# CLC5000

# SERVICE MANUAL

**REVISION 0**

Canon

**JAN.2001** **FY8-13GZ-000**



CANON CLC5000 REV.0 JAN. 2001 PRINTED IN JAPAN (IMPRIME AU JAPON)

## 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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***Printed in Japan***

***Imprimé au Japon***

## Caution

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

# 1 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. |
|  | Refers to the Copier Basics Series for a better understanding of the contents. |

# 2 Outline of the Manual

This Service Manual contains basic facts and figures needed to service the machine, Paper Deck-J1/K1, Buffer Pass Unit-B1, conducted to ensure a high level of performance and expected functions.

The following accessories come with separate service manuals or service informations; refer to them for details:

1. RDF-E3
2. Stapler Sorter-F2
3. Film Projector-E1
4. Editor-F1
5. ED Board-C1
6. Interface Board-E1
7. Preview Monitor Board
   * Refer to CLC1000 series service manual.

This Service Manual is organized as follows;

<Main body & Accessory>

| | | |
|---|---|---|
| Chapter 1 | General Description: | Features, specifications, how to operate |
| Chapter 2 | New Functions: | Principle operations of each unit; timing of operations; how to disassemble and assemble (special information from CLC1000 series only) If necessary, refer CLC1000 series service manual. |
| Chapter 3 | Installation: | Requirements on the site of installation, installation procedure |
| Chapter 4 | Maintenance And Inspection: | Periodically replaced parts table, consumables and durables table, scheduled servicing chart, scheduled servicing table |
| Chapter 5 | Troubleshooting: | Basic procedure for image adjustment, standards/adjustments, troubleshooting image faults, troubleshooting malfunctions |
| Appendix: | | General timing chart, general circuit diagrams |

<Service Mode>

<Error Codes>

The descriptions in this Service Manual are based on he following rules:

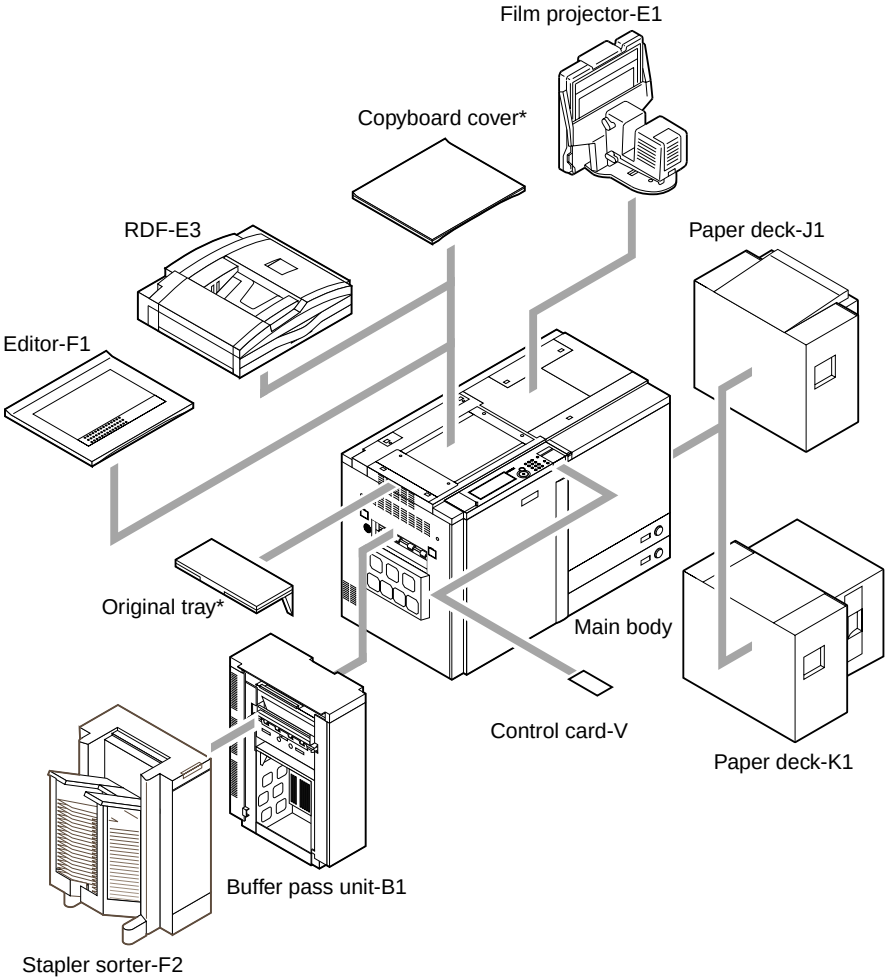
1. In each chapter, the uses of the function in question and its relationship to electrical and mechanical systems are discussed and the timing of operation of its associated parts is explained by means of outlines and diagrams.
   In the diagrams, the symbol  represents a mechanical path, while the symbol  with a name next to it indicates the flow of an electric signal.
   The expression “turn on the power” means turning on the power switch, closing the front cover, and closing the delivery cover so that the machine will be supplied with power.
2. In circuit diagrams (digital), a signal whose level is High is expressed as being ‘1’, while a single whose level is Low is expressed as being ‘0’; the level of voltage, however, varies from circuit to circuit.
   The machine uses CPUs, whose internal mechanisms cannot be checked in the field, and, therefore, are not explained. In addition, the machine’s PCBs are not intended for repairs at the user’s and, therefore, are explained by means of block diagrams: two types are used, i.e., between sensors and inputs of PCBs equipped with a control or drive function and between outputs equipped with a control or drive function and loads; in addition, functional block diagrams are used at times.

Changes made to the machine for product improvement are communicated in the form of a Service Information bulletin as needed. All service persons are expected to go through all service documentation including the bulletins and be equipped to respond to the needs of the field (as by being able to identify possible causes of problems).

# System Configuration

CLC5000 may be configured as follows:

*Standard




Accessary boards as follows:

- ED board-C1
- Interface board-E1
- Preview monitor board

# Main Body & Accessory
# SERVICE MANUAL


CANON CLC5000 REV.0 JAN. 2001

# Contents

## CHAPTER 1 GENERAL DESCRIPTION



## CHAPTER 2 NEW FUNCTIONS

# CHAPTER 3 INSTALLATION



# CHAPTER 4 MAINTENANCE AND SERVICING

# CHAPTER 5 TROUBLESHOOTING IMAGE FAULTS/ MALFUNCTIONS

# APPENDIX

# CHAPTER 1

# GENERAL DESCRIPTION

# 1 Specifications

## 1.1 Type

| Body | Console |
|---|---|
| Copyboard | Fixed |
| Light source | Halogen lamp |
| Lens | Fixed lens array |
| Image reading | Photocell (BGR 3-line CCD); scanning by mirror with CCD fixed in place |
| Photosensitive medium | OPC drum (60-mm dia.); 4 pc. |
| Reproduction | Indirect statophotographic |
| Charging | Corona |
| Exposure | Laser beam |
| Contrast adjustment | Auto |
| Development | Toner projection (CMYK) |
| Toner supply | Manual (YMC, 750 g; K, 6450 g) |
| Paper source | Special front cassette (2 pc.), paper deck, multifeeder |
| Attraction | Static electricity (simultaneously with cyan transfer) |
| Transfer | Blade (transfer belt) |
| Separation | Static electricity |
| Photosensitive drum cleaning | Blade |
| Fixing | Heat roller (upper, 800 W; lower, 600 W) |

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# 1.2 Functions

| | | | | |
|---|---|---|---|---|
| Type of original | | Sheets, 3-D object (2 kg max.) | | |
| Maximum size of original | | A3 (297 x 420 mm)/11 x 17 (279 x 432 mm) | | |
| Reproduction ratio<br>auto ratio selection, zoom | | Direct (±0.5%); default enlargement/reduction (±1.0%; see Table 1-201); zoom, 25% to 400% (±1.0%, in 1% increments); | | |
| Wait time (20ºC) | | 9 min or less | | |
| First copy time (A4/LTR) | | 12 sec or less (A4/LTR) | | |
| Continuous copying | | 999 copies max. | | |
| Copying speed | | See T01-105-01. | | |
| Copy size | Cassette | Maximum: A3 (297 x 420 mm)/11 x 17 (279 x 432 mm)<br>Minimum: A5 (148 x 210 mm)/STMT (216 x 139.5 mm) | | |
| | Multifeeder | Maximum: A3 extra length (305 x 457 mm)<br>Minimum: Postcard (A6 non-default) | | |
| | Paper deck | A4 (210 x 297mm), LTR (216 x 279 mm), 11 x 17 (279 x 432 mm), A3 extra-length (305 x 457 mm), 12 x 18 (305 x 457 mm), B5 (182 x 257 mm), A3 (297 x 420 mm), B4 (257 x 364 mm) | | |
| Type of copy paper | Cassette | Plain paper (80 to 105 g/m$^2$), transparency (special), thin paper (64 to 79 g/m$^2$) | | |
| | Multifeeder | Thin paper (64 to 79 g/m$^2$), plain paper (80 to 163 g/m$^2$), thick paper (106 to 163 g/m$^2$; including cast coated paper and special postcard), extra-thick paper (164 to 253 g; including cast coated paper and postcard), special paper 1/2, transparency (special) | | |
| | Paper deck (64 to 79 g/m$^2$) | Plain paper (80 to 105 g/m$^2$), transparency (special), thin paper | | |
| | Double-sided copy | Plain paper (105 g/m$^2$; auto double-sided and manual double-sided) | | |
| Cassette | w/o claw, center reference, 550 sheets (of 105 g/m$^2$ paper; approx.) | | | |
| Multifeeder | 250 sheets (of 81.4 g/m$^2$ paper; approx.) | | | |
| Paper deck | Stack height | Paper Deck-J1 | 205 mm (2000 sheets of 81.4 g/m$^2$ paper) | |
| | | Paper Deck-K1 | 410 mm (4000 sheets of 81.4 g/m$^2$) | |
| Delivery tray | 250 sheets (of 81.4 g/m$^2$ paper; approx.) | | | |
| Image margin | Single-sided | | Double-sided | |
| | Leading edge: 2.5±1.5 mm<br>Left/right: 2.0±1.5 mm<br>Trailing edge: 2.5±1.5 mm | | Leading edge: 2.5±2.0 mm<br>Left/right: 2.0±1.5 mm<br>Trailing edge: 2.5±2.0 mm | |
| Non-image width | Single-sided | | Double-sided | |
| | Leading edge: 2.5±1.5 mm<br>(in full image, 0.5±0.5 mm)<br>Let/right: 2.0±1.5 mm<br>(in full image, 0±1.0 mm) | | Leading edge: 2.5±2.0 mm<br>(in full in full image, 0.5±0.5 mm)<br>Left/right: 2.0±1.5 mm<br>(in full image, 0±1.0 mm) | |
| Reading resolution<br>(main scanning direction) | 400 dpi | | | |
| Reading resolution<br>(main scanning direction) | 400 dpi | | | |

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| | | |
|---|---|---|
| Density adjustment | | Manual (9 steps), color AE, BE |
| Color mode | | ACS, black, full color |
| Color adjustment | | Color balance, registration, hue, chroma, density area |
| Original mode map, second copy | | Text/print photo, text/film photo, text, print photo, film photo, |
| Original detection | | Size, position |
| Cassette selection | | Auto paper selection, auto cassette selection |
| Page separation | | Page separation, free division, enlargement separation, reduced page composition (requires RDF), double-sided separation (requires RDF) |
| Auto double-sided | | Single-sided to double-sided, double-sided to double-sided (requires RDF), double-sided to single-sided (requires RDF), page separation double-sided |
| Bind margin | | Yes (right/left bind, bind width, back only) |
| Frame erase | | Original, book, sheet |
| Shift | | Center shift, corner shift, free shift |
| Transparency interleaf | | Yes |
| One-touch adjustment | | Yes |
| Interrupt | | Yes |
| ID mode | | Yes |
| Auto start | | Yes |
| Auto clear | | Yes (2 min standard; may be changed or disabled in user mode) |
| Auto power-off | | Yes (2 hr standard; may be changed or disabled in user mode) |
| Pre-heat | | Yes |
| Area selection/Non-rectangle area selection | | Yes (requires ED Board-C1) |
| Marker selection | | No |
| Synthesis | | Yes (requires ED Board-C1) |
| Image create | | Yes (some functions require ED Board-C1) |
| Color create | | Use (some functions require ED Board-C1) |
| User mode | Settings selection | Yes |
| | Standard mode change | Registration/initialization |
| | Mode memory | 9 modes: full set, 3; no area, 6 |
| | Timer | Auto clear time, auto power-off time |
| | Density correction | Yes |
| | Auto gradation correction | Yes |
| | Background level adjustment | Yes |
| | Text/photo level | Text/photo separation level (7 steps) |
| | Zoom fine tuning | Yes |
| | Cleaning | Yes |
| | Transparency cassette selection | Yes |
| | Thin paper cassette selection | Use |

T01-102-02

# 1.3 Others

## 1.3.1 Copier

| | | | |
|---|---|---|---|
| Operating environment | | Temperature: 15 to 27.5ºC<br>Humidity: 25% to 75%<br>Atm pressure: 810.6 hPa to 1013.3 hPa (0.8 to 1.0 atm) | |
| Power supply (rated voltage ±10%) | | Power supply<br>200V<br>208/240V<br>230V<br>230V<br>230V<br>230V<br>230V<br>230V<br>230V | Serial No.<br>LQZxxxxx<br>NSXxxxxx (UL)<br>PRXxxxxx (ITA)<br>SCZxxxxx (FRN)<br>TDLxxxxx (GER)<br>UHBxxxxx (AMS)<br>PRMxxxxx (general)<br>QEBxxxxx (UK)<br>PDQxxxxx (CA) |
| Power consumption | | 3 KW or less (during copying, A4, full-color continuous)<br>0.62 KW (during standby; reference only) | |
| Noise | | 77 dB (during copying)<br>71 dB (during standby) | ISO sound power level<br>(1 m from machine) |
| Ozone | | 0.02 ppm or less<br>(upon installation) | 0.05 ppm<br>(100,000 copies or 1 yr) |
| Consumables | Paper | Keep wrapped to protect against humidity. | |
| | Toner | Avoid direct sunlight, and keep it at 40ºC or lower. | |
| | Fixing oil | Avoid direct sunlight. | |
| Dimensions | | See F01-103-01. | |
| Weight | | 490.0 kg (body only)<br>3.7 kg (copyboard)<br>4.9 kg (editor)<br>28.5 kg (A4 paper deck)<br>39.4 kg (A3 paper deck) | |

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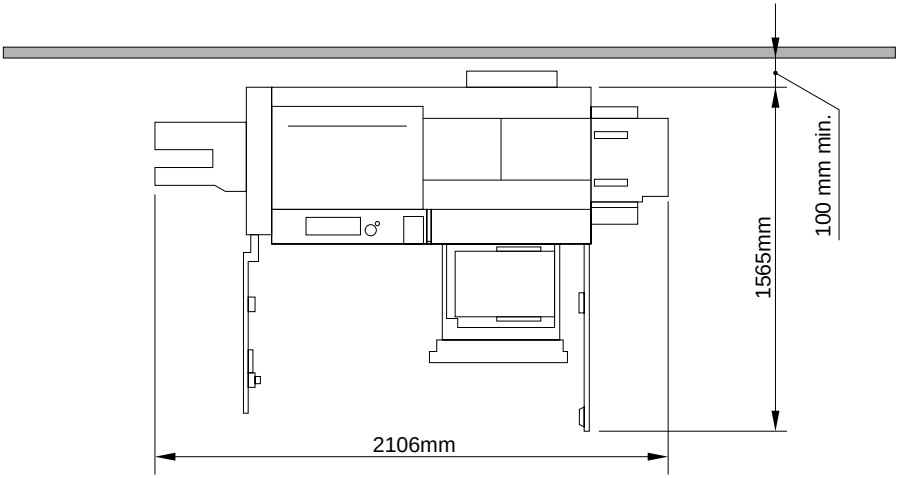
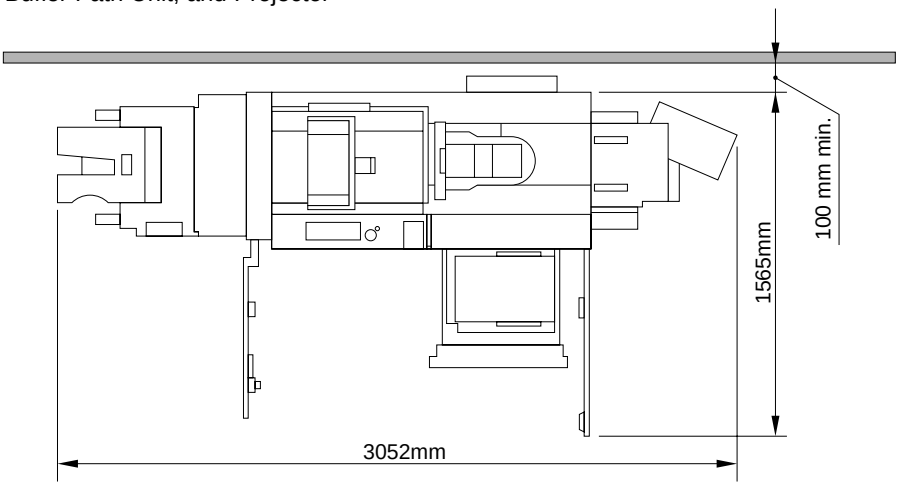
Dimensions

• Without Options




• With Paper Deck-J1, Feeder, Stapler Sorter,
Buffer Path Unit, and Projector

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## 1.4 Default Ratios

| Site | Reduction | Ratio | Enlargement | Ratio |
|---|---|---|---|---|
| Japan 6R5E | — | 0.250 | B4 to A3<br>B5R to A4R<br>B5 to A4 | 1.153 |
| | A3 to A5 | 0.500 | A4R to B4<br>A5 to B5 | 1.223 |
| | A3 to B5 | 0.611 | A4R to B4<br>B5R to B4 | 1.414 |
| | A3 to A4R<br>B4 to B5R | 0.707 | A5 to A3 | 2.000 |
| | B4 to A4R | 0.815 | — | 4.000 |
| | A3 to B4<br>A4R to B5R | 0.865 | — | |
| North America 5R4E | — | 0.250 | LGL to 11x17 | 1.214 |
| | — | 0.500 | — | 1.294 |
| | 11x17 to LTRR | 0.647 | LTRR to 11x17 | 2.000 |
| | 11x17 to LGL | 0.733 | MINIT to LTRR | 4.000 |
| | LGL to LTRR | 0.786 | — | |
| Europe 3R3E | — | 0.250 | A4R to A3 | 1.414 |
| | A3 to A5 | 0.500 | A5 to A3 | 2.000 |
| | A3 to A4R | 0.707 | — | 4.000 |
| Others 5R5E | — | 0.250 | B4 to A3<br>B5R to A4R<br>B5 to A4 | 1.153 |
| | A3 to A5 | 0.500 | A4R to B4<br>A5 to B5 | 1.223 |
| | A3 to A4R<br>B4 to B5R | 0.707 | A4R to A3<br>B5R to B4 | 1.414 |
| | B4 to A4R | 0.815 | A5 to A3 | 2.000 |
| | A3 to B4<br>A4R to B5R | 0.865 | | 4.000 |

T01-104-01

## 1.5 Copying Speed

| Source | Side | Medium | Copying speed | | |
|---|---|---|---|---|---|
| | | | A4/LTR | A3/11x17 | 4R/B4 |
| Cassette | 1st | Plain paper | 50 | 25 | 30 |
| | | Transparency | 9 | — | 8 |
| Paper deck | 1st | Plain paper | 50 | 25 | 30 (B4) |
| Duplex unit | 2nd | Plain paper | 20 | 10 | 10 |
| Multifeeder | 1st | Plain paper | 35 | 18 | 22 |
| | 2nd | Thick paper | 16 | 11 | 12 |
| | | Extra-thick paper | 13 | 8 | 9 |
| | | Transparency | 9 | 7 | 8 |

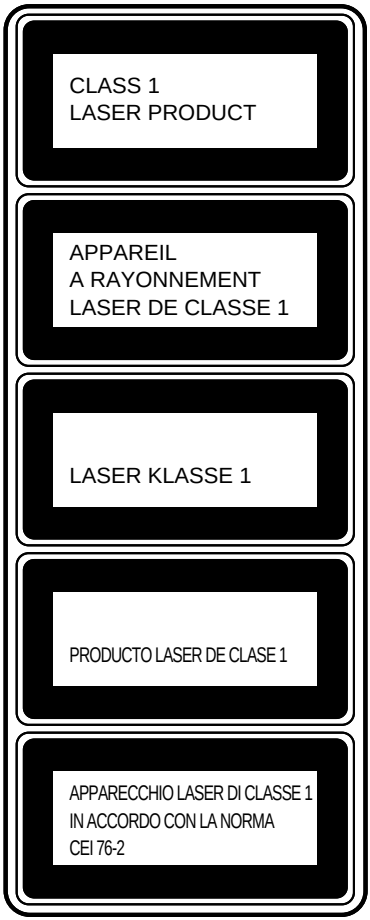
T01-105-01

The above specifications are subject to change for product improvement.

# 2 Safety

## 2.1 Safety of Laser Light

Laser light can be harmful to the human body. The machine's laser unit is sealed in a protective housing and external covers to prevent escape of laser light to the outside of the machine, protecting the individuals around the machine from the harmful effects of laser light as long as the machine is used in normal ways.

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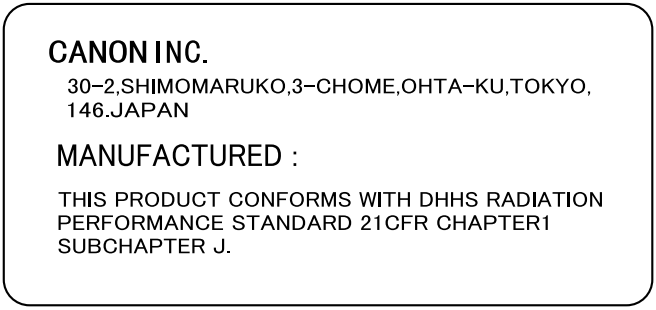
## 2.2 CDRH Ordinance

The Center for Devices and Radiological Health of the US Food and Drug Administration put into effect an ordinance to govern laser products on August 2, 1976.

The ordinance applied to laser products produced on August 1, 1976, and the sale of laser products is banned in the US without certification under the ordinance.

The following is the label indicating compliance under the CDRH ordinance, and it must be attached to all laser products sold in the US.

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A different description may be used for a different product.

## 2.3 Handling Parts Associated with the Laser Unit

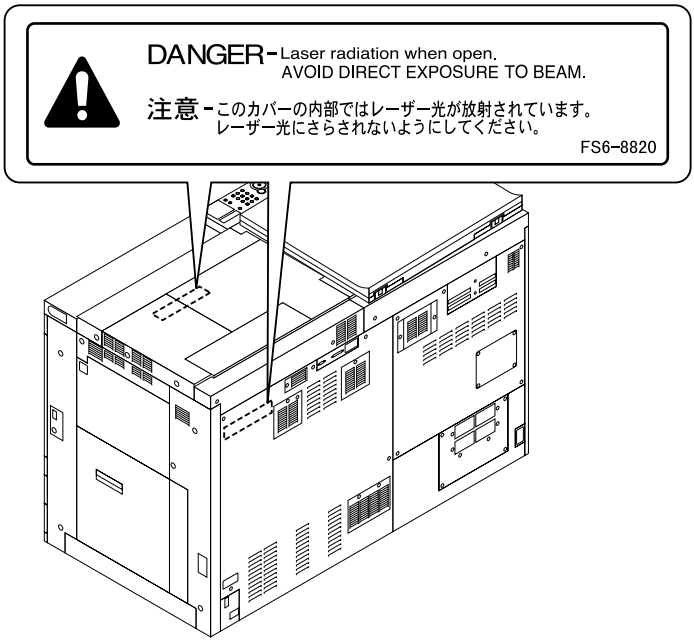
Do not introduce a screwdriver or the like (i.e., with a high degree of reflectance) into the laser path when servicing the areas around the laser unit.

Also, remove watches, rings, and the like to prevent laser light from reflecting to your eyes.

Extra attention is called for when servicing the inside of covers to which the following label is attached.

The machine is equipped with a shutter to cut off the path of laser light. The shutter operates in conjunction with the hopper assembly, and remains open as long as the hopper is set in the machine, closing when the hopper assembly is slid to the front.

It is even more important to heed the foregoing points when the hopper assembly is inside the machine or when a shutter opening tool is fitted (after sliding out the hopper assembly).

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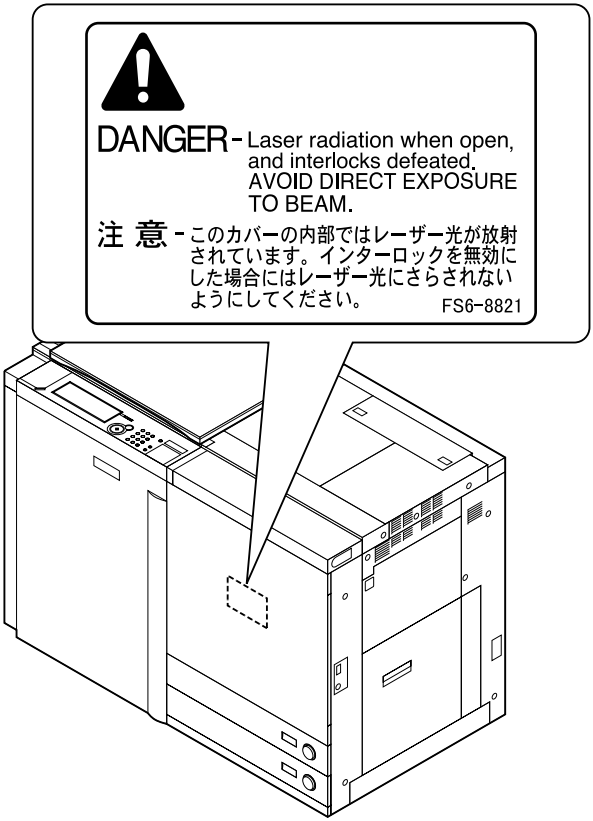
DANGER - Laser radiation when open, and interlocks defeated. AVOID DIRECT EXPOSURE TO BEAM.
注 意 - このカバーの内部ではレーザー光が放射されています。インターロックを無効にした場合にはレーザー光にさらされないようにしてください。
FS6-8821

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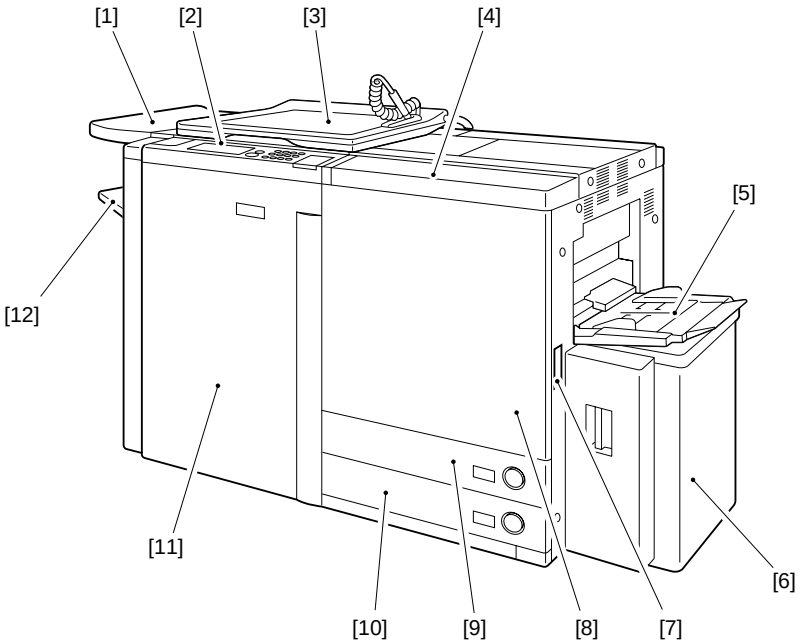
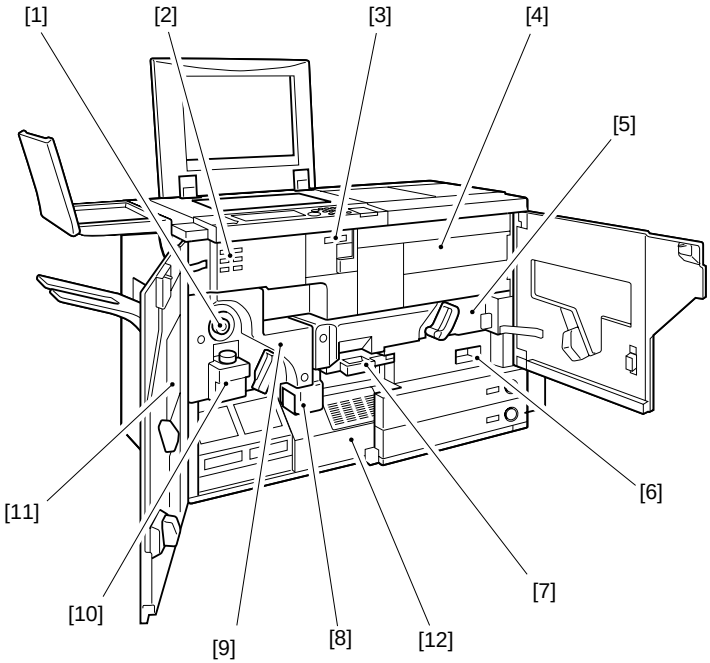
# 3 Names of Parts

## 3.1 External View




[1] Copyboard
[2] Control panel
[3] Editor (accessory)
[4] Hopper lid (toner supply mouth)
[5] Multifeeder assembly
[6] Paper deck (accessory)
[7] Control key/power switch
[8] Right front cover
[9] Cassette 1
[10] Cassette 2
[11] Left front cover
[12] Delivery tray

F01-301-01




[1] Fixing assembly knob
[2] Counter
[3] Front cover switch
[4] Hopper assembly
[5] Transfer unit
[6] Duplex unit
[7] Duplex front feedingassembly
[8] Waste toner box (for transfer belt)
[9] Fixing/delivery/reversal unit
[10] Fixing oil bottle
[11] Service book case
[12] Waste toner box (for process unit)

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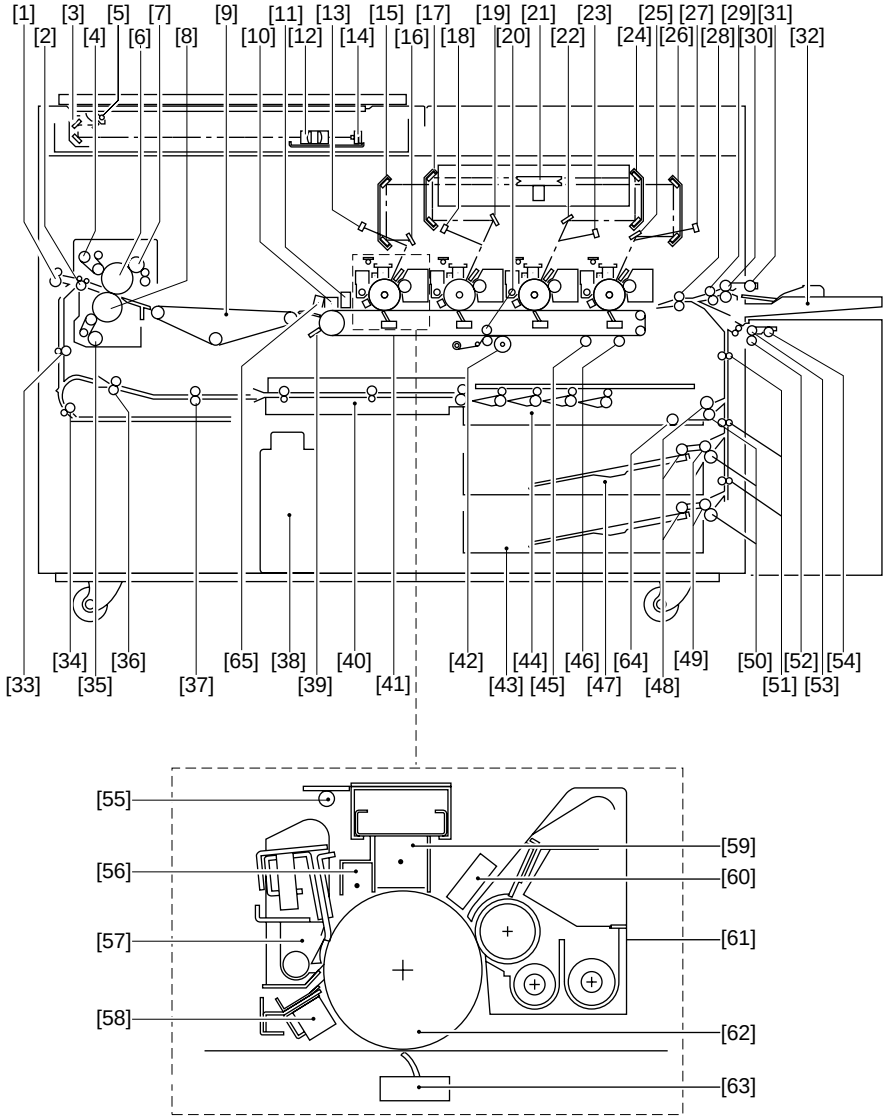
## 3.2 Cross Section

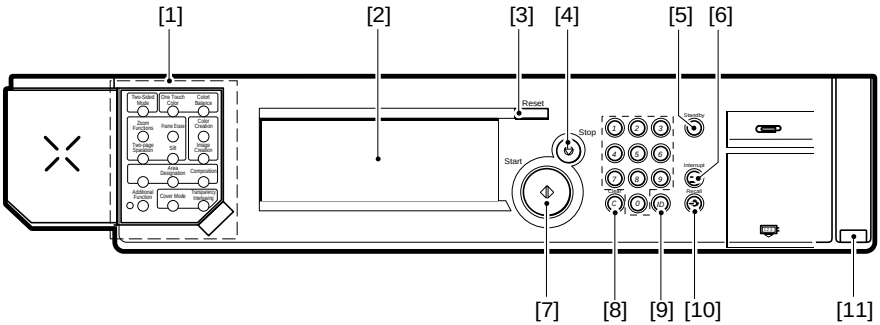



F01-302-01

[1] External delivery roller
[2] Internal delivery roller
[3] No. 2 mirror base
[4] Fixing upper belt
[5] Scanning lamp
[6] Fixing upper roller
[7] Oil applying roller
[8] Fixing lower roller
[9] Pre-fixing feeding assembly
[10] Separation charging assembly
[11] Image position correction CCD unit
[12] Lens
[13] K BD sensor
[14] CCD
[15] K image position correction mirror
[16] K No. 3 mirror
[17] Y image position correction mirror
[18] Y BD sensor
[19] Y No. 3 mirror
[20] Internal static eliminating roller
[21] Polygon mirror/motor
[22] M No. 3 mirror
[23] M BD sensor
[24] M image position correction mirror
[25] C No. 3 mirror
[26] C image position correction mirror
[27] C BD sensor
[28] Registration roller
[29] Paper thickness detection roller
[30] Multifeeder feed roller
[31] Multifeeder pickup roller
[32] Multifeeder tray
[33] Delivery vertical path roller
[34] Duplex reversal inlet roller
[35] Fixing lower roller web
[36] Duplex reversal feed roller
[37] Duplex reversal outlet roller
[38] Waste toner box
[39] Transfer cleaning blade
[40] Pre-duplex feeding assembly
[41] Transfer belt
[42] Transfer belt cleaning web
[43] Cassette 2
[44] Duplex unit
[45] Oil removing roller
[46] Polishing roller
[47] Cassette 1
[48] Pickup roller
[49] Feed roller
[50] Separation roller
[51] Pickup vertical path roller
[52] Paper deck separation roller
[53] Paper deck feed roller
[54] Paper deck pickup roller
[55] Pre-exposure roller
[56] Pre-primary charging assembly
[57] Photosensitive drum cleaner
[58] SALT sensor
[59] Primary charging assembly
[60] Potential sensor
[61] Developing assembly
[62] Photosensitive drum
[63] Transfer blade
[64] Feeding roller
[65] Pre-fixing charging assembly

# 4 Control Panel

## 4.1 Control Panel



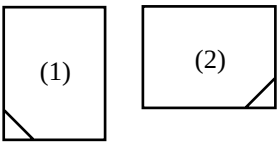

[1] Extension Copy Mode key
[2] Message display
[3] Reset key
[4] Stop key
[5] Pre-Heat key
[6] Interrupt key
[7] Start key
[8] Clear key
[9] ID key
[10] Call key
[11] Pilot lamp

F01-401-01

### 4.1.1 Instructions to the User

Instruct the user on the following:

1. When making a double-sided copy in manual mode, correct the curling along the leading edge of the paper by bending in opposite direction.
2. Keep in mind that paper is classified into the following six:
   Plain: Most commonly used paper (80 to 105 g/m$^2$)
   Thin paper: Paper thinner than plain paper (64 to 79 g/m$^2$)
   Thick paper: Paper thicker than plain paper (106 to 163 g/m$^2$)
   Extra-thick paper: Paper thicker than thick paper (164 to 253 g/m$^2$)
   Transparency: Transparency film
   Special paper 1: Paper identified by the notation Special Paper 1 on wrappings
   Special paper 2: Paper identified by the notation Special Paper 2 on wrappings
3. About Transparencies
   - Do not touch the copying surface. Hold it by the edges.
   - Before placing transparencies in the cassette or in the multifeeder, fan them out to separate the sheets.
   - To prevent a jam, remove the processed transparency immediately upon delivery.
   - Keep all transparencies in its package, and store the package avoiding a high-temperature/humidity environment.
4. Orientation of Transparencies
   - In the Cassette Tray
     Vertical: Place it so that the triangle in a corner is to the left front. (1)
     Horizontal: Place it so that the triangle in a corner is to the right front. (2)

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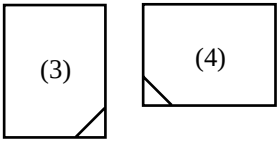
- In the Multifeeder/Paper deck
  Vertical: Place it so that the triangle in a corner is to the left front. (3)
  Horizontal: Place it so that the triangle in a corner is to the left front. (4)




F01-401-03

5. Cassette Sheets
   In a high-humidity environment, paper tends to become moist, adversely affecting copying. As needed, place a cassette sheet on the bottom of the cassette tray before depositing paper.

## 4.2 List of User Modes

| Item | Description |
|---|---|
| Key touch sound | (ON*/OFF) |
| Error alert sound | (ON*/OFF) |
| Auto cassette change | (ON*/OFF) |
| Single original sort | (ON*/OFF) |
| Trace width | (1 to 4 mm; 1-mm increments; 4 mm*) |
| Outline position | (inside/outside*) |
| Shadow length | (0.25 to 0.5 mm; 0.25 mm increments/1.5 mm*) |
| Ratio in steps | (1% increments*/0.1% increments) |
| Density in steps | (9 steps*/17 steps) |
| Color sheet change | (sheet A*/sheet B/sheet C/custom sheet: no color selection*) |
| Settings initialization | |
| Standard mode setting | Paper selection: auto*; Copy count: 1*; Ratio: Direct*;<br>Zoom: 100%<br>Original type: text/print photo*; Density: auto-OFF*;<br>Density: median*;<br>ACS: ON*; Original size auto detection: ON*; Center shift: ON* |
| Mode memory | |
| Timer setting | Auto clear time (1 to 9 min; in 1-min increments/2 min*)<br>Auto power-off time (1 to 24 hr; in 1-hr increments/2 hr*) |
| Monitor setting | |
| Density correction | |
| Auto gradation correction | Quick correction<br>Enables simple correction of halftone gradations (photo, images; test print read once)<br>Full correction<br>In addition to halftone (photo, image), gradation and density of text may be corrected (test print read 3 times) |
| Background level adjustment | Background adjustment mode (A*/B)<br>Color space adjustment (ON*/OFF) |
| Text/photo level | |
| Zoom fine-adjustment | |
| Cleaning | |
| Source of transparencies | |
| Source of thick paper | |
| Deck size change | |
| Auto vertical/horizontal rotation | Auto vertical/horizontal rogation (ON*/OFF) |
| Print color processing | Print color processing (ON*/OFF) |

*Factory default.

T01-402-01

# 5 Routine Maintenance by the User

## 5.1 Cleaning the Outside

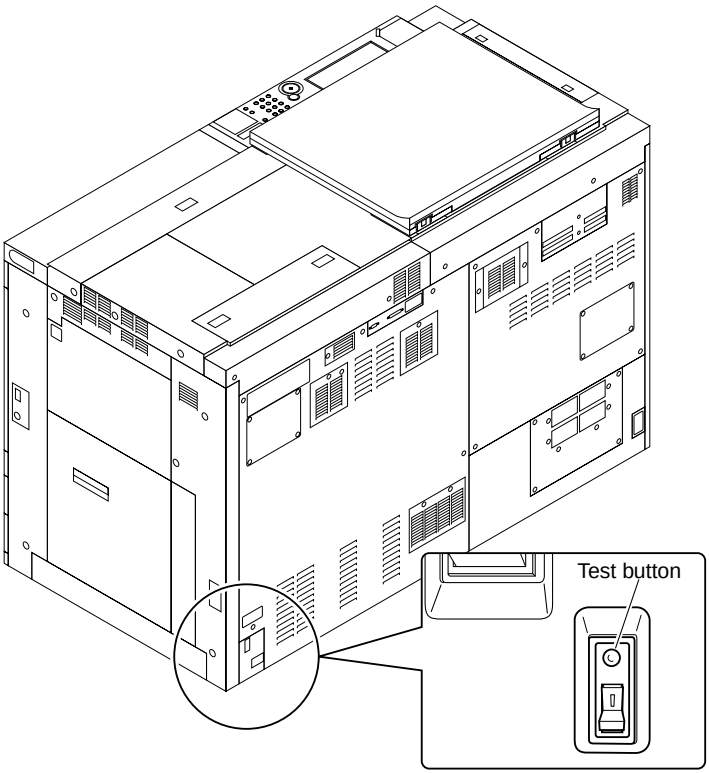
Advise the user to clean the surface of the copyboard glass, copyboard cover (editor), and touch panel once a week.

## 5.2 Checking the Leakage Breaker

Check the leakage breaker once or twice a month, and record the results.

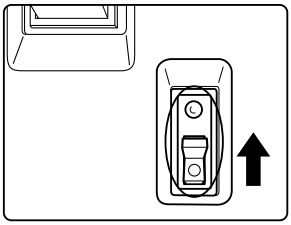
Making a Check

1) Press the test button of the breaker.



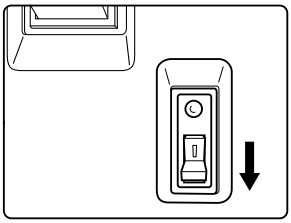

F01-502-01

2) Check to make sure that the open/close lever has shifted to the OFF terminal side and the power has been cut.



F01-502-02

3) Turn off the main power switch.
4) Shift the open/close lever to the ON side.



F01-502-03

5) Turn on the main power switch.

# CHAPTER 2

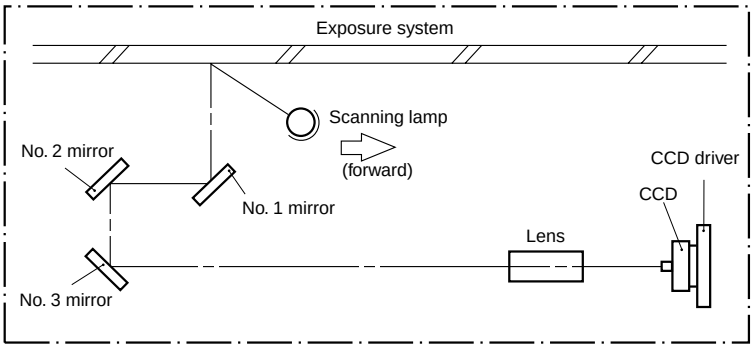
# NEW FUNCTIONS

# 1 Exposure System

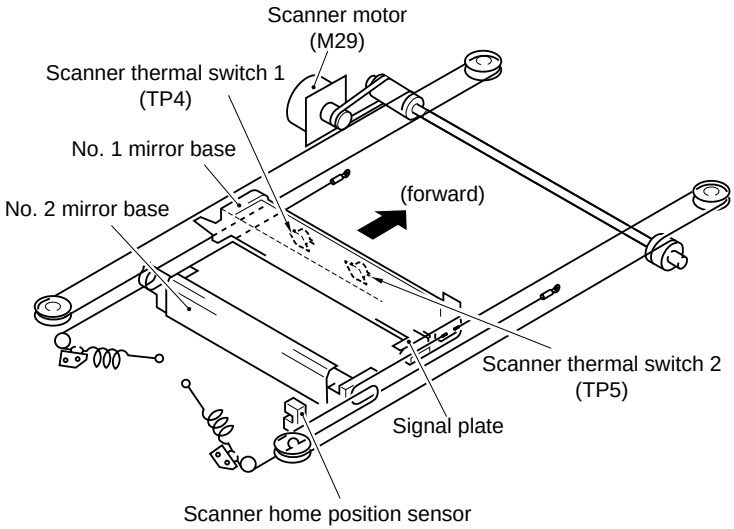
## 1.1 Outline of the Original Exposure System

The machine's exposure system is designed on the reader scanner of the CLC1100 Series machines.

F02-101-01 shows a block diagram of the machine's exposure system, and F02-101-02 shows its external view.




F02-101-01




F02-101-02

## 1.2 Comparison of Exposure Systems

| Unit/Part | Differences from CLC1000 Series machines | Purpose | Reference |
|---|---|---|---|
| Scanner HP sensor | Home position search | To improve the accuracy of detection | 1.3 “Basic Sequence of Operations (exposure system)” |
| Scanner motor | Drive voltage used for reverse movement (from 24 to 40 V) | To support higher speed | 1.4 “Scanner Motor” |
| Scanning lamp intensity control | Number of scanner thermal switches (from 1 to 2) | To improve safety | 1.5 “Controlling the Intensity of the Scanning Lamp” |

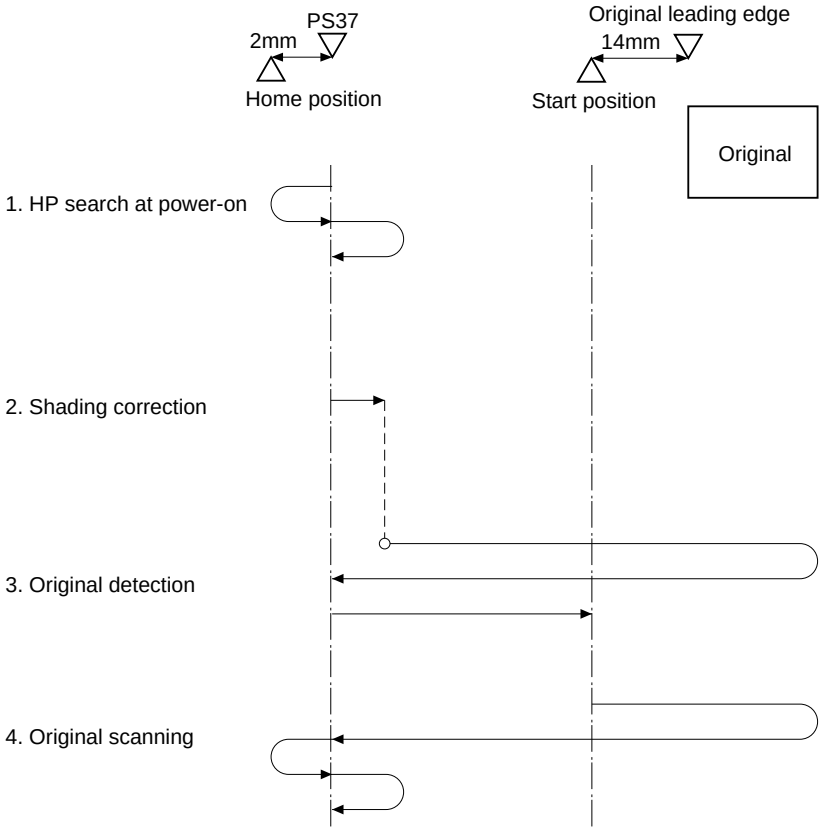
T02-102-01

# 1.3 Basic Sequence of Operations (exposure system)

## 1.3.1 Scanner Home Position Sensor and Operations

The scanner home position sensor (PS37) turns on as follows:

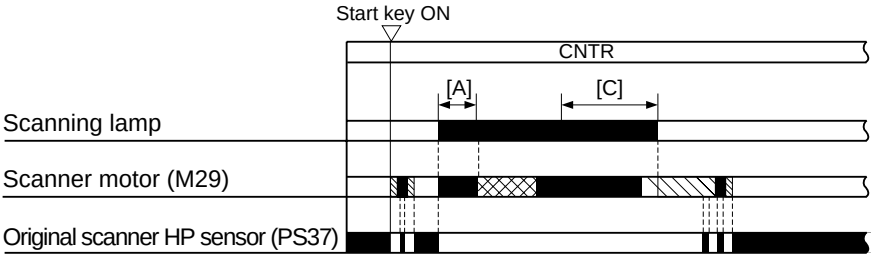
- When the power is turned on.
- When the Start key is pressed.
- When scanning of an original ends.
- When CCD is adjusted (in service mode).



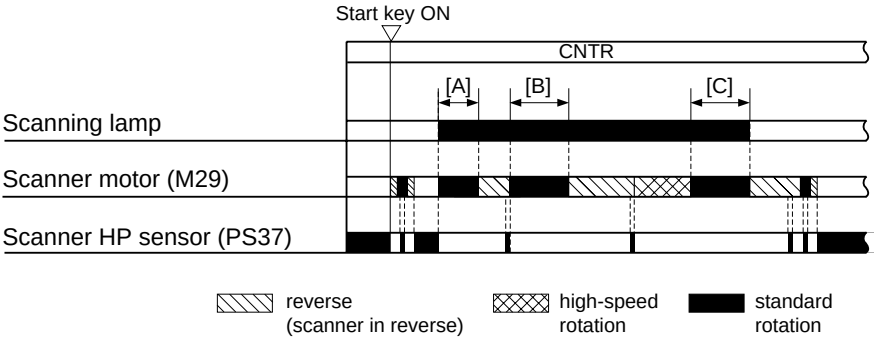

F02-103-01

## 1.3.2 Sequence of Operations

• Without Pre-Scanning (if original detection OFF, ACS off, APS OFF)




• With Pre-Scanning (single scan over original; standard mode)




[A]:shading corection.

[B]:original position identification, black original identification, AE measurement

[C]:original scan

F02-103-02

# 1.4 Scanner Motor

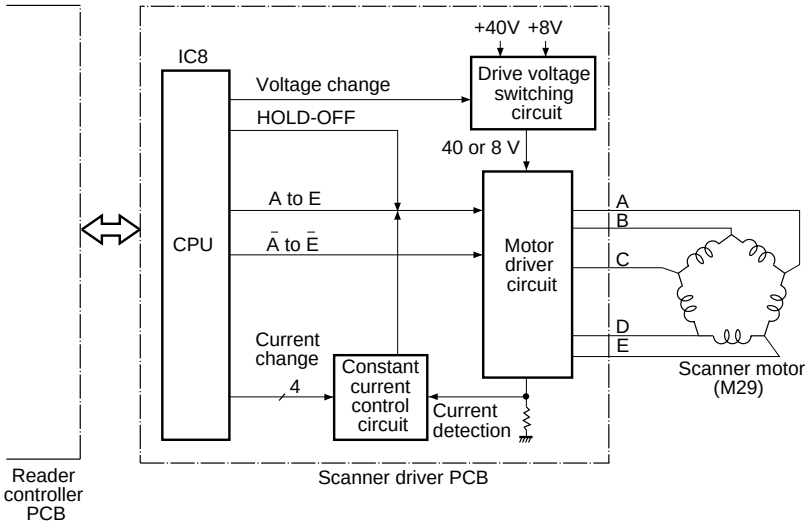
## 1.4.1 Outline

The following figure shows the circuit used to control the scanner motor, and the circuit has the following functions:

1. Controlling the direction of rotation of the scanner motor
2. Controlling the speed of rotation of the scanner motor

The scanner motor changes its direction of rotation to move the scanner forward or in reverse, and the speed of its rotation when the scanner is moved forward changes to suit the selected reproduction ratio.

When the scanner is moved in reverse, the speed of rotation is the same regardless of the selected reproduction ratio, which is ten times as high as the speed at which the scanner is moved forward in Direct.




F02-104-01

## 1.4.2 Operations

The CPU (IC8) on the scanner motor driver PCB receives instructions from the reader controller PCB on the mode, distance, and reproduction ratio selected for scanning. Then, in response to the start command, the CPU sends drive pulses to the scanner motor base on these instructions.

The scanner motor is a 5-phase stepping motor, and its direction (scanning direction) and speed are switched by changing the sequence of drive pulses (A through E) and frequency.

When the scanner is moved in reverse, the motor must be rotated at high speed, requiring the drive voltage switching circuit to switch from 8 V (forward) to 40 V (reverse).

The constant current control circuit is used to control the current flowing to the motor to a specific level according to the rotation of the motor. When the motor is kept at rest (as in standby), the current to the motor is cut off by means of the HOLD-OFF signal.

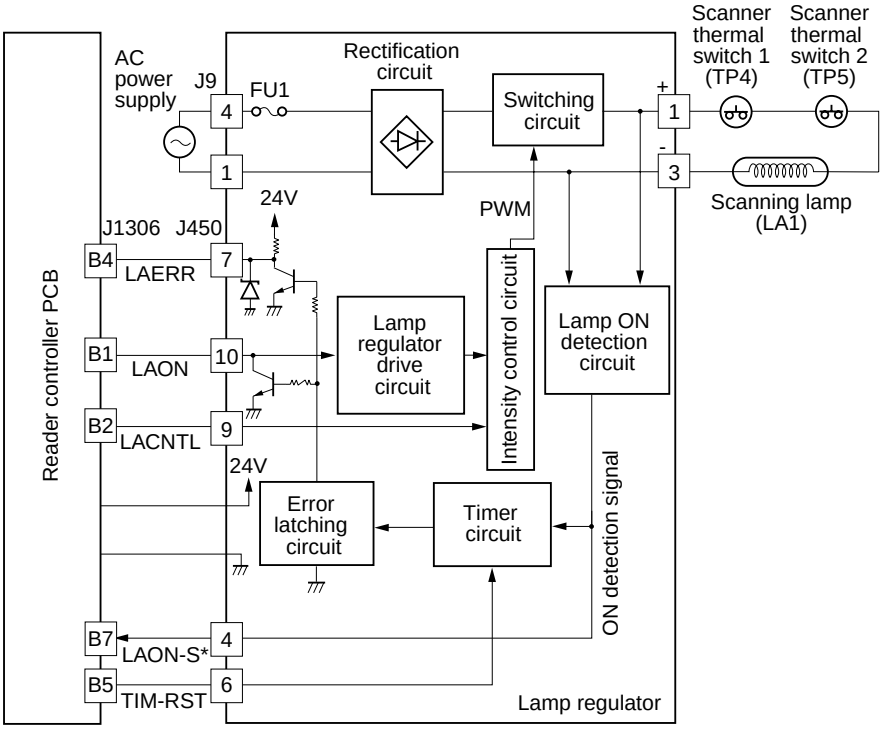
# 1.5 Controlling the Intensity of the Scanning Lamp

## 1.5.1 Outline

The machine's scanning lamp is a halogen lamp.

The following figure shows the circuit used to control the intensity of the scanning lamp, and the circuit has the following functions:

1. Turning on and off the scanning lamp
2. Detecting the activation of the scanning lamp
3. Controlling the intensity of the scanning lamp
   - The intensity of the scanning lamp is controlled to a specific level even when the voltage of the power supply fluctuates.




F02-105-01

## 1.5.2 Operations

1. Turning On and Off the Scanning Lamp
   When LAON is '0', the lamp regulator drive circuit is off, and the intensity connector circuit is also off, consequently keeping the scanning lamp (LA1) off.
   When LAON is '1', on the other hand, the lamp regulator drive circuit goes on to turn on the intensity control circuit, consequently turning on the scanning lamp (LA1).

2. Detecting the Activation of the Scanning Lamp
   As long as the scanning lamp (LA1) remains on, the lamp ON detection circuit also remains on to generate the ON detection signal to the timer circuit.
   If the scanning lamp remains on for about 60 sec for some reason (e.g., fault), the timer circuit turns on the error latching circuit to force the LAON signal to go '0', thereby turning off the lamp. At the same time, the lamp error single (LAERR) is sent to the reader controller PCB; and, as a result, the machine will indicate 'E220' on its control panel and shut itself off.
   To reset the machine, remove the cause, and turn on the power switch.
   The machine is equipped with the following two protective mechanisms to prevent malfunction of the scanning lamp:
   - If the temperature inside the thermal switch exceeds 175ºC , one of two thermal switches will turn off to cut off the power to the scanning lamp.
   - If overcurrent flows because of a short circuit or the like around the scanning lamp, the fuse (FU1) turns off to cut off the power to the lamp regulator.

The thermal switches 1 and 2 (TP4, TP5) are used on the DC line, subjecting the contacts to damage when they turn on. Do not use them once they have turned on to avoid unreliable operation after the machine has been reset.

3. Controlling the Intensity for the Scanning Lamp
   The intensity of the scanning lamp is determined by the value of the intensity adjustment signal (LACNTL) from the reader controller PCB.
   The intensity control circuit inside the lamp regulator sends pulse signals (PWM) to the switching circuit according to the level of the LACNTL signal; and the switching circuit repeats turning on and off at short intervals in response; these intervals are varied to control the current flowing to the scanning lamp (hence its intensity).
   The level LACNTL signal is determined when FUNC>CCD>AUTO-ADJ is executed in service mode; once determined, it remains the same. It is important to execute FUNC>CCD>AUTO-ADJ whenever you have replaced the reader controller PCB the standard white plate, the reader controller PCB flash memory, CCD unit, the analog processor PCB.

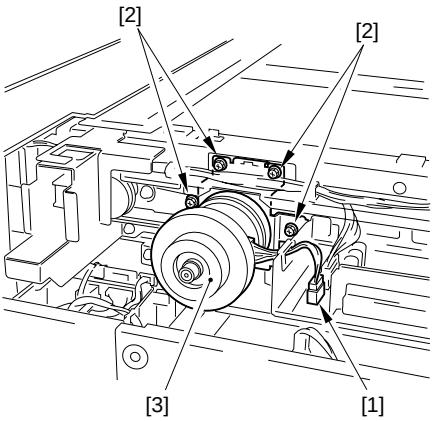
## 1.6 Disassembly/Assembly

The machine has the mechanical features and operations as described herein, and may be disassembled or assembled as shown; be sure to observe the following whenever disassembling or assembling the machine:

1. ⚠Disconnect the power plug for safety before the work.
2. Unless otherwise noted, reverse the steps used to disassemble the machine for assembly.
3. Identify the screws by type (length, diameter) and location.
4. The screws used for the grounding wire, varistors, or the like are equipped with washers to ensure electrical continuity. Be sure to use these screws during assembly.
5. As a rule, do not operate the machine with any of its parts removed.
6. ⚠Do not throw toner into fire to avoid explosion.

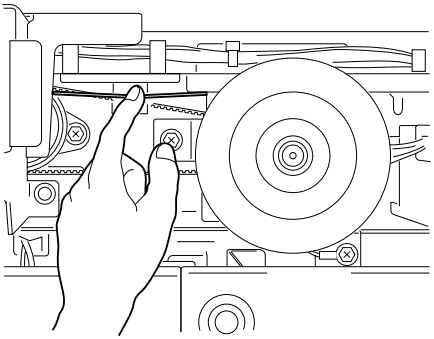
### 1.6.1 Removing the Scanner Motor

1) Remove the right glass retainer and the vertical size plate; then, detach the copyboard glass.
2) Remove the reader rear cover.
3) Remove the left rear upper cover.
4) Disconnect the connector [1], and remove the four screws; then, detach the scanner motor [3] together with the mounting support as if to pull it out to the bottom.



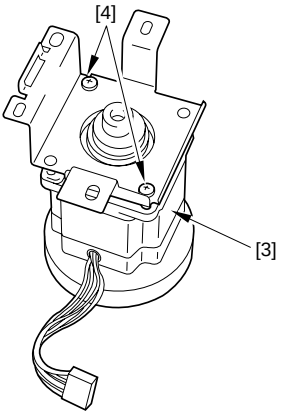

F02-106-01

When removing the scanner motor, push down the wire as shown, thus preventing damage to the wire by the edge of the stay.



F02-106-02

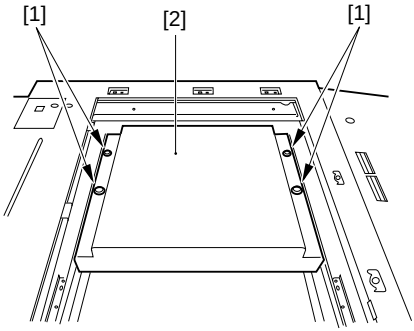
5) Remove the two screws [4], and detach the scanner motor [3].




F02-106-03

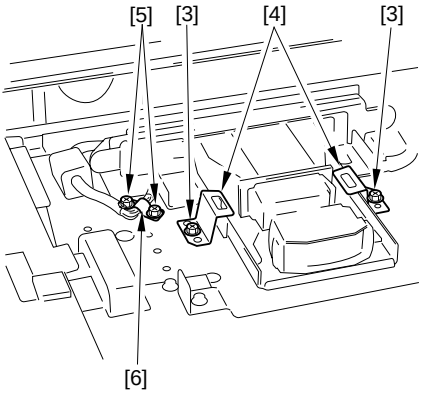
## 1.6.2 Removing the Lens Base Cover/CCD Cover/CCD Unit

1) Disconnect the power plug.
2) Detach the copyboard glass.
3) Remove the four screws [1], and detach the lens base cover [2].



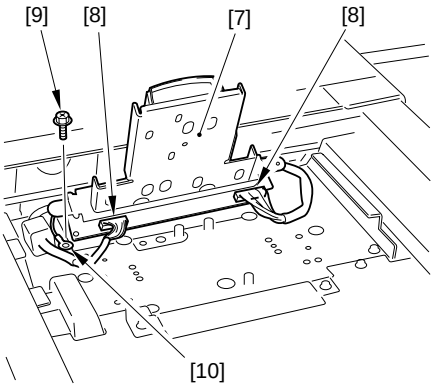

F02-106-04

4) Remove the two screws [3], and remove the two CCD unit retaining screws [4].
5) Remove the two screws [5], and detach the grounding plate [6].




F02-106-05

6) Lift the CCD unit [7], and disconnect the two connectors [8]; then, remove the screw [9]. Thereafter, remove the grounding wire [10], and detach the CCD unit [7].

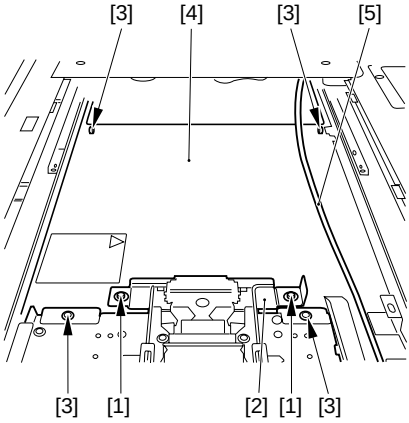



F02-106-06

### 1.6.3 Removing the Scanner Cover

1) Remove the two screws [1], and detach the auxiliary cover [2].
2) Remove the four screws [3], and detach the laser scanner cover [4].

Be sure to keep the mirror base fully to the left. In addition, take care not to damage the power cord [5] of the scanning lamp. Pay attention to the bend found at the front.




F02-106-07

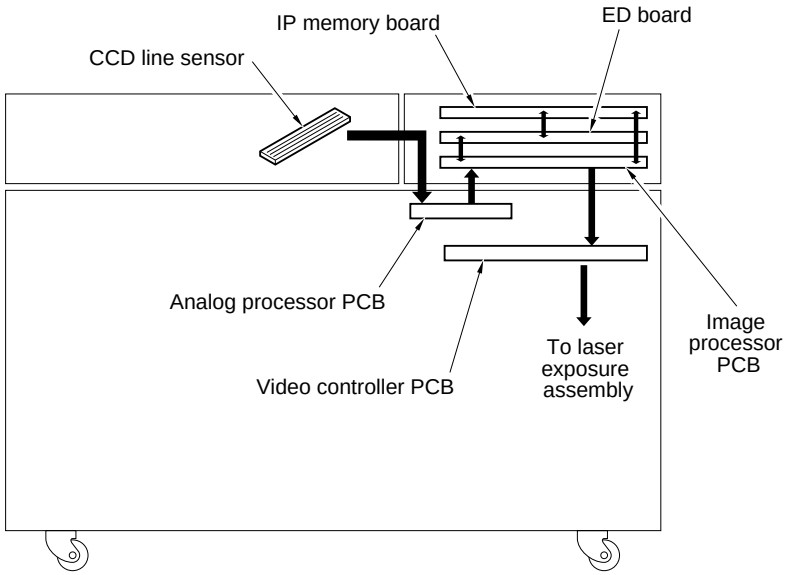
# 2 Image Processing System

## 2.1 Outline of the Image Processing System

- The major changes include the elimination of the memory compression/de-compression function and the addition of the direct mapping function.
- The rest of the image processing system are the same as those of the CLC1000 Series machines.

The image processing system consists of the following:

- CCD line sensor used to convert light reflected by the original into analog video signals.
- analog processor PCB used to generate digital video signals from analog video signals.
- PCBs (image processor PCB, IP memory board, ED board) used for various correction and processing on digital video signals.



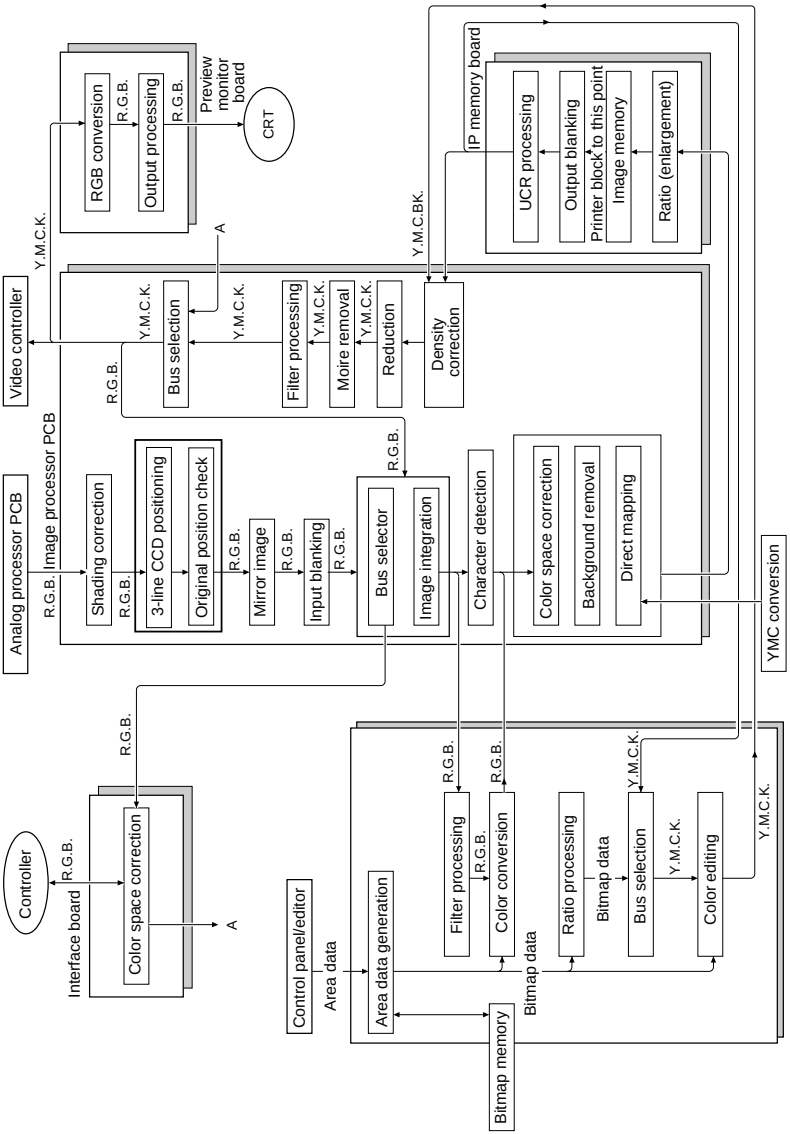

F02-201-01

## 2.2 Differences in the Image Processing System

| Unit/part | Differences for CLC1000 Series machines | Purpose | Reference |
|---|---|---|---|
| IP memory board | Elimination of memory compression/de-compression function | • To reduce the cost of memory element<br>• To enable high image quality | 2.4 “IP Memory Board” |
| Image processor PCB | Addition of direct mapping function | To improve reproduction of images | 2.5 “Direct Mapping” |

T02-202-01

## 2.3 Functional Blocks

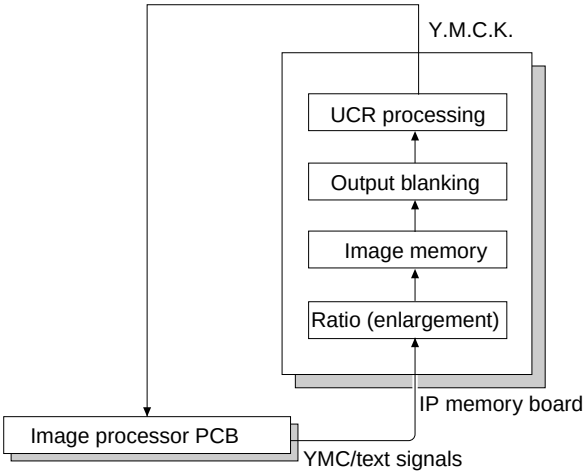



F02-203-01

## 2.4 IP Memory Board

The machine uses four photosensitive drums, requiring temporary retention of image signals in image memory.

The image data (YMC signals and text signals) from the scanner is sent to the IP memory board and stored in image memory. It is then read in response to the read signal prepared with reference to the ITOP signal. The UCR processing block generates the K signal and sends it to the image processor PCB.




F02-204-01

## 2.5 Direct Mapping

In this block, the RGB signals (after color space correction) is corrected by a LUT to improve the reproduction of flesh tone and the blue of the sky and the green of leaves.

# 3 Laser System

## 3.1 Outline of the Laser System

- The major difference is the change of an image position correction sequence for standby and the formation of images using 800 lines.
- The rest of the construction is the same as that of the CLC1000 Series machines.

## 3.2 Differences in the Laser System

| Unit | Difference from CLC1000 Series machines | Purpose | Reference |
|---|---|---|---|
| Entire system | Addition of image formation using 800 lines | To increase the reproduction of images | 3.3 “Image Formation Using 800 Lines” |
| Laser unit | Increase in the laser output (same as CLC1100 Series) | To support the higher process speed | |
| Polygon mirror unit | Increase in the speed of rotation | To support the higher process speed | |
| BD mirror | No change | | |
| BD detection PCB | No change | | |
| Image position correction mirror | No change | | |
| Image position correction control | Addition of an image position correction sequence for standby | To reduce first copy time | 3.4 “Image Position Correction Sequence in Standby” |

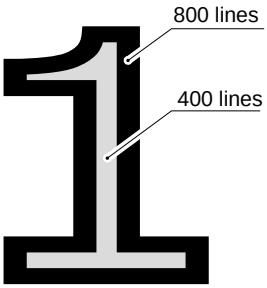
T02-302-01

## 3.3 Image Formation Using 800 Lines

The machine uses 800 lines as the outline of a character, thereby making each character sharper.

REF.

A CLC1000 Series machine uses 400 lines to form a character and 266 lines in YK halftone areas or 200 lines in CM halftone areas.




F02-303-01

# 3.4 Image Position Correction Sequence in Standby

## 3.4.1 Outline

The machine executes image position correction while in standby state, and this function is independent of presses on the Start key.


In the case of a CLC1000 Series machine, image position correction is executed in response to a press on the Start key by the user, forcing the user to wait for nearly 1 min once the correction starts.

## 3.4.2 Timing of Operation

The image position correction sequence is executed as follows:

1. When the power switch is turned on (during initial rotation)
2. A specific period of time after the power switch is turned on (during standby): 12, 20, 35, 60, and 120 min; thereafter, at intervals of 120 min
3. When the transfer unit is slid out and then in (during initial rotation)

The image position correction sequence is automatically expected independently of the operation of the Start key; however, it is not executed under the following conditions:

1. When an E code is indicated
2. When a jam exists
3. When service mode is used
4. When the hopper is released
5. When the rear cover is removed
6. When it is disabled in service mode (i.e., '0' is set to OPTION>P-OPT>AUTO-REG in service mode)

## 3.5 Disassembly/Assembly

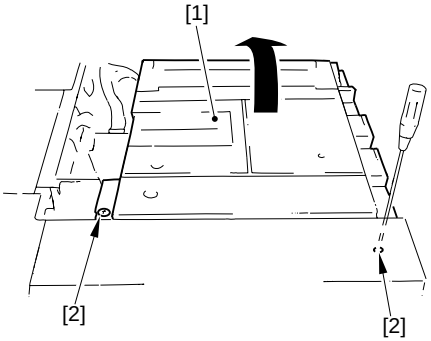
The machine has the mechanical features and operations as described herein, and may be disassembled or assembled as shown; be sure to observe the following whenever disassembling or assembling the machine:

1. ⚠Disconnect the power plug for safety before the work.
2. Unless otherwise noted, reverse the steps used to disassemble the machine for assembly.
3. Identify the screws by type (length, diameter) and location.
4. The screws used for the grounding wire, varistors, or the like are equipped with washers to ensure electrical continuity. Be sure to use these screws during assembly.
5. As a rule, do not operate the machine with any of its parts removed.
6. Be sure to turn off the front cover switch or the power switch before sliding out the duplex unit or the fixing/feeding unit.
7. Do not throw toner into fire to avoid explosion.
8. For the following items, refer to CLC1000 series service manual.

- Disassembly of the laser unit
- Disassembly of the dust proof glass
- Disassembly of the BD unit

### 3.5.1 Preparing for Laser Unit-Related Work

1) Remove the right glass retainer, right rear upper cover, and digital covers (1 through 4).
2) Remove the fixing screw [2] of the digital unit [1]; then, lift it in the direction of the arrow (from front to rear), and secure it as indicated.

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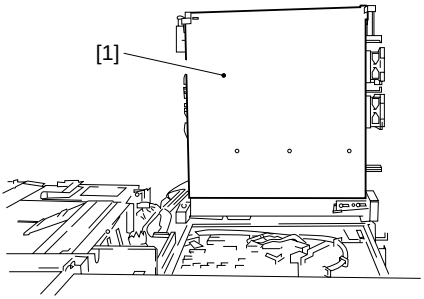
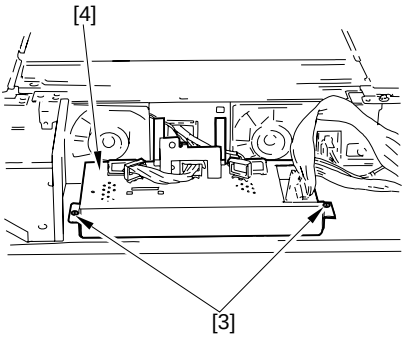
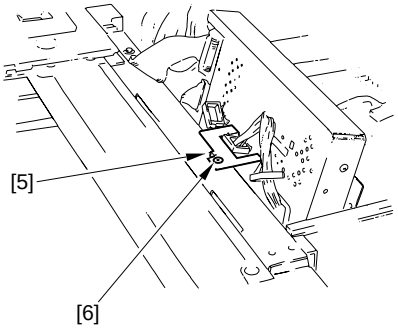



F02-305-02

3) Remove the two screws [3], and detach the analog processor PCB [4]; then, secure it on the hook hole [5] with a screw [6].

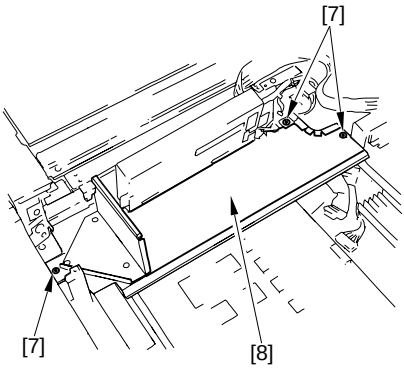



F02-305-03



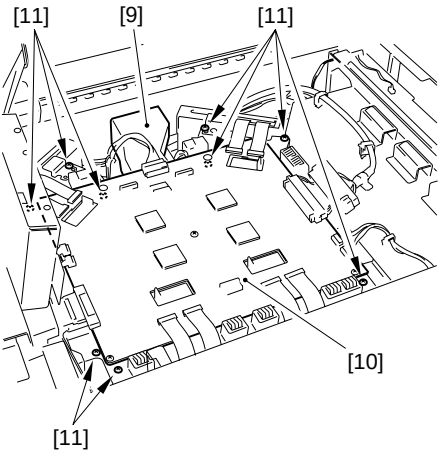

F02-305-04

4) Remove the three screws [7], and detach the duct plate [8].




F02-305-05

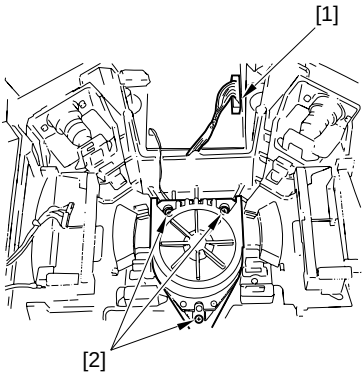
5) Remove the duct [9]; then, disconnect the connector from the video controller PCB [10], and remove the 9 screws [11]. Detach the video controller PCB together with its support plate.




F02-305-06

### 3.5.2 Removing the Laser Unit Motor

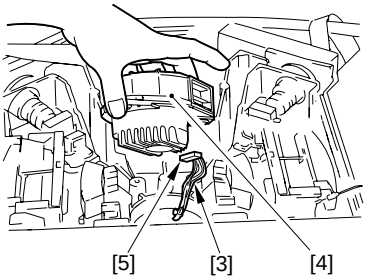
1) Perform laser unit-related preparatory work. (See the appropriate instructions.)
2) Disconnect the connector (J03) [1] from the laser scanner motor driver PCB, and remove the three screws [2] of the laser scanner motor assembly.




F02-305-07

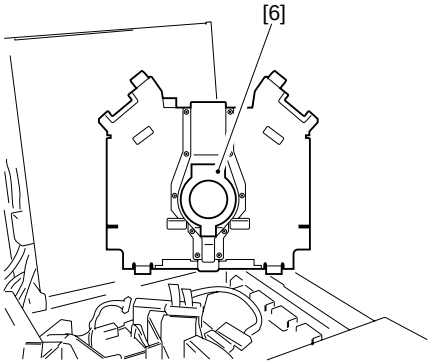
Do not remove the screw used to hold the lid in place.

3) Route the harness [3] of the connector removed in step 2) under the laser scanner motor bottom, and disconnect the connector [5] while lifting the laser scanner motor [4].




F02-305-08

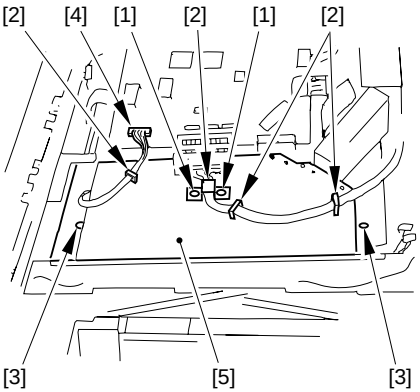
When removing the laser scanner motor, be sure to work while paying attention to the lenses found to the left and the right of the motor assembly and the dust-proofing glass of the motor assembly.
When mounting the laser scanner motor, do not force the harness while connecting the connector to the laser scanner motor driver PCB to avoid disconnecting the connector.
When mounting the laser scanner drive PCB, take care not to slant or peel the sticker [6] found on the back of the support plate.




F02-305-09

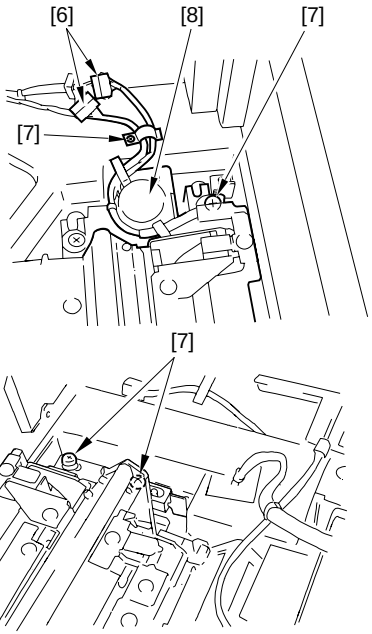
### 3.5.3 Removing the C Image Position Correction Mirror Unit

1) Perform laser unit-related preparatory work.
2) Remove the two cable mounting screws [1] and the cable clamp [2]. Remove the two cover mounting screws [3], and disconnect the connector [4] from the video controller PCB; then, detach the image position correction mirror cover.




F02-305-10

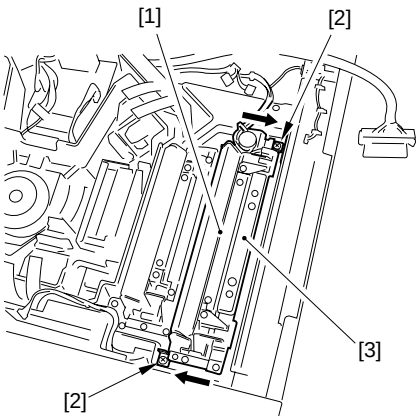
3) Disconnect the two connectors [6], and remove the four screws [7]; then, detach the C image position correction mirror unit [8].




F02-305-11

### 3.5.4 Mounting the C Image Position Correction Mirror Unit

1) Force the C image position correction mirror assembly [1] accurately against the butting plate [2], and secure it in place.

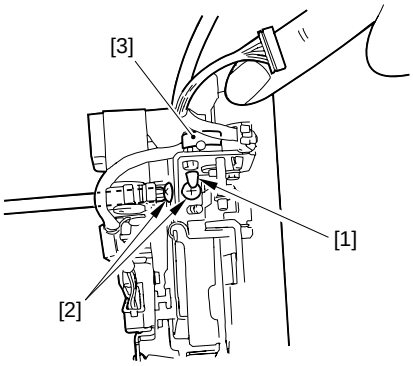


02-305-12

Be sure to attach the weight [3] whenever replacing the mirror unit.

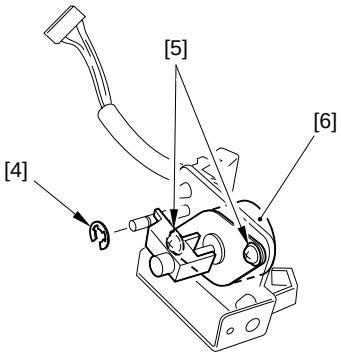
### 3.5.5 Removing the C Slant Correction Motor

1) Remove the C image position correction mirror unit. (CLC1000 Chap. 4>VI.>B; however, keep in mind that the CLC1000 has different Cyan and Yellow positions)
2) Remove the wire saddle [1] and two screws [2]; then, detach the slant correction motor unit [3].




F02-305-13

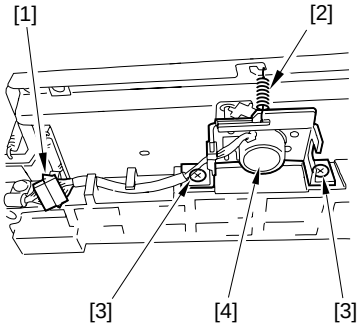
3) Remove the E-ring [4] and two screws [5]; then, detach the slant correction Motor [6].




F02-305-14

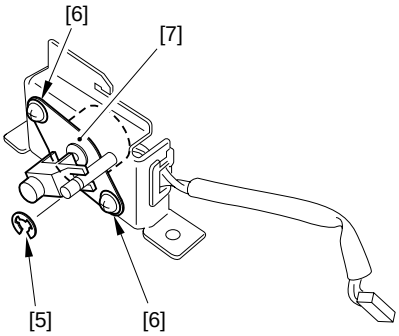
### 3.5.6 Removing the C Ratio Correction Motor

1) Remove the C image position correction mirror unit.
2) Disconnect the connector [1], and remove the spring [2].
3) Remove the two screws [3], and detach the ratio correction motor unit [4].




F02-305-15

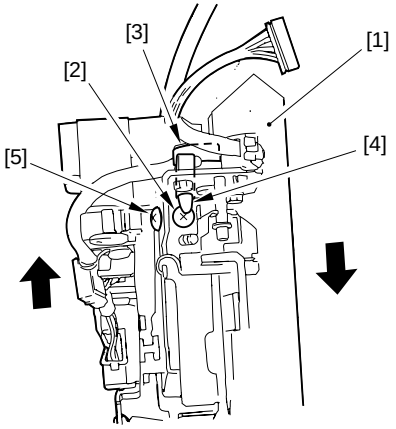
4) Remove the E-ring [5] and two screws [76]; then, detach the ratio correction motor [7].




F02-305-16

Points to Note When Mounting the Slant Correction Motor

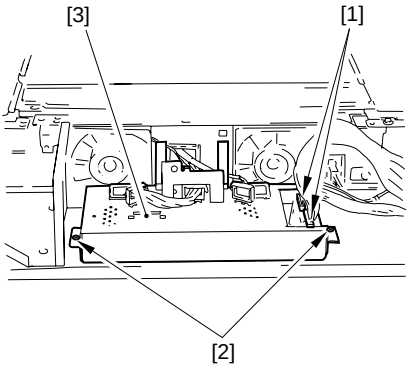
1) While moving the mirror assembly [1] in the direction of the arrow, force the motor unit [3] in the direction of tightening the screw [2].
2) Attach the wire saddle [4], then attach the screw [5].




F02-305-17

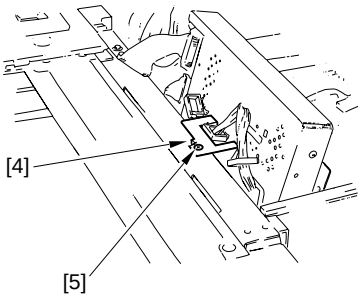
### 3.5.7 Shifting the scanner Unit

1) Remove the right glass retainer, right rear upper cover, and digital covers (1 through 4).
2) Secure the digital unit in place. (See F02-305-02.)
3) Disconnect the two connectors [1] from the analog processor PCB and the two screws; then, detach the analog processor PCB [3].



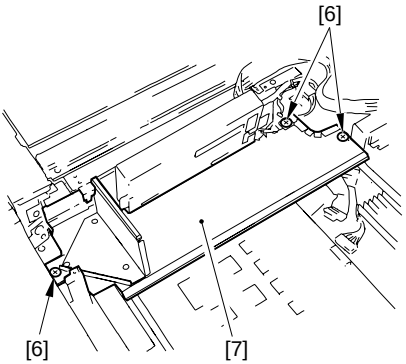

F02-305-18

4) Secure the analog processor PCB on the hook hole [4] with a screw.



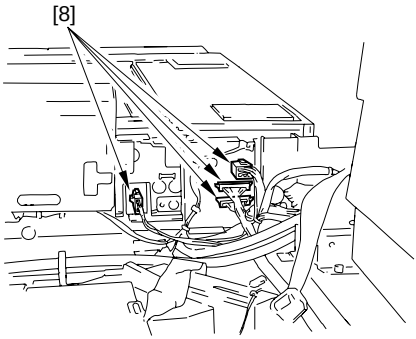

F02-305-19

5) Remove the three screws [6], and detach the duct panel [7].



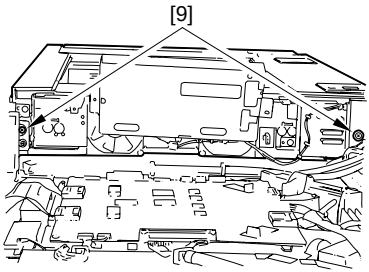

F02-305-20

6) Disconnect the four connectors [8].



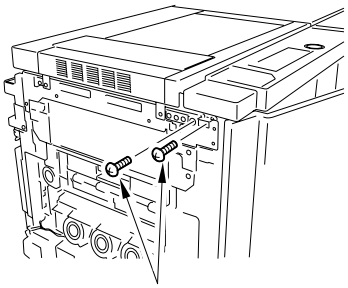

F02-305-21

7) Remove the two stepped screws [9].



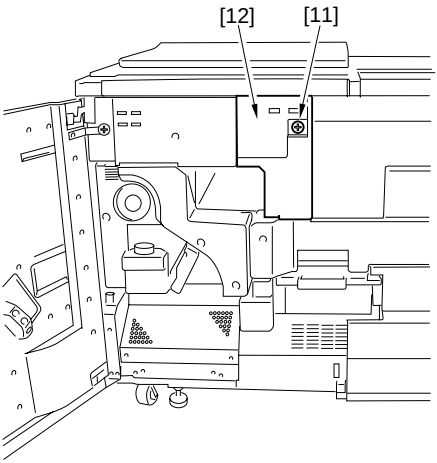

F02-305-22

8) Remove the left cover.
9) Remove the two screws [10] from the control panel fixing plate.



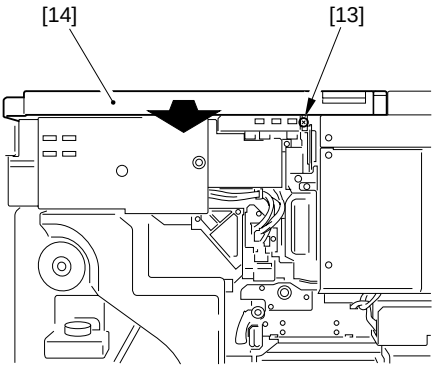

F02-305-23

10) Remove the screw [11], and detach the hopper unit left cover [12].



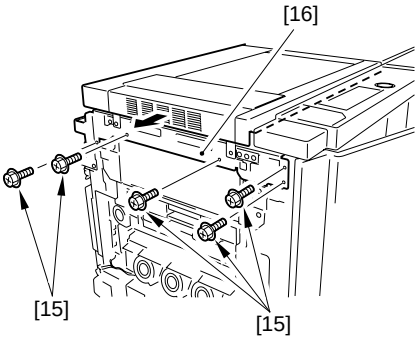

F02-305-24

11) Remove the screw [13] from the control panel support plate, and shift the control panel [14] by 7 to 8 mm to the front.




F02-305-25

12) Remove the five screws [15], and shift the scanner unit [16] to the left.




F02-305-26

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## 4.1 Outline of the Image Formation System

- The major differences include the sequence of image formation (to CMYK) and an increase in the process speed.
- The rest of the image formation process are the same as those of the CLC1000 Series machines.
- The following items found in the CLC1000 Series machines are not used in the machine:
  → Detection of home position for the transfer belt
  → Control of attraction position
  → Grounding roller

## 4.2 Differences in the Image Formation System

| Unit/part | Differences from CLC100 Series machines | Purpose | Remarks | Reference |
|---|---|---|---|---|
| Entire system | New sequence of image formation (from YMCK to CMYK) | To improve the reproduction of images | | |
| Photosensitive drum | Increase in the effective image area | To support extra-length paper | | |
| Pre-exposure unit | No change in intensity/control voltage | — | | |
| Auxiliary charging assembly | No change in basic construction | — | | |
| | Addition of a function to change sequence in service mode | To correct faulty images in a low humidity environment | | |
| Primary charging assembly | No change in control current, method of control, or basic construction | — | | |
| Potential sensor | No change in the height of the charging wire | — | | |
| Developing assembly | No change | — | Uses common parts | |
| | Increase in the number of rotations of the developing cylinder | To support the higher process speed | | |
| | Increase in the effective image area | To support extra-length paper | | |
| Transfer unit | Use of toner of different material | To support the higher process speed | | |
| | Use of a seamless transfer belt | To decrease control mechanisms (e.g., detection of a seam), to increase life | | |
| | Different position of the transfer cleaning blade | To prevent displacement of the transfer belt | | 4.4.2 “Cleaning Mechanism for the Transfer Belt” |
| | Eliminating the releasing mechanism of the transfer cleaning blade | In relation to the use of a seamless belt | | |
| | Relocation of the oil removing roller and the polishing roller | To improve polishing performance | | 4.4.2 “Cleaning Mechanism for the Transfer Belt” |
| | Use of a transfer cleaning web of a different material | To use a conducing material for removal of charge from the transfer belt | | |
| Drum cleaning | Different blade material, different angle of contact | To accommodate the change of the toner material | | |
| Pre-fixing charging assembly | Different position | To improve charging performance | | |
| Grounding roller | Eliminated | Owing to the use of a transfer cleaning web capable of removing charge | | |
| SALT control | No change | — | | |
| PASCAL control | Addition of simpler PASCAL (quick correction) | | | 4.3 “Auto Gradation Correction” (PASCAL) |

T02-402-01

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# 4.3 Auto Gradation Correction (PASCAL)

## 4.3.1 Outline

The machine uses the following two types of auto gradation correction:

1. Full Correction
   - Corrects the solid areas using test print 1.
   - Corrects the halftone areas (400 lines, 80 lines) using test print 2.
   - Corrects the halftone areas (200/266 lines) using test print 3.
2. Quick Correction
   - Corrects the gradation areas (200/266 lines, 400 lines) using test print 4

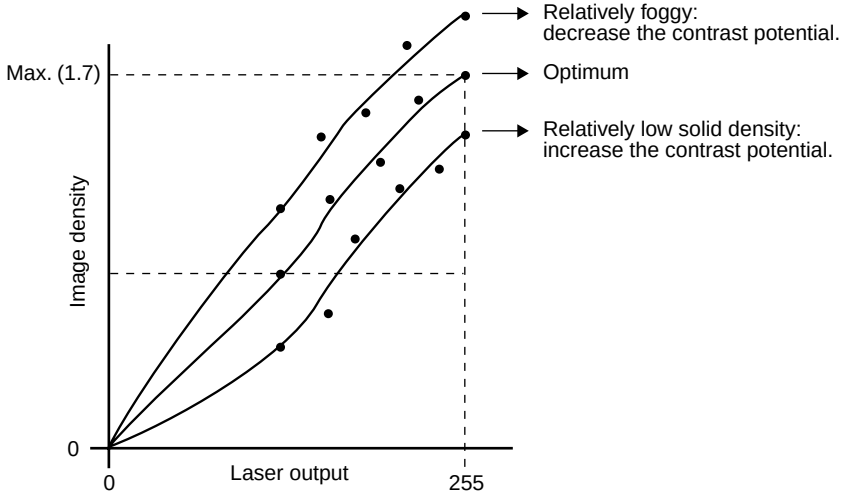
## 4.3.2 Operations (full correction)

Full correction is executed under the following conditions:

- For the high-density areas, if an appropriate level of density is not found.
- For the halftone areas, they differ from the corresponding areas on the original.

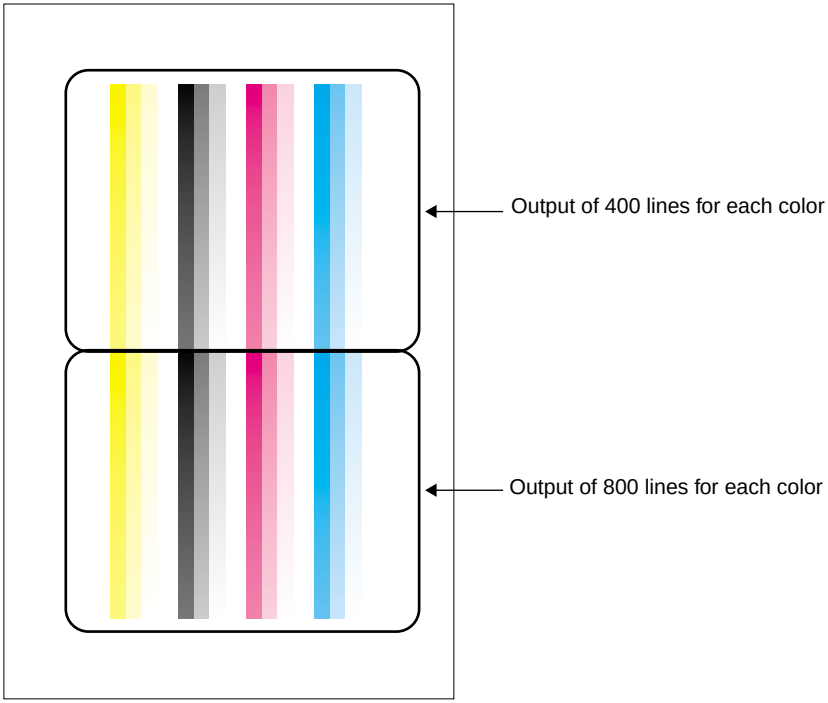
The sequence of operations is as follows:

1) Select the following in user mode: auto gradation correction>full correction.
2) Generate Test Print 1.
3) Check to make sure that the generated test print is free of image faults, and have it read by the machine. (If it has an image fault, perform the Basic Image Adjustment Procedure.)
   - Using the image data collected by reading the test print output, the machine finds the characteristics of the laser output and the image density (F02-403-01), and computes a correction value for the contrast potential so that the ideal solid density may be obtained.



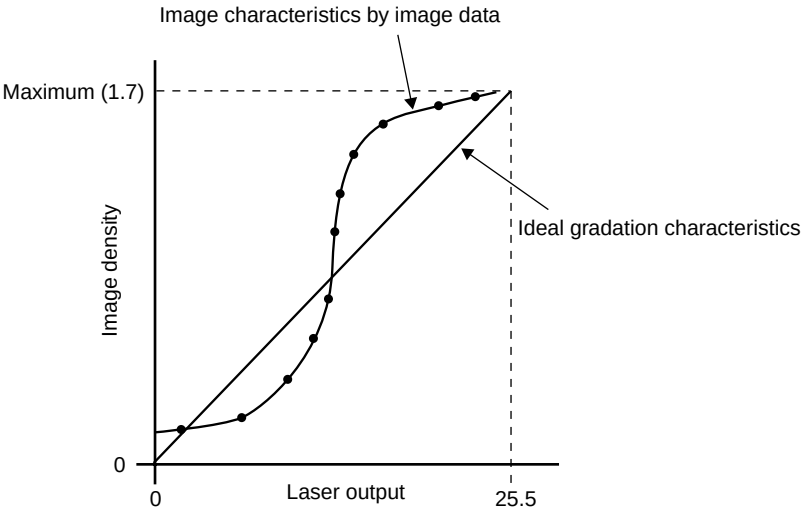

F02-403-01

4) Generate Test Print 2.



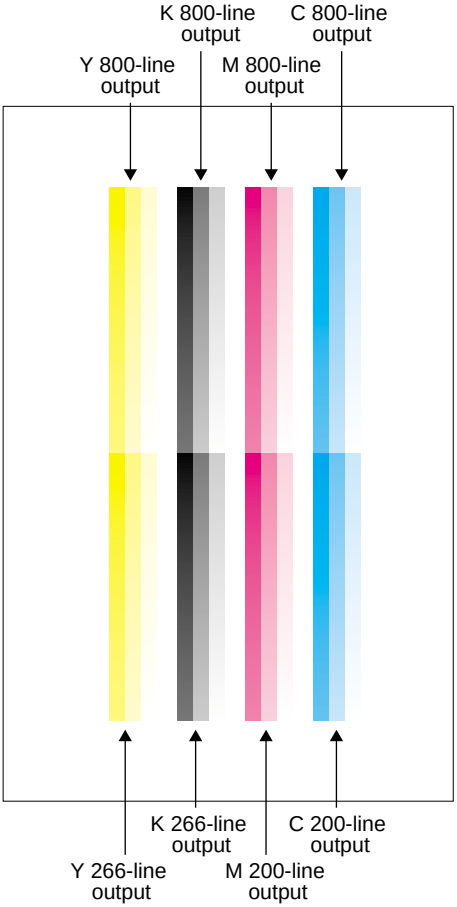

F02-403-02

5) Check to make sure that the test print output is free of image faults, and have it read by the machine. (If it has an image fault, perform the Basic Image Adjustment Procedure.)
   - Using the image data collected by reading the test print output, the machine finds the characteristics of the laser output and the image density (F02-403-03), and computes a correction value for 400-line/800-line image data to obtain the ideal gradation characteristics.




F02-403-03

6) Generate Test Print 3.




F02-403-04

7) Check to make sure that the generated test print is free of image faults, and have it read by the machine. (If it has an image fault, perform the Basic Image Adjustment Procedure.)
   - Using the image data collected by reading the test print output, the machine finds the characteristics of the laser output and the image density, and computes a correction value for 200-/266-line image data so that the ideal solid density may be obtained.

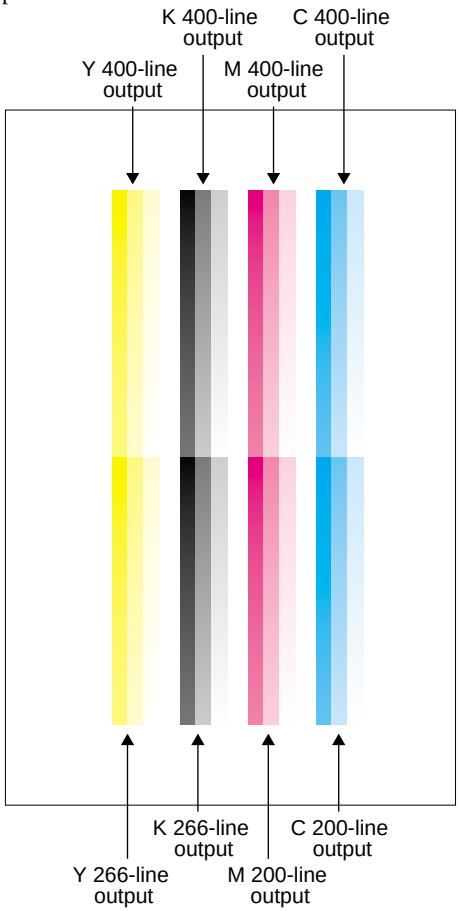
### 4.3.3 Operations (quick correction)

The machine executes quick correction under the following condition:

- For the high-density areas, if the density is appropriate but the gradation of the halftone areas is different from that of the original.

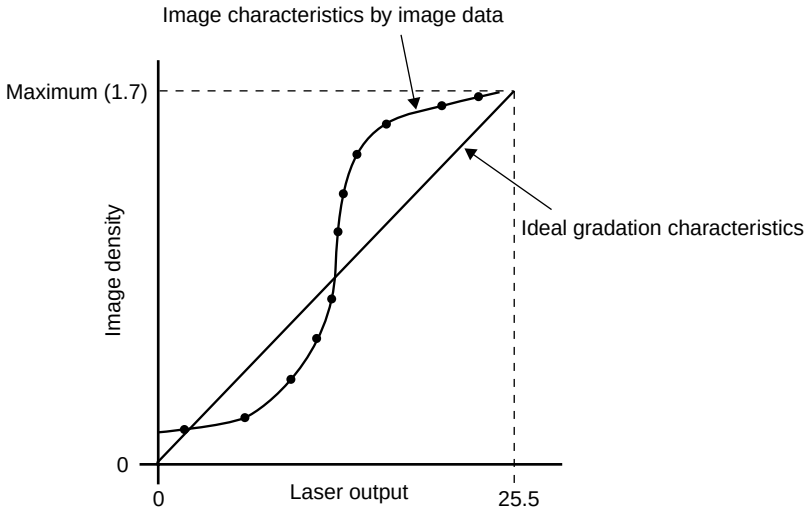
The following sequence of operations is used:

1) In user mode, make the following selections: auto gradation correction>quick correction.
2) Generate a test print.




F02-403-06

3) Check to make sure that the generated test print is free of image faults, and have it read by the machine. (If it has an image fault, perform the Basic Image Adjustment Procedure.)
   - Using the image data collected by reading the test print output, the machine finds the characteristics of the laser output and the image density (F02-403-07), and computes a correction value for 400-line and 200-/266-line image data so that the ideal solid density may be obtained.




F02-403-07

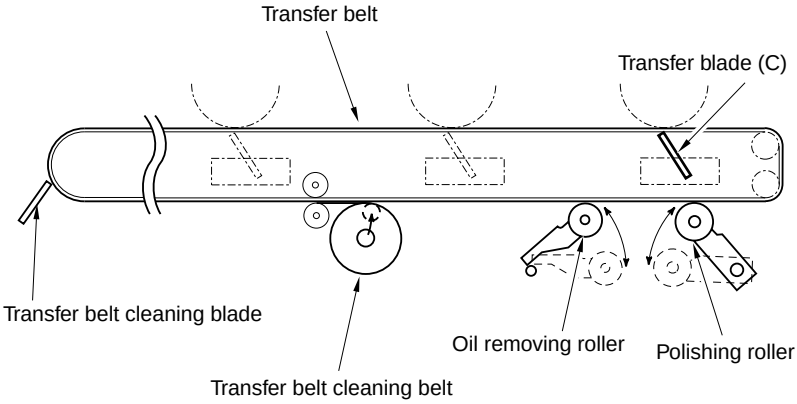
# 4.4 Transfer Unit

## 4.4.1 Outline

The machine's transfer unit is constructed as shown in F02-404-01.

The transfer unit has the following functions:

- Attracts copy paper from the registration roller to the transfer belt by means of the transfer blade (C).
- Transfers toner images from the C, M, Y, and K photosensitive drums.
- Separates the copy paper separated from the transfer belt to the pre-fixing feeding assembly.
- Cleans the surface of the transfer belt.



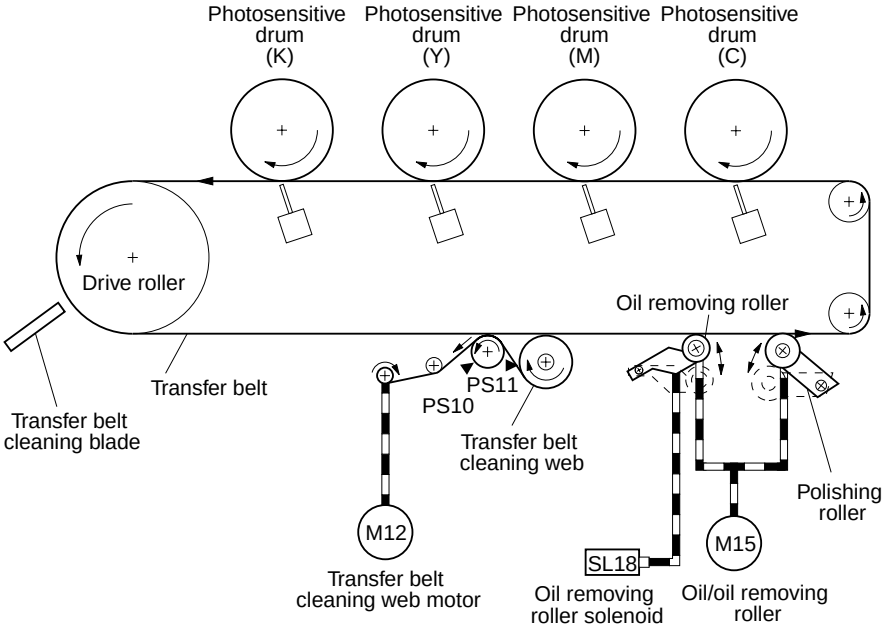

F02-404-01

## 4.4.2 Cleaning Mechanism for the Transfer Belt

### a. Outline

The transfer belt unit is equipped with a cleaning mechanism designed to remove dirt from the transfer belt (toner and fixing oil).

The cleaning mechanism is constructed as follows:

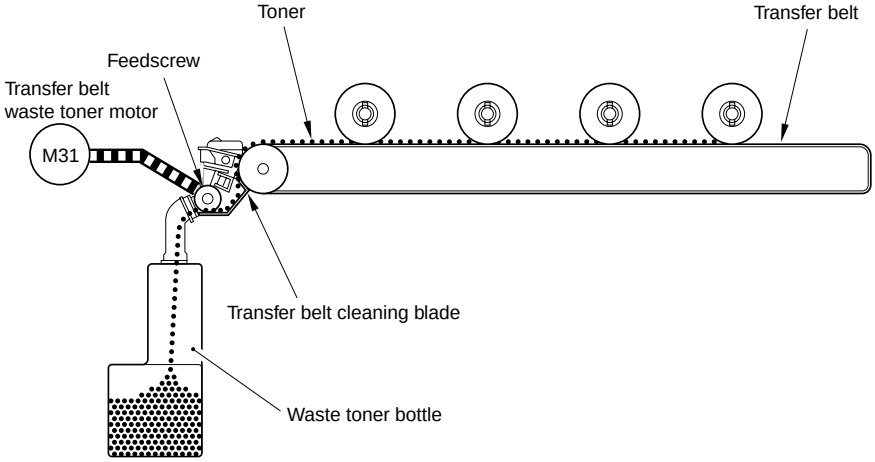



F02-404-02

b. Transfer Cleaning Blade

The transfer cleaning belt is used to remove toner deposited on the transfer belt as the result of image position correction or the like. The toner collected by the cleaning blade is moved to the waste toner bottle by the feedscrew that is operated the transfer belt waste toner motor (M31).

The cleaning blade remains in contact with the transfer belt at all times.




F02-404-03

c.Oil Removing Roller

The oil removing roller is used to remove fixing oil from the transfer belt.

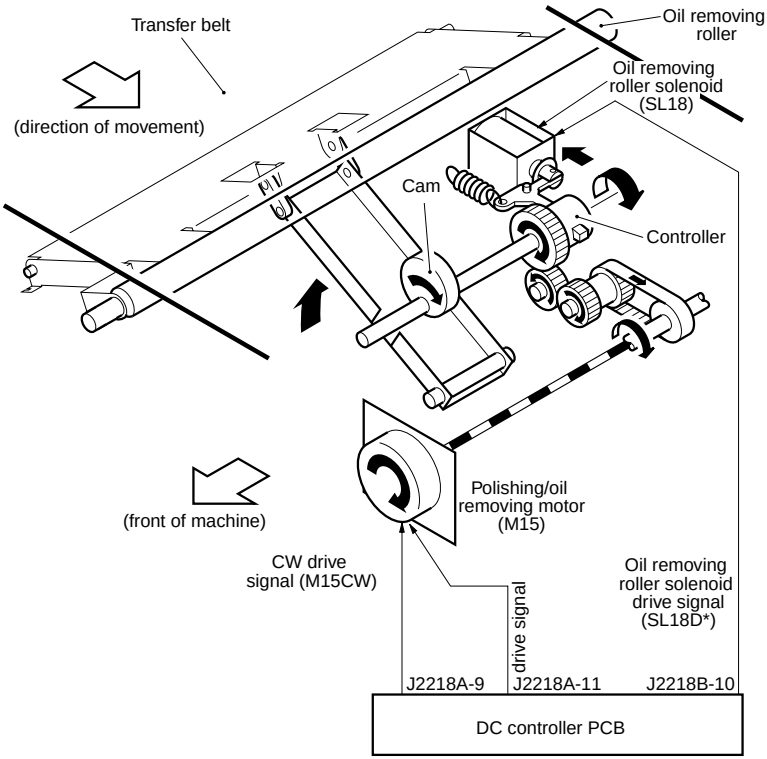
REF.

When a double-sided copy is made, the side with toner after fixing is placed on the transfer belt, causing the fixing oil to move to the transfer belt. If the transfer belt rotates as it is, the oil will move to the photosensitive drum, causing fogging or other adverse effects on the next copy image.

When the polishing/oil removing motor (M15) rotates clockwise and the oil removing roller solenoid (SL18) turns on, the cam starts to rotate by the drive arriving by way of the control ring, operating the push-on spring and, consequently, bringing the oil removing roller into contact with the transfer belt.

The oil removing roller remains pressed against the transfer belt; the solenoid remains off. When the solenoid turns off, the oil removing roller moves away from the transfer belt.

If the rotation speed of the polishing/oil removing motor deviates for some reason, the control panel will indicate 'E018'.




F02-404-04

d. Polishing Roller

The polishing roller polishes the surface of the transfer belt to limit the friction against the cleaning blade, thereby preventing the otherwise possible bending of the blade.

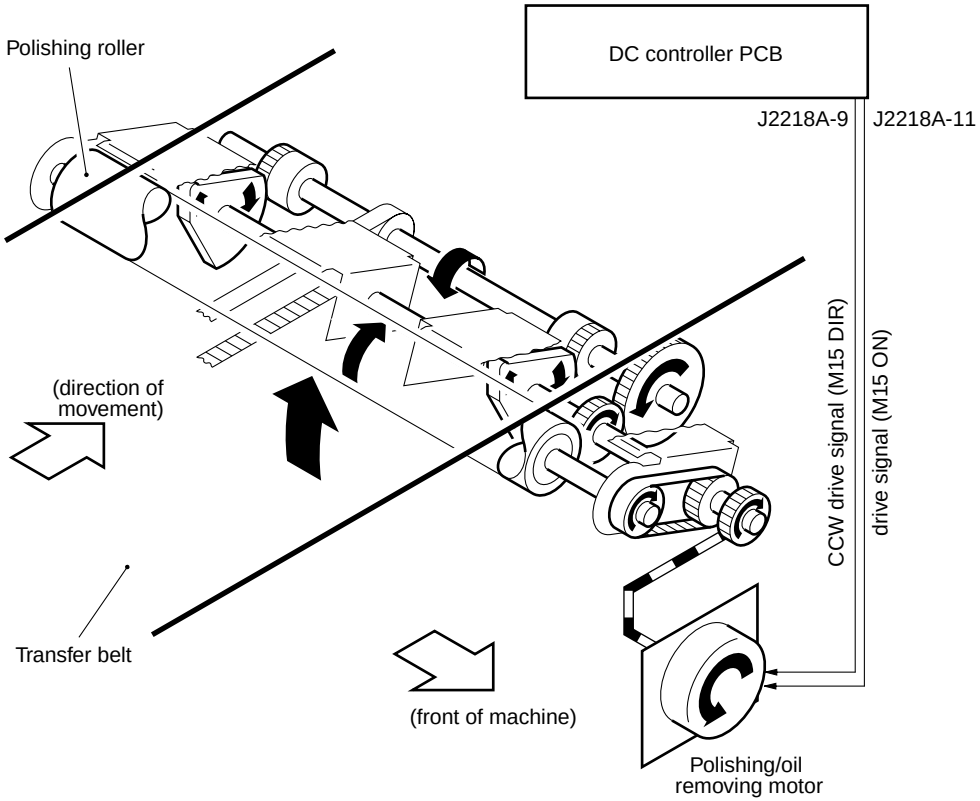
REF.

As more and more images are formed, toner and paper lint tend to build up, increasing the friction against the cleaning blade.

The polishing operation takes place at the end of image position correction for an equivalent of 2 rotations of the transfer belt.

When the polishing/oil removing motor (M15) starts to rotate, the transfer belt rotates and moves against the transfer belt.

The polishing roller is moved down when the transfer belt moves down (lifter operation), at the end of which it becomes released.




F02-404-05

## 4.5 Disassembly/Assembly

The machine has the mechanical features and operations as described herein, and may be disassembled or assembled as shown; be sure to observe the following whenever disassembling or assembling the machine:

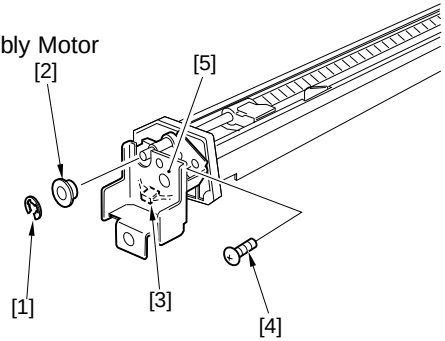
1. Disconnect the power plug for safety before the work.
2. Unless otherwise noted, reverse the steps used to disassemble the machine for assembly.
3. Identify the screws by type (length, diameter) and location.
4. The screws used for the grounding wire, varistors, or the like are equipped with washers to ensure electrical continuity. Be sure to use these screws during assembly.
5. As a rule, do not operate the machine with any of its parts removed.
6. Do not throw toner into fire to avoid explosion.
7. For the following items, refer to CLC1000 series service manual.

