Service Manual

iR C3100 Series
iR3100CN

Canon

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Application

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

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Caution

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

Symbols Used

This documentation uses the following symbols to indicate special information:

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

The following rules apply throughout this Service Manual:

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

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

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

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

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

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

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

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1.1 System Construction

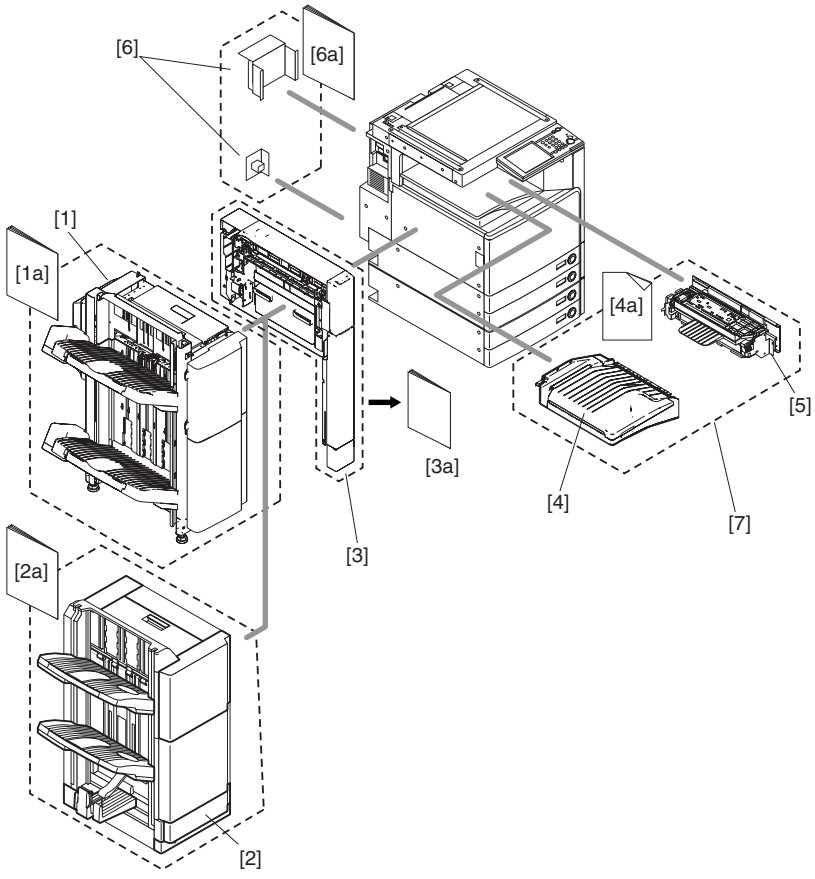
1.1.1 Overview of the Delivery Accessories System Configuration 0002-0763

The machine's delivery accessories may be configured into any of the following 3 patterns.
- if a large volume of paper must be dealt with or multiple types of processing (e.g., stapling, punching) are needed, delivery accessories configuration 1
- if no more than a stapling level of processing is needed, delivery accessories system configuration 2
- if no more than a sorting level (3-output) of processing is needed, delivery accessories system configuration 3

See the diagrams of individual constructions that follow.

1.1.2 Delivery Accessorizes System Configuration 1 0001-2267

The following is a diagram of the system configurations:



F-1-1

T-1-1

[1]	Finisher-Q1 (marketing scheduled for August 2003)	[1a]	Installation Procedure - Installing the Finisher-Q1 - Installing the Buffer Path 4 - Installing the Relay Delivery Assembly 5
[2]	Saddle Finisher-Q2 (marketing scheduled for August 2003)	[2a]	Installation Procedure - Installing the Saddle Finisher-Q2 - Installing the Buffer Path - Installing the Relay Delivery Assembly - Installing the Saddle (for Q2)
[3]	Punch Unit	[3a]	Installation Procedure - Installing the Punch Unit
[4]	Buffer Path	[4a]	Installation Sheet
[5]	Relay Delivery Assembly (for Finisher-Q1/Saddle Finisher Q2)		
[6]	Accessories Power Supply-P1 (if 120/230 V, standard; needed for installation of 1 thorough 5)	[6a]	Installation Procedure - Installing the Accessories Power Supply-P1
[7]	Buffer Path Unit-C1		

The following is a list of functions and accessories needed to make use of these functions:

T-1-2

Function	**Accessories**
- 2-output delivery - stapling	Finisher-Q1 or Saddle Finisher-Q2 Accessories Power Supply-P1 Buffer Path Unit-C1

T-1-3

Function	Accessories
- 3-output delivery - stapling	Finisher-Q1 or Saddle Finisher-Q2 Accessories Power Supply-P1 Buffer Path Unit-C1

T-1-4

Function	Accessories
- saddling	Saddle Finisher-Q2 Accessories Power Supply-P1 Buffer Path Unit-C1

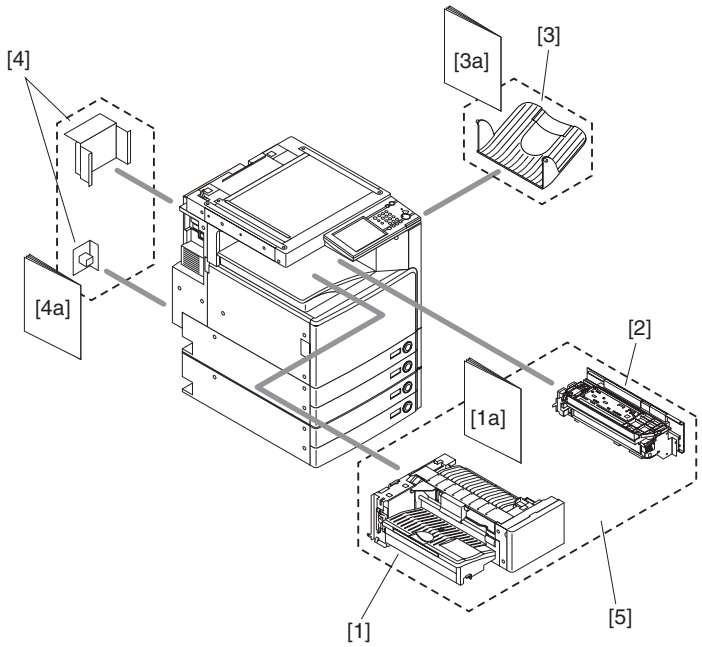
T-1-5

Function	Accessories
- punching	Finisher-Q1 or Saddle Finisher-Q2 Accessories Power Supply-P1 Buffer Path Unit-C1 Punch Unit

1.1.3 Delivery Accessorizes System Configuration 2

0001-2278

The following is a diagram of the system configuration:



F-1-2

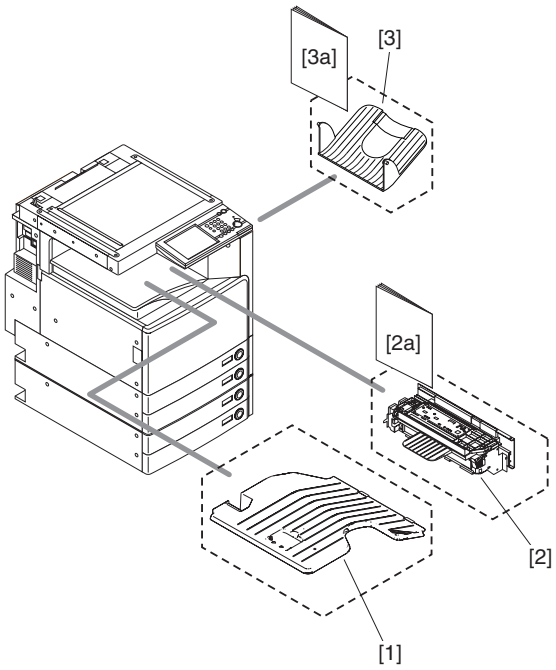
T-1-6

[1]	Finisher Block	[1a]	Installation Procedure - Installing the Finisher-P1 - Installing the Relay Delivery Assembly 2
[2]	Relay Delivery Assembly (for Finisher-P1)		
[3]	Copy Tray-J1	[3a]	Installation Procedure - Installing the Copy Tray-J1
[4]	Accessories Power Supply-P1 (if 120/230 V, standard; needed for installation of 1 or 2)	[4a]	Installation Procedure - Installing the Accessories Power Supply-P1
[5]	Finisher-P1		

1.1.4 Delivery Accessories System Configuration 3

0001-2281

The following is a diagram of the system configuration:



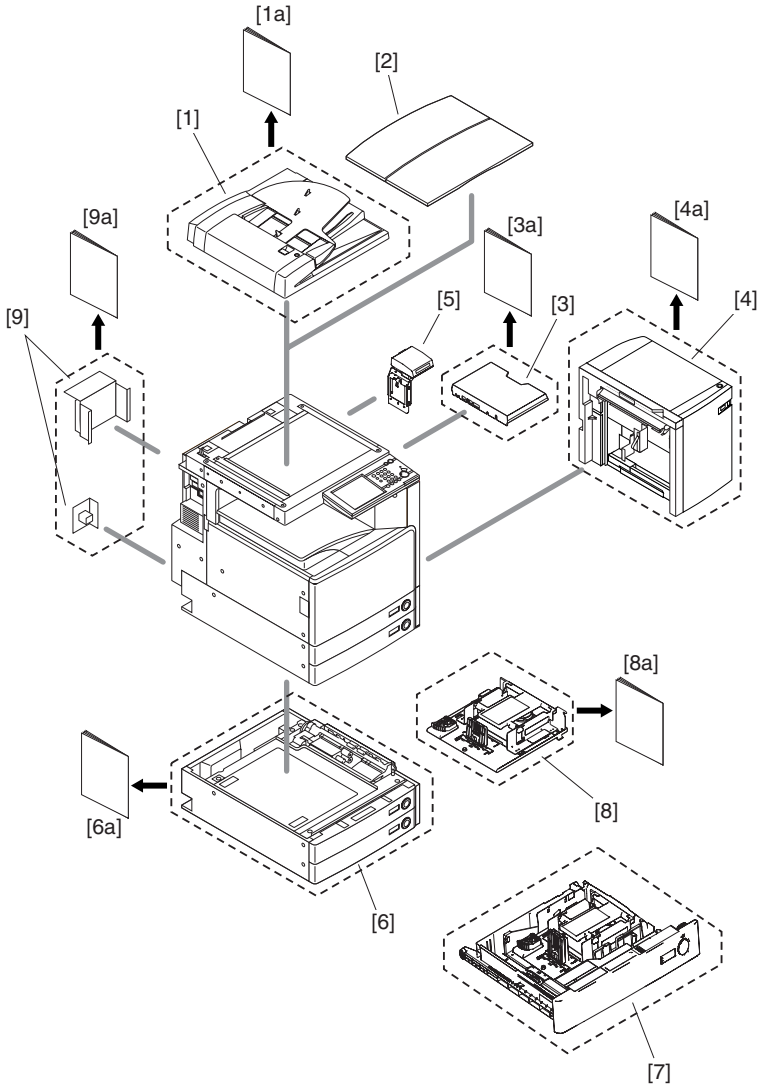
F-1-3

T-1-7

[1]	Internal Delivery Tray		
[2]	Inner 2-Way Tray-C1 (power supplied by printer unit, does not require Accessories Power Supply-P1)	[2a]	Installation Procedure - Installing the Inner 2-Way Tray-C1 - Installing the Inner Delivery Tray
[3]	Copy Tray-J1	[3a]	Installation Procedure - Installing the Copy Tray-J1

1.1.5 Pickup/Original Handling Accessories System Configuration 0001-2282

The following is a diagram of the system configuration:



F-1-4

T-1-8

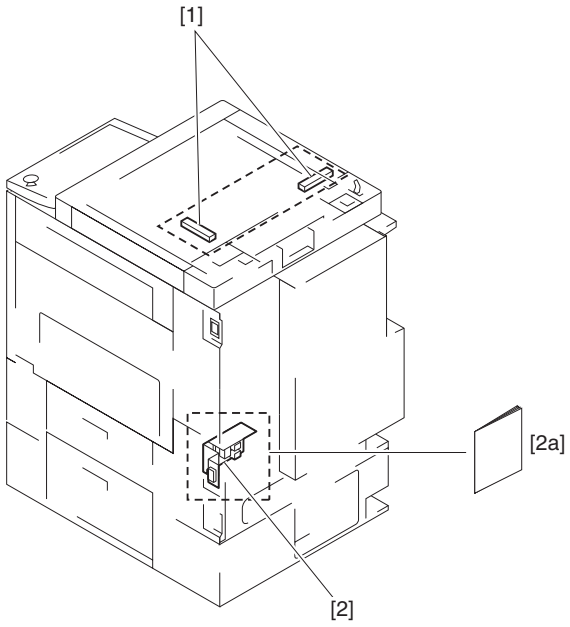
[1]	DADF-L1	[1a]	Installation Procedure - Installing the ADF-L1
[2]	Platen Cover Type-H1		
[3]	Original Holder-J1	[3a]	Installation Procedure - Installing the Original Holder-J1
[4]	Side Paper Deck-Q1	[4a]	Installation Procedure - Installing the Side Paper Deck-Q1
[5]	Card Reader-B1, Card Reader Mounting Kit-B1		

[6]	2-Cassette Pedestal-Y1	[6a]	Installation Procedure - Installing the 2-Cassette Pedestal-Y1
[7]	Envelope Cassette-C1 (100V)		
[8]	Envelope Cassette Attachment-C1 (115/200V)	[8a]	Installation Procedure - Installing the Envelope Cassette Attachment-C1
[9]	Accessories Power Supply-P1 (if 120/230V, standard; required for Side Paper Deck-Q1 4)	[9a]	Installation Procedure - Installing the Accessories Power Supply-P1

1.1.6 Reader Heater System Configuration

0001-2285

The following is a diagram of the system configuration:



F-1-5

T-1-9

[1] Reader Heater Unit-B1

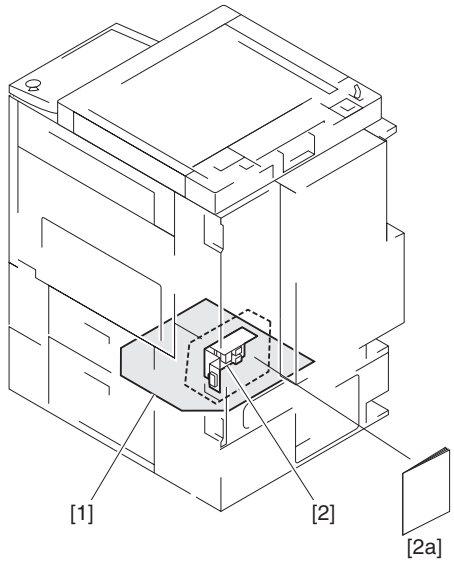
[2] Heater PCB-B1

[2a] Installation Procedure
- Installing the Heater PCB
- Installing the Cassettes Heater Unit-24
(mounting to printer unit)
- Reader Heater Unit-B1

1.1.7 Cassette Heater System Configuration 1

0001-2286

The following is a diagram of the system configuration:



F-1-6

T-1-10

[1] Cassette Heater Unit-24
(installation to the printer unit indicated)
(requires Heater PCB-B1 for operation)

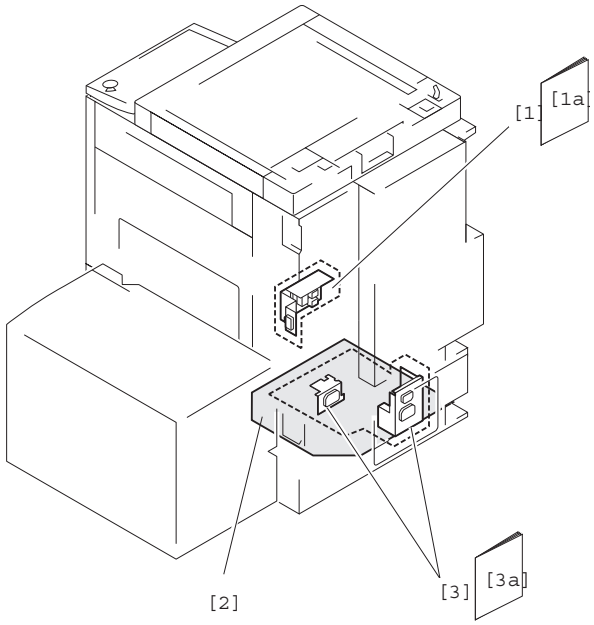
[2] Heater PCB-B1

[2a] Installation Procedure
- Installing the Heater PCB-B1
- Installing the Cassette Heater Unit-24
(installation to the printer unit)
- Installing the Reader Heater Unit-B1

1.1.8 Cassette Heater System Configuration 2

0001-2284

The following is a diagram of the system configuration:



F-1-7

T-1-11

[1] Heater PCB-B1

[1a] Installation Procedure
- Installing the Heater PCB-B1
- Installing the Cassette Heater Unit-24
  (installation to printer unit)
- Installing the Reader Unit-BL

[2] Cassette Heater Unit-24
  (installation to cassette pedestal indicated)
  (requires Heater PCB-B1 and Cassette Heater Mounting Kit-B1 for operation)

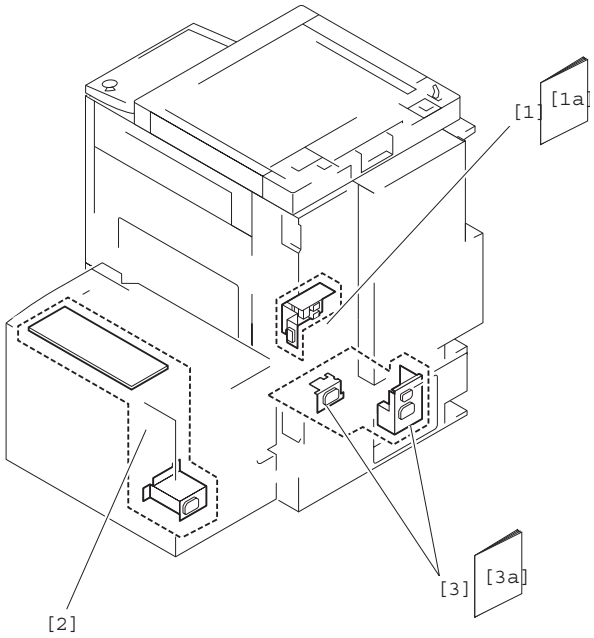
[3] Cassette Heater Mounting Kit-B1

[3a] Installation Procedure
- Installing the Cassette Heater Mounting Kit-B1
- Installing the Cassette Heater Unit-25
- Installing the Cassette Heater Unit-24
  (installation to cassette pedestal)

1.1.9 Side Deck Heater System Configuration

0001-5918

The following is a diagram of the system configuration:



F-1-8

T-1-12

[1] Heater PCB-B1

[1a] Installation Procedure
- Installing the Heater PCB-B1
- Installing the Cassette Hater Unit-24
  (installation to printer unit)
- Installing the Reader Unit-B1

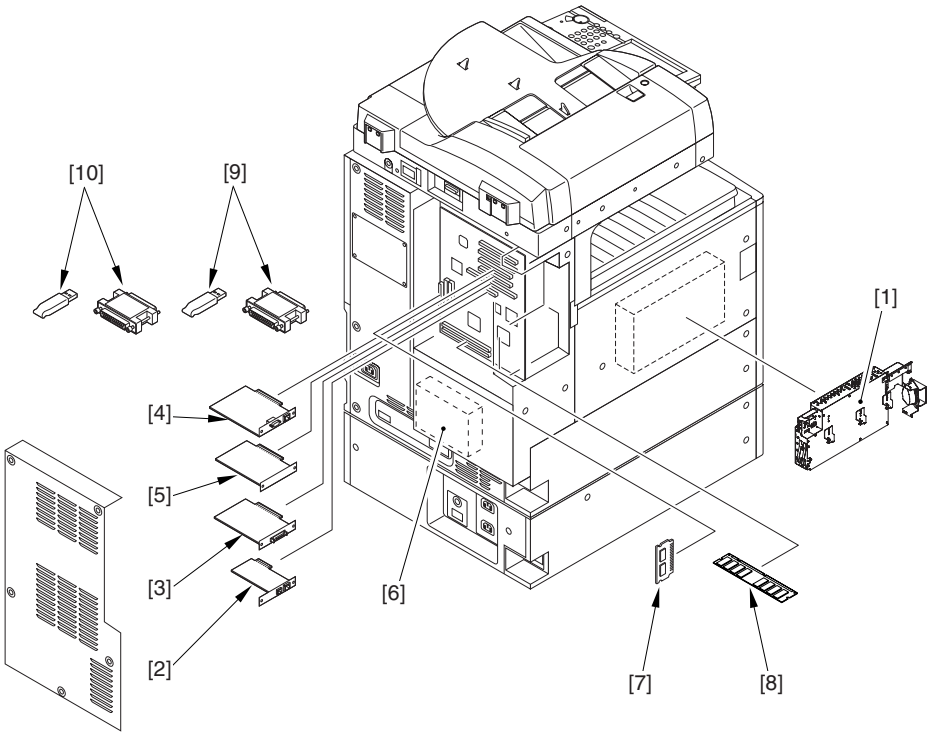
[2] Cassette Heater Unit-25
(requires heater PCB-B1 and Cassette Heater Mounting Kit-B1 for operation)

[3] Cassette Heater Mounting Kit-B1

[3a] Installation Procedure
- Installing the Cassette Heater Mounting Kit-B1
- Installing the Cassette Unit-25
- Installing the Cassette Heater Unit-24
  (installation to cassette pedestal)

1.1.10 Printing/Transmitting Accessories System Configuration 0001-2288

The following is a diagram of the system configuration:



F-1-9

[1] Super G3 Fax Board-N1 (standard if iR C3100F)
[2] Ethernet Board (standard)
[3] UFR Board or Open Interface Board
[4] USB Interface Board-A2 or TokenRing Board-TB84
[5] Image Conversion Board-A1
[6] PS Print Server Unit-D1
[7] PDL Expansion Kit-B1 (LIPS; boot ROM for LIPS model: 100 V model only)
[8] Color iR 256 MB Expansion RAM (if 100 V model, option)
[9] SEND Function Expansion CIP/CIU (dongle for functional expansion)
[10] iR Security Kit AIP/AIU (dongle for functional expansion)

1.1.11 Functions of Printing/Transmitting Accessories

0001-2319

The following is a table of functions expected of printing/transmitting accessories:

T-1-13

	UFR Printer/ Scanner Kit-B1	PDL Expansion Kit-B1 (LIPS)	Color iR 256MB Expansion RAM	SEND Expansion Kit-CIP/ CIU	Image Conversion Board-A1	USB Interface Board-A2	Super G3 Fax Board-N1
GDI-UFR printing	yes*	-	-	-	-	-	-
LIPS printing	yes*	yes	yes	-	-	-	-
Transmis-sion	-	-	yes	yes	yes	-	-
Faxing	-	-	yes	-	yes	-	yes
Local printing	yes*	-	-	-	-	yes	-

The following is a brief explanation of the functions expected of the accessories; for details, see the chapters that follow:

- UFR Printer/Scanner-B1

adds the GDI-UFR printing function and a scanning function in combination with ScanGear.

- PDL Expansion Kit-B1 (LIPS)

adds the LIPS printing function; the kit does not come with a PDL board, requiring separate procurement.

- Color iR 256 MB Expansion RAM

needed when a transmission/fax function is added.

- SEND Function Expansion CIU-CIP/CIU

adds a transmission function; the setup work calls for a PC, requiring the selection of CIP (parallel port) or CIU (USB port) depending on the type of connection offered by the PC.

- Image Conversion Board-A1

needed when a transmission/fax function is added.

- USB Interface Board-A2

adds a printing function by connection to a PC in a local configuration (USB); requires a UFR board.

- Super G3 Fax Board-N1

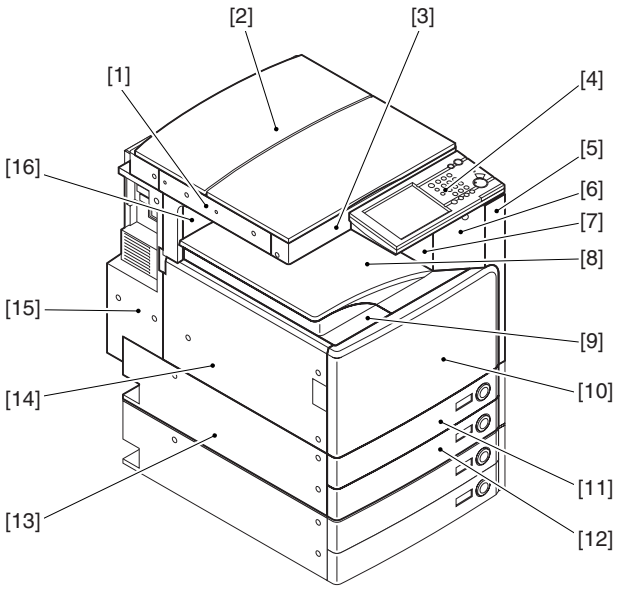
adds the G3 fax function.

1.2 Product Specifications

1.2.1 Names of Parts

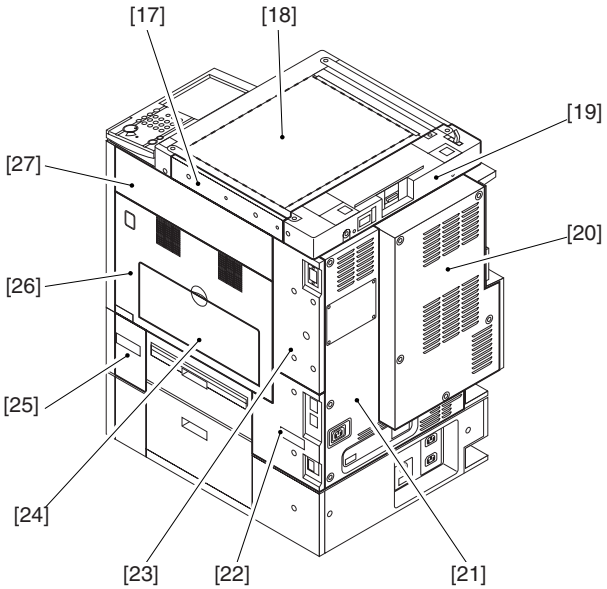
1.2.1.1 External View

0001-2293



F-1-10

[1] ADF reading glass retainer
[2] Copyboard cover
[3] Reader cover (front)
[4] Control panel
[5] Support cover (right)
[6] Support cover
[7] Delivery tray right cover
[8] Delivery tray
[9] Delivery tray lower cover
[10] Front cover
[11] Cassette 1
[12] Cassette 2
[13] Left cover (lower)
[14] Left cover
[15] Left cover (rear)
[16] Delivery tray rear cover

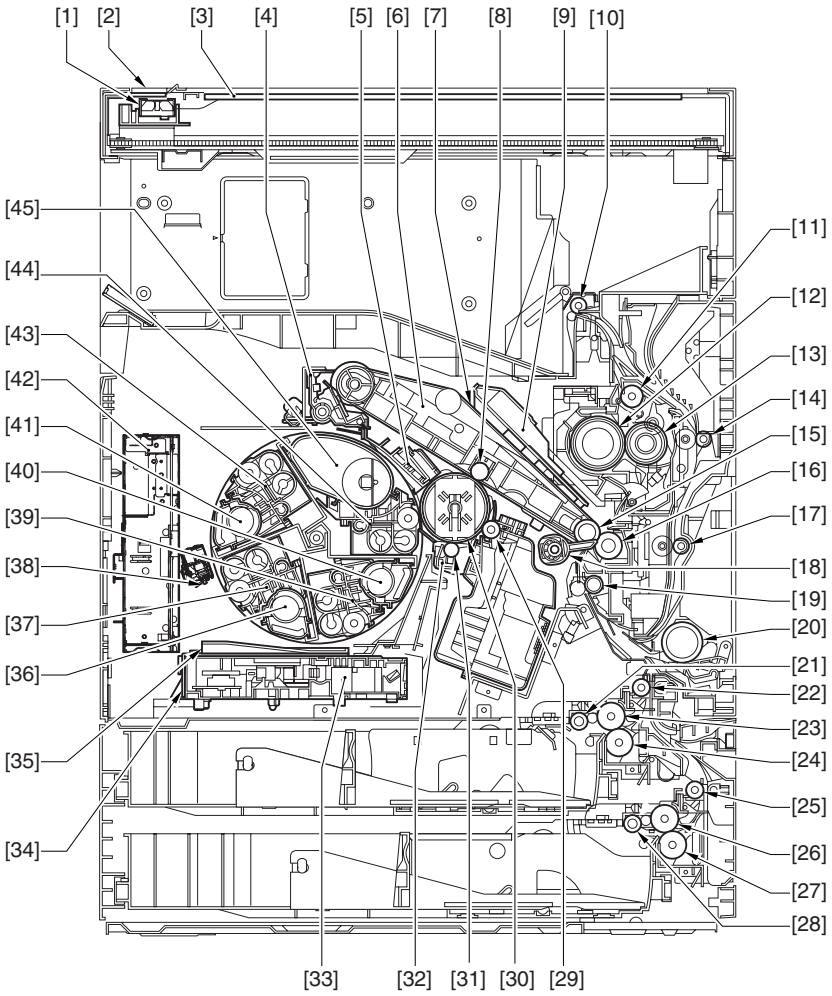


F-1-11

[17] Reader cover (right)
[18] Copyboard glass
[19] Reader cover (rear)
[20] Rear cover (right)
[21] Rear cover (left)
[22] Right cover (lower rear)
[23] Right cover (upper rear)
[24] Manual feed pickup tray
[25] Right cover (lower front)
[26] Right door unit
[27] Right cover (upper)

1.2.1.2 Cross Section

0001-2297



F-1-12

T-1-14

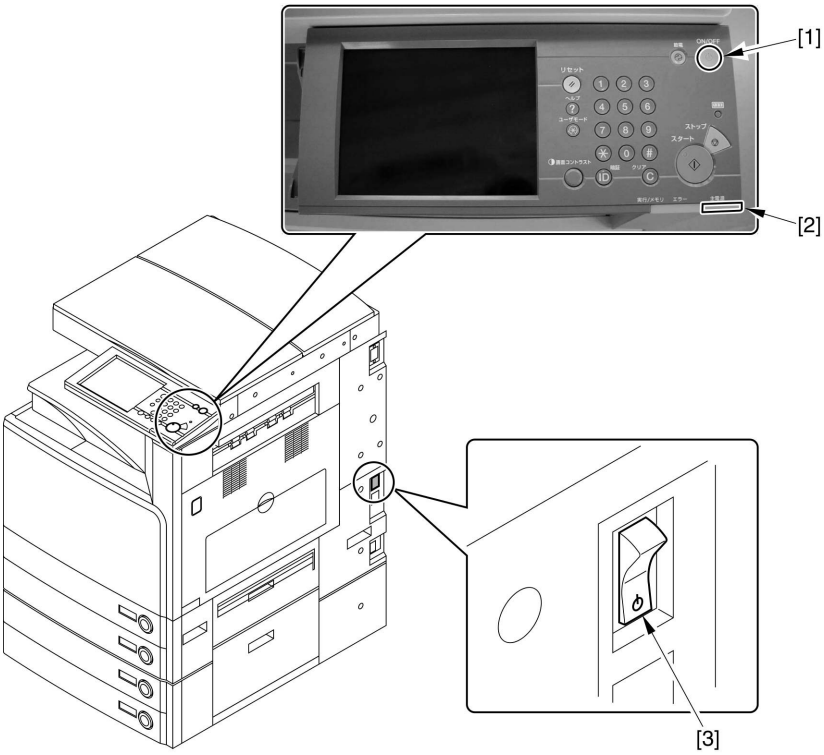
[1]	CIS unit	[23]	Feed roller (cassette 1)
[2]	ADF reading glass	[24]	Separation roller (cassette 1)
[3]	Copyboard glass	[25]	Vertical path roller 2
[4]	Intermediate transfer belt cleaner unit	[26]	Feed roller (cassette 2)
[5]	Patch sensor unit	[27]	Separation roller (cassette 2)
[6]	Intermediate transfer unit	[28]	Pickup roller (cassette 2)
[7]	Intermediate transfer belt	[29]	Brush roller
[8]	Primary transfer roller	[30]	Photosensitive drum

[9] Intermediate transfer belt fan duct
[10] Delivery roller
[11] Fixing outlet roller
[12] Fixing roller
[13] Pressure roller
[14] Duplex feed roller 1
[15] Secondary transfer inside roller
[16] Secondary transfer external roller
[17] Duplex feed roller 2
[18] Secondary transfer outside roller releasing arm
[19] Registration roller
[20] Manual feed pickup roller
[21] Pickup roller (cassette 1)
[22] Vertical path roller 1
[31] Primary charging roller
[32] Drum unit
[33] Laser scanner unit
[34] Dust-blocking sheet
[35] Toner receptacle
[36] Toner cartridge (M)
[37] Developing assembly (M)
[38] ATR sensor
[39] Developing assembly (Y)
[40] Toner cartridge (Y)
[41] Toner cartridge (C)
[42] Fax unit
[43] Developing assembly (C)
[44] Developing assembly (Bk)
[45] Toner cartridge (Bk)

1.2.2 Using the Machine

1.2.2.1 Turning On the Power Switch 0001-2299

The machine has 2 power switches: main power switch and control panel power switch. Normally, the machine goes on when its main power switch is turned on, i.e., when it is not in power save mode, low power mode, or sleep mode.



F-1-13

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

⚠Never turn off the power while the progress bar is indicated. The HDD is being accessed, and turning off the power can well damage the HDD (E602).

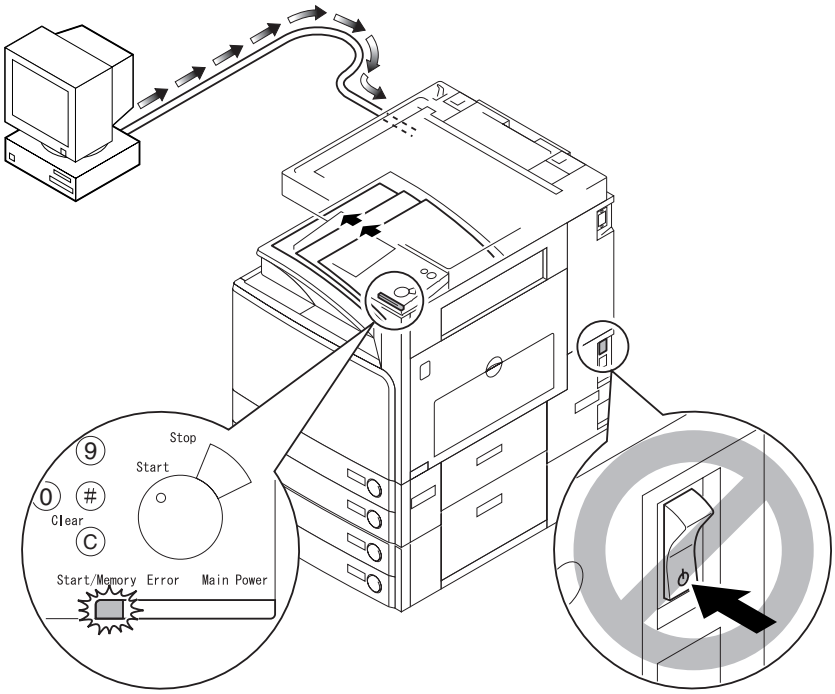
F-1-14

1.2.2.2 Points to Note About Turning Off the Main Power Switch 0001-2302

Be sure always to turn off the control panel power switch before turning off the main power switch.

⚠While Printing to the Printer/Receiving a Fax

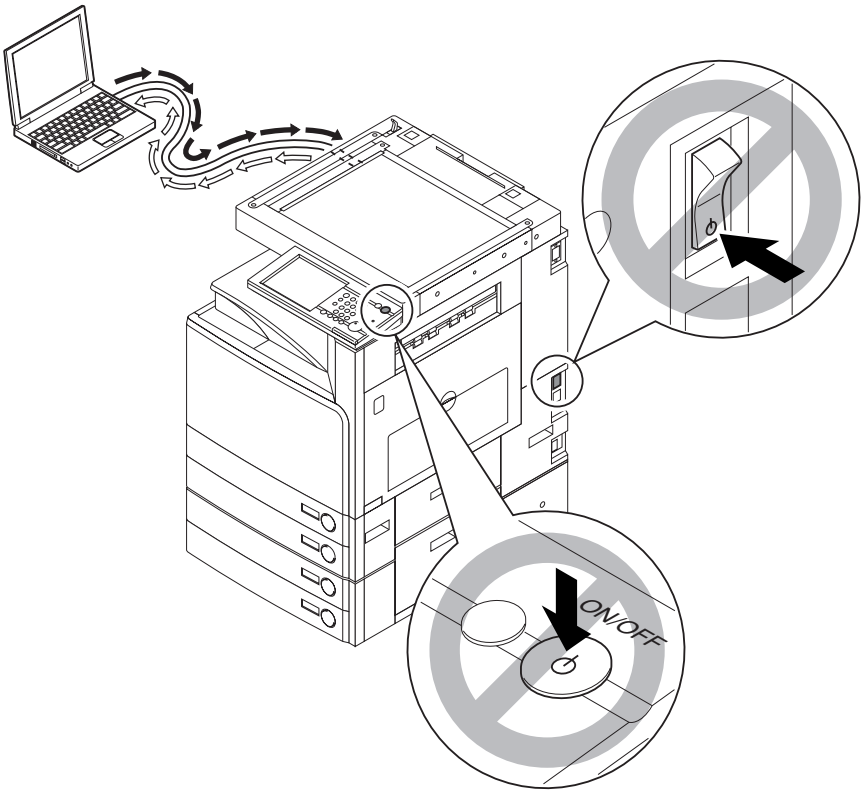
Be sure that the Start/Memory lamp on the control panel is off when operating the main power switch. (Turning off the main power switch can result in the loss of the data being processed.)



F-1-15

⚠When Downloading Is Under Way

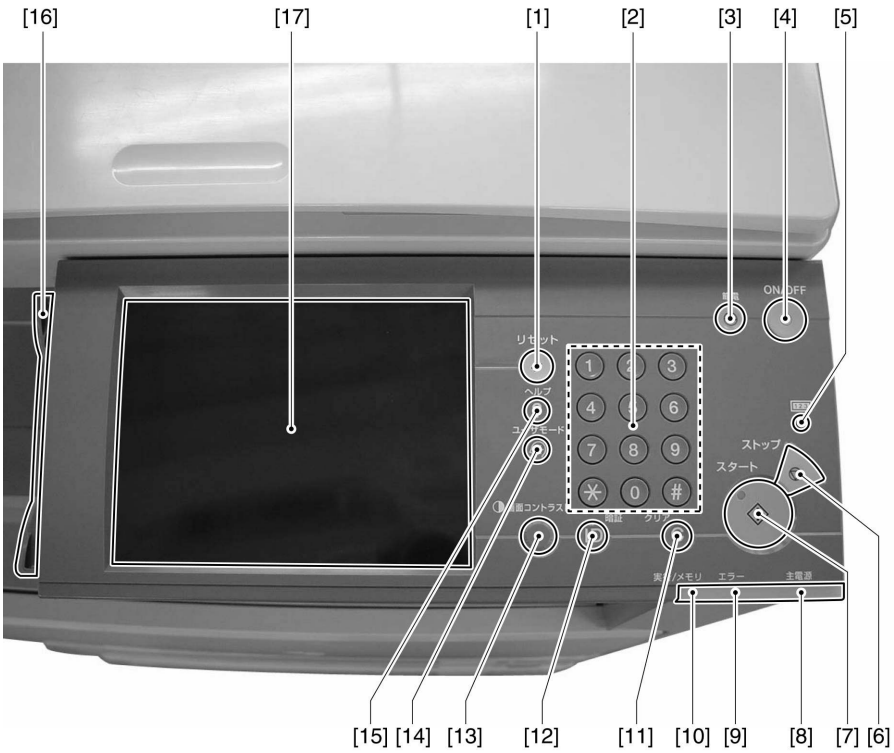
Never turn off the main power switch/control panel power switch while downloading is under way. (Turning off the main power switch while downloading is under way can cause the machine operation to fail.)



F-1-16

1.2.2.3 Control Panel

0001-2304



F-1-17

T-1-15

[1] Reset key	[10] Start/Memory lamp
[2] Keypad	[11] Clear key
[3] Power Save key	[12] ID key
[4] Control panel power switch	[13] Contrast dial
[5] Counter Check key	[14] Additional Function key
[6] Stop key	[15] Help key
[7] Start key	[16] Touch pen
[8] Main power lamp	[17] Touch panel
[9] Error lamp	

1.2.3 User Mode Items

1.2.3.1 Common Settings

0001-2305

- Factory Settings

T-1-16

Mode	Description
initial settings	initial function: *copy/transmit/box/MEAP
	system initial screen: on/*off
	priority on system device: *on/off
post-auto clear function	*return/do not return
buzzer	input sound: *on/off
	invalid input sound: on/*off
	replenish pre-warning sound: on/off
	warning sound: *on/off
	job end sound: *on/off
	residual original alert sound: on/*off
paper level message display	*ON/OFF
priority on text/photo with black-and-while selected for auto color selection	text/*photo
inch input	enable/disable inch input (on/*off; on if 230V model)
cassette auto selection	for copy, off for manual, on for others
	for printer, on for all
	for box, off for manual, on for others
	for fax, off for manual, on for others
	for copy, off for manual, on for others
envelope cassette selection	ENV.1/ENV.2
paper type selection	yes
save power mode	-10%, -25%, -50%, no return
power consumption in sleep	*low/high
special tray selection	for tray A, copy/box/fax/printer/others

Mode	Description
	may be tray A, B, or C
LTRR/STMT original distinction	manual/*on if LTRR/on if STMT
special tray selection (w/ finisher; fax reception)	yes
output priority	copy: *1/2/3
	printer: 1/*2/3
	box: 1/2/*3
	fax reception: 1/2/*3
	others: 1/2/*3
manual feed envelope selection	on/*off (in Japanese model; outside Japan, always on)
manual feed paper standard mode selection	on (paper size/paper type)/*off
local print standard mode	paper selection: auto paper/cassette 1 thorough 5
	number of prints: *1 to 2000
	sort: sort/group/staple sort/*shift sort/shift group/ rotation sort/rotation group/punch hole/Z-fold
	double-sided print: on (left/right, top/bottom)/*off
	post-print file deletion: on/*off
	file merge: on/*off
display language switch-over	ON/*OFF
scan color reversal	ON/*OFF
job-to-job shift	*ON/OFF
cleaning alert for original reading area	* ON/OFF
JPEG compression rate for remote scan	high/*medium/low
gamma value for remote scan	1.0, 1.4, *1.8, 2.2
function control mode	*ON/OFF
common settings initialization	initialize?: yes/no

1.2.3.2 Timer Settings

0001-2306

- Factory Settings

T-1-17

Mode	Description
date/time	by time zone/daylight saving *off
auto sleep time	10, 15, 20, 30, 40, 50 min; *1, 1.5, 2, 3, 4 hr
auto clear rime	0=disable;1, *2, ---, 9 min (in 1-min increments)
weekly timer	00:00 to 23:59 from Sunday to Saturday (in 1-min increments)
low power mode shift interval	10, *15, 20, 30, 40, 50 min; 1, 1.5, 2, 3, 4 hr

1.2.3.3 Adjustment and Cleaning 0001-2308

- Factory Settings

T-1-18

Mode	Description
zoom fine tuning	XY independent; -1.0 to +1.0% (in 0.1% increments)/ *0%
middle bind staple edging (w/ finisher)	Start key
middle bind position change (w/finisher)	size: A3, 11x17/B4/A4R, LTRR
auto gradation correction	no display
	full correction (text printing to read start x 3 times)
	quick correction (no test printing)
density correction	copy/transmit, 9 steps each (at time of shipment, set to 5)
	copy box/black-and-white transmit/color transmit, 9 steps each (at shipment, set to 5)
machine inside cleaning	Start key
feeder cleaning	Start key
toner replacement without prompt	black/yellow/magenta/cyan

1.2.3.4 Printing Various Reports 0001-2309

- Factory Settings

T-1-19

Mode	Description
Transmit (in keeping with specifications)	transmission result report: *only if error/on/off
	original indication: *on/off
communications control report	auto printing after every 100 communications: *on/off
	printing at specified time: on/*off
time specification	*00:00 to 23:59
	transmission/reception separation: (toggle) on/*off
fax (in keeping with specifications)	fax transmission result report: *only if error/on/off
	original indication: *on/off
fax communications control report	auto printing after every 40 communications: *on/off
	printing at specified time: on/*off
	time specification: *00:00 to 23:59
	transmission/reception separation: (toggle) on/*off
fax reception result report	only if error: /ON/*OFF
fax box reception report	*ON/OFF
list print (transmission)	address list: list print
user data list (transmission)	print user data list?: yes/no
user data list (fax)	user data list: print user data list? yes/no
user data list (network)	user data list: print user data list? yes/no

1.2.3.5 System Control Settings

0001-2322

T-1-20

Mode	Description
system administrator information	by ID, address
group ID	ON/*OFF

Mode	Description
communications control setting	by e-mail/fax/box
remote user interface	*ON/OFF
restrictions on address list	ID/access No.: on/*off
device information setting	by device name/site of installation
network setting	(TCP/IP) on/*off; various information
	(Net Ware) on/*off; various information
	(Apple Talk) on/*off; individual phases
	(SMB) on/*off; various information
	(SNMP) *on/off; various information
	(special report) *ON/OFF
	(spool function) ON/*OFF
	(start-up time) *5 sec; 0 to 300 sec
	(Ethernet driver) auto detection: *on/off; or others
	(e-mail/I fax) SMTP: *on/off; POP: *on/off; others

1.2.3.6 Copy Function Settings

0001-2323

T-1-21

Mode	Description
preference key 1	*no setting (settings include magnification, sorter, page separation)
preference key 2	*no setting (settings include magnification, sorter, page separation)
priority of image orientation	ON/*OFF
copy wait time	ON/*OFF
auto vertical/horizontal rotation	*ON/OFF
standard mode change	set/initialize
copy function initialization	yes/no

1.2.3.7 Common Transmission Function Settings 0001-2324

T-1-22

Mode	Description
common transmission function setting	sender registration (99 max.)
	user abbreviation (various choices)
	FTP transmission selection (on/*off)
	error file clear (*on/off)
	JPEG compression rate (high/*medium/low)
	transfer error processing (always print/save/*off)
	number of retries (*3; may be 0 through 5)
	transmission function change (read: 150x150; file: TIFF/ JPEG; others)
	routine task registration (M1 to M9)
	PDF image level (data/*plain/image quality; text mode: on/*off)
	transmission screen (*default/one-touch/new)
	source (indicate/*do not indicate)
	color transmission gamma (1.0/1.4/1.8/*2.2)
	transmission function initialization (yes/no)
common reception function setting	cassette selection (all; *on/off)
	image reduction (on/*off)
	reception information (attach/*do not attach)
	2-on-1 (on/*off)
fax basic registration	user telephone number (input accepted)
	line type (*20 pps/10 pps/push-tone)
	volume control (alarm sound, communication sound)
fax transmission function setting	ECM (*on/off)
	pause length (*2 sec; 1 through 15 sec)
	auto redial (*on/off)

Mode	Description
fax reception function setting	ECM (*ON/OFF)

1.2.3.8 Box Function Settings

0001-2325

T-1-23

Mode	Description
box setting	user box setup/register (99 max.)
	read setup (register/initialize)
	fax box setup/register (49 max.)

1.2.3.9 Printer Function Setting

0001-2327

T-1-24

Mode	Description
settings	number of copies (1 to 2000; *1)
	simplex/duplex (double-sided/*single-sided)
	save blank paper (*yes/no)
	pickup (size: A4; type: plain; do not replace)
	print adjustment (super smooth; toner density for individual colors; save toner)
	page layout (bind lengthwise, margin 0; -30 to +30 mm; horizontal correction 0/vertical correction 0; -50- to +50 mm)
	error skip (yes/*no)
	print deletion interval (*1, 2, 3, 6, 12, 24 hr)
	time-out (*15 sec/disabled; may be varied between 5 and 300)
	RIP (yes/*no)
	sort (*no/rotation sort/rotation group)
	transparency interleaf (*no/blank paper interleaf/printed paper interleaf)
	printer operation mode (*auto; or from 6 other choices)
	emulation (*no; from other 4 choices)

Mode	Description
	auto switch-over (LIPS/ESC-P/15577/HP-GL; all)
	color mode (*auto/full color/monochrome)
	gradation (*standard/zoom 1/zoom 2; *yes apply to graphics; *yes apply to image)
	halftone selection (text: resolution/gradation/*error diffusion; graphics: resolution/gradation/error diffusion; image: resolution/ error/error diffusion)
	printer initialize (yes/no)
	LIPS/emulation (12 items)
utility	printer initialize (yes/no)

1.2.3.10 Address List Settings 0001-2330

T-1-25

Mode	Description
address registration	individual items
address list name registration	address list from 1 to 10; individual items
one-touch button registration	#001 to #200; individual items

1.2.4 User Maintenance

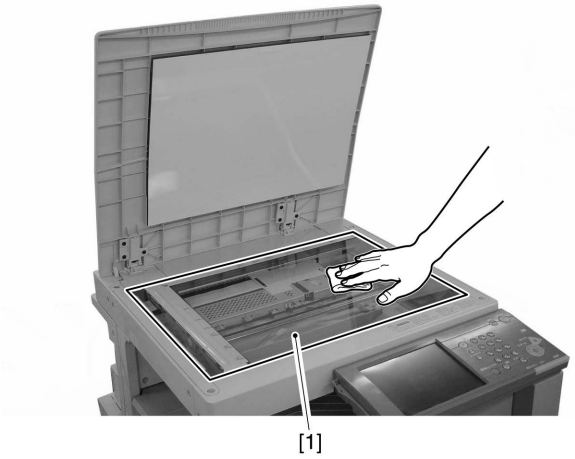
1.2.4.1 Cleaning 0001-2332

- Copyboard Glass and Back of Copyboard Cover (Platen Cover Type H)

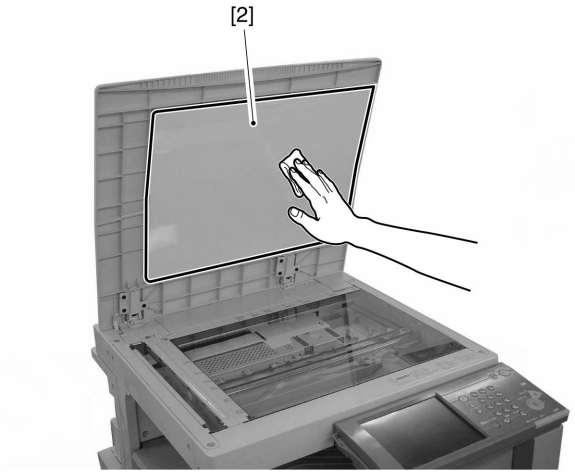
Advise the user to be sure to clean the surface of the copyboard glass and the back of the copyboard cover at least once a once.

Cleaning Procedure

Wipe the surface of the copyboard glass [1] and the back of the copyboard cover (white plate) [2] with a cloth moistened with mild detergent (well wrung); then, dry wipe them.



F-1-18



F-1-19

1.2.4.2 Inspection

0001-2334

- Checking the Operation of the Leakage Breaker

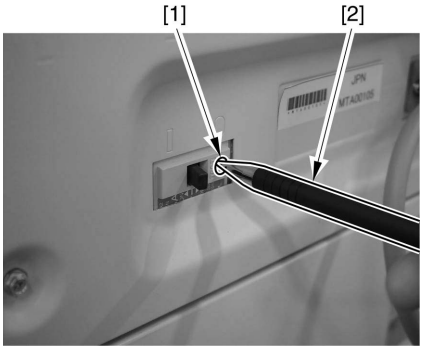
Advise the user to be sure to check the leakage breaker at least once or twice a month and keep a record of checks.

Inspection Procedure

1) Turn on the main power switch.

2) Press the test button [1] of the breaker with the tip of a ball-point pen [2].

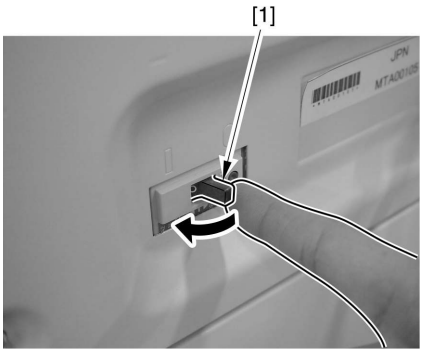
3) Check to see that the breaker switch shifts to the OFF side and the power goes off.



F-1-20

4) Turn off the main power switch.

5) Shift the breaker switch [1] to the ON side.



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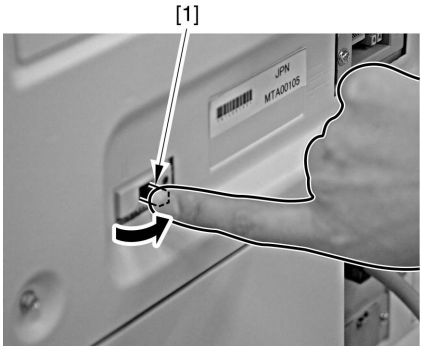
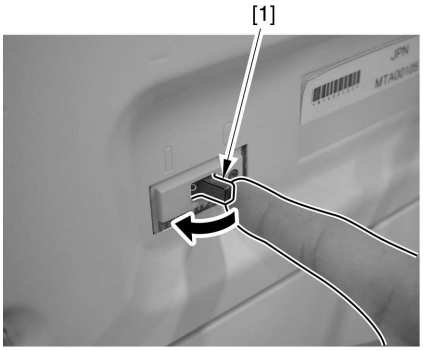
⚠If the breaker switch stops between ON and OFF sides, shift it back to the OFF side first and then shift it to the ON side.



F-1-22



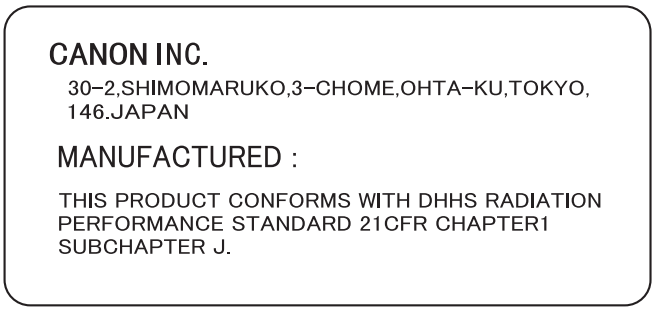
F-1-23

6) Turn on the main power switch.

1.2.5 Safety

1.2.5.1 CDRH Regulations 0001-2337

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



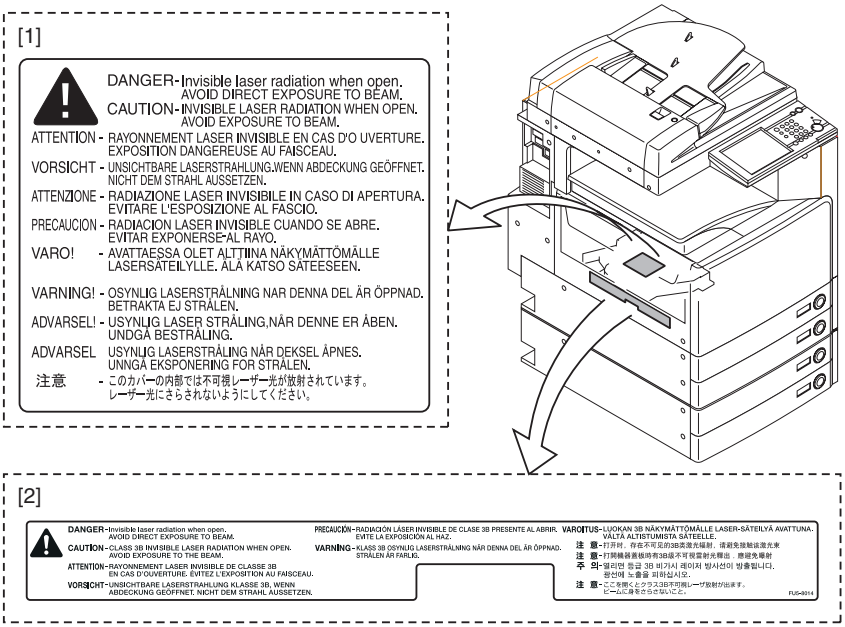
F-1-24

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

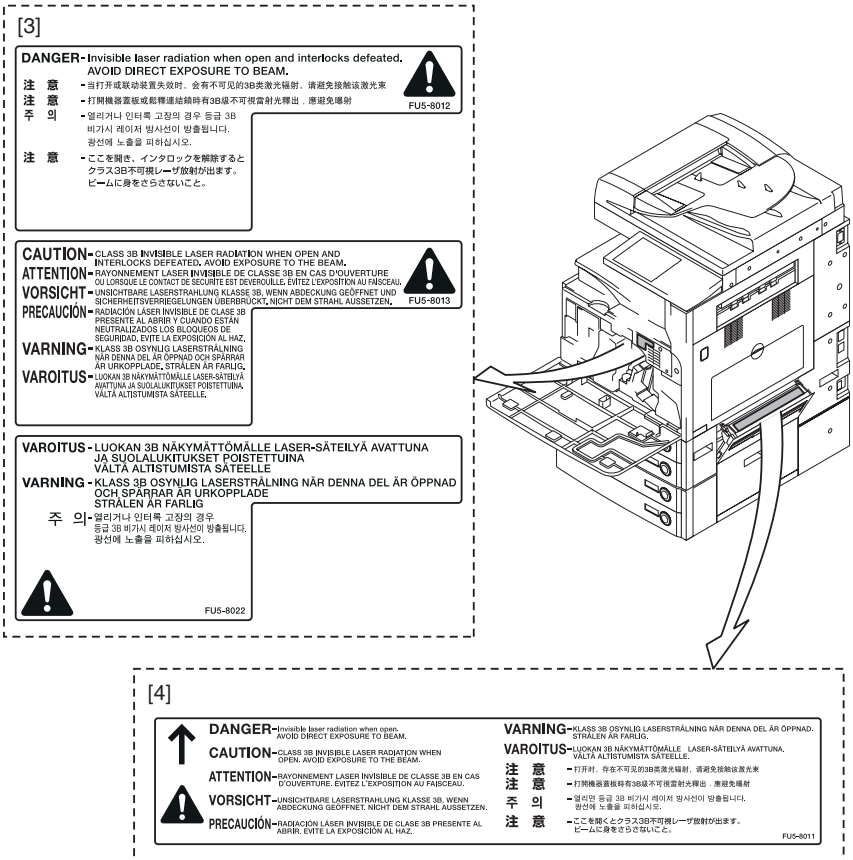
1.2.5.2 Handling the Laser Unit 0001-2338

If you must service the area around the machine's laser unit, be sure to take full care to avoid exposure to laser light: do not insert a tool (e.g., screwdriver or those with a high reflectance) into the laser path; also, remove watches, rings, and the like before starting the work, as they reflect laser light.
The machine's laser light is red in color, and an appropriate label ([1] to [4]) is attached to all covers that can reflect

laser light. Keep also in mind that the machine's laser unit cannot be adjusted in the field.



F-1-25



F-1-26

1.2.5.3 Safety of the Laser Light 0001-2336

Laser light can prove to be hazardous to the human body. The machine's laser unit is fully enclosed in a protective housing and external covers so that its light will not escape outside as long as the machine is used normally.

1.2.5.4 Safety of Toner 0001-2339

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

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

Toner on Clothing or Skin

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

1.2.6 Product Specifications

1.2.6.1 System and Functions 0001-6142

Body	Desktop
Photosensitive medium	OPC (62 mm in diameter)
Exposure method	by laser
Charging method	by charging roller
Development method (mono)	by dry, 2-component toner
Development method (color)	by dry, 2-component toner
Cassette pickup method	separation retard (center reference)
Multifeeder pickup method	simplified duplex method (center reference)
Transfer method	by intermediate belt
Transfer method (primary transfer)	by transfer roller
Transfer method (secondary transfer)	by transfer roller
Separation method	by curvature + static eliminator
Drum cleaning method	by cleaning blade

Trasnsfer cleaning method	by cleaning blade
Fixing method	Fixing method
Delivery method	face-down
Warm-up time	6 min or less (at power-on)
Toner type	non-magnetic, negative (S toner; for both mono and full color)
Print area	maximum imaging area: 305 x 450.5 mm; guaranteed maximum imaging area: 300 x 450.5 mm
Copying resolution	600 x 600 dpi
Printing resolution	600 x 600 dpi
Duplex method	tray-less duplexing
Toner level detection function	yes
Cassette capacity	550 sheets (of 80 g/m2 paper)
Multifeeder tray capacity	55 sheets (of 64 g/m2 paper)
Non-image width (leading edge)	2.5 -1.5, +1.5 mm (single-/double-sided)
Non-image width (left/ right)	2.5 -1.5, +1.5 mm mm (single-sided left/double-sided left)
Image margin (leading edge)	2.5 -1.5, +1.5 mm mm (single-sided); 2.5 -2.0, +2.0 mm (double-sided)
Image margin (left/ right)	2.5 -1.5, +1.5 mm mm (single-sided, left edge); 2.5 -2.0, +2.0mm (double-sided, left side)
Image margin (trailing edge)	4 mm (single-sided; reference only); 4 mm (double-sided, reference only)
Energy save mode	yes (saving at -10%, -25%, -50%; no return time; shift to low-power mode after specific period of time)
Low-power mode	yes (fixing assembly remains on; shifts to sleep mode after specific period of time)
Sleep mode	yes
Option	See sections on system configurations.

1.2.6.2 Others

0001-6594

Operating environment (temperature range)	5 deg C to 30 deg C
Operating environment (humidity range)	5% RH to 80% RH
Operating environment (atmospheric pressure)	0.6 to 1.0 bar
Noise	During printing: 71dB or less (BK) During printing: 73dB or less (4C) During standby: 50dB or less
Power consumption	Maximum: 1185W During standby: 281.1W During continuous printing: 706.92W (BK) During continuous printing: 526.26W (4C)
Ozone	Maximum: 0.02ppm or less Average: 0.01ppm or less
Dimensions	Width (W): 565mm Depth (D): 755mm Height (H): 754mm
Weight	Main unit: 65kg (cartridge not included)

1.2.7 Function List

1.2.7.1 First Copy Time

0002-1152

T-1-26

	Single-sided	
	Full color	**Bk mono**
A4 plain paper (64 to 105 g/m2) Cassette as source	23.9	8
A4 heavy paper (106 to 163 g/m2)	37.6	23.2
Manual feed tray as source	37.6	8

(unit: sec)

1.2.7.2 Printing Speed

0002-1153

T-1-27

			Single-sided		Auto Duplexing (FD delivery)	
Paper type		**Paper size**	**Full color**	**Bk mono**	**Full color**	**Bk mono**
Plain paper (64 to 105 g/m2)		A3/LDR	3.5 (3.1)	16.0 (14.2)	1.7 (-)	4.8 (-)
		B4/LGL	3.5 (3.1)	16.0 (14.2)	1.7 (-)	4.8 (-)
		A4R/ LTRR/B5R	3.5 (3.1)	16.0 (14.2)	1.7 (-)	4.8 (-)
		A4/LTR/B5	7.0 (3.5)	31.8 (22.8)	3.5 (-)	10.3 (-)
		A5R/ STMTR	7.0 (3.5)	16.0 (14.2)	3.5 (-)	4.8 (-)
		12×18	3.5 (3.1)	15.0 (13.0)	1.7 (-)	4.5 (-)
Heavy paper (106 to 163 g/m2)		A3/LDR	1.6 (1.6)	2.2 (2.2)	----	----
		B4/LGL	1.6 (1.6)	2.2 (2.2)	----	----
		A4R/ LTRR/B5R	1.6 (1.6)	2.2 (2.2)	----	----
		A4/LTR/B5	3.2 (1.9)	4.5 (3.2)	----	----
Transparency		LTR/A4	3.2 (1.9)	7.0 (7.0)	----	----
Postcard (manually fed)		----	1.9	3.2	----	----
Envelope	from cassette (Monarch)	----	1.6 (1.9)	2.4 (3.2)	----	----
	from manual feed tray (Monarch)	----	1.6 (1.9)	2.4 (3.2)	----	----

Values inside parentheses represent manual feeding. (unit: copies/min)

1.2.7.3 Types of Paper

0002-1154

T-1-28

Type		Size	Source		
			Manual feed tray	Cassette	Side paper deck-Q1
Plain paper, eco paper, recycled paper		A3, B4, A4R, LDR, LGL, LTRR	yes	yes	no
		A4, LTR	yes	yes	yes
		B5, EXE	yes	yes	no
		A5R, STMTR	yes	yes	no
		B5R	yes	yes	no
		A5, STMT, SRA3	yes	no	no
		12"x 18"	yes	yes	no
Special paper	Heavy paper	A3, B4, A4, A4R, B5, B5RLDR, LGL, LTR, LTRRSRA3, 12"x 18"	yes	yes	no
	Transparency	A4, A4R	yes	yes	no
	Postcard	Postcard A46R modified; double-postcard A5/A5R modified	yes	no	no
	4-plane postcard	A4/A4R modified	yes	no	no
	Label paper	A4, A4R, LTR, LTRR	yes	no	no
	3-hole paper	same as plain paper	yes	yes	yes
	Tracing paper	A3, B4, A4	yes	yes	no
	Envelope	Com10, Monarch, DL, ISO-C5ISO-B5, YOKEI No. 4	yes	yes	no

Chapter 2 Installation

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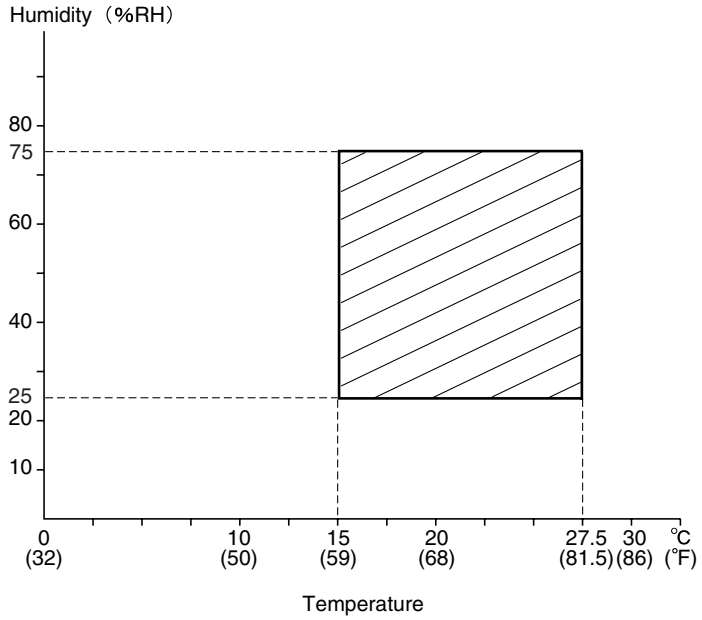
2.1 Making Pre-Checks

2.1.1 Selecting the Site of Installation

0001-7300

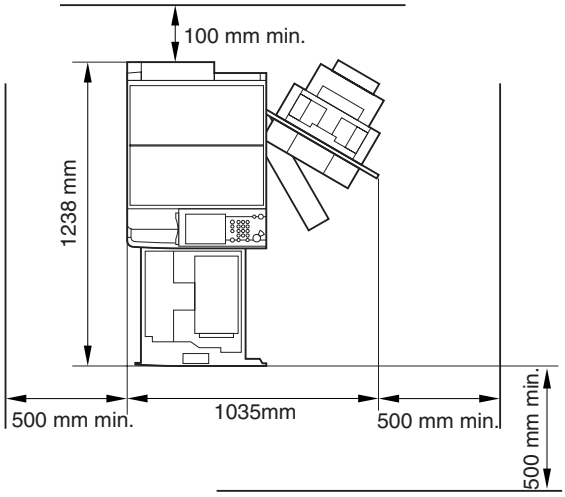
Select the site of installation against the following requirements; if possible, visit the user's before delivery of the machine:

1) There must be a power outlet properly grounded and rated as indicated (+, -10%) for exclusive use by the machine.
2) The environment of the room must be as indicated in the following diagram, and the machine must not be installed near a water faucet, water boiler, humidifier, or refrigerator:



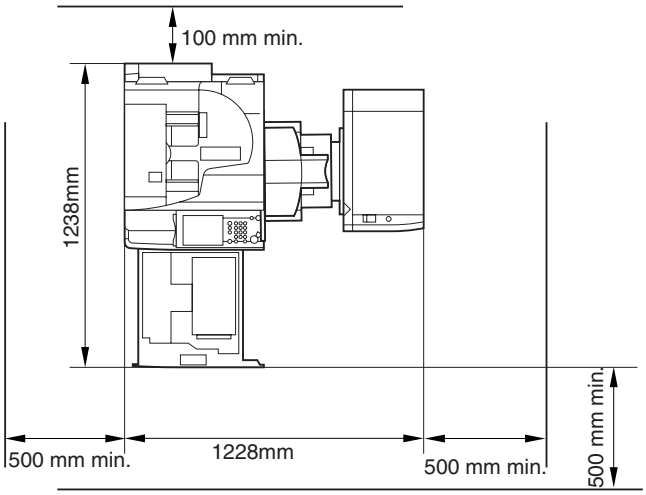
F-2-1

3) The machine must not be installed near a source of fire or in an area subject to dust or ammonium gas.
If the area is exposed to direct rays of the sun, provide curtains to the window.
4) The room must be well ventilated. (The level of ozone generated by the machine in use will not affect the individuals around it. However, some may find its odor to be unpleasant, as when working in a poorly ventilated room.)
5) The floor of the machine must be level so that the feet of the machine will remain in contact and the machine will remain level.
6) The machine must be at least 10 cm away from any wall, permitting unobstructed use.



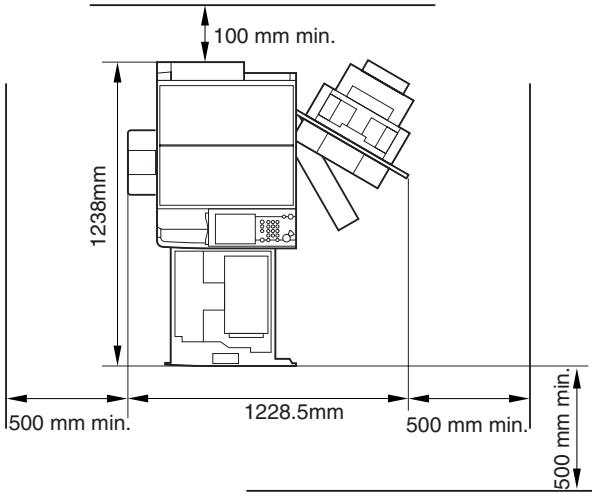
F-2-2

Without a Finisher or Side Paper Deck-P1 Installed



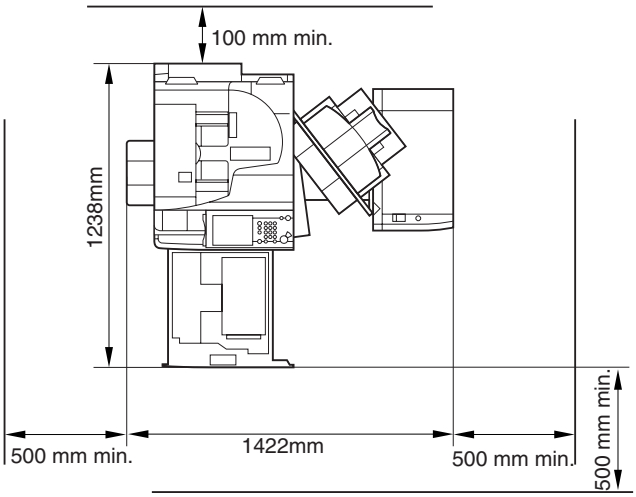
F-2-3

With the Side Paper Deck-Q1 Installed



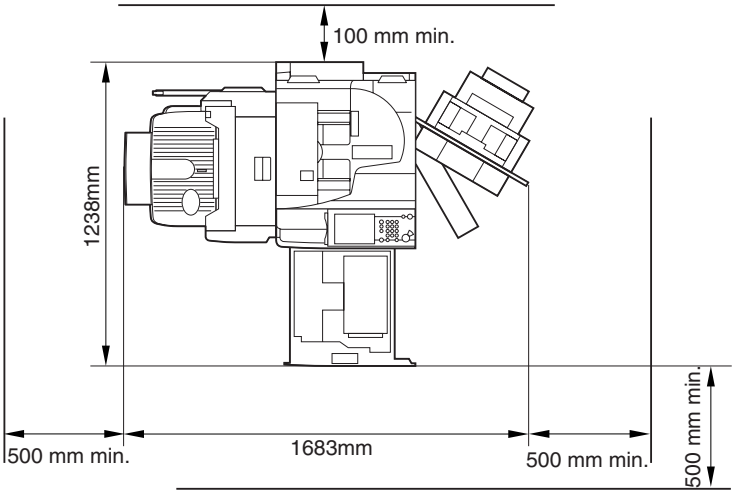
F-2-4

With the Finisher-P1 Installed



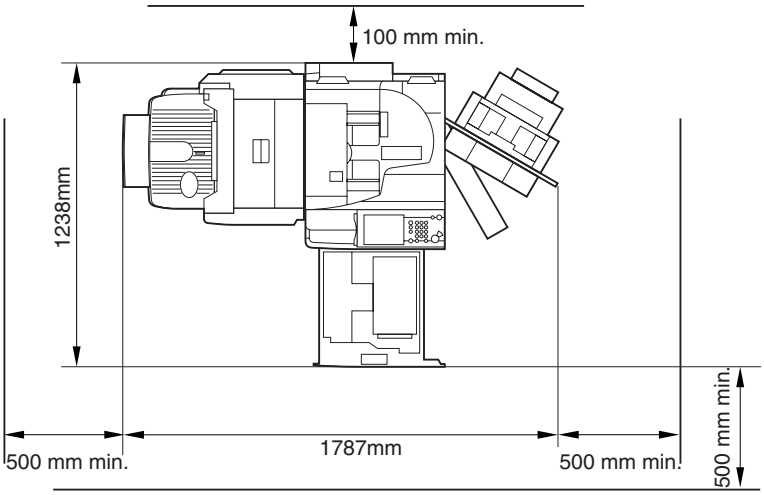
F-2-5

With the Side Paper Deck-Q1 and Finisher-P1 Installed



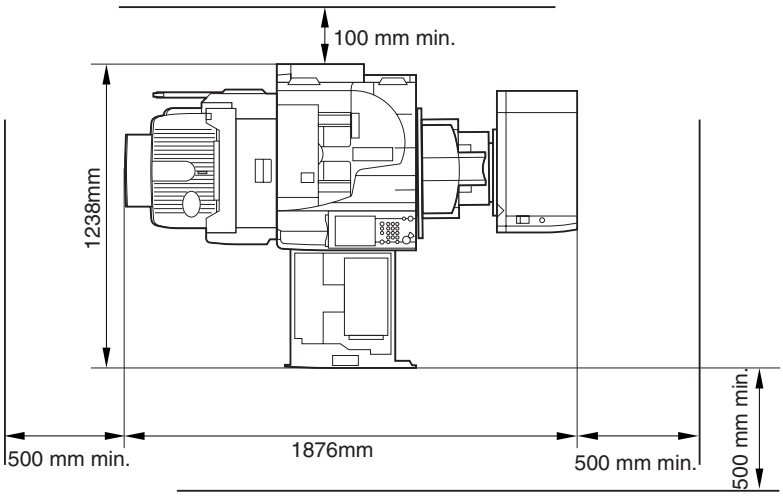
F-2-6

With the Finisher-Q1 Installed



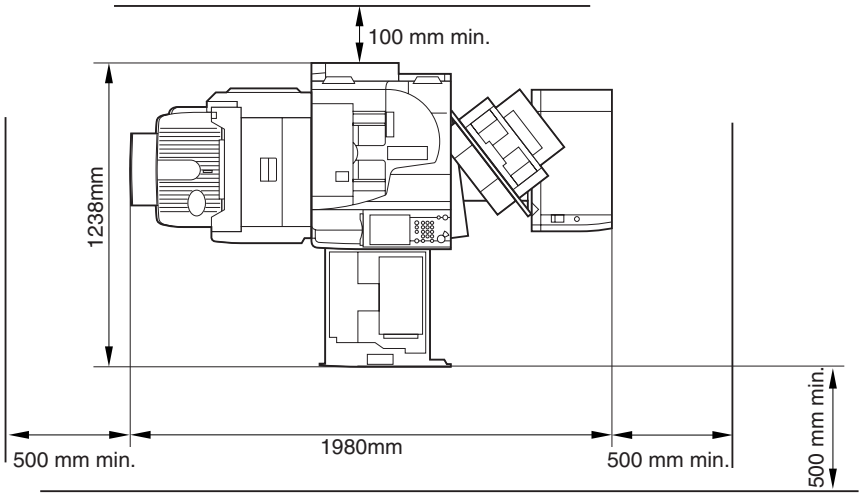
F-2-7

With the Saddle Finisher-Q2 Installed



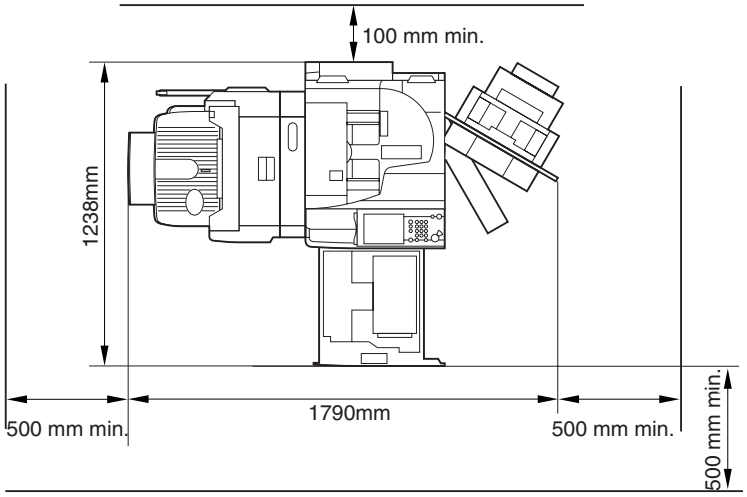
F-2-8

With the Side Paper Deck-Q1 and Finisher-Q1 Installed



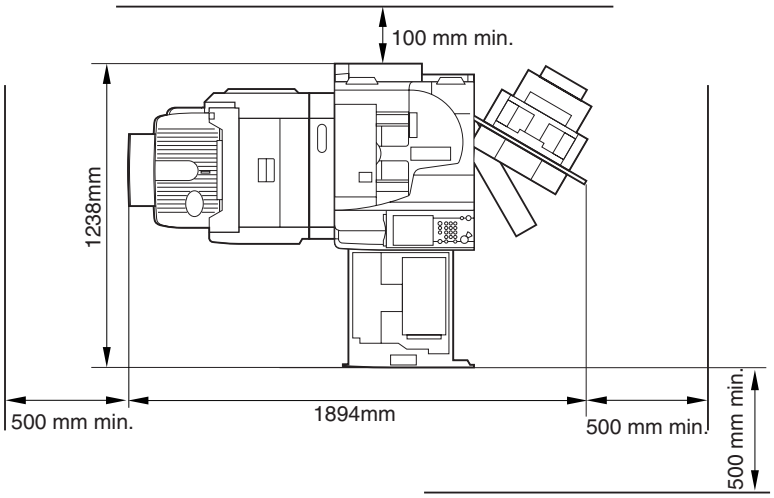
F-2-9

With the Side Paper Deck-Q1 and Saddle Finisher-Q2 Installed



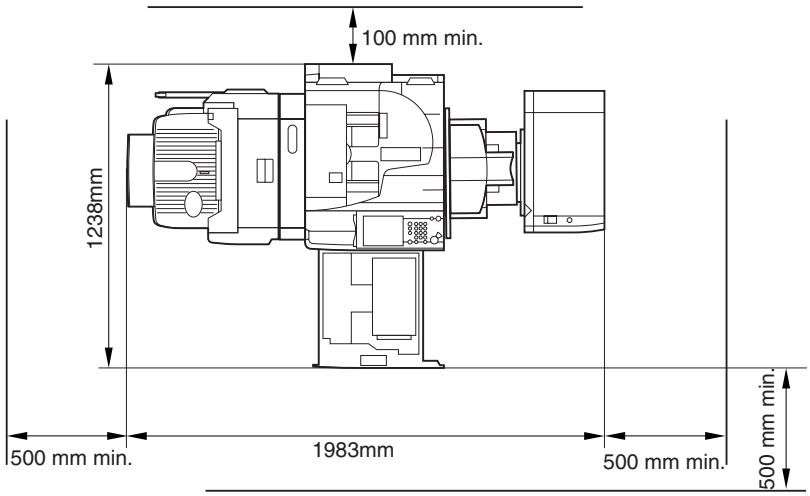
F-2-10

With the Finisher-Q1 and Puncher Unit-L1/M1/N1/PI Installed



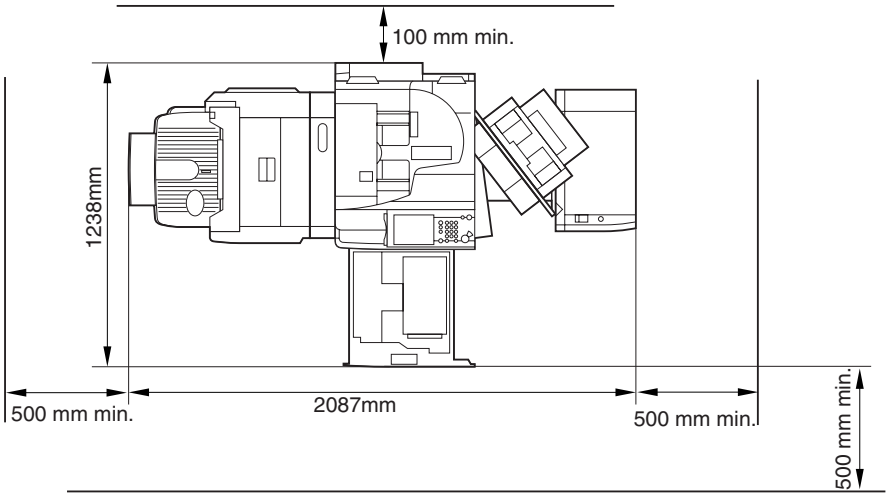
F-2-11

With he Saddle Finisher -Q2 and Paper Deck Unit-L1/M1/N1/PI Installed



F-2-12

With the Side Paper Deck-Q1, Finisher-Q1, and Puncher Unit-L1/M1/N1/P1 Installed



F-2-13

With the Side Paper Deck-Q1, Saddle Finisher-Q2, and Puncher Unit-L1/M1/N1/P1 Installed

7) The machine must be placed in a well ventilated area. It is important to make sure, however, that the machine is not near the air vent (for suction) of the room.

2.1.2 Check to Make Before Installation

0004-6602

1-1 Points to Make Before Installation

Be sure to go through the following before starting the work:

1) If you are installing the machine after moving it from a cold to warm location, be sure to leave the machine unpacked for at least 2 hours so that the machine is fully used to the site temperature, thus avoiding image faults caused by condensation. (The term "condensation" refers to the formation of droplets of water on the surface of a metal object brought in from a cold to warm place, i.e., as the result of the rapid cooling of the moisture (vapor)

around the object.)

2) The machine weighs a maximum of about 65 kg/ 143.3lb. Be sure to work in a group of 4 persons when lifting it.

1-2 Recording the Service Mode Settings

Be sure to record the following service mode items as part of the installation work. Fill in the blanks as instructed herein, and be sure all these blanks have been filled at the end of the installation work:

T-2-1

<Service Label>

Initial screen	Level 1 item	Level 2 item	Level 3 item	Check
COPIER	ADJUST	DENS	REF-Y	
			REF-M	
			REF-C	
			SGNL-Y	
			SGNL-M	
			SGNL-C	

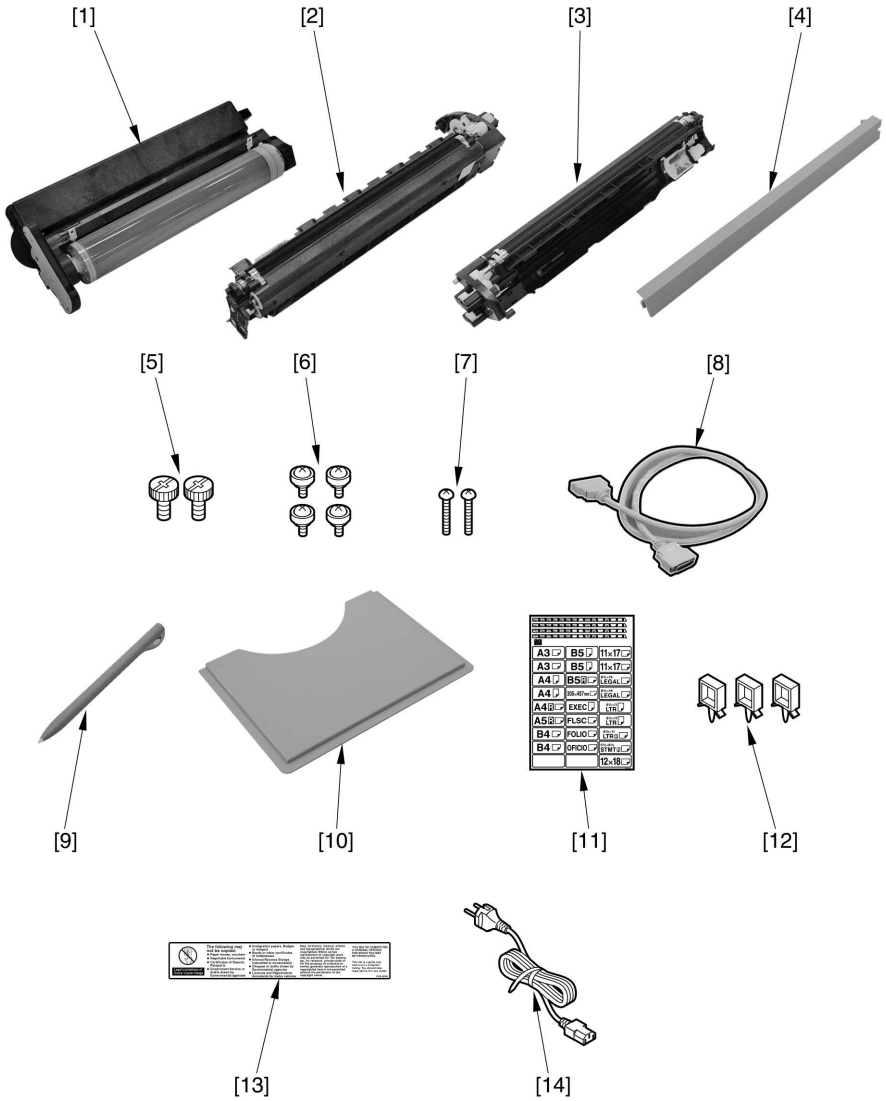
T-2-2

<Drum Counter Label>

Initial screen	Level 1 item	Level 2 item	Level 3 item	Check
COPIER	ADJUST	HV-PRI	DR-I-INT	

1-3 Checking the Contents

Check to be sure that none of the following contents is missing:



F-2-14

T-2-3

[1]	Drum unit	1pc	[9]	Touch pen	1pc
[2]	Developing assembly (black)	1pc	[10]	Service book case	1pc
[3]	Developing assembly (cyan, magenta, yellow)	1pc each	[11]	Cassette size label	2pc
[4]	Lower right cover	1pc	[12]	Wire saddle	3pc
[5]	Adjusting screw	2pc	[13]	Do Not Copy label	4pc
[6]	Developing assembly fixing stepped screw	4pc	[14]	Power cable	1pc

[7]	Drum unit fixing screw (M4x20; white)	2pc	[15]	Key switch unit (not in EUR model)	1pc
[8]	Reader communications cable	1pc			

Memo
The developing assembly fixing stepped screw may come in 2 pieces: collar and shank; if so, be sure to put them together.

Check the documentation and CD against the following table:

T-2-4

iR C3100 230V
Operators manual: Reference guide
Operators manual:Copying and Mail Box Guide
Operators manual CD-ROM: NW/RUI guide
Software lisence agreement(JEFIG)

T-2-5

iR C3100C 230V EUR
Operators manual: User's Guide
Operators manual CD-ROM (Ref,Copy/Box)
Operators manual CD-ROM (NW/RUI)
License agreement for software (JEFIG)

T-2-6

iR C3100N 230V
Operators manual: Reference guide
Operators manual: Copying and Mail Box Guide
Operators manual CD-ROM:NW/RUI

iR C3100N 230V
Network Quick Start Guide
UFR Driver/Utility CD-ROM
ScanGear CD
User Manual CD-ROM: printer guide
Release Note
Software lisence agreement

T-2-7

iR C3100CN 230V EUR
Operators manual: User's Guide
Network Quick Start Guide
User Manual CD-ROM: Printer Guide
Operators manual: CD-ROM Ref,Copy/Box)
Operators manual CD-ROM: NW/RUI guide
UFR/PS/PCL Driver/Utility CD-ROM
ScanGear CD
Software lisence agreement
Release Note

2.2 Unpacking and Installation

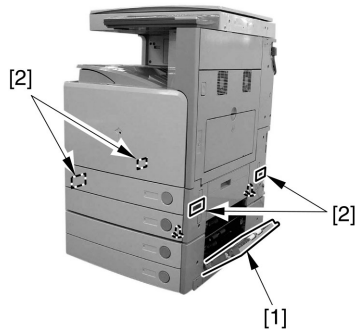
2.2.1 Unpacking and Removing the Fixing Materials

0001-7766

1) Unpack the machine, and remove the plastic covering.
- If you are installing a pedestal together with the machine, unpack it also.

2) If you are installing the machine on a Cassette Pedestal-Y1, open the right door [1] of the pedestal.

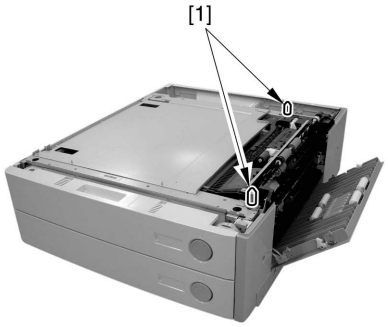
3) Working as a group of 4 persons, hold the grips [2], and place the machine on the pedestal.



F-2-15

⚠The machine weighs as much as 100 kg (including the DADF). Be sure always to work as a group of 4 persons when lifting it.

Memo:
When placing the machine on a cassette pedestal, be sure to match the 2 positioning pins [1] found on the top surface of the pedestal against the holes found in the base of the machine.



F-2-16

4) Close the right door of the pedestal (in the case of the 2-Cassette Pedestal-Y1).

5) Remove the fixing tape/fixing material from the individual parts.
- front door
- right door
- manual feed assembly
- cassette 1/2
- inside of cassette 1/2
- DADF (if found)
- copyboard glass

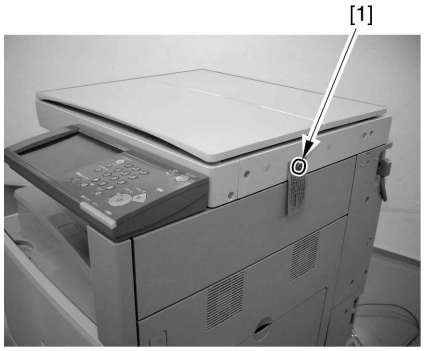
6) Push the cassette releasing button, and remove the cassettes 1 and 2.

⚠Go through steps 6) through 8) only if you are installing the machine on a 2-Cassette Pedestal-Y1.

7) Join the machine and the pedestal using a screw [1]. The screw comes with the 2-Cassette Pedestal-Y1.

8) Slide the cassette 1 and 2 back in.

9) Remove the optical system fixing screw [1] from the outside of the reader unit right cover. (Store away the screw for possible future relocation of the machine.)



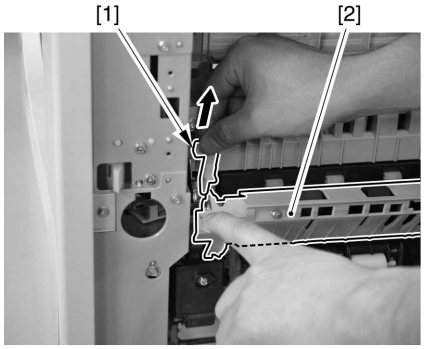
F-2-17

10) Open the right door.

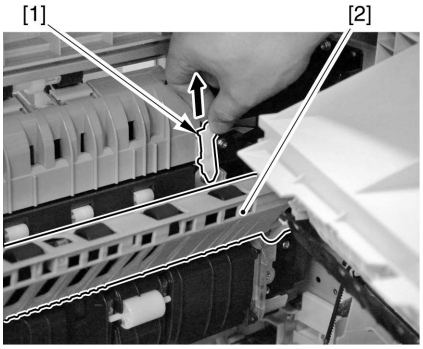
11) Remove the 2 fixing assembly releasing rolls [1].

One roll is set on front side, another one roll is set rear side.

⚠When removing the fixing assembly releasing roll, be sure not to force down the jam guide [2] of the fixing assembly. Otherwise, the force can damage the jam guide of the fixing assembly.



F-2-18



F-2-19

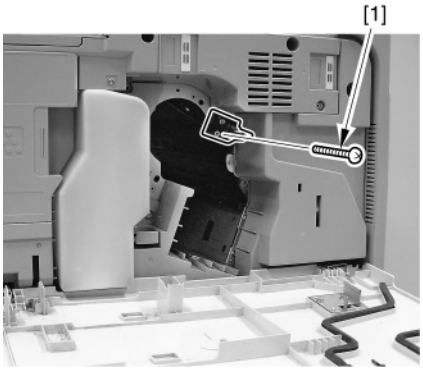
12) Close the right door.

2.2.2 Installing the Drum Unit

0001-7796

1) Open the front cover.

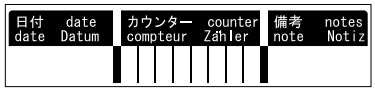
2) Remove the ITB releasing lever fixing screw (M3x20; black) [1].



F-2-20

3) Remove the wrapping from the drum unit.

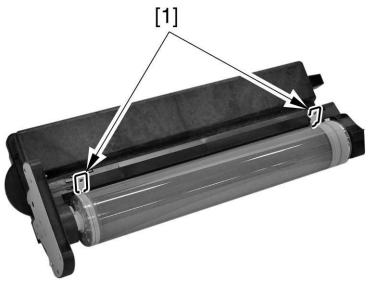
- Be sure to remove the drum protective sheet.
- The drum counter reading recording label comes with the drum protective sheet. Use it for the next step (i.e., initializing the drum unit).



F-2-21

4) Remove the 2 charging roller releasing rolls [1] of

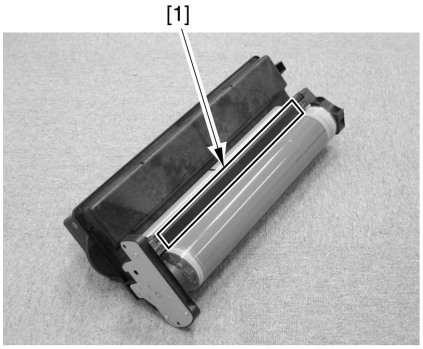
the drum unit.



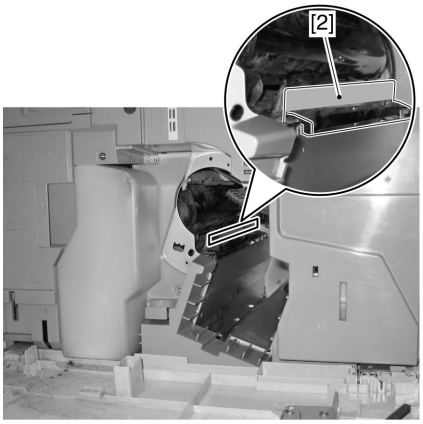
F-2-22

⚠Be sure not to touch or damage the surface of the photosensitive drum in the drum unit.

5) Check to see if there is a build-up of dust in the area [1] of the drum unit and the area [2] of the optical hood. As needed, clean the areas with a cloth moistened with water.



F-2-23

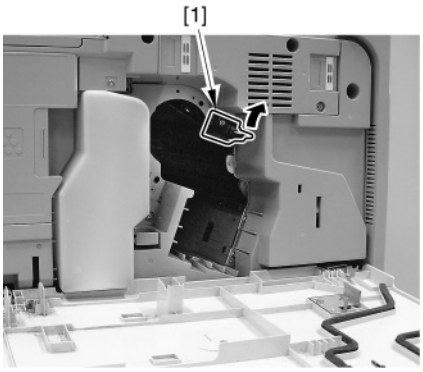


F-2-24

⚠Do not dry wipe the area. Otherwise, static charges will build up to attract dust.

Memo:
The laser light moves through the area between [1] and [2] of the figure to reach the photosensitive drum. The presence of dust in the area will block some of the light, thus causing white lines in the images.

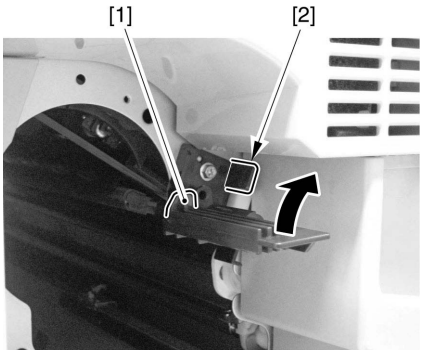
6) Turn the ITB releasing lever [1] clockwise until it becomes locked, thereby releasing the ITB.



F-2-25

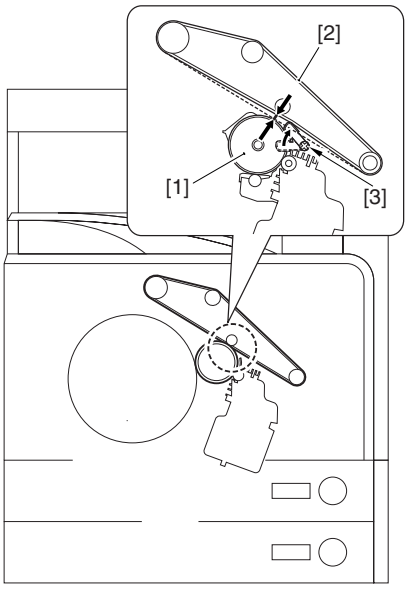
⚠A protrusion is found on the back of the ITB releasing lever [1]. The ITB releasing lever

becomes locked in place when it is turned until the protrusion has ridden over the stopper [2].



F-2-26

⚠The photosensitive drum [1] and the ITB [2] are in contact, and turning the ITB releasing lever clockwise will cause the releasing member [3] (operating in conjunction with the lever) to push up the ITB [2], thereby moving the ITB [2] away from the photosensitive drum [1].

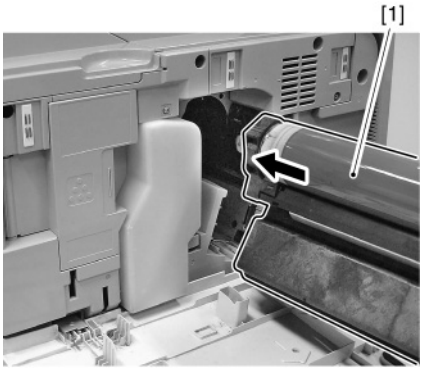


F-2-27

At this time, the ITB is slack temporarily. If left as it is for a long time, however, the ITB can suffer deformation. Be sure to limit the time during which the ITB remains slack.

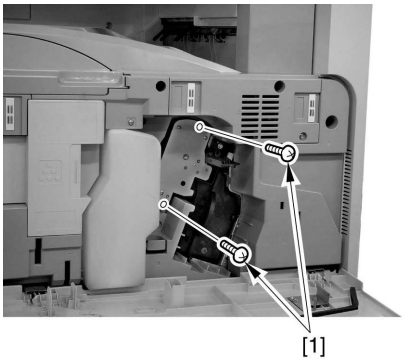
7) Fit the drum unit [1] in the machine.

⚠When fitting the drum unit in the machine, be sure to hold it level and move it until it butts against the rear of the machine. If moved at an angle, the photosensitive drum can interfere with components inside the machine to damage them.



F-2-28

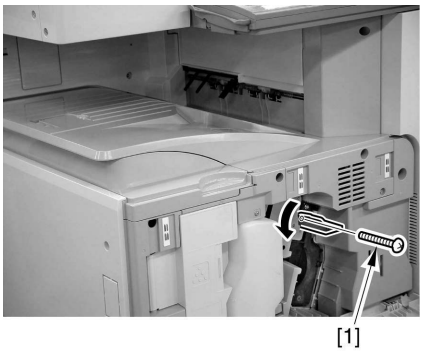
8) Fix the drum unit in place using the 2 drum unit fixing screws (M4x20; white) [1].



F-2-29

9) Turn the ITB releasing lever counterclockwise.

10) Fix the ITB releasing lever in place using the ITB releasing lever fixing screw (M3x20; black) [1].



F-2-30

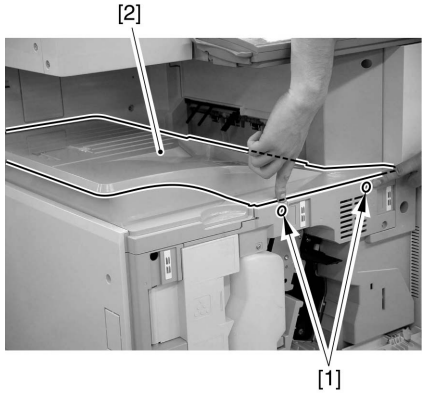
2.2.3 Preparing for the Mounting of the Developing Assembly 0001-7798

⚠When turning the rotary by hand, take care not to touch the rotating area.

1) Loosen the 2 screws [1], and detach the delivery tray [2].

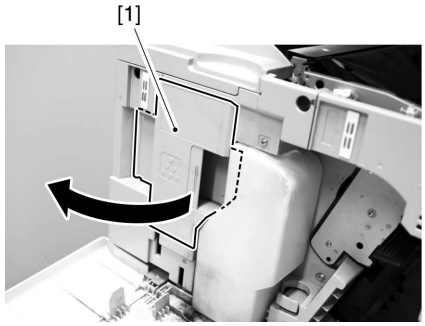
⚠

1. Take care not to damage the transfer belt by the rib found on the back of the delivery tray.
2. Take care not to hit the delivery sensor flag against the tray to break it.
3. Detaching the delivery tray will expose the ITB. If you must detach it for the work, be sure to take full care not to touch the belt.



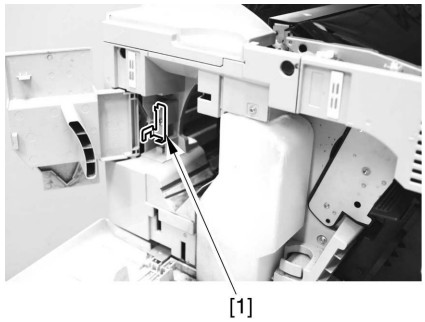
F-2-31

2) Open the toner cartridge access cover [1].



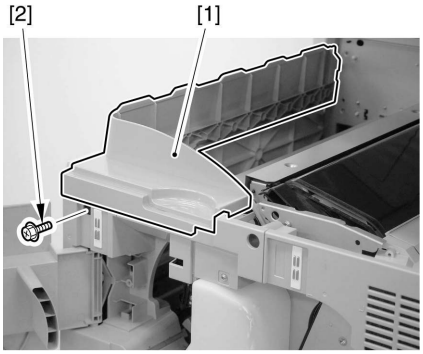
F-2-32

3) Remove the rotary lock fixing [1] (1 self-tapping screw).



F-2-33

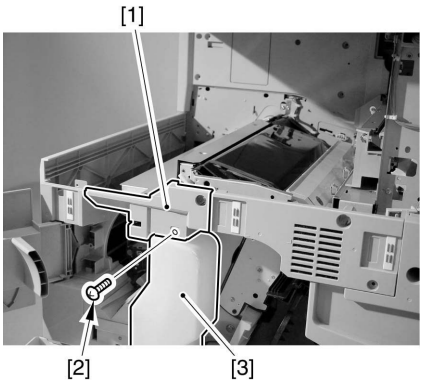
4) Remove the delivery tray lower cover [1] (1 screw [2]).



F-2-34

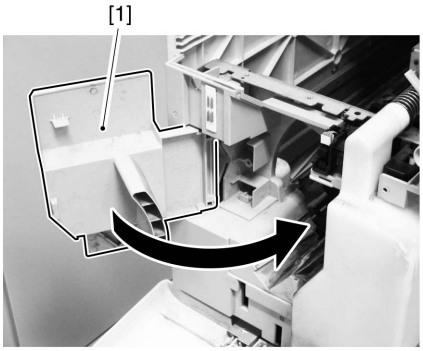
5) Remove the waste toner bottle retainer [1]. (1 TP screw [2])

6) Detach the waste toner bottle [3].



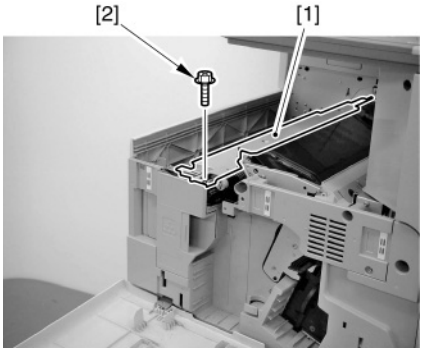
F-2-35

7) Close the toner cartridge access cover[1].



F-2-36

8) Remove the protective plate [1]. (1 screw [2])

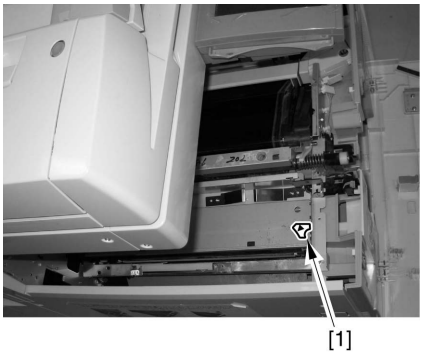


F-2-37

⚠Take care not to touch the ITB while detaching the part.

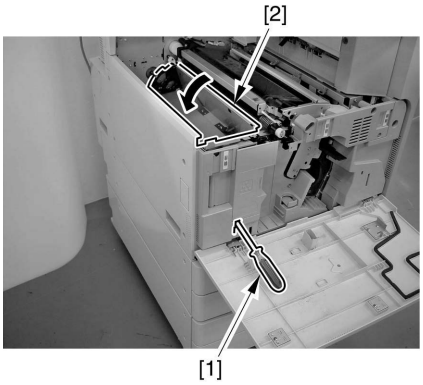
9) Turn the rotary to the point of replacement for the cyan developing assembly as follows:

Memo:
A colored marking is used to identify the point of replacement for cyan, yellow, and magenta. There is no label, however, for the black developing assembly.



F-2-38

9-1) While unlocking the rotary using a screwdriver [1], turn the rotary [2] counterclockwise by hand until it is near the point of replacement for cyan.

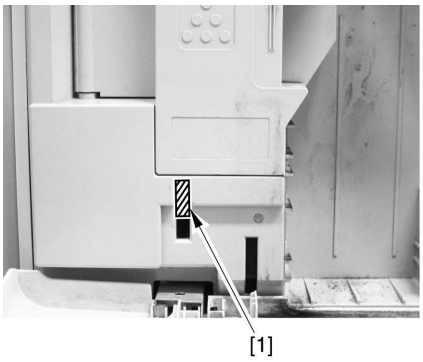


F-2-39

Memo

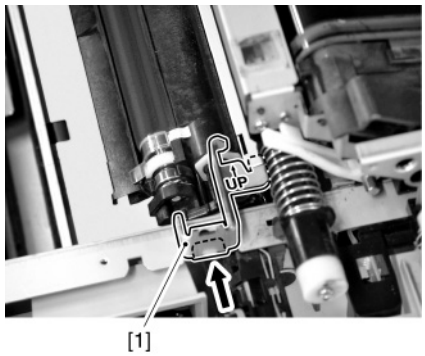
Positioning a Screwdriver

To help free the rotary lock, try inserting a screwdriver by positioning it as follows (2/3 of the angular hole).

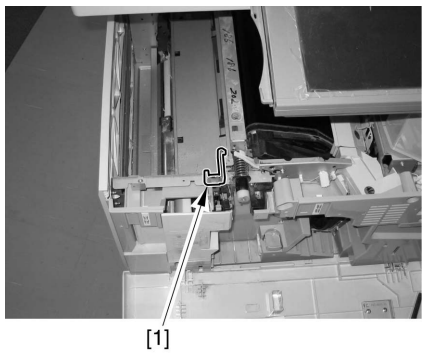


F-2-40

9-2) Fix the rotary in place to the front side plate using the rotary fixing [1]. Be sure that the marking UP of the rotary fixing [1] faces upward. The rotary fixing is the one removed in the foregoing step "Preparing for the Mounting of the Developing Assembly."



F-2-41



F-2-42

⚠Mount the developing assemblies strictly in the following order:

1. cyan
2. black
3. yellow
4. magenta

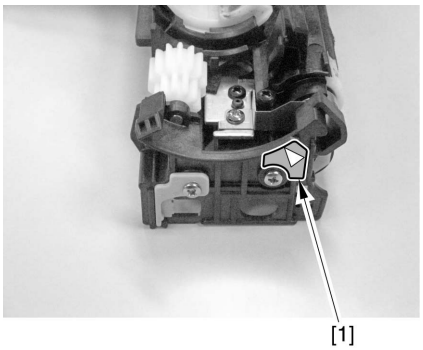
Otherwise, the weight of the rotary can cause it to rotate unexpectedly.

2.2.4 Mounting the Cyan Developing Assembly 0001-7838

1) Make a cut in the package bag of the cyan developing assembly with scissors, and take out the developing assembly.

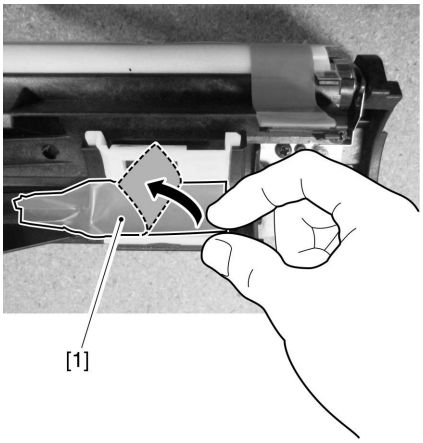
Memo:

To check the color of the toner inside a developing assembly, refer to the color of the label attached to the front of the developing assembly.
The packaging bag is transparent; be user to check the color of the label [1] before opening it.



F-2-43

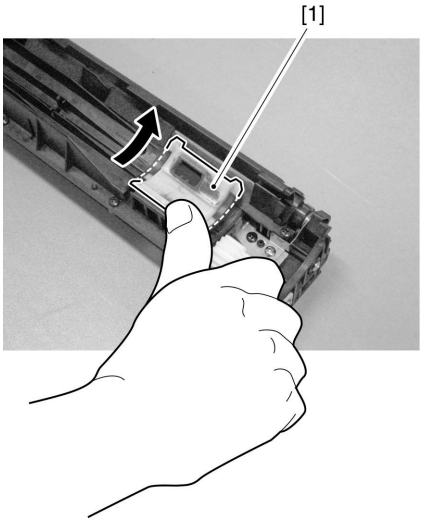
2) Remove the tape [1] used on the toner shutter.



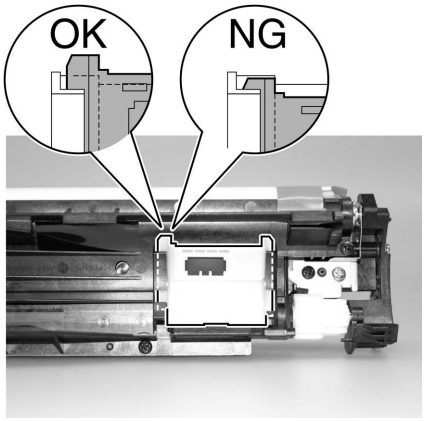
F-2-44

3) Check to see that the toner shutter [1] is fitted all the way in the direction of the arrow in the figure. Otherwise, move it in the direction of the arrow unit it stops.

- if the butting is not adequate, the toner cartridge may not settle in place.
- if the butting is not adequate, toner leakage may occur.

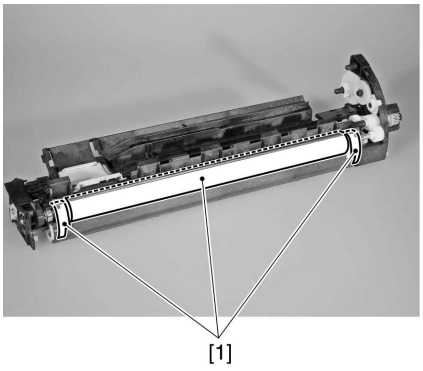


F-2-45



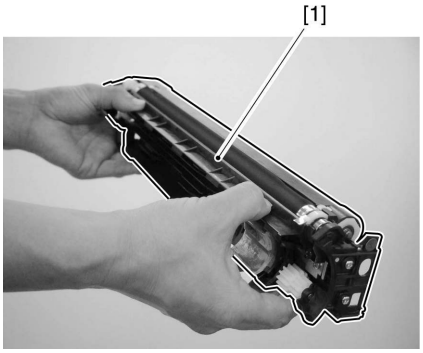
F-2-46

4) Remove the protective sheet [1] used to cover the developing cylinder.



F-2-47

5) Hold the cyan developing assembly [1] as shown in the figure.



F-2-48

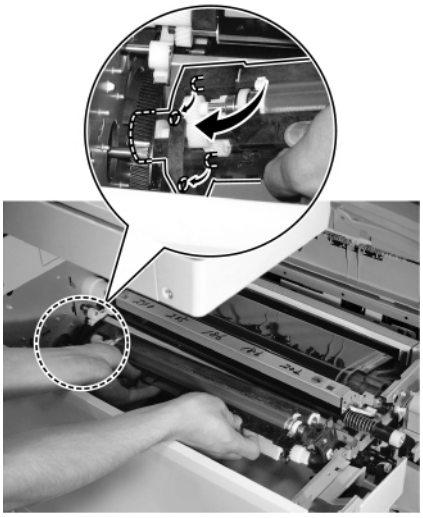
⚠Do not touch the sleeve surface.

6) Fit the cyan developing assembly [1] in the rotary.

- Be sure to set the rear of the developing assembly at an angle.

Memo:

Fit the gear and the protrusion of the developing assembly in the hole of the rotary flange (rear).



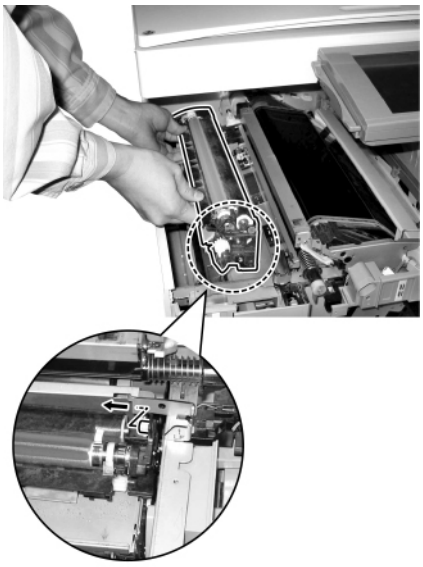
F-2-49

- Set the front of the developing assembly in the rotary.

⚠When fitting the developing assembly, take care not to bring the developing assembly into contact with the rotary fixing. Otherwise, the rotary fixing can become displaced.

Memo:

Fit the protrusion of the developing assembly in the hole of the rotary flange (front). For a better view of the protrusion of the developing assembly, stand to the left of the machine's front.

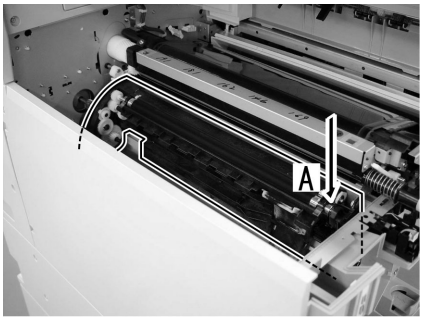


F-2-50

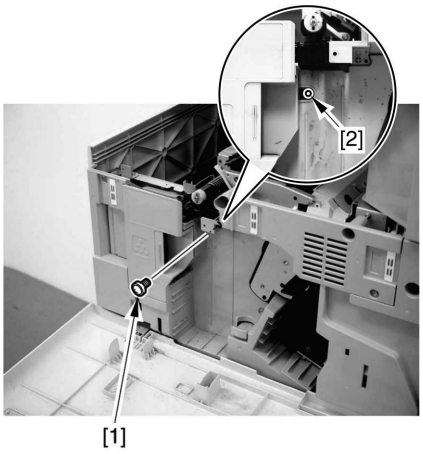
F-2-51

7) While pushing the cyan developing assembly in the

direction of the arrow A, fix it in place using the included developing assembly fixing stepped screw [1] (screw hole [2]).



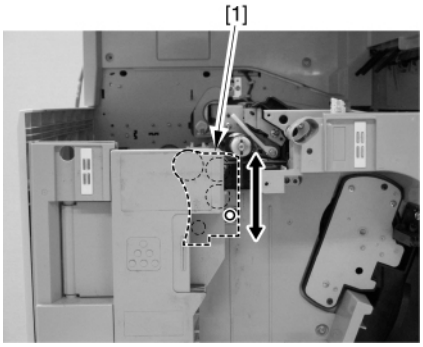
F-2-52



F-2-53

Memo:
If the developing assembly fixing stepped screw came separately with its collar, be sure to put them together before use.

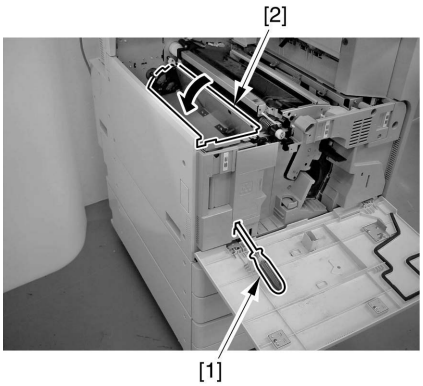
8) Check to make sure there is play of about 1.5 to 2 mm in up/down and right/left directions of the cyan developing assembly [1]. If not, the developing assembly fixing stepped screw may be failing to force the developing assembly correctly. Loosen the developing assembly fixing stepped screw once, and tighten it back.



F-2-54

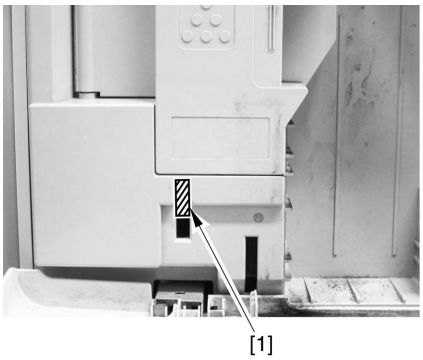
9) Remove the rotary fixing.

10) While freeing the rotary lock using a screwdriver [1], turn the rotary [2] counterclockwise by hand until it is near the point of replacement for black.



F-2-55

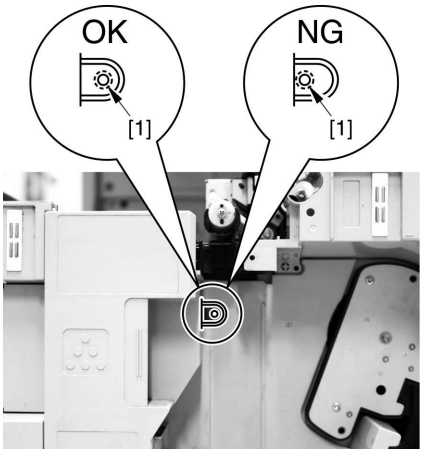
Memo
Positioning a Screwdriver
To help free the rotary lock, try inserting a screwdriver by positioning it as follows (2/3 of the angular hole).



F-2-56

11) You need not use the rotary fixing to fix the rotary in place at the point of replacement for black; simply remove the screwdriver so that it will lock into place on its own. (In other word, the black developing assembly does not need a rotary fixing.)

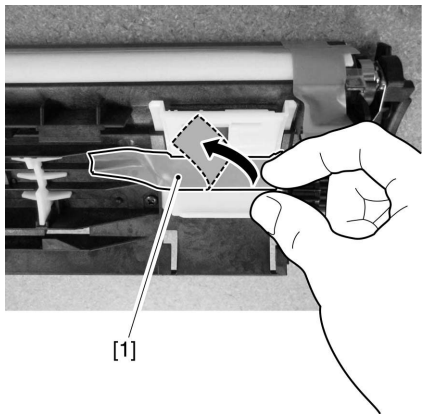
⚠Check the position of the screw hole used to secure the black developing assembly to see if the rotary is locked correctly in position in relation to the black developing assembly. If not, start over.



F-2-57

2.2.5 Mounting the Black Developing Assembly 0002-5229

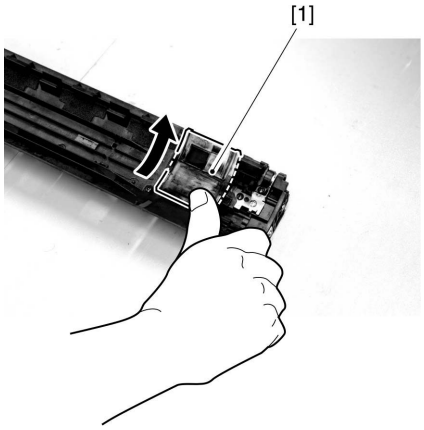
1) Cut the packaging bag of the black developing assembly with scissors, and take out the developing assembly.
2) Remove the tape [1] used on the toner shutter.



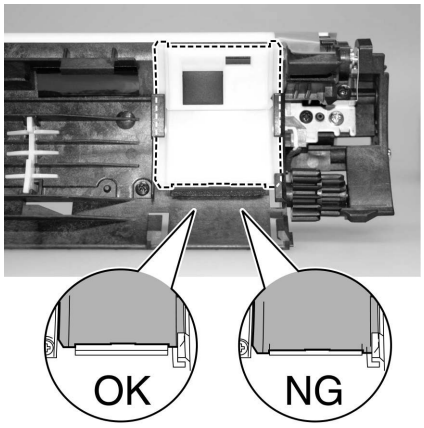
F-2-58

3) Check to make sure that the toner shutter [1] is fully butted in the direction of the arrows. If not, move the toner shutter [1] in the direction of the arrow until it is fully butted.

- if the butting is not adequate, the toner cartridge may not settle in place.
- if the butting is not adequate, toner leakage may occur.
- if the butting is not adequate, collection of waste toner (from auto carrier refresh) may fail, or the feedscrew/ sleeve used to move the toner may fail.

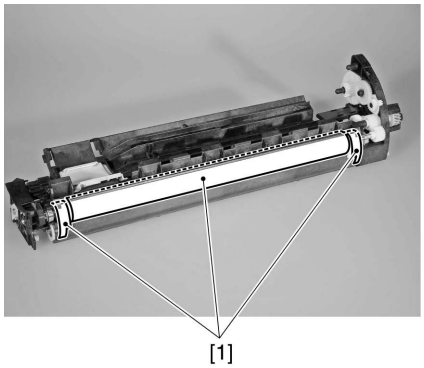


F-2-59



F-2-60

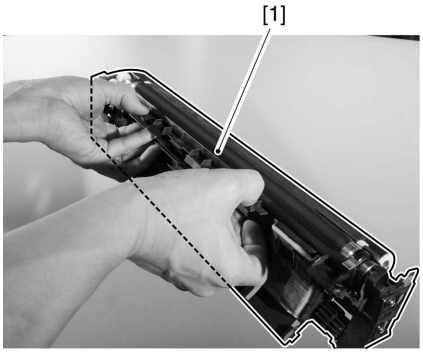
4) Remove the protective sheet [1] used to cover the developing cylinder.



F-2-61

5) Hold the black developing assembly [1] as shown.

⚠Take care not to touch the cylinder surface.



F-2-62

6) Fit the black developing assembly [1] in the rotary.

- Set the rear of the developing assembly in the rotary at an angle.

Memo:
Fit the gar and the protrusion of the developing assembly in the hole of the rotary flange (rear).

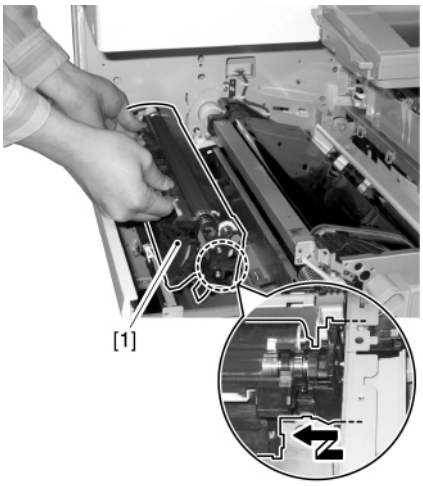
F-2-63

- Set the front of the developing assembly in the rotary.

⚠When fitting the developing assembly, take care

not to bring the developing assembly into contact with the rotary fixing. Otherwise, the rotary fixing can become displaced.

Memo:
Fit the protrusion of the developing assembly into the hole of the rotary flange (front).

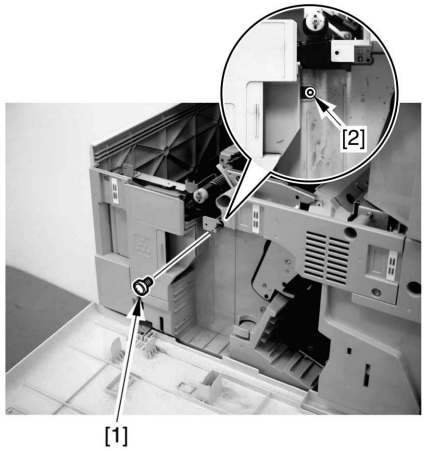


F-2-64

F-2-65

7) While pushing the developing assembly in the direction of the arrow A, fix it in place using the included black developing assembly fixing screw [1] (screw hole [2]).

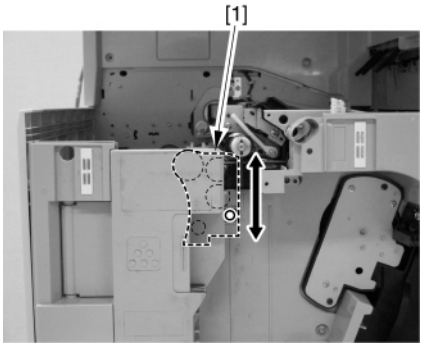
F-2-66



F-2-67

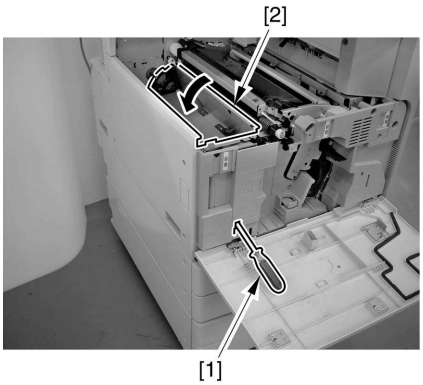
Memo:
If the developing assembly fixing screw came separately with its collar, be sure to put them together before use.

8) Check to see if there is play of about 1.5 to 2 mm in up/down and left/right directions of the black developing assembly [1]. If not, the developing assembly fixing screw may not be pushing the developing assembly correctly. Loosen the developing assembly fixing stepped screw once, and tighten it back.



F-2-68

9) While freeing the rotary using a screwdriver [1], turn the rotary [2] counterclockwise by hand until it is near the point of replacement for yellow.

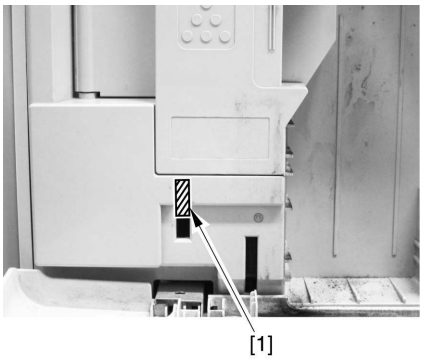


F-2-69

Memo

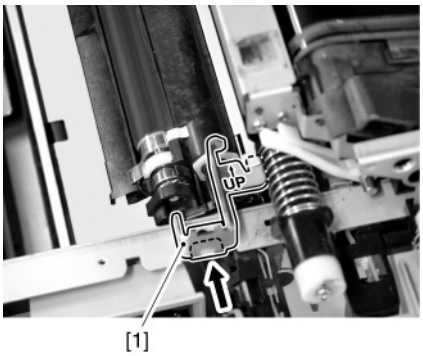
Positioning a Screwdriver

To help free the rotary lock, try inserting a screwdriver by positioning it as follows (2/3 of the angular hole).

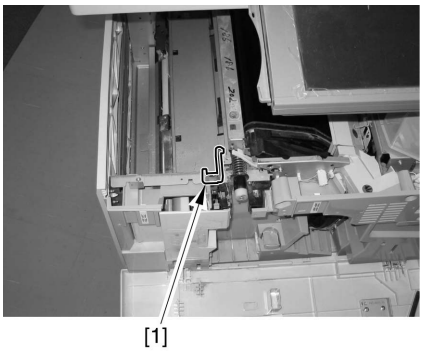


F-2-70

10) Fix the rotary in place to the front plate using the rotary fixing [1]. Be sure that the marking "UP" on the rotary fixing [1] faces upward.



F-2-71



F-2-72

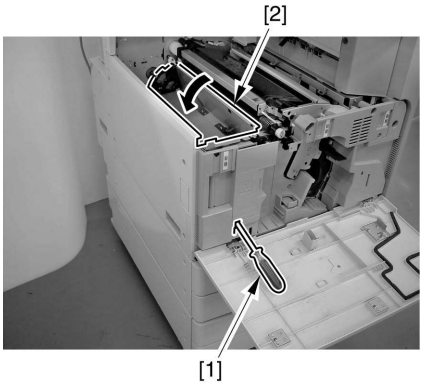
2.2.6 Mounting the Yellow Developing Assembly 0002-5232

Perform steps 1) through 9) shown for installing the

cyan developing assembly for the yellow developing assembly.

Thereafter, perform the following steps to fix the rotary in place for magenta:

1) While keeping the rotary unlocked using a screwdriver [1], turn the rotary counterclockwise by hand so that it is positioned near the point of magenta replacement.

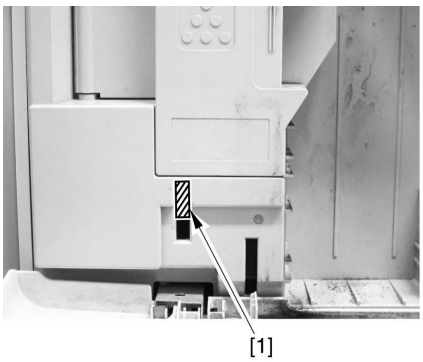


F-2-73

Memo

Positioning a Screwdriver

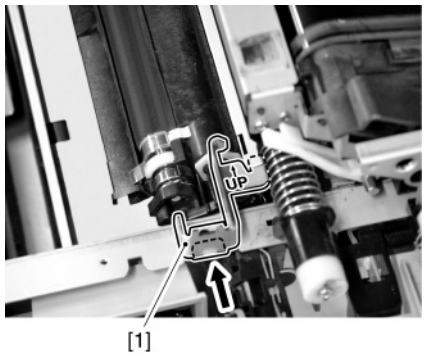
To help free the rotary lock, try inserting a screwdriver by positioning it as follows (2/3 of the angular hole).



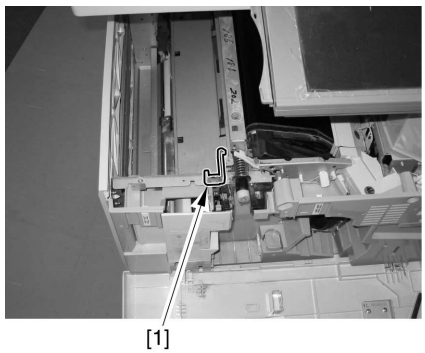
F-2-74

---

2) Fix the rotary in place to the front plate using the rotary lock fixing [1]. Be sure that the UP marking on the rotary lock fixing [1] faces upward.



F-2-75



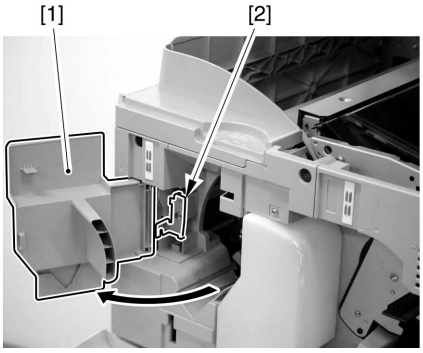
F-2-76

2.2.7 Mounting the Magenta Developing Assembly 0002-5247

Perform steps 1) through 9) under "Mounting the Cyan Developing Assembly" for the magenta developing assembly.

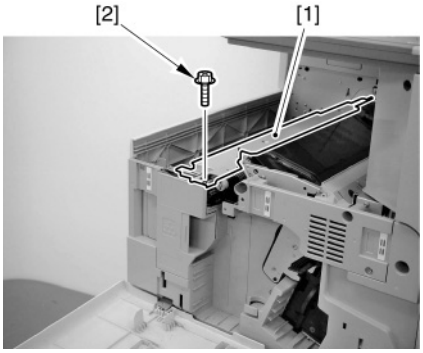
2.2.8 After Mounting the Developing Assembly 0002-5249

1) Open the toner cartridge access cover [1], and fit the rotary fixing [2]. (1 self-tapping screw).



F-2-77

2) Fit the protective plate [1]. (1 screw [2])



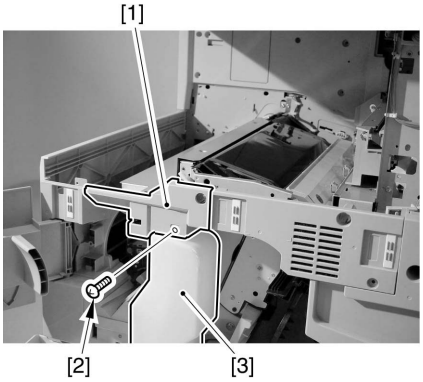
F-2-78

⚠Take care not to touch the ITB while attaching the part.

---

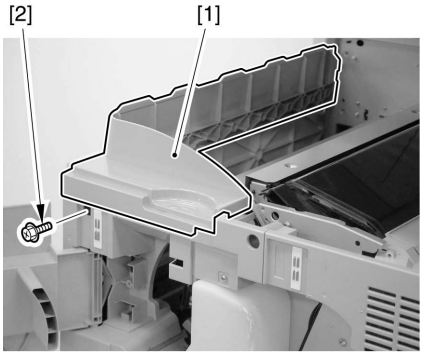
3) Fit the waste toner bottle [3].

4) Fit the waste toner bottle retainer [1]. (1 TP screw [2])



F-2-79

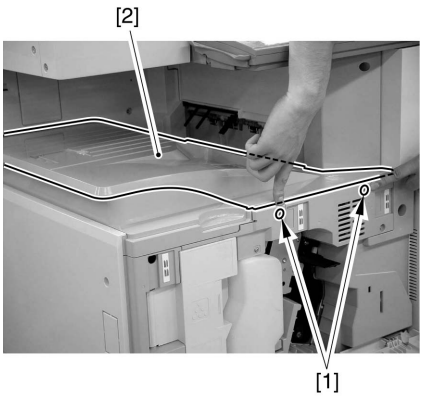
5) Mount the delivery tray lower cover [1]. (1 screw [2])



F-2-80

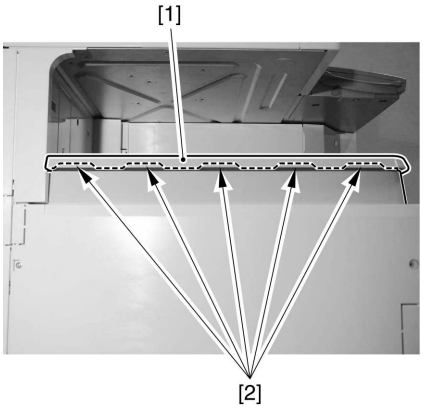
6) Close the toner cartridge access cover.

7) Mount the delivery tray [2], and tighten the 2 screws [1].



F-2-81

⚠Be sure that the delivery tray [1] covers the rib area [2] of the delivery tray lower cover.



F-2-82

8) Close the front cover.

2.2.9 Fixing the Machine in Place

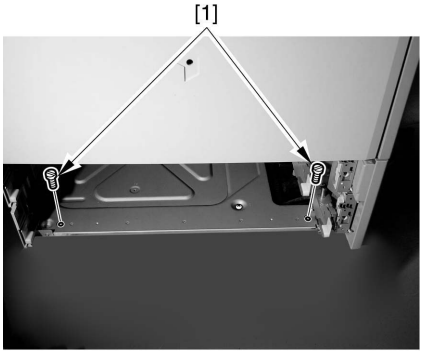
0001-8288

- If a Pedestal Is Used

1) Move the machine to its permanent position, and fix it in place using the 4 adjusters of the pedestal.

- If No Pedestal Is Used

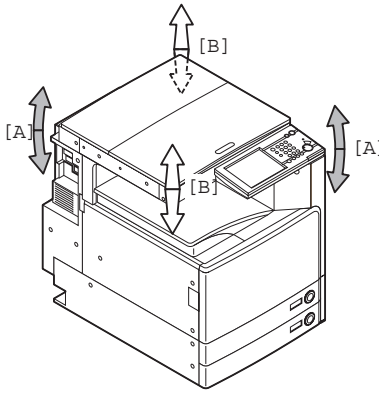
1) Take out the cassettes 1 and 2, and temporarily tighten the adjusting screw [1] on the base plate of the machine (with the foot of the adjusting screw lightly in contact).



F-2-83

2) Check the table or the floor to see that the machine will not wobble; if it does, tighten the adjusting screw to stop it as follows:

- if it moves in the direction of the arrow A, tighten the screw on the right in the figure.
- if it moves in the direction of the arrow B, tightened the screw on the left in the



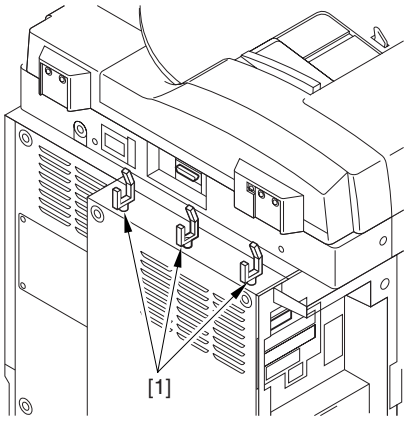
F-2-84

4) Put back the cassettes 1 and 2.

2.2.10 Connecting the Cable

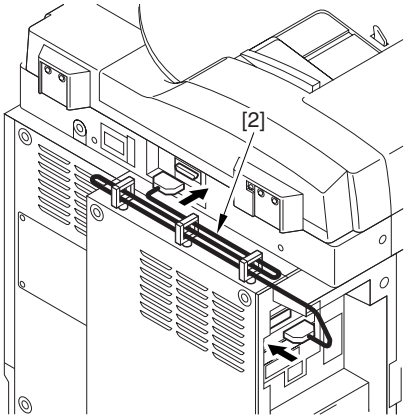
0005-5443

1) Fit the 3 wire saddles [1] to the rear cover (right) of the printer unit.



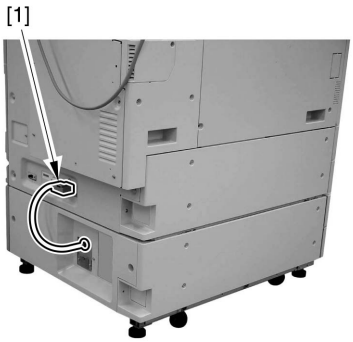
F-2-85

2)Fit the reader communication cable [2] to the reader printer. Bundle the cable using the wire saddles as shown, and be sure to push the connectors on both ends of the cable until a click is felt.



F-2-86

3) If you are installing a cassette pedestal, remove the lattice connector cover, and fit the lattice connector [1] of the cassette pedestal to the machine.



F-2-87

4) Connect the power plug to the power outlet.

⚠

1. Power supply voltage shall be +/-10% of the rating.
2. The amperage of the power supply must be as rated.
3. Before connecting the power plug, check to be sure that the main power switch is off.

---

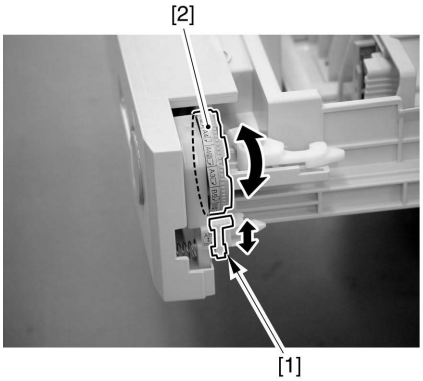
5) Turn on the main power switch.

- The machine issues a message to indicate that it is loading programs.
- The machine issues a message to indicate that its printer is getting ready for a job.
- In about 6 min, the machine issues a message to indicate that it is checking the network settings.
- Be sure to set up the cassette before the machine completes its warm-up period. (For instructions, see "Setting Up the Cassette.")

2.2.11 Setting Up the Cassette

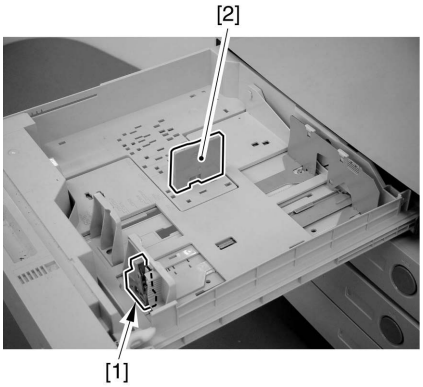
0001-7937

1) Press the cassette release button, and slide out the cassette to the front.
2) Check the type of paper that the user uses, check to see that the size configuration switch [1] of the cassette is set to the paper size. As necessary, change the switch position.
3) Set the paper size dial [1] to suit the size of the paper in question.



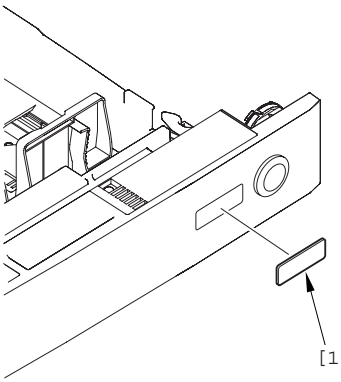
F-2-88

4) Pick the lever [1] of the side guide plate, and move the side guide plate to the desired position.
5) Push the trailing edge guide plate [2] to the right to detach. Mach the trailing edge guide plate against a specific size index found on the cassette bottom.



F-2-89

6) Attach the cassette size label [1] that matches the selected size of paper to the front of the cassette.



F-2-90

7) Deposit paper in the cassette; then, slide in the cassette.
8) Perform the same for the other cassette.
9) If a cassette pedestal is used, set it by referring to its Installation Procedure.

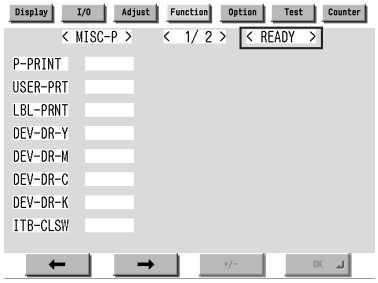
2.2.12 Mounting the Toner Cartridge

0001-7943

⚠If the developing rotary fails to stop at an appropriate position and thus prevents mounting of a toner cartridge, move it as follows before attempting to set the toner cartridge:

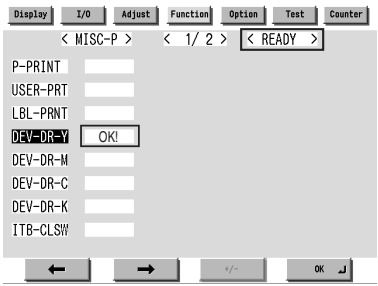
1) Check to see that the screen indicates [ready].
2) Make the following selections, and press [OK]: COPIER>FUNCTION>MISC-P>DEV-DR-Y/M/C/K (select the desired color).
3) Check to see that the message has changed from [service] to [ready]; then, open the front cover and the toner cartridge access cover, and mount the toner cartridge in question.

1) Take out the toner cartridge from its packaging bag.
2) When the machine has completed its warm-up period, start service mode by pressing the Additional Function key, the 2 and 8 keys at the same time, and then the Additional Function key once again.
3) Mount the yellow toner cartridge as follows:
3-1) Make the following selections: COPIER>FUNCTION>MISC-P>DEV-DR-Y. Then, check to see that the screen indicates [ready], and press [OK]. Check to see that the developing rotary moves to the point of replacement for the yellow toner cartridge.



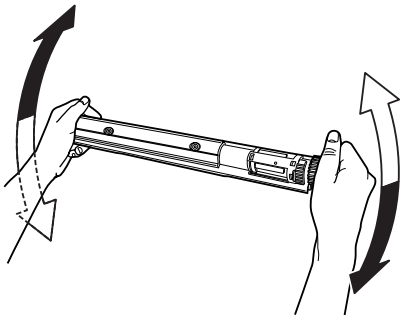
F-2-91

3-2) Check to see that the screen indicates [OK!] and [ready]; then, open the front cover and the toner cartridge access cover.



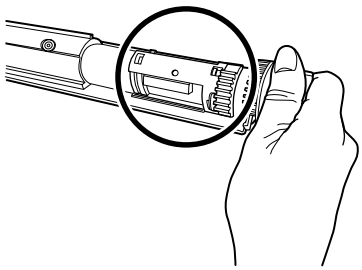
F-2-92

3-3) Hold the toner cartridge as shown with both your hands, and move it to and for about 5 times so as to turn over the toner inside it.



F-2-93

⚠When moving the toner cartridge, take care not to touch the shutter area or turn the knob; otherwise, the toner may start to leak.



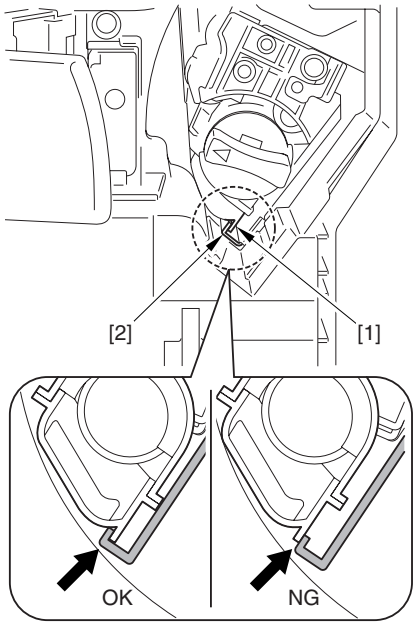
F-2-94

3-4) Keep the toner cartridge so that its side with 2 arrows face upward; then, fit it into the machine in the direction of the arrow.

F-2-95

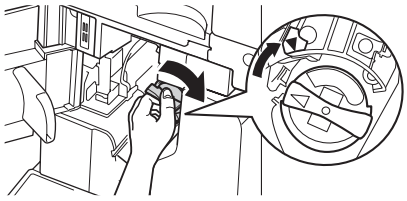
⚠When fitting the toner cartridge into the printer unit, be sure that the guide [1] of the toner cartridge is inside the bend on the rail [2] of the rotary assembly.

Check to be sure that the guide [1] of the toner cartridge has not ridden over the rail [2] of the rotary when it is fitted into the printer unit; otherwise, the machine may suffer leakage of toner.



F-2-96

3-5) Turn the knob of the toner cartridge clockwise until it stops.



F-2-97

3-6) Close the toner cartridge access cover and the front cover.

4) Fit the magenta toner cartridge as follows:

4-1) Wait until the screen indicates [ready].

4-2) Make the following selections, and press [OK]: COPIER>FUNCTION>MISC-P>DEV-DR-M. See that the developing rotary moves to the point of replacement for the magenta toner cartridge.

4-3) Check to see that the screen shows [OK!] and [ready]; then, mount the magenta toner cartridge as you did the yellow toner cartridge.

5) Mount the cyan toner cartridge as follows:

5-1) Wait until the screen indicates [ready].

5-2) Make the following selections, and press [OK]; COPIER>FUNCTION>MISC-P>DEV-DR-C. See that the developing rotary moves to the point of replacement for the cyan toner cartridge.

5-3) Check to see that the screen indicates [OK!] and [ready]; then, mount the cyan toner cartridge as you did the yellow toner cartridge.

6) Mount the black toner cartridge as follows:

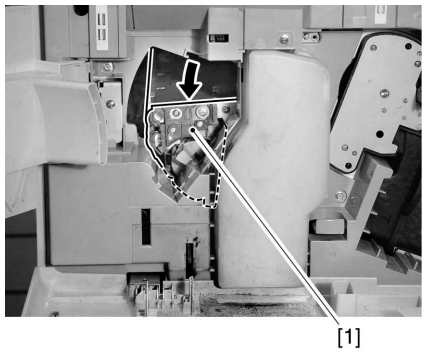
Memo:
You need not shake the black toner cartridge before mounting it.

6-1) Wait until the screen indicates [ready].

6-2) Make the following selections, and press [OK]: COPIER>FUNCTION>MISC-P>DEV-DR-K. See that the developing rotary moves to the point of replacement for the black toner cartridge.

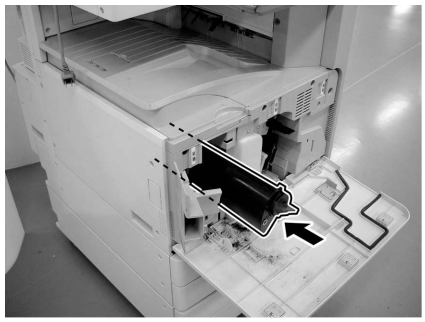
6-3) See that the screen indicates [OK!] and [ready]; then, open the front cover and the toner cartridge access cover.

⚠When the toner cartridge access cover is opened, the rotary [1] may not be at the point of cartridge replacement; if such is the case, turn it counterclockwise until the rotary is locked in position so that the black toner cartridge may be fitted in place.



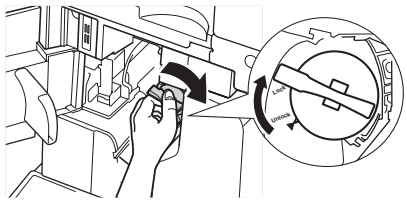
F-2-98

6-4) With the side of the toner cartridge indicating 2 arrows facing upward, slide the cartridge in the direction of the arrow.



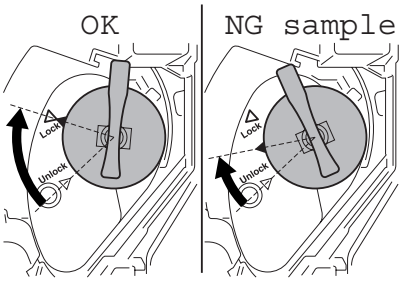
F-2-99

6-5) Turn the knob of the toner cartridge clockwise (from UNLOCK position to LOCK position) until it stops.



F-2-100

⚠After turning the toner cartridge knob, check to see that the triangle marking of the toner cartridge knob is positioned against LOCK; otherwise, the machine can suffer leakage of toner.



F-2-101

7) Close the toner cartridge access cover.

8) Close the front cover.

2.2.13 Making Initial Settings for the Developing Assembly 0001-7998

⚠If you want to use service mode from this point on, be sure to check to see that the screen indicates [ready] before doing so.

1) Execute stirring of the developer.

- Make the following selections, and press [OK]: COPIER>FUNCTION>INSTALL>STIR-4.
- When done, the machine indicates [OK!]. (in about 2 min)

2) Make ATR initial settings.

- Make the following selections, and press [OK]: COPIER>FUNCTION>INSTALL>IN-3.
- When done, the machine indicates [OK!]. (in about 40 sec)

3) Open the front cover.

4) Record the result of the following on the service label: COPIER>FUNCTION>INSTALL>IN-3. Be sure that the following 6 items have been noted:

- for ADJ>DENS>REF-Y of the label, record the value of COPIER>ADJUST>DENS>REF-Y.
- for ADJ>DNES>REF-M of the label, record the value of COPIER>ADJUST>DENS-REF-M.
- for ADF>DENS>REF-C of the label, record the value of COPIER>ADJUST>DENS>REF-C.
- for ADJ>DENS>SGNL-Y of the label, record the value of COPIER>ADJUST>DENS-Y.
- for ADJ>DENS>SGNL-M of the label, record the value of COPIER>ADJUST>DENS>SGNL-M.
- for ADJ>DENS>SGNL-C of the label, record the value of COPIER>ADJUST>DENS>SGNL-C.

5) Close the front cover.

6) Supply toner to the developing assembly.

- Make the following selections, and press [OK]: COPIER>FUNCTION>INSTALL>SPLY-H-4.
- When done, the machine indicates [OK!]. (in bout 1 min)

2.2.14 Initializing the Drum Unit 0001-8272

1) Initialize the drum unit by making the following selections and pressing [OK]:

- COPIER>FUNCTION>CLEAR>DRM-LIFE

The machine flashes [active] on its screen while it executes initialization, which takes about 1 min.

⚠Do not press any of the keys, open the door, or turn off the power switch while initialization is under way (while [active] is flashing); otherwise, go back to step 1) and start over.

2) When initialization is done, check to see that the value of the following is '0%':

- COPIER>DISPLAY>MISC>DRM-LIFE

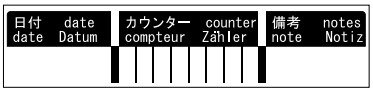
Otherwise, go back to step 2) and start over.

3) Record the value of the following service mode item in the Remarks column of the drum counter label

- COPIER>ADJUST>HV-PRI>DR-I-INT

4) Press the Reset key twice to end service mode.

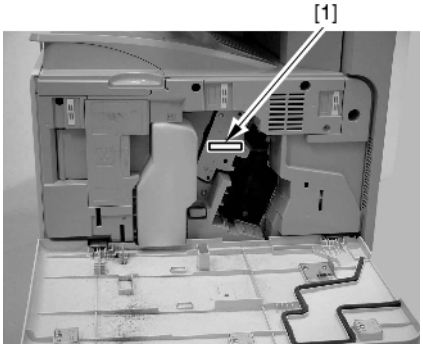
5) Record the date and the counter reading to the drum counter label.



F-2-102

6) Open the front cover.

7) Attach the drum counter label to the front of the drum unit.



F-2-103

8) Close the front cover.

2.2.15 Automatic Gradation Correction 0001-8292

⚠If the machine is not equipped with a copyboard cover, fit the copyboard cover to it. If you are installing a DADF, perform the steps up to A. "DADF" under 2. "Installation" of the DADF-L1 Installation Procedure.

1) Clean the machine's copyboard glass.

2) Place A3, A4, 11x17, or LTR paper in the cassette. (See the instructions on how to set up the cassette.)

3) Press the Additional Function key.

4) Make the following selections: adjust/clean>auto gradation correction>full correction>test print 1.

- The test print 1 will be printed out.

5) Place the printout of the test print 1 on the copyboard glass as instructed on the control panel screen.

6) Close the copyboard cover/ DADF.

7) Press [start to read].

- The machine reads the printout of the test print 1.
- When a message appears prompting you to remove the test print, remove the printout of the test print 1 from the copyboard glass.

8) Press [test print 2].

- The machine prints out the test print 2.

9) Place the printout of the test print 2 on the copyboard glass as instructed on the control panel scan.

10) Close the copyboard cover/ DADF.

11) Press [start to read].

- The machine reads the print out of the test print 2.
- When a message appears promoting you to remove the test print, remove the printout of the test print 2 from the copyboard glass.

12) Press [test print 3].

- The machine prints the test print 3.

13) Place the printout of the test print 3 on the copyboard glass as instructed on the control panel screen.

14) Close the copyboard cover/ DADF.

15) Press [start to read].

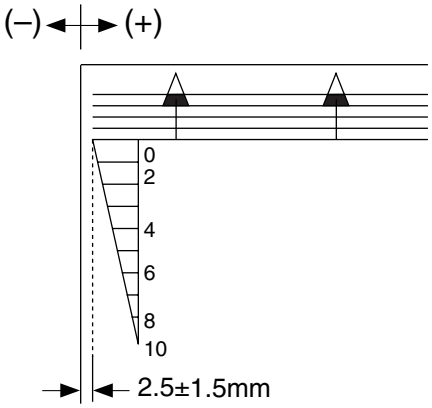
- The machine reads the printout of the test print 3.
- The machine issues a message to indicate that it has completed full correction. In response, remove the printout of the test print 3 form the copyboard glass.

16) Press the Reset key once to end user mode.

2.2.16 Adjusting the Image Position 0001-8326

1. Adjusting the Margin (1st side; mechanical adjustment)

1) Make a copy using the cassettes 1 and 2 as the source of paper; then, check to see that the margin on the front side is 2. +/-1.5 mm.

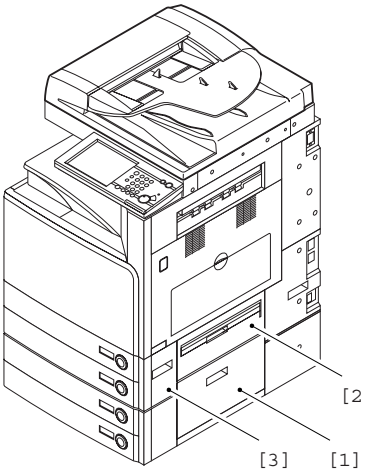


F-2-104

- If the value for the cassette 1 or 2 is not as indicated, make the following adjustments:

2) If a 2-Cassette Pedestal-Y1 is used, open its right door [1].

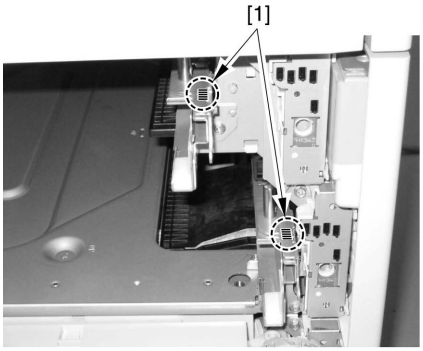
3) Open the lower right cover [2]; then, remove the 2 screws [3], and detach the cover (lower front) [3].



F-2-105

4) Slide out the cassettes 1 and 2.

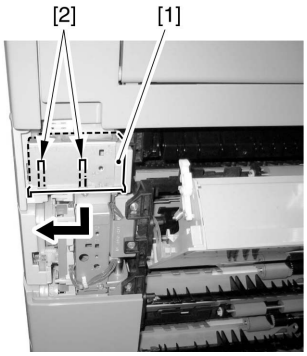
5) Check the index position [1] on the adjusting plate.



F-2-106

- Making Adjustments for the Cassette 1

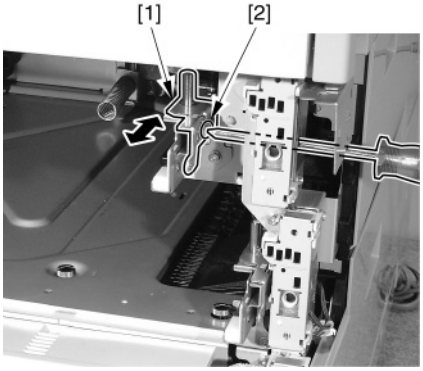
6) Free the 2 claws [2], and pull the grip (right front) [1] in the direction of the arrow to detach.



F-2-107

7) Loosen the fixing screw [2] of the adjusting plate [1].

8) By referring to the index you took note of in step 5), move the adjusting plate back and forth. Moving it toward the rear of the machine will increase the margin on the image front.



F-2-108

9) Tighten the fixing screw.

10) Slide in the cassette 1.

11) Make a copy using the cassette 1 as the source of paper; then, check to see that the margin in the image front direction is 2.5 +/-1.5 mm.

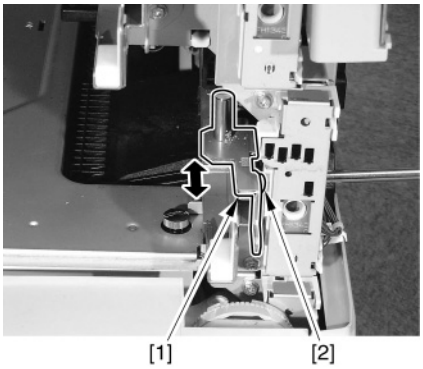
12) Mount back the grip (front right).

13) Mount back the machine's front right cover.

- Making Adjustments to the Cassette 2

6) Loosen the fixing screw [2] of the adjusting plate [1].

7) By referring to the index you took note of in step 5), move the adjusting plate back and forth. Moving it toward the rear of the machine will increase the margin on the image front side.



F-2-109

8) Tighten the fixing screw.

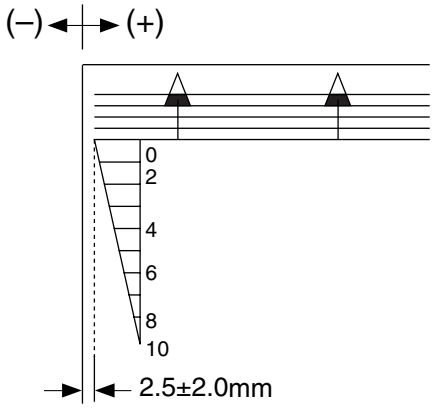
9) Slide back the cassette 2.

10) Make a copy using the cassette 2 as the source of paper; then, check to see that the margin in the image front direction is 2.5 +/-1.5 mm.

11) Mount back the machine's right front cover.

2. Adjusting the Margin (2nd side)

1) Make a copy using the cassette 1 as the source of paper; then, check to make sure that the margin on the front side is 2.5 +/-2.0 mm.



F-2-110

2) If the margin is as indicated, change the adjustment value of the horizontal registration for the 2nd side for the cassette 1.

- COPIER>ADJUST>FEED-ADJ>ADJ-C1RE

An increase by '1' will decrease the margin on the front side by 0.1 mm.

3) Enter the adjustment value for the horizontal registration of the 2nd side for the cassette 1 as the adjustment value for the horizontal registration of the 2nd side of the cassette 2.

- COPIER>ADJUST>FEED-ADJ>ADJ-C2RE

4) Make a copy using the cassette 2 as the source of paper; then, check to make sure that the margin on the front side is 2.5 +/-2 mm.

5) If the value is not as indicated, change the adjustment value of the 2nd side for the cassette 2.

- COPIER>ADJUST>FEED-ADJ>ADJ-C2RE

An increase by '1' (for DJ-C2RE) will decrease the horizontal registration on the front side by 0.1 mm.

6) Record the new values on the service label.

- ADJ-C1RE
- ADJ-C2RE

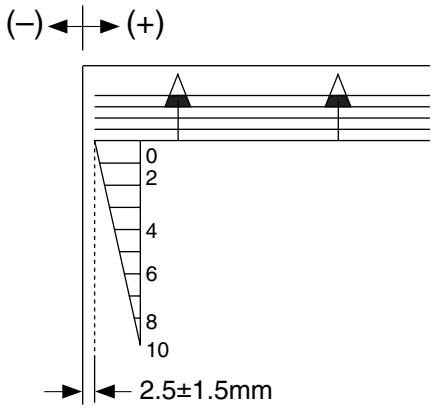
7) Press the Reset key twice to end service mode.

3. Adjusting the Margin for the Manual Feed Tray (1st side; mechanical adjustment)

1) Place paper in the manual feed tray. For instructions, see the label attached to the manual feed tray.

2) Make a copy using the manual feed tray as the

source of paper; then, check to make sure that the margin on the front side is 2.5 +/-1.5 mm.



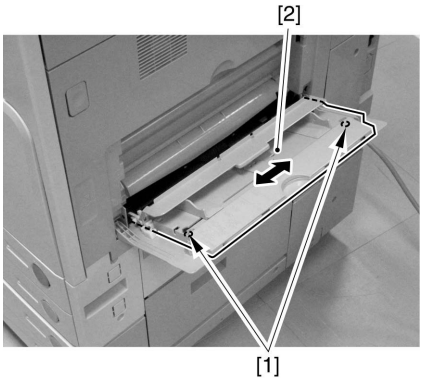
F-2-111

- If the value is not as indicated, make the following adjustments:

3) Remove the paper from the manual feed tray.

4) Loosen the fixing screw [1] of the manual feed tray upper cover.

5) With reference to the value you took note of in step 2), move the manual feed upper cover back and forth. Moving it toward the rear of the machine will increase the margin on the front side.



F-2-112

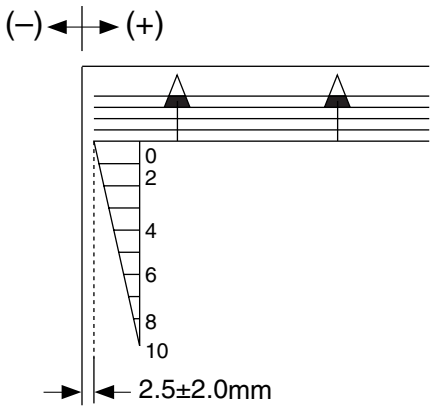
6) Tighten the fixing screw of the manual feed tray upper cover.

7) Place paper in the manual feed tray.

8) Make a copy; then, check to make sure that the margin on the image front side is 2.0 +/-1.5 mm.

4. Adjusting the Margin (manual feed tray; 2nd side)

1) Make a double-sided copy using the manual feed tray as the source of paper; then, check to make sure that the margin on the front side for the 2nd side is 2.5 +/-2.0 mm.



F-2-113

2) If the value is not as indicated, change the horizontal registration adjustment value for the 2nd side for the manual feed tray.

- COPIER>ADJUST>FEED-ADJ>ADJ-MFRE

An increase by '1'(ADJ-MFRE) will decrease the margin on the front side by 0.1 mm.

3) Record the new adjustment value on the service label.

- ADJ-MFRE

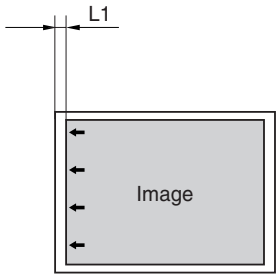
4) Press the Reset key twice to end service mode.

5. Adjusting the Margin Along the Leading Edge (1st side)

- Make a copy using the cassette 1 as the source of paper; then, check to make sure that the margin along the image leading edge (L1) is 2.5 +/-1.5 mm. If not, make adjustments as follows:

1) Make the following selections in service mode: COPIER>ADJUST>FEED-ADJ>REGIST.

2) Change the setting to make adjustments. (A change of '1' will cause a shift of 0.1 mm, with a higher value moving the image toward the leading edge.)



An increase in REGIST will shift the image toward the leading edge of the paper.

F-2-114

3) Record the new adjustment value on the service label.

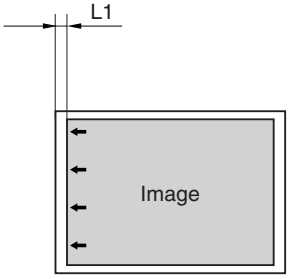
- REGIST

6. Adjusting the Margin Along the Leading Edge (2nd side)

- Make a double-sided copy using the cassette 1 as the source of paper; then, check to see if the margin along the image leading edge for the 2nd side (L) is 2.5 +/-2.0 mm. If not, make adjustments as follows:

1) Make the following selections in service mode: COPIER>ADJUST>FEED-ADJ>RG-REFE.

2) Change the setting, and make adjustments. (A change of '1' will cause a shift of 0.1 mm, with a higher setting moving the image toward the leading edge.)



An increase in RG-REFE will shift the image toward the leading edge of paper (toward the trailing edge of feed).

F-2-115

3) Record the new adjustment value on the service label.

- RG-REFE

7. Correcting the Shading Position

If the output image made in copyboard cover mode has a line, go through the following:

1) Make the following selections in service mode: COPIER>ADJUST>ADJ-XY>ADJ-S.

2) Change the setting to change the shading position:

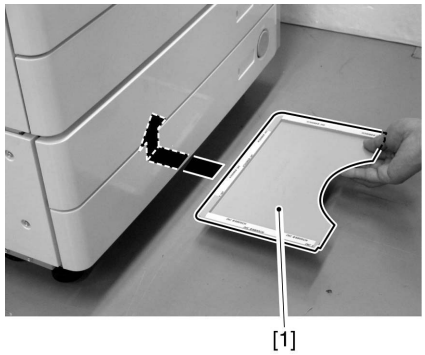
- Try +5, +10, -5, or -10 to look for the best position (where the standard white plate is free of scratches and dirt).

2.2.17 Others

0004-7404

1.Service Book Case

1) Peel off the double-sided adhesive tape from the ribbed side of the service book case [1], and attach the case to the pedestal bottom plate.



F-2-116

⚠Areas to Avoid:

- inside the machine (i.e., behind the front cover)
- over the louver
- over the grip

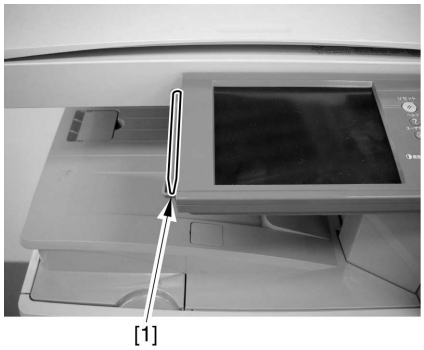
Memo:

If no pedestal is used, attach the case to the left cover.

---

2. Touch Pen

1) Fit the touch pen [1] to the control panel.

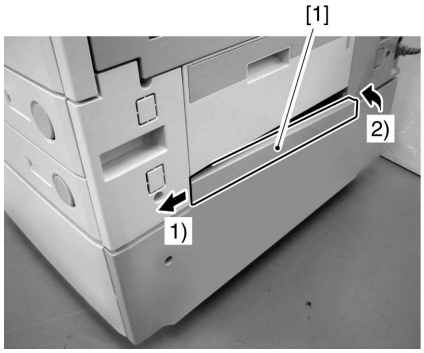


F-2-117

3. Lower Right Cover

1) Mount the lower right cover [1].

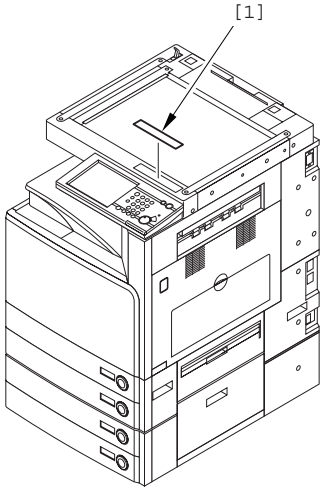
(Perform this step if you are installing the machine on a pedestal other than a Cassette Feeding Unit-Y1.)



F-2-118

4. Do Not Copy Label

1) Select the Do Not Copy label [1] of the appropriate language, and attach it to the reader cover (front) as indicated in the figure.



F-2-119

2.2.18 If Not Connected to a Network

0005-3940

MEMO

Memo

If the machine is not connected to a network, its control panel will display the message “Check Connection to the Network.” To disable the message, set the following service mode item to ‘0’:

COPIER> OPTION> BODY> NWERR-SW (level 2)

2.3 Checking the Connection to the Network

2.3.1 Connecting to the Network

0000-8240

⚠Go through the following steps only if you are connecting the machine to a network:

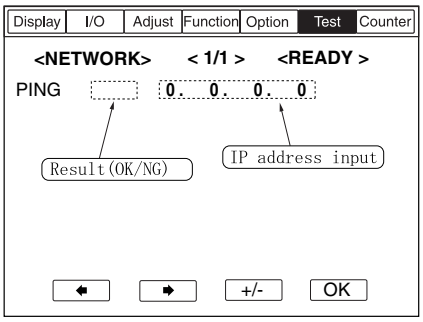
1) Turn off the control panel power switch.
2) Turn off the main power switch.
3) Connect the network cable to the machine, and turn on the main power switch.
4) Inform the user's system administrator that the installation work is over, and ask him/her to set up the machine for use on the user's network.
5) When network settings have been made, turn off the control power switch, and then turn off and then on the main power switch.

2.3.2 Using PING

0000-4373

⚠Go through the following steps only if the machine is connected to a network:
If the user's network environment is based on TCP/IP, use the PING function to see that the Ethernet PCB has been correctly mounted and the network settings have been correctly made. If the user's network environment is based on IPX/SPX or AppleTalk, on the other hand, you need not make a PING-based check.

1) Make the following selections in service mode: COPIER>TEST>NETWORK>PING.
2) Enter the IP address using the keypad on the control panel, and press the OK key.
3) Press the Start key.
- If the PING check is successful, the machine will indicate 'OK'; otherwise, it will indicate 'NG'.



F-2-120

2.3.3 Making Checks Using a Remote Host Address

0000-4374

You can execute PING using a remote host address, thereby checking the connection to the network.

The term "remote address" refers to the IP address of a PC terminal connected to and operating in a TCP/IP network environment to which the machine belongs.

1) Inform the system administrator that you will be checking the connection to the network using PING.
2) Check with the system administrator to find out the remote host address.
3) Enter the remote host address you obtained in PING.
4) If the indication is 'OK", the machine is correctly connected to the network.
5) If the indication is 'NG", the machine is not correctly connected to the network. Go through the following troubleshooting steps:

2.4 Troubleshooting the Network

2.4.1 Troubleshooting the Network

0000-4375

⚠Go through the following steps only if the machine is connected to the network:

If the connection to the network is not correct, you may suspect the following:
a. poor connection between the network and the Ethernet PCB
b. wrong TCP/IP setting on the machine
c. faulty Ethernet PCB or poorly mounted PCB
d. faulty user network

Go through the following steps to find out and correct the cause:

2.4.2 Making Checks Using a Loopback Address

0000-8237

A loopback address returns before it reaches the network PCB; therefore, executing PING using a loopback address will enable you to find out whether the TCP/IP settings of the machine are correct.
1) Enter the loopback address (127.0.0.1) to PING.
- if the machine indicates 'NG', check the TCP/IP settings of the machine once again, and then execute PING once again.
- if the machine indicates 'OK', check the local host address.

2.4.3 Checking the Connection of the Network Cable

0000-8238

The local host address is the IP address of the machine; therefore, executing PING using the local host address, which returns after it has reached the network PCB, enables you to find out if the network PCB is good or not.
1) Enter the IP address of the machine to PING.
- if the machine indicates 'NG', make the following checks/corrections, and execute PING once again.
a. faulty IP address of the machine: check with the system administrator to find out if the IP address (and its settings) assigned to the machine is correct.
b. poor connection of the network PC: check the connectors associated with the network PCB.
c. faulty network PCB: replace the network PCB.
- if the machine indicates 'OK', suspect a fault in the user's network environment. Report to the system administrator, ask for corrective action.

2.5 Checking the Images/Operations

2.5.1 Checking the Images

0001-8222

1) Place the test chart on the copyboard glass, and make copies using the individual cassettes as the source of paper. then, check the images.

- check to see that the machine does not produce any abnormal noise.
- check to see that the images are produced correctly at different magnifications.
- check to see that the machine produces as many copies as specified normally.

2) Make settings (Additional Function ; e.g., date, time) to suit the needs of the user.

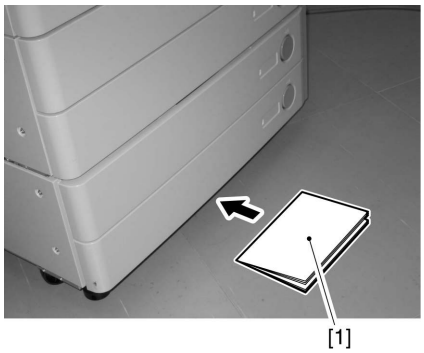
3) Start service mode.

- press the Additional Function key, press the 2 and 8 keys at the same time, press the Additional Function key once gain.

4) Make the user-related settings to suit the needs of the user (COPIER>OPTION>USER).

5) Print out test prints in service mode (COPIER>FUNCTION>MISC-P>P-PRINT).

6) Put away the printed test print [1] in the service book case.



F-2-121

7) Press the Reset key twice to end service mode.

8) Clean up the area around the machine, and fill out the service book.

2.6 Relocating the Machine

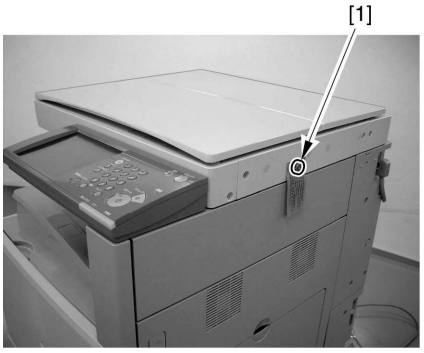
2.6.1 Relocating the Machine

0001-7304

If you need to relocate the machine after installation by truck or other means of transportation, be sure to perform the following work in advance:

⚠If you want to move the machine intact with its pedestal, be sure not to use the machine's grips; otherwise, the machine will come off the pedestal as when it is moved over a step. Be sure to lift the pedestal.

1) Fix the scanner in place using the scanner fixing screw [1] that has been set aside from the time of installation.



F-2-122

2) Put paper on the copyboard glass.
3) Remove all toner cartridges and developing assembly so that the developing rotary will not rotate in response to vibration occurring in transit.

2.7 Installing the Card Reader-C1

2.7.1 Points to Note

0001-2860

⚠You will need a Card Reader Mounting Kit-B1 to install the Card Reader-C1.

2.7.2 Checking the Contents

0001-2898

<Card Reader-C1>

[1] Card Reader-C1 1 pc

[2] Screw (RS tightening; M4x10) 1 pc.

[3] Toothed washer 1 pc.

<Card Reader Mounting Kit-B>

[1] Card reader base 1 pc.

[2] Relay harness 1 pc.

[3] TP screw (M4x8) 1 pc.

[4] TP screw (M4x25) 1 pc.

[5] Toothed washer 1 pc.

2.7.3 Installation

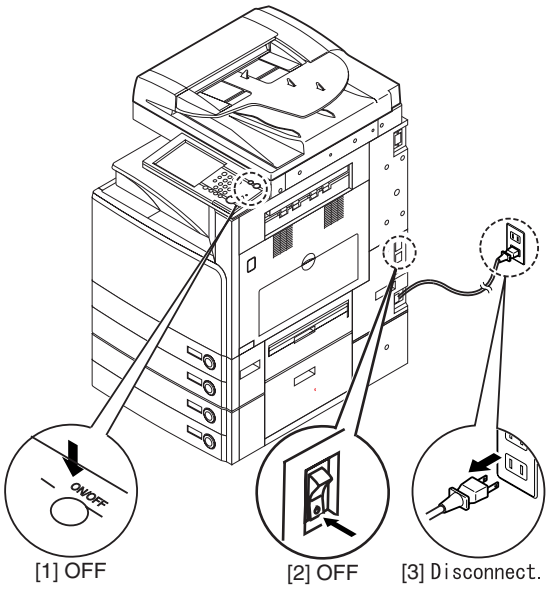
0001-2930

⚠When you have installed the Card Reader-C1, enter the numbers of the cards to be used in service mode (COPIER>FUNCTION>INSTALL>CARD); otherwise, the reader will not recognize cards upon insertion.

1) Turn off the control panel power switch.

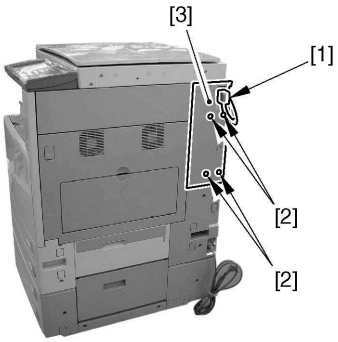
2) Turn off the main power switch.

3) Disconnect the power cable (from the power outlet) [3].



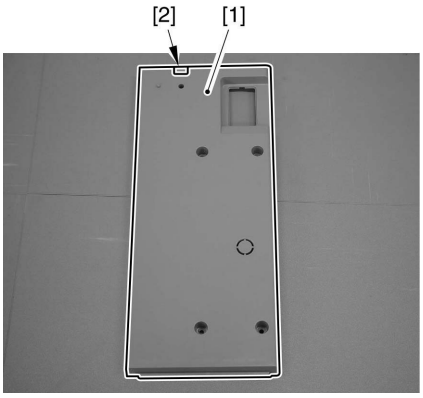
F-2-123

4) Disconnect the reader power cable [1].
5) Remove the 4 screws [2], and detach the rear right cover [3].



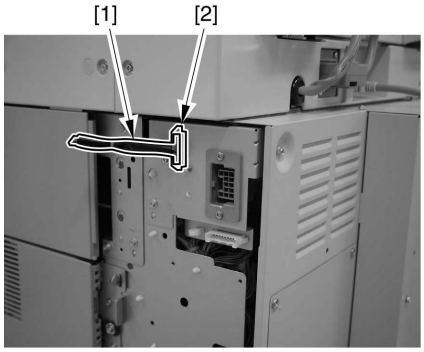
F-2-124

6) Remove the face plate [2] of the rear right cover using nippers or the like.



F-2-125

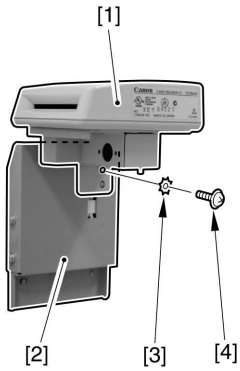
7) Connect the relay cable [1] to the machines' connector assembly.



F-2-126

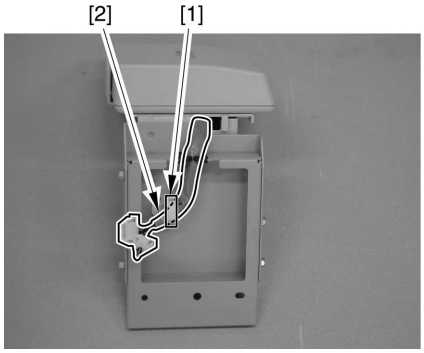
8) Mount the rear right cover using 4 screws.

9) Mount the card Reader-C1 [1] and the card reader base [2] using the included TP screw (M4x8) [4] together with its washer [3].



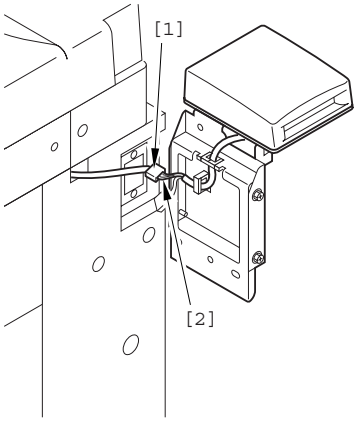
F-2-127

10) Route the relay cable [2] through the wire saddle.



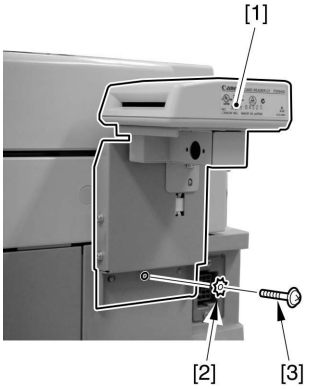
F-2-128

11) Connect the machine's cable [1] to the relay cable [2] of the Card Reader-C1.



F-2-129

12) Taking care so that that the harness will not be trapped, mount the card Reader-C1 [1] using a TP screw (M4x25) [3] together with its washer [2].



F-2-130

13) Connect the power cable to the power outlet, and turn on the power. Check to see that the machine has entered a standby state, and start service mode.

14) Enter the numbers of the cards to be used in service mode (COPIER>FUNCTION>INSTALL>CARD).

- Enter the lowest number of the card numbers the user is planning to use.
- As many as 300 cards may be used (starting with the number you have entered).

15) Turn off the control panel power switch.

16) Turn off and then on the main power switch.

2.7.4 Using with NetSpot Accountant (NSA) 0001-9160

1) Make the following selections in Additional Function: system control settings>group ID control>count control; then, check to see IDs 00000001 thorough 00001000 have been created (i.e., if you entered '1' as the first number in service mode): COPIER>FUNCTION>INSTALL>CARD).

2) Make the following selections in Additional Function: system control settings>network settings>TCP/IP settings>IP address; then set up the following: IP address, gateway address, subnet mask.

⚠Take care. If you fail to register [system control group] and [system control ID No.], you will not be able to perform 'register card to device' as part of NSA setup work.

3) Under [system administrator info] of Additional Function, enter any number for [system control group] and [system control ID No.].
4) Turn off the control panel switch.
5) Turn off and then on the main power switch.

2.8 Installing the NE Controller-A1

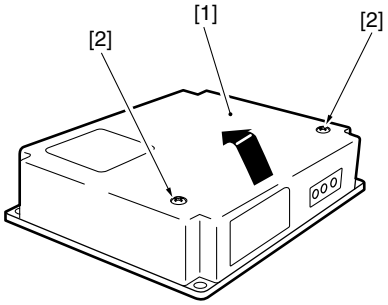
2.8.1 Installing the NE Controller-A1

0001-2145

If you want to install an NE controller-A1 to the machine, be sure to observe the following:

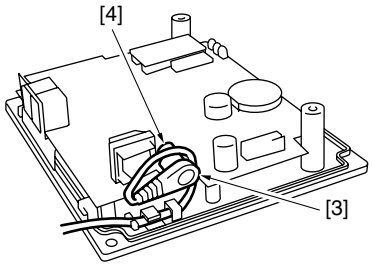
1. follow the laws and regulations of the country in question.
2. check to see that the host machine has properly been installed.
3. check to see that the host machine's power plug is disconnected.
4. identify the screws by type (length, diameter) and location.
5. prepare the unit setup data on the PC at the service station.

1) Remove the 2 screws [2], and detach the upper cover [1] of the unit.



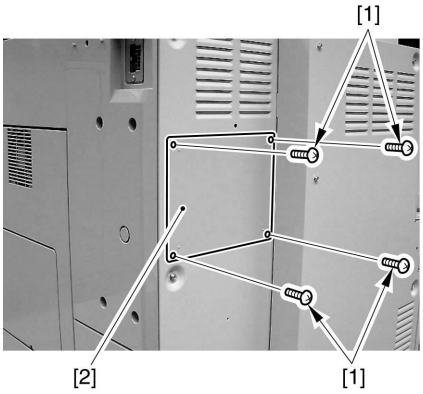
F-2-131

2) Connect the connector [3] of the power supply to the connector [4] of the unit.



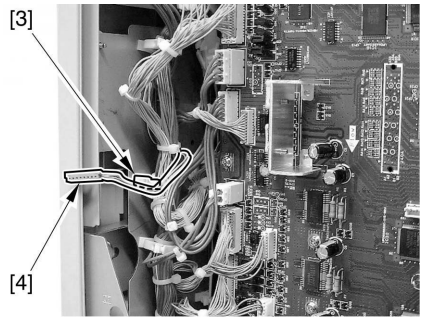
F-2-132

3) Remove the 4 screws [1], and detach the face plate [2] of the host machine's upper cover.



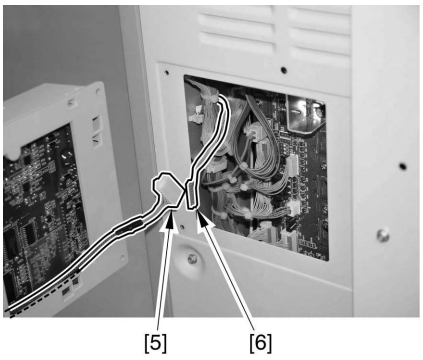
F-2-133

4) Remove the wire saddle [3], and detach the cable [4] of the unit.



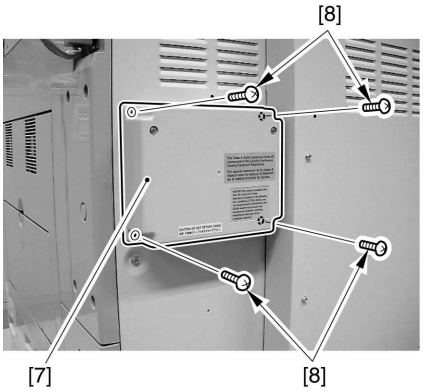
F-2-134

5) Connect the cable [5] of the unit to the connector [6] of the host machine's DC controller.



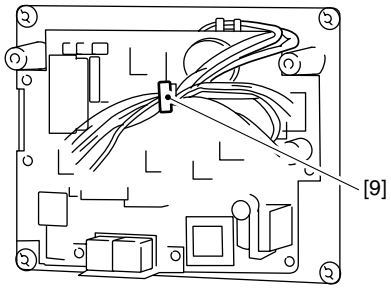
F-2-135

6) Fix the unit [7] in place to the host machine's rear cover using 4 screws [8]. (Use the screws that come with the unit.)



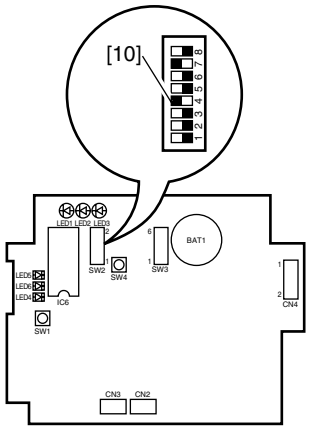
F-2-136

7) Remove the slack from the cable lying between the host machine and the unit; bundle the excess length of cable, and fix it in place using the harness band [9].



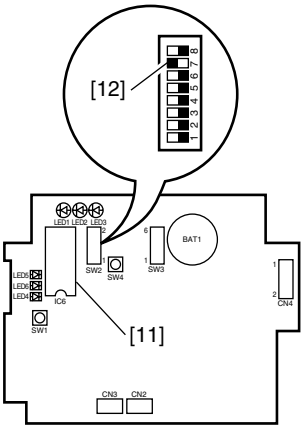
F-2-137

8) Shift bit 4 of the DIP switch [10] on the PCB to ON (SW2-4 so that the communication between the unit and the host machine will be in IPC mode).



F-2-138

9) If IC6 [11] is found on the PCB, shift bit 7 of the DIP switch [12] (SW2-7) to ON; otherwise, shift it to OFF.



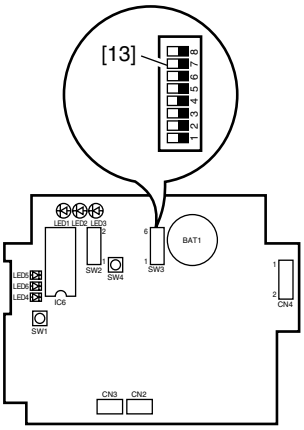
F-2-139

⚠If IC6 [11] is not found, there is no need to mount one.

If you are mounting a ROM (IC6) [11] for upgrading the unit or replacing the ROM, be sure to shift bit 7 of the DIP switch [12] to ON (SW2-7).

---

10) Set the bits of the DIP switch [13] (SW3) on the PCB as indicated:



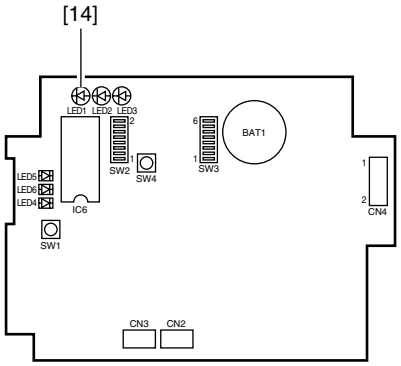
F-2-140

T-2-8

Notation	Setting	SW3-1	SW3-2	Description
		OFF	OFF	set the modem signal transmission level to -16 dBm.
		ON	OFF	set the modem signal transmission level to -14 dBm.

Notation	Setting	SW3-1	SW3-2	Description
SW3-1	see right	OFF	ON	set the modem signal transmission level to -12 dBm.
SW3-2		ON	ON	set the modem signal transmission level to -10 dBm.
SW3-3	OFF	set to OFF at all times.		
SW3-4	ON	set the line of the unit to push pulse.		
	OFF	set the line of the unit to dial pulse.		
SW3-5	ON	set the dial pulse speed to 20 PPS.		
	OFF	set the dial pulse speed to 10 PPS.		
SW3-6	-	not used		

11) Connect the power supply to the power plug; then, check to see that LED1 [14] on the PCB (green) comes on.



F-2-141

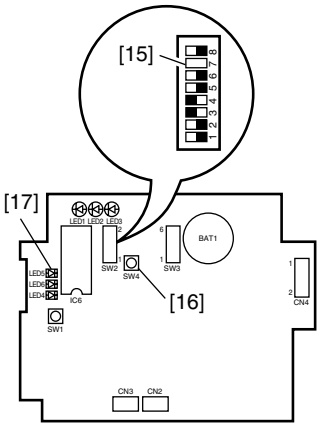
12) Initialize the RAM of the unit.

See the bits of the DIP switch [15] (SW2) of the PCB as indicated; then, press the push switch [16] (SW4) so that LED5 [17] (red) goes on.

T-2-9

bits of SW2	Setting
SW2-1	OFF
SW2-2	OFF
SW2-3	ON
SW2-4	ON

bits of SW2	Setting
SW2-5	OFF
SW2-6	OFF
SW2-7	See step 9).
SW2-8	OFF

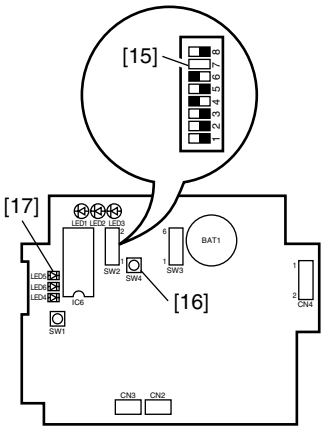


F-2-142

13) When LED5 [17] (red) has come on, set the bits of the DIP switch [15] (SW2) on the PCB as indicated, and press the push switch [16] (SW4) so that LED5 [17] (red) goes off to indicate that RAM has been initialized.

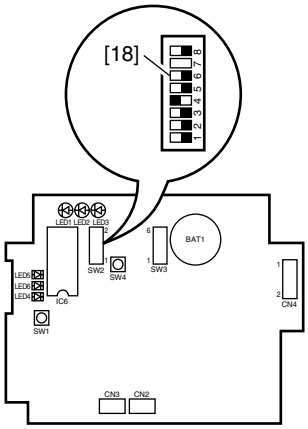
T-2-10

bits of SW2	Setting
SW2-1	OFF
SW2-2	OFF
SW2-3	OFF
SW2-4	ON
SW2-5	OFF
SW2-6	ON
SW2-7	See step 9).
SW-8	OFF



F-2-143

14) Shift bit 6 of the DIP switch [18] (SW2-6) on the PCB to OFF.

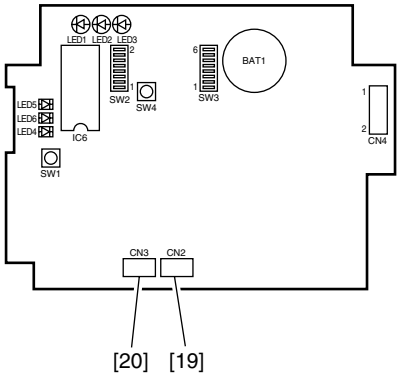


F-2-144

15) Connect the telephone line to the unit.

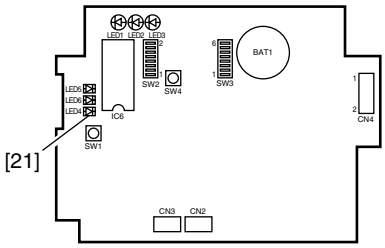
If the unit is to be used on its own, connect the modular jack cable to the connector [19] (LINE) of the unit.

If the extension function of the unit is to be used, connect the existing telephone or fax to the connector [20] (TEL) of the unit, and connect the telephone line to the other connector [19] (LINE) of the unit.



F-2-145

16) Call the service station, and ask for initial setup work for the unit. (In response to an incoming call, LED4 (red) [21] of the unit will come on.)



F-2-146

17) Call the service station, and check to find out if the initial setup work for the unit has ended. If the work failed, go back to RAM initialization, and go through steps 11) through 13).

⚠Be sure to find out if the settings of the unit are correct by contacting the service station.

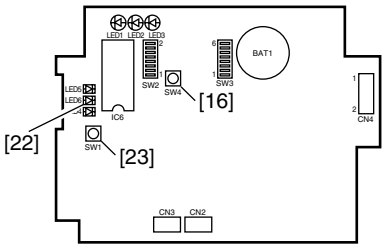
---

18) Check to find out if a call may be placed using the unit to the PC located at the service station.

Press the push switch [16] (SW4) of the PCB. In response, LED6 [22] (red) will go on; it goes off when the transmission is done, and starts to flash if it fails.

A press on the push switch (SW4) [16] while LED6 [22] is flashing will initiate transmission for a second time.

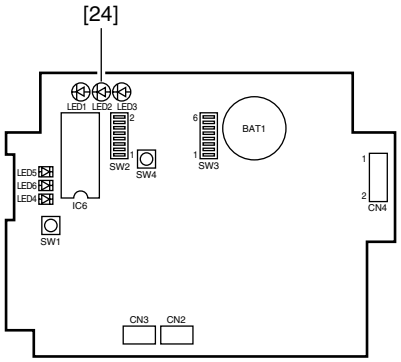
A press on the push switch (SW1) [23] while LED6 [22] is flashing will cancel the ongoing transmission by the unit.



F-2-147

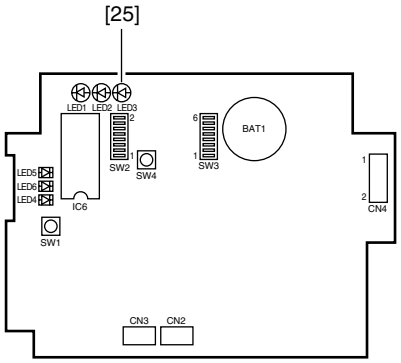
19) Check to see that the communication between the unit and its host machine is normal.

Connect the host machine's power plug, and turn on the power switch; then, see that LED2 [2] (orange) flashes.



F-2-148

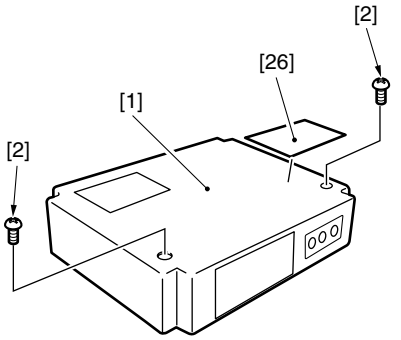
20) Press the host machine's Start key, and check to see that LED3 [25] (pink) flashes each time delivery takes place.



F-2-149

21) Attach the Switch Settings label [26] to the upper cover; then, record the individual switch settings.

22) Mount the upper cover [1] in place with 2 screws [2]. When doing so, be sure that heat cable of the power supply is secured by the cable guide inside and is not trapped by the upper cover [1].



F-2-150

2.9 Installing the Key Switch Unit-A1

2.9.1 Checking the Contents

0000-8761

Key Switch Unit-A1

[1] Key Switch Unit 1 PC.

[2] Control key 1 pc.

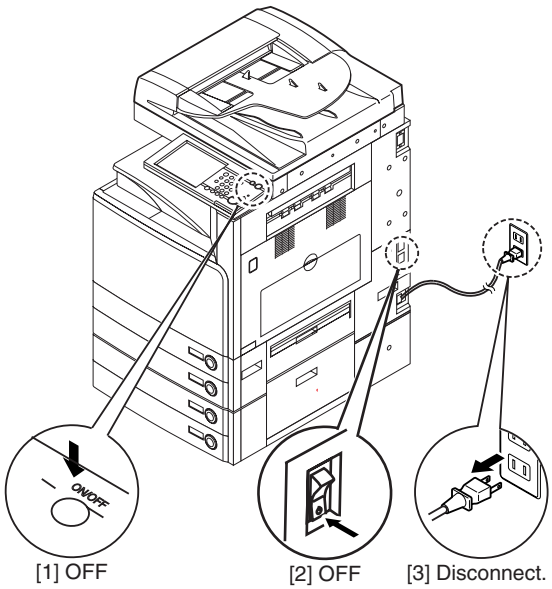
[3] Binding screw (M4x6) 1 pc.

2.9.2 Installation

0000-8762

⚠Before stating the work, be sure to go through the following on the host machine in strict order:

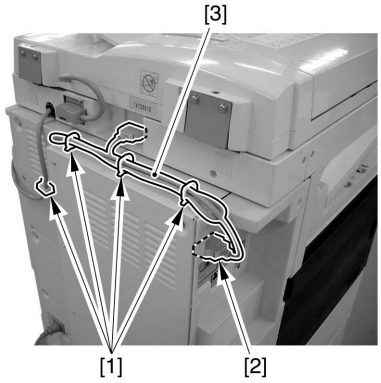
1. turn off the control panel power switch.
2. turn off the main power switch.
3. disconnect the power cable (from the power outlet).



F-2-151

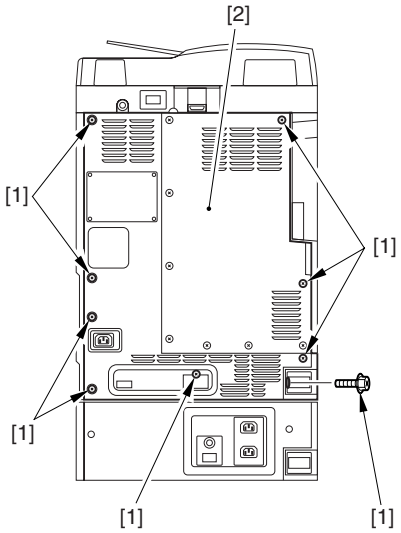
1) Remove the 3 wire saddles [1].

2) Disconnect the connector [2], and detach the reader communication cable [3].



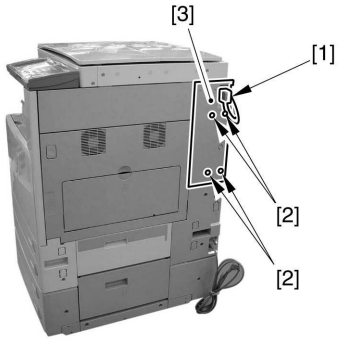
F-2-152

3) Remove the 9 screws [1], and detach the rear cover [2].



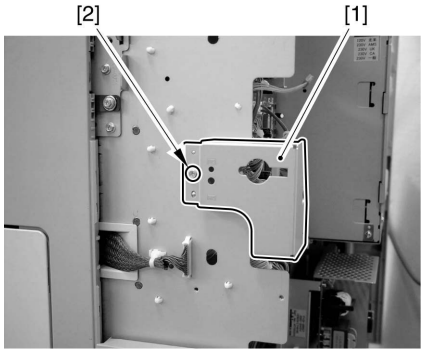
F-2-153

4) Disconnect the reader power cable [1].
5) Remove the 4 screws [2], and detach the rear right cover [3].



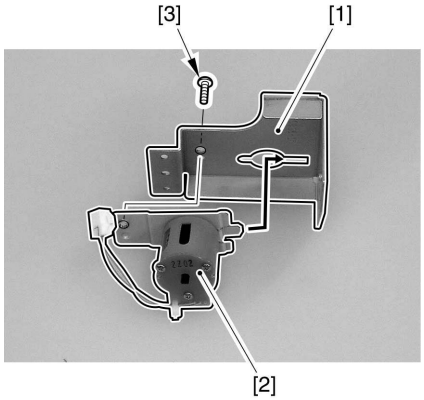
F-2-154

6) Remove the screw [2], and detach the bracket [1] from the key switch.



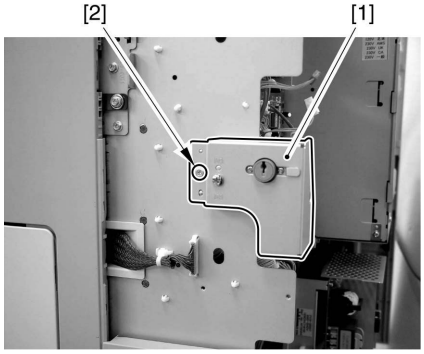
F-2-155

7) Mount the key switch unit [2] to the key switch breaker [1] using the included screw [3] (M4x6).



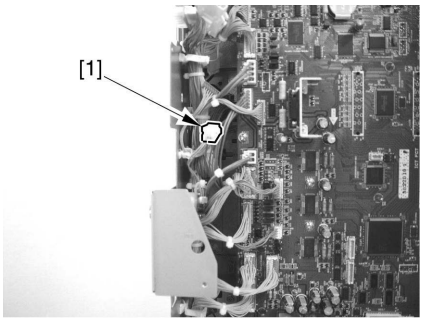
F-2-156

8) Mount the key switch bracket [1] with a screw [2].



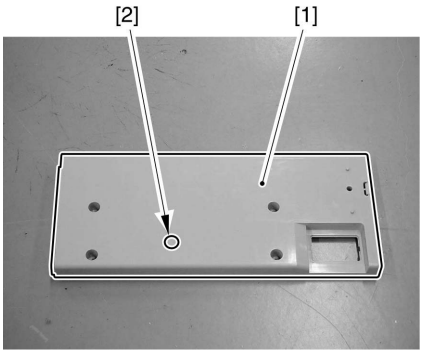
F-2-157

9) Connect the connector [1] of the key switch unit.



F-2-158

10) Remove the face plate [2] from the rear right cover [1] using nippers.



F-2-159

11) Mount the rear cover of the host machine using 9 screws.
12) Mount the rear right cover using 4 screws.
13) Fit the reader communications cable.
14) Fit the reader power cable.
15) Fit the power cable (for the power outlet).
16) Turn on the main power switch.

2.9.3 Making Checks After Installation

0000-8764

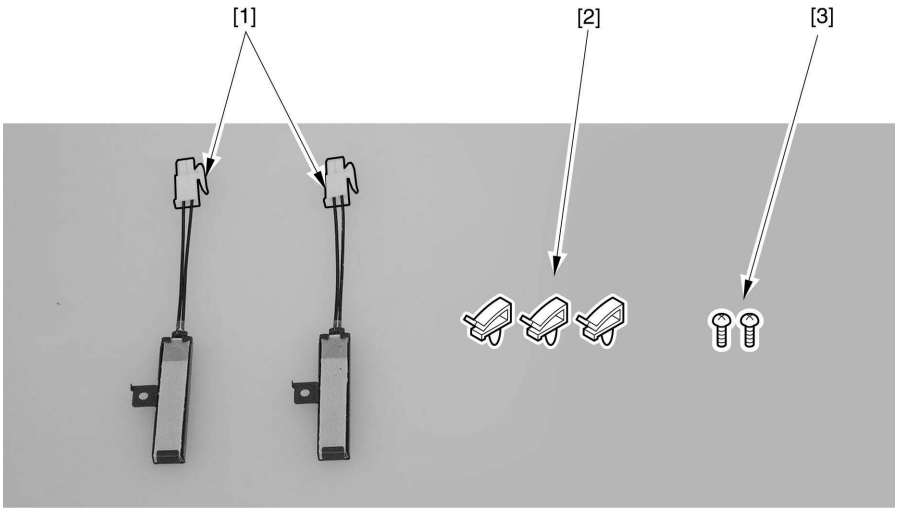
1) Start service mode.
2) Make the following selections, and enter '1': COPIER>FUNCTION>INSTALL>KEY.
3) Turn off the control panel power switch.
4) Turn off and then on the main power.
5) Check to see that the message "set the control key" has appeared.
6) Fit the key to the key switch unit.

2.10 Installing the Reader Heater Kit-B1

2.10.1 Checking the Contents

0000-9880

[1] Reader Heater 2 pc.
[2] Clamp 3 pc.
[3] Screw (M4x6) 2 cp.



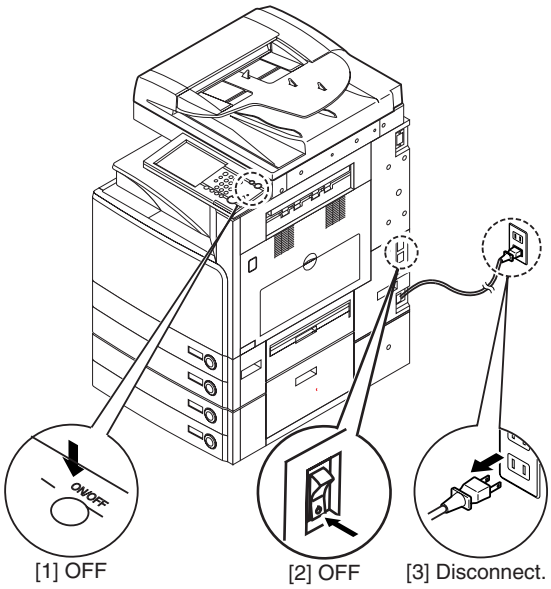
F-2-160

2.10.2 Installation

0000-9957

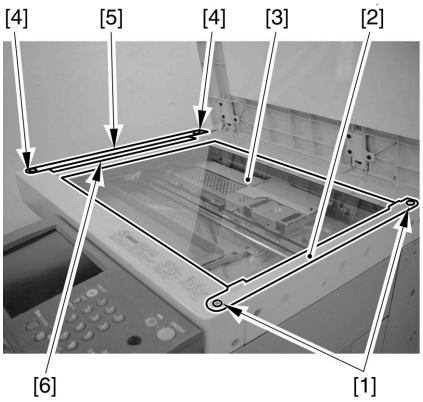
⚠Thee are 2 locations for the heaters. Any of the 2 heaters may be used for any of the locations.

⚠Before starting the work, be sure to go through the following on the host machine in strict order:
1. turn off the control panel power switch.
2. turn off the main power switch.
3. disconnect the power cable (from the power outlet).



F-2-161

1) Open the copyboard cover/ADF.
2) Remove the 2 screws, and detach the glass retainer (right) [2].
3) Remove the copyboard glass (for copyboard cover) [3].
4) Remove the 2 screws [4], and detach the glass retainer (left) [5].
5) Remove the copyboard glass (for ADF) [6].

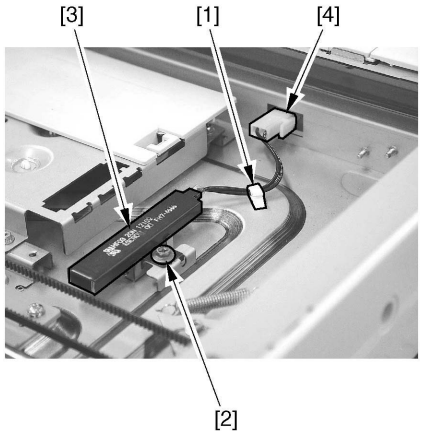


F-2-162

⚠When removing the copyboard glass, take care not to touch the glass surface and the white plate on its back. (The presence of dirt will cause a black line in the images.)

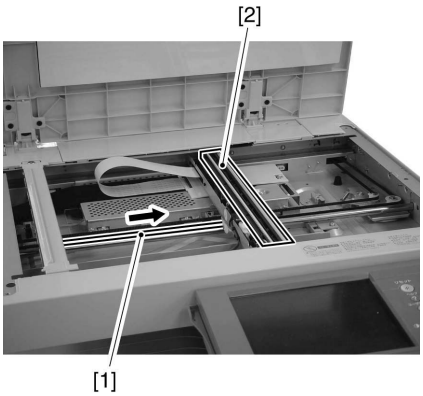
6) Mount the clamp [1].

7) Fix the heater [3] in place using a screw [2].
8) Fit the connector [4] of the heater, and fix the harness of the heater in place using the clamp [1].



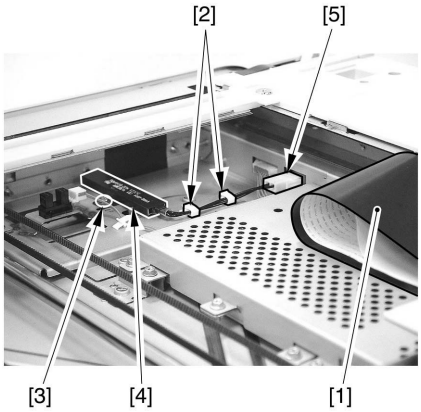
F-2-163

9) Pull the drive belt (front side) [1] to the right to move the contact sensor unit [2] to the center.



F-2-164

10) Peel off the protective sheet [1], and fit the 2 clamps [2]. (Keep the protective sheet peeled until step 12).)
11) Fix the heater [4] in place using a screw [3].
12) Fit the connector [5] of the heater in place, and fit the harness of the heater to the clamp [2].



F-2-165

13) Put back the protective sheet.
14) Mount the copyboard glass (for DF) and the copyboard glass (for copyboard cover).
15) Mount the glass retainer (let, right) using 2 screws each.
16) Connect the power cable.

Chapter 3 Basic Operation

Contents

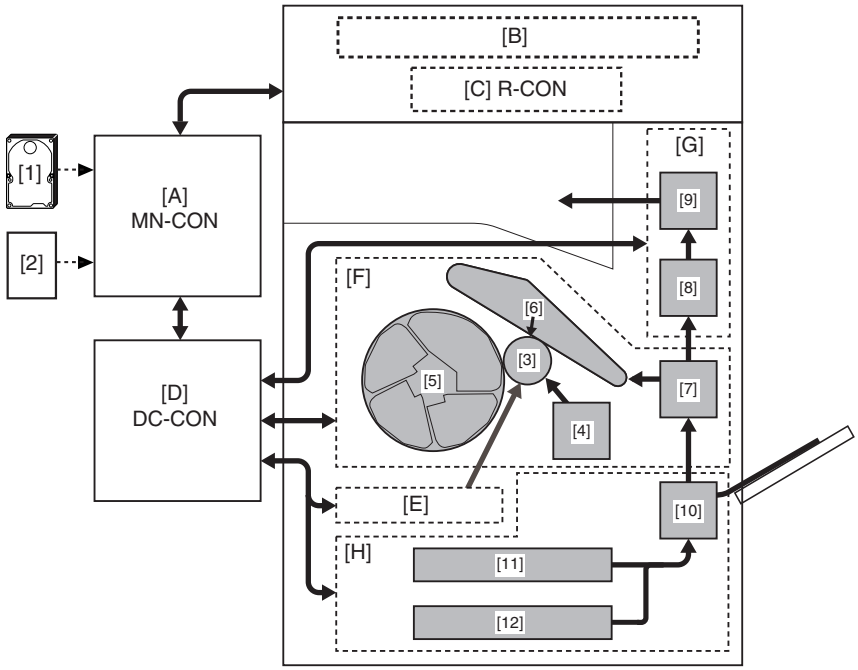
3.1 Construction 3-1
3.1.1 Functional construction 3-1
3.1.2 Connections Among Major PCBs 3-2
3.1.3 DC Controller PCB 3-4
3.2 Basic Sequence 3-6
3.2.1 Basic Sequence of Operations at Power-On 3-6
3.2.2 Basic Sequence of Operations for a Print Job (full color) 3-7
3.2.3 Basic Sequence of Operations for a Print Job (mono color) 3-8

3.1 Construction

3.1.1 Functional construction

0001-4573

The machine may broadly be divided into the following functional blocks: general control block, original exposure block, reader control block, printer control block, laser exposure block, image formation block, pickup/feed block, and fixing/delivery block. For detailed discussions of individual functions, see the chapters that follow.



F-3-1

T-3-1

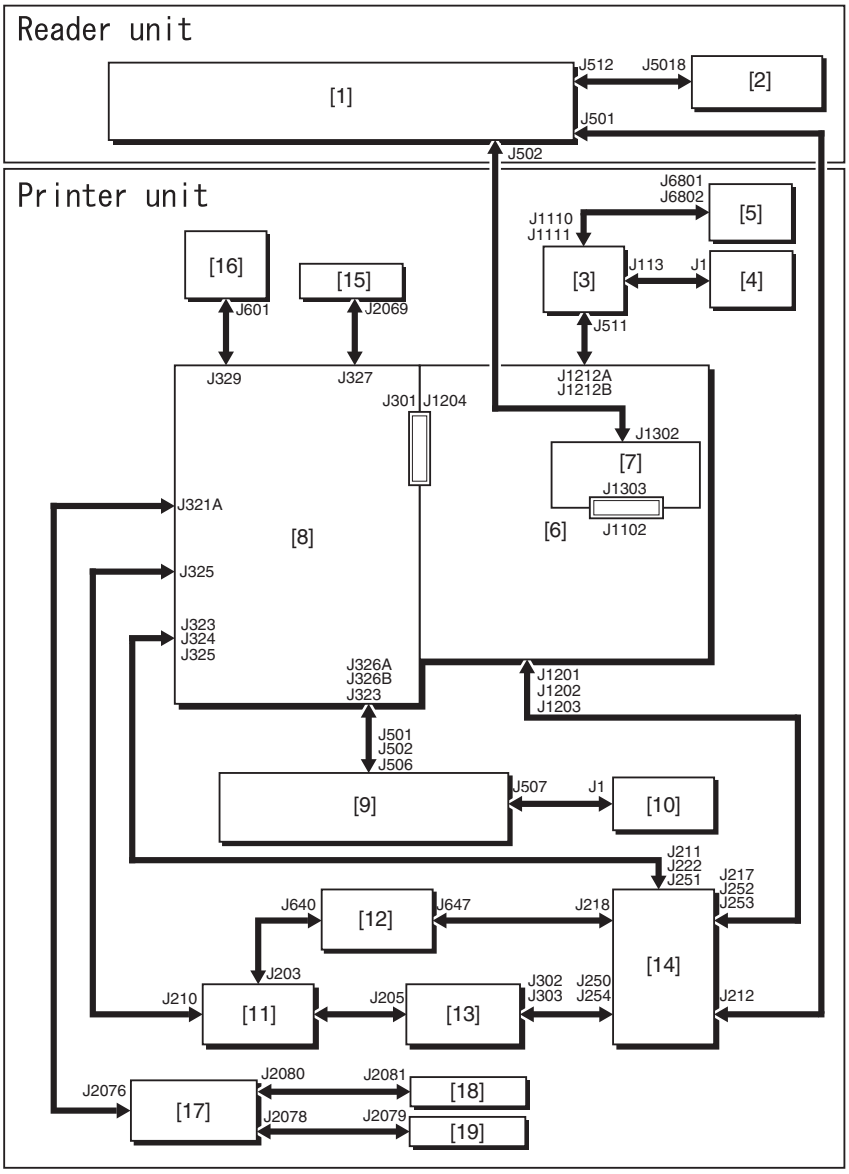
[A]	General Control System	[1]	HDD
	main controller PCB	[2]	Accessories PCB
[B]	Original Exposure System	[3]	Photosensitive drum
[C]	Reader Unit Controller System	[4]	Charging
	reader controller PCB	[5]	Development
[D]	Printer Unit Control System	[6]	Primary transfer
	DC controller PCB	[7]	Secondary transfer/Separation

[E]	Laser Exposure System	[8]	Fixing
[F]	Image Formation System	[9]	Delivery/Reversal/Duplexing
[G]	Fixing/Delivery System	[10]	Pickup
[H]	Pickup/Feed System	[11]	Cassette 1
		[12]	Cassette 2

3.1.2 Connections Among Major PCBs

0001-4576

The following is a diagram showing connections among individual PCBs:



F-3-2

T-3-2

[1]	Reader controller PCB	[11]	AC driver PCB
[2]	CIS inverter PCB	[12]	Accessories power supply PCB
[3]	Control panel CPU PCB	[13]	Printer power supply PCB
[4]	Control panel inverter PCB	[14]	Controller power supply PCB
[5]	Keypad PCB	[15]	BD PCB
[6]	Main control PCB (main)	[16]	Laser driver PCB
[7]	Main controller PCB (sub)	[17]	Cassette size relay PCB

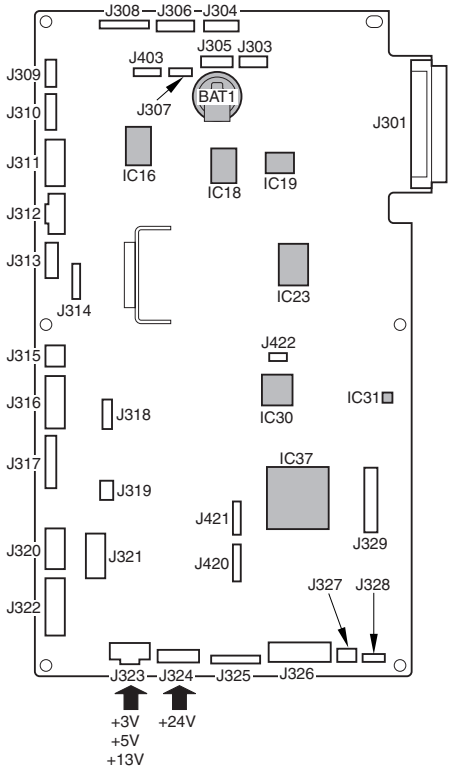
[8]	DC controller PCB	[18]	Upper cassette size PCB
[9]	High-voltage PCB (main)	[19]	Lower cassette size PCB
[10]	High-voltage PCB (sub)		

Memo:
The arrows in the diagram indicate PCB connections, not the direction of signals.

3.1.3 DC Controller PCB

0001-4577

The machine's DC controller PCB has the following functional construction:



F-3-3

T-3-3

BAT1:	battery for SRAM (IC18) backup
IC23:	CPU (equipped with boot ROM)
IC31:	reset IC
IC16:	flash ROM (holds system software)

IC18: SRAM (retains settings data, e.g., service mode settings)

IC19,30: used for clutch control, solenoid control, fan control

IC37: used for high-voltage control, fixing control, motor control, image control, PWM control (for laser/high voltage)

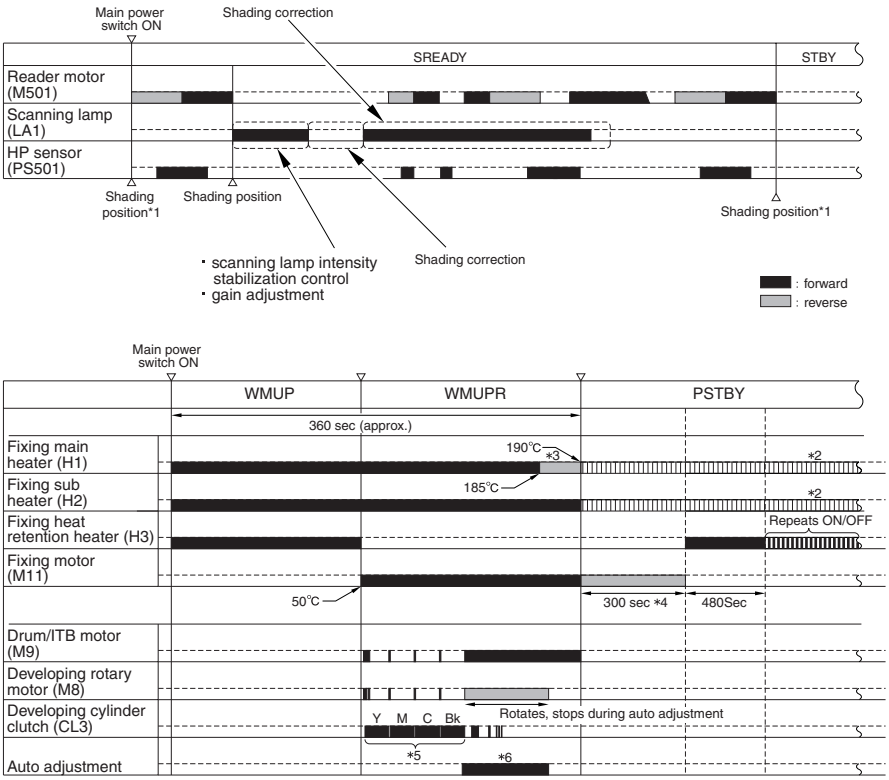
3.2 Basic Sequence

3.2.1 Basic Sequence of Operations at Power-On

0001-4578

T-3-4

Period	Description
WMUP (warm-up)	the drive system is at rest; lasts until the fixing roller reaches 50 degrees Celcius.
SREADY (scanner ready)	from when shading correction ends to when the Start key is pressed or the main power switch is turned off.
WMUPR (warm-up rotation)	the drive system goes on; lasts until the fixing roller reaches 190 degrees Celcius.
PSTBY (printer standby)	the machine is ready to accept a copy/print request signal.



F-3-4

*1: if the copyboard cover (ADF) is "open," stands by at point of original size detection.

*2: uses the main or sub heater to perform temperature control (to 190 degrees Celcius) depending on the difference

in the readings of the main thermistor (TH1) and the sub thermistor (TH2).

*3: if the temperature at a the start of the warm-up period is less than 170 degrees Celcius, turns off the main heater; if 170 degrees Celcius or higher, turns on the main heater.

*4: executes half-speed rotation if printing does not start at the end of the warm-up period.

*5: omits the sequence if the surface temperature of the fixing roller is 50 degrees Celcius or higher at the start of the warm-up period.

*6: as a rule, executes (image stabilization control during auto adjustment) only if the surface temperature of the fixing roller at the start of the warm-up period is less than 50 degrees Celcius.

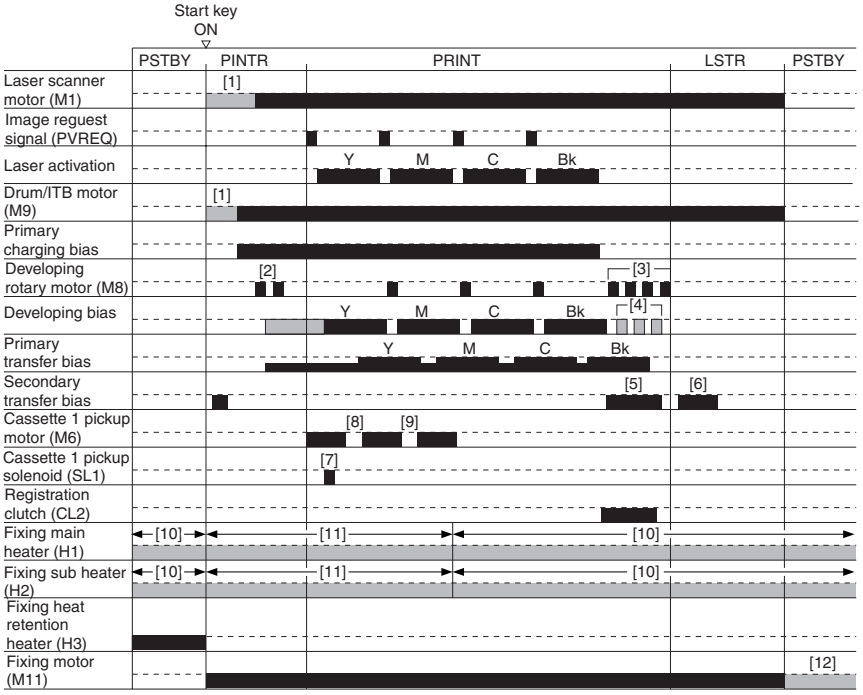
- ATR correction control
- drum film thickness detection control
- primary transfer ATVC control
- development gradation density correction control

3.2.2 Basic Sequence of Operations for a Print Job (full color) 0001-4579

Full color, A4, 1 copy, Cassette 1

T-3-5

Period	Description
PSTBY (print standby)	when the machine is ready to accept a copy/print request signal.
PINTR (initial rotation)	from when a print request signal is received to when an image signal is generated.
PRINT	from when all toner has been transferred to paper and the paper is delivered.
LSTR (last rotation)	from when the paper has been delivered to when all drive has been stopped.



F-3-5

[1] stabilizes the rotation.

[2] makes the following moves: rotary HP>Bk point of development>Y point of development (1st color).

[3] moves to rotary HP.

[4] holds toner/carrier on the developing cylinder.

[5] transfers to paper.

[6] cleans the secondary transfer outside roller.

[7] picks up paper from the cassette.

[8] executes pre-registration.

[9] executes registration.

[10]controls to 190 degrees Celcius.

[11]controls to 193 degrees Celcius.

[12]executes half-speed rotation (to increase temperature of the pressure roller).

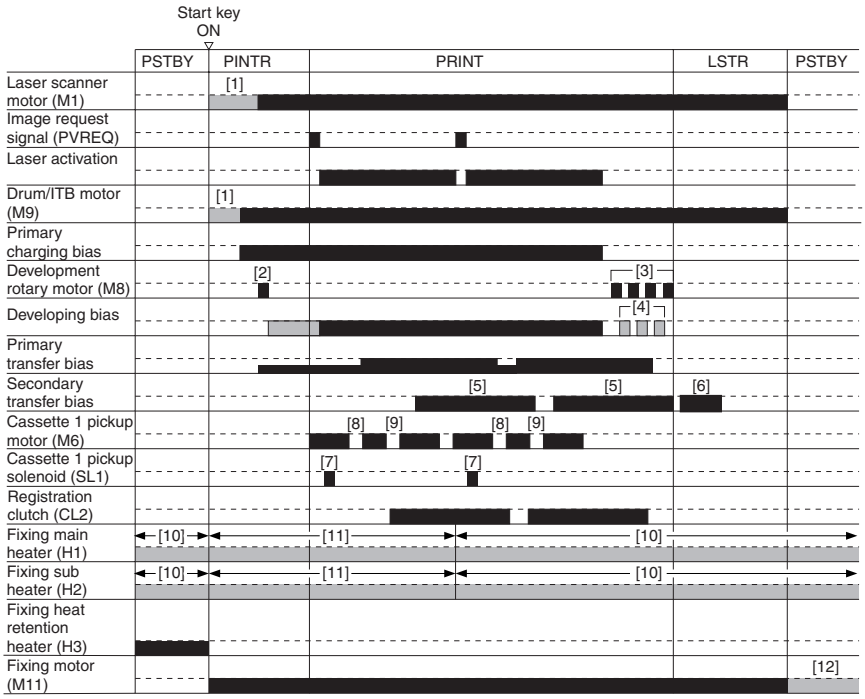
3.2.3 Basic Sequence of Operations for a Print Job (mono color) 0001-4580

Mono, A4, 2 copies, Cassette 1

T-3-6

Period	Description
PSTBY (print standby)	whine the machine is ready to accept a copy/print request signal.

Period	Description
PINTR (initial rotation)	from when a print request signal has been received to when an image signal is generated.
PRINT	from when all toner has been transferred to paper to when the paper is delivered.
LSTR (last rotation)	from when the paper has been delivered to when all drive is stopped.



F-3-6

[1] stabilizes the rotation.
[2] makes the following moves: rotary HP>point of Bk development
[3] moves to rotary HP.
[4] retains toner/carrier on the developing cylinder.
[5] transfers to paper.
[6] executes secondary transfer outside roller cleaning.
[7] picks up paper from the cassette.
[8] executes pre-registration.
[9] executes registration.
[10]controls to 190 degrees Celcius.
[11]controls to 193 degrees Celcius.
[12]performs half-speed rotation (to increase the temperature of the pressure roller).

Chapter 4 Main Controller

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4.1 Construction

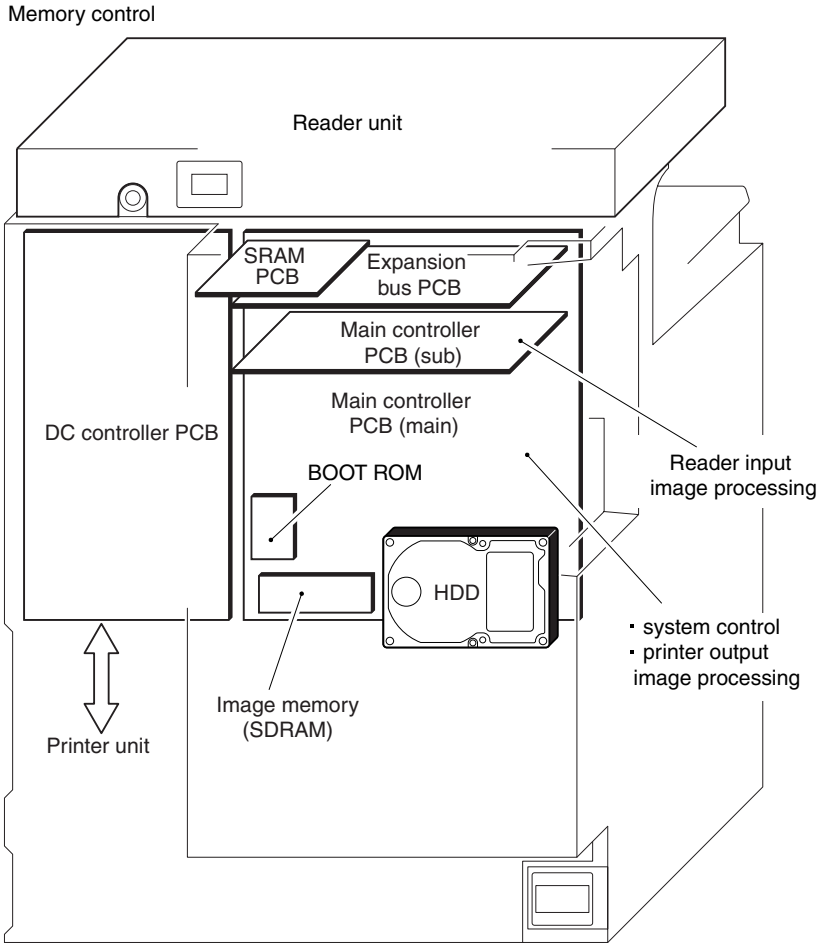
4.1.1 Construction and Functions

0000-7710

The machine's main controller block consists of the following components and provides the functions indicated:

T-4-1

Item	Description
Main controller PCB (main)	controls the system, controls the memory, controls image processing for output to the printer
Main controller PCB (sub)	processes images from the reader unit
Expansion bus PCB	serves as the interface for the color LCD controller, card reader, etc.
SRAM PCB	retains service mode settings and HDD control information
Image memory (SRAM)	retains image data temporarily
Boot ROM	stores programs used for booting
HDD	stores system software, retains image data for Box/fax functions


Memory control
Reader unit
SRAM PCB
Expansion bus PCB
Main controller PCB (sub)
Main controller PCB (main)
DC controller PCB
BOOT ROM
HDD
Reader input image processing
· system control
· printer output image processing
Image memory (SDRAM)
Printer unit

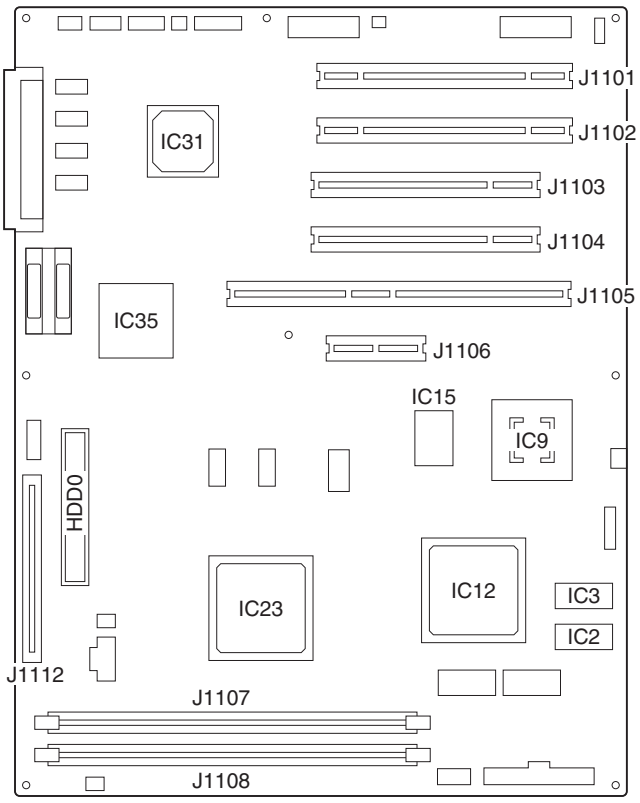
F-4-1

4.2 Construction of the Electrical Circuitry

4.2.1 Main Controller PCB (main)

0002-0606

The following shows the major control functions of the main controller PCB (main) grouped according to jack/IC:



F-4-2

T-4-2

Jack No.	Description
J1101	expansion bus PCB slot
J1102	main controller PCB (sub) connection slot
J1103	image conversion board connection slot
J1104	USB interface board/TokenRing connection slot
J1105	UFR board/OPEN I/F board connection slot
J1106	Ethernet board connection slot
J1107	image memory (SDRAM, 512 MB; standard)
J1108	image memory (SDRAM, 256 MB; optional for 100-V model or standard for 120/230-V model)

Jack No.	Description
J1112	boot ROM connection slot
HDD0	hard disk connection connector

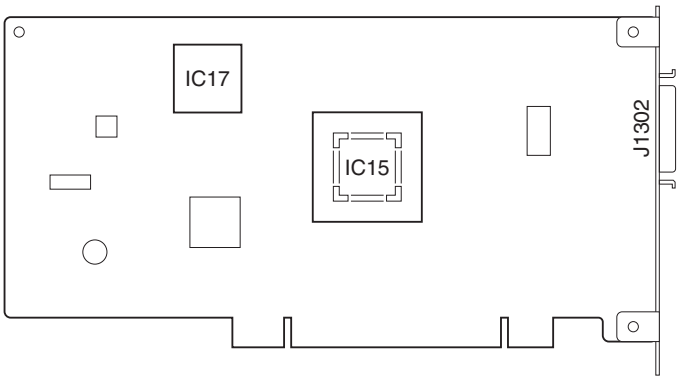
T-4-3

IC No.	Description
IC9	controls the processing of images coming from IC12 for output to the printer.
IC12	controls image input/output functions, image rotation function, resolution conversion function, and binary processing function.
IC15	controls the conversion of 4-bit serial image data coming from IC9 into 8-bit parallel image data; keeps track of video count.
IC23	CPU: system control raster JPEG compression/decompression network controller PCI bus controller ROM/RAM controller serial communication controller
IC31	I/O processing of signals
IC35	HDD controller

4.2.2 Main Controller PCB (sub)

0002-0688

The following shows the major functions of the main controller PCB (sub) grouped according to jack/IC:



F-4-3

T-4-4

Jack No.	Description
J1302	connector for reader unit communication

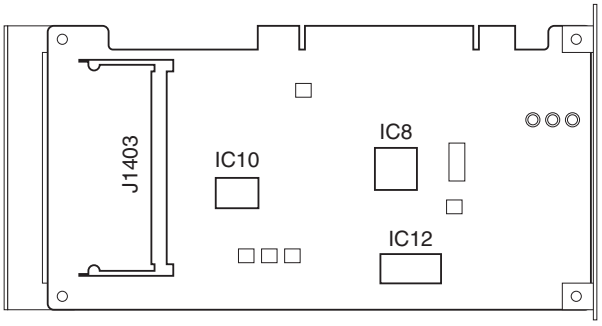
T-4-5

IC No.	Description
IC15	controls image processing of input image data from the reader unit.
IC17	controls indication of images read by the scanner.

4.2.3 Expansion Bus PCB

0002-0689

The following shows the major functions of the expansion bus PCB grouped according to jack/IC:



F-4-4

T-4-6

Jack No.	Description
J1403	connector for the SRAM PCB.

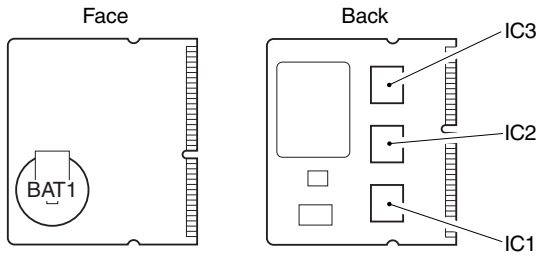
T-4-7

IC No.	Description
IC8	LCD controller
IC10	NE controller, coin vendor, interface ASIC for card reader connection
BAT	backup battery for SRAM

4.2.4 SRAM PCB

0002-0690

The following is a discussion of the major control functions of the SRAM indicated with reference to ICs:



F-4-5

T-4-8

IC No.	Description
IC1,2,3 (SRAM)	retains control information on the image data stored on the HDD; retains service mode settings data and Additional Function settings data

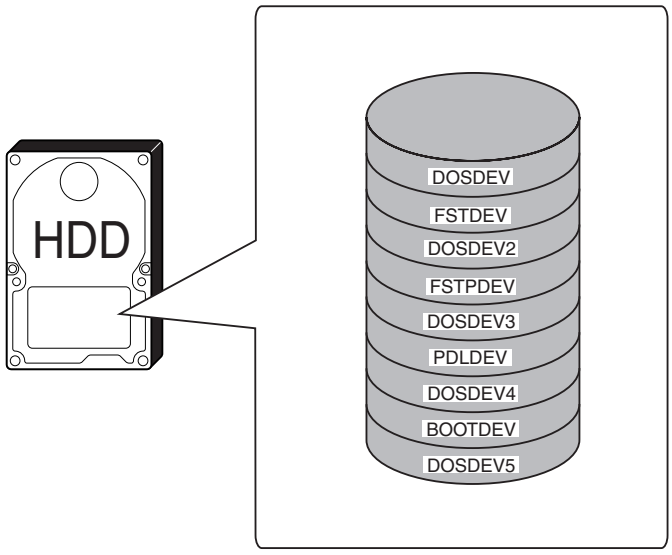
4.2.5 HDD

0001-9933

The HDD is formatted so that there are 9 partitions (blocks) with specific tasks assigned to them:

T-4-9

Partition	Description
DOSDEV	retains multipurpose data
FSTDEV	retains image data
DOSDEV2	retains thumbnail display data for image data
FSTPDEV	retains image data
DOSDEV3	retains multi-purpose files (e.g., PDL spool)
PDLDEV	retains PDL-related files (font, registered form, ICC profile, PDL function color correction information file)
DOSDEV4	retains user data (address books, transfer settings)
BOOTDEV	retains system software
DOSDEV5	for future expansion



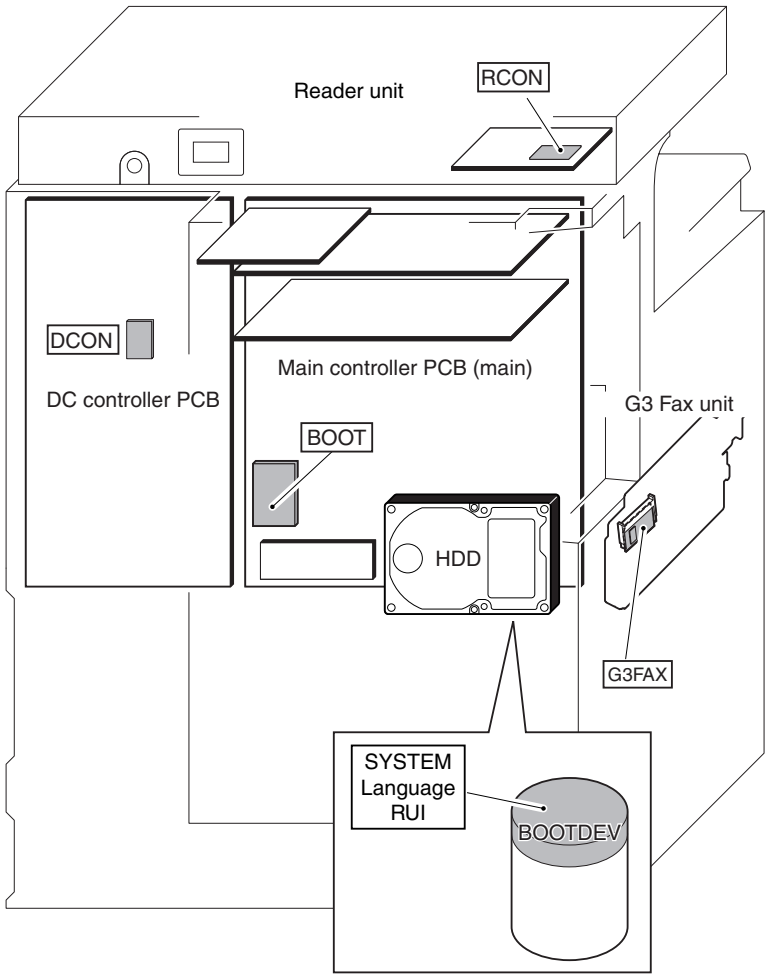
F-4-6

The machine's system software consists of the following:

T-4-10

System software	Description	Location	Remarks
System	system model (controls comprehensive system functions)	HDD (BOOTDEV)	

System software	Description	Location	Remarks
Language	language module (controls LCD)	HDD (BOOTDEV)	
RUI	language module (controls remote UI)	HDD (BOOTDEV)	
Boot	starts up the machine	boot ROM	DIMM
G3FAX	controls G3 fax	G3 fax board	DIMM
Dcon	controls the DC controller	DC control PCB	soldered flash ROM
Rcon	controls the reader controller	reader controller PCB	soldered flash ROM


Reader unit
RCON
DCON
DC controller PCB
Main controller PCB (main)
G3 Fax unit
BOOT
HDD
G3FAX
SYSTEM
Language
RUI
BOOTDEV

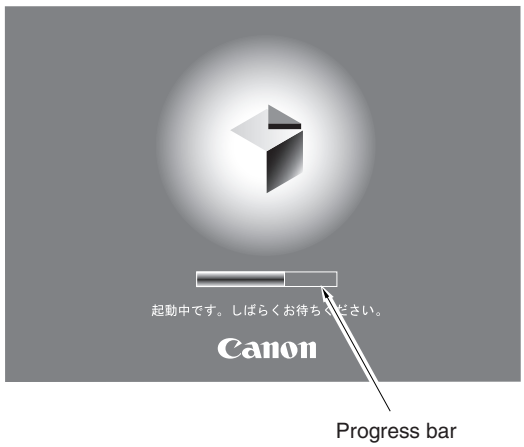
F-4-7

4.3 Start-Up Sequence

4.3.1 Overview

0000-7737

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



F-4-8

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

4.3.2 Start-Up Sequence

0000-7741

<Boot ROM Area>

- Self-Diagnostic Program (interval 1)

When the main power switch is turned on, the CPU of the main controller PCB runs a self-diagnostic program, which checks the condition of the image memory (SDRAM) and the HDD. If a fault is found, the machine will indicate its presence by an error code.

- Boot Program (interval 2)

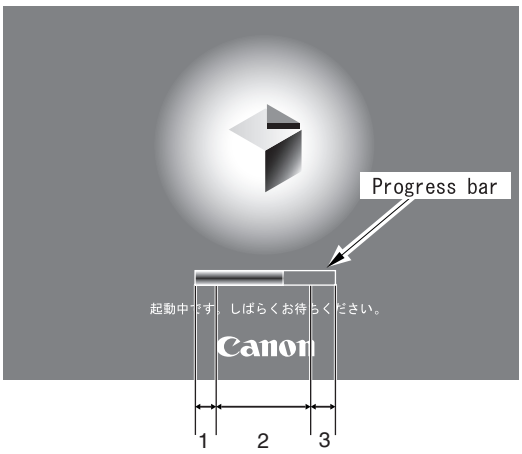
When the self-diagnostic program ends normally, the CPU on the main controller PCB executes the boot program to read the system software from the HDD, writing it to the system area of the image memory (SDRAM).

<Image Memory (SDRAM) Area> (interval 3)

The machine initializes its various parts using the system software written into memory by the boot program (i.e., I/

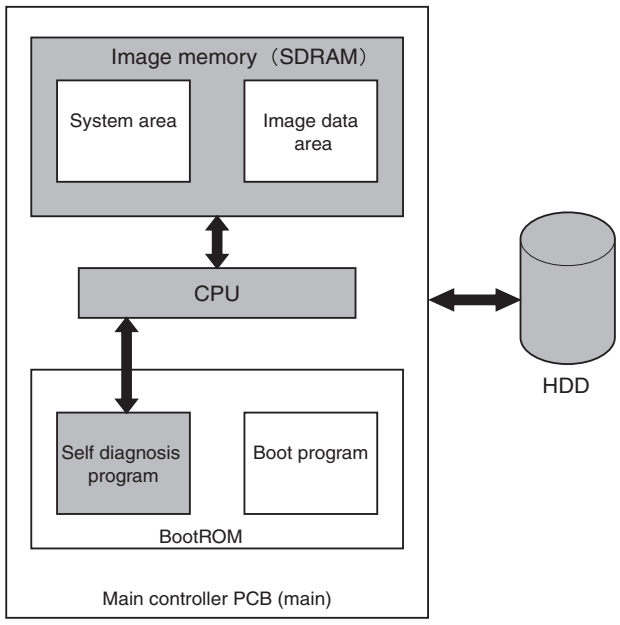
F settings for the main controller).

When all ends normally, the machine becomes ready for a job (indicating the Operation screen on the control panel, and changing the Start LED key from red to green).



F-4-9

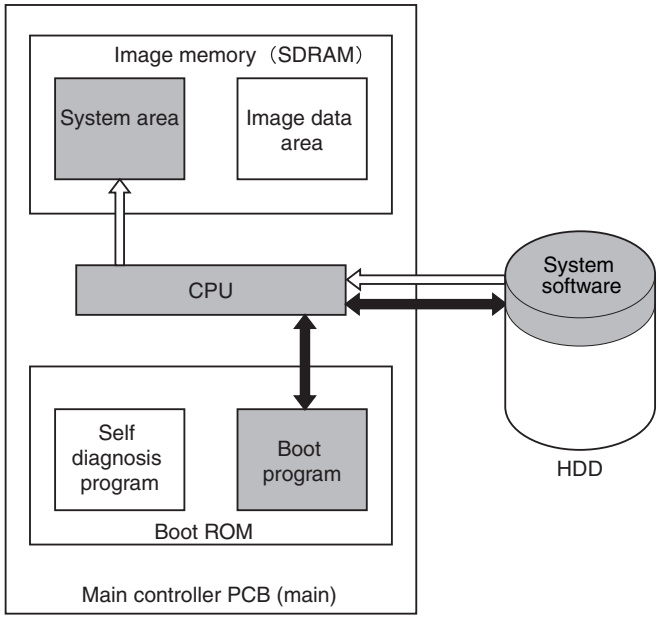
・Self diagnosis program being executed



⟷ : access to program at time of execution.

F-4-10

- Boot Program in Execution



F-4-11

4.4 Actions when HDD Error (E602)

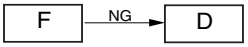
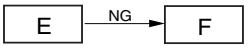
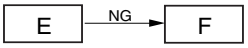
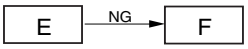
4.4.1 E602 in Detail

0002-3236

If the machine suffers a fault associated with E602-xxyy, it calls for different remedial actions as identified by the sub code.

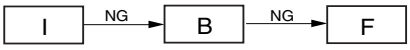
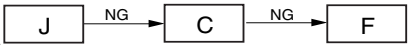
⚠if E602-xxyy is indicated, be sure always to turn off and then on the machine (so that it will run auto recovery sequence).

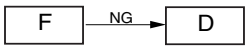
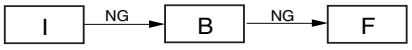
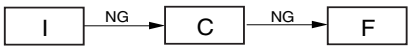
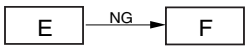
T-4-11

xx	Partition	yy	Description
00	HDD as a whole	01	The machine cannot recognize the HDD. The machine cannot find BOOTDEV at time of startup. Remedy: Turn off the main power, and check the connection of the 2 types of cables (power, IDE) connecting to the HDD; then, turn on the power. When doing so, check to see if the HDD rotates and if the power is supplied. 
		02	The machine cannot find the system software for the CPU of the main controller (main) in BOOT DEV. Remedy: 
		03	The machine detects a read error sector while it is reading data from BOOTDEV. Remedy:
		06	The machine cannot find the system software for the CPU of the main controller (sub) in BOOTDEV. Remedy: 
		07	The machine cannot find an appropriate ICCProfile in BOOTDEV/PDLDEV. Remedy: 

xx	Partition	yy	Description

T-4-12

xx	Partition	yy	Description
01 02 03 04 05 06 07 08 09 FF	DOSDEV FSTDEV DOSDEV2 FSTPDEV DOSDEV3 PDLDEV DOSDEV4 BOOTDEV DOSDEV5 not identified	01, 02	The machine has encountered a read error or a file system error while starting up. Remedy:  if xxyy is 0701, 0702. Remedy: Ask the user to use the RUI to collect address book data, transfer settings, and user mode data.  if xxyy is 0801, 0802. Remedy: if xxyy is FF01, FF02. Remedy:
		03	The machine has encountered an HDD contact fault or, operating system error. Remedy: Turn off the main power, and check the 2 types of cable (power, IDE) connecting to the HDD; then, turn on the main power. While doing so, check to see if the HDD rotates and if power is supplied.
		11,21	The machine has encountered an HDD contact fault.

xx	Partition	yy	Description
			Remedy: Turn off the main power, and check the 2 types of cable (power, IDE) connecting to the HDD; then,turn on the power. While doing so, check to see if the HDD rotates and if the power is supplied. 
		13,25	The machine has encountered a read error. Remedy:  if xxyy is 0713, 0725. Remedy:  if xxyy is 0813, 0825. Remedy:
		10,12,14, 22,23, 24	The machine has encountered a system error or a packet data error. Remedy: 

A :

1) Make the following selections, and enter '1': COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HDCHECK*.
3) When done, turn off and then on the main power.

