NP6621

REFERENCE MANUAL

REVISION 0

NOTE:
This package indicates and describes the major differences from previous model NP6521. For full details, please refer to the Service Manual for NP6621 (revision 0, part number FY8-13F4-000).

Furthermore, service coefficient estimates are included. These have also been published in the Service Plan for model NP6621, ref. GEN-603.

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1. Product Outline

Name: NP6621

Outline:
This machine is based on the NP6521, with a simplified duplexing unit for lower cost.

Major differences from the NP6521:

- Fixing mechanism changed from fixing film to heat roller.
- Scanning lamp changed from fluorescent to Halogen lamp.
- Duplexing unit capacity 10 sheets (A4/A4R), 2 sheets (A3)
- Deleted the following adaptive functions:
  Photo Mode, Overlay Mode, Zoom Programming, Document Size Mixing, Mode Memory, Frame Erasing/Binding Margin, ID Mode
- The drum unit and toner are the same as for the NP6521.

Expected life: 5 years or 1 million copies whichever comes first.

2. Service Coefficient Estimate

As started above, the NP6621 is based on the NP6521, with changes made to the fixing assembly, scanning lamp, duplexing unit, etc. Although the normal procedure would be estimated service coefficients based on NP6521 field performance data, the data for the NP6521 is inadequate; therefore same service coefficients which were used for the 21-cpm NP6521 will be used for the NP6621.

Item	**Monthly CV**	**3,000 copies**	**6,000 copies**
Call visit	Visit coefficient	0.14 times/mo.	0.18
	Between-visits copies	21,000 copies	33,300 copies
	Work time	36 min.	
Scheduled visit	Visit coefficient	0.16 times/mo.	0.15
	Between-visits copies	18,700 copies	41,100 copies
	Work time	32 min.	
Total	Visit coefficient	0.30 times/mo.	0.33
	Between-visits copies	9,900 copies	18,100 copies

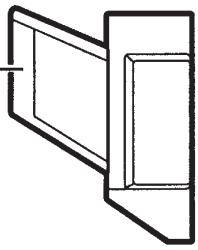
Note: Data are quoted from the NP6521 Service Plan.

Function	Page number
Auto energy saver	5, 12
Basic sequence of operation	18, 19
Control display mode	38, 39, 40
Control panel	9, 10
Duplexing unit	24, 25, 26, 27, 28, 29, 30, 31, 32
Fixing unit	7, 8, 13, 14, 33, 34, 35, 36, 45, 46, 47, 48, 49
General circuit diagram	50
Original size detection	20
Scanner cooling	15, 17, 43, 48
Scanning lamp	6, 16, 18, 21, 41, 44, 48
Service label	37
Stapler Sorter – D2 (10 bins)	4
Two-sided copies	22, 23
User mode	11

RDF-F1 (Recirculating Document Feeder)
Automatically feeds a set of up to 100 originals to the platen glass for copying. The RDF can also turn over two-sided originals for automatic two-sided copying.



MS-B1 (10 bins)
Automotically sorts and groups sets of up to 10 copies.



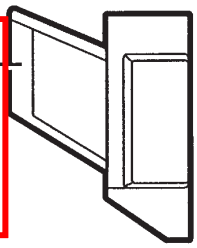
ADF-E1 (Automatic Document Feeder)
Automatically feeds sets of up to 30 originals to the copyboard for copying.

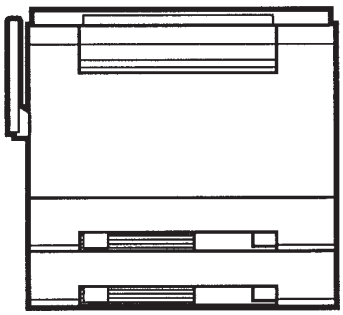


Control Card IV N
Allows you to monitor the number of copies made by each card holder.

1

Stapler Sorter-D2 (10 bins)
Automatically sorts or groups copies into 10 bins at (30 pages per set). Staples sets of up to 20 copies each.





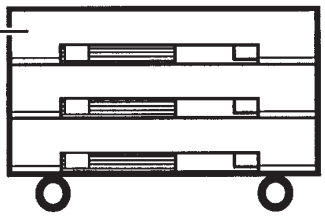
Cassette Feeding Module-B2
Allows you to increase your paper supply through the addition of one paper cassette.



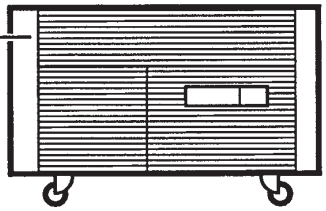
Cassette Feeding Module-A2
Allows you to increase your paper supply through the addition of two paper cassettes.



Cassette Feeding Unit-K1
Allows you to increase your paper supply through the addition of three paper cassettes.



Paper Deck Pedestal-K1
Holds up to 1500 sheets of one type of paper.



I. FEATURES

When fitted with options, it provides a maximum of four paper sources.

1. Multiple front loading and multifeeder for space saving.

- The cassette may be slid out to the front for paper supply work.
- With the adjustable cassette and the multifeeder, various types of paper may be used.

2. Office conveniences and ecology.

- The copier is designed compact, enabling effective use of office space.
- The use of roller charging has proved to reduce the generation of ozone significantly.(1/100 to 1/1000 compared to other Canon copiers)
- As the pick-up mechanism, center-reference is adopted in consideration of the use of recycled paper.
- A significant number of parts are made of plastic in an effort to promote recycling.
- The copier is designed as a clamshell type to facilitate clearing of jammed paper.

3. Dependable high image quality.

- The new HQ (high-quality) toner ensures faithful reproduction of solid black, text, and photos.
- In addition to Canon's own single-component toner projection development method, the use of auto image control (AIC) ensures stable reproduction of images.

4. Practical basic features.

- As many as 21 copies (A4/Letter, horizontal) may be made per minute.
- Copies may be as large as A3/11×17 or as small as A5/STMT, accommodating postcards.
- The AE mechanism promises enhanced reproduction of newspapers or diazo originals.
- Using page separation mode, a book may be copies with its lift and right pages processed separately.
- Copies may be made in zoom between 49% and 204%.
- (2) The zoom fine-adjustment mechanism ensures better control for faithful reproduction of originals.
- The auto energy saver mechanism helps further saving of energy.
- The interrupt mechanism enables cutting in on a continuous copying session.

II. SPECIFICATIONS

A. Copier

1. Configuration

Item	Specifications
Body	Desktop
Copyboard	Fixed
3 Light source	Halogen lamp
Lens	Zoom lens
Photosensitive medium	OPC

2. Type

Item		Specifications
Copying		Indirect electrostatic photography
Charging		Roller (direct charging)
Exposure		Slit (moving light source)
Copy density adjustment		Automatic (AE) or manual
Development		Dry (toner projection)
Pick-up	Automatic	2 cassettes
	Manual	Multifeeder
Transfer		Roller
Separation		Curvature + static eliminator
Cleaning		Cleaning blade
Fixing		Heat roller, 900W

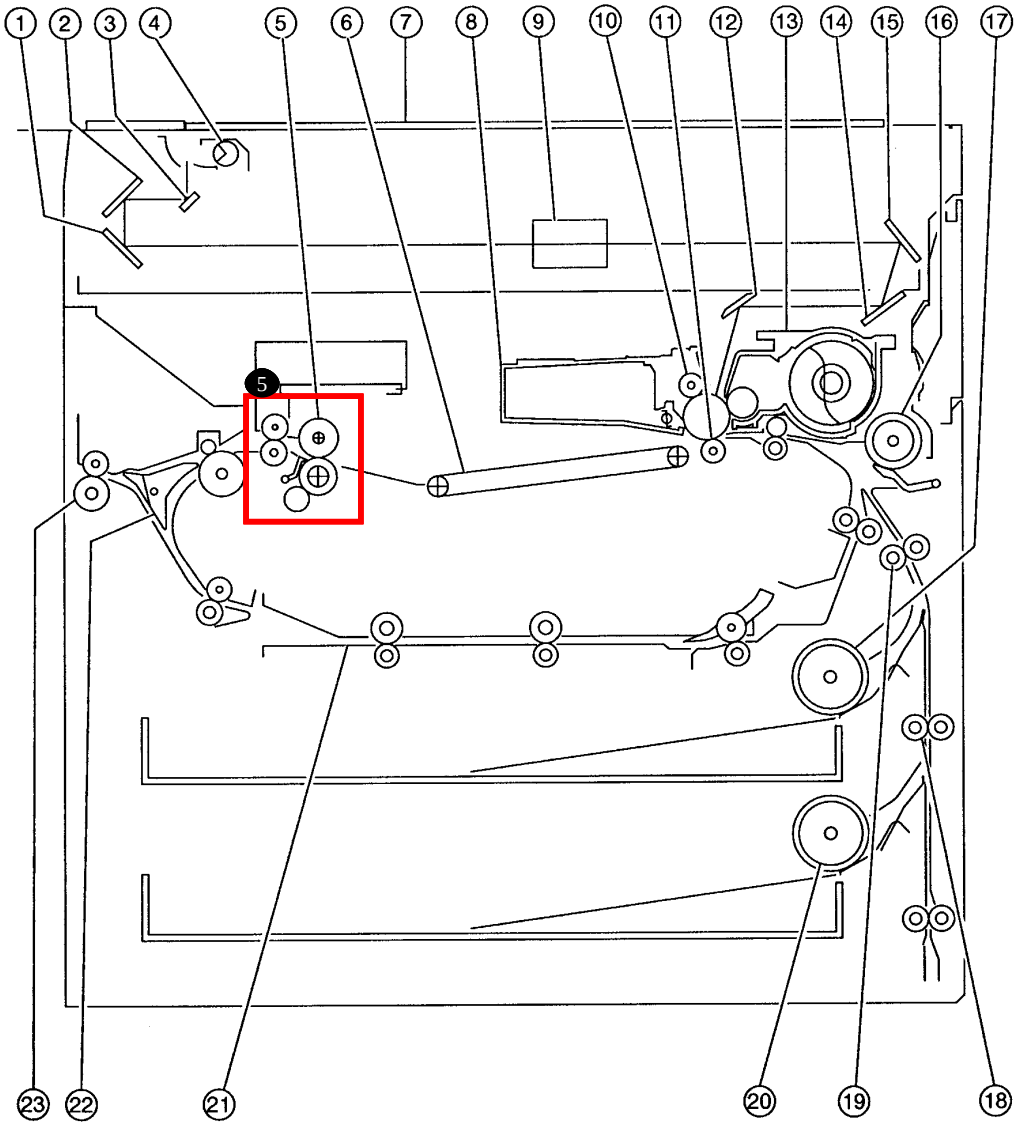
3. Performance

Item		Specifications
Original type		Sheet, book, 3-D object (2 kg/2.204 lb. max.)
Maximum original size		A3 (297 x 420 mm)
Reproduction ratio		DIRECT, 2R2E (Table 1-1); zoom between 49% and 204% (fine zooming provided)
4 Wait time		30 sec
First copy time		9.7 sec (approx.; A4, DIRECT, non-AE, cassette 1)
Continuous copying		100 copies (max.; upper limit may be changed in service mode)
Copying speed		See Table 1-202.
Copy size		Cassette: A3 to A5 Manual: A3 to postcard
Copy paper type	Cassette	Plain paper (64g to 80 g/m²), tracing paper*1, colored paper*1, recycled paper (64 to 80 g/m²), eco paper (80 g/m²)
	Manual	Plain paper (64 to 80 g/m²), tracing paper*1, colored paper*1, recycled paper (64 to 80 g/m²), eco paper (80 g/m²*1), transparency*3, postcard, label sheet*1, Thick paper (81 to 128 g/m²)
	Two-sided/overlay copying*2	Plain paper (64 to 80 g/m²), colored paper, postcard, recycled paper (64 to 80 g/m²), eco paper (80 g/m²)
Cassette		34 mm deep (approx.; about 250 sheets of 80 g/m²); no claw, front loading (center reference)
Multifeeder		5 mm (max. stacking height; i.e., about 50 sheets of 80 g/m²); no claw (center reference)
Copy tray		100 sheets (approx.: A3, 80 g/m²)
Non-image width	One-sided	2.0 ±1.0 mm (leading edge); 2.5 ±1.5 mm (left/right, trailing edge)
	Multifeeder	2.0 ±1.0 mm (leading edge); 3.5 ±1.5 mm (left/right, trailing edge)
Auto clear		Provided (2 min standard; may be varied in 1-min increments between 1 and 9 min; may be deactivated)
Auto power-off		Provided (5 min standard; 2, 5, 10, 15, 30, 60, or 120 min; may be varied in user mode)
Options		Cassette Feeding Module-B2, Cassette Feeding Module-A2, Cassette Feeding Unit-K1, Control Card IV N, Stapler Sorter-D2, Sorter 10-B1, ADF-E1, RDF-F1, Paper Deck Pedestal-K1, Remote Diagnostic Device II

*1 Canon recommended paper.
*2 If in manual mode, remove curling before second feeding.
*3 Fan out sheets before setting to eliminate adhesion.

B. Cross Section

1. Cross Section of the Body



① No. 3 mirror
② No. 2 mirror
③ No. 1 mirror
④ Scanning lamp
⑤ Fixing unit
⑥ Feeding assembly
⑦ Copyboard glass
⑧ Drum unit
⑨ Lens
⑩ Primary charging roller
⑪ Transfer roller
⑫ No. 6 mirror
⑬ Developing assembly
⑭ No. 4 mirror
⑮ No. 5 mirror
⑯ Multifeeder pick-up roller
⑰ Cassette 1 pick-up roller
⑱ Vertical path roller 2
⑲ Vertical path roller 1
⑳ Cassette 2 pick-up roller
㉑ Duplexing unit
㉒ Delivery paper deflecting plate
㉓ Delivery roller

Figure 1-303

IV. BASIC OPERATION

6 A. Control Panel

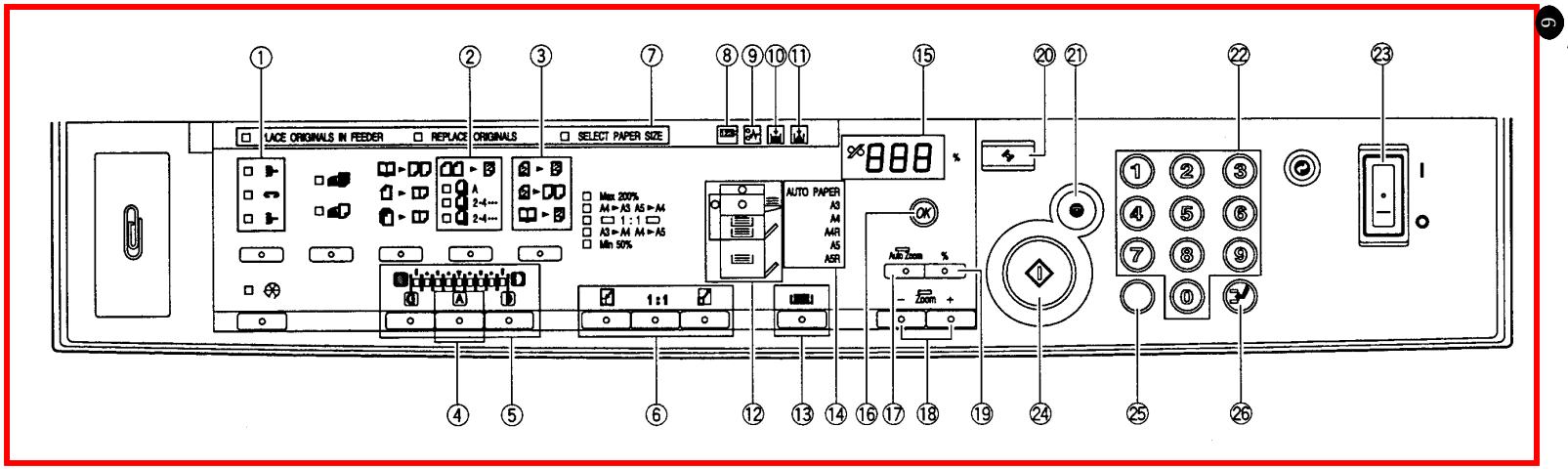


Figure 1-401

① Sorter key	Press to set or cancel the Sort, Staple Sort, and Group modes.	
	Sort mode: When copying a multi-page document, copies are automatically sorted into sets arranged in page order. * To use this mode, your copier must be equipped with the optional Stapler Sorter, Sorter, or ADF/RDF.	
	Staple Sort mode: When copying a multi-page document, copies are automatically sorted into sets arranged in page order and then stapled. * To use this mode, your copier must be equipped with the optional Stapler Sorter.	
	Group mode: When copying a multi-page document, all copies of the same original page are grouped together, and output into different bins. * To use this mode, your copier must be equipped with the optional Stapler Sorter or Sorter.	
② Two-sided key (left side)	Press to set or cancel the following two-sided copy modes: 1 → 2-sided, 2 → 2-sided, 2 → 1-sided, Book → 2-sided.	
	1 → 2-sided: Makes two-sided copies from one-sided originals.	
	When you do not know the total page number of the original, the copier automatically counts the original.	
	Select when you know beforehand that there is an odd number of originals. This will save the time spent on counting the original.	
	Select this when you know beforehand that there is an even number of originals. This will save the time spent on counting the original.	
③ Two-sided key (right side)	2 → 2-sided: Makes two-sided copies from two-side originals.	
	2 → 1-sided: Makes one-sided copies from two-sided originals.	
	Book → 2-sided: Makes two-sided copies from facing pages in a book.	
④ AE key	Press to set or cancel the AE (Automatic Exposure) mode.	
⑤ Copy exposure key	Press to manually adjust the copy exposure.	
⑥ Reduce/1:1/Enlarge key	Press to enlarge or reduce using a preset copy ratio, or to return the copier to 100% copying (1:1).	
⑦ Message display	Place originals in feeder	Flashes when the original in the feeder needs to be reloaded.
	Enter frame erase/margin size	Flashes when the width of the edges to be erased or the margin needs to be specified. * Enter the measurement with the Number keys and then press the OK key.
	Replace originals	Flashes when the first original copied needs to be replaced with the next one.
	Set copy ratio	Flashes when the copy ratio needs to be specified. * Enter the copy ratio with the preset copy ratio key, the reduce/1:1/enlarge keys, or the Zoom key, and then press the OK key.
	Select paper size	Flashes when the paper size needs to be specified. * Select a paper size with the paper select key, and then press the OK key.
	Enter original size	Flashes when the original size needs to be specified. * Enter the original size with the Number keys and then press the OK key.
		Flashes when the original size needs to be selected. * Select the original size with the paper select key, and then press the OK key.
		Flashes when the copy size needs to be entered. * Enter the copy size with the Number keys, and then press the Ok key.
⑧ Check Control Card indicator		Flashes when the control card is not properly inserted.
⑨ Paper Jam indicator		Flashes when a paper jam occurs.
⑩ Add Paper indicator		Flashes when the paper supply in the cassete or stack bypass tray runs out, and when the cassette is not properly set.
⑪ Replace Toner Cartridge indicator		Flashes when the toner runs low and must be replaced with a new one.
⑫ Paper Supply/Jam Location indicator	Lights to indicate the selected paper cassete or stack bypass. When a paper jam occurs, the location of the paper jam flashes. It also lights when the Sorter or right door needs to be inspected, or when a paper jam occurs in the ADF/RDF.	
⑬ Paper select key	Press to select Auto Paper selection, a paper cassette, or the stack bypass.	
⑭ Select paper size indicator	The size of the original/copy paper selected with the Paper select key lights.	
⑮ Copy quantity/copy ratio display	Displays the entered copy quantity copy ratio, and Additional Functions settings.	
⑯ OK key	Press to confirm items and functions that have been selected when setting modes.	
⑰ Auto Zoom key	Press to set or cancel the Auto Zoom mode. Auto Zoom automatically selects the appropriate copy ratio, based on the size of the originals and the selected copy paper.	
⑱ Zoom key	Press to set or cancel the Zoom mode. Zoom mode allows you to specify a copy ratio from 49 to 204% in 1% increments. Continue pressing for fast selection.	
⑲ % key	Press to display the selected copy ratio.	
⑳ Reset key	Press to return the settings to standard mode.	
㉑ Stop key	Press to stop the coper before copying is completed.	
㉒ Number keys	Press the enter copy quantity and other numerical values when setting a mode.	
㉓ Power switch	Press to turn the power ON and OFF.	
㉔ Start key	Press to begin copying.	
㉕ Clear key	Press to return the copy quantity to one, or to clear an incorrectly entered value when setting a mode.	
㉖ Interrupt key	Press to temporarily stop the current copy job to make priority copies.	