- Removing the hopper assembly
- Removing the hoppers
- Removing the toner level sensor
- Removing the primary charging assembly cleaning pad
- Developing assembly
- Photosensitive drum
- SALT sensor

## 4.5.1 Charging System

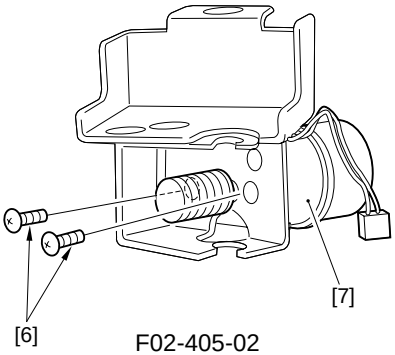
### a. Removing the Primary Charging Assembly Motor

1) Lift the hopper assembly. (See CLC 1000 Chap. VII. “Hopper System.”)
2) Pull out the primary charging assembly.
3) Remove the E-ring [1] and the bushing [2].
4) Disconnect the connector [3], and remove the screw [4]; then, detach the primary charging assembly motor support plate [5].




F02-405-01

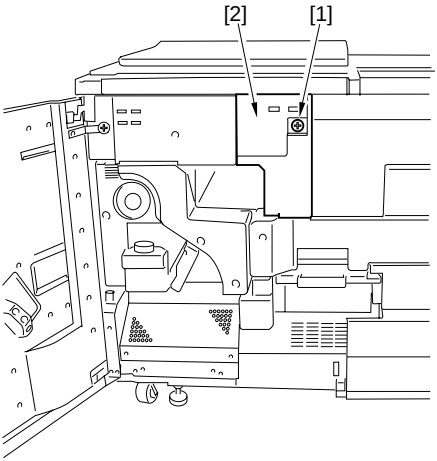
5) Remove the two screws [6], and detach the primary charging assembly motor [7].




F02-405-02

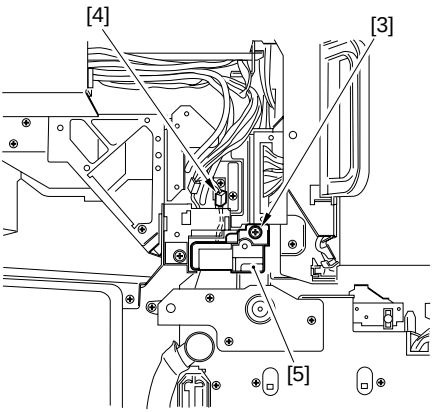
### b-1. Removing the Separation Charging Assembly

1) Open the front cover.
2) Remove the screw [1], and detach the hopper unit left cover [2].




F02-405-03

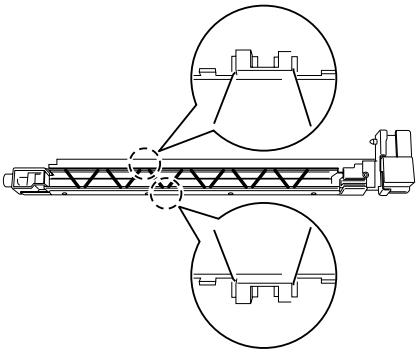
3) Remove the screw [3], and disconnect the connector [4]; then, detach the separation charging assembly [5].




02-405-04

b-2. Routing the Gut Wire

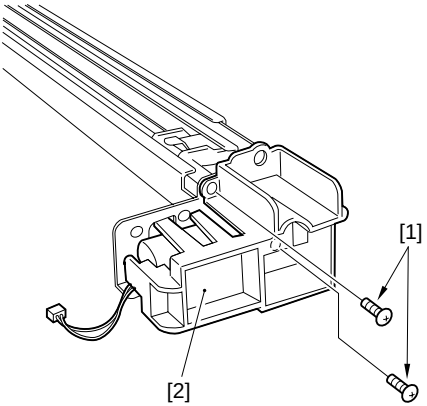
1) Route the gut wire as shown.



F02-405-05

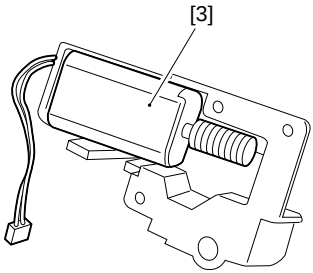
b-3. Removing the Separation Charging Assembly Motor

1) Remove the separation charging assembly. (See b-1. “Removing the Separation Charging Assembly.”)
2) Remove the two screws [1], and detach the motor mounting base [2].




F02-405-06

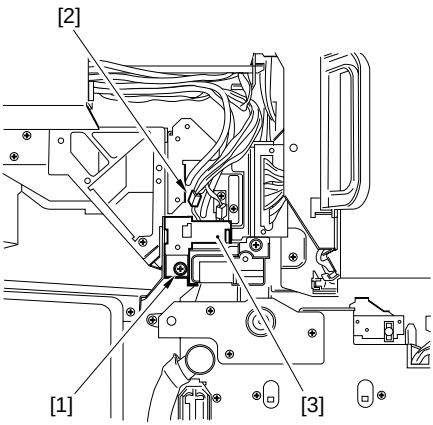
3) Remove the separation charging assembly motor [3]. (The motor is snapped in place.)




F02-405-07

c-1. Removing the Pre-Fixing Charging Assembly

1) Open the front cover.
2) Remove the hopper unit left cover.
3) Pull out the pre-fixing duct. (See 7.6.1 j “Removing the Pre-Fixing Filter”.)
4) Remove the screw [1], and disconnect the connector [2]; then, detach the pre-fixing charging assembly [3].



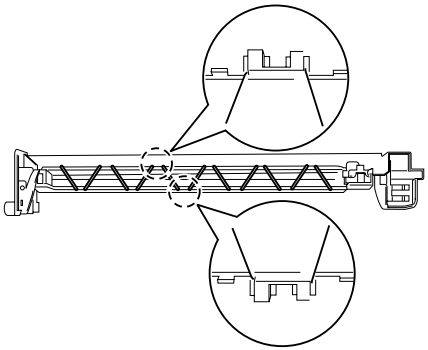

F02-405-08

Memo

To detach, pull it to the front slightly, and shift it to the left.

c-2. Removing the Gut Wire

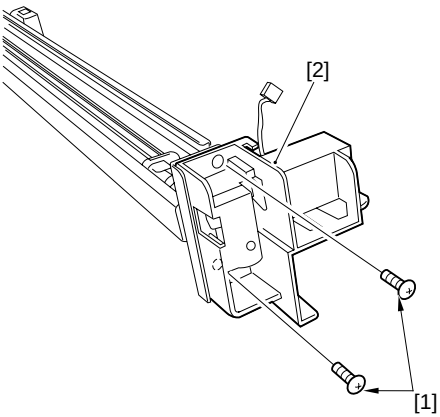
1) Route the gut wire as shown.



F02-405-09

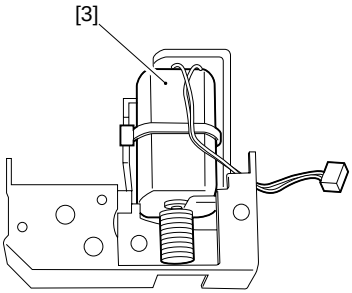
c-3. Removing the Pre-Fixing Charging Assembly Motor

1) Remove the pre-fixing charging assembly. (See c-1. “Removing the Pre-Fixing Charging Assembly.”)
2) Remove the two screws [1], and detach the motor mounting base [2].




F02-405-10

3) Remove the motor [3]. (The motor is snapped in place.)

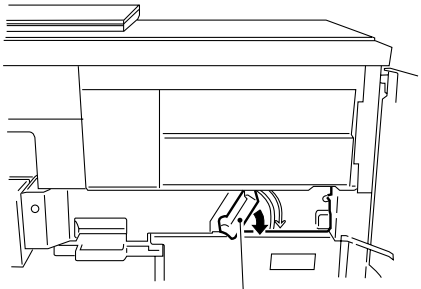



F02-405-11

## 4.5.2 Process Unit System

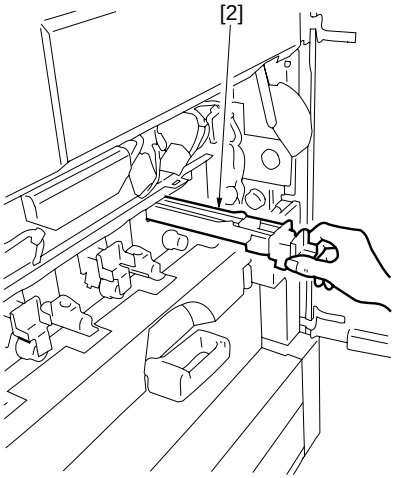
### a. Sliding out the process unit case

1) Shift down the releasing lever [1] of the transfer unit to release the transfer belt from the photosensitive drum.




F02-405-12

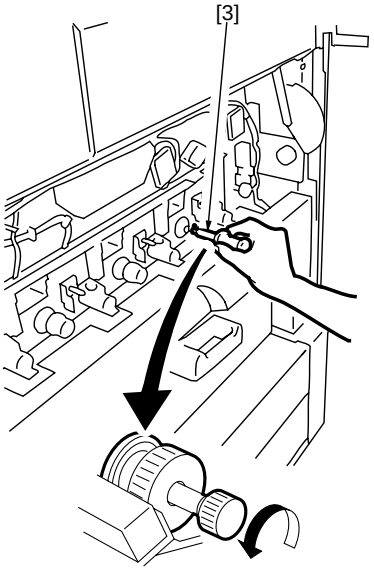
2) Lift the hopper unit.
3) Remove the four primary charging assemblies [2].




F02-405-13

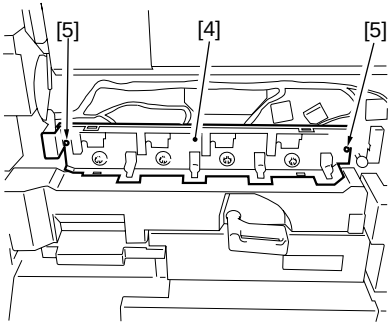
Place the primary charging assembly so that the grid faces upward.

4) Remove the four positioning knobs [3] of the photosensitive drum. (Turn the smaller knob in the middle counter-clockwise.)



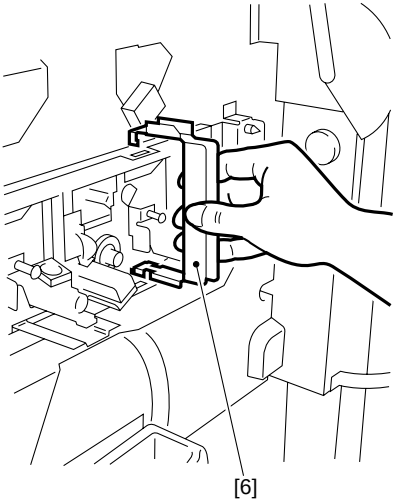

F02-405-14

5) Remove the two screws [5] of the process unit case [4].



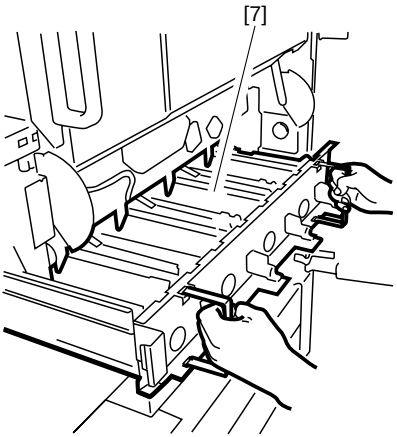

F02-405-15

6) Install the two process unit grips [6].




F02-405-16

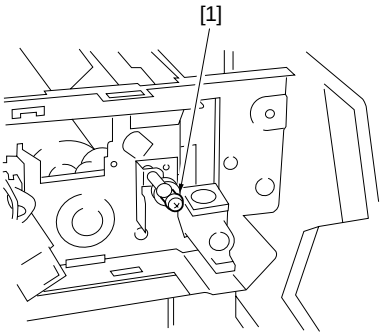
7) Slide out the process unit case [7] fully to the front.




F02-405-17

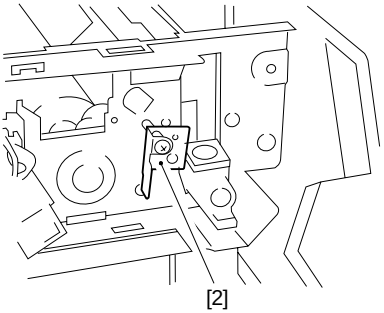
b. Removing the Process Unit

1) Slide out the process unit case.
2) Remove the screw [1] equipped with a spring.



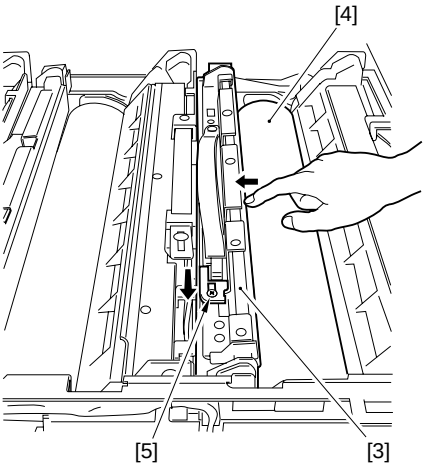

F02-405-18

3) Pull out the positioning pin [2].



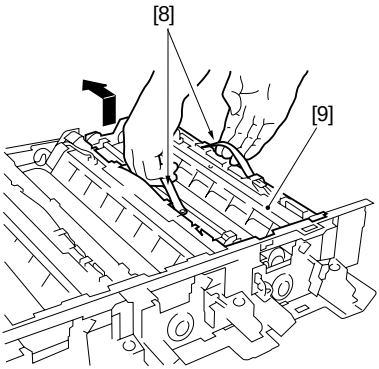

F02-405-19

4) Push the middle of the cleaning blade [3] with your finger, and move the pressure releasing pin [5] in the direction of the arrow while the area is away from the drum [4] to free the cleaning blade.




F02-405-20

5) Holding the grips [8] with both your hands, lift the process unit [9] about 5 cm, and shift it to the rear to detach.



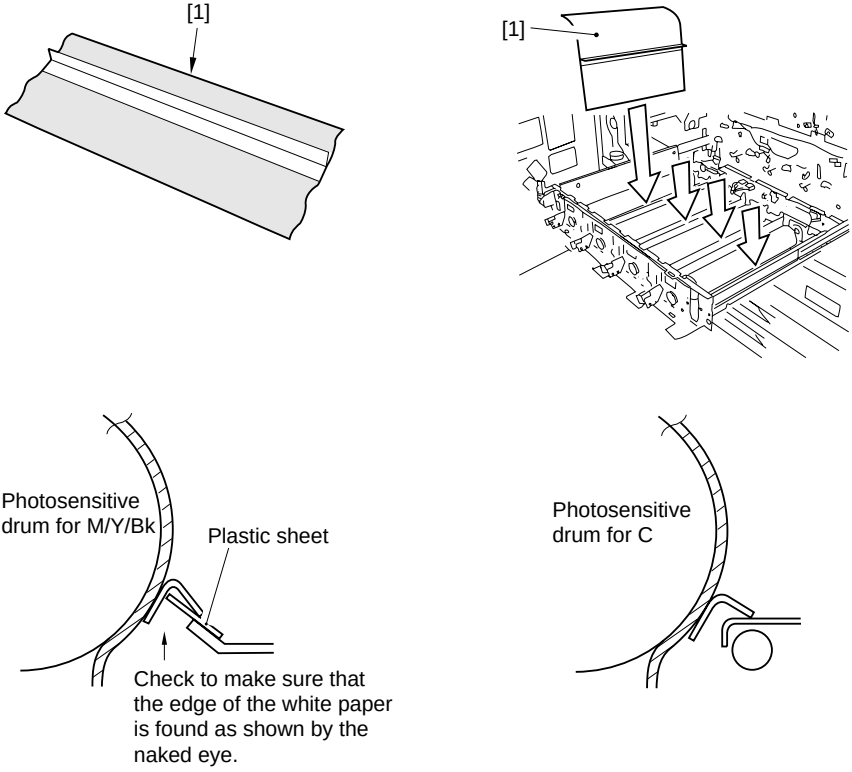

F02-405-15

Points to Note When Removing the Process Unit

- Lay paper where the unit will be placed. (Toner may fall out.)
- Do not move the unit over other unit of different color toners.

c. Mounting the Process Unit

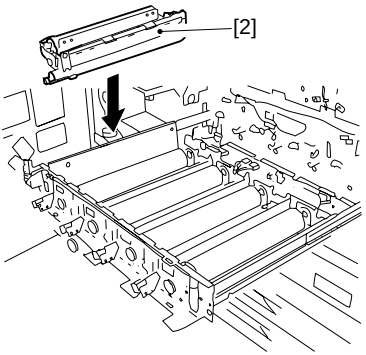
1) Remove all developing assemblies, and attach the drum protection sheet [1] to each photosensitive drum.




F02-405-22

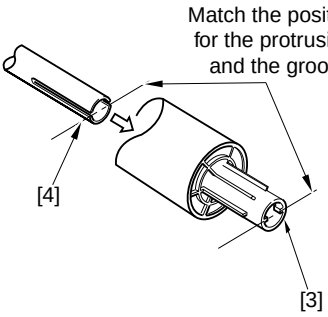
■ Do not touch the area where contact will be made with the drum.
■ Before putting it to use, be sure to dry wipe it with lint-free paper.

2) Set the process unit [2] to the process unit case.




F02-405-23

3) Shift the pressure releasing point of the cleaning blade back to its initial position.
4) Orient the two protrusions inside the flange shaft of the photosensitive drum to match the groove [4] of the drum shaft on the machine side.



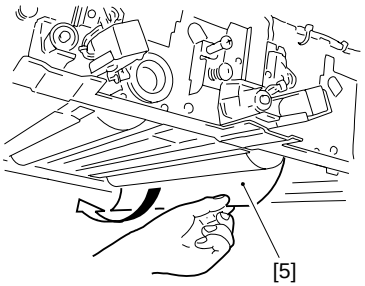

F02-405-24

When rotating the photosensitive drum, pull out the process unit, and lift the developing assembly so that it is away from the drum (to prevent damage to the drum).

5) Insert the positioning pin into the developing assembly.
6) Set the process unit case to the copier.
7) Secure the positioning pin in place with the screw equipped with a spring.

When setting the process unit case, be sure that the protrusion on the inside of the flange of the photosensitive drum is in the groove in the drum shaft. Further, take care not to force the process unit to avoid damage to the drum surface.

8) Slide out the transfer unit, and detach the drum protection sheet [5] in the direction of the arrow. (Be sure to store away the removed drum protection sheet.)

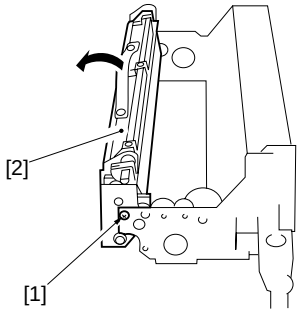



F02-405-25

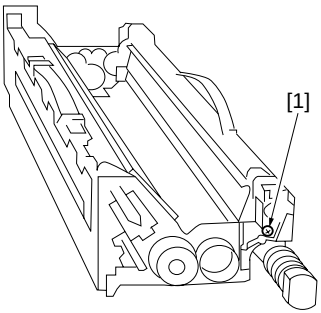
Points to Note When Handling the Drum Protection Sheet
- Do not touch the area where the drum will come into contact.
- Put it in a plastic bag, keeping it away from dust, oil, or the like.
- If it must be rolled for storage, be sure the side where the drum will come into contact will be the inner side.
- Before putting it into use, be sure to dry wipe the area where the drum will come into contact with lint-free paper.

d. Separating the Developing Assembly and the Drum Cleaner Unit

1) Remove the screw [1] from the front/ rear side plate of the process unit; then, shift the drum cleaner unit [2] to the rear, and turn it counterclockwise to detach.



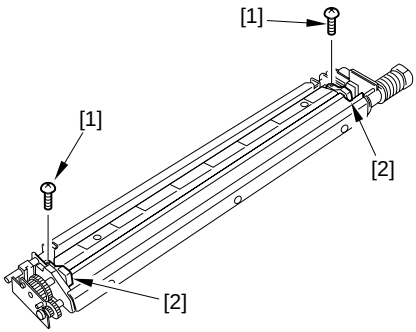

F02-405-26




F02-405-27

e. Removing the Cleaning Blade Seal

1) Remove the process unit from the copier. (See the instructions on how to remove the process unit.)
2) Remove the screw [1], and remove the cleaning blade seal [2].

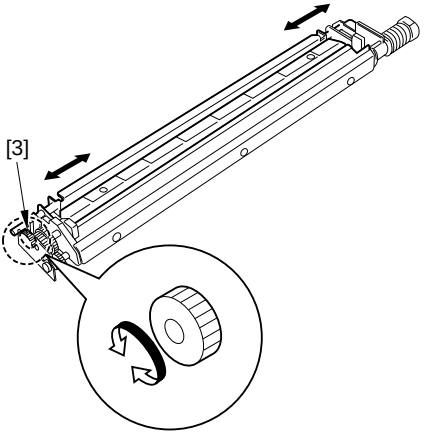



F02-405-28

REF.

Points to Note When Removing the Cleaning Blade Seal

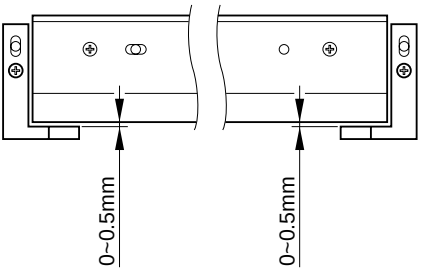
■ Turn the reciprocating gear [3], and shift the blade base so that a gap will show where the seal is attached at the edge of the cleaner to facilitate the work.




F02-405-29

Points to Note When Mounting the Cleaning Blade Seal

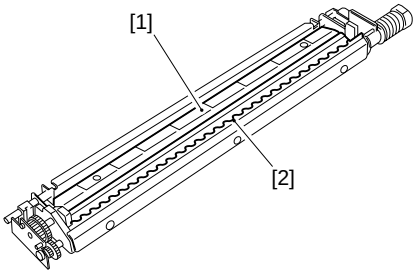
■ Make sure that the gap between the blade and the cleaning blade seal is about 0.5 mm as shown. Try pushing the cleaning blade seal to be sure that it will not get trapped by the blade.




F02-405-30

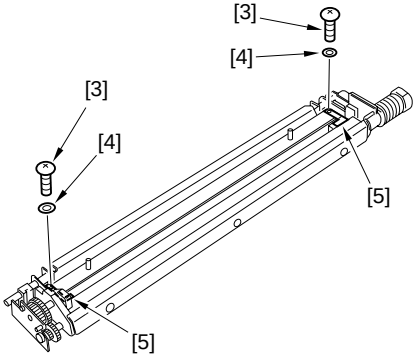
f. Removing Seal from the Cleaner Edge

1) Remove the process unit from the copier. (See the instructions on how to remove the process unit.)
2) Remove the cleaning blade.
3) Remove the spacer [1] and the scraping sheet [2].




F02-405-31

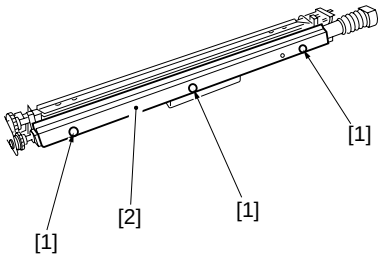
4) Remove the screw [3] from the front and the rear, and remove the washer [4]; then, detach the cleaner edge seal [5].




F02-405-32

g. Removing the Cleaner Assembly Scoop-Up Sheet

1) Remove the process unit from the copier. (See the instructions on how to remove the process unit.)
2) Separate the developing assembly and the drum cleaner unit.
3) Remove the three screws [1], and detach the cleaner assembly scoop-up sheets [2] together with its support plate.

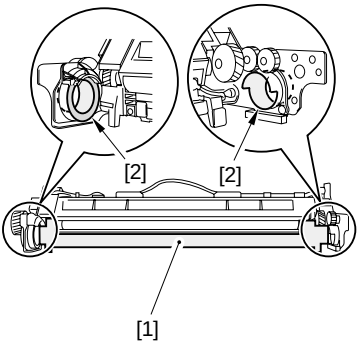



F02-405-33

h. Cleaning the Developing Assembly Bottom Cover and the Bearing

If you replaced the photosensitive drum or the cleaning blade, be sure to clean the developing assembly bottom cover and the bearing as follows:

1) Slide out the process unit from the copier.
2) Remove the developing assembly.
3) Remove the toner found in the area of the developing assembly bottom cover [1] indicated in the figure using a blower brush or lint-free paper.
4) If toner is found sticking to the developing assembly front side plate or the bearing [2] of the rear side plate, dry wipe it using lint-free paper.

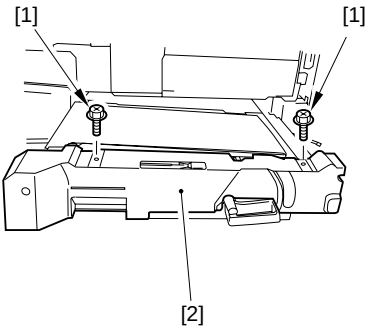



F02-405-34

## 4.5.3 Transfer Belt Unit

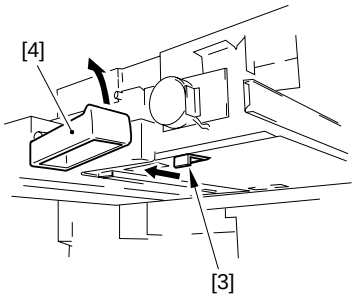
### a. Removing the Transfer Blade

1) Open the front cover, and slide out the transfer unit assembly to the front.
2) Remove the two screws [1], and detach the transfer unit cover [2].



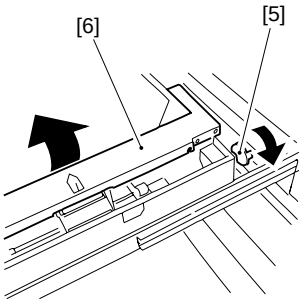

F02-405-35

3) While pulling the lever [3] found on the bottom of the transfer unit assembly, set the transfer assembly releasing lever [4].



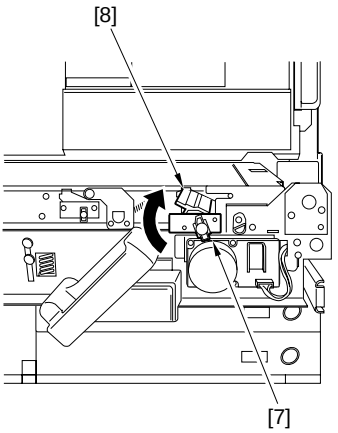

F02-405-36

4) Turn the cam [5] by hand so that the belt unit [6] will be in UP position.



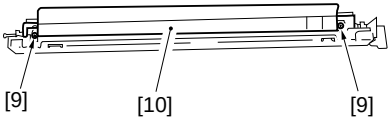

F02-405-37

5) Give the knob [7] a half clockwise turn, and pull out the transfer blade assembly [8].




F02-405-38

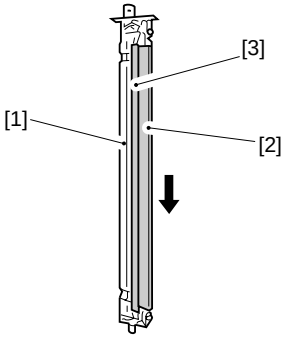
6) Give the knob a half counterclockwise turn to release the lock; then, remove the two screws [9], and detach the transfer blade [10].




F02-405-39

b. Cleaning the Transfer Blade

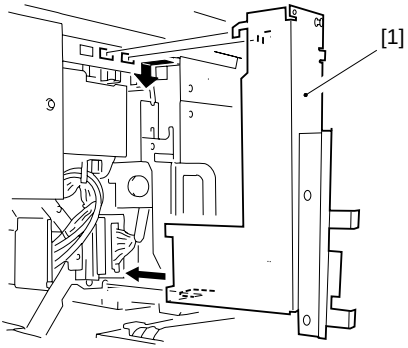
1) After performing step 5) for removing the transfer blade, keep the transfer blade assembly [1] upright as shown; then, clean the blade [2] and the plastic sheet [3] with lint-free paper or a blower brush. (Be sure to keep the strokes in one direction only.)




F02-405-40

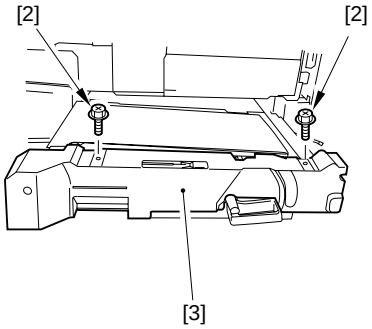
c. Opening the Transfer Belt Assembly

1) Remove the hopper left cover and the separation charging assembly; then, mount the transfer unit fixing [1] to the front side plate of the copier.



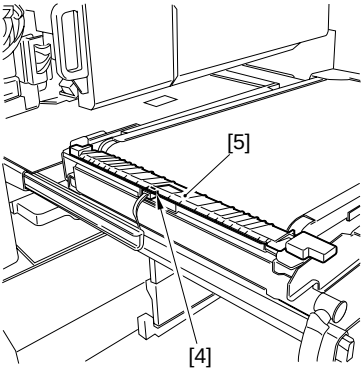

F02-405-41

2) Slide out the transfer unit.
3) Remove the two screws [2], and detach the pre-transfer cover [3].



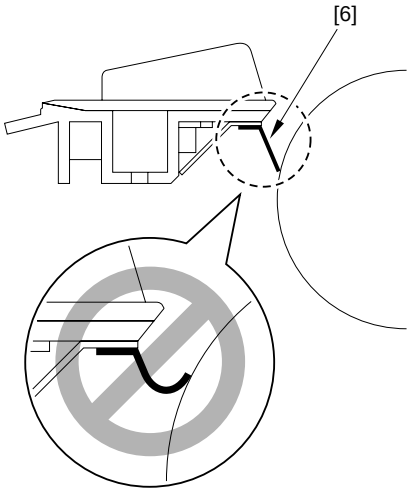

F02-405-42

4) Disconnect the connector [4], and detach the separation guide [5].



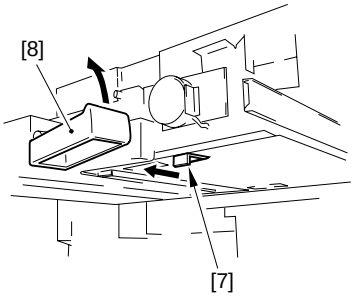

F02-405-43

Points to Note When Mounting the Separation Guide
When mounting the separation guide, be sure that the plastic sheet [6] is inside as shown, not hitting the transfer belt and bending.



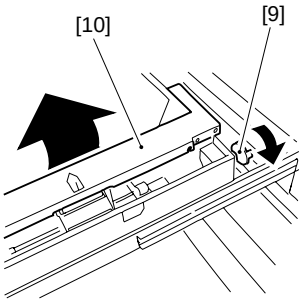

F02-405-44

5) While pulling the lever [7] to the front, set the transfer releasing lever [8].



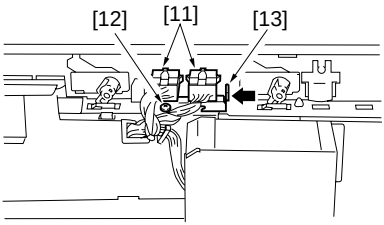

F02-405-45

6) Turn the cam [9] by hand so that the belt unit [10] is in UP position.



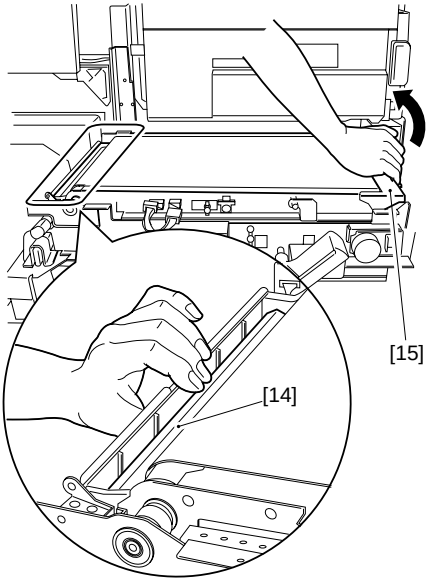

F02-405-46

7) Disconnect the two connectors [11], and loosen the screw [12]; then, shift the lock plate [13] to the left.




F02-405-47

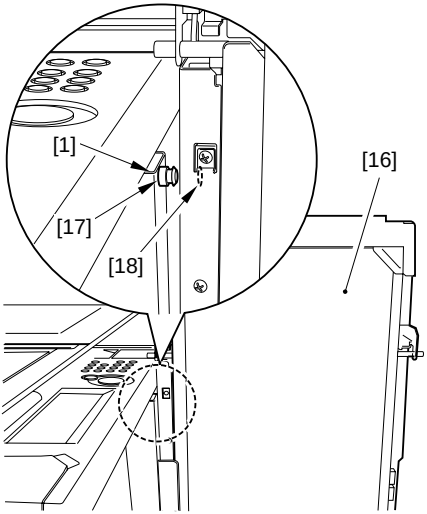
8) Push the cleaning blade [14] with your finger to release the pressure; then, lift the inlet guide [15] while supporting it at its center.




F02-405-48

When lifting the inlet guide, be sure to support it at its center; otherwise, the guide plate can deform.

9) As if to lift the transfer belt assembly [16] slightly, hook the pin of the transfer unit fixing [1] on the hole [18] of the transfer belt assembly [17]; at this time, be sure that the hole of the transfer belt assembly is securely engaged with the groove of the pin.

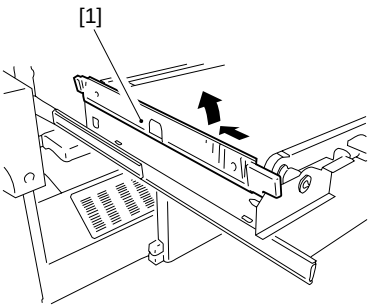



F02-405-49

d-1. Removing the Transfer Belt (method 1)

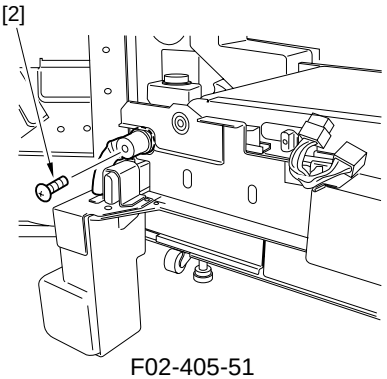
- While keeping the transfer unit inside the copier

1) Slide out the transfer unit assembly to the front, and detach the pre-transfer cover. (See F02-405-34.)
2) Shift up the separation guide [1], and shift it to the rear to detach.



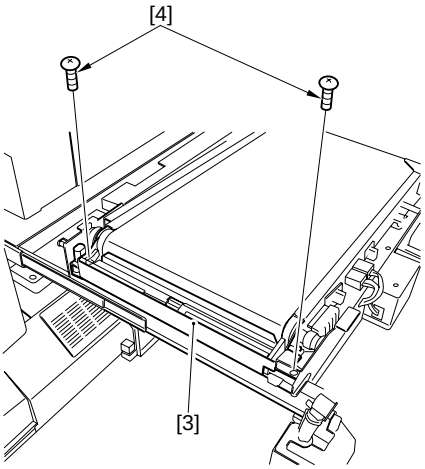

F02-405-50

3) Remove the screw [2] for the waste toner box relay.



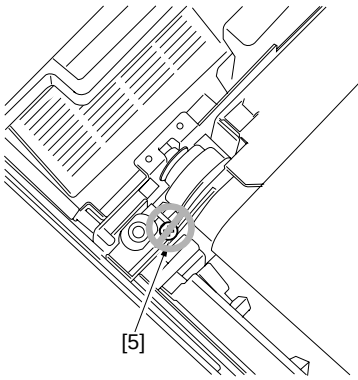

F02-405-51

4) Remove the two fixing screws [4] of the transfer cleaner unit.



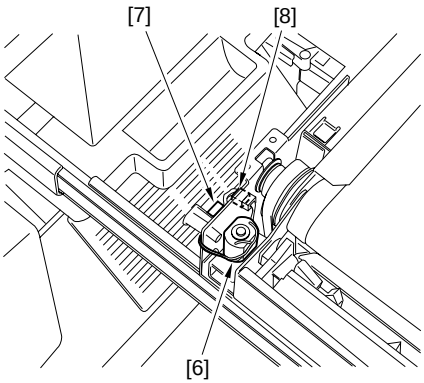

F02-405-52

When removing the screw at the rear, be sure NOT to touch the screw [5] indicated in the drawing. (The screw is used to position the drive roller.)



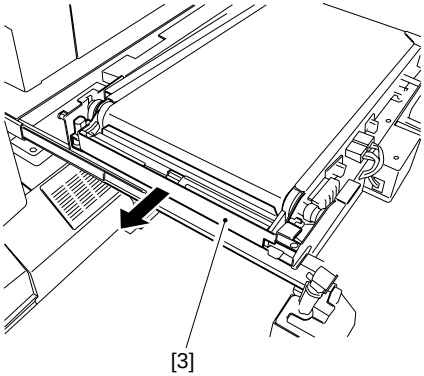

F02-405-53

5) Free the harness of the transfer cleaner motor [6] from the clamp [7], and disconnect the connector [8].



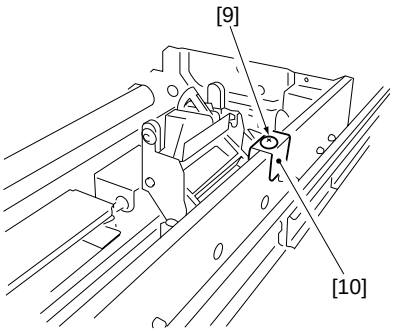

F02-405-54

6) Move the transfer cleaner unit [3] to the left to detach.



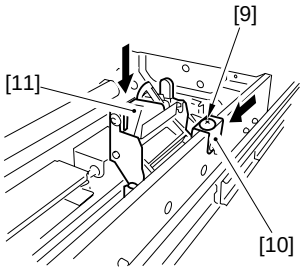

F02-405-55

7) Open the transfer belt assembly. (See the instructions on how to open the transfer belt.)
8) Loosen the mounting screw [9] to free the sensor unit fixing plate [10].



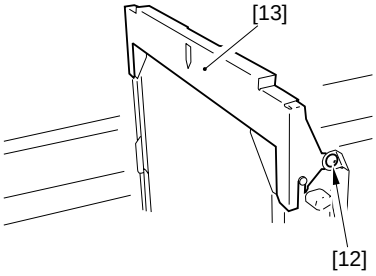

F02-405-56

9) Push down the sensor unit [11], and force the sensor unit fixing plate [10] in the direction of the arrow; then, tighten the screw [9] to secure the sensor unit [11] and the sensor unit fixing plate [10].



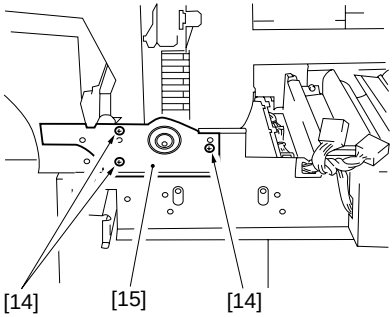

F02-405-57

10) Remove the screw [12], and detach the transfer inlet paper guide [13].



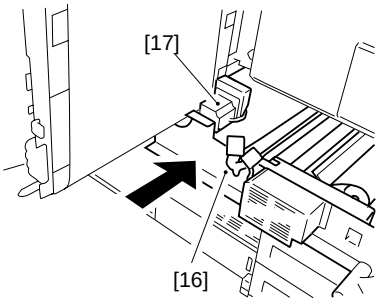

F02-405-58

11) Remove the three screws [14], and detach the transfer frame front support plate [15].



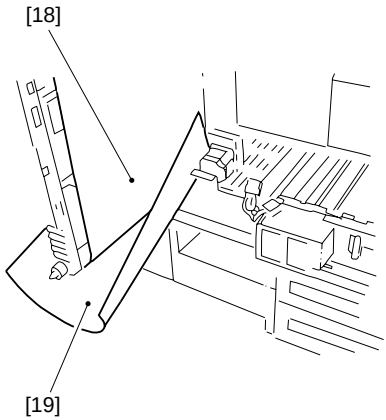

F02-405-59

12) Push in the transfer unit assembly [16] to the rear until it comes lightly in contact with the motor [18].



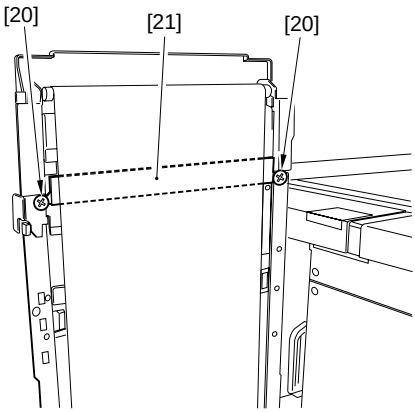

F02-405-60

13) To protect the transfer belt [18], place a sheet of A3 paper [19] as shown.



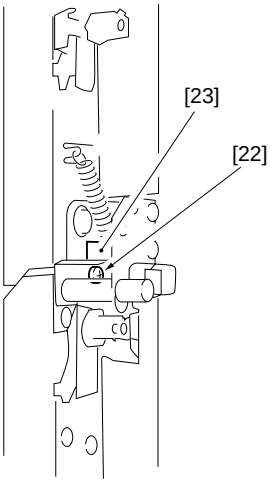

F02-405-61

14) Remove the two screws [20], and pull off the No. 2 back cleaning member [21] to the front.



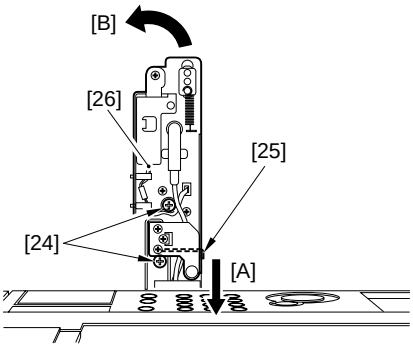

F02-405-62

15) Remove the screw [22], and pull out the fixing [23] at the front.




F02-405-63

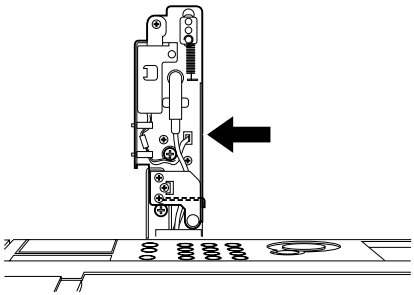
16) Remove the two screws [24]; then, while pulling the rear lever [25] in the direction of the arrow [A], bend the slave roller assembly [26] in the direction of the arrow [B].




F02-405-64

17) Pull the transfer belt to the front to detach.

During assembly after replacing the belt, be sure to fit the fixing while forcing the slave roller assembly in the direction of the arrow to eliminate any gap.

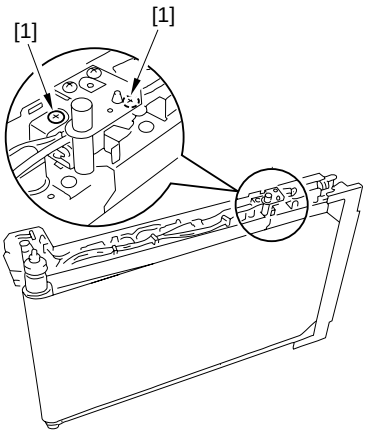


F02-405-65

d-2. Removing the Transfer Belt (method 2)

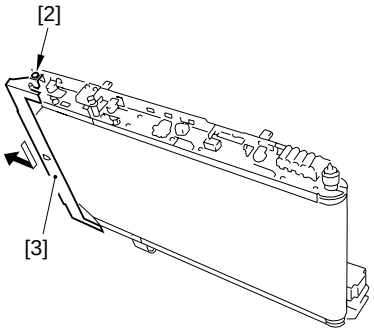
(• After removing the transfer unit assembly from the copier

1) Remove the transfer belt assembly.
2) Place the transfer belt assembly as shown, and remove the two releasing lever fixing screws [1] at the rear.



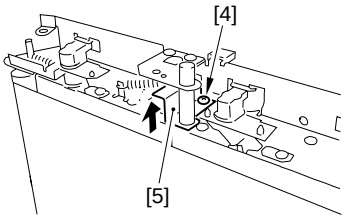

F02-405-66

3) Thereafter, place the transfer belt assembly as shown on the floor, remove the screw [2], and detach the transfer belt assembly inlet paper guide [3].



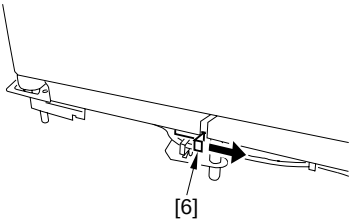

F02-405-67

4) Remove the screw [4], and free the fixing (front) [5].



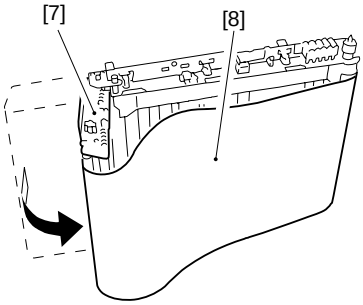

F02-405-68

5) Release the rear releasing lever [6].




F02-405-69

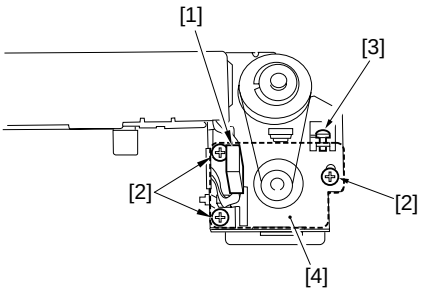
6) Bend the slave roller assembly [7] in the direction shown, and detach the belt [8].




F02-405-70

e. Removing the Transfer Belt Motor

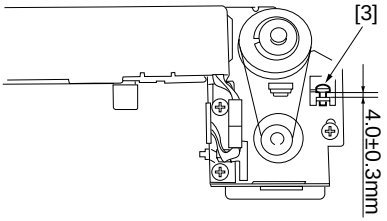
1) Slide out the transfer unit assembly to the front, and open the transfer belt assembly. (See the instructions on how to open the transfer belt.)
2) Disconnect the connector [1], and remove the three screws [2] and the adjusting screw [3]; then, detach the transfer belt motor [4].




F02-405-71

f. Mounting the Transfer Belt Motor

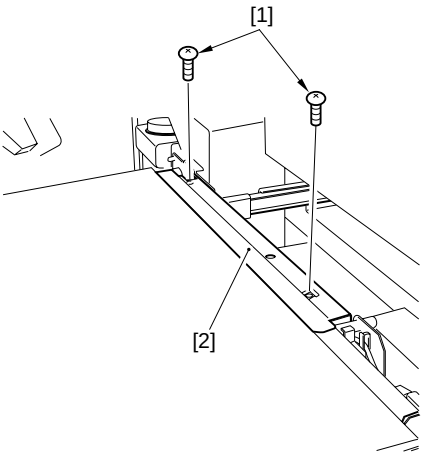
1) Mount the motor by reversing the steps used to remove it.
2) Check to make sure that the gap of the adjusting screw [3] is 4.0 ±0.3 mm.




F02-405-72

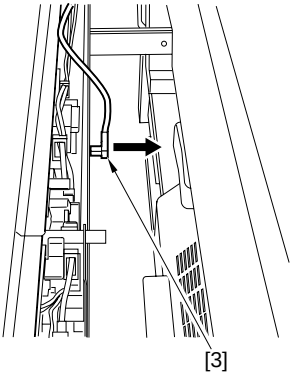
g. Removing the Internal Static Eliminating Roller

1) Slide out the transfer belt assembly.
2) Remove the transfer unit cover.
(Refer to F02-405-34)
3) Set the transfer assembly releasing lever.
(Refer to F02-405-35)
4) Remove two screws [1], then detach the rear transfer assembly cover.



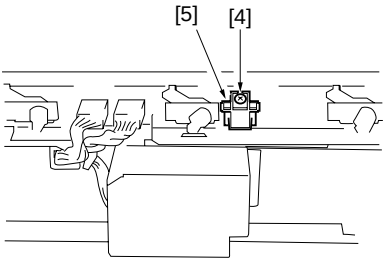

F02-405-73

5) Disconnect the connector [3].




F02-405-74

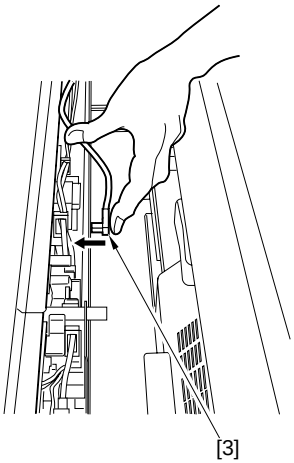
6) Remove the screw [4], and pull out the internal static eliminating roller [5] as if to lift it.




F02-405-75

Points to Note When Mounting

- When removing the internal static eliminating roller, be user to force to n the front while connecting the connector [3].
- When mounting the transfer rear cover, be sure to take care not to trap the harness.

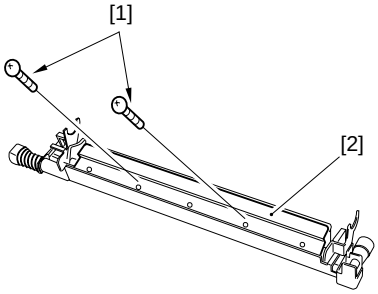



F02-405-76

## 4.5.4 Transfer Belt Base

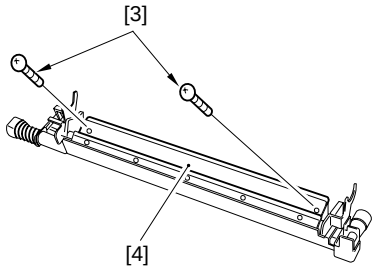
### a. Removing the Transfer Cleaning Blade

1) Remove the transfer cleaner unit.
2) Remove the two screws [1], and detach the scoop-up sheet [2].




F02-405-77

3) Remove the two screws [3], and detach the blade base [4].



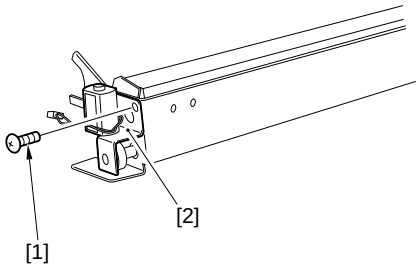

F02-405-78

Points to Note When Mounting the Transfer Cleaning Blade Assembly

1. But the blade support plate against the bearing of the transfer belt shaft from the rear.
2. After mounting it, push it two to three times with your finger to eliminate the distortion at the tip of the blade.

b. Removing the Transfer Belt Waste Toner Motor

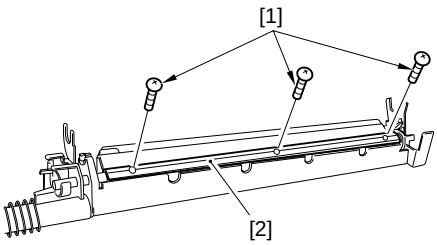
1) Remove the transfer cleaner unit.
2) Remove the screw [1], and detach the transfer belt waste toner motor [2].




F02-405-79

c. Replacing the Stray Toner Blocking Plastic Sheet

1) Remove the transfer cleaner unit.
2) Remove the three screws [1], and detach the stray toner blocking plastic sheet [2].



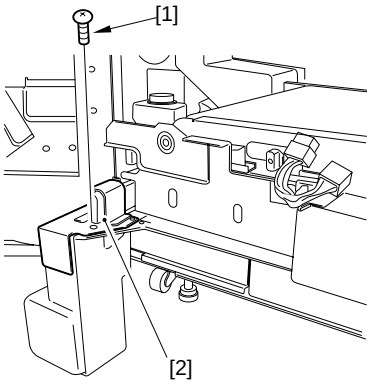

F02-405-80

Points to Note When Replacing the Stray Toner Blocking Plastic Sheets

Be sure to replace the plastic sheet whenever the transfer cleaning blade is replaced.

d. Removing the Waste Toner Box

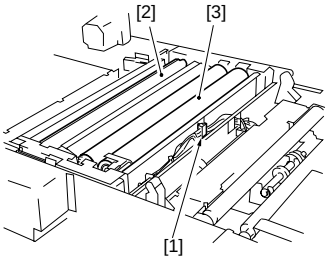
1) Slide out the transfer unit.
2) Remove the transfer unit cover.
3) Remove the screw [1], and detach the waste toner box retaining plate [2].




F02-405-81

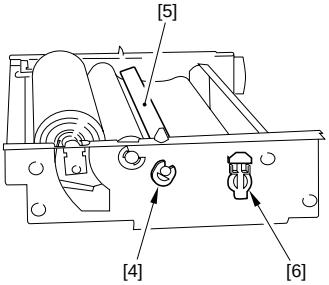
e. Removing the Transfer Cleaning Web

1) Disconnect the connector [1]; then, while pushing down the pressure arm [2], lift the web assembly [3] to detach.



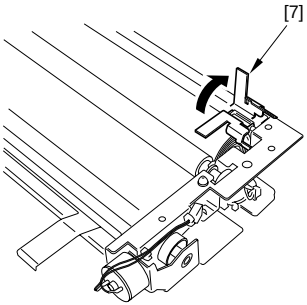

F02-405-82

2) After removing the resinous e-ring [4] and the cleaner blade support shaft [5], detach the web fixing bushing [6].

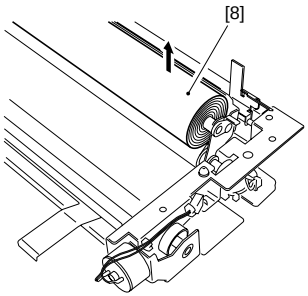



F02-405-83

3) Lift the cleaning belt detection lever [7] on the front side of the cleaning belt as shown in the figure. Then pull the transfer cleaning web [8] down to the point where the figure F02-405-85 indicates, and remove it upward.

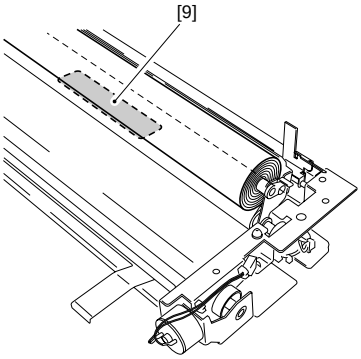



F02-405-84

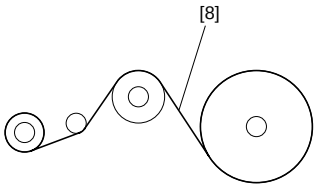



F02-405-85

4) When installing the transfer cleaning web [8], follow the guidance in the label [9] indicated in the figure F02-405-86. The figure F02-405-87 shows the installation result.



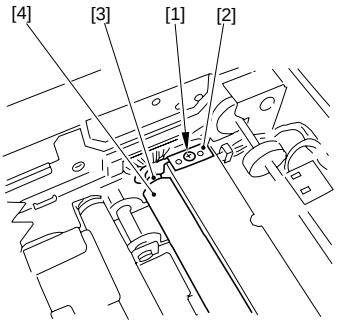

F02-405-86




F02-405-87

f. Removing the Polishing Roller

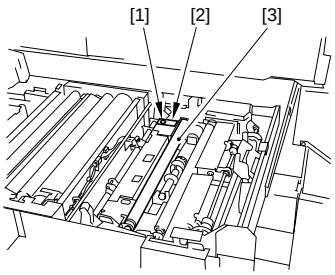
1) Remove the screw [1], fixing [2], and bushing [3]; then, detach the polishing roller [4].




F02-405-88

g. Removing the Oil Removing Roller

1) Remove the screw [1] and the roller support plate [2]; then, detach the oil removing roller [3].




F02-405-89

# 5 Pickup/Feed System

## 5.1 Outline of the Pickup/Feed System

- The major difference is the higher copying speed (from 30 to 50 cpm; A4, Direct).
- The pickup assembly is based on that of the CLC1100.

The feed system, on the other hand, is identical to that of the CLC1000.

The machine uses the center reference method, in which paper is moved in the middle of the pickup/ feed path.

To accommodate the increase in the copying speed, the feed speed to the registration roller has been increased to 400 mm/sec (in relation to the process speed of 200 mm/sec).

The pickup system consists of the following: cassette 1, cassette 2, multifeeder, and holding tray (duplex unit). (For the paper deck, see 8. “Paper Deck.”)

The paper picked up from the cassette or the multifeeder is controlled so that the leading edge will match the leading edge of the image on the photosensitive drum, and is sent to the transfer belt.

When the paper arrives at the transfer belt, the charge from the transfer blade causes it to be attracted to the transfer belt; transfer of the first color (cyan) takes place to coincide with static attraction.

When all four colors have been transferred, the paper is then moved to the delivery tray through the separation, feeding, and fixing assemblies (F02-502-01).

The CPU on the machine’s DC controller PCB generates the image leading edge signal (ITOP) as soon as the registration roller turns to initiate reading of image data from the IP memory PCB.

## 5.2 Differences in the Pickup/Feed System

| Unit/part | Difference from CLC1000 Series machines | Purpose | Remarks | Reference |
|---|---|---|---|---|
| Pickup/vertical path assembly | Increase in the feed speed (400 mm/sec) in relation to the process speed of 200 mm/sec | To enable high-speed operation | Separate pickup units for cassettes 1 and 2 | 5.3 “Pickup Assembly” |
| | Use of a different material (urethane instead of silicone) for the separation roller (surface layer) | To increase durability and strength against friction | No change to the procedure used for roller replacement | |
| Registration roller assembly | Use of an independent pulse motor to drive the registration roller (no registration clutch) | To enable high-speed operation (to increase feeding speed) | Pickup motor (cassette 1, 2), re-pickup motor, and registration motor are independent motors | 5.4 “Multifeeder Pickup Assembly” |
| Duplex unit | Use of a no-stack duplex unit (to support A3 extra-length size) | To increase productivity | Re-pickup assembly is separate from the cassette pickup assembly | 5.5 “Duplex Unit” |
| | No intermediate tray heater | To enable stackless both-side | | |
| Pre-fixing feeding assembly | Use of a different number of feed belts (from 2 to 4) | To prevent feeding faults | To prevent jams cause by attachment of paper | |

T02-502-01

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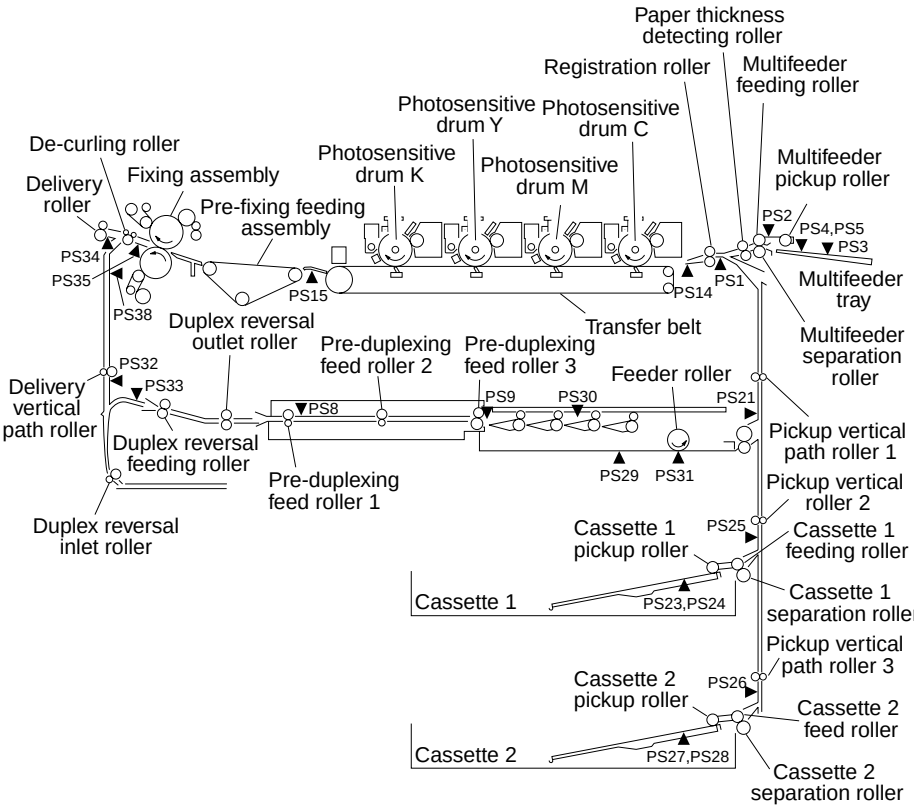



PS1 Registration paper sensor
PS2 Multifeeder lifter sensor (upper)
PS3 Multifeeder lifter sensor (lower)
PS4 Multifeeder paper width sensor (front)
PS5 Multifeeder paper width sensor (rear)
PS8 Pre-duplexing feed sensor 1
PS9 Pre-duplexing feed sensor 2
PS14 Post-registration paper sensor
PS15 Separation sensor
PS21 Pickup vertical path 1 sensor
PS23 Cassette 1 paper sensor
PS24 Cassette 1 lifter sensor
PS25 Pickup vertical path 2 sensor
PS26 Pickup vertical path 3 sensor
PS27 Cassette 2 lifter sensor
PS28 Cassette 2 paper sensor
PS29 Duplex paper alignment guide home position sensor
PS30 Duplexing paper sensor 1
PS31 Duplexing paper sensor 2
PS33 Duplex reversal sensor
PS34 Delivery sensor
PS35 Inside delivery sensor
PS38 Delivery vertical path sensor 1

F02-502-01

# 5.3 Cassette Pickup Assembly

## 5.3.1 Outline

The machine's pickup assembly is constructed as shown in T02-503-01 and F02-503-01.

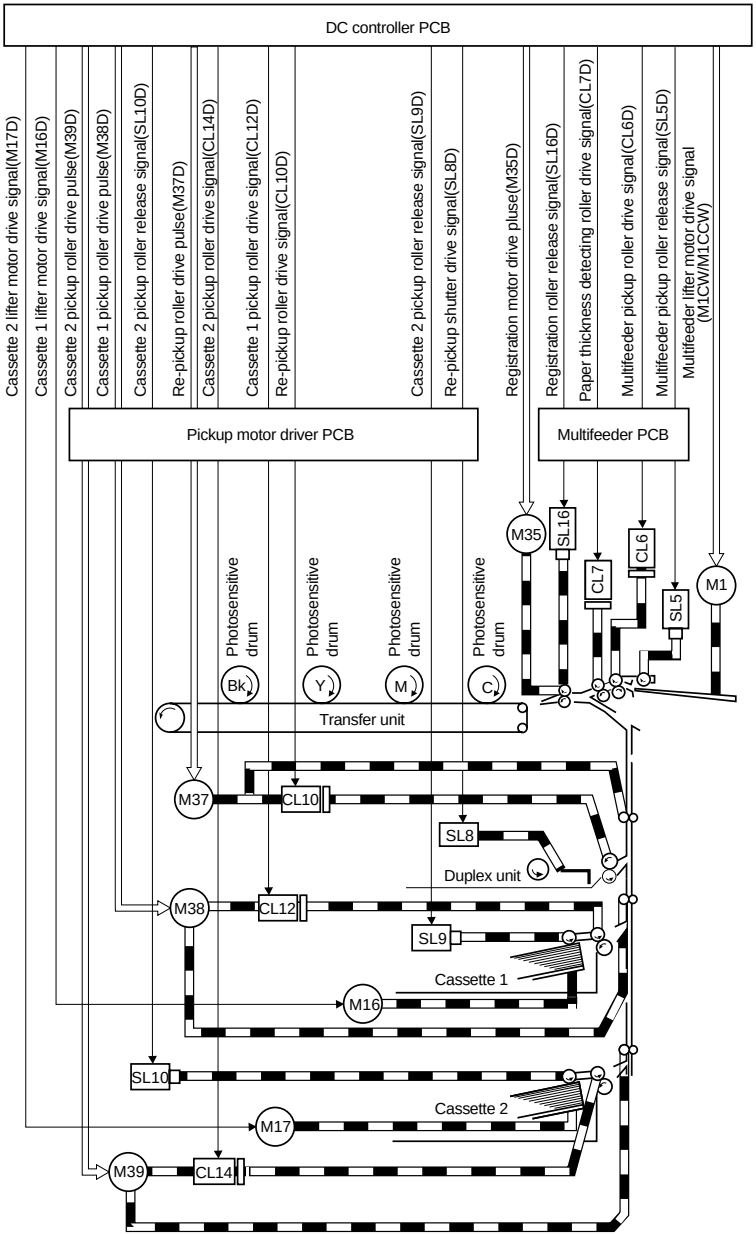
The paper inside the cassette is moved up by the work of a lifter, and remains in contact with the pickup roller.

When the pickup roller clutch turns on, the pickup roller starts to rotate to pick up paper. Then, the pickup roller releasing solenoid turns on so that the pickup roller moves away from the surface of the stack of paper.

The feed roller and the separation roller make sure that only one sheet of paper is forwarded to the feed path, in which the paper is moved by the pickup vertical path to the transfer belt by way of the registration roller.

| Item | Description |
|---|---|
| Feed reference | Center |
| Paper stack | Cassette 1/2: 550 sheets each (of 81.4 g/m$^2$ paper) |
| Paper size switch | Universal cassette (by user) |
| Related mechanical adjustments | Cassette horizontal registration |

T02-503-01


DC controller PCB
Cassette 2 lifter motor drive signal(M17D)
Cassette 1 lifter motor drive signal(M16D)
Cassette 2 pickup roller drive pulse(M39D)
Cassette 1 pickup roller drive pulse(M38D)
Cassette 2 pickup roller release signal(SL10D)
Re-pickup roller drive pulse(M37D)
Cassette 2 pickup roller drive signal(CL14D)
Cassette 1 pickup roller drive signal(CL12D)
Re-pickup roller drive signal(CL10D)
Cassette 2 pickup roller release signal(SL9D)
Re-pickup shutter drive signal(SL8D)
Registration motor drive pluse(M35D)
Registration roller release signal(SL16D)
Paper thickness detecting roller drive signal(CL7D)
Multifeeder pickup roller drive signal(CL6D)
Multifeeder pickup roller release signal(SL5D)
Multifeeder lifter motor drive signal (M1CW/M1CCW)
Pickup motor driver PCB
Multifeeder PCB
M35
SL16
CL7
CL6
SL5
M1
Photosensitive drum
Bk
Y
M
C
Transfer unit
M37
CL10
SL8
Duplex unit
M38
CL12
SL9
Cassette 1
M16
SL10
Cassette 2
M17
M39
CL14

F02-503-01

## 5.3.2 Cassette Lifter Operation

T02-503-02 shows an outline of the movement of the cassette lifter.

When the cassette is set in the copier, the pickup roller moves down, and the lifter detecting lever leaves the lifter sensor.

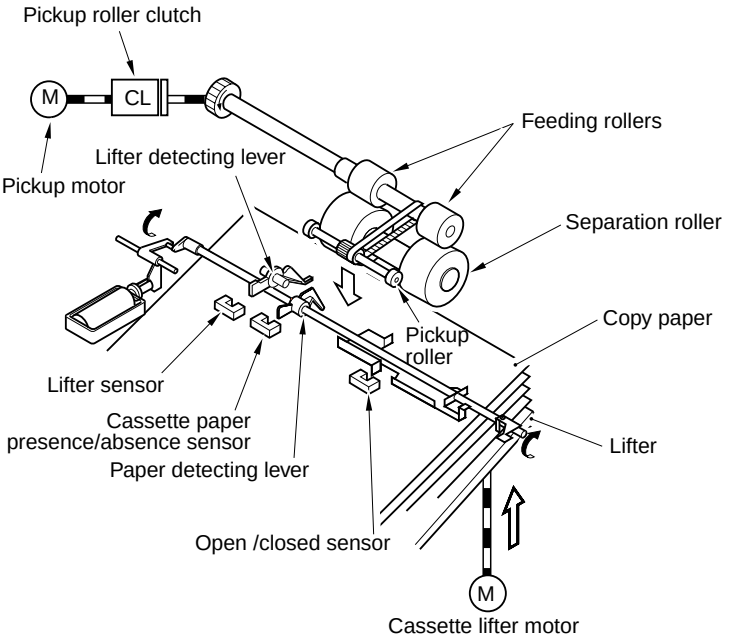
This condition turns on the cassette lifter motor to move up the lifter. The cassette lifter motor stops when the cassette lifter sensor reaches a position at which it can detect the top surface of the stack of paper placed on the lifter.

When paper runs out and, as a result, the paper detecting lever leaves the cassette paper sensor, the machine displays a message on its control panel to indicate the absence of paper.

The following shows the notations of the cassette lifter motor, cassette lifter sensor, and cassette paper sensor used in the machine's cassette 1 and cassette 2.

| Name | Cassette 1 | Cassette 2 |
|---|---|---|
| Cassette lifter motor | M16 | M17 |
| Cassette lifter sensor | PS24 | PS27 |
| Cassette paper presence/absence sensor | PS23 | PS28 |

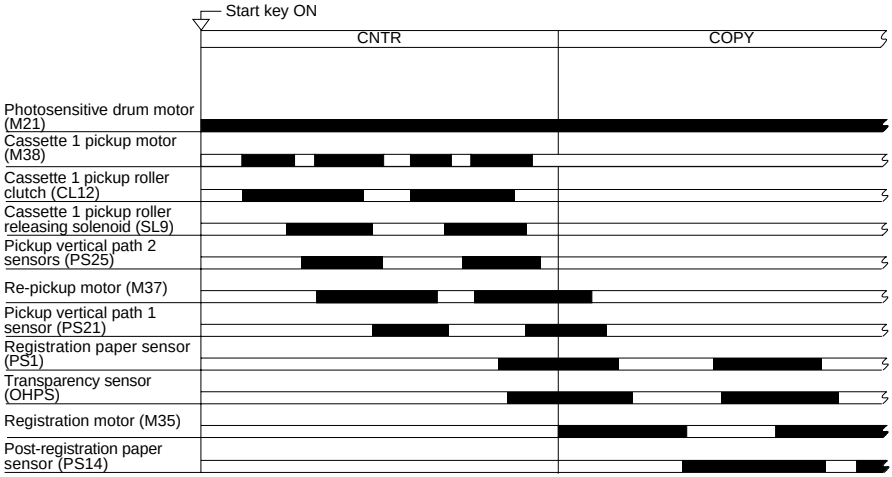
T02-503-02




F02-503-02

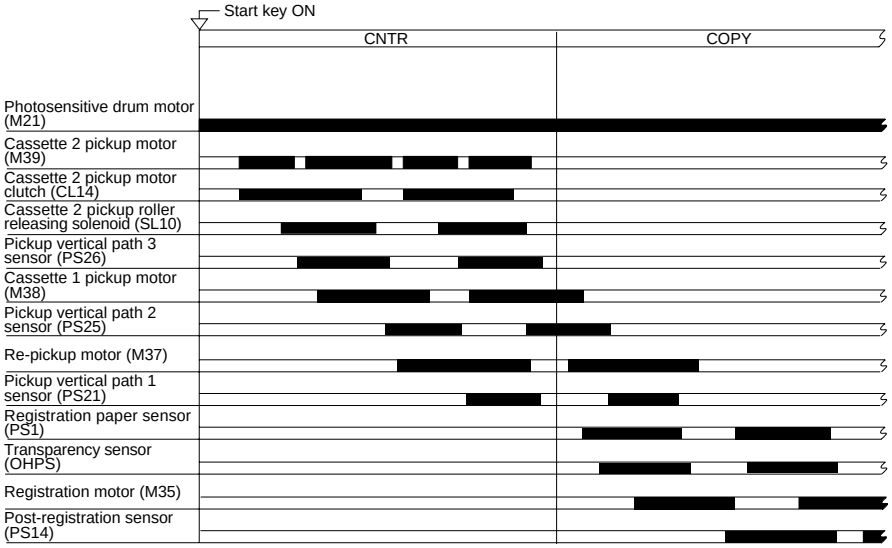
## 5.3.3 Sequence of Operations (pickup)

- Cassette 1, A4/LTR, 2 Sheets, Continuous, 4 Colors, Direct




F02-503-03

- Cassette 2, A4/LTR, 2 Sheets, Continuous, 4 Colors, Direct




F02-503-04

# 5.4 Multifeeder Pickup Assembly

## 5.4.1 Operations

The multifeeder pickup assembly is constructed as shown in F02-504-01.

The multifeeder is a mechanism in which sheets are picked up from a stack placed on the tray for continuous feeding.

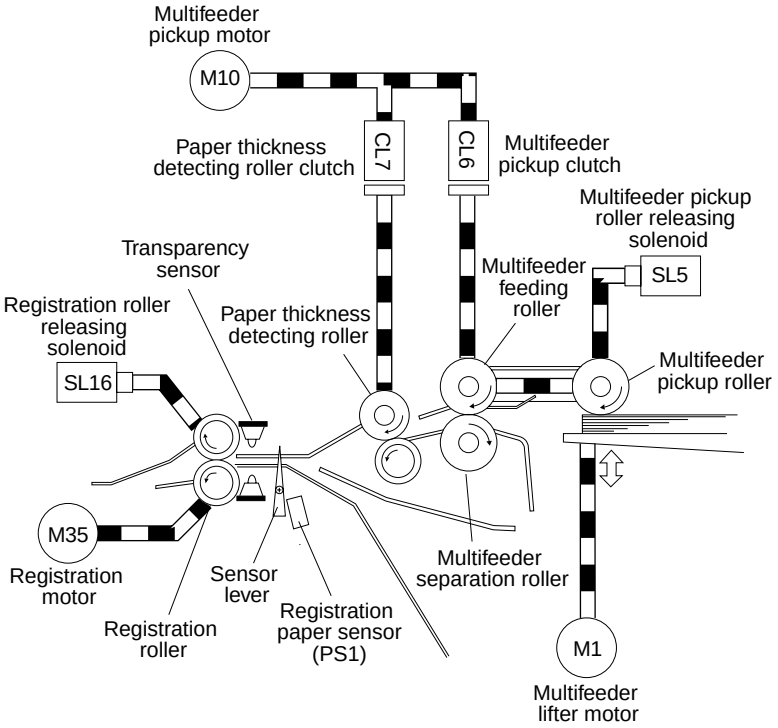
As many as 250 sheets (81.4 g/m$^2$ paper) may be placed on the tray.

The paper on the tray is detected by the multifeeder paper width sensor (PS4, PS5).

When the Start key is pressed, the stack of sheets is moved up as far as the pickup position by the work of the multifeeder lifter motor (M1).

The pickup roller is rotated by the drive of the multifeeder pickup motor (M1) to pick up paper from the stack.

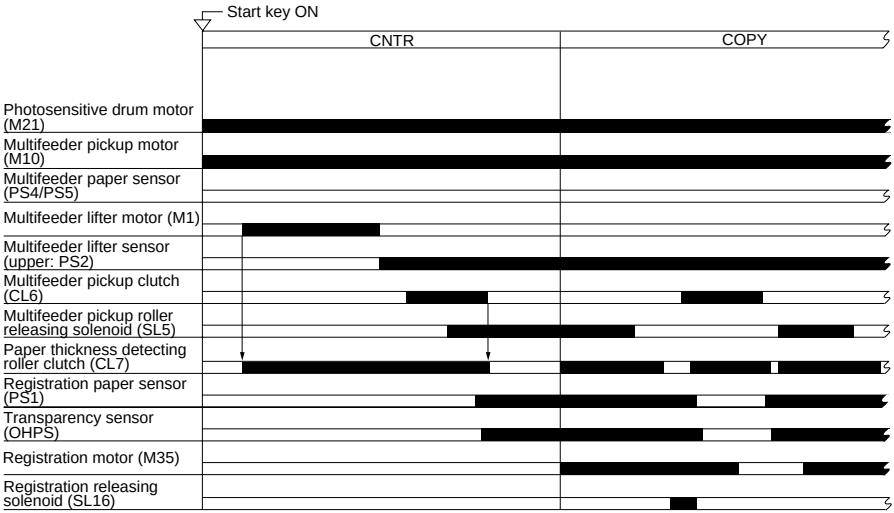
When the multifeeder pickup roller releasing solenoid (SL5) turns on, the pickup roller moves away from the surface of the stack of paper; the feeding roller and the separation roller serve to make sure that only one sheet of paper is moved to the registration roller by way of the paper thickness detecting roller.




F02-504-01

## 5.4.2 Sequence of Operations (multifeeder pickup)

Multifeeder, A4/LTR, 2 Sheets, Continuous, 4-Color, Direct



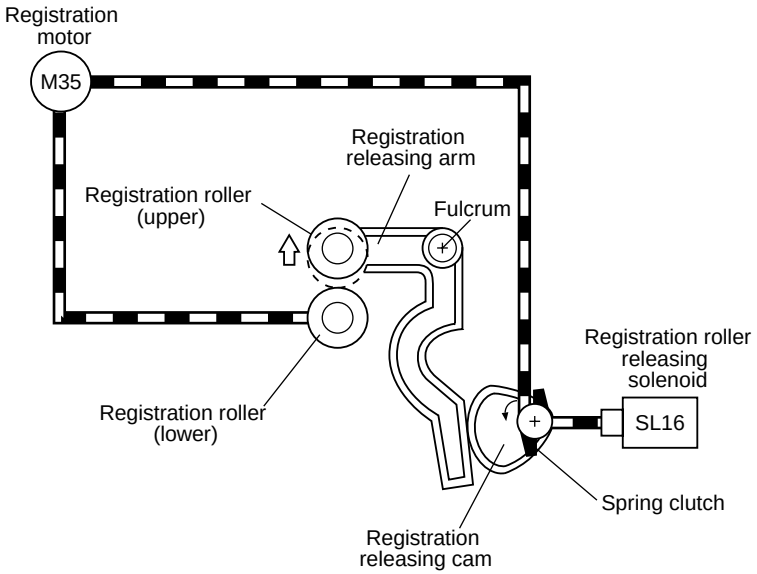

F02-504-02

### 5.4.3 Releasing the Registration Roller

The registration roller is released to make up for the minute discrepancy in speed between the registration roller and the transfer belt occurring when thick paper is moved, thereby preventing displacement of images during transfer.

When the multifeeder is the source of paper, the registration roller releasing solenoid (SL16) turns on as the registration roller starts to rotate and the paper is attracted to the transfer belt. This causes the drive of the registration motor to be transmitted to the registration releasing arm by way of the spring clutch and the registration releasing cam, moving up the registration roller (upper) and releasing the registration roller as shown in the following figure (the registration releasing cam is turned halfway by the work of the spring clutch when the registration roller releasing solenoid turns on).

The registration releasing solenoid (SL16) is also on in the presence of a jam.




F02-504-03

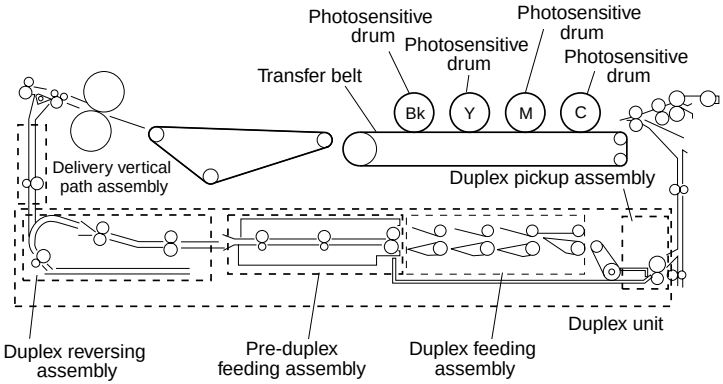
# 5.5 Duplex Unit

## 5.5.1 Outline

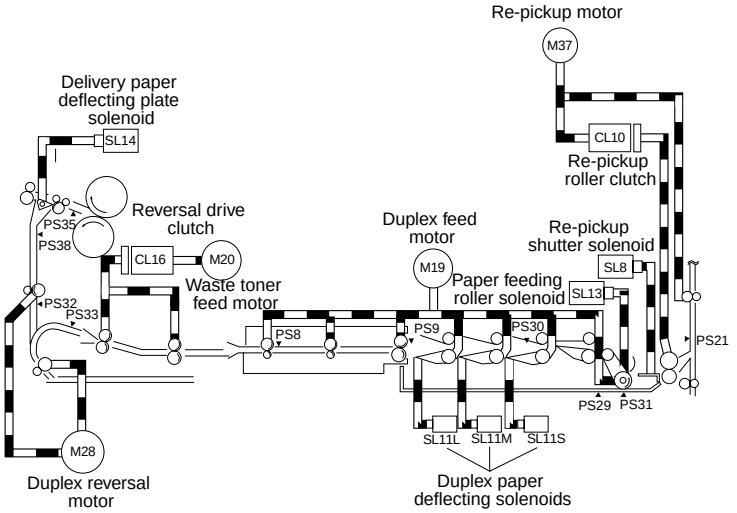
When fixing ends, the paper is moved to the delivery vertical path assembly by the delivery paper deflecting plate. Then, the paper is turned over in the duplex reversing assembly, and is sent to the duplex feeding assembly inside the duplex unit.

In the duplex feeding assembly, one of three paper paths is configured by the work of the paper deflecting plate, and the re-pickup roller performs pickup for the second side.

F02-505-01 and F02-505-02 provide a block diagram of the duplex unit and an outline of its basic operations, respectively.




F02-505-01




F02-505-02

## 5.5.2 Feeding in Duplex Mode

When fixing on the first side ends, the paper is moved to the duplex reversing assembly through the delivery vertical path assembly configured by the delivery paper deflecting plate driven by the delivery paper detecting plate solenoid (SL14).

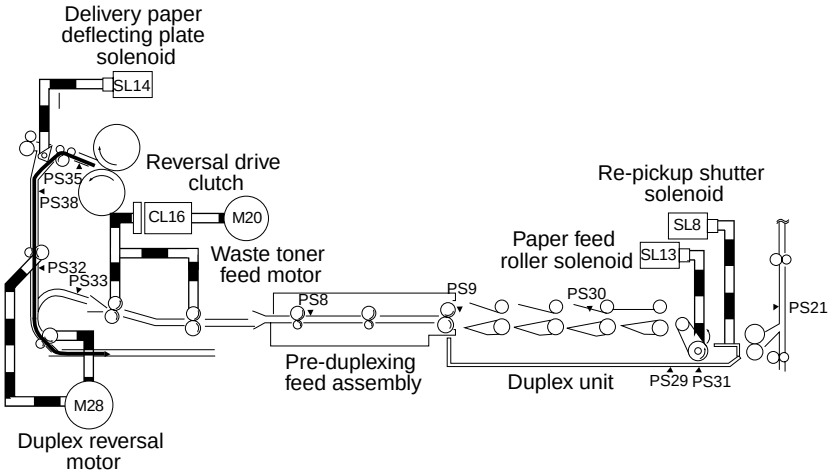
Then, a specific period of time after the trailing edge of the paper has moved past the delivery vertical path sensor (PS32), the duplex reversing assembly inlet roller starts to rotate in reverse, turning over the paper and moving it to the pre-duplexing feed assembly.

The pre-duplexing feed assembly transmits the drive of the waste toner feed motor (M2) to each of the feeding rollers by way of the reversal drive clutch (CL16), thereby moving the paper to the duplex unit.

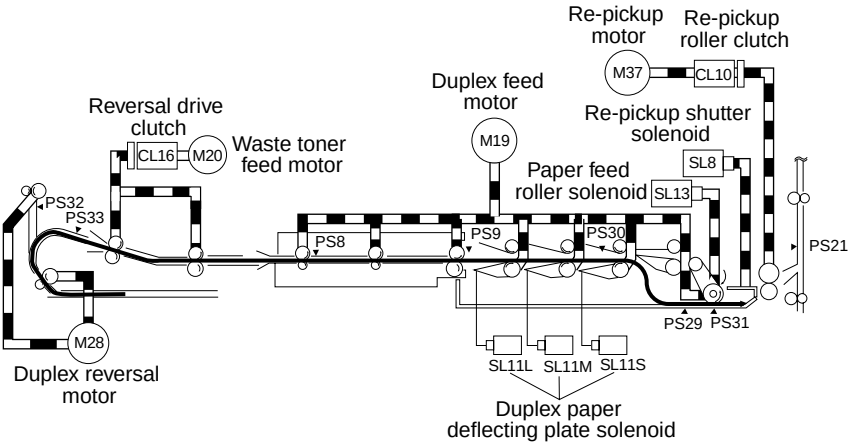
When the paper is moved to the holding tray by the drive of the duplex feed motor (M19), the feeder roller moves down to butt the paper against the re-pickup shutter.

At the appropriate timing, the re-pickup shutter solenoid (SL8) turns on to move up the re-pickup shutter. Then, the re-pickup roller starts pickup for the second side. F02-505-03 and F02-505-04 provide outlines of how paper is moved in duplex mode.

If a fault occurs in the rotation of the duplex feed motor for some reason, the control panel indicates 'E017' in response.



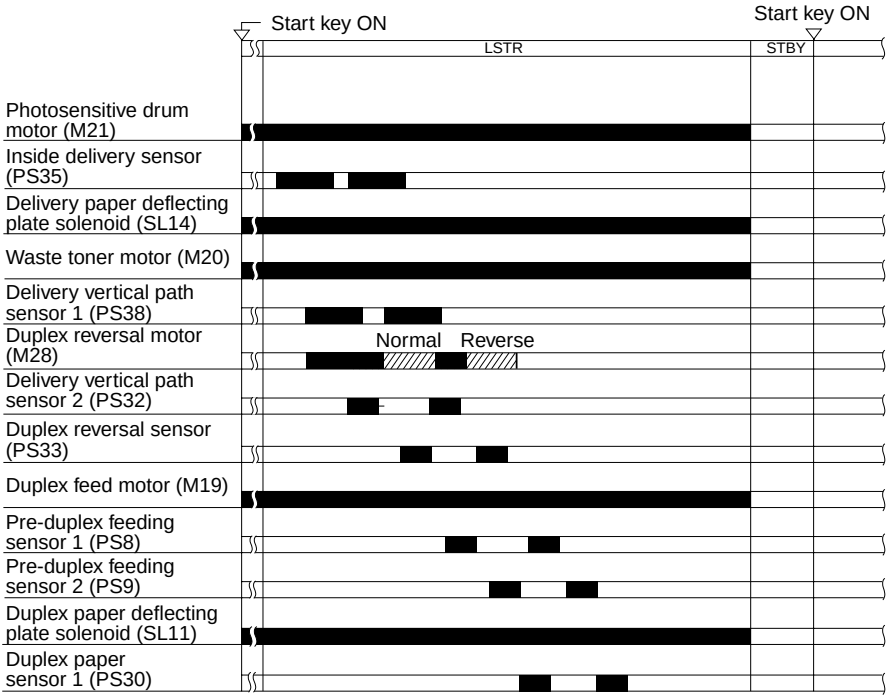

F02-505-03


Re-pickup motor
Re-pickup roller clutch
M37
CL10
Duplex feed motor
Re-pickup shutter solenoid
Reversal drive clutch
CL16
M20
Waste toner feed motor
M19
SL8
Paper feed roller solenoid
SL13
PS32
PS33
PS8
PS9
PS30
PS21
PS29
PS31
M28
Duplex reversal motor
SL11L
SL11M
SL11S
Duplex paper deflecting plate solenoid

F02-505-04

## 5.5.3 Sequence of Operations in Duplex Mode (1st side)

Duplex Copy (1st side), A4, 2 Copies, Continuous, 4-Color, Direct




F02-505-05

## 5.5.4 Pickup from the Duplex Unit

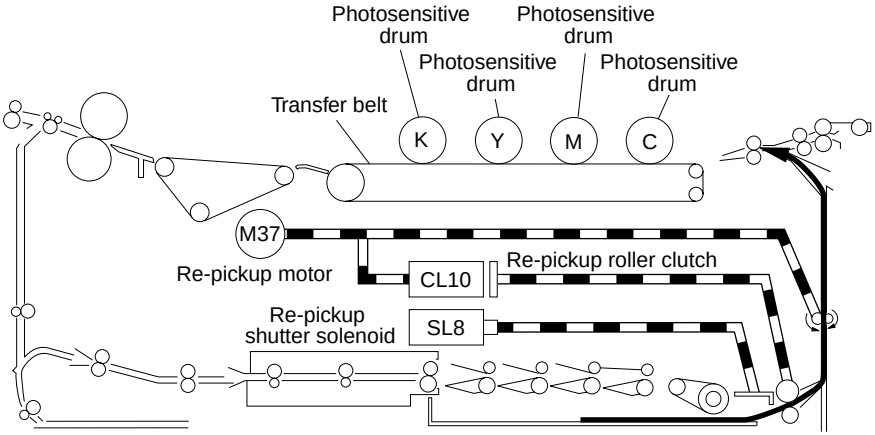
1. Outline

When paper is butted against the re-pickup shutter, the re-pickup shutter solenoid (SL8) turns on to move up the re-pickup shutter.

Then, when the feeder roller moves the paper as far as the re-pickup roller, the re-pickup roller clutch (CL10) turns on. As a result, the drive of the re-pickup motor (M37) is transmitted to the re-pickup roller to start pickup.

The paper is then moved to the pickup vertical path assembly by the work of the feed roller and the separation roller.

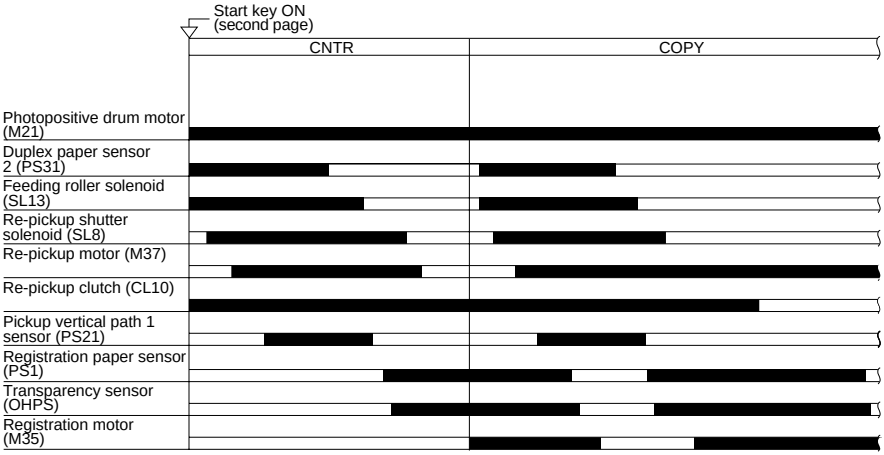
The following is an outline of pickup operation when the duplex unit is selected as the source of paper.




F02-505-06

2) Sequence of Operations

Duplex Unit (2nd side), A4/LTR, 2 Copies, Continuous, 4-Color, Direct




F02-505-07

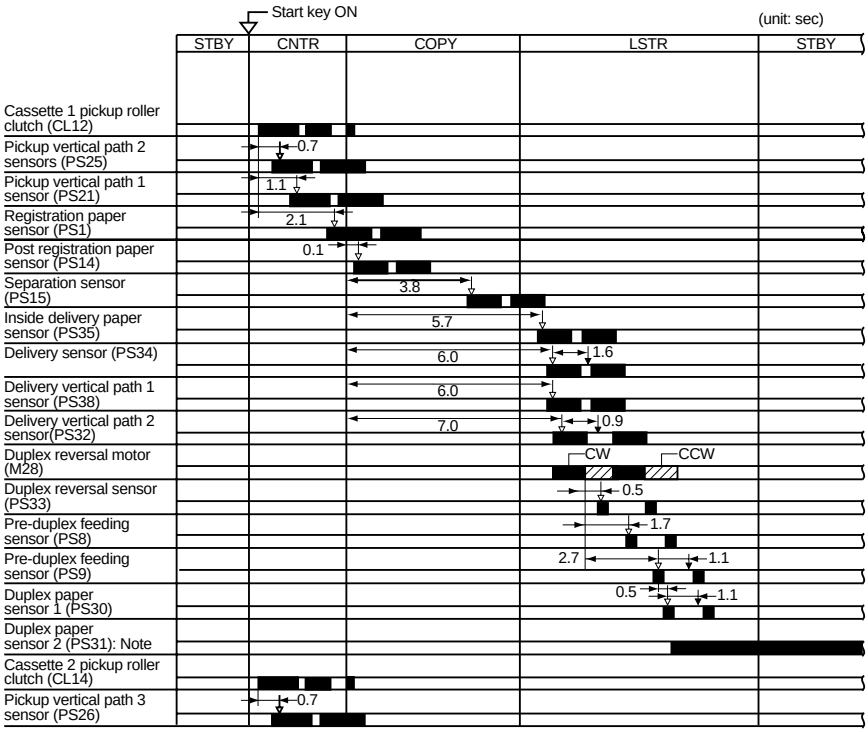
# 5.6 Detecting Jams

## 5.6.1 Outline

The machine's jam detection sensors are constructed more or less in the same way as the CLC1000's sensors; for the types and the location of each sensor, see the CLC1000 Service Manual.

## 5.6.2 Sequence of Jam Detection

A4/LTR, 2 Copies, 4-Color, Direct, Cassette




▽: delay check (if paper is presence, normal)
▼: stationary jam check (if paper is absence, normal)

Note: If the duplexing paper sensor 2 (PS31) detects paper at such times as not stored in memory (timing), the Remove Paper message will be indicated on the control panel.

F02-506-01

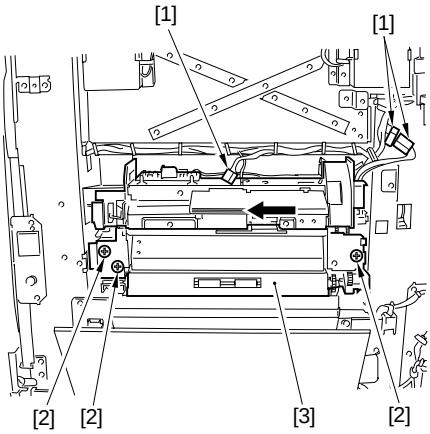
## 5.7 Disassembly/Assembly

The machine has the mechanical features and operations as described herein, and may be disassembled or assembled as shown; be sure to observe the following whenever disassembling or assembling the machine:

1. ⚠Disconnect the power plug for safety before the work.
2. Unless otherwise noted, reverse the steps used to disassemble the machine for assembly.
3. Identify the screws by type (length, diameter) and location.
4. The screws used for the grounding wire, varistors, or the like are equipped with washers to ensure electrical continuity. Be sure to use these screws during assembly.
5. As a rule, do not operate the machine with any of its parts removed.
6. ⚠Do not throw toner into fire to avoid explosion.

## 5.7.1 Removing the Multifeeder Assembly

1) Remove the multifeeder tray assembly.
2) Disconnect the three connectors [1], and remove the three screws [2]; then, shift the multifeeder assembly [3] in the direction of the arrow to detach.

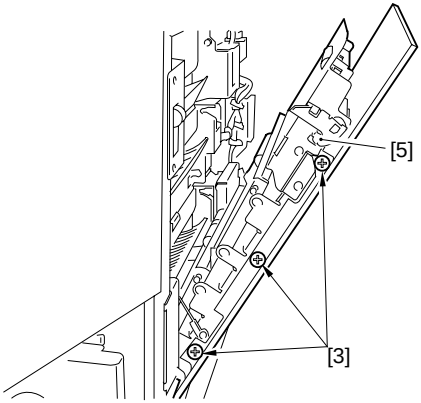



F02-507-01

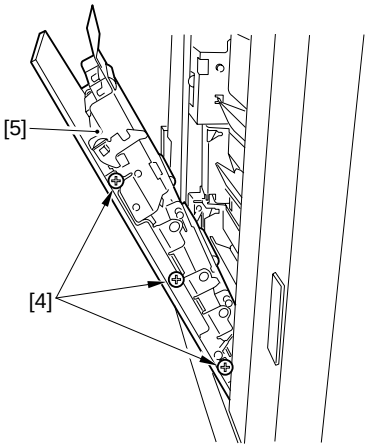
When Mounting the Multifeeder
To mount it, match its hook against the hole in the stay, and slide it to the right.

## 5.7.2 Removing the Cassette Pickup Assembly

1) Remove the right front cover and the right rear cover.
2) Slide out the cassette 1/2 and the duplex unit to the front.
3) Remove the three screws [3] at the front and the three screws [4] at the rear; then, detach the right door unit [5].

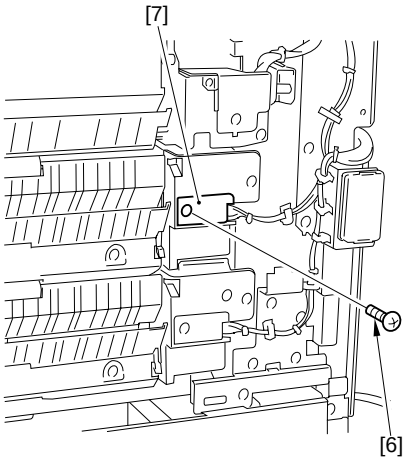



F02-507-02



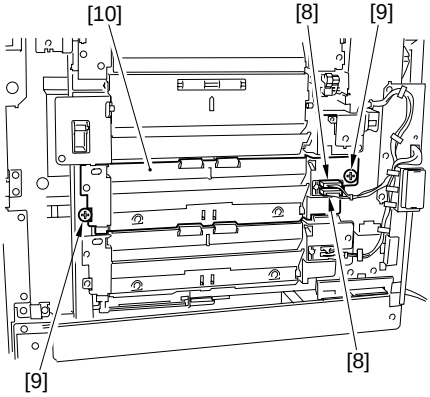

F02-507-03

4) Remove the screw [6], and detach the connector cover [7].




F02-507-04

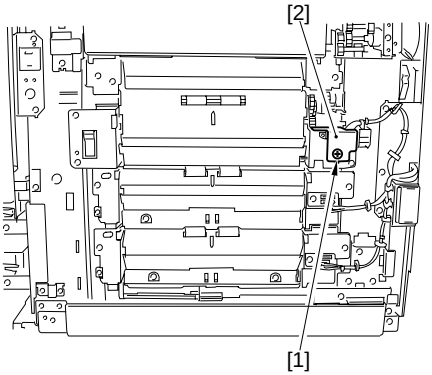
5) Disconnect the two connectors [8], and remove the two screws [9]; then, detach the cassette pickup unit [10].




F02-507-05

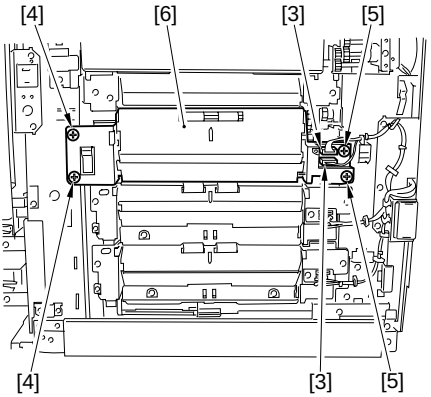
## 5.7.3 Removing the Re-Pickup Assembly

1) Remove the right cover. (See F02-507-02.)
2) Remove the screw [1] at the rear, and detach the connector cover [2].




F02-507-06

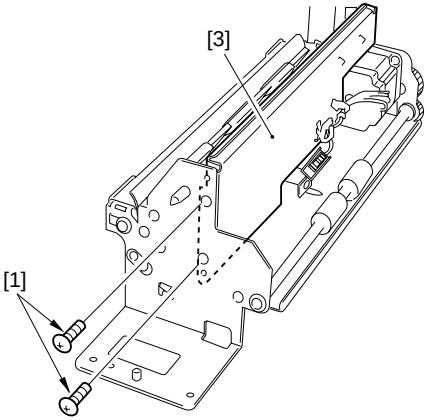
3) Disconnect the two connectors [3], and remove the two screws [4] at the front and the two screws [5] at the rear; then, detach the re-pickup assembly [6].



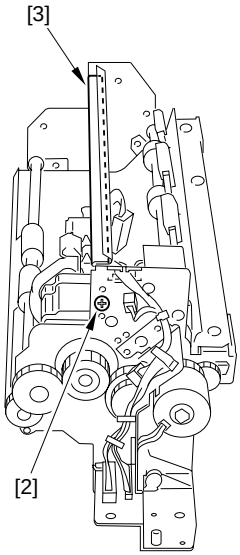

F02-507-07

## 5.7.4 Removing the Re-Pickup Motor

1) Remove the right cover. (See F02-507-02.)
2) Remove the re-pickup assembly. (See 5.7.3 “Removing the Re-Pickup Unit.”)
3) Remove the two screws [1] at the front and the screw [2] at the rear; then, detach the stay [3].

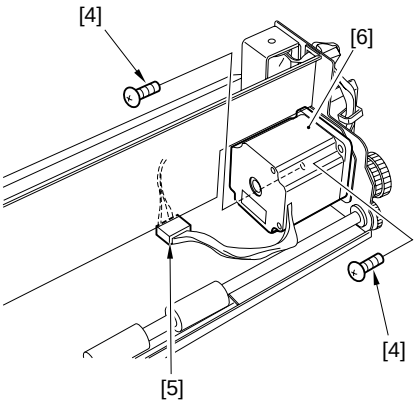



F02-507-08




F02-507-09

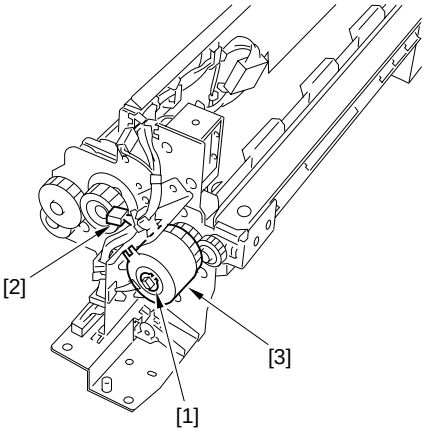
4) Remove the two screws [4], and disconnect the connector [5]; then, detach the re-pickup motor [7].




F02-507-10

## 5.7.5 Removing the Re-Pickup Unit Clutch

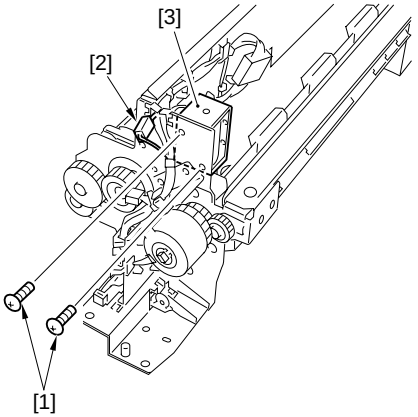
1) Remove the right cover. (See F02-507-02.)
2) Remove the re-pickup assembly. (See 5.7.3 “Removing the Re-Pickup Assembly.”)
3) Remove the grip ring [1], and disconnect the connector [2]; then, detach the re-pickup clutch [3].




F02-507-11

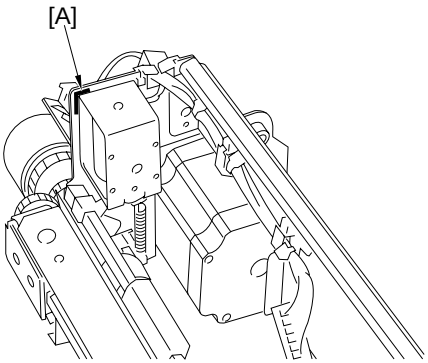
## 5.7.6 Removing the Re-Pickup Shutter Solenoid

1) Remove the right cover. (See F02-507-02.)
2) Remove the re-pickup assembly. (See 5.7.3 “Removing the Re-Pickup Assembly.”)
3) Remove the two screws [1], and disconnect the connector [2]; then, detach the pickup shutter solenoid [3].




F02-507-12

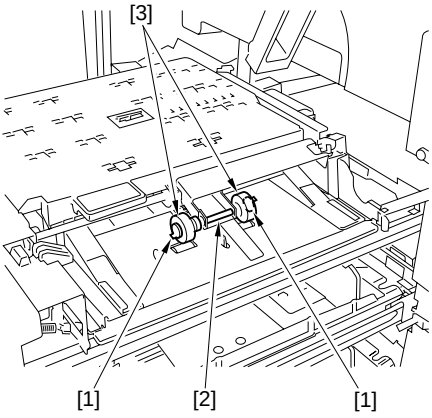
When Mounting the Re-Pickup Shutter Solenoid
You will have to make adjustments. Be sure to mark the position with a scribe (A in the figure before) removing it.




F02-507-13

### 5.7.7 Removing the Duplex Unit Feed roller

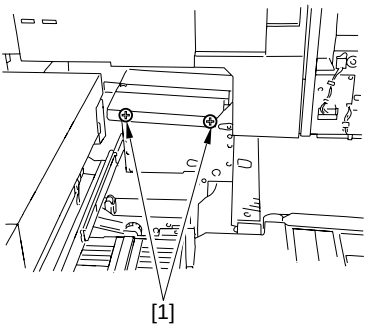
1) Remove the duplex unit.
2) Remove the two resin clamps [1], and detach the feed roller [3] from the feed roller shaft [2].




F02-507-14

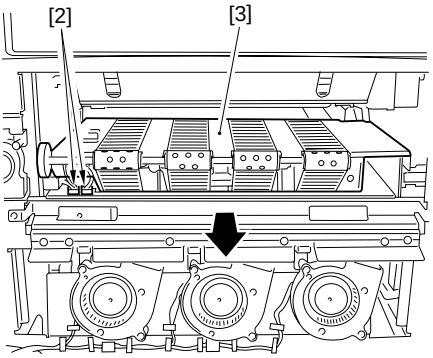
### 5.7.8 Removing the Pre-Fixing Feeding Assembly

1) Remove the left cover.
2) Slide out the fixing unit and the transfer unit.
3) Remove the two screws [1].




F02-507-15

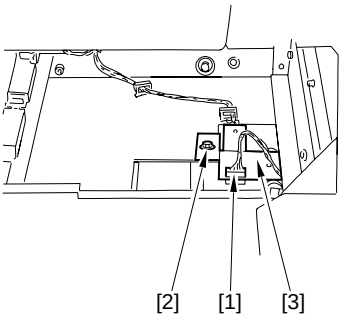
4) Disconnect the two connectors [2], and shift the pre-fixing feeding assembly [3] to the front, and pull it out from the delivery side.




F02-507-16

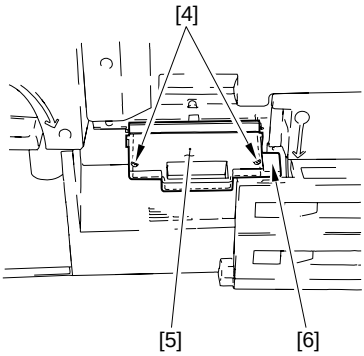
### 5.7.9 Removing the Pre-Duplex Feeding Unit

1) Remove the left cover.
2) Open the front cover, and slide out the fixing unit and the transfer unit.
3) Slide out the pre-fixing feeding assembly. (See the instructions on how to remove the pre-fixing feeding assembly.)
4) Disconnect the connector [1], and remove the screw [2]; then, detach the connector support plate [3].



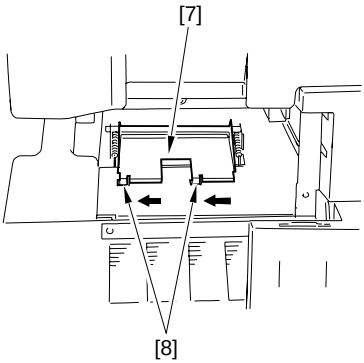

F02-507-17

5) Remove the two screws [4]; then, detach the grip [5] and the reinforcing plate [6] of the pre-duplexing feeding assembly.



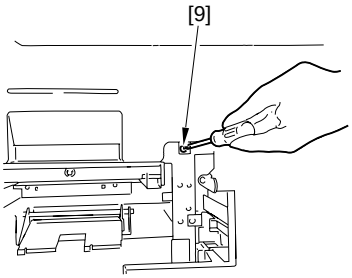

F02-507-18

6) Lower the lifter plate [7] of the duplex feeding assembly, and hook it on the cut-off [8].



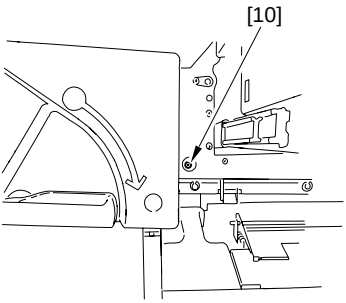

F02-507-19

7) Slide out the duplex unit, and remove the screw [9].




F02-507-20

8) Slide out the transfer unit, and remove the screw [10].

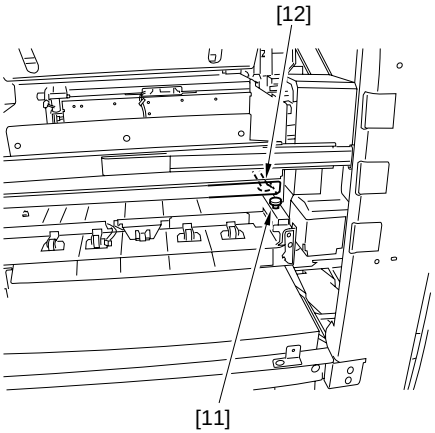



F02-507-21

9) Move the pre-duplex feeding assembly to the front once; then, slide it back toward the delivery side to detach.

When Removing
When removing it, be sure to keep the duplex unit slid out.

When Mounting
When mounting it, be sure to hook the stepped screw [11] show in the figure on the groove [12] in the frail.

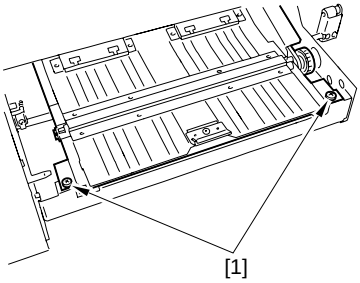



F02-507-22

## 5.7.10 Delivery/Reversing Assembly

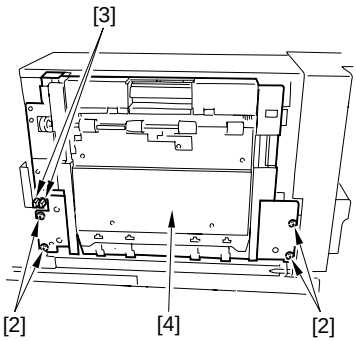
### a. Removing the Delivery/Reversing Assembly

1) Open the front left cover, and detach the left cover.
2) Slide out the fixing unit.
3) Loosen the two screws [1].




F02-507-23

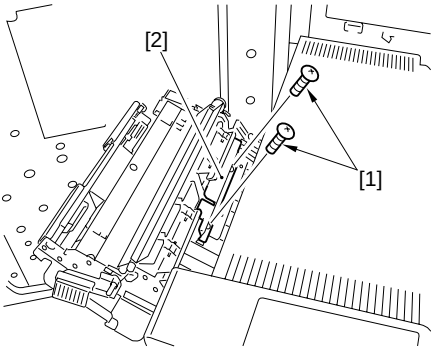
4) Remove the four screws [2], and open the outside delivery unit and the inside delivery unit; then, disconnect the two connectors [3], and pull out the delivery/reversing assembly [4] to the left of the machine.




F02-507-24

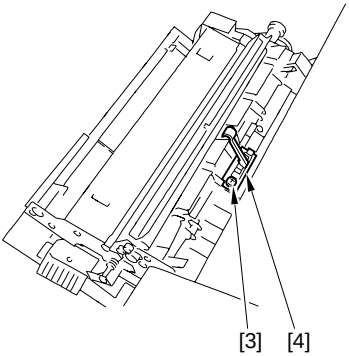
b. Removing the Separation Claw

1) Open the front left cover, and slide out the fixing unit; then, open the outside delivery unit and the inside delivery unit.
2) Remove the two screws [1], and detach the sensor cover [2].



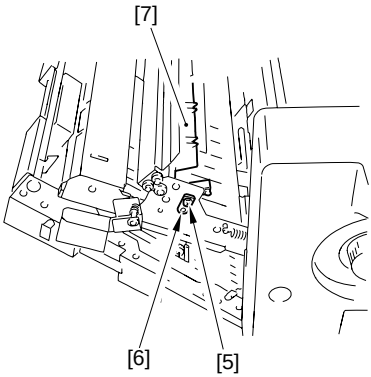

F02-507-25

3) Remove the screw [3], and detach the delivery sensor assembly [4].



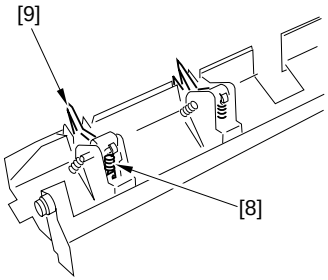

F02-507-26

4) Remove the screw [5], and detach the positioning pin [6] of the separation claw unit; then, detach the separation claw unit [7].




F02-507-27

5) Remove the spring [8], and detach the separation claw [9].

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# 6 Fixing System

## 6.1 Outline of the Fixing System

- The major differences are the addition of oil heater, higher fixing speed, and elimination of the gloss function.
- The rest are more or less identical with CLC1000 Series machines.

## 6.2 Outline of the Fixing System

| Unit/part | Difference from CLC1000 Series machines | Purpose | Reference |
|---|---|---|---|
| Fixing drive assembly | Control of fixing speed (from 6 to 4 steps) | To review speed in support of high-speed operation<br>To eliminate the gloss selection function | 6.3 “Outline of Fixing/Delivery Assembly”<br>6.8 “Timing Chart (fixing/delivery assembly)” |
| | Elimination of the gloss selection function | To increase the latitude of fixing temperature control in accommodating higher speed of operation | 6.7 “Controlling the Fixing Speed” |
| | Increase of nip pressure<br>Different fixing speed: in the case of a transparency, 138 mm/sec until its leading edge reaches the nip; thereafter, 68 mm/sec | To support higher speed of operation | 6.7 “Controlling the Fixing Speed” |
| Fixing heater | Increase of power to the fixing heater<br>(upper: from 650 W to 800 W; lower: from 550 W to 600 W) | To support higher speed of operation | 6.4 “Controlling the Fixing Roller Temperature” |
| Thermistor | Addition of sub thermistor (upper, lower) | To increase the accuracy of error detection | 6.4 “Controlling the Fixing Roller Temperature” |
| Fixing roller temperature control mechanism | Change in the fixing roller control temperature | To review temprature in support of higher operation | 6.4 “Controlling the Fixing Roller Temperature”<br>6.8 “Timing Chart (fixing/delivery assembly”) |
| Fixing oil temperature control mechanism | Addition of fixing oil temperature control<br>Addition of an oil heater, heater thermistor, oil temperature thermistor, thermal switch | To stabilize the viscosity of oil, thereby stabilizing the amount of application | 6.5 “Controlling the fixing oil temperature”<br>6.8 “Timing Chart (fixing/delivery assembly)” |
| Protective mechanism | Addition of protective functions | Addition of a sub thermistor<br>Addition of a fixing oil heater | 6.6 “Protective Mechanism” |
| Oil applying assembly | Addition of a scraper blade | To scrape off offset toner, thereby stabilizing the amount of oil application | — |

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## 6.3 Outline of the Fixing/Delivery Assembly

The following are driven by the fixing motor (M9):

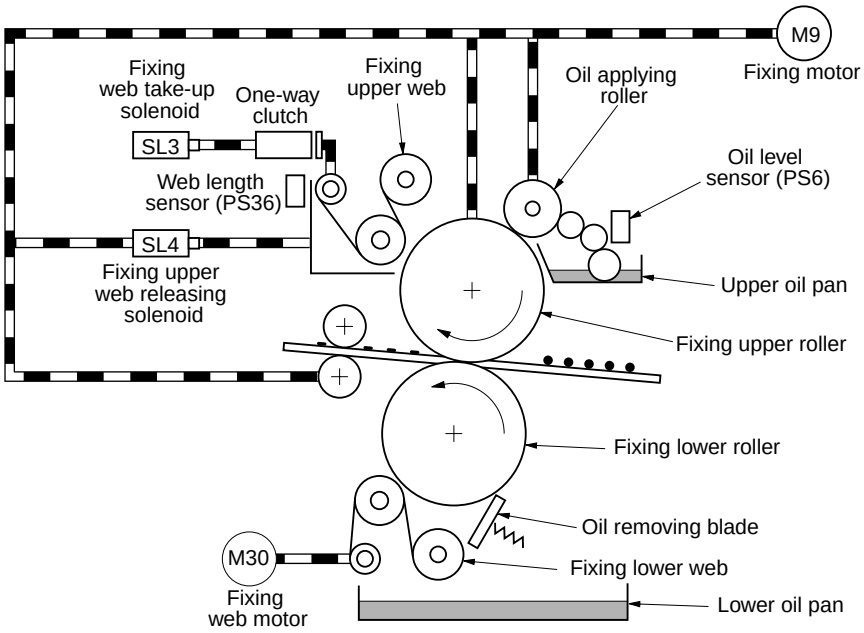
- Fixing upper roller
- Lower fixing roller
- Delivery roller
- Oil applying roller
- Fixing upper web lock

To ensure good fixing invariably in duplex, transparency, or normal mode, the machine changes its fixing speed among four levels.