B :

1) Find the appropriate CHK-TYPE from the table 'HDD Format' ; then, make the followingselections, and type: COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CLEAR.
3) When done, turn off and then on the main power.

C :

1)** Start up the machine in normal mode (i.e., turn on the main power while pressing the 1 and 7 keys ; then, make the following selections, and press the OK key: COPIER>FUNCTION>SYSTEM>DOWNLOAD).
2) Execute formatting of DOSDEV4 using the Service Support Tool.

3) When done, turn off and then on the main power.

D:

1) Replace the main controller (main) board.
2) Remove the image memory (SDRAM) and the boot ROM from the previous board, and mount them on the new board.

E:

1)** Start up the machine in safe mode (i.e., turn on the power while pressing the 2 and 8 keys).
2) Format the HDD (ALL) using the Service Support Tool, and download the system software (SYSTEM, LANG, RUI).
3) When done, turn off and then on the main power.

F:

1)** Replace the HDD, and start up the machine in safe mode (i.e., turn on the main power while pressing the 2 and 8 keys).
2) Format the HDD (ALL) using the Service Support Tool, and download the system software (SYSTEM, LANG, RUI).
3) When done, turn off and then on the main power.

G:

1) Make the following selections, and enter '1': COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CLEAR.
3) When done, turn off and then on the main power.

H:

1) Turn off the main power; then, turn on the main power while pressing the 1 and 9 keys (so that the machine will automatically start its remedial program*, turning the control panel solid black).

2) When done (i.e., when the control panel turns white), turn off and then on the main power.

⚠ If the machine does not run its remedial program in response to the foregoing step, go to E.

I :

1) Find the appropriate CHK-TYPE in the table "HDD Format"; then, make the following selections and enter CHK-TYPE.
2) Make the selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CHECK*.
3) When done, turn off and then on the main power.

J:

1) Make the following selections, and enter '4': OPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CHECK (1 to 5 min).
3) When done, turn off and then on the main power.

* Takes about 30 to 50 min.

** As necessary, ask the user to use the RUI to collect address book data, transfer settings, and user mode settings.

T-4-13

HDD Format

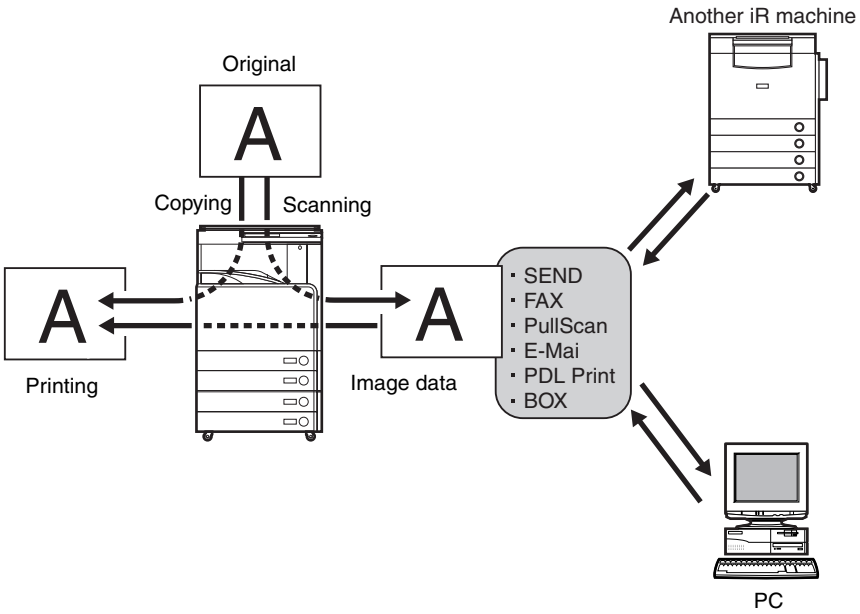
Partition	CHK-TYPE	Typical data item deleted
DOSDEV	1	all relating to images (reservation, Box, fax); mode memory, routine task button
FSTDEV	1	
DOSDEV2	1	
FSTPDEV	1	
DOSDEV3	2	PDL spool
PDLDEV	3	PDL-related file (font, registration form, ICCProfile)
DOSDEV4	4	user data (address book, transfer settings), system software
BOOTDEV	4	
DOSDEV5	5	-
non specific	0	-

4.5 Image Processing

4.5.1 Outline of the Flow of Image Processing

0000-7745

The machine processes images as follows using its various functions:

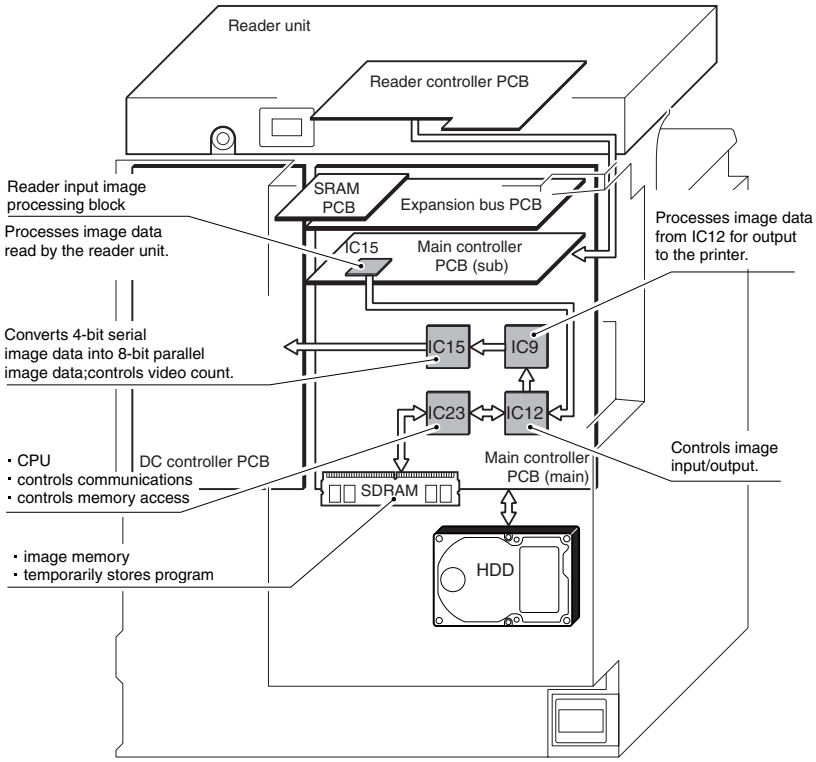


F-4-12

4.5.2 Construction of the Image Processing Module

0000-7749

The machine's major image processing is handled by the main controller PCB (main), and the following modules are associated with the work:

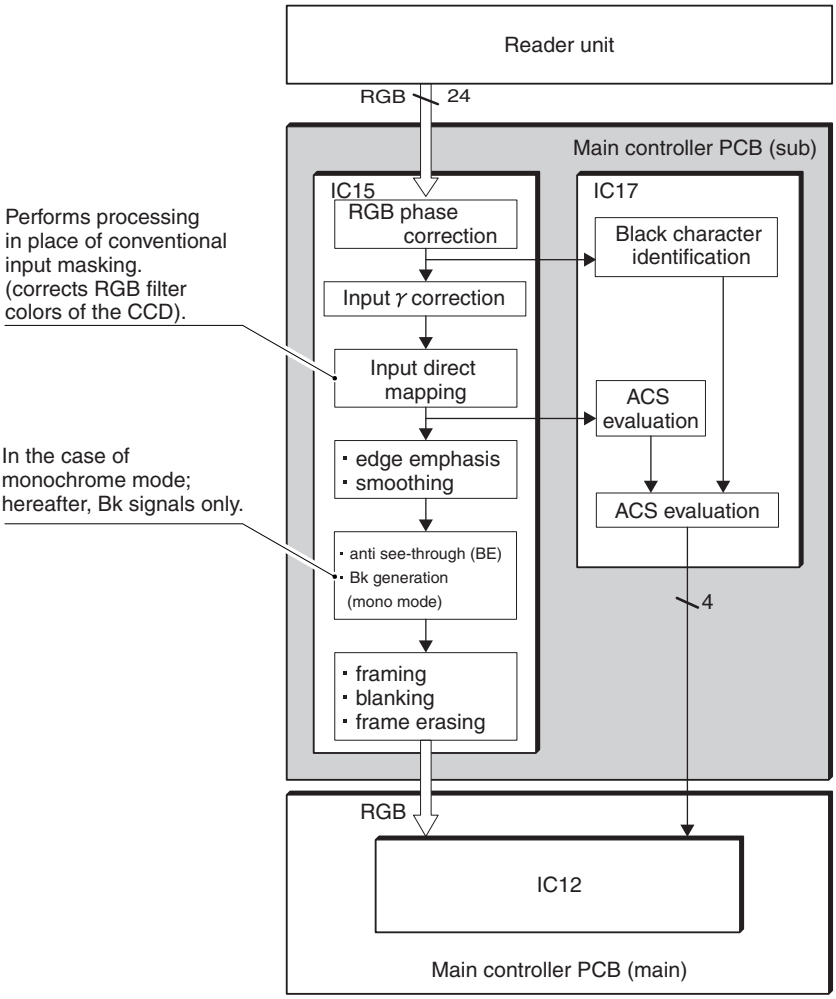


F-4-13

4.5.3 Reader Input Image Processing

0000-7750

The image data (RGB) collected by the contact image sensor is processed by the main controller PCB (sub).

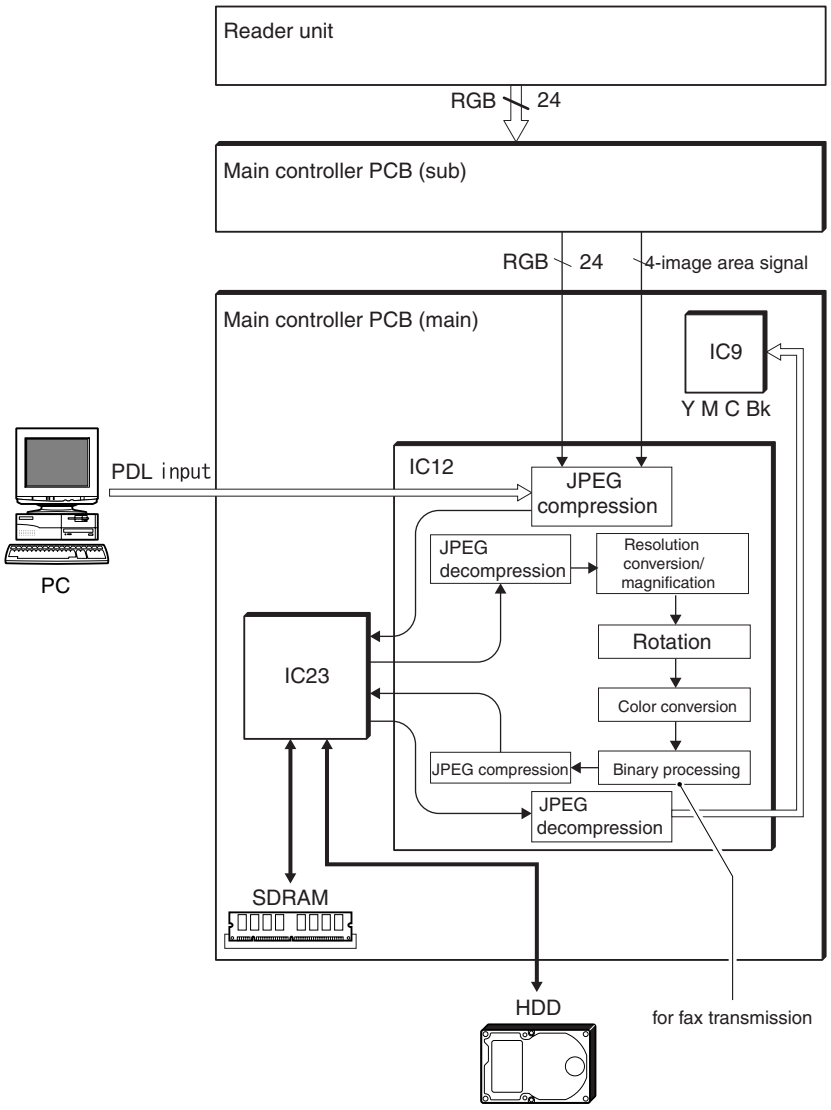


F-4-14

4.5.4 Compression/Decompression and Editing Blocks

0000-7753

IC12 is used to compress/decompress and edit various data.

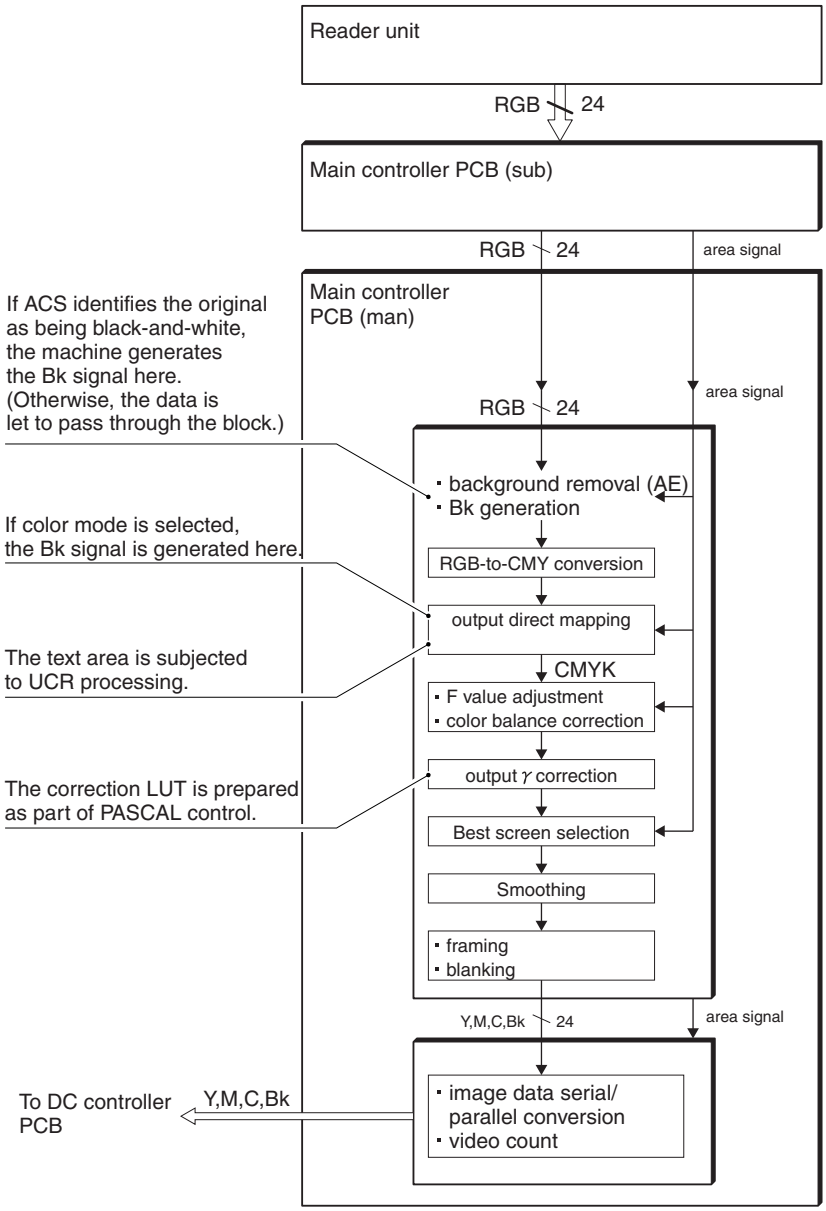


F-4-15

4.5.5 Printer Output Image Processing

0000-7754

Main controller PCB processes image data from the Reader unit for output to the printer.


Reader unit
RGB
24
Main controller PCB (sub)
RGB
24
area signal
Main controller PCB (man)
If ACS identifies the original as being black-and-white, the machine generates the Bk signal here. (Otherwise, the data is let to pass through the block.)
RGB
24
area signal
background removal (AE)
Bk generation
If color mode is selected, the Bk signal is generated here.
RGB-to-CMY conversion
output direct mapping
The text area is subjected to UCR processing.
CMYK
F value adjustment
color balance correction
output γ correction
The correction LUT is prepared as part of PASCAL control.
Best screen selection
Smoothing
framing
blanking
Y,M,C,Bk
24
area signal
To DC controller PCB
Y,M,C,Bk
image data serial/ parallel conversion
video count

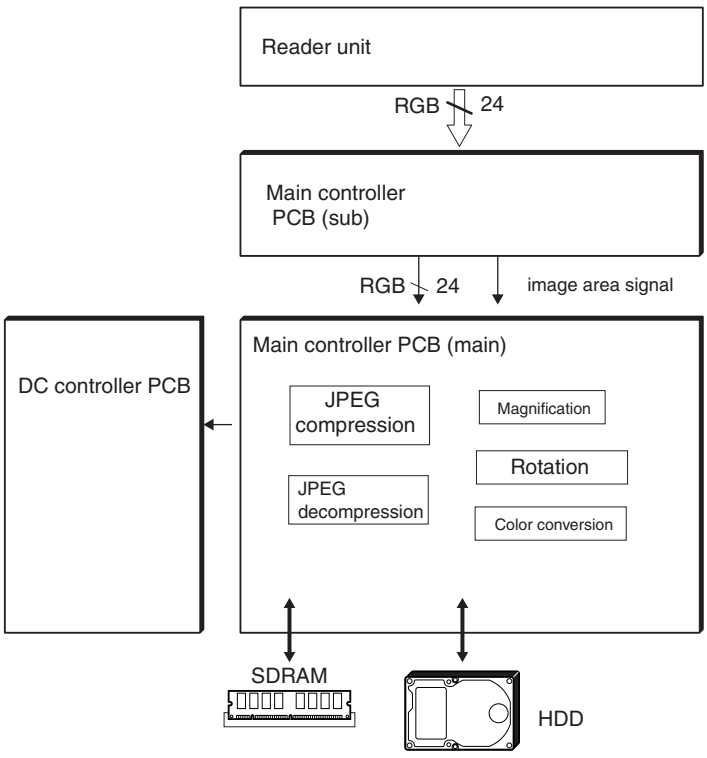
F-4-16

4.6 Flow of Image Data

4.6.1 Flow of Image Data (copier function)

0000-7755

The following shows the flow of image data when copier functions are used:

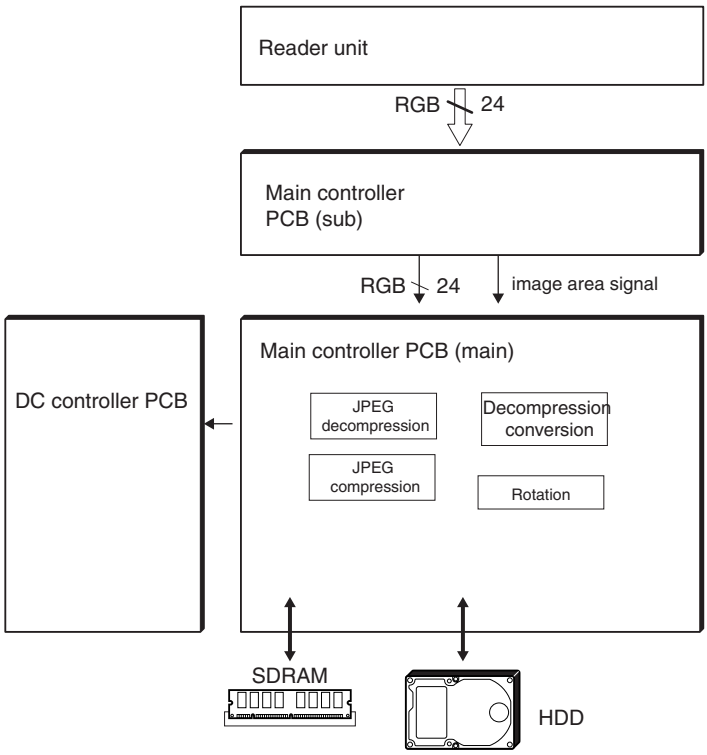


F-4-17

4.6.2 Flow of Image Data (Box function)

0000-7757

The following shows the flow of image data when Box functions are used.

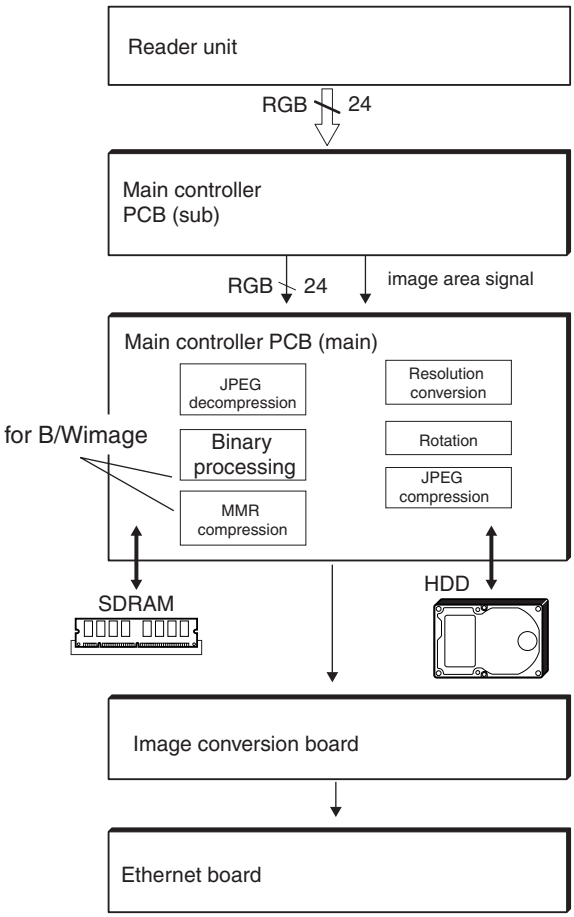


F-4-18

4.6.3 Flow of Image Data (SEND function)

0000-7760

The following shows the flow of image data when SEND functions are used.

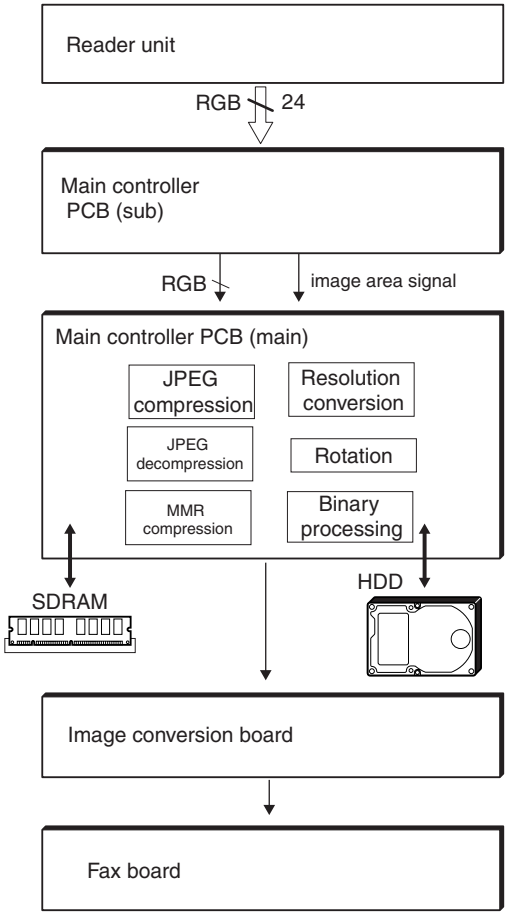


F-4-19

4.6.4 Flow of Image Data (fax transmission)

0000-7764

The following shows the flow of image data when fax transmission functions are used:

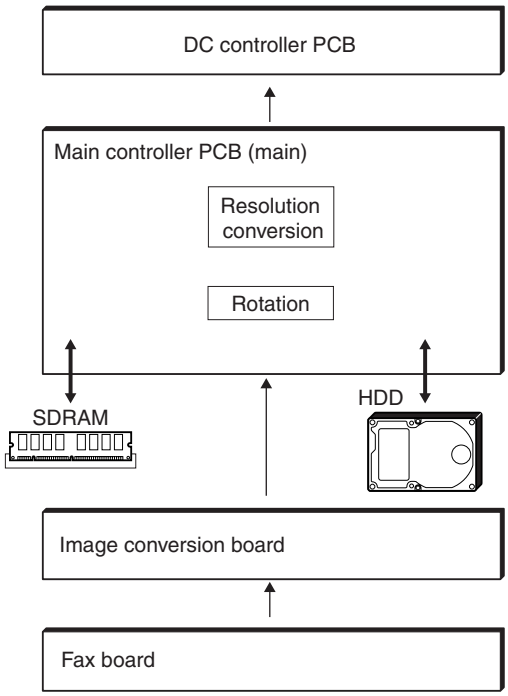


F-4-20

4.6.5 Image Data Flow for Fax Reception Functions

0000-7766

The following is the flow of image data used for fax reception functions.

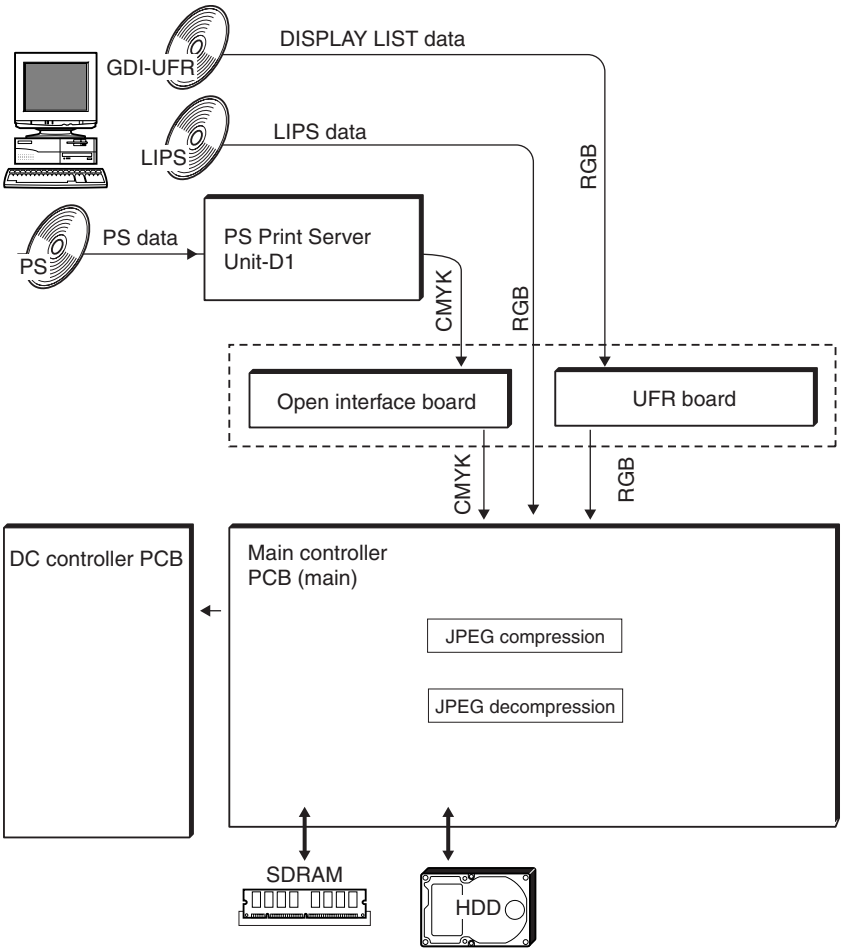


F-4-21

4.6.6 Flow of Image Data (PDL function)

0000-7770

The following shows the flow of image data when PDL functions are used:


GDI-UFR
DISPLAY LIST data
LIPS
LIPS data
RGB
PS
PS data
PS Print Server
Unit-D1
CMYK
RGB
Open interface board
UFR board
CMYK
RGB
DC controller PCB
Main controller
PCB (main)
JPEG compression
JPEG decompression
SDRAM
HDD

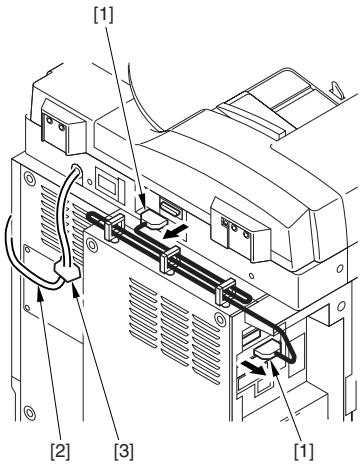
F-4-22

4.7 Parts Replacement Procedure

4.7.1 Controller Box

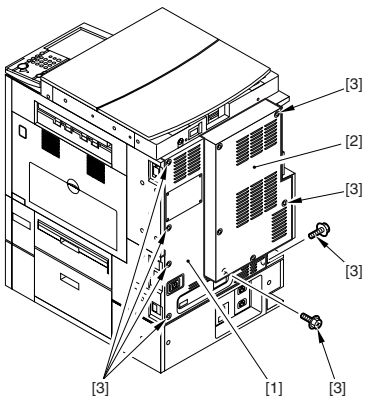
4.7.1.1 Removing the Rear Cover (right) 0002-5415

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-4-23

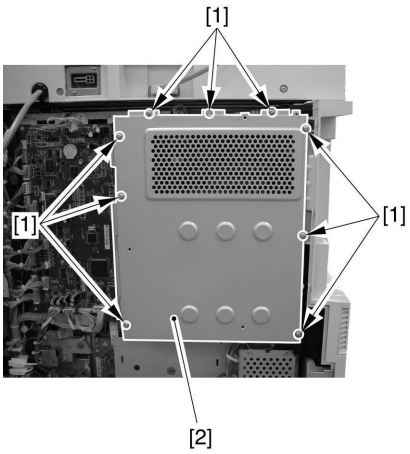
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-4-24

4.7.1.2 Removing the Controller Box Cover 0002-5528

1) Remove the 9 screws [1], and detach the controller box cover [2].

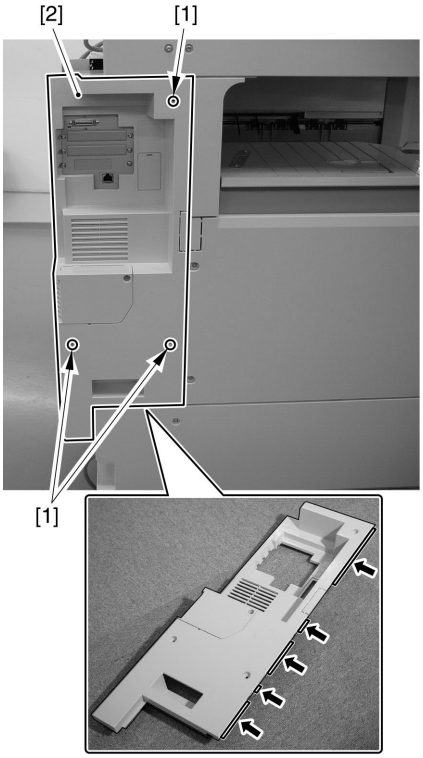


F-4-25

4.7.1.3 Removing the Left Cover (rear) 0002-5548

1) Remove the 3 screws [1], and detach the rear left cover [2].

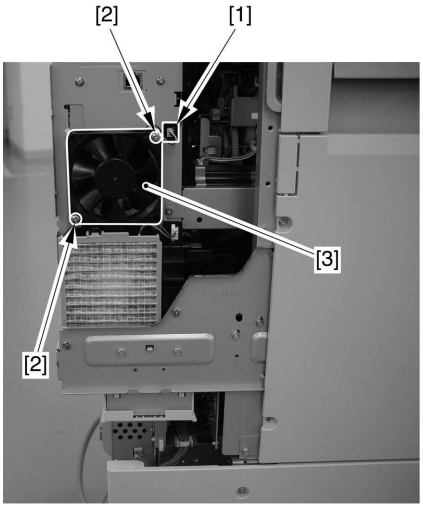
⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.



F-4-26

4.7.1.4 Removing the Controller Fan 0002-0165

1) Disconnect the connector [1] of the host machine, and remove the 2 screws [2]; then, detach the controller fan [3].

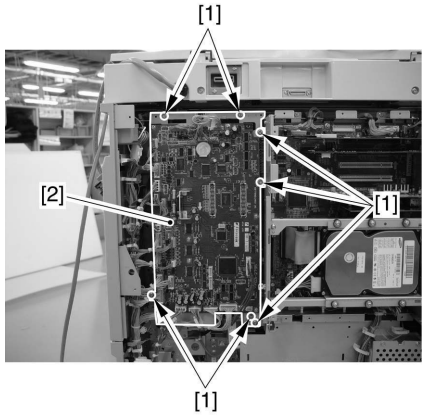


F-4-27

4.7.1.5 Removing the Controller Box 0000-9917

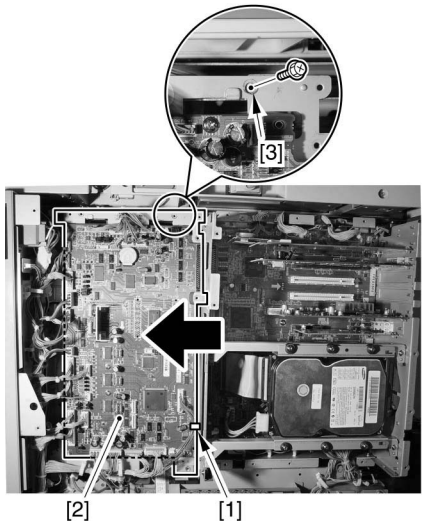
1) Remove the 7 screws [1].

⚠Free the DC controller PCB base [2]. (You need not detach it.)



F-4-28

2) Free the wire saddle [1], and slide the DC controller PCB base [2] in the direction of the arrow.
Fit the removed screw in the hole [3]; then, temporarily fix the DC controller PCB base [2] in place.

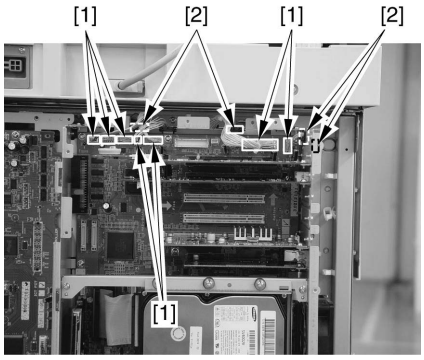


F-4-29

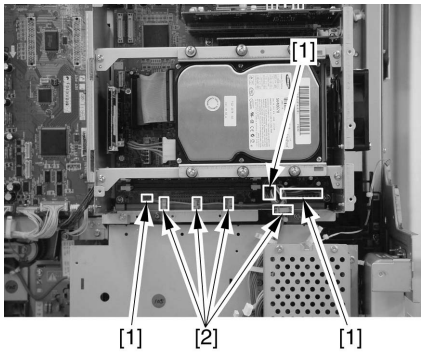
3) Disconnect the 10 connectors [1] of the main controller PCB; then, remove the 8 wire saddles.

⚠If a fax unit is installed, you will have to

disconnect 12 connectors in the case of a Japanese model or 11 connectors in the case of a non-Japanese model.

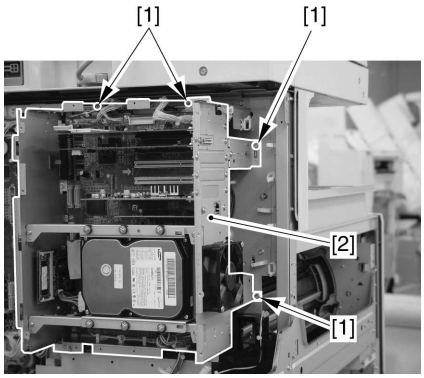


F-4-30

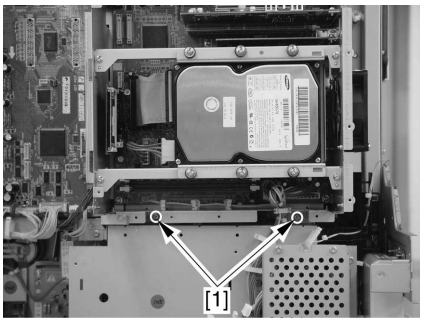


F-4-31

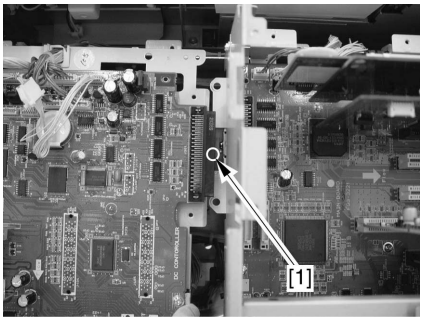
4) Remove the 7 screws, and detach the controller box [2].



F-4-32

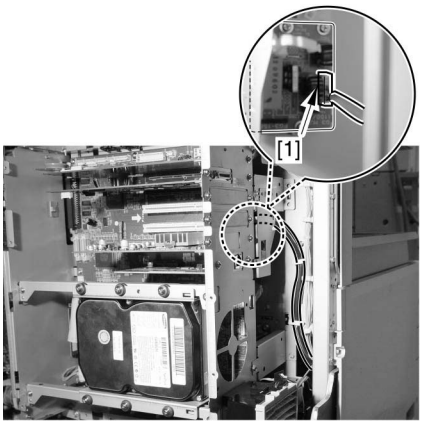


F-4-33



F-4-34

⚠If a fax unit is installed, you will find a connector [1] on the modular PCB found behind the controller box. Be sure to disconnect this connector before detaching the controller box from the machine.

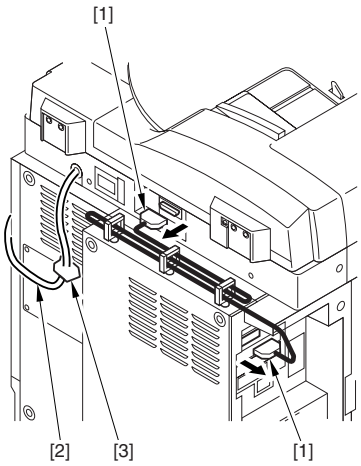


F-4-35

4.7.2 Main Controller PCB (main)

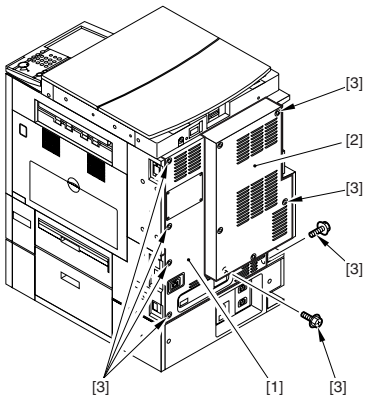
4.7.2.1 Removing the Rear Cover 0002-5418

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-4-36

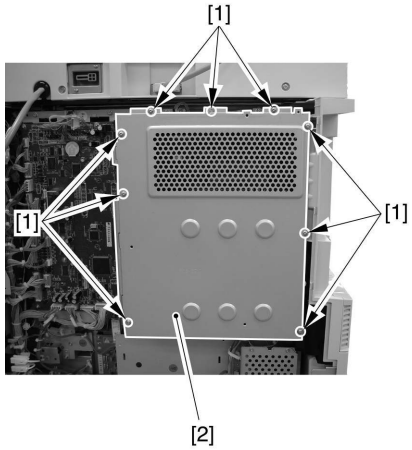
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-4-37

4.7.2.2 Removing the Controller Box Cover 0002-5530

1) Remove the 9 screws [1], and detach the controller box cover [2].

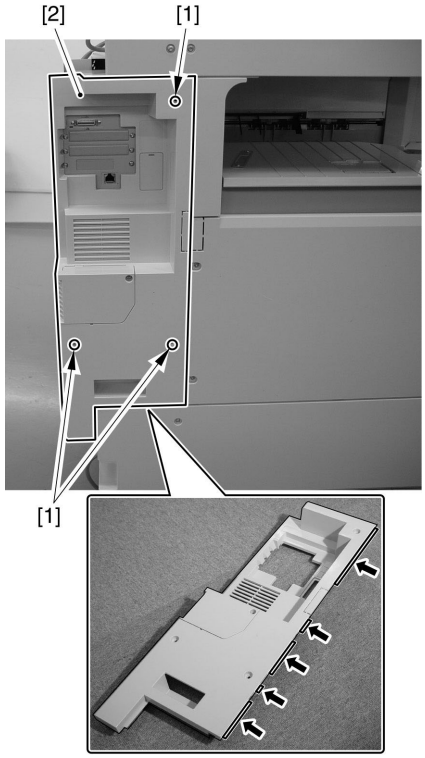


F-4-38

4.7.2.3 Removing the Left Cover (rear) 0002-5550

1) Remove the 3 screws [1], and detach the rear left cover [2].

⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.

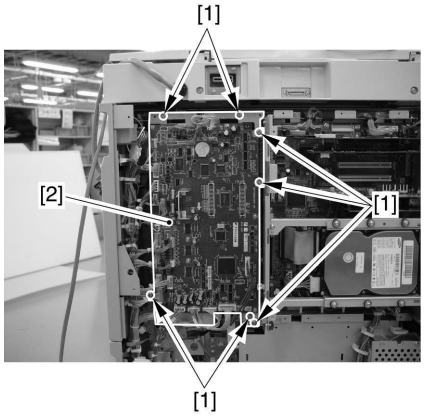


F-4-39

4.7.2.4 Removing the Main Controller PCB (main) 0000-8109

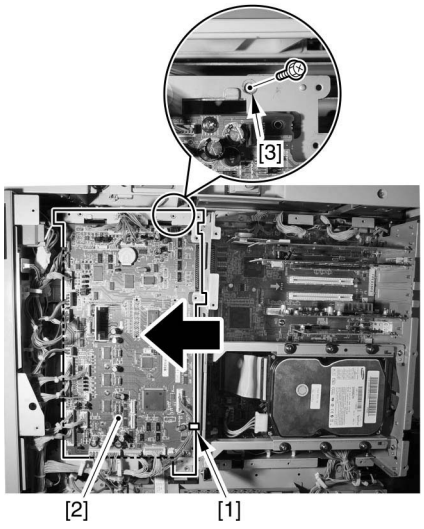
1) Remove the 7 screws.

⚠Free the DC controller PCB base [2]. (You need not detach it.)



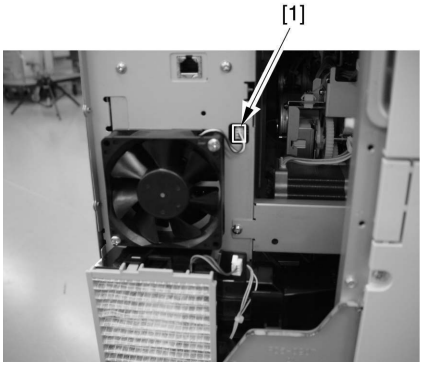
F-4-40

2) Free the wire saddle [1], and slide the DC controller PCB base [2] in the direction of the arrow.
Fit the removed screw in the hole [3], and temporarily fix the DC controller PCB base in place.



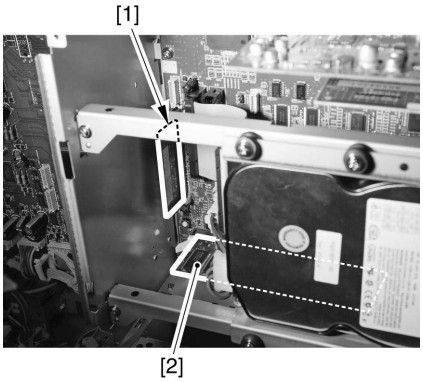
F-4-41

3) Disconnect the connector [1] of the controller fan.



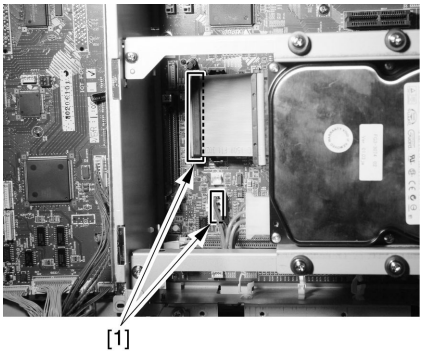
F-4-42

4) Remove the boot ROM [1] and the image memory (SDRAM) [2].



F-4-43

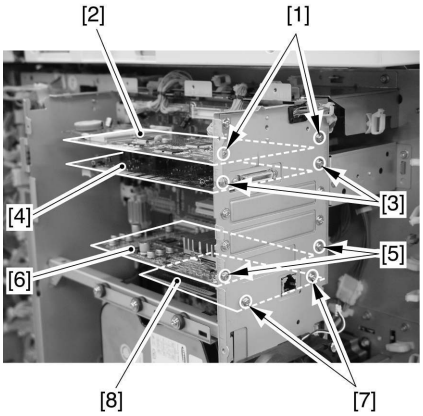
5) Disconnect the 2 connectors [1].



F-4-44

6) Remove the screws [1] [3] [5] [7], 3 pc. each; then, detach the following:
- expansion bus PCB [2]
- main controller PCB (sub) [4]

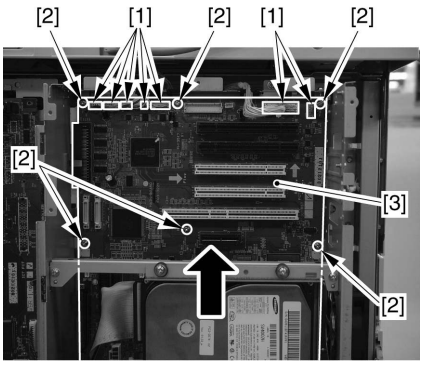
- UFR board [6]
- Ethernet board [8]



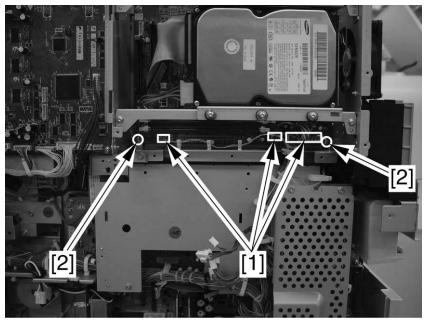
F-4-45

7) Disconnect the 10 connectors [1], and remove the 8 screws [2]; then, slide the main controller PCB (main) [3] in the direction of the arrow to detach.

⚠If a fax unit is installed, you will have to disconnect 12 connectors [1] in the case of a Japanese model or 11 connectors in the case of a non-Japanese model.



F-4-46

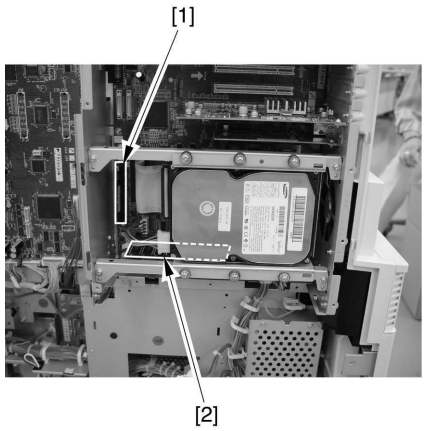


F-4-47

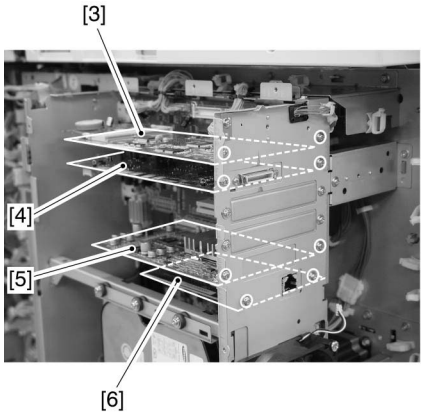
4.7.2.5 After Replacing the Main Controller PCB (main) 0000-8110

When you have mounted the main controller PCB (main), be sure to mount the PCBs you may have removed before starting the work:

[1] Boot ROM
[2] Image memory (SDRAM)
[3] Expansion bus PCB
[4] Main controller PCB (sub)
[5] UFR board
[6] Ethernet board



F-4-48

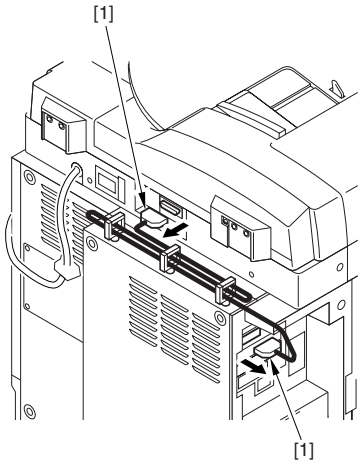


F-4-49

4.7.3 Main Controller PCB (sub)

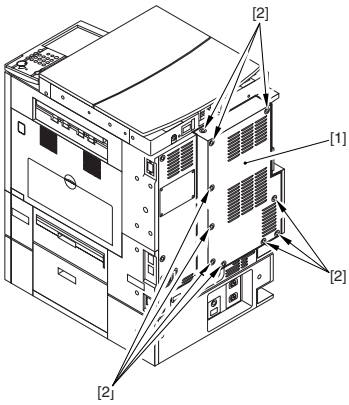
4.7.3.1 Removing the Rear Cover (right) 0002-4090

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-4-50

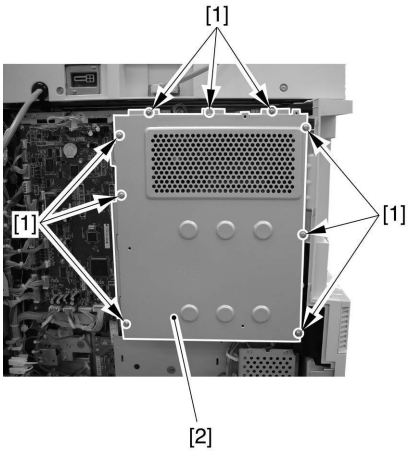
2) Remove the rear cover (right) [1]. (9 screws [3])



F-4-51

4.7.3.2 Removing the Controller Box Cover 0002-5531

1) Remove the 9 screws [1], and detach the controller box cover [2].

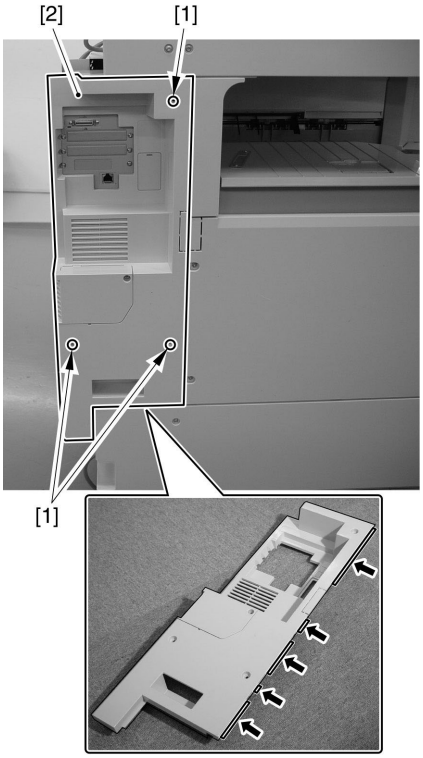


F-4-52

4.7.3.3 Removing the Left Cover (rear) 0002-5551

1) Remove the 3 screws [1], and detach the rear left cover [2].

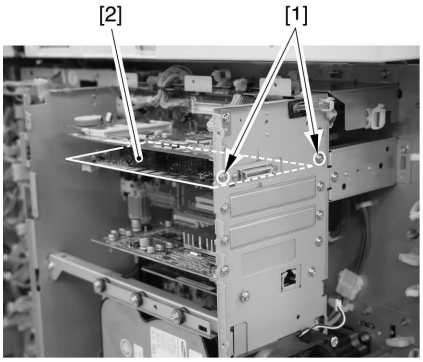
⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.



F-4-53

4.7.3.4 Removing the Main Controller PCB (sub) 0000-8112

1) Remove the 2 screws [1], and detach the main controller PCB (sub) [2].

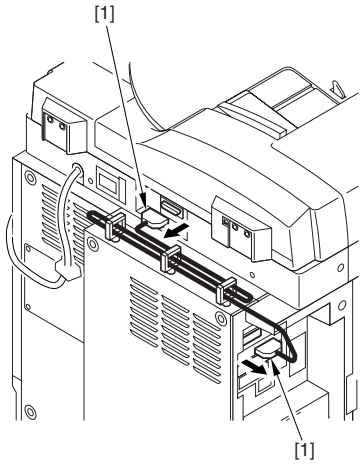


F-4-54

4.7.4 Expansion Bus PCB

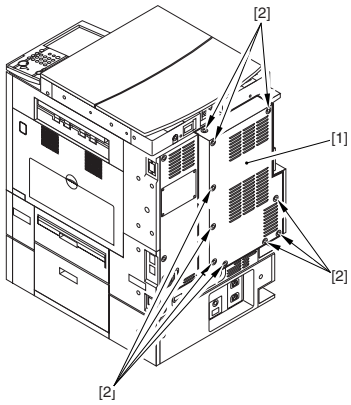
4.7.4.1 Removing the Rear Cover (right) 0002-4092

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-4-55

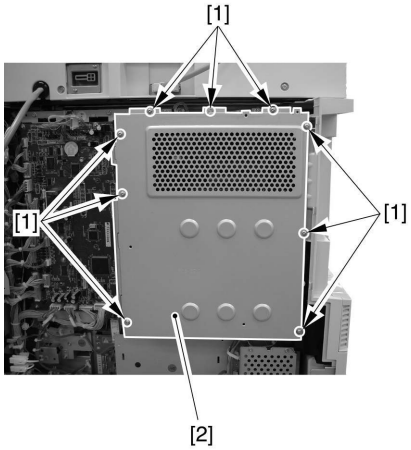
2) Remove the rear cover (right) [1]. (9 screws [3])



F-4-56

4.7.4.2 Removing the Controller Box Cover 0002-5534

1) Remove the 9 screws [1], and detach the controller box cover [2].

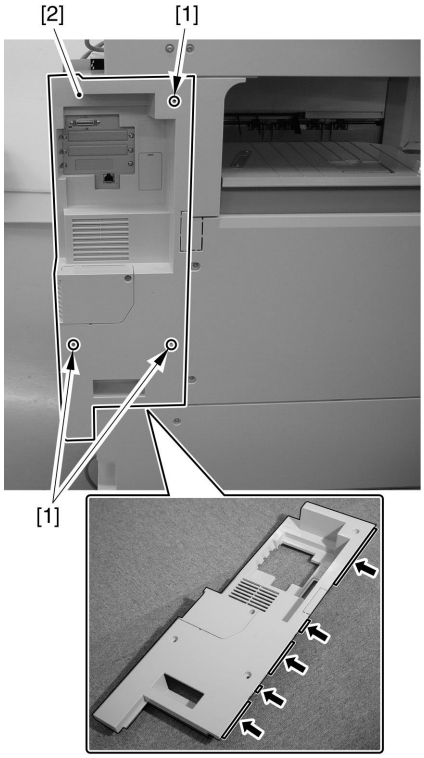


F-4-57

4.7.4.3 Removing the Left Cover (rear) 0002-5552

1) Remove the 3 screws [1], and detach the rear left cover [2].

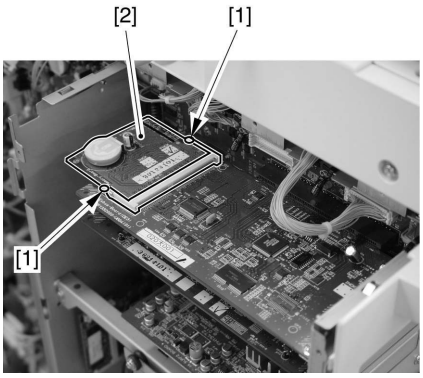
⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.



F-4-58

4.7.4.4 Removing the SRAM Board 0002-0214

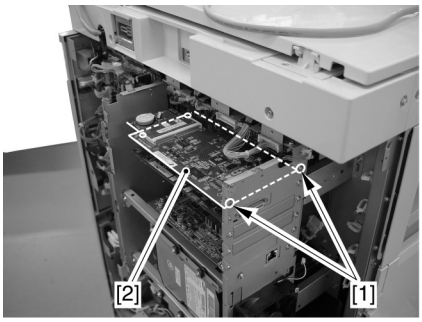
1) Free the 2 locks [1], and detach the SRAM board [2].



F-4-59

4.7.4.5 Removing the Expansion Bus PCB 0000-9926

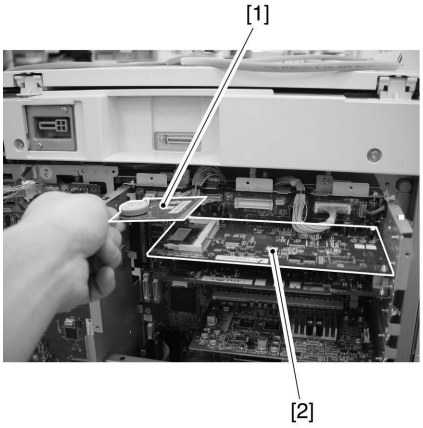
1) Remove the 2 screws [1], and detach the expansion bus PCB [2].



F-4-60

4.7.4.6 After Replacing the Expansion Bus PCB 0000-9929

Mount the SRAM PCB [1] removed for the old extension bus PCB to the extension bus PCB [2] you have newly mounted.

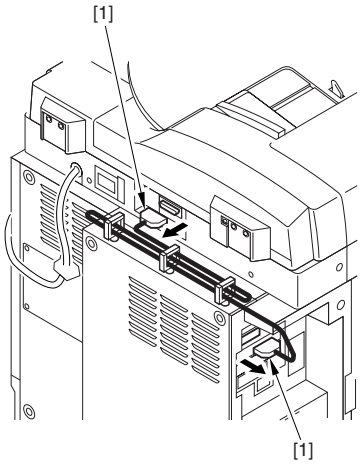


F-4-61

4.7.5 SRAM PCB

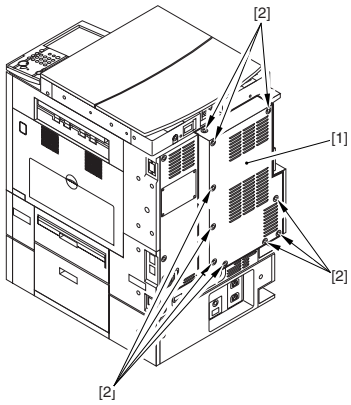
4.7.5.1 Removing the Rear Cover (right) 0002-4093

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-4-62

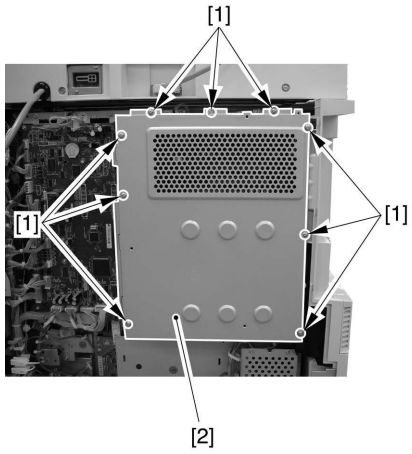
2) Remove the rear cover (right) [1]. (9 screws [3])



F-4-63

4.7.5.2 Removing the Controller Box Cover 0002-5536

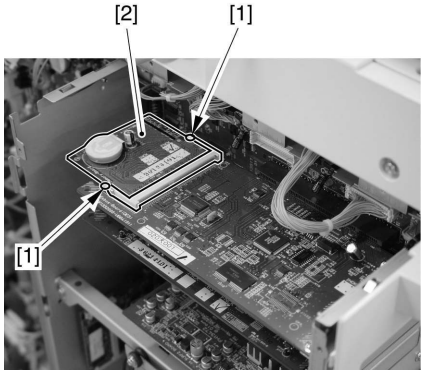
1) Remove the 9 screws [1], and detach the controller box cover [2].



F-4-64

4.7.5.3 Removing the SRAM Board 0000-8114

1) Free the 2 locks [1], and detach the SRAM board [2].



F-4-65

4.7.5.4 After Replacing the SRAM Board 0000-8115

⚠

- Inform the user that replacing the SRAM board will cause all image data in Box to be lost. Be sure to obtain the user's consent before starting the work.
- **Be sure that the SRAM board you are using is a new one.**

  The machine will be likely to malfunction if you use a RAM that has been used in a different printer unit.

1) Replace the SRAM board, and turn on the main power. (The machine will execute automatic initialization.)
2) See that the machine indicates the message "Turn On the Power Switch on the Right Side" on its control panel. Turn off and then on the power.
3) Initialize the RAM.

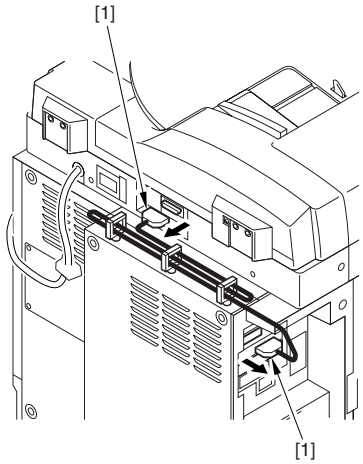
COPIER>FUNCTION>CLEAR>MN-CON

Make the foregoing selections, and press the OK key.

4.7.6 UFR Board

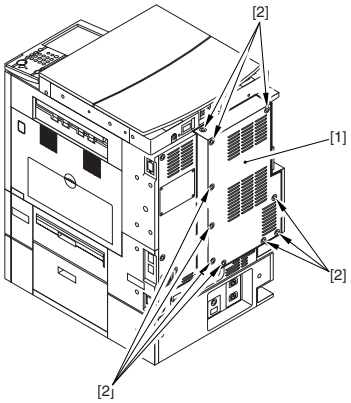
4.7.6.1 Removing the Rear Cover (right) 0002-4098

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-4-66

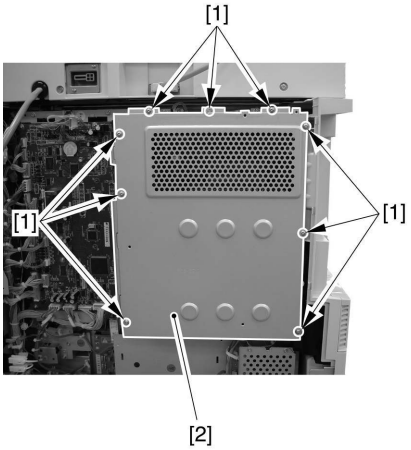
2) Remove the rear cover (right) [1]. (9 screws [3])



F-4-67

4.7.6.2 Removing the Controller Box Cover 0002-5541

1) Remove the 9 screws [1], and detach the controller box cover [2].

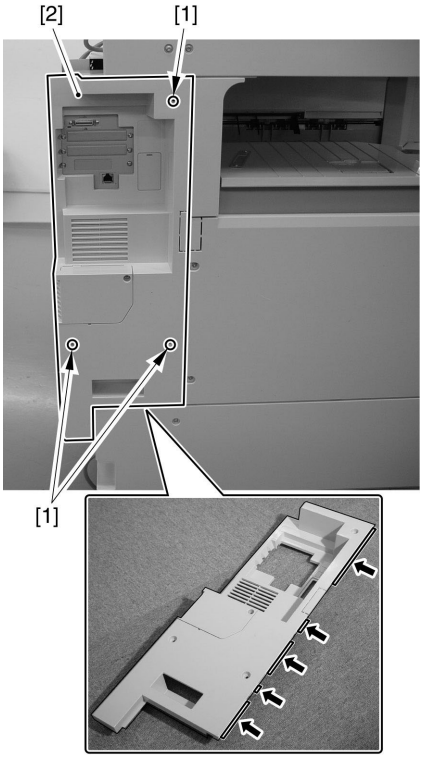


F-4-68

4.7.6.3 Removing the Left Cover (rear) 0002-5555

1) Remove the 3 screws [1], and detach the rear left cover [2].

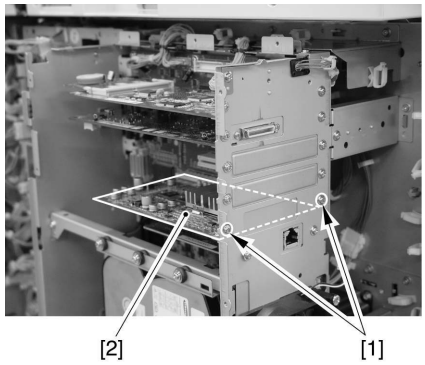
⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.



F-4-69

4.7.6.4 Removing the UFR Board 0002-0137

1) Remove the 2 screws [1], and detach the UFR board [2].

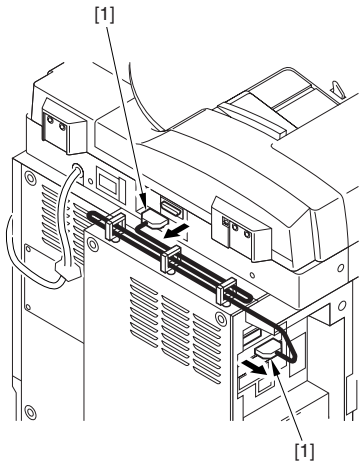


F-4-70

4.7.7 Ethernet Board

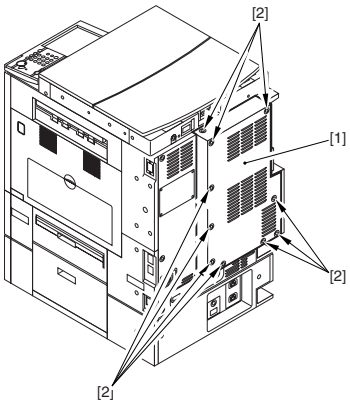
4.7.7.1 Removing the Rear Cover (right) 0002-4094

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-4-71

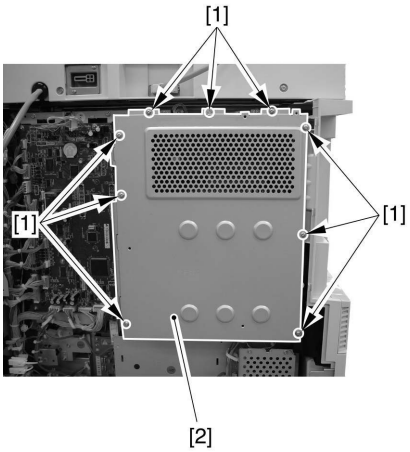
2) Remove the rear cover (right) [1]. (9 screws [3])



F-4-72

4.7.7.2 Removing the Controller Box Cover 0002-5537

1) Remove the 9 screws [1], and detach the controller box cover [2].

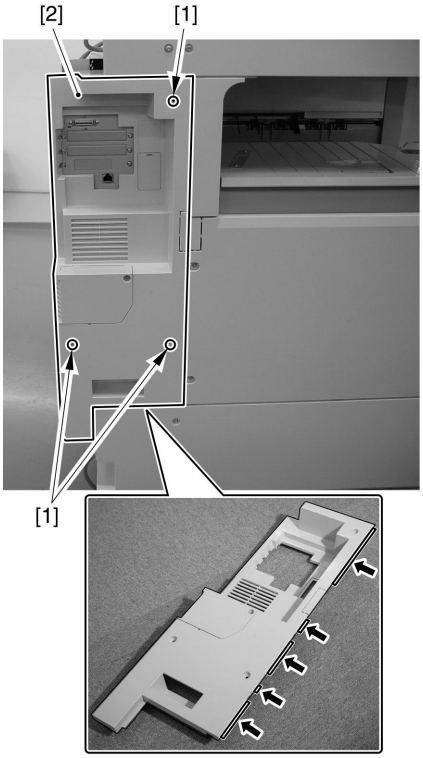


F-4-73

4.7.7.3 Removing the Left Cover (rear) 0002-5553

1) Remove the 3 screws [1], and detach the rear left cover [2].

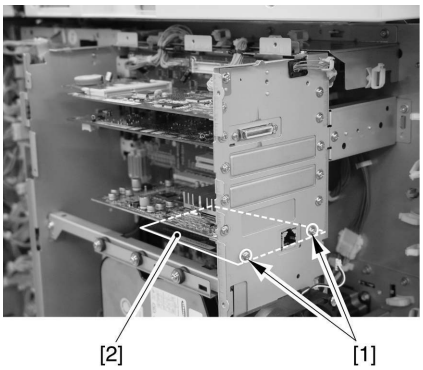
⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.



F-4-74

4.7.7.4 Removing the Ethernet Board 0000-8206

1) Remove the 2 screws [1], and detach the Ethernet board [2].



F-4-75

4.7.8 HDD

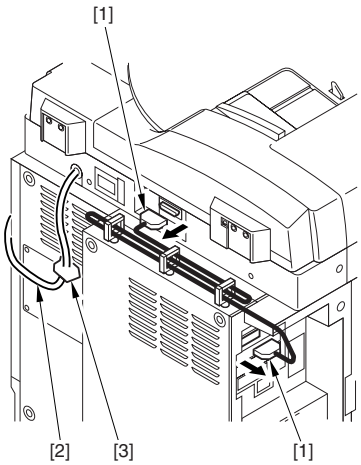
4.7.8.1 Handling the HDD 0002-0209

⚠When removing the HDD, be sure to protect

against static destruction. Keep the HDD free of impact.

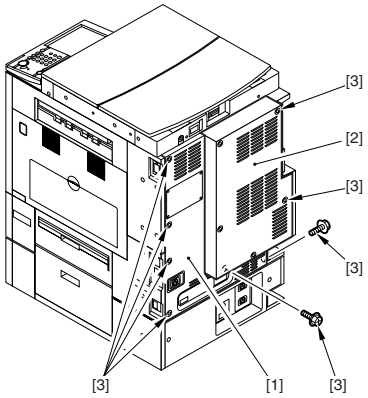
4.7.8.2 Removing the Rear Cover 0002-5547

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-4-76

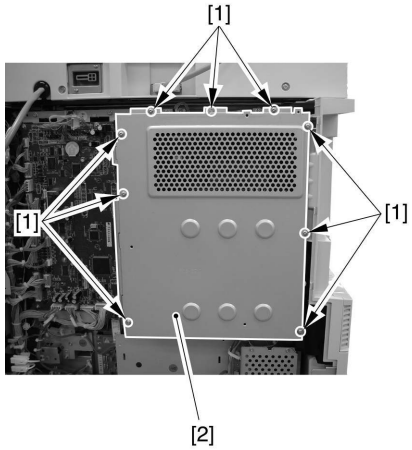
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-4-77

4.7.8.3 Removing the Controller Box Cover 0002-5540

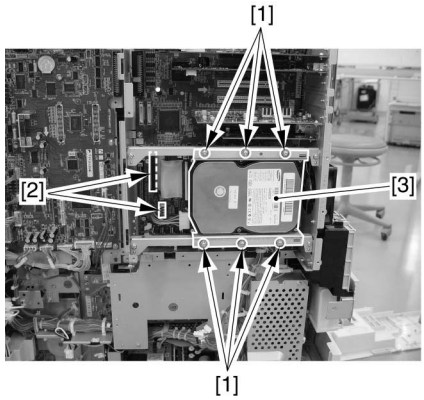
1) Remove the 9 screws [1], and detach the controller box cover [2].



F-4-78

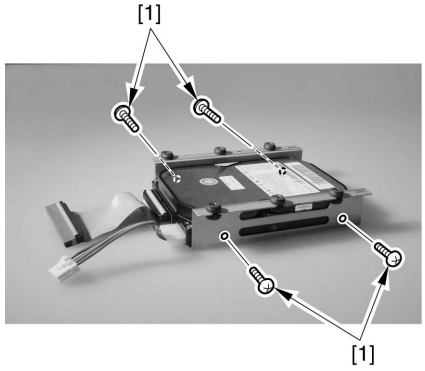
4.7.8.4 Removing the HDD 0000-8117

1) Remove the 6 screws [1], and disconnect the 2 connectors [2]; then, detach the HDD unit [3].



F-4-79

2) Remove the 4 screws [1], and detach the HDD from the HDD unit.



F-4-80

4.7.8.5 After Replacing the HDD 0000-8121

A. If NetSpot Accountant (NSA) Is Not Used

1) Format the HDD.

Start up the machine in safe mode (i.e., turn on the main power while holding down the 2 and 8 keys). Using the SST's HD formatting function, execute formatting of all partitions. (For details, see the instructions on how to upgrade the machine.)

2) Download the system software.

Using the SST, download the system, language, and RUI files.

It may take about 5 min for the machine to start up after a download session.

B. If a Card Reader and NetSpot Accountant (NSA) Are Used

A card ID used by the NSA exists on the HDD. If you have replaced the HDD, you must also download the card data used by the NSA once again; otherwise, you will not be able to make use of statistical management functions of the NSA.

You will first have to format the HDD and download the system software as for A above; thereafter, you need to perform additional steps:

1) Format the HDD.

2) Download the system software.

3) Make the following selections:

COPIER>FUNCTION>INSTALL>CARD

4) Enter a card number.

Enter the number of the first card of those to be used for group control, and press the OK key. (For instance, if the group will be using numbers between 1 through 1000, enter '1'.)

5) Turn off and then on the machine's main power.

6) Make a check.

Make the following selections in Additional Function: system control settings>group ID control>count control; then, check to make sure the following IDs are made ready: ID00000001 through ID00001000.

7) Set the appropriate addresses.

Make the following selections in Additional Function: system control settings>network settings>TCP/IP settings>IP address. Then, set the following addresses: IP address, gateway address, subnet mask.

8) Enter a number.

Make the following selections in Additional Function, and enter a number: system administrator information settings>system control group ID/ system control ID No.

9) Turn off and then on the machine's main power.

⚠Unless you set up the system control ID and the system control ID No., you will not be able to register a card to the machine while using NSA.

10) Download the card ID.

Keep the machine in a standby state, and download the card ID through the NSA.

11) Check the count control.

Make the following selections in Additional Function to bring up the Count Control screen: system control settings>group ID control; then, check to see that only the ID data you have downloaded are indicated.

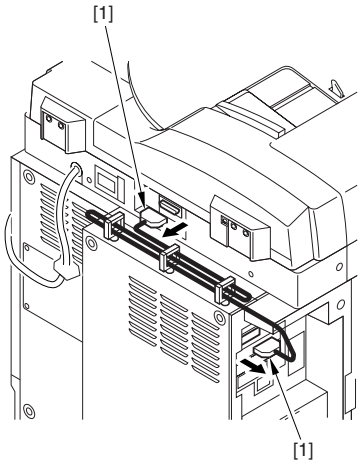
12) Check to see that the operation is normal.

Using a user card that has been registered to the NSA, make copies; then, check that the number of copies you have made are associated with the card you have used in the machine.

4.7.9 Controller Fan

4.7.9.1 Removing the Rear Cover (right) 0002-4096

1) Disconnect the 2 connectors [1] of the DDIS cable.



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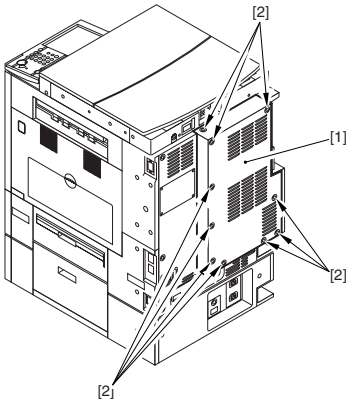
2) Remove the rear cover (right) [1]. (9 screws [3])

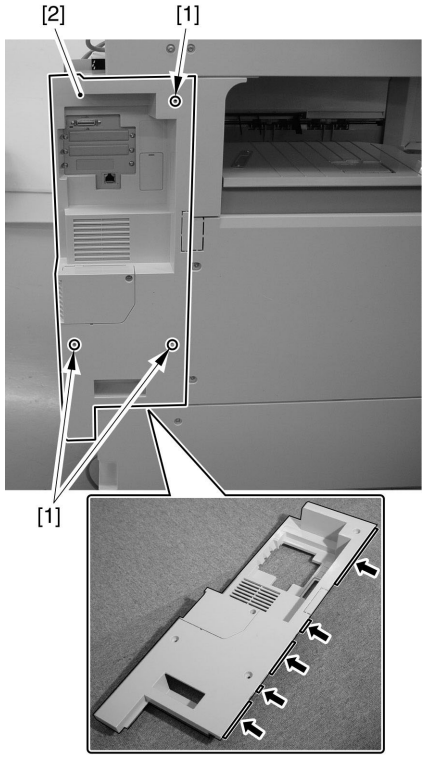


F-4-82

4.7.9.2 Removing the Left Cover (rear) 0002-5554

1) Remove the 3 screws [1], and detach the rear left cover [2].

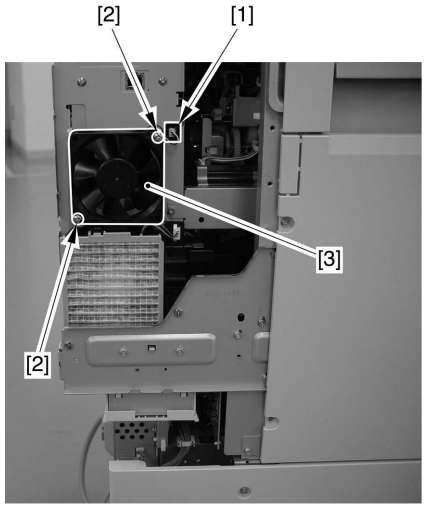
⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.



F-4-83

4.7.9.3 Removing the Controller Fan 0000-8235

1) Disconnect the connector [1] of the host machine, and remove the 2 screws [2]; then, detach the controller fan [3].



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Chapter 5 Original Exposure System

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5.1 Construction

5.1.1 Specifications, Control Mechanisms, and Functions

0000-7715

The following are the major specifications, control mechanisms, and functions associated with the original exposure system:

T-5-1

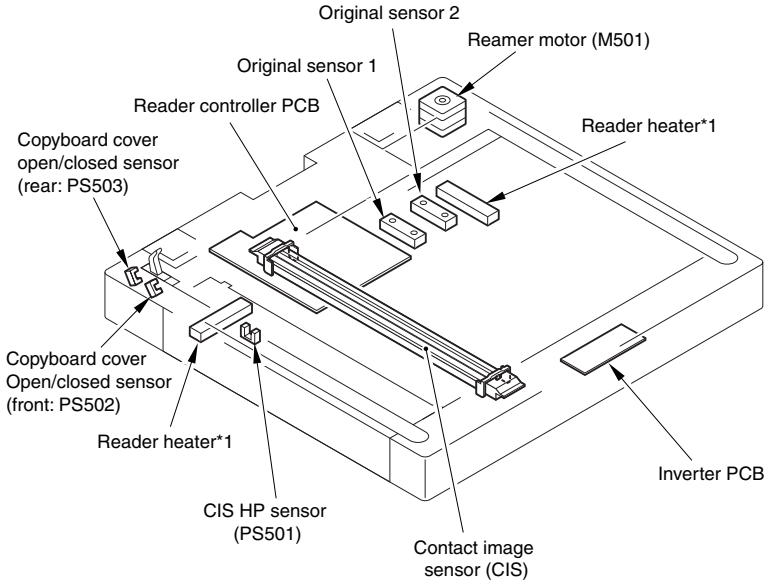
Item	Description
Source of light	Xenon lamp (white)
Scan	in book mode: scan by a moving contact image sensor (CIS)
	in ADF mode: scan by a stationary contact image sensor (CIS; stream reading)
Reading resolution	600 dpi (main scanning direction) x 600 dpi (sub scanning direction)
Number of gradations	256
Productivity (w/ ADF in use)	28 ipm (single-sided, A4/LTR)
Carriage position detection	by contact image sensor (CIS) HP sensor (PS501)
Magnification	25% to 400%
	in main scanning direction: image processing by the main control PCB (main)
	in sub scanning direction: image processing by the main controller PCB (main)
Lens	rod lens array
CCD	number of lines: 3 (RGB)
	Number of pixels: 7488
	maximum reading width: 310 mm
CIS drive control	by reader motor (M501)
Scanning lamp activation control	[1] by inverter circuit
	[2] error detection

Item	Description	
Original size identification	[1] Book Mode	
	main scanning direction:	by contact image sensor (CIS)
	sub scanning mode:	by reflection sensor (AB/Inch)
	[2] ADF mode	
	main scanning direction:	by slide guide in ADF
	sub scanning direction:	by photo sensor in ADF

5.1.2 Major Components

0000-7724

The original exposure system consists of the following major components:



*1: accessories settings (100/230V model only)

F-5-1

T-5-2

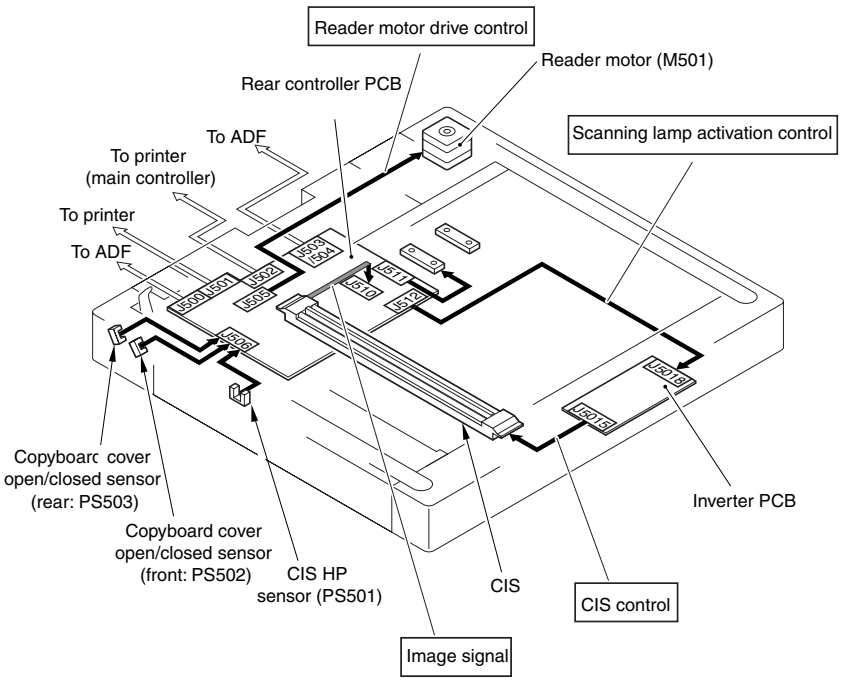
Item	Notation	Description
Contact image sensor (CIS)		xenon lamp (2 pc. of 2400 lx)

Item	Notation	Description
Reader motor	M501	pulse motor (carriage drive control)
CIS HP sensor	PS501	photointerrupter (CIS home position detection)
Copyboard cover open/ closed sensor	PS502/PS503	photointerrupter (copyboard cover state (open/closed) detection)
	(PS502)	sub scanning direction by angle of copyboard cover (lamp ON)
		copyboard cove/ADF: 25 deg (approx.)
	(PS503)	main scanning direction by angle of copyboard cover (about 17 deg)
Original sensor 1	---	original size detection (AB)
Original sensor 2	---	original size detection (Inch)

5.1.3 Construction of the Control System

0000-7730

The control system of the original is constructed as follows:

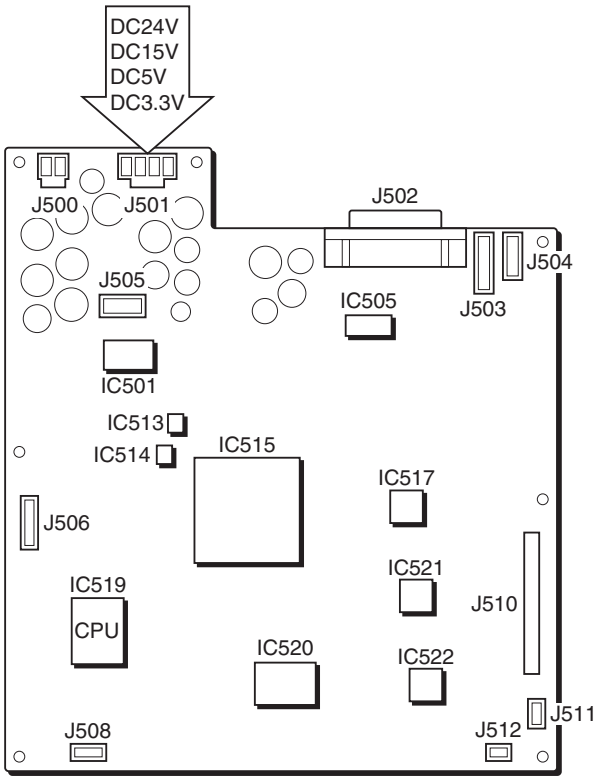


F-5-2

5.1.4 Reader Controller PCB

0000-7731

The following shows the functional construction of the reader controller PCB:



F-5-3

T-5-3

Jack	Description
J500	used to supply power to the ADF.
J501	used for power from the machine (printer unit).
J502	used for communication with the machine (printer unit).
J503	used for communication with the ADF.
J504	used for communication with the ADF.
J505	used for connection to the main motor.
J506	used for connection with the original cover open/closed sensor, CIS HP sensor.
J510	used for connection with the contact image sensor (CIS).
J511	used for connection with the original size sensor (AB/Inch).
J512	used for connection with the inverter PCB.

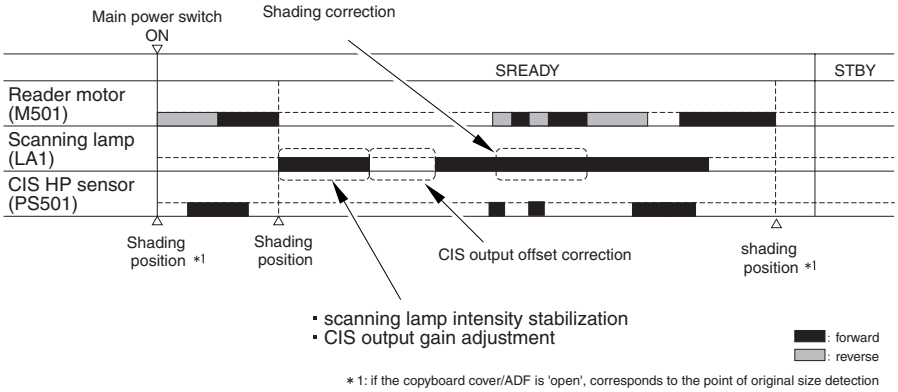
T-5-4

IC	Description
IC501	reader motor driver
IC505	image data parallel/serial conversion
IC513	EEPROM (backup of service mode settings)
IC514	EEPROM (backup of service mode settings)
IC515	image processing (shading correction)
IC517	A/D converter
IC519	CPU (boot program storage)
IC520	system software storage (flash ROM)
IC521	A/D converter
IC522	A/D converter

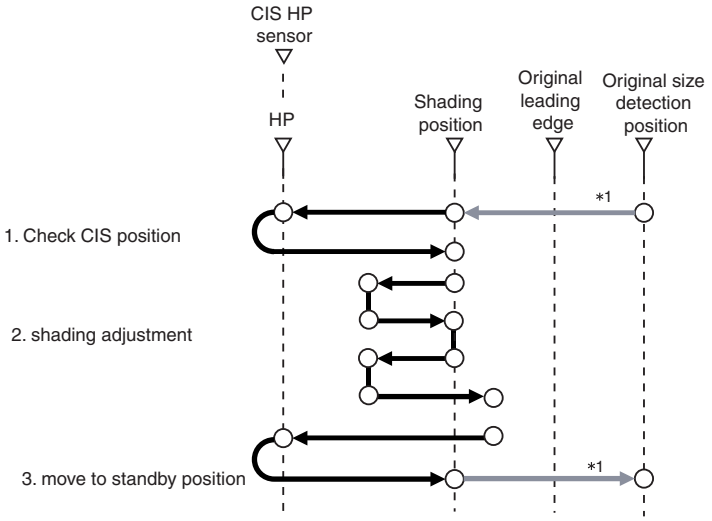
5.2 Basic Sequence

5.2.1 Basic Sequence of Operations at Power-On

0000-7733



F-5-4

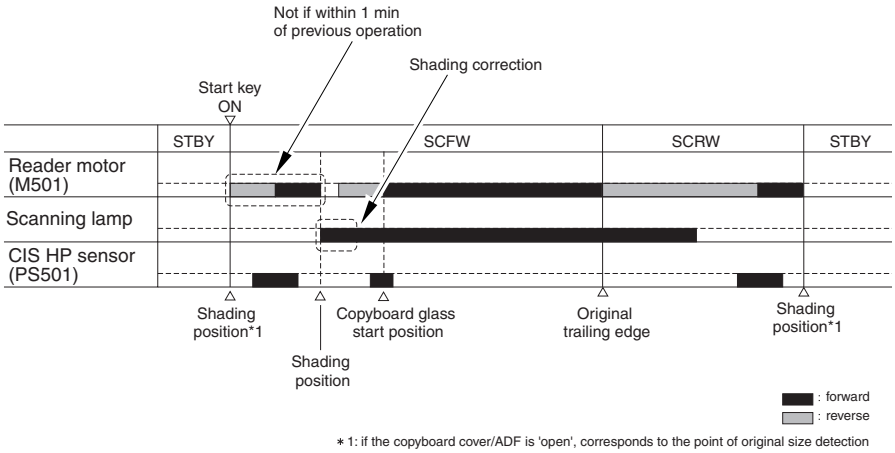


*1:only if the copyboard cover/ADF is 'open'

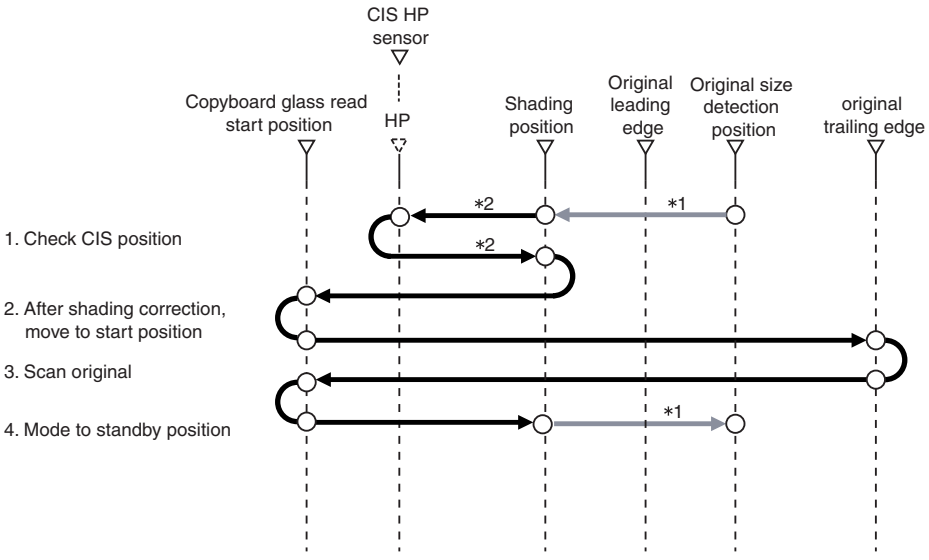
F-5-5

5.2.2 Basic Sequence of Operations in Response to a Press on the Start Key (book mode, 1 original)

0000-7734



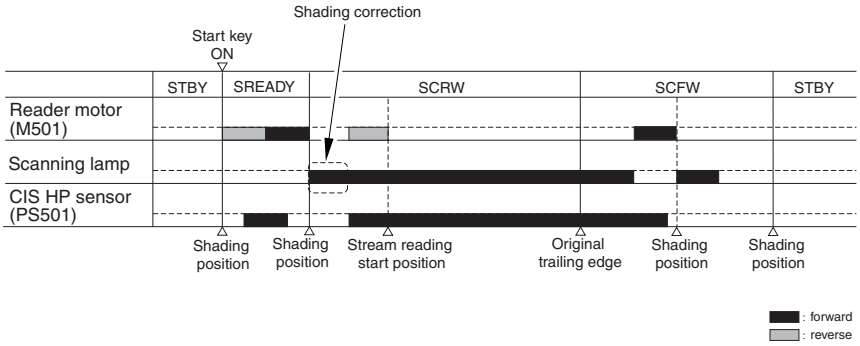
F-5-6



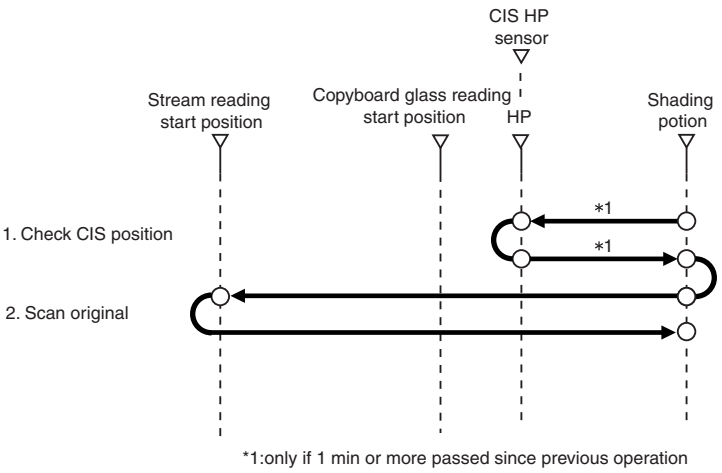
F-5-7

5.2.3 Basic Sequence of Operations in Response to a Press on the Start Key (ADF mode, 1 original)

0001-4991



F-5-8



F-5-9

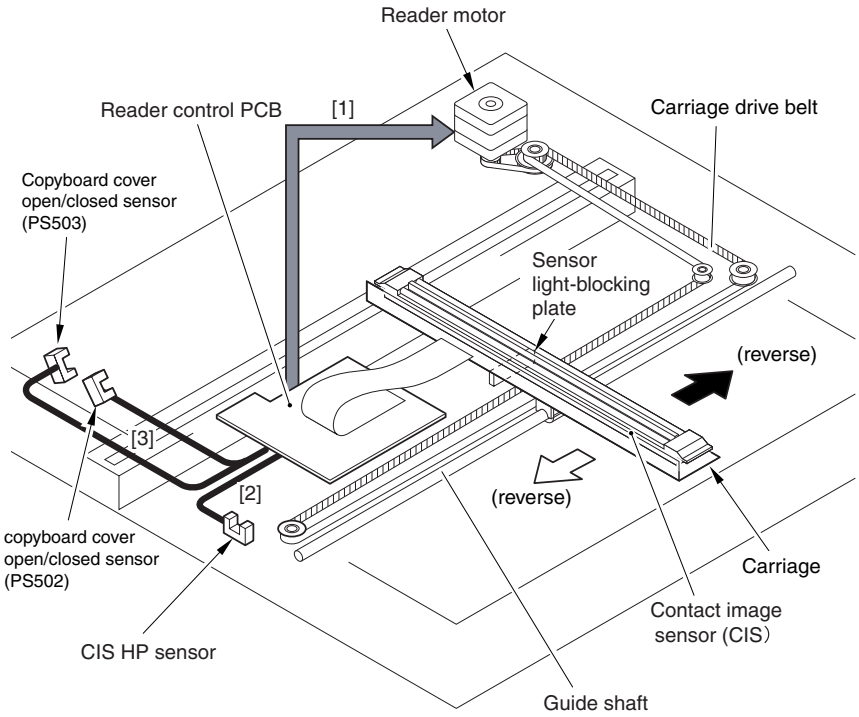
5.3 Various Control

5.3.1 Controlling the Scanner Drive System

5.3.1.1 Overview

0000-7735

The following components are associated with the scanner drive system:



F-5-10

[1] Reader Motor (M501) Drive Signal
used to turn on/off the motor and change its direction/speed of rotation.

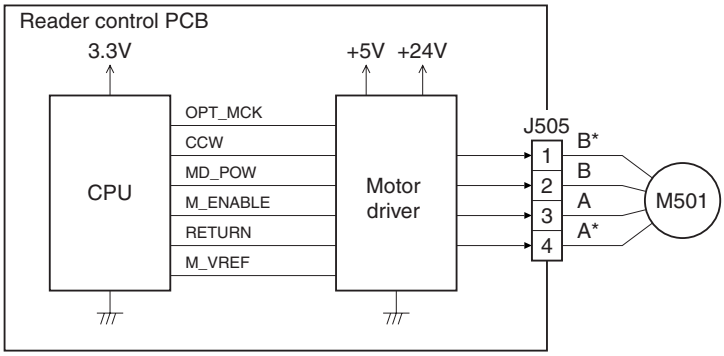
[2] Contact Image Sensor (CIS) Home Position sennsaor (PS501) Detection Signal
used to indicate that the contact image sensor (CIS) is in home position,

[3] Copyboard Cover Sensor (front, PS502; rear, PS503) Detection Sugnal
used to indicate the state (open/closed) of the copyboard cover.
used to turn on/off the motor and change its direction/speed of rotation.
[2] Contact Image Sensor (CIS) HP Sensor (PS501) Detection Signal
used to indicate that the contact image sensor (CIS) is in home position.
[3] Copyboard Cover Sensor (front, PS502; rear, PS503) Detection Signal
Used to indicate the state (open/closed) of the copyboard cover.

5.3.1.2 Reader Motor Control

0000-7738

The reader motor driver turns on/off the reader motor and controls its direction/speed of rotation.



F-5-11

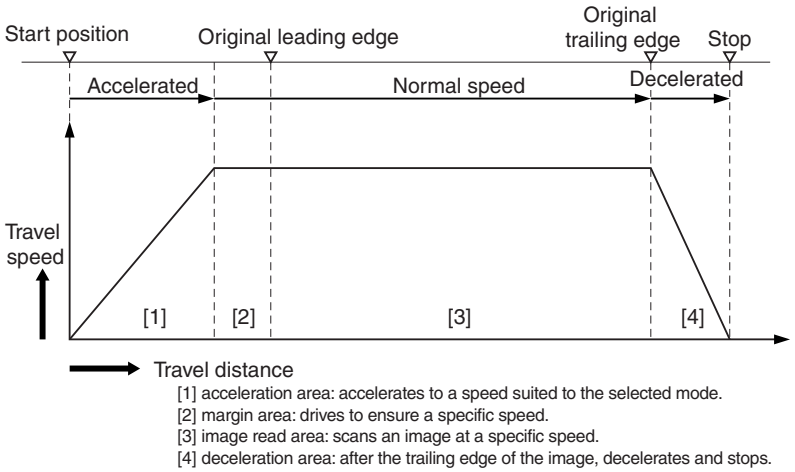
<Memo>
The machine uses any of the following scan speeds according to selected mode:

T-5-5

Function	Mode	Scan speed
Copy	full color mode	118 mm/sec
	black-and-white mode	118 mm/sec
SEND	full-color mode (originals other than of 300 dpi or lower; 320x450m 12"x18")	236 mm/sec
	full-color mode (originals of 300 dpi or lower; 320x450, 12"x18")	118 mm/sec
	black-and-white mode	236 mm/sec

a. Moving Forward to Scan an Image

when scanning the image, the machine controls the contact image sensor (CIS) by controlling the motor as follows:



F-5-12

b. Moving in Reverse After an Image Scan

The machine maintains a specific speed (147 mm/sec) to move the contact image sensor (CIS) to shading position after making an image scan.

5.3.2 Contact Sensor

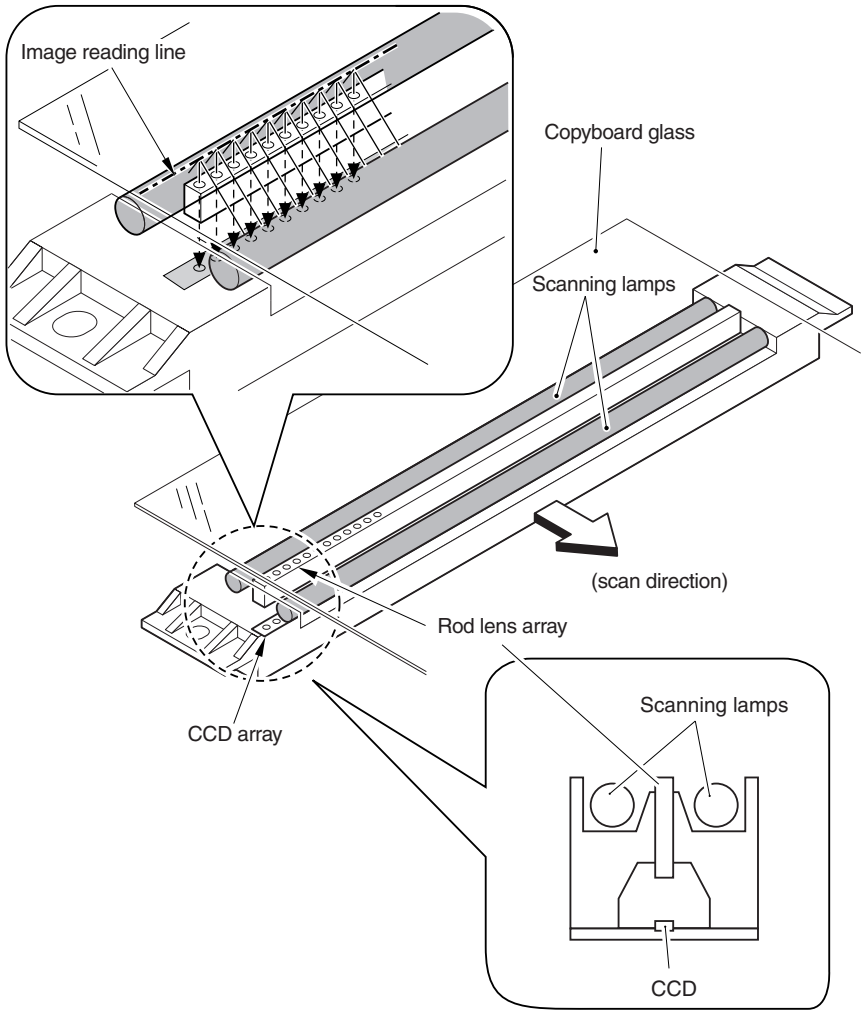
5.3.2.1 Overview

0001-3293

The machine uses a contact image sensor (CIS) to read images, line-by line.

T-5-6

Item	Description
Scanning lamp	used to illuminate originals.
Rod lens array	used to collect light reflected by originals.
CCD array	used to collect reflected light coming through a rod lens array.



F-5-13

5.3.2.2 Analog Control Inside the Contact Image Sensor (CIS) 0002-1329

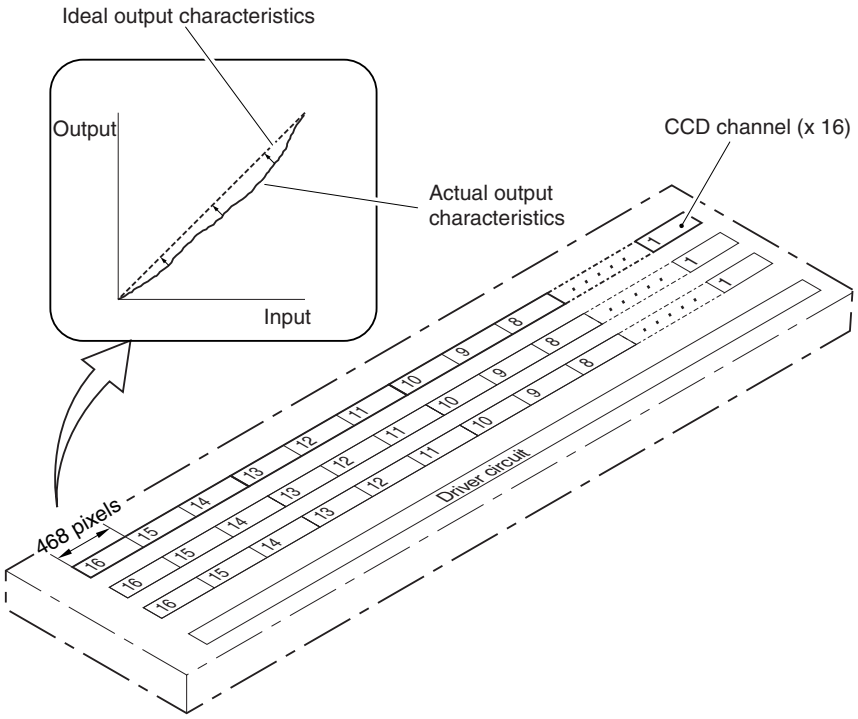
The contact image sensor (CIS) read images in keeping with the following flow of analog image processing:

uses a rod lens array to collect light reflected by the original.

-> receives light using a CCD array.

-> uses the CCD array to turn the light into an electrical signal (photo conversion), thus preparing output.

The machine's CCD array consists of 16 channels (units) in total. Each of these channels is equipped with an output correction table, and generates image signals after gain correction on input intensity signals.



F-5-14

If any of the following occurs, be sure to execute the following service mode item to correct the output among the channels:

- there is a difference in the output of the image density among channels after replacement of the contact image sensor (CIS).
- the CCD-LUT setting is not 0 after replacement of the reader controller PCB.

<Service Mode>

- setting CIS unit gain correction data

COPIER>OPTION>BODY>CCD-LUT

CCD Gain Fine Correction

COPIER>FUNCTION>CCD>LUT-ADJ2

(making adjustments using a D-10 chart)

5.3.3 Enlargement/Reduction

5.3.3.1 Changing the Magnification in Main Scanning Direction 0000-7742

Book mode, ADF in use

The machine reads the original in main scanning direction at 100%; any change needed in magnification is made by processing data on the main controller PCB (main).

5.3.3.2 Changing the Magnification in Sub Scanning Direction 0000-7756

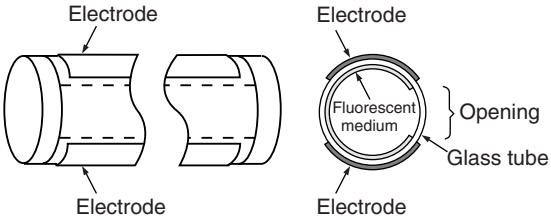
Book mode, ADF in use

The machine reads the original in sub scanning direction at 100%; any change needed in magnification is made by processing data on the main controller PCB (main).

5.3.4 Controlling the Scanning Lamp

5.3.4.1 Scanning Lamp 0000-7763

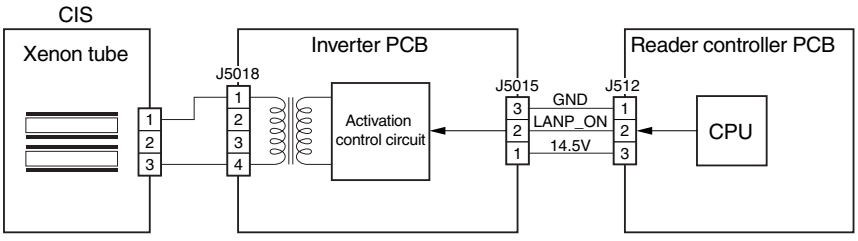
The machine's scanning lamp is a xenon lamp, in which xenon gas is sealed inside a tube. Along the glass tube are 2 electrodes, while the inside the glass tube is coated with phosphorous material. When a high-frequency voltage is applied to the electrodes, electrons occur within the gas, thus causing the phosphorous material to emit light.



F-5-15

5.3.4.2 Overview 0000-7759

The scanning lamp is controlled for the following, and is composed of the items indicated:
- activation/de-activation
- error detection



F-5-16

5.3.4.3 Activation Control 0000-7765

The scanning lamp is turned on/off using the drive signal (LAMP_ON) generated by the CPU of the reader controller PCB. In response to the signal, the inverter PCB uses the drive voltage (+16 V) from the reader controller PCB to generate high-frequency voltage in the activation control circuit to turn on the xenon lamp.

5.3.4.4 Error Detection 0000-7768

An error in the intensity of the lamp is checked against the presence/absence of a fault when the lamp is initially tuned on (e.g., at time of shading correction).

E225 (CIS intensity error)

- fault in the inverter PCB
- fault in the reader controller PCB
- fault in the contact image sensor (CIS)
- fault in the flexible cable (poor contact)

5.3.5 Detecting the Size of Originals

5.3.5.1 Overview 0000-7771

The machine identifies the size of an original based on the measurements it takes of the light reflected by the original at specific points of the CCD (inside the CIS) and the output of the reflection sensor.

main scanning direction: CCD (4 points for AB; 3 points for Inch)
sub scanning direction: reflection photosensor (1 point for AB; 1 point for Inch)

1) External Light Search (main scanning direction only)

   While keeping the scanning lamp on, the machine measures the level of light at specific points of the CCD for main scanning direction.

2) Detecting the Sensor Output Level

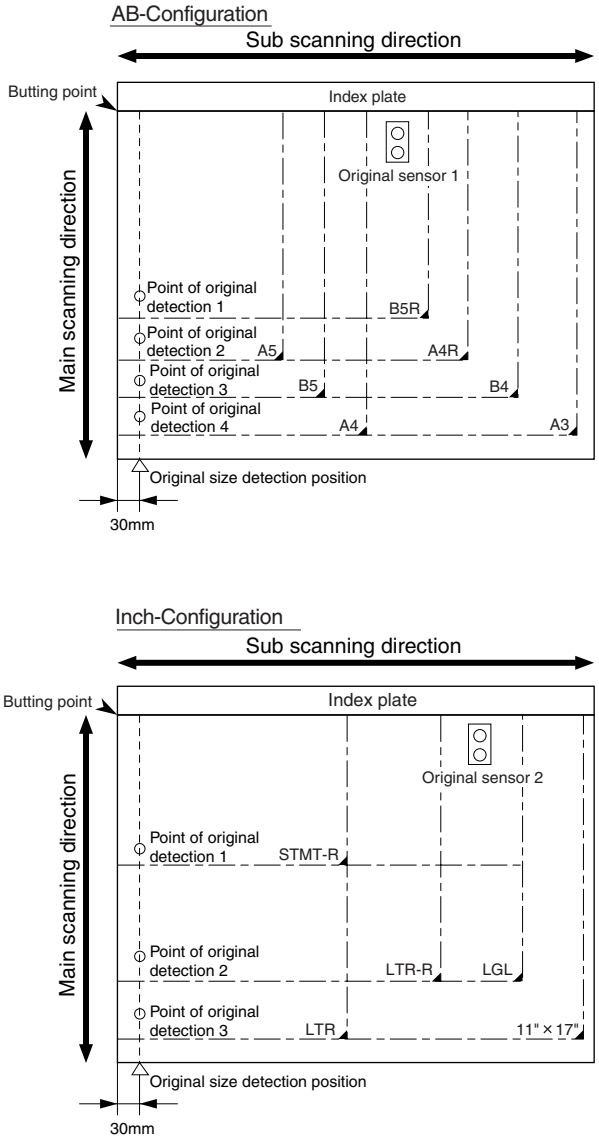
   The machine turns on the scanning lamp, and measures the CCD levels at individual points of detection in main scanning direction.

   The machine also turns on the reflection photosensor and measures its output for sub scanning direction.

   The machine identifies the size of the original based on the resulting combination of the measurement and the output.

5.3.5.2 Points of Original Size Detection 0000-7775

The length in main scanning direction is measured by checking the intensify of light at specific points while moving the contact image sensor (CIS) to a point 30 mm from the leading edge of the original. The length in sub scanning direction, on the other hand, is measured by means of the sensors mounted to the following locations:



F-5-17

5.3.5.3 Overview of Detection Operation

0000-7776

- Book Mode

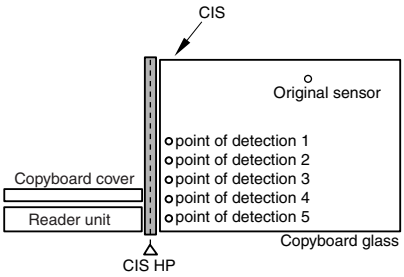
1 original (A4R), copyboard cover (or ADF) closed

1. Standby

CIS: in home position

xenon lamp: off

original sensor: off



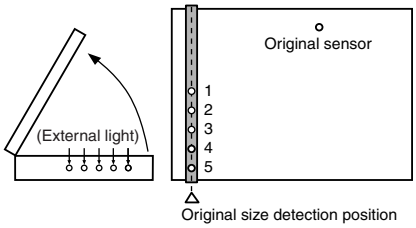
F-5-18

2. Copyboard Cover Opened

CIS: moves to point of original detection

xenon lamp: off

original sensor: off

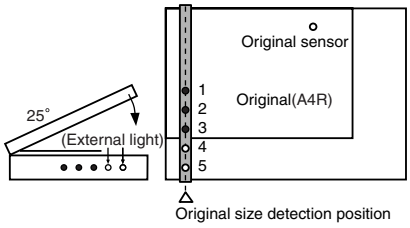


F-5-19

3. Copyboard Cover Closed (15 deg C or more, less than 25 deg C)

a. External Light Detection

The machine executes an external light search.



F-5-20

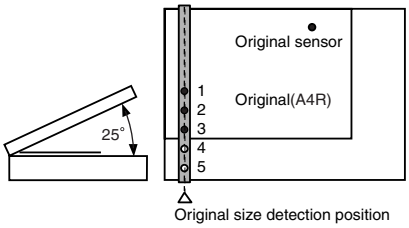
b. Size Detection in Sub Scanning Direction

The copyboard cover sensor identifies a "closed" state.

CIS: at point of original detection

xenon lamp: off

original sensor: on



F-5-21

4. Copyboard Cover Closed (less than 15 deg C)

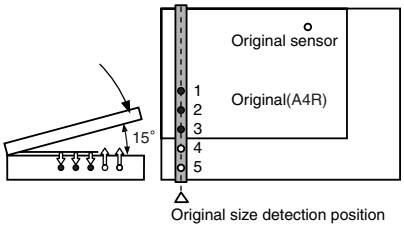
c. Size Detection in Main Scanning Direction

The machine turns on the xenon lamp inside the CIS, and uses the CCD inside the CIS to check the reflected light.

CIS: at point of original detection

xenon lamp: on

original sensor: on

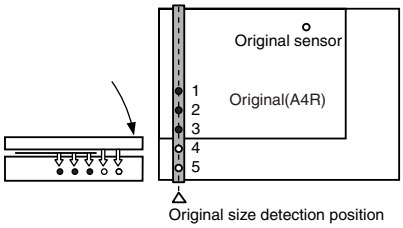


F-5-22

5. Copyboard Cover Fully Closed

After the copyboard cover sensor has identified a "closed" state, the machine checks for a change in the output level of the original sensor (CCD point of detection) for 3 sec. If there is no change in the level of output, the machine identifies the condition to indicate the presence of an original.

The machine uses combinations of changes in the levels of 6 locations to identify the size of the original:



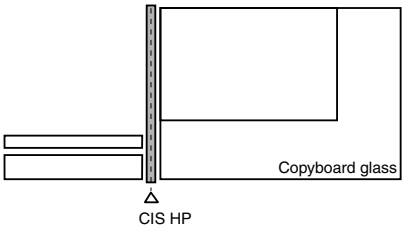
F-5-23

6. Standby (in wait for a press on the Start key)

CIS: moves to home position

xenon lamp: off

original sensor: off



F-5-24

AB-Configuration

Original size	1	2	3	4	5	Original sensor1
A3	○	○	○	○	○	○
A4	○	○	○	○	○	●
B4	○	○	○	○	●	○
B5	○	○	○	○	●	●
A4R	○	○	○	●	●	○
A5	○	○	○	●	●	●
B5R	○	○	●	●	●	○
No original	●	●	●	●	●	●

Inch-Configuration

Original size	1	2	3	Original sensor2
11"X17"	○	○	○	○
LTR	○	○	○	●
LGL	○	○	●	○
LTR-R	○	○	●	●
STMT-R	○	●	●	●
No original	●	●	●	●

○: Change absent
●: Change present

F-5-25

5.3.6 Dirt Sensor Control

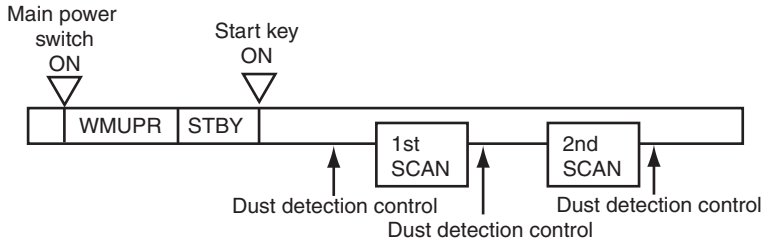
5.3.6.1 Overview

0001-4990

When reading an original, the machine changes the point of reading or corrects image data in reference to the presence/absence of dust on the stream reading glass/ADF platen roller, thereby avoiding the effects of dust on images. The machine executes this control only when the ADF is used and, in addition, when it is closed.

<Timing of Control>

- at the end of a job
- between sheets (each time a sheet is read)
- at the start of a job (only if any of the following is met)
  /first job after power-on
  /presence of dust at all points of detection at the end of the previous job
  /failure of dust detection at the end of the previous job (e.g., the ADF is opened)



F-5-26

<Particulars of Control>

- At the End of a Job (dust detection)

The contact image sensor (CIS) checks the light reflected by the platen roller of the ADF at a point of reading to find out the presence/absence of dust. If the presence of dust is detected, the contact image sensor moves to the next candidate point (2 times max.; A -> B -> C; B -> C -> A; or C -> A -> B).

The point identified will be used as the point of reading for the next job.

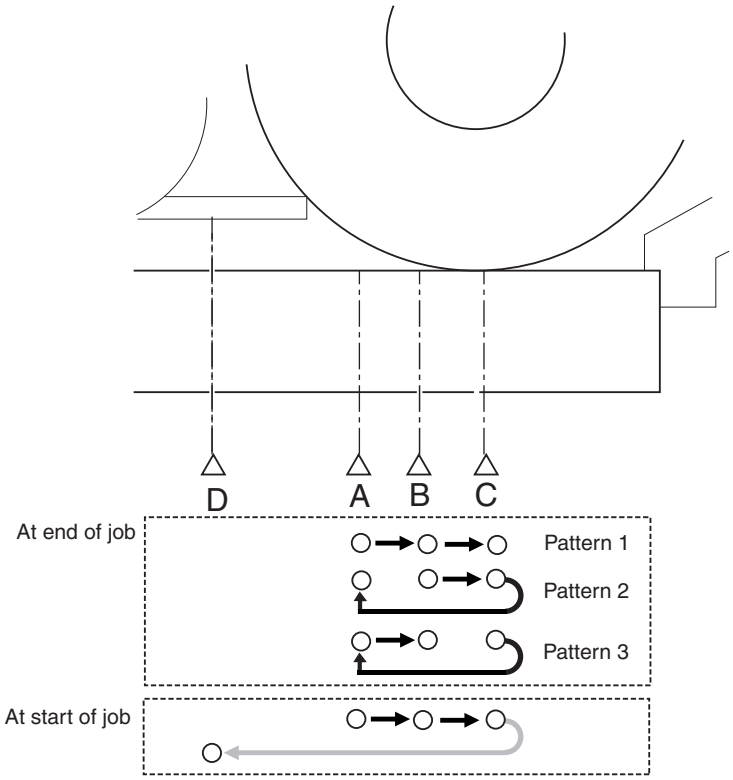
⚠

- For the control at the end of a job, the sensor will never move to point D.
- For the control at the end of a job, a message prompting cleaning of the glass surface will be indicated if an original is placed in the ADF while the presence of dust has been detected at all points (A, B, C). The Start key is disabled until the message is cleared.

- At the Start of a Job (dust avoidance)

The same detection mechanism as used at the end of a job is executed; if the presence of dust is detected at all points (A, B, C), the sensor is moved to point D for reading operation.

If the control is at the end of a job that takes place at point D, it will be after moving the sensor to point D.



F-5-27

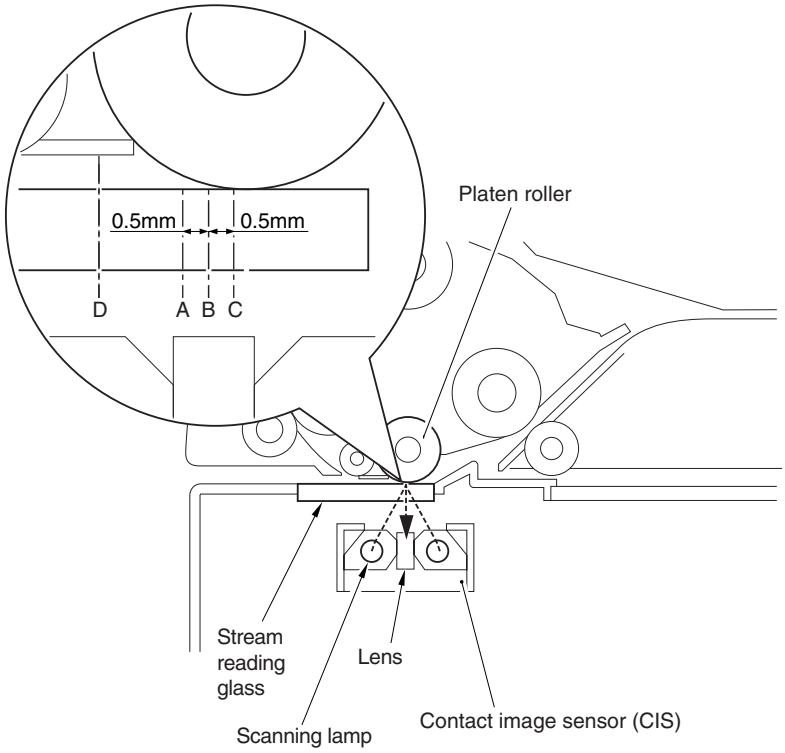
- Between Sheets

The contact image sensor (CIS) is not moved for detection of dust.

The machine undertakes reading at a point determined by control executed at the end of a job or at the start of a job; if the presence of dust is identified, the machine executes image correction.

T-5-7

Location		Image correction	Gain correction against reference position
A	reading reference location	yes	no
B	point about 0.5 mm toward roller inside from reference position	yes	no
C	point about 1.0 mm toward roller inside from reference position	yes	no
D	point about 4.0 mm toward roller outside from reference position (no dust detection)	no	yes



F-5-28

<Service Mode>

COPIER>OPTION>BODY>DST-POS (level 1)

- use it to set an original reading position when the ADF is in use.

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

- use it to adjust the dust reading detection level for between sheets.

COPIER>OPTION>BODY>DFDST-L2 (level 1)

- use it to adjust the dust reading detection level for the end of a job.

5.3.7 Image Processing

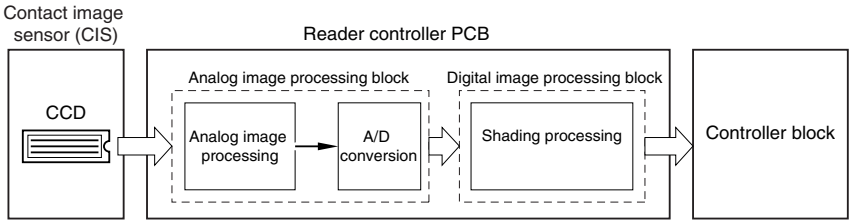
5.3.7.1 Overview

0001-4976

The image processing system has the following major specifications and functions:

T-5-8

- CCD	Number of lines: 3 (RGB, 1 line each) Number of pixels: 7488 Size of pixel: 42.3 um
- Shading Correction	Shading correction; executed for each job Shading adjustment: executed in service mode



F-5-29

The PCB used by the image processing system has the following functions:

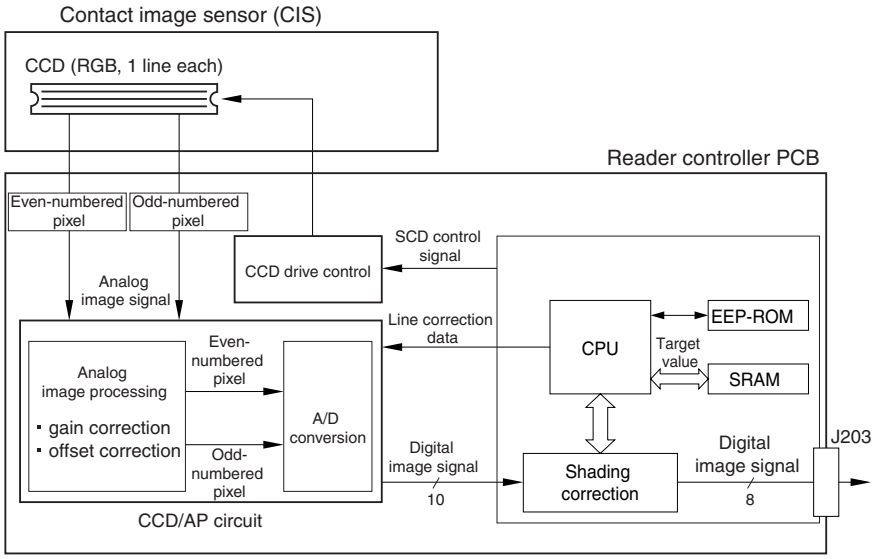
T-5-9

- Reader Controller PCB	drives the CCD, performs analog image processing, performs A/D conversion, performs shading correction

The machine processes images using its reader controller PCB line by line, and the processing consists in the following;

1. Analog Image Processing
- drives the CCD
- performs gain correction and offset correction for the CCD output
- performs A/D conversion for the CCD output

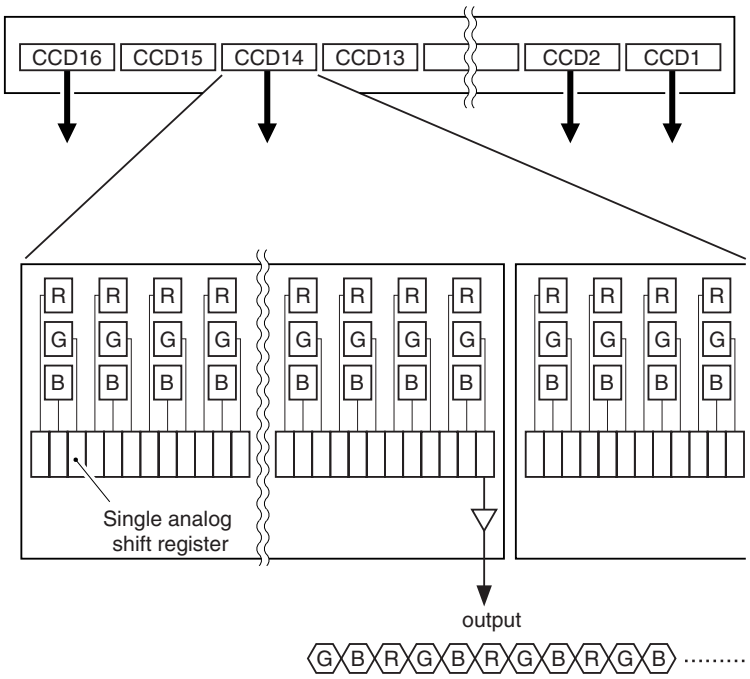
2. Digital image Processing
- performs shading correction



F-5-30

5.3.7.2 Driving the CCD 0001-4979

The machine's CCD sensor is a linear image sensor that consists of 3 lines (RGB, 1 line each), and it is composed of 7488-pixel photocells. The signals generated through photo conversion at the light-receiving segment are sent as analog signals according to pixels in the order of G, B, and R.



F-5-31

5.3.7.3 Gain Correction and Offset Correction for the CCD Output 0001-4980

The analog video signal from the CCD is subjected to gain correction (in which the rate of amplification is corrected to a specific level) and offset correction (in which the output voltage in the absence of incident light is also corrected to a specific level).

5.3.7.4 A/D Conversion of the CCD Output 0001-4981

The analog signal after correction is then converted into 8-bit digital signals that comply with the individual levels of pixel voltage by the A/D converter.

5.3.7.5 Shading Correction (outline) 0001-4983

An original of even density does not necessarily mean uniform CCD output because of the following factors:

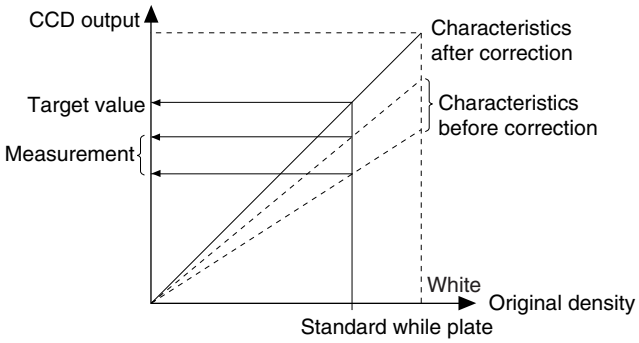
1. variation in the sensitivity of each pixel of the CCD
2. uneven intensity across the rod lens array
3. difference in intensity of light between the center and ends of the scanning lamp
4. deterioration of the scanning lamp

The machine performs shading correction to correct any discrepancy in the output of the CCD. It performs shading correction at power-on and or for each job.

5.3.7.6 Shading Correction

0001-4985

The machine executes shading correction for each scan of the original. It measures the density of the standard white plate, and compares the measurement against the target value stored in the shading correction circuit; the machine then sets up the difference as the shading correction value, and uses it to correct any variation among CCD pixel when scanning the originals, thus evening out the image density levels.



F-5-32

5.3.7.7 Shading Adjustment

0001-4984

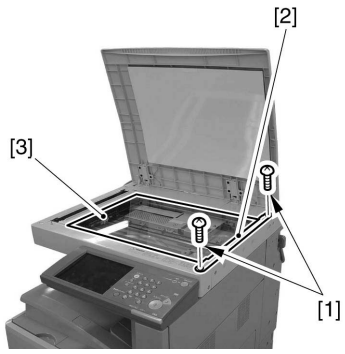
The machine measures the density of the standard while plate, and uses the result as density data. The data is then subjected to computation to obtain the target value for use during shading correction.

5.4 Parts Replacement Procedure

5.4.1 Copyboard Glass

5.4.1.1 Removing the Copyboard Glass 0000-8289

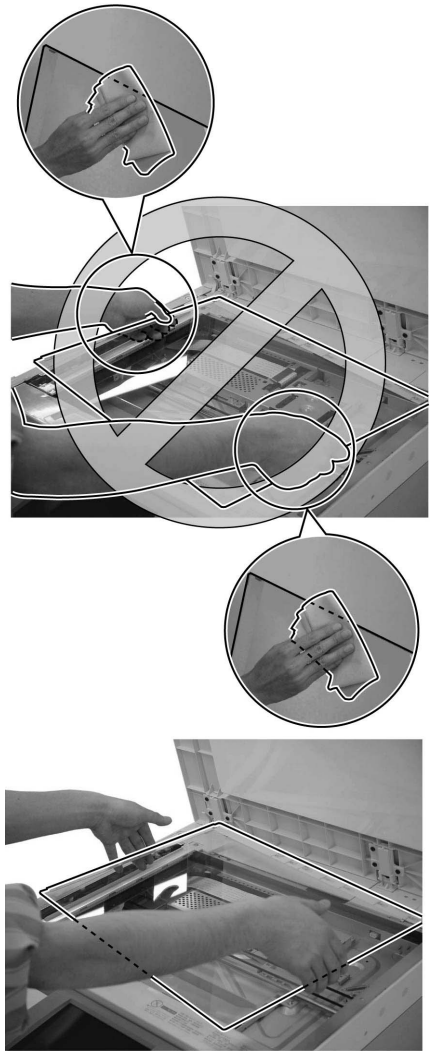
1) Open the copyboard cover (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2]; then, detach the copyboard glass [3].



F-5-33

⚠When removing the copyboard glass, take care not to touch the following:
- glass surface
- standard white plate

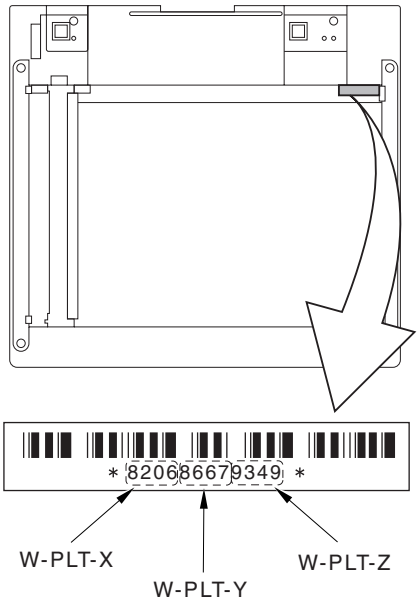
The presence of dirt can cause white/black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.



F-5-34

5.4.1.2 After Replacing the Copyboard Glass 0002-4562

A. Enter the value indicated by the bar code found at the upper right on the copyboard glass (copyboard cover) using the following service mode items:
COPIER>ADJUST>CCD>W-PLT-X
COPIER>ADJUST>CCD>W-PLT-Y
COPIER>ADJUST>CCD>W-PLT-Z
(standard white plate white level data X, Y, Z)

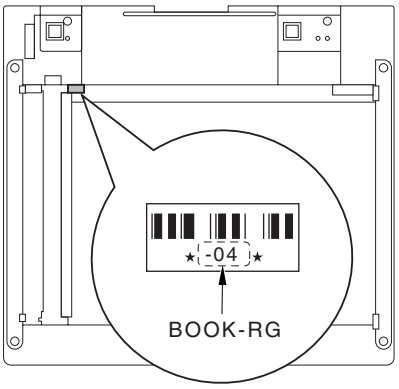


F-5-35

B. Enter the value indicated by the bar code found at the upper left of the copyboard glass (copyboard sheet) using the following service mode item:

COPIER>ADJUST>CCD>BOOK-RG

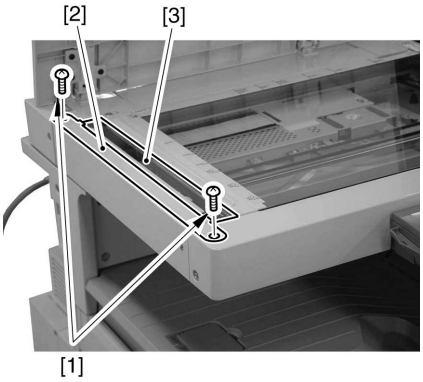
(offset value against color displacement caused by copyboard glass)



F-5-36

5.4.1.3 Removing the ADF Reading Glass 0000-8298

1) Open the copyboard glass (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2].
3) Remove the ADF reading glass [3].



F-5-37

⚠When removing the ADF reading glass, take care not to touch the glass surface.

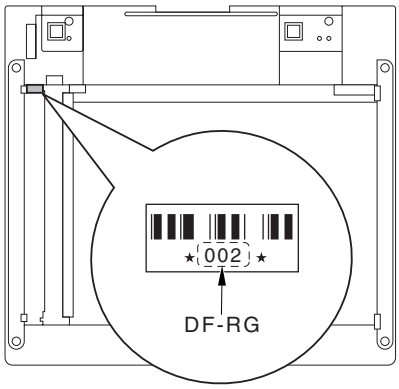
The presence of dirt can cause white/black lines in the images. If dirt is found, be sure to clean it using lint-free paper moistened with alcohol.

5.4.1.4 After Replacing the ADF Reading Glass 0002-4567

Enter the value indicated by the bar code found on the ADF reading glass using the following service mode item:

COPIER>ADJUST>CCD>DF-RG

(offset value against color displacement caused by stream reading glass)



F-5-38

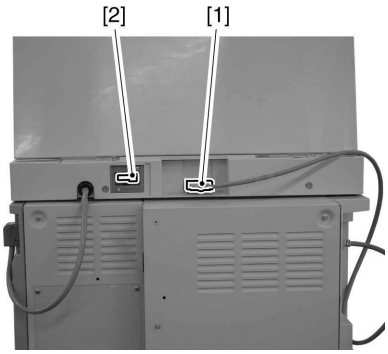
5.4.2 Reader Controller PCB

5.4.2.1 Before Replacing the Reader Controller PCB 0002-3678

⚠If an ADF is used, be sure to execute P-PRINT of service mode to obtain its printout:
COPIER>FUNCTION>MISC-P>P-PRINT

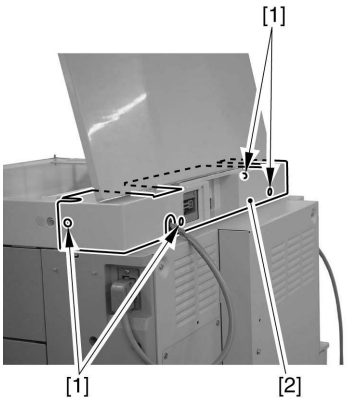
5.4.2.2 Removing the Reader Rear Cover 0002-3679

1) Open the copyboard cover (or the ADF).
2) Disconnect the reader communications cable [1] and the ADF communications cable [2] (if equipped with an ADF).



F-5-39

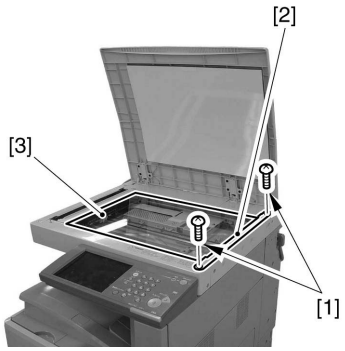
3) Remove the 4 screws [1], and detach the reader rear cover [2].



F-5-40

5.4.2.3 Removing the Copyboard Glass 0002-3680

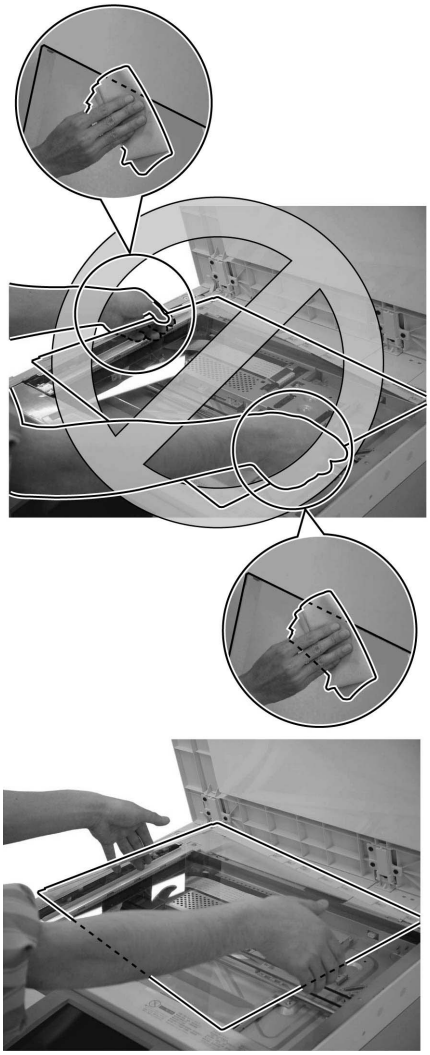
1) Open the copyboard cover (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2]; then, detach the copyboard glass [3].



F-5-41

⚠When removing the copyboard glass, take care not to touch the following:
- glass surface
- standard white plate

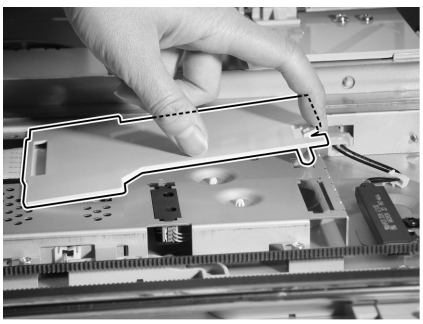
The presence of dirt can cause white/black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.



F-5-42

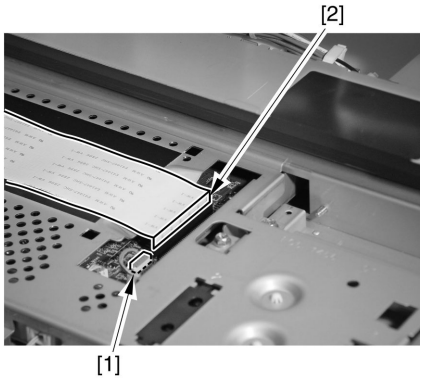
5.4.2.4 Removing the Reader Controller PCB 0000-8305

1) Remove the cover [1].



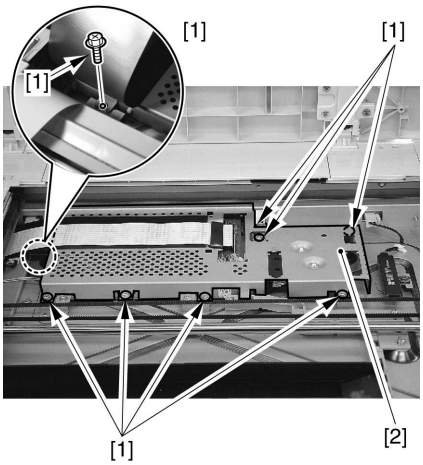
F-5-43

2) Disconnect the connector [1], and detach the flexible cable [2].



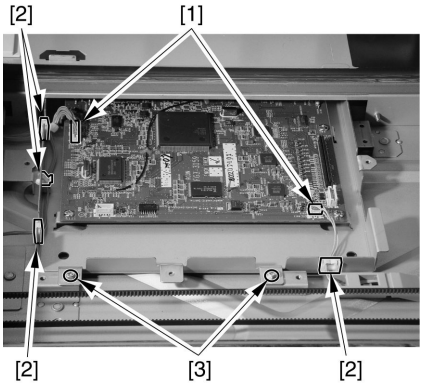
F-5-44

3) Remove the 8 screws [2], and detach the cover [3].



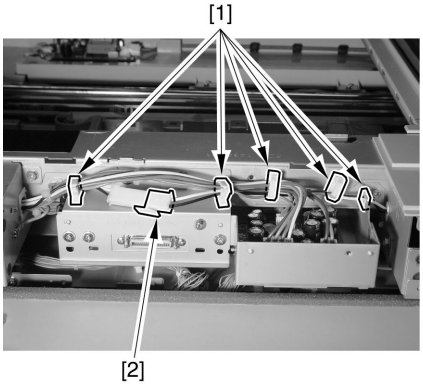
F-5-45

4) Disconnect the 2 connectors [1], and detach the 4 wire saddles [2]; then, remove the 2 screws [3].



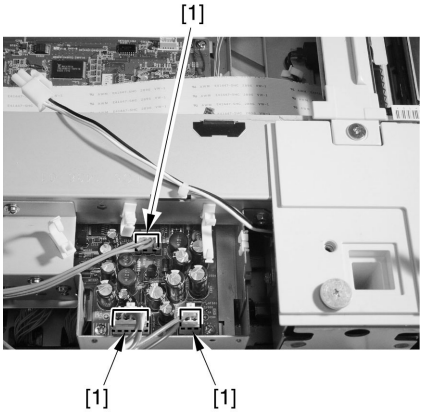
F-5-46

5) Go to the back of the machine, and free the cable from the 5 wire saddles [1]; then, disconnect the connector [2].



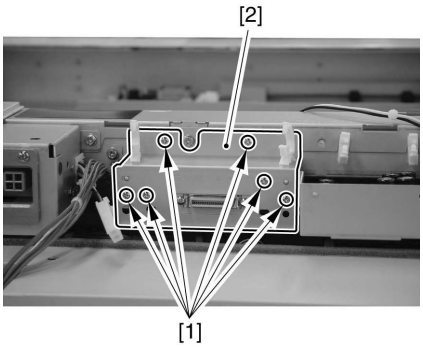
F-5-47

6) Disconnect the 3 connectors [1].



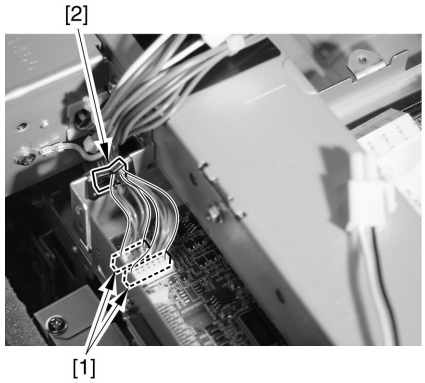
F-5-48

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



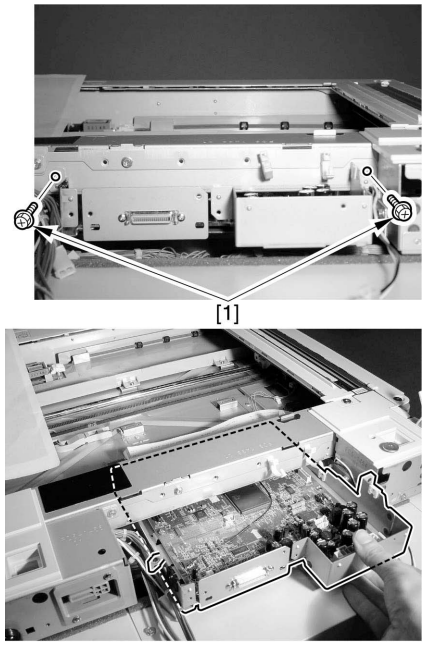
F-5-49

8) Disconnect the 2 connectors [1], and free the cable from the wire saddle [2].



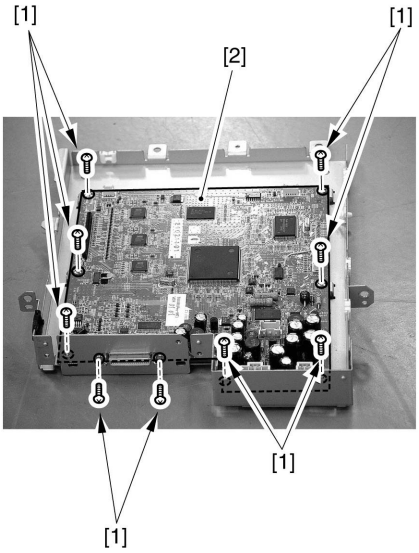
F-5-50

9) Remove the 2 screws [1], and pull out the reader controller PCB base [2].



F-5-51

10) Remove the 9 screws [1], and detach the reader controller PCB [2].



F-5-52

5.4.2.5 After Replacing the Reader Controller PCB or After Initializing the RAM 0002-4571

⚠

- Before replacing the reader controller PCB, be sure to generate the latest P-PRINT printout.

<if you are initializing the RAM of the reader controller without replacing the PCB>

- Using the SST, upload the reader controller backup data; after initializing the RAM, download the data, thus eliminating the need for the following adjustment.

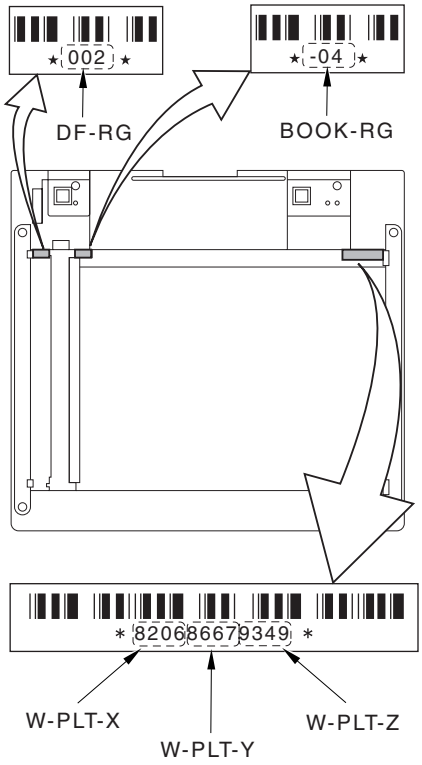
1. Reader Unit-Related Adjustment

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 initialize the RAM. Thereafter, turn off and then on the main power.
3) Enter the appropriate values using the following service mode items:

a. standard white plate white level data
COPIER>ADJUST>CCD>W-PLT-X,Y,Z

b. offset value against color displacement for copyboard glass (copyboard cover)
COPIER>ADJUST>CCD>BOOK-RG

c. offset value against color displacement for copyboard glass (ADF)
COPIER>ADJUST>CCD>DF-RG



F-5-53

d. service label (behind reader unit left cover) values

d-1. CIS read position adjustment (fixed reading)
COPIER>ADJUST>ADJ-XY>ADJ-X

d-2. main scanning direction position adjustment (fixed reading)
COPIER>ADJUST>ADJ-XY>ADJ-Y

d-3. shading position adjustment (fixed reading)
COPIER>ADJUST>ADJ-XY>ADJ-S

d-4. sub scanning direction color displacement correction
COPIER>ADJUST>CCD>CCDU-RG

d-5. main/sub scanning direction MTF value
COPIER>ADJUST>CCD>MTF-MG,SG

d-6. auto gradation correction target value

COPIER>ADJUST>PASCAL>OFST-P-Y,M,C,K

⚠If the value of the following was not 0 before the replacement of the reader controller PCB: COPIER>OPTION>BODY>CCD-LUT.

Set a value other than '0' once again, and make the following adjustments using the D-10 Chart.

COPIER>FUNCTION>CCD>LUT-ADJ2

2. ADF-Related Adjustment

⚠The machine keeps ADF-related service mode data in the RAM of the reader controller; as such, you will have to make the appropriate adjustments if you have replaced the reader controller or initialized the RAM.

1) Enter the values indicated in the P-PRINT printout you have previously generated for the following:

a. main scanning direction position adjustment (stream reading)

COPIER>ADJSUT>ADJ-XY>ADJ-Y-DF

b. original stop position adjustment

FEEDER>ADJSUT>DOCST

c. original feed speed (magnification) adjustment

FEEDER>ADUST>LA-SPEED

2) Make adjustments using the following items:

a. tray width adjustment

FEEDER>FUNCTION>TRY-A4

FEEDER>FUNCTION>TRY-A5R

FEEDER>FUNCTION>TRY-LTR

FEEDER>FUNCTION>TRY-LTRR

b. CIS read position adjustment (stream reading)

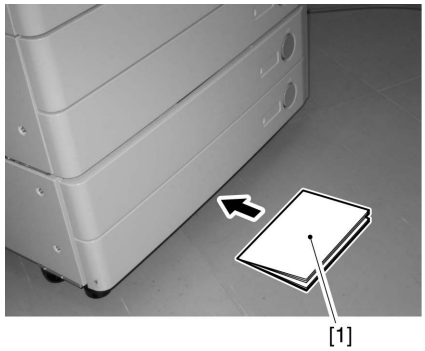
COPIER>FUNCTION>INSTALL>STRD-POS

c. white level adjustment

COPIER>FUNCTION>CCD>DF-WLVL1

COPIER>FUNCTION>CCD>DF-WLVL2

When you have finished the foregoing adjustments, put the P-PRINT printout [1] you have previously generated in the service book cassette to replace the old P-PRINT printout.

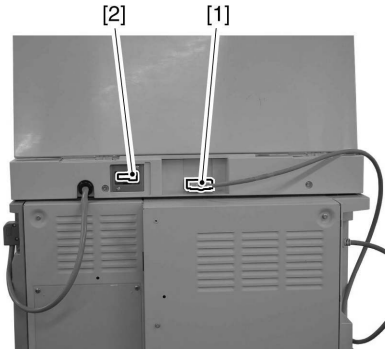


F-5-54

5.4.3 Inverter PCB

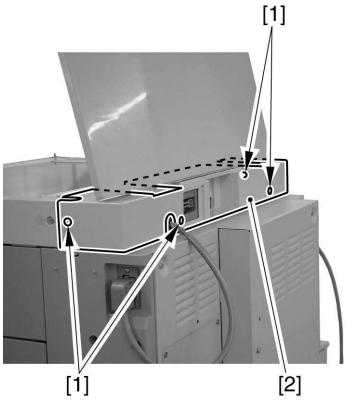
5.4.3.1 Removing the Reader Rear Cover 0002-3836

1) Open the copyboard cover (or the ADF).
2) Disconnect the reader communications cable [1] and the ADF communications cable [2] (if equipped with an ADF).



F-5-55

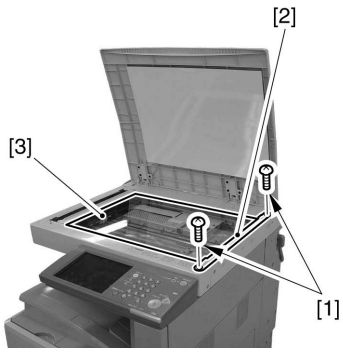
3) Remove the 4 screws [1], and detach the reader rear cover [2].



F-5-56

5.4.3.2 Removing the Copyboard Glass 0002-3837

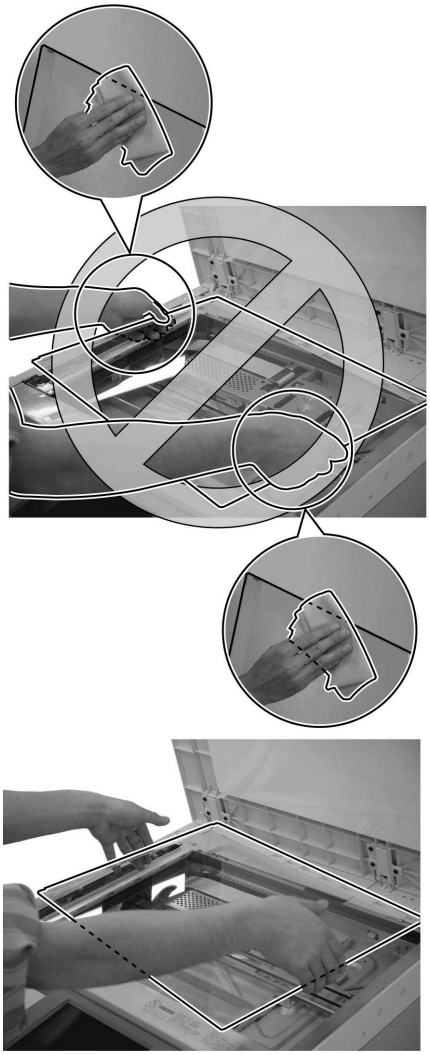
1) Open the copyboard cover (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2]; then, detach the copyboard glass [3].



F-5-57

⚠When removing the copyboard glass, take care not to touch the following:
- glass surface
- standard white plate

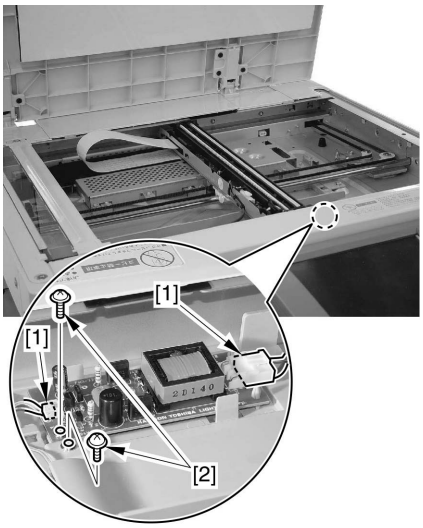
The presence of dirt can cause white/black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.



F-5-58

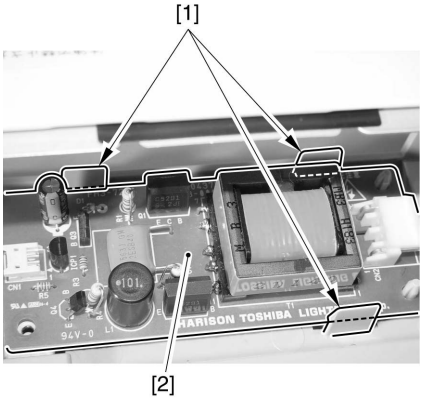
5.4.3.3 Removing the Inverter PCB 0000-8315

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



F-5-59

2) While freeing the 3 hooks [1], detach the inverter PCB [2].

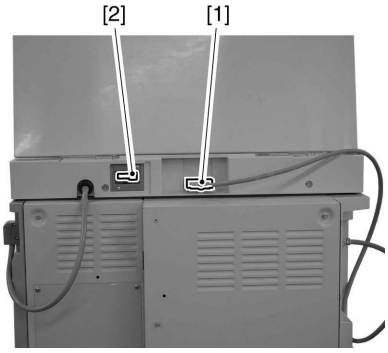


F-5-60

5.4.4 Scanner Motor

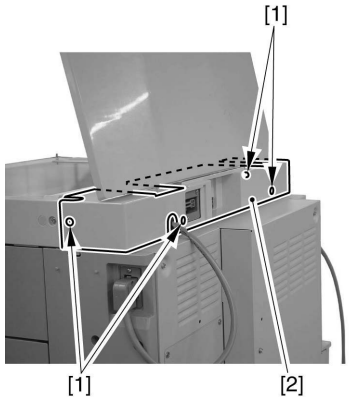
5.4.4.1 Removing the Reader Rear Cover 0002-3839

1) Open the copyboard cover (or the ADF).
2) Disconnect the reader communications cable [1] and the ADF communications cable [2] (if equipped with an ADF).



F-5-61

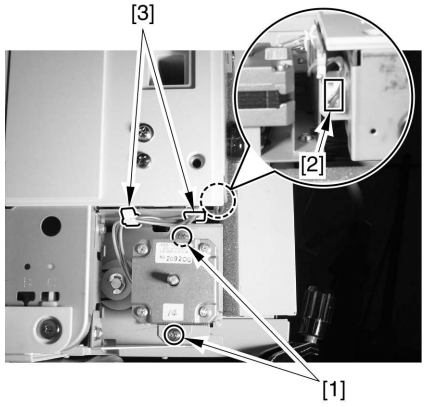
3) Remove the 4 screws [1], and detach the reader rear cover [2].



F-5-62

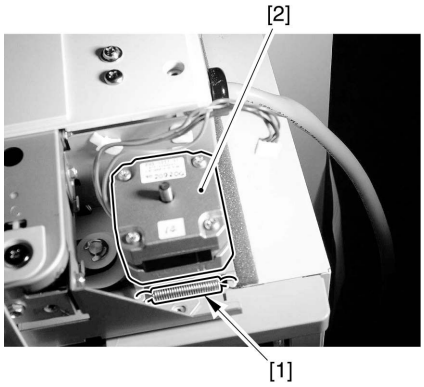
5.4.4.2 Removing the Scanner Motor 0000-8316

1) Remove the 2 screws [1]; then, disconnect the connector [2], and detach the 2 wire saddles [3].



F-5-63

2) Remove the spring [1], and detach the scanner motor [2].

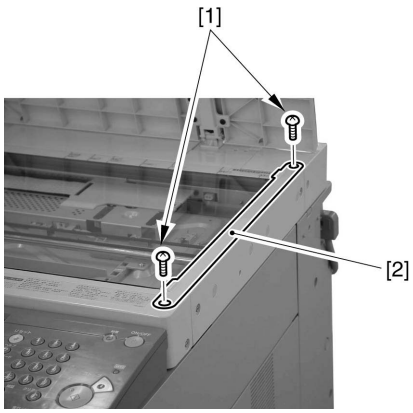


F-5-64

5.4.5 Contact Sensor

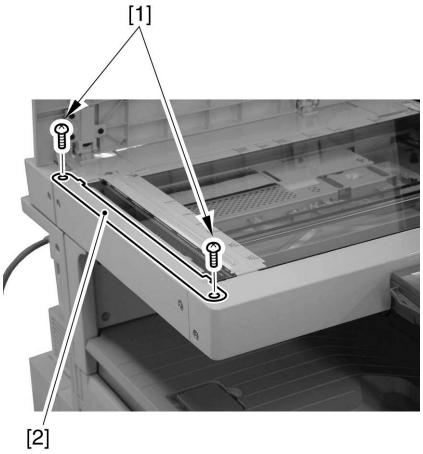
5.4.5.1 Removing the Reader Front Cover 0002-3843

1) Open the copyboard cover (or ADF).
2) Remove the 2 screws [1], and detach the copyboard glass retainer (right) [2].



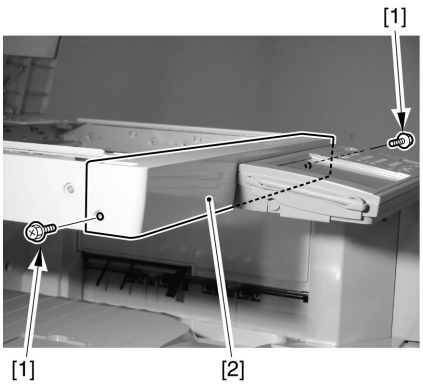
F-5-65

3) Remove the 2 screws [1], and detach the copyboard glass retainer (left) [2].



F-5-66

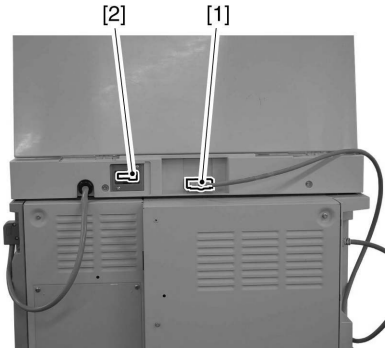
4) Remove the 2 screws [3], and detach the reader front cover [4].



F-5-67

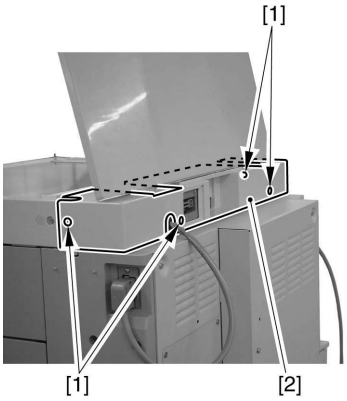
5.4.5.2 Removing the Reader Rear Cover 0002-3852

1) Open the copyboard cover (or the ADF).
2) Disconnect the reader communications cable [1] and the ADF communications cable [2] (if equipped with an ADF).



F-5-68

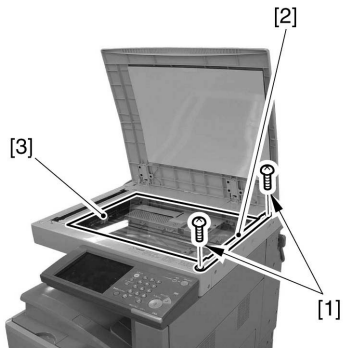
3) Remove the 4 screws [1], and detach the reader rear cover [2].



F-5-69

5.4.5.3 Removing the Copyboard Glass 0002-3854

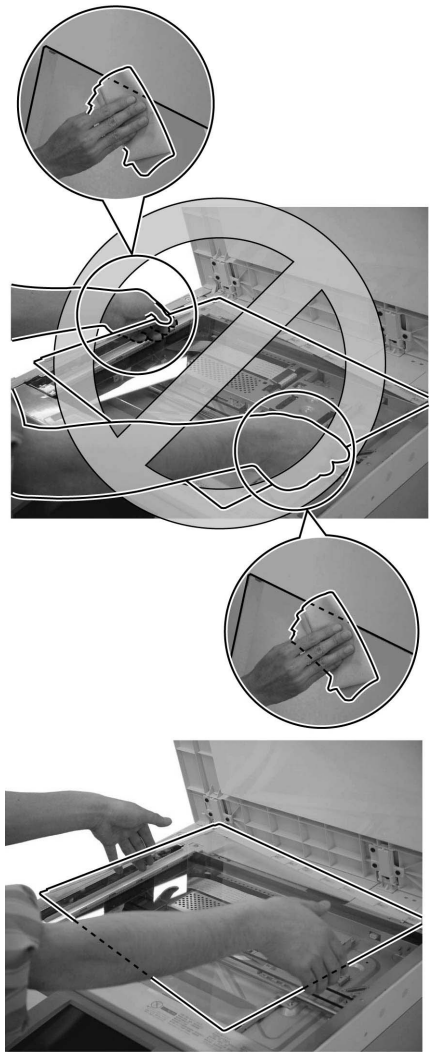
1) Open the copyboard cover (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2]; then, detach the copyboard glass [3].



F-5-70

⚠When removing the copyboard glass, take care not to touch the following:
- glass surface
- standard white plate

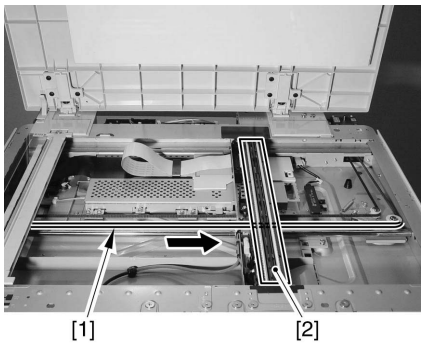
The presence of dirt can cause white/black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.



F-5-71

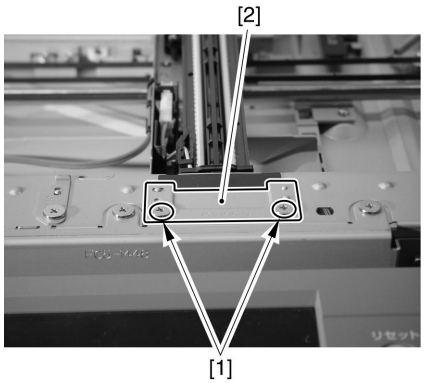
5.4.5.4 Removing the Contact Image Sensor (CIS) 0000-8407

1) Pull the drive belt (front) [1] in the direction of the arrow so that the contact image sensor (CIS) [2] will move where it is shown in the figure.



F-5-72

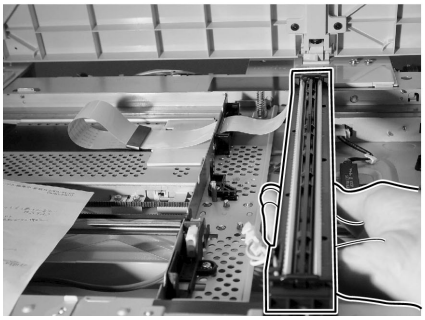
2) Remove the 2 screws [1], and detach the plate [2].



F-5-73

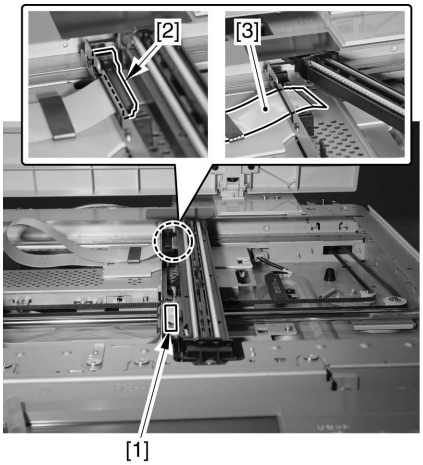
3)

⚠When detaching the contact sensor unit, take care not to touch the scanning lamp and the lens assembly.



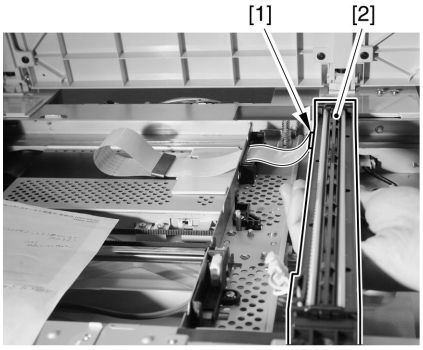
F-5-74

Disconnect the connector [1], and remove the flexible cable retainer [2]; then, remove the other flexible cable [3], and detach the contact image sensor (CIS).



F-5-75

⚠When mounting it, be sure to connect the flexible cable [1] before fitting the contact image sensor (CIS) [2] to the machine.

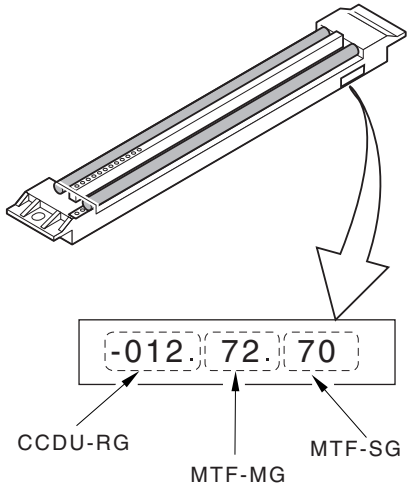


F-5-76

5.4.5.5 After Replacing the CIS 0002-4560

Be sure to enter the values indicated on the CIS label attached to the contact image sensor (CIS) using the following service mode items:

COPIER>ADJUST>CCD>CCDU-RG
(offset value against color displacement caused by CIS)
COPIER>ADJUST>CCD>MTF-MG
(MTF correction value for main scanning direction)
COPIER>ADJUST>CCD>MTF-SG
(MTF correction value for sub scanning direction)



F-5-77

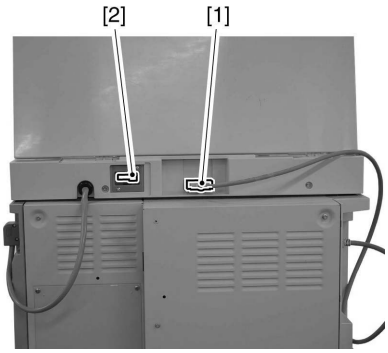
Also, be sure to update the values indicated on the service label attached behind the reader left cover by the values indicated on the CIS label.

Reference:
The machine is not shipped out of the factory with the CIS label attached to it.

5.4.6 Original Cover Sensor

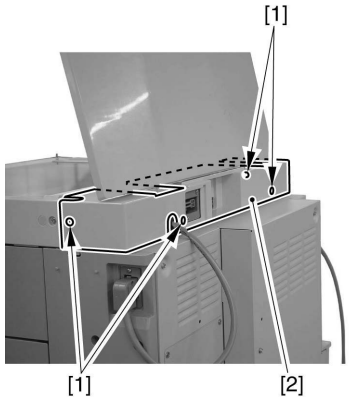
5.4.6.1 Removing the Reader Rear Cover 0002-3871

1) Open the copyboard cover (or the ADF).
2) Disconnect the reader communications cable [1] and the ADF communications cable [2] (if equipped with an ADF).



F-5-78

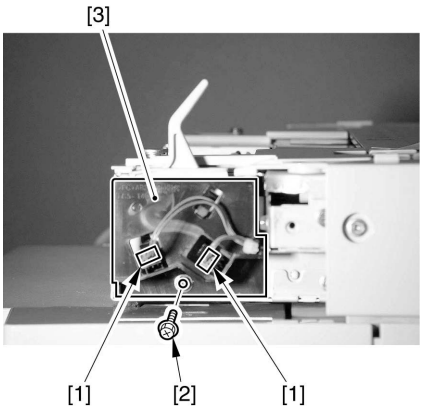
3) Remove the 4 screws [1], and detach the reader rear cover [2].



F-5-79

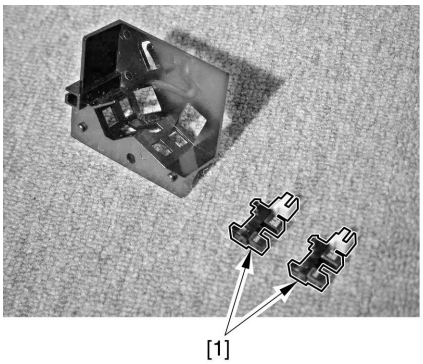
5.4.6.2 Removing the Copyboard Cover Open/ Closed Sensor (front/rear) 0000-8322

1) Disconnect the 2 connectors [1], and remove the screw [2]; then, detach the sensor base [3].



F-5-80

2) Detach the 2 sensors [1] from the sensor base.

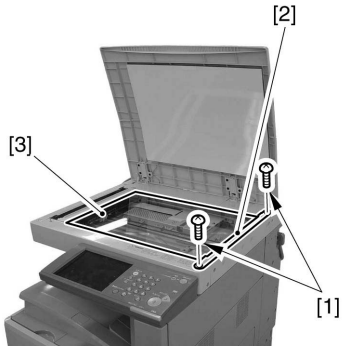


F-5-81

5.4.7 Contact Sensor HP Sensor

5.4.7.1 Removing the Copyboard Glass 0002-3873

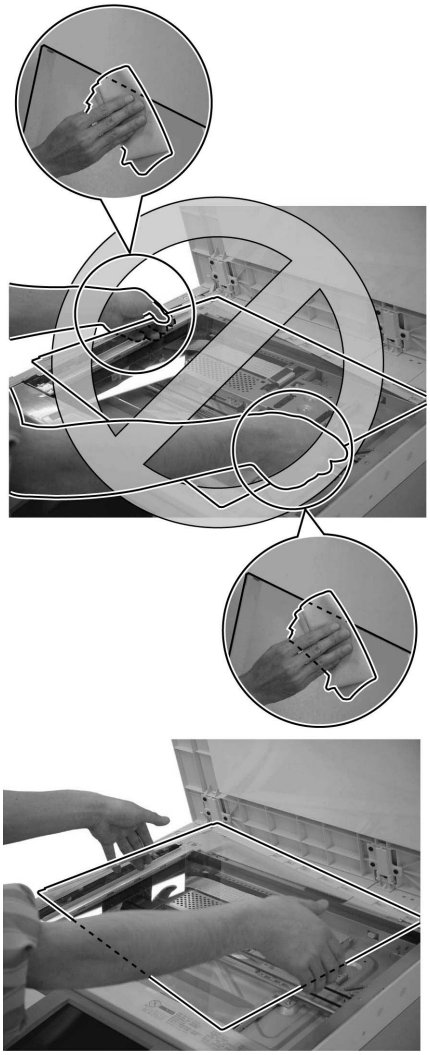
1) Open the copyboard cover (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2]; then, detach the copyboard glass [3].



F-5-82

⚠When removing the copyboard glass, take care not to touch the following:
- glass surface
- standard white plate

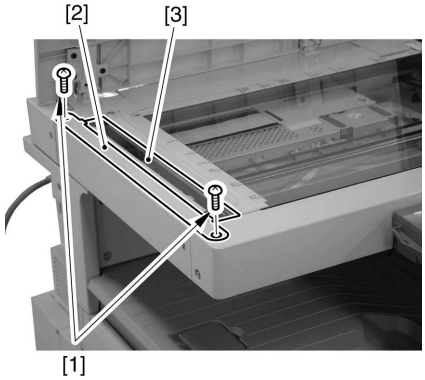
The presence of dirt can cause white/black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.



F-5-83

5.4.7.2 Removing the ADF Reading Glass 0002-3875

1) Open the copyboard glass (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2].
3) Remove the ADF reading glass [3].

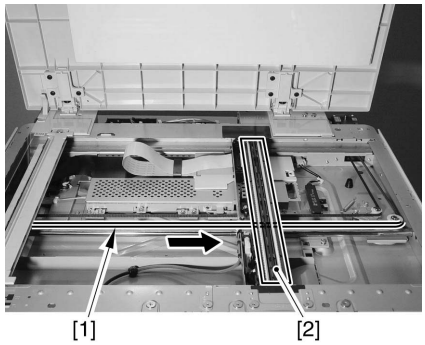


F-5-84

⚠When removing the ADF reading glass, take care not to touch the glass surface.
The presence of dirt can cause white/black lines in the images. If dirt is found, be sure to clean it using lint-free paper moistened with alcohol.

5.4.7.3 Removing the Contract Sensor Home Position Sensor 0000-8404

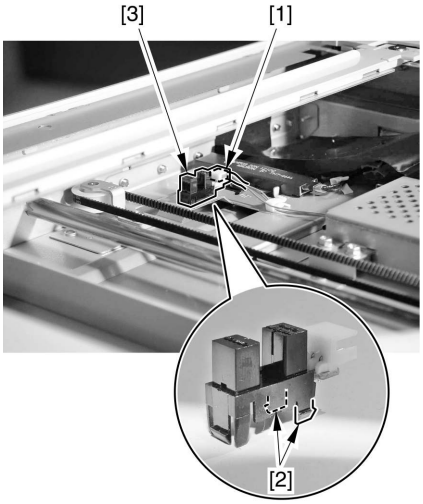
1) Pull the drive belt [1] in the direction of the arrow so that the contact image sensor (CIS) [2] is where indicated in the figure.



F-5-85

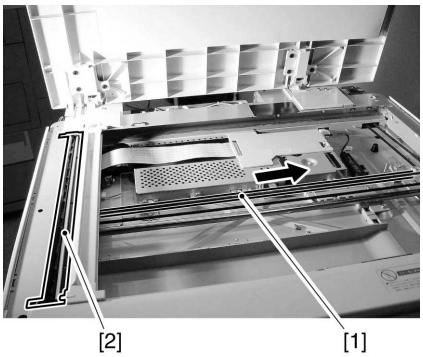
2) Disconnect the connector [1], and remove the CIS home position sensor [3].

⚠When detaching the sensor, do so as if to push it under the claw [2] found at the rear.



F-5-86

⚠After replacing the sensor, pull the drive belt (rear) [1] in the direction of the arrow so that the contact image sensor (CIS) [2] is returned to the farthest left.

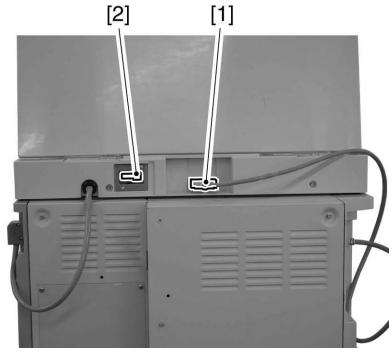


F-5-87

5.4.8 Original Sensor

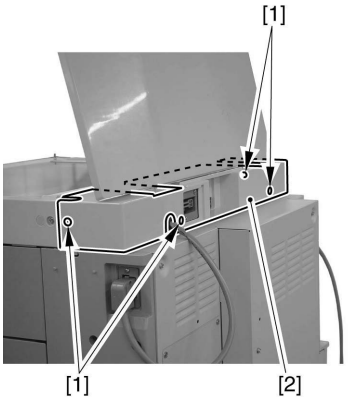
5.4.8.1 Removing the Reader Rear Cover 0002-3877

1) Open the copyboard cover (or the ADF).
2) Disconnect the reader communications cable [1] and the ADF communications cable [2] (if equipped with an ADF).



F-5-88

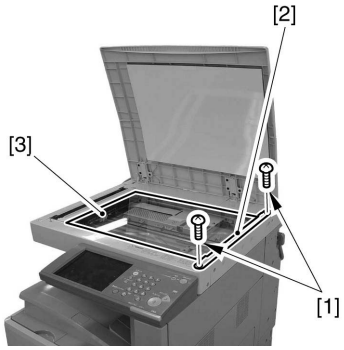
3) Remove the 4 screws [1], and detach the reader rear cover [2].



F-5-89

5.4.8.2 Removing the Copyboard Glass 0002-3879

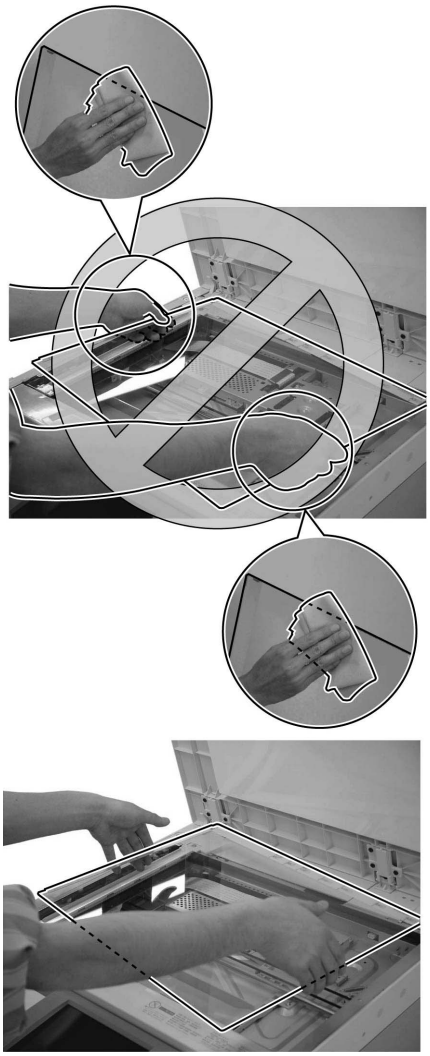
1) Open the copyboard cover (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2]; then, detach the copyboard glass [3].



F-5-90

⚠When removing the copyboard glass, take care not to touch the following:
- glass surface
- standard white plate

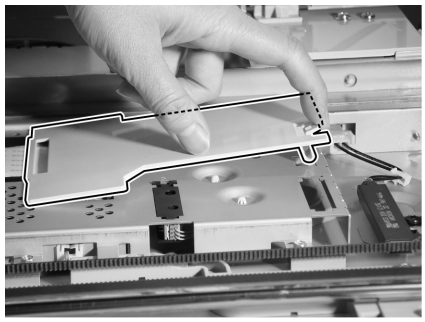
The presence of dirt can cause white/black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.



F-5-91

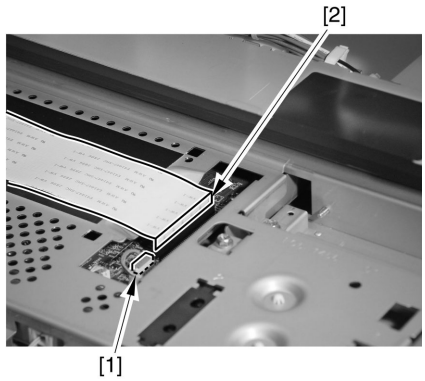
5.4.8.3 Removing the Original Size Sensor (AB/Inch-configuration) 0000-8323

1) Remove the cover.



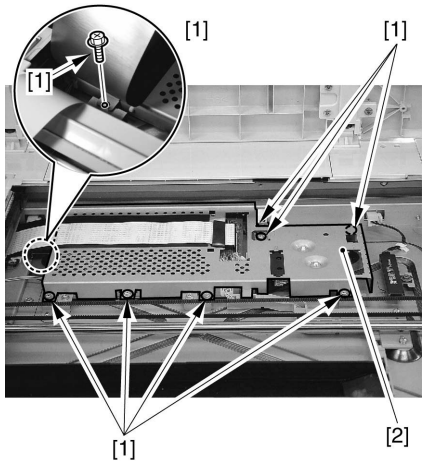
F-5-92

2) Disconnect the connector [1], and detach the flexible cable [2].



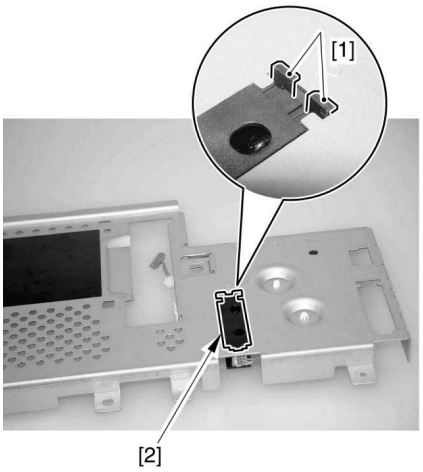
F-5-93

3) Remove the 8 screws [2], and detach the cover [3].



F-5-94

4) Free the hook [1], and detach the original sensor [2].

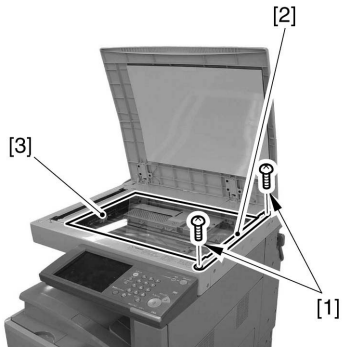


F-5-95

5.4.9 Reader Heater (option)

5.4.9.1 Removing the Copyboard Glass 0002-3886

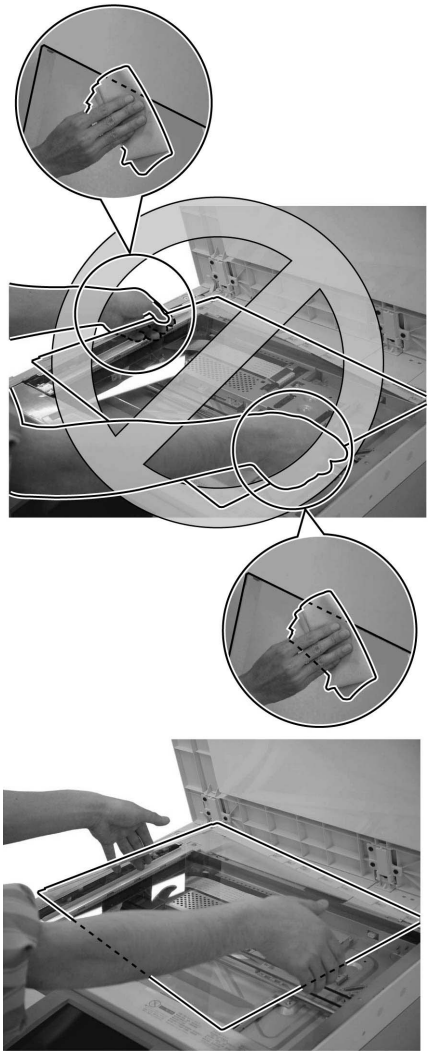
1) Open the copyboard cover (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2]; then, detach the copyboard glass [3].



F-5-96

⚠When removing the copyboard glass, take care not to touch the following:
- glass surface
- standard white plate

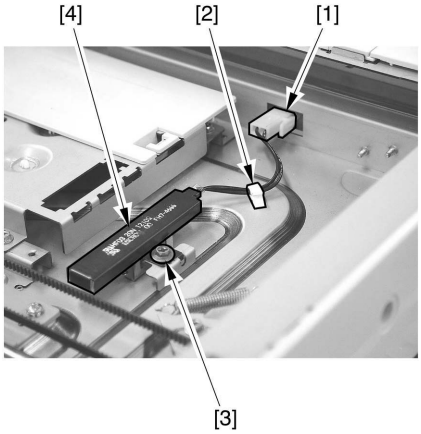
The presence of dirt can cause white/black lines in the images. If dirt is found, clean it with lint-free paper moistened with alcohol.



F-5-97

5.4.9.2 Removing the Reader Heater (right) 0000-8325

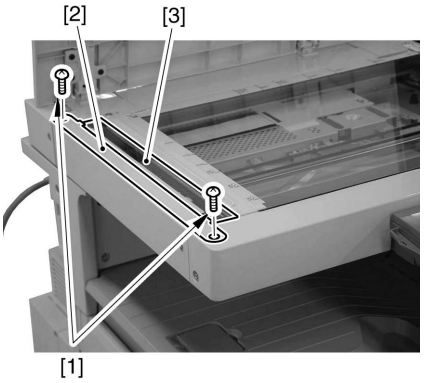
1) Disconnect the connector [1], and free the cable from the wire saddle [2].
2) Remove the screw [3], and detach the reader heater (right) [4].



F-5-98

5.4.9.3 Removing the ADF Reading Glass 0002-3887

1) Open the copyboard glass (or ADF).
2) Remove the 2 screws [1], and detach the glass retainer [2].
3) Remove the ADF reading glass [3].

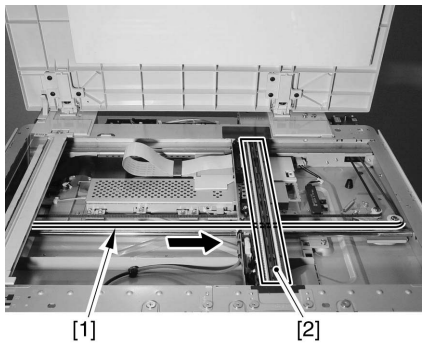


F-5-99

⚠When removing the ADF reading glass, take care not to touch the glass surface.
The presence of dirt can cause white/black lines in the images. If dirt is found, be sure to clean it using lint-free paper moistened with alcohol.

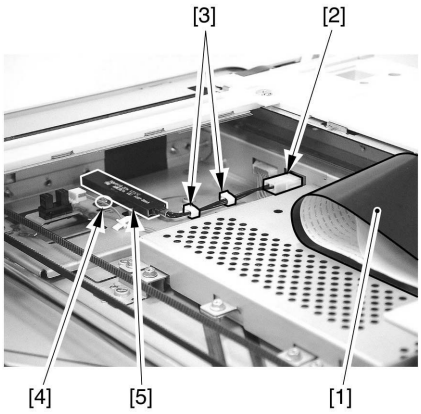
5.4.9.4 Removing the Reader Heater (left) 0000-8326

1) Pull the drive belt (front) [1] in the direction of the arrow so that the contact image sensor (CIS) [2] is where it is indicated in the figure.



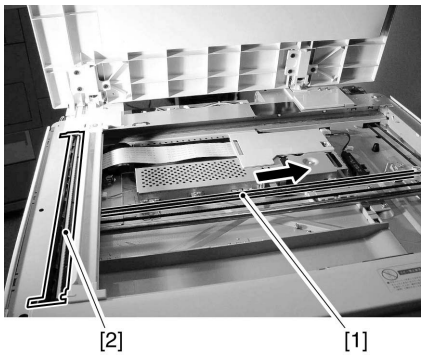
F-5-100

2) Peel the protective sheet [1], and disconnect the connector [2].
3) Free the cable from the wire saddle [3], and remove the screw [4]; then, detach the reader heater (left) [5].



F-5-101

⚠After replacing the sensor, pull the drive belt (rear) [1] in the direction of the arrow so that the contact image sensor is returned to the farthest left.



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6.1 Construction

6.1.1 Specifications, Control Mechanisms, and Functions

0000-9254

T-6-1

Laser Light	
Wave length	785 to 800p nm (infrared)
Output	5 mW
Number of beams	2

T-6-2

Scanner Motor	
Type of motor	DC brushless
Revolution	16000 rpm (approx.)
Type of bearing	Oil

T-6-3

Polygon Mirror	
Number of facets	6

T-6-4

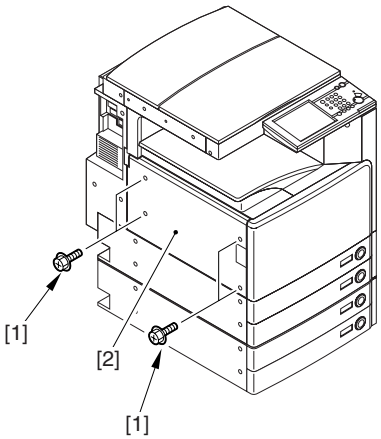
Control Mechanisms	
Synchronization	In main scanning direction
	In sub scanning direction (write start position)
Intensity control	APC control
	PWM control
Others	Laser activation
	Laser scanner motor control
	Laser shutter control

6.2 Parts Replacement Procedure

6.2.1 Laser Scanner Unit

6.2.1.1 Removing the Left Cover 0002-0498

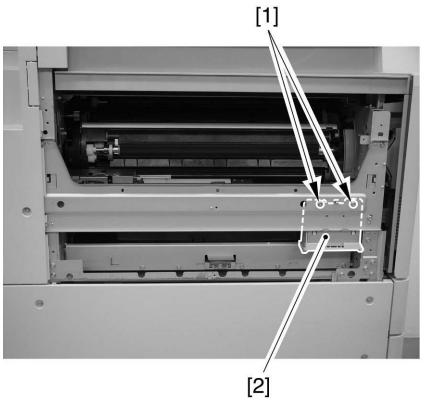
1) Remove the 4 screws [1], and detach the left cover [2].



F-6-1

6.2.1.2 Removing the Left Grip (front) 0001-8205

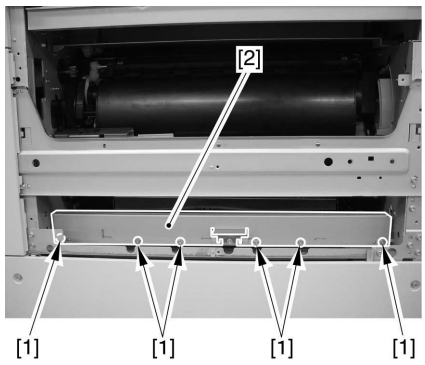
1) Remove the 2 screws [1], and detach the left grip (front) [2].



F-6-2

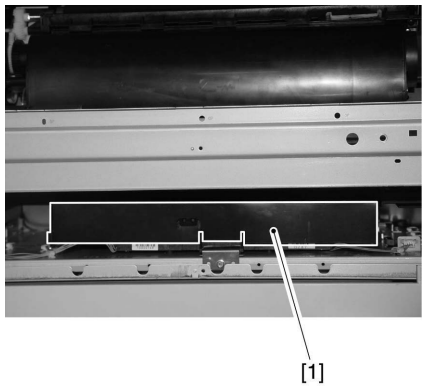
6.2.1.3 Removing the Laser Scanner Unit 0000-9265

1) Remove the 6 screws [1], and detach the anti-vibration plate [2].



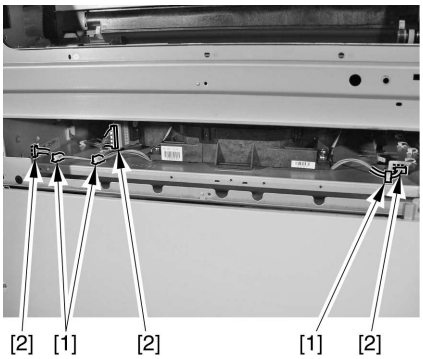
F-6-3

2) Pull out the dust-blocking sheet [1] to the front to detach.



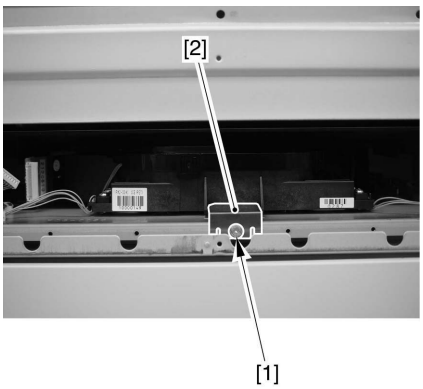
F-6-4

3) Free the cable from the 3 cable clamps [1], and disconnect the 3 connectors [2].



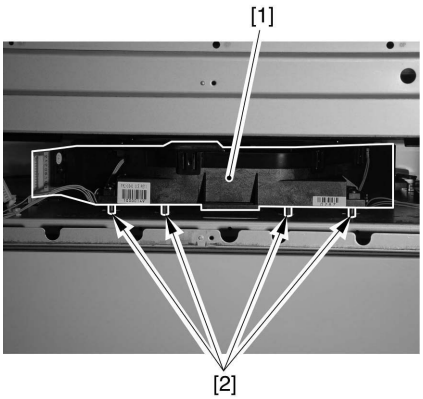
F-6-5

4) Remove the screw [1], and detach the laser scanner unit fixing plate [2].



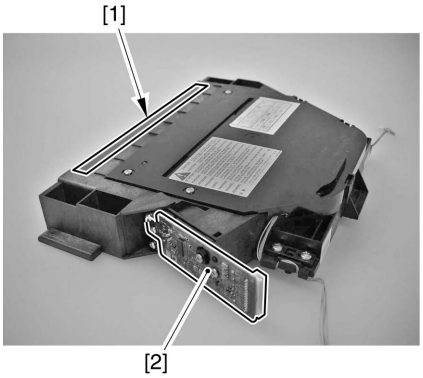
F-6-6

5) Lift the laser scanner unit [1], and free the 4 bosses [2]; then, pull it to the front to detach.



F-6-7

⚠Take care not to touch the element on the laser drive PCB [2] or the dust-blocking glass [1] (laser exposure area) of the laser scanner unit. Also, take care not to hit the laser drive PCB [2] against the machine.



F-6-8

6.2.1.4 After Replacing the Laser Scanner Unit 0001-6204

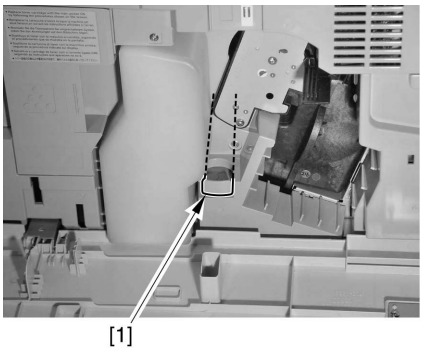
Enter the values indicated on the label attached to the laser scanner unit using the following service mode item:

- COPIER>ADJUST>LASER>LA-DELAY

6.2.2 Dust-Proofing Glass Cleaning Pad

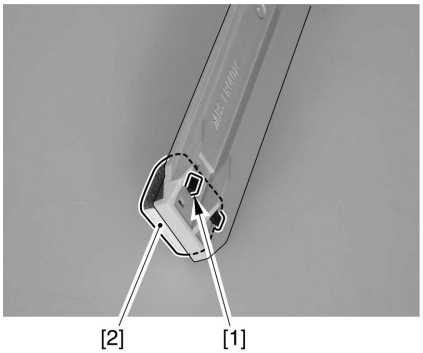
6.2.2.1 Removing the Dust-Blocking Glass Cleaning Pad 0002-2972

1) Open the front cover.
2) Pull out the dust-blocking glass cleaning tool [1] to the front to detach.



F-6-9

3) Free the claw [1], and detach the dust-blocking glass cleaning pad [2].



F-6-10

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7.1 Construction

7.1.1 Specifications of the Image Formation System

0000-9261

T-7-1

Drum Unit		
	Photosensitive drum	
	Drum type	OPC
	Drum diameter	62 mm
	Cleaning mechanism	cleaning blade
		brush roller
	process speed	137 mm/sec
	Primary charging assembly	
	Charging method	roller charging
	Charging roller diameter	14 mm
	Cleaning mechanism	none

T-7-2

Developing Unit		
	Developing cylinder diameter	20 mm
	Development method	dry, 2-component
	Toner	non-magnetic negative (S toner)
	Toner level detection (to ensure a specific level)	video count data, patch image density measurement
	Starter	comes filled

T-7-3

Toner Cartridge	
	Toner level detection

Toner Cartridge		
	Toner detection	path image density measurement
	Toner level indication	toner supply amount (video count data, patch image density measurement)
	Toner amount	Y: 170 g M: 170 g C: 170 g Bk: 635 g (including about 95 g of carrier)

T-7-4

Intermediate transfer assembly		
	Construction	intermediate transfer belt (ITB) (ITB)
	Drive method	from drum/ITB motor through gears
	Feed speed	
	Plain paper	137 mm/sec
	Thick paper, postcard, transparency*1	68.5 mm/sec
	Cleaning mechanism	Cleaning blade

*1: in the case of full color mode, 68.5 mm/sec; of mono color mode, 137 mm/sec.

T-7-5

Image stabilization control		
	ATR control	corrects toner density (supply amount)
	Drum film thickness detection control	corrects development contrast
	Development contrast control	determines appropriate primary charging DC bias and developing DC bias
	ATVC control	ensures good transfer
	PASCAL control	corrects image gradation density characteristics
	development gradation density correction control	corrects development gradation density characteristics

7.2 Image Formation Process

7.2.1 2-Side Placement Control

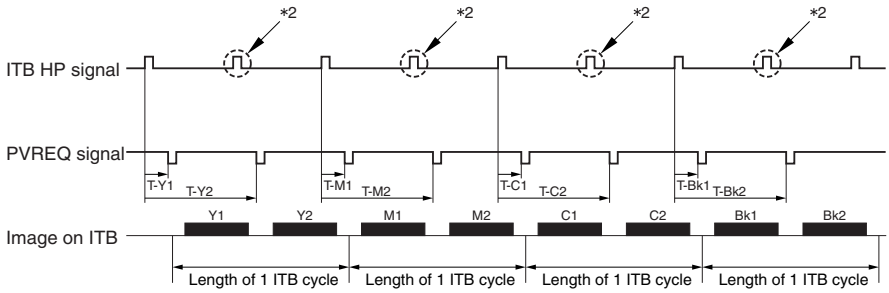
0000-9344

The machine uses the paper placement control mechanism to increase productivity.

In principle, when full color copies are made or when thick paper is used to generate multiple output, the machine forms images for 2 output sides on its ITB.*1
The machine uses the ITB HP signal when forming images for both 1st and 2nd sides.

<Particulars of Control>
EX: Full color, Plain paper, A4, 2 copies

The machine forms 4-color (YMCBk) images on its ITB in the following sequence:



F-7-1

T-Y1/M1/C1/Bk1: time from when the ITB HP signal is detected to when the PVREQ signal for the 1st side is sent.
T-Y2/M2/C2/Bk2: time from when the ITB HP signal is detected to when the PVREQ signal is sent.

*1 The machine uses the 1-side placement mechanism for the following, as they do not permit the use of the 2-side placement mechanism:
- there is a delay in the transmission of the image data for the 2nd side from the main controller.
- the length of the paper in sub scanning direction is in excess of 216 mm.
- the manual feed tray is used as the source of paper.
- the No. 3 delivery slot is used for delivery.
- the first 2nd or the last 2nd copy is being handled in duplex mode.
- envelopes are used.

*2: the HP signal is ignored in this interval.

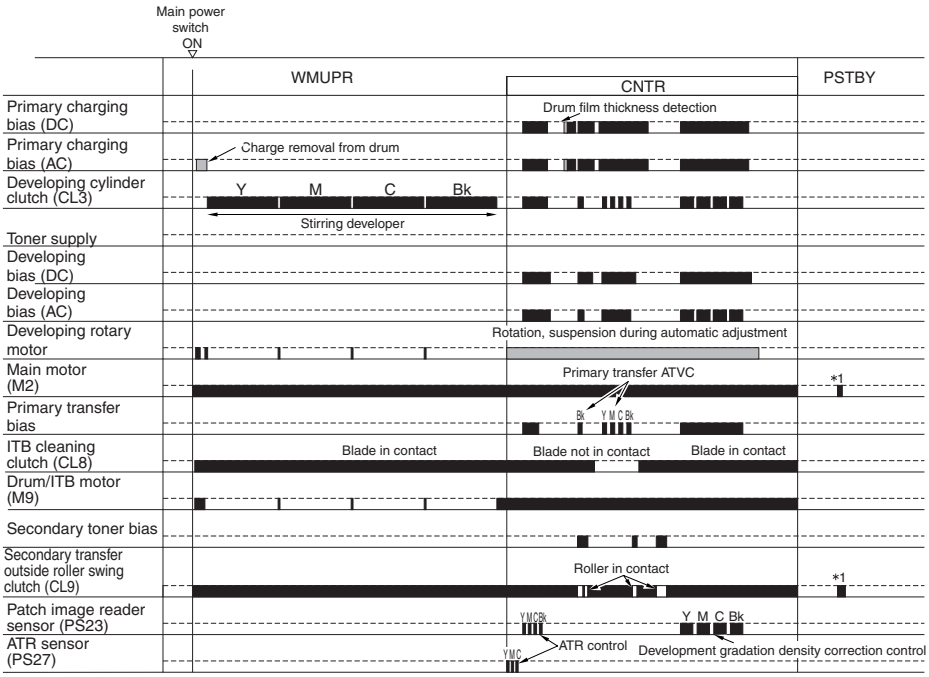
7.3 Basic Sequence

7.3.1 Power-On

0000-9343

The machine goes thorough the following sequence of operations when its main power switch is turned on while the surface temperature of the fixing roller is less than 50 deg C (as in the morning, when the machine is turned on after being left alone for a long time).

<Characteristics>
- immediately after the start of the sequence, the machine checks the home position of the developing rotary and removes charges from the drum surface.
- stirs up the developer inside the individual developing units (colors), and deposits an even coating of developer on the developing cylinder.
- the machine takes about 360 sec from when the main power switch is turned on to when it enters a standby state.
- the machine executes the following image stabilization control mechanisms while warm-up rotation is taking place: ATR correction control, drum film thickness detection control, primary transfer ATVC control, developing gradation density correction control



F-7-2

*1: in about 30 sec after the machine enters a standby state, it causes the secondary transfer outside roller to move away from the ITB.

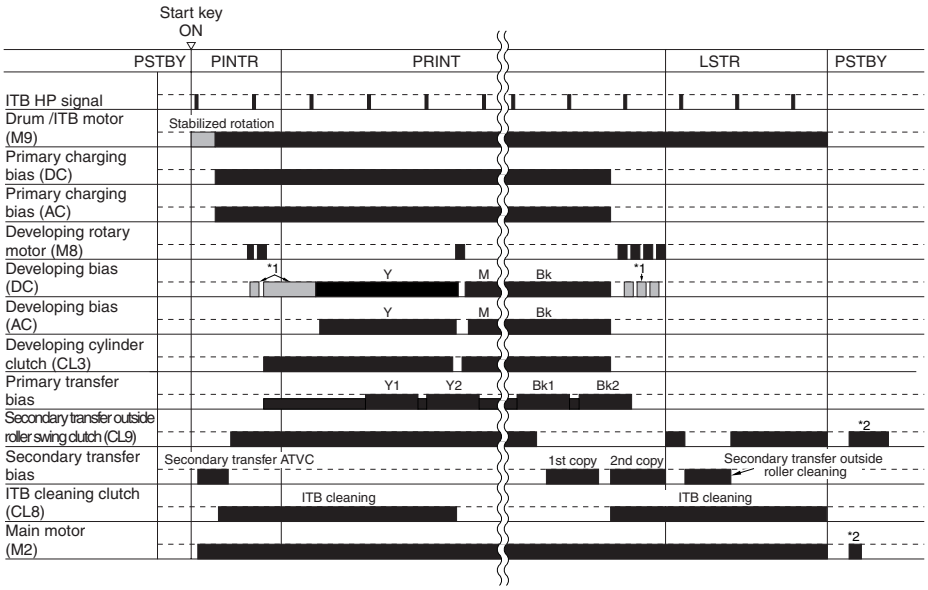
<if the main power switch is turned on while the surface temperature of the fixing roller is 50 deg C or more>
- the machine does not stir the developer.
- the machine takes about 10 to 45 sec from when the main power switch is turned on to when it enters a standby state.

- in principle, the machine does not execute image stability control; however, it executes development gradation density correction if any of the following conditions exists:
- there has been a significant change in the environment since the previous execution of the developing gradation density correction mechanism.
- the cumulative number of copies has reached 200 if full color or 1000 if mono color.

7.3.2 Copying/Printing (normal speed) 0000-9346

Full color, Plain paper, A4, 2 copies

<Characteristics>
- in the case of multiple output, the machine forms images for 2 sides of the same color on the ITB in succession. (2-side placement)
- while an image is on the ITB, the machine keeps the ITB cleaning blade and the secondary transfer outside roller from the ITB.



F-7-3

*1: the machine applies a specific level of bias so as to prevent adhesion of toner and carrier form the developing cylinder to the drum.
*2: the machine moves the secondary transfer roller from the ITB 30 sec after it has entered a standby state.

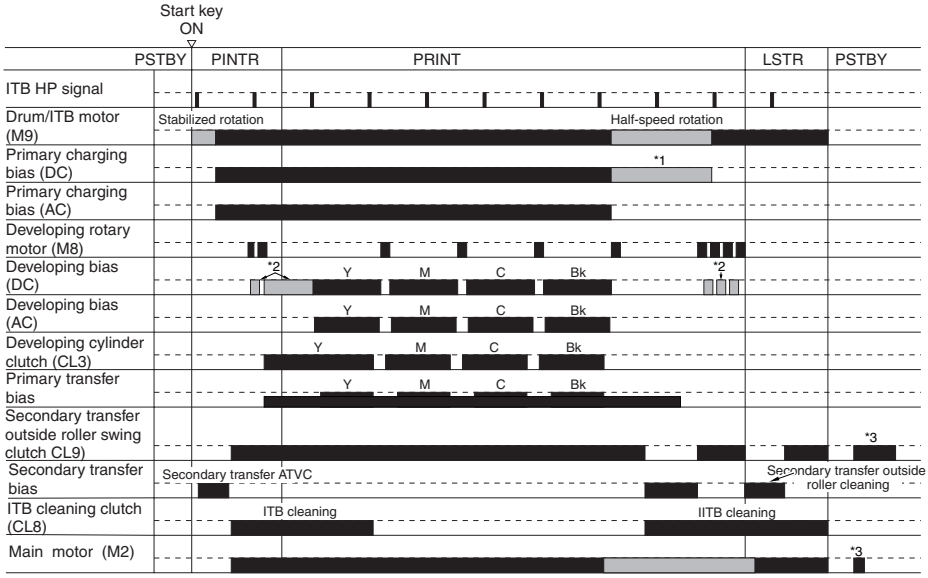
<Mono Color Copying/Printing>
- the machine always uses the 1-side placement mechanism (as there is no need for depositing images of different colors on the ITB, i.e., the image formed on the ITB is immediately transferred to paper).
- the machine keeps the ITB cleaning blade and the secondary transfer outside roller in contact with the ITB at all times (even while an image is being formed on the ITB.

7.3.3 Copying/Printing (half-speed) 0001-4757

Full color, Thick paper, Postcard, Transparency, A4, 1 copy

<Characteristics>

- after forming an image on the ITB (all colors), the machine slows down the drum/ITB motor until they rotate at half its normal speed before it starts transfer operation.



F-7-4

*1: while the drum/ITB motor is rotating at a low speed, the machine applies a specific primary charging bias so as to prevent the toner on the ITB from returning to the drum.

*2: the machine applies a specific level of developing bias so that the toner and carrier on the developing cylinder will not adhere to the drum.

*3: the machine moves the secondary transfer outside roller from the ITB about 30 sec after it has entered a standby state.

<Mono Color Copying/Printing>

- Unlike when using normal speed, the machine forms images for 2 sides on the ITB in succession to increase the productivity of making multiple copies/prints. (2-side placement)

7.3.4 Copying/Printing a Mix of Color and Black-and-White Originals 0000-9349

The machine does not use special processing for the sequence it uses to make copies/prints of a mix of color and black-and-white originals; in other words, its operation is the same as the operation it uses to make copies/prints of color only or black-and-while only originals.

7.4 Image Stabilization Control

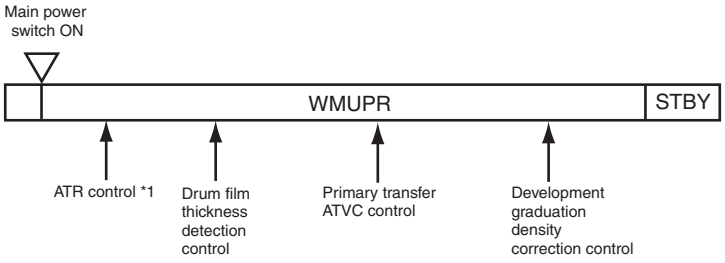
7.4.1 Timing of Image Stabilization Control

0001-6270

At Power-On

<Characteristics>

- in principle, the machine executes image stabilization control only when the surface temperature of the fixing roller is less than 50 deg C. However, it executes development gradation density correction control if any of the following conditions exist when the surface temperature of the fixing roller is 50 deg C or more:
- there has been a significant change in the environment since the execution of the previous development gradation correction control.
- the cumulative number of copies has reached 200 if full color or 1000 if mono color.
- when the cover is opened/closed, toner cartridge is replaced, return is made from a jam state, or return is made for low power mode, the machine executes image stabilization control if the surface temperature of the fixing roller is less than 50 deg C at the time.
- the machine takes about 120 sec to complete the execution.



F-7-5

*1: corrects the patch density target value (ATR sensor), corrects the toner supply amount (patch image read sensor).

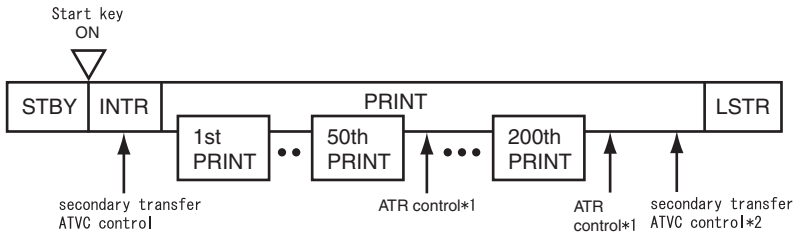
The following is a table of times taken by automatic control, including image stabilization control.

T-7-6

Operation		**Time (approx.)**
Power-on/Cover open/close	if the surface temperature of the fixing roller is less than 50 deg C	250 sec
	if the surface temperature of the fixing roller is 50 deg C or more	15 sec

Operation		Time (approx.)
Return from jam state	if the surface temperature of the fixing roller is less than 50 deg C	260 sec
	if the surface temperature of the fixing roller is 50 deg C or higher	25 sec
Toner cartridge replacement	if the surface temperature of the fixing roller is less than 50 deg C	315 sec
	if the surface temperature of the fixing roller is 50 deg C or more	75 sec
Return from low-power mode	if the cover is not opened/closed while in low power mode	15 sec

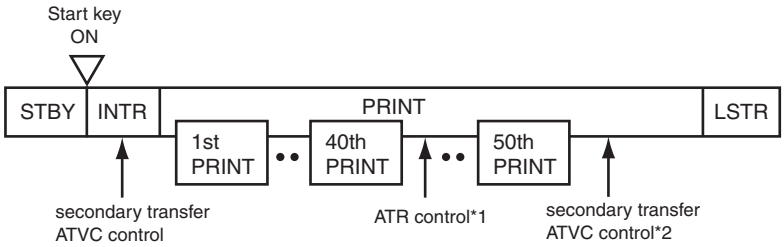
In Response to a Press on the Start Key (mono color)



F-7-6

*1: corrects the toner supply amount; executes every 50 copies of 6 % originals (about 8 sec).
*2: executes every 200 copies (small size; about 6 sec).

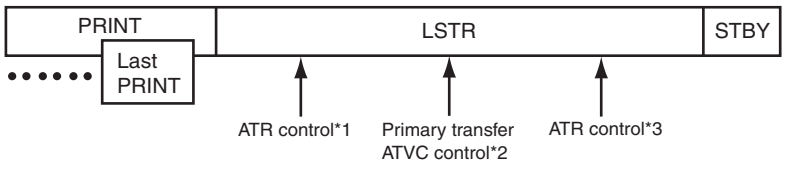
In Response to a Press on the Start Key (full color)



F-7-7

*1: corrects the patch density target value; executes every 40 copies (about 9 sec).
*2: executes every 50 copies (small size; about 6 sec)

During Last Rotation



F-7-8

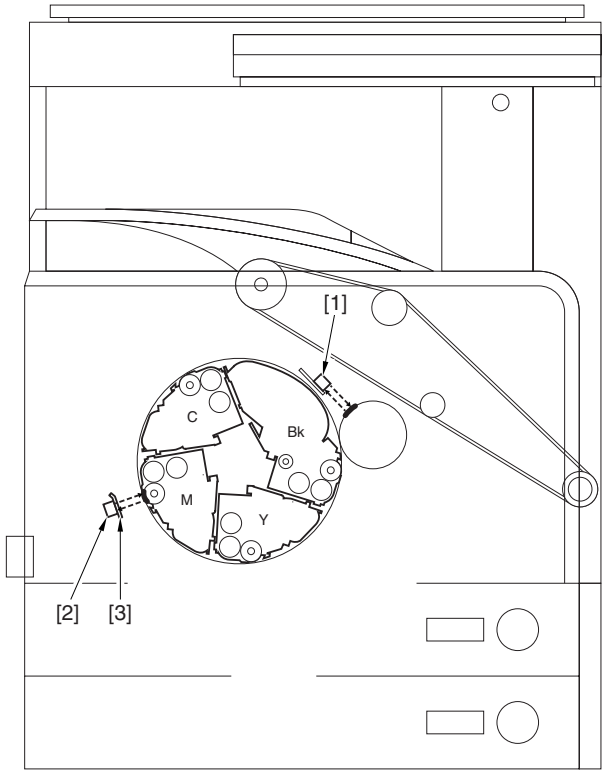
*1: the cumulative copies/prints made since the previous execution of ATR control (correction of the toner supply amount based on the patch image density measurement) has reached 48 (Bk only; about 9 sec).
*2: there has been a significant change in the environment (about 40 sec).
*3: the cumulative number of copies/prints made since the previous execution of ATR control (correction of the density target value based on the measurement of the developer density on the developing cylinder) has reached 40 for full color (Y, M, C only; about 9 sec).

7.4.2 ATR Control

0000-7855

The machine executes ATR control to keep the density (ratio of toner/carrier) inside the developing unit to a specific level, which otherwise would change over time.

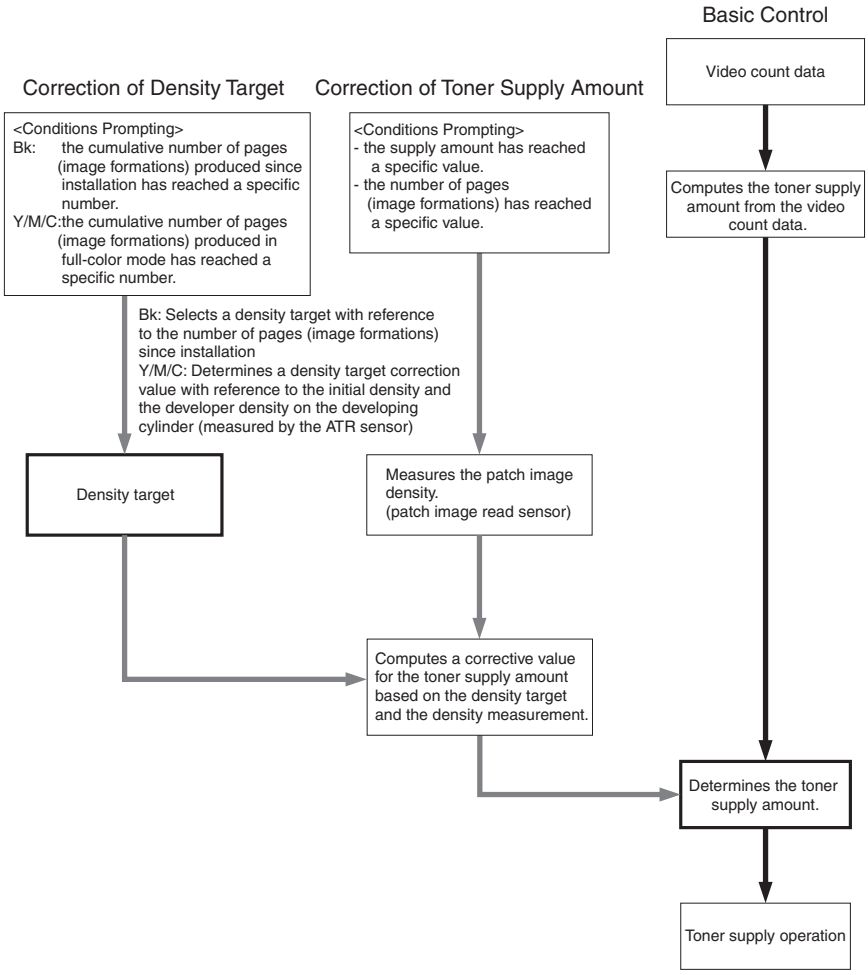
<Particulars of Control>
The machine is not equipped with a means (sensor) of directly measuring the level of toner inside the developing unit. In its place, the machine forecasts the consumption of toner with reference to video count data to make up for the consumption of toner. The toner supply amount computed from the video count data is corrected at such times as programmed: the machine uses the difference in potential between the primary charging bias and the developing bias to form a patch density on the photosensitive drum. It reads the density of the patch using the patch image read sensor, and compares the result against the density target value to increase or decrease the toner supply amount. If the density of the patch image changes because of changes in the developer characteristics, the machine will not be able to keep the density of the developer inside the developing unit to a specific level, which would cause the toner to move astray inside the machine or carrier to stick to the drum. To prevent such a problem, the machine corrects the density target value at such times as programmed, thereby keeping the density of developer inside the developing unit to a specific level. (In the case of Y, M, or C, the machine uses the density of the developer measured by the ATR sensor; in the case of Bk, on the other and, the machine corrects the density target value based on the reading of the counter designed for the developing unit (Bk; i.e., how may sheets have moved past it).



F-7-9

[1] Patch image read sensor
[2] ATR sensor
[3] ATR sensor shutter

Flow of ATR Control



F-7-10

These individual measurements may be checked in service mode.

T-7-7

Item	Description	Optimum value
COPIER>DISPLAY>DENS		
DENS-Y/M/C/K	Use it to check the discrepancy of the patch image density from the target value. (%) [patch image read sensor]	-25 to +25
P-SENS-P	Use it to check the background measurement taken of the photosensitive drum. (P wave; positive reflection component) [P wave; patch image read sensor]	400 to 600

Item	Description	Optimum value
SGNL-Y/M/C	Use it to check the measurement of the developer density on the developing cylinder. [ATR sensor]	225 to 863
REF-Y/M/C	Use it to check the reference signal value of the developer density on the developing cylinder. (direct light from LED) [ATR sensor]	464 to 560
COPIER>ADJUST>DENS		
SGNL-Y/M/C	Use it to check the initial setting of the developer density on the developing cylinder. [ATR sensor]	336 to 752
REF-Y/M/C	Use it to check the initial reference signal value of the developer density on the developing cylinder. (direct light from LED) [ATR sensor]	464 to 560

Memo:
Checking the Soiling of the Window
When the window of the light-emitting/receiving segment of the patch image read sensor becomes soiled with stray toner, the machine will not be able to accurately measure the density of the patch image. To avoid the problem, the machine checks the patch image read sensor for soiling. While initial multiple rotation is under way, the machine measures the light from the surface of the drum without depositing any toner on it (drum background measurement); it will assume that the window is soiled if the measurement is lower than a specific level (COPIER>DISPLAY>DENS>P-SENS-P), thus indicating an error code (E020-0081) and stopping its operation.
Although the machine does not check the ATR sensor for soiling, the sensor is equipped with a shutter to prevent soiling; the shutter opens only when the ATR sensor measures the developer density on the developing cylinder and remains closed at other times.

7.4.3 Drum Film Thickness Detection Control 0001-5930

As more and more copies are made, the film thickness of the photosensitive drum decreases; to make up for the decrease in the film thickness and, thus to correct the development contrast, the machine checks the film thickness with reference to the current flowing over the drum surface to determine the development contrast correction value.

<Particulars of Control>
1. using a specific level of charging AC bias, the machine removes charges from the drum surface.
2. the machine applies a specific level of charging DC bias to the primary charging roller, and measures the current flowing in response (i.e., current flowing over the drum surface) using the high-voltage PCB.

3. the machine communicates the detected current level to the DC controller PCB, and finds out the thickness of the

drum film from the current level.
4. the machine determines the development contrast correction value based on the film thickness of the drum.

<Timing of Control>
See "Timing of Image Stabilization Control>

7.4.4 PASCAL Control (image gradation density correction) 0001-2313

The machine executes PASCAL control to ensure stable gradation density characteristics of images. It corrects the characteristics that otherwise would tend to change as a result of changes in the environment and deterioration of the photosensitive drum.
It reads a gradation pattern (64-gradation) of a test print using its reader unit to prepare an image density correction table.

starts up

↓

generates a text pattern (3 types, stored in the main controller) automatically.

↓

reads the test pattern print-out placed in the reader unit.

↓

prepares an image correction table A.

<Timing of Control>
- as needed (when 'Full Adjust' is under way under auto gradation correction in Additional Function)

7.4.5 Development Gradation Density Correction Control 0001-2314

The machine executes development gradation density correction so that the gradation density characteristics of images formed on the drum are stable against the changes that otherwise would occur because of changes in the environment and the deterioration of the environment.
The machine reads the patch image pattern (YMCK; 9 gradations each) formed on the photosensitive drum using the patch image read sensor, and prepares an image density correction table.

starts up

↓

using the patch image read sensor, measures the light reflected by the surface of the drum.

↓

forms a patch image pattern on the drum drawn from patterns stored in the main controller (without toner in the patch image)

↓

using the patch image read sensor, measures the density of the patch image pattern.

↓

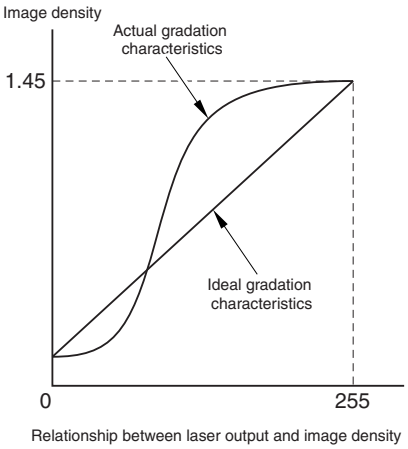
prepares an image correction table B or C.

<Timing of Control>
- as needed (while 'Full Adjust' or 'Quick Adjust' under auto gradation correction is under way in Additional Function
- automatic

7.4.6 Auto Gradation Correction Function

0001-2882

The machine corrects the mage density correction table so as to obtain an ideal set of gradation characteristics. It executes the control in response to a command sent in Additional Function.



F-7-11

The machine permits the selection of 'Full Adjust' or 'Quick Adjust' for Additional Function auto gradation correction. In full or quick mode of correction, the machine combines PASCAL control and development gradation density correction control for execution.

<Particulars of Control>

Full Adjust
1. using the density data of the gradation pattern in the test pattern collected by the reader unit, prepares an image correction table A. (PASCAL control)
2. from the density data of the gradation pattern on the drum read by the patch image read sensor, prepares an image correction table B.

Quick Adjust
1. using the density data of the gradation pattern on the drum read by the patch image read sensor, prepares an image correction table C.

2. using the image correction table B and the image correction table C, corrects the image correction table A.

7.5 Drum Unit

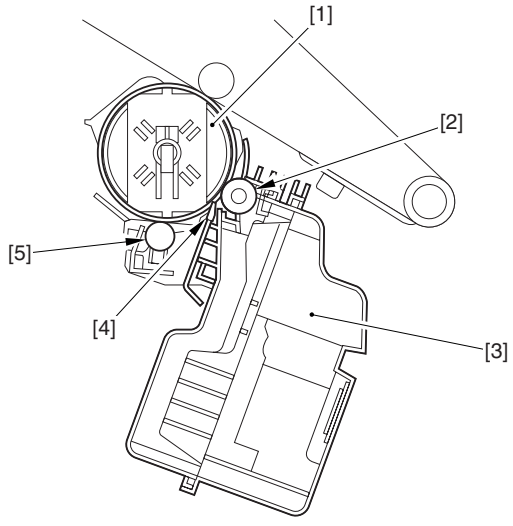
7.5.1 Drum Unit

7.5.1.1 Construction of the Drum Unit

0000-9350

T-7-8

	Component	Description
[1]	Photosensitive drum	forms a static (latent) image using laser light.
[2]	Brush roller	stirs up the toner remaining on the drum from previous transfer to the ITB, thereby reducing its adhesion to the drum.
[3]	Waste toner collection case	collects toner scarped off by the cleaning blade.
[4]	Cleaning blade (polyurethane rubber)	scrapes off and removes the toner remaining on the drum from previous transfer to the ITB.
[5]	Primary charging roller	charges the surface of the photosensitive drum to an even layer of negative potential.



F-7-12

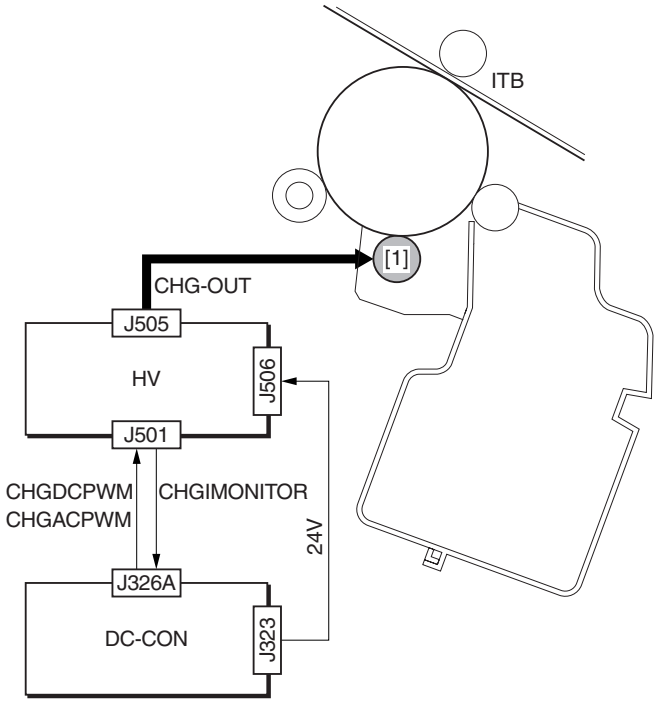
7.5.1.2 Charging Bias Control

0000-9352

AC component: output by constant current control.

DC component: output in keeping with the output of the environment sensor (temperature, humidity) and the drum

film thickness current value.



F-7-13

[1] Primary charging roller
CHGDCPWM: PWM signal for charging DC
CHGACPWM: PWM signal for charging AC
CHG-OUT: charging bias output signal
CHGIMONITOR: charging current detection signal

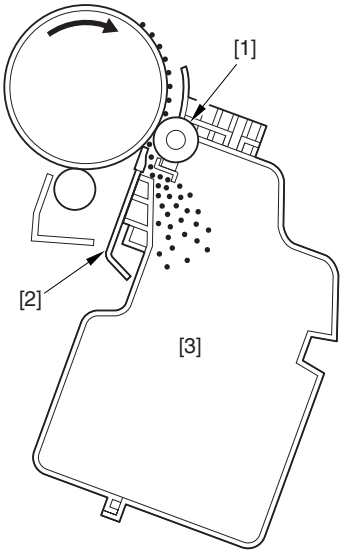
7.5.1.3 Drum Cleaning

0000-9353

The machine uses a cleaning blade to clean its photosensitive drum.

T-7-9

	Component	Description
[1]	Brush roller	stirs up the toner on the drum, thereby reducing its adhesion to the drum.
[2]	Cleaning blade (polyurethane rubber)	remains in contact with the drum at all times, and scrapes off residual toner from the drum.
[3]	Waste toner case	collects toner scarped off by the cleaning blade.



F-7-14

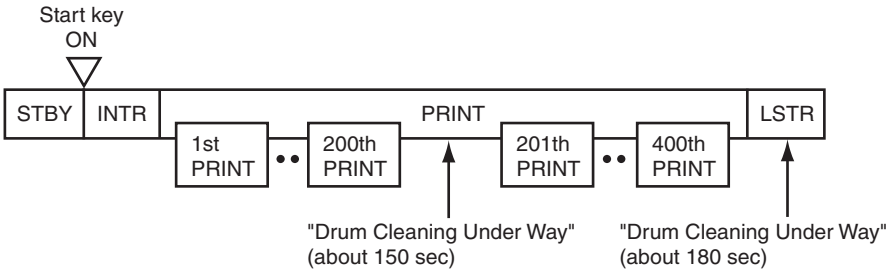
If the application of primary charging bias lasts too long (e.g., because of continuous copying/printing), the byproduct of discharge (ozone oxides) occurring in the primary charging assembly will build up on the drum surface, temporarily increasing the friction between the photosensitive drum surface and the cleaning blade, which ultimately warps the cleaning blade and lowers the cleaning performance. To prevent such a problem, the machine executes idle rotation of the drum, in which the byproduct of discharge is removed. While the machine rotates the drum idly, it indicates the message "Drum Cleaning Under Way" on its control panel.

<Timing of Start-up and Duration>

- while copying/printing is under way (about 150 sec) after the number of copies/prints made in succession has reached 800 images*1.
- during last rotation (about 180 sec max.*2)

*1: in the case of mono color, 800 copies; of full color, 200 copies.

*2: rotates the drum idly for a shorter or longer period of time according to the number of copies/prints.



F-7-15

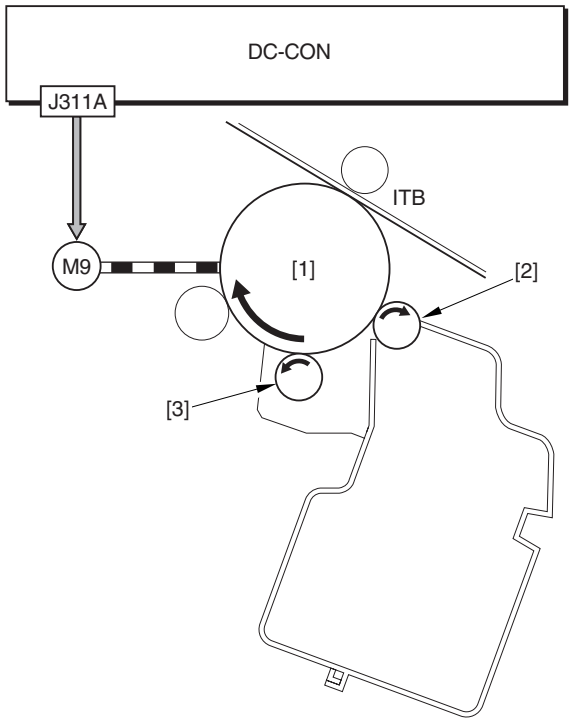
- Full color, Plain paper, A4, 400 copies

7.5.1.4 Drum Unit Drive Path

0000-9351

T-7-10

	Component	Source of drive
[1]	Photosensitive drum	drum/ITB motor (M9)
[2]	Brush roller	drum/ITB motor through gears
[3]	Primary charging roller	photosensitive drum (linked to drum)



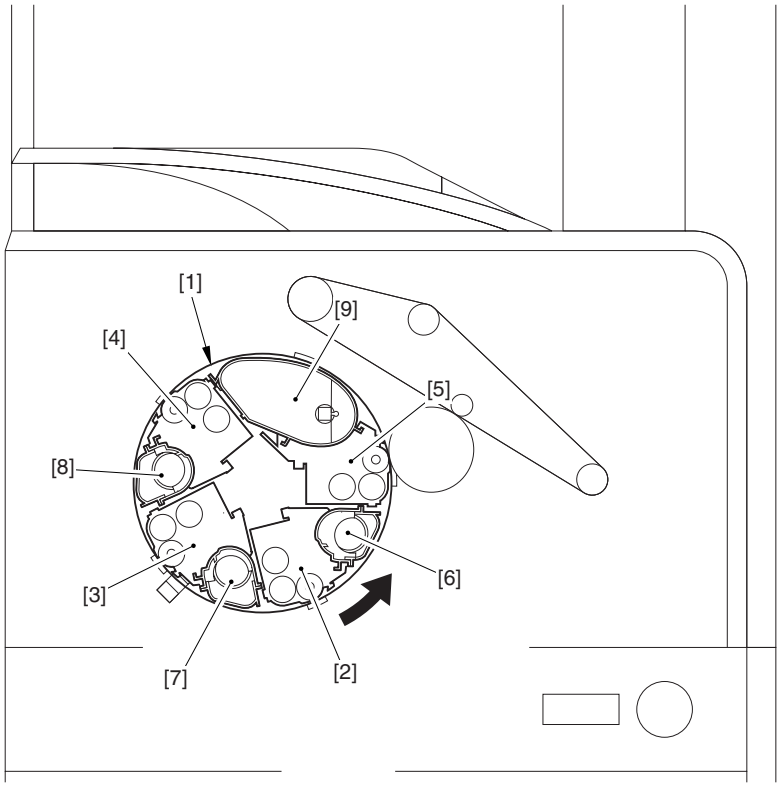
F-7-16

7.6 Developing Rotary

7.6.1 Construction of the Developing Rotary

0001-5033

The developing assembly consists of a developing rotary and 4 toner cartridges (YMCBk); the rotary in turn is equipped with 4 developing units YMCBk.
The developing rotary rotates counterclockwise to move the developing unit to the point of development (where the drum cylinder comes face to face with the drum) at time of development.



F-7-17

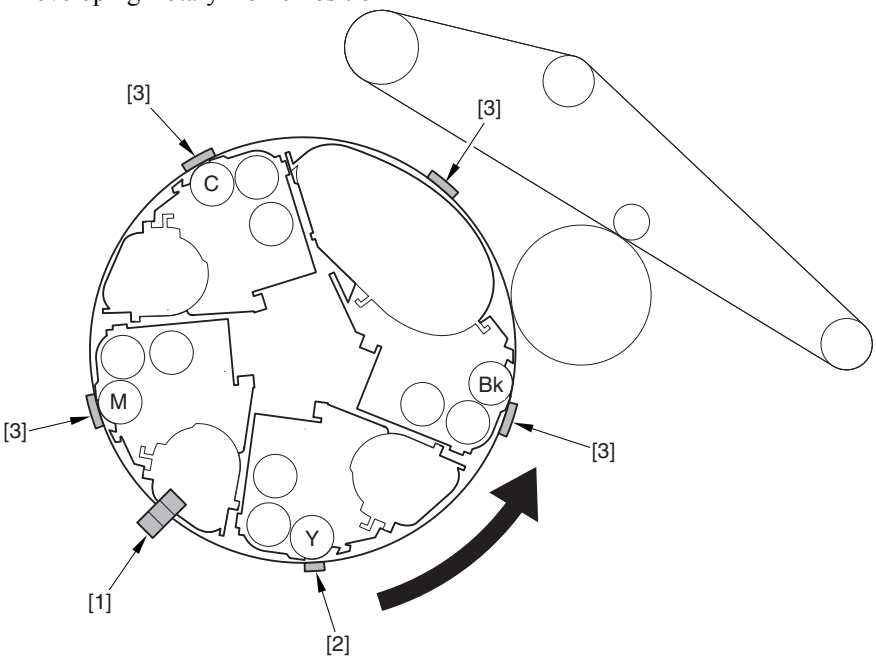
[1] Developing rotary
[2] Developing unit (Y)
[3] Developing unit (M)
[4] Developing unit (C)
[5] Developing unit (Bk)
[6] Toner cartridge (Y)
[7] Toner cartridge (M)
[8] Toner cartridge (C)
[9] Toner cartridge (Bk)

7.6.2 Developing Rotary Control

0001-5034

The developing rotary is controlled with reference to the rotary home position, which is where the developing rotary is rotated by 30 deg after the rotary HP sensor has detected the passage of the HP detecting sensor flag mounted to the circumference of the developing rotary. The machine uses this position to move the individual developing units to the point of development (where the developing cylinder comes face to face with the drum) and to the point of cartridge replacement and point of developer density measurement (where the YMC developing cylinder comes face to face with the ATR sensor).

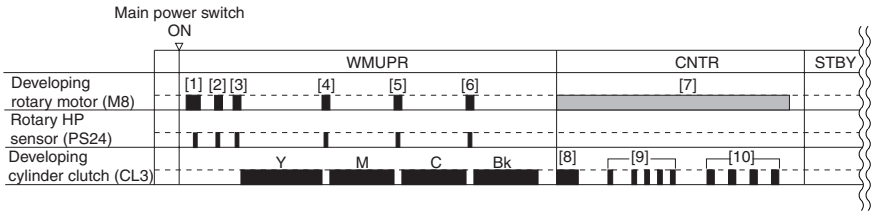
- Developing Rotary Home Position



F-7-18

[1] Rotary HP sensor
[2] HP detection sensor flag
[3] Developing position detecting sensor flag

- Basic Sequence of Operations of the Developing Rotary (at power-on)

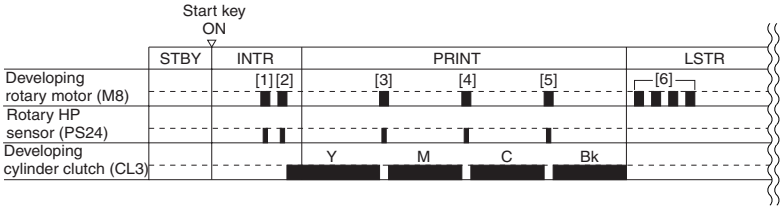


F-7-19

[1] rotation for detection of rotary HP
[2] move from rotary HP to point of Bk development
[3] move from point of Bk development to point of Y development
[4] move from point of Y development to point of M development

[5] move from point of M development to point of C development
[6] move from point of C development to point of Bk development
[7] rotation during image stabilization control
[8] ATR control
[9] primary transfer ATVC
[10]development gradation density correction

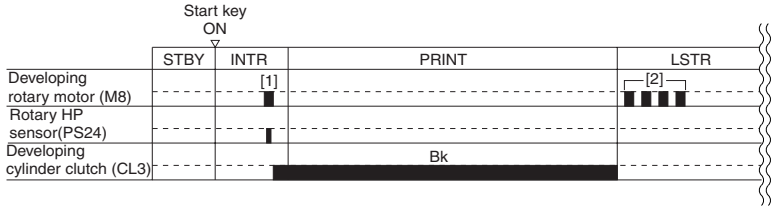
- Basic Sequence of Operations (developing rotary; full color)



F-7-20

[1] move from rotary HP to point of Bk development
[2] move from point of Bk development to point of Y development
[3] move from point of Y development to point of M development
[4] move from point of M development to point of C development
[5] move from point of C development to point of Bk development
[6] move from point of Bk development to rotary HP

- Basic Sequence of Operations (developing rotary; mono color)



F-7-21

[1] move from rotary HP to point of Bk development
[2] move from point of Bk development to rotary HP

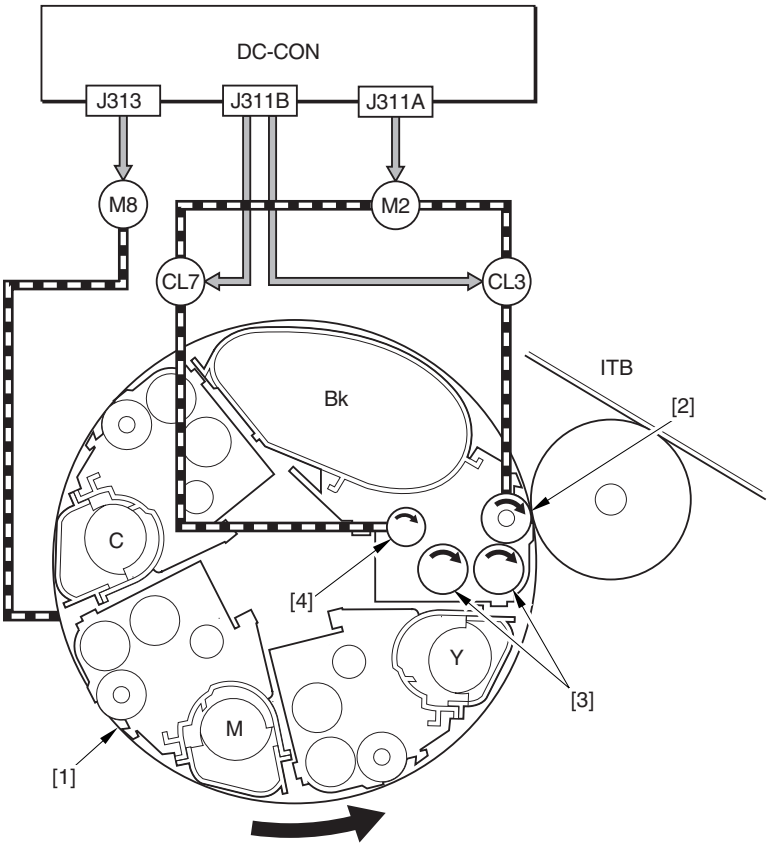
E021 (developing rotary rotation error)
1. the rotary HP sensor flag cannot be detected.
2. the sensor flag length detected during rotation is too long or too short.
3. the development sensor flag is not detected when the rotary stops at a point of development.

7.6.3 Developing Assembly Drive Path

0001-5035

T-7-11

	Component	Source of drive	Remarks
[1]	Developing rotary	rotary motor (M8)	uses the rotary home position to control the drive of the developing rotary.
[2]	Developing cylinder	main motor (M2)	driven when the clutch (CL3) goes on.
[3]	Developer stirring screw	main motor (M2)	driven when the clutch (CL3) goes on.
[4]	Toner feed screw	main motor (M2)	driven when the clutch (CL7) goes on.



F-7-22

7.7 Developing Unit

7.7.1 Construction of the Developing Unit

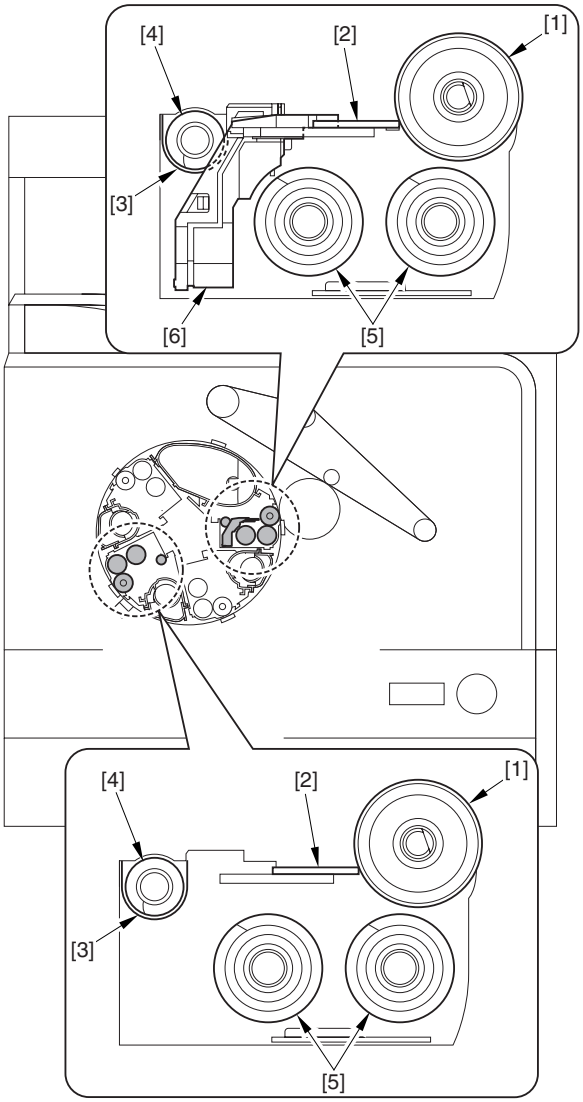
0000-9308

The machine's developing units differ between the Bk unit and the Y/M/C unit; while the former (Bk) is equipped with a waste carrier collection unit, the later (Y/M/C) is not.

T-7-12

Component		Description
[1]	Developing cylinder	retains developer (toner/carrier).
[2]	Developing blade	forms an even layer of developer on the developing cylinder.
[3]	Toner buffer assembly	retains toner from the toner cassette temporarily.
[4]	Toner feedscrew	feeds toner from the buffer assembly to the developing chamber.
[5]	Developer stirring screw	stirs up the developer and supplies it to the developing cylinder.
[6]	Waste carrier collection unit	collects waste toner*1.

*1: Bk developing unit only.



F-7-23

7.7.2 ACR Control (Auto Carrier Refresh control)

0000-9312

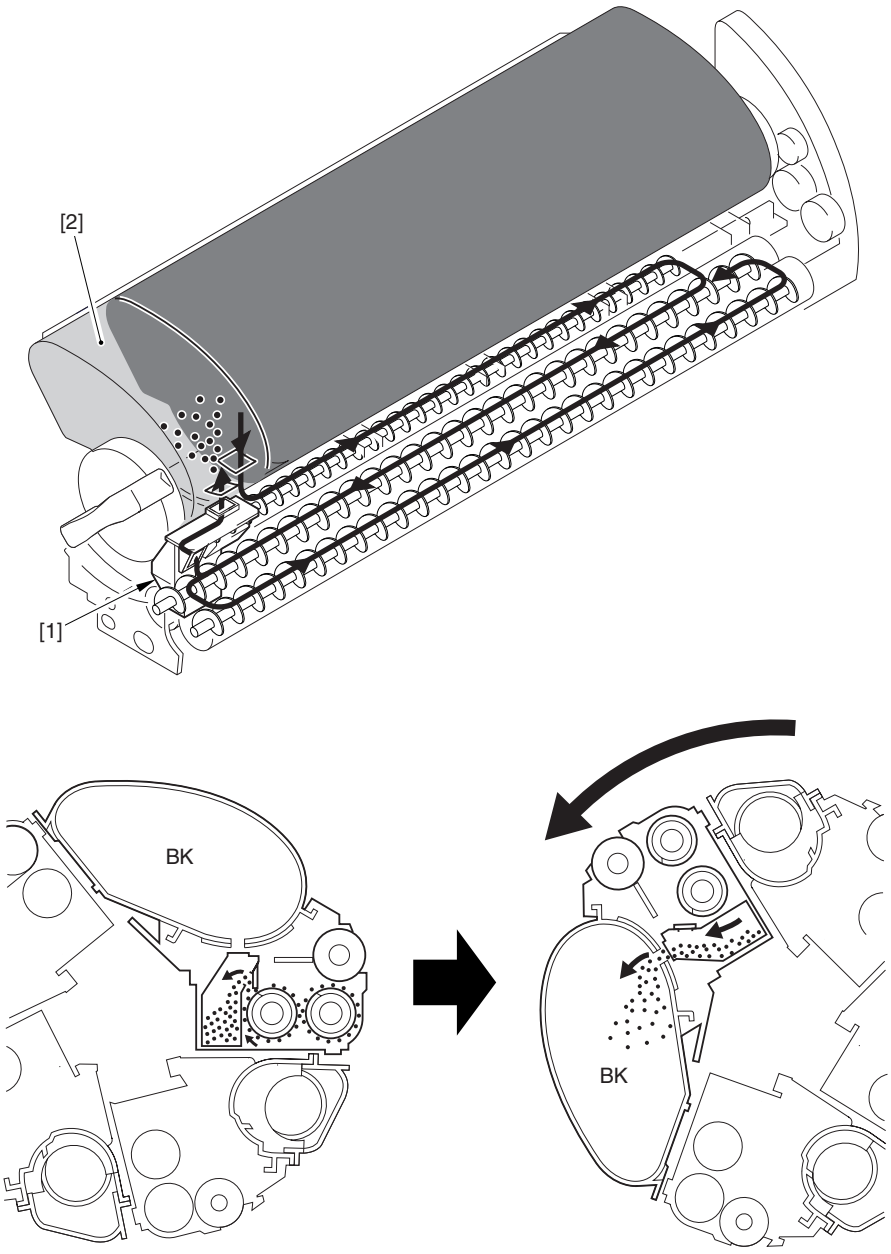
The machine uses the ACR control mechanism to enable longer use of carrier in the Bk developing unit.

The machine supplies developer (toner/carrier) from the Bk cartridge and, at the same item, collects the waste toner from the developing unit to the waste carrier collection chamber inside the toner cartridge.

<Particulars of Control>

1) As more and more developer is supplied from the toner cartridge, the amount of developer inside the developing unit increases.
2) The increase in the amount of developer is collected by the waste carrier collection unit while it is circulated inside the developing unit. Most of the developer being collected at this time consists of used (waste) carrier.
3) When the developing rotary rotates (2 turns), the waste carrier falls on its own weight and is colleted inside the

waste carrier collection chamber in the toner cartridge.



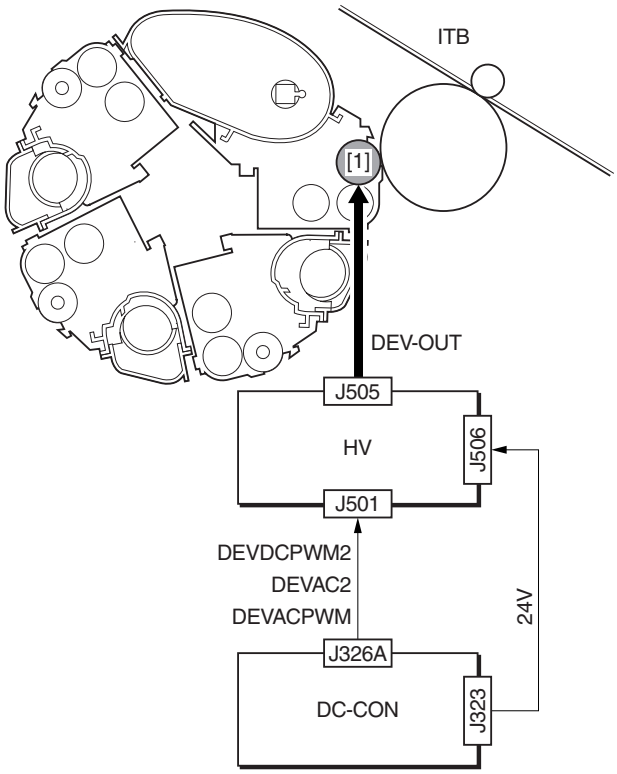
F-7-24

[1] Waste carrier collection unit (inside developing unit)
[2] Waste carrier collection chamber (inside toner cartridge)
<Timing of Start-Up/Duration>
The machine executes the mechanism after ATR correction (patch image detection control) if the amount of Bk toner supplied since the previous auto carrier refresh operation reaches a specific level during a mono color job. The execution takes about 5 sec.

7.7.3 Developing Bias Control

0000-9311

AC component: fixed.
DC component: in keeping with the output of the environment sensor (temperature, humidity), drum film thickness detection current.



F-7-25

Developing Bias Control
[1] Developing cylinder
DEVDCPWM2: PWM signal for developing DC
DEVACPWM: PWM signal for development AC
DEVAC2: remote signal for developing AC
DEV-OUT: developing bias output signal

7.8 Toner Container

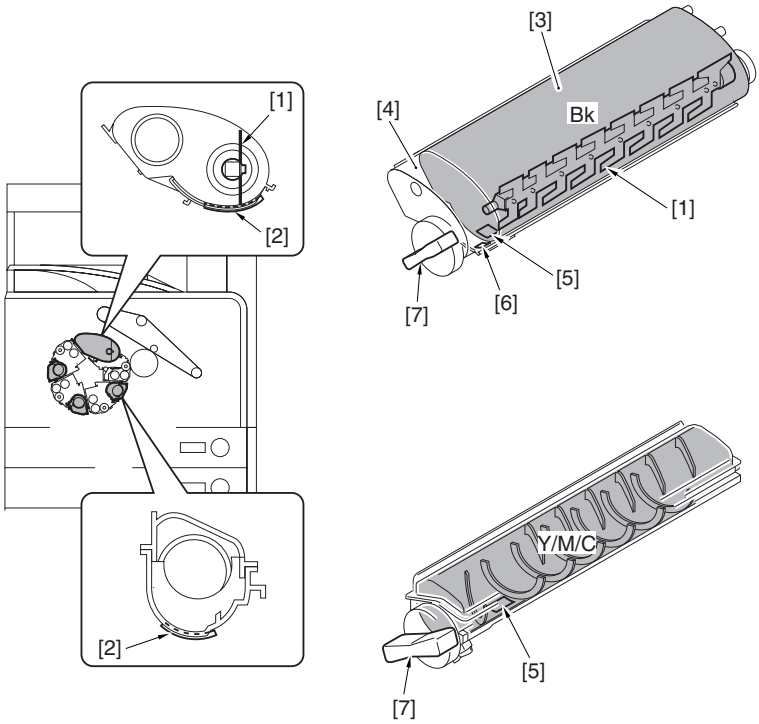
7.8.1 Construction of the Toner Cartridge

0001-2844

The machine uses different types of toner cartridge between Bk and Y/M/C; the latter type is not equipped with a toner feedscrew, and relies on the rotation of the developing rotary for movement of toner.
The Bk cartridge comes filled with toner and carrier mixed to a specific ratio; the amount of toner it contains is about 3 times that in a Y/C cartridge.