Table 1-401

Table 1-402

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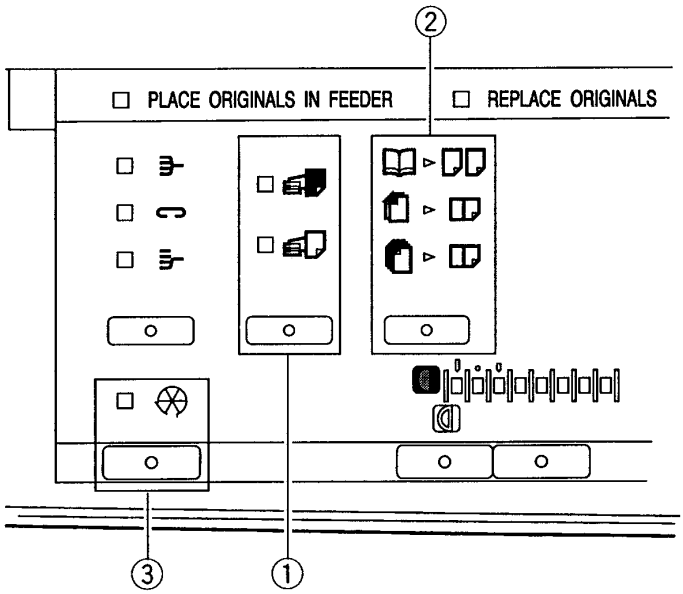


Figure 1-402

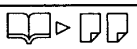
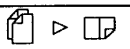
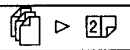
① Transparency Interleaving key	Press to set or cancel the Transparency Interleaving mode.	
		The interleaf sheets are printed with the same images as the transparencies.
		The interleaf sheets are left blank.
② Two-page Separation/Image Combination key (left side)		Copies facing pages in a bound original onto two copy sheets.
		2 ON 1: Reduces two originals to fit on one side of a single copy sheet.
		2 ON 1/2 Sided: Reduces four originals to fit on two sides of a single copy sheet.
③ Additional Functions key	Press to set or change standard settings and custom settings according to specific user needs, and when adjusting and cleaning the copier.	

Table 1-403

7) Press the ⊙ key.

If you set the Two-sided, Two-page separation, Overlay, Image Separation or Transparency Interleaving modes in step 1 for stack bypass feeding, and you have not selected the size of the paper to be fed, the Paper Size indicator flashes.

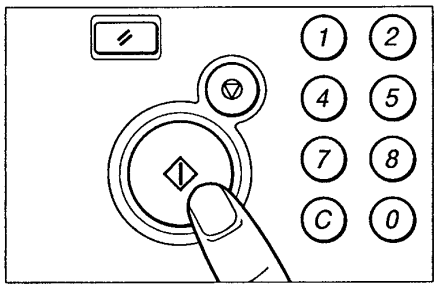


Figure 1-414

Press the ▭ key to select the size of the paper to be fed into the stack bypass.

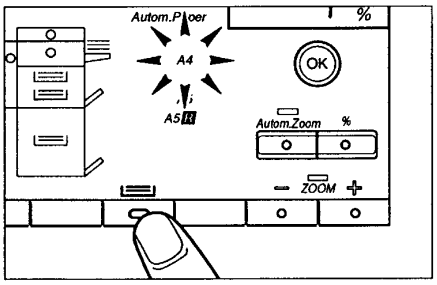


Figure 1-415

Then press the OK key. If the size you want cannot be selected, press the ▭ key so that the Stack Bypass Size Entry display disappears, then press the OK key.

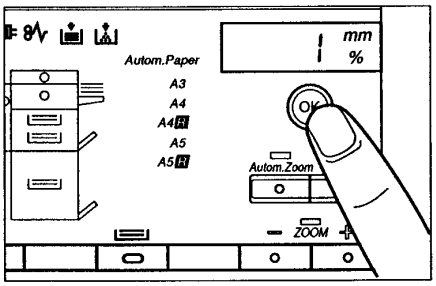


Figure 1-416

8

D. User Mode

1. Outline

You can change or adjust the factory settings for various functions to meet your specific copying needs. It is also possible to perform cleaning and to make adjustments to the copier.

You can change or adjust the settings for the following items:

	Function	Initial setting
01	Auto Clear Time	2 min.
02	Auto Energy Saver Time	5 min.
03	Zoom Fine Adjustment	0%
04	Auto Cassette Selection ON/OFF	ON
05	Stack Bypass Size Specification ON/OFF	OFF
06	Auto Sort ON/OFF	ON
07	Feeder Cleaning	
08	Standard Copy Settings	
09	Input Unit mm/Inch Selection	2 min.
00	Initializing Additional Functions	NP Drum Cartridge Counter

Table 1-404

2. The Use of Keys and Displays That Appear When Changing the Settings

a. The Use of Keys

- Additional Functions key : Press this key to set or cancel the Additional Functions and return to the normal copying mode.
- OK key : Press this key to indicate the item that you want to change.
- C key : Press this key to clear any mistakes that you have made when changing the settings. Also press this key to return to the last previous setting that you had entered.
- Copy Quantity/Copy Ratio Display

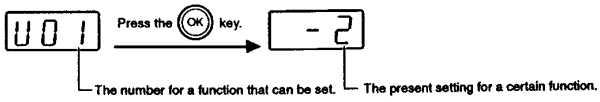


Figure 1-417

3. Auto Clear Time

If the copier is not operated (no keys are pressed) for a certain period of time, the copier automatically returns to the standard copy settings. This time period is called the "Auto Clear Time." You can cancel or freely change the Auto Clear Time.

Auto Clear Time can be set from 1 to 9 minutes in one-minute increments.

1) Press the Additional Functions key.
   - "U01" appears in the Copy quantity/Copy ratio display.
   To continue setting other Additional Functions, press the 1 key.

Reference:
Once you set the Additional Functions mode, the ⊙ key turns red and copying operations cannot be initiated.

2) Check the Copy quantity/Copy ratio display.
   If "U01" is displayed, proceed to the next step.

Reference:
If "U01" is not displayed or if you make a mistake while entering a value, press either the C key or press the C key and then the C key.

3) Press the OK key.
   - The current setting is displayed in the Copy quantity/Copy ratio display.
   - The possible settings for Auto Clear Time appear in the Copy quantity / Copy ratio display as follows:

Auto Clear Time (min.)	Settings
0	–0
1	–1
2	–2
3	–3
4	–4
5	–5
6	–6
7	–7
8	–8
9	–9

Table 1-405

4) Enter the Auto Clear Time with the Number keys (0 - 9).
   - The setting time is displayed in the Copy quantity/Copy ratio display.

Reference:
1. The initial setting for the Auto Clear Time is 2 minutes.
2. You can set Auto Clear Time from 1 to 9 minutes, in one-minute increments.
3. To cancel this function, press the 0 key.
4. If you make a mistake while entering a value, enter the correct value and it will replace the incorrect one that was previously entered, or press the C key and after the display clears, enter the correct value.

5) Press the OK key.
   The Auto Clear Time is changed and "U01" is displayed.

Reference:
If the Clear key is pressed before the OK key is pressed, the Auto Clear Time that was set is cleared and the copier returns to the normal copying mode.

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4. Auto Energy Saver Time

1) Press the Additional Functions key.
   - "U01" appears in the Copy quantity/Copy ratio display.
2) Press the 2 key.
3) Press the OK key.
   - The current setting is displayed in the Copy quantity/Copy ratio display.
   The possible settings for Auto Energy Saver Time appear in the Copy quantity / Copy ratio display as follows:

Auto Energy Saver Time (min.)	Settings
2	–1
5	–2
10	–3
15	–4
30	–5
60	–6
120	–7

Table 1-406

4) Enter the Auto Energy Saver Time with the Number keys (1 - 7).
   - The setting time is displayed in the Copy quantity/Copy ratio display.
5) Press the OK key.
   - The Auto Energy Saver Time is changed and "U02" is displayed.

I. IMAGE FORMATION

A. Outline

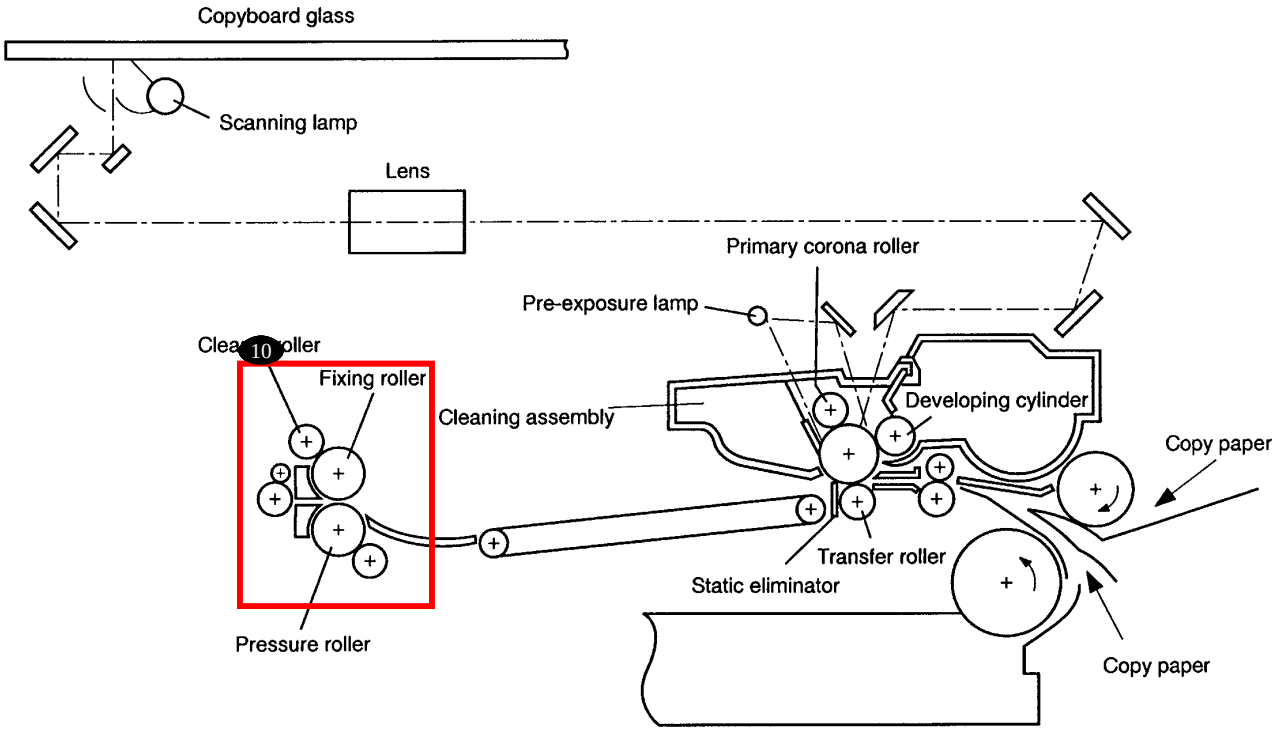


Figure 2-101

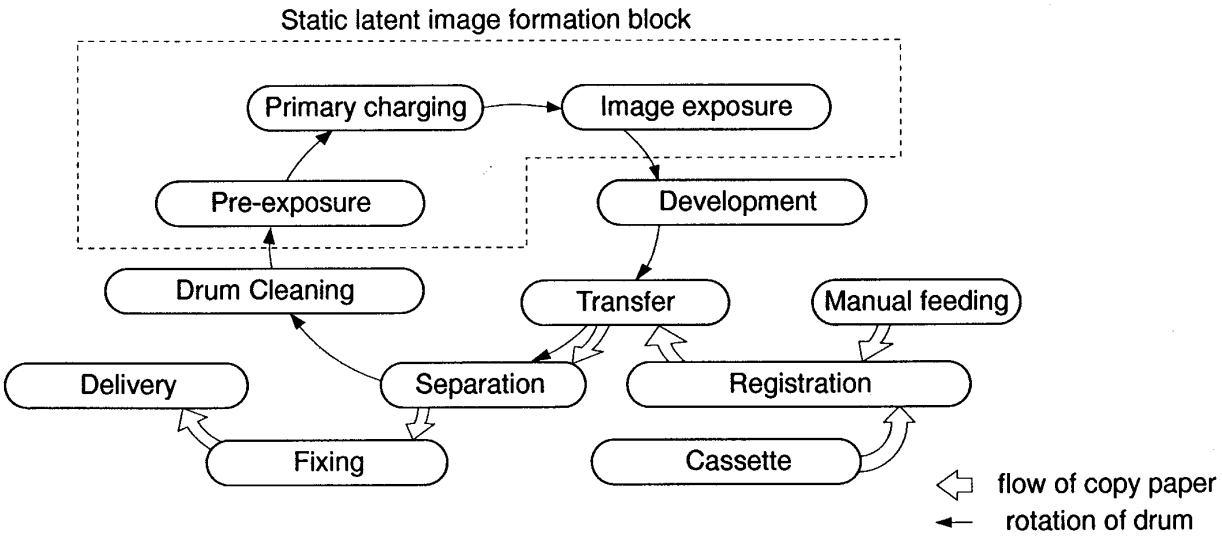


Figure 2-102

I. Step 7 (fixing)

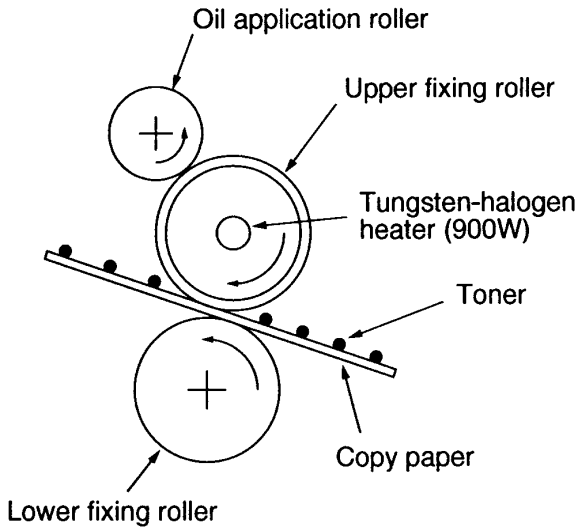


Figure 2-114

In this step, the copy paper is pressed between two heated rollers to make the toner image permanent.

To prevent the copy paper from wrapping around the roller and toner offsetting (adhesion of toner to the roller and transfer of the toner to the next copy), the surface of the upper fixing roller is cleaned with the cleaning roller.

J. Step 8 (drum cleaning)

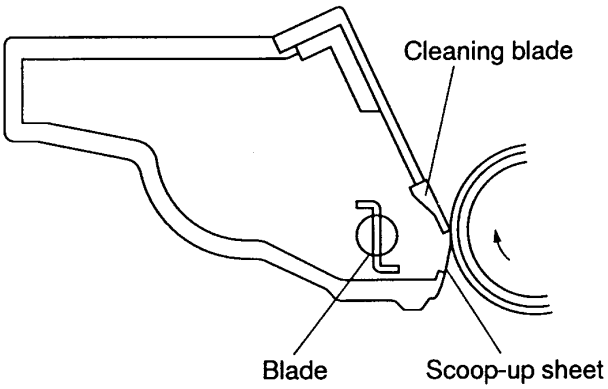


Figure 2-115

In this step, the cleaning blade scrapes off the toner remaining on the photosensitive drum in preparation for the next copy run. The toner is gathered by the scoop-up sheet and collected at the rear by a blade.

B. Outline of Electrical Circuitry

The machine's most electrical mechanisms are controlled by the microprocessor on its DC controller PCB. The microprocessor reads the input signals from the sensors and operation keys according to its pre-programmed instructions and sends signals to drive such loads as motors, solenoids, and lamps as necessary.

The machine's microprocessor is capable of reading analog signals as well as digital signals using its A/D converter.