The upper roller and the lower roller are each provided with a fixing cleaning web. The fixing upper web is driven by the fixing upper web take-up solenoid (SL3), and the lower web is driven by the fixing web motor (M30).

The fixing lower roller is also provided with a cleaning blade of a spring type.

The separation claws used to prevent paper from wrapping around the fixing lower roller are made to move away from the fixing lower roller by the drive of the separation claw solenoid (SL15) to prevent scratches on the roller.




F02-603-01

## 6.4 Controlling the Fixing Roller Temperature

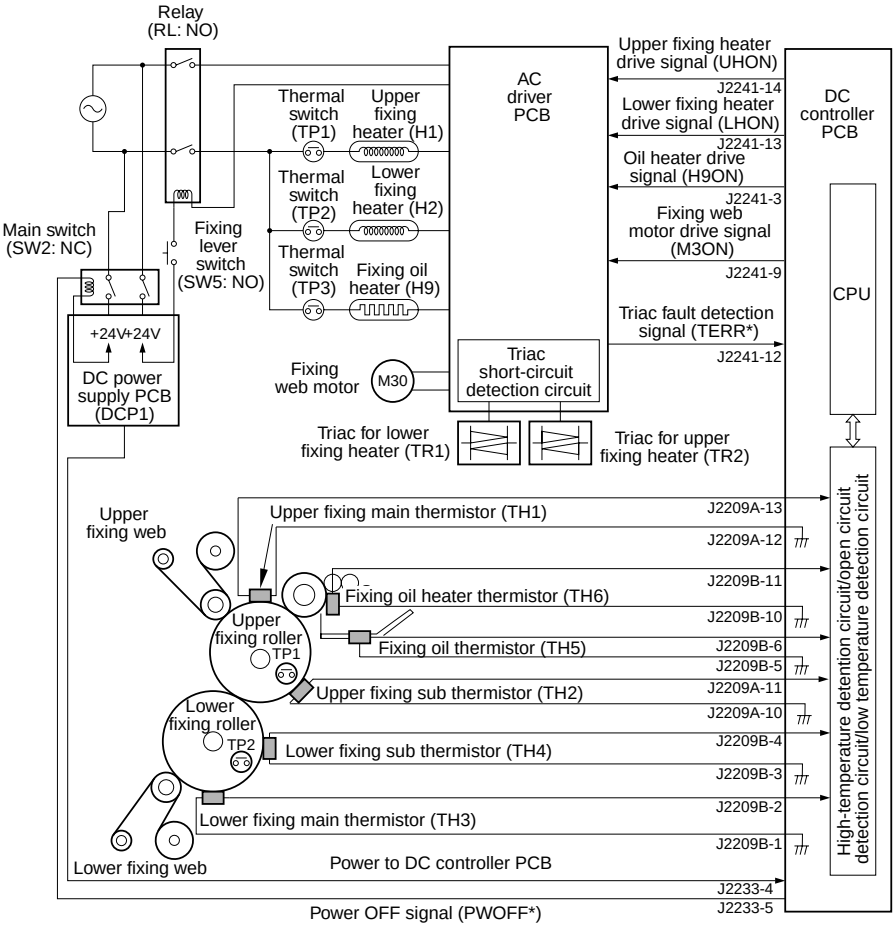
The fixing upper roller and the fixing lower roller are each heated by a fixing heater (H1: 800 W; H2: 600 W). The surface temperature of the upper roller is monitored by the upper main thermistor (TH1), while that of the lower roller is monitored by the lower main thermistor (TH3).

The CPU on the DC controller PCB uses the readings of these thermistors to control the fixing heaters by means of the upper fixing heater drive signal (UHON) and the lower fixing heater drive signal (LHON) so that the surface temperature of the upper and lower rollers remain at a specific level.

- Upper Fixing Roller/Lower Fixing Roller (common)
  During copying: controlled to 175ºC (One-sided), controlled to 170ºC (Auto two-sided mode)
  During STBY: controlled to 182ºC
  During pre-heat: controlled to 182ºC

The upper sub thermistor (TH2) and the lower sub thermistor (TH4) are attached to the ends of the rollers for detection of errors.


Shifting down the fixing assembly lever, as when drawing out the fixing assembly, will cut off the power to the fixing heater using the fixing lever switch (SW5).


Relay
(RL: NO)
Thermal switch (TP1)
Upper fixing heater (H1)
Thermal switch (TP2)
Lower fixing heater (H2)
Thermal switch (TP3)
Fixing oil heater (H9)
Main switch (SW2: NC)
Fixing lever switch (SW5: NO)
+24V
+24V
DC power supply PCB (DCP1)
Fixing web motor
M30
AC driver PCB
Triac short-circuit detection circuit
Upper fixing heater drive signal (UHON)
J2241-14
Lower fixing heater drive signal (LHON)
J2241-13
Oil heater drive signal (H9ON)
J2241-3
Fixing web motor drive signal (M3ON)
J2241-9
Triac fault detection signal (TERR*)
J2241-12
DC controller PCB
CPU
Triac for lower fixing heater (TR1)
Triac for upper fixing heater (TR2)
Upper fixing web
Upper fixing main thermistor (TH1)
J2209A-13
J2209A-12
Fixing oil heater thermistor (TH6)
J2209B-11
J2209B-10
Upper fixing roller
TP1
Fixing oil thermistor (TH5)
J2209B-6
J2209B-5
Upper fixing sub thermistor (TH2)
J2209A-11
J2209A-10
Lower fixing roller
TP2
Lower fixing sub thermistor (TH4)
J2209B-4
J2209B-3
Lower fixing main thermistor (TH3)
J2209B-2
J2209B-1
Lower fixing web
Power to DC controller PCB
J2233-4
J2233-5
Power OFF signal (PWOFF*)
High-temperature detention circuit/open circuit detection circuit/low temperature detection circuit

F02-604-01

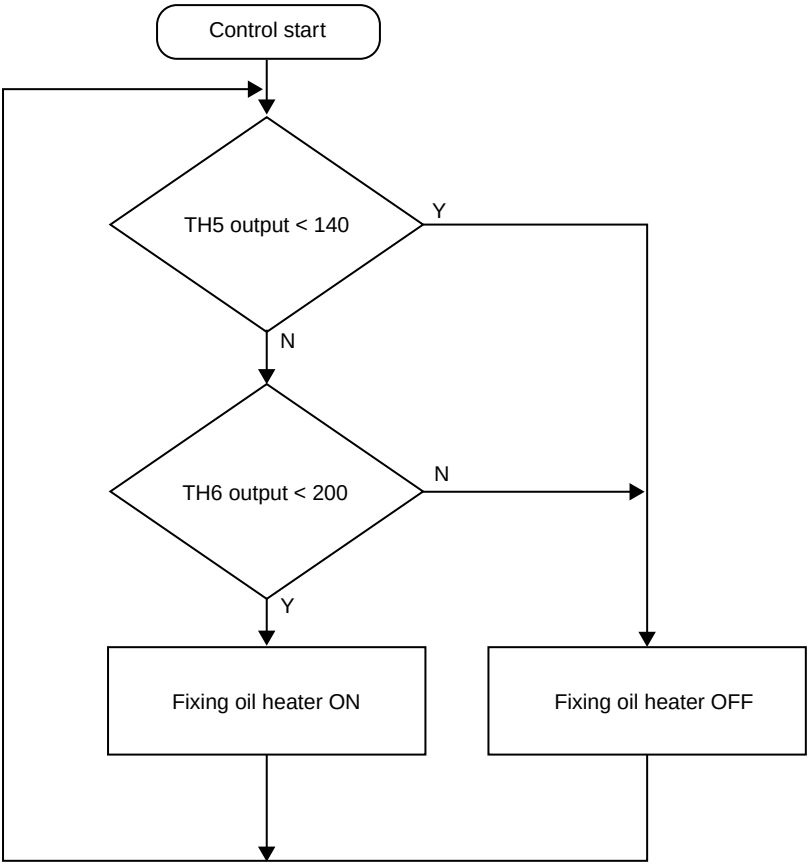
## 6.5 Controlling the Fixing Oil Temperature

To ensure that the upper fixing roller is provided with a specific level of oil at all items, the fixing oil in the upper oil pan is controlled to about 140°C by the oil heater (H9).

The temperature of the fixing oil is monitored by the fixing oil thermistor (TH5), while that of the fixing oil heater is monitored by the fixing oil heater thermistor (TH6).

The DC controller PCB uses the readings of these two thermistors to switch the fixing oil heater drive signal (H9_DRIVE), thereby controlling the fixing oil heater.

The fixing oil heater is turned OFF while the paper is being led.




F02-605-01

The fixing oil is likely to be very hot. Be sure that the oil has cooled before starting any work involving the fixing assembly.

## 6.6 Protective Mechanisms

The machine is equipped with the following nine types of protective mechanisms to prevent malfunction of the fixing heater and the oil heater.

### 6.6.1 Detecting Overheating (software)

The CPU on the DC controller PCB monitors the voltage of the upper main thermistor (TH1), upper sub thermistor (TH2), lower main thermistor (TH3), and lower sub thermistor (TH4), and issues the following error codes when detecting an overheating condition:

| Thermistor | Detection temperature | Error code |
|---|---|---|
| Upper thermistor (TH1) | 215ºC | E000-0102 |
| Lower thermistor (TH3) | 208ºC | E000-0202 |

### 6.6.2 Detecting Overheating (hardware)

When the overheating detection circuit on the DC controller PCB detects any of the following temperature readings, it issues the corresponding error codes; it will then cause the power OFF signal (PWOFF*) to go '0' so as to turn off the power switch (SW2).

| Thermistor | Detection temperature | Error code |
|---|---|---|
| Upper main thermistor (TH1) | 230ºC | E000-0101 |
| Upper sub thermistor (TH2) | 230ºC | E000-0101 |
| Lower main thermistor (TH3) | 220ºC | E000-0201 |
| Lower sub thermistor (TH4) | 230ºC | E000-0201 |

### 6.6.3 Detecting an Open Circuit in the Thermistor

If the open-circuit detection circuit on the DC controller PCB detects a difference of 60°C or more in the readings of the main thermistor and the sub thermistor, the DC controller PCB will issue the following error codes: then, it will cause the power OFF signal (PWOFF*) to go '0', thereby turning off the power switch (SW2).

| | |
|---|---|
| Upper main thermistor (TH1) and upper sub thermistor (TH2) | E000-0105 |
| Lower main thermistor (TH3) and lower sub thermistor (TH4) | E000-0205 |

### 6.6.4 Detecting a Fault in the Triac

The triac short-circuit detection circuit on the AC driver PCB monitors the drive of the fixing heater, and will issue the following error codes if the fixing heater is on when it is not expected to be on.

| | |
|---|---|
| Fault in triac (TR2) for upper fixing heater | E004-0001 |
| Fault in triac (TR1) for lower fixing heater | E004-0001 |

### 6.6.5 Detecting Overheating of Fixing Oil (software)

The CPU on the DC controller PCB monitors the voltage of the oil heater thermistor (TH5) and the oil thermistor (TH6), and will issue the following error codes in the presence of a fault:

| Thermistor | Detection temperature | Error code |
|---|---|---|
| Oil thermistor (TH5) | 180ºC | E000-0061 |
| Oil heater thermistor (TH6) | 220ºC | E000-0071 |

### 6.6.6 Detecting Overheating of Fixing Oil (hardware)

If the overheating detection circuit on the DC controller PCB detects overheating, the DC controller PCB will issue the following error codes; then, it will cause the power OFF signal (PWOFF*) to go '0', thereby turning off the power switch.

| Thermistor | Detection temperature | Error code |
|---|---|---|
| Oil thermistor (TH5) | 190ºC | E000-0081 |
| Oil heater thermistor (TH6) | 230ºC | E000-0081 |

### 6.6.7 Detecting Low Temperature of Oil (software)

The CPU on the DC controller PCB monitors the voltage of the oil thermistor (TH5) and the oil heater thermistor (TH6), and the DC control PCB will issue the following error codes in the presence of a fault and then cause the power OFF signal (PWOFF*) to go '0', thereby turning off the power switch (SW2):

| Thermistor | Condition | Error code |
|---|---|---|
| Oil thermistor (TH5) | It does not reach 50ºC after the end of WAIT. | E000-0062 |
| Oil heater thermistor (TH6) | It does not reach 50ºC after the end of WAIT. | E000-0072 |

### 6.6.8 Detecting Low Temperature of Oil (hardware)

If the low temperature detention circuit on the DC controller PCB doesn't detect 50ºC within 2 min after the oil heater turns on the following error code will be issued:

| Thermistor | Error code |
|---|---|
| Oil heater thermistor (TH6) | E000-0082 |

### 6.6.9 Operation of the Thermal Switch

If the temperature inside the thermal switch of the upper fixing heater, lower fixing heater, or oil heater exceeds 230ºC, the respective switch turns off to cut off the power to its heater.


The contact of the thermal switch (TP1, TP2, TP3) will not recover even when the temperature returns to normal. Do not use it once its contact has opened.

Resetting E000

1) Remove the cause.
2) Start service mode, and make the following selections: FUNCTION>USER.
3) Press 'E000-RLS' so that the <P> notation will change as follows: ERROR → BUSY → ERROR.
4) Turn off and then on the power switch.

## 6.7 Controlling the Fixing Speed

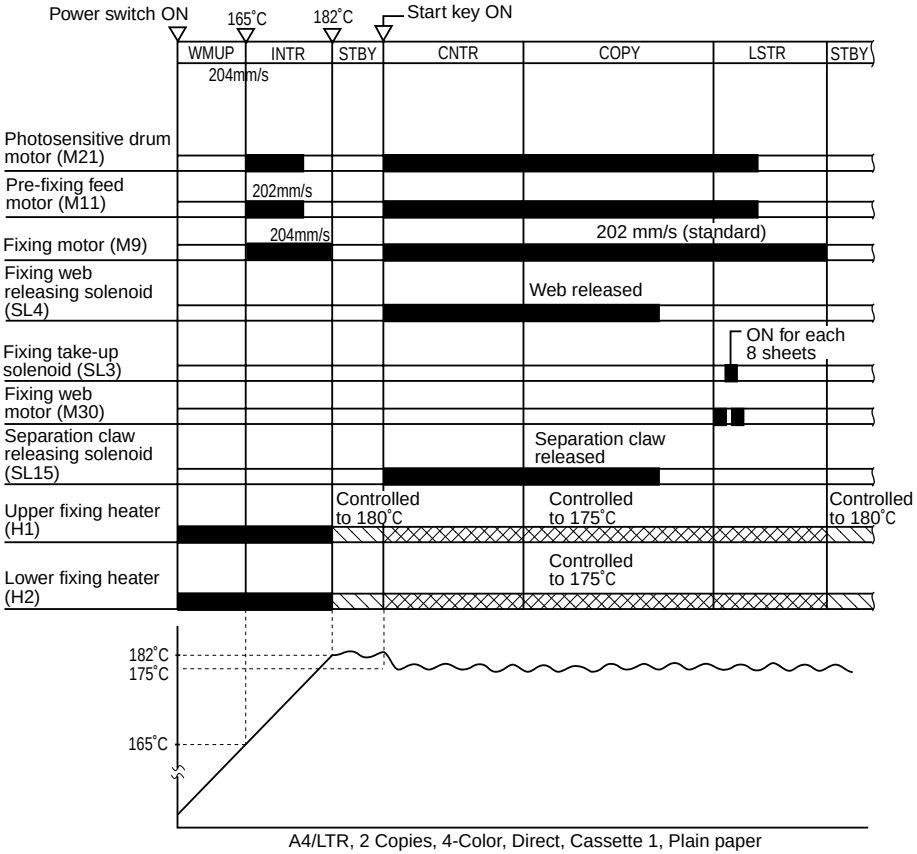
To ensure good fixing, the machine controls the speed of the fixing motor (M9), thereby switching the fixing speed among four settings:

| | |
|---|---|
| Thin paper (64 to 79 g/m$^2$), plain paper (80 to 105 g/m$^2$) | 204 mm/sec |
| Thick paper (106 to 163 g/m$^2$) | 138 mm/sec |
| Extra-thick paper (164 to 253 g/m$^2$) | 90 mm/sec |
| Transparency | 138/68 mm/sec |

When a transparency is used, the fixing speed is switched as follows to enable smooth introduction of paper to the fixing nip:

Immediately before the leading edge of the transparency leaves the separation sensor (PS15) and rushes into the fixing nip, the speed of the pre-fixing feed belt is switched from 338 to 68 mm/sec; thereafter, the previous speed is used immediately before the medium reaches the pre-fixing feeding assembly.

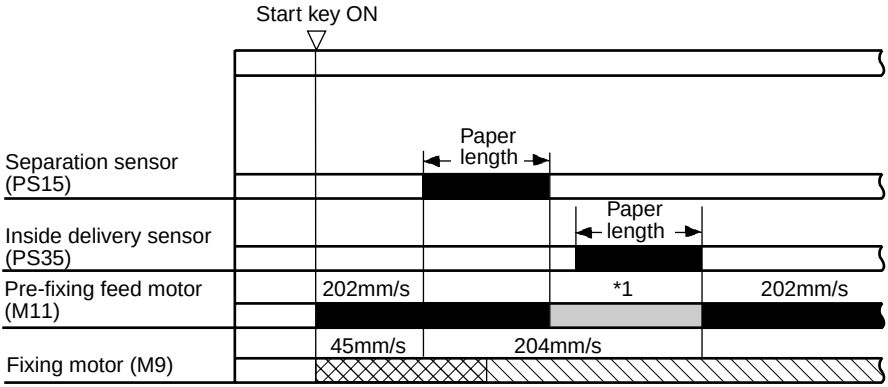
# 6.8 Timing Chart (fixing/delivery assembly)
## 6.8.1 Basic Sequence of Operations




A4/LTR, 2 Copies, 4-Color, Direct, Cassette 1, Plain paper

F02-608-01

## 6.8.2 Changing the Fixing Speed




*1: For feed speed, see “Controlling the Fixing Speed.”

F02-608-02

Immediately before the leading edge of paper leaves the separation sensor (PS15) and its leading edge rushes into the fixing nip, the speed of the pre-fixing feed belt is changed; then, the previous speed is used before the next sheet reaches the pre-fixing feeding assembly.

In the case of the fixing roller, the rotation starts at a speed of warm-up rotation after the start key is pressed, and the speed most suited to the transfer medium is used after the leading edge leaves the separation sensor.

## 6.9 Driving the Fixing Cleaning Web

### a. Upper Fixing Web

The upper fixing web used to clean the fixing roller is taken up 0.56 mm each time the upper fixing web take-up solenoid (SL3) turns on and off.

The fixing web take-up solenoid turns on once for every 8 sheets of paper (small-size, smaller than A3).

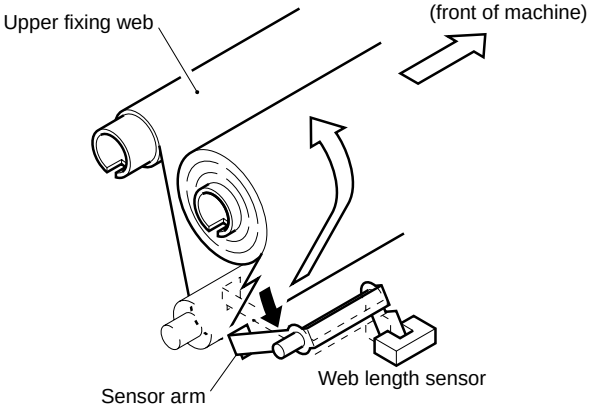
The end of the web is provided with a cut-off to enable detection of its length. When the web is taken up as far as the cut-off, the arm supported by the web falls through the cut-off, causing the web length sensor (PS36) to turn on; as a result, the control panel will indicate an alarm.

The upper web moves away from the upper fixing roller when the upper fixing web releasing solenoid (SL4) turns on.

### b. Lower Fixing Web

The lower fixing web is used to clean the lower fixing roller by the drive of the lower fixing web motor (M30).

The lower fixing web motor is used to take up the lower fixing web 0.04 mm for each sheet of paper. Dirt left behind the web is scraped off by the lower fixing blade operated by the work of a spring. The lower fixing web is not equipped with a detection mechanism, and it must be replaced whenever the upper fixing web is replaced.




F02-609-01

1. 'E005' will be indicated when the upper fixing web take-up solenoid turns on and off about 270 times after the Replace Web message has been indicated on the control panel.
2. The web is 7.4 m long, and a cut-off is found 7.1 m from its lead edge.
3. After replacing the upper and lower fixing webs, be sure to execute the following in service mode and turn off and then on the power switch: FUNC>FUSER>E005-RLS.

## 6.10 Disassembly/Assembly

The machine has the mechanical features and operations as described herein, and may be disassembled or assembled as shown; be sure to observe the following whenever disassembling or assembling the machine:

1. ⚠ Disconnect the power plug for safety before the work.
2. Unless otherwise noted, reverse the steps used to disassemble the machine for assembly.
3. Identify the screws by type (length, diameter) and location.
4. The screws used for the grounding wire, varistors, or the like are equipped with washers to ensure electrical continuity. Be sure to use these screws during assembly.
5. As a rule, do not operate the machine with any of its parts removed.
6. ⚠ Do not throw toner into fire to avoid explosion.

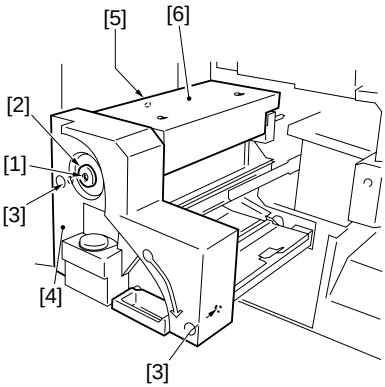
## 6.10.1 Fixing Assembly

With a few exceptions, the machine's fixing-related components may be serviced without removing the fixing assembly from the machine.

### a. Removing the Fixing Assembly

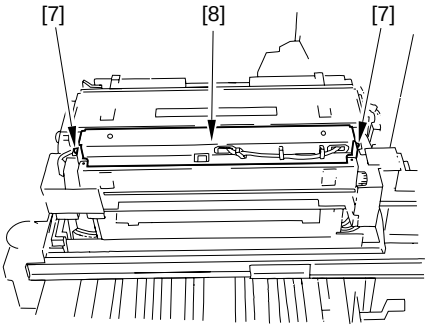
Be sure to keep the fixing assembly inside the machine when removing such components as the fixing roller.
The machine's fixing assembly is separate from the lower oil pan; be sure to collect the fixing oil from the upper oil pan into an oil bottle as follows before removing the fixing assembly.

1) Open the front left cover, and lower the fixing assembly lever; then, slide out the fixing unit.
2) Remove the screw [1], and detach the fixing knob [2].
3) Remove the two screws [3], and detach the pre-fixing assembly cover [4].
4) Open the outside delivery unit and the inside delivery unit.
5) Remove the screw [5], and detach the upper fixing cover [6].



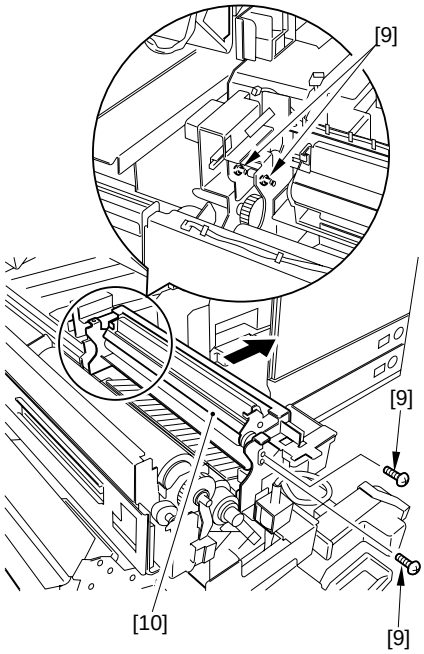

F02-610-01

6) Remove the two screws [7], and open the upper fixing roller unit [8].



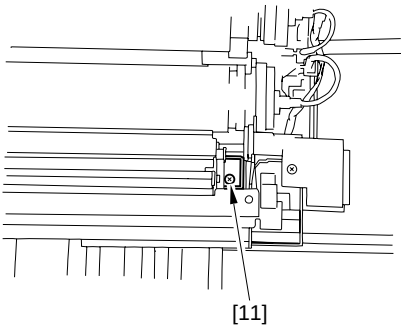

F02-610-02

7) Remove the two screws [9] each at the front and the rear; then, shift the oil applying unit [10] in the direction of the arrow.



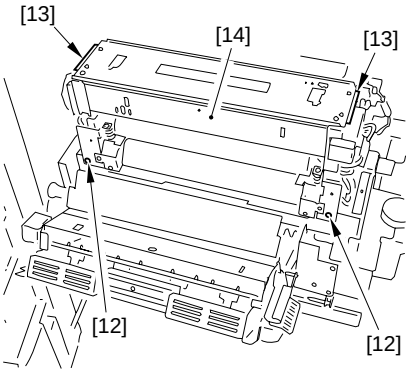

F02-610-03

8) Remove the screw [11] at the rear inside the upper oil pan, and wait until all fixing oil has been collected in the oil tank.




F02-610-04

9) Close the upper fixing roller unit.
10) Remove the two screws [12], and hold the grip [13] to detach the fixing assembly [14]. At this time, be sure to fit the screw [7] removed in step 6).



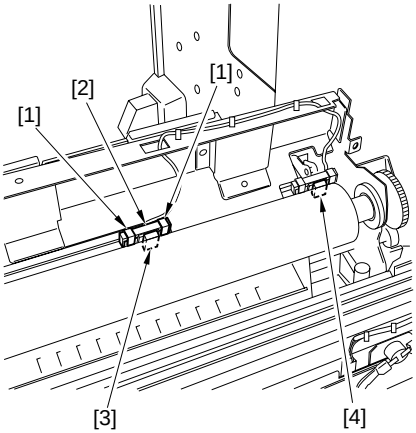

F02-610-05

Take care when lifting the fixing assembly. The oil filter may be sticking to the bottom of the fixing assembly.

b. Removing the Fixing Main Thermistor (Upper) and Sub Thermistor (Upper)

1) Open the upper fixing roller unit. (See the instructions on how to open the upper fixing roller unit on the CLC1000 service manual chapter 4.)
2) Remove the two fixing main thermistor fixings [1].
3) Free the thermistor cord from the cord retainer [2]; then, detach the fixing main thermistor (upper) [3].

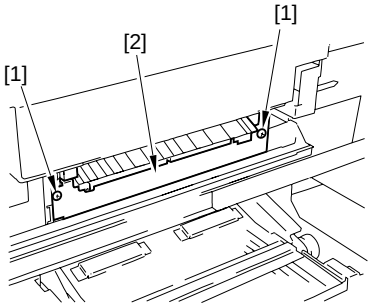
Note:
The sub thermistor (upper) [4] may be removed in the same way.




F02-610-06

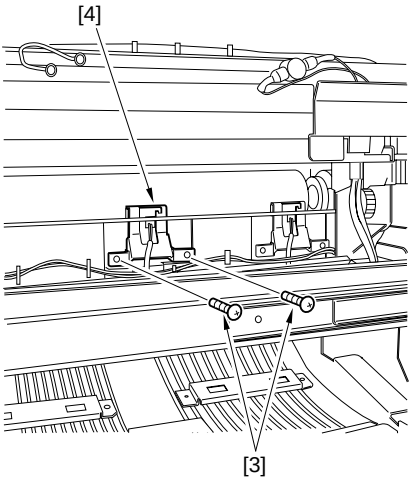
c. Removing the Fixing Main Thermistor (Lower) and Sub Thermistor (Lower)

1) Open the front left cover, and shift down the fixing lever; then, slide out the fixing unit.
2) Remove the two screws [1], and detach the fixing inlet guide mounting base [2].




F02-610-07

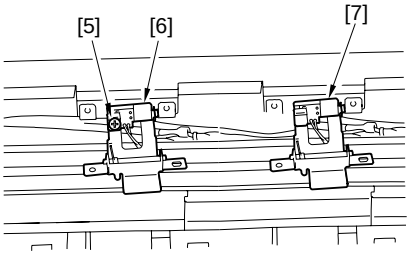
3) Remove the two screws [3], and detach the fixing main thermistor (lower) mounting base [4].




F02-610-08

4) Remove the screw [5], and detach the fixing main thermistor (lower) [6].

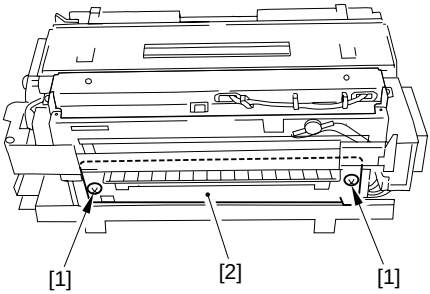
Note:
The sub thermistor (lower) [7] may be removed in the same way.




F02-610-09

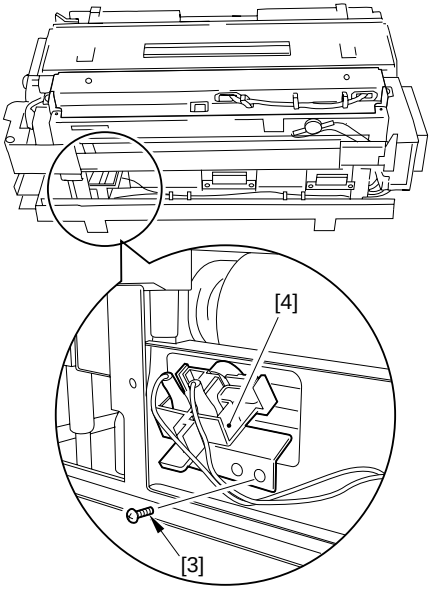
d. Removing the Fixing Lower Roller Thermal Switch

1) Remove the fixing assembly. (See the instructions on how to remove the fixing assembly.)
2) Remove the two screws [1], and detach the fixing inlet guide mounting base [2].




F02-610-10

3) Remove the screw [3], and detach the fixing lower roller thermal switch unit [4].

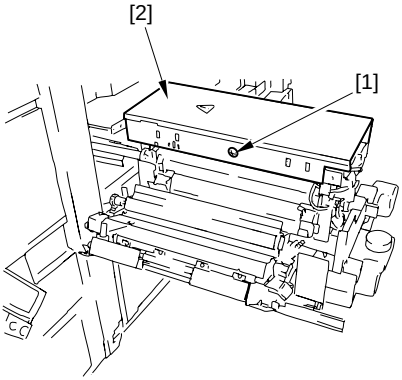



F02-610-11

## 6.10.2 Upper Fixing Cleaner Assembly

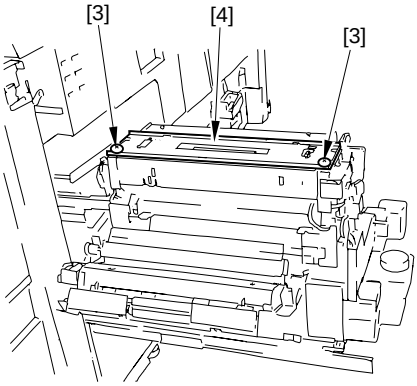
### a. Removing the Upper Fixing Web

1) Open the front cover (left), and shift down the fixing assembly lever; then, slide out the fixing unit.
2) Remove the fixing assembly knob.
3) Remove the fixing front cover.
4) Open the outside delivery unit and the inside delivery unit.
5) Remove the screw [1], and detach the upper fixing cover [2].



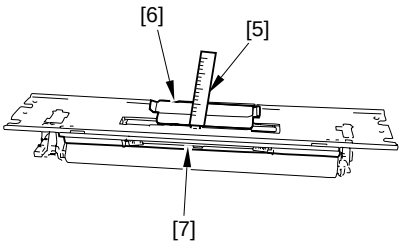

F02-610-12

6) Remove the two screws [3], and detach the upper fixing web unit [4].



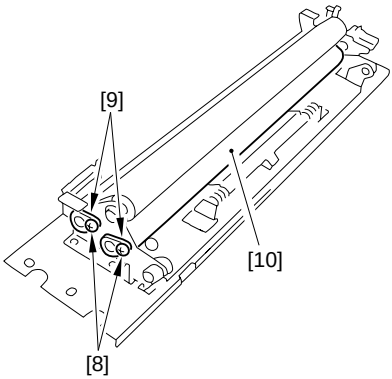

F02-610-13

7) Insert a metal ruler [5] along the stop plate [6] as shown, and release the web [7].




F02-610-14

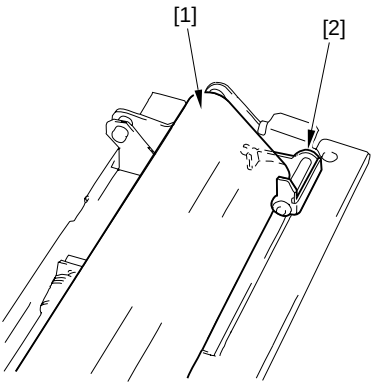
8) Remove the two screws [8] and the two bushings [9]; then, detach the fixing upper web [10].




F02-610-15

b. Mounting the Upper Fixing Web

1. When mounting the web [1], be sure that the length detecting lever [2] is positioned as shown.



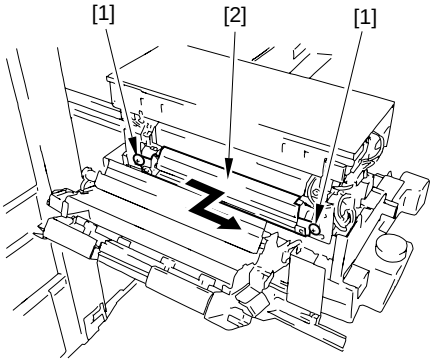

F02-610-16

When mounting the upper fixing web, be sure to move the lever up and down to remove any slack.

## 6.10.3 Lower Fixing Cleaning Assembly

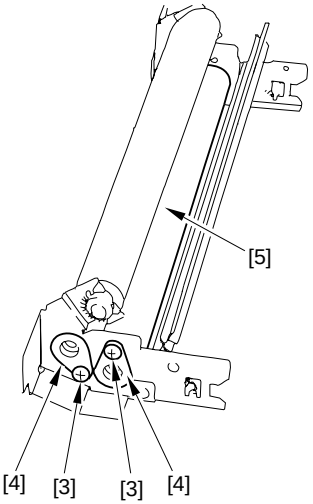
### a. Removing the Lower Fixing Web/Lower Fixing Blade

1) Open the front cover (left), and shift down the fixing lever; then, slide out the fixing unit.
2) Remove the fixing assembly knob.
3) Remove the front fixing cover.
4) Open the outside delivery unit and the inside delivery unit.
5) Remove the two screws [1]; then, slide the lower fixing web unit [2] to the front, and pull it out.



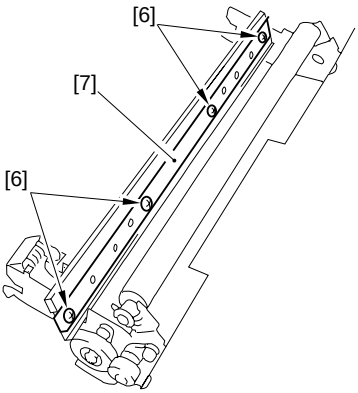

F02-610-17

6) Remove the two screws [3] and the two bushings [4]; then, detach the web [5].




F02-610-18

7) Remove the four screws [7], and detach the lower fixing blade [7].

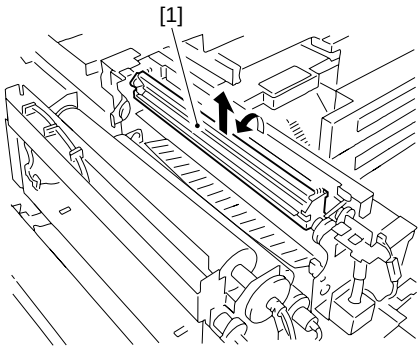



F02-610-19

## 6.10.4 Fixing Oil Applying Unit

### a. Removing the Oil Applying Blade Unit

1) Open the upper fixing roller unit. (See Service Manual CLC1000, Chapter 4, the instructions on how to open the upper fixing roller unit.)
2) Shift down the oil applying blade unit [1] in the direction of the arrow; then, pull it up.

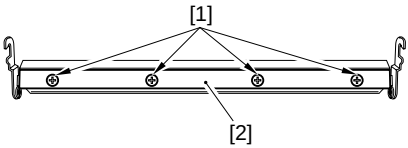



F02-610-20

When mounting the blade unit, be sure to return the blade unit to the point indicated in the figure to avoid damage to the fixing roller; in addition, be sure to mount the blade plate to the inside of the applying stay.

b. Removing the Oil Applying Blade

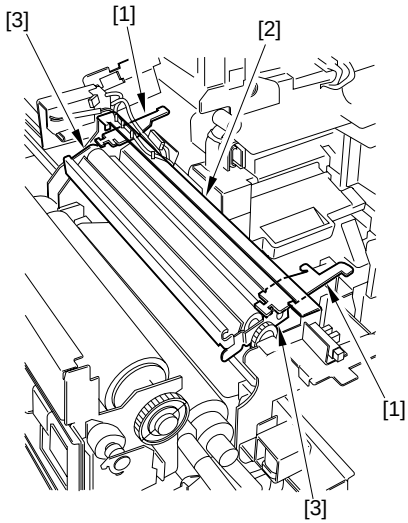
1) Remove the oil applying blade unit.
2) Remove the four screws [1], and detach the oil applying blade [2].




F02-610-21

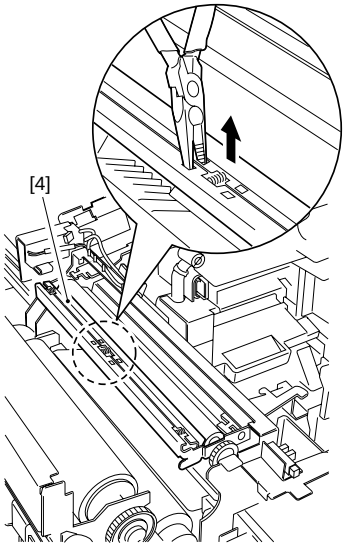
c. Removing the Toner Scraping Blade

1) Remove the oil applying blade.
2) Remove the two cover switch actuator [1] into the applying stay [2]; then, hook it on the blade arm [3] to release the blade.



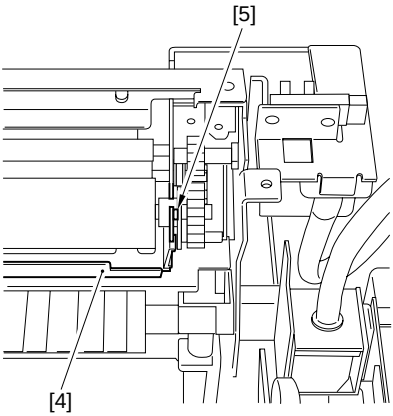

F02-610-22

3) Pick the toner scraping blade [4] with small pliers, and lift it to the point indicated in the figure to detach it in the upward direction.




F02-610-23

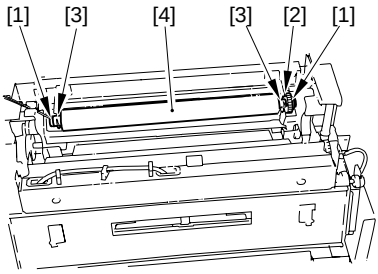
When mounting the toner scraping blade [4], be sure to mount the blade plate to the inside of the protrusion [5] of the bushing indicated in the figure.




F02-610-24

d. Removing the Oil Applying Roller

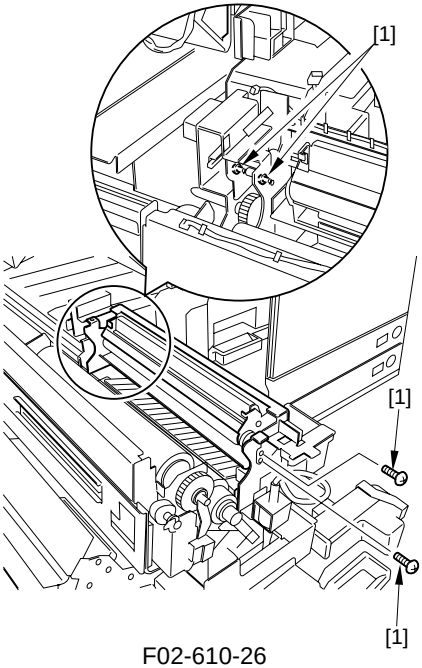
1) Remove the oil applying blade unit and the toner scraping blade.
2) Remove the two E-rings [1] (1 each at front and rear).
3) Remove the gear [2] and the two bushings [3] (1 each at front and rear).
4) Remove the oil applying roller [4].




F02-610-25

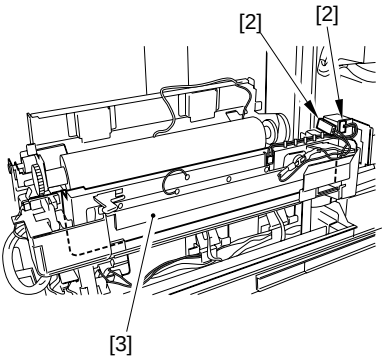
e. How to remove the oil heater

1) Open the front cover (left).
2) Pull out the fixing unit.
3) Remove the fixing knob.
4) Remove the fixing assembly front cover.
5) Open the upper fixing roller unit.
6) Remove the oil-applying blade unit.
7) Remove the toner-scraping blade.
8) Unscrew the two screws [1] each from the front and the rear and remove the two connectors [2].



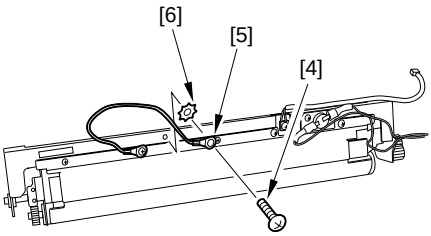

F02-610-26

9) Remove the oil-applying unit [3].




F02-610-27

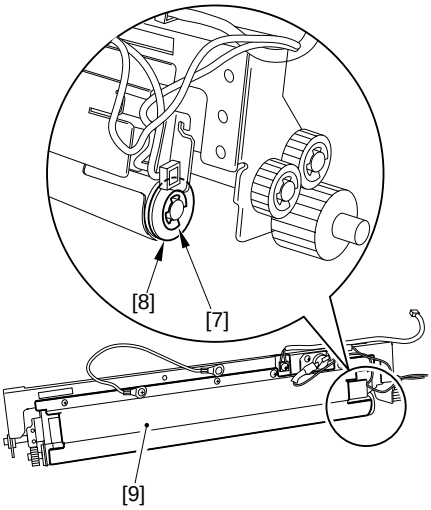
10) Unscrew the one screw [4] and remove the earth wire.




F02-610-28

When you unscrew the screw [4], be careful not to lose the toothed lock washer [6].

11) Remove the E-ring [7] at the rear and the bushing [8], and remove the oil heater [9].




F02-610-29

# 7 Externals and Controls

## 7.1 Outline of the Externals and Controls

The major difference is the addition of various fans, fuse PCB, and download function. The rest are the same as the externals and controls of the CLC1000 Series machines.

## 7.2 Differences in the Externals and Controls

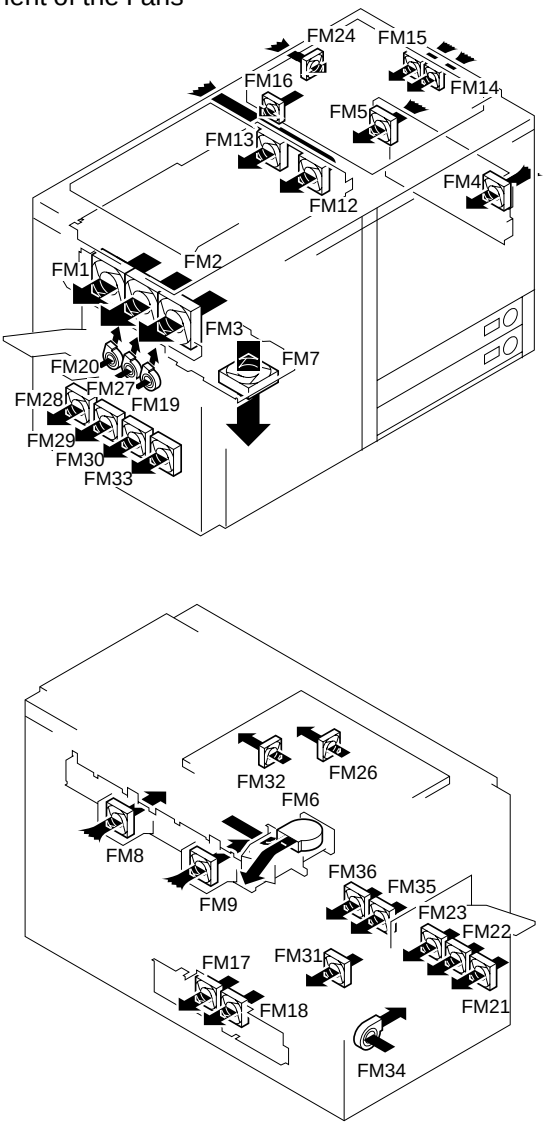
| Unit/location | Differences from CLC1000 Series | Purpose | Reference |
|---|---|---|---|
| Fan | Addition of the following<br>General exhaust fan (FM21, 22, 23)<br>Laser scanner motor cooling fan (FM24)<br>Pickup cooling fan (FM26, 32)<br>Exhaust lower cooling fan (FM27)<br>Reversing assembly exhaust fan (FM28, 29, 30, 33)<br>Fixing heat exhaust fan (FM31)<br>Delivery cooling fan (FM34)<br>Pre-fixing exhaust fan (FM35, 36) | To review the flow of air to enable higher speed. | 7.3 “Fans” |
| Leakage breaker | Use of a leakage breaker | To improve safety. | 7.4 “Power Supply” |
| Holding tray heater | Elimination of the holding tray heater | To accommodate the use of a stackless duplex system. | 7.4 “Power Supply” |
| Fixing oil heater | Addition of a fixing oil heater | To ensure a specific amount of fixing oil. | 7.4 “Power Supply” |
| Fuse PCB | Addition of a fuse PCB | To improve the protection mechanism. | 7.4 “Power Supply” |
| Download connector/ switch | Addition of a download function<br>Addition of a download connector/switch | To accommodate the use of a flash memory for the DC controller PCB and the reader controller PCB. | 7.5 “Downloading” |

T02-702-01

## 7.3 Fans

The machine is equipped with various fans for the discharge of ozone, suction of stray toner, and cooling of parts.

### 7.3.1 Arrangement of the Fans



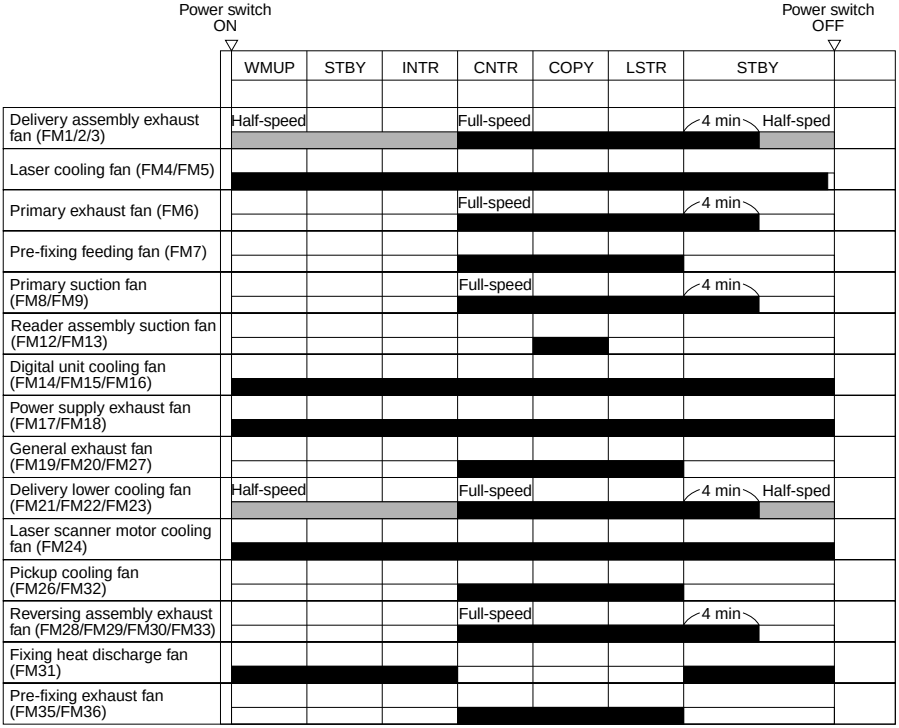

F02-703-01

## 7.3.2 Types of Fans

| Notation | Name | Function | Speed control | Filter |
|---|---|---|---|---|
| FM1 | Delivery assembly exhaust fan 1 | Exhausts air around the delivery assembly | 2-speed | Dust-proofing filter, ozone filter |
| FM2 | Delivery assembly exhaust fan 2 | | | |
| FM3 | Delivery assembly exhaust fan 3 | | | |
| FM4 | Laser cooling fan (front) | Cools the laser unit | Fixed | Dust-proofing filter |
| FM5 | Laser cooling fan (rear) | | | |
| FM6 | Primary exhaust fan | Draws stray toner | Fixed | Dust-proofing filter, ozone filter |
| FM7 | Pre-fixing feed fan | Draws paper to the feeding assembly | Fixed | None |
| FM8 | Primary suction fan (left) | Circulates air inside the machine | Fixed | Dust-proofing filter |
| FM9 | Primary suction fan (right) | | | |
| FM12 | Reader assembly suction fan (front) | Prevents overheating of the CCD and the copyboard glass caused by the scanning lamp | Fixed | None |
| FM13 | Reader assembly suction fan (rear) | | | |
| FM14 | Digital unit cooling fan 1 | Cools the digital unit | Fixed | Dust-proofing filter |
| FM15 | Digital unit cooling fan 2 | | | |
| FM16 | Digital unit cooling fan 3 | | | |
| FM17 | Power supply cooling fan 1 | Exhausts air around the power unit | Fixed | Dust-proofing filter, ozone filter |
| FM18 | Power supply cooling fan 2 | | | |
| FM19 | Delivery lower cooling fan 1 | | Fixed | Dust-proofing filter |
| FM20 | Delivery lower cooling fan 2 | Cools paper after fixing | | |
| FM21 | General exhaust fan 1 | | 2-speed | Dust-proofing filter, ozone filter |
| FM22 | General exhaust fan 2 | Exhausts air from around the printer | | |
| FM23 | General exhaust fan 3 | | | |
| FM24 | Laser scanner motor cooling fan | Cools the laser scanner motor | Fixed | Dust-proofing filter |
| FM26 | Pickup cooling fan 1 | Cools the pickup motor | Fixed | None |
| FM27 | Delivery lower cooling fan 3 | Cools paper after fixing | Fixed | Dust-proofing filter |
| FM28 | Reversing assembly exhaust fan 1 | | Fixed | Ozone filter |
| FM29 | Reversing assembly exhaust fan 2 | Cools the reversing assembly | | |
| FM30 | Reversing assembly exhaust fan 3 | | | |
| FM31 | Fixing heat discharge fan | Exhaust heat form the fixing assembly | Fixed | |
| FM32 | Pickup cooling fan 2 | Cools the pickup motor | Fixed | None |
| FM33 | Reversing assembly exhaust fan 4 | Cools paper after fixing | Fixed | Ozone filter |
| FM34 | Delivery cooling fan | Cools paper after fixing | Fixed | None |
| FM35 | Pre-fixing exhaust fan 1 | Collects stray toner | Fixed | Ozone filter |
| FM36 | Pre-fixing exhaust fan 2 | | | |

T02-703-01

## 7.3.3 Sequence of Operations




F02-703-02

## 7.4 Power Supply

The machine's DC power is supplied to its loads directly or by way of a respective controller PCB from three power supply PCBs: DC power supply PCB 1 (upper), DC power supply PCB 1 (lower), and DC power supply PCB 2.

The DC power supply PCB 1 supplies DC voltage in sync with the power switch, while the DC power supply PCB 2 supplies DC voltage independently of the power switch.

F02-704-01 shows how AC power is supplied to each power supply PCB, while F02-704-02 shows the destinations of the voltage and the outputs of each power supply PCB.

The machine is equipped with a power save switch (SW8) so that the cassette heater and the like may be supplied with power "at all times" or "only when the power switch is on." The heaters that are subject the settings of the switch are shown in F02-704-01.

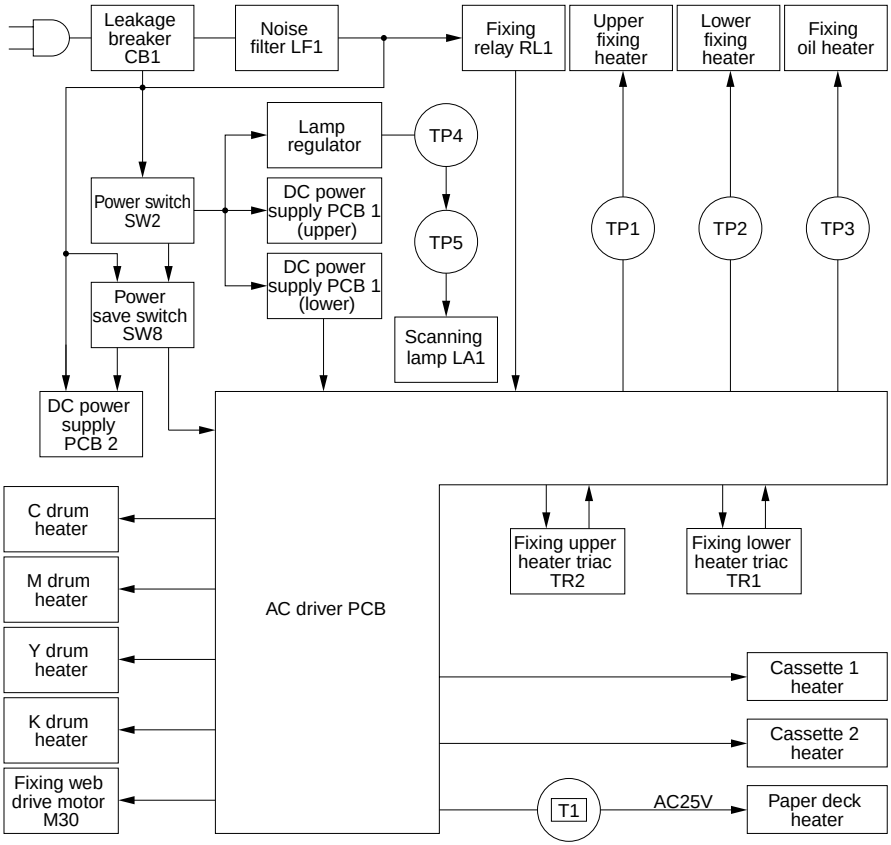
The cassette heater may be operated in ways that are selected in service mode, and it is turned on according to the selected settings if the power save switch is on even when the power switch is off.

When the machine's power switch is turned off, the power to the loads other than the circuits around the CPU on the DC controller PCB or the reader controller PCB is cut off; to back up the data in RAMs on these PCBs, the machine is equipped with lithium batteries.

| Power switch (SW2) | Power save switch (SW8) | Cassette 1 heater<br>Cassette 2 heater<br>Paper deck heater | C drum heater<br>M drum heater<br>Y drum heater<br>K drum heater |
|---|---|---|---|
| ON | 1(ON) | ON | ON |
| ON | 0(OFF) | ON | ON |
| OFF | 1(ON) | ON | ON |
| OF | 0(OFF) | OFF | OFF |

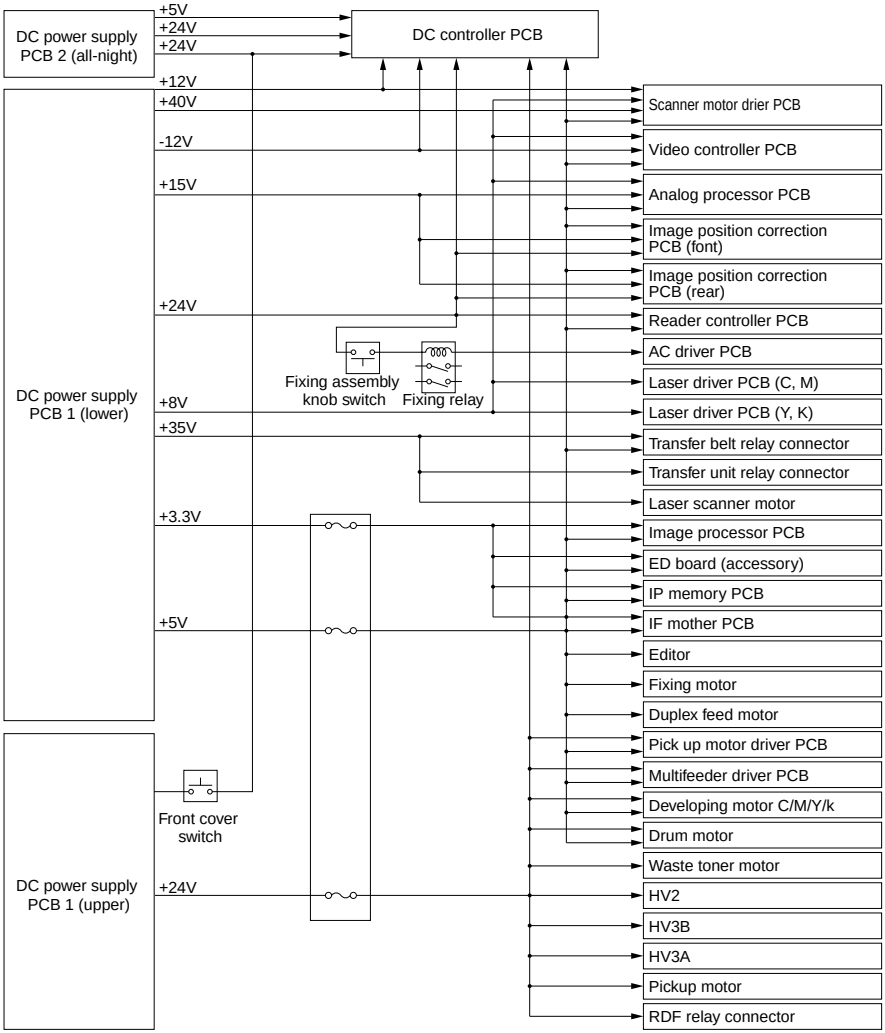
T02-704-01

a. AC Power Supply to the Power Supply PCBs




F02-704-01

## b. DC Power Supply from the Power Supply PCBs




F02-704-02

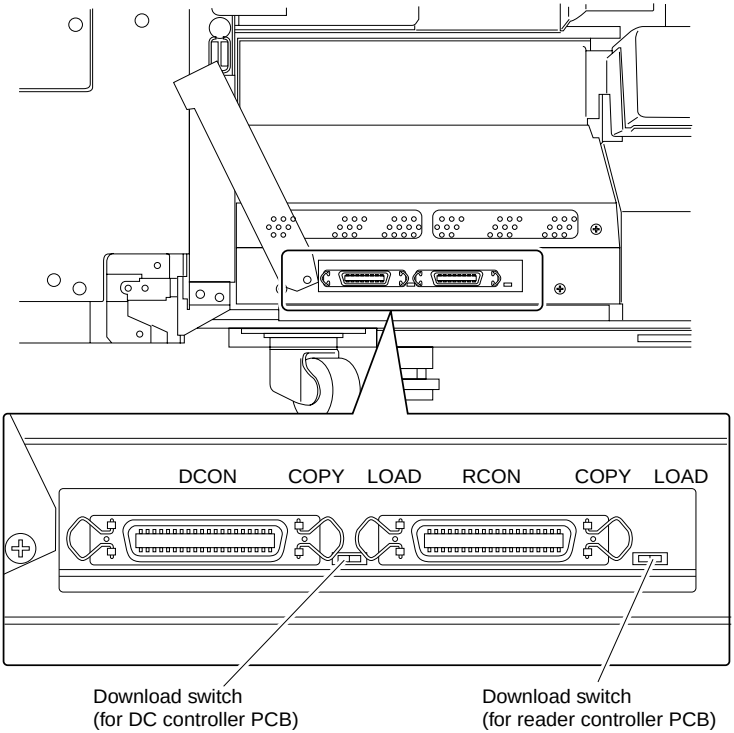
## 7.5 Download

The machine will provide the following functions when it is connected to a PC by a bi-Centronics interface.

| PCB | Element | Download | Upload |
|---|---|---|---|
| DC controller PCB | Flash memory | Yes | No |
| | Backup memory RAM | Yes | Yes |
| Reader controller PCB | Flash memory | Yes | No |
| | Backup Ram | Yes | Yes |

T02-705-01

The machine is switched between copying mode and download/upload mode by the switch found behind its inside cover.




F02-705-01

| Switch position | Operation | Remarks |
|---|---|---|
| LOAD | Downloading/uploading | Do not move for copying |
| COPY | Copying | |

T02-705-02

## 7.6 Disassembly/Assembly

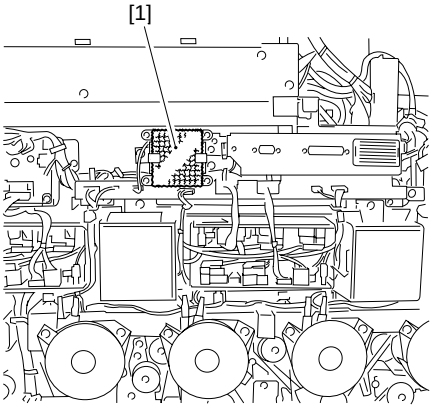
The machine has the mechanical features and operations as described herein, and may be disassembled or assembled as shown; be sure to observe the following whenever disassembling or assembling the machine:

1. ⚠Disconnect the power plug for safety before the work.
2. Unless otherwise noted, reverse the steps used to disassemble the machine for assembly.
3. Identify the screws by type (length, diameter) and location.
4. The screws used for the grounding wire, varistors, or the like are equipped with washers to ensure electrical continuity. Be sure to use these screws during assembly.
5. As a rule, do not operate the machine with any of its parts removed.
6. ⚠Do not throw toner into fire to avoid explosion.

## 7.6.1 Fans and Filters

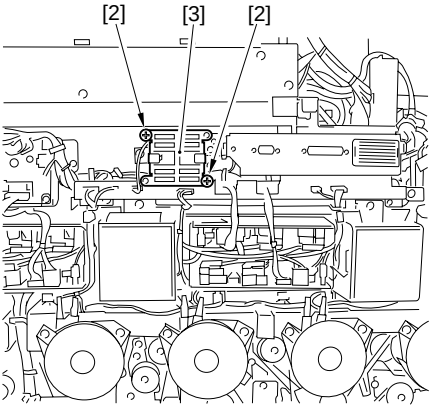
### a. Removing the Laser Scanner Motor Cooling Fan

1) Remove the rear cover (1).
2) Remove the filter [1].



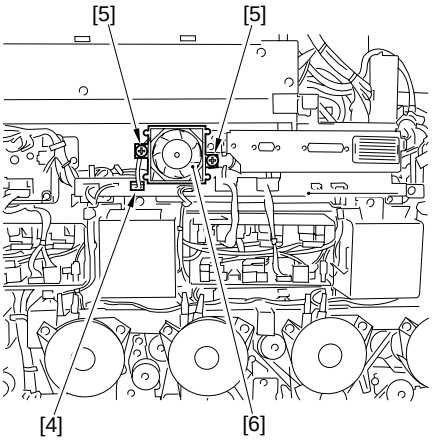

F02-706-01

3) Remove the two screws [2], and detach the filter mounting plate [3].




F02-706-02

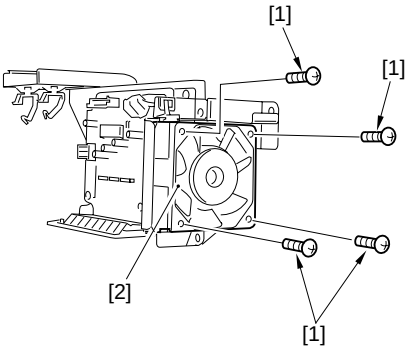
4) Disconnect the connector [4], and remove the two screws [5]; then, detach the laser scanner motor cooling fan [6].




F02-706-03

b. Removing the Pick Up Cooling Fan 2

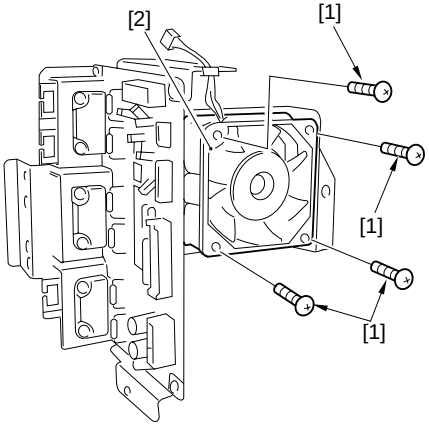
1) Remove the rear cover (2).
2) Remove the DC driver PCB. (See the instructions on how to remove the DC motor driver PCB.)
3) Remove the four screws [1], and detach the pick up cooling fan 2 [2].




F02-706-04

c. Removing the Pick Up Cooling Fan 1

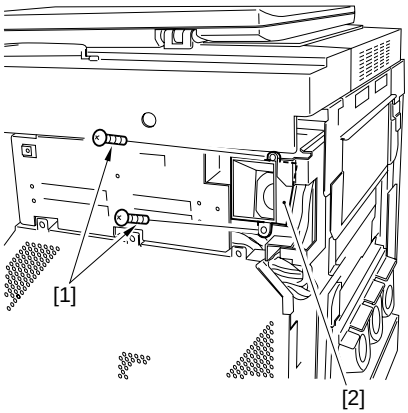
1) Remove the rear cover (2).
2) Remove the multifeeder driver PCB. (See the instructions on how to remove the multifeeder driver PCB.)
3) Remove the four screws [1], and detach the pickup cooling fan 1 [2].




F02-706-05

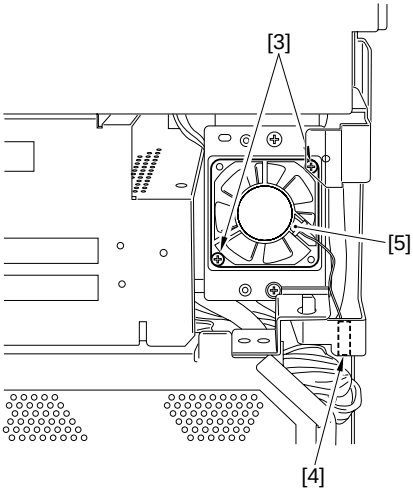
d. Removing the Fixing Heat Discharge Fan

1) Remove the rear cover (1).
2) Remove the two screws [1], and detach the fan duct [2].




F02-706-06

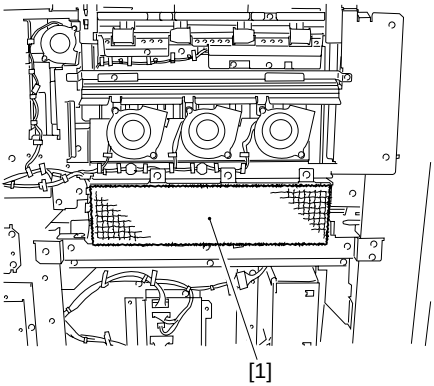
3) Remove the two screws [3], and disconnect the connector [4]; then, detach the fixing heat discharge fan [5].




F02-706-07

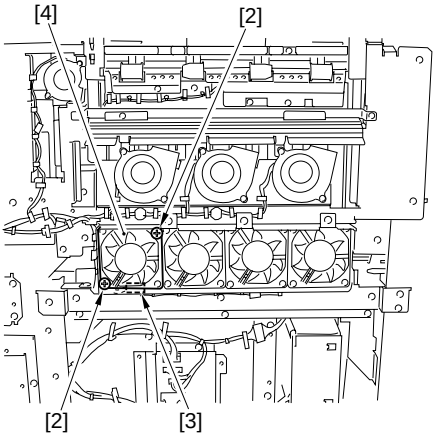
e. Removing the Delivery Cooling Fan

1) Remove the left cover.
2) Remove the filter [1].




F02-706-08

3) Remove the two screws [2], and disconnect the connector [3]; then, detach the reversing assembly exhaust fan [4].



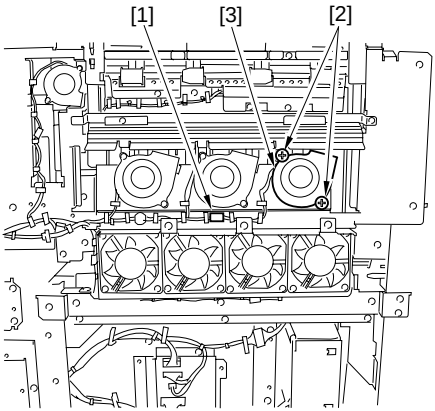

F02-706-09

Memo

The remaining three fans may be removed in the same way.

f. Removing the Lower Delivery Cooling Fan

1) Remove the left cover.
2) Disconnect the connector [1], and remove the two screws [2]: then, detach the delivery lower cooling fan [3].



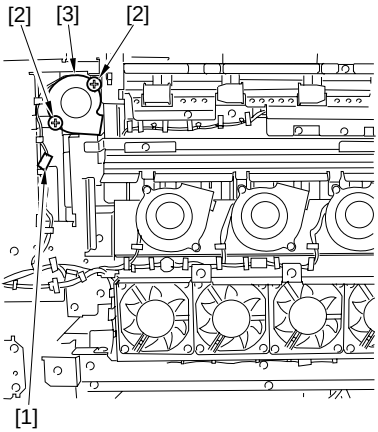

F02-706-10

Memo

The remaining two fans may be removed in the same way.

g. Removing the Delivery Cooling Fan

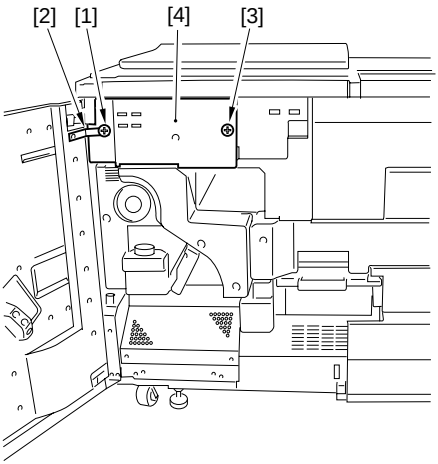
1) Remove the left cover.
2) Disconnect the connector [1], and remove the two screws [2]; then, detach the delivery cooling fan [3].




F02-706-11

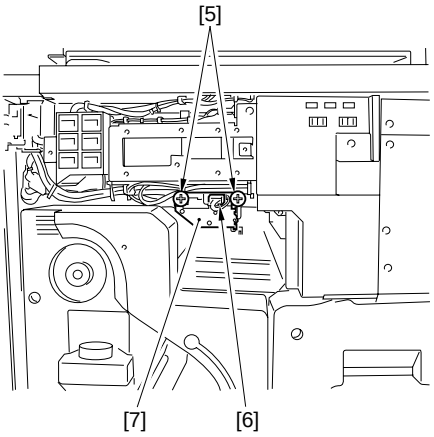
h. Removing the Pre-Fixing Exhaust Fan

1) Open the front cover (left).
2) Remove the pre-fixing duct. (See the instructions on how to remove the pre-fixing filter.)
3) Remove the screw [1], and detach the front cover strap [2]; then, remove the screw [3], and detach the counter cover [4].



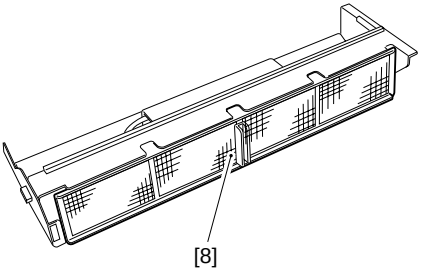

F02-706-12

4) Remove the two screws [5], and disconnect the connector [7]; then, detach the fan mounting plate [7].



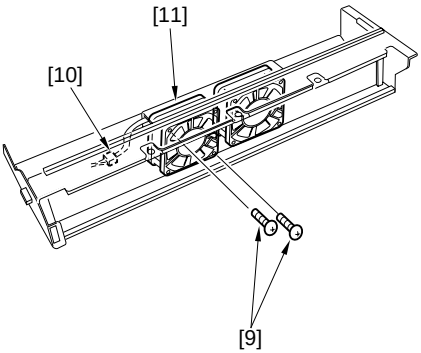

F02-706-13

5) Remove the filter [8].




F02-706-14

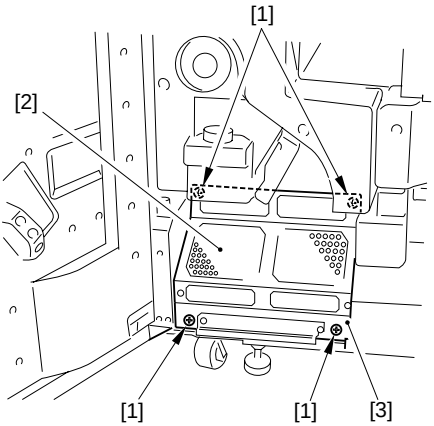
6) Remove the two screws [9], and disconnect the connector [10]; then, detach the pre-fixing exhaust fan [11].




F02-706-15

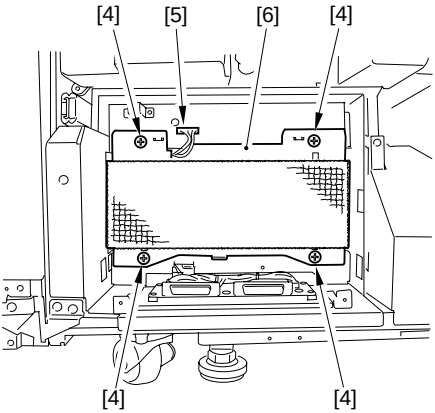
i. Removing the General Exhaust Fan

1) Open the front cover (left).
2) Slide out the transfer unit.
3) Remove the four screws; then, detach the general exhaust fan cover [2] together with the download cover [3].



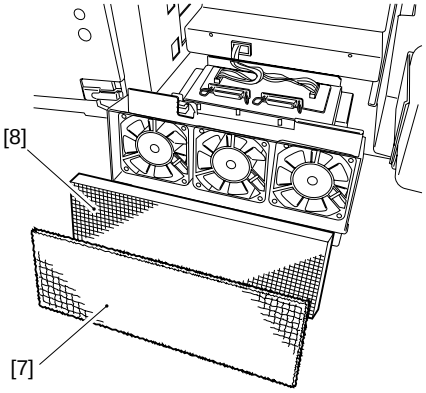

F02-706-16

4) Remove the four screws [4], and disconnect the connector [5]; then, detach the general exhaust fan assembly [7].



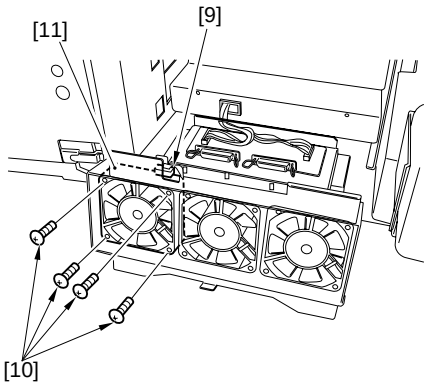

F02-706-17

5) Remove the dust-proofing filter [7] and the ozone filter [8].




F02-706-18

6) Disconnect the connector [9], and remove the four screws [10]; then, detach the general exhaust fan [11].



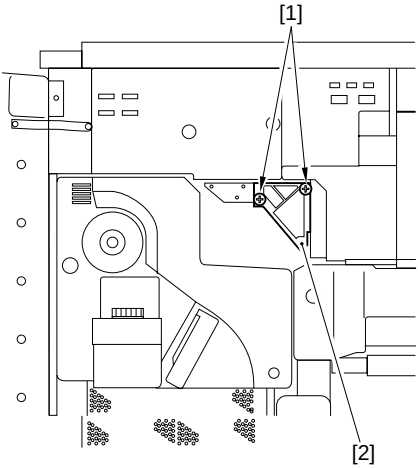

F02-706-19

Note:

The three fans may be removed in the same way.

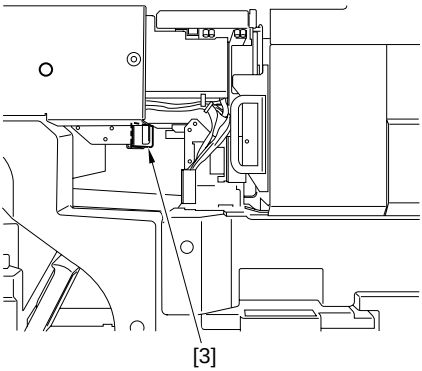
j. Removing the Pre-Fixing Filter

1) Open the front cover.
2) Remove the two screws [1], and pull put the pre-fixing duct [2].




F02-706-20

3) Remove the filter [3].

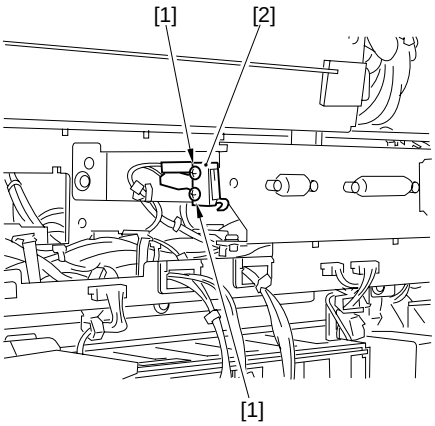



F02-706-21

## 7.6.2 Switches

### a. Removing the Rear Cover Switch

1) Remove the rear cover (2).
2) Remove the laser scanner motor cooling fan unit.
3) Remove the two screws [1], and detach the rear cover switch [2].

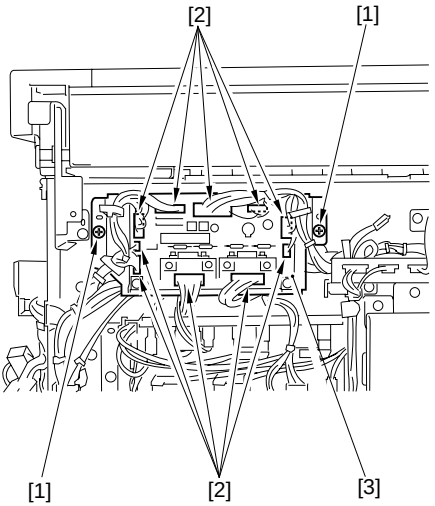



F02-706-22

## 7.6.3 PCBs

### a. Removing the Multifeeder PCB

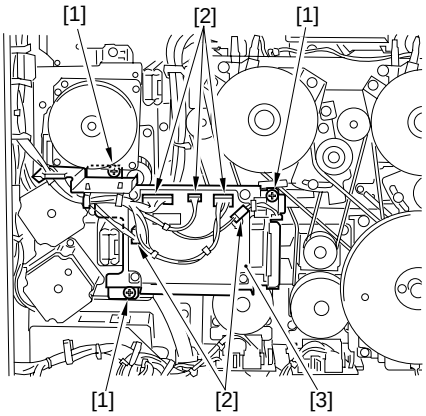
1) Remove the rear cover (2).
2) Remove the two screws [1], and disconnect the 10 connectors [2]; then, detach the multifeeder PCB [3].




F02-706-23

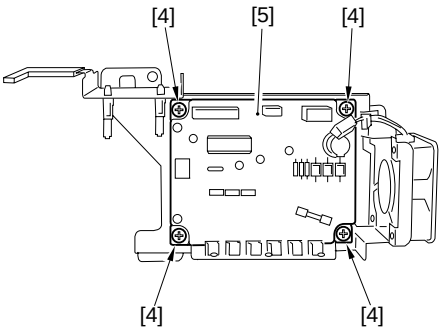
b. Removing the DC Driver PCB

1) Removing the rear cover (2).
2) Remove three screws [1], and disconnect the five connectors [2]; then, detach the DC driver PCB unit [3].




F02-706-24

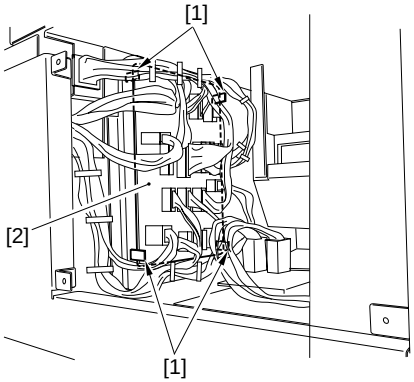
3) Remove the four screws [4], and detach the DC drive PCB [5].




F02-706-25

c. Removing the Fuse PCB

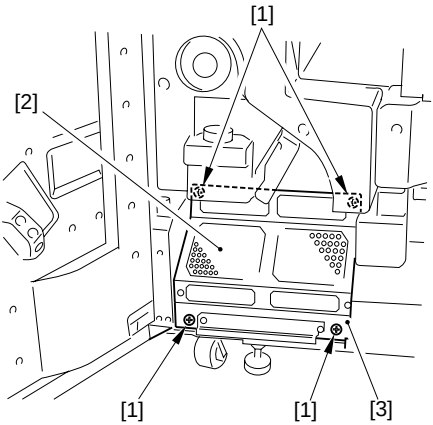
1) Remove the rear cover (3)
2) Disconnect the connector from the PCB, and remove the four PCB retaining clips [1]; then, detach the fuse PCB [2].




F02-706-26

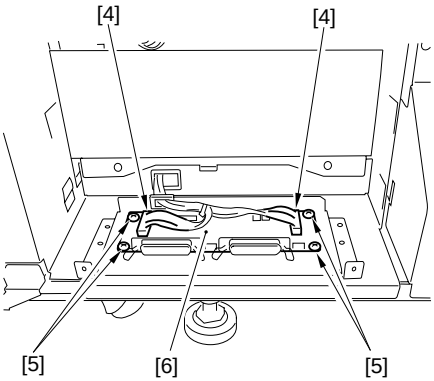
d. Removing the Download PCB

1) Open the front cover (left).
2) Slide out the transfer unit.
3) Remove the four screws [1], and detach the general exhaust fan cover [2] together with the download cover [3].




F02-706-27

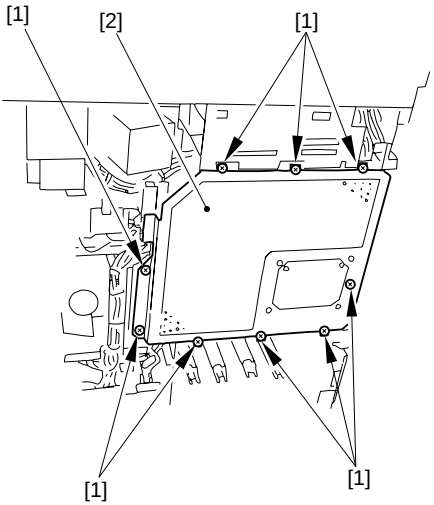
4) Disconnect the two connectors [4], and remove the four screws [5]; then, detach the download PCB [6].




F02-706-28

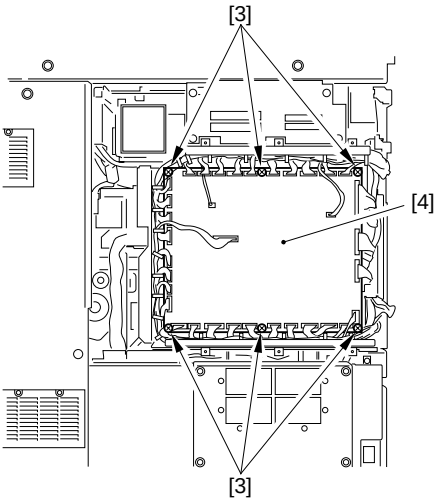
e. Removing the DC Controller PCB

1) Remove the rear cover (1).
2) Remove the nine screws [1], and detach the shield plate [2].




F02-706-29

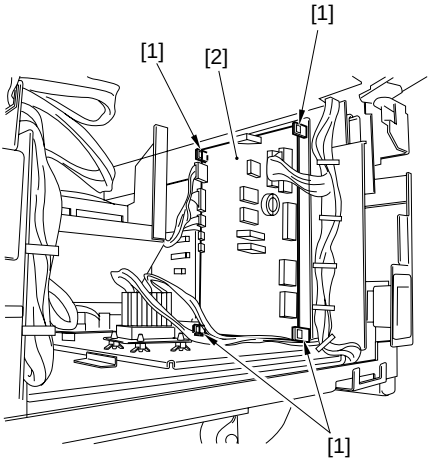
3) Disconnect all connectors and remove the six screws from the DC connectors PCB; then, detach the DC controller PCB [4].




F02-706-30

f. Removing the AC Driver PCB

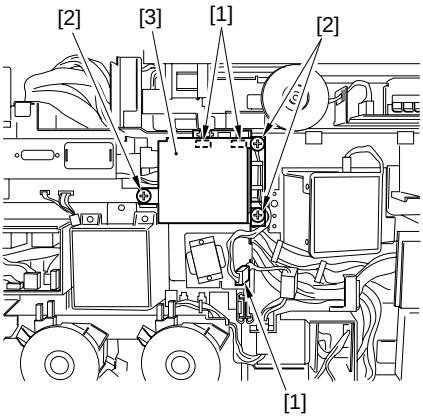
1) Remove the rear cover (3).
2) Disconnect the connectors from the PCB, and remove the four PCB retaining clips [1]; then, detach the AC driver PCB [2].




F02-706-31

g. Removing the Lamp Regulator

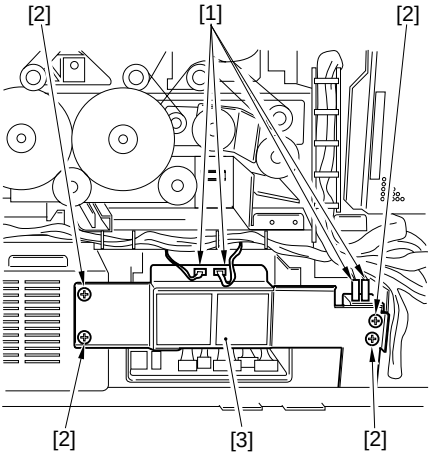
1) Remove the rear cover (1).
2) Disconnect the three connectors [1], and remove the three screws [2]; then, detach the lamp regulator [3].




F02-706-32

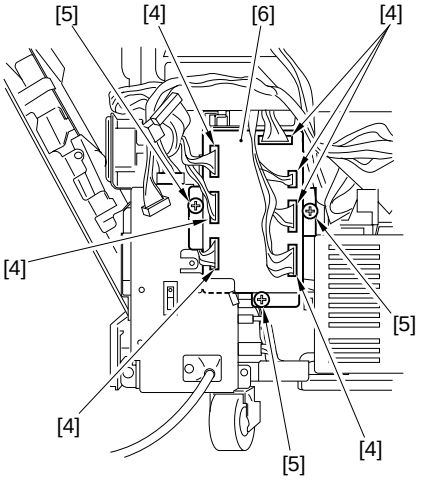
h. Removing the Developing Bias High-Voltage Assembly (HVT3)

1) Remove the rear cover (2)/(3).
2) Disconnect the four connectors [1], and remove the four screws [2]; then, detach the power supply cooling fan unit [3].



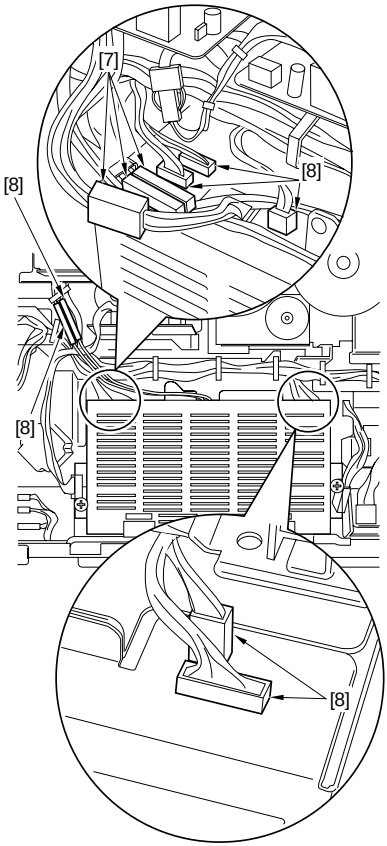

F02-706-33

3) Disconnect the conductor [4] and remove the three screws [5] from the pickup drive PCB; then, detach the pickup driver unit [6].

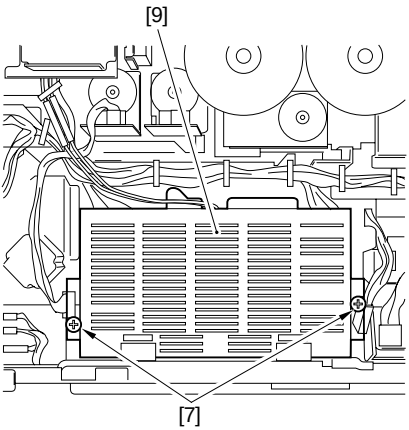



F02-706-34

4) Remove the two screws [7], and disconnect the ten connectors [8]; then, detach the developing bias high-voltage assembly (HVT3) [9].



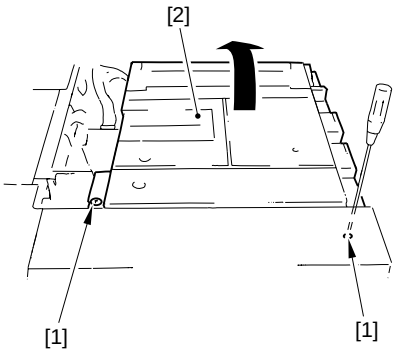

F02-706-35



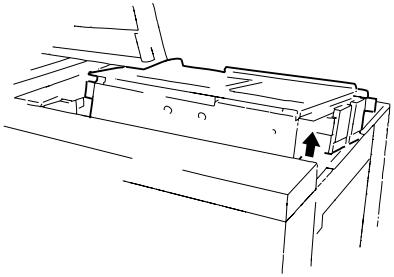

F02-706-36

i. Removing the Analog Processor PCB

1) Remove the fixing screw [1], and secure the digital unit [2] in the position indicated.

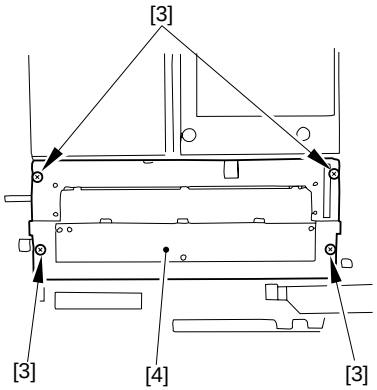



F02-706-37



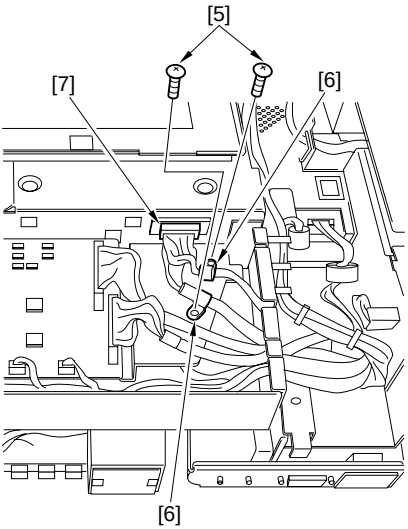
F02-706-38

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



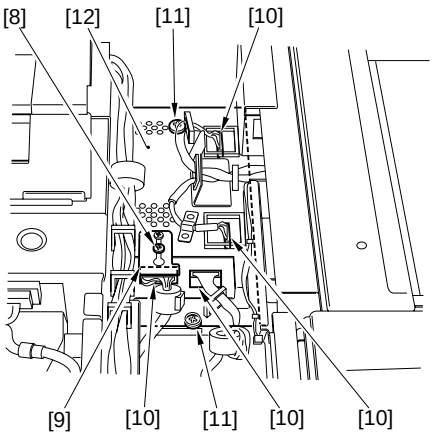

F02-706-39

3) Remove the two screws [5], and detach the two harness retainers [6]; then, disconnect the connector [7].




F02-706-40

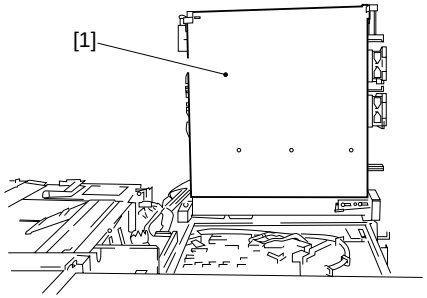
4) Loosen the screw [8], and shift the connector retainer [9]; then, disconnect the four connectors [10], and remove the two screws [11] to detach the analog processor PCB [12].




F02-706-41

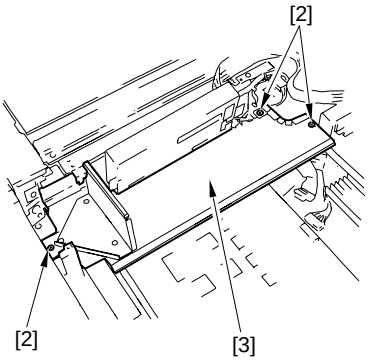
j. Removing the Video Controller PCB

1) Secure the digital unit [1] as indicated in the figure. (See the instructions on the preparatory work for the laser unit.)



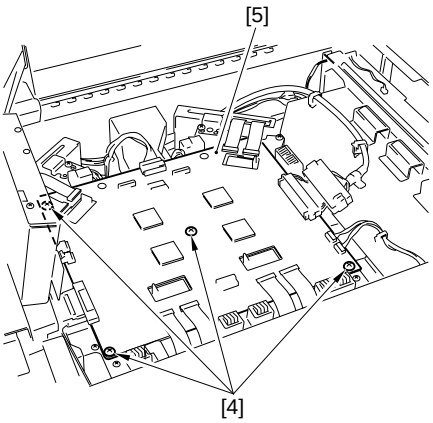

F02-706-42

2) Remove the three screws [2], and detach the air duct plate [3].




F02-706-43

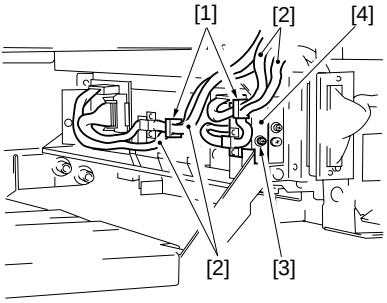
3) Disconnect all connectors and remove the four mounting screws [4] from the video controller PCB; then, detach the video controller PCB [5].




F02-706-44

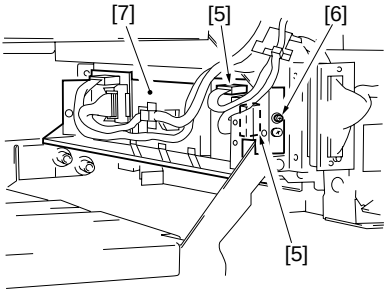
k. Removing the Image Position Correction CCD Unit

1) Remove the hopper assembly left cover.
2) Remove the separation charging assembly.
3) Remove the pre-fixing charging assembly.
4) Slide out the transfer unit.
5) Free the harness [2] from the wire saddle [1].
6) Remove the screw [3], and detach the cable support plate [4].



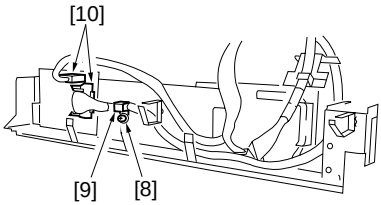

F02-706-45

7) Disconnect the two connectors [5] at the front.
8) Remove the unit fixing screw [6], and detach the image position correction CCD unit [7].




F02-706-46

9) Remove the screw [8], and detach the cable fixing plate [9] at the rear.
10) Disconnect the two connectors [10] on the rear side.

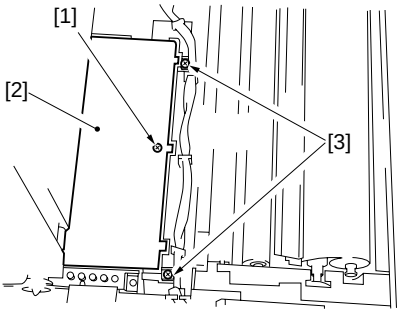



F02-706-47

After mounting the image correction CCD unit, execute the following in service mode: FUCN>INSTALL (2nd sheet)>REG-PAPER (pattern read position auto adjustment); then, turn off and on the power to correct the image position.

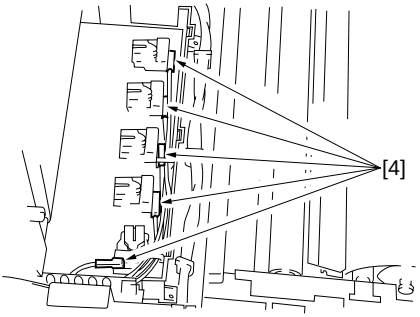
l. Removing the Transfer High-Voltage Transformer (HVT1)

1) Open the transfer unit. (See the instructions on how to open the transfer unit.)
2) Remove the screw [1], and detach the insulating cover [2] for the transfer high-voltage transformer; then, removed the two screws [3].



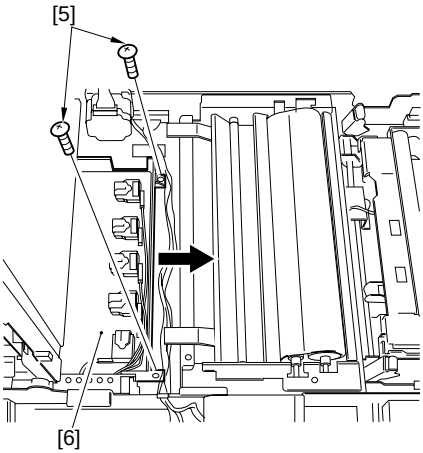

F02-706-48

3) Disconnect the five connectors from the transfer high-voltage transformer.



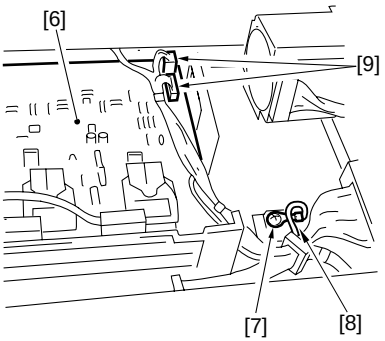

F02-706-49

4) Remove the two screws [5], and slide out the transfer high-voltage transformer [7] to the right. At this time, take care so that the transfer high-voltage transformer will not come into contact with the transfer belt.




F02-706-50

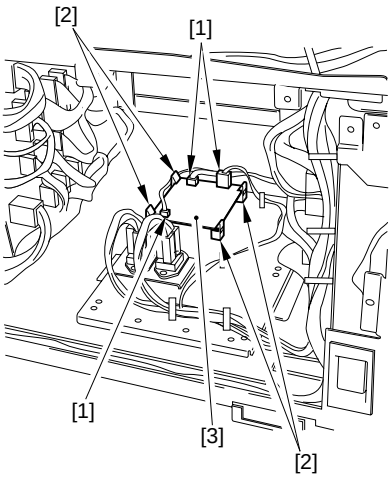
5) Remove the screw [7] and the grounding wire [8]; then, disconnect the two connectors [9], and detach the transfer high-voltage transformer [6].




F02-706-51

m. Removing the Flicker Controller PCB

1) Remove the rear cover (3).
2) Disconnect the three connectors [1], and remove the four PCB retaining clips [2]; then, detach the flicker controller PCB [3].

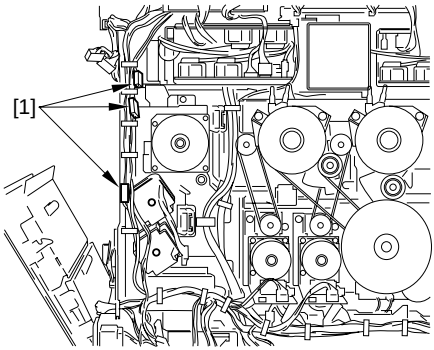



F02-706-52

## 7.6.4 Drive System

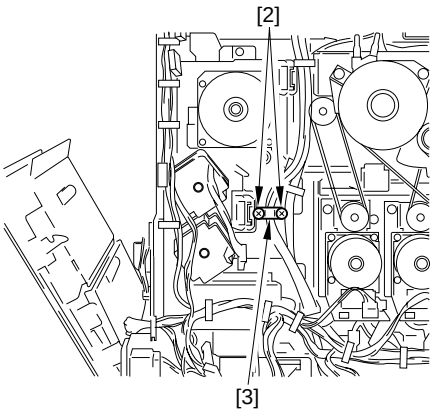
### a. Removing the Registration Drive Assembly

1) Remove the rear cover (2).
2) Remove the manual feed unit.
3) Remove the DC motor driver PCB.
4) Disconnect the three connectors [1].



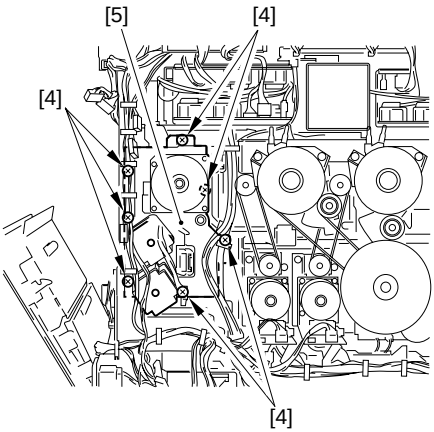

F02-706-53

5) Remove the two screws [2], and detach the harness retainer [3].




F02-706-54

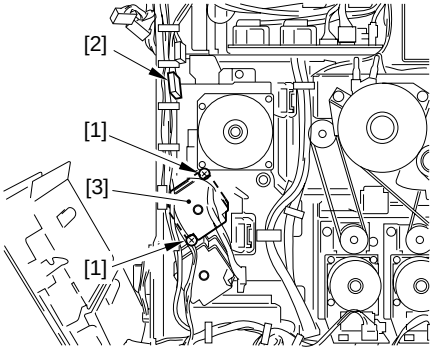
6) Remove the seven screws [4], and detach the registration drive assembly [5].




F02-706-55

b. Removing the Deck Pickup Motor

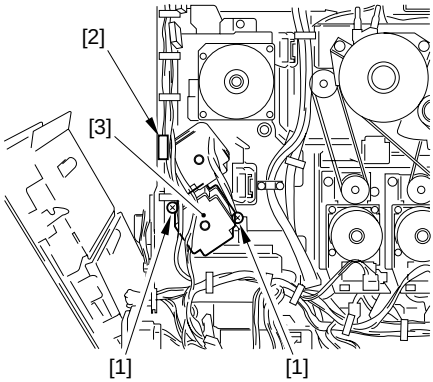
1) Remove the rear cover (2).
2) Remove the right rear cover.
3) Remove the DC motor driver PCB.
4) Remove the two screws [1], and disconnect the connector [2]; then, detach the deck pickup motor [3].




F02-706-56

c. Removing the Registration Motor

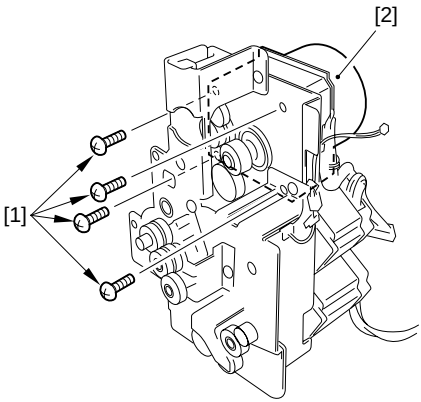
1) Remove the rear cover (2).
2) Remove the right rear cover.
3) Remove the DC driver PCB.
4) Remove the two screws [1], and disconnect the connector [2]; then, detach the registration motor [3].




F02-706-57

d. Removing the Multifeeder Pickup Motor

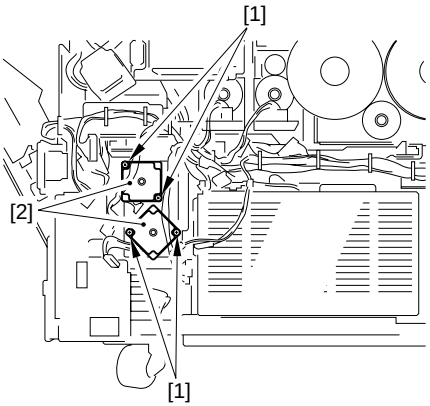
1) Remove the rear cover (2).
2) Remove the manual feed unit.
3) Remove the registration drive assembly.
4) Remove the four screws [1], and detach the multifeeder pickup motor [2].




F02-706-58

e. Removing the Cassette Pickup Motor

1) Remove the rear cover (2).
2) Remove the pickup driver PCB.
3) Remove the two screws [1], and detach the cassette pickup motor [2].



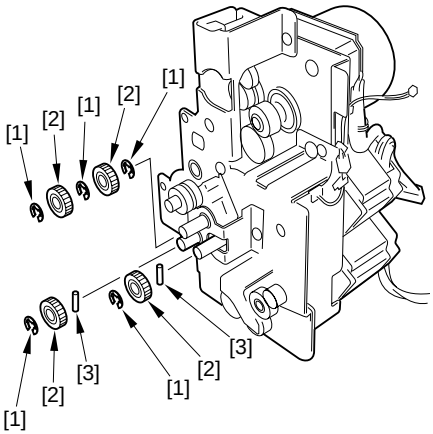

F02-706-59

Memo

Both cassette 1/2 pickup motor may be removed in the same way.

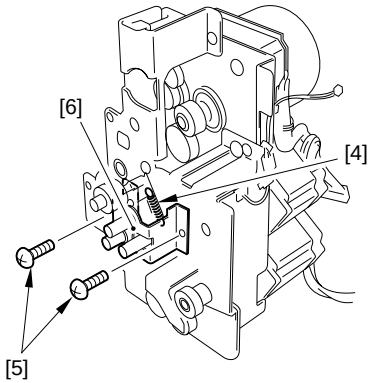
f. Removing the Transfer Lifter Clutch

1) Remove the rear over (2).
2) Remove the manual feed unit.
3) Remove the registration drive assembly.
4) Remove the five E-rings [1], four gears [2], and two parallel pins [3].



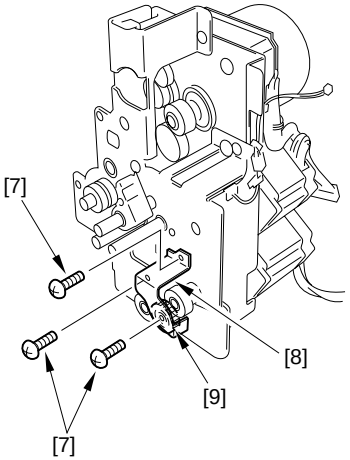

F02-706-60

5) Remove the tension spring [4] and two screws [5]; then, detach the shaft retaining plate [6].



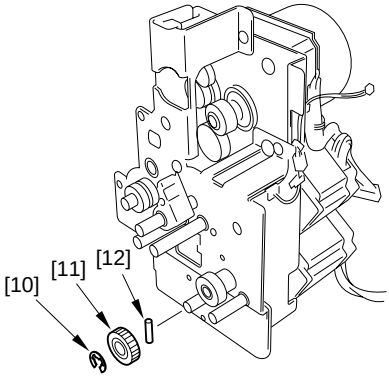

F02-706-61

6) Remove the three screws [7], and detach the gear retaining plate [8]; then, detach the gear [9].



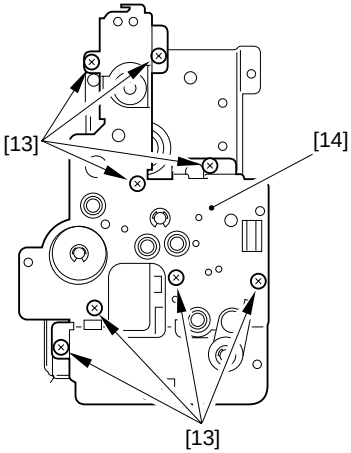

F02-706-62

7) Remove the E-ring [10]; then, remove the gear [11] and the parallel pin [12].



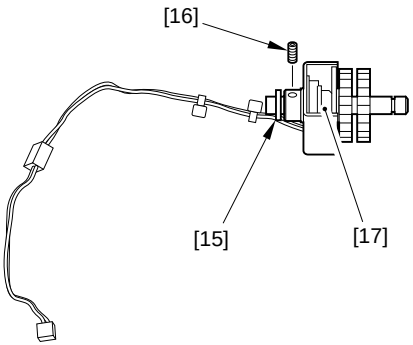

F028-706-63

8) Remove the eight screws [13], and detach the registration drive support plate (upper) [14].



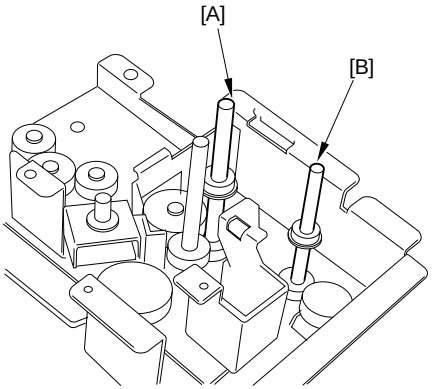

F02-706-64

9) Remove the clutch unit; then, remove the E-ring [15] and the set screw [16], and detach the clutch [17].




F02-706-65

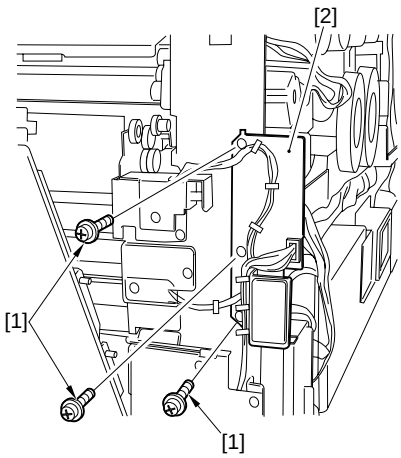
If you have removed the gears from around the transfer lifter clutch, take care not to confuse the gear mounting shafts (A, B).




F02-706-66

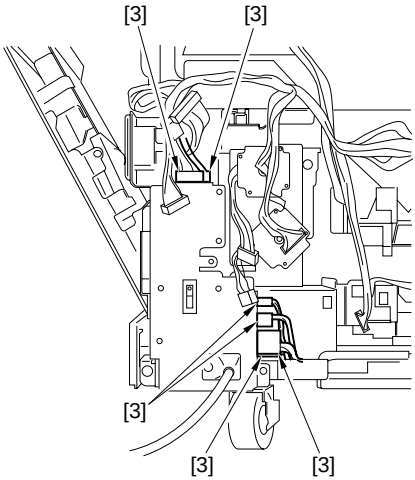
g. Removing the Power Cord Base

1) Remove the rear cover (2).
2) Remove the pickup driver unit.
3) Remove the right rear cover.
4) Remove the screws [1], and detach the deck connector base [2].



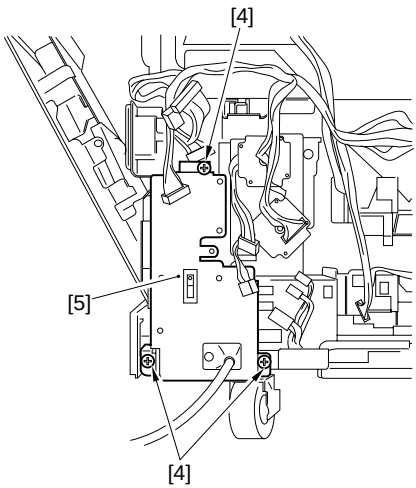

F02-706-67

5) Disconnect the six connectors [3].




F02-706-68

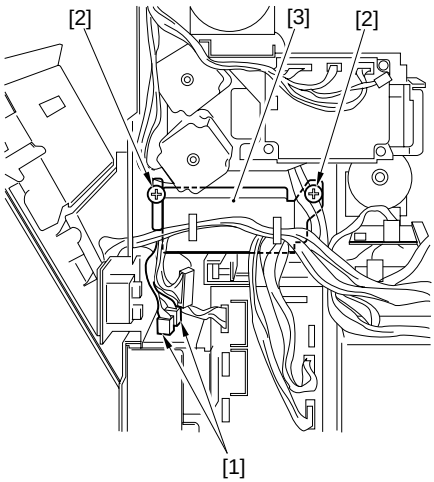
6) Remove the three screws [4], and detach the power cord base [5].




F02-706-69

h. Removing the Noise Filter

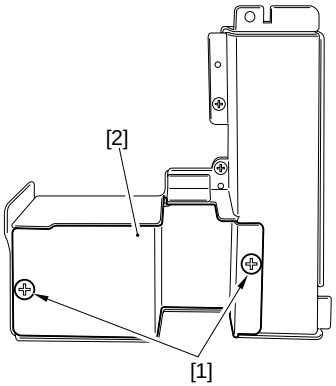
1) Remove the rear cover (2).
2) Remove the right rear cover.
3) Remove the deck connector base. (See the instructions on how to remove the power cord base.)
4) Disconnect the two connectors [1] from the power cord base, and remove the two screws; then, detach the noise filter.




F02-706-70

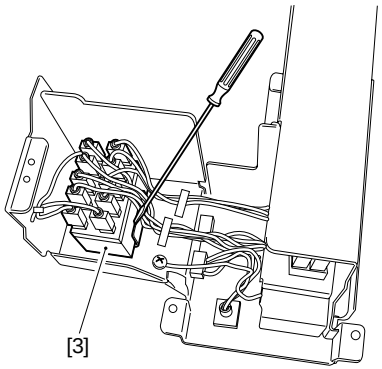
i. Removing the Fixing Relay

1) Remove the power cord base. (See the instructions on how to remove the power cord base.)
2) Remove the two screws [1], and detach the cover (1) [2].




F02-706-71

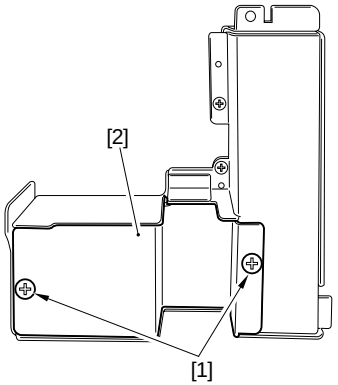
3) Using the tip of a flat-blade screwdriver, free the hook to detach the fixing relay [3].




F02-706-72

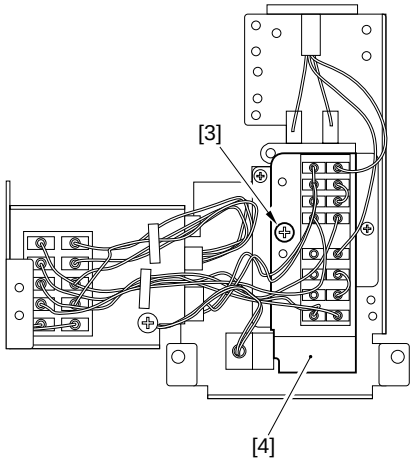
j. Removing the Leakage Breaker

1) Remove the power cord base.
2) Remove the three screws [1], and detach the cover (2) [2].



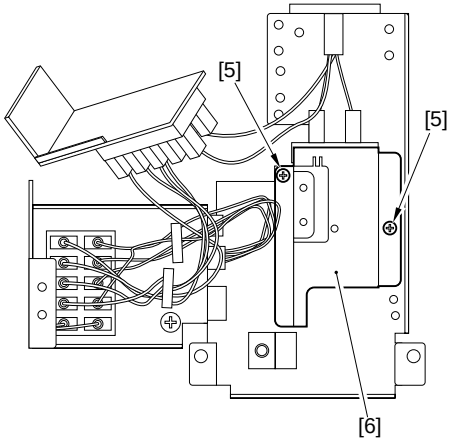

F02-706-73

3) Remove the screw [3], and detach the terminal base [4].



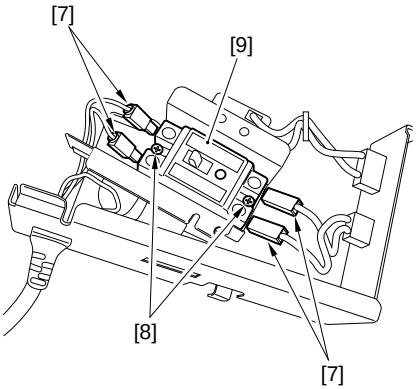

F02-706-74

4) Remove the two screws, and detach the breaker base [7].




F02-706-75

5) Remove the four terminals [7], and removed the two screws [8]; then, detach the leakage breaker [9].