T-7-13

	Component	Description	
		Black	Color
[1]	Toner feedscrew	stirs up toner, and moves it to the buffer assembly inside the developing unit.	none
[2]	Toner shutter	opens or closes in response to the shutter open/close knob.	
[3]	Toner case	comes filled with toner; about 635 g (including about 95 g of carrier).	content: 170 g
[4]	Waste carrier collection chamber	collects waste carrier.	none
[5]	Supply mouth	moves and directs toner through it to the developing assembly.	
[6]	Collection mouth	moves waste carrier through it to the waste carrier collection chamber.	none
[7]	Shutter open/close knob	opens/closes the shutter.	



F-7-26

7.8.2 Toner Level Detection Control

0001-2847

The machine is not equipped with a means (sensor) to directly check the level of toner inside the toner cartridge (all 4 cartridges), and uses the measurements it takes of the patch images it forms on the photosensitive drum to find out the presence/absence of toner.

<Particulars of Control>
1) supplies toner to the inside of the developing unit.
2) forms a patch image on the photosensitive drum, and reads its density using the patch image read sensor.
3) compares the measurement against the reference value
|
v
i) if measurement >= reference value,
-> the machine assumes that toner exists inside the toner cartridge, and ends toner level detection control.
ii) if measurement < reference value
-> the machine repeats steps 1 through 3 a specific number of times; if the measurement still does not exceed the reference value, the machine will assume that toner does not exist inside the toner cartridge, and moves the developing rotary to the point of toner cartridge replacement and then indicates the message "No toner" on its control panel.

<Timing of Start-Up/Duration>
- if the patch image density measurement at time of ATR control is less then the reference value for a specific number of times.

- when the toner cartridge access cover/front cover is opened/closed after the machine identifies the absence of toner (the machine is not equipped with a sensor to check the presence/absence of the toner cartridge; it will execute toner level detection control automatically when the toner cartridge access cover/front cover is opened and closed after it has identified the absence of toner regardless of the presence/absence of a cartridge).

It takes about 70 sec for the machine to execute the control mechanism.

Memo:
In addition to the message "No toner," the machine uses the following 2 types of indications to inform the user of the level of toner:

a) Toner Level Meter
From the amount of toner consumed so far (i.e., from the number of toner supply operations) and the amount of toner held by a single toner cartridge, the machine assumes the remaining level of toner and indicates it by means of a 4-step meter (100%, 75%, 50%, 10%). The meter will remain 10% even when the toner level is computed to be less than 10%; the meter will be 0% only when the machine identifies the absence of toner as the result of patch image density measurement executed in relation to the aforementioned toner level detection control mechanism.

b) "Add toner"
From the amount of toner consumed so far (from the number of toner supply operations) and the amount of toner held by a single toner cartridge, the machine assumes the remaining level of toner; it indicates the message when the result of computation is less than 10%.

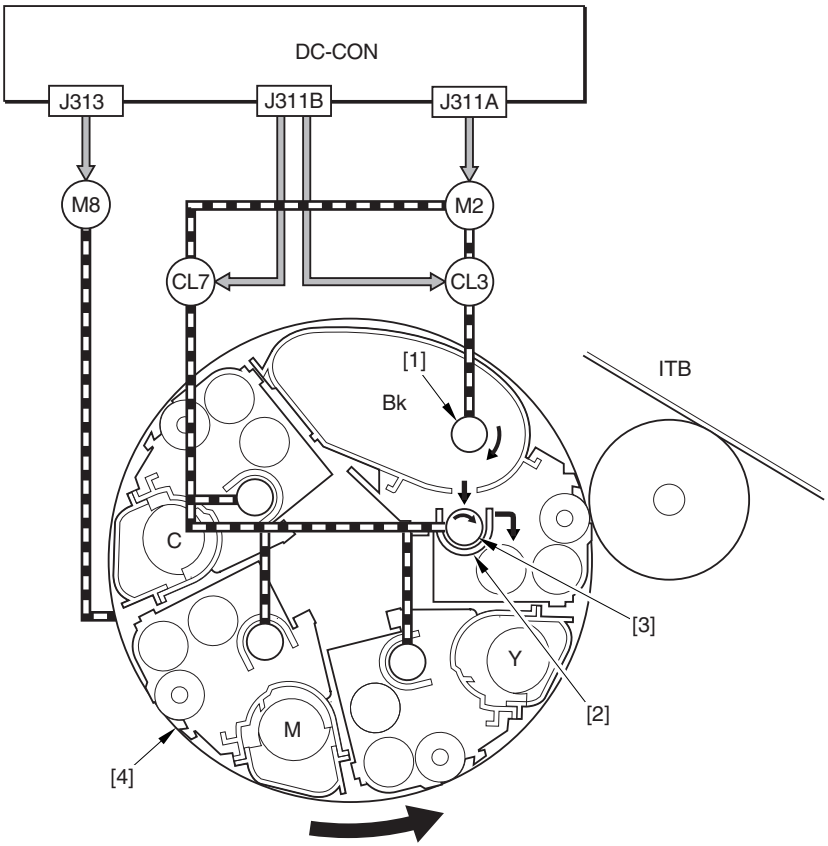
E026 (toner level detection operation upper limit)
Indicated if the toner density fails to return to a normal level after the machine has executed toner replacement and toner recovery mechanism 5 times in succession following the identification of the absence of toner. The machine supplies toner and then checks the level of toner; if it repeats detection without a new toner cartridge, the toner inside the developing unit will be exhausted, possibly causing stray toner and damage to the ITB. To avoid such a problem, the machine puts a limit on the number of times it executes toner level detection operations after the absence of toner has been identified:
0101- for Y toner cartridge
0201- for M toner cartridge
0301- for C toner cartridge
0401- for Bk toner cartridge

7.8.3 Toner Supply Control

0001-2845

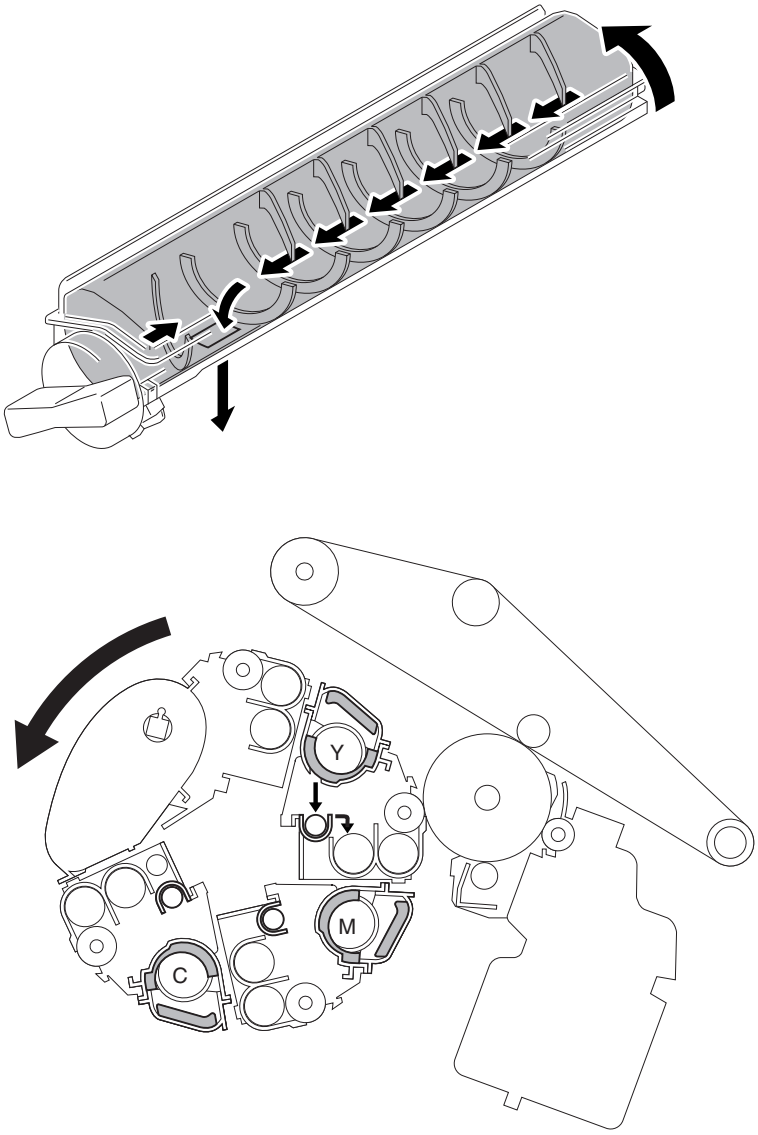
The toner inside the toner cartridge is first sent to the buffer assembly of the developing unit for storage. Then, the movement of the toner feedscrew supplies toner from the toner buffer assembly to the developing chamber in an amount determined as the result of ATR control.
The Bk toner cartridge uses a toner feedscrew mounted inside it to move toner, while a Y, M, or C toner cartridge relies on the rotation of the developing rotary (for lack of a feedscrew) to move toner along the protrusions arranged

in a spiral inside the cartridge.



F-7-27

[1] Toner feedscrew (Bk only)
[2] Toner buffer assembly
[3] Toner feedscrew
[4] Developing rotary
M2: main motor
M8: developing rotary motor



F-7-28

Moving the Toner Using the Rotation of the Developing Rotary (Y/M/C)

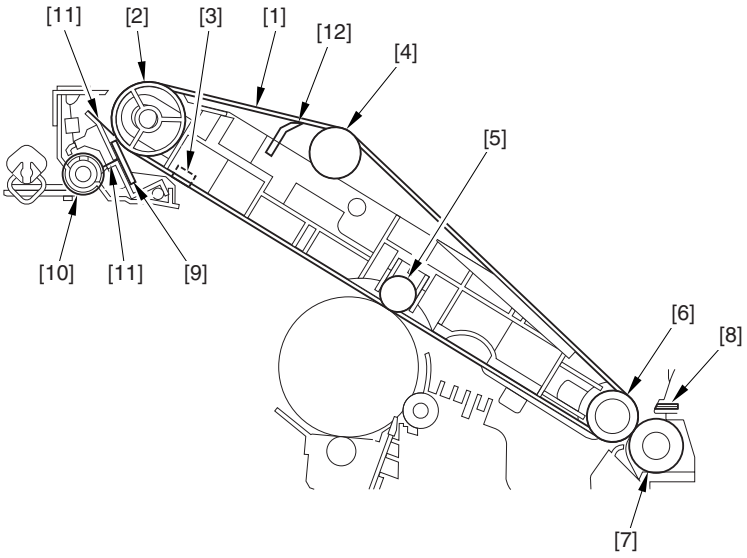
7.9 Transfer Device

7.9.1 Construction of the Transfer Assembly

0000-9298

T-7-14

Component		Description
[1]	Intermediate transfer belt (ITB)	receives images (toner) formed on the photosensitive drum.
[2]	Drive roller	drives the ITB.
[3]	ITB home position sensors	detects the home position sticker (white) attached to the inside of the ITB.
[4]	Tension roller	retains ITB tension.
[5]	Primary transfer roller	applies transfer bias to transfer the toner from the photosensitive drum to the ITB.
[6]	Secondary transfer inside roller	transfers the toner from the ITB to paper using the application of transfer bias from the secondary transfer outside roller to the secondary transfer inside roller.
[7]	Secondary transfer outside roller	
[8]	Separation static eliminator	removes residual charges from the ITB.
[9]	ITB cleaning blade	scrapes off the toner remaining on the ITB.
[10]	ITB waste toner feedscrew	moves the waste toner from inside the ITB cleaning unit to the waste toner case.
[11]	Stray toner blocking sheet	prevents the waste toner from moving astray inside the machine at time of cleaning.
[12]	Inside blade	scrapes the toner for the inside of the ITB.

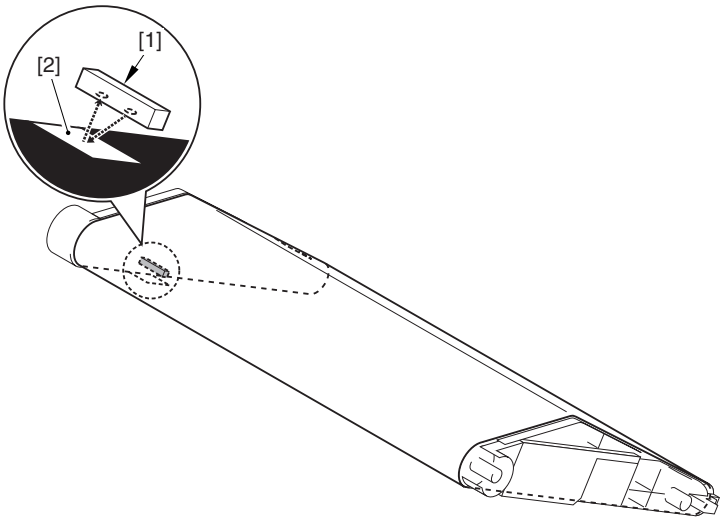


F-7-29

7.9.2 ITB Home Position Detection Control

0001-5495

When the ITB home position sensor detects the sticker (while) attached to the back of the ITB after the Start key is pressed, the machine generates the ITB home position signal, used to form and transfer images.

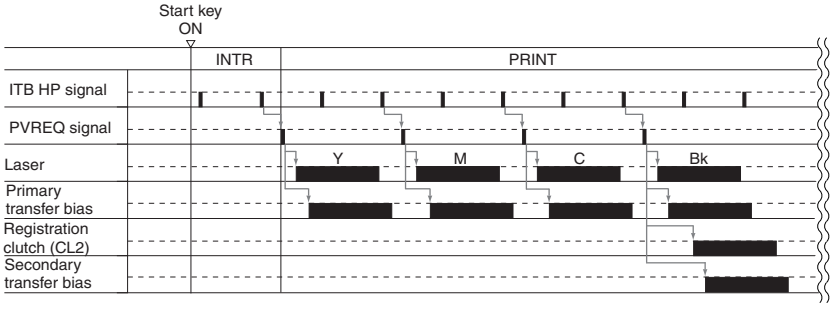


F-7-30

[1] ITB HP sensor
[2] ITB HP sticker (2 pc.)

- Full color, Normal speed

The machine uses the ITB home position signal (hereafter, ITB HP signal to generate the PVREQ signal for individual colors (image request signal). The machine uses the PVREQ signal when it forms and transfers images.

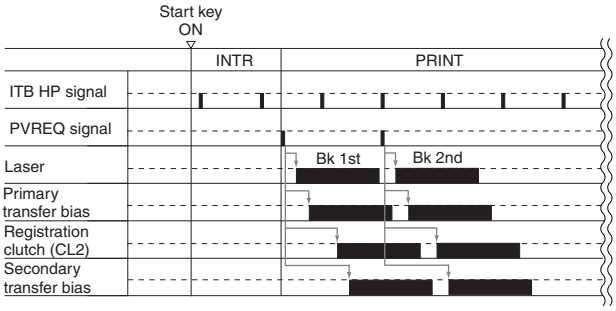


F-7-31

- Full color, Normal speed, 1 copy

- Mono color, Normal speed

The machine forms images not in synch with the ITB HP signal. It generates the PVREQ signal a specific period of time after it has become ready to form images, and uses the signal to form and transfer images.

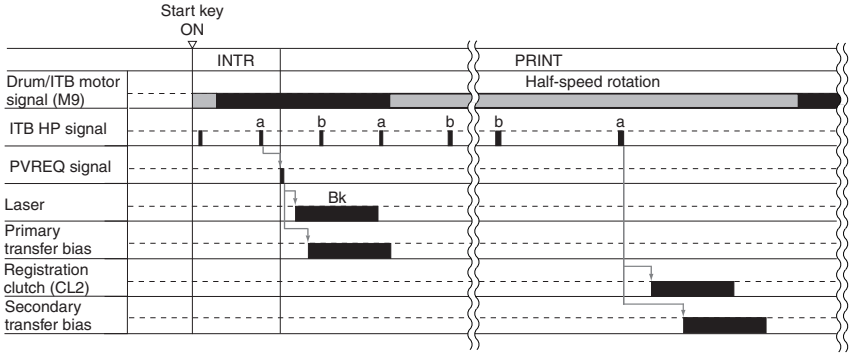


F-7-32

- Half-speed (both full and mono color)

The machine uses the ITB home position signal to generate the PVREQ signal (image request signal) for individual colors to serve as a reference when forming and transferring images.

The machine operates in half-speed mode to ensure good fixing on paper; after transfer to the ITB, it reduces the speed of the drum/ITB motor (DC brushless motor used to drive the fixing motor and the ITB) to half (68.5 mm/sec) the normal speed. After reducing the speed of the motor, the machine detects the ITB HP signal and turns on the registration clutch using the ITB HP signal as the reference.



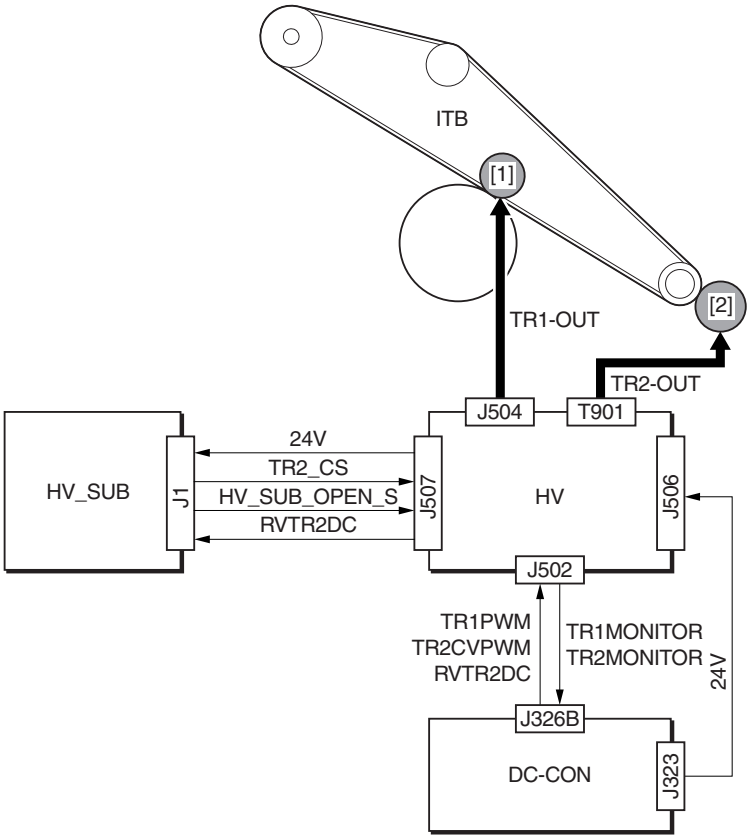
F-7-33

- Mono color, Half-speed, 1 copy

7.9.3 Transfer Bias Control

0000-9300

Primary transfer bias: output in keeping with the output of the environment sensor (temperature, humidity), print mode (mono, full color), and color.
Secondary transfer bias: output in keeping with the output of the environment sensor (temperature, humidity), print mode (mono, full color), pickup (single-, double-sided), and paper type.



F-7-34

[1] Primary transfer roller
[2] Secondary transfer roller
TR1PWM: PWM signal for primary transfer
TR2CVPWM: PWM signal for secondary transfer
TR1-OUT: primary transfer bias output signal
TR2-OUT: secondary bias output signal
TR1MONITOR: primary transfer current detection signal
TR2MONITOR: secondary transfer current detection signal
TR2_SUB: secondary transfer output detection signal
RVTR2DC, HV_SUB_OPEN_S: bias mode switching signal for secondary transfer

7.9.4 Cleaning the Intermediate Transfer Belt (ITB)

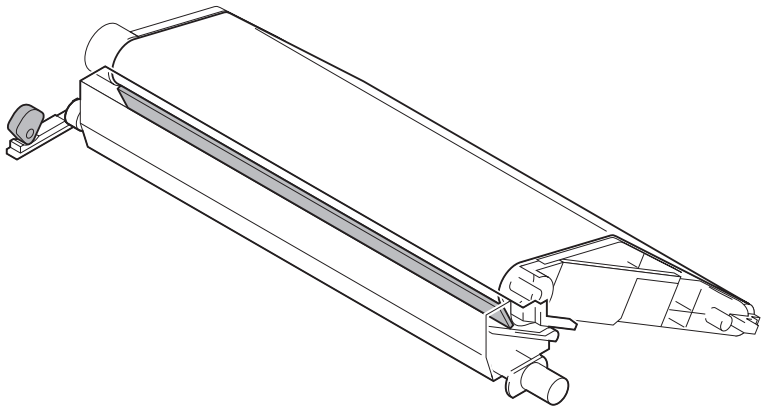
0000-9303

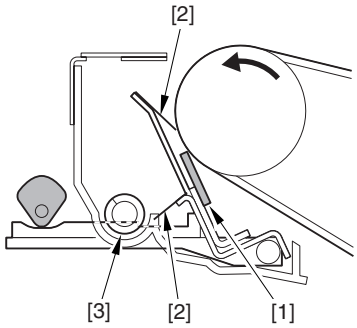
The machine uses a cleaning blade to clean the intermediate transfer belt (ITB).

T-7-15

Component	Description

[1] ITB cleaning blade	moves into contact with the ITB at all times to scrape off toner remaining on the ITB; while the machine is in standby, remains away from the ITB.
[2] Stray toner blocking sheet	prevents toner from moving astray during cleaning operation.
[3] ITB waste toner feedscrew	moves waste toner in the direction of the ITB waste toner case.





F-7-35

7.9.5 Cleaning the Secondary Transfer Outside Roller

0002-0787

The machine cleans the secondary transfer outside roller using static charges.

<Particulars of Control>
The machine alternately applies biases of opposite polarities to the secondary transfer outside roller (same and opposite in relation to the bias used when forming images), thereby returning the toner remaining on the secondary transfer outside roller to the ITB.

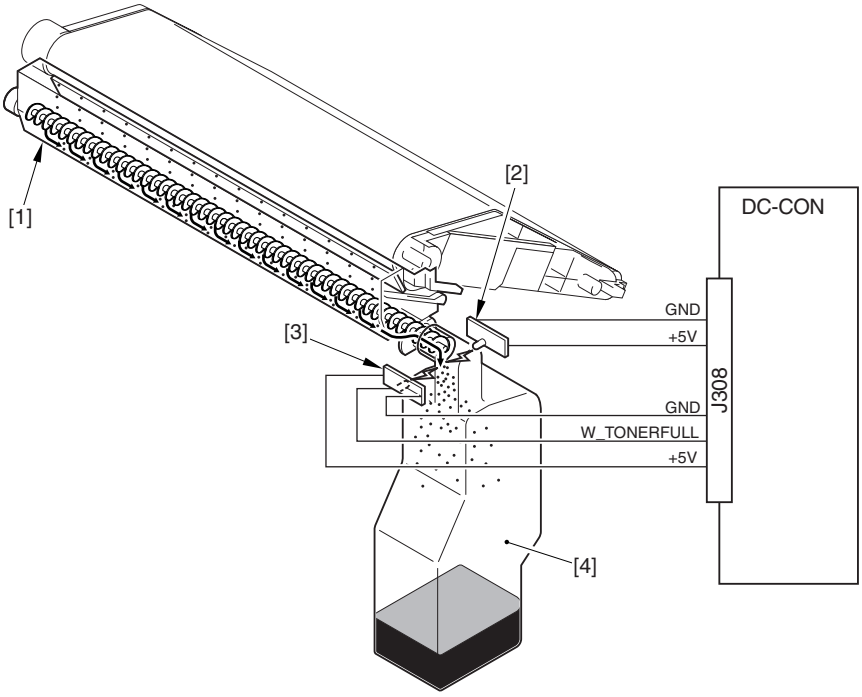
<Timing of Control>
- end of copy/print job

- return from jam state
- after formation of a patch image or test pattern as part of image stabilization control

7.9.6 ITB Waste Toner Collection Mechanism

0000-9305

The waste toner scraped off the ITB is collected in the ITB waste toner unit. The level of waste toner inside the unit is checked by means of a waste toner sensor (LED, photo transistor).



F-7-36

[1] ITB cleaning unit
[2] Waste toner sensor (light-emitting)
[3] Waste toner sensor (light-receiving)
[4] ITB waste toner unit

When the machine finds that the unit is full of waste toner, it indicates the message "Replace the waste toner container." If copies/prints are made in succession thereafter, the machine will indicate an error code (E013) as soon as it has handled 500 copies (A4) and stops operation.

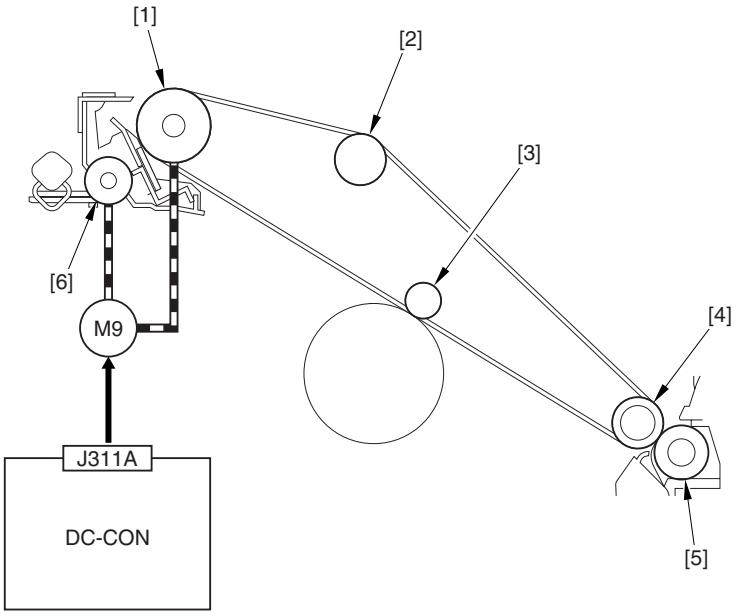
7.9.7 Transfer Assembly Drive Path

0000-9299

T-7-16

Component	Source of drive
[1] Drive roller	drum/ITB motor (M9)

Component	Source of drive
[2] Tension roller	linked to ITB
[3] Primary transfer roller	linked to ITB
[4] Secondary transfer inside roller	linked to ITB
[5] Secondary transfer outside roller	linked to ITB
[6] ITB waste toner feedscrew	drum/ITB motor (M9)



F-7-37

7.9.8 Transfer Assembly Swing Control

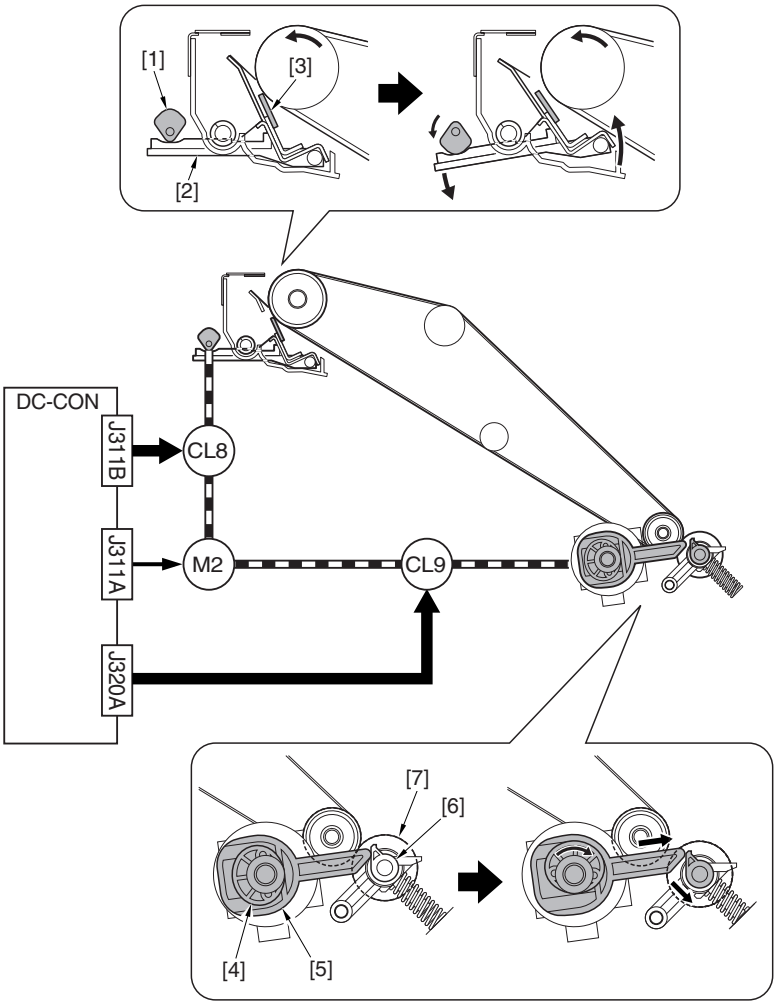
0000-9301

- ITB Cleaning Blade

When the clutch (CL8) goes on, the drive of the main motor (M2) is transmitted to a cam; when the releasing lever moves up and down, its associated ITB cleaning blade moves into contact with or moves away from the ITB. The ITB cleaning blade remains away from the ITB while the machine is in a standby state.

- Secondary Transfer Outside Roller

When the clutch (CL9) goes on, the drive of the main motor (M2) is transmitted to a cam, and the transfer locking arm pushes the secondary transfer arm, causing the latter to move away from the ITB. The secondary transfer outside roller moves away from the ITB if no copy/print job arrives within about 30 sec after the machine enters a standby state.



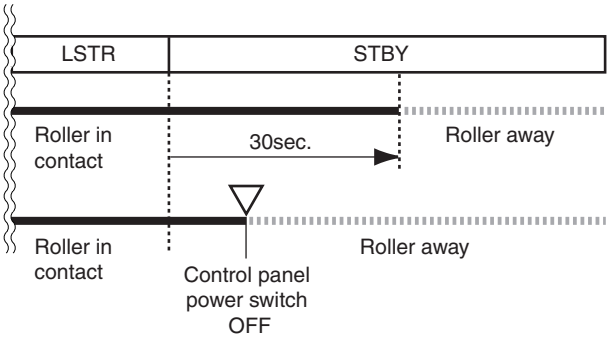
F-7-38

[1] ITB cleaning swing cam
[2] Releasing lever
[3] ITB cleaning blade
[4] Transfer locking cam
[5] Transfer locking arm
[6] Secondary transfer arm
[7] Secondary transfer outside roller

⚠Points to Note When Turning Off the Power

If you need to turn off the machine for service work, be sure to turn off the control panel power switch before turning off the main power switch. If the secondary transfer outside roller is left in contact with the ITB for a long time, the ITB can suffer traces of the roller. To avoid these traces, the machine is designed to automatically move the secondary transfer roller away from the ITB if there is no next job within about 30 sec after it has entered a standby state. Likewise, the machine moves away the secondary transfer outside roller when the control panel power

switch is turned off. If you turn off the main power switch within about 30 sec after the machine enters a standby state, the machine will not be able to move the secondary transfer outside roller from the ITB, permitting it to leave traces on the belt.

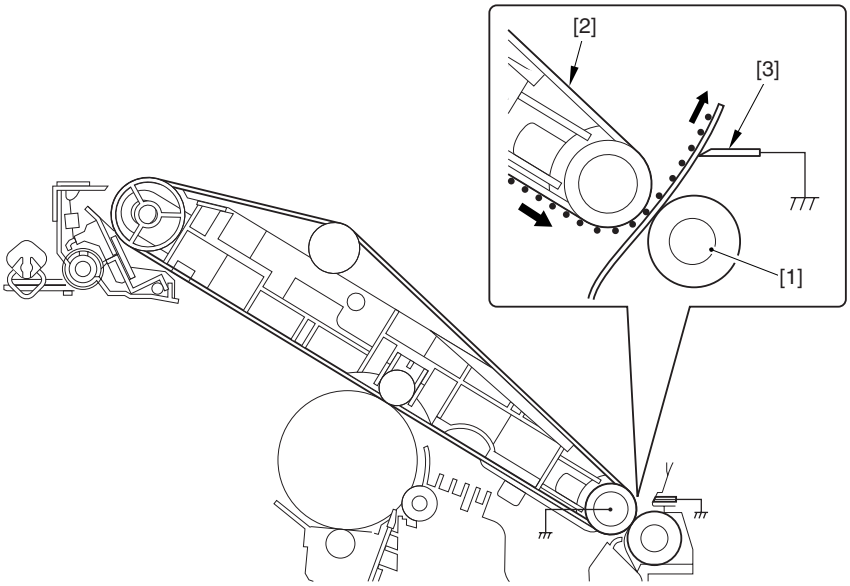


F-7-39

7.9.9 Separation

0000-9307

The machine uses a curvature method to separate paper; it is also equipped with a static eliminator to assist separation. The eliminator removes positive changes remaining on paper, thus preventing adhesion of paper (especially thin paper with little body) to the ITB.



F-7-40

[1] Secondary transfer outside roller
[2] ITB
[3] Separation static eliminator

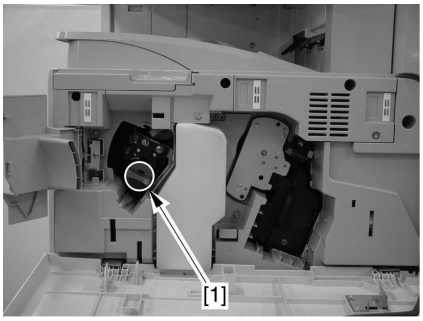
7.10 Parts Replacement Procedure

7.10.1 Drum Unit

7.10.1.1 Removing the Drum Unit

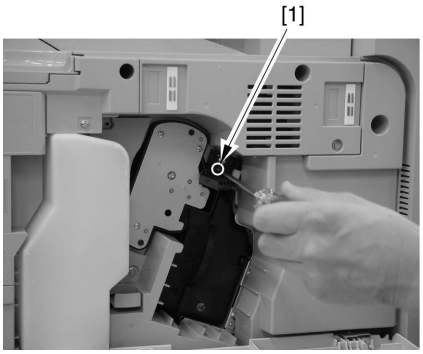
0001-6860

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



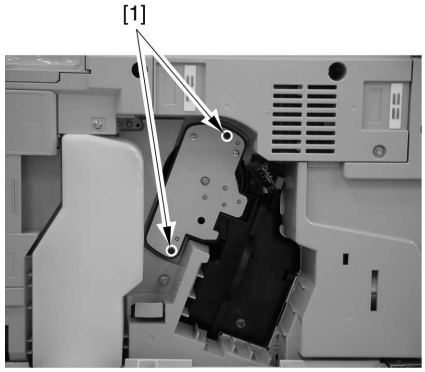
F-7-41

2) Remove the screw [1] (black; M3x20).



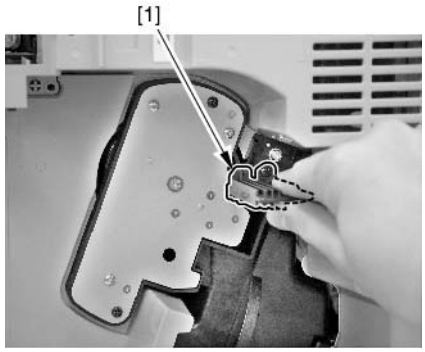
F-7-42

3) Remove the 2 fixing screws [1] (M4x20).

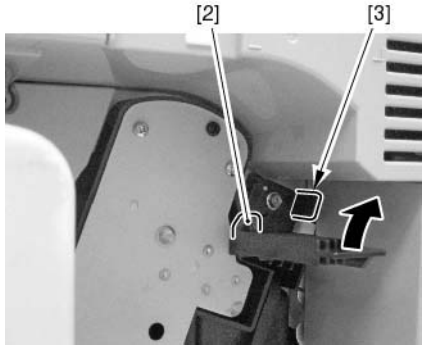


F-7-43

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

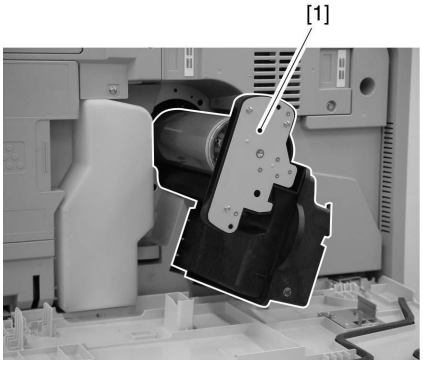


F-7-44



F-7-45

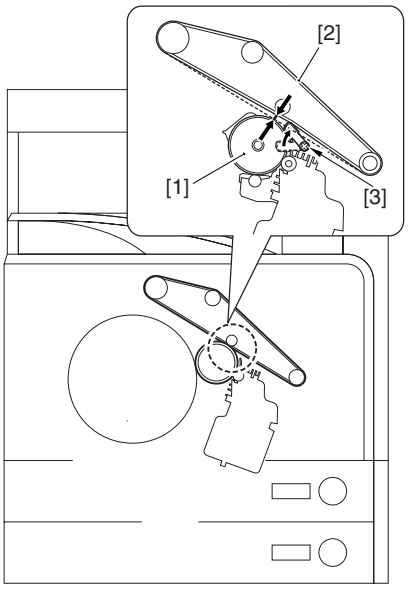
5) Slide out the drum unit [1] to the front to detach.



F-7-46

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



F-7-47

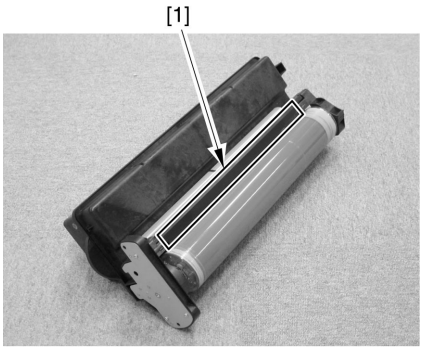
At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

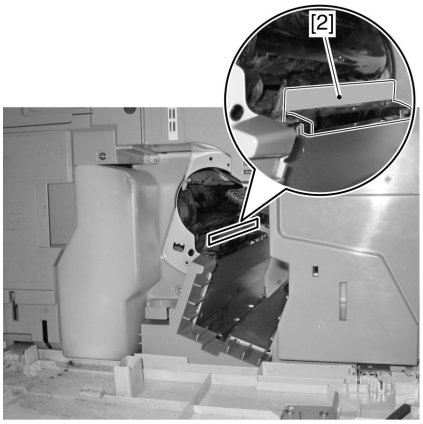
7.10.1.2 Points to Note When Mounting the Drum Unit 0001-6867

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-48



F-7-49

Memo:
The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

7.10.1.3 After Replacing the Drum Unit 0001-6873

1) Initialize the drum unit. Execute the following service mode item.
 - COPIER>FUNCTION>CLEAR>DRM-LIFE

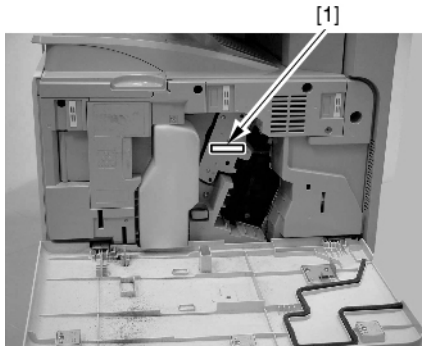
While initialization is under way, the machine flashes "ACTIVE" on its screen. It indicates "OK!" at the end of initialization in about 1 min.

⚠Do not touch any of the keys, open the door, or turn off the power while initialization is under way. Otherwise, go back to step 1) and start over.

2) When initialization is done, check to see that the value of the following service mode item is '0':
 - COPIER>DISPLAY>MISC>DRM-LIFE

 If not '0', go back to sep 1) and start over.
3) Record the value indicated in the following service mode item in the Remarks field of the drum initial value label (attached to the light-blocking sheet of a new drum unit):
 - COPIER>ADJUST>HV-PRI>DR-I-INT

 As necessary, record the date of drum unit replacement and the counter reading on the drum initial value label.
4) Attach the drum initial value label to the front [1] of the drum unit.



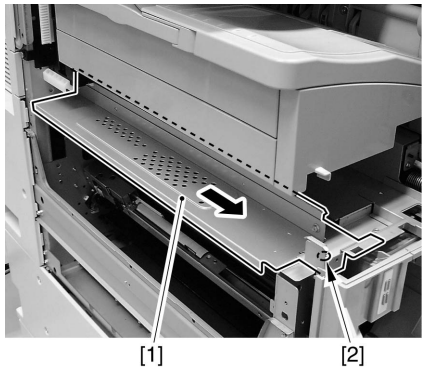
F-7-50

5) Execute 'Full Adjust' of auto gradation correction in Additional Function.

7.10.2 Development Unit

7.10.2.1 Finisher-P1 in Use 0003-1924

⚠If the machine is equipped with a Finisher-P1, be sure to detach it before removing the finisher unit. To detach the finisher rail [1], remove the screw [2], and force it in the direction of the arrow.



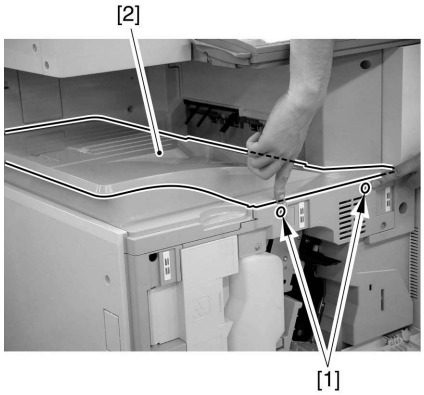
F-7-51

If you try to detach the developing unit without first removing the finisher rail, the developing cylinder can interfere with the finisher rail.

Memo:
Recommended Work in the Presence of a Finisher-P1
To facilitate the removal of the developing unit, it is a good idea to remove not only the finisher rail but also the finisher itself before starting to remove the developing unit.

7.10.2.2 Removing the Delivery Tray 0002-0317

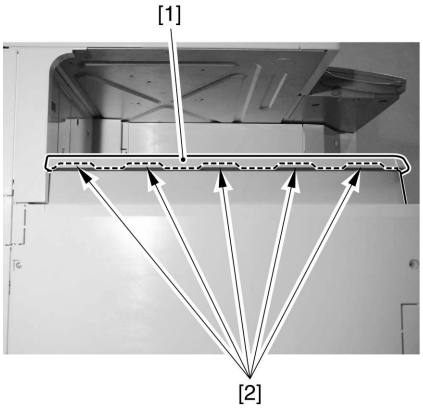
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-52

⚠Points to Note When Mounting the Delivery Tray

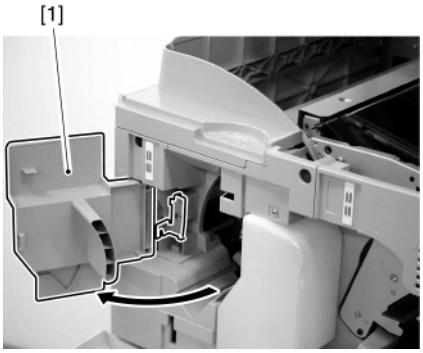
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-53

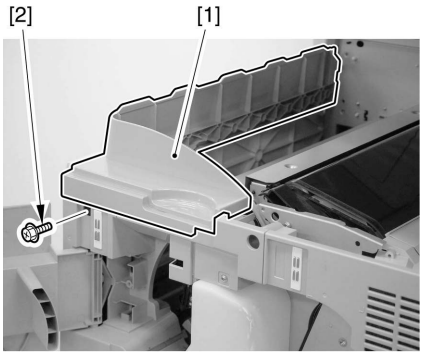
7.10.2.3 Removing the Delivery Tray Lower Cover 0002-0318

1) Open the toner cartridge access cover [1].



F-7-54

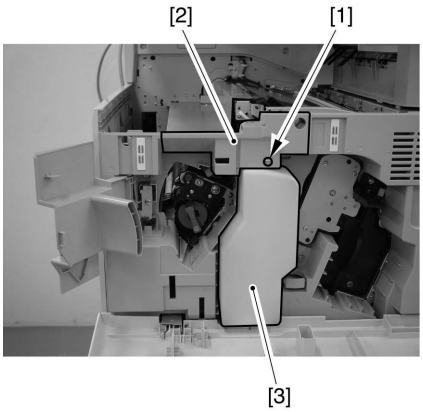
2) Remove the screw [2], and detach the delivery tray lower cover [1].



F-7-55

7.10.2.4 Removing the ITB Waste Toner Unit 0001-8422

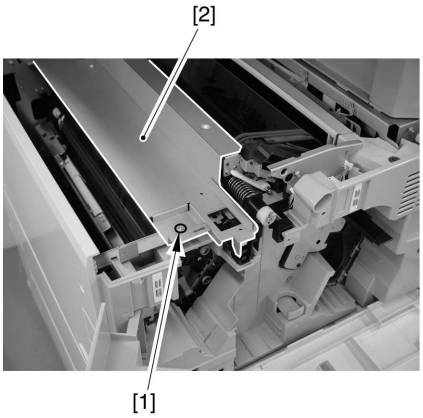
1) Remove the screw [1], and detach the waste toner unit retainer [2]; then, detach the ITB waste toner unit [3].



F-7-56

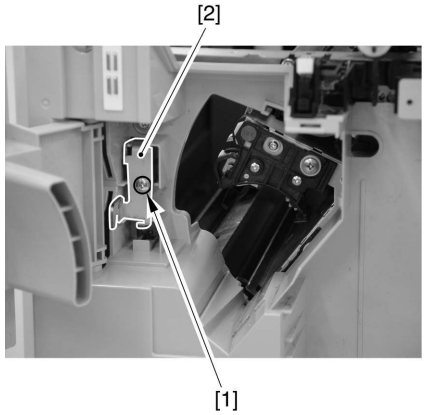
7.10.2.5 Removing the Developing Unit 0000-9364

1) Remove the screw [1], and detach the protective plate [2].



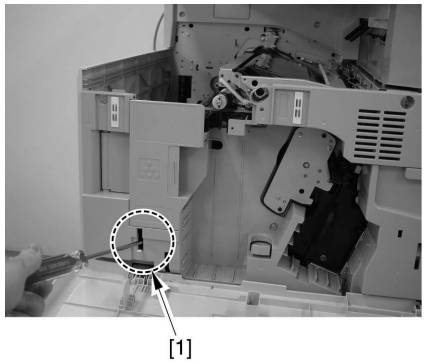
F-7-57

2) Remove the screw [1], and detach the rotary fixing plate [2]. If you are removing the black developing unit, you may skip this step, as the rotary fixing plate is not needed for the unit.

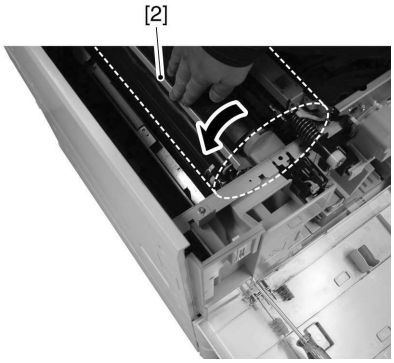


F-7-58

3) Close the toner cartridge access cover, and insert a screwdriver through the angular hole [1]; turn the developing rotary [2] counterclockwise slowly by hand so that the desired developing unit is at the point of replacement. When the cartridge reaches its point of replacement, the developing rotary will be fixed in place by the work of the rotary fixing arm.

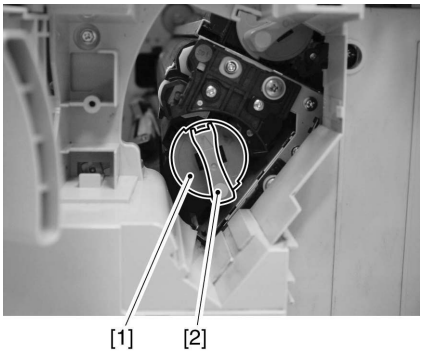


F-7-59



F-7-60

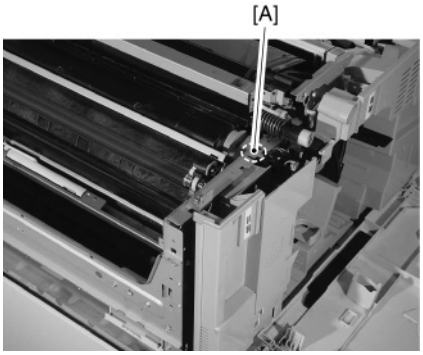
4) Open the toner cartridge access cover, and turn the knob [2] of the toner cartridge [1] counterclockwise until it stops; then, pull out the toner cartridge [1] to the front to detach.



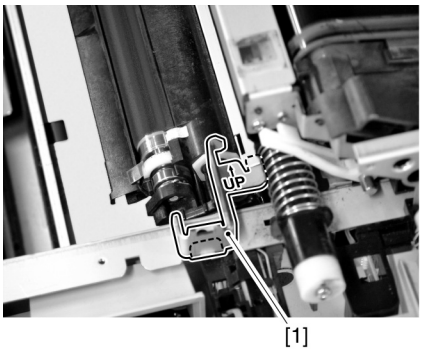
F-7-61

⚠When removing the toner cartridge, work with care so that the toner will not spill around the toner cartridge replacement mouth.

5-1) In the case of a color developing unit (Y, M, or C), move the developing assembly rotary to the point of replacement, and fix it in place using the rotary fixing plate you have previously removed. Fit the rotary fixing plate [1] so that the UP marking on it faces up.

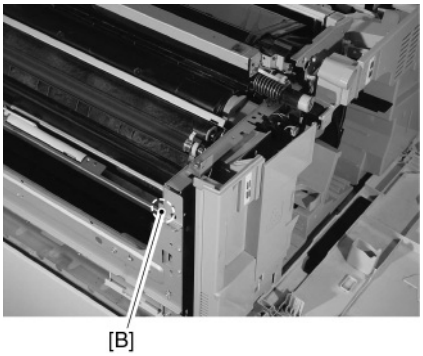


F-7-62

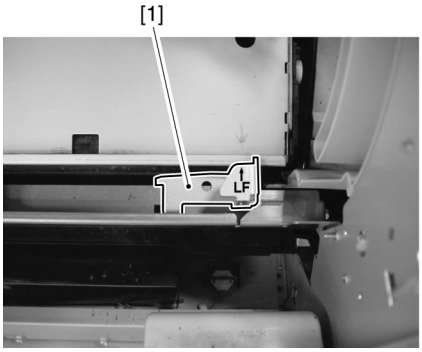


F-7-63

5-2) If you are removing a developing unit with the Finisher-P1 connected, fit the rotary fixing plate [1] where shown [B] to fix the developing rotary in place. Be sure that the rotary fixing plate [1] is fitted so that the LF marking faces up.



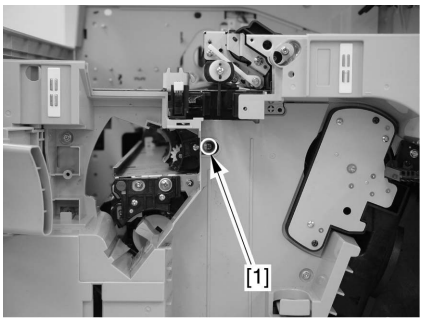
F-7-64



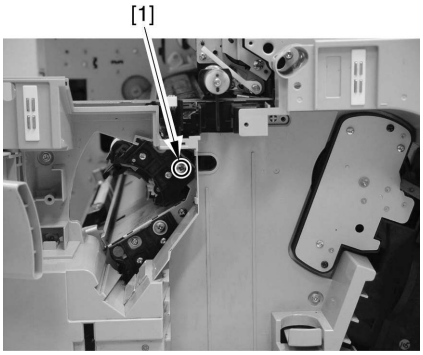
F-7-65

Memo:
The point of replacement for the developing unit (Bk) is the same as that of the toner cartridge (Bk), freeing you from the need to perform steps 5-1) and 5-2).

6) Remove the screw [1]. Keep in mind that in the case of a color developing unit (Y, M, or C), a different screw [1] is removed, depending on where the developing rotary is fixed in place.

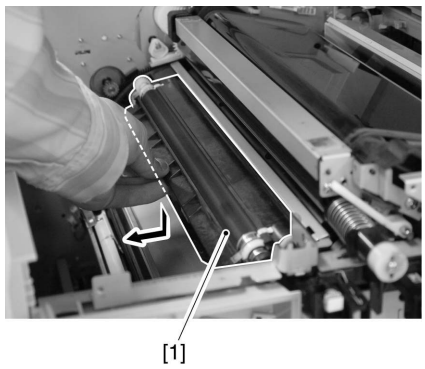


F-7-66



F-7-67

7) Remove the developing unit [1].

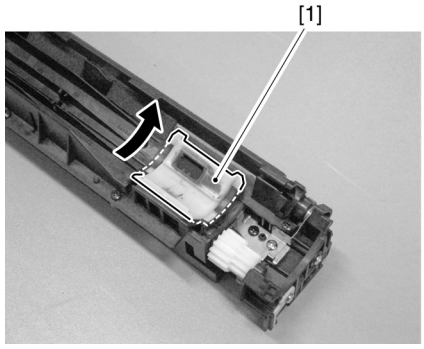


F-7-68

7.10.2.6 Points to Keep in Mind When Fitting the Developing Unit

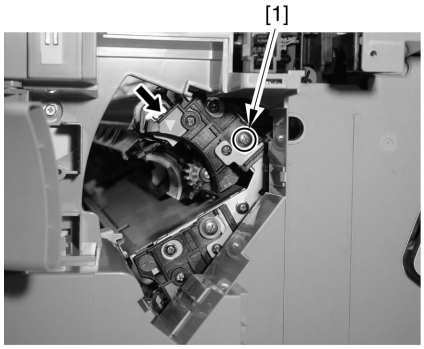
0001-3637

- Before starting the work, check to be sure that the shutter [1] is forced in the direction of the arrow. If not, move it in the direction of the arrow until it butts against the shutter [1]. If it is not fully butted against the shutter, you may not be able to fit the toner cartridge correctly.



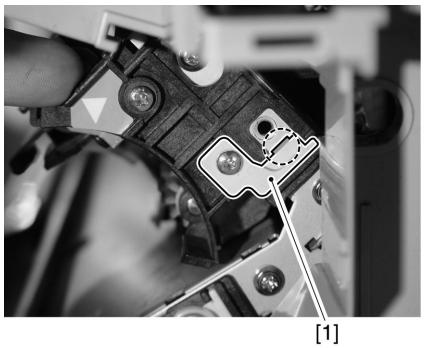
F-7-69

- When fixing the developing unit using a screw [1], be sure to force the casing of the developing unit in the direction of the arrow as you tighten the screw. After tightening the screw, try pushing the casing of the developing unit in the direction of the arrow to make sure that there is play of about 1.5 to 2 mm. If there is no play, remove the screw [1], and tighten it while forcing the casing of the developing unit in the direction of the arrow.



F-7-70

Memo:
This step is performed so that the screw base will not ride over the developing cartridge guide plate [1]. If you tighten the screw while it rides over the guide plate, the spatial relationship between the photopositive drum and the developing cylinder will be wrong, causing blank output.



F-7-71

7.10.2.7 After Replacing the Developing Unit (Y, M, C) 0001-6774

1) Execute the following service mode item (color):
- COPIER> FUNCTION> INSTALL> STIR-Y/M/C
2) Execute the following service mode item (color):
- COPIER> FUNCTION> INSTALL> INIT-Y/M/C
(If you have replaced the Y, M, and C cartridges at the same time, execute INIT-3.)
3) Execute the following service mode item (color):
- COPIER> FUNCTION> INSTALL> SPLY-Y/M/C
4) Record the value for the following service mode item (color) on the service label:
- COPIER> ADJUST> DENS> SGNL-Y/M/C
- COPIER> ADJUST> DENS> REF-Y/M/C
5) Execute 'Full Adjust' of auto gradation correction in Additional Function.

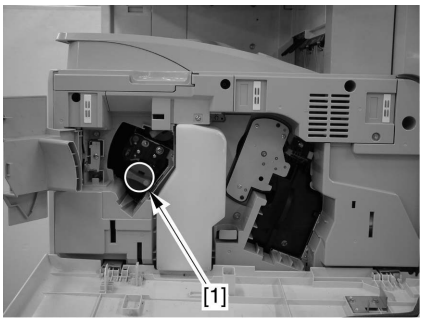
7.10.2.8 After Replacing the Developing Unit (Bk) 0001-6215

1) Execute the following service mode item:
- COPIER> FUNCTION> INSTALL> STIR-K
2) Execute the following service mode item:
- COPIER> FUNCTION> INSTALL> SPLY-K
3) Execute the following service mode item; thereafter, check to see that the value has been initialized to '0':
- COPIER> COUNTER> MISC> DV-UNT-K
4) Execute 'Full Adjust' of auto gradation correction in Additional Function.

7.10.3 Rotary Upper Cover

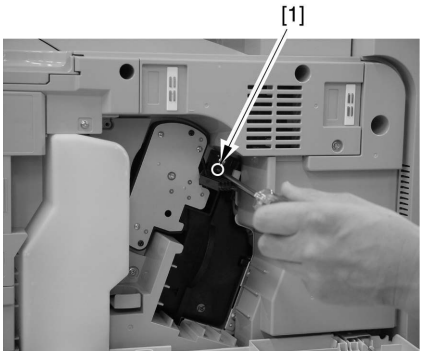
7.10.3.1 Removing the Drum Unit 0002-6741

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



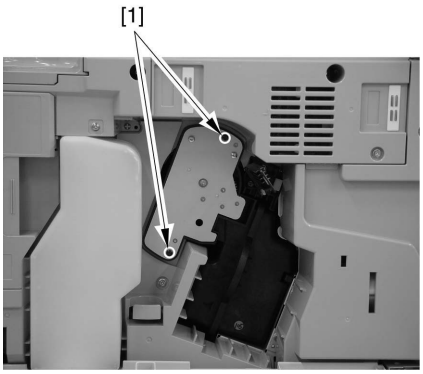
F-7-72

2) Remove the screw [1] (black; M3x20).



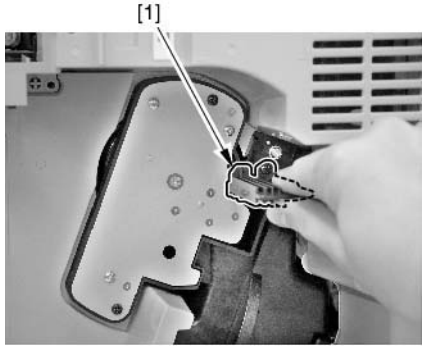
F-7-73

3) Remove the 2 fixing screws [1] (M4x20).

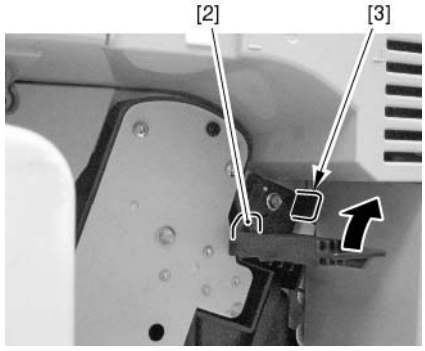


F-7-74

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

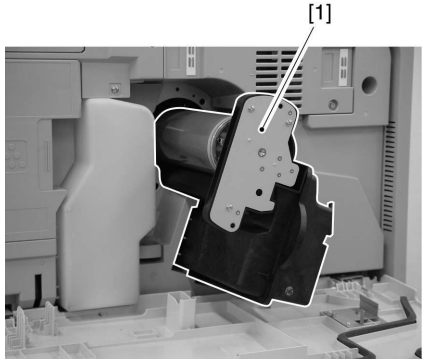


F-7-75



F-7-76

5) Slide out the drum unit [1] to the front to detach.

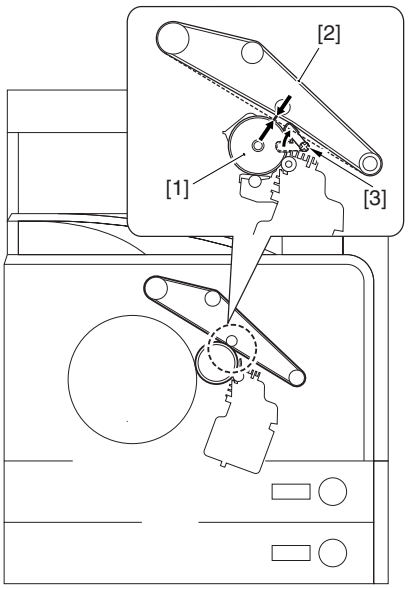


F-7-77

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3]

(operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



F-7-78

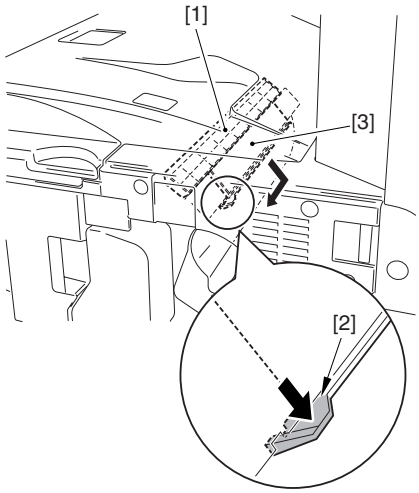
At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.3.2 Removing the Rotary Upper Cover 0002-6742

⚠The ITB is located immediately above the rotary upper cover. Take full care not to touch the ITB when removing the rotary upper cover. If you inadvertently touched it, be sure to execute ITB cleaning in service mode: COPIER>FUNCTION>CLEANING>TBLT-CLN.

1) Free the claw [2] found at the front of the rotary upper cover [1]; then, hold the center [3] of the rotary upper cover [1], and detach it in the direction of the arrow.

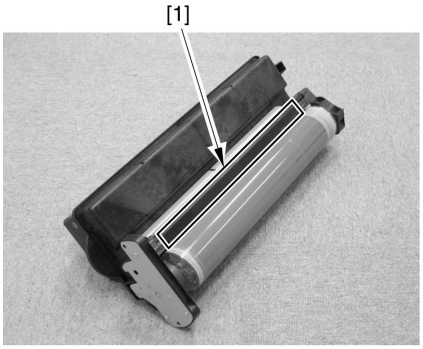


F-7-79

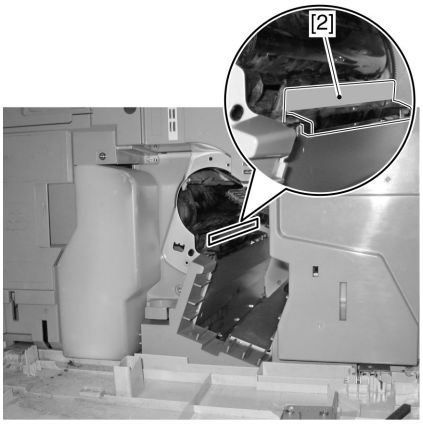
7.10.3.3 Points to Note When Mounting the Drum Unit 0002-6744

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-80



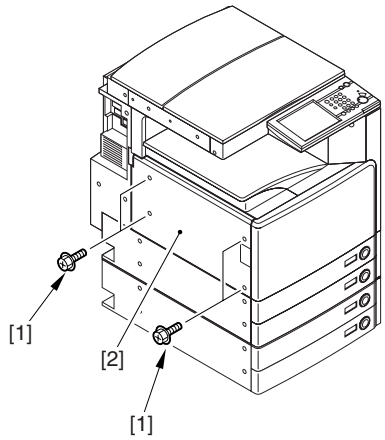
F-7-81

Memo:
The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

7.10.4 Rotary Lower Cover

7.10.4.1 Removing the Left Cover 0002-6617

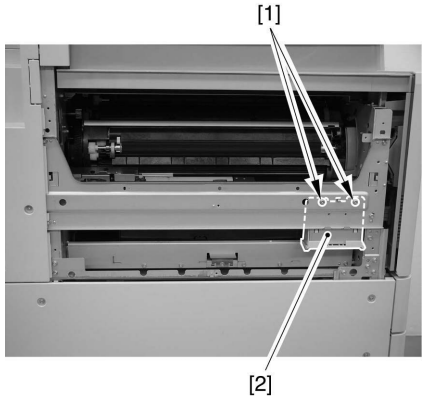
1) Remove the 4 screws [1], and detach the left cover [2].



F-7-82

7.10.4.2 Removing the Left Grip (front) 0002-6623

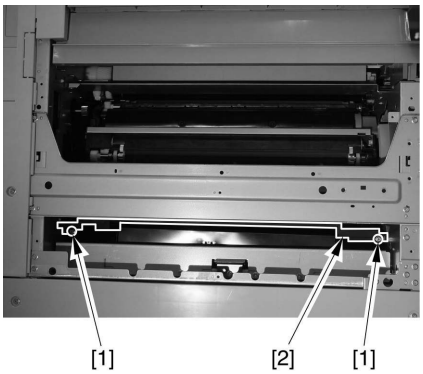
1) Remove the 2 screws [1], and detach the left grip (front) [2].



F-7-83

7.10.4.3 Removing the Rotary Lower Cover 0002-6625

1) Open the front cover.
2) Remove the 2 screws [1]; then, pull the rotary lower cover [2] to the front to detach.



F-7-84

7.10.5 ITB Cleaning Unit

7.10.5.1 Preparing for the Removal of the ITB Cleaning Unit 0001-8374

1) Turn on the main power switch.
2) Make the following selections in service mode, and press the OK key:

- COPIER>FUNCTION>MISC-P>ITB-CLSW

While the mode is being executed, the screen flashes 'ACTIVE'; it changes to 'OK!' at the end of the execution.

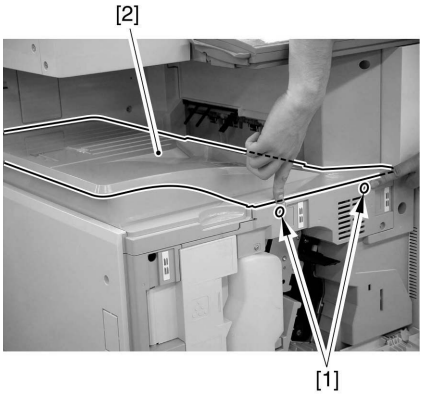
3) Turn off the control panel power switch; then, wait for 15 sec or more, and turn off the main power switch.

Memo:
The machine operates as follows in response to the execution of this service mode:

- it changes the position of the developing assembly rotary. (If the developing cylinder is positioned immediately under the ITB cleaning unit, the base of the ITB cleaning unit can rub against the surface of the developing cylinder to cause damage. The developing assembly rotary is rotated so that the Bk toner cartridge is positioned immediately under the ITB cleaning unit.)
- if a Finisher-P1 is installed, the finisher delivery tray is moved as far up as it moves. (If the finisher delivery tray is in down position, mounting the ITB cleaning unit can prove to be difficult.)

7.10.5.2 Removing the Delivery Tray 0002-0308

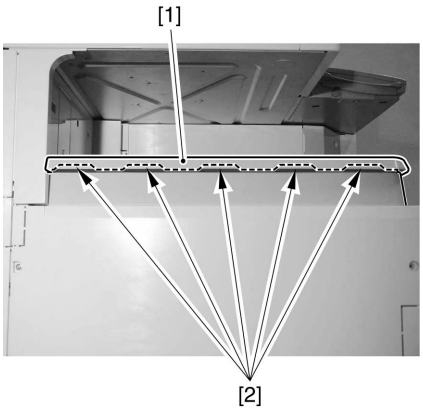
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-85

⚠Points to Note When Mounting the Delivery Tray

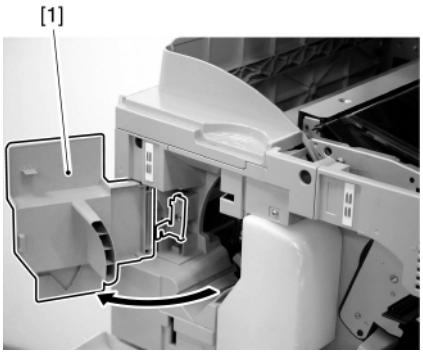
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-86

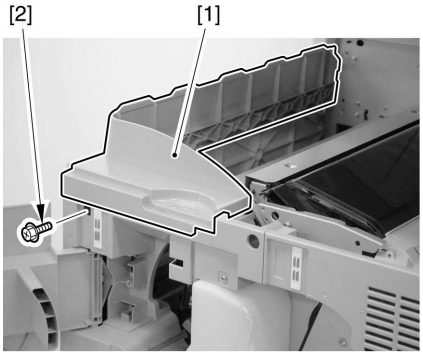
7.10.5.3 Removing the Delivery Tray Lower Cover 0002-0309

1) Open the toner cartridge access cover [1].



F-7-87

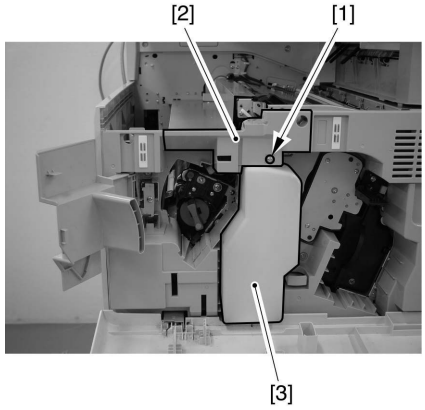
2) Remove the screw [2], and detach the delivery tray lower cover [1].



F-7-88

7.10.5.4 Removing the ITB Waste Toner Unit 0001-8375

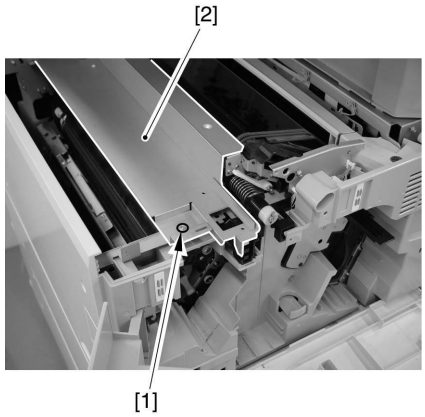
1) Remove the screw [1], and detach the waste toner unit retainer [2]; then, detach the ITB waste toner unit [3].



F-7-89

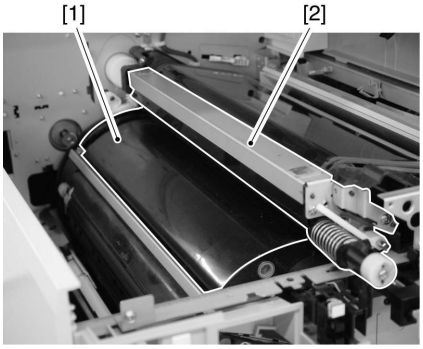
7.10.5.5 Removing the ITB Cleaning Unit 0000-9358

1) Remove the screw [1], and detach the protective plate [2].



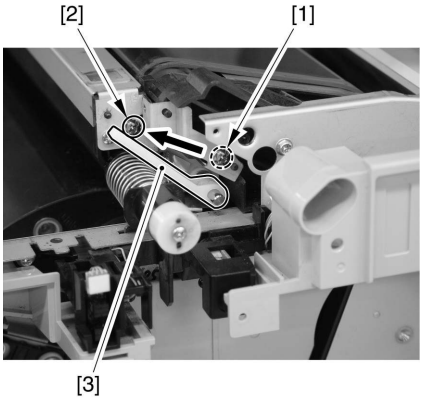
F-7-90

2) Check to be sure that the toner cartridge (Bk) [1] is positioned under the ITB cleaning unit [2]. If not, turn the developing assembly rotary by hand so that the toner cartridge (Bk) moves to a point immediately under the ITB cleaning unit.



F-7-91

3) Remove the screw [1], and fit the screw to the screw hole [2].

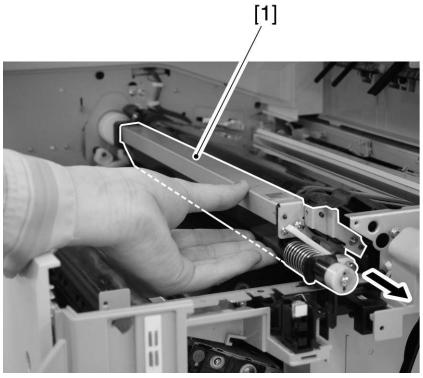


F-7-92

Memo:
To fix the arm [3] in place, fit the screw in the screw hole [2].
If the arm is not fixed in place, the cleaning blade will come into contact with the ITB when the ITB cleaning unit is removed, damaging the ITB.

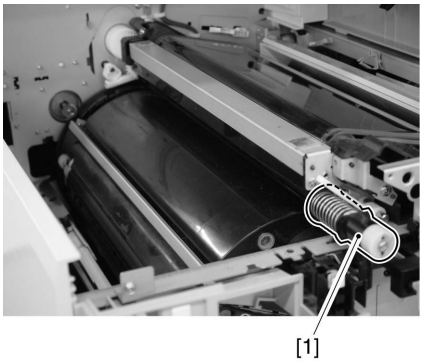
---

4) Slide out the ITB cleaning unit [1] to the front to detach.



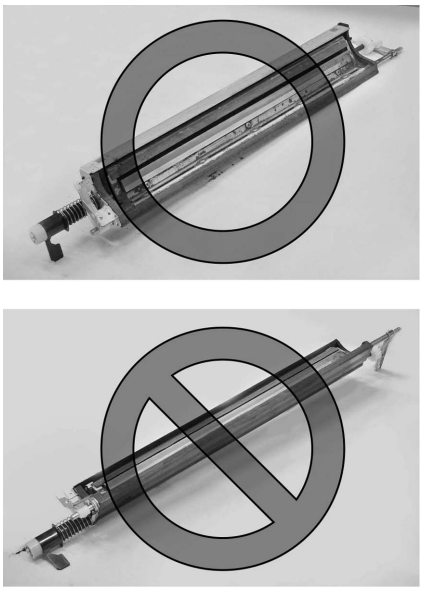
F-7-93

⚠When removing the ITB cleaning unit, take care not to impose excess force on the nozzle area [1] of the unit; otherwise, the area can suffer damage.



F-7-94

⚠If you have to place the ITB cleaning unit on the floor after removing it from the machine, be sure to orient it as shown (i.e., so that the releasing arm is parallel with the floor); otherwise, the waste toner inside the ITB cleaning unit can start to leak.

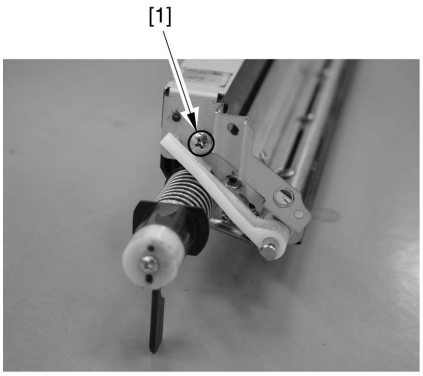


F-7-95

7.10.5.6 Points to Note When Mounting the ITB Cleaning Unit

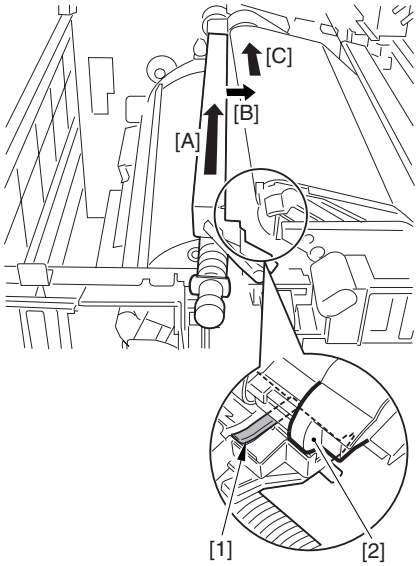
0000-9359

- Be sure that the screw [1] is fitted to the ITB cleaning unit before mounting the ITB cleaning unit to the machine. Otherwise, the ITB cleaning blade will remain in contact with the ITB, damaging the ITB when the ITB cleaning unit is being mounted.

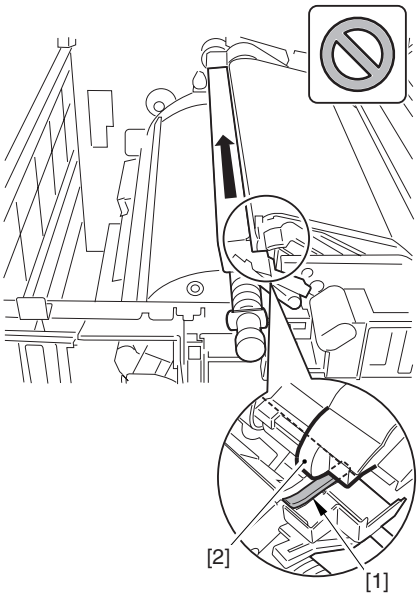


F-7-96

- When carelessly attaching the ITB cleaning unit to the main body, the end seal [1] may be tilted to clash the ITB unit guide assembly [2] (the surface indicated by a heavy line in the figure), and the seal may get deformed or removed. This damage on the seal may result in scattering of the waste toner inside the machine. To prevent this scattering, attach the ITB cleaning unit in the following steps: [A] Slant the front edge of the ITB cleaning unit toward the left, and insert the ITB cleaning unit toward the rear side of the machine temporally; [B] Move the unit until it becomes parallel to the ITB, ensuring that the end seal [1] does not clash the ITB unit guide assembly [2] (the surface indicated by a heavy line in the figure); [C] Push the unit straight to the rear side of the machine.

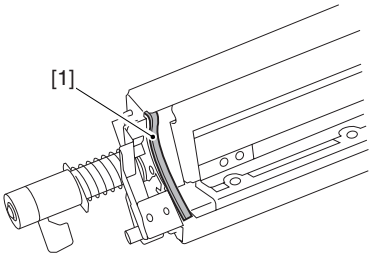


F-7-97

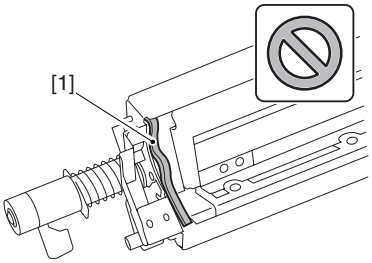


F-7-98

Memo: The figures below show the end seal [1] in normal condition and the one in abnormal condition (upward-tilted one).

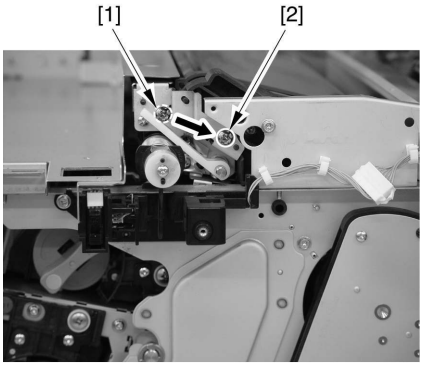


F-7-99



F-7-100

- After mounting the ITB cleaning unit to the machine, be sure to put back the screw [1] where the screw [2] is found. Otherwise, there will be a gap to the ITB cleaning blade, preventing cleaning of the ITB.

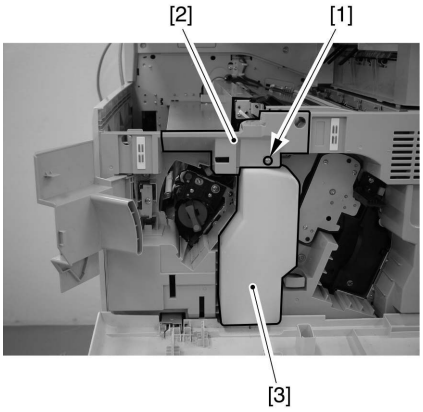


F-7-101

7.10.6 ITB Waste Toner Unit

7.10.6.1 Removing the ITB Waste Toner Unit 0000-9356

1) Remove the screw [1], and detach the waste toner unit retainer [2]; then, detach the ITB waste toner unit [3].



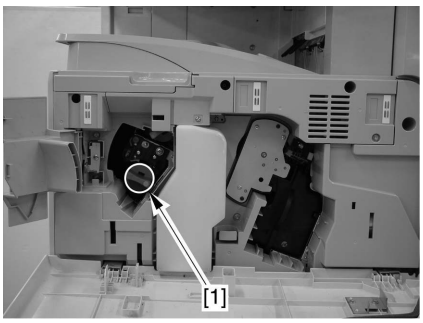
F-7-102

7.10.7 Intermediate Transfer Unit

7.10.7.1 Removing the Drum Unit 0002-8700

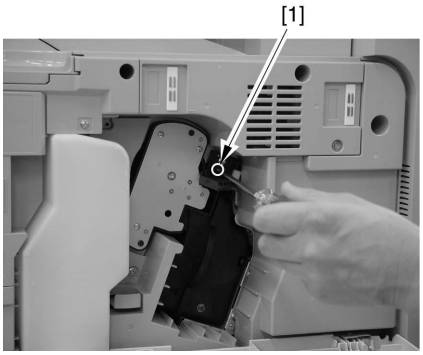
1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close

the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



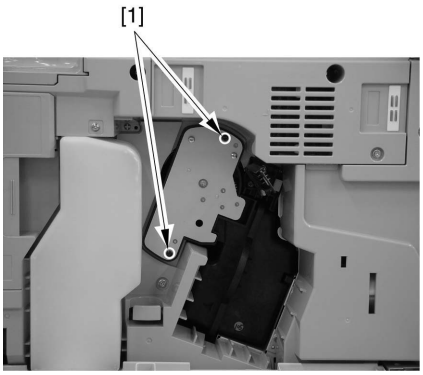
F-7-103

2) Remove the screw [1] (black; M3x20).



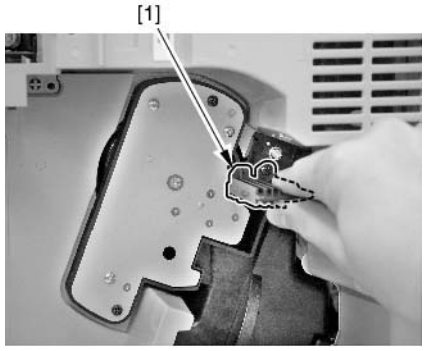
F-7-104

3) Remove the 2 fixing screws [1] (M4x20).

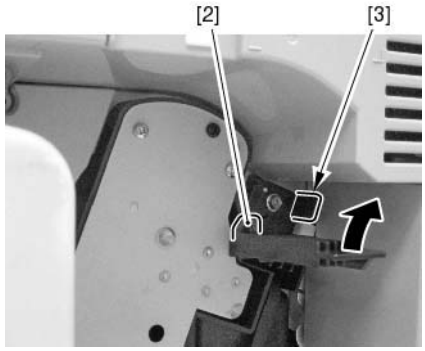


F-7-105

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

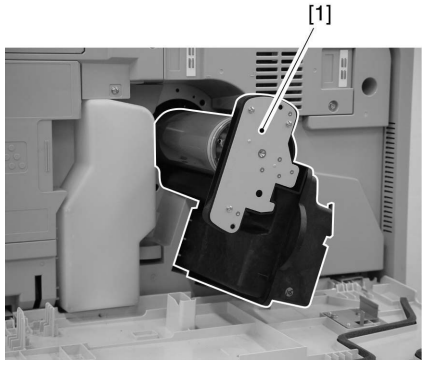


F-7-106



F-7-107

5) Slide out the drum unit [1] to the front to detach.

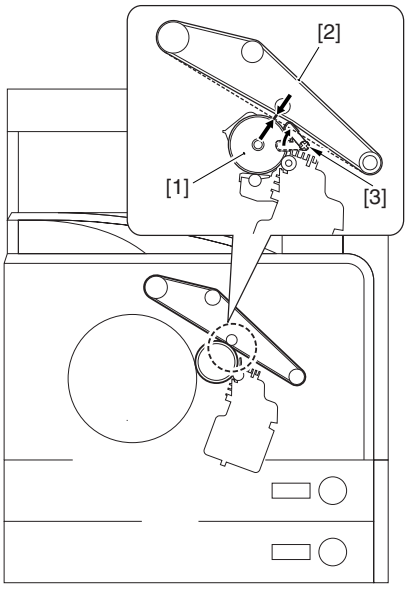


F-7-108

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in

contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



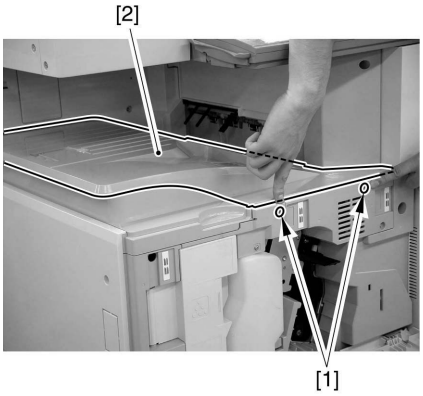
F-7-109

At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.7.2 Removing the Delivery Tray 0002-0019

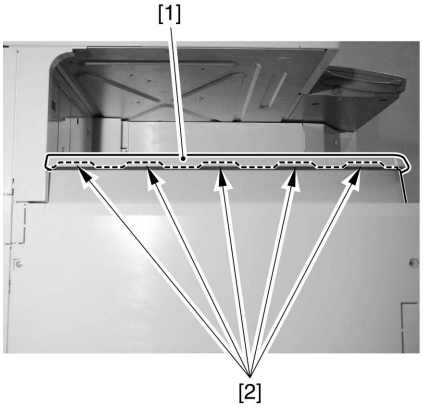
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-110

⚠**Points to Note When Mounting the Delivery Tray**

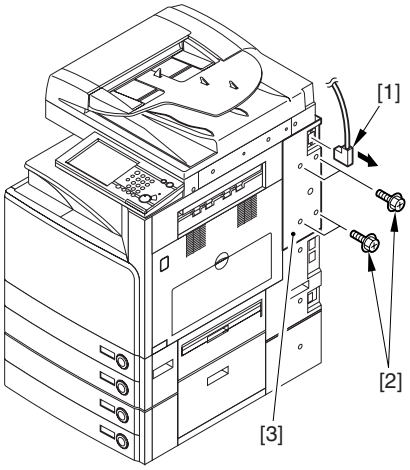
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-111

7.10.7.3 Removing the Right Cover (upper rear) 0002-0455

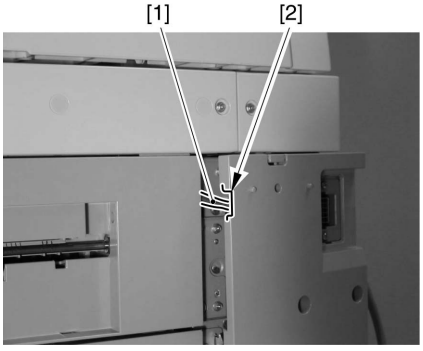
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-112

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

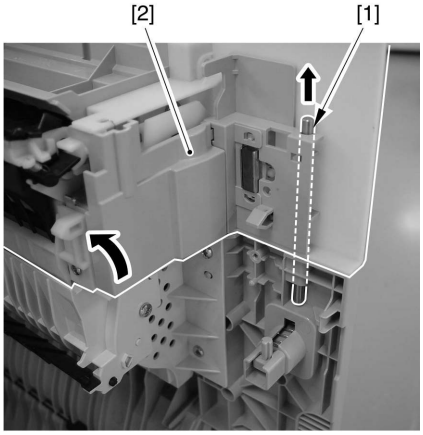


F-7-113

7.10.7.4 Removing the Right Door

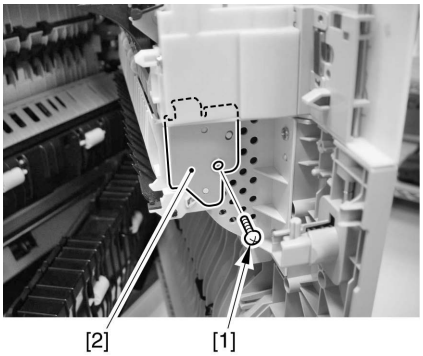
0002-0332

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



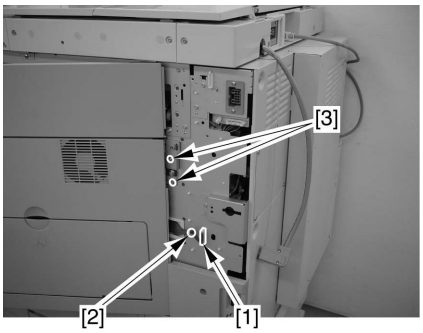
F-7-114

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



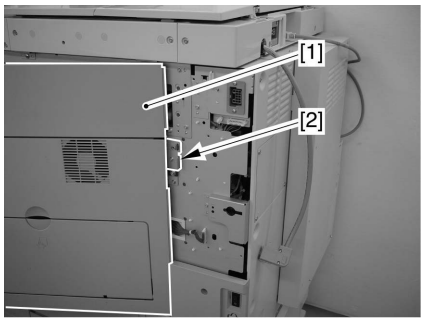
F-7-115

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-116

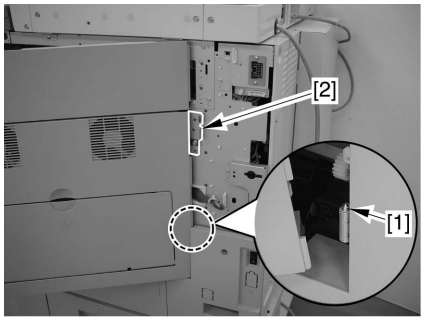
6) Detach the right door [1] together with the hinge [2].



F-7-117

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

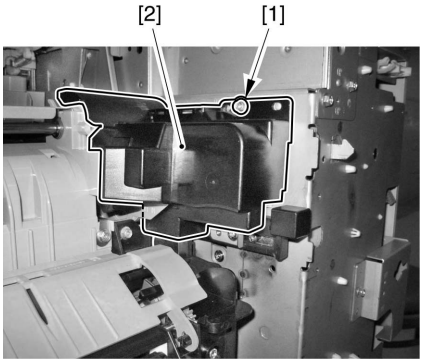


F-7-118

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

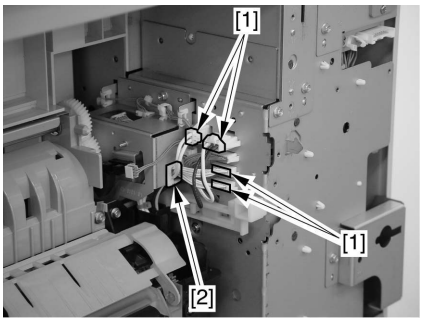
7.10.7.5 Removing the Fixing Unit 0001-8261

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



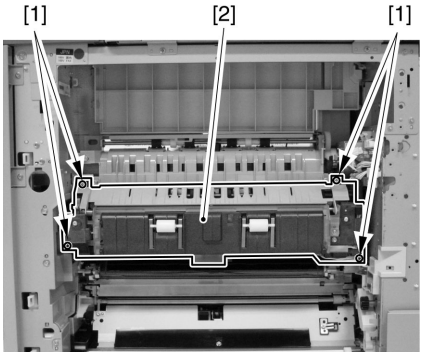
F-7-119

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-120

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-7-121

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

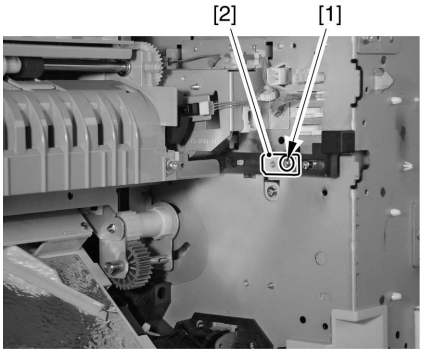
⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

7.10.7.6 Removing the Fixing Release Arm Plate 0001-4442

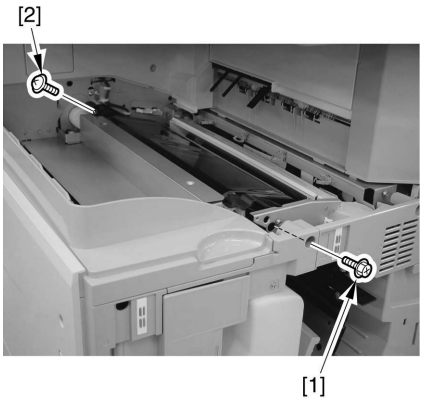
1) Remove the screw [1], and detach the plate [2].



F-7-122

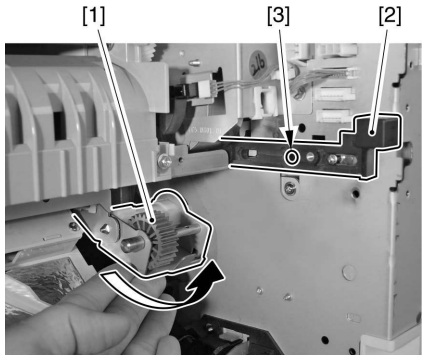
7.10.7.7 Removing the Intermediate Transfer Unit (ITB unit) 0001-8252

1) Remove the screw [1], and remove the screw [2].

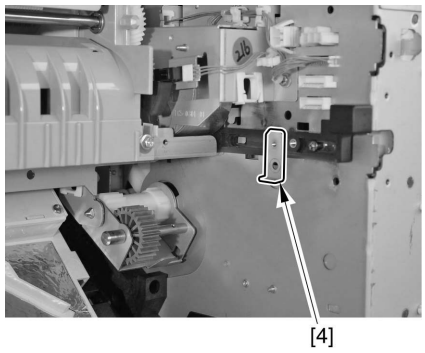


F-7-123

2) With the fixing drive gear assembly [1] fully lifted in the direction of the arrow, fit the previously removed fixing release arm plate [4] into the hole of the fixing release arm [2] to hold the fixing drive gear assembly [1] in place.



F-7-124



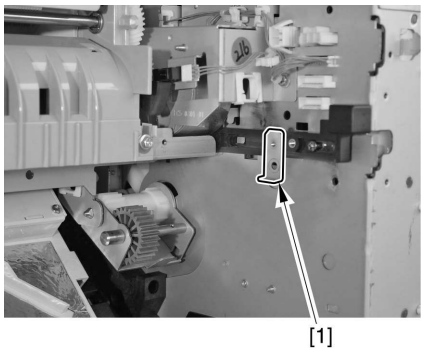
F-7-125

Memo:
Step 2) is performed so that the ITB unit and the fixing drive gear assembly will not interfere with each other when the ITB unit is removed.

⚠Be sure to put back the fixing release arm plate used to hold the fixing drive gear assembly in place as follows when mounting the ITB unit:

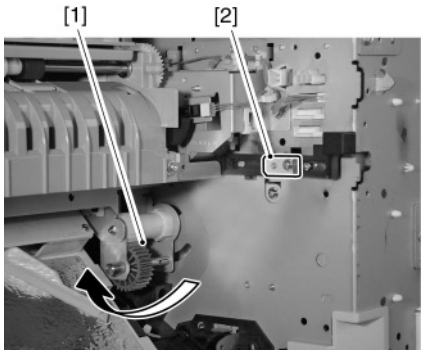
1) If you have attached the delivery tray, remove it for the time being.
If the fixing release arm plate is mounted in the presence of the delivery tray, the fixing release arm (rear) will get stuck on the boss of the delivery tray, preventing transmission of drive to the fixing roller.

2) Remove the fixing release arm plate [1] so that the fixing drive gear assembly will be freed.



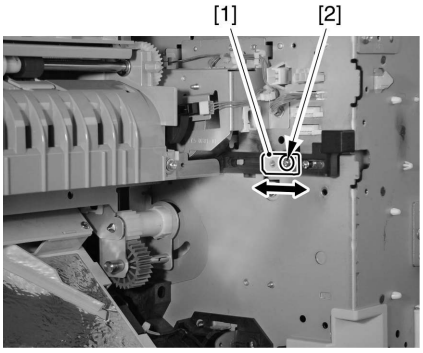
F-7-126

3) With the fixing drive gear assembly [1] fully moved by hand in the direction of the arrow, fit the fixing releasing arm plate [2] in to the hole to secure it in place.



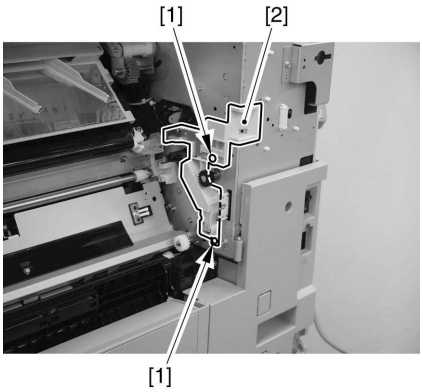
F-7-127

4) Fix the fixing releasing arm plate [1] in place using a screw [2]. Thereafter, try moving the fixing release arm back and forth to be sure that the fixing drive gear assembly moves in response.



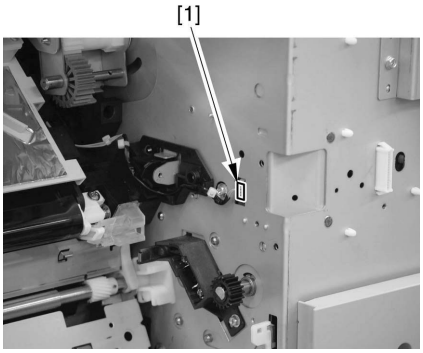
F-7-128

3) Remove 2 screws [1], and detach the contact guide [2].



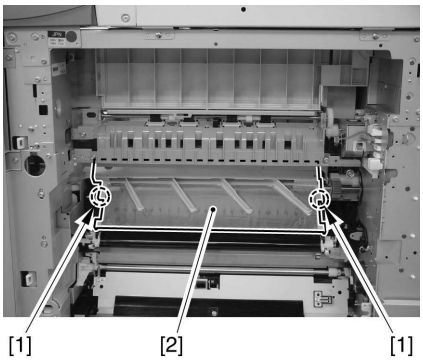
F-7-129

4) Disconnect the connector [1], and free the cable from the cable guide.



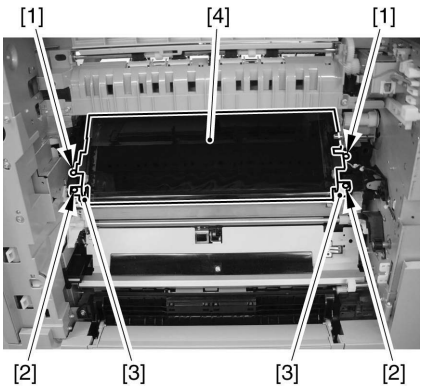
F-7-130

5) Lift the 2 points of the ITB fan duct [1] to free the claw; then, detach the ITB fan duct [2].



F-7-131

6) Remove the 2 screws [1] (TP; M3x6) and the 2 screws [2] (binding; M4x14); then, lift the 2 grips [3] to detach from the bushing assembly, and detach the ITB unit



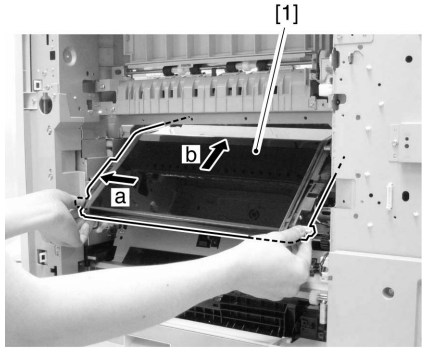
F-7-132

⚠When removing the ITB unit, be sure to take full care not to touch or damage the ITB. When you have removed the ITB unit, try not to place it on the floor or a desk without paper under it.

⚠If you must leave the ITB unit alone for a long time after removing it, be sure to cover the surface of the photosensitive drum to protect it against light.

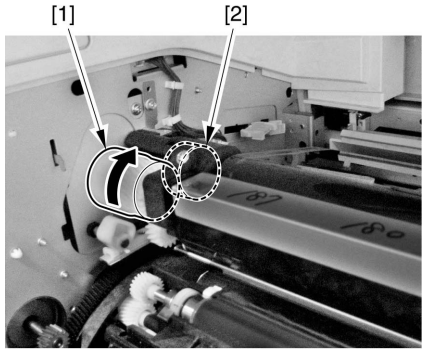
7.10.7.8 Points to Note When Mounting the ITB Unit 0000-9269

- When fitting the ITB unit [1] in the machine, move the unit in the direction of the arrow a (toward the machine front) and then along the rails in the direction of the arrow b.



F-7-133

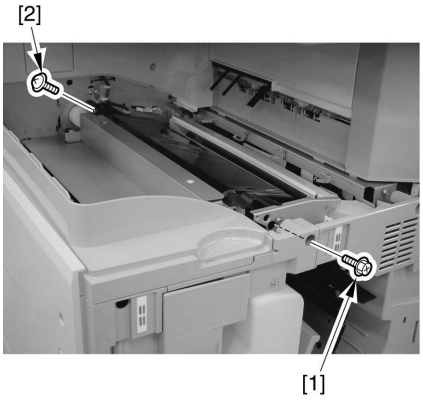
- When you have fitted the ITB unit in the machine, be sure to give the gear [1] a full turn before tightening the screw to fix it in place. Merely fitting the ITB unit in the machine does not always mean that the gear [1] and the other gear [2] have fully been engaged; the turn will mesh them correctly.



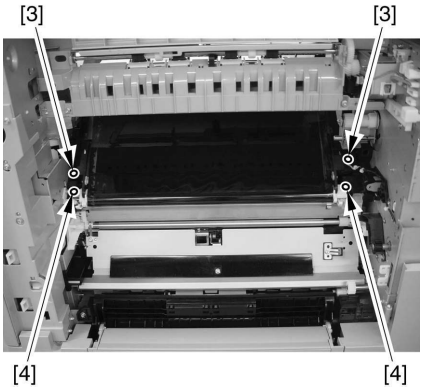
F-7-134

- Be sure to fit the 4 fixing screws of the ITB unit in the following sequence; if not tightened in the correct sequence, images may show lines at intervals of 96.7 mm.

[1]>[2]>[3] or [4]; screw [3] (TP; M3x6) and screw [4] (binding; M4x14) may be tightened in any order.



F-7-135

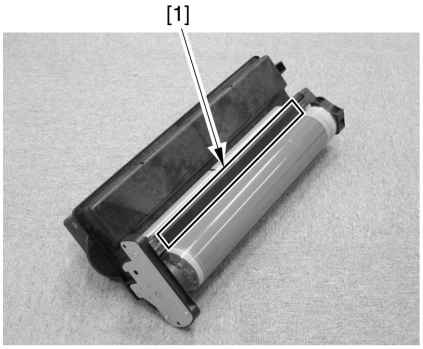


F-7-136

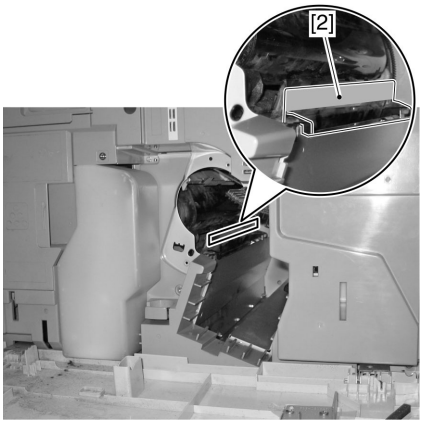
7.10.7.9 Points to Note When Mounting the Drum Unit 0002-8701

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-137



F-7-138

Memo:
The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

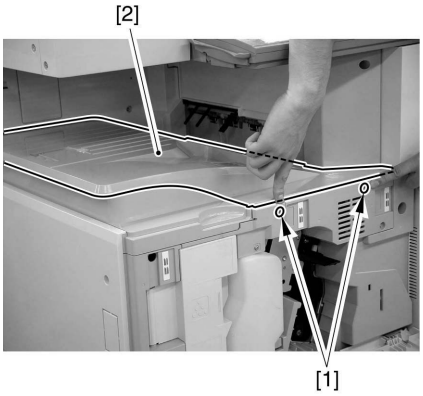
7.10.7.10 After Replacing the Intermediate Transfer Unit 0001-8425

Execute the following service mode item:
- COPIER>FUNCTION>MISC-P>1ATVC-EX

7.10.8 ITB Waste Toner Detection Unit

7.10.8.1 Removing the Delivery Tray 0002-0312

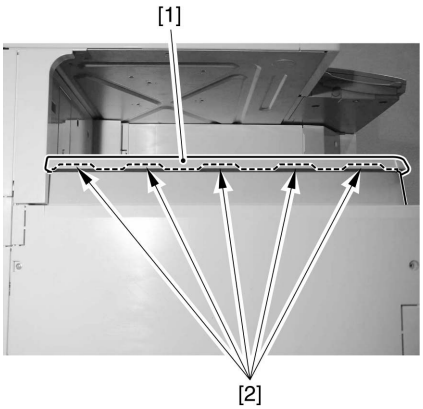
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-139

⚠Points to Note When Mounting the Delivery Tray

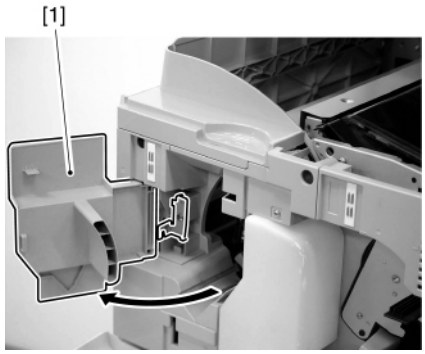
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-140

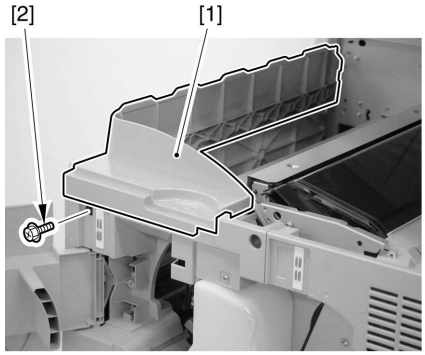
7.10.8.2 Removing the Delivery Tray Lower Cover 0002-0313

1) Open the toner cartridge access cover [1].



F-7-141

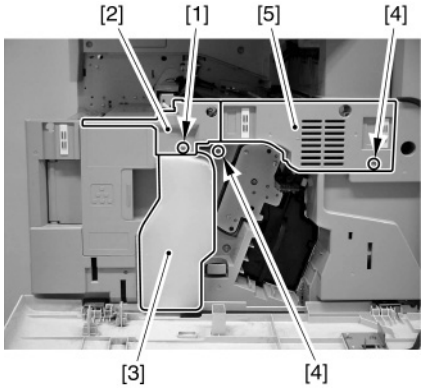
2) Remove the screw [2], and detach the delivery tray lower cover [1].



F-7-142

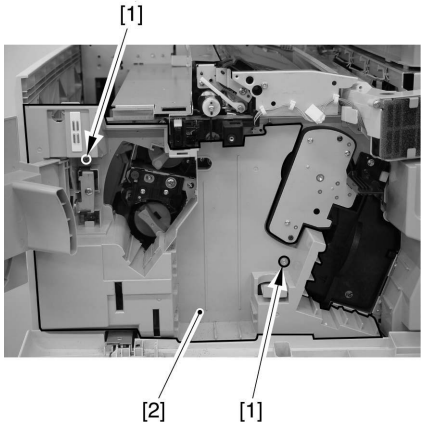
7.10.8.3 Removing the ITB Waste Toner Detection Unit 0000-9361

1) Remove the screw [1], and detach the waste toner unit retainer [2] and the ITB waste toner unit [3]; then, remove the two screws [4], and detach the inside cover (middle) [5].



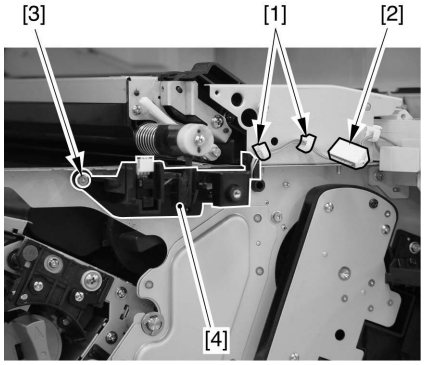
F-7-143

2) Remove the 2 screws [1], and detach the inside cover (left) [2].



F-7-144

3) Free the cable from the 2 cable clamps [1]; then, disconnect the connector [2], remove the screw [3], and detach the ITB waste toner detention unit [4].



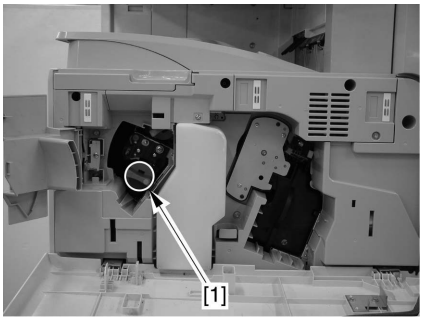
F-7-145

7.10.9 Intermediate Transfer Belt

7.10.9.1 Removing the Drum Unit

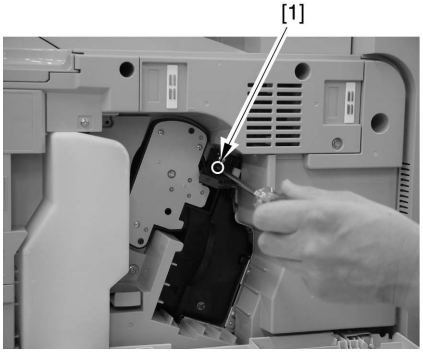
0002-8702

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



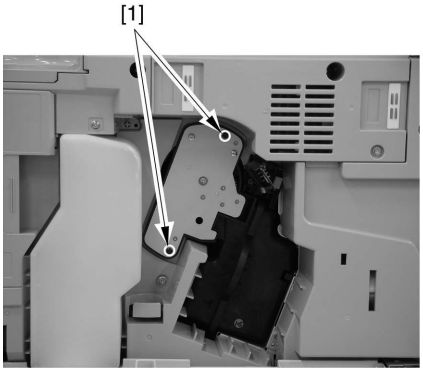
F-7-146

2) Remove the screw [1] (black; M3x20).



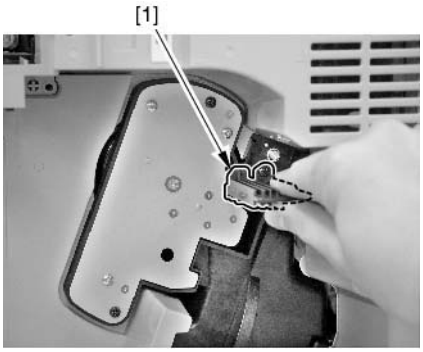
F-7-147

3) Remove the 2 fixing screws [1] (M4x20).

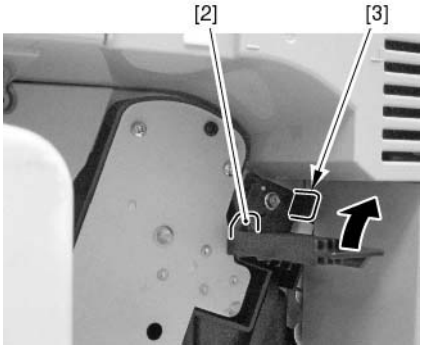


F-7-148

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

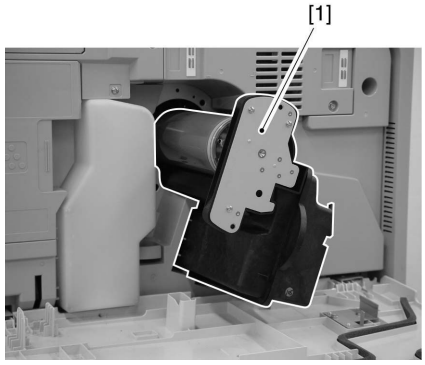


F-7-149



F-7-150

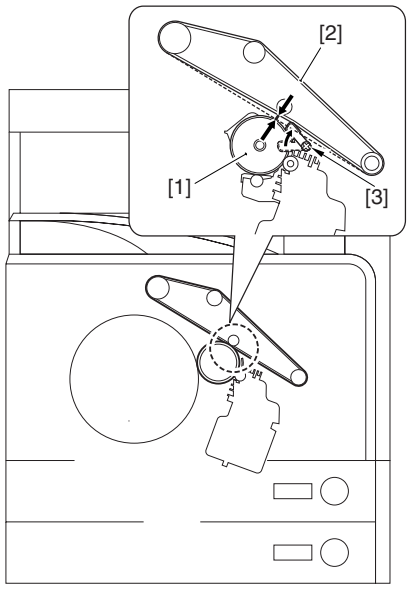
5) Slide out the drum unit [1] to the front to detach.



F-7-151

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



F-7-152

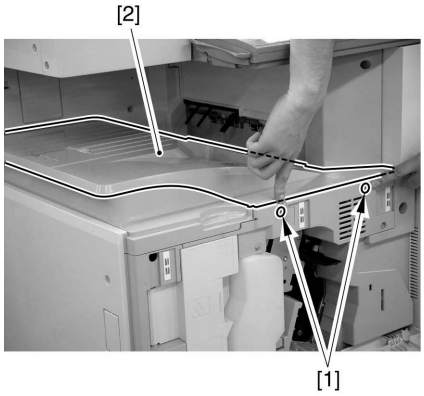
At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as

possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.9.2 Removing the Delivery Tray 0002-0294

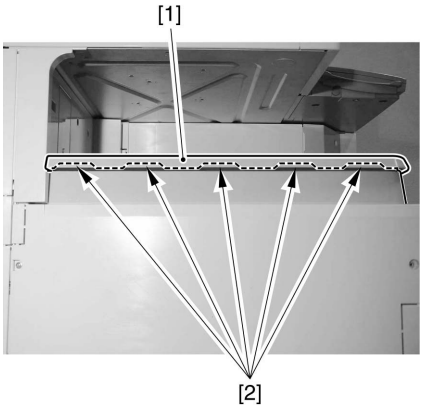
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-153

⚠**Points to Note When Mounting the Delivery Tray**

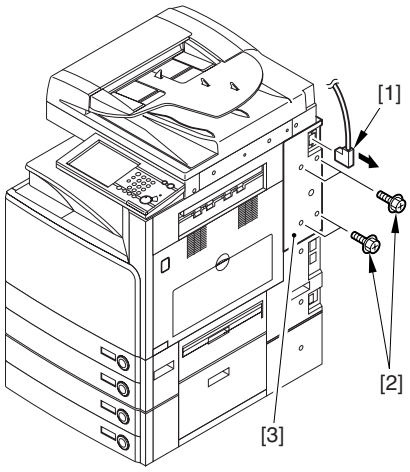
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-154

7.10.9.3 Removing the Right Cover (upper rear) 0003-5718

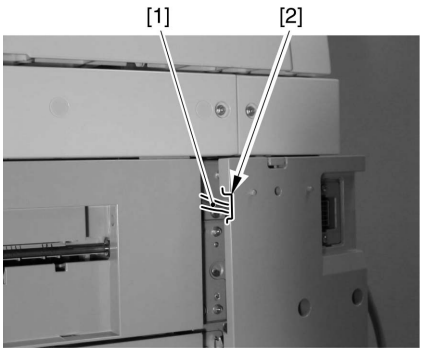
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-155

⚠**Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)**

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

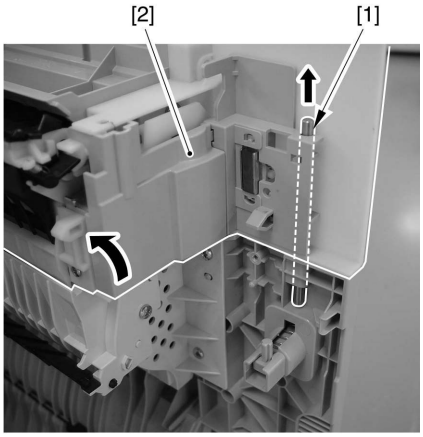


F-7-156

7.10.9.4 Removing the Right Door

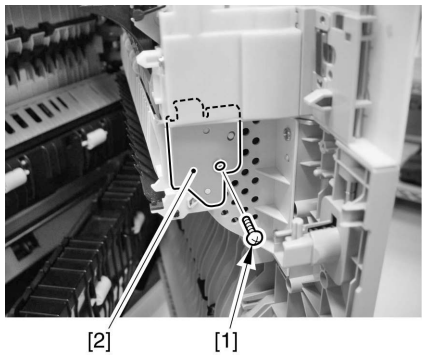
0002-0333

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



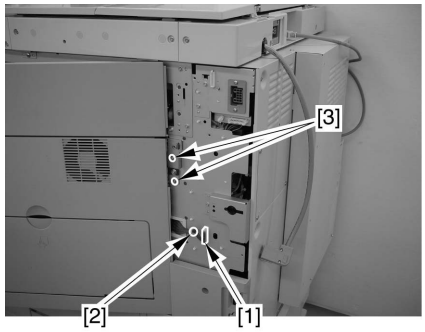
F-7-157

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



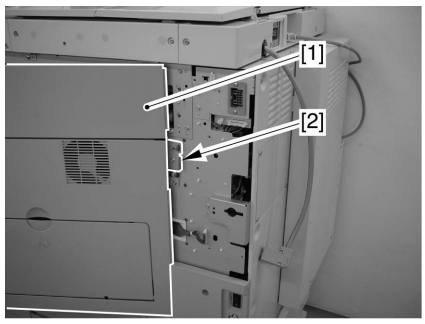
F-7-158

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-159

6) Detach the right door [1] together with the hinge [2].

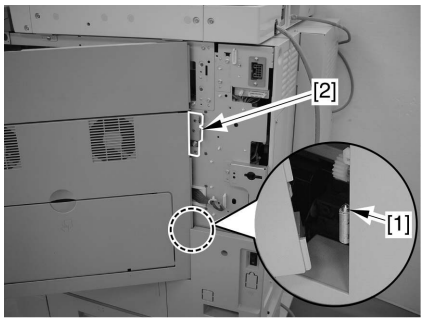


F-7-160

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

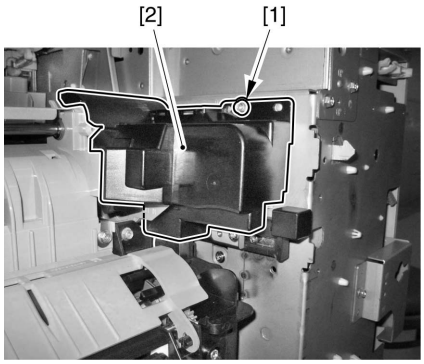


F-7-161

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

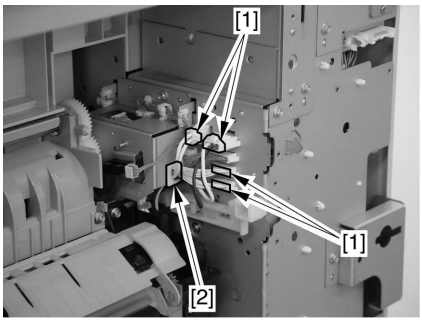
7.10.9.5 Removing the Fixing Unit 0001-8316

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



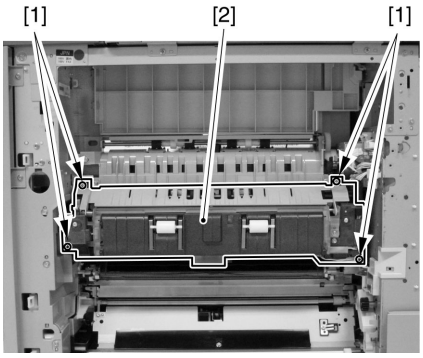
F-7-162

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-163

3) Remove the 4 screws [1], and detach the fixing assembly [2].



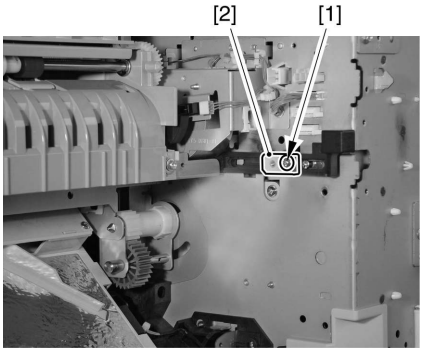
F-7-164

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

7.10.9.6 Removing the Fixing Release Arm Plate 0001-8315

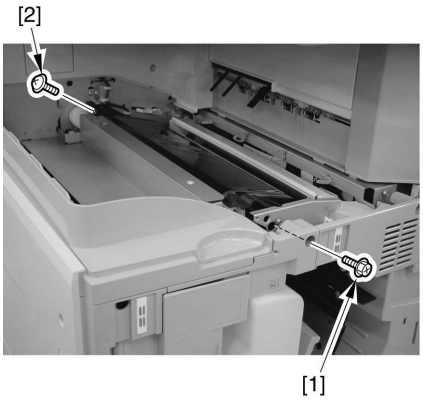
1) Remove the screw [1], and detach the plate [2].



F-7-165

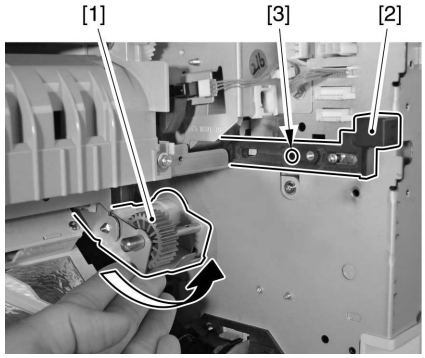
7.10.9.7 Removing Intermediate Transfer Unit (ITB unit) 0001-8283

1) Remove the screw [1], and remove the screw [2].

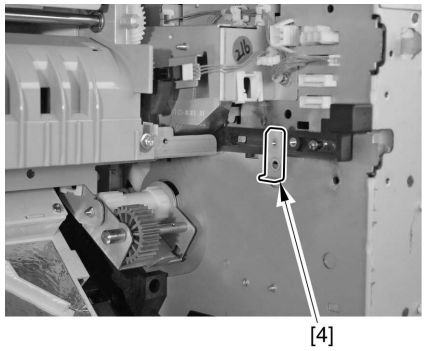


F-7-166

2) With the fixing drive gear assembly [1] fully lifted in the direction of the arrow, fit the previously removed fixing release arm plate [4] into the hole of the fixing release arm [2] to hold the fixing drive gear assembly [1] in place.



F-7-167

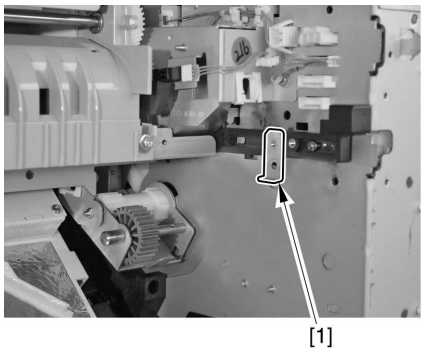


F-7-168

Memo:
Step 2) is performed so that the ITB unit and the fixing drive gear assembly will not interfere with each other when the ITB unit is removed.

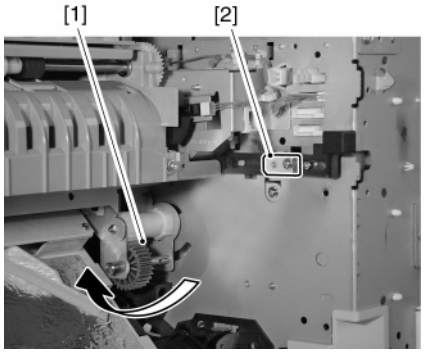
⚠Be sure to put back the fixing release arm plate used to hold the fixing drive gear assembly in place as follows when mounting the ITB unit:

1) If you have attached the delivery tray, remove it for the time being.
   If the fixing release arm plate is mounted in the presence of the delivery tray, the fixing release arm (rear) will get stuck on the boss of the delivery tray, preventing transmission of drive to the fixing roller.
2) Remove the fixing release arm plate [1] so that the fixing drive gear assembly will be freed.



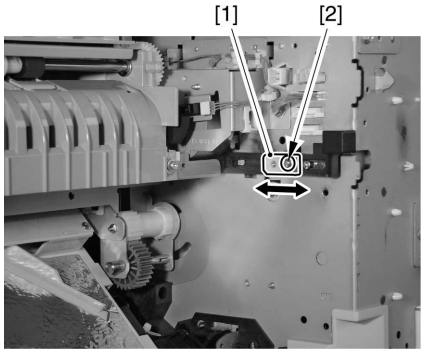
F-7-169

3) With the fixing drive gear assembly [1] fully moved by hand in the direction of the arrow, fit the fixing releasing arm plate [2] in to the hole to secure it in place.



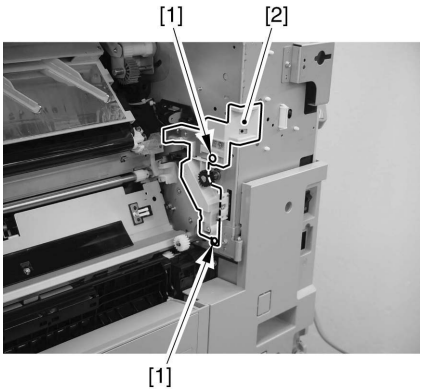
F-7-170

4) Fix the fixing releasing arm plate [1] in place using a screw [2]. Thereafter, try moving the fixing release arm back and forth to be sure that the fixing drive gear assembly moves in response.



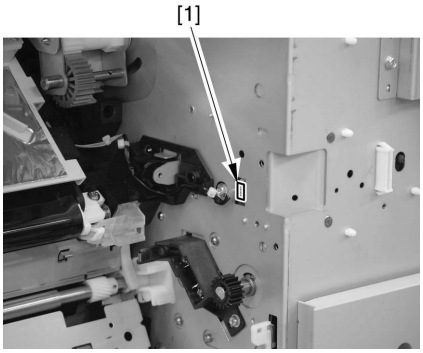
F-7-171

3) Remove 2 screws [1], and detach the contact guide [2].



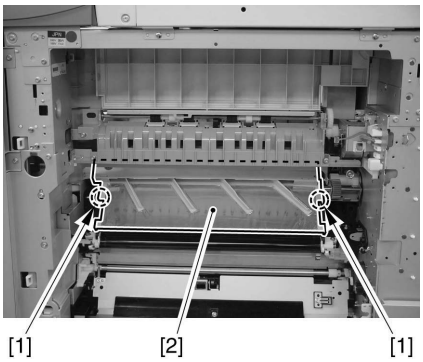
F-7-172

4) Disconnect the connector [1], and free the cable from the cable guide.



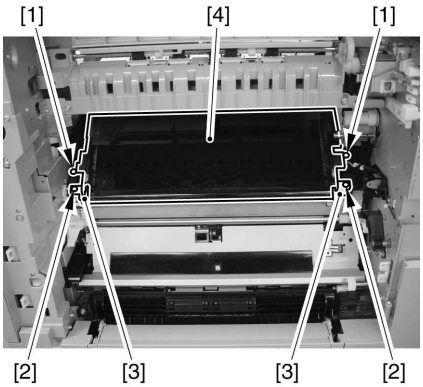
F-7-173

5) Lift the 2 points of the ITB fan duct [1] to free the claw; then, detach the ITB fan duct [2].



F-7-174

6) Remove the 2 screws [1] (TP; M3x6) and the 2 screws [2] (binding; M4x14); then, lift the 2 grips [3] to detach from the bushing assembly, and detach the ITB unit



F-7-175

⚠When removing the ITB unit, be sure to take full care not to touch or damage the ITB. When you have removed the ITB unit, try not to place it on the floor or a desk without paper under it.

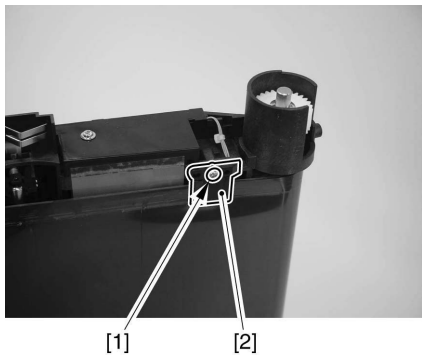
⚠If you must leave the ITB unit alone for a long time after removing it, be sure to cover the surface of the photosensitive drum to protect it against light.

7.10.9.8 Removing the Intermediate Transfer Belt (ITB) 0000-9270

⚠Do not place the ITB unit directly on the floor or a desk. Be sure to place paper underneath.

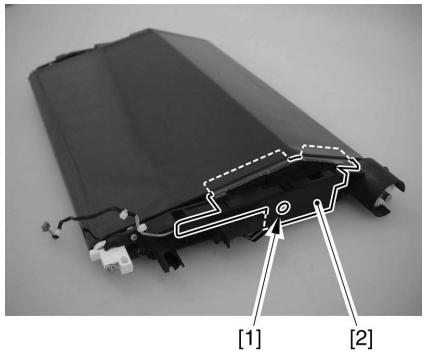
---

1) Remove the screw [1], and detach the ITB retainer [2].



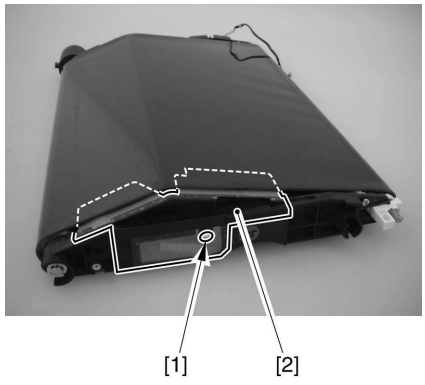
F-7-176

2) Remove the screw [1], and detach the sheet base (rear) [2].



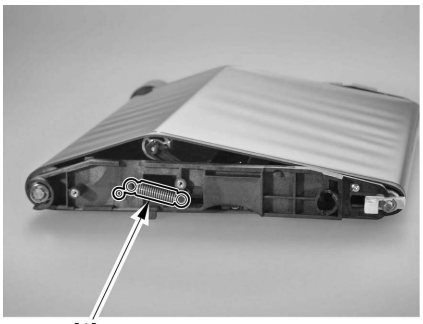
F-7-177

3) Remove the screw [1], and detach the sheet base (front) [2].

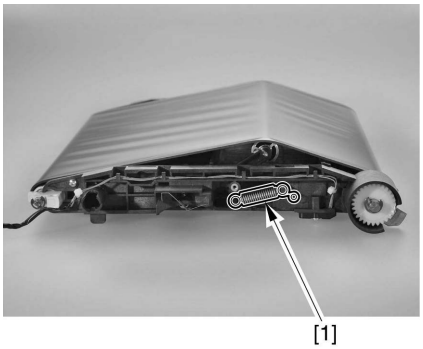


F-7-178

4) Remove the 2 tension springs [1].



F-7-179



F-7-180

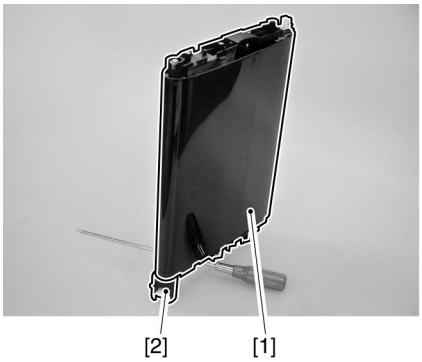
5) While pushing the bushings [1] and [2] of the secondary transfer inside roller toward the inside, slide them in the direction of the arrows until they stop.

F-7-181

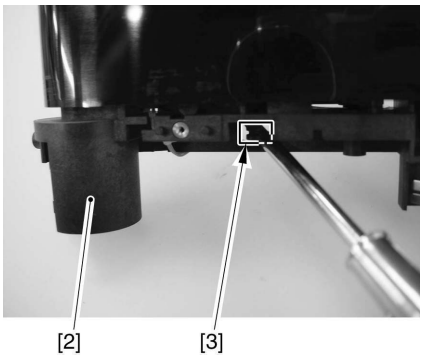
Memo:
This step loosens the ITB and thus facilitates the removal of the ITB.

6) Insert a long screwdriver into the angular hole [3] found in the frame (drive gear side) [2] of the ITB unit [1] so that the ITB unit is on its own.

⚠During the work after you have used a screwdriver to keep the ITB unit upright, take care so that the unit will not tumble down. Otherwise, the force occurring around the angular opening [3], in which the screwdriver is found, will cause damage to the unit.

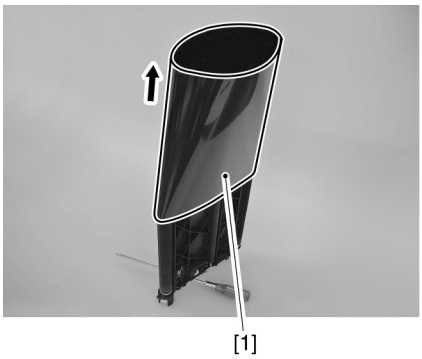


F-7-182



F-7-183

7) Detach the ITB [1] by pulling it in upward direction.

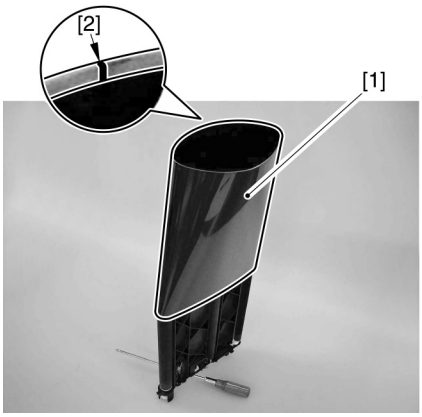


F-7-184

⚠Once detached and on its own, the ITB unit tends to be extremely unstable. Be sure to take full care when detaching it.

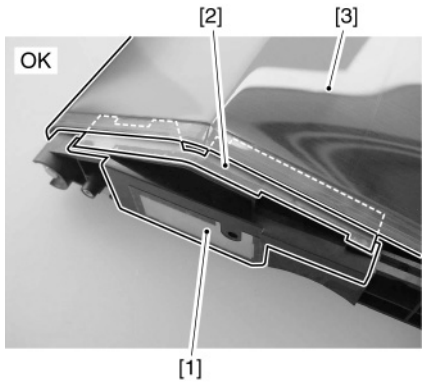
7.10.9.9 Points to Note When Mounting the ITB 0000-9271

- When placing the ITB unit upright, be sure that the drive gear side is at the bottom.
- When mounting the ITB [1], be sure to orient it so that the end with a marking (red) [2] is at the top in the ITB frame.

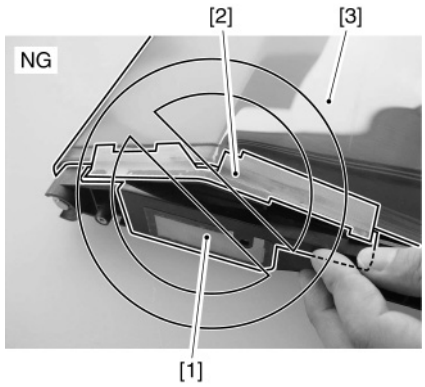


F-7-185

- When mounting the sheet base (front) [1], take full care so that the plastic film [2] will not ride over the ITB [3].

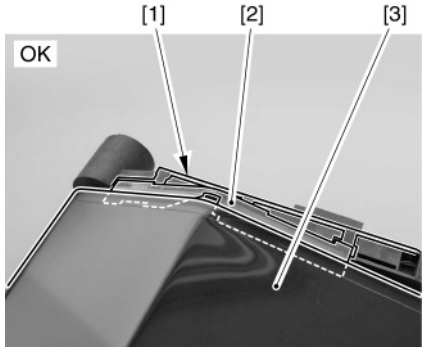


F-7-186

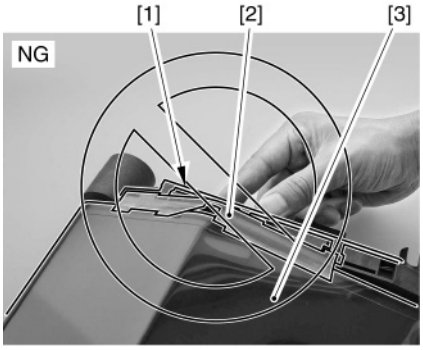


F-7-187

- When mounting the sheet base (rear) [1], be sure that the plastic film [2] will not ride over the ITB [3].



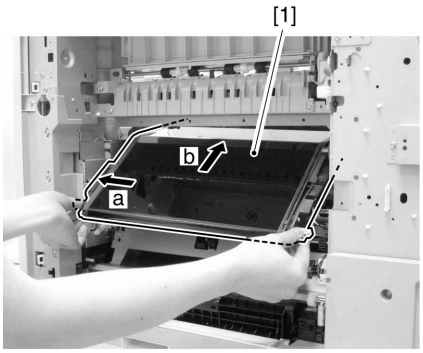
F-7-188



F-7-189

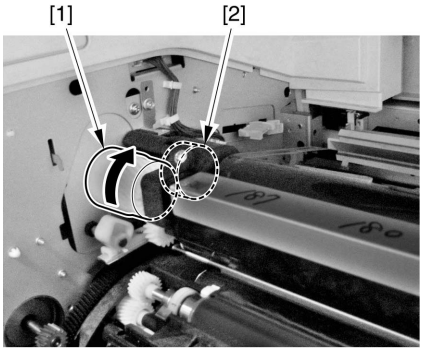
7.10.9.10 Points to Note When Mounting the ITB Unit 0001-8284

- When fitting the ITB unit [1] in the machine, move the unit in the direction of the arrow a (toward the machine front) and then along the rails in the direction of the arrow b.



F-7-190

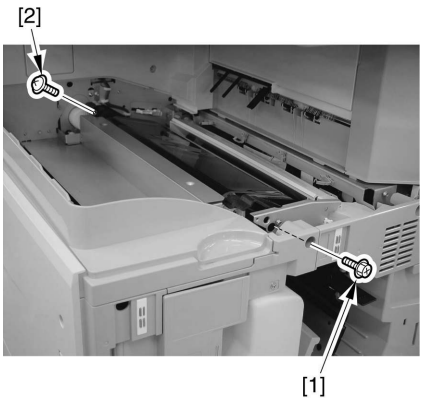
- When you have fitted the ITB unit in the machine, be sure to give the gear [1] a full turn before tightening the screw to fix it in place. Merely fitting the ITB unit in the machine does not always mean that the gear [1] and the other gear [2] have fully been engaged; the turn will mesh them correctly.



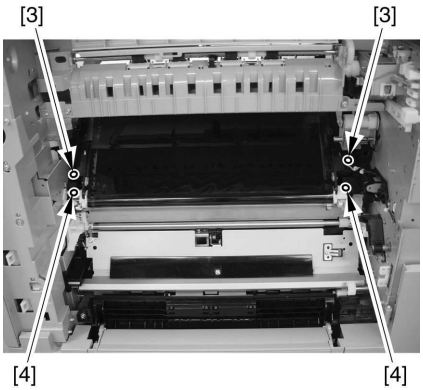
F-7-191

- Be sure to fit the 4 fixing screws of the ITB unit in the following sequence; if not tightened in the correct sequence, images may show lines at intervals of 96.7 mm.

[1]>[2]>[3] or [4]; screw [3] (TP; M3x6) and screw [4] (binding; M4x14) may be tightened in any order.



F-7-192

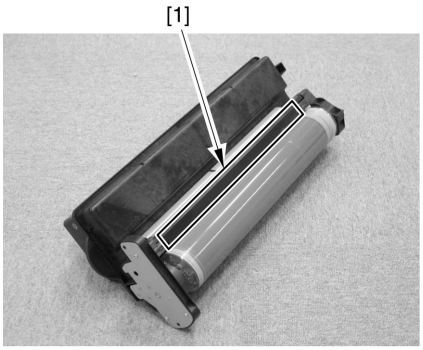


F-7-193

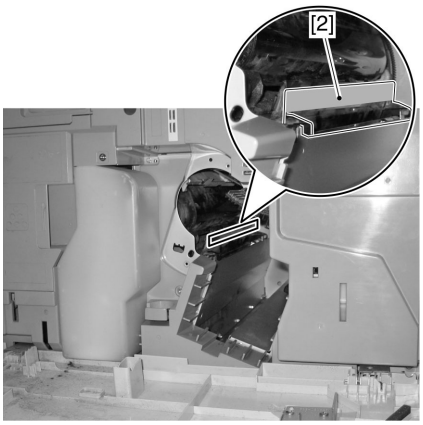
7.10.9.11 Points to Note When Mounting the Drum Unit 0002-8703

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-194



F-7-195

Memo:
The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

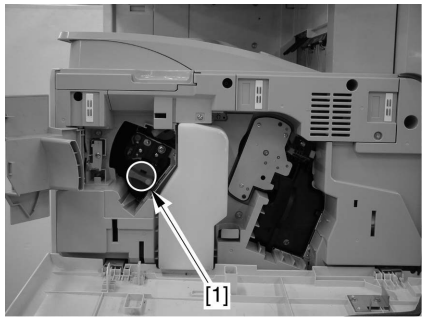
7.10.9.12 After Replacing the Intermediate Transfer Belt 0001-8289

Execute the following service mode item:
- COPIER>FUNCTION>MISC-P>1ATVC-EX

7.10.10 ITB Home Position Sensor PCB

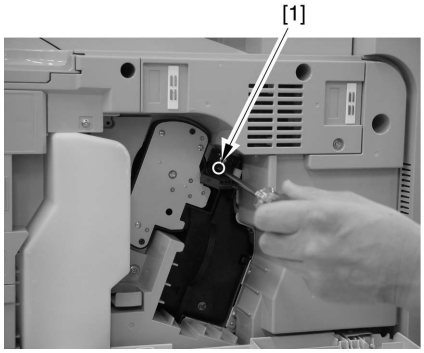
7.10.10.1 Removing the Drum Unit 0002-8704

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



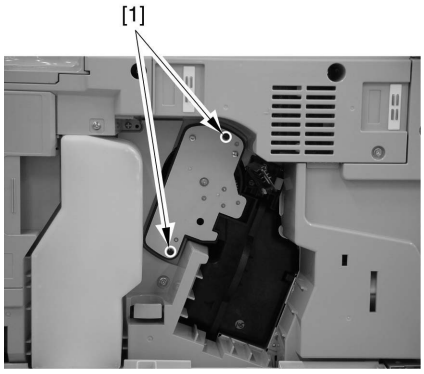
F-7-196

2) Remove the screw [1] (black; M3x20).



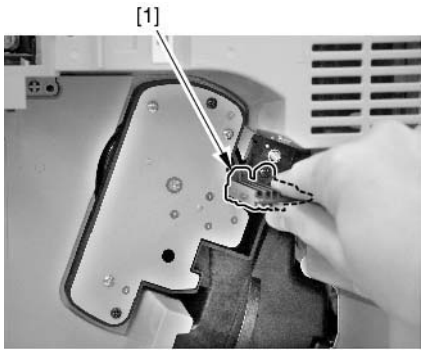
F-7-197

3) Remove the 2 fixing screws [1] (M4x20).

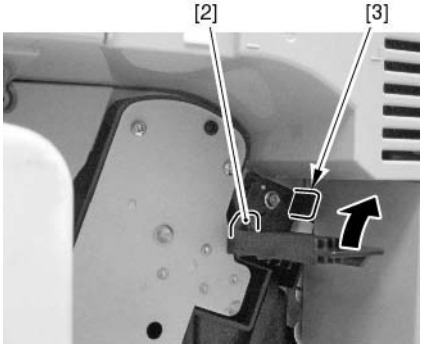


F-7-198

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

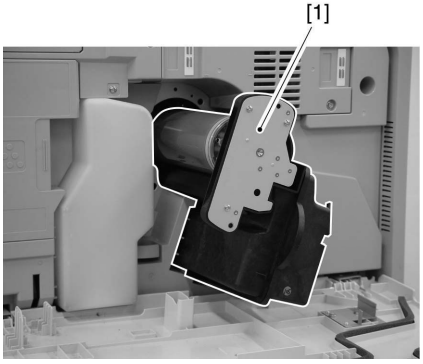


F-7-199



F-7-200

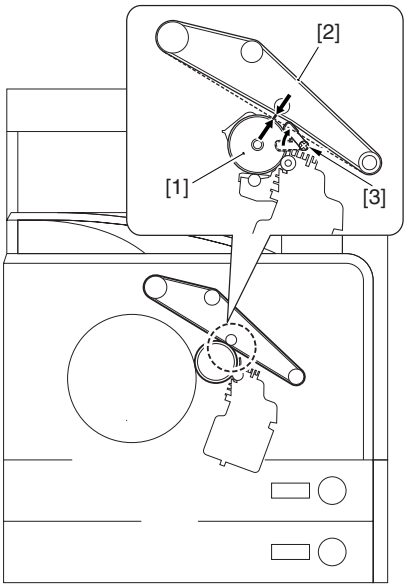
5) Slide out the drum unit [1] to the front to detach.



F-7-201

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



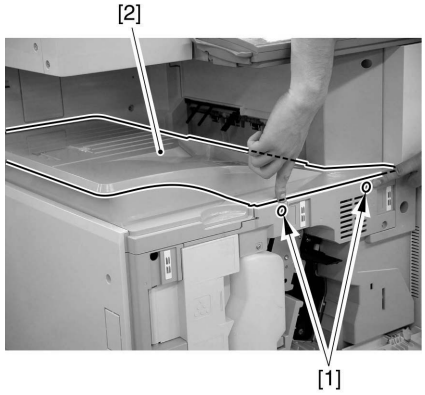
F-7-202

At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.10.2 Removing the Delivery Tray 0002-0306

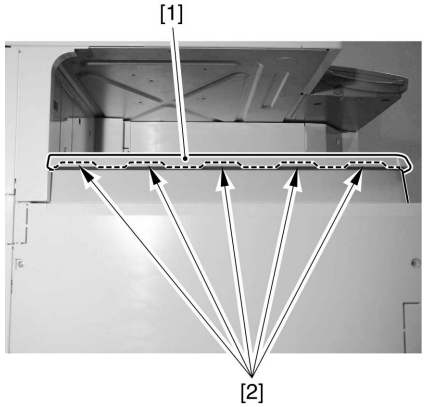
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-203

⚠**Points to Note When Mounting the Delivery Tray**

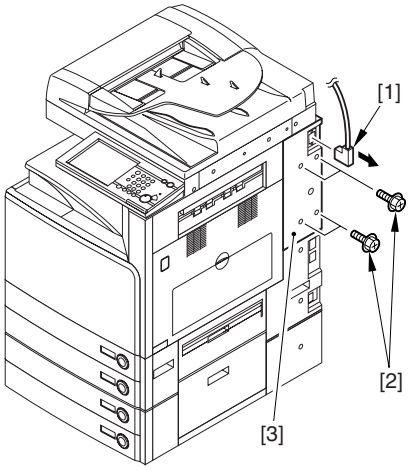
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-204

7.10.10.3 Removing the Right Cover (upper rear) 0002-0307

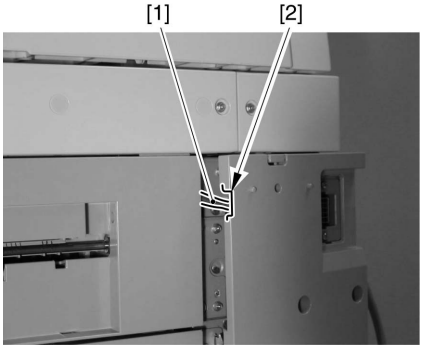
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-205

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

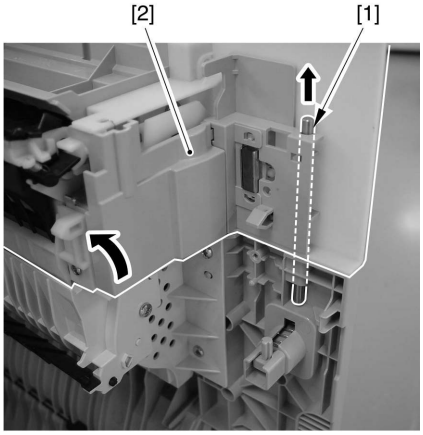


F-7-206

7.10.10.4 Removing the Right Door

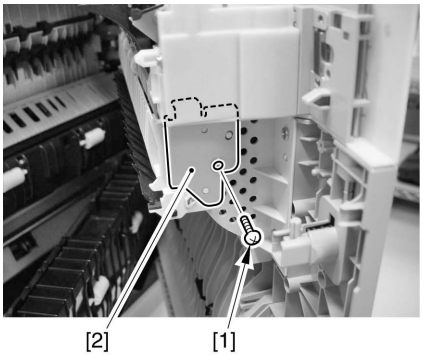
0002-0337

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



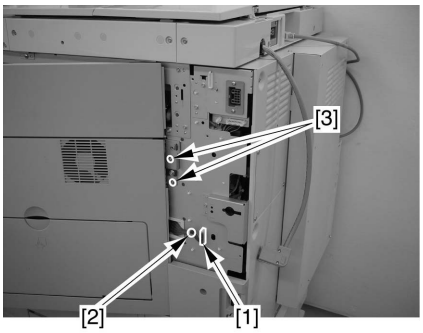
F-7-207

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



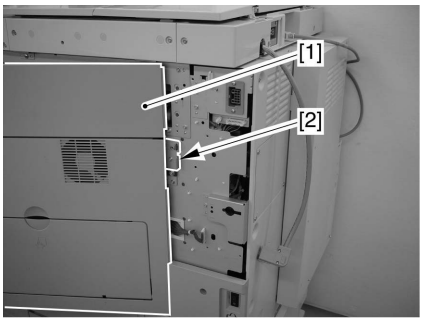
F-7-208

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-209

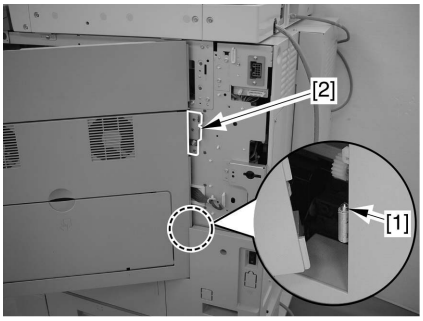
6) Detach the right door [1] together with the hinge [2].



F-7-210

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

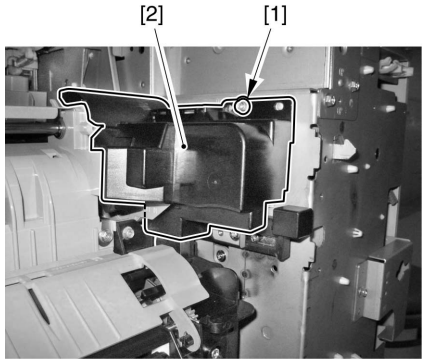


F-7-211

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

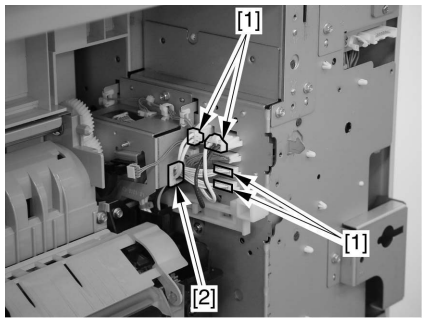
7.10.10.5 Removing the Fixing Unit 0001-8349

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



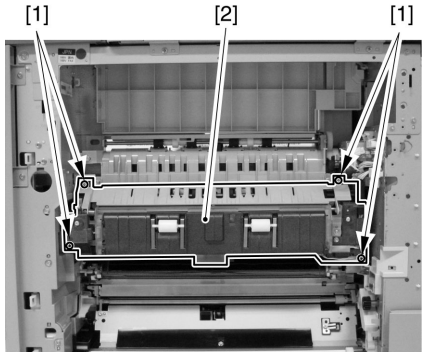
F-7-212

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-213

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-7-214

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

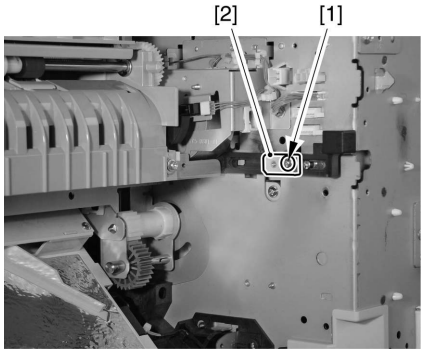
⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

7.10.10.6 Removing the Fixing Release Arm Plate 0001-8348

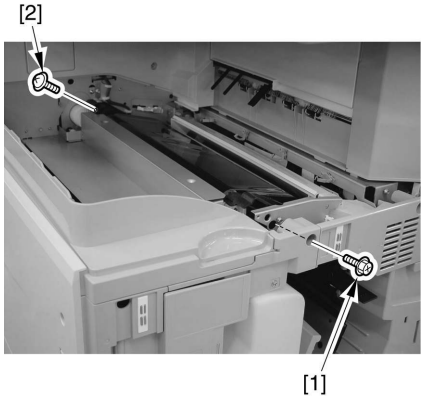
1) Remove the screw [1], and detach the plate [2].



F-7-215

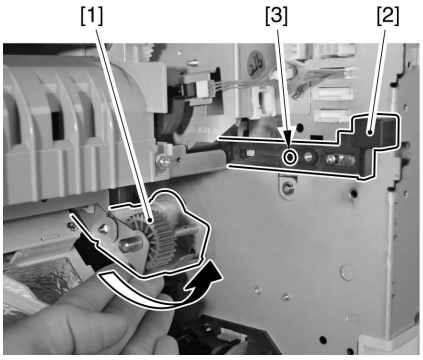
7.10.10.7 Removing the Intermediate Toner Unit (ITB unit) 0001-8355

1) Remove the screw [1], and remove the screw [2].

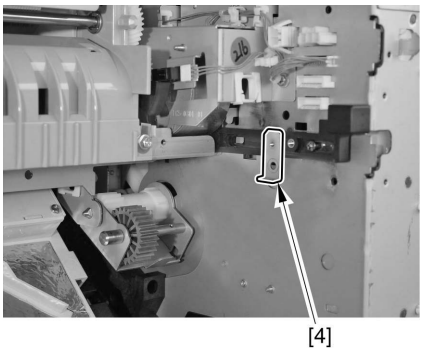


F-7-216

2) With the fixing drive gear assembly [1] fully lifted in the direction of the arrow, fit the previously removed fixing release arm plate [4] into the hole of the fixing release arm [2] to hold the fixing drive gear assembly [1] in place.



F-7-217



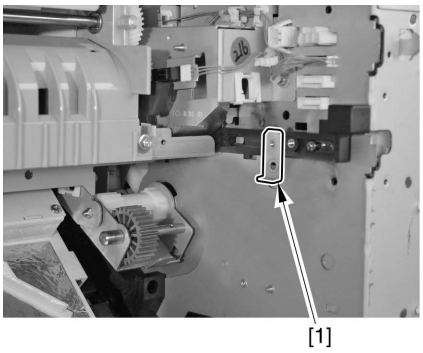
F-7-218

Memo:
Step 2) is performed so that the ITB unit and the fixing drive gear assembly will not interfere with each other when the ITB unit is removed.

⚠Be sure to put back the fixing release arm plate used to hold the fixing drive gear assembly in place as follows when mounting the ITB unit:

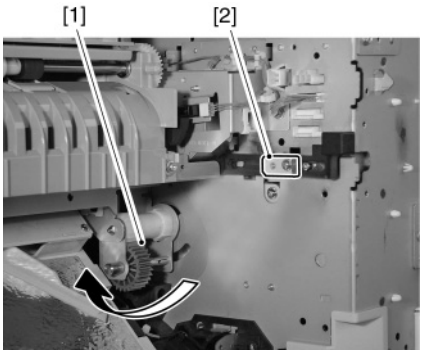
1) If you have attached the delivery tray, remove it for the time being.
If the fixing release arm plate is mounted in the presence of the delivery tray, the fixing release arm (rear) will get stuck on the boss of the delivery tray, preventing transmission of drive to the fixing roller.

2) Remove the fixing release arm plate [1] so that the fixing drive gear assembly will be freed.



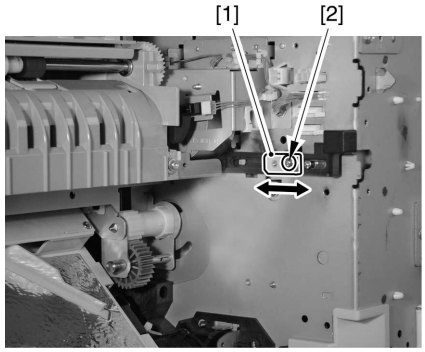
F-7-219

3) With the fixing drive gear assembly [1] fully moved by hand in the direction of the arrow, fit the fixing releasing arm plate [2] in to the hole to secure it in place.



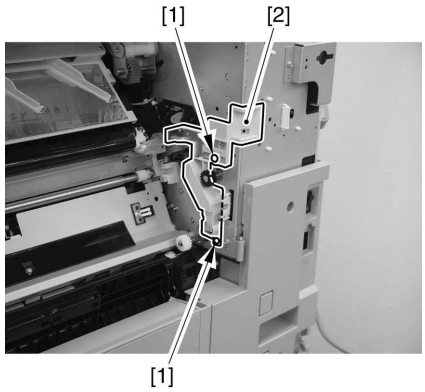
F-7-220

4) Fix the fixing releasing arm plate [1] in place using a screw [2]. Thereafter, try moving the fixing release arm back and forth to be sure that the fixing drive gear assembly moves in response.



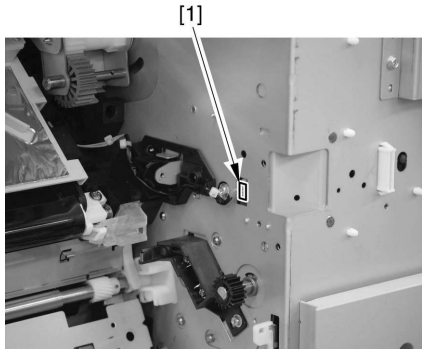
F-7-221

3) Remove 2 screws [1], and detach the contact guide [2].



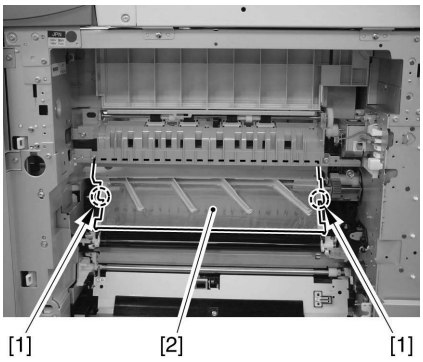
F-7-222

4) Disconnect the connector [1], and free the cable from the cable guide.



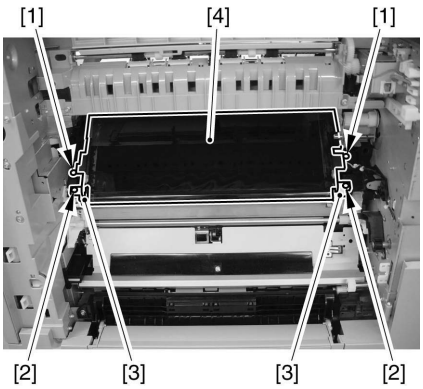
F-7-223

5) Lift the 2 points of the ITB fan duct [1] to free the claw; then, detach the ITB fan duct [2].



F-7-224

6) Remove the 2 screws [1] (TP; M3x6) and the 2 screws [2] (binding; M4x14); then, lift the 2 grips [3] to detach from the bushing assembly, and detach the ITB unit



F-7-225

⚠When removing the ITB unit, be sure to take full care not to touch or damage the ITB. When you have removed the ITB unit, try not to place it on the floor or a desk without paper under it.

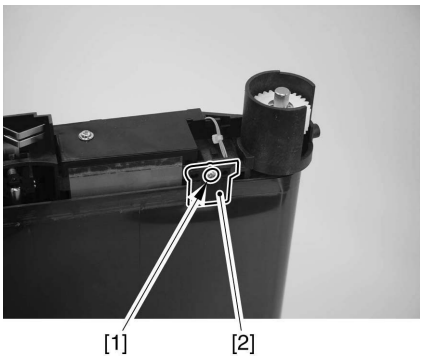
⚠If you must leave the ITB unit alone for a long time after removing it, be sure to cover the surface of the photosensitive drum to protect it against light.

7.10.10.8 Removing the Intermediate Transfer Belt (ITB) 0001-8356

⚠Do not place the ITB unit directly on the floor or a desk. Be sure to place paper underneath.

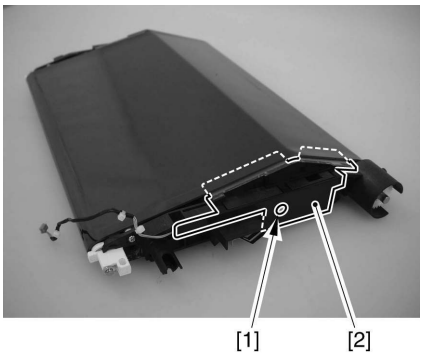
---

1) Remove the screw [1], and detach the ITB retainer [2].



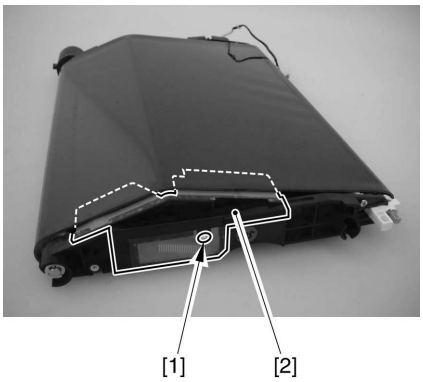
F-7-226

2) Remove the screw [1], and detach the sheet base (rear) [2].



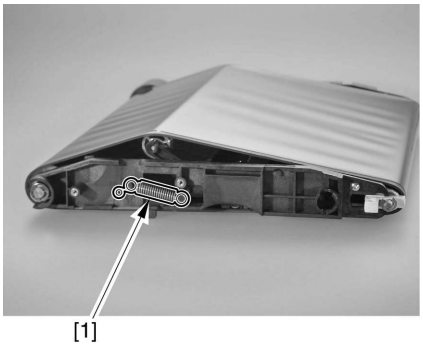
F-7-227

3) Remove the screw [1], and detach the sheet base (front) [2].

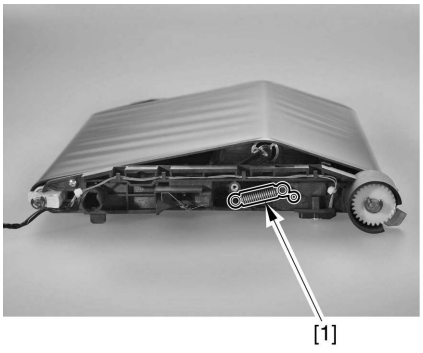


F-7-228

4) Remove the 2 tension springs [1].



F-7-229



F-7-230

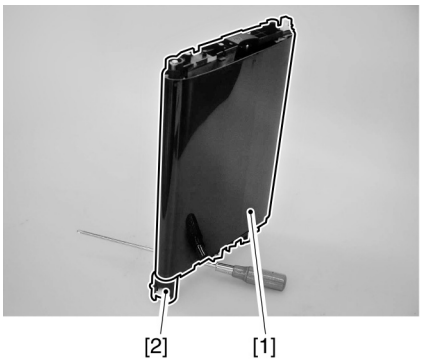
5) While pushing the bushings [1] and [2] of the secondary transfer inside roller toward the inside, slide them in the direction of the arrows until they stop.

F-7-231

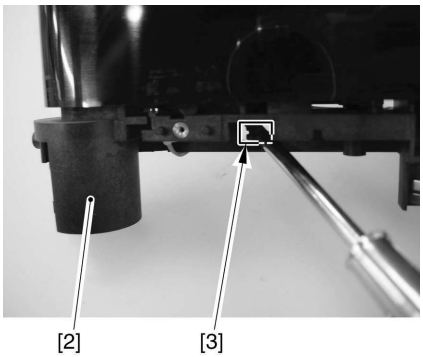
Memo:
This step loosens the ITB and thus facilitates the removal of the ITB.

6) Insert a long screwdriver into the angular hole [3] found in the frame (drive gear side) [2] of the ITB unit [1] so that the ITB unit is on its own.

⚠During the work after you have used a screwdriver to keep the ITB unit upright, take care so that the unit will not tumble down. Otherwise, the force occurring around the angular opening [3], in which the screwdriver is found, will cause damage to the unit.

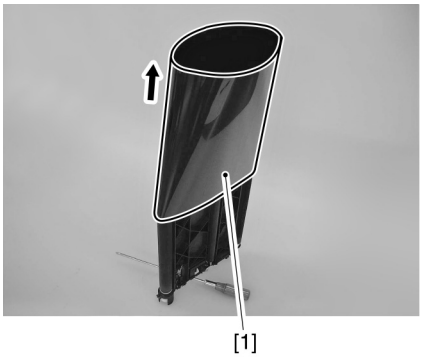


F-7-232



F-7-233

7) Detach the ITB [1] by pulling it in upward direction.

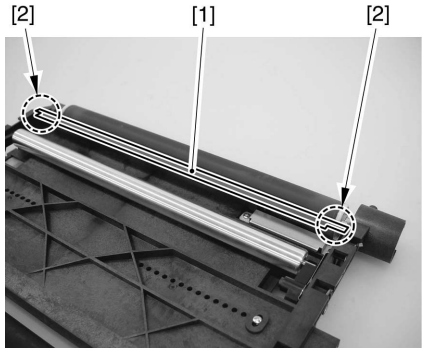


F-7-234

⚠Once detached and on its own, the ITB unit tends to be extremely unstable. Be sure to take full care when detaching it.

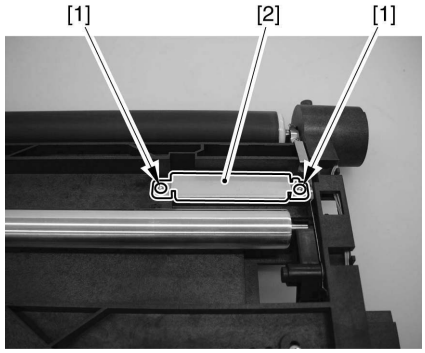
7.10.10.9 Removing the ITB Home Position Sensor PCB 0000-9277

1) Hold the inside blade [1] by both its edges, and detach it in upward direction.



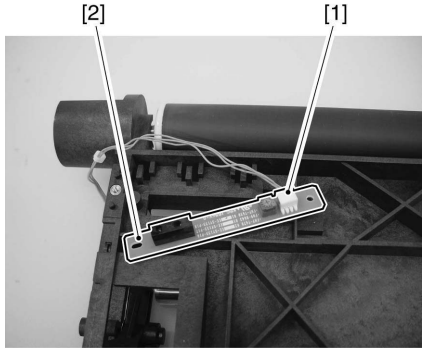
F-7-235

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



F-7-236

3) Turn over the ITB unit, and disconnect the connector [1]; then, detach the ITB home position sensor PCB [2].

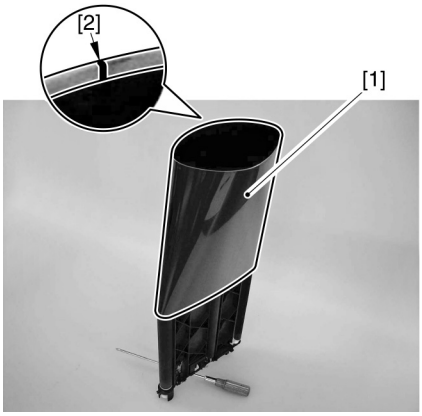


F-7-237

7.10.10.10 Points to Note When Mounting the ITB 0001-8358

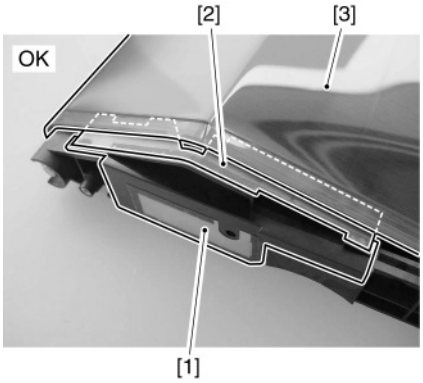
- When placing the ITB unit upright, be sure that the drive gear side is at the bottom.

- When mounting the ITB [1], be sure to orient it so that the end with a marking (red) [2] is at the top in the ITB frame.

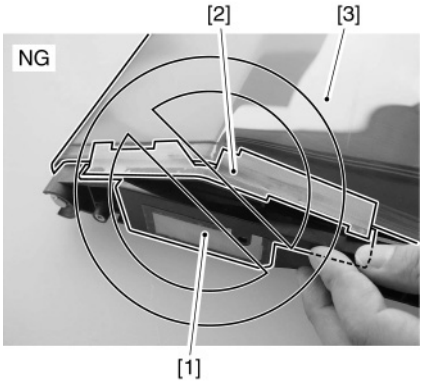


F-7-238

- When mounting the sheet base (front) [1], take full care so that the plastic film [2] will not ride over the ITB [3].

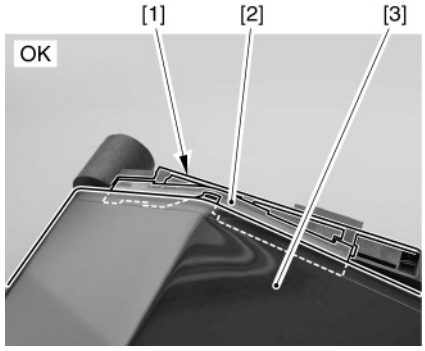


F-7-239

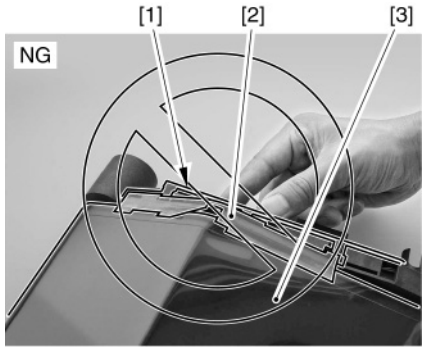


F-7-240

- When mounting the sheet base (rear) [1], be sure that the plastic film [2] will not ride over the ITB [3].



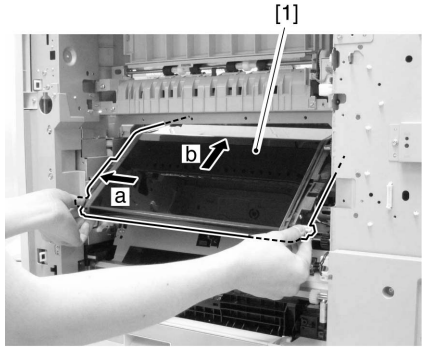
F-7-241



F-7-242

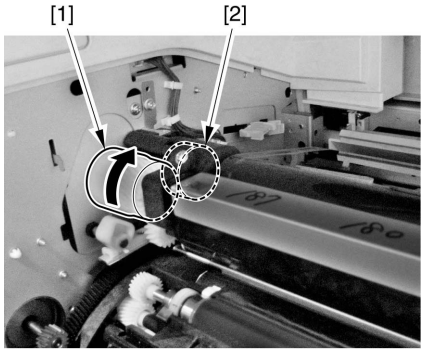
7.10.10.11 Points to Note When Mounting the ITB Unit 0001-8359

- When fitting the ITB unit [1] in the machine, move the unit in the direction of the arrow a (toward the machine front) and then along the rails in the direction of the arrow b.



F-7-243

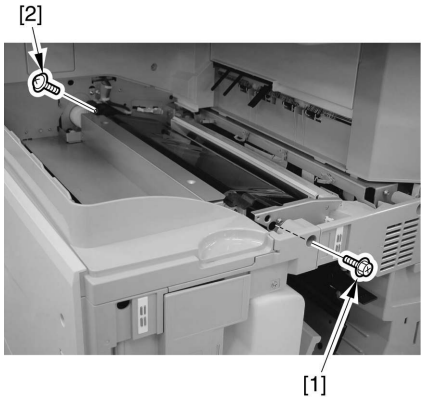
- When you have fitted the ITB unit in the machine, be sure to give the gear [1] a full turn before tightening the screw to fix it in place. Merely fitting the ITB unit in the machine does not always mean that the gear [1] and the other gear [2] have fully been engaged; the turn will mesh them correctly.



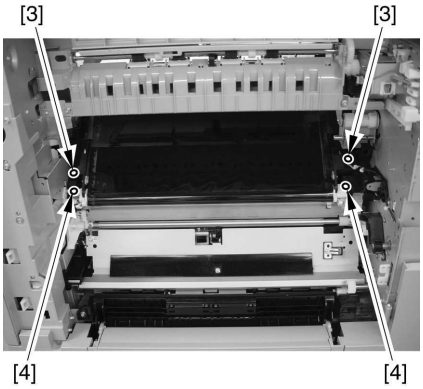
F-7-244

- Be sure to fit the 4 fixing screws of the ITB unit in the following sequence; if not tightened in the correct sequence, images may show lines at intervals of 96.7 mm.

[1]>[2]>[3] or [4]; screw [3] (TP; M3x6) and screw [4] (binding; M4x14) may be tightened in any order.



F-7-245



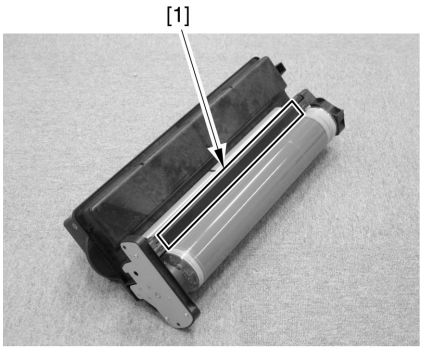
F-7-246

7.10.10.12 Points to Note When Mounting the Drum Unit

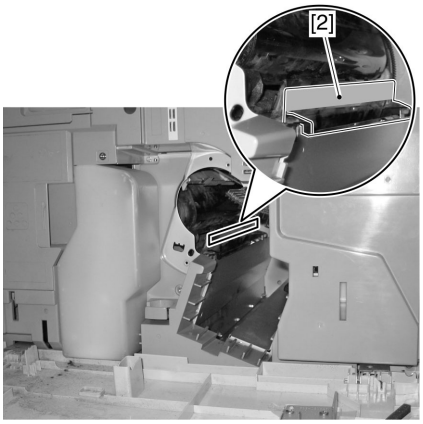
0002-8705

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-247



F-7-248

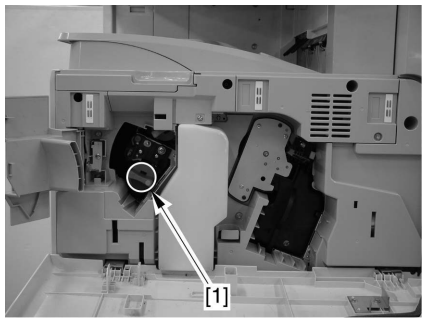
Memo:
The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

7.10.11 Primary Transfer Roller

7.10.11.1 Removing the Drum Unit

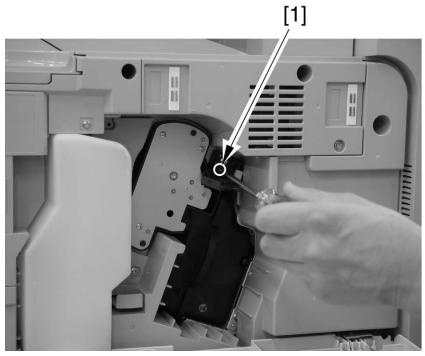
0002-8706

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



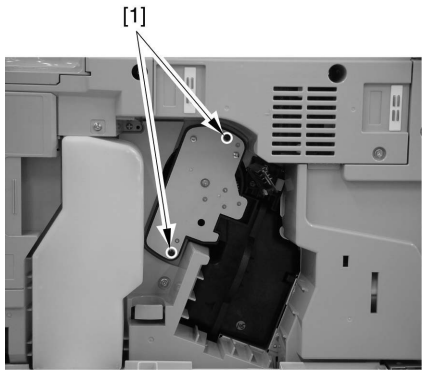
F-7-249

2) Remove the screw [1] (black; M3x20).



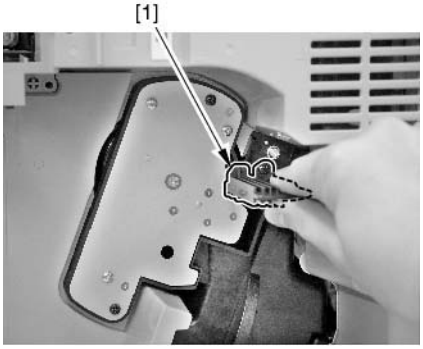
F-7-250

3) Remove the 2 fixing screws [1] (M4x20).

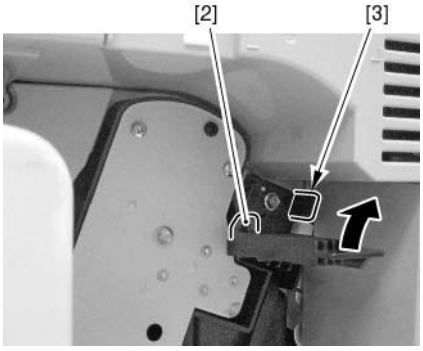


F-7-251

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

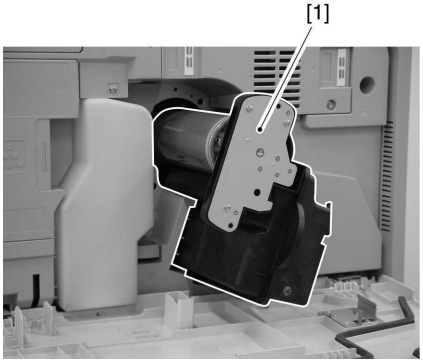


F-7-252



F-7-253

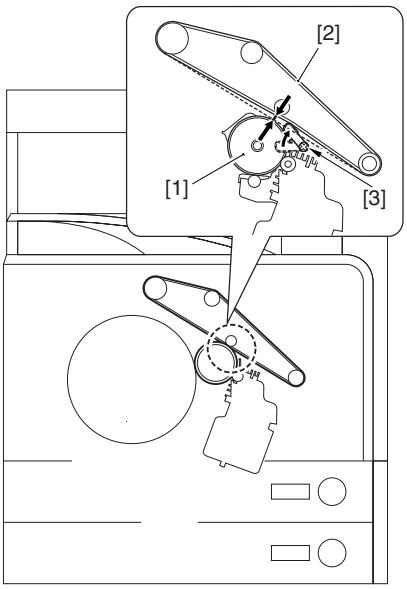
5) Slide out the drum unit [1] to the front to detach.



F-7-254

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



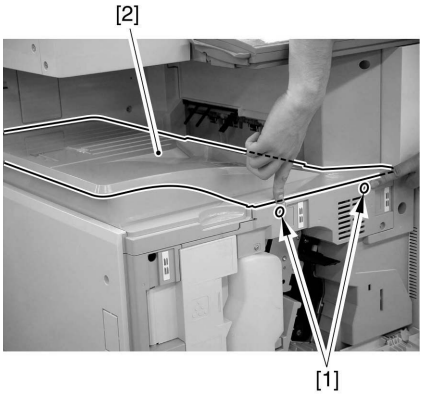
F-7-255

At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.11.2 Removing the Delivery Tray 0002-0298

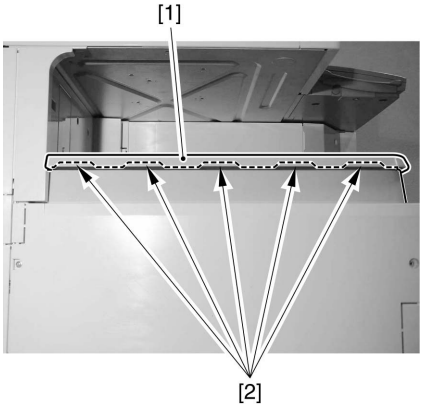
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-256

⚠Points to Note When Mounting the Delivery Tray

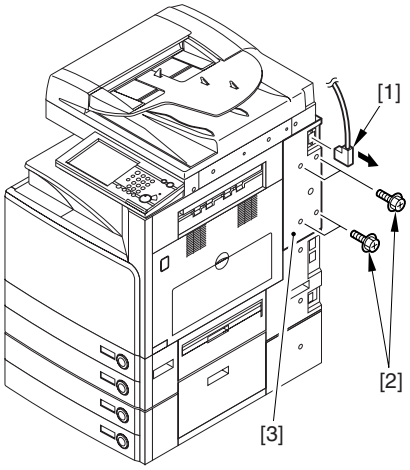
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-257

7.10.11.3 Removing the Right Cover (upper rear) 0002-0458

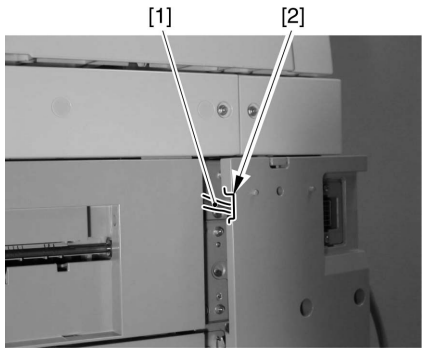
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-258

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

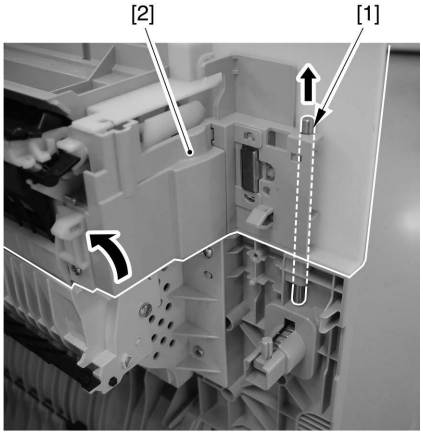
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-7-259

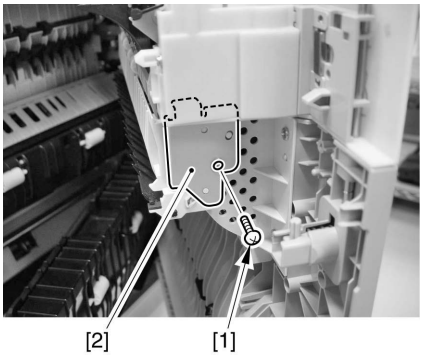
7.10.11.4 Removing the Right Door 0002-0334

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



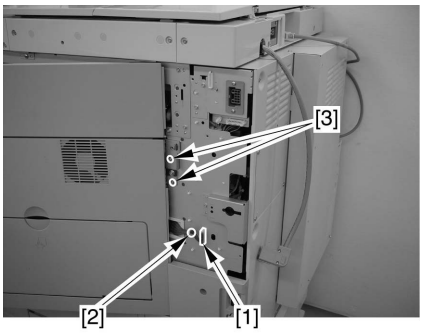
F-7-260

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



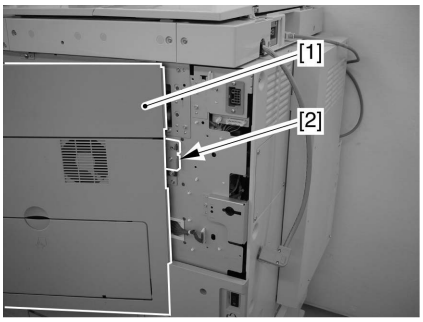
F-7-261

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-262

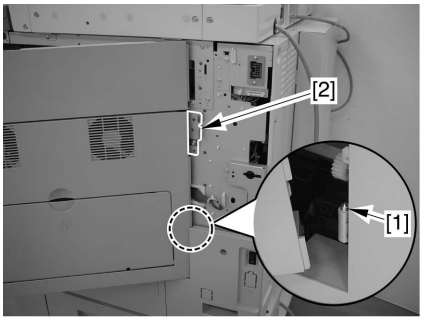
6) Detach the right door [1] together with the hinge [2].



F-7-263

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

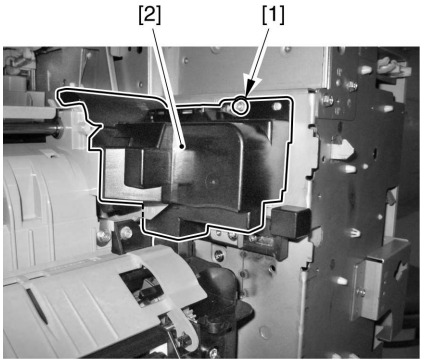


F-7-264

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

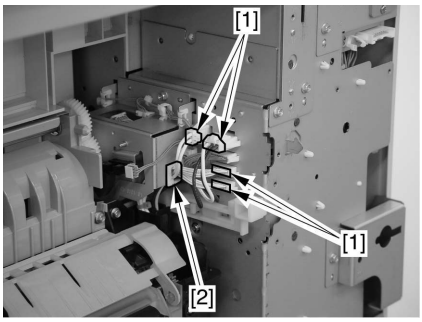
7.10.11.5 Removing the Fixing Unit 0001-8323

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



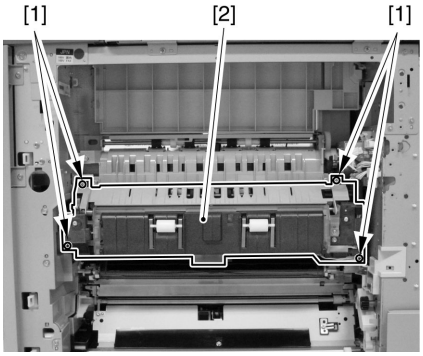
F-7-265

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-266

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-7-267

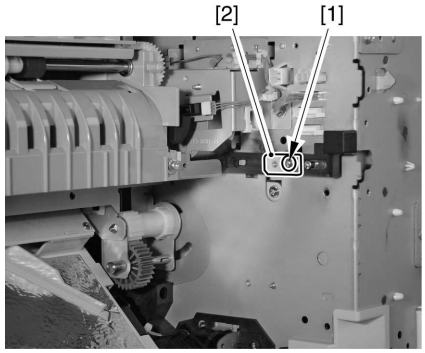
Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

7.10.11.6 Removing the Fixing Release Arm Plate 0001-8321

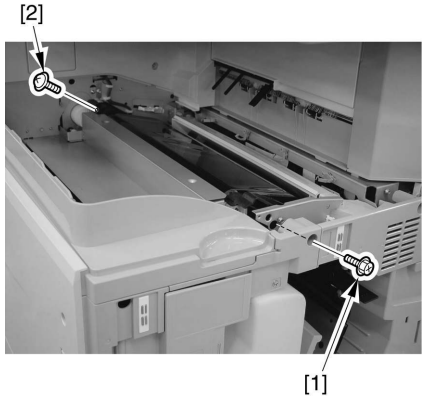
1) Remove the screw [1], and detach the plate [2].



F-7-268

7.10.11.7 Removing the Intermediate Transfer Unit (ITB unit) 0001-8325

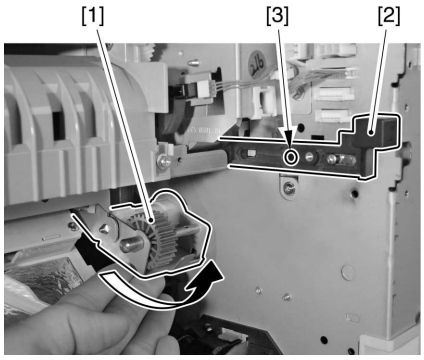
1) Remove the screw [1], and remove the screw [2].



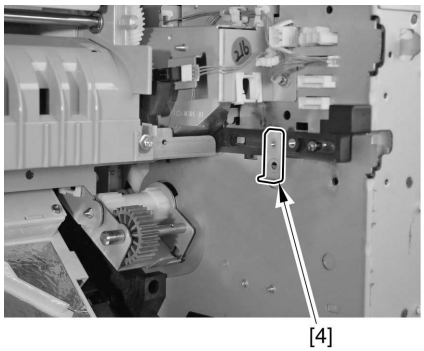
F-7-269

2) With the fixing drive gear assembly [1] fully lifted in the direction of the arrow, fit the previously removed fixing release arm plate [4] into the hole of

the fixing release arm [2] to hold the fixing drive gear assembly [1] in place.



F-7-270



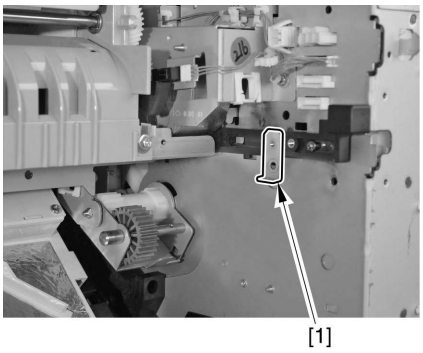
F-7-271

Memo:
Step 2) is performed so that the ITB unit and the fixing drive gear assembly will not interfere with each other when the ITB unit is removed.

⚠Be sure to put back the fixing release arm plate used to hold the fixing drive gear assembly in place as follows when mounting the ITB unit:

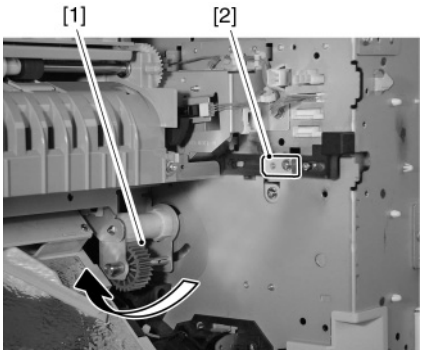
1) If you have attached the delivery tray, remove it for the time being.
If the fixing release arm plate is mounted in the presence of the delivery tray, the fixing release arm (rear) will get stuck on the boss of the delivery tray, preventing transmission of drive to the fixing roller.

2) Remove the fixing release arm plate [1] so that the fixing drive gear assembly will be freed.



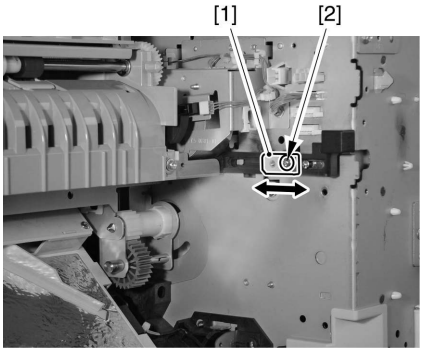
F-7-272

3) With the fixing drive gear assembly [1] fully moved by hand in the direction of the arrow, fit the fixing releasing arm plate [2] in to the hole to secure it in place.



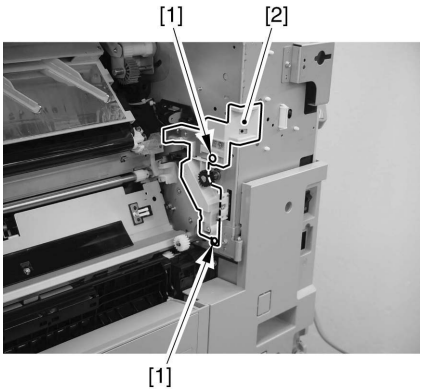
F-7-273

4) Fix the fixing releasing arm plate [1] in place using a screw [2]. Thereafter, try moving the fixing release arm back and forth to be sure that the fixing drive gear assembly moves in response.



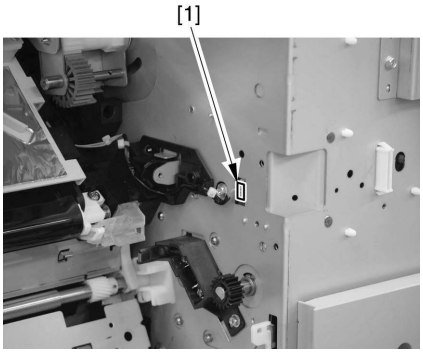
F-7-274

3) Remove 2 screws [1], and detach the contact guide [2].



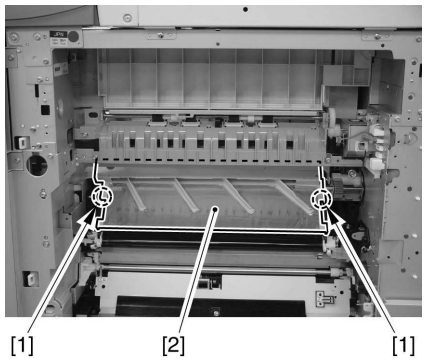
F-7-275

4) Disconnect the connector [1], and free the cable from the cable guide.



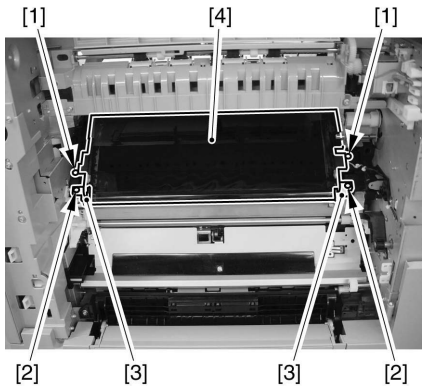
F-7-276

5) Lift the 2 points of the ITB fan duct [1] to free the claw; then, detach the ITB fan duct [2].



F-7-277

6) Remove the 2 screws [1] (TP; M3x6) and the 2 screws [2] (binding; M4x14); then, lift the 2 grips [3] to detach from the bushing assembly, and detach the ITB unit



F-7-278

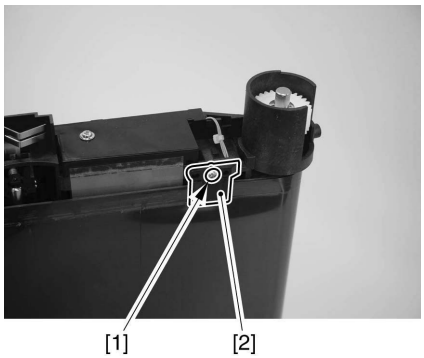
⚠When removing the ITB unit, be sure to take full care not to touch or damage the ITB. When you have removed the ITB unit, try not to place it on the floor or a desk without paper under it.

⚠If you must leave the ITB unit alone for a long time after removing it, be sure to cover the surface of the photosensitive drum to protect it against light.

7.10.11.8 Removing the Intermediate Transfer Belt (ITB) 0001-8328

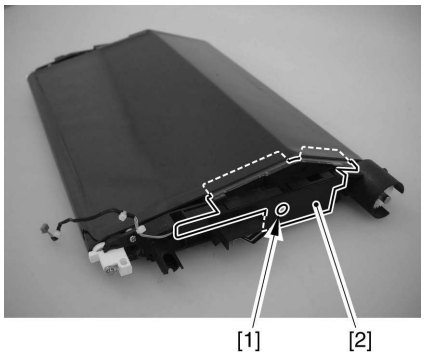
⚠Do not place the ITB unit directly on the floor or a desk. Be sure to place paper underneath.

1) Remove the screw [1], and detach the ITB retainer [2].



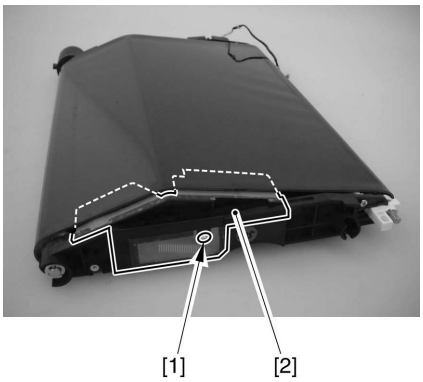
F-7-279

2) Remove the screw [1], and detach the sheet base (rear) [2].



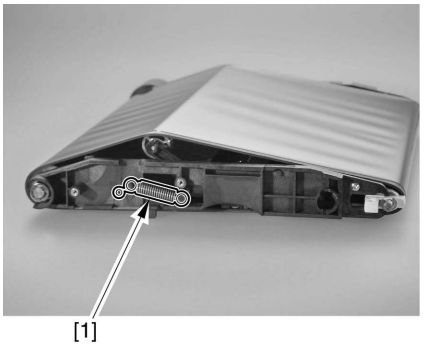
F-7-280

3) Remove the screw [1], and detach the sheet base (front) [2].

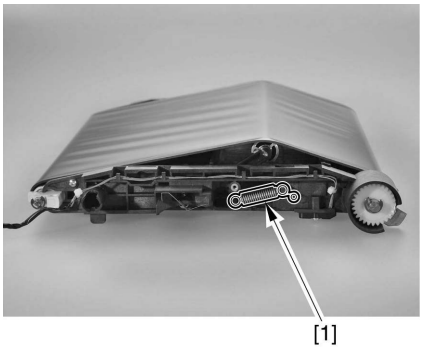


F-7-281

4) Remove the 2 tension springs [1].



F-7-282



F-7-283

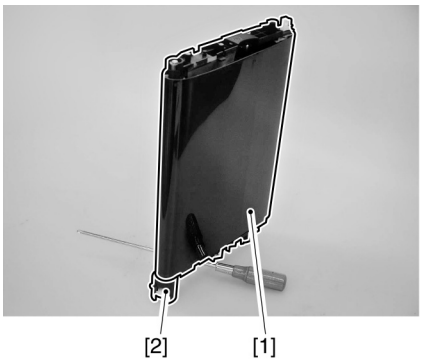
5) While pushing the bushings [1] and [2] of the secondary transfer inside roller toward the inside, slide them in the direction of the arrows until they stop.

F-7-284

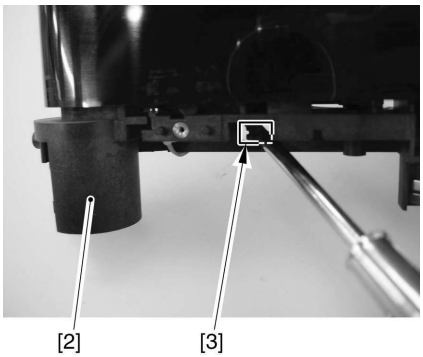
Memo:
This step loosens the ITB and thus facilitates the removal of the ITB.

6) Insert a long screwdriver into the angular hole [3] found in the frame (drive gear side) [2] of the ITB unit [1] so that the ITB unit is on its own.

⚠During the work after you have used a screwdriver to keep the ITB unit upright, take care so that the unit will not tumble down. Otherwise, the force occurring around the angular opening [3], in which the screwdriver is found, will cause damage to the unit.

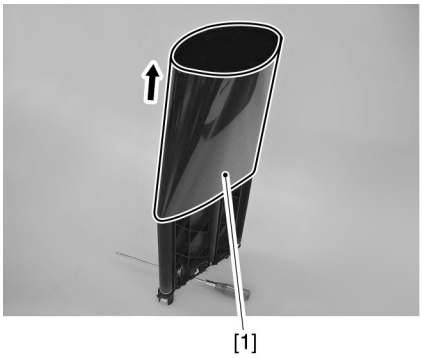


F-7-285



F-7-286

7) Detach the ITB [1] by pulling it in upward direction.

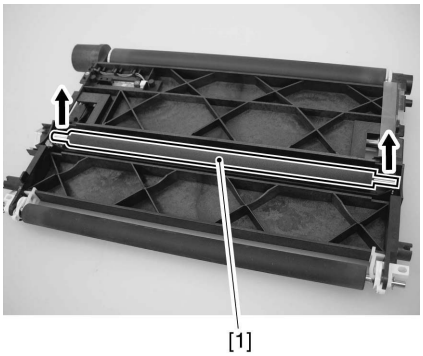


F-7-287

⚠Once detached and on its own, the ITB unit tends to be extremely unstable. Be sure to take full care when detaching it.

7.10.11.9 Removing the Primary Transfer Roller 0000-9272

1) Lift the primary transfer roller [2] by both its edges to detach it from the bushing assembly.

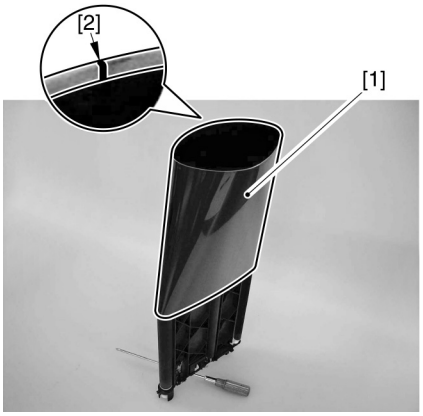


F-7-288

⚠Do not hold it by the sponge or rubber areas.

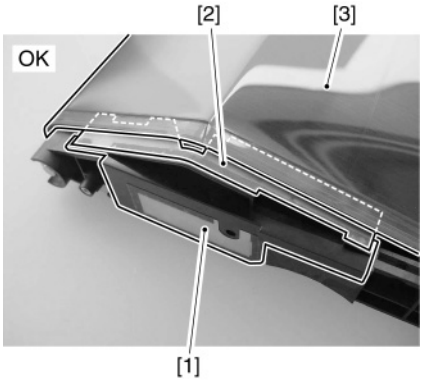
7.10.11.10 Points to Note When Mounting the ITB 0001-8329

- When placing the ITB unit upright, be sure that the drive gear side is at the bottom.
- When mounting the ITB [1], be sure to orient it so that the end with a marking (red) [2] is at the top in the ITB frame.

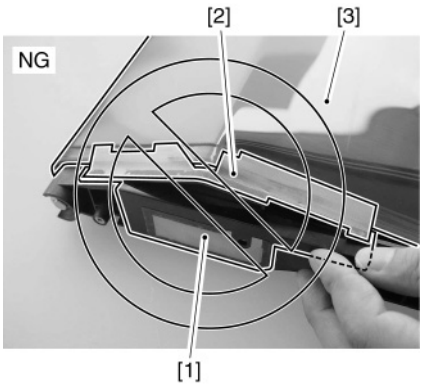


F-7-289

- When mounting the sheet base (front) [1], take full care so that the plastic film [2] will not ride over the ITB [3].

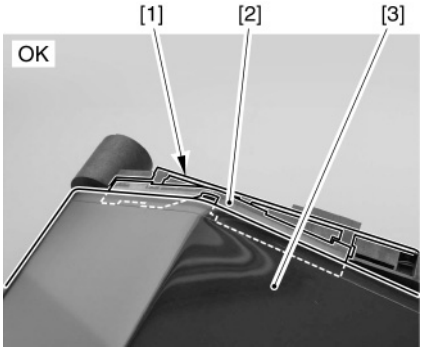


F-7-290

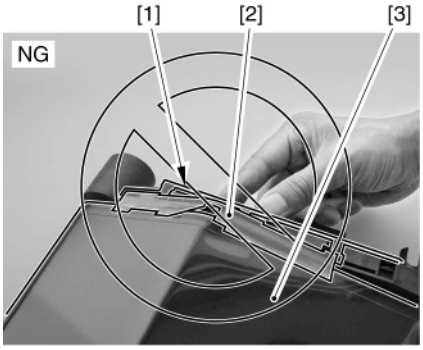


F-7-291

- When mounting the sheet base (rear) [1], be sure that the plastic film [2] will not ride over the ITB [3].



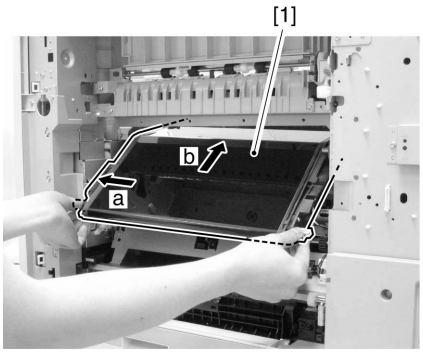
F-7-292



F-7-293

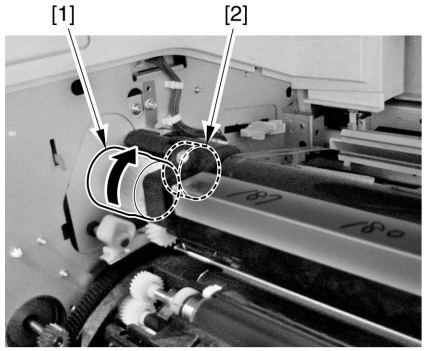
7.10.11.11 Points to Note When Mounting the ITB Unit 0001-8330

- When fitting the ITB unit [1] in the machine, move the unit in the direction of the arrow a (toward the machine front) and then along the rails in the direction of the arrow b.



F-7-294

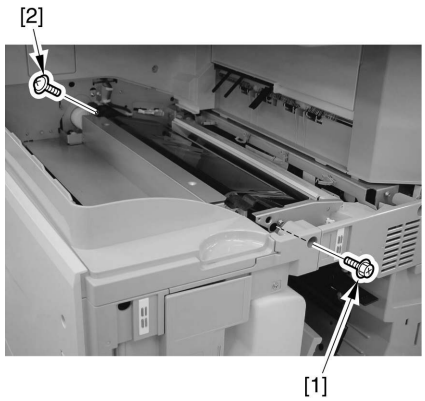
- When you have fitted the ITB unit in the machine, be sure to give the gear [1] a full turn before tightening the screw to fix it in place. Merely fitting the ITB unit in the machine does not always mean that the gear [1] and the other gear [2] have fully been engaged; the turn will mesh them correctly.



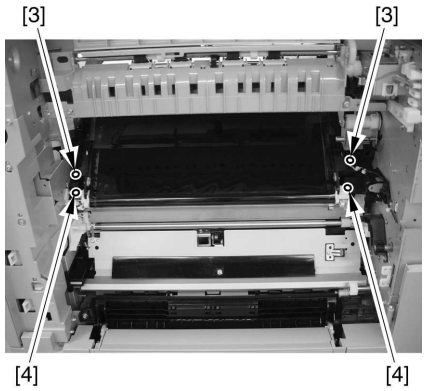
F-7-295

- Be sure to fit the 4 fixing screws of the ITB unit in the following sequence; if not tightened in the correct sequence, images may show lines at intervals of 96.7 mm.

[1]>[2]>[3] or [4]; screw [3] (TP; M3x6) and screw [4] (binding; M4x14) may be tightened in any order.



F-7-296

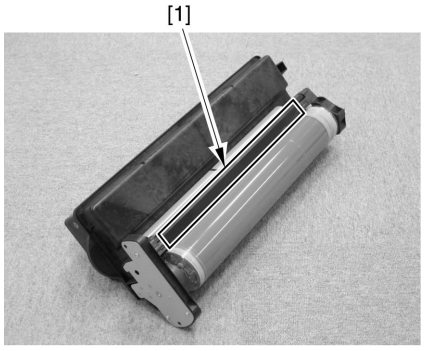


F-7-297

7.10.11.12 Points to Note When Mounting the Drum Unit 0002-8707

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-298

F-7-299

Memo:
The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

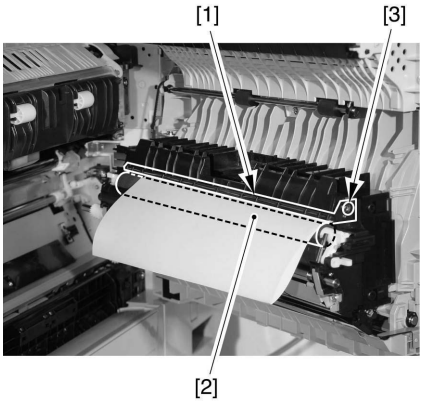
7.10.11.13 After Replacing the Primary Transfer Roller 0001-6883

Execute the following service mode item:
- COPIER>FUNCTION>MISC-P>1ATVC-EX

7.10.12 Secondary Transfer External Roller

7.10.12.1 Removing the Separation Static Eliminator 0001-8393

1) Open the right door.
2) Put paper between the separation static eliminator [1] and the secondary transfer outside roller [2]; then, remove the screws [3], and pull out the separation static eliminator [1] toward the front.



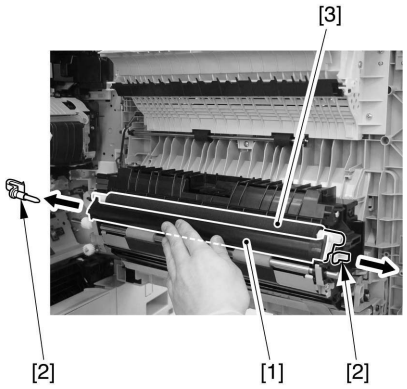
F-7-300

Memo:
It is important to put paper in between to prevent damage to the secondary transfer roller by molded

segment of the separation static eliminator when removing the eliminator.

7.10.12.2 Removing the Secondary Transfer Outside Roller 0000-9280

1) While holding down the auxiliary guide [1] by hand, remove the 2 screws [2]; then, detach the secondary transfer outside roller assembly [3].

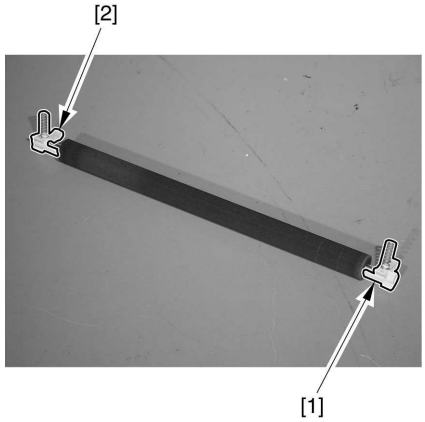


F-7-301

⚠

- Be sure to hold the auxiliary guide and the secondary transfer outside roller in place when removing the pin; otherwise, these parts will slide out by the work of a spring.
- Be sure not to touch the secondary transfer outside roller. Use paper when holding it.

2) Detach the arms [1] [2] from the secondary transfer external roller assembly.

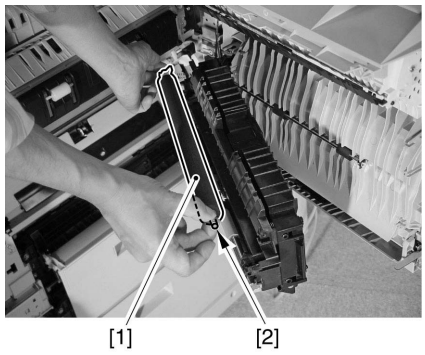


F-7-302

⚠Do not touch the secondary transfer roller. Be sure to use paper when holding it.

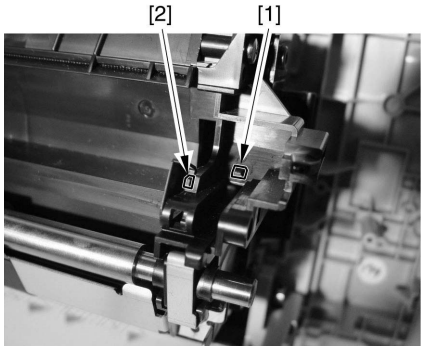
7.10.12.3 Points to Note When Mounting the Secondary Transfer Outside Roller 0001-8923

- Do not touch the secondary transfer outside roller. Use paper when holding it.
- The secondary transfer roller [1] has its own orientation. Be sure to mount it so that the edge with a marking (blue) [2] is toward the front.



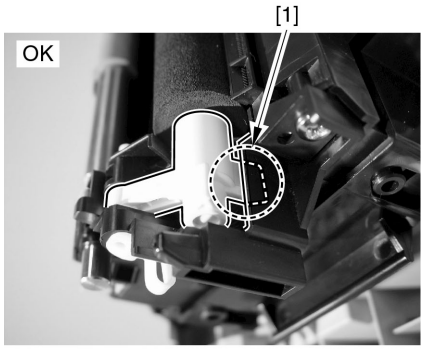
F-7-303

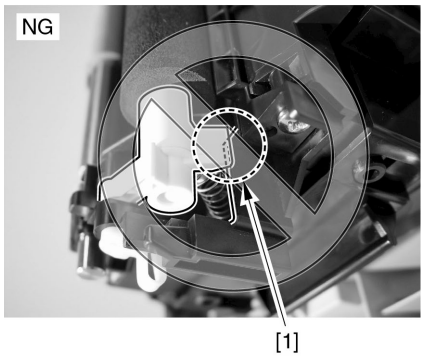
- Be sure that the spring attached to the arm of the secondary transfer outside roller is fitted within the protrusion [1]. Also, be sure that the spring attached to the auxiliary guide is within in the protrusion [2].



F-7-304

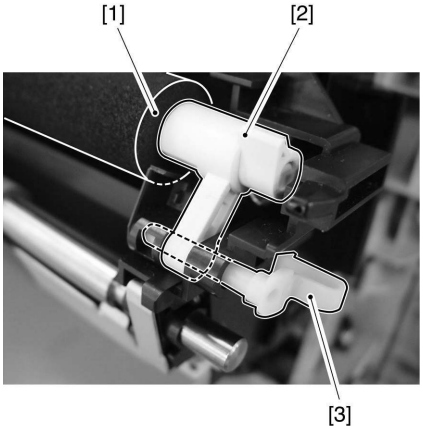
- Be sure that the claw [1] of the arm found on both edges of the secondary transfer roller assembly are inside the frame.



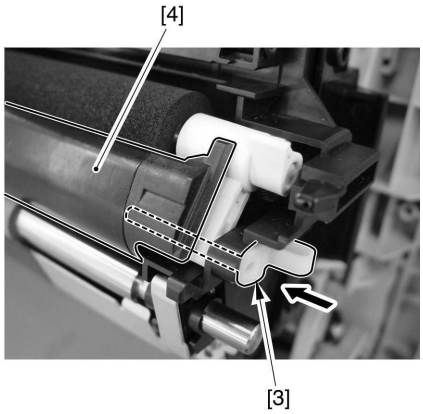


F-7-305

- When fixing the arm [2] of the secondary transfer outside roller [1] by means of a pin [3], keep the pin half way; thereafter, push the pin fully inside when mounting the auxiliary guide [4].



F-7-306

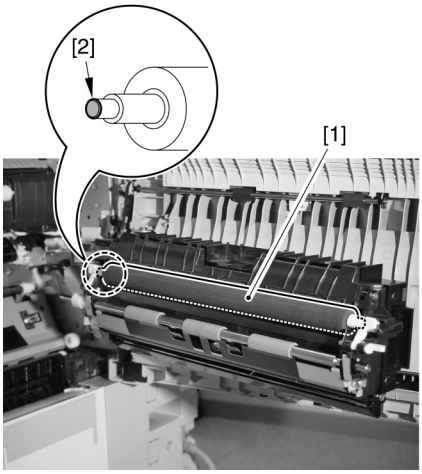


F-7-307

7.10.12.4 After Replacing the Secondary Transfer Outside Roller

0001-8427

- If you have replaced the secondary transfer outside roller, be sure to apply about 10 mg of grease (FY9-6008) to the end [2] (side without the blue marking) at the rear of the secondary transfer outside roller [1].

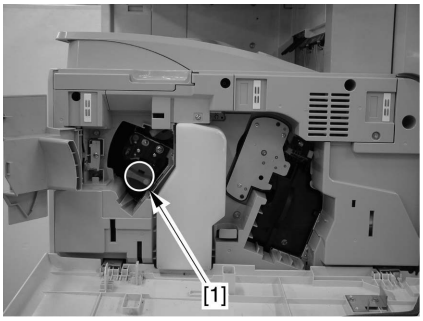


F-7-308

7.10.13 Secondary Transfer Internal Roller

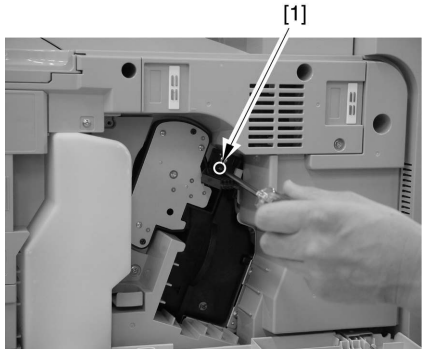
7.10.13.1 Removing the Drum Unit 0003-5684

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



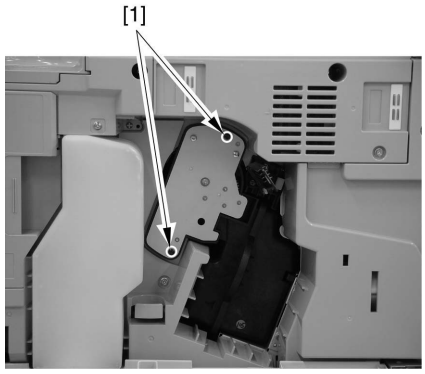
F-7-309

2) Remove the screw [1] (black; M3x20).



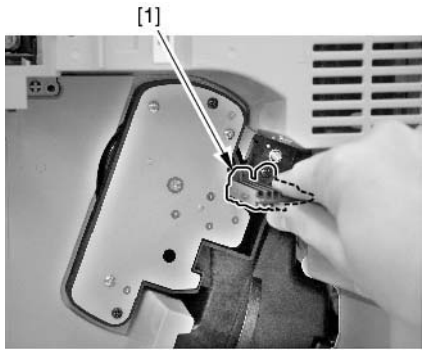
F-7-310

3) Remove the 2 fixing screws [1] (M4x20).

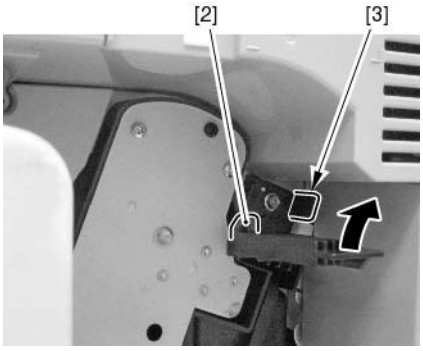


F-7-311

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

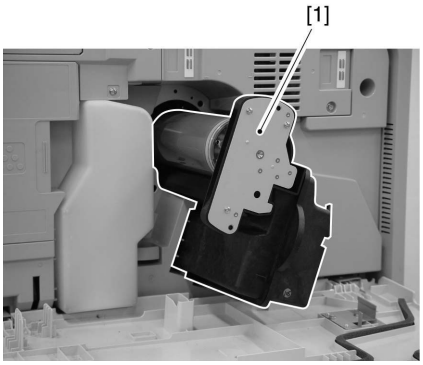


F-7-312



F-7-313

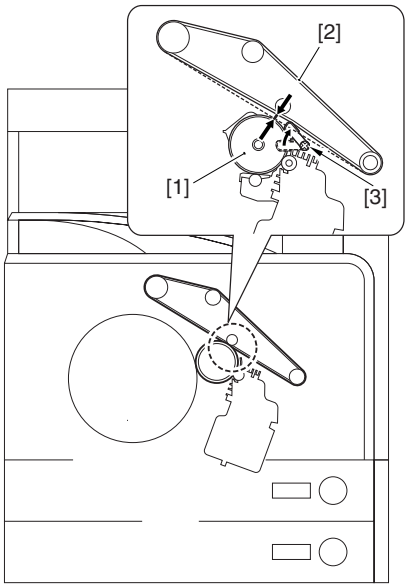
5) Slide out the drum unit [1] to the front to detach.



F-7-314

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



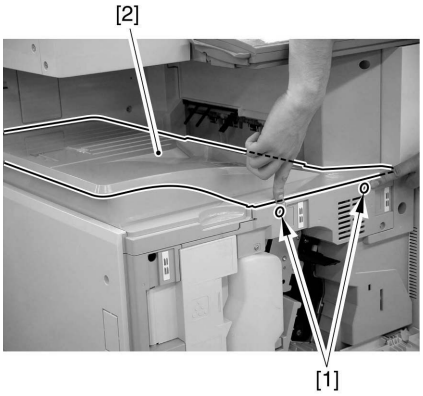
F-7-315

At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.13.2 Removing the Delivery Tray 0002-0304

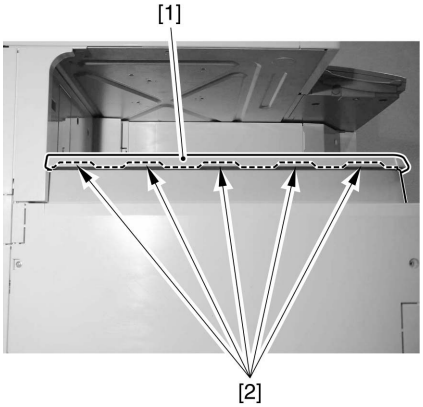
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-316

⚠Points to Note When Mounting the Delivery Tray

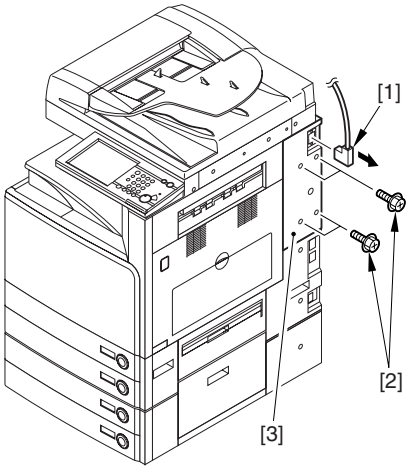
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-317

7.10.13.3 Removing the Right Cover (upper rear) 0002-0303

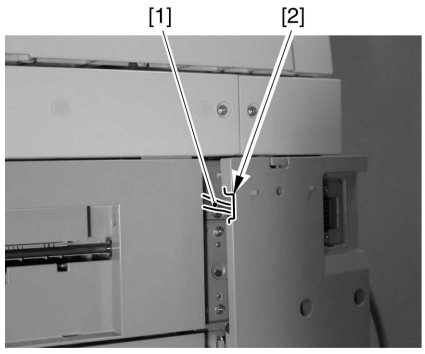
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-318

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

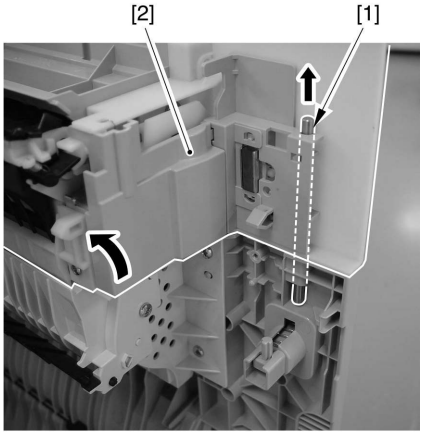
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-7-319

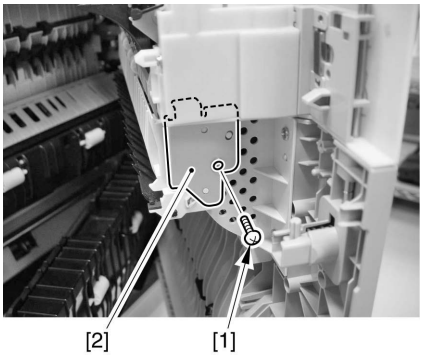
7.10.13.4 Removing the Right Door 0002-0335

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



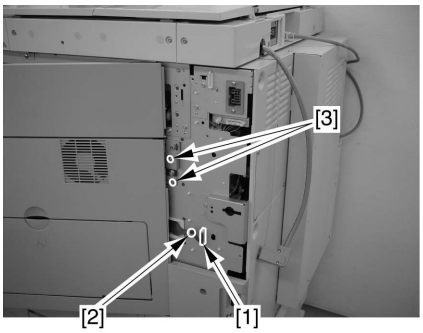
F-7-320

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



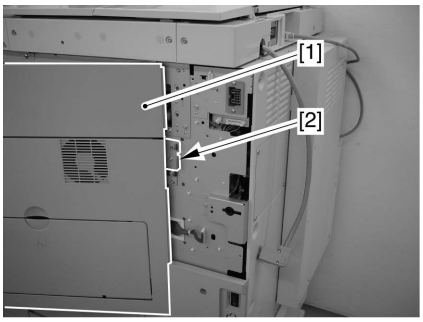
F-7-321

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-322

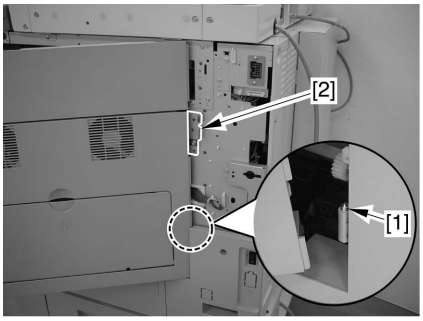
6) Detach the right door [1] together with the hinge [2].



F-7-323

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

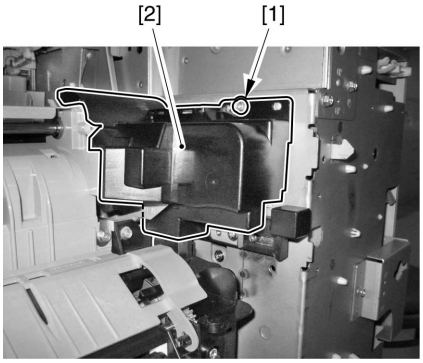


F-7-324

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

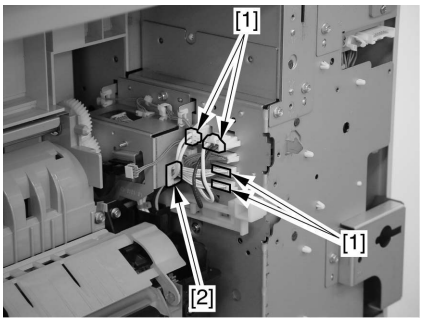
7.10.13.5 Removing the Fixing Unit 0001-8335

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



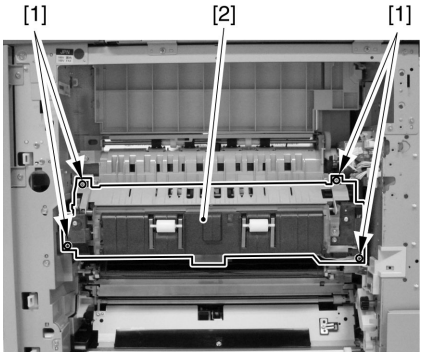
F-7-325

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-326

3) Remove the 4 screws [1], and detach the fixing assembly [2].



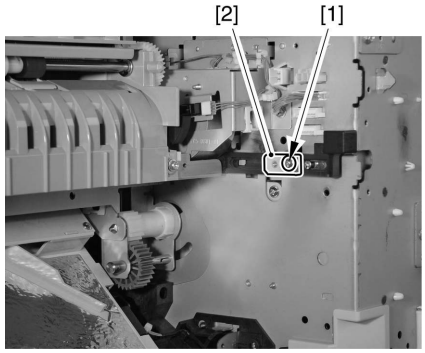
F-7-327

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

7.10.13.6 Removing the Fixing Release Arm Plate 0001-8334

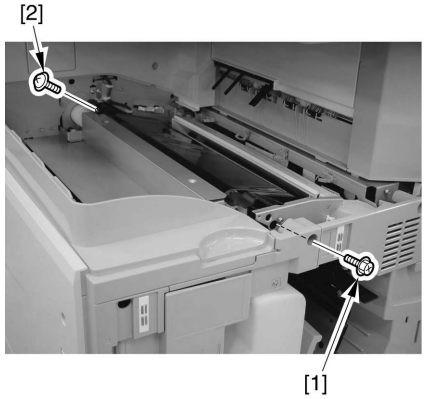
1) Remove the screw [1], and detach the plate [2].



F-7-328

7.10.13.7 Removing the Intermediate Transfer Unit (ITB unit) 0001-8337

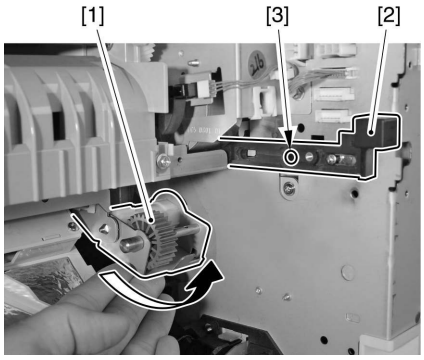
1) Remove the screw [1], and remove the screw [2].



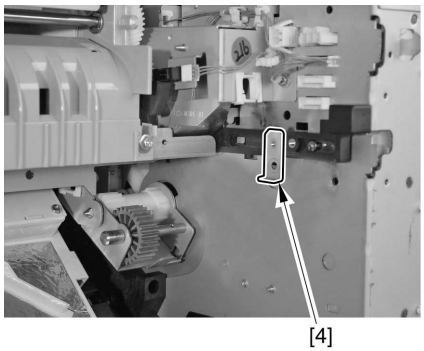
F-7-329

2) With the fixing drive gear assembly [1] fully lifted in the direction of the arrow, fit the previously removed fixing release arm plate [4] into the hole of

the fixing release arm [2] to hold the fixing drive gear assembly [1] in place.



F-7-330



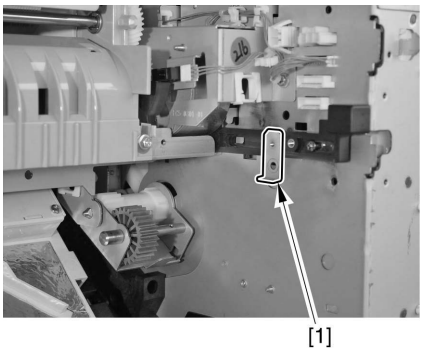
F-7-331

Memo:
Step 2) is performed so that the ITB unit and the fixing drive gear assembly will not interfere with each other when the ITB unit is removed.

⚠Be sure to put back the fixing release arm plate used to hold the fixing drive gear assembly in place as follows when mounting the ITB unit:

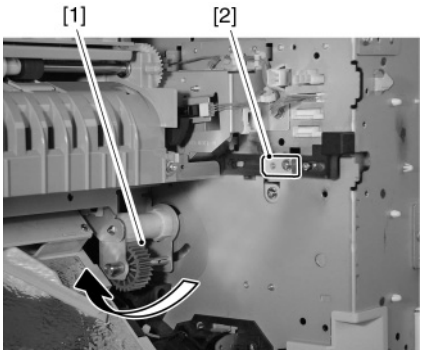
1) If you have attached the delivery tray, remove it for the time being.
If the fixing release arm plate is mounted in the presence of the delivery tray, the fixing release arm (rear) will get stuck on the boss of the delivery tray, preventing transmission of drive to the fixing roller.

2) Remove the fixing release arm plate [1] so that the fixing drive gear assembly will be freed.



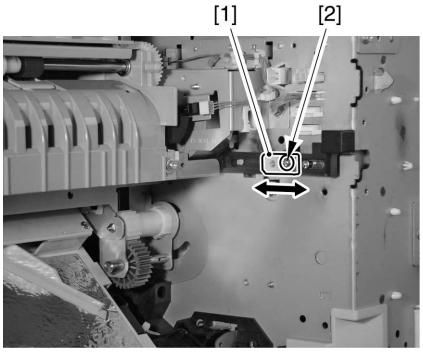
F-7-332

3) With the fixing drive gear assembly [1] fully moved by hand in the direction of the arrow, fit the fixing releasing arm plate [2] in to the hole to secure it in place.



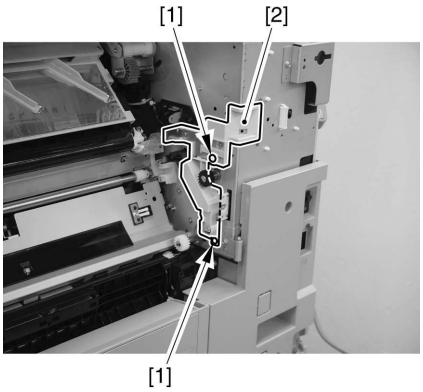
F-7-333

4) Fix the fixing releasing arm plate [1] in place using a screw [2]. Thereafter, try moving the fixing release arm back and forth to be sure that the fixing drive gear assembly moves in response.



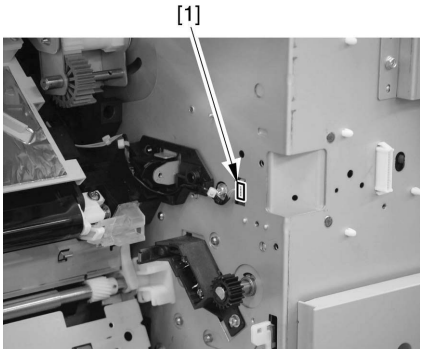
F-7-334

3) Remove 2 screws [1], and detach the contact guide [2].



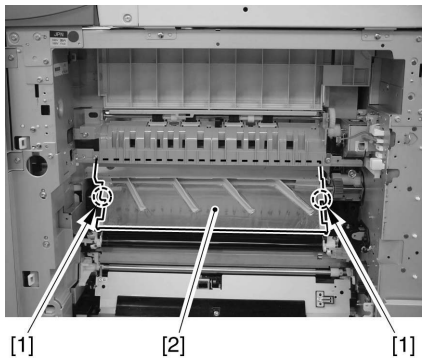
F-7-335

4) Disconnect the connector [1], and free the cable from the cable guide.



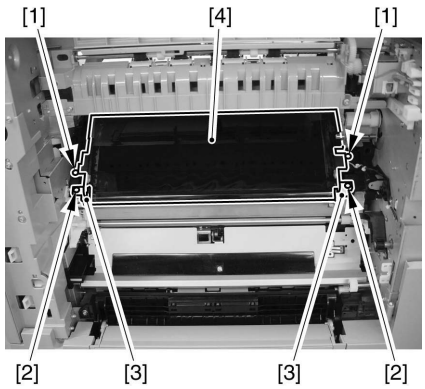
F-7-336

5) Lift the 2 points of the ITB fan duct [1] to free the claw; then, detach the ITB fan duct [2].



F-7-337

6) Remove the 2 screws [1] (TP; M3x6) and the 2 screws [2] (binding; M4x14); then, lift the 2 grips [3] to detach from the bushing assembly, and detach the ITB unit



F-7-338

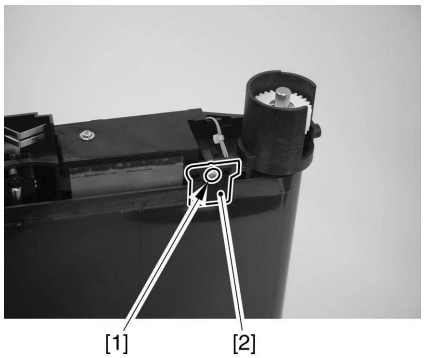
⚠When removing the ITB unit, be sure to take full care not to touch or damage the ITB. When you have removed the ITB unit, try not to place it on the floor or a desk without paper under it.

⚠If you must leave the ITB unit alone for a long time after removing it, be sure to cover the surface of the photosensitive drum to protect it against light.

7.10.13.8 Removing the Intermediate Transfer Belt (ITB) 0001-8338

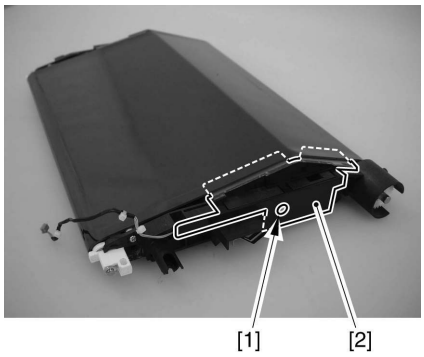
⚠Do not place the ITB unit directly on the floor or a desk. Be sure to place paper underneath.

1) Remove the screw [1], and detach the ITB retainer [2].



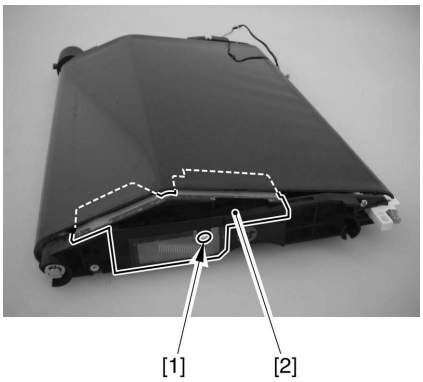
F-7-339

2) Remove the screw [1], and detach the sheet base (rear) [2].



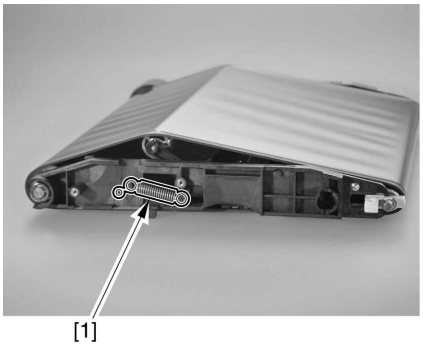
F-7-340

3) Remove the screw [1], and detach the sheet base (front) [2].

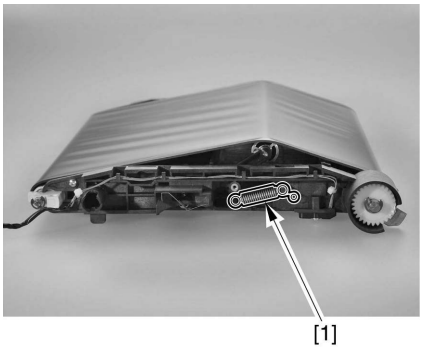


F-7-341

4) Remove the 2 tension springs [1].



F-7-342



F-7-343

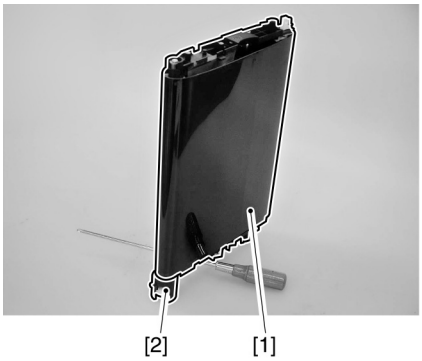
5) While pushing the bushings [1] and [2] of the secondary transfer inside roller toward the inside, slide them in the direction of the arrows until they stop.

F-7-344

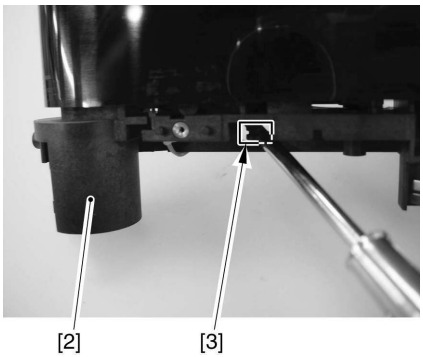
Memo:
This step loosens the ITB and thus facilitates the removal of the ITB.

6) Insert a long screwdriver into the angular hole [3] found in the frame (drive gear side) [2] of the ITB unit [1] so that the ITB unit is on its own.

⚠During the work after you have used a screwdriver to keep the ITB unit upright, take care so that the unit will not tumble down. Otherwise, the force occurring around the angular opening [3], in which the screwdriver is found, will cause damage to the unit.

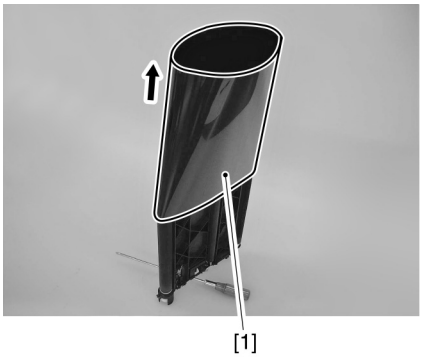


F-7-345



F-7-346

7) Detach the ITB [1] by pulling it in upward direction.

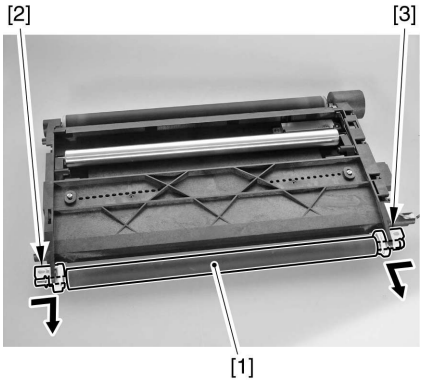


F-7-347

⚠Once detached and on its own, the ITB unit tends to be extremely unstable. Be sure to take full care when detaching it.

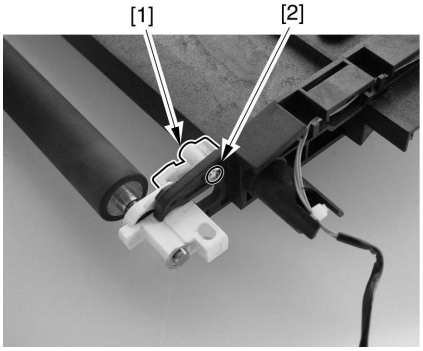
7.10.13.9 Removing the Secondary Transfer Inside Roller 0000-9274

1) While pushing the bushings [2] and [3] of the secondary transfer roller assembly [1] toward the inside, slide them out in the direction of arrows until they stop.

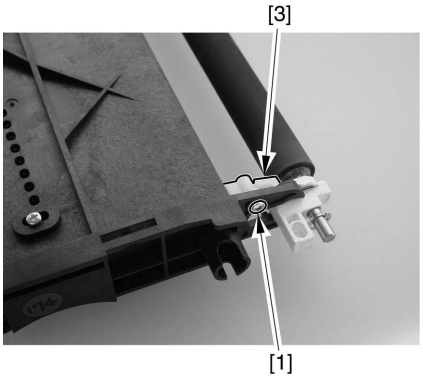


F-7-348

2) Remove the 2 screws [1], and detach the roller support members [2] and [3].

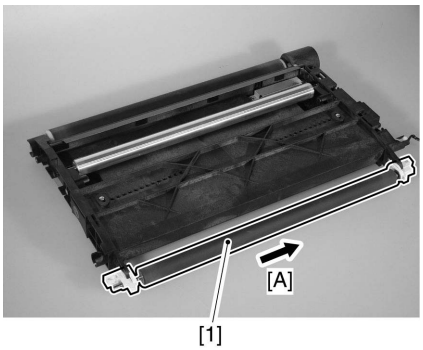


F-7-349

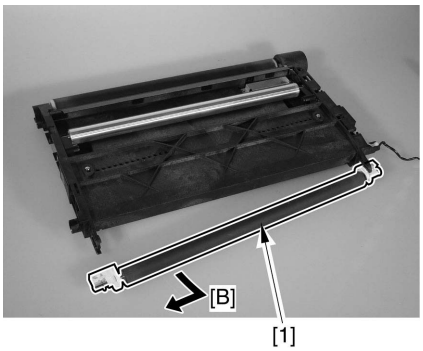


F-7-350

3) Move the secondary transfer inside roller assembly [1] in the direction of the arrow [A] unit it stops; then, move it in the direction of the arrow [B] to detach.

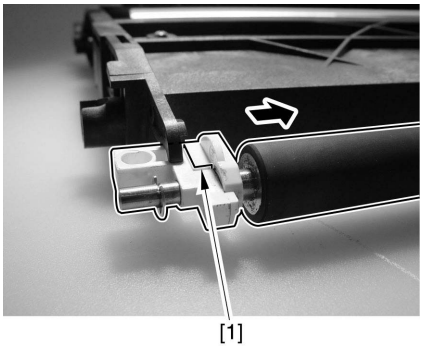


F-7-351



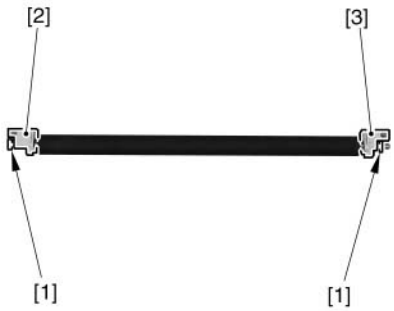
F-7-352

Memo:
Move the secondary transfer inside roller in the direction of the arrow so that you can remove the protrusion [1].



F-7-353

4) Remove the 2 E-rings [1], and detach the bushing [2] and the other bushing [3].

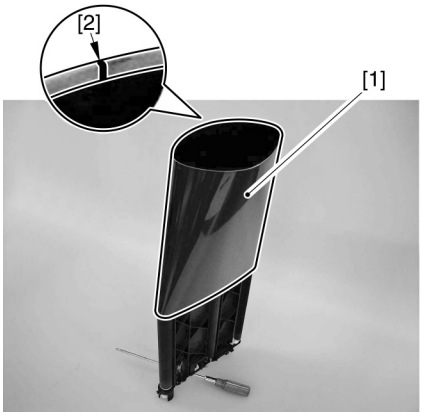


F-7-354

⚠Be sure not to hold the rubber portion of the secondary transfer inside roller.

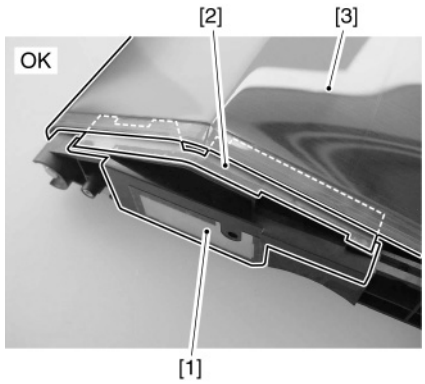
7.10.13.10 Points to Note When Mounting the ITB 0001-8341

- When placing the ITB unit upright, be sure that the drive gear side is at the bottom.
- When mounting the ITB [1], be sure to orient it so that the end with a marking (red) [2] is at the top in the ITB frame.

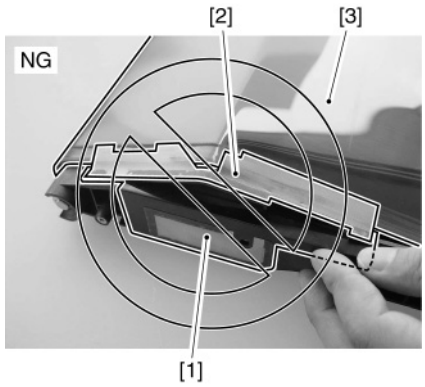


F-7-355

- When mounting the sheet base (front) [1], take full care so that the plastic film [2] will not ride over the ITB [3].

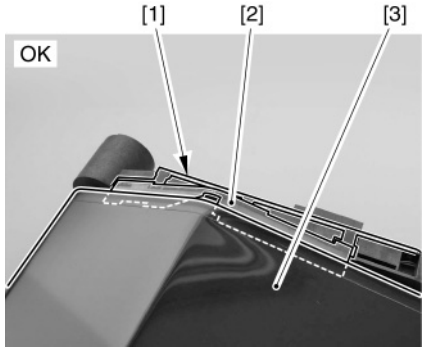


F-7-356

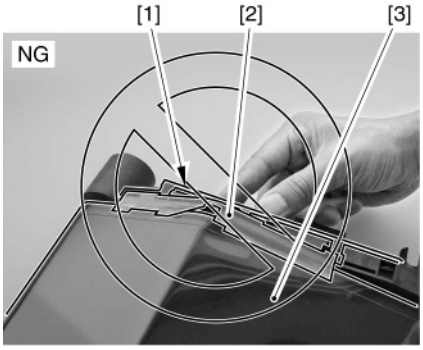


F-7-357

- When mounting the sheet base (rear) [1], be sure that the plastic film [2] will not ride over the ITB [3].



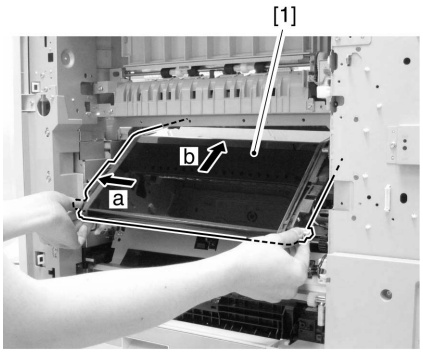
F-7-358



F-7-359

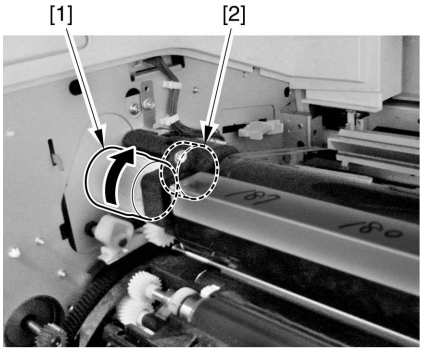
7.10.13.11 Points to Note When Mounting the ITB Unit 0001-8343

- When fitting the ITB unit [1] in the machine, move the unit in the direction of the arrow a (toward the machine front) and then along the rails in the direction of the arrow b.



F-7-360

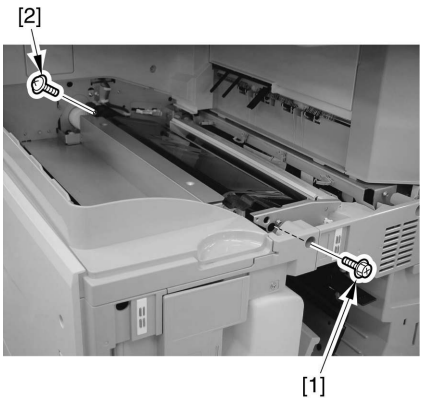
- When you have fitted the ITB unit in the machine, be sure to give the gear [1] a full turn before tightening the screw to fix it in place. Merely fitting the ITB unit in the machine does not always mean that the gear [1] and the other gear [2] have fully been engaged; the turn will mesh them correctly.



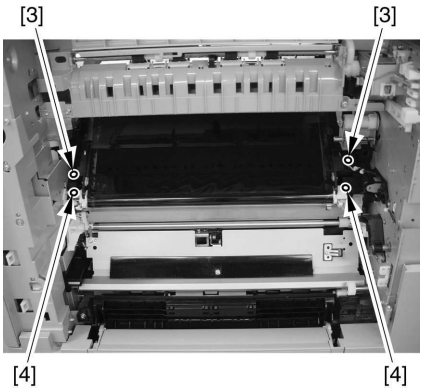
F-7-361

- Be sure to fit the 4 fixing screws of the ITB unit in the following sequence; if not tightened in the correct sequence, images may show lines at intervals of 96.7 mm.

[1]>[2]>[3] or [4]; screw [3] (TP; M3x6) and screw [4] (binding; M4x14) may be tightened in any order.



F-7-362

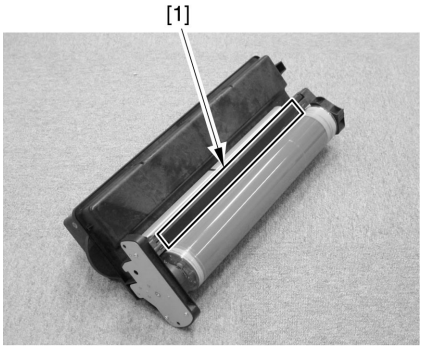


F-7-363

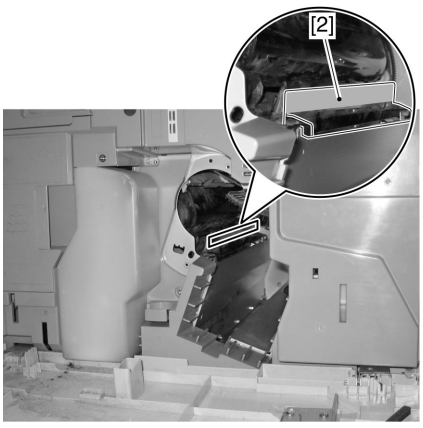
7.10.13.12 Points to Note When Mounting the Drum Unit 0002-8708

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-364



F-7-365

Memo:

The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

7.10.14 ITB Cleaning Blade

7.10.14.1 Preparing for the Removal of the ITB Cleaning Unit 0001-8377

1) Turn on the main power switch.
2) Make the following selections in service mode, and press the OK key:

- COPIER>FUNCTION>MISC-P>ITB-CLSW

While the mode is being executed, the screen flashes 'ACTIVE'; it changes to 'OK!' at the end of the execution.

3) Turn off the control panel power switch; then, wait for 15 sec or more, and turn off the main power switch.

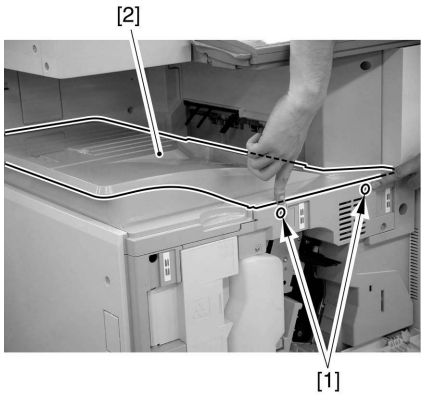
Memo:

The machine operates as follows in response to the execution of this service mode:

- it changes the position of the developing assembly rotary. (If the developing cylinder is positioned immediately under the ITB cleaning unit, the base of the ITB cleaning unit can rub against the surface of the developing cylinder to cause damage. The developing assembly rotary is rotated so that the Bk toner cartridge is positioned immediately under the ITB cleaning unit.)
- if a Finisher-P1 is installed, the finisher delivery tray is moved as far up as it moves. (If the finisher delivery tray is in down position, mounting the ITB cleaning unit can prove to be difficult.)

7.10.14.2 Removing the Delivery Tray 0002-0310

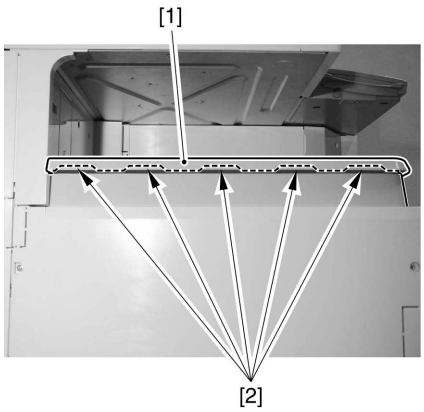
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-366

⚠Points to Note When Mounting the Delivery Tray

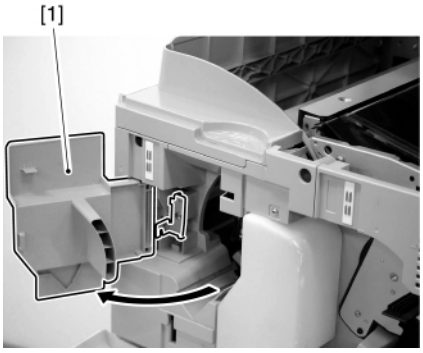
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-367

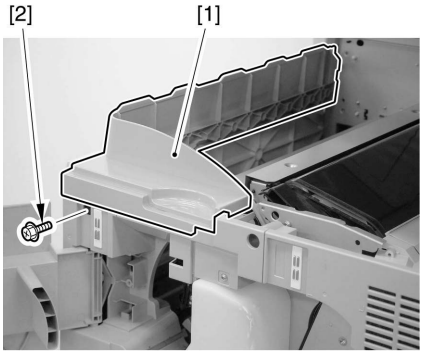
7.10.14.3 Removing the Delivery Tray Lower Cover 0002-0311

1) Open the toner cartridge access cover [1].