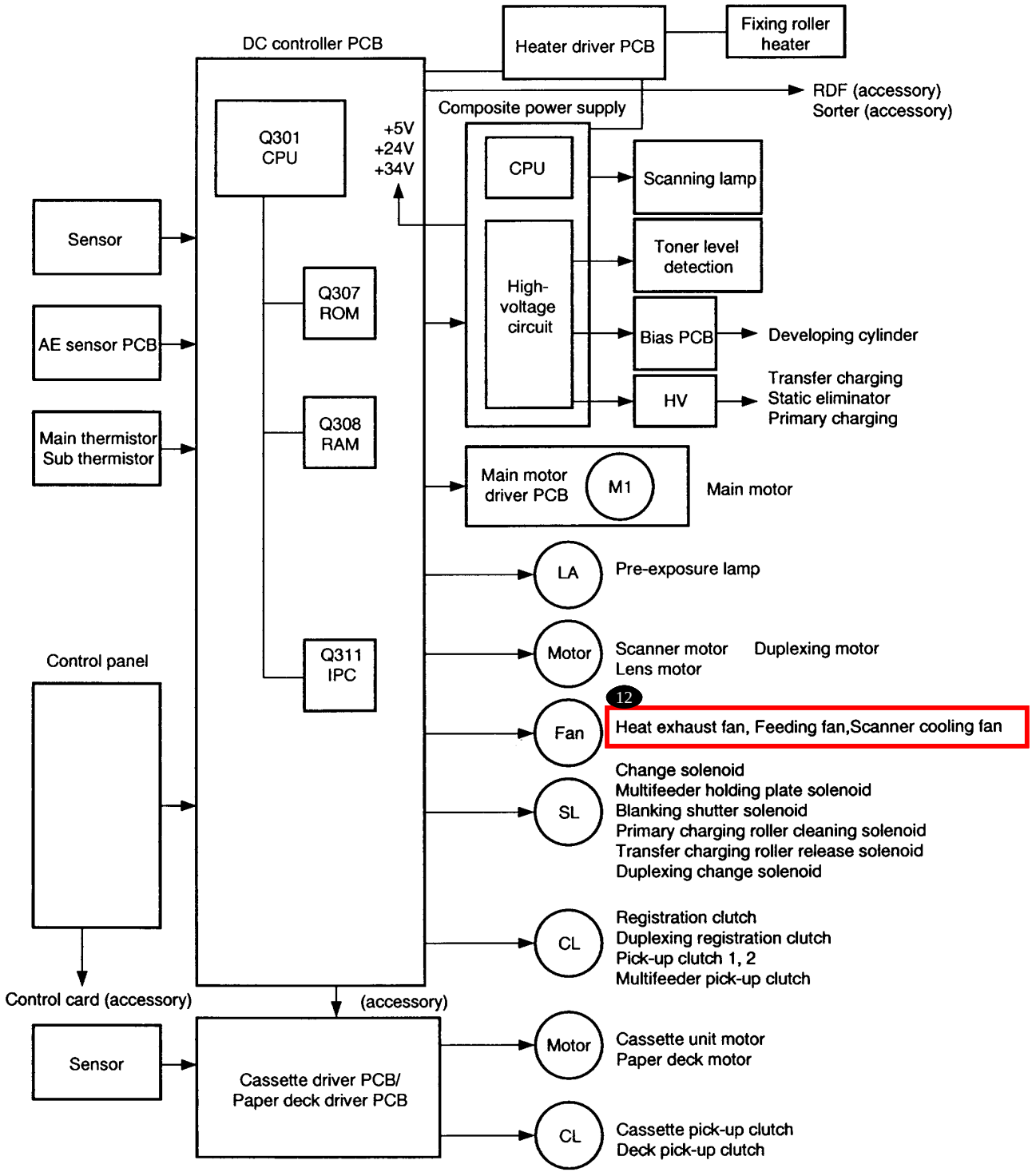


Figure 3-102

D. Outputs from the DC Controller

1. Outputs from the DC Controller PCB (1/5)

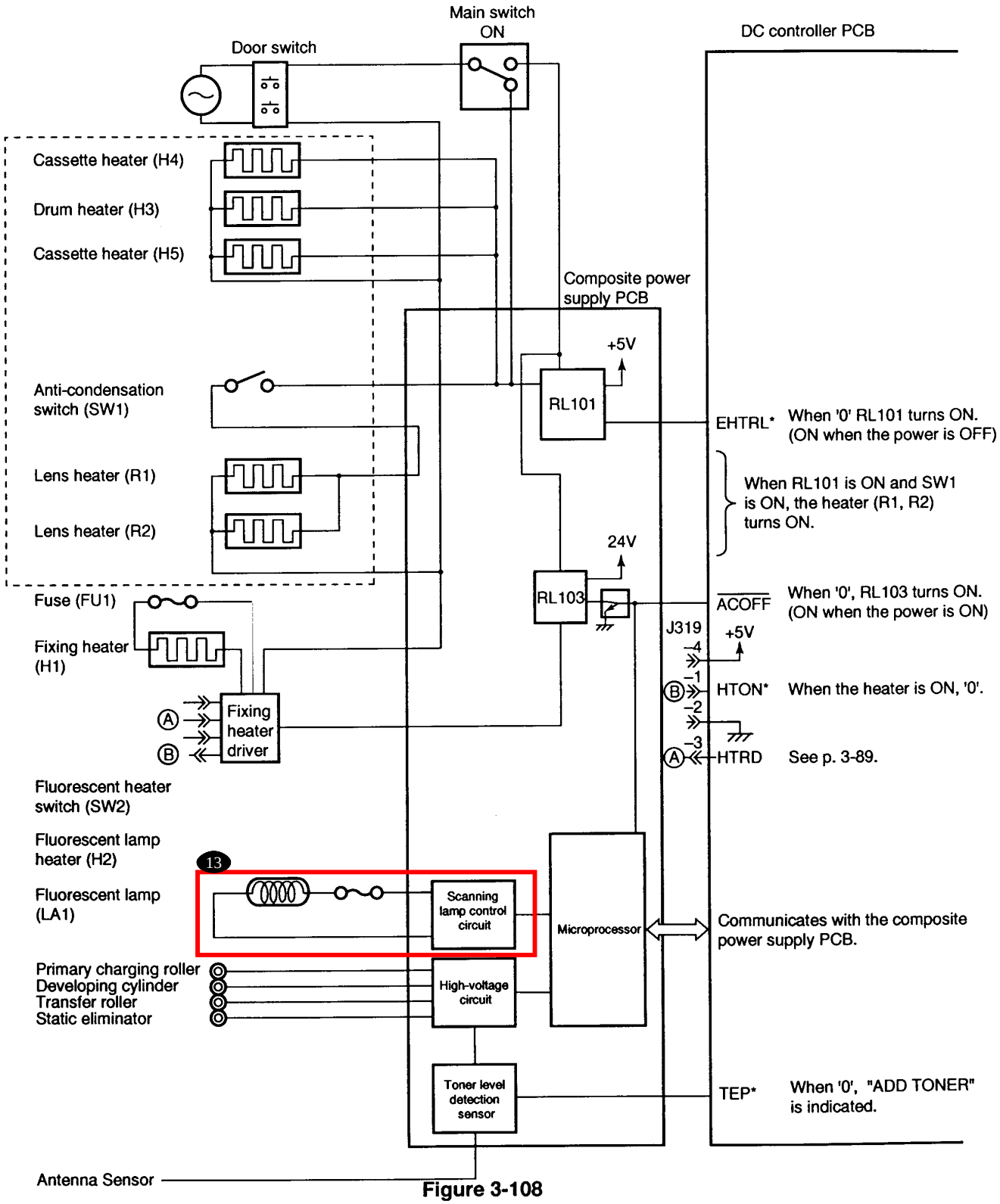


Figure 3-108

5. Outputs from the DC Controller PCB (5/5)

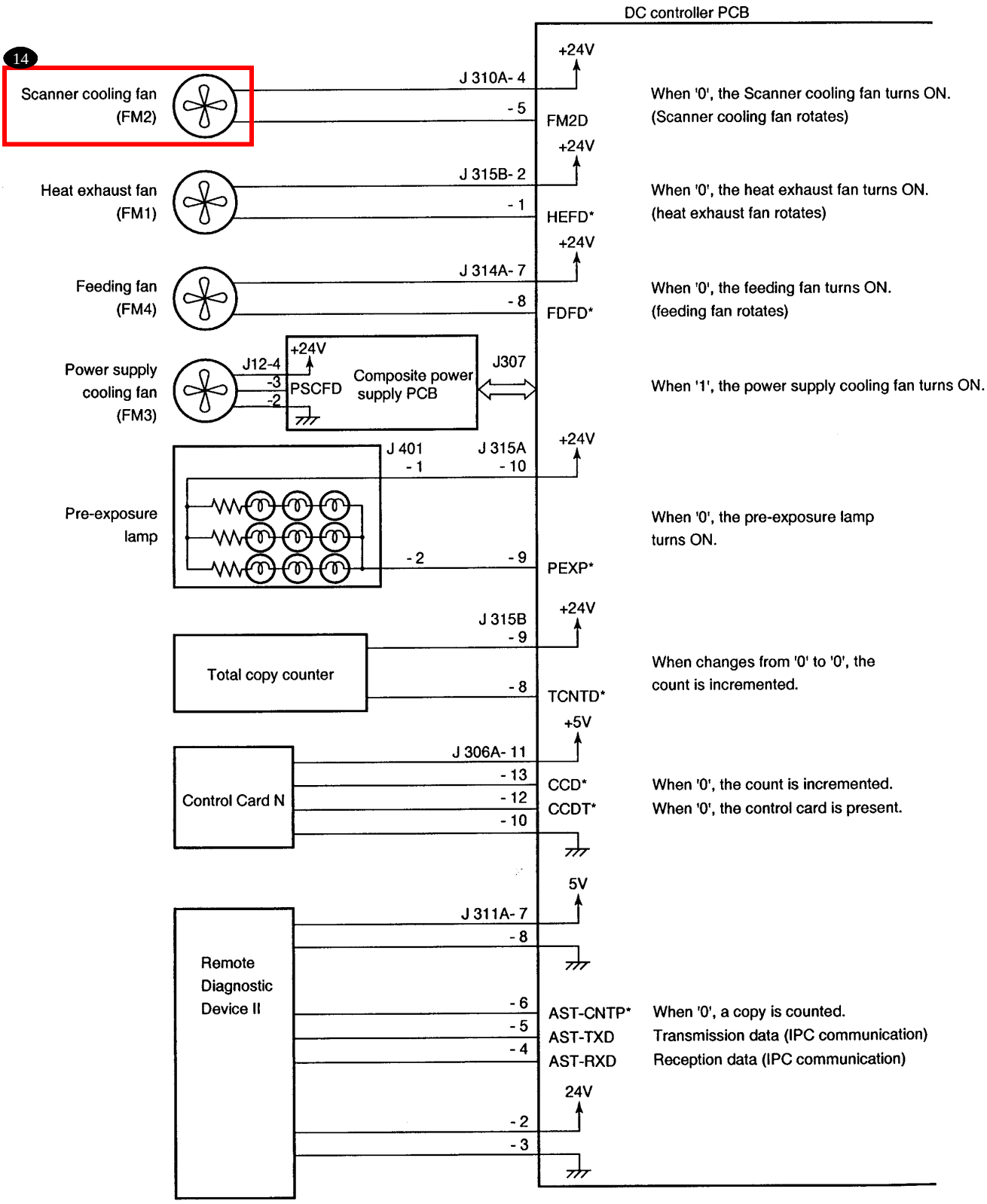


Figure 3-112

I. Basic Sequence of Operations (2 copies, continuous, AE)

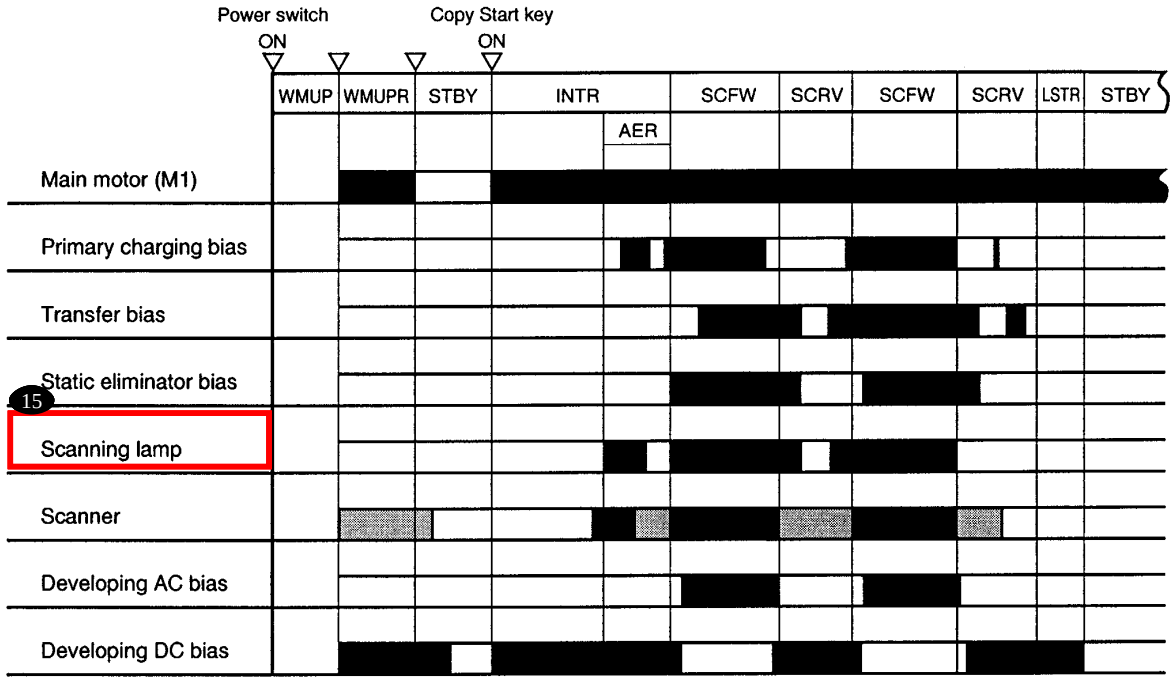


Figure 3-122

16

Period		Function	Remarks
WMUP (Warm-Up)	From switch on until the fixing roller temperature reaches 165°C for the black developer or 145°C for the CT Unit. (about 75 seconds at an ambient temperature of 20°C)	Allows time for fixing roller to warm up.	Warm-up time varies with fixing roller temperature at power ON. When the COPY START key is lighting green.
WMUPR (Warm-Up Rotation)	Until the fixing roller temperature reaches 175°C to 180°C for the black developer or 155°C to 160°C for the CT unit.	Keeps fixing roller temperature uniform. Stabilizes drum sensitivity to prepare for copying.	• After the WMUPR period ends, the READY/WAIT indicator changes from orange to green. • Even when the fixing roller has warmed up, it rotates for at least 3.5 seconds.
STBY (standby)	• From when LSTR ends until when the Copy Start key is pressed or the power switch is turned OFF. • From when the power switch is turned ON until the Copy Start key is pressed.	Waits for a press on an operation key (e.g., Copy Start key).	• 2 min or more after LSTR ends, the display on the control panel switches to standard mode.
INTR (initial rotation)	For at least 1 sec after the Copy Start key is pressed.	Stabilizes the drum sensitivity in preparation for copying operation.	
AER (AE rotation)		Moves the scanner forward/in reverse about 65 mm to measure the density of the original.	AE mode only.
SCFW (scanner forward)	While the scanner is moving forward. • The distance traveled forward depends on the cassette size and the reproduction ratio. • The speed for forward travel depends on the selected reproduction ratio.	Illuminates the original by the scanning lamp, and the reflected optical image is projected on the photosensitive drum through mirrors and lenses.	
SCRV (scanner reverse)	While the scanner is moving in reverse.	Returns the scanner to the home position in preparation for the next copying operation.	The registration signal is generated and the copy paper is fed to the transfer assembly.
LSTR (last rotation)	From when SCRV ends until when the copy paper moves past the delivery sensor.	Removes charges from the surface of the photosensitive drum as post copying processing.	Discharges the last copy.

Table 3-101

J. Original Size Detection Control

1. Outline

The machine offers auto paper selection, auto reproduction selection, reduction layout, and enlargement layout functions, all of which require the identification of the size of the originals being used.

To identify the size, the machine has two to four original size sensors under its copyboard glass which check the presence/absence of an original when the copyboard cover is closed and identify the original as being any of the default paper sizes.

Each original size sensor consists of a LED and a phototransistor: the LED illuminates the original, and the photodiode receives the reflected light and sends the output to the DC controller circuit.

The size of originals in the DF (option) is identified by the DF and communicated to the machine. When the DF is used, the machine executes auto paper selection, auto reproduction selection, reduction layout, and enlargement layout based on this size data.