F02-706-76

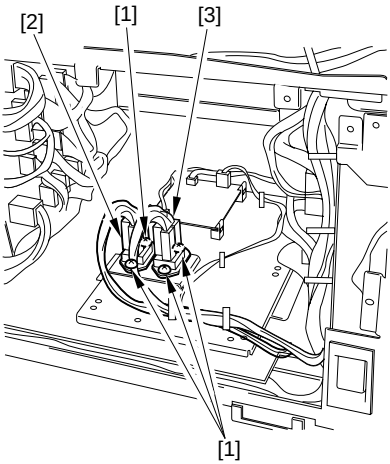
When mounting the leakage breaker, take care not to confuse its top/bottom orientation.
Fit the hook on the breaker mounting base in the hole of the breaker.

k. Removing the Hater Triac (upper, lower)

1) Remove the rear cover (3).
2) Remove the two screws [1], and detach the heat triac (upper) [2].

Note:

The heater triac (lower) [3] may be removed in the same way.




F02-706-77

# 8 Paper Deck-J1/K1

## 8.1 Outline

The Paper Deck-J1 differs from the Paper Deck-H1 for the following two points:

- Elimination of the pickup cutch (CL8001)

The rest are the same as those of the Paper Deck-H1.

In addition to the above, the Paper Deck-K1 is different from the paper deck designed for the CLC1000 for the following:

- Addition of a deck sensor (PS8003)

The following paper sizes may be used for the Paper Deck-J1/K1:

| | Paper Deck-J1 (2000 sheets) | Paper Deck-K1 (4000 sheets) |
|---|---|---|
| Supported paper sizes (81.4 g/m$^2$) | A3 extra-length (305x457 mm), A3, A4, B4, B5, LTR, 11x17 (279x432 mm) | A4, B5, LTR |

T02-801-01

REF.

If you are installing a CLC1000 Paper Deck/Paper Deck-H1 to a CLC5000 Series machine, be sure to use the upgrade kit.

## 8.2 Differences in the Paper Deck-J1/K1

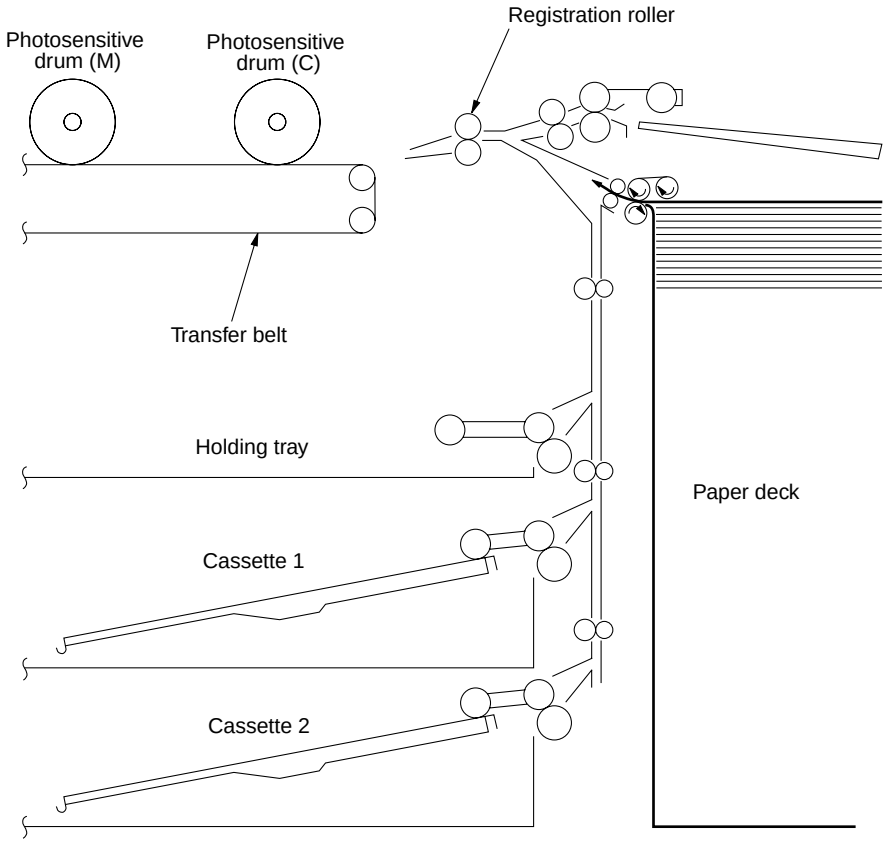
| Unit/Location | Differences from Paper Deck-H1 (CLC1000 paper deck) | Remarks |
|---|---|---|
| Deck pickup assembly | Elimination of the pickup clutch (CL8001)<br>Addition of a deck sensor (PS8003) : Paper deck-k1 only | To obtain drive from the deck motor (M36) of the host |

T02-802-01

# 8.3 Outline of Operations

## 8.3.1 Outline

A paper deck enables accommodation of a large volume of paper (as many as 2,000 sheets in the Paper Deck-J1; 4,000 sheets in the Paper Deck-K1), and serves to feed sheets to its host copier in response to control signals from the DC controller PCB.



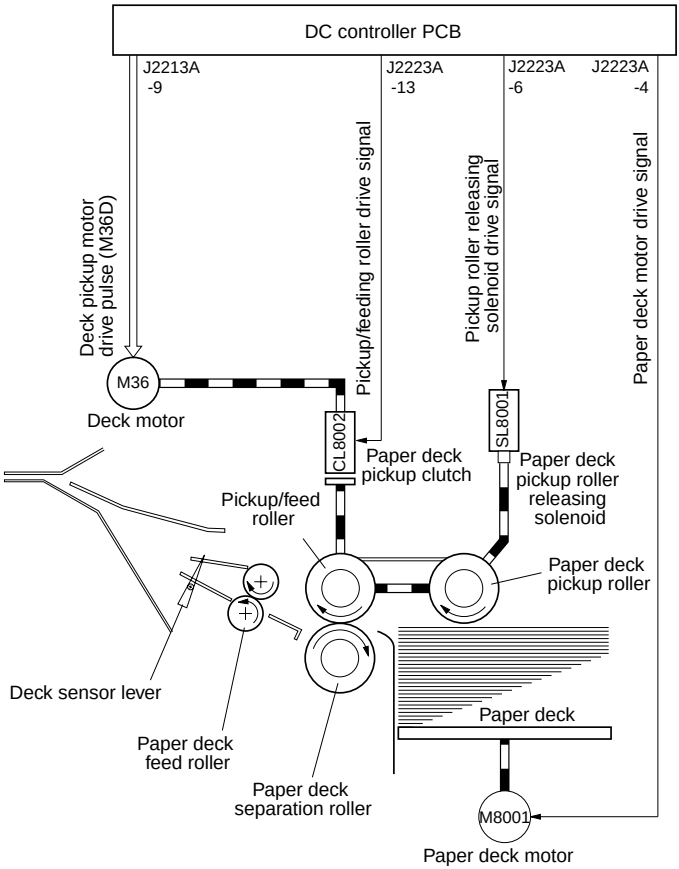

F02-803-01

## 8.3.2 Pickup Operations

The paper placed inside the paper deck is held up by a lifter driven by the paper deck motor (M8001), and is kept at a specific position.

The control signal from the DC controller PCB of the host copier turns on the deck motor (M36) and the deck pickup clutch (CL8002); then, the paper deck pickup roller releasing solenoid (SL8001) turns on so that the pickup roller leaves the surface of the paper.

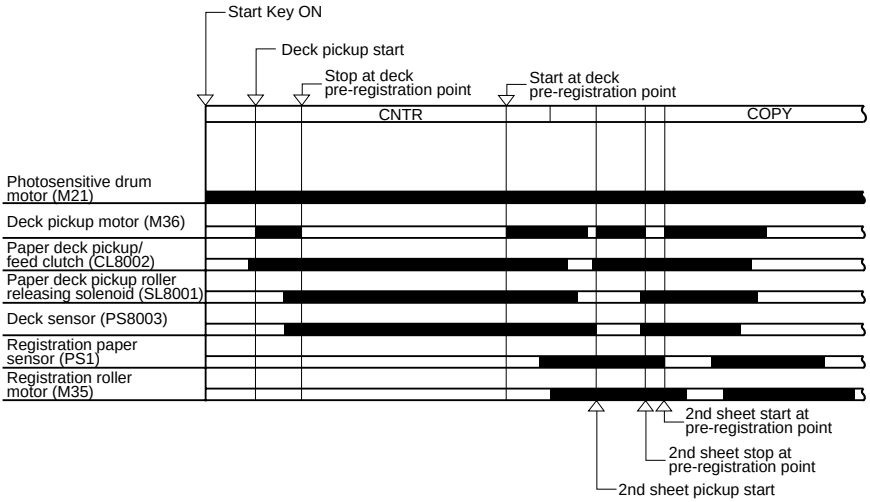
The pickup/feed roller serves to make sure only one sheet of paper is picked up at a time. The sheet is moved past the deck sensor, in response to which the deck motor turns off; after being adjusted for appropriate timing, the sheet is then moved forward to the registration roller, which controls the sheet so that its leading edge will match the image on the photosensitive drum.




F02-803-02

## 8.3.3 Sequence of Operations (pickup from paper deck)

- Paper deck, A4/LTR, 2 Copies, 4-Color, Direct




F02-803-03

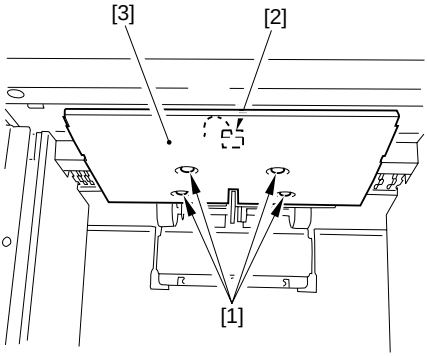
## 8.4 Disassembly/Assembly

The machine has the mechanical features and operations as described herein, and may be disassembled or assembled as shown; be sure to observe the following whenever disassembling or assembling the machine:

1. ⚠ Disconnect the power plug for safety before the work.
2. Unless otherwise noted, reverse the steps used to disassemble the machine for assembly.
3. Identify the screws by type (length, diameter) and location.
4. The screws used for the grounding wire, varistors, or the like are equipped with washers to ensure electrical continuity. Be sure to use these screws during assembly.
5. As a rule, do not operate the machine with any of its parts removed.
6. ⚠ Do not throw toner into fire to avoid explosion.

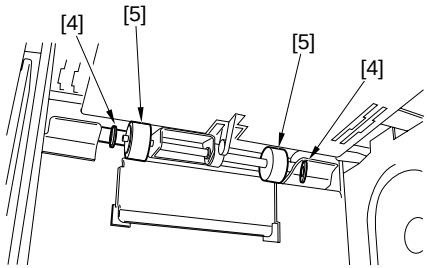
## 8.4.1 Removing the Pickup Roller

1) Open the paper deck cover.
2) Remove the four screws [1], and disconnect the connector [2]; then, detach the paper deck heater [3].




F02-804-01

3) Remove the resin clamp [4] at the front and the rear; then, detach the pickup roller [5].

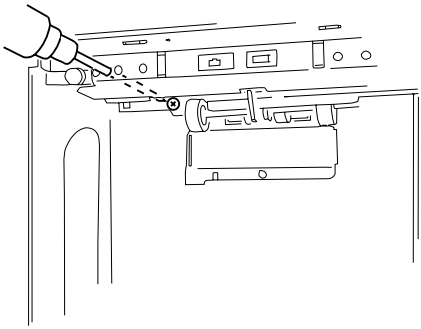



F02-804-02

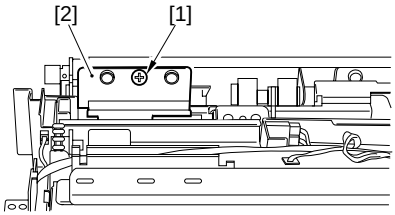
Take care not to drop the parallel pin from within the pickup roller shaft.

## 8.4.2 Removing the Pickup/Feed roller

1) Remove the paper deck heater. (See F02-804-01.)
2) Remove the pickup roller at the front. (See F02-804-02.)
3) Pull off the bush lock used to secure the side guide plate (left, right) so as to free the side guide plate.
4) Insert a screwdriver into the hole for the bush lock that has been removed in step 3); then, remove the mounting screw [1], and detach the roller stopper plate [2].

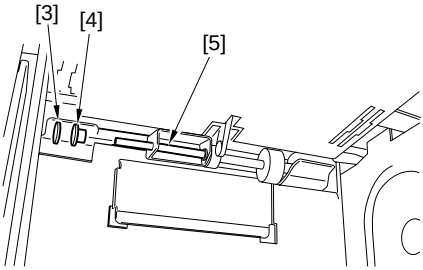


F02-804-03



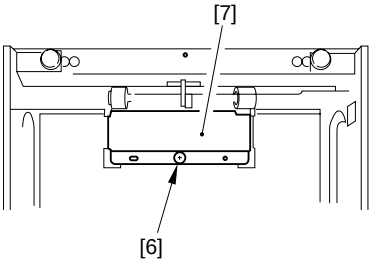

F02-804-04

5) Remove the resinic E-ring [3] and bearing [4]; then, pull out the pickup roller shaft [5] to the rear.



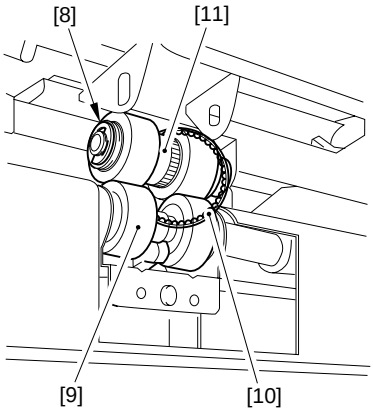

F02-804-05

6) Remove the mounting screw [6], and detach the separation roller assembly cover [7].




F02-804-06

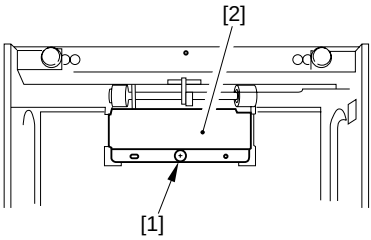
7) Remove the resinic E-ring [8]; then, while pushing down the separation roller assembly [9], detach the timing belt [10], and detach the pickup/feed roller assembly [11].




F02-804-07

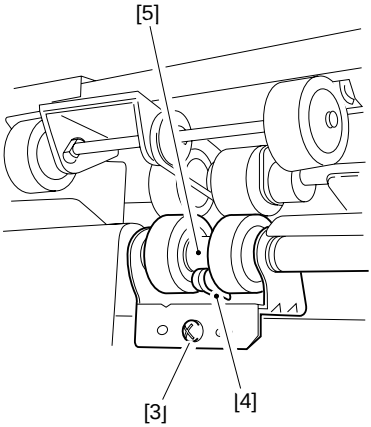
### 8.4.3 Removing the Separation Roller

1) Open the paper deck cover; then, remove the mounting screw [1], and detach the separation roller assembly cover [2].



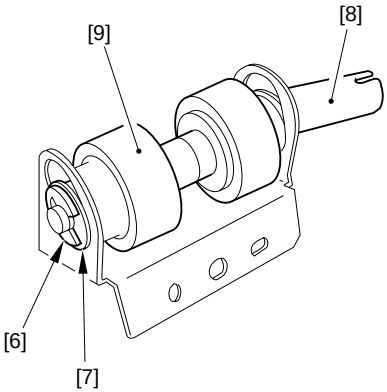

F02-804-08

2) Remove the mounting screw [3]; then, while pushing down the separation roller pressure member [4], detach the separation roller assembly [5] together with its support plate.




F02-804-09

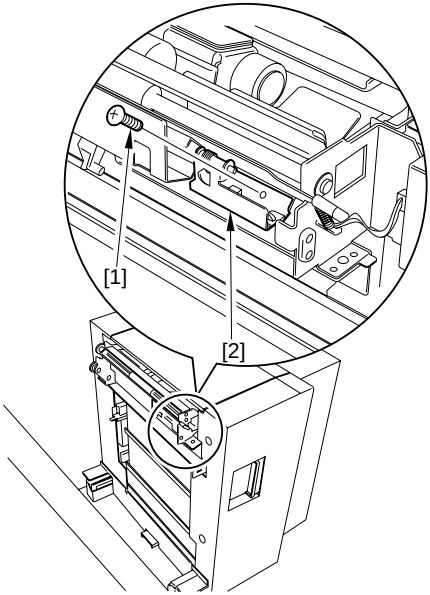
3) Remove the resinic E-ring [6] and the bearing [8] at the front of the separation roller assembly; then, pull out the separation roller shaft [8], and detach the separation roller [9].




F02-804-10

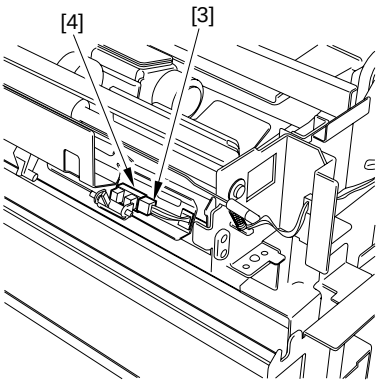
## 8.4.4 Removing the deck sensor

1) Detach the paper deck from the main body of copier with the connecting rail attached to the main body.
2) Remove the screw [1] (1 location), then remove the deck sensor mounting plate [2].




F04-804-11

3) Remove the connector [3] (1 location), then remove the deck sensor [4].




F04-804-12

# 9 Buffer Pass Unit-B1

## 9.1 Outline

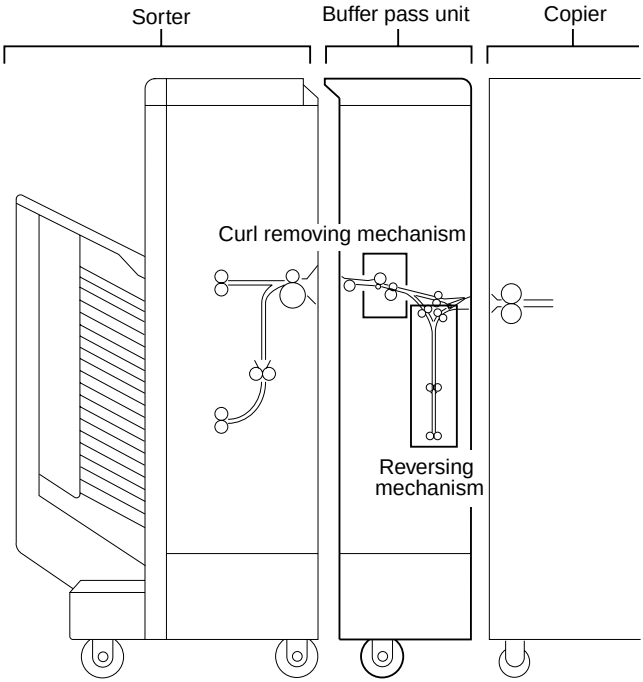
The buffer pass unit has the following two functions:

- Removes curl from paper delivered by the copier
- Turns over paper delivered by the copier

REF.

Paper tends to curl when the toner on it is heated in the fixing assembly and then cooled. Curl on paper adversely affects its movement and alignment inside the sorter.

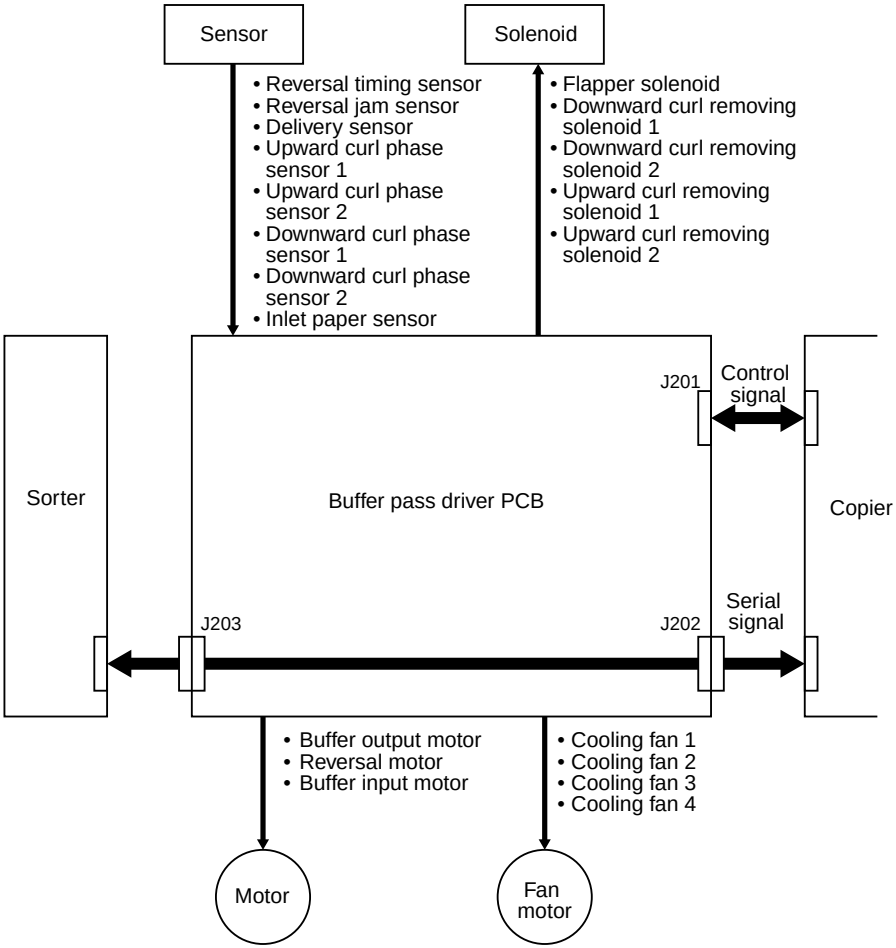
The buffer pass unit is situated between the copier and the sorter to remove curl from paper delivered by the copier before forwarding it to the sorter.




F02-901-01

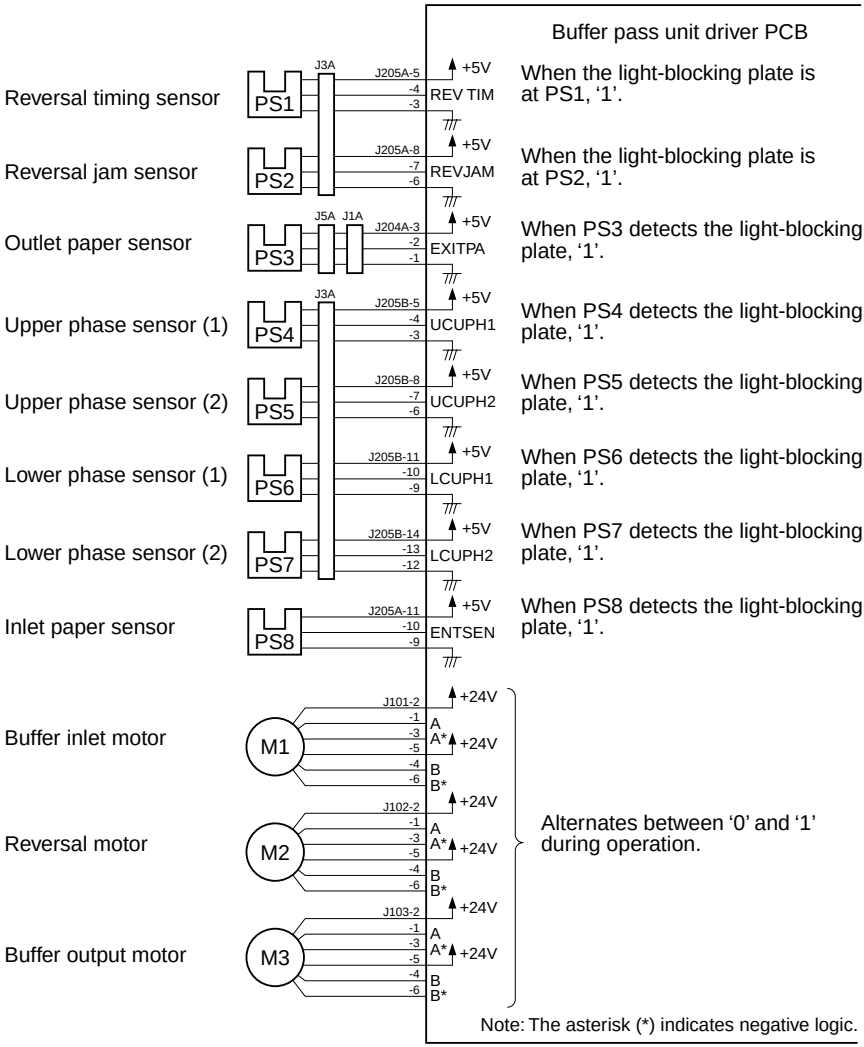
## 9.1.1 Outline of the Electrical Circuitry

The electric mechanisms of the machine are controlled by its host copier (i.e., the machine is not equipped with controller PCB of its own). The signals from the copier are received by the buffer pass unit drive PCB to drive the motors, solenoids, and clutches.

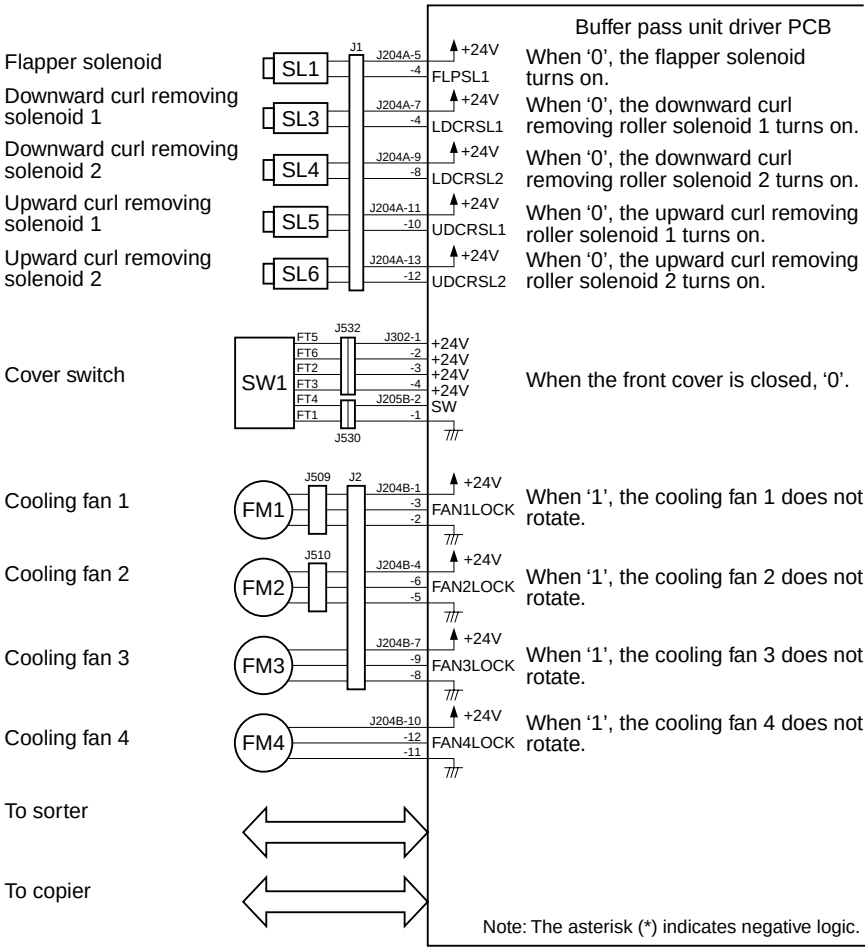



F02-901-02

## 9.1.2 Inputs to and Outputs from the Buffer Pass Driver PCB




F02-901-03




F02-901-04

## 9.2 Differences in the Buffer Path Unit

| Unit/Location | Differences from CLC Buffer Pass-1 | Remarks |
|---|---|---|
| Vertical path guide (left/right) | New addition | To turn over the paper delivered by its host |
| Reversal motor (M2) | New addition | To turn over the paper delivered by its host |
| Cooling fan (FM1 through 4) | New addition | To cool the power supply, motor, and paper path. |
| Curl removing unit | Addition of a curl removnig roller, pressure roller | To remove curl from the paper feed from the vertical path guide at time of reversal |
| | Addition of a flapper solenoid | To switch the flapper to move paper to the vertical path guide at time of reversal |
| | Addition of a buffer pass motor (M3) | To increase the power of the drive |

T02-902-01

# 9.3 Feeding Operations

## 9.3.1 Outline

The feeding operations consist of the following two:

- Sending the paper coming from the copier to the sorter
- Turning over the paper coming from the copier and then sending it to the sorter

The feeder roller and the sponge roller are driven by the buffer pass motor (M1, M3). The sponge roller and the pressure roller pick paper and then flattens it out to remove curl. (The feeding speed is controlled by the buffer pass motor.)

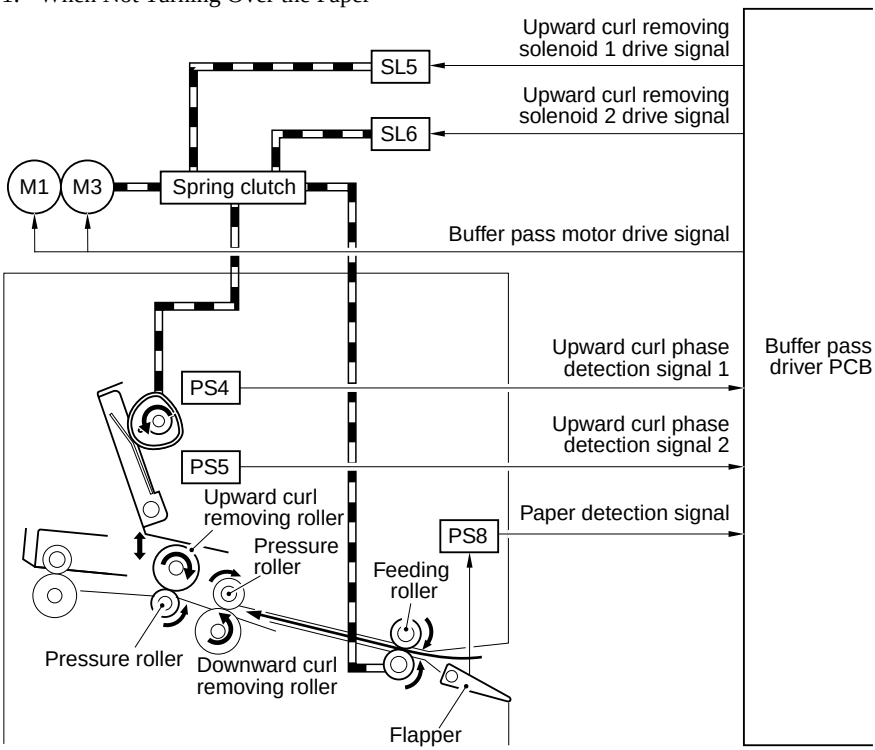
Paper inside the buffer pass unit is detected as follows:

- If the paper is not to be turned over, the inlet paper sensor (PS8) is used to detect paper.
- If the paper is to be turned over, reversal timing sensor (PS1) and the reversal jam sensor (PS2) are used to detect paper.

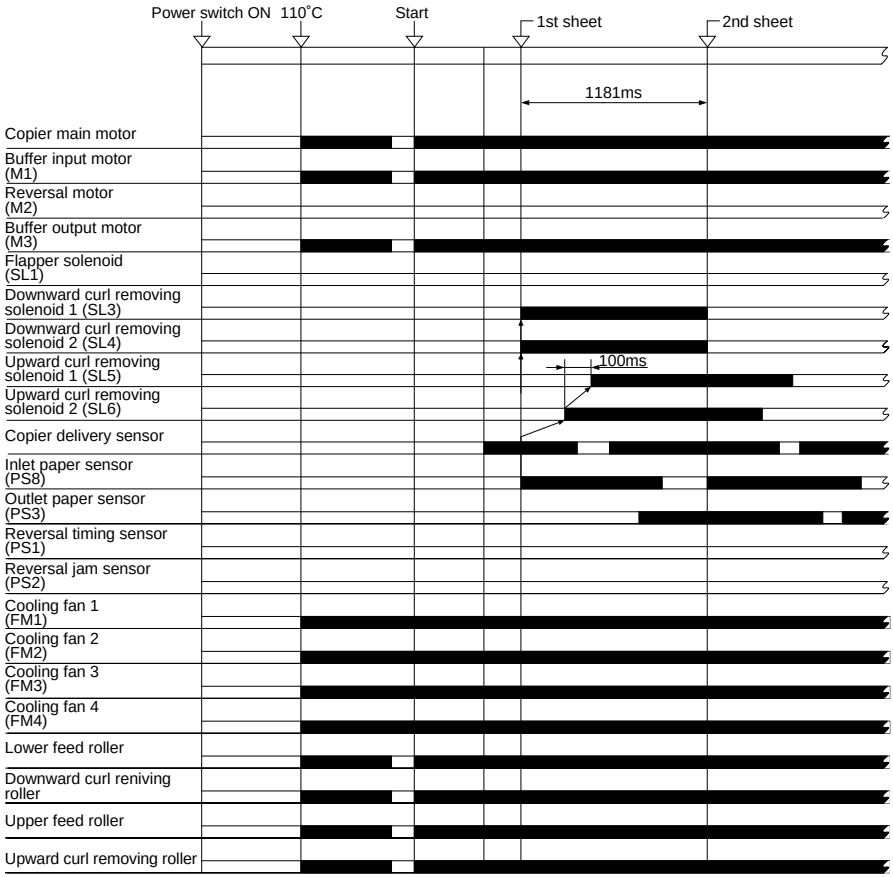
When reversal does not take place, the flapper is always positioned for straight pickup.

The sequence and outlines of oparation at time of reversal pickup and straight pickup are shown in following page.

1. When Not Turning Over the Paper

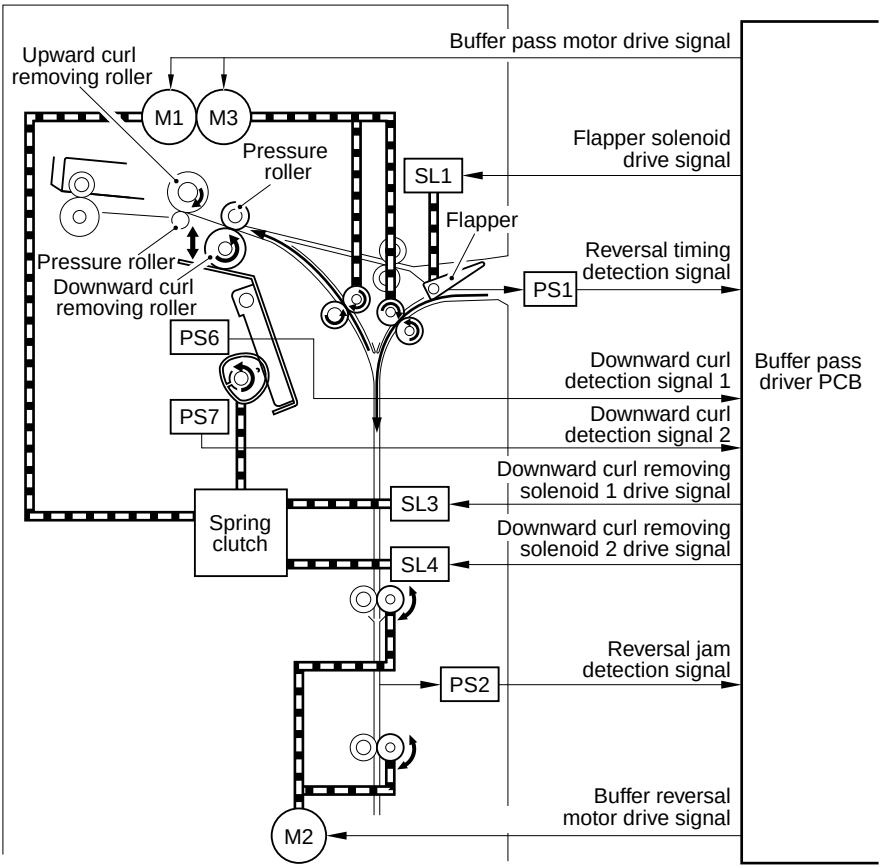



F02-903-01

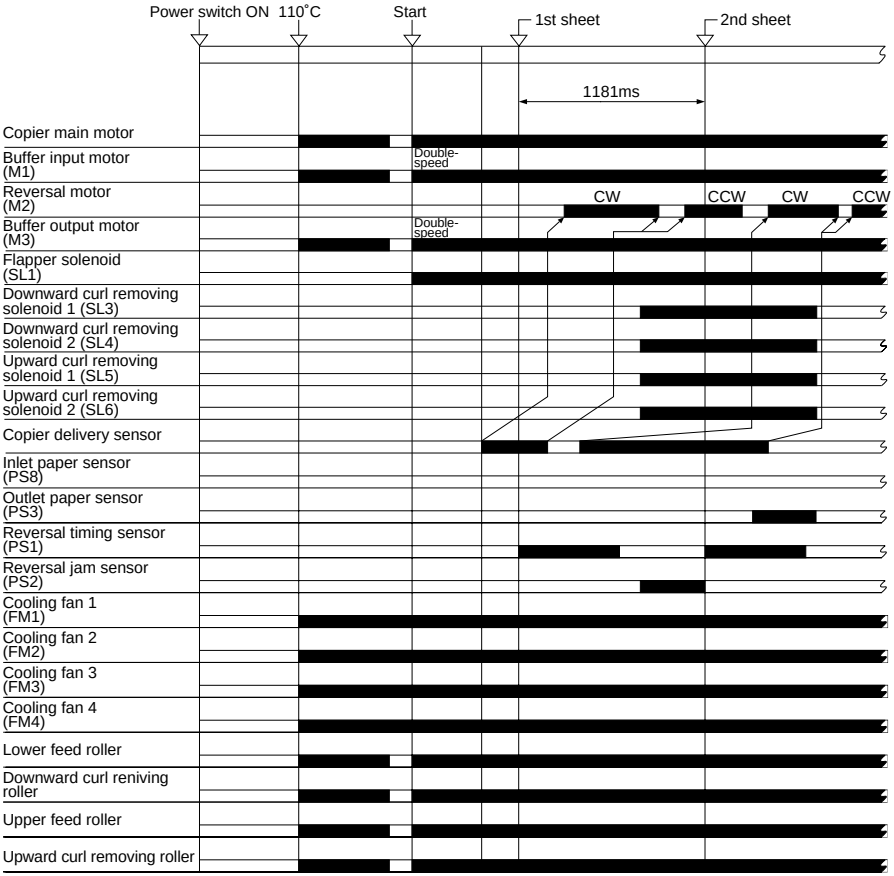



F02-903-02

2. When Turning Over the Paper




F02-903-03




F02-903-04

## 9.3.2 Controlling the Feeding Speed

### a. Outline

The feeding speed is changed to suit the type of copy paper and whether the reversal unit is used or not;

When the reversal unit is used, the feeding speed is doubled in consideration of the time between a press on the start key and delivery of the copy.

The feeding speed is controlled as followes for each combination:

Feeding Speed by Reversal Upper/Lower Moter Mode

| Speed (mm/sec) | Paper type | Mode | Cam switch | Reversal |
|---|---|---|---|---|
| 204 | Plain paper | Normal speed | Yes | No |
| 408 | Plain paper | Double speed | Yes | Yes |
| 138 | Thick paper (157 g/m$^2$) | Normal speed | No | No |
| 276 | Thick paper (157 g/m$^2$) | Double speed | No | Yes |
| 90 | Thick paper (253 g/m$^2$), special paper | Normal speed | No | No |
| 180 | Thick paper (253 g/m$^2$), special paper | Double speed | No | Yes (w/ condition) |
| 67.5 | Transparency | Normal speed | No | No |

T02-903-01

### 9.3.3 Controlling the Buffer Pass Motor

#### a. Outline

The buffer pass motor (M1, M3) is a 4-phase stepping motor.

It is turned on/off or its speed of rotation is changed by controlling the rest signal (RESETB) and the output timing of the pulse signals A, $A^*$, B, and $B^*$

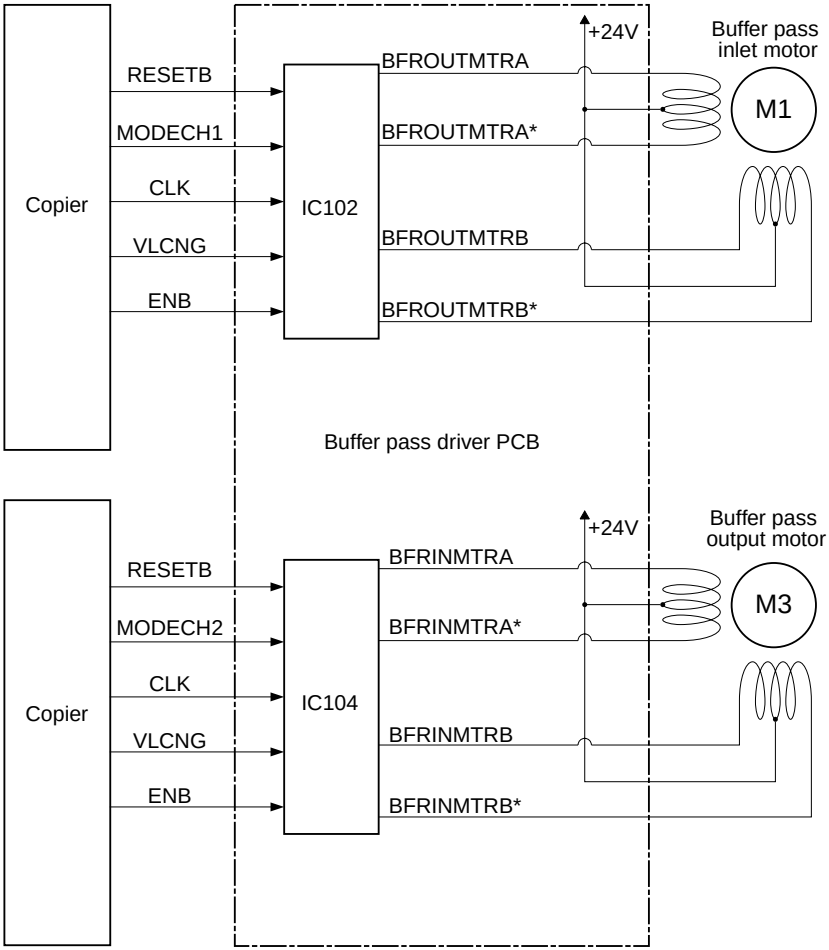
#### b. Operations

The following five types of signals are sent by the host copier to the buffer pass driver PCB to control the buffer pass motor (M1, M3):

- Reset signal (RESETB)
- Mode check signal (MODECH1, 2)
- Motor rotation speed signal (CLK)
- Vertical path switching signal (VLCNG)
- Motor rotation enable signal (ENB)

In response to these five types of signals, the motor clock generation circuit determines the speed of rotation, and sends control signals to the motor driver PCB.

In turn, the motor drive PCB then drives the buffer pass motor according to the control signal it receives.




F02-903-05

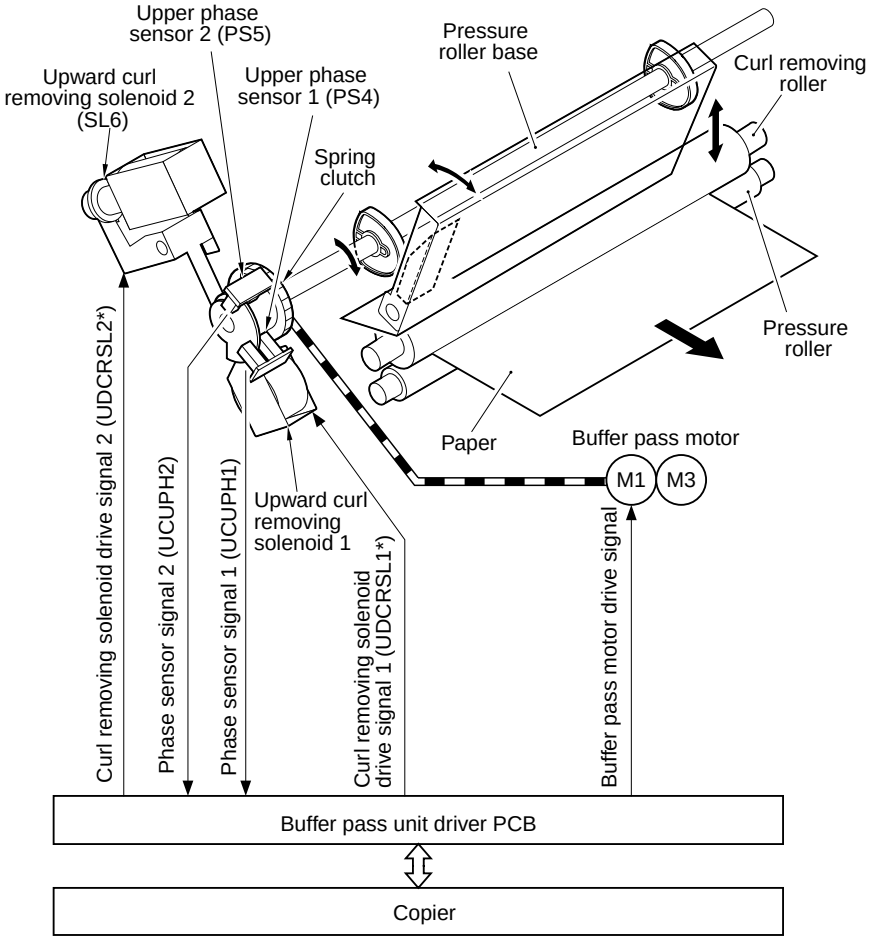
# 9.4 Removing Curling

## 9.4.1 Outline

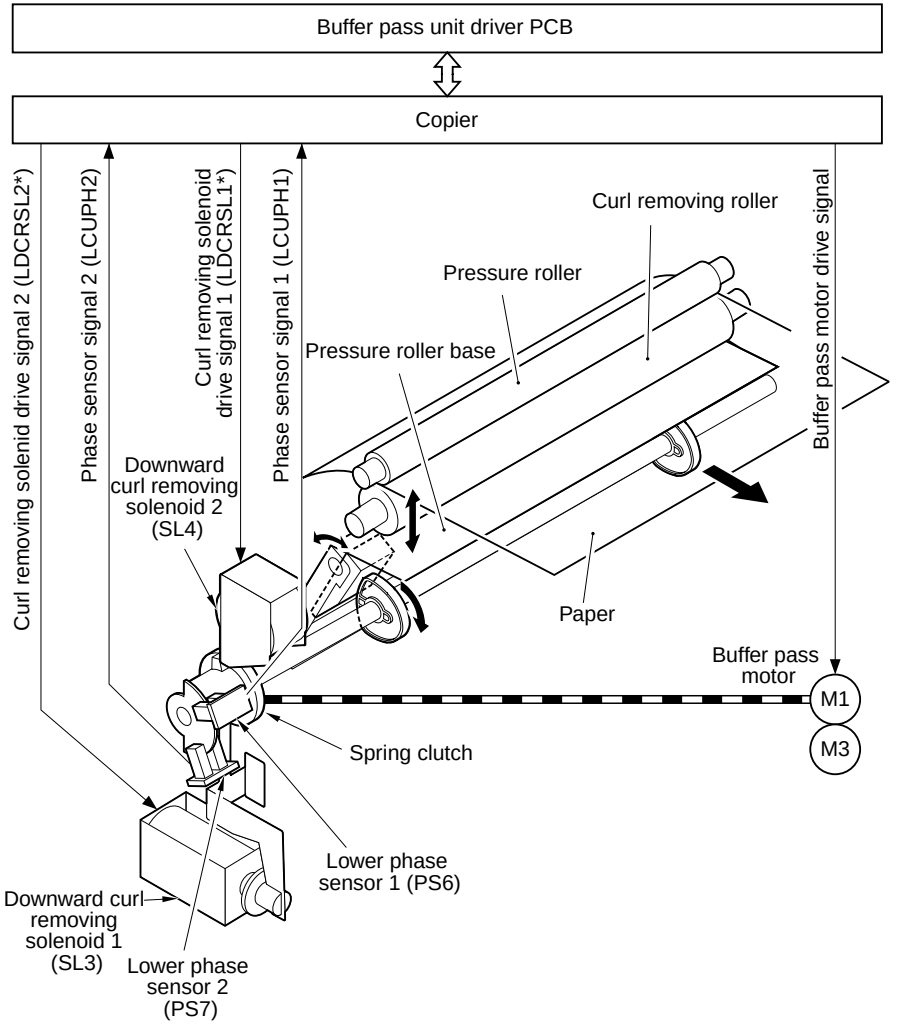
The curl removing roller and the pressure roller picks paper, and bend it in the direction opposite the direction in which the paper has curled.

Bending may be in any of three degrees, and changed by rotating the pressure cam by the drive of the buffer pass motor.

To detect the position of the pressure cam, the upward curl phase sensor 1 (PS4) and the upward curl phase sensor 2 (PS5) are used in normal feeding, while the downward curl phase sensor 1 (PS6) and the downward curl phase sensor 2 (PS7) are used in reversal feeding.



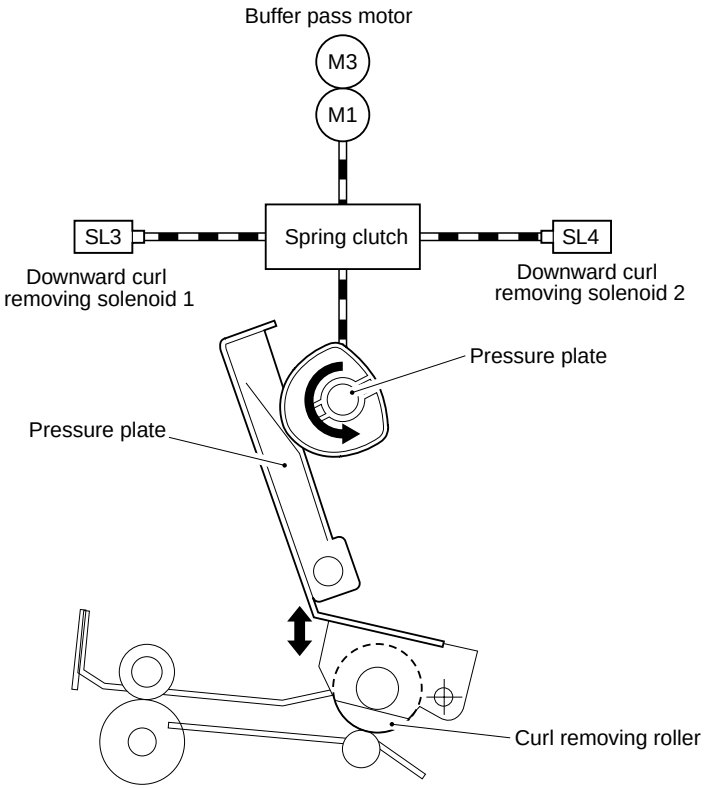

F02-904-01




F02-904-02

## 9.4.2 Operations

When the buffer pass motor (M1, M3) rotates, its drive is transmitted to the pressure cam through the spring clutch. When the pressure cam starts to rotate in response, the pressure plate moves up and down to change the degree of pressure of the curl removing roller.



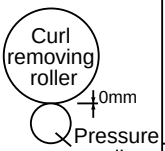
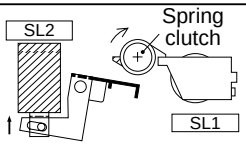
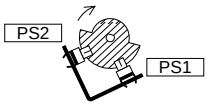
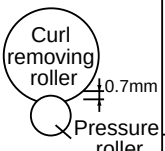
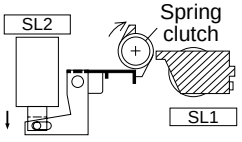
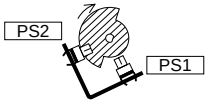
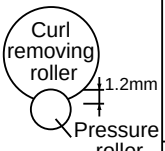
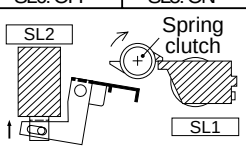
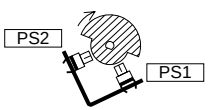
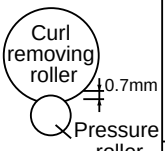
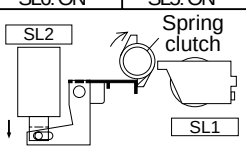
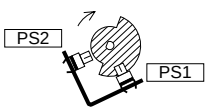

F02-904-03

The pressure cam may be positioned in either of four locations. determined by the spring clutch operated by two solenoids (SL3, SL4; for reversal, SL5, SL6).

The position is switched to suit the condition of the paper delivered by the copier, determined in relation to the following two factors:

- Paper type
- Image ratio

b. Spatial Relationship Between Curl removing Roller and the Pressure Roller in Relation to the Position of the Pressure cam

| Pressure cam stop position | Spatial relationship between curl removing roller and pressure roller | Drive of pressure cam switching solenoid (SL5, SL6) | | State of pressure cam home position sensor (PS4, PS5) | |
|---|---|---|---|---|---|
| 0° (home position) |  |  | |  | |
| | | SL6: ON | SL5: OFF | PS5: OFF | PS4: OFF |
| 90° |  |  | |  | |
| | | SL6: OFF | SL5: ON | PS5: OFF | PS4: ON |
| 180° |  |  | |  | |
| | | SL6: ON | SL5: ON | PS5: ON | PS4: ON |
| 270° |  |  | |  | |
| | | SL6: OFF | SL5: OFF | PS5: ON | PS4: OFF |

Memo

The above table applies to straight pickup only. In the case of reversal pickup, the same operations is used but with the following change in sequence: SL3 instead of SL5; SL4 instead of SL6; PS6 instead of PS4; and PS7 instead of PS5.

F02-904-04

The copier determines the position of the pressure roller based on the foregoing factors, and instructs the buffer pass unit accordingly; the signal indicating the position of the pressure roller is sent for each delivery made by the copier.

The phase sensor 1 (PS4; for reverse, PS5) and the phase sensor 2 (PS6; for reverse, PS7) are used to detect the position for the pressure cam.

As soon as the copier is turned on, a search is immediately executed to find the home position (where bending will be maximum) for the pressure cam. If the home position cannot be found within a specific period of time, an error code (E517) will be indicated on the copier's control panel.

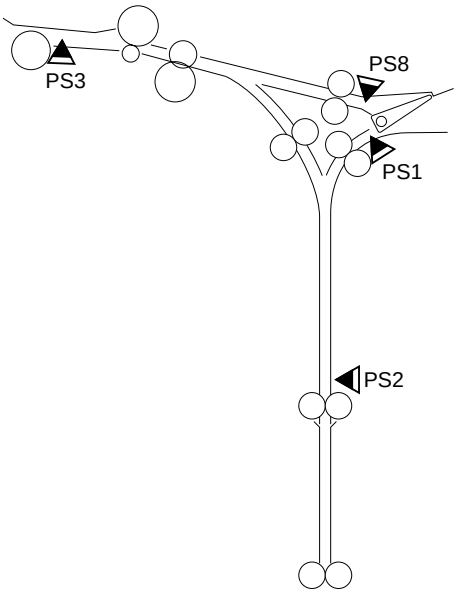
In standby, the pressure cam is always at its home position, thereby preventing deformation (dents) of the curl removing roller.

# 9.5 Detecting Jams

## 9.5.1 Outline

The machine is equipped with the following jam sensors:

- Inlet sensor (PS8)
- Delivery sensor (PSS3)
- Reversal jam sensor (PS2)
- Reversal timing sensor (PS1)




F02-905-01

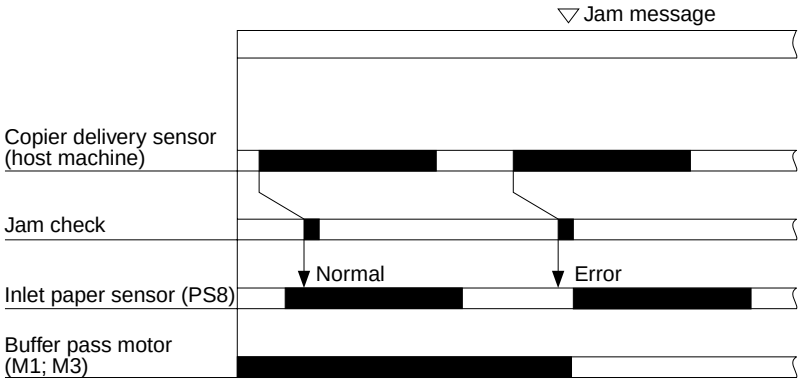
The presence/absence of paper or a jam is identified in relation to the presence/absence of paper over sensors in question at such times as stored in memory of the copier.

The machine recognizes the following two types of jams: it also identifies a jam if paper exits over a sensor at time power on:

## 9.5.2 Delay Jam

After paper has reached the copier's delivery sensor, the inlet sensor does not detect paper when period of time needed by paper to reach the machine's inlet sensor (PS8) and a peried of time needed by paper to move distance of 60 mm have passed.

In response, the buffer motor will be stopped, and the Jam indication will be made on the copier's display.



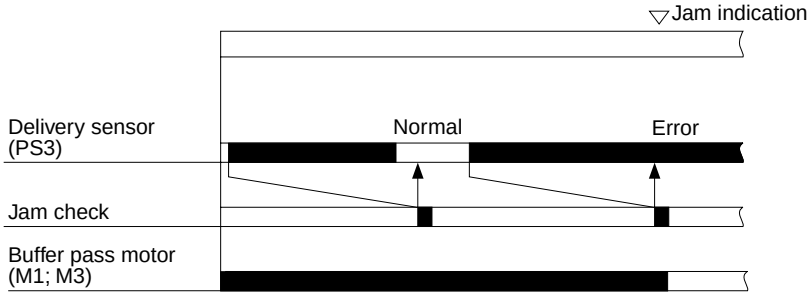

F02-905-02

REF.

PS1, PS2 and PS3 are also used to detect a delay jam

### 9.5.3 Stationary Jam

After paper has reached the delivery sensor (PS3), the inlet sensor remains ON when a specific period of time and the period of time needed by paper to move a distance of 60 mm have passed. In response, the buffer motor will be stopped, and the Jam indication will be made on the copier's display.

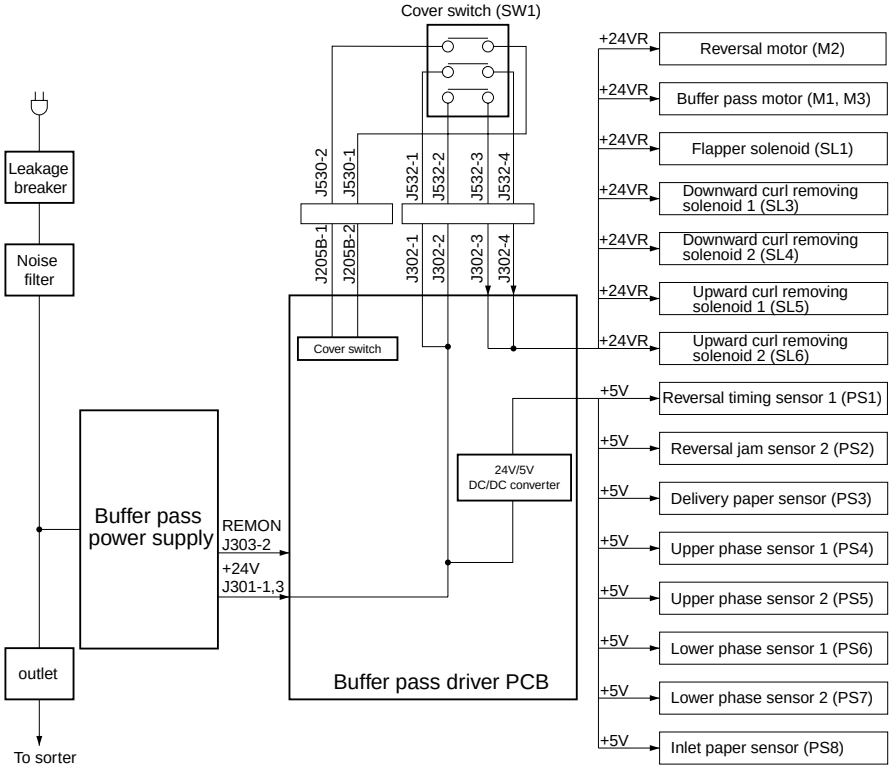



F02-905-03

# 9.6 Power Supply

## 9.6.1 Outline

The following diagram shows how power is distributed. The buffer pass unit is supplied with +5V and +24V power by the buffer pass power supply. +24 V is supplied by way of the cover switch (SW1) to the loads; it will be cut off when the front cover of the buffer pass unit is opened and, as a result, the cover switch turns off.



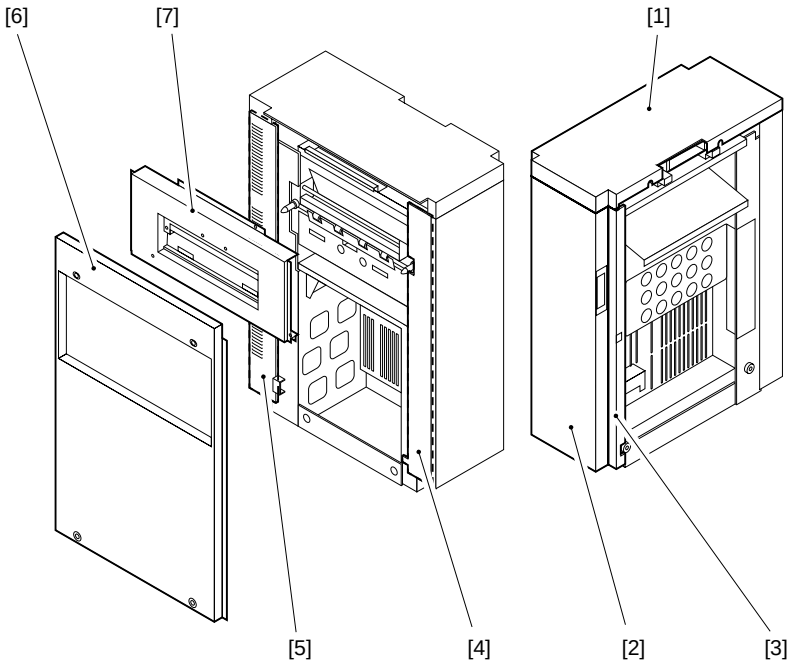

F02-906-01

## 9.7 Disassembly/Assembly

The machine has the mechanical features and operations as described herein, and may be disassembled or assembled as shown; be sure to observe the following whenever disassembling or assembling the machine:

1. ⚠Disconnect the power plug for safety before the work.
2. Unless otherwise noted, reverse the steps used to disassemble the machine for assembly.
3. Identify the screws by type (length, diameter) and location.
4. The screws used for the grounding wire, varistors, or the like are equipped with washers to ensure electrical continuity. Be sure to use these screws during assembly.
5. As a rule, do not operate the machine with any of its parts removed.
6. ⚠Do not throw toner into fire to avoid explosion.

## 9.7.1 External Covers




[1] Upper cover (2)
[2] Front cover (2)
[3] Right front cover (2)
[4] Left front cover (5)
[5] Rear cover (3)
[6] Left cover (4)
[7] Delivery cover (4)

Memo

The left cover and the delivery cover are used when the buffer pass unit is installed on its own.

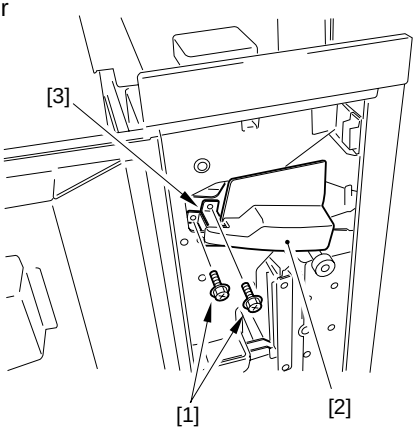
F02-907-01

The number in parentheses indicates the number of mounting screws used.
To remove the front cover, remove the mounting screws from the cover hinge.
Mount the left cover and the Delivery cover if no sorter is installed.

## 9.7.2 Feeding System

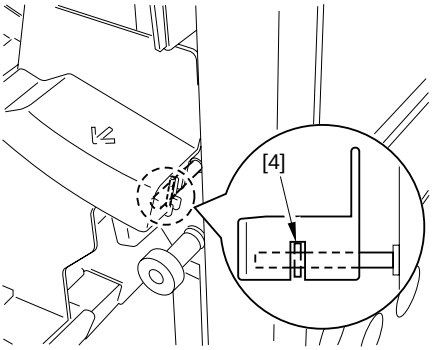
### a. Removing the Upper Curl removing Roller

1) Open the front cover.
2) Remove the two screws [1], and detach the retainer handle [2] together with the handle support base [3].



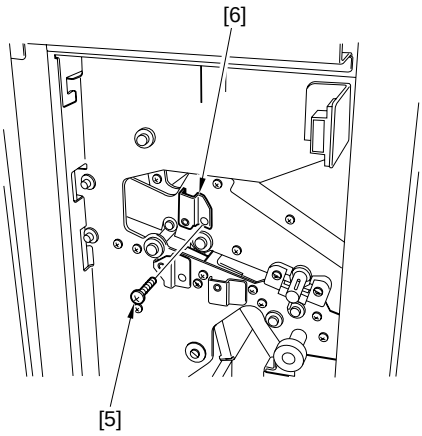

F02-907-02

When mounting the retaining handle, be sure to fit the pin [4] on the slide shaft with the cut-off in the handle.



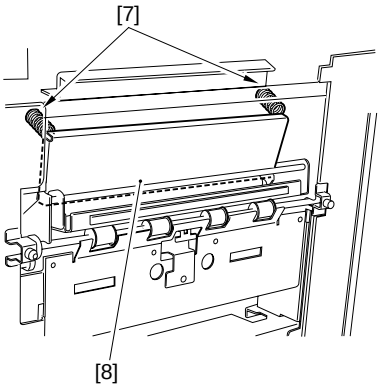

F02-907-03

3) Remove the screw [5], and detach the lower arm base [6].



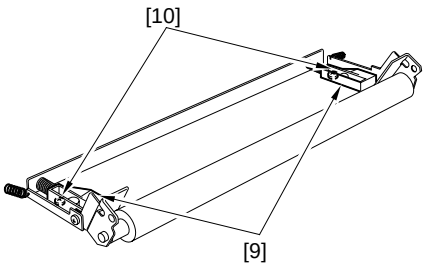

F02-907-04

4) Remove the two pressure adjusting springs [7], and detach the pressure plate [8].



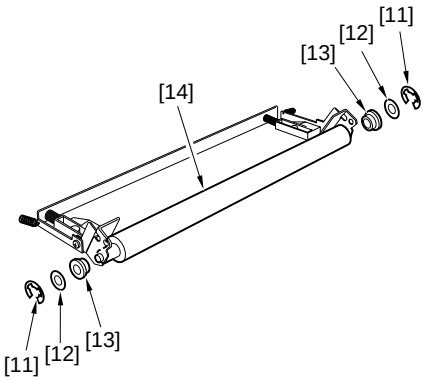

F02-907-05

Do not touch the screw [10] used to secure the pressure spacer [9] to the pressure plate. It has been adjusted at the factory.




F02-907-06

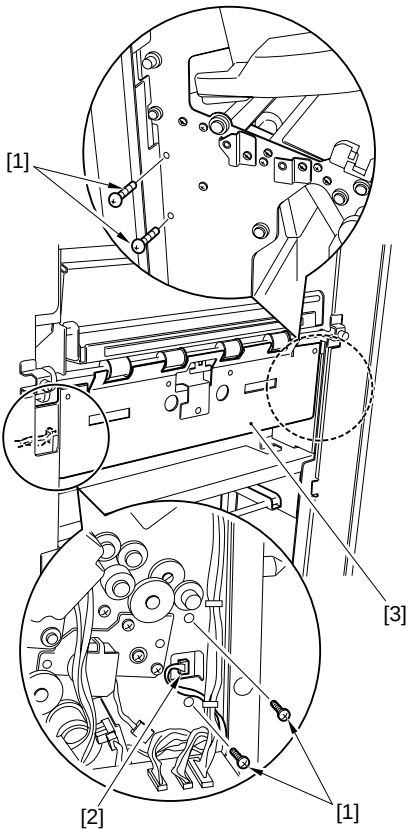
5) Remove the E-ring [11], washer [12], and bearing [13] at the front and the rear; then, detach the curl removing roller [14].




F02-907-07

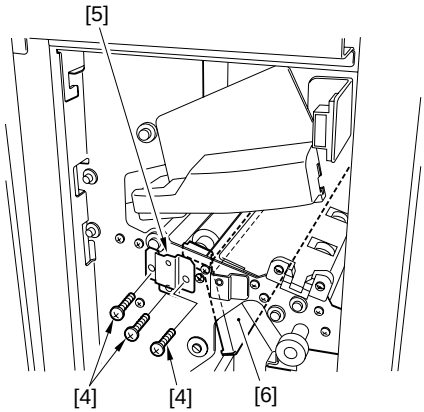
b. Removing the Lower Curl removing Roller

1) Open the front cover.
2) Remove the rear cover.
3) Remove the two screws [1] each at the front and the rear; then, disconnect the connector [2], and detach the left stay [3].



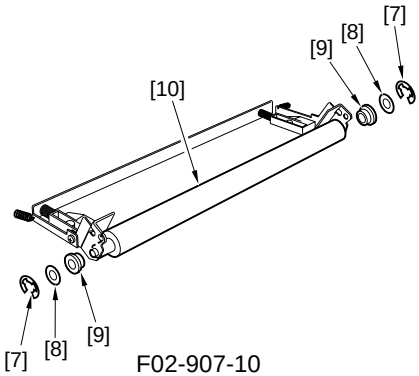

F02-907-08

4) Pull the retaining handle to the from, and push up the retainer unit; then, remove the three screws [4], and detach the lower arm base [5] and then the pressure plate [6].



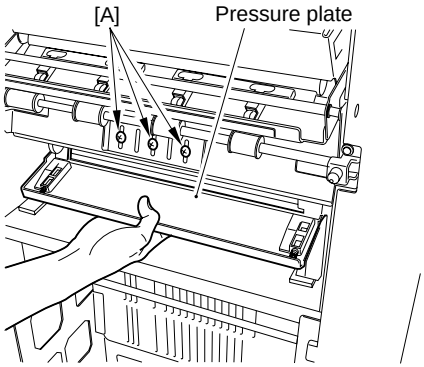

F02-907-09

6) Remove the E-ring [7], washer [8], and bearing [9] at the front and the rear; then, detach the curl removing roller.




F02-907-10

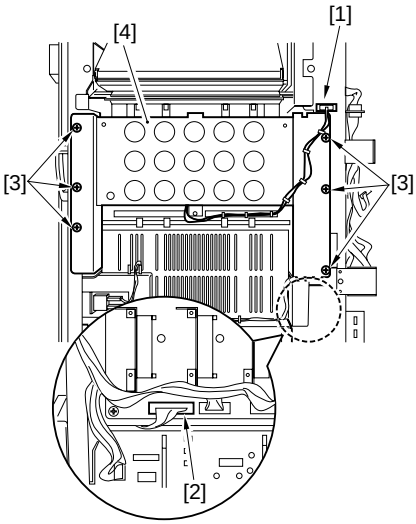
When removing the lower arm base, be sure to support the pressure plate with your hand. If you pull off the lower arm base without support, the pressure plate can fall. Be sure to take care.
In addition, do NOT remove the screw [A] in detected in the figure.




F02-907-11

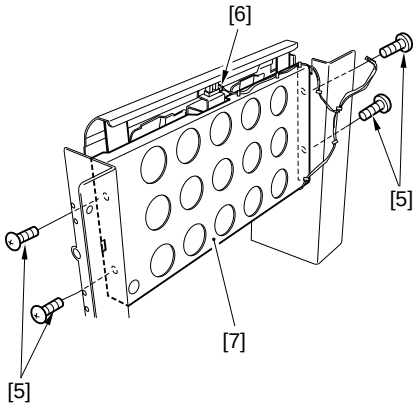
c. Removing the Feed Roller (vertical path; upper/lower)

1) Remove the rear cover.
2) Remove the right front cover.
3) Disconnect the connector [1]; then, disconnect the connector [2] of the reversal motor. Thereafter, remove the six screws [3], and detach the vertical path guide assembly [4].



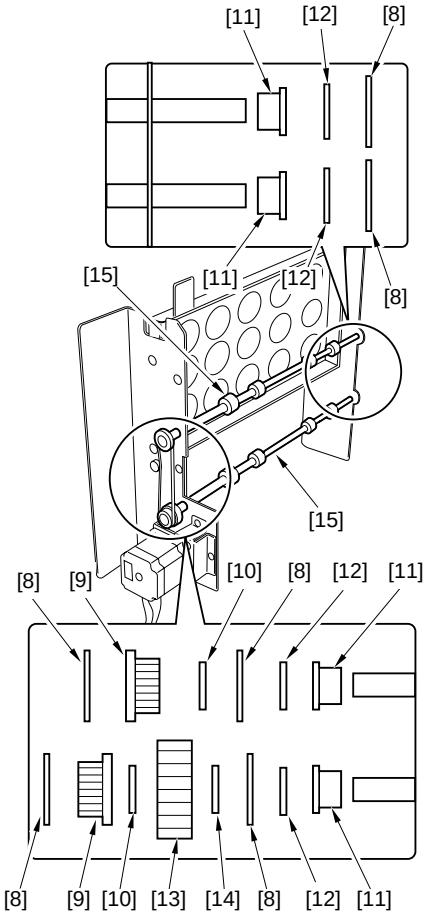

F02-907-12

4) Remove the four screws [5], and disconnect the connector [6]; then, detach the reinforcing plate [7].




F02-907-13

5) Remove the three E-rings [8], pulley [9], parallel pin [10], two bearings [11], two washers [12], gear [13], and parallel pin [14] (for [13] and [14], bottom only); then, detach the feed roller (vertical path) [15].

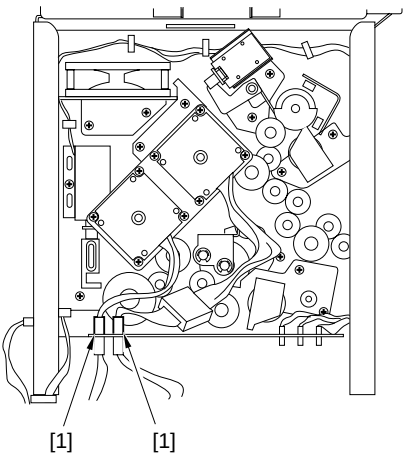



F02-907-14

When detaching and attaching the vertical path guide assembly, be sure to take care not to damage the reversal plastic sheet.

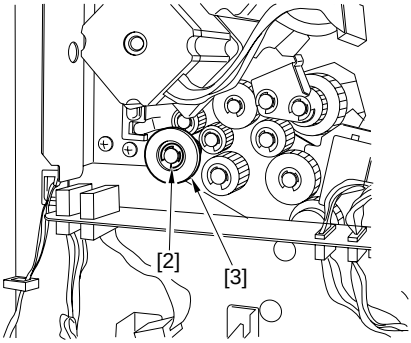
d. Removing the Feed roller (reversal inlet)

1) Remove the rear cover.
2) Disconnect the two connectors [1] of the buffer pass motor.



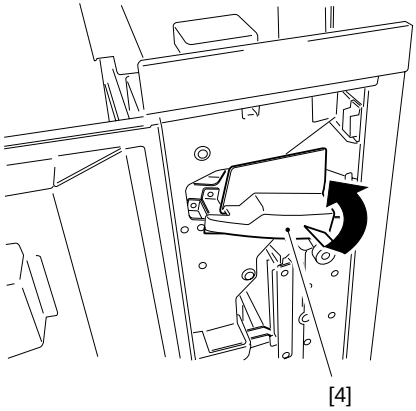

F02-907-15

3) Remove the E-ring [2] and the gear [3].



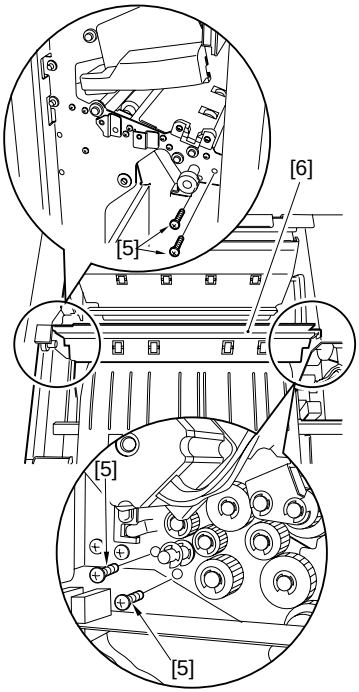

F02-907-16

4) Open the front cover.
5) Pull the retaining handle [4] to the front, and push up the retaining unit.



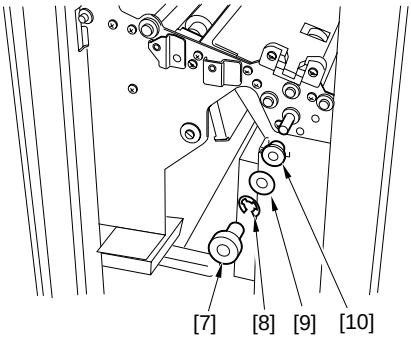

F02-907-17

6) Remove the two screws [5] each at the front and the rear; then, detach the right lower guide [6].



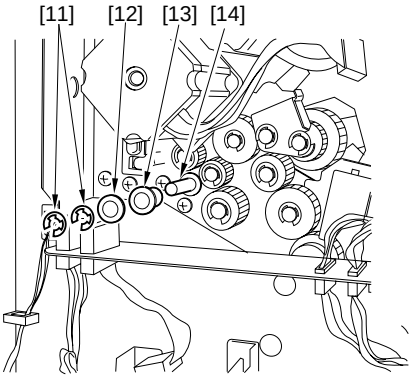

F02-907-18

7) Pull out the jam removing tab [7]; then, remove the E-ring [8], washer [9], and bearing [10] at the front.




F02-907-19

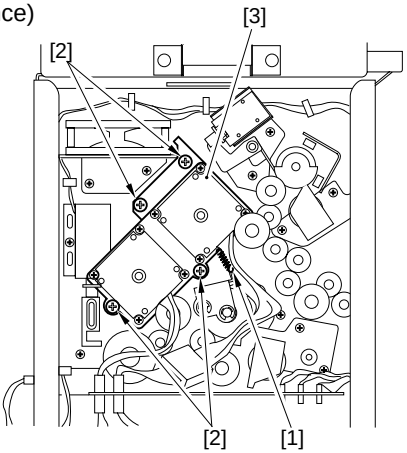
8) Remove the two E-rings [11], washer [12], and bearing [13] at the rear then, detach the feed roller (reversal inlet) [14].




F02-907-20

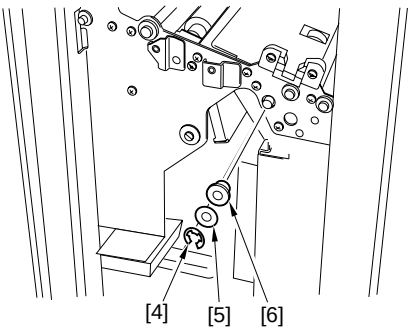
e. Removing the Feed roller (reversal confluence)

1) Remove the rear cover.
2) Remove heater reversal inlet roller. (See d. above.)
3) Remove the tension spring [1], and remove the four screws [2]; then, detach the buffer pass motor [3] together with its mounting base.



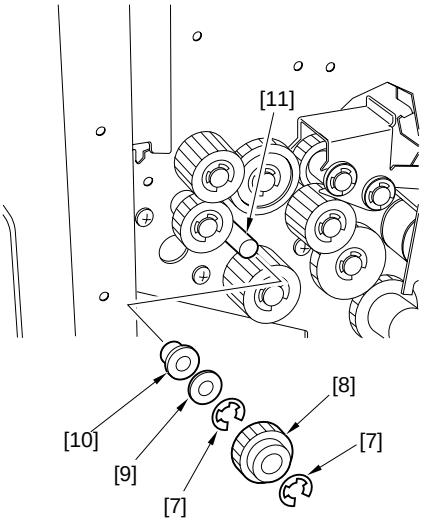

F02-907-21

4) Open the front cover.
5) Pull the retaining handle to the front, and push up the retaining unit. (See F02-907-17.)
6) Remove the E-ring [4], washer [5], and bearing [6] at the front.




F02-907-22

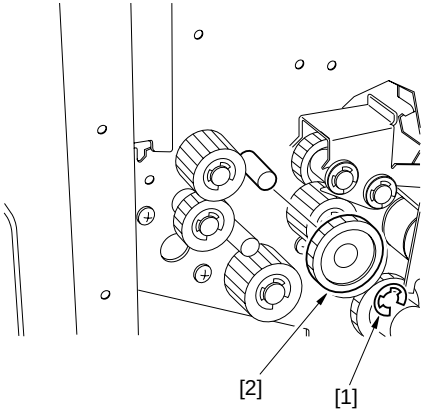
7) Remove the two E-rings [7], gear [8], washer [9], and bearing [10]; at the rear; then, detach the feed roller (reversal confluence) [11].




F02-907-23

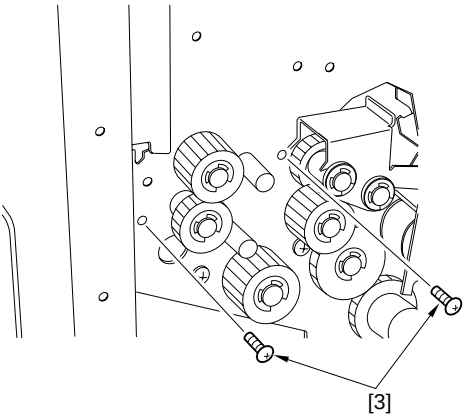
f. Removing the Feed roller (upper guide)

1) Remove the rear cover.
2) Remove the buffer pass motor together with its mounting base. (See F02-907-21.)
3) Remove the E-ring [11] and the gear [2].



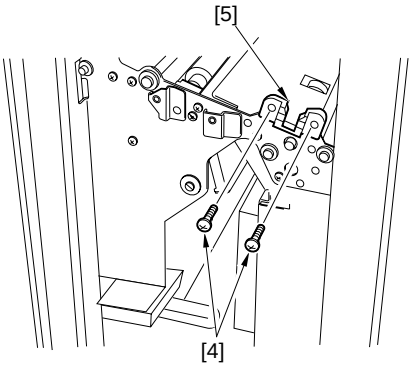

F02-907-24

4) Open the front cover.
5) Pull the retaining handle to the front, and push up the retaining unit. (See F02-907-17.)
6) Remove the two screws [3] at the rear.



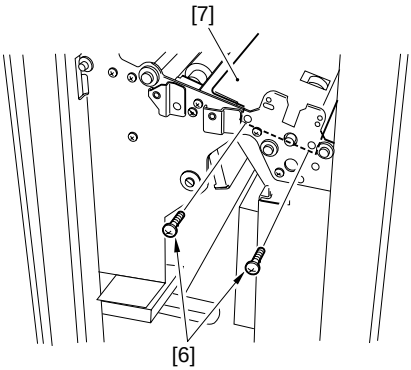

F02-907-25

7) Remove the two screws [4], and detach the guide stopper [5].



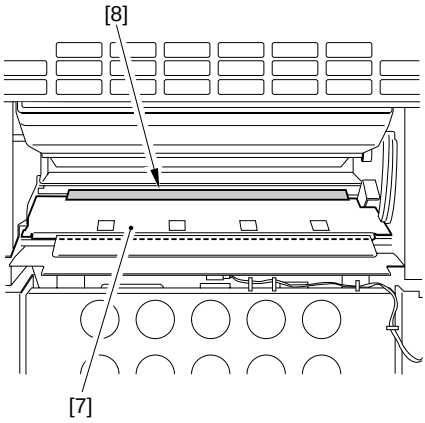

F02-907-26

8) Remove the two screws [6] at the front, and detach the guide plate [7].



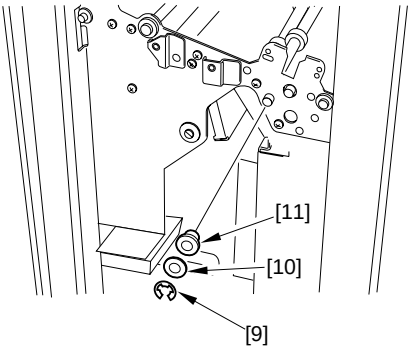

F02-907-27

When mounting the guide plate [7], take care not to bend the plastic sheet [8] attached to the guide plate.



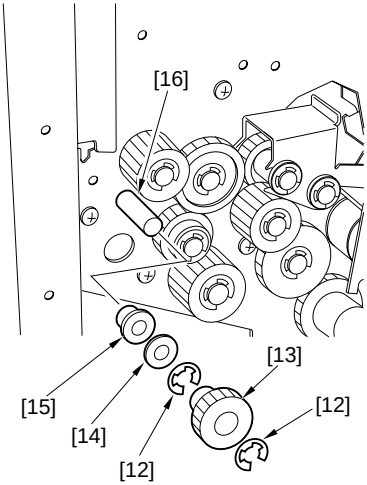

F02-907-28

9) Remove the E-ring [9], washer [10], ad bearing [11] at the front.




F02-907-29

10) Remove the two E-rings [12], gear [13], washer [14], and bearing [15] at the rear; then, detach the feed roller (upper guide) [16].

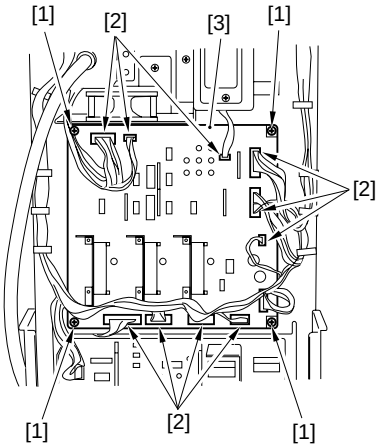



F02-907-30

## 9.7.3 PCBs

### Removing the Buffer Pass Driver PCB

1) Remove the rear cover.
2) Remove the four screws [1], and disconnect the 11 connectors [2]; then, detach the buffer pass driver PCB [3].

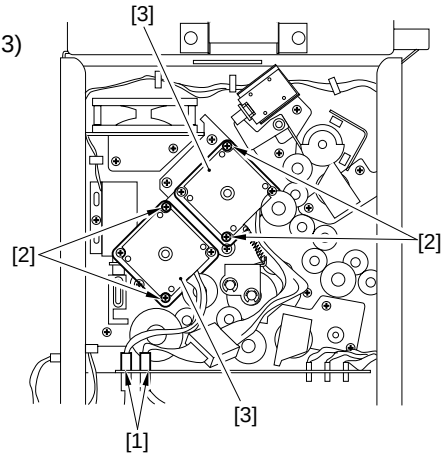



F02-907-31

## 9.7.4 Fans and Motors

### a. Removing the Buffer Pass Motor (M1, M3)

1) Remove the rear cover.
2) Disconnect the two connectors [1], and remove the two screws [2]; then, detach the buffer pass motor [3].



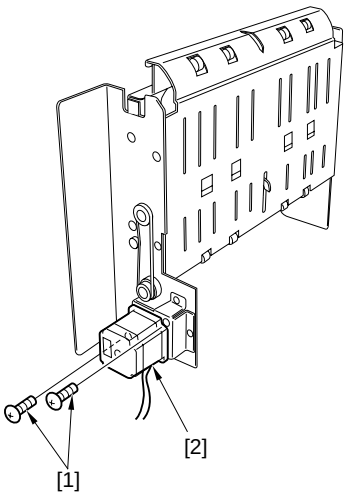

F02-907-32

Memo

The buffer pass input motor (M1) and the buffer pass output motor (M3) may be disassembled in the same way.

### b. Removing the Reversal Motor (M2)

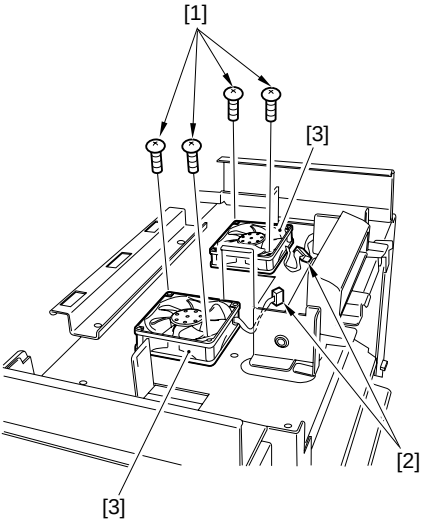
1) Remove the rear cover.
2) Remove the right front cover.
3) Disconnect the connector of the reversal motor.
4) Remove the vertical path guide assembly. (See F02-907-12.)
5) Remove the two screws [1], and detach the reversal motor [2].




F02-907-33

c. Removing the Cooling Fan 1/2 (FM1/FM2)

1) Remove the upper cover.
2) Remove the two screws, and disconnect the connector [2]; then, detach the cooling fan [3].



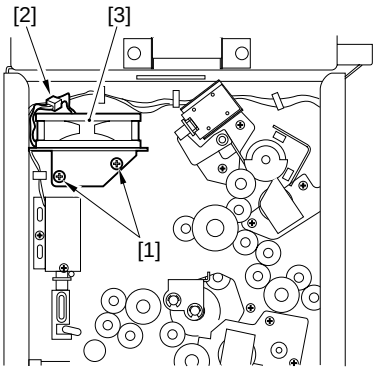

F02-907-34

Memo

The cooling fans 1 and 2 may be removed in the same way.

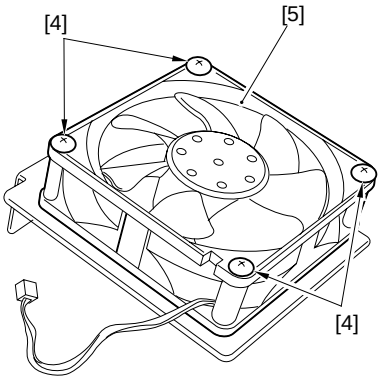
d. Removing the Cooling Fan 3 (FM3)

1) Remove the rear cover.
2) Remove the two screws [1], and disconnect the connector [2]; then, detach the cooling fan 3 [3] together with mounting base.




F02-907-35

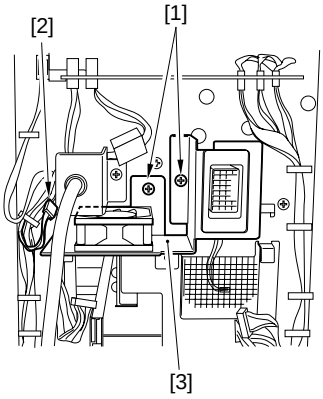
3) Remove the four screws [4], and detach the cooling fan 3 [5].




F02-907-36

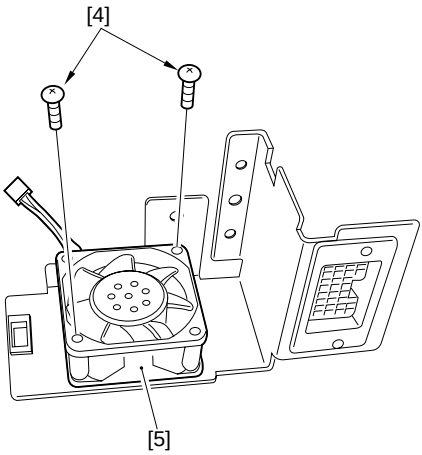
e. Removing the Cooling Fan 4 (FM4)

1) Remove the rear cover.
2) Remove the two screws [1], and disconnect the connector [2]; then, detach the fan mounting base [3].




F02-907-37

3) Remove the two screws [4], and detach the cooling fan 4 [5].



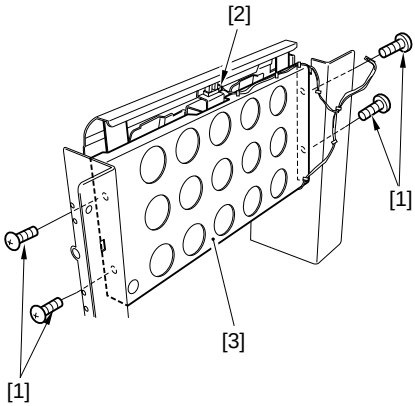

F02-907-38

When mounting the fan, take care so that the direction of air will be downward.

## 9.7.5 Sensors

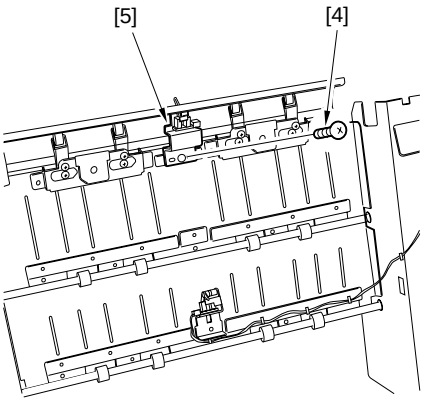
### a. Removing the Reversal Timing Sensor (PS1)

1) Remove the rear cover.
2) Remove the right front cover.
3) Remove the vertical path guide assembly. (See F02-907-12.)
4) Remove the four screws [1], and disconnect the connector [2]; then, detach the reinforcing plate [3].




F02-907-39

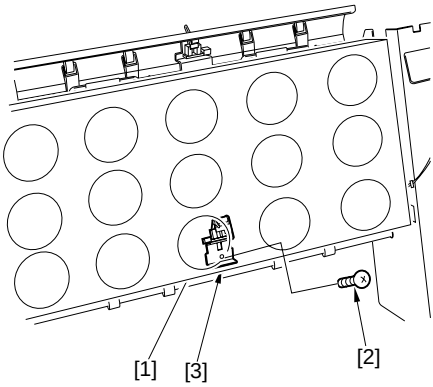
5) Remove the screw [4], and detach the reversal timing sensor [5].




F02-907-40

b. Removing the Reversal Jam Sensor (PS2)

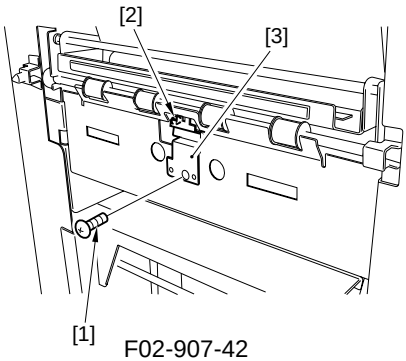
1) Remove the rear cover.
2) Remove the right front cover.
3) Remove the vertical path guide assembly. (See F02-907-12.)
4) Disconnect the connector [1], and remove the screw [2]; then, detach the reversal jam sensors [3].




F02-907-41

c. Removing the Delivery Sensor (PS3)

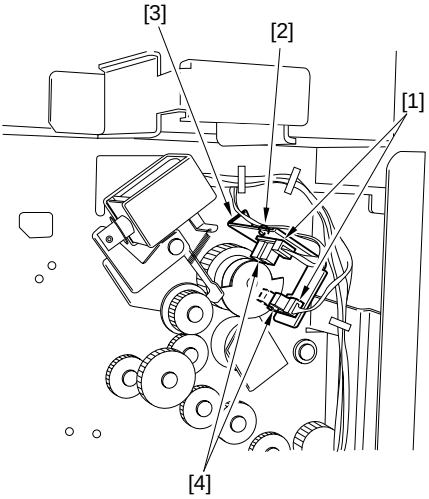
1) Remove the screw [1], and disconnect the connector [2]; then, detach the delivery sensor [3].




F02-907-42

d. Removing the Upper Phase Sensor 1/2 (PS4/5)

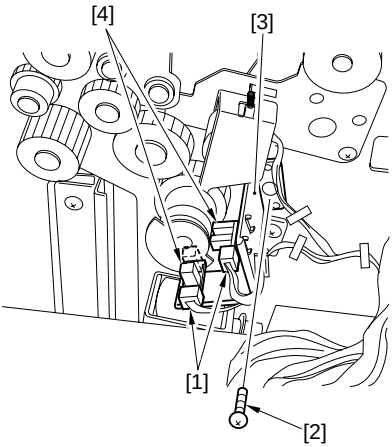
1) Remove the rear cover.
2) Disconnect the two connectors [1], and remove the screw [2]; then, detach the sensor mounting base [3], and detach the upper phase sensor [4].




F02-907-43

e. Removing the Lower Phase Sensor 1/2 (PS6/7)

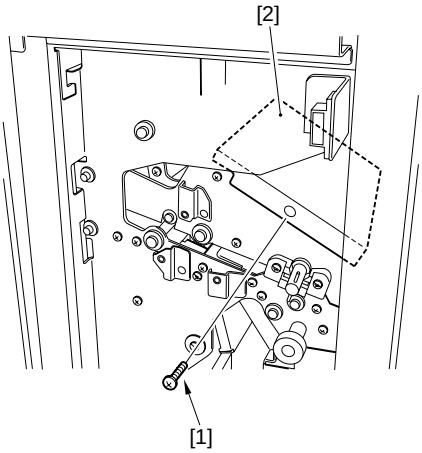
1) Remove the rear cover.
2) Disconnect the two connectors [1], and remove the screw [2]; then, detach the sensor mounting base [3], and detach the lower phase sensor [4].




F02-907-44

f. Removing the Inlet Sensor (PS8)

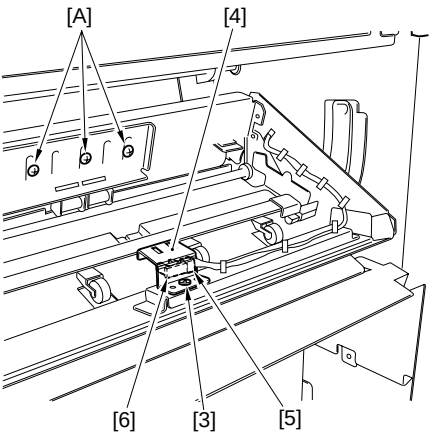
1) Open the front cover.
2) Remove the retaining handle. (See F02-907-02.)
3) Remove the screw [1], and detach the retaining guide bar [2].




F02-907-45

4) Remove the screw [3], and detach the inlet sensor base [4]; then, disconnect the connector [5], and detach the inlet sensor [6].

Do not remove the screw [A] indicated in the figure.



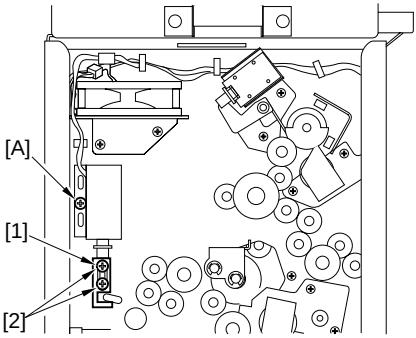

F02-907-46

## 9.7.6 Solenoids

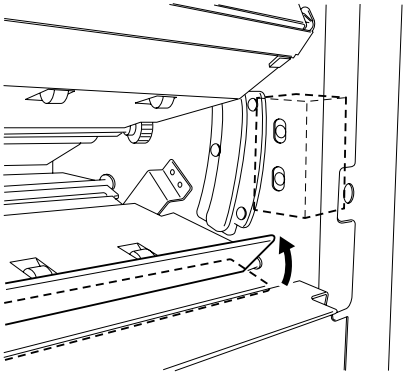
### a. Removing the Flapper Solenoid (SL1)

1) Remove the rear cover.
2) Remove the buffer pass motor. (See F02-907-21.)
3) Remove the two screws [1], and pull out the arm [2] of the flapper solenoid together with the core shaft.

If you happen to have removed the screw [A] indicated in the figure, make adjustments so that the flapper is positioned at F02-907-47a when the solenoid has turned on.

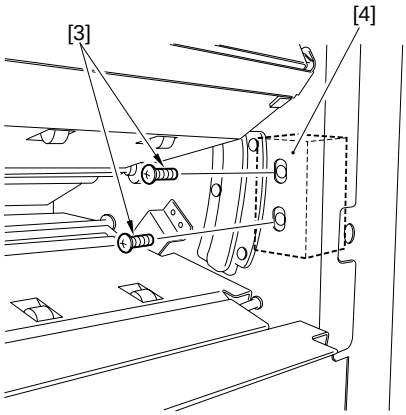



F02-907-47



F02-907-47a

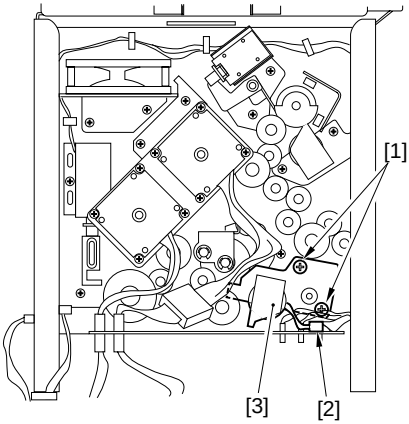
4) Remove the two screws [3] from the inside of the rear side plate, and detach the flapper solenoid [4].




F02-907-48

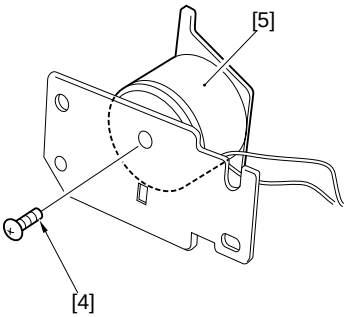
b. Removing the Downward Curl Removing Solenoid 1 (SL3)

1) Remove the rear cover.
2) Remove the two screws [1], and disconnect the connector [2]; then, detach the solenoid mounting base [3].




F02-907-49

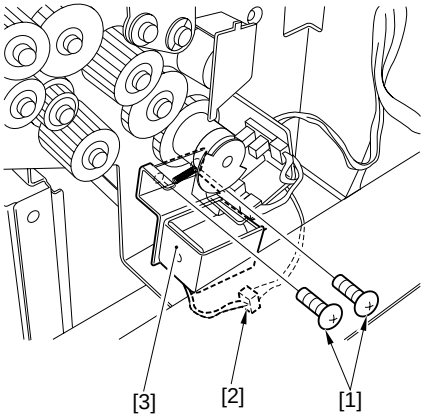
3) Remove the screw [4], and detach the solenoid [5].




F02-907-50

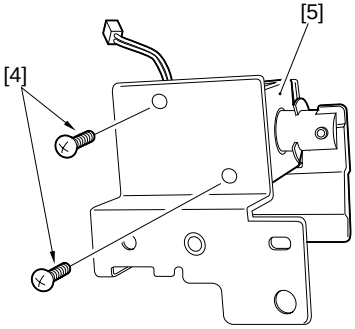
c. Removing the Downward Curl Removing Solenoid 2 (SL4)

1) Remove the rear cover.
2) Remove the two screws [1], and disconnect the connector [2]; then, detach the solenoid mounting base [3].




F02-907-51

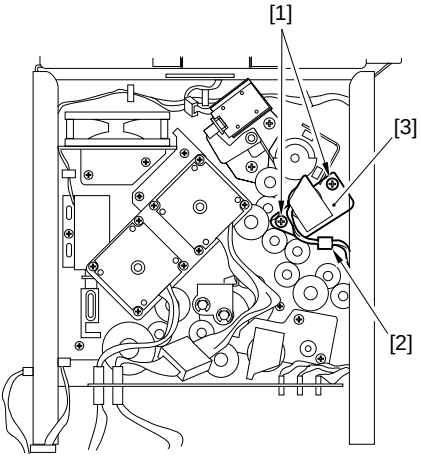
3) Remove the two screws [4], and detach the solenoid [5].




F02-907-52

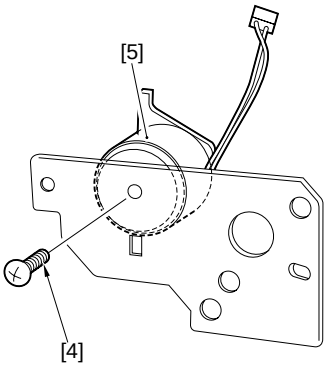
d. Removing the Upward Curl Removing Soiling 1 (SL5)

1) Remove the rear cover.
2) Remove the two screws [1], and disconnect the connector [2]; then, detach the solenoid mounting base [3].




F02-907-53

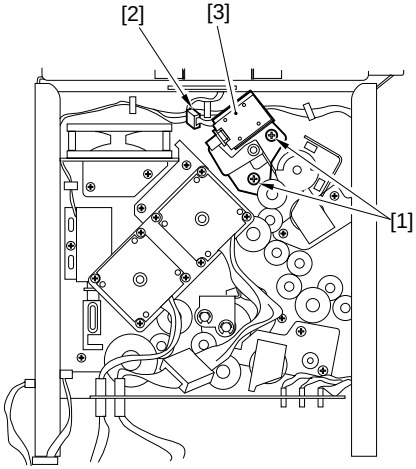
3) Remove the screw [4], and detach the solenoid [5].




F02-907-54

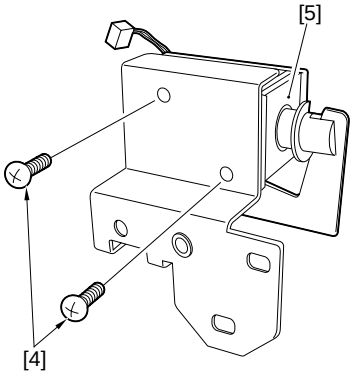
e. Removing the Upward Curl Removing Solenoid 2 (SL6)

1) Remove the rear cover.
2) Remove the two screws [1], and disconnect the connector [2]; then, detach the solenoid mounting base [3].




F02-907-55

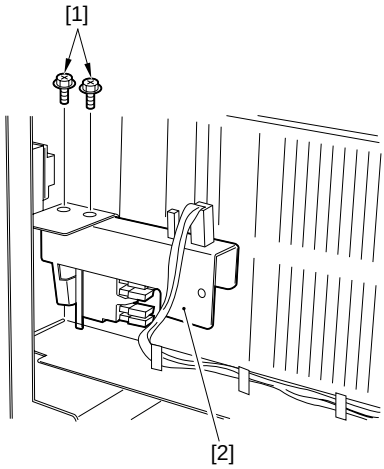
3) Remove the two screws [4], and detach the solenoid [5].




F02-907-56

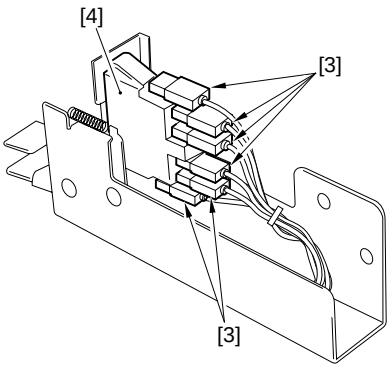
f. Removing the Cover Switch

1) Remove the two screws [1] behind the buffer pass front side plate, and detach the cover switch mounting base [2].




F02-907-57

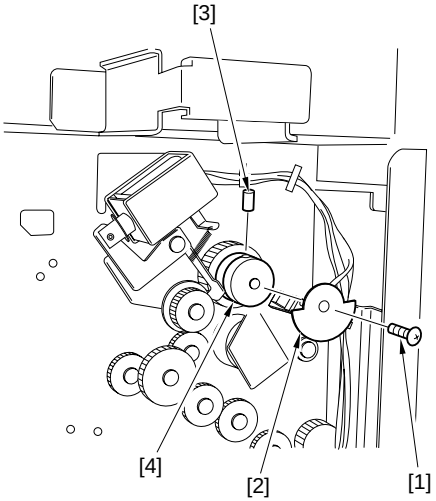
2) Remove the six terminals [3], and detach the cover switchs [4]. (The cover switch is snapped in place.)



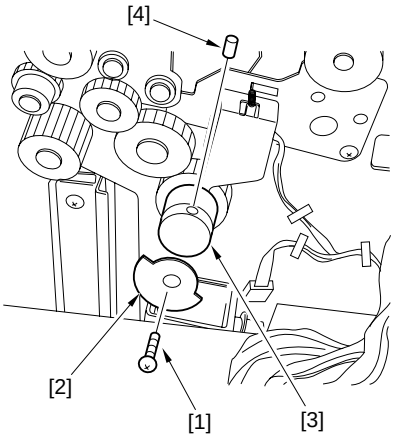

F02-907-58

g. Removing the Spring Clutch

1) Remove the rear cover.
2) Remove the phase sensor together with its support plate. (See F02-907-43, -44.)
3) Remove the screw [1], and detach the sensor flag [2]; then, remove the stop screw [3], and detach the spring clutch [4].




F02-907-59



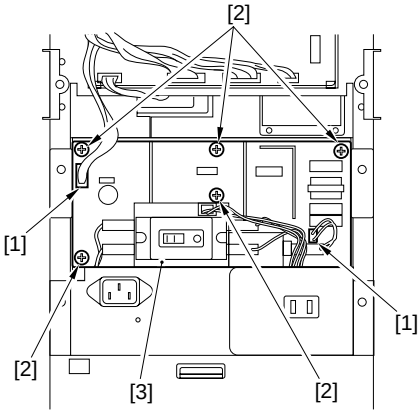

F02-907-60

Memo

Both upper and lower spring clutches may be removed in the same way.

h. Removing the Power Supply Assembly

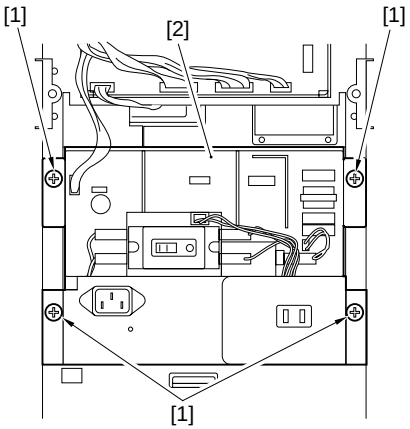
1) Remove the rear cover.
2) Disconnect the two connectors [1], and remove the five screws [2]; then, detach the power supply PCB [3].




F02-907-61

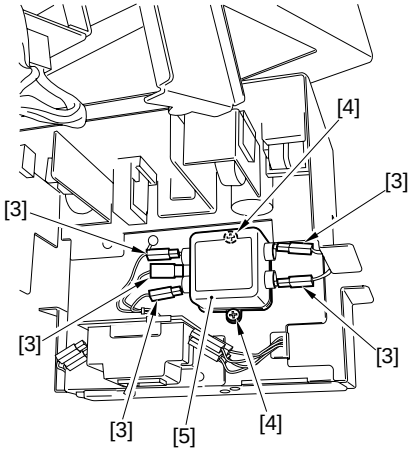
i. Removing the Noise Filter

1) Remove the rear cover.
2) Remove the four screws [1], and detach the power supply mounting plate [2].




F02-907-62

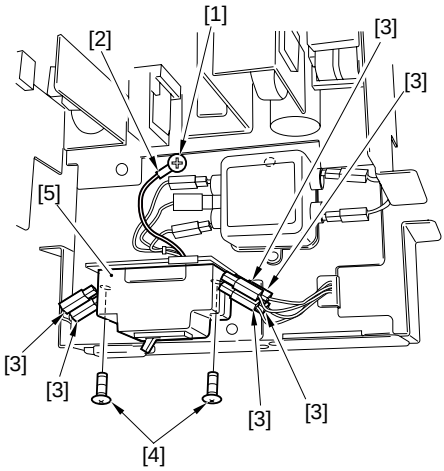
3) Remove the five terminals [3] and two screws [4]; then, detach the noise filter [5].




F02-907-63

j. Removing the Leakage Breaker

1) Remove the rear cover.
2) Remove the screw [1], and detach the rounding wire [2]. Thereafter, remove six terminals [3] and the two screws [4]; then, detach the leakage breaker [5].




F02-907-64

# CHAPTER 3

# INSTALLATION

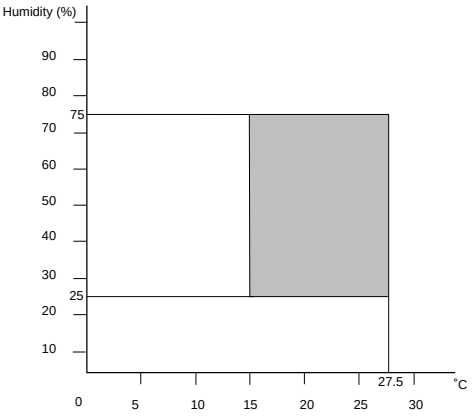
# 1 Selecting the Site

Select the site of installation with the following considerations in mind; if possible, pay a visit to the user's before delivering the machine.

1. Make sure that the power supply enables exclusive connection to a receptacle rated as follows, and the appropriate terminal of the receptacle is properly grounded for safety:

| Model | Voltage | Amperage | Receptacle |
|---|---|---|---|
| 1 North American | 208/240 V* | 15 A | NEMA 6-20R |
| 2 European | 230 V | 16 A | DIN49440/49441 |
| 3 UK | 230 V | 13 A | BS1363 |
| 4 Australian | 230 V | 15 A | AS |

2. The temperature and humidity requirements must be as shown in Figure F03-100-01. Avoid areas near water faucets, water boilers, humidifiers, or refrigerators.

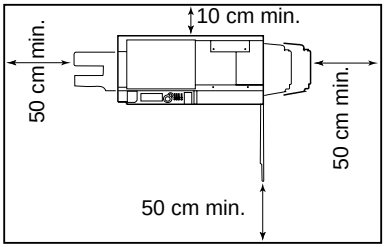



F03-100-01

3. Avoid areas near sources of fire and areas subject to dust or ammonium gas. Avoid direct rays of the sun; as necessary, provide curtains.
4. The room must be well ventilated.

The level of ozone emitted by the machine should not harm the health of those around the machine. However, some may find the level unpleasant if the machine is used for a long time in a poorly ventilated room. Make sure the room is ventilated often.

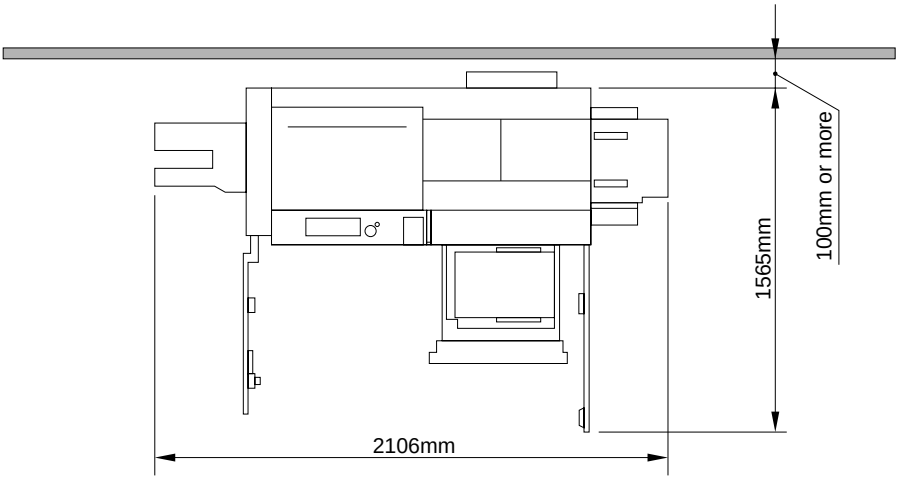
5. The floor must be level so that all feet of the machine are in contact with the floor and the machine remains level.
6. The machine must be installed at least 10 cm away from all walls so as to allow machine operation and maintenance work.



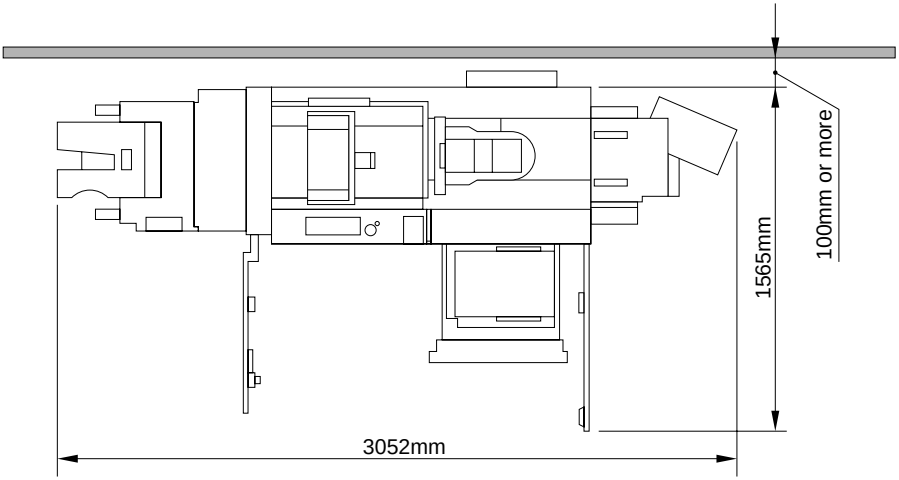

F03-100-02

* Make the following spatial considerations for the machine:

■ without accessories




■ with accessories

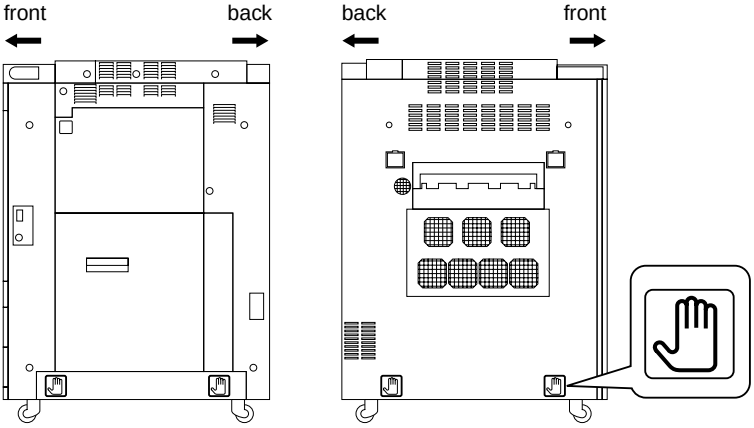



F03-100-03

# 2 Points to Note for Installation and Relocation

## 2.1 Base Plate and Installation/Relocation Work

When moving the machine while supporting its base plate, be sure to place your hands as shown; otherwise, the external covers can suffer deformation.