F-7-368

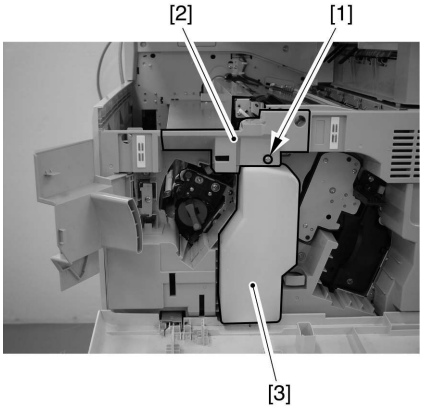
2) Remove the screw [2], and detach the delivery tray lower cover [1].



F-7-369

7.10.14.4 Removing the ITB Waste Toner Unit 0001-8381

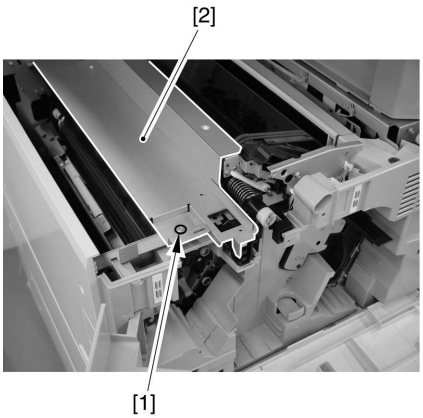
1) Remove the screw [1], and detach the waste toner unit retainer [2]; then, detach the ITB waste toner unit [3].



F-7-370

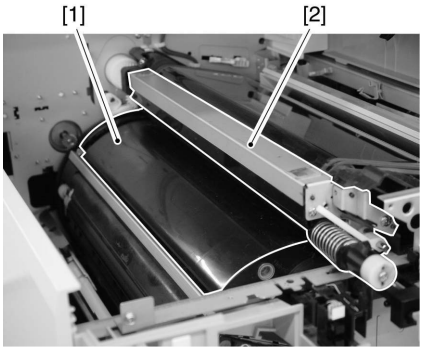
7.10.14.5 Removing the ITB Cleaning Unit 0001-8382

1) Remove the screw [1], and detach the protective plate [2].



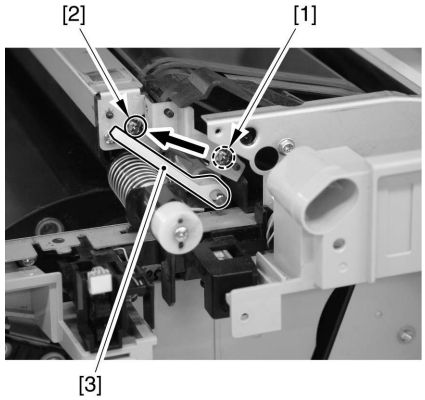
F-7-371

2) Check to be sure that the toner cartridge (Bk) [1] is positioned under the ITB cleaning unit [2]. If not, turn the developing assembly rotary by hand so that the toner cartridge (Bk) moves to a point immediately under the ITB cleaning unit.



F-7-372

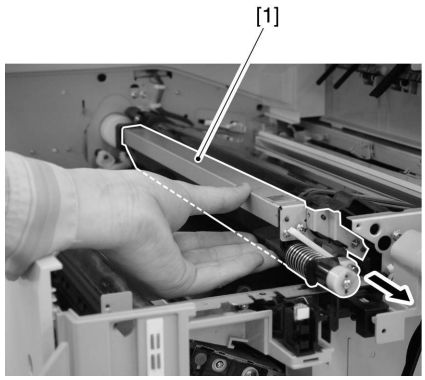
3) Remove the screw [1], and fit the screw to the screw hole [2].



F-7-373

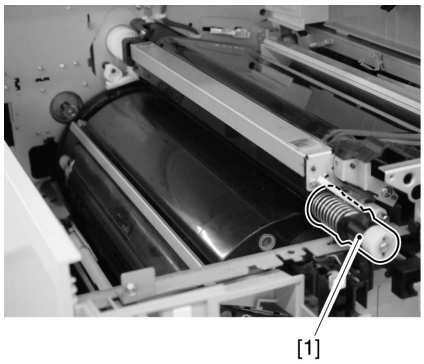
Memo:
To fix the arm [3] in place, fit the screw in the screw hole [2].
If the arm is not fixed in place, the cleaning blade will come into contact with the ITB when the ITB cleaning unit is removed, damaging the ITB.

4) Slide out the ITB cleaning unit [1] to the front to detach.



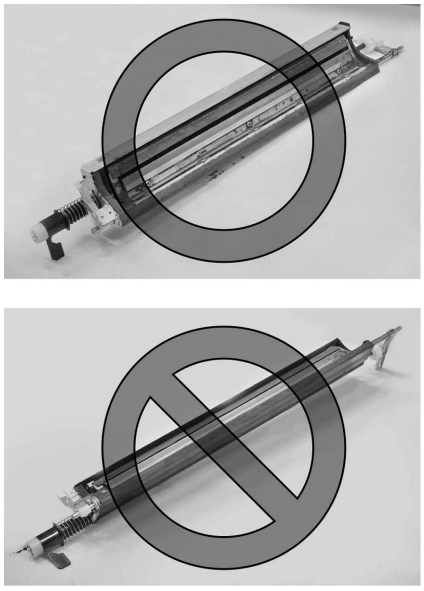
F-7-374

⚠When removing the ITB cleaning unit, take care not to impose excess force on the nozzle area [1] of the unit; otherwise, the area can suffer damage.



F-7-375

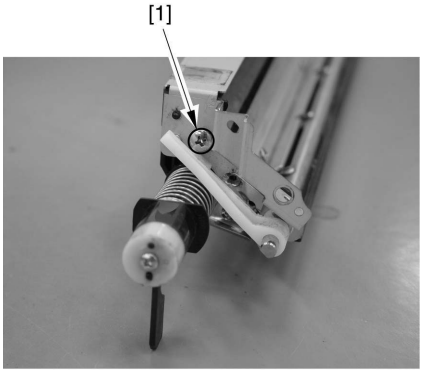
If you have to place the ITB cleaning unit on the floor after removing it from the machine, be sure to orient it as shown (i.e., so that the releasing arm is parallel with the floor); otherwise, the waste toner inside the ITB cleaning unit can start to leak.



F-7-376

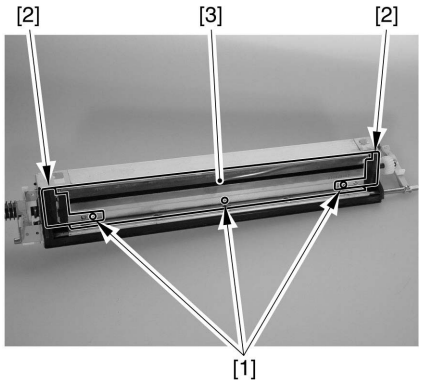
7.10.14.6 Removing the ITB Cleaning Blade 0000-9360

1) Remove the screw [1] that you fitted before removing the ITB cleaning unit.



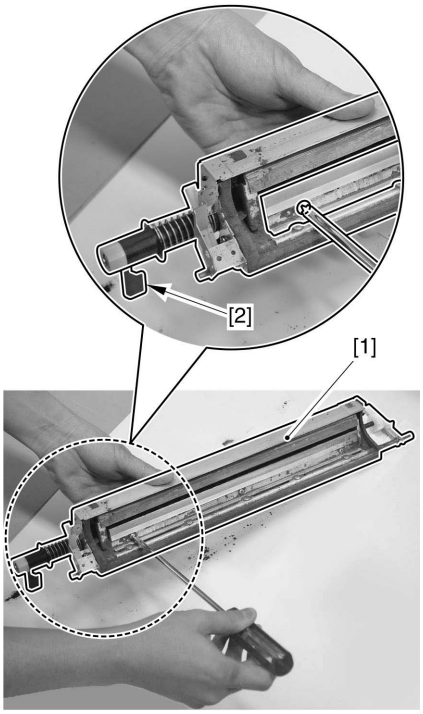
F-7-377

2) Remove the 3 screws [1], and detach the 2 end seal members [2] and the ITB cleaning blade [3].



F-7-378

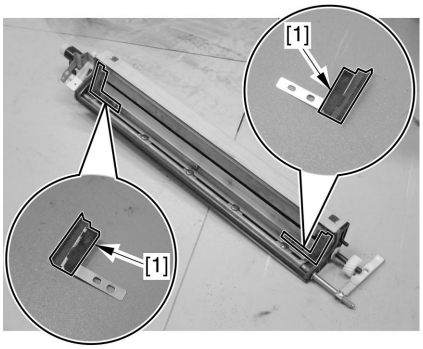
When removing or fitting the fixing screw of the ITB cleaning blade, keep the ITB cleaning unit assembly [1] lifted with your hand so that the shutter assembly [2] will not come into contact with the floor. The resulting excess force can damage the shutter assembly.



F-7-379

7.10.14.7 When Replacing the ITB Cleaning Blade 0004-5158

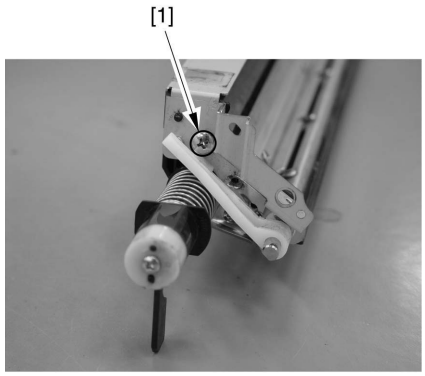
- When replacing the ITB cleaning blade, be sure to remove the waste toner collecting in the brush assembly [1] of the end seal member.



F-7-380

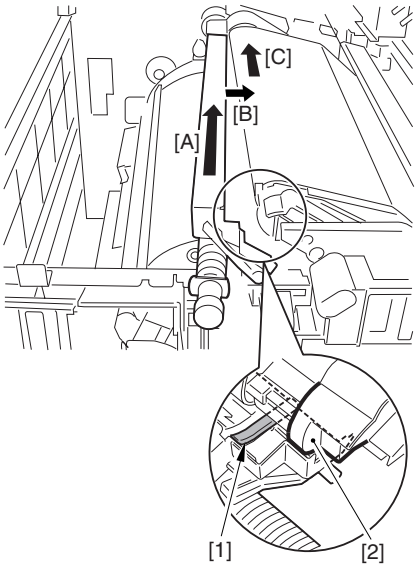
7.10.14.8 Points to Note When Mounting the ITB Cleaning Unit 0001-8383

- Be sure that the screw [1] is fitted to the ITB cleaning unit before mounting the ITB cleaning unit to the machine. Otherwise, the ITB cleaning blade will remain in contact with the ITB, damaging the ITB when the ITB cleaning unit is being mounted.

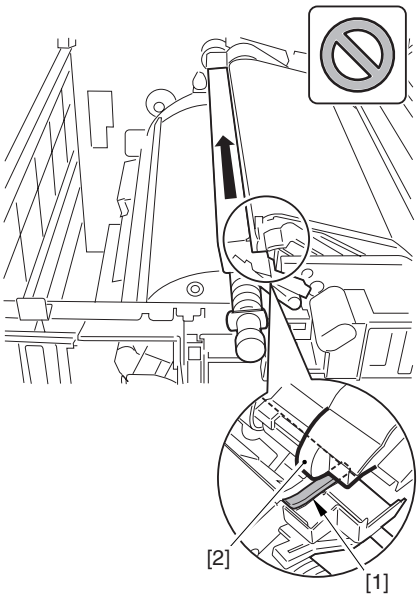


F-7-381

- When carelessly attaching the ITB cleaning unit to the main body, the end seal [1] may be tilted to clash the ITB unit guide assembly [2] (the surface indicated by a heavy line in the figure), and the seal may get deformed or removed. This damage on the seal may result in scattering of the waste toner inside the machine. To prevent this scattering, attach the ITB cleaning unit in the following steps: [A] Slant the front edge of the ITB cleaning unit toward the left, and insert the ITB cleaning unit toward the rear side of the machine temporally; [B] Move the unit until it becomes parallel to the ITB, ensuring that the end seal [1] does not clash the ITB unit guide assembly [2] (the surface indicated by a heavy line in the figure); [C] Push the unit straight to the rear side of the machine.

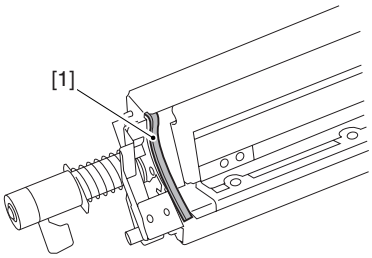


F-7-382

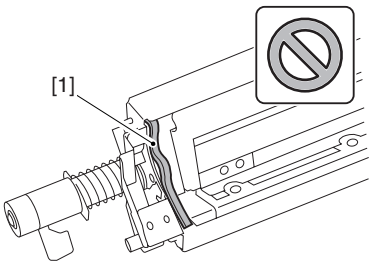


F-7-383

Memo: The figures below show the end seal [1] in normal condition and the one in abnormal condition (upward-tilted one).

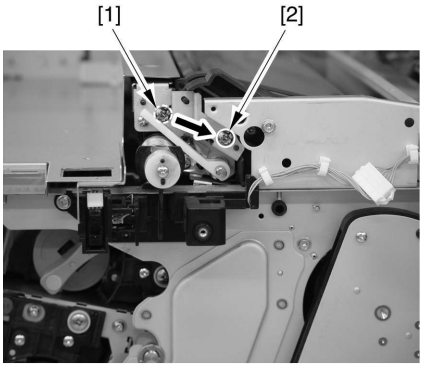


F-7-384



F-7-385

- After mounting the ITB cleaning unit to the machine, be sure to put back the screw [1] where the screw [2] is found. Otherwise, there will be a gap to the ITB cleaning blade, preventing cleaning of the ITB.



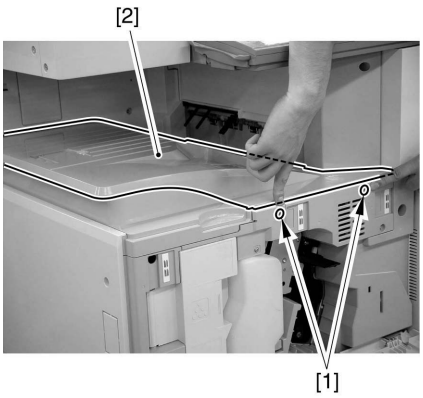
F-7-386

7.10.15 ITB Fan

7.10.15.1 Removing the Delivery Tray 0002-0314

1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery

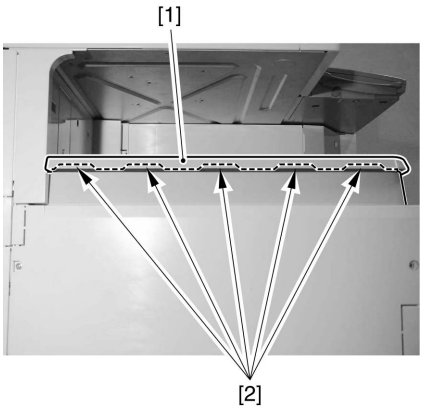
tray [2].



F-7-387

⚠Points to Note When Mounting the Delivery Tray

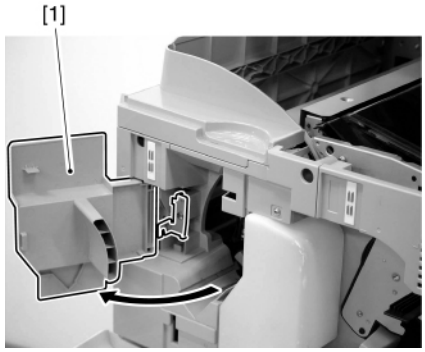
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-388

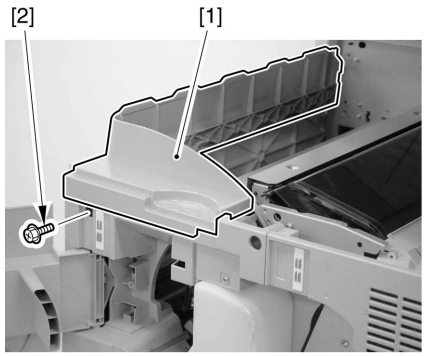
7.10.15.2 Removing the Delivery Tray Lower Cover 0002-0315

1) Open the toner cartridge access cover [1].



F-7-389

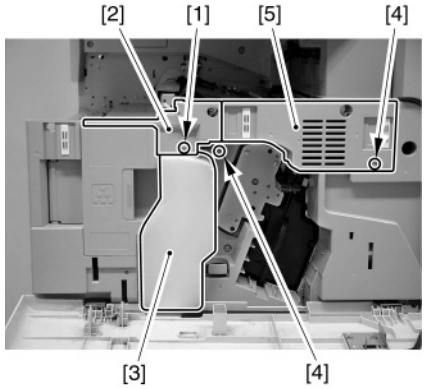
2) Remove the screw [2], and detach the delivery tray lower cover [1].



F-7-390

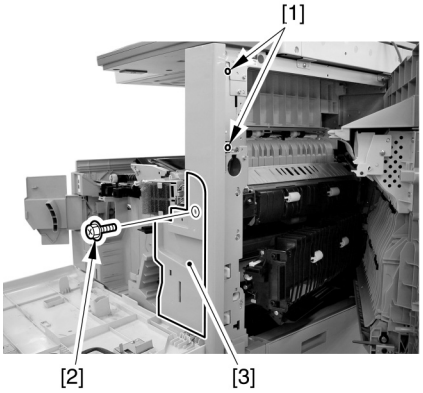
7.10.15.3 Removing the ITB Cleaning Fan 0000-9362

1) Remove the screw [1], and detach the waste toner unit retainer [2] and the ITB waste toner unit [3]; then, remove the two screws [4], and detach the inside cover (middle)



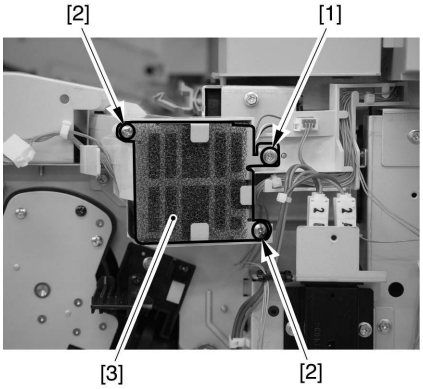
F-7-391

2) Open the right door, and loosen the 2 screws [1]; then, remove the screw [2], and detach the support cover (right) [3].



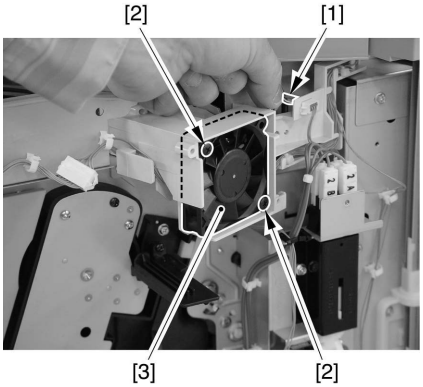
F-7-392

3) Remove the screw [1] and the other 2 screws [2];then, detach the ITB cooling fan cover [3].



F-7-393

4) Disconnect the connector [1], and remove the 2 screws [2]; then, detach the ITB cooling fan [3].



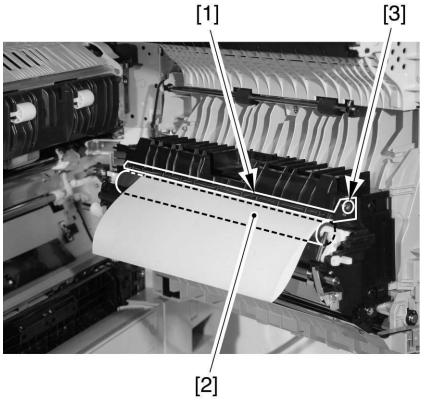
F-7-394

7.10.16 Separator Eliminator

7.10.16.1 Removing the Separation Static Eliminator 0000-9279

1) Open the right door.

2) Put paper between the separation static eliminator [1] and the secondary transfer outside roller [2]; then, remove the screws [3], and pull out the separation static eliminator [1] toward the front.



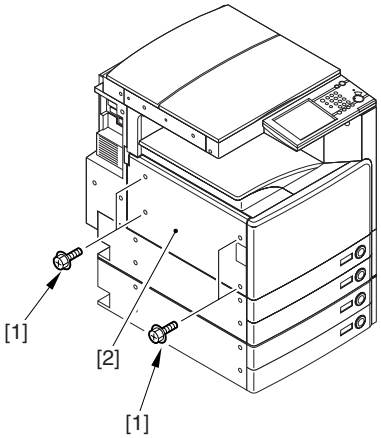
F-7-395

Memo:
It is important to put paper in between to prevent damage to the secondary transfer roller by molded segment of the separation static eliminator when removing the eliminator.

7.10.17 ATR Sensor Unit

7.10.17.1 Removing the Left Cover 0002-0497

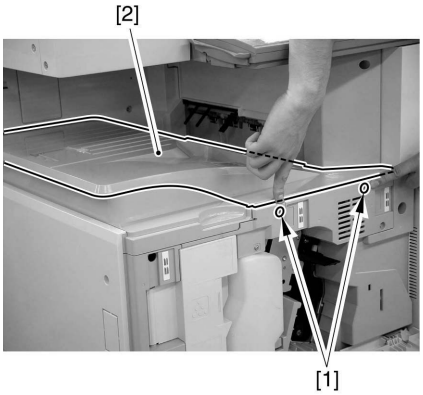
1) Remove the 4 screws [1], and detach the left cover [2].



F-7-396

7.10.17.2 Removing the Delivery Tray 0002-0320

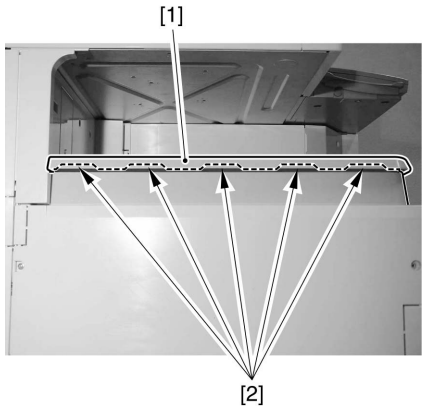
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-7-397

⚠Points to Note When Mounting the Delivery Tray

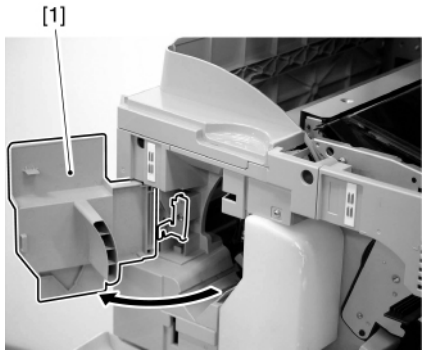
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-7-398

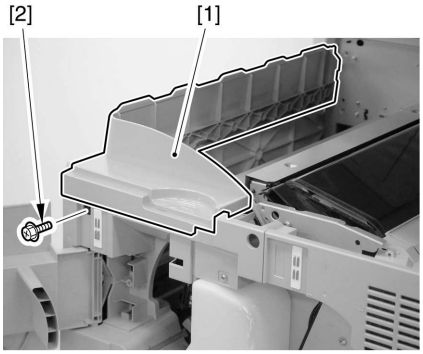
7.10.17.3 Removing the Delivery Tray Lower Cover 0002-0321

1) Open the toner cartridge access cover [1].



F-7-399

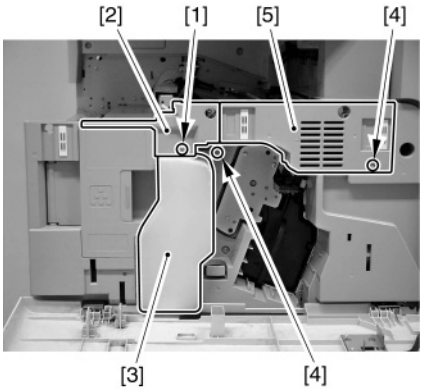
2) Remove the screw [2], and detach the delivery tray lower cover [1].



F-7-400

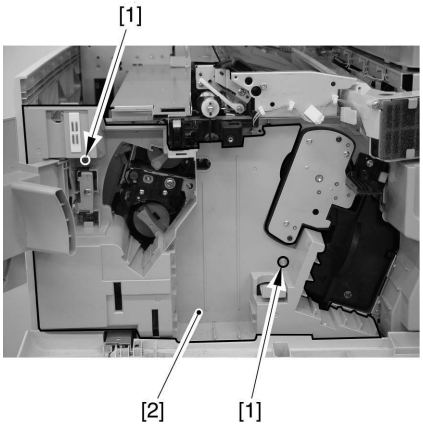
7.10.17.4 Removing ATR Sensor Unit 0000-9369

1) Turn the developing assembly rotary by hand so that the Bk toner cartridge is in position of replacement.
2) Remove the screw [1], and detach the waste toner unit retainer [2] and the ITB waste toner unit [3]; then, remove the 2 screws [4], and detach the inside cover (middle) [5].



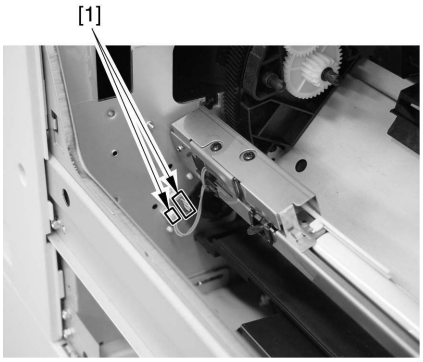
F-7-401

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



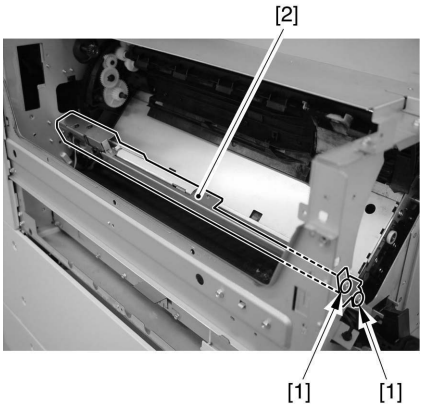
F-7-402

4) Disconnect the 2 connectors [1].



F-7-403

5) Remove the 2 screws [1], and detach the ATR sensor unit [2].



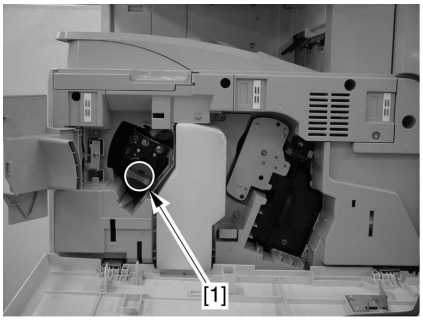
F-7-404

7.10.18 Environment Sensor PCB

7.10.18.1 Removing the Drum Unit

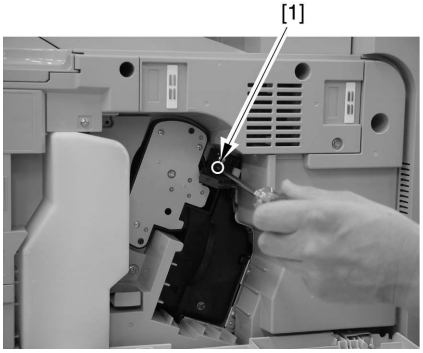
0001-8409

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



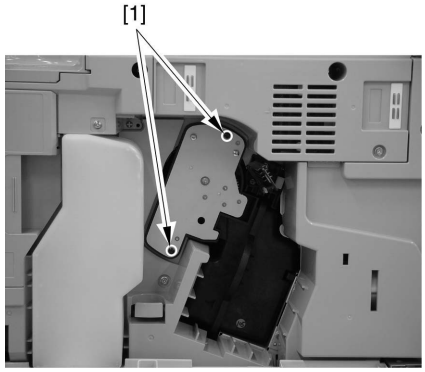
F-7-405

2) Remove the screw [1] (black; M3x20).



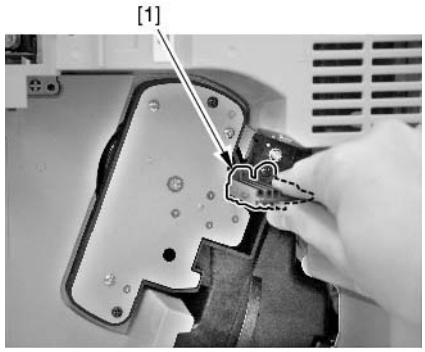
F-7-406

3) Remove the 2 fixing screws [1] (M4x20).

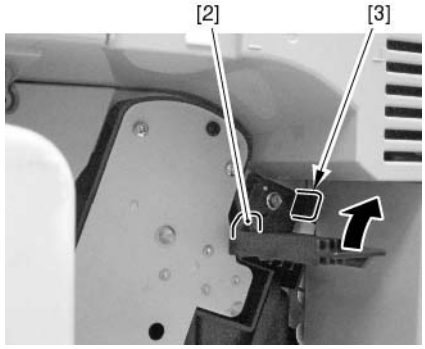


F-7-407

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

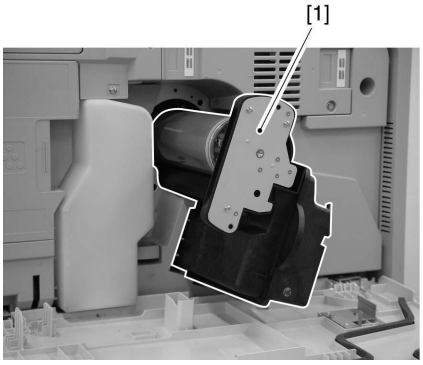


F-7-408



F-7-409

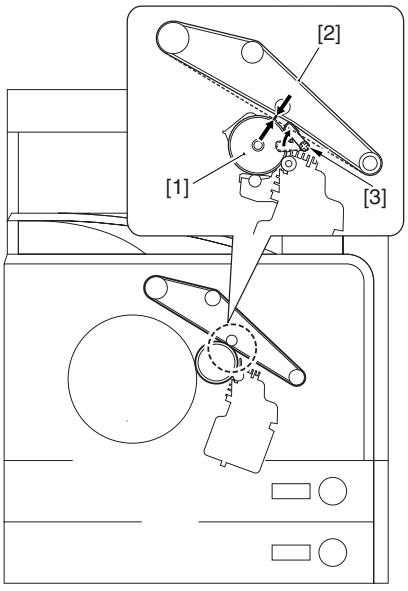
5) Slide out the drum unit [1] to the front to detach.



F-7-410

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3] (operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



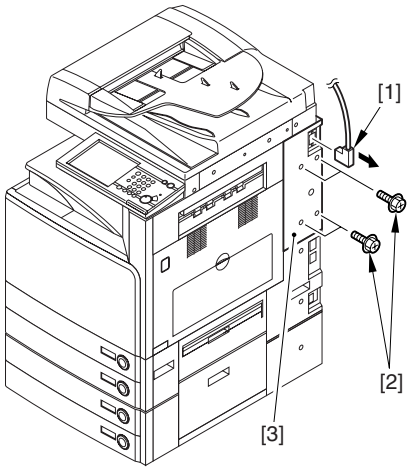
F-7-411

At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.18.2 Removing the Right Cover (upper rear) 0002-0323

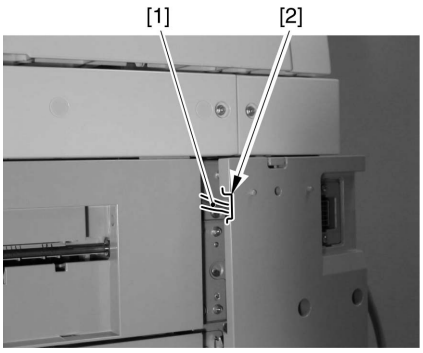
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-412

⚠**Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)**

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

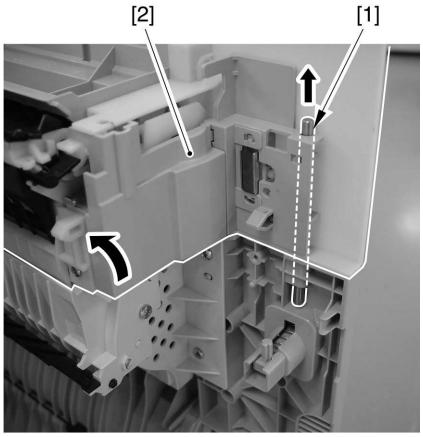


F-7-413

7.10.18.3 Removing the Right Door

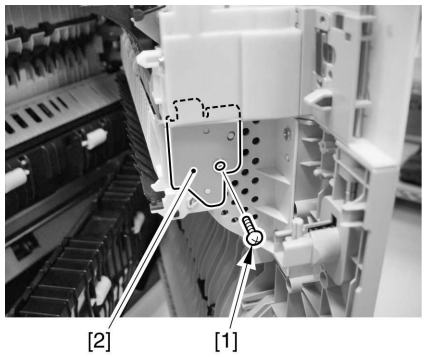
0002-0340

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



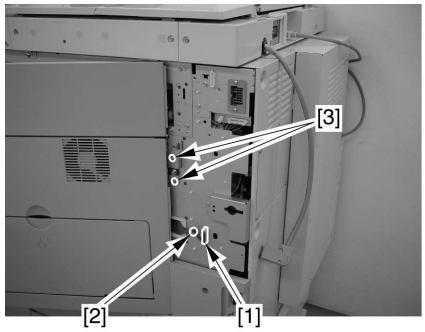
F-7-414

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



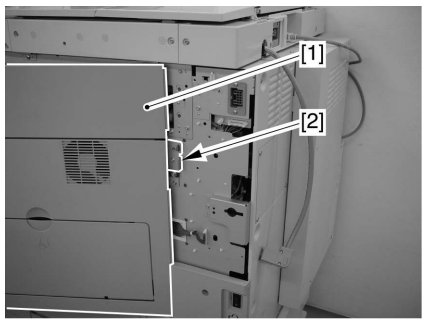
F-7-415

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-416

6) Detach the right door [1] together with the hinge [2].

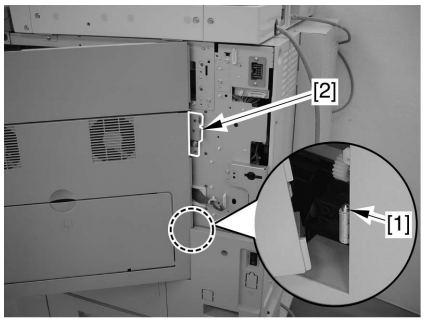


F-7-417

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

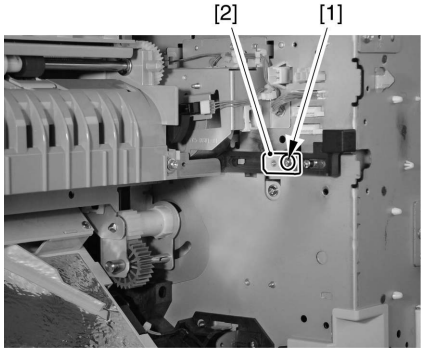


F-7-418

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

7.10.18.4 Removing the Fixing Assembly Release Arm Plate 0001-8412

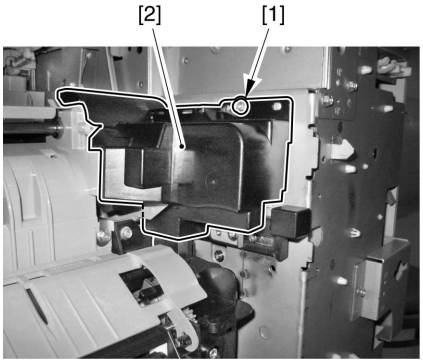
1) Remove the screw [1], and detach the plate [2].



F-7-419

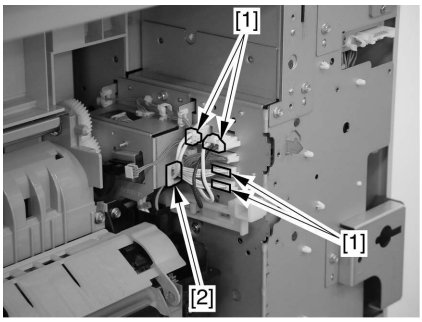
7.10.18.5 Removing the Fixing Unit 0001-8413

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



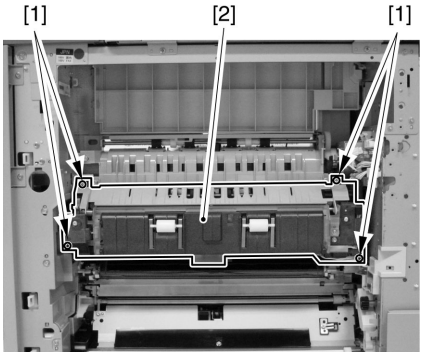
F-7-420

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-421

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-7-422

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

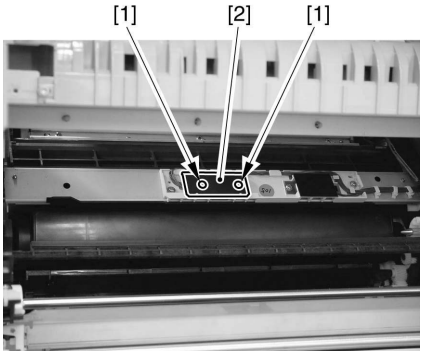
⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

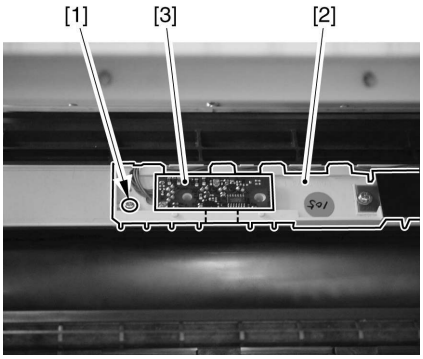
7.10.18.6 Removing the Patch Image Read Sensor 0001-8414

1) Using a stubby screwdriver, remove the 2 screws [1], and detach the sensor protective cover [2].



F-7-423

2) Remove the screw [1]; then, lifting the sensor PCB holder [2] slightly toward the front, pull out the patch image read sensor PCB [3] in upward direction at an angle.

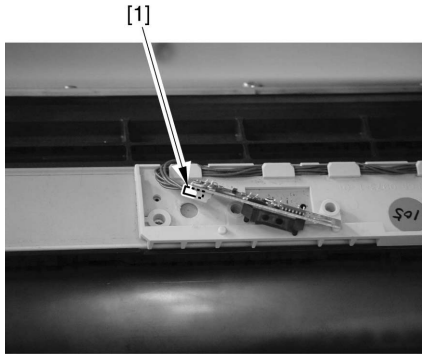


F-7-424

⚠

- Do not touch the volume element on the sensor PCB. If you touched it inadvertently, be sure to replace it.
- Do not touch the window surface of the sensor. If you touched it inadvertently, be sure to wipe it with a moist cloth. (Never dry wipe it.)

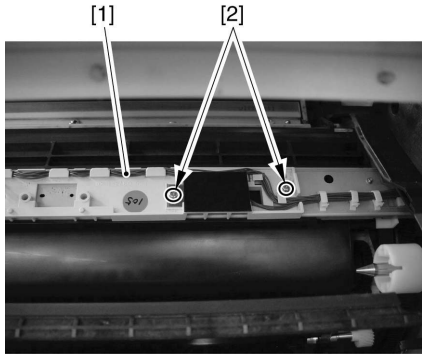
3) Disconnect the connector [1].



F-7-425

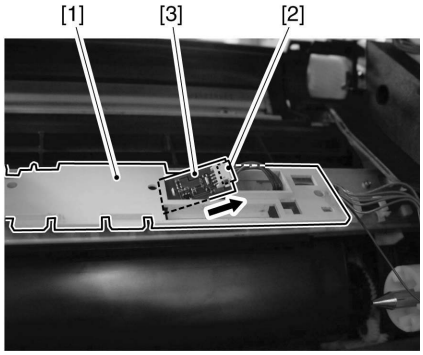
7.10.18.7 Removing the Environment Sensor PCB 0000-9291

1) Free the cable [1] from the cable guide, and remove the 2 screws [2].



F-7-426

2) Turn over the sensor PCB holder [1], and disconnect the connector [2]; then, slide the environment sensor PCB [3] at an angle to detach.

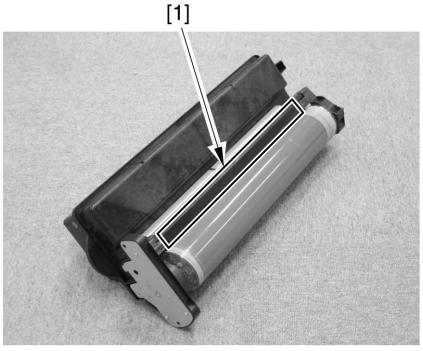


F-7-427

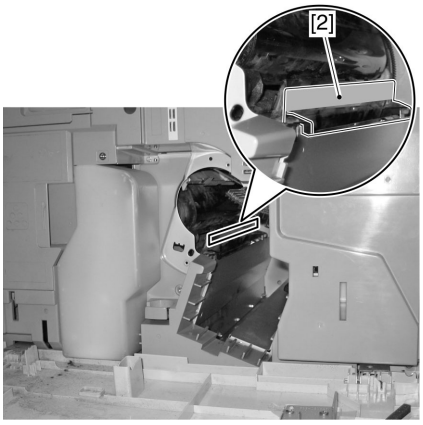
7.10.18.8 Points to Note When Mounting the Drum Unit 0001-8415

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-428



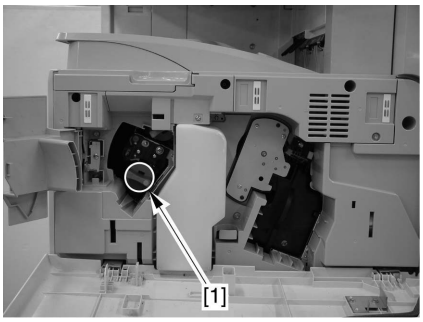
F-7-429

Memo:
The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

7.10.19 Patch Image Sensor

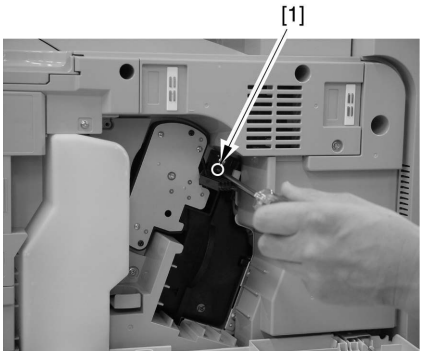
7.10.19.1 Removing the Drum Unit 0001-8400

1) Open the front cover and the toner cartridge access cover, and check to be sure that the toner cartridge (magenta) [1] is positioned as shown. If not, close the front cover and the toner cartridge access cover, and turn on the machine's main power switch. Then, after making sure that the toner cartridge (magenta) [1] is positioned as shown, turn off the machine's control panel power switch and main power switch.



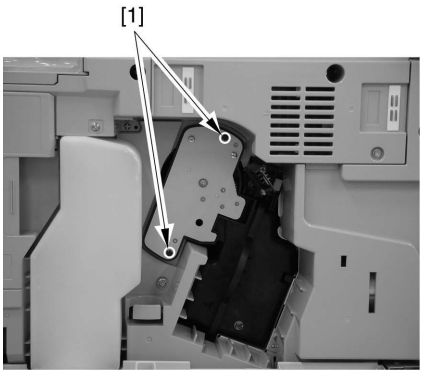
F-7-430

2) Remove the screw [1] (black; M3x20).



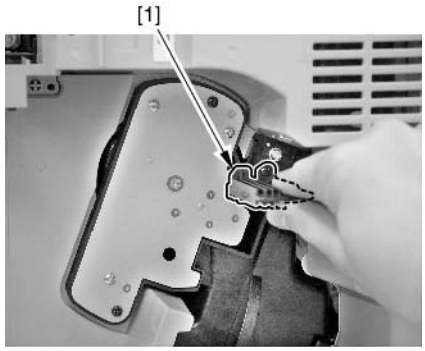
F-7-431

3) Remove the 2 fixing screws [1] (M4x20).

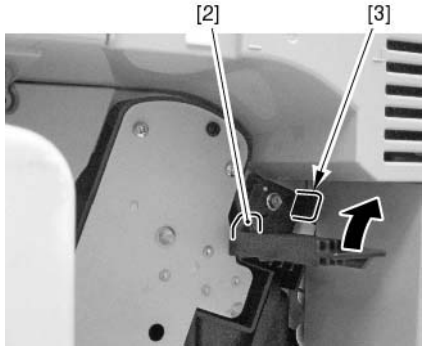


F-7-432

4) Turn the ITB releasing lever [1] clockwise until it is locked. There is a protrusion behind the area indicated in the figure [2]; turn the ITB release lever until the protrusion has ridden over the stopper [3].

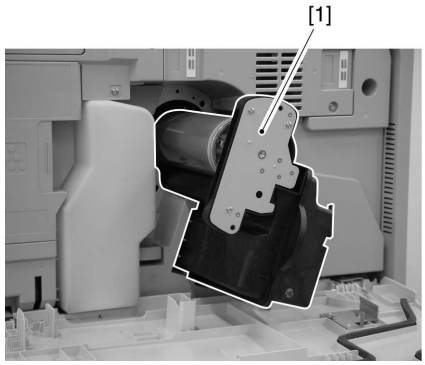


F-7-433



F-7-434

5) Slide out the drum unit [1] to the front to detach.

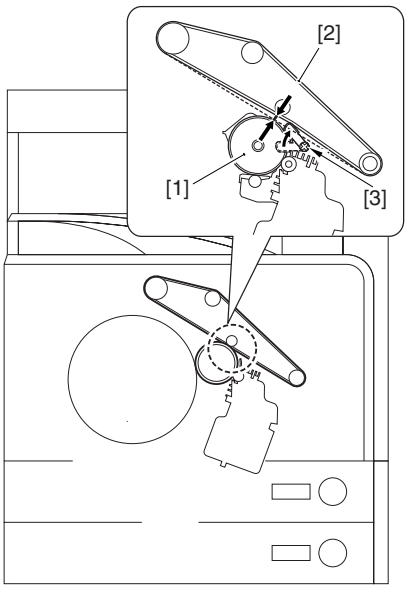


F-7-435

6) To return the ITB release lever to its initial position (where it was before removing the drum unit), unlock it and turn it counterclockwise.

⚠The photosensitive drum [1] and the ITB [2] are in contact with each other; turning the ITB release lever clockwise causes the release member [3]

(operating in conjunction with the lever) to move up, thus moving the ITB [2] away from the photosensitive drum [1].



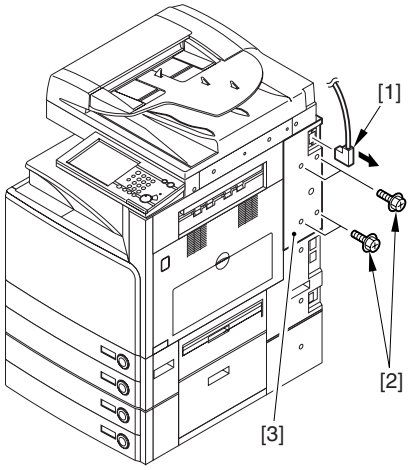
F-7-436

At this time, the ITB is slack temporarily. Left as it is for a long time, however, it can start to deform. So that the ITB remains slack as short a time as possible, be sure to return the ITB release lever to its initial position as soon as you have removed the drum unit.

⚠Take care not to touch or damage the surface of the photosensitive drum of the drum unit.

7.10.19.2 Removing the Right Cover (upper rear) 0002-0322

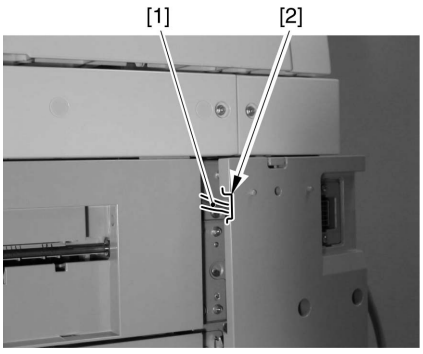
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-7-437

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

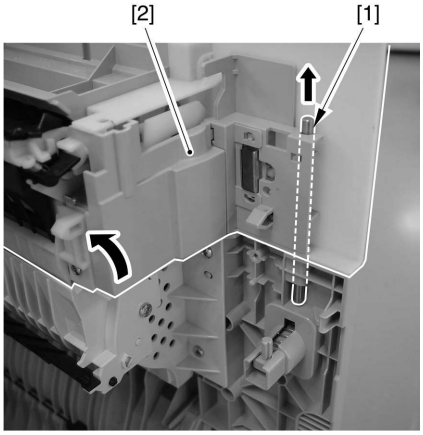
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-7-438

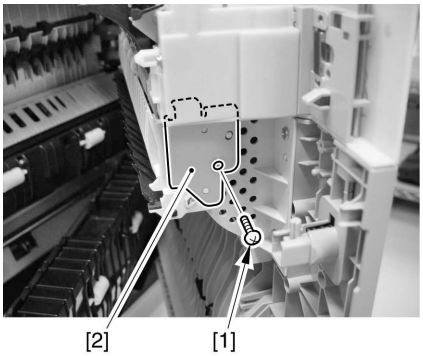
7.10.19.3 Removing the Right Door 0002-0338

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-439

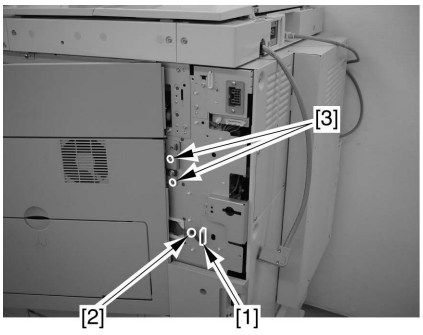
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-7-440

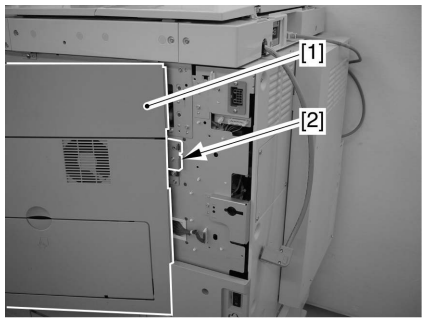
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-7-441

6) Detach the right door [1] together with the hinge [2].

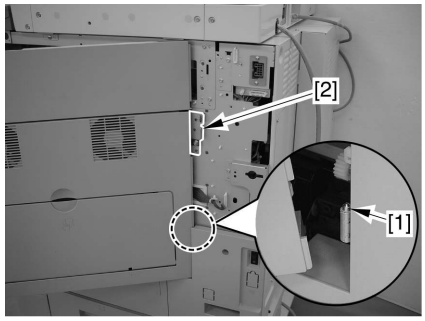


F-7-442

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

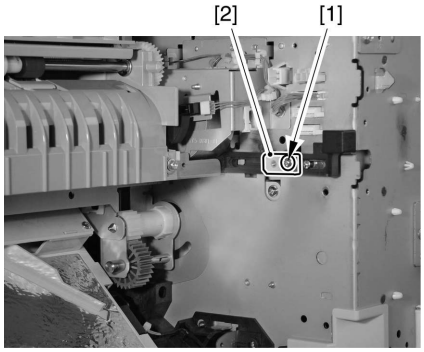


F-7-443

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

7.10.19.4 Removing the Fixing Assembly Release Arm Plate 0001-8404

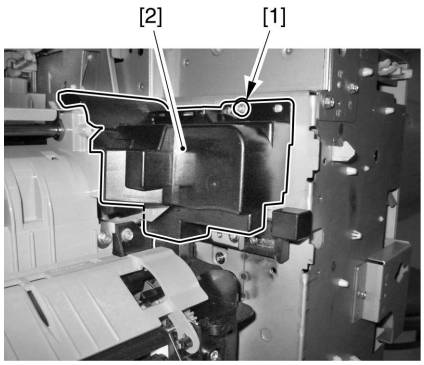
1) Remove the screw [1], and detach the plate [2].



F-7-444

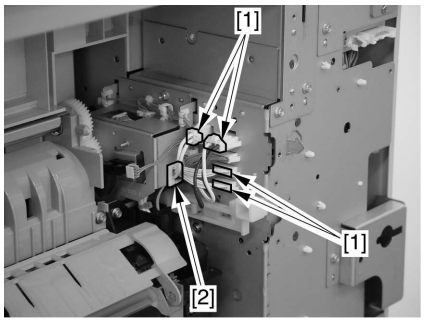
7.10.19.5 Removing the Fixing Unit 0001-8405

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



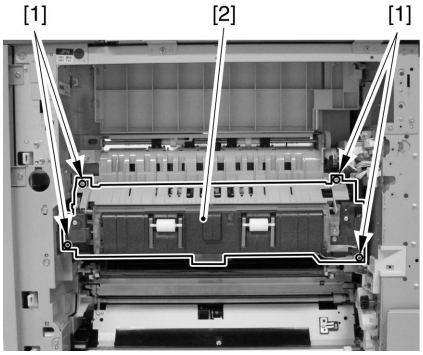
F-7-445

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-7-446

3) Remove the 4 screws [1], and detach the fixing assembly [2].



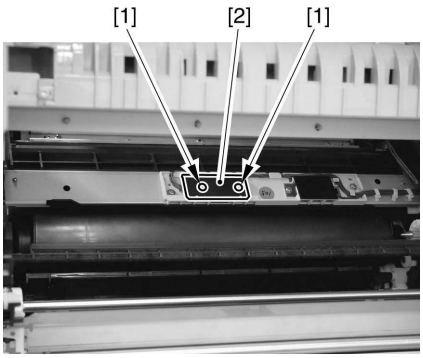
F-7-447

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

7.10.19.6 Removing the Patch Image Read Sensor 0000-9290

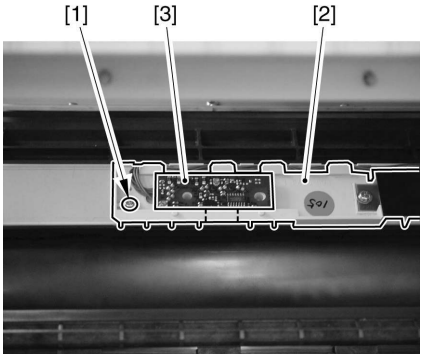
1) Using a stubby screwdriver, remove the 2 screws [1], and detach the sensor protective cover [2].



F-7-448

2) Remove the screw [1]; then, lifting the sensor PCB holder [2] slightly toward the front, pull out the patch image read sensor PCB [3] in upward

direction at an angle.



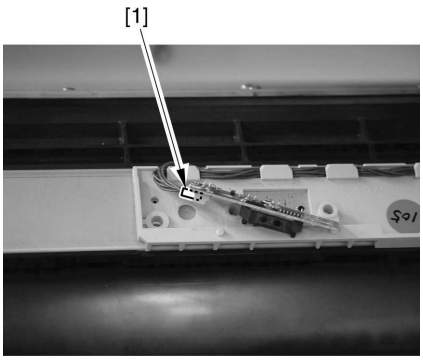
F-7-449

⚠

- Do not touch the volume element on the sensor PCB. If you touched it inadvertently, be sure to replace it.
- Do not touch the window surface of the sensor. If you touched it inadvertently, be sure to wipe it with a moist cloth. (Never dry wipe it.)

---

3) Disconnect the connector [1].

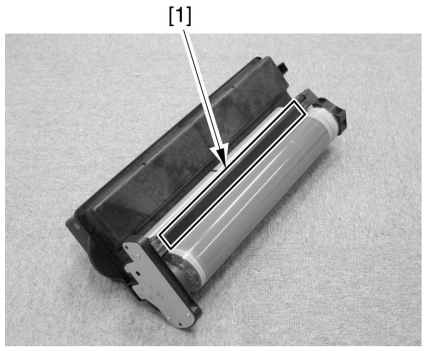


F-7-450

7.10.19.7 Points to Note When Mounting the Drum Unit 0001-8408

- Take care not to touch or damage the surface of the photosensitive drum of the drum unit.
- When fitting the drum unit in the machine, be sure to slide it until it butts against the rear of the machine while holding it level. Otherwise, the photosensitive drum will interfere with the machine's internal components, possibly damaging them.
- Before fitting the drum unit, check to be sure that the area [1] and the area [2] (for the drum unit and the optical hood, respectively) are free of dust and dirt. As necessary, wipe it with a cloth moistened with water.

  Do not dry wipe the areas; otherwise, static electricity will build up to attract dust.



F-7-451

F-7-452

Memo:

The beam of laser light moves between area [1] and area [2] of the figure; a buildup of dust in these areas can well block part of the laser light, leaving a white line in images.

Chapter 8 Pickup/ Feeding System

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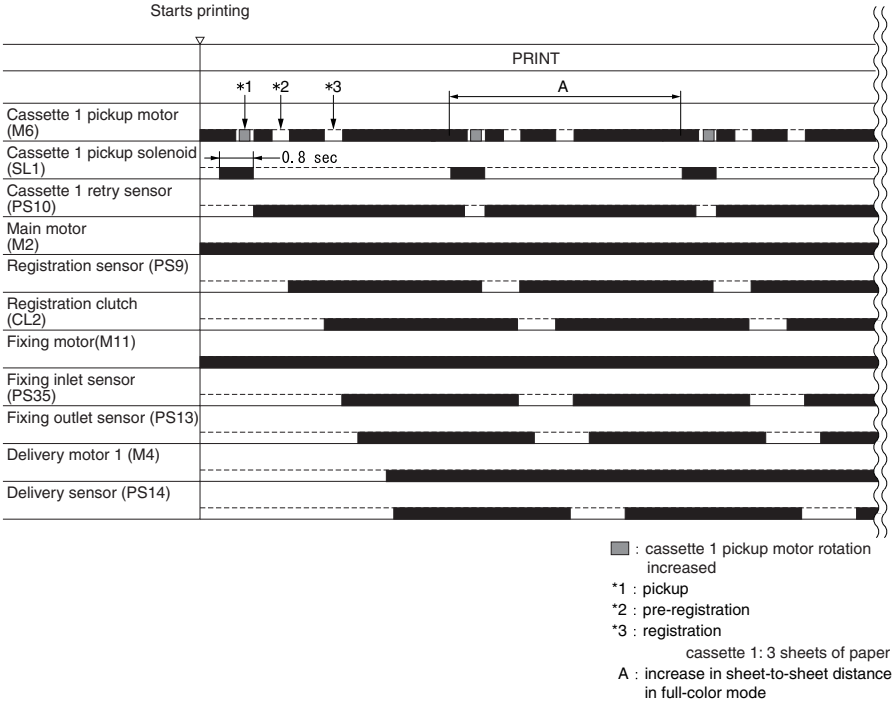
8.1 Basic Sequence

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

0000-8589

- Basic Sequence of Operations for Making 3 Prints



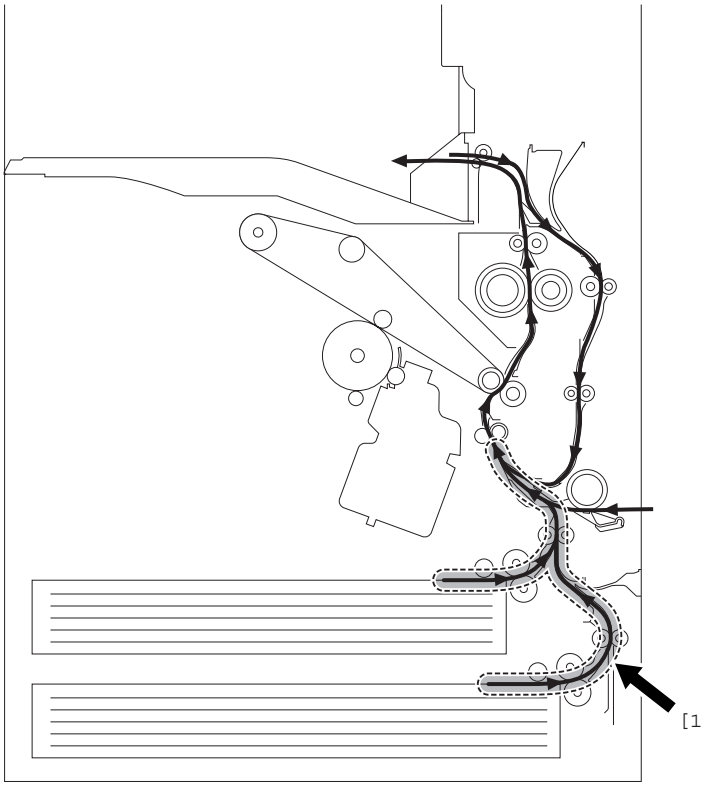
F-8-1

8.1.2 Increase in Speed

0000-7866

The machine increases the speed of moving paper over specific intervals. An overview and the associated accessories for the increase in speed are as follows:

- No Delivery Accessory

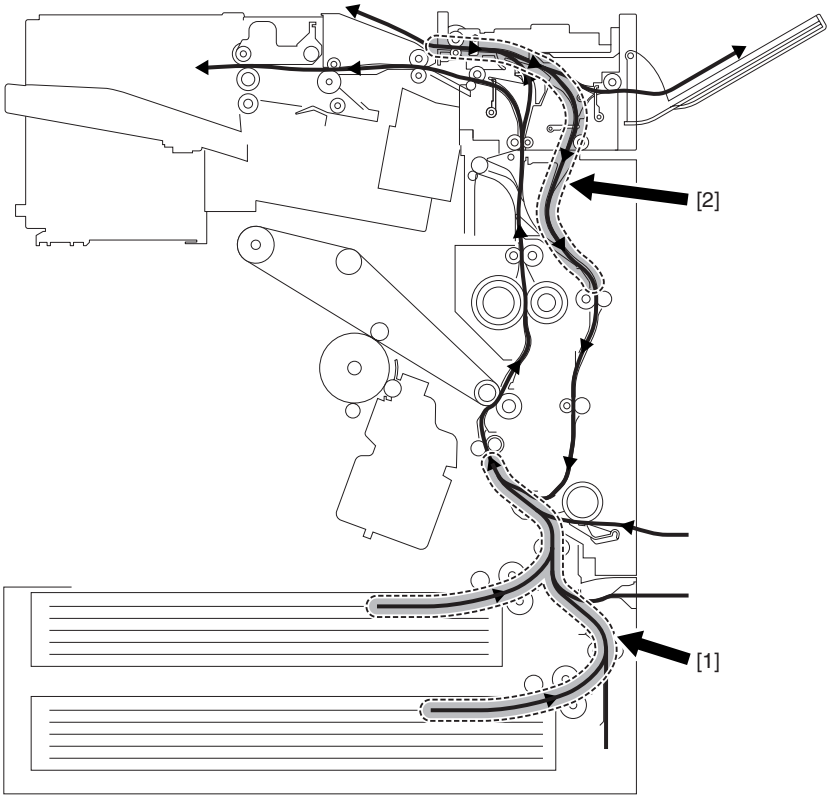


F-8-2

1. Increase in Speed for Pickup Operation

The speed is 1.5 times as high as the process speed (no increase if for manual feed pickup)

- Finisher-P1 in Use



F-8-3

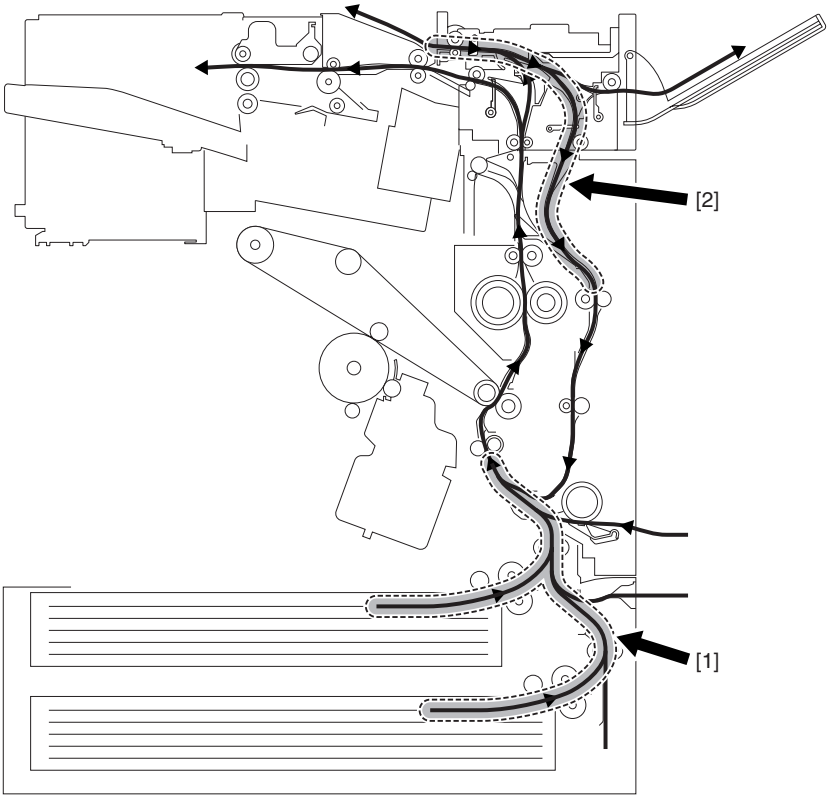
1. Increase in Speed for Pickup

The speed is 1.5 times as high as the process speed (no increase if for manual feed pickup).

2. Increase in Speed for Reversal

The speed is 2 times as high as the process speed (no increase if for delivery to tray 3).

- Finisher-Q1/Q2 in Use



F-8-4

1. Increase in Speed for Pickup

The speed is 1.5 times as high as the process speed (no increase if for manual feed pickup).

2. Increase in Speed After Fixing

The speed is 2 times as high as the process speed.

3. Increase in Speed for the Buffer Path

The speed is 2.5 times as high as the process speed (increase if for large size; no increase if for delivery to saddle).

4. Increase in Speed for Reversal

The speed is 2 times as high as the process speed (no increase if for delivery to tray 3).

8.2 Detecting Jams

8.2.1 Stationary Jams

8.2.1.1 Stationary Jam at Power-On 0001-4453

The machine makes a check to see that there is no paper over the following sensors before it starts initial multiple rotation at power-on:

T-8-1

Sensor
Cassette 1 retry sensor (PS10)
Cassette 2 retry sensor (PS11)
Registration sensor (PS9)
Fixing inlet sensor (PS25)
Fixing outlet sensor (PS13)
No. 1 delivery sensor (PS14)
Duplex feed sensor (PS17)

8.2.2 Other Jams

8.2.2.1 Wrong Size Jam 0001-4502

A wrong size jam is identified when paper being used is shorter than the specified paper length.

T-8-2

Sensor
Registration sensor (PS9)

8.2.2.2 Wrong Material Jam 0001-4503

A wrong material jam is identified when the transparency sensor detects the wrong type of paper.

T-8-3

Sensor
Transparency sensor (PS26)

8.2.2.3 Cover Open Jam 0001-4504

A door open jam is identified when the machine detects the opening of the door while it is making copies/prints.

T-8-4

Sensor
Front cover open sensor (PS22)
Right cover open sensor (PS18)

8.3 Cassette

8.3.1 Setting Up the Universal Cassette

0000-8451

The following are default sizes the machine will assume when U1 through U4 are detected:

T-8-5

U1	G-LTR
U2	FLSC
U3	G-LGL
U4	A-LTR

The following is a list of sizes that may be assigned in addition to default sizes in service mode:

T-8-6

Universal U1 Through U4

Size
FLSC
OFI
E-OFI
B-OFI
A-OFI
M-OFI
FOLI
A-FLS
G-LTR
G-LGL
A-LTR (LTR)
A-LTRR (LTRR)

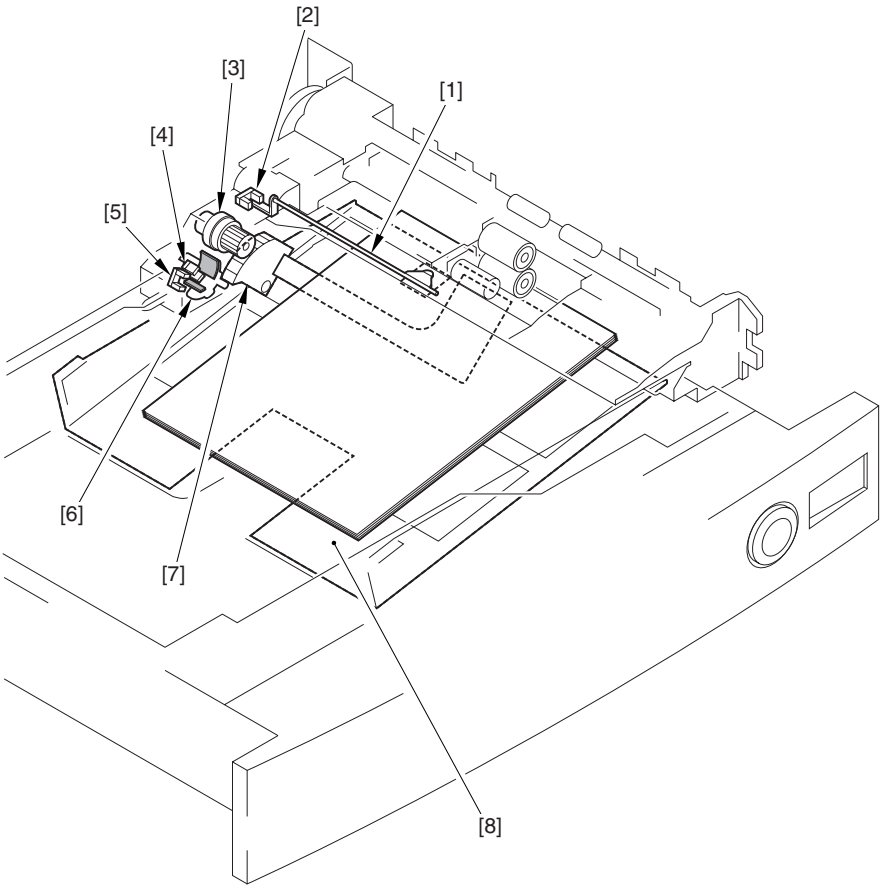
8.3.2 Paper Level Sensor

0000-7995

The level of paper inside the cassette is checked using the following sensors:

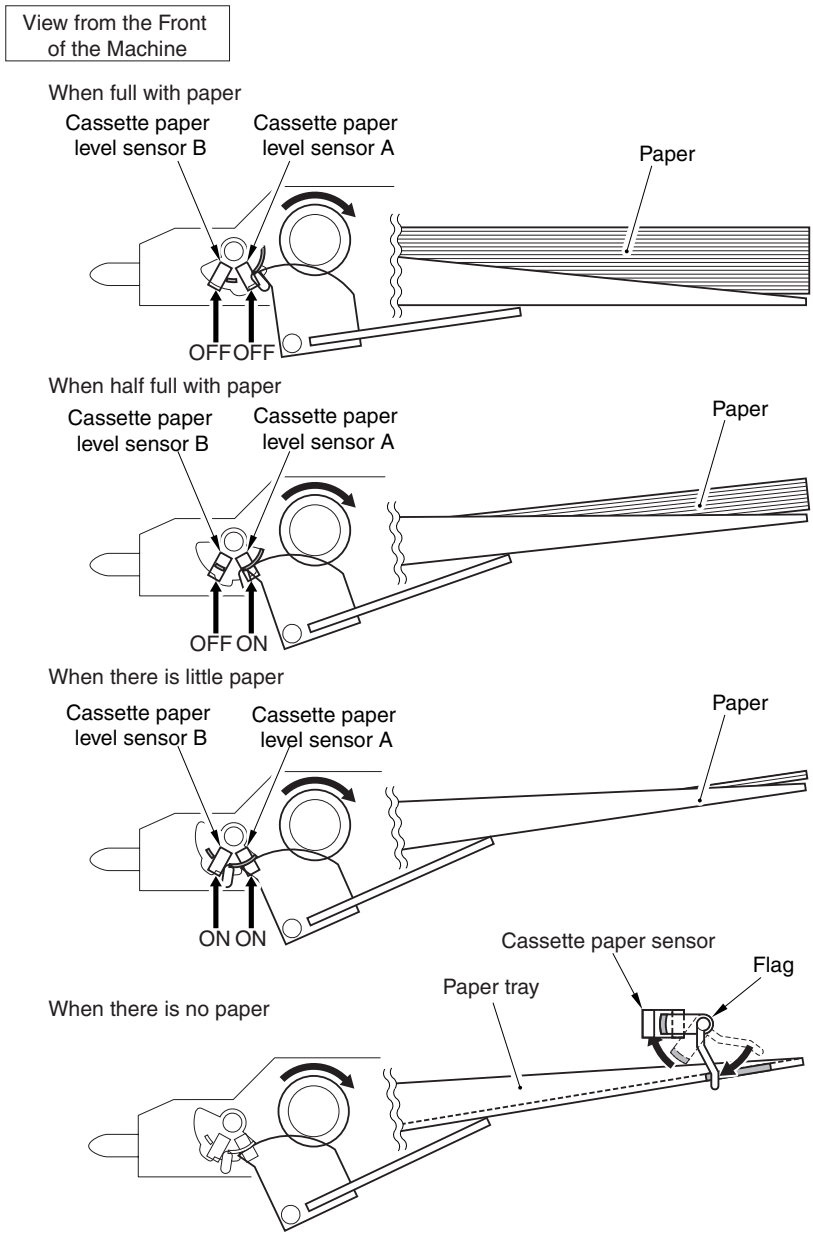
T-8-7

	Cassette 1	Cassette 2
Paper level sensor A	PS3	PS5
Paper level sensor B	PS4	PS6
Paper sensor	PS1	PS2



F-8-5

[1] Flag
[2] Cassette paper sensor
[3] Lifter clutch
[4] Cassette paper level sensor A
[5] Cassette paper level sensor B
[6] Paper level sensor flag
[7] Lifter gear
[8] Tray



F-8-6

T-8-8

Paper level sensor A	Paper level sensor B	Paper sensor	Paper level	Control panel indication
OFF	OFF	OFF	100% to 50% of capacity	

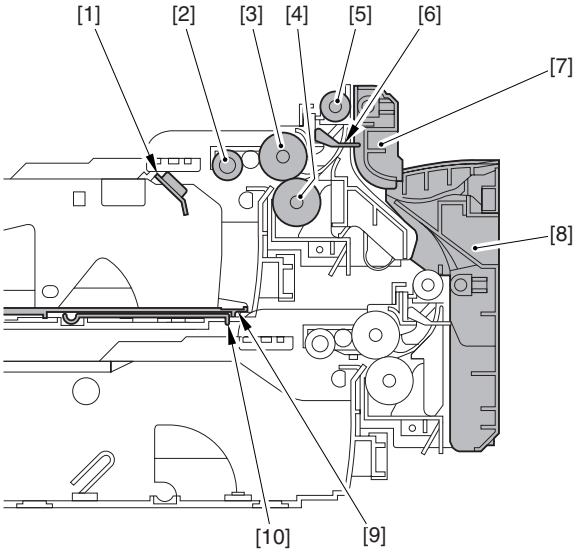
Paper level sensor A	Paper level sensor B	Paper sensor	Paper level	Control panel indication
ON	OFF	OFF	50% to 50 sheets (approx.)	
ON	ON	OFF	50 sheets or less (approx.)	
---	---	ON	No paper	

8.4 Cassette Pick-Up Unit

8.4.1 Overview

0001-8636

The paper inside the cassette is held up by the work of the lifer plate. When pickup takes place, the pickup roller moves down to come into contact with the stack of paper. The pickup roller starts to move down when the pickup solenoid goes on. The feed roller and the separation roller make sure that no more than a single sheet of paper is moved forward to the paper path. The vertical path roller serves to move paper as far as the registration roller.
The pickup path roller, pickup roller, feed roller, and separation roller are driven by the pickup motor.



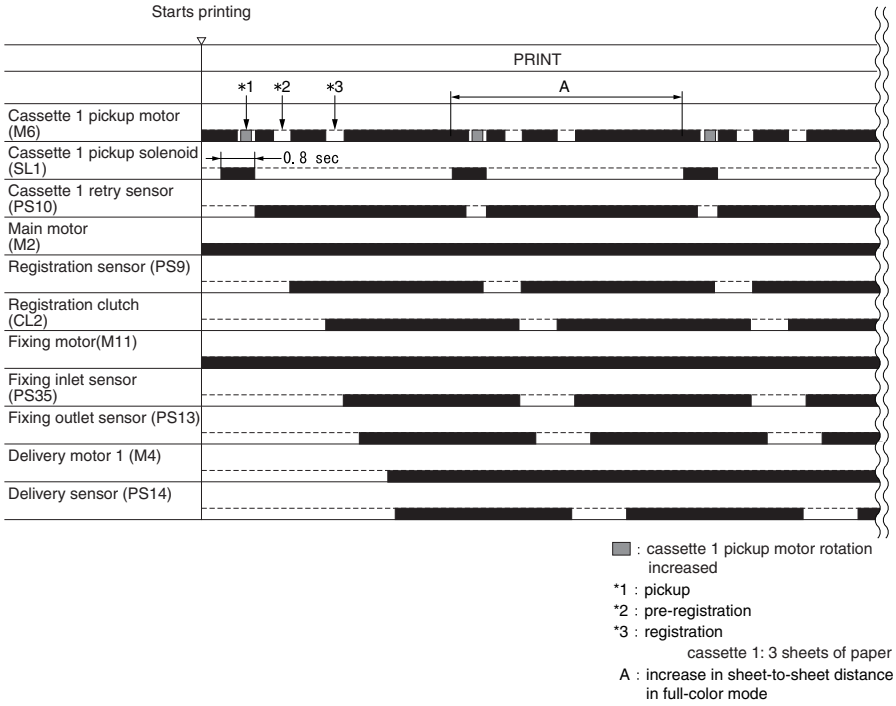
F-8-7

[1] Cassette paper sensor
[2] Pickup roller (roller A)
[3] Feed roller (roller B)
[4] Separation roller (roller C)
[5] Pickup vertical path roller
[6] Cassette retry paper sensor
[7] Vertical path guide
[8] Lower right cover
[9] Holding plate
[10] Lifter plate

8.4.2 Basic Sequence of Operations

0001-8619

Basic Sequence



: cassette 1 pickup motor rotation increased
*1 : pickup
*2 : pre-registration
*3 : registration
cassette 1: 3 sheets of paper
A : increase in sheet-to-sheet distance in full-color mode

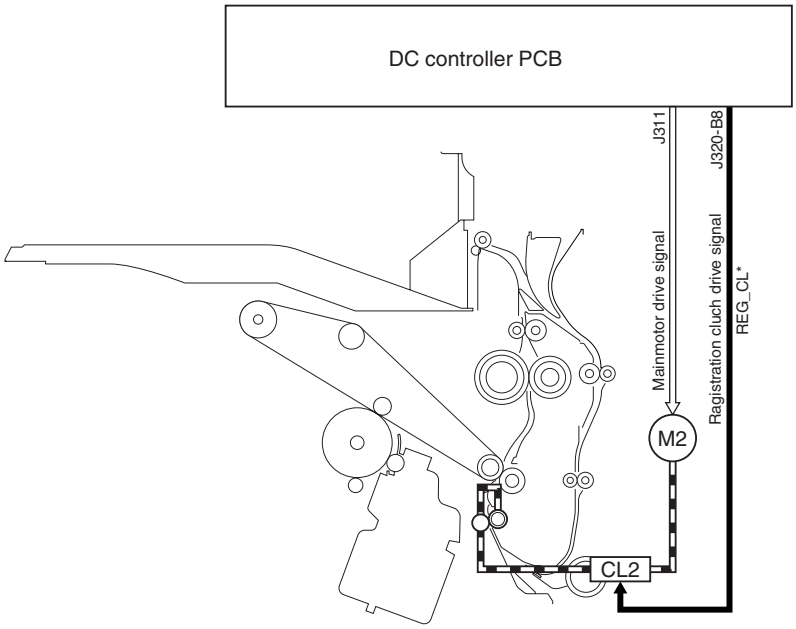
F-8-8

8.5 Registration Unit

8.5.1 Overview

0001-4411

The registration roller is driven by the main motor (M2). The registration clutch (CL2) found between the registration roller and the main motor goes on and off to control the registration roller so that the paper and the image on the intermediate transfer belt will match.



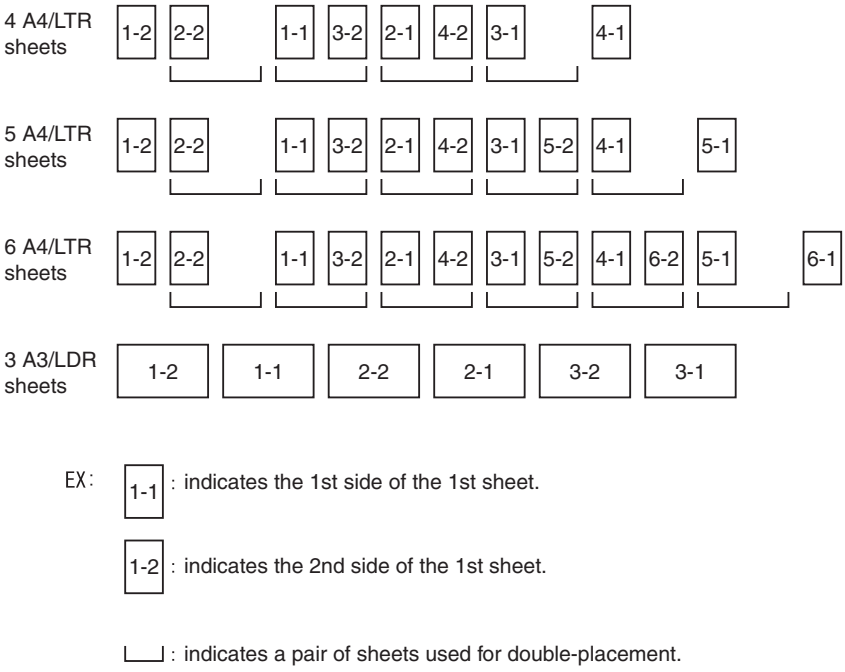
F-8-9

8.6 Duplex Feeding Unit

8.6.1 Sequence of Image Formation

0001-4746

The machine goes thorough the following sequence to form images when making double-sided copies/prints:



F-8-10

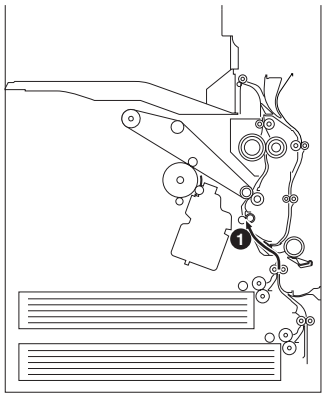
8.6.2 Flow of Paper (wo/ Delivery Option)

0001-4747

A4/LTR, Black-and-White, 5 Sheets

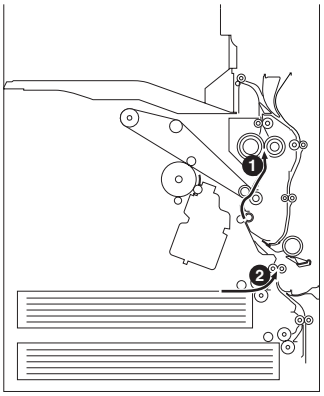
A number in a circle indicates the 1st side, while a number in a square indicates the 2nd side.

Although a different sheet-to-sheet interval is used for full-color operation, the sequence of image formation is the same.



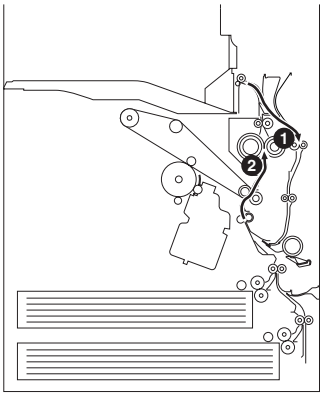
F-8-11

The 1st sheet is picked up.



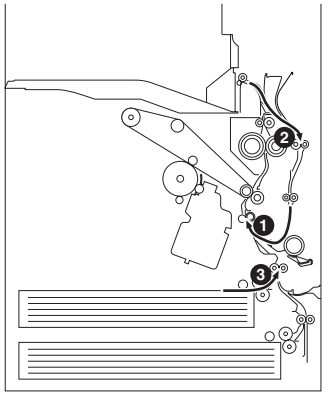
F-8-12

An image is formed for the 2nd side of the 1st sheet. The 2nd sheet is picked up.



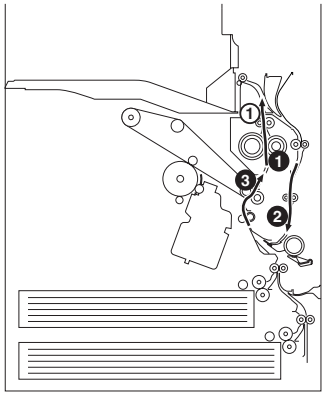
F-8-13

The 1st sheet is turned over and moved to duplexing registration. An image is formed for the 2nd side of the 2nd sheet.



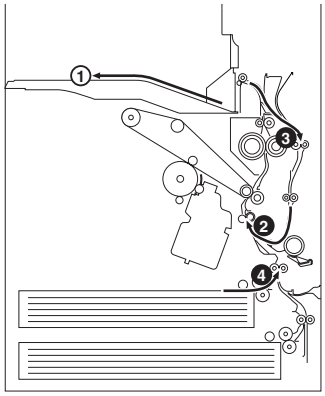
F-8-14

The 1st sheet is moved for registration once again. The 2nd sheet is turned over and moved for duplexing registration. The 3rd sheet is picked up.



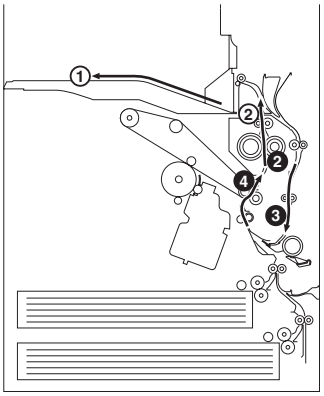
F-8-15

An image is formed for the 1st side of the 1st sheet and for the 2nd side of the 3rd sheet. The 2nd sheet is moved for duplexing.



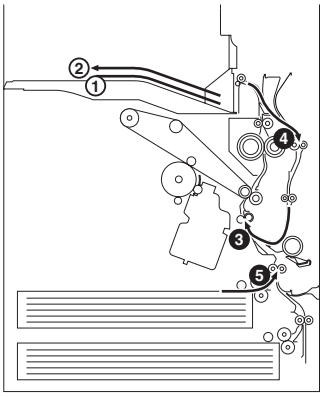
F-8-16

The 1st sheet is delivered. The 3rd sheet is turned over and moved for duplexing registration. The 2nd sheet is moved for registration once again. The 4th sheet is picked up.



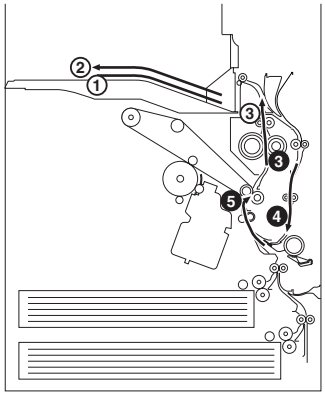
F-8-17

An image is formed for the 1st side of the 2nd sheet and for the 2nd side of the 4th sheet. The 3rd sheet is moved for duplexing.



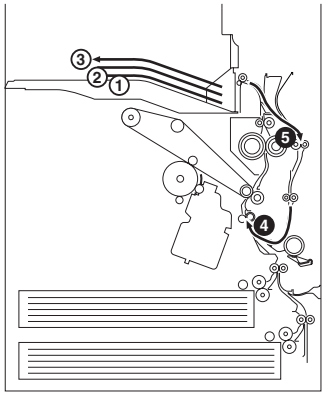
F-8-18

The 2nd sheet is delivered. The 4th sheet is reversed and is moved for duplexing registration. The 3rd sheet is picked for registration once again. The 5th sheet is picked up.



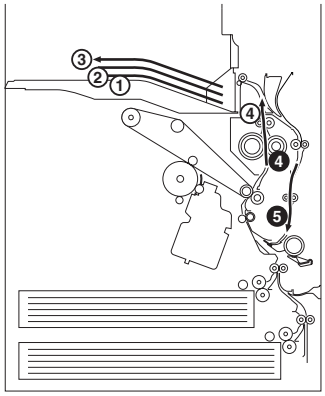
F-8-19

An image is formed for the 1st side of the 3rd sheet and for the 2nd side of the 5th sheet. The 4th sheet is moved for duplexing.



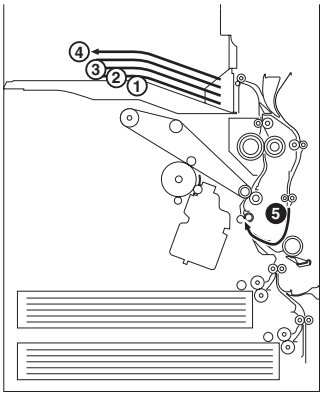
F-8-20

The 3rd sheet is delivered. The 5th sheet is turned over and moved for registration. The 4th sheet is moved for registration once again.



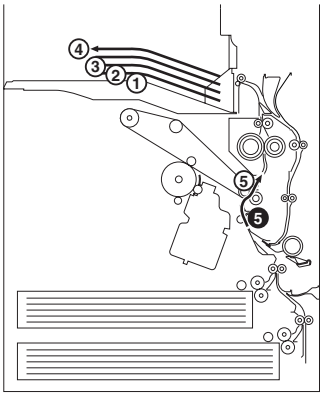
F-8-21

An image is formed for the 1st side of the 4th sheet. The 5th sheet is moved for duplexing.



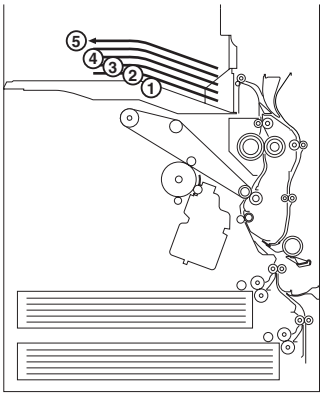
F-8-22

The 4th sheet is delivered. The 5th sheet is moved for registration once again.



F-8-23

An image is formed for the 1st side of the 5th sheet.

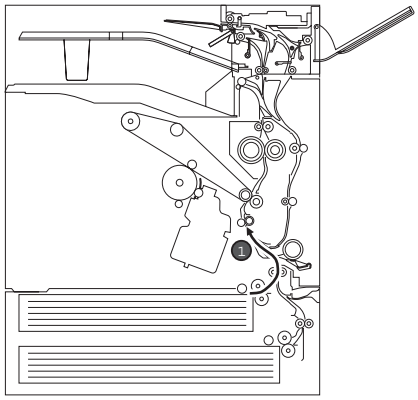


F-8-24

The 5th sheet is delivered.

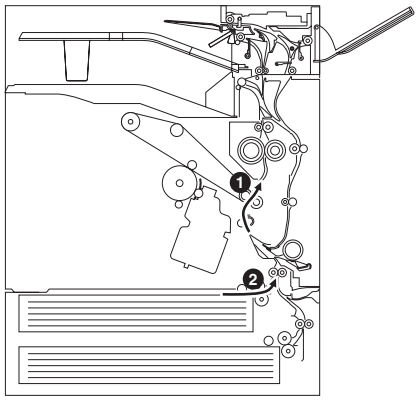
8.6.3 Flow of Paper (w/ Delivery option -internal delivery) 0001-4749

A4/LTR, 5 sheets, Delivery to tray 1/2
Although a different sheet-to-sheet interval is used for full-color operation, the sequence of image formation is the same.



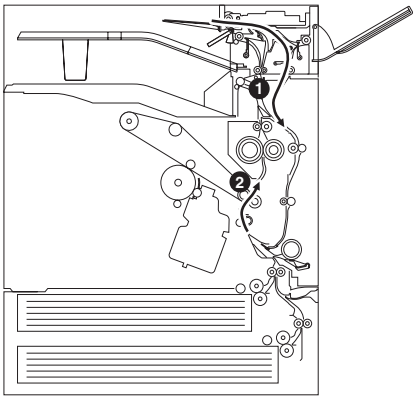
F-8-25

The 1st sheet is picked up.



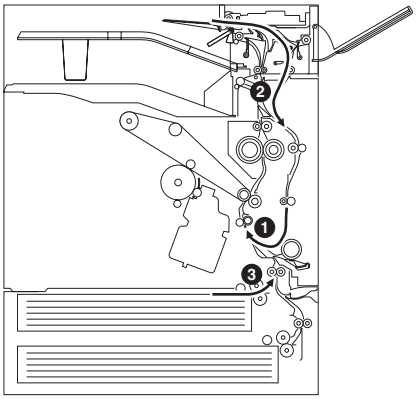
F-8-26

An image is formed for the 2nd side of the 1st sheet. The 2nd sheet is picked up.



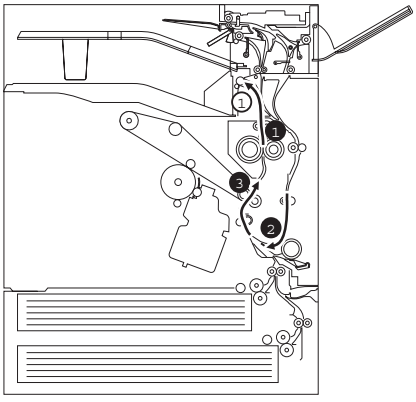
F-8-27

The 1st sheet is turned over, and is moved for duplexing registration. An image is formed for the 2nd side of the 2nd sheet.



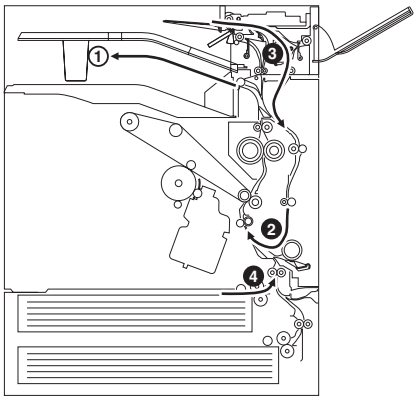
F-8-28

The 1st sheet is moved for registration once again. The 2nd sheet is turned over and moved for duplexing registration. The 3rd sheet is picked up.



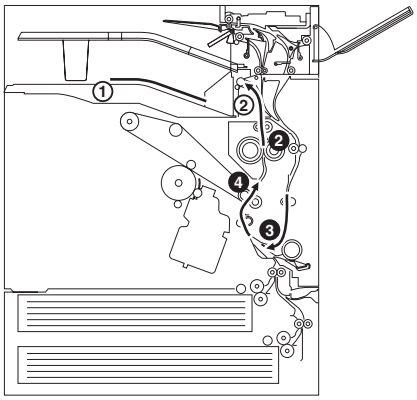
F-8-29

An image is formed for the 1st side of the 1st sheet and the 2nd side of the 3rd sheet. The 2nd sheet is moved for duplexing.



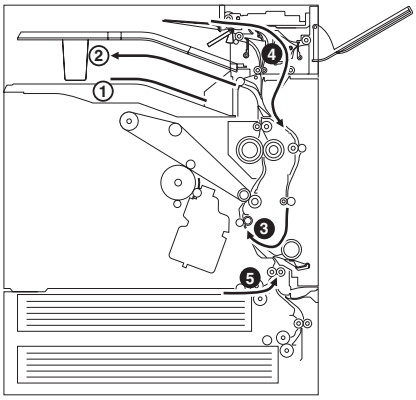
F-8-30

The 1st sheet is delivered. The 3rd sheet is turned over and is moved for duplexing registration. The 2nd sheet is moved for registration once again. The 4th sheet is picked up.



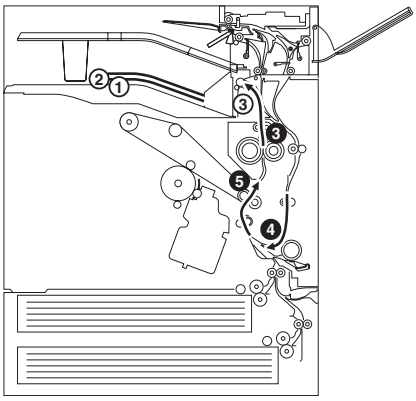
F-8-31

An image is formed for the 1st side of the 2nd sheet and for the 2nd side of the 4th sheet. The 3rd sheet is moved for duplexing.



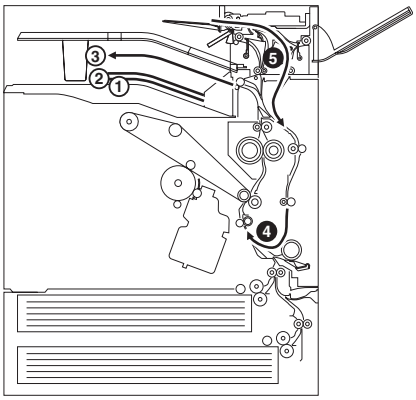
F-8-32

The 2nd sheet is delivered. The 4th sheet is turned over, and is moved for duplexing registration. The 3rd sheet is moved for registration once again. The 5th sheet is picked up.



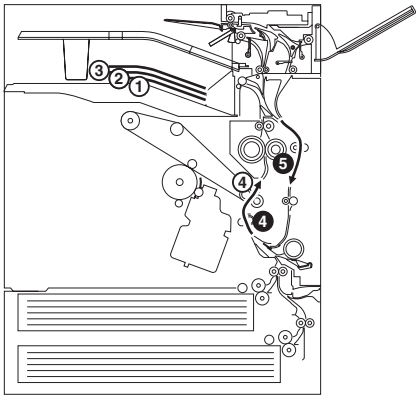
F-8-33

An image is formed for the 1st side of the 3rd sheet and for the 2nd side of the 5th sheet. The 5th sheet is moved for duplexing.



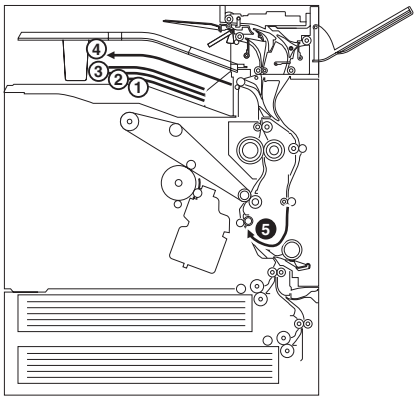
F-8-34

The 3rd sheet is delivery. The 5th sheet is turned over, and is moved for duplexing registration. The 4th sheet is moved for registration once again.



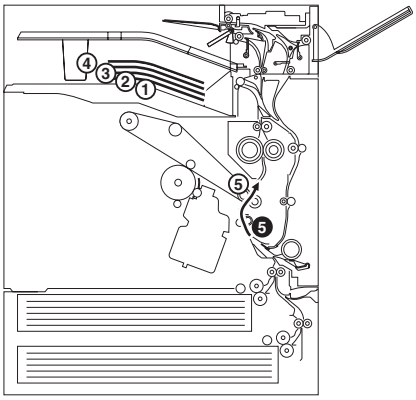
F-8-35

An image is formed for the 1st side of the 4th sheet. The 5th sheet is moved for duplexing.



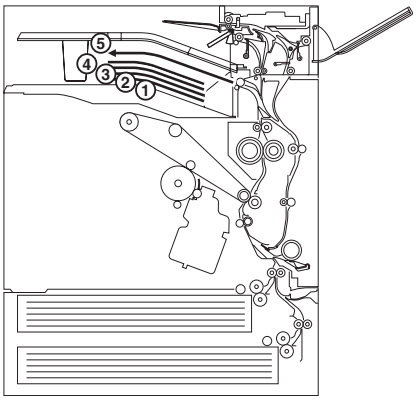
F-8-36

The 4th sheet is delivered. The 5th sheet is moved for registration once again.



F-8-37

An image is formed for the 1st side of the 5th sheet.

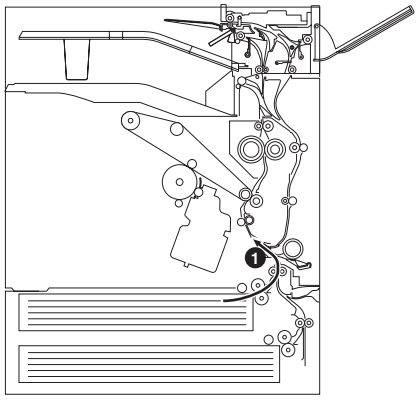


F-8-38

The 5th sheet is delivered.

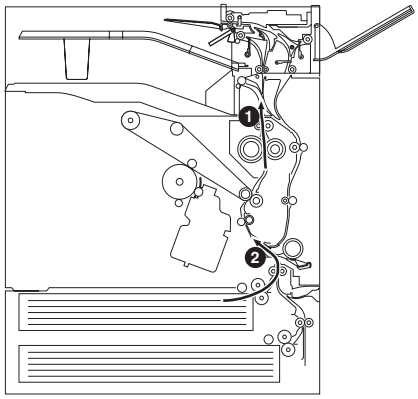
8.6.4 Flow of Paper (w/ Delivery option -external delivery) 0001-4750

A4/LTR, 3 sheets, Delivery to tray 3
Although a different sheet-to-sheet interval is used for full-color or A3/LDR size operation, the sequence of image formation is the same.



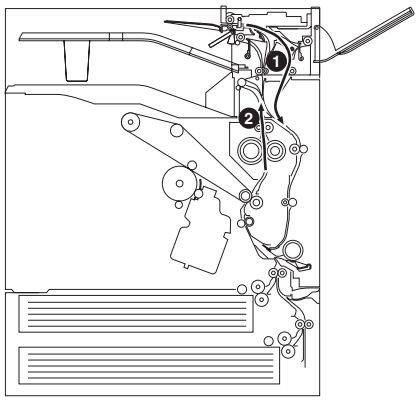
F-8-39

The 1st sheet is picked up.



F-8-40

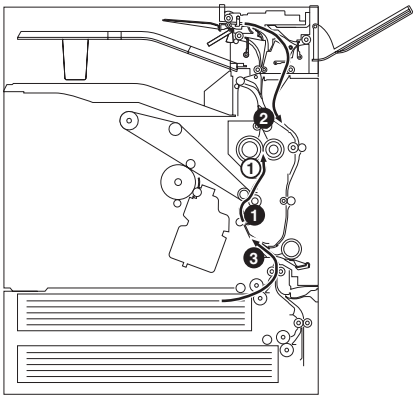
An image is formed for the 2nd side of the 1st sheet. The 2nd sheet is picked up.



F-8-41

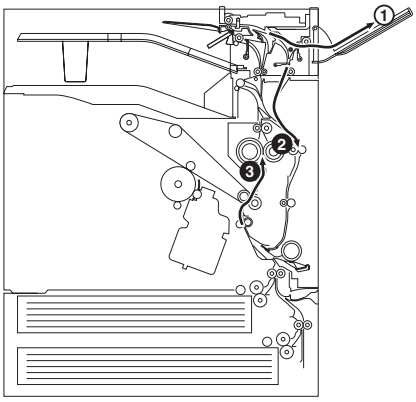
The 1st sheet is turned over, and is moved for duplexing registration. An image is formed for the 2nd side of the 2nd

sheet.



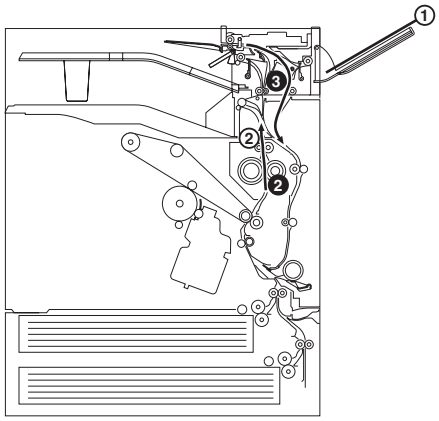
F-8-42

An image is formed for the 1st side of the 1st sheet. The 2nd sheet is turned over, and is moved for duplexing registration. The 3rd sheet is picked up.



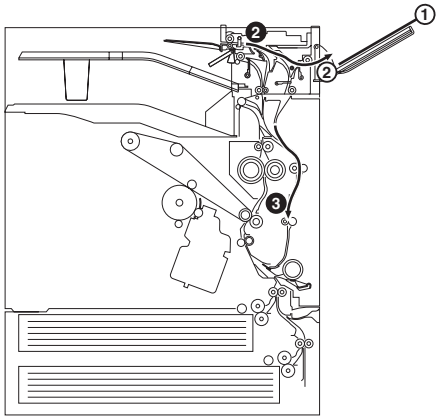
F-8-43

The 1st sheet is turned over, and an image is formed for the 2nd side of the 3rd sheet. The 2nd sheet is kept in wait for duplexing registration.



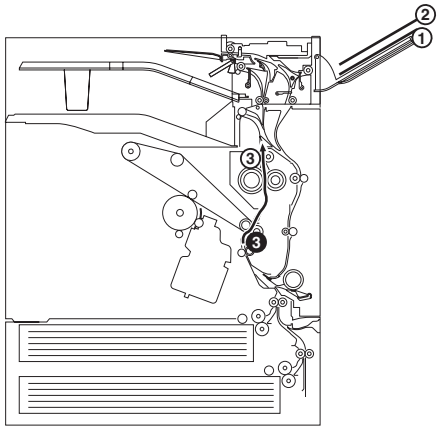
F-8-44

An image is formed for the 1st side of the 2nd sheet. The 3rd sheet is tuned over, and is moved for duplexing registration.



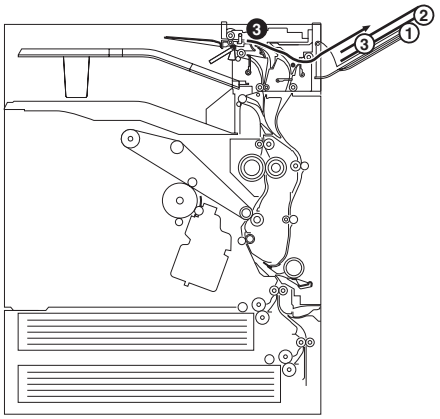
F-8-45

The 2nd sheet is turned over, and is delivered. The 3rd sheet is moved for duplexing.



F-8-46

An image is formed for the 1st side of the 3rd sheet.



F-8-47

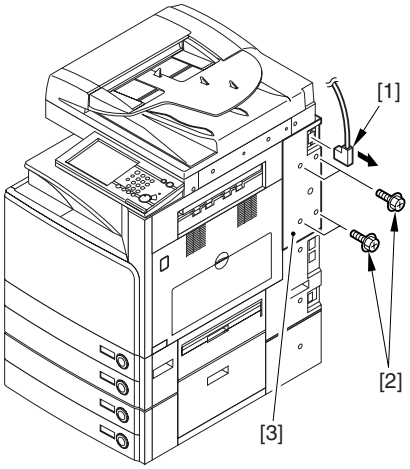
The 3rd sheet is turned over, and is delivered.

8.7 Parts Replacement Procedure

8.7.1 Pickup Unit 1

8.7.1.1 Removing the Right Cover (upper rear) 0002-0446

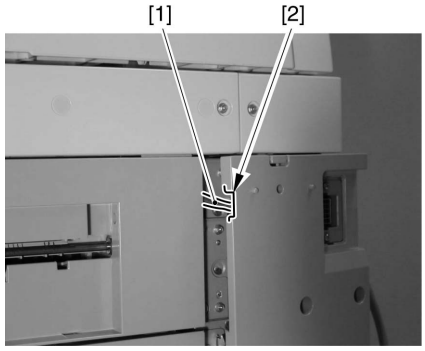
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-48

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

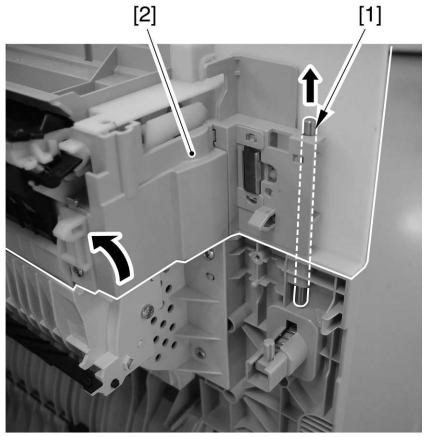
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-49

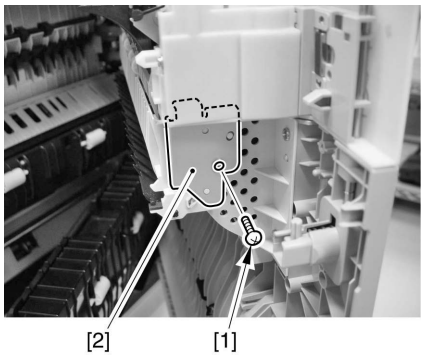
8.7.1.2 Removing the Right Door 0001-2706

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



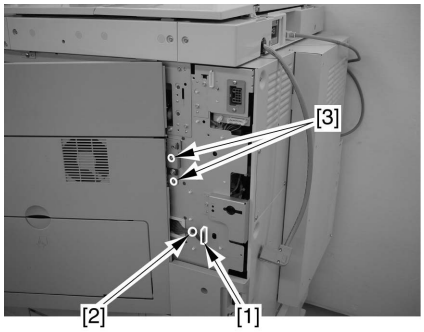
F-8-50

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



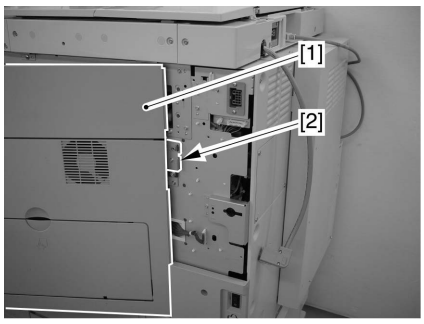
F-8-51

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-52

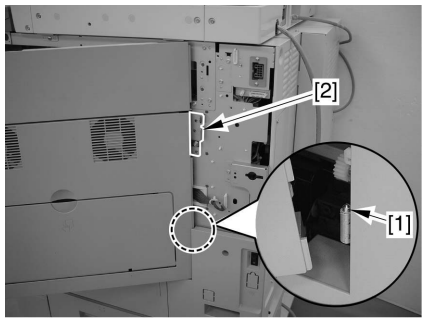
6) Detach the right door [1] together with the hinge [2].



F-8-53

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

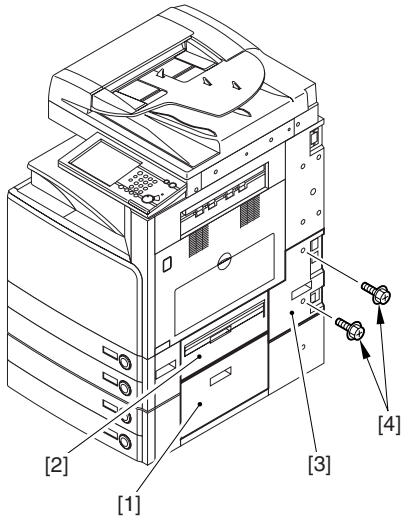


F-8-54

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.7.1.3 Removing the Right Cover (lower rear) 0002-0384

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-55

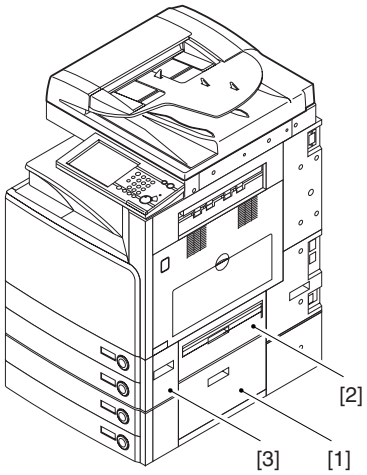
8.7.1.4 Removing the Right Cover (lower front) 0002-0079

1) Open the right door [1] of the pedestal (if a 2-

Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

3) Remove the 2 screws, and detach the right cover (lower front) [3].

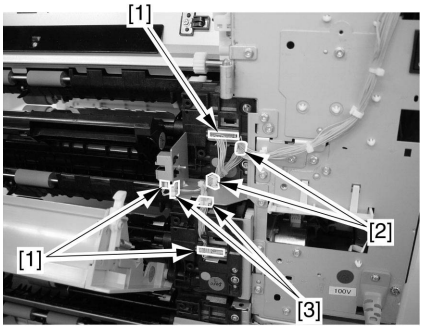


F-8-56

8.7.1.5 Removing the Pickup Assembly 1 0001-1972

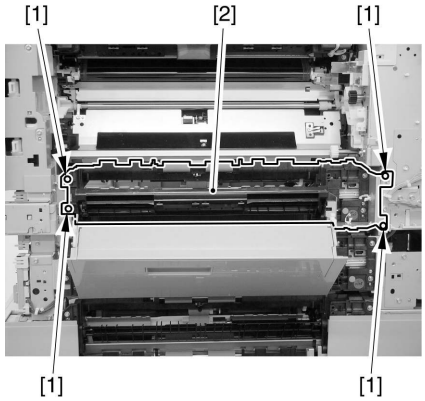
1) Slide out the cassette 1/2.

2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-57

3) Remove the 4 screws [1], and take out the pickup unit 1 [2].



F-8-58

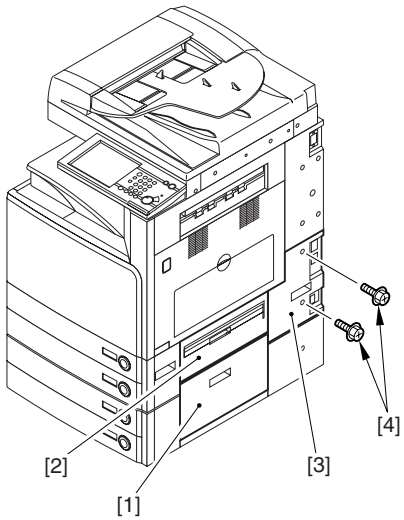
8.7.2 Pickup Unit 2

8.7.2.1 Removing the Right Cover (lower rear) 0002-0385

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

3) Remove the 2 screws, and detach the right cover (lower rear) [3].

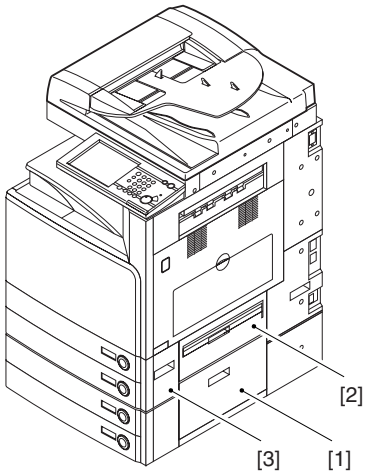


F-8-59

8.7.2.2 Removing the Right Cover (lower front) 0002-0080

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

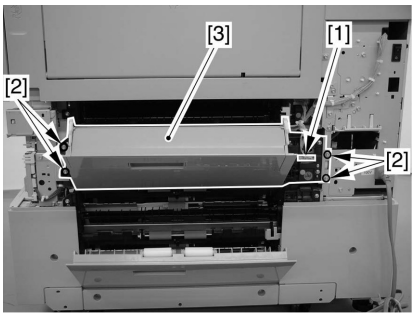
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].



F-8-60

8.7.2.3 Removing the Pickup Assembly 2 0001-1549

1) Slide out the cassette 1/2.
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].

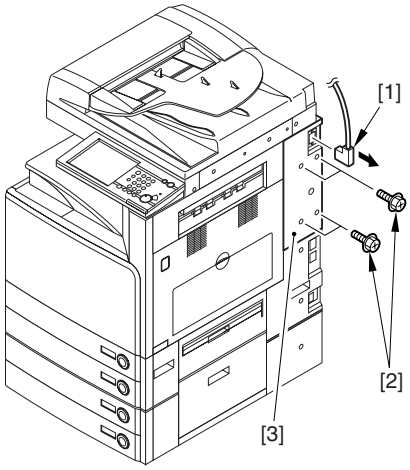


F-8-61

8.7.3 Sensor Mounting Plate

8.7.3.1 Removing the Right Cover (upper rear) 0002-0425

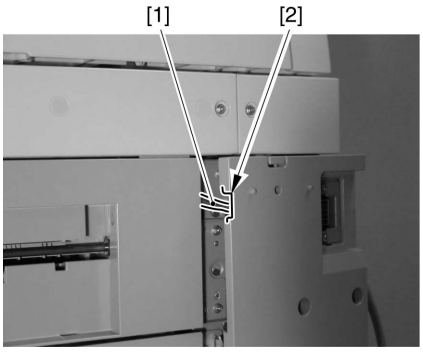
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-62

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

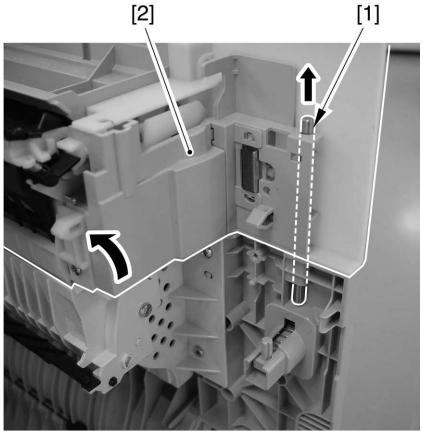
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-63

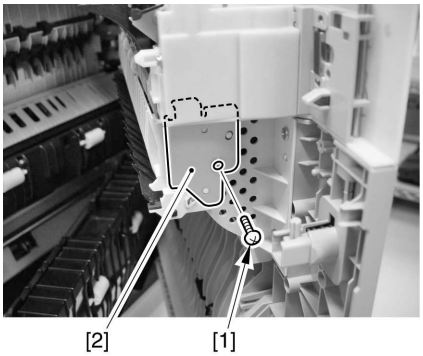
8.7.3.2 Removing the Right Door 0001-4378

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-64

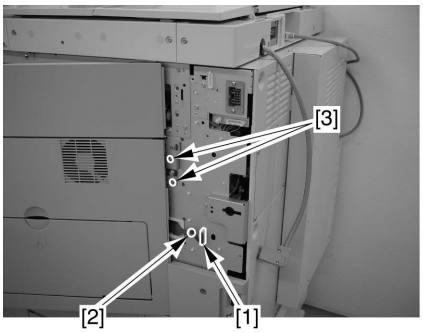
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-65

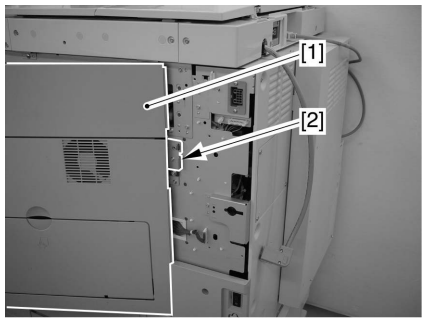
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-66

6) Detach the right door [1] together with the hinge [2].

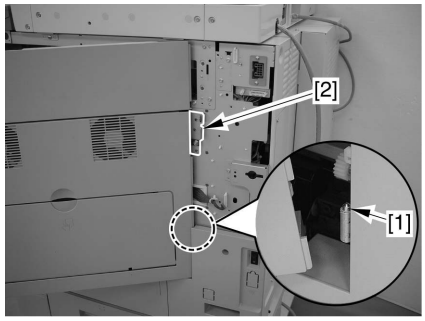


F-8-67

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



F-8-68

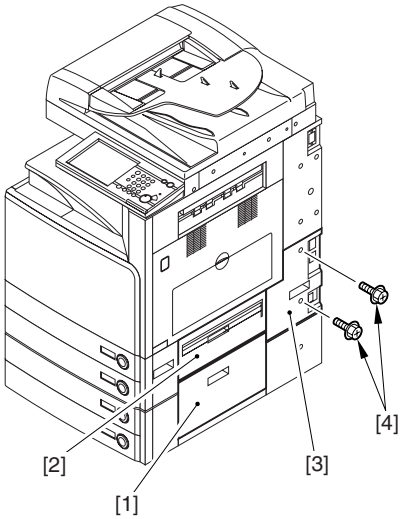
⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.7.3.3 Removing the Right Cover (lower rear) 0002-0401

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

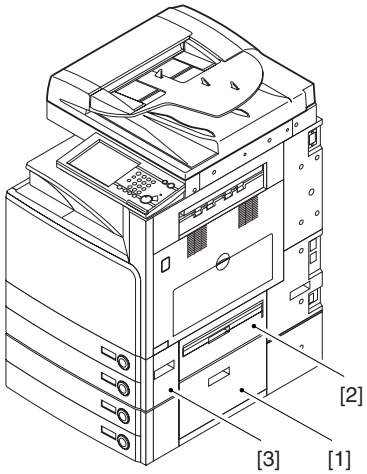
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-69

8.7.3.4 Removing the Right Cover (lower front) 0002-0086

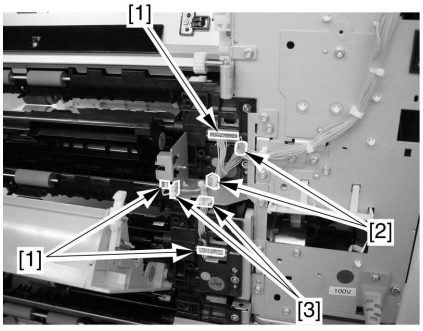
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].



F-8-70

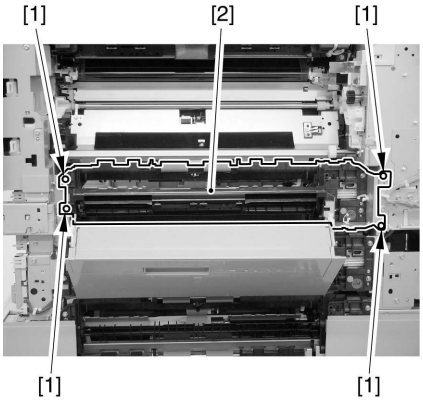
8.7.3.5 Removing the Pickup Assembly 1 0001-1800

1) Slide out the cassette 1/2.
2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-71

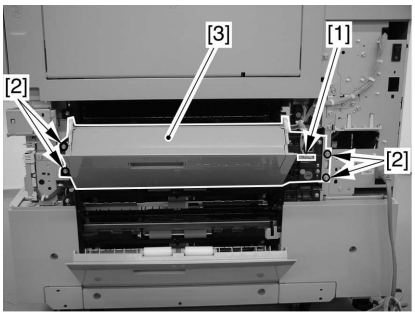
3) Remove the 4 screws [1], and take out the pickup unit 1 [2].



F-8-72

8.7.3.6 Removing the Pickup Assembly 2 0001-1802

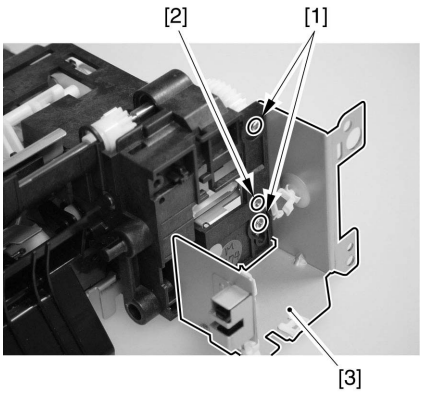
1) Slide out the cassette 1/2.
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].



F-8-73

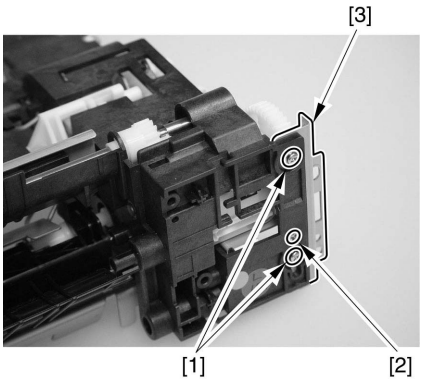
8.7.3.7 Removing the Sensor Base 0001-1808

1) Remove the 2 TP screws [1] and the binding screw [2] from the rear of the pickup assembly, and detach the bracket [3].



F-8-74

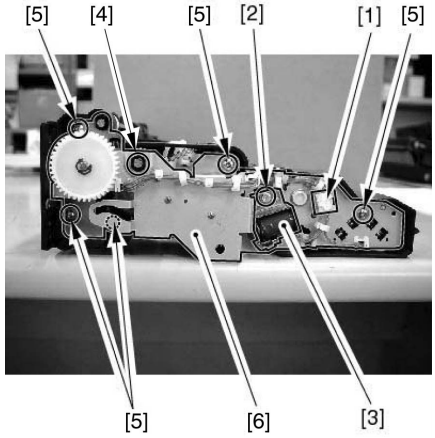
Pickup Unit 1



F-8-75

Pickup Unit 2

2) Disconnect the connector [1], and remove the screw; then, detach the cassette pickup solenoid [3].
3) Remove the bushing [4] and the 5 screws [5]; then, detach the sensor base [6].

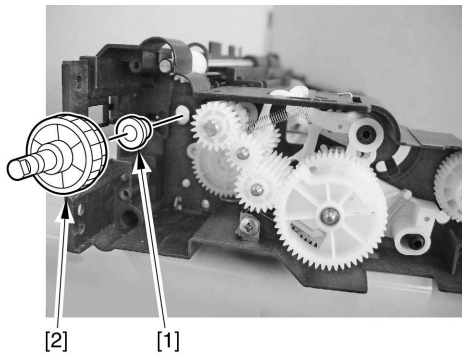


F-8-76

8.7.3.8 Mounting the Sensor Base 0002-5589

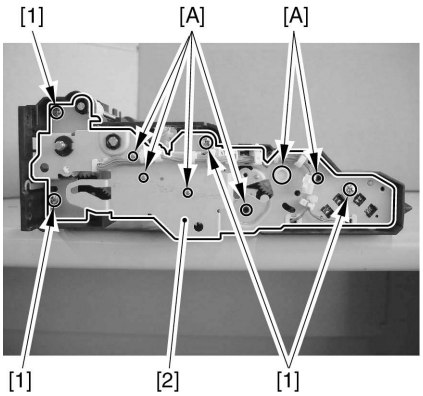
⚠Take care not to orient the pickup unit facing down when mounting the sensor base; otherwise, the gears will fall out.

1) After fitting the bushing [1] to the frame, mount the gear shaft [2].



F-8-77

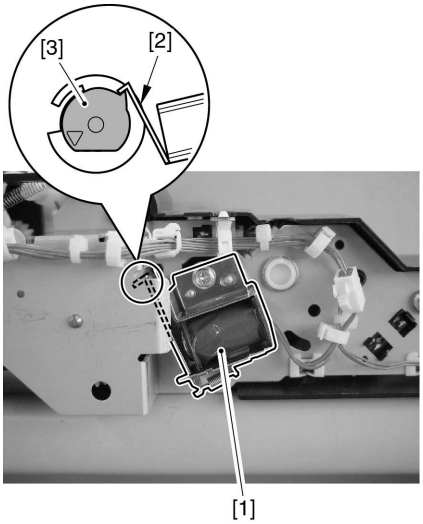
2) Fit the 6 points [A] indicated in the figure in the holes of the base; then, mount the sensor base [2] using 4 screws [1].



F-8-78

3) Mount the gear [1] and the E-ring [2].

⚠Be sure not to leave out the pickup solenoid [1]. When mounting it, be sure that the stop [2] is fully engaged with the cam gear [3].



F-8-79

⚠Try turning the gears to be sure that they turn without resistance.

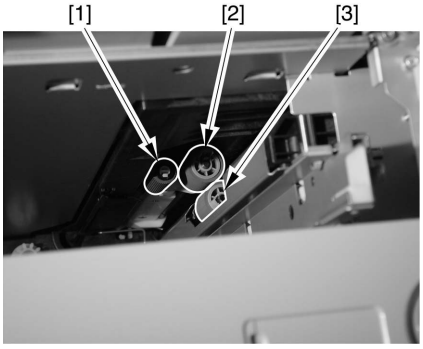
8.7.4 Pickup Roller

8.7.4.1 Removing the Pickup Roller/Feed Roller/ Separation Roller 0003-5923

1) Slide out the cassette.

2) Open the right door (in the case of the separation roller).

3) Pick the tabs of the individual rollers, and detach the pickup roller [1], feed roller [2], and separation roller [3].



F-8-80

⚠Point to Note When Replacing the Feed/ Separation Roller 1

The collar (roller core) of the machine's feed/ separation roller is black.

Be sure not to use a collar (mint green) used for the feed/separation roller of a different model; otherwise, the ingredients used in the roller will build up on the intermediate transfer belt, causing transfer faults.

⚠Point to Note When Replacing the Feed/ Separation Roller 2

The collar (roller core) of a separation/feed roller shipped as a service part is black.

Although some machines come with a separation/ feed roller that has a gray collar, be sure to use a separation/feed roller with a black collar if you need to replace the roller.

8.7.5 Feed Roller

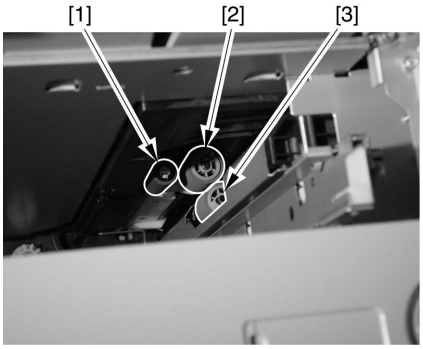
8.7.5.1 Removing the Pickup Roller/Feed Roller/ Separation Roller 0003-5924

1) Slide out the cassette.

2) Open the right door (in the case of the separation

roller).

3) Pick the tabs of the individual rollers, and detach the pickup roller [1], feed roller [2], and separation roller [3].



F-8-81

⚠Point to Note When Replacing the Feed/ Separation Roller 1

The collar (roller core) of the machine's feed/ separation roller is black.

Be sure not to use a collar (mint green) used for the feed/separation roller of a different model; otherwise, the ingredients used in the roller will build up on the intermediate transfer belt, causing transfer faults.

⚠Point to Note When Replacing the Feed/ Separation Roller 2

The collar (roller core) of a separation/feed roller shipped as a service part is black.

Although some machines come with a separation/ feed roller that has a gray collar, be sure to use a separation/feed roller with a black collar if you need to replace the roller.

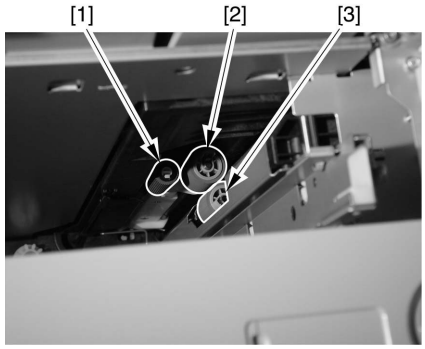
8.7.6 Separation Roller

8.7.6.1 Removing the Pickup Roller/Feed Roller/ Separation Roller 0003-5925

1) Slide out the cassette.

2) Open the right door (in the case of the separation roller).

3) Pick the tabs of the individual rollers, and detach the pickup roller [1], feed roller [2], and separation roller [3].



F-8-82

⚠Point to Note When Replacing the Feed/ Separation Roller 1

The collar (roller core) of the machine's feed/ separation roller is black.

Be sure not to use a collar (mint green) used for the feed/separation roller of a different model; otherwise, the ingredients used in the roller will build up on the intermediate transfer belt, causing transfer faults.

⚠Point to Note When Replacing the Feed/ Separation Roller 2

The collar (roller core) of a separation/feed roller shipped as a service part is black.

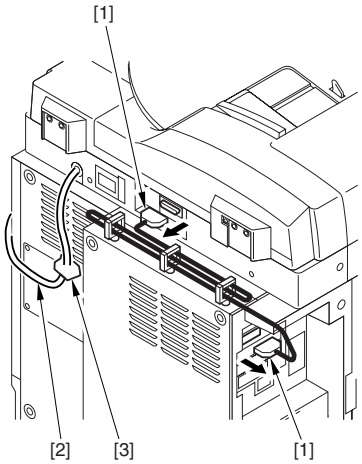
Although some machines come with a separation/ feed roller that has a gray collar, be sure to use a separation/feed roller with a black collar if you need to replace the roller.

8.7.7 Cassette Pickup Motor 1

8.7.7.1 Removing the Rear Cover 0002-0471

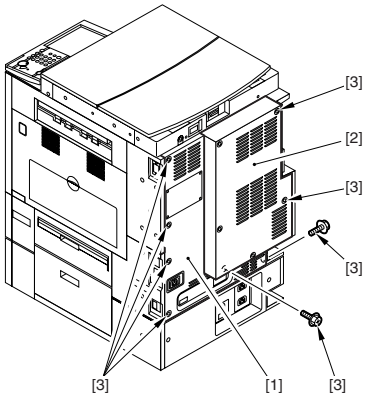
1) Disconnect the 2 connectors [1] of the reader communication cable.

2) Free the reader power supply cable [2] from the cable clamp [3].



F-8-83

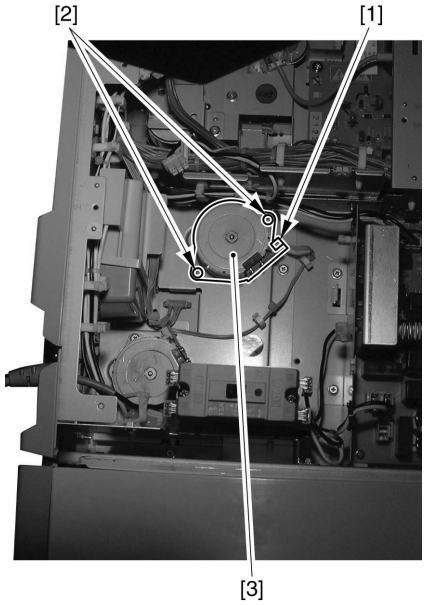
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-8-84

8.7.7.2 Removing the Cassette Pickup Motor 1 0001-1610

1) Disconnect the connector [1].
2) Remove the 2 screws [2], and detach the pickup motor 1 [3].

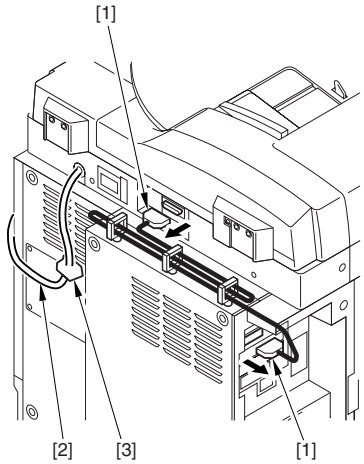


F-8-85

8.7.8 Cassette Pickup Motor 2

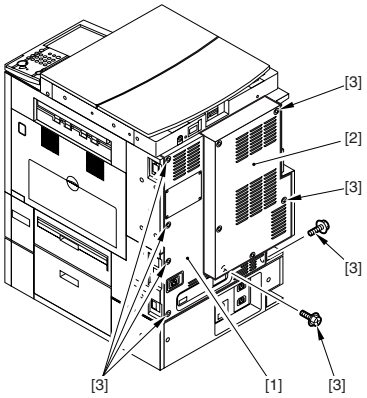
8.7.8.1 Removing the Rear Cover 0002-0473

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-8-86

3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])

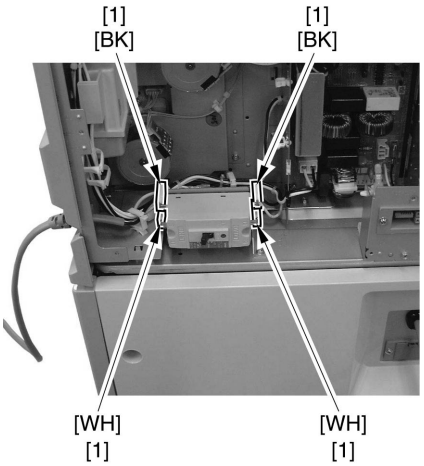


F-8-87

8.7.8.2 Removing the Leakage Breaker 0001-3735

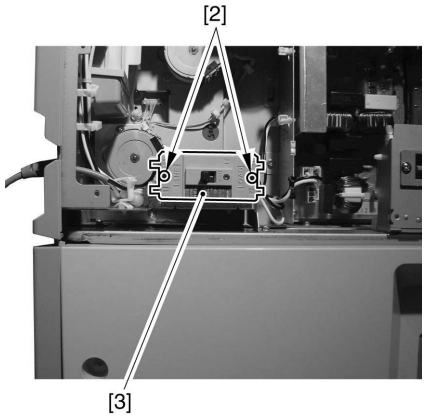
1) Remove the 4 fastons [1].

⚠The cords connected to the fastons are color-coded; be sure the colors are correctly matched when connecting them once again.



F-8-88

2) Remove the 2 screws [2], and detach the leakage breaker [3].

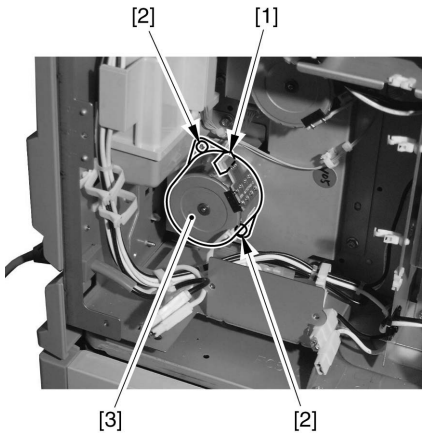


F-8-89

8.7.8.3 Removing the Cassette Pickup Motor 2 0001-1653

1) Disconnect the connector [1].

2) Remove the 2 screws [2], and detach the pickup motor 2 [3].



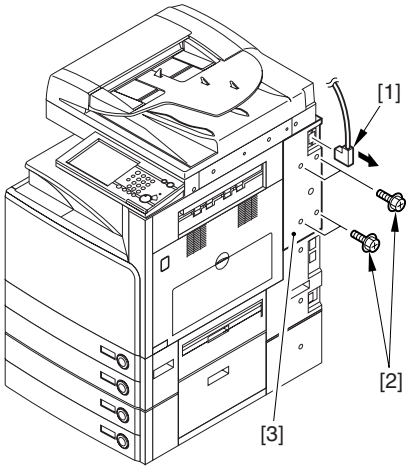
F-8-90

8.7.9 Cassette Size Detection Sensor

8.7.9.1 Removing the Right Cover (upper rear) 0002-0437

1) Disconnect the power cable [1] from the printer unit.

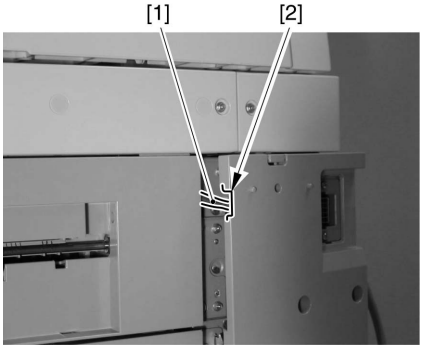
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-91

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

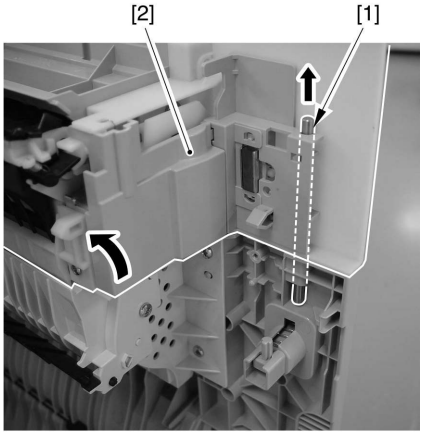


F-8-92

8.7.9.2 Removing the Right Door

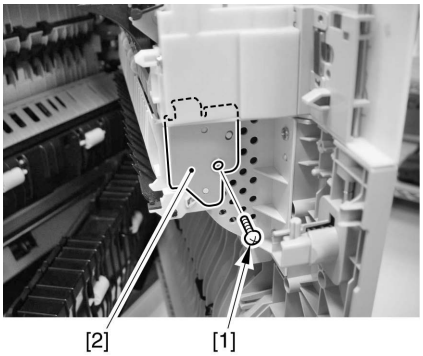
0001-1762

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



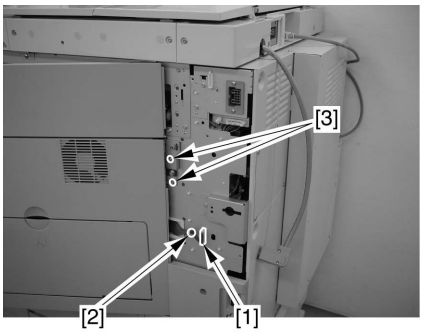
F-8-93

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



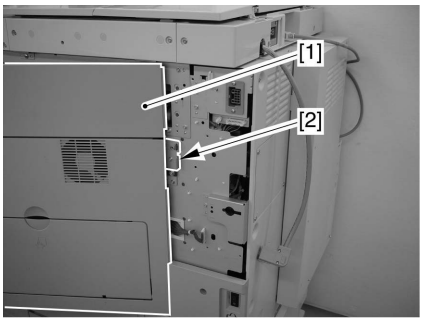
F-8-94

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-95

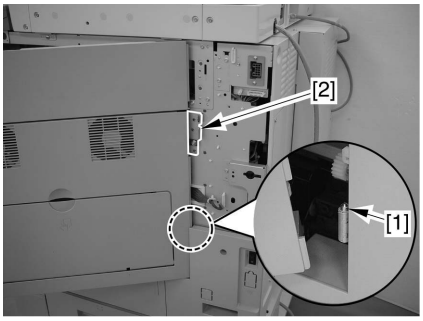
6) Detach the right door [1] together with the hinge [2].



F-8-96

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

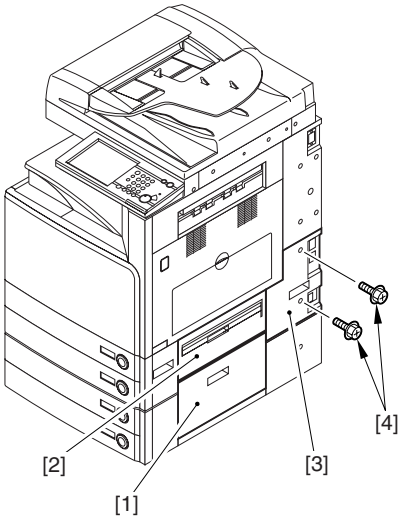


F-8-97

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.7.9.3 Removing the Right Cover (lower rear) 0002-0389

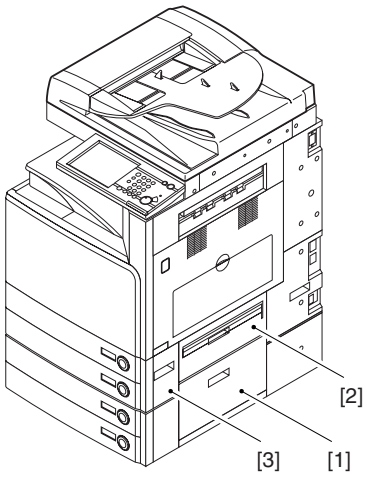
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-98

8.7.9.4 Removing the Right Cover (lower front) 0002-0383

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].

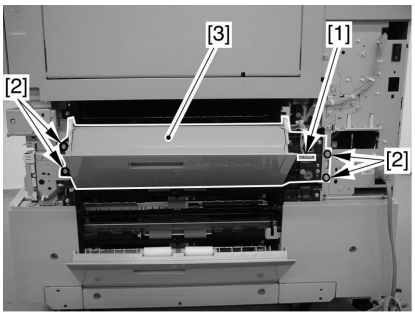


F-8-99

8.7.9.5 Removing the Pickup Assembly 2 0003-0007

1) Slide out the cassette 1/2.
2) Disconnect the connector [1], and free the harness

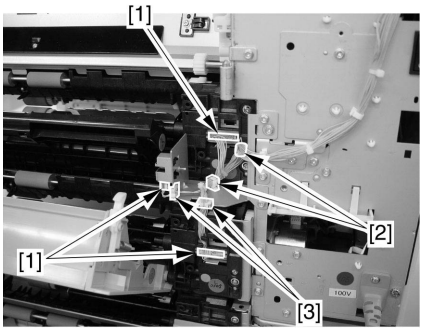
from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].



F-8-100

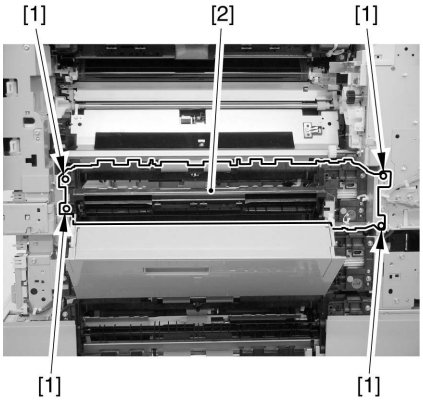
8.7.9.6 Removing the Pickup Assembly 1 0001-1766

1) Slide out the cassette 1/2.
2) Disconnect that 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-101

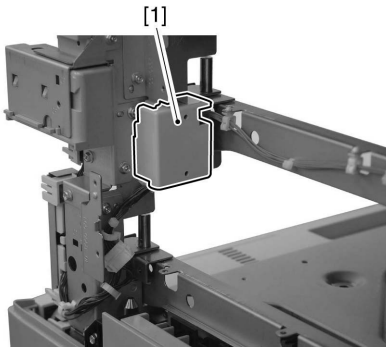
3) Remove the 4 screws [1], and take out the pickup unit 1 [2].



F-8-102

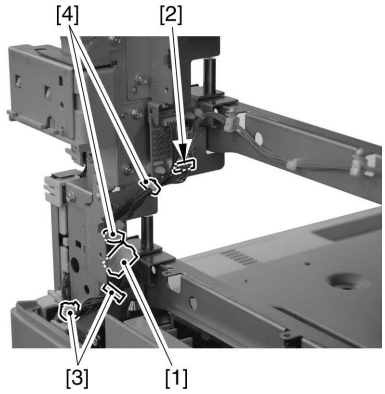
8.7.9.7 Removing the Cassette Size Sensor 0001-1769

1) Remove the snap stop, and detach the PCB cover [1].



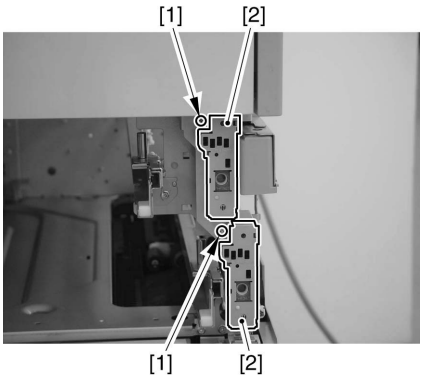
F-8-103

2) Disconnect the connector from the cassette size sensor relay PCB (in the case of the size sensor 1, disconnect the connector [1]; in the case of the size sensor 2, disconnect the connector [2]).
3) Free the harness from the clamp (in the case of the size sensor 1, the 2 clamps [3]; in the case of the size sensor 2, the 4 clamps [3] and [4]).



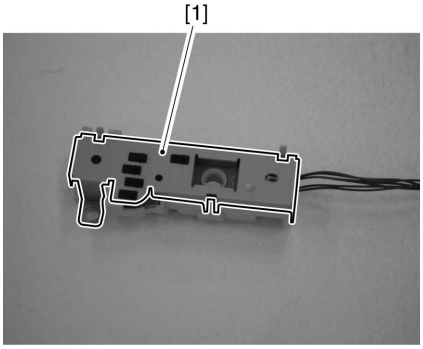
F-8-104

4) Remove the screw [1], and detach the cassette size sensor together with the PCB [2] (in the case of the size sensor 1, together with the size sensor 2; in the case of the size sensor 2, remove the sensor on its own).



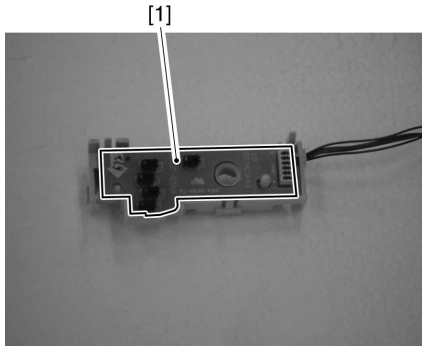
F-8-105

5) Detach the cover [1] from the PCB.



F-8-106

6) Detach the size sensor [1] from the PCB.

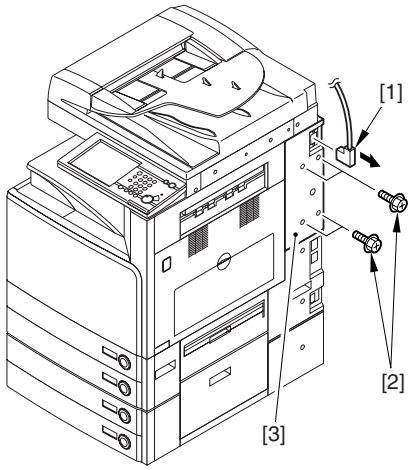


F-8-107

8.7.10 Cassette Retry Paper Sensor

8.7.10.1 Removing the Right Cover (upper rear) 0002-0443

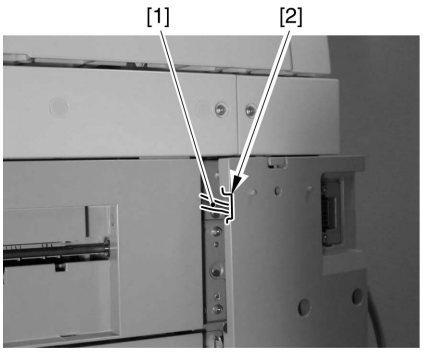
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-108

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

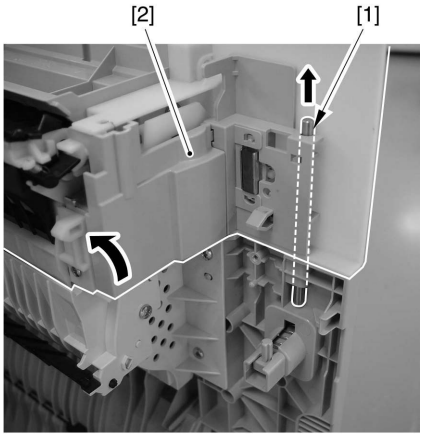


F-8-109

8.7.10.2 Removing the Right Door

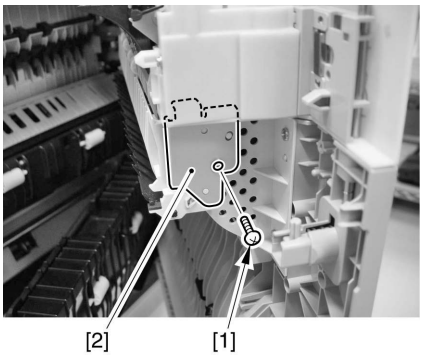
0001-1562

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



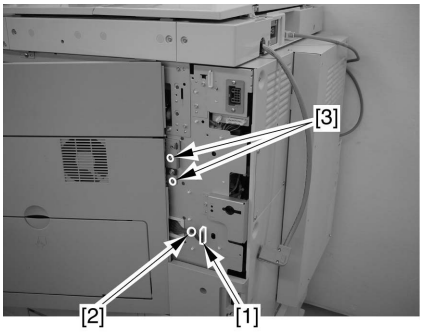
F-8-110

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



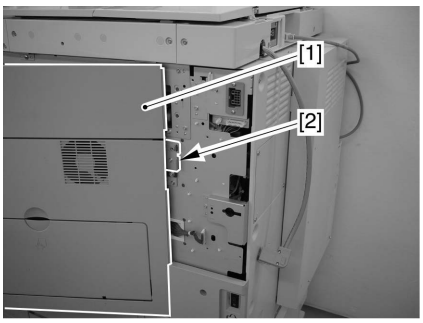
F-8-111

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-112

6) Detach the right door [1] together with the hinge [2].

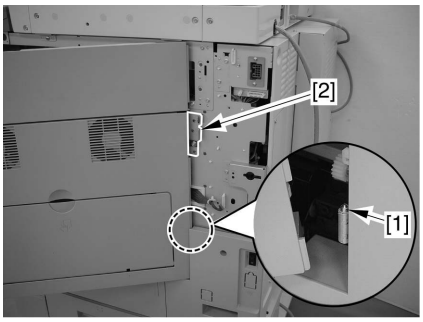


F-8-113

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

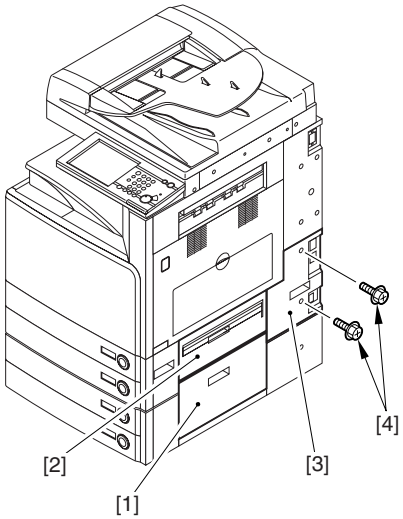


F-8-114

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.7.10.3 Removing the Right Cover (lower rear) 0002-0397

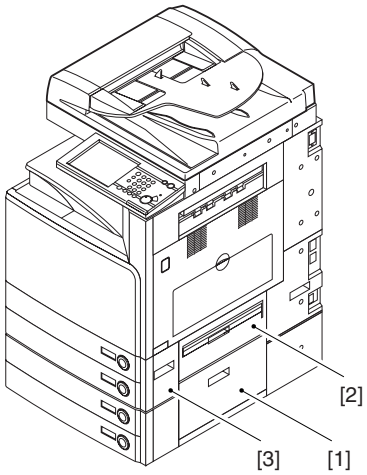
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-115

8.7.10.4 Removing the Right Cover (lower front) 0002-0088

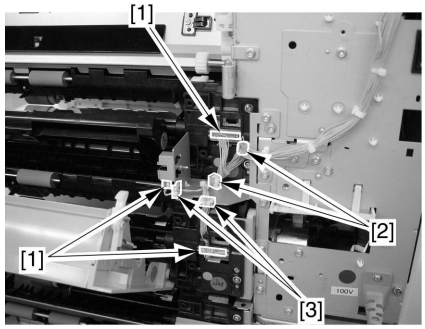
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].



F-8-116

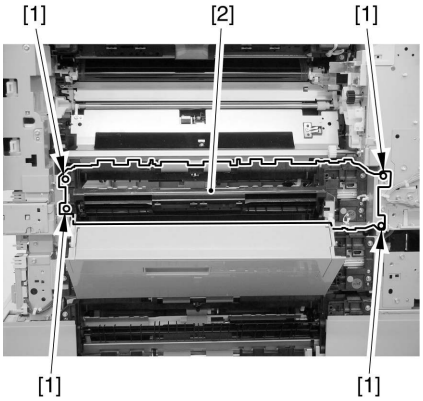
8.7.10.5 Removing the Pickup Assembly 1 0001-1566

1) Slide out the cassette 1/2.
2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-117

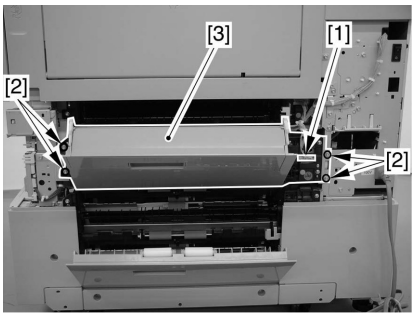
3) Remove the 4 screws [1], and take out the pickup unit 1 [2].



F-8-118

8.7.10.6 Removing the Pickup Assembly 2 0001-1567

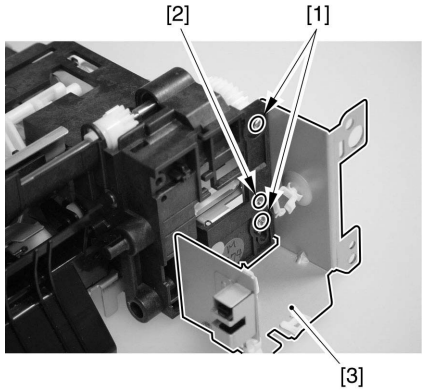
1) Slide out the cassette 1/2.
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].



F-8-119

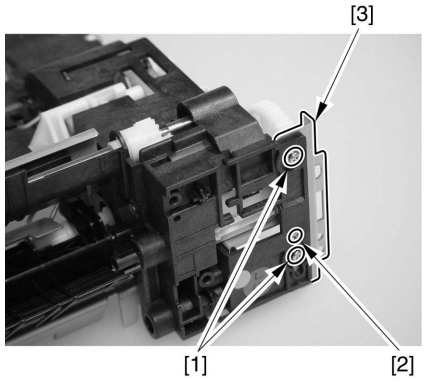
8.7.10.7 Removing the Sensor Base 0001-3721

1) Remove the 2 TP screws [1] and the binding screw [2] from the rear of the pickup assembly, and detach the bracket [3].



F-8-120

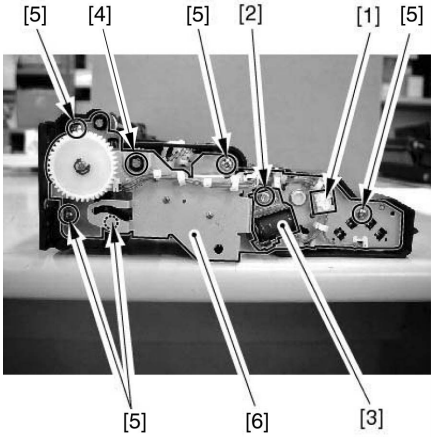
Pickup Unit 1



F-8-121

Pickup Unit 2

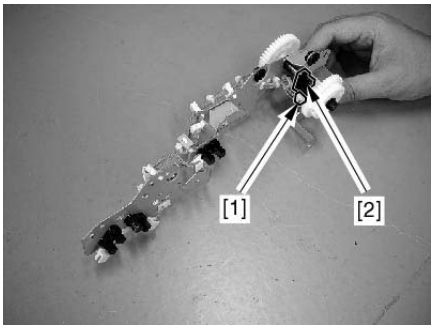
2) Disconnect the connector [1], and remove the screw; then, detach the cassette pickup solenoid [3].
3) Remove the bushing [4] and the 5 screws [5]; then, detach the sensor base [6].



F-8-122

8.7.10.8 Removing the Cassette Retry Paper Sensor 0001-1569

1) Disconnect the connector [1], and detach the cassette retry paper sensor [2].

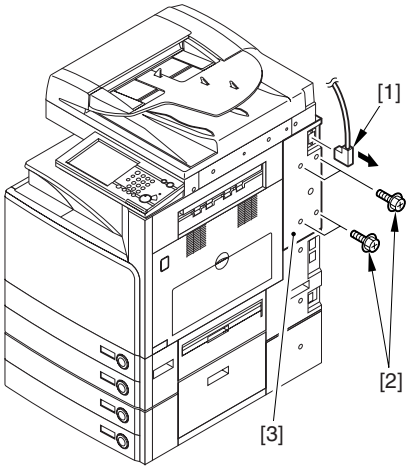


F-8-123

8.7.11 Cassette Paper Sensor

8.7.11.1 Removing the Right Cover (upper rear) 0002-0442

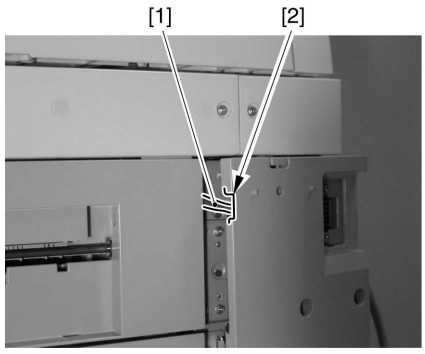
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-124

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

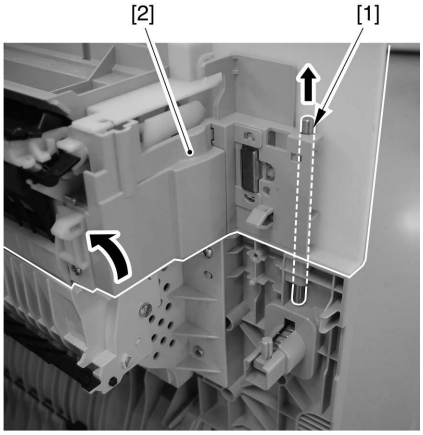
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-125

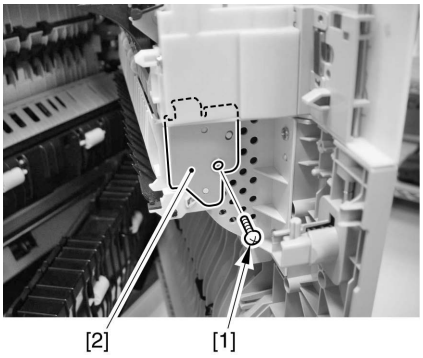
8.7.11.2 Removing the Right Door 0001-1571

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



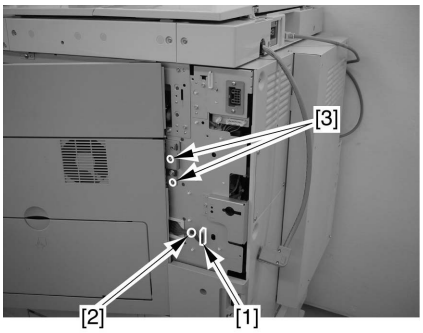
F-8-126

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



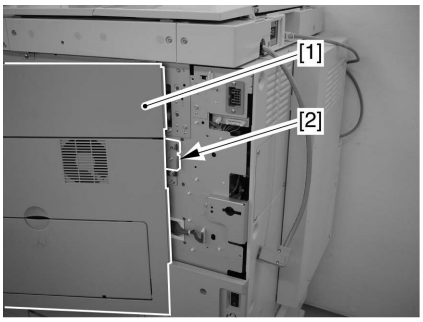
F-8-127

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-128

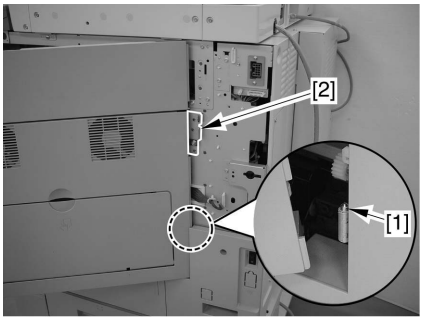
6) Detach the right door [1] together with the hinge [2].



F-8-129

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

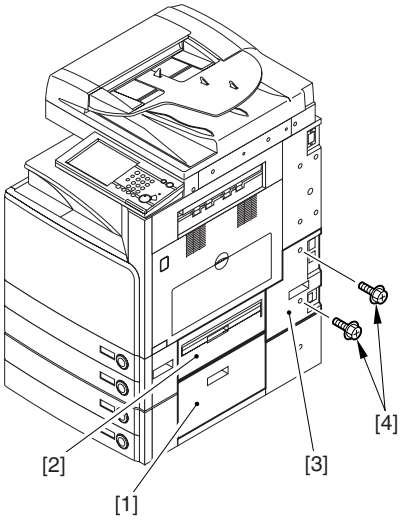


F-8-130

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.7.11.3 Removing the Right Cover (lower rear) 0002-0398

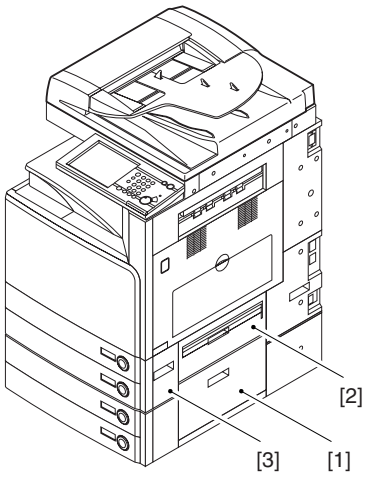
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-131

8.7.11.4 Removing the Right Cover (lower front) 0002-0083

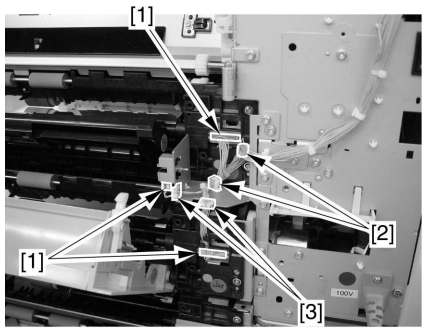
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].



F-8-132

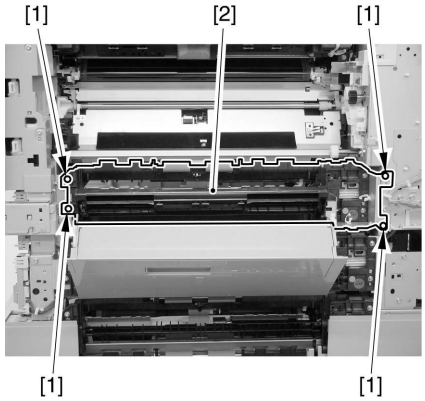
8.7.11.5 Removing the Pickup Assembly 1 0001-1576

1) Slide out the cassette 1/2.
2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-133

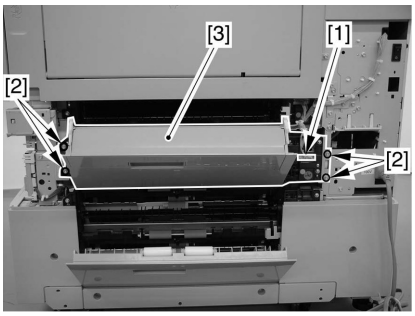
3) Remove the 4 screws [1], and take out the pickup unit 1 [2].



F-8-134

8.7.11.6 Removing the Pickup Assembly 2 0001-1580

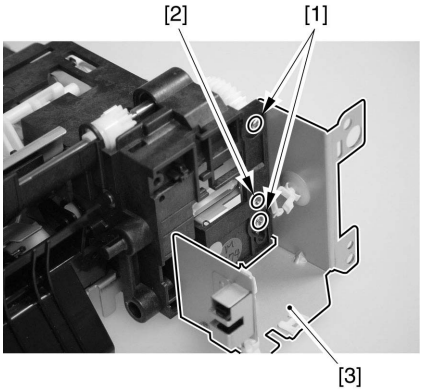
1) Slide out the cassette 1/2.
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].



F-8-135

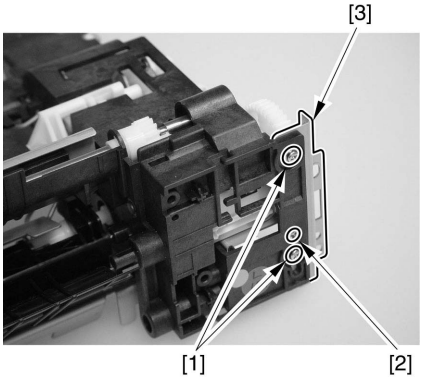
8.7.11.7 Removing the Sensor Base 0001-1581

1) Remove the 2 TP screws [1] and the binding screw [2] from the rear of the pickup assembly, and detach the bracket [3].



F-8-136

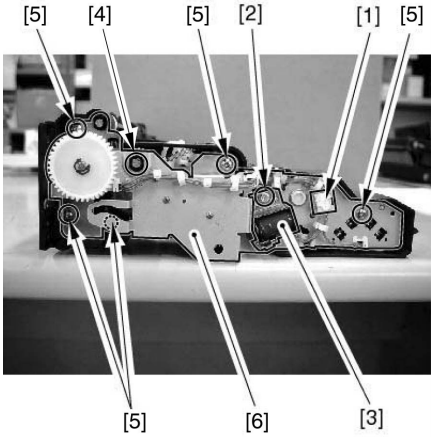
Pickup Unit 1



F-8-137

Pickup Unit 2

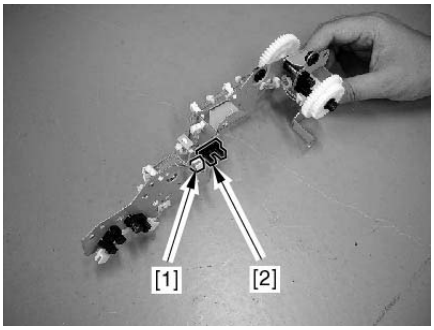
2) Disconnect the connector [1], and remove the screw; then, detach the cassette pickup solenoid [3].
3) Remove the bushing [4] and the 5 screws [5]; then, detach the sensor base [6].



F-8-138

8.7.11.8 Removing the Cassette Paper Sensor 0001-1584

1) Disconnect the connector [1], and detach the cassette paper sensor [2].



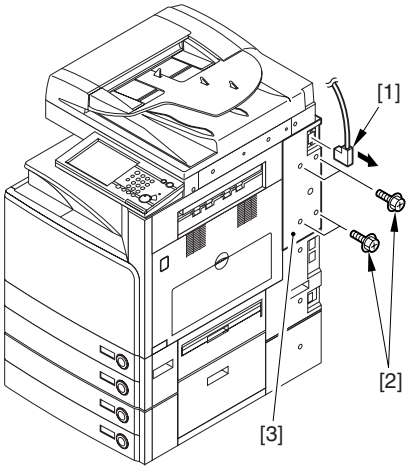
F-8-139

8.7.12 Cassette Paper Level Sensor (A/B)

8.7.12.1 Removing the Right Cover (upper rear) 0002-0441

1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover

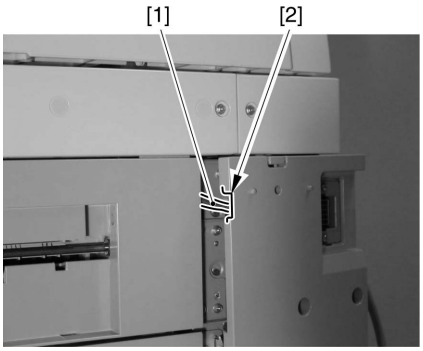
(upper rear) [3].



F-8-140

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

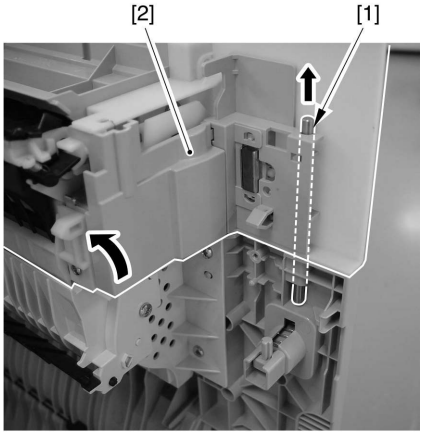


F-8-141

8.7.12.2 Removing the Right Door

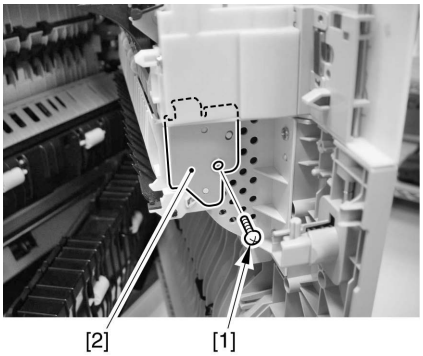
0001-1587

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



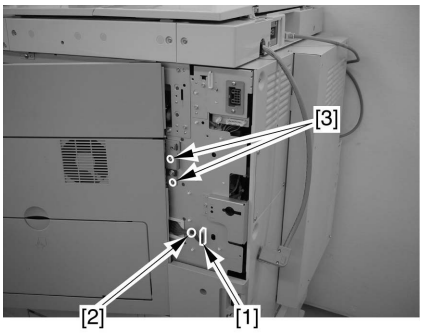
F-8-142

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



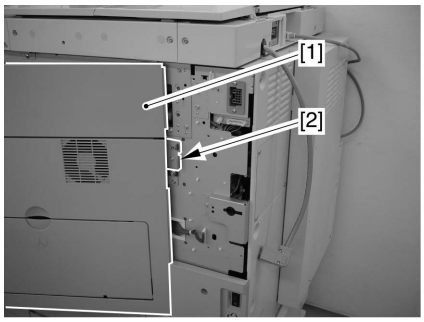
F-8-143

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-144

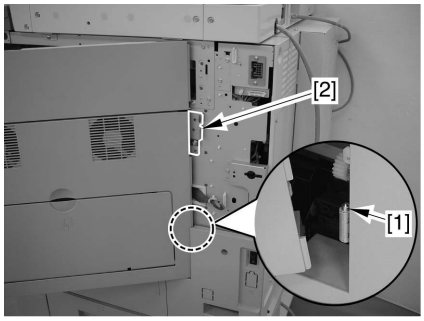
6) Detach the right door [1] together with the hinge [2].



F-8-145

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

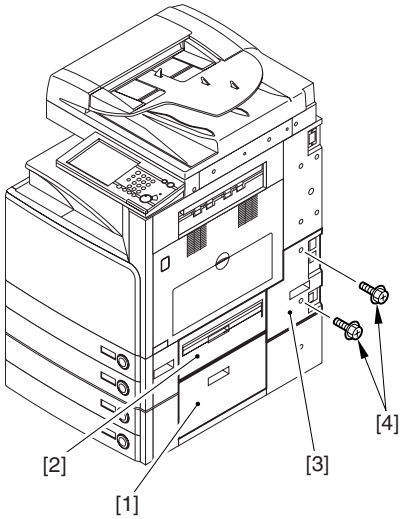


F-8-146

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.7.12.3 Removing the Right Cover (lower rear) 0002-0399

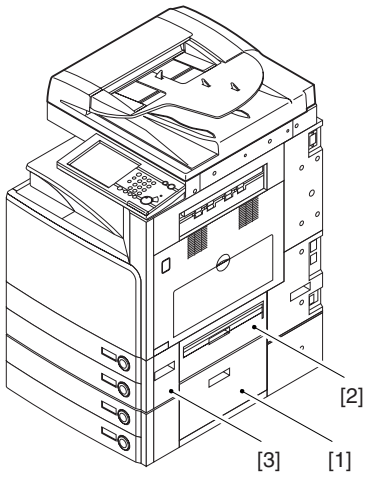
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-147

8.7.12.4 Removing the Right Cover (lower front) 0002-0084

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].

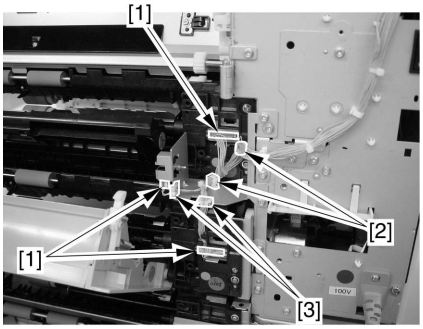


F-8-148

8.7.12.5 Removing the Pickup Assembly 1 0001-1594

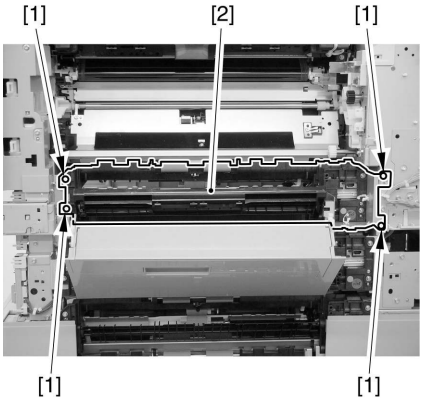
1) Slide out the cassette 1/2.
2) Disconnect the 3 connectors [1]; then, free the

harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-149

3) Remove the 4 screws [1], and take out the pickup unit 1 [2].



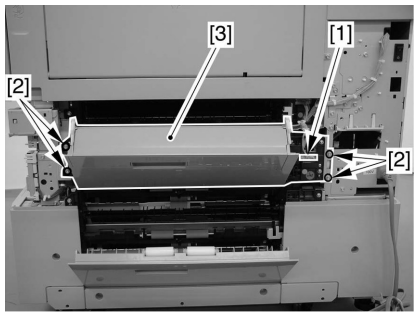
F-8-150

8.7.12.6 Removing the Pickup Assembly 2

0001-1596

1) Slide out the cassette 1/2.

2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].

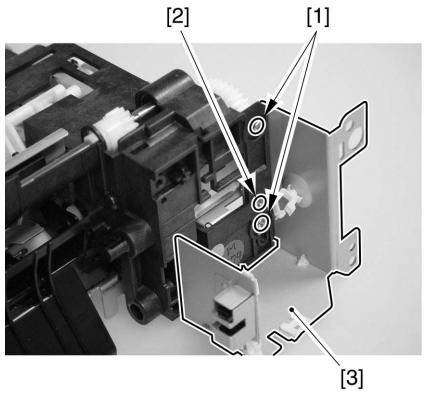


F-8-151

8.7.12.7 Removing the Sensor Base

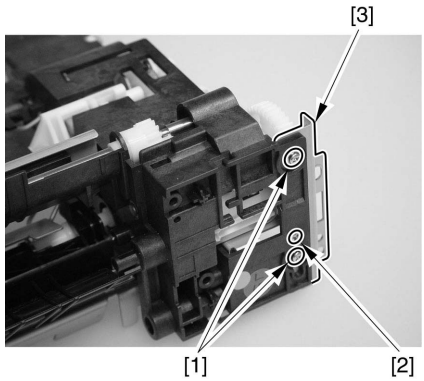
0001-1599

1) Remove the 2 TP screws [1] and the binding screw [2] from the rear of the pickup assembly, and detach the bracket [3].



F-8-152

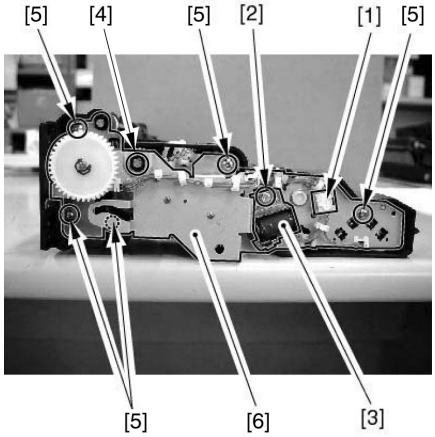
Pickup Unit 1



F-8-153

Pickup Unit 2

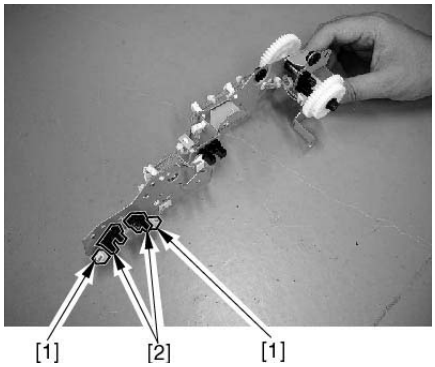
2) Disconnect the connector [1], and remove the screw; then, detach the cassette pickup solenoid [3].
3) Remove the bushing [4] and the 5 screws [5]; then, detach the sensor base [6].



F-8-154

8.7.12.8 Removing the Cassette Paper Level Sensor (A/B) 0001-1600

1) Disconnect the connector [1] (1 pc. each), and detach the cassette power level sensor (A/B) [2].

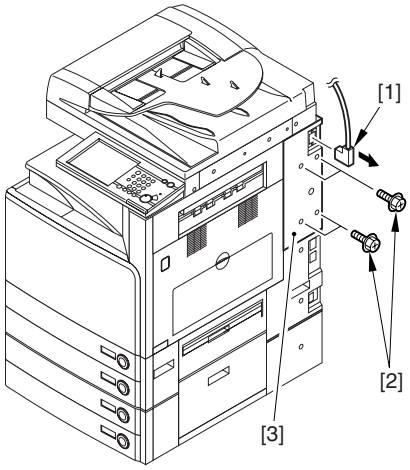


F-8-155

8.7.13 Slide Resistor

8.7.13.1 Removing the Right Cover (upper rear) 0002-0349

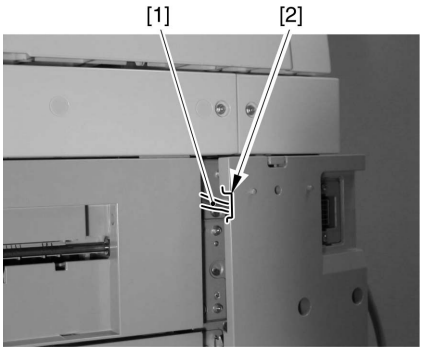
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-156

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

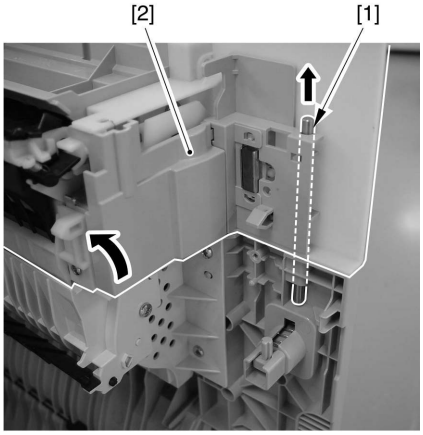
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-157

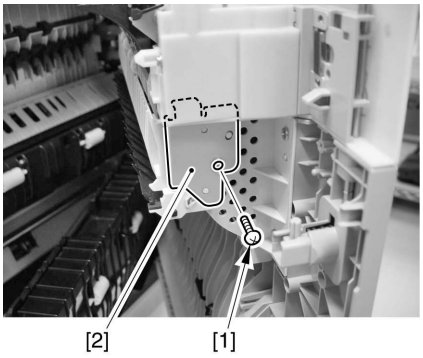
8.7.13.2 Removing the Right Door 0002-0351

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-158

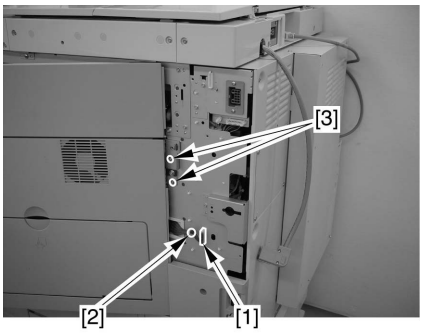
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-159

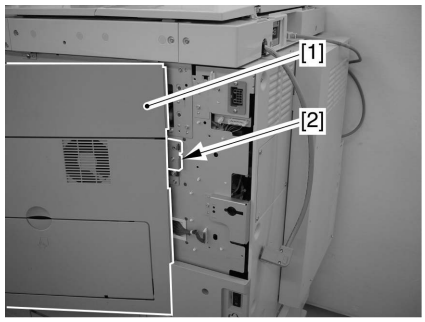
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-160

6) Detach the right door [1] together with the hinge [2].

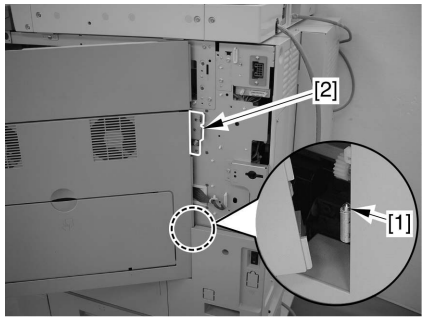


F-8-161

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

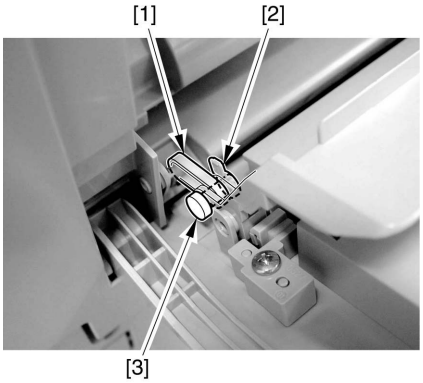


F-8-162

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

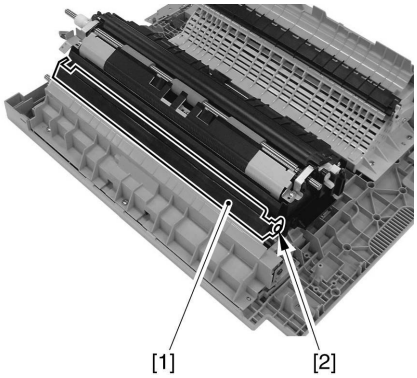
8.7.13.3 Removing the Manual Feed Unit 0001-4377

1) Remove the manual upper guide link [1] (plastic E-ring [2] and boss [3]).



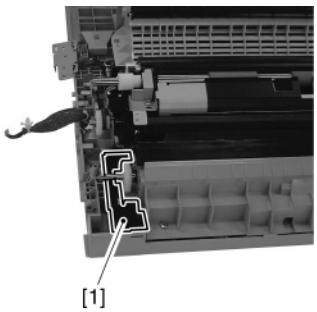
F-8-163

2) Remove the screw [2], and detach the manual feed guide [1].



F-8-164

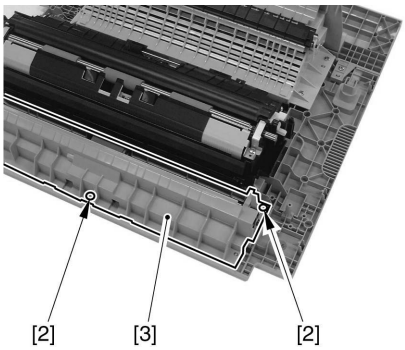
3) Remove the connector cover [1] (snap-on).



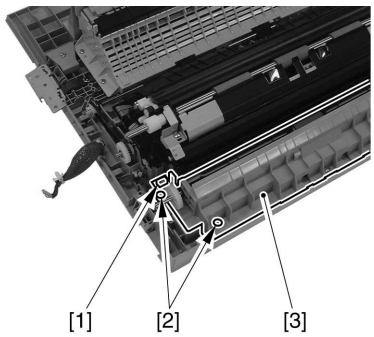
F-8-165

4) Disconnect the connector [1].

5) Remove the 4 screws [2], and detach the manual feed unit [3].



F-8-166



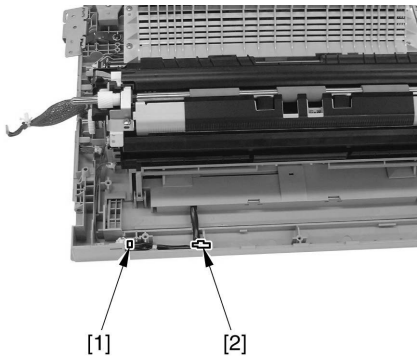
F-8-167

8.7.13.4 Removing Manual Feed Tray Unit

0001-4326

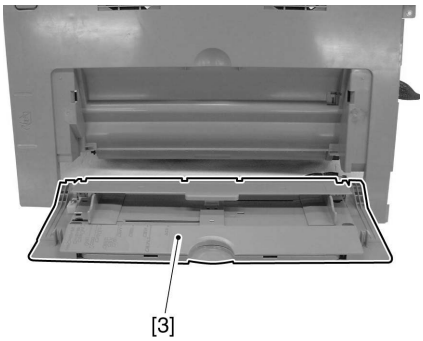
1) Disconnect the connector [1].

2) Remove the tie-wrap [2].



F-8-168

3) Remove the manual feed tray unit [3].

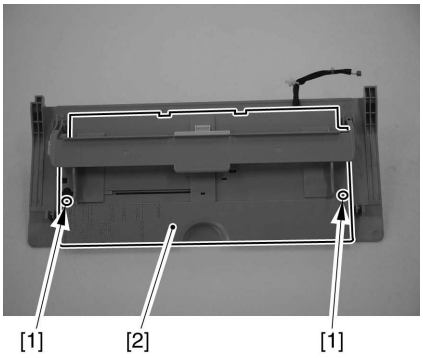


F-8-169

8.7.13.5 Removing the Slide Resistor 0001-1755

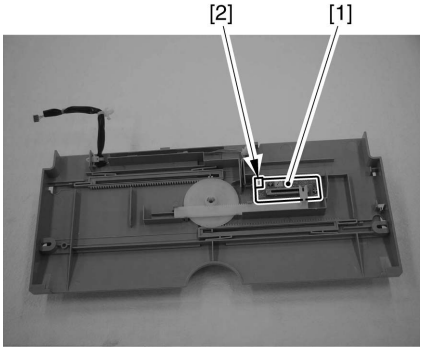
1) Remove 2 screws [1], and detach the manual feed tray upper cover [2].

⚠If possible, mark the position of the point of horizontal registration before removal.



F-8-170

2) Remove the slide resistor [1] (connector [2]).

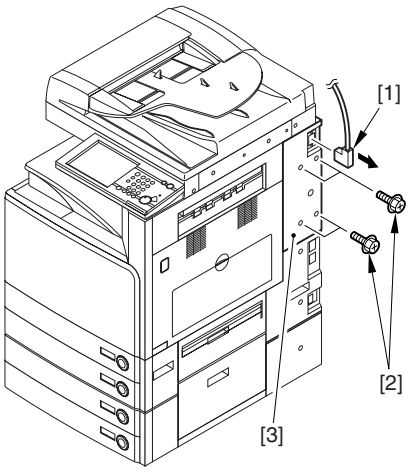


F-8-171

8.7.14 Cassette Pickup Solenoid

8.7.14.1 Removing the Right Cover (upper rear) 0002-0435

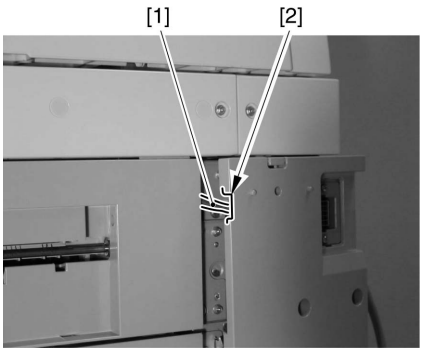
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-172

⚠**Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)**

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

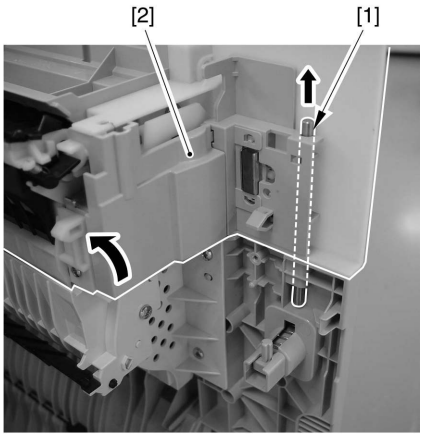


F-8-173

8.7.14.2 Removing the Right Door

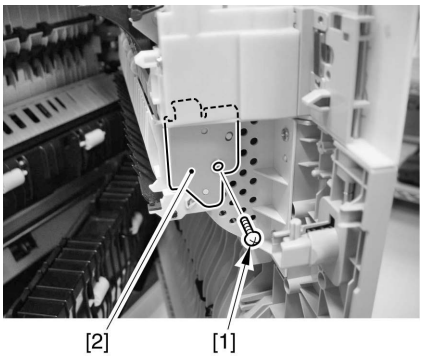
0001-1935

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



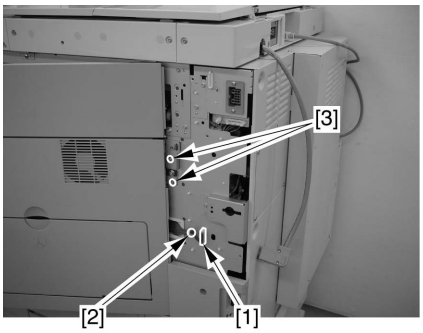
F-8-174

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



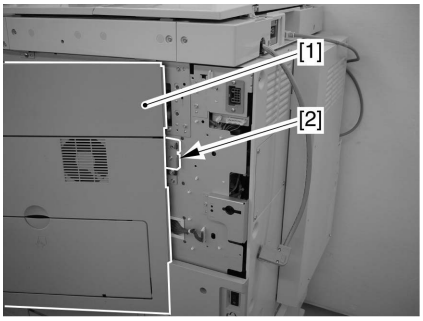
F-8-175

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-176

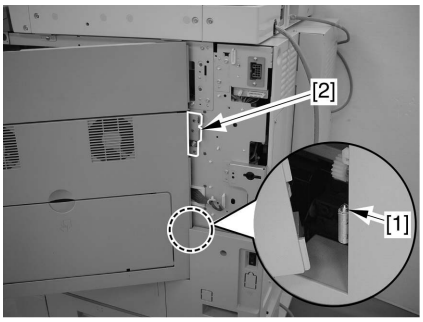
6) Detach the right door [1] together with the hinge [2].



F-8-177

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

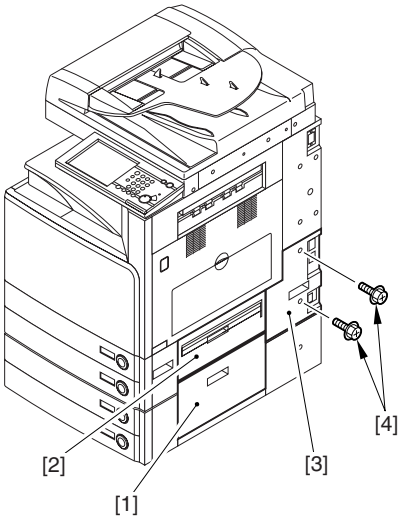


F-8-178

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.7.14.3 Removing the Right Cover (lower rear) 0002-0392

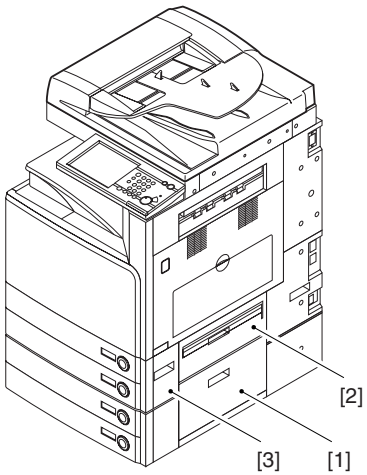
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-179

8.7.14.4 Removing the Right Cover (lower front) 0002-0085

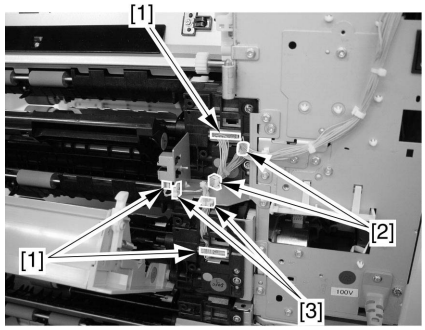
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].



F-8-180

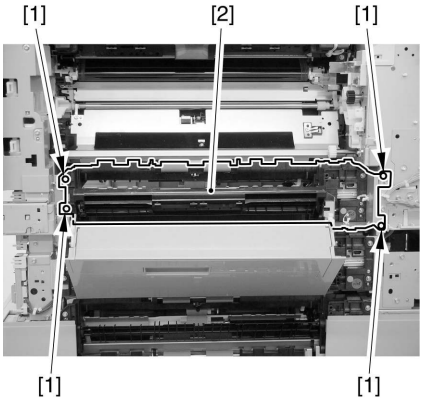
8.7.14.5 Removing the Pickup Assembly 1 0001-1938

1) Slide out the cassette 1/2.
2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-181

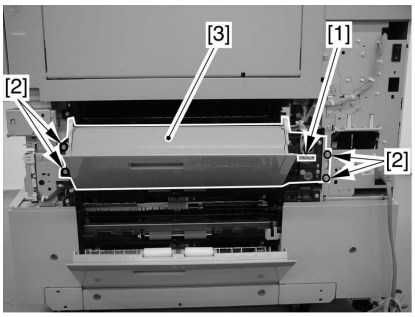
3) Remove the 4 screws [1], and take out the pickup unit 1 [2].



F-8-182

8.7.14.6 Removing the Pickup Assembly 2 0001-1940

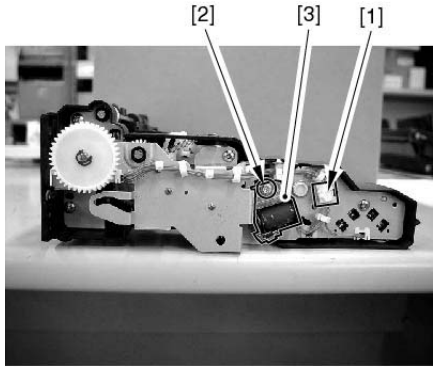
1) Slide out the cassette 1/2.
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].



F-8-183

8.7.14.7 Removing the Cassette Pickup Solenoid 0001-1912

1) Disconnect the connector [1], and remove the screw [2]; then, detach the cassette pickup solenoid [3].

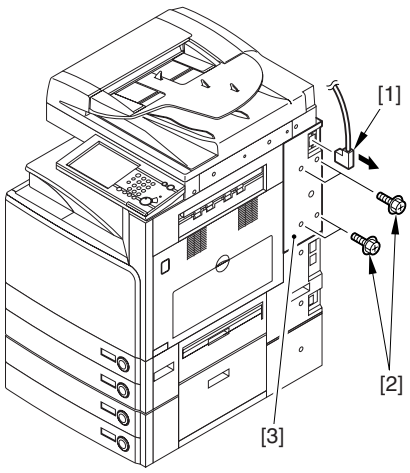


F-8-184

8.7.15 Cassette Size Sensor Relay PCB

8.7.15.1 Removing the Right Cover (upper rear) 0002-0434

1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].

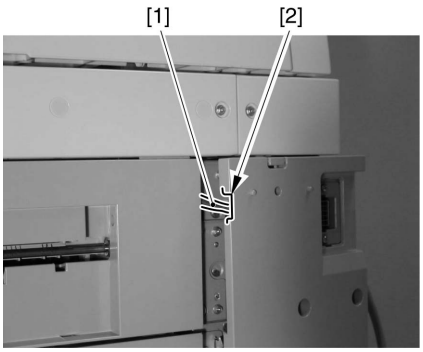


F-8-185

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-

off [2] of the right cover (upper right).

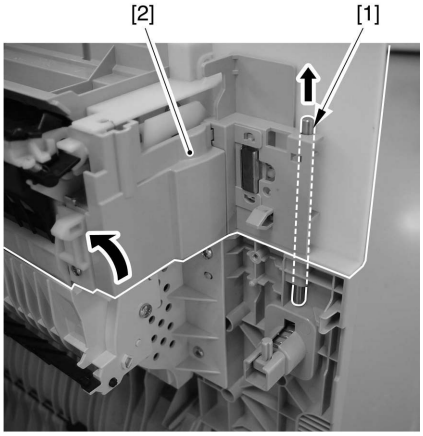


F-8-186

8.7.15.2 Removing the Right Door

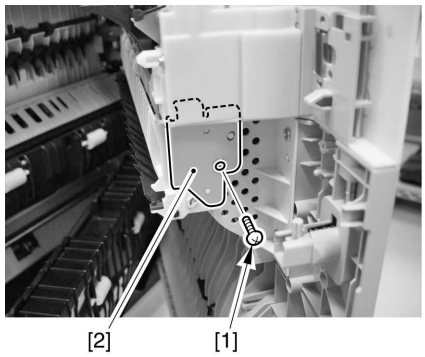
0001-1771

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



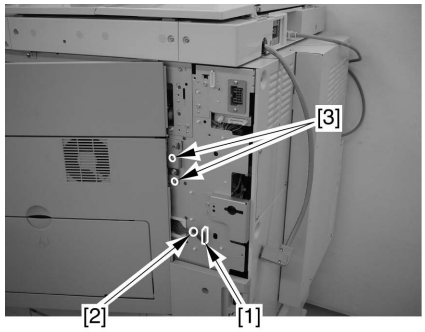
F-8-187

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



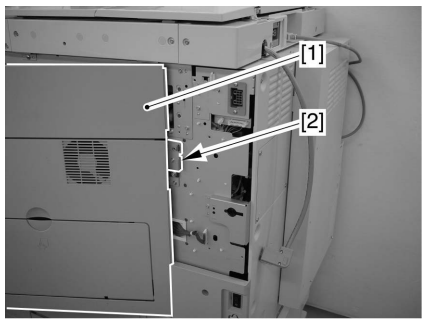
F-8-188

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-189

6) Detach the right door [1] together with the hinge [2].

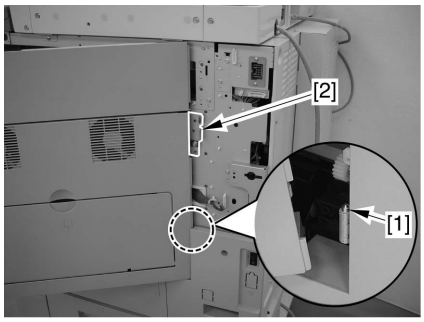


F-8-190

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

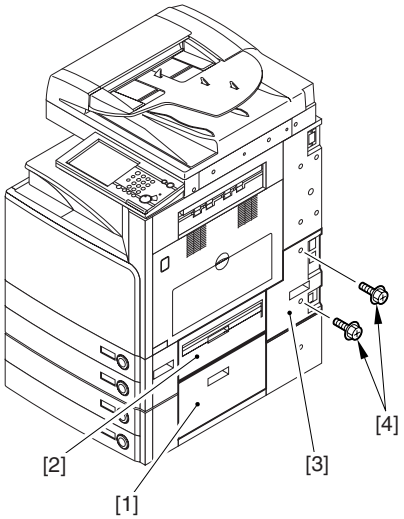


F-8-191

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.7.15.3 Removing the Right Cover (lower rear) 0002-0387

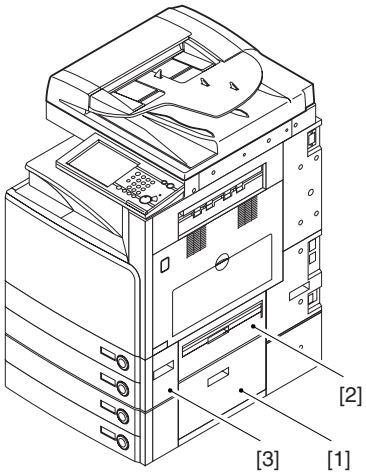
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-192

8.7.15.4 Removing the Right Cover (lower front) 0002-0082

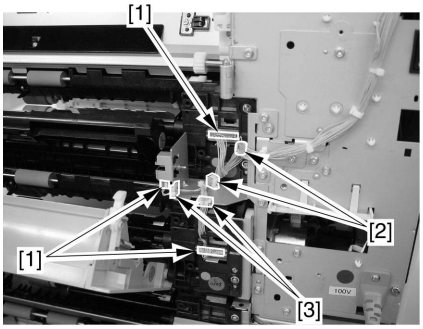
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].



F-8-193

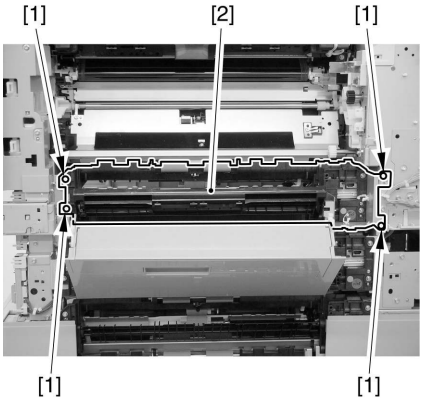
8.7.15.5 Removing the Pickup Assembly 1 0001-1775

1) Slide out the cassette 1/2.
2) Disconnect that 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-194

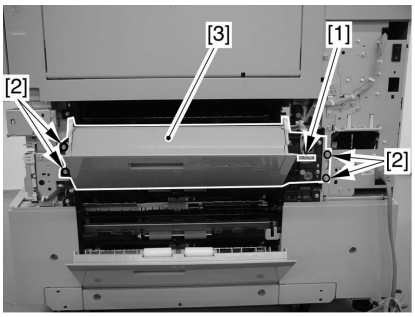
3) Remove the 4 screws [1], and take out the pickup unit 1 [2].



F-8-195

8.7.15.6 Removing the Pickup Assembly 2 0001-1776

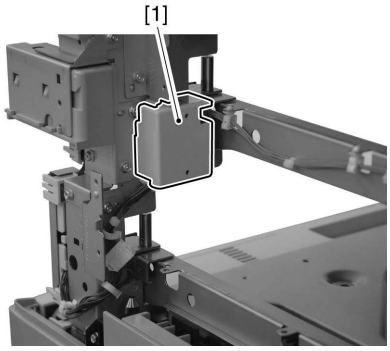
1) Slide out the cassette 1/2.
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].



F-8-196

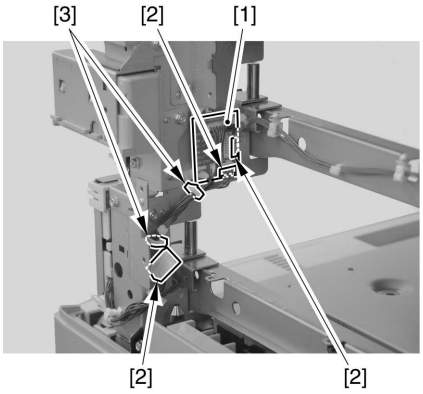
8.7.15.7 Removing the Cassette Size Sensor Relay PCB 0001-1777

1) Remove the PCB cover [1] (snap-on).



F-8-197

2) Remove the cassette size sensor relay PCB [2] (3 connectors [2], 2 clamps [3]).

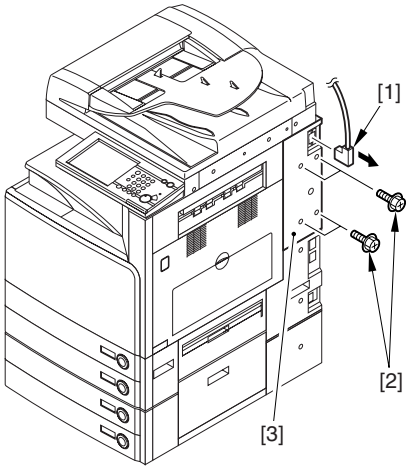


F-8-198

8.7.16 Manual Feed Pickup Clutch

8.7.16.1 Removing the Right Cover (upper rear) 0002-0427

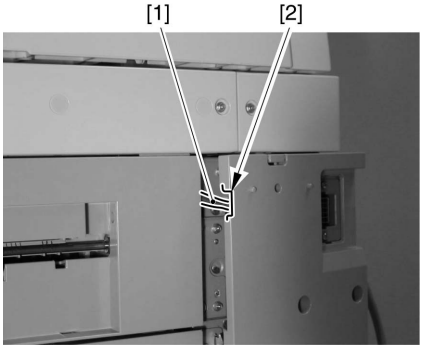
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-199

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

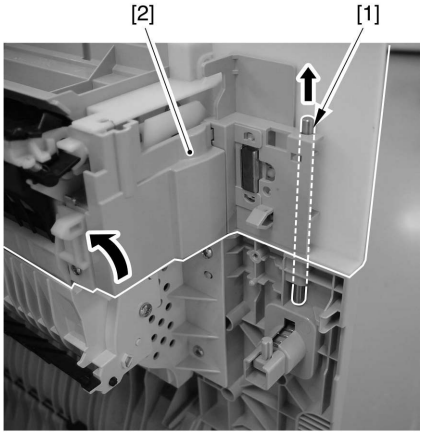


F-8-200

8.7.16.2 Removing the Right Door

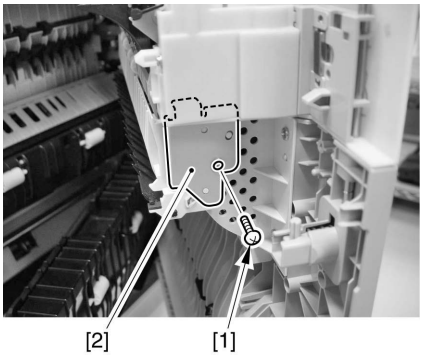
0001-1782

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



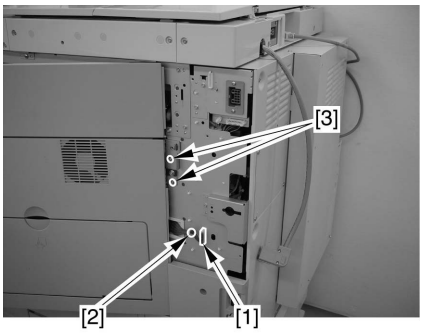
F-8-201

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



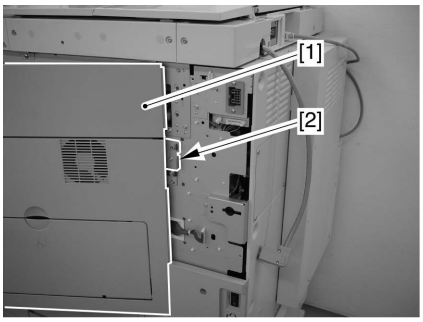
F-8-202

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-203

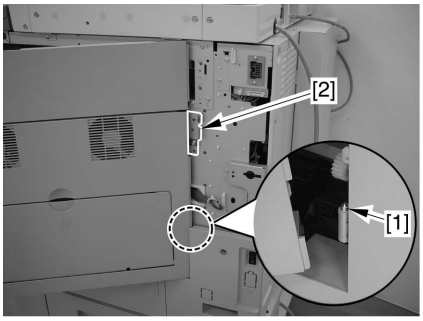
6) Detach the right door [1] together with the hinge [2].



F-8-204

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

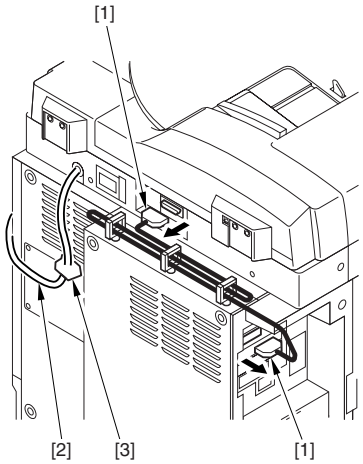


F-8-205

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

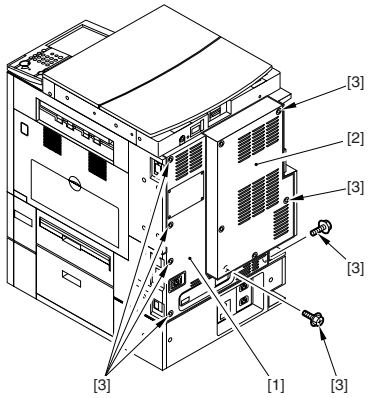
8.7.16.3 Removing the Rear Cover 0002-0478

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-8-206

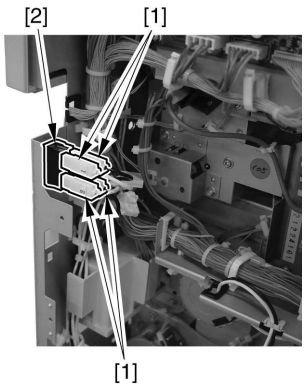
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-8-207

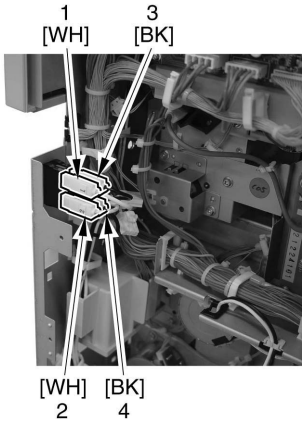
8.7.16.4 Removing the Main Power Switch 0001-3812

1) Remove the 4 fastons [1], and detach the main power switch [2] (snap-on).



F-8-208

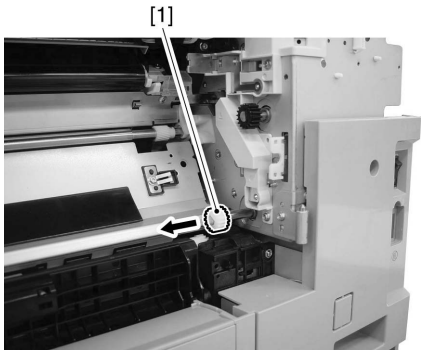
⚠When connecting the 4 fastons, be sure that the numbers in the following figure match those on the stickers attached to the fastons.



F-8-209

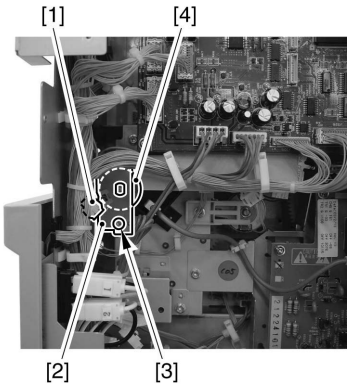
8.7.16.5 Removing the Manual Feed Pickup Clutch 0001-3810

1) Remove the manual feed pickup gear [1].



F-8-210

2) Disconnect the connector (2P) [1]; at the same time, remove the 2 screws [3], and detach the stop [2].
3) Pull out the pickup manual feed clutch [4] to the front.

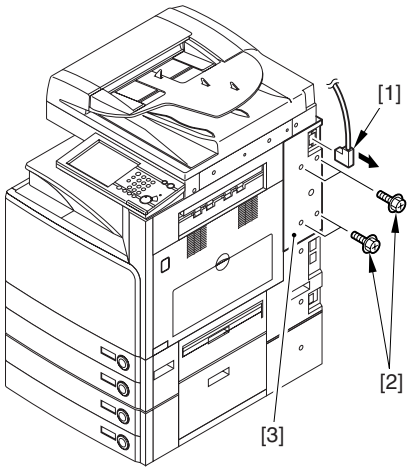


F-8-211

8.7.17 Manual Feed Tray Unit

8.7.17.1 Removing the Right Cover (upper rear) 0002-0348

1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].

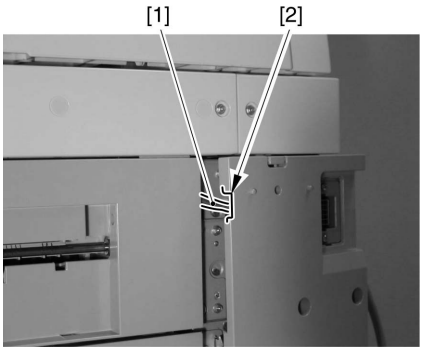


F-8-212

⚠**Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2**

is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

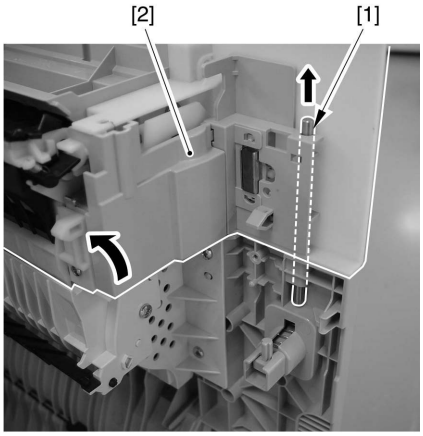


F-8-213

8.7.17.2 Removing the Right Door

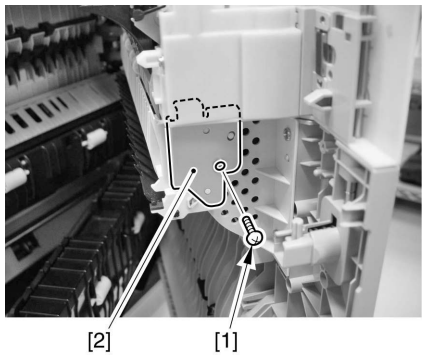
0001-2759

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



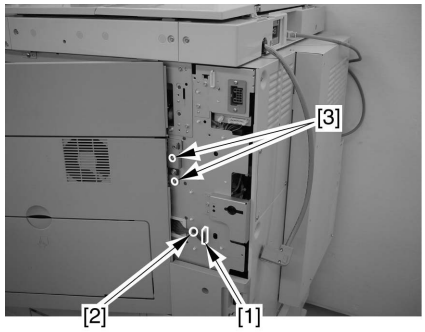
F-8-214

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



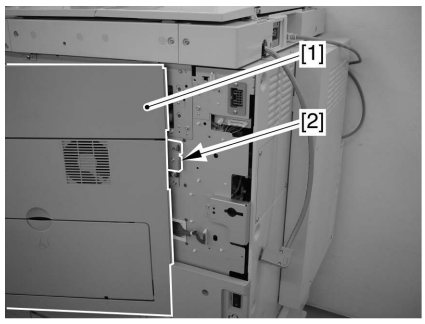
F-8-215

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-216

6) Detach the right door [1] together with the hinge [2].

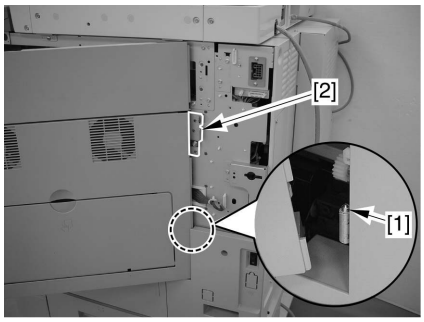


F-8-217

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

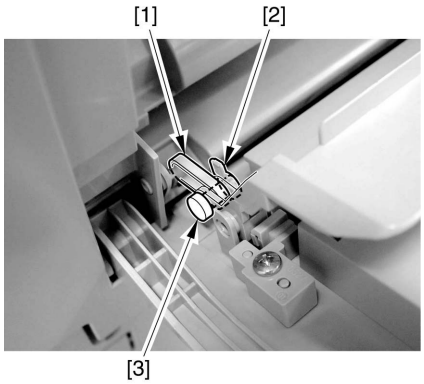


F-8-218

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

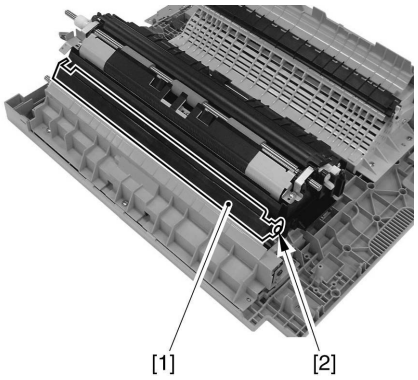
8.7.17.3 Removing the Manual Feed Unit 0001-1676

1) Remove the manual upper guide link [1] (plastic E-ring [2] and boss [3]).



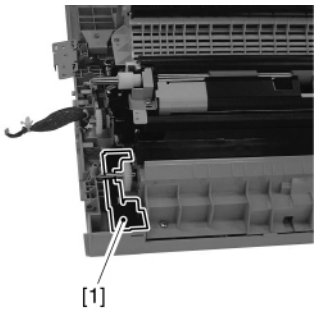
F-8-219

2) Remove the screw [2], and detach the manual feed guide [1].



F-8-220

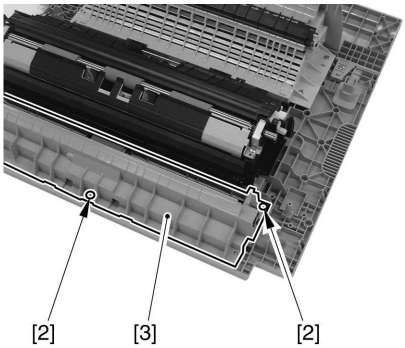
3) Remove the connector cover [1] (snap-on).



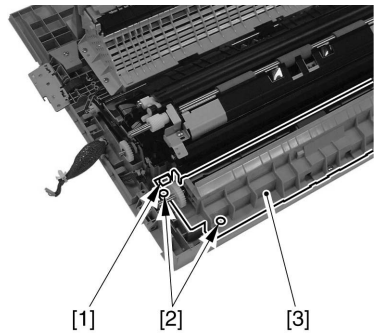
F-8-221

4) Disconnect the connector [1].

5) Remove the 4 screws [2], and detach the manual feed unit [3].



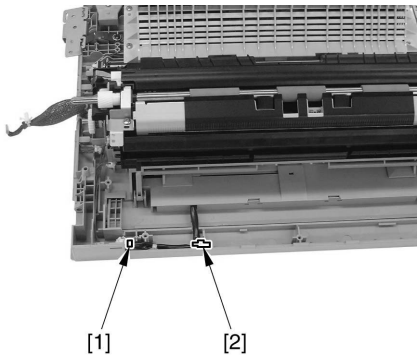
F-8-222



F-8-223

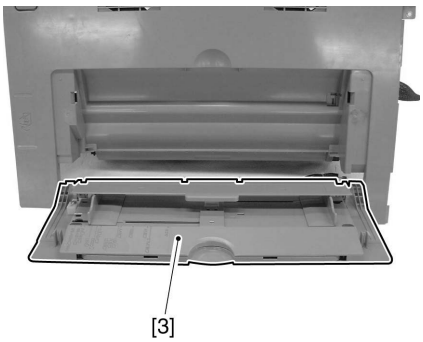
8.7.17.4 Removing Manual Feed Tray Unit 0001-1677

1) Disconnect the connector [1].
2) Remove the tie-wrap [2].



F-8-224

3) Remove the manual feed tray unit [3].

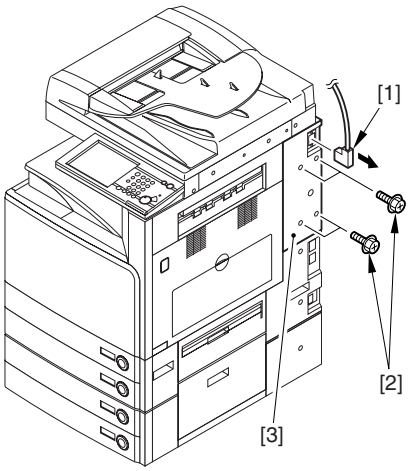


F-8-225

8.7.18 Manual Feed Unit

8.7.18.1 Removing the Right Cover (upper rear) 0002-0347

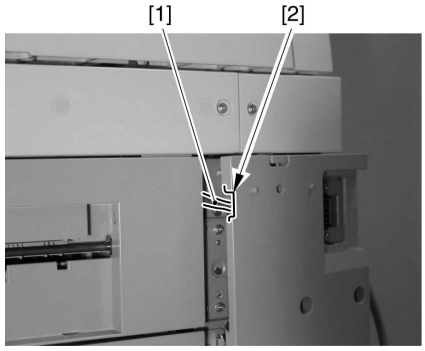
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-226

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

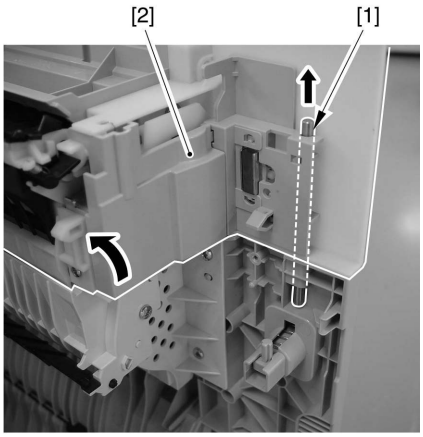


F-8-227

8.7.18.2 Removing the Right Door

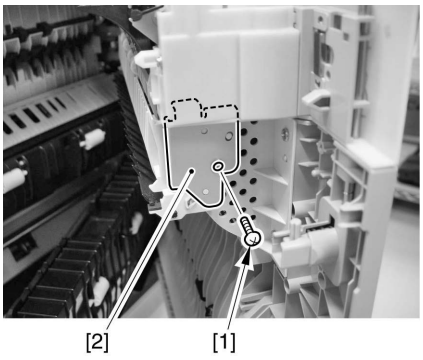
0001-2757

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



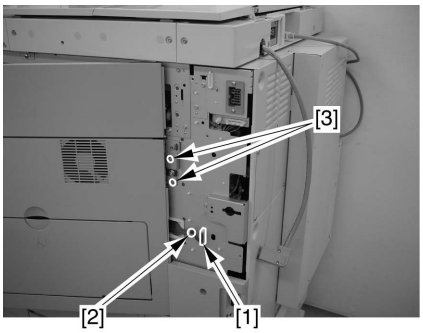
F-8-228

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



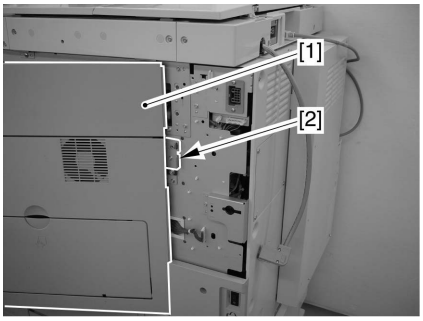
F-8-229

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-230

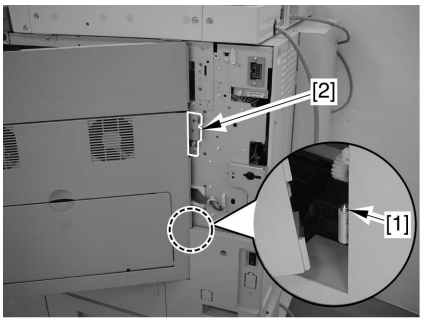
6) Detach the right door [1] together with the hinge [2].



F-8-231

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

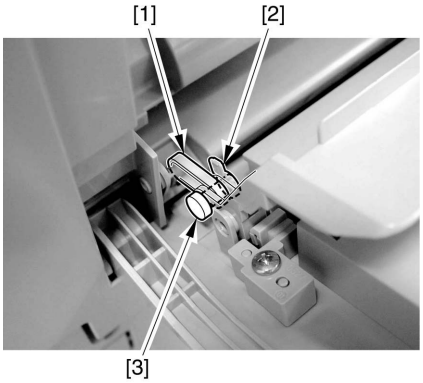


F-8-232

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

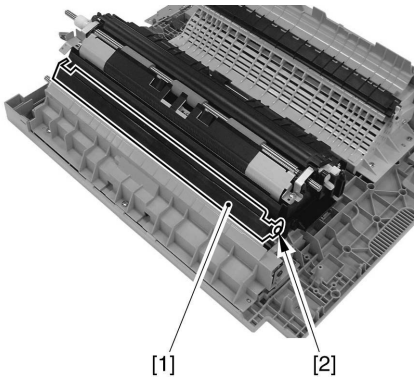
8.7.18.3 Removing the Manual Feed Unit 0001-1673

1) Remove the manual upper guide link [1] (plastic E-ring [2] and boss [3]).



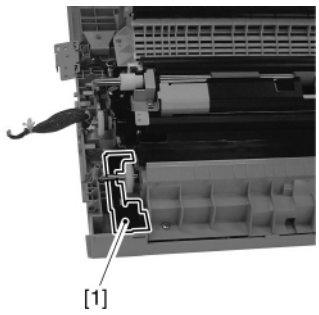
F-8-233

2) Remove the screw [2], and detach the manual feed guide [1].



F-8-234

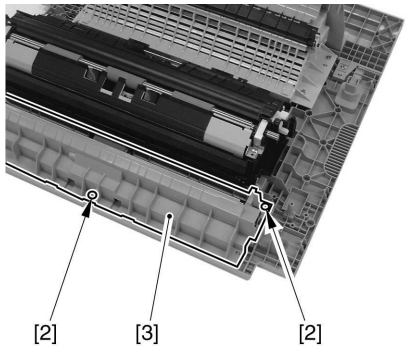
3) Remove the connector cover [1] (snap-on).



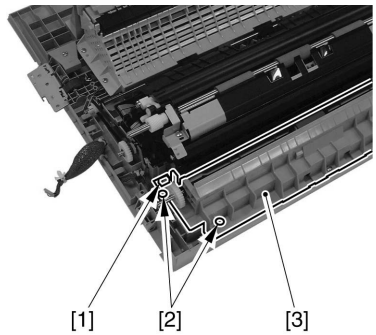
F-8-235

4) Disconnect the connector [1].

5) Remove the 4 screws [2], and detach the manual feed unit [3].



F-8-236



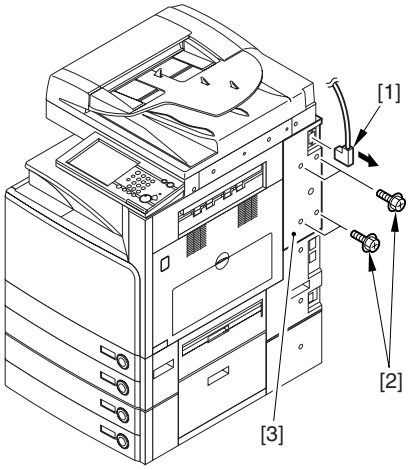
F-8-237

8.7.19 Manual Pickup Roller

8.7.19.1 Removing the Right Cover (upper rear) 0002-0452

1) Disconnect the power cable [1] from the printer unit.

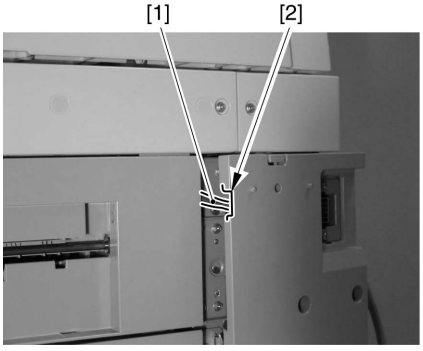
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-238

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

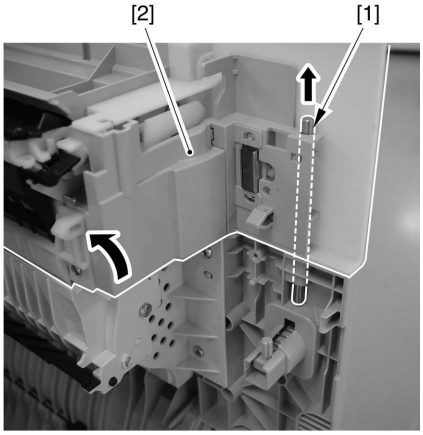


F-8-239

8.7.19.2 Removing the Right Door

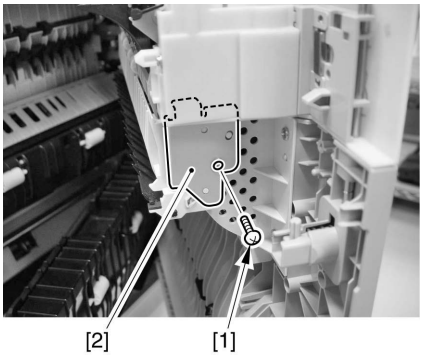
0001-4331

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



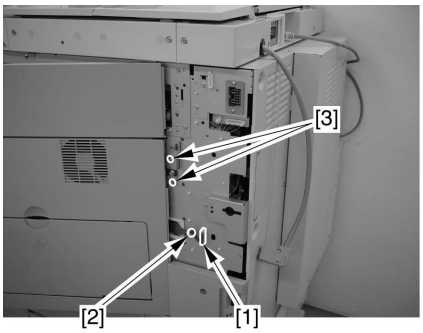
F-8-240

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



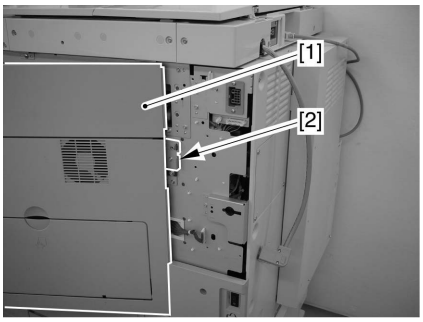
F-8-241

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-242

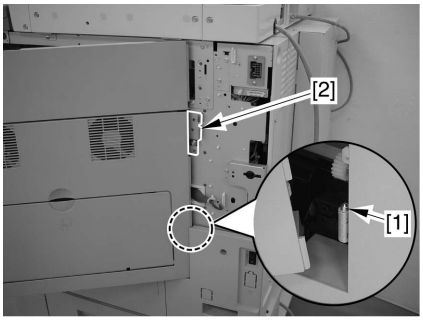
6) Detach the right door [1] together with the hinge [2].



F-8-243

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

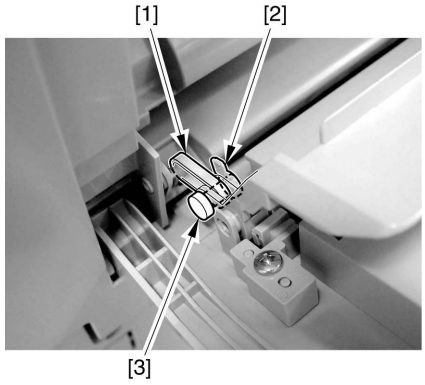


F-8-244

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

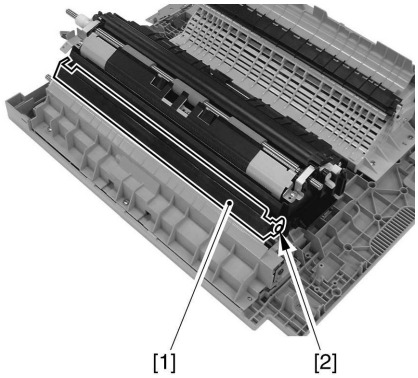
8.7.19.3 Removing the Manual Feed Unit 0001-1952

1) Remove the manual upper guide link [1] (plastic E-ring [2] and boss [3]).



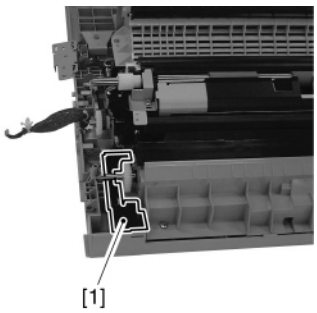
F-8-245

2) Remove the screw [2], and detach the manual feed guide [1].



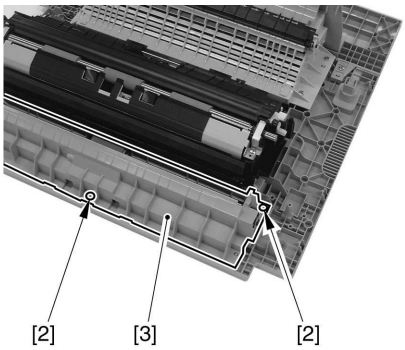
F-8-246

3) Remove the connector cover [1] (snap-on).

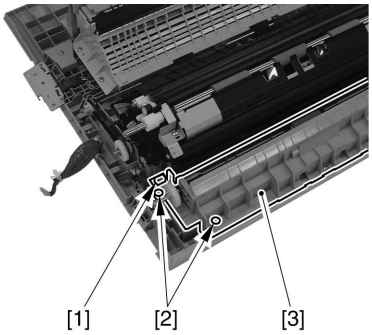


F-8-247

4) Disconnect the connector [1].
5) Remove the 4 screws [2], and detach the manual feed unit [3].



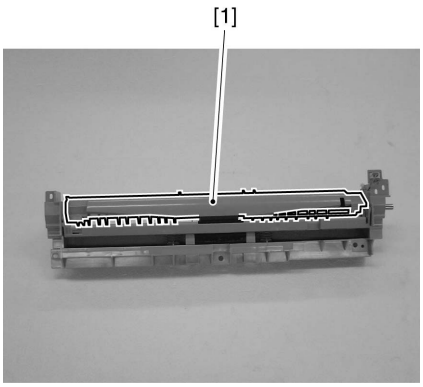
F-8-248



F-8-249

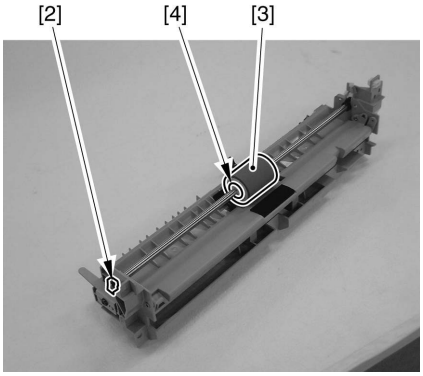
8.7.19.4 Removing the Pickup Roller 0001-1953

1) Remove the manual feed upper cover [1] (snap-on).



F-8-250

2) Remove the bush [2], and detach the manual feed pickup roller [3] together with the shaft.
3) Remove the plastic E-ring [4], and detach the manual feed pickup roller from shaft. Take care not to drop the parallel pin.

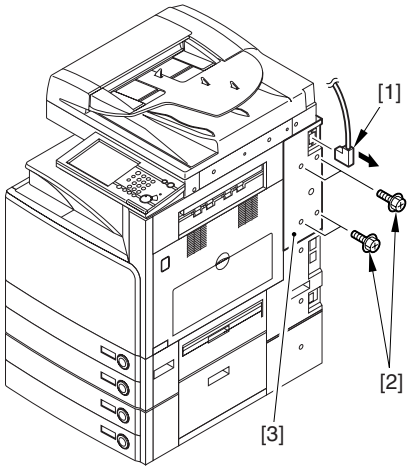


F-8-251

8.7.20 Manual Feed Separation Pad

8.7.20.1 Removing the Right Cover (upper rear) 0002-0453

1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].

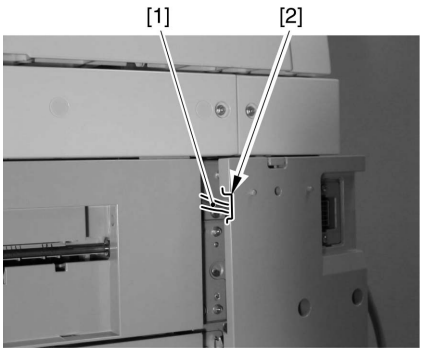


F-8-252

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-

off [2] of the right cover (upper right).

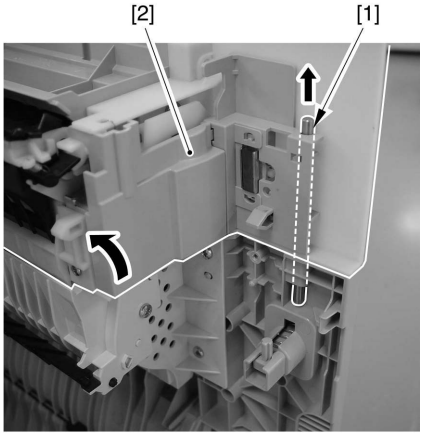


F-8-253

8.7.20.2 Removing the Right Door

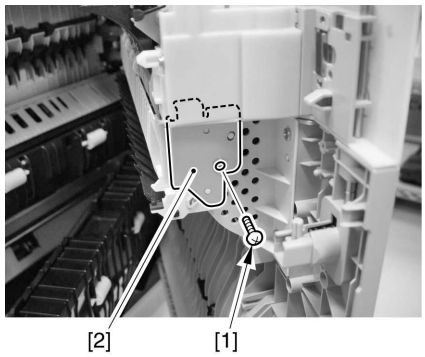
0001-4335

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



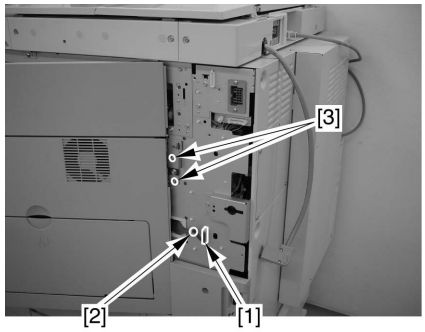
F-8-254

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



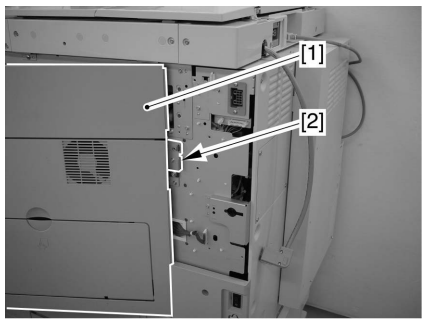
F-8-255

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-256

6) Detach the right door [1] together with the hinge [2].

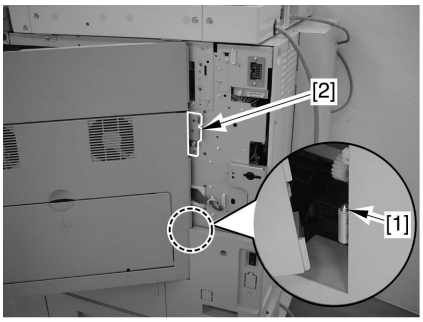


F-8-257

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

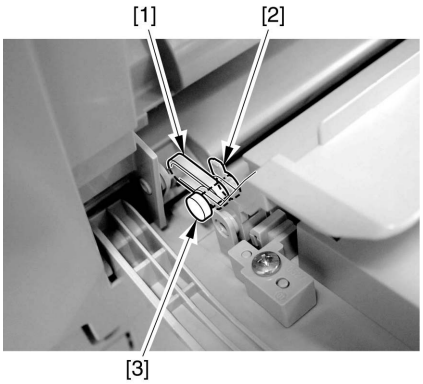


F-8-258

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

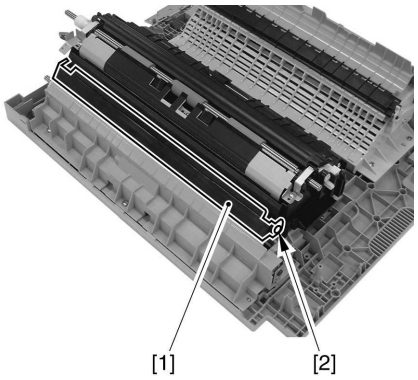
8.7.20.3 Removing the Manual Feed Unit 0001-4336

1) Remove the manual upper guide link [1] (plastic E-ring [2] and boss [3]).



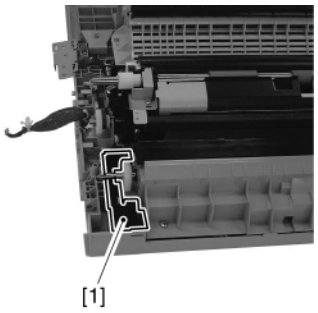
F-8-259

2) Remove the screw [2], and detach the manual feed guide [1].



F-8-260

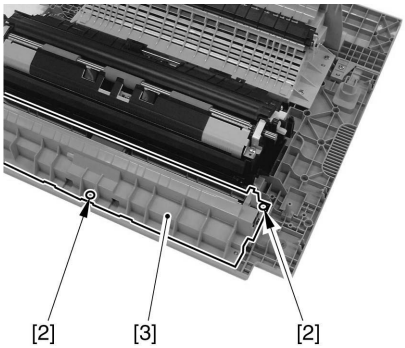
3) Remove the connector cover [1] (snap-on).



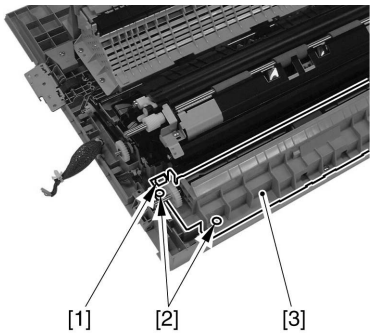
F-8-261

4) Disconnect the connector [1].

5) Remove the 4 screws [2], and detach the manual feed unit [3].



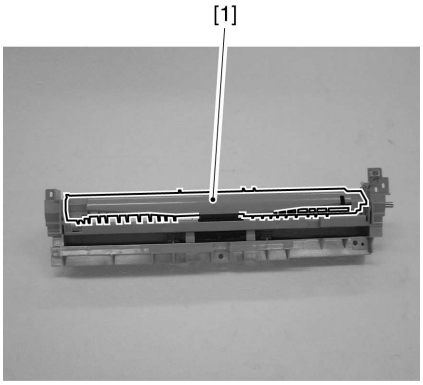
F-8-262



F-8-263

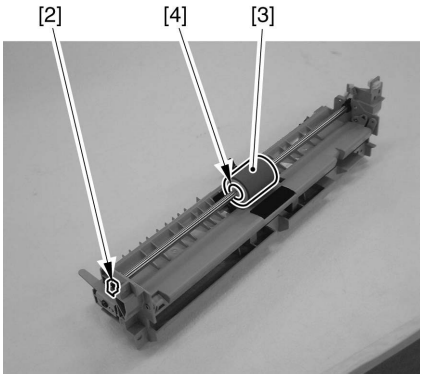
8.7.20.4 Removing the Pickup Roller 0001-4337

1) Remove the manual feed upper cover [1] (snap-on).



F-8-264

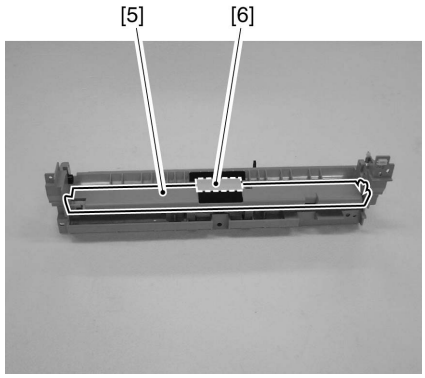
2) Remove the bush [2], and detach the manual feed pickup roller [3] together with the shaft.
3) Remove the plastic E-ring [4], and detach the manual feed pickup roller from shaft. Take care not to drop the parallel pin.



F-8-265

8.7.20.5 Removing the Manual Feed Separation Pad 0001-4338

1) Remove the holding plate [5].
2) Remove the separation pad [6].

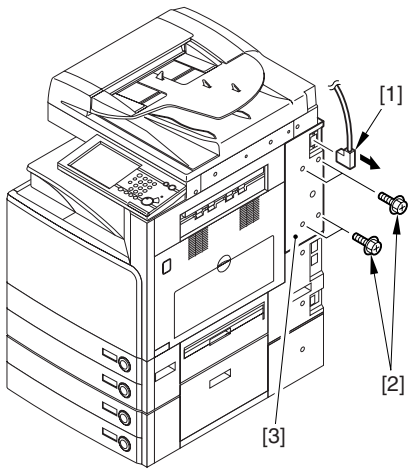


F-8-266

8.7.21 Transparency Sensor (Front/Rear)

8.7.21.1 Removing the Right Cover (upper rear) 0002-0429

1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].

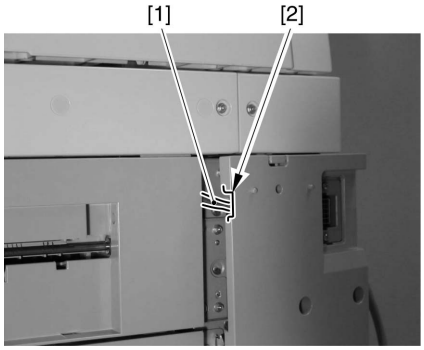


F-8-267

⚠Point to Note When Mounting the Right Cover

(upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

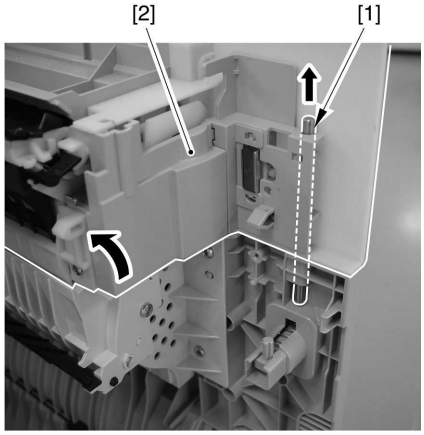


F-8-268

8.7.21.2 Removing the Right Door

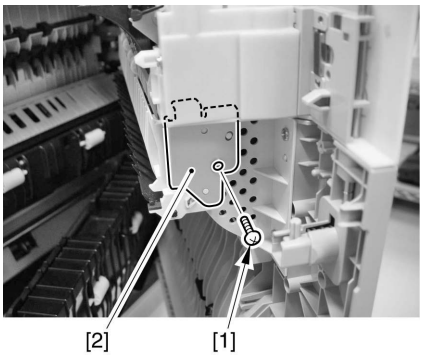
0001-1957

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



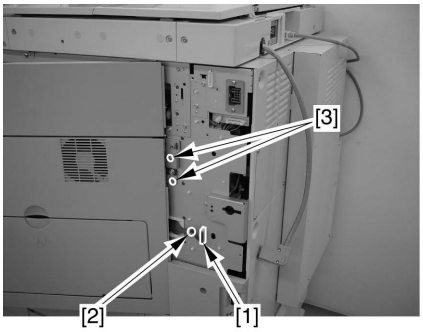
F-8-269

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



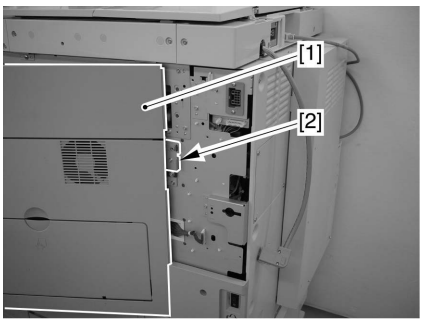
F-8-270

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-271

6) Detach the right door [1] together with the hinge [2].

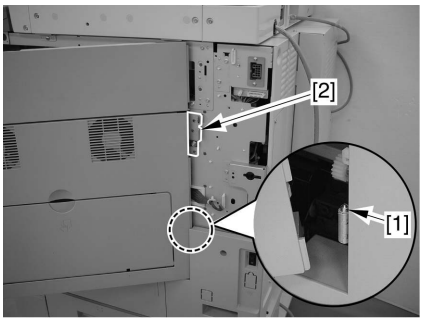


F-8-272

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

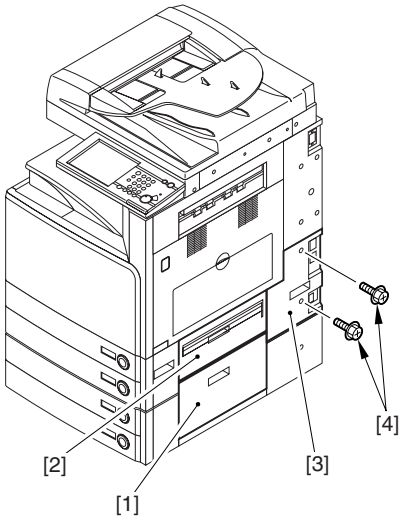


F-8-273

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.7.21.3 Removing the Right Cover (lower rear) 0002-0390

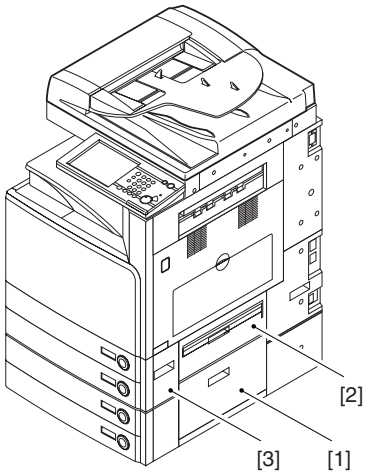
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-274

8.7.21.4 Removing the Right Cover (lower front) 0002-0089

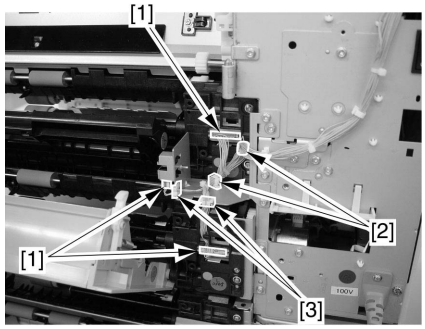
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].



F-8-275

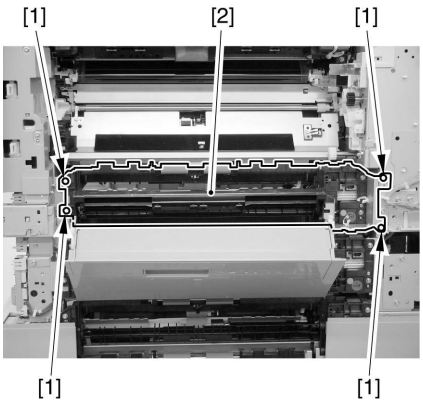
8.7.21.5 Removing the PIck-up Assembly 1 0001-4376

1) Slide out the cassette 1/2.
2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-276

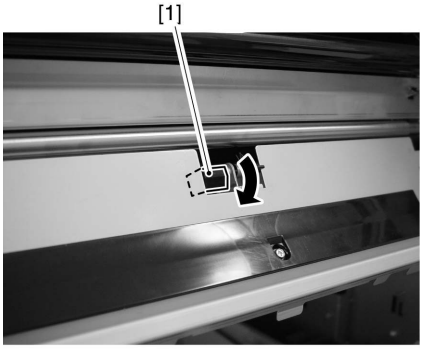
3) Remove the 4 screws [1], and take out the pickup unit 1 [2].



F-8-277

8.7.21.6 Removing the Transparency Sensor 0001-1963

1) Put your hand from behind the pre-registration guide, and remove the transparency sensor [1] (snap-on and connector).