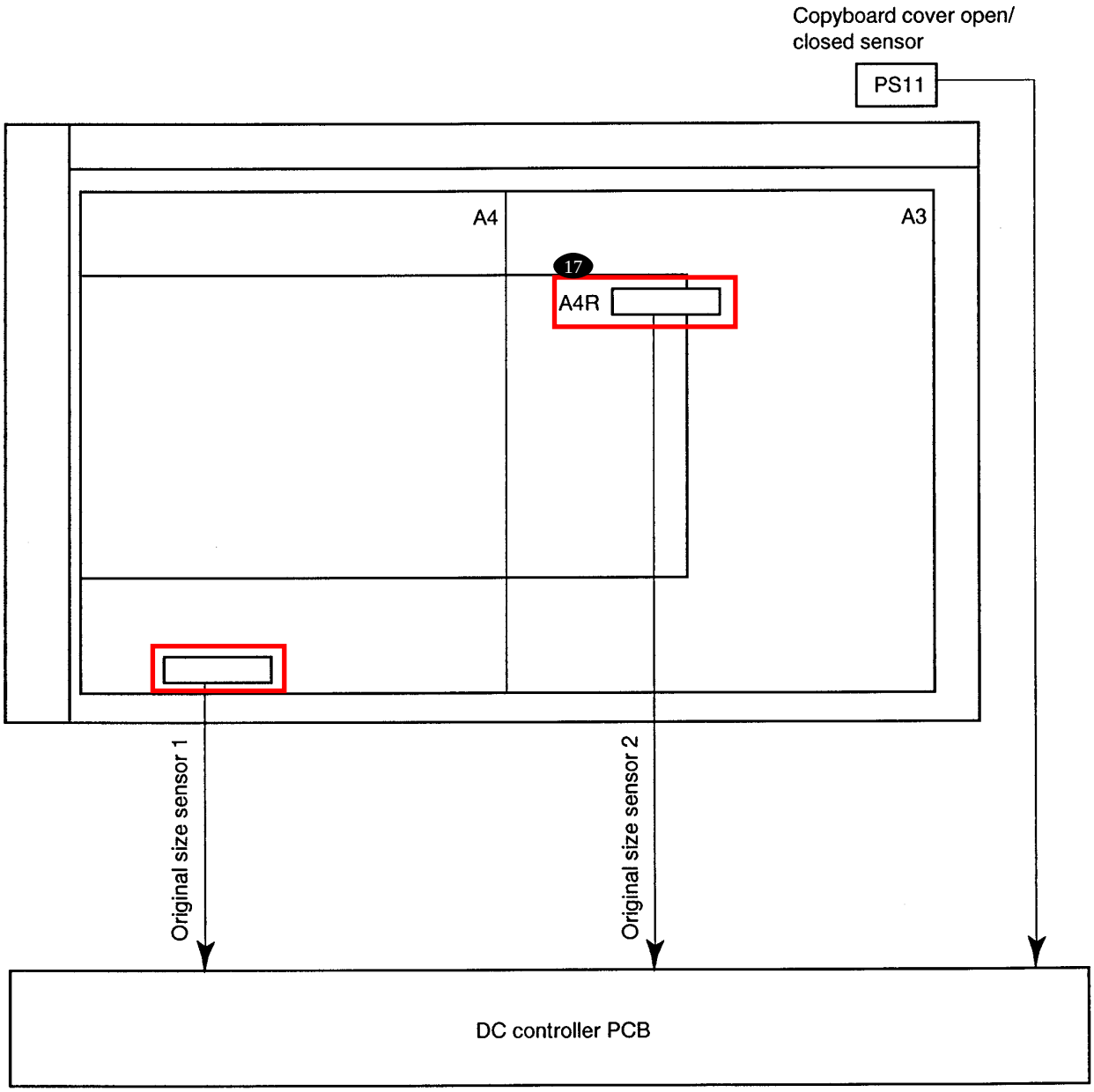


Figure 3-123 (A configuration)

C. Controlling the Scanning Lamp

1. Outline

The scanning lamp (LA1) is controlled by the DC controller PCB; see Figure 3-303. Specifically, the DC controller:

- Turns the scanning lamp ON and OFF.
- Controls the intensity of the scanning lamp.

2. Mechanism

a. Turning the Scanning Lamp ON and OFF

The CPU (Q308) on the DC controller PCB controls the lamp regulator. The scanning lamp goes ON/OFF through serial communication interface between DC controller PCB and Composite power supply PCB.

b. Controlling the Intensity of the Scanning Lamp

The machine exerts phase control by the zero-cross signal (ZXDP) to stabilize the light intensity.

The intensity of the scanning lamp is switched controlled by the LIGHT INTENSITY CONTROL command (FLS).

During AE exposure, however, the voltage (70 V) applied to the scanning lamp remains the same.

The NP6621 adjusts the copy density using its development bias; see p. 3-26.

c. Error Protection

The condition of the scanning lamp is monitored using the LIGHT signal (LGHT).

If the LIGHT signal (LGHT) is received by the DC controler for about 20 sec, the error detection circuit generates the AC SHUTOFF signal (ACOFF) to force the relay (K1) on the AC driver OFF, thereby cutting AC power supply (p. 3-101). In this case, E220 error is displayed.

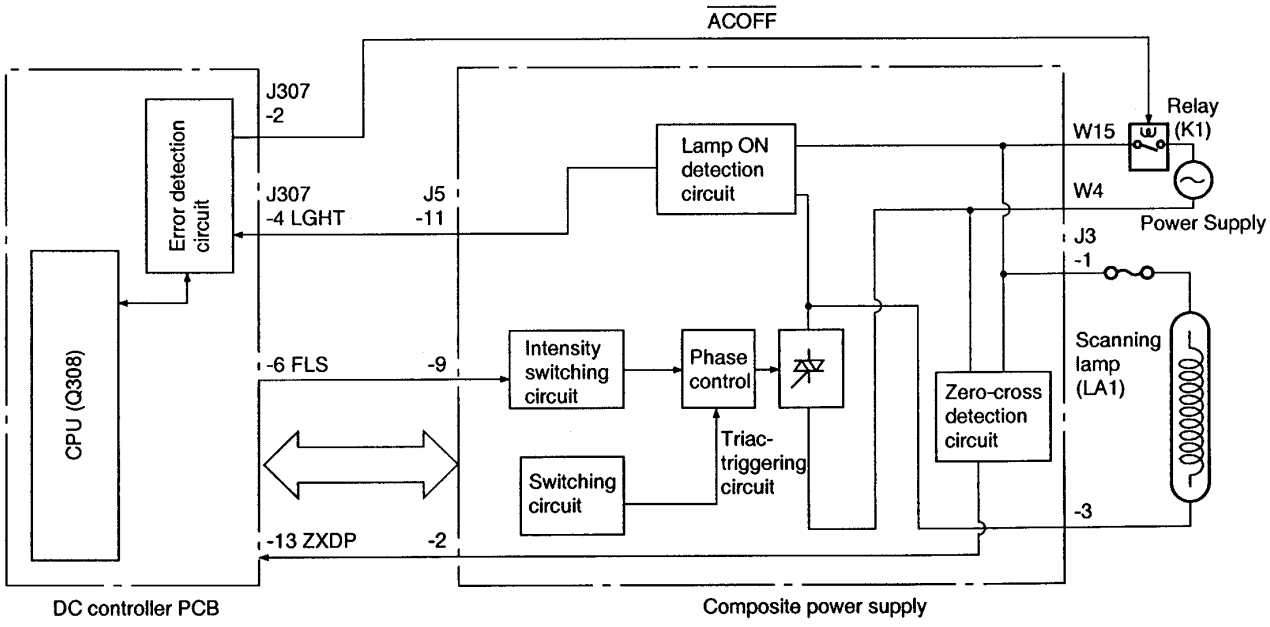


Figure 3-303

B. Making Two-Sided Copies (1 copy)

1. Outline

The copy paper takes the following path.

When copying on the first side, the delivery roller reverses after the paper from the fixing assembly has moved past the delivery sensor; the paper is then sent to the duplexing unit. The paper stops several millimeters in front of the duplexing unit outlet paper sensor (PS14) and waits for copying on the second side.

The duplexing unit is capable of accommodating 10 sheets of A4, A4R (2 sheets of A3).

Copying on the 1st Side

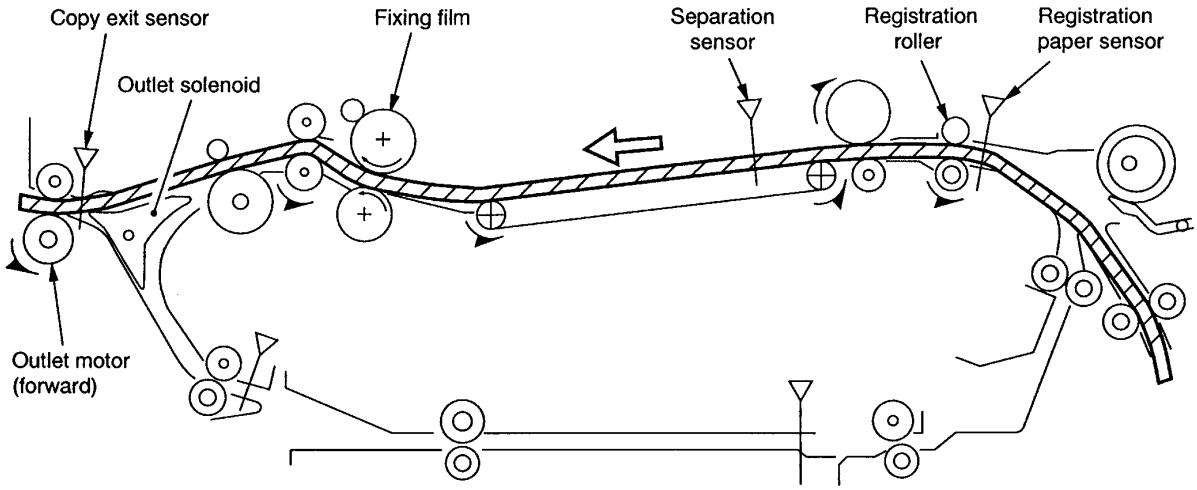


Figure 3-405

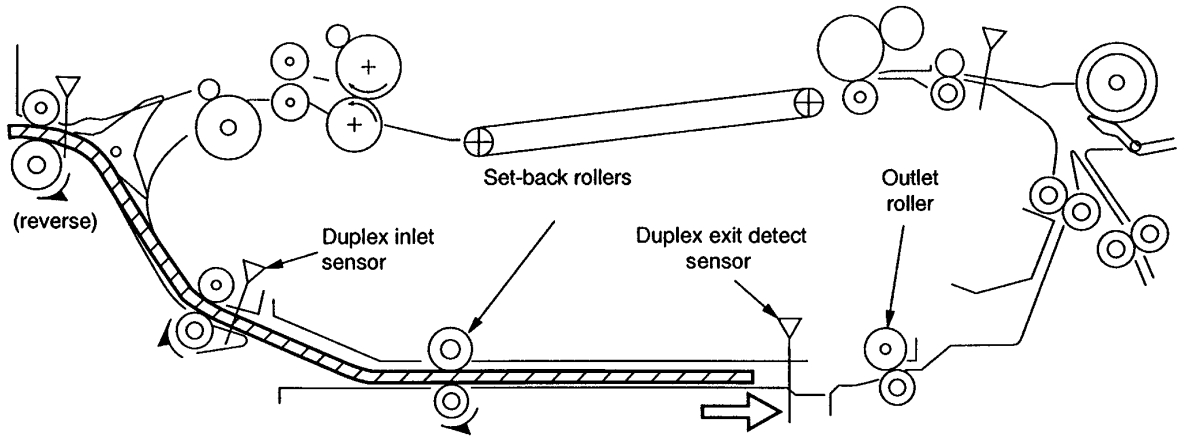


Figure 3-406

Copying on the 2nd Side

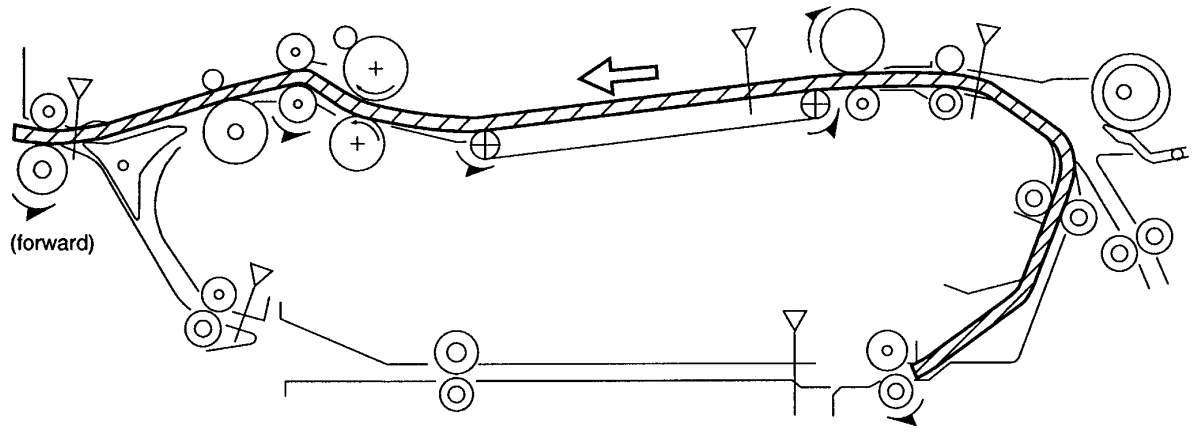


Figure 3-407

20

2. Sequence of Operations (two-sided; 1 copy, A4)

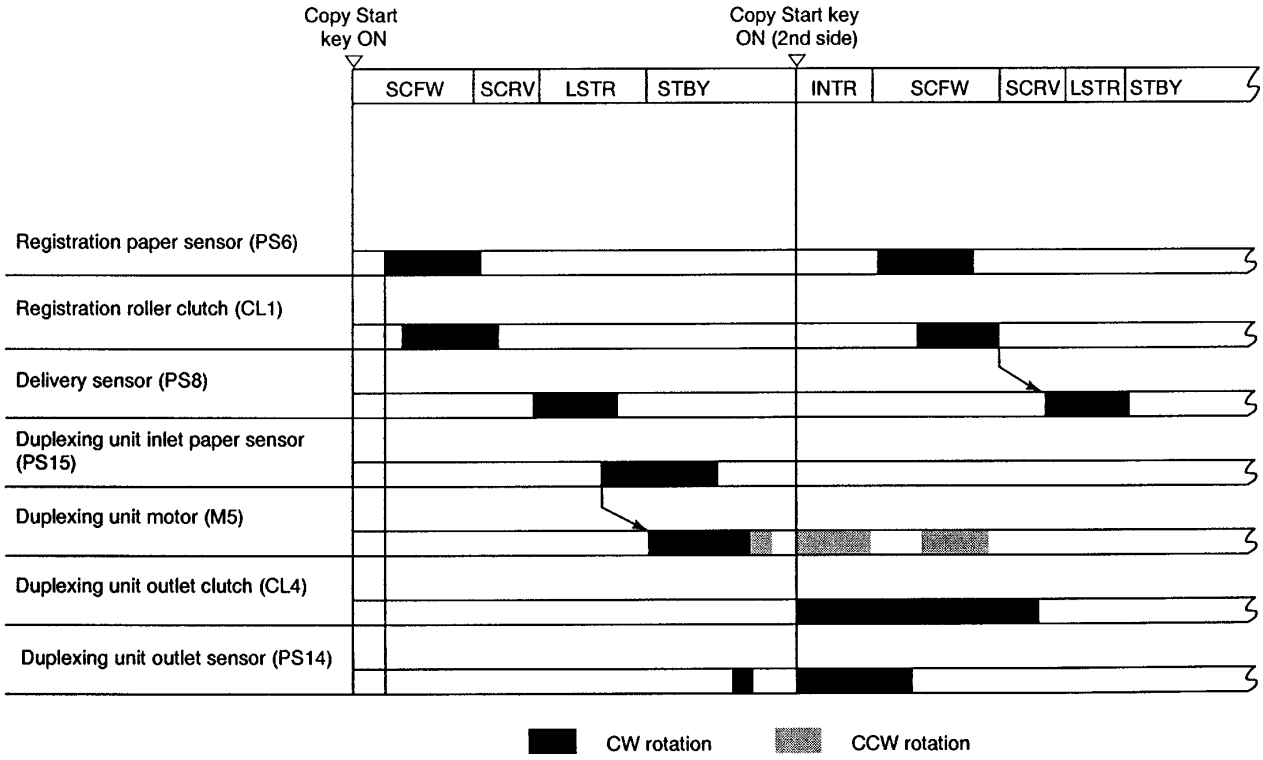


Figure 3-408

C. Duplexing Unit

1. Outline

The machine uses a set-back method and a separation flapper during continuous two-sided copying. The term *set-back* method refers to a method of preventing double feeding by stacking (tiling) sheets of paper in the limited space of the duplexing unit. The presence of the separation flapper at the outlet of the duplexing unit serves to improve separation of sheets.

The set-back mechanism is used under the following conditions:

1. Copy Paper Size
   A3, A4, A4R and A5
2. Copy Count
   Up to 10 (A4, A4R) or 2 (A3)

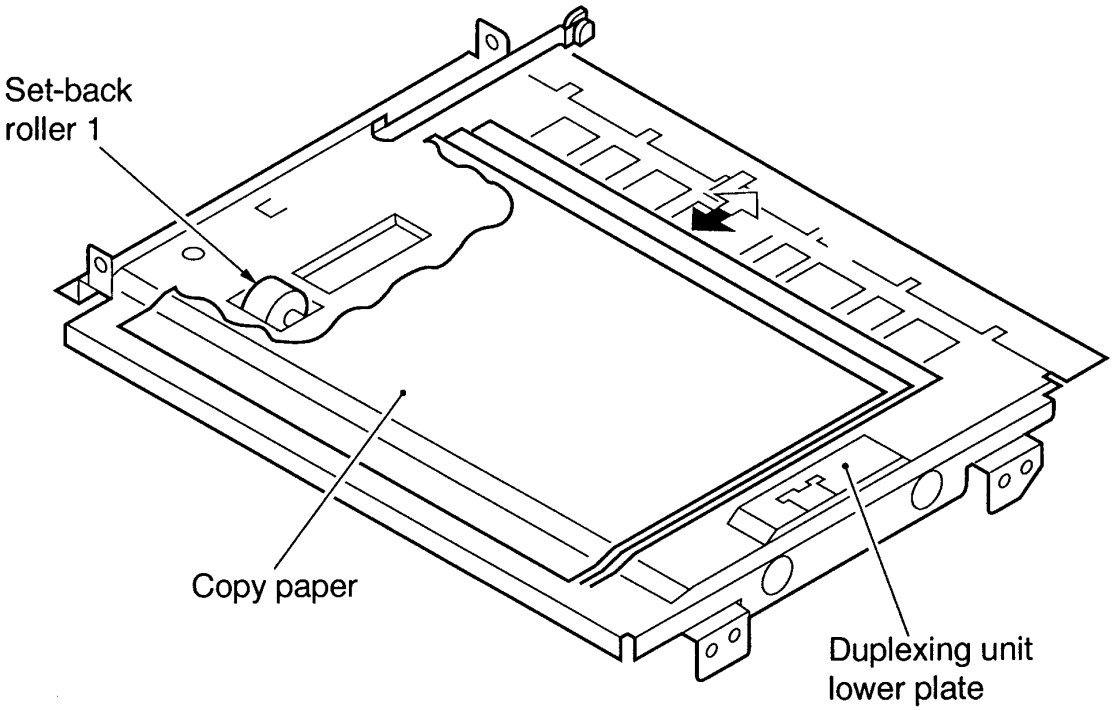


Figure 3-409

2. Set-Back Operations

The lower feeding inlet roller and the lower feeding outlet roller are driven by the main motor, and the set-back roller is driven by a special stepping motor.