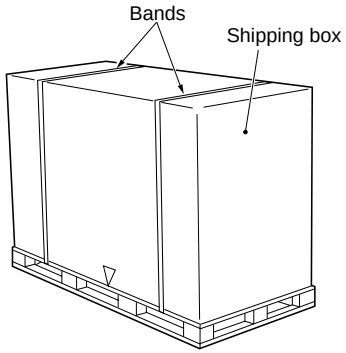
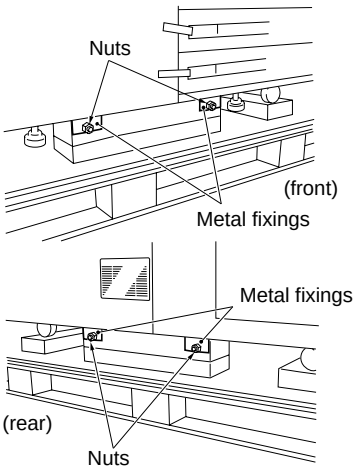

F03-201-01

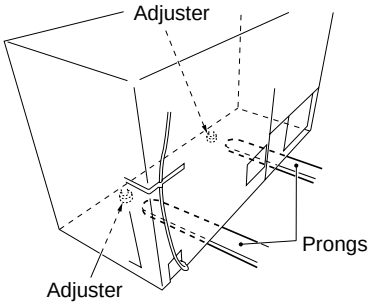
# 3 Installation

When a metal object is brought in from a cold to a warm place, droplets of water can develop on its surface. This phenomenon is known as condensation, and copiers subjected to condensation tend to generate faulty images.

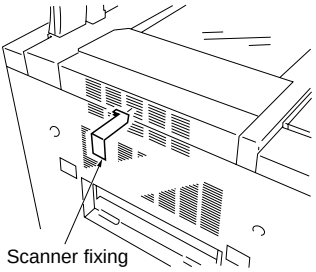
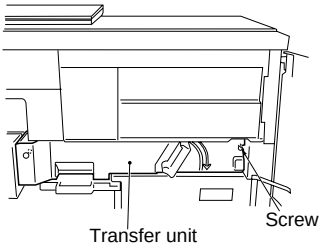
If the copier has been brought in from a cold place, leave it alone at the site of installation for at least one hour before starting the work.

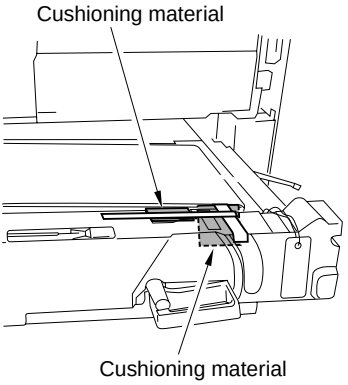
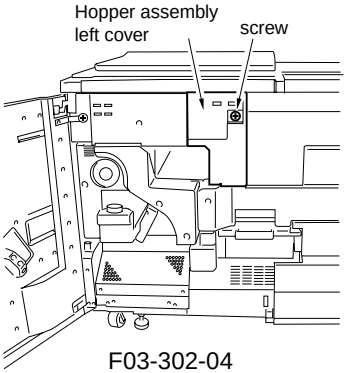
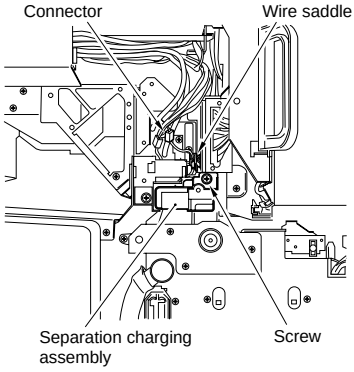
## 3.1 Unpacking

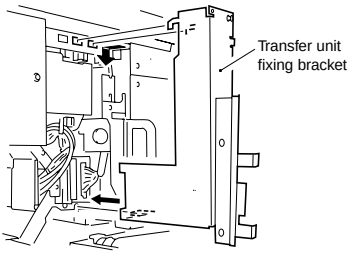
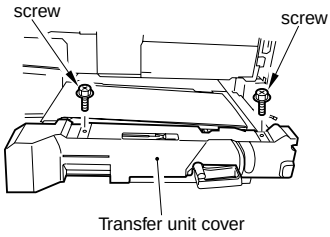
| Step | Work | Remarks |
|---|---|---|
| 1 | Cut the two bands used to hold the shipping box, and free the shipping box. |  F03-301-01 |
| 2 | Tear off and remove the plastic bag. | |
| 3 | Turn the nuts, and remove the metal fixings (2 each at front and rear) used to keep the skids. |  F03-301-02 |

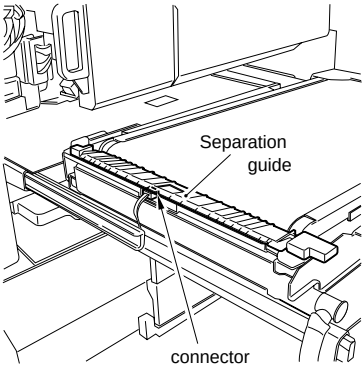
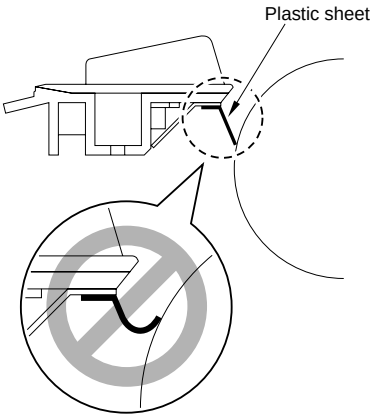
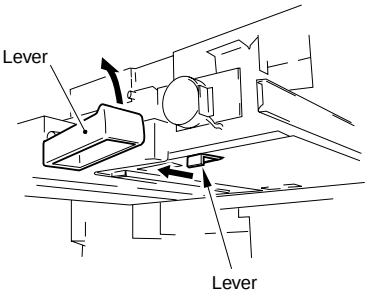
| Step | Work | Remarks |
|---|---|---|
| 4 | Lift the machine using a fork lift operating from the rear to move it off the skids and onto the floor.<br><br>When sliding in the prongs of the fork lift, be sure that the forks stop before they come into contact with the adjusters. |  <br>F03-301-03 |
| 5 | Move the machine to the site of installation.<br>Open the cardboard box, and take out the parts and accessories. | Check to make sure that none of the following is missing:<br>• Copy tray<br>• Control key (2 pcs.)<br>• Operator's Manual<br>• Fixing oil (2 bottles)<br>• Toner (4 colors)<br>• Starter (4 colors)<br>• Oil nozzle<br>• Hopper retaining fixing (2 pcs.)<br>• Process unit grip (2 pcs.)<br>• Laser shutter open tool (2 pcs.)<br>• Starter collecting container (4 pcs.)<br>• Drum protection sheet plastic bag<br>• Transfer unit fixing tool<br>• Storage box<br>• Label for duplex unit<br>• Cassette bottom film set (2 set)<br>• Cassette size label<br>• Label for the number of a pickup paper<br>• Original holder |

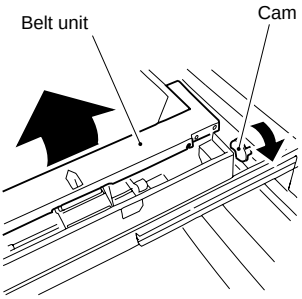
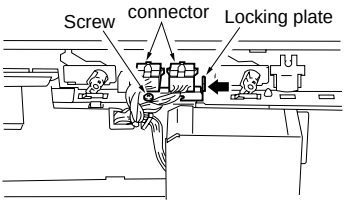
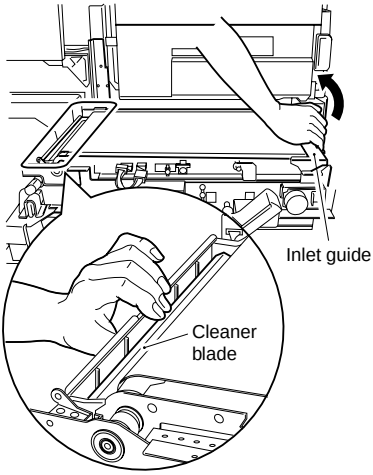
## 3.2 Removing the Fixings, Supplying Fixing Oil, and Changing the Voltage Rating (240V North American Model)

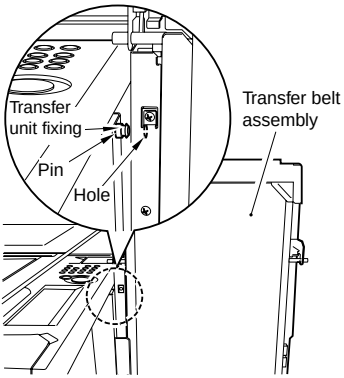
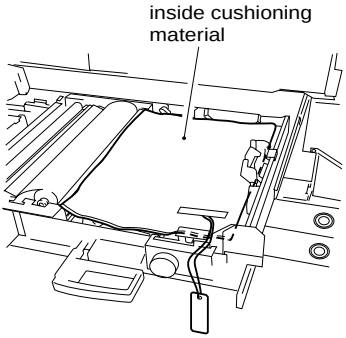
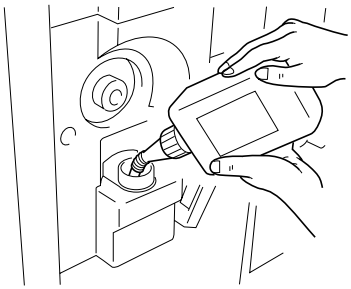
| Step | Work | Remarks |
|---|---|---|
| 1 | Take out the C, M, Y, and Bk starter bottles, and shake them well. Open the caps, peel off the seals, and keep them in a dust-free environment. | The step on the left lets the starters become used to the environment of the site. |
| 2 | Remove the strips of tape from the parts of the machine and the protection sheet used for the copyboard glass. |  F03-302-01 |
| 3 | Removing the Scanner Fixing<br>Remove the tape from the scanner retaining fixing found on the outside of the left cover; then, slide the metal fixing from the rear to the front, and pull it to the left to remove. | Store away the fixing in the tool box for possible relocation of the machine. |
| 4 | Open the front covers (left, right), and remove the fixing screw from the transfer unit. |  F03-302-02 |
| 5 | Remove the tape and materials and sheets used to keep the lever and others in place. | However, do NOT remove the seal from the toner supply mouth of the hopper assembly. (Otherwise, toner will be likely to leak during toner supply operation.) |
| 6 | Remove the tape and fixing materials from inside the cassette. | |

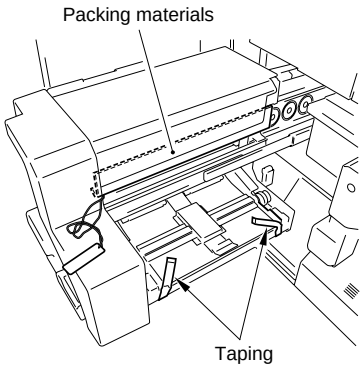
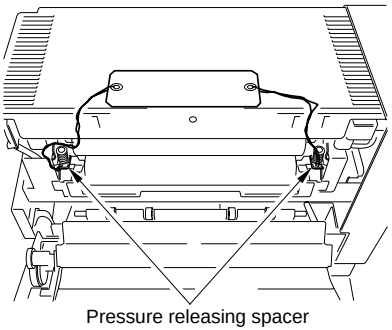
| Step | Work | Remarks |
|---|---|---|
| 7 | Release the lever of the transfer unit, and slide out the transfer unit; then, remove the fixing tape used to keep the jam tweezers in place and the fixing tape used to keep the transfer belt in place at the rear.<br><br>Do not remove the tag found at the front of the pre-transfer cover.<br><br>Remove all fixing tape from the pre-transfer cover. |  <br>F03-302-03 |
| 8 | • Remove the screw, and detach the hopper assembly left cover. |  <br>F03-302-04 |
| | • Remove the screw, and disconnect the connector, and open the wire saddle; then, detach the separation charging assembly. |  <br>F03-302-05 |

| Step | Work | Remarks |
|---|---|---|
| 9 | After removing the hopper left cover and the separation charging assembly, mount the transfer unit fixing bracket to the front side plate of the machine. |  F03-302-06 |
| 10 | Remove the two screws, and detach the pre-transfer cover. |  F03-302-07 |

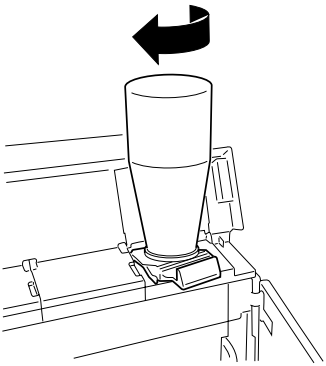
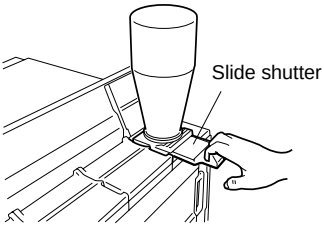
| Step | Work | Remarks |
|---|---|---|
| 11 | Disconnect the connector, and detach the separation guide. |  F03-302-08 |
| | **Points to Note When Mouting the Separation Guide**<br>When mounting the separation guide,be sure that the plastic sheet is inside as shown,not hitting the transfer belt and bending. |  F03-302-09 |
| 12 | While pulling the lever to the front, set the transfer releasing lever. |  F03-302-10 |

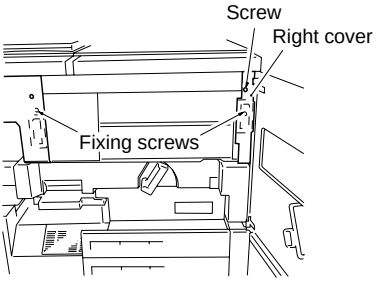
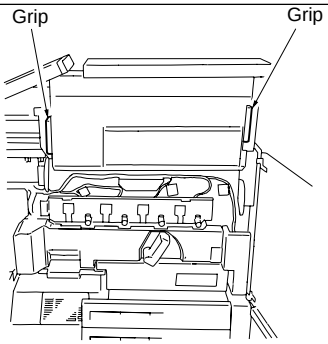
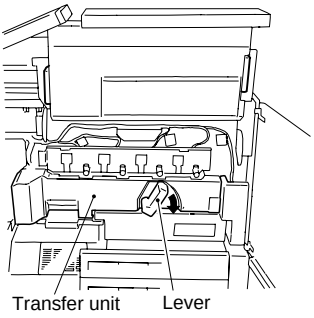
| Step | Work | Remarks |
|---|---|---|
| 13 | Turn the cam by hand so that the belt unit is in UP position. |  F03-302-11 |
| 14 | Disconnect the two connectors, and loosen the screw ; then, shift the locking plate to the left. |  F03-302-12 |
| 15 | Push the cleaning blade to release the pressure, and lift the middle of the inlet guide.<br>When lifting the inlet guide, be sure to support at its middle to avoid deforming the guide. |  F03-302-13 |

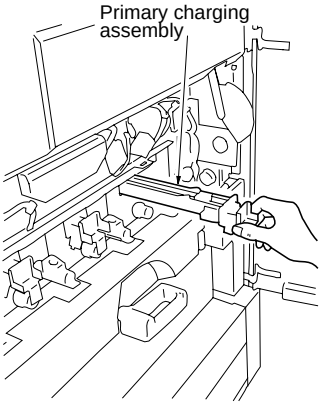
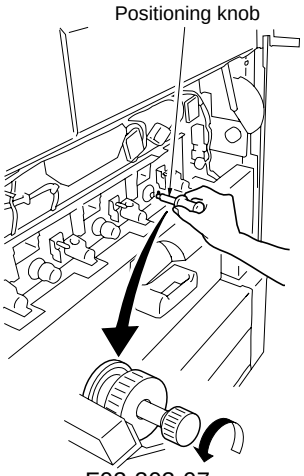
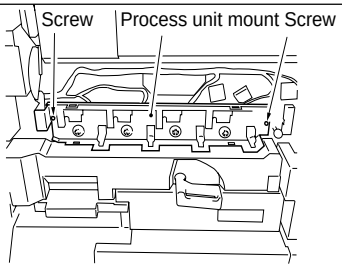
| Step | Work | Remarks |
|---|---|---|
| 16 | As if to slightly lift the transfer belt assembly, hook the hole of the transfer belt assembly on the pin of the transfer unit fixing. At this time, be sure to engage the hole of the transfer belt assembly with the groove of the pin. |  F03-302-14 |
| 17 | Remove the inside cushioning material (w/ tag) from the bottom of thetransfer belt. |  F03-302-15 |
| 18 | Reverse steps 8) through 16) to assemble the transfer unit. Then, mount the transfer front cover, and lock the lever in place. | |
| 19 | Remove the cap from the fixing oil tank, and pour two bottles of fixing oil (2l). Then, close the cap. |  F03-302-16 |

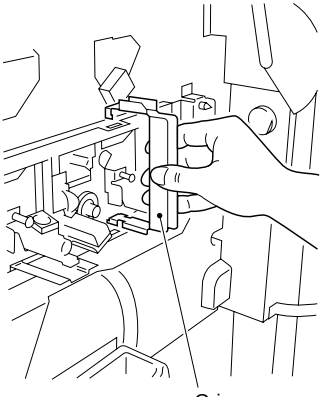
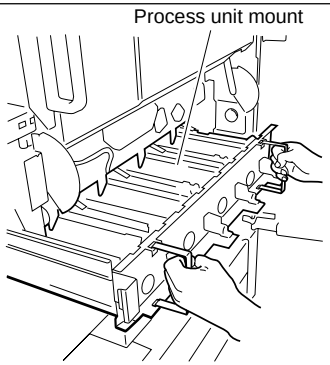
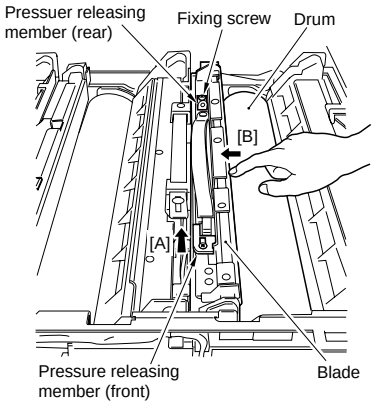
| Step | Work | Remarks |
|---|---|---|
| 20 | Slide out the fixing assembly, and remove the packing materials and taping. |  F03-302-17 |
| 21 | Pull out the fixing pressure releasing spacer (2 pc.). |  F03-302-18 |
| 22 | Set the fixing assembly. | |

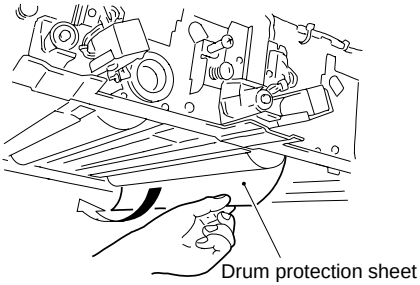
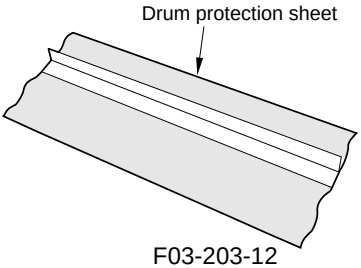
## 3.3 Supplying Toner

| Step | Work | Remarks |
|---|---|---|
| 1 | As if to invert the top and the bottom, shake the C toner container 20 times or more.<br><br>Do not perform this step until immediately before setting the bottle to the hopper. | |
| 2 | Open the lid of the C toner hopper, and fit the C toner bottle in the opening of the hopper; hold the base of the bottle, and turn the bottle clockwise until it stops (about 10°). |  <br>F03-303-01 |
| 3 | Pull the slide shutter of the C toner bottle toward the front, and lightly tap on the bottom and the side of the bottle two to three times.<br>• Take note of the time at which toner supply operation starts.<br>• Check to make sure that the toner has poured into the hopper. |  <br>F03-303-02 |
| 4 | Close the slide shutter of the C toner bottle, and turn the bottle counterclockwise (about 10°) to remove.<br>Check to make sure no toner remains on the mesh over the inlet to the hopper; otherwise, tap on the hopper until all toner has fallen into the hopper. | |

| Step | Work | Remarks |
|---|---|---|
| 5 | Perform the same steps for the M, Y, and Bk toners as for the C toner.<br><br>Do not dispose of the toner bottle in fire; it may tear open or explode. | |
| 6 | Open the right cover, and remove the hopper assembly right cover (1 screw). |  <br>F03-303-03 |
| 7 | Remove the two fixing screws from the hopper assembly. | |
| 8 | Holding both left and right grips, pull the hopper assembly to the front and then lift it. (It will be locked when lifted to the topmost position.)<br><br>Check to make sure that the hopper assembly is securely locked in position by the naked eye. |  <br>F03-303-04 |
| 9 | • Shift down the lever of the transfer unit, and release the transfer belt from the photosensitive drum. |  <br>F03-303-05 |

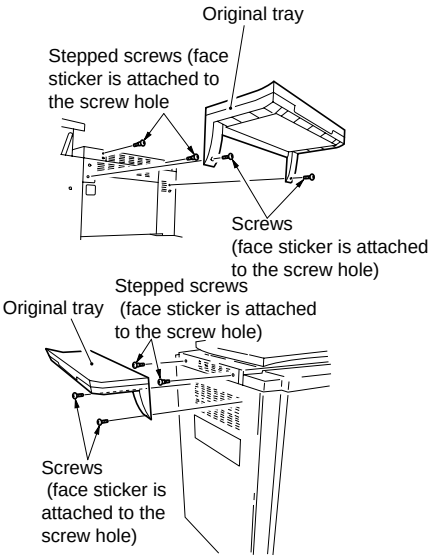
| Step | Work | Remarks |
|---|---|---|
| 10 | Remove the four primary charging assemblies.<br><br>After removal, place each primary charging assembly so that its grid side faces up. |  <br>F03-303-06 |
| 11 | Remove the four photosensitive drum positioning knobs.<br>The knobs have a two-layer construction. To remove, turn the small knob at the center counterclockwise. |  <br>F03-303-07 |
| 12 | Remove the two screws from the process unit mount. |  <br>F03-303-08 |

| Step | Work | Remarks |
|---|---|---|
| 13 | Install the two process unit grips that come with the machine. |  F03-303-09 |
| 14 | Slide out the process unit mount. |  F03-303-10 |
| 15 | Loosen the mounting screw of the C drum, and detach the photosensitive drum cleaner pressure releasing members (rear). Slide the pressure releasing member in an arrow [A]. Perform the same for M, Y, and Bk.<br><br>Push the center of the blade (indicated by an arrow [B] ) with a finger to release the pressure on the releasing member.<br><br>Do not remove the protection sheet from the drum. |  F03-303-11 |

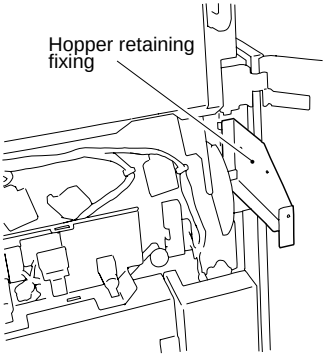
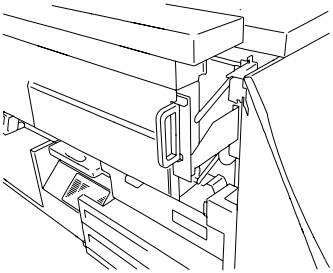
| Step | Work | Remarks |
|---|---|---|
| 16 | Put the process unit back into the machine, and remove the grips. | |
| 17 | Install the two screws removed in step 12. | |
| 18 | Install the photosensitive drum positioning knob. | |
| 19 | Install the primary charging assembly. (Be sure to put each charging assembly back to its original location.) | |
| 20 | Slide out the transfer unit, and remove the drum protection sheet in the direction of the arrow.<br>Store away the drum protection sheet.<br><br>Do not touch its areas that will come into contact with the drum.<br>To store, put it in a plastic bag, and keep it protected from dust and oil.<br>If it must be rolled, be sure that the side that will come into contact with the drum is inside. |  <br>  <br>F03-203-12 |
| 21 | Install the transfer unit cover, and put the transfer unit back into position; then, set (lock) the lever of the transfer unit. | |
| 22 | Release the lock to the lower left of the hopper; then, bring down the hopper assembly to the bottom to set it in position. | |
| 23 | Insert the cover switch actuator into the cover switch assembly. | |
| 24 | Check the power supply, and connect the power plug. Turn on the power switch, insert the control key, and turn it. | |

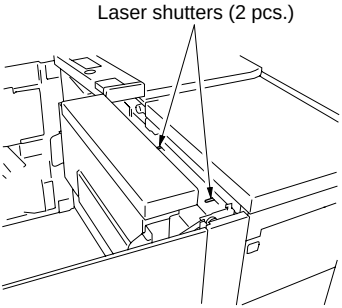
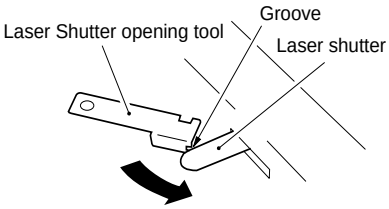
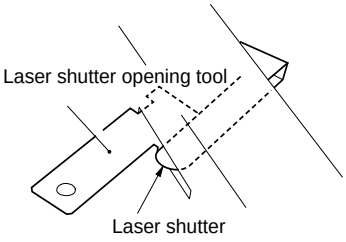
| Step | Work | Remarks |
|---|---|---|
| 25 | Start service mode, and press FUNC. | |
| 26 | Press INSTALL twice to select screen 2. | |
| 27 | Press LSNS-KIL to select '1'. | |
| 28 | Wait until warm-up ends.<br>During the wait period, perform the following:<br>• Set the cassette size to suit the needs of the user.<br>• First, set the side guide plate to suit the paper size. Then, put copy paper in the cassette, and adjust the trailing edge guide plate against the trailing edge of the copy paper.<br>• Remove the cassette size plate from each cassette, and attach the appropriate size label; then, put the cassettes back into their original positions.<br>• Install the original tray.<br><br>If you are installing a paper deck, you must remove the rear right cover. Be sure to install the paper deck before installing the original tray (if on the right side). | |
| 29 | Lift the hopper assembly as far up as it goes. | |


F03-303-13

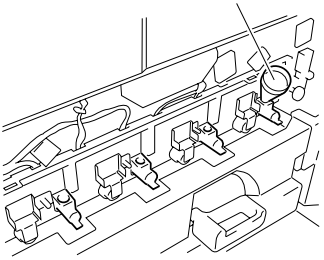
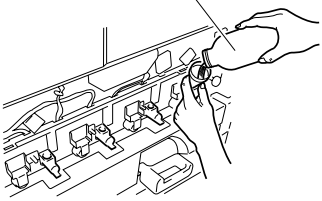


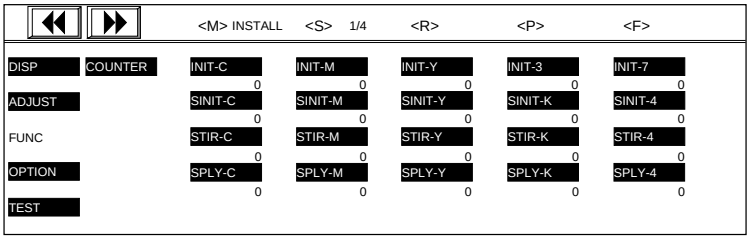

F03-303-14

| Step | Work | Remarks |
|---|---|---|
| 30 | Install the hopper retaining fixing that comes with the machine (right). |  F03-303-15 |
| 31 | Install the hopper retaining fixing that comes with the machine. (left) | |
| 32 | Release the lock of the hopper assembly, and lower the hopper assembly as far down as the metal fixing. |  F03-303-16 |

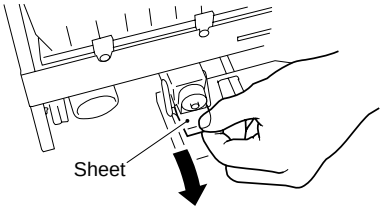
| Step | Work | Remarks |
|---|---|---|
| 33 | Install the two laser shutter opening tools to the two laser shutters. |  F03-303-17  F03-303-18  F03-303-19 |
| 34 | Lift the hopper assembly as far up as it moves, and manually engage the lock found in the lower left of the hopper assembly. | |
| 35 | Work as instructed under 3.4 “Supplying Starter.” | |

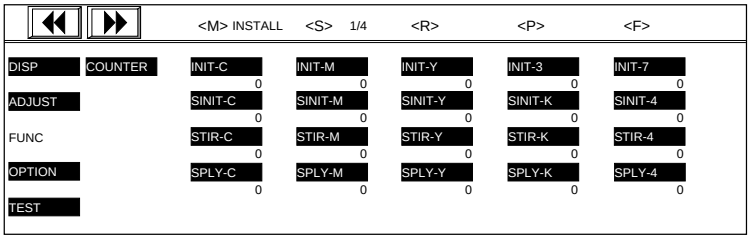
# 3.4 Supplying Starter

| Step | Work | Remarks |
|---|---|---|
| 1 | Return to the 1st screen ('FUNC > INSTALL' in service mode).<br>Press SPLY-Y . | The screw of the C developing assembly starts to rotate. |
| 2 | Using the funnel attached to the starter bottle, supply the starter through the toner supply mouth of the C developing assembly.<br>You may tilt the bottle slightly to avoid leakage. | Funnel<br>  <br>F03-304-02<br>Starter<br>  <br>F03-304-03 |
| 3 | When done, press the Stop key to stop the operation of the developing assembly. | |
| 4 | Repeat steps 1 through 3 for M, Y, and Bk. (Press SPLY-M, SPLY-Y, or SPLY-K as necessary to suit each color.) | |



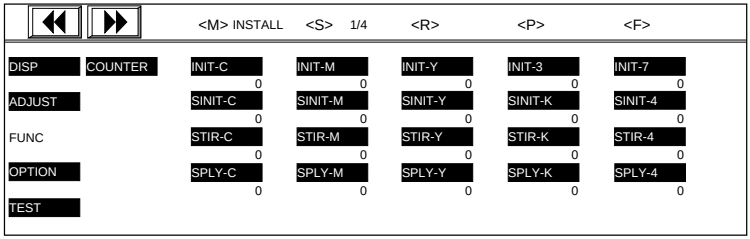

F03-304-01

| Step | Work | Remarks |
|---|---|---|
| 5 | After supplying all developing assemblies with starters, check to make sure that 10 min or more has passed since the end of toner supply (to the hopper). | |
| 6 | Install the retaining fixing. | |
| 7 | Release the lock of the hopper assembly, and lower the hopper assembly as far down as the hopper assembly retaining fixing; then, remove the sheet from the toner supply mouth (for all colors).<br>Pull it down at an angle to facilitate removal. |  <br>F03-304-04 |
| 8 | Remove the two laser shutter opening tools installed in step 33. | |
| 9 | Holding the left and right grips, lift the hopper assembly while pulling it to the front. | |
| 10 | Remove the two hopper fixings, and check to make sure that the lock is released; then, set the hopper assembly into place.<br>Thereafter, fix it in place with two fixing screws. | |
| 11 | Press STIR-4 .<br>Wait until stirring ends. (about 1 min) | |

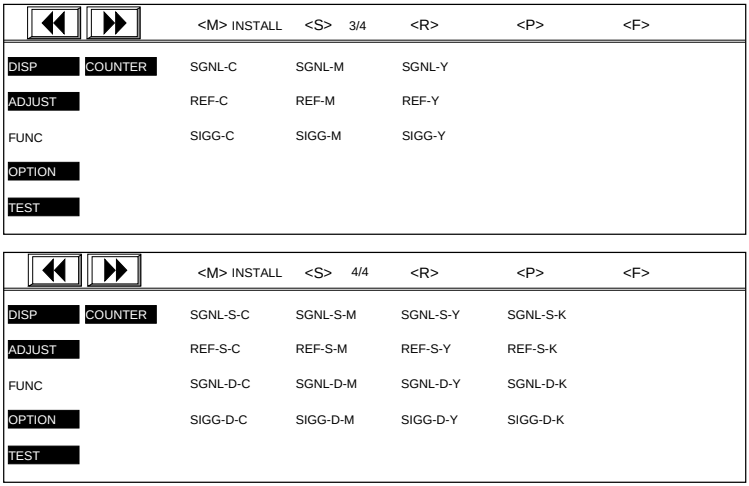



F03-304-05

| Step | Work | Remarks |
|---|---|---|
| 12 | Press INIT-7.<br>The initial ATR data will be read. Wait until the operation ends automatically. (about 1 min) | |
| 13 | The initial ATR-related readings will be indicated on the 3rd/4th screen under 'INSTALL'. Record the readings on the service data sheet. (Press the ▷▷ key to scan through the screens.) The service data sheet is attached behind the document compartment of the front cover (left). | |

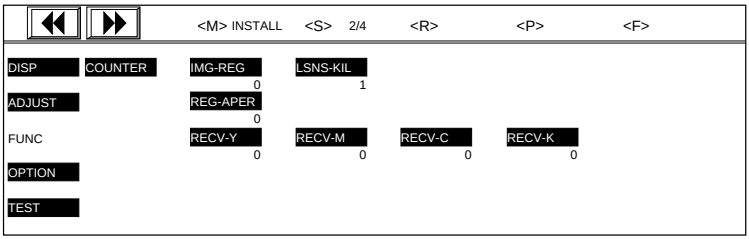



F03-304-06




F03-304-07

| Step | Work | Remarks |
|---|---|---|
| 14 | Press the ◁◁ key to bring up the 2nd screen of 'INSTALL'. Press IMG-REG to select '1'. | |
| 15 | Press REG-APER to execute image position correction.<br><br>Before executing 'REG-APER', check to make sure that the transfer unit is at locking position. | |
| 16 | Press the Reset key twice to end service mode. | |
| 17 | Pull out the cover switch actuator, and close the front cover. | |
| 18 | Turn off and then on the power switch, and wait until warm-up ends. | |
| 19 | Select 'ADJSUT > PASCAL' in service mode; then, set PASCAL to '1'.<br>Press the Reset key twice to end service mode. | |
| 20 | In user mode, execute the following: auto gradation correction > full correction. (Pick-up must be from an A3 or B4 cassette; otherwise, feed A3/B4 paper using the multifeeder.) | |

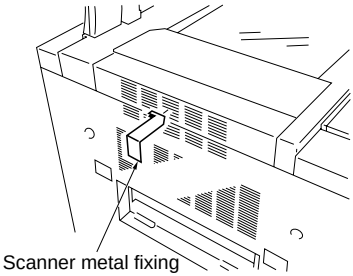
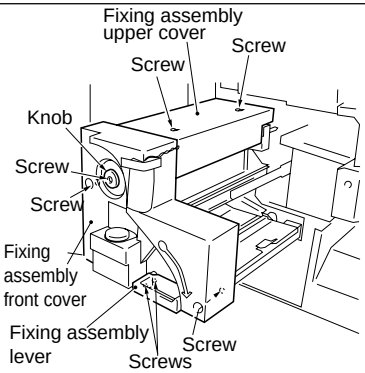
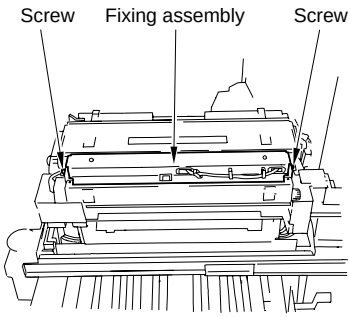


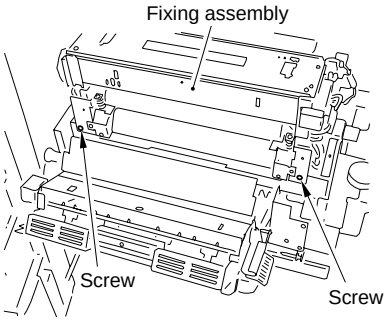
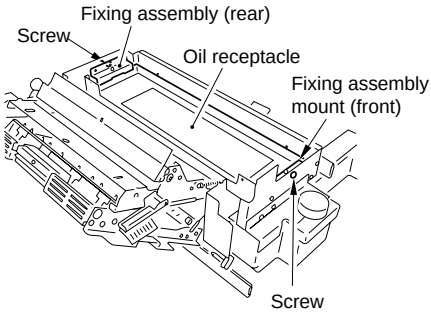
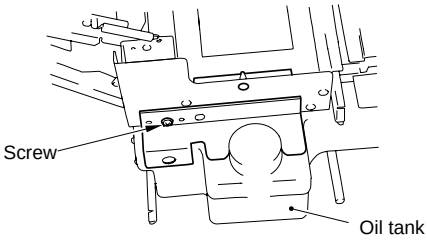

F03-304-08

## 3.5 Checking Images and Operations

| Step | Work | Remarks |
|---|---|---|
| 1 | Press a key on the control panel (other than the Copy Start key) to make sure that operation is normal. | |
| 2 | Set the CA-1 Test Chart on the copyboard, and make a copy to check the image. | • Make sure there is no abnormal noise.<br>• Check the copy image for each default ratio.<br>• Make sure that the specified number of copies are made normally.<br>• Try each cassette, paper deck, and multifeeder.<br>• If the image is not normal, make adjustments according to the “Basic Image Adjustment Procedure.” |
| 3 | If you have made adjustments, select ‘ADJSUT > PASCAL’ in service mode, and check that ‘PASCAL’ is set to ‘1’. Otherwise, set it to ‘1’. | |
| 4 | Press the Reset key to end service mode. | |
| 5 | If you have made adjustment, execute “Auto Graduation Correction > full correction” in user mode. (Paper need to be fed from A3 or B4 cassette. If not set, feed A3/B4 paper from multifeeder). | |
| 6 | Check the external covers for damage and deformation. | |
| 7 | Clean up the area around the machine. | |
| 8 | Fill out the service sheet. | |

# 4 Relocating the Machine

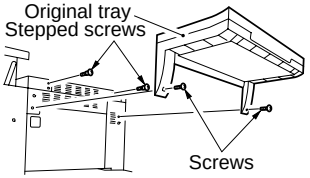
| Step | Work | Remarks |
|---|---|---|
| 1 | Tape the cover of the toner hopper in place.<br>• Install the scanner metal fixing.<br>Insert the metal fixing through the louver on the delivery side, and slide it to the rear to fix the scanner mirror mount in position.<br>Tape the metal fixing in place. |  <br>F03-400-01 |
| 2 | Open the copier's front cover. |  <br>F03-400-02 |
| 3 | Release the lever of the fixing unit, and slide out the fixing unit. | |
| 4 | Open the external delivery unit and the internal delivery unit; remove the fixing assembly lever (2 screws), fixing assembly knob (1 screw), and fixing assembly front cover (2 screws); then, remove the fixing assembly front cover. | |
| 5 | Loosen the two screws, and open the fixing assembly. | |
| 6 | Remove the two screws, and open the fixing assembly. |  <br>F03-400-03 |
| 7 | Remove the screw from the rear of the upper oil pan; then, wait until all fixing oil has collected in the oil tank. | |

| Step | Work | Remarks |
|---|---|---|
| 8 | Remove the two screws, and remove the fixing assembly.<br><br>Be sure to fit the two screws removed in step 6 in advance of this step. |  <br>F03-400-04 |
| 9 | Remove the two screws, and remove the fixing assembly mount (front, rear); then, remove the oil receptacle.<br><br>At this time, take care not to drop the hose attached to the oil receptacle. |  <br>F03-400-05 |
| 10 | Remove the screw, and remove the oil tank; then, draw out the fixing oil from the oil tank. |  <br>F03-400-06 |
| 11 | Return the fixing unit to its initial position. | |

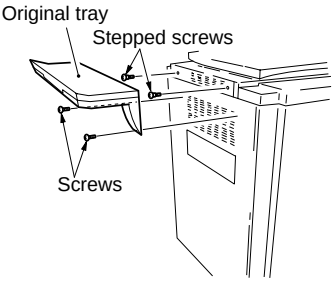
If the route of relocation is not flat and the copier is likely to be subjected to vibration for several minutes, remove the hopper assembly to avoid caking of toner and take precautions to keep the hopper assembly free of vibration.

# 5 Installing the Original Tray

■ Installing on the Right

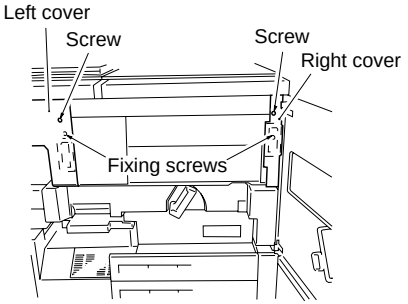
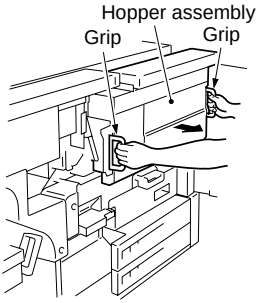
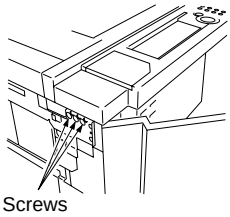
| Step | Work | Remarks |
|---|---|---|
| 1 | Peel the four face stickers from the copier's right side, and fit the two stepped screws. |  F03-500-01 |
| 2 | Fit the original tray over the stepped screws; then, fix the tray in position with two screws. | |

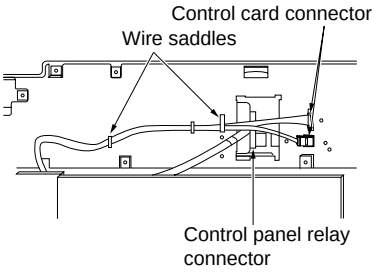
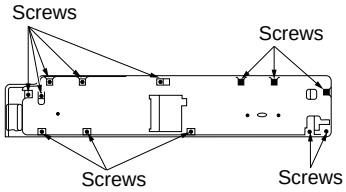
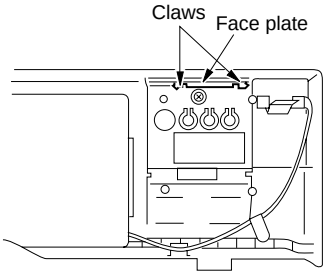
■ Installing on the Left

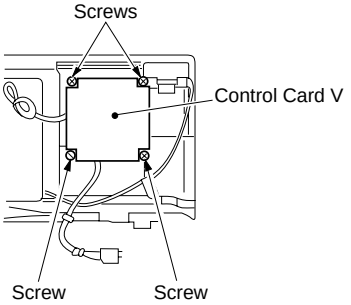
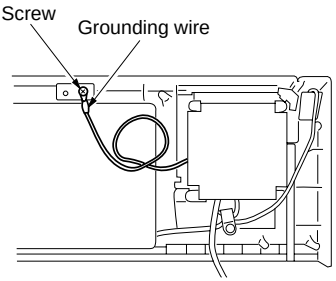
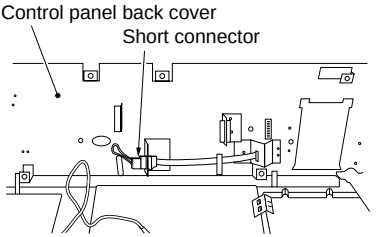
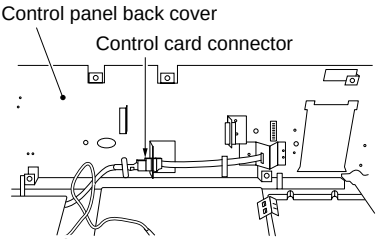
| Step | Work | Remarks |
|---|---|---|
| 1 | Peel the four face stickers from the copier's right side, and fit the two stepped screws. |  F03-500-02 |
| 2 | Fit the original tray over the stepped screws; then, fix the tray in position with two screws. | |

# 6 Installing the Control Card V

Be sure to disconnect the power plug before starting the work.

| Step | Work | Remarks |
|---|---|---|
| 1 | Open the copier's front cover (left, right). |  F03-600-01 |
| 2 | Remove the screw, and remove the hopper assembly right cover. | |
| 3 | Remove the screw, and remove the hopper assembly left cover. | |
| 4 | Remove the two fixing screws from the hopper assembly. | |
| 5 | Holding the right and left grips, pull out the hopper assembly to the front. |  F03-600-02 |
| 6 | Remove the copier's left side plate, and remove the three screws used to fix the control panel in place. |  F03-600-03 |

| Step | Work | Remarks |
|---|---|---|
| 7 | Remove the control panel relay connector and the two control card connectors; free the harness for the control card from the wire saddles behind the control panel; then, turn over the control panel. |  F03-600-04 |
| 8 | Remove the 13 screws, and remove the control panel back cover. |  F03-600-05 |
| 9 | Remove the mounting screw from the face plate; then, disengage the claw to remove the face plate from the card slot. |  F03-600-06 |
| 10 | Install the insulating sheet over the display window for the control card on the control panel. | |
| 11 | Peel the protection sheet from the control card. | |

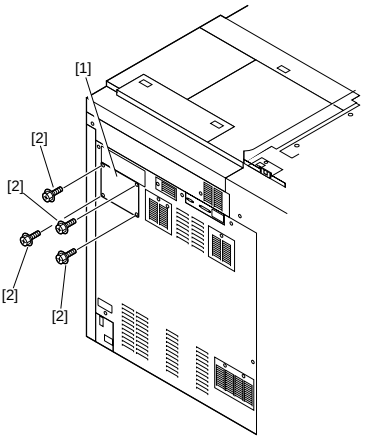
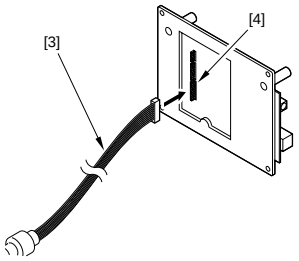
| Step | Work | Remarks |
|---|---|---|
| 12 | Fix the control card to the control panel using four self-tapping screws.<br>At this time, slide in and out a card, and fix the control card where the card slides in and out easily.<br>Further, check that the printer connector is centered over the hole. |  <br>F03-600-07 |
| 13 | Fix the grounding wire of the control card to the control panel. |  <br>F03-600-08 |
| 14 | Disconnect the short connector for the control card behind the control panel; then, connect the connector (4P) of the control card. |  <br>F03-600-09<br>  <br>F03-600-10 |

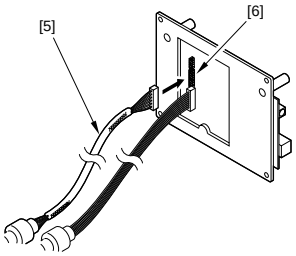
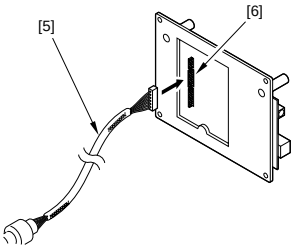
| Step | Work | Remarks |
|---|---|---|
| 15 | Peel the protective sheet from the control panel ratings plate of the control card. | |
| 16 | Attach the control panel ratings plate of the control card to the control panel. | |
| 17 | Fix the back cover to the control panel with 13 screws; then, connect the control relay connector to the control panel. | |
| 18 | Fix the control panel relay harness and the relay harness for the control panel in place with the wire saddles on the control panel back cover; then, install the control panel by reversing the steps used to remove it. | |
| 19 | Return the hopper assembly back to its original position, and fix it in place; then, install the left and right covers of the hopper assembly, and close the front covers. | |
| 20 | Turn on the copier's power switch, and check the operation of the control card. | |

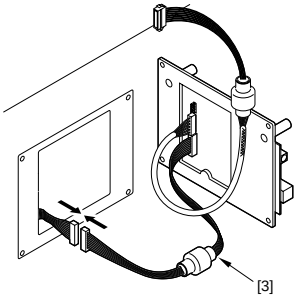
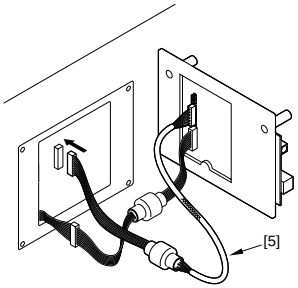
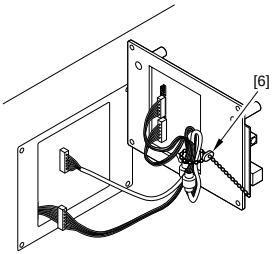
# 7 Installing the DA Unit-A1

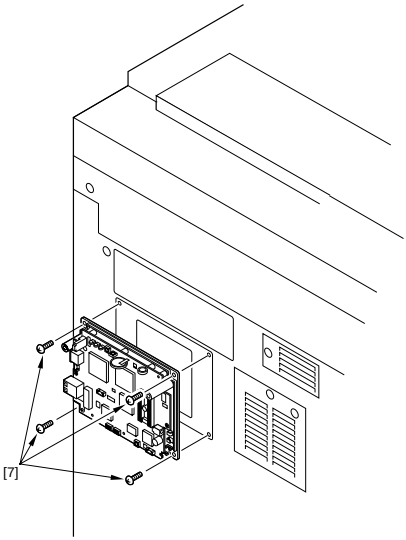
Be sure to observe the following when installing the DA unit to its host copier:

1. Check to make sure that the copier has properly been installed. Disconnect all power plugs.
2. Identify the screws by type (length, diameter) and location.
3. Store the settings data of the DA unit to the PC at the service station in advance. Likewise, store the settings data to the control server.

| Step | Work | Remarks |
|---|---|---|
| 1 | Remove the four screws [2], and detach the face plate [1] from the copier's rear cover. |  F03-700-01 |
| 2 | If a Card Reader-A1 is to be installed, connect the relay cable [3] (9-pin; included with the card reader) to the connector J7 [4] of the DA unit. |  F03-700-02 |

| Step | Work | Remarks |
|---|---|---|
| 3 | Connect the communication cable [5] to the connector J9 [6] of the DA unit. |  F03-700-03a (when using a card reader)<br>  F03-700-03b (when not using a card reader) |

| Step | Work | Remarks |
|---|---|---|
| 4 | If a Card Reader-A1 is to be installed, connect the relay cable [3] connected in step 2) to the host copier.<br><br>Connect the communication cable [5] to the host copier. |  <br>F03-700-04a<br>  <br>F03-700-04b |
| 5 | Bundle the communication cable with the cable clamp [6], and fix the clamp in place behind the DA unit. |  <br>F03-700-04c |

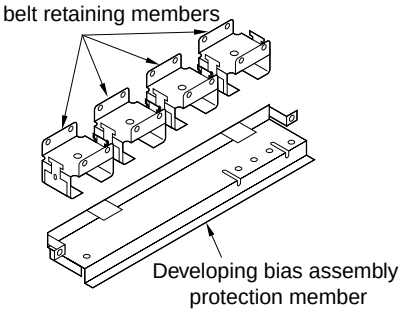
| Step | Work | Remarks |
|---|---|---|
| 6 | Be sure to fix the clamp in place where it will not get in the way.<br><br>Secure the DA unit to the rear cover of the host copier with four screws (M4x4) [7]. (Use the screws that come with the DA unit.) |  <br>F03-700-05 |
| 7 | For checks on operation and how to mount the cover for the DA unit, see the DA Unit-A1 Installation Procedure. | |

# 8 Using the Crane Transport kit

If you are using the transport kit to move the machine by suspending it on a crane, perform the following:

## 8.1 Items to Prepare

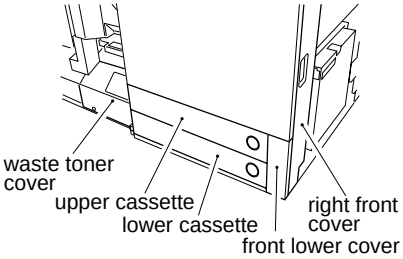
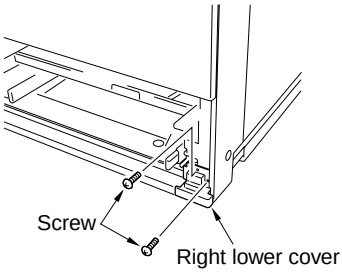
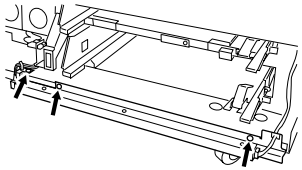
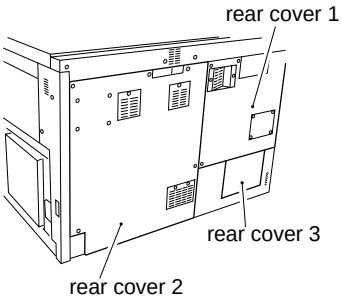
| | | |
|---|---|---|
| Crane Transport Kit | (FG6-1585-000) | |
| Contents | • Belt retaining member | 4pc. |
| | • Developing bias assembly protection member | 1pc. |



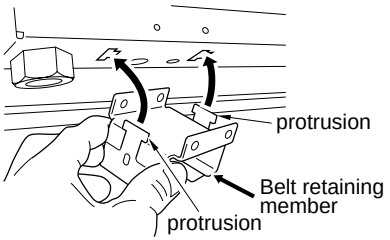
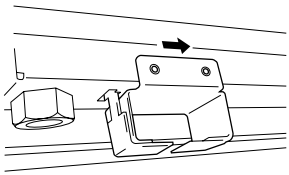
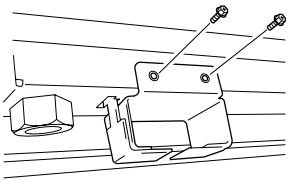

F03-801-01

# 8.2 Procedure

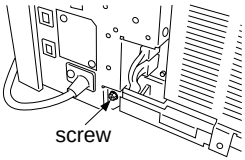
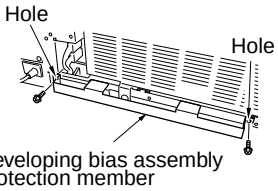
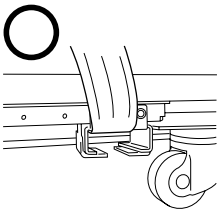
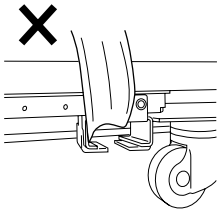
## 8.2.1 Preventing Deformation of Externals

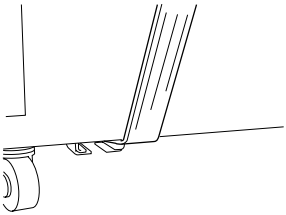
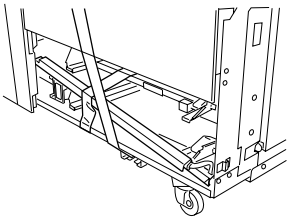
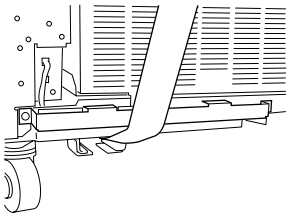
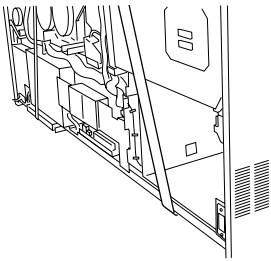
| Step | Work | Remarks |
|---|---|---|
| 1 | To protect the externals from deformation, remove the upper cassette, lower cassette, waste toner cover, right front cover, and front lower cover. |  F03-802-01 |
| 2 | Detach the right lower cover. |  F03-802-02 |
| 3 | Remove the harness base (cassette lower) secured to the base plate with three screws, and attach it temporarily to the cassette holder by means of duct tape or the like. |  F03-802-03 |
| 4 | Detach the rear cover1, 2, 3 cover. |  F03-802-04 |

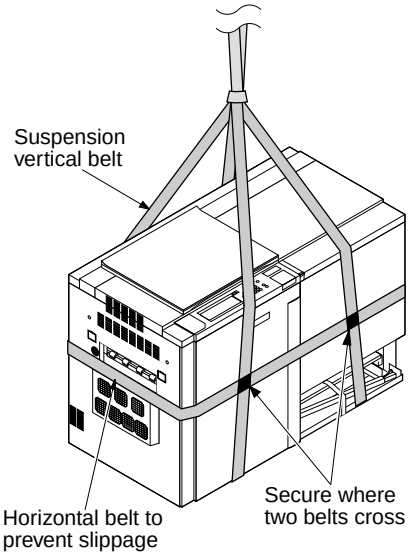
## 8.2.2 Mounting the Belt Retaining Members

| Step | Work | Remarks |
|---|---|---|
| 1 | Fit the protrusion of the top of the belt retaining member into the T-shaped opening in the bottom plate of the machine. |  F03-802-05 |
| 2 | Slide the belt retaining member toward the center of the machine so that the 6-mm dia. hole of the belt retaining member and its corresponding 4-mm dia. hole in the bottom plate match. |  F03-802-06 |
| 3 | Using the M4x8 screws used to keep the externals, secure the belt retaining member to the base plate.Be sure to tighten the screws while butting the belt retaining member upward and toward the center of the machine. |  F03-802-07 |
| 4 | Likewise, mount the belt retaining member to the right front, right rear, and left rear. | |

## 8.2.3 Mounting the Developing Bias Assembly Protection Member

| Step | Work | Remarks |
|---|---|---|
| 1 | Remove the M4x8 screw used to secure the power cord base in place. |  F03-802-08 |
| 2 | Secure the developing bias protection member(left side in the illsutration) to the power cord base using the M4x8mm screw removed in step1 as shown. Using the M4x8mm screw used to hold the rear cover, secure the developing bias assembly protection member to the rear of the base plate. |  F03-802-09 |
| 3 | Lead the belt through the gap of the belt retaining member. Before suspending the machine, apply light tension, and check to make sure that the belt is in contact with the top surface of the retaining member at four points. |  F03-802-10  F03-802-11 |

| Step | Work | Remarks |
|---|---|---|
| 4 | On the left side, put the belt directly to the left cover. (The left cover will warp when tension is imposed on the belt, but it will recover as soon as the belt is detached.) |  F03-802-12 |
| 5 | On the right side, secure the harness base removed previously by means of duct tape, and put the belt directly on the base plate. |  F03-802-13 |
| 6 | At the right rear, put the belt over the developing bias assembly protection member mounted previously. |  F03-802-14 |
| 7 | At the left rear, put the belt directly on the base plate. |  F03-802-15 |

| Step | Work | Remarks |
|---|---|---|
| 8 | Be sure to use soft cloth or cushioning material to prevent damage where the belt comes into contact with the machine.<br>Be sure to attach a horizontal belt as shown to keep the machine level and also to prevent the machine from slipping. |  <br>F03-802-16 |

# CHAPTER 4

# MAINTENANCE AND SERVICING

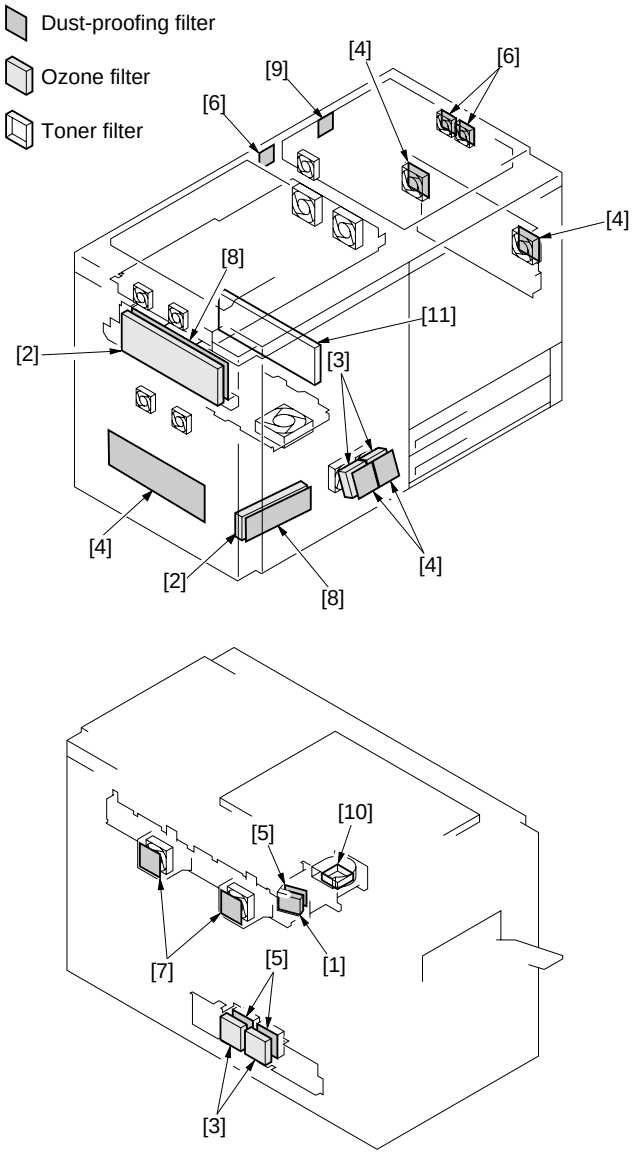
# 1 Periodically Replaced Parts

As of Dec 2000

| No. | Parts name | Parts number | Q'ty | Life | Remarks |
|---|---|---|---|---|---|
| 1 | Ozone filter 1 (primary charging assembly) | FB2-3702-000 | 1 | 100,000 | Or 1 yr. (FM6: primary charging assembly fan) |
| 2 | Ozone filter 2 (delivery assembly, general exhaust) | FB5-8775-000 | 2 | 100,000 | Or 1 yr. (FM1/2/3: delivery assembly exhaust fan FM21/22/23: general exhaust) |
| 3 | Ozone filter 3 (power supply assembly, pre-fixing exhaust) | FB2-3704-000 | 4 | 100,000 | Or 1 yr. (FM17/18: power supply assembly exhaust fan; FM35/36: pre-fixing exhaust fan) |
| 4 | Ozone filter 4 (reversing assembly exhaust) | FB5-8428-000 | 1 | 100,000 | Or 1 yr. (FM28/29/30/33: reversing assembly exhaust fan) |
| 5 | Dust-proofing filter 1 (laser unit, cooling, primary charging assembly, pre-fixing exhaust filter) | FA6-4538-000 | 7 | 100,000 | Or 1 yr. (FM4/5/6/17/18/35/36) |
| 6 | Dust-proofing filter 3 (digital unit suction filter) | FB2-3955-000 | 3 | 100,000 | Or 1 yr. (FM14/15/16: digital unit cooling fan) |
| 7 | Dust-proofing filter 4 (primary suction filter) | FB3-5608-020 | 2 | 100,000 | Or 1 yr. (FM8/9: primary charging assembly suction fan) |
| 8 | Dust-proofing filter 6 (delivery assembly, general exhaust) | FB3-6320-020 | 2 | 100,000 | Or 1 yr. (FM1/2/3: delivery assembly exhaust fan; FM21/22/23: general exhaust) |
| 9 | Dust-proofing filter 7 (Laser scanner cooling) | FB5-6264-000 | 1 | 100,000 | Or 1 yr. (FM24: laser scanner motor cooling fan) |
| 10 | Toner filter (primary charging assembly) | FB2-4383-000 | 1 | 100,000 | Or 1 yr. (FM6: primary exhaust fan) |
| 11 | Pre-fixing duct filter (Pre-fixing duct) | FF6-1117-000 | 1 | 50,000 | Or 1 yr. (FM35/36: pre-fixing exhaust fan) |


The above values are estimates only and are subject to change based on future data.
The parts numbers are subject to change according to engineering revisions.

T04-100-01




F04-100-01

As of Jan 2001

| No. | Parts name | Parts number | Q'ty | Life | Remarks |
|---|---|---|---|---|---|
| 12 | Transfer blade | FF6-0542-000 | 4 | 100,000 | |
| 13 | Primary grid | FB2-2958-000 | 4 | 50,000 | |
| 14 | Primary/pre-transfer charging wire | FY3-0030-000 | AR | 50,000 | 200V |
| | | FY3-0040-000 | AR | 50,000 | 230V |
| 15 | Primary charging wire cleaning pad (lower) | FF2-3551-000 | 4 | 50,000 | |
| | Primary charging wire cleaning pad (upper) | FF2-3552-000 | 4 | 50,000 | |
| 16 | Separation/pre-fixing charging wire | FY3-0030-000 | AR | 100,000 | 200V |
| | | FY3-0040-000 | AR | 100,000 | 230V |
| 17 | Separation/pre-fixing charging wire cleaning pad | FF5-5517-000 | 2 | 100,000 | |
| 18 | Separation/pre-fixing charging assembly gut wire | FA5-1876-000 | AR | 100,000 | |
| 19 | Cleaning blade (photosensitive drum cleaner) | FB5-9745-000 | 4 | 80,000 | |
| 20 | Scoop-up sheet (photosensitive drum cleaner) | FB2-2901-000 | 4 | 80,000 | When replacing the cleaning blade |
| 21 | No. 2 scoop-up sheet (SALT sensor) | FB2-2924-000 | 4 | 80,000 | When replacing the cleaning blade |
| 22 | Cleaner side seal (front; photosensitive drum cleaner) | FF6-4166-000 | 4 | 80,000 | When replacing the cleaning blade |
| 23 | Cleaner side seal (rear; photosensitive drum cleaner) | FF6-4167-000 | 4 | 80,000 | When replacing the cleaning blade |
| 24 | Cleaner end seal(front; photosensitive drum cleaner) | FF6-1105-000 | 4 | 80,000 | When replacing the cleaning blade |
| 25 | Cleaner end seal (rear; photosensitive drum cleaner) | FF6-1106-000 | 4 | 80,000 | When replacing the cleaning blade |
| 26 | Transfer web plate | FF6-0518-000 | 1 | 100,000 | |
| 27 | Polishing roller backup | FF6-1348-000 | 1 | 100,000 | |


The above values are estimates only and subject to change based on future data. Likewise, the parts numbers are subject to change to accommodate engineering revisions.

T04-100-02

# 2 Consumables and Durables

## 2.1 Copier

### 2.1.1 By the Copier's Hard Counter

As of Jan 2001

| No. | Parts name | Parts number | Q'ty | Life | Remarks |
|---|---|---|---|---|---|
| 1 | Fixing oil | FG5-3918-050 | 2 | 40,000 | 2 LT (1 L/bottle); as a rule, by the user. |
| 2 | Starter developer (Y) | F42-5032 | 1 | 50,000 | To be purchased by the user. |
| 3 | Starter developer (M) | F42-5022 | 1 | 50,000 | To be purchased by the user. |
| 4 | Starter developer (C) | F42-5012 | 1 | 50,000 | To be purchased by the user. |
| 5 | Starter developer (Bk) | F42-5002 | 1 | 50,000 | To be purchased by the user. |
| 6 | Upper fixing roller | FB5-6459-000 | 1 | 50,000 | |
| 7 | Lower fixing roller | FB5-6461-000 | 1 | 50,000 | |
| 8 | Oil removing roller (transfer belt assembly) | FB3-3228-010 | 1 | 50,000 | |
| 9 | Transfer belt cleaning belt | FB5-8704-000 | 1 | 50,000 | |
| 10 | Transfer belt | FB5-6369-000 | 1 | 300,000 | |
| 11 | Transfer belt cleaning blade | FB5-6342-000 | 1 | 100,000 | |
| 12 | Upper fixing cleaning belt | FB3-9463-000 | 1 | 100,000 | |
| 13 | Lower fixing cleaning belt | FB3-7088-000 | 1 | 100,000 | |
| 14 | Oil applying blade (Fixing assembly) | FB2-6467-000 | 1 | 100,000 | |
| 15 | Oil applying roller (fixing assembly) | FG6-6427-000 | 1 | 100,000 | |
| 16 | Oil filter (fixing assembly) | FB2-4114-000 | 1 | 100,000 | |
| 17 | Oil applying cleaning blade (fixing assembly) | FB3-9466-000 | 1 | 100,000 | |
| 18 | Curl removing roller (lower) | FG5-8277-000 | 1 | 150,000 | |
| 19 | Belt guide | FB5-8705-000 | 1 | 300,000 | |
| 20 | Pape dust removing plastic sheet | FF6-1589-000 | 1 | 500,000 | |
| 21 | Fixing heater (upper) | FH7-4678-000 | 1 | 200,000 | 200 V |
| 22 | | FH7-4680-000 | 1 | 200,000 | 230 V |
| 23 | Fixing heater (lower) | FH7-4679-000 | 1 | 200,000 | 200 V |
| 24 | | FH7-4681-000 | 1 | 200,000 | 230 V |

Memo

The above values are estimates only and are subject to change based on future data. The parts numbers are subject to change to reflect engineering revisions.

T04-201-01

As of Jan 2001

| No. | Parts name | Parts number | Q'ty | Life | Remarks |
|---|---|---|---|---|---|
| 25 | Oil removing blade (fixing assembly) | FB3-2047-000 | 1 | 200,000 | |
| 26 | Delivery separation claw | FB3-3215-000 | 4 | 200,000 | |
| 27 | Polishing roller (transfer belt assembly) | FB6-0699-000 | 1 | 300,000 | 50,000 in case of only two-sided copy. |
| 28 | Primary charging assembly | FG6-6269-020 | 4 | 250,000 | |
| 29 | Developing assembly (C, M, Y) | FG6-6276-000 | 3 | 500,000 | |
| 30 | Developing assembly (Bk) | FG6-6277-000 | 1 | 500,000 | |

Memo

The above values are estimates only and are subject to change based on future data. The parts numbers are subject to change to reflect engineering revisions.

T04-201-02

### 2.1.2 By the Soft Counter in Service Mode (COUNTER)

As of Jan 2001

| No. | Parts name | Q'ty | Parts number | Life | Remarks |
|---|---|---|---|---|---|
| 1 | Feeding roller (duplexing unit) | 2 | FF-5743-000 | 100,000 | • Cassette |
| 2 | Pick-up roller (front; cassette 1, 2) | 2 | FB4-2033-000 | 250,000 | • Multifeeder |
| 3 | Pick-up roller (rear; cassette 1, 2) | 2 | FB4-2033-000 | 250,000 | • Duplexing unit |
| 4 | Feeding roller (cassette 1, 2) | 4 | FB4-2034-000 | 250,000 | Paperdeck For |
| 5 | Separation roller (cassette 1, 2) | 2 | FB5-6586-020 | 250,000 | each pick-up |
| 6 | Pick-up roller (paper deck) | 2 | FF2-5674-020 | 100,000 | holder, the actual |
| 7 | Feeding roller (paper deck) | 1 | FF2-4785-020 | 100,000 | number of copies |
| 8 | Separation roller (paper deck) | 1 | FF2-6312-020 | 100,000 | made (reading of |
| 9 | Pick-up roller (multifeeder) | 2 | FF5-4327-000 | 50,000 | software |
| 10 | Feeding roller (multifeeder) | 1 | FF5-4331-000 | 50,000 | counter). |
| 11 | Separation roller (multifeeder) | 1 | FF2-4710-000 | 50,000 | |
| 12 | Belt guide | 4 | FB5-8705-000 | 150,000 | |
| 13 | Scanning lamp | 1 | FH7-3349-000 | 100,000 | Number of scans by original scanner |

Memo

The above values are estimates only and are subject to change based on future data. The parts numbers are subject to change to reflect engineering revisions.

T04-201-03

## 2.2 Buffer Pass Unit-B1

As of Jan 2001

| No. | Parts name | Q'ty | Parts number | Life | Remarks |
|---|---|---|---|---|---|
| 1 | Curl removing roller | 2 | FB5-8928-000 | 200,000 | |
| 2 | Static eliminating brush | 1 | FA3-3129-000 | 1,000,000 | |

T04-202-01

## 2.3 Paper Deck-K1/J1

As of Jan 2001

| No. | Parts name | Q'ty | Parts number | Life | Remarks |
|---|---|---|---|---|---|
| 1 | Pickup roller | 2 | FF2-5674-020 | 100,000 | |
| 2 | Feed roller | 1 | FF2-4785-020 | 100,000 | |
| 3 | Separation roller | 1 | FF2-6312-020 | 100,000 | |

T04-203-01

# 3 Scheduled Servicing Procedure

1. As a rule, provide scheduled servicing every 50,000 copies.
2. Before setting out for a visit, check the service record, and take parts expected for replacement.

| Step. | Work | Checks | Remarks |
|---|---|---|---|
| 1 | Meet the person in charge. | Check the general condition. | |
| 2 | Record the counter reading. | Check the faulty copies. | |
| 3 | Make test copies in Direct, Reduce, and Enlarge. | a. Image density<br>b. Soiling of white background<br>c. Character clarity<br>d. Leading edge margin<br>e. Left/right margin<br>f. Fixing/registration error; soiled back<br>g. Abnormal noise<br>h. Counter operation | <br><br><br>Standard:2.5 ±1.5 mm (Direct)<br>Standard:2.0 ±1.0 mm (Direct) |
| 4 | Provide scheduled servicing (Scheduled servicing chart) according to the number of copies made. | | |
| 5 | Check the waste toner, transfer cleaner waste toner and fixing oil. | | Exercise care when sliding out the waste toner box. Excess impact can cause the toner to fly astray inside the machine. If toner flew astray, check the holding tray, pre-holding tray feeding assembly, and pre-fixing assembly feeding assembly for soiling. |
| 6 | Clean soiled areas inside the machine. | | |
| 7 | Make sample copies. | | |
| 8 | Execute automatic gradation correction control in user mode. | | |
| 9 | Make sample copies. | | |
| 10 | Arrange the sample copies, and clean up the area around the machine. | | |
| 11 | Record the latest counter reading. | | |
| 12 | Fill out the Service Sheet, and report to the person in charge. | | |

T04-300-01

# 4 Scheduled Maintenance Chart

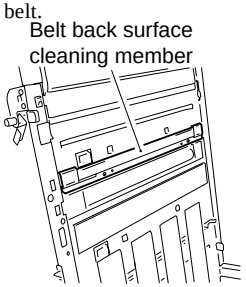
Do not use solvents or oils other than those indicated.
△ : Clean ● : Replace × : Lubricate □ : Adjust

## 4.1 Copier

| Unit | Part | Maintenance every 50,000 | every 80,000 | every 100,000 | every 150,000 | others | Remarks |
|---|---|---|---|---|---|---|---|
| External control | Copyboard glass | △ | | | | | |
| | Copyboard sheet | △ | | | | | |
| | Ozone filter | | | ● | | | Or 1 yr. |
| | Dust-proofing filter | | | ● | | | Or 1 yr. |
| | Toner filter | | | ● | | | Or 1 yr. |
| | Pre-fixing duct filter | ● | | | | | Or 1 yr. |
| Scanner system | Scanner rail | | | | | △× | When replacing the lamp. |
| Original exposure system | Dust-proofing glass | | | | | △ | When replacing the drum. |
| | Scanner mirror (Nos. 1 through 3) | | | | | △ | When replacing the lamp. |
| | Reflecting shade | | | | | △ | When replacing the lamp. |
| | Standard white plate | | | | | △ | When replacing the lamp. |
| Charging system | Primary/pre-primary charging wire, grid | ● | | | | | |
| | Primary charging wire cleaning pad (upper/lower) | ● | | | | | |
| | Primary, pre-charging assembly | △ | | | | | |
| | Separation, pre-fixing charging assembly | | | ● | | | |
| | Separation/Pre-fixing charging wire cleaning pad | | | ● | | | |
| | Separation/Pre-fixing charging gut wire | | | ● | | | |
| | Separation/Pre-fixing charging assembly | | | △ | | | |
| Photosensitive drum cleaner | Scoop-up sheet | | ● | | | | When replacing the cleaning blade |
| | No. 2 scoop-up sheet (SALT sensor) | | ● | | | | When replacing the cleaning blade |
| | Cleaner side seal | | ● | | | | When replacing the cleaning blade |
| | Cleaner end seal | | ● | | | | When replacing the cleaning blade |
| | Cleaning blade | | ● | | | | |

T04-401-01

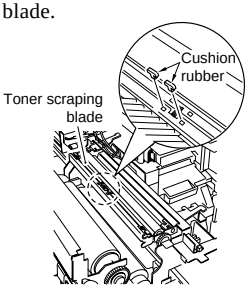
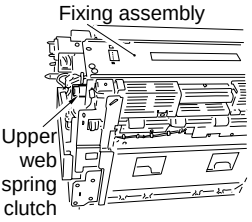
| Unit | Part | Maintenance every 50,000 | every 100,000 | every 150,000 | others | Remarks |
|---|---|---|---|---|---|---|
| Developing system | Developing assembly upper cover (*1) | | | | △ | When replacing the cleaner blade or the drum. |
| | Developing assembly lower cover (*2) | | | | △ | |
| | Developing assembly casing (*2) | | | | △ | |
| | Bearing (*2) | | | | △ | |
| Transfer system | Transfer blade | △ | ● | | | |
| | Transfer belt drive roller | | | △ | | When replacing the transfer belt. |
| | Transfer belt sub roller | | | △ | | |
| | Transfer belt swing roller | | | △ | | |
| | Internal stack removing roller | | | △ | | When replacing the trandfer belt. |
| | Transfer web board | | ● | | | When replacing the transfer belt. |
| | Polishing roller backup | | ● | | | |
| Fixing assembly | Inlet guide plate | △ | | | | |
| | Delivery separation claw | △ | | | | |
| | Thermistor upper | | | | △ | When replacing the upper/ lower fixing roller. |
| | Thermistor lower | | | | △ | When replacing the upper/ lower fixing roller. |
| | Oil applying blade | △ | | | | |




F04-401-01

(*1) For details on cleaning instructions, see CLC1000 Service Manual “Chapter 4 Mechanical System”.
(*2) For details on cleaning instructions, see “Chapter 2 New Function”.

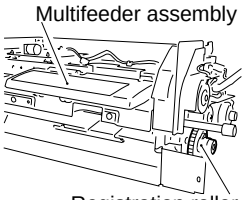
T04-401-02

| Unit | Part | Maintenance every 50,000 | Maintenance every 100,000 | Maintenance every 150,000 | Maintenance others | Remarks |
|---|---|---|---|---|---|---|
| Fixing assembly | Toner scraping blade | △ | | | | Caution : Remove the cushion rubber piece (*3) indicated in the drowing whenever you are removing the toner scraping blade.   F04-401-02 |
| | Oil removing blade | | | | △ | When replacing the lower fixing roller. |
| | Upper cleaning belt spring clutch | | × | | |   F04-401-03 |

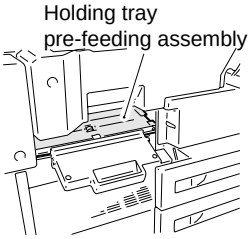
(*3) Cushion rubber is used as the member which prevent the fixing roller from hurting when the copier is transported.

T04-401-03

| Unit | Part | Maintenance every 50,000 | every 100,000 | every 150,000 | others | Remarks |
|---|---|---|---|---|---|---|
| Pick-up/feeding system | Pick-up roller | △ | | | | |
| | Feeding roller | △ | | | | |
| | Separation roller | △ | | | | |
| | Pre-fixing feeding (top face/belt) | △ | | | | |
| | Transfer separation guide | △ | | | | |
| | Registration roller releasing spring clutch | | | | × | Every 500,000 copies. |
| Others | Waste toner box | △ | | | | Collect waste toner |
| | SALT sensor/shutter* | | | | △ | At time of replacing drum/developer |
| | SALT sensor lower plastic sheet* | | | | △ | At time of replacing drum/developer |
| | Auto gradation correction | | | | □ | At time of replacing drum/developer |
| | Image position correction CCD unit (shutter assembly/LED assembly)* | △ | | | | |
| | Developing assembly lower plastic sheet | | | | △ | |
| | Pre-holding tray feeding assembly | △ | | | | |



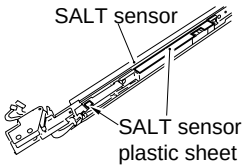
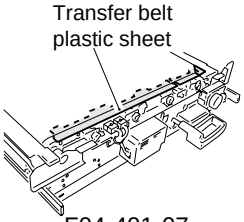

F04-401-04




F04-401-05

*For details on cleaning, instructions, see CLC1000, Service Manual “Chapter 4 Mechanical System”.

T04-401-04

| Unit | Location | Maintenance every 50,000 | every 100,000 | every 150,000 | others | Remarks |
|---|---|---|---|---|---|---|
| Others | Duplexing unit (inside) | △ | | | | |
| | SALT sensor plastic sheet* | | △ | | |  F04-401-06 |
| | Transfer unit cover/ transfer belt plastic sheet (front) | △ | | | |  F04-401-07 |
| | Transfer cleaner waste toner box | △ | | | | Collect waste toner |

*For details on cleaning, instructions, see CLC1000, Service Manual “Chapter 4 Mechanical System”.

T04-401-05

## 4.2 Buffer Pass Unit - B1

| Unit | Location | Maintenance every 50,000 | every 100,000 | every 150,000 | others | Remarks |
|---|---|---|---|---|---|---|
| | Guide | △ | | | | |
| | Spring clutch | × | | | | Use special oil |

T04-402-01

## 4.3 Paper Deck - J1/K1

| Unit | Location | Maintenance every 50,000 | every 100,000 | every 150,000 | others | Remarks |
|---|---|---|---|---|---|---|
| | Pickup roller | △ | | | | |
| | Feed roller | △ | | | | |
| | Separation roller | △ | | | | |

T04-403-01

# CHAPTER 5

# TROUBLESHOOTING IMAGE FAULTS/ MALFUNCTIONS

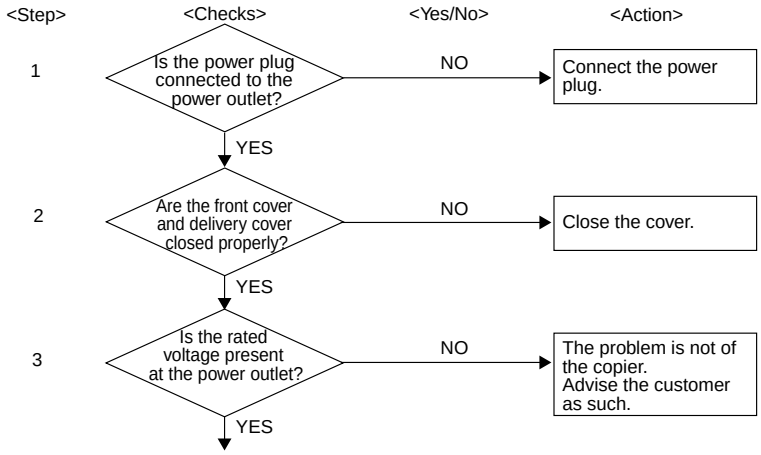
# 1 Guide to Table

In this Service Manual, work procedures are given in the form of tables instead of flow charts used generally. Familiarize yourself by studying the example below.

EX. AC power is absent.

| Cause | Step | Checks | Yes/No | Action |
|---|---|---|---|---|
| Power plug | 1 | Is the power plug connected to the power outlet? | NO | Connect the power plug |
| Covers | 2 | Are the front cover and delivery cover closed properly? | NO | Close the cover |
| Power sourse | 3 | Is the rated voltage present at the power outlet? | NO | The problem is not of the copier.<br>Advise the customer as such. |
| | 4 | Is the rated voltage present between J1-1 and -2 (near cord plate)? | YES | Go to step 6. |

- To find out the cause (problem part) of a single problem, refer to the item under "Cause." For "AC power is absent," the cause may be the power plug, covers, power source, or others.
- To find out the checks to make or remedies to provide for a single problem, refer to the "Checks" and "Action"; make checks, answer to the questions YES or NO, and provide remedies accordingly. If the answer is otherwise, proceed to the next step.




- Checks on the voltage using a tester; the description "Check the voltage between J109-1(+) and J109-2(-) on the DC controller PCB" means that the positive probe of the meter should be placed on J109-1(+) and the negative probe, on J109-2(-).

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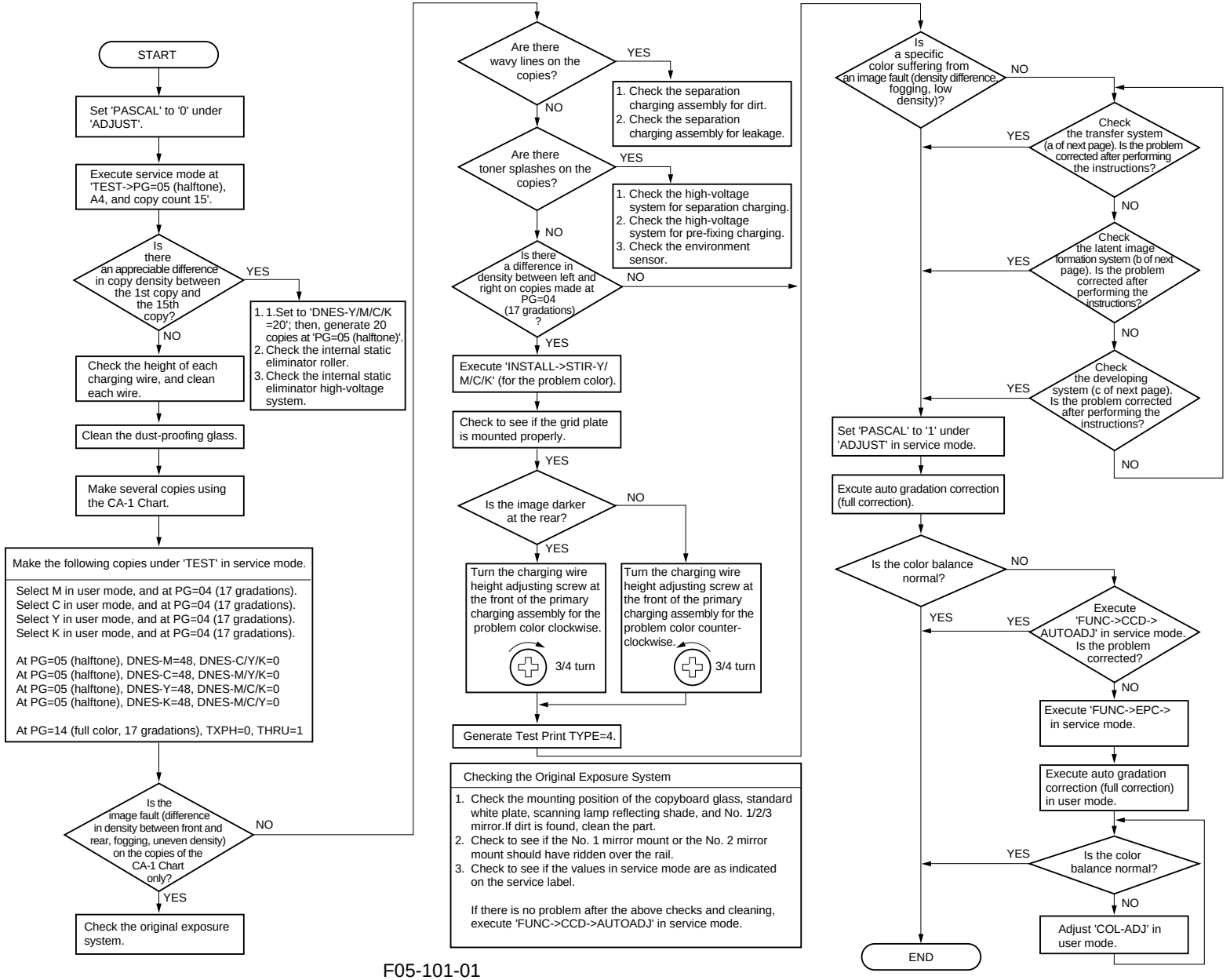
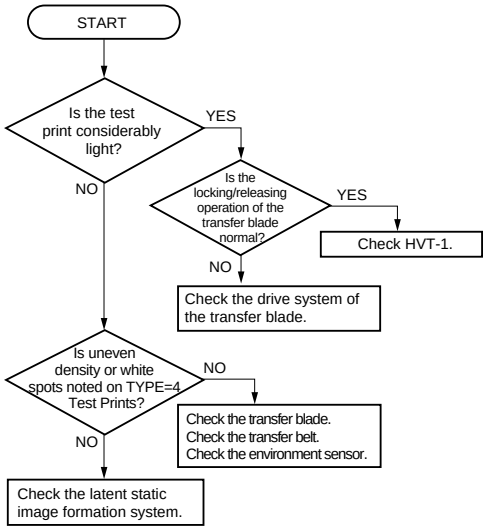
# 1.1 Image Adjustment Basic Procedure

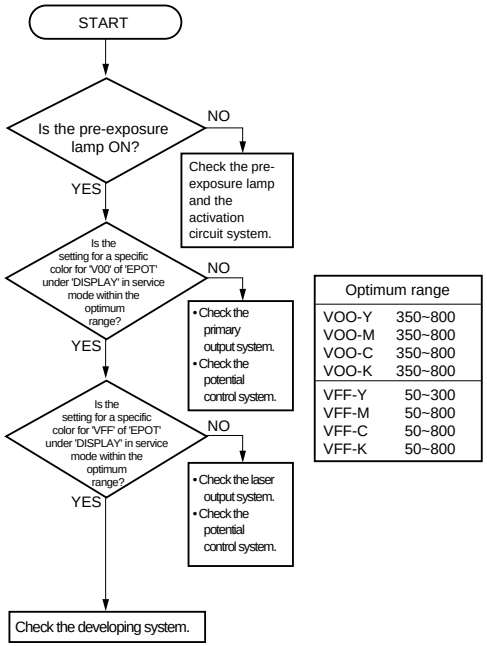



F05-101-01

a. Checking the Transfer System

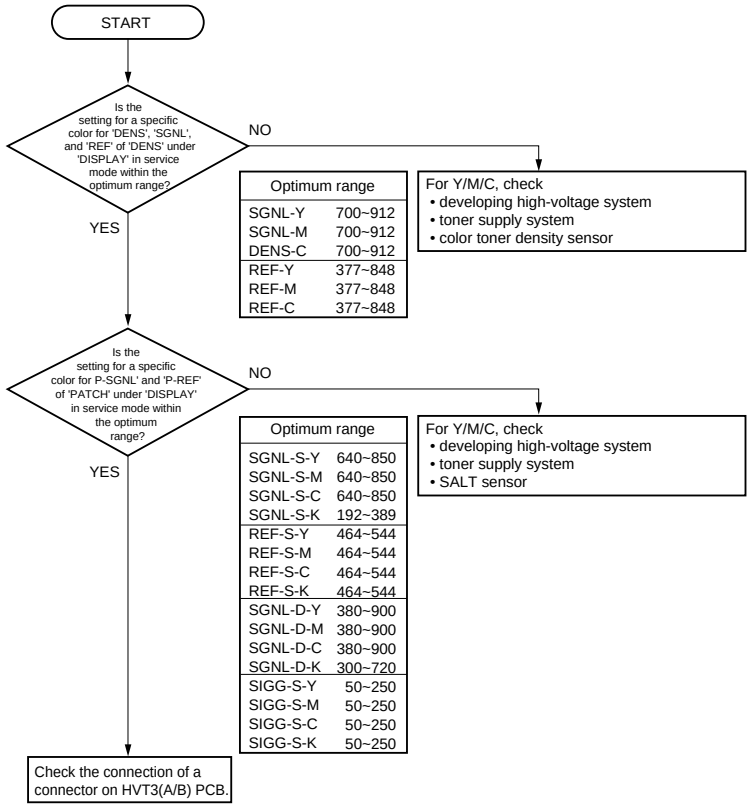



b. Checking the Latent Static Image Formation System




| Optimum range | |
|---|---|
| VOO-Y | 350~800 |
| VOO-M | 350~800 |
| VOO-C | 350~800 |
| VOO-K | 350~800 |
| VFF-Y | 50~300 |
| VFF-M | 50~800 |
| VFF-C | 50~800 |
| VFF-K | 50~800 |

c. Checking the Developing System




| Optimum range | |
|---|---|
| SGNL-Y | 700~912 |
| SGNL-M | 700~912 |
| DENS-C | 700~912 |
| REF-Y | 377~848 |
| REF-M | 377~848 |
| REF-C | 377~848 |

| Optimum range | |
|---|---|
| SGNL-S-Y | 640~850 |
| SGNL-S-M | 640~850 |
| SGNL-S-C | 640~850 |
| SGNL-S-K | 192~389 |
| REF-S-Y | 464~544 |
| REF-S-M | 464~544 |
| REF-S-C | 464~544 |
| REF-S-K | 464~544 |
| SGNL-D-Y | 380~900 |
| SGNL-D-M | 380~900 |
| SGNL-D-C | 380~900 |
| SGNL-D-K | 300~720 |
| SIGG-S-Y | 50~250 |
| SIGG-S-M | 50~250 |
| SIGG-S-C | 50~250 |
| SIGG-S-K | 50~250 |

F05-101-02

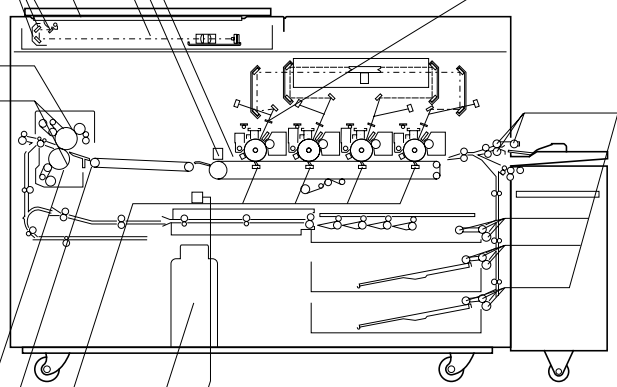
# 1.2 Points of the Scheduled Servicing

| | | |
|---|---|---|
| Pattern reading unit (LED/shutter) | Lint-free paper<br>Blower brush | Cleaning (Note 1) |
| Separation/Pre-fixing charging assembly | Alcohol<br>Lint-free paper | Cleaning |
| Scanner rail | Alcohol | Cleaning (Note 4) |
| Standard white plate | Alcohol<br>Lint-free paper | Cleaning (Note 4) |
| No. 1 through No. 3 mirror | Blower brush | Cleaning (Note 2)<br>(Note 4) |
| Reflecting shade | | |

| Parts | Tools/solvents | Work/remarks |
|---|---|---|
| Oil applying blade | Alcohol<br>Lint-free paper | Cleaning |
| Thermistor (upper / lower) | Solvent<br>Lint-free paper | Cleaning |
| Upper separation claw | Solvent<br>Lint-free paper | Cleaning |

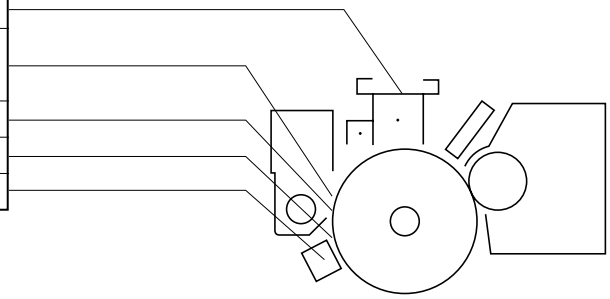
| Parts | Tools/solvents | Work/remarks |
|---|---|---|
| Oil removing blade | Alcohol<br>Lint-free paper | Cleaning |
| Inlet guide plate | Solvent | Cleaning |
| Transfer blade | Lint-free paper<br>Cotton swab | Cleaning |
| Waste toner box | | Collecting the box |
| Transfer belt waste toner box | | Collecting the box |

| Parts | Tools/solvents | Work/remarks |
|---|---|---|
| Dust-proofing glass | Lint-free paper<br>Blower brush | Cleaning (Note 3) |
| Pick-up/feeding/separation roller | Alcohol<br>Lint-free paper | Cleaning |



Note 1:
Take care not to apply force to the LED or to keep the CCD free of dust.
Note 2:
Take care not to touch the mirror or the lens and to keep the CCD free of dust.
Note 3:
Perform when performing the photosensitive drum.
Note 4:
At time of replacing the scanning lamp.

| Parts | Tools/solvents | Work/remarks |
|---|---|---|
| Primary/pre-primary charging assembly | Alcohol<br>Lint-free paper | Cleaning |
| Cleaner side seal | Blower brush | Cleaning (Note 3) |
| Cleaner end seal | | |
| Scoop-up sheet | Lint-free paper<br>Blower brush | Cleaning (Note 3) |
| No. 2 scoop-up sheet | Lint-free paper<br>Blower brush | Cleaning (Note 3) |
| SALT sensor/Shutter | Lint-free paper<br>Blower brush | Dry-wiping; do not use solvent. |



F05-102-01

# 2 Standards and Adjustments

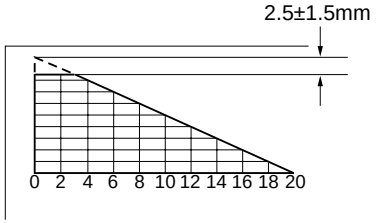
## 2.1 Image-Related Parts

### 2.1.1 Non-Image Width

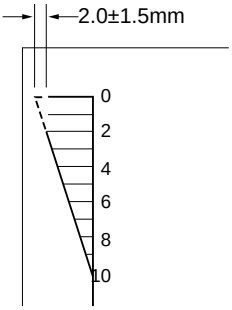
The non-image width on copies made in Direct with original detection OFF must be as follows:

Leading edge: 2.5 ±1.5 mm (2.5 ±2.0 mm)
Left/right: 2.0 ±1.5 mm (2.0 ±1.5 mm)

The value in parentheses refers to the second side of a two-sided copy.




F05-201-01 Leading Edge Non-Image Width



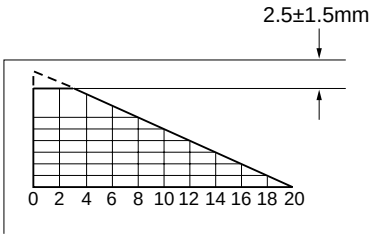

F05-201-02 Left/Right Non-Image Width

## 2.1.2 Image Margin

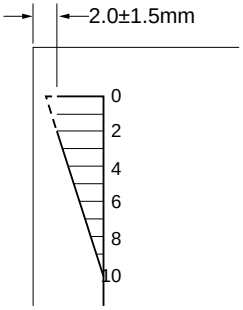
The image margin on copies made in Direct with original detection OFF must be as follows:

Leading edge: 2.5 ±1.5 mm (2.5 ±2.0 mm)
Left/right: 2.0 ±1.5 mm (2.0 ±1.5 mm)

The value in parentheses refers to the second side of a two-sided copy.




F05-201-03 Leading Edge Margin




F05-201-04 Left/Right Image Margin

## 2.1.3 Checking and Adjusting the Non-Image Width and Margin

Make adjustments in the following order:

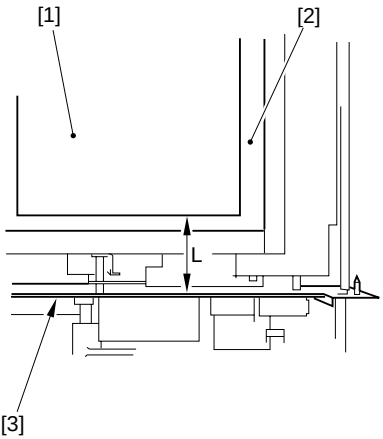
- Left-right registration
- Image margin
- Image reading start position (ADJ-XY)
- Image margin (check)

### a. Adjusting the Left/Right Registration

1) Make 10 copies each using all cassettes, multifeeder, duplexing unit, and paper deck, and check the left/right margin.
2) If the margin is not as indicated, perform the following:

• Standard Registration

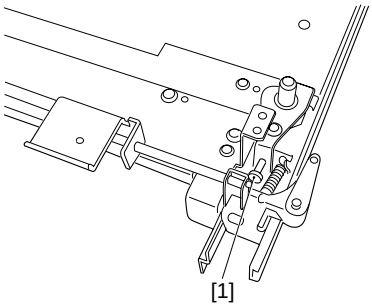
3) Select 'FUNC > ATTRACT'.
4) Using 'ATT-SLCT', select the pick-up assembly which is outside the specification.
5) Press 'ATT-ON'.
   (Paper will be picked up automatically and stopped retained on the transfer belt.)
6) Make adjustments so that the distance L between the front edge of paper [1] and the front side plate [3] of the transfer unit [2] is 74.7 ±0.5 mm (reference). (In the case of LTR, 83.7 ±0.5 mm.)




F05-201-05 Standard Registration

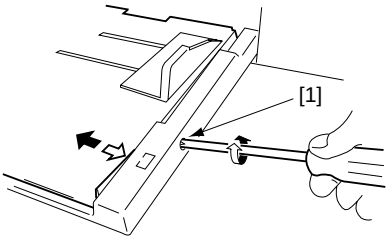
• Using the Cassette as the source of Paper

1) Slide out the cassette from the machine.
2) Remove the cassette front cover.
3) Turn the adjusting screw [1] to adjust the position of the horizontal registration plate.
   - To increase the registration at the front, turn the adjusting screw to the left.
   - To increase the registration at the rear, turn the adjusting screw to the right.
4) After the adjustment, be sure to execute 'paper width basic value registration'.



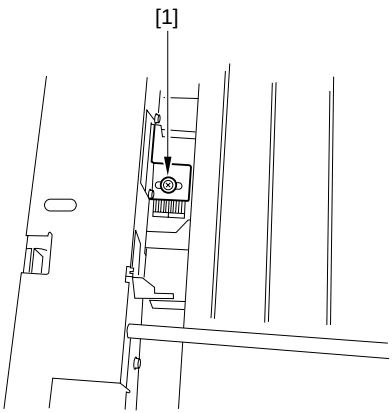

F05-201-06 (top view of cassette stay)

- Using the Multifeeder as the source of Paper
  Turn the screw [1] to move the tray position so that the standard value is attained.




F05-201-07

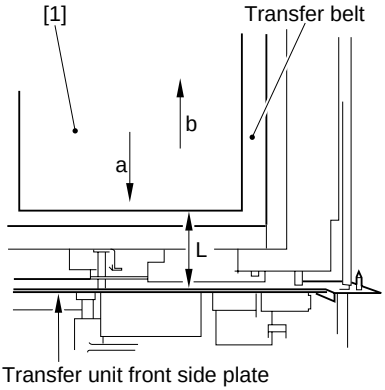
- Using the Two-Sided Copies as the source of Paper
  Loosen the screw [1], and adjust the position of the paper guide plate so that the standard value is attained.



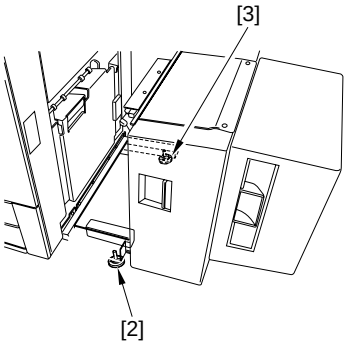

F05-201-08

- Using the Paper Deck as the source of Paper

1) To move the paper [1] in the direction of 'a', turn the front adjuster [2] so that it will move down. (A full turn causes a shift of about 1 mm.)
   If the displacement is excessive, turn the rear adjuster so that it will move up.




F05-201-09




F05-201-10

2) To move the paper in the direction of 'b', turn the rear adjuster [3] so that it will move down.
   If the displacement is excessive, turn the front adjuster [2] so that it will move up.

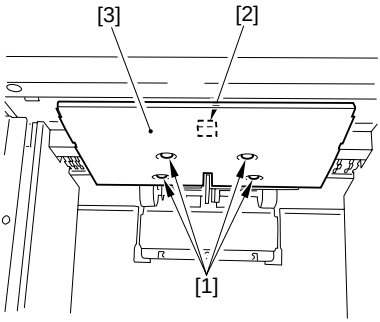
■ If the left/right registration fails to be as indicated using the adjusters

3) Start the copier's service mode, and make the following selections: 'ADJUST>FEED-ADJ'.
4) With the 'FEED-ADJ' screen on the display, press the Start key.
5) Check the left/right registration, and adjust the image write start position in main scanning direction using 'DECK-ADJ', and then adjust the image write start position in sub scanning direction using 'VSYC-ADJ'.

■ If the left right registration fails to be as indicated in service mode.

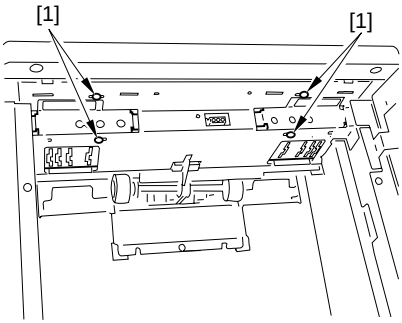
6) Check to make user that the copier's left/right registration is correct.

7) Remove the four screws [1], and disconnect the connector [2]; then, remove the paper deck heater [3].




F05-201-11

8) Loosen the two screws [1] (rear, front; 1 each) on the upper mounting plate of the side guide plate, and make adjustments.

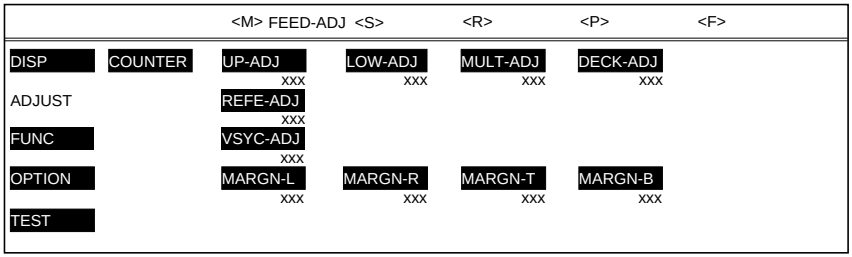



F05-201-12

- Do not change the paper width.
- Limit the adjustment to ± 1.0 mm to prevent interference between the side guide plate and the lifter plate.

9) After adjusting the left/right registration, mount the side guide plate and the deck heater.

b. Adjusting the Image Margin

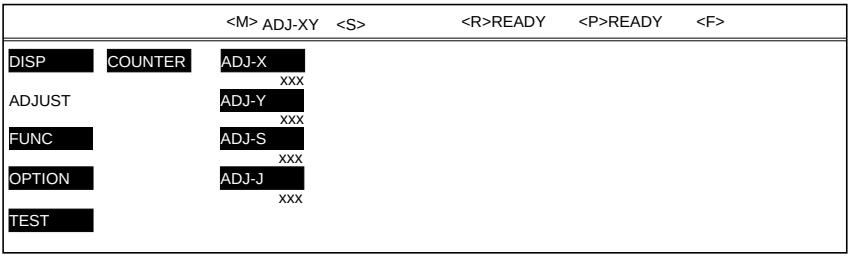



F05-201-13

1) Start service mode, and select ‘ADJUST > FEED-ADJ’.
2) While the ‘FEED-ADJ’ screen is on, press the Start key.
3) If the image margin is not as indicated, adjust the image writing start position in the main scanning direction using ‘UP-ADJ’, ‘LOW-ADJ’, ‘MULT-ADJ’, ‘DECK-ADJ’, and ‘REFE-ADJ’ and using ‘VSYC-ADJ’ in the sub scanning direction.

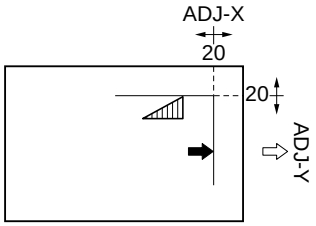
Then, adjust the non-image width using ‘MARGIN-L, -R, -T, -B’.
(For details, see. “SERVICE MODE.”)

c. Adjusting the Image Reading Start Position (ADJ-XY)




F05-201-14

1) Start service mode, and select 'ADJUST > ADJ-XY'.
2) While the 'ADJ-XY' screen is on, press the Start key.
   - The appropriate copying mode will be set automatically, and a copy is made with a shift of about 20 mm as shown in F05-201-15.
3) If a portion of the image is missing, decrease the setting of 'ADJ-X' and 'ADJ-Y'.
4) If an area outside the image area is copied, increase the setting of 'ADJ-X' and 'ADJ-Y'.
5) Press the Start key once again, and check the output.
6) Press the Reset key.




F05-201-15

### d. Adjusting the Pick-Up Timing (paper deck)

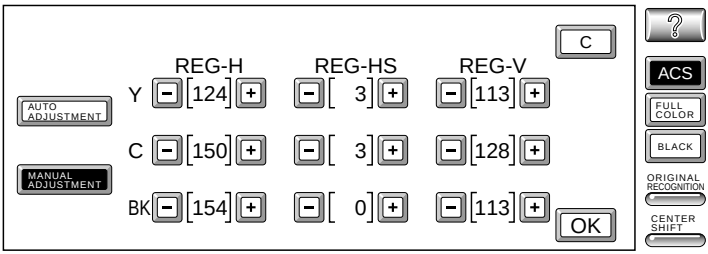
If a discrepancy is found in the image leading edge margin on 'LTR' copies made using the paper deck, correct the problem by performing the following steps:

1) Place three or more sheets of 'LTR' paper in the paper deck.
2) Start service mode, and select 'FUNC>P-UP-TMG'.
3) Execute 'PK-ADJ-D'.
   - The machine picks up a single sheet of paper.
4) Execute 'AK-ADJ-D' for a total of three times to pick up three sheets of paper.
5) When pick-up has ended, press 'D-SEND-D'.

## 2.1.4 Image Positioning Correction

- In case image position shifts in every color as well as the image positioning correction (Service Mode 'FUNC>IMG-REG>AUTO-ADJ') did not provide any effects on the image shift problem, follow the below procedures for adjustments.

1) Select the service mode 'TEST>PG>TYPE'. Set to "6 (lattice pattern)" and press the start button. (A test print will be printed out.)
2) Select the service mode 'OPTION>P-OPT>REG-DISP'. Set to "1" and then press the OK key.
3) Press the reset key twice to exit from the service mode.
4) Press the user mode key to enter the user mode.
5) Select "Image Positioning Correction." (The display indicates as below.)




F05-201-16

6) Select "Manual Correction" key.
7) On the test print already made, on the basis of magenta color, measure how mm other three colors are shifting from the magenta.
8) In terms of any shifts in main scanning direction, make an adjustment by changing values of REG-H(rough adjustment) / REG-HS (fine adjustment).
   REG-H: In case the numerical value is increased by "+16," the position will shift to the rear side by 1 mm.
   REG-HS: In case the numerical value is increased by "+32," the position will shift to the rear side by 0.5mm.
9) In terms of any shifts in sub-scanning direction, make an adjustment by changing the REG-V value.
   REG-V: In case the numerical value is increased by "+16," the position will shift to the trailing edge by 1mm.
10) Select "Auto Correction" key.
11) Press the OK button to exit from the user mode.
12) On the lattice-patterned test print, check if the image is normal.
   * In case the image position is not good, re-adjust the image.
   * In case the image position is good, go to the next step.
13) Select the service mode 'OPTION>P-OPT>REG-DISP'. Set to "0" and press the OK key.
14) Press the reset key twice to exit from the service mode.

## 2.2 Original Illuminating System

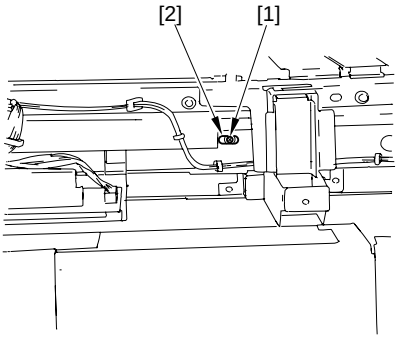
### 2.2.1 When Replacing the Scanning Lamp, Standard White Plate, Lamp Regulator, Reflecting Lamp Cover, Reader Controller PCB, Flash memory on Reader Controller PCB, or Analog Processor PCB CCD Unit

1) Execute data reading using 'CCD' under 'FUNC' in service mode.

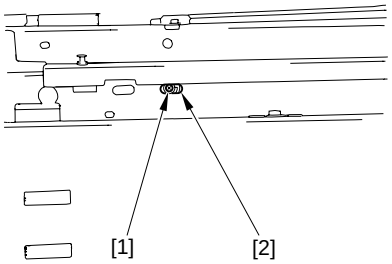
### 2.2.2 Routing the Scanner Cable

- You must keep the mirror positioning tool (FY9-3040-000) near at hand before routing the scanner cable.

1) Remove the left cover and the hopper left cover.
2) Remove the control panel.
3) Remove the vertical size plate and the right glass retainer right, and remove the copyboard glass.
4) Move the No. 2 mirror mount until the pulley shaft [1] of the No. 2 mirror mount is visible through the long hole [2] in the side plate.

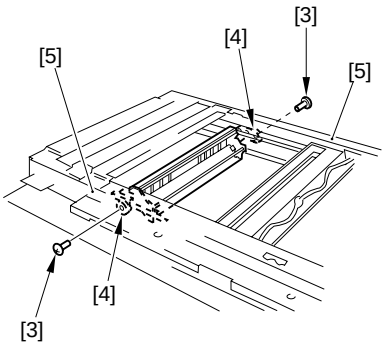



F05-202-01 (rear)



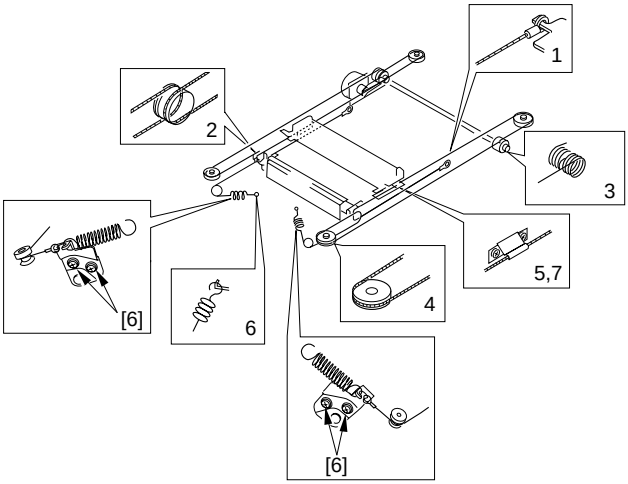

F05-202-02 (front)

5) Fit a binding screw (M4 × 8mm) [3] to the pulley shaft [4] to fix the front and rear of the pulley temporarily to the side plate [5], thereby temporarily fixing the No. 2 mirror mount in place.




F05-202-03

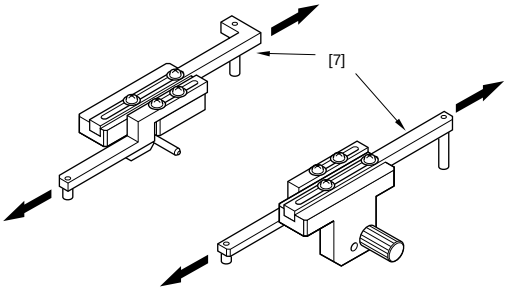
6) Fit the scanner cable on the pulley and the hook as indicated in F05-202-04.




F05-202-04

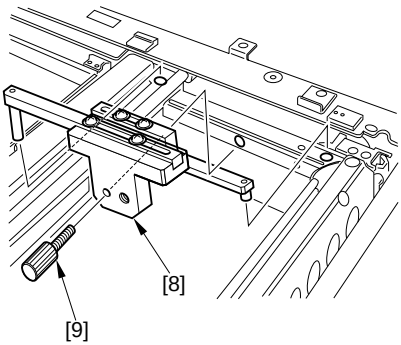
- Take care not to damage the wire by the edge of the metal plate.
- Be sure to keep the four screws [6] loose during the work.

7) Remove the screw [3] used in step 5.
8) Loosen the screw on the mirror positioning tool (FY9-3040-000), and extend the arm [7] fully.