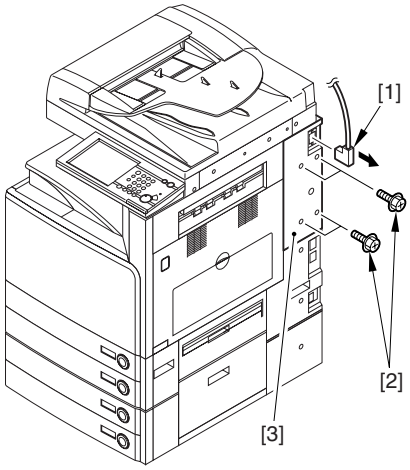


F-8-278

8.7.22 Registration Sensor

8.7.22.1 Removing the Right Cover (upper rear) 0002-0428

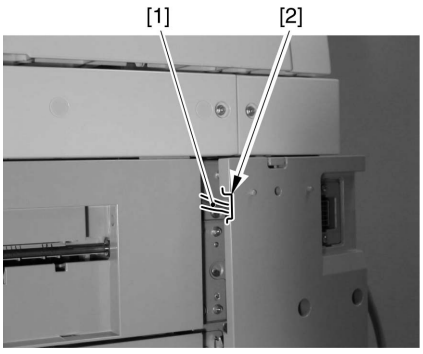
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-279

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

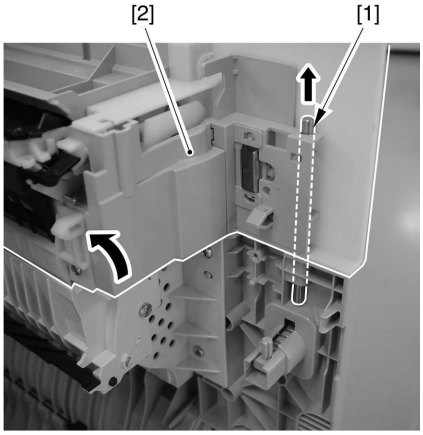
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-280

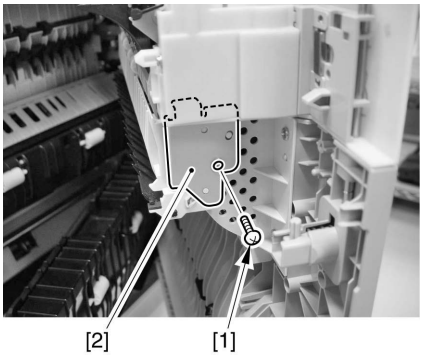
8.7.22.2 Removing the Right Door 0001-1702

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-281

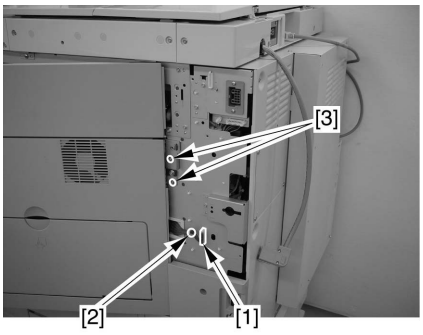
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-282

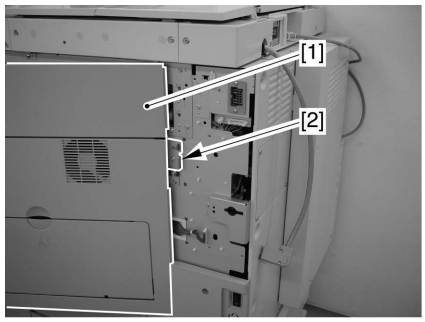
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-283

6) Detach the right door [1] together with the hinge [2].

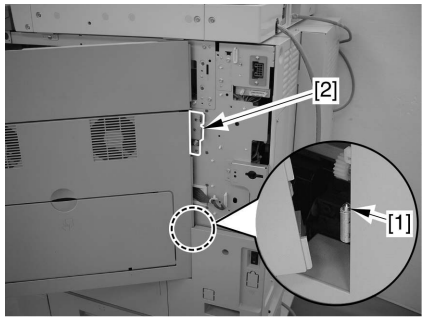


F-8-284

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



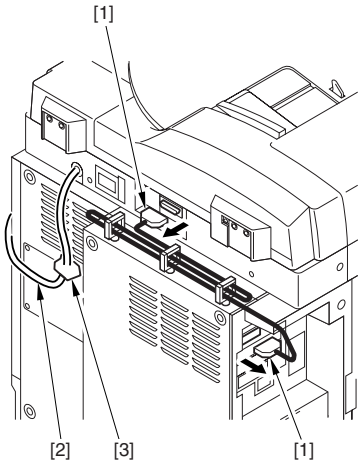
F-8-285

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.7.22.3 Removing the Rear Cover 0002-0475

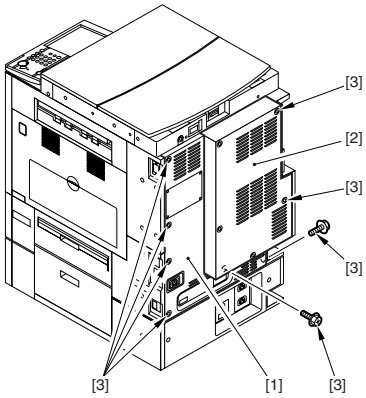
1) Disconnect the 2 connectors [1] of the reader communication cable.

2) Free the reader power supply cable [2] from the cable clamp [3].



F-8-286

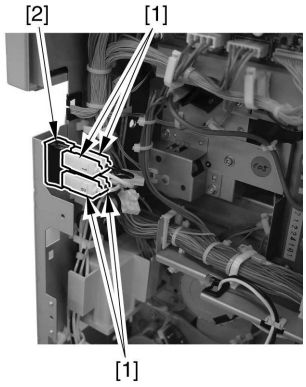
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-8-287

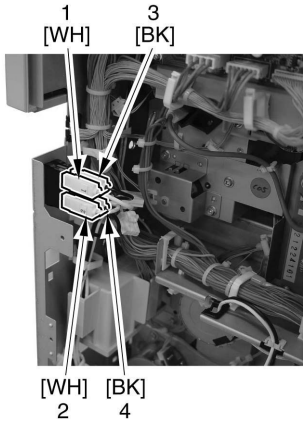
8.7.22.4 Removing the Main Power Switch 0001-2455

1) Remove the 4 fastons [1], and detach the main power switch [2] (snap-on).



F-8-288

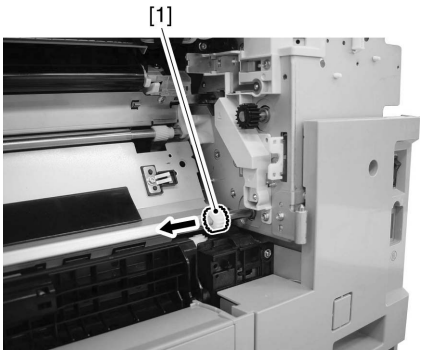
⚠When connecting the 4 fastons, be sure that the numbers in the following figure match those on the stickers attached to the fastons.



F-8-289

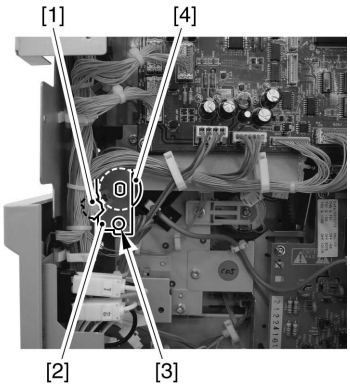
8.7.22.5 Removing the Manual Feed Pickup Clutch 0001-1709

1) Remove the manual feed pickup gear [1].



F-8-290

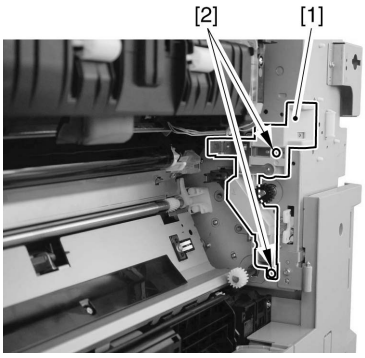
2) Disconnect the connector (2P) [1]; at the same time, remove the 2 screws [3], and detach the stop [2].
3) Pull out the pickup manual feed clutch [4] to the front.



F-8-291

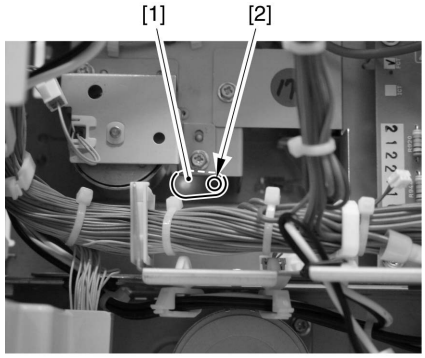
8.7.22.6 Removing the Contact Guide and the Pre-Registration Guide Fixing Boss 0001-1711

1) Remove the screw [2], and detach the contact guide [1].



F-8-292

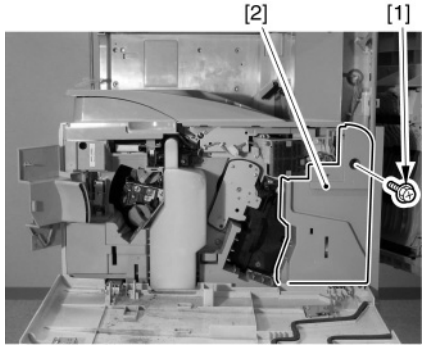
2) Remove the screw [2], and detach the pre-registration guide fixing boss (rear)



F-8-293

8.7.22.7 Removing the Inside Front Cover (right) 0002-4246

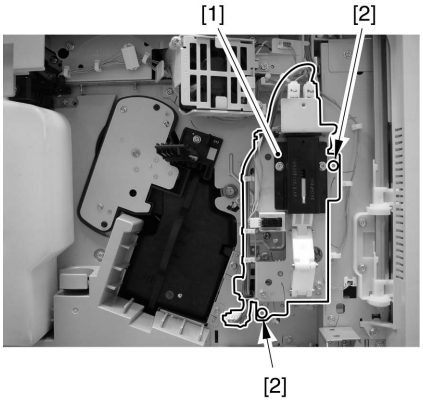
1) Remove the screw [1], and detach the inside front cover (right) [2].



F-8-294

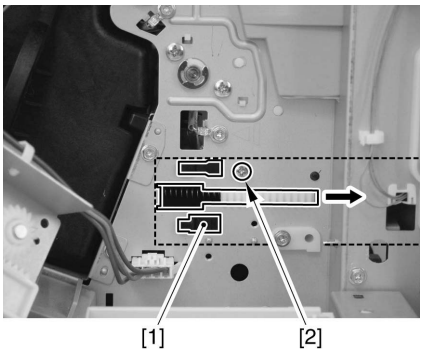
8.7.22.8 Removing the Registration Sensor 0001-1721

1) Remove the 2 screws [2], and detach the front cover switch gear unit [1].



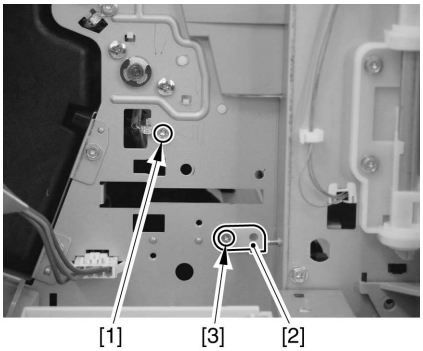
F-8-295

2) Remove the screw [2], and detach the front cover switch link [1].



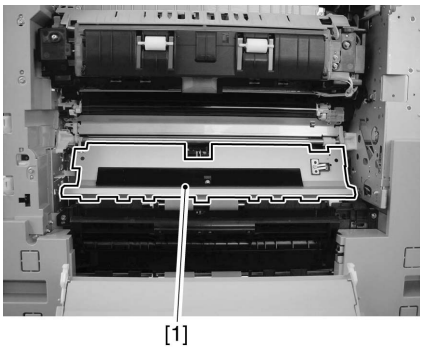
F-8-296

3) Remove the screw, and detach the varistor fixing screw [1] and the pre-registration guide fixing boss (front) [2].



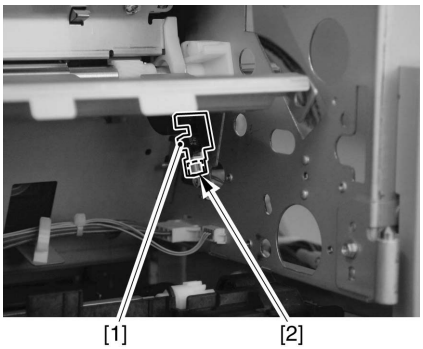
F-8-297

4) Shift up the per-registration guide [1].



F-8-298

5) Remove the stop, and disconnect the connector [2]; then, detach the registration sensor [1].

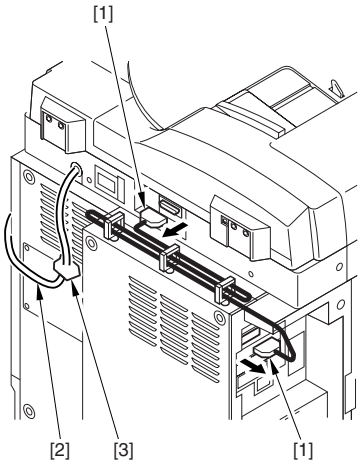


F-8-299

8.7.23 Registration Clutch

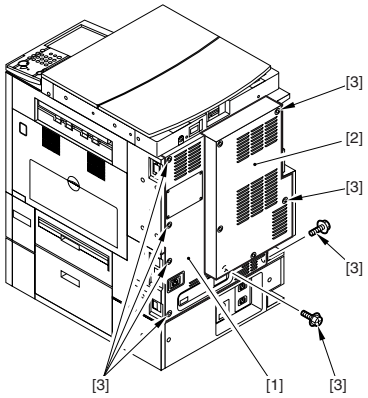
8.7.23.1 Removing the Rear Cover 0002-0477

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-8-300

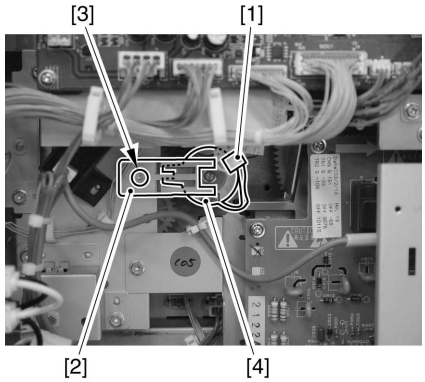
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-8-301

8.7.23.2 Removing the Registration Clutch 0001-1730

1) Disconnect the connector (3P) [1]; at the same time, remove the screw [3], and detach the stop [2].
2) Pull out the registration clutch [4] to the front to detach.

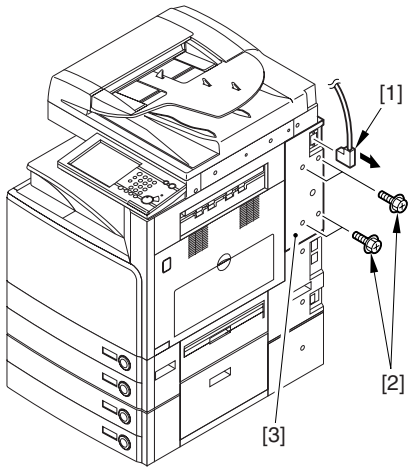


F-8-302

8.7.24 Vertical Path Roller

8.7.24.1 Removing the Right Cover (upper rear) 0002-0445

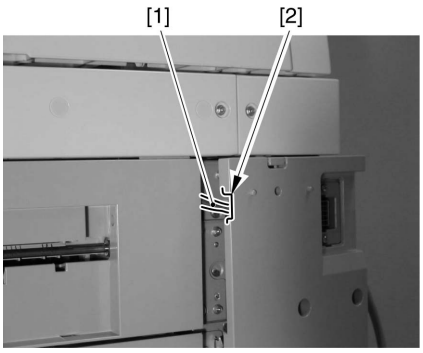
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-303

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

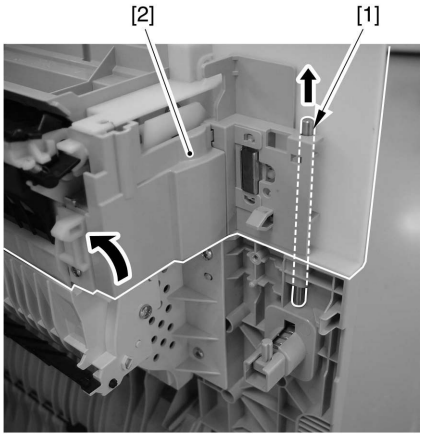


F-8-304

8.7.24.2 Removing the Right Door

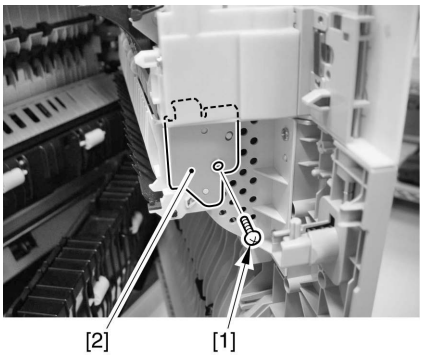
0001-2342

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



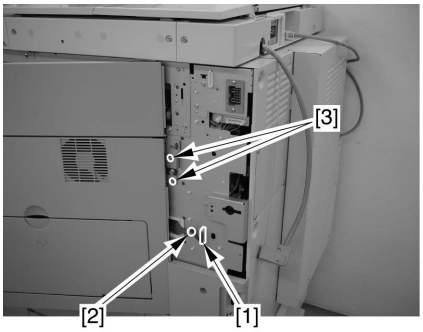
F-8-305

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



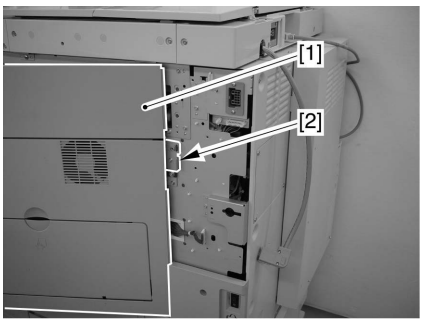
F-8-306

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-307

6) Detach the right door [1] together with the hinge [2].

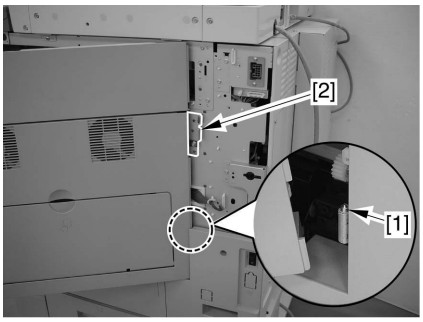


F-8-308

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

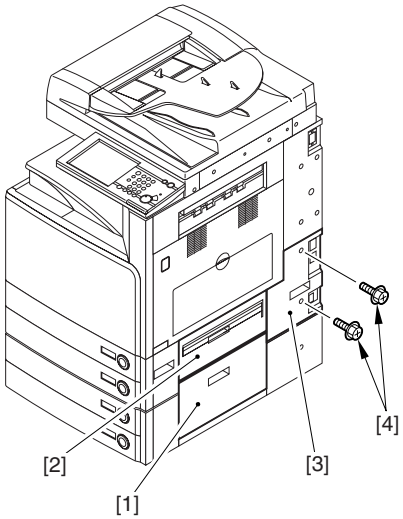


F-8-309

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.7.24.3 Removing the Right Cover (lower rear) 0002-0393

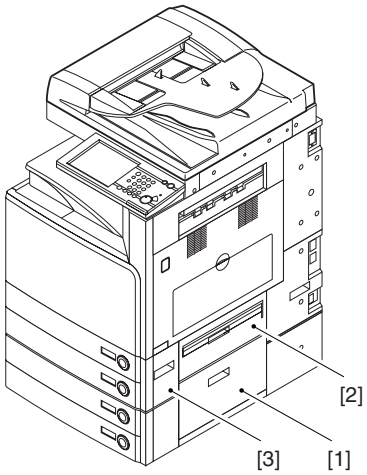
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-8-310

8.7.24.4 Removing the Right Cover (lower front) 0002-0090

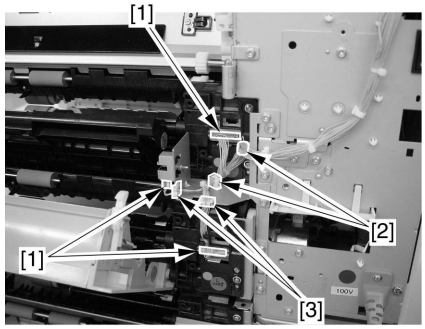
1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).
2) Open the lower right cover [2].
3) Remove the 2 screws, and detach the right cover (lower front) [3].



F-8-311

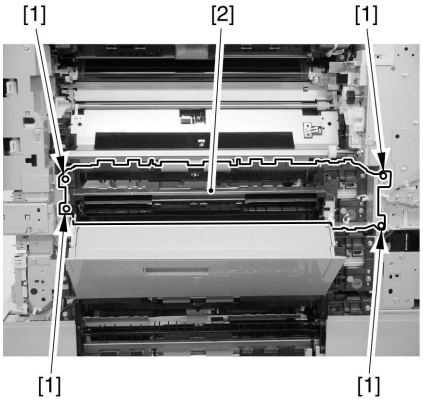
8.7.24.5 Removing the Pickup Assembly 1 0001-1557

1) Slide out the cassette 1/2.
2) Disconnect the 3 connectors [1]; then, free the harness from the 2 wire saddles [2] and the 2 clamps [3].



F-8-312

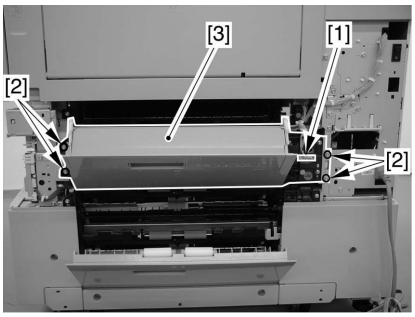
3) Remove the 4 screws [1], and take out the pickup unit 1 [2].



F-8-313

8.7.24.6 Removing the Pickup Assembly 2 0001-1558

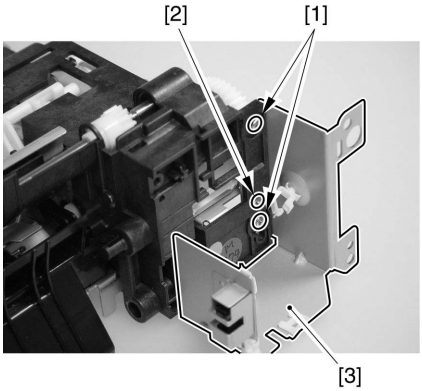
1) Slide out the cassette 1/2.
2) Disconnect the connector [1], and free the harness from the guide; then, remove the 4 screws [2], and detach the pickup assembly 2 [3].



F-8-314

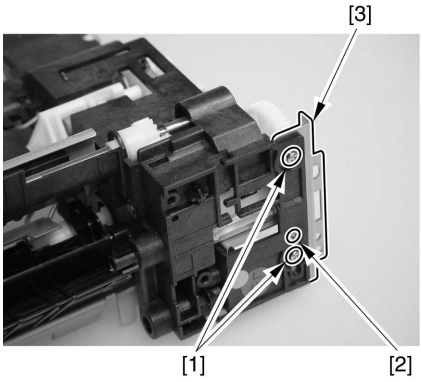
8.7.24.7 Removing the Sensor Base 0001-1559

1) Remove the 2 TP screws [1] and the binding screw [2] from the rear of the pickup assembly, and detach the bracket [3].



F-8-315

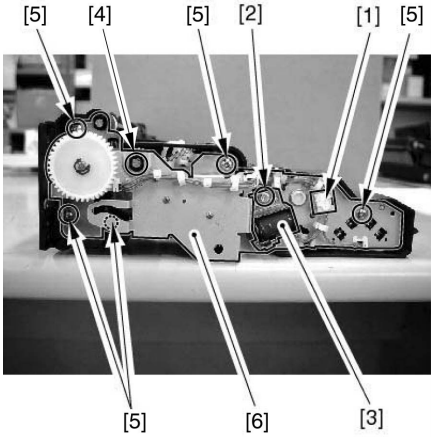
Pickup Unit 1



F-8-316

Pickup Unit 2

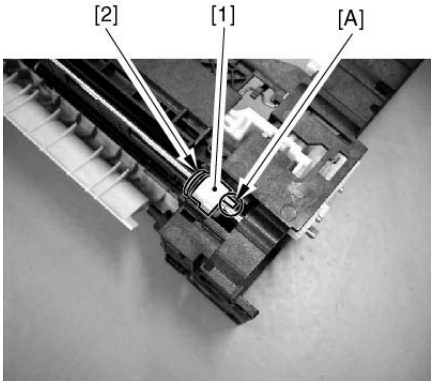
2) Disconnect the connector [1], and remove the screw; then, detach the cassette pickup solenoid [3].
3) Remove the bushing [4] and the 5 screws [5]; then, detach the sensor base [6].



F-8-317

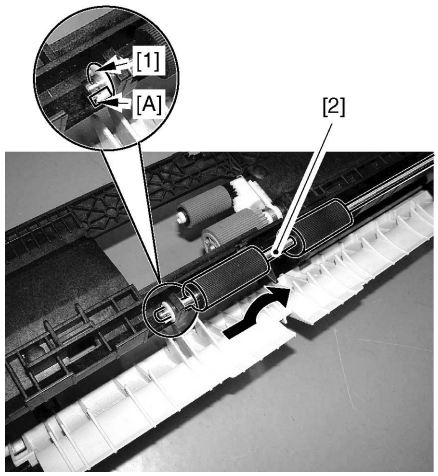
8.7.24.8 Removing the Vertical Path Roller 0001-1560

1) Free the claw [A] of the gear [1] at the rear; then, detach the gear and the bushing [2].



F-8-318

2) Free the claw [A] of the bushing [1] at the front; then, shift it to the rear, and lift the vertical path roller [2] to detach.

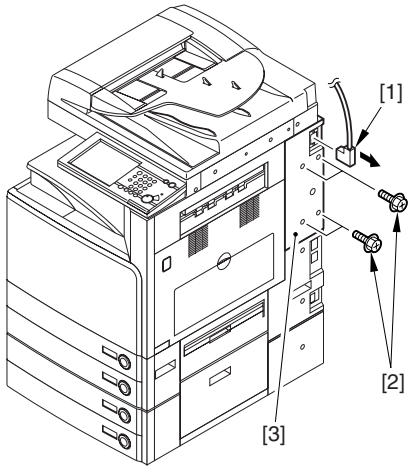


F-8-319

8.7.25 Duplex Feed Roller 2

8.7.25.1 Removing the Right Cover (upper rear) 0002-0430

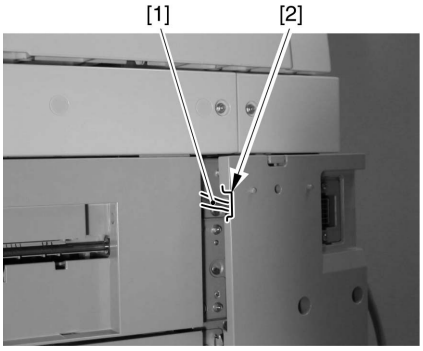
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-320

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

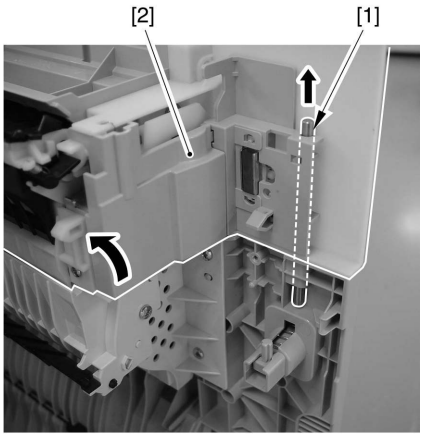


F-8-321

8.7.25.2 Removing the Right Door

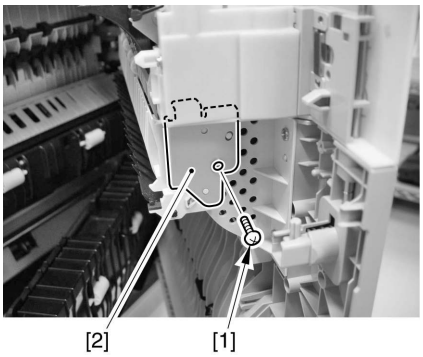
0001-1682

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



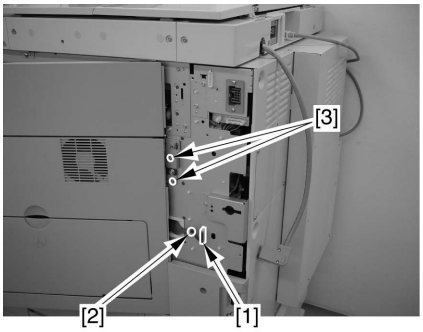
F-8-322

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



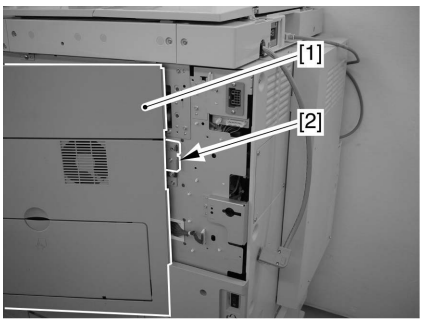
F-8-323

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-324

6) Detach the right door [1] together with the hinge [2].

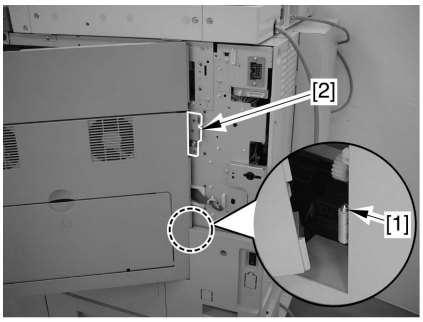


F-8-325

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

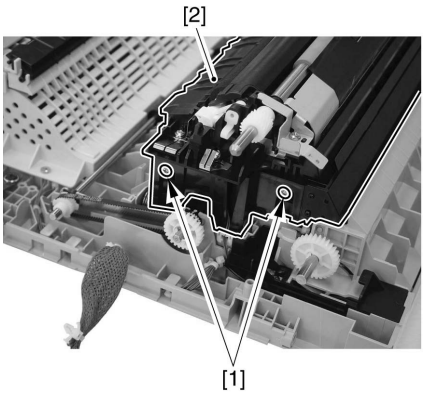


F-8-326

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

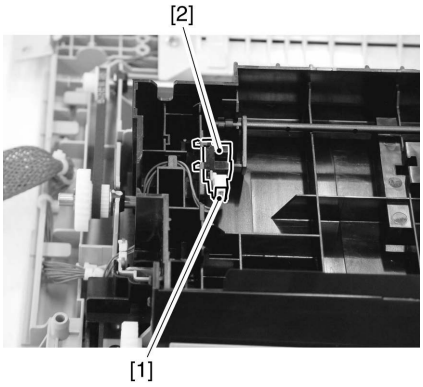
8.7.25.3 Removing the Duplex Feed Sensor 0001-1683

1) Remove the 2 screws (w/ collar) [1], and detach the transfer frame [2].



F-8-327

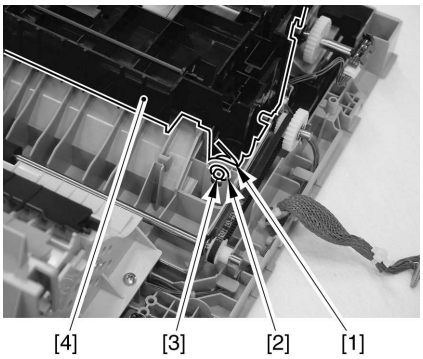
2) Disconnect the connector [1], and remove the duplex feed sensor [2].



F-8-328

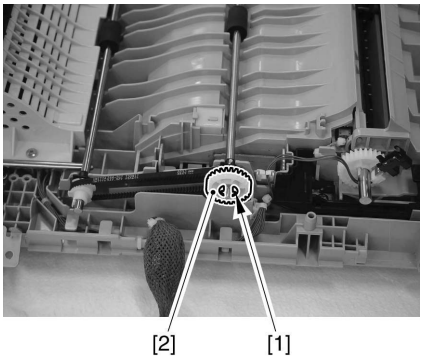
8.7.25.4 Removing the Duplex Feed Roller 2 0001-1687

1) Free the coil spring [1] and, at the same time, remove the E-ring [2] to pull out the shaft [3]; then, detach the duplex feed frame [4].



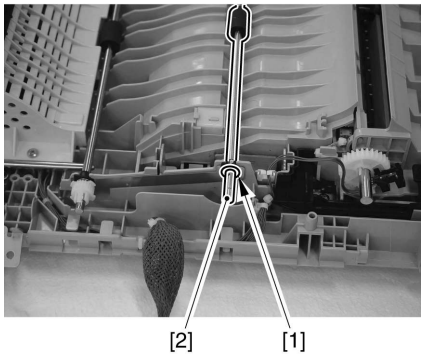
F-8-329

2) Remove the E-ring [1], and detach the one-way gear [2].



F-8-330

3) Remove the E-ring [1], and detach the duplex feed roller 2 [2].

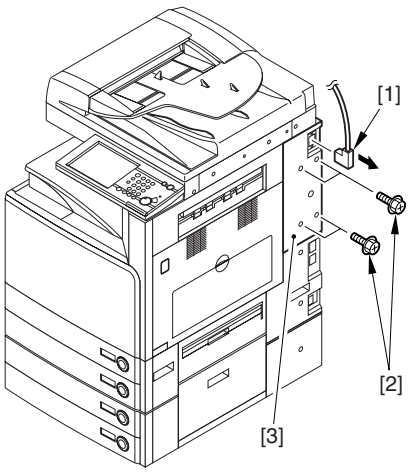


F-8-331

8.7.26 Duplex Feed Sensor

8.7.26.1 Removing the Right Cover (upper rear) 0002-0431

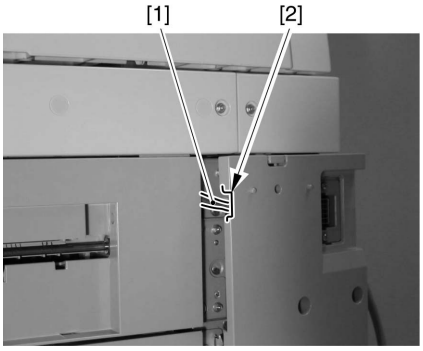
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-332

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

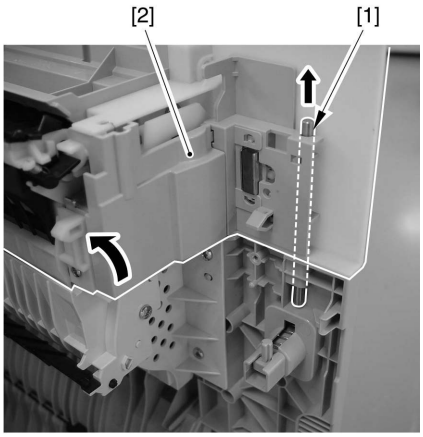
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-333

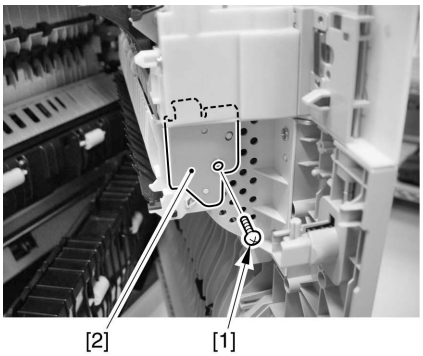
8.7.26.2 Removing the Right Door 0001-1690

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-334

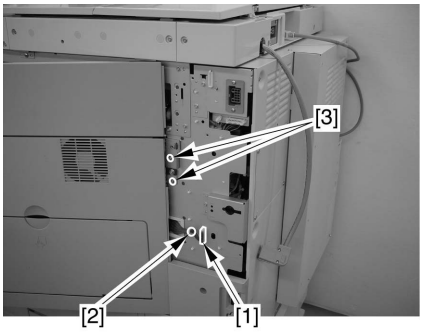
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-8-335

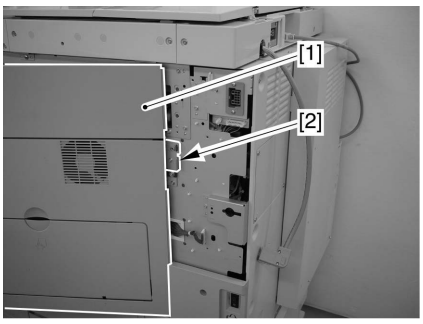
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-336

6) Detach the right door [1] together with the hinge [2].

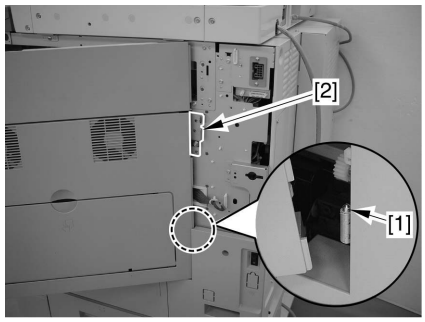


F-8-337

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



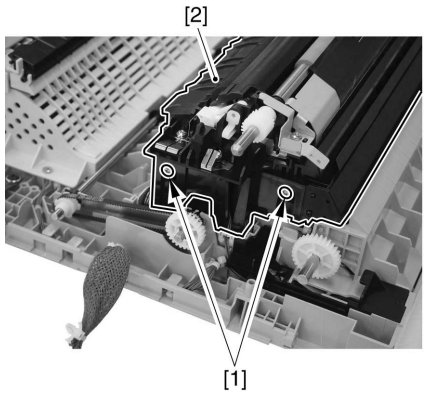
F-8-338

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

8.7.26.3 Removing the Duplex Feed Sensor

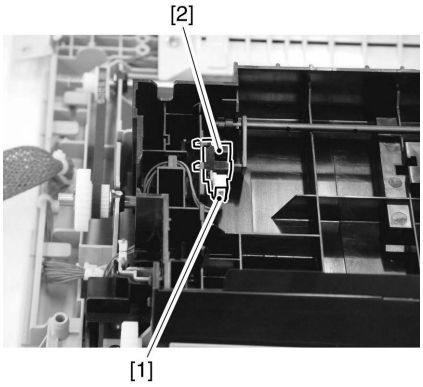
0001-1694

1) Remove the 2 screws (w/ collar) [1], and detach the transfer frame [2].



F-8-339

2) Disconnect the connector [1], and remove the duplex feed sensor [2].

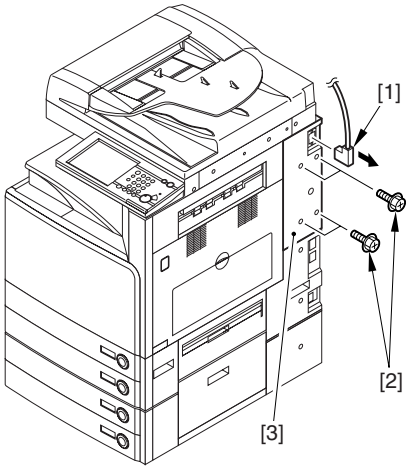


F-8-340

8.7.27 Duplex Feed Clutch

8.7.27.1 Removing the Right Cover (upper rear) 0002-0432

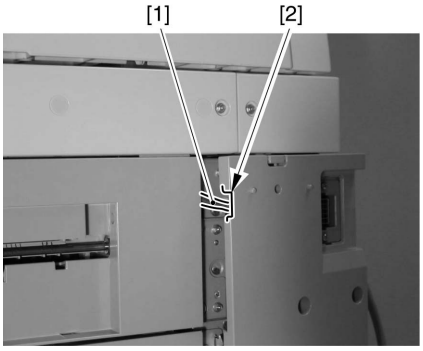
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-341

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

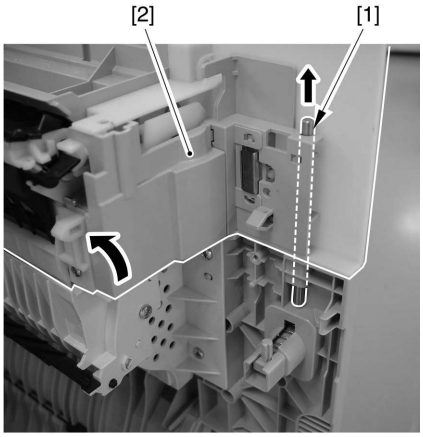
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-342

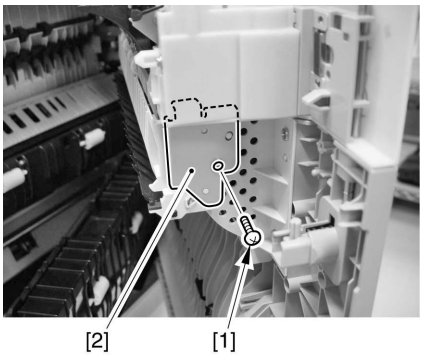
8.7.27.2 Removing the Right Door 0001-1778

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



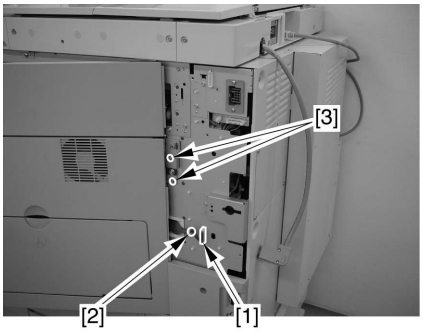
F-8-343

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



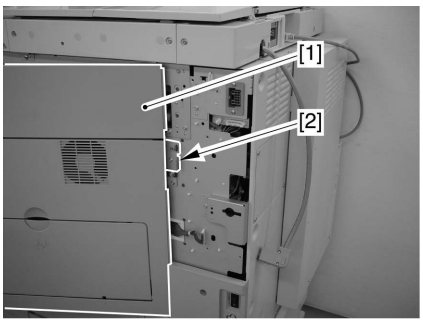
F-8-344

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-345

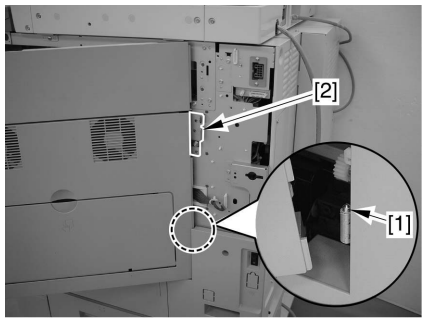
6) Detach the right door [1] together with the hinge [2].



F-8-346

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

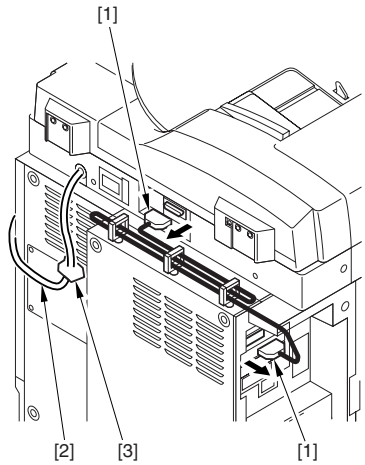


F-8-347

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

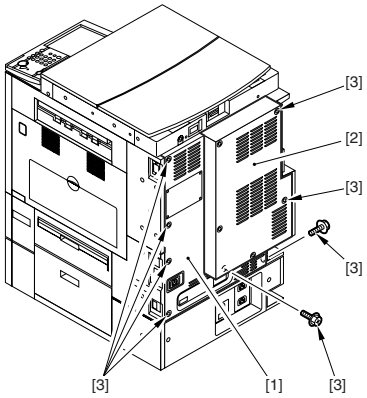
8.7.27.3 Removing the Rear Cover 0002-0470

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-8-348

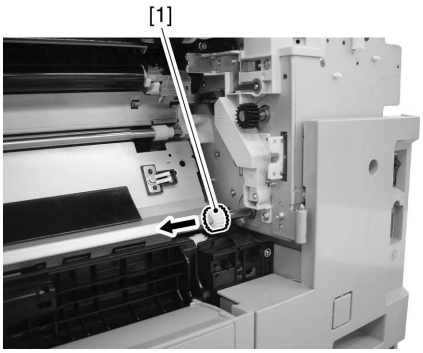
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-8-349

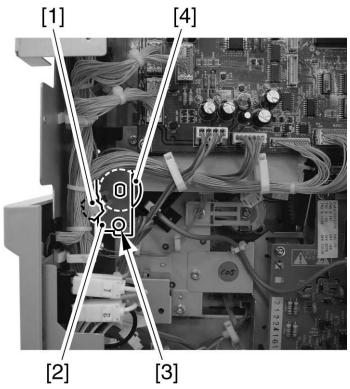
8.7.27.4 Removing the Duplex Feed Clutch 0001-1781

1) Remove the duplex drive gear [1].



F-8-350

2) Disconnect the connector [1]; at the same time, remove the screw [3], and detach the stop [2].
3) Pull out the duplex feed clutch [4] to the front.

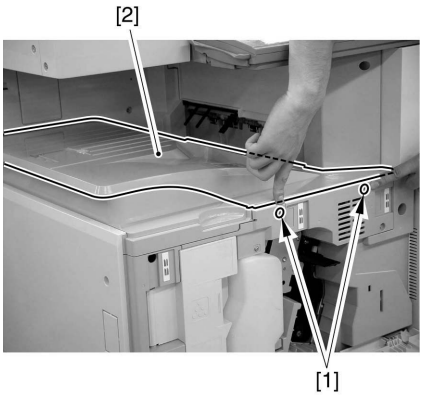


F-8-351

8.7.28 Delivery Assembly 1

8.7.28.1 Removing the Delivery Tray 0002-0065

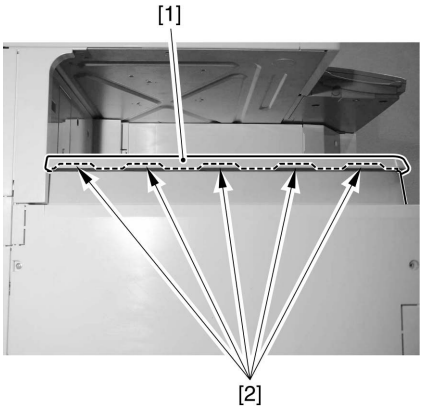
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-8-352

⚠Points to Note When Mounting the Delivery Tray

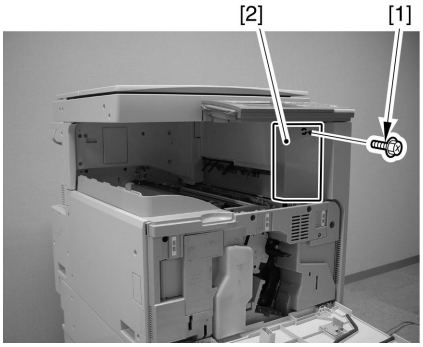
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-8-353

8.7.28.2 Removing the Support Cover 0002-0067

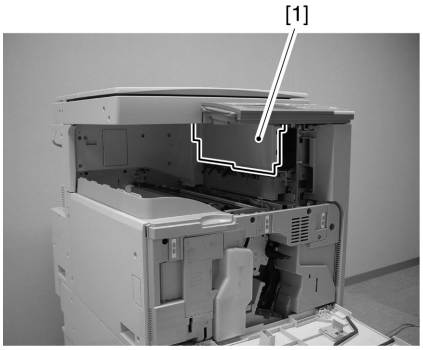
1) Remove the screw [1], and detach the support cover [2].



F-8-354

8.7.28.3 Removing the Delivery Tray Right Cover 0002-0069

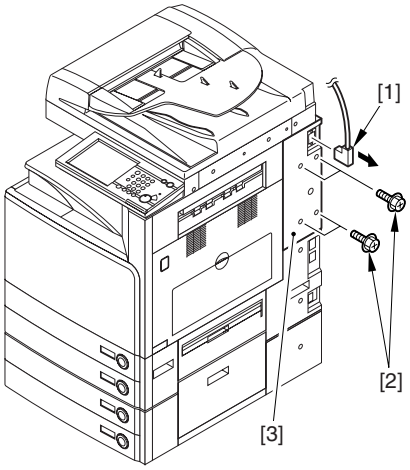
1) Remove the delivery tray right cover [1]. (There is no mounting screw used for the delivery tray right over.)



F-8-355

8.7.28.4 Removing the Right Cover (upper rear) 0002-0449

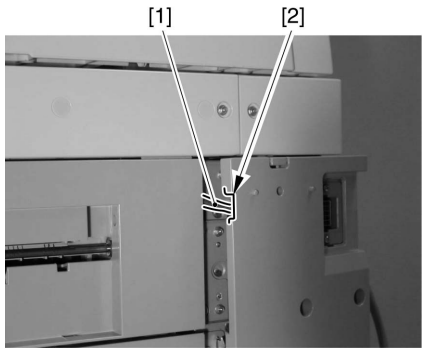
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-8-356

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

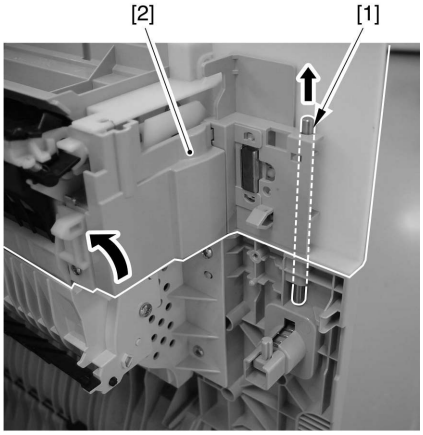
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-8-357

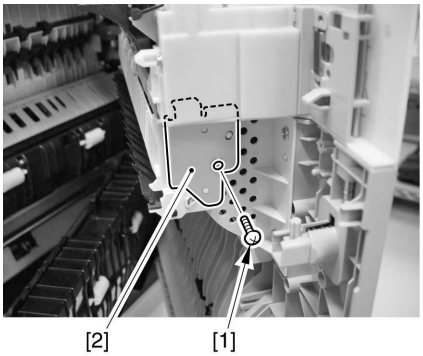
8.7.28.5 Removing the Right Door 0001-3775

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



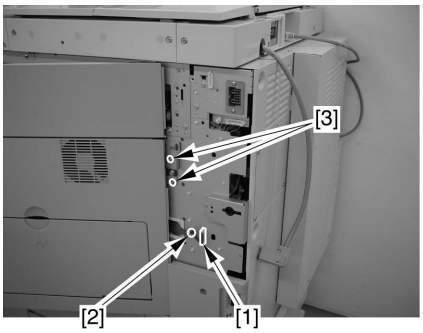
F-8-358

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



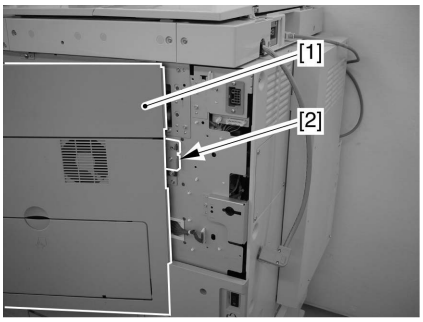
F-8-359

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-360

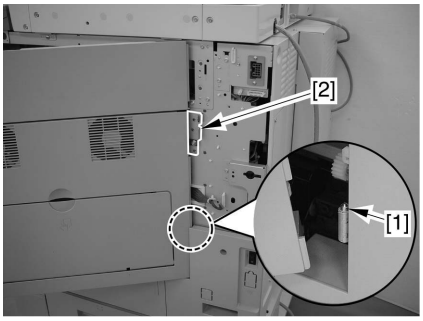
6) Detach the right door [1] together with the hinge [2].



F-8-361

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

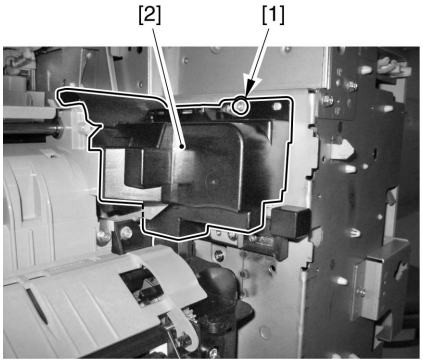


F-8-362

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

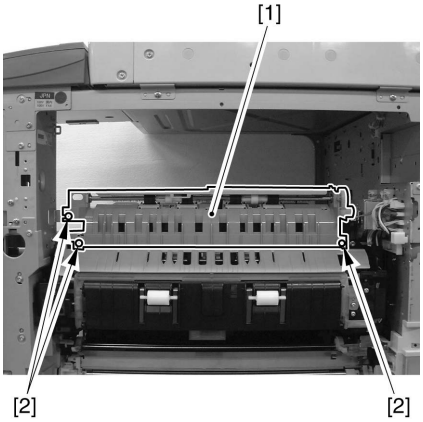
8.7.28.6 Removing the Delivery Assembly 1 0001-2480

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



F-8-363

2) Remove the delivery assembly 1 [1]. (3 screws [2]; 2 on the left are stepped screws)



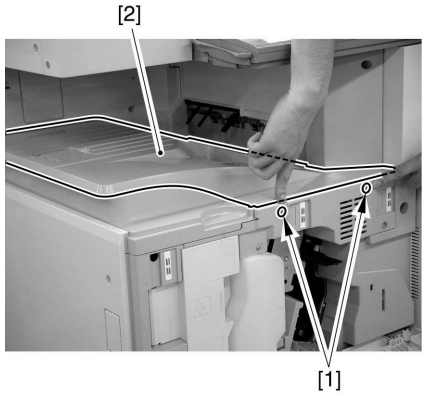
F-8-364

8.7.29 Delivery Drive Unit

8.7.29.1 Removing the Delivery Tray 0002-0066

1) Open the front cover.

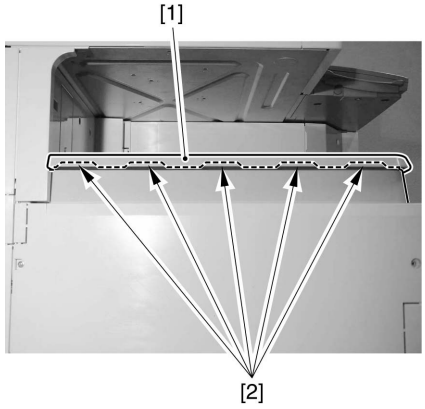
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-8-365

⚠Points to Note When Mounting the Delivery Tray

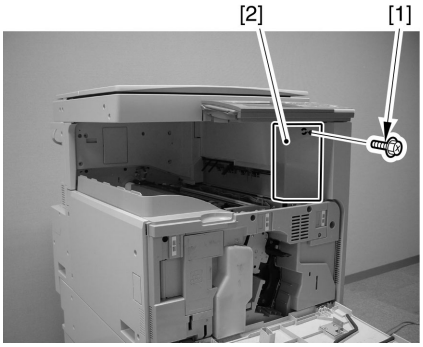
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-8-366

8.7.29.2 Removing the Support Cover 0002-0068

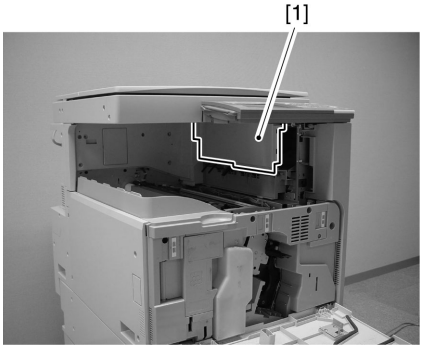
1) Remove the screw [1], and detach the support cover [2].



F-8-367

8.7.29.3 Removing the Delivery Tray Right Cover 0002-0070

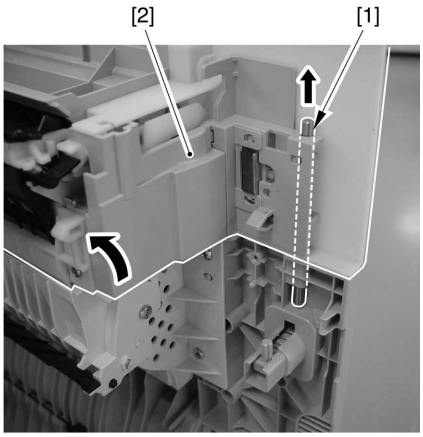
1) Remove the delivery tray right cover [1]. (There is no mounting screw used for the delivery tray right over.)



F-8-368

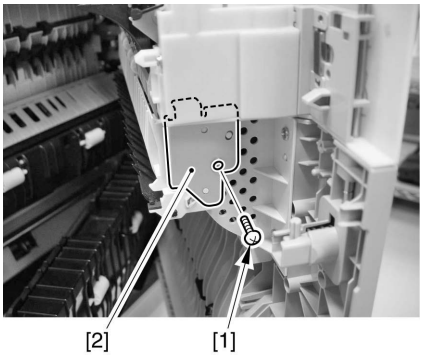
8.7.29.4 Removing the Right Door 0001-1947

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



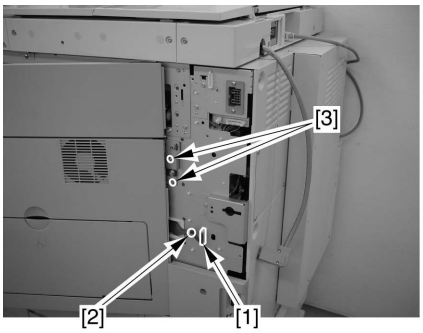
F-8-369

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



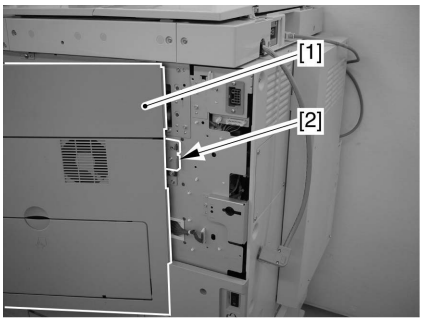
F-8-370

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-8-371

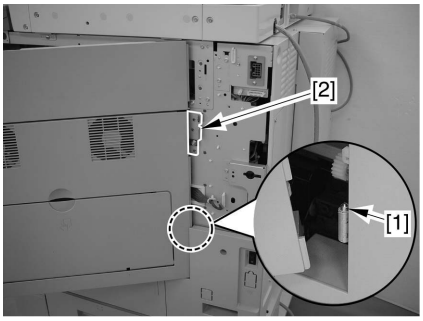
6) Detach the right door [1] together with the hinge [2].



F-8-372

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

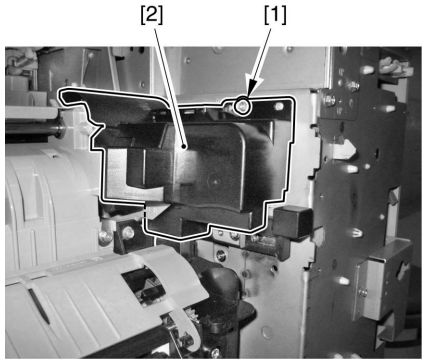


F-8-373

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

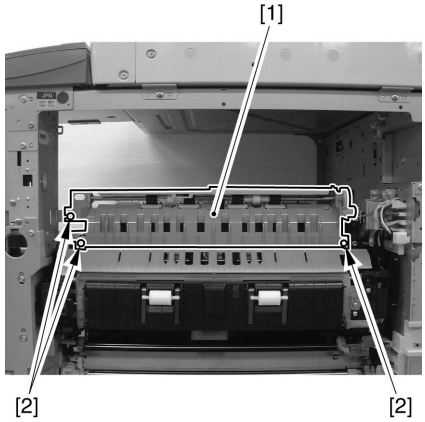
8.7.29.5 Removing the Delivery Assembly 1 0001-2756

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



F-8-374

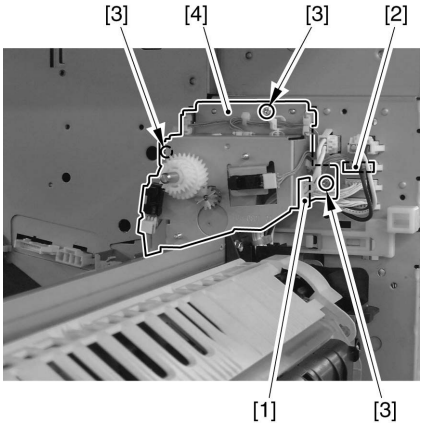
2) Remove the delivery assembly 1 [1]. (3 screws [2]; 2 on the left are stepped screws)



F-8-375

8.7.29.6 Removing the Delivery Drive Assembly 0001-1949

1) Free the fixing harness from the clamp [1].
2) Disconnect the connector [2], and remove the 3 screws [3]; then, detach the delivery drive assembly 1 [4].



F-8-376

Chapter 9 Fixing System

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9.1 Construction

9.1.1 Specifications, Control Mechanisms, and Functions

0000-7945

The fixing system has the following functions:

T-9-1

Item	Description
Fixing method	by heat roller
Fixing heater	for fixing roller side, 2 heaters (main, sub)
	for pressure roller side, 1 heater (heat retention heater)
Control temperature	190 deg C (at standby)
Fixing drive control	by controlling speed of fixing roller (according to paper type)
Fixing temperature detection	by main thermistor (non-contact; TH1, fixing roller center)
	by sub thermistor (contact; TH2, fixing roller front end)
Protective function	for the following; cuts off power to fixing heater in response to error:
	- thermistor (TH1/TH2; temperature control)
	- fixing thermal switch (TP1; fixing roller rear end; operating temperature of 190 +8, -8 deg C)
	- thermistor connection detection
separation claw	non-contact type (assists separation of paper in high humidity environment; in normal environment, separation by fixing/pressure roller)
Bias application	none
Cleaning mechanism	none (cleaning-less)
Oil application	none (oil-less fixing)
Unlocking mechanism	none (jam removal handle used)

Ref:

Cleaning-less Mechanism

The area of the machine where paper moves is free of an object that comes into contact with the fixing roller (e.g., separation claw, thermistor, thermal switch) so that the fixing roller remains free of adhesion of paper lint or dust.

Ref:

Separation of Paper

The pressure of the separation roller in the fixing assembly is more or less identical at the roller center and ends; for this reason, paper comes into contact with and leaves the roller under even pressure across the roller.

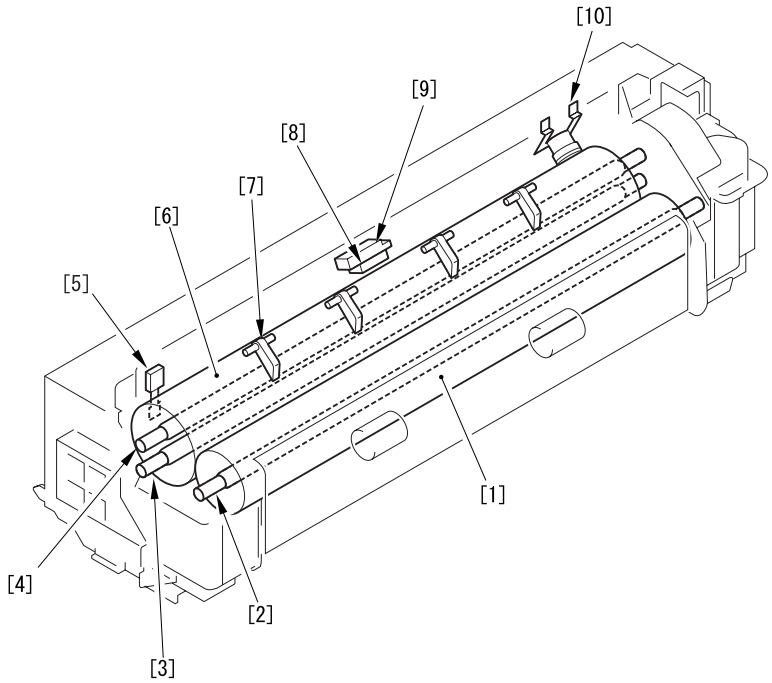
9.1.2 Major Components

0000-7948

The fixing assembly consists of the following components offering the indicated functions:

T-9-2

Item	Notation	Description
Fixing roller		48.5 mm in outside diameter
Pressure roller		38.0 mm in outside diameter
Main heater	H1	485 W (100/115/230 V halogen heater)
Sub heater	H2	315 W (100/115/230 V halogen heater)
Heat retention heater	H3	80 W (24 V; DC heater)
Main thermistor	TH1	non-contact thermistor (temperature control, overheating detection)
Sub thermistor	TH2	non-contact thermistor (overheating detection)
Thermal switch	TP1	contact type (operating temperature: 190 +8, -8 deg C)
Separation claw		non-contact type
Fixing inlet sensor	PS25	detects paper remaining in fixing assembly
Fixing delivery sensor	PS13	detects delivery of paper from fixing assembly
Fixing motor	M11	DC brush-less motor



F-9-1

T-9-3

[1] Pressure roller

[2] Heat retention heater (H3)

[3] Main heater (H1)

[4] Sub heater (H2)

[5] Sub thermistor (TH2)

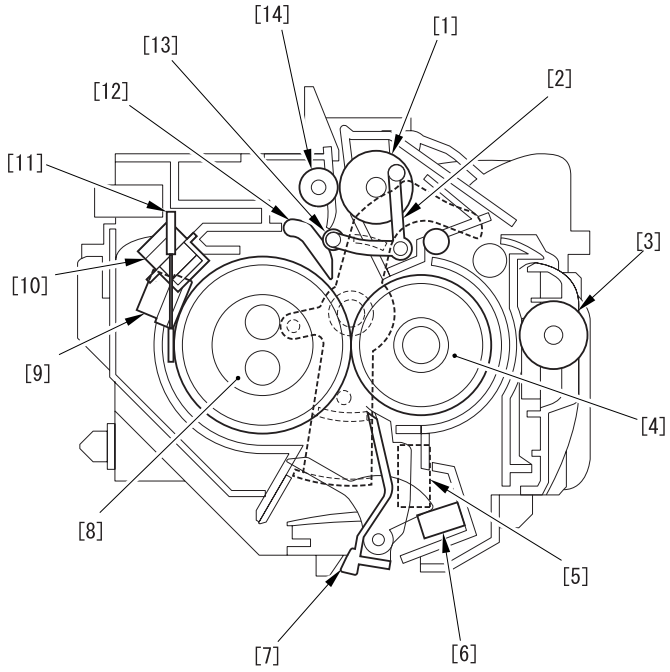
[6] Fixing roller

[7] Separation claw

[8] Thermistor cover

[9] Main thermistor (TH1) (non-contact)

[10] Thermal switch (TP1)



F-9-2

T-9-4

[1] Fixing outlet roller

[2] Fixing outlet sensor arm

[3] Duplex feed roll 1

[4] Pressure roller

[5] Fixing outlet sensor (PS13)

[6] Fixing inlet sensor (PS25)

[7] Fixing inlet guide

[8] Fixing roller

[9] Thermal switch (TP1)

[10] Main thermistor (TH1)

[11] Sub thermistor (TH2)

[12] Separation claw

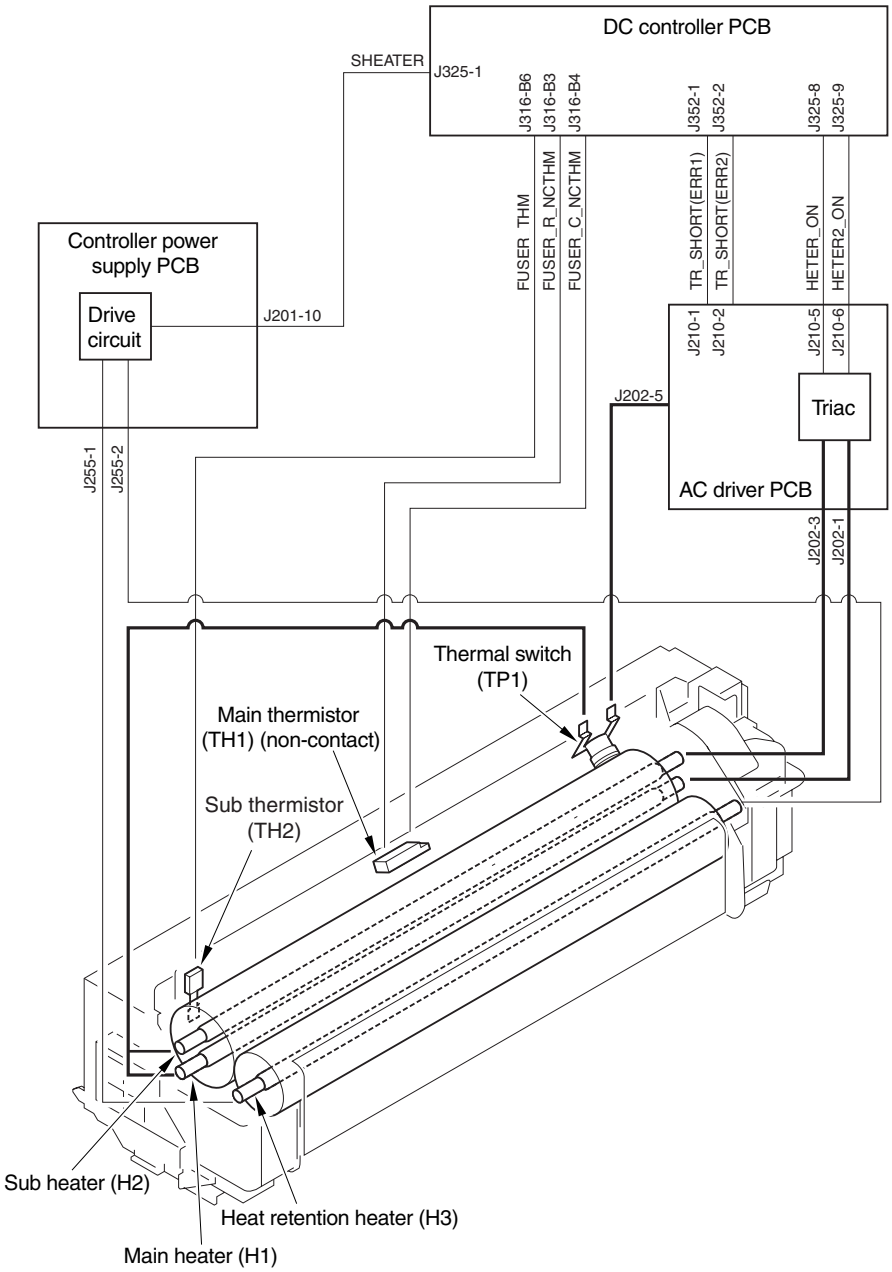
[13] Fixing outlet sensor roll

[14] Fixing outlet roll

9.1.3 Construction of the Control System

0000-7950

The following is a diagram of the construction of the fixing system:

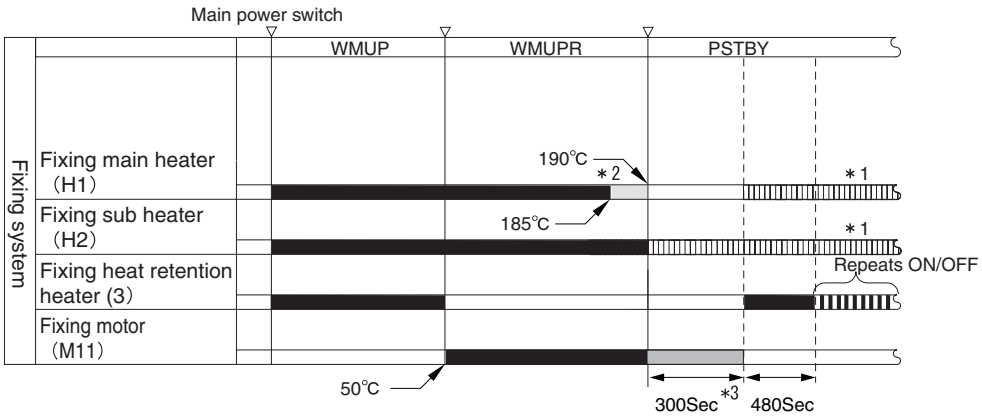


F-9-3

9.2 Basic Sequence

9.2.1 Sequence of Operations at Power-On

0000-7951



F-9-4

*1: executes temperature control using the main heater or the sub heater according to the difference in temperature readings between the main thermistor (TH1) and the sub thermistor (TH2).

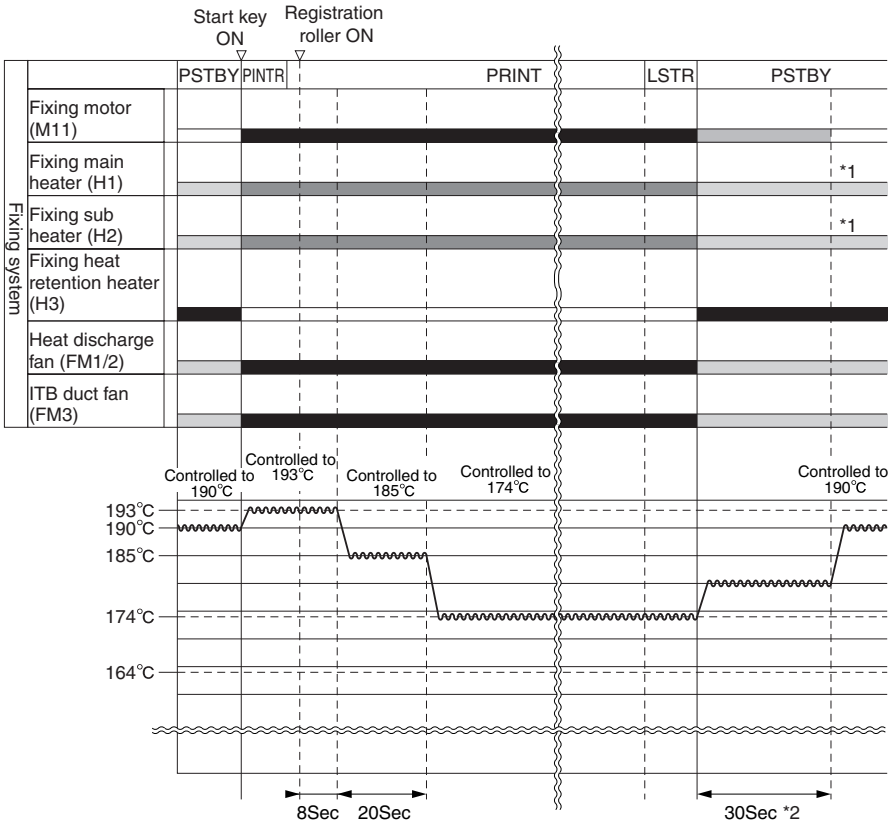
*2: executes temperature control using the sub heater to reduce overshooting (from when the temperature reaches 180 deg C until the warm-up period ends). However, if the temperature is less than 170 deg C at the start of the warm-up period, the main heater will also be used.

*3: executes half-speed rotation if printing starts at the end of the warm-up period.

9.2.2 Basic Sequence of Operations During Printing

0000-7952

Printing starts in a standby state (black-and-white, plain paper).



F-9-5

*1: executes temperature control (to 190 deg C) using the main heater or the sub heater according to the difference in temperature readings between the main thermistor (TH1) and the sub thermistor (TH2).

*2: executes idle rotation of the fixing motor and temperature control at 180 deg C after the end of printing that lasts 180 sec or more.

9.3 Various Control Mechanisms

9.3.1 Controlling the Speed of the Fixing Roller

9.3.1.1 Overview

0000-7953

The fixing roller is driven by an exclusive DC motor (M11).

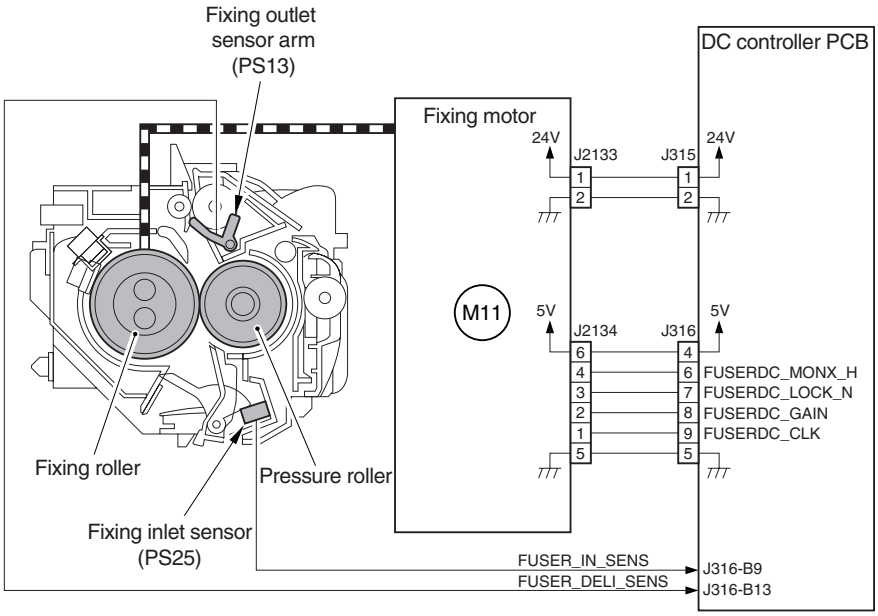
The speed of the fixing roller is controlled for the following:

1. speed control for paper type.
2. speed control for printing volume.
3. control against partial deformation of roller (otherwise caused by non-use over time).

The following signals are sent from the DC controller to the fixing motor (M11).

T-9-5

Signal	Description
FUSER_DC_MONX_H	motor drive signal; if '1', on; if '0', off.
FUSER_DC_LOCK_N	motor speed detection signal; if '0', off or short in revolution; if '1', normal rotation.
FUSER_DC_GAIN	motor speed control signal; if '1', half-speed; if '0', full speed.
FUSER_DC_CLK	basic frequency input to motor.



F-9-6

9.3.1.2 Speed Control According to Paper Type 0000-7956

a. 2-Speed Control

The machine controls the fixing roller to 2 speeds to suit the type of paper being used.

T-9-6

Paper type	Fixing speed
Plain paper	137.0 mm/sec (full speed)
Heavy paper	68.5 mm/sec (half speed)
Mono color transparency	137.0 mm/sec (full speed)
Full color transparency	68.5 mm/sec (half speed)

Note:

The machine reduces the speed of the fixing roller (to half) for the following; if thick paper, to ensure good fixing; for full color transparencies, for good fixing of color toner layers to film.

b. Speed Control for Printing Volume (down sequence)

When a large volume of printing is undertaken, paper can collect heat from the pressure roller, increasing the curling at time of delivery and, thus, adversely affecting stacking (number of sheets that are stacked).

To prevent the symptom, the machine permits a change to the service mode settings so that the following takes place: after the 100th sheet in large size mode or after the 200th sheet in small size mode, the machine increases the distance between sheets and reduces the printing speed by half to decrease curling and ensuring good stacking. The machine refers to the counter reading for the sequence, not to the roller temperature reading.

F-9-7

Level 2

COPIER > OPTION > BODY > DWNSQ-SW

1: down sequence enabled.

0: down sequence disabled (default)

c. Prevention of Partial Deformation of the Roller (otherwise caused by no use over time)

The fixing roller can start to suffer deformation if left alone for a long time under temperature control (because of its nip). To prevent deformation, the machine rotates the fixing roller at 68.5 mm/sec (half speed) for a period of 0.5 sec every 30 min (during standby).

When the machine starts sleep mode, the machine turns off the power to the fixing motor (M11) to prevent the fixing motor from rotating; however, since the machine does not perform temperature control for fixing in sleep mode, the

roller will not suffer deformation even when it remains stationary.

The machine performs temperature control for fixing while it is in power save mode (-50%) or in low-power mode, and turns off the power to the fixing motor (M11), thus preventing the fixing roller from rotating. If such a condition lasts for 4 hr or more, the roller can start to suffer deformation; the machine, however, is designed to shift to sleep mode before the passage of 4 hr so that the roller cannot start to suffer deformation.

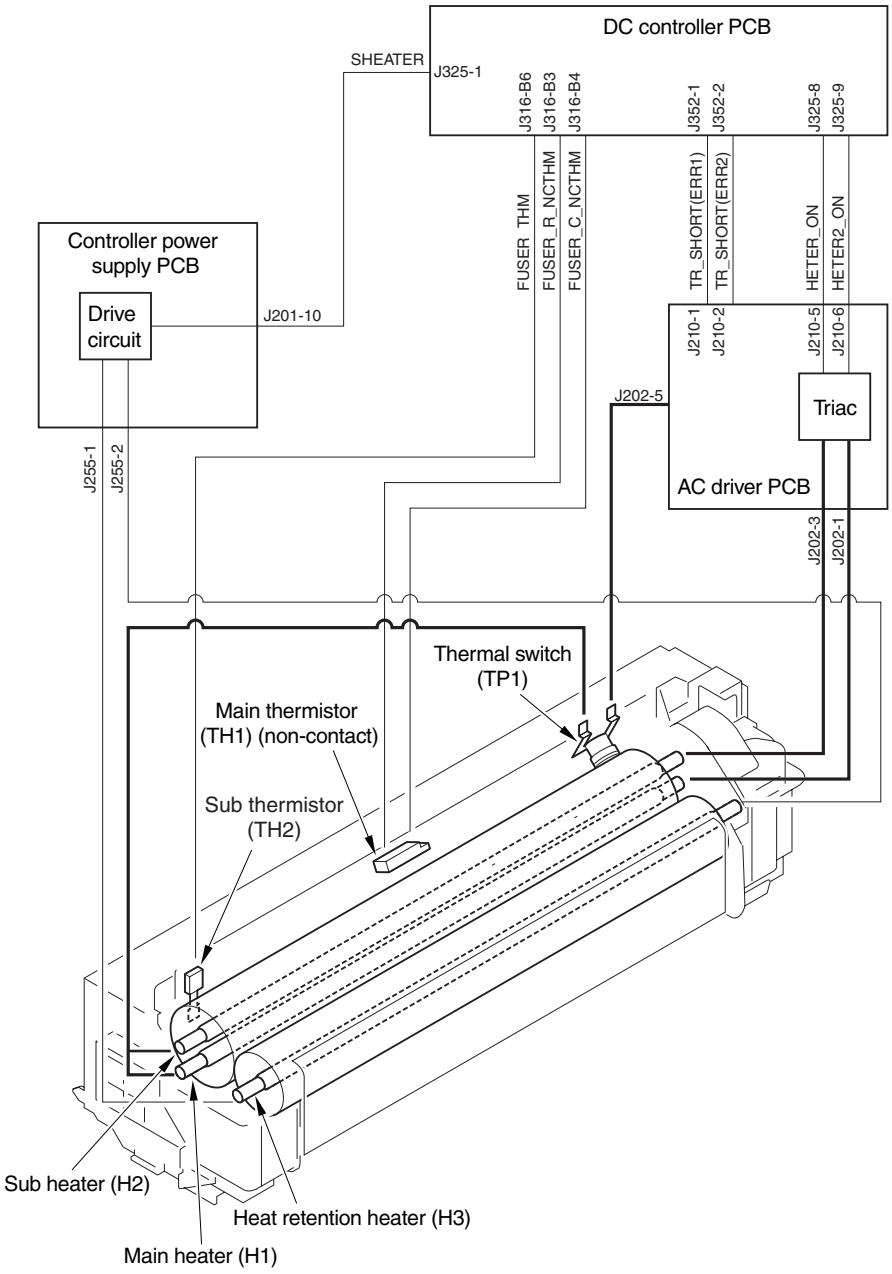
9.3.2 Controlling the Fixing Roller Temperature

9.3.2.1 Overview

0000-7958

The following is a diagram of the mechanisms involved in fixing roller temperature control; see the detailed descriptions of the mechanism for the following states:

[1] at time of power-on
[2] in a standby state
[3] during printing
[4] return sequence



F-9-8

9.3.2.2 At Power-On

0000-7960

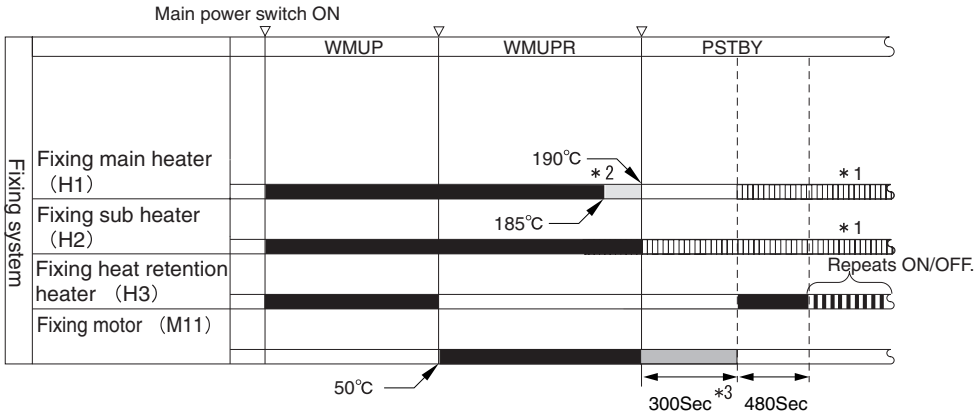
The fixing roller is heated by 2 fixing heaters (H1, main heater; H2, sub heater). The fixing pressure roller is heated by the heat retention heat heater (H3; DC heater). The main and sub heaters remain fully on until the fixing roller reaches 185 deg C. Thereafter, the sub heater remains fully on until the fixing roller reaches 190 deg C; when it reaches 190 deg C, the machine ends the warm-up period. (If the temperature is 170 deg C or more at the start of the warm-up period, however, the main heater will also remain fully on until the warm-up period ends.) The heat retention heater remains fully on from the start of the warm-up period until the temperature of the fixing roller reaches 50 deg C.

When the temperature of the fixing roller reaches 50 deg C, the machine starts initial multiple rotation (full speed), and continues it until the warm-up period ends (i.e., when the fixing roller is heated to 190 deg C).

If printing does not start at the end of the warm-up period, the machine rotates the fixing roller for 300 sec at half speed (following initial multiple rotation). While the roller is rotating at half speed, it is controlled to 195 deg C by the work of the sub heater.

Memo:

1. The machine accepts a print job at time of half-speed rotation; if 300 sec has not passed at the end of the job, it will continue half-speed rotation until 300 sec has passed.
2. The machine uses half-speed rotation so that the temperature of the pressure roller increases, thereby ensuring good fixing.



F-9-9

*1: The machine executes temperature control (to 190 deg C) using the main heater or the sub heater according to the difference in temperature readings between the main thermistor (TH1) and the sub thermistor (TH2).

*2: The machine performs temperature control using the sub heater when the temperature reaches 180 deg C to reduce overshooting (until the end of the warm-up period). If the temperature at the start of the warm-up period is less than 170 deg C, the machine executes temperature control also using the main heater.

*3: If printing does not start at the end of the warm-up period, the machine executes half-speed rotation.
The machine uses half-speed rotation to increase the temperature of the pressure roller.

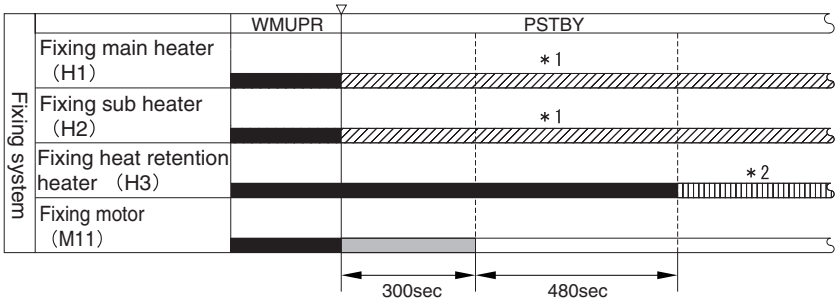
9.3.2.3 At a Standby State 0000-7964

The machine controls the temperature of the fixing roller using the main heater (H1) and the sub heater (H2) to 190 deg C based on the readings of the main thermistor (TH1; non-contact type) and the sub thermistor (TH2). If we assume that the reading of temperature by the main thermistor is Th1 and that by the sub thermistor is Th2,

- if Th1 is higher than Th2, the machine uses the sub thermistor to execute temperature control.
- if TH1 is lower than or is equal to Th2, the machine uses the main heater to execute temperature control.

Memo:

The main heater emits heat most at its center, while the sub heater emits heat most at its both ends.



F-9-10

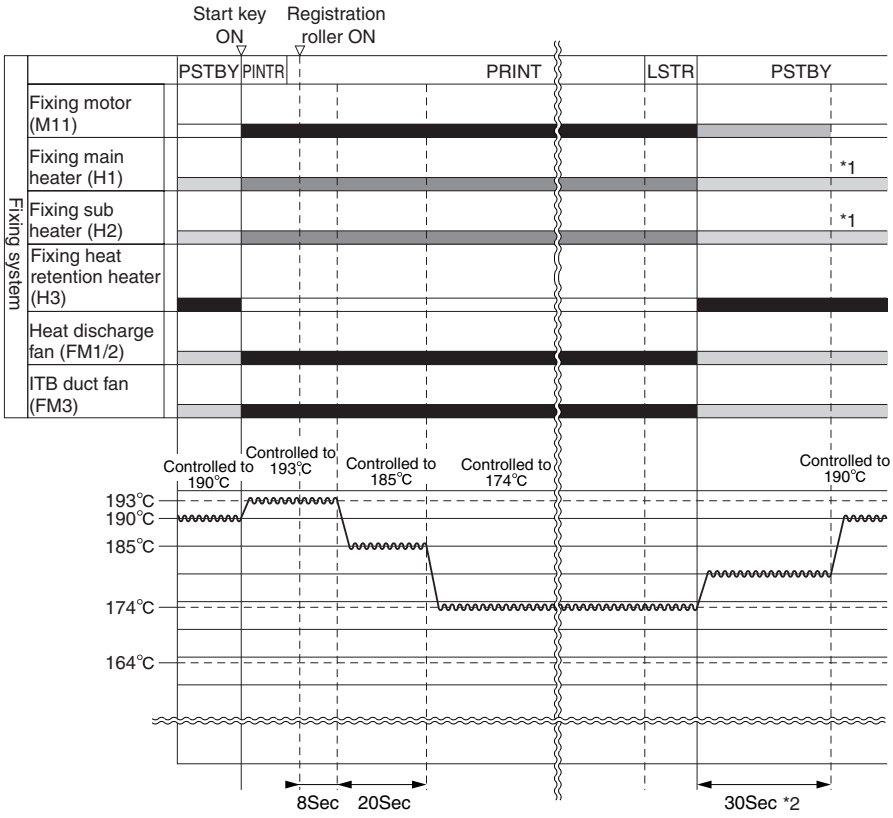
*1: The machine executes temperature control (to 190 deg C) using the main heater or the sub heater according to the difference in readings between the main thermistor (TH1) and the sub thermistor (TH2).

*2: The fixing heat retention heater repeats remaining on for 4.2 sec and off for 1.6

9.3.2.4 At Time of Printing

0000-7967

The machine controls the temperature of the fixing roller by turning on and off the main heater according to the reading of the main thermistor. The following shows how the machine controls the temperature when making black-and-white prints using plain paper:



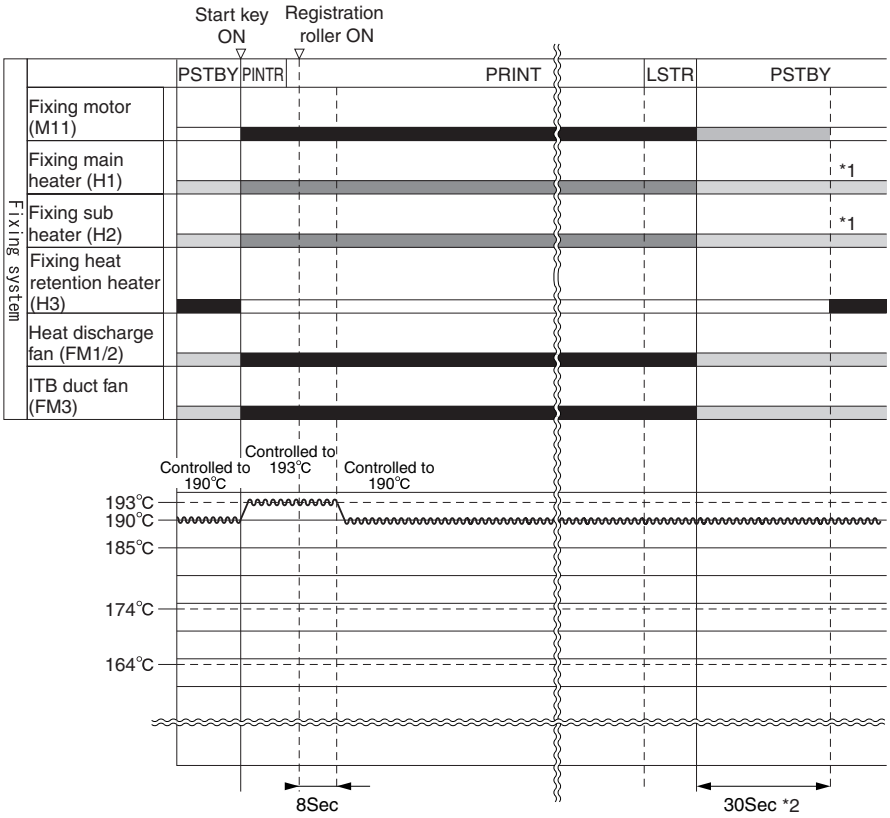
F-9-11

*1: The machine executes temperature control (to 190 deg C) using the main heater or the sub heater according to

the difference in readings of the main thermistor (TH1) and the sub thermistor (TH2).

*2: The machine executes idle rotation of the fixing motor and temperature control to 180 deg C after a print job that lasts for 180 sec or more.

The machine uses the following temperature control sequence when making black-and-white prints on transparencies or making color prints.



F-9-12

*1: The machine executes temperature control (to 190 dg C) using the main heater or the sub heater according to the difference in readings of the main thermistor (TH1) and the sub thermistor (TH2).

*: The machine executes idle rotation of the fixing motor after a print job that lasts 180 sec or more.

9.3.2.5 Return Sequence

0000-7974

Return from Power Save Mode/Jam Removal/Door Open State

The machine becomes ready for printing when the temperature of the main thermistor (TH1) reaches 190 deg C.

Return from Low Power Mode

- In the Case of Black-and-White Prints

The machine becomes ready for printing 30 sec (less than 180 deg C) after it starts return sequence.

- In the Case of Full Color Prints

The machine becomes ready for printing when the temperature of the main thermistor (TH1) reaches 180 deg C.

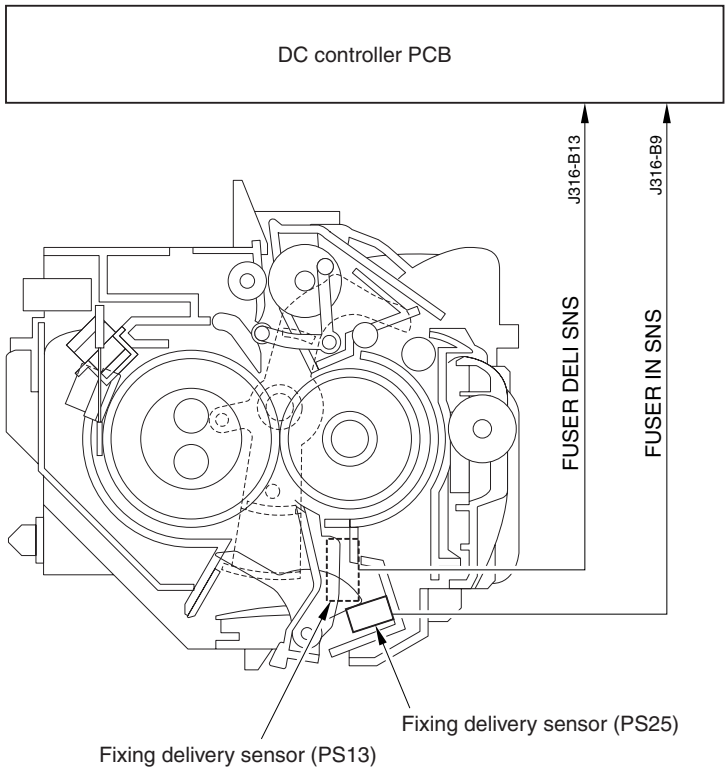
F-9-13

The machine permits a change to the conditions imposed on return from low power mode (so that it becomes ready for printing when the temperature of the main thermistor (TH1) reaches 180 deg C, 185 deg C, or 190 deg C).
COPIER>OPTION>BODY>LPM-RTRN
0: return in 30 sec (default)
1: return at 180 deg C
2: return at 185 deg C
3: return at 190 deg C

9.3.3 Detecting the Passage of Paper

9.3.3.1 Detection of the Passage of Paper 0001-4703

The following is a diagram of the mechanisms used by the machine to detect the passage of paper for the fixing unit:



F-9-14

T-9-7

Sensor	Description
Fixing inlet sensor (PS25)	detects paper remaining at the fixing assembly inlet at power-on.
Fixing outlet sensor (PS13)	Detects paper delivered by the fixing assembly.

- Preventing Wrapping of Paper Around the Fixing Roller

The machine starts its mechanism to prevent wrapping of paper around the fixing roller in response to detection of a jam by the fixing inside sensor.

a. Fixing Inlet sensor (PS25)

When the fixing inlet sensor (PS25) detects a stationary jam at power-on, the machine does not execute initial multiple rotation, thereby preventing paper from wrapping around the fixing roller.

The fixing inlet sensor (PS25), however, does not check for a delay or stationary jam while feed operation is under way.

b. Fixing Outlet Sensor (PS13)

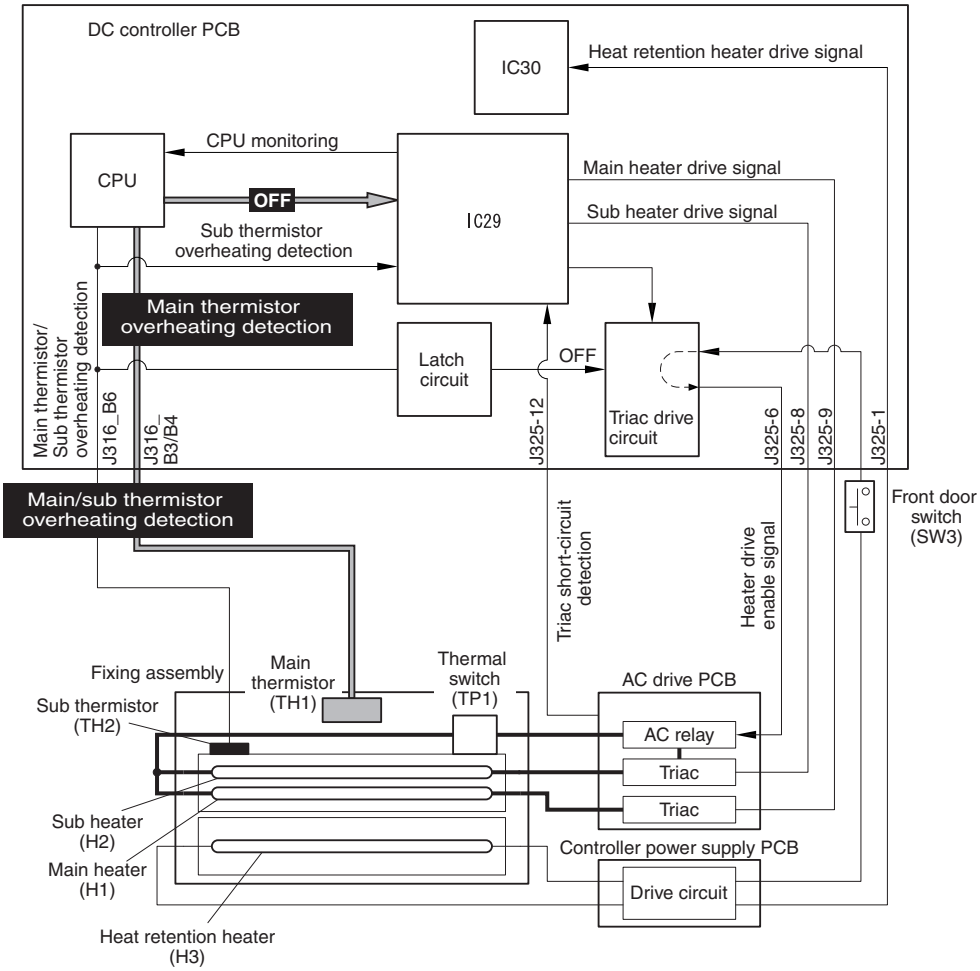
When the fixing outlet sensor (PS13) detects a delay jam, the machine stops the fixing motor (M11) to prevent wrapping of paper around the fixing roller.

9.4 Protective Functions

9.4.1 Detecting Overheating by the Main Thermistor (TH1)

0000-7976

When the main thermistor (TH1) detects overheating, the CPU on the DC controller PCB turns off the triac drive circuit.
Moreover, if the CPU on the DC controller detects that the difference in readings between the main thermistor (TH1) and the sub thermistor (TH2) is more than specified, the CPU turns off the triac drive circuit.

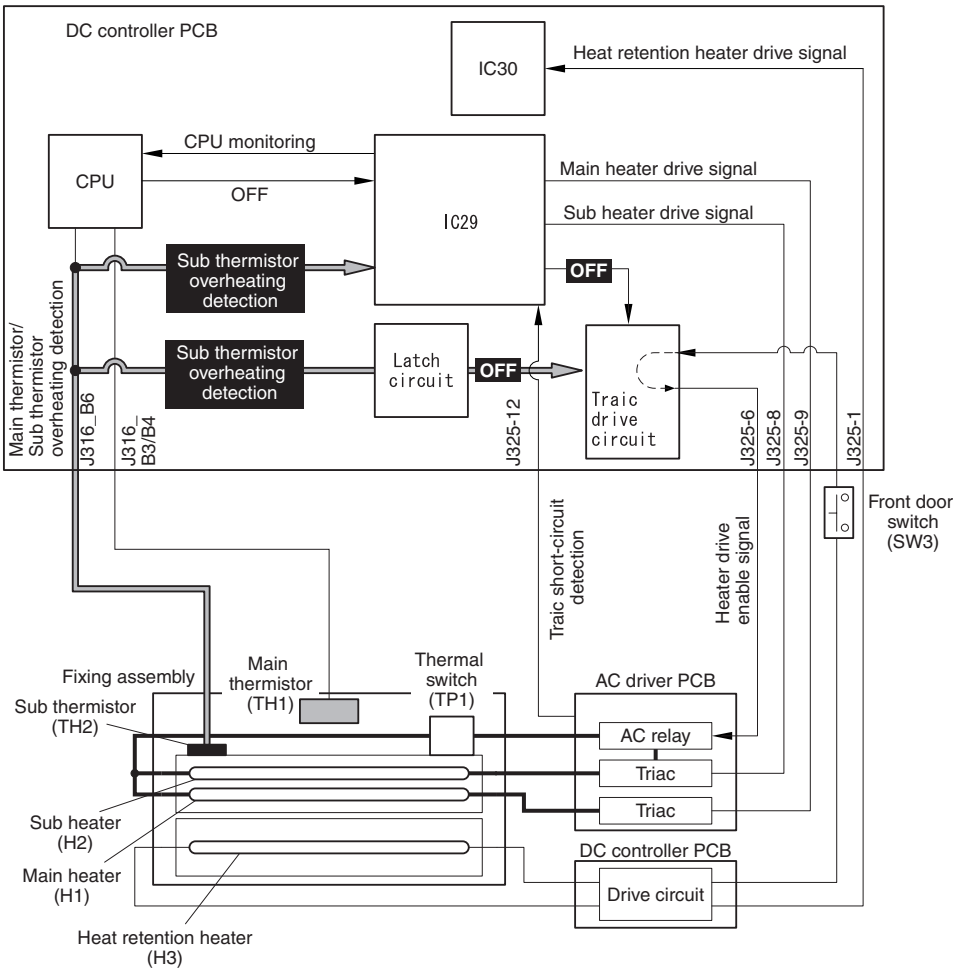


F-9-15

9.4.2 Detecting Overheating by the Sub Thermistor (TH2)

0000-8584

When the sub thermistor (TH2) detects overheating, the triac drive circuit of the DC controller PCB turns off the main heater/sub heater drive signal. Or, the latch circuit of the DC controller PCB turns off the heater drive enable signal to the triac drive circuit.

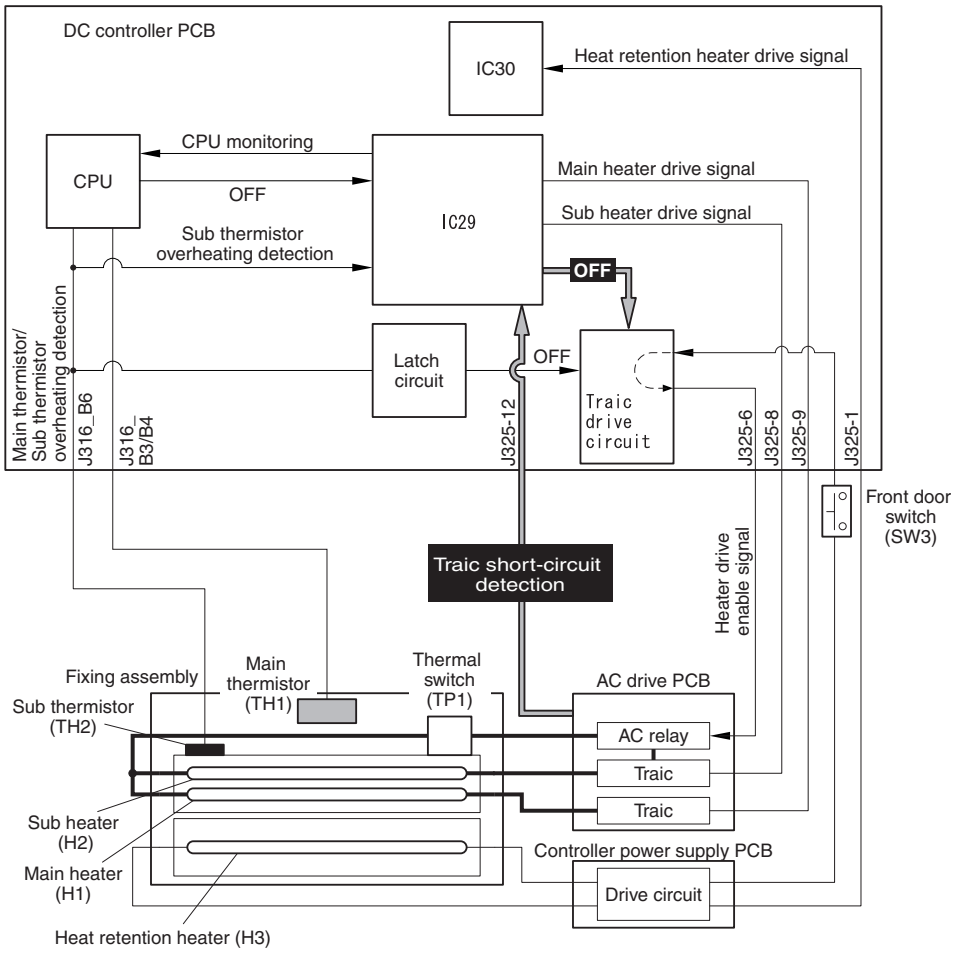


F-9-16

9.4.3 Detecting Overheating in Relation to a Triac Short-Circuit

0000-8585

When the AC drive detects a short circuit in the triac, the triac drive circuit on the DC controller PCB turns off the main heater/sub heater drive signal.



F-9-17

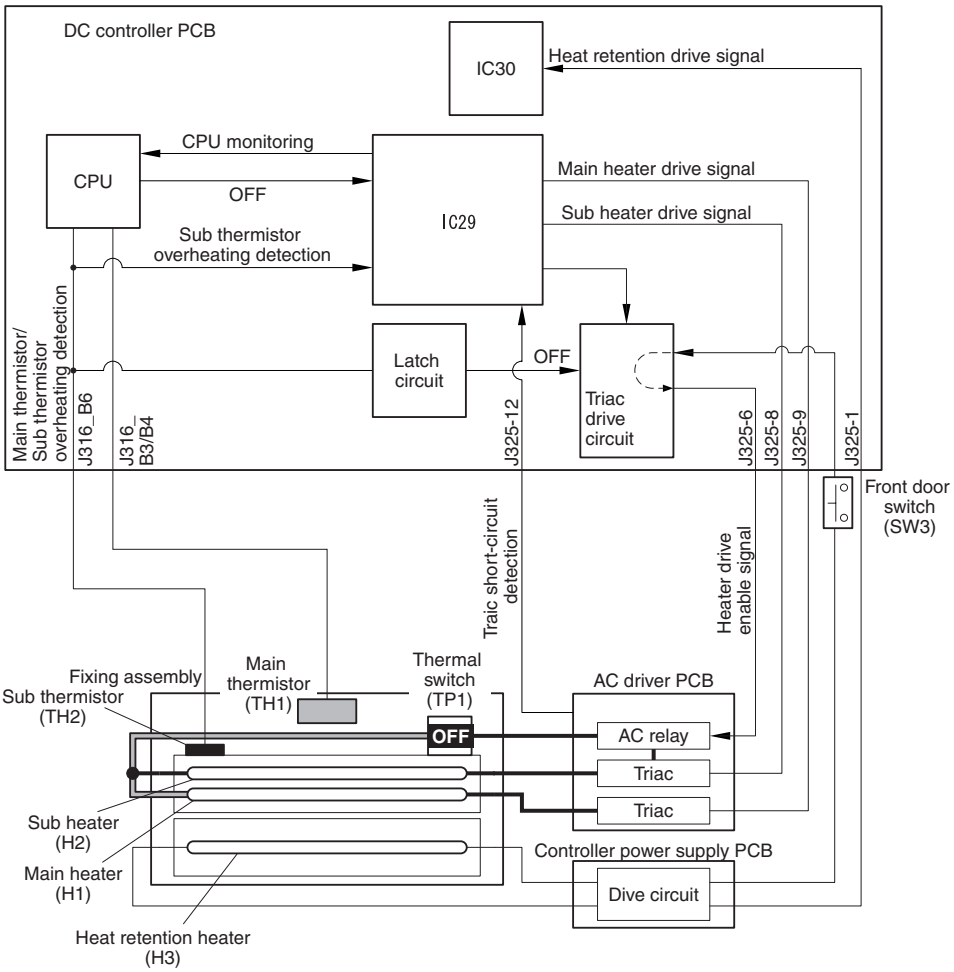
9.4.4 Detecting Overheating by the Thermal Switch (TP1)

0000-8586

When the thermal switch (TP1) reaches a specific temperature, it goes off to cut off the AC power line to the main heater and the sub heater.

Caution:

Once open, the contact of the thermal switch will not return to normal even after the temperature drops to its normal level. Remove the cause of the error that opened the contact, and be sure to replace the thermal switch with a new one.



F-9-18

9.4.5 Detecting Overheating of the Heat Retention Heater (H3)

0000-8587

The machine does not monitor the heat retention heater (H3) for overheating, and there is no mechanism to turn off the power to the heat retention heater.

9.4.6 Error

0000-8588

Related Error

E000

The main thermistor (TH1) has an open circuit or has poor contact. The sub thermistor (TH2) has an open circuit or poor contact. The thermal switch (TP1) has an open circuit. The main heater (H1)/sub heater (H2) has an open circuit. The AC drive PCB is faulty. The DC controller PCB is faulty. The door switch (SW3) is faulty.

E0001

The main thermistor (TH1) is faulty. The sub thermistor (TH2) is faulty. The AC driver PCB is faulty. The DC controller PCB is faulty.

E003
The sub thermistor (TH2) has an open circuit or has poor contact. The thermal switch (TP1) has an open circuit. The main heater (H1)/sub heater (H2) has an open circuit. The AC drive PCB is faulty. The DC controller PCB is faulty. The door switch (SW3) is faulty.

E004
The main thermistor (TH1) has an open circuit or has poor contact. The sub thermistor (TH2) has an open circuit or has poor contact. The thermal switch (TGP1) has an open circuit. The main heater (H1)/sub heater (H2) has an open circuit. The AC driver PCB is faulty. The DC controller PCB is faulty.

E008
The fixing upper roller counter reading has reached its upper limit (180,000 counts: if smaller than B4, 1 count; if B4 or larger, 2 counts).

E014
The fixing motor (M11) has an open circuit or has poor contact. The DC controller PCB is faulty.

Note 1:
If the machine indicates E000 through E003, it will not reset the error when its main power switch is turned off and then on, requiring you to execute the following service mode item: COPIER>FUNCTION>CLER>ERR.

Note 2:
If the machine suffers an error because the fixing upper roller count has reached its upper limit, be sure to replace the fixing assembly or the fixing upper roller, and then execute the following service mode item: COPIER>COUNTER>MISC>FX-UP-RL.

Note 3:
If you have replaced the DC controller PCB or initialized the RAM on the DC controller, be sure to enter the reading you noted before the replacement or initialization in the following service mode item: COPIER >COUNTER>MISC>FX-UP-RL.

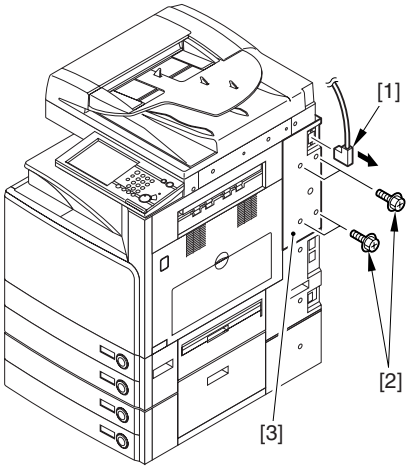
Note 4:
The machine indicates a warning when the reading of the fixing upper roller counter reaches 100,000.

9.5 Parts Replacement Procedure

9.5.1 Fixing Unit

9.5.1.1 Removing the Right Cover (upper rear) 0002-0405

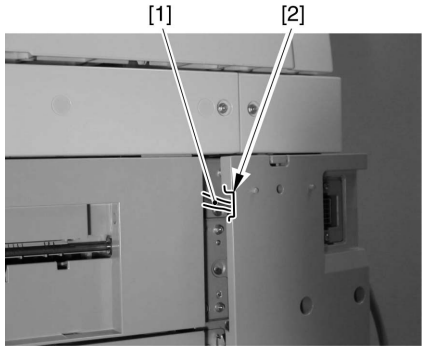
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-19

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

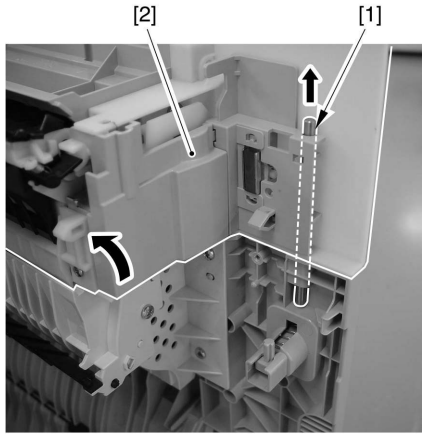
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-9-20

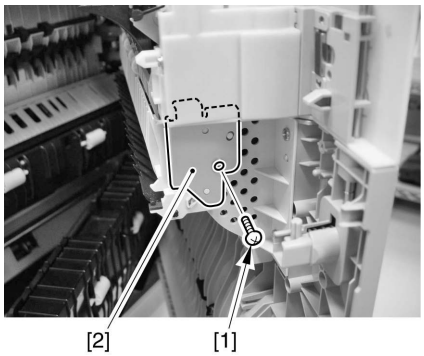
9.5.1.2 Removing the Right Door 0001-1317

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



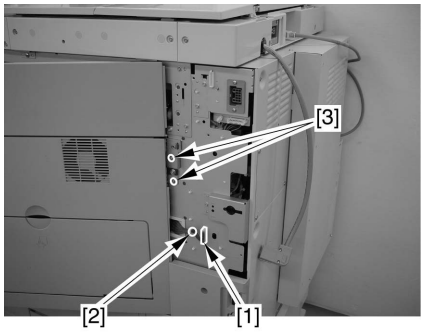
F-9-21

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



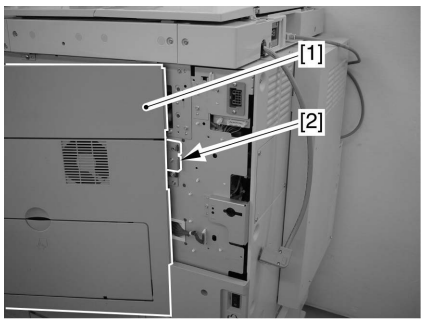
F-9-22

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-23

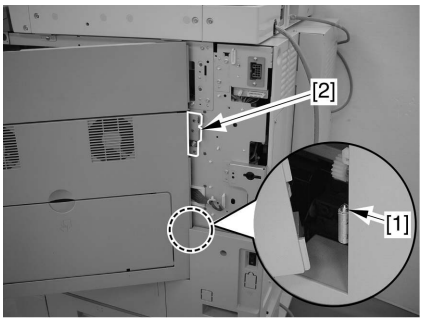
6) Detach the right door [1] together with the hinge [2].



F-9-24

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

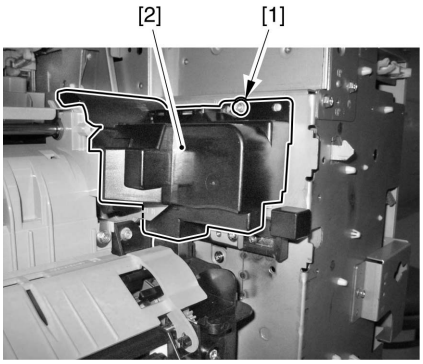


F-9-25

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

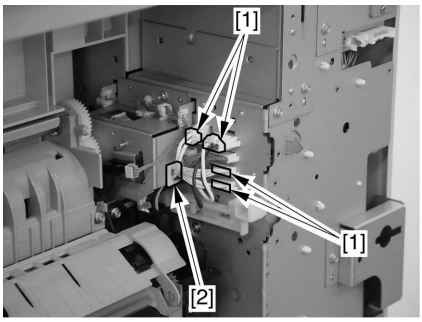
9.5.1.3 Removing the Fixing Unit 0001-1309

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



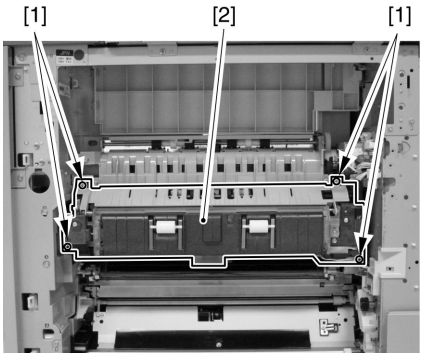
F-9-26

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-27

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-28

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

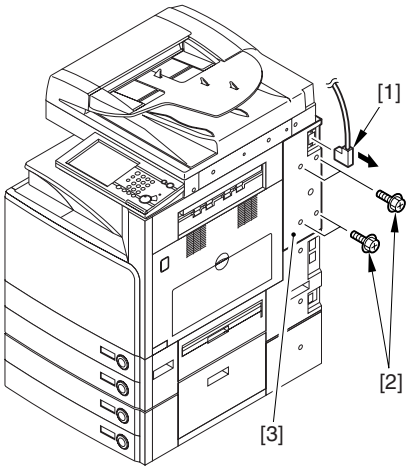
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

9.5.2 Fixing Upper Frame

9.5.2.1 Removing the Right Cover (upper rear) 0002-7382

1) Disconnect the power cable [1] from the printer unit.

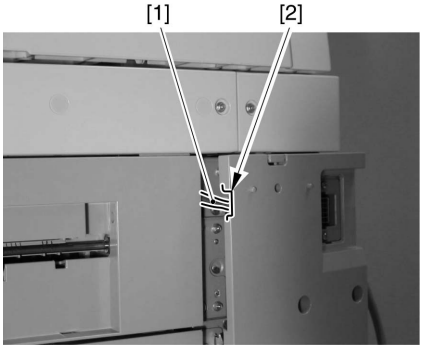
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-29

⚠**Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)**

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



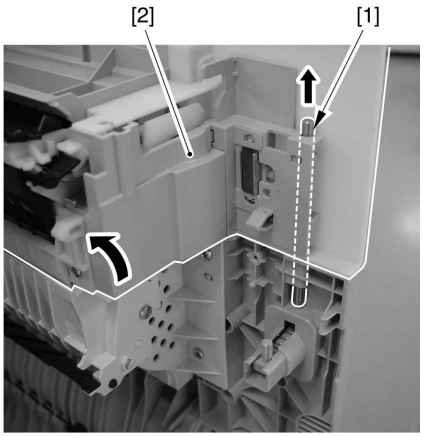
F-9-30

9.5.2.2 Removing the Right Door 0002-7384

1) Open the right cover.

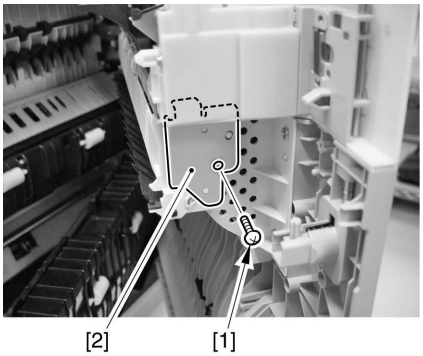
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1,

Finisher-Q1, or Saddle Finisher-Q2 is installed.



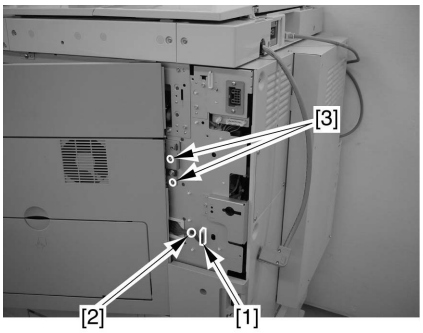
F-9-31

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



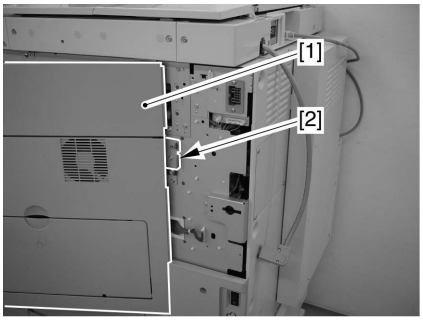
F-9-32

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-33

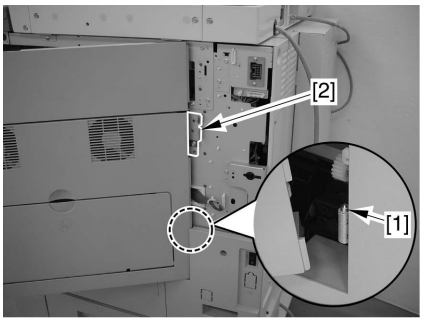
6) Detach the right door [1] together with the hinge [2].



F-9-34

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

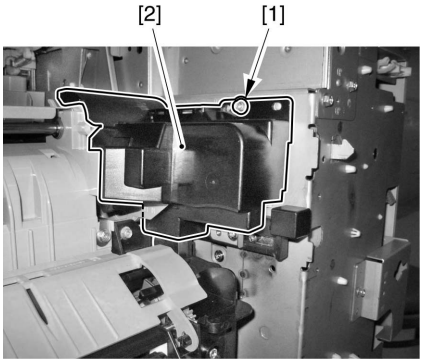


F-9-35

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

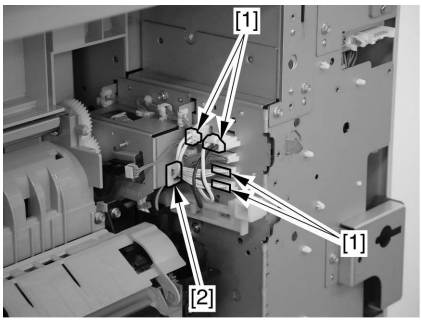
9.5.2.3 Removing the Fixing Unit 0002-7386

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



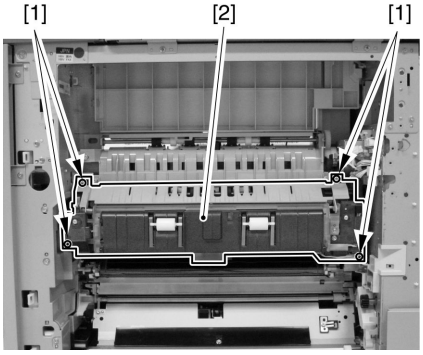
F-9-36

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-37

3) Remove the 4 screws [1], and detach the fixing assembly [2].



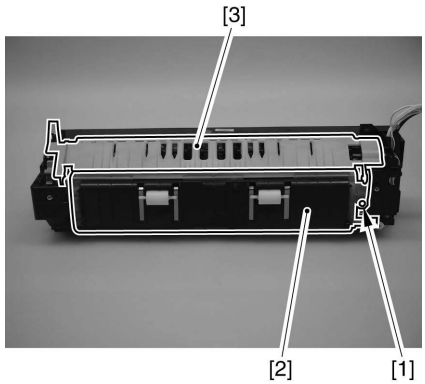
F-9-38

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

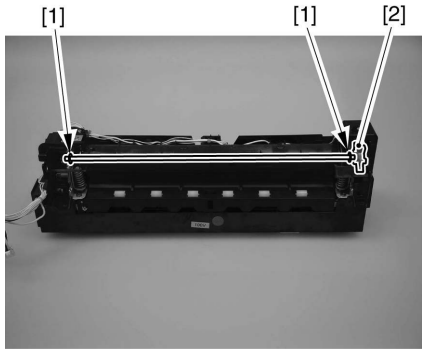
9.5.2.4 Removing the Fixing Inlet Guide 0002-7387

1) Remove the screw [1], and detach the duplex feed guide [2] and the jam access guide [3] at the same time.



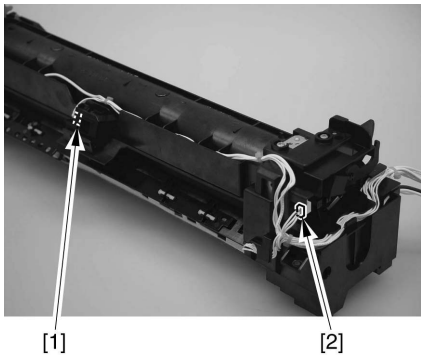
F-9-39

2) Remove the 2 E-rings [1], and detach the jam removal dial [2].



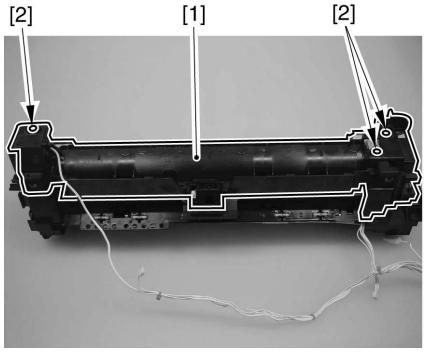
F-9-40

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



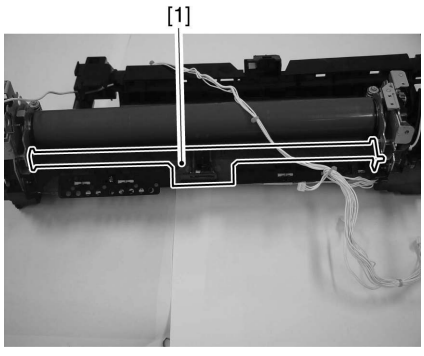
F-9-41

4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-42

5) Remove the fixing inlet guide [1].



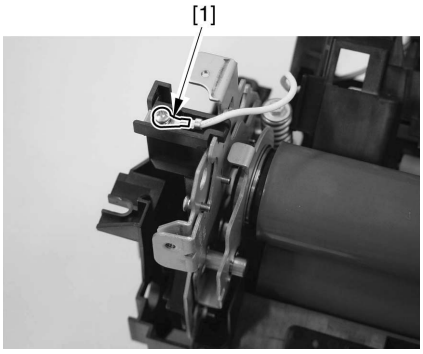
F-9-43

9.5.2.5 Removing the Fixing Roller

0002-7389

1) Remove the screw, and detach the round terminal [1] connected to the heat retention heater.

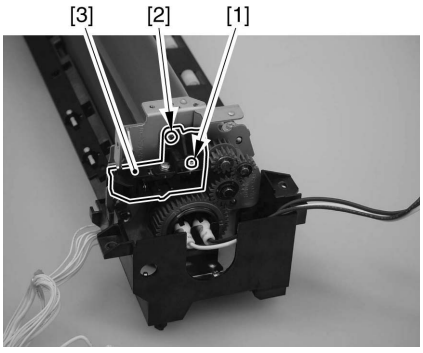
⚠Keep in mind that the screw used to fix the round terminal connected to the heat retention heater is equipped with a washer.



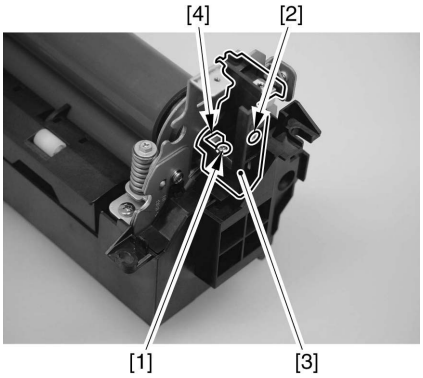
F-9-44

2) Remove the 2 screws [1], and detach the terminal; then, remove the 2 screws [2], and detach the heater base (front/rear) [3]. Thereafter, detach the heat retention heater [4].

⚠Keep in mind that the screw used to fix the heat retention heater in place is equipped with a washer.

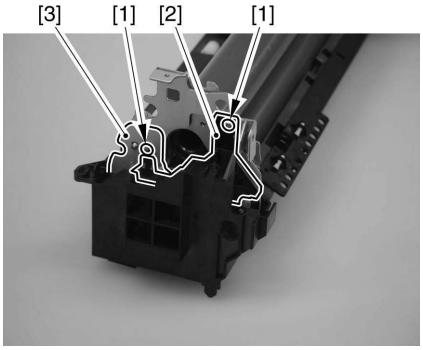


F-9-45



F-9-46

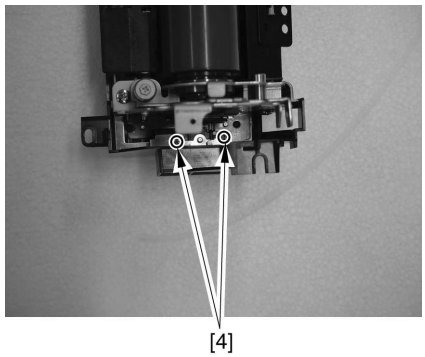
3) Remove the 2 screws [1], and detach the bearing retainer (front) [3] and the cover [2].



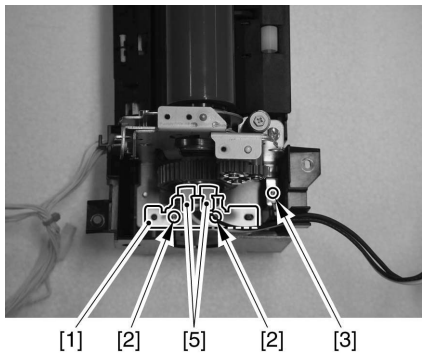
F-9-47

4) Remove the 2 screws [2], and detach the heater retainer [1]; then, detach the round terminal [3], remove the 2 heater retaining screws [4], and detach the main/sub heater [5].

⚠The following screws are equipped with a washer:
- 2 screws used to fix the heater retainer in place [1]
- screw [3] used to fix the round terminal in place
- screw [4] used to retain the heater in place



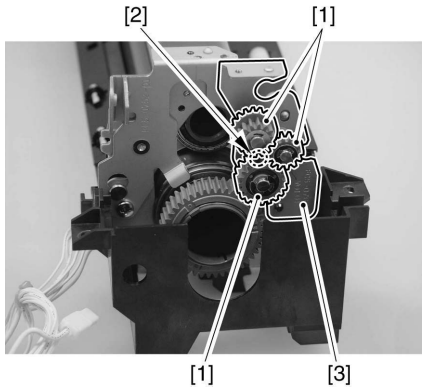
F-9-48



F-9-49

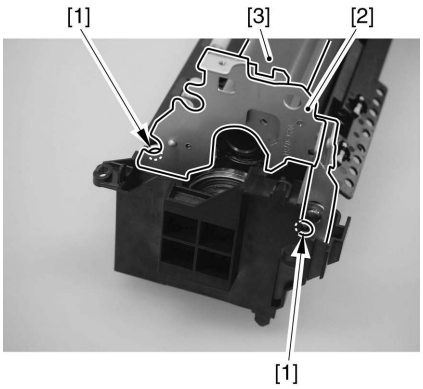
Memo:
The fixing main heater can be identified by its white cable, and it is located on the pickup side. The fixing sub heater can be identified by the black cable, and it is located on the pickup side.

5) Remove the 3 E-rings, and detach the 3 gears [1].
6) Remove the 2 screws [2], and detach the bearing retainer (rear) [3].



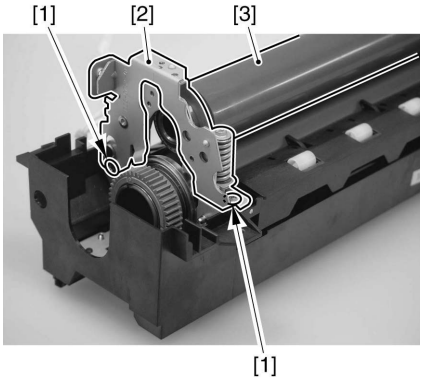
F-9-50

7) Remove the 2 screws (M5) [1], and detach the pressure unit (front) [2].



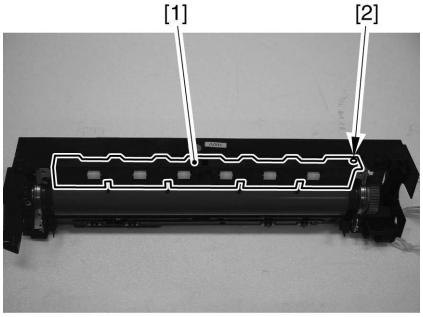
F-9-51

8) Remove the 2 screws (M5) [1], and detach the pressure unit (rear) [2]; then, detach the fixing pressure roller [3].



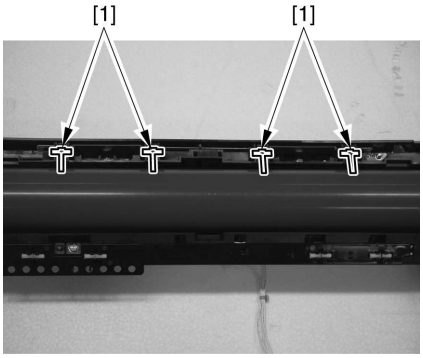
F-9-52

9) Remove the screw [2], and detach the delivery guide [1].



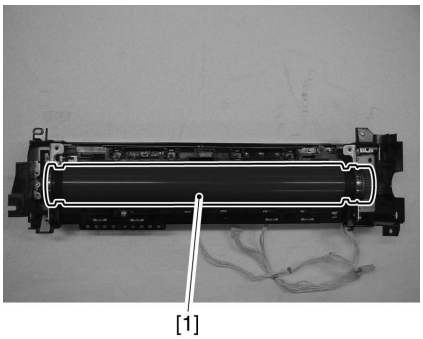
F-9-53

10) Free the 4 separation claws [1].



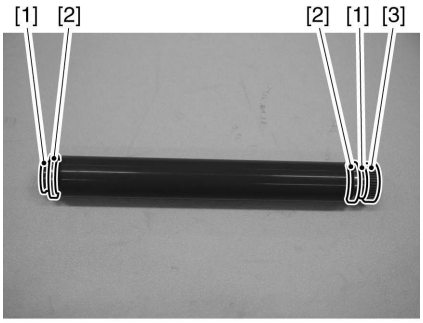
F-9-54

11) Remove the fixing roller [1].



F-9-55

16) From the fixing roller, detach the 2 bushings [1], and 2 bearings [2], and gear [3]. (C-ring; 1 pc. each on both ends)



F-9-56

⚠

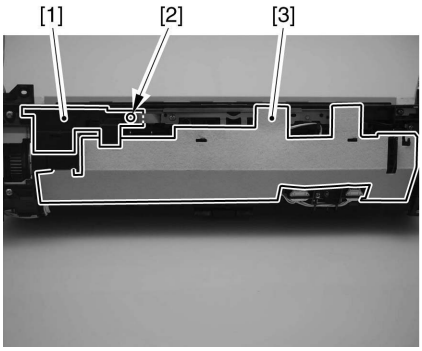
1. If you have replaced the fixing roller, be sure to initialize the service mode counter using the

following service mode:
COPIER> COUNTER> MISC> FX-UP-RL

2. If you have replaced the fixing roller with a used one, be sure to enter the counter reading of the used fixing roller using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

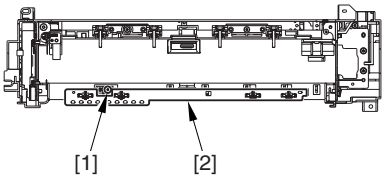
9.5.2.6 Removing the Fixing Upper Frame 0002-7390

1) Remove the insulating sheet retainer [1]; then, remove the screw [2], and detach the heat insulating sheet [3].



F-9-57

2) Remove the screw [1], and detach the spur unit [2].

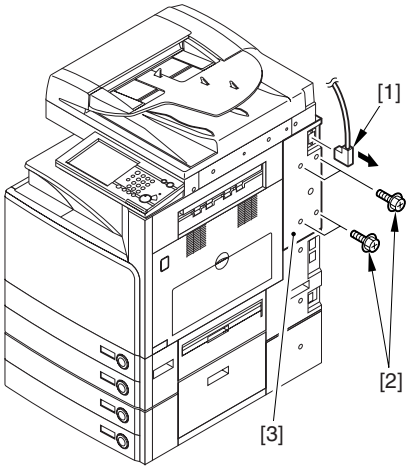


F-9-58

9.5.3 Fixing Roller

9.5.3.1 Removing the Right Cover (upper rear) 0002-0409

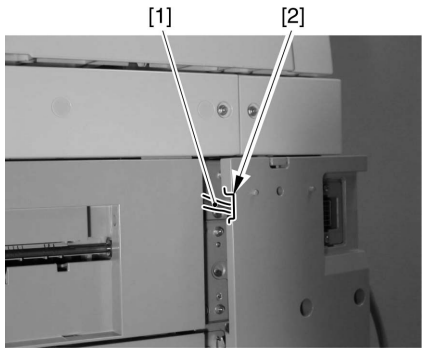
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-59

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

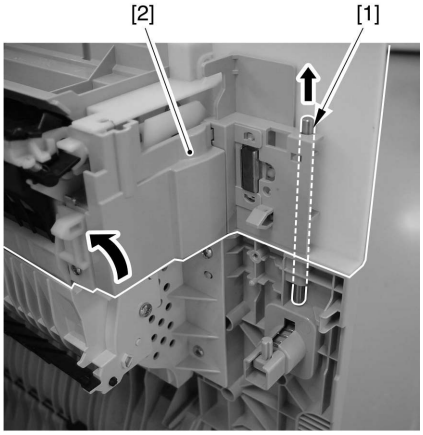
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-9-60

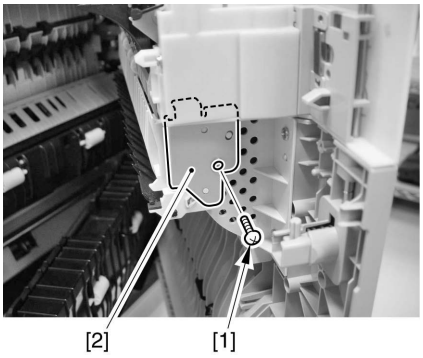
9.5.3.2 Removing the Right Door 0001-1327

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



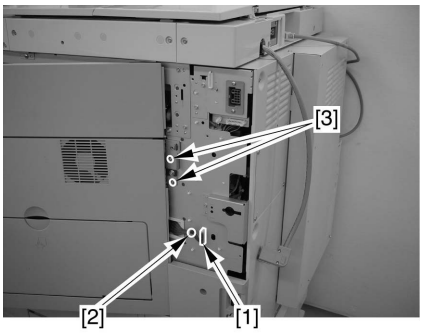
F-9-61

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



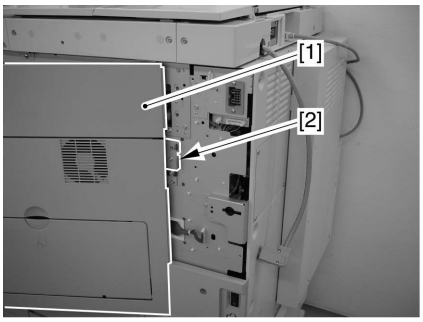
F-9-62

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-63

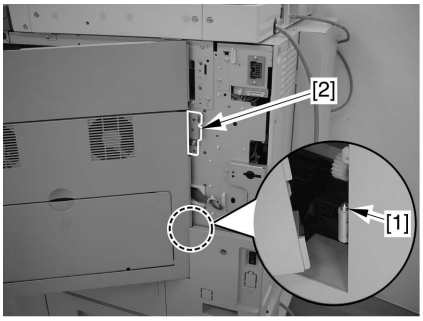
6) Detach the right door [1] together with the hinge [2].



F-9-64

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

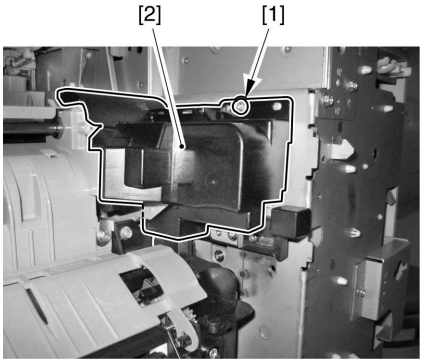


F-9-65

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

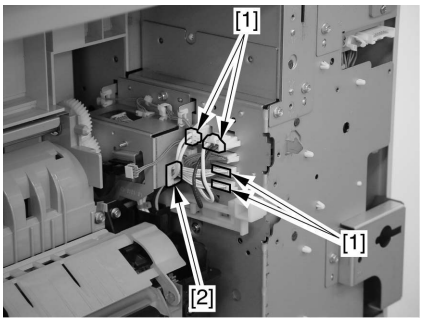
9.5.3.3 Removing the Fixing Unit 0001-1335

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



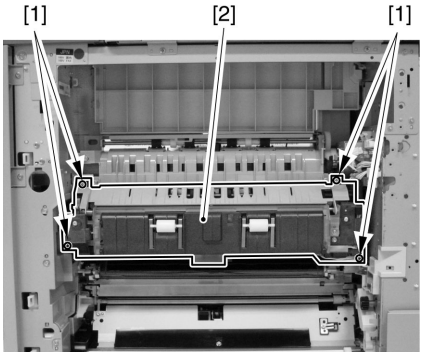
F-9-66

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-67

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-68

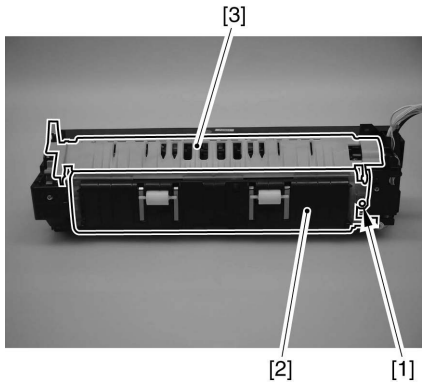
Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

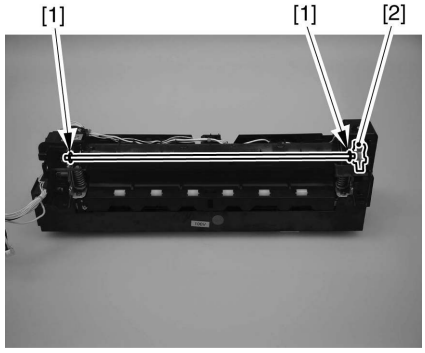
9.5.3.4 Removing the Fixing Inlet Guide 0002-3924

1) Remove the screw [1], and detach the duplex feed guide [2] and the jam access guide [3] at the same time.



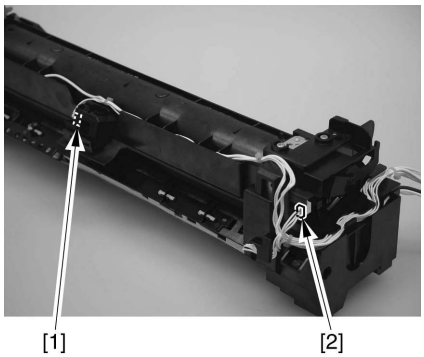
F-9-69

2) Remove the 2 E-rings [1], and detach the jam removal dial [2].



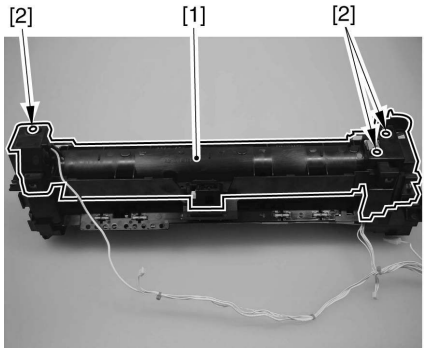
F-9-70

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



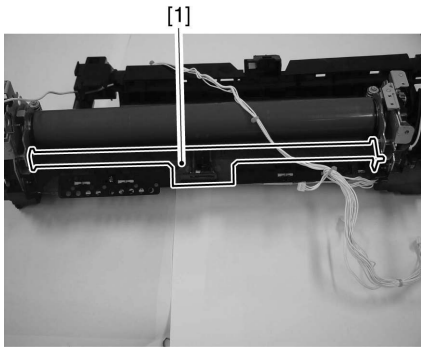
F-9-71

4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-72

5) Remove the fixing inlet guide [1].

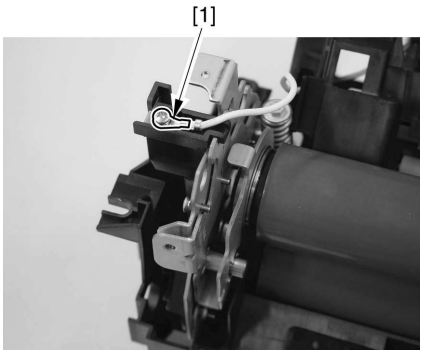


F-9-73

9.5.3.5 Removing the Fixing Roller 0001-1336

1) Remove the screw, and detach the round terminal [1] connected to the heat retention heater.

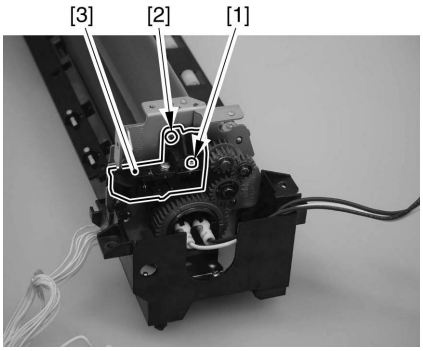
⚠Keep in mind that the screw used to fix the round terminal connected to the heat retention heater is equipped with a washer.



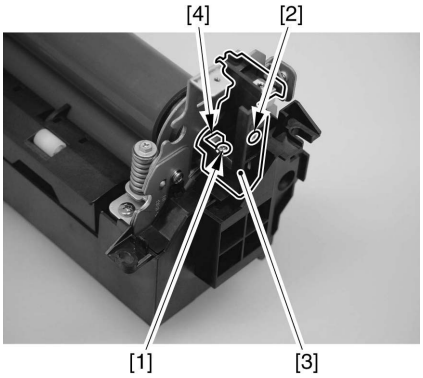
F-9-74

2) Remove the 2 screws [1], and detach the terminal; then, remove the 2 screws [2], and detach the heater base (front/rear) [3]. Thereafter, detach the heat retention heater [4].

⚠Keep in mind that the screw used to fix the heat retention heater in place is equipped with a washer.

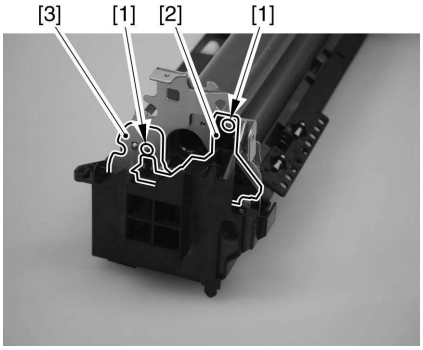


F-9-75



F-9-76

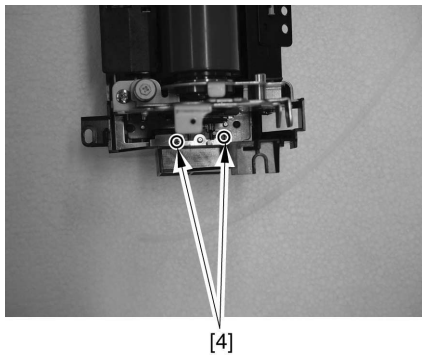
3) Remove the 2 screws [1], and detach the bearing retainer (front) [3] and the cover [2].



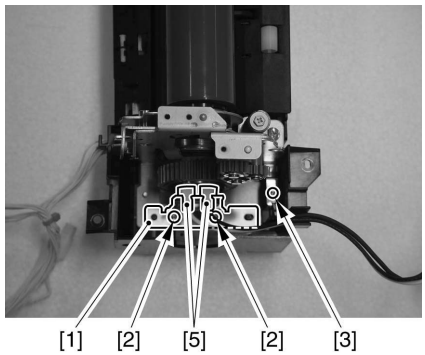
F-9-77

4) Remove the 2 screws [2], and detach the heater retainer [1]; then, detach the round terminal [3], remove the 2 heater retaining screws [4], and detach the main/sub heater [5].

⚠The following screws are equipped with a washer:
- 2 screws used to fix the heater retainer in place [1]
- screw [3] used to fix the round terminal in place
- screw [4] used to retain the heater in place



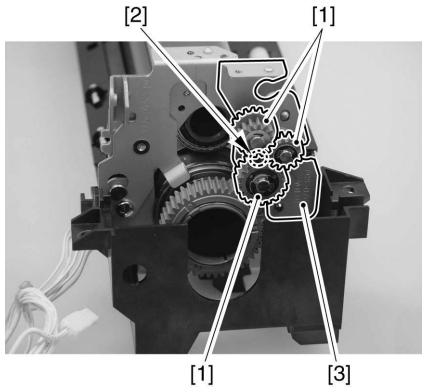
F-9-78



F-9-79

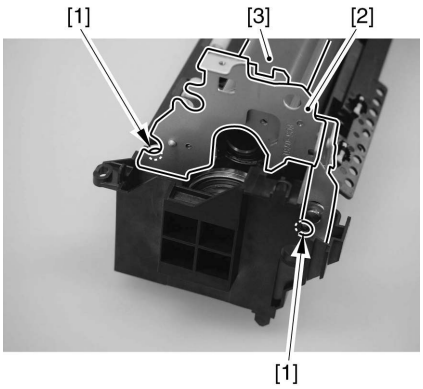
Memo:
The fixing main heater can be identified by its white cable, and it is located on the pickup side. The fixing sub heater can be identified by the black cable, and it is located on the pickup side.

5) Remove the 3 E-rings, and detach the 3 gears [1].
6) Remove the 2 screws [2], and detach the bearing retainer (rear) [3].



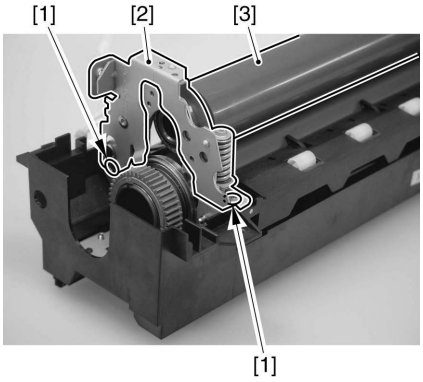
F-9-80

7) Remove the 2 screws (M5) [1], and detach the pressure unit (front) [2].



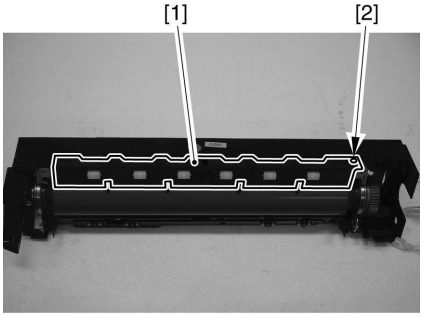
F-9-81

8) Remove the 2 screws (M5) [1], and detach the pressure unit (rear) [2]; then, detach the fixing pressure roller [3].



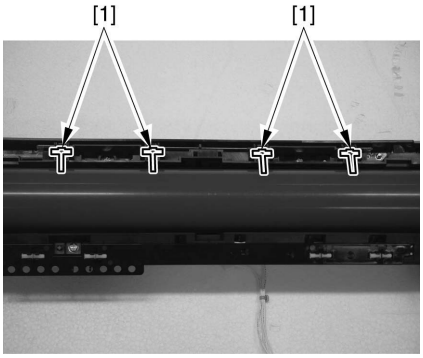
F-9-82

9) Remove the screw [2], and detach the delivery guide [1].



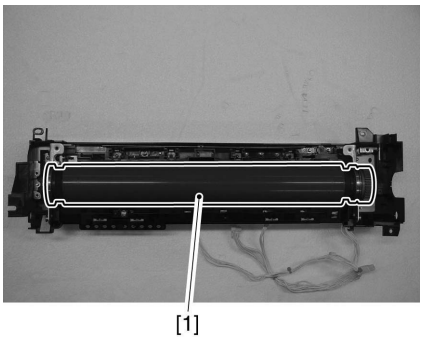
F-9-83

10) Free the 4 separation claws [1].



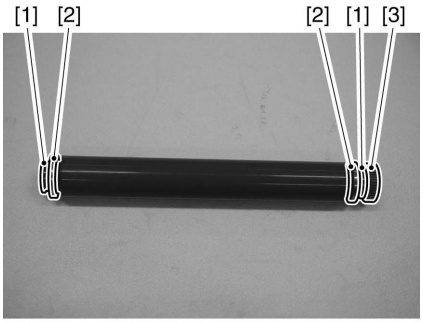
F-9-84

11) Remove the fixing roller [1].



F-9-85

16) From the fixing roller, detach the 2 bushings [1], and 2 bearings [2], and gear [3]. (C-ring; 1 pc. each on both ends)



F-9-86

⚠

1. If you have replaced the fixing roller, be sure to initialize the service mode counter using the

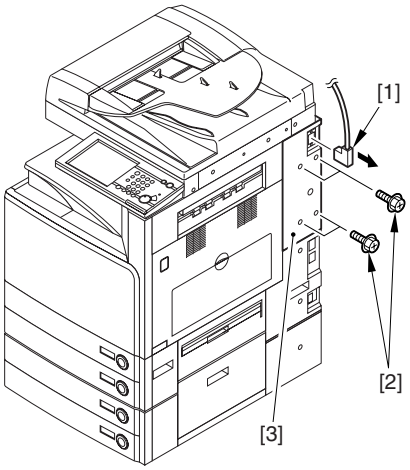
following service mode:
COPIER> COUNTER> MISC> FX-UP-RL

2. If you have replaced the fixing roller with a used one, be sure to enter the counter reading of the used fixing roller using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

9.5.4 Pressure Roller

9.5.4.1 Removing the Right Cover (upper rear) 0002-0411

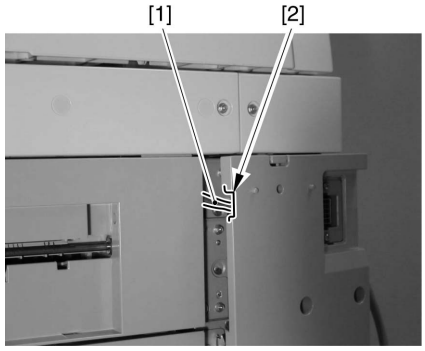
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-87

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

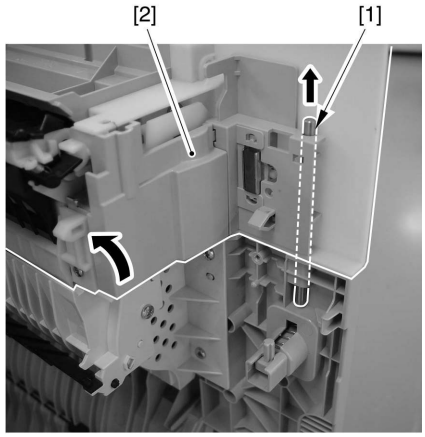
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-9-88

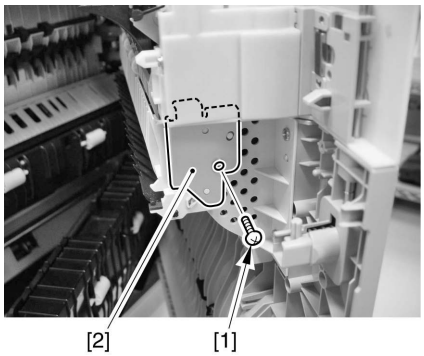
9.5.4.2 Removing the Right Door 0001-1340

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



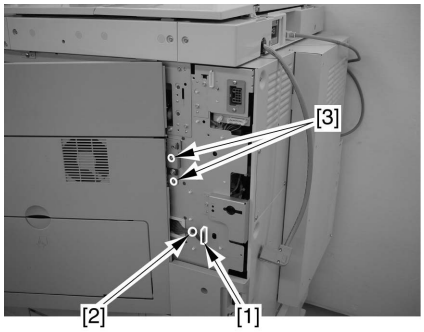
F-9-89

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



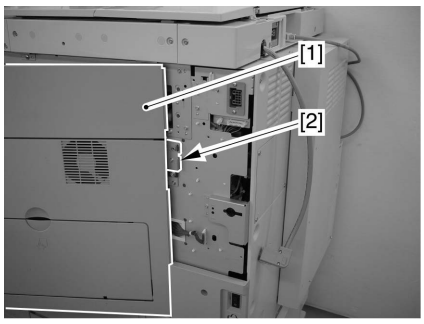
F-9-90

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-91

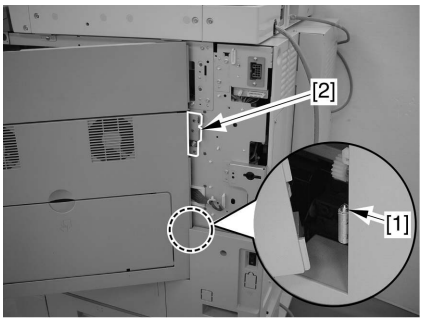
6) Detach the right door [1] together with the hinge [2].



F-9-92

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

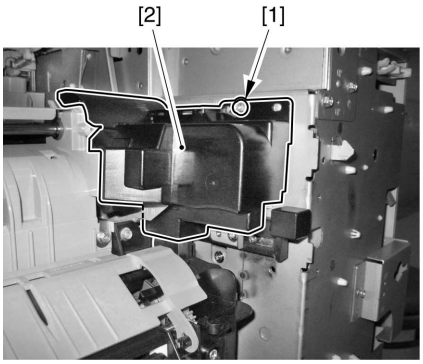


F-9-93

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

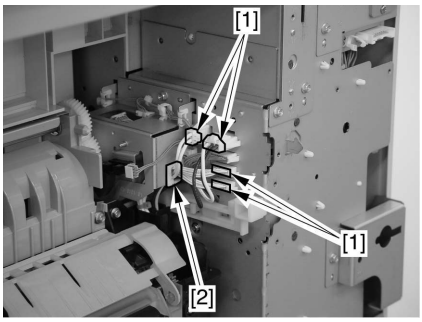
9.5.4.3 Removing the Fixing Unit 0001-1341

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



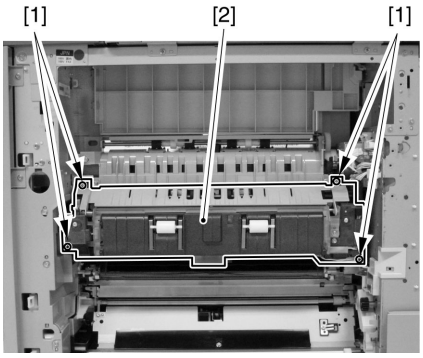
F-9-94

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-95

3) Remove the 4 screws [1], and detach the fixing assembly [2].



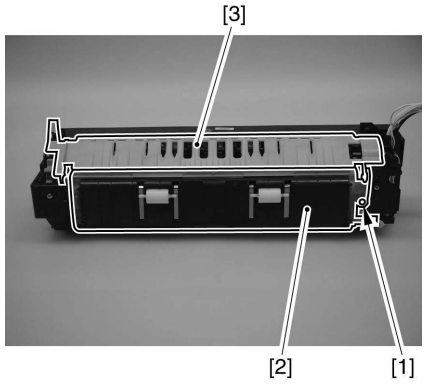
F-9-96

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

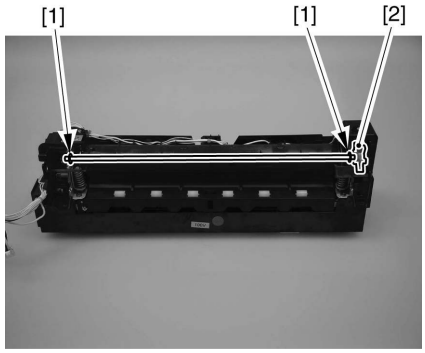
9.5.4.4 Removing the Fixing Pressure Roller 0001-1342

1) Remove the screw [1], and detach the duplex feed guide [2] and the jam access guide [3] at the same time.



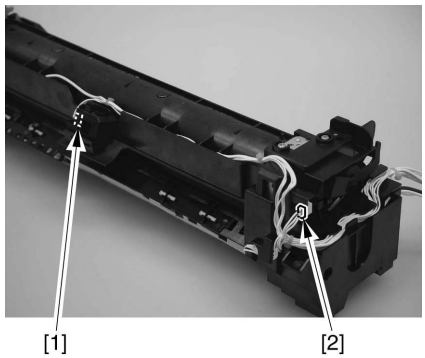
F-9-97

2) Remove the 2 E-rings [1], and detach the jam removal dial [2].



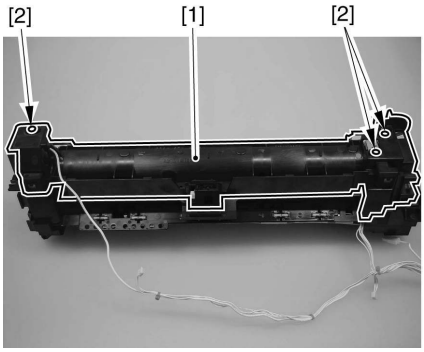
F-9-98

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



F-9-99

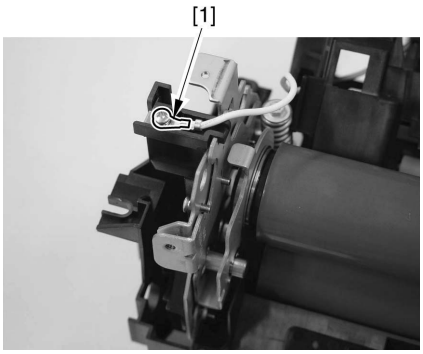
4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-100

5) Remove the round terminal [1] connected to the heat retention heater.

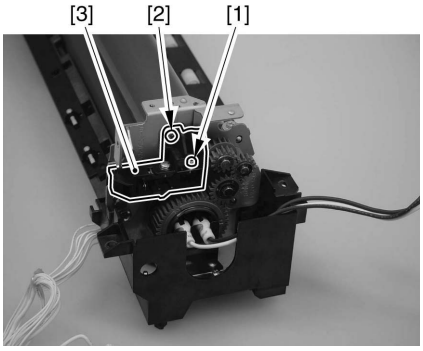
⚠Keep in mind that the screw used to fix the round terminal connected to the heat retention heater is equipped with a washer.



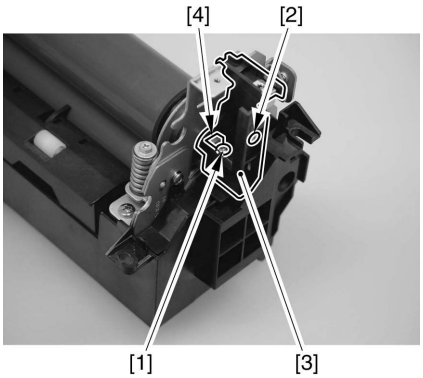
F-9-101

6) Remove the 2 screws, and detach the terminal; then, remove the 2 screws [2], and detach the heater base (front, rear) [3]. Thereafter, detach the heat retention heater.

⚠Keep in mind that the screw used to fix the heat retention heater in place is equipped with a washer.

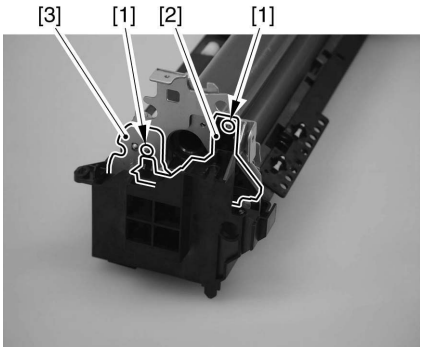


F-9-102



F-9-103

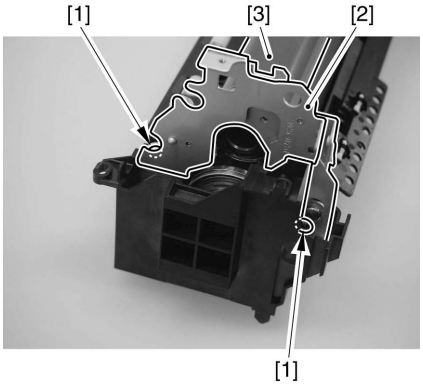
7) Remove the 2 screws [1], and detach the cover [2] and the bearing retainer (front) [3].



F-9-104

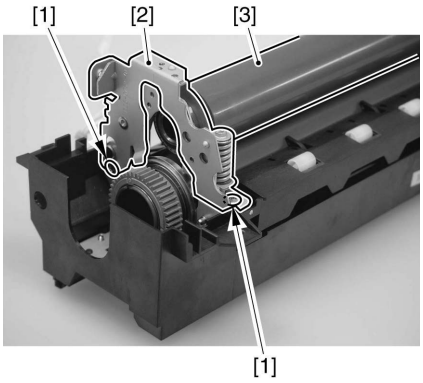
8) Remove the 3 gears [1] and the screw [2]; then, detach the bearing retainer (rear) [3].

9) Remove the 2 screws (M5) [3], and detach the pressure unit (front) [2].



F-9-105

10) Remove the 2 screws (M5) [1], and detach the pressure unit (rear) [2]; then, detach the fixing pressure roller [3].

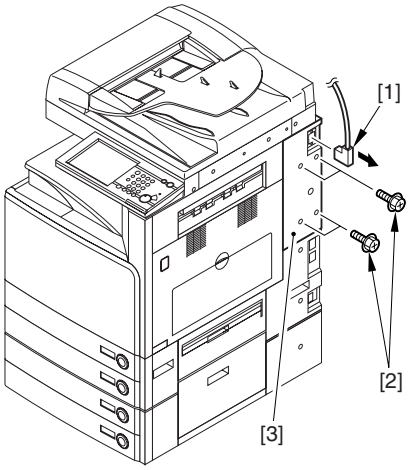


F-9-106

9.5.5 Fixing Main Thermistor

9.5.5.1 Removing the Right Cover (upper rear) 0002-0412

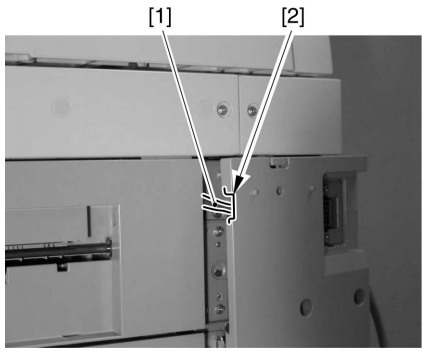
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-107

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

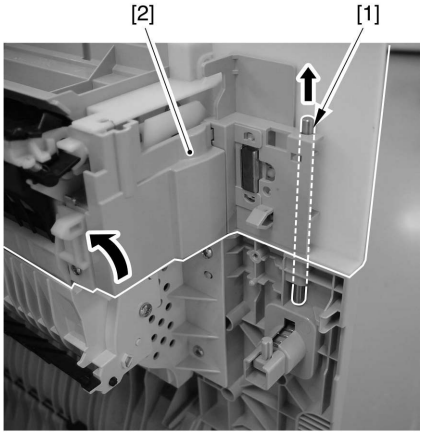
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-9-108

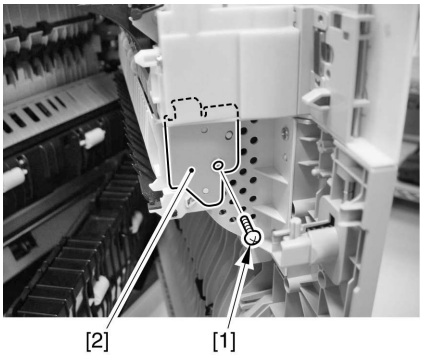
9.5.5.2 Removing the Right Door 0001-1344

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



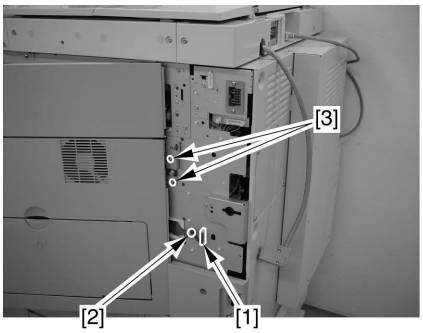
F-9-109

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



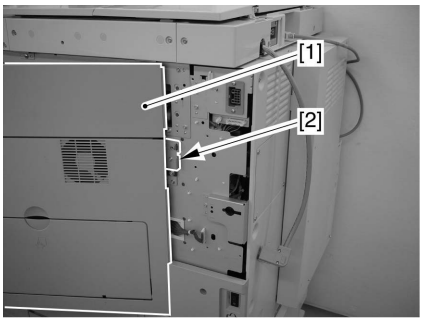
F-9-110

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-111

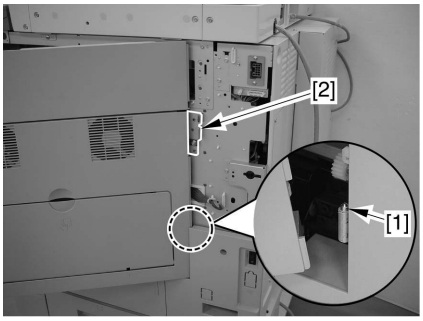
6) Detach the right door [1] together with the hinge [2].



F-9-112

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

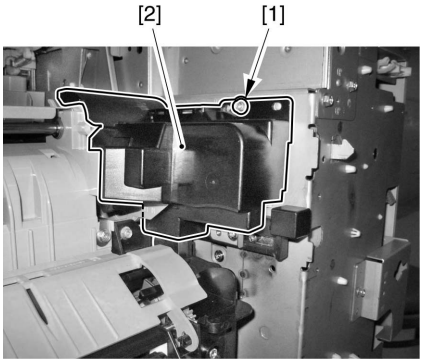


F-9-113

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

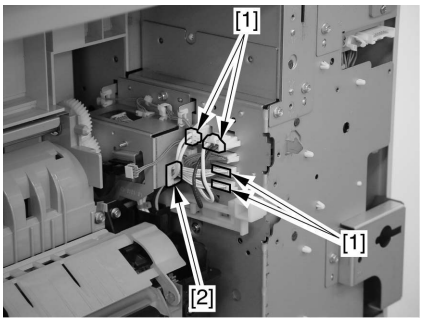
9.5.5.3 Removing the Fixing Unit 0001-1345

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



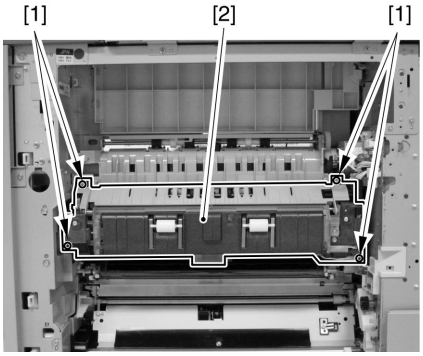
F-9-114

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-115

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-116

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

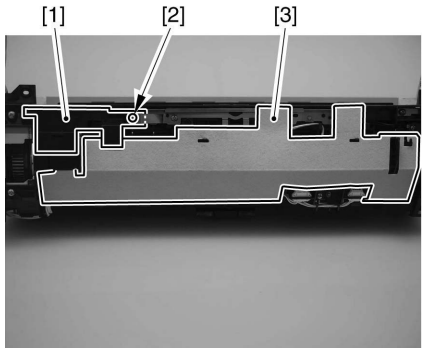
⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

9.5.5.4 Removing the Fixing Main Thermistor 0001-1346

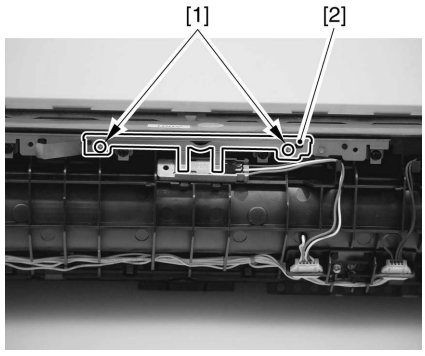
1) Remove the screw [2], and detach the heat insulating sheet retainer [1]; then, detach the heat insulating sheet [3].

Memo:
The following figure shows the back of the fixing assembly.



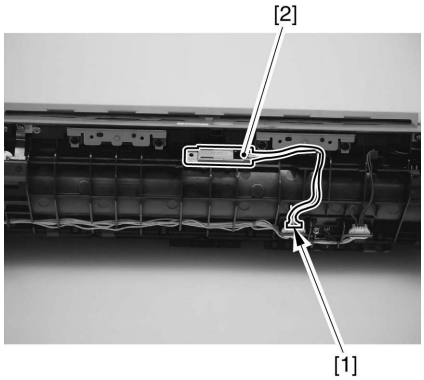
F-9-117

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



F-9-118

3) Disconnect the connector [1], and detach the fixing main thermistor [2].



F-9-119

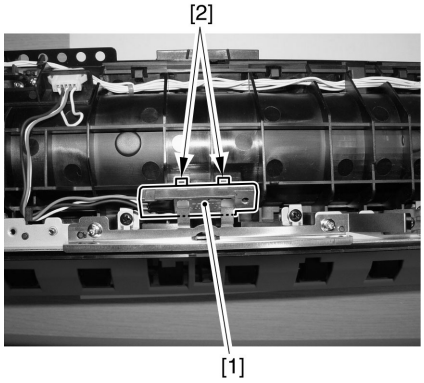
9.5.5.5 Point to Note About the Position of the Fixing Main Thermistor 0001-8700

⚠Caution 1

Check to be sure that the thermistor cover [2] is fitted under the fixing main thermistor [1].

⚠Caution 2

Check to be sure that the thermistor cover [2] is not mounted in the wrong orientation. The cover is equipped with a protrusion to prevent wrong orientation.



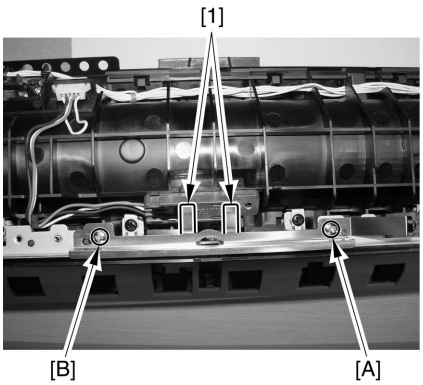
F-9-120

⚠Caution 3

Check to be sure that the spring [1] of the thermistor retainer is found forcing the thermistor.

⚠Caution 4

Be sure to tighten the screw A and then the screw B of the thermistor retainer in sequence.

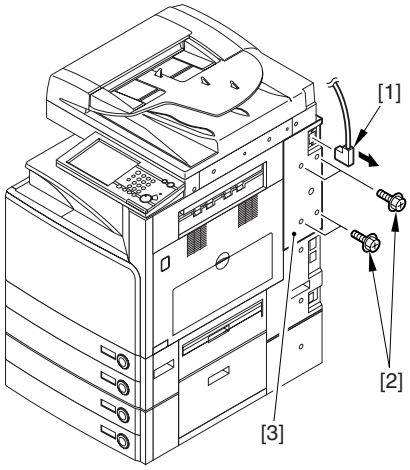


F-9-121

9.5.6 Fixing Sub Thermistor

9.5.6.1 Removing the Right Cover (upper rear) 0002-0413

1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].

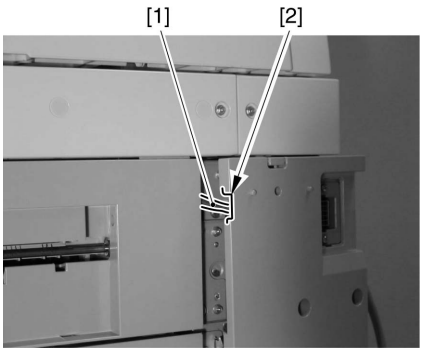


F-9-122

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-

off [2] of the right cover (upper right).

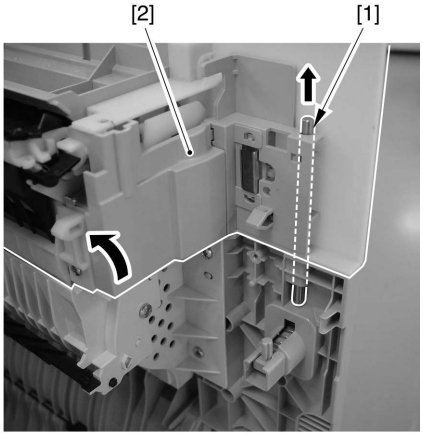


F-9-123

9.5.6.2 Removing the Right Door

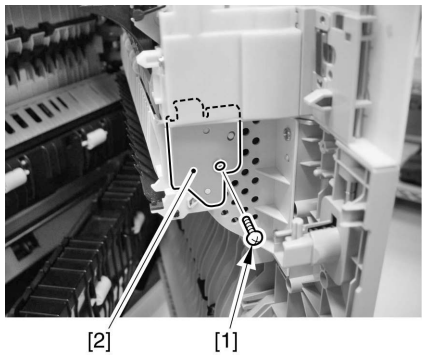
0001-1348

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



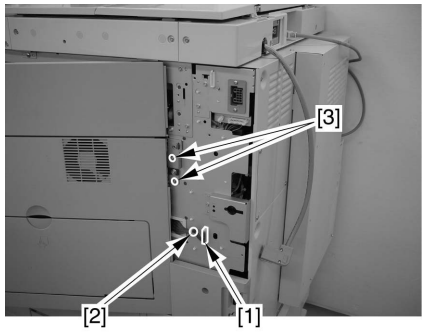
F-9-124

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



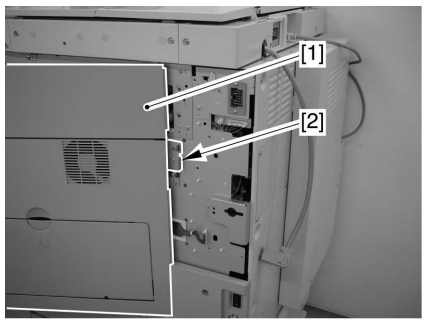
F-9-125

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-126

6) Detach the right door [1] together with the hinge [2].

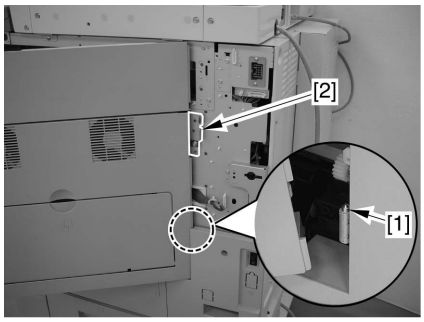


F-9-127

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

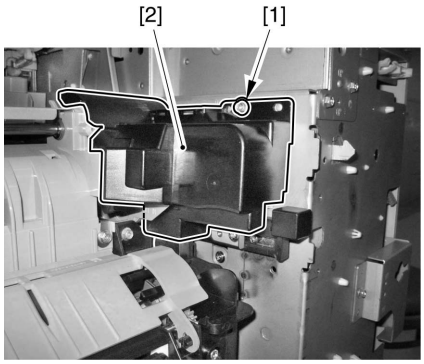


F-9-128

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

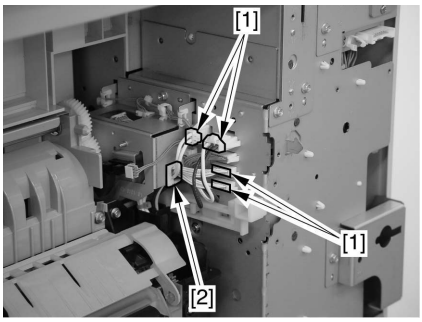
9.5.6.3 Removing the Fixing Unit 0001-1352

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



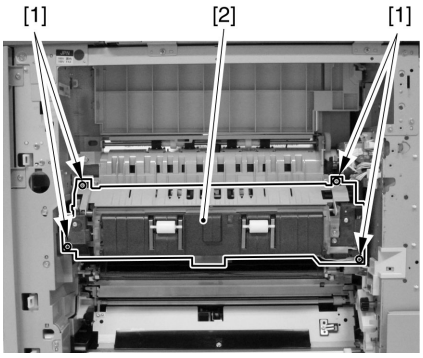
F-9-129

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-130

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-131

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

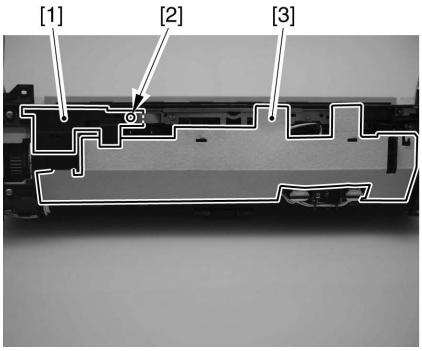
⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

9.5.6.4 Removing the Fixing Sub Thermistor 0001-1353

1) Remove the screw [2], and detach the heat insulating sheet retainer [1]; then, detach the heat insulting sheet [3].

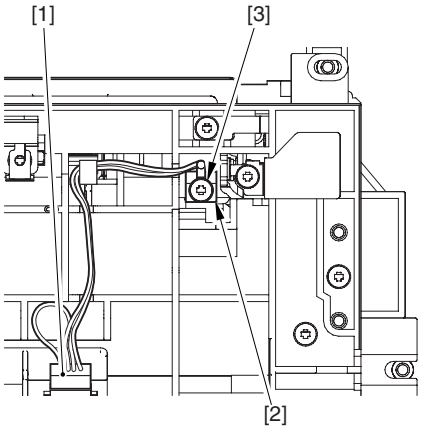
Memo:

The following figure shows the back of the fixing assembly:



F-9-132

2) Disconnect the connector [1], and detach the fixing sub thermistor [2]. (1 12-mm long screw [3])



F-9-133

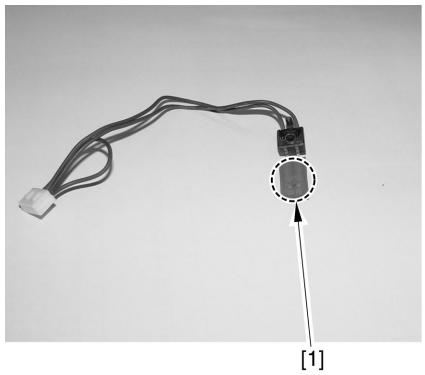
9.5.6.5 Point to Note When Mounting the Fixing Sub Thermistor 0001-8699

⚠Caution 1

Take care not to touch the surface [1] of the fixing sub thermistor.

⚠Caution 2

Take care not to deform the fixing sub thermistor.

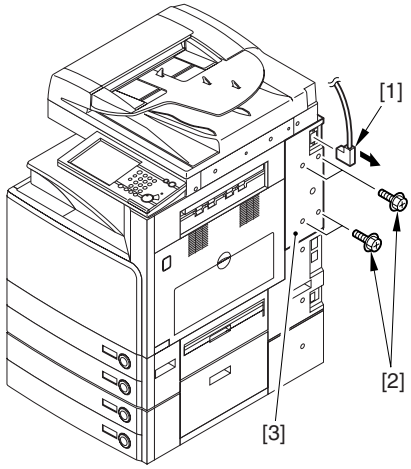


F-9-134

9.5.7 Fixing Thermal Switch

9.5.7.1 Removing the Right Cover (upper rear) 0002-0415

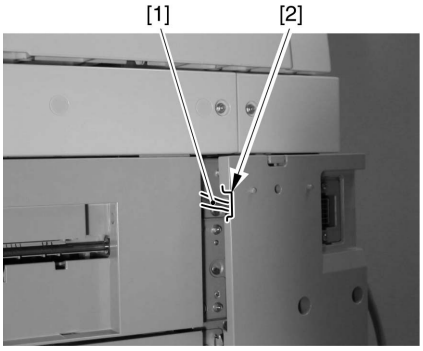
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-135

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

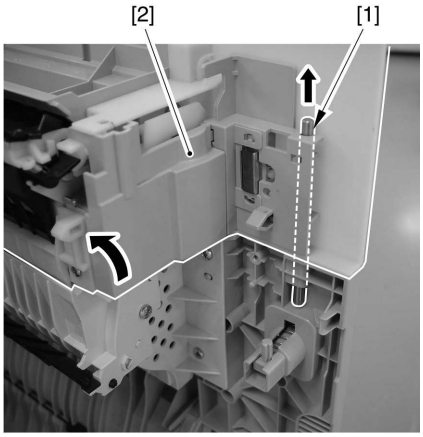


F-9-136

9.5.7.2 Removing the Right Door

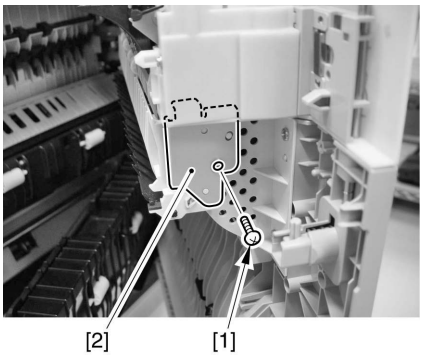
0001-1356

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



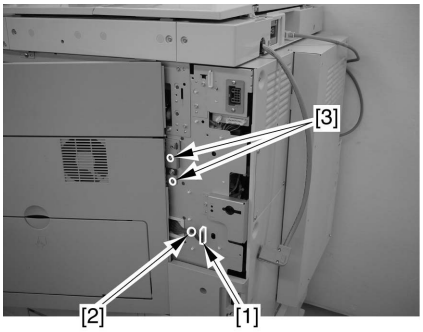
F-9-137

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



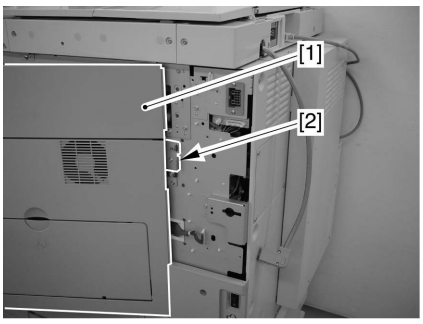
F-9-138

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-139

6) Detach the right door [1] together with the hinge [2].

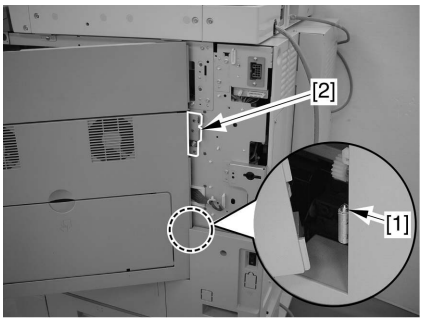


F-9-140

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

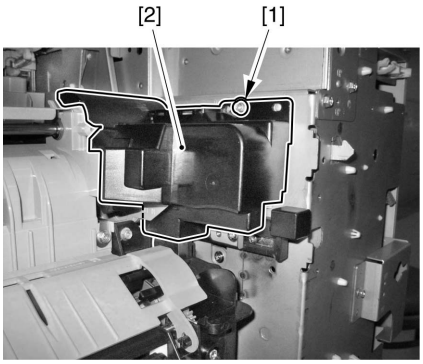


F-9-141

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

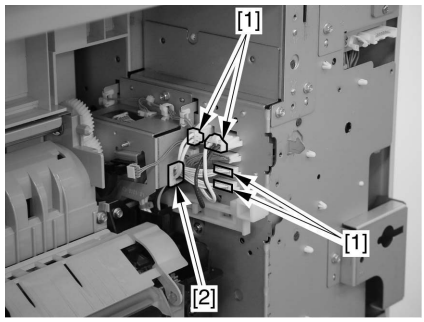
9.5.7.3 Removing the Fixing Unit 0001-1357

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



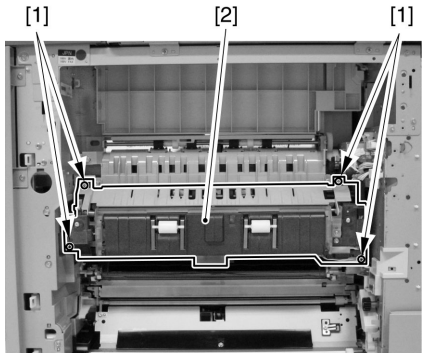
F-9-142

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-143

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-144

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

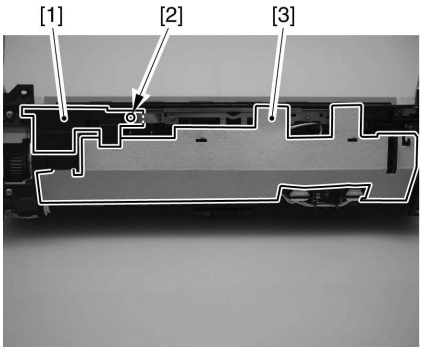
⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

9.5.7.4 Removing the Fixing Thermal Switch 0001-1358

1) Remove the screw [2], and detach the insulating sheet retainer [2]; then, detach the heat insulating sheet [3].

Memo:

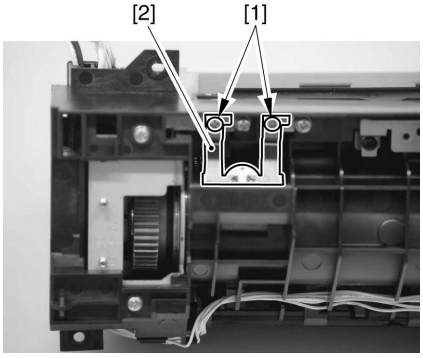
The following figure shows the back of the fixing assembly:



F-9-145

2) Remove the 2 screws [1], and detach the fixing thermal switch [2].

⚠Keep in mind that the 2 screws used to fit the fixing thermal switch in place is equipped with a washer.



F-9-146

9.5.7.5 Point to Note When Mounting the Fixing Thermal Switch

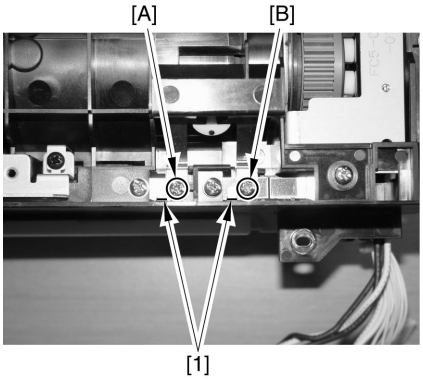
0001-8698

⚠Caution 1

Check to be sure that the claw [1] of the thermal switch is in the cut-off of the conducting plate [2].

⚠Caution 2

Be sure to tighten the fixing screw A and then the fixing screw B of the thermal switch.

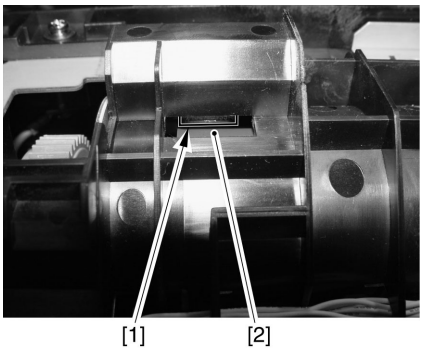


F-9-147

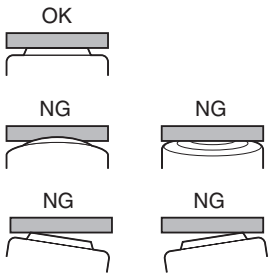
⚠Caution 3

After tightening the fixing screws of the thermal switch, perform the following:

Check to be sure that the surface of the thermal switch [1] is level in relation to the fixing roller. (Be sure to use a pen light or the like to shine the thermal switch for this check; if not level, be sure to repeat the mounting work.)



F-9-148

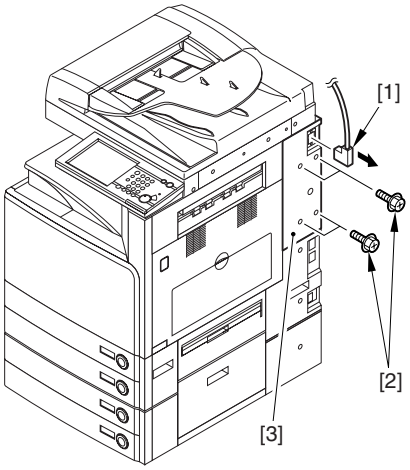


F-9-149

9.5.8 Fixing Main Heater/Fixing Sub Heater

9.5.8.1 Removing the Right Cover (upper rear) 0002-0408

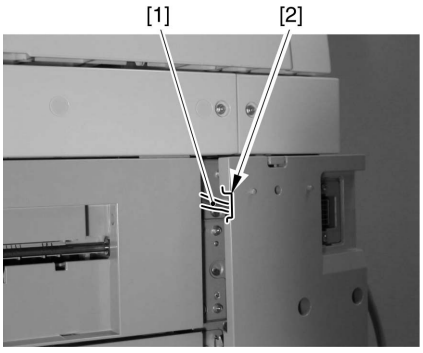
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-150

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

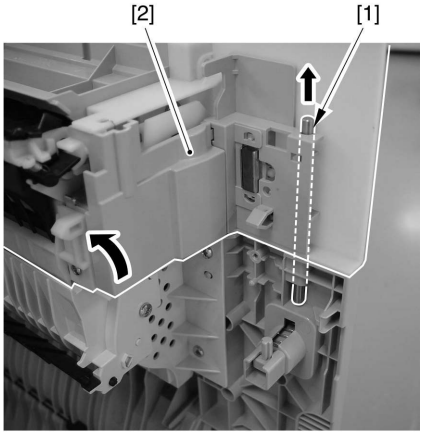
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-9-151

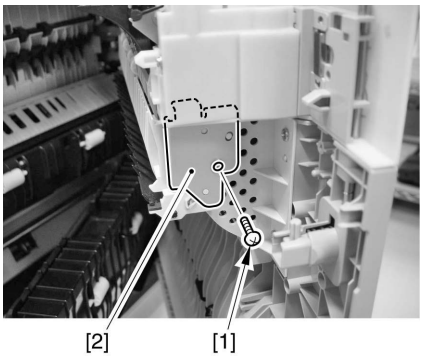
9.5.8.2 Removing the Right Door 0001-1326

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



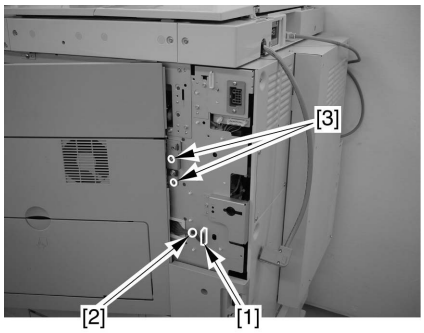
F-9-152

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



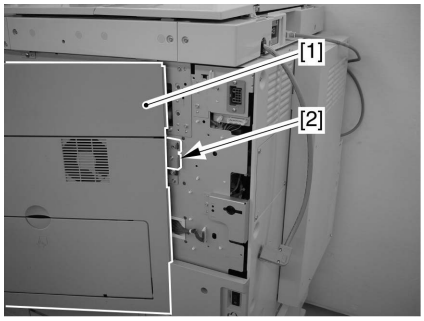
F-9-153

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-154

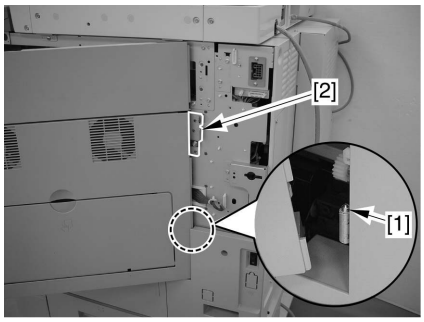
6) Detach the right door [1] together with the hinge [2].



F-9-155

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



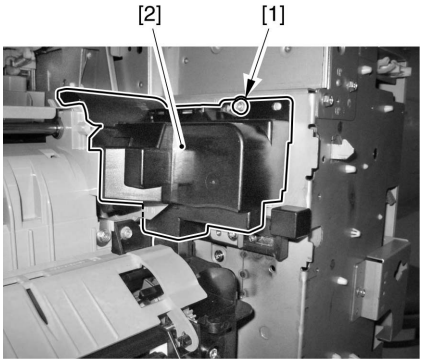
F-9-156

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

9.5.8.3 Removing the Fixing Unit

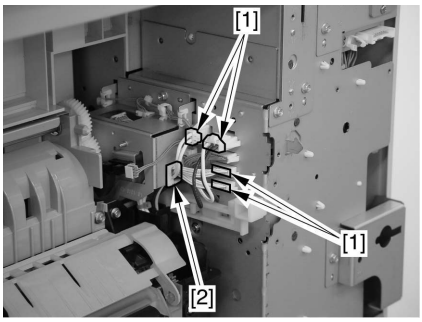
0001-1333

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



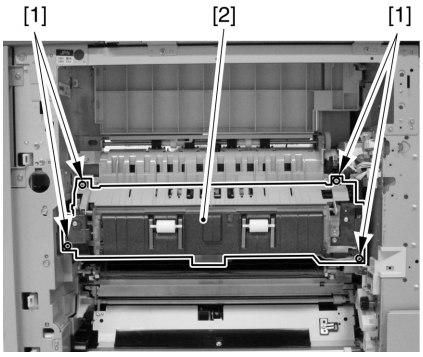
F-9-157

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-158

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-159

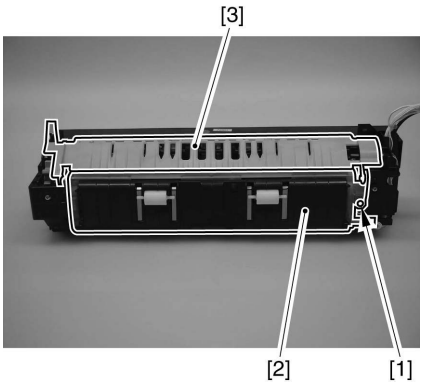
Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

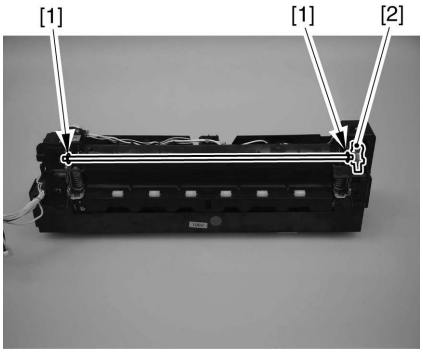
9.5.8.4 Removing the Fixing Inlet Guide 0002-3922

1) Remove the screw [1], and detach the duplex feed guide [2] and the jam access guide [3] at the same time.



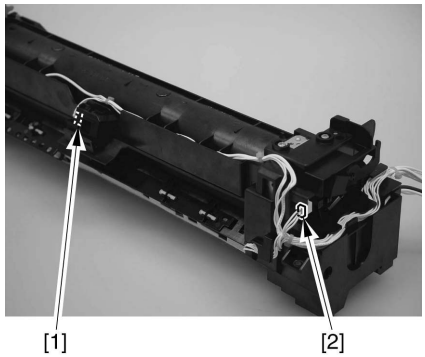
F-9-160

2) Remove the 2 E-rings [1], and detach the jam removal dial [2].



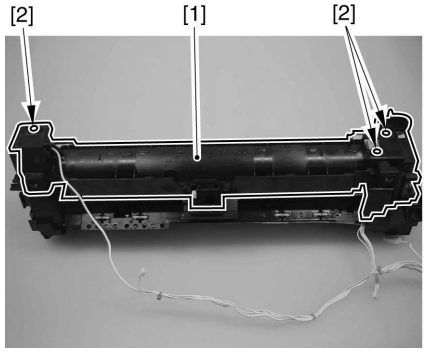
F-9-161

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



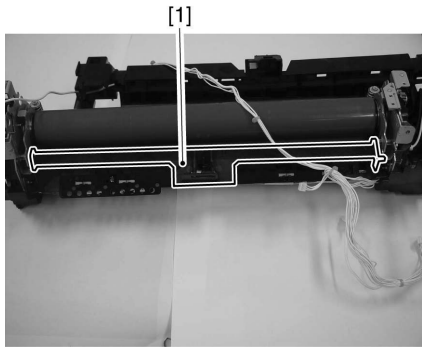
F-9-162

4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-163

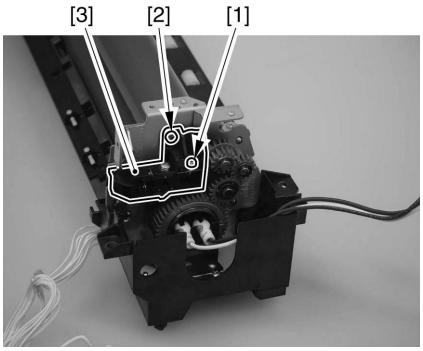
5) Remove the fixing inlet guide [1].



F-9-164

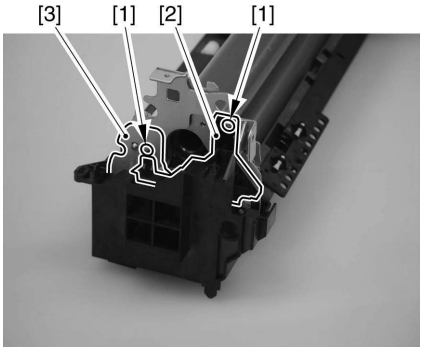
9.5.8.5 Removing the Fixing Main Heater and the Fixing Sub Heater 0001-1334

1) Remove the screw [1], and detach the terminal; then, remove the screw [2], and detach the heater base (front) [3].



F-9-165

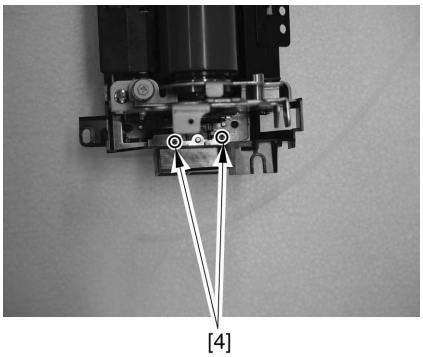
2) Remove the 2 screws [1], and detach the cover [2] and the bearing retainer (front) [3].



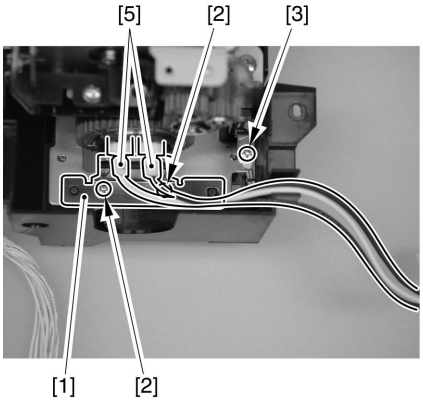
F-9-166

3) Remove the 2 screws [2], and detach the heater retainer [1]; then, detect the round terminal [3], remove the 2 heater retaining screws [4], and detach the main/sub heater [5].

⚠The following screws are equipped with a washer:
- 2 screws [1] used to fix the heater retainer in place
- screw [3] used to fix the ground terminal in place
- screw [4] used to retain the heater in place



F-9-167



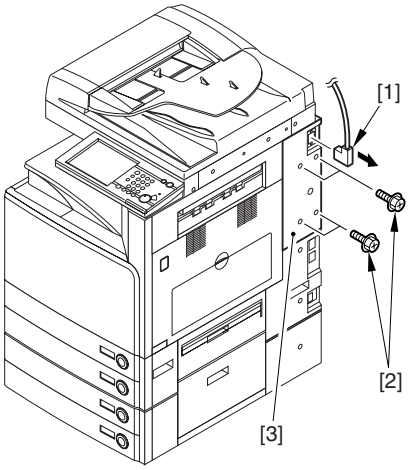
F-9-168

Memo:
The fixing main heater may be identified by its white cable, and it is located on the pickup side.
The fixing sub heater may be identified by its black cable, and it is located on the delivery side (delivery unit).

9.5.9 Fixing Heat Retaining Heater

9.5.9.1 Removing the Right Cover (upper rear) 0002-0410

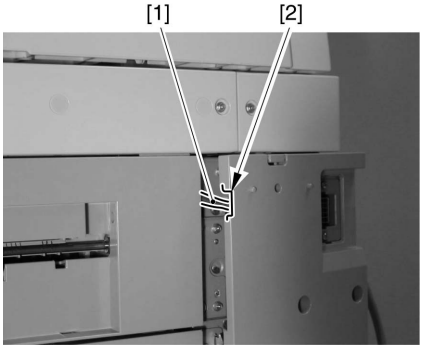
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-169

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

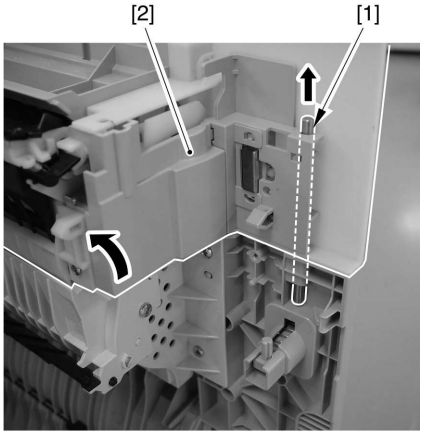


F-9-170

9.5.9.2 Removing the Right Door

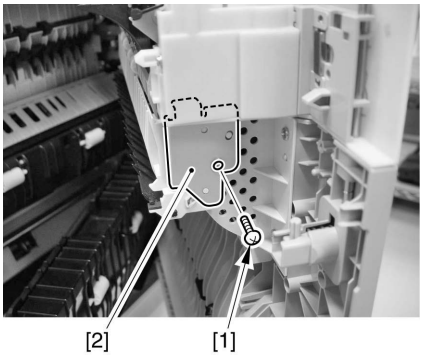
0001-1328

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



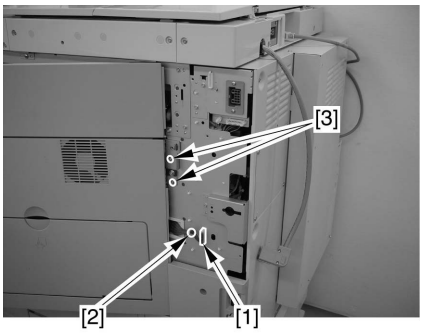
F-9-171

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



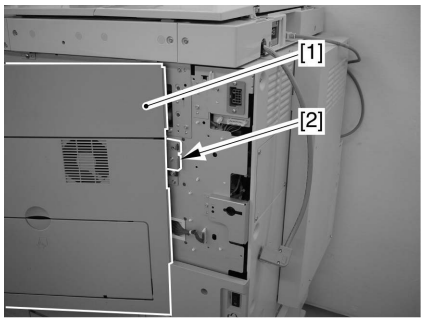
F-9-172

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-173

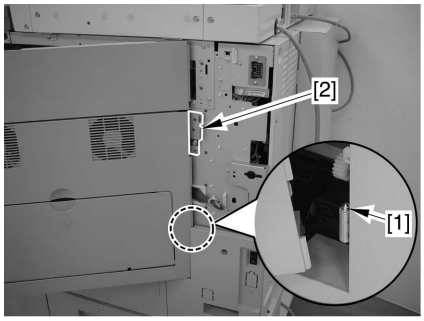
6) Detach the right door [1] together with the hinge [2].



F-9-174

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

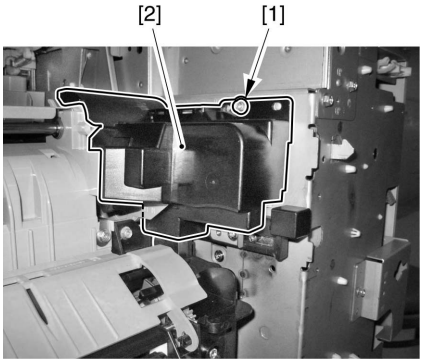


F-9-175

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

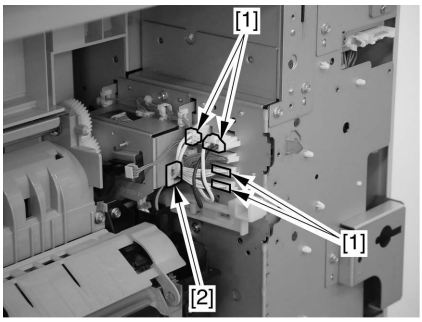
9.5.9.3 Removing the Fixing Unit 0001-1338

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



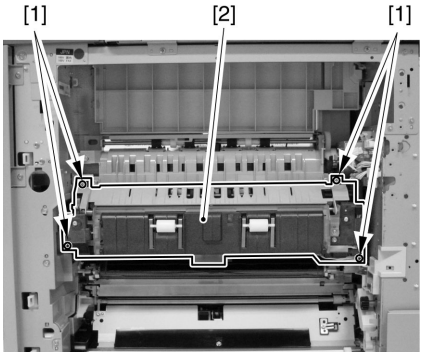
F-9-176

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-177

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-178

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

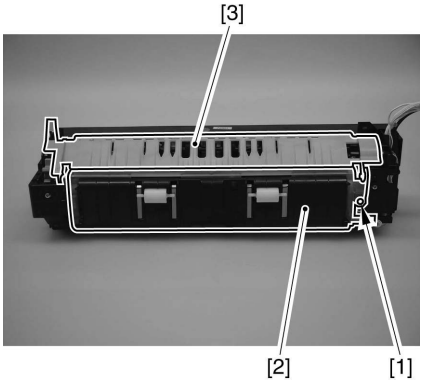
⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

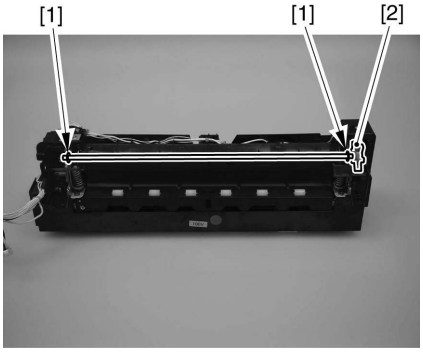
9.5.9.4 Removing the Fixing Heat Retention Heater 0001-1339

1) Remove the screw [1], and detach the duplex feed guide [2] and the jam access guide [3] at the same time.



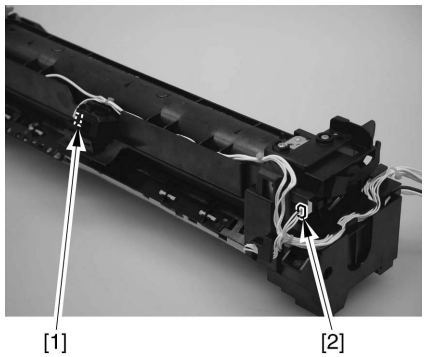
F-9-179

2) Remove the 2 E-rings [1], and detach the jam removal dial.



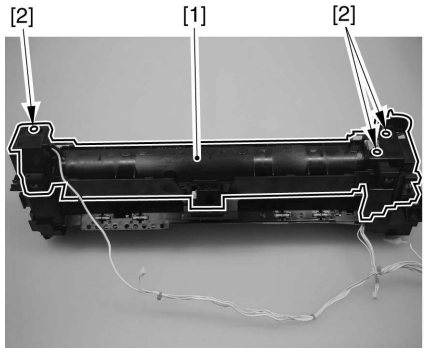
F-9-180

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



F-9-181

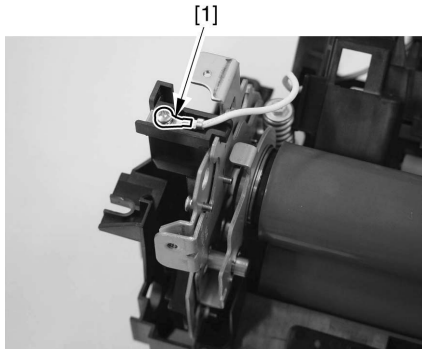
4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-182

5) Remove the round terminal connected to the heat retention heater.

⚠Keep in mind that the fixing screw used for the round terminal is equipped with a washer.

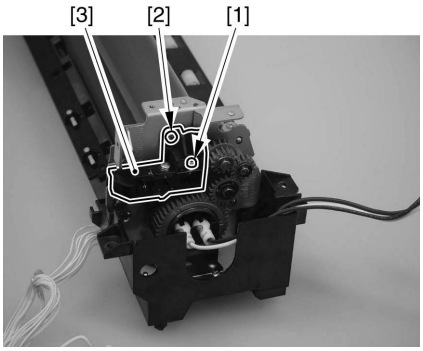


F-9-183

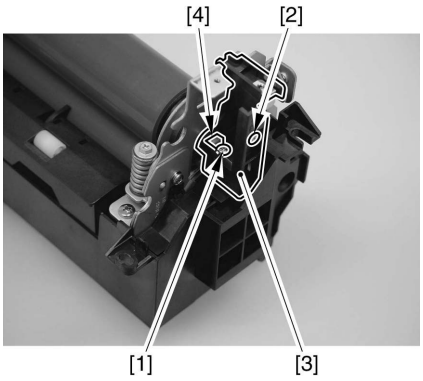
6) Remove the 2 screws [1], and detach the terminal; then, remove the 2 screws [2], and detach the heater

base [3] and the heat retention heater [4].

⚠Keep in mind that the screw used for the heat retention heater is equipped with a washer.



F-9-184

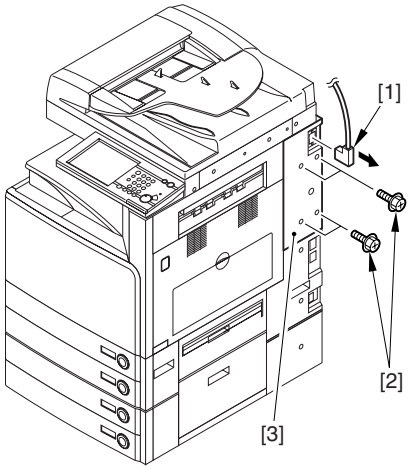


F-9-185

9.5.10 Fixing Inlet Guide

9.5.10.1 Removing the Right Cover (upper rear) 0002-0406

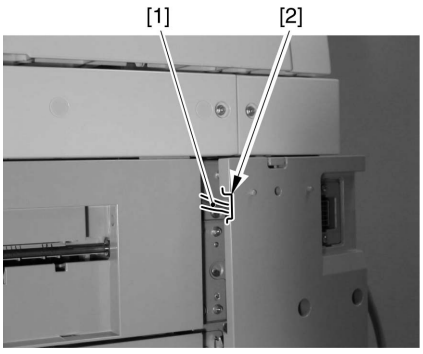
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-186

⚠**Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)**

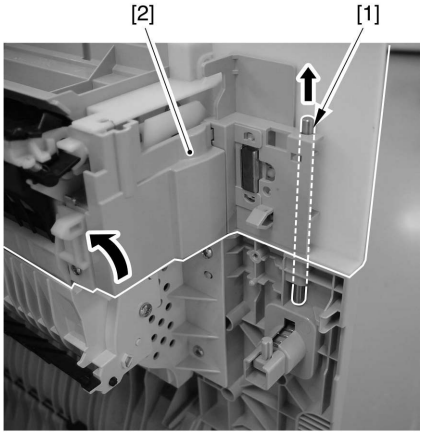
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-9-187

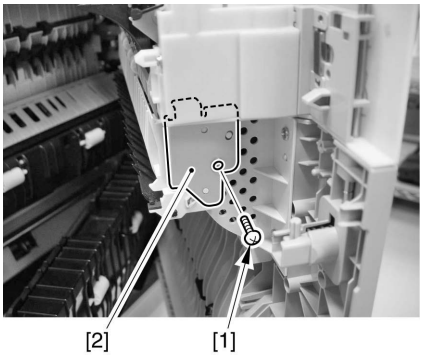
9.5.10.2 Removing the Right Door 0001-1325

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-188

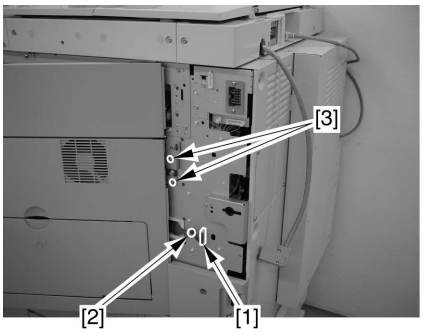
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-9-189

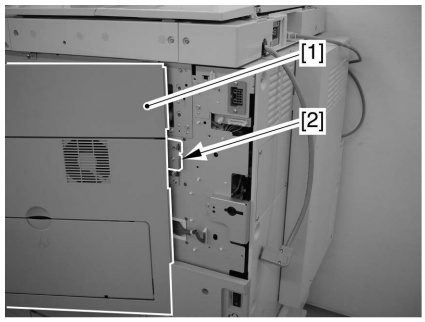
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-190

6) Detach the right door [1] together with the hinge [2].

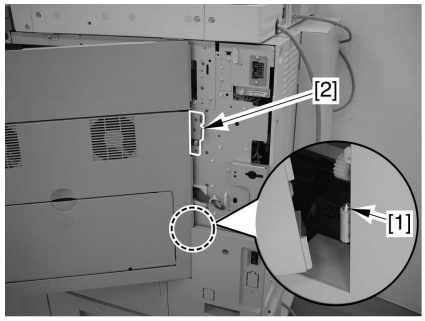


F-9-191

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

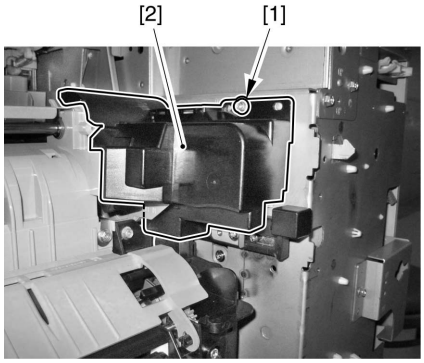


F-9-192

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

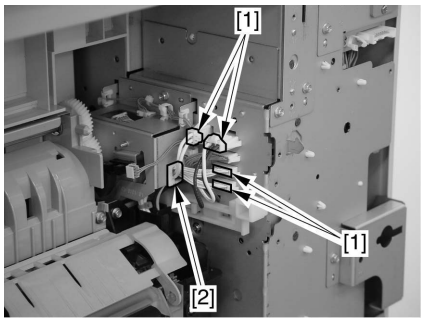
9.5.10.3 Removing the Fixing Unit 0001-1330

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



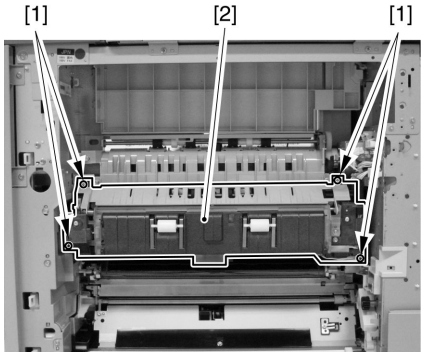
F-9-193

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-194

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-195

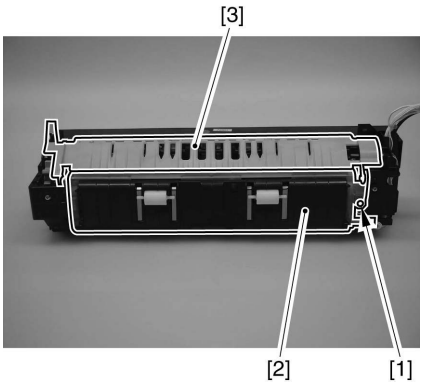
Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

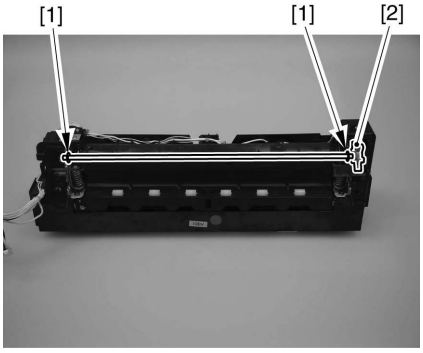
9.5.10.4 Removing the Fixing Inlet Guide 0001-1331

1) Remove the screw [1], and detach the duplex feed guide [2] and the jam access guide [3] at the same time.



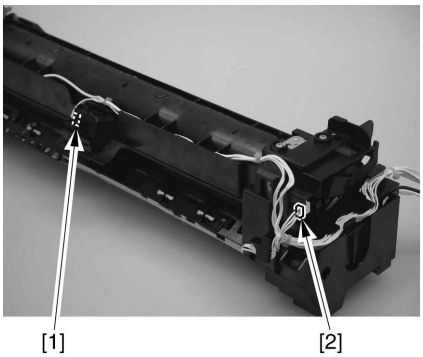
F-9-196

2) Remove the 2 E-rings [1], and detach the jam removal dial [2].



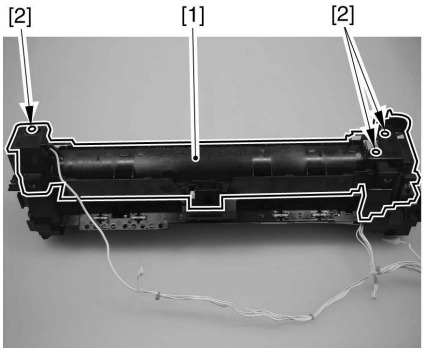
F-9-197

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



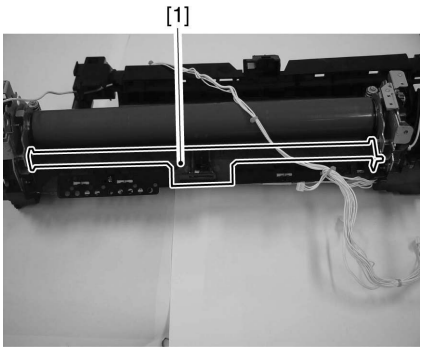
F-9-198

4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-199

5) Remove the fixing inlet guide [1].

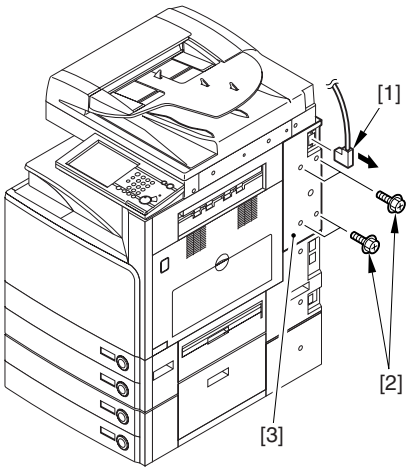


F-9-200

9.5.11 Fixing Delivery Guide

9.5.11.1 Removing the Right Cover (upper rear) 0002-0447

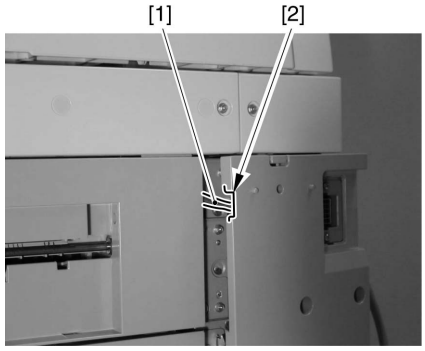
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-201

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

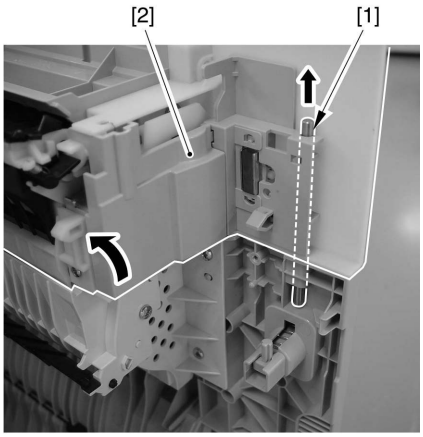


F-9-202

9.5.11.2 Removing the Right Door

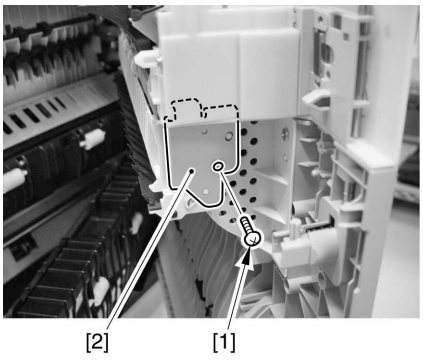
0001-2261

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



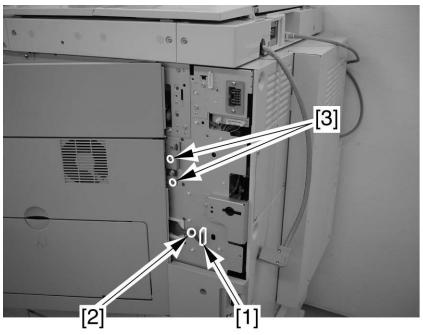
F-9-203

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



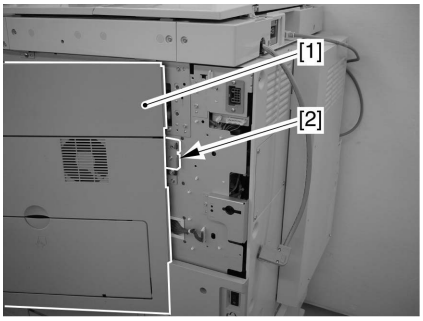
F-9-204

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-205

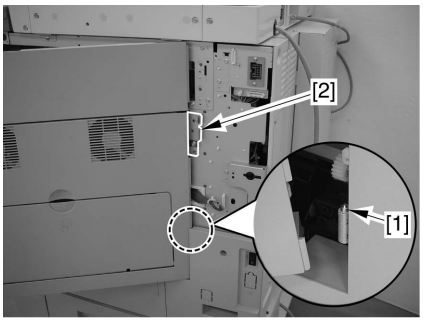
6) Detach the right door [1] together with the hinge [2].



F-9-206

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

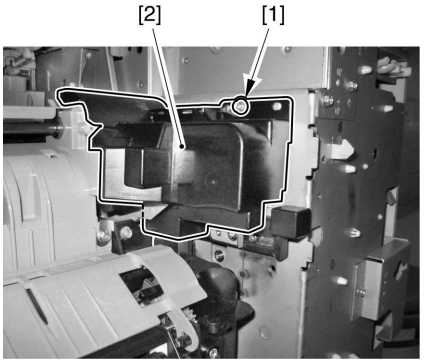


F-9-207

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

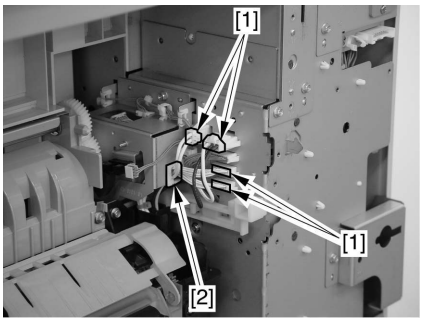
9.5.11.3 Removing the Fixing Unit 0001-2262

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



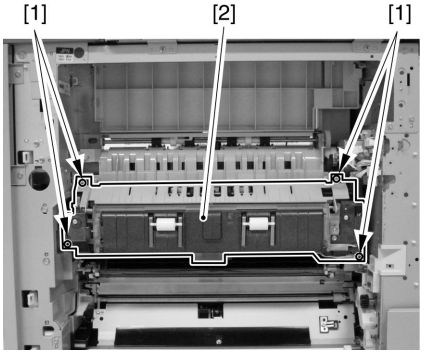
F-9-208

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-209

3) Remove the 4 screws [1], and detach the fixing assembly [2].



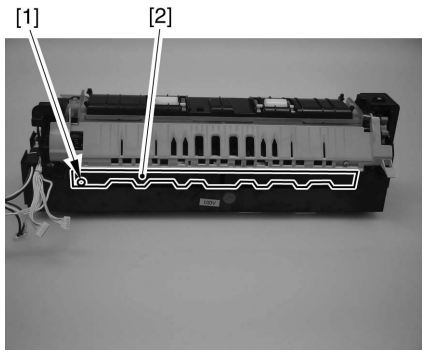
F-9-210

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

9.5.11.4 Removing the Fixing Delivery Guide 0001-2263

1) Remove the screw [1], and detach the fixing delivery guide [2].

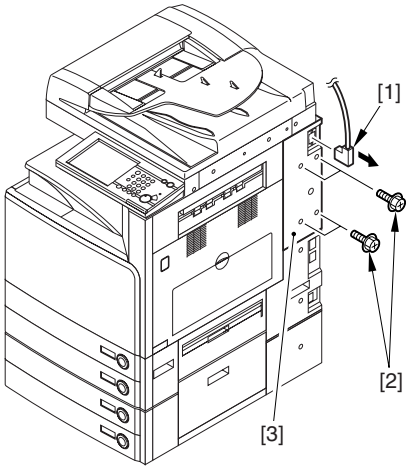


F-9-211

9.5.12 Fixing Inlet Sensor

9.5.12.1 Removing the Right Cover (upper rear) 0002-0416

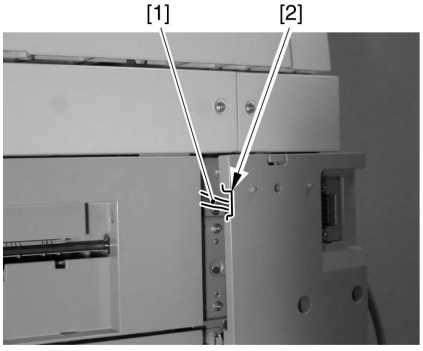
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-212

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

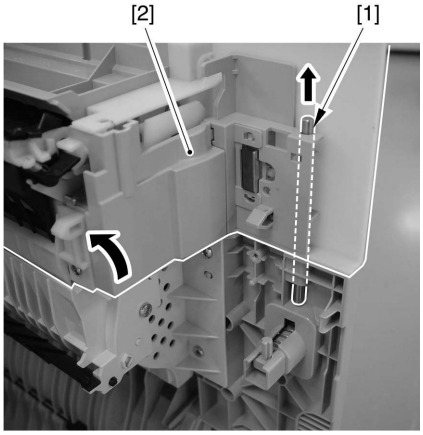


F-9-213

9.5.12.2 Removing the Right Door

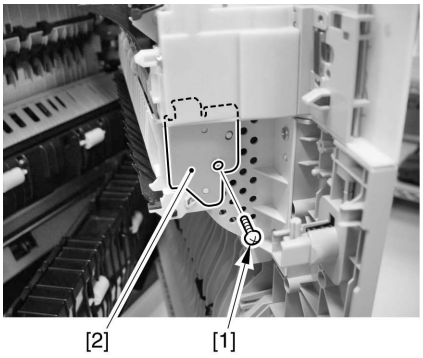
0001-1359

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



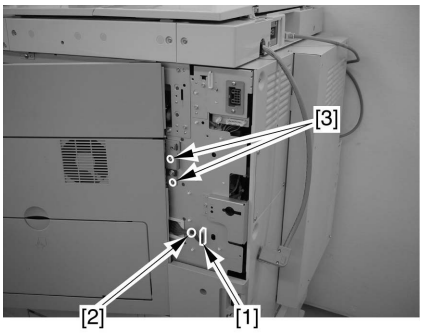
F-9-214

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



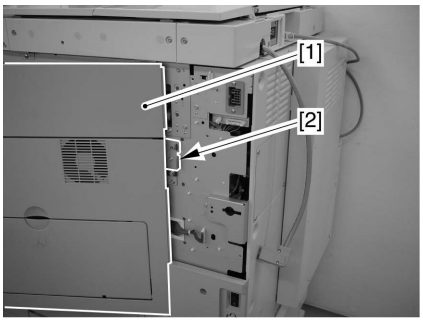
F-9-215

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-216

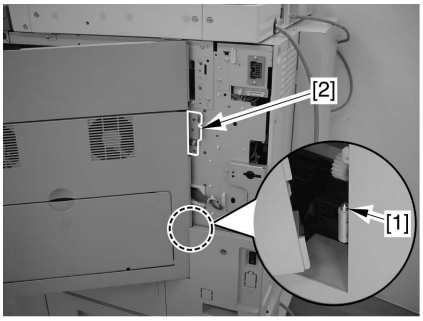
6) Detach the right door [1] together with the hinge [2].



F-9-217

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

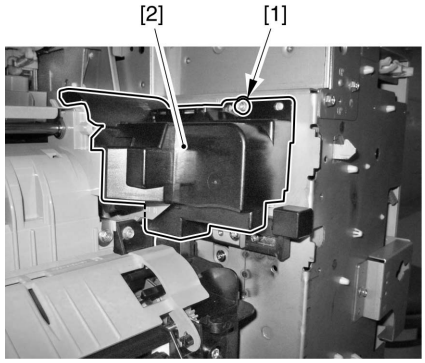


F-9-218

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

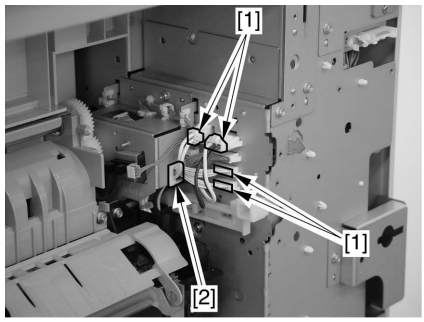
9.5.12.3 Removing the Fixing Unit 0001-1360

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



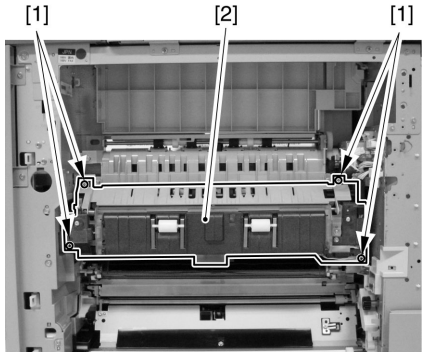
F-9-219

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-220

3) Remove the 4 screws [1], and detach the fixing assembly [2].



F-9-221

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

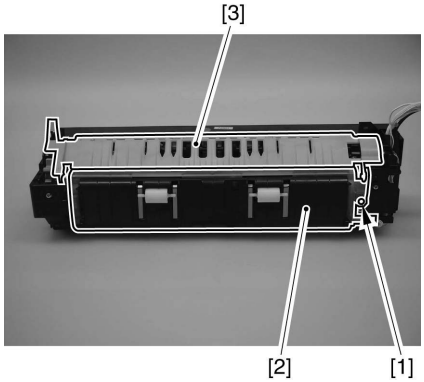
⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:

COPIER> COUNTER> MISC> FX-UP-RL

2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

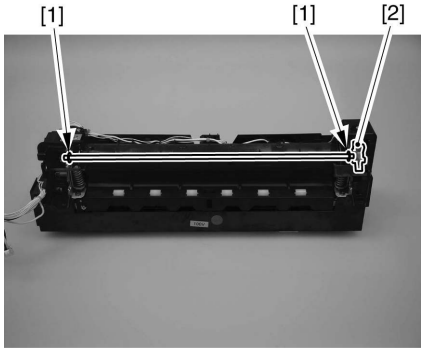
9.5.12.4 Removing the Fixing Inlet Sensor 0001-1362

1) Remove the screw [1], and detach the duplex feeding unit [2] and the jam access guide [3] at the same time.



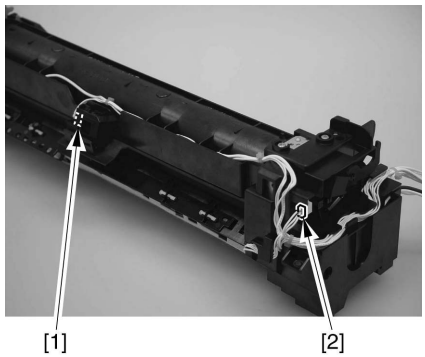
F-9-222

2) Remove the 2 E-rings [1], and detach the jam removal dial [2].



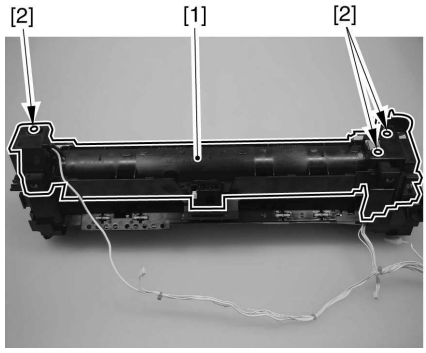
F-9-223

3) Disconnect the fixing inlet sensor connector [1] and the fixing delivery sensor connector [2]; then, pull out the faston [3] connected to the fixing heat retention heater.



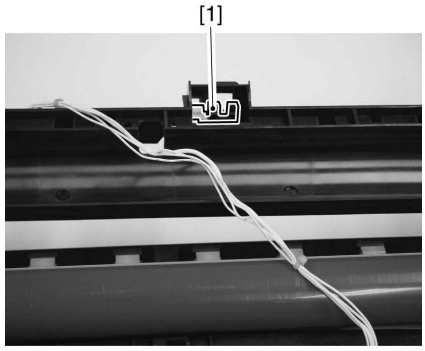
F-9-224

4) Remove the 3 screws [2], and detach the fixing inside cover [1].



F-9-225

5) Detach the fixing inlet sensor [1] from the fixing inside cover.

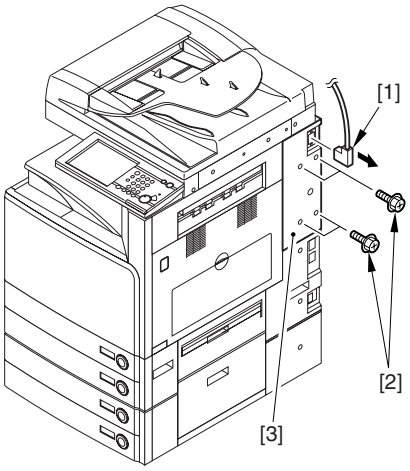


F-9-226

9.5.13 Fixing Delivery Sensor

9.5.13.1 Removing the Right Cover (upper rear) 0002-0417

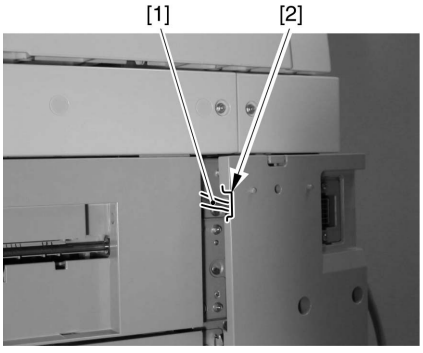
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-9-227

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

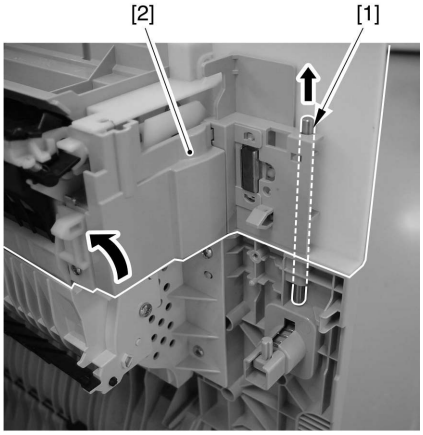
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-9-228

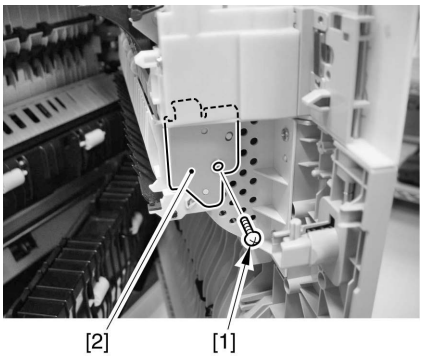
9.5.13.2 Removing the Right Door 0001-1365

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



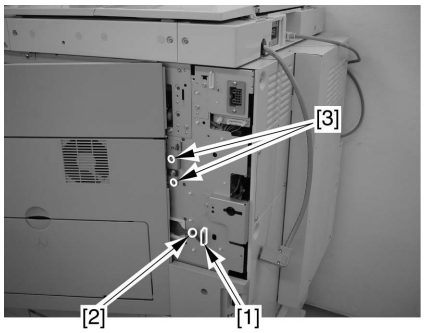
F-9-229

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



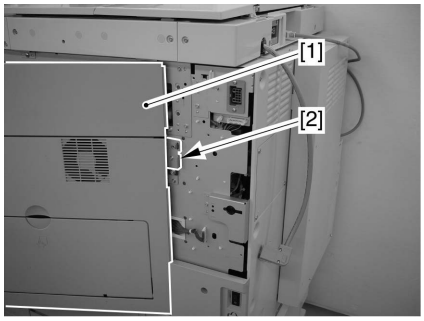
F-9-230

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-9-231

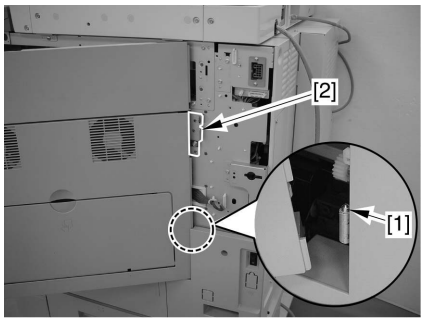
6) Detach the right door [1] together with the hinge [2].



F-9-232

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.

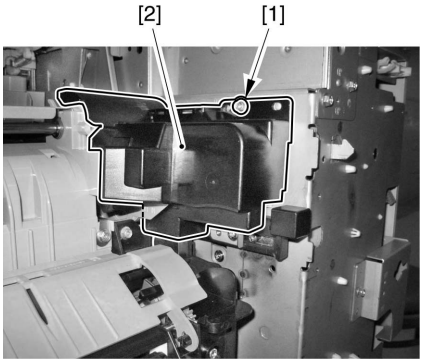


F-9-233

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

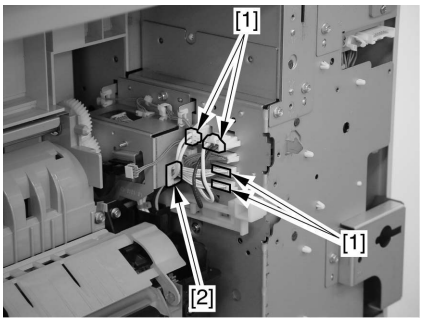
9.5.13.3 Removing the Fixing Unit 0001-1366

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



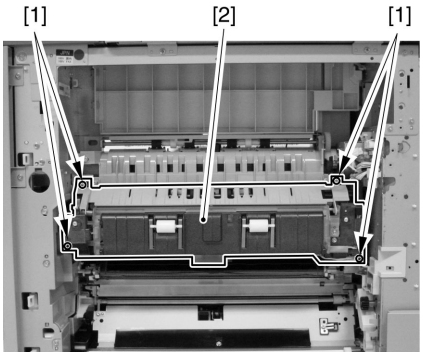
F-9-234

2) Disconnect the 4 connectors [1], and free the fixing harness from the clamp [2].



F-9-235

3) Remove the 4 screws [1], and detach the fixing assembly [2].



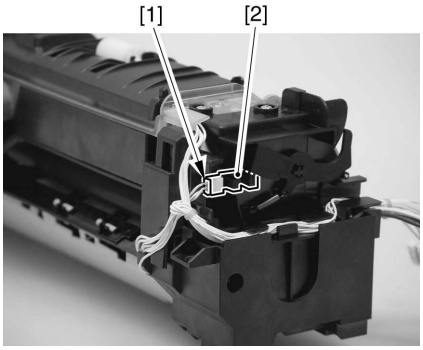
F-9-236

Memo:
Of the 4 screws, the 2 on the left are stepped screws.

⚠1. When you have replaced the fixing assembly, be sure to initialize the service mode counter using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL
2. If you replaced the existing assembly with a used one, be sure to enter the counter reading of the used fixing assembly using the following service mode item:
COPIER> COUNTER> MISC> FX-UP-RL

9.5.13.4 Removing the Fixing Delivery Sensor 0001-1368

1) Disconnect the connector [1], and detach the fixing delivery sensor [2].



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Chapter 10 Externals and Controls

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10.1 Power Supply

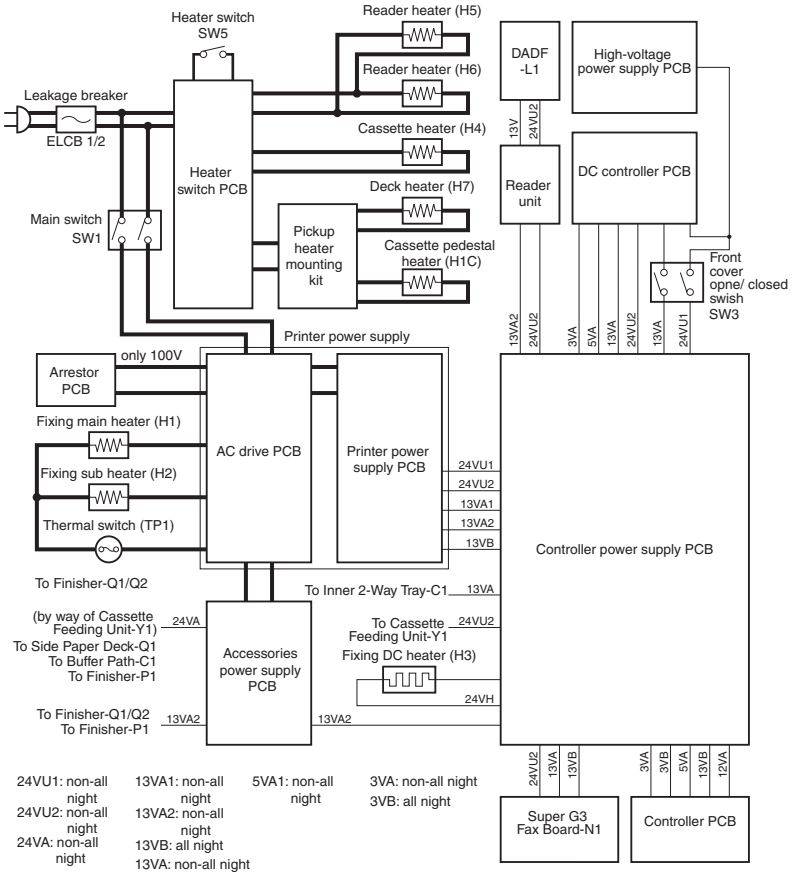
10.1.1 Power Supply

10.1.1.1 Route of Power Supply Inside the Printer 0001-4682

The machine's DC power is supplied by the printer power supply PCB. The DC power to its accessories is supplied by the accessories power supply PCB.
The functions of the individual power supply PCBs and distribution of power is as follows:

T-10-1

Name	Description	Remarks
Printer power supply PCB	generates DC power (24V, 13V); supplies DC power to the controller power supply PCB and the cassette pedestal.	
Accessories power supply PCB	supplies DC power to the side paper deck, buffer path, and finisher.	
Main switch	turns on and off AC power to the AC driver PCB.	
Cover switch	turns on and off 24 VU1/13 VA to the DC controller PCB.	
Leakage breaker	cuts power in the event of an error.	
Environment heater switch PCB	turns on and off power to the cassette heater, reader heater, and deck heater.	100/230V accessory
High-voltage power supply PCB	generates various high-voltage power.	
AC driver PCB	supplies AC power to the printer power supply PCB; drives the fixing system.	
Controller power supply PCB	supplies DC power to the inner 2-way tray, fax board, controller, DC controller PCB, and fixing heat retention heater (H3).	
	generates DC power (13V, 5V, 3.3V).	



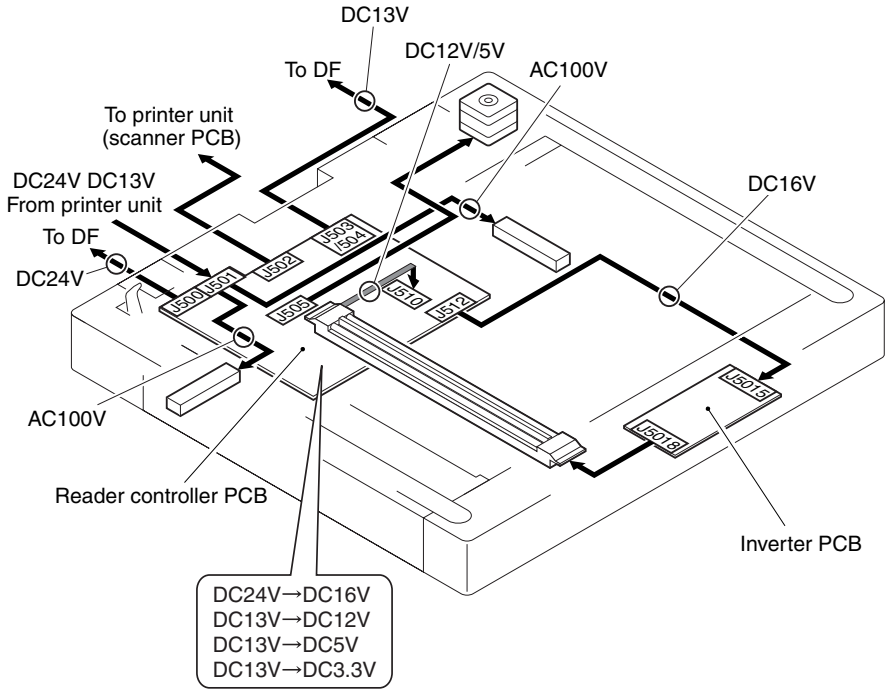
F-10-1

10.1.1.2 Route of Power to the Reader Unit

0001-4686

The reader controller PCB uses the 24/13 VDC from the printer unit to generate the following DC voltages:

- 16 VDC (for scanning lamp)
- 12 VDC (for CCD)
- 5 VDC (for sensor)
- 3.3 VDC (for IC)

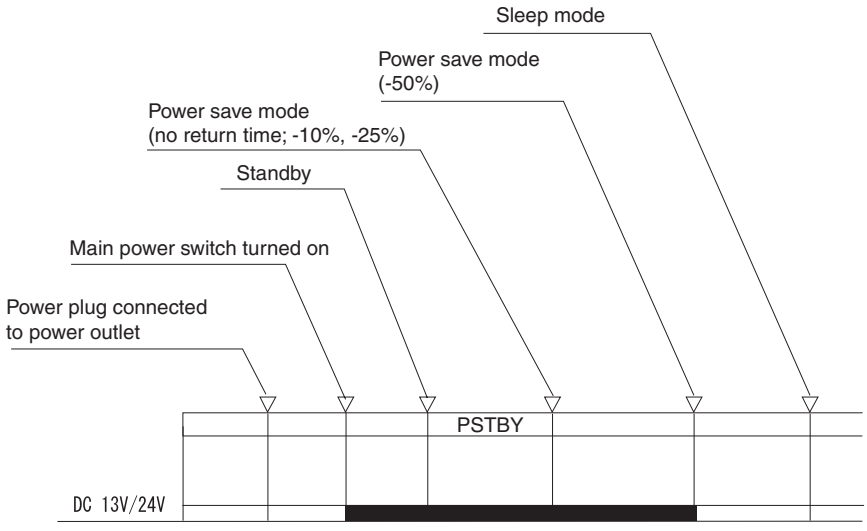


F-10-2

10.1.1.3 Timing of Supplying Power to the Reader Unit

0001-4689

The reader unit is supplied with 24/13 VDC by the printer unit at the following timing:

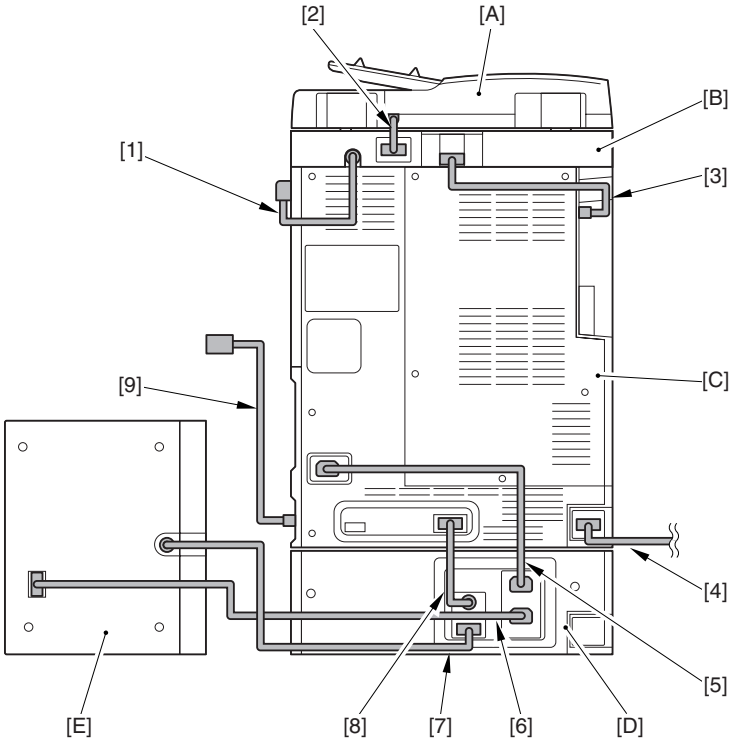


F-10-3

10.1.1.4 Routes of Power to various Options

0001-4693

The power from the printer unit to the accessories is routed as follows:



F-10-4

[1] Reader unit power cable
[2] DADF I/F cable
[3] DDIS cable
[4] Finisher-Q1/Saddle /Finisher-Q2 I/F cable
[5] Pickup heater cable
[6] Side deck heater cable
[7] Side deck I/F cable
[8] Cassette pedestal I/F cable
[9] AC input

[A] DADF-L1
[B] Reader unit
[C] Printer unit
[D] Cassette Feeding Unit-Y1
[E] Paper Deck-Q1

10.1.2 Rated Output of DC Power Supply PCB

10.1.2.1 Rated Output of the Printer Unit Power Supply PCB 0001-4716

The ratings and the power tolerances of the printer power supply PCB are as follows:

T-10-2

Output name	13VA	13VB	24VU1	24VU2
all-night/non-all night	non-all night	all night	non-all night	
rated output	13.2 V	13.2 V	24 V	
power supply tolerance	±3%	±3%	±5%	
		+3%, -5% (between 4.7 A and 5.2 A)	+8%, -6% (between 8 A and 10 A)	
			+8%, -6% between 0 A and 0.1 A)	

10.1.2.2 Rated Output of the Controller Power Supply PCB 0001-4719

The ratings and the power tolerances of the controller power supply PCB are as follows:

T-10-3

Output name	**3VA**	**3VB**	**5VA**	**12VA**	**24VH**
all night/ non-all night	non-all night	all night	non-all night	non-all night	non-all night
rated output	3.4V	3.4V	5.1V	12V	24V
power supply tolerance	±4%	±4%	±3%	±5%	±7%
				+5%, -6% (between 2A and 2.5A)	

10.1.2.3 Rated Output of the Options Power Supply PCB 0001-4721

The ratings and the power tolerances of the accessories power supply PCB are as follows:

T-10-4

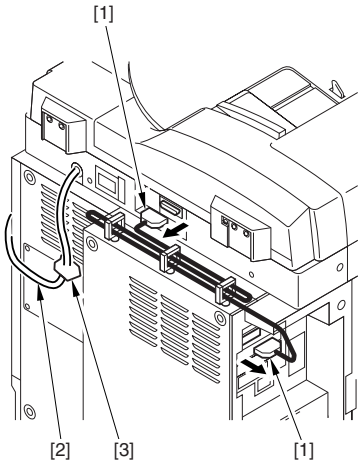
Output name	**24VA**
all all/non-all night	non-all night
rated output	24V
power tolerances	±5%
	+8%, -6% (between 6.5A and 12A)
	+8%, -6% (between 0A and 0.1A)

10.2 Parts Replacement Procedure

10.2.1 Option Power Supply Assembly

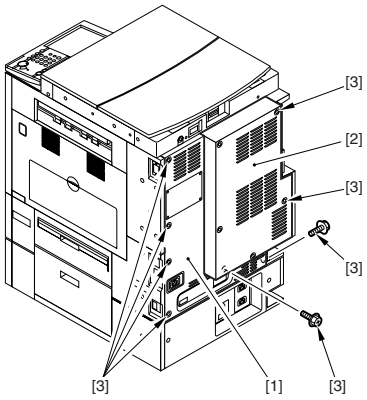
10.2.1.1 Removing the Rear Cover 0002-0483

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-5

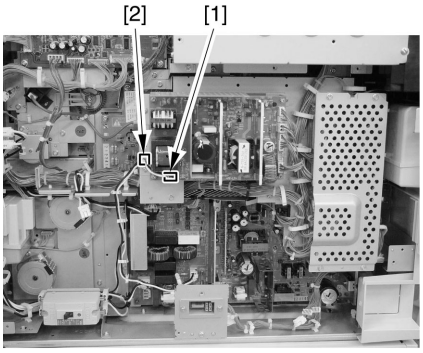
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-10-6

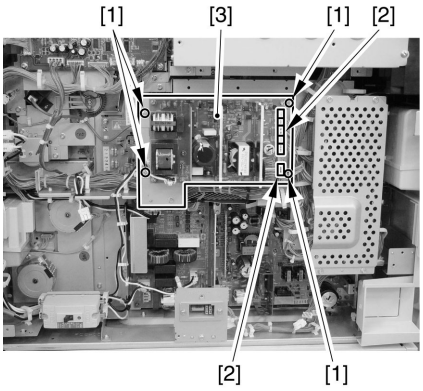
10.2.1.2 Removing the Accessories Power Supply 0001-2579

1) Disconnect J6401 [1] of the accessories power supply.
2) Free the relay harness from the clamp [2] of the accessories power supply.