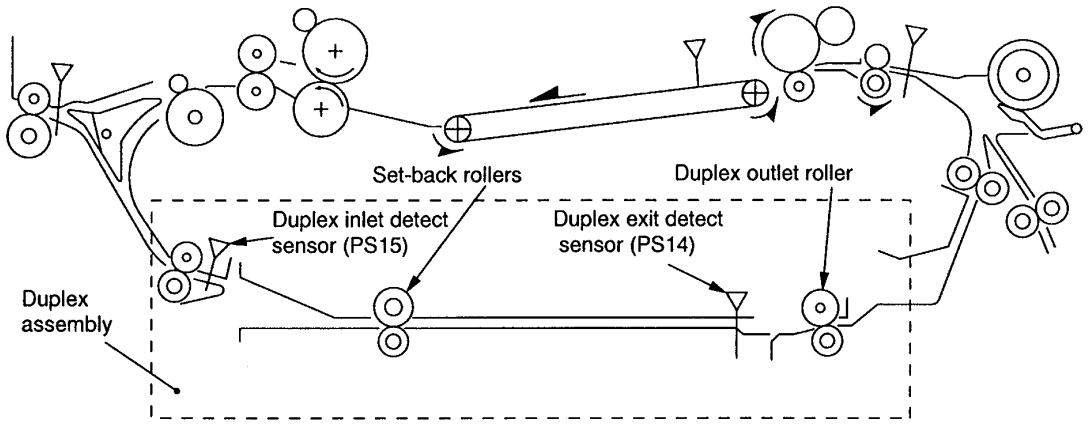


Figure 3-410

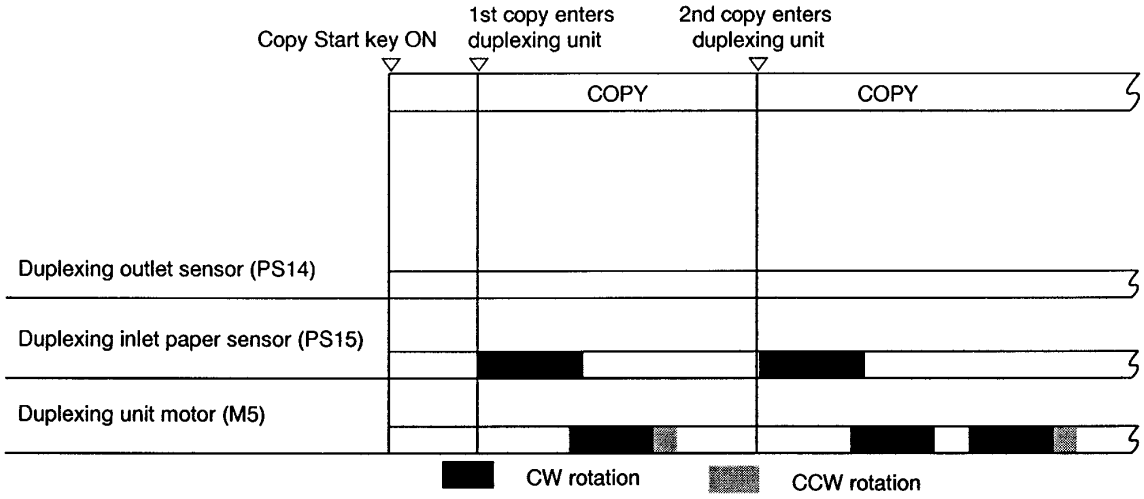


Figure 3-411

23

a. Set-Back Operations

1. The first copy moves from the delivery assembly to the duplexing unit.

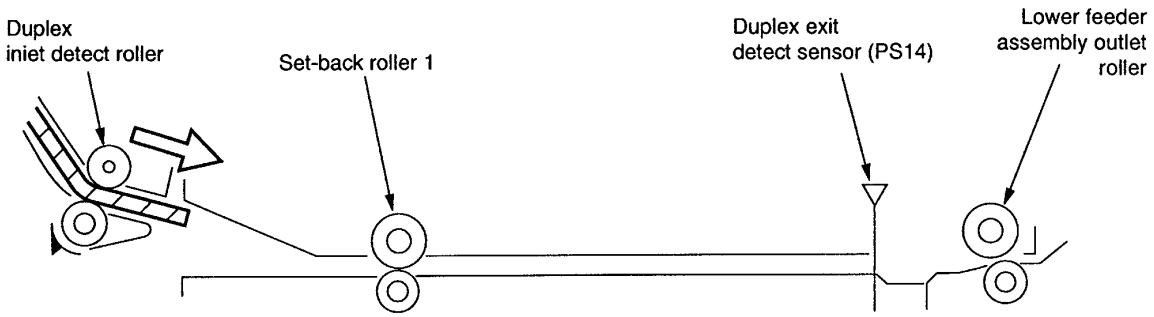


Figure 3-412

2. The leading edge of the copy paper butts against the set-back roller 1 and forms an arch.

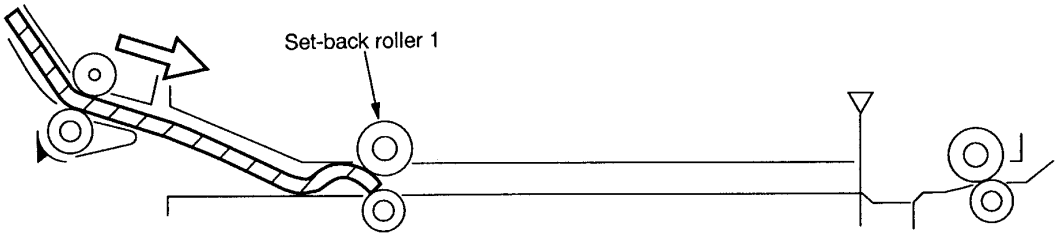


Figure 3-413

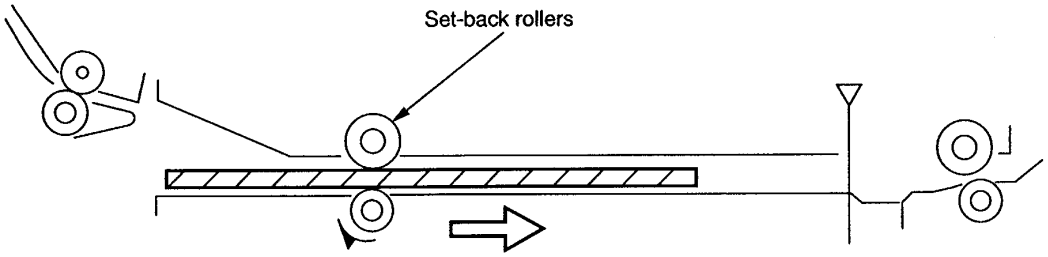


Figure 3-414

3. The set-back rollers 1 rotate counterclockwise, and the leading edge of the copy paper stops at a point about 12 mm past the set-back roller 1.

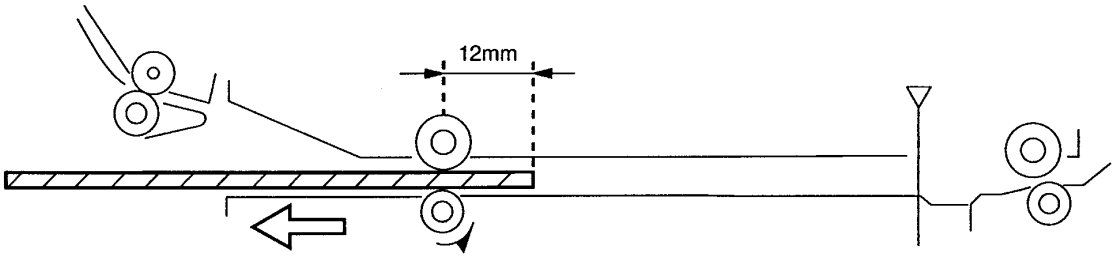


Figure 3-415

4. The second copy paper is moved to the duplexing unit.

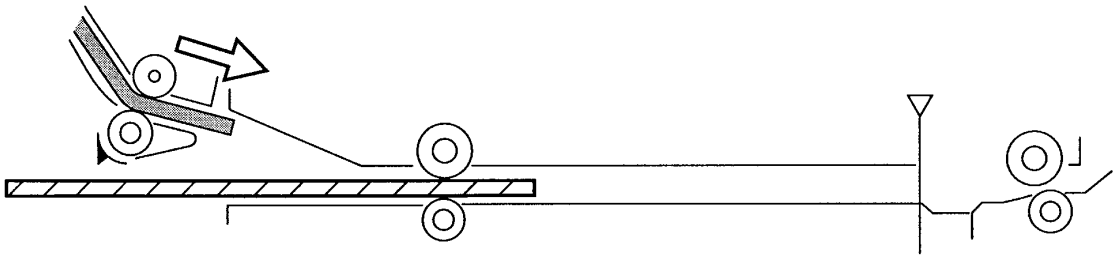


Figure 3-416

5. The leading edge of the second copy paper butts against the set-back roller 1 and forms an arch.

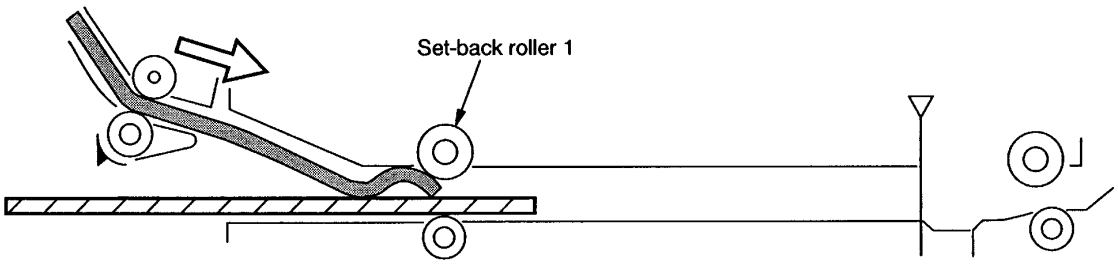


Figure 3-417

6. The set-back rollers 1 rotate clockwise, thereby pulling the trailing edge of the second copy paper out the duplexing unit inlet.

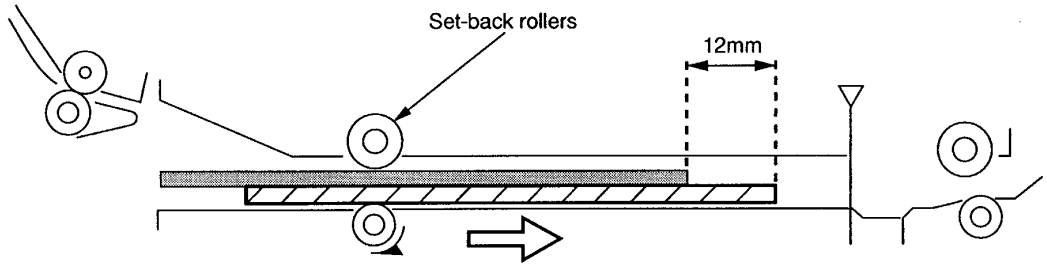


Figure 3-418

7. The set-back rollers 1 and 2 rotate counterclockwise, and the leading edge of the second copy paper stops at a point about 12 mm past the set-back roller 1.

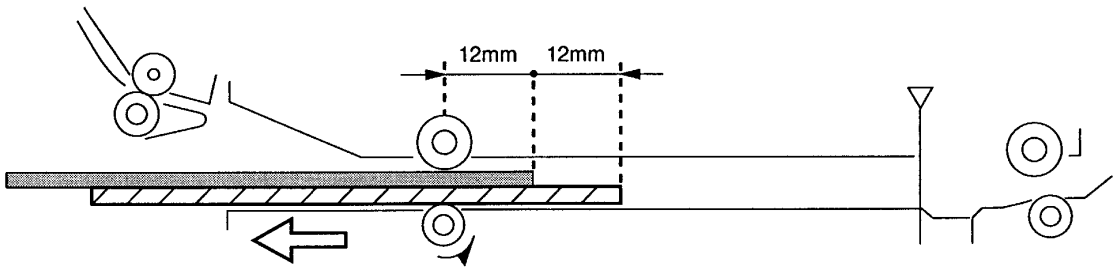


Figure 3-419

8. Operations 4 through 7 are repeated for as many times as there are copies to make, and the copies are stacked in the duplexing unit.

26

9. The set-back rollers 1 rotates counterclockwise, thereby stopping the trailing edge of the first copy paper 6 mm before the set-back rollers 1.

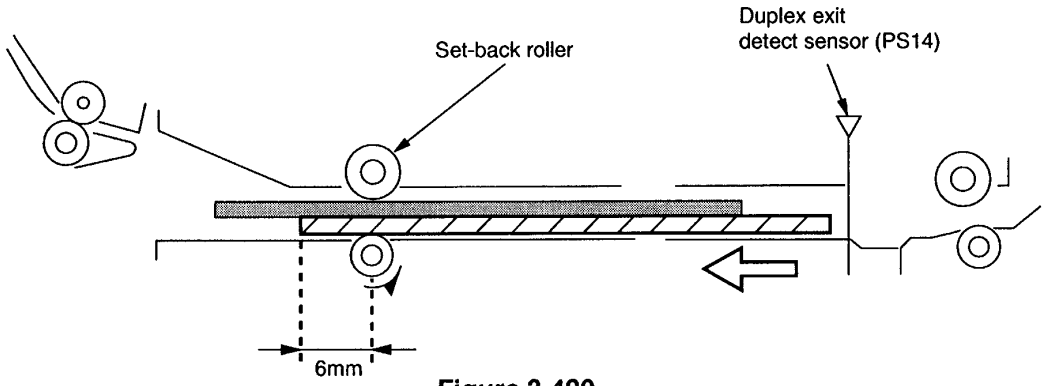


Figure 3-420

3. Re-Pick Up Operation

After copying on the first side, the copy paper stacked in the duplexing unit is picked up once again for copying on the second side.

The machine's duplexing unit outlet is equipped with a flapper to improve separation of stacked paper, and the operation is as described below.

Sequence of Operations (re-pick up; A4, 2 copies)

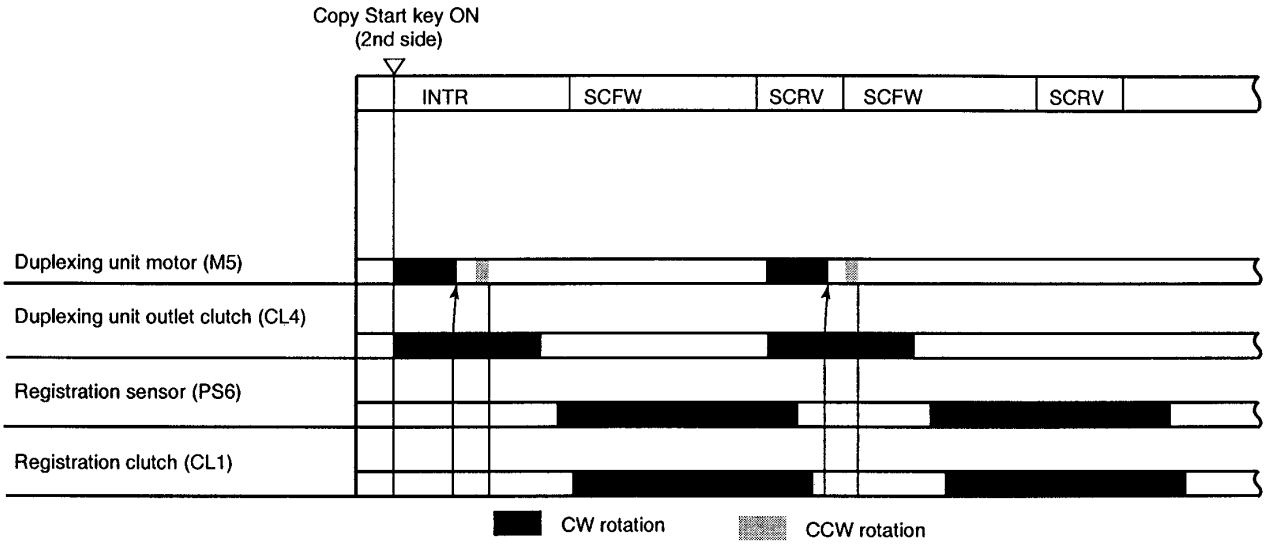


Figure 3-421

1. After the Copy Start key is pressed for the second side, the set-back roller and the duplexing unit outlet roller rotate clockwise.

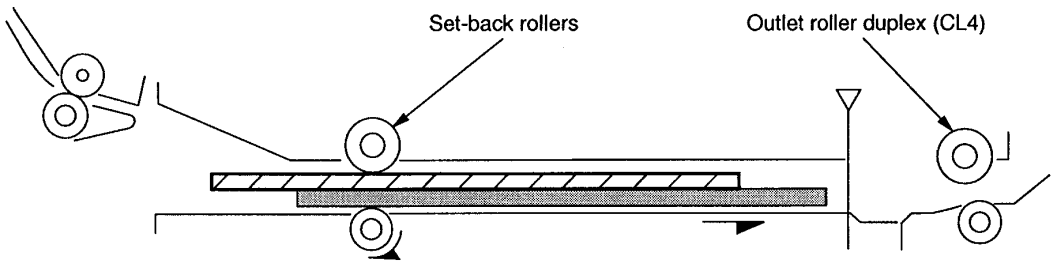


Figure 3-422

2. When the first copy paper reaches the duplexing unit outlet sensor, the set-back roller and the duplexing unit outlet roller stop; the outlet roller duplex rotates.