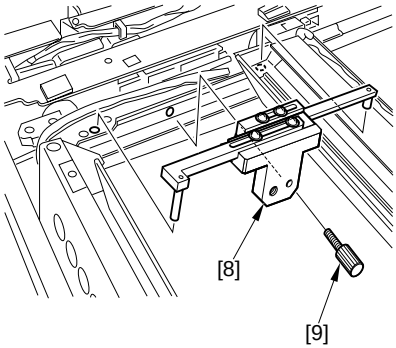



F05-202-05

9) Set the mirror positioning tool [8] between the No. 1 mirror mount and the No. 2 mirror mount; then, insert the pin [9] that comes with the mirror positioning tool.

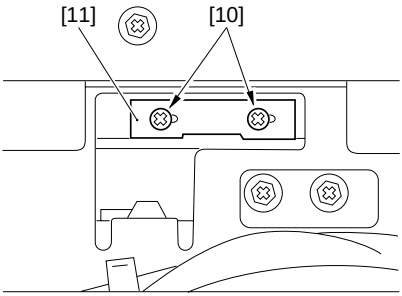



F05-202-06

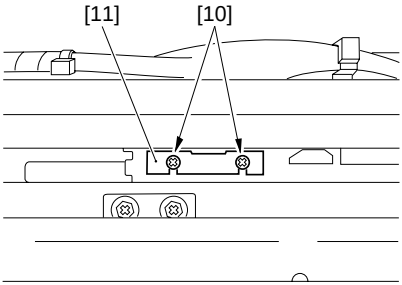



F05-202-07

10) Using two screws [10], fit the metal fixing [10] of the scanner cable to the No. 1 mirror mount through the angular hole in the side plate.




F05-202-08




F05-202-09

11) Remove the mirror positioning tool.
12) Fully tighten the four screws [7] loosened in step 6.

REF.

You need not adjust the cable tension.

1. Check to make sure that the scanner cable is not twisted or has not ridden over the pulley.
2. Move the No. 1 mirror mount and the No. 2 mirror mount by hand to make sure that they move smoothly; at this time, take care not to touch the reflecting plate.

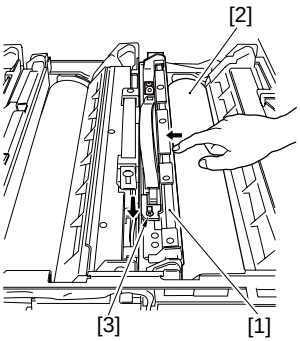
# 2.3 Photosensitive Drum-Related Parts

## 2.3.1 Removing the Photosensitive Drum

1) Draw out the process unit mount from the copier, and remove the process unit.

Points to Note When Removing the Process Unit
If you have to remove the process unit, perform the following to release the cleaning blade; otherwise, the plastic sheets found inside the unit can deform.

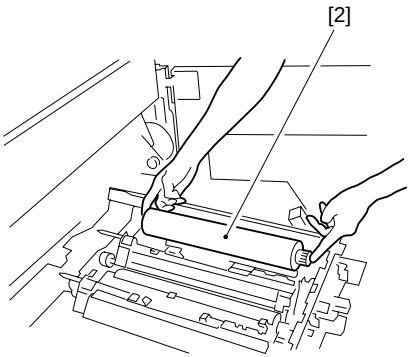
2) Push the middle of the cleaning blade [1] with your finger to keep it away from the drum [2]; then, move the pressure releasing pin [3] in the direction of the arrow to free the cleaning blade.




F05-203-01

3) Holding both ends of the drum [2], lift the drum to remove.

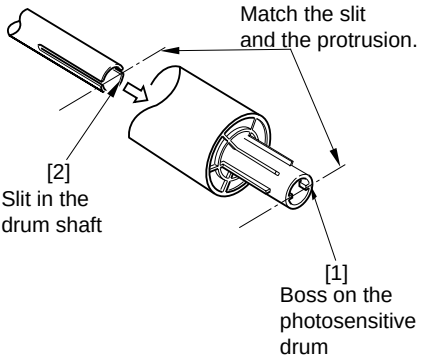
Take out the photosensitive drum, being careful not to damage it.




F05-203-02

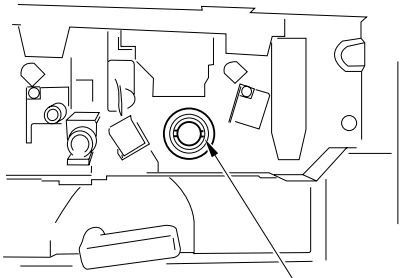
## 2.3.2 Points to Note When Installing the Photosensitive Drum

- Make sure that the direction of the two bosses [1] on the flange shaft of the photosensitive drum and the direction of the slits [2] in the drum shaft match.




F05-203-03

To rotate the photosensitive drum, be sure to do so while lifting the process unit so that it is away from the drum. (to avoid damage to the drum)

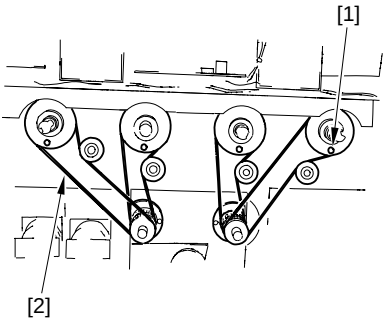



F05-203-04

When rotating the photosensitive drum, be sure to hold up the developing assembly so that it is away from the drum to prevent damage.

### 2.3.3 Points to Note When Fitting the Drum Drive Belt

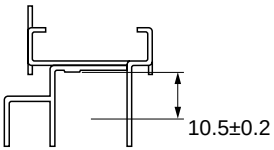
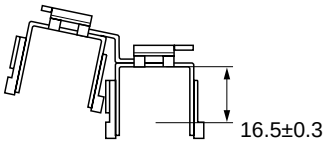
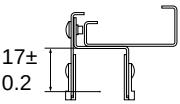
Fit the drum drive belt [2] so that all the markings [1] on the drum drive pulleys face the same direction.




F05-203-05

## 2.4 Charging Assembly-Related Parts

### 2.4.1 Adjusting the Height of the Charging Wire

| Charging assembly | Height of charging wire (mm) | Variable width |
|---|---|---|
| Primary charging assembly |   | 4 mm (approx.) |
| Separation charging assembly |   | 4 mm (approx.) |
| Pre-fixing charging assembly |   | 4 mm (approx.) |

T05-204-01

REF.

The height (position) of the charging wire may be adjusted by turning the screw found behind the corona assembly. (The height of the charging wire for the primary charging assembly, however, cannot be adjusted.) A full turn of the screw changes the position of the charging wire by about 0. 7 mm.

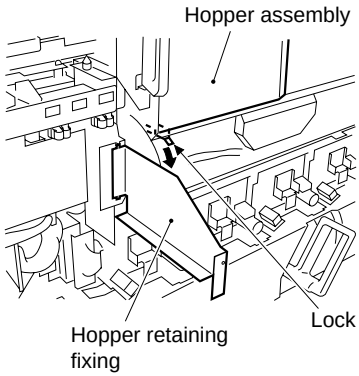
### 2.4.2 Points to Note When Handling the Primary Grid Plate and the Primary Charging Wire

Do not clean the primary grid plate or the primary charging wire. If image faults (uneven density) occurs, replace the part.

## 2.5 Developing Assembly-Related Parts

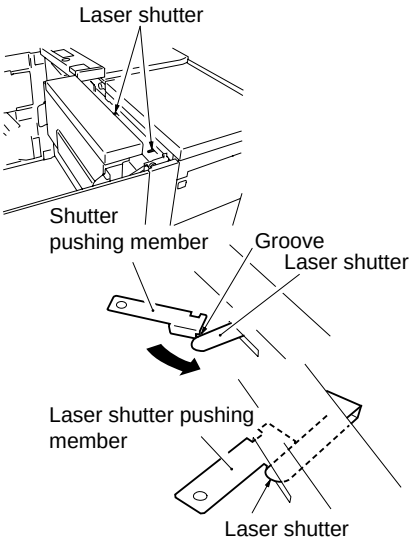
### 2.5.1 Replacing the Developer

1) Insert the door switch actuator into the door switch assembly.
2) Turn on the power, and insert and turn the control key.
3) Start service mode, and select 'FUNC > IN-STALL'.
4) Select the 2nd screen, and set 'LSNS-KIL' to '1'.
5) Select '0' by executing 'ADJSUT > PASCAL > PASCAL'.
6) Wait until warm-up ends.
7) Lift the hopper assembly to the topmost position. (At this time, the locking mechanism will turn on automatically. Make a visual check of the hopper assembly to make sure that the hopper assembly is locked.)
8) Install the hopper retaining fixings (left, right).
9) Release the hopper assembly, and move the assembly down to where the retaining fixings are located.



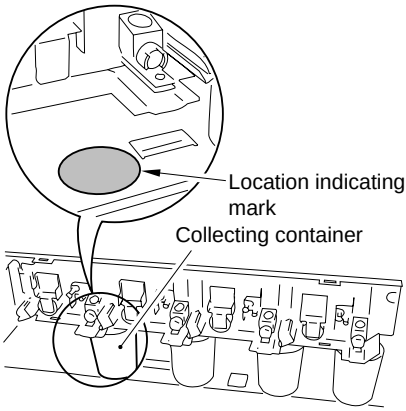

F05-205-01

10) Install the laser shutter opening tool.



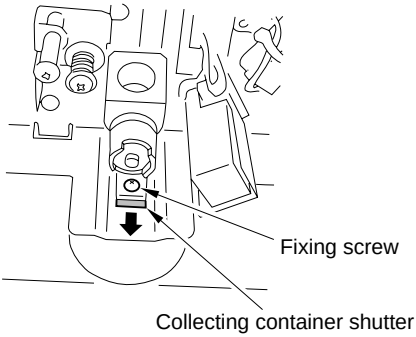

F05-205-02

11) Raise the hopper assembly as far as it moves, and operate the locking mechanism by hand; then, remove the hopper metal fixings (left, right).
12) Slide out the transfer assembly.
13) Place the collecting container as shown.



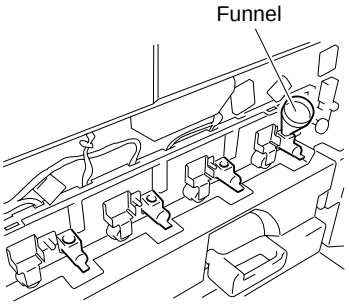

F05-205-03

14) Remove the screw, and pull out the collecting container shutter.
(At this time, check to make sure that the collecting container opening is open.)



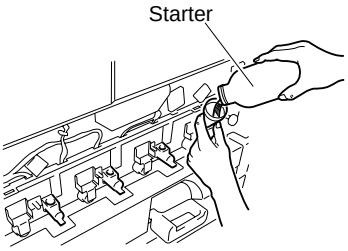

F05-205-04

15) Select the 2nd screen of 'FUNC > INSTALL' in service mode.
16) To collect all four developers, press 'RECV-4'; for each, press 'RECV-C, -M, -Y, -K'.
(The developer will be discharged into the collecting container; the operation will stop in about 2 min.)
17) When done, close the collecting container shutter, and fit and tighten the screw.
18) Remove the collecting container.
19) Close the transfer unit.
20) Press 'SPLY-C, -M, -Y, -K' as appropriate for the color to replace on the service mode screen [1].
21) Check to make sure that the screw inside the developing assembly has started to rotate.
22) Fit the funnel that comes with the starter in the supply mouth of the developing assembly.




F05-205-05

23) Pour developer into the developing assembly.
    - Tilt the container while turning it to avoid spilling the developer.




F05-205-06

24) When done, press the Stop key to stop the operation of the developing assembly.
25) Install the hopper metal fixings (left, right), and release the locking mechanism of the hopper assembly; then, lower the hopper as far as the metal fixings.
26) Remove the laser shutter opening tool.
27) Lift the hopper assembly to the topmost position.
    (At this time, the locking mechanism will not work; lock it by hand.)
28) Clean the SALT sensor of the color in question.
29) Remove the hopper retaining fixing (left, right).
30) Release the hopper assembly, and move it down to its specific position.
31) Select the 1st screen of 'FUNC IN > STALL' in service mode.

■ Replacement for All Colors

32) Execute 'STIR-4'. (about 4 min)
33) Execute 'INIT-7'. (about 2 min)
34) Execute 'WINCLR4'.
35) Record the results on the service label.
36) Execute 'ADJUST > PASCAL > PASCAL' to select '1'.
37) Turn off and on the power switch.
38) Execute 'auto gradation correction' in user mode.

■ Replacement for C/M/Y

32) Execute 'STIR-C/M/Y' as necessary. (about 1 min)
33) Execute 'INIT-C/M/Y' as necessary. (about 1 min)
34) Execute 'SINIT-C/M/Y' as necessary. (about 1 min)
35) Execute 'WINCLR-C, M, or -Y'.
36) Select '1' by executing 'ADJUST > PASCAL > PASCAL'.
37) Record the result on the service label.
38) Turn off and then on the power switch.
39) Execute 'auto gradation correction (full correction)' in user mode.

■ Replacement for Bk Only

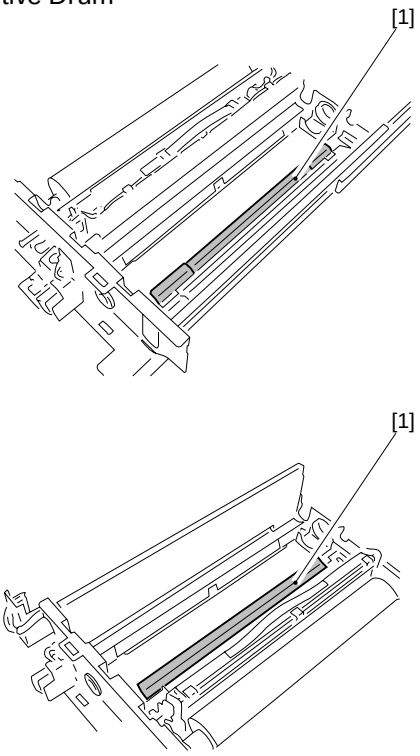
32) Execute 'STIR-K'. (about 1 min)
33) Execute 'SINIT-K'. (about 1 min)
34) Execute 'WINCLR-K'.
35) Record the result on service mode.
36) Select '1' by executing 'ADJSUT > PASCAL > PASCAL'.
37) Turn off and then on the power switch.
38) Execute 'auto gradation correction (full correction)' in user mode.

## 2.5.2 When Replacing the Developing Assembly (CMYK)

1) Using 'FUNC > INSTALL' in service mode, set 'IMNG-REG' to '0'.
2) Replace the developing assembly.
3) Replace the developer of the color in guestion.
4) Using 'FUNC > INSTALL' in service mode, set 'IMG-REG' to '1'.

### 2.5.3 When Replacing the Photosensitive Drum

1) After replacing the cleaning blade, apply lubricant.
2) Clean the plastic film [1] under the process unit mount with lint-free paper.



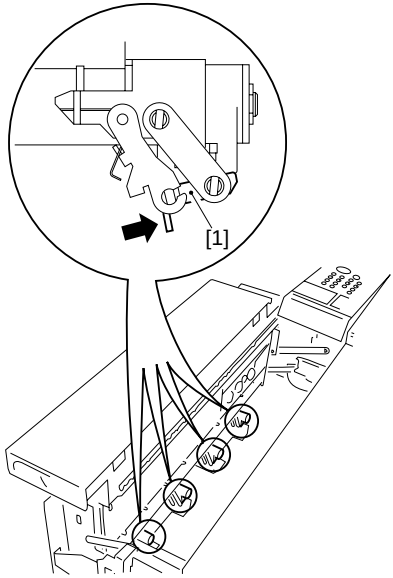

F05-205-07

3) Install the photosensitive drum.
4) Install the drum protection sheet.
5) Install the process unit, and install the process unit mount.
6) Ready the copier, and turn on the power switch.
7) Execute ‘auto gradation correction (full correction)’ in user mode.

## 2.5.4 When Supplying the Hopper with Toner

Perform the following steps when supplying a new hopper or the existing hopper with little toner (after replacing the toner level sensor, for example) with toner so as to prevent leakage of toner from the hopper:

1) Install the hopper position metal fixings (left, right) to the copier.
2) Fix the hopper assembly to the hopper position metal fixings.
3) Push the shutters at the bottom of the hopper in the direction of the arrow, making sure that the shutters are securely closed.



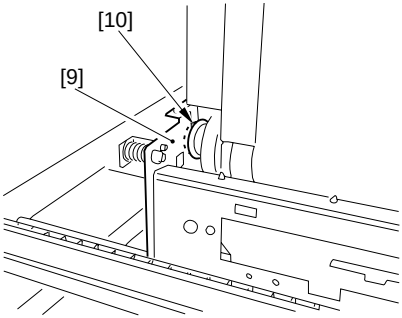

F05-205-08

4) Start supplying toner to the hopper.
5) After a minimum of 5 min, lower the hopper.

# 2.6 Transfer Belt Unit

## 2.6.1 Points to Note When Replacing the Transfer Belt

- Avoid touching the surface of the transfer belt (particularly, the area coming into contact with paper).
  If the transfer belt is soiled, wipe it with a moist cloth (or a cloth moistened with alcohol). Be sure that the belt is completely dry before installing it to the machine.
- If you have removed the transfer belt or replaced it, be sure to initialize the transfer belt swing data after the work by executing 'FUNC>MISCp>E075-RLS' in service mode. For instructions, see 2.6.2 Initializing the Transfer Belt Swing Controller Data.
- When installing the transfer unit, check to make sure that the bearing is securely in the transfer assembly frame rear support plate.




F05-206-01

## 2.6.2 Initializing the Transfer Belt Swing Control Data

When the transfer belt is swung, the swing data is recorded for use during swinging operation.

You must initialize the transfer belt swing control data using 'FUNC > F-MISCp > E075-RLS' in service mode whenever you have done the following:

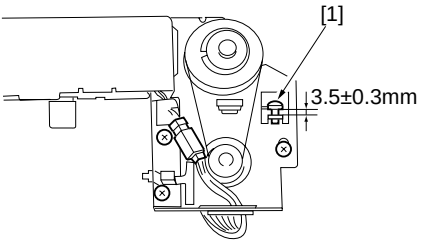
- If you have removed the transfer belt (including replacement).
- If you have replaced the transfer belt swing motor.

Memo

- Check to make sure that the transfer belt is not in contact with the end sensor.
- Make sure that the transfer belt unit is drawn out. (Insert the cover switch key to start service mode; 'E075' will be indicated, and the machine will enter service mode.)
- After executing 'E075-RLS', turn off and then on the power switch.

## 2.6.3 Adjusting the Tension on the Drive Belt of the Transfer Belt Motor

1) Make adjustments so that the gap of the adjusting screw [1] of the transfer belt motor is 3.5 ±0.3 mm.

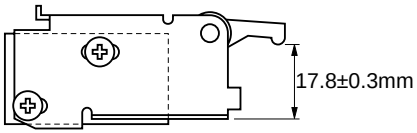



F05-206-02

## 2.6.4 Adjusting the Position of the Transfer Belt-Related Solenoid

### a Adjusting the Position of the Transfer Blade Solenoid (SL7)

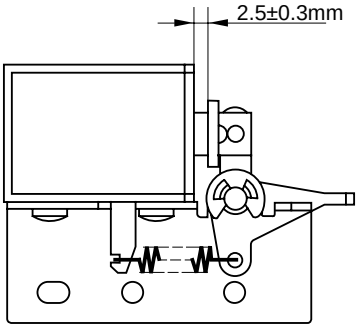
Fix the solenoid in place so that the distance between the solenoid arm and the solenoid mount base is 17.8 ±0.3 mm when the plunger of the solenoid is pulled.




F05-206-03

### b. Adjusting the Position of the Oil Removing Roller Solenoid (SL18)

Fix the solenoid in place so that the stroke indicated in F05-207-12 is 2.5 ±0.3 mm when the solenoid arm is pulled by the spring.




F05-206-04

# 2.7 When Replacing the Pick-Up/Feeding-Related Parts

## 2.7.1 Registering the Cassette/Multifeeder Paper Width Basic Setting (under 'FUNC')

You must register the paper width basic setting if you have

- Replaced the paper width VR of the copier (including the multifeeder).
- Adjusted the front/rear registration for the cassette.

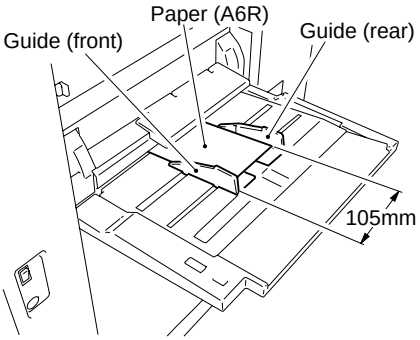
For the cassette, you must register the setting for 'STMTR' and 'A4R'; for the multifeeder, you must register the setting for 'A6R', 'A4R', and 'A4'.

### a. Cassette 1 or 2

1) Slide out the cassette you want to register the setting for, and set the paper width guide plate inside the cassette to A4R.
2) Set the cassette in the copier.
3) Check that the basic setting is indicated on the CST-AD screen of 'FUNC' in service mode on the control panel.
4) Select the size of the cassette for which you want to register the basic setting:
   UP-A4R (cassette 1)
   LOW-A4R (cassette 2)
5) Note that basic setting 1 has been registered.
6) Slide out the cassette you want to register the setting for, and set the paper width guide plate inside the cassette to STMTR.
7) Set the cassette in the copier.
8) Check that the basic setting is indicated on the CST-AD screen of 'FUNC' in service mode on the control panel.
9) Select the size of the cassette for which you want to register the basic setting:
   UP-STMTR
   LOW-STMTR
10) Note that basic setting 2 has been registered.

b. Multifeeder

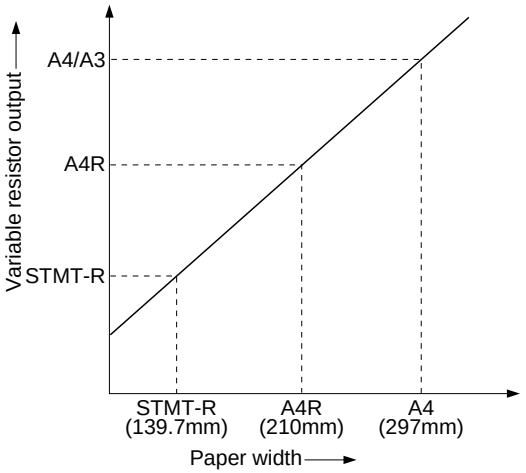
1) Set the paper guide plate of the multifeeder to A4R (210 mm).
2) Note that the basic setting is indicated on the CST-AD screen for 'FUNC' in service mode on the control panel.
3) Select the size for which you want to register the basic setting.
   MF-A4R
4) Note that basic setting 1 has been registered.
5) Set the paper guide plate of the multifeeder to A6R (105 mm).




F05-207-01

6) Check that the basic setting is indicated on the CST-AD screen under 'FUNC' in service mode on the control panel.
7) Select the size for which you want to register the basic setting.
   MF-A6R
8) Note that basic setting 2 has been registered.
9) Set the paper guide plate of the multifeeder to A4 (297 mm).
10) The basic setting is indicated on the CST-AD screen under 'FUNC' in service mode on the control panel.
11) Select the size for which you want to register the basic setting.
    MF-A4
12) Note that basic setting 3 has been registered.

If you have registered basic settings, record the settings on the service label.
If you have replaced the DC controller PCB, enter the settings recorded on the service label using 'DC-CON' under 'FUNC' in service mode.




F05-207-02

## 2.7.2 Orientation of the Cassette Pickup Roller

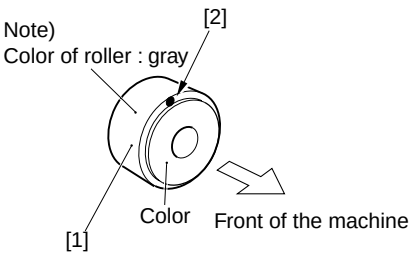
When mounting the pickup roller [1] to the pickup assembly, be sure that the round marking [2] on the rubber portion is to the front of the machine.

The pickup roller is identified as follows by the color of its collar:

front : gold color

rear : silver color

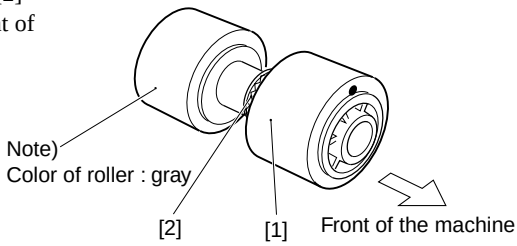
Be sure to use the appropriate roller.




F05-207-03

## 2.7.3 Orientation of the Cassette Feed Roller

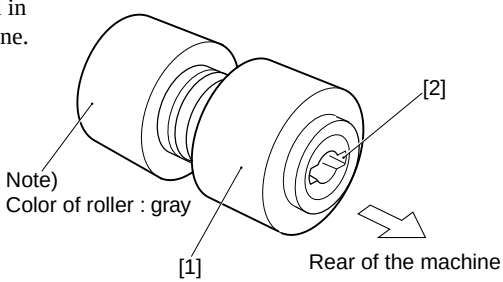
When mounting the feed roller [1] to the pickup assembly, be sure that the gear [2] mounted to the feed roller is to the front of the machine.




F05-207-04

## 2.7.4 Orientation of the Cassette Separation Roller

When mounting the separation roller [1] to the pickup assembly, be sure that the narrow groove [2] for the parallel pin found in the collar is toward the rear of the machine.

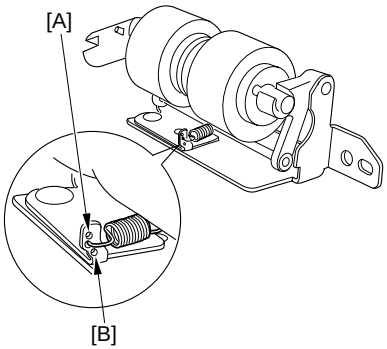



F05-207-05

## 2.7.5 Adding the Pressure of the Cassette Separation Roller

If double-feeding or pickup failure occurs during pickup operation, change the position of the pressure spring of the separation roller:

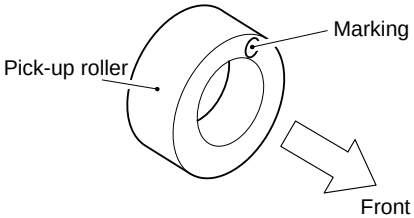
a. If double-feeding occurs, move the hook of the spring in the direction of [A].
b. If pickup failure occurs, move the hook of the spring in the direction of [B].




F05-207-06

## 2.7.6 Orientation of the Paper Deck Pick-Up Roller

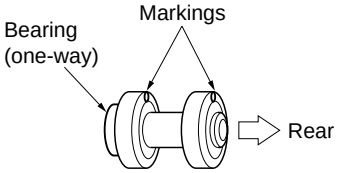
When installing the pick-up roller to the pick-up roller shaft, make sure that the marking is to the rear.




F05-207-07

## 2.7.7 Orientation of the Paper Deck Pick-Up/Feeding Roller

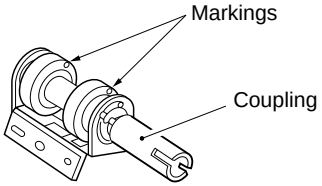
When installing the pick-up/feeding roller, make sure that the marking is to the rear.




F05-207-08

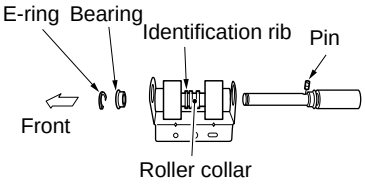
## 2.7.8 Orientation of the Paper Deck Separation Roller

1) When installing the separation rubber roller, make sure that the marking is to the rear (coupling side).




F05-207-09

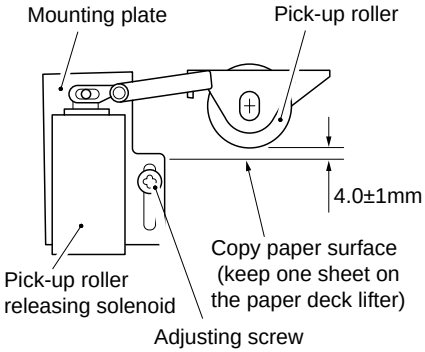
2) When installing the separation roller, make sure that the orientation identification rib on the roller collar is to the front.




F05-207-10

## 2.7.9 Adjusting the Position of the Paper Deck Pick-Up Roller Releasing Solenoid (SL8001)

Install the solenoid where the paper deck pick-up roller is 4.0 ±1 mm from the surface of the paper when the plunger of the solenoid is pushed in. (Keep one sheet of paper on the paper deck lifter.)

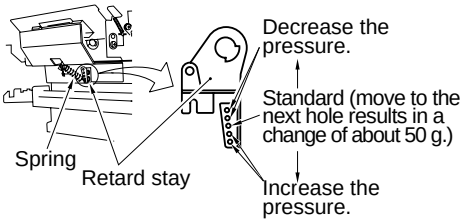



F05-207-11

## 2.7.10 Adjusting the Pressure of the Paper Deck Separation/Feeding Roller

If pick-up faults or double-feeding occurs in the paper deck, change the position of the spring hooked on the retard stay.

a. If pick-up faults occur, increase the pressure.
b. If double-feeding occurs, decrease the pressure.




F05-207-12

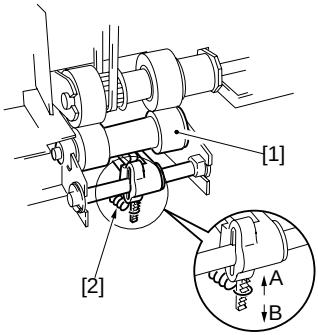
## 2.7.11 Positioning the Cassette Pickup Roller Releasing Solenoid (SL9, SL10)

The position of the solenoid needs not be adjusted; however, be sure that it is where it is when it is shipped from the factory. If you must remove it, be sure to mark its position with a scribe in advance.

## 2.7.12 Adjusting the Pressure of the Multifeeder Separation Roller

If double-feeding or pick-up faults occur during pick-up operation, change the position of the pressure spring [2] of the separation roller [1].

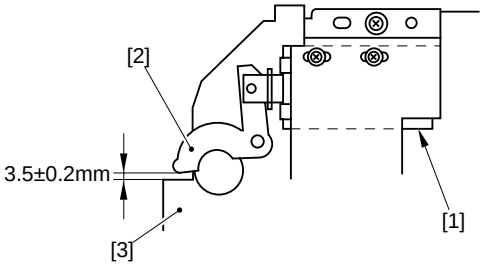
a. If double-feeding occurs, hook the pressure spring on the direction of A.
b. If pick-up faults occur, hook the pressure spring on the direction of B.




F05-207-13

## 2.7.13 Adjusting the Position of the Multifeeder Pick-Up Roller Releasing Solenoid (SL5)

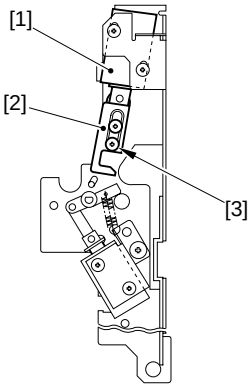
Install the solenoid so that the distance between the solenoid arm [2] and the rear side plate [3] is 3.5 ±0.2 mm when the plunger of the solenoid [1] is pushed in.




F05-207-14 (rear)

## 2.7.14 Adjusting the Position of the Delivery Paper Deflecting Plate Solenoid (SL14)

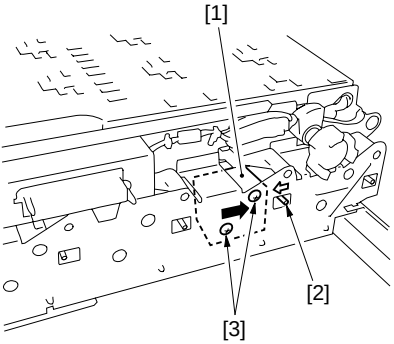
1) Place the delivery assembly upright on a flat surface.
2) Fix the solenoid in position where the arm [2] hits the stepped screw [3] and stops with the arm lifted and the plunger of the solenoid [1] pushed in.




F05-207-15 (rear)

## 2.7.15 Adjusting the Position of the Duplexing Unit Paper Deflecting Plate Solenoid (SL11)

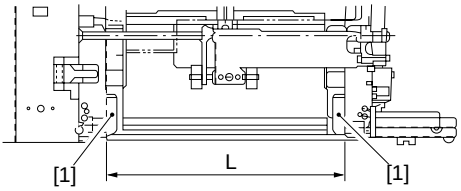
1) Remove the duplexing unit.
2) Fix the solenoid in place with a mounting screw [3] after moving the solenoid to the delivery direction while the plunger [2] of the solenoid [1] is pushed in.




F05-207-16 (rear)

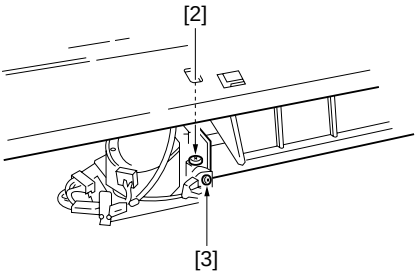
## 2.7.16 Adjusting the Position of the Duplexing Unit Stacking Assembly Paper Guide Plate

1) Select A3 or 11x17, and copy on the first side of a two-sided copy.
2) Slide out the duplexing unit to the front.
3) Measure the distance L of the paper guide plate [1].
   A3 : L = 297.5 ±0.5 mm
   11x17 : L = 297.5 ±0.5 mm




F05-207-17

4) If the measurement is outside the standards, remove the duplexing unit front cover.
5) Loosen the screw [2], and turn the adjusting screw [3]; then, adjust the position of the paper guide plate home position sensor.

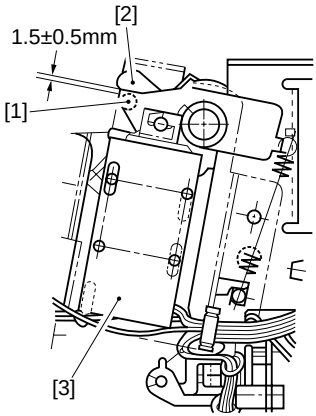



F05-207-18

## 2.7.17 Adjusting the Position of the Duplexing Unit Feeding Roller Solenoid (SL13)

Let the feeding roller drop to the bottom of the duplex feeding assembly on its own weight.

At this time, fix the solenoid [3] so that the end-to-end distance between the lever [1] and the arm [2] is 1.5 ±0.5 mm when the plunger of the solenoid is pushed.

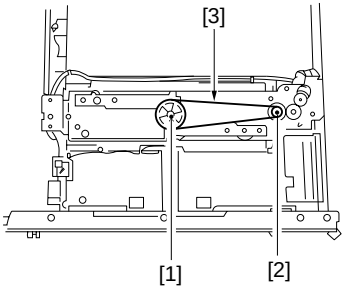



F05-207-19

## 2.7.18 Attaching the Timing Belt for the Duplexing Unit Stacking Assembly Paper Guide Plate

Install the gear [1] with the paper guide plate fully open.

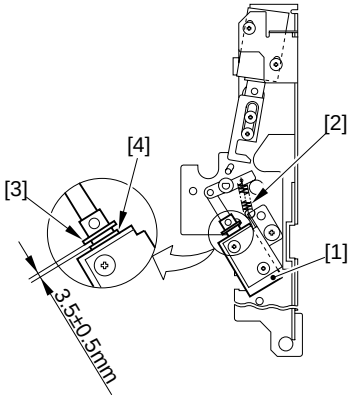
Install the timing belt [3] to the gear 1 and the pulley [2].




F05-207-20

## 2.7.19 Adjusting the Position of the Separation Claw Solenoid (SL15)

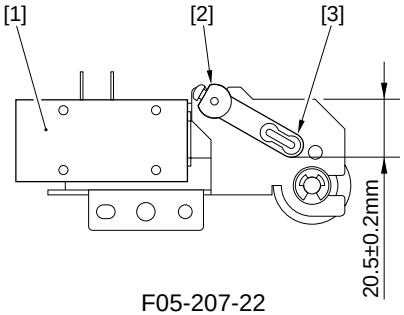
1) Place the delivery assembly upright.
2) Fix the solenoid in place where the distance between the E-ring [3] and the resin washer [4] is 3.5 ±0.5 mm when the plunger of the solenoid [1] is pulled by the spring [2].




F05-207-21

## 2.7.20 Adjusting the Position of the Upper Fixing Web Take-Up Solenoid (SL3)

1) Keep the delivery assembly upright.
2) Fix the solenoid in place so that the vertical distance between the top end of the solenoid shaft [2] and the top end of the solenoid lever [3] is 16.3 ±0.2 mm when the plunger of the solenoid [1] is pushed.




F05-207-22

## 2.7.21 When Replacing the Registration Roller Unit

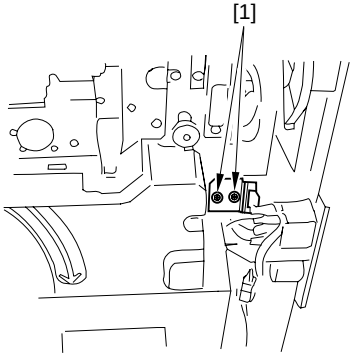
You must make adjustments as follows whenever you have replaced the registration roller unit:

1) Replace the registration roller unit.
2) Make several copies of the Test Chart, and check the leading edge margin, left/right margin, and for skew movement.
3) If the leading edge margin is not as specified, make adjustments once again. (For standards and method, See Chapter 5>2.1 Image-Related Parts)
4) If skew movement is noted, make adjustments as instructed in the section that follows.

## 2.7.22 Correcting Skew Movement(slope of the registration roller unit)

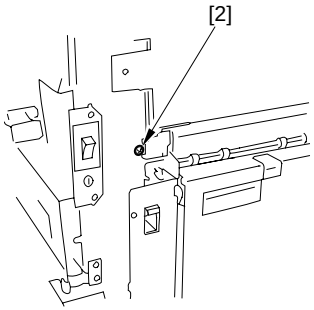
If you must correct skew movement after replacing the registration roller unit, perform the following:

1) Remove the transfer right cover and the front right cover.(CLC1000 Service Manual>Chap 4>I. "External Control System")
2) Loosen the two mounting screws [1] on the registration roller unit.

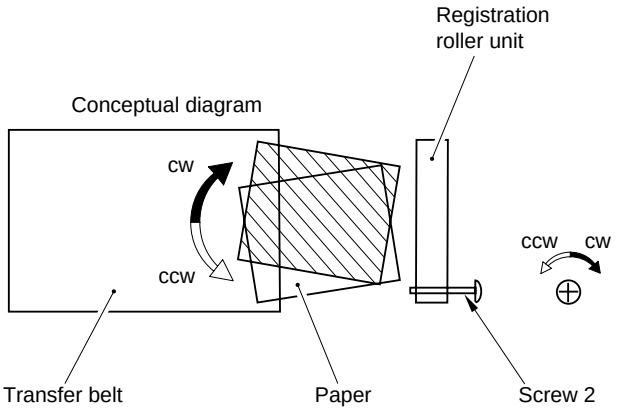



F05-207-23

3) Adjust the screw [2] used to position the fixing plate.
   - The leading edge of paper will be toward the front in relation to the movement of feeding (CW).




F05-207-24




F05-207-25

4) After making adjustments, fully tighten the screw loosened in step 2).

# 2.8 Laser Exposure System

## 2.8.1 When Replacing the Laser Unit

1) Perform laser focus adjustment.
2) Perform laser power adjustment.
3) Perform laser intensity adjustment.

## 2.8.2 When Replacing the Video Controller PCB

Nothing in particular.

## 2.8.3 When Replacing the BD Unit

Before removing the BD unit, be sure to mark its position with a scriber.

1) Using 'FUNC>INSTALL', set 'IMG-REG' to '0'.
2) Turn off the power switch, and replace the BD unit.
3) After replacement, execute 'FUNC>INSTALL>REG-APER' in service mode. (If a BD error 'E100' occurs, check the position of the unit, and execute 'REG-APER' once again.)
4) Execute 'FUNC>IMG-REG>AUTO-ADJ' in service mode.
5) Using 'FUNC>INSTALL' in service mode, set 'IMG-REG' to '1'.

## 2.8.4 Adjusting the Laser Power

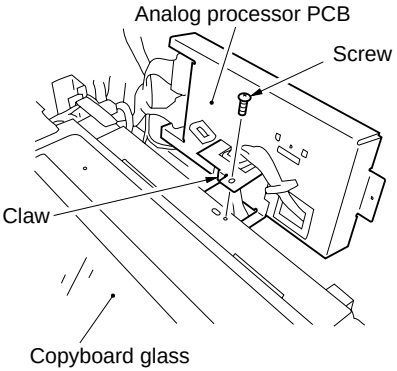
You must always adjust the laser power whenever you have replaced the laser unit.

### a. Required Tools

- Laser Power Checker (FY9-4013)
- Digital Multimeter (CK-0436)

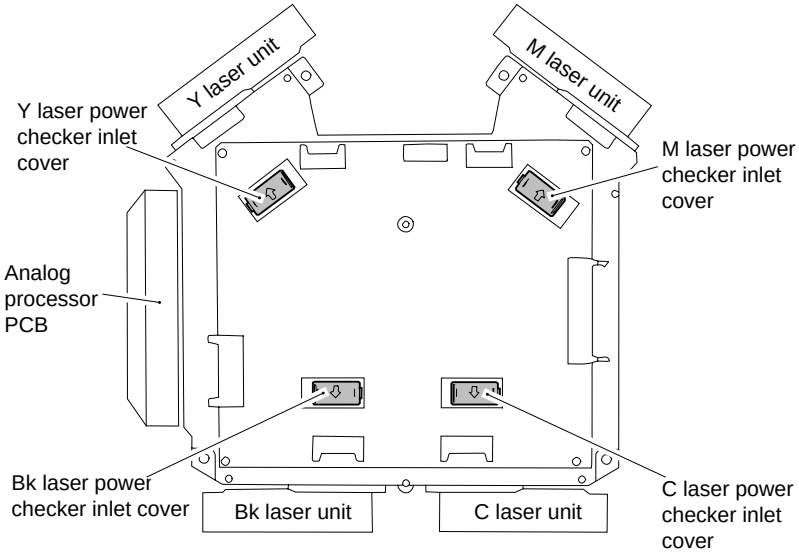
The output of the Laser Power Checker may change over time; have it calibrated once a year at the service station using a special calibration tool.

1) If you have replaced the laser unit for C/Bk, position the analog processor PCB as indicated in F05-208-01.



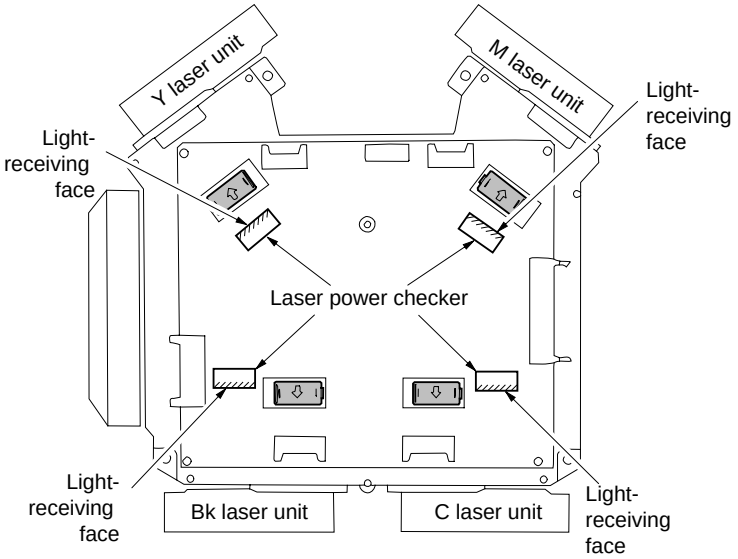

F05-208-01

2) Turn on the power switch.
3) Open the laser power checker inlet cover.




F05-208-02

4) Set the laser power checker switch to '2'.
5) Insert the laser power checker with its light-receiving face oriented as indicated in F05-208-03.

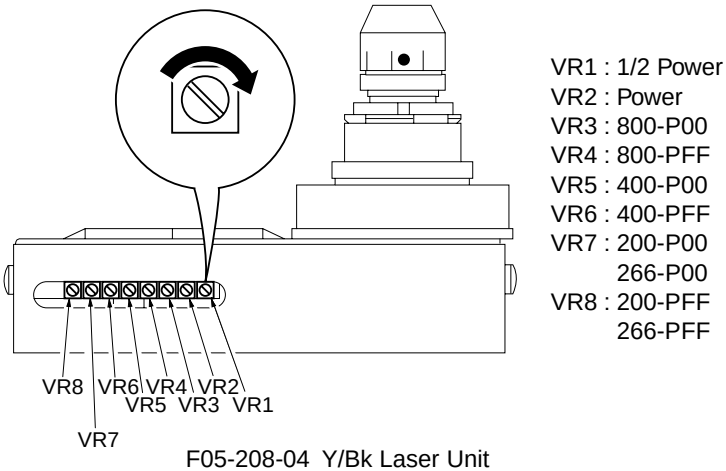



F05-208-03

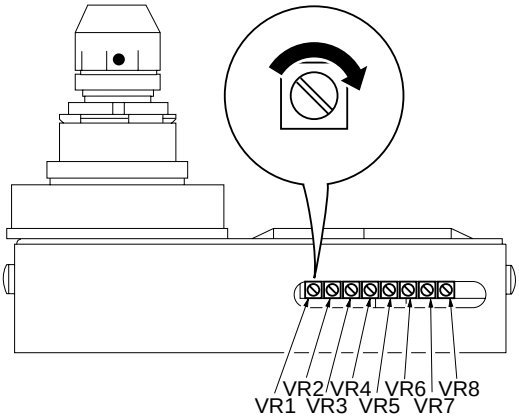
6) Insert the lead wire of the laser power checker into the Digital Multimeter, and set it to the 200 mV range.
7) Start service mode, and execute 'POWER' and '1/2 POWER' of '6 LASER' under 'FUNC'.
8) Check to make sure that the reading of the Digital Multimeter is 'POWER: 44.8 ±0.4 mV, 1/2 POWER: 20.0 ±0.2 mV'. If the readings are not as specified, make the following adjustments:

Making Adjustments

1) Turn the volumes VR1 through VR8 on the laser unit fully clockwise.




F05-208-04 Y/Bk Laser Unit




F05-208-05 C/M Laser Unitm

2) Start service mode, and execute '1/2 POWER' of 'LASER' under 'FUNC'.
3) Turn VR1 counterclockwise so that the reading of the Digital Multimeter is '20.0 ±0.2 mV'. (Take care not to turn too fast; the reading will increase abruptly at a certain point.)
4) Press the Stop key to stop the laser output.
5) Execute 'POWER' of '6 LASER' under 'FUNC'.
6) Turn VR2 counterclockwise so that the reading of the Digital Multimeter is '44.8 ±0.4 mV'. (Take care not to turn too fast; the reading will increase abruptly at a certain point.)
7) Take notes of the reading of 'POWER' after adjustment.
8) Press the Stop key to stop the laser output.
9) Perform laser intensity adjustment.

- When turning the VR, turn it slowly while referring to the reading of the Digital Multimeter; do not increase the power excessively.
- Turning the VR clockwise decreases the laser output.
- Do not exceed the setting recorded on the label; otherwise, the laser diode may become damaged.

## 2.8.5 Adjusting the Laser Intensity

Be sure to adjust the laser power before making the following adjustments:

1) Start service mode, and execute 'FUNC > 6 LASER > BIAS'.
2) Take notes of the reading of the Digital Multimeter.
3) Press the Stop key to stop the laser output.
4) Compute the target value according to the following formula:

| Formula | Results |
|---|---|
| P00 target:<br>(POWER–BIAS)×0.008+BIAS= | |
| PFF target:<br>(POWER–BIAS)×0.9+BIAS= | |

T05-208-01

5) Execute 'FUNC > 6 LASER > 800-P00'
6) Turn VR3 counterclockwise so that the reading of the Digital Multimeter is the P00 target value.
7) Press the Stop key to stop the laser output.
8) Execute 'FUNC > 6 LASER > 800-PFF'
9) Turn VR4 counterclockwise so that the reading of the Digital Multimeter is the PFF target value.
10) Press the Stop key to stop the laser output.

11) Likewise, adjust the following volumes:
- Execute the following in service mode, and use VR5:
  'FUNCTION>LASER>400-P00'
- Execute the following in service mode, and use6:
  'FUNCTION>LASER>400-PFF'

12) Likewise, adjust the following volumes:
- For Bk/Y laser unit,

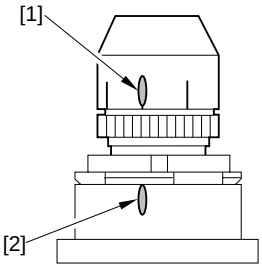
Execute the following in service mode, and use VR7:
'FUNC>LASER>266-P00'
Execute the following in service mode, and use VR8:
'FUNC>LASER> 266-PFF'
- For C/M laser unit,

Execute the following in service mode, and use VR7:
'FUNC>LASER>200-P00'
Execute the following in service mode, and use VR8:
'FUNC>LASER>200-PFF'

13) Press the Reset key to end service mode.
14) Turn off the power switch.
15) Remove the laser power checker, and install the inlet cover.

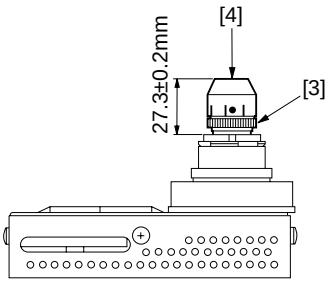
## 2.8.6 Laser Focus Adjustment

1) Check to make sure that the marking [1] on the lens assembly matches the marking [2] on the lens mount (standard position).



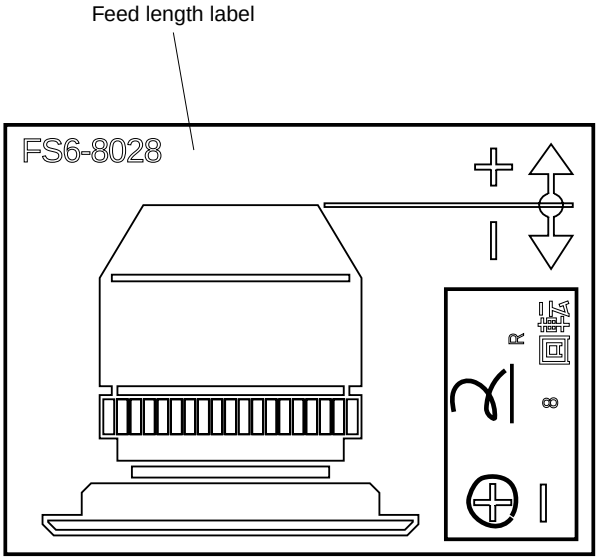

F05-208-06

If the unit is not in standard position, loosen the locking nut [3], and turn the lens assembly until the distance to the end [4] of the lens assembly is 27.3 ±0.2 mm, i.e., where the markings match.

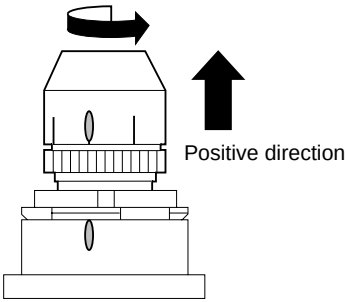



F05-208-07

2) Perform focusing adjustments by turning the lens assembly once again according to the values recorded on the label. For instance, if the value is "+2/8," turn the lens assembly in the positive direction (counterclockwise when viewing from the end of the lens assembly) over two notches.




F05-208-08




F05-208-09

3) Tighten the locking nut [3], and fix the position of the lens in place.

# 2.9 Fixing Assembly-Related Parts

## 2.9.1 Points to Note When Replacing the Fixing Heater

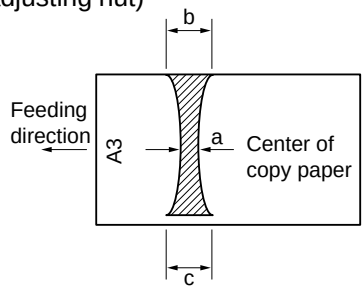
- Do not touch the surface of the heater.

REF.

Neither fixing heater (upper/lower) has any specific front/rear orientation.

## 2.9.2 Adjusting the Nip (fixing pressure adjusting nut)

- Check to make sure that the nip width is as indicated in T04-209-01. If not, turn the adjusting screw to adjust.




F05-209-01

a and c represent points 10 to 15 mm from the edges.

| Dimension | Measurements* |
|---|---|
| a | 7.5 ±0.5 mm |
| \| b-c \| | 0.5 mm or less |
| b-a | 0.5 mm or less |
| c-a | 0.5 mm or less |

* Taken when the upper and lower rollers are sufficiently heated.

T05-209-01

### Measuring the Nip Width

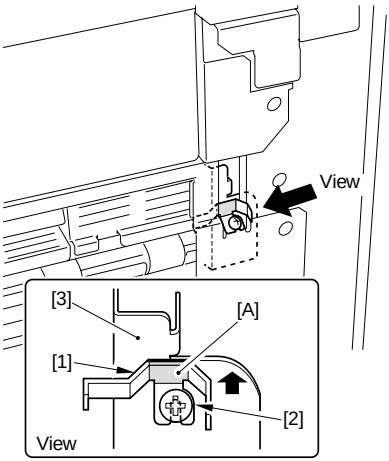
If the fixing rollers are cool, wait until the standby period is over, wait an additional 15 min, and make 30 copies before taking measurements.

Taking Measurements

1) Start service mode.
2) Select 'NIP-CHK' of 'FUSER' under 'FUNC'.
3) Select 'NIP-CHK=1'.
4) Press the Start key to execute. (The operation will stop automatically.)
5) Measure the dimensions indicated in F04-203-02 as a, b, and c.

## 2.9.3 Adjusting the Mounting Position of the External Paper Delivery Unit Guide Plate

1) Remove the left cover.
2) Open the front cover.
3) Pull out the fixing unit mount to the position where the front side plate of the external delivery paper unit and the section A of the guide plate [1] overlap each other.




F05-209-02

4) Loosen a screw [2] for the guide plate. The guide plate [1] should be pushed in while it is being pushed to the front side plate of the external delivery unit [3].
5) Tighten the screw [2] for the guide plate.

# 2.10 Electrical

## 2.10.1 When Replacing Major Parts

### a. When Replacing the ROM on the DC Controller PCB or the Reader Controller PCB

(The term “reader controller” or the “DC controller” within parentheses indicates work unique to the respective PCB.)

1) Turn on the power switch.
2) Record the settings of the user mode. (reader controller)
3) Set ‘IMG-REG’ on the second page of the INSTALLL screen under ‘FUNC’ in service mode from ‘1’ to ‘0’. (DC controller)
4) Turn off the power switch.
5) Disconnect the power plug from the power outlet. (DC controller)

You must always disconnect the power plug from the outlet; merely turning off the power switch will not cut the power to the DC controller.

6) Replace the ROM of the DC controller and the ROM of the reader controller.
7) Connect the power plug to the power outlet, and turn on the power switch.
8) Execute ‘FUNC > R-CON > RAM-CLR’ in service mode. (the power switch will automatically be off : reader controller)
9) Turn on the power switch. (‘E350’ will be indicated : reader controller)
10) Execute ‘FUNC > CCD > AUTO-ADJ’ in service mode. (about 8 min; reader controller)
11) If a projector is installed, execute ‘FUNC > PROJ-ADJ > PROJ-CCD’ in service mode. (reader controller)
12) Compare the value in A of the service label and the service mode value; if different, or if you replaced the DC controller PCB as a whole, perform the steps for initializing the RAM on the DC controller PCB shown below. (DC controller)
    If you are not clearing the RAM of the DC controller PCB, be sure to check the setting of the following: ‘ADJUST>HV-TR-Y>TR-#’; then, if ‘-3’ is indicated, set it to ‘0’. (Be sure to do the same for zones A, B, and C.)
13) Set ‘IMG-REG’ on the panel of ‘INSTALL2’ under ‘FUNC’ in service mode from ‘0’ to ‘1’. (DC controller)
14) Enter new user mode settings and the value of B of service label. (reader controller)
    (If any of the service mode settings relating to the reader controller other than the items under B of the service label has been changed, be sure also to change such settings.)
15) Turn off and on the power switch.
16) Execute auto gradation correction, after setting ‘ADJUST > PASCAL’ in service mode to ‘1’.

b. When Replacing the Reader Controller PCB

1) Initialize the RAM on the reader controller PCB. (See the appropriate instructions.)
2) Turn off and on the power switch.

c. When Replacing the DC Controller PCB

1) Start service mode, and check to make sure that 'DISP > BLT-DRFT > BELT-POS' is 'CENTER'; if not, move the transfer belt to the center.
2) Turn off the power switch.
3) Disconnect the power plug from the power outlet.

Be sure to disconnect the power plug from the power outlet. Merely turning off the power switch will not cut the power.

4) Replace the DC controller PCB.
5) Turn on the power switch.
6) Initialize the RAM on the DC controller PCB. (See the appropriate instructions.)
7) Turn on and then off the power switch.

d. Initializing the RAM on the DC controller PCB

1) Record the setting of 'OFFSET-C/M/Y/K' found in the second row of page 2 on the EPC screen of 'FUCNT' in service mode.
2) Start service mode, and check to make sure that 'BELT-POS' of 'BLT-DRFT' under 'DISP' is 'CENTER'; if not, move the transfer belt to the center.
3) Execute 'FUNC>DC-CON>RAM-LR' in service mode.
4) Turn off the power switch, and disconnect and then connect the power plug (so that the RAM will be cleared).
5) Turn on the power switch.
6) If you have replaced the DC controller PCB, replace the developer according to the instructions on 2.5.1 Replacing the Developer.
7) Enter the value of A recorded on the service label. (If you have changed other service mode settings related to the DC controller, enter such settings as well.)
8) Execute 'REG-APER' of 'INSTALL2' under 'FUNC' in service mode.
9) Enter the setting of 'OFFSET- C/M/Y/K' recorded in step 1) to the following: 'FUNC>DC-CON>POTOFST-C/M/Y/K'.

The settings on the screens of service mode are cleared when the RAM on the reader controller PCB is initialized.

| | |
|---|---|
| ADJUST | Settings on ADJ-XY screen |
| | Settings on DOC-REC screen |
| | Settings on PROJ screen |
| | Settings on ED/RF screen |
| | Settings on COL-ADJ screen |
| | Settings on ADJ-MISC screen |
| | Settings on PRJ-ADJ screen |
| OPTION | Settings on P-OPT screen |
| | Settings on ON-SET on P-OPT screen |
| | Settings on REMOTE screen |
| | Settings on DECK screen |

The settings on the screens of service mode are cleared when the RAM on the DC controller PCB is initialized.

| | |
|---|---|
| ADJUST | Settings on PASCAL screen |
| | Settings on FEED-ADJ screen |
| | Settings on ENV-SET screen |
| | Settings on HV-TR C/M/Y/K screen |
| | Settings on HV-SP screen |
| | Settings on HV-FS screen |
| | Settings on HV-EL screen |
| FUNC | Settings on DC-CON screen |
| | Settings on P-UP-TMG screen |
| | Settings on P-THICK screen |
| | Settings on IMG-REG screen |
| | Settings on FUSER screen |
| OPTION | Settings on P-OPT screen (except ON-SET) |

Service Mode Settings Related to the DC Controller PCB

| | |
|---|---|
| ADJUST | Settings on PASCAL screen |
| | Settings on FEED-ADJ screen |
| | Settings on ENV-SET screen |
| | Settings on HV-TR C/M/Y/K screen |
| | Settings on HV-SP screen |
| | Settings on HV-FS screen |
| | Settings on HV-EL screen |
| FUNC | Settings on DC-CON screen |
| | Settings on P-UP-TMG screen |
| | Settings on P-THICK screen |
| | Settings on IMG-REG screen |
| | Settings on FUSER screen |
| OPTION | Settings on P-OPT screen (except ON-SET) |

### e. Initializing the RAM on the Reader Controller PCB

1) Record the settings of user mode.
2) Execute 'FUNC>R-CON>RAM-CLR' in service mode. (The power switch will automatically turn off.)
3) Turn on the power switch.
4) Execute 'FUNC>CCD>AUTO-ADJ' in service mode. (about 8 min)
5) If a projector is installed, execute 'FUNC>PROJ-ADJ>PROJ-CCD' in service mode.
6) Enter any new user mode settings and the settings recorded in B of the service label. (If you have changed any other service mode settings related to the reader controller, enter such settings.)

Service Mode Settings Related to the Reader Controller

| | |
|---|---|
| ADJUST | Settings on ADJ-XY screen |
| | Settings on DOC-REC screen |
| | Settings on PROJ screen |
| | Settings on ED/RF screen |
| | Settings on COL-ADJ screen |
| | Settings on ADJ-MIS screen |
| | Settings on PRJ-ADJ screen |
| OPTION | Settings on R-OPT screen |
| | Settings on ON-SET on R-OPT screen |
| | Settings on REMOTE screen |
| | Settings on DECK screen |

The above service mode settings are cleared when the RAM on the reader controller is initialized.

### f. When Replacing the Image Position Correction CCD Unit

1) After replacing the image position correction CCD unit, execute 'FUNC>INSTALL (2nd screen)>REG-APER' in service mode.
   Thereafter, be sure to turn off and on the power switch to correct the image position.

### g. When Replacing the Paper Thickness Sensor

1) Check the settings (A through E) recorded on the label attached to the paper thickness sensor you are replacing, and record them under 'SNSR-RNK' on the service label. At this time, you need not perform step 3) and the subsequent steps if the settings are the same as the settings under 'FUNC>P-THICK>SNSR-RNK' of service mode.
2) Replace the power thickness sensor.
3) Enter the settings you recorded on the service label in step 1) under 'FUNC>P-THICK>SNSR-RNK' in service mode. (Each press on 'SNSR-RNK' toggles the settings A through E.)
4) Check to make sure that the values of 'P-TH-1' and 'P-TH-2' are identical to the values recorded on the service label; if different, enter the correct values using 'FUNC-DC-CON (5/5)>P-TH-1/2' in service mode.
5) End service mode.

h. After Replacing the Pick-Up Motor/Pick-Up Unit

1) Place three or more A4 or LTR sheets of paper in the cassette (upper, lower).
2) Select 'FUNC > P-UP-TMG' in service mode.
3) Execute 'PK-ADJ-U' three times.
   - A value near '186' will be indicated under 'DATA-A' and 'PUDT-U'.
4) Press 'D-SEND-U' to write the adjustment data in RAM.
5) Execute 'PK-ADJ-L' three times.
   - A value near '104' will be indicated under 'DATA-L' and 'PUDT-L'.
6) Press 'D-SEND-L' to write the adjustment data in RAM.
7) Write the value of 'PUDT-U/L' on the service label.
8) End service mode.

## 2.10.2 Checking the Environment Measurement PCB

The condition of the environment measurement PCB and the environment sensor is checked using the environment measurement checking tool (TKN-0457) and the sensor for the environment checking sensor (TKN-0456).

a. Checking the Environment Measurement PCB

1) Turn off the power switch.
2) Remove the multitray covers 1 and 2.
3) Remove the environment sensor from the environment measurement PCB, and insert the sensor for the environment measurement checking sensor (TKN-0457) in its place.
4) Turn on the power switch.
5) Set the meter to the 30 VDC range, and check to make sure that the voltage of J1-1 (+) and J1-2 (–) on the environment measurement PCB is 24 V ±2.4V. If not, check the DC power supply PCB (DCP1).
6) Start service mode, and select 'DISPLAY'.
7) Check the temperature and humidity on the ANALOG screen.
   BODY °C ..... 5 ±5
   BODY % ..... 40 ±10
8) Check to make sure that the reading is within specification.
   If not, go to step 9). If the reading is as indicated, go to step 14).
9) Press the Reset key, and turn off the power switch.
10) Disconnect J1 of the environment measurement PCB.
11) Turn on the power switch; start service mode, and select 'DISPLAY'.
12) Check the temperature and humidity on the ANALOG screen.
   BODY °C ..... 25 ±5
   BODY % ..... 26 ±10
13) Check to make sure that the reading is as indicated.


If the reading is not as indicated, suspect a fault in the DC controller.

14) Press the Reset key.
15) Turn off the power switch.
16) Connect J1 of the environment measurement PCB.
17) Remove the environment measurement sensor from the environment measurement PCB, and insert the environment sensor.
18) Install all covers.

### b. Checking the Environment Sensor

1) Check the environment PCB.
2) Turn on the power switch, and leave it on for 5 min.
3) Start service mode, and select 'DISPLAY'.
4) Check the temperature and humidity on the ANALOG screen.
   BODY °C ..... data A1
   BODY % ..... data A2
5) Press the Reset key, and turn off the power switch.
6) Remove the environment sensor from the environment measurement PCB, and insert the sensor for the environment sensor (TKN-0456) in its place.
7) Turn on the service switch, and leave it on for 5 min.
8) Start service mode, and select 'DISPLAY'.
9) Check the temperature and humidity on the ANALOG screen.
   (data B)
   BODY °C ..... data B1
   BODY % ..... data B2
10) Compare data A and data B
    - The difference between data A1 and data B1 is 0 ±5.
    - The difference between data A and data B is 0 ±20.
      If the difference is outside the specification, replace the environment sensor.
11) Press the Reset key, and turn off the power switch.
12) Remove the sensor for the environment sensor from the environment measurement PCB, and insert the environment sensor.
13) Install all covers.

The sensor for the environment sensor (TKN-0456) is adjusted with high precision at the factory. Keep it in a sealed case with a drying agent.

## 2.10.3 Checking the High Voltage Control System

### a. Outline

If an image fault occurs, you must first determine whether the cause is the latent static formation block which includes the photosensitive drum and the potential control system or the developing/transfer system.

The CLC5000's high-voltage is controlled to a specific level using the environment sensor and the potential sensor.

| Sensor | Environment sensor |
|---|---|
| Environment sensor | Primary grid bias |
| | Transfer blade bias |
| | Separation charging bias |
| Potential sensor | Primary grid bias |
| | Developing bias |

### b. Target Contrast Potential

The primary grid bias or the developing bias control mechanism may be checked by canceling the auto setting mechanism by the environment sensor for target contrast potential.

1) Select 'VCONT' of 'ADJ-MISC' under 'ADJUST' in service mode.
2) Select an appropriate value from the target contrast voltage levels in the following table, and enter it.

| | C | M | Y | K |
|---|---|---|---|---|
| 0 | Auto | Auto | Auto | Auto |
| 1 | 370.00 | 365.00 | 390.00 | 420.00 |
| 2 | 370.00 | 365.00 | 390.00 | 420.00 |
| 3 | 370.00 | 365.00 | 390.00 | 420.00 |
| 4 | 355.00 | 345.00 | 370.00 | 410.00 |
| 5 | 335.00 | 325.00 | 340.00 | 390.00 |
| 6 | 315.00 | 295.00 | 310.00 | 380.00 |
| 7 | 290.00 | 275.00 | 295.00 | 370.00 |
| 8 | 225.00 | 225.00 | 245.00 | 330.00 |

3) Execute 'FUNC > EPC' in service mode.
4) Make copies, and check the images.

- If the image is better, suspect a fault in the environment sensor or the environment measurement PCB.

5) Return the setting of 'VONT' of 'ADJ-MISC' under 'ADJUST' in service mode to '0'.

## 2.10.4 Checking the Photointerrupters

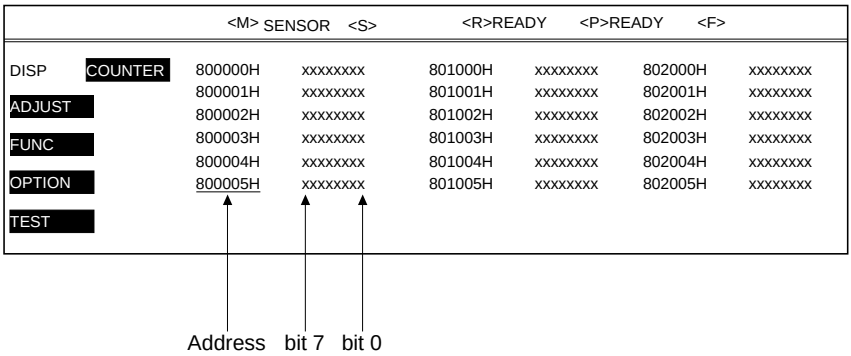
The CLC1000 allows you to use a conventional meter or service mode when checking its photointerrupters.

### a. Using a Meter

1) Set the meter to the 30VDC range.
2) Connect the – probe of the meter to J101-7 (GND) of the DC control PCB.
3) Connect the + probe to the terminals (on the DC controller PCB or the deck controller PCB) shown on the pages that follow.
4) Make checks according to the instructions given.

### b. Using Service Mode

1) Start service mode.
2) Press 'DISP'.
3) Press 'SENSOR'.
4) Make checks as indicated.




F05-210-01

4) Set the laser power checker switch to '2'.

| Sensor | Name | Service mode | | Checks |
|---|---|---|---|---|
| PS 1 | Registration paper sensor | 800006 | bit 0 | During copying,<br>• '1' if paper is present over the registration paper sensor.<br>• '0' if absent. |
| PS 2 | Multifeeder lifter sensor (upper) | 80000A | bit 2 | After the multifeeder has been selected and the Start key has been pressed,<br>• '1' when the lifter of the multifeeder moves up. |
| PS 3 | Multifeeder lifter sensor (lower) | 80000A | bit 3 | During standby,<br>• '1' if the lifter of the multifeeder is down. |
| PS 4 | Multifeeder paper width sensor (front) | 80000B | bit 0 | During standby,<br>• '1' when paper is set in the multifeeder. |
| PS 5 | Multifeeder paper width sensor (rear) | 80000B | bit 1 | During standby,<br>• '1' when paper is set in the multifeeder. |
| PS 6 | Oil level sensor | 80000E | bit 2 | • '1' if the arm is over the sensor.<br>• '0' otherwise. |
| PS 8 | Pre-duplex feeding sensor 1 | 800007 | bit 6 | • '1' if paper is present over the pre-duplex feeding sensor.<br>• '0' if absent. |
| PS 9 | Pre-duplex feeding sensor 2 | 800007 | bit 7 | • '0' if paper is present over the pre-duplex feeding sensor 2.<br>• '1' if absent. |
| PS 10 | Transfer belt cleaning web rotation sensor | 80000F | bit 7 | Slide out the transfer unit, and open the transfer belt assembly. Close the transfer belt assembly by blocking the light of PS10 by paper; and set the transfer unit to the copier.<br>• '1' when the power is ON.<br>• '0' when the light is not blocked. |
| PS 11 | Transfer belt cleaning web length sensor | 80000E | bit 0 | Slide out the transfer unit, and open the transfer belt assembly. Close the transfer belt assembly by blocking the light of PS11 by paper; and set the transfer unit to the copier.<br>• '1' when the power is ON.<br>• '0' when the light is not blocked. |

| Sensor | Name | Service mode | | Checks |
|---|---|---|---|---|
| PS 12 | Transfer belt lifter sensor 1 | 80000 | bit 0 | • '1' when the transfer belt is moved down under 'FUNC' in service mode.<br>• '0' when moved up. |
| PS 13 | Transfer belt lifter sensor 2 | 80000F | bit1 | • '0' when the transfer belt is moved down under 'FUNC' in service mode.<br>• '1' when moved up. |
| PS 14 | Post registration paper sensor | 800007 | bit 0 | During copying,<br>• '1' when paper is present over the post registration paper sensor.<br>• '0' when absent. |
| PS 15 | Separation sensor | 800007 | bit 1 | • '1' when paper is present over the separation sensor.<br>• '0' when absent. |
| PS 17 | Transfer belt edge sensor 1 | 80000F | bit 2 | During standby,<br>• '1' when the detecting lever is present over PS17.<br>• '0' when absent. |
| PS 18 | Transfer belt edge sensor 2 | 80000F | bit 3 | During standby,<br>• '1' when the detecting lever is present over PS19.<br>• '0' when absent. |
| PS 19 | Transfer belt edge sensor 3 | 80000F | bit 4 | During standby,<br>• '1' when the detecting lever is present over PS19.<br>• '0' when absent. |
| PS 20 | Transfer belt edge sensor 4 | 80000F | bit 5 | During standby,<br>• '1' when the detecting lever is present over PS20.<br>• '0' when absent. |
| PS 21 | Pick-up vertical path 1 sensor | 800006 | bit 1 | • '1' when paper is present over the pick-up vertical path 1 sensor.<br>• '0' when absent. |
| PS 22 | Paper deck connection | 800005 | bit 4 | • '0' when the paper deck is set in the copier. |

| Sensor | Name | Service mode | | Checks |
|---|---|---|---|---|
| PS 23 | Cassette 1 paper sensor | 80000B | bit 4 | During standby, slide out the cassette 1.<br>• '1' when the cassette is slid in with paper.<br>• '0' when the cassette is slid in without paper. |
| PS 24 | Cassette 1 lifter sensor | 80000A | bit 0 | During standby, slide out the cassette 1.<br>• '0' when the cassette is slid out.<br>• '1' when the cassette is slid in. |
| PS 25 | Pick-up vertical path 2 sensor | 800006 | bit 2 | • '1' when paper is present over the pick-up vertical path 2 sensor.<br>• '0' when absent. |
| PS 26 | Pick-up vertical path 3 sensor | 800006 | bit 3 | • '1' when paper is present over the pick-up vertical path 3 sensor.<br>• '0' when absent. |
| PS 27 | Cassette 2 lifter sensor | 80000A | bit 1 | During standby,<br>• '1' when the cassette 2 is slid out.<br>• '0' when the cassette 2 is slid in. |
| PS 28 | Cassette 2 paper sensor | 80000B | bit 5 | During standby,<br>• '1' when the cassette is slid in with paper.<br>• '0' when the cassette is slid in without paper. |
| PS 29 | Duplex paper jogging guide home position sensor | 80000A | bit 6 | During standby, slide out the duplexing unit, and remove the front cover.<br>• '1' when the duplexing unit is slid in and the light-blocking plate is over the sensor.<br>• '0' otherwise. |
| PS 30 | Duplex sensor 1 | 800008 | bit 0 | During standby,<br>• '1' when paper is put over the duplex sensor 1.<br>• '0' otherwise. |
| PS 31 | Duplex paper sensor 2 | 80000B | bit 7 | During standby,<br>• '1' when paper is put over the duplex paper sensor 2.<br>• '0' otherwise. |
| PS 32 | Delivery vertical path sensor 2 | 800007 | bit 4 | • '1' when paper is present over the delivery vertical path sensor 2.<br>• '0' when absent. |

| Sensor | Name | Service mode | | Checks |
|---|---|---|---|---|
| PS 33 | Duplex reversal sensor | 800007 | bit 5 | '1' when paper is present in the duplexing reversing assembly.<br>• '0' when absent. |
| PS 34 | Delivery sensor | 800007 | bit3 | • '1' when paper is put over the delivery sensor.<br>• '0' otherwise. |
| PS 35 | Internal delivery sensor | 800007 | bit 2 | • '1' when paper is put over the internal delivery sensor.<br>• '0' otherwise. |
| PS36 | Upper web length sensor | 80000E | bit 3 | During standby,<br>• '1' when the detecting lever is put over the sensor.<br>• '0' otherwise. |
| PS 37 | Scanner home position sensor | Reader unit controller | | During standby, remove the copyboard glass.<br>• '1' when the light-blocking plate is put over PS37. |
| PS38 | Delivery vertical path sensor 1 | 800008 | bit 3 | • '1' when paper is put over the delivery vertical path sensor 1.<br>• '0' otherwise. |
| PS 39 | Shutter closed sensor | 802011 | bit 6 | Execute 'FUNC > F-MISCp > MTR' in service mode to operate the shutter.<br>PS39: '1' at first; '0' when operation starts; then, '1' in about 10 sec. |
| PS40 | Shutter open sensor | 802011 | bit 7 | PS40: '0' at first; '1' about 5 sec after operation; then, '0' once again. |
| PS 41 | Cassette 1 open/close sensor | 800003 | bit 6 | • '1' if paper is present in the cassette.<br>• '0' when absent. |
| PS 42 | Cassette 2 open/close sensor | 800003 | bit 5 | • '1' if paper is present in the cassette.<br>• '0' when absent. |
| PS 8001 | Paper deck paper absent sensor | 80000B | bit 6 | • '1' if paper is present in the paper deck.<br>• '0' when absent. |

# 3 Troubleshooting Image Problems

## 3.1 Initial Checks

### 3.1.1 Checking the Site of Installation

a. Make sure that the voltage at the power source is as rated (±10%).
b. Make sure that the site is not subject to high temperature/humidity (near a water faucet, water boiler, humidifier) and is not cold, not close to a source of fire, and not subject to dust.
c. Make sure that the site is not subject to ammonium gas.
d. Make sure that the site is free of direct rays of the sun; otherwise, curtains are provided.
e. Make sure that the room is well ventilated.
f. Make sure that the machine is kept level. Make the above checks to see if the site meets the requirements.

### 3.1.2 Checking the Originals

Try to find out whether the problem is due to the type of original used or to the machine.

a. Check the density of the originals; a diazo copy original or an original with transparency can produce copies that tend to be mistaken for “foggy copies”; and originals prepared in light pencil tend to produce copies that tend to be mistaken for “light image copies.”

### 3.1.3 Checking the Copyboard Cover, Copyboard Glass, and Standard White Plate

Check the copyboard cover, copyboard glass, and standard white plate for dirt. Clean the part if soiled, and replace the part if damage is found.

### 3.1.4 Checking the Charging Assemblies

a. Check each of the charging assemblies for dirt. Check the charging wire/grid plate for a fault (damage, deformation).
b. Check shield plate of each charging assembly. (If necessary, dry wipe the part with lint-free paper; then, use alcohol. If the dirt cannot be removed, replace the part.)
c. Check the height of each charging wire.
d. Make sure that each charging assembly is properly set.
e. Check the charging spring (especially of the separation charging assembly) for rusting.

### 3.1.5 Checking the Developing Assembly

a. Check to make sure that the surface of the developing cylinder is covered with a uniform coating of toner.

### 3.1.6 Checking the Paper

a. Check if the paper is of a type recommended by Canon.
b. Check if the paper is moist.
   Try making copies using fresh paper.

### 3.1.7 Checking the Periodically Replaced Parts

a. Check the periodically replaced parts against the Scheduled Servicing Chart, and replace those that reached the end of their lives.

### 3.1.8 Others

When a machine is brought from a cold to a warm place in winter, its inside can start to develop condensation, leading to various problems.

a. Condensation on the original illuminating system or the laser exposure system (glass, mirror, lens) causes light or dark images.
b. Condensation in the charging system can cause leakage.
c. Condensation in the pick-up system or on the feeding guide plate can cause feeding problems.

If condensation is noted, dry wipe the part or leave the machine powered for 10 to 20 minutes.

If uneven density (difference in density between front and rear), light images, or fogging is noted, perform the “Image Adjustment Basic Procedure” first.

## 3.2 Standard Image

What is referred to as a “standard image” is an image in which the gray scale, color patches, and 3-color gradation scale are as follows when the Canon CA-1 Test Sheet is copied in four full colors.

### 3.2.1 Gray Scale

No. 1 (dark area) is more or less black and the density grows lighter with No. 8 (light) area being barely visible and No. 9 being white.

The color of the halftone area is more or less gray but is not appreciably yellowish or bluish.

### 3.2.2 Color Patches

Each color can be distinguished and is not appreciably different from its original color (Test Sheet).

### 3.2.3 Photo

The color balance is not appreciably different from the original.

### 3.2.4 3-Color Gradation Scale

No. 8 is barely visible with No. 9 being white.

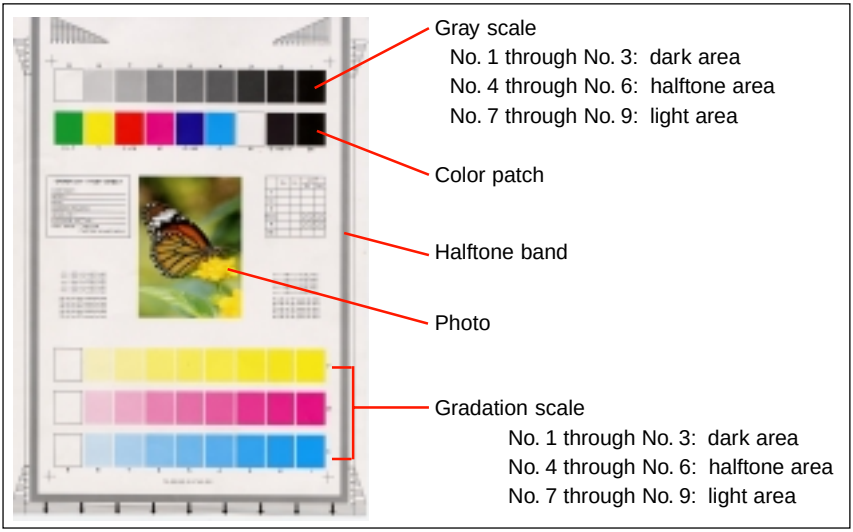
### 3.2.5 Halftone Band

The color is not appreciably different from the original (Test Sheet). Further, the band as a whole is not appreciably uneven*, and the color does not differ appreciably between left and right.

*Moire, if found, may be ignored.

### 3.2.6 Fogging

The white area must not be foggy.




F05-302-01


F05-302-02 Standard Image Sample

## 3.3 Test Prints

The CLC1000 possesses nine types of test print patterns, enabling identification of an error in reference to each test print pattern.

If a fault on a copy made normally does not appear on a test print, you may suspect the original exposure system, CCD, analog processor, or image processor.

### 3.3.1 Selecting a Test Pattern

1) Set the copy count and copy size.
2) Start service mode. (asterisk key ∗ → '2' ,'8' → asterisk key ∗)
3) Press 'TEST'.
4) Select 'PG → TYPE'.
5) Enter the appropriate PG number using the keypad.
6) Set the color mode.
   - 'COLOR-Y/M/C/K=1' selects a color.
     *Effective when 'PGTYPE=2, 3, 4, 5, or 6.
7) Set the density of the test print*.
   - Set the density using the 'DENS-Y/M/C/K' key.
     *Effective when 'PGTYPE=5'.
8) Press the Start key.

Be sure to return the setting of 'PGTYPE' to '0' when you have finished checks using test prints.

| PGTYPE | Description |
|---|---|
| 0 | Image from CCD (regular copying) |
| 1 | For R&D |
| 2 | 256 colors |
| 3 | 256 gradations |
| 4 | 17 gradations |
| 5 | Total halftone page |
| 6 | Grid |
| 7 | For image position correction |
| 8 | For R&D |
| 9 | For R&D |
| 10 | MCYBk horizontal stripe (laser FF activation) |
| 11 | For R&D |
| 12 | For R&D |
| 13 | For R&D |
| 14 | Full color in 17 gradations |
| 15 | Not used |
| 16 | Not used |
| 17 | For R&D |
| 18 | For R&D |
| 19 | For R&D |
| 20 | For R&D |
| 21 | For R&D |
| 22 | For R&D |

T05-303-01

### 3.3.2 256-Color Test Print (PGTYPE=02)

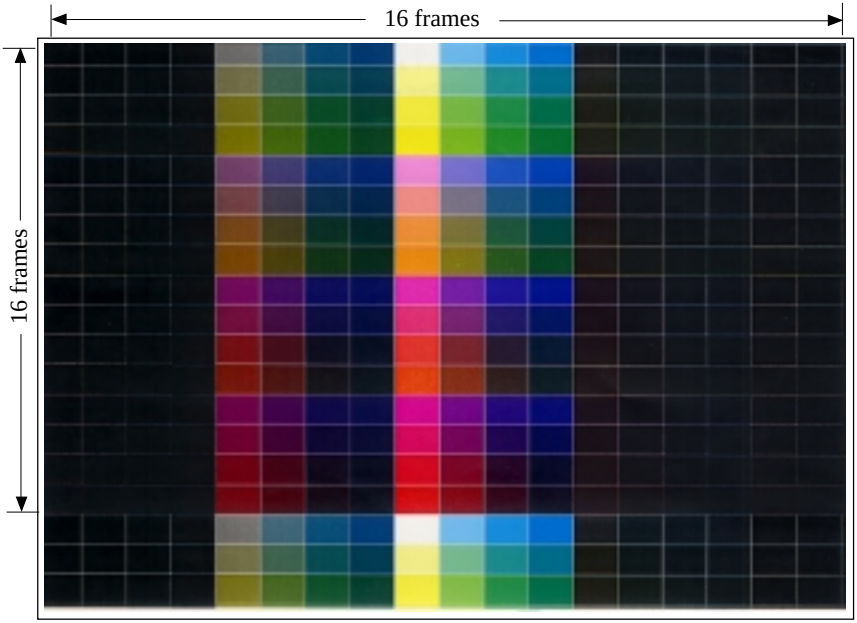
Use the 256-color test print to check the hues.

For the 256-color test print, the 16×16 frames from the leading edge of the copy paper represent 256 colors; all frames that follow are repetitions of the first set.

#### a. Hues of the 256 Colors

The print must show the hues shown in F05-303-01.

If the hues are different, suspect deterioration of the developer, deterioration of the photosensitive drum, and mixing of developers.




F05-303-01

### 3.3.3 256-Gradation Test Print (PGTYPE=03)

Use the 256-gradation test print to check gradation and balance between colors.

#### a. Gradation

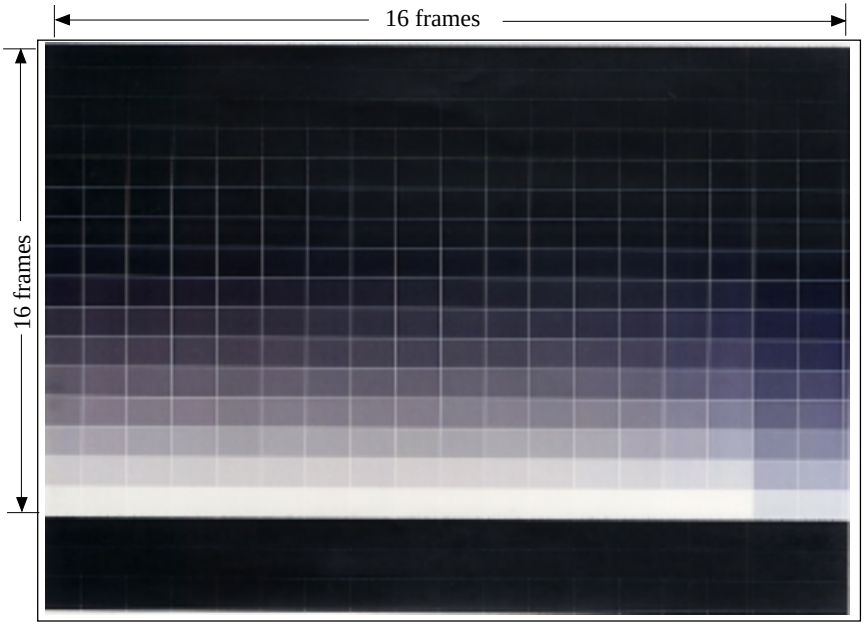
You may check the gradation of all densities from density 0 to density 255.

#### b. Balance between Colors (3-color copying)

Select 3-color mode, and generate a test print to check the gray balance of all densities from density 0 to density 255.

Memo

Use Service mode 'TEST>PG>COLOR-C/M/Y/K' to make a mono or 3-color selection.




F05-303-02

### 3.3.4 17-Gradation Test Print (PGTYPE=04)

Use the 17-gradation test print to check gradation, fogging, white lines, uneven density between left and right, and balance between colors.

#### a. Gradation

If the gradation of density is not as shown in F05-303-03, suspect a fault in the developing assembly or the laser system.

#### b. Fogging

If fogging is over the section of 00 activation in F05-303-03, suspect a fault in the developing system or the photosensitive drum; or, the laser may not be adjusted correctly.

#### c. White Lines

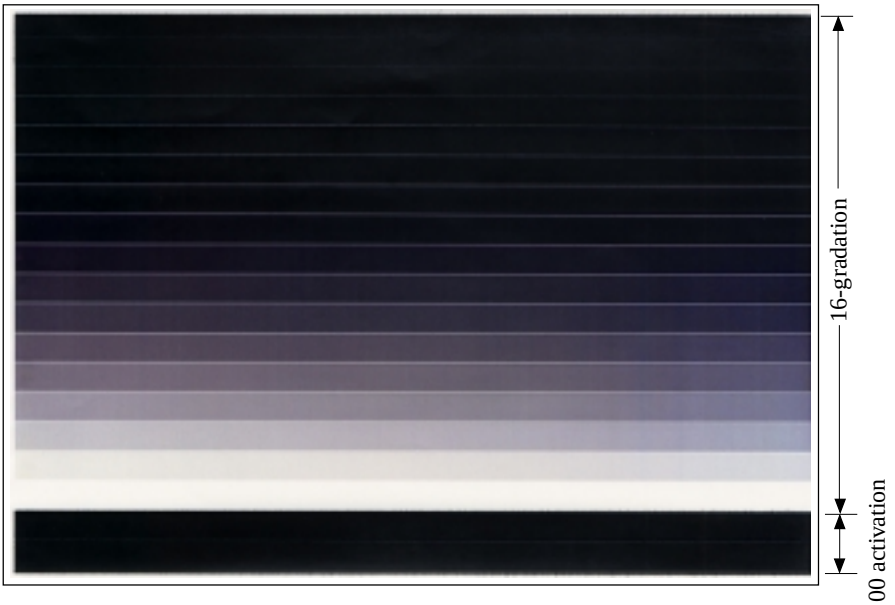
If white lines are noted on the image, suspect a fault in the developing assembly.

#### d. Balance between Colors (3-color copying)

Select 3-color mode to generate a test print to check the gray balance at each density.

Memo

Use Service mode 'TEST>PG>COLOR-C/M/Y/K' to make a mono or 3-color selection.




F05-303-03

### 3.3.5 Halftone Test Print (PGTYPE=05)

Use the halftone test print to check transfer faults (failure), black lines, white lines, and uneven intervals.

#### a. Transfer Faults (failure)

If a transfer fault is noted, suspect a fault in the transfer belt or the static eliminating assembly.

#### b. Black Lines

If black lines are noted, suspect scratches on the photosensitive drum or dirt on the primary charging wire.

#### c. White Lines

If white lines are noted at the same location for all colors, suspect a fault on the transfer belt.

If they occur at different locations, or if they occur in one color only, suspect a fault in the developing assembly.

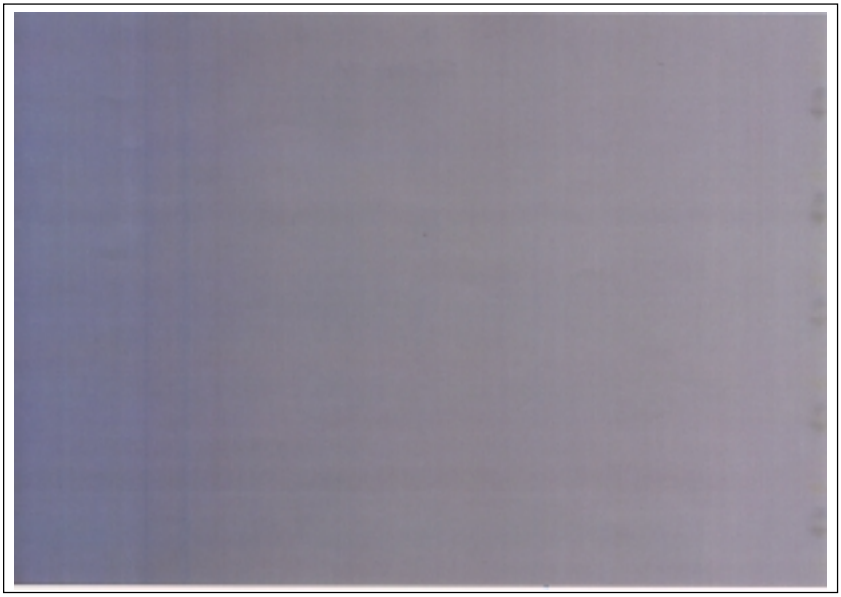
#### d. Uneven Intervals

If uneven intervals occur, suspect the following:

- If at intervals of about 0.5 mm, suspect the scanner*.
- If at intervals of about 38 mm, suspect the developing cylinder.
- If at intervals of about 1.6 mm, suspect the drive gear.

*Will not occur on test prints.


Use Service mode ‘TEST>PG>COLOR-C/M/Y/K’ to make a mono or 3-color selection.



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### 3.3.6 Grid Test Print (PGTYPE=06)

Use the grid test print to check color displacement, right angles, and straight lines.

#### a. Color Displacement

If color displacement is noted, suspect a fault in the transfer belt.

Color displacement on this test print does not necessarily mean color displacement on regular copies because of black text processing. The mechanisms are normal as long as color displacement is not noted on regular copies. (Use this test to find out the location of displacement and the color if color displacement is noted on regular copies.)

#### b. Right Angles/Straight Lines

If a fault is noted in relation to right angles or straight lines, suspect a displaced laser beam or a fault in the beam detection mechanism.

Memo

Use Service mode 'TEST>PG>COLOR-C/M/Y/K' to make a mono or 3-color selection.

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### 3.3.7 Image Position Correction Pattern (PGTYPE=07)

Use this test print to check whether the image position correction pattern is normal or otherwise.


F05-303-06

### 3.3.8 Horizontal Stripe (FF activation) Test Print (PGTYPE=10)

Use the horizontal stripe test print to check the dark area density of each color, balance between colors, and white lines (development).

#### a. Dark Area Density of Each Color and Balance between Colors

The density must not be appreciably light.

If a mono color copy is light, suspect a fault in the developer or the transfer blade.

If the density is light for all colors, suspect a fault in the up/down movement of the transfer belt.

#### b. White Lines (development)

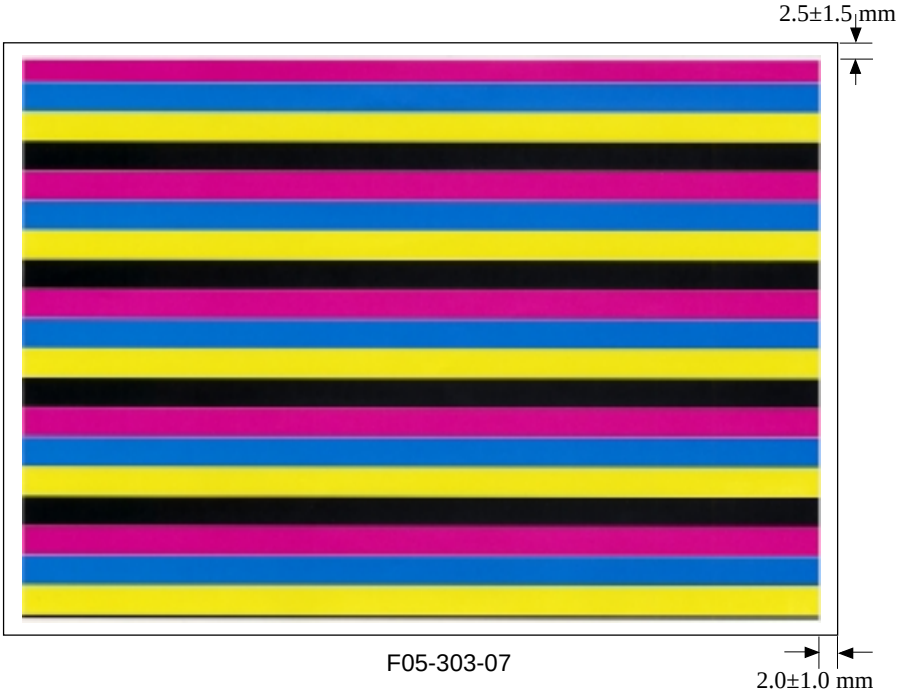
For instance, if white lines are noted in the cyan area of the copied image, suspect a fault in the developing assembly for cyan.

#### c. Uneven Density between Left and Right

If uneven density occurs between left and right for all colors, suspect dirt on the butting block, and a fault in the height of the primary charging wire.

#### d. Image Position (left/right)

If the position of the cassette holder or the setting of 'REG-X, Y' is wrong, the registration between the copy paper and the image (left/right) will have a discrepancy, eliminating the non-image width, possibly causing stray toner and soiling the inside of the machine.

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## 3.3.9 Full Color 17-Gradation (YMCBk+RGB+gray) Test Print (PGTYPE=14)

Use the full-color 17-gradation test print to check gray balance, gradation of CMYBk, and gradation of RGB mono, and fogging.

### a. Gray Balance

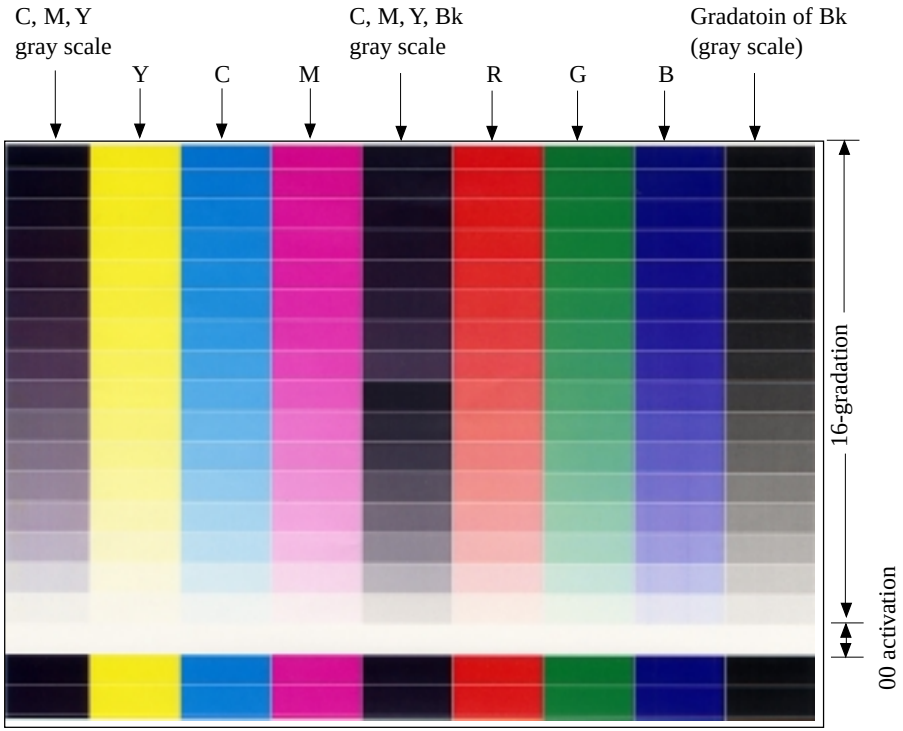
Check to make sure that each color is reproduced at an even density over the gray scale. To make adjustments, use the contrast potential.

### b. Gradation

Check gradation of CMYBk and RGB mono and difference in density.

### c. Fogging

If fogging is noted in the white area, suspect a fault in the developing assembly or the photosensitive drum; or, the laser may not be adjusted correctly.




F05-303-08

# 3.4 Troubleshooting Image Faults

| | | |
|---|---|---|
| 1 Too light (all colors) | 7 White lines/white lines (vertical) | 13 Soiled image/soiled back |
| 2 Too light (specific color) | 8 Horizontal lines/horizontal fogging | 14 Fixing fault |
| 3 Uneven density (vertical) | 9 White spots (horizontal) | 15 Toner smear (fixing) |
| 4 Uneven density (horizontal) | 10 White spots | 16 Blank |
| 5 Fogging | 11 White spots (trailing center) | 17 Solid black |
| 6 Vertical lines/ horizontal lines | 12 White spots (wavy lines) | 18 Color displacement |

## 3.4.1 The image is too light (all colors).

Perform the Image Adjustment Basic Procedure.

## 3.4.2 The image is too light (specific color).

Perform the Image Adjustment Basic Procedure.

## 3.4.3 The copy has uneven density (vertical).

| | |
|---|---|
| | **1) Clean the primary charging assembly, dust-proofing glass, reflecting mirror, and lens. Is the problem corrected?**<br>YES: End.<br>**2) Is the output image of the halftone test print (PGTYPE=5) normal?**<br>NO: Go to step 12. |
| Moire | **3) Is the image uneven because of moire*?**<br>*** Pattern interference that can occur when copying originals printed in dots.**<br>YES: Decrease 'Photo Sharpness', and store the setting in standard mode.<br>• If excessively decreased, copies of photos will have little contrast. |
| Scanner | **4) Clean the standard white plate, scanning lamp, and reflecting lamp cover. Is the problem corrected?**<br>YES: End.<br>**5) Is there a gap under the standard white plate or the copyboard glass?**<br>YES: Install them so that the part will be in even contact.<br>**6) Is the scanning lamp blackened?**<br>YES: Replace it. |

| | |
|---|---|
| Service mode | **7) Are the settings of 'CCD' in service mode as indicated on the service label?**<br>NO: Enter the correct settings.<br>**8) Execute 'FUNC > CCD > AUTO-ADJ'. Is the problem corrected?**<br>NO: Try replacing the image processor and the analog processor. |
| Developing assembly | **9) Is uneven density noted in all colors?**<br>NO: Check the developing assembly and the developing cylinder for which uneven density is noted; if a fault is found, clean or replace it. |
| Grid wire (primary charging assembly) | **10) Is the grid plate of the primary charging wire normal?**<br>NO: Replace the grid plate. |
| Pre-exposure lamp | **11) Does the pre-exposure lamp turn ON during copying operation?**<br>NO: Check the contact of J2239 on the DC controller PCB and the wiring from J2239 to connector on the pre-exposure lamp PCB; if normal, replace the pre-exposure lamp PCB. |
| Transfer/static eliminating system | **12) • Is the transfer blade locking mechanism of the transfer unit normal?**<br>**• Are there scratches or a fault on the transfer blade?**<br>**• Operate the transfer blade using 'BLADE' under 'FUNC' in service mode to check the locking of the transfer blade. At this time, is the transfer blade subject to warping or other fault?**<br>YES: Check the transfer blade locking mechanism; if normal, replace the transfer blade. |
| Fixing unit | **13) Are there scratches or dents in the peripheral direction of the fixing roller (upper, lower)?**<br>YES: Replace the fixing roller.<br>**14) Is there a fault in the fixing oil applying roller, oil applying blade, toner removing blade, oil hose, oil tank, fixing oil pump drive solenoid (SL2), or oil removing blade?**<br>YES: Remove the cause of the fault, and replace the part. |

## 3.4.4 The copy has uneven density (horizontal).

| | |
|---|---|
| | **1) Clean the primary charging assembly, dust-proofing glass, reflecting mirror, and lens. Is the problem corrected?**<br>YES: End. |
| | **2) Is the output image of the halftone print (PGYTPE=5) normal?**<br>YES: Go to step 11. |
| Moire | **3) Is the image uneven because of moire*?**<br>*** Pattern interference that occurs when copying originals printed in dots.**<br>YES: Decrease 'Photo Sharpness', and store the setting in standard mode.<br>• If excessively decreased, copies of photos will have little contrast. |
| Service mode (CCD) | **4) Are the settings of 'CCD' as indicated on the service label?**<br>NO: Enter the correct settings.<br>**5) Execute 'FUNC > CCD > AUTO-ADJ' in service mode. Is the problem corrected?**<br>NO: Replace the image processor or the analog processor. |
| Transfer/static eliminating system | **6) • Is the transfer blade locking mechanism of the transfer unit normal?**<br>**• Are there scratches or a fault on the transfer blade?**<br>**• Operate the transfer blade using 'BLADE' under 'FUNC' in service mode to check the locking of the transfer blade. At this time, is the transfer blade subject to warping or other fault?**<br>YES: Check the transfer blade locking mechanism; if normal, replace the transfer blade. |
| Fixing unit | **7) Are there scratches or dents in the peripheral direction of the fixing roller (upper, lower)?**<br>YES: Replace the fixing roller.<br>**8) Is there a fault on the fixing oil applying roller, oil hose, oil tank, oil pump driver solenoid or oil removing blade?**<br>YES: Remove the cause of the fault, and replace the part. |

## 3.4.5 The copy has fogging.

Perform the Image Adjustment Basic Procedure.

If fogging occurs in K at the 100th to 5000th copy after the replacement of developer in a low humidity environment, perform any of the following:

1. Decrease the setting of the following: 'ADJUST>ADJ-MISC>K-DOFST'
   Make five copies of the Test Print (type 5, DENS-K=255, COLOR-K=1, COLOR-Y/M/C=0; copy count=1).
   Then, check to make sure that the setting of PASCAL is '1', and execute auto gradation correction.
2. Check the following: 'DISPLAY>ANALOG>BODY'
   If it is '500 g' or lower, replace the K developer, and execute the following: 'FUNCTION>INSTALL>NLSET-K' (about 2 min 30 sec)
   Then, check to make sure that the setting of 'PASCAL' is '1', and execute auto gradation correction.

## 3.4.6 The copy has vertical streaks/vertical lines (the main scanning direction).

| | |
|---|---|
| | **1) Generate a halftone test print (PGTYPE=5). Are vertical streaks/vertical lines noted?**<br>**If the problem is noted in all colors, go to step 12.**<br>**If the problem is noted in a specific color, go to the next step.**<br>NO: Go to step 16. |
| Primary charging assembly cleaner | |
| | **2) Does the cleaner of the primary charging assembly stop in the middle?**<br>NO: Check the motor of the cleaner. |
| Primary charging wire, Pre-primary charging wire | |
| | **3) Clean the primary charging wire and the pre-primary charging wire. Is the problem corrected?**<br>YES: End. |
| Grid plate | |
| | **4) Are there scratches or dirt on the grid plate?**<br>YES: Replace the grid plate. |
| Photosensitive drum | |
| | **5) Are there scratches in the peripheral direction of the photosensitive drum?**<br>YES: Replace the photosensitive drum. If scratches are found, remove the cause. Further, keep in mind that scratches on the photosensitive drum can damage the cleaning blade; if such is the case, replace the cleaning blade also. |

| | |
|---|---|
| Photosensitive drum cleaner (poor cleaning) | |
| | **6) Is there paper or foreign matter on the cleaning blade of the photosensitive drum cleaner assembly?**<br>YES: Remove the foreign matter, and clean the cleaning blade and the outside of the cleaner assembly.<br>**7) Is there deformation or damage on the edge of the cleaning blade? Feel the edge of the cleaning blade with a finger to check.**<br>NO: If deformation or damage is found, remove the cause, and replace the cleaning blade.<br>See the description given for the photosensitive drum and the cleaning blade.<br>**8) Are the vertical streaks rather wide and fuzzy? Does the waste toner screw rotate? Is there a collection of waste toner in the cleaning assembly?**<br>YES: Apply grease on the cleaner drive shaft of the photosensitive drum cleaner assembly, and remove the waste toner. |
| Transfer blade | |
| | **9) Does the transfer blade have warping, bending, or a fault?**<br>YES: Replace the transfer blade; if it is soiled with toner, clean it. |
| Developing assembly | |
| | **10) Check the developing assembly and the developing cylinder for which the problem is noted. Is there a fault?**<br>YES: Clean or replace it. |
| SALT sensor scoop-up sheet | |
| | **11) Does the SALT sensor scoop-up sheet have deformation or a fault?**<br>YES: Replace it. |
| Fixing assembly | |
| | **12) Are there scratches in the peripheral direction of the upper fixing roller?**<br>YES: • Replace the upper fixing roller.<br>• Check if the web is taken up properly.<br>• Check the fixing separation claw and the separation guide.<br>**13) Are there scratches or dents in the axial direction of the fixing roller (upper, lower)?**<br>YES: Check the fixing assembly inlet for dirt. If the problem is on the trailing edge only, try replacing the fixing roller.<br>Replace the fixing roller. |
| Fixing assembly | |
| | **14) Is there a fault on the oil applying roller, oil applying blade, toner removing blade oil hose, oil tank, oil pump driver solenoid, or oil removing blade?**<br>YES: Remove the cause of the fault, and replace the part. |

| | |
|---|---|
| Optical path | **15) Clean the standard white plate, scanning lamp, and reflecting lamp cover mirror. Is the problem corrected?**<br>YES: End.<br>**16) Remove the CCD cover, and clean the surface of the CCD with a blower brush. Is the problem corrected?**<br>YES: End.<br>NO: Replace the CCD unit. |
| Pre-exposure lamp, Optical path (dirt) | **17) Does the pre-exposure lamp have a fault?**<br>YES: Remove the cause, and replace the part.<br>NO: Clean the bending mirror and the folding mirror. |

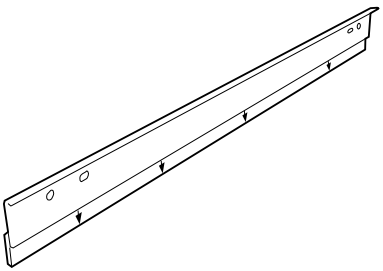
### Work on the Photosensitive Drum and Cleaning Blade

- Clean the photosensitive drum with a flannel cloth coated with toner. You need not replace the photosensitive drum if it is free of toner cake and its surface is free of scratches.
- Clean the cleaning blade with lint-free paper. You need not replace it if its edge is free of scratches. Thereafter, put lubricant on lint-free paper, and coat the edge of the cleaning blade evenly with lubricant.

Memo

If the lubricant is not even, the copies may carry white, vertical lines.

- Limit the application to the edge of the blade, i.e., where it will come into contact with the drum.
- Do not rub the edge with force. Tap lightly over the edge to avoid damage.
- Start from the top to the edge face as if to let the lubricant collect along the line that will come into contact with the drum.



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## 3.4.7 The copy has white streaks/white lines (vertical : the sub scanning direction).

| | |
|---|---|
| | **1) Generate a halftone test print (PGTYPE=5). Are there vertical white streaks/white lines?**<br>**If in all colors, go to step 11.**<br>**If in a specific color, go to the next step.**<br>NO: Go to step 13. |
| Developing assembly | |
| | **2) Check the cylinder of the developing assembly for which white streaks/white lines are noted. Are there white streaks or other fault?**<br>YES: Check the inside of the developing assembly for foreign matter. |
| Laser optical path | |
| | **3) Clean the dust-proofing glass of the laser exposure system. Is the problem corrected?**<br>YES: End.<br>**4) Clean the lens with a blower brush. Is the problem corrected?**<br>YES: End. |
| Photosensitive drum | |
| | **5) Are there scratches in the peripheral direction of the photosensitive drum?**<br>YES: Clean the photosensitive drum with a cloth coated with toner; if the scratches are not eliminated, replace the photosensitive drum. |
| Fixing unit | |
| | **6) Clean the fixing assembly inlet guide (upper, lower). Is the problem corrected?**<br>YES: End.<br>**7) Are there scratches or dents in the axial direction of the fixing roller (upper, lower)?**<br>YES: Remove the cause of the scratches, and replace the fixing roller.<br>**8) Is there a fault in the take-up mechanism of the web and cleaning operation?**<br>YES: Remove the cause of the fault, and replace the part.<br>**9) Check the fixing assembly separation claw or the separation guide for an error.**<br>YES: Clean or replace it.<br>**10) Are there scratches or dents on the oil removing blade?**<br>YES: Clean or replace it. |
| Cleaner lubricant | |
| | **11) Does the problem occur during installation of the machine or replacement of the photosensitive drum?**<br>YES: Suspect uneven cleaner lubricant. See the notes on using the cleaner lubricant. |

| | |
|---|---|
| Transfer unit | **12) Are there scratches or fault on the transfer belt?**<br>YES: Replace the transfer belt. If soiled with toner, clean it.<br>**13) Are there scratches or fault on the transfer blade?**<br>YES: Replace the transfer blade. |
| Separation assembly | **14) Clean the separation assembly. Is the problem corrected?**<br>YES: End. |
| Optical path<br>CCD, Standard white plate (dirt, scratches) | **15) Clean the standard white plate, scanning lamp, reflecting lamp cover, mirror, reflecting mirror, and lens. Is the problem corrected?**<br>YES: End.<br>NO: Try the following:<br>• Change the setting of 'ADJUST-S' under 'ADJUST' in service mode to change the shading position.<br>• Replace the standard white plate.<br>• Replace the CCD unit. |

Caution on Using the Cleaner Lubricant

You must shake the container well before removing its cap. When applying to the cleaning blade, be sure the application is uniform; uneven application will allow the lubricating ingredients to slide over the cleaning blade and adhere to the photosensitive drum, causing vertical white lines on the copies.

If such a problem is noted,

1) Using the color for which vertical white streaks are noted, make 10 solid copies in continuous mode.
   • This step may correct the problem.
2) Remove the photosensitive drum, and using a cloth coated with the color in question, wipe the surface of the drum; then, install the photo sensitive drum.
   • Remove the lubricant adhering to the photosensitive drum as indi cated.

## 3.4.8 The copy has horizontal streaks/horizontal fogging (the main scanning direction).

**1) Generate a halftone test print (PGTYPE=5). Are there vertical white streaks/white lines?**
**If in all colors, go to step 6.**
**If in a specific color, go to the next step.**

NO: Go to step 4.

Photosensitive drum

**2) Are there scratches or dirt in the peripheral direction of the axis of the photosensitive drum?**

YES: Replace the photosensitive drum.

Paper lint collecting plastic sheet

**3) Is the symptom a black line noted 188mm from the leading edge of the image?**

YES: Replace the paper lint collecting plastic sheet located in the registration roller assembly.

Power supply voltage, Scanning lamp, Lamp regulator
Original exposure system, CCD

**4) Does the scanning lamp flicker?**

YES: 1. Check the voltage of the power supply for fluctuations.
Use an exclusive power outlet.
2. Check the scanning lamp and the lamp regulator.

NO: Check the No. 1/No. 2 mirror mount for wobbling. Check the contact between the CCD and the CCD driver.

## ■ Horizontal Streaks

| No. | Color/location (A3) | Interval (mm) | Cause | Action |
|---|---|---|---|---|
| 1 | Specific color (dark, horizontal lines). | Drum | A transfer memory exists on the drum. | Generate 20 test prints (PG=05, halftone) continuously. (Try five times or so while checking the images.) If the problem is not corrected, replace the drum. |
| 2 | Specific color (light, horizontal lines). | | Traces of contact with the developing cylinder exist on the drum. | |
| 3 | All colors | 30 mm (approx.) | Dirt exists on the decurling roller (upper). | Clean the roller. |
| 4 | Specific color; leading edge (black lines as if made by rubbing). | | The trailing edge of curled paper touched the separation charging assembly. | Remove the curling from the paper. |
| 5 | Specific color | Random | The output of the developing bias is faulty. | Check the wiring; if normal, replace the developing bias unit (HVT3-A/B). |

## 3.4.9 The copy has white spots (horizontal : the main scanning direction).

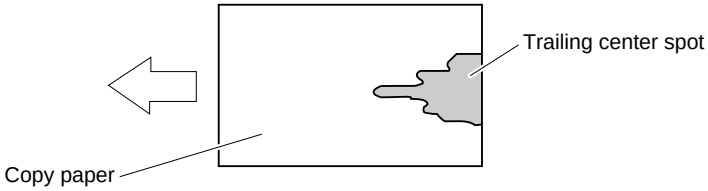
| | |
|---|---|
| Rail on mirror mount, Cable of original exposure system | **1) Generate a halftone test print (PG-TYPE=5). Is the problem noted?**<br>**If all colors, go to step 6.**<br>**If a specific color, go to the next step.**<br>NO: • Clean the rail of the mirror mount.<br>• Check the cable of the scanning system. |
| Developing assembly | **2) Check the developing cylinder. Is it normal?**<br>NO: Replace the developing assembly. |
| Transfer unit | **3) Is the locking mechanism for the transfer blade normal?**<br>NO: Remove the cause.<br>**4) Does the transfer blade have warping, bending, or a fault?**<br>YES: Replace the transfer blade.<br>**5) Does the transfer belt have scratches, bending, or a fault?**<br>YES: Replace the transfer belt. |
| Fixing roller<br>Copy paper | **6) Is offset noted on the surface of the fixing roller?**<br>YES: Check the fixing roller (upper, lower) for deformation.<br>NO: Is the copy paper moist?<br>Try different paper; advise the user on the correct method of storing paper. |

## 3.4.10 The copy has white spots.

| | |
|---|---|
| | **1) Is there a small lump of toner in the middle of a spot?**<br>YES: Go to step 6. |
| Developing assembly | |
| | **2) Generate a halftone test print (PGTYPE=5). Is the problem noted?**<br>**If all colors, go to step 4.**<br>**If a specific color, go to the next step.**<br>NO: Check the developing assembly and the developing cylinder for which the problem is noted; if a fault is found, clean or replace it. |
| Photosensitive drum, Transfer belt | |
| | **3) • Check the photosensitive drum and the transfer belt for scratches.**<br>**• Check the transfer belt for scratches and deformation.**<br>YES: Replace the photosensitive drum or the transfer drum belt. |
| Fixing roller | |
| | **4) Is the problem noted at intervals of about 180 mm?**<br>YES: Check the fixing roller for scratches and deformation. |
| Transfer current | |
| | **5) Execute the following:**<br>**• Check to find out the present zone by referring to the absolute value of the machine inside temperature ('DISP>ANALOG' in service mode).**<br>**0 ~ 580 g: zone A**<br>**581 ~ 1800 g: zone B**<br>**1801g go or more: zone C**<br>**• Check to find out the type of paper used and whether single-sided or double-sided is used.**<br>**• Select the following in service mode: 'ADJUST>HV-TR'**<br>**• Decrease the setting value of the transfer current corresponding to the conditions of occurrence (zone, paper type, single-sided/ double-sided) to '3' for al colors.**<br>**• If the symptoms are not corrected, reduce the value by another '3'.** |
| Waste toner (caking)<br>Developer (caking) | |
| | **6) Check to find out whether the lump of toner is of waste toner or developer.**<br>**Is it of waste toner?**<br>**• Waste toner: gray (mixed colors)**<br>**• Developer: C, M, Y, or Bk**<br>YES: Check the end seal of the photosensitive drum cleaner blade.<br>Check the end of the cylinder of the developing assembly for dirt.<br>NO: • Replace the developer.<br>• Replace the developing assembly. |

## 3.4.11 The copy has white spots (trailing center).

A trailing center white spot is a type of transfer failure and is found at the center of the trailing edge of a copy.