F-10-7

3) Disconnect the 6 connectors [2] of the machine harness from the accessories power supply.
4) Remove the 4 TP screws (M3x6) [1], and detach the accessories power supply [3].

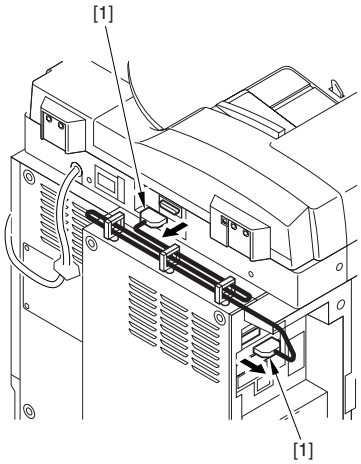


F-10-8

10.2.2 Controller Power Supply Unit

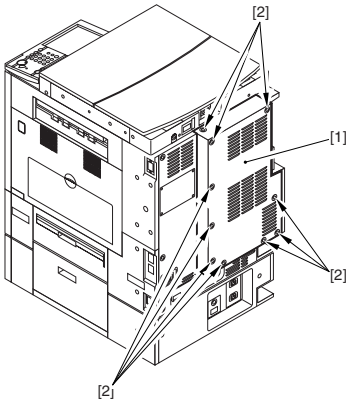
10.2.2.1 Removing the Rear Cover (right) 0002-0495

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-10-9

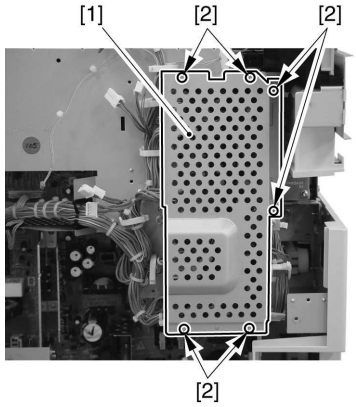
2) Remove the rear cover (right) [1]. (9 screws [3])



F-10-10

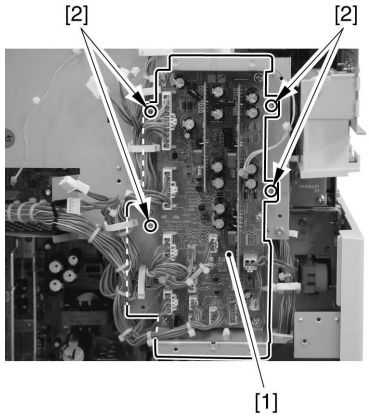
10.2.2.2 Removing the Controller Power Supply 0001-1452

1) Remove the controller power supply cover [1] in upward direction. (6 screws [2])



F-10-11

2) Remove the controller power supply [1]. (15 connectors, 5 clamps, 4 screws [2])

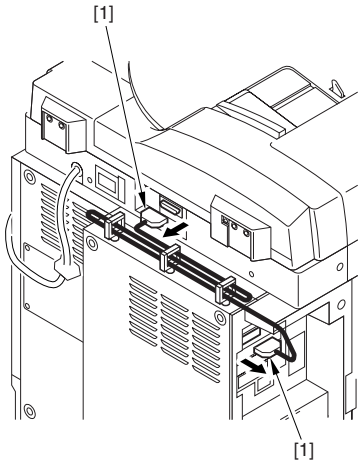


F-10-12

10.2.3 Printer Power Supply Unit

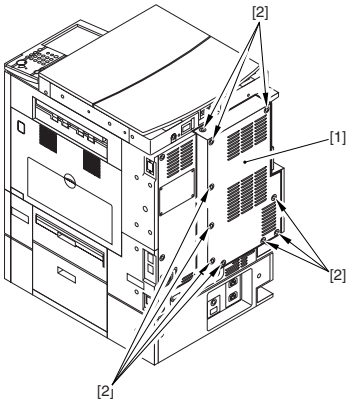
10.2.3.1 Removing the Rear Cover (right) 0002-0496

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-10-13

2) Remove the rear cover (right) [1]. (9 screws [3])

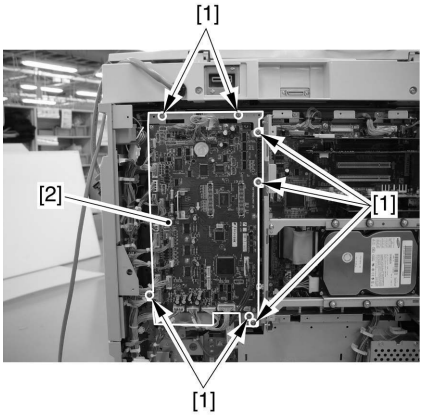


F-10-14

10.2.3.2 Removing the Controller Box 0001-4455

1) Remove the 7 screws [1].

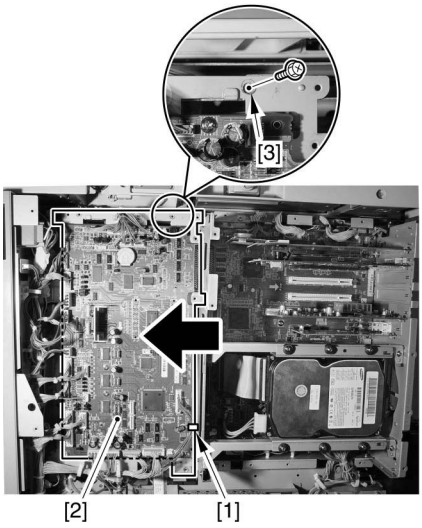
⚠Free the DC controller PCB base [2]. (You need not detach it.)



F-10-15

2) Free the wire saddle [1], and slide the DC controller PCB base [2] in the direction of the arrow.

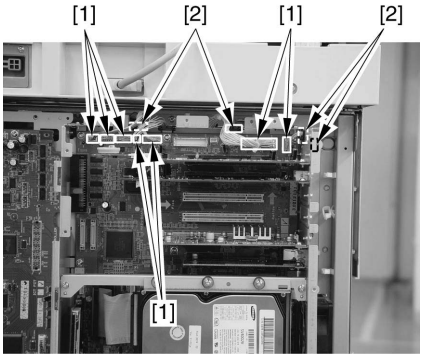
Fit the removed screw in the hole [3]; then, temporarily fix the DC controller PCB base [2] in place.



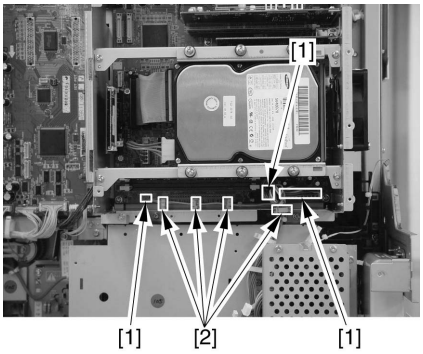
F-10-16

3) Disconnect the 10 connectors [1] of the main controller PCB; then, remove the 8 wire saddles.

⚠If a fax unit is installed, you will have to disconnect 12 connectors in the case of a Japanese model or 11 connectors in the case of a non-Japanese model.

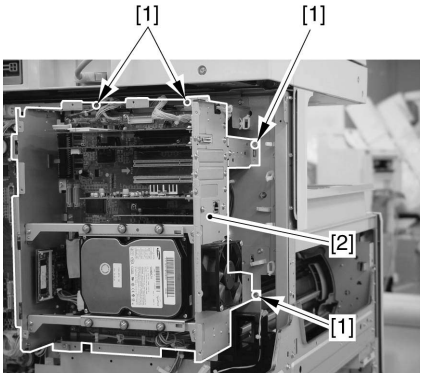


F-10-17

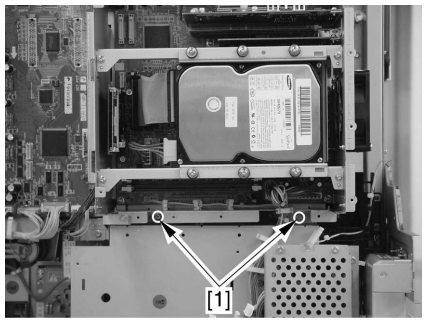


F-10-18

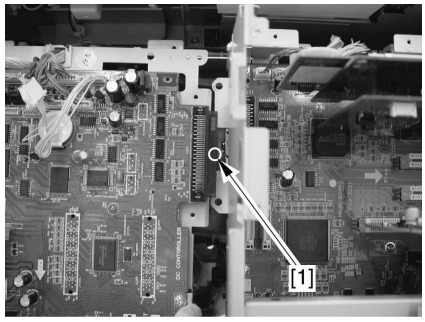
4) Remove the 7 screws, and detach the controller box [2].



F-10-19

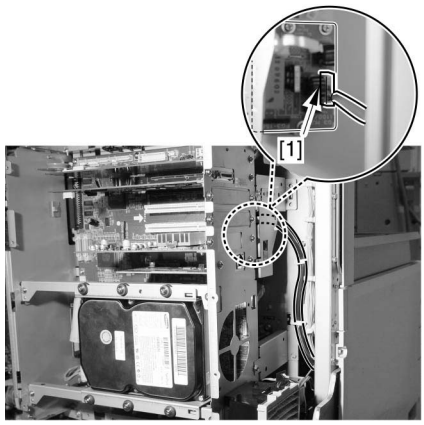


F-10-20



F-10-21

⚠If a fax unit is installed, you will find a connector [1] on the modular PCB found behind the controller box. Be sure to disconnect this connector before detaching the controller box from the machine.

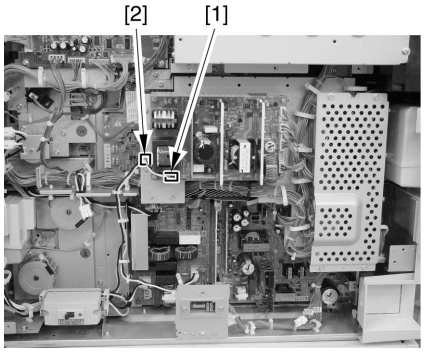


F-10-22

10.2.3.3 Removing the Accessories Power Supply 0002-0077

1) Disconnect J6401 [1] of the accessories power supply.

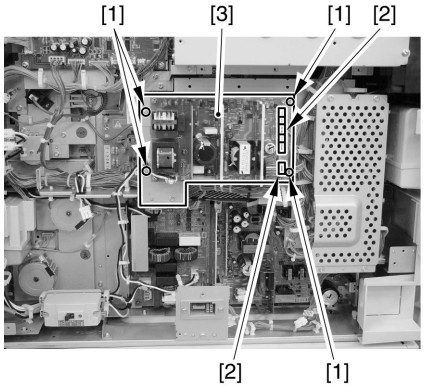
2) Free the relay harness from the clamp [2] of the accessories power supply.



F-10-23

3) Disconnect the 6 connectors [2] of the machine harness from the accessories power supply.

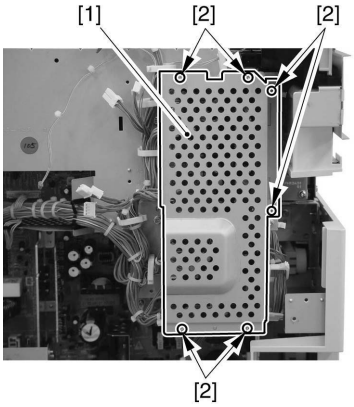
4) Remove the 4 TP screws (M3x6) [1], and detach the accessories power supply [3].



F-10-24

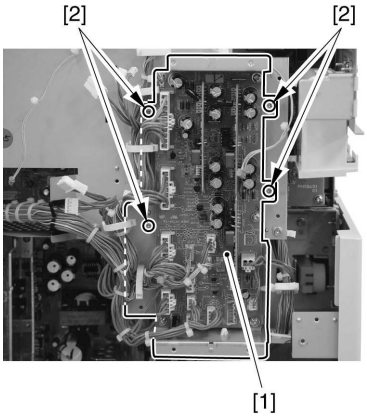
10.2.3.4 Removing the Controller Power Supply 0001-4400

1) Remove the controller power supply cover [1] in upward direction. (6 screws [2])



F-10-25

2) Remove the controller power supply [1]. (15 connectors, 5 clamps, 4 screws [2])



F-10-26

10.2.3.5 Removing the Left Cover (lower) 0002-0500

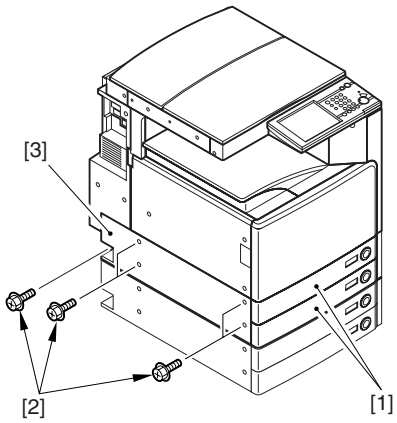
1) Disconnect the lattice connector [1] to the finisher. (if equipped with Finisher-Q1 or Saddle Finisher-Q2) Or, remove the cover of the lattice connector.

Memo:

Depending on the specifications of the machine, you may not find a lattice connector.

2) Remove the cassettes 1 and 2 [1].

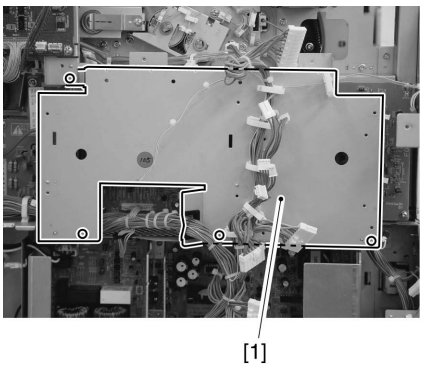
3) Remove the 4 screws [2], and detach the lower right cover [3].



F-10-27

10.2.3.6 Removing the Printer Unit Power Supply 0001-1433

1) Remove the HVT cover [1]. (5 screws [2], 8 clamps)



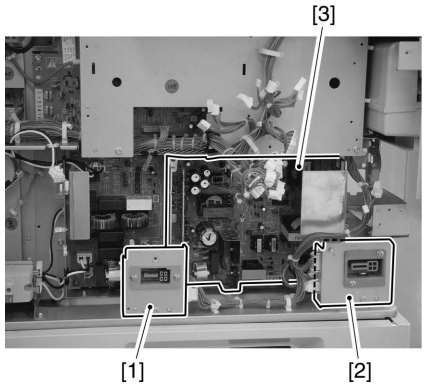
F-10-28

2) Disconnect the lattice connector [1] (1 screws) to the cassette pedestal and the lattice connector [2] (1 screw) to the finisher.

3) Remove the printer unit power supply [3]. (3 connectors, 4 screws)

Memo

Depending on the specifications of the machine, you may not find the lattice connector.



F-10-29

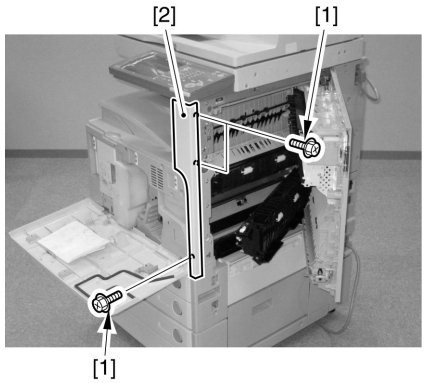
10.2.4 Control Panel

10.2.4.1 Removing the Support Cover (right) 0002-0059

1) Open the right door.

2) Open the front cover.

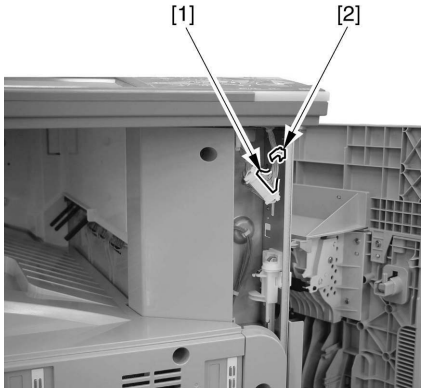
3) Remove the 3 screws [1], and detach the support cover (right) [2].



F-10-30

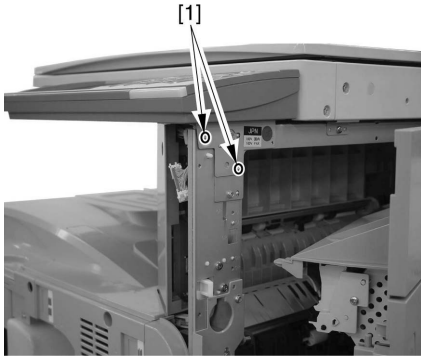
10.2.4.2 Removing the Control Panel 0001-1469

1) Disconnect the connector [1] of the control panel cable, and free the harness [2] from the clamp.



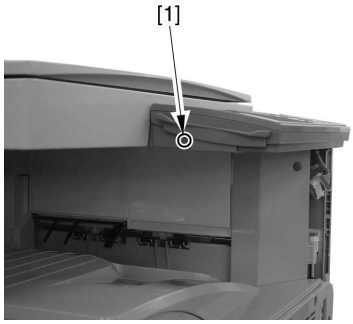
F-10-31

2) Remove the 2 screws [1] from the right side of the control panel.



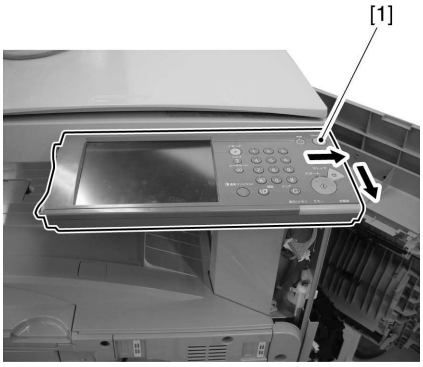
F-10-32

3) Remove the screw cover [1] from the left side of the control panel, and remove the screw from the rear.



F-10-33

4) Shift the control panel [1] to the right, and detach it toward the front.

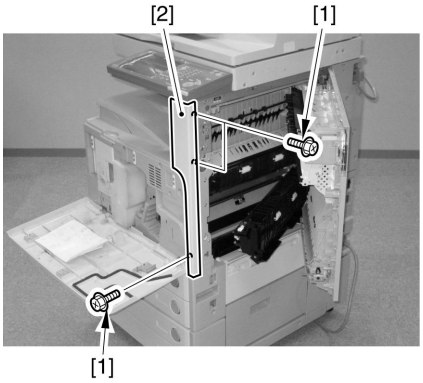


F-10-34

10.2.5 Control Panel LCD Unit

10.2.5.1 Removing the Support Cover (right) 0002-0058

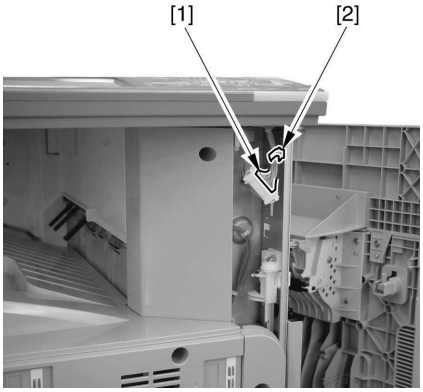
1) Open the right door.
2) Open the front cover.
3) Remove the 3 screws [1], and detach the support cover (right) [2].



F-10-35

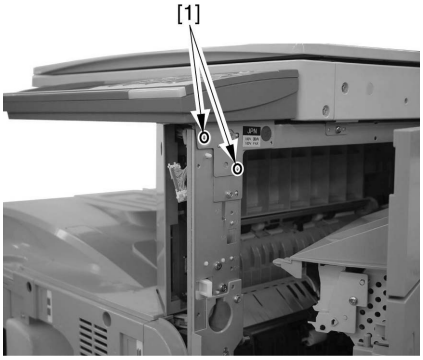
10.2.5.2 Removing the Control Panel 0001-2523

1) Disconnect the connector [1] of the control panel cable, and free the harness [2] from the clamp.



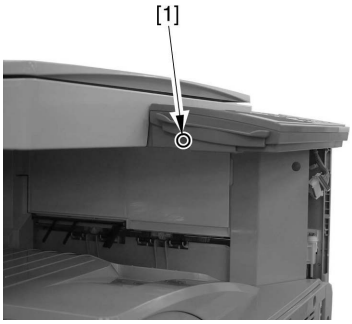
F-10-36

2) Remove the 2 screws [1] from the right side of the control panel.



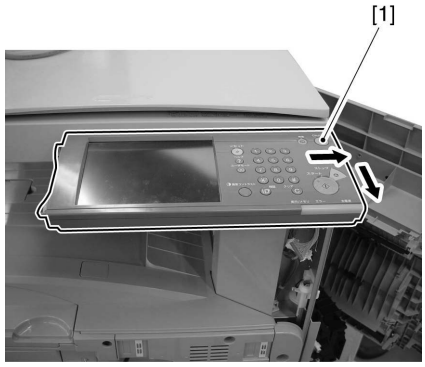
F-10-37

3) Remove the screw cover [1] from the left side of the control panel, and remove the screw from the rear.



F-10-38

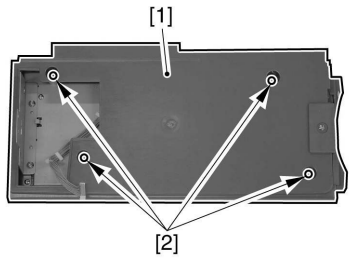
4) Shift the control panel [1] to the right, and detach it toward the front.



F-10-39

10.2.5.3 Removing the Control Panel Lower Cover 0001-8928

1) Remove the control panel lower cover [1]. (4 TP screws [2])



F-10-40

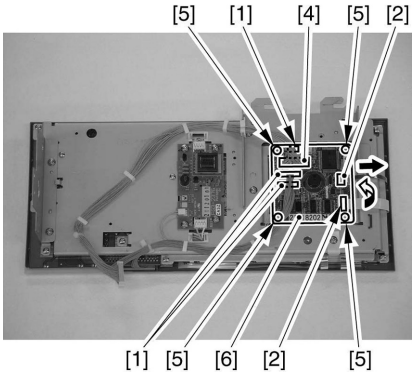
10.2.5.4 Removing the Control Panel LCD 0001-1484

1) Disconnect the 2 connectors [1] of the cable used between the control panel PCB and the control panel key switch PCB; then, free the cable from the 2 clamps [2].

2) Disconnect the 2 connectors used between the control panel PCB and the control panel LCD.

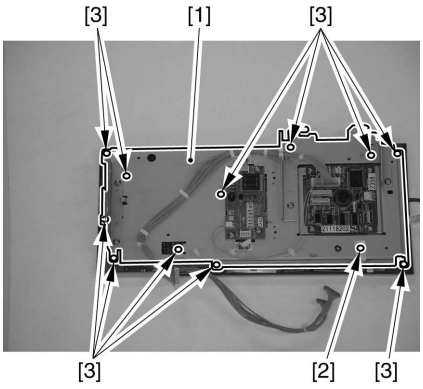
⚠Be sure to move the stopper in the direction of the arrow. Each stopper has its own direction of movement.

3) Disconnect the 2 connectors [3] of the control panel inverter PCB.



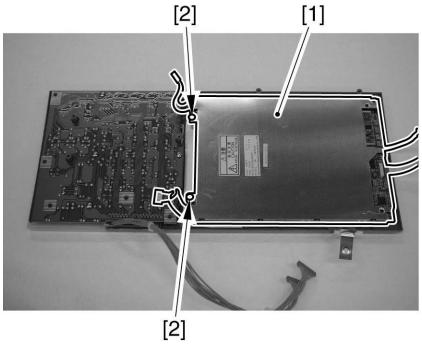
F-10-41

4) Remove the control panel inside frame [1]. (1 TP screw [2], 11 self-tapping screws [3])



F-10-42

5) Remove the control panel LCD [1]. (2 self-tapping screws [2]).

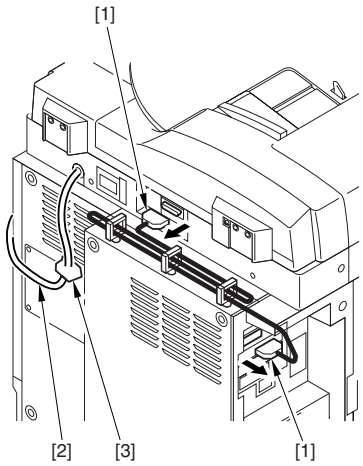


F-10-43

10.2.6 DC Controller PCB

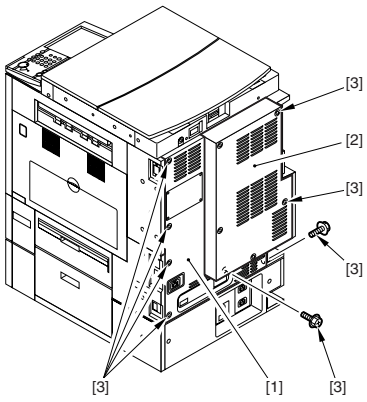
10.2.6.1 Removing the Rear Cover 0002-0479

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-44

3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])

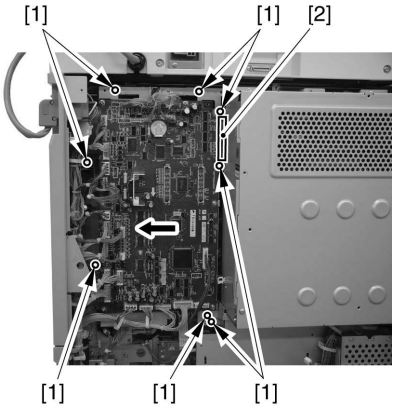


F-10-45

10.2.6.2 Removing the DC Controller PCB 0001-1491

1) Disconnect all connectors of the DC controller PCB.

2) Remove the 8 TP screws [1] of the DC controller PCB base.
3) Shift the DC controller PCB together with the base to the left to disconnect the connector [2] to the controller PCB.



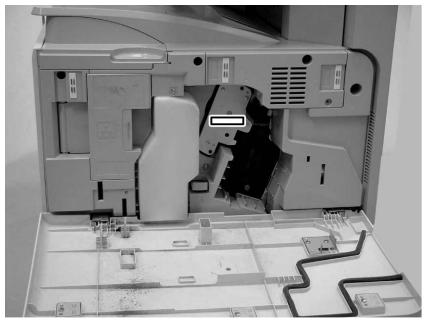
F-10-46

4) Remove the DC controller PCB together with the base toward the front.

10.2.6.3 When Replacing the DC Controller 0001-7538

⚠Before replacing the DC controller PCB, generate the latest P-PRINT printout:
COPIER>FUNCTION>MISC-P>P-PRINT

1) Download the latest system software by the SST.
2) After replacing the DC controller, initialize the memory of the DC controller PCB using the following service mode item:
COPIER>FUNCTION>CLEAR>DC-CON
3) Enter the values indicated on the service label using the following service mode items:
- COPIER>ADJUST>LASER>**LA-DELAY**
- COPIER>ADJUST>IMG-REG>
REG-V-Y,M,K
REG2-V-Y,M,K
- COPIER>ADJUST>DENS>
SGNL-Y,M,C
REF-Y,M,C
- COPIER>ADJUST>HV-PRI>
OFST1-AC
PRI-GAIN
PRI-OFST
- COPIER>ADJUST>HV-TR>
1TR-GAIN,OFST
2TR-GAIN,OFST
- COPIER>ADJUST>CST-ADJ>
MF-A4R,A6R,A4
- COPIER>ADJUST>FEED-ADJ>
REGIST
ADJ-C1,C2,MF,C1RE,C2RE,C3RE,C4RE
ADJ-DKRE,MFRE,RG-REFE
4) If any value is recorded in the Remarks field of the service label, enter the value in service mode.
5) Enter the counter backup data indicated in the P-PRINT printout using the following service mode items:
COPIER>COUNTER>MISC>FX-UP-RL
COPIER>COUNTER>MISC>DV-UNT-K
6) Enter the drum film thickness current value in service mode. (The drum film thickness current value is indicated on the drum counter label attached to the front of the drum unit.)
COPIER>ADJUST>HV-PRI>DR-I-INT

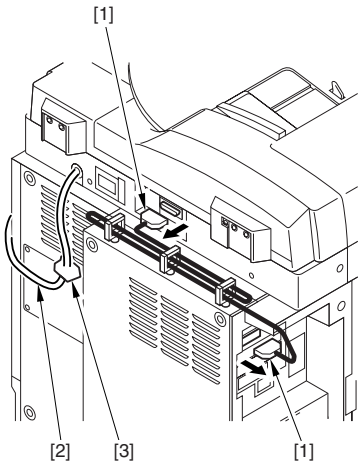

F-10-47

7) Turn off the control panel power switch.
8) Turn off and then on the main power switch.
9) Execute the following service mode item of the drum film thickness level setting:
COPIER>ADJUST>HVT-PRI>DRM-CHK

10.2.7 Leakage Breaker

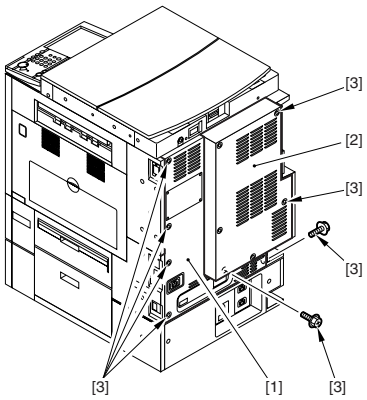
10.2.7.1 Removing the Rear Cover 0002-0480

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-48

3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])

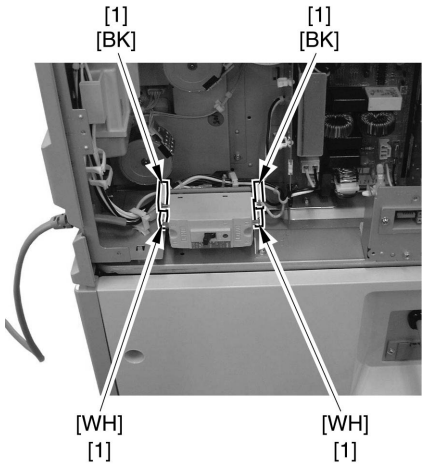


F-10-49

10.2.7.2 Removing the Leakage Breaker 0001-1494

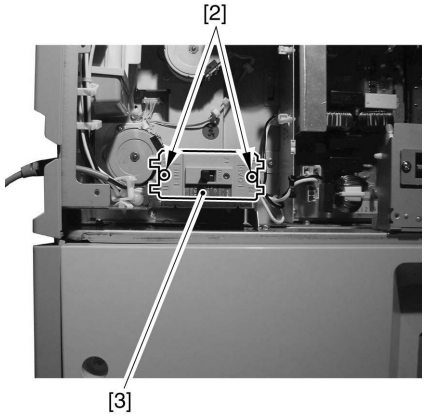
1) Remove the 4 fastons [1].

⚠The cords connected to the fastons are color-coded; be sure the colors are correctly matched when connecting them once again.



F-10-50

2) Remove the 2 screws [2], and detach the leakage breaker [3].

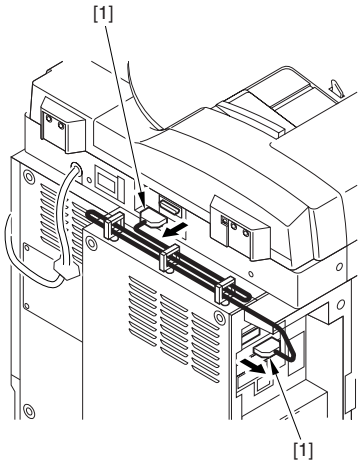


F-10-51

10.2.8 HVT PCB

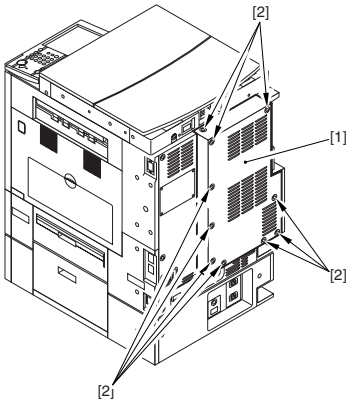
10.2.8.1 Removing the Rear Cover (right) 0002-0494

1) Disconnect the 2 connectors [1] of the DDIS cable.



F-10-52

2) Remove the rear cover (right) [1]. (9 screws [3])

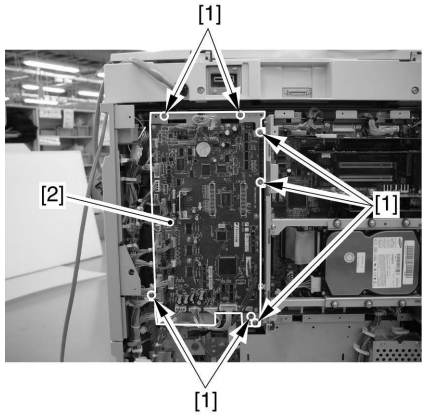


F-10-53

10.2.8.2 Removing the Controller Box 0001-4449

1) Remove the 7 screws [1].

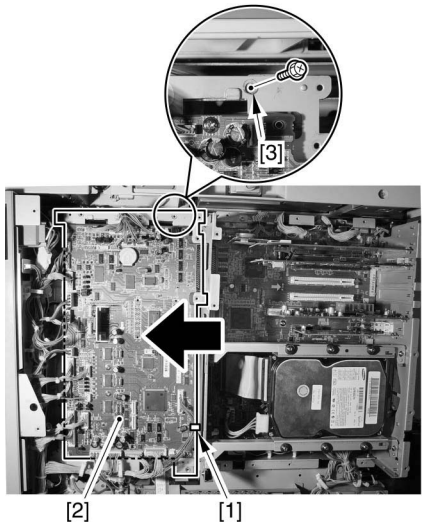
⚠Free the DC controller PCB base [2]. (You need not detach it.)



F-10-54

2) Free the wire saddle [1], and slide the DC controller PCB base [2] in the direction of the arrow.

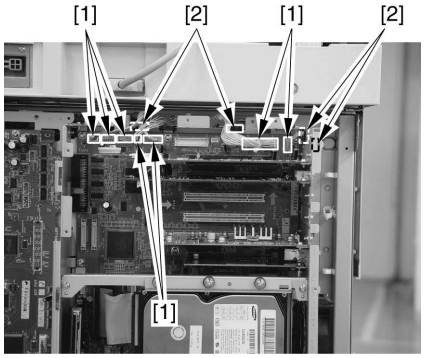
Fit the removed screw in the hole [3]; then, temporarily fix the DC controller PCB base [2] in place.



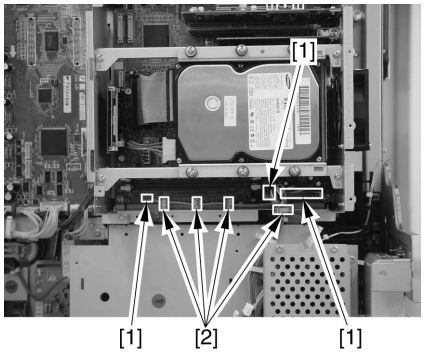
F-10-55

3) Disconnect the 10 connectors [1] of the main controller PCB; then, remove the 8 wire saddles.

⚠If a fax unit is installed, you will have to disconnect 12 connectors in the case of a Japanese model or 11 connectors in the case of a non-Japanese model.

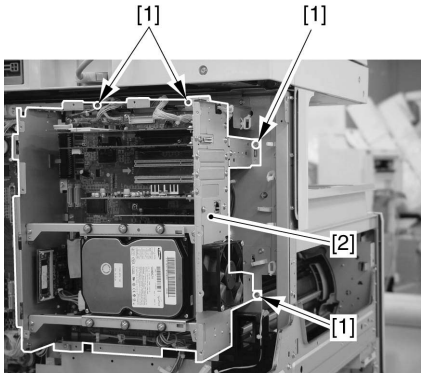


F-10-56

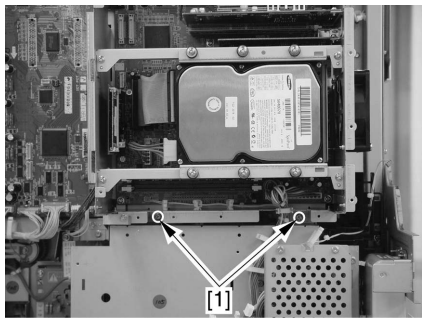


F-10-57

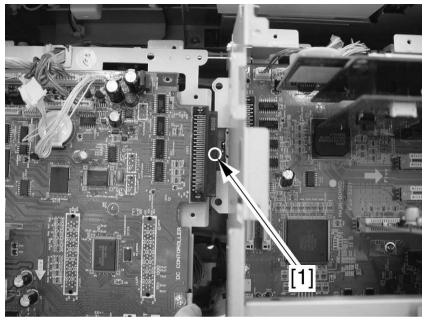
4) Remove the 7 screws, and detach the controller box [2].



F-10-58

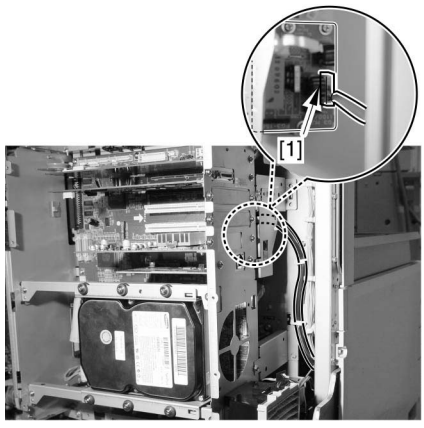


F-10-59



F-10-60

⚠If a fax unit is installed, you will find a connector [1] on the modular PCB found behind the controller box. Be sure to disconnect this connector before detaching the controller box from the machine.

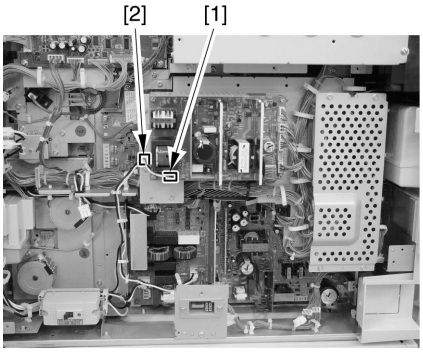


F-10-61

10.2.8.3 Removing the Accessories Power Supply 0001-9597

1) Disconnect J6401 [1] of the accessories power supply.

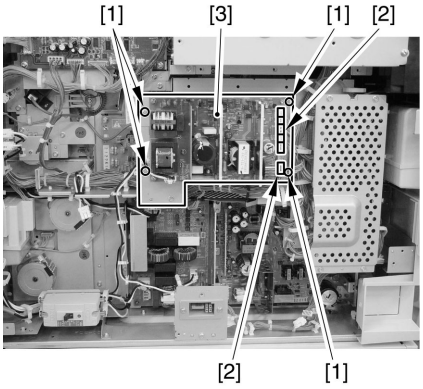
2) Free the relay harness from the clamp [2] of the accessories power supply.



F-10-62

3) Disconnect the 6 connectors [2] of the machine harness from the accessories power supply.

4) Remove the 4 TP screws (M3x6) [1], and detach the accessories power supply [3].

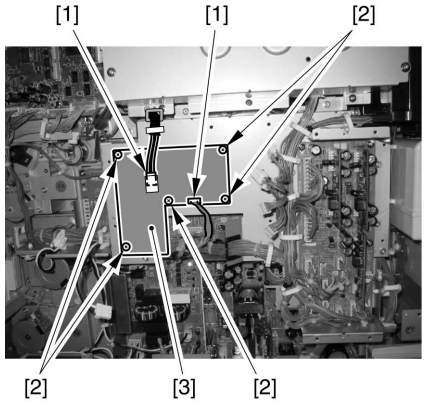


F-10-63

10.2.8.4 Removing the High-Voltage Sub PCB 0001-9595

1) Disconnect the 2 connectors [1] from the high-voltage sub PCB.

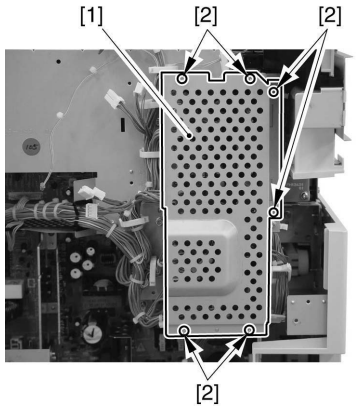
2) Remove the 5 supports [2] from the high-voltage sub PCB [3].



F-10-64

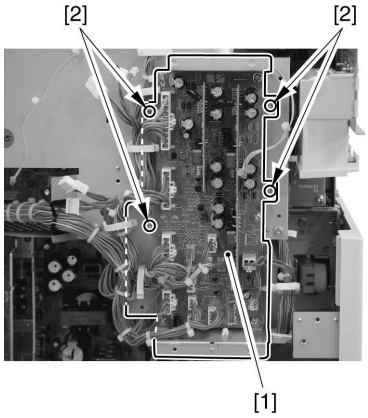
10.2.8.5 Removing the Controller Power Supply 0001-4401

1) Remove the controller power supply cover [1] in upward direction. (6 screws [2])



F-10-65

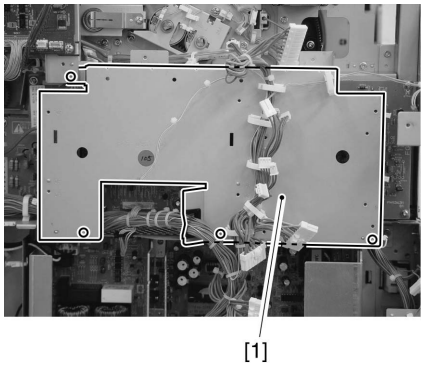
2) Remove the controller power supply [1]. (15 connectors, 5 clamps, 4 screws [2])



F-10-66

10.2.8.6 Removing the Printer Power Supply 0001-4526

1) Remove the HVT cover [1]. (5 screws [2], 8 clamps)



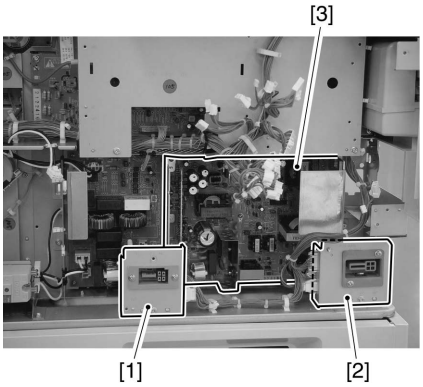
F-10-67

2) Disconnect the lattice connector [1] (1 screws) to the cassette pedestal and the lattice connector [2] (1 screw) to the finisher.

3) Remove the printer unit power supply [3]. (3 connectors, 4 screws)

Memo

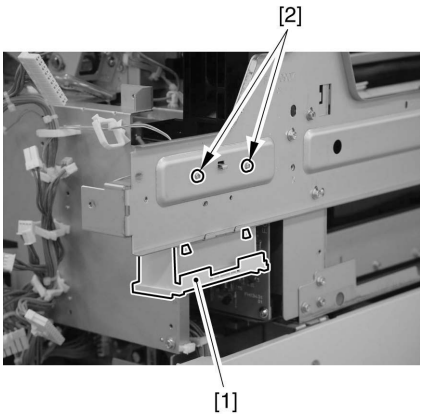
Depending on the specifications of the machine, you may not find the lattice connector.



F-10-68

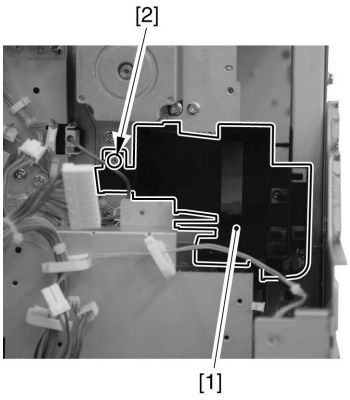
10.2.8.7 Removing the HVT PCB 0001-1423

1) Remove the right rear grip [1]. (2 screws [2])



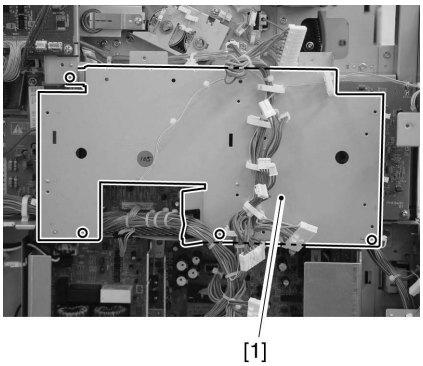
F-10-69

2) Remove the fan duct [1]. (1 screws [2])



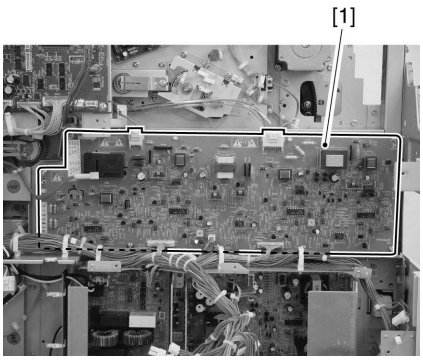
F-10-70

3) Remove the HVT cover [1]. (5 screws [2], 8 clamps)



F-10-71

4) Remove the HVT PCB [1]. (5 connectors, 8 screws, 2 PCB supports)



F-10-72

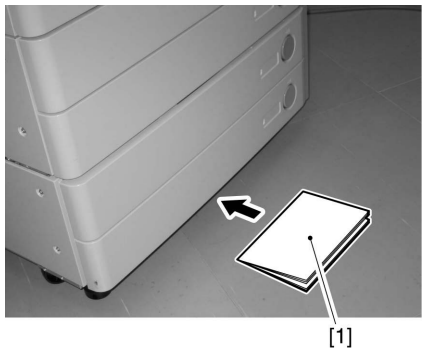
10.2.8.8 When Replacing the HVT PCB 0001-6276

1) Enter the appropriate information using the following 6 service mode items by going through the instructions indicated on the label attached to the HVT PCB:

COPIER> ADJUST> HV-PRI> PRI-GAIN (CHG G)
COPIER> ADJUST> HV-PRI> PRI-OFST (CHG Off)
COPIER> ADJUST> HV-TR> 1TR-GAIN (1TR G)
COPIER> ADJUST> HV-TR> 1TR-OFST (1TR Off)
COPIER> ADJUST> HV-TR> 2TR-GAIN (2TR G)
COPIER> ADJUST> HV-TR> 2TR-OFST (2TR Off)

The notations in parentheses indicate the notations as they appear on the PCB label.

2) Record the new values on the service label.
3) Generate a P-PRINT printout in service mode.
4) Put away the generated P-PRINT printout [1] in the service book case to replace the old printout.

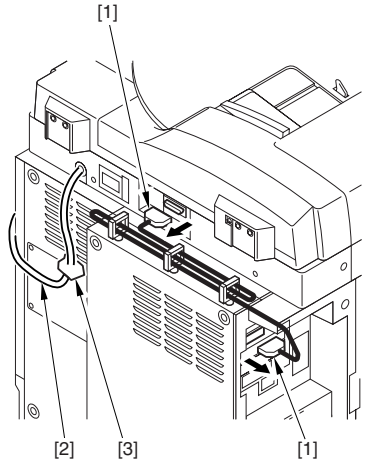


F-10-73

10.2.9 High-Voltage Sub PCB

10.2.9.1 Removing the Rear Cover 0002-0486

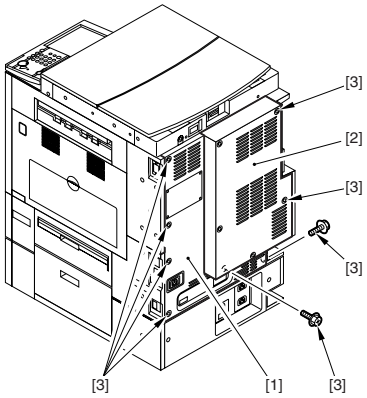
1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-74

3) Detach the rear cover (left) [1] and the other rear

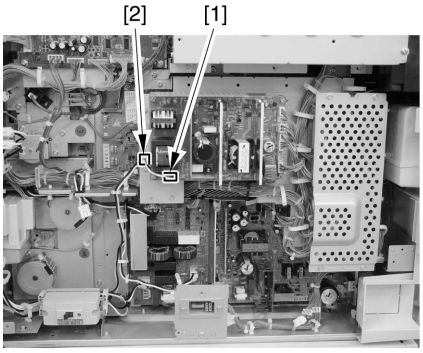
cover (right) [2] at the same time. (9 screws [3])



F-10-75

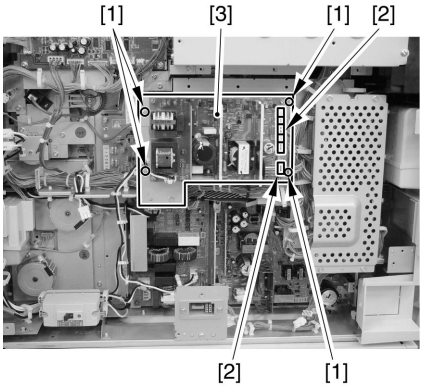
10.2.9.2 Removing the Accessories Power Supply 0001-9579

1) Disconnect J6401 [1] of the accessories power supply.
2) Free the relay harness from the clamp [2] of the accessories power supply.



F-10-76

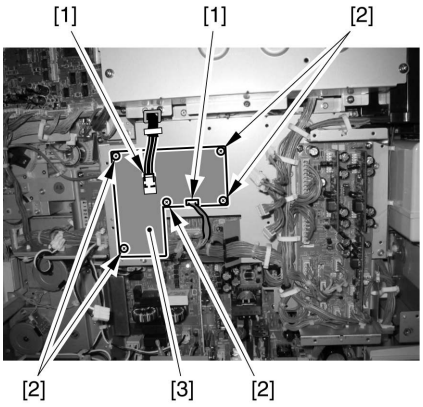
3) Disconnect the 6 connectors [2] of the machine harness from the accessories power supply.
4) Remove the 4 TP screws (M3x6) [1], and detach the accessories power supply [3].



F-10-77

10.2.9.3 Removing the High-Voltage Sub PCB 0001-9581

1) Disconnect the 2 connectors [1] from the high-voltage sub PCB.
2) Remove the 5 supports [2] from the high-voltage sub PCB [3].

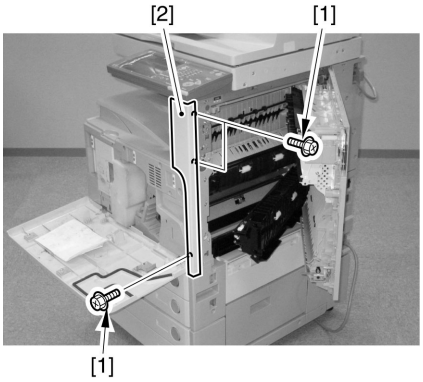


F-10-78

10.2.10 Control Panel CPU PCB

10.2.10.1 Removing the Support Cover (right) 0002-0056

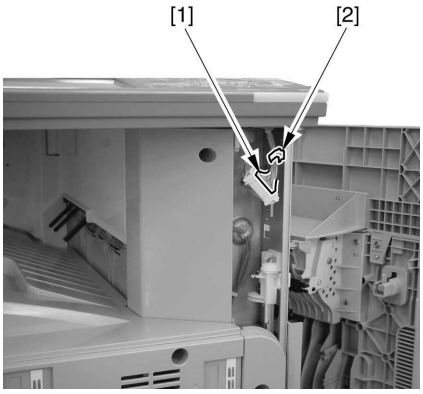
1) Open the right door.
2) Open the front cover.
3) Remove the 3 screws [1], and detach the support cover (right) [2].



F-10-79

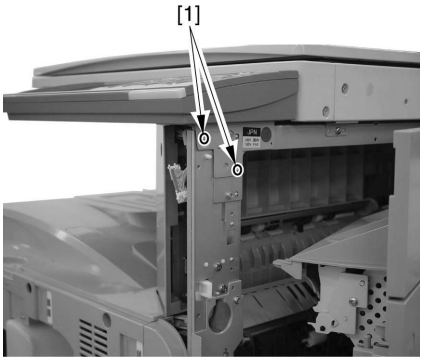
10.2.10.2 Removing the Control Panel 0001-1965

1) Disconnect the connector [1] of the control panel cable, and free the harness [2] from the clamp.



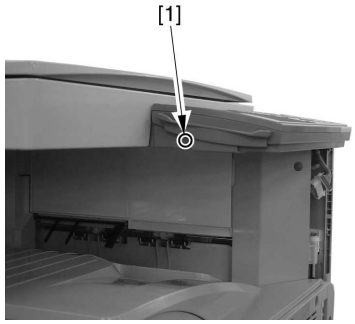
F-10-80

2) Remove the 2 screws [1] from the right side of the control panel.



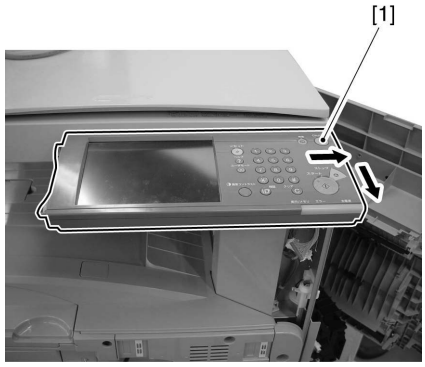
F-10-81

3) Remove the screw cover [1] from the left side of the control panel, and remove the screw from the rear.



F-10-82

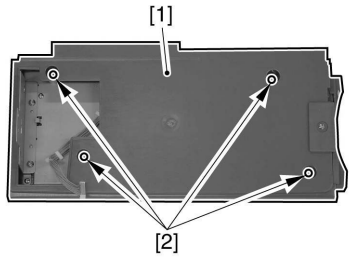
4) Shift the control panel [1] to the right, and detach it toward the front.



F-10-83

10.2.10.3 Removing the Control Panel Lower Cover 0001-8926

1) Remove the control panel lower cover [1]. (4 TP screws [2])



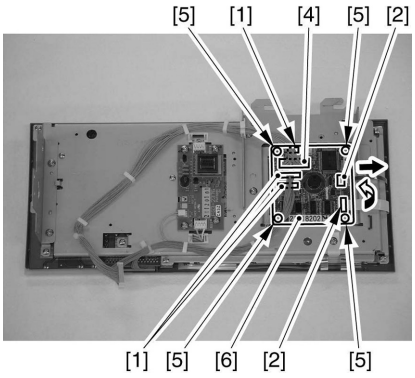
F-10-84

10.2.10.4 Removing the Control Panel CPU PCB 0001-1966

1) Disconnect the 3 connectors [1] of the cable used between control panel PCB and the control panel key switch PCB.
2) Disconnect the 2 connectors [2] used between the control panel PCB and the control panel LCD.

⚠Be sure to move the stopper in the direction of the arrow. Each of the 2 stoppers has its own direction of movement.

3) Disconnect the control panel cable [4].
4) Remove the 4 TP screws [5], and detach the control panel PCB [7].

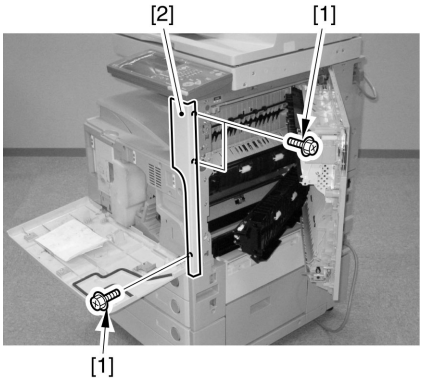


F-10-85

10.2.11 Control Panel Key Switch PCB

10.2.11.1 Removing the Support Cover (right) 0002-0060

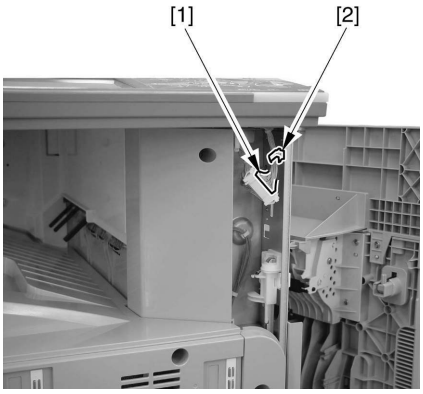
1) Open the right door.
2) Open the front cover.
3) Remove the 3 screws [1], and detach the support cover (right) [2].



F-10-86

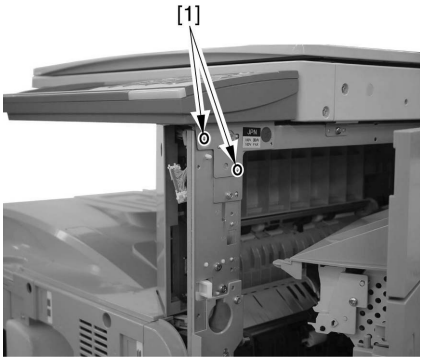
10.2.11.2 Removing the Control Panel 0001-2513

1) Disconnect the connector [1] of the control panel cable, and free the harness [2] from the clamp.



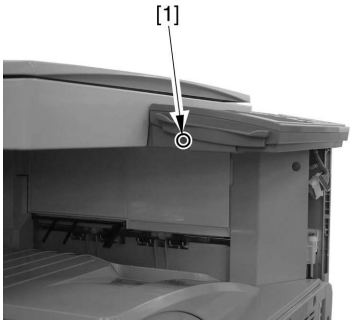
F-10-87

2) Remove the 2 screws [1] from the right side of the control panel.



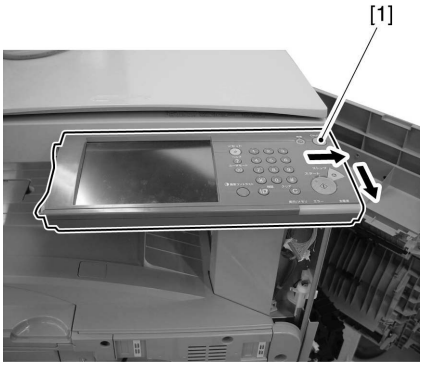
F-10-88

3) Remove the screw cover [1] from the left side of the control panel, and remove the screw from the rear.



F-10-89

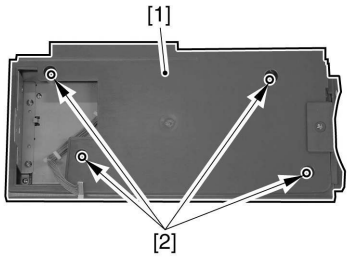
4) Shift the control panel [1] to the right, and detach it toward the front.



F-10-90

10.2.11.3 Removing the Control Panel Lower Cover 0001-8924

1) Remove the control panel lower cover [1]. (4 TP screws [2])



F-10-91

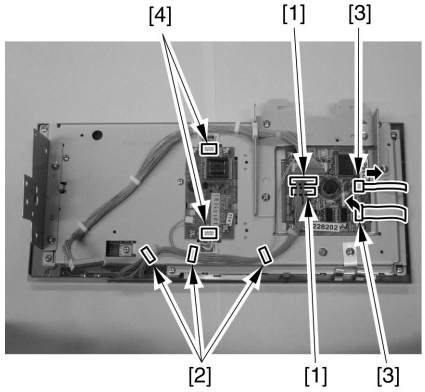
10.2.11.4 Removing the Control Panel Key Switch PCB 0001-1627

1) Disconnect the 2 connectors [1] of the cable used between the control panel PCB and the control panel key switch PCB, and free it from the 3 clamps.

2) Disconnect the 2 connectors [3] used between the control panel PCB and the control panel LCD.

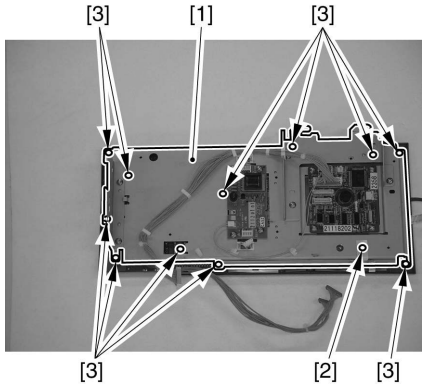
⚠Be sure to move the stopper in the direction of the arrow. Each of the 2 stopper has its own direction of movement.

3) Disconnect the 2 connectors of the control panel inverter PCB.



F-10-92

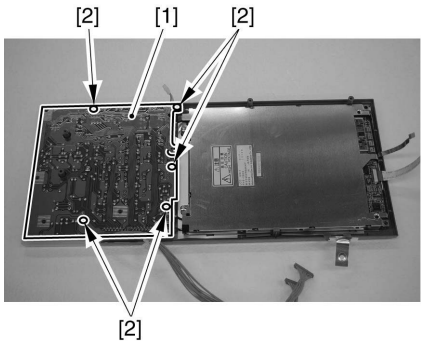
4) Remove the control panel inside frame [1]. (1 TP screw [2], 1 self-tapping screws [3])



F-10-93

5) Remove the control panel key switch PCB [1]. (5

self-tapping screws [2])

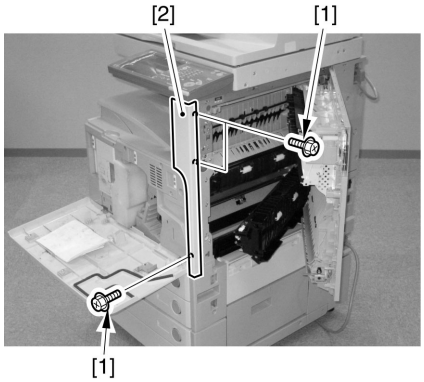


F-10-94

10.2.12 Control Panel Inverter PCB

10.2.12.1 Removing the Support Cover (right) 0002-0057

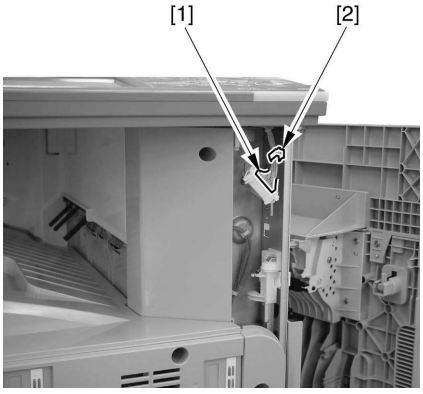
1) Open the right door.
2) Open the front cover.
3) Remove the 3 screws [1], and detach the support cover (right) [2].



F-10-95

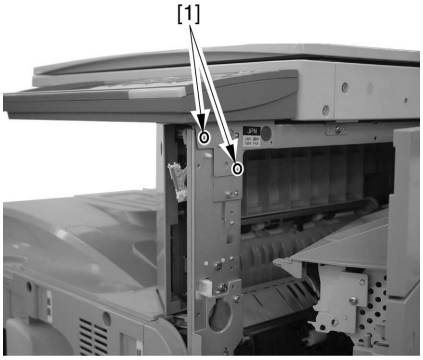
10.2.12.2 Removing the Control Panel 0001-2522

1) Disconnect the connector [1] of the control panel cable, and free the harness [2] from the clamp.



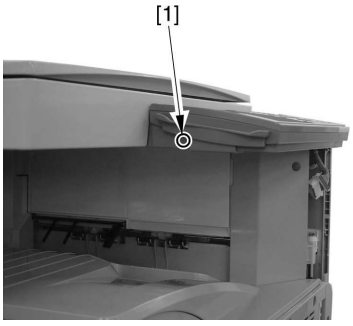
F-10-96

2) Remove the 2 screws [1] from the right side of the control panel.



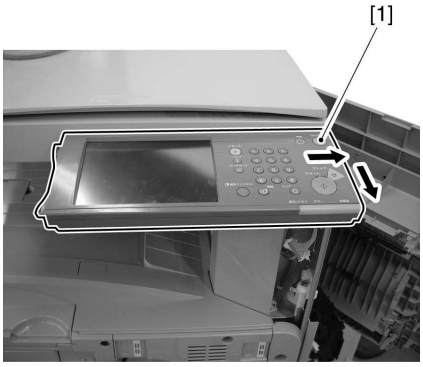
F-10-97

3) Remove the screw cover [1] from the left side of the control panel, and remove the screw from the rear.



F-10-98

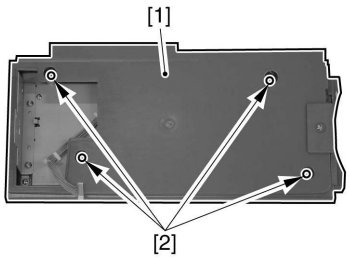
4) Shift the control panel [1] to the right, and detach it toward the front.



F-10-99

10.2.12.3 Removing the Control Panel Lower Cover 0001-8927

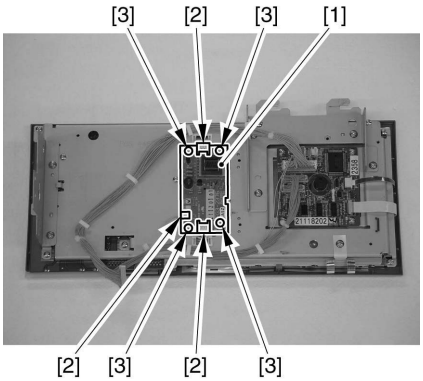
1) Remove the control panel lower cover [1]. (4 TP screws [2])



F-10-100

10.2.12.4 Removing the Control Panel Inverter 0001-1475

1) Remove the control panel inverter PCB [1]. (3 connectors [2], 4 screws [3])

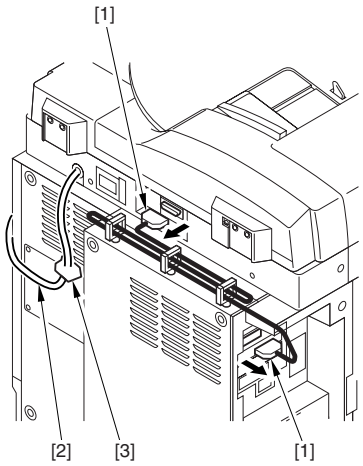


F-10-101

10.2.13 Main Power Switch

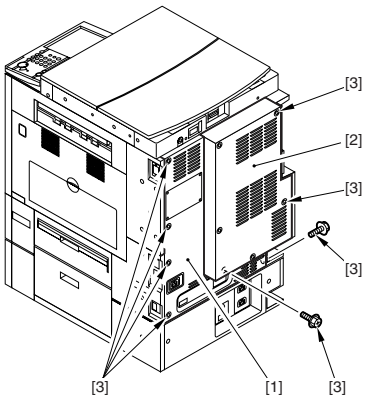
10.2.13.1 Removing the Rear Cover 0002-0481

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-102

3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



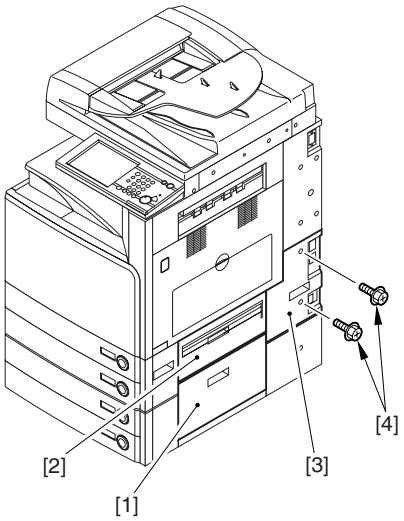
F-10-103

10.2.13.2 Removing the Right Cover (lower rear) 0002-0492

1) Open the right door [1] of the pedestal (if a 2-Cassette Pedestal-Y1 is installed).

2) Open the lower right cover [2].

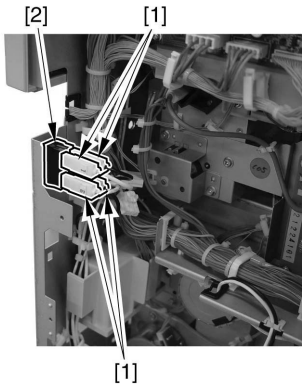
3) Remove the 2 screws, and detach the right cover (lower rear) [3].



F-10-104

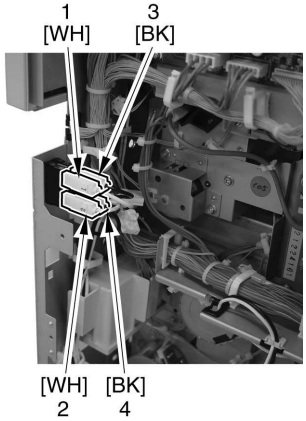
10.2.13.3 Removing the Main Power Switch 0001-1500

1) Remove the 4 fastons [1], and detach the main power switch [2] (snap-on).



F-10-105

⚠When connecting the 4 fastons, be sure that the numbers in the following figure match those on the stickers attached to the fastons.



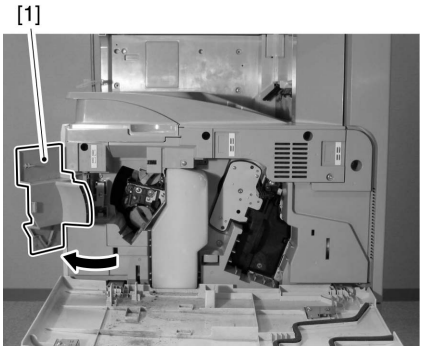
F-10-106

10.2.14 Front Cover Open/Closed Detecting Switch

10.2.14.1 Removing the Toner Bottle Retainer 0002-0467

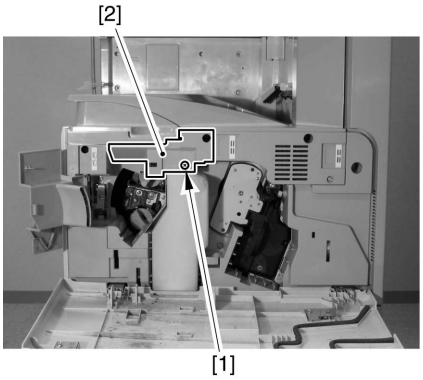
1) Open the front cover.

2) Open the toner container access cover [1].



F-10-107

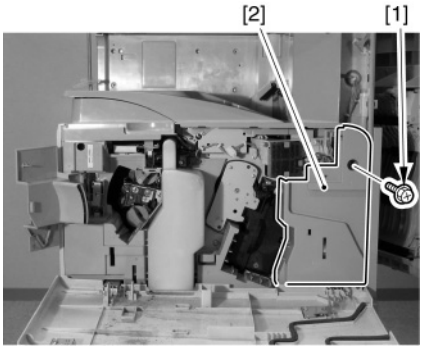
3) Remove the TP screw [1], and detach the waste toner bottle retainer [2].



F-10-108

10.2.14.2 Removing the Inside Front Cover (right) 0002-0469

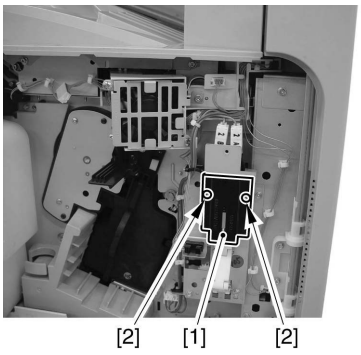
1) Remove the screw [1], and detach the inside front cover (right) [2].



F-10-109

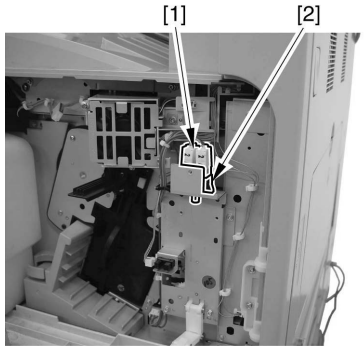
10.2.14.3 Removing the Front Cover Open/Closed SW 0001-1504

1) Remove the link retainer [1]. (2 screws [2])



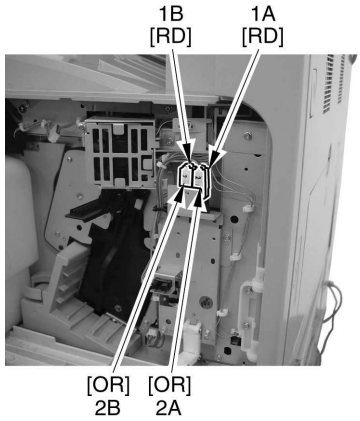
F-10-110

2) Remove the 4 fastons [1], and detach the front cover open/closed switch [2]. (snap-on)



F-10-111

⚠To find the location of each faston, see the number indicated on it.

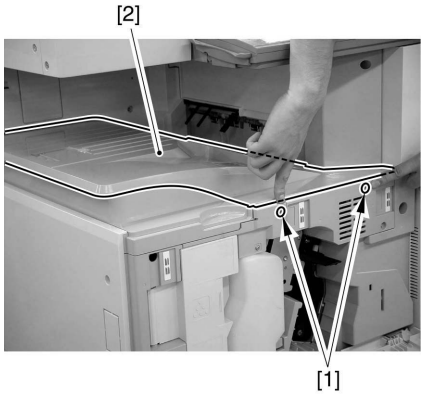


F-10-112

10.2.15 ITB Fan

10.2.15.1 Removing the Delivery Tray 0002-0376

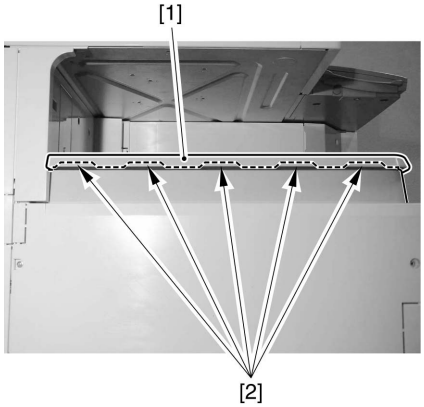
1) Open the front cover.
2) Loosen the 2 screws [1], and detach the delivery tray [2].



F-10-113

⚠Points to Note When Mounting the Delivery Tray

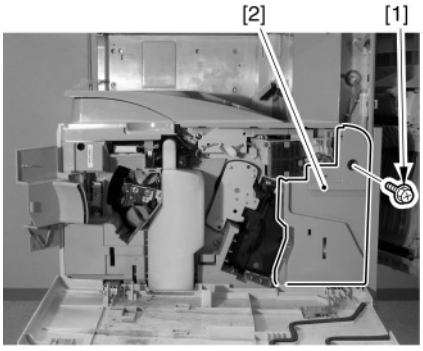
Be sure that the delivery tray [1] fully covers the ribs [2] of the delivery tray lower cover.



F-10-114

10.2.15.2 Removing the Inside Front Cover (right) 0002-4245

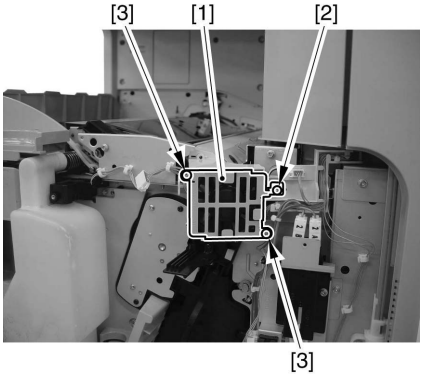
1) Remove the screw [1], and detach the inside front cover (right) [2].



F-10-115

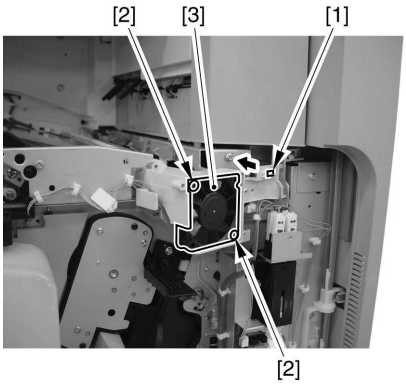
10.2.15.3 Removing the ITB Fan 0001-1830

1) Remove the finger guard [1]. (1 tapping screw [2], 2 self-tapping screws [3])



F-10-116

2) Disconnect the connector [1] in the direction of the arrow, and remove the 2 self-tapping screws [2]; then, detach the ITB fan [3].

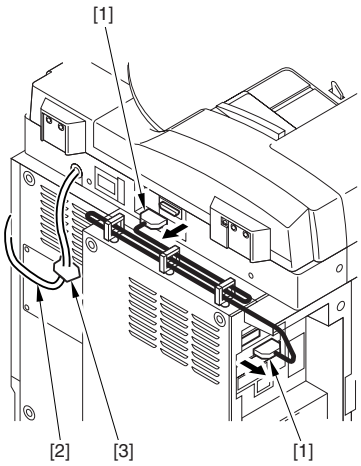


F-10-117

10.2.16 Toner Intake Fan

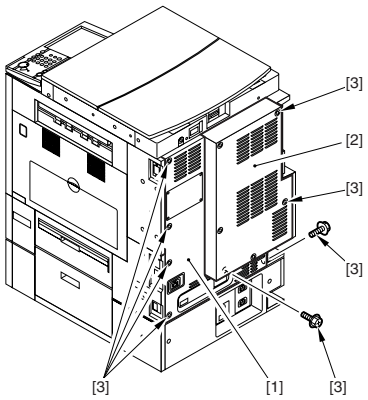
10.2.16.1 Removing the Rear Cover 0002-0487

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-118

3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])

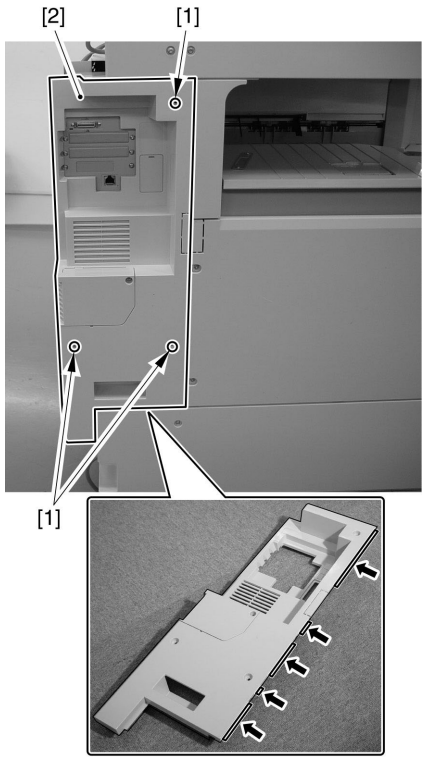


F-10-119

10.2.16.2 Removing the Left Cover (rear) 0002-0097

1) Remove the 3 screws [1], and detach the rear left cover [2].

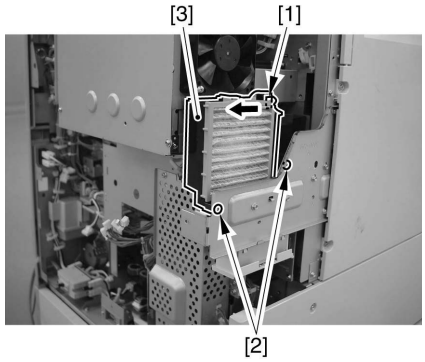
⚠A claw is found on the side (one side) of the cover. Pay attention to it when detaching the cover.



F-10-120

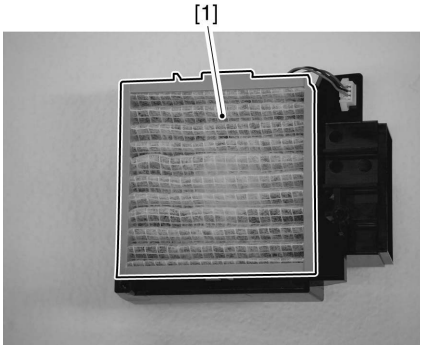
10.2.16.3 Removing the Toner Suction Fan 0001-1860

1) Disconnect the connector [1] in the direction of the arrow.
2) Remove the 2 screws [2], and detach the toner suction fan [3] together with its holder.



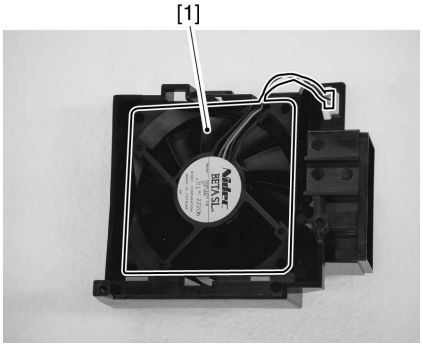
F-10-121

3) Detach the filter [1] from the holder.



F-10-122

4) Detach the toner suction fan [1] from the holder.

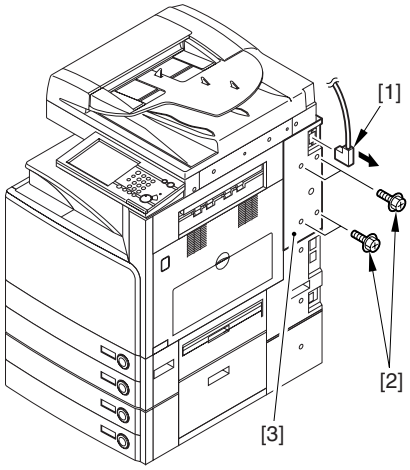


F-10-123

10.2.17 Machine Heat Discharge Fan

10.2.17.1 Removing the Right Cover (upper rear) 0002-0450

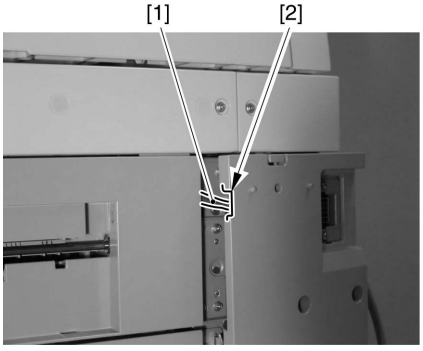
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-10-124

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

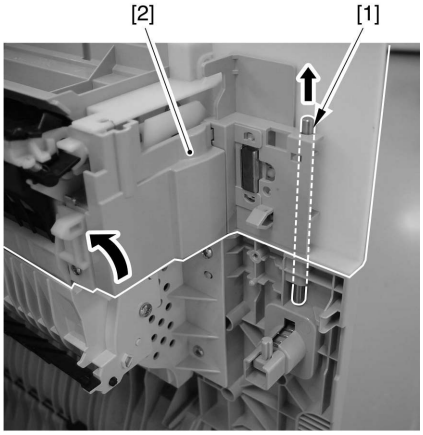
Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).



F-10-125

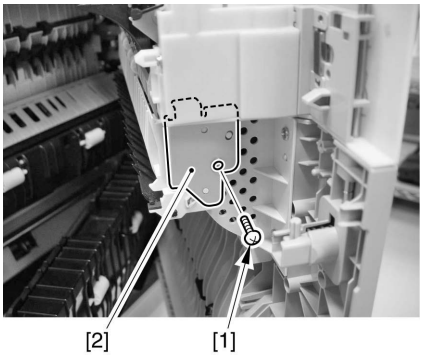
10.2.17.2 Removing the Right Door 0001-1968

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-10-126

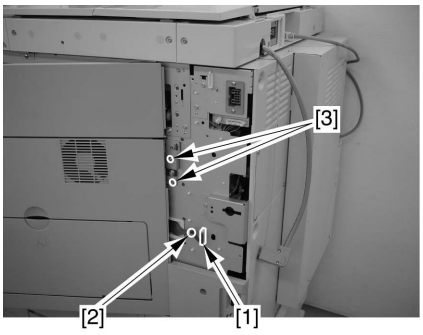
3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



F-10-127

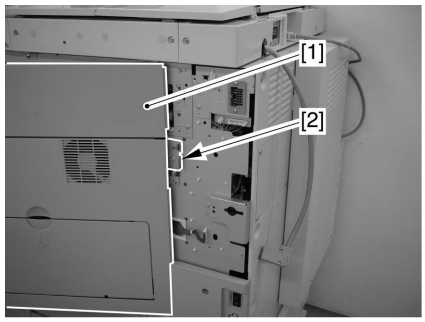
4) Disconnect the connector [1], and remove the clamp [2].

5) Remove the 2 screws [3] used to fix the hinge in place.



F-10-128

6) Detach the right door [1] together with the hinge [2].

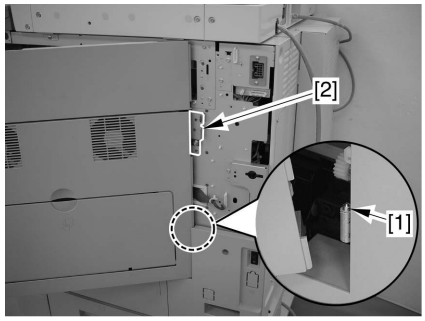


F-10-129

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].

2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



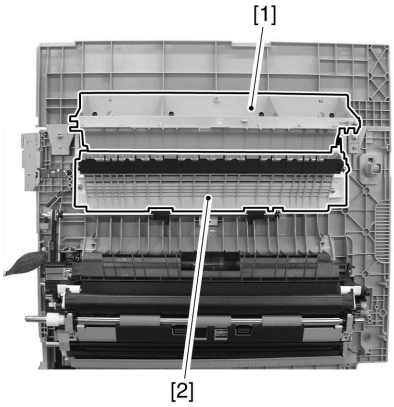
F-10-130

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

10.2.17.3 Removing the Machine Heat Exhaust Fan 0001-1969

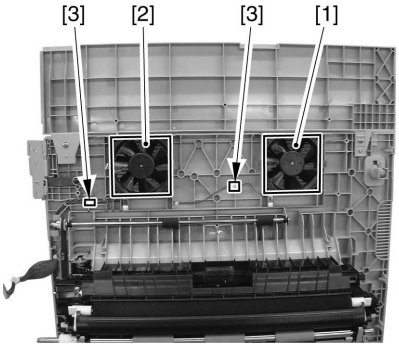
1) Remove the right door feed guide 1 [1]. (3 self-tapping screws; if no relay delivery assembly is used)

2) Remove the right door feed guide 2 [2]. (5 self-tapping screws)



F-10-131

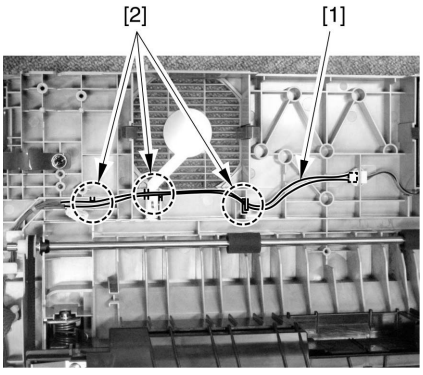
3) Remove the machine fan (front) [1] and the other machine fan (rear) [2]. (1 connector [3] each)



F-10-132

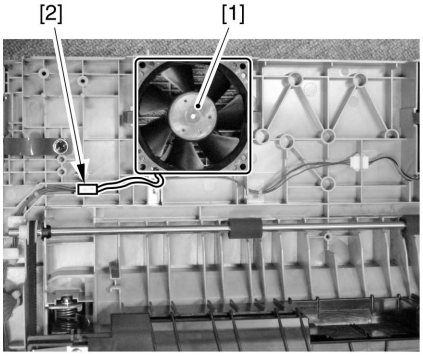
10.2.17.4 Routing the Heat Discharge Fan Harness 0003-9412

1) Route the harness [1] of the machine fan (front) along the harness guides [2].



F-10-133

2) Fit the connector [2] of the machine fan (rear) [1] to the harness guide to keep the harness of the machine fan (front) in place.

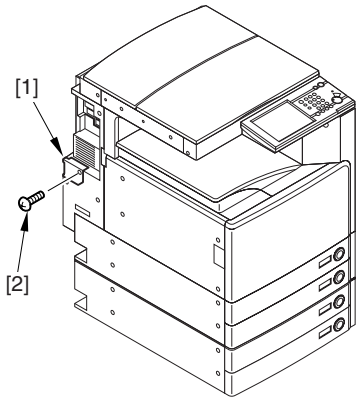


F-10-134

10.2.18 Toner Intake Fan Filter

10.2.18.1 Removing the Toner Suction Fan Cover 0002-0095

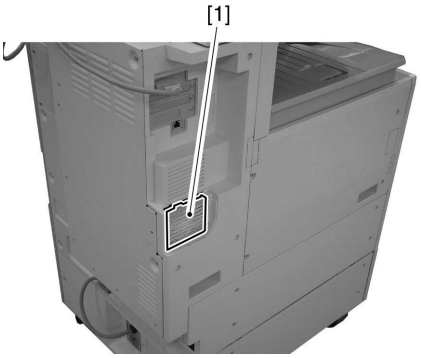
1) Remove the screw [2], and detach the toner suction fan cover [1].



F-10-135

10.2.18.2 Removing the Toner Suction Fan Filter 0001-1866

1) Remove the toner suction fan filter [1] in upward direction.

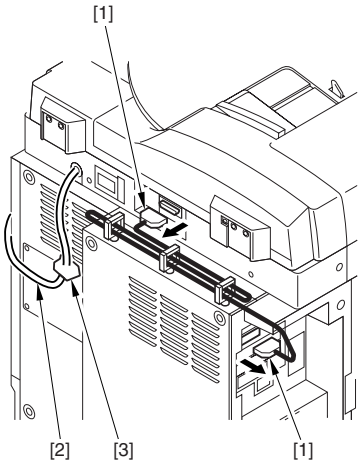


F-10-136

10.2.19 Motor of Main Drive Assembly

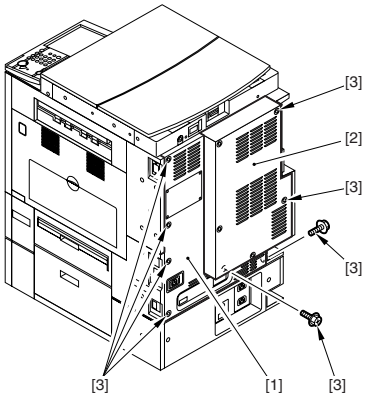
10.2.19.1 Removing the Rear Cover 0002-0484

1) Disconnect the 2 connectors [1] of the reader communication cable.
2) Free the reader power supply cable [2] from the cable clamp [3].



F-10-137

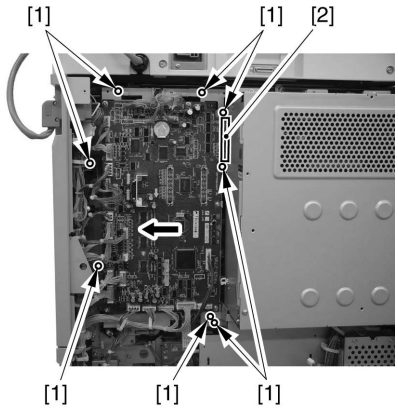
3) Detach the rear cover (left) [1] and the other rear cover (right) [2] at the same time. (9 screws [3])



F-10-138

10.2.19.2 Removing the DC Controller PCB 0001-3729

1) Disconnect all connectors of the DC controller PCB.
2) Remove the 8 TP screws [1] of the DC controller PCB base.
3) Shift the DC controller PCB together with the base to the left to disconnect the connector [2] to the controller PCB.



F-10-139

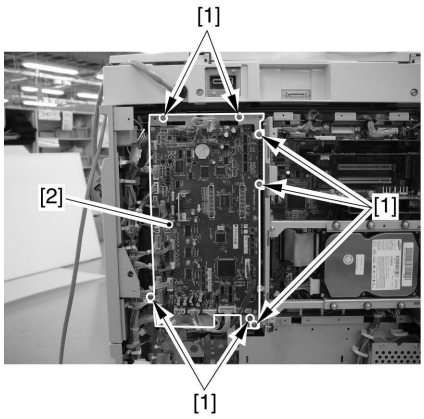
4) Remove the DC controller PCB together with the base toward the front.

10.2.19.3 Removing the Controller Box 0001-4464

1) Remove the 7 screws [1].

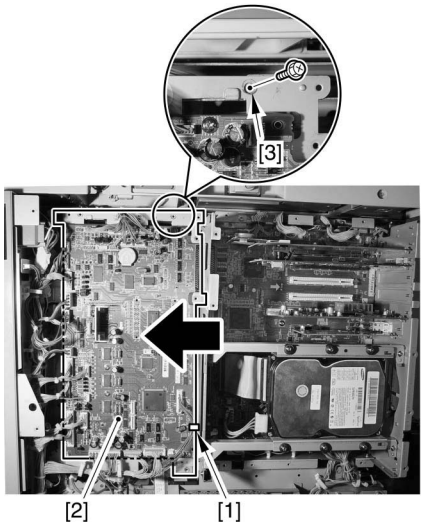
⚠Free the DC controller PCB base [2]. (You need

not detach it.)



F-10-140

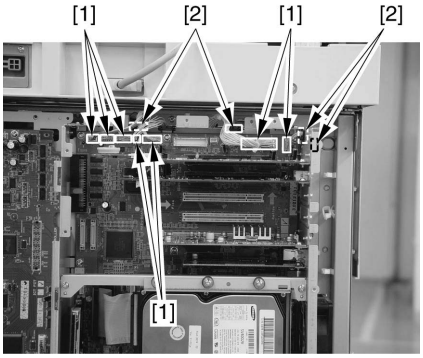
2) Free the wire saddle [1], and slide the DC controller PCB base [2] in the direction of the arrow.
Fit the removed screw in the hole [3]; then, temporarily fix the DC controller PCB base [2] in place.



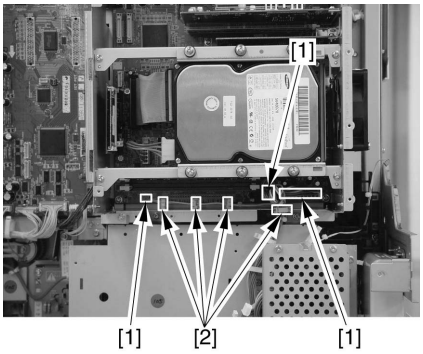
F-10-141

3) Disconnect the 10 connectors [1] of the main controller PCB; then, remove the 8 wire saddles.

⚠If a fax unit is installed, you will have to disconnect 12 connectors in the case of a Japanese model or 11 connectors in the case of a non-Japanese model.

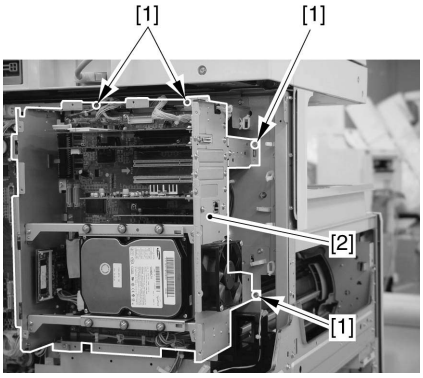


F-10-142

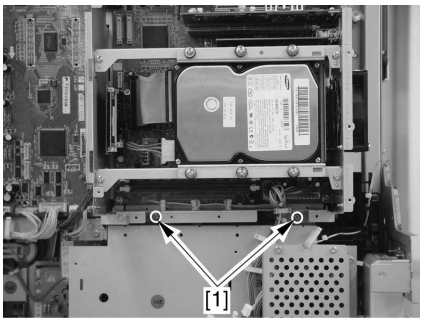


F-10-143

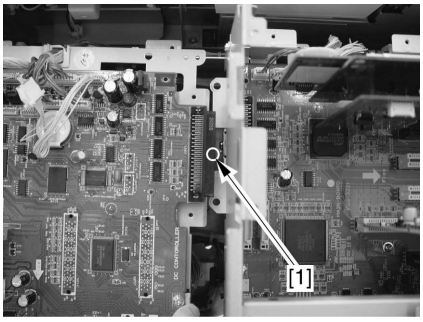
4) Remove the 7 screws, and detach the controller box [2].



F-10-144

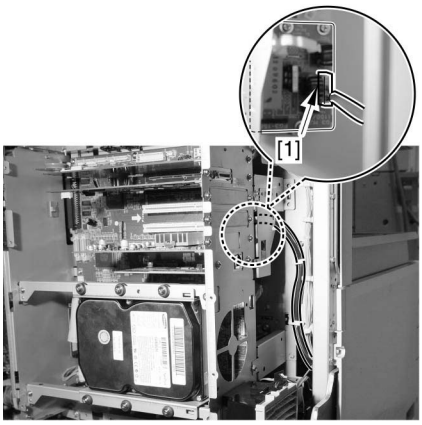


F-10-145



F-10-146

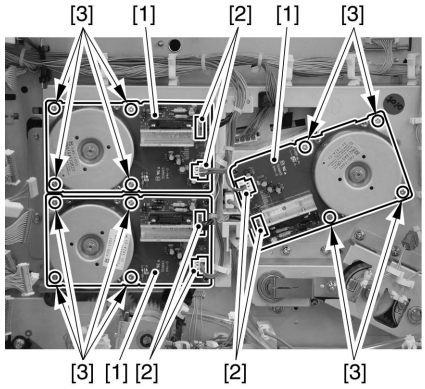
If a fax unit is installed, you will find a connector [1] on the modular PCB found behind the controller box. Be sure to disconnect this connector before detaching the controller box from the machine.



F-10-147

10.2.19.4 Removing the Main Drive Motor 0001-2608

1) Remove each motor [1]. (2 connectors [2], 4 screws [3])



F-10-148

The 3 motors on the main drive assembly may be positioned against the markings on the main drive frame. Each of these motors, moreover, may be identified by the color of its nameplate.

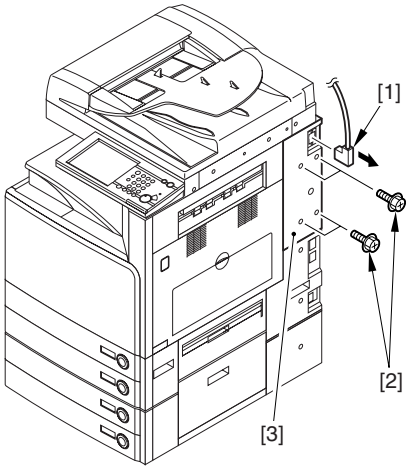
T-10-5

Motor	Marking	Nameplate color
Main motor (M2)	M	white
Drum motor (M9)	D	yellow
Fixing motor (M11)	L	pink

10.2.20 Right Door

10.2.20.1 Removing the Right Cover (upper rear) 0002-0423

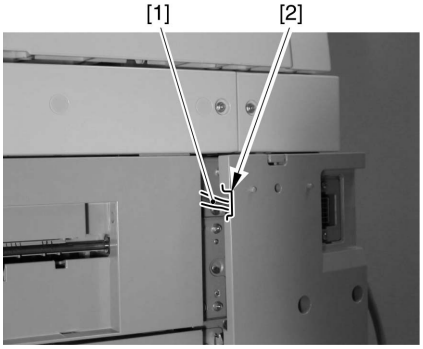
1) Disconnect the power cable [1] from the printer unit.
2) Remove the 4 screws [2], and detach the right cover (upper rear) [3].



F-10-149

⚠Point to Note When Mounting the Right Cover (upper rear; if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-2 is installed)

Take full care not to trap the harness [1] by the cut-off [2] of the right cover (upper right).

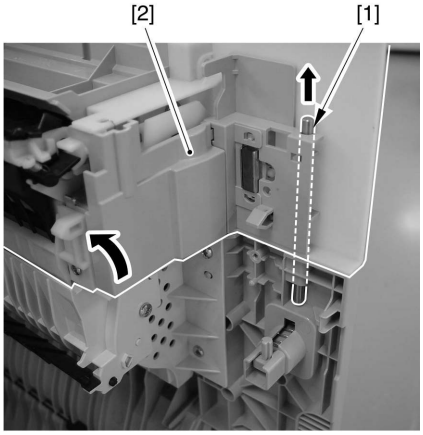


F-10-150

10.2.20.2 Removing the Right Door

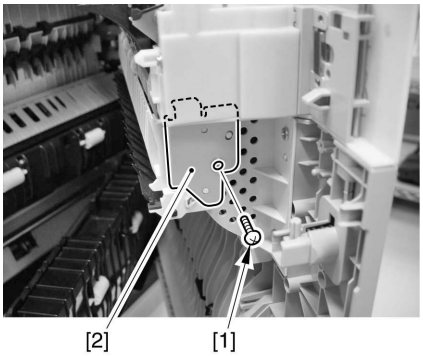
0002-0325

1) Open the right cover.
2) Detach the joint pin [1], and lift the inner 2-way tray [2] to separate it from the right door. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



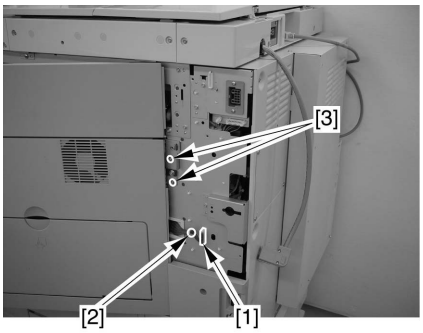
F-10-151

3) Remove the screw [1], and detach the joint plate [2]. Perform this step if an Inner 2-Way Tray-C1, Finisher-P1, Finisher-Q1, or Saddle Finisher-Q2 is installed.



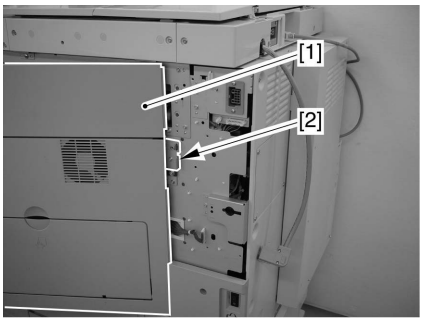
F-10-152

4) Disconnect the connector [1], and remove the clamp [2].
5) Remove the 2 screws [3] used to fix the hinge in place.



F-10-153

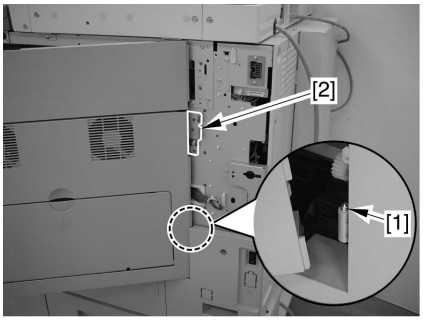
6) Detach the right door [1] together with the hinge [2].



F-10-154

Mounting the Right Door

1) Match the hinge [1] found at the bottom of the right door against the boss [1].
2) Engage the hinge [2] found at the top of the right door on the hook of the machine side plate.



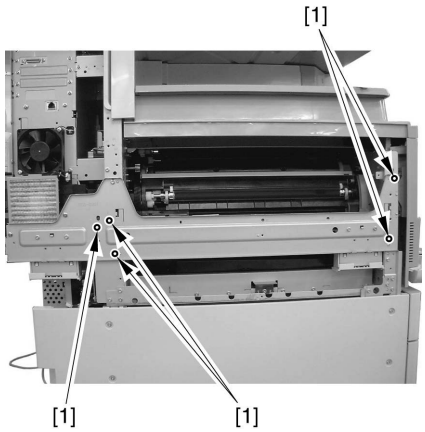
F-10-155

⚠Be sure to close the right door before tightening the 2 screws used to fix the hinge in place.

10.2.21 Cautions in Handling the Left Stay

10.2.21.1 Points to Note about Handling the Left Stay 0001-1863

⚠The left stay is used to keep the interval of the front and rear side plates at a specific distance.
If the distance is not correct, the output may show blurred images. The distance between the front and rear side plates cannot be adjusted in the field. Be sure not to loosen the 5 screws [1] used to keep the left stay in place. These screws are paint-locked.



F-10-156

Chapter 11 Maintenance and Inspection

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11.1 Periodically Replaced Parts

11.1.1 Overview

0000-9632

Some parts of the machine must be replaced on a periodical basis so as to ensure a specific level of performance. They may be free of external changes or damage, but they can significantly affect the machine performance once they lose their function.
It is best if replacement work is scheduled to coincide with a scheduled visit to the user's.

⚠

The values indicated herein are estimates only and are subject to change depending on the site environment and how the machine is used.

11.1.2 Reader Unit

0000-9633

The machine's reader unit does not have parts that must be replaced on a periodical basis.

11.1.3 Printer Unit

0000-9634

The machine's printer unit does not have parts that must be replaced on a periodical basis.

11.2 Durables and Consumables

11.2.1 Overview

0000-9642

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).

Making Checks When Replacing Durables
Use the following service mode items to find out when to replace parts:

- Machine
  COPIER>COUNTER>DRBL-1
  COPIER>COUNTER>MISC(Bk developing unit only)
- Accessory
  COPIER>COUNTER>DRBL-2

11.2.2 Reader Unit

0000-9645

The machine's reader unit does not have parts that are classified as durables.

11.2.3 Printer Unit

0000-9647

T-11-1

as of December 2003

Ref.	Parts name	Pats No.	Q'ty	Estimated life (prints)	Remarks
[1]	Developing unit (Bk)	FM2-0056-000	1	500,000	
[2]	Developing unit (Y)	FM2-0057-000	1	60,000	
[3]	Developing unit (M)	FM2-0058-000	1	60,000	
[4]	Developing unit (C)	FM2-0059-000	1	60,000	
[5]	Intermediate transfer belt (ITB)	FC5-0334-000	1	300,000 images	*1
[6]	ITB cleaning blade	FC5-0368-000	1	100,000 images	*1
[7]	Primary transfer roller	FC5-6920-000	1	300,000 images	*1

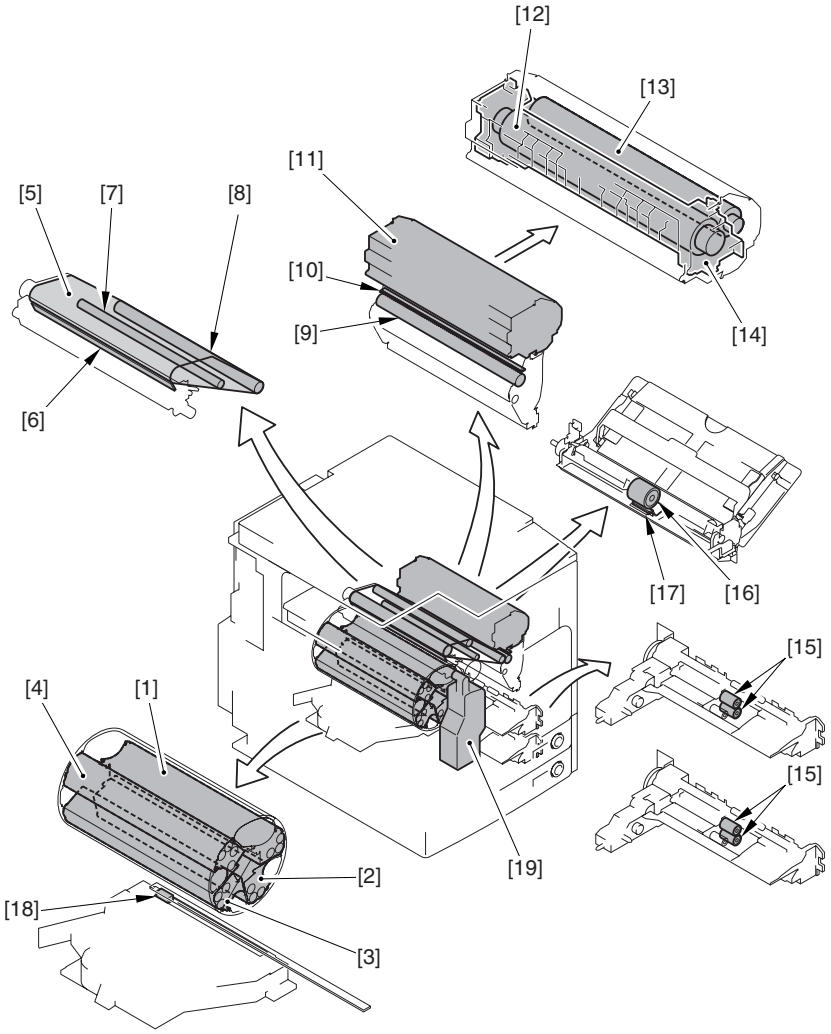
as of December 2003

Ref.	Parts name	Pats No.	Q'ty	Estimated life (prints)	Remarks
[8]	Secondary transfer inside roller	FC5-0337-000	1	300,000 images	*1
[9]	Secondary transfer outside roller	FC5-0661-000	1	60,000	
[10]	Separation static eliminator	FC5-0664-000	1	240,000 prints	
[11]	Fixing assembly 100 V	FM2-0172-000	1	200,000	*2
	Fixing assembly 115 V	FM2-0173-000	1	200,000	*2
	Fixing assembly 230 V	FM2-0174-000	1	200,000	*2
[12]	Fixing roller	FC5-0726-000	1	100,000	*3
[13]	Pressure roller	FC5-0727-000	1	100,000	*3
[14]	Fixing upper frame unit	FM2-0176-000	1	100,000	*3
[15]	Feed roller/ separation roller	FC5-6934-000	4	120,000	
[16]	Manual feed pickup roller	FB1-8581-000	1	240,000	
[17]	Manual feed separation pad	FC5-0488-000	1	240,000	
[18]	Dust-blocking glass cleaning pad	FL2-0033-000	1	500,000	
[19]	ITB Waste Toner Unit	FM2-0083-000	1	60,000 images	*1

*1: The value here is an estimate expressed in terms of the number of mono color prints made. In the case of full-color prints, the value will be 1/4 of that indicated.

*2: Be sure to replace the fixing roller, pressure roller, and fixing upper frame unit when 100,000 prints are made.

*3: Be sure to replace the fixing roller, pressure roller, and fixing upper frame unit at a time; or to replace the fixing assembly every 100,000 prints.



F-11-1

11.3 Scheduled Servicing Basic Procedure

11.3.1 Scheduled Servicing Basic Procedure

0000-9666

⚠

- As a rule, provide scheduled servicing every 60,000 prints.
- Before setting out for a visit, check with the service book, and take parts for which replacement is expected.
- Disconnect the power plug on a periodical basis, and clean it and the area around it with a dry cloth. If left connected for a long time in an area subject to high humidity or oily smoke, it can catch fire (the buildup of dust is likely to absorb moisture and cause insulation failure).

<Work Procedure>

1) Report to the person in charge, and check the general condition.

2) Record the counter readings, and check the faulty prints.

3) Make the following checks, and clean/adjust the components:

- COPIER > COUNTER > MISC > FX-UP-RL

- COPIER > COUNTER > MISC > DV-UNT-K

Any of the following indicates that the counter reading is incorrect:

a. the counter reading is lower than that recorded for the previous service visit.

b. the counter reading is excessively high in relation to the increase in the total counter reading recorded for the previous service visit.

⚠If the counter reading is faulty, make the following computation, and enter the result:

A = current reading of 'total 2'.

B = reading of 'total 2' recorded for the previous service visit.

C = reading of 'FX-UP-RL' or 'DV-UNIT-K' recorded for the previous service visit.

Enter the result of the following for 'FX-UP-RL' or 'DV-UNIT-K':

(A - B) + C

4) Check the following item, and clean/adjust the parts as necessary.

T-11-2

Item to check	
Test Copy	image density standards

Item to check		
	soiling of white background	
	clarity of characters	
	margin	
	fixing	incorrect registration, soiling of back of paper
	margin standards (singe-sided print)	leading edge: 2.5 +/-1.5 mm
		left edge: 2.5 +/-1.5 mm
	(double-sided print)	leading edge: 2.5 +/- 2.0 mm
		left edge: 2.5 +/-2.0 mm
Laser Exposure System	dust-blocking glass cleaning tool	
Feeding System	registration upper/lower roller	
	paper lint in front of registration assembly	

5) Check the waste toner case.
If the case is half full, dispose of the waste toner in a plastic bag for collection. Or, replace it with a new one.

⚠

- If you have to dispose of waste toner, be sure that you follow the rules and regulations imposed by the local authorities.
- Do not throw waste toner into fire. (It can explode, creating significant hazards.)

6) Clean the copyboard glass and the reading glass.
7) Make test copies.
8) Make sample copies.
9) Check the operation of the leakage breaker.
While the machine remains on, press the test switch of the leakage breaker to see if it operates normally (i.e., the lever shits to the OFF side to cut off the power).

- If the leakage breaker fails to operate normally, replace it, and make the foregoing check once again.

[Resetting]
After making the check, turn off the power switch; then, shift the lever back to the ON position, and turn on the power.
10) Put the sample copies in order, and clean up the area around the machine.

11) Record the final counter readings. At this time, be sure also to record the readings of 'FX-UP-RL' and 'DV-UNIT-K'.

12) Fill out the service book and report to the person in charge.
Be sure to record the result of the check on the leakage breaker in the service book.

11.3.2 Items of Work for Scheduled Servicing (reader unit) 0000-9673

The machine's reader unit does not have items that must be serviced on a scheduled basis.

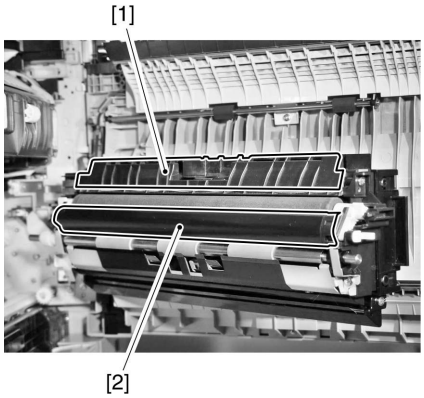
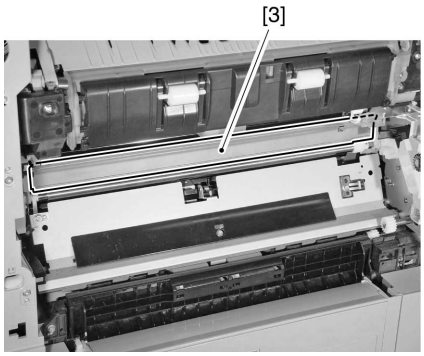
⚠

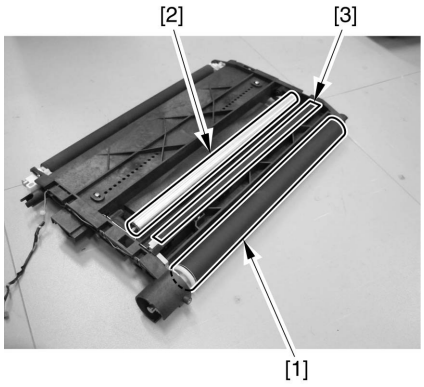
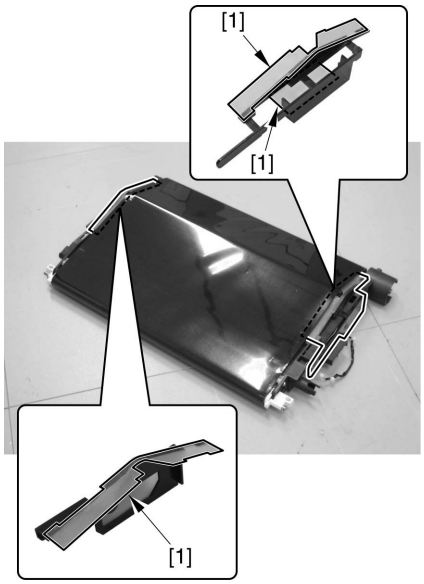
Be sure to clean the copyboard glass and the ADF reading glass during each visit you make for scheduled servicing.

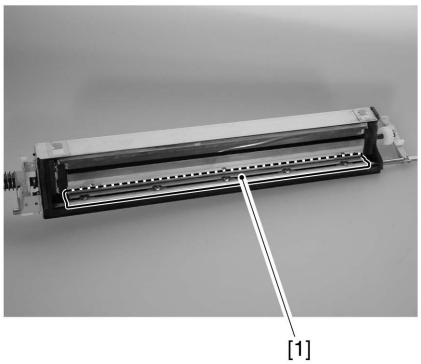
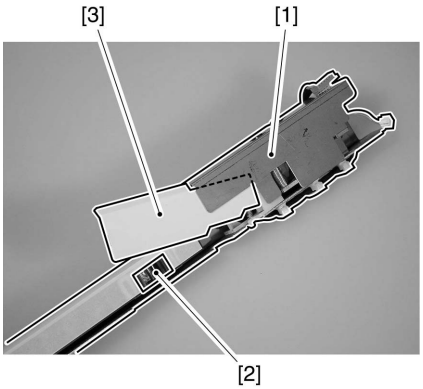
11.3.3 Items of Work for Scheduled Servicing (printer unit) 0000-9676

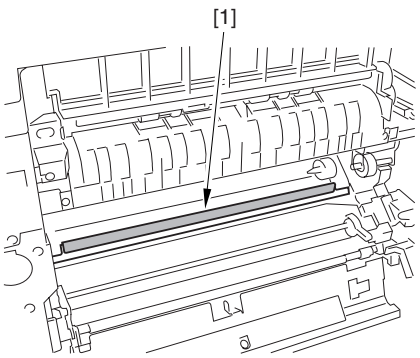
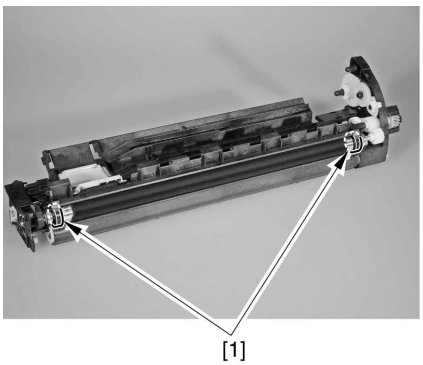
⚠Do not use solvents or oils other than those indicated.

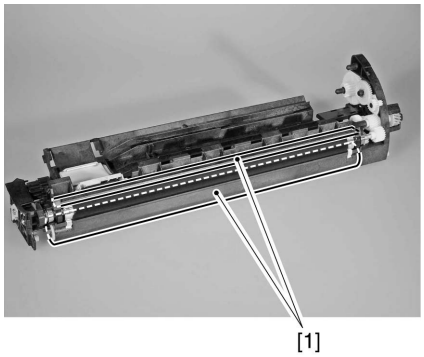
T-11-3

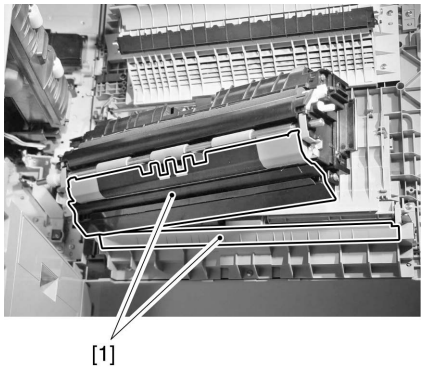
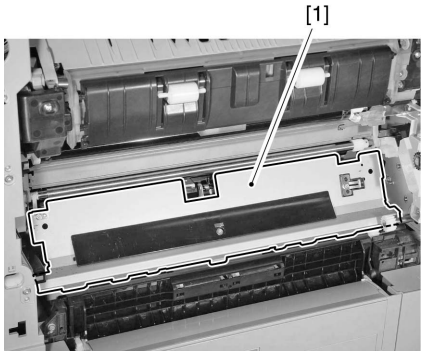
Unit	Location	Item of work	Inter-vals	Remarks
Transfer assembly	Transfer/feed guide	clean	60,000 images	  [1] Feed guide [2] Secondary transfer front outside guide [3] Secondary transfer front inside guide
Transfer assembly	patch image read sensor	clean	60,000 images	

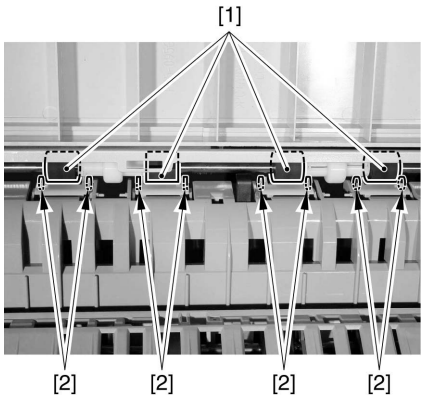
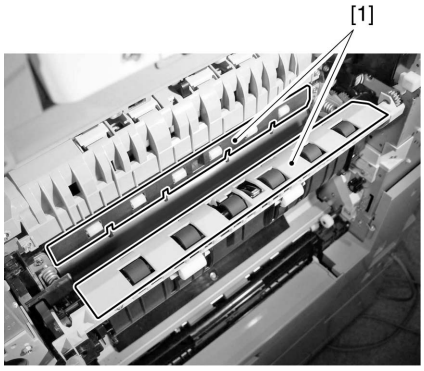
Unit	Location	Item of work	Inter-vals	Remarks
Transfer assembly	Drive roller/ Tension roller/ Inside brade	clean	300,000 images	 [1] Drive roller [2] Tension roller [3] Inside blade
Transfer assembly	Mylar sheet	clean	300,000 images	 [1] Mylar sheet

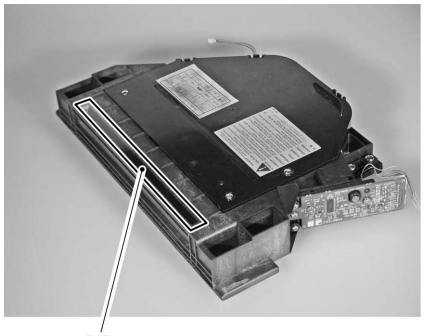
Unit	Location	Item of work	Inter-vals	Remarks
Transfer assembly	ITB cleaning blade fixing base	clean	60,000 images	 [1] ITB cleaning blade fixing base
Transfer assembly	ATR sensor window/ shutter	clean	60,000 images	 [1] ATR sensor unit [2] ATR sensor window [3] Shutter
Transfer assembly	rotary upper cover	clean	60,000 images	If the images are not soiled when the machine has made 60,000 images, clean it when the machine has made 300,000 images. For instructions on how to remove the rotary upper cover, see "Disassembly and Assembly" under "Image Formation System."
Transfer assembly	ITB/HP sensor	clean	300,000 images	

Unit	Location	Item of work	Inter-vals	Remarks
Transfer assembly	ITB releasing part	clean	300,000 images	 [1]ITB releasing part Before cleaning the part, remove the ITB unit and the drum unit from the machine.
Developing assembly	Photosensitive drum butting roll	clean	120,000 images	 [1] Photosensitive drum butting rolls Perform the work only for the Bk developing unit. The color units need not be cleaned (as they are replaced after 60,000 images).

Unit	Location	Item of work	Inter-vals	Remarks
Developing assembly	Developing assembly casing	clean	120,000 images	 [1] Developing assembly casing Perform the work only for the Bk developing unit. The color developing units need not be cleaned (as they are replaced after 60,000 images).
Developing assembly	Rotary lower cover	clean	120,000 images	For instructions on how to remove the rotary lower cover, see "Disassembly and Assembly" under "Image Formation System."
Feeding assembly	Registration roller	clean	60,000 images	

Unit	Location	Item of work	Inter-vals	Remarks
Feeding assembly	Registration front guide	clean	60,000 images	  [1] Registration front guide
Feeding assembly	Transparency sensor surface	clean	240,000 images	

Unit	Location	Item of work	Inter-vals	Remarks
Feeding assembly	Feeding roller, scraping ring	clean	60,000 images	 [1] Delivery rollers [2] Scrape rings You need not clean the parts if a Finisher-P1 is installed.
Feeding assembly	Duplex feed roller 1/2	clean	as needed	Clean the part only when dirt is conspicuous.
Fixing assembly	Fixing outlet roller, roll	clean	60,000 images	
Fixing assembly	Fixing delivery guide assembly	clean	as needed	 [1] Fixing delivery guide Clean the part if adhesion is found.

Unit	Location	Item of work	Inter-vals	Remarks
Others	Dust-blocking glass	clean	60,000 images	 [1] Dust-blocking guide

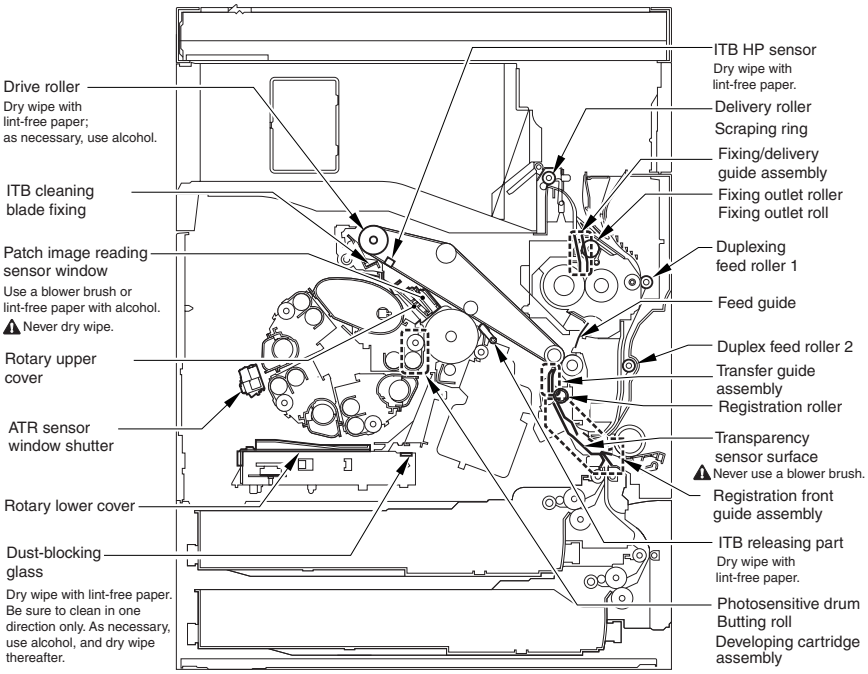
⚠The above values are estimates only, and are subject to change according to future data.

11.3.4 Points to Note for Scheduled Servicing Work

0000-9678

⚠

- If you used solvent, be sure to check that the part has completely dried before fitting it back to the machine.
- Do not use a wet (moist) cloth in areas not specifically indicated.
- Be sure to conduct scheduled servicing at the indicated intervals.



Note: Unless otherwise specified, use lint-free paper with alcohol.

F-11-2

Chapter 12 Standards and Adjustments

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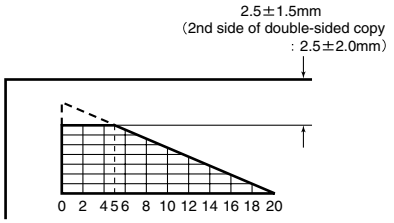
12.1 Image Adjustments

12.1.1 Standards for Image Position

0001-6001

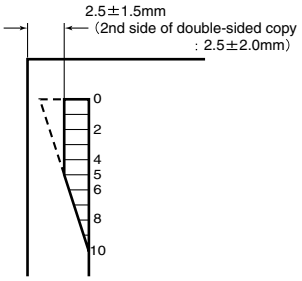
A print made at a magnification of 100% must meet the following standards for image margin/non-image width:

- Margin Along the Leading Edge



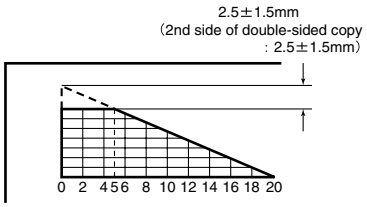
F-12-1

- Left/Right Image Margin



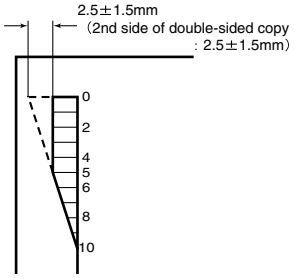
F-12-2

- Leading Edge Non-Image Width



F-12-3

- Left/Right Non-Image Width



F-12-4

12.1.2 Checking the Image Position

0001-1715

Make 10 prints each using the following sources of paper; then, check to make sure that the image margin and the non-image width are as indicated;

[1] individual cassettes

[2] manual feed tray

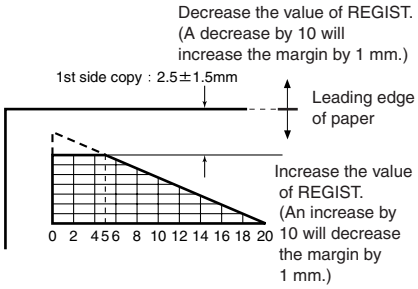
[3] side paper deck

If not as indicated, make the following adjustments:

1. Leading edge image margin (1st side)

Use the following service mode item to adjust the registration:

COPIER> ADJUST> FEED-ADJ> REGIST



F-12-5

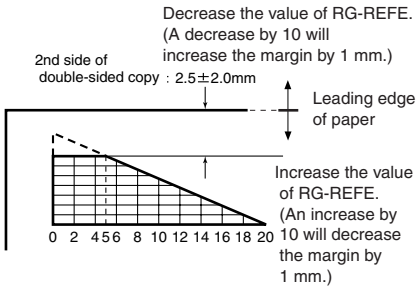
2. Left/right image margin (1st side)

Use it to adjust the horizontal registration mechanically.

3. Leading edge image margin (2nd side)

Use the following service mode item to adjust the registration:

COPIER> ADJUST> FEED-ADJ> RG-REFE



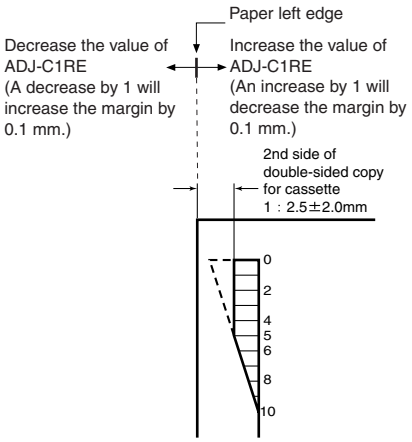
F-12-6

4. Left/right image margin (2nd side)

Use the following service mode item to adjust the horizontal registration:

- Cassette 1

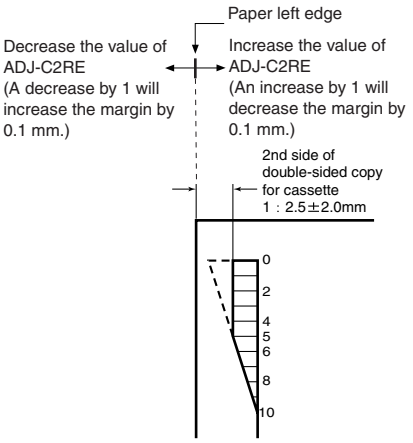
COPIER> ADJUST> FEED-ADJ> ADJ-C1RE



F-12-7

- Cassette 2

COPIER> ADJUST> FEED-ADJ> ADJ-C2RE

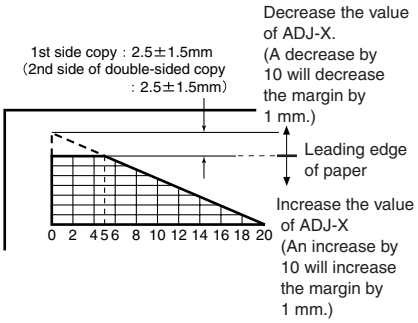


F-12-8

5. Leading edge non-image width

Use the following service mode item to make adjustments:

COPIER> ADJUST> ADJ-XY> ADJ-X

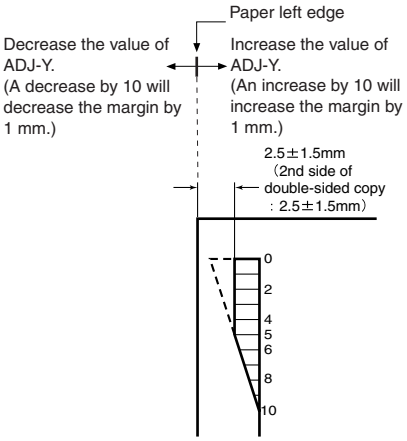


F-12-9

6. Left/right non-image width

Use the following service mode item to make adjustments:

COPIER> ADJUST> ADJ-XY> ADJ-Y



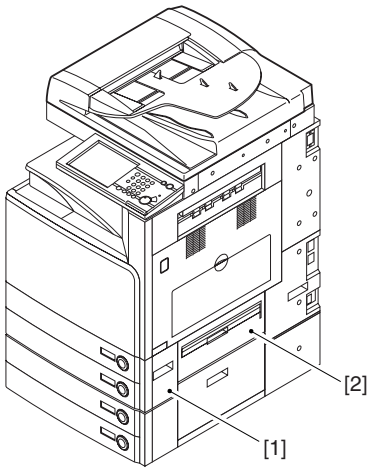
F-12-10

12.1.3 Cassette

0001-1716

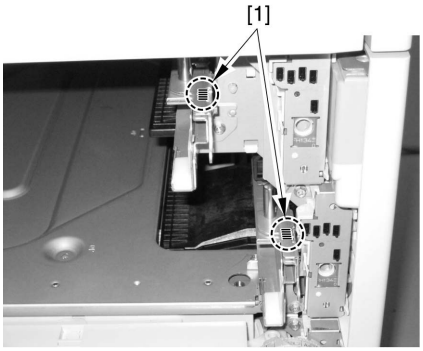
A. Left/Right Image Margin Adjustment (1st side)

1) Open the lower right cover [2]; then, remove the 2 screws, and detach the cover (lower front) [1].



F-12-11

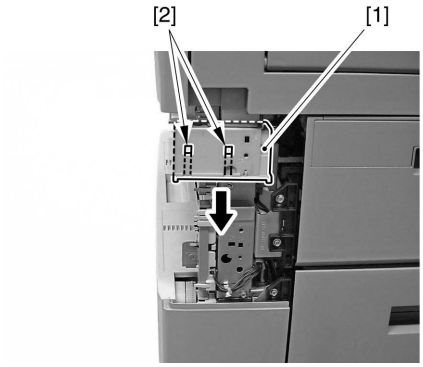
2) Slide out the cassette 1 or 2.
(In the case of a 2-cassette pedestal, slide out the cassette 3 or 4.)
3) Check the index [1].
(Perform this step also for a 2-cassette pedestal.)



F-12-12

A-1. Making Adjustments of the Cassette 1 (left/right image margin; 1st side)

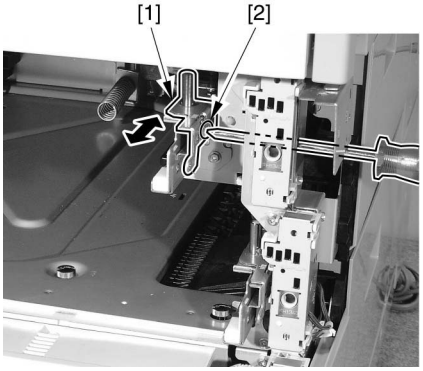
4) Free the 2 claws [2], and detach the grip (right front) [1].



F-12-13

5) Loosen the fixing screw [2] of the horizontal registration adjusting plate [1] of the cassette.

6) In keeping with the index you checked in step 3), move the horizontal registration adjusting plate back and forth. Moving the adjusting plate toward the rear of the machine will increase the left/right image margin on the front of the image.



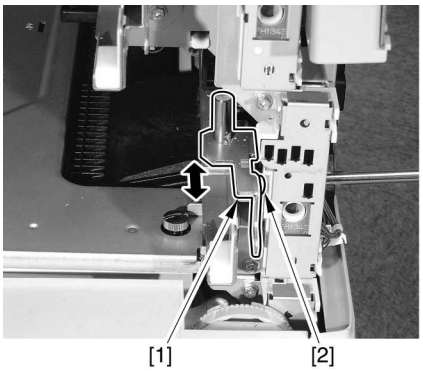
F-12-14

7) Tighten the fixing screw.

8) Fit the cassette 1.
9) Make copies using the cassette 1 as the source of paper, and check to make sure that the margin is as indicated.
10) Fit back the grip (right front).
11) Fit back the machine's right front cover.

A-2. Making Adjustments for the Cassette 2 (left/right image margin; 1st side)

4) Loosen the fixing screw [2] of the horizontal registration adjusting plate [1] of the cassette.
5) In keeping with the index you checked in step 3), move the horizontal registration adjusting plate back and forth. Moving the adjusting plate toward the rear of the machine will increase the left/right image margin on the front of the image.



F-12-15

6) Tighten the fixing screw.
7) Fit back the cassette 2.
8) Make copies using the cassette 2 as the source of paper, and check to make sure that the margin is as indicated.
9) Fit back the machine's right front cover.

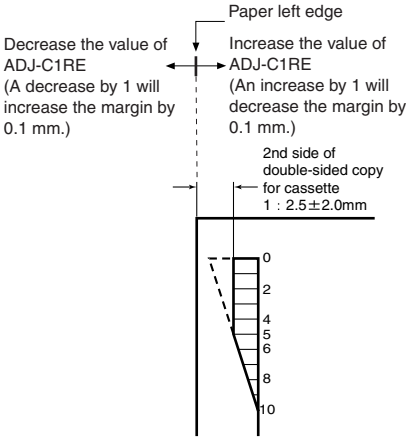
B. Left/Right Image Margin (2nd side)

B-1. Making Adjustments for Cassette 1 (left/right image margin; 2nd side)

1) If the margin is not as indicated, change the adjustment value for the left/right margin of the 2nd side.

COPIER>ADJUST>FEED-ADJ>ADJ-C1RE

An increase by 1 will decrease the left/right margin on the front by 0.1 mm.



F-12-16

B-2. Making Adjustments for Cassette 2 (left/right image margin; 2nd side)

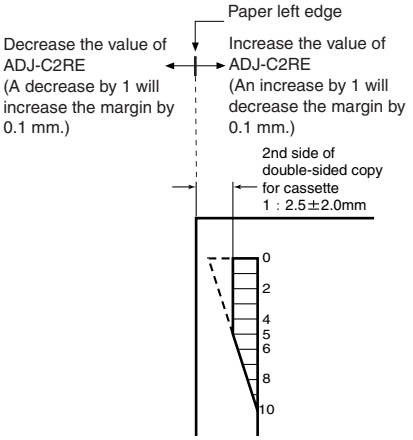
1) Enter the same value as for ADJ-C1RE using the following service mode item:
COPIER>ADJUST>FEED-ADJ>ADJ-C2RE

2) Make double-sided copies from the cassette 2, and check to make sure that the margin is as indicated.

3) If not as indicated, change the adjustment value of the left/right margin on the 2nd side for the cassette 2.

COPIER>ADJUST>FEED-ADJ>ADJ-C2RE

An increase by 1 will decrease the left/right margin on the front by 0.1 mm.



F-12-17

4) Record the new adjustment values on the service label.
- ADJ-C1RE
- ADJ-C2RE

5) Press the Reset key twice to end service mode.

12.1.4 Manual Feed Tray

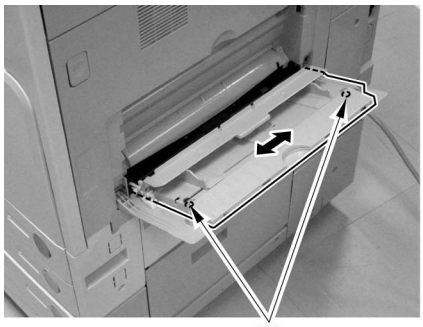
0001-1718

A. Left/Right Margin Adjustment (1st side; mechanical adjustment)

1) Place paper in the manual feed tray.
2) Make copies using the manual feed tray, and check to make sure that the left/right margin is 2.5 +/-1.5 mm.

- If not as indicated, perform the following:

3) Remove the paper from the manual feed tray.
4) Loosen the manual feed tray upper cover fixing screw [1].



F-12-18

5) So that the margin is as indicated, move the manual feed tray upper cover back and froth.

   Moving the manual feed tray upper cover toward the rear of the machine will decrease the left/right margin on the front side.

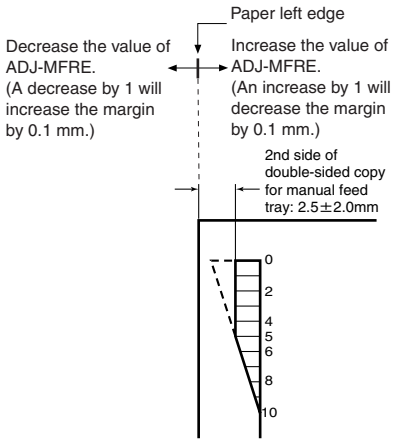
6) Tighten the manual feed tray upper cover fixing screw.
7) Place paper in the manual feed tray.
8) Make copies using the manual feed tray as the source of paper, and check to make sure that the margin is as indicated.

B. Left/Right Margin Adjustment (2nd side)

1) Make double-sided copies using the manual feed tray as the source of paper, and check to make sure that the left/right margin on the 2nd side is 2.5 ±2.0 mm.
2) If not as indicated, change the adjustment value of the left/right margin on the 2nd side for the manual feed tray.

COPIER > ADJUST > FEED-ADJ > ADJ-MFRE

An increase by 1 will decrease the left/right image margin by 0.1 mm on the front side.



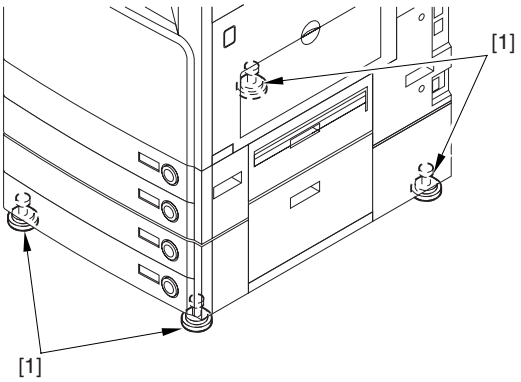
F-12-19

3) Record the new adjustment values on the service label.
- ADJ-MFRE
4) Press the Reset key twice to end service mode.

12.1.5 Side Paper Deck

0001-1722

1) Check to make sure that the 4 adjusters [1] of the pedestal are in firm contact with the floor.



F-12-20

2) Connect the machine's power plug, and turn on the power.
3) When the machine has completed its wait period, make copies using the paper deck as the source of paper; then, make checks.

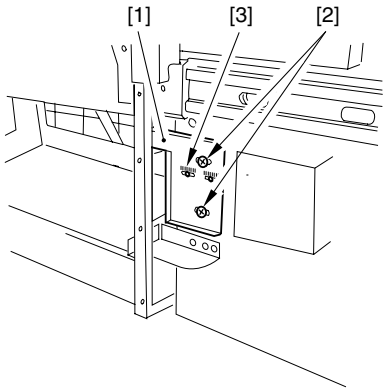
A. Left/Right Margin Adjustment (1st side; mechanical adjustment)

1) Make copies using the paper deck as the source of paper, and check to make sure that the left-right margin is 2.5 -1.5, +1.5 mm.

- If not as indicated, perform the following:
2) Slide out the compartment.

3) Turn the 2 screws [2] to adjust the position of the latch plate [1] of the deck open solenoid (SL2D).

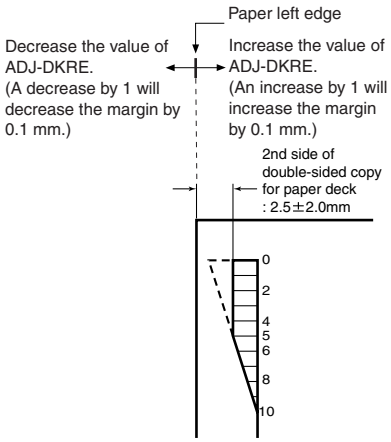
⚠At this time, use the index [3] on the latch plate as a reference.



F-12-21

B. Left/Right Margin Adjustment (2nd side)

1) Start service mode, and check the left/right margin for the cassette 1:
   COPIER>ADJUST>FEED-ADJ>ADJ-CIRE
2) Enter the adjustment value of the left/right margin on the 2nd side for the cassette 1 as the left/right margin on the 2nd side of the side deck.
   COPIER>ADJUST>FEED-ADJ>ADJ-DKRE
   An increase by 1 will increase the left/right image on the front by 0.1 mm.



F-12-22

3) Press the Reset key twice to end service mode.

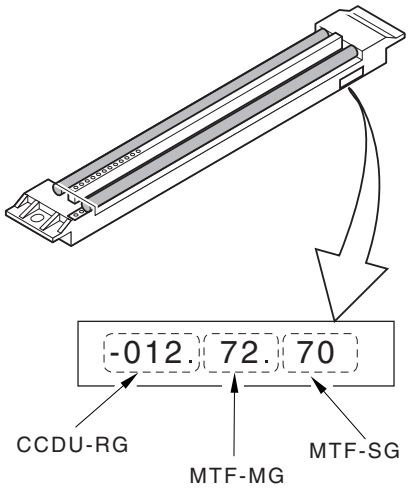
12.2 Scanning System

12.2.1 After Replacing the CIS

0002-4555

Be sure to enter the values indicated on the CIS label attached to the contact image sensor (CIS) using the following service mode items:

COPIER>ADJUST>CCD>CCDU-RG
(offset value against color displacement caused by CIS)
COPIER>ADJUST>CCD>MTF-MG
(MTF correction value for main scanning direction)
COPIER>ADJUST>CCD>MTF-SG
(MTF correction value for sub scanning direction)



F-12-23

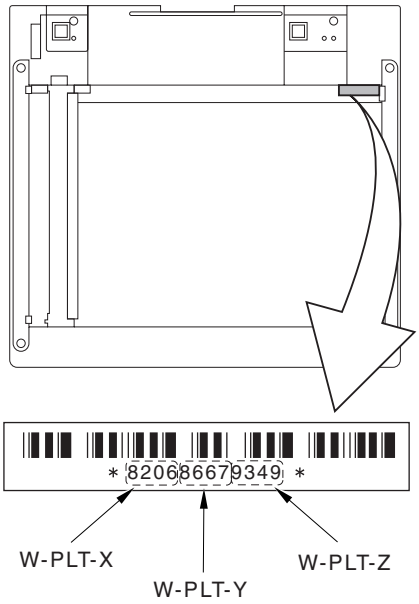
Also, be sure to update the values indicated on the service label attached behind the reader left cover by the values indicated on the CIS label.

Reference:
The machine is not shipped out of the factory with the CIS label attached to it.

12.2.2 After Replacing the Copyboard Glass

0002-4561

A. Enter the value indicated by the bar code found at the upper right on the copyboard glass (copyboard cover) using the following service mode items:
COPIER>ADJUST>CCD>W-PLT-X
COPIER>ADJUST>CCD>W-PLT-Y
COPIER>ADJUST>CCD>W-PLT-Z
(standard white plate white level data X, Y, Z)

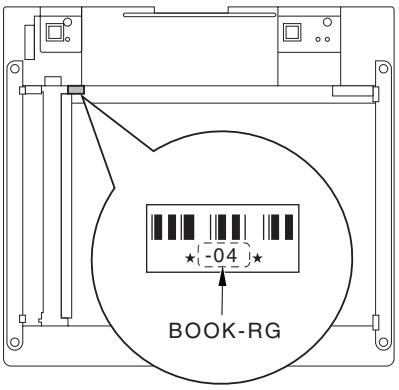


F-12-24

B. Enter the value indicated by the bar code found at the upper left of the copyboard glass (copyboard sheet) using the following service mode item:

COPIER>ADJUST>CCD>BOOK-RG

(offset value against color displacement caused by copyboard glass)



F-12-25

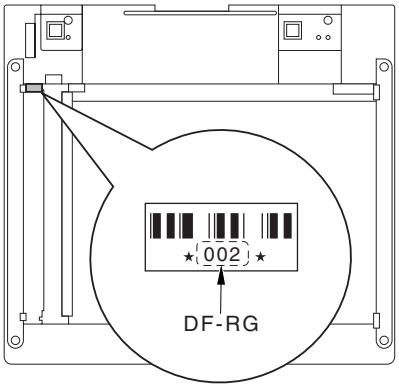
12.2.3 After Replacing the ADF Reading Glass

0002-4566

Enter the value indicated by the bar code found on the ADF reading glass using the following service mode item:

COPIER>ADJUST>CCD>DF-RG

(offset value against color displacement caused by stream reading glass)



F-12-26

12.2.4 After Replacing the Reader Controller PCB or After Initializing the RAM

0002-4569

⚠

- Before replacing the reader controller PCB, be sure to generate the latest P-PRINT printout.

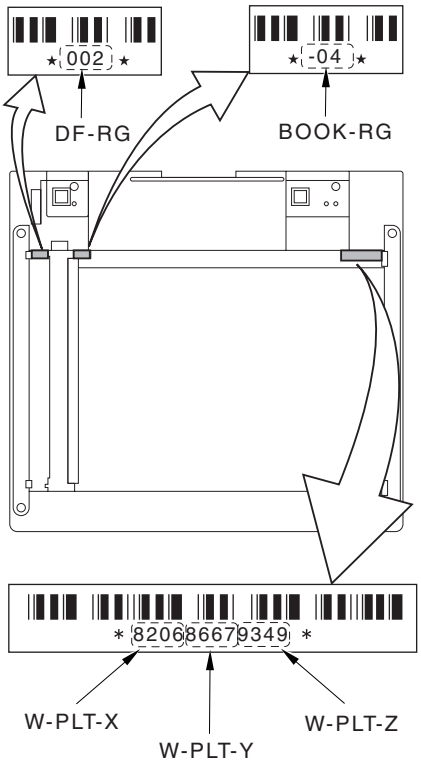
<if you are initializing the RAM of the reader controller without replacing the PCB>

- Using the SST, upload the reader controller backup data; after initializing the RAM, download the data, thus eliminating the need for the following adjustment.

1. Reader Unit-Related Adjustment

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 initialize the RAM. Thereafter, turn off and then on the main power.
3) Enter the appropriate values using the following service mode items:

a. standard white plate white level data
COPIER>ADJUST>CCD>W-PLT-X,Y,Z
b. offset value against color displacement for copyboard glass (copyboard cover)
COPIER>ADJUST>CCD>BOOK-RG
c. offset value against color displacement for copyboard glass (ADF)
COPIER>ADJUST>CCD>DF-RG



F-12-27

d. service label (behind reader unit left cover) values

d-1. CIS read position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-X

d-2. main scanning direction position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-Y

d-3. shading position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-S

d-4. sub scanning direction color displacement correction

COPIER>ADJUST>CCD>CCDU-RG

d-5. main/sub scanning direction MTF value

COPIER>ADJUST>CCD>MTF-MG,SG

d-6. auto gradation correction target value

COPIER>ADJUST>PASCAL>OFST-P-Y,M,C,K

⚠If the value of the following was not 0 before the replacement of the reader controller PCB: COPIER>OPTION>BODY>CCD-LUT.

Set a value other than '0' once again, and make the following adjustments using the D-10 Chart.

COPIER>FUNCTION>CCD>LUT-ADJ2

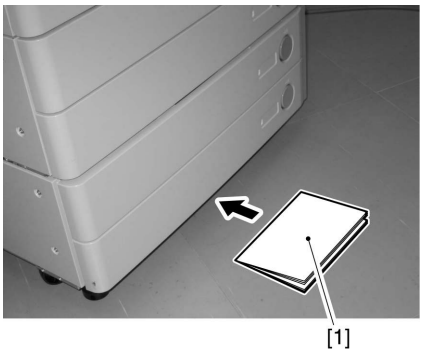
2. ADF-Related Adjustment

⚠The machine keeps ADF-related service mode data in the RAM of the reader controller; as such, you will have to make the appropriate adjustments if you have replaced the reader controller or initialized the RAM.

1) Enter the values indicated in the P-PRINT printout you have previously generated for the following:
   a. main scanning direction position adjustment (stream reading)
      COPIER>ADJSUT>ADJ-XY>ADJ-Y-DF
   b. original stop position adjustment
      FEEDER>ADJSUT>DOCST
   c. original feed speed (magnification) adjustment
      FEEDER>ADUST>LA-SPEED

2) Make adjustments using the following items:
   a. tray width adjustment
      FEEDER>FUNCTION>TRY-A4
      FEEDER>FUNCTION>TRY-A5R
      FEEDER>FUNCTION>TRY-LTR
      FEEDER>FUNCTION>TRY-LTRR
   b. CIS read position adjustment (stream reading)
      COPIER>FUNCTION>INSTALL>STRD-POS
   c. white level adjustment
      COPIER>FUNCTION>CCD>DF-WLVL1
      COPIER>FUNCTION>CCD>DF-WLVL2

When you have finished the foregoing adjustments, put the P-PRINT printout [1] you have previously generated in the service book cassette to replace the old P-PRINT printout.



F-12-28

12.3 Laser Exposure System

12.3.1 After Replacing the Laser Scanner Unit

0001-6187

Enter the values indicated on the label attached to the laser scanner unit using the following service mode item:
- COPIER>ADJUST>LASER>LA-DELAY

12.4 Image Formation System

12.4.1 After Replacing the Intermediate Transfer Unit 0001-6190

Execute the following service mode item:
- COPIER>FUNCTION>MISC-P>1ATVC-EX

12.4.2 After Replacing the Intermediate Transfer Belt 0001-6879

Execute the following service mode item:
- COPIER>FUNCTION>MISC-P>1ATVC-EX

12.4.3 After Replacing the Primary Transfer Roller 0001-6881

Execute the following service mode item:
- COPIER>FUNCTION>MISC-P>1ATVC-EX

12.4.4 After Replacing the Drum Unit 0001-6872

1) Initialize the drum unit. Execute the following service mode item.
 - COPIER>FUNCTION>CLEAR>DRM-LIFE

While initialization is under way, the machine flashes "ACTIVE" on its screen. It indicates "OK!" at the end of initialization in about 1 min.

⚠Do not touch any of the keys, open the door, or turn off the power while initialization is under way. Otherwise, go back to step 1) and start over.

---

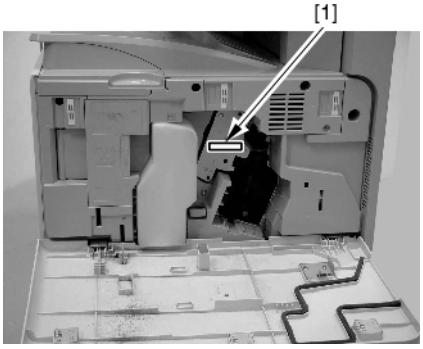
2) When initialization is done, check to see that the value of the following service mode item is '0':
 - COPIER>DISPLAY>MISC>DRM-LIFE

 If not '0', go back to sep 1) and start over.

3) Record the value indicated in the following service mode item in the Remarks field of the drum initial value label (attached to the light-blocking sheet of a new drum unit):
 - COPIER>ADJUST>HV-PRI>DR-I-INT

 As necessary, record the date of drum unit replacement and the counter reading on the drum initial value label.

4) Attach the drum initial value label to the front [1] of the drum unit.



F-12-29

5) Execute 'Full Adjust' of auto gradation correction in Additional Function.

12.4.5 After Replacing the Developing Unit (Y, M, C) 0001-6772

1) Execute the following service mode item (color):
- COPIER> FUNCTION> INSTALL> STIR-Y/M/C

2) Execute the following service mode item (color):
- COPIER> FUNCTION> INSTALL> INIT-Y/M/C (If you have replaced the Y, M, and C cartridges at the same time, execute INIT-3.)

3) Execute the following service mode item (color):
- COPIER> FUNCTION> INSTALL> SPLY-Y/M/C

4) Record the value for the following service mode item (color) on the service label:
- COPIER> ADJUST> DENS> SGNL-Y/M/C
- COPIER> ADJUST> DENS> REF-Y/M/C

5) Execute 'Full Adjust' of auto gradation correction in Additional Function.

12.4.6 After Replacing the Developing Unit (Bk) 0001-6193

1) Execute the following service mode item:
- COPIER> FUNCTION> INSTALL> STIR-K

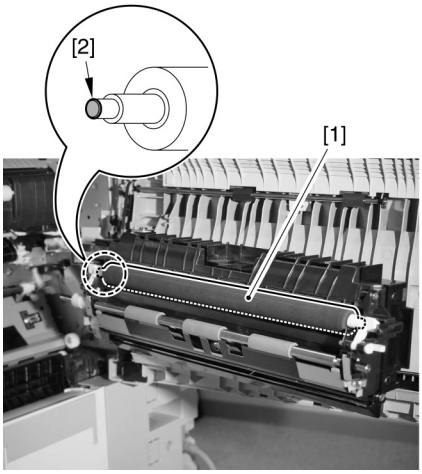
2) Execute the following service mode item:
- COPIER> FUNCTION> INSTALL> SPLY-K

3) Execute the following service mode item; thereafter, check to see that the value has been initialized to '0':
- COPIER> COUNTER> MISC> DV-UNT-K

4) Execute 'Full Adjust' of auto gradation correction in Additional Function.

12.4.7 After Replacing the Secondary Transfer Outside Roller 0001-8396

- If you have replaced the secondary transfer outside roller, be sure to apply about 10 mg of grease (FY9-6008) to the end [2] (side without the blue marking) at the rear of the secondary transfer outside roller [1].



F-12-30

12.5 Fixing System

12.5.1 After Disassembling the Fixing Unit

0001-1743

1) If you have detached any of the following electrical components, check to see if it has been mounted back correctly;
- fixing main thermistor
- fixing sub thermistor
- fixing thermal switch

2) Adjust the fixing roller nip.

Service Mode;
COPIER>FUNCTION>FIXING>NIP-CHK

fixing nip width auto measurement output

12.5.2 After Replacing the Fixing Unit

0001-6541

1) Initialize the fixing roller counter in service mode:
COPIER>COUNTER>MISC>FX-UP-RL

12.5.3 After Replacing the Fixing Roller

0001-6546

1) Initialize the fixing roller counter in service mode:
COPIER>COUNTER>MISC>FX-UP-RL
2) Perform nip adjustments.

12.5.4 Nip Adjustment

0001-7823

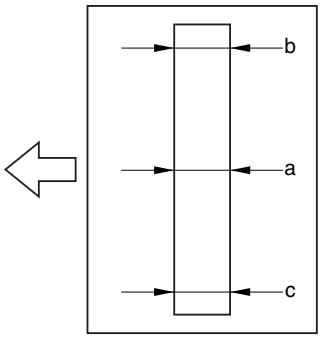
T-12-1

	Generate a printout of automatic measurement of the fixing nip width.
Steps	1) Select 'plain paper' or 'recycled paper' as the type of paper for the cassette 1 (Additional Function>common settings>paper type).
	2) Place A4/LTR plain paper or recycled paper in the cassette 1.

3) Press the OK key (so that paper is picked up from the cassette 1).

4) See that the paper is stopped once between the fixing roller and then discharged in about 15 sec.

5) Check to see the nip width of the discharged paper is as indicated.



F-12-31

standard: b, c
9.25 -0.25, +0.25 mm (less than 5000 sheets)
9.25 +1.25/ -0.25mm difference between b and c 0.5 mm or less (5000 sheets or more)

standard: a (reference only)
from 8.5 to 9.0 mm (less than 5000 sheets)
from 8.5 to 10.0 mm (5000 sheets or more)

Note 1:
The point of measurement for a is in the middle of paper.

Note 2:
The points of measurement for b and c are 10 to 15 mm from the edge of paper.

Note 3:

The arrow in the figure indicates the direction of paper movement.

Note 4:
The nip tends to increase as more and more paper is moved past. There is no need, however, for another session of adjustment each time 5000 sheets have been moved past. If adjustments are needed for some reason, try so that b and c are adjusted to match the median value of 9.25 mm.

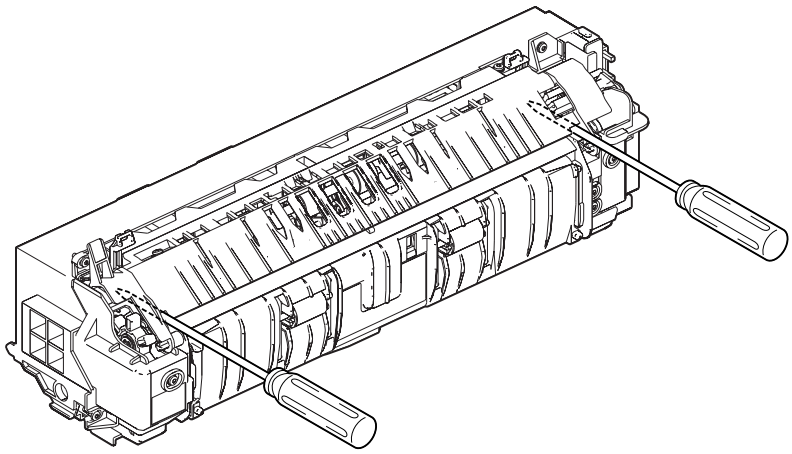
T-12-2

6) If the nip width is not as indicated, perform the following:

6-1) Turn the front and rear adjusting screws to adjust the nip.

EX: if the median value of the nip measurements is closer to the lower limit,
tighten the screw of the side where the nip at the ends is smaller; a full turn of the screw will cause a change of about 0.5 mm.

EX: if the nip balance is correct, turn the screws of both sides.



F-12-32

T-12-3

7) After the work, generate a test print using the following: COPIER>TEST>PG>TYPE6 (grid).

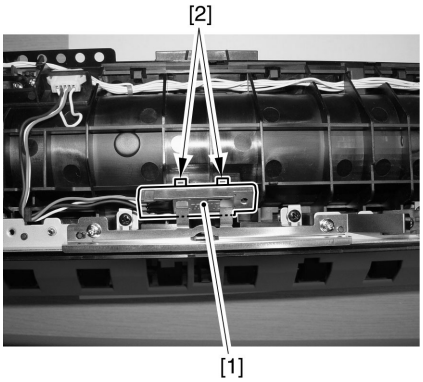
12.5.5 Point to Note About the Position of the Fixing Main Thermistor 0003-5490

⚠Caution 1

Check to be sure that the thermistor cover [2] is fitted under the fixing main thermistor [1].

⚠Caution 2

Check to be sure that the thermistor cover [2] is not mounted in the wrong orientation. The cover is equipped with a protrusion to prevent wrong orientation.



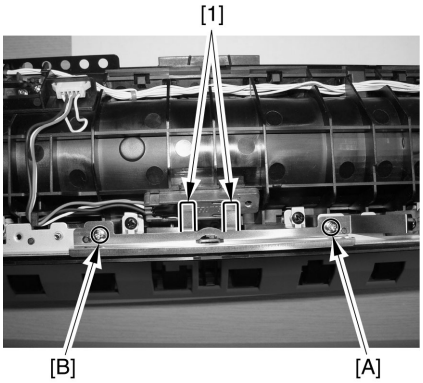
F-12-33

⚠Caution 3

Check to be sure that the spring [1] of the thermistor retainer is found forcing the thermistor.

⚠Caution 4

Be sure to tighten the screw A and then the screw B of the thermistor retainer in sequence.



F-12-34

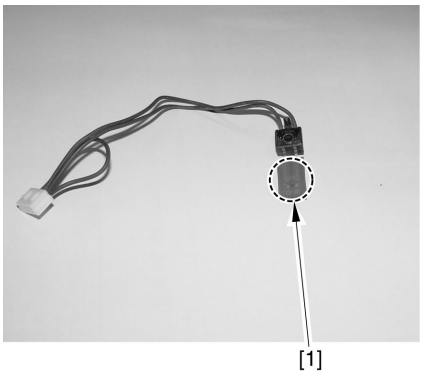
12.5.6 Point to Note When Mounting the Fixing Sub Thermistor 0003-5492

⚠Caution 1

Take care not to touch the surface [1] of the fixing sub thermistor.

⚠Caution 2

Take care not to deform the fixing sub thermistor.



F-12-35

12.5.7 Point to Note When Mounting the Fixing Thermal Switch

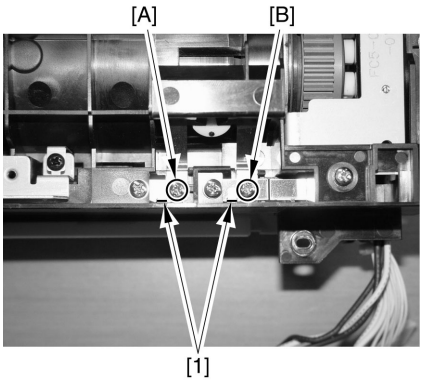
0003-5496

⚠Caution 1

Check to be sure that the claw [1] of the thermal switch is in the cut-off of the conducting plate [2].

⚠Caution 2

Be sure to tighten the fixing screw A and then the fixing screw B of the thermal switch.

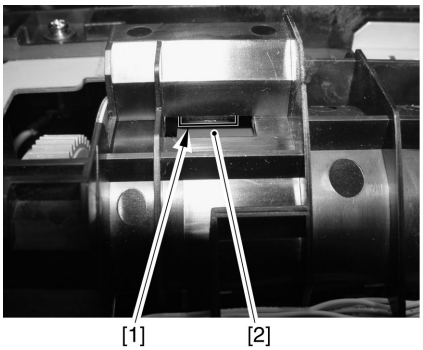


F-12-36

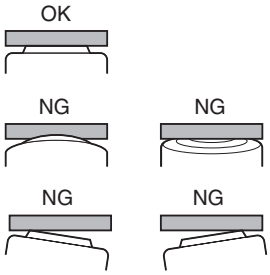
⚠Caution 3

After tightening the fixing screws of the thermal switch, perform the following:

Check to be sure that the surface of the thermal switch [1] is level in relation to the fixing roller. (Be sure to use a pen light or the like to shine the thermal switch for this check; if not level, be sure to repeat the mounting work.)



F-12-37



F-12-38

12.6 Electrical Components

12.6.1 After Replacing the Reader Controller PCB

0002-4570

⚠

- Before replacing the reader controller PCB, be sure to generate the latest P-PRINT printout.

<if you are initializing the RAM of the reader controller without replacing the PCB>

- Using the SST, upload the reader controller backup data; after initializing the RAM, download the data, thus eliminating the need for the following adjustment.

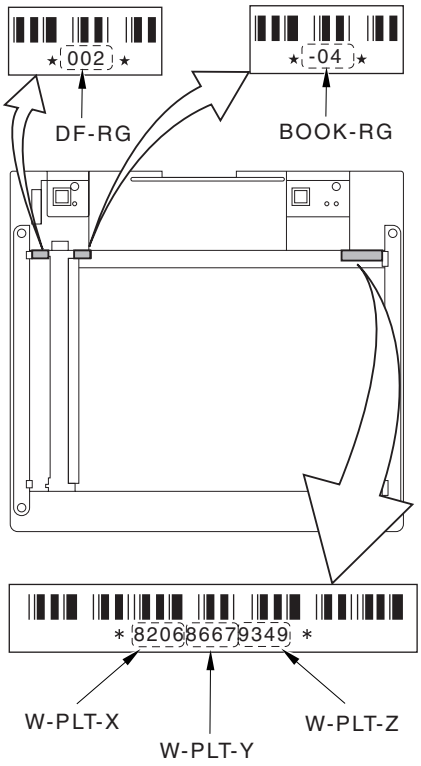
1. Reader Unit-Related Adjustment

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 initialize the RAM. Thereafter, turn off and then on the main power.
3) Enter the appropriate values using the following service mode items:

a. standard white plate white level data
COPIER>ADJUST>CCD>W-PLT-X,Y,Z

b. offset value against color displacement for copyboard glass (copyboard cover)
COPIER>ADJUST>CCD>BOOK-RG

c. offset value against color displacement for copyboard glass (ADF)
COPIER>ADJUST>CCD>DF-RG



F-12-39

d. service label (behind reader unit left cover) values

d-1. CIS read position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-X

d-2. main scanning direction position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-Y

d-3. shading position adjustment (fixed reading)

COPIER>ADJUST>ADJ-XY>ADJ-S

d-4. sub scanning direction color displacement correction

COPIER>ADJUST>CCD>CCDU-RG

d-5. main/sub scanning direction MTF value

COPIER>ADJUST>CCD>MTF-MG,SG

d-6. auto gradation correction target value

COPIER>ADJUST>PASCAL>OFST-P-Y,M,C,K

⚠If the value of the following was not 0 before the replacement of the reader controller PCB: COPIER>OPTION>BODY>CCD-LUT.

Set a value other than '0' once again, and make the following adjustments using the D-10 Chart.

COPIER>FUNCTION>CCD>LUT-ADJ2

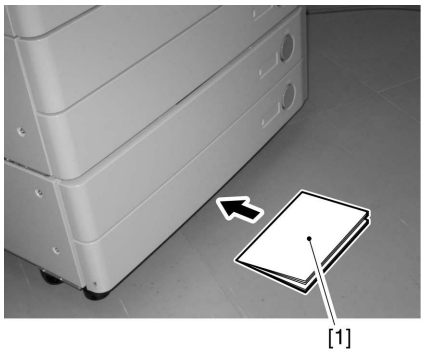
2. ADF-Related Adjustment

⚠The machine keeps ADF-related service mode data in the RAM of the reader controller; as such, you will have to make the appropriate adjustments if you have replaced the reader controller or initialized the RAM.

1) Enter the values indicated in the P-PRINT printout you have previously generated for the following:
   a. main scanning direction position adjustment (stream reading)
      COPIER>ADJSUT>ADJ-XY>ADJ-Y-DF
   b. original stop position adjustment
      FEEDER>ADJSUT>DOCST
   c. original feed speed (magnification) adjustment
      FEEDER>ADUST>LA-SPEED

2) Make adjustments using the following items:
   a. tray width adjustment
      FEEDER>FUNCTION>TRY-A4
      FEEDER>FUNCTION>TRY-A5R
      FEEDER>FUNCTION>TRY-LTR
      FEEDER>FUNCTION>TRY-LTRR
   b. CIS read position adjustment (stream reading)
      COPIER>FUNCTION>INSTALL>STRD-POS
   c. white level adjustment
      COPIER>FUNCTION>CCD>DF-WLVL1
      COPIER>FUNCTION>CCD>DF-WLVL2

When you have finished the foregoing adjustments, put the P-PRINT printout [1] you have previously generated in the service book cassette to replace the old P-PRINT printout.



F-12-40

12.6.2 After Replacing the DC Controller PCB

0001-1745

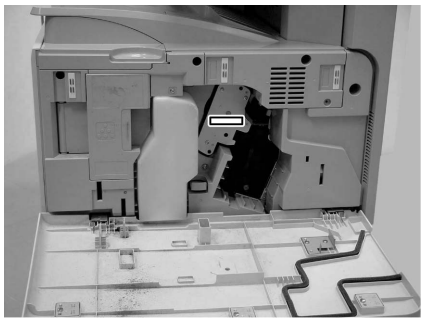
⚠Before replacing the DC controller PCB, generate the latest P-PRINT printout:

COPIER>FUNCTION>MISC-P>P-PRINT

1) Download the latest system software by the SST.
2) After replacing the DC controller, initialize the memory of the DC controller PCB using the following service mode item:
   COPIER>FUNCTION>CLEAR>DC-CON
3) Enter the values indicated on the service label using the following service mode items:

- COPIER>ADJUST>LASER>**LA-DELAY**
- COPIER>ADJUST>IMG-REG>
  REG-V-Y,M,K
  REG2-V-Y,M,K
- COPIER>ADJUST>DENS>
  SGNL-Y,M,C
  REF-Y,M,C
- COPIER>ADJUST>HV-PRI>
  OFST1-AC
  PRI-GAIN
  PRI-OFST
- COPIER>ADJUST>HV-TR>
  1TR-GAIN,OFST
  2TR-GAIN,OFST
- COPIER>ADJUST>CST-ADJ>
  MF-A4R,A6R,A4
- COPIER>ADJUST>FEED-ADJ>
  REGIST
  ADJ-C1,C2,MF,C1RE,C2RE,C3RE,C4RE
  ADJ-DKRE,MFRE,RG-REFE

4) If any value is recorded in the Remarks field of the service label, enter the value in service mode.
5) Enter the counter backup data indicated in the P-PRINT printout using the following service mode items:
   COPIER>COUNTER>MISC>FX-UP-RL
   COPIER>COUNTER>MISC>DV-UNT-K
6) Enter the drum film thickness current value in service mode. (The drum film thickness current value is indicated on the drum counter label attached to the front of the drum unit.)
   COPIER>ADJUST>HV-PRI>DR-I-INT

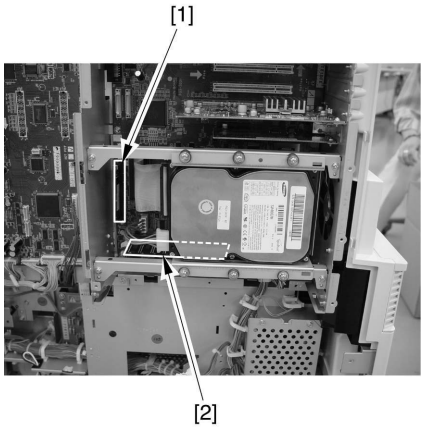


F-12-41

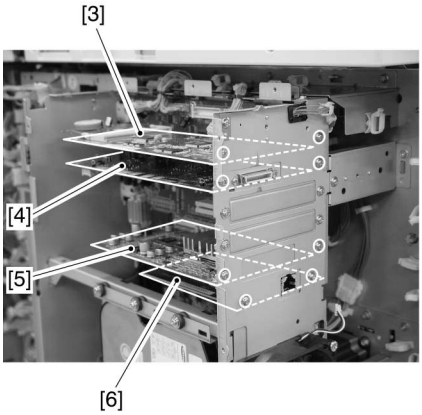
7) Turn off the control panel power switch.
8) Turn off and then on the main power switch.
9) Execute the following service mode item of the drum film thickness level setting:
COPIER>ADJUST>HVT-PRI>DRM-CHK

12.6.3 After Replacing the Main Controller PCB (main) 0001-6280

When you have mounted the main controller PCB (main), be sure to mount the PCBs you may have removed before starting the work:
[1] Boot ROM
[2] Image memory (SDRAM)
[3] Expansion bus PCB
[4] Main controller PCB (sub)
[5] UFR board
[6] Ethernet board



F-12-42



F-12-43

12.6.4 After Replacing the SRAM Board

0001-6278

⚠

- Inform the user that replacing the SRAM board will cause all image data in Box to be lost. Be sure to obtain the user's consent before starting the work.
- **Be sure that the SRAM board you are using is a new one.**
  The machine will be likely to malfunction if you use a RAM that has been used in a different printer unit.

1) Replace the SRAM board, and turn on the main power. (The machine will execute automatic initialization.)
2) See that the machine indicates the message "Turn On the Power Switch on the Right Side" on its control panel. Turn off and then on the power.
3) Initialize the RAM.
   COPIER>FUNCTION>CLEAR>MN-CON
   Make the foregoing selections, and press the OK key.

12.6.5 After Replacing the HDD

0001-7305

A. If NetSpot Accountant (NSA) Is Not Used

1) Format the HDD.
   Start up the machine in safe mode (i.e., turn on the main power while holding down the 2 and 8 keys).
   Using the SST's HD formatting function, execute formatting of all partitions. (For details, see the instructions on how to upgrade the machine.)
2) Download the system software.
   Using the SST, download the system, language, and RUI files.
   It may take about 5 min for the machine to start up after a download session.

B. If a Card Reader and NetSpot Accountant (NSA) Are Used

A card ID used by the NSA exists on the HDD. If you have replaced the HDD, you must also download the card data

used by the NSA once again; otherwise, you will not be able to make use of statistical management functions of the NSA.

You will first have to format the HDD and download the system software as for A above; thereafter, you need to perform additional steps:

1) Format the HDD.
2) Download the system software.
3) Make the following selections:
COPIER>FUNCTION>INSTALL>CARD
4) Enter a card number.
Enter the number of the first card of those to be used for group control, and press the OK key. (For instance, if the group will be using numbers between 1 through 1000, enter '1'.)
5) Turn off and then on the machine's main power.
6) Make a check.
Make the following selections in Additional Function: system control settings>group ID control>count control; then, check to make sure the following IDs are made ready: ID00000001 through ID00001000.
7) Set the appropriate addresses.
Make the following selections in Additional Function: system control settings>network settings>TCP/IP settings>IP address. Then, set the following addresses: IP address, gateway address, subnet mask.
8) Enter a number.
Make the following selections in Additional Function, and enter a number: system administrator information settings>system control group ID/system control ID No.
9) Turn off and then on the machine's main power.

⚠Unless you set up the system control ID and the system control ID No., you will not be able to register a card to the machine while using NSA.

10) Download the card ID.
Keep the machine in a standby state, and download the card ID through the NSA.
11) Check the count control.
Make the following selections in Additional Function to bring up the Count Control screen: system control settings>group ID control; then, check to see that only the ID data you have downloaded are indicated.
12) Check to see that the operation is normal.
Using a user card that has been registered to the NSA, make copies; then, check that the number of copies you have made are associated with the card you have used in the machine.

12.6.6 When Replacing the HVT PCB

0001-1750

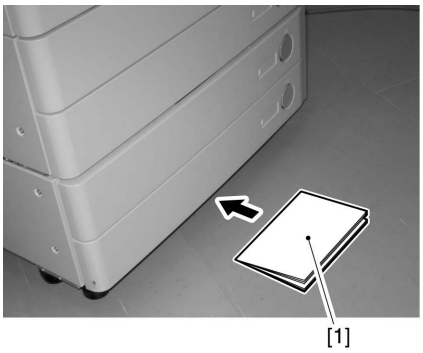
1) Enter the appropriate information using the following 6 service mode items by going through the instructions indicated on the label attached to the HVT PCB:

COPIER> ADJUST> HV-PRI> PRI-GAIN (CHG G)

COPIER> ADJUST> HV-PRI> PRI-OFST (CHG Off)
COPIER> ADJUST> HV-TR> 1TR-GAIN (1TR G)
COPIER> ADJUST> HV-TR> 1TR-OFST (1TR Off)
COPIER> ADJUST> HV-TR> 2TR-GAIN (2TR G)
COPIER> ADJUST> HV-TR> 2TR-OFST (2TR Off)

The notations in parentheses indicate the notations as they appear on the PCB label.

2) Record the new values on the service label.
3) Generate a P-PRINT printout in service mode.
4) Put away the generated P-PRINT printout [1] in the service book case to replace the old printout.



F-12-44

12.7 Pickup/Feeding System

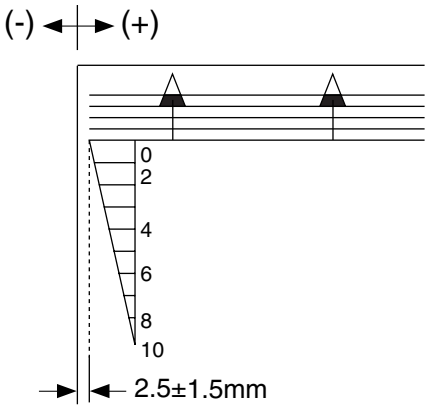
12.7.1 Adjusting the Horizontal Registration When Replacing the Pickup Cassette

0001-1751

- 1st side (mechanical adjustment)

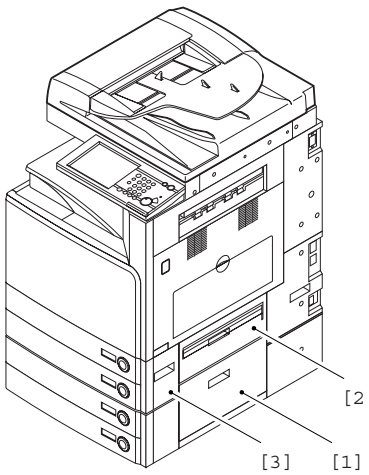
1)Make copies using the cassette 1/2 as the source of paper; then, check to make sure that the margin on the front side is 2.5 -1.5, +1.5 mm.

- If the margin is not as indicated, make the following adjustment:



F-12-45

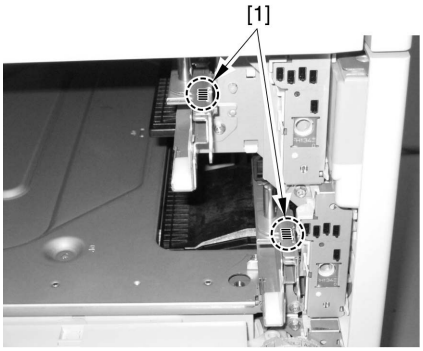
2) If a 2-Cassette Pedestal-Y1 is installed, open the right door [1] of the pedestal.
3) After opening the lower right cover [2], remove the 2 screws, and detach the cover (lower front) [3].



F-12-46

4) Slide out the cassette 1 or 2.

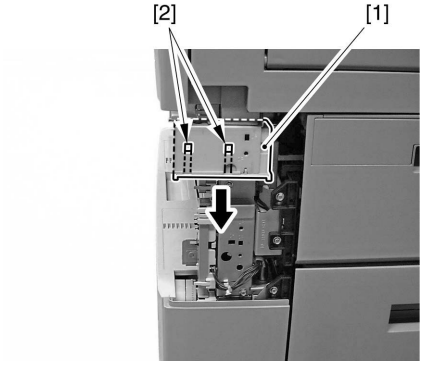
5) Check the index [1] on the adjusting plate.



F-12-47

- Adjusting the Cassette 1

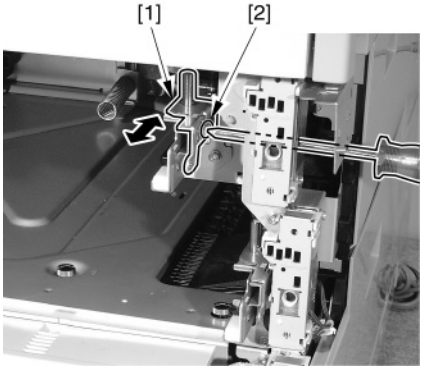
6) Free the 2 claws [2], and detach the grip (right front) [1].



F-12-48

7) Loosen the fixing screw [2] on the adjusting plate [1].

8) Move the adjusting plate back and forth with reference to the index you have checked in step 5). Moving the adjusting plate toward the rear of the machine will increase the margin on the front side of the image.



F-12-49

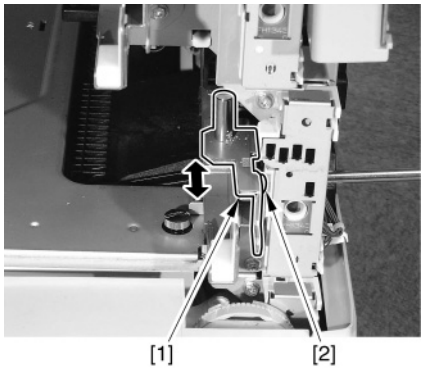
9) Tighten the fixing screw.

10) Put back the cassette 1.

11) Make copies using the cassette 1 as the source of paper; then, check to make sure that the margin along the image front side is 2.5 +1.5, -1.5 mm.
12) Fit back the grip (right front).
13) Attach the machine's right front cover.

- Adjusting the Cassette 2

6) Loosen the fixing screw [2] on the horizontal registration adjusting plate [1] of the cassette.
7) Move the adjusting plate back and forth along the index you checked in step 5). (Moving the adjusting plate toward the rear of the machine will increase the margin on the image front.)

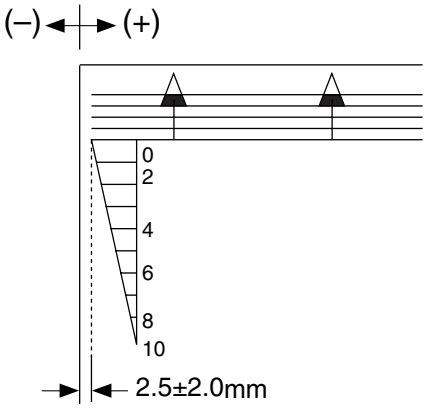


F-12-50

8) Tighten the fixing screw.
9) Fit back the cassette 2.
10) Make copies using the cassette 2 as the source of paper; then, check to make sure that the margin on the image front is 2.2 +1.5, -1.5 mm.
11) Fit back the machine's right front cover.

-Margin (2nd side)

1) Make double-sided copies using the cassette you have adjusted for the 1st side; then, check to make sure that the margin on the front side is 2.5 +2.0, -2.0 mm.



F-12-51

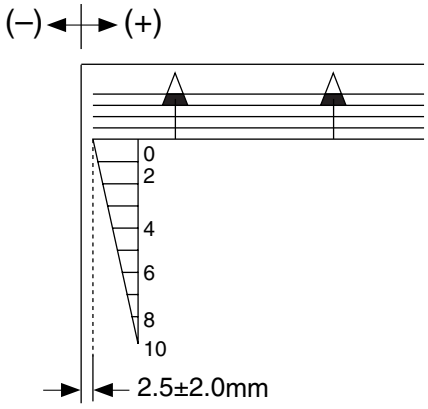
2) If the margin is not as indicated, change the adjustment value of the horizontal registration on the 2nd side for the cassette in question.
- COPIER>ADJUST>FEED-ADJ>ADJ-C1RE
- COPIER>ADJUST>FEED-ADJ>ADJ-C2RE

An increase by 1 will decrease the margin on the front by 0.1 mm.
3) Record the new adjustment value on the service label.- ADJ-C1RE
- ADJ-C2RE

12.7.2 Adjusting the Horizontal Registration When Replacing the Duplex Unit

0001-1754

1) Make double-sided copies using the cassette 1/2 as the source of paper; then, check to be sure that the margin on the front side is 2.5 -2.0, +2.0 mm.



F-12-52

2) If the margin is not as indicated, change the adjustment value of the horizontal registration on the 2nd side for the cassette in question.
- COPIER>ADJUST>FEED-ADJ>ADJ-C1RE
- COPIER>ADJUST>FEED-ADJ>ADJ-C2RE

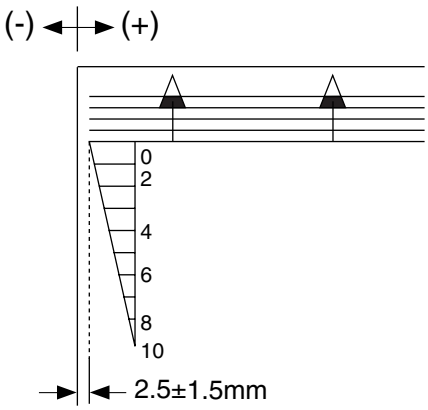
An increase by 1 will decrease the margin on the front side by 0.1 mm.
3) Record the new adjustment value on the service label.
- ADJ-C1RE
- ADJ-C2RE

12.7.3 Adjust the Horizontal Registration for the Manual Feed Tray

0001-7739

- 1st side (mechanical adjustment)

1) Place paper in the manual feed tray. For instructions on how to place paper, see the label attached to the manual feed assembly.
2) Make copies using the manual feed tray as the source of paper; then, check to make sure that the margin on the front side is 2.5 -1.5, +1.5 mm.



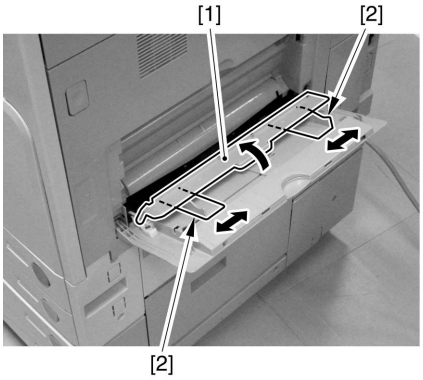
F-12-53

- If the margin is not as indicated, make the following adjustments:

3) Remove the paper from the manual feed tray.

4) Loosen the fixing screw [1] on the manual feed tray upper cover.

5) Move the manual feed tray upper cover back and forth based on the value you checked in step 2). (Moving the manual feed tray upper cover toward the rear of the machine will increase the margin on the front side.



F-12-54

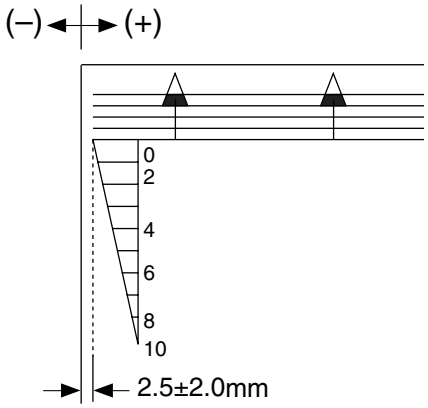
6) Tighten the fixing screw of the manual feed tray upper cover.

7) Place paper in the manual feed tray.

8) Make copies using the manual feed tray as the source of paper; then, check to make sure that the margin on the front side is 2.5 -1.5, +1.5 mm.

- Manual Feed Margin (2nd side)

1) Make double-sided copies using the manual feed tray as the source of paper; then, check to make sure that the margin on the front side of the 2nd side is 2.5 -2.0, +2.0 mm.



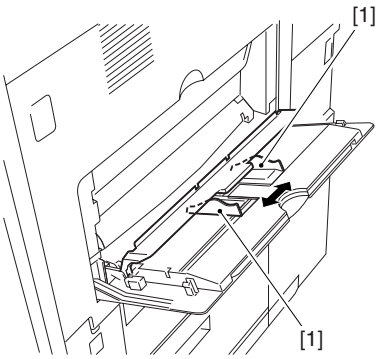
F-12-55

2) If the margin is not as indicated, change the adjustment value of the horizontal registration on the 2nd side.
- COPIER>ADJUST>FEED-ADJ>ADJ-MFRE
An increase of 1 will decrease the margin on the front side by 0.1 mm.
3) Record the new adjustment value on the service label.
- ADJ-MFRE

12.7.4 Registering the Paper Width Basic Value

0001-6579

1) Turn on the main power switch.
2) Register the paper width basic value for A4R as follows:
2-1) Match the manual feed side guide [1] against A4R.



F-12-56

2-2) Start service mode, and select 'register manual feed A4R width'.
CPOIER>FUNCTION>CST>MF-A4R
2-3) Press the OK key to store the A4R width.
2-4) Record the A4 basic value indicated on the control panel on the service label.

3) Register the paper width basic value for A4 as follows:
3-1) Match the manual feed guide against A4.

3-2) Select 'register manual feed A4 width' in service mode.
CPOIER>FUNCTION>CST>MF-A4
3-3) Press the OK key to storp the A4 width.
3-4) Record the A4 basic value indicated on the control panel on the service label.

4) Register the A6R paper width basic value as follows:
4-1) Match the manual feed side guide against A6R.
4-2) Select 'register manual feed A6R width' in service mode.
CPOIER>FUNCTION>CST>MF-A6R
4-3) Press the OK key to store the A6R width.
4-4) Record the A4 basic value indicated on the control panel on the service label.

5) Press the Rest key twice to end service mode.
6) Turn off the control panel power switch.
7) Turn off the main power switch.

Chapter 13 Correcting Faulty Images

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13.1 Making lnitial Checks

13.1.1 Checking the Site Environment

0001-6073

a. The voltage of the source of power must be as indicated (+/-10%), and the power plug must remain connected day and night.
b. The temperature and humidity of the site must be as indicated, and the site must be away from a water faucet, water boiler, humidifier; moreover, the machine must not be near a fire or subjected to dust.
c. The site must be free of ammonium gas.
d. The machine must not be subjected to the direct rays of the sun. As necessary, curtains must be furnished.
e. The site must be well ventilated, and its floor must keep the machine level.
f. The machine must remain connected to the wall outlet at all times.

13.1.2 Checking the Paper

0001-6076

a. Check to see if the paper is of a type recommended by Canon.
b. Check to see if the paper is dry. If moist, try paper fresh out of package.

13.1.3 Checking the Placement of Paper

0001-6077

a. Check to see that the amount of paper placed in the cassette and the manual feed tray is as indicated.
b. If transparencies are used, check to see if they are placed in the correct orientation.

13.1.4 Checking the Durables

0001-6079

Check the Durables Table, and replace those parts that have reached the end of the indicated lifetimes.

13.1.5 Checking the Periodically Replaced Parts

0001-6080

Check the Scheduled Servicing Chart and the Periodically Replaced Parts Table, and replace those parts that have reached the end of the indicated lifetimes.

13.1.6 Checking the Units and Functional Blocks

0001-6082

<Reader Unit>
- Check the optical system (contact sensor, white plate, copyboard glass) for a scar, dirt, and foreign matter.
- Check the contact sensor unit to see if it moves smoothly. Check its rail for dirt.
- Check the contact sensor for flickering.
- Check the scanner for condensation.

<Process>
- Check the drum unit/developing unit to see if it is fitted properly.

- Check the photosensitive drum for a scar and dirt.
- Check the patch image read sensor window for dirt.

<Transfer>
- Check the secondary transfer outside roller for wear, scar, dirt, and deformation.
- Check the blade of the cleaning unit for a tear, warping, deformation, and stray toner.

<Fixing>
- Check the fixing roller/pressure roller for wear, scar, dirt, and deformation.
- Check the fixing heater (main/sub) to see if it goes on when the power is turned on.
- Check the fixing thermistor for an open circuit.
- Check the thermal switch for electrical continuity.

<Paper Movement>
- Check to see if there is foreign matter such as paper lint.
- Check the pickup/feed/separation roller for a buildup of paper powder, wear, scar, dirt, and deformation.
- Check the registration roller (middle, outside)/paper path roller for wear, scar, dirt, and deformation.
- Check the feed guide for wear, scar, dirt, and deformation.
- Check the paper for a bent leading edge, curling, waving, and moisture.
- As necessary, try transparencies of a type recommended by Canon to see if the problem, if any, is corrected.

<Machine>
- Check to see if an excess load is imposed on the drive system.
- Check the gears for wear and chipping.

<Cassette>
- Check to see if the cassettes are fitted properly. Check also to see that an appropriate paper size is selected. As necessary, try a normal cassette to see if the problem, if any, stops.
- Check to see that the movement of the cassette holding plate is smooth. Check also to see that the holding plate is free of deformation.
- Check to see if the side guide plate/trailing edge plate inside the cassette are set correctly.
- Check to see if the cassette heater switch is at the ON side (if a cassette heater is fitted).

<Service Mode>
- Check to see that the various CCD adjustment values are as indicated on the service label.
 (COPIER>ADJUST>CCD>all items)
- Check to see if registration adjustment is correct.
 (COPIER>ADJUST>FEED-ADJ>REGIST)
- Check to see if the machine inside temperature/humidity is the correct reading.
 (COPIER>DISPLAY>ANALOG>TEMP/ABS-HUM)
- Check to see that the image read position adjustment is correct.
 (COPIER>ADJUST>ADJ-XY>ADJ-X/ADJ-Y)
- Check to see if the value for ADJUST/OPTION is as indicated on the service label.
- Check to see if error initialization has been executed.

(COPIER>FUNCTION>CLEAR>ERR)

<General>
- Check to see that the power plug is connected properly.
- Check to see that there is the rated AC voltage at the power outlet.
- Check to see that the sensors, clutches, motors, and solenoids operate normally. Check the connectors for poor contact.
  (Be sure to check with the General Timing Chart for reference to power/signal routes.)
- Check to see that the leakage breaker/circuit breaker operates normally.
- Check the wiring for trapping and loose screws.
- Check to see that the external cover are all fitted properly.
- Check to see that the main power switch/control panel power switch are at the ON side.
- Check to see that the power cable/signal cable to accessories are correctly routed.
- Check to see that the cover switch operates normally.
- Check the fuses on the PCBs to see if they have blown.
- Check to see that the user knows how to use the machine correctly.

13.1.7 Others

0001-6094

If a machine is brought in from a cold to a warm place, its inside can develop condensation, which will lead to various problems.

a. condensation on the BD sensor can cause faults associated with E100.
b. condensation on the dust-blocking glass can cause the images in sub scanning direction to be too light.
c. condensation on the contact sensor of the reader unit or the copyboard glass can lead to light images.
d. condensation on the pickup/feed guide can cause faulty paper movement.

If d above is noted, be sure to dry wipe the units involved in the feed system.
The same is true of toner cartridges, developing units, and drum units, i.e., when they are unpacked after being brought in from a cold place. To prevent condensation, advise the user to leave the package alone (for about 1 to 2 hr) before opening it.

13.2 Test Print

13.2.1 Overview

0001-6108

The machine offers the following 6 types of test prints (TYPE), each designed for identification of a specific type of image fault. The data for these test prints is prepared by the main controller: if the output of a test print is free of the fault in question, suspect a fault on the PDL input or the reader unit.

13.2.2 Test Print TYPE

0001-6109

T-13-1

Type No.	Description
0	normal copy/print
1 ～ 3	－ (for R&D)
4	16 gradations
5	full half-tone
6	grid
7 ～ 9	－ (for R&D)
10	MCYBk horizontal stripe (sub scanning direction)
11	－ (for R&D)
12	64 gradations
13	－ (for R&D)
14	full color 16 gradations
15 ～ 100	－ (for R&D)

13.2.3 Selecting Test Print TYPE

0001-6111

1) Set the copy count, paper size, and pickup mode (single-sided or double-sided).
2) Make the following selections in service mode: COPIER>TEST>PG.
3) Make the following selections: COPIER>TEST>PG>TYPE.
4) Enter the appropriate TYPE No. using the keypad, and press the OK key.
5) Select the appropriate color using COLOR-Y/M/C/K (output at 1).
6) Set the density using DENS-Y/M/C/K (valid only if TYPE=5).
7) Press the start key.

13.2.4 16-Gradation (TYPE=4)

0001-6113

Use this test print to check gradation, fogging, white line, and uneven density at the front/rear.

a. Gradation

If the 16-gradation[1] is not properly produced, suspect a fault in the drum unit or the laser exposure system.

b. Fogging

If fogging is found only in the white area[2], suspect a fault in the drum unit or the laser exposure system.

c. White Line

If a white line is found in the image, suspect a fault in the developing system.

d. Uneven Density at the Front/Rear

If uneven density is found at the front/rear, suspect a fault in the drum unit, laser exposure system, or transfer system.

F-13-1

13.2.5 Full Page Halftone (TYPE=5)

0001-6115

Use this test print to check a transfer fault, black line, white line, and uneven density at specific intervals.

Memo:

- You can print out test prints for individual colors by making the following selections in service mode: COPIER>TEST>PG and then COLOR-Y/M/C/K.
- You can also change the density of the test prints by making the following selections in service mode: TEST>PG>DENS>Y/M/C/K.

---

a. Transfer Fault

If a transfer fault (white spot) occurs, suspect a fault in the ITB unit or the secondary transfer outside roller.

b. Black Line
If a black line occurs, suspect a scratch in the photosensitive drum or dirt on the primary charging roller.

c. White Line
If a white line occurs, suspect a fault in the ITB unit, secondary transfer outside roller, or laser exposure system.

d. Uneven Density
If the density is uneven at specific intervals, suspect the following:
- photosensitive drum (if at 194.7 mm)
- developing cylinder (if at 37.6 mm)

e. Uneven Density
If uneven density occurs, suspect dirt on the dust-blocking glass of the laser unit or deterioration of the ITB.

COLOR-M=1, COLOR-Y/C/K=0

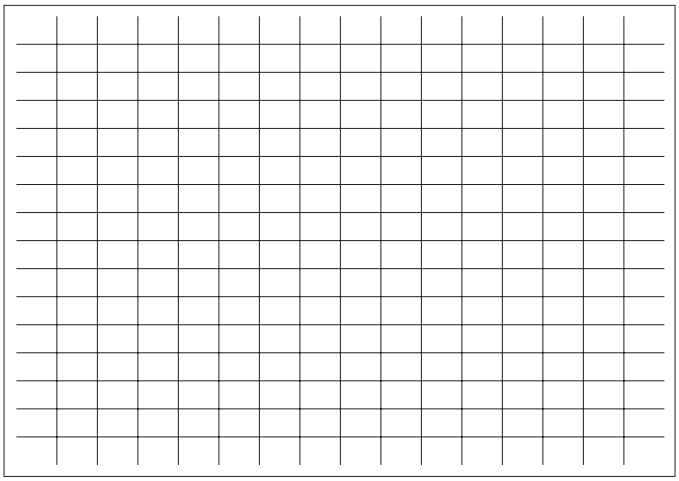
F-13-2

13.2.6 Grid (TYPE=6)

0001-6117

Use this text print to check color displacement, right angles, and straight lines.

a. Color Displacement
If color displacement is found, suspect a scar in the ITB and a fault in the drum unit.
b. Right Angle, Straight Lines
If the right angles or straight lines are not correct, suspect a fault in the laser exposure system, a fault in the shape of the registration (middle/outside) roller, and a fault in the secondary transfer outside roller.



F-13-3

13.2.7 MCYBk Horizontal Stripes (TYPE=10)

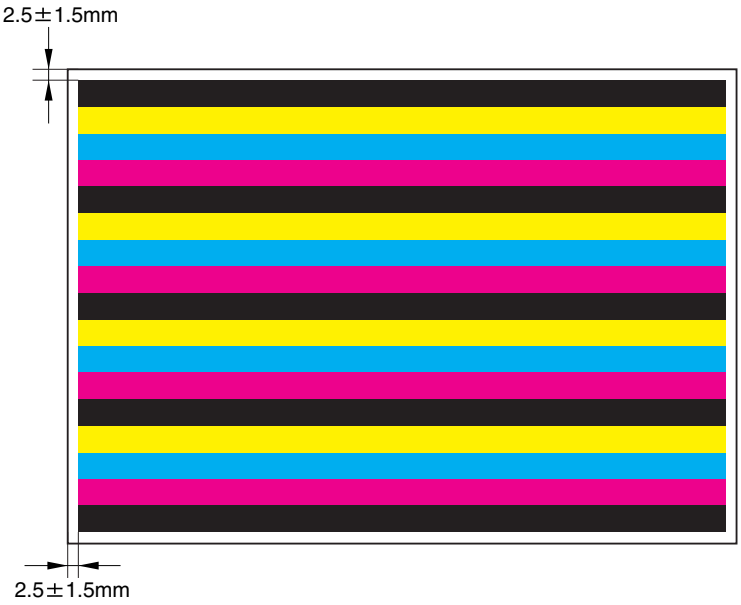
0001-6118

Use this test print to check the density of dark areas of individual colors, balance among colors, and white lines associated with development.

a. Solid Density of Individual Colors and Balance Among Colors
- the density must not be appreciably low (too light).
- if the density of a specific color is too low (too light), suspect a fault in the developing system.
- if the density of all colors is low (too light), suspect a fault in the laser exposure system and the transfer block.

b. While Line
If a white line is found in a specific color, suspect a fault in the development system of that particular color.

c. Uneven Density at the Front/Rear
If uneven density is found in a specific color, suspect a fault in the development system of that particular color. If it is found in all colors, suspect a fault in the drum unit, ITB unit, and laser exposure system.



F-13-4

13.2.8 64-Gradation (TYPE=12)

0001-6119

Use this test print to check the gradation of Y, M, C, and Bk at once.

F-13-5

13.2.9 Full Color 16-Gradation (TYPE=14)

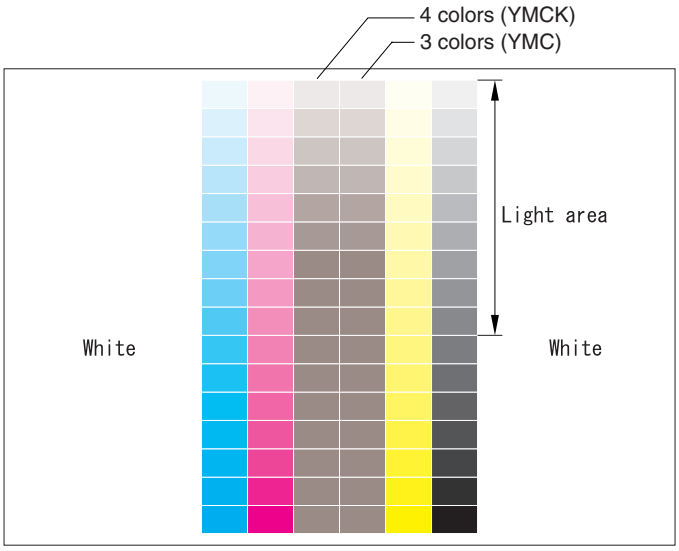
0001-6120

Use this test print to check the gray balance, gradation of individual colors (YMCBk), and fogging.

a. Gray Balance
Check the grayscale area to see if the densities of all colors are even.
b. Gradation
Check the gradation of individual colors (YMCBk) and for any difference in color.

c. Fogging

If fogging is found in the white area, suspect a fault in the developing system, a fault in the drum unit, and poor adjustment of the laser exposure system.



F-13-6

13.3 Troubleshooting

13.3.1 Symptoms

13.3.1.1 Symptoms 0001-8098

T-13-2

Item	Description
Image fault	blurry image/line caused by condensation
	color displacement in sub scanning direction
	white spot in horizontal direction
	horizontal lines at intervals of 75.4 mm
	vertical white line
	round, white spot along trailing edge
	white spot indicating traces of pickup roller
	cyclic image fault
	black line along leading edge
	fine, black line in stream reading
	rib-shaped dirt
	poor reproduction of horizontal fine line
Paper movement fault	skew of last postcard from manual feed tray
	skew of paper from manual feed tray
	peeling of a manually fed label sheet
Operation fault	noise during pickup from cassette
Jam (machine)	pickup fault from side paper deck
	jam immediately after pickup (heavy paper, envelope, postcard)
	delivery delay jam (label sheet)
	Pickup Stationary Jam

For details, see the remedies given for individual faults.

13.3.2 Image Faults

13.3.2.1 Out of Focus

13.3.2.1.1 Blurred image in main scanning direction only on copies 0005-3470

[Case in the field]

Cause

In the field, this symptom occurred because the Main Controller PCB (sub) was faulty (1 case).

Field Remedy

1. Make sure that the connectors on the Main Controller PCB are securely fitted or there is no pinched cable. If the symptom still recurs, go to the Step 2.
2. Replace the Main Controller PCB with a new one.
Main Controller PCB (main): FG3-3221

13.3.2.1.2 Blurred Image/Line Caused by Condensation 0002-1418

<Cause>

The machine fails to create normal images because of condensation.

<Field Remedy>

Remove the left cover and the delivery tray, and leave the machine alone so that it will become used to the room temperature.

13.3.2.1.3 Color Displacement in Sub Scanning Direction 0002-1429

<Cause>

- The transfer to the ITB has become displaced because of a shock occurring when the ITB cleaning blade is engaged/disengaged.
- Transfer to the ITB has become displaced because of a shock occurring when the secondary transfer outside roller is engaged/disengaged.

<Field Remedy>

Make the following selections in service mode to make adjustments: COPIER>ADJUST>IMG-REG.

Service mode: COPIER>ADJUST>IMG-REG

Use it to fine-adjust the image sub scanning direction start position.

- REG-V-Y (Y, 1st side)
- REG-V-M (M, 1st side)
- REG-V-K (K, 1st side)
- REG2-V-Y (Y, 2nd side)
- REG2-V-M (M, 2nd side)
- REG2-V-K (K, 2nd side)

<Making Adjustments>

- An increase by '1' will move the image by a single pixel (about 0.04 mm) toward the rear.

- Be sure to enter the values indicated on the service label if you have initialized the RAM on the DC controller PCB or replaced the DC controller PCB.

<Range of Adjustment>
-10 to +10 (unit: pixel) [at time of shipment: factory value] [at time of RAM initialization: 0]

Service mode: COPIER>OPTION>BODY>TBLD-TMG (level 2)
Timing of Execution of ITB Cleaning in Direct, Full Color Mode

<Settings>
0: do not delay [at time of shipment/after RAM initialization]
1: delay

<Note>
Setting it to '1' will lead to lowered productivity.

13.3.2.2 Partially Blank/Streaked

13.3.2.2.1 White streaks in sub scanning direction 0005-3241

[Case in the field]

Cause

In the field, this symptom occurred because foreign substances were trapped inside the developing ass'y.

Field Remedy

1. Output each color of test print (Y/M/C/Bk) in service mode:
Change the set value from [0] to [5] in [COPIER> Test> PG> TYPE]. In order to output a test print in e.g. yellow (single color), set [1] for [COLOR-Y] and [0] for [COLOR-M/COLOR-C/COLOR-K]. Then press the start key. For Magenta, Cyan and Black, do the same thing by setting [1] for each color.
2. If white streaks appear on any of the test prints, inspect the affected developing ass'y to see any scratches on the developing cylinder surface or any foreign substances between the cylinder and the blade.
Checking Method:
Move toner between the cylinder and the blade using a sheet of OHT. If the position of the white streaks is changed, foreign substances might be the root cause.
Developing Ass'y (BLACK): FM2-0056
Developing Ass'y (YELLOW): FM2-0057
Developing Ass'y (MAGENTA): FM2-0058
Developing Ass'y (CYAN): FM2-0059

13.3.2.2.2 Horizontal White Streaks 0002-1420

<Notes>
This symptom tends to occur in a full color, halftone image made in a high temperature/humidity environment.
<Cause>

The secondary transfer outside roller has been left in contact with the ITB, thus causing a secondary transfer fault.

<Field Remedy>

Execute the following in service mode: COPIER>FUNCTION>CLEANING>TBLT-CLN.

<Caution>

The machine moves the secondary transfer roller away from the ITB for the following:

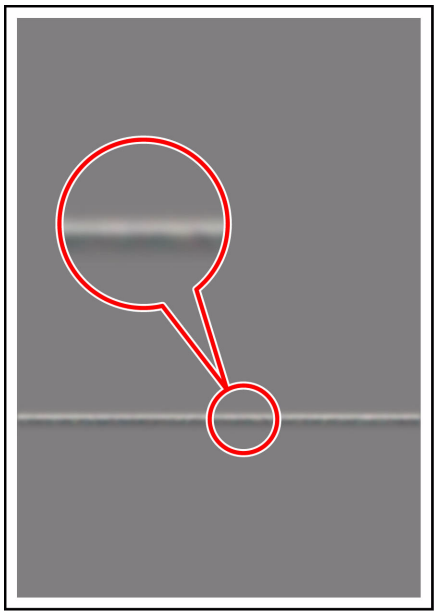
- about 30 sec after it enters a standby state.
- the control panel power switch is tuned off.

If the main power switch is turned off in about 30 sec after the machine enters a standby state, the machine cannot move the secondary transfer roller away from the ITB, leaving it in contact with the ITB.

<Notes>

The symptom starts to appear when the secondary transfer outside roller is left in contact with the ITB for about 30 min to 1 hr; it tends to disappear when about 200 sheets of paper have been moved past.

<Image Sample>



F-13-7

13.3.2.2.3 White Horizontal Lines at Intervals of 75.4 mm 0002-1421

<Notes>

This symptom tends to occur on the 2nd side of a halftone image print.

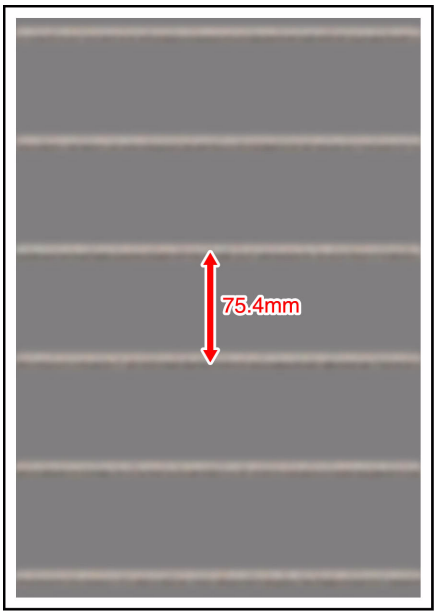
<Cause>

The secondary transfer outside roller is approaching the end of its life, thus starting to show abnormal discharge.

<Field Remedy>

Replace the secondary transfer outside roller.

<Image Sample>



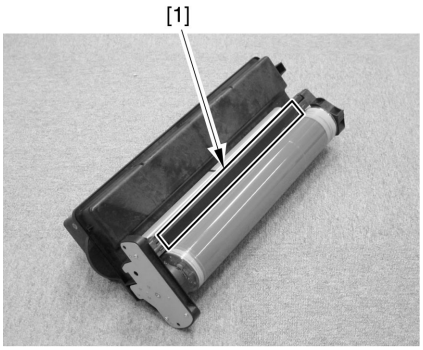
F-13-8

13.3.2.2.4 Vertical White Line

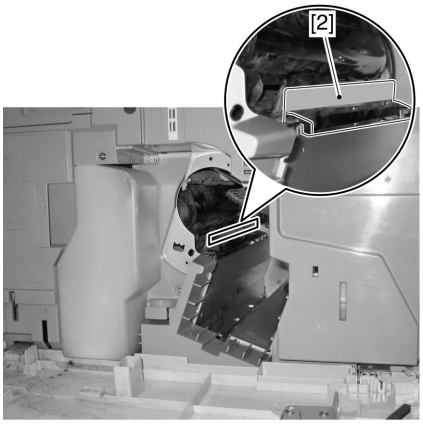
0002-1422

<Cause>

There is adhesion of dust in a specific area [1] or [2] of the drum unit or scanner hood, respectively.



F-13-9



F-13-10

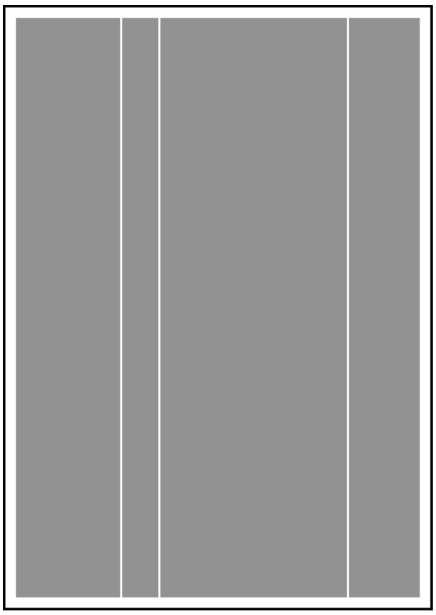
<Field Remedy>

Dry wipe the area [1] or [2] of the drum unit or the scanner hood, respectively with a moist cloth.

<Caution>

Never dry wipe the areas; otherwise, static charges will occur and attract dust.

<Image Sample>



F-13-11

13.3.2.2.5 White Spots Along the Trailing Edge 0002-1423

<Notes>

This symptom tends to occur in a low humidity environment.

<Cause>

The movement of paper is disrupted when the secondary transfer roller moves away.

<Field Remedy>

Make adjustments using the following service mode item: COPIER>ADJUST>BLANK>BLANK-B.

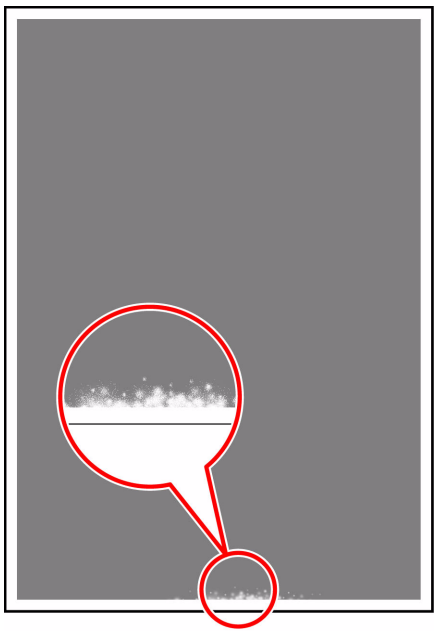
T-13-3

BLANK-B	**Use it to enter an adjustment value for the non-image width (trailing edge).**
Method of adjustment	Enter the value indicated on the service label if you have initialized the RAM on the main controller PCB or replaced the SRAM PCB.
Range of adjustment	0 to 1000 [at time of shipment/at time of RAM initialization, +59]

<Caution>

Executing this field remedy will increase the trailing edge margin/non-image width.

<Image Sample>



F-13-12

13.3.2.2.6 White Spot Indicating Trace of the Pickup Roller 0002-1424

<Notes>

This symptom tends to occur in a high temperature/humidity environment.

<Cause>

An ingredient contained in the pickup roller builds up on the ITB, causing the white spots.

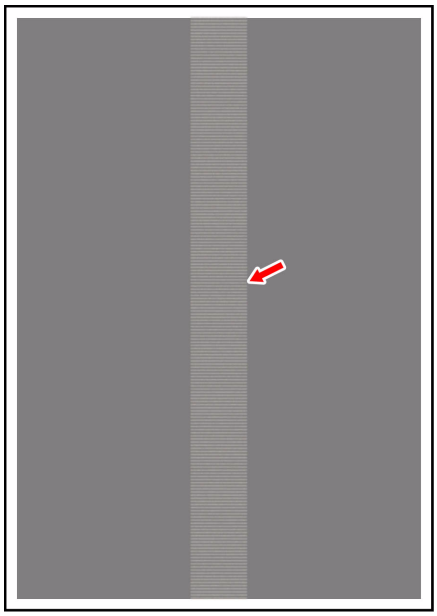
<Field Remedy>

1. Replace the ITB.
2. If FB6-3406 (w/ green collar) is used as the feed roller/separation roller, replace it with the roller designed for the iR C3100 Series (see the Parts Catalog).

<Caution>

Do not use FB6-3406 (w/ green collar) as the feed roller/separation roller to avoid white spots.

<Image Sample>



F-13-13

13.3.2.2.7 Cyclic Image Fault

0002-1425

<Notes>

This symptom tends to occur in sub scanning direction.

<Field Remedy>

See the following table to identify the part; then, clean or replace the part:

T-13-4

Interval (mm)	**Part**
14.1	fixing outlet sensor roll
15.7	fixing inlet roll
27.3	delivery roll
29.5	fixing outlet roll
37.6	developing cylinder
40.8	registration roller (middle)
44.0	primary charging roller
45.4	delivery roller

Interval (mm)	Part
46.3	duplexing feed roller 1/2
50.2	primary transfer roller
	pickup roller
	vertical path roller 1/2
	vertical path slave roller
50.5	registration roller (outside)
56.5	duplex feed roller 1/2
62.8	fixing outlet roller
65.9	secondary transfer inside roller
75.4	secondary transfer outside roller
	feed roller
	separation roller
113.0	manual feed pickup roller
119.3	pressure roller
152.3	fixing roller
194.7	photosensitive drum
584.0	ITB

13.3.2.3 Smudged/Streaked

13.3.2.3.1 Yellow streaks on full-colored copy, black streaks on black-and-white copy, in sub scanning direction

0005-3466

[Case in the field]

Field Remedy

In the field, this symptom occurred because the Contact Image Sensor (CIS) was faulty (1 case). Follow the steps below:

In service mode [COPIER> Test> PG], select either of 4, 5, 6, 10, 12, or 14 for [TYPE] to output a test print. If no streak appears on the test print, it is possible that the CIS is faulty, so replace it with a new one.

Contact Image Sensor Ass'y: FM2-1563

After replacement, follow the instructions described in Service Manual [Chapter 12 Standards and Adjustments > Scanning System > After Replacing the CIS].

13.3.2.3.2 Toner scattering inside machine and soiled image because side seal in Transfer Cleaning As'y peeled off 0005-4383

[Case in the field]

Field Remedy

In the field, it was found that toner scattered inside the machine upon installation because the side seal in the Transfer Cleaning Ass'y (FM2-0082) peeled off. Check whether or not the side seal peels off when this symptom occurs.

Transfer Cleaning Ass'y (ITB Cleaning Unit): FM2-0082

13.3.2.3.3 Horizontal Black Line Along Leading Edge 0002-1426

<Notes>

This symptom tends to occur in a high temperature/humidity environment.

<Cause>

The movement of paper is disrupted during secondary transfer.

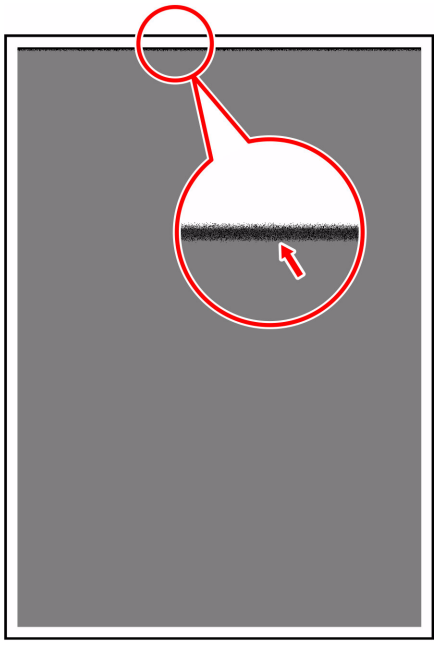
<Remedy>

Increase the value of the following service mode item: COPIER>ADJUST>BLANK>BLANK>-T.

<Caution>

Execution of this field remedy will increase the leading edge margin/non-image width.

<Image Sample>



F-13-14

13.3.2.3.4 Fine, Black Line in Stream Read Mode 0002-1427

<Cause>

Dust causing black streaks has 2 types, and measures to be taken against the streaks differ depending upon the dust type.

- Airborne Dust
Suspended on the DADF feeding path.
- Adherent Dust
Adhered to the DADF reading glass.

<How to Identify the Dust Type>
- Airborne Dust
Cause is regarded as airborne dust if black streaks are short at random.
- Adherent Dust
Cause is regarded as adherent dust if black streaks are long in the same direction (height direction).
<Field Remedy>
- Measures against airborne dust
1)Clean the white mylar and platen roller to remove dust.
2)Clean inside the DADF to remove dust.

For environment where user often uses paper containing much paper dust, however, there is possibility that black streaks caused by airborne dust still occur even after these measures are taken. In this case, advise user to make the background removal setting in user mode.

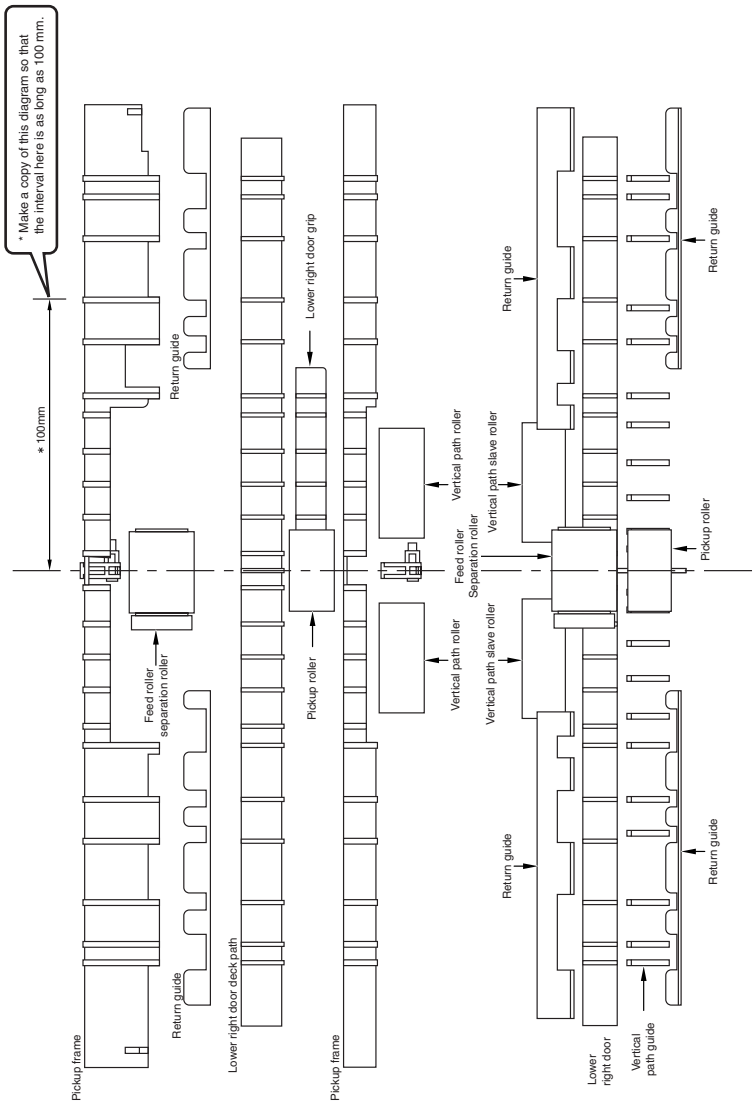
- Measures against adherent dust
1)Clean the DADF reading glass (using silicone oil and cleaning tissue).
For environment where black streaks caused by adherent dust often occur, advise user to clean the reading glass with cleaning tissue.
2)Fix the reading position at 6.5mm. (In service mode, COPIER>OPTION>BODY and set 2 to DST-POS.)

This reading position can prevent the DADF reading glass from adhesion of much dust (since document does not come in contact with the glass). In other words, black streaks appear as long as any dust is adhered to this position.

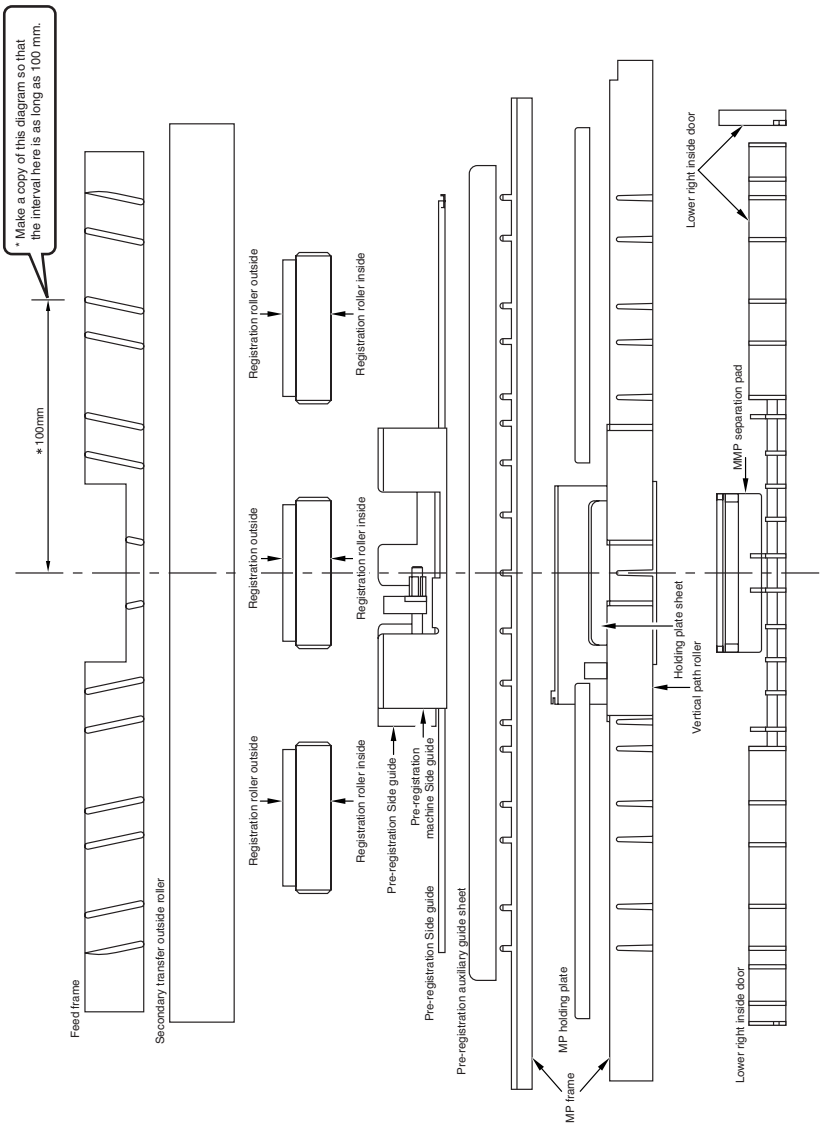
If black streaks often occur even after these measures are taken, advise user to make the background removal setting in user mode.

13.3.2.3.5 Rib-Shaped Dirt 0002-1428

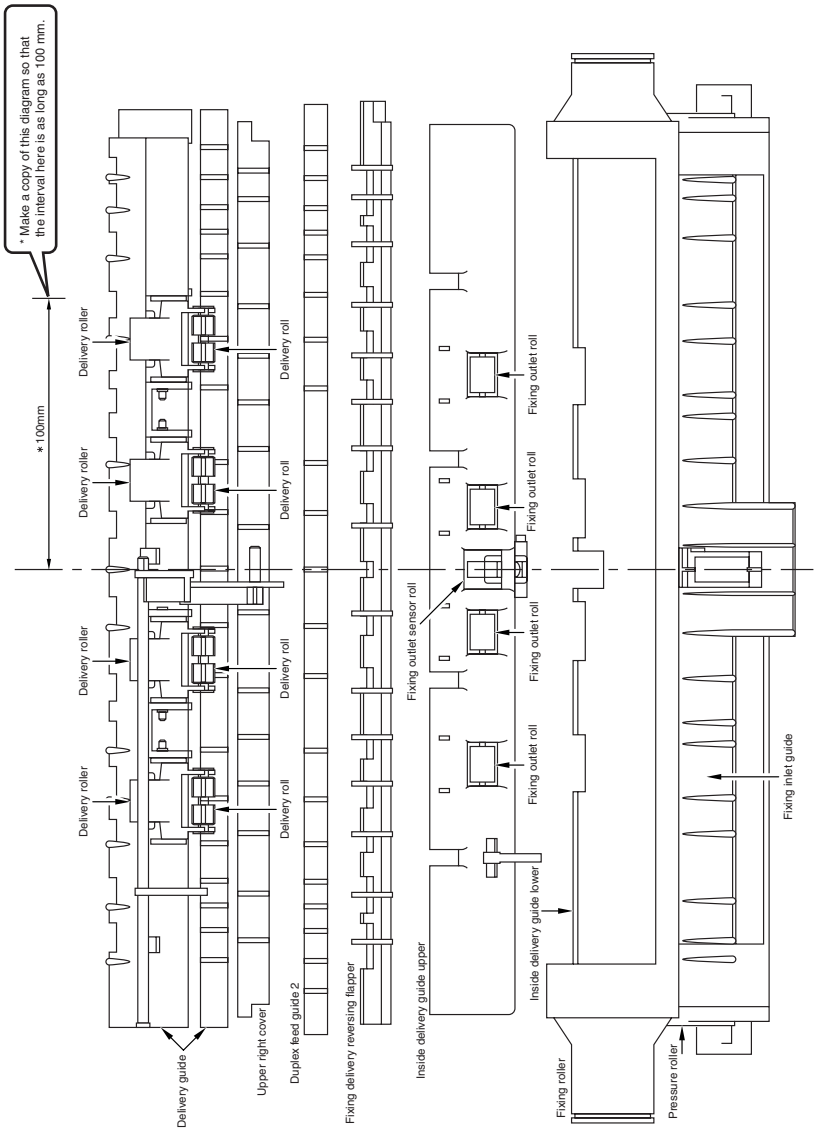
<Cause>
A rib in the path is soiled with stray toner or paper powder to cause dirt in the form of a rib.
<Field Remedy>
Clean the area of the rib identified by the map that follows.


* Make a copy of this diagram so that the interval here is as long as 100 mm.
* 100mm
Return guide
Feed roller separation roller
Return guide
Pickup frame
Lower right door deck path
Lower right door grip
Pickup roller
Pickup frame
Vertical path roller
Feed roller Separation roller
Vertical path roller
Vertical path slave roller
Vertical path slave roller
Return guide
Return guide
Pickup roller
Return guide
Return guide
Lower right door
Vertical path guide

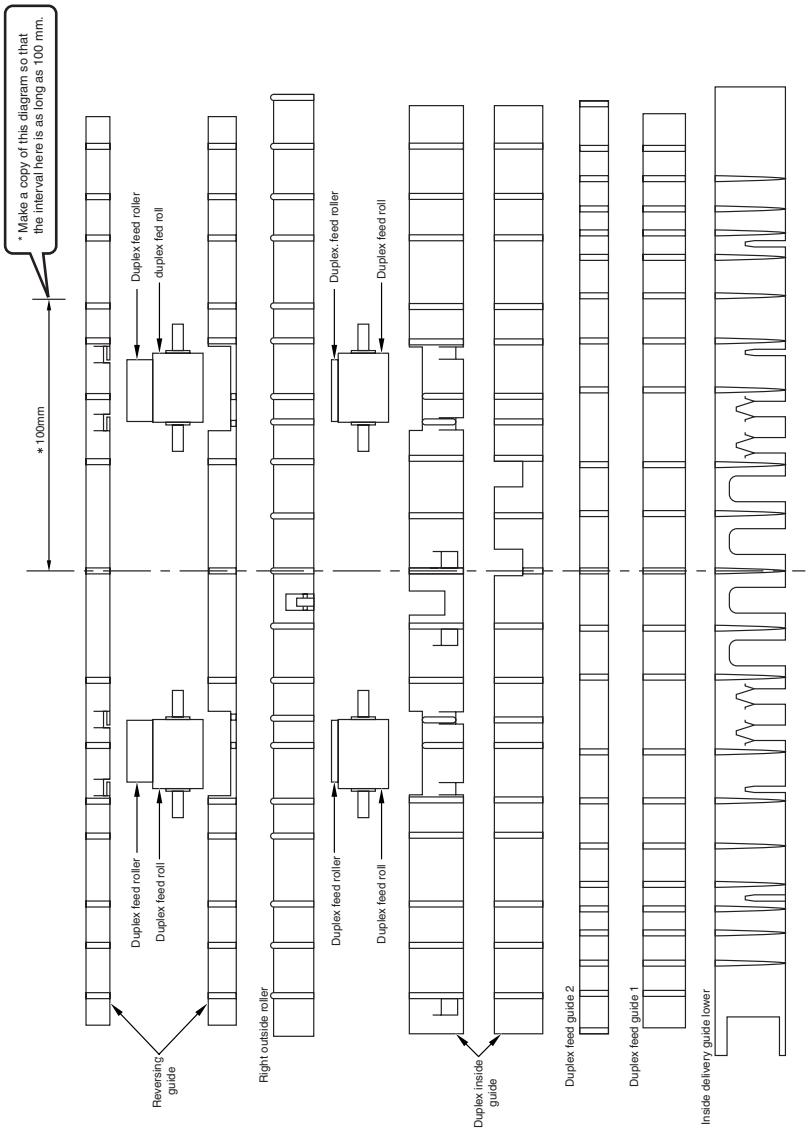
F-13-15


* Make a copy of this diagram so that the interval here is as long as 100 mm.
*100mm
Feed frame
Secondary transfer outside roller
Registration roller outside
Registration roller inside
Registration outside
Registration roller inside
Registration roller outside
Registration roller inside
Pre-registration Side guide
Pre-registration machine Side guide
Pre-registration Side guide
Pre-registration auxiliary guide sheet
MP holding plate
MP frame
Holding plate sheet
Vertical path roller
Lower right inside door
MMP separation pad
Lower right inside door

F-13-16


* Make a copy of this diagram so that the interval here is as long as 100 mm.
*100mm
Delivery roller
Delivery roller
Delivery roller
Delivery roller
Delivery roll
Delivery roll
Delivery roll
Delivery roll
Fixing outlet roll
Fixing outlet roll
Fixing outlet roll
Fixing outlet roll
Fixing outlet sensor roll
Fixing inlet guide
Inside delivery guide lower
Inside delivery guide upper
Fixing roller
Pressure roller
Delivery guide
Upper right cover
Duplex feed guide 2
Fixing delivery reversing flapper

F-13-17



F-13-18

13.3.2.4 Faulty Color Reproduction

13.3.2.4.1 Poor Reproduction of Horizontal Fine Lines

0002-1430

<Notes>

This fault tends to occur in text/photo/map mode and photo mode.

<Cause>

- characteristics of the contact image sensor
- image processing characteristics used for text

<Field Remedy>

Recommend the use of film photo/print photo mode.

13.3.3 Faulty Feeding

13.3.3.1 Skew Feed

13.3.3.1.1 Last Paper Skew (manually fed postcard) 0002-1431

<Note>

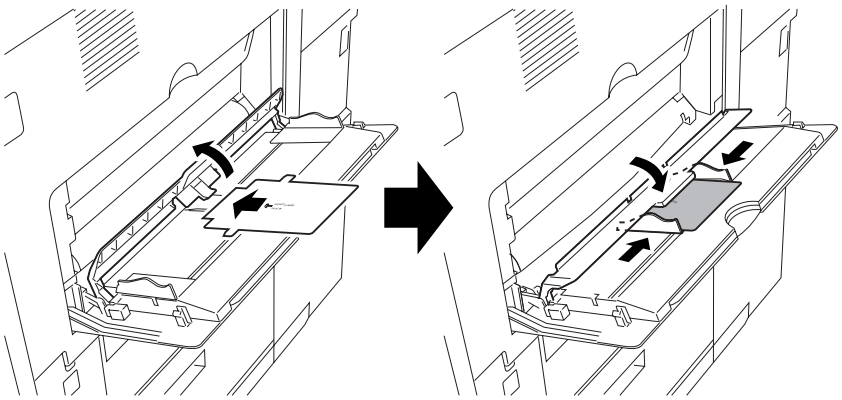
This symptom tends to occur on last sheets of paper.

<Cause>

The last of a group of postcards tends to be subject to friction by the separation pad, at times causing the side guide plate to fail to move it along a straight path.

<Field Remedy>

Advise the user to use an MP sheet (FC5-6560; available as a separate remedy) when using postcards.



F-13-19

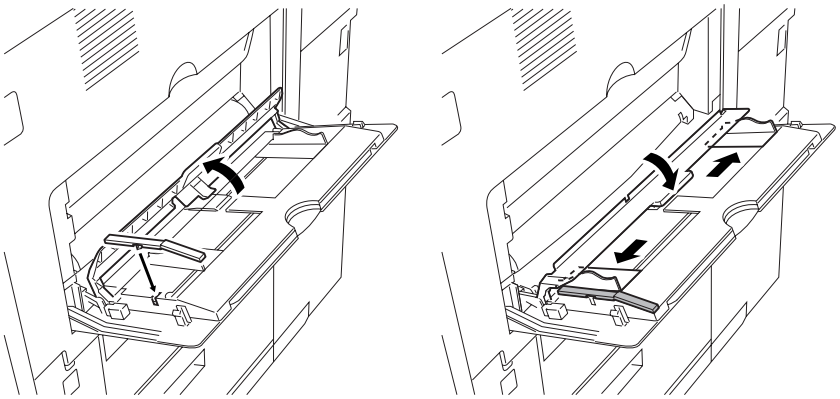
13.3.3.1.2 Skew in Manually Fed Paper 0002-1432

<Cause>

This symptom tends to occur when the side guide plate is not set to the correct position of the size of paper in use.

<Field Remedy>

If the user is not using paper larger than A3 (i.e., 305x457, 320x450), attach an MP side guide stopper (FC5-0530; available as a separate remedy) to the machine.



F-13-20

13.3.3.2 Fold/Rip

13.3.3.2.1 Peeling of a Manually Fed Label Sheet 0002-7030

<Cause>

The glue used on the label sheet stuck to a metal area of the manual feed separation pad.

<Field Remedy>

Clean the metal area of the manual feed separation pad to remove the glue.

13.3.4 Malfunction

13.3.4.1 Noise

13.3.4.1.1 Cassette Feeding Unit-Y1: Abnormal noise from drive unit 0005-3245

[Inspected by Canon Inc.]

< Field Remedy >

As a result of inspection, abnormal noise occurred somewhere between the gear of the cassette paper pick-up motor and the driving gear (80T/16T gear) inside the drive unit because the attachment position of the motor was not proper (1 case).

Make sure the motor is in proper alignment with the drive gear when this symptom occurs.

Drive Ass'y: FM2-0147

13.3.4.1.2 Noise at Time of Pickup from the Cassette 0002-1433

<Cause>

The symptom (i.e., noise) occurs when multiple sheets are moved to the feed roller or the separation roller, causing the separation roller assembly to vibrate.

<Field Remedy>

Use a sponge retard roller (FB5-0873; available as a separate remedy).

13.3.5 Jam (Main Unit)

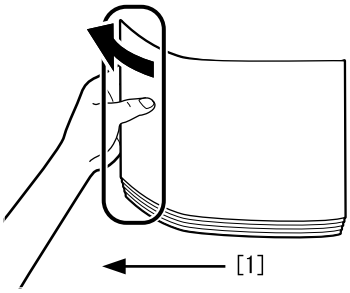
13.3.5.1 Jam Immediately After Pickup (heavy paper, envelope, postcard) 0002-6207

<Cause>

The heavy paper, envelope, or postcard was not given curling before it was set in the manual feed tray.

<Field Remedy>

Give heavy paper, envelope, or postcard curling of about 3 mm before placing it in the manual feed tray as shown.



F-13-21

[1] Direction of paper feed

Memo:

The remedy herein is indicated in the User's Manual for use by the user. If a similar jam recurs, advise the user to refer to the User's Manual (i.e., to curl the edge of the paper).

13.3.5.2 0D91 JAM CODE: Occurred at all cassettes upon installation 0005-1582

[Inspected by Canon Inc.]

< Field Remedy >

As a result of inspection, it was found that this symptom occurred because the spring of the pre-registration sensor (PS9) flag was deviated from the hook portion (1 case).

Generally speaking, the 0D91 jam code can be displayed when the paper size is wrongly designated (paper in shorter length than designated is delivered).

If the paper jam occurs at all the cassettes, check whether there are any abnormalities on the sensor (PS9), the sensor flag and its spring.

13.3.5.3 Pickup Faults (pickup from the side paper deck) 0002-1434

<Note>

This symptom tends to occur when the deck adjuster is not correctly adjusted at time of installation.

<Cause>

The point of paper passage from the paper deck to the machine is too low, adversely affecting the latching to the machine; the resulting low pressure of the pull-off roller causes pickup faults.

<Field Remedy>

Turn the adjuster found on the bottom of the paper deck to adjust the height of the deck.

<Remarks>

If the adjuster is not adjusted correctly at time of installation, the following symptoms can also occur in addition to jams:

1. the release lever movement tends to be heavy.
2. the door tends to close more tightly at the rear than at the front.
3. the deck may not easily settle in place.

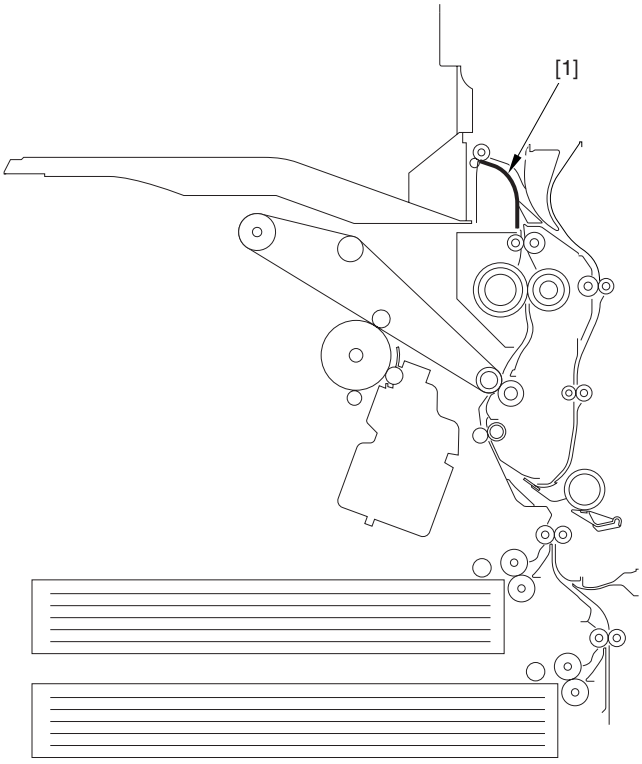
13.3.5.4 Delivery Delay Jam (label sheet) 0002-7023

<Cause>

The glue used on the delivered label sheet stuck on the rib found where the feed path curves immediately in front of the delivery roller. The glue used on the label sheet that follows joined the glue left by the preceding sheet, thus turning into a delivery delay jam.

<Field Remedy>

Clean the delivery path [1] to remove the glue left behind the label sheets.



F-13-22

13.3.5.5 Pickup Stationary Jam 0003-5010

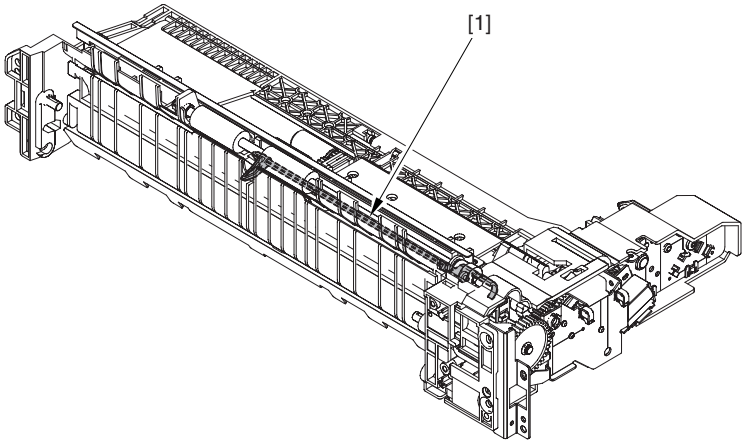
<Cause>

Paper moving past leaves lint behind it, which tends to collect around the sensor flag. The build-up of lint soon starts to hinder the movement of the sensor flag, at times preventing it from returning to its initial position.

<Field Remedy>

1) Remove the pickup unit in question.

2) Clean the area around the sensor flag [1] using a blower brush or the like to remove the paper lint.



F-13-23

3) Put the pickup unit back into place.

13.4 Outline of Electrical Components

13.4.1 Clutch/Solenoid

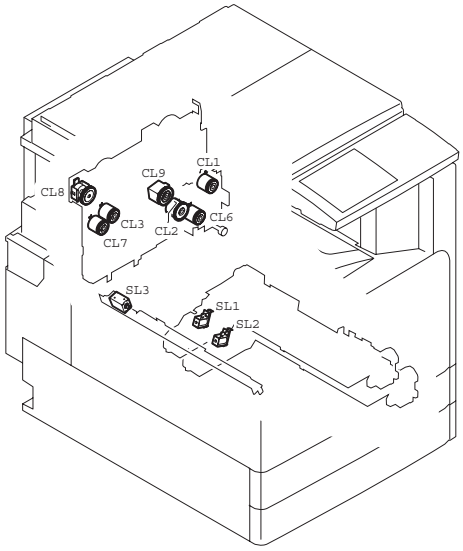
13.4.1.1 Reader Unit 0001-9611

The reader unit does not have clutches or solenoids.

13.4.1.2 Printer Unit 0001-1805

T-13-5

Notation	Name	Description
CL1	manual feed pickup clutch	drives the manual feed pickup roller
CL2	registration clutch	drives the registration roller
CL3	developing sleeve clutch	drives the developing sleeve
CL6	duplex feed clutch	drives the duplexing roller 1/2
CL7	toner supply clutch	drives the toner feedscrew (Bk)
CL8	ITB cleaning clutch	drives the ITB cleaning blade
CL9	secondary transfer clutch	moves the secondary transfer roller in contact/away
SL1	cassette 1 pickup solenoid	drives the cassette 1 pickup roller
SL2	cassette 2 pickup solenoid	drives the cassette 2 pickup roller
SL3	ATR shutter solenoid	drives the ATR shutter



F-13-24

13.4.1.3 Clutch/Solenoid Table (portable) 0003-6400

<Reader Unit>

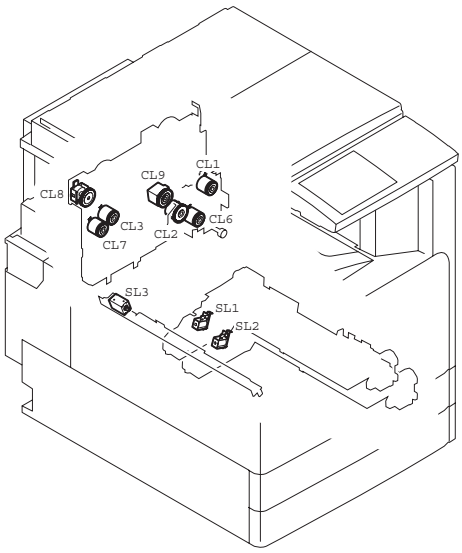
The reader unit does not have clutches or solenoids.