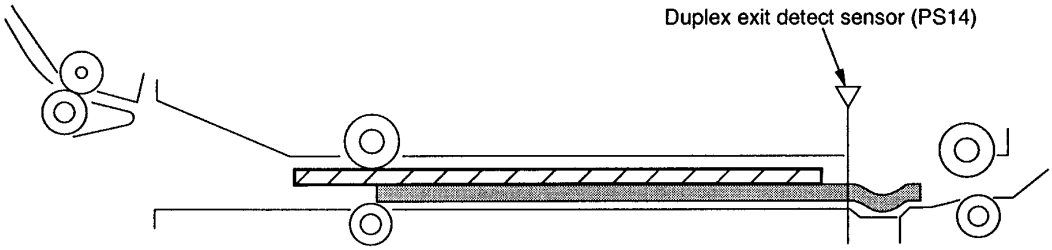


Figure 3-423

3. When the trailing edge of the first copy paper leaves the set-back roller, the set-back roller rotates counterclockwise, thereby returning the second copy paper.

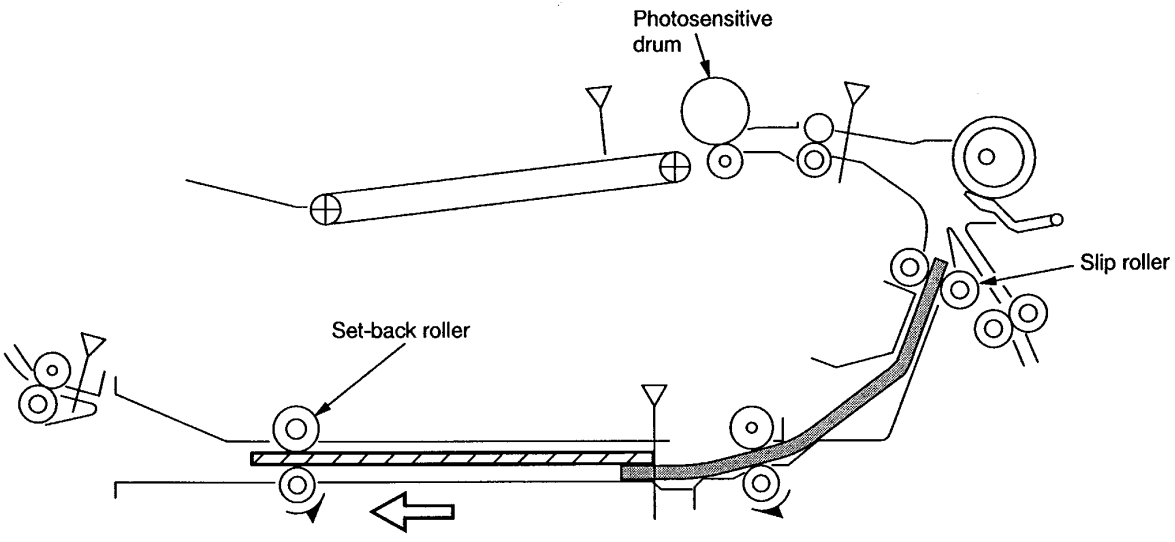


Figure 3-424

29

4. When the registration sensor turns ON, the set-back roller and the duplexing unit outlet roller rotate clockwise to pick up the second copy paper.

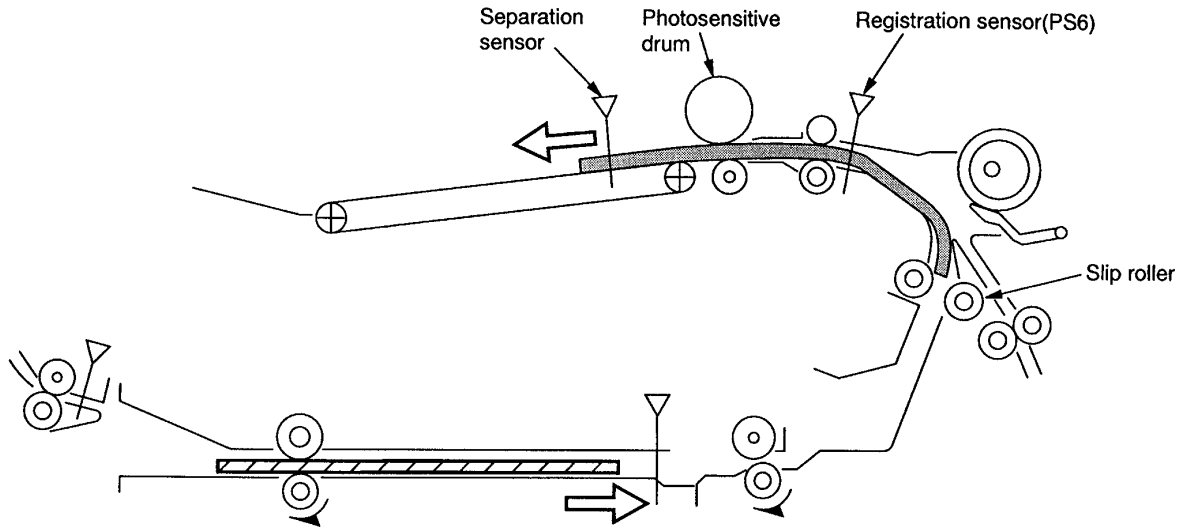


Figure 3-425

30

I. Fixing/Delivery Assembly

1. Controlling the Fixing Roller Temperature

The upper and lower rollers of the fixing assembly and the delivery roller of the delivery unit are driven by the main motor (M1).

The upper roller is heated by a heater (H1:900W) built in it.

The DC controller monitors the surface temperature of the upper roller by means of two thermistor (TH1, TH2) so as to control the temperature to a specific value.

The temperature of the upper fixing roller is controlled as follows (paper area):
160°C (at standby, during copy operation)
175°C (during copy operation)

To prevent drops in the temperature of the upper roller during continuous copy operation, the control temperature is as follow, measured with main thermistor (TH1) Located out of paper area.

Aux themistor (TH2) is at same position of main thermistor and is checking correct function of TH1.

Target temperatures for the following size paper:

A3 – A4
Argentine letter
Ledger – Letter
Government letter – Executive
Government Korea

Peak number	Target temperature
1	135
2	142
3	146
4	149
5	153
6	155
7	157
8	159
9	160
10	161
11	162
12	163
13	163
14	164
15	164
16	165
17	165
18	166
19	166
20	166
> 21	167

B4 – B5
Oficio Equador
Argentine Legal
Argentine Letter R
Officio – Oficio Bolivia
Foolscap – Legal – Letter R – Mini

Peak number	Target temperature
1	126
2	140
3	148
4	153
5	158
6	162
7	165
8	167
9	170
10	171
11	173
12	175
13	176
14	178
15	179
16	180
17	180
18	181
19	181
20	182
21	182
22	183
23	183
24	184
25	185
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41	189
42	189
43	189
44	190
45	190
46	190
47	190
48	190
49	190
50	190
51	190
52	190
53	190
54	190
55	190
56	190
> 57	191

A4R – A5 – Folio
Australian Foolscap
Government Letter R – Government Legal
Government Korea R
Executive R

Peak number	Target temperature
1	134
2	145
3	149
4	154
5	160
6	164
7	168
8	171
9	173
10	175
11	176
12	178
13	179
14	180
15	181
16	182
17	183
18	184
19	184
20	185
21	186
22	187
23	188
24	188
25	189
26	189
27	190
28	190
29	191
30	191
31	192
32	192
33	193
> 34	194

B5R – B6
A5R – A6
Mini (STM) R
B6R
A6R
Postcard

Peak number	Target temperature
1	124
2	138
3	147
4	154
5	160
6	165
7	169
8	171
9	173
10	175
11	177
12	179
13	181
14	182
15	183
16	184
17	185
18	187
19	188
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34	196
35	197
36	197
37	197
38	198
39	198
40	199
41	199
42	199
43	199
44	200
45	200
46	201
47	201
48	202
49	202
50	202
51	202
52	202
> 53	203

Table 3-403

The copier is equipped with three protection mechanisms to prevent the fixing heater from going ON at wrong timing.

- The microprocessor monitors the voltage of TH1 and indicates 'E000' or 'E001' or 'E002' or 'H003' in response to an error.
- If the voltage of TH1 and TH2 falls below about 0.9 V (equivalent of 215°C), the error detection circuit cuts off the supply power to the fixing heater regardless of the output of the microprocessor.

If the inside temperature of the thermal switch rises above 220°C, the power to the fixing heater will be off.

Note:
Once the contact of the thermoswitch (TS1) opens, the thermoswitch cannot be used unless cooled to 0°C or less; the contact will not recover at ambient temperature.

2. Oil Application Roller

The upper fixing roller is provided with an oil application roller for cleaning and application of oil. Normally, the oil application roller remains away from the fixing roller, and it comes into contact with the upper fixing roller only when copy paper passes through.

The mechanism is driven by the oil application solenoid (SL6); SL6 goes ON 1 sec after the registration roller goes ON; it then goes OFF as soon as the main motor (M1) goes OFF thereby bringing the oil application roller into contact with the upper fixing roller.

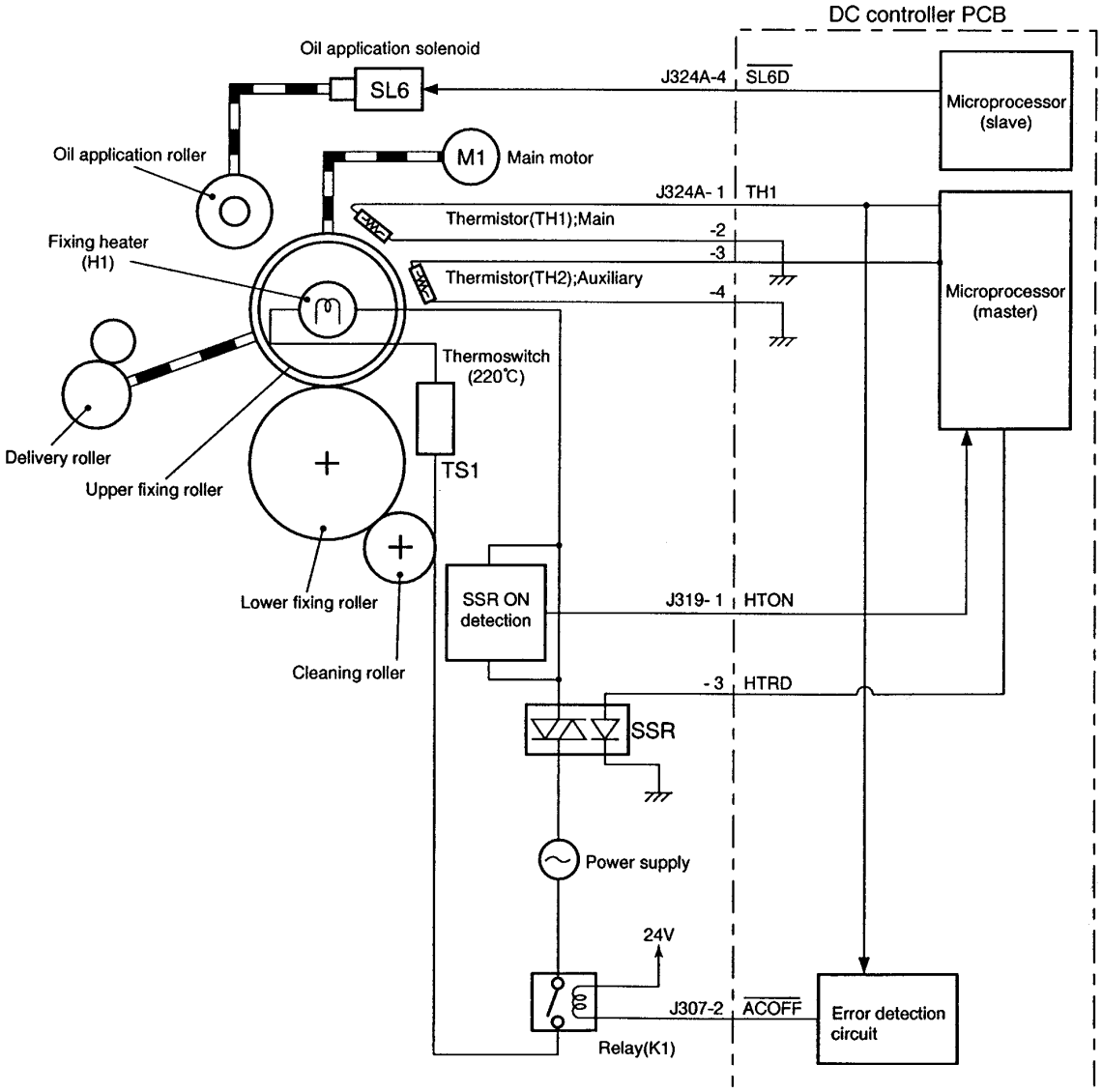


Table 3-442

3. Operation of Fixing Assembly Temperature Control System

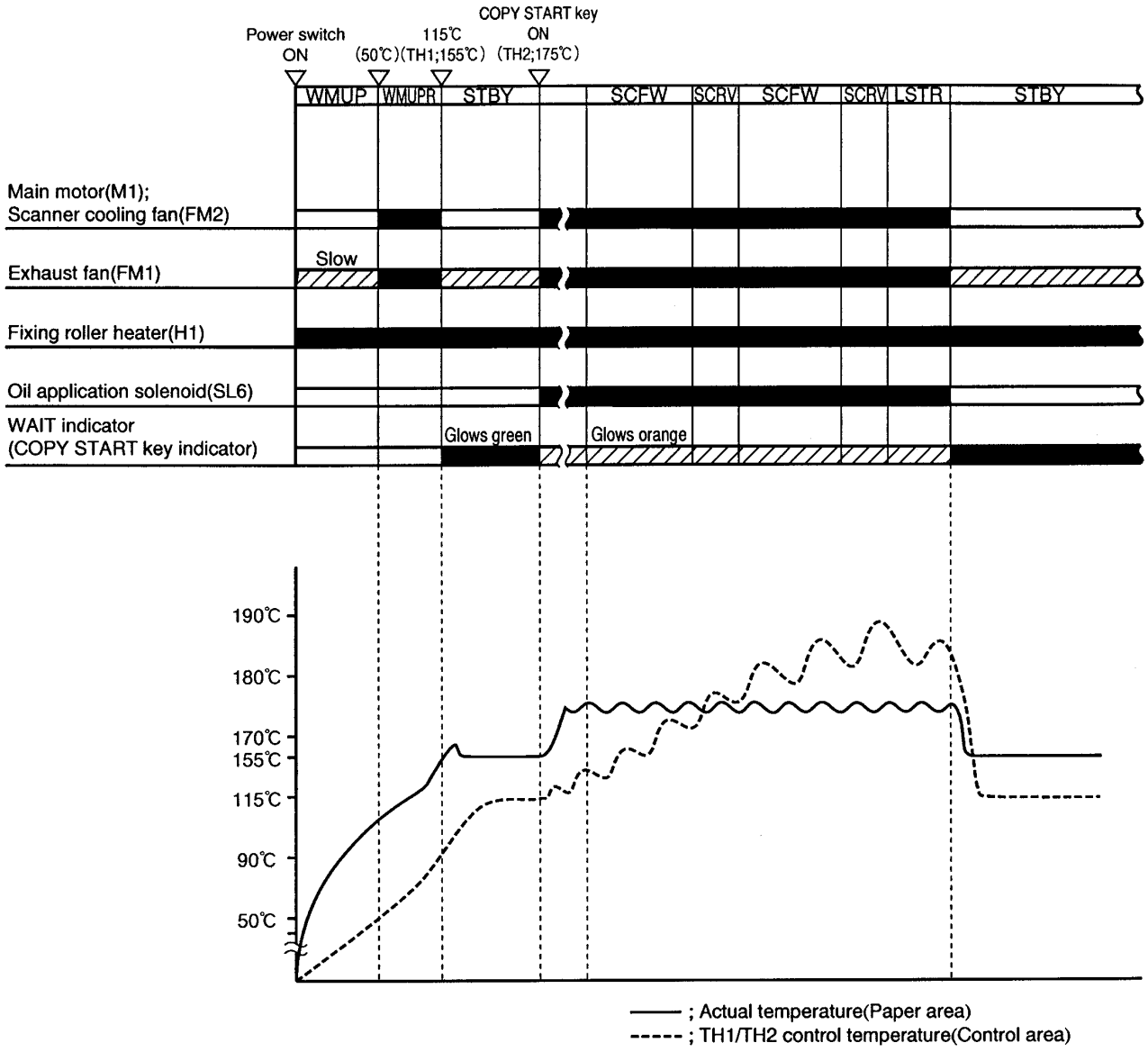


Figure 3-443

4. Using Adjustment Mode ('3') and Machine Settings Mode ('5')

1) Press the numeric keypad to change the number.
   - The number flashes.
   - If the number is negative, '%' turns ON. To enter a negative number, press the % key and enter the number on the numeric keypad.
2) Press the AE key.
   - The machine stores the value and stops flashing the value.
   - A press on the Start key starts copying operation.
3) To change the number once again, repeat steps 1) and 2).
4) Press the Clear key to return to item selection.

5. Using Operation/Inspection Mode ('4')

1) Press the Start key to execute the selected service mode.
2) Press the Stop key to stop and return to item selection.
   - If the mode is designed to stop automatically, the machine stops and automatically returns to item selection.

6. Resetting Error Codes (back-up codes)

If 'E000', 'E001', 'E002', 'E003', or 'E004' is indicated, remove the cause of the error and reset the code that has been backed up.

1) Open the front door, and insert the door switch actuator.
2) While holding down the service mode switch (SW850) on the service PCB with a hex key, press the power switch.
3) Turn OFF/ON the power switch.

7. Recording on the Service Label

Figure 3-601 shows the label attached behind the front door. Each machine is adjusted and set at the factory, and the appropriate values are recorded on the label.

Be sure to record any new settings you entered in the field on the label. Further, if you have replaced the DC controller, be sure to enter the settings recorded on the label.

If you have replaced the drum unit or the composite power supply, be sure to enter the settings recorded on the labels attached to the drum unit or composite power supply (service parts), and record these settings on the label.

Program	Meaning	Value
302	AE curve shift	
303	AE curve slope	
304	Fixing offset temperature	
305	Register	
306	Leading edge	
307	Register B-side	
308	Leading edge B-side	
309	Trailing edge	
310	Stack-bypass tail	
311	Blank home	
312	Blank home reduction	
315	APVC voltage	
316	APVC current	
318	ATVC compensation	
319	Stack-bypass loop	
320	Main register loop	
321	C1_cl_off	
322	C2_cl_off	
323	C3_cl_off	
324	Duplex paper stack adj	
325	Duplex inversion roller	
326	Halogen lamp intensity	
327	Duplex input loop	
328	Duplex output loop	

Figure 3-602

C. Control Display Mode ('1')

- To select an item, press the appropriate number on the numeric keypad and then the Start key.
- To deselect an item, press the Clear key.
- A press on the Start key while a description of the selected service mode is indicated will execute appropriate copying operations.