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■ Trailing Center White Spot

A trailing center white spot is caused by warping of paper. The leading edge of such paper is retained on the transfer belt without uniform contact, causing its trailing edge to warp.

This problem tends to occur particularly when copying on the second side of a two-sided copy in a high humidity environment.

| | |
|---|---|
| | **1) Does the problem occur only when copying on special paper or thick paper?**<br>YES: Go to step 3. |
| | **2) Is the copy paper wavy because of humidity?**<br>NO: Replace the paper. |
| Cassette heater<br>Transfer belt | **3) Is the cassette heater operating normally?**<br>NO: See “The cassette heater fails to operate.”<br>YES: Check the transfer belt; replace it if dents exist in the surface. |

## 3.4.12 The copy has white spots (meandering).

| | |
|---|---|
| Separation charging wire | **1) Clean the separation charging wire. Is the problem corrected?**<br>YES: End. |
| Separation charging assembly | **2) Is leakage, poor contact, or wrong charging wire height noted for the separation charging assembly?**<br>YES: Remove the fault. |
| Environment sensor | **3) Check the machine inside temperature using 'ANALOG' under 'DISP' in service mode. Is the reading proper?**<br>YES: Replace the environment sensor.<br>NO: Check the separation charging wire, signal line of the pre-fixing charging system, and wiring. |

## 3.4.13 The copy has a soiled image or soiled back.

| | |
|---|---|
| | **1) Is a soiled image noted only on a copy made after making a two-sided copy?**<br>YES: Go to step 11. |
| Image margin | **2) Is the image margin within specification?**<br>NO: Make adjustments as instructed under 2. "Standards and Adjustments." |
| Primary charging assembly, Developing bias laser power | **3) Is fogging noted in the image margin?**<br>YES: Check the primary charging assembly for dirt, and check the developing bias and laser power. |

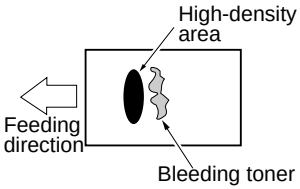
| | |
|---|---|
| Cleaning fault | **4) Is the cleaning blade of the photosensitive drum locked?**<br>NO: Lock and fix in position the cleaning blade of the cleaning assembly.<br>**5) Is foreign matter found on the cleaning blade of the photosensitive drum cleaning assembly?**<br>YES: Remove the foreign matter, and clean the cleaning blade and the cleaner assembly externals.<br>**6) Is deformation or scratches noted on the edge of the cleaning blade? Feel the cleaning blade with a finger to check for deformation and scratches.**<br>YES: If deformation or scratches are noted, remove the cause, and replace the cleaning blade.<br>**7) Is there a collection of waste toner under the scoop-up sheet?**<br>YES: Clean it.<br>**8) Is the scoop-up sheet of the photosensitive drum cleaning blade bent or faulty?**<br>YES: Replace the scoop-up sheet. |
| Side scraper | **9) Are the edges soiled when on the photosensitive drum?**<br>YES: Replace the side scraper. |
| Cleaning assembly (developing assembly) | **10) Is the transfer belt soiled with toner or fixing oil?**<br>YES: 1. Check to see if toner is leaking from the photosensitive drum cleaning assembly or the No. 2 cleaning assembly (end).<br>2. Check the oil removing roller to see if it is operating correctly. |
| Fixing assembly | **11) Is the take-up mechanism of the web of the fixing assembly normal? Is the upper/lower roller cleaned normally?**<br>NO: 1. Check the take-up mechanism of the web.<br>2. Clean the upper/lower roller.<br>3. Clean the oil blade.<br>4. Clean the contact face of the oil applying roller.<br>5. Clean the fixing assembly guide.<br>6. Clean the oil removing blade. |
| Delivery assembly, External static eliminating/separation charging assembly | **12) Clean the delivery roller, separation claw, external static eliminating/separation charging assembly. Is the problem corrected?**<br>YES: End. |

## 3.4.14 The copy has poor fixing.

| | |
|---|---|
| Upper roller, Lower roller | |
| | **1) Is the problem in the same direction as the feeding direction of the copy?**<br>YES: 1. Check the upper/lower roller of the fixing assembly for scratches.<br>2. Check the separation claw to see if it is positioned correctly. |
| Heater | |
| | **2) Does the heater (H1, H2) turn ON at power-on?**<br>NO: See "The fixing heater fails to operate." |
| Oil application | |
| | **3) Is oil applied evenly over the upper roller of the fixing assembly?**<br>NO: • Check the oil application assembly.<br>• Check the oil supply from the oil case. |
| Insulating bush, Bearing | |
| | **4) Are the insulating bush and the bearing installed properly?**<br>NO: Re-install them. |
| Nip, Thermistor | |
| | **5) Is the nip between the upper roller and the lower roller of the fixing assembly within specification?**<br>NO: Adjust the nip.<br>YES: Check the thermistor for a fault. |

## 3.4.15 The copy has bleeding toner (during fixing).

The term bleeding toner refers to spreading of toner immediately following (in relation to feeding direction) a high-density area of a copy.

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| | |
|---|---|
| Separation charging wire, Pre-fixing charging wire | **Clean the separation charging wire and the pre-fixing charging wire. Is the problem corrected?**<br>YES: End. |
| Separation charging assembly, Pre-fixing charging assembly | **Is leakage, poor contact, or wrong charging wire height noted for the separation charging assembly or the pre-charging assembly?**<br>YES: Remove the fault. |
| Service mode ('HV-SP' under 'ADJUST') | **1) Decrease the setting of 'SS-xx' corresponding to the mode and paper type using 'HV-SP' under 'ADJUST' in service mode. Is the problem corrected?**<br>**For a description of SP-xx and adjustments, see the descriptions given for service mode.**<br>YES: End. |
| Service mode ('HV-OFST' under 'ADJUST') | **2) Increase the setting of 'SP-OFST' for 'HV-OFT' under 'ADJUST' in service mode. Is the problem corrected?**<br>YES: End.<br>For the range of settings, see the descriptions on service mode. |
| Toner (excessive) | **3) Check the latent image formation system and the developing system. Is there a fault?**<br>YES: Correct it.<br>NO: Lower the copy density by changing the F value. |

## 3.4.16 The copy is blank.

| | |
|---|---|
| | **1) Generate a horizontal test print (PG-TYPE=10). Is the image normal?**<br>YES: Check the wiring of the following PCBs; if normal, replace it.<br>• Analog processor PCB<br>• Video controller PCB<br>• Image processor PCB<br>• CCD unit |
| Potential control fault | |
| | **2) Execute 'FUNC > EPC' in service mode. Is the copy image generated immediately after the execution normal?**<br>YES: End. |
| Transfer unit | |
| | **3) Is a fault noted on the transfer blade?**<br>YES: Replace it. |
| Developing motor | |
| | **4) Is the developing cylinder rotating during development?**<br>NO: Check the developing motor. |
| Transfer high voltage | |
| | **5) Turn off the power switch during development. Lower the transfer unit, and release the transfer unit and the photosensitive drum by hand; then, lift the hopper to remove the photosensitive drum unit. Is the image on the drum normal?**<br>YES: • Check the transfer high-voltage system.<br>• Check the high-voltage cable from the HVT PCB to the transfer unit; if normal, replace the HVT PCB.<br>• Check the internal static eliminating high-voltage system.<br>NO: • Check the developing bias system. |

## 3.4.17 The copy is solid black.

| | |
|---|---|
| | **1) Generate a horizontal stripe test print (PGTYPE=10). Is the image normal?**<br>YES: Go to step 6. |
| Potential control fault | |
| | **2) Execute 'EPC' under 'FUNC' in service mode. Is the copy image immediately after the execution normal?**<br>YES: End. |
| Primary charging unit | |
| | **3) Is the primary charging unit installed properly?**<br>NO: Replace the high-voltage cord. |
| Primary charging, Grid bias (output system) | |
| | **4) Is there electrical continuity between both connectors of the high-voltage cord connected to the primary charging assembly?**<br>NO: Replace the high-voltage cord.<br>YES: • Check the primary charging system and the grid bias output system.<br>• Try replacing the HVT PCB. |
| | **5) Does the scanning lamp turn ON?**<br>NO: See "The scanning lamp fails to turn ON." |
| Connector, Wiring | |
| | **6) Are the connectors and wiring between the following PCBs normal?**<br>**Image processor PCB**<br>**Analog processor PCB**<br>**CCD unit**<br>NO: Re-connect them. |

DC power supply

CCD unit, Analog processor PCB, Image processor PCB

**9) Is DC power present between the following terminals of the analog processor?**
**J2504-7 (+) — 8 (–): +5V**
**J2504-5 (+) — 4 (–): +8V**
**J2504-3 (+) — 4 (–): +8V**
**J2504-1 (+) — 2 (–): +15V**

NO: See "The DC power is absent."

YES: Try replacing the following parts:
- CCD unit
- Analog processor PCB
- Image processor PCB

## ■ Checking the Original Exposure System

1) Check to find out if the copyboard glass has ridden over an obstacle.
2) Clean the scanning lamp, reflecting plate, No. 1/2/3 mirror, standard white plate, and copyboard glass, and execute 'AUTO-ADJ' for 'CCD' under 'FUNC' in service mode. Is the problem corrected?

## 3.4.18 The copy has color displacement.

| | |
|---|---|
| | **1) Set 'FUNC > IMG-REG > AUTO-ADJ' in service mode to 'ON'. Is the problem corrected?**<br>YES: End. |
| Transfer belt | **2) Does the transfer belt have dents or deformation?**<br>YES: Replace it. |
| Retention | **3) Does the C transfer blade have dents or deformation?**<br>YES: Replace it.<br>**4) Is the operation of the locking mechanism of the C transfer blade normal?**<br>NO: Remove the cause of the fault. |
| Drum drive system | **5) Is the gear of the photosensitive drum worn or loose?**<br>YES: Replace the gear.<br>**6) Does the flywheel wobble?**<br>YES: Tighten the mounting screw.<br>**7) Clean the ends of the photosensitive drum and the spacer rubber. Is the problem corrected?**<br>YES: End.<br>NO: Check the developing drive system for wobbling and other faults. |

## 3.4.19 The copy has image blur

| | |
|---|---|
| | **1) Generate a test print (PGTYPE-10). Is the image normal?**<br>YES: Go to step 3. |
| Drive on Printer side | |
| | **2) Check the following**<br>**• Is the photosensitive drum drive gear worn?**<br>**• Does the flywheel wobble?**<br>**• Does the transfer belt have dents or deformation?** |
| Drive on Reader | |
| | **3) Set 'OPT > R-OPT > SCAN-DWN' in service mode. Is the problem corrected after the value is set below '1' ?**<br>NO: Check the following.<br>• Clean the rail of mirror mount.<br>• Clean the wire of mirror mount. |

## 3.4.20 Adjusting the Image Leading

| | |
|---|---|
| Laser write start position<br>transfer high voltage application timing | **1) Generate a test print (PGTYPE-10). Is the image normal?**<br>YES: Go to step 3. |
| Original read start position | **2) Adjust the setting in service mode, i.e., use a lower setting: 'ADJUST>FEED-ADJ>VSYC-ADJ'. Is the problem corrected?**<br>YES: End. |
| | **3) Execute image read position adjustment (ADJ-Y). (Refer to 2.1.3.c "Adjusting the Image Red Position" in this chapter.)** |

# 4 Troubleshooting

## 4.1 Troubleshooting Malfunctions

### 4.1.1 E000/E004

- Check the detail code of 'E000/E004' using 'DISPLAY > JAM/ERR' in service mode.

a. E000–XX01, XX02 (high-order 2 digits representing type as XX=01 indicating upper heater and 02, lower heater) and E004=0001

**1) Clear 'E000'. *1 Is 'E000' indicated immediately after the power switch is turned ON?**
**• Be sure to turn OFF the power switch immediately after the check.**
NO: Go to step 3.

Fixing thermistor (open circuit)
DC controller PCB

**2) Turn OFF the power switch, and disconnect J6020 from the connector J2209 on the DC controller PCB. As indicated by the detail code, measure the resistance between a and b in the following table. Is it 1kΩ or less?**

| Code | a | b |
|---|---|---|
| 0101/0102 | J6019A-12 | J6019A-13 |
| 0101/0202 | J6019B-1 | J6019B-2 |

YES: Check the wiring from J2209 to the fixing thermistor; if normal, replace the fixing thermistor.
NO: Replace the DC controller PCB.

Triac (open circuit)

**3) Replace the triac. Is the problem corrected?**
YES: End.

AC driver PCB
DC controller PCB

**4) Replace the AC driver PCB. Is the problem corrected?**
YES: End.
NO: Replace the DC controller PCB.

Note 1: To clear 'E000',
1) Start service mode. (asterisk key ∗ → '2', '8' → asterisk key ∗ )
2) Press 'FUNC > FUSER > E000-RLS' in order.
3) Check to make sure that the indication for 'P' at the top of the Service Mode screen changes from 'ERROR', 'SERVICE' and 'ERROR'.
4) Turn OFF and ON the power switch.

b. E000–XX05 (upper order 2 digits indicate the top/bottom; XX=01: upper heater; 02: lower heater)

| | |
|---|---|
| | **1) Clear 'E000'. Is 'E000' indicated immediately after the power switch is turned on?**<br>**•Be sure to turn off the power switch as soon as you have made the check.** |
| Thermistor | **2) Is the thermistor in even contact with the upper/lower fixing roller?**<br>NO: Mount it correctly. |
| Thermistor (open circuit) | **3) Turn off the power switch; then, open the front cover and the delivery assembly to cool the fixing roller.**<br>**Then, turn on the power switch; does the voltage between the following connectors gradually lower from about 5 V?**<br>**(Be sure to turn off the power switch as soon as you have made the check.)**<br>**Main thermistor, upper (TH1) : J2209-A13 (TH1), J2209-A12 (GND)**<br>**Sub thermistor, upper (TH2) : J2209-A11 (TH2), J2209-A10 (GND)**<br>**Main thermistor, lower (TH3) : J22-9-B2 (TH3), J2209-B1 (GND)**<br>**Sub thermistor, lower (TH4) : J2209-B4 (TH4), J2209-B3 (GND)**<br>NO: Check the wiring from the thermistor to the DC controller PCB; if normal, replace the thermistor.<br>YES: Replace the DC controller PCB. |

c. E000–XX20, XX30, XX40, XX50 (high-order 2 digits representing type as XX=01 indicating upper heater and 02, lower heater)

| | |
|---|---|
| | **1) Clear 'E000' (*), and turn ON the power switch. Does the fixing heater turn ON?**<br>**• Check by the eye. Be sure to turn OFF the power switch immediately after the check.**<br>NO: See "The fixing heater fails to turn on."<br>YES: Go to step 7. |
| Fixing thermistor (open circuit) | |
| | **2) Open the front cover and the delivery assembly to cool the fixing roller.**<br>**Close the delivery assembly and the front cover; then, set the meter to the 5VDC range, and measure the voltage between J2209A-13 (+: FRST) and J2209A-12 (–; GND).**<br>**Likewise, measure the voltage between J2209B-12 (+; FRST) and J2209B-1 (–; GND).**<br>**Does the voltage decrease from about 5 V gradually when the power switch is turned ON?**<br>**• Turn OFF the power switch immediately after the check.**<br>NO: Check the wiring from J2209 to the fixing thermistor; if normal, replace the fixing thermistor. |
| Thermistor | |
| | **3) Is the fixing oil thermistor upper, lower (THM1, THM2) in even contact with the upper/lower fixing roller?**<br>NO: Re-install it. |
| Environment | |
| | **4) Does the problem occur only when the machine is turned on for the first time in the morning?**<br>YES: • Advise the user that the operating environment is outside the specification.<br>• Advise the user not to turn on the power while the room is cold. |
| Thermistor switch (activation) | |
| | **5) Is there electrical continuity in the thermal switch (TP1, TP2)?**<br>NO: Replace the thermal switch. |
| Main thermistor<br>DC controller | |
| | **6) Replace the thermistor (upper/lower). Is the problem corrected?**<br>YES: End.<br>NO: Replace the DC controller. |

d. E000–0061, 0071, 0081

**1) Clear 'E000'. Is 'E000' indicated immediately after the power switch is turned on?**
- **Be sure to turn off the power switch as soon as you have made the check.**

NO: Go to step 3.

Oil thermistor (TH5), Oil heater thermistor (TH6; short circuit), DC controller PCB

**2) Turn off the power switch, and disconnect J6019 from J2209 on the DC controller PCB. Measure the resistance between a and b of the following table in reference to the detail code; is it 1 KΩ?**

| Code | a | b |
|---|---|---|
| 0061/0081 | J6019-B5 | J6019-B6 |
| 0071/0081 | J6019-B10 | J6019-B11 |

AC driver PCB
DC controller PCB

**3) Replace the AC driver PCB. Is the problem corrected?**

YES: End.
NO: Replace the DC controller PCB.

e. E000–0062, 0072, 0082

**1) Clear 'E000'. Is 'E000' indicated immediately after the power switch is turned on?**
**• Be sure to turn off the power switch as soon as you have made the check.**
NO: Go to step 3.

Thermistor (open circuit)

**2) Open the front cover and the delivery assembly to cool the fixing oil. Close the delivery assembly and the front cover, and set the meter to the 5 VDC range; then, measure the voltage between J2209-B6 (+: FRST) and J2209-B5 (GND). Likewise, measure the voltage between J2209B-1 (+: FRST) and J2209-B10 (GND). Turn on the power switch; does the voltage gradually lower from +5V?**
**• Be sure to turn off the power switch as soon as you have made the check.**
NO: Check the wiring from J12209B to the oil thermistor or the oil heater thermistor; if normal, replace the thermistor.

Thermistor(setting)

**3) Is thermistor(TH5/6) in even contact with the oil heater and upper oil pan?**
NO: Reset the thermistor.

Thermal switch

**4) Is there electrical continuity in the thermal switch (TP3)?**
NO: Replace the thermal switch.

Thermistor

**5) Replace the thermistor. Is the problem corrected?**
YES: End.

AC drive PCB
DC controller PCB

**6) Replace the AC driver PCB. Is the problem corrected?**
YES: End.
NO: Replace the DC controller PCB.

f. E000–0002

Triac (short circuit)
DC controller PCB

**1) Replace the triac. Is the problem corrected?**
YES: End.
NO: Replace the DC controller PCB.

## 4.1.2 E005

Cleaning web

**1) Is the cleaning web more or less used up?**

YES: Replace the cleaning web.

Counter

**2) After replacing the cleaning web, has 'FUNC > FUSER > E005-RLS' in service mode been executed?**

NO: Execute 'FUNC > FUSER > E005-RLS' in service mode.

Detecting lever (position)

**3) Is the detecting lever of the web length sensor on the web?**

NO: Re-mount it.

Web length sensor (PS36)
DC controller PCB

**4) Is the web length sensor (PS36) normal?**

NO: Replace the web length sensor.

YES: Replace the DC controller PCB.

You cannot clear 'E005' by executing 'E005-RLS' without replacing the web. Replace the web first.

## 4.1.3 E006

Fixing drawer connector
DC controller PCB

**1) Is there a fault in the fixing drawer connector?**

YES: Replace the drawer connector.

NO: Check the wiring from J22098A on the DC controller PCB to the fixing drawer connector J601; if normal, replace the DC controller PCB.

## 4.1.4 E008

| | |
|---|---|
| Fixing oil | **1) Does the oil case have an adequate amount of fixing oil?**<br>NO: Supply oil. |
| Fixing oil supply route | **2) Is the hose from the oil case to the upper oil pan clogged with dust?**<br>YES: Remove the clogging; or, replace the part. |
| Fixing oil level detect sensor (PS6) | **3) Is the fixing oil level detect sensor (PS6) normal? (Check as when checking a photointerrupter.)**<br>NO: Check the wiring from the DC controller PCB to the sensor; if normal, replace the fixing oil level detect sensor (PS6). |
| Fixing oil pump drive solenoid (SL2) | **4) Operate the fixing oil pump drive solenoid using 'IO-ON' of 'FMISCp' under 'FUNC' in service mode. Does it operate normally?**<br>NO: Check the wiring from the DC controller PCB to the fixing oil pump drive solenoid; if normal, replace the fixing oil pump drive solenoid. |
| DC controller PCB | **5) Operate the solenoid using 'IO-ON' of 'FMISCp' under 'FUNC' in service mode. At this time, does the voltage between J2209A-4 and J2209A-5 on the DC controller PCB change from 24 V to 0 V?**<br>NO: Replace the DC controller PCB. |

## 4.1.5 E012

| | |
|---|---|
| | **1) Does the photosensitive drum motor (M21) rotate during initial rotation?**<br>YES: Go to step 4. |
| Excess load | **2) Slide out the primary charging assembly, and check the condition of the cleaning blade by the naked eye. (Do not slide out the process unit.)**<br>**Is the cleaning blade bent?**<br>YES: Put a finger through the primary charging assembly slot, and push the blade support plate to correct the bend; then, slide out the process unit.<br>Check if the photosensitive drum should be subject to excess load. Replace the cleaning blade as necessary. |
| Photosensitive drum motor (M21)<br>DC controller PCB | **3) Set the meter to the 5VDC range, and measure the voltage between J2225B-2 (+; M210N) and J2225B-3 (–; GND) on the DC controller PCB.**<br>**Turn OFF and then ON the power switch. Does the voltage change from about 5 V to about 0 V when the main motor starts to rotate?**<br>YES: Replace the photosensitive drum motor (M21).<br>NO: Check the wiring from J2225B to the drum motor; if normal, replace the DC controller PCB. |
| DC controller PCB<br>Photosensitive drum motor (M21) | **4) Set the meter to the 5VDC range, and measure the voltage between J2226A-12 (+; M21PLL*) and J2226A-14 (–; GND) on the DC controller PCB.**<br>**Turn OFF and then ON the power switch. Does the voltage change from about 3 V to about 0 V when the main motor starts to rotate?**<br>YES: Replace the DC controller PCB.<br>NO: Check the wiring from J2225B to the photosensitive drum motor; if normal, replace the photsensitive drum motor. |

## 4.1.6 E013

- Check the detail code of 'E013' using 'DISPLAY > JAM/ERR' in service mode.

Waste toner feeding screw

**1) Is '0002' indicated?**

YES: The waste toner case is full, imposing excess load on the waste toner feeding screw. Remove the waste toner as shown under "F013-0002."

Waste toner feeding motor (M20)
DC controller PCB

**2) Set the meter to the 12VDC range. Does the voltage between J2226A-5 (+) and J2226A-6 (–) on the DC controller PCB change from 5 to 0 V when the Start key is pressed after turning off and then on the power?**

YES: Check the wiring; if normal, replace the waste toner feeding motor.
NO: Replace the DC controller PCB.

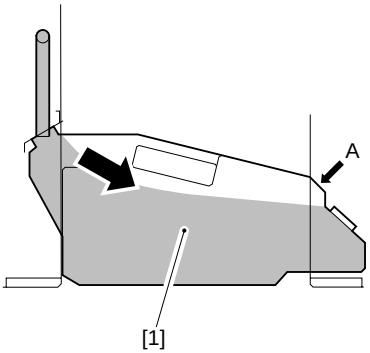
Waste toner lock detecting switch (SW4)
DC controller PCB

**3) Is the voltage between J2223B-4 (+) and J2223B-5 (–) on the DC controller PCB 0 V when the waste toner lock detecting switch is pressed and 5 V when released?**

NO: Replace the waste toner lock detecting switch.
YES: Replace the DC controller PCB.

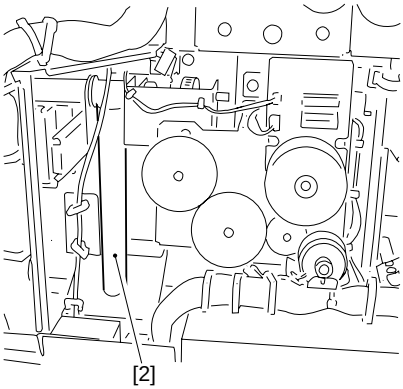
■ E013-0002

1) Turn off the power switch.
2) Apply vibration to area A of the waste toner box [1] so that the toner moves from the rear to the front.



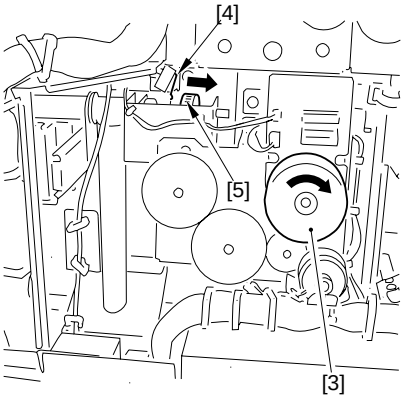

F05-401-01

3) Tap the waste toner vertical pipe [2] with a screwdriver so that the toner will fall from the pipe.




F05-401-02

4) Turn the waste toner feeding motor [3] in the direction of the arrow so that the screw gear [5] moves away from the microswitch lever [4]. (If it does not move, the pipe is still filled with waste toner. Perform step 3) once again.)




F05-401-03

5) Turn on the power switch.
6) Execute 'FUNC > F-MISCp > MTR' in service mode to rotate the waste toner feeding motor. Check if the rotation is stable.
7) Dispose of the waste toner collecting inside the waste toner box.

## 4.1.7 E014

Fixing roller drive assembly, Fixing oil applying roller drive assembly, Feeding drive assembly

**1) Is there a fault on the fixing roller (upper, lower), fixing oil applying roller, or the drive assembly of the feeding assembly? Or, is any of them subjected to excess load?**

YES: Replace any faulty part, and remove the cause of the fault.

Fixing motor (M9)
DC controller PCB

**2) Set the meter to the 12VDC range. Does the voltage between J2214A-12 (+; M9D*) and J2214A-13 (–; GND) on the DC controller PCB change from 5 V to 0 V after the power has been turned on, WMUP has ended, and INTR begins (i.e., when the temperature of the fixing roller reaches 110°C)?**

YES: Replace the fixing motor unit.

NO: Check the wiring from J6070 on the fixing motor driver PCB to J2214A on the DC controller PCB; if normal, replace the DC controller PCB.

## 4.1.8 E015

Multifeeder pick-up roller drive assembly, Paper thickness detecting roller drive assembly, Hopper drive assembly

**1) Is there a fault in multifeeder pick-up roller drive assembly, paper thickness detecting roller drive assembly or hopper drive assembly? Or, is any of them subjected to an excess load?**

YES: Remove the cause of the fault. Replace the faulty part. Moreover, remove the cause of the fault.

Pick-up motor (M10)
DC controller PCB

**2) Set the meter to the 24VDC range. When the Start key is pressed, does the voltage between J2214B-3 (+; M10D∗) and J2214B-4 (–; GND) on the DC controller PCB change from 5 V to 0 V?**

YES: Replace the multifeeder pick-up motor.

NO: Check the wiring from J6071 on the multifeeder pick-up motor to J2214B on the DC controller; if normal, replace the DC controller PCB.

### 4.1.9 E017

Duplexing feeding drive assembly

**1) Is there a fault (e.g., excess load) in the roller drive assembly driven by the duplexing unit feeding motor?**

YES: Remove the cause of the fault.

Duplex feed motor (M19)
DC controller PCB

**2) Set the meter to the 24VDC range. Select two-sided mode, and press the Start key; does the voltage between J2223B-8 (+) and J2223B-9 (–) on the DC controller PCB change from 5 V to 0 V?**

YES: Check the wiring from the DC controller to the duplex feed motor; if normal, replace the duplex feeding motor.

NO: Replace the DC controller PCB.

### 4.1.10 E018

Polishing/Oil removing motor drive system

**1) Push the one-way clutch lever to rotate the oil removing roller. Is there any fault (e.g., excess load)?**

YES: Remove the cause of the fault.

Polishing/Oil removing motor (M15)
DC controller PCB

**2) Set the meter to the 24VDC range, and select automatic two-sided mode. When the Start key is pressed, does the voltage between J2218A-11 (reversal signal) and J2218A-12 on the DC controller PCB change from 7 V to 0 V?**

YES: Check the wiring from the DC controller to the polishing/oil removing motor; if normal, replace the polishing/oil removing motor.

NO: Replace the DC controller PCB.

## 4.1.11 E020

- Check the detail code of 'E020' using 'JAM/ERR' under 'DISPLAY' in service mode.

a. E020=XX30, XX31, XX35, XX36, XX3A, XX3B, XX40, XX41, XX42, XX43, XX45, XX46, XX47, XX48, XX50, XX55, XXA0, XXA1, XXA5, XXA6, XXAA, XXB0, XXB1, XXB2, XXB5, XXB6, XXB7 XXBF (high-order 2 digits representing the color as XX=00 indicating all colors; 01, C; 02, M; 03, Y; and 04, Bk.)

Initial value setting

**1) Execute 'FUNC > INSTALL > INIT-C/M/Y' and 'SINIT-C/M/Y/K' in service mode once again for the color for which 'E020' is indicated. Is the problem corrected?**

YES: End.

Developing assembly (uneven toner density)

**2) Execute 'STIR' for the color for which 'E020' is indicated for 'INSTALL' under 'FUNC' in service mode. Is the problem corrected?**

YES: End.

Developing assembly

**3) Replace the developer of the color for which 'E020' is indicated, and execute 'FUNC > INSTALL > INIT'. Is the problem corrected?**

YES: End.

Connector, Wiring

**4) Are the connectors and wiring of the following connectors normal? SALT sensor in every color ⇔ DC controller (J2228)**

NO: Re-connect them.

Toner density sensor
DC controller PCB

**5) Replace the toner density sensor of the color for which 'E020' is indicated. Is the problem corrected?**

YES: End.
- Be sure to replace the developer after replacing the toner density sensor.

NO: Replace the DC controller PCB.

SALT sensor

**6) Is the front door open while the transfer frame front cover is removed (i.e., is the SALT sensor subject to stray light)?**

YES: Install the transfer frame front cover.

NO: Replace the SALT sensor.
- Be sure to replace the developer after replacing the toner density sensor.

Photosensitive drum

**7) Replace the photosensitive drum. Is the problem corrected?**

YES: End.

NO: Replace the DC controller PCB.

b. E020–XX60, XX70

Photosensitive drum

**1) Is the photosensitive drum soiled?**

YES: Replace the cleaning blade.
Be sure to clean the SALT sensor as well.

SALT sensor

**2) Clean the window of the SALT sensor. Is the problem corrected?**

YES: End.

NO: Check the wiring from the DC controller PCB to the SALT sensor; if normal, replace the SALT sensor.

c. E020–XX80, XX81, XX82, XX85, XX86, XX87, XX8F, XXC0, XXC1, XXC2, XXC5, XXC67, XXC7

Backup data

**1) 'FUNC > INSTALL' in service mode, is the value on the 3rd, 4th page the same as that indicated on the service label?**

NO: Enter the value of 'DC-CON' under 'FUNC' in service mode.

DC controller PCB

**2) Replace the DC controller PCB. Is the problem corrected?**

YES: End.
Perform the steps indicated for replacing the DC controller PCB.

d. E020–XX90, XX91

SALT sensor (dirt)

**1) Is the window of the SALT sensor soiled with toner?**

YES: Clean it.

SALT sensor shutter
Shutter open/close solenoid

**2) Is the opening/closing operation of the SALT sensor shutter normal?**

NO: Check the shutter for deformation.
Clean the inside by referring to 3. "Disassembling and Cleaning the Inside of the SALT Sensor" under E. (SALT Sensor" in Chapter 2 "Mechanical System."

YES: Check the wiring from the DC controller 2 to the solenoid; if normal, replace the solenoid.

e. E020–XX4A, XX4B, XX4C, XX4D, XXBA, XXBB, XXBC, XXBD, XXD0, XXE0

| | |
|---|---|
| | **1) Perform "Checking E020" on the next page. Is 'E020' still indicated?**<br>NO: End. |
| Developing assembly (uneven toner density) | |
| | **2) Execute 'FUNC > INSTALL > STIR-C/M/Y/K' in service mode for the color in question. Is the problem corrected?**<br>YES: End. |
| Developer | |
| | **3) Replace the developer of the color for which 'E020' is indicated, and execute 'FUNC > INSTALL > INIT'. Is the problem corrected?**<br>YES: End.<br>• Check the counter. If the developers of other colors are near the ends of their lives, replace all developers. |
| Color toner density sensor | |
| | **4) Replace the toner density sensor of the color for which 'E020' is indicated. Is the problem corrected?**<br>YES: End.<br>NO: Go to step 8. |
| SALT sensor | |
| | **5) Replace the Bk SALT sensor. Is the problem corrected?**<br>YES: End.<br>NO: Go to the next step. |
| Photosensitive drum | |
| | **6) Replace the photosensitive drum. Is the problem corrected?**<br>YES: End. |
| Developing cylinder | |
| | **7) Does the developing cylinder of the color for which 'E020' is indicated rotating?**<br>NO: Check the developing cylinder drive system. |
| Toner level sensor | |
| | **8) Is toner present inside the hopper? (Is the level of toner inside the hopper for which 'E020' is indicated above the toner sensor?)**<br>NO: Check the toner level sensor inside the hopper. |
| Hopper | |
| | **9) Replace the toner level sensor. Is the problem corrected? (To supply toner, follow the instructions on Service Handbook of CLC1000 > Chapter 2 > E. Developing Assembly-Related Parts > 1. Replacing the Developer.)**<br>YES: End.<br>NO: Replace the hopper. (To supply toner, see Service Handbook of CLC1000 > Chapter 2 > E. Developing Assembly-Related Parts > 1. Replacing the Developer.) |

f. E020/XXF1, 04F2

| | |
|---|---|
| | **1) Is the detailed code '04F2'?**<br>YES: Go to step 4. |
| CMY hopper | **2) Is the level of toner inside the hopper for which 'E020' is indicated above the toner sensor?**<br>YES: Replace the hopper. (To supply toner, see Service Handbook of CLC1000 > Chapter 2 > E. Developing Assembly-Related Parts > 1. Replacing the Developer.) |
| CMY error sensor | **3) Disconnect the connector of the toner level sensor (front of toner). Replace the error sensor (hopper rear). After replacement, is the Add Toner message indicated?**<br>YES: Connect the connector of the toner level sensor, and supply the hopper with toner. (To supply toner, see Service Handbook of CLC1000 > Chapter 2 > E. Developing Assembly-Related Parts > 1. Replacing the Developer.)<br>NO: Replace the hopper. (To supply toner, see Service Handbook of CLC1000 > Chapter 2 > E. Developing Assembly-Related Parts > 1. Replacing the Developer.) |
| Bk hopper | **4) Is the level of toner inside the Bk hopper above the toner sensor?**<br>YES: Replace the hopper. (To supply toner, see Service Handbook of CLC1000>Chater 2> E. Developing Assembly-Ralated Parts>1. Replacing the Developer.) |
| SALT sensor | **5) Replace the Bk toner level sensor (upper). Is the Add Toner message indicated?**<br>NO: Replace the hopper. (To supply toner, see Service Handbook of CLC1000 > Chapter 2 > E. Developing Assembly-Related Parts > 1. Replacing the Developer.)<br>YES: End. (To supply toner, see Service Handbook of CLC1000 > Chapter 2 > E. Developing Assembly-Related Parts > 1. Replacing the Developer.) |

■ Checking E020

1) Identify the color for which 'E020' has been indicated using 'DISPLAY > JAM/ERR'.
2) Turn OFF and then ON the power switch, and select the following mode:
   - A3/11 × 17
   - 21 copies
   - mono copy of the color for which 'E020' has been indicated.
3) Start service mode, and select 'DISPLAY > DENS/VCONT'.
4) Place a stack consisting of several A3/11 × 17 sheets of paper on the copyboard glass, and press the Start key.
5) Check the following two points:
   - Normal if the value of 'DENS' for the color for which 'E020' is indicated approaches '0'.
   - Is 'E020' indicated after copying?

## 4.1.12 E023

**1) Check the detail code of E023 using 'DISPLAY > JAM/ERR' in service mode.**

Developing assembly

**2) Remove the developing assembly for which 'E023' is indicated. Turn the cylinder gear in its normal direction (Counter clockwise). Does it turn smoothly?**

NO: Check the inside of the developing assembly for foreign matter. Check the drive system for damage to gear.

Developing motor drive system

**3) Do the belt and the pulley rotate smoothly?**

NO: Check the gears of the drive system for damage and fault.

Developing motor
for Y (M18C)
for M (M18M)
for C (M18Y)
for Bk (M18K)
DC controller PCB

**4) Set the meter to the 12VDC range. When the Start key is pressed, does the voltage between the following terminals on the DC controller PCB change from 5 V to 0 V?**

**for C J2226A-2 (+) — J2226A-3 (–)**
**for M J2226A-12 (+) — J2226A-13 (–)**
**for Y J2223B-7 (+) — J2223B-8 (–)**
**for Bk J2223B-13 (+) — J2223B-6 (–)**

YES: Replace the developing motor.
NO: Replace the DC controller PCB.

## 4.1.13 E030

DC controller PCB

**1) Does the total copy counter operate normally?**

NO: See "The counter fails to operate."
YES: Replace the DC controller PCB.

## 4.1.14 E040

- Check the detail code of 'E040' using 'DISPLAY > JAM/ERR' in service mode.

### a. E040-0001, 0002

Cassette size detecting switch

**1) Is the size of the cassette indicated on the message display?**
NO: Check the cassette size detecting switch.

Gear, Lever

**2) Slide out the cassette, and move the lifter up by hand. Does it move smoothly?**
NO: Remove the pick-up assembly, and check the gear and lever.

Cassette (latch)

**3) Is the movement of the latch assembly of the grip on the cassette normal?**
NO: Re-install it.

Spring, Lever

**4) Push up the pick-up roller releasing lever by a finger. Does the pick-up roller move down?**
NO: Remove the pick-up assembly, and check the spring and the lever.

Cassette lifter position sensor

**5) Is the cassette lifter sensor (PS24, PS27) normal? (See the instructions on how to check photointerrupters.)**
NO: Check the lever and the wiring; if normal, replace the sensor.

Cassette 1 lifter motor (M16)
Cassette 2 lifter motor (M17)

**6) Turn OFF the power switch, and disconnect the connector J2222 from the DC controller PCB. Set the meter to the ×100Ω range, and measure the resistance between the following terminals on the motor side. Is it about 60Ω?**
**M16: J2239A-1 and J2239A-2**
**M17: J2239A-3 and J2239A-4**
NO: Check the wiring from the connector to the motor; if normal, replace the motor.

Cassette lifter motor
DC controller PCB

**7) Connect the connector, and turn ON the power switch. Set the meter to the 30VDC range, and connect the – probe to GND and the + probe to the following. Does the reading of the meter change from about 0 V to about 24 V when the cassette is slid in?**
**M16: J2222A-1**
**M17: J2222A-3**
YES: Remove the pick-up assembly, and check the gear; if normal, replace the motor.
NO: Replace the DC controller PCB.

b. E040–0101, 0102

Drive gear
Lever

**1) Is the up/down movement of the lifter of the multifeeder smooth? (See the descriptions on how to release the lifter.)**

NO: Check the drive gear and the lever.

Lifter sensor (PS2, PS3)

**2) Is the lifter sensor (PS2, PS3) normal? (See the instructions on how to check photointerrupters.)**

NO: Check the lever and the wiring; if normal, replace the sensor.

Multi feed lifter motor (M1)
DC controller PCB

**3) Turn OFF the power switch, and disconnect the connector J2239 from the DC controller PCB. Set the meter to the ×100Ω range, and measure the resistance between the following terminals on the motor side. Is it about 60Ω?**

**J2229B-1 and J2229B-2**

NO: Check the wiring from the connector to the motor; if normal, replace the motor.

YES: Replace the DC controller PCB.

## 4.1.15 E041

- Take note of the position of the lifter when 'E041' is indicated.
- Check the detail code of 'E041' using 'DISPLAY > JAM/ERR' in service mode.

### a. E041-0001, 0003

**1) Has the lifter moved up to push the switch when 'E041' is indicated?**

NO: Go to step 3.

Lifter upper limit switch (SW8001)

**2) Turn OFF and ON the power switch to clear 'E041'.**
**Does bit 4 of address 801004 under 'DISPLAY/SENSOR' in service mode change when the lifter upper switch (SW8001) is pressed by a finger?**

NO: Check the wiring from the switch to the DC controller PCB; if normal, replace the sensor.

YES: Replace the DC controller PCB.

Paper deck motor (M8001)

DC controller PCB

**3) Turn OFF and ON the power switch, and open the paper deck cover.**
**Does the voltage between J2223A-3 (+) and J2223A-5 (–) on the DC controller change from 0 V to 24 V?**

YES: Check the drive system and wiring from the motor; if normal, replace the motor.

NO: Replace the DC controller PCB.

b. E041–0002, 0003

**1) Is the lifter down and pushing the switch when 'E041' is indicated?**
NO: Go to step 3.

Lifter lower limit switch (SW8002)

**2) Turn OFF and ON the power switch to clear 'E041'.**
**Does bit 5 of address 801004 under 'DISPLAY > SENSOR' in service mode change when the lifter lower limit switch (SW8002) is pressed by a finger?**
NO: Check the wiring from the switch to the DC controller PCB; if normal, replace the sensor.
YES: Replace the DC controller PCB.

Paper deck motor (M8001)
DC controller PCB

**3) Turn OFF and ON the power switch.**
**Does the voltage between J2223-A-5 (+) and J2223A-3 on the DC controller change from 0 V to 24 V?**
YES: Check the drive system and wiring from the motor; if normal, replace the motor.
NO: Replace the DC controller PCB.

## 4.1.16 E044

Paper width reference value data (faulty)

**1) Enter the values recorded on the service label to the following under 'ADJUST > DC-CON' in service mode: UP-A4R, UP-STMR, LOW-A4R, LOW-STMR, MF-A4R, MF-A6R, MF-A4. Doe the error disappear?**
YES: End.

Paper width reference value

**2) Using 'FUNC > CST-AD' in service mode, set the paper width reference value once again. Is the problem corrected?**
YES: End.

Variable resistor

**3) Shift the paper guide for the paper width direction. Does the resistance of the variable resistor change?**
NO: Replace the variable resistor.
YES: Replace the DC controller PCB.

## 4.1.17 E050

| | |
|---|---|
| Duplexing paper jogging guide home position sensor (PS29) | **1) Is the sensor normal? (See the instructions on how to check photointerrupters.)**<br>NO: Replace the sensor. |
| Operation (faulty) | **2) Is there any obstacle in the operation path of the duplexing unit stacking guide?**<br>YES: Remove it. |
| Duplexing paper jogging guide motor (M23)<br>DC controller PCB | **3) Replace the motor. Is the problem corrected?**<br>YES: End.<br>NO: Replace the DC controller PCB. |

## 4.1.18 E061

| | |
|---|---|
| | **1) Is the value of 'ADJUST > VCCRT (MCYK)' in service mode the same as that recorded on the service label?**<br>NO: Enter the value recorded in the service label. |
| | **2) Check the detail code of 'E061' in 'DISPLAY > JAM/ERR' in service mode.**<br>Make the appropriate checks prescribed for each detail code. |
| Laser exposure system | **3) Is the operation of the laser shutter normal?**<br>NO: Check the shutter assembly.<br>**4) Is the laser power normal?**<br>NO: Adjust it. If output is absent, replace the laser unit. |
| Video controller PCB | **5) Is the connection of each connector on the video controller PCB normal?**<br>YES: Replace the PCB. |

| | |
|---|---|
| Primary charging assembly | **6) Is the primary charging assembly inserted properly?**<br>NO: Re-install it.<br>**7) Are the charging wires of the primary charging assembly and the pre-primary charging assembly broken?**<br>YES: Re-install the charging wire.<br>**8) Are the charging wires of the primary charging assembly and the pre-primary charging assembly soiled?**<br>YES: Clean them or re-install them.<br>**9) Is there electrical continuity between charging wire, grid, and shielding plate?**<br>**Further, is there a trace of leakage on the primary charging assembly or the pre-primary charging assembly?**<br>NO: Replace the primary charging assembly.<br>**10) Is the grid broken, slack, or soiled?**<br>NO: Replace the grid. |
| HVT2 PCB | **11) Is the high-voltage output from the HVT2 PCB normal?**<br>**Is the connection of each connector on the HVT2 PCB normal?**<br>YES: Check the connectors on the HVT2 PCB and the high-voltage cable; if normal, replace the HVT2 PCB. |
| Pre-exposure lamp | **12) Is the pre-exposure lamp normal?**<br>**Turn on the pre-exposure lamp using 'FUNC > F-MISCp > I/O' in service mode. Is it normal?**<br>NO: Check the wiring from the DC controller PCB to the pre-exposure lamp; if normal, replace the pre-exposure lamp. |
| Photosensitive drum | **13) Is the photosensitive drum grounded?**<br>NO: Ground it.<br>YES: Replace the photosensitive drum. |
| Potential sensor | **14) Clean the potential sensor. Is the problem corrected?**<br>YES: End.<br>Check the wiring from the DC controller PCB to the potential sensor; if normal, replace the potential sensor unit. |
| Environment sensor | **15) Check the temperature and humidity using 'DISPLAY > ANALOG' in service mode. Is the environment sensor normal?**<br>NO: Check the wiring from the DC controller PCB to the environment sensor; if normal, replace the environment sensor.<br>YES: Replace the DC controller PCB. |

## 4.1.19 E062

- Check the detail code of 'E062' using 'DISPLAY > JAM/ERR' in service mode.

### a. XX01

AC driver PCB

**1) Turn OFF and ON the power. Is 'E062' indicated?**
NO: End.

DC controller PCB

**2) Replace the AC driver PCB. Is the problem corrected?**
YES: End.
NO: Replace the DC controller PCB.

### b. XX02

**1) Turn OFF and ON the power switch. Is 'E062' indicated?**
NO: End.

Drum heater

**2) Measure the resistance between the following terminals on the AC driver PCB for the color for which 'E062' is indicated:**
**for Y: J2805-1 and -7**
**for M: J2805-2 and -8**
**for C: J2805-3 and -9**
**for Bk: J2805-4 and -10**
**Is the reading of the meter 'OL'?**
YES: Check the wiring from the AC driver PCB and the drum heater; if normal, replace the drum heater.
NO: See "The drum heater fails to turn ON."

### c. 0010

Drum thermistor
DC controller PCB

**1) Disconnect J2216A from the DC controller PCB, and measure the resistance of the terminals on the harness side:**
**for Y: J2216A-4 and J2216A-5**
**for M: J2216A-9 and J2216A-10**
**for C: J2216B-4 and J2216B-5**
**for Bk: J2216B-9 and J2216B-10**
**Is the resistance 10 kWor more?**
NO: Check the wiring up to the drum thermistor; if normal, replace the drum thermistor.
YES: Replace the DC controller PCB.

## 4.1.20 E072

Transfer belt cleaning web rotation sensor (PS10)

**1) Is the sensor normal? (Check the instructions on how to check photointerrupters.)**

NO: Replace the sensor.

Operation (faulty)

**2) Turn the web drive shaft by a finger. Does it turn smoothly?**

NO: Remove the cause of poor rotation.

Transfer belt cleaning web motor (M12)

DC controller PCB

**3) Turn OFF and ON the power switch; then, select two-sided copying mode, and press the Start key.**
**Does the voltage at J2218A-4 on the DC controller PCB change from 0 V to 24 V?**

YES: Check the wiring from the DC controller PCB to the transfer belt cleaning web motor; if normal, replace the transfer belt cleaning web motor.

NO: Replace the DC controller PCB.

## 4.1.21 E073

Transfer frame drawer connector

DC controller PCB

**1) Is the transfer frame drawer connector soiled with toner or damaged?**

YES: Clean the drawer connector.

NO: Check the wiring from J2218 on the DC controller PCB to the transfer frame drawer connector J6122; if normal, replace the DC controller PCB.

## 4.1.22 E074

Transfer belt lifter sensor 1 (PS12), 2 (PS13)

**1) Is the sensor normal? (See the instructions on how to check photo-interrupters.)**

NO: Replace the sensor.

Operation (faulty)

**2) Turn the transfer belt lifter drive shaft by a finger. Does it turn smoothly?**

NO: Remove the cause of the faulty rotation.

Sensor (position)

**3) Turn OFF and ON the power switch to clear 'E074'.**
**Press the Start key, and check the operation of the lifter of the transfer belt by the eye. Does the transfer belt move up and down?**

YES: Check the position of the sensor; if normal, replace the DC controller PCB.

Multifeeder pick-up motor

**4) Turn OFF and ON the power switch once again, and press the Start key. Does the multifeeder pick-up motor rotate?**

NO: Check the wiring; if normal, replace the multifeeder pick-up motor.

Transfer belt lifter clutch (CL17)
DC controller PCB

**5) Turn OFF and ON the power switch once again, and press the Start key.**
**Does the voltage between J2208A-14 and J2208A-15 on the DC controller PCB change from 0 V to 24 V?**

YES: Check the wiring from the clutch to the DC controller PCB; if normal, replace the clutch.

NO: Replace the DC controller PCB.

## 4.1.23 E075

- Check the detail code of 'E075' using 'DISPLAY > JAM/ERR' in service mode.

### a. E075–0001, 0002, 0003, 0004

Transfer belt edge sensor (PS17, PS18, PS19, PS20)

**1) Is the sensor represented by the detail code in question normal? (See the instructions on how to check photointerrupters.)**

NO: Check the operation; if normal; replace the sensor.

Transfer belt unit (connector)

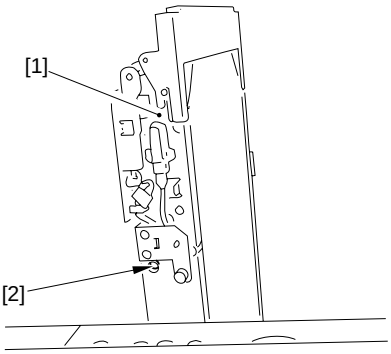
**2) Is the connector of the transfer belt unit connected securely?**

NO: Connect it securely.

Slave roller (fixing screw)

**3) Is the fixing screw of the slave roller assembly loose?**
**When the slave roller assembly [1] is bent, the fixing screw [2] at the rear is loosened; be sure to tighten the fixing screw after the work. Otherwise, the slave roller assembly will wobble, causing the transfer belt to become displaced (leading to 'E075').**

NO: Tighten it fully.



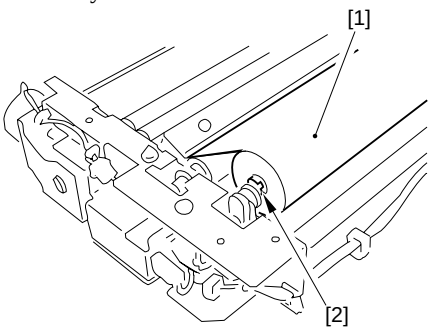

F05-401-04

Transfer belt cleaning web

**4) Is the web shaft of the transfer belt cleaning web fitted correctly in the bushing?**

**If the web shaft [2] is not correctly fitted to the bushing when the cleaning belt web [1] is mounted, the web will come into uneven contact with the transfer belt, causing the transfer belt to malfunction ('E075').**

NO: Mount the web shaft correctly.




F05-401-05

Oil removing roller

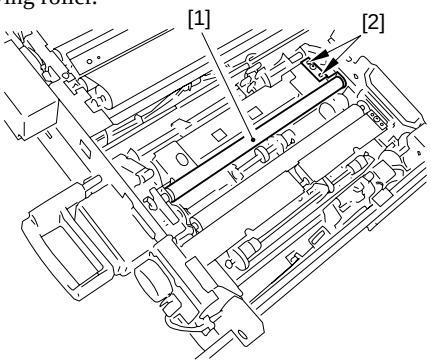
**5) Is the oil removing roller mounted correctly?**

**If the oil removing roller [1] is fixed in position overriding the emboss [2] next to the fixing screw, the roller will come into uneven contact with the transfer belt, causing the transfer belt to malfunction ('E075').**

NO: Mount the oil removing roller correctly.

**6) Is the surface of the roller peeling?**

YES: Replace the oil removing roller.

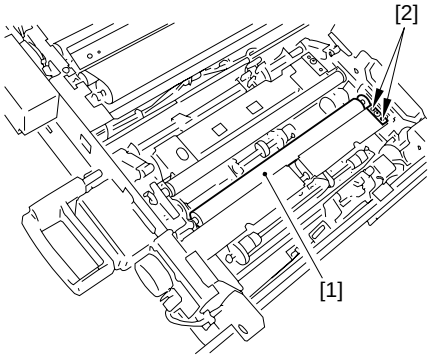



F05-401-06

Polishing roller

**7) Is the polishing roller mounted normally?**
**If the polishing roller [1] is fixed in position overriding the emboss [2] next to the fixing screw, the roller will come into uneven contact with the transfer belt, causing the transfer belt to malfunction ('E075').**

NO: Mount the polishing roller correctly.

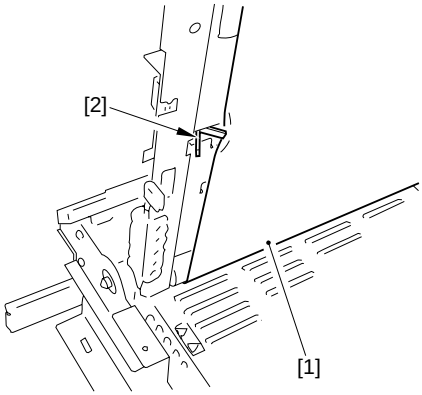



F05-401-07

Transfer belt

**8) Is the transfer belt overriding the edge sensor?**
**Take care not to mount the transfer belt [1] overriding the edge sensor [2]; otherwise, the transfer belt can malfunction ('E075').**

YES: Mount the transfer belt correctly.

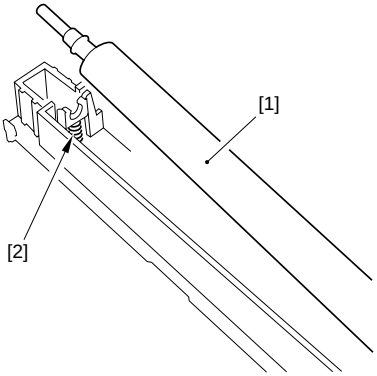



F05-401-08

Internal static eliminating roller

**9) Is the internal static eliminating roller mounted correctly?**
**If the internal static eliminating roller [1] is secured in position with the push-on spring [2] detached, the roller will come into uneven contact with the transfer belt, causing the transfer belt to malfunction ('E075').**

NO: Mount the internal static eliminating roller correctly.

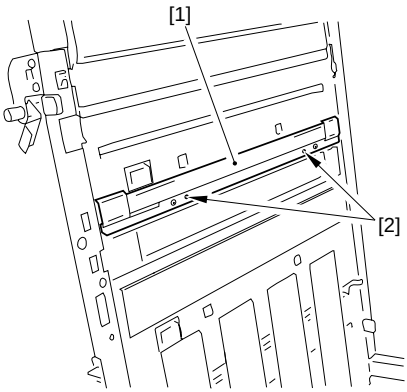



F05-401-09

Transfer belt back cleaning member

**10) Is the transfer belt back cleaning member mounted correctly?**
**If the transfer belt back cleaning member [1] is secured in place overriding the emboss [2] next to the fixing screw, the contact with the transfer belt will be uneven, causing the transfer belt to malfunction ('E075').**

NO: Mount the transfer belt face cleaning member correctly.




F05-401-10

Transfer assembly (releasing)

**11) Was the transfer assembly released while the transfer belt was rotating during servicing work?**
**If the transfer assembly releasing lever is freed before the transfer belt stops to rotate after service work conducted with the help of the cover switch actuator, 'E073' or 'E075' will occur when the transfer unit is slid out.**

YES: Check to make sure that the machine has stopped operating before sliding out the transfer unit.

Transfer belt drive roller

**12) Is there shavings of the belt on the surface of the roller?**

YES: Clean the surface of the roller with alcohol.

Transfer blade

**13) Is there shavings of the belt on the surface of the blade?**

YES: Clean the surface of the blade with lint-free paper.

DC controller PCB

**14) Operate the transfer belt shifting motor in service mode. Is operation noise heard?**

YES: Check the drive system and the wiring; if normal, replace the DC controller PCB.

Transfer belt shifting motor (M12)
DC controller PCB

**15) Replace the motor. Is the problem corrected?**

YES: End.
NO: Replace the DC controller PCB.

### b. E075–0005, 0006, 0007, 0008

Transfer belt edge sensor (PS17, PS18, PS19, PS20; flag operation)

**1) Is the sensor represented by the detail code in question normal? (See the instructions on how to check photointerrupters.)**

NO: Check the movement of flag, and remove the cause.

Transfer belt edge sensor
DC controller PCB

**2) Is the sensor normal? (See the instructions on how to check photointerrupters.)**

NO: Check the wiring from the DC controller PCB to the sensor; if normal, replace the sensor.
YES: Replace the DC controller PCB.

## 4.1.24 E076

| | |
|---|---|
| | **1) Execute 'FUNC>F-MISCP>MTR>13' in service mode to rotate the transfer cleaner web motor (M12). Does the motor rotate?**<br>YES: Go to step 3. |
| Overload | **2) Turn the transfer cleaner web by hand. Is the rotation heavy?**<br>NO: Check the transfer cleaner web drive system. |
| Transfer cleaner web motor (M12)<br>DC controller PCB | **3) Set the meter to the 5VDC range, and measure the voltage between J2218-A1 (+: M12ON) and J2218-A4 (-: GND). Does it change from about 5 V to about 0 V when the motor is rotated in service mode?**<br>YES: Replace the transfer cleaner web motor (M12).<br>NO: Check the wiring from J2218A to the transfer cleaner web motor (M12); if normal, replace the DC controller PCB. |

## 4.1.25 E077

| | |
|---|---|
| | **1) Make copies. Does the transfer belt waste toner motor (M31) rotate?**<br>YES: Go to step 3. |
| Overload | **2) Turn the transfer cleaner waste toner feeding screw by hand. Is the rotation heavy?**<br>NO: Check the transfer cleaner waste toner feeding screw drive system. |
| Transfer belt waste toner motor (M31)<br>DC controller PCB | **3) Set the meter to the 24VDC range, and measure the voltage between J218-B12 (+: M3ON) and J2218-B3 (-: GND). Make copies; does it change from about 24 V to about 0 V when the motor rotates?**<br>YES: Replace the transfer belt waste toner motor (M31).<br>NO: Check the wiring from J2218B to the transfer belt waste toner motor (M31); if normal, replace the DC controller PCB. |

## 4.1.26 E100

### a. E100-xx01

Laser shutter

**1) Is the operation of the laser shutter normal?**

NO: Replace the faulty part.

DC power supply PCB 1 (lower)

**2) Is power present at J2101 on the DC controller PCB?**

**J2101-1 (+) — J2101-4 (–): 5V**
**J2101-8 (+) — J2101-9 (–): 8V**
**J2101-7 (+) — J2101-8 (–): –12V**

NO: Check the wiring; if normal, replace the DC power supply PCB 1 (lower).

Video controller PCB
Laser driver PCB

**3) Is there a fault in the connection between the video controller PCB and the laser driver PCB of the every color?**

| | | | |
|---|---|---|---|
| **C** | **J2106** | **—** | **J3002C** |
| | **J2107** | **—** | **J3001C** |
| **M** | **J2108** | **—** | **J3002M** |
| | **J2109** | **—** | **J3001M** |
| **Y** | **J2110** | **—** | **J3002Y** |
| | **J2111** | **—** | **J3001Y** |
| **Bk** | **J2112** | **—** | **J3002K** |
| | **J2113** | **—** | **J3001K** |

YES: Re-connect it.

Laser exposure system

**4) Is the laser power normal?**

NO: Adjust it. If output is absent, replace the laser unit.

BD unit
Laser driver PCB

**5) Clean the light-receiving face of the BD unit. Is the problem corrected?**

YES: End.

NO: Replace the following parts in the order indicated:

- BD unit
- Video controller PCB

Memo

You can find out whether the cause of 'E100' has been removed or not by executing 'FUNC > EPC > EPC'.

b. E100–xx02

DC power supply PCB 1 (lower)

**1) Is power present at J2101 on the video controller PCB?**

**J2101-1 (+) — J2101-4 (–): 5 V**
**J2101-8 (+) — J2101-9 (–): 8 V**
**J2101-7 (+) — J2101-8 (–): -12 V**

NO: Check the wiring; if normal, replace the DC power supply PCB (lower).

Video controller PCB
Laser diver PCB

**2) Is there a fault in the connection between the video controller PCB and the laser drive PCB of the color for which 'E100' is indicated?**

| | | | |
|---|---|---|---|
| **C** | **J2106** | **—** | **J3002C** |
| | **J2107** | **—** | **J3001C** |
| **M** | **J2108** | **—** | **J3002M** |
| | **J2109** | **—** | **J3001M** |
| **Y** | **J2110** | **—** | **J3002Y** |
| | **J2111** | **—** | **J3001Y** |
| **Bk** | **J2112** | **—** | **J3002K** |
| | **J2113** | **—** | **J3001K** |

YES: Re-connect it.

Laser exposure system
Laser unit, Video controller PCB
DC controller PCB

**3) Is the laser power normal? (See "Adjusting the Laser Power."**

NO: Make adjustments.
If output is absent, replace the laser unit.

YES: Try replacing the following parts in sequence:
- Laser unit
- Video controller PCB
- DC controller PCB

## 4.1.27 E110

DC power supply PCB 1 (upper)

**1) Is power present at J6297 on the laser scanner motor driver PCB?**
**J6297-3 (+) — J6297-1 (–): 35V**
**J6297-4 (+) — J6297-2 (–): 35V**

NO: Check the wiring: if normal, replace the DC power supply PCB 1 (upper).

Laser scanner motor driver PCB
DC controller PCB

**2) Is there a fault in the connection between the laser scanner motor and J4081 on the laser scanner motor driver PCB?**
**Is there a fault in the connection between J2208B on the DC controller PCB and J6037 on the laser scanner motor driver PCB?**

YES: Re-connect it.

NO: Replace the following parts in the order indicated:
- DC controller PCB
- Laser scanner motor unit
- Laser scanner motor driver

## 4.1.28 E194

### a. E194–xx01, xx02, xx03

**1) Execute 'FUNC > INSTALL > REG-APER' in service mode.**
**Is the execution normal?**

YES: Go to step 4).

Transfer belt

**2) Generate a test pattern (PG=07). Is the image position correction pattern normal?**

NO: Check the transfer belt where the image position correction pattern is formed; if there are scratches, replace the transfer belt. Otherwise, perform the instructions given for image adjustments.

DC controller PCB

**3) Replace the image position correction CCD unit. Is the problem corrected?**

NO: Replace the DC controller PCB.

Pattern position

**4) Generate a test pattern (PG=06, grid). Is the discrepancy from the M pattern in main scanning direction?**

YES: Adjust the position using 'FUNC > IMG-REG > C/Y/K-REG-H' and 'C/Y/K-REG-HS' in service mode
Thereafter, be sure to execute 'FUNC > INSTALL > REG-APER'.

NO: Adjust the position using 'FUNC > IMG-REG-V' in service mode.
Thereafter, be sure to execute 'FUNC > INSTALL > REG-APER'.

b. E194–0001, 0002

Shutter drive motor (M25)

**1) Execute 'FUNC > F-MISCp > MTR' in service mode to operate the shutter. Does the shutter drive motor operate normally?**

YES: Check the drive system; if normal, replace the motor.

Shutter open sensor (PS40)

**2) Is the shutter open sensor (PS40) normal? (in the case of E194-0001)**

NO: Replace the sensor.

YES: Check the wiring; if normal, replace the DC controller PCB.

Shutter closed sensor (PS39)

**3) Is the shutter closed sensor (PS39) normal (if E194=0002)?**

NO: Replace the sensor.

Shutter drive system

**4) Check the shutter drive system as shown below. Does it move smoothly?**

YES: Check the wiring; if normal, replace the DC controller PCB.

Parts (deformation, dirt)

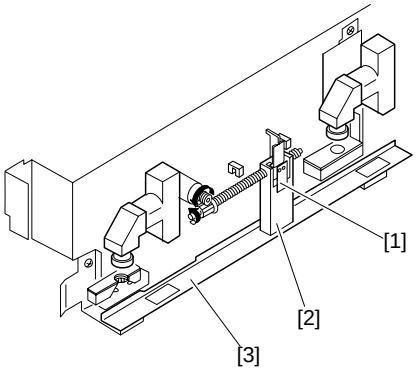
**5) Is the shutter screw assembly soiled?**

NO: Check the wiring; if normal, replace the DC controller PCB.

YES: Disassembly/clean the parts as shown below.

■ Correcting E194-0001/0002

1) Turn off the power switch.
2) Open the front cover.
3) Remove the image position correction CCD unit. (See the descriptions under "Removing the Image Position Correction CCD Unit" in Service Manual of CLC1000, Chapter 4.)
4) Remove the drive releasing pin [1], and dry moving the shutter [3] while holding the mobile member.

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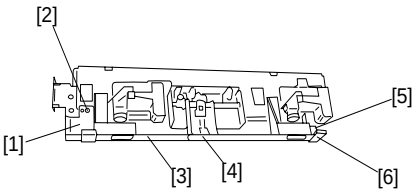
■ Correcting E194-0001/0002

1) Turn off the power switch.
2) Open the front cover.
3) Remove the image position correction CCD unit. (See the descriptions under “Removing the Image Position Correction CCD Unit” in Service Manual of CLC1000,Chapter 4.)
4) Remove the screw [2], and remove the support plate (front) [1].
5) Remove the screw [4], and remove the shutter [3]. (At this time, take care not to deform the grounding plate [5]. Take care also not to lose the screw [4]; it is a special screw.)
6) With lint-free paper, dry wipe the top and bottom faces of the shutter [3], top and bottom faces of the support plate (front) [1], and top and bottom faces of the support plate (rear) [6].

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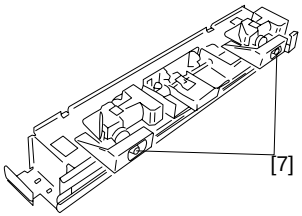
7) Dry wipe the LED [7]. At this time, do not apply excess force on the LED.

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8) Install the shutter with a screw. (At this time, take care not to deform the grounding plate.)
9) Install the support plate (front) with a screw.

## 4.1.29 E220

**1) Does the scanning lamp turn ON?**
NO: See “The scanning lamp fails to turn ON.”

Lamp regulator PCB
Reader unit controller PCB

**2) Is there a fault in the connection between J1306B on the reader unit controller PCB and J450 on the lamp regulator PCB?**
YES: Re-connect it.
NO: Replace the following parts in the order indicated:
- Lamp regulator PCB
- Reader unit controller PCB

## 4.1.30 E226

Reader assembly suction fan (FM12/13)
Reader controller PCB

**1) Try replacing the reader assembly suction fan (FM12/13). Is the problem corrected?**
YES: End.
NO: Check the wiring from the reader assembly suction fan (FM12/13) to J1311B of the reader controller PCB; if normal, replace the reader controller PCB.

## 4.1.31 E249

### a. E249-0001

Image memory on the IP memory board

**1) Remove the image memory from the IP memory board once; and then mount it back again. Is the problem corrected?**
YES: End
NO: Check the connectors on the IP memory board for connection; if normal, replace the image memory.

### b. E249-0002

Image memory on the EDC board

**1) Remove the image memory from the ED board once, and then mount it back again. Is the problem corrected?**
YES: End
NO: Check the connectors on the ED board for conection; if normal, replace the image memory.

### 4.1.32 E350

| | |
|---|---|
| Connector | **1) Is the connection between the reader controller PCB and the ECO-ID PCB normal?**<br>NO: Connect the PCBs correctly. |
| ECO-PCB<br>Reader controller PCB | **2) Replace the ECO-ID PCB. Is the problem corrected?**<br>YES: End.<br>NO: Replace the reader controller PCB. |

### 4.1.33 E351

| | |
|---|---|
| Connector | **1) Is the connection between the analog processor PCB and the image processor PCB normal?**<br>NO: Connect the PCBs correctly.<br>**2) Is the connection between the reader contoroller PCB and the image processor PCB normal?**<br>NO: Connect the PCBs correctly.<br>**3) Try replacing the image processor PCB. Is the problem corrected?**<br>YES: End.<br>NO: Replace the analog processor PCB or the reader controller PCB. |

## 4.1.34 E517

### a. E517-0001 through -0005

| | |
|---|---|
| Solenoid | **1) Disconnect the connector of the upward curl removing solenoid (SL5/6), and the solenoid side for electrical continuity. Is there continuity?**<br>YES: Go to step 2.<br>NO: Replace the solenoid without electrical continuity. |
| Sensor | **2) Try replacing the upper phase sensor (PS4/5). Does the error disappear?**<br>NO: Replace the buffer pass driver PCB. |

### b.E517-0006 through -0009

| | |
|---|---|
| Cable | **1) Are the connectors (J101 through 103; 201 through 205; 301 through 303) on the buffer pass driver PCB connected correctly?**<br>NO: Connect them correctly.<br>**2) Disconnect the connector of the sorter. Doe the error disappear?**<br>YES: Check the cable between the sorter and the buffer pass.<br>NO: Go to step 3.<br>**3) Try replacing the buffer pass drive PCB. Is the problem corrected?**<br>YES: Replace the buffer pass drive PCB.<br>NO: Check the cable between the buffer pass and the copier.<br>**4) Is the cable between the buffer pass driver PCB and the following sensors connected correctly: inlet sensor (PS8), reversal timing sensor (PS1), reversal jam sensor (PS2), upper phase sensor (PS4/5), and lower phase sensor (PS6/7)?**<br>NO: Connect it correctly. |

### c. E517-0011 through -0015

| | |
|---|---|
| | **1) Disconnect the connector of the downward curl removing solenoid (SL7/8), and check the solenoid side for electrical continuity. Is there continuity?**<br>YES: Go to step 2.<br>NO: Replace the solenoid without continuity.<br>**2) Try replacing the lower phase sensor (PS7/7). Doe the error disappear?**<br>NO: Replace the buffer pass driver PCB. |

## 4.1.35 E620

Connector wiring

**1) Is there a fault in the connection of the ED PCB, memory PCB, or image processor PCB?**

NO: Re-connect it.

YES: Replace the following parts in the order indicated:

- ED PCB
- Memory PCB
- Image processor PCB

## 4.1.36 E700

Malfunction

**1) Turn off and then on the power switch. Is the problem corrected?**

YES: End.

Connector Wiring

**2) Are the wiring and the connection of the following connectors normal?**

**Reader controller PCB: J1310**

**DC controller PCB: J2206**

NO: Connect the connector correctly.

Reader controller PCB

**3) Are all the connectors on the reader controller PCB connected securely?**

NO: Connect the connectors.

YES: Check all connectors on the DC controller PCB for connection.

## 4.1.37 E718

Connector, Wiring

**1) Are the connection and the wiring of the following connector normal?**
**Projector Controller PCB: J103**
NO: Re-connect it.

Projector controller PCB

**2) Set the meter to the 12VDC range, and measure the voltage between J107-1 (+; 5 V) and J107-2 (–; GND) on the projector controller PCB. Does it change from about 0 V to about 5 V when projector mode starts?**
YES: Go to step 8.

Connector, Wiring

**3) Are the connection and wiring between the following connectors normal?**
**J107 on the projector controller PC and J203 on the DC power supply**
**J102 on the projector controller PCB and SSR1**
NO: Re-connect it.

DC power supply

**4) Set the meter to the 300VAC range, and measure the voltage between J201-1 and -3 of the DC power supply. Is the rated AC voltage present when projector mode starts?**
YES: Replace the DC power supply.

Overcurrent

**5) Press the circuit breaker. Is it reset?**
YES: Be sure to find out the cause of the overcurrent.

Reader unit controller PCB

**6) Set the meter to the 30VDC range, and measure the voltage between J103-5 (+; 5 V) and J103-6 (–; POWON∗) on the projector controller PCB. Does it change from about 0 V to about 5 V when projector mode starts?**
NO: Replace the reader unit controller PCB.

SSR1
Projector controller PCB

**7) As in step 6, measure the voltage between J102-1 (+; 5 V) and J102-2 (–; POWON∗). Does it change from about 0 V to about 5 V?**
YES: Replace SSR1.
NO: Replace the projector controller PCB.

Projector controller PCB
Reader unit controller PCB

**8) Replace the projector controller PCB. Is the problem corrected?**

YES: End.
NO: Replace the reader controller PCB.

### 4.1.38 E800

Malfunction

**1) Turn OFF and ON the power switch. Is the problem corrected?**

YES: End

Power switch (SW2)
DC controller PCB

**2) Try replacing the power switch (SW2). Is the problem corrected?**

YES: End
NO: Check the wiring and electrical continuity from the DC controller PCB to the power switch (SW2); if normal, replace the DC controller PCB.

### 4.1.39 E804

Power supply cooling fan (FM17/18)
DC controller PCB

**1) Try replacing the power supply cooling fan (FM17/18). Is the problem corrected?**

YES: End.
NO: Check the wiring from the power supply cooling fan (FM17/18) to J2234A of the DC controller PCB; if normal, replace the DC controller PCB.

### 4.1.40 E805

Delivery assembly exhaust fan (FM1/2/3)
DC controller PCB

**1) Try replacing the delivery assembly exhaust fan (FM1/2/3). Is the problem corrected?**

YES: End.
NO: Check the wiring from the delivery assembly exhaust fan (FM1/2/3) to J2212B of the DC controller PCB; if normal, replace the DC controller PCB.

## 4.1.41 E807

Fan
DC controller PCB
Reader controller PCB

**1) Try replacing the fan identified by the detail code. Is the problem corrected?**

| Detail code | Fan |
|---|---|
| **0001** | **laser cooling fan(FM4/5)** |
| **0002** | **laser scanner motor cooling fan(FM24)** |
| **0003** | **digital unit cooling fan(FM16)** |
| **0004** | **digital unit cooling fan(FM14/15)** |

YES: End

NO: Check the wiring from the fan identified by the detail code to connector of the DC controller PCB; if normal, replace the DC controller PCB.

| Detail code | Fan | PCB | Connector |
|---|---|---|---|
| **0001** | **laser cooling fan(FM4/5)** | **DC controller** | **J2208B** |
| **0002** | **laser scanner motor cooling fan(FM24)** | **PCB** | **J2208B** |
| **0003** | **digital unit cooling fan (FM16)** | **Reader controller** | **J1311A** |
| **0004** | **digital unit cooling fan (FM14/15)** | **PCB** | **J1311A** |

## 4.1.42 E822

Fan
DC controller PCB

**1) Try the fan identified by the detail code. Is the problem corrected?**

| Detail code | Fan |
|---|---|
| 0001 | pre-fixing feed fan(FM7) |
| 0002 | delivery lower cooling fan(FM19/20/27) |
| 0003 | reversing assembly exhaust fan(FM28/29/30/33) |
| 0004 | delivery cooling fan(FM34) |
| 0005 | pre-fixing exhaust fan(FM35/36) |

YES: End
NO: Check the wiring the fan identified by the detail code to connector of the DC controller PCB; if normal, replace the DC controller PCB.

| Detail code | Fan | Connector |
|---|---|---|
| 0001 | pre-fixing feed fan(FM7) | J2214A |
| 0002 | delivery lower cooling fan(FM19/20/27) | J2213B |
| 0003 | reversing assembly exhaust fan (FM28/29/30/33) | J2240B |
| 0004 | delivery cooling fan(FM34) | J1311A |
| 0005 | pre-fixing exhaust fan(FM35/36) | J2228A |

## 4.1.43 E824

Fan
DC controller PCB

**1) Try replacing the fan identified by the detail code. Is the problem corrected?**

| Detail code | Fan |
|---|---|
| 0001 | primary cooling fan (FM6) |
| 0002 | primary suction fan (FM8/9) |

YES: End.
NO: Check the wiring from the fan identified by the detail code to the connector on the deck controller PCB; if normal, replace the DC controller PCB.

| Detail code | Fan | Connector |
|---|---|---|
| 0001 | primary cooling fan (FM6) | J2213 |
| 0002 | primary suction fan (FM8/9) | J2215B |

### 4.1.44 E826

Pickup cooling fan(FM26/32)
DC controller PCB

**1) Try replacing pickup cooling fan(FM26/32). Is the problem corrected?**

YES: End.

NO: Check the wiring from the fan identified by the detail code to the connector on the deck controller PCB; if normal, replace the DC controller PCB.

| Fan | Connector |
|---|---|
| FM26 | J5706 |
| FM32 | J2226A |

### 4.1.45 AC power is absent.

Power plug

**1) Is the power plug connected to the power outlet?**

NO: Connect the power plug.

Power source

**2) Is the rated AC voltage present at the power outlet?**

NO: The problem is not of the copier. Advise the user.

**3) Is the rated voltage present between F3 and F4 of RL1?**

YES: Go to step 5.

Leakage breaker (CB1; faulty or OFF)
Power cord
Noise filter (LF1)

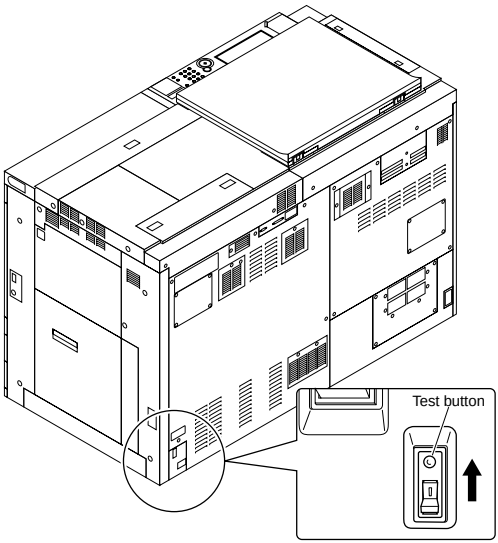
**4) Is the open/close lever of the leakage breaker (CB1) on the ON side?**

NO: Check the operation, if not normal, replace the leakage breaker (CB1).

YES: Check or replace the power cord and the noise filter (LF1).

System of checking the Leakage Breaker

1. Press the test button of the breaker.

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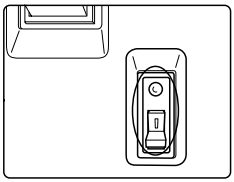
2. Check to make sure that open/close lever has shifted to the OFF terminal side and the power has been cut.



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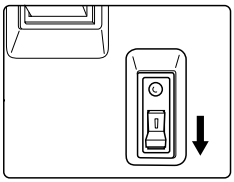
3. Turn off the power switch.
4. Shift the open/close lever to the ON side.



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5. Turn on the power switch.

Power switch (SW2) faulty
Wiring

**5) Connect the probes of the meter to both terminals of the power switch (SW2). Is it 0Ω when the switch is turned ON, and ∞Ω when the switch is turned OFF?**

NO: Replace SW2.

YES: Check the wiring of the AC power line and connector for poor contact.

## 4.1.46 DC power is absent.

AC power supply

**1) Is AC power present between the following terminals?**
**J5327M-1 and J5327M-4 on the DC power supply PCB 1 (upper)**
**J5301M-1 and J5301M-3 on the DC power supply PCB 1 (lower)**
**J5337-1 and J5337-3 on the DC power supply PCB**

NO: See "AC power is absent."

Right cover switch (SW1)

**2) Disconnect the power plug, and check the front cover (right) switch for electrical continuity. Is it normal?**

NO: Replace the front cover (right) switch.

Wiring
DC power supply
DC load

**3) Disconnect all connectors except for the following:**
**J5327M on the DC power supply PCB 1 (upper)**
**J5301M on the DC power supply PCB 1 (lower)**
**J5337 on the DC power supply PCB 2**
**Connect the power plug, and turn ON the power switch. Is the DC power supply output of the above connectors on the DC power supply normal?**

Caution 1: Be careful to avoid shorting the connectors.
Keep in mind that +24VU and +214VR are not generated.

YES: Turn OFF the power switch, and connect one of the disconnected connectors; then, turn ON the power. Repeat this for all connectors to find out which connector activates the protection circuit. Check the wiring from that connector to the DC load.

NO: Replace the faulty DC power supply PCB.

## 4.1.47 The scanner fails to move forward/in reverse.

Cable (broken, displaced)

**1) Is the drive cable routed correctly?**

NO: Re-route the cable.

Obstacle in path

**2) Is the rail free of dirt? Does the mirror mount move smoothly when pushed by hand?**

NO: Check the rail for dirt or foreign object; as necessary, clean or lubricate.


If the surface of the rail is soiled, use alcohol to clean it; then, apply a small amount of silicone oil available for the fixing roller.

Scanner home position sensor (PS37)

**3) Is the scanner home position sensor (PS37) normal? (See the instructions on how to check photointerrupters.)**

NO: Check the wiring and light-blocking plate; if normal, replace the sensor.

Connector
Wiring

**4) Are the connection of the following connectors and the wiring between the connectors normal?**
**J602 on the scanner motor driver PCB**
**J1306 on the reader unit controller PCB**

NO: Re-connect it.

DC power supply

**5) Set the meter to the 50VDC range, and measure the voltage between the following terminals on the scanner motor driver. Is it normal?**
**J601-2 (+) and –1 (–):about 5 V**
**J601-4 (+) and –3 (–):about 8 V**
**J601-6 (+) and –5 (–):about 24 V**

NO: See “DC power is absent.”

Scanner motor driver
Scanner motor (M29)

**6) Replace the scanner motor driver. Is the problem corrected?**

YES: End.

NO: Replace the scanner motor.

## 4.1.48 The scanning lamp fails to turn ON.

| | |
|---|---|
| Lamp | **1) Turn OFF the power switch, and disconnect the power plug. Is the lamp installed properly?**<br>NO: Re-install the lamp. |
| Thermal switch | **2) Check both terminals of the thermal switch (TP4/5) for electrical continuity using the meter. Is there continuity?**<br>NO: Replace the thermal switch.<br>• The lamp may have turned on wrongly, the thermal switch may have been mounted wrongly, or the cooling fan may have failed to operate. Make checks. |
| Lamp (open circuit) | **3) Disconnect J10 (3P) on the lamp regulator, and set the meter to the 1kW range. Does the index of the meter swing when the probe is connected to the connector on the harness side?**<br>NO: Check the wiring from J10 to the lamp; if normal, replace the lamp. |
| Lamp regulator overcurrent | **4) Is there electrical continuity on the fuse on the lamp regulator?**<br>NO: Replace the lamp regulator.<br>• Check the lamp and the harness for a short circuit. |
| AC power supply | **5) Connect J10, and disconnect J9 (4P). Connect the power plug, and turn ON the power switch. Set the meter to the 300VAC range, and measure the voltage between J9-1 and 4 on the harness side. Is the rated voltage present?**<br>NO: See “AC power is absent.” |
| DC power supply PCB | **6) Turn OFF the power switch, and connect J9. Set the meter to the 50VEDC range, and turn ON the power switch. Is 24 VDC present between J450-2 (+; 24 V) and J450-1 ( –; GND)?**<br>NO: See “DC power is absent.” |
| Lamp regulator PCB<br>Reader unit controller PCB | **7) Set the meter to the 50VDC range, and connect the probes to J450-10 (+; LAON*) and J450-8 (–; GND) on the lamp regulator PCB. Does the voltage change from about 24 V to about 0 V when the Start key is pressed?**<br>YES: Replace the lamp regulator PCB.<br>NO: Check the wiring from J450 to J1306B on the reader unit controller PCB; if normal, replac e the image processor PCB. |

## 4.1.49 The lifter fails to move up (pick-up from the cassette).

| | |
|---|---|
| Cassette | **1) Slide out the cassette, and lift the holding plate inside the cassette. Does it move smoothly?**<br>NO: Check the inside of the cassette for foreign matter. |
| Latch (cassette) | **2) Is the movement of the latch assembly of the cassette grip normal?**<br>NO: Re-install it. |
| Spring<br>Lever | **3) Push up the pick-up roller releasing lever by a finger. Does the pick-up roller move down?**<br>NO: Remove the pick-up assembly, and check the spring and lever. |
| Lifter position sensor | **4) Is the lifter position sensor normal?**<br>NO: Check the lever and wiring; if normal, replace the sensor. |
| Cassette 1 lifter motor (M16)<br>Cassette 2 lifter motor (M17)<br>DC controller PCB | **5) Set the tester to the 30VDC range, and insert the cassette. Does the voltage between the following terminals change from about 0 V to about 24 V?**<br>**M16: J2239A-1 (+), 2**<br>**M17: J2239A-3 (+), 4**<br>YES: Check the wiring from the connector to the motor; if normal, replace the motor.<br>NO: Replace the DC controller PCB. |

## 4.1.50 Pick-up fails (cassette 1).

| | |
|---|---|
| | **1) Does the "ADD PAPER" message remain ON?**<br>YES: See "The 'ADD PAPER' message fails to turn OFF." |
| | **2) Slide out and then in the cassette. Are the sounds of lifter lowering and of the lifter motor turning heard?**<br>NO: See "The lifter fails to rotate." |
| Drive belt (displacement) | |
| | **3) Is the drive belt attached properly?**<br>NO: Re-attach it. |
| Gear | |
| | **4) Is the drive from the pick-up motor transmitted to the cassette holder through the gears?**<br>NO: Check the gears. |
| Pick-up/separation/feeding roller | |
| | **5) Does the pick-up/separation/feeding roller rotate?**<br>YES: • Check the pick-up/separation/feeding roller.<br>• Check the guide plate for deformation and obstacles. |
| Drive clutch, Solenoid<br>DC controller PCB | |
| | **6) Does the voltage between the following terminals on the DC controller PCB change at the pick-up timing after the start key has been pressed?**<br>**• Cassette 1 Pick-Up Roller Releasing Solenoid (SL9) J5503A-16 and J5503A-15**<br>**• Cassette 1 Pick-Up Roller Drive Clutch (CL2) J5503A-8 and J5503A-7**<br>YES: Check the wiring; if normal, replace the solenoid and clutch.<br>NO: Replace the DC controller PCB. |

## 4.1.51 Pick-up fails (cassette 2).

| | |
|---|---|
| | **1) Does the "ADD PAPER" message remain ON?**<br>YES: See "The 'ADD PAPER' message fails to turn OFF." |
| | **2) Slide out and then in the cassette. Are the sounds of the lifter lowering and of the lifter motor turning heard?**<br>NO: See "The lifter fails to move up." |
| Drive belt (displacement) | |
| | **3) Is the belt for drive attached properly?**<br>NO: Re-attach the belt. |
| Gear | |
| | **4) Is the drive of the pick-up motor transmitted to the cassette holder through the gears?**<br>NO: Check the gears. |
| Pick-up/separation/feeding roller | |
| | **5) Does the pick-up/separation/feeding roller rotate?**<br>YES: • Check the pick-up/separation/feeding roller.<br>• Check the guide plate for deformation and foreign objects. |
| Drive clutch, Solenoid<br>DC controller PCB | |
| | **6) Does the "ADD PAPER" message remain ON even after the Start key has been pressed?**<br>**After the Start key has been pressed, does the voltage between the following terminals on the DC controller PCB change at the pick-up timing?**<br>**• Cassette 2 Pick-Up Roller Releasing Solenoid (SL10)**<br>**J5503B-16 and J5503B-15**<br>**• Cassette 2 Pick-Up Clutch (CL14)**<br>**J5503B-8 and J5503B-7**<br>YES: Check the wiring; if normal, replace the solenoid and clutch.<br>NO: Replace the DC controller PCB. |

## 4.1.52 The multifeeder fails to pick up paper.

| | |
|---|---|
| Multifeeder pick-up clutch (CL6) | **1) Select multifeeder pick-up, and press the Start key. Does the multifeeder pick-up roller rotate?**<br>NO: Check the wiring; if normal, replace CL6. |
| Multifeeder pick-up roller | **2) Is paper fed properly by the pick-up roller?**<br>YES: Replace the pick-up roller. |
| Lifter plate | **3) Press the Start key. Does the lifter plate move up?**<br>NO: Check the lifter plate drive system. As necessary, adjust or replace it. |
| Paper thickness roller clutch (CL7) | **4) Press the Start key. Does the roller rotate?**<br>NO: Check the wiring; if normal, replace the clutch. |
| Multifeeder pick-up roller releasing solenoid (SL5)<br>DC controller PCB | **5) Connect the + probe of the meter to J5704A-2 on the DC controller PCB. Does the voltage change from about 24 V to about 0 V?**<br>YES: Check the wiring; if normal, replace SL5.<br>NO: Replace the DC controller PCB. |

## 4.1.53 The registration roller fails to rotate.

| | |
|---|---|
| Connector | **1) Is the connection of the following connectors normal?**<br>**• from registration motor to manual feed drive PCB: J5709**<br>**• from manual feed drive PCB to DC controller PCB: J5703/J2240**<br>NO: Connect the connector correctly. |
| Gear | **1) Is the drive of the registration motor normally transmitted to the registration roller through gears?**<br>NO: Remove the cause of the overload.<br>YES: Try replacing the following in sequence: manual feed driver PCB, registration motor, DC controller PCB |

## 4.1.54 Retention fails.

| | |
|---|---|
| C transfer blade | **1) Is the C transfer blade locked in position properly?**<br>NO: Check the locking mechanism for the transfer blade. |
| High-voltage cable | **2) Is the connection of the high-voltage cable for C transfer charging proper?**<br>NO: Re-connect it. |
| Transfer belt | **3) Is there a scratch or a dent in the transfer belt?**<br>YES: Replace the belt. |
| Paper | **4) Is paper curled or wavy?**<br>YES: Replace the paper. Advise the user on the correct method of storing paper.<br>**5) Try fresh paper. Is the problem corrected?**<br>YES: End.<br>**6) Try Canon-recommended paper. Is the problem corrected?**<br>YES: Advise the user to use recommended paper. |
| | **7) Is the problem noted on paper other than plain paper?**<br>YES: Advise the user to use recommended paper. |

## 4.1.55 The pre-exposure lamp fails to turn ON.

Pre-exposure lamp (LA2)

**1) Turn ON the power switch, and disconnect the connector J2239 from the DC controller PCB. Set the meter to the ×100Ω range, and measure the resistance between the following terminals on the harness side. Is it about 20Ω?**
**for C, J2239A-5 and -6**
**for M, J2239A-7 and -8**
**for Y, J2239A-9 and -10**
**for Bk, J2239A-11 and -12**

NO: Check the wiring from J2209 to the pre-exposure lamp; if normal, replace the exposure lamp.

Pre-exposure lamp (LA2 to LA5)
DC controller PCB

**2) Connect J2239, and turn ON the power switch. Set the meter to the 30VDC range, and measure the voltage between the following terminals on the DC controller PCB. Does the voltage change from about 0 V to about 24 V?**
**for C, J2239A-5 and -6**
**for M, J2239A-7 and -8**
**for Y, J2239A-9 and -10**
**for Bk, J2239A-11 and -12**

YES: Replace the pre-exposure lamp.
NO: Replace the DC controller PCB.

## 4.1.56 The fixing heater fails to turn ON.

Connector

**1) Are the fixing drawer connectors J6410 and J6019 and the connectors J2804 and J2808 on the AC driver PCB connected?**

NO: Connect them.

**2) Draw out the fixing unit, and set the meter to the ×1Ω range. Does the index of the meter swing when the probe of the meter is connected to the terminal of the following connectors of the fixing drawer connector (J6410)?**
**J6410-1 and -2**
**J6410-3 and -4**

YES: Go to step 8.

Thermal switch (TP1, TP2)

**3) Is there electrical continuity in the thermal switch?**

NO: Replace the thermal switch.

| | |
|---|---|
| Thermistor (TH1, TH3) | **4) Set the meter to the ×1Ω range. Does the index of the meter swing when the probe of the meter is connected to the following connector of the fixing drawer connector (J6019)?**<br>**J6019A12 and 13**<br>**J6019B-1 and 2**<br>YES: Replace the thermistor. |
| Upper heater (H1) | **5) Does the index of the meter swing when the probe of the meter is connected to both terminals of the upper heater?**<br>NO: Check the installation of the heater; if normal, replace the upper heater. |
| Lower heater (H2)<br>AC harness | **6) Does the index of the meter swing when the probes are connected to both ends of the lower heater?**<br>NO: Check the installation of the heater; if normal, replace the lower heater.<br>YES: Check the AC harness inside the fixing assembly. |
| AC power supply | **7) Push in the fixing unit, and turn ON the power switch; then, set the meter to the 250VA range.**<br>**Does the index of the meter swing when the probes of the meter are connected to the following terminals of the faston of RL1?**<br>**FT35 and FT40**<br>NO: Check the power switch and the relay (RL1); if normal, see "AC power is absent." |
| Triac<br>DC controller | **8) Set the meter to the 10VDC range, and connect the probes of the meter to the terminals of the following connectors of the DC controller PCB. Does the index of the meter indicate '+5 V'?**<br>**J2241-14 and GND**<br>**J2241-13 and GND**<br>YES: Check the wiring from relay (RL1) to AC driver PCB and from the triac to the fixing assembly drawer connector; if normal, replace the triac.<br>NO: Replace the DC controller PCB. |

## 4.1.57 The drum heater fails to rotate.

Drum heater (H3, H4, H5, H6)

**1) Set the meter to the ×100Ω range, and connect the probes of the meter to the terminals of the heater. Does the index of the meter swing?**

NO: Replace the drum heater.

Thermistor (TH8,9,10,11)

**2) Set the meter to the ×1000Ω range, and connect the probes of the meter to the following terminals. Does the index of the meter swing?**

**TH8 (for C): J2216A-4 and 5**
**TH9 (for M): J2216A-9 and 10**
**TH10 (for Y): J2216B-1 and 2**
**TH11 (for Bk): J2216B-6 and 7**

NO: Replace the thermistor.

Connector, Wiring

**3) Are the connection and wiring normal?**

**Drum heater ⇔ AC driver : J6305, J2805**
**AC driver ⇔ Drum heater : J2806, J6412**

NO: Re-connect them.

Drum heater brush

**4) Disconnect the power outlet, and remove the drum heater brush cover. Is the contact of the drum heater brush normal?**

NO: • Re-install the brush.
• Replace the brush.

DC controller PCB

**5) Install the drum heater brush cover, and connect the power plug. Set the meter to the 12VDC range, and measure the voltage on the DC controller PCB. Is it about 5 V?**

**Drum heater (Bk) J2241-5 (+5V), J2241-2 (GNDAN)**
**Drum heater (Y) J2241-6 (+5V), J2241-2 (GNDAN)**
**Drum heater (M) J2241-7 (+5V), J2241-2 (GNDAN)**
**Drum heater (C) J2241-8 (+5V), J2241-2 (GNDAN)**

YES: Replace the drum heater.
NO: Replace the DC controller PCB.

## 4.1.58 The counter fails to operate.

Counter

**1) Turn OFF the power switch, and disconnect the connector J2216 from the DC controller. Set the meter to the ×KΩ range, and measure the resistance of the following counters:**

| Counter | + | – |
|---|---|---|
| CNT1 | J2216B-9 | J2216B-8 |
| CNT2 | J2216B-10 | J2216B-8 |
| CNT3 | J2216B-11 | J2216B-8 |
| CNT4 | J2216B-12 | J2216B-8 |
| CNT5 | J2216B-13 | J2216B-8 |
| CNT6 | J2216B-14 | J2216B-8 |

NO: Check the wiring from J2216 to the counter; if normal, replace the counter.

DC controller PCB

Counter

**2) Connect the connector J2216, and set the meter to the 24VDC range.**
**Does the voltage of the following connectors on the DC controller PCB change from about 24 V to about 0 V and then to 24 V when the Start key is pressed? Be sure to select a copying mode appropriate to the counter operation:**

| Counter | + | – |
|---|---|---|
| CNT1 | J2216B-9 | J2216B-8 |
| CNT2 | J2216B-10 | J2216B-8 |
| CNT3 | J2216B-11 | J2216B-8 |
| CNT4 | J2216B-12 | J2216B-8 |
| CNT5 | J2216B-13 | J2216B-8 |
| CNT6 | J2216B-14 | J2216B-8 |

NO: Replace the DC controller PCB.
YES: Replace the counter.

## 4.1.59 The cassette heater fails to operate.

| | |
|---|---|
| Environment sensor | **1) Is there a significant discrepancy between the temperature/humidity indicated under 'DISP > ANALOG' in service mode and the readings of a thermometer/hygrometer in the room?**<br>NO: Replace the sensor.<br>**2) Make the following sections in service mode:**<br>**DISP > SENSOR. Is the following indication '1'?**<br><br>**802009 00100000**<br>**3rd bit**<br>NO: Go to step 4. |
| Cassette heater (H7, H8) | **3) Turn OFF the power switch, and disconnect the connector J6. Set the meter to the ×1Ω range. Does the index of the meter swing when the probe of the meter is connected to the terminals of the following connectors?**<br>**Upper Cassette Heater**<br>**J6417-1 and J6417-3**<br>**Lower Cassette Heater**<br>**J6418-1 and J6418-3**<br>NO: Replace the cassette heater. |
| Connector<br>Wiring | **4) Are the connection and the wiring between the following connectors normal?**<br>**J61, J62, power-saving switch, J6, J37**<br>**Set the meter to the 12VDC range.**<br>NO: Re-connect them.<br>YES: Check the wiring from the relay RL1 to the power saving switch and AC driver PCB; if normal, replace AC driver PCB. |

## 4.1.60 Abnormal noise is heard.

| | |
|---|---|
| Scanner system | **1) Is the noise from the scanning system?**<br>YES: Check the scanner motor, belt, cable, pulley, and rail. Check the mirror mount for an object that may come into contact. |
| Drum motor drive system | **2) Is the noise from the drum unit?**<br>YES: Check the drum motor drive system (drum motor, gear, photosensitive drum, flywheel). |
| Fan | **3) Is the noise from the fan?**<br>YES: Check the fan. |
| Developing motor drive system | **4) Is the noise heard when only the developing motor is rotating? *1**<br>YES: Check the developing motor drive system. Check the reciprocating operation of the developing assembly, cleaning screw, and cleaning blade. |
| Pick-up motor drive system | **5) Is the noise heard when paper is picked up?**<br>YES: Check the pick-up motor (Multifeeder, Cassette 1/2) system and the hopper motor drive system. |
| Fixing motor drive system | **6) Is it from the fixing assembly?**<br>YES: Check the fixing motor drive system. |
| Transfer unit drive system | **7) Is it from the transfer unit?**<br>YES: Check the transfer unit drive system. |
| Waste toner feeding drive system | **8) Is it from the waste toner feeding system?**<br>YES: Check the waste toner feeding system. |
| Duplexing unit drive system | **9) Is it from the duplexing unit unit?**<br>YES: Check the duplexing unit drive system. |

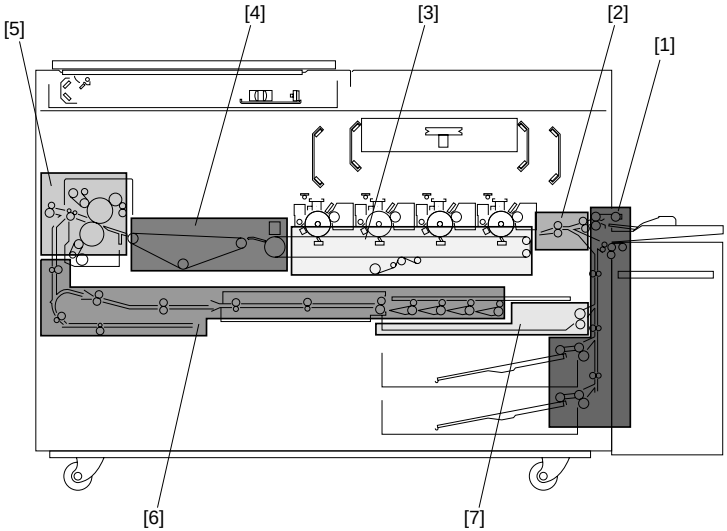
Note1:
- If the problem is the cleaning blade, it is not clear which station is suffering from a temperature error. Make 10 solid copies using each color. If the problem is not corrected, dispose of the waste toner, and put 5 g of drum cleaner lubricating agent (FG2-1694) into the cleaning assembly.
- If the problem is the side scraper, replace the side scraper, and put a small amount of drum cleaning lubricant to the tip of the side scraper.
- If the problem is the side seal, clean the felt surface, and remove the drum cleaner.

# 5 Troubleshooting Feeding Problems

## 5.1 Jams

The CLC1000 may be divided into the following blocks in terms of where copies tend to jam.

[1] Pick-up assembly
[2] Pick-up feeding assembly
[3] Transfer unit assembly
[4] Separation/pre-fixing feeding assembly
[5] Fixing/delivery assembly
[6] Delivery vertical path assembly, duplexing reversing assembly, pre-holding tray feeding assembly
[7] Re-pick-up assembly

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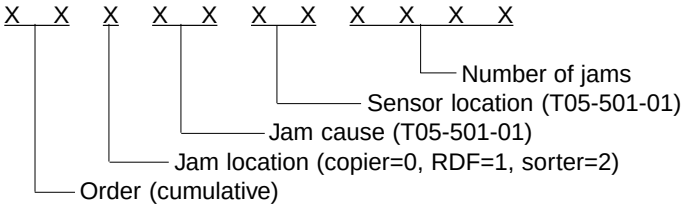
Use the CLC1000's service mode (control display mode) to check the location and the type of jam. The CLC1000 keeps records of jams by code and displays the result starting with the most frequent jam:

■ Display




| Cause code | Type |
|---|---|
| 01×× | Delay jam |
| 02×× | Stationary jam |
| 10×× | Jam at power-on or when the front cover/ pick-up cover/delivery door is opened/closed |
| 11×× | Jam when the front door/pick-up cover/ delivery cover is opened/closed during copying operation |

| Sensor code | Sensor name |
|---|---|
| ××01 | Registration paper sensor |
| ××02 | Pick-up vertical path 1 sensor |
| ××03 | Pick-up vertical path 2 sensor |
| ××04 | Pick-up vertical path 3 sensor |
| ××31 | Post registration paper sensor |
| ××32 | Separation sensor |
| ××33 | Internal delivery sensor |
| ××34 | Delivery sensor |
| ××61 | Delivery vertical path sensor 1 |
| ××62 | Delivery vertical path sensor 2 |
| ××63 | Duplexing unit reversal sensor |
| ××64 | Pre-duplex feeding sensor 1 |
| ××65 | Pre-duplex feeding sensor 2 |
| ××66 | Dupler paper sensor 1 |
| ××67 | Dupler paper sensor 2 |

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## 5.1.1 Pick-Up Assembly

| | |
|---|---|
| | **1) Was the paper picked up from the cassette?**<br>NO: Go to step 11. |
| Cassette | **2) Is the cassette properly set in the cassette?**<br>NO: Set the cassette properly, and check the inside of the cassette for foreign matter. |
| Paper | **3) Is the paper curled or wavy?**<br>YES: Replace the paper, and advise the user on the correct method of storing paper.<br>**4) Try paper recommended by Canon. Is the problem corrected?**<br>YES: Advise the user to use recommended paper. |
| Transparency | **5) Is the transparency of the specified type, and is it oriented correctly?**<br>NO: Advise the user to use transparencies of the specified type and to place them correctly. |
| DC controller PCB, Pick-up clutch | **6) Does the pick-up roller of the selected cassette pick-up assembly rotate during copying?**<br>NO: See IV. “Pick-up fails.” |
| Pick-up roller | **7) Is the pick-up roller deformed or worn?**<br>YES: Replace the pick-up roller. |
| Separation roller | **8) Is the separation roller of the selected cassette pick-up assembly deformed or worn?**<br>YES: Replace the separation roller. |
| Feeding roller | **9) Is the feeding roller of the selected cassette pick-up assembly deformed or worn?**<br>YES: Replace the feeding roller. |
| Pick-up vertical path 1, 2, 3 sensor | **10) Is each of the sensors (P21, PS25, PS26) of the pick-up assembly normal?**<br>YES: Check each guide for foreign matter and deformation.<br>NO: Check the lever and wiring; if normal, replace the sensor. |

| | |
|---|---|
| | **11) Paper is fed through the multifeeder. Do the multifeeder pick-up roller and the paper thickness detecting roller rotate?**<br>NO: See "Multifeeder pick-up fails." |
| Paper | **12) Try Canon-recommended paper. Is the problem corrected?**<br>YES: Advise the user to use recommended paper. |
| Transparency | **13) Is the transparency of the specified type, and is it oriented correctly?**<br>NO: Advise the user to use transparencies of the specified type and to place them correctly. |
| Multifeeder pick-up roller | **14) Is the multifeeder pick-up roller deformed or worn?**<br>YES: Replace the multifeeder pick-up roller. |
| Multifeeder pick-up sensor | **15) Is the operation of the multifeeder paper width sensor (PS4, PS5) normal?**<br>YES: Check the placement of the paper.<br>Check each guide for foreign matter and deformation.<br>NO: Check the wiring to the sensor; if normal, replace the sensor. |

## 5.1.2 Pick-up Feeding Assembly

| | |
|---|---|
| Paper | **1): Is the paper curled or wavy?**<br>YES: Replace the paper. Advise the user on the correct method of storing paper.<br>**2): Try paper recommended by Canon. Is the problem corrected?**<br>YES: Advise the user to use recommended paper. |
| Transparency | **3): Is the transparency of the specified type, and is it oriented correctly?**<br>NO: Advise the user to use transparencies of the specified type and to place them correctly. |
| Registration roller<br>Registration roller drive assembly | **4): Does the registration roller/registration roller drive assembly operate normally?**<br>NO: See 4.1.52 "The registration roller fails to rotate." |

| | |
|---|---|
| Registration roller | **5): Is the registration roller deformed or worn?**<br>YES: Replace the registration roller. |
| OHP sensor, Registration paper sensor, Post-registration paper sensor | **6): Is the operation of each sensor (OHPS, PS1, PS14) of the pick-up feeding assembly normal?**<br>YES: Check each guide plate for foreign matter and deformation.<br>NO: Check the lever and wiring; if normal, clean/replace the part. |

## 5.1.3 Transfer Unit Assembly

| | |
|---|---|
| Transfer belt | **1) Is the transfer belt soiled or deformed?**<br>YES: Replace the transfer belt. |
| Transfer belt motor | **2) Is the transfer belt rotating normally?**<br>NO: Replace the transfer belt motor. |
| Retention | **3) Is the jam paper retained on the transfer belt?**<br>NO: See “Retention fails.” |
| Internal/external static eliminating roller | **4) Is the internal/external static eliminating roller operating normally?**<br>NO: Replace the faulty parts. Further, remove the cause. |
| Transfer belt cleaner assembly | **5) Is there a fault in the transfer belt cleaner assembly? Further, is it subject to excessive load?**<br>YES: Replace the problem part; in addition, remove the cause of the fault.<br>NO: Replace the DC controller PCB. |

## 5.1.4 Separation/Pre-Fixing Feeding Assembly

| | |
|---|---|
| Separation charging assembly | **1) Is the separation charging assembly operating normally?**<br>NO: Check the separation charging assembly. |
| Separation claw | **2) Is the separation claw worn or deformed?**<br>YES: 1. Replace the separation claw.<br>2. If soiled, clean with solvent. |

| | |
|---|---|
| Separation sensor | **3) Is the separation sensor (PS15) operating normally?**<br>NO: Check the lever and the wiring; if normal, replace the sensor. |
| Feeding belt | **4) Is the feeding belt operating normally?**<br>NO: Check the pre-fixing feeding motor.<br>YES: Check the feeding belt; if wear or scraches are found, replace the belt. |

## 5.1.5 Fixing/Delivery Assembly

| | |
|---|---|
| Separation claw | **1) Is the separation claw soiled?**<br>YES: Clean it with solvent. |
| Fixing roller drive assembly | **2) Does the fixing roller rotate smoothly?**<br>NO: Check the fixing roller drive assembly. |
| Upper/lower roller | **3) Is there deformation or scratches on the upper/lower roller?**<br>YES: Replace the roller. |
| Paper guide plate | **4) Is the paper guide soiled with toner?**<br>YES: Clean it with solvent. |
| Nip | **5) Is the lower roller pressure (nip) within specification?**<br>NO: Adjust it. |
| Web | **6) Is the web taken up properly?**<br>NO: Check the fixing assembly cleaner assembly. |
| Upper/lower thermistor | **7) Is the surface of the thermistor soiled?**<br>YES: Clean it with solvent. |
| Delivery sensor lever | **8) Does the delivery sensor lever operate smoothly?**<br>NO: Adjust it so that it operates smoothly. |
| Internal delivery/delivery sensor | **9) Does the inside delivery/delivery sensor (PS35, PS34) operate normally?**<br>NO: Replace the sensor. |
| Internal/external delivery roller drive assembly | **10) Does the internal/external delivery roller rotate smoothly?**<br>NO: Check the delivery roller drive assembly. |

Delivery paper deflecting plate
Oil applying assembly

**11) Does the delivery paper deflecting plate operate normally?**
NO: Check the delivery paper deflecting plate solenoid (SL14).
YES: 1. Check the oil applying roller drive assembly.
2. Check the level of the silicone oil.

## 5.1.6 Delivery Vertical Path, Duplexing Reversing Assembly, and Pre-duplex Feeding Assembly

Delivery paper deflecting plate

**1) Does the delivery paper deflecting plate operate normally?**
NO: Check the delivery paper deflecting solenoid (SL14).

Delivery vertical path roller

**2) Does the delivery vertical path roller operate normally?**
NO: Check the duplex reversal motor drive assembly.

Pick-up vertical path 1 sensor (PS21)
Pick-up vertical path 2 sensor (PS25)

**3) Does each sensor operate normally?**
NO: Check the lever and the wiring; if normal, replace the sensor.

Inlet roller

**4) Does the inlet roller operate normally?**
NO: Check the duplexing unit reversing motor drive assembly.

Feeding roller, Outlet roller

**5) Does the feeding/outlet roller operate normally?**
NO: Check the waste toner feeding motor drive assembly; if normal, check the reversing roller drive clutch (CL16).

Duplexing unit reversal sensor

**6) Does the duplex reversal sensor (PS33) operate normally?**
NO: Check the lever and the wiring; if normal, replace the sensor.

Feeding drive assembly

**7) Does the feeding assembly operate normally?**
NO: Check the duplexing feeding motor drive assembly.

Duplexing paper deflecting plate

**8) Is the duplexing paper deflecting plate operating normally?**
NO: Check the duplex paper deflecting plate solenoid (SL11).

Pre-duplex feeding sensor 1, 2

**9) Does the pre-duplex feeding sensor (PS8, PS9) operate normally?**
YES: Check the guide plates, the duplex unit feeding assembly and pre-duplex unit feeding for foreign matter and deformation.
NO: Check the lever and the wiring; if normal, replace the sensor.

## 5.1.7 Duplex feeding Assembly/Duplex Assembly

| | |
|---|---|
| Duplexing unit | **1) Is the duplex feeding assembly properly installed in the copier?**<br>NO: Install it properly, and check the inside of the unit for foreign matter. |
| Paper | **2) Try Canon-recommended paper. Is the problem corrected?**<br>YES: Advise the user to use recommended paper. |
| Feeding roller | **3) Does the feeding roller operate normally?**<br>NO: Check the paper feed roller solenoid (SL13).<br>**4) Is there deformation or dirt on the feeding roller?**<br>YES: Replace the feeding roller. |
| Holding tray paper sensor 1, 2 | **5) Does the duplex paper sensor (PS30, PS31) operate normally?**<br>NO: Check the lever and the wiring; if normal, replace the sensor. |
| Paper jogging guide plate | **6) Does the paper jogging guide plate operate normally?**<br>NO: Check the duplex paper jogging guide motor (M23); if normal, replace the duplex paper jogging guide home position sensor (PS29). |
| DC controller PCB<br>Pick-up clutch | **7) Does the separation roller, feeding roller of the duplex pickup assembly rotate while copying on the 2nd side of a two-sided copy?**<br>NO: See IV. “Pick-up from the duplexing unit fails.” |
| Separation roller | **8) Is the separation roller of the duplex pickup assembly deformed or worn?**<br>YES: Replace the separation roller. |
| Re-pickup roller | **9) Is the re-pickup of the duplex pick up assembly deformed or worn?**<br>YES: Replace the feeding roller.<br>NO: Check the guide plates and the stacking assembly for foreign matter and deformation. |
| Re-pickup shutter | **10) Does the re-pickup shutter operate normally?**<br>NO: Check the re-pickup shutter solenoid (SL8). |

# 5.2 Feeding Faults

## 5.2.1 Double Feeding

Separation roller
Pressure spring

**1) Is the separation roller deformed or worn?**
YES: Replace the separation roller.
NO: Adjust the position of the pressure spring.
Replace the pressure spring of the separation roller.

## 5.2.2 Wrinkles

Cassette pick-up assembly
Duplexing unit

**1) Turn off the power while paper is moving through the pick-up vertical path assembly/pick-up feeding assembly. Is the paper wrinkled at this time? Is it moving askew?**
YES: Check the pick-up assembly. Check the registration roller.

Paper

**2) Try fresh paper. Is the problem corrected?**
YES: The paper may be moist. Advise the user on the correct method of storing paper.
**3) Try Canon-recommended paper. Is the problem corrected?**
YES: Advise the user to use recommended paper.
NO: Check the heater of each pick-up assembly to see if it is operating normally.

### a. Fixing assembly

Paper guide plate

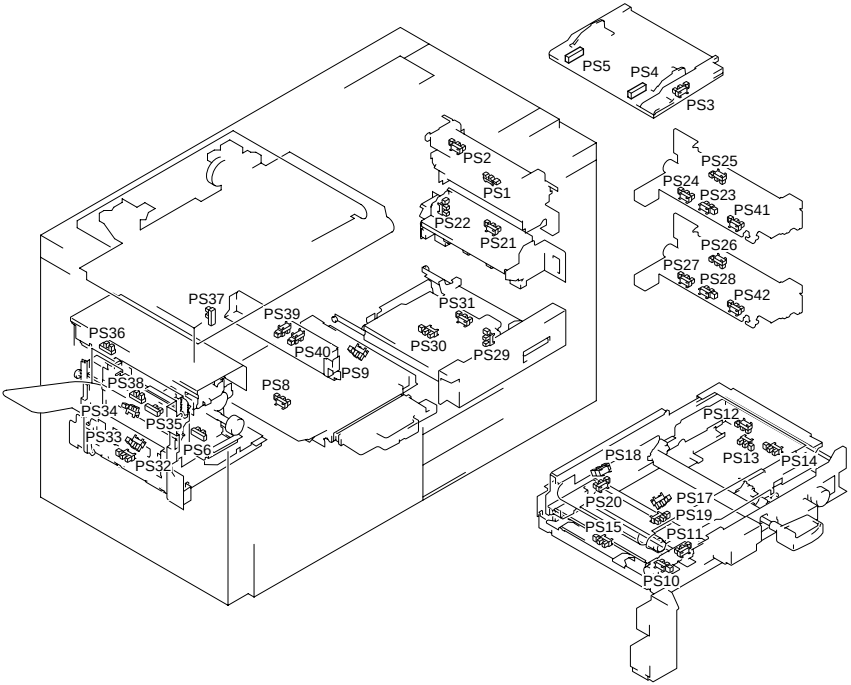
**4) Is the paper guide plate soiled with toner or the like?**
YES: Clean it with solvent.

Lower roller pressure
Upper/lower roller

**5) Is the lower roller pressure (nip) within specification?**
NO: Adjust it.
YES: Try replacing the upper and then the lower roller.

# 6 Arrangement and Functions of Electrical Parts

## 6.1 Sensors

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| Sensor | Notation Name |
|---|---|
| PS 1 | Registration paper sensor |
| PS 2 | Multifeeder lifter sensor (upper) |
| PS 3 | Multifeeder lifter sensor (lower) |
| PS 4 | Multifeeder paper width sensor (front) |
| PS 5 | Multifeeder paper width sensor (rear) |
| PS 6 | Fixing oil level sensor |
| PS 8 | Pre-duplex tray feed sensor 1 |
| PS 9 | Pre-duplex tray feed sensor 2 |
| PS 10 | Transfer belt cleaning web rotation sensor |
| PS 11 | Transfer belt cleaning web length sensor |
| PS 12 | Transfer belt lifter sensor 1 |
| PS 13 | Transfer belt lifter sensor 2 |
| PS 14 | Post-registration sensor |
| PS 15 | Separation sensor |
| PS 17 | Transfer belt edge sensor 1 |
| PS 18 | Transfer belt edge sensor 2 |
| PS 19 | Transfer belt edge sensor 3 |
| PS 20 | Transfer belt edge sensor 4 |
| PS 21 | Pickup vertical path 1 sensor |
| PS 22 | Paper deck connection (pickup cover) sensor |
| PS 23 | Cassette 1 paper sensor |
| PS 24 | Cassette 1 lifter sensor |
| PS 25 | Pickup vertical path 2 sensor |
| PS 26 | Pickup vertical path 3 sensor |
| PS 27 | Cassette 2 lifter sensor |
| PS 28 | Cassette 2 paper sensor |
| PS 29 | Duplex paper jogging guide home position sensor |
| PS 30 | Duplex paper sensor 1 |
| PS 31 | Duplex paper sensor 2 |
| PS 32 | Delivery vertical path sensor 2 |
| PS 33 | Duplex reversal sensor |
| PS 34 | Delivery sensor |
| PS 35 | Inside delivery sensor |
| PS 36 | Fixing web length sensor |
| PS 37 | Original scanner home position sensor |
| PS 38 | Delivery vertical path sensor 1 |
| PS 39 | Shutter closed sensor |
| PS 40 | Shutter open sensor |
| PS 41 | Cassette 1 open/closed sensor |
| PS 42 | Cassette 2 open/closed sensor |

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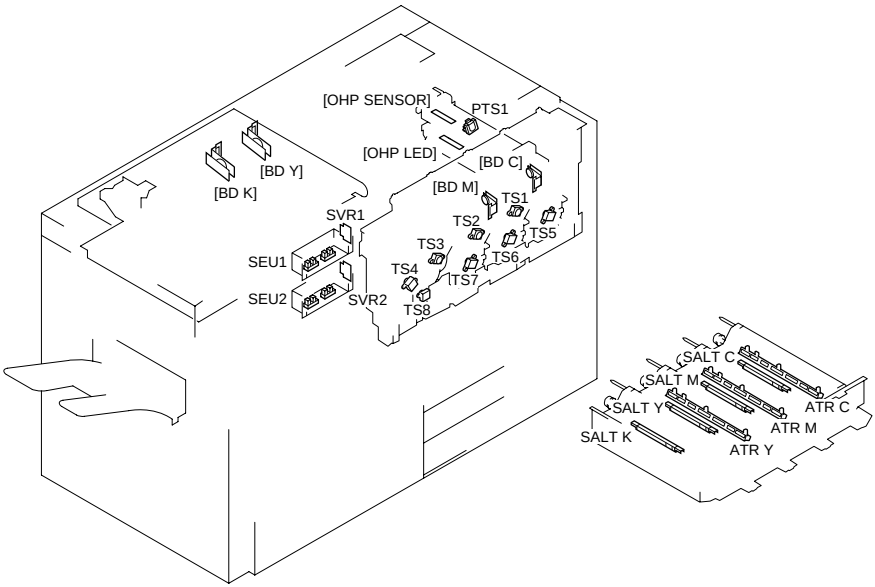
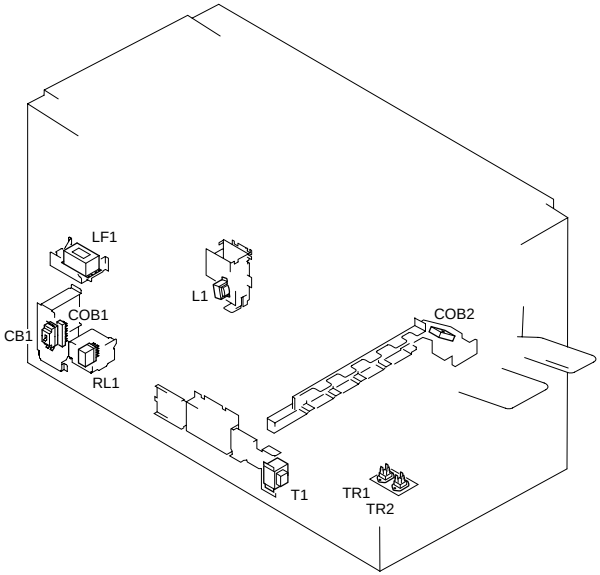



F05-601-02

| Notation | Name | Notation | Name |
|---|---|---|---|
| ATR C | ATR sensor (C) | SEU 1 | Cassette 1 paper length sensor |
| ATR M | ATR sensor (M) | SEU 2 | Cassette 2 paper length sensor |
| ATR Y | ATR sensor (Y) | SVR 1 | Cassette 1 paper width sensor |
| BD C | BD sensor (C) | SVR 2 | Cassette 2 paper width sensor |
| BD M | BD sensor(M) | TS 1 | Toner level sensor (upper) C |
| BD Y | BD sensor (Y) | TS 2 | Toner level sensor (upper) M |
| BD K | BD sensor (Bk) | TS 3 | Toner level sensor (upper) Y |
| PTS 1 | Paper thickness sensor | TS 4 | Toner level sensor (upper) Bk |
| SALT C | SALT sensor (C) | TS 5 | Toner level sensor (lower) C |
| SALT M | SALT sensor (M) | TS 6 | Toner level sensor (lower) M |
| SALT Y | SALT sensor (Y) | TS 7 | Toner level sensor (lower) Y |
| SALT K | SALT sensor (Bk) | TS 8 | Toner level sensor (lower) Bk |

T05-601-02

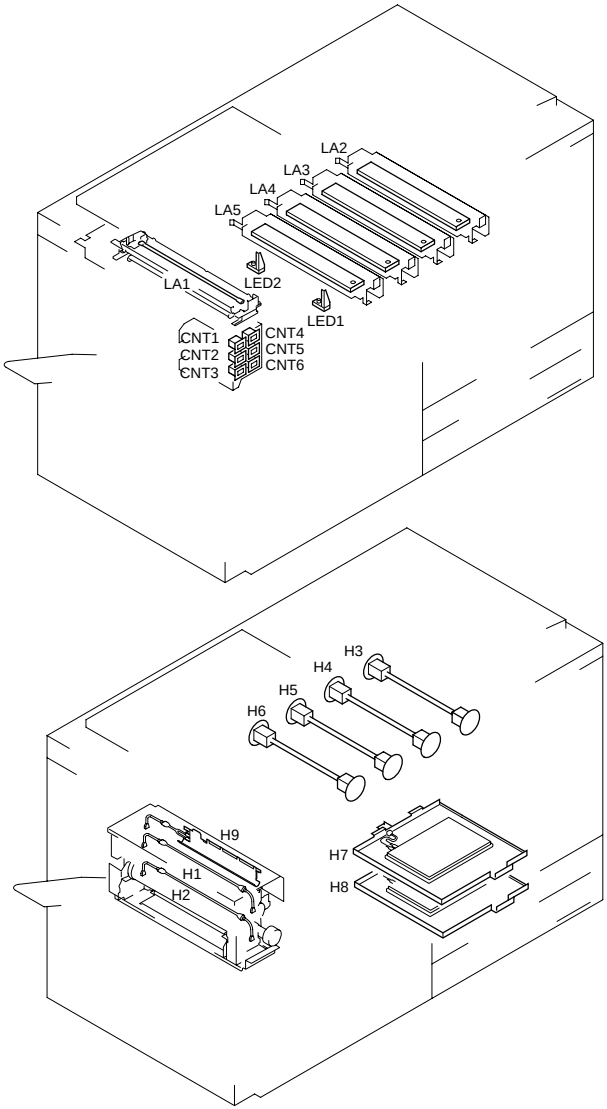



F05-601-03

| Notation | Name | Notation | Name |
|---|---|---|---|
| COB 1 | Terminal base (large) | RL 1 | Fixing relay |
| COB 2 | Terminal base (small) | T 1 | Deck heater transformer |
| CB 1 | Leakage breaker | TR 1 | Lower heater triac |
| L 1 | Noise filter 1 | TR 2 | Upper heater triac |
| LF 1 | Noise filter 2 | | |

T05-601-03

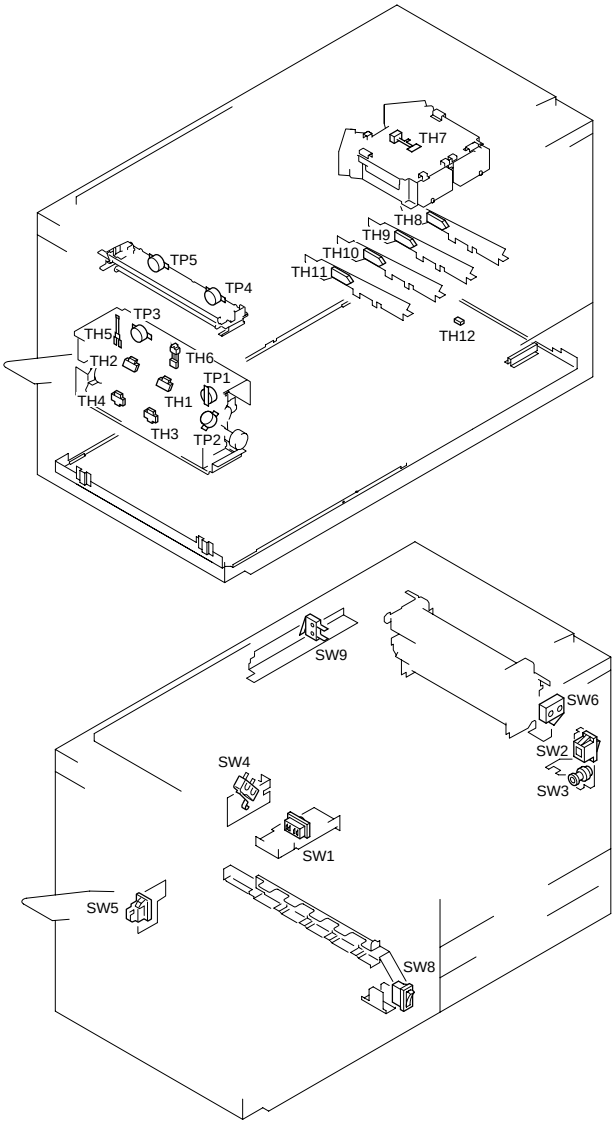
# 6.2 “Lamps, Switches, Thermistors, and Heaters”




F05-602-01

| Sensor | Notation Name | Sensor | Notation Name |
|---|---|---|---|
| LA1 | Scanning lamp | CNT5 | Counter5 |
| LA2 | Pre-scanning lamp (C) | CNT6 | Counter6 |
| LA3 | Pre-scanning lamp (M) | H1 | Fixing uppper heater |
| LA4 | Pre-scanning lamp (Y) | H2 | Fixing lower heater |
| LA5 | Pre-scanning lamp (Bk) | H3 | Drum heater (C) |
| LED1 | Image position correction LED (front) | H4 | Drum heater (M) |
| LED2 | Image position correction LED (rear) | H5 | Drum heater (Y) |
| CNT1 | Counter1 | H6 | Drum heater (Bk) |
| CNT2 | Counter2 | H7 | Cassette 1 heater |
| CNT3 | Counter3 | H8 | Cassette 2 heater |
| CNT4 | Counter4 | H9 | Fixing oil heater |

T05-602-01



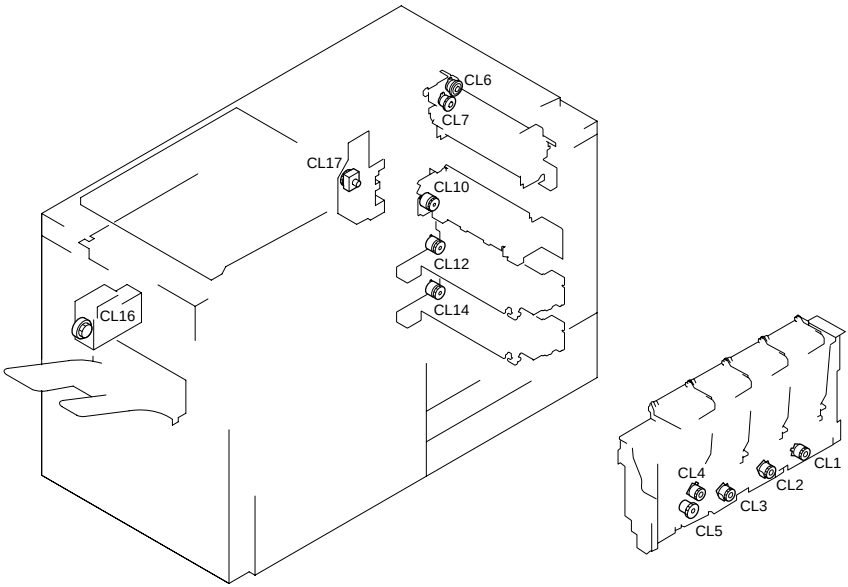

F05-602-02

| Sensor | Notation Name |
|---|---|
| TH1 | Fixing upper thermistor (main) |
| TH2 | Fixing upper thermsitor (sub) |
| TH3 | Fixing lower thermistor (main) |
| TH4 | Fixing lower thermistor (sub) |
| TH5 | Fixing oil thermsitor |
| TH6 | Fixing oil heater thermistor |
| TH7 | Scanner base thermistor |
| TH8 | Drum thermistor (C) |
| TH9 | Drum thermistor (M) |
| TH10 | Drum thermistor (Y) |
| TH11 | Drum thermistor (Bk) |
| TH12 | Environment sensor |
| TP1 | Fixing upper roller thermal switch |
| TP2 | Fixing lower roller thermal switch |
| TP3 | Fixing oil heat thermal switch |
| TP4 | Scanning lamp thermal switch 1 |
| TP5 | Scanning lamp thermal switch 2 |

| Sensor | Notation Name |
|---|---|
| SW1 | Front cover switch |
| SW2 | Power switch |
| SW3 | Control key switch |
| SW4 | Waste toner lock switch |
| SW5 | Fixing lever switch |
| SW6 | Multifeeder pickup cover open/ closed switch |
| SW8 | Power save switch |
| SW9 | Rear cover open/close switch |

T05-602-02

# 6.3 Clutches

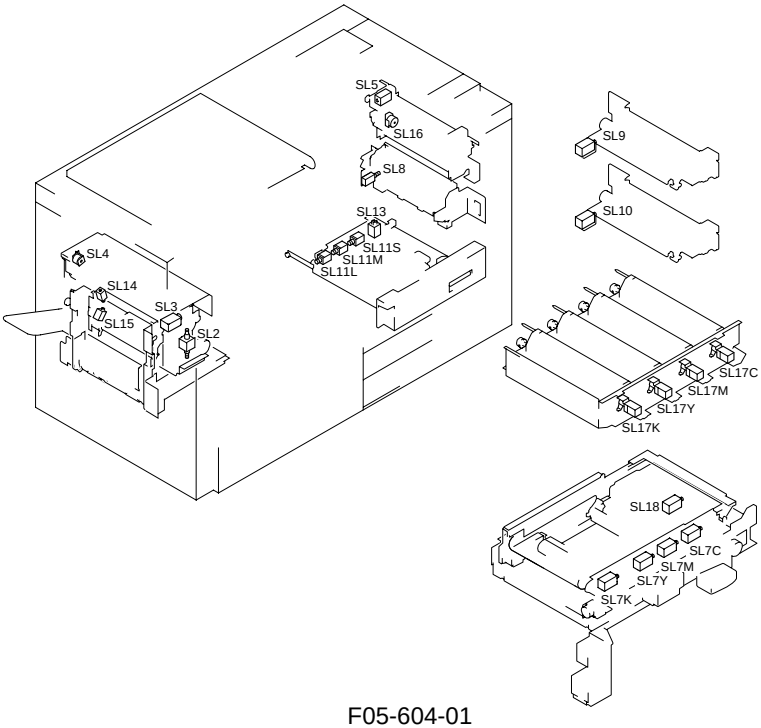



F05-603-01

| Notation | Name | Notation | Name |
|---|---|---|---|
| CL 1 | Toner supply clutch (C) | CL 7 | Paper thickness detection roller clutch |
| CL 2 | Toner supply clutch (M) | CL 10 | Re-pickup roller clutch |
| CL 3 | Toner supply clutch (Y) | CL 12 | Cassette 1 pickup roller clutch |
| CL 4 | Toner supply (upper) clutch (Bk) | CL 14 | Cassette 2 pickup roller clutch |
| CL 5 | Toner supply (lower) clutch (Bk) | CL 16 | Reversing roller drive clutch |
| CL 6 | Multifeeder pickup roller clutch | CL 17 | Transfer belt lifter clutch |

T05-603-01

## 6.4 Solenoids

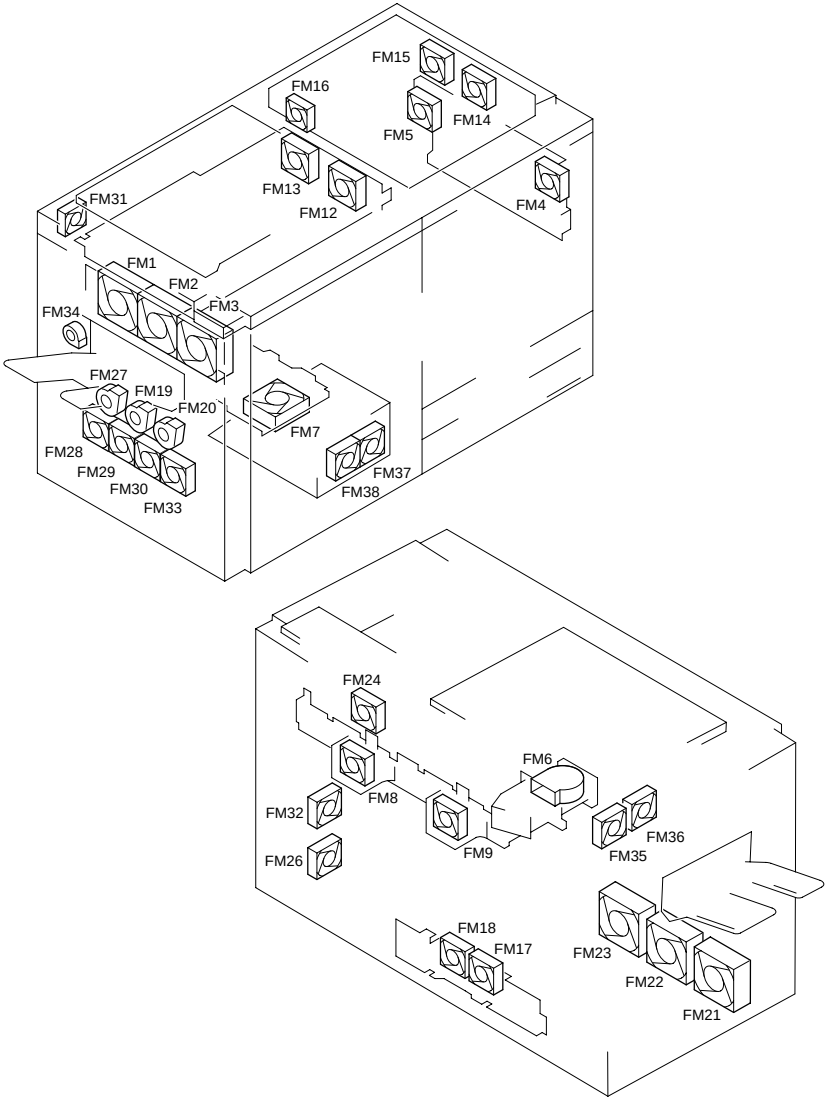



F05-604-01

| Notation | Name |
|---|---|
| SL2 | Fixing oil pump drive solenoid |
| SL3 | Fixing web take-up solenoid |
| SL4 | Fixing web releasing solenoid |
| SL5 | Multifeeder pickup roller releasing solenoid |
| SL7C | Transfer blade solenoid (C) |
| SL7M | Transfer blade solenoid (M) |
| SL7Y | Transfer blade solenoid (Y) |
| SL7K | Transfer blade solenoid (Bk) |
| SL8 | Re-pickup shutter solenoid |
| SL9 | Cassette 1 pickup roller releasin solenoid |
| SL10 | Cassette 2 pickup roller releasing solenoid |
| SL11S | Duplex paper deflecting plate solenoid (S) |
| SL11M | Duplex paper deflecting plate solenoid (M) |
| SL11L | Duplex paper deflecting plate solenoid (L) |
| SL13 | Paper feed roller solenoid |
| SL14 | Delivery paper deflecting solenoid |
| SL15 | Separation claw releasing solenoid |
| SL16 | Registration roller releasing solenoid |
| SL17C | SALT sensor shutter open/closed solenoid (C) |
| SL17M | SALT sensor shutter open/closed solenoid (M) |
| SL17Y | SALT sensor shutter open/closed solenoid (Y) |
| SL17K | SALT sensor shutter open/closed solenoid (Bk) |
| SL18 | Polishing roller solenoid |

T05-604-01

# 6.5 Fans

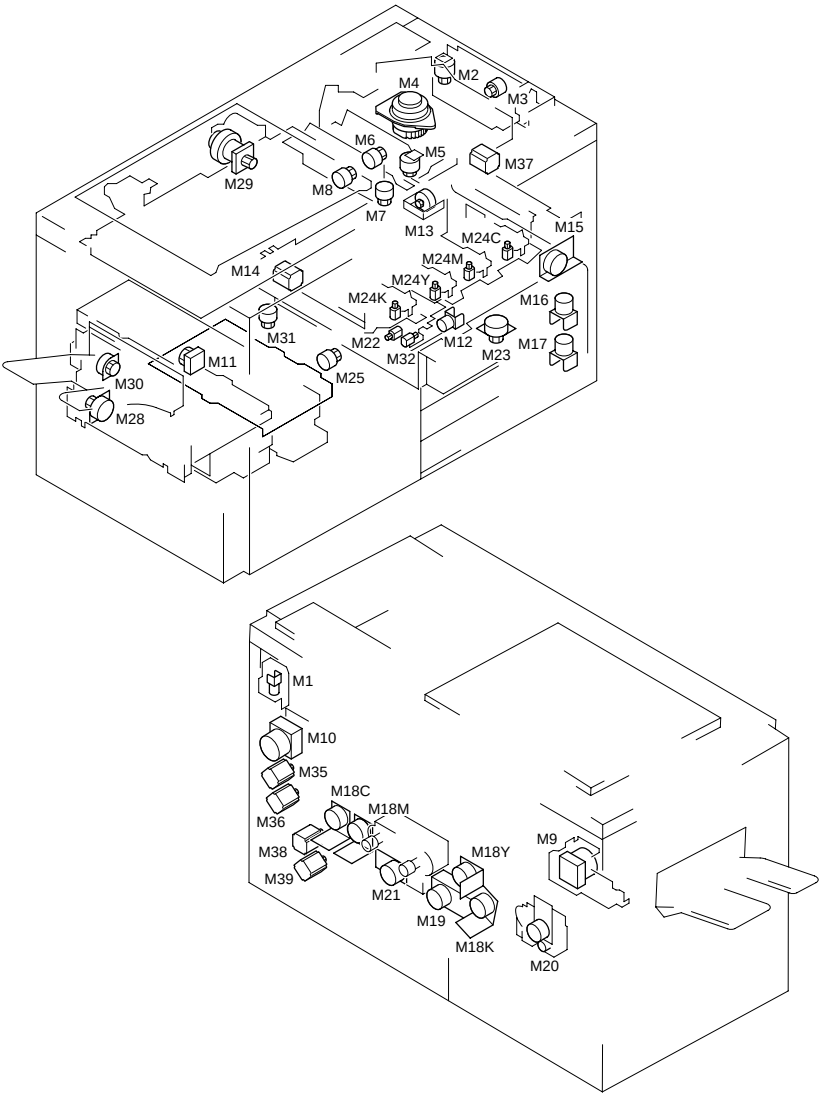



F05-605-01

| Sensor | Notation Name |
|---|---|
| FM1 | Delivery assembly exhaust fan 1 |
| FM2 | Delivery assembly exhaust fan 2 |
| FM3 | Delivery assembly exhaust fan 3 |
| FM4 | Laser cooling fan (front) |
| FM5 | Laser cooling fan (rear) |
| FM6 | Primary exhaust fan |
| FM7 | Rre-fixing feed fan |
| FM8 | Primary suction fan (left) |
| FM9 | Primary suction fan (right) |
| FM12 | Reader assembly cooling fan (front) |
| FM13 | Reader assembly cooling fan (rear) |
| FM14 | Digital unit cooling fan 1 |
| FM15 | Digital unit cooling fan 2 |
| FM16 | Digital unit cooling fan 3 |
| FM17 | Power supply cooling fan 1 |
| FM18 | Power supply cooling fan 2 |
| FM19 | Delivery lower cooling fan 1 |
| FM20 | Delivery lower cooling fan 2 |
| FM21 | General exhaust fan 1 |
| FM22 | General exhaust fan 2 |
| FM23 | General exhaust fan 3 |
| FM24 | Laser scanner moter cooling fan |
| FM26 | Pickup cooling fan 1 |
| FM27 | Delivery lower cooling fan 3 |
| FM28 | Reversing assembly exhaust fan 1 |
| FM29 | Reversing assembly exhaust fan 2 |
| FM30 | Reversing assembly exhaust fan 3 |
| FM31 | Fixing heat discharge fan |
| FM32 | Pickup cooling fan 2 |
| FM33 | Reversing assembly exhaust fan 4 |
| FM34 | Delivery cooling fan |
| FM35 | Rre-fixing exhaust fan 1 |
| FM36 | Rre-fixing exhaust fan 2 |
| FM37 | Power supply cooling fan 3 |
| FM38 | Power supply cooling fan 4 |

T05-605-01

# 6.6 Motors



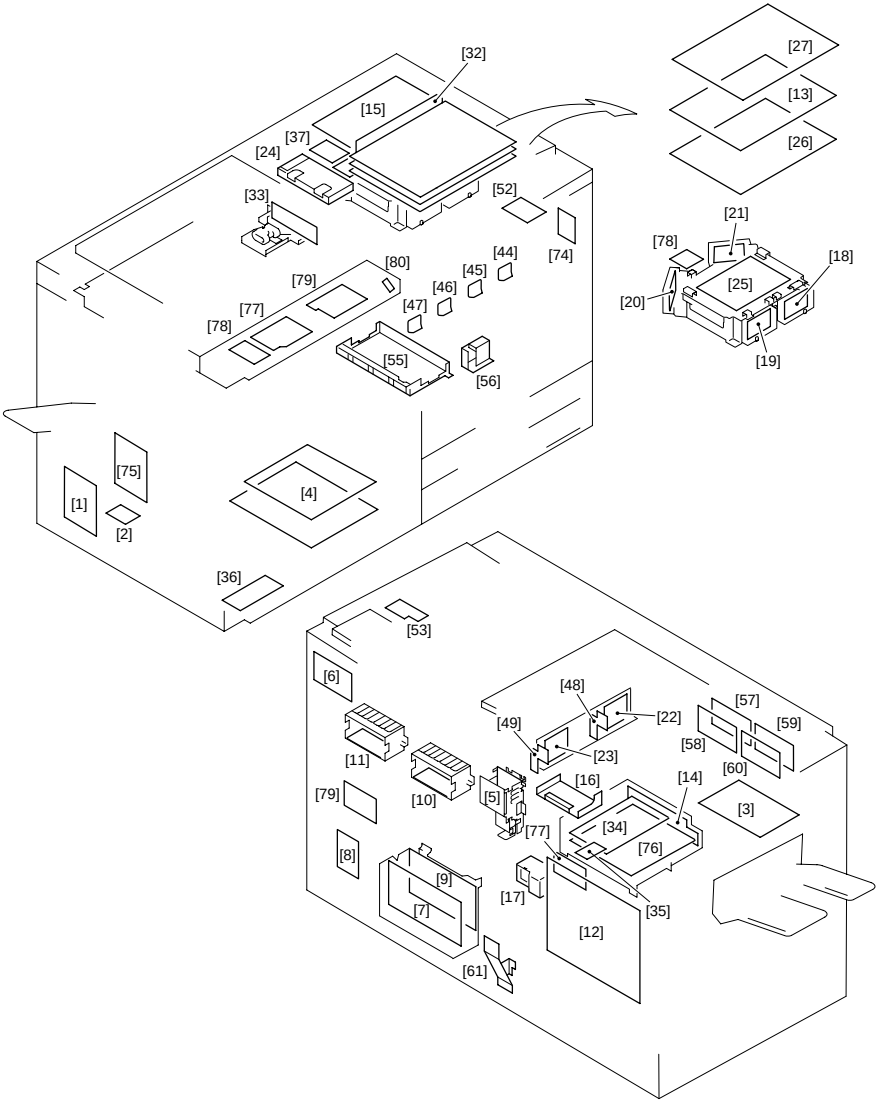

F05-606-01

| Sensor | Notation Name |
|---|---|
| M1 | Multifeeder lifter motor |
| M2 | Mirror slant correction motor (C) |
| M3 | Mirror ratio correction motor (C) |
| M4 | Laser scanner motor |
| M5 | Mirror slant correction motor (Y) |
| M6 | Mirror ratio correction motor (Y) |
| M7 | Mirror slant correction motor (Bk) |
| M8 | Mirror ratio correction motor (Bk) |
| M9 | Fixing motor |
| M10 | Multifeeder pickup motor |
| M11 | Per-fixing feed motor |
| M12 | Transfer belt cleaning web motor |
| M13 | Transfer belt swing motor |
| M14 | Transfer belt motor |
| M15 | Polishing/oil removing motor |
| M16 | Cassette 1 lifter motor |
| M17 | Cassette 2 lifter motor |
| M18C | Developing motor (C) |
| M18M | Developing motor (M) |
| M18Y | Developing motor (Y) |
| M18K | Developing motor (Bk) |

| Sensor | Notation Name |
|---|---|
| M19 | Duplex feed motor |
| M20 | Waste toner feed motor |
| M21 | Photosensitive drum motor |
| M22 | Pre-fixing charging assembly wire cleaner motor |
| M23 | Duplex paper jogging guide motor |
| M24 | Primare charging wire cleaner motor (C) |
| M24 | Primare charging wire cleaner motor (M) |
| M24 | Primare charging wire cleaner motor (Y) |
| M24 | Primare charging wire cleaner motor (Bk) |
| M25 | Registration shutter drive motor |
| M28 | Duplex reversal motor |
| M29 | Original scanner motor |
| M30 | Fixing lower web motor |
| M31 | Transfer belt waste toner motor |
| M32 | Separatio charging assembly motor |
| M35 | Registration motor |
| M36 | Paper deck pickup motor |
| M37 | Re-pickup motor |
| M38 | Cassette 1 pickup motor |
| M39 | Cassette 2 pickup motor |

T05-606-01

# 6.7 PCBs




F05-607-01

| Sensor | Notation Name | Sensor | Notation Name |
|---|---|---|---|
| 1 | AC drive PCB | 35 | Monitor I/F PCB |
| 2 | Ficker controller PCB | 36 | Download PCB |
| 3 | DC power supply PCB 2 | 37 | ECo-ID PCB |
| 4 | DC power supply PCB 1 | 44 | Primary wire relay PCB (C) |
| 5 | Lamp regulator | 45 | Primary wire relay PCB (M) |
| 6 | Multifeeder PCB | 46 | Primary wire relay PCB (Y) |
| 7 | HVT3-A | 47 | Primary wire relay PCB (Bk) |
| 8 | Pickup motor drive PCB | 48 | Image position correction CCD PCB (front) |
| 9 | HVT3-B | | |
| 10 | HVT2-R | 49 | Image position correction CCD PCB (rear) |
| 11 | NVT2-L | | |
| 12 | DC controller PCB | 52 | Environment measurement PCB |
| 13 | ED board | 53 | Multifeeder paper width detection PCB |
| 14 | Interface controller motor PCB | | |
| 15 | Reader controller PCB | 55 | HVT1 |
| 16 | Original scanner motor PCB | 56 | Transfer belt motor drive PCB |
| 17 | HVT4 | 57 | Potential measurement PCB (C) |
| 18 | Laser drive PCB (C) | 58 | Potential measurement PCB (M) |
| 19 | Laser drive PCB (Bk) | 59 | Potential measurement PCB (Y) |
| 20 | Laser drive PCB (Y) | 60 | Potential measurement PCB (Bk) |
| 21 | Laser drive PCB (M) | 61 | HVT5 |
| 22 | Image position correction PCB (front) | 74 | Hopper relay PCB |
| 23 | Image position correction PCB (rear) | 75 | Fuse PCB |
| 24 | Analog Processor PCB | 76 | Interfasce board |
| 25 | Video controlleer PCB | 77 | Fixing motor drive PCB |
| 26 | Image processer PCB | 78 | Laser scanner motor drive PCB |
| 27 | IP memory PCB | 79 | DC drive PCB |
| 32 | IP motor PCB | 80 | Contrpl paner family PCB |
| 33 | CCD drive PCB | 81 | Contrpl paner PCB |
| 34 | Pre-view monitor PCB | | |

T05-607-01

## 6.8 Variable Resistors (VR), Light-Emitting Diodes (LED), and Check Pins by PCB

Of the variable resistors (VR), light-emitting diodes (LED), and check pins used in the CLC1000, those that are needed when servicing the machine in the field are discussed.

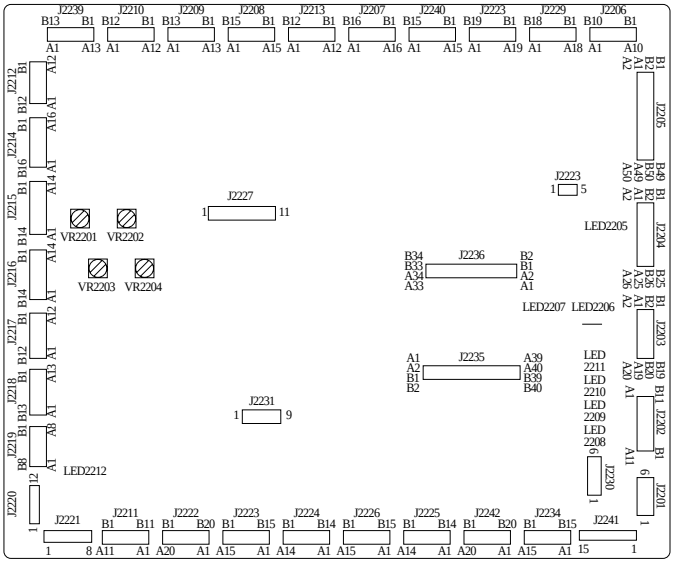
1 Do not touch the VRs and check pins that are not mentioned herein; they are for factory use only and require special instruments and high precision for adjustment.
2 Some LEDs emit light because of leakage current; this is a normal condition and must be kept in mind.
3 VRs that may be used in the field

. . . ◪

VRs that must not be used in the field

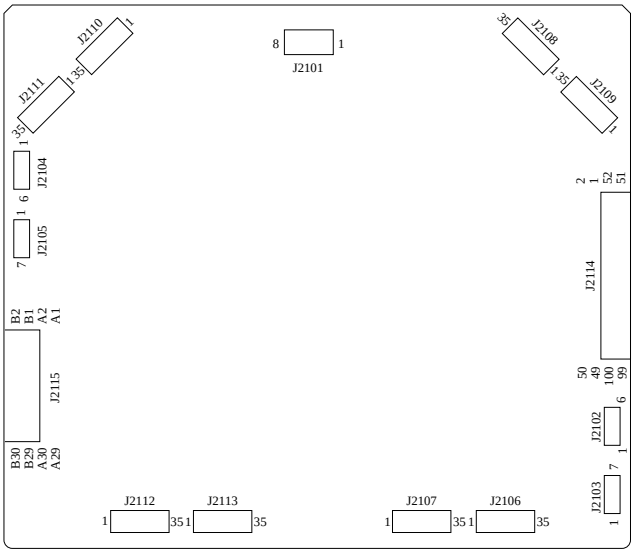
. . . ▨

## 6.8.1 DC Controller PCB



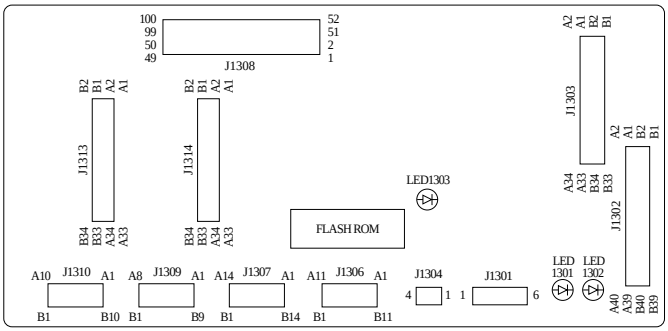

F05-608-01

## 6.8.2 Video Controller PCB




F05-608-02

## 6.8.3 Reader Control PCB

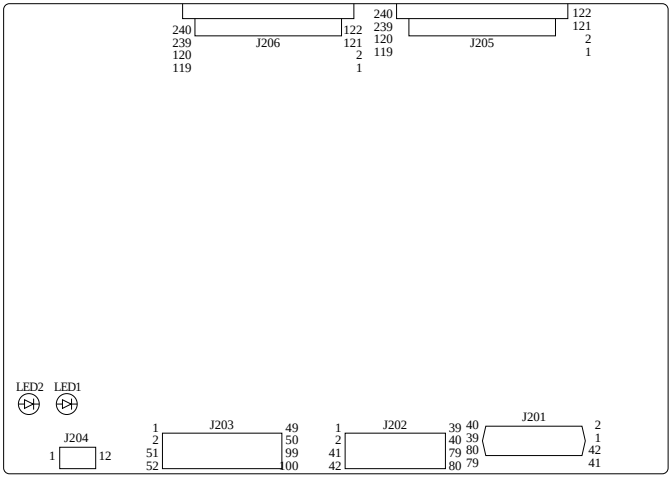



F05-608-03

| LED | Function |
|---|---|
| LED1301: | ON while all-night power supply 5 V is being supplied. |
| LED1302: | ON when + VU power is being supplied. |
| LED1303: | ON when the CPU is in operation (flashes for 3 sec only at power-on). |

T05-608-01

## 6.8.4 Image Processor PCB

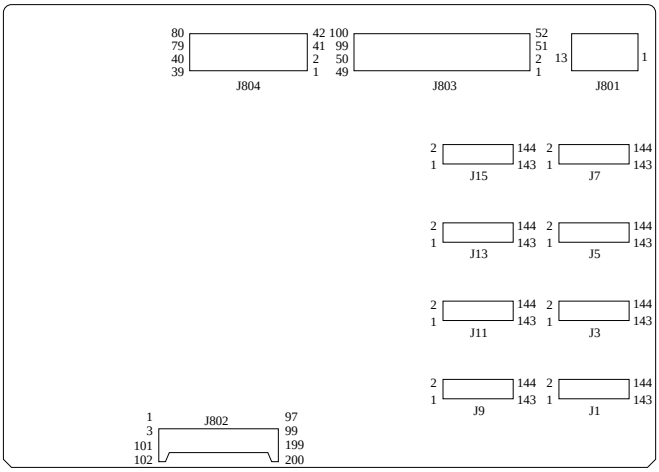



F05-608-04

| LED | Function |
|---|---|
| LED1: | ON while +3.3 V power is being supplied. |
| LED2: | ON while +5 V power is being supplied. |

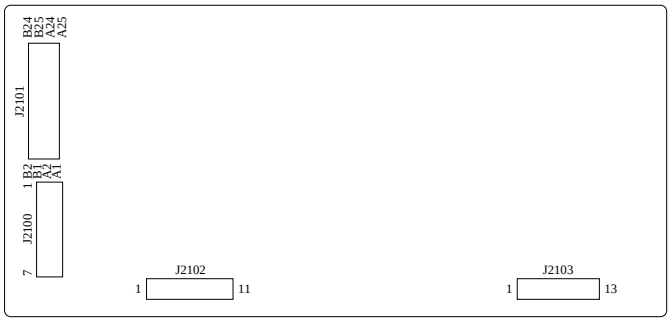
T05-608-02

## 6.8.5 IP Memory PCB



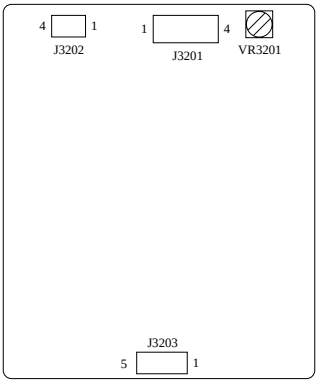

F05-608-05

## 6.8.6 Analog Processor PCB




F05-608-06

## 6.8.7 Transfer Belt Motor Driver PCB



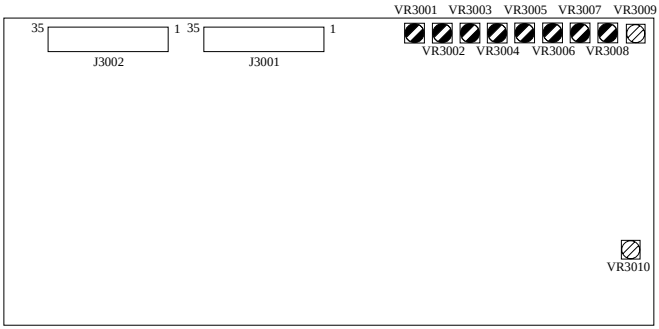

F05-608-07

| LED | Function |
|---|---|
| VR3201: | for factory adjustment (Do not touch.) |

T05-608-03

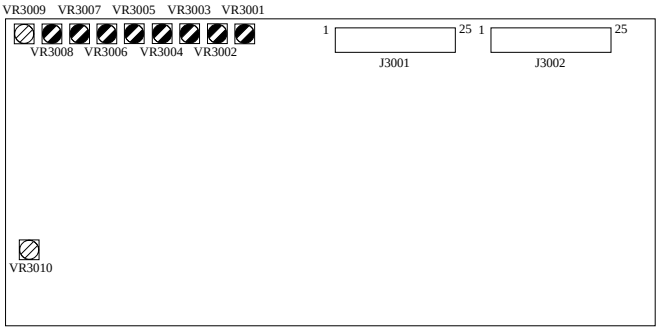
## 6.8.8 Laser Driver PCB

■ For C/Bk




F05-608-08

■ For Y/M

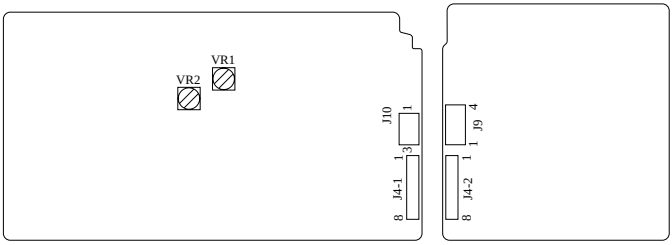



F05-608-09

| VR | Function |
|---|---|
| VR3001: | Use it to set the laser power minimum level (at time of replacing the laser unit). |
| VR3002: | Use it to set the laser power maximum level (at time of replacing the laser unit). |
| VR3003: | |
| VR3004: | |
| VR3005: | |
| VR3006 : | Use it to adjust the laser power or the laser intensity (at time of replacing |
| VR3007: | the laser unit). |
| VR3008: | |
| VR3009: | |
| VR3010: | for factory adjustment (Do not touch.) |

T05-608-04

## 6.8.9 Lamp Regulator PCB

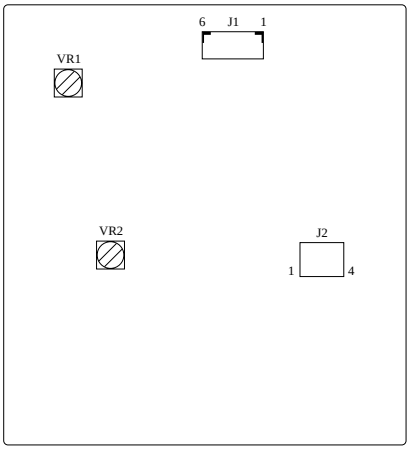



F05-608-10

| LED | Function |
|---|---|
| VR1: | |
| VR2: | for factory adjustment (Do not touch.) |

T05-608-05

## 6.8.10 Enviroment Sensor PCB

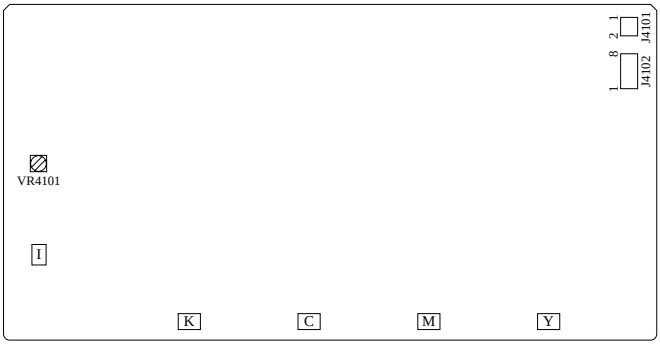



F05-608-11

| LED | Function |
|---|---|
| VR1: | |
| VR2: | for factory adjustment (Do not touch.) |

T05-608-06

## 6.8.11 HVT1



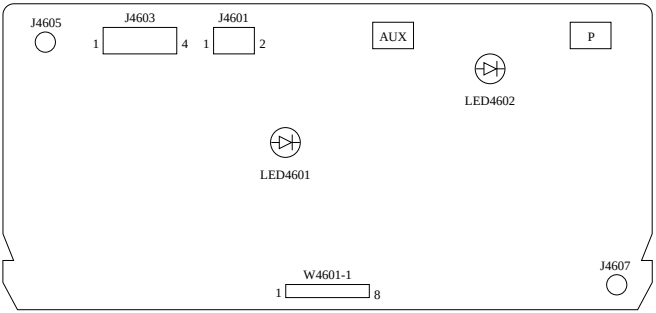

F05-608-12

| LED | Function |
|---|---|
| VR4101: | for factory adjustment (Do not touch.) |

T05-608-07

## 6.8.12 HVT2

### ■ HVT2-1

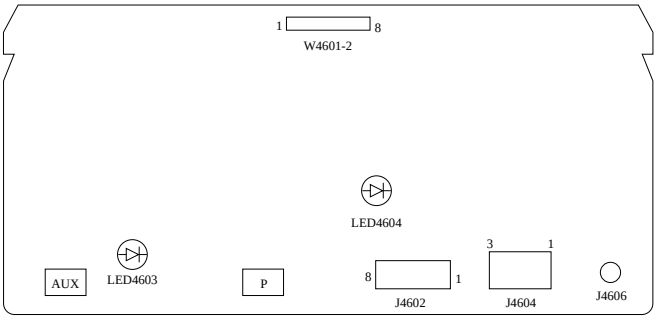



F05-608-13

| LED | Function |
|---|---|
| LED4601: | ON while (Y) Pre-primary charging high voltage is being generated. |
| LED4602: | (Y)/(C) ON in response to primary charging output. |

T05-608-08

■ HVT2-2

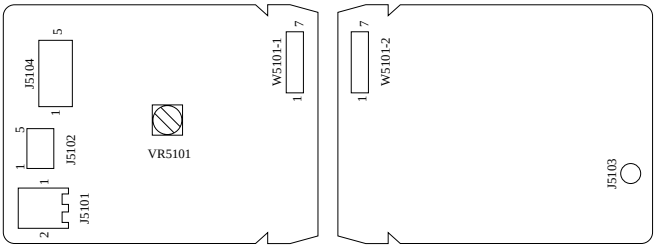



F05-608-14

| LED | Function |
|---|---|
| LED4603: | ON while (Y) Pre-primary charging high voltage is being generated. |
| LED4604: | ON while (Y) primary charging high voltage is being generated |

T05-608-09

## 6.8.13 HVT4

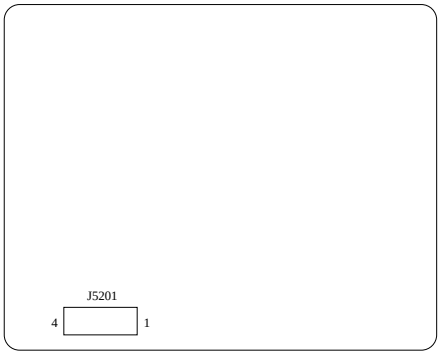



F05-608-15

| LED | Function |
|---|---|
| VR5101: | for factory adjustment (Do not touch.) |

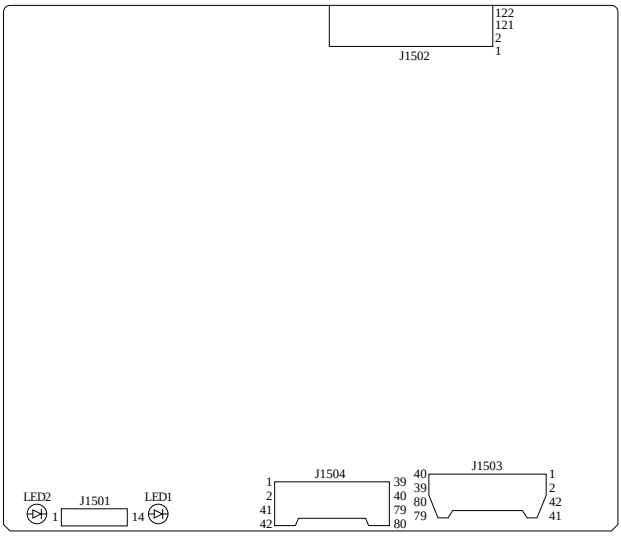
T05-608-10

## 6.8.14 HVT5




F05-608-16

## 6.8.15 ED board A1

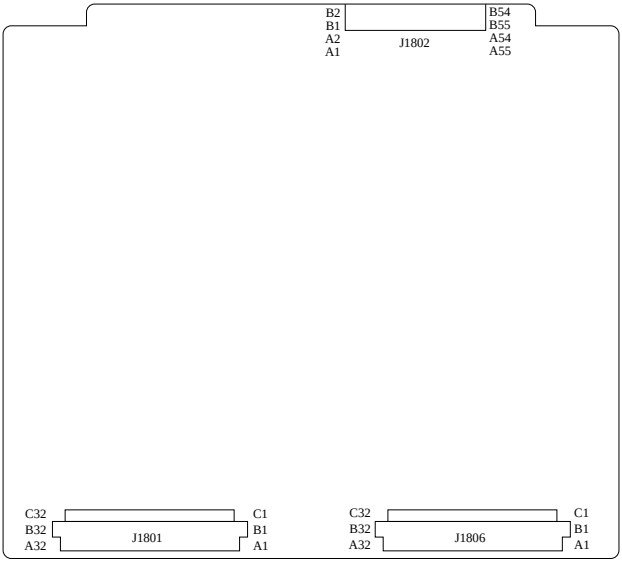



F05-608-17

| LED | Function |
|---|---|
| LED1: | ON while +3.3 V power is being supplied. |
| LED2: | ON while +5 V power is being supplied. |

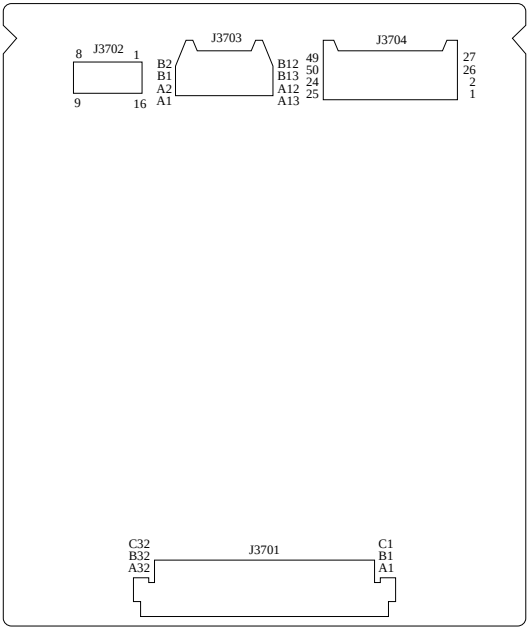
T05-608-11

## 6.8.16 Interface board B1



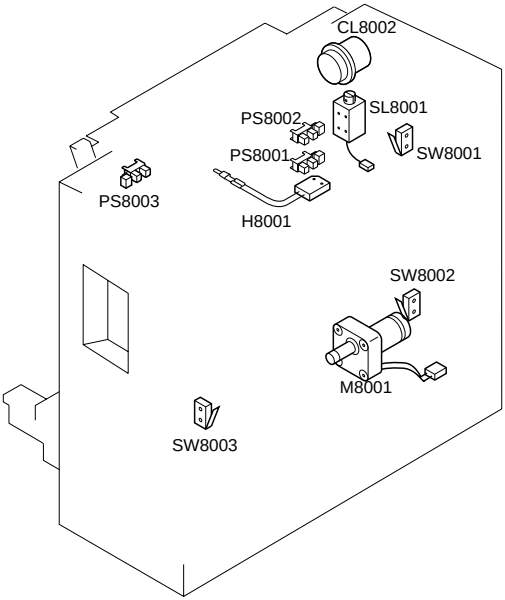

F05-608-18

## 6.8.17 Preview monitor board




F05-608-19

# 6.9 Paper Deck-K1

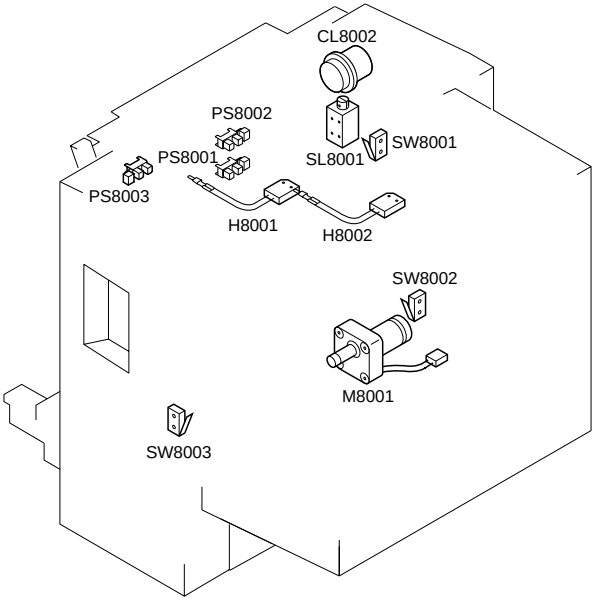



F05-609-01

| Notation | Name | Notation | Name |
|---|---|---|---|
| M8001 | Paper deck lifter motor | CL8002 | Pickup clutch |
| SW8001 | Lifter upper limit switch | SL8001 | Pickup roller releasing solenoid |
| SW8002 | Lifter lower limit switch | | |
| SW8003 | Cover open/closed detecting switch | H8001 | Paper deck heater (1) |
| PS8001 | Lifter sensor (lower) | | |
| PS8002 | Lifter sensor (upper) | | |
| PS8003 | Deck sensor | | |

T05-609-01

# 6.10 Paper Deck-J1

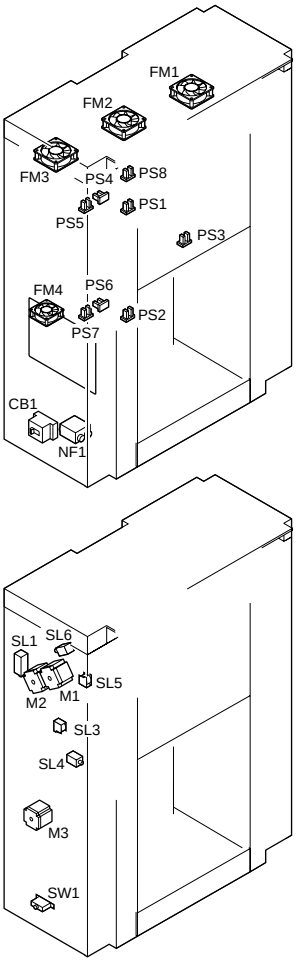



F05-610-01

| Notation | Name | Notation | Name |
|---|---|---|---|
| M8001 | Paper deck lifter motor | PS8003 | Deck sensor |
| SW8001 | Lifter upper limit switch | CL8002 | Pickup clutch |
| SW8002 | Lifter lower limit switch | | |
| SW8003 | Cover open/closed detecting switch | SL8001 | Pickup roller releasing solenoid |
| PS8001 | Lifter sensor (lower) | H8001 | Paper deck heater (1) |
| PS8002 | Lifter sensor (upper) | H8002 | Paper deck heater (2) |

T05-610-01

# 6.11 Buffer pass unit C1




F05-611-01

| Sensor | Notation Name |
|---|---|
| FM1 | Cooling fan 1 |
| FM2 | Cooling fan 2 |
| FM3 | Cooling fan 3 |
| FM4 | Cooling fan 4 |
| PS1 | Reversal timing sensor |
| PS2 | Reversal jam sensor |
| PS3 | Delivery sensor |
| PS4 | Upper phase sensor 1 |
| PS5 | Upper phase sensor 2 |
| PS6 | Lower phase sensor 1 |
| PS7 | Lower phase sensor 2 |
| PS8 | Inlet paper sensor |

| Sensor | Notation Name |
|---|---|
| SL1 | Flapper solenoid |
| SL3 | Downward curl removing solenoid 1 |
| SL4 | Downward curl removing solenoid 2 |
| SL5 | Upward curl removing solenoid 1 |
| SL6 | Upward curl removing solenoid 2 |
| M1 | Buffer input motor |
| M2 | Reversal motor |
| M3 | Buffer output motor |
| SW1 | Cover switch |
| CB1 | Circuit breaker |
| NF1 | Noise filter |

T05-611-01

# 7 Upgrading (download)

## 7.1 Items to Prepare

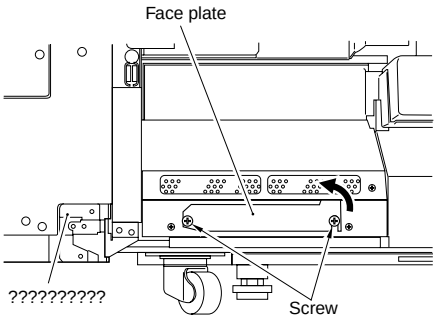
- PC (to which the copier Service Support Tool has been installed)
- Bi-Centronics cable (w/ IEEE 1284Std-complaint notation)

## 7.2 Preparing for the Work

1) Turn on the power switch.
2) Record the settings of the user mode (if you are upgrading the reader controller PCB).
3) Change '1' to '0' for 'IMG-REG' on the 2nd page on the INSTALL screen of 'FUNC' in service mode (if you are upgrading the DC controller PCB).
4) Turn off the power switch.

## 7.3 Making Connections

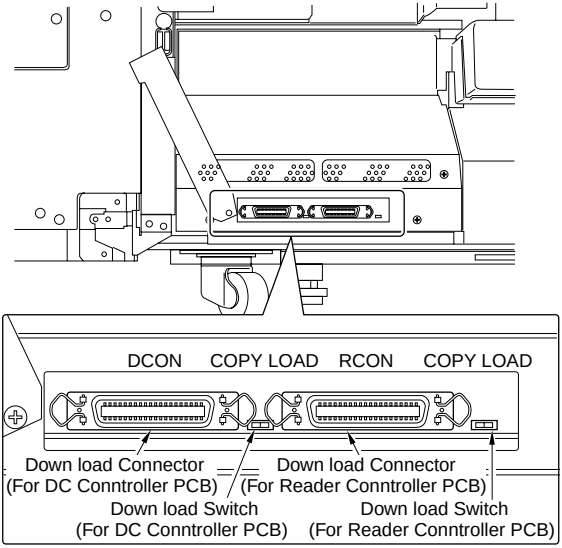
1) Disconnect the power plug from the outlet.
2) Open the front cover, and insert the cover switch actuator.
3) Loosen the two screws at the left bottom and open the face cover.




F05-703-01

4) Connect the download connector on the download PCB and the PC with a bi-Centronics cable.
   - Keep the PCB OFF.
   - Connect the 25-pin connector of the bi-Centronics cable to the PC, and the 36-pin connector to the copier.

5) Slide the download switch on the download PCB to the LOAD position.

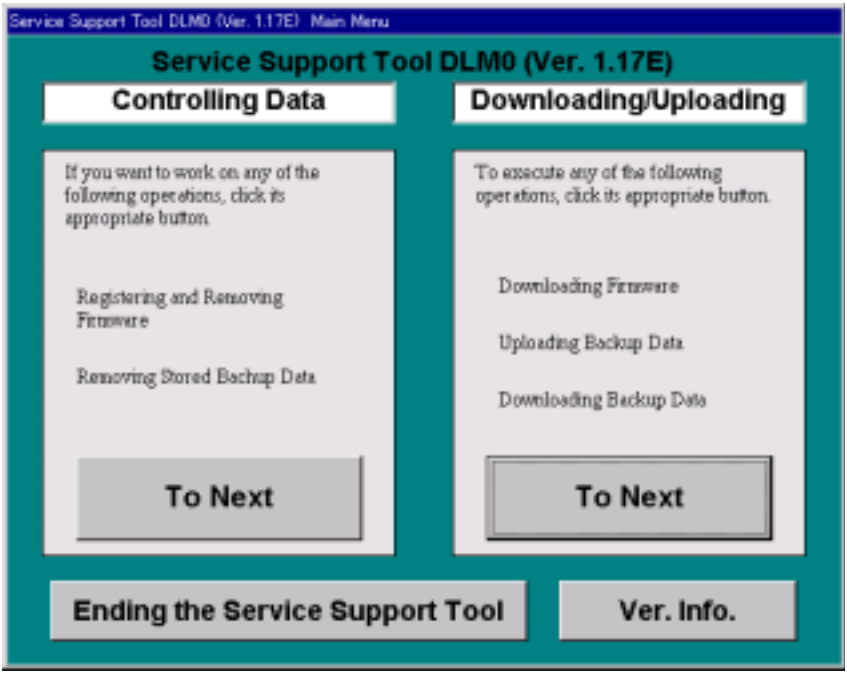



F05-703-02

6) Turn on the PC, and start the Copier Service Support Tool.
7) Connect the power plug to the outlet, and turn on the power switch.

## 7.4 Downloading

1) Select 'main menu' on the start-up message of the Copier Service Support Tool.
2) Select 'next' under 'download/upload'.




3) Select the appropriate type and PCB, and press 'start connection'.
   Type : CLC5000
   PCB : RCON (reader controller PCB)
   DCN (DC controller PCB)
4) Operate as instructed on the PC screen to download the flash ROM program.

Do not turn off the PC or the copier while downloading takes place; otherwise, the DIMM can go out of order, not allowing reuse.

5) When downloading is done, turn of the PC as follows:
   OK>return to main menu>end copier support tool>end

## 7.5 After the Work

1) Turn off the power switch, and disconnect the power plug.
2) Disconnect the bi-Centronics cable.
3) Slide the download switch to the COPY position.
4) Connect the power plug, and turn on the power switch.
5) ON the VERSION screen under 'DISP' in service mode, check the version of 'R-CON' or 'DC-CON'.
6) Remove the cover switch actuator; then, secure the face cover, and close the front cover.
7) Execute 'RAM-CLR' under 'R-CON' of 'FUNC' in service mode.
   - The power switch will automatically turn off.

   If you are upgrading the reader controller PCB,
8) Turn on the power switch.
   - E350' (error code) will be indicated.

   If you are upgrading the reader controller PCB,
9) Execute 'AUTO-ADJ' of 'CCD' under 'FUNC' in service mode. (about 8 min)
   If your are upgrading the reader controller PCB,
10) If a film projector is installed, execute 'PROJ-CCD' of 'PROJ-ADJ' under 'FUNC' in service mode.
    If you are upgrading the reader controller PCB,
11) Compare the value of A on the service label and the service mode setting; if different, clear the RAM on the DC controller PCB. (For details, see the instructions on how to clear the RAM on the DC controller PCB under 2.10.d. of Chapter 5.)

If you are not clearing the RAM on the DC controller PCB, check the setting of 'TR-#' of 'HV-TR-Y' under 'ADJUST'; if '3' is indicated, change it to '0'. (Be sure to do the same for zones A, B, and C.)

If your are upgrading the DC controller PCB,

12) Change '0' to '1' for 'IMG-REG' on the 2nd page on the INSTALL screen of 'FUNC' in service mode.
    If you are upgrading the DC controller PCB,
13) Enter the settings of user mode and the value of B indicated on the service label; if any of the settings of the items of B on the service label relating to the reader controller has been changed, also enter such settings.)
    If you are upgrading the reader controller PCB,
14) Turn off and then on the power switch.
15) Set '1' to 'PASCAL' of 'ADJUST' in service mode, and execute auto gradation correction.

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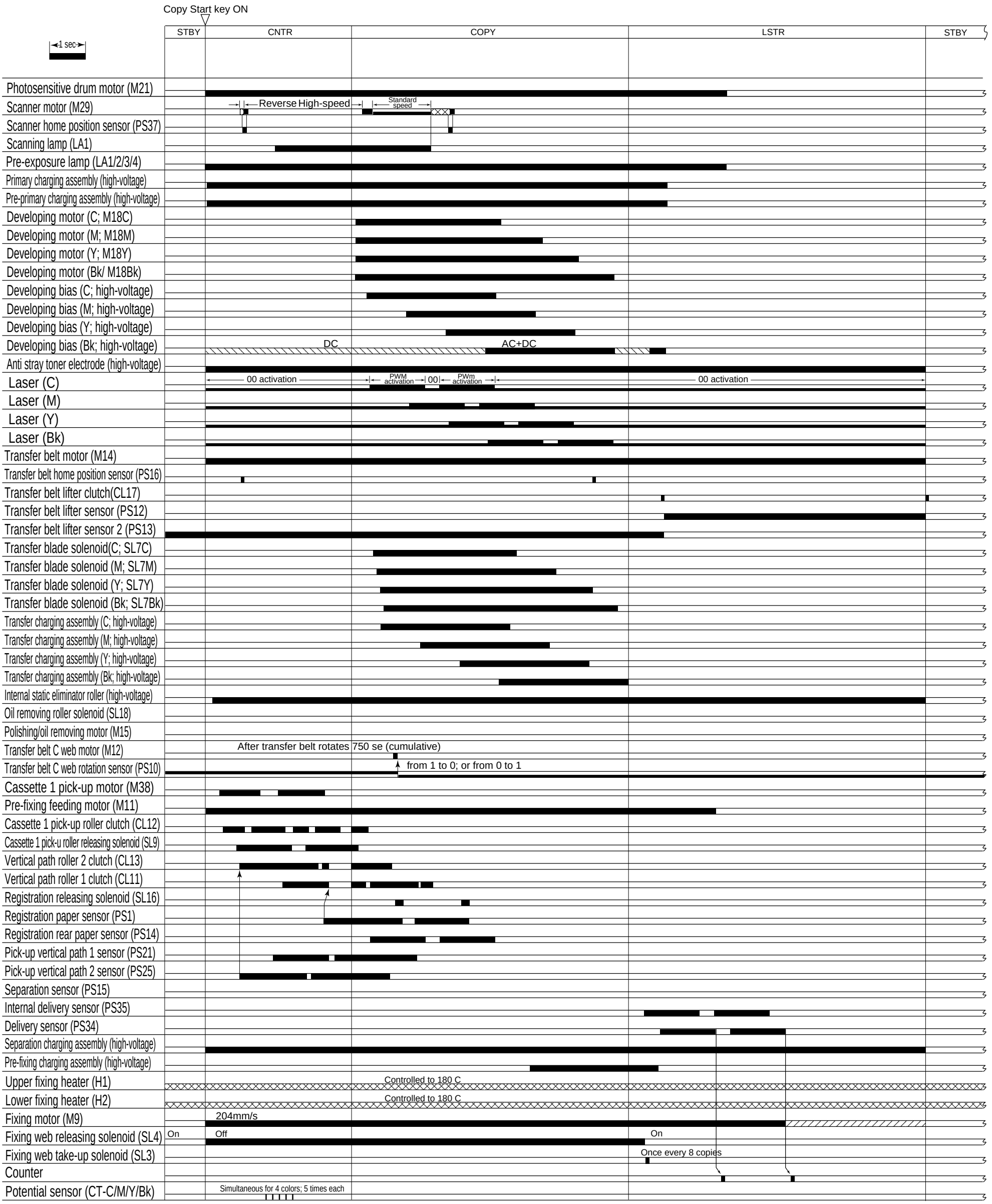
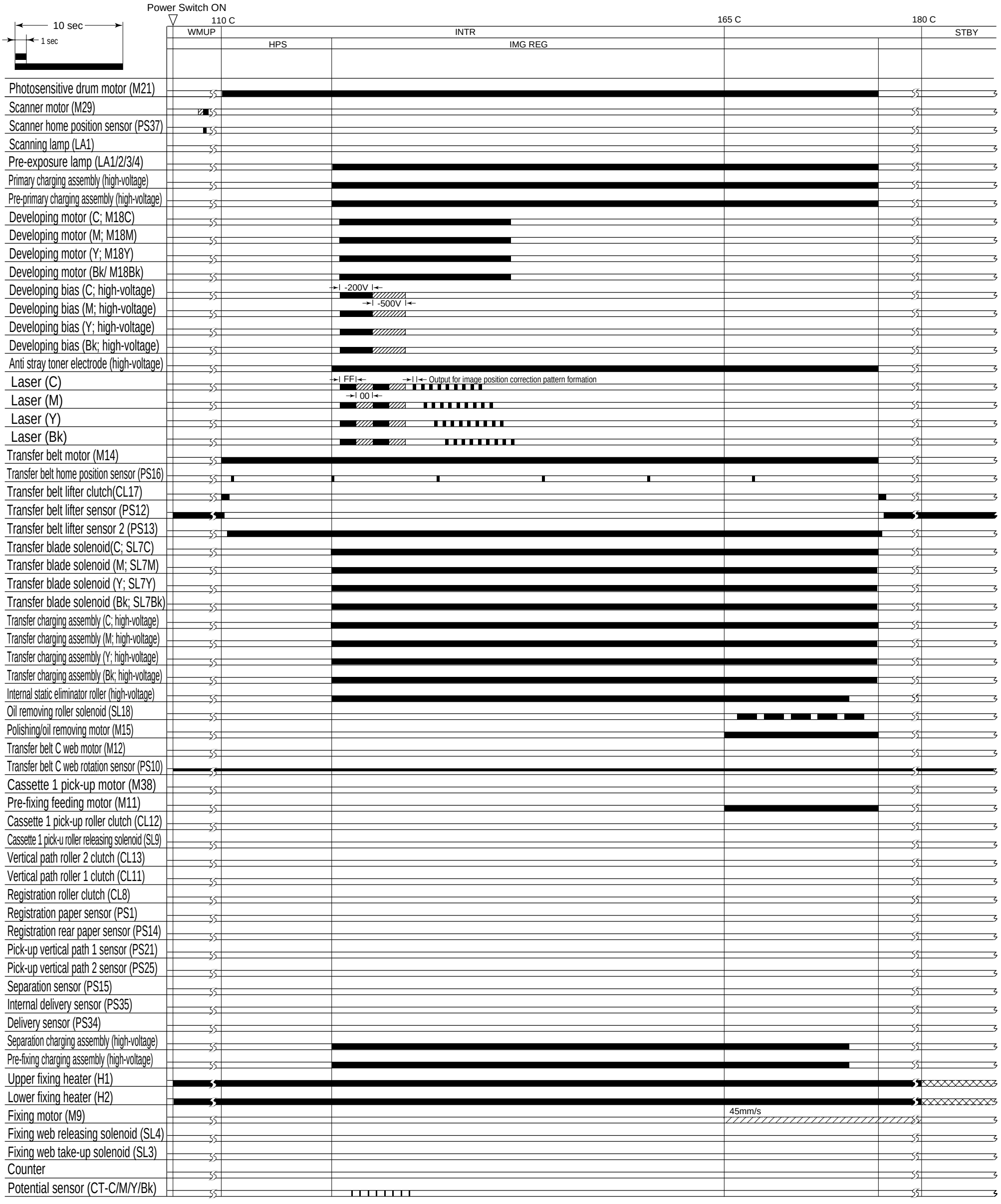
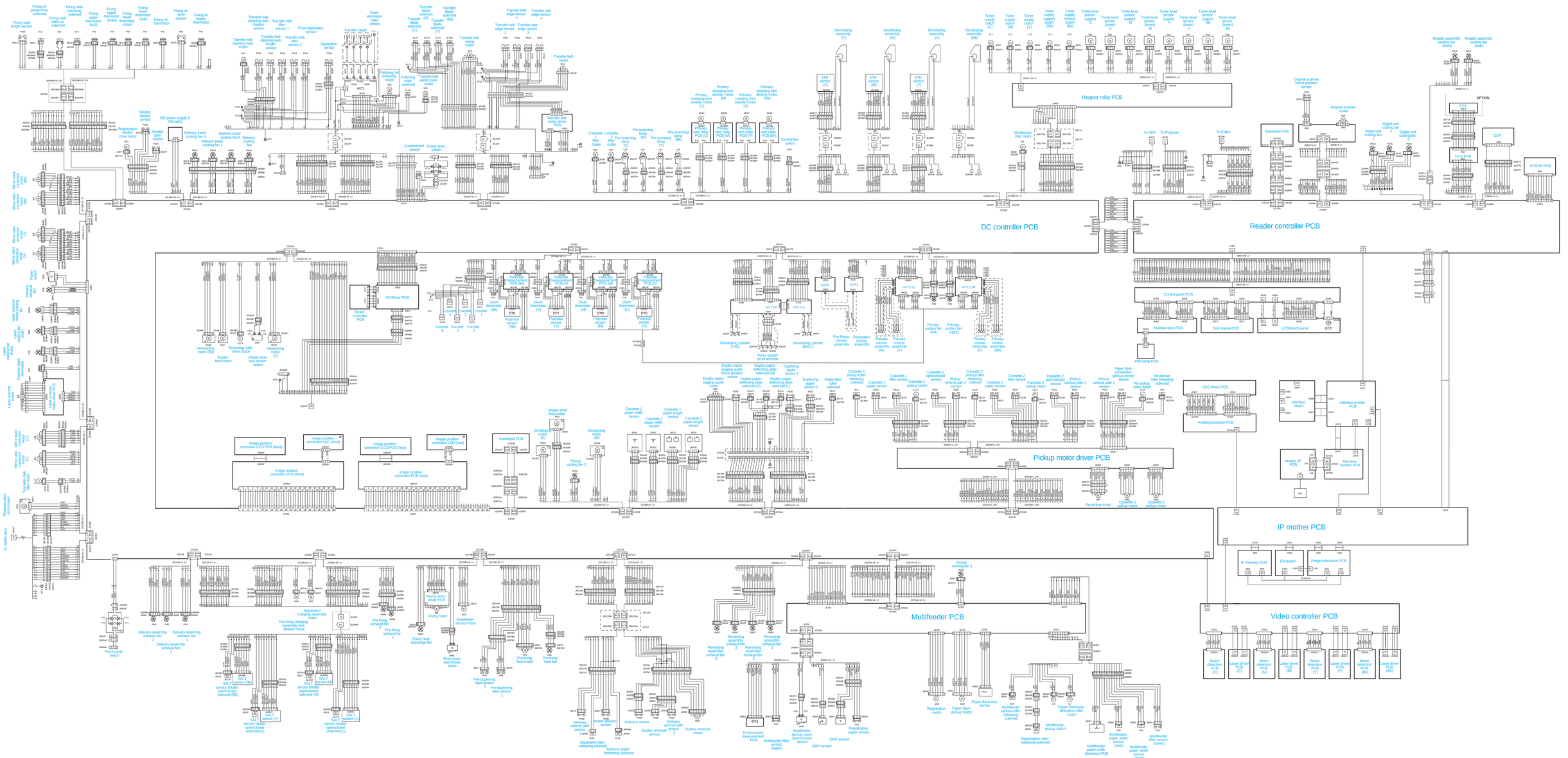
# APPENDIX

# 1 General Timing Chart







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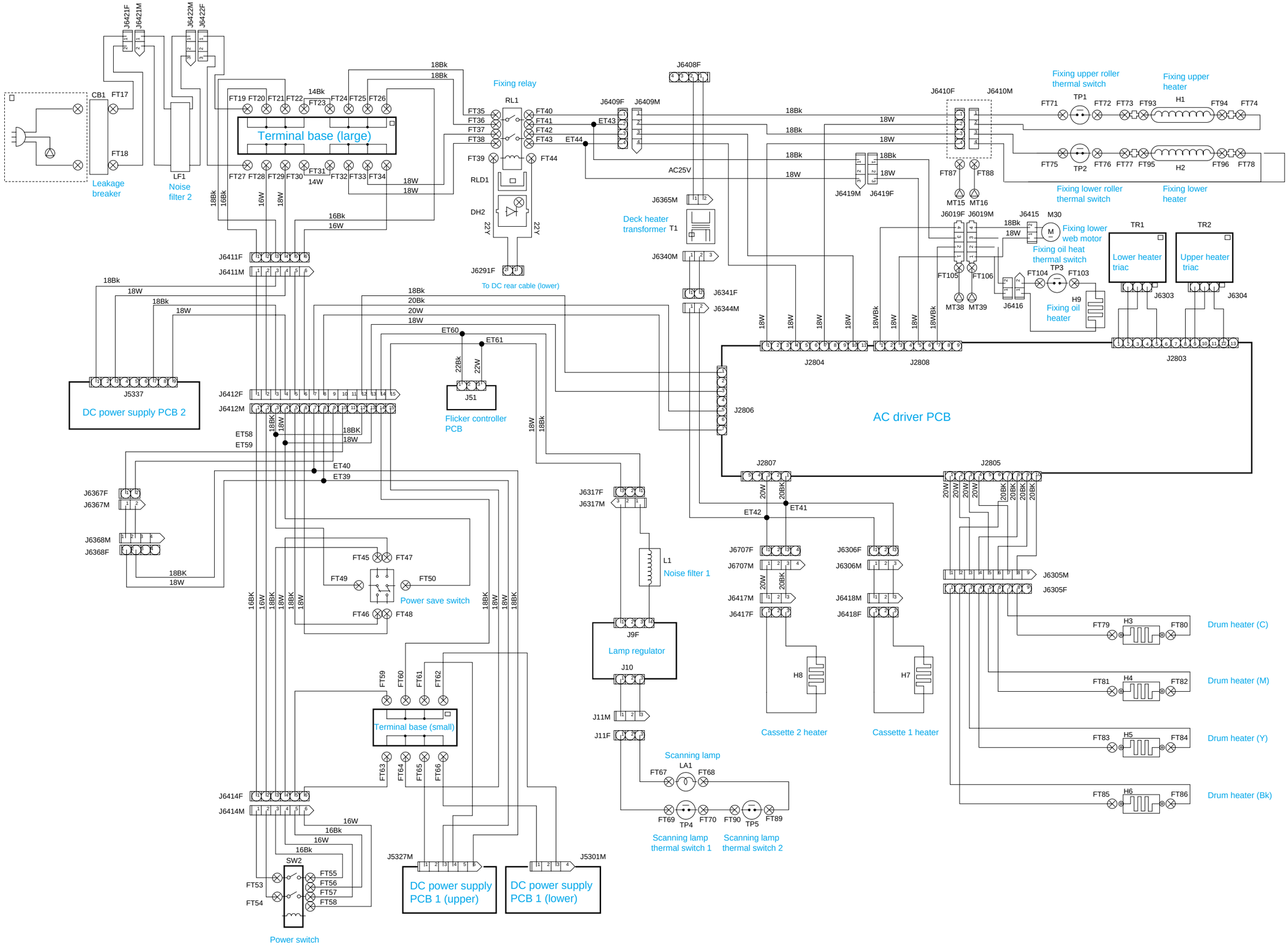
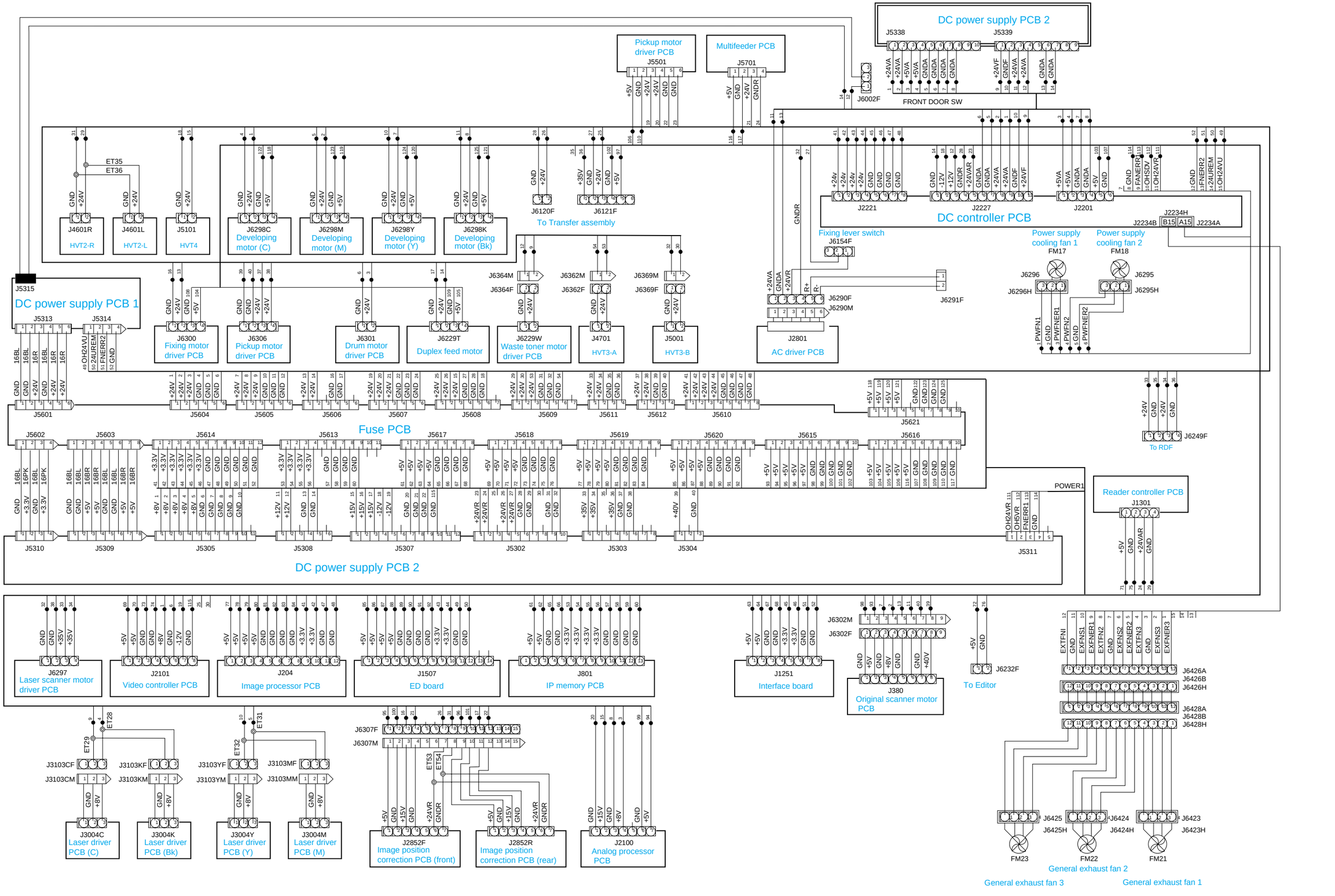
# 2 General Circuit Diagram (2/3)

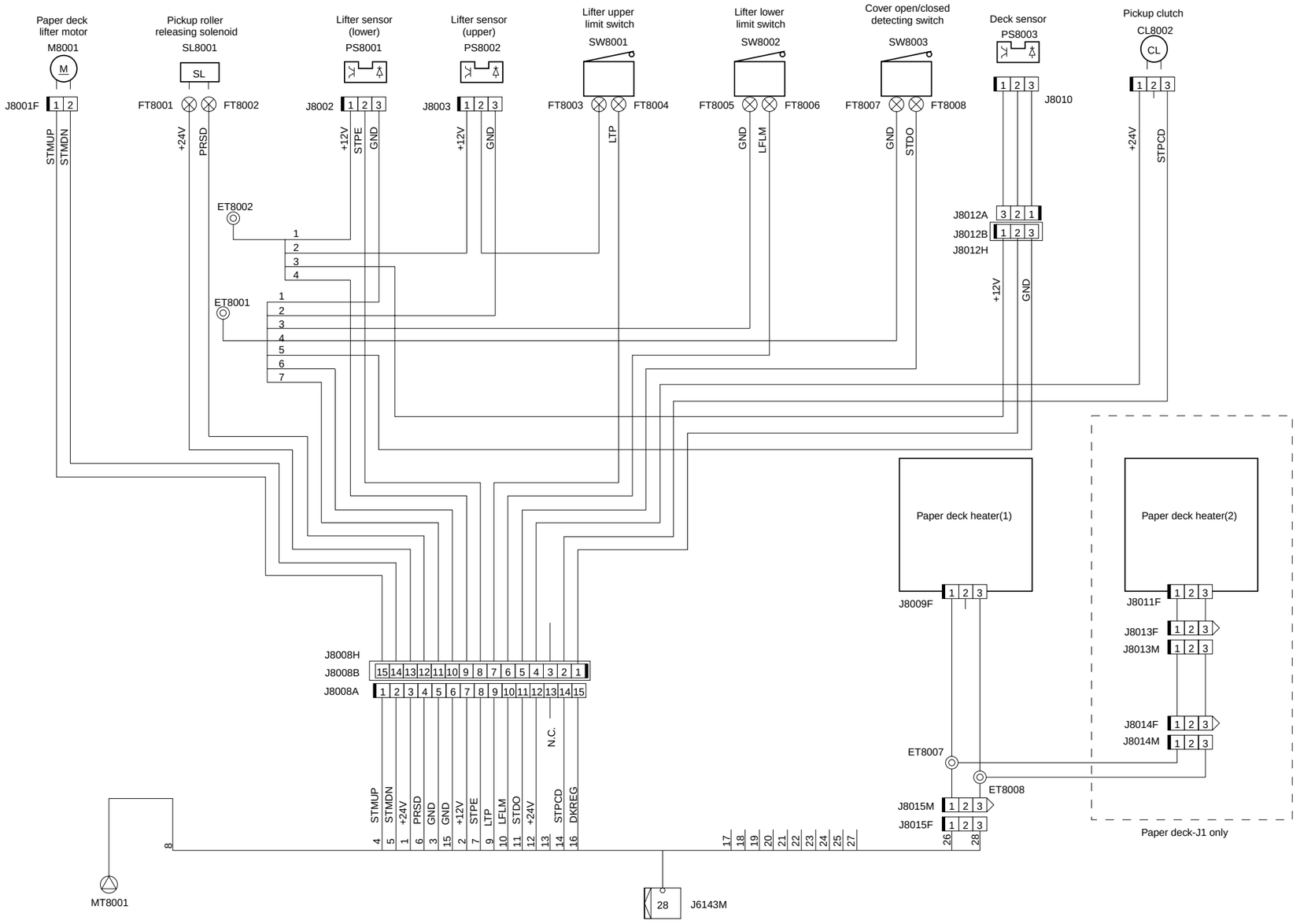


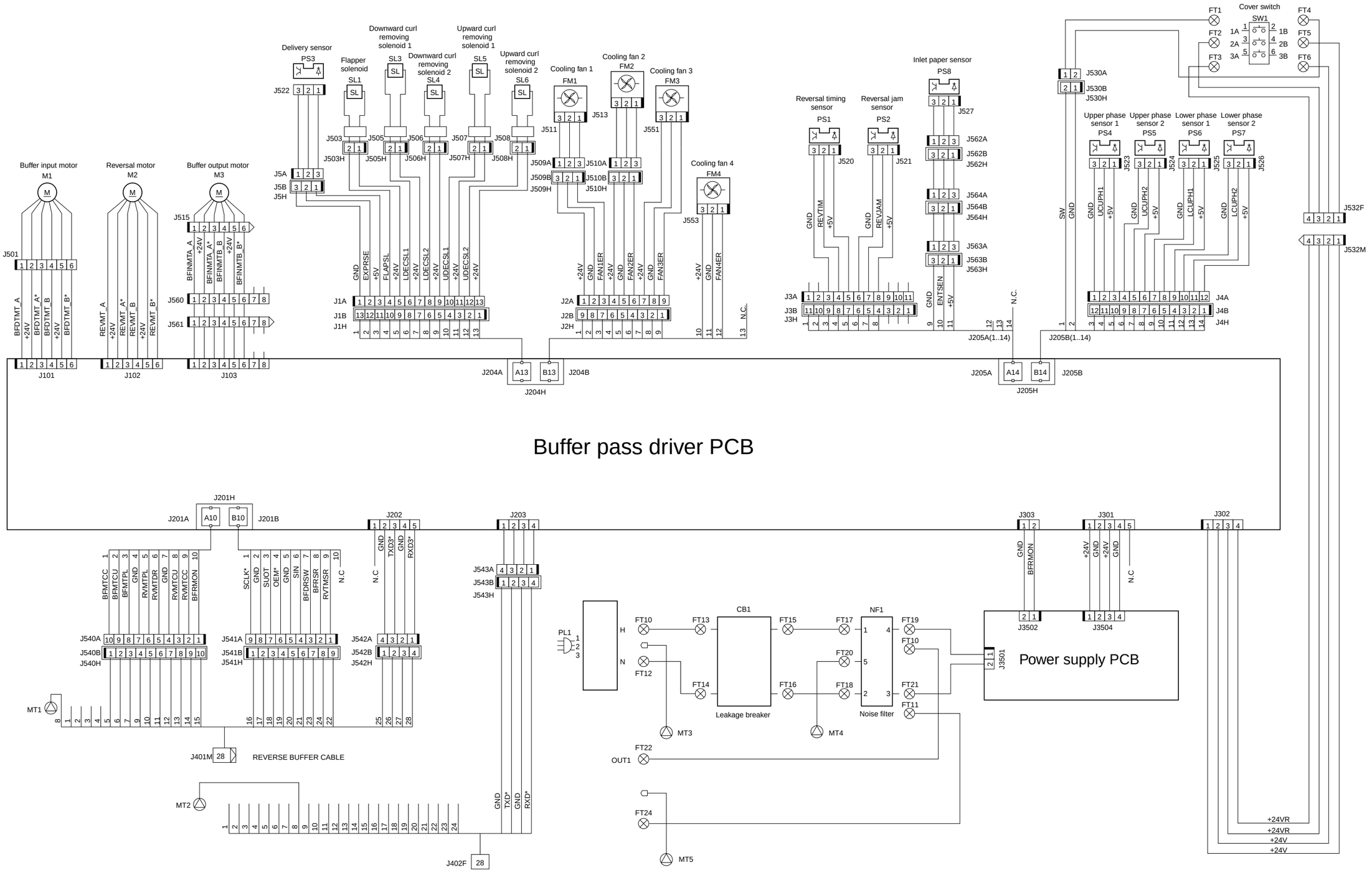
# 2 General Circuit Diagram (3/3)



# 3 Paper Deck J1/K1 General Circuit Diagram



# 4 Buffer Pass Unit General Circuit Diagram

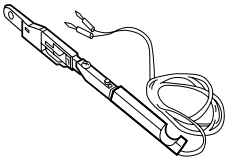
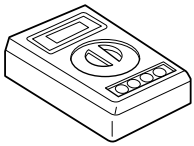
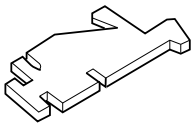
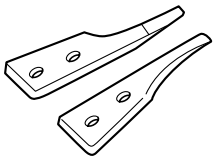
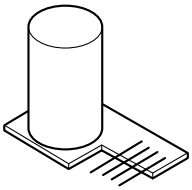




# 5 Special Tools

You will need the following special tools in addition to the standard tools set to service the machine.

| No. | Tool Name | Tool No. | Shape | Rank* | Remarks |
|---|---|---|---|---|---|
| 1 | Laser power checker | FY9-4013 |  | A | Use it when adjusting the intensity of the laser from the laser unit; to be use in combination with a digital multimeter. |
| 2 | Digital multimeter | CK-0436 |  | A | Use it when adjusting the intensity of the laser from the laser unit; to be use in combination with the laser power checker to adjust the intensity of the laser from the laser unit. |
| 3 | Cover switch | TKN-0093 |  | A | Do not remove the transfer assembly frame while the cover switch is on. |
| 4 | Stop ring pliers end replacement | CK-0426 |  | B | Use it when removing the grip stop ring; 4 to 9 mm. |
| 5 | Environment sensor checker | TKN-0456 |  | B | Use it when checking the environment sensor. |

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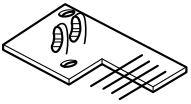
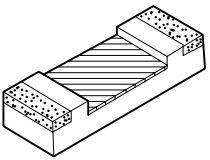
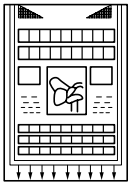
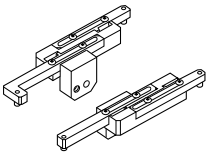
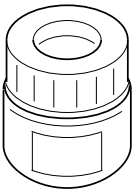
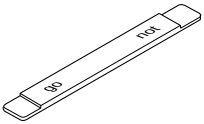
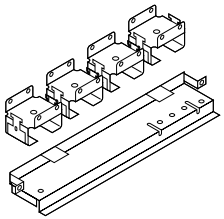
| No. | Tool Name | Tool No. | Shape | Rank* | Remarks |
|---|---|---|---|---|---|
| 6 | Environment sensor checker | TKN-0457 |  | B | Use it when checking the environment PCB. |
| 7 | Potential sensor checker (terminal) | TKN-0197 |  | B | Use it when making a zero-level check on the surface potential sensor. |
| 8 | CA-1 test sheet | FY9-9030-020 |  | A | Use it when adjusting or checking images. |
| 9 | Mirror positioning tool (front, rear) | FY9-3002-000 |  | B | Use it when adjusting the position of No. 1/ No. 2 mirrors; to be used in combination with the mirror positioning tool (rear). |
| 10 | Tospearl (lubricant for photosensitive drum cleaning blade) | FY9-6007-000 |  | B | Use it for preventing detachment of the drum cleaning blade. |
| 11 | S-B gap adjusting tool | FY9-3024-000 |  | B | Use it when adjusting gap between developing cylinder and blade. |

TA-300-02

| No. | Tool Name | Tool No. | Shape | Rank* | Remarks |
|---|---|---|---|---|---|
| 12 | Crane transport Kit | FG6-1585-000 |  | C | Use it when transferring main body using crane |

TA-300-03

REF.

*Rank
A: Must be kept by each service person.
B: Must be kept by each group of about five service persona.
C: Must be kept by each workshop.

# 6 SOLVENTS AND OILS

| No. | Item | Use | Chemiccal formula, mixture ratio, etc. | Use | Remarks |
|---|---|---|---|---|---|
| 1 | Ethyl alcohol (Ethanol)<br><br>Isopropyl alcohol (Isopropanol) | Cleaning: copyboard, glass, mirror, etc. | $C_2H_5OH$<br><br>$(CH_3)_2CHOH$ | Local | Take care in handling. All are flammable.<br><br>Use in a well-ventilated area. Avoid breathing vapor. |
| 2 | MEK | Removing toner or oil stains | $CH_3$-CO-$C_2$-$H_5$ Methylethy ketone | Local | Do not use for cleaning the drum, plastic molded parts, or corona wires. Use in a well-ventilated area and avoid breathing vapor. Avoid contact with eyes or with skin. |
| 3 | Heat-resistant grease | Lubricating the drive mechanisms; e.g., fixing drive gear, fixing ass'y, etc. | | CANON | Tool No.: CK-0427 (500 g/can; equivalent grease may be used if able to withstand 200ºC for extended periods of time.) |
| 4 | Lubricating oil | Spring cluch | Mineral oil (paraffin family) | CANON | Super lube oil. Tool No.: FY-6006(7g) |
| 5 | Lubricating oil | | Mineral oil (paraffin family) | Local | • Uniway 220 (Nihon Sekiyu)<br>• Tool No.: CK-0524 (100 cc)<br>• Alternative Cosmo Dynaway 220 (Cosmo Oil) |
| 6 | Lubricating oil | Scanner rail | Silicon oil | Local | • Silicon oil S-20 KF96SS 300CS<br>• Tool No.: FY9-6011(50cc) |

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Solvents listed are not toxic, but they may produce minor, temporary effects if breathed in a high concentration, or if let to remain on the skin for a period of time. Any effects are temporary, but exercise reasonable caution nevertheless.

# Service Mode

 

# Contents



 

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# 1 Outline

## 1.1 Construction of Service Mode

The CLC5000's service mode is divided into the following six:

| No. | Notation | Description |
|---|---|---|
| 1 | DISPLAY | Control display mode |
| 2 | ADJUST | Adjustment mode |
| 3 | FUNC | Function/inspection mode |
| 4 | OPTION | Options mode |
| 5 | TEST | Test print mode |
| 6 | COUNTER | Counter mode |

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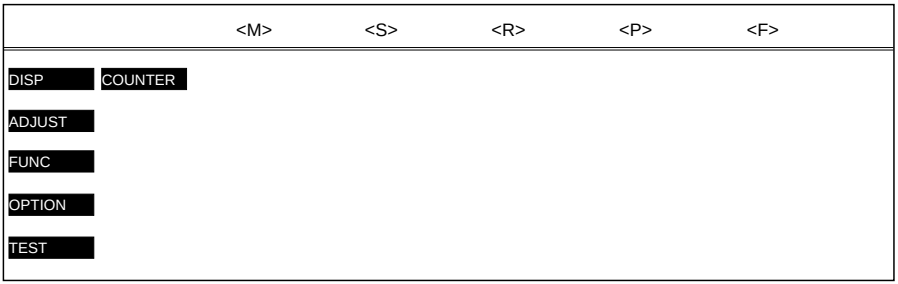


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## 1.2 Starting Service Mode and Making Selections

1) Press the '∗' key on the control panel.
2) Press '2' and '8' on the keypad at the same time.
3) Press the '∗' key.
   •The screen in the above figure will appear.
4) Select an item on the touch panel.
   •The respective screen will appear.

- Once you have turned on the power switch, do not start service mode until the machine is in standby state (the CPUs may have established communications).
- You cannot start service mode while the machine is making copies.

## 1.3 Ending Service Mode

Press the Reset key.

## 1.4 RAM Backup

F00-104-01 shows the label attached to the inside of the cover of the service document compartment found on the front left cover.

Each machine is adjusted at the factory, and the adjustment values are recorded on the label.

Be sure to record any new values on the label if you executed service mode and changed values after replacing a part.

A

| | | TYP | | | | |
|---|---|---|---|---|---|---|
| FUNC | UP-A4R | 447 | | | | |
| DC-CON | UP-STMR | 62 | | | | |
| | LOW-A4R | 429 | | | | |
| | LOW-STMR | 41 | | | | |
| | MF-A4R | 516 | | | | |
| | MF-A6R | 51 | | | | |
| | MF-A4 | 889 | | | | |
| | SGNL-Y | 804 | | | | |
| | SGNL-M | 798 | | | | |
| | SGNL-C | 803 | | | | |
| | REF-Y | 819 | | | | |
| | REF-M | 818 | | | | |
| | REF-C | 818 | | | | |
| | SIGG-Y | 181 | | | | |
| | SIGG-M | 194 | | | | |
| | SIGG-C | 157 | | | | |
| | SGNL-S-Y | 687 | | | | |
| | SGNL-S-M | 746 | | | | |
| | SGNL-S-C | 756 | | | | |
| | SGNL-S-K | 318 | | | | |
| | REF-S-Y | 514 | | | | |
| | REF-S-M | 515 | | | | |
| | REF-S-C | 515 | | | | |
| | REF-S-K | 513 | | | | |
| | SGNL-D-Y | 599 | | | | |
| | SGNL-D-M | 600 | | | | |
| | SGNL-D-C | 599 | | | | |
| | SGNL-D-K | 499 | | | | |
| | SIGG-S-Y | 132 | | | | |
| | SIGG-S-M | 133 | | | | |
| | SIGG-S-C | 137 | | | | |
| | SIGG-S-K | 111 | | | | |
| | PT-OFST-K | -2 | | | | |
| | PUDT-U | 184 | | | | |
| | PUDT-L | 102 | | | | |
| | P-TH-1 | 3199 | | | | |
| | P-TH-2 | 2408 | | | | |
| | SNSR-RNK | E | | | | |
| | | | | | | |
| ADJUST | P-OFST-Y | 10 | | | | |
| PASCAL | P-OFST-M | 6 | | | | |
| | P-OFST-C | 2 | | | | |
| | P-OFST-K | 4 | | | | |
| | | | | | | |
| FUNC | Y-REG-H | 136 | | | | |
| IMG | Y-REG-V | 124 | | | | |
| -REG | C-REG-H | 140 | | | | |
| | C-REG-V | 130 | | | | |
| | K-REG-H | 145 | | | | |
| | K-REG-V | 127 | | | | |
| | | | | | | |
| ADJUST | UP-ADJ | 115 | | | | |
| FEED | LOW-ADJ | 112 | | | | |
| -ADJ | MULT-ADJ | 128 | | | | |
| | DECK-ADJ | 128 | | | | |
| | REFE-ADJ | 128 | | | | |
| | VSYC-ADJ | 180 | | | | |
| | MRGN-L | 32 | | | | |
| | MRGN-R | 32 | | | | |
| | MRGN-T | 40 | | | | |
| | MRGN-B | 40 | | | | |
| | | | | | | |
| FUNC | UPPER-CR | 0 | | | | |
| FUSER | LOWER-CR | 0 | | | | |
| | | | | | | |

| BODY No. | #83 |
|---|---|

B

| | | TYP | | | | |
|---|---|---|---|---|---|---|
| ADJUST | ADJ-X | | | | | |
| ADJ-XY | ADJ-Y | | | | | |
| | ADJ-S | | | | | |
| | ADJ-J | | | | | |
| | | | | | | |
| ADJUST | DA-XS | | | | | |
| DOC-REC | DA-XE | | | | | |
| | DA-YS | | | | | |
| | DA-YE | | | | | |
| | DS-DOC | | | | | |
| | DS-PRJ | | | | | |
| | DS-OHP | | | | | |
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| TR-BELT LOT NO. | SERIAL NO. |
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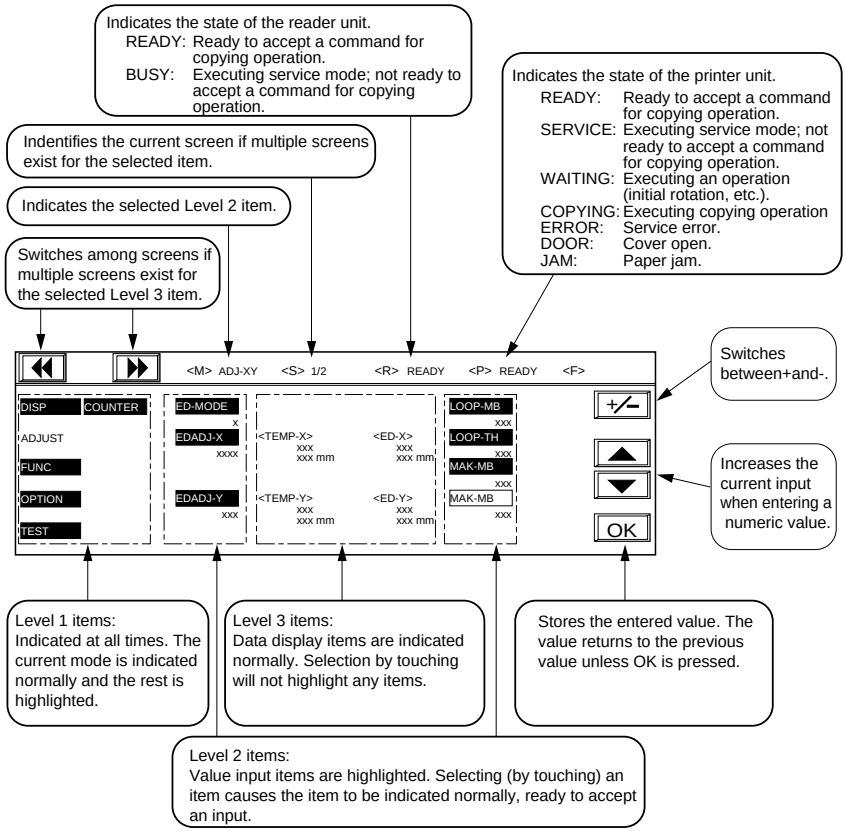
FB3-7172

F00-104-01

# 1.5 Basic Operations

Selecting Items

- Items may be Level 1, Level 2, or Level 3. The Level 1 items remain on the screen throughout service mode.
- To select an item, press the highlighted notation on the touch panel.
- Display (e.g., ADJUST>ADJ-XY>MRK-MB)

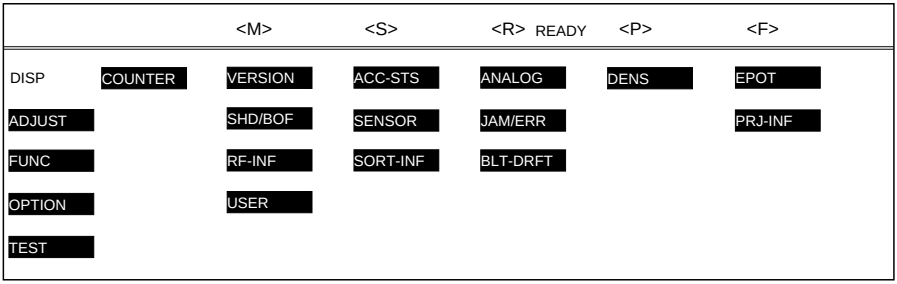



F00-105-01

■ Keys on the Control Panel

| | |
|---|---|
| 0 to 9 | Press an appropriate number (0 through 9) when entering a value. |
| Reset | Press it to end service mode (not valid for LCD-CHECK or KEY-CHECK). |
| Clear | Press it to return any input to 0. |
| Stop | Press it to stop various operations. |
| Start | Press it to start copying operation. |

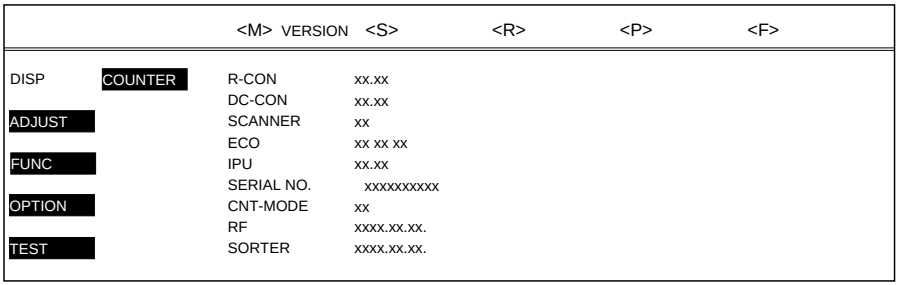
# 2 Control Display Mode (DISPLAY)




F00-200-01

| | | |
|---|---|---|
| 1 | VERSION | Indicates the version of the ROM. |
| 2 | ACC-STS | Indicates the status of the option. |
| 3 | ANALOG | Indicates the measurement taken by the analog sensor. |
| 4 | DENS | Indicates the density of the developer. |
| 5 | EPOT | Indicates the photosensitive drum surface potential control data. |
| 6 | SHD/BOF | Indicates the shading/black offset data. |
| 7 | SENSOR | Indicates the sensor/DC controller input port. |
| 8 | JAM/ERR | Indicates the presence of a jam/E code. |
| 9 | PRJ-INF | Indicates the condition of the projector. (Only if connected) |
| 10 | BLT-DRFT | Indicates the transfer belt swing data. |
| 11 | RF-INF | Indicates the state of the RDF. (Only if connected) |
| 12 | SORT-INF | Indicates the state of the sorter. (Only if connected) |
| 13 | USER | Making settings related to the operation display. |

# <Version (ROM version)>




F00-200-02

**R-CON**

Indicates the version of the ROM on the reader controller PCB.

**DC-CON**

Indicates the version of the ROM on the DC controller PCB.

Remarks: XX.XX

R&D control No.

ROM version No.

**SCANNER**

Indicates the version of the ROM on the original scanner motor driver PCB.

**ECO**

Indicates the version of the ROM on the IP-ECO PCB.

**IPU**

Indicates the version of the ROM of the external controller. (See the table that follows.)

**SERIAL No.**

Indicates the serial number.

Remarks: For factory.

**CNT-MODE**

Indicates the type of count control of the copy counter. (See the table that follows.)

| | |
|---|---|
| RF | Indicates the version of the ROM on the RDF controller PCB. (only if connected) |
| SORTER | Indicates the version of the ROM on the sorter controller PCB. (only if connected) |
| Remarks | XXXX.XX.XX<br>R&D number<br>ROM version<br>Not used |

■ Details of CNT-MODE

| Display | Counter 1 | Counter 2 | Counter 3 | Counter 4 | Counter 5 | Counter 6 |
|---|---|---|---|---|---|---|
| 7 | Total counter | Full color copy counter | Retention counter | Bk print + Bk copy counter | Full color print counter | Two-sided copy counter |
| 5 | Total counter | Full color copy counter (large size) | Color print counter (large size) | Bk print + Bk copy counter | Full color copy (small size) | Full color print (small size) |
| 3 | Total counter | Full color print + full color copy counter (large size) | Bk print + Bk copy counter (large size) | Small size total counter | Full color print + full color copy (small size) | Bk print + Bk copy counter (small size) |
| 4 | Total copy counter | Full color copy counter (large size) | Total print counter | Bk print + Bk copy counter | Full color copy counter (small size) | Mono color counter |

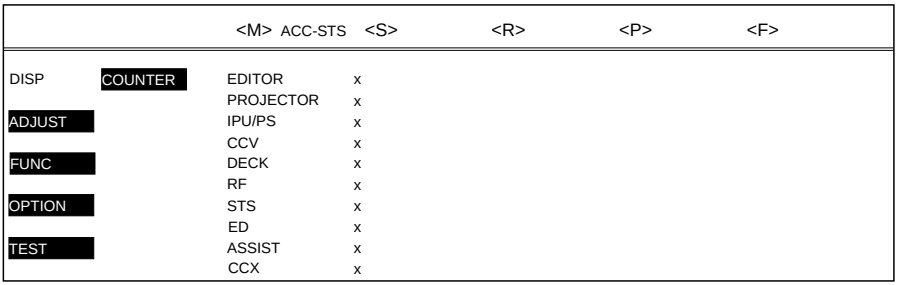
Counter 1 Counter 4

Counter 2 Counter 5

Counter 3 Counter 6

| Counter control type | Product notation |
|---|---|
| 7 | F14-0411(JPN) |
| 5 | F14-0431(USA)/0441(EUR)<br>F14-0431(AUS)/0481(DTL)<br>F14-0491(AMS)/0451(UK) |
| 3 | F14-0471(FRN) |
| 4 | not used |

## <ACC-STS (status of option)>




F00-200-03

### EDITOR

Indicates the state (connection) of the editor.
EDITOR= 0: Editor absent.
1: Editor present.

### PROJECTOR

Indicates the status (connection) of the projector.

| | | Projector | Power supply for projector |
|---|---|---|---|
| PROJECTOR= | 0 | Absent | Absent |
| | 1 | Absent | Present |
| | 2 | Present | Absent |
| | 3 | Present | Present |

### IPU/PS

Indicates the state of connection of the IF board/external controller.
IPU/PS= 0: IF board absent
1: not used
2: IF board present
(An external controller may be connected, but is not powered.)
3: IF board present
(A communication is under way with the external controller.)

### CCV

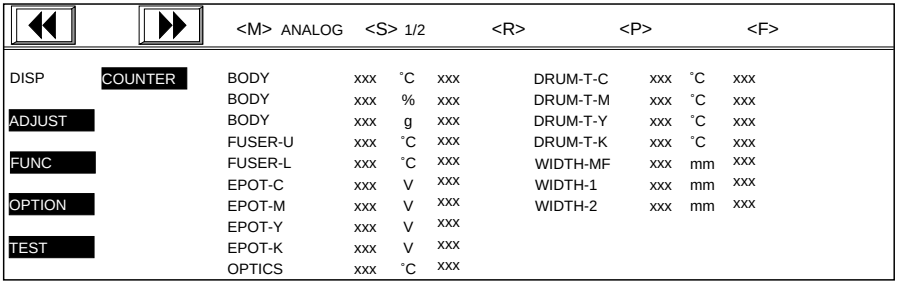
Indicates the status (connection) of the Control Card V.
CCV= 0: CCV absent.
1: CCV present.

### DECK

Indicates the status (connection) of the paper deck.
DECK= 0: Paper deck absent.
1: Paper deck absent.

| | |
|---|---|
| RF | Indicates connection of the RF.<br>RF= 0: RF absent.<br>1: RF present. |
| STS | Indicates the status (connection) of the STS.<br>STS= 0: STS absent.<br>1: STS present. |
| ED | Indicates the status (connection) of the ED board.<br>ED= 0: ED absent.<br>1: ED present. |
| ASSIST | Indicates the status (connection) of the Copy data controller-A1/DA unit-A1.<br>ASSIST= 0: Connection absent.<br>1: Connection present. |
| CCX | Indicates the status (connection) of the Card reader-A1.<br>CCX= 0: Connection absent.<br>1: Connection present. |

# <ANALOG (measurement by analog sensor)>




F00-200-04

## BODY(°C)

Indicates the machine inside temperature measured by the environment sensor.
BODY XXX°C XXX
- XXX°C: Environment sensor output conversion value (°C)
- XXX: Environment sensor output value (0 to 1023)

## BODY(%)

Indicates the machine inside humidity measured by the environment sensor.
BODY XXX% XXX
- XXX%: Environment sensor output conversion value (%)
- XXX: Environment sensor output value (0 to 1023)

## BODY(g)

Indicates the machine internal absolute humidity (g) obtained from the measurements collected by the environment sensor.
BODY XXX% XXX
- XXX%: Converted value
- XXX: Computed value

## FUSER-U

Indicates the upper fixing roller temperature (output of thermistor TH1).
FUSER-U XXX°C XXX
- XXX°C: THM1 output conversion value (°C)
- XXX: THM1 output value (0 to 1023)

## FUSER-L

Indicates the lower fixing roller temperature (output of thermistor TH3).
FUSER-L XXX°C XXX
- XXX°C: THM2 output conversion value (°C)
- XXX: THM2 output value (0 to 1023)

EPOT-Y/M/C/K

Indicates the drum surface potential measured by the potential sensor.

EPOT XXX V XXX

- XXX: Potential sensor output conversion value (V)
- XXX: Potential sensor output value (0 to 1023)

OPTICS

Indicates the temperature of the laser scanner assembly (thermistor TH7).

DRUM-T/M/C/K

Indicates the drum heater temperature (thermistor TH8/9/10/11).

DRUM-T-Y XXX°C XXX

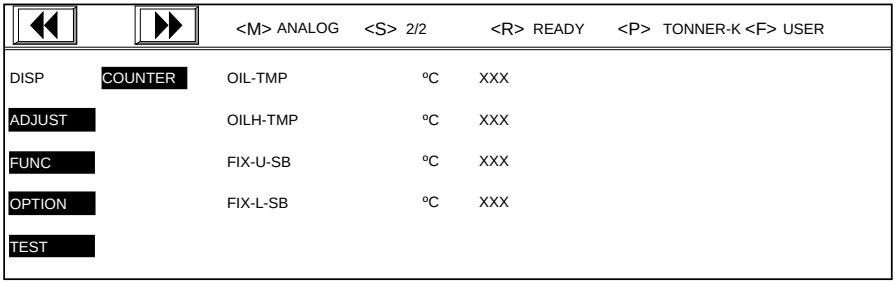
- XXX°C: THM4 output conversion value (°C)
- XXX: THM4 output value (0 to 1023)

WIDTH-MF/1/2

Indicates the paper width conversion value (mm) of the multifeeder, paper deck, and each cassette.

WIDTH XXX mm XXX