<Printer Unit>

T-13-6

Ref.	Name		Description		
	Parts number	I/O		PART-CHK	connector number
CL1	manual feed pickup clutch		drives the manual feed pickup roller		
	FM2-0197	P004-6	1:ON	CL>7	J320
CL2	registration cultch		drives the registration roller		
	FH6-5075	P004-5	1:ON	CL>6	J320
CL3	developing sleeve clutch		drives the developing sleeve		
	FH6-5076	P004-2	1:ON	CL>3	J311
CL6	duplex feed clutch		drives the duplexing roller 1/2		
	FM2-0197	P004-4	1:ON	CL>5	J320

Ref.	Name		Description		
	Parts number	I/O		PART-CHK	connector number
CL7	toner supply clutch		drives the toner feedscrew (Bk)		
	FH6-5005	P004-0	1:ON	CL>1	J311
CL8	ITB cleaning clutch		drives the ITB cleaning blade		
	FM2-0197	P004-1	1:ON	CL>2	J311
CL9	secondary transfer clutch		moves the secondary transfer roller in contact/away		
	RH7-5168-000	P004-3	1:ON	CL>4	J320
SL1	cassette 1 pickup solenoid		drives the cassette 1 pickup roller		
	FH6-5055	P005-7	1:ON	SL>1	J322
SL2	cassette 2 pickup solenoid		drives the cassette 2 pickup roller		
	FH6-5055	P005-6	1:ON	SL>2	J322
SL3	ATR shutter solenoid		drives the ATR shutter		
	FH6-5078			SL>3	J307



F-13-25

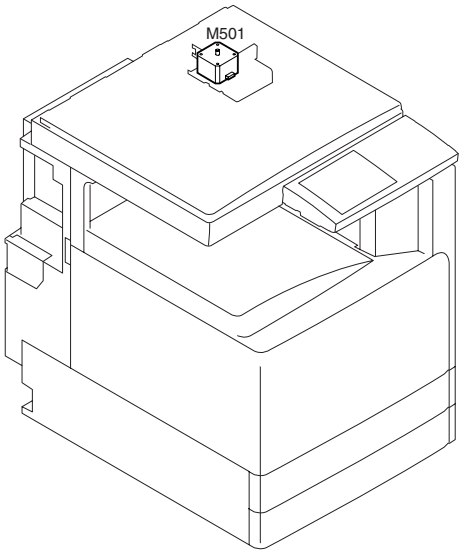
13.4.2 Motor

13.4.2.1 Reader Unit

0001-9612

T-13-7

Notation	Name	Description
M501	reader motor	drives the carriage



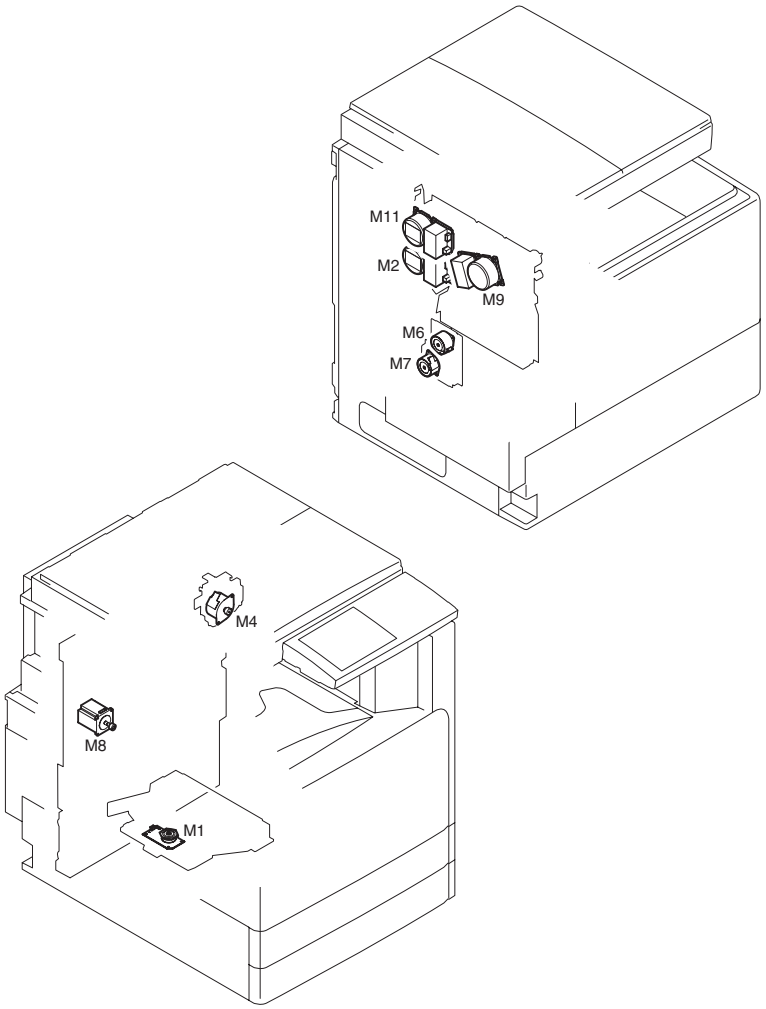
F-13-26

13.4.2.2 Printer unit

0001-7801

T-13-8

Notation	Name	Description
M1	polygon motor	drives the laser scanner
M2	main motor	drives major printer unit components
M4	delivery motor 1	drives the delivery roller
M6	cassette 1 pickup motor	drives the pickup unit 1
M7	cassette 2 pickup motor	drives the pickup unit 2
M8	rotary motor	drives the rotary
M9	drum motor	drives the drum
M11	fixing motor	drives the fixing assembly



F-13-27

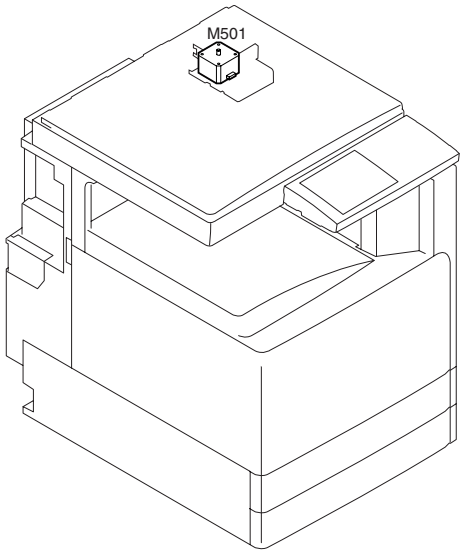
13.4.2.3 Motor Table (portable)

0003-6403

<Reader Unit>

T-13-9

Ref.	Name		Description	
	Parts number	I/O		connector number
M501	reader motor		drives the carriage	
	FH5-1028	P002-2	1: forward 0: reverse	J505



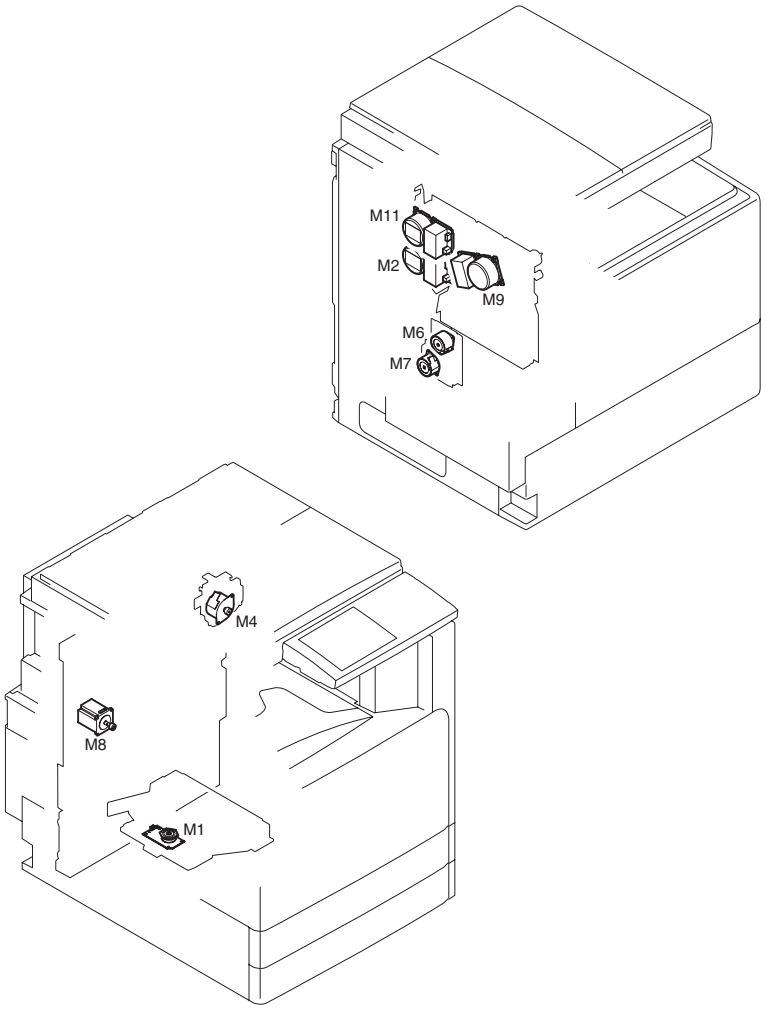
F-13-28

<Printer Unit>

T-13-10

Ref.	Name		Description			
	Parts number	**I/O**	**PART-CHK**	**connector number**	**E code**	
M1	polygon motor		drives the laser scanner			
	FM2-0041(the scanner Unit)			MTR>1	J328	
M2	main motor		drives major printer unit components			
	FH5-1001			MTR>7	J311/312	E010
M4	delivery motor 1		drives the delivery roller			
	FH6-1997			MTR>5	J314	
M6	cassette 1 pickup motor		drives the pickup unit 1			
	FH6-1972			MTR>3	J321	
M7	cassette 2 pickup motor		drives the pickup unit 2			
	FH6-1972			MTR>4	J321	
M8	rotary motor		drives the rotary			
	FM2-0080			MTR>2	J313	

Ref.	Name		Description			
	Parts number	I/O		PART-CHK	connector number	E code
M9	drum motor		drives the drum			
	FH5-1004			MTR>6	J311/312	E012
M11	fixing motor		drives the fixing assembly			
	FH5-1006	P017-0 (fixing motor locked)	1:ON	MTR>8	J315/316	E014
		P017-1 (fixing speed switch-over)	1:half-speed			
		P017-2 (fixing motor ON)	1:ON			



F-13-29

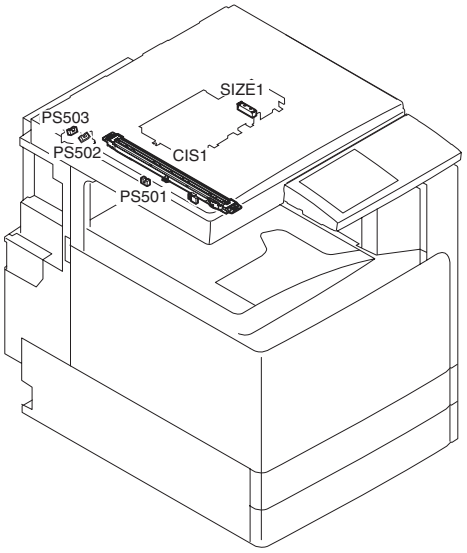
13.4.3 Sensor

13.4.3.1 Reader Unit

0001-9614

T-13-11

Notation	Name	Description
PS501	CIS HP sensor	detects CIS home position
PS502	copyboard cover open/closed sensor (front)	detects the state (open/closed) of the copyboard cover
PS503	copyboard cover open/closed sensor (rear)	detects the state (open/closed) of the copyboard cover
CIS1	CIS	reads originals
SIZE1	original size sensor	identifies the size of originals



F-13-30

13.4.3.2 Printer Unit

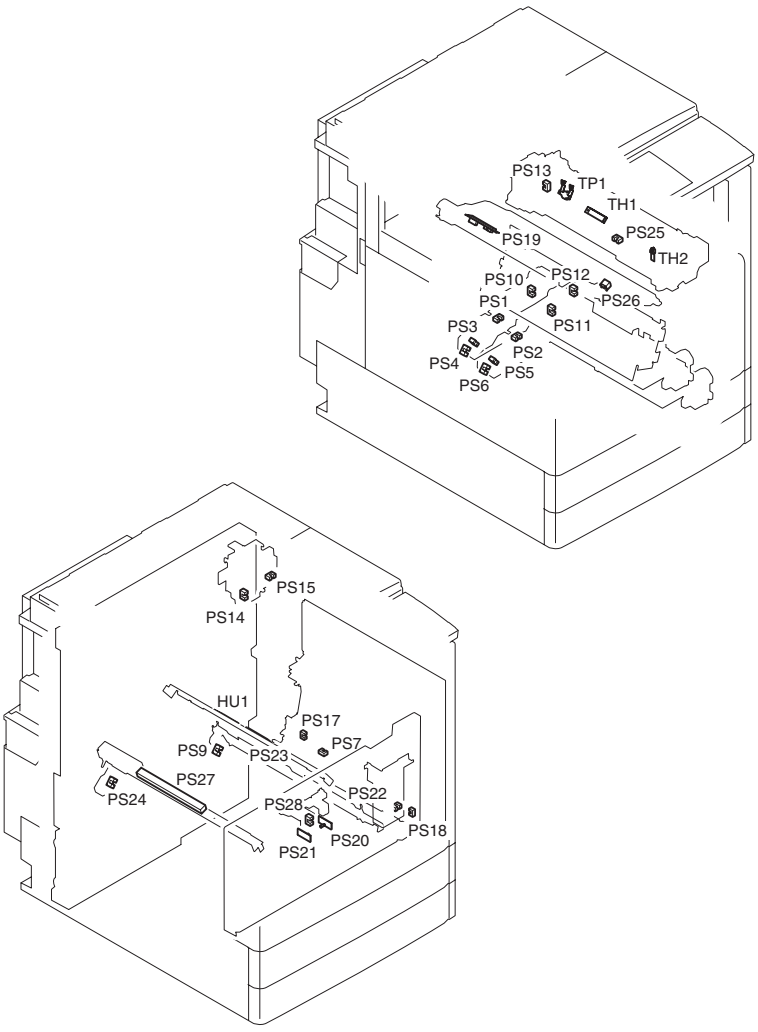
0001-1812

T-13-12

Notation	Name	Description
PS1	cassette 1 paper sensor	detects the presence/absence of paper in cassette 1

Notation	Name	Description
PS2	cassette 2 paper sensor	detects the presence/absence of paper in cassette 2
PS3	cassette 1 paper level A senor	detects paper level A in cassette 1
PS4	cassette 1 paper level B sensor	detects paper level B in cassette 1
PS5	cassette 2 paper level A sensor	detects paper level A in cassette 2
PS6	cassette 2 paper level B sensor	detects paper level B in cassette 2
PS7	manual feed tray paper sensor	detects the presence/absence of paper in the manual feed tray
PS9	pre-registration sensor	detects paper for pre-registration
PS10	cassette 1 retry sensor	detects retry for cassette 1
PS11	cassette 2 retry sensor	detects retry for cassette 2
PS12	pickup cover sensor	detects the state (open/closed) of the pickup cover
PS13	fixing outlet sensor	detects paper at the fixing outlet
PS14	No. 1 delivery sensor	detects delivery
PS15	No. 1 delivery full sensor	detects the state (full) of delivery
PS17	duplex feed sensor	detects movement for duplexing
PS18	feed cover sensor	detects the state of the feed cover
PS19	ITB HP sensor	detects ITB home position
PS20	waste toner sensor (light-emitting)	detects waste toner (light-emitting)
PS21	waste toner sensor (light-receiving)	detects waste toner (light-receiving)
PS22	front cover sensor	detects the state (open/closed) of the front cover
PS23	patch image read sensor	detect the density of toner image on the drum
PS24	rotary sensor	detects rotary home position
PS25	fixing inlet sensor	detects paper at the fixing inlet
PS26	transparency sensor	identifies transparencies
PS27	ATR sensor	detects the density of toner on the developing cylinder
PS28	toner cartridge access cover sensor	detects the state (open/closed) of the toner cartridge access cover

Notation	Name	Description
HU1	environment sensor	detects the humidity inside the machine
TH1	fixing main thermistor	detects the temperature of the fixing roller (middle)
TH2	fixing sub thermistor	detects the temperature of the fixing roller (ends)
TR1	thermal switch	cuts off the power line to the heater in response to overheating



F-13-31

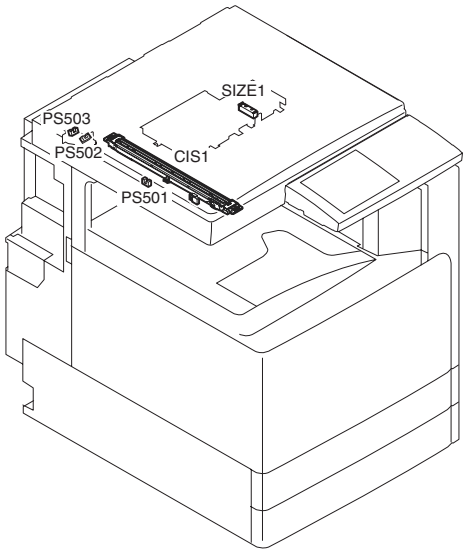
13.4.3.3 Sensor Table (portable)

0003-6406

<Reader Unit>

T-13-13

Ref.	Name	Description
	Parts number	**connector number**
PS501	CIS HP sensor	detects CIS home position
	FH7-7462	J506
PS502	copyboard cover open/closed sensor (front)	detects the state (open/closed) of the copyboard cover
	FH7-7312	J506
PS503	copyboard cover open/closed sensor (rear)	detects the state (open/closed) of the copyboard cover
	FH7-7312	J506
CIS1	CIS	reads originals
	FM2-1563	
SIZE1	original size sensor	identifies the size of originals
	FH7-7569	J511



F-13-32

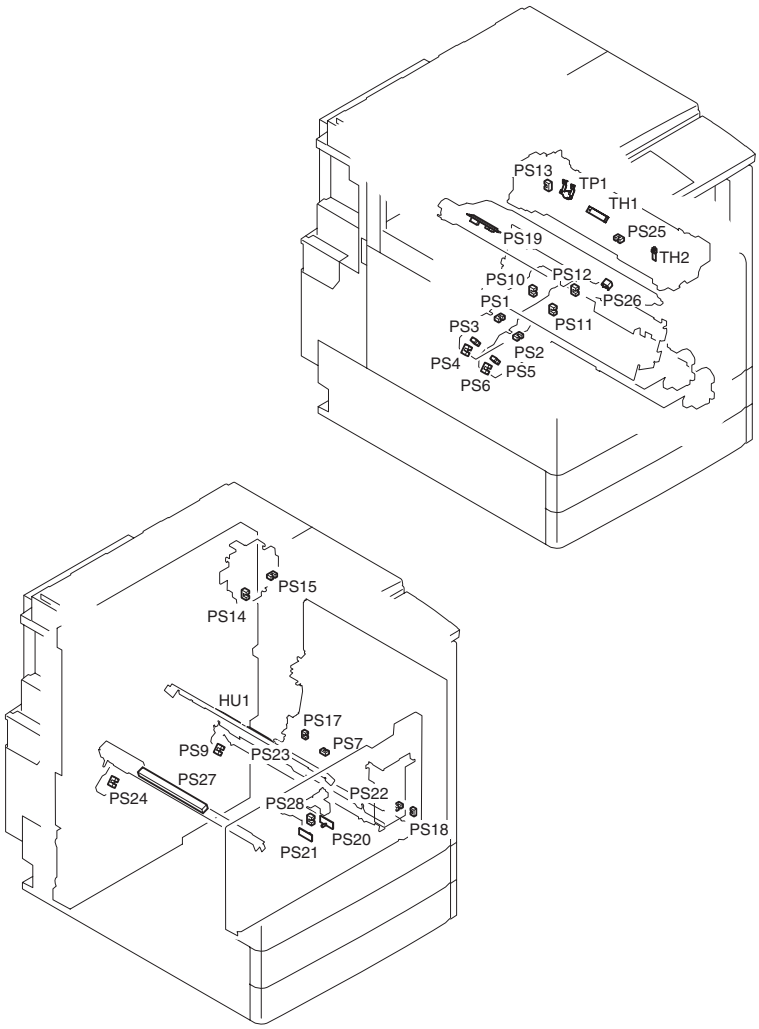
<Printer Unit>

T-13-14

Ref.	Name		Description		
	Parts number	I/O		connector number	JAM/E Code
PS1	cassette 1 paper sensor		detects the presence/absence of paper in cassette 1		
	FH7-7312	P001-7	1 paper absent	J322	
PS2	cassette 2 paper sensor		detects the presence/absence of paper in cassette 2		
	FH7-7312	P001-3	1 paper absent	J322	
PS3	cassette 1 paper level A senor		detects paper level A in cassette 1		
	FH7-7312	P001-6	1 about half or less	J322	
PS4	cassette 1 paper level B sensor		detects paper level B in cassette 1		
	FH7-7312	P001-5	1 about 50 sheets or less	J322	
PS5	cassette 2 paper level A sensor		detects paper level A in cassette 2		
	FH7-7312	P001-2	1 about half or less	J322	
PS6	cassette 2 paper level B sensor		detects paper level B in cassette 2		
	FH7-7312	P001-1	1 about 50 sheets or less	J322	
PS7	manual feed tray paper sensor		detects the presence/absence of paper in the manual feed tray		
	FH7-7312	P002-2	0 paper present	J317	
PS9	pre-registration sensor		detects paper for pre-registration		
	FH7-7312	P002-7	1 paper present	J320	xx05
PS10	cassette 1 retry sensor		detects retry for cassette 1		
	FH7-7312	P001-4	1 detected	J322	xx01
PS11	cassette 2 retry sensor		detects retry for cassette 2		
	FH7-7312	P001-0	1 detected	J322	xx02
PS12	pickup cover sensor		detects the state (open/closed) of the pickup cover		
	FH7-7312			J321	
PS13	fixing outlet sensor		detects paper at the fixing outlet		
	FH7-7312	P002-6	1 paper present	J316	xx07
PS14	No. 1 delivery sensor		detects delivery		
	FH7-7312	P002-5	1 paper present	J314	xx08
PS15	No. 1 delivery full sensor		detects the state (full) of delivery		
	FH7-7312	P002-4	0 paper present	J314	

Ref.	Name		Description		
	Parts number	I/O		connector number	JAM/E Code
PS17	duplex feed sensor		detects movement for duplexing		
	FH7-7312	P002-3	1 paper present	J317	xx0D
PS18	feed cover sensor		detects the state of the feed cover		
	FH7-7312			J308	
PS19	ITB HP sensor		detects ITB home position		
	FH7-7630			J320	
PS20	waste toner sensor (light-emitting)		detects waste toner (light-emitting)		
	FG3-2374			J308	
PS21	waste toner sensor (light-receiving)		detects waste toner (light-receiving)		
	FG3-2375			J308	
PS22	front cover sensor		detects the state (open/closed) of the front cover		
	FH7-7312			J308	
PS23	patch image read sensor		detect the density of toner image on the drum		
	FH7-7629			J310	
PS24	rotary sensor		detects rotary home position		
	FH7-7312			J311	E021
PS25	fixing inlet sensor		detects paper at the fixing inlet		
	FH7-7312			J316	xx06 (residual paper only)
PS26	transparency sensor		identifies transparencies		
	RH7-7129			J320	
PS27	ATR sensor		detects the density of toner on the developing cylinder		
	FM2-0096			J307	
PS28	toner cartridge access cover sensor		detects the state (open/closed) of the toner cartridge access cover		
	FH7-7312			J308	

Ref.	Name		Description		
	Parts number	I/O		connector number	JAM/E Code
HU1	environment sensor		detects the humidity inside the machine		
	FH7-7620			J310	
TH1	fixing main thermistor		detects the temperature of the fixing roller (middle)		
	FH7-7631			J316	
TH2	fixing sub thermistor		detects the temperature of the fixing roller (ends)		
	FH7-7632			J316	
TR1	thermal switch		cuts off the power line to the heater in response to overheating		
	FH7-6367				



F-13-33

13.4.4 Lamps, Heaters, and Others

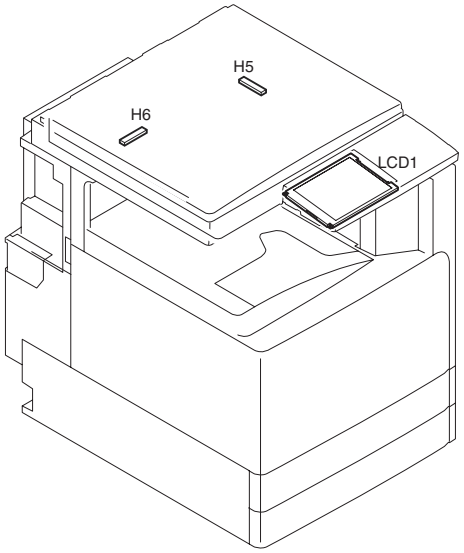
13.4.4.1 Reader Unit

0001-9616

T-13-15

Name	Notation	Name	Description
Heater	H5	anti-condensation heater (left)	prevents condensation on the copyboard glass
	H6	anti-condensation heater (right)	prevents condensation on the reading glass

Name	Notation	Name	Description
LCD	LCD1	LCD panel	provides visual indications on the control panel (touch panel)



F-13-34

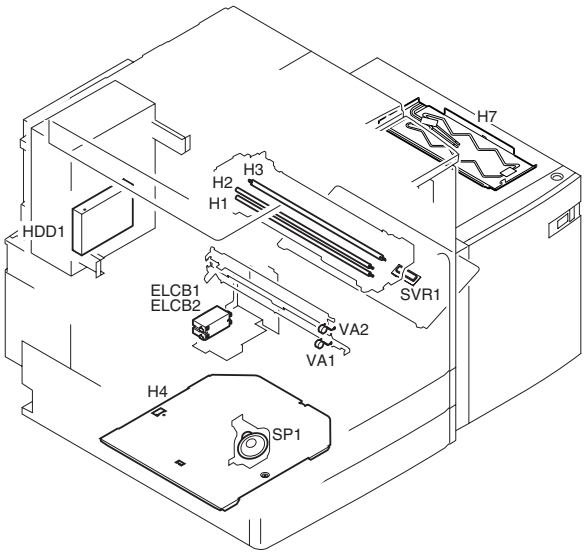
13.4.4.2 Printer Unit

0001-1820

T-13-16

Notation	Name	Description
H1	fixing main heater	serves the main heater (controls the temperature of the fixing roller)
H2	fixing sub heater	serves the sub heater (controls the temperature of the fixing roller)
H3	fixing heat retention heater	retains heat (keeps the pressure roller heated)
H4	cassette heater	prevents absorption of moisture by paper inside the cassette
H7	deck heater	prevents absorption of moisture by paper inside the side deck
ELCB1	leakage breaker (100 V)	protects against leakage
ELCB2	leakage breaker (230 V)	protects against leakage

Notation	Name	Description
VA1	varistor	protects against a voltage surge
VA2	varistor	protects against a voltage surge
HDD1	hard disk	holds programs and images
SVR1	paper width detecting volume	detects the width of paper from the manual feed tray
SP1	speaker	provides audio indication (fax unit)



F-13-35

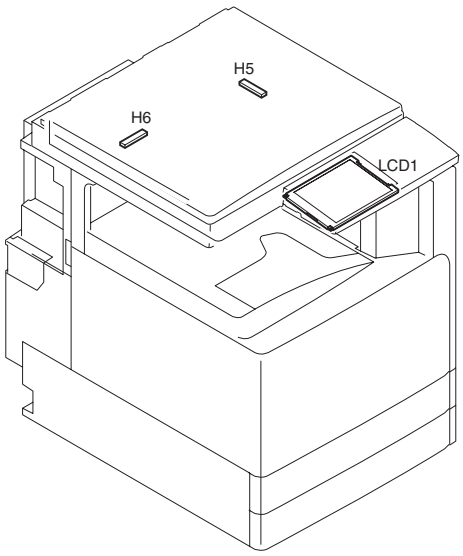
13.4.4.3 Lamp. Heaters, and Others Table (portable) 0003-6409

<Reader Unit>

T-13-17

Ref.	Name	Parts number	Description
H5	anti-condensation heater (left)	NPN	prevents condensation on the copyboard glass
H6	anti-condensation heater (right)	NPN	prevents condensation on the reading glass

Ref.	Name	Parts number	Description
LCD1	LCD panel	FL2-1148	provides visual indications on the control panel (touch panel)



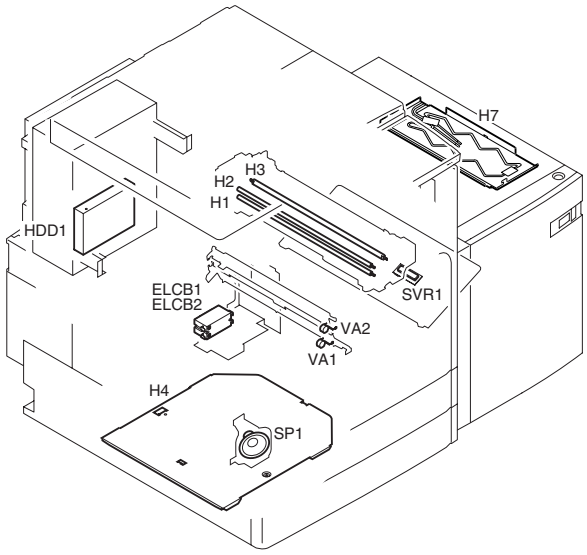
F-13-36

<Printer Unit>

T-13-18

Ref.	Name	Description	
	Parts number	connector number	E Code
H1	fixing main heater	serves the main heater (controls the temperature of the fixing roller)	
	FG3-2787 (100V) FG3-2790 (120V) FG3-2791 (240V)		
H2	fixing sub heater	serves the sub heater (controls the temperature of the fixing roller)	
	FG3-2787 (100V) FG3-2790 (120V) FG3-2791 (240V)		

Ref.	Name	Description	
	Parts number	connector number	E Code
H3	fixing heat retention heater	retains heat (keeps the pressure roller heated)	
	FH7-4768-000		
H4	cassette heater	prevents absorption of moisture by paper inside the cassette	
	NPN		
H7	deck heater	prevents absorption of moisture by paper inside the side deck	
	NPN		
ELCB 1	leakage breaker (100V)	protects against leakage	
	FH7-7624		
ELCB 2	leakage breaker (230V)	protects against leakage	
	FH7-7623		
VA1,2	varistor	protects against a voltage surge	
	FF3-4529		
HDD1	hard disk	holds programs and images	
	WM2-5188	J1110/1111	E315
SVR1	paper width detecting volume	detects the width of paper from the manual feed tray	
	FG3-2800	J317	
SP1	speaker	provides audio indication (fax unit)	
	FH5-3218		



F-13-37

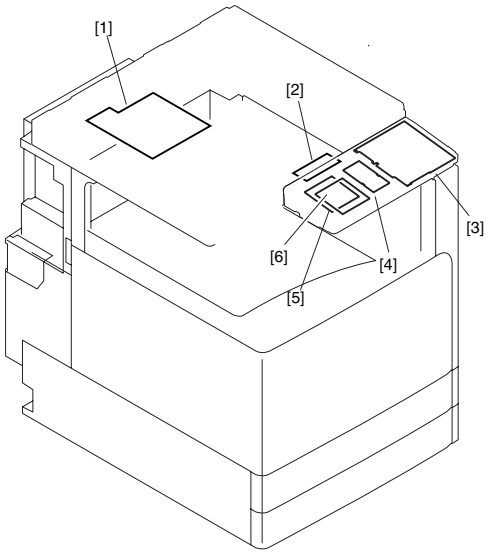
13.4.5 PCBs

13.4.5.1 Reader Unit

0001-9617

T-13-19

Ref.	Name	Description
[1]	reader controller PCB	controls the reader unit/ADF
[2]	CIS inverter PCB	controls the scanning lamp
[3]	PANEL-SW-CL PCB	communicates the image data detected by the reader unit to the printer unit
[4]	control panel inerter PCB	controls the activation of the LCD backlight
[5]	control panel CPU PCB	controls the control panel
[6]	control panel KEY PCB	controls the inputs from the keypad



F-13-38

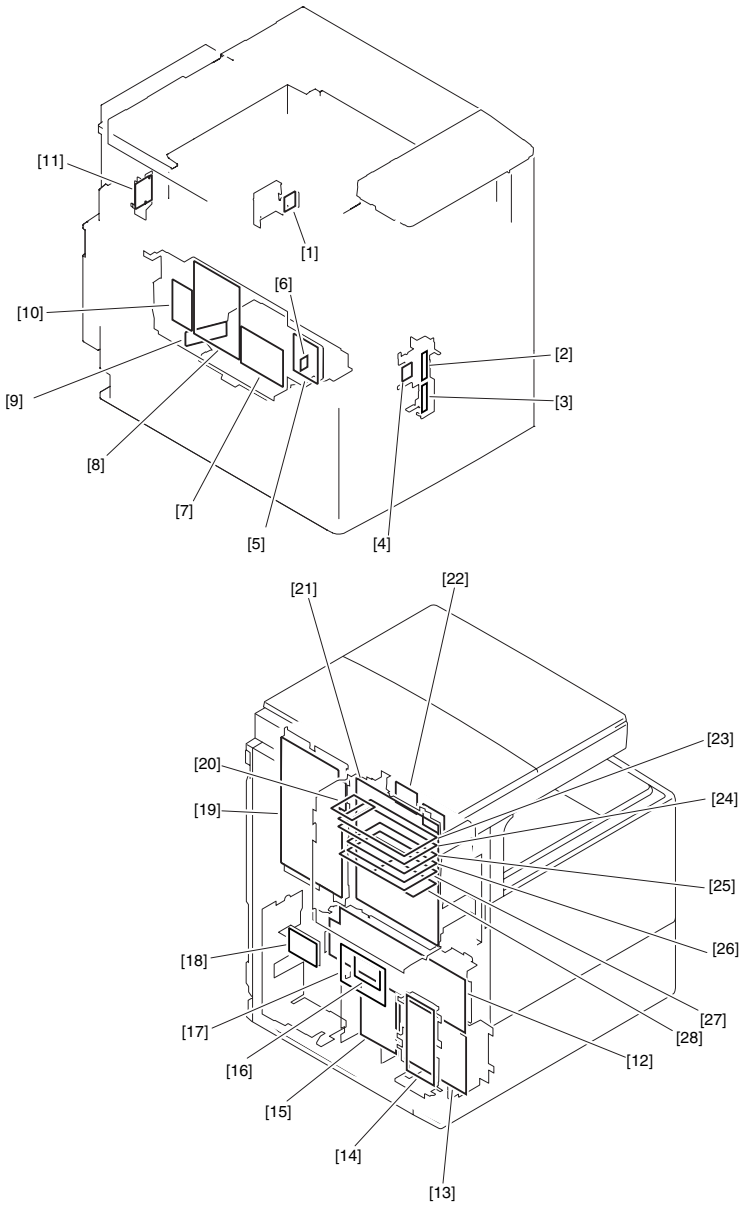
13.4.5.2 Printer Unit

0003-7551

T-13-20

Ref.	Name	Description
[1]	arrestor PCB	protects against over-voltage
[2]	cassette 1 size detection PCB	detects the size setting of cassette 1
[3]	cassette 2 size PCB	detects the size setting of cassette 2
[4]	cassette size detection relay PCB	relays the detected size setting of the cassette
[5]	pseudo CIP PCB	generates pseudo CI signals
[6]	BD PCB	generates the BD signal
[7]	NCU PCB	controls line switching
[8]	fax board PCB	controls the fax unit
[9]	laser driver PCB	controls the laser unit
[10]	G3F AX power supply PCB	serves as the power supply for G3FAX
[11]	modular PCB	serves as an interface
[12]	high-voltage power supply PCB	serves as a high-voltage power supply
[13]	printer power supply PCB	serves as the printer power supply
[14]	controller power supply PCB	serves as the controller power supply
[15]	AC driver PCB	drives AC loads

Ref.	Name	Description
[16]	high-voltage sub PCB	serves as a high-voltage sub power supply
[17]	accessories power supply PCB	serves as the power supply for accessories
[18]	environment switch PCB	serves as the heater power switch
[19]	DC controller PCB	controls the printer unit/accessories
[20]	SRAM PCB	retains service mode settings/HDD control information
[21]	main controller PCB (main)	processes image data for output to the printer unit
[22]	ECO-ID PCB	assists image processing
[23]	expansion bus PCB	serves the color LCD controller, card reader interface, etc.
[24]	main controller PCB (sub)	converts images from the reader unit
[25]	resolution conversion board	converts resolution
[26]	USB board/TokenRing board	serves as an USB/TokenRing interface
[27]	UFR board	executes image rendering
[28]	LAN board	permits connection to a network



F-13-39

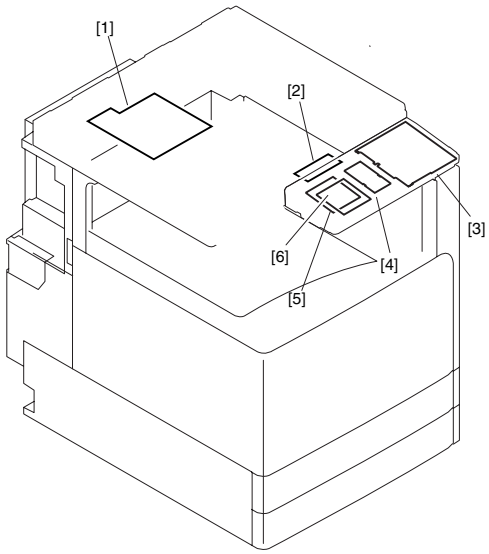
13.4.5.3 PCBs Table (portable) 0003-6410

<Reader Unit>

T-13-21

Ref.	Name	Parts number	Description
[1]	reader controller PCB	FG3-3159	controls the reader unit/ADF
[2]	CIS inverter PCB	FH3-7215	controls the scanning lamp

Ref.	Name	Parts number	Description
[3]	PANEL-SW-CL PCB	FG6-8938	communicates the image data detected by the reader unit to the printer unit
[4]	control panel inerter PCB	FG3-2834	controls the activation of the LCD backlight
[5]	control panel CPU PCB	FG6-8939	controls the control panel
[6]	control panel KEY PCB	FH6-0834	controls the inputs from the keypad



F-13-40

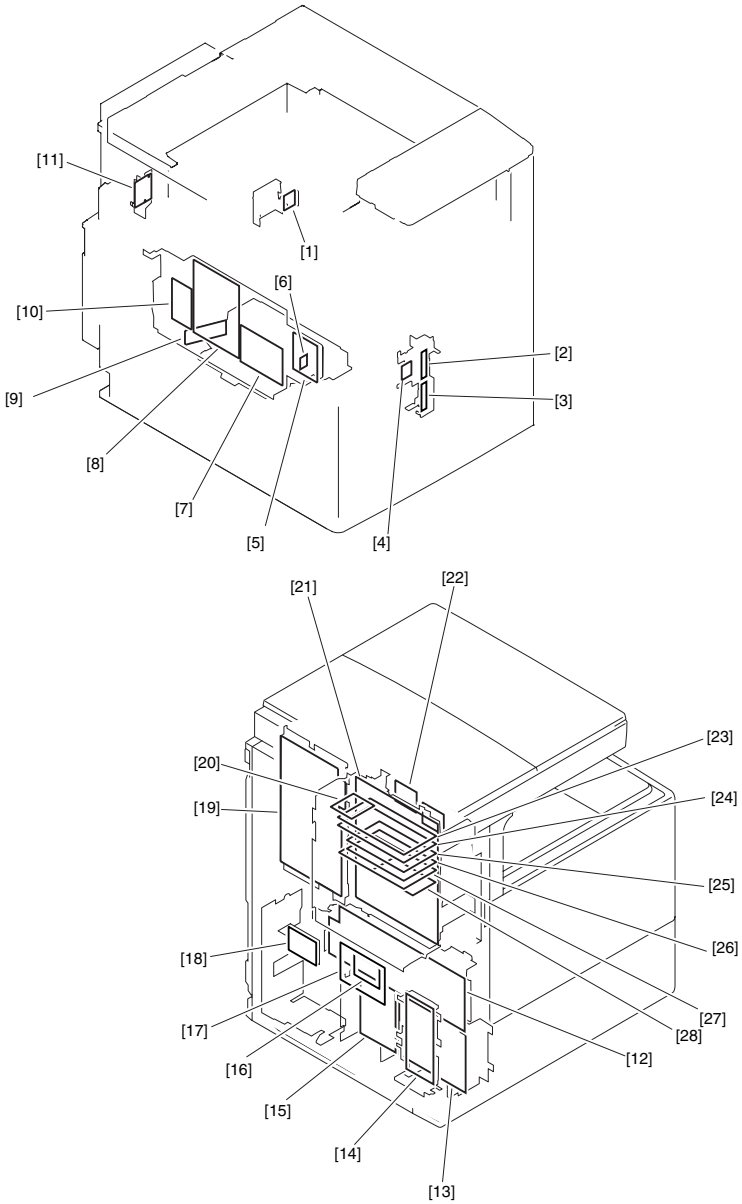
<Printer Unit>

T-13-22

Ref.	Name	Parts number	Description
[1]	arrestor PCB	FG3-2851	protects against over-voltage
[2]	cassette 1 size detection PCB	FG3-2798	detects the size setting of cassette 1
[3]	cassette 2 size PCB	FG3-2798	detects the size setting of cassette 2
[4]	cassette size detection relay PCB	NPN	relays the detected size setting of the cassette
[5]	pseudo CIP PCB	FM2-0103	generates pseudo CI signals

Ref.	Name	Parts number	Description
[6]	BD PCB	FM2-0041	generates the BD signal
[7]	NCU PCB	HG5-1866	controls line switching
[8]	fax board PCB	FG3-1587	controls the fax unit
[9]	laser driver PCB	FM2-0041	controls the laser unit
[10]	G3F AX power supply PCB	FG3-2801	serves as the power supply for G3FAX
[11]	modular PCB	FG3-3464	serves as an interface
[12]	high-voltage power supply PCB	FG3-2796	serves as a high-voltage power supply
[13]	printer power supply PCB	FM2-0190 (100/120V) FM2-0216 (230V)	serves as the printer power supply
[14]	controller power supply PCB	FG3-2792	serves as the controller power supply
[15]	AC driver PCB	FM2-0190 (100/120V) FM2-0216 (230V)	drives AC loads
[16]	high-voltage sub PCB	FG3-3584	serves as a high-voltage sub power supply
[17]	accessories power supply PCB	FH3-2656 (100/120V) FH3-2657 (230V)	serves as the power supply for accessories
[18]	environment switch PCB	FG3-2797	serves as the heater power switch
[19]	DC controller PCB	FG3-2795	controls the printer unit/accessories
[20]	SRAM PCB	FG3-3225	retains service mode settings/HDD control information
[21]	main controller PCB (main)	FG3-3221	processes image data for output to the printer unit
[22]	ECO-ID PCB	NPN	assists image processing
[23]	expansion bus PCB	FM2-0210	serves the color LCD controller, card reader interface, etc.
[24]	main controller PCB (sub)	FM2-0209	converts images from the reader unit
[25]	resolution conversion board	FG3-2728	converts resolution

Ref.	Name	Parts number	Description
[26]	USB board/TokenRing board	FG3-3226	serves as an USB/TokenRing interface
	TokenRing board	FG3-3223	
[27]	UFR board	FG3-3223	executes image rendering
[28]	LAN board	FG3-3135	permits connection to a network



F-13-41

13.4.6 Variable Resistors (VR), Light-Emitting Diodes (LED), and Check Pins by PCB

13.4.6.1 Variable Resistors (VR), Light-Emiting Diodes (LED), and Check Pins by PCB

0001-1848

Of the variable resistors (VR), light-emitting diodes (LED), and check pins used in the machine those needed in the field are discussed.

⚠

- Although normal, some LEDs may emit dim light when they remain off becouse of leakege current.
- Keep the following symbols in mind;

⊘---VR that may be used in the field.

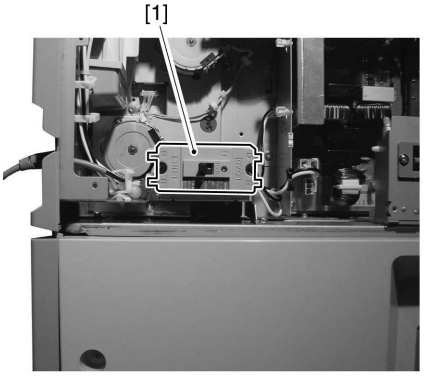
⊘---VR that must not be used in the field.

13.4.6.2 Points to Note about the Leakage Breaker

0003-1806

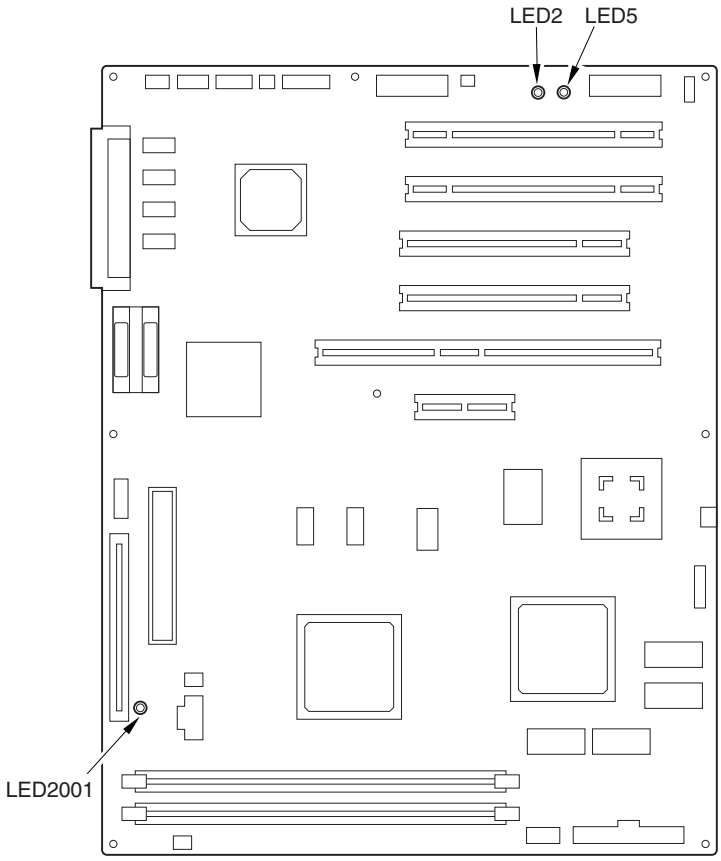
⚠Points to Note When Checking the Output of PCBs

While the machine is supplied with power, an AC voltage is applied to the terminlas of the leaksge breaker [1].
Be sure not to touch it inadvertently during a check.



F-13-42

13.4.6.3 Main Controller PCB (main) 0001-1849



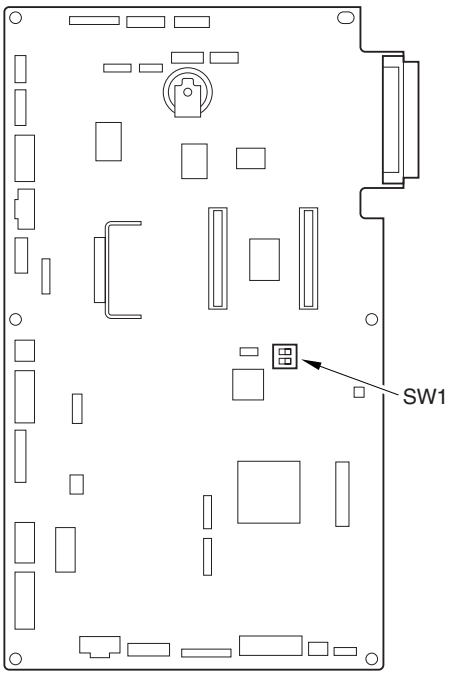
F-13-43

T-13-23

Notation	Description
LED2001	in operation
LED2	+3.3V (all-night) being supplied
LED5	+3.3V (non-all night) being supplied

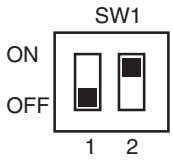
13.4.6.4 DC Controller PCB

0001-1854



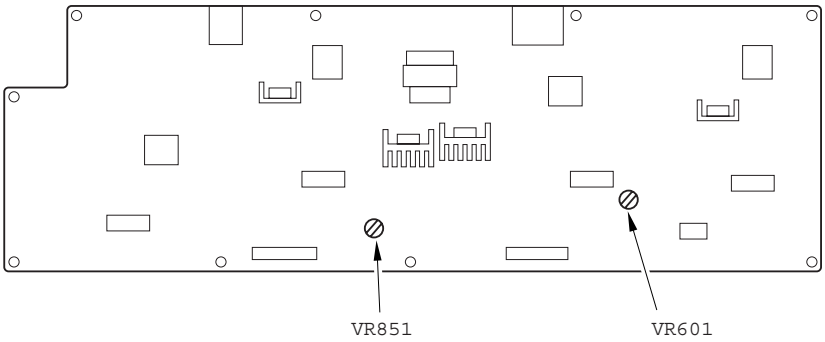
F-13-44

T-13-24

Notation	Description
SW1	for high-viltage PCB Be sure that the bits of the switch are positioned as follows: 

13.4.6.5 High-Voltage Power Supply PCB

0003-2199



F-13-45

T-13-25

Notation	Description
VR601	for factory adjustment
VR851	for factory adjustment

Chapter 14 Self Diagnosis

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14.1 Error Code Table

14.1.1 Error Code

0001-2273

The machine is equipped with a function that checks its state (particularly, sensor output); it runs a check and, upon detection of a fault, indicates an error code on its control panel.

The tables that follow show individual codes and the causes they are used for, and provide general descriptions of the codes.

A 4-digit code is a detail code, and is indicated in service mode: COPIER>DISPLAY>ERR.

T-14-1

Code	Description
E000	inadequate rise in the temperature of the fixing unit at power-on
E001	error in the fixing unit
E002	inadequate rise in the temperature of the fixing unit
E003	low temperature error associated with the fixing unit after standby
E004	protection circuit error of the fixing unit
E006	fixing unit connection error
E008	fixing roller service life error
E010	main motor error
E012	drum motor error
E013	ITB waste toner full error
E014	fixing motor error
E020	drum/developer-related error
E021	developing assembly rotary error
E026	toner absent error
E032	NE controller counter error
E045	transparency sensor error
E067	high-voltage-related error
E070	ITB HP detection error
E100	BD error
E110	laser scanner motor operation error

Code	Description
E202	CIS unit HP detection error
E225	CIS light intensity error
E227	reader unit power supply error
E240	communication error between main controller and DC controller
E243	control panel error
E248	backup memory error
E315	image data error
E351	ECO PCB error
E400	feeder communication error
E490	wrong model error
E500	finisher communication error
E503	finisher internal communication error
E505	finisher backup memory error
E514	stack delivery error/trailing edge assist motor error
E519	gear change motor error
E530	rear alignment error/front alignment error
E531	stapler error
E532	stapler relocation error
E535	swing error
E537	front alignment error/rear alignment error
E540	stack tray ascent/descent error, upper tray ascent/descent error
E542	lower tray ascent/descent error
E577	paddle error
E584	shutter error
E590	punch error
E591	punch dust sensor error
E592	punch horizontal registration sensor error
E593	punch relocation error
E5F0	saddle paper positioning error
E5F1	saddle paper folding error

Code	Description
E5F2	saddle guide error
E5F3	saddle alignment error
E5F4	saddle rear stapler error
E5F5	saddle front stapler error
E5F6	saddle butting error
E5F8	saddle connector error
E5F9	saddle switch error
E602	hard disk error
E604	image memory (SDRAM) shortage error
E674	fax board error
E677	external controller error
E710	IPC initialization error
E711	IPC function error
E712	communication error between ADF and reader unit
E717	communication error with NE controller
E719	communication error with coin vendor/card reader
E730	PDL error
E731	UFR board error
E732	reader unit communication error
E733	printer unit communication error
E740	Ethernet board error
E743	DDI communication error (reader unit side)
E744	language file/boot ROM error
E745	TokeRing board error
E746	accessories board wrong model error
E747	image processing ASIC or memory control/communication control ASIC error
E803	door close error
E804	controller fan error
E805	fan error

14.2 Error Code Details

14.2.1 E code Overview

0003-1069

The machine is equipped with a function that checks its state; it runs a check at such times as programmed, and indicates a code on its control panel upon detection of a fault. The tables that follow show codes together with detail codes and the causes associated with the codes and timing of detection. They also offer how these errors may be reset.

14.2.2 E000

0003-0340

T-14-2

Code	Detail code	Nature	Description	Remedy	Remarks
E000	inadequate rise in temperature of the fixing unit at power-on				
	0001	delay error, temperature rise, at power-on	At power-on, the output of the non-contact thermistor does not reach 50 deg C.	Use the following service mode item to reset: COPIER>FUNCTION>CLEAR>ERR.	

14.2.3 E001

0003-0341

T-14-3

Code	Detail code	Nature	Description	Remedy	Remarks
E001	error in the fixing unit				
	0001	high reading, end thermistor; hardware	The reading of the end thermistor is abnormally high (230 deg C or more) for 400 msec continuously (hardware detection).	Use the following service mode item to reset: COPIER>FUNCTION>CLEAR>ERR.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0002	high reading, non-contact thermistor; software	The reading of the non-contact thermistor is abnormally high (250 deg C or more) for 500 msec continuously.	Use the following service mode item to reset: COPIER>FUNCTION>CLEAR>ERR.	
	0003	high reading, end thermistor; software	The reading of the end thermistor is abnormally high (220 deg C or more) for 500 msec continuously.	Use the following service mode item to reset: COPIER>FUNCTION>CLEAR>ERR.	
	0004	difference in reading between end and center large	The difference in readings of the non-contact thermistor and the end thermistor is 80 deg C or more for 500 msec continuously.	Check the thermistor, and then reset using the following service mode: COPIER>FUNCTION>CLEAR>ERR.	thermistor error
	0005	foreign matter, non-contact thermistor	The difference in readings of the non-contact thermistor and the end thermistor at the end of initial rotation is 20 deg C or more for 200 msec continuously.	Check the inside of the fixing assembly for residual paper, and check the thermistor; then, reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	residual paper indicated fixing assembly/ thermistor error

Code	Detail code	Nature	Description	Remedy	Remarks
	0006	open-circuit, non-contact thermistor film	The A/D value of the film side of the non-contact thermistor is FFh for 500 msec continuously.	Check the thermistor for an open-circuit, and check for a disconnected connector; then, reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	open-circuit in thermistor/ disconnected connector
	0007	short-circuit, non-contact thermistor film	The A/D value of the film side of the non-contact thermistor is 30h or less for 500 msec continuously.	Check the thermistor, then, reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	short-circuit in thermistor
	0008	open-circuit, no-contact thermistor case side	The A/D value on the case side of the non-contact thermistor is FFh for 500 msec continuously.	Check the thermistor for an open-circuit, and check for a disconnected connector; then, reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	open-circuit in thermistor/ disconnected connector
	0009	short-circuit, non-contact thermistor case	The A/D value on the case side and the A/D value of the film side of the non-contact thermistor is 0 deg C or more for 700 msec continuously.	Check the thermistor, and reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	short-circuit in thermistor

Code	Detail code	Nature	Description	Remedy	Remarks
	0010	open-circuit, end thermistor	The A/D value on the case side of the contact thermistor is FFh for 500 msec continuously.	Check the thermistor for an open-circuit, and reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	open-circuit in disconnected/ disconnected connector
	0011	short-circuit in end thermistor	The A/D value on the case is of the contact thermistor is 39h or less for 500 msec continuously.	Check the thermistor, and reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	short-circuit in thermistor

14.2.4 E002

0003-0346

T-14-4

Code	Detail code	Nature	Description	Remedy	Remarks
E002	inadequate rise in temperature of the fixing unit				
	0002		The reading of the non-contact thermistor reaches 50 deg C but does not reach 70 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	
	0003		The reading of the non-contact thermistor reaches 70 deg C but does not reach 100 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0004		The reading of the non-contact thermistor reaches 100 dg C but does not reach 120 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	
	0005		The reading of the non-contact thermistor reaches 120 C deg but does not reach 140 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	
	0006		The reading of the non-contact thermistor reaches 140 deg C but does not reach 160 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	
	0007		The reading of the non-contact thermistor reaches 160 deg C but does not reach 180 deg C within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	
	0008		The reading of the non-contact thermistor reaches 180 deg C but does not reach the standby temperature (normally, 190 deg c) within 180 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	
	0101		The reading of the non-contact thermistor does not reach 120 deg C within 300 sec after power-on.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0102		The reading of the non-contact thermistor reaches 120 deg C but does not reach the standby temperature (normally 190 deg C) within 300 sec thereafter.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	

14.2.5 E003

0003-0350

T-14-5

Code	Detail code	Nature	Description	Remedy	Remarks
E003	low temperature error of the fixing unit after standby				
	0001		The reading of the non-contact thermistor show a low temperature error (130 deg C or less) for 3.5 sec continuously after standby.	Reset using the following service mode item: COPIER>FUNCTION>CLEAR>ERR.	

14.2.6 E004

0003-0352

T-14-6

Code	Detail code	Nature	Description	Remedy	Remarks
E004	protection circuit error of the fixing unit				
	0001		A short-circuit is detected in the triac (for 1 sec or more continuously) while the heater remains off (hardware detection) for 40 msec continuously.	Turn off and then on the main power supply.	fixing assembly triac malfunction/13V power supply error

14.2.7 E006

0003-0355

T-14-7

Code	Detail code	Nature	Description	Remedy	Remarks
E006	fixing unit connection error				
	0000		The fixing unit is identified as not being connected for 400 msec continuously (hardware detection).	Turn off and then on the main power supply.	fixing unit present/ absent signal open-circuit/ disconnected connector

14.2.8 E008

0003-0358

T-14-8

Code	Detail code	Nature	Description	Remedy	Remarks
E008	fixing roller life detection error				
	0001		The reading of the fixing roller life counter has reached its upper limit.	Turn off the main power, and replace the fixing roller or the fixing assembly; then, set '0' to the following in service mode: COPIER>COUNTER>MISC>FX-UP-RL.	

14.2.9 E010

0003-0360

T-14-9

Code	Detail code	Nature	Description	Remedy	Remarks
E010	main motor error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		After the motor start-up, a lock state is not detected within 2 sec or more.	Turn off and then on the main power.	excess load on feeding assembly
	0002		An off-lock state is detected for 500 msec or more after motor stabilization rotation.	Turn off and then on the main power.	excess load on feeding assembly

14.2.10 E012

0003-0363

T-14-10

Code	Detail code	Nature	Description	Remedy	Remarks
E012	drum motor error				
	0001		After the motor goes on, a lock state is not detected within 2 sec.	Turn off and then on the main power.	excess load on photosensitive drum
	0002		After motor stabilization rotation, a motor unlock state is detected for 500 msec or more.	Turn off and then on the main power.	excess load on photosensitive drum.

14.2.11 E013

0003-0365

T-14-11

Code	Detail code	Nature	Description	Remedy	Remarks
E013	ITB waste toner case full error				
	0000		After the ITB waste toner case full sensor goes on, a job is executed for an equivalent of 500 images (in terms of small size).	Replace the waste toner case.	

14.2.12 E014

0003-0369

T-14-12

Code	Detail code	Nature	Description	Remedy	Remarks
E014	fixing motor error				
	0001		After the motor goes on, a lock state is not detected for 2 sec or more.	Turn off and then on the main power supply.	excess load on fixing motor
	0002		After motor stabilization rotation, a motor unlock state is detected for 500 msec or more.	Turn off and then on the main power supply.	excess load on fixing motor

14.2.13 E020

0003-0380

T-14-13

Code	Detail code	Nature	Description	Remedy	Remarks
E020	drum/developer-related error				
			xx=01: Y xx=02: M xx=03: C xx=04: K xx=00: no color distinction		
	XX10		For INIT control at time of initial setting, the SGNL value is lower than 62.	Turn off and then on the main power.	damage on ATR sensor, soiling of ATR sensor window, poor developing assembly engagement, open-circuit in ATR sensor
	XX11		For INIT control at time of initial setting, the REF value is lower than 62.	Turn off and then on the main power.	damage on ATR sensor, open-circuit in ATR sensor

Code	Detail code	Nature	Description	Remedy	Remarks
	XX12		For INIT control at time of initial setting, the SGNL value is 960 or higher.	Turn off and then on the main power.	damage to ATR sensor, malfunction of shutter, open-circuit in ATR sensor
	XX13		For INIT control at time of initial setting, the REF value is 960 or higher.	Turn off and then on the main power.	damage to ATR sensor, open-circuit in ATR sensor
	XX50		For ATR control, a fault in the backup data during computation of density data based on the SGNL value and the REF value caused the REF value to go '0'.	Turn off and then on the main power.	check on backup data
	XX52		For ATR control, a fault in the backup data during computation of density data based on the SGNL value and the REF value caused the sensitivity coefficient to go '0'.	Turn off and then on the main power.	check on backup data
	XX81		When the background (drum surface) is read for patch detection, the value of P-SENS-P is lower than 255.	Turn off and then on the main power.	error in sensor read value caused by soiling of patch image read sensor with toner

Code	Detail code	Nature	Description	Remedy	Remarks
	XX90		The result of computation based on patch readings in patch detection is lower than 16.	Turn off and then on the main power.	damage to patch image read sensor, poor rotation of developing sleeve, poor engagement of developing assembly, poor stirring of toner inside developing assembly, damage to toner stirring screw or feedscrew
	XX91		The result of computation based on patch readings in patch detection is 1008 or higher.	Turn off and then on the main power.	leakage from toner buffer inside developing assembly, damage to sensor
	XX92		The result of computation based on 3 continuous patch readings in patch detection is lower than 42 for Y, M, and C and lower than 73 for Bk.	Turn off and then on the main power.	damage to patch image read sensor, poor rotation of developing sleeve, poor engagement of developing assembly, poor stirring of toner inside developing assembly (damage to toner stirring screw or feedscrew)

Code	Detail code	Nature	Description	Remedy	Remarks
	XX93		The result of computation based on 3 continuous patch readings in patch detection is 52 or higher for Y, M, and C and 543 or higher for Bk.	Turn off and then on the main power.	leakage from toner buffer inside developing assembly, damage to sensor
	XXA0		For ATR control, the value of SGNL is lower than 62.	Turn off and then on the main power.	damage to ATR sensor, soiling of ATR sensor window, poor developing assembly engagement, open-circuit in ATR sensor
	XXA1		For ATR control, the value of REF is lower than 62.	Turn off and then on the main power.	damage to ATR sensor, open-circuit in ATR sensor
	XXA2		For ATR control, the value of SGNL is 960 or higher.	Turn off and then on the main power.	damage to ATR sensor, malfunction of shutter, open-circuit in ATR sensor
	XXA3		For ATR control, the value of REF is 960 or higher.	Turn off and then on the main power.	damage to ATR sensor, open-circuit in ATR sensor
	XXA8		For ATR control, the detected T/D ratio exceeds the upper limit (13%) 3 times continuously.	Turn off and then on the main power.	leakage from toner buffer inside developing assembly
	XXA9		For ATR control, the detected T/D ratio exceeds the lower limit (3%) 3 times continuously.	Turn off and then on the main power.	

14.2.14 E021

0003-0384

T-14-14

Code	Detail code	Nature	Description	Remedy	Remarks
E021	developing assembly error				
	0001		The developing rotary home position cannot be detected.	Turn off and then on the main power.	error in HP sensor, fault in DC controller PCB, poor torque caused by excess load on developing assembly
	0002		The length of the flag detected during rotation is too long or short.	Turn off and then on the main power.	error in HP sensor, flat in DC control PCB wiring, poor torque caused by excess load on developing assembly
	0003		The sensor does not detect the flag when a stop is made at the position of development.	Turn off and then on the main power.	error in HP sensor, fault in DC controller PCB writing, poor torque caused by excess load on developing assembly.

14.2.15 E026

0003-0387

T-14-15

Code	Detail code	Nature	Description	Remedy	Remarks
E026	toner absent error				

Code	Detail code	Nature	Description	Remedy	Remarks
			xx=01: Y xx=02: M xx=03: C xx=04: K		
	xx01		The toner concentration does not return to a normal level after replacement of the toner bottle and 5 toner recovery sessions following the detention of the absence of toner.	Turn off and then on the main power, and fit a new toner bottle.	Some users tend to fit an empty toner bottle and cause the machine to execute a toner recovery session, causing the carrier to fly astray and damaging the ITB.

14.2.16 E032

0003-0391

T-14-16

Code	Detail code	Nature	Description	Remedy	Remarks
E032	NE controller counter failure				
	0001		A break is detected in the count pulse signal.	Turn off the main power, and check the cable for an open-circuit; then, turn the power back on.	

14.2.17 E045

0003-0393

T-14-17

Code	Detail code	Nature	Description	Remedy	Remarks
E045	transparency sensor error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		A sampling is taken in the absence of an obstacle during initial multiple rotation; the sampling data indicates a level lower than a specific level.	Turn off and then on the main power.	

14.2.18 E067

0003-0395

T-14-18

Code	Detail code	Nature	Description	Remedy	Remarks
E067	high-voltage-related error				
	0100		The current measured of the primary transfer ATVC is faulty 2 times in succession.	Turn off and then on the main power.	
	0110		The computed voltage of the primary transfer ATVC is faulty 2 times in succession.	Turn off and then on the main power.	

14.2.19 E070

0003-0399

T-14-19

Code	Detail code	Nature	Description	Remedy	Remarks
E070	ITB HP detection error				
	0001		The ITB home position is not detected within a specific period of time.	Turn off the main power, and check the ITB-HP sensor; then, turn the main power back on.	error in HP sensor, full displacement of belt, soiling of seal

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		The time that passes after detection of the ITB home position to the next detection of the home position is longer than a specific period of time.	Turn off the main power, and check the drive of the ITB; then, turn the main power back on.	slippage of belt against roller, causing delay in HP detection timing
	0003		The time that passes after detection of the ITB home position to the next detection of the home position is shorter than a specific period of time.	Turn off the main power, and check the surface of the ITB for scars; then, turn the main power back on.	rear in ITB, causing sensor to wrongly detect home position

14.2.20 E100

0003-0403

T-14-20

Code	Detail code	Nature	Description	Remedy	Remarks
E100	BD error				
	0001		After the polygon scanner goes on, a speed lock state does not occur for BD speed control within 5 sec.	Turn off the main power, and check the DC controller PCB wiring and the 24-V system fuses; then, turn the main power back on.	
	0002		While the polygon scanner is rotating at a constant speed, the speed clock for BD speed control goes off.	Turn off the main power, and check the DC control PCB wiring and the 24-V fuses; then, turn the main power back on.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0003		While the polygon scanner is rotating at a constant speed, the phase lock for BD phase control goes off.	Turn off the main power, and check the DC controller PCB wiring and the 24-V system fuses; then, turn the main power back on.	
	0004		After the polygon scanner goes on, the phase lock does not go on for BD phase control within 6 sec.	Turn off the main power, and check the DC controller PCB wiring and the 24-V system fuse; then, turn the main power back on.	

14.2.21 E110

0003-0405

T-14-21

Code	Detail code	Nature	Description	Remedy	Remarks
E110	laser scanner motor operation error				
	0001		After the polygon scanner goes on, the speed lock for FG speed control does not go on within 5 sec.	Turn off the main power, check the DC controller PCB wiring and the 24-V system fuses; then, turn the main power back on.	

14.2.22 E202

0003-0407

T-14-22

Code	Detail code	Nature	Description	Remedy	Remarks
E202	CIS unit HP detection error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		The HP sensor does not go on after the unit is moved in reverse for a specific length/ period.	Disconnect and then connect the harness connectors; as necessary, replace the scanner HP sensor, scanner motor, and reader controller PCB.	
	0002		The HP sensor does not go off after the unit is moved forward for a specific length/period.	Disconnect and then connect the harness connector; as necessary, replace the scanner HP sensor, scanner motor, and reader controller PCB.	

14.2.23 E225

0003-0409

T-14-23

Code	Detail code	Nature	Description	Remedy	Remarks
E225	CIS light intensity error				
	0001		At time of power-on or at the start of a job, the machine cannot find out whether the lamp has gone on normally for shading correction.	Disconnect and connect the harness connectors; as necessary, replace the scanning lamp (xenon tube), CIS, inverter PCB, and reader controller PCB.	

14.2.24 E227

0003-0412

T-14-24

Code	Detail code	Nature	Description	Remedy	Remarks
E227	reader power supply error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		At time of power-on, the 24V port is off.	Disconnect and connect the power supply harness connector; as necessary, replace the power supply.	
	0002		At the start of a job, the 24V port is off.	Disconnect and then connect the power supply harness; as necessary, replace the power supply.	
	0003		At the end of a job, the 24V port is off.	Disconnect and then connect the power supply harness; as necessary, replace the power supply.	
	0004		When a load is driven, the 24V port is off.	Disconnect and connect the power supply harness; as necessary, replace the power supply.	

14.2.25 E240

0003-0414

T-14-25

Code	Detail code	Nature	Description	Remedy	Remarks
E240	communication error between main controller and DC controller				
	0000		An error occurred in the serial communication between the main controller and the DC controller.		
	0002		While printing is under way, no response arrives from the DC controller within a specific period of time.		

14.2.26 E243

0003-0416

T-14-26

Code	Detail code	Nature	Description	Remedy	Remarks
E243	control panel error				
	0000		An error occurred in the communication between the controller and the control panel.	Turn off the main power, and check the connectors between the main controller PCB and the control panel for connection; then, turn the main power back on.	

14.2.27 E248

0003-0419

T-14-27

Code	Detail code	Nature	Description	Remedy	Remarks
E248	backup memory error				
	0000		check error on backup SRAM board at time of start-up	Turn off the main power, and check the backup SRAM PCB for connection or replace the backup SRAM PCB; then, turn the main power back on.	
	0001		error on reader controller EEPROM at power-on	Replace the reader controller PCB.	
	0002		write error in reader controller EEPROM	Replace the reader controller PCB.	
	0003		reader error in reader controller EEPROM after check error wire operation	Replace the reader controller PCB.	

14.2.28 E315

0003-0421

T-14-28

Code	Detail code	Nature	Description	Remedy	Remarks
E315	image data error (fault in image conversion board, SDRAM, or HDD; or, poor connection)				
	0008	The ASIC on the main controller is faulty.	time-out error at time of encoding (no response within 30 sec)		
	000e	data damage/ memory HDD error	software decoding error		
	0010	The ASIC on the main controller PCB is faulty.	time-out error at time of decoding		
	0025	The ASIC on the main controller PCB is faulty.	image data transfer error at time of rotation processing		
	0028	The ASIC on the main controller PCB is faulty.	time-out error at time of rotation processing		
	0034	The ASIC on the main controller PCB is faulty.	image data transfer error at time of magnification processing		
	0038	The ASIC on the main controller PCB is faulty.	time-out error rat time of magnification processing		

14.2.29 E351

0003-0424

T-14-29

Code	Detail code	Nature	Description	Remedy	Remarks
E351	Main controller PCB (sub) error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0000		communication error between Main controller PCB (sub) and main controller PCB (main) at start-up	Turn off the main power, and check the main controller PCB (main, sub); then, turn the main power back on.	

14.2.30 E400

0003-0427

T-14-30

Code	Detail code	Nature	Description	Remedy	Remarks
E400	feeder communication error				
	0001	data communication error	check sum error	Disconnect and then connect the connector; as necessary, replace the reader controller PCB and the DC controller of the ADF.	
	0002		reception status error	Disconnect and connect the connector; as necessary, replace the reader controller PCB and the DC controller PCB of the ADF.	
	0003		reception interrupt error	Disconnect and then connect the connector; as necessary, replace the reader controller PCB and the DC controller PCB of the ADF.	

14.2.31 E490

0003-0429

T-14-31

Code	Detail code	Nature	Description	Remedy	Remarks
E490	wrong model error				
	0001	model ID mismatch	A feeder for a different model is connected.	Use an ADF designed for the machine.	

14.2.32 E500

0003-0437

T-14-32

Code	Detail code	Nature	Description	Remedy	Remarks
E500	finisher communication error (common among finishers)				
	0001	data communication error	In the communication between the machine and the finisher, an error has been detected for a specific number of times and for a specific period of time.	Turn off the main power, and check the DC controller PCB, finisher PCB wiring, and 24V system fuses; then, turn the main power back on.	

14.2.33 E503

0003-0439

T-14-33

Code	Detail code	Nature	Description	Remedy	Remarks
E503	finisher internal communication error (Finisher-Q1/Q2)				

Code	Detail code	Nature	Description	Remedy	Remarks
	0002	data communication error	error in communication between finisher and saddle unit		
	0003		error in communication between finisher and punch unit		

14.2.34 E505

0003-0440

T-14-34

Code	Detail code	Nature	Description	Remedy	Remarks
E505	backup memory error of finisher (Finisher-P1)				
	0001		an error has occurred in the data stored in the backup memory.	Turn off the main power, and check the DC controller PCB, finisher PCB wiring, and 24V system fuses; then, turn the main power back on.	

T-14-35

Code	Detail code	Nature	Description	Remedy	Remarks
E505	backup memory error of finisher (Finisher-Q1/Q2)				
	0001		An error has occurred in the data stored in the backup memory.	Turn off the main power, and check the DC controller PCB, finisher PCB wiring, and 24V system fuses; then, turn the main power back on.	
	0002		punch unit EEPROM data error		

14.2.35 E514

0003-0441

T-14-36

Code	Detail code	Nature	Description	Remedy	Remarks
E514	stack delivery error (Finisher-P1)				
	0001		when the return belt is moved to HP, the HP sensor does not go on within 1500 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.
	0002		When moving the return belt to the belt contact position, the HP sensor does not go off within 1500 msec after the start of the operation.	Turn off the main power, and check the finisher PCB and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.

T-14-37

Code	Detail code	Nature	Description	Remedy	Remarks
E514	rear end assist motor error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the rear end assist motor has rotated for a specific period of time.		
	0002		The HP sensor does not go on after the rear end assist motor has rotated for a specific period of time.		

14.2.36 E519

0003-0443

T-14-38

Code	Detail code	Nature	Description	Remedy	Remarks
E519	gear change motor error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the gear change motor has rotated for a specific period of time.		
	0002		The HP sensor does not go on after the gear change motor has rotated for a specific period of time.		

14.2.37 E530

0003-0445

T-14-39

Code	Detail code	Nature	Description	Remedy	Remarks
E530	rear alignment error (Finisher-P1)				
	0001		When the rear aligning plate is being moved to home potion, the HP sensor does not go on within 2000 msec after the start of the operation.	Turn off and then on the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit on the function.

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		When the rear aligning plate is being moved to home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses: then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.

T-14-40

Code	Detail code	Nature	Description	Remedy	Remarks
E530	front aligning plate error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the front alignment motor has rotated for a specific period of time.		
	0002		The HP sensor does not go on when the front alignment motor has rotated for a specific period of time.		

14.2.38 E531

0003-0447

T-14-41

Code	Detail code	Nature	Description	Remedy	Remarks
E531	staple error (Finisher-P1)				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		At time of staple jam recovery, the HP sensor does not go on within 500 msec after the start of the reversal rotation of the stapler motor.	Turn off the main motor, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.
	0002		The HP sensor does not go off within 500 msec after the start of the stapler motor operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.

T-14-42

Code	Detail code	Nature	Description	Remedy	Remarks
E531	stapler error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the stapler motor has rotated for a specific period of time.		
	0002		The HP sensor does not go on after the stapler motor has rotated for a specific period of time.		

14.2.39 E532

0003-0449

T-14-43

Code	Detail code	Nature	Description	Remedy	Remarks
E532	stapler relocation error (Finisher-P1)				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		When the stapler unit is being moved to binding home position, the HP sensor does not go on within 1100 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.
	0002		While the stapler unit is being moved from home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.

T-14-44

Code	Detail code	Nature	Description	Remedy	Remarks
E532	stapler relocation error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the stapler relocation motor has rotated for a specific period of time.		
	0002		The HP sensor does not go on after the stapler relocation motor has rotated for a specific period of time.		

14.2.40 E535

0003-0451

T-14-45

Code	Detail code	Nature	Description	Remedy	Remarks
E535	swing error (Finisher-P1)				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		When the swing arm is moved to home position, the HP sensor does not go on within 2000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB and the 24V system fuses; then, turn on the main power back on.	
	0002		When the swing arm is moved from the home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	

T-14-46

Code	Detail code	Nature	Description	Remedy	Remarks
E535	swing error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the swing motor has rotated for a specific period of time.		
	0002		The HP sensor does not go off after the swing motor has rotated for a specific period of time.		
	0003		hazardous area		

14.2.41 E537

0003-0453

T-14-47

Code	Detail code	Nature	Description	Remedy	Remarks
E537	front alignment error (Finisher-P1)				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		When the front aligning plate is moved to home position, the HP sensor does not go on within 2000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.
	0002		When the front aligning plate is moved from home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn off the main power, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.

T-14-48

Code	Detail code	Nature	Description	Remedy	Remarks
E537	rear alignment error (Finisher-Q1/Q2)				
	0001		The HP sensor does not go off after the swing motor has rotated for a specific period of time.		
	0002		The HP sensor does not go on after the swing motor has rotated for a specific period of time.		

14.2.42 E540

0003-0455

T-14-49

Code	Detail code	Nature	Description	Remedy	Remarks
E540	stack tray ascent/descent error (Finisher-P1)				

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		A paper surface search does not end within 1000 msec.	Turn of the main power, and check the finisher PCB wiring and the 24V system wiring; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.
	0003		In the course of a paper surface search, the encoder lock signal within 200 msec does not reach 10 pulses.	Turn off the main power, and check the finisher PCB wiring an the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit to the function.
	0004		In the course of a paper surface search, an error is found in the input of the paper upper surface, paper power surface, tray upper limit, or tray lower limit sensor.	Turn off the main power, and correct the stack tray position; then, check the finisher PCB wiring and the 24V system fuses, and turn the main power back on.	A shift may be made to mode that puts a limit to the function.

T-14-50

Code	Detail code	Nature	Description	Remedy	Remarks
E540	upper tray ascent/descent error (Finisher-Q1/Q2)				
	0001		upper tray ascent/ descent motor clock error		
	0002		area error		
	0003		safety switch activation		

14.2.43 E542

0003-0457

T-14-51

Code	Detail code	Nature	Description	Remedy	Remarks
E542	lower tray ascent/descent error (Finisher-Q1/Q2)				
	0001		lower try ascent/descent motor clock error		
	0002		area error		
	0003		safety switch activation		

14.2.44 E577

0003-0459

T-14-52

Code	Detail code	Nature	Description	Remedy	Remarks
E577	paddle error (Finisher-P1)				
	0001		When the paper retaining paddle is moved to home position, the HP sensor does not go on within 1500 msec after the start of the operation.	Turn off the main power, and check the finisher PCB and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit on the function.
	0002		When the paper retaining paddle is moved from home position, the HP sensor does not go off within 1000 msec after the start of the operation.	Turn the main power off, and check the finisher PCB wiring and the 24V system fuses; then, turn the main power back on.	A shift may be made to mode that puts a limit on the function.

14.2.45 E580

0003-0461

T-14-53

Code	Detail code	Nature	Description	Remedy	Remarks
E580	stack tray ascent/descent error				
		faulty stack tray ascent motor (M5), stack tray power height sensor (S10), stack tray ascent/ descent motor clock sensor (S9); disconnected connector; error load on stack tray ascent/descent motor	While the stack tray decent/decent motor is in operation, the stack tray upper limit sensor goes on; or, within 0.8 sec, the clock signal of the stack tray direction motor clock sensor is not detected 15 times or more. After the stack tray ascent/descent motor has started ascent operation, the tray does not reach the stack tray height sensor within 4 sec; or, the tray does not leave the height sensor.		

14.2.46 E584

0003-0463

T-14-54

Code	Detail code	Nature	Description	Remedy	Remarks
E584	shutter unit error (Finisher-Q1/Q2)				
	0001		The shutter open sensor does not go off (i.e., the shutter does not close).		
	0002		The shutter open sensor does not go on (i.e., the shutter does not open).		
	0003		hazardous area		

14.2.47 E590

0003-0464

T-14-55

Code	Detail code	Nature	Description	Remedy	Remarks
E590	punch motor error (punch unit)				
	0001		The puncher does not detect the punch home position sensor when the punch motor has been driven 200 msec.		
	0002		After the motor is stopped during initalization of the punch motor, the puncher does not detect the punch home position sensor.		

14.2.48 E591

0003-0466

T-14-56

Code	Detail code	Nature	Description	Remedy	Remarks
E591	punch dust sensor error (punch unit)				
	0001		error light reception voltage when the light emitter is on		
	0002		error light reception voltage when the light emitter is off		

14.2.49 E592

0003-0468

T-14-57

Code	Detail code	Nature	Description	Remedy	Remarks
E592	punch horizontal registration sensor error (punch unit)				
	0001		error light reception voltage when the light emitter is on (rear end sensor)		
	0002		error light reception voltage when the light emitter is off (rear end sensor)		
	0003		error light reception voltage when the light emitter is on (horizontal registration sensor 1)		
	0004		error light reception voltage when the light emitter is off (horizontal registration sensor 1)		
	0005		error light reception voltage when the light emitter is on (horizontal registration sensor 2)		
	0006		error light reception voltage when the light emitter is off (horizontal registration sensor 2)		
	0007		error light reception voltage when the light emitter is on (horizontal registration sensor 3)		
	0008		error light reception voltage when the light emitter is off (horizontal registration sensor 3)		
	0009		error light reception voltage when the light emitter is on (horizontal registration sensor 4)		

Code	Detail code	Nature	Description	Remedy	Remarks
	000A		error light reception voltage when the light emitter is off (horizontal registration sensor 4)		

14.2.50 E593

0003-0470

T-14-58

Code	Detail code	Nature	Description	Remedy	Remarks
E593	punch relocation motor error (punch unit)				
	0001		When the light emitter is on, the light reception voltage HP sensor does not go off.		
	0002		When the light emitter is off, the light reception voltage HP sensor does not go on.		

14.2.51 E5F0

0003-0472

T-14-59

Code	Detail code	Nature	Description	Remedy	Remarks
E5F0	saddle paper positioning error				
	0001		The paper positioning plate HP sensor does not go on within 1.33 sec after the paper positioning plate motor is driven.		paper positioning plate motor (M4S), paper positioning plate HP sensor (PI7S)

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		The paper position plate HP sensor does not go off within 1 sec after the paper positioning plate motor is driven for 1 sec.		paper positioning plate motor (M4S), paper positioning plate HP sensor (PI7S)

14.2.52 E5F1

0003-0474

T-14-60

Code	Detail code	Nature	Description	Remedy	Remarks
E5F1	saddle paper folding error				
	0001		The number of detection pulses of the paper fold motor clock sensor drops below a specific value.		paper fold motor (M2S), paper fold motor clock sensor (PI4S)
	0002		The start of the paper fold HP sensor does not change within 3 sec after the paper fold motor is driven.		paper fold motor (M2S), paper fold motor clock sensor (PI4S)

14.2.53 E5F2

0003-0476

T-14-61

Code	Detail code	Nature	Description	Remedy	Remarks
E5F2	saddle guide error				
	0001		The guide HP sensor does not go on within 0.455 sec after the guide motor is driven.		guide motor (M3S), guide HP sensor (PI3S)

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		The guide HP sensor dose not go off within 1 sec after the guide motor is driven.		guide motor (M3S), guide HP sensor (PI3S)

14.2.54 E5F3

0003-0483

T-14-62

Code	Detail code	Nature	Description	Remedy	Remarks
E5F3	saddle alignment error				
	0001		The aligning plate HP sensor does not go on within 0.5 sec after the alignment motor is driven. (at time of initialization, 1.67 sec)		alignment motor (M5S), aligning plate HP sensor (PI5S)
	0002		The aligning plate HP sensor does not go off within 1 sec after the alignment motor is driven.		alignment motor (M5S), aligning plate HP sensor (PI5S)

14.2.55 E5F4

0003-0479

T-14-63

Code	Detail code	Nature	Description	Remedy	Remarks
E5F4	saddle rear stapler error				
	0001		The stitching operation HP sensor does not go on when the switch motor (rear) is driven in reverse for 0.5 sec or more.		stitch motor (rear; M6S), switching HP sensor (rear, MS5S)

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		The stitching HP sensor does not go off when the switch motor (rear) is driven in normal direction for 0.5 sec or more.		switch motor (rear, M6S), stitching HP sensor (rear, MS5S)

14.2.56 E5F5

0003-0481

T-14-64

Code	Detail code	Nature	Description	Remedy	Remarks
E5F5	saddle front stapler error				
	0001		The stitching HP sensor does not go on when the switch motor (front) is driven in reverse for 0.5 sec or more.		switch motor (front, M7S), stitching HP sensor (front, MS7S)
	0002		The stitching HP sensor does not go off when the stitch motor (front) is driven in normal direction for 0.5 sec or more.		switch motor (front, M7S), stitching HP sensor (front, MS7S)

14.2.57 E5F6

0003-0485

T-14-65

Code	Detail code	Nature	Description	Remedy	Remarks
E5F6	saddle butting error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		The paper pushing plate HP sensor does not go on when the paper pushing motor is driven for 0.3 sec or more.		paper pushing plate motor (M8S), paper pushing plate HP sensor (PI14S)
	0002		The paper pushing plate HP sensor does not go off when the paper pushing plate motor is driven for 80 msec or more.		paper pushing plate motor (M8S), paper pushing plate HP sensor (PI14S)
	0003		The number of detection pulses of the paper pushing plate motor clock sensor drops below a specific value.		paper pushing plate motor (M8S), paper pushing plate motor clock sensor (PI1S)
	0004		The paper pushing plate leading edge sensor does not go off when the paper pushing plate motor is driven for 80 msec or more.		paper pushing plate motor (M8S), paper pushing plate leading edge sensor (PI15S)
	0005		The paper pushing plate leading edge sensor does not go on when the paper pushing motor is driven for 0.3 sec or more.		paper pushing plate motor (M8S), paper pushing plate leading edge sensor (PI15S)

14.2.58 E5F8

0003-0487

T-14-66

Code	Detail code	Nature	Description	Remedy	Remarks
E5F8	saddle connector error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		The connector of the guide HP sensor is identified as being disconnected.		connector of guide HP sensor (PI13S)
	0002		The connector of the paper pushing plate HP sensor is identified as being disconnected.		connector of paper pushing plate HP sensor (PI4S)
	0003		The connector of the paper pushing plate leading edge sensor is identified as being disconnected.		connector of paper pushing plate leading edge sensor (PI5S)

14.2.59 E5F9

0003-0489

T-14-67

Code	Detail code	Nature	Description	Remedy	Remarks
E5F9	saddle switch error				
	0001		The inlet cover switch is identified as being open for 1 sec or more after the start of printing or after the start of initial rotation of the host machine with the cover identified by the following sensor as being closed: - inlet cover sensor (PI9S) - front cover open/closed sensor (PI2S) - delivery cover sensor (PI3S) or, the front cover switch (MS2S) or the delivery cover switch (MS3S) is open.		inlet cover switch (MSIS), front cover switch (MS2S), delivery cover switch (MS3S)

Code	Detail code	Nature	Description	Remedy	Remarks
	0002		The front cover switch is identified as being open for 1 sec or more after the start of printing or after the start of initial rotation of the host machine with the cover identified by the following sensor as being closed: - inlet cover sensor (PI9S) - front cover open/closed sensor (PI2S) - delivery cover sensor (PI3S)		front cover switch (MS2S), delivery cover switch (MS3S)
	0003		The delivery cover switch is identified as being open for 1 sec or more after the start of printing or after the start of initial rotation of the host machine with the cover identified by the following sensor as being closed: - inlet cover sensor (PI9S) - front cover open/closed sensor (PI2S) - delivery cover sensor (PI3S)		delivery cover switch (MS3S)

14.2.60 E601

0003-0342

T-14-68

Code	Detail code	Nature	Description	Remedy	Remarks
E601	communication error in image memory (SDRAM)				
	0000				

14.2.61 E602

0003-0491

T-14-69

Code	Nature
E602	hard disk error

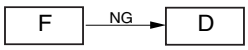
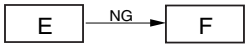
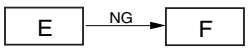
14.2.62 E602 in detail

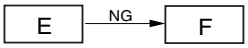
0003-0493

If the machine indicates E602-xxyy, it requires different approaches as indicated by its suffix (detail code).

⚠If the machine indicates E602-xxyy, be sure to turn off and then on the main power once (so that the machine will execute automatic recovery sequence).

T-14-70

xx	Partition	yy	Description
00	entire HDD	01	The machine cannot recognize the HDD. The machine cannot find BOOTDEV at start-up. Remedy: Turn off the main power, and check the 2 types of cables (power, IDE) that come from the HDD for connection; then, turn the main power back on. 
		02	The machine cannot find the system software for the main controller (main) CPU in BOOTDEV. Remedy: 
		03	The machine detects a faulty read sector while it reads data from BOOTDEV. Remedy:
		06	The machine cannot find system software for the main controller (sub) CPU in BOOTDEV. Remedy: 

xx	Partition	yy	Description
		07	The machine cannot find appropriate ICCProfile in BOOTDEV/PDLDEV. Remedy: 

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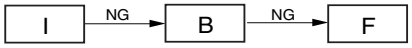
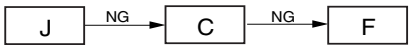
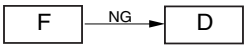
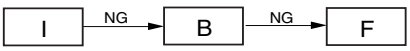
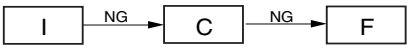
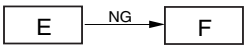
xx	Partition	yy	Description
01 02 03 04 05 06 07 08 09 FF	DOSDEV FSTDEV DOSDEV2 FSTPDEV DOSDEV3 PDLDEV DOSDEV4 BOOTDE V DOSDEV5 not specified	01, 02	The machine has detected a read error or a file system error at start-up. Remedy:  - in the case of xxyy = 0701, 0702 Remedy: Ask the user to collect address book data, transfer settings, and user mode data using the remote UI.  - in the case of xxyy = 0801, 0802 Remedy: - in the case of xxyy = FF01, FF02 Remedy:
		03	The system has detected an HDD contact fault or an operation system error. Remedy: Turn off the main power, and check the 2 types of cables (power supply, IDE) that come from the HDD for connection; then, turn the main power back on. At that time, check to see if the HDD is rotating and that power is being supplied.

xx	Partition	yy	Description
		11, 21	The machine detected an HDD contact fault. Remedy: Turn off the main power, and check the 2 types of cables (power supply, IDE) for connection; then, turn the power back on. At that time, check to see that the HDD is rotating and power is being supplied. 
		13, 25	The machine has detected a read error. Remedy:  - in the case of xxyy = 0713, 0725 Remedy:  - in the case of xxy = 0813, 0825 Remedy:
		10, 12, 14, 22, 23, 24	The machine has detected a system error or a packet data error. Remedy: 

A:

1) Make the following selections, and enter '0': COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CHECK*.
3) When done, turn off and then on the main power.

B:

1) By referring to [HDD format], make the following selections, and enter the appropriate value: COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key: COPIER>FUNCTION>SYSTEM>HD-CLEAR.
3) When done, turn off and then on the main power.

C:

1)** Start up the machine in normal mode (i.e., turn on the main power while holding down the 1 and 7 keys); then, make the following selections, and press the OK key: COPIER>FUNCTION>SYSTEM>DOWNLOAD.

2) Execute DOSDEV4 using the SST (formatting).
3) When done, turn on and then off the main power.

D:

1) Replace the main controller (main) board.
2) Remove the image memory (SDRAM) and the boot ROM from the older board, and mount them to the new board.

E:

1)** Start up the machine in safe mode (i.e., turn on the main power while holding down the 2 and 8 keys).
2) Format the HDD (ALL) and download the system software (SYSTEM, LANG, RUI) using the SST.
3) When done, turn off and then on the main power.

F:

1)** Replace the HDD, and start up the machine in safe mode (i.e., turn on the main power while holding down the 2 and 8 keys).
2) Format the HDD (ALL) and download the system software (SYSTEM, LANG, RUI) using the SST.
3) When done, turn off and then on the main power.

G:

1) Make the following selections, and enter '1': COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CLEAR.
3) When done, turn off and then on the main power.

H:

1) Turn off the main power, and press the 1 and 9 keys to turn it back on (so that the machine will automatically start its recovery program*, turning the control panel to go fully black).
2) When done (i.e., when the screen has turned fully white), turn off and then on the main power.

⚠If the machine does not start its recovery program in response to the foregoing operation, go to E.

I:

1) By referring to [HDD format], make the following selections, and enter an appropriate value: COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CHECK*.
3) When done, turn off and then on the main power.

J:

1) Make the following selections, and enter '4': COPIER>FUNCTION>SYSTEM>CHK-TYPE.
2) Make the following selections, and press the OK key to execute: COPIER>FUNCTION>SYSTEM>HD-CHECK (1 to 5 min).
3) When done, turn off and then on the main power.

* Takes about 30 to 50 min.

** As necessary, ask the user to collect address book data, transfer settings, and user mode data in advance using the remote UI.

T-14-72

- HDD Format

Partition	CHK-TYPE	Data deleted
DOSDEV	1	all image-related data (reservations, Box, fax), mode memory, routine task button
FSTDEV	1	
DOSDEV2	1	
FSTPDEV	1	
DOSDEV3	2	PDL spool
PDLDEV	3	PDL-related file (font, registration from, ICCProfile, etc.)
DOSDEV4	4	user data (address book, transfer settings), system software
BOOTDEV	4	
DOSDEV5	5	-
not specified	0	-

14.2.63 E604

0003-0344

T-14-73

Code	Detail code	Nature	Description	Remedy	Remarks
E604	image memory (SDRAM) shortage				
	0000		The machine does not recognize an amount of memory needed for the model in question.		For information on models and memory amounts, see the table prepared for it.

14.2.64 E605

0003-0345

T-14-74

Code	Detail code	Nature	Description	Remedy	Remarks
E605	image memory battery fault				
	0000		The machine has detected a drop in the voltage (below a specific level).		

14.2.65 E606

0003-0347

T-14-75

Code	Detail code	Nature	Description	Remedy	Remarks
E606	hard disk error				
	0001		The machine has detected a mount error on the HD at time of a boot from the boot ROM.		
	0002		The machine has detected a read error when booting the HD from the boot ROM.		

14.2.66 E674

0003-0348

T-14-76

Code	Detail code	Nature	Description	Remedy	Remarks
E674	fax board error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		The machine has recognized the fax board, but it cannot communicate with it.	Turn off the main power, and check the connection between the fax board and the main controller PCB; then, turn the main power back on.	If the fault is not corrected, replace the fax board or the main controller PCB.

14.2.67 E677

0003-0349

T-14-77

Code	Detail code	Nature	Description	Remedy	Remarks
E677	external controller fault				
	0003	fault in EFI controller	The machine has detected a fault during a configuration check when starting up an EFI controller.	Turn off the main power, and check the connection cable; then, turn the main power back on.	If the fault is not corrected, reinstall the system software of the EFI controller.
	0010		A controller designed for a different model is connected.	Turn off the main power, and check to see if the controller is one designed for the model and check the connector cable; then, turn the main power back on.	If the fault is not corrected, reinstall the system software of the EFI controller.
	0080		The external controller has started up normally, but the machine has detected an error in the communication with the printer unit.	Turn off the main power, and check the cable; then, turn the main power back on.	If the fault is not corrected, reinstall the system software of the EFI controller.

14.2.68 E710

0003-0351

T-14-78

Code	Detail code	Nature	Description	Remedy	Remarks
E710	IPC initialization error				
	0001		The machine does not become ready 3 sec after starting up the IPC chip.	Turn off the main power, and check the cable; then, turn the main power back on.	

14.2.69 E711

0003-0353

T-14-79

Code	Detail code	Nature	Description	Remedy	Remarks
E711	IPC communication error				
	0001	data communication error	An error is recorded in the IPC chip error register 4 times or more within 1.5 sec.	Turn off the power, and check the cable; then, turn the power back on.	fault in ADF controller/ reader controller PCB; poor connection of connector between reader and DADF
	0002	IPC communication error	An error is detected but cannot be corrected within 1.5 sec after the communication between the finisher and the printer is suspended.	Turn off the main power, and check the cable; then, turn the power back on.	error in data communication ; fault in finisher controller PCB, DC controller PCB; poor connection of connector

14.2.70 E712

0003-0354

T-14-80

Code	Detail code	Nature	Description	Remedy	Remarks
E712	error in communication between ADF and reader unit				
			The communication between the reader unit and the ADF has stopped, and 5 sec or more has passed without recovery.		

14.2.71 E713

0003-0356

T-14-81

Code	Detail code	Nature	Description	Remedy	Remarks
E713	error in communication between finisher and printer				
		error in data communication; fault in fisher controller PCB, DC controller PCB	The communication between the machine and the finisher is disrupted.	Turn off the power, and check the cable; then, turn the power back on.	Turn off the main power, and check the cable; then, turn the main power back on.

14.2.72 E716

0003-0357

T-14-82

Code	Detail code	Nature	Description	Remedy	Remarks
E716	error in communication between cassette pedestal and printer unit				

Code	Detail code	Nature	Description	Remedy	Remarks
	0000	error in data communication; fault in deck controller or cassette pedestal controller PCB	The communication between the cassette pedestal and the machine stopped, and 2 sec or more has passed without recovery.		

14.2.73 E717

0003-0359

T-14-83

Code	Detail code	Nature	Description	Remedy	Remarks
E717	error in communication with NE controller				
	0000		The communication stopped with the NE controller, and is not resumed within 3 sec.		
	0001		The machine does not recognize the NE controller that was connected before its power was turned off.	Reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.	
	0002		The IPC has an open-circuit, and the machine cannot correct the error in the IPC.	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.	

14.2.74 E719

0003-0361

T-14-84

Code	Detail code	Nature	Description	Remedy	Remarks
E719	error in communication with coin vendor/card reader				

Code	Detail code	Nature	Description	Remedy	Remarks
	0000		The machine does not recognize the presence of a coin vendor at time of start-up.		
	0001		When the power is turned on, the machine does not recognize the presence of the coin vendor that was connected before the power was turned off.	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.	
	0002		- The IPC cable connected to the coin vendor has an open-circuit. The machine cannot recover IPC communication. - The machine has detected an open-circuit in the pickup/delivery signal. - The machine has detected an illegal connection (short-circuit in Tx and Rx of IPC).	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.	
	0011		When the power is turned on, the machine does not recognize the card reader that was connected before the power was turned off.	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0012		The machine has detected an open-circuit in the IPC cable connected to the card reader, and the machine cannot recover the communication.	Check the cable, and reset the error in service mode: COPIER>FUNCTION>CLEAR>ERR.	

14.2.75 E730

0003-0362

T-14-85

Code	Detail code	Nature	Description	Remedy	Remarks
E730	PDL error				
	1001	PDL software error	The machine has detected an initialization error at the start of a job.	Execute a PDL reset, or turn off and then on the main power.	
	100A	PDL software error	While processing a job, the machine failed to release the semaphore; the machine has detected a system error (e.g., initialization error).	Execute a PDL reset, or turn off and then on the main power.	
	100B	PDL master font error	At time of start-up, the machine detected a mismatch between the version number indicated in the master font control file and the bootable version. The machine does not detect the presence of master font control file in /BOOTEV.	Execute a PDL reset, or turn off and then on the main power.	If the fault is not corrected, reinstall the appropriate font file, or format and reinstall all system software.

Code	Detail code	Nature	Description	Remedy	Remarks
	9004	open I/F communication error	The machine has detected a PAI error in the communication with the EFI controller.	Turn off the main power, and check the open I/F board and the cable for connection; then, turn the main power back on.	If the fault is not corrected, replace the EFI controller, open I/F PCB, or main controller PCB.
	9005	The machine has detected a fault in the video cable connected to the EFI controller.	Turn off the main power, and check the open I/F board and the cable for connection; then, turn the main power back on.	Turn off the main power, and check the open I/F board and the cable for connection; then, turn the main power back on.	If the fault is not corrected, replace the EFI controller, open I/F PCB, or main controller PCB.
	A006	PDL communication error	PDL does not respond. PDL does not respond because of a fault in the sub bootbable program, the absence of a sub bootable program, or fault in RIPA.	Execute a PDL reset; or, turn off the main power, check the SURF2 board for connection, and turn the main power back on.	If the fault is not corrected, reinstall the firmware, or replace the main controller PCB.
	A007	PDL version mismatch	At time of start-up, the machine detected a mismatch in the versions between the machine's control software and the PDL control software.	Execute a PDL reset, or turn off and then on the main power.	If the fault is not corrected, format and reinstall all system software.
	B013	PDL built-in font error	At time of start-up, the machine detected damage in the font data.	Turn off and then on the main power.	If the fault is not corrected, format and reinstall all system software.

14.2.76 E731

0003-0364

T-14-86

Code	Detail code	Nature	Description	Remedy	Remarks
E731	UFR board error				
	3000	UFR board error	At time of start-up, the machine does not recognize the presence of a UFR1 board.	Turn off the main power, and check the connection of the UFR2 board; then, turn the main power back on.	If the fault is not corrected, replace the UFR2 board or the main controller PCB.
	3001	The machine cannot initialize the UFR board.	At time of startup, the machine failed to initialize UFR1.	Turn off the main power, and check the UFR2 board; then, turn the main power back on.	If the fault is not corrected, replace the UFR2 board or the main controller PCB.
	3002	The machine cannot initialize the RAM bus.	TBD		
	3015	No image data arrives at the main controller PCB.	The machine's software is free of a fault when processing a job; however, video data fails to arrive at CL1-G.	Turn off and then on the main power.	If the fault cannot be corrected, replace the UFR2 board or the main controller PCB.

14.2.77 E732

0003-0366

T-14-87

Code	Detail code	Nature	Description	Remedy	Remarks
E732	reader communication error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001	DDI-S communica-tion error		Turn off the main power, and check the connectors used to connect to the reader unit; then, check the reader power supply, and turn the main power back on.	
	9999		On a printer model, a reader unit has been detected at time of start-up. (A copier model starts up once as a printer model at time of RAM initialization.)	Turn off and then on the main power.	The indication on the machine is limited to "Turn On the Power."

14.2.78 E733

0003-0367

T-14-88

Code	Detail code	Nature	Description	Remedy	Remarks
E733	printer communication error				
	0000	printer communica-tion error	At time of start-up, the machine cannot detect the presence of a printer unit.	Turn off the main power, and check the connectors used to connect the DC controller PCB and the main controller PCB; then, check the power supply of the printer unit, and turn the main power back on.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0001	DDI-P communica-tion error		Turn off the main power, and check the connectors used to connect the DC controller PCB and the main controller PCB; then, check the power supply of the printer unit, and turn the main power back on.	

14.2.79 E740

0003-0368

T-14-89

Code	Detail code	Nature	Description	Remedy	Remarks
E740	Ethernet board error				
	0002		At time of start-up, the MAC address proves to be illegal.	Turn off the main power, and replace the NIC; then, turn the main power back on.	The machine has detected a non-Canon MAC address.

14.2.80 E743

0003-0370

T-14-90

Code	Detail code	Nature	Description	Remedy	Remarks
E743	DDI communication error				

Code	Detail code	Nature	Description	Remedy	Remarks
			The reader controller PCB has detected an error in communication between the main controller PCB an the reader controller PCB.	Disconnect and then connect the DDI-S cable connector; replace the reader controller PCB or the main controller PCB.	

14.2.81 E744

0003-0381

T-14-91

Code	Detail code	Nature	Description	Remedy	Remarks
E744	language file/boot ROM error				
	0001		The language version stored on the HDD and the bootable ROM version are different from each other.	Download a language file with the correct version using the service support tool.	
	0002		The size of the language file on the HDD is too large.	Download a language file with the correct version using the service support tool.	
	0003		The machine cannot find a language file specified by config.txt stored on the HDD.	Download a language file with the correct version using the service support tool.	
			The machine cannot switch over to a language file stored on the HDD.	Download a language file with the correct version using the service support tool.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0004		The machine cannot switch power to a language file stored on the HDD.		
	0005		The boot ROM mounted in the machine is one designed for a different model.		
	1000	boot ROM project error	The boot ROM connected to the machine is one designed for a different model.	Turn off the main power, and replace the boot ROM with an appropriate one; then, turn the main power back on.	
	3000	illegal boot ROM module version	At time of start-up, the boot ROM is identified as not being able to operate normally.	Upgrade the boot ROM, or replace it.	

14.2.82 E745

0003-0382

T-14-92

Code	Detail code	Nature	Description	Remedy	Remarks
E745	TokenRing board error				
	0001		When initializing the TokeRing driver, the machine failed to initialize the PCI.	Turn off the main power, and check the connector of the TokenRing board; then, replace the TokenRing, and turn the main power back on.	

Code	Detail code	Nature	Description	Remedy	Remarks
	0002	faulty MAC address	When initializing the TokenRing driver, the machine found that the MAC address was faulty.	Turn off the main power, and replace the TokenRing board; then, turn the main power back on.	
	0003	The machine cannot obtain board information.	When initializing the TokeRing driver, the machine suffered an error in obtaining/ setting up the board information.	Turn off the main power, and replace the TokenRing board; then, turn the main power back on.	
	0004	connector error	When starting up the TokeRing driver, the machine suffered a connection error.	Turn off the main power, and check the cable connection and the power supply of the MAU; then, turn the main power back on.	
	0005	TBD			

14.2.83 E746

0003-0383

T-14-93

Code	Detail code	Nature	Description	Remedy	Remarks
E746	wrong accessories board				
	0003		At time of start-up, the machine detected a UFR board designed for a different model.	Replace the UFR board with an appropriate one.	The machine checks the engine ID to see if it is a correct one.

Code	Detail code	Nature	Description	Remedy	Remarks
	0004		At time of start-up, the machine detects a scanner board designed for a different model.	Replace the scanner board with an appropriate one.	The machine checks the engine ID to see if it is a correct one.

14.2.84 E747

0003-0385

T-14-94

Code	Detail code	Nature	Description	Remedy	Remarks
E747	error in image processing ASIC or memory control/communication control ASIC				
	---		The machine has detected an error (e.g., image data transfer error) in IC1015 (image processing ASIC) or IC1012 (memory control/ communication ASIC; CPU) of the main controller PCB.	Turn off the main power, and check the main controller PCB; then, turn the main power back on.	

14.2.85 E803

0003-0388

T-14-95

Code	Detail code	Nature	Description	Remedy	Remarks
E803	door closed error				

Code	Detail code	Nature	Description	Remedy	Remarks
	0001		The machine detected a remote (+24V) OFF state immediately after the door is closed.	Turn off the main power, and check the DC controller PCB and the presence/absence of a fault in the interlock; then, turn the main power back on.	fault in interlock; short-circuit in 24V system; other fault in power supply; open-circuit around power supply; blown fuse
	0002		The machine detects a remote (+13V) OFF state immediately after the door is closed.	Turn off the main power, and check the DC controller PCB wiring and the presence/ absence of a fault in the interlock; then, turn the main power back on.	fault in interlock; open-circuit in 13V system; other fault in power supply; open-circuit around power supply

14.2.86 E804

0003-0390

T-14-96

Code	Detail code	Nature	Description	Remedy	Remarks
E804	controller fan error				
	0004		The machine has detected that the controller fan remained at rest for 16 sec continuously.	Turn off the main power, and check the power to the fan or replace the fan; then, turn the main power back on.	

14.2.87 E805

0003-0392

T-14-97

Code	Detail code	Nature	Description	Remedy	Remarks
E805	fan error				
	0001		With the exhaust fan (front) in operation, the machine does not detect a lock state for 5 sec continuously.	Turn off the main power, and check the DC controller PCB; then, turn the main power back on.	disconnected fan connector; absence of lock signal because of fault in fan
	0002		With the exhaust fan (rear) in operation, the machine does not detect a lock state for 5 sec continuously.	Turn off the main power, and check the DC controller PCB wiring; then, turn the main power back on.	disconnected fan connector; absence of lock signal because of fault in fan
	0003		With the ITB fan in operation, the machine does not detect a lock state for 5 sec continuously.	Turn off the main power, and check the DC controller PCB; then, turn the power back on.	disconnected fan connector; absence of lock signal because of fault in fan
	0004		With the fan and the toner fan in operation, the machine does not detect a lock state for 5 sec continuously.	Turn off the main power, and check the DC controller PCB wiring; then, turn the main power back on.	disconnected fan connector; absence of signal because of fault in fan

Chapter 15 Service Mode

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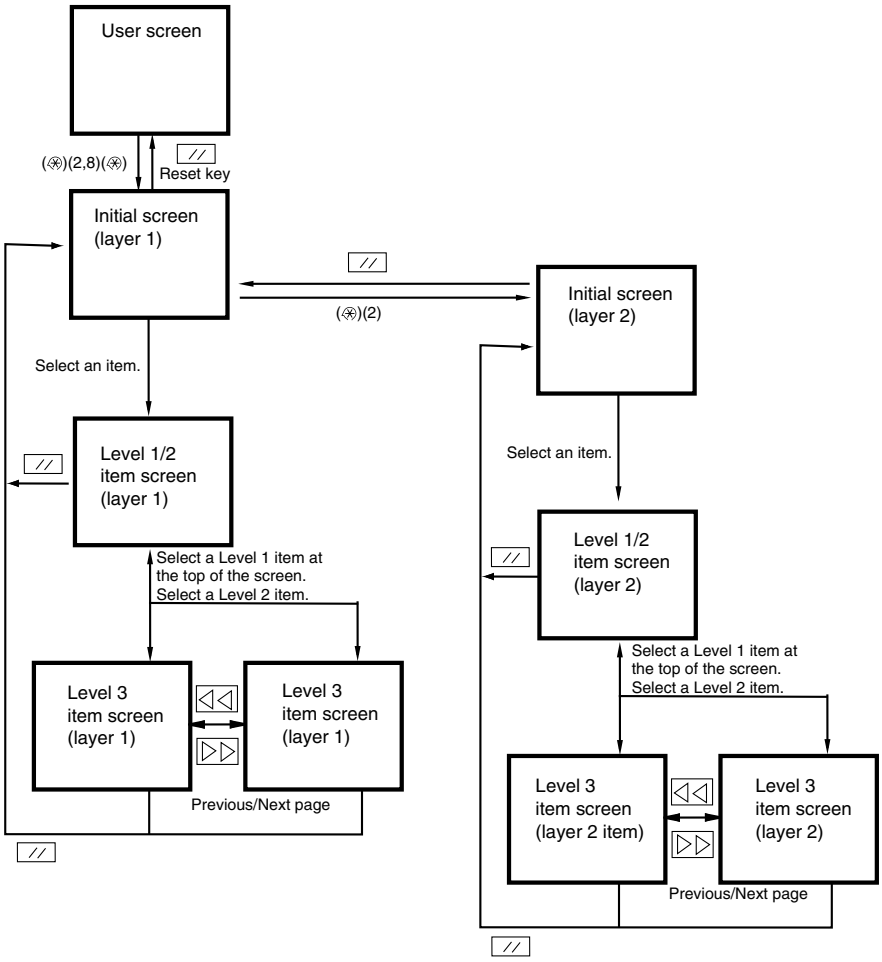
15.1 Outline

15.1.1 Construction of Service Mode

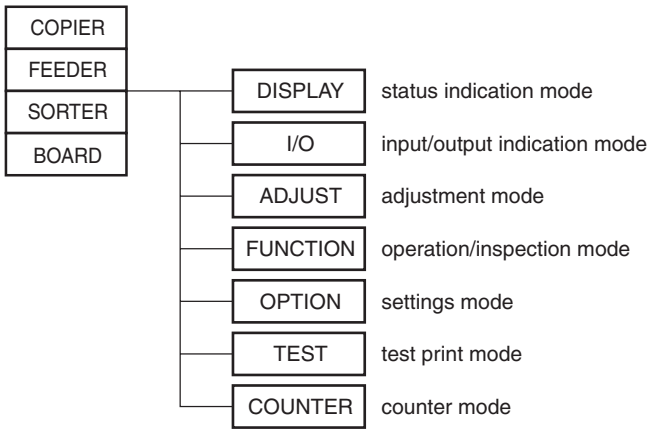
0000-9782

The machine's service mode has a 3-layer screen construction: Initial screen, Level 1/2 screen, and Level 3 screen. Its mode items are grouped into those used in regular maintenance work (Level 1 items) and those used in response to faults (Level 2 items).



F-15-1

The machine's service mode is divided into the following 7 types:



F-15-2

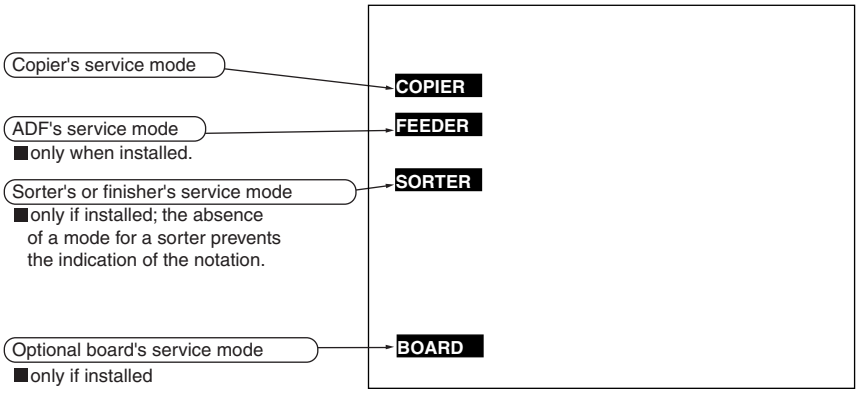
15.1.2 Starting Service Mode and Making Selections

0000-9783

⚠If you want to execute a machine operation using a service mode item, be sure to disconnect all cables from an external controller or a network before starting service mode. Particularly, if you are using a FUNCTION (operation/inspection) mode item, the arrival of a print job from an external source can cause the machine to malfunction, leading to damage.

1) Press the asterisk key "✳" on the control panel.
2) Press the 2 and 8 keys of the keypad at the same time.
3) Press the asterisk key "✳" on the control panel.

In response to the foregoing key operations, the machine will bring up the following Initial screen:



F-15-3

15.1.3 Ending Service Mode

0000-9785

A press on the Reset key will bring back the Service Mode Initial screen.

Another press on the Reset key will end service mode, and bring back the User screen (standard screen).

⚠If you used service mode (ADJUST, FUNCTION, OPTION), be sure to turn off and then on the main power switch after ending service mode.

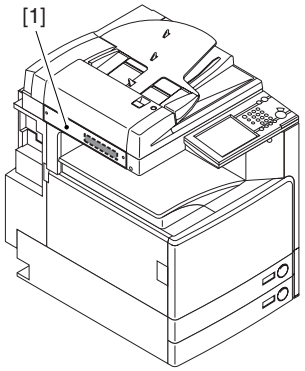
15.1.4 Back-Up

0000-9786

At time of shipment from the factory, all machines are adjusted individually, and adjustment values are recorded in their respective service labels.

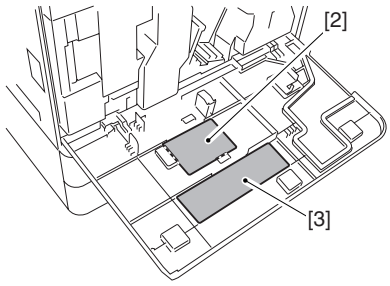
If you have replaced the reader controller PCB or the DC controller PCB, or if you have initialized the RAM, the adjustment values (for ADJUST and OPTION) will return to their default settings. If there has been any change in a service mode item, be sure to update its setting indicated on the service label. As necessary, make use of the space in the service label (as when recording an item not found on the label).

- Service Label for the Reader Controller PCB (behind the left cover [1] of the reader unit)



F-15-4

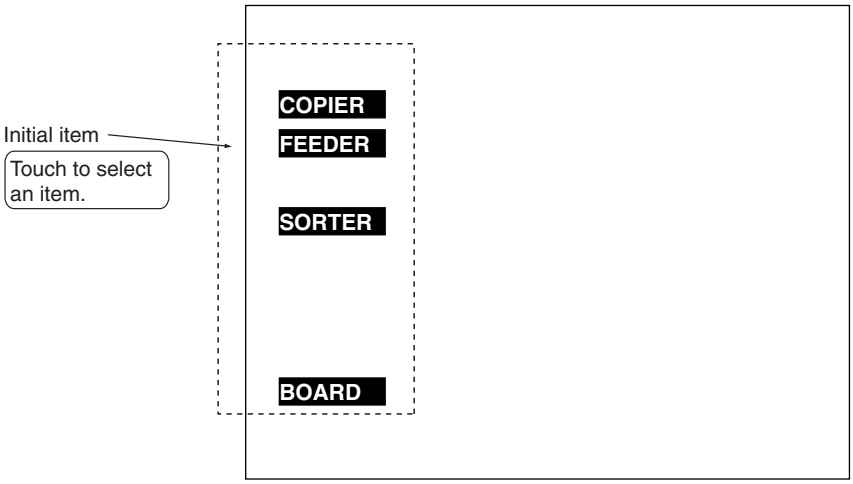
- Service Label [2] for the Main Controller PCB/DC controller PCB (behind the front cover of the printer unit)



F-15-5

15.1.5 Initial Screen

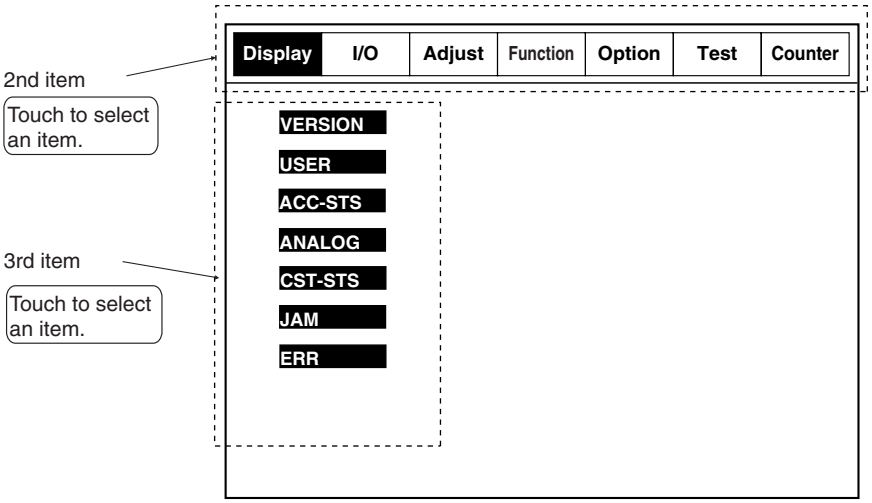
0000-9788



F-15-6

15.1.6 2nd/3rd Item Screen

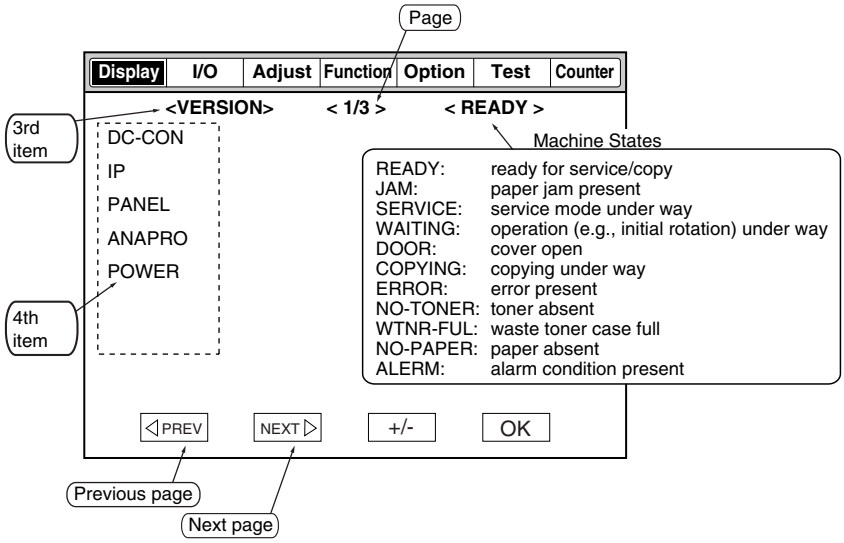
0000-9789



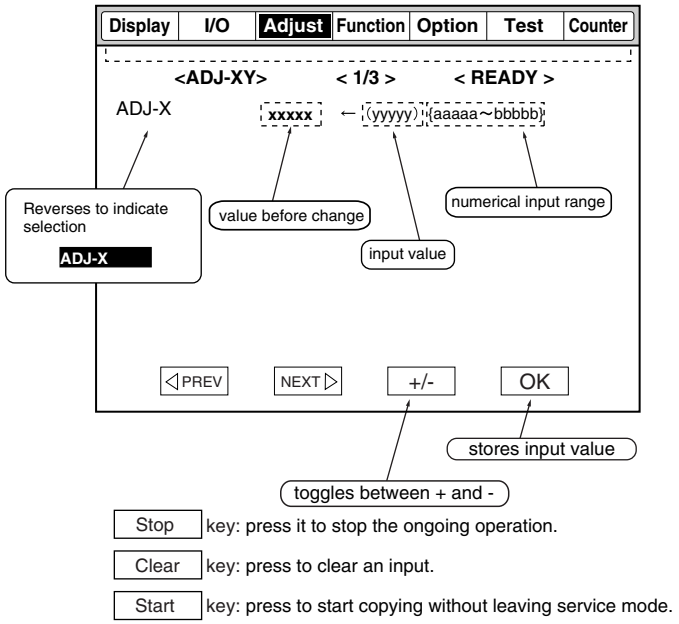
F-15-7

15.1.7 4th Item Screen

0000-9790



F-15-8



F-15-9

15.2 DISPLAY（Status Display Mode）

15.2.1 COPIER

15.2.1.1 VERSION

15.2.1.1.1 Overview 0000-9717

Use it to check the ROM version of individual PCBs (host machine and accessories).
- for example, in <R-CON XX.YY>, XX indicates the version and YY indicates R&D number.
- if no PCB is connected, the indication will be <--.-->.

15.2.1.1.2 <DC-CON> 0001-0006

Use it to check the ROM version of the DC controller PCB.

15.2.1.1.3 <R-CON> 0001-0008

Use it to check the ROM version of the reader controller PCB.

15.2.1.1.4 <PANEL> 0001-0011

Use it to check the ROM version of the control panel CPU PCB.

15.2.1.1.5 <ECO> 0001-0013

Use it to check the ROM version of the ECO PCB.

15.2.1.1.6 <FEEDER> 0001-0014

Uses it to check the ROM version of the DADF controller PCB.

15.2.1.1.7 <SORTER> 0001-0016

Use it to check the ROM version of the finisher controller PCB.

15.2.1.1.8 <FAX> 0001-0023

Use it to check the ROM version of the fax board.

15.2.1.1.9 <NIB> 0001-0024

Uses it to indicate the version of the network software.

15.2.1.1.10 <PS/PCL> 0001-0025

Use it to check the version of the UFR board (PS/PCL function).

15.2.1.1.11 <LIPS> 0001-0027

Use it to check the version of the UFR board (LIPS).

15.2.1.1.12 <SDL-STCH> 0001-0028

Use it to check the ROM version of the saddle stitcher controller PCB.

15.2.1.1.13 <OP-CON> 0001-0029

Use it to indicate the ROM version of the option controller PCB.

15.2.1.1.14 <MN-CON> 0001-0030

Use it to check the ROM version of the main controller PCB.

15.2.1.1.15 <BOOT-ROM> 0001-0032

Use it to check the boot ROM version of the main controller PCB.
- copier model/GDI-UFR model: xx.yyC
- LIPS mode: xx.yyL
- PS/PCL model: xx.yyN

15.2.1.1.16 <DIAG-DVC> 0001-0033

Use it to check the ROM version of the self-diagnosis device.

15.2.1.1.17 <RUI> 0001-0034

Use it to check the remote UI.

15.2.1.1.18 <PUNCH> 0001-1200

Use it to check the version of the punch unit.

15.2.1.1.19 <LANG-EN> 0001-0035

Use it to check the version of an English language file.

15.2.1.1.20 <LANG-FR> 0001-0037

Use it to check the version of a French language file.

15.2.1.1.21 <LANG-DE> 0001-0038

Use it to check the version of a German language file.

15.2.1.1.22 <LANG-IT> 0001-0040

Use it to check the version of an Italian language file.

15.2.1.1.23 <LANG-JP> 0001-0041

Use it to check the version of a Japanese language file.

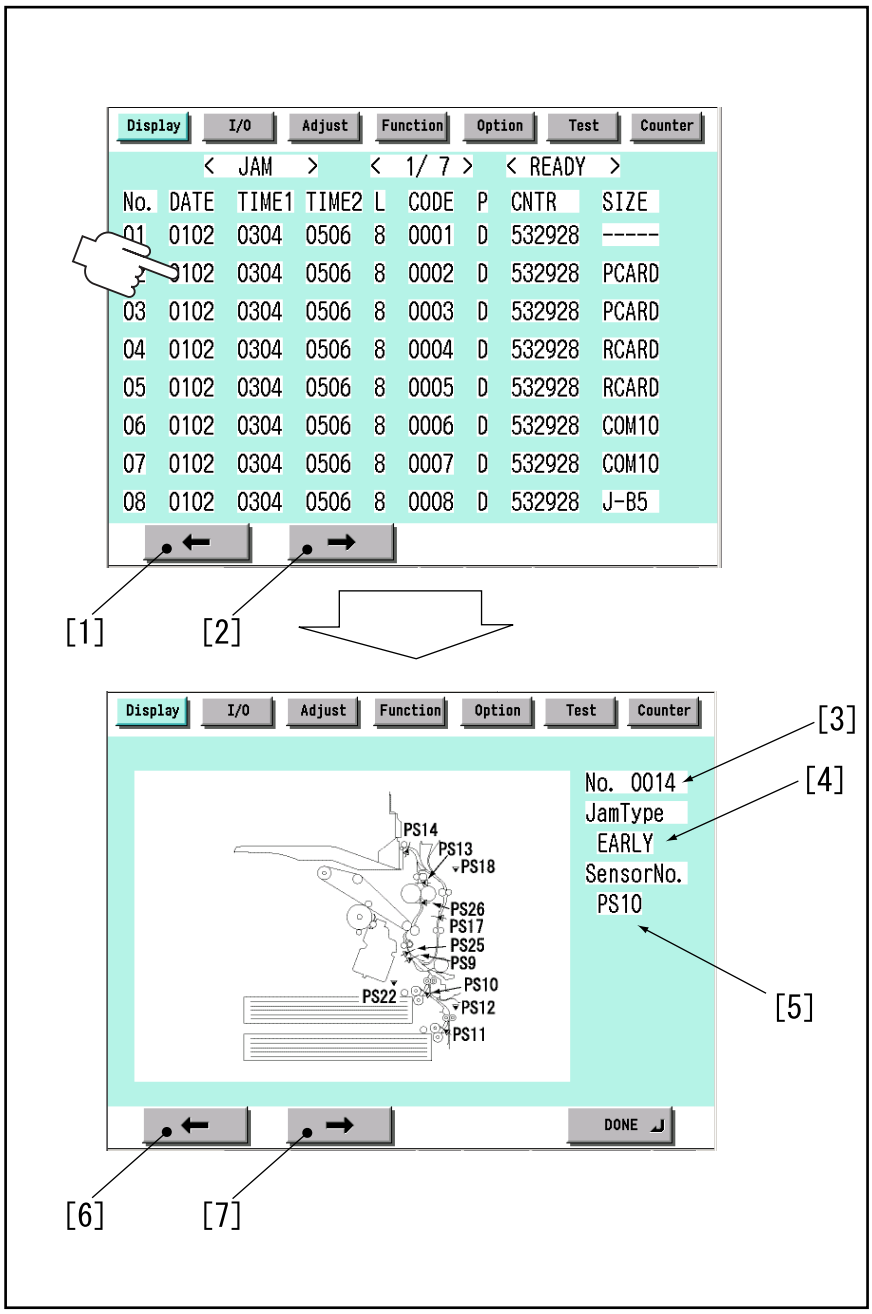
15.2.1.1.24 <GDI-UFR> 0001-0042

Use it to check the version of the UFR board (GDI-UFR function).

15.2.1.2 JAM

15.2.1.2.1 Overview 0001-0066

Use it to check jam data.



F-15-10

Touch any Jam Indication screen to go to the detailed screen of that particular type of jam.

1. press to go to the previous page.
2. press to go to the next page.
3. indicates the order of occurrence of the jam in question.
4. indicates the type of jam.
6. press to go to the previous Jam Indication screen.
7. press it to go to the next Jam Indication screen.

15.2.1.2.2 <No.> 0001-0069

Indicates the order of occurrence of the jam in question.
1 through 50 (the higher the number, the older the jam)

15.2.1.2.3 <DATE> 0001-0070

Indicates the date of the jam in question.

15.2.1.2.4 <TIME1> 0001-0071

Indicates the time of the jam in question.

15.2.1.2.5 <TIME2> 0001-0072

Indicates the jam recovery time.

15.2.1.2.6 <L> 0001-0073

Indicates the location of the jam in question.

T-15-1

Code	Location/classification
0	host machine
1	feeder
2	finisher

15.2.1.2.7 <CODE> 0001-0074

Jam Code (See the list of jam codes.)

15.2.1.2.8 <P> 0001-0075

Indicates the source of paper used.

T-15-2

Code	Description
1	cassette 1
2	cassette 2
3	cassette 3
4	cassette 4
5	side paper deck
6	manual feed tray

Code	Description
7	duplexing unit

15.2.1.2.9 <CNTR> 0001-0077

Indicates the reading of the soft counter for the source of paper.

15.2.1.2.10 <SIZE> 0001-0078

Indicates the size of paper.

15.2.1.2.11 Jam Code (jam type) 0001-0081

T-15-3

Code	Type of jam
01xx	delay jam
02xx	stationary jam
0Axx	residnal jam
0B00	door open jam
0B01	door open jam (detection by software)
0D91	size mismatch (paper shorter than specified size)
0D92	medium mismatch (paper instead of transparency)
0D93	medium mismatch (transparency instead of paper)

15.2.1.2.12 Jam Code (printer unit) 0001-0082

T-15-4

Code	Sensor type	Sensor No.
xx01	cassette 1 retry sensor	PS10
xx02	cassette 2 retry sensor	PS11
xx03	cassette 3 retry sensor	PS1 (cassette pedestal)
xx04	cassette 4 retry sensor	PS2 (cassette pedestal)
xx05	pre-registration sensor	PS9
xx06	fixing inlet sensor (residual paper only)	PS25
xx07	fixing inside delivery sensor	PS13

Code	Sensor type	Sensor No.
xx08	No. 1 delivery sensor	PS14
xx09	No. 2 delivery sensor	PS1A (2/3 delivery unit)
xx0A	No. 3 reversal sensor	PS4A (2/3 delivery unit)
xx0B	No. 3 delivery sensor	PS5A (2/3 delivery unit)
xx0C	duplex inlet sensor	PS3A (2/3 delivery unit)
xx0D	duplex re-pickup sensor	PS17
xx0E	deck retry sensor	PS6D (side paper deck)
xx0F	deck pull-off sensor	PS1D (side paper deck)
xx10	multifeeder pickup sensor (no activation)	
xx11	buffer inlet sensor	PS1B (buffer path unit)
xx12	buffer outlet sensor	PS2B (buffer path unit)

15.2.1.2.13 Jam Code (finisher-related) 0001-0083

T-15-5

Code	Sensory type	Sensor No.
1011	delivery sensor feed delay jam	SR1 (Finisher-P1)
1101	delivery sensor feed stationary jam	
1500	staple jam	
1300	power-on jam	
1400	door open jam	

T-15-6

Code	Sensor type	Sensor No.
1001	inlet path sensor feed delay jam	P13
1002	punch path sensor (punch registration sensor) feed delay jam	LED5/PTR5
1004	delivery path sensor feed delay jam	P14

Code	Sensor type	Sensor No.
1101	inlet path sensor feed stationary jam	P13
1102	punch path sensor (punch registration sensor) feed stationary jam	LED5/PTR5
1104	delivery path sensor feed stationary jam	P14
1200	timing jam	P13
1500	stapler staple jam	STP
1300	power-on jam	P13,P14
1400	door open jam	DOOR
1644	punch jam	LED5/PTR5
1645	punch power-on jam	LED5/PTR5
1791	saddle feed sensor feed delay jam	P18S, PI19S, PI20S
1792	saddle delivery sensor feed delay jam	PI11S
1793	saddle inlet sensor feed delay jam	PI22S
17A1	saddle feed sensor feed stationary jam	P18S, PI19S, PI20S
17A2	saddle delivery sensor feed stationary jam	PI11S, PI17S
17A3	saddle inlet sensor feed stationary jam	PI22S
1786	saddle staple jam	S STP
1787	saddle power-on jam	PI11S, PI18S, PI19S, PI20S, PI22S
1788	saddle door open jam	DOOR

15.2.1.2.14 Jam Code (ADF-related)

0001-0085

T-15-7

Code	Sensor type	Sensor No.	Description
0003	registration sensor delay	PI2	The registration sensor does not detect paper within 1.5 sec after pickup takes place. At time of reversal, the registration sensor does not detect paper when the read motor has rotated for a specific period of time.

Code	Sensor type	Sensor No.	Description
0004	registration sensor stationary	PI2	After the registration sensor goes on, it does not go off when the paper has been moved for an equivalent of 500 mm (if long paper, 700 mm).
0005	read sensor delay	PI2, PI3	After the pickup request signal is received from the reader, the read sensor does not detect paper when the feed motor has rotated for a specific period of time.
0006	read sensor stationary	PI3	After the read sensor goes on, the sensor does not go off after the paper has been moved for an equivalent of 500 mm (if long paper, 70 mm).
0007	delivery sensor delay	PI3, PI4	After the read request signal is received from the reader, the delivery sensor does not detect paper when the read motor has rotated for a specific period of time.
0008	delivery sensor stationary	PI4	After the delivery sensor goes on, the sensor does not go off when paper has been moved for an equivalent of 500 mm (if long paper, 700 mm).
0044	1st sheet registration sensor stationary	PI2	A registration sensor stationary jam has been identified for the 1st original.
0045	1st sheet read sensor delay	PI2, PI3	A read sensor delay jam has been identified for the 1st original.
0046	1st sheet read sensor stationary	PI3	A read sensor stationary jam has been identified for the 1st original.
0047	1st sheet delivery sensor delay	PI3, PI4	A delivery sensor delay jam has been identified for the 1st original.
0048	1st sheet delivery sensor stationary	PI4	A delivery sensor stationary jam has been identified for the 1st original.
0071	timing error	-	A software sequence fails to end normally within a specific period of time.
0090	ADF open	PI1	While the machine is in operation (drive system in operation), the ADF is opened.
0091	user ADF open	PI1	While the machine is in operation (drive system at rest), the ADF is opened.
0092	ADF cover open	PI10	While the machine is in operation (drive system in operation), the ADF cover is opened.

Code	Sensor type	Sensor No.	Description
0093	user cover open	PI10	While the machine is in operation (drive system at rest), the ADF cover is opened.
0094	initial stationary	PI2, PI3, PI4	While the 1st sheet is being picked, paper is detected within the feeder.
0095	pickup fault	-	With no paper in the tray, the pickup signal is received for 2 sec.

15.2.1.3 DENS

15.2.1.3.1 Overview 0000-9819

Use it to check the concentration of developer inside the developing assembly.

15.2.1.3.2 <DENS-Y> 0000-9794

T-15-8

	Use it to check the computed value of the density (Y) of the patch formed on the photosensitive drum. (indicates the discrepancy from the target value in %)
Reference	The value is updated when the machine executes toner supply operation after the main power switch is turned on.
Optimum	-25 to +25

15.2.1.3.3 <DENS-M> 0001-1242

T-15-9

	Use it to check the computed value of the density (M) of the patch formed on the photosensitive drum. (indicates the discrepancy from the target value in %)
Reference	The value is updated when the machine executes toner supply operation after the main power switch is turned on.
Optimum	-25 to +25

15.2.1.3.4 <DENS-C>

0001-1243

T-15-10

	Use it to check the computed value of the density (C) of the patch formed on the photosensitive drum. (indicates the discrepancy from the target value in %)
Reference	The value is updated when the machine executes toner supply operation after the main power switch is turned on.
Optimum	-25 to +25

15.2.1.3.5 <DENS-K>

0001-1244

T-15-11

	Use it to check the computed value of the density (K) of the patch formed on the photosensitive drum. (indicates the discrepancy from the target value in %)
Reference	The value is updated when the machine executes toner supply operation after the main power switch is turned on.
Optimum	-25 to +25

15.2.1.3.6 <REF-Y/M/C>

0000-9807

T-15-12

	Use it to check the density standard (Y/M/C) of the developer on the developing cylinder.
Reference	The value is updated when the machine executes toner supply operation after the main power switch is turned on.
Optimum	464 to 560

15.2.1.3.7 <SGNL-Y/M/C> 0000-9808

T-15-13

	Use it to check the measurement (Y/M/C) of the density of the developer on the developing cylinder.
Reference	The value is updated when the machine executes toner supply operation after the main power switch is turned on.
Optimum	225 to 863

15.2.1.3.8 <P-SENS-P> 0000-9809

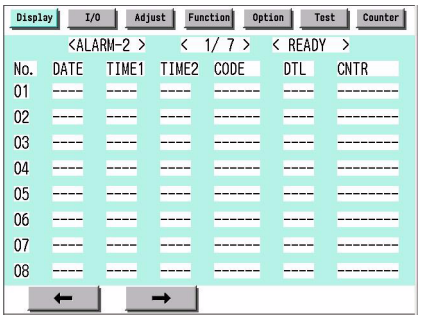
T-15-14

	Use it to check the measurement (for P wave component) of the soiling of the window of the patch image sensor. The value effective when the machine executes patch image detection operation after the main power switch is turned on is indicated. **(range of indications: 0 to 1023)**
Reference	In the case of 255 or lower, the indication will be E020-0081.
Optimum	400 to 600

15.2.1.4 ALARM-2

15.2.1.4.1 Overview 0001-1247

Use it to check alarm data.



F-15-11

T-15-15

Item	Description	Remarks
No.	indicates the order of occurrence of alarms (1 through 50; the higher the number, the older the error).	
DATE	indicates the date of the alarm in question.	
TIME1	indicates the time of the alarm in question.	
TIME2	indicates the alarm recovery time.	
CODE	indicates the code of the location at which the alarm in question occurred. (See the table on next page.)	
	indicates the code of the alarm in question. (See the table on next page.)	
DTL	Indicates the detail code of the alarm in question. (See the table on next page.)	
CNTR	indicates the total counter reading at the time of the alarm in question.	

T-15-16

Location code	Alarm code	
02 scanner	0002	indicates the presence of dirt on the glass for stream reading.
	0020	line correction alarm (upon detection of dust on the stream reading glass between originals)

Location code	Alarm code	
04 pickup/feed	0001	cassette 1 lifter error
	0002	cassette 2 lifter error
	0003	cassette 3 lifter error
	0004	cassette 4 lifter error
	0008	optional deck lifter error
33 fan	0011	fixing heat discharge fan
50 ADF	0010	indicates that the original separation alarm condition has occurred 3 times in sequence (i.e., faulty pickup of the 1st original).
61 finisher	0001	staple absent
62 saddle stitcher	0001	stitch staple absent
65 puncher	0001	punch waste case full

15.2.2 DISPLAY(Status Display Mode)Level2

15.2.2.1 COPIER

15.2.2.1.1 DENS

<DENS-S-Y/M/C/K> 0001-0157

Use it to check the density value (Y/M/C/Bk) detected of the sample image formed at time of ATR control.

<D-Y/M/C -TRGT> 0001-0158

Use it to check the target value (Y/M/C) of the developer density.

<DEV-DC-Y/M/C/K> 0001-0156

Use it to check the output value of the developing DC voltage (Y/M/C/Bk) generated last.

<CHG-DC-Y/M/C/K> 0001-0155

Use it to check the output value of the primary DC voltage (Y/M/C/Bk) generated last.

<D-K-TRGT> 0001-7458

Use it to check the target value (Bk) of the developer density.

<D-CRNT-P/S> 0001-0160

Uses it to indicate the value (P wave/S wave) measured of the dark current at time of ATR control.

<P-SENS-S> 0001-0159

Use it to check the value (S wave) detected of the intensity of light from the background (drum) at time of ATR control.

<DENS-Y/M/C-H> 0001-1020

Use it to check the history of measurements taken by the ATR sensor (Y/M/C; latest 8 measurements).

<DS-S-Y/M/C/K-H> 0001-1022

Use it to check the history of the results of detection of patch images (Y/M/C/K; latest 8 result).

<P-LED-DA> 0001-1023

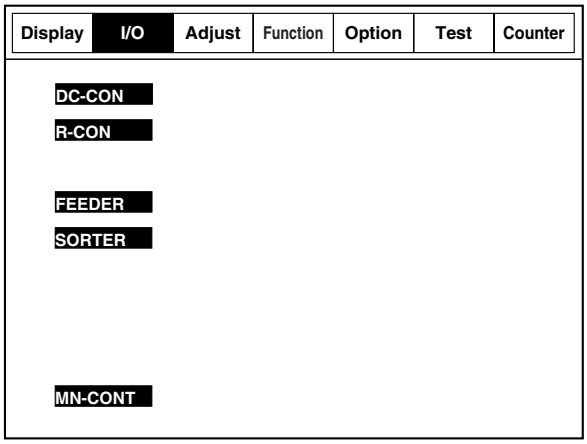
Use it to check the D/A settings of the LED for the path image sensor.

15.3 I/O （I/O Display Mode）

15.3.1 Overview

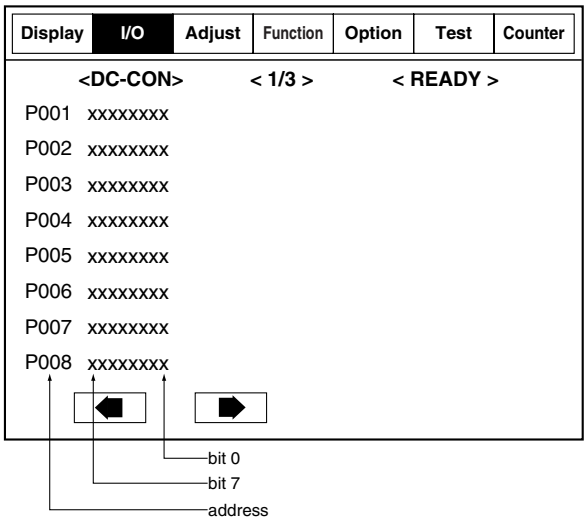
0001-0118

The following is the screen appearing in response to COPIER>I./O; see the items that follow available under I/O mode (those needed in field work):



F-15-12

<Guide to the Screen>



F-15-13

15.3.2 <DC-CON>

0001-0119

T-15-17

Address	Bit	Description	Remarks
P001	0	cassette 2 retry sensor	1 detected
	1	cassette 2 level B sensor	1 about 50 sheets or less
	2	cassette 2 level A sensor	1 about half or less
	3	cassette 2 paper sensor	1 paper absent
	4	cassette 1 retry sensor	1 detected
	5	cassette 1 level B sensor	1 about 50 sheets or less
	6	cassette 1 level A sensor	1 about half or less
	7	cassette 1 paper sensor	1 paper absent
	8-15	not used	
P002	0	13 V detection (door open detection)	1 door open
	1	24 V detection (door open detection)	1 door open
	2	manual feed tray paper sensor	0 paper present
	3	duplex feed sensor (PS17)	1 paper present
	4	No. 1 delivery full sensor (PS15)	0 paper present
	5	No. 1 delivery sensor (PS14)	1 paper present
	6	fixing delivery sensor (PS13)	1 paper present
	7	pre-registration sensor (PS9)	1 paper present
	8-15	not used	
P003	0	patch detection LED-ON	1 ON
	1	ITB fan half-speed	1 half speed
	2	exhaust fan 1 half speed (machine rear)	1 half speed
	3	for R&D	
	4	cassette 1 size detection indication	alternates 1/0
	5	cassette 2 size detection indication	alternates 1/0
	6-7	for R&D	
	8-15	not used	
P004	0	toner supply clutch	1 ON

Address	Bit	Description	Remarks
	1	ITB cleaner drive clutch	1 ON
	2	sleeve drive clutch (CL3)	1 ON
	3	secondary transfer swing clutch (CL9)	1 ON
	4	duplex feed clutch (CL6)	1 ON
	5	registration clutch (CL2)	1 ON
	6	manual feed pickup clutch (CL1)	1 ON
	7	heat retention heater ON	1 ON
	8-15	not used	
P005	0	exhaust fan 1 full speed (machine rear)	1 ON
	1	ITB fan full speed	1 ON
	2	for R&D	
	3	transparency sensor ON	1 ON
	4	ITBHPLED_ON	1 ON
	5	for R&D	
	6	pickup 2 solenoid (SL2)	1 ON
	7	pickup 1 solenoid (SL1)	1 ON
	8-15	not used	
P006	0-1	for R&D	
	2	exhaust fan 2 full speed (machine front)	1 ON
	3	exhaust fan 2 full speed (machine front)	1 ON
	4	feed door sensor	0 door closed
	5	fixing inlet sensor	1 ON
	6	pickup unit door sensor	0 door closed
	7	front door sensor	0 door closed
	8-15	not used	
P007	0-7	for R&D	
	8-15	not used	
P008	0	DIP SW0	1 ON
	1	DIP SW1	1 ON
	2-3	for R&D	

Address	Bit	Description	Remarks
	4	delivery toner sensor	1 detected
	5	ITB fan lock detection	1 detected
	6	exhaust fan R lock detection	1 detected
	7	exhaust fan F lock detection	1 detected
	8-15	not used	
P009	0	cassette size detection 0 (alternately indicates cassettes 1 and 2)	1 ON
	1	cassette size detection 1 (alternately indicates cassettes 1 and 2)	1 ON
	2	cassette size detection 2 (alternately indicates cassettes 1 and 2)	1 ON
	3	cassette size detection 3 (alternately indicates cassettes 1 and 2)	1 ON
	4	cassette size detection 4 (alternately indicates cassettes 1 and 2)	1 ON
	5-7	for R&D	
	8-15	not used	
P010	0	toner fan lock detection	0 detected
	1	fixing fan lock detection	0 detected
	2	reserved	
	3-7	for R&D	

T-15-18

Address	Bit	Description	Remarks
P011	0-7	for R&D	
P012	0	for R&D	
	1-5	for R&D	
	6-7	not used	
P013	0-7	for R&D	
P014	0	for R&D	
	1-6	for R&D	

Address	Bit	Description	Remarks
	7	not used	
P015	0-7	for R&D	
P016	0-4	not used	
	5-6	for R&D	
	7	not used	
P017	0	fixing motor lock	1 ON
	1	fixing speed switch-over	1 half speed
	2	fixing motor ON	1 ON
	3-7	for R&D	
P018	0	LED	
	1-4	for R&D	
	5-7	not used	
P019	0-2	not used	
	3	for R&D	
	4	100V/200V detect	1 100V
	5-7	not used	
P020	0-1	for R&D	
	2	ATR solenoid	1 ON
	3	for R&D	
	4-7	not used	
P021	0-4	not used	
	5	for R&D	
	6-7	for R&D	
P022 to 029		reserved	

15.3.3 <R-CON>

0001-0120

T-15-19

Address	Bit	Description	Remarks
P001	0-4	not used	
	5	CIS power-on signal	1:ON
	6	for R&D	

Address	Bit	Description	Remarks
	7	size sensor drive single	1: ON
P002	0	not used	
	1	24V power supply monitor signal	0: normal
	2	scanner motor drive single	1: forward 0: reverse
	3-4	for R&D	
	5	13V power supply monitor signal	0: normal
	6	not used	
	7	for R&D	
P003	0-3	for R&D	
	4	LED control signal	1: ON
	5-7	for R&D	
P004	0-1	not used	
	2	original size detection 2	0: original present
	3-4	not used	
	5-6-7	for R&D	
	7	not used	
P005	0-7	for R&D	
P006	0	not used	
	1-3	for R&D	
	4	ADF sensor read input	0: ON
	5	copyboard open/closed sensor interrupt input 0	1: closed
	6	HP sensor interrupt input	1: HP
	7	copyboard open/closed sensor interrupt input 1	1: closed
P007	0-3	for R&D	
	4	scanner motor drive power saving	0: ON
	5	ADF pickup motor clock interrupt input	alternately 0/1
	6	ADF motor clock interrupt input	alternately 0/1
	7	not used	
P008	0	lamp ON signal	1: ON
	1	CIS drive ON signal	1: ON
	2-7	for R&D	
P009	0-7	for R&D	

15.3.4 <FEEDER>

0001-0122

T-15-20

Address	Bit	Description	Remarks
P001	0	read sensor	1: detected
	1	pre-registration sensor	1: detected
P002	0-3	not used	
	4	stamp solenoid	1: ON
	5	not used	
	6	original detection LED	1: ON
	7	not used	
P003	0-7	for R&D	
P004	0	original sensor	1: detected
	1	cover sensor	1: detected
	2-7	not used	
P005	0	cycle end sensor	1: detected
	1	length sensor 2	1: detected
	2	length sensor 1	1: detected
	3	A4/LTR identification sensor	1: detected
	4-5	not used	
	6	delivery sensor	1: detected
	7	DF open sensor	1: detected
P006	0-7	for R&D	
P007	0-7	for R&D	
P008	0-7	for R&D	
P009	0-7	for R&D	
P010	0-7	for R&D	
P011	0-7	for R&D	

15.3.5 <SORTER>

0001-0123

T-15-21

Address	Controller	Bit	Description	Remarks
P001	STACKER	0	inlet feed motor A	
		1	inlet feed motor B	
		2	inlet feed motor A-	
		3	inlet feed motor B-	
		4	inlet feed motor switch 0	0: ON
		5	inlet feed motor switch 1	0: ON
		6	inlet feed/stack delivery motor standby signal	1: ON
		7	common solenoid ON signal	0: ON
P002	STACKER	0	punch feed motor A	
		1	punch feed motor A-	
		2	punch feed motor B	
		3	punch feed motor B-	
		4	punch feed motor current switch 0	1: ON
		5	punch feed motor current switch 1	1: ON
		6	tray 2 motor clock	
		7	tray 1 motor clock	
P003	STACKER	0-3	for R&D	
		4-7	not used	
P004	STACKER	0	saddle connection detection signal	0: ON
		1	not used	
		2	swing HP sensor	1: ON
		3	upper cover open/closed sensor	0: ON
		4	front cover open/closed sensor	0: ON
		5	front cover interlock sensor	1: ON
		6	gear change HP sensor	1: ON
		7	not used	
P005	STACKER	0-1	for R&D	
		2	punch transmission request signal	0: ON
		3	saddle 13V ON signal	1: ON

Address	Controller	Bit	Description	Remarks
		4-7	not used	
P006	STACKER	0	punch connection detection	0: ON
		1-2	not used	
		3	punch motor standby	1: ON
		4	inlet sensor (IRQ0)	1: ON
		5	paper trailing edge sensor (IRQ1)	1: ON
		6	punch communication input (IRQ2)	0: ON
		7	not used	
P007	STACKER	0	tray approach sensor	0: ON
		1	tray 2 area sensor 1	0: ON
		2	tray 2 area sensor 2	0: ON
		3	tray 2 area sensor 3	0: ON
		4	tray 2 paper sensor	1: ON
		5	tray 2 paper surface sensor	1: ON
		6	inlet motor lock sensor	
		7	stack edging motor lock input	
P008	STACKER	0	tray 3 paper sensor	1: ON
		1	tray 3 connection detection	0: ON
		2	upper paper surface sensor	1: ON
		3	tray 1 interlock sensor	1: ON
		4	tray 1 area sensor 1	0: ON
		5	tray 1 area sensor 2	0: ON
		6	tray 1 area sensor 3	0: ON
		7	tray 1 paper sensor	1: ON
P009	STACKER	0	tray 1 shift motor CW	0: ON
		1	tray 1 shift motor enable	1: ON
		2	tray 1 shift motor power supply switch 0	0: ON
		3	tray 1 shit motor current switch 1	0: ON
		4	tray 2 shift motor CW	0: ON
		5	tray 2 shit motor enable	1: ON
		6	tray 2 shift motor power supply switch 0	0: ON

Address	Controller	Bit	Description	Remarks
		7	tray 2 shift motor power supply switch 1	0: ON
P010	STACKER	0	not used	
		1	swing lock motor power supply switch 0	0: ON
		2	swing lock motor phase A pulse output	
		3	swing lock motor phase B pulse output	
		4-7	not used	
P011	STACKER	0	input roller drive (away) solenoid	1: ON
		1-2	for R&D	
		3	buffer roller drive (away) solenoid	1: ON
		4	feed path sensor	1: ON
		5-7	not used	
P012	STACKER	0	gear change phase A	
		1	gear change phase B	
		2	gear change motor current switch 0	0: ON
		3	gear change motor current switch 1	0: ON
		4	not used	
		5-7	for R&D	
P013	STACKER	0	for R&D	
		1	front alignment HP sensor	1: ON
		2	front alignment HP sensor	1: ON
		3	handling tray paper sensor	1: ON
		4	trailing edge assist HP sensor	1: ON
		5-7	not used	
P014	STACKER	0	rear alignment motor phase A	
		2	rear alignment motor phase B	
		3	rear alignment motor current switch 0	0: ON
		4-7	not used	
P015	STACKER	0	front alignment phase A	
		1	front alignment phase B	

Address	Controller	Bit	Description	Remarks
		2	front alignment motor current switch 0	0: ON
		3-7	not used	

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Address	Controller	Bit	Description	Remarks
P016	STACKER	0-4	not used	
		5	CIS power-on signal	1:ON
		6	for R&D	
		7	size sensor drive signal	1: ON
P017	STACKER	0	not used	
		1	24V power supply monitor signal	0: normal
		2	scanner motor drive signal	1: forward 0: reverse
		3-4	for R&D	
		5	13V power supply monitor signal	0: normal
		6	not used	
		7	for R&D	
P018	STACKER	0-7	for R&D	
		4	LED control signal	1: ON
		5-7	for R&D	
P019	STACKER	0-1	not used	
		2	original size detection 2	0: original present
		3-4	not used	
		5-6	for R&D	
		7	not used	
P020	STACKER	0-7	for R&D	
P021	STACKER	0	not used	
		1-3	for R&D	
		4	ADF sensor interrupt input	0: ON
		5	copyboard cover open/closed sensor input 0	1: closed
		6	HP sensor interrupt input	1: HP

Address	Controller	Bit	Description	Remarks
		7	copyboard open/closed sensor interrupt input 1	1: closed
P022	STACKER	0-3	for R&D	
		4	scanner motor driver power saving	0: ON
		5	ADF pickup motor clock interrupt input	alternates 0/1
		6	ADF read motor clock interrupt input	alternates 0/1
		7	not used	
P023	STACKER	0	lamp ON signal	1: ON
		1	CIS drive ON signal	1: ON
		2-7	for R&D	
P024	SADDLE	0-7	not used	
P025	SADDLE	0-7	not used	
P026	SADDLE	0-7	not used	
P027	SADDLE	0-7	not used	
P028	SADDLE	0-7	not used	
P029	SADDLE	0-7	not used	
P030	SADDLE	0-7	not used	

T-15-23

Address	Controller	Bit	Description	Remarks
P031	SADDLE	0	saddle tray paper sensor	0: ON
		1	paper positioning area paper sensor	0: ON
		2	crescent roller HP sensor	0: ON
		3	saddle delivery path sensor	0: ON
		4	saddle path (upstream) sensor	1: ON
		5	saddle path (middle) sensor	1: ON
		6	saddle path (downstream) sensor	1: ON
		7	saddle path sensor	1: ON
P032	SADDLE	0	butting motor enable signal	1: ON
		1	butting motor CW signal	1: ON
		2	butting motor CCW signal	1: ON
		3	folding roller HP sensor	1: ON

Address	Controller	Bit	Description	Remarks
		4	front door open sensor	0: ON
		5	delivery cover open detection (photo sensor)	0: ON
		6	saddle alignment HP sensor	0: ON
		7	delivery cover open 24V down detection	1: ON
P033	SADDLE	0	inlet flapper solenoid	1: ON
		1	saddle path switch flapper 1	1: ON
		2	saddle path switch flapper 2	1: ON
		3	intermediate feed solenoid	1: ON
		4-5	not used	
		6	inlet path sensor	1: ON
		7	not used	
P034	SADDLE	0	rear staple motor CW	0: ON
		1	rear staple motor CCW	0: ON
		2	front stapler motor CW	0: ON
		3	not used	
		4	folding roller HP connector open detection	0: ON
		5-7	not used	
P035	SADDLE	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
P036	SADDLE	0-1	not used	
		2	punch switch 1	0: ON
		3	5V detection signal	0: ON
		4	24V detection signal	0: ON
		5-7	not used	
P037	SADDLE	0	POWER_ON	1: ON

Address	Controller	Bit	Description	Remarks
		1	LED1	1: ON
		2	LED2	1: ON
		3	LED3	1: ON
		4	LEDY	0: ON
		5	TRAY_MTR_CUR	0: ON
		6	TRAY_MTR_B	0: ON
		7	TRAY_MTR_A	0: ON
P038	PUNCHER	0	DIPSW1	0: ON
		1	DIPSW2	0: ON
		2	DIPSW3	0: ON
		3	not used	
		4	PCH-OUT	
		5	rear edge sensor	1: ON
		6	punch encoder clock	
		7	punch HP sensor	0: ON
P039	PUNCHER	0-2	for R&D	
		3-7	not used	
P040	PUNCHER	0-3	for R&D	
		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
P041	PUNCHER	0-3	not used	
		4	DIPSW4	0: ON
		5	horizontal registration motor CUR	0: ON
		6	for R&D	
		7	not used	
P042	PUNCHER	0	LED1	0: ON
		1	for R&D	
		2	for R&D	
		3	LED2	0: ON
		4	front cover sensor	0: ON
		5	for R&D	

Address	Controller	Bit	Description	Remarks
		6	PUSHSW2	0: ON
		7	PUSHSW1	0: ON
P043	PUNCHER	0-4	not used	
		5	upper cover sensor	0: ON
		6-7	not used	

15.3.6 <MN-CON>

0001-0124

T-15-24

Address	Bit	Sign	Description	Remarks
P001 (output)	0	GPDATA	PWR1	1: normal
	1		PWR2	1: normal
	2		for R&D	every 50 msec, alternates 1/0
	3		for R&D	
	4		cooling fan ON	cooling fan control

T-15-25

P002	0 to 16		for R&D	

T-15-26

P003 (output)	10	GPO	pickup count (for coin robo, ASSIST)	
	11		delivery count (for coin robo, ASSIST)	
	12		LCD backlight control	0: off, 1: on

T-15-27

P004 (input)	0	GPI	SRAM board detected	0: present, 1: absent
	1		for R&D	
	2		for R&D	
	3		operation enabled (key switch)	0: enabled, 1: disabled
	4		operation enabled (control card)	0: enabled, 1: disabled
	5		operation enabled (coin robo)	0: enabled, 1: disabled

T-15-28

P005	0 to 7	for R&D	

T-15-29

P006 (input)	8	open I/F control (PRDY signal)	0: Ready, 1: not ready
	9	open I/F setting	Mode0
	10	open I/F setting	Mode1
	11-13	for R&D	
	14	open I/F board detection	0: present; 1: absent
	15	open I/F detection (CRDY)	0: Ready, 1: not ready

T-15-30

P007 (input)	16	fax option	0: connected; 1: not connected

T-15-31

P008 (input)	4	Printer Power Ready	0: Ready, 1: not ready
	5-8	for R&D	
	9	Scanner Power Ready	0: Ready, 1: not ready

T-15-32

P009 (output)	5	PCPRDY	0: Ready, 1: not ready
	6-10	for R&D	
	11	Controller Power Ready	0: Ready, 1: not ready

15.4 ADJUST（Adjustment Mode）

15.4.1 COPIER

15.4.1.1 ADJ-XY

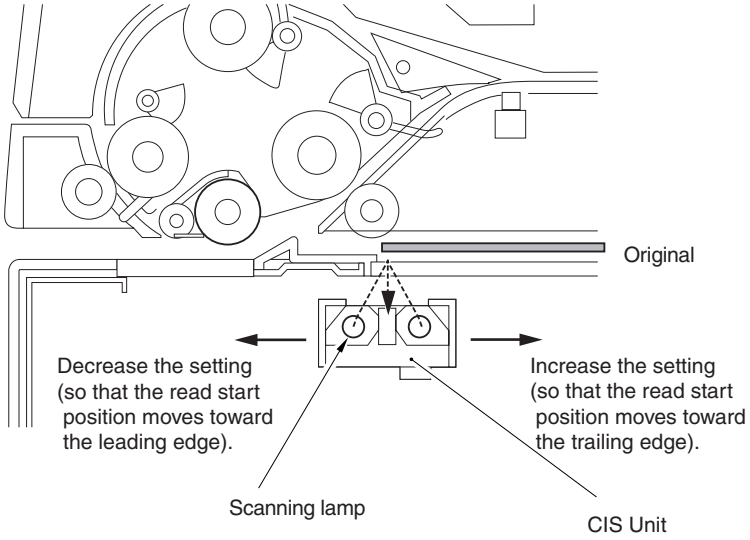
15.4.1.1.1 Overview 0002-8400

Adjusting the Image Read Start Point

15.4.1.1.2 <ADJ-X> 0000-9765

T-15-33

	Use it to adjust the scanner image leading edge position (i.e., image read start position in sub scanning direction).
Method of adjustment	- if the non-image width is larger than indicated, decrease the setting. - if an area outside the original is copied, increase the setting. - an increase of '1' will move the image read start position toward the trailing edge by 0.1 mm (i.e., the image read range will move toward the trailing edge). - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the setting indicated on the service label.
Range of adjustment	**1 to 100** **[at time of shipment: factory adjustment value/ after RAM initialization: 20]**
Caution 1	If you have changed the setting, be sure to record the new setting on the service label.



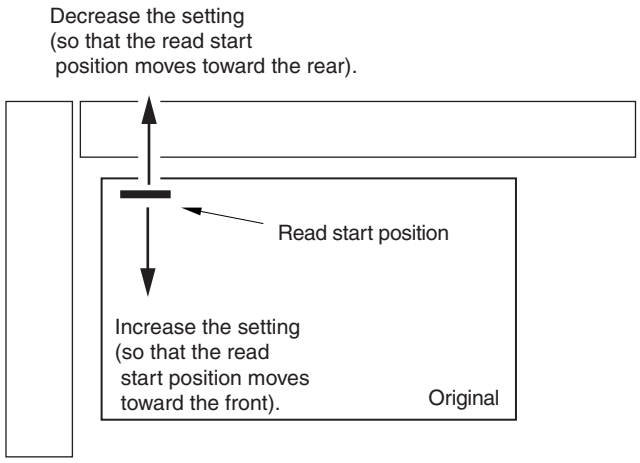
F-15-14

15.4.1.1.3 <ADJ-Y>

0000-9766

T-15-34

	Use it to adjust the read start cell position of the CCD (i.e., image read start position in main scanning direction).
Method of adjustment	- if the non-image width is larger than indicated, decrease the setting.
	- if an area outside the original is copied, increase the setting.
	- an increase of '1' will move the image read start position toward the front (i.e., the image read area will move toward the front).
	- if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label.
Range of adjustment	85 to 169 [at time of shipment: factory value/after RAM initialization: 131]
Caution	If you have changed the setting, be sure to record the new setting on the service label.



F-15-15

15.4.1.1.4 <ADJ-S> 0000-9769

T-15-35

Use it to enter an adjustment value for the scanner shading measurement position.

- a decrease of '1' will move the shading measurement position toward the leading edge by 0.1 mm.

Method of adjustment: - if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label.

Range of adjustment: 20 to 200
[at time of shipment: factory value/after RAM initialization: 40]

15.4.1.1.5 <ADJ-Y-DF> 0000-9770

T-15-36

Use it to adjust the main scanning position for stream reading.

- an increase of '1' will move the image read start position toward the front by 0.1 mm.

Method of adjustment: - if you have initialized the RAM on the reader controller PCB or if you have placed the reader controller PCB, enter the value indicated on the service label.

Range of adjustment: 50 to 250
[at time of shipment: factory value/after RAM initialization: 158]

15.4.1.1.6 <STRD-POS>

0000-9771

T-15-37

	Use it to adjust the CCD read position for stream reading. - an increase of '1' will move the image read position to the left by 1 mm.
Method of adjustment	- if you have initialized the RAM on the reader controller PCB or replaced the reader controller PCB, enter the value indicated on the service label.
Range of adjustment	1 to 200 [at time of shipment: factory value/after RAM initialization: 100]

15.4.1.2 CCD

15.4.1.2.1 Overview

0002-8425

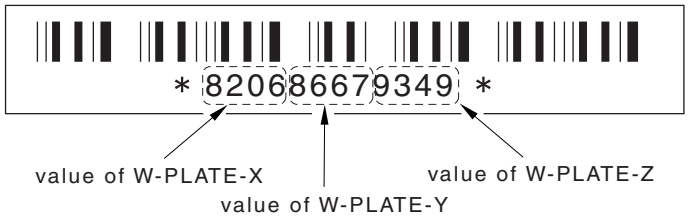
Making CCD-Related Adjustments

15.4.1.2.2 <W-PLT-X/Y/Z>

0001-0188

T-15-38

	Use it to enter the white level data indicated on the standard while plate.
Method of adjustment	- if you have initialized the RAM on the reader controller or if you have replaced the reader controller PCB, enter the value indicated on the service label. - if you have replaced the copyboard glass, enter the value indicated on the copyboard glass. (See the figure below.)
Range of adjustment	**1 to 9999** **[at time of shipment: factory measurement/after RAM initialization:** **W-PLT-X=8244** **W-PLT-Y=8707** **W-PLT-Z=9383]**



F-15-16

15.4.1.2.3 <CCDU-RG> 0001-2873

T-15-39

	Use it to enter the offset value for color displacement caused by the CIS.
Method of adjustment	Enter the offset value for the following: - if you have replaced the CIS unit, enter the value indicated on the label attached to the CIS unit. (In addition, be sure to record the value on the service label.) In the case of the following, enter the value indicated on the service label: - if you have replaced the reader controller PCB. - if you have initialized the RAM on the reader controller PCB.
Range of adjustment	-150 to 150 [at time of shipment: factory measurement/after RAM initialization: 0]

15.4.1.2.4 <MTF-MG> 0001-2526

T-15-40

	Use it to enter the MTF correction value in main scanning direction.
Method of adjustment	Enter the value of the following: If you have replaced the CIS unit, enter the value indicated on the label attached to the CIS unit. (In addition, be sure to record the value on the service label.)

Use it to enter the MTF correction value in main scanning direction.

In the case of the following, enter the value indicated on the service label:
- if you have replaced the reader controller PCB.
- if you have initialized the RAM on the reader controller PCB.

Range of adjustment: 0 to 99
[at time of shipment: factory measurement/after RAM initialization: 0]

15.4.1.2.5 <MTF-SG>

0001-2527

T-15-41

Use it to enter the MTF correction value in sub scanning direction.

Method of adjustment: Enter the value for the following:

If you have replaced the CIS unit, enter the value indicated on the label attached to the CIS unit. (In addition, be sure to record the value on the service label.)

In the case of the following, enter the value indicated on the service label:
- if you have replaced the reader controller PCB.
- if you have initialized the RAM on the reader controller PCB.

Range of adjustment: 0 to 99
[at time of shipment: factory measurement/after RAM initialization: 0]

15.4.1.2.6 <BOOK-RG>

0001-2528

T-15-42

Use it to enter the offset value for color displacement caused by the copyboard glass.

Method of adjustment: Enter the value for the following:

If you have replaced the copyboard glass, enter the value indicated on the label attached to the copyboard glass. (In addition, be sure to record the value on the service label.)

Use it to enter the offset value for color displacement caused by the copyboard glass.

In the case of the following, enter the value indicated on the service label:
- if you have replaced the reader controller PCB.
- if you have initialized the RAM on the reader controller PCB.

Range of adjustment: -150 to 150 [at time of shipment: factory measurement/after RAM initialization: 0]

15.4.1.2.7 <DF-RG> 0001-2537

T-15-43

Enter the offset value for color displacement caused by the stream reading glass.

Method of adjustment: Enter the value for the following:

Use it to enter the offset value for color displacement caused by the stream reading glass.
If you have replaced the stream reading glass, enter the value indicated on the label attached to the stream reading glass.

In the case of the following, enter the value indicated on the label attached to the stream reading glass:
- if you have replaced the reader controller PCB.
- if you have initialized the RAM on the reader controller PCB.

Range of adjustment: -150 to 150 [at time of shipment: factory measurement/after RAM initialization: 0

15.4.1.2.8 <50-RG> 0001-7310

Use it to indicate the offset value (indication only) for color displacement (R-G) for BOOK mode/50% reading.

15.4.1.2.9 <50-GB> 0001-7311

Use it to indicate the offset value (indication only) for color displacement (G-B) for BOOK mode/50% reading.

15.4.1.2.10 <100-RG> 0001-7312

Use it to indicate the offset value (indication only) for color displacement (R-G) for BOOK mode/100% reading.

15.4.1.2.11 <100-GB> 0001-7314

Use it to indicate the offset value (indication only) for color displacement (G-B) for BOOK mode/100% reading.

15.4.1.2.12 <50DF-RG> 0001-7315

Use it to indicate the offset value (indication only) for color displacement (R-G) for ADF mode/50% reading.

15.4.1.2.13 <50DF-GB> 0001-7316

Use it to indicate the offset value (indication only) for color displacement (G-B) for ADF mode/50% reading.

15.4.1.2.14 <100DF-RG> 0001-7317

Use it to indicate the offset value (indication only) for color displacement (R-G) for ADF mode/100% reading.

15.4.1.2.15 <100DF-GB> 0001-7318

Use it to indicate the offset value (indication only) for color displacement (G-B) for ADF mode/100% reading.

15.4.1.2.16 <DFTAR-R> 0001-2557

T-15-44

	Use it to enter the shading target (red) for the DF (normal original read position).
Method of adjustment	Use this mode item to enter the factory measurement if an image fault occurs (e.g., caused by soiling of the chart) after executing COPIER>FUNCTION>CCD>DF-WLVL1/DF-WLV2.
Range of adjustment	1 to 2047 [at time of shipment: factory measurement/after RAM initialization: 1106]

15.4.1.2.17 <DFTAR-G> 0001-2558

T-15-45

	Use it to enter the shading target (green) for the DF (normal original read position).
Method of adjustment	Use this mode item to enter the factory measurement if an image fault occurs (e.g., caused by soiling of the chart) after executing COPIER>FUNCTION>CCD>DF-WLVL1/DF-WLV2.
Range of adjustment	0 to 2047 [at time of shipment: factory measurement/after RAM initialization: 1131]

15.4.1.2.18 <DFTAR-B> 0001-2560

T-15-46

	Use it to enter the shading target (blue) for the DF (normal original read position).
Method of adjustment	Use this mode to enter the factory setting if an image fault occurs (e.g., caused by soling of the chart) after executing COPIER>FUNCTION>CCD>DF-WLVL1/DF-WLV2.
Range of adjustment	1 to 2047 [at time of shipment: factory measurement/after RAM initialization: 1185]

15.4.1.2.19 <DFTAR2-R> 0001-2561

T-15-47

	Use it to enter the shading target (red) for the DF (No. 2 read position).
Method of adjustment	Use this mode item to enter the factory measurement if an image fault occurs (e.g., caused by soiling of the chart) after executing COPIER>FUNCTION>CCD>DF-WLVL2.
Range of adjustment	1 to 2047 [at time of shipment: factory measurement/after RAM initialization: 1138]

15.4.1.2.20 <DFTAR2-G> 0001-2562

T-15-48

	Use it to enter the shading target value (green) for the DF No. 2 read position).
Method of adjustment	Use this mode item to enter the factory measurement if an image fault occurs (e.g., caused by soiling of the chart) after executing COPIER>FUNCTION>CCD>DF-WLVL2.
Range of adjustment	1 to 2047 [at time of shipment: factory measurement/after RAM initialization: 1154]

15.4.1.2.21 <DFTAR2-B>

0001-2564

T-15-49

	Use it to enter the shading target (blue) for the DF (No. 2 read position).
Method of adjustment	Use this mode item to enter the factory measurement if an image fault occurs (e.g. caused by soiling of the chart) after executing COPIER>FUNCTION>CCD>DF-WLVL2.
Range of adjustment	1 to 2047 [at time of shipment: factory measurement/after RAM initialization: 1201]

15.4.1.3 HV-PRI

15.4.1.3.1 Overview

0002-8447

Making Adjustments for the Primary Charging Assembly High-Voltage Output According to Conditions

15.4.1.3.2 <OFST1-AC>

0001-1707

T-15-50

	Use it to adjust the offset value of the primary charging AC voltage.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - Enter the value indicated on the label attached to the PCB if you have replaced the high-voltage PCB.
Range of adjustment	**0 to 255** **[at time of shipment/after RAM initialization: 8]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.3.3 <PRI-GAIN>

0001-1031

T-15-51

	Use it to adjust the gain for the primary charging current measurement.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - Enter the value indicated on the label attached to the PCB if you have replaced the high-voltage PCB.
Range of adjustment	**50 to 700** **[at time of shipment: factory adjustment value/ after RAM initialization: 162]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.3.4 <PRI-OFST>

0001-1032

T-15-52

	Use it to adjust the offset value for the primary charging current measurement.
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - Enter the value indicated on the label attached to the PCB if you have replaced the high-voltage PCB.
Range of adjustment	**-10000 to +5000** **[at time of shipment: factory adjustment/after RAM initialization: -17]**
Reference	This mode item is for use at the factory only. Do not use it in the field.

15.4.1.3.5 <DR-I-INT> 0001-1887

T-15-53

	Use it for the drum film thickness current initial value. The drum film thickness current value measured when the following is executed will be indicated: COPIER>FUNCTION>CLEAR>DRUM-LIFE.
Method of adjustment	- If you have newly mounted/replaced the drum unit, execute the following, and record on the service label the value indicated: COPIER>FUNCTION>CLEAR>DRM-LIFE. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**300 to 600 (unit: 0.1yA)** **[at time of shipment: factory measurement/after RAM initialization: 350]**

15.4.1.4 FEED-ADJ

15.4.1.4.1 Overview 0002-8458

Making Feeding System-Related Adjustments

15.4.1.4.2 <REGIST> 0001-0210

T-15-54

	Use it to adjust the timing at which the registration roller clutch goes on.
Method of adjustment	- An increase of '1' will move the image toward the leading edge of paper by 0.1 mm. - Enter the value indicated on the service lable if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-50 to 50 (unit: 0.1 mm)** **[at time of shipment: factory adjustment value/after RAM initialization: -30]**

15.4.1.4.3 <ADJ-C1> 0001-2968

T-15-55

	Use it to adjust the image write start position in main scanning direction when the cassette 1 is used as the source of paper.
Method of adjustment	- An increase by '1' will move the image toward the rear by 0.1 mm.
	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if have replaced the DC controller PCB.
Range of adjustment	**-100 to 100 (unit: 0.1 mm)** **[at time of shipment: factory adjustment value/after RAM initialization: 0]**

15.4.1.4.4 <ADJ-C2> 0001-2971

T-15-56

	Use it to adjust the image write start position in main scanning direction when the cassette 2 is used as the source of paper.
Method of adjustment	- An incase by '1' will move the image toward the rear by 0.1 mm.
	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller or if you have replaced the DC controller PCB.
Range of adjustment	**-100 to 100 (unit: 0.1 mm)** **[at time of shipment: factory adjustment value/after RAM initialization: 0]**

15.4.1.4.5 <ADJ-C3> 0001-2974

T-15-57

	Use it to adjust the image write position in main scanning direction when the cassette 3 is used as the source of paper.
Method of adjustment	- An increase of '1' will move the image toward the rear by 0.1 mm.

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

Range of adjustment

-100 to 100 (unit: 0.1 mm)
[at time of shipment; factory adjustment value/after RAM initialization: 0]

15.4.1.4.6 <ADJ-C4>

0001-2975

T-15-58

Use it to adjust the image write start position in main scanning direction when the cassette 4 is used as the source of paper.

Method of adjustment

- An increase of '1' will move the image toward the rear by 0.1 mm.

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

Range of adjustment

-100 to 100 (unit: 0.1 mm)
[at time of shipment; factory adjustment value/ after RAM initialization: 0]

15.4.1.4.7 <ADJ-MF>

0001-2976

T-15-59

Use it to adjust the image write start position in main scanning direction when the multifeeder is used as the source of paper.

Method of adjustment

- An increase of '1' will move the image toward the rear by 0.1 mm.

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

Range of adjustment

-100 to 100 (unit: 0.1 mm)
[at time of shipment: factory adjustment value/after initialization: 0]

15.4.1.4.8 <ADJ-DK> 0001-2977

T-15-60

	Use it to adjust the image write start position in main scanning direction when the paper deck is used as the source of paper.
Method of adjustment	- An increase of '1' will move the image toward the rear by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if have replaced the DC controller PCB.
Range of adjustment	**-100 to 100 (unit: 0.1 mm)** **[at time of shipment: factory adjustment value/after RAM initialization: 0]**

15.4.1.4.9 <RG-REFE> 0001-7319

T-15-61

	Use it to adjust the leading edge registration for the 2nd side of a double-sided print.
Method of adjustment	- An increase of '1' will move the image toward the leading edge of paper by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller or if you have replaced the DC controller PCB.
Range of adjustment	**-50 to +50 (1 = 0.1 mm, approx.)** **[at time of shipment: factory adjustment value/after RAM initialization: 0]**
Reference	The paper path used for duplexing is different from the path for the cassette (joins the later immediately in front of the registration roller); as such, the leading edge registration may also be different from the registration for paper arriving from the cassette. This mode is offered for that reason, and it does not operate in keeping with the registration used when the cassette is the source of paper.

15.4.1.4.10 <ADJ-C1RE> 0001-1052

T-15-62

Use it to adjust the image write start position for the 2nd side in main scanning direction when the cassette 1 is used as the source of paper (horizontal registration adjustment).

Method of adjustment
- An increase of '1' will move the image toward the rear by 0.1 mm.
- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.

Range of adjustment
-10 to +10 (1 = 0.1 mm, approx.)

[at time of shipment: factory adjustment value/after RAM initialization: 0]

15.4.1.4.11 <ADJ-C2RE> 0001-1054

T-15-63

Use it to adjust the image start position for the 2nd side in main scanning direction when the cassette 2 is used as the source of paper (horizontal registration adjustment).

Method of adjustment
- An incase of '1' will move the image toward the rear by 0.1 mm.
- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.

Range of adjustment
-10 to +10 (1 = 0.1 mm, approx.)

[at time of shipment: factory adjustment/after RAM initialization: 0]

15.4.1.4.12 <ADJ-C3RE> 0001-1058

T-15-64

image write start position adjustment in main scanning direction for 2nd side of paper from cassette 3 (horizontal registration adjustment)

Method of adjustment	- an increase by '1' will move the image toward the rear by 0.1 mm. - If you have initialized the RAM of the DC controller PCB or replaced the DC controller PCB, enter the value indicated on the service label.
Range of adjustment	**-10 to +10 (1 = 0.1 mm, approx.)** [at time of shipment: factory adjustment/after RAM initialization: 0]

15.4.1.4.13 <ADJ-C4RE>

0001-1059

T-15-65

Use it to adjust the image write start position for the 2nd side when the cassette 4 is used as the source of paper (horizontal registration adjustment)

Method of adjustment	- An increase of '1' will move the image toward the rear by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to +10 (1 = 0.1 mm, approx.)** [at time of shipment: factory adjustment/after RAM initialization: 0]

15.4.1.4.14 <ADJ-DKRE>

0001-1061

T-15-66

Use it to adjust the image write start position for the 2nd side in main scanning direction when the paper deck is used as the source of paper (horizontal registration adjustment).

Method of adjustment	- An increase of '1' will move the image toward the rear by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to +10 (1 = 0.1 mm, approx.)** [at time of shipment: factory adjustment value/after RAM initialization: 0]

15.4.1.4.15 <ADJ-MFRE>

0001-1063

T-15-67

	Use it to adjust the image write start position for the 2nd side in main scanning direction when the manual feed tray is used as the source of paper (horizontal registration adjustment).
Method of adjustment	- An increase of '1' will move the image toward the rear by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-10 to +10 (1 = 0.1 mm, approx.)** [at time of shipment: factory adjustment value/after RAM initialization: 0]

15.4.1.4.16 <RG-HF-SP>

0001-2891

T-15-68

	Use it to adjust the timing at which the registration clutch goes on (process speed at 1/2, heavy paper/transparency in use).
Method of adjustment	- An increase of '1' will move the image toward the leading edge of paper by 0.1 mm. - Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB.
Range of adjustment	**-50 to 50 (1 = 0.1 mm, approx.)** **[at time of shipment: factory adjustment value/after RAM initialization: 0]**

15.4.1.5 CST-ADJ

15.4.1.5.1 Overview

0002-8462

Making Pickup System-Related Adjustments

15.4.1.5.2 <MF-A4R> 0001-0212

T-15-69

	Use it to enter the paper width basic value for the manual feed tray (A4R).
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - If you have replaced the paper width detecting VR or if you are registering a value newly, be sure to execute the following in service mode: FUNCTION>CST.
Range of adjustment	**0 to 255** [at time of shipment: factory adjustment value/after RAM initialization: 141]

15.4.1.5.3 <MF-A6R> 0001-0213

T-15-70

	Use it to enter the paper width basic value for the manual feed tray (A6R).
Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - If you have replaced the paper width detecting VR or if you are registering a value newly, be sure to execute the following in service mode: FUNCTION>CST.
Range of adjustment	**0 to 255** [at time of shipment: factory adjustment value/after RAM initialization: 235]

15.4.1.5.4 <MF-A4> 0001-0214

T-15-71

Enter the paper width basic value for the manual feed tray (A4).

Method of adjustment	- Enter the value indicated on the service label if you have initialized the RAM on the DC controller PCB or if you have replaced the DC controller PCB. - If you have replaced the paper width detecting VR or if you are registering the value newly, be sure to execute the following in service mode: FUNCTION>CST.
Range of adjustment	**0 to 255** [at time of shipment: factory adjustment value/after RAM initialization: 26]

15.4.2 FEEDER

15.4.2.1 Overview 0002-8467

Making Feeder-Related Adjustments

15.4.2.2 <DOCST> 0001-0224

T-15-72

Adjusting the Original Image Leading Edge

Method of adjustment	A higher setting will delay the image leading edge timing.
Range of adjustment	**-100 to 100 (unit: 0.337mm) [at time of shipment/after RAM initialization: 0]**

15.4.2.3 <LA-SPEED> 0001-7321

T-15-73

Adjusting the document feeding speed at the time of stream reading from the feeder

Method of adjustment	The speed becomes faster (image is reduced) by increasing setting value.

	Adjusting the document feeding speed at the time of stream reading from the feeder
Range of adjustment	**-30 to 30 (unit: 0.1%)** **[at time of shipment: factory adjustment value/after RAM initialization: 0]**

15.5 FUNCTION （Operation/Inspection Mode）

15.5.1 COPIER

15.5.1.1 INSTALL

15.5.1.1.1 Overview 0001-0232

Operation for Installation

15.5.1.1.2 <STIR-Y> 0001-1794

T-15-74

	Use it to stir the developer inside the developing unit (Y).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.3 <STIR-M> 0001-1814

T-15-75

	Use it to stir the developer inside the developing unit (M).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.4 <STIR-C> 0001-1818

T-15-76

	Use it to stir the developer inside the developing unit (C).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.5 <STIR-K> 0001-1821

T-15-77

	Use it to stir the developer inside the developing unit (Bk).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.6 <STIR-4> 0001-1824

T-15-78

	Use it to stir the developer inside all developing units (Y, M, C, Bk).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.7 <INIT-Y> 0001-1827

T-15-79

	Use it to cause the machine to read the initial value for the Y toner density signal (SGNL, REF).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.8 <INIT-M> 0001-1836

T-15-80

	Use it to cause the machine to read the initial value for the M toner density signal (SGNL, REF).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.9 <INIT-C> 0001-1837

T-15-81

	Use it to cause the machine to read the initial value for the C toner density signal (SGNL, REF).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.10 <INIT-3> 0001-1838

T-15-82

	Use it to cause the machine to read the initial value for 3-color (Y, M, C) toner density signal (SGNL, REF).
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.11 <SPLY-H-Y> 0001-1845

T-15-83

	Use it to start initial supply of toner from the toner cartridge (Y) to the toner buffer assembly.
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.12 <SPLY-H-M> 0001-1856

T-15-84

	Use it to start initial supply of toner from the toner cartridge (M) to the toner buffer assembly.
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.13 <SPLY-H-C> 0001-1858

T-15-85

	Use it to start initial supply of toner from the toner cartridge (C) to the toner buffer assembly.
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.14 <SPLY-H-K> 0001-1861

T-15-86

	Use it to start initial supply of toner from the toner cartridge (Bk) to the toner buffer assembly.
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.15 <SPLY-H-4> 0001-1862

T-15-87

	Use it to start initial supply of toner from all toner cartridges (Y, M, C, Bk) to the toner buffer assembly.
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.16 <STRD-POS> 0001-6935

T-15-88

	Use it to cause auto detection of the CIS read position for DF stream reading mode.
Method of operation	Select the item to highlight, and press the OK key to start the operation.

15.5.1.1.17 <CARD> 0001-0233

T-15-89

Use it to make settings for a card reader.

Method of adjustment	**1 to 2001 [at time of shipment/after RAM initialization: 0]**
Method of operation	Enter the number of a card, and press the OK key. (As many as 100 cards starting with the one whose number you have entered will be accepted for use.) At this time, the card control information (group ID and ID No.) is initialized.

15.5.1.1.18 <KEY> 0001-0235

T-15-90

Use it to set the control key function.

Settings	**0: do not recognize control key. [at time of shipment/after RAM initialization: 0]**
	1: recognize control key function.
Method of operation	1) Make the following selections, and enter '1': COPIER>INSTALL>KEY.
	2) Turn off and then on the main power switch (so that the control key function will be recognized).

15.5.1.2 CCD

15.5.1.2.1 Overview 0001-0236

CCD-Related Automatic Adjustmant

15.5.1.2.2 <DF-WLVL1/2> 0001-2660

T-15-91

Use it to adjust the ADF white level.

Method of operation	1) Make the following selections, and enter the appropriate value: COPIER>ADJUST>CCD>W-PLATE-X/Y/Z. To check the target value, make the following selections: COPIER>DISPLAY>CCD>TARGET-R/G/B. 2) Execute the following selections: COPIER>FUNCTION>CCD>DF-WLVL1. Place paper normally used by the user on the copyboard glass, and cause the machine to read it. The machine reads the white level for book mode (i.e., checks the degree of transmission of the glass for book mode). 3) Execute the following selections: COPIER>FUNCTION>CCD-DF-WLVL2. Place paper normally used by the user in the DF, and cause the machine to read it (steam reading). The machine reads the white level for DF mode (stream reading; i.e., checks the level of transmission of the reading glass for stream reading). face reading: computes DFTAR-R/G/B back reading: computes DFTAR2-R/G/B
Caution	Be sure to execute these 2 items at the same time.

15.5.1.3 CST

15.5.1.3.1 Overview

0001-0251

Cassette/Manual Feed Tray-Related Auto Adjustment

15.5.1.3.2 <MF-A4R, MF-A6R, MF-A4>

0001-0252

T-15-92

Use it to enter the paper width basic value for the manual feeder.

A4 width: 210 mm; A6R width: 105 mm; A4 width: 297 mm

	- To make fine-adjustments, make the following selections: COPIER>ADJUST>CST-ADJ>MF-A4, RMF-A6R, MF-A4.
Method of operation	1) Place A4 paper in the manual feeder, and adjust the size guide to A4R width. 2) Using this service mode item, select 'MF-A4R' to highlight, and press the OK key(so that the value will be stored after auto adjustment). 3) Likewise, perform steps 1) and 2) to register the basic value for A6R and A4.

15.5.1.4 CLEANING

15.5.1.4.1 Overview 0001-0254

Cleaning Operation

15.5.1.4.2 <TBLT-CLN> 0001-0256

T-15-93

	Use it to clean the intermediate transfer belt. When executed, it will remove the foreign matter (e.g., oils from fingers, paper lint) to prevent image faults.
Method of operation	Select it to highlight, and press the OK key to start the operation. The cleaning operation will last for about 80 sec and end automatically.

15.5.1.4.3 <FDRL-CLN> 0001-0257

T-15-94

	Use it to clean the face-down delivery roller 1/2.
Method of operation	1) Select it to highlight, and press the OK key so that the rollers will start to rotate. 2) While both rollers are rotating, press a cloth moistened with alcohol against the individual rollers to clean them.

3) Press the Stop key to stop the operation.

15.5.1.4.4 <RVRL-CLN>

0001-0259

T-15-95

Use it to clean the reversing roller.

Method of operation

1) Open the delivery cover.

2) Select the item, and press the OK key so that the roller will start to rotate.

3) While the roller is rotating, press a cloth moistened with alcohol against it to clean.

4) Press the Stop key to stop the operation.

15.5.1.4.5 <DEVL-CLN>

0001-0260

T-15-96

Use it to clean the inside of the developing unit.
The machine is forced to use up the toner that may have been excessively stirred by the toner stirring screw (i.e., thus acquiring wrong charges) to prevent image faults.

Method of operation

Select the item to highlight, and press the OK key to start the operation.
The operation will last for about 7 min and will end automatically.

15.5.1.4.6 <TB-INSD>

0001-1072

T-15-97

Use it to clean the inner side of the intermediate transfer belt (ITB).

Method of operation

Select it to highlight, and press the OK key to start the operation.
The operation will last for about 30 sec and will end automatically.

15.5.1.5 FIXING

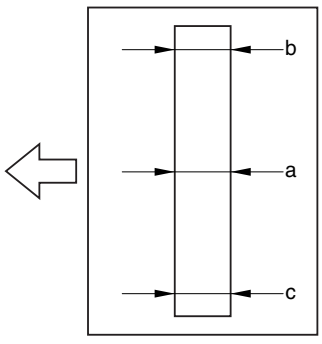
15.5.1.5.1 Overview 0001-0261

Fixing Unit-Related Auto Adjustments

15.5.1.5.2 <NIP-CHK> 0001-0262

T-15-98

	Generate a printout of automatic measurement of the fixing nip width.
Steps	1) Select 'plain paper' or 'recycled paper' as the type of paper for the cassette 1 (Additional Function>common settings>paper type).
	2) Place A4/LTR plain paper or recycled paper in the cassette 1.
	3) Press the OK key (so that paper is picked up from the cassette 1).
	4) See that the paper is stopped once between the fixing roller and then discharged in about 15 sec.
	5) Check to see the nip width of the discharged paper is as indicated.



F-15-17

standard: b, c
9.25 -0.25, +0.25 mm (less than 5000 sheets)
9.25 +1.25/ -0.25mm difference between b and c 0.5 mm or less (5000 sheets or more)

standard: a (reference only)
from 8.5 to 9.0 mm (less than 5000 sheets)
from 8.5 to 10.0 mm (5000 sheets or more)

Note 1:
The point of measurement for a is in the middle of paper.

Note 2:
The points of measurement for b and c are 10 to 15 mm from the edge of paper.

Note 3:

The arrow in the figure indicates the direction of paper movement.

Note 4:
The nip tends to increase as more and more paper is moved past. There is no need, however, for another session of adjustment each time 5000 sheets have been moved past. If adjustments are needed for some reason, try so that b and c are adjusted to match the median value of 9.25 mm.

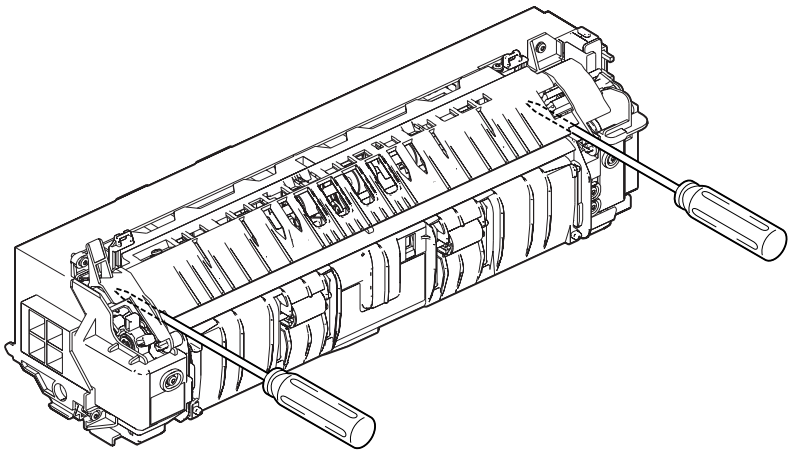
T-15-99

6) If the nip width is not as indicated, perform the following:

6-1) Turn the front and rear adjusting screws to adjust the nip.

EX: if the median value of the nip measurements is closer to the lower limit,
tighten the screw of the side where the nip at the ends is smaller; a full turn of the screw will cause a change of about 0.5 mm.

EX: if the nip balance is correct, turn the screws of both sides.



F-15-18

T-15-100

7) After the work, generate a test print using the following: COPIER>TEST>PG>TYPE6 (grid).

15.5.1.6 PANEL

15.5.1.6.1 Overview

0001-0263

Checks on the Control Panel

15.5.1.6.2 <LCD-CHK>

0001-0264

T-15-101

	Use it to check the LCD for a missing dot.
Method of operation	1) Select the item, and press the OK key to start the operation. See that the front face of the touch panel goes on in the following sequence: white, black, red, green, and blue. 2) Press the Stop key to end the operation. (In the case of the printer model, press the Clear key.)

15.5.1.6.3 <LED-CHK> 0001-0265

T-15-102

	Use it to check the LEDs on the control panel.
Method of operation	1) Select it, and press the OK key to start the operation. See that the LEDs go on in sequence. 2) Press [LED-OFF] to stop the operation.

15.5.1.6.4 <LED-OFF> 0001-0266

T-15-103

	Use it to check the LEDs on the control panel.
Method of operation	1) Select it to end the operation under [LED-CHK].

15.5.1.6.5 <KEY-CHK> 0001-0267

T-15-104

	Use it to check the keys.
Method of operation	1) Select [KEY-CHK] so that the machine indicates the numbers/names of the input keys. 2) Press any key to check; if normal, the appropriate character will appear on the touch panel. (See the table.) 3) Select [KEY-CHK] once again to end the key input check.

T-15-105

Numbers/Names of the Keys

Key	Indication on screen
0 to 9, #, *	0 to 9, #, *
reset	RESET
stop	STOP
user mode	USER
start	START

Key	Indication on screen
power save	STAND BY
clear	CLEAR
ID	ID
help	?
counter check	BILL

15.5.1.6.6 <TOUCHCHK>

0001-0269

Adjusting the Coordinates of the Analog Touch Panel

T-15-106

Method of operation	- Match points pressed on the touch panel with the coordinates of the LCD. - Execute this service mode item if you have replaced the LCD. 1) Select [TOUCHCHK] to highlight, and press the OK key. 2) Press the + symbols (9 pc.) appearing on the touch panel in sequence to end the adjustment.

15.5.1.7 PART-CHK

15.5.1.7.1 Overview

0002-8515

Checking the Operation of the Loads

15.5.1.7.2 <CL>

0001-0270

T-15-107

	Use it to select a clutch whose operation you want to check. (range 1 through 15; 8 through 10 and 13 through 15, reserved)
Method of operation	1) Select the item.

2) Enter the code of the clutch you want to check using the keypad.

1: toner supply clutch	CL7
2: ITB cleaning drive clutch	CL8
3: sleeve drive clutch	CL3
4: secondary transfer swing clutch	CL9
5: duplex feed clutch	CL6
6: registration clutch	CL2
7: manual feed pickup clutch	CL1
8 to 10: reserved	
11: deck pickup clutch	CL2D
12: deck draw-out clutch	CL1D

3) Press the OK key.

4) Press [CL-ON] to check the operation.

15.5.1.7.3 <CL-ON>

0001-0271

T-15-108

Use it to start a check on the operation of the clutch you have selected.

Method of operation

1) Select the time, and press the OK key so that the clutch will repeat going on and off as follows:

ON for 0.5 sec > OFF for 10 sec > ON for 0.5 sec > OFF for 1 sec > ON for 0.5 sec > OFF

15.5.1.7.4 <FAN>

0001-0272

T-15-109

Use it to select a fan whose operation you want to check.

(1 through 10; 5 or higher, reserved)

Method of operation

1) Select the item.

2) Enter the code of the fan you want to check.

1: heat exhaust fan (FAN1)

2: heat exhaust fan 2 (FM2)

3: toner suction fan (FM5)

4: ITB fan (FM3)

3) Press the OK key.

4) Press [FAN-ON], and check the operation.

15.5.1.7.5 <FAN-ON>

0001-0273

T-15-110

	Use it to check the operation of the fans; power supply fan, fixing fan, cleaner fan.
Method of operation	1) Select the item, and press the OK key so that the following operation starts: for 10 sec, ON at full speed > for 10 sec, ON at half speed > standby

15.5.1.7.6 <MTR>

0001-0276

T-15-111

	Use it to select the motor whose operation you want to check. (1 thorough 25; 9, 17 through 25, reserved)	
Method of operation	1) Select the item.	
	2) Enter the code of the motor you want to check using the keypad.	
	1: laser scanner motor	M1
	2: rotary motor	M8
	3: pickup 1 motor	M6
	4: pickup 2 motor	M7
	5: No. 1 delivery motor	M4
	6: drum motor	M9
	7: main motor	M2
	8: fixing motor	M11
	9: reserved	

10: pedestal pickup 1 motor M1C

11: pedestal pickup 2 motor M2C

12: P/D feed motor M1D

13: P/D lifter motor M2D

14: No. 2 delivery motor

15: No. 3 delivery motor

16: buffer path motor

3) Press the OK key.

4) Press [MTR-ON], and check the operation.

15.5.1.7.7 <MTR-ON> 0001-0277

T-15-112

Use it to start the operation of the motor.

Method of operation

Toner Cartridge Motor (Y, M, C, K)

1) Remove the toner cartridge, and close the front cover.

2) Select the item, and press the OK key.

- for 10 sec ON > OFF

Horizontal Registration Motor

1) Select the item, and press the OK key.

- HP search starts > end automatically

Motors Other Than Toner Cartridge Motor (Y, M, C, K) and Horizontal Motor

1) Select the item, and press the OK key.

- for 10 sec, ON > OFF

15.5.1.7.8 <SL> 0001-0278

T-15-113

Use it to select the solenoid whose operation you want to check.

(1 to 20; 4 to 10, 18 to 20, reserved)

Method of operation	1) Select the item.
	2) Enter the code of the solenoid you want to check using the keypad.
	1: cassette 1 pickup solenoid SL1
	2: cassette 2 pickup solenoid SL2
	3: ATR shutter solenoid SL3
	4 to 10: reserved
	11: cassette 3 pickup solenoid SL1C
	12: cassette 4 pickup solenoid SL2C
	13: paper deck pickup solenoid SL1D
	14: paper deck paper compartment open solenoid SL2D
	15: No. 1 flapper solenoid
	16: No. 2 flapper solenoid
	17: No. 3 flapper solenoid
	18 to 20: reserved
	3) Press the OK key.
	4) Press [SL-ON], and check the operation.

15.5.1.7.9 <SL-ON>

0001-0279

T-15-114

	Use it to start the check on the solenoid you have selected.
Method of operation	1) Select the item, and press the OK key so that the solenoid will repeat going 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

15.5.1.8 CLEAR

15.5.1.8.1 Overview

0001-0281

Resetting RAM/Error Code/Jam History/Error History

15.5.1.8.2 <ERR> 0001-0283

T-15-115

	Use it to reset an error code.
	(E000, E001, E002, E003)
Method of operation	1) Select the item, and press the OK key.
	2) Turn off and then on the main power supply.

15.5.1.8.3 <DC-CON> 0001-0285

T-15-116

	Use it to reset the RAM on the DC controller PCB.
Caution	The contents of the RAM are removed when the main power switch is turned off and then on once again.
Method of operation	1) Obtain a printout of the service mode settings by making the following selections: COPIER>FUNCTION>MISC-P>P-PRINT.
	2) Select the item, and press the OK key.
	3) Turn off and then on the main power.
	4) As necessary, enter the data indicated on the print obtained using [P-PRINT].

15.5.1.8.4 <R-CON> 0001-0286

T-15-117

	Use it to initialize the RAM on the reader controller PCB.
Caution	The contents of the RAM are initialized only when the main power switch has been turned off and then on once again.
Method of operation	1) Obtain a printout of the service mode settings by making the following selections: COPIER>FUNCTION>MISC-P>P-PRINT.
	2) Select the item, and press the OK key.
	3) Turn off and then on the main power.
	4) As necessary, enter the data indicated on the printout obtained by [P-PRINT].

15.5.1.8.5 <JAM-HIST>

0001-0287

T-15-118

	Use it to reset the jam history.
Caution	The jam history is removed when the OK key is pressed.
Method of operation	1) Select the item, and press the OK key.

15.5.1.8.6 <ERR-HIST>

0001-0289

T-15-119

	Use it to reset the error history.
Caution	The error history is removed when the OK key is pressed.
Method of operation	1) Select the item, and press the OK key.

15.5.1.8.7 <PWD-CLR>

0001-0291

T-15-120

	Use it to reset the password set up in user mode under [system administrator].
Caution	The password is removed when the OK key is pressed.
Method of operation	1) Select the item, and press the OK key.

15.5.1.8.8 <ADRS-BK>

0001-0292

T-15-121

	Use it to reset the address book data.
Caution	The address book data is removed when the main power switch is turned off and then on once again.
Method of operation	1) Select the item, and press the OK key. 2) Turn off and then on the main power.

15.5.1.8.9 <CNT-MCON>

0001-0293

T-15-122

	Use it to reset the service counter readings controlled by the main controller PCB (main). (For the readings that are reset, see the description under COUNTER mode.)
Caution	The counter readings are removed when the OK key is pressed.
Method of operation	1) Select the item, and press the OK key.

15.5.1.8.10 <CNT-DCON>

0001-0294

T-15-123

	Use the item to reset the service counter readings controlled by the DC controller PCB. - COPIER>COUNTER>DRBL-2>SORT - COPIER>COUNTER>DRBL-2>FIN-STPR - COPIER>COUNTER>DRBL-2>FIN-PDDL - COPIER>COUNTER>DRBL-2>SADDLE - COPIER>COUNTER>DRBL-2>SDL-STPL
Caution	The counter readings are removed when the OK key is pressed.
Method of operation	1) Select the item, and press the OK key.

15.5.1.8.11 <OPTION>

0001-0295

T-15-124

	Use it to reset the service mode (OPTION) settings to default settings (RAM initialization).
Caution	The settings are reset when the OK key is pressed.
Reference	The data removed here is data in the main controller, DC controller, and reader controller.
Method of operation	1) Obtain a printout of the service mode settings by executing the following selections: COPIER>FUNCTION>MISC-P>P-PRINT.

2) Select the item, and press the OK key.

15.5.1.8.12 <MMI>

0001-0296

T-15-125

Use it to reset the following for user mode.

- backup data for copier control panel (user settings)
- common settings backup data (user settings)
- backup data (other than fax settings; user settings)

Caution	The settings are removed when the main power switch is turned off and then on again.
Method of operation	1) Select the item, and press the OK key. 2) Turn off and then on the main power.

15.5.1.8.13 <MN-CON>

0001-0297

T-15-126

Use it to reset the RAM in the main controller PCB SRAM board.

Caution	- The contents of the RAM are removed when the main power switch is turned off and then on once again. - When this item is executed, all data on the SRAM board will be initialized. In other words, the image data including the images in Boxes on the hard disk will also be lost. Be sure to obtain the consent of the user before executing this item.
Method of operation	1) Obtain a printout of the service mode settings by executing the following selections: COPIER>FUNCTION>MISC-P>P-PRINT. 2) Select the item, and press the OK key. The machine will restart automatically, and indicate a message asking you to turn off and then on the power. 3) Turn off and then on the main power.

15.5.1.8.14 <CARD>

0001-0298

T-15-127

	Use it to reset card ID-related data (group).
Caution	The card ID-related data is removed when the main power switch is turned off and then on.
Method of operation	1) Select the item, and press the OK key. 2) Turn off and then on the main power.

15.5.1.8.15 <DRM-LIFE>

0001-1075

T-15-128

	Use it to initialize the various parameters after replacing the drum unit.
Method of operation	Execute this item if you have replaced the drum unit with a new one. 1) Select the item. 2) Press the OK key to start the operation. While the operation is under way, the item will flash; and, the operation ends in about 1 min. 3) Record the setting indicated for the following on the drum counter label: COPIER>ADJUST>HV-PRI>DRM-1-INIT. 4) If the following is not '0', execute the item once again: COPIER>DISPLAY>MISC>DRUM>LIFE.
Caution	- Do not execute this unit unless you have replaced the drum unit with a new one. Otherwise, the image density will not be optimum, requiring you to replace the drum unit. - Do not open any door or turn off the power switch while the operation is under way. Otherwise, you will have to execute the item once again.

15.5.1.9 MISC-R

15.5.1.9.1 Overview

0001-0299

Checking the Operation of the Reader Unit

15.5.1.9.2 <SCANLAMP> 0001-0301

T-15-129

	Use it to check the operation of the scanning lamp.
Method of operation	1) Select the item.
	2) Press the OK key so that the scanning lamp remains on for 3 sec.

15.5.1.10 MISC-P

15.5.1.10.1 Overview 0001-0302

Checking the Operation of the Printer Unit

15.5.1.10.2 <P-PRINT> 0001-0303

T-15-130

	Use it to generate a printout of the service mode settings.
Method of operation	1) Select the item.
	2) Press the OK key to generate a printout.
Reference	It takes about 15 sec for the machine to generate a printout.

15.5.1.10.3 <USER-PRT> 0001-0304

T-15-131

	Use it to obtain a printout of the user mode settings.
Method of operation	1) Select the mode.
	2) Press the OK key to generate a printout.
Reference	It takes about 3 sec for the machine to generate a printout.

15.5.1.10.4 <LBL-PRNT>

0001-0305

T-15-132

	Use it to obtain a printout of the service label.
Method of operation	1) Place 4/LTR paper in the cassette 1.
	2) Select the item.
	3) Press the OK key to generate a printout.
Reference	It takes about 15 sec for the machine to generate a printout.

15.5.1.10.5 <DEV-DR-Y>

0001-1082

T-15-133

	Use it to move the developing assembly rotary to the point of replacement for the toner cartridge (Y).
Method of operation	1) Select the item. 2) Press the OK key so that the developing assembly rotary moves to the point of replacement for the toner cartridge (Y).
Caution	Be sure to move the developing assembly rotary to the point of replacement for the toner cartridge; then, turn off the control panel power switch and the main power switch in correct sequence before removing and mounting the toner cartridge. If you replace and mount a toner cartridge that has already been used while the power is on, the machine will incorrectly indicate the level of remaining toner (to be full) until the next replacement of the toner cartridge.

15.5.1.10.6 <DEV-DR-M>

0001-1880

T-15-134

	Use it to move the developing rotary assembly to the point of replacement for the toner cartridge (M).
Method of operation	1) Select this item. 2) Press the OK key so that the developing assembly rotary moves to the point of replacement for the toner cartridge (M).

Caution	Be sure to move the developing assembly rotary to the point of replacement for the toner cartridge, and turn off the control panel power switch and the main power switch in correct sequence before removing and mounting the toner cartridge. If you replace and mount a toner cartridge that has already been used while the power is on, the machine will incorrectly indicate the level of remaining toner (to be full) until the next replacement of the toner cartridge.

15.5.1.10.7 <DEV-DR-C>

0001-1882

T-15-135

Use it to move the developing assembly rotary to the point of replacement of the toner cartridge (C).

Method of operation	1) Select the item. 2) Press the OK key so that the developing rotary moves to the point of replacement for the toner cartridge (C).
Caution	Be sure to move the developing rotary to the point of toner replacement for the toner cartridge, and turn off the control panel power switch and the main power switch in sequence before removing and mounting the toner cartridge. If you remove and mount a toner cartridge that has been used while the power is on, the machine will incorrectly indicate the level of remaining toner (to be full) until the next replacement of the toner cartridge.

15.5.1.10.8 <DEV-DR-K>

0001-1883

T-15-136

Move the developing assembly rotary to the point of replacement of the toner cartridge (Bk).

Method of operation	1) Select the item. 2) Press the OK key so that the developing assembly rotary moves to the point of replacement for the toner cartridge (Bk).
Caution	Be sure to move the developing assembly rotary to the point of replacement, and turn off the control panel power switch and the main power switch before removing and mounting the toner cartridge. If you remove and mount a toner cartridge that has been used while the power is on, the machine will incorrectly indicate the level of remaining toner (to be full) until the next replacement.

15.5.1.10.9 <ITB-CLSW>

0001-1083

T-15-137

	Use it when replacing the ITB cleaning unit.
Method of operation	Execute this mode when you are removing the ITB cleaning unit. 1) Select the item. 2) Press the OK key to start that operation. During the operation, the item will flash, and the operation will end in about 5 sec.
Reference	The following takes place for this mode item: 1. the developing assembly rotary is moved to the point of replacement for the toner cartridge (C) so that the toner cartridge (Bk) will move under the ITB cleaning unit. 2. if a Finisher-P1 is used, the finisher delivery tray is moved to the topmost position.
Caution	Do not use this mode unless you are removing the ITB cleaning unit.

15.5.1.10.10 <DRM-CHK>

0001-1884

T-15-138

	Use it to set the drum film thickness correction level.
Method of operation	Execute this item if you have replaced the DC controller PCB or if you have initialized the RAM on the DC controller PCB. 1) Enter the value indicated on the drum initial value label for the following: COPIER>ADJUST>HV-PRI>DR-I-INT. 2) Select this item, and press the OK key so that the machine will automatically measure the drum film thickness current and set up a drum film thickness correction level based on the measurement it has taken and the initial value (COPIER>ADJUST>HV-PRI>DR-I-INT).

15.5.1.10.11 <1ATVC-EX>

0001-6941

T-15-139

Use it to force the execution of primary ATVC.

Execute this item when you have replaced the ITB, the ITB unit, or the primary transfer roller.

Method of operation	1) Select the item.
	2) Press the OK key so that the operation starts; the operation will end in about 1 min.

15.5.1.10.12 <ENV-PRT>

0001-9075

T-15-140

	Use it to generate a printout of the log of changes in machine internal humidity/fixing temperature.
Reference	The machine prints out changes that have taken place in machine internal humidity/fixing temperature (middle) obtained from the readings of the environment sensor and then on-contact thermistor.

15.5.1.11 SYSTEM

15.5.1.11.1 Overview

0001-0306

Checking System-Related Operation

15.5.1.11.2 <DOWNLOAD>

0001-0307

T-15-141

	Use it to switch over to download mode.
Method of operation	1) Select the item.
	2) Press the OK key so that the machine will enter download mode and waits for a command (connection). At this time, [STAND-BY] (or [STANDBY]) will be indicated next to the Level 3 field.
	3) Uses the Service Support Tool to perform downloading work. (While connected to a PC, the machine will indicate [CONNECTED].)
	4) See that that the notation has changed to [HOLD] to indicate that the communication has ended. (You may turn off the power while the indication is [HOLD].)

15.5.1.11.3 <CHK-TYPE>

0001-0309

T-15-142

Use it to select the number of the partition that you want to check (HD-CHECK).

Method of operation

1) Select the item.

2) Select the number of the partition you want to check using the keypad.

0: entire HDD (check and correction)

1: image storage area

2: multiple-use file storage area

3: PDL-related file storage area

4: firmware storage area

- A PDL file is a file that contains user settings data, various log data, PDL spool data, and image data (i.e., control information for data).

3) Press the OK key.

15.5.1.11.4 <HD-CHECK>

0001-0310

T-15-143

Use it to check and correct the partition you have selected using CHK-TYPE.

Method of operation

1) Select the item.

2) Press the OK key.

3) See the result (1: OK; 2: NG, hardware; 3: NG, software/ corrected sector, switched sector).

15.5.1.11.5 <HD-CLEAR>

0001-0311

T-15-144

Us it to initialize the partition you have selected using CHK-TYPE.

Caution

- if you have selected 0 or 4, the selections will be invalid.

	- if you have selected 1, the SRAM area and the image control data held in the multiple-purpose file storage area will also be initialized.
Method of operation	1) Select the item. 2) Press the OK key.

⚠The initialization is done when the power is turned off and then on if you execute [HD-CLEAR] after using [CHK-TYPE] to select 1: image storage area or 3: PDL-related file storage area.
The initialization takes about 5 min, during which time the progress bar moves slowly. Do not turn off the power while the progress bar is indicated.

15.5.2 FEEDER

15.5.2.1 Overview 0001-7201

Checking the DF on Its Own

15.5.2.2 <MTR-CHK> 0001-7202

T-15-145

Use it to select a motor when checking the DF motor on its own.

Select [MTR-ON] to execute the item.

1: pickup motor; 2: read motor

15.5.2.3 <TRY-A4> 0001-7203

Use it to execute automatic adjustment (A4 Width) for DF original paper width detection.

15.5.2.4 <TRY-A5R> 0001-7205

Use it to execute automatic adjustment (A5R width) for DF original paper width detection.

15.5.2.5 <TRY-LTR> 0001-7207

Use it to execute automatic adjustment (LTR width) for DF original paper width detection.

15.5.2.6 <TRY-LTRR> 0001-7208

Use it to execute automatic adjustment (LTR-R width) for DF original paper width detention.

15.5.2.7 <FEED-CHK> 0001-7209

T-15-146

Use it to check the parameters in use when checking paper movement in the DF.

Select [FEED-ON] to execute the item.

1: simplex operation
2: duplex operating
3: simplex operation w/ stamp
4: duplex operation w/ stamp

15.5.2.8 <SL-CHK> 0001-7210

T-15-147

Use it to select a component when checking the DF solenoid on its own.

Use [SL-ON] to execute the item.

1: lock solenoid
2: stamp solenoid

15.5.2.9 <SL-ON> 0001-7211

T-15-148

Use it to start the operation selected by [SL-CHK].

Press the OK key to start the operation.

15.5.2.10 <MTR-ON> 0001-7212

T-15-149

Use it to start the operation selected by [MTR-ON].

Press the OK key to start the operation.
Press the OK key once again to stop the operation.

15.5.2.11 <ROLL-CLN> 0001-7213

T-15-150

Use it to clean the roller.
Press the OK key to start the operation.
Press the OK key once again to stop the operation.

15.5.2.12 <FEED-ON> 0001-7214

T-15-151

Use it to start the operation selected by [FEED-ON].

Press the OK key to start the operation.
Press the OK key once again to stop the operation.

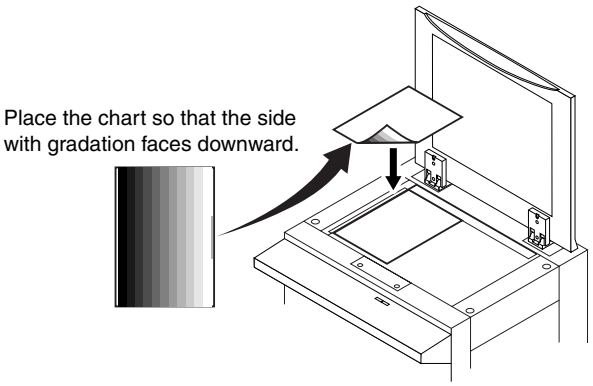
15.5.3 FUNCTION （operation/inspection mode）:Level 2

15.5.3.1 COPIER

15.5.3.1.1 CCD

<LUT-ADJ2> 0001-3150

CCD Gain Fine-Correction
If adjustment of the density using LUT-ADJ (CCD gain simple correction) cannot be made, execute this mode using the 10-gradation chart.
<Method of Operation>
1) Place the 10-gradation Chart (D-10 test sheet) on the copyboard glass as shown.
2) Select the item, and press the OK key.
3) See that the machine executes automatic adjustment.
4) See that the machine ends the automatic adjustment.
5) When the service mode items (COPIER>ADJUST>LAMP, COPIER>ADJUST>CCD) are updated, print out a service sheet, and store away the printout.



F-15-19

15.5.3.1.2 LASER

<POWER-H> 0001-1868

Use it to turn on the laser output of the laser power maximum value adjustment.
Select the item to highlight, and press the OK key to start laser output. Press the Stop key to stop the laser output.

15.5.3.1.3 CLEAR

<SND-STUP> 0001-7218

Use it to initialize the setting for the transmission reading. (Execute this item when you switch language settings.)

15.5.3.1.4 MISC-P

<DRUM-ROT> 0001-1878

DRUM-ROT (Use it to rotate the photosensitive drum idly for a specific period of time.)
Select the item to highlight, and press the OK key to start the operation.

<KEY-HIST> 0001-0318

Use it to obtain a printout of the history of key inputs made on the control panel.

1) Select the item.

2) Press the OK key so that the machine generates the printout.

<HIST-PRT> 0001-0323

Use it to obtain a printout of the history of jams and errors.

1) Select the item.

2) Press the OK key so that the machine generates the printout.

<TRS-DATA> 0001-0326

Use it to move data received in memory mode to a Box.

1) Select the item.

2) Press the OK key to move the data.

15.6 OPTION （Machine Settings Mode）

15.6.1 COPIER

15.6.1.1 BODY

15.6.1.1.1 Overview 0001-0328

Selecting Machine-Related Settings

15.6.1.1.2 <MODEL-SZ> 0001-0330

T-15-152

Use it to switch the default magnification display function and the ADF original size detection function.

Caution: The new settings become valid only when the main power switch has been turned off and then on.

Settings:
0: AB (6R5E)
1: INCH (5R4E)
2: A (3R3E)
3: AB/INCH (6R5E)

15.6.1.1.3 <PASCAL> 0001-0332

T-15-153

Use it to enable/disable the use of gradation data and contrast potential obtained by auto gradation correction (full correction).

Caution: The new settings become valid only when the power switch has been turned off and then on.

Settings:
0: disable
1: enable
[at time of shipment/after RAM initialization: 1]

15.6.1.1.4 <CONFIG> 0001-0337

T-15-154

Use it to select multiple pieces of firmware stored on the hard disk, and to switch the machine's country, language, destination, and paper size configuration settings.

Caution: The new settings become valid when the main power switch has been turned off and then on.

Method of operation:
1) Select the item whose setting you want to change, and press the +/- key.
2) See that each press on the +/- key changes the setting.
3) When all items are as you want, press the OK key.
4) Turn off and then on the main power switch.

Settings:
XXYYZZAA
XX: country (e.g., JP for Japan)
YY: language (e.g., ja for Japanese)
ZZ: destination (e.g., 00 for Canon)
AA: paper size configuration (e.g., 00 for AB)

15.6.1.1.5 <TEMP-TBL> 0001-0338

T-15-155

Use it to adjust the fixing assembly control temperature.

Setting:
0: OFF
1: +5 deg C
2: -5 deg C

Caution: The new settings become valid only when the main power switch has been turned off and then on.
[at time of shipment/after RAM initialization: 0]

15.6.1.1.6 <W/SCNR> 0001-0341

T-15-156

Use it to specify the presence/absence of a reader unit in the case of a copier model.

Caution: The new settings become valid when the main power switch has been turned off and then on.

Setting	0: printer model 1: model w/ leader [at time of shipment: 1/after RAM initialization: 0]

15.6.1.1.7 <RUI-DSP>

0001-7220

T-15-157

Use it to permit or not to permit the selection of copier functions on the RUI screen.

Setting	0: disable display of copier screen on RUI 1: enable display of copier screen on RUI [at time of shipment/after RAM initialization: 0]

15.6.1.1.8 <NW-SPEED>

0001-0342

T-15-158

Use it to select a data transfer speed for connection to a network for service work.

Setting	0: Auto 1: 100Base-TX 2: 10Base-T [at time of shipment/after RAM initialization: 0]

15.6.1.1.9 <DEVL-PTH>

0001-0347

T-15-159

Use it to set a threshold level of the number of prints in response to which the toner consumption sequence is forced to go on.

Method of operation	When an image with a low color ratio is copied/printed continuously, if the density is below the threshold, the toner consumption sequence is forced to go on while the job is under way as soon as the selected number of copies/prints is exceeded.
Setting	0: disable the sequence 1: 125 sheets (approx.) 2: 250 sheets (approx.) 3: 500 sheets (approx.) [at tine of shipment/after RAM initialization: 2]

15.6.1.1.10 <DFDST-L1> 0001-7756

T-15-160

	Use it to adjust the dust detection level (sheet-to-sheet correction) used when the DF is in use.
Method of adjustment	A higher setting enables the detection of smaller particles of dust.
Range of adjustment	0 to 255 [at time of shipment/after RAM initialization: 205]

15.6.1.1.11 <DFDST-L2> 0001-7758

T-15-161

	Use it to adjust the dust detection level (post-job) valid when the DF is in use.
Method of adjustment	A higher setting enables the detection of smaller particles of dust.
Range of adjustment	0 to 255 [at time of shipment/after RAM initialization: 205]

15.6.1.1.12 <DST-POS> 0001-7759

T-15-162

	Use it to switch the original reading position when the DF is in use. Use it to set the original read position in the presence of dust on the glass surface.
Setting	0: No. 1 position + No. 2 position 1: No. 1 position 2: No. 2 position [at time of shipment/after RAM initialization: 0]
Caution	The No. 2 position corresponds to an empty space, permitting stray dust to show in images.

15.6.1.1.13 <CCD-LUT>

0001-7761

T-15-163

Use it to enable/disable the use of GAIN correction data for the CIS unit.

(data corrected in FUNCTION>CCD>LUT-ADJ2 of level 2)

Setting
0: disable the use
1: enable the use (1-point correction)
2: enable the use (3-point correction)
[at time of shipment/after RAM initialization: 0]

15.6.1.1.14 <2T-RL-TM>

0001-1149

T-15-164

Use it to set the length of time during which the secondary transfer outside roller is moved away from the ITB.

Setting
0: 0 sec
1: 30 sec
2: 60 sec
3: 5 min
4: 30 min
5: 60 min
6: 120 min
7: off
[at time of shipment/after RAM initialization: 1]

Reference
The machine moves the secondary transfer outside roller away from the ITB if its engine is not started up within a specific period of time. Use this mode to set the length of time.
If white spots tend to occur in halftone images in a high humidity environment, select '0' A higher setting is better for FCOT (first copy time); however, it can lead to image faults (halftone images).

15.6.1.1.15 <ENVP-INT>

0001-9453

T-15-165

Use it to set the intervals at which logs are obtained for the machine inside temperature/humidify and fixing temperature.
(COPIER>FUNCTION>MISC-P>ENV-PRT and COPIER>DISPLAY>ENVRNT)

Range of Setting	0 to 480 (min) [at time of shipment/after RAM initialization: 60]
Reference	If 0, no log is obtained.

15.6.1.1.16 <FX-SPD2> 0004-0094

T-15-166

fine adjustment of the fixing roller speed (for half-speed mode)

Method of adjustment	A higher setting will increase the fixing roller speed.
Range of adjustment	-5 to +5 (at time of shipment/RAM initialization: 0)

15.6.1.1.17 <LPW-TIME> 0005-4480

T-15-167

not used

15.6.1.2 USER

15.6.1.2.1 Overview 0001-0351

Making User-Related Settings

15.6.1.2.2 <COPY-LIM> 0001-0352

T-15-168

Use it to change the upper limit imposed on the number of copies to make.

Setting	1 to 999 [at time of shipment/after RAM initialization: 999]

15.6.1.2.3 <SLEEP> 0001-0353

T-15-169

Use it to enable/disable the sleep function.

Setting
0: OFF
1: ON
[at time of shipment/after RAM initialization: 1]

Reference
To set up the sleep function, use [timer setting] in user mode.

15.6.1.2.4 <COUNTER 1> 0001-0354

T-15-170

Use it to set the software counter 1 on the user mode screen.

Setting
101: total 1
[at time of shipment/after RAM initialization: 1 (fixed; cannot be changed)]

15.6.1.2.5 <COUNTER 2> 0001-0356

T-15-171

Use it to change the type of software counter 2 on the control panel to suit the needs of the user or dealer.

Range of setting
0 to 999
[at time of shipment/after RAM initialization: 108]

Reference
The type of counter may be changed to suit the needs of the user and dealer.

15.6.1.2.6 <COUNTER 3> 0001-0357

T-15-172

Use it to change the type of soft counter 3 on the control panel to suit the needs of the user or the dealer.

Range of setting
0 to 999
[at time of shipment/after RAM initialization; 232]

Reference	The type of counter may be changed to suit the needs of the user or the dealer.

15.6.1.2.7 <COUNTER 4>

0001-0358

T-15-173

	Use it to change the type of software counter 4 on the control panel to suit the needs of the user or the dealer.
Range of setting	0 to 999 [at time of shipment/after RAM initialization: 324]
Reference	The type of counter may be changed to suit the needs of the user or the dealer.

15.6.1.2.8 <COUNTER 5>

0001-0360

T-15-174

	Use it to change the type of software counter 5 on the control panel to suit the needs of the user or the dealer.
Range of setting	0 to 999 [at time of shipment/after RAM initialization: 0]
Reference	The type of counter may be changed to suit the needs of the user or the dealer.

15.6.1.2.9 <COUNTER 6>

0001-0361

T-15-175

	Use it to change the type of software counter 6 on the control panel to suit the needs of the user or the dealer.
Range of setting	0 to 999 [at time of shipment/after RAM initialization: 0]
Reference	The type of counter may be changed to suit the needs of the user or the dealer.

15.6.1.2.10 Software Counter Specifications

0001-0364

<Software Counter Specifications>

The software counters are classified as follows according to input numbers:

T-15-176

000's: remote copy	500's: scan
100's: total copies	600's: box
200's: copies	700's: received prints
300's: prints	800's: report prints
400's: copier + prints	

Guide to the Table

- yes: counter valid for the machine
- 4C: full color
- mono: mono color (Y, M, C/R, G, B/aged mono)
- Bk: black mono
- L: large-sized (B4 or smaller)
- S: small-size (paper of B4 or smaller)
- 1/2: under "count of," the number of counts given to large-size paper.
  You may change the following in service mode so that the paper as large as and larger than B4 is counted as large-size paper: COPIER>OPTION>USER>B4_L_CNT.
- 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-15-177

yes/no	No.	Description
	000	no indication
yes	002	remote copy (full color 1)
yes	003	remote copy (full color 2)
yes	004	remote copy (mono color 1)
yes	005	remote copy (mono color 2)
yes	006	remote copy (black-and-white 1)
yes	007	remote copy (blank-and-white 2)
yes	008	remote copy (full color, large)
yes	009	remove copy (full color, small)
yes	010	remote copy (mono color, large)

yes/no	No.	Description
yes	011	remote copy (mono color, small)
yes	012	remote copy (black-and-white, large)
yes	013	remote copy (black-and-white, small)
yes	014	remote copy (full color + mono color, large)
yes	015	remote copy (full color + mono color, small)
yes	016	remote copy (full color + mono color 2)
yes	017	remote copy (full color + mono color 1)
yes	018	remote copy (full color, large, double-sided)
yes	019	remote copy (full color, small, double-sided)
yes	020	remote copy (mono color, large, double-sided)
yes	021	remote copy (mono color, small, double-sided)
yes	022	remote copy (black-and-white, large, double-sided)
yes	023	remote copy (black-and-white, small, double-sided)

T-15-178

yes/no	No.	Description
yes	101	total 1
yes	102	total 2
yes	103	total (large)
yes	104	total (small)
yes	105	total (full color 1)
yes	106	total (full color 2)
yes	108	total (black-and -white 1)
yes	109	total (black-and -white 2)
yes	110	total (mono color, large)
yes	111	total (mono color, small)
yes	112	total (black-and-white, large)
yes	113	total (black-and-white, small)
yes	114	total 1 (double-sided)
yes	115	total 2 (double-sided)
yes	116	large (double-sided)
yes	117	small (double-side)
yes	118	total (mono color 1)

yes/no	No.	Description
yes	119	total (mono color 2)
yes	120	total (full color, large)
yes	121	total (full color, small)
yes	122	total (full color + moo color, large)
yes	123	total (full color + mono color, small)
yes	124	total (full color + mono color 2)
yes	125	total (full color + mono color 1)

T-15-179

yes/no	No.	Description
yes	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	215	remote copy (large)
yes	216	remote copy (small)
yes	217	copy (full color 1)
yes	218	copy (full color 2)
yes	219	copy (mono color 1)
yes	220	copy (mono color 2)
yes	221	copy (black-and-white 1)
yes	222	copy (black-and-white 2)
yes	223	copy (full color, large)

yes/no	No.	Description
yes	224	copy (full color, small)
yes	225	copy (mono color, large)
yes	226	copy (moo color, small)
yes	227	copy (black-and-white, large)
yes	228	copy (black-and-write, small)
yes	229	copy (full color + mono color, large)
yes	230	copy (full color + mono color, small)
yes	231	copy (full color + mono color/2)
yes	232	copy (full color + mono color/1)
yes	233	copy (full color, large, double-sided)
yes	234	copy (full color, small, double-sided)
yes	235	copy (mono color, large, double-sided)
yes	236	copy (mono color, small, double-sided)
yes	237	copy (black-and-white, large, double-sided)
yes	238	copy (black-and-white, small, double-sided)
yes	245	copy A (full color 1)
yes	246	copy A (full color 2)
yes	247	copy A (mono color 1)
yes	248	copy A (mono color 2)
yes	249	copy A (black-and-white 1)
yes	250	copy A (black-and-white 2)
yes	251	copy A (full color, large)
yes	252	copy A (full color, mall)
yes	253	copy A (mono color, large)
yes	254	copy A (mono color, small)
yes	255	copy A (black-and-white, large)
yes	256	copy A (black-and-white, small)
yes	257	copy A (full color + mono color, large)
yes	258	copy A (full color + mono color, small)
yes	259	copy A (full color + mono color 2)
yes	260	copy A (full color + mono color 1)
yes	261	copy A (full color, large, double-sided)
yes	262	copy A (full color, small, double-sided)

yes/no	No.	Description
yes	263	copy A (mono color, large, double-sided)
yes	264	copy A (mono color, large, double-sided)
yes	265	copy A (black-and-white, large, double-sided)
yes	266	copy A (black-and-white, small, double-sided)
yes	273	local copy (full color 1)
yes	274	local copy (full color 2)
yes	275	local copy (mono color 1)
yes	276	local copy (mono color 2)
yes	277	local copy (black-and-white 1)
yes	278	local copy (black-and-white 2)
yes	279	local copy (full color, large)
yes	280	local copy (full color, small)
yes	281	local copy (mono color, large)
yes	282	local copy (mono color, small)
yes	283	local copy (black-and-white, large)
yes	284	local copy (black-and-white, small)
yes	285	local copy (full color + mono color, large)
yes	286	local copy (full color + mono color, small)
yes	287	local copy (full color + mono color 2)
yes	288	local copy (full color + mono color 1)
yes	289	local copy (full color, large, double-sided)
yes	290	local copy (full color, small, double-sided)
yes	291	local copy (mono color, large, double-sided)
yes	292	local copy (mono color, small, double-sided)
yes	293	local copy (black-and-white, large, double-sided)
yes	294	local copy (black-and-white, small, doubles-sided)

T-15-180

yes/no	No.	Description
yes	301	print (total 1)
yes	302	print (total 2)
yes	303	print (large)
yes	304	print (small)

yes/no	No.	Description
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)
yes	310	print (full color 2)
yes	311	print (mono color 1)
yes	312	print (mono color 2)
yes	313	print (black-and-white 1)
yes	314	print (black-and-white 2)
yes	315	print (full color, large)
yes	316	print (full color, small)
yes	317	print (mono color, large)
yes	318	print (mono color, small)
yes	319	print (black-and-white, large)
yes	320	print (black-and-large, small)
yes	321	print (full color + mono color, large)
yes	322	print (full color + mono color, small)
yes	323	print (full color + mono color/2)
yes	324	print (full color + mono color/1)
yes	325	print (full color, large, double-sided)
yes	326	print (full color, small, double-sided)
yes	327	print (mono color, large, double-sided)
yes	328	print (mono color, small, double sided)
yes	329	print (black-and-white, large, double-sided)
yes	330	print (black-and -white, small, double-sided)
yes	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)
yes	336	PDL print (full color 2)
yes	339	PDL print (black-and-white 1)

yes/no	No.	Description
yes	340	PDL print (black-and-white 2)
yes	341	PDL print (full color, large)
yes	342	PDL print (full color, small)
yes	345	PDL print (black-and-white, large)
yes	346	PDL print (black-and-white, small)
yes	351	PDL print (full color, large, double-sided)
yes	352	PDL print (full color, small, double-sided)
yes	355	PDL print (black-and-white, large, double-sided)
yes	356	PDL print (black-and-white, small, double-sided)

T-15-181

yes/no	No.	Description
yes	401	copy + print (full color, large)
yes	402	copy + print (full color, small)
yes	403	copy + print (black-and-white, large)
yes	404	copy + print (black-and-white, small)
yes	405	copy + print (black-an-white 2)
yes	406	copy + print (black-and-white 1)
yes	407	copy + print (full color + mono color, large)
yes	408	copy + print (full color + mono color, small)
yes	409	copy + print (full color + mono color/2)
yes	410	copy + print (full color + mono color/1)
yes	411	copy + print (large)
yes	412	copy + print (small)
yes	413	copy + print (2)
yes	414	copy + print (1)
yes	415	copy + print (mono color, large)
yes	416	copy + print (mono color, small)
yes	417	copy + print (full color, large, double-sided)
yes	418	copy + print (full color, small, double-sided)
yes	419	copy + print (mono color, large, double-sided)
yes	420	copy + print (mono color, small, double-sided)
yes	421	copy + print (black-and-white, large, double-sided)

yes/no	No.	Description
yes	422	copy + print (back-and-white, small, double-sided)

T-15-182

yes/no	No.	Description
yes	501	scan (total 1)
-	502	scan (total 2)
-	503	scan (large)
-	504	scan (small)
yes	505	black-and-white (total 1)
-	506	black-and-white (total 2)
-	507	black-and-white (large)
-	508	black-and-white scan (small)
yes	509	color scan (total 1)
-	510	color scan (total 2)
-	511	color scan (large)
-	512	color scan (small)

T-15-183

yes/no	No.	Description
yes	601	box print (total 1)
yes	602	box print (total 2)
yes	603	box print (large)
yes	604	box print (small)
yes	605	box print (full color 1)
yes	606	box print (full color 2)
yes	607	box print (mono color 1)
yes	608	box print (mono color 2)
yes	609	box print (black-and-white 1)
yes	610	box print (black-and-white 2)
yes	611	box print (full color, large)
yes	612	box print (full color, small)
yes	613	box print (mono to color, large)
yes	614	box print (mono color, small)

yes/no	No.	Description
yes	615	box print (black-and-white, large)
yes	616	box print (black-and-white, small)
yes	617	box print (full color + moo color, large)
yes	618	box print (full color + mono color, small)
yes	619	box print (full color + mono color 2)
yes	620	box print (full color + mono color 1)
yes	621	box print (full color, large, double-sided)
yes	622	box print (full color, small, double-sided)
yes	623	box print (mono color, large, double-sided)
yes	624	box print (mono color, small, double-sided)
yes	625	box print (black-and-white, large, double-sided)
yes	626	box print (back-and-white, small, double-sided)

T-15-184

yes/no	No.	Description
yes	701	reception print (total 1)
yes	702	reception print (total 2)
yes	703	reception print (large)
yes	704	reception print (small)
-	705	reception print (full color 1)
-	706	reception print (full color 2)
-	707	reception print (grayscale 1)
-	708	reception print (grayscale 2)
yes	709	reception print (black-and-white 1)
yes	710	reception print (black-and-white 2)
-	711	reception print (full color, large)
-	712	reception print (full color, small)
-	713	reception print (grayscale, large)
-	714	reception print (grayscale, small)
yes	715	reception print (black-and-white, large)
yes	716	reception print (black-and-white, small)
-	717	reception print (full color + grayscale, large)
-	718	reception print (full color + grayscale, small)

yes/no	No.	Description
-	719	reception print (full color + grayscale 2)
-	720	reception print (full color, grayscale 1)
-	721	reception print (full color, large, double-sided)
-	722	reception print (full color, small, double-sided)
-	723	reception print (grayscale, large, double-sided)
-	724	reception print (grayscale, small, double-sided)
yes	725	reception print (black-and-white, large, double-sided)
yes	726	reception print (black-and-white, small, double-sided)

T-15-185

yes/no	No.	Description
yes	801	report print (total 1)
yes	802	report print (total 2)
yes	803	report print (large)
yes	804	report print (small)
-	805	report print (full color 1)
-	806	report print (full color 2)
-	807	report print (grayscale 1)
-	808	report print (grayscale 2)
yes	809	report print (black-and-white 1)
yes	810	report print (black-and-white 2)
-	811	report print (full color, large)
-	812	report print (full color, small)
-	813	report print (grayscale, large)
-	814	report print (grayscale, small)
yes	815	report print (black-and-white, large)
yes	816	report print (black-and-white, small)
-	817	report print (full color + grayscale, large)
-	818	report print (full color + grayscale, small)
-	819	report print (full color + grayscale 2)
-	820	report print (full color + grayscale 1)
-	821	report print (full color, large, double-sided)
-	822	report print (full color, small, double-sided)

yes/no	No.	Description
-	823	report print (grayscale, large, double-sided)
-	824	report print (grayscale, small, double-sided)
yes	825	report print (black-and-white, large, double-sided)
yes	826	report print (black-and-white, small, double-sided)

T-15-186

yes/no	No.	Description
-	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 coy 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-white)
yes	915	transmission scan total 2 (color)
yes	916	transmission scan total 2 (black-and-white)
yes	917	transmission scan total 3 (color)
yes	918	transmission scan total 3 (black-and-white)
-	919	transmission scan total 4 (color)
-	920	transmission scan total 4 (black-and-white)
yes	921	transmission scan total 5 (color)
yes	922	transmission scan total 5 (black-and-white)
yes	929	transmission scan total 6 (color)
yes	930	transmission scan total 6 (black-and-white)
-	931	transmission scan total 7 (color)
-	932	transmission scan total 7 (black-and-white)

yes/no	No.	Description
-	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)
yes	937	box scan (color)
yes	938	box scan (black-and-white)
yes	939	remote scan (color)
yes	940	remote scan (black-and-white)
-	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)
yes	945	transmission scan/e-mail (color)
yes	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 (white-and-white)
-	953	transmission scan/database (color)
-	954	transmission scan/database (black-and-white)
-	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)

15.6.1.2.11 <CONTROL> 0001-7227

T-15-187

Use it to limit the use of a control card for a PDL job.

setting 0: disable
1: enable
[at time of shipment/after RAM initialization: 0]

15.6.1.2.12 <B4-L-CNT> 0001-0367

T-15-188

Use it to set so that soft counters 1 through will count B4 as being of large size or small size.

Setting
0: small size
1: large size
[at time of shipment/after RAM initialization: 0]

15.6.1.2.13 <COPY-JOB> 0001-0368

T-15-189

Use it to disable the copy job reservation function when the card reader or the coin vendor is in use.

Setting
0: enable copy job reservation function
1: disable copy job reservation function
[at time of shipment/after initialization: 0]

15.6.1.2.14 <IDPRN-SW> 0001-0370

T-15-190

Use it to switch between types of count jobs for group counters.

Setting
0: count the following for PRINT: box print, report print, send local print, PDL print.
1: count the following for PRINT: report printout, send local print, PDL print
[at time of shipment/after RAM initialization: 0]

15.6.1.2.15 <CPRT-DSP> 0001-0371

T-15-191

not used

15.6.1.2.16 <CNT-SW> 0001-7228

T-15-192

Use it to switch between counter display items.

counters to use

when set to '0'
101 total 1
108 total <black-and-white 1>
232 copy <full color + mono color/1>
324 print <full color + mono color/1>

when set to '1'
102 total 2
231 copy <full color + mono color/2>
222 copy <black-and-white 2>
133 total A <black-and-white 2>
[at time of shipment/after RAM initialization: 0]

15.6.1.2.17 <REMPNL> 0001-7229

T-15-193

not used

15.6.1.2.18 <BCONT-AST> 0001-7230

T-15-194

Use it to set a count for Box printing in relation to the NE controller.

Setting
0: count box print job as PDL job
1: count box print job as copy job
[at time of shipment/after RAM initialization: 0]

15.6.1.2.19 <DFLT-CPY> 0001-7231

T-15-195

Use it to set the default color mode for COPY.

setting	0: ACS 1: full color 2: black-and-white JPN [at time of shipment/after RAM initialization: 2] UL [at time of shipment/after RAM initialization: 0] EUR [at time of shipment/after RAM initialization: 2] other destination [at time of shipment/after RAM initialization: 2]

15.6.1.2.20 <DFLT-BOX> 0001-7232

T-15-196

Use it to set the default color mode for BOX.

setting	0: ACS 1: full color 2: black-and-white JPN [at time of shipment/after RAM initialization: 2] UL [at time of shipment/after RAM initialization: 0] EUR [at time of shipment/after RAM initialization: 2] other destinations [at time of shipment/after RAM initialization: 2]

15.6.1.2.21 <DOC-REM> 0001-7233

T-15-197

Use it to enable/disable the message used to prompt removal of originals.

setting	0: disable 1: enable [at time of shipment/after RAM initialization: 0]

15.6.1.3 CST

15.6.1.3.1 Overview 0001-7255

Registering the Envelope Cassette Size

15.6.1.3.2 <ENV1/ENV2> 0001-7257

T-15-198

Use it to register the size of the envelope cassette.

setting
21: ISO-C5 [after RAM initialization: 21]
22: COM10
23: MONARCH
24: DL
25: ISO-B5
26: YOKEI No. 4

15.6.1.4 ACC

15.6.1.4.1 Overview 0001-0373

Making Accessory-Related Machine Settings

15.6.1.4.2 <COIN> 0001-0374

T-15-199

Use it to enable/disable the coin vendor function.

setting
0: OFF [at time of shipment/after RAM initialization: 0]
1: ON

15.6.1.4.3 <DK-P> 0001-0375

T-15-200

Use it to set the paper size for the paper deck (option).

setting
0: A4 [at time of shipment/after RAM initialization: 0]
1: not supported
2: LTR

15.6.1.4.4 <CARD-SW> 0001-0376

T-15-201

Use it to switch between UI screens for support of the coin vendor function.

setting
0: coin [at time of shipment/after RAM initialization: 0]
1: card
2: coin & card

15.6.1.4.5 <OUT-TRAY> 0001-7239

T-15-202

use it to specify the presence/absence of a No. 3 delivery tray.

setting
0: absent [at time of shipment/after RAM initialization: 0]
1: present

15.6.1.5 INT-FACE

15.6.1.5.1 Overview 0001-0378

Setting Up Conditions for Connection to an External Controller

15.6.1.5.2 <IMG-CONT> 0001-0380

T-15-203

Use it to make settings for connection to an EFI controller.

setting
0: normal operation
1: not used
2: not used
3: EFI controller in use
4: not used
5: not used

Caution
If set to '1', the following returns to its initial setting:

- system control setup>network setup>TCP/IP setup>IP address setup>IP address

- system control setup>network setup>TCP/IP setup>IP address setup>sub net mask
- system control setup>network setup>IP address setup>gateway address
- system control setup>network setup>TCP/IP setup>Ethernet driver setup>communication system
- system control setup>network setup>TCP/IP setup>Ethernet driver setup>Ethernet type
- system control setup>network setup>TCP/IP setup>start-up time

Moreover, the following user mode settings will be set to OFF.

- system control setup>network setup>TCP/IP setup>IP address setup>DHCP in use
- system control setup>network setup>TCP/IP setup>IP address setup>RARP in use
- system control setup>network setup>TCP/IP setup>IP address setup>BOOTP in use
- system control setup>network setup>TCP/IP setup>Ethernet driver setup>auto detection
- system control setup>network setup>spool function in use
- If set to '3' or '4', the following settings will be OFF in addition to the foregoing:
- system control setup>network setup>TCP/IP setup>RAW setup
- system control setup>network setup>TCP/IP setup>LPD setup
- system control setup>network setup>TCP/IP setup>IPP print
- system control setup>network setup>SMB setup

You will have to newly make settings for the foregoing items, as they will not return to their initial settings even when '0: normal mode' is selected.

- system control setup>network setup>TCP/IP setup>IP address setup>sub net mask
- system control setup>network setup>TCP/IP setup>IP address setup>gateway address
- system control setup>network setup>TCP/IP setup>Ethernet driver setup>communication method
- system control setup>network setup>TCP/IP setup>Ethernet driver setup>Ethernet type
- system control setup>network setup>TCP/IP setup>startup

Moreover, the following user mode settings will be OFF:

- system control setup>network setup>TCP/IP setup>IP address setup>DHCP in use
- system control setup>network setup>TCP/IP setup>IP address setup>RARP in use
- system control setup>network setup>TCP/IP setup>IP address setup>BOOTP in use
- system control setup>network setup>TCP/IP setup>Ethernet driver setup>auto detection
- system control setup>network setup>spool function in use
- If '3' or '4' is set, the following settings will be OFF in addition to the foregoing items:
- system control setup>network setup>TCP/IP setup>RAW setup
- system control setup>network setup>TCP/IP setup>LPD setup
- system control setup>network setup>TCP/IP setup>IPP print
- system control setup>network setup>SMB setup

You will have to newly make settings for the foregoing items, as they will not return to their initial settings even when '0: normal mode' is selected.

15.6.1.6 COMBO

15.6.1.6.1 Overview 0001-7765

Setting Up Operation by Mode Combination

15.6.1.6.2 <PPR/COL/MOD-SLCT> 0001-7781

T-15-204

	Use it to select paper type, pickup mode, and color mode for which the secondary transfer bias should be applied (during a specific period of time after the leading edge of paper reaches the secondary transfer roller). Use it if white spots occur along the image leading edge for a specific type of paper, pickup mode, or color mode.
setting	PPR-SLCT 1: plain paper 2: heavy paper 3: tracing paper 4: transparency 5: postcard/envelope 6: label sheet 7: special paper [at time of shipment/after RAM initialization: 1]
setting	COL-SLCT 1: mono color mode 2: full color mode [at time of shipment/after RAM initialization: 1]
setting	MOD-SLCT 1: single-sided 2: 2nd side of double-sided (from cassette) 3: 2nd side of double-sided (from manual feeder) [at time of shipment/after RAM initialization: 1]
Reference	When you press any of 2TR-SW1 through 2TR-SW5 after setting up a value for PPR-SLCT, COL-SLCT, or MOD-SLCT, the machine will register PPR-SLCT,COL-SLCT, or MOD-SLCT for the corresponding SW, thus enabling the switch.

15.6.1.6.3 <2TR-SW1/SW2/SW3/SW4/SW5> 0001-7778

T-15-205

Use it to enable the combination of paper type, pickup mode, and color mode you have selected using PPR-SLCT, COL-SLCT and MOD-SLCT.

15.6.2 SORTER

15.6.2.1 Overview 0001-7259

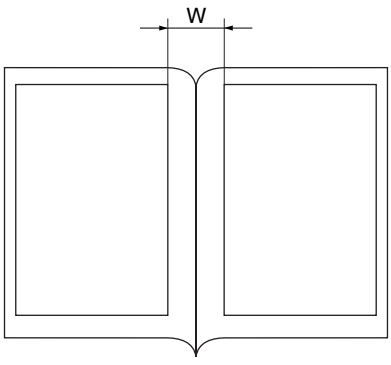
Making Finisher-Related Machine Settings

15.6.2.2 <BLNK-SW> 0001-0420

T-15-206

Use it to set the marking width (W) for both sides of the crease for the saddle stitcher in use.

Setting 0: normal width (5 mm)
1: large width (10 mm)
[at time of shipment/after RAM initialization: 1]



F-15-20

15.6.2.3 <MD-SPRTN> 0001-7260

T-15-207

Use it to limit the finisher functions.

setting
0: normal
1: enable functional separation
[at time of shipment/after RAM initialization: 0]

15.6.3 BOARD

15.6.3.1 Overview 0001-7261

Making Option Board-Related Machine Settings

15.6.3.2 <SURF-OFF> 0001-0421

T-15-208

Use it to enable/disable the UFR board function.

setting
0: enable operation as copier model without E code indication in absence of UFR board
1: check presence of UFR board; if absent, indicate E code
[at time of shipment/after RAM initialization: 0]

15.6.4 OPTION （mechanical specifications setting mode）:Level 2

15.6.4.1 COPIER

15.6.4.1.1 BODY

<CONTRAST> 0001-7483

T-15-209

Use it to set auto/manual setting of target contrast potential.

setting 0: manual
1: Auto
[at time of shipment/after RAM initialization: 1]

<SPCL-PPR> 0001-7484

T-15-210

Use it to enable/disable the start-up mechanism in low-temperature mode, thus ensuring good fixing in a low temperature environment.

setting 0: OFF [at time of shipment/after RAM initialization: 0]
1: ON

Caution Enabling it (ON) increases FCOT (first copy time) by about 20 sec.

<SCANSLCT> 0001-0438

T-15-211

Use it to enable/disable the function the machine uses to compute the scan area based on the selected paper size.

setting 0: OFF (determine scan based on original size)

1: ON (determine scan area based on paper size)

[at time of shipment/after RAM initialization: 0]

<DH-SW> 0001-7485

T-15-212

Use it to execute Dhalf correction.

setting 0: enable Dhalf control
1: disable Dhalf control
[at time of shipment/after RAM initialization: 1]

<SENS-CNF> 0001-7486

T-15-213

Use it to select the original sensor configuration.

	setting	0: AB-configuration [at time of shipment/after RAM initialization: 0] 1: Inch-configuration

<RAW-DATA> 0001-0447

T-15-214

	Use it to specify how received data should be printed out.
setting	0: normal operation 1: print as is [at time of shipment/after RAM initialization: 0]
	If received images have a fault, use it to isolate the cause between data itself and image processing.

<RMT-LANG> 0001-0451

T-15-215

Method of setting	Use it to select a language code by means of the +/- key of the remote UI used through the Web.

<IFAX-LIM> 0001-0452

T-15-216

	Use it to limit the number of output lines for a large volume of data coming through i-fax.
setting	0: no limit 0 to 999 [at time of shipment/after RAM initialization: 500]

<SMTPTXPN> 0001-0456

T-15-217

	Use it to change the SMTP transmission port number.
Range of setting	0 to 65535 (increments of '1') [at time of shipment/after RAM initialization: 25]

<SMTPRXPN> 0001-0459

T-15-218

Use it to change the SMTP reception port number.

Range of setting: 0 to 65535 (in increments of '1')

[at time of shipment/after RAM initialization: 25]

<POP3PN> 0001-0462

T-15-219

Use it to change the POP reception port number.

Range of setting: 0 to 65535 (in increments of '1')

[at time of shipment/after RAM initialization: 110]

<ORG-LGL> 0001-0468

T-15-220

Use it to set a special paper whose size may not be recognized by the DF.

setting:

0: LEGAL [at time of shipment/after RAM initialization]

1: FOOLSCAP

2: A-FOOLSCAP

3: FORIO

4: G-LEGAL

5: OFFICIO

6: E-OFFICIO

7: A-OFFICIO

8: B-OFFICIO

9: A-LEAGAL

10: M-OFFICIO

<ORG-LTR> 0001-0470

T-15-221

Use it to set a special paper whose size may not be recognized by the DF.

setting
0: LTR [at time of shipment/after RAM initialization]
1: G-LTR
2: A-LTR
3: EXECUTIVE

<ORG-LTRR> 0001-0475

T-15-222

Use it to set a special paper whose size may not be recognized by the DF.

setting
0: LTR-R [at time of shipment/after RAM initialization]
1: G-LTR-R
2: A-LTR-R
3: OFFICIO
4: E-OFFICIO
5: EXECTIVE-R

<ORG-LDR> 0001-7488

T-15-223

Use it to set a special paper whose size may not be recognized by the DF.

setting
0: LDR [at time of shipment/after RAM initialization]
1: A-LTR

<ORG-B5> 0001-7489

T-15-224

Use it to set a special paper whose size may not be recognized by the DF.

setting 0: B5 [at time of shipment/after RAM initialization]
1: K-LEAGAL

<UI-BOX> 0001-0472

T-15-225

Use it to enable/disable the control panel box screen.

setting 0: disable

1: enable [at time of shipment/after RAM initialization]

<UI-SEND> 0001-0476

T-15-226

Use it to enable/disable the display of the transmission screen on the control panel.

setting 0: disable

1: enable [at time of shipment/after RAM initialization]

<UI-FAX> 0001-0478

T-15-227

Use it to enable/disable the display of the environment screen on the control panel.

setting 0: disable

1: enable [at time of shipment/after RAM initialization]

<UI-EXT> 0001-0479

T-15-228

Use it to enable/disable the display of the extended screen on the control panel.

setting 0: disable

1: enable [at time of shipment/after RAM initialization]

<Y-PTN> 0002-6371

T-15-229

Use it to set dots before development.

setting 0: disable

1: normal [at time of shipment/after RAM initialization]

2: many

<SCR-SLCT> 0001-0491

T-15-230

Use it to specify how halftone must be processed in photo mode.

setting 0: use error diffusion

1: use low-number screen [at time of shipment/after RAM initialization]

2: use high-number screen

<TMC-SLCT> 0001-0492

T-15-231

Use it to switch between coefficients for error diffusion.

setting 0: standard

1: Texture Feel Smooth (less coarse)/stability low

2: Texture Feel Rough (more coarse)/stability high

<DEVL-VTH> 0001-0509

T-15-232

Use it to set the video count for operation of toner forced consumption sequence.

Avoid its use as much as possible if operation is normal.

<FTPTXPN> 0001-0510

T-15-233

Use it to select a name for the target SEND port (FTP).