No.	Service mode	Description
101	Jam location	Indicates the jam location on the copy counter indicator. (See the next page.)
103	Primary current buffer display	unit: μA
104	Primary charging voltage display	unit: V To obtain the actual primary charging voltage, put the indicated value into negative and subtract 1000.
105	Primary current display	unit: μA
106	Intensity display	unit: lux To obtain the actual intensity (lux), divide the indicated value by 100.
107	Jam history	See the next page.
108	Error history (E indications)	Indicates a history of the most recent ten errors. A press on the '1', '2', '3', '4', '5', '6', '7', '8', '9', or '0' key on the numeric keypad will indicate the either of most recent through tenth most recent error.
109	Fixing main thermistor (TH1) detection temperature	unit: °C
110	Fixing target temperature	unit: °C
112	AE sensor output	Normal if the value changes for each original when making copies in AE.
113	ROM version No.	Indicates the parts revision number of the ROM.
114	ROM release No.	Indicates the version of the program.
116	AE scan intensity display	Normal if between '68' and '72'.
120	Jam interval	
121	Jam paper size data	
123	Jam document handler copying data	

Table 3-602

No. 101 Jam Location Display

The type of jam is indicated using the copy counter.

LED (ON)	Type of jam
J1	Pre-registration delay jam
J2	Pre-registration stationary jam
J3	Separation delay jam
J4	Separation stationary jam
J5	Delivery delay jam
J6	Delivery stationary jam
J7	Sorter jam
J8	Door open jam
J9	Cassette 3 pick-up delay jam
JA	Cassette 3 pick-up stationary jam
Jb	Cassette 4 pick-up delay jam
JC	Cassette 4 pick-up stationary jam

Table 3-603

LED (ON)	Type of jam
JD	Cassette 5 pick-up delay jam
JE	Cassette 5 pick-up stationary jam
JF	Duplexing unit inlet delay jam
J10	Duplexing unit outlet delay jam
J11	Duplexing unit registration delay jam
J12	Duplexing unit inlet stationary jam
J13	Vertical path roller 2 delay jam
J14	Vertical path roller 1 delay jam
J15	Vertical path roller 2 stationary jam
J16	Vertical path roller 1 stationary jam
J17	Deck outlet delay jam
J25	Jam due to electrical causes (IE: Main power off during copy)

Table 3-604

No. 107 Jam History

A press on the '1' through '10' on the numeric keypad indicates the most recent ten jams.
A press on '1' indicates the most recent jam.
A press on '2' indicates the second most recent jam.
A press on '3' indicates the third most recent jam.
A press on '4' indicates the fourth most recent jam.
A press on '5' indicates the fifth most recent jam.
A press on '6' indicates the sixth most recent jam.
A press on '7' indicates the seventh most recent jam.
A press on '8' indicates the eighth most recent jam.
A press on '9' indicates the ninth most recent jam.
A press on '10' indicates the tenth most recent jam.

No. 108 Error History

A press on the '1' through '10' on the numeric keypad indicates the most recent ten errors.
A press on '1' indicates the most recent error.
A press on '2' indicates the second most recent error.
A press on '3' indicates the third most recent error.
A press on '4' indicates the fourth most recent error.
A press on '5' indicates the fifth most recent error.
A press on '6' indicates the sixth most recent error.
A press on '7' indicates the seventh most recent error.
A press on '8' indicates the eighth most recent error.
A press on '9' indicates the ninth most recent error.
A press on '10' indicates the tenth most recent error.

37

No. 120 Jam interval indication

By pushing key	Jam interval indication 120
1	First lates jam interval.
2	Second latest jam interval.
3	Third latest jam interval.
4	Fourth latest jam interval.
5	Fifth latest jam interval.
6	Sixth latest jam interval.
7	Seventh latest jam interval.
8	Eigth latest jam interval.
9	Nineth latest jam interval.
0	Tenth latest jam interval.

Table 3-605

It displays the number of copies made (in tens: 1 to 999) between two jams occurence.

No. 121 Jam paper size data indication
No. 122 Jam drawer selection data indication
No. 123 Jam Document Handler copying data indication

By pushing key	Jam data indication
1	First lates jam data.
2	Second latest jam data.
3	Third latest jam data.
4	Fourth latest jam data.
5	Fifth latest jam data.
6	Sixth latest jam data.
7	Seventh latest jam data.
8	Eigth latest jam data.
9	Nineth latest jam data.
0	Tenth latest jam data.

Table 3-606

Service program 121 displays the paper size at jam occurrence (B5, B5R, B4, A3, A4, A4R, A5, A5R, A6R)

Service program 122 displays the drawer selection at jam occurrence:

0	Upper drawer.
1	Lower drawer.
2	Stack bypass.
3	Optional 1st drawer.
4	Optional 2nd drawer.
5	Optional 3rd drawer.
6	Optional deck.
7	Duplex unit.

Table 3-607

Service program 123 displays if Document Handler was used for copying at jam occurrence (1 = DH used)

VIII. STANDARDS AND ADJUSTMENTS

A. Electrical

1 Adjustment after Replacing PCBs

You must perform the following adjustments whenever you have replaced the following PCBs:

a. DC Controller PCB

1) Start service mode (adjustment mode [3]), and enter the settings indicated on the Service Mode label attached behind the front door.
2) Perform the multifeeder paper width sensor adjustment.
3) Perform scanning lamp intensity adjustment.
4) Perform AE adjustment.

As necessary, change the settings of service mode and user mode.

Caution:

If you changed any of the settings indicated in the Service Mode label, be sure to record the new settings on the label.

b. Composite Power Supply PCB

1) Select service mode No. 315 through No. 318 (adjustment mode [3]), and enter the settings indicated on the label attached to the composite power supply PCB.

Be sure to record any new settings in the Service Mode label.

c. AE Sensor PCB

1) Perform AE adjustment.

Caution:

If you changed any of the settings indicated in the Service Mode label, be sure to record the new settings on the label.

d. Light Adjustment Sensor PCB

1) Perform scanning lamp intensity adjustment.
2) Perform AE adjustment.

Caution:

If you changed any of the settings indicated in the Service Mode label, be sure to record the new settings on the label.

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2 Adjusting the Scanning Lamp Intensity

Select service mode No. 407.

1) Place the Test Sheet NA3 on the copyboard, and close the copyboard cover.
2) Turn OFF AE, and make copies in continuous mode at copy density 5 and VR850 (DC bias) at center.
3) Press the zoom + keys or zoom - key so that the optimum image is obtained.
   - If the image is too light, press the zoom + key.
   - If the image is too dark, press the zoom - key.

Reference:

1. What is referred to as optimum image is an image in which gray scale No. 8 on the copy corresponds to gray scale No. 4 through No. 7 on the Test sheet while the copy is free of fogging.
2. Turning the VR excessively can cause E220 to be displayed. If this is the case, turn the VR 301 to the center position, turn OFF/ON the power, and make adjustments once again.

Caution:

After making the adjustment, be sure to perform AE adjustment.

3 AE Adjustment

Perform AE adjustment using the following three service modes:

① AE Basic Adjustment
- No. 410 scanner forward stop
- No. 408 scanning lamp ON check
- No. 208 AE sensor voltage display
- No. 301 AE scan lamp intensity automatic adjustment

② No. 302 AE mode copy density (developing bias) reference adjustment

③ No. 303 AE mode copy density (developing bias) slope adjustment

If the copy density is not optimum after performing AE basic adjustment ① No. 410, No. 408, No. 208, and No. 301, try ② No. 302 and ③ No. 303 in sequence.

39

Revised Procedure For Adjusting The Scanning Lamp Intensity On NP6621

References

a) *Service Manual, Chapter 3 Operations and Timings, VIII Standards and Adjustments, A. Electrical, 2. Adjusting the Scanning Lamp Intensity*
(Formerly page 3-127 reported in Service Manual of NP6521)

b) *Service Handbook, Chapter 2 Standards and Adjustments, B. Electrical, 2. Adjusting the Scanning Lamp Intensity*
(Formerly page 2-18 reported in Service Handbook of NP6521)

Please, modify as follows.

Select service mode No. 407.

1) Place the Test Sheet NA3 on the copyboard, and close the copyboard cover.
2) Turn OFF AE, and make copies in continuous mode at copy density 5 and with VR850 (DC bias) at centre.
3) Press the zoom + key or zoom - key so that the optimum image is obtained.
   - If the image is too light, press the zoom + key.
   - If the image is too dark, press the zoom - key.
4) Turn OFF / ON the power to store the new value in service mode 407.

Reference:

1. What is referred to as optimum image is an image in which gray scale No. 8 on the copy corresponds to gray scale No. 7 on the Test sheet while the copy is free of fogging.
2. Leaving the scanning lamp ON for more than 20 seconds can cause E220 to be displayed. If this is the case, turn OFF / ON the power to switch the lamp OFF and make adjustments once again.

Caution:

After making the adjustment, be sure to perform AE adjustment.

D. Fan

1. Removing the Exhaust Fan

1) Open the front door.
2) Pull the open/close door, and open the body.
3) Remove the relay connector ①.

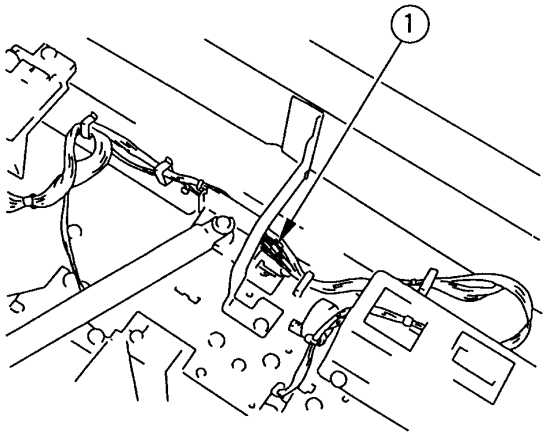


Figure 4-108

4) Remove the screw ② from the rear and the two screws from the front ③.

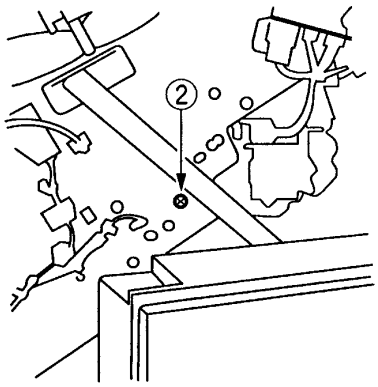


Figure 4-109

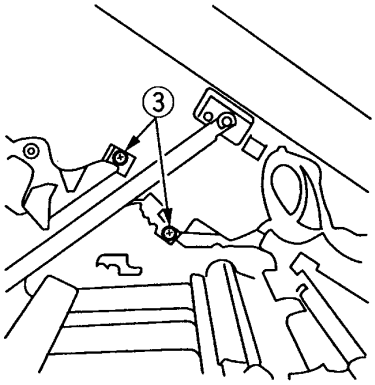


Figure 4-110

5) Holding the exhaust fan assembly ④, pull it off to the front.

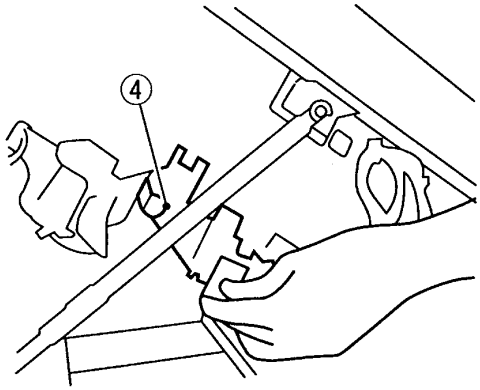


Figure 4-111

6) Remove the four screws ⑤, and remove the air conveyor ⑥,.then remove the fan ⑦ together with the two rubbers ⑧.

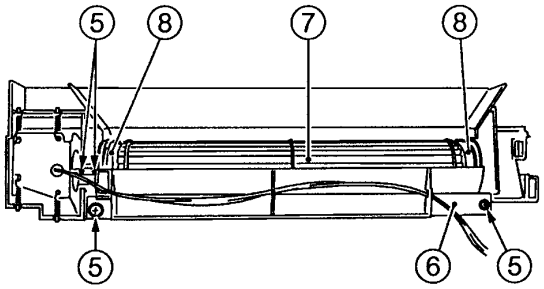


Figure 4-112

2. Removing the Scanner cooling fan

1) Open the front door.
2) Pull the open/close door, and open the body.
3) Remove the rear cover.
4) Remove the four screws ①, and remove the scanner cooling fan ②.

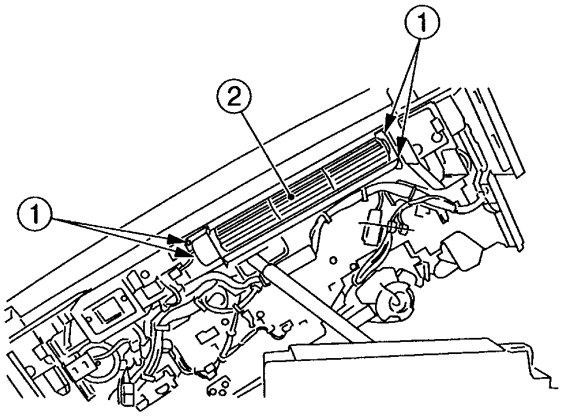


Figure 4-113

IV. EXPOSURE SYSTEM

A. Illuminating Assembly

1. Removing the Scanning Lamp/Fluorescent Heater

1) Disconnect the power plug.
2) Remove the copyboard glass.
3) Remove the upper rear cover.
4) Move the scanner unit to the center.
5) Remove the two screws ①, and remove the light-blocking plate ②.

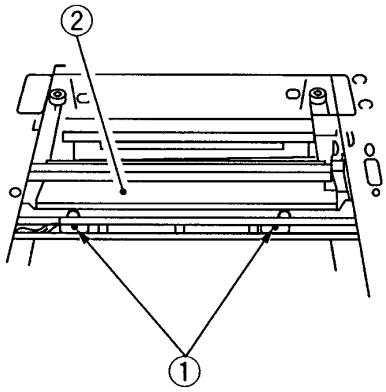


Figure 4-401

6) Remove the screw ⑤, and disconnect the connector ⑥.
7) Pull the halogen lamp ⑦ slowly toward the front to remove.

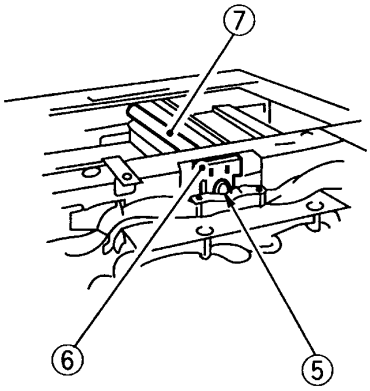


Figure 4-402

Caution:
Do not touch the halogen lamp. (If necessary, wrap lint-free paper around it.)

2. Removing the Blank Exposure Assembly

1) Open the front cover.
2) Pull the open/close lever to open the body.
3) Remove the inside cover.
4) Remove the exhaust fan and the cartridge. (See "Removing the Exhaust Fan.")
5) Disconnect the connector (J315) ① on the DC controller PCB; then, remove the two screws ②.

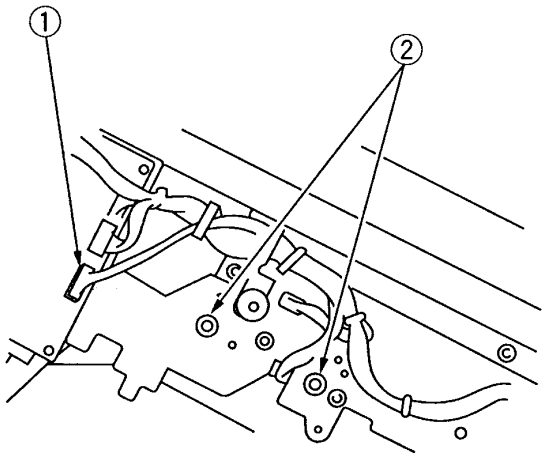


Figure 4-403

6) Push up the blank exposure assembly ③ lightly, and pull it off toward the bottom front.

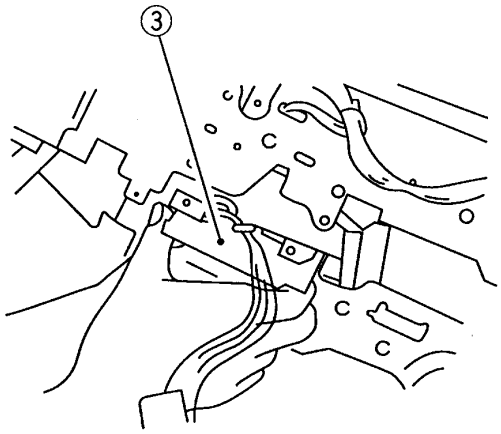


Figure 4-404

VII. FIXING SYSTEM

1. Construction

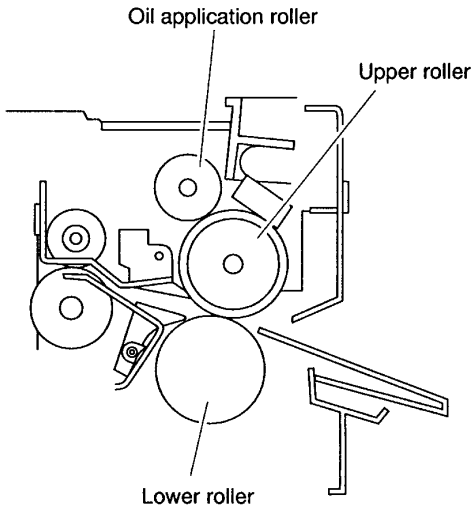


Figure 4-701

2. Removing the Upper Fixing Unit

1) Open the front cover.
2) Open the top body.
3) Remove the two screws ①, and remove the fixing assembly cover ②.

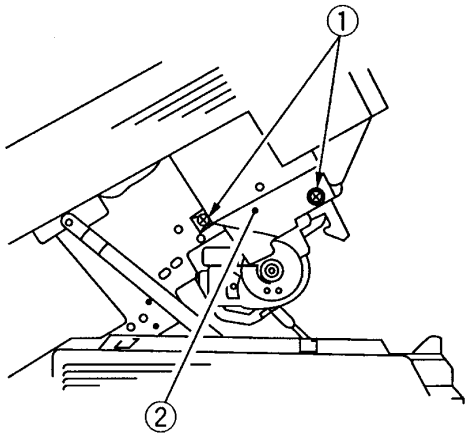


Figure 4-702

4) Disconnect the three connectors ③, and remove the screw ④.

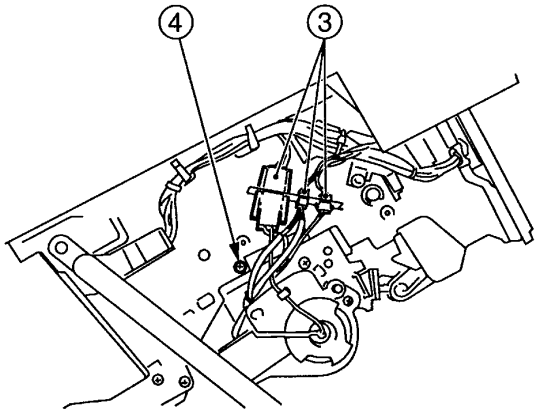


Figure 4-703

5) Open the fixing shutter ⑤ with the screw driver inserted into the hole ⑦, after lifting the fixing shutter.

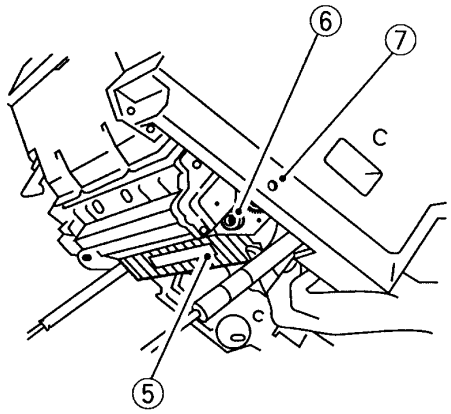


Figure 4-704

6) Pull out the upper fixing unit slowly toward the rear.

Caution:
Do not touch the fixing roller.

3. Removing the Fixing Roller

Caution:
Wait until the heater and the heater connector have cooled adequately before starting the following work:

1) Remove the upper fixing unit. (See "Removing the Upper Fixing Unit.")
2) Remove the front and rear cover.
3) Remove the front wire (stopper).
4) Pull toward rear the fixing roller.
5) Remove the two screws ①, and pull out the cleaning roller to the front.

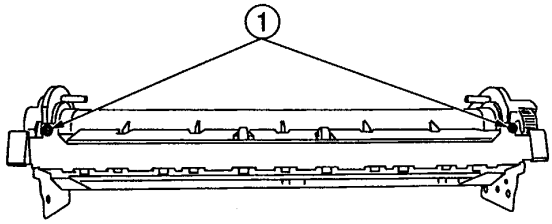


Figure 4-705

6) Remove the four screws ②, and remove the fixing cover (both front and rear).

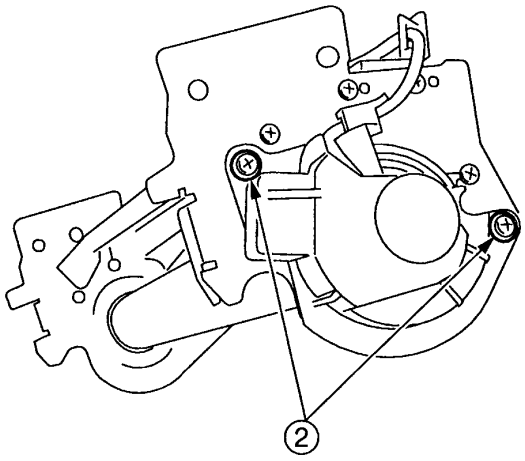


Figure 4-706(front)

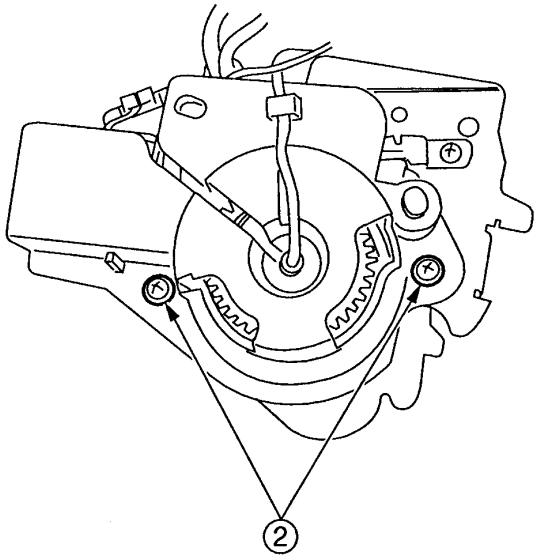


Figure 4-706(rear)

7) Open the two wire saddles ③, and remove the two fastons ④; then, remove the heater.

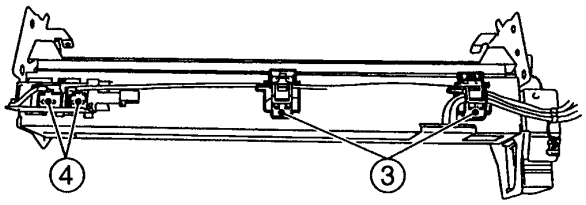


Figure 4-707

8) Push the thermal switch ⑤ in the direction of the arrow, and remove it.

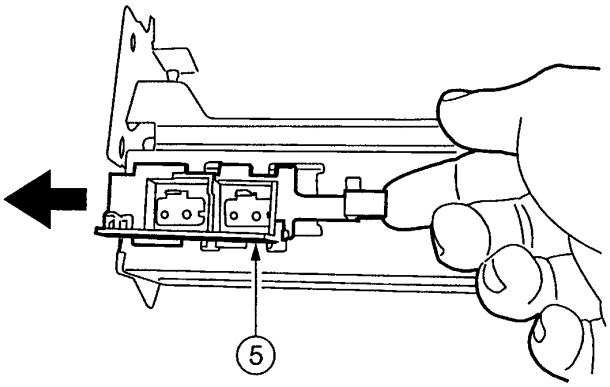


Figure 4-708

9) Remove the screw ⑥, and remove the metal plate ⑦.

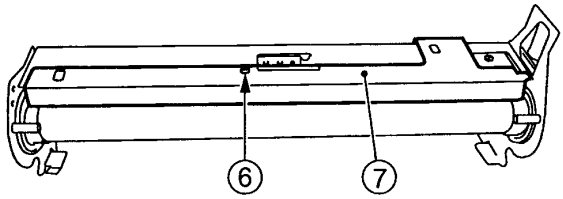


Figure 4-709

10) Remove the screw ⑧, and remove the thermistor ⑨.

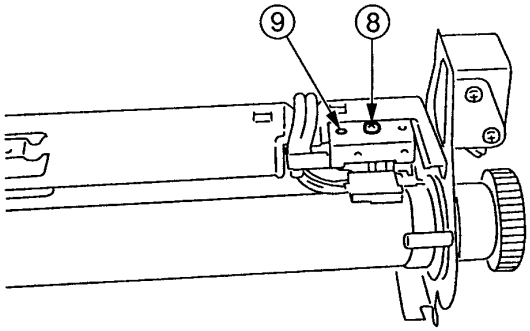


Figure 4-710

11) Remove the E-ring ⑩ at the front, and remove the bush ⑪ and the bearing ⑫; then, pull out the upper roller.

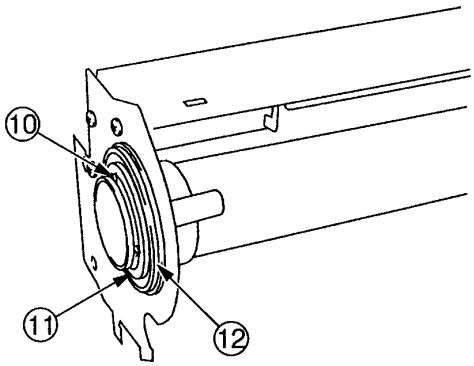


Figure 4-711

12) Remove the three E-rings ⑬ at the rear, and pull out the gear ⑭ and the bush ⑮.

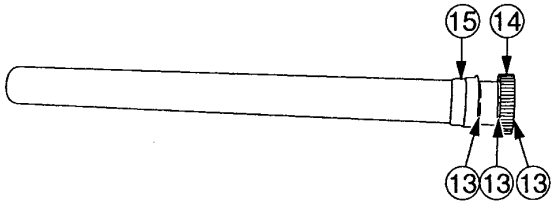


Figure 4-712

4. Points to Note after Replacing the Upper Fixing Unit

- If you have replaced the upper fixing unit, you must enter the temperature adjustment in service mode No. 304. (See the Service Handbook.)

Caution:
Do not touch the surface of the heater.

II. DURABLES AND CONSUMABLES

Of the parts used in the machine, those given in the table may prove to require replacement once or more over the period of warranty because of wear or damage; replace them as necessary referring to the guide.

A. Copier

As of FEB. 1998

No.	Parts name	Parts No.	Q'ty	Life (copies)	Remarks
1	Pick-up roller	FB3-8771-00P	2	100,000	Actual copies made.
2	Pick-up separation pad	FG5-6792-020	2	100,000	Actual copies made.
3	Multifeeder pick-up roller	FB1-8581-000	1	100,000	Actual copies made.
4	Multifeeder separation pad	FB2-2167-000	1	100,000	Actual copies made.
5	Halogen Lamp	FB7-3271-000	1	100,000	
6	Fixing cleaning roller	FB3-4494-00P	1	100,000	
7	Oil-applying roller	FA0-0353-00P	1	60,000	
8	Transfer roller	FB2-2223-000	1	100,000	
9	Fixing upper unit	FG5-2928-140	1	200,000	
10	Lower fixing roller	FB2-2316-000	1	200,000	
11	Upper fixing separation claw	FB1-0301-000	4	200,000	
12	Lower fixing separation claw	FB1-7275-000	4	200,000	
13	Pre-exposure lamp	FG5-2891-000	1	200,000	Replace in units of 12 or 12-1 through 12-4.
14	Developing assembly	FG5-3275-04P	1	100,000	
14-1	Developing cylinder	FB2-3834-000	1	100,000	
14-2	Side seal	FB2-3825-00P	2	100,000	
14-3	Developing blade unit	FG5-7012-00P	1	100,000	
15	Scanner cooling fan filter	FC2-8902-00P	1	100,000	

Note:
The above values are estimates only and subject to change based on future data.

IV. SERVICING CHART

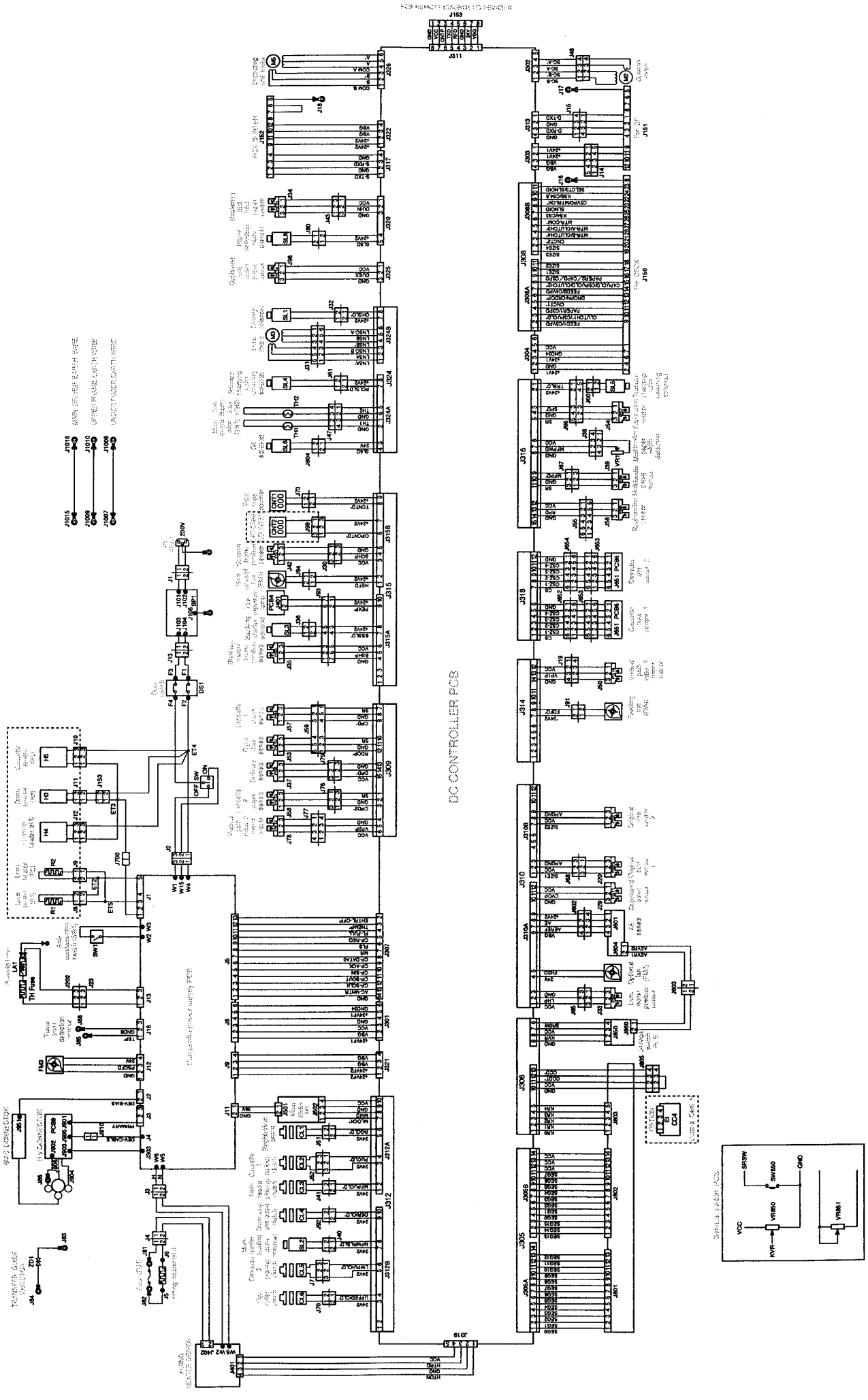
Caution:
Do not use solvents or oils other than those indicated.

A. Scheduled Maintenance Work

△: clean ●: replace ☆: lubricate □: adjust ◎: check or clean

Unit	Parts	every 20,000	every 60,000	every 100,000	every year	Remarks
External Control	Copyboard glass	△				Use alcohol.
Pick-up assembly	Pick-up roller	△				
Scanner drive assembly	Scanning rail		☆			Use alcohol; then, apply lubricant.
Feeding assembly	Transfer guide assembly	△				Use a moist cloth.
	Feeding belt	△				
	Feeding assembly PCB	△				
Optical path	Scanning lamp reflecting plate	△				Use a blower brush; if the dirt cannot be removed, use alcohol.
	Scanning lamp side reflecting plate	△				
	No. 1 through No. 6 mirrors	△				
	Lens	△				
	Dust-proofing glass	△				
Drum kit	Clearner bottom	△				Actual number of times the drum ikit has been used.
	Drum support shaft		△			
Charging assembly	Charging roller	△				Use a cotton wad.
	Charging roller cleaner	△				
	Static eliminator	△		●		
Developing assembly	Developing roll	△				
Fixing assembly	Lower fixing roller	△				Use cleaning oil.
	Separation claw (lower, upper)	△				Use solvent..
	Fixing inlet guide	△				
Delivery assembly	Delivery guide/ tray	△				Use alcohol.
	Fixing feeding spacer	△				
	Delivery roll	△				
Duplexing unit	Set-back roller			△		Use alcohol.
	Re-pick-up roller			△		

C. GENERAL CIRCUIT DIAGRAM



Notes

Note 1
Stapler Sorter-D2, change of name: D1 → D2

Note 2
Energy save mode has been added

Note 3
New light source used: halogen lamp

Note 4
Warm up time is 30 seconds

Note 5
New type of Fixing unit

Note 6
Different lay-out of operation panel, less functions than NP6521

Note 7
Close-up of additional functions

Note 8
User Mode: less possibilities than NP6521

Note 9
New function: Auto energy saver time

Note 10
New type of Fixing unit

Note 11
Operation of new Fixing unit

Note 12
Added fans: Exhaust, feeding and scanner cooling fan

Note 13
New scanning lamp

Note 14
Scanner cooling fan

Note 15
Timing diagram of new scanning lamp

Note 16
Modified timing diagram – details

Note 17
Lay-out of original detection sensors

Note 18
Different type of lamp controller (halogen lamp)

Note 19
Different sequence of duplex copies

Note 20
Modified timing diagram duplex copies

Note 21
Only 1 set of set-back rollers

Note 22
Only 1 set of set-back rollers

Note 23
Explanation of duplex operation

Note 24
Explanation of duplex operation (continued)

Note 25
Explanation of duplex operation (continued)

Note 26
Explanation of duplex operation (continued)

Note 27
Modified timing diagram duplex operation

Note 28
Explanation of duplex operation (continued)

Note 29
Explanation of duplex operation (continued)

Note 30
Explanation of Fixing unit

Note 31
Explanation of Fixing unit target temperature

Note 32
Explanation of Fixing unit (continued)

Note 33
Explanation of Fixing unit operation temperature control

Note 34
Modified lay-out of service label

Note 35
New adresses service mode '1'

Note 36
Jam code explanation

Note 37
Jam code explanation (continued)

Note 38
New adjustment procedure scanning lamp

Notes

Note 39
Revised adjustment procedure scanning lamp

Note 40
Removal procedure new fans in machine

Note 41
Replacement procedure scanning lamp

Note 42
Construction new Fixing unit

Note 43
Removal procedure fixing roller

Note 44
Removal procedure fixing roller (continued)

Note 45
New items in durables and consumables table

Note 46
New items in scheduled maintenance work table

Note 47
New General Circuit Diagram