Range of Setting: 0 through 65535 (16-bit) [at time of shipment/after RAM initialization: 21]

<SLPOFF 01 to 12> 0002-6374

T-15-234

Use it to enable/disable the anti-condensation function for specific calendar months.

setting: 0: enable [at time of shipment/after RAM initialization]
1: disable

<DWNSQ-SW> 0001-0515

T-15-235

Use it to improve stacking on the tray for single-sided continuous printing.

(Avoid its use as much as possible if operation is normal.)

<PRN-FLG> 0001-0520

T-15-236

Use it to select a flag for the PDL image area.

(Avoid its use as much as possible if the operation is normal.)

<SCN-FLG> 0001-0522

T-15-237

Use it to select a flag for the copy image area.

(Avoid its use as much as possible if the operation is normal.)

<T-LW-LVL> 0001-0524

T-15-238

Use it to switch between the display timing for the toner replacement warning message.

(Avoid its use as much as possible if the operation is normal.)

<NWERR-SW> 0001-0527

T-15-239

Use it to enable/disable network-related error messages.

setting 0: disable

enable [at time of shipment/after RAM initialization]

<FX-SPD> 0001-0530

T-15-240

Use it to adjust the speed of the fixing roller.

Range of setting -2 to 2 [at time of shipment/after RAM initialization: 0]

A higher setting will increase the speed of the fixing roller.

A setting made using this mode item will automatically change the rotation speed of the delivery vertical path motor.

<FX-SUB> 0001-7493

T-15-241

Use it to change the activation ratio of the sub heater.

setting 0: no change
1: +1 sec
2: -1 sec

<STS-PORT> 0001-7495

T-15-242

Use it to set the TOT synchronous type command communication port.

setting 0: OFF
1: ON

<CMD-PORT> 0001-7496

T-15-243

Use it to set the TOT asynchronous type status communication port.

setting 0: OFF
1: ON

<MODELSZ2> 0001-7497

T-15-244

Use it to set the global support function for book mode original detection.

setting 0: normal
1: AB-configuration/Inch-configuration mixed detection

<LST-TNSW> 0001-7498

T-15-245

Use it to set the toner forced consumption sequence for last rotation.

setting 0: disable
1: enable [at time of shipment/after RAM initialization]

<UISW-DSP> 0003-4744

T-15-246

not used

<NS-CMD5> 0001-7499

T-15-247

Use it to set CRAM-MD5 authentication under SMTP authentication.

setting 0: dependent on SMTP server
1: disable

<NS-GSAPI> 0001-7501

T-15-248

Use it to set GSSAPI authentication under SMTP authentication.

setting 0: dependent on SMTP server
1: disable

<NS-NTLM> 0001-7502

T-15-249

Use it to set NTLM authentication under SMTP authentication.

setting 0: dependent on SMTP server
1: disable it

<NS-PLNWS> 0001-7504

T-15-250

Use it to set PLAIN LOGIN authentication under SMTP authentication.
<environment in which communication packets are subjected to coding>

setting 0: dependent on SMTP server
1: disable

<NS-PLN> 0001-7505

T-15-251

Use it to set PLAIN LOGIN under SMTP authentication.
<environment in which communication packages are not subjected to coding>

setting: 0: dependent on SMTP server
1: disable

<NS-LGN> 0001-9640

T-15-252

Use it to set LOGIN authentication under SMTP authentication.

setting: 0: dependent on SMTP server
1: disable

<T-CRG-SW> 0001-1086

T-15-253

Use it to permit/not permit replacement of a toner cartridge by the user in the presence of toner.

setting: 0: do not permit replacement [at time of shipment/after RAM initialization]
1: permit replacement

Caution (if set to '1'): - Toner can start to leak when the toner cartridge is removed. Advise the user to take care when removing the cartridge.
- Fitting a toner cartridge will cause the machine to always indicate a 100% full toner cartridge message regardless of the amount of toner inside the cartridge (existing or new), resetting the previous message. Inform the user that the machine may indicate the Add Toner message while the indication is not 0% if this has been done.

<EX-MTR1> 0001-7507

T-15-254

Use it to fine-adjust the speed of the No. 1 delivery motor and the buffer motor.

Range of settings: -1 to +1
[at time of shipment/after RAM initialization: 0]

<EX-MTR2> 0001-7508

T-15-255

Use it to fine-adjust the speed of the accessory delivery motor.

Range of settings: -1 to +1
[at time of shipment/after RAM initialization: 0]

<LPM-PTRN> 0001-7509

T-15-256

Use it to set the operation temperature used upon return (low-temperature mode).

setting:
0: normal
1: 180 deg C
2: 185 deg C
3: 190 deg C

<TNR-DWN> 0001-7510

T-15-257

Use it to set a toner deposit amount.

setting:
0: normal
1: smaller amount

<TMIC-BK> 0001-7511

T-15-258

Use it to set end edge correction for BkLUT for Tmic PDL and BkLUT for Copy under Tmic.

setting 0: PDL ON, Copy OFF PDL ON, Copy OFF [at time of shipment/after RAM initialization]
1: PDL OFF, Copy OFF
2: PDL ON, Copy ON
3: PDL OFF, Copy ON

<DH-MODE> 0001-1902

T-15-259

Use it to select patch image read data (high density side) for patch image detection gradation correction (other than full correction).

setting 0: use patch image read data used for patch image read data [at time of shipment/after RAM initialization]
1: do not use patch image reading data used for full correction

<TBLD-TMG> 0001-7512

T-15-260

Use it to set the ITB cleaning execution timing for normal speed/full color mode.

When making copies/points in normal speed/full-color mode, the ITB cleaning blade is brought into contact later than normal.

setting 0: do not delay [at time of shipment/after RAM initialization]
1: delay

Use this mode item to correct color displacement occurring when copies/prints are made in full-color/normal speed mode. Its use, however, will lower productivity.

<2T-R-TMG> 0002-2795

T-15-261

Use it to set the timing at which the secondary transfer outside roller cleaning is executed in normal speed/mono color mode.

Use it to change the timing at which the secondary transfer outside roller is brought into contact in normal-speed/mono color mode.

setting 0: do not delay [at time of shipment/after RAM initialization]
1: delay

Use this mode item to correct exposure displacement when copies/prints are made in mono color/normal speed mode.

<HP-SW> 0004-0148

T-15-262

ITB HP marking (2 pc.) switching for full color image formation

Setting 0: switch at cumulative count of 5 secondary transfers (setting at time of factory shipment/RAM initialization)
1: do not switch
2: switch at cumulative count of 10 secondary transfers
3: switch at cumulative count of 3 secondary transfers

If a nip trace is noted, set it to '3', at the risk, however, of a drop in productivity.

<DV-RT-MD> 0005-5020

T-15-263

Switching on/off the idle rotation of the developing cylinder

Setting 0: ON (idle rotation is set on)[selected at factory / after RAM clear]
1: OFF (idle rotation is set off)

Caution Avoid switching as much as possible while the machine works normally.

<BK-MD-SW> 0005-5021

T-15-264

Selecting an initial rotation mode

Setting 0: Normal mode [selected at factory/ after RAM clear]
1: Bk special mode

<BK-SPD> 0005-5022

T-15-265

Switching the Bk print mode

(Avoid switching as much as possible while the machine works normally.)

<BND-RDCT> 0005-5023

T-15-266

Switching the drum cleaning control mode

(Avoid switching as much as possible while the machine works normally.)

15.6.4.1.2 USER

<SIZE-DET> 0001-0560

T-15-267

Use it to turn on/off the original size detection function.

setting 0: off (The scanner will not go on when the copyboard is opened/closed, thereby preventing the glare of the lamp.

1: ON [at time of shipment/after RAM initialization]

<DATE-DSP> 0001-0562

T-15-268

Use it to change the date indication.

setting 0: YYMM/DD

1: DD/MM'YY

2: MM/DD/YY

<MB-CCV> 0001-7731

T-15-269

Use it to limit the individuals holding control cards for mail boxes.

setting 0: do not limit[at time of shipment/after RAM initialization: 0]
1: limit

<TRY-STP> 0001-0565

T-15-270

Use it to specify how output is made when the tray becomes full.

setting 0: normal mode (cut operation when the finisher tray becomes full)

1: cut based on height detection

<MF-LG-ST> 0001-7520

T-15-271

Use it to set the extra-length key mode.

setting 0: normal
1: enable display of the Extra Length key in extension mode.

<CNT-DISP> 0001-0567

T-15-272

Use it to enable/disable indication of the serial number of the machine in response to a press on the Counter Check key.

setting 0: enable

1: disable

<NW-SCAN> 0001-0569

T-15-273

Use it to permit/not permit the network scan function.

setting 0: do not permit

1: permit (invalid if UFR board or open I/F board is not connected)

<FX-LIM> 0001-7523

not used

<HDCR-DSP> 0001-0570

T-15-274

Use it to enable/disable display and operation of HDD initialization for Additional Function.

setting
0: do not display and do not initialize
1: for '0', initialize once
2: at random (data), initialize once
3: at random (data), initialize 3 times

<JOB-INVL> 0001-0571

T-15-275

Use it to set intervals for job interruption.

setting
0: standard (at time of interrupt mode, generate next job in succession)
1: start next job after delivery of last of interrupt job
2: start next job after delivery of last sheet of group of jobs

<LGSW-DSP> 0001-0572

T-15-276

Use it to enable/disable display of 'log indication on/off setup' on the Additional Function screen.

setting
0: disable display of 'log display on/off setup'
1: enable 'log display on/off setup'

<PCL-COPY> 0001-0579

T-15-277

Use it to set PCL command (COPIES Menu/Pinatubo/Hood) compatibility mode.

setting
0: control on page basis according to COPIES command value set on individual pages [at time of shipment/after RAM initialization]
1: Menu/Pinatubo/Hood compatibility mode

2: reserved

<PRJOB-CP> 0001-7525

T-15-278

Use it to set the CCV count pulse for reception/report output.

setting 0: do not generate count pulse [at time of shipment/after RAM initialization]
1: generate count pulse

<SND-RATE> 0001-1905

T-15-279

Use it to set a compression rate for SEND-RATE (i.e., when 'high' is selected under SEND for compression rate).

setting 0: rate of compression 1/16 [at time of shipment/after RAM initialization]
1: rate of compression 1/20
2: rate of compression 1/24
A higher rate of compression means a lower image level.

15.6.4.1.3 CST

<U1-NAME to U4-NAME> 0001-0588

T-15-280

Use it to enable/disable indication of paper names identified according to paper size groups (U1 through U4).

setting 0: indicate U1, U2, U3, or U4 on touch panel (default)

1: indicate paper names as selected in service mode (CST-U1, -U2, -U3, -U4).

<CST-U1/U2/U3/U4> 0001-0591

T-15-281

Use it to select paper names for paper size groups (U1 through U4).

setting 24: Foolscap (CST-U2, default)

25: Australian Foolscap

26: Officio

27: Ecuadorian Officio

28: Bolivian Officio

29: Argentine LTR (U4, default)

30: Argentine LTR-R

31: Government LTR (U1, default)

32: Government LTR-R

34: Government LGL (U3, default)

35: Folio

36: Argentine Officio

37: Mexican Officio

38: Executive

15.6.4.1.4 ACC

<STPL-LMT> 0001-0580

T-15-282

Use it to set a limit to the number of sheets that may be saddle-bound.

setting 0: 5 (w/o white band)

1: 10 (w/o while band)

2: 10 (w/ white band)

3: 15 (w/ white band)
[at time of shipment/after RAM initialization]

<SC-TYPE> 0001-0584

T-15-283

Use it to select the type of coin vendor model

(not used normally)

<CC-SPSW> 0001-1162

T-15-284

	Use it to select the control card (CC IV/CC V) I/F support level.
setting	0: do not support [at time of shipment/after RAM initialization] 1: support (priority on speed) 2: support (priority on upper limit) - If it is set to '1', the machine may not be ale to make an accurate stop based on an upper limit, as it puts priority on the maintenance of engine performance. - If it is set to '2', the machine will be able to use proper control based on an upper limit, but may suffer from a drop in engine performance depending on which source of paper it uses.

15.6.4.1.5 INT-FACE

<AP-OPT > 0001-0585

T-15-285

	Use it to enable/disable printing from PrintMe (application bundled with the PS print server unit).
setting	0: permit printing by specific account 1: permit printing by any account [at time of shipment/after RAM initialization] 2: do not permit printing (permitting only for specific group ID)

<AP-ACCNT> 0001-0586

T-15-286

	Use it to set a group ID for a print job (CPCA) from PintMe (application bundled with the PS print server unit).
Range of settings	0 to 9999999 [at time of shipment/after RAM initialization: 0]

<AP-CODE> 0001-0587

T-15-287

	Use it to set a path code for a print job (CPCA) from PrintMe (application bundled with the PS print server unit).
Range of settings	0 to 9999999 [at time of shipment/after RAM initialization: 0]

15.6.4.2 BOARD

15.6.4.2.1 <MENU-1 to 4> 0001-0596

Indication of Levels 1 Through 4 for the Printer Setup Menu

T-15-288

	0: do no indicate [at time of shipment/after RAM initialization]
setting	1: indicate

15.7 TEST （Test Print Mode）

15.7.1 COPIER

15.7.1.1 PG

15.7.1.1.1 Overview 0001-0600

Preparing for Test Printing

15.7.1.1.2 <TYPE> 0001-0601

T-15-289

Enter the number (TYPE) of the test print you want, and press the Start key to start printing. (Be sure to set it back to '0' after printing.)

Setting 0: normal print (0 to 100; see the table below)

T-15-290

- PG>TYPE input No./test print

Input No.	Description
0	image from CCD (normal print)
1	for R&D
2	for R&D
3	for R&D
4	16-gradation
5	full halftone
6	grid
7	for R&D
8	for R&D
9	for R&D
10	MCYBk horizontal stripe
11	for R&D

- PG>TYPE input No./test print

Input No.	Description
12	YMCBk 64-gradation
13	for R&D
14	full color 16-gradation
15 to 100	for R&D

15.7.1.1.3 <TXPH> 0001-0606

T-15-291

Setting	Use it to set image mode for test print output. 0: T-MIC (no end edge correction) 1: SC1 (no end edge correction) 2: SC2 (no end edge correction) 3: T-MIC (end edge correction for Bk only) 4: SC2 (end edge correction for Bk only)
Reference	The setting made here is valid only for test printing.

15.7.1.1.4 <THRU> 0001-0608

T-15-292

	Use it to switch between image correction tables for text print output.
Setting	0: on (use) 1: off (do not use)

15.7.1.1.5 <DENS-Y,DENS-M,DENS-C,DENS-K> 0001-0610

T-15-293

	Use it to adjust the density of individual colors for text printing (TYPE=5).
Range of Settings	0 to 255: a higher setting darkens image

15.7.1.1.6 <COLOR-Y,COLOR-M,COLOR-C,COLOR-K> 0001-0612

T-15-294

Use it to set output of individual colors for each TYPE; e.g., to generate M mono, set 'COLOR-M=1', and set '0' to all other colors.

Setting
0: do not generate
1: generate

15.7.1.1.7 <F/M-SW> 0001-7271

T-15-295

Use it to switch between full color and mono color for PG output.

Setting
0: full color output
1: mono color output

15.7.1.1.8 <PG-PICK> 0001-0616

T-15-296

Use it to select a source of paper for text print output.

Setting
1: cassette 1
2: cassette 2
3: cassette 3
4: cassette 4
5: side deck
6: manual feeder
7 and 8: not used

15.7.1.1.9 <2-SIDE> 0001-1163

T-15-297

Use it to set mode for text printing.

Setting
0: single-sided [at time of shipment/after RAM initialization]
1: double-sided

15.7.1.1.10 <PG-QTY> 0001-1166

T-15-298

Use it to set a copy count for text printing.

Setting 1 to 999 [at time of shipment/after RAM initialization: 1]

Chapter 16 Upgrading

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16.1 Outline

16.1.1 Outline of the Version Upgrade

0003-8570

The version upgrade of this machine and the accessories can be done by downloading from a personal computer (PC) in which the service support tool (SST) is installed or by replacing DIMM-ROM. The table below shows a list of firmware and the associated way of upgrading.

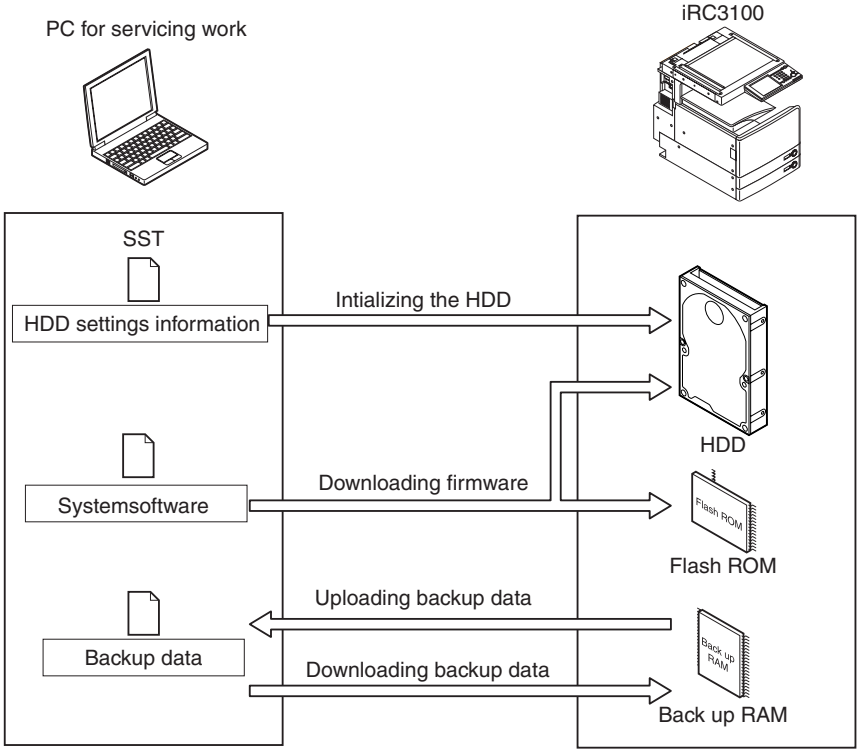
T-16-1

	Firmware	Way of Version Upgrade		Notes
		SST	ROM-DIMM replacement	
Main Body	System (system software)	Yes	No	
	Language (language module)	Yes	No	
	RUI (remote UI)	Yes	No	
	Boot (boot program)	Yes	Yes	
	DCON (DC controller)	Yes	No	
	RCON (reader controller)	Yes	No	It also controls ADF reading.
Accessory	G3FAX (super G3FAX board-N1)	Yes	Yes	
	Fin_P1 (Finisher-P1)	Yes	No	The special service tool (Downloader PCB: FY9-2034) is necessary.
	Fin_QR (Finisher-Q1/ Saddle Finisher-Q2)	Yes	No	

16.1.2 Outline of the Service Support Tool

0001-1613

The service supporrt tool (SST, hereafter) provides the following functions:



F-16-1

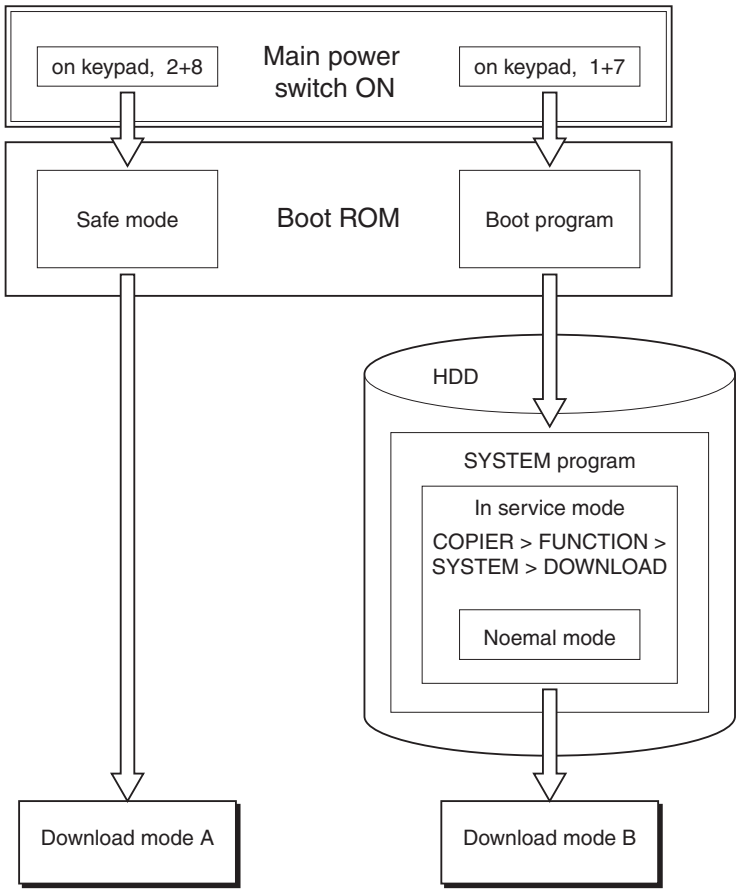
To use the SST, you must first set the machine to download mode.
The machine's download mode consists of 2 types.

-Normal Mode(Download mode B)

(With pressing 1+7, turn on the main power switch and select service mode: COPIER> FUNCTION> SYSTEM> DOWNLOAD.)

-Safe Mode(Download mode A)

(With pressing 2+8, turn on the main power switch.)



F-16-2

⚠

Use safe mode for the following:
-after replacing the HDD.
-if the system fails to operate normally.

The following shows combinations of functions that may be used in association with the SST and the download mode:

T-16-2

Function	Download mode	
	Normal mode (download mode B)	Safe mode (download mode A)
Formatting the HDD	-	ALL
	-	BOOTDEV

Function	Download mode	
	Normal mode (download mode B)	**Safe mode (download mode A)**
	DOSDEV	-
	FSTDEV	-
	DOSDEV2	-
	FSTPDEV	-
	DOSDEV3	-
	PDLDEV	-
	DOSDEV4	-
	DOSDEV5	-
Downloading system software	-System	-System
	-Language	-Language
	-RUI	-RUI
	-Boot	-Boot
	-G3FAX	-
	-Dcon	-
	-Rcon	-
Downloading/ Uploading back up data	-DconSRAM	-
	-RconSRAM	-

16.1.3 Network Interface of the Machine with the SST in Use

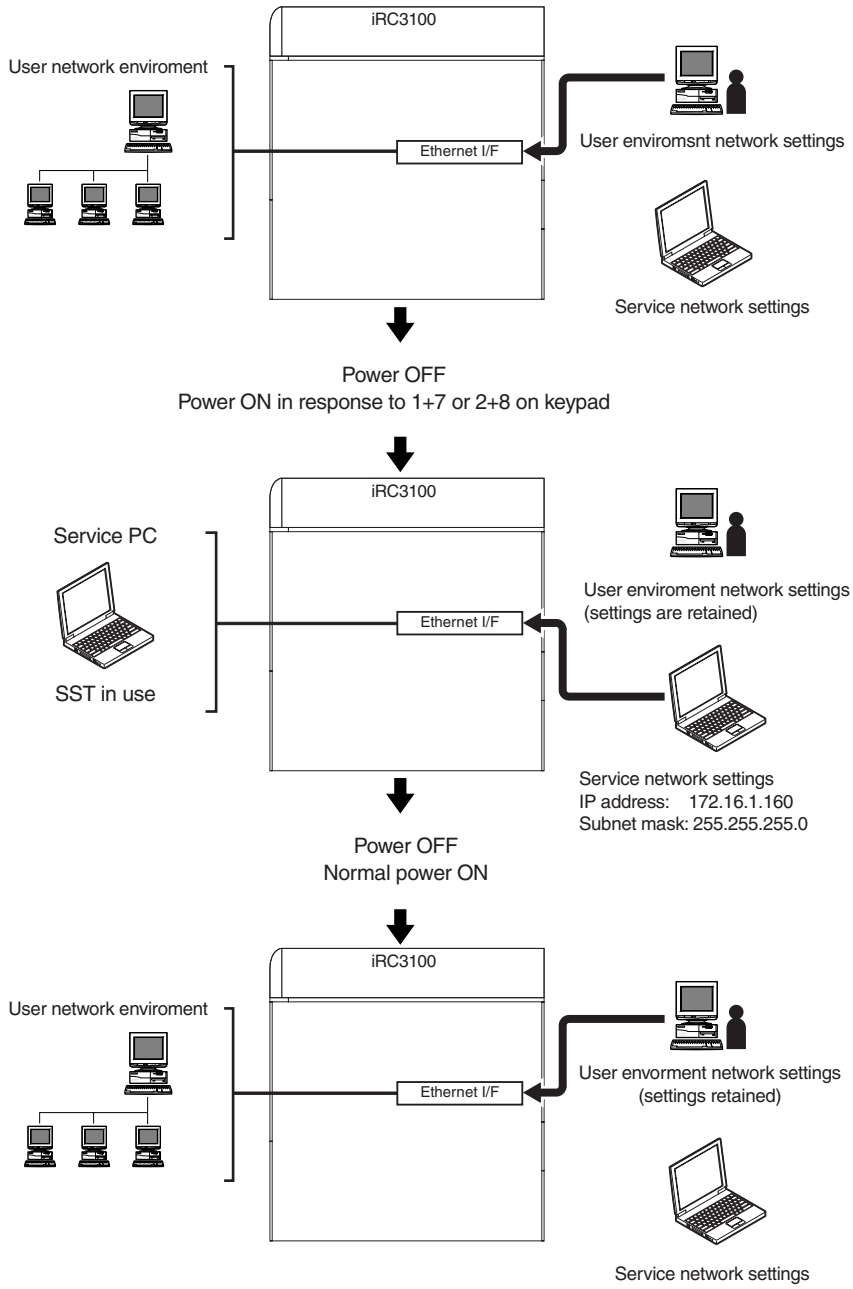
0001-1615

The machine communicates with the SST using the Ethernet protocol(TCP/IP).
The machine offers 2 sets of network settings:

-user enviroment network settings
(Additional Function> system contorol settings> network settings)
-service network settings
(IP address: 172.16.1.160
Subnet mask: 255.255.255.0)

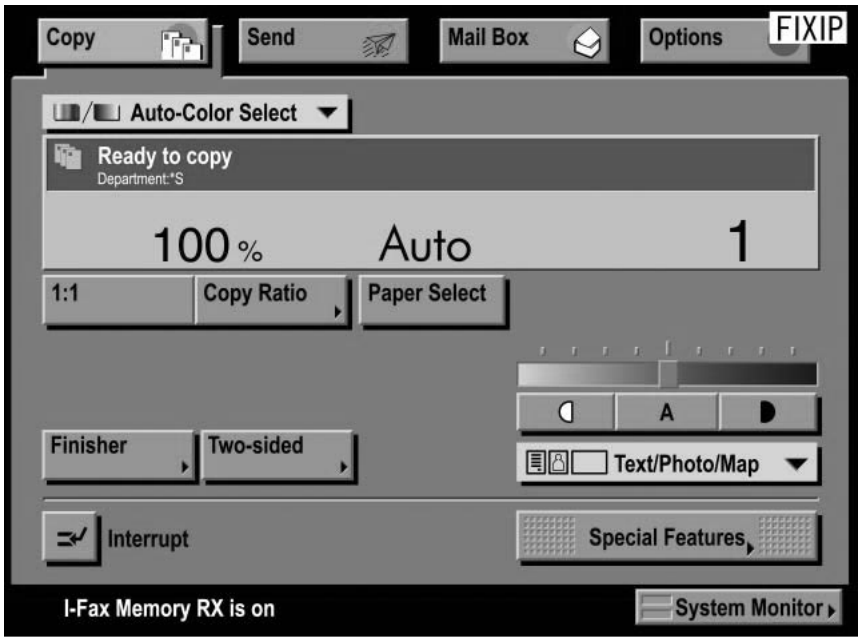
The netework settings are dependent on how the machine is started up.
The user enviroment settings are retained while the service settings are selected.

⚠You need not change the user enviroment network settings before or after the SST.



F-16-3

If you start up the machine by pressing 1+7, the machine indicates **'FIXIP'** in the upper right of the LCD to distinguish its state from normal.



F-16-4

Attension when installed option board

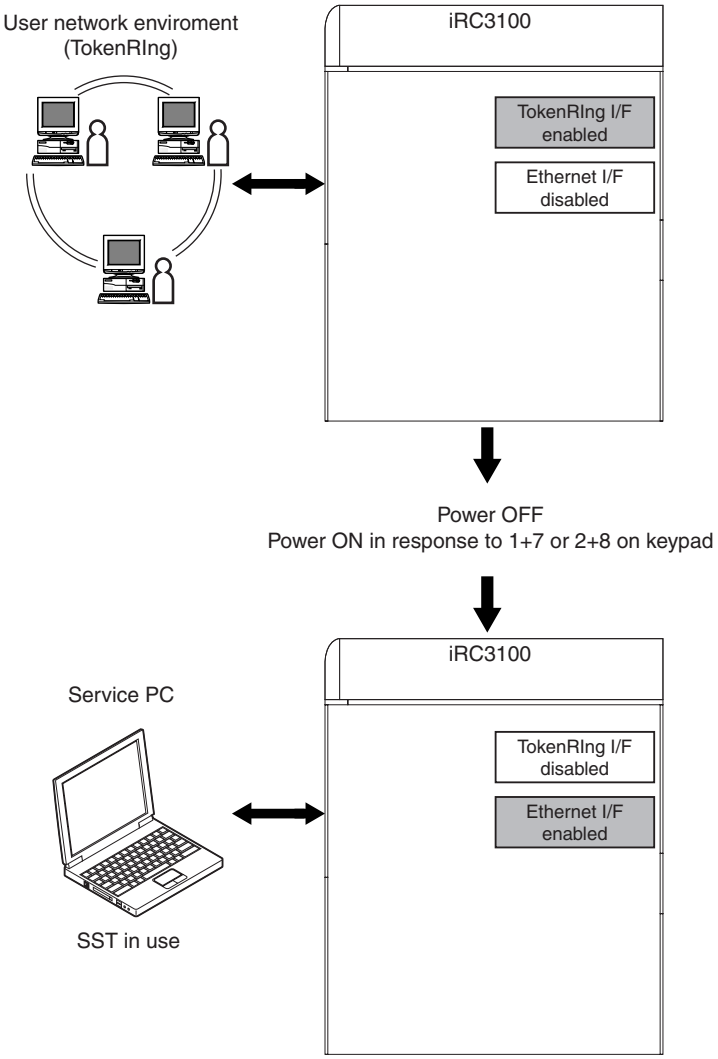
-Normal Power ON

The Ethernet interface is disabled if a TokenRing board is installed.

-Power ON in response to 1+7 or 2+8

The Ethernet interface is enabled if a TokenRing board is installed, and the TokenRing board is disabled.

You need not remove the TokenRing board when connecting the SST.


User network enviroment
(TokenRIng)
iRC3100
TokenRIng I/F
enabled
Ethernet I/F
disabled
Power OFF
Power ON in response to 1+7 or 2+8 on keypad
iRC3100
Service PC
TokenRIng I/F
disabled
Ethernet I/F
enabled
SST in use

F-16-5

16.2 Making Preparations

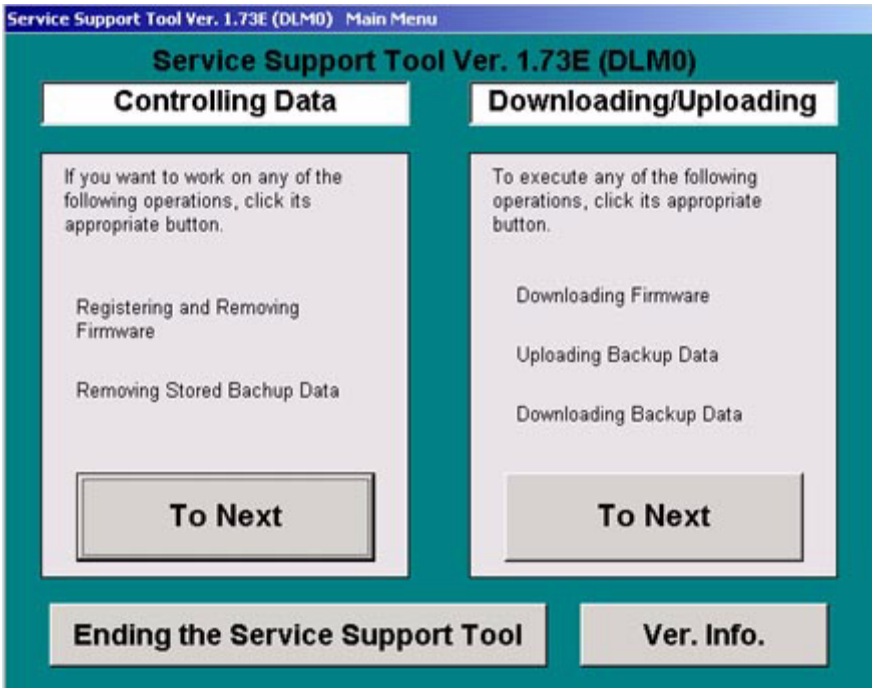
16.2.1 Registering the System software

0001-1617

Register the System software stored on the system CD to the SST.

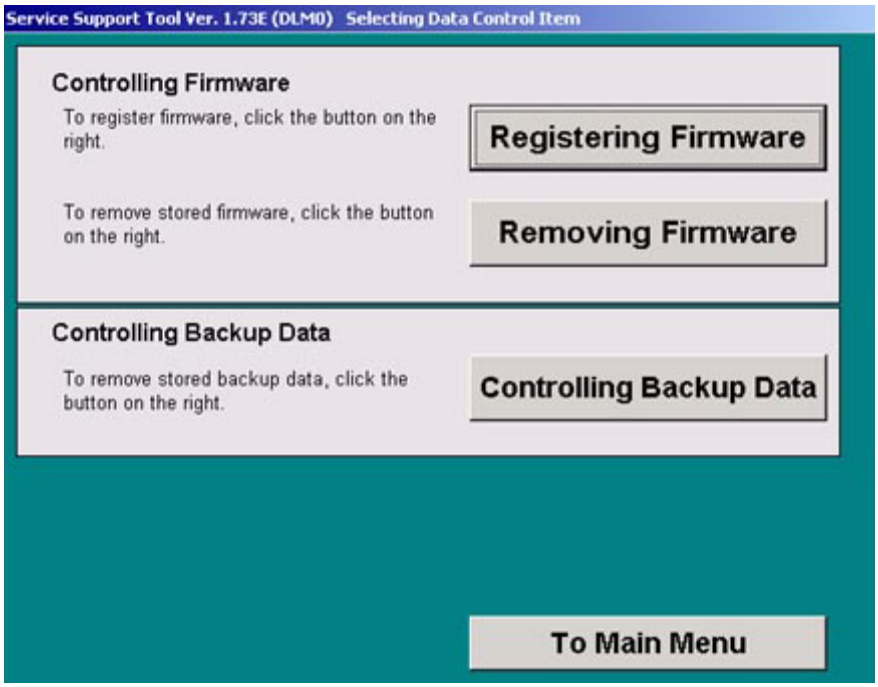
[Before starting the work]
Keep the following on hand:
-PC to which SST v1.73 or later has been installed.
-system CD for iRC3100
(if the machine supports the Netware, prepare the system CD for iRC3100N)

[Registering the System software]
1) Start up the PC.
2) Set the system CD to the PC.
3) Start up the SST.
4) Click [next] under Controlling Data.



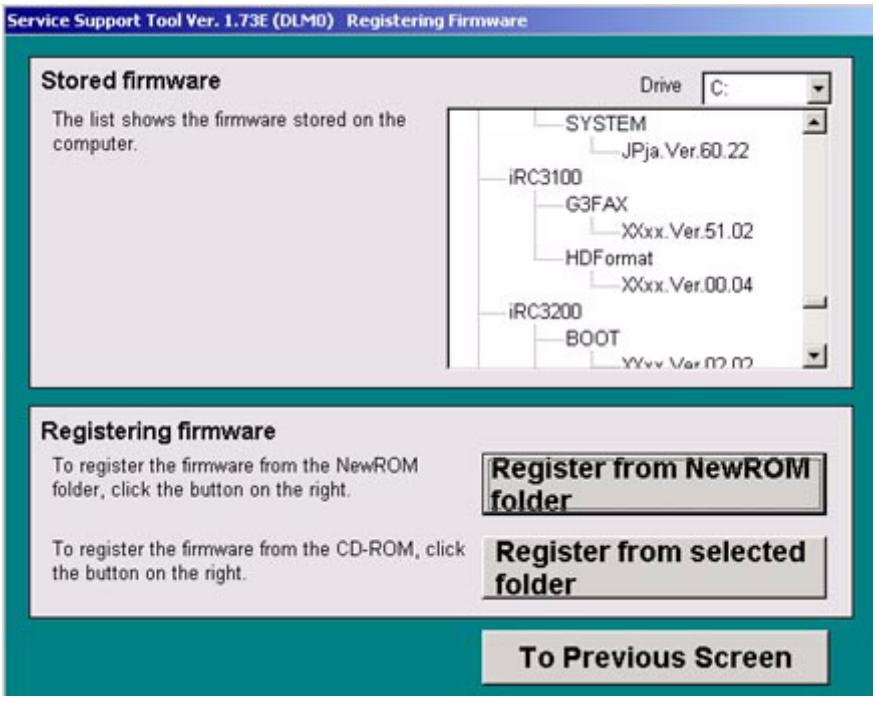
F-16-6

5) Click [Registering Firmware].



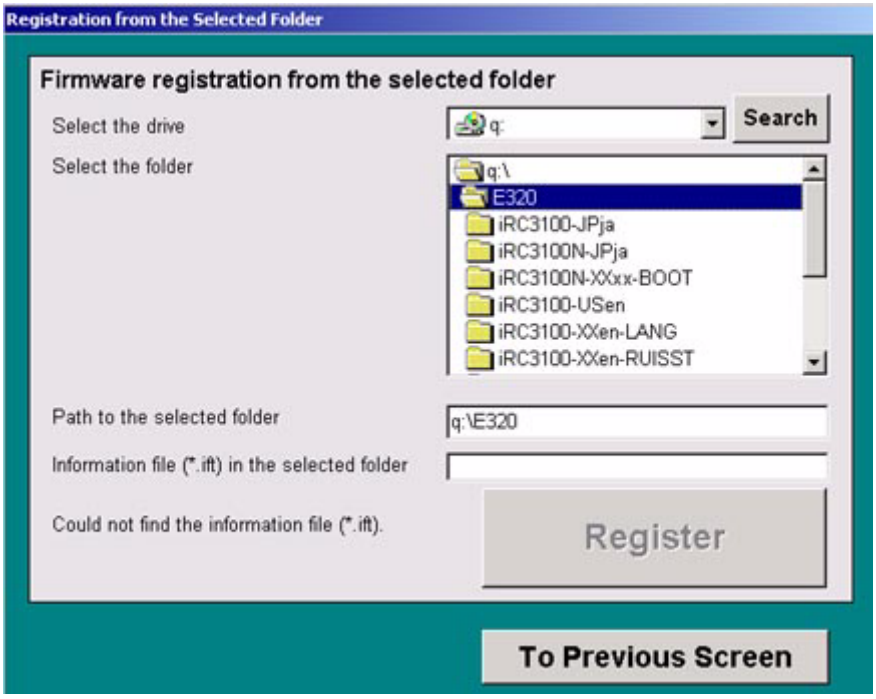
F-16-7

6) Click [Register from selected folder].



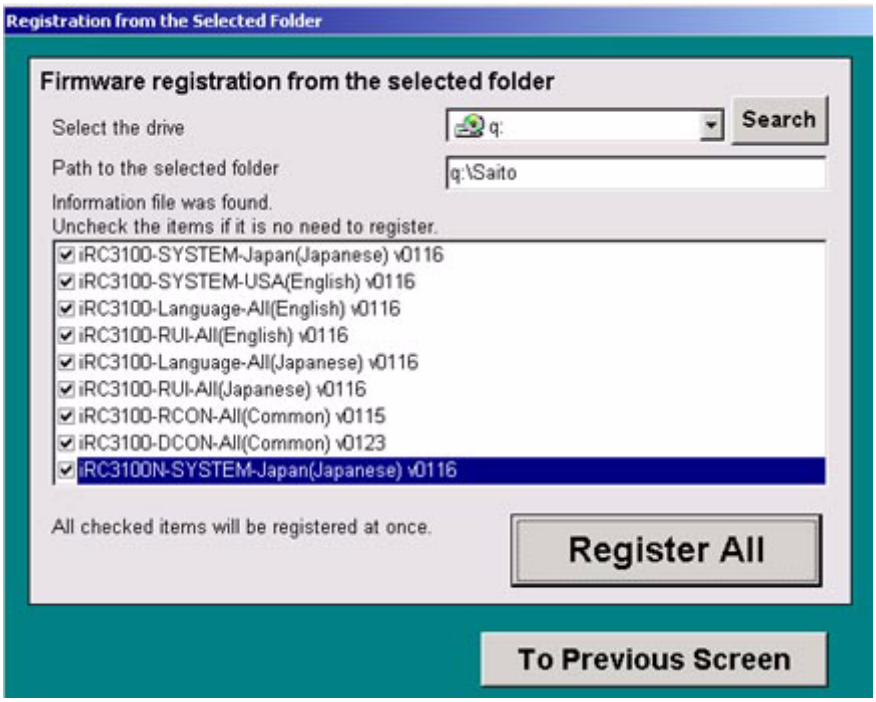
F-16-8

7) Select the drive in which you have set the system CD, and click [Search].



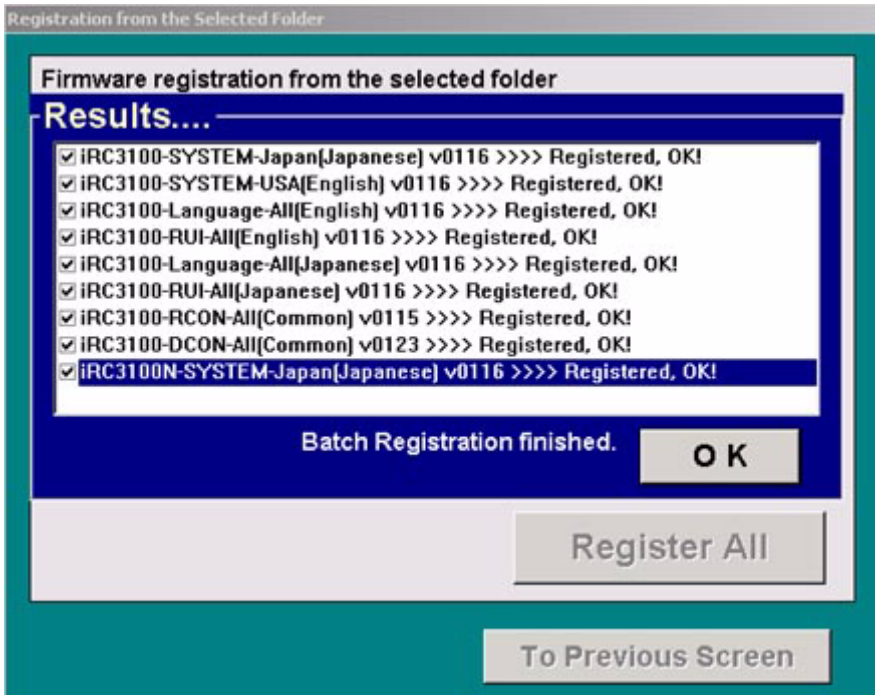
F-16-9

8) When the list of system software items contained on the system CD has appeared, click [Register All] after it becomes enabled.



F-16-10

9) When the result of the registration have appeared, click [OK].



F-16-11

16.2.2 Making connections

0001-1621

You will be connecting the PC to the machine.

[Before starting the work]

Keep the following on hand:

-PC to which SST v1.73 or later has been installed and iRC3100 system software has been registered.

-Twisted pair Cross cable

10BASE-T: category 3 or 5

100BASE-T: category 5

[Procedure]

1) Start up the PC.

2) Check the network settings of the PC.

-Type **'IPCONFIG'** to the command prompt, and press the Enter 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 settings.

-172.16.1.0

-172.16.1.100

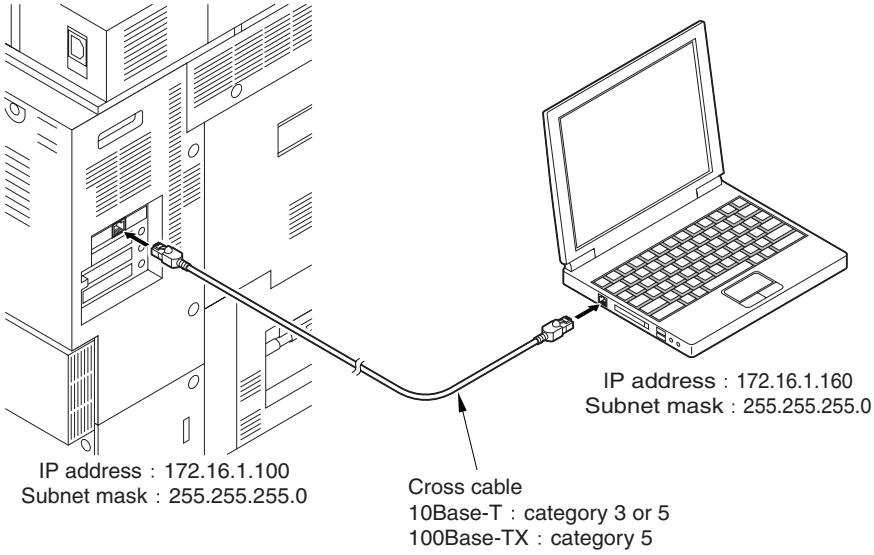
-172.16.1.255

If the settings are not as indicatred, change the PC network settings:

F-16-12

3) Check to see that the Execute/Memory lamp on the control panel is OFF; then, turn off the main power switch of the machine.

4) Connect the PC and the machine with a cross cable.



F-16-13

5) While holding down the keys suited to the download mode you are going to use, turn on the main power switch of the machine.

-if Normal mode

Turn on the main power switch in response to 1+7 on keypad.

Enter sorce mode, make the following selection in service mode:

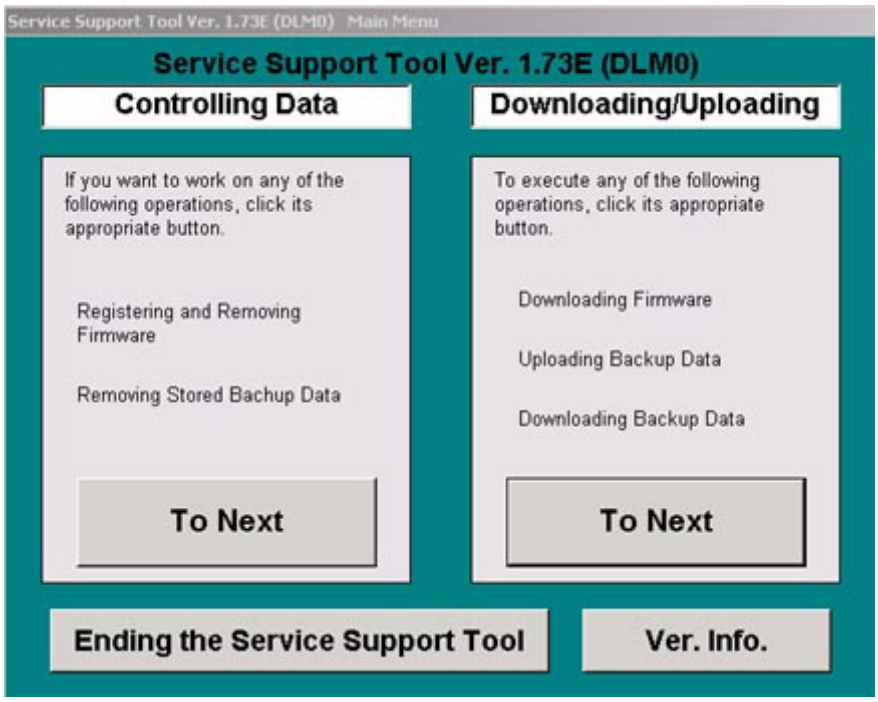
COPIER> FUNXTION> SYSTEM> DOWNLOAD

-if Safe mode

Turn on the main power switch in response to 2+8 on keypad.

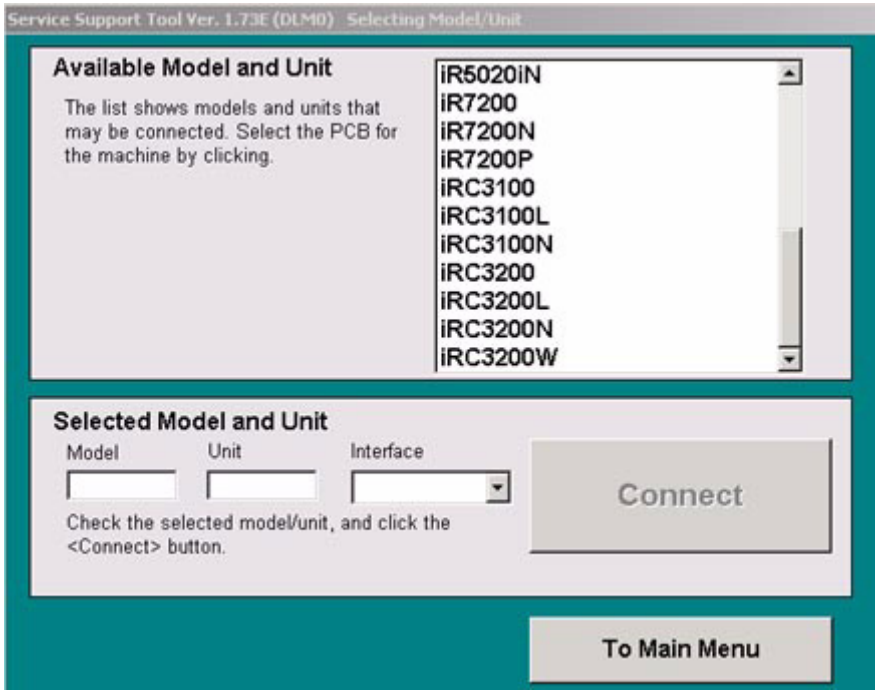
6) Start up the SST.

7) Click [To next] under Downloading/Uploading.



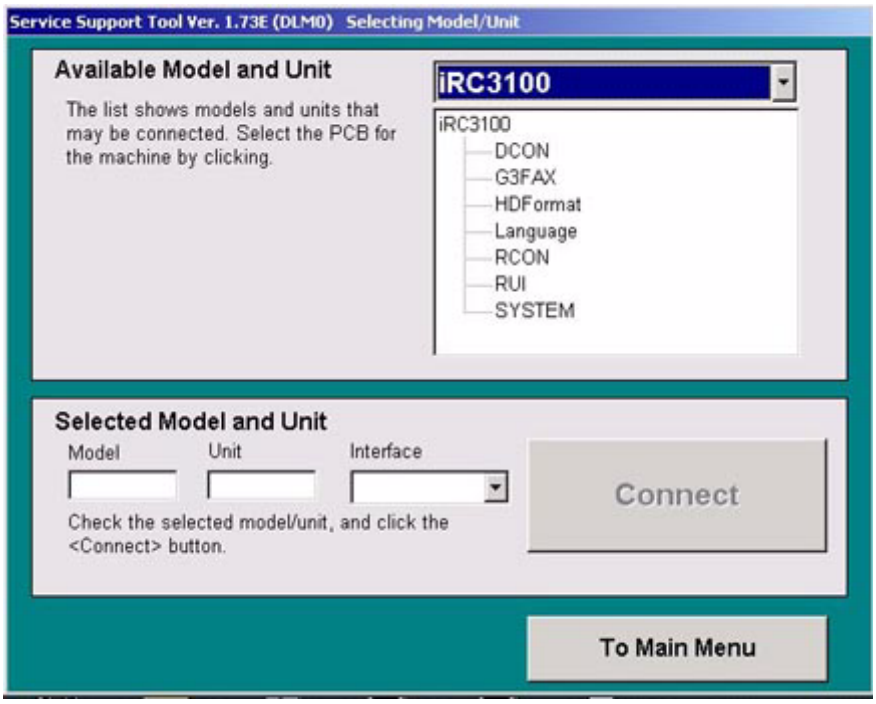
F-16-14

8) Select the model of the machine.



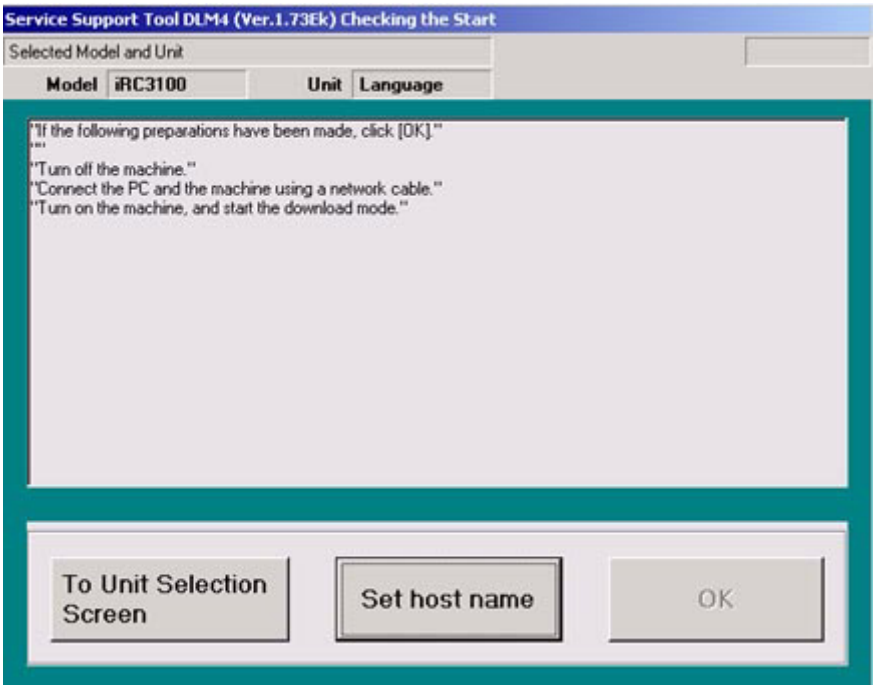
F-16-15

9) Select the unit you want, and click [Connect].



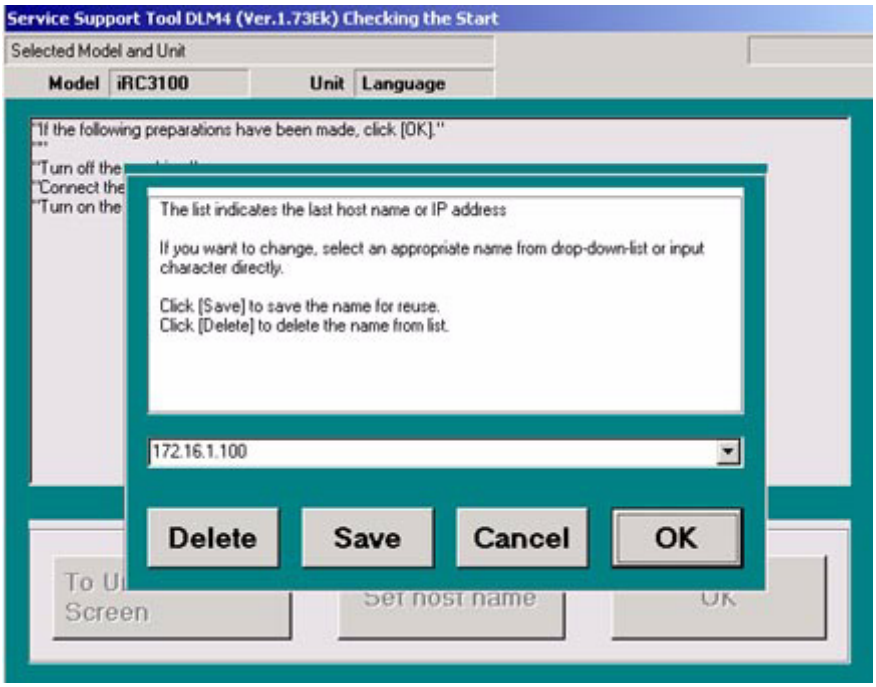
F-16-16

10) Click [Set host name].



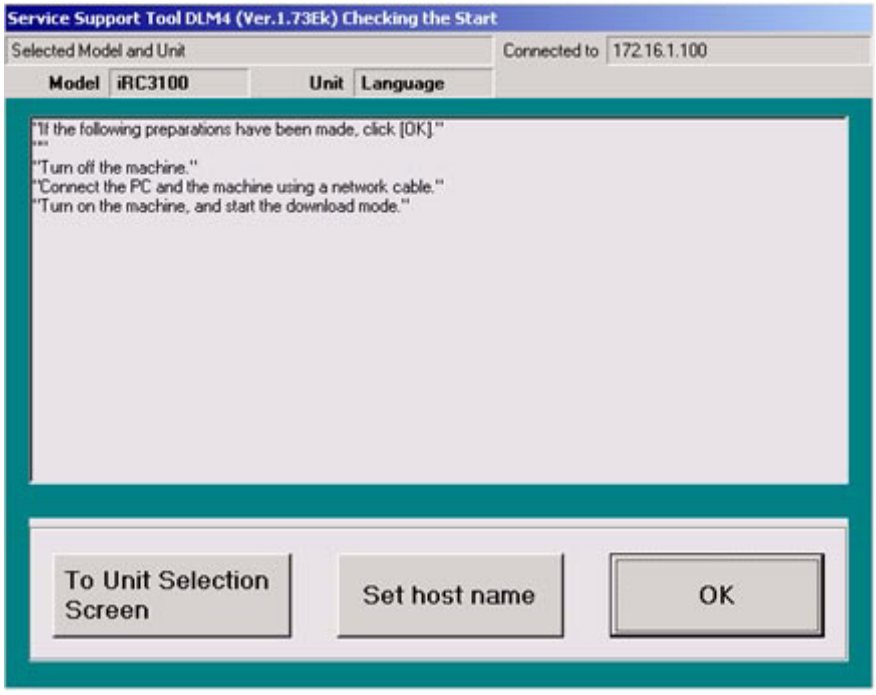
F-16-17

11) The machine's IP address is entered automatically; click [OK].



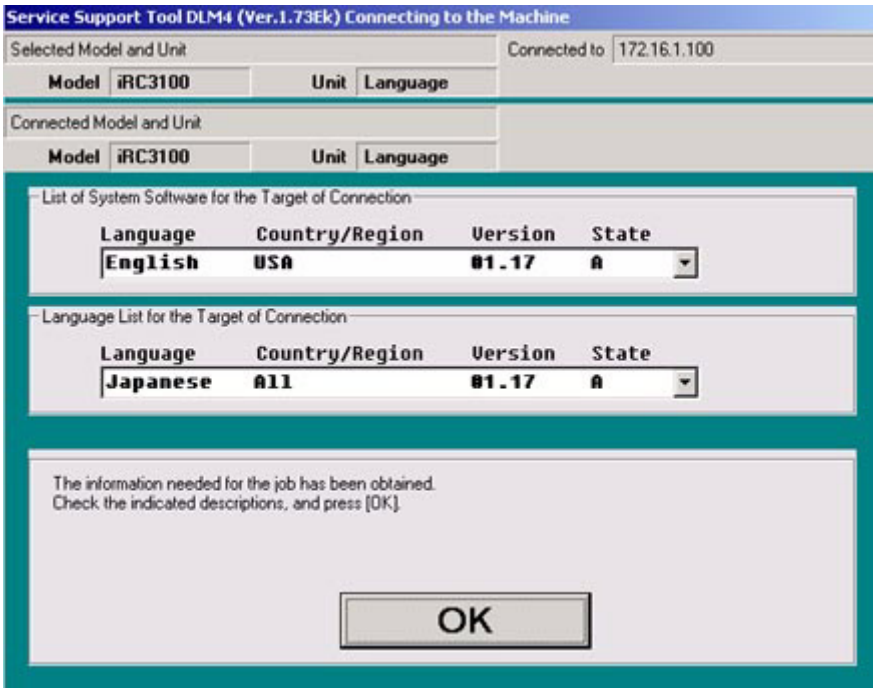
F-16-18

12) Click [OK] so that the machine makes a connection.



F-16-19

13) When the machine has made a connection and brings up the following screen, click [OK].


Service Support Tool DLM4 (Ver.1.73Ek) Connecting to the Machine
Selected Model and Unit
Connected to 172.16.1.100
Model iRC3100 Unit Language
Connected Model and Unit
Model iRC3100 Unit Language
List of System Software for the Target of Connection
Language Country/Region Version State
English USA 01.17 A
Language List for the Target of Connection
Language Country/Region Version State
Japanese All 01.17 A
The information needed for the job has been obtained.
Check the indicated descriptions, and press [OK].
OK

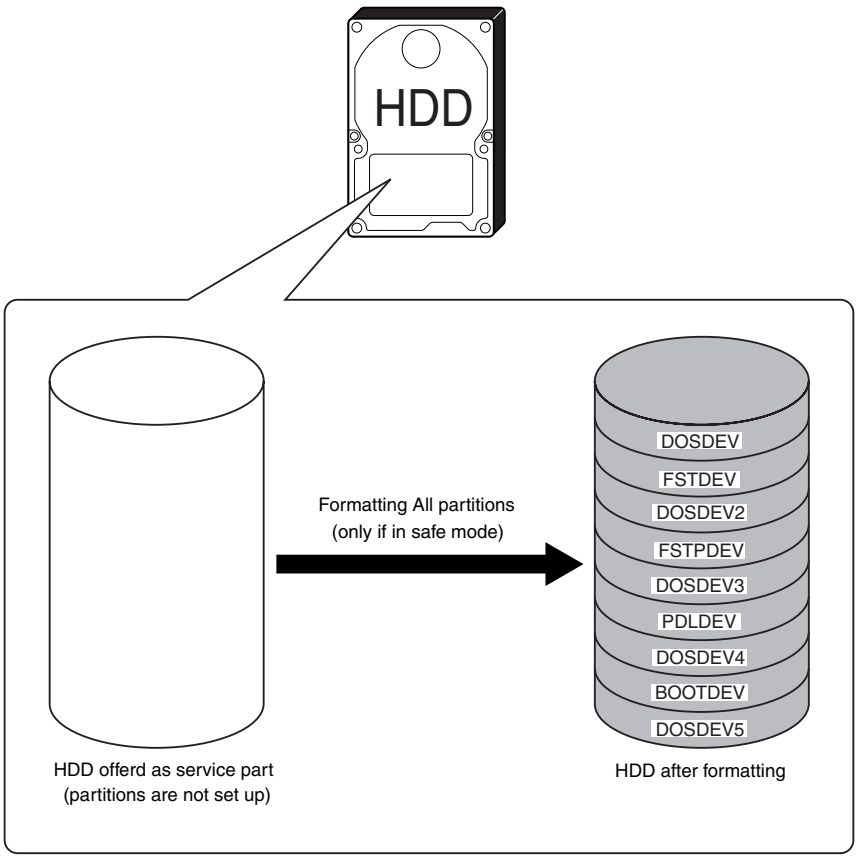
F-16-20

16.3 Formatting the HDD

16.3.1 Formatting All Partitions

0001-1640

You will be settin up partitions on the HDD and formatting (initializing) them for use by the main controller.

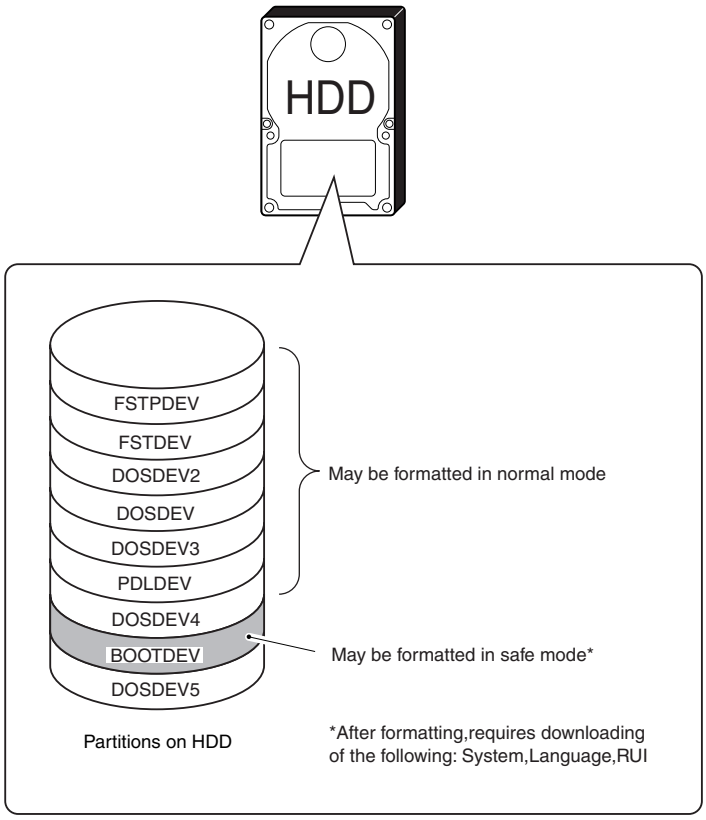


F-16-21

16.3.2 Formatting Selected Partitions

0001-1642

You will be formatting (initializing) partitions that you have selected.



F-16-22

Formatting Partitions Using the SST

T-16-3

Name of partition selected by the SST	Partition that is formatted
FSTDEV	FSTDEV, FSTPDEV, DOSDEV, DOSDEV2
DOSDEV3	DOSDEV3
PDLDEV	PDLDEV
DOSDEV4	DOSDEV4
DOSDEV5	DOSDEV5
BOOTDEV	BOOTDEV

⚠

-4 partitions (FSTDEV, FSTPDEV, DOSDEV, DOSDEV2) are formatted at hte same time.
-Formatting of DOSDEV4 requires the use of the SST.

The actual formatting of FSTDEV and PDLDEV takes place when the machine is started up the next time, and it takes as long as the following:

Formatting of FSTDEV: 2 min (approx.)

Formatting of PDLDEV: 5 min (approx.)

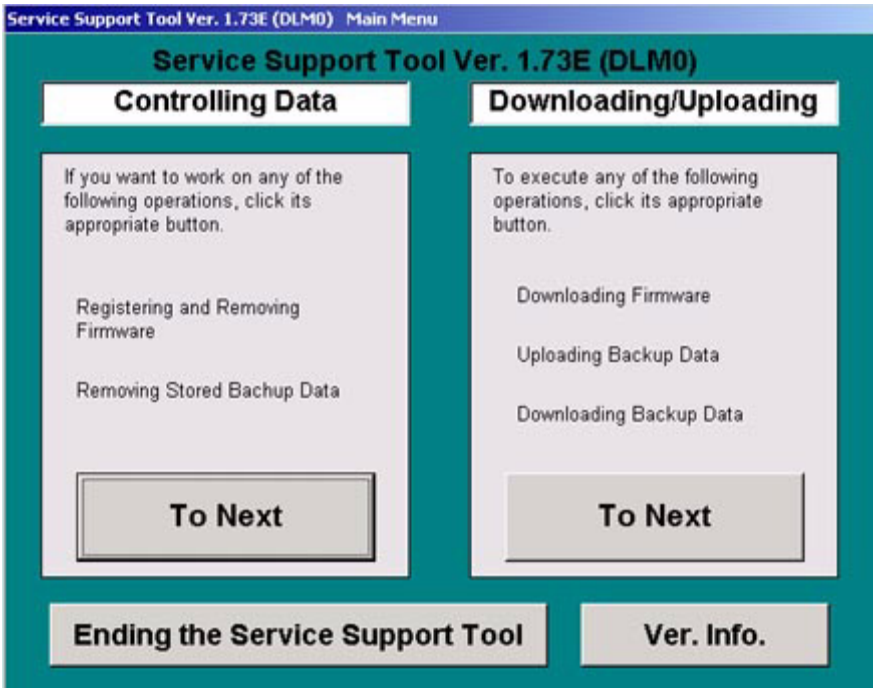
Formatting of All partitions: 7 min (approx.)

-The times vary according to the state of the HDD, and the progress of formatting is indicated by means of a progress bar.

16.3.3 Formatting Procedure

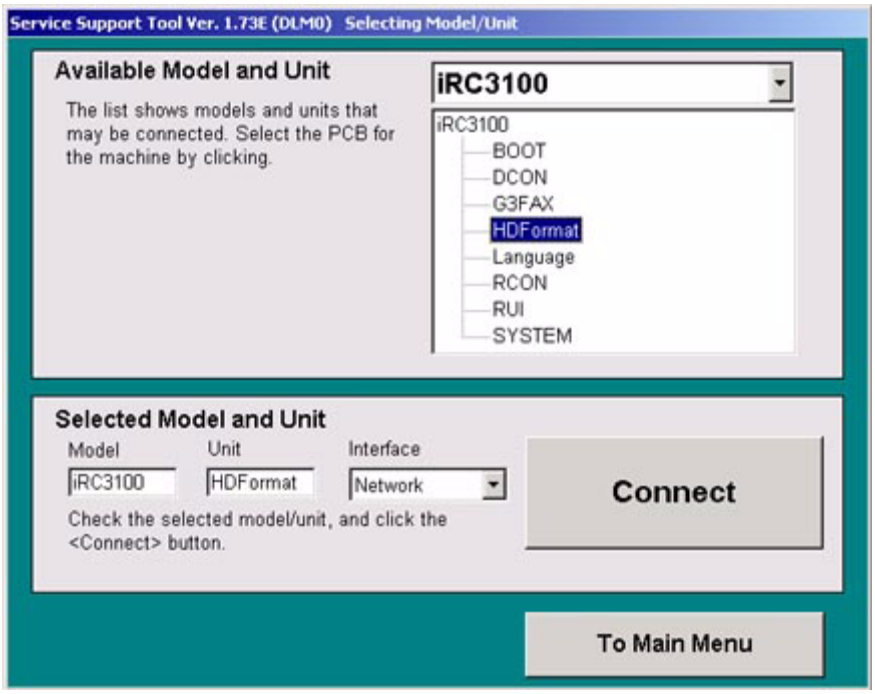
0001-1646

1) Click [To next] under Downloading/Uploading.



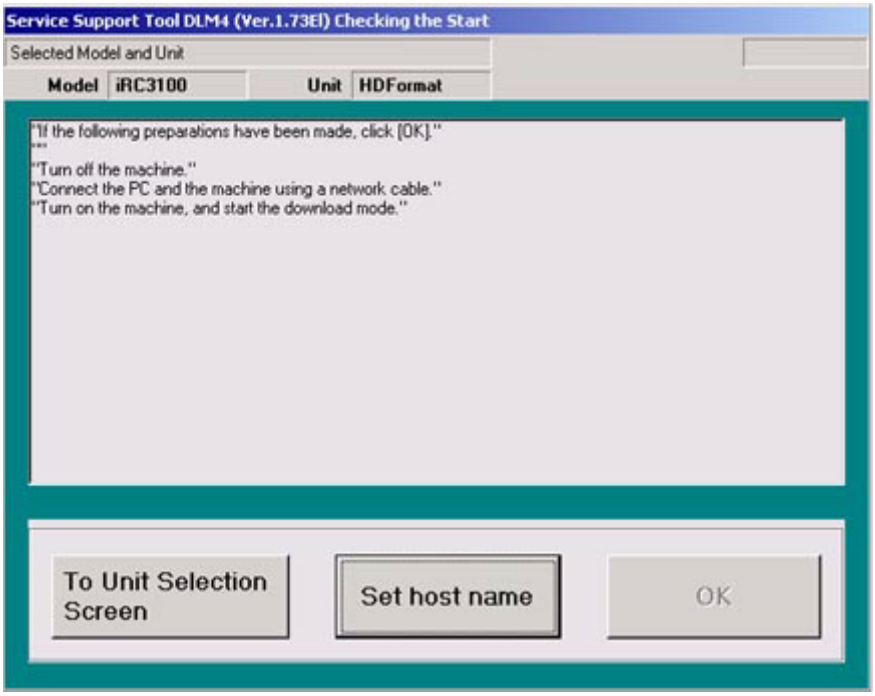
F-16-23

2) Select [HDForamt], and click [Connect].



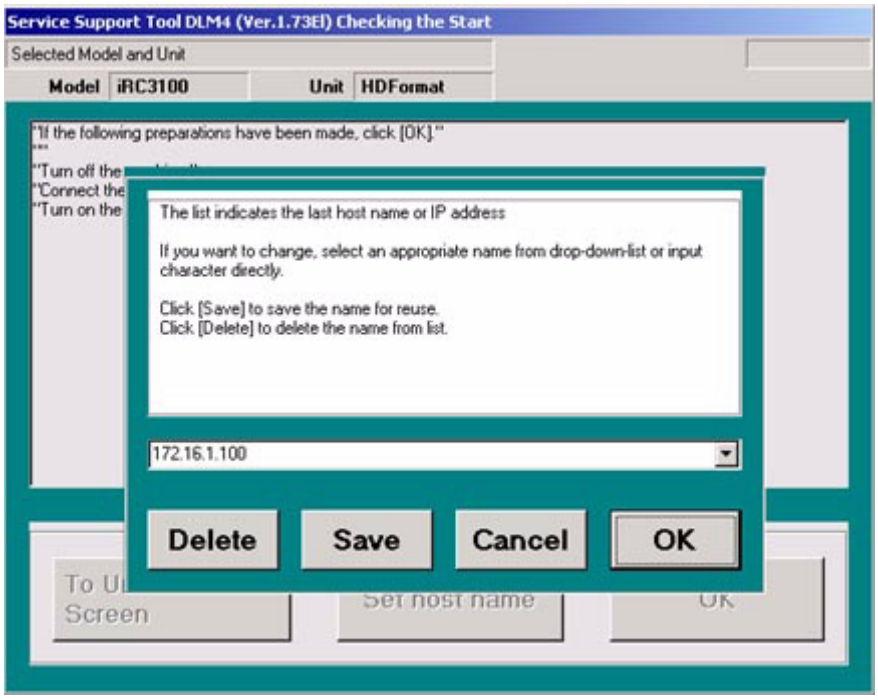
F-16-24

3) Click [Set host name].



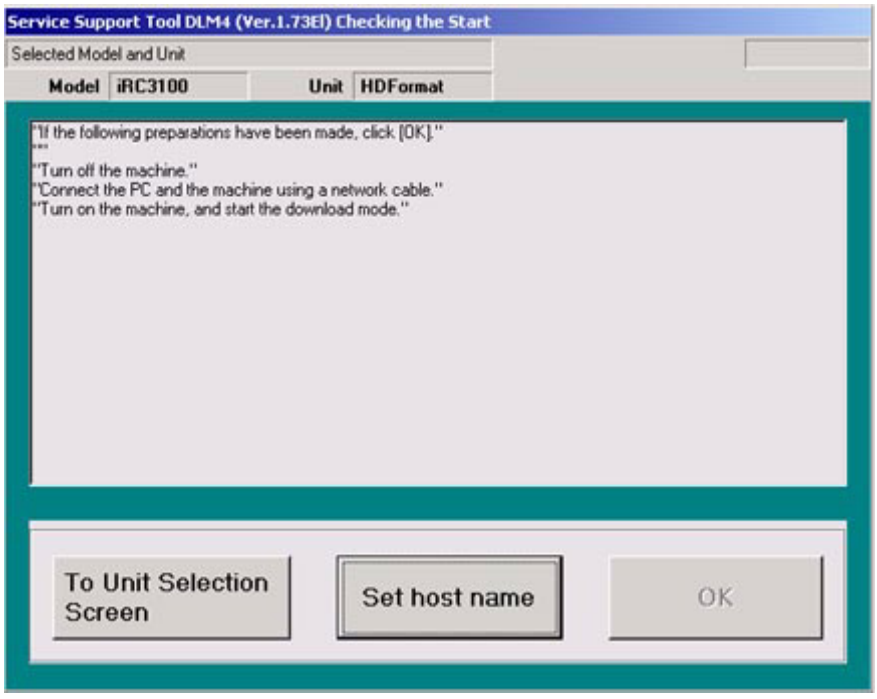
F-16-25

4) The machiine's IP address is entered automatically; click [OK].



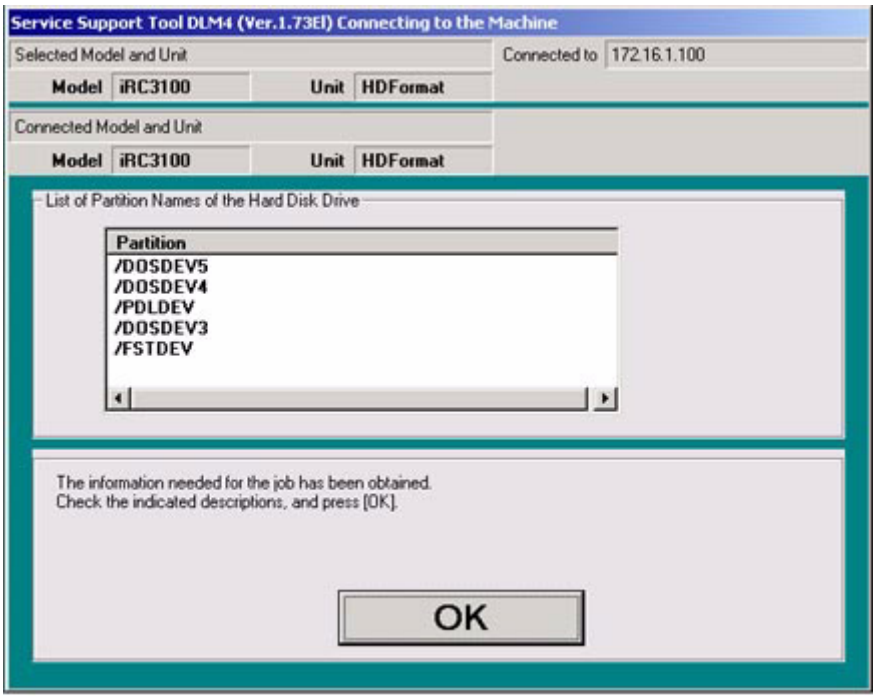
F-16-26

5) Click [OK] to start connection.



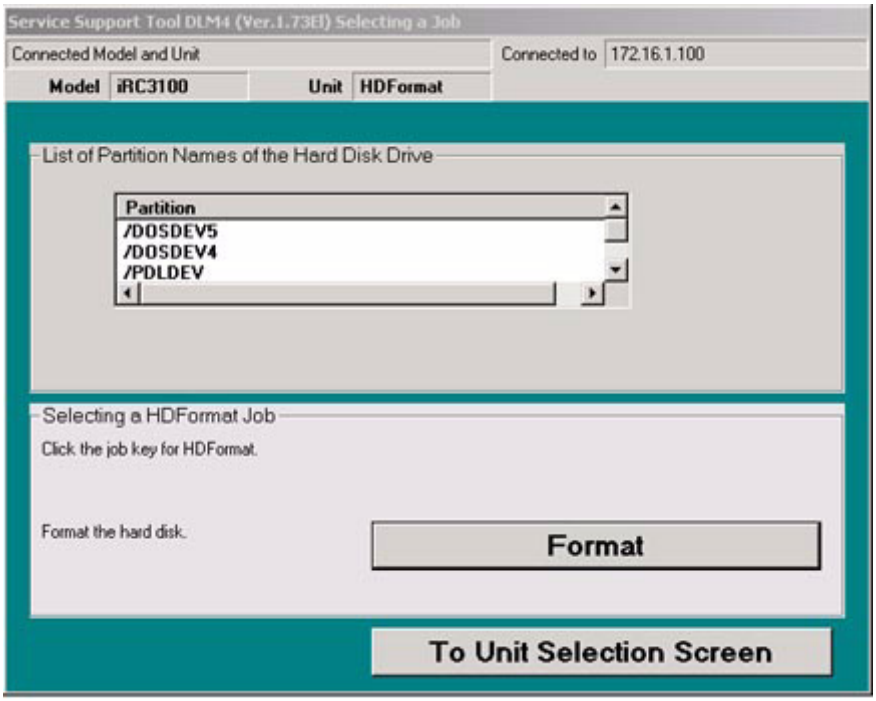
F-16-27

6) When the machine has made a connection and brings up the following screen, click [OK].



F-16-28

7) Click [Format].



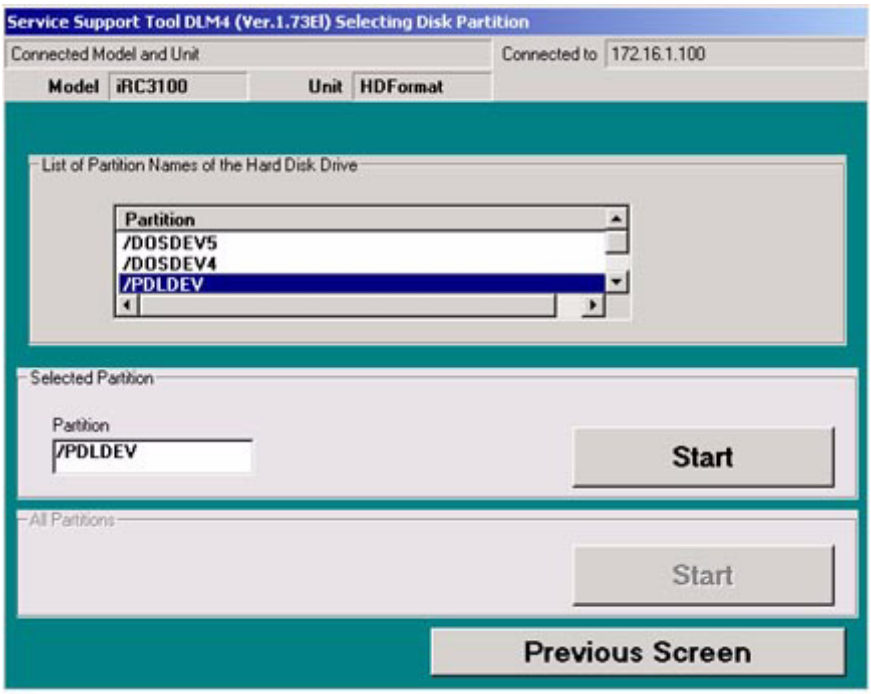
F-16-29

8) Select the partition you want to format from the list, and click [start].

⚠

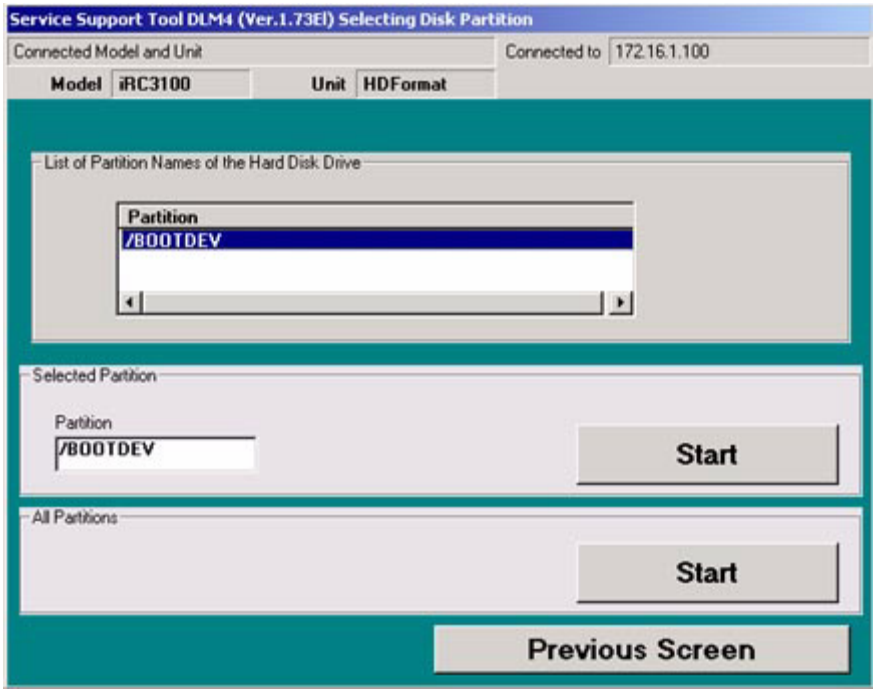
When formatting all partitions, click [start] under All partitions (enabled if in safe mode).

-If formatting in Normal Mode



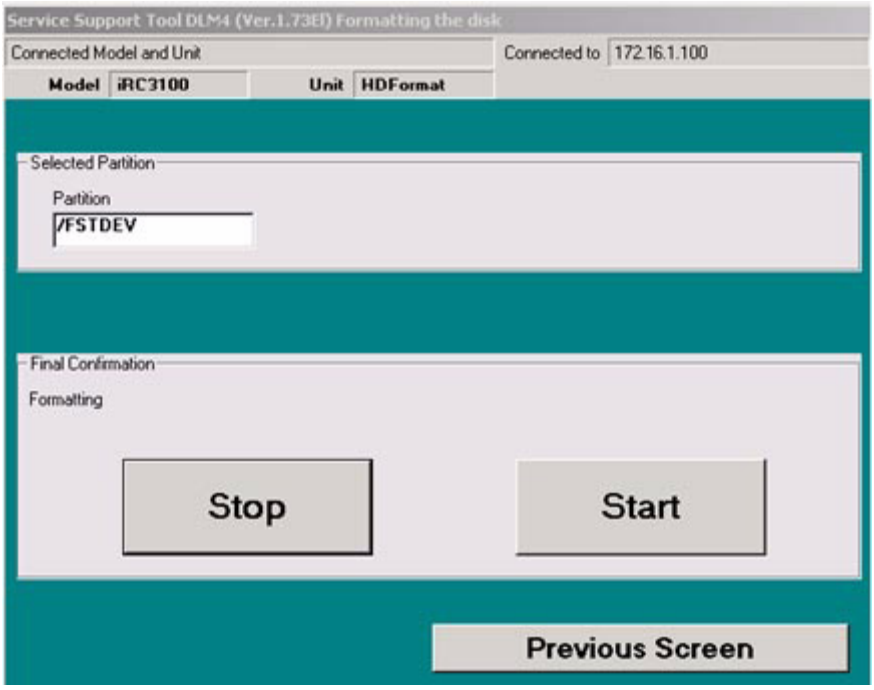
F-16-30

-If formatting in Safe Mode



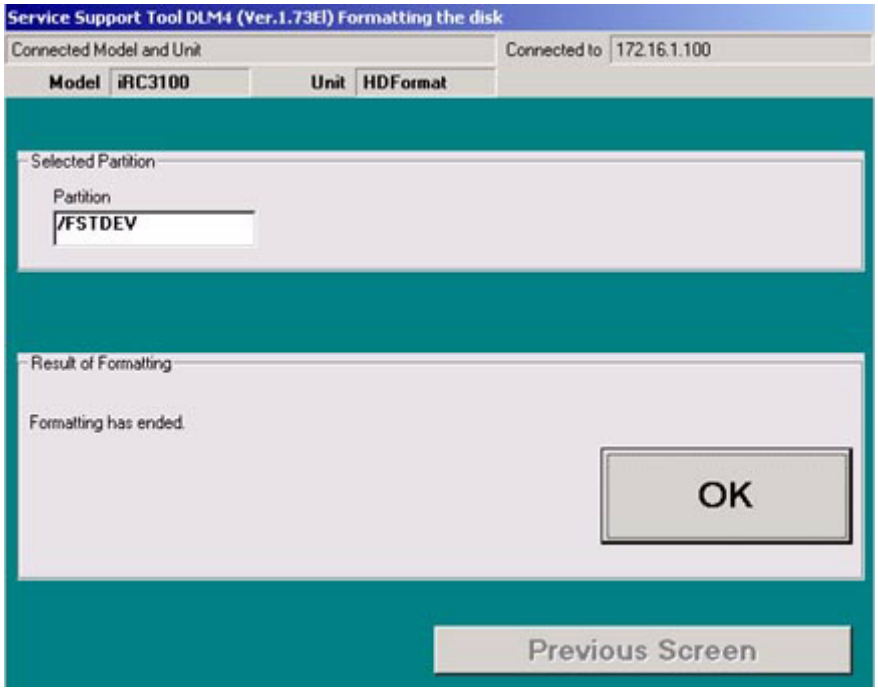
F-16-31

9) When the machine indicates the message for confirmation for the last time, click [Start].



F-16-32

10) After the machine indicates the message to the indicate the end of formatting, click [OK].



F-16-33

11) Click [To Unit Selectioin Screen].

⚠

-If you have formatted all partitions or BOOTDEV, you must download the following:
System, Language, RUI
(If you fail to download these, an error(E602) will ocur when the main power switch is turned ON.)

-The actual formattin of FSTDEV and PDLDEV takes place when the machine is started up the next time, and it takes as long as the following:
Formatting of FSTDEV: 2 min (approx.)
Formatting of PDLDEV: 5 min (approx.)
Formatting of All partitions: 7 min (approx.)

-The times vary according to the state of the HDD, and the progress of formatting is indicated by means of a progress bar.

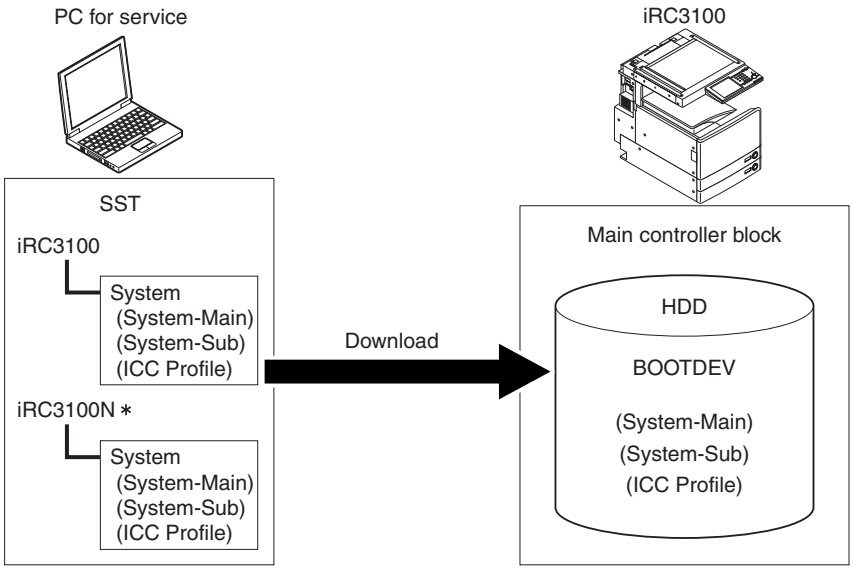
-You must not turn off the machine's main power switch while the progress bar is shown.

16.4 Downloading Firmware

16.4.1 Downloading the System Software

16.4.1.1 Outline

0001-1623



F-16-34

The system software comes in 3 types.
In the case of Japan, appropriate model must be selected with reference to the presence/absence of support for NetWare.

T-16-4

Country	SST installation model	NetWare	Remarks
100V	iRC3100	Not supported	Installed at time of shipment to iRC3100 (100V)
	iRC3100N	Supported	Installed at time of shipment to iRC3100F(100V)/3100N(100V)/ 3100i(100V)
120/230V	iRC3100	Supported	Installed at time of shipment to iR3100 (120/230V)/3100N(120/ 230V)

The machine's System software consists of multiple files.

The SST handles these files in group, and transfers them in succession at time of downloading.

T-16-5

Notation	Function
System-Main	Program for main CPU
System-Sub	Program for sub CPU
ICC Profile	color correction information file for PDL functions

16.4.1.2 Downloading Procedure

0001-1626

[Makin Checks in Advance **(only in Japan)**]

-Chcek the type of system software installed to the machine (support/non-support of NetWare) in service mode.

COPIER> DISPLAY> ACC-STS> NETWARE

1: Netware supported

0: Netware not supported

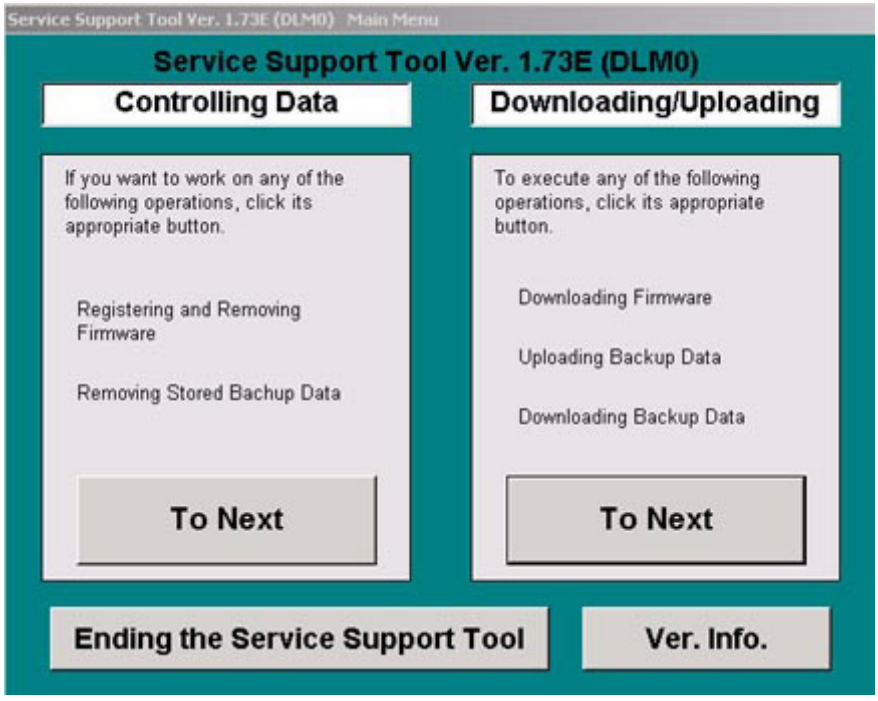
-Select the type of system software to download using the name of the model in SST.

Name of model iRC3100: NetWare not supported

iRC3100N: NetWare supported

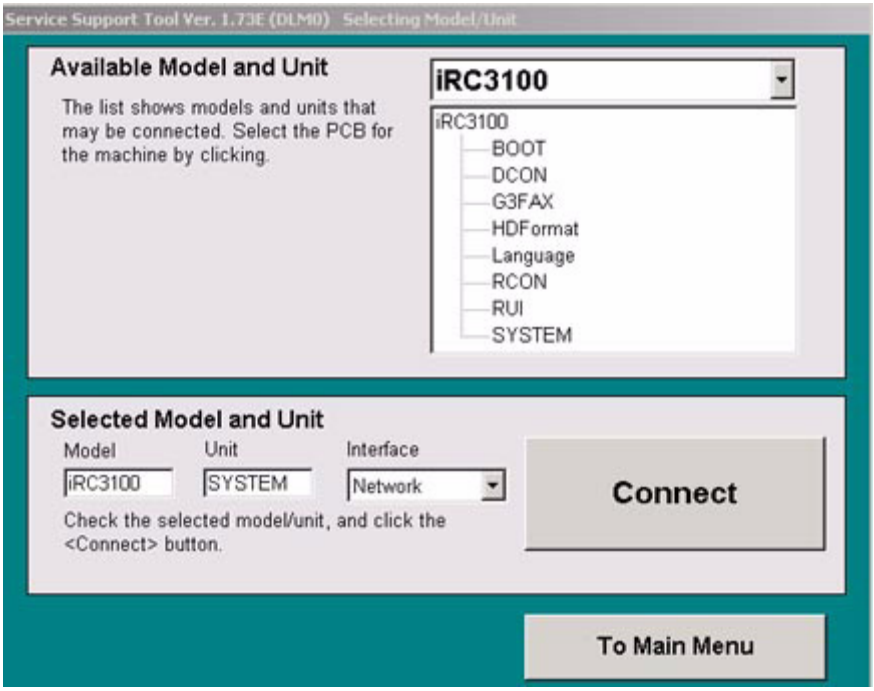
[Procedure]

1) Click [To Next] under Downloading/Uploading.



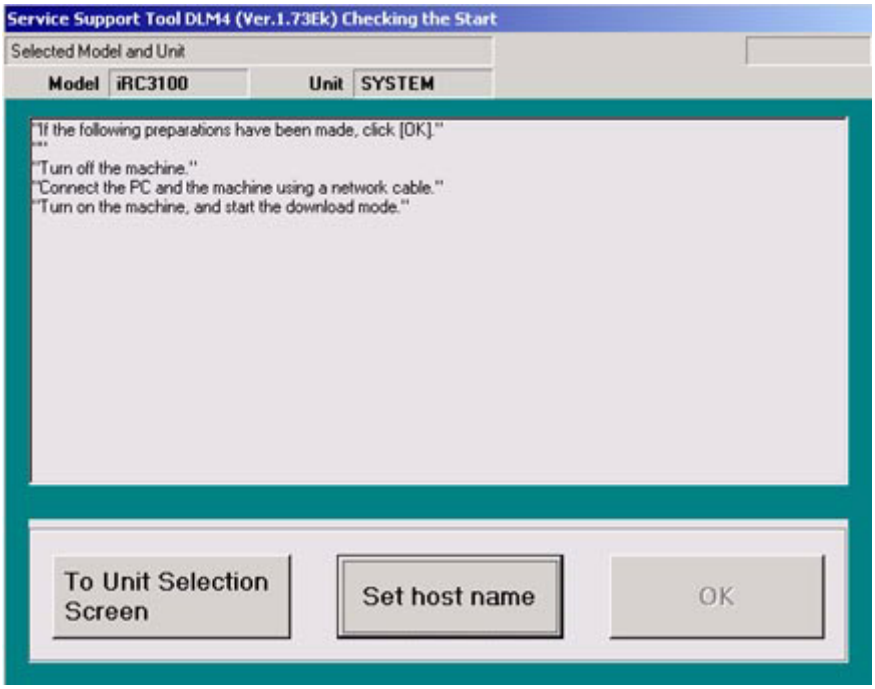
F-16-35

2) Select the SYSTEM of the iRC3100, and click [Connect].
(In Japan and if NetWare is supported, be sure to select the SYSTEM of the iRC3100N.)



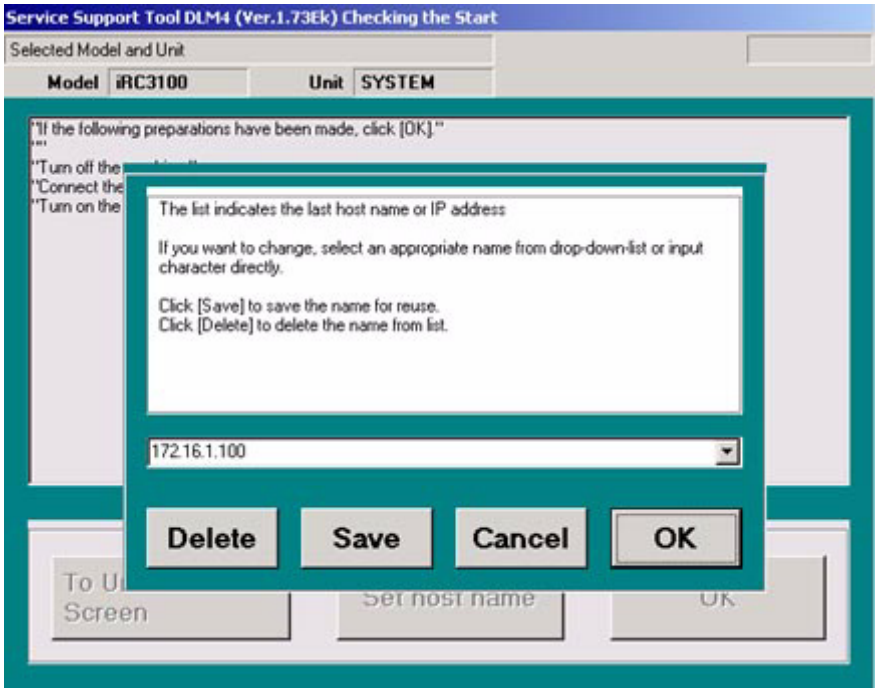
F-16-36

3) Click [Set host name].



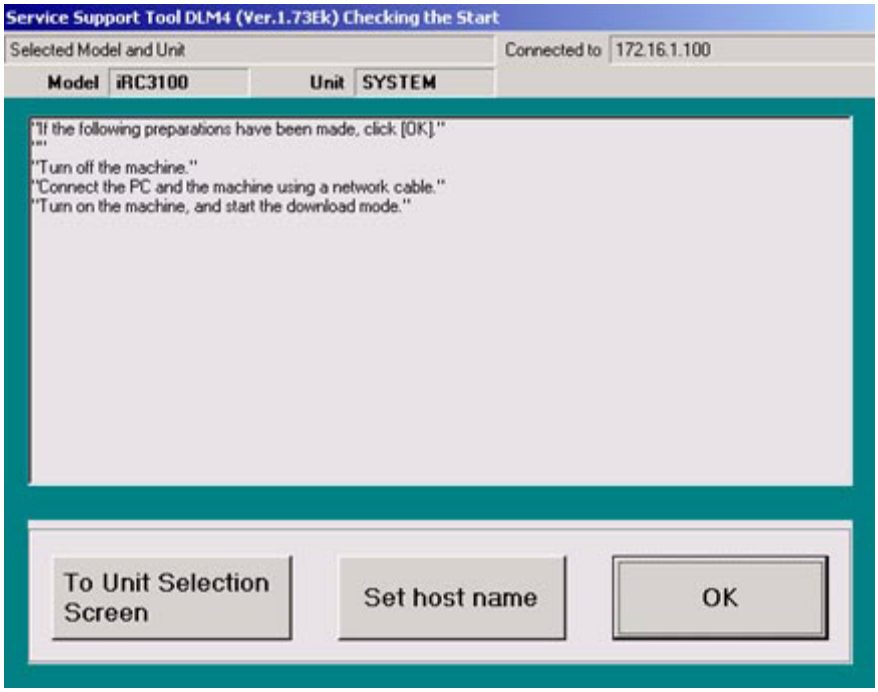
F-16-37

4) The machine's IP address is entered automatically; click [OK].



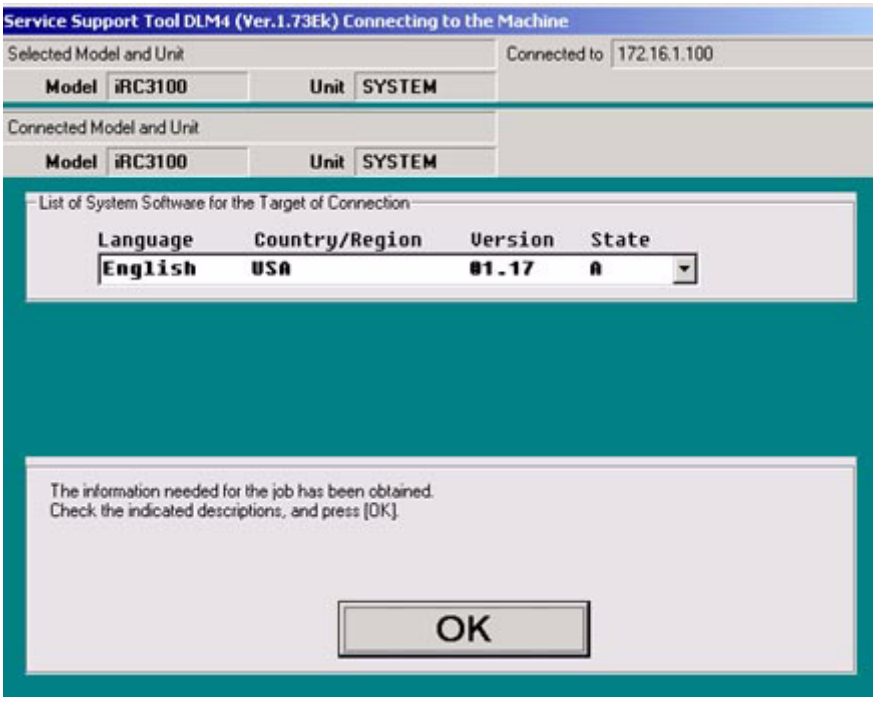
F-16-38

5) Click [OK] to start connection.



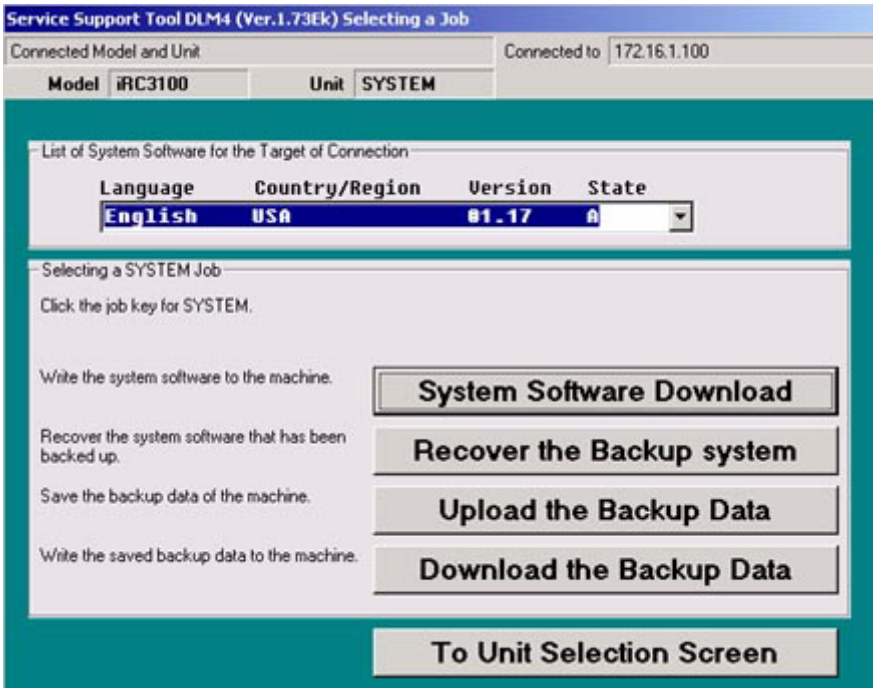
F-16-39

6) When the machine has made a connection and brings up the following screen, click [OK].



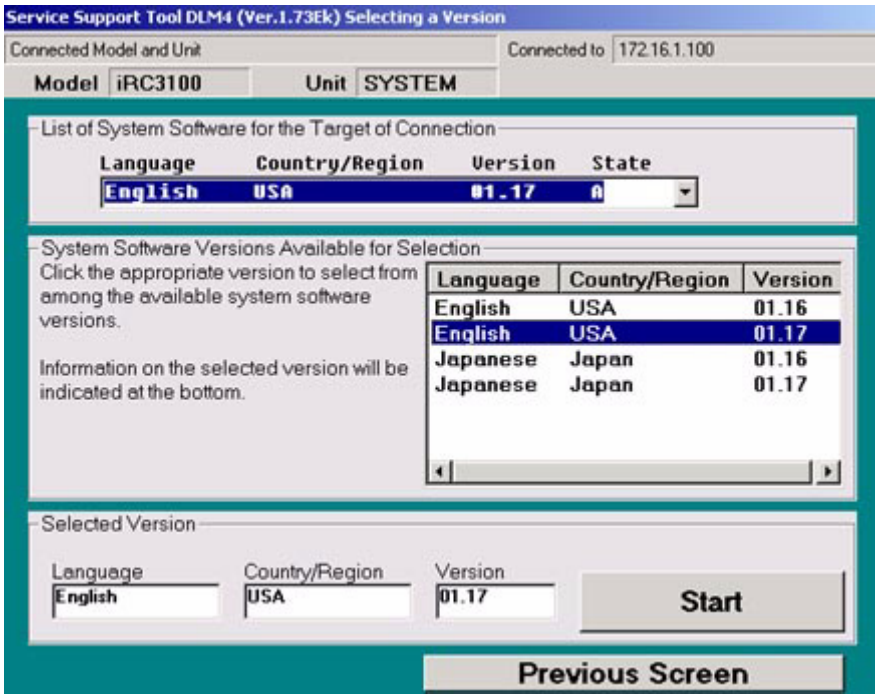
F-16-40

7) Click [System Software Download].



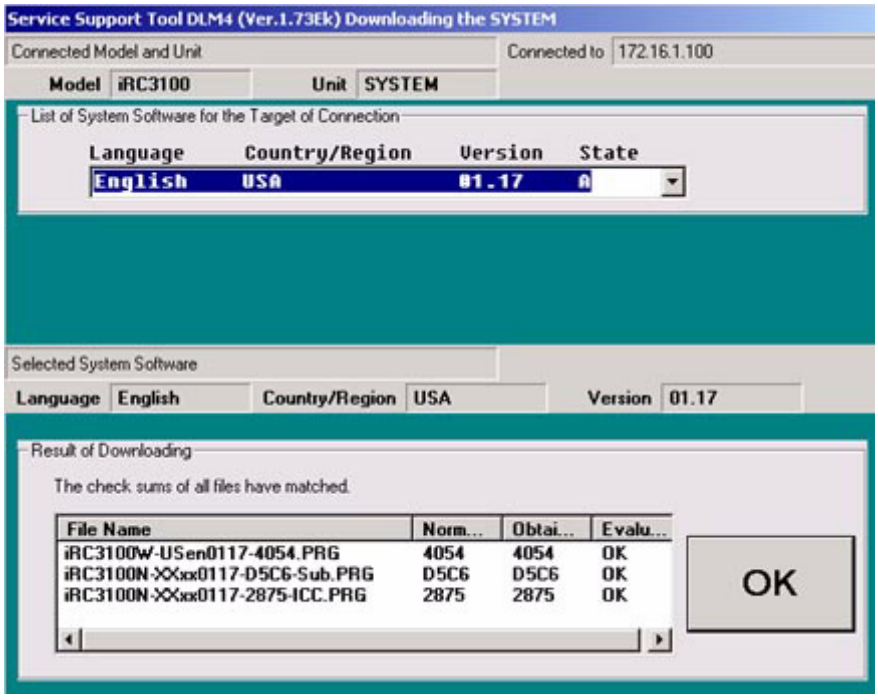
F-16-41

8) Select the version to download, and click [Start].



F-16-42

9) When the results of the downloading are indicated, and click [OK].

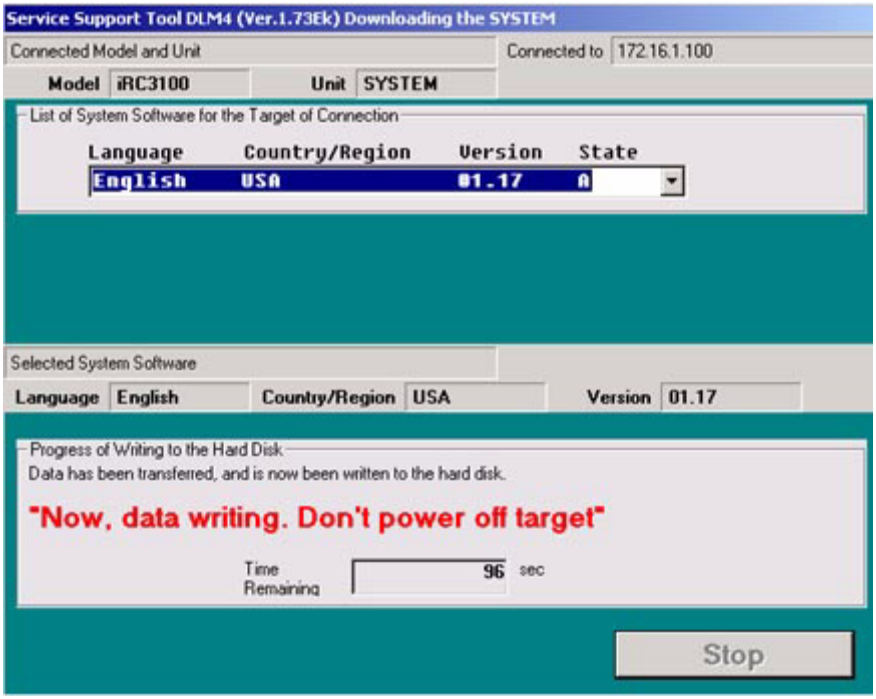


F-16-43

10) Click [To Unit Selection Screen].

⚠

Never turn off the machine while the following screen is shown.
Otherwise writing to the HDD will be suspended, preventing the machine to start up.



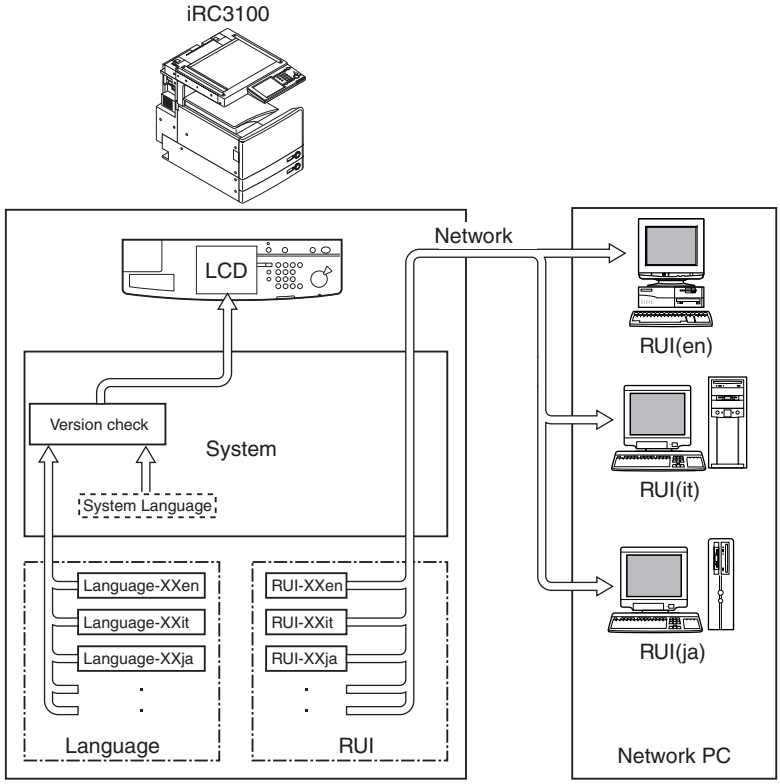
F-16-44

If the machine fails to start up, execute foramtting BOOTDEV using HDForamt and download the following: System, Language, RUI

16.4.2 Downloading the RUI, and Language Module

16.4.2.1 Outline

0001-1648



F-16-45

T-16-6

Language used on control panel LCD

Check the versions of system software and language files.

1) if the versions are correct

Selections may be made in Additional Function;
Common settings>Language Switch

2) if the versions are not correct

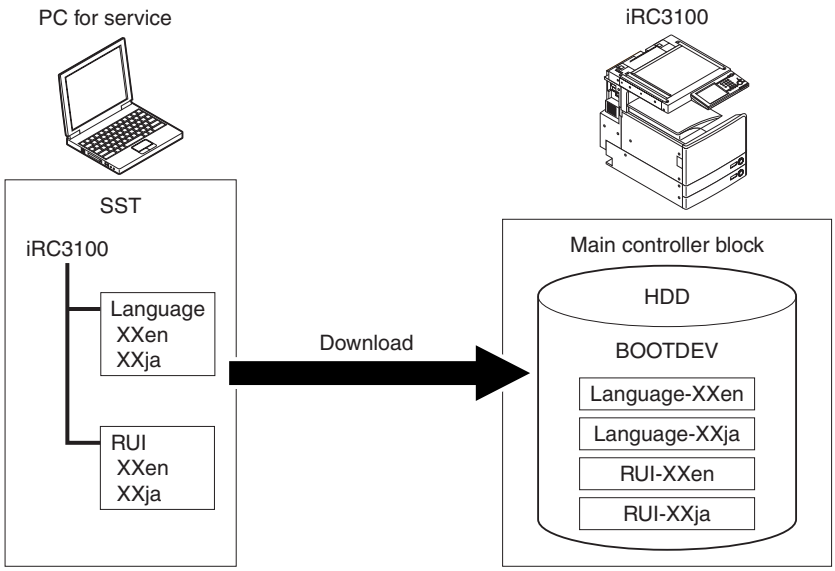
'E744' will be indicated.
Turn off and then on the main power switch so that the system language will be used.

T-16-7

Language used in RUI

Select on the RUI.
A specific language may be selected for a specific PC.

<Language Code>	<Language>
de	German
en	English
fr	French
it	Italian
ja	Japanese



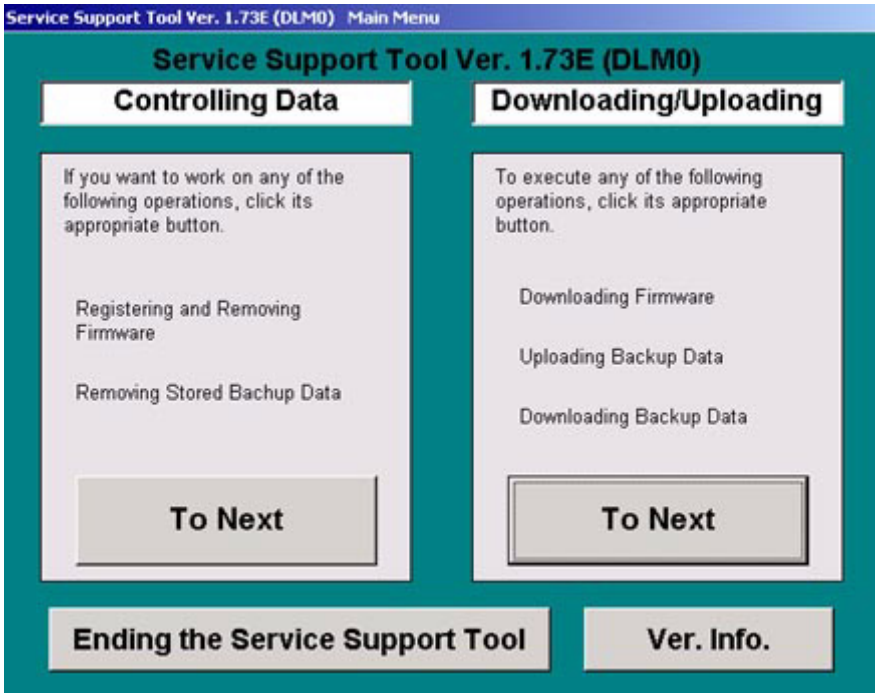
F-16-46

16.4.2.2 Downloading Procedure

0001-1650

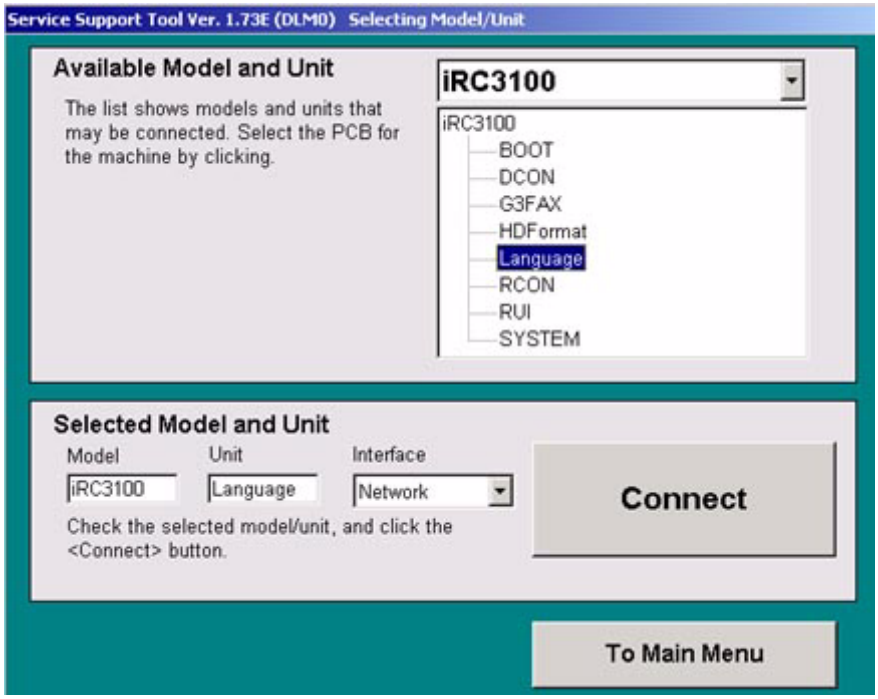
[Procedure]
Downloading may take place when the machine is in normal or in safe mode.
Both Language and RUI files mey be downloaded in common among models.
(here,the iRC3100 is selected)

[describes downloading of the Language]
1) Click [To next] under Downloading/Uploading.



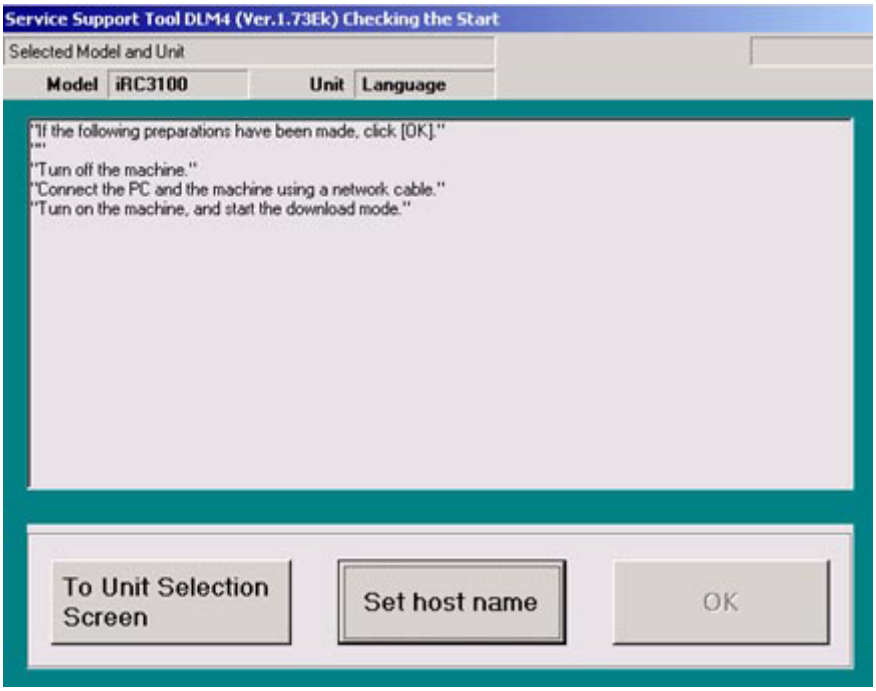
F-16-47

2) Select [Language] for the iRC3100, and click [Connect].



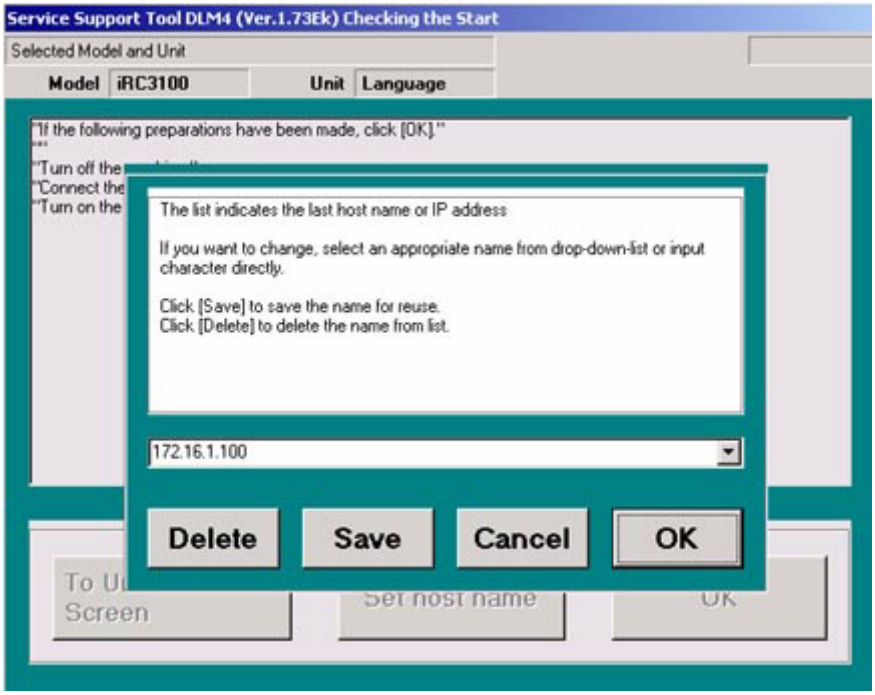
F-16-48

3) Click [Set host name].



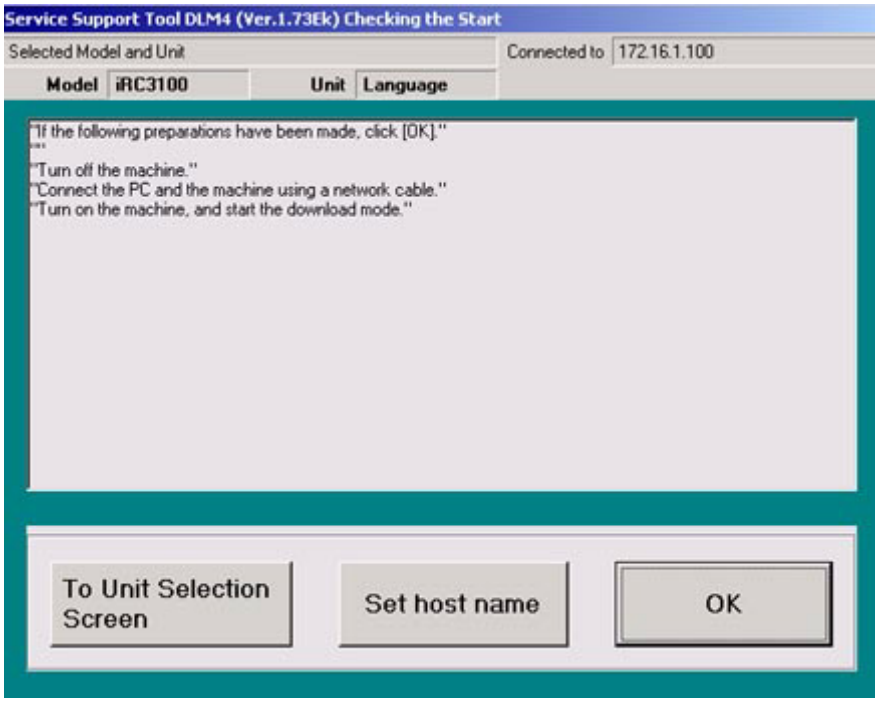
F-16-49

4) The machiine's IP address is entered automatically; click [OK].



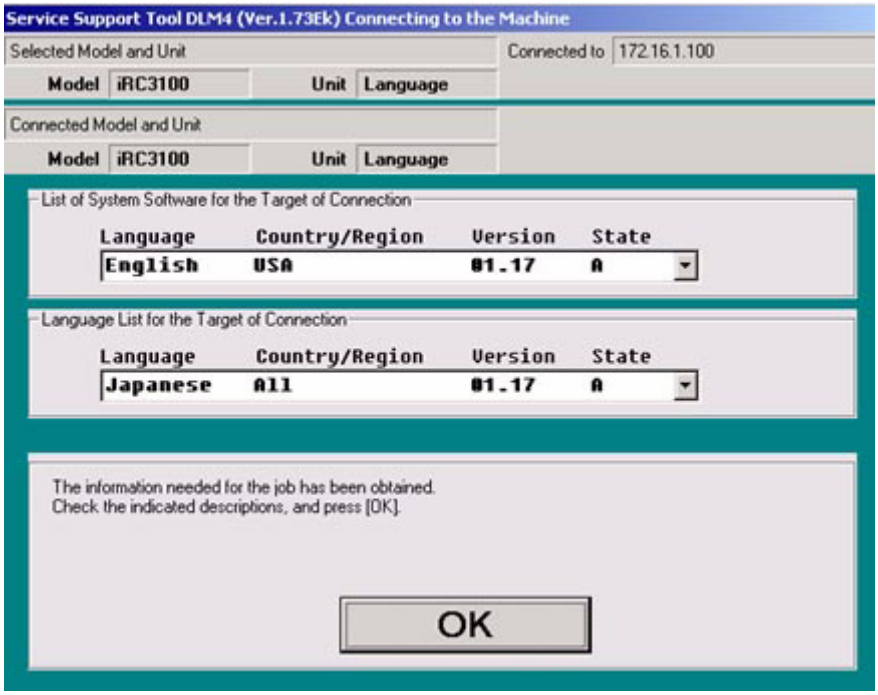
F-16-50

5) Click [OK] to start conncection.



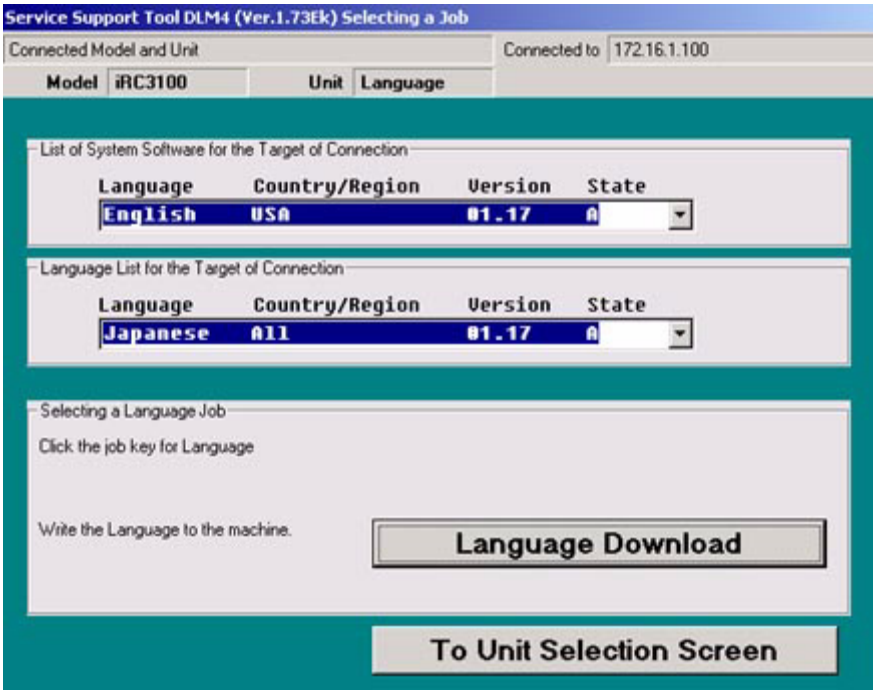
F-16-51

6) When the machine has made a connection and bring up the following screen, click [OK].



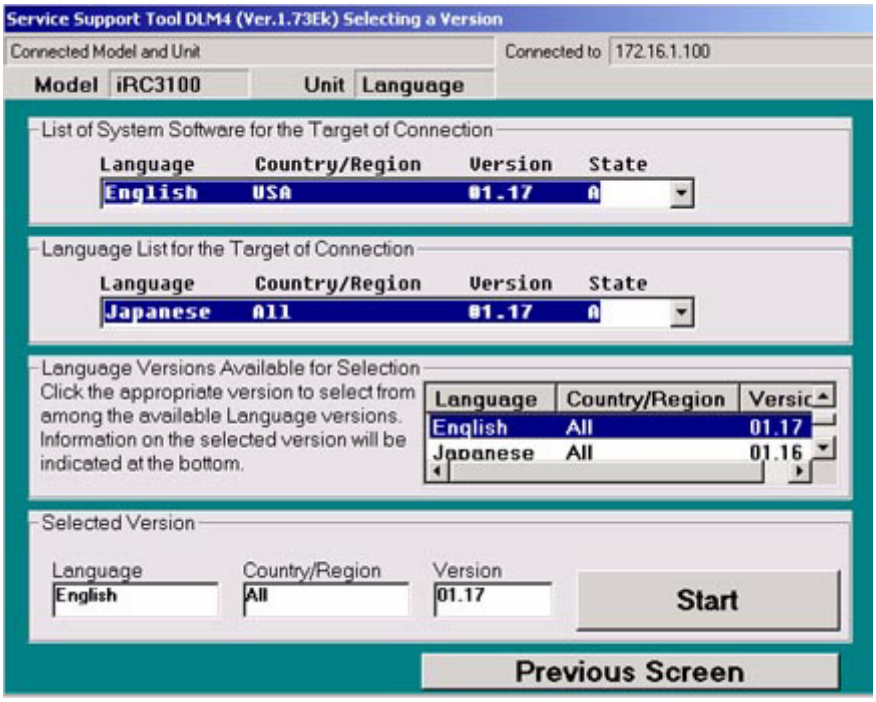
F-16-52

7) Click [Language Download].



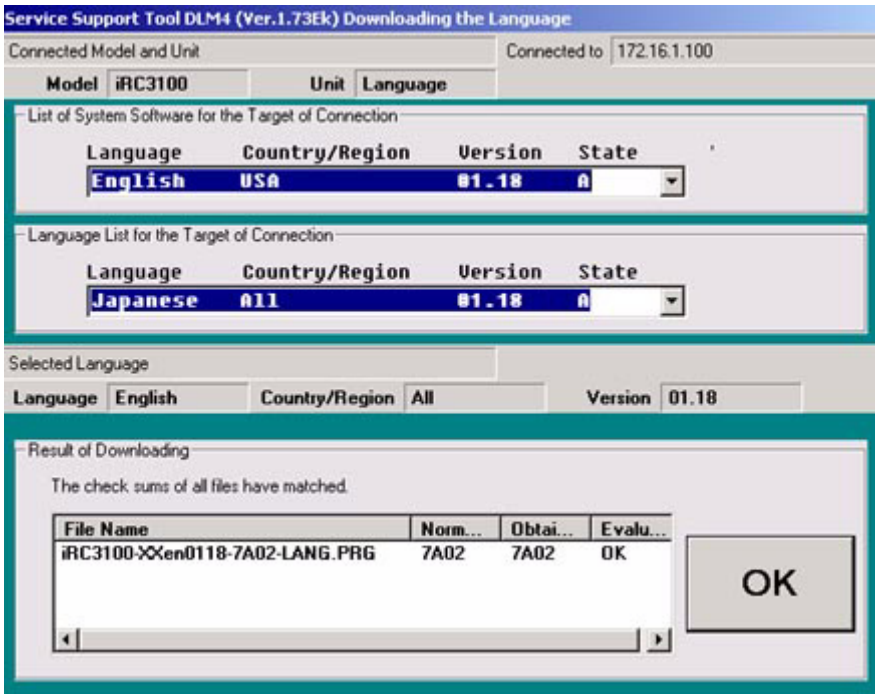
F-16-53

8) Select the version to download, and click [Start].



F-16-54

9) When the results of the downloading are indicated. click [OK].

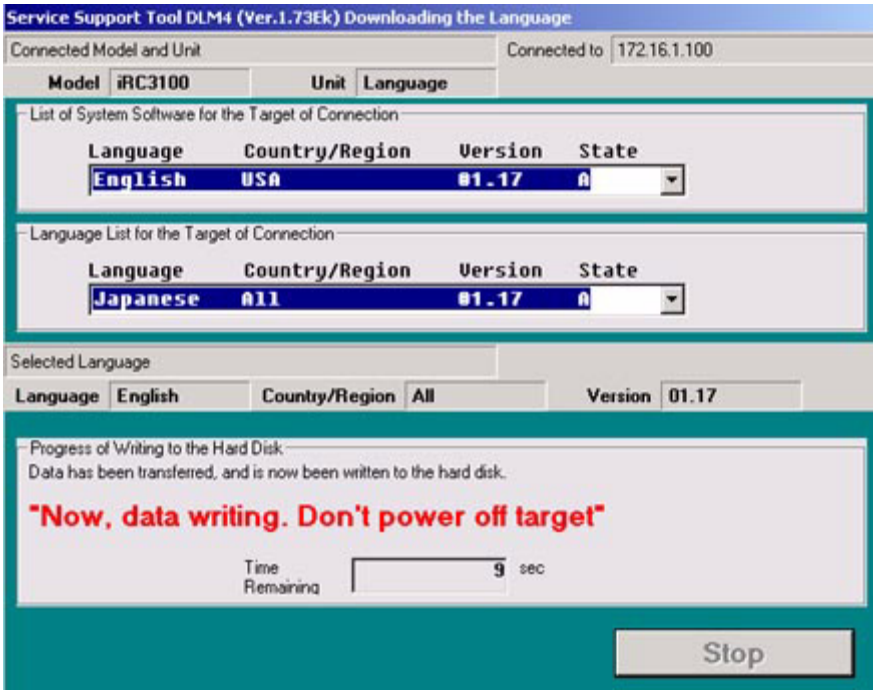


F-16-55

10) Click [To Unit Selection Screen].

⚠

Never turn off the machine while the following screen is shown.
Otherwise writing to the HDD will be suspended, preventing the machine to start up.



F-16-56

If the machine fails to start up, execute foramtting BOOTDEV using HDForamt and download the following: System, Language, RUI

16.4.3 Downloading the BOOT Software

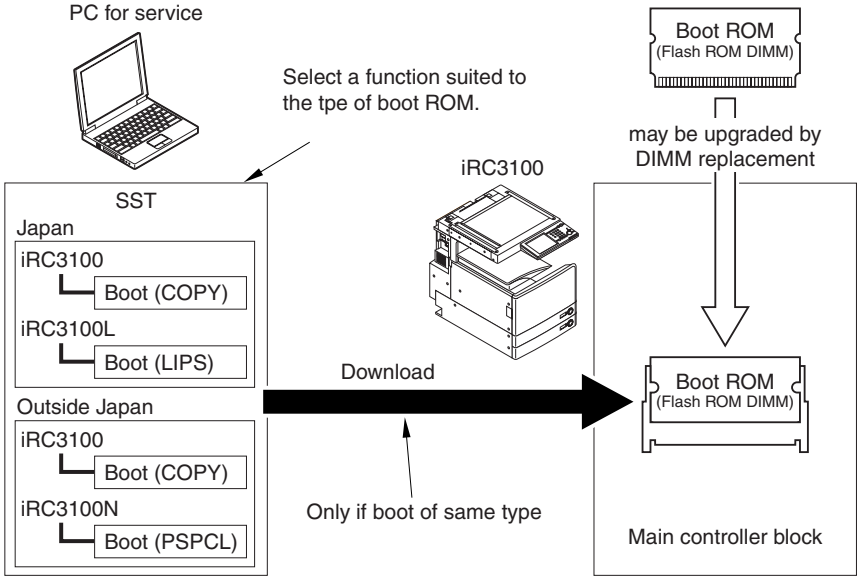
16.4.3.1 Outline

0001-1652

The boot ROM differs according to the machine's functions:

T-16-8

Boot ROM type	Service mode indication	Country	Machine function
Copy	xx.yyC	Worldwide	Copy
LIPS	xx.yyL	Japan	Copy+LIPS
PSPCL	xx.yyN	Outside Japan	Copy+PSPCL



F-16-57

⚠

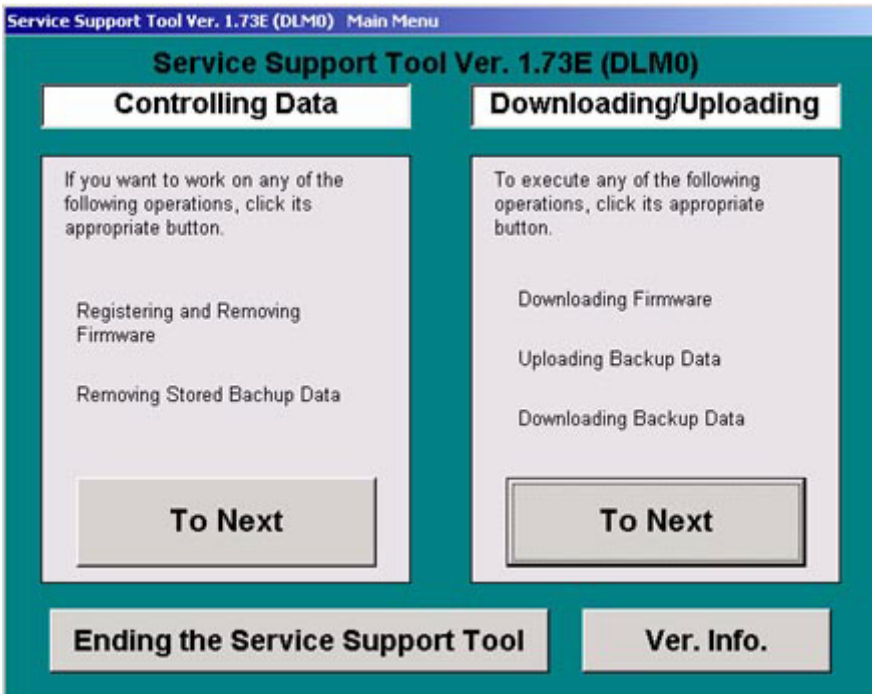
-If you fail to downloading files, you must replace the boot ROM.
-You are not required to check the type of boot ROM mounted to the machine when downloading.

16.4.3.2 Downloading Procedure

0001-1657

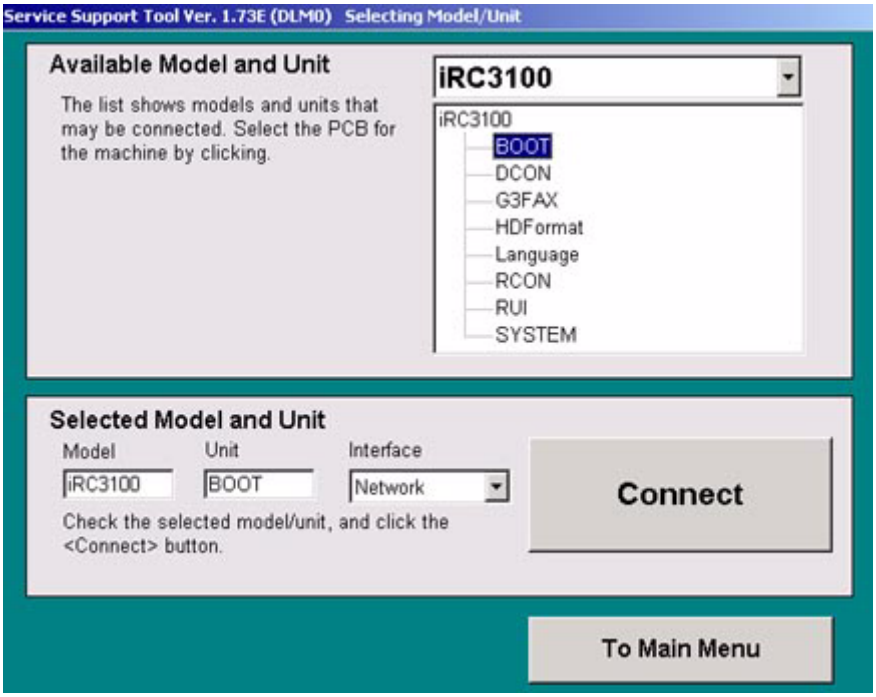
Downloading may take place in normal mode (1+7 on keypad) or in safe mode (2+8 on keypad).

1) Click [To next] under Downloading/Uploading.



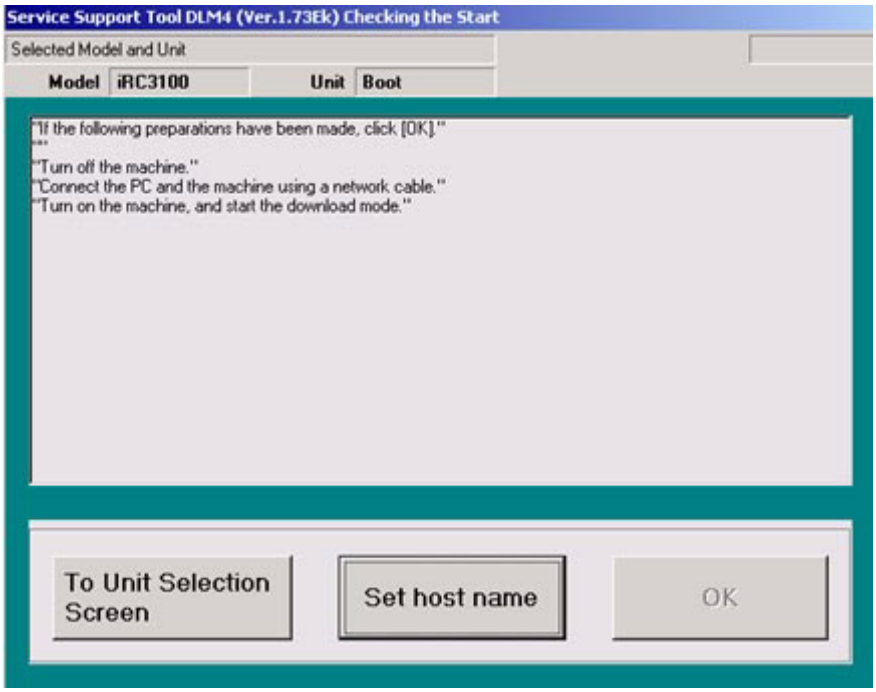
F-16-58

2) Select [BOOT] for the iRC3100 (if a LIPS model, select iRC3100L), and click [Connect].



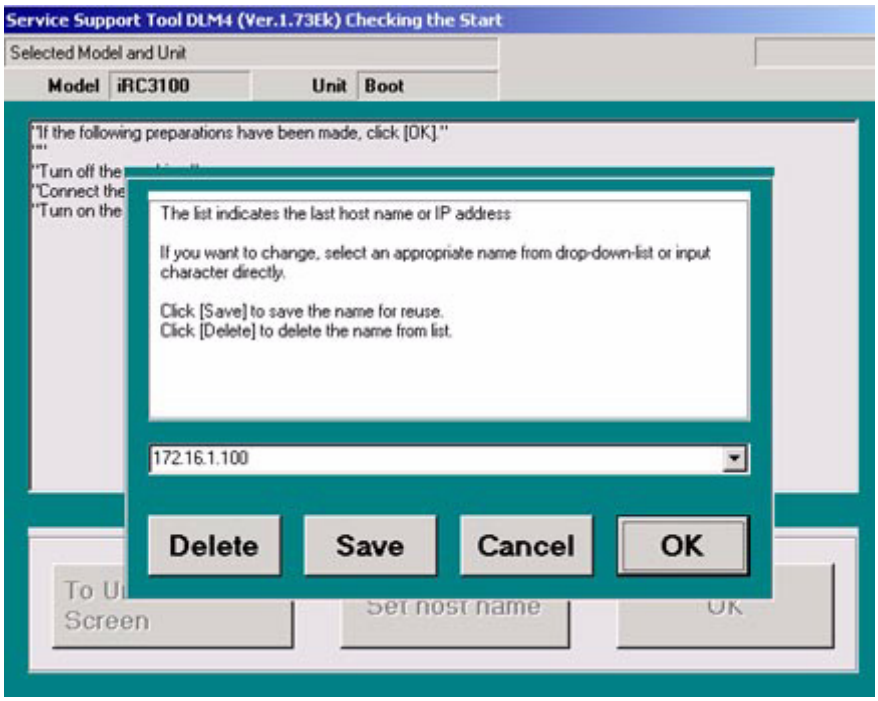
F-16-59

3) Click [Set host name].



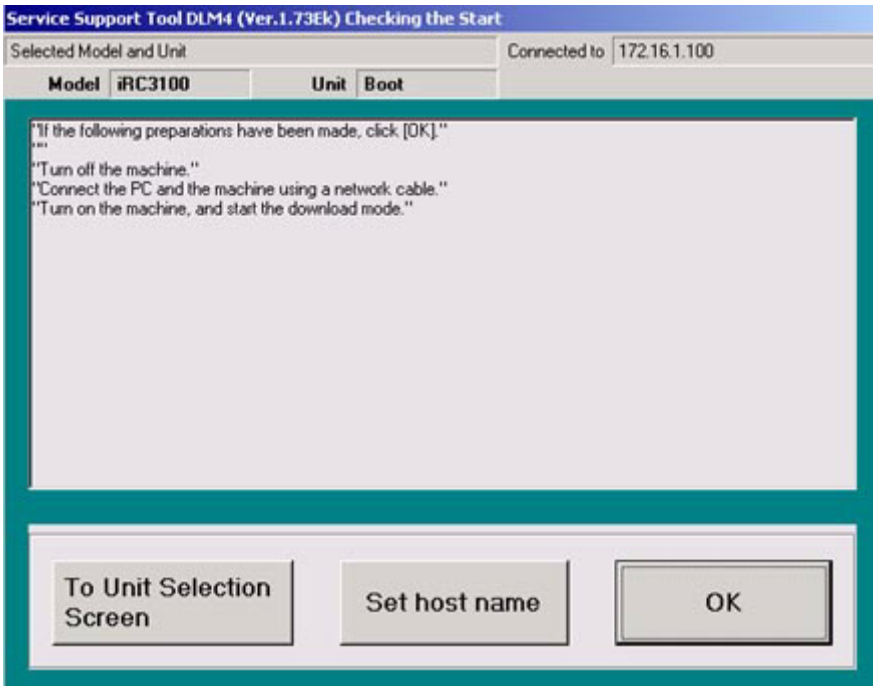
F-16-60

4) The machine's IP address is entered automatically; click [OK].



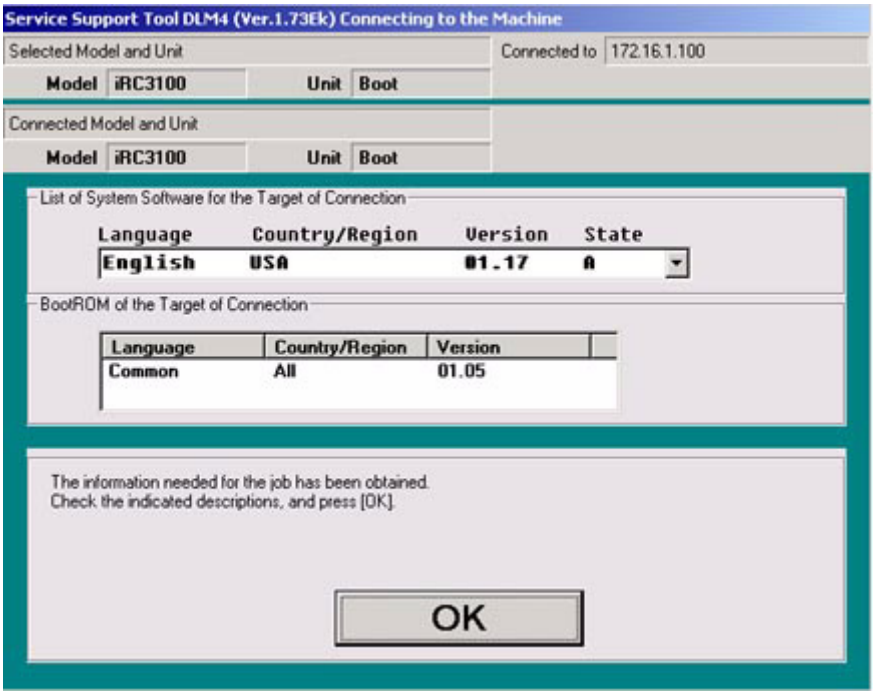
F-16-61

5) Click [OK] to start connection.



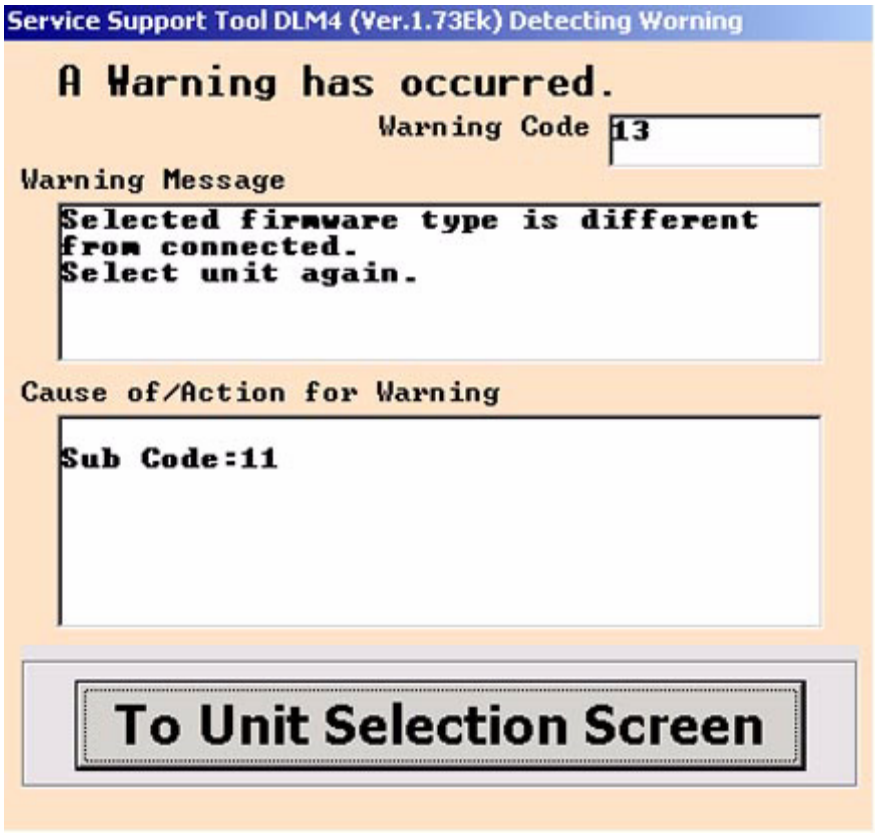
F-16-62

6) When the machine has made a connection and brings up the following screen, click [OK].



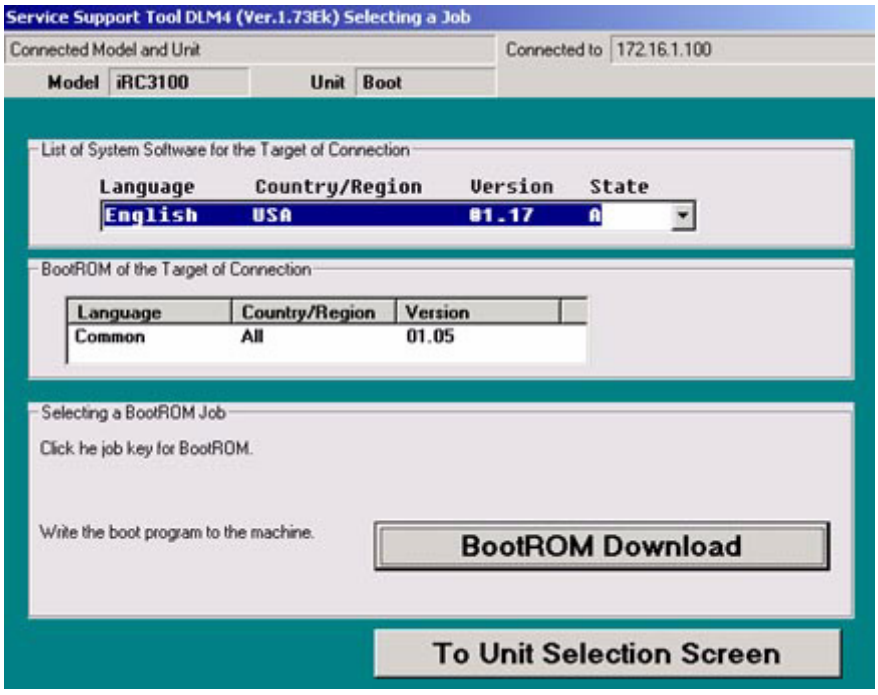
F-16-63

If the wrong type of boot ROM has been selected, the following screen will appear; select the correct model:



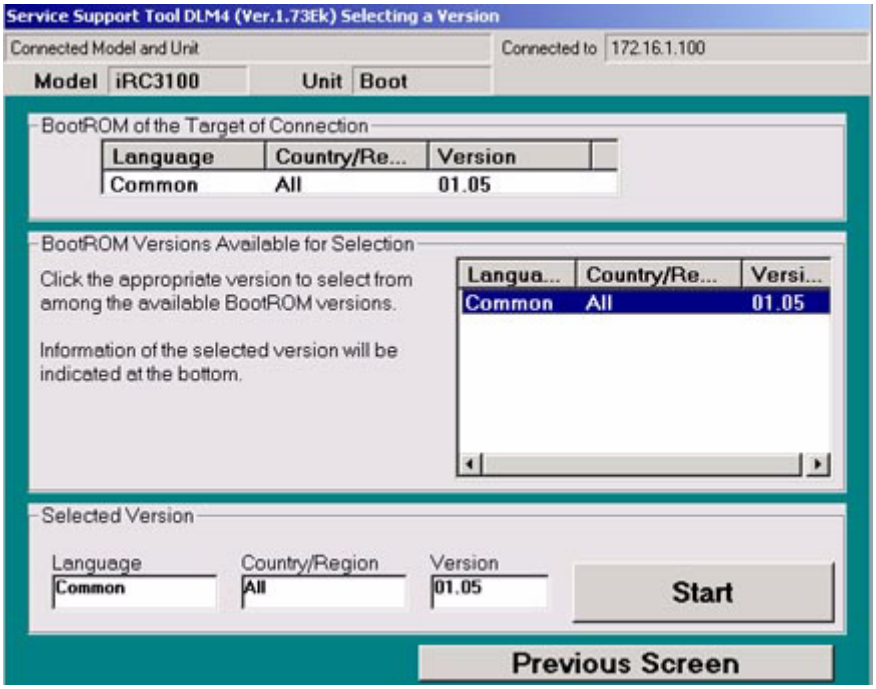
F-16-64

7) Click [BootROM Download].



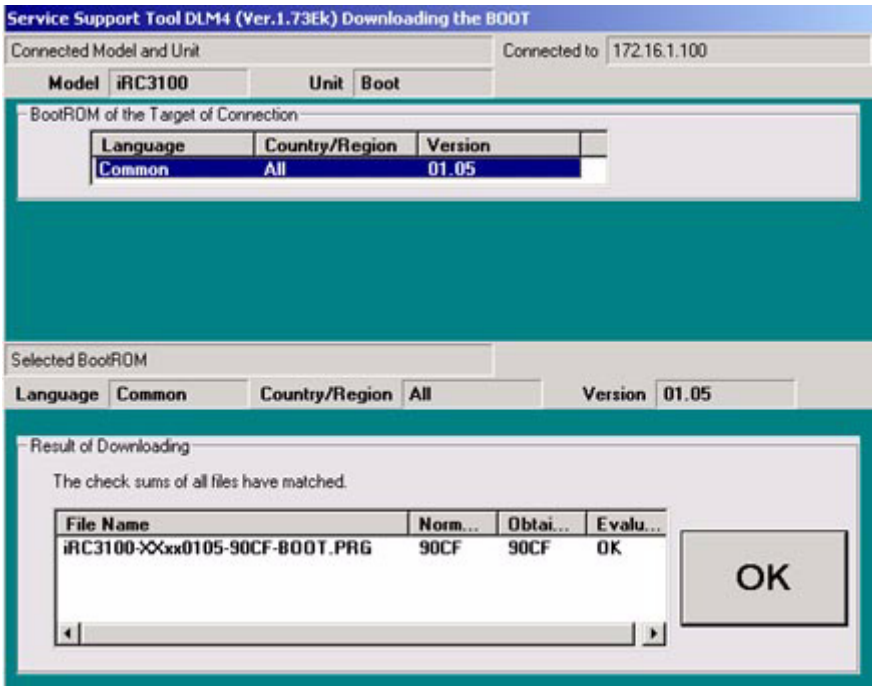
F-16-65

8) Select the version to download, and click [Start].



F-16-66

9) When the results of the downloading are indicated, and click [OK].



F-16-67

10) Click [To Unit Selection Screen].

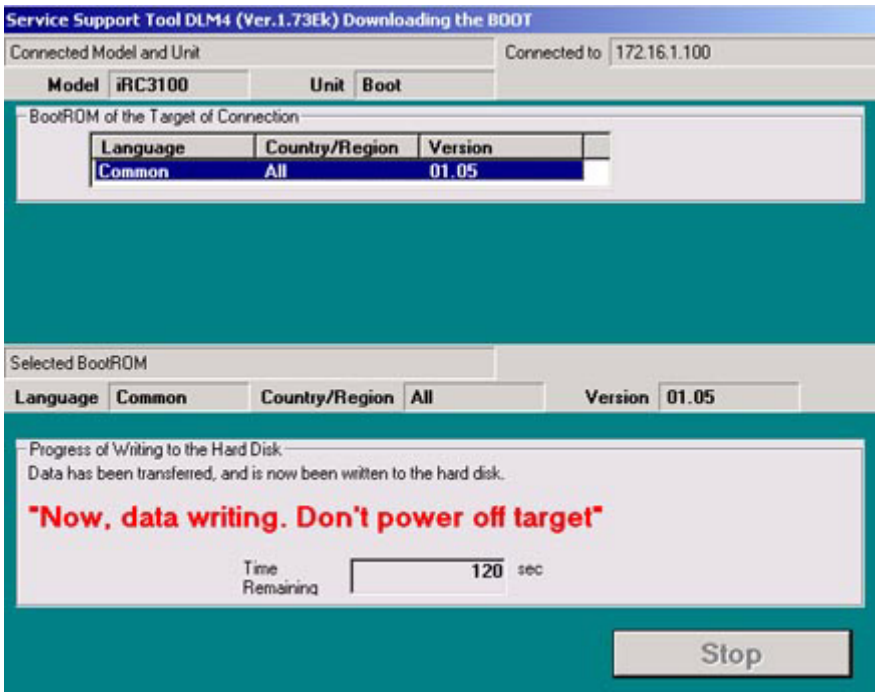
[after Downloading]

When you upgrade the boot ROM, be sure to turn off and then on the machine's main power switch so that the new version will be validated.

⚠

Never turn off the machine while the following screen is shown.

Otherwise writing to the HDD will be suspended, preventing the machine to start up.



F-16-68

If the machine fails to start up, replace the boot ROM.

16.4.4 Downloading the Dcon and Rcon Software

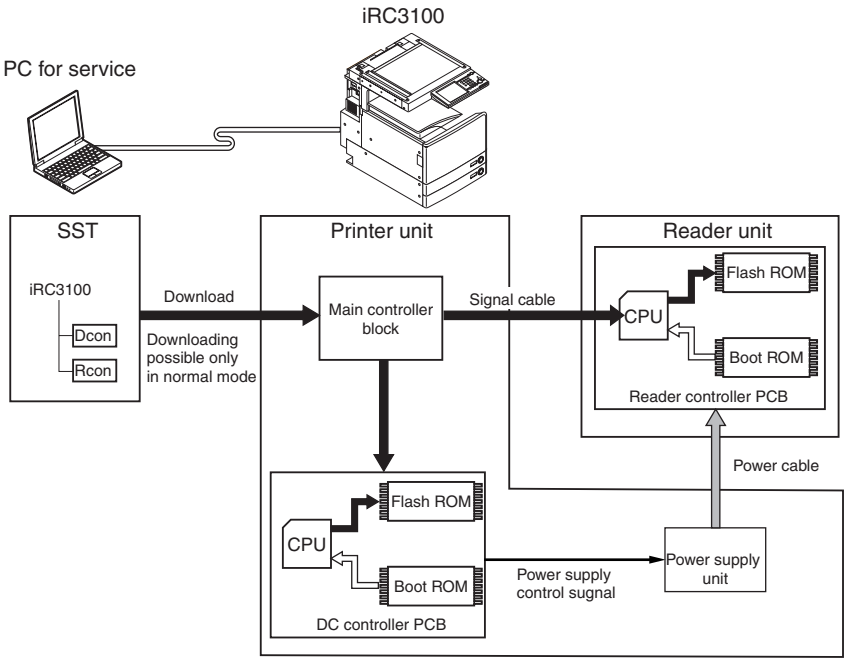
16.4.4.1 Outline

0001-1660

The DC controller/Reader controller files are downloaded by way of the main controller block.

⚠

Both DC controller PCB and the Reader controller PCB are wquipped with booy ROMs, permitting retries if downloading fails.



F-16-69

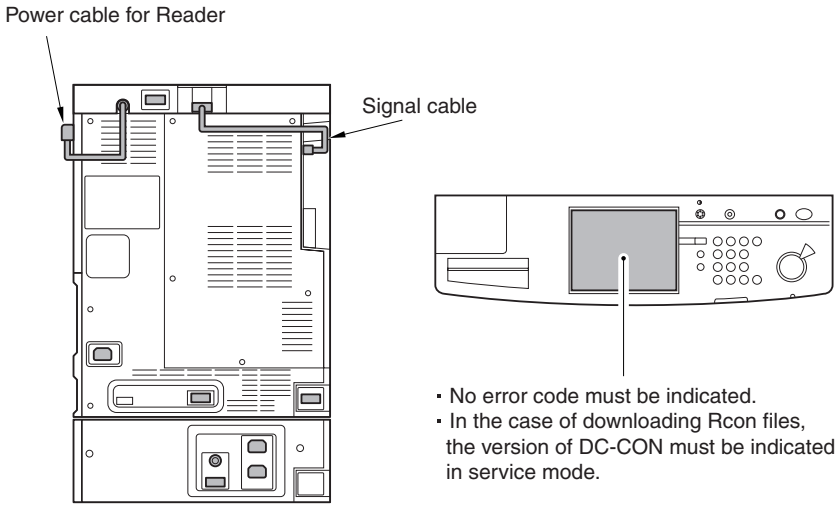
⚠

Unless the DC controller has started up normally, not permitting downloading of Reader controller files.
(Because the power supply control signal will not be validated, not supplying the reader unit with power.)

16.4.4.2 Downloading Procedure

0001-1662

[Making Checks in Advance]

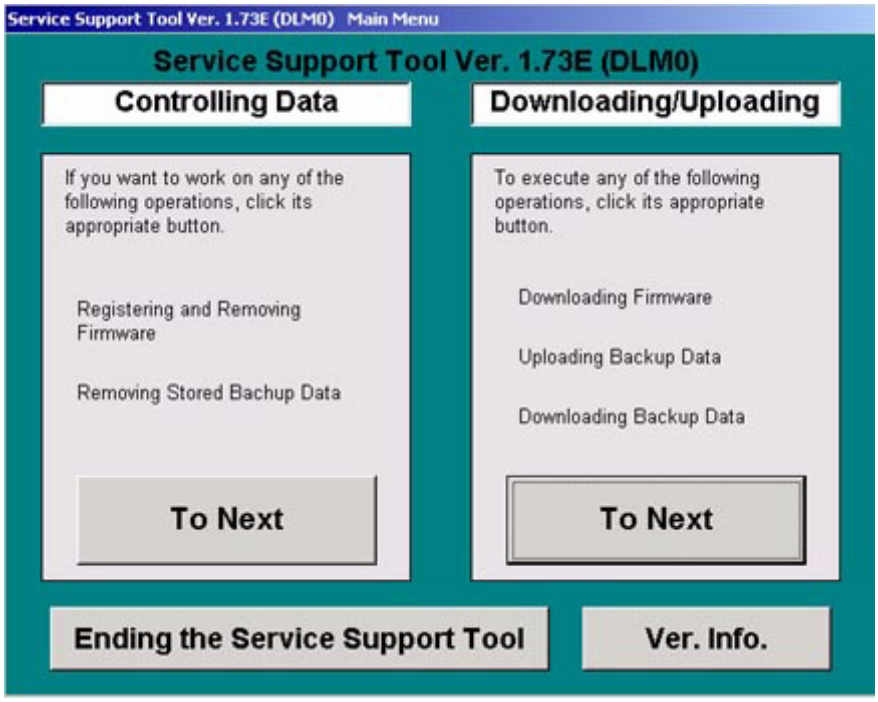


F-16-70

[Procedure]

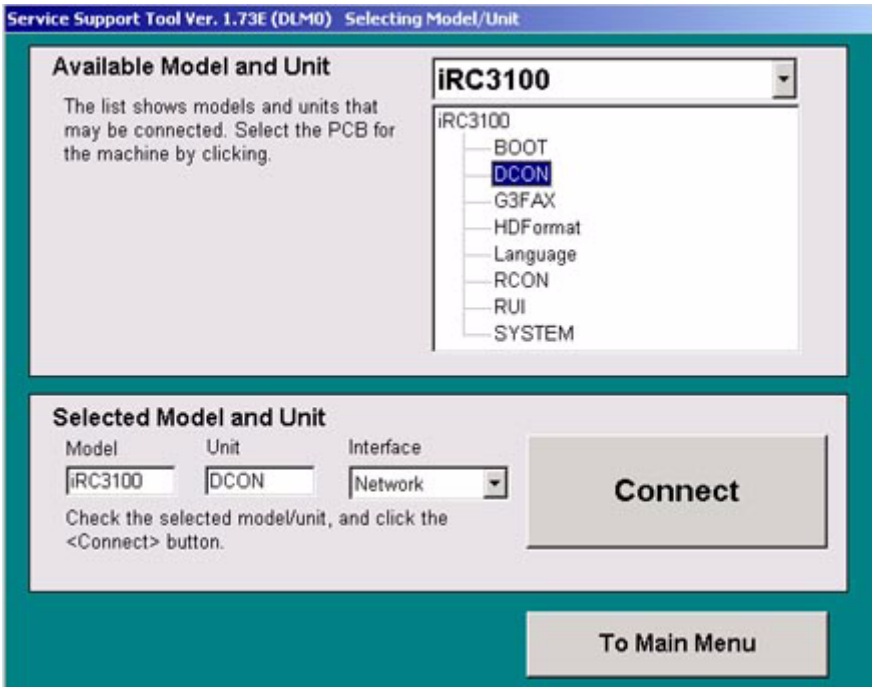
The following describes downloading of DC controller files.
Both DC controller and Reader controller files are common among models.

1) Click [To next] under Downloading/Uploading.



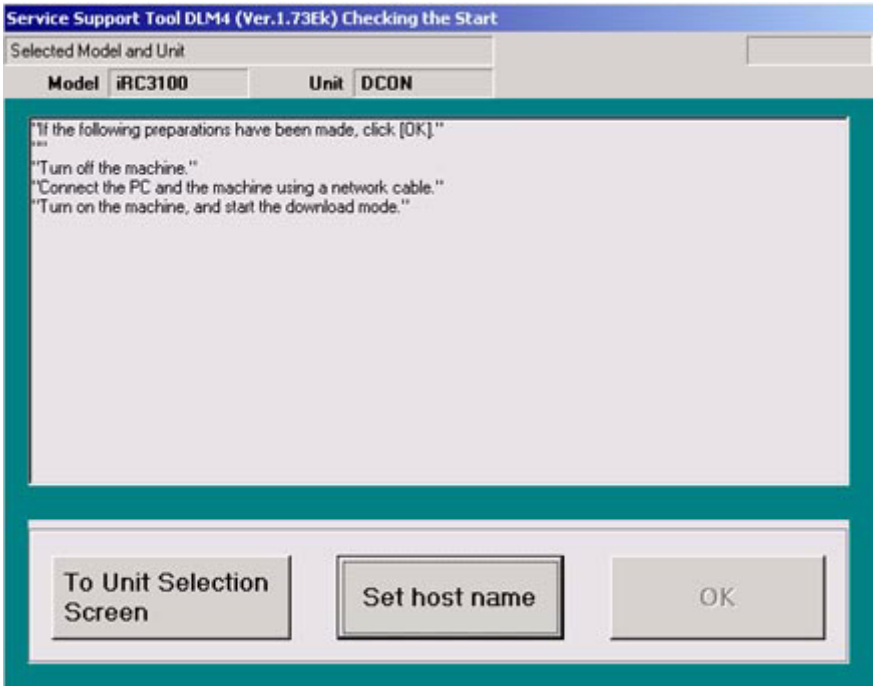
F-16-71

2) Select [DCON], and click [Connect].



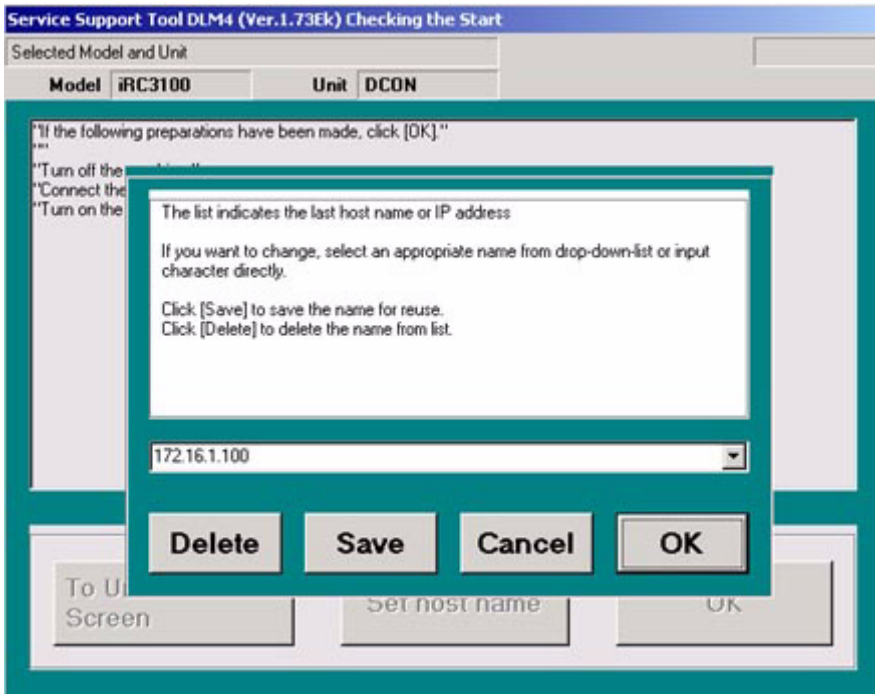
F-16-72

3) Click [Set host name].



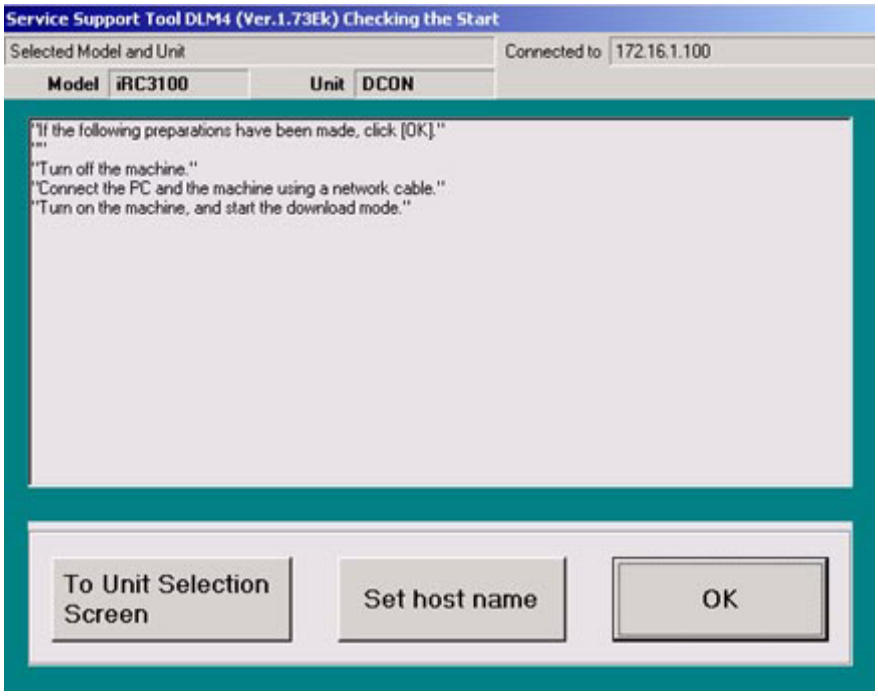
F-16-73

4) The machine's IP address is entered automatically; click [OK].



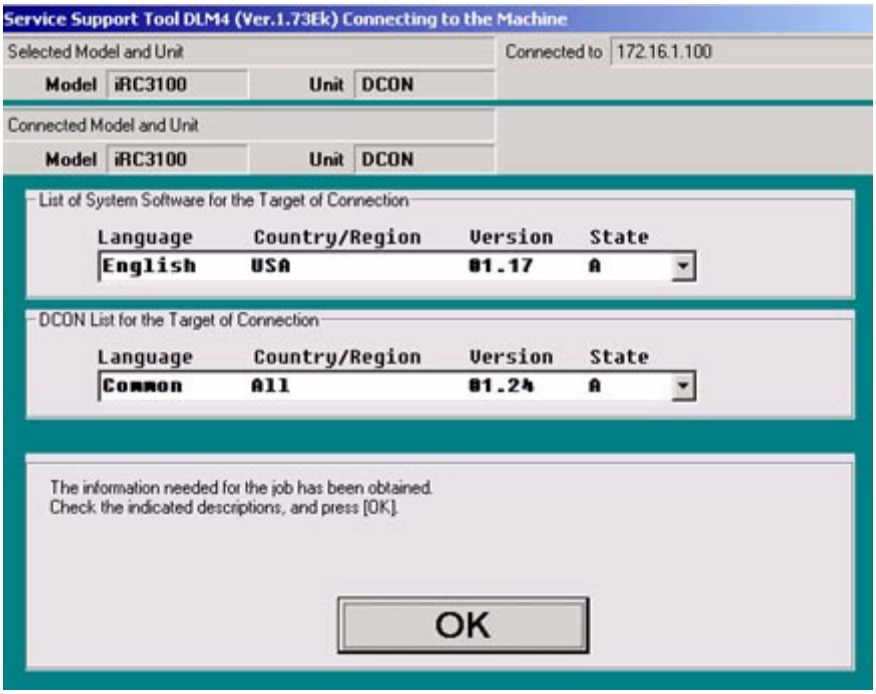
F-16-74

5) Click [OK] to start connection.



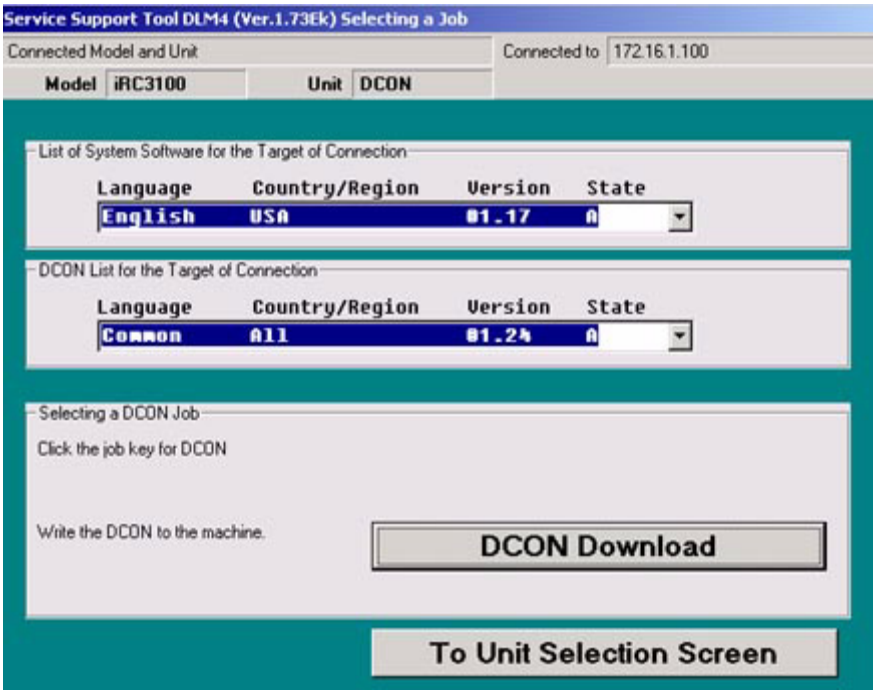
F-16-75

6) When the machine has made a connection and brings up the following screen, click [OK].



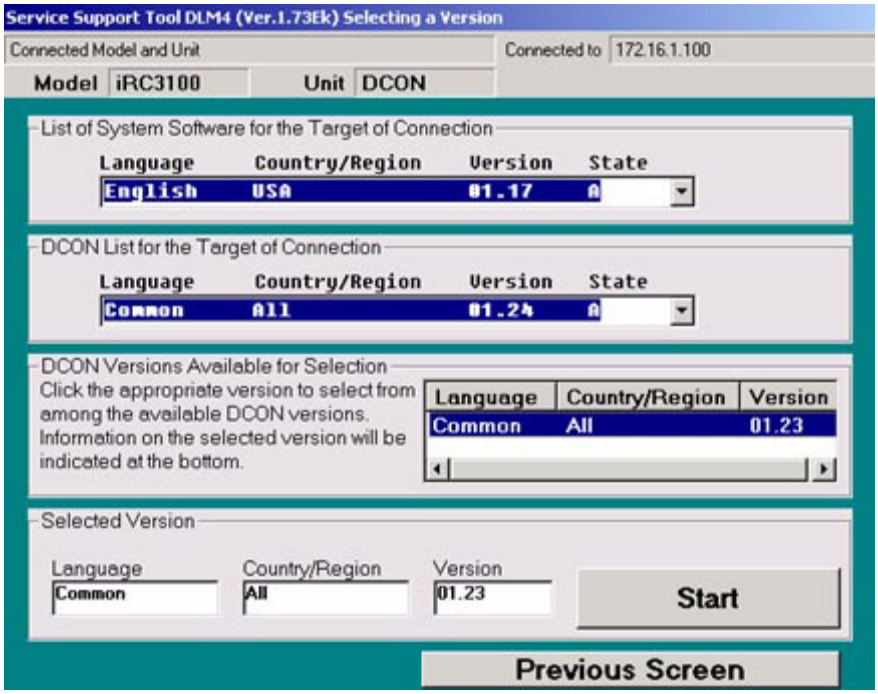
F-16-76

7) Click [DCON Download].



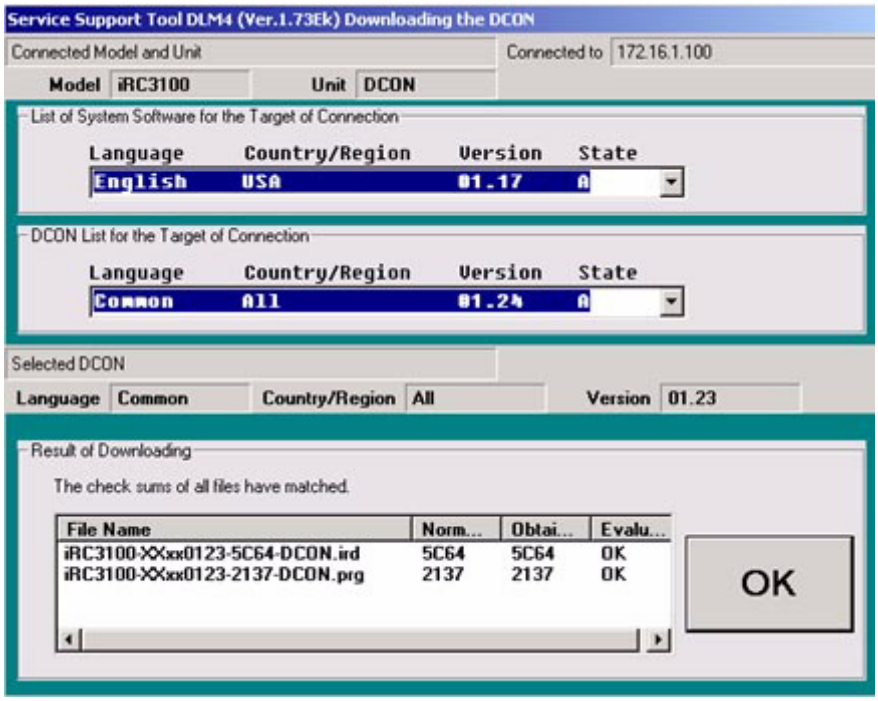
F-16-77

8) Select the version to download, and click [Start].



F-16-78

9) When the results of the downloading are indicated, and click [OK].



F-16-79

10) Click [To Unit Selection Screen].

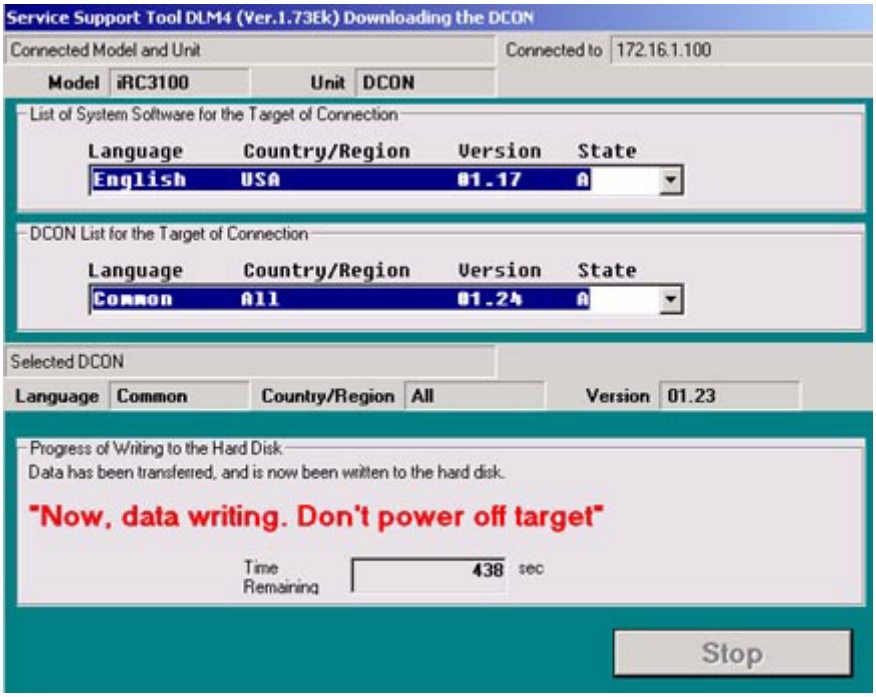
[after Downloading]
When you have downloaded DC controller or Reader controller files, be sure to turn off and then on the machine's main power switch.

⚠You cannot download the DC controller and Reader controller files in succession.

⚠
Never turn off the machine while the following screen is shown.
Otherwise, writing to `DCON/RCON' can fail, indicated by the error code.

DCON: E733

RCON: E732



F-16-80

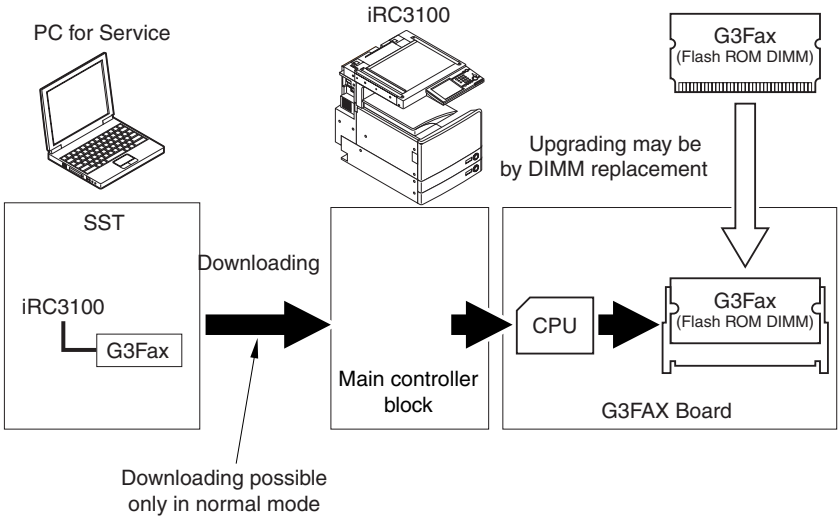
If an error code is indicated, be sure to download the appropriate system software.

16.4.5 Downloading the G3 FAX Software

16.4.5.1 Outline

0001-1664

The G3fax files are downloaded by way of the main controller block.



F-16-81

⚠

If downloading fails, the flash ROM DIMM must be replaced.

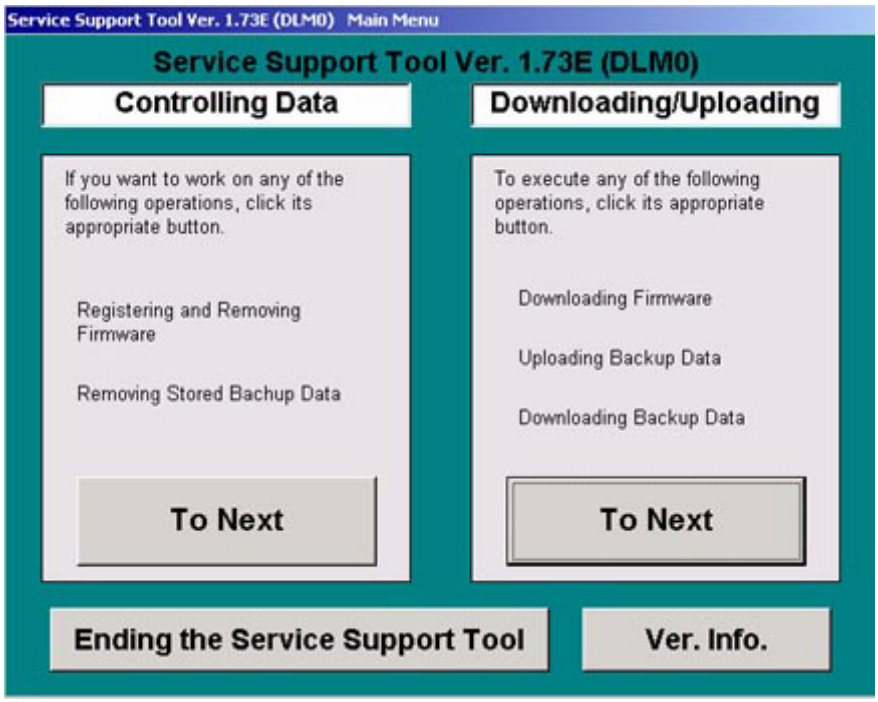
16.4.5.2 Downloading Procedure

0001-1665

[Procedure]

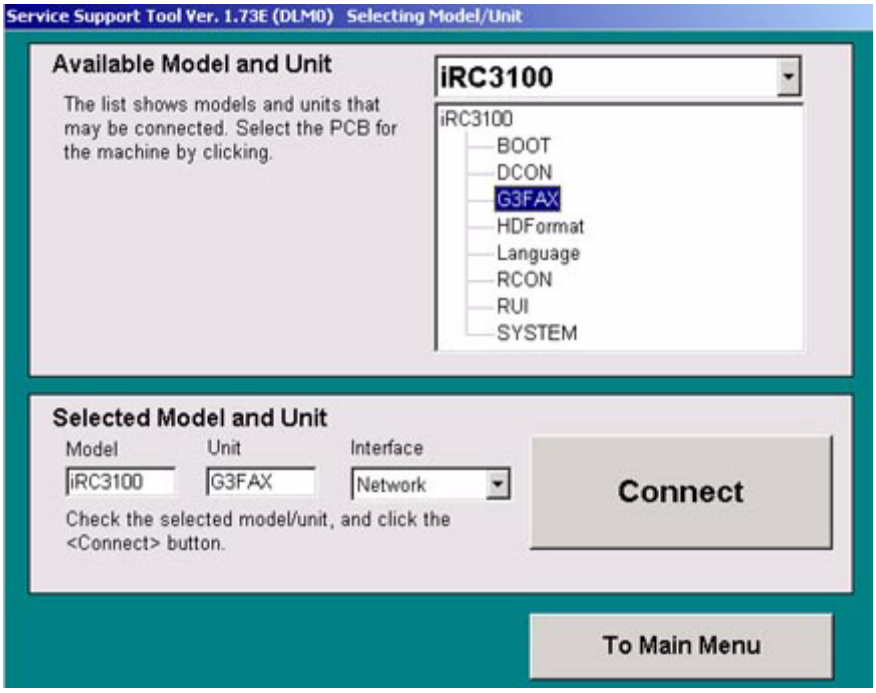
Use normal mode for downloading.

1) Click [To next] under Downloading/Uploading.



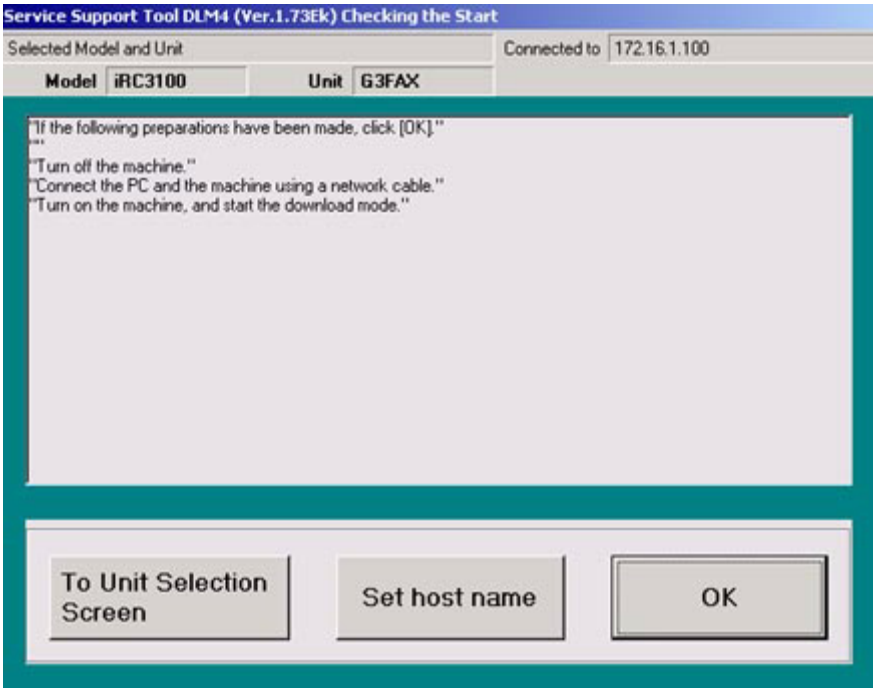
F-16-82

2) Select [G3FAX], and click [Connect].



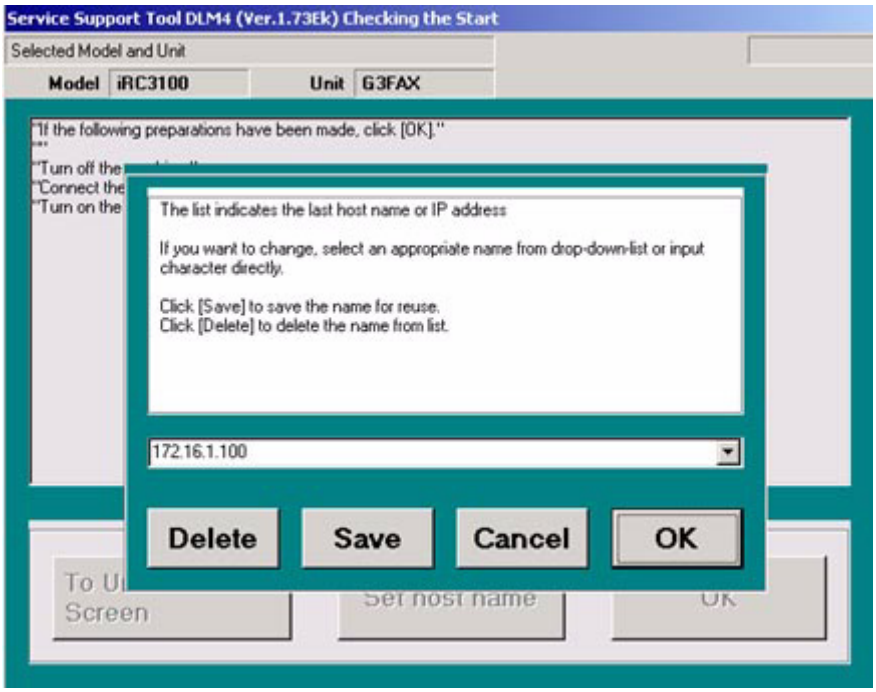
F-16-83

3) Click [Set host name].



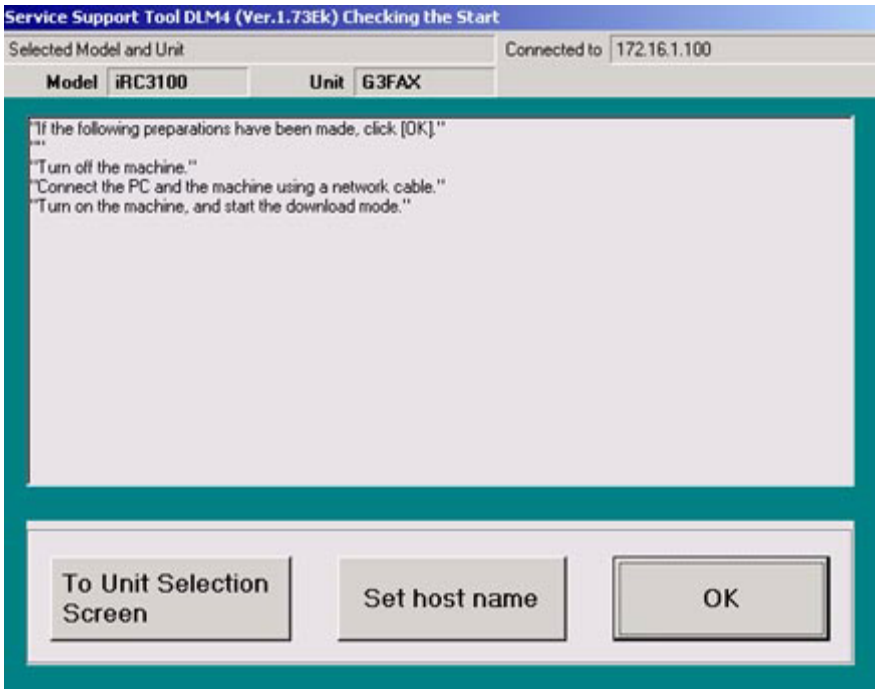
F-16-84

4) The machine's IP address is entered automatically; click [OK].



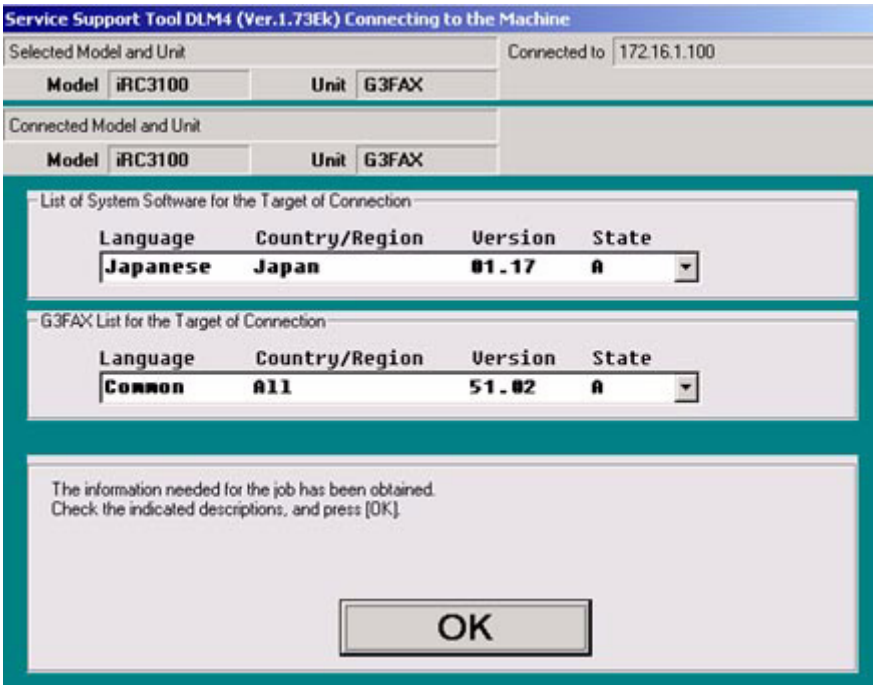
F-16-85

5) Click [OK] to start connection.



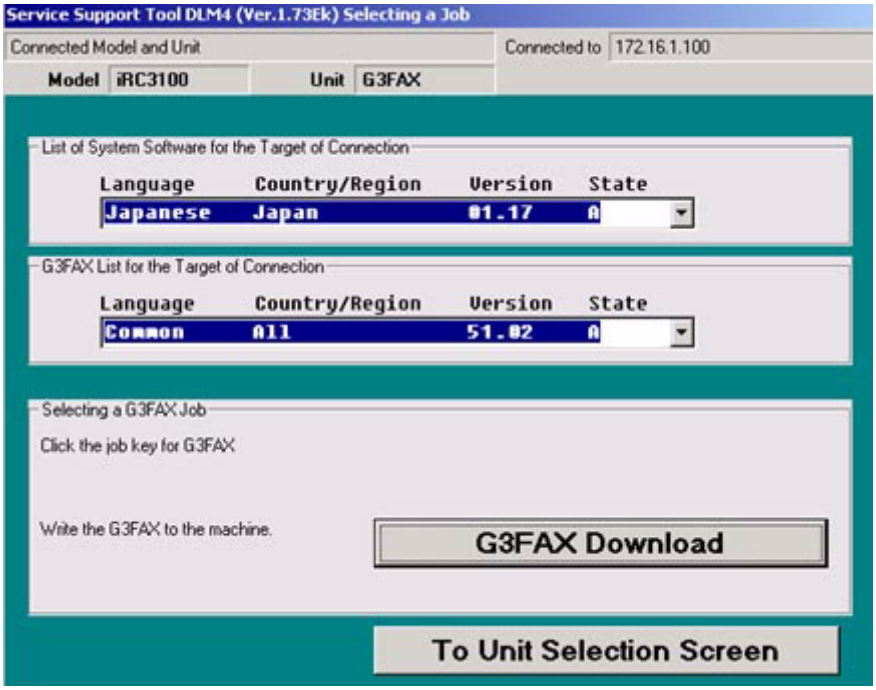
F-16-86

6) When the machine has made a connection and brings up the following screen, click [OK].



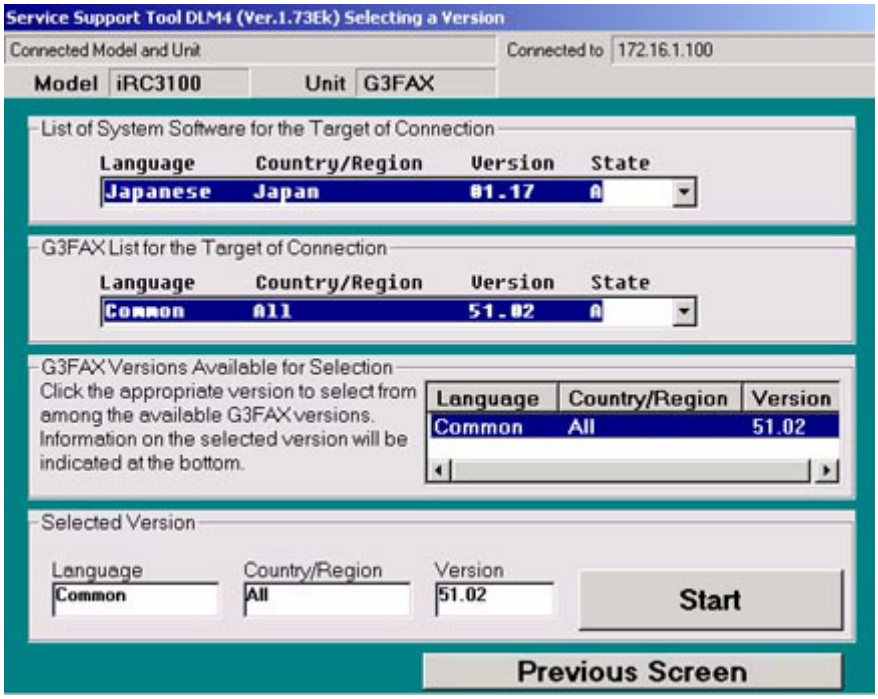
F-16-87

7) Click [G3FAX Download].



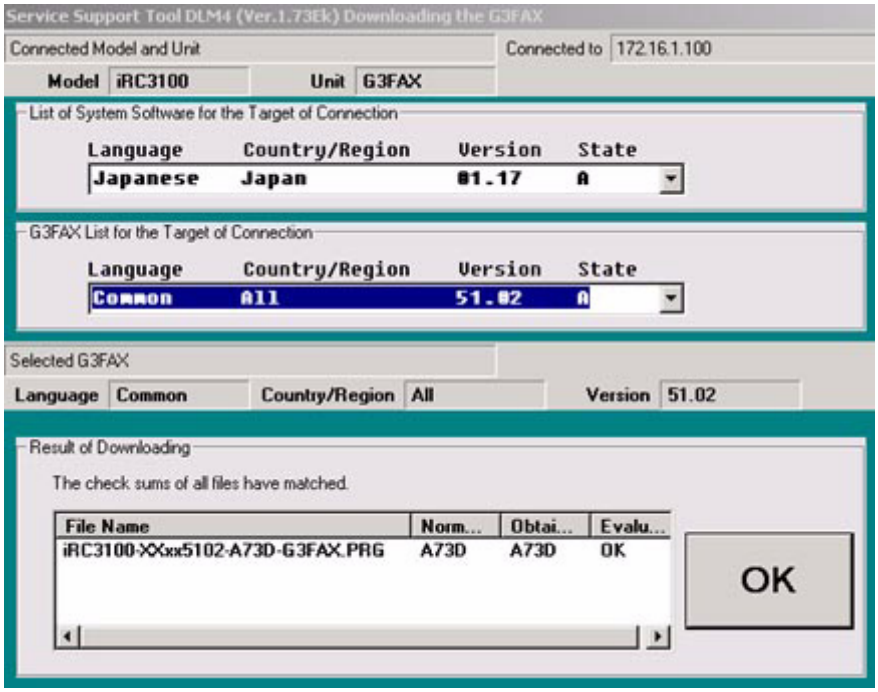
F-16-88

8) Select the version to download, and click [Start].



F-16-89

9) When the results of the downloading are indicated, and click [OK].



F-16-90

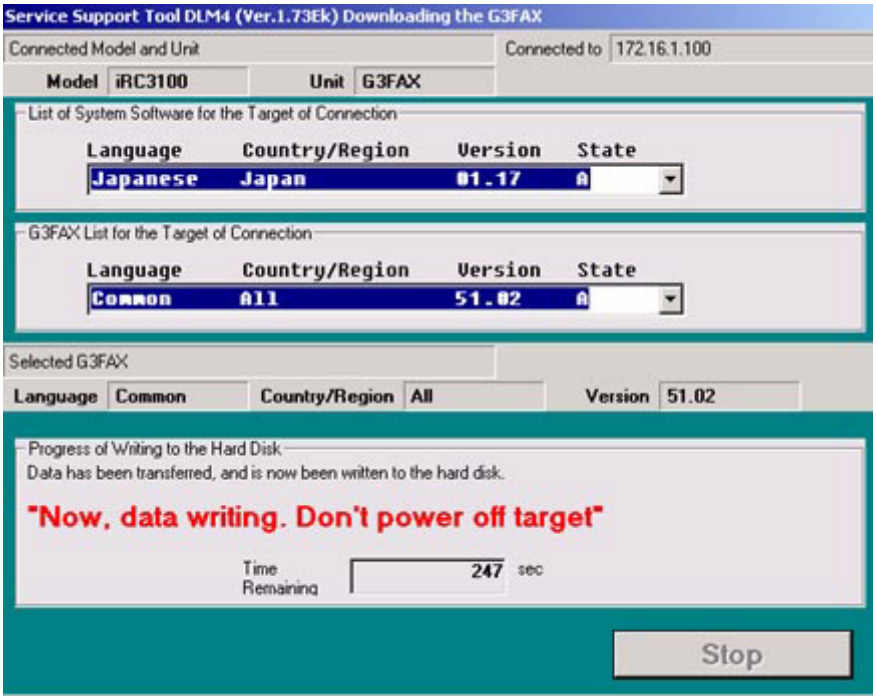
10) Click [To Unit Selection Screen].

[after Downloading]
When you have downloaded G3FAX filess, be sure to turn off and then on the machine's main power switch.

⚠

You cannnot download G3FAX files twice in succession.
(Once downloading ends, the G3FAX board will be reset, leaving download mode.)

Never turn off the machine while the following screen is shown.
Writing to the flash ROM DIMM of the G3 fax board will fail, preventing the G3FAX board functions from operating normally.



F-16-91

If the G3fax board fails to operate, be sure to replace the flash ROM DIMM onthe G3fax board.

16.5 Uploading and Downloading Backup Data

16.5.1 Outline

0001-1666

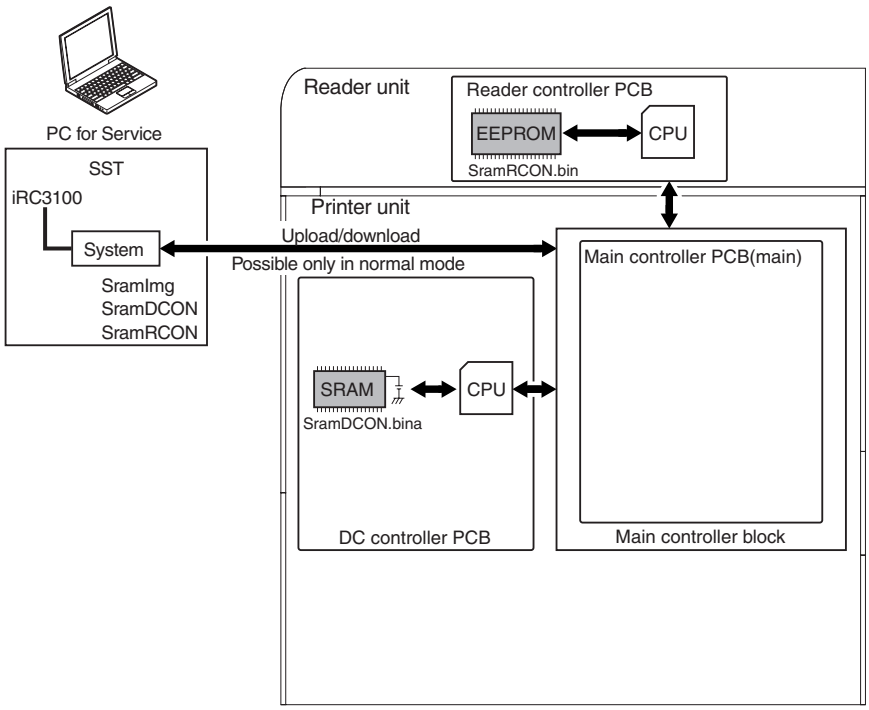
The machine's backup data is stored on the SRAM, DC controller PCB, and Reader controller PCB.
Any backup data is selected with reference to its file name used when uploading it.

T-16-9

Backup data	File name selected at time of uploading
DC controller PCB	SramDCON.bin
Reder controller PCB	SramRCON.bin
For R&D	SramImg.bin

⚠

-Be sure not to download or upload the [SramImg.bin] in the field.
-When replacing the DC controller PCB or the Reder controller PCB, it is a good idea to upload its data in advance, and download it after replacement so that parts counter reading and the like may be retained.



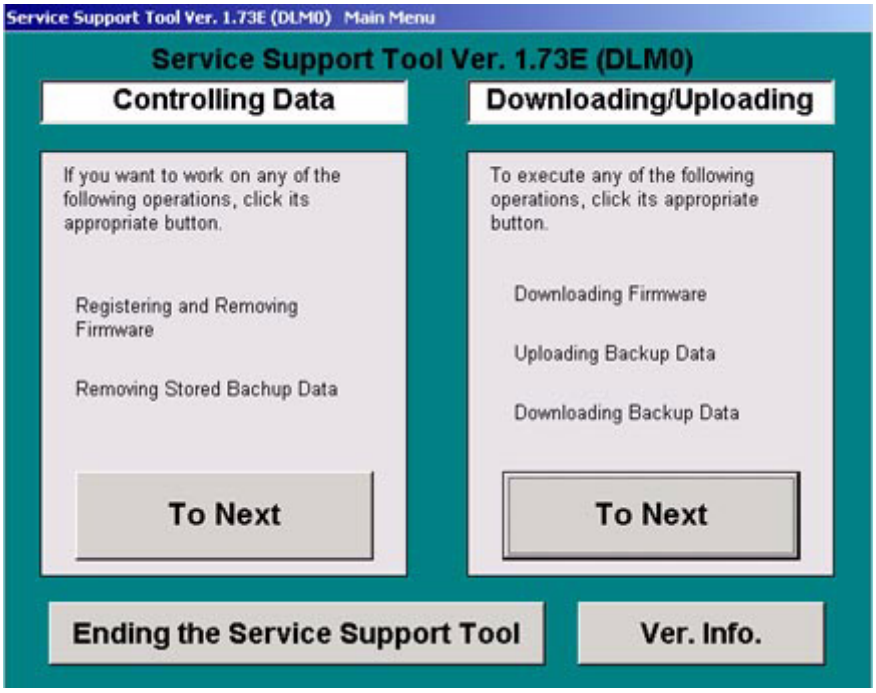
F-16-92

16.5.2 Uploading Procedure

0003-2764

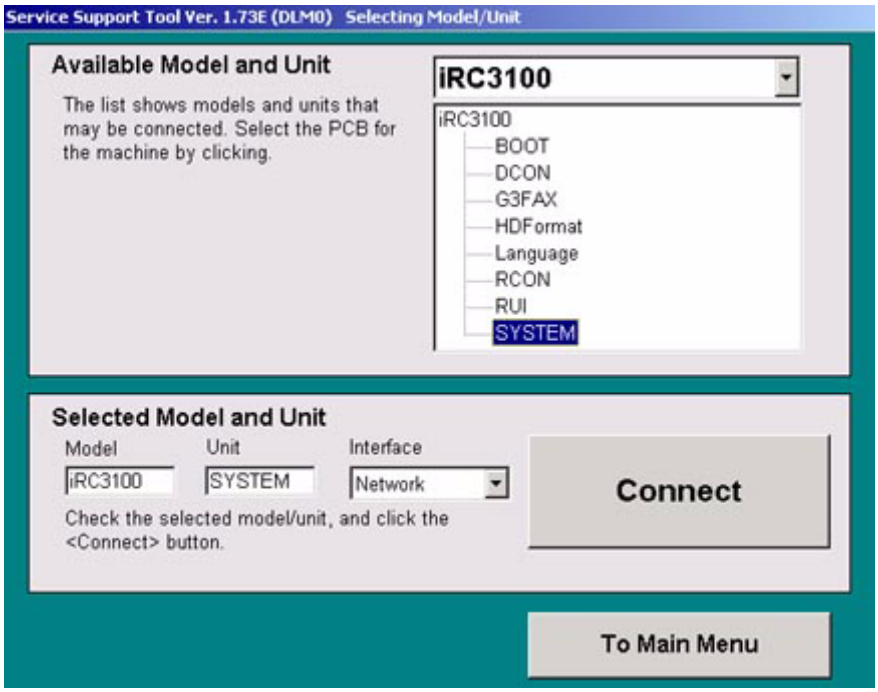
[Procedure]
Use normal mode (Power ON 1+7 on keypad) for uploading.

1) Click the [To Next] under Downloading/Uploading.



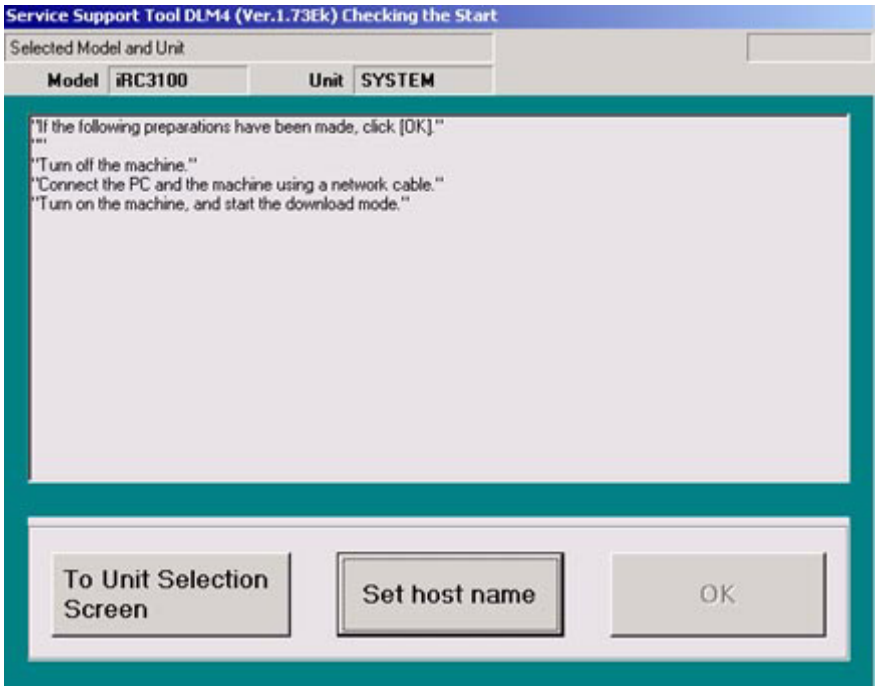
F-16-93

2) Select [SYSTEM] under iRC3100, and click [Connect].



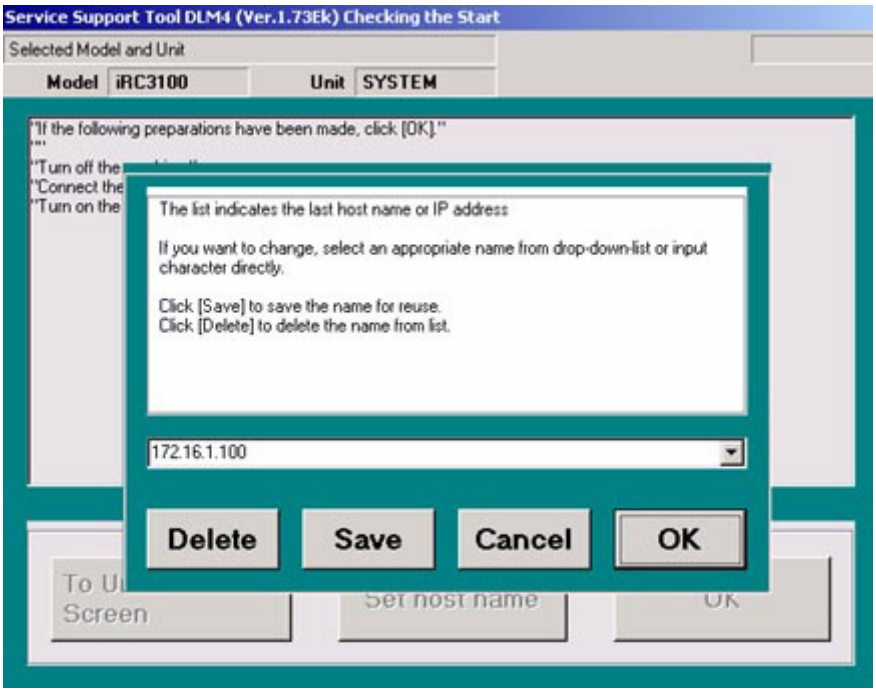
F-16-94

3) Click [Set host name].



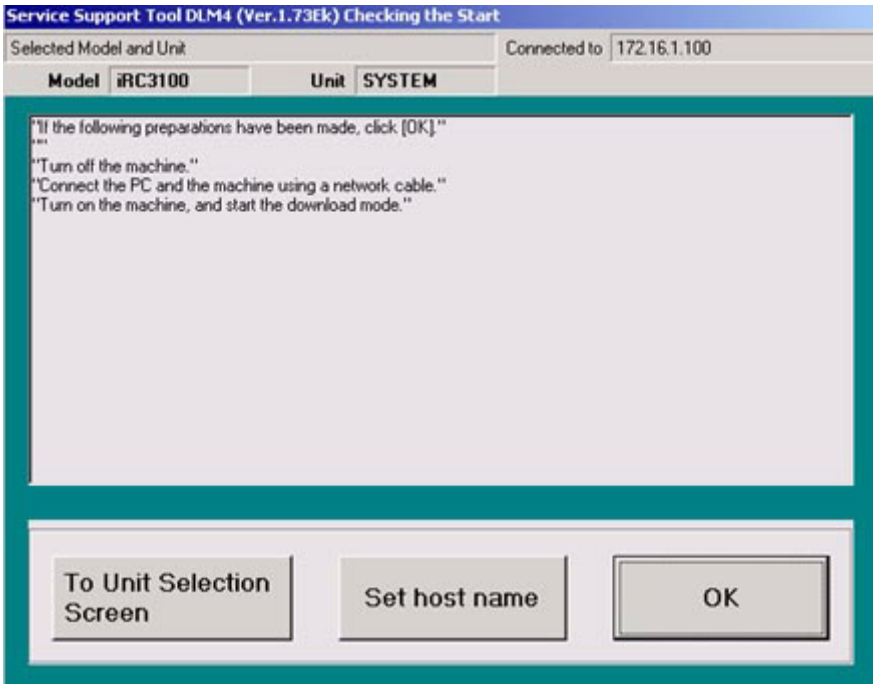
F-16-95

4) The machine's IP address is entered automatically; click [OK].



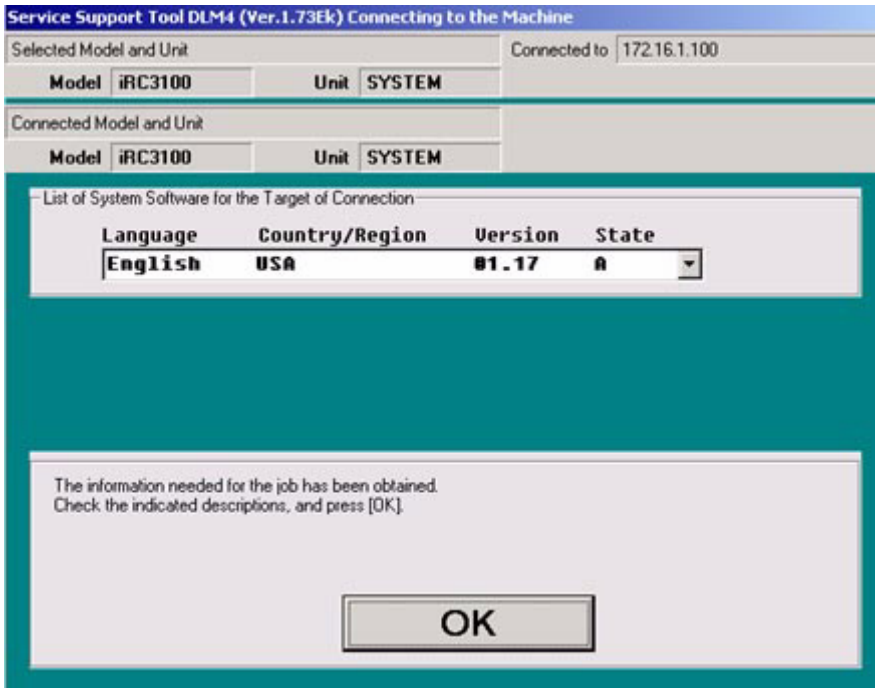
F-16-96

5) Click [OK] to start connection.



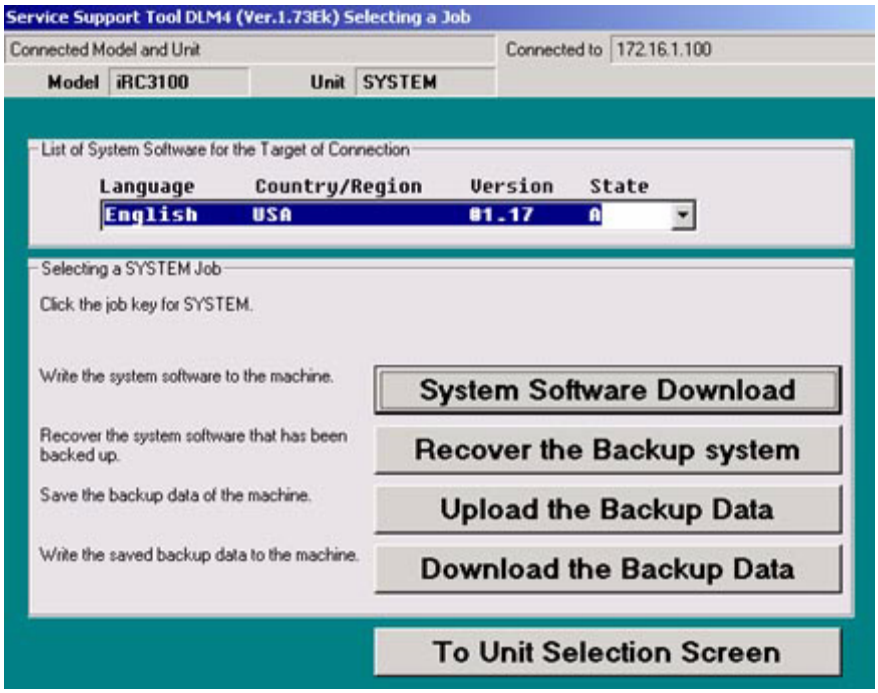
F-16-97

6) When the machine has made a connection and brings up the following screen, click [OK].



F-16-98

7) Click [Upload the Backup Data].

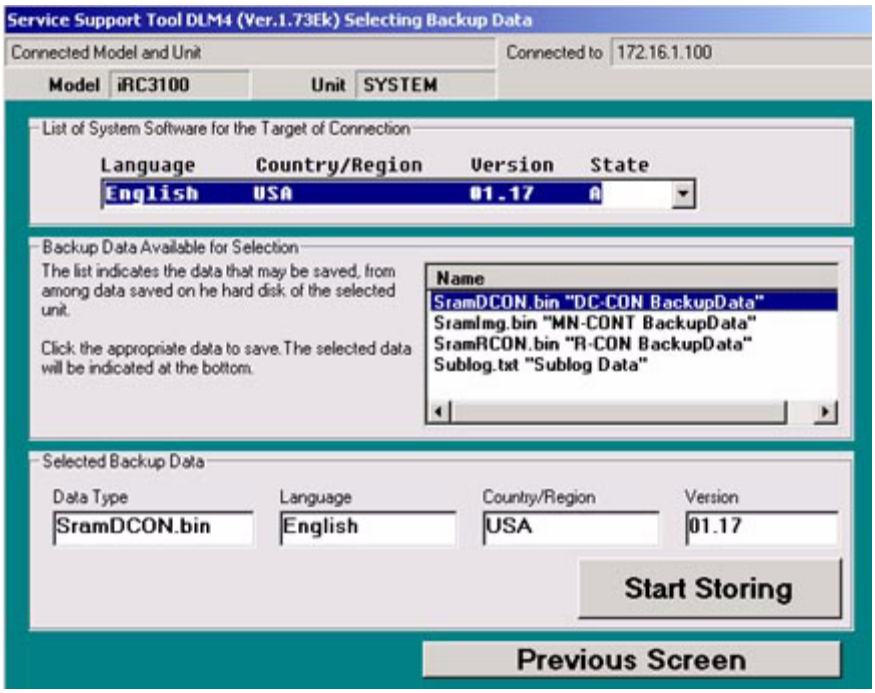


F-16-99

8) Select the data to upload, and click [Start Storing].

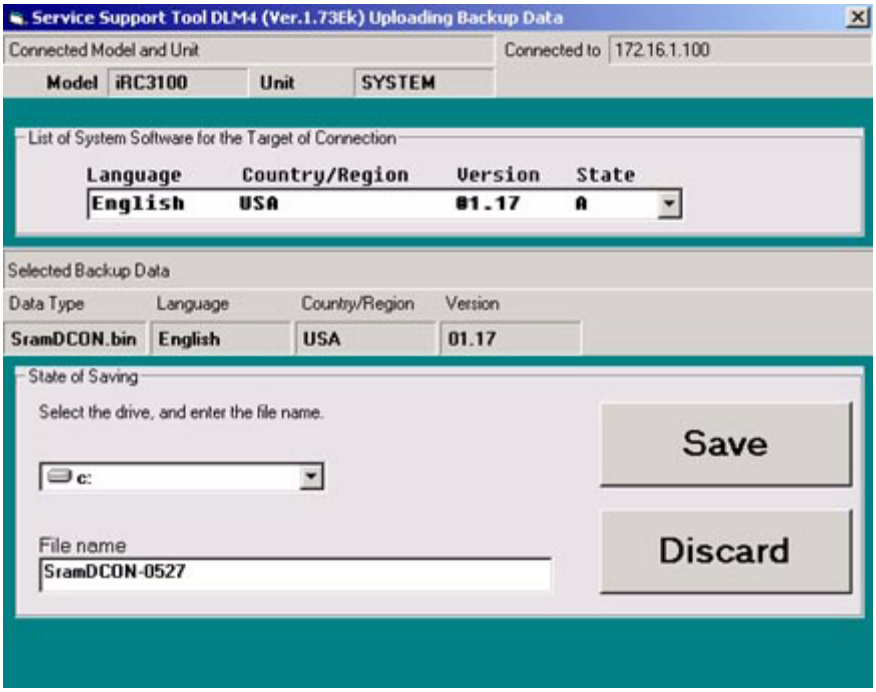
-DC controller PCB: SramDCON.bin

-Reader controller PCB: SramRCON.bin



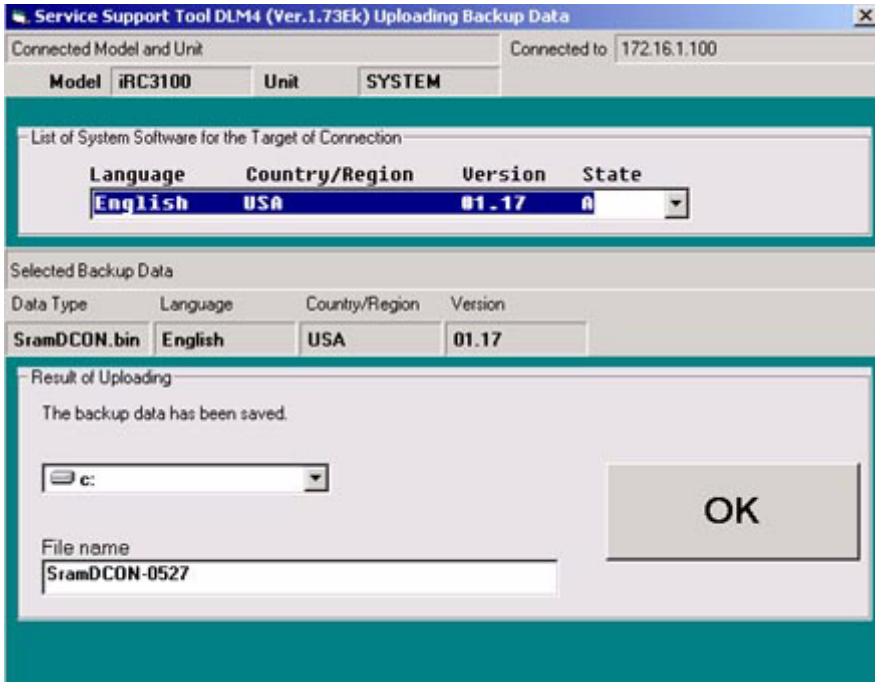
F-16-100

9) When uploading has ended, enter a file name to use, and click [Save].



F-16-101

10) When the file has been saved, click [OK].



F-16-102

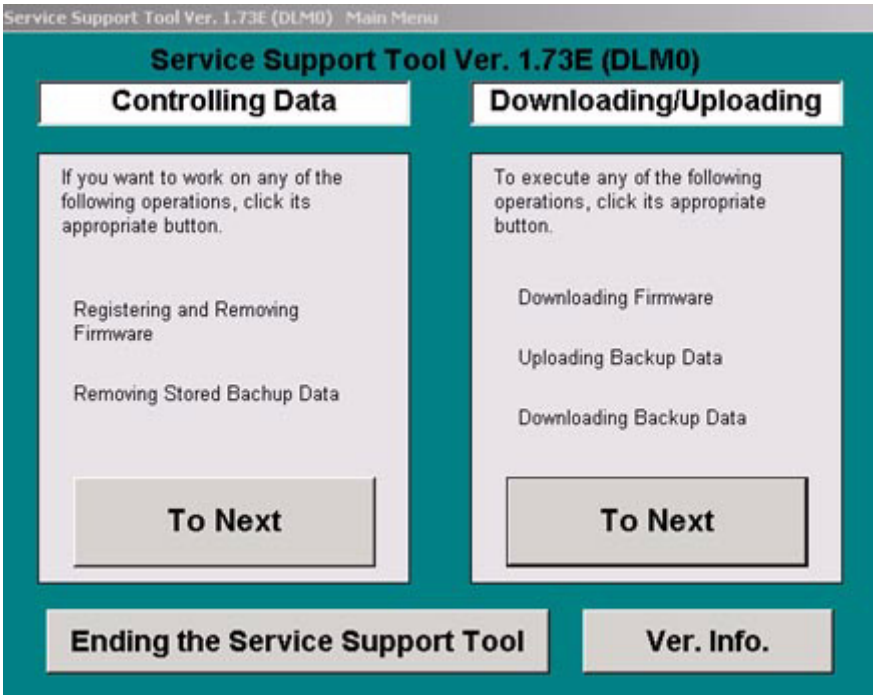
10) Click [To Unit Selection Screen].

16.5.3 Downloading Procedure

0003-2767

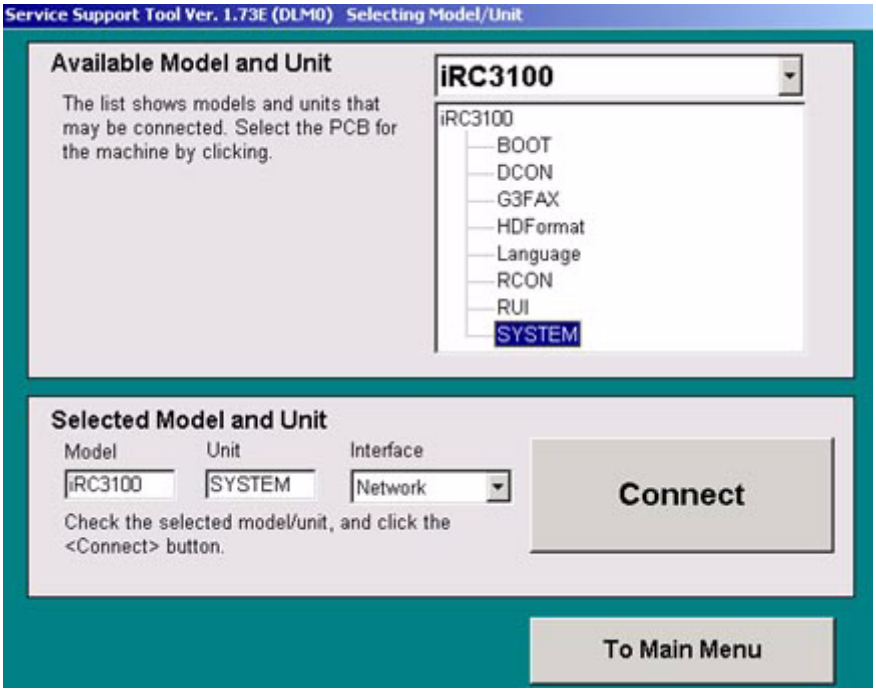
[Procedure]
Use normal mode (Power ON 1+7 on keypad) for downloading.

1) Click the [To Next] under Downloading/Uploading.



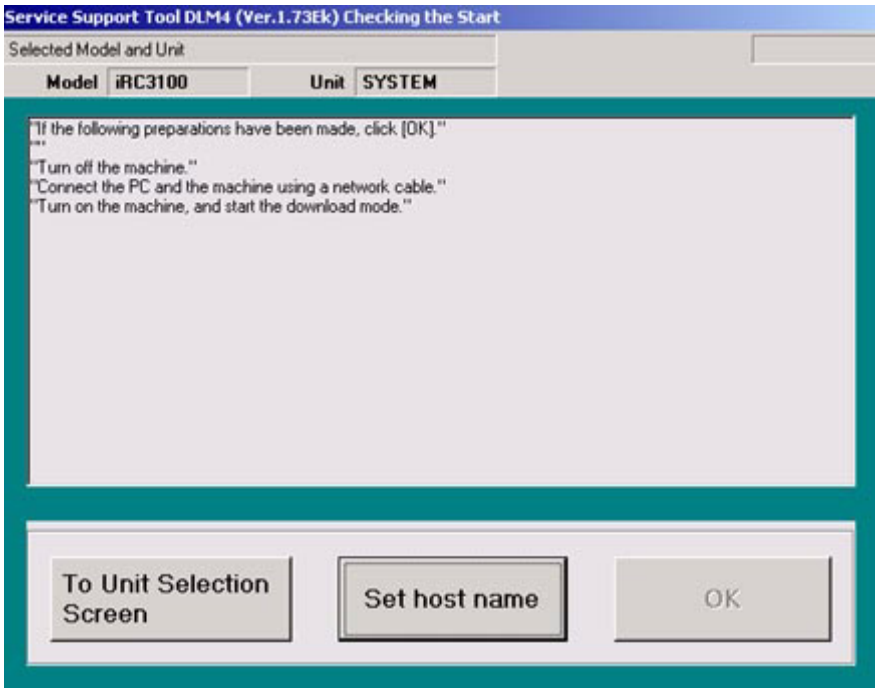
F-16-103

2) Select [SYSTEM] under iRC3100, and click [Connect].



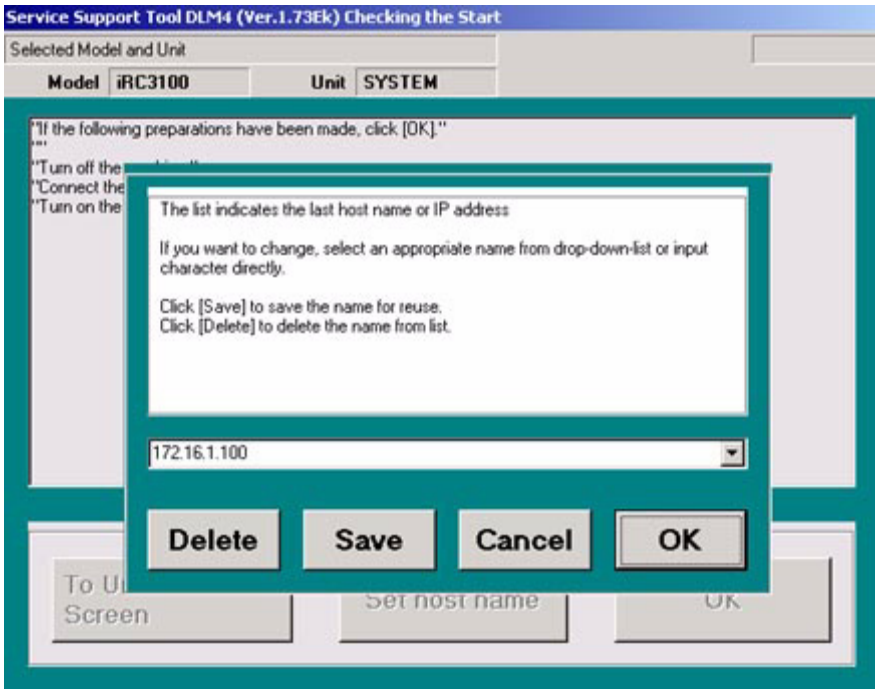
F-16-104

3) Click [Set host name].



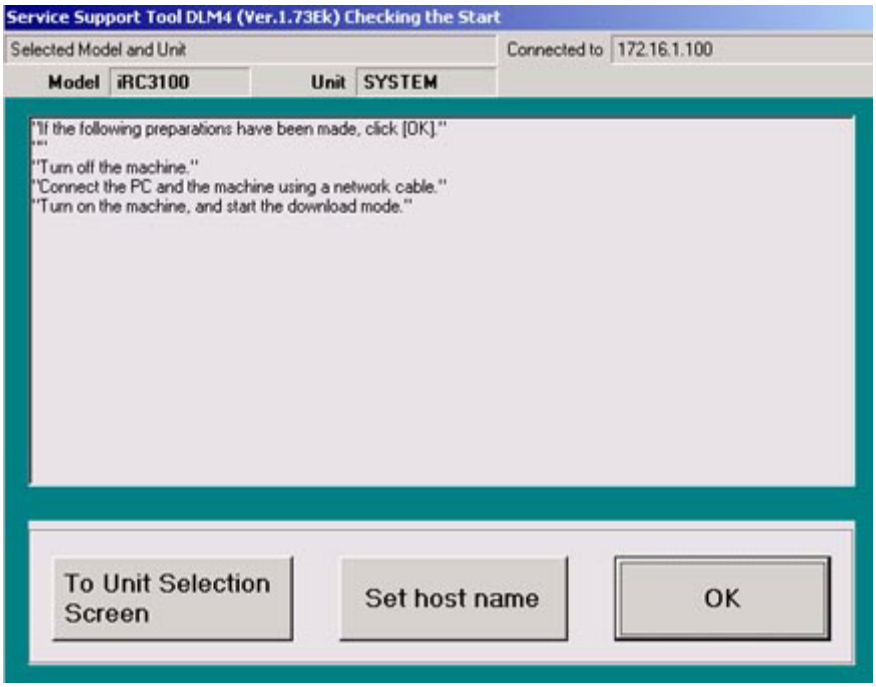
F-16-105

4) The machine's IP address is entered automatically; click [OK].



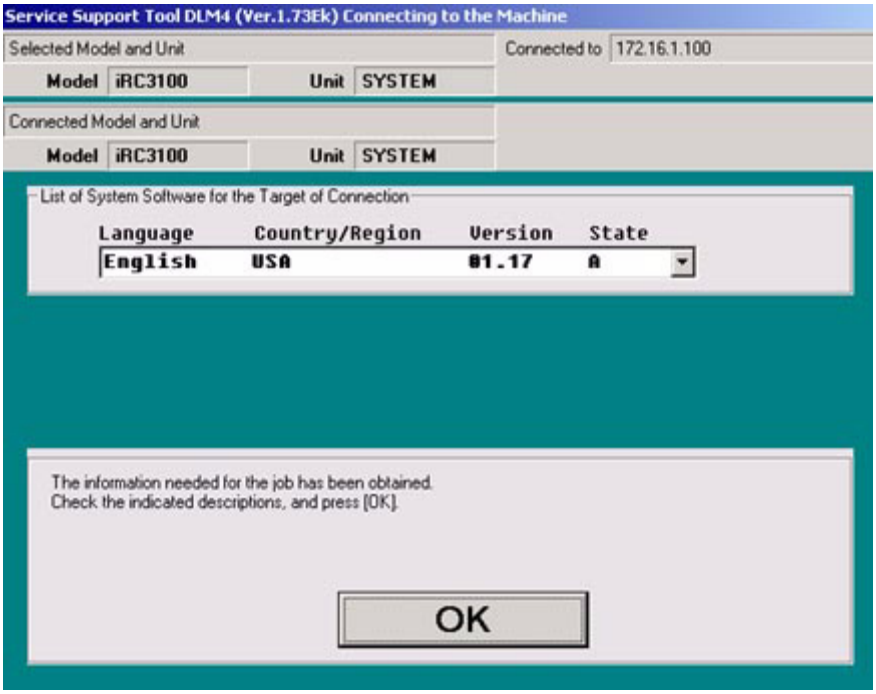
F-16-106

5) Click [OK] to start connection.



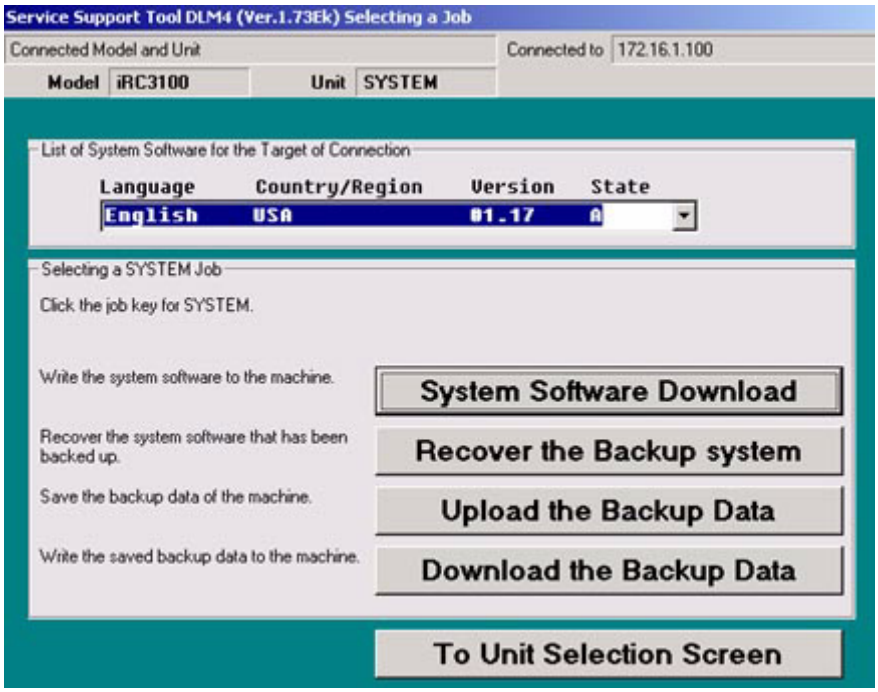
F-16-107

6) When the machine has made a connection and brings up the following screen, click [OK].



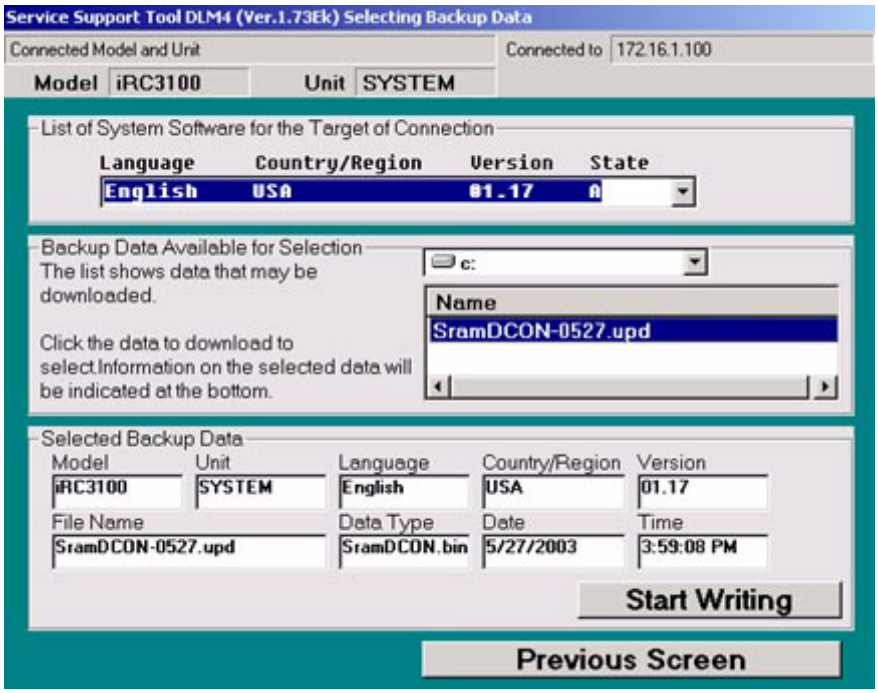
F-16-108

7) Click [Download the Backup Data].



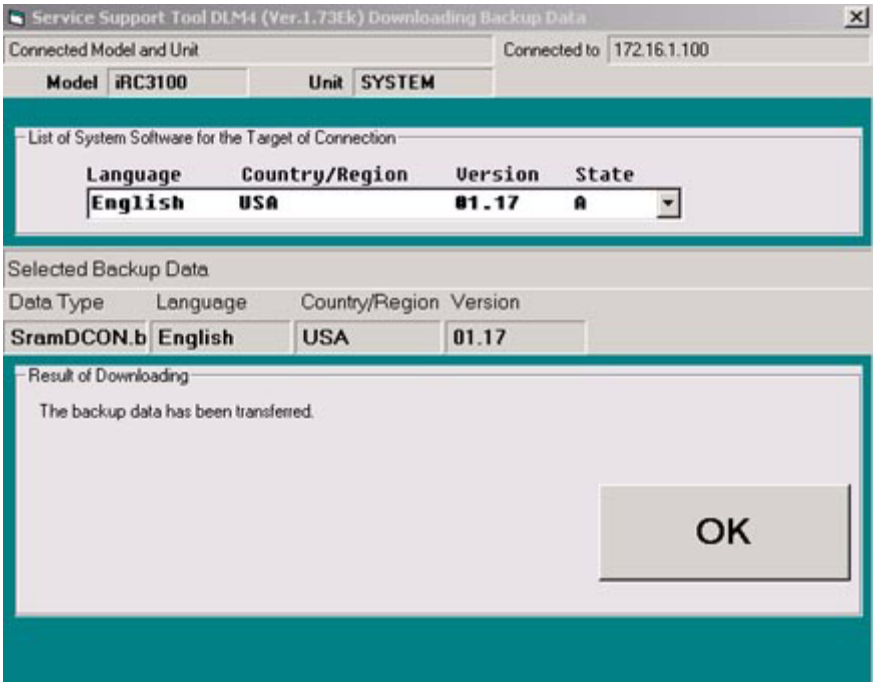
F-16-109

8) Select the file to download, and click [Start Writing].



F-16-110

9) When uploading has ended, click [OK].



F-16-111

10) Click [To Unit Selection Screen].

Chapter 17 Service Tools

Contents

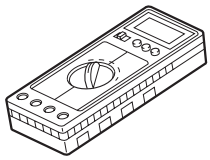
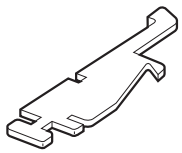
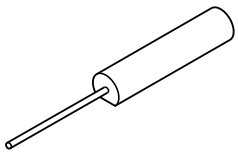
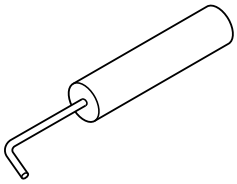
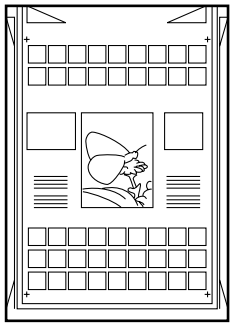
17.1 Special Tools 17-1
17.2 Solvents and Oils 17-3

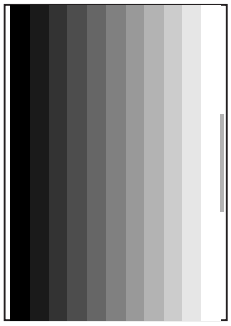
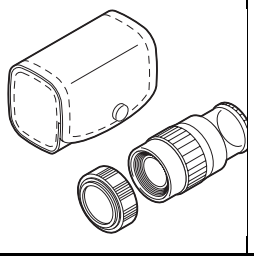
17.1 Special Tools

0001-9022

In addition to the standard tooles set, the following special tools are required when servicing the machine:

T-17-1

Tool name	Tool No.	Ctgr	Appearance	Remarks
Digital multimeter	FY9-2002	A		Use for electrical checks; for adjustment of laser power in combination with the laser power checker.
Cover switch	TKN-0093	A		
Tester extension pin	FY9-3038	A		Used as a probe extension when making electrical checks.
Tester extension pin (L-shaped)	FY9-3039	A		Used as a probe extension when making electrical checks.
CA1 test Sheet	FY9-9030	A		Used for adjusting/ checking images.

Tool name	Tool No.	Ctgr	Appearance	Remarks
D-10 test sheet	FY9-9129	B		Used for adjusting images.
Loupe	CK-0056	B		Used for checking images.

[Ctgr]

A: Must be kept by each service engineer.

B: Must be kept by each group of about five engineers.

C: Must be kept by each warkshop.

17.2 Solvents and Oils

0001-9171

T-17-2

Item	Uses	Composition	Remarks
Alcohol	Cleaning; e.g., glass, plastic, ruber; external covers.	-Fluoride-family hydrocarbon -Alcohol -Surface activating -Water	-Do not bring ner fire. -Procure locally. -Substitute: IPA(isopropy alcohol)
Solvent	Cleaning; e.g., metal; oil or toner stain.	-Fluoride-family hydrocarbon -Chlorine-family hydrocarbon -Alcohol	-Do not bring ner fire. -Procure locally. -Substitute: MEK
Heat-resisting grease	Lubrication; e.g., fixing drive areas.	-Mineral oil-family lithium soap -Molybdenum disulfide	-MO-138S -Tool No: CK-0427 (500 g/ can)
Lubricating oil		-Mineral oil (paraffin-family)	-Tool No: CK-0524 (100 cc)
Lubricating oil	Lubrication; e.g., drive areas, friction areas.	-Silicone oil	-Tool No: CK-0551 (20 g)
Lubricating oil (EM-50L)	Lubrication; e.g., gears.	-Special oil -Special solid lubricating agent -Lithium soap	-Tool No: HY9-0007
Libricating oil	Lubrication; e.g., scanner rail.	-Silicone oil	-Tool No: 9-6011 (50 cc)
Conducting grease	Lubrication; e.g., edge of secondary transfer roller	-Fluorine poly wthyl -Polytetra fluorune ethylene	-Tool No: FY9-6008 (75 g)

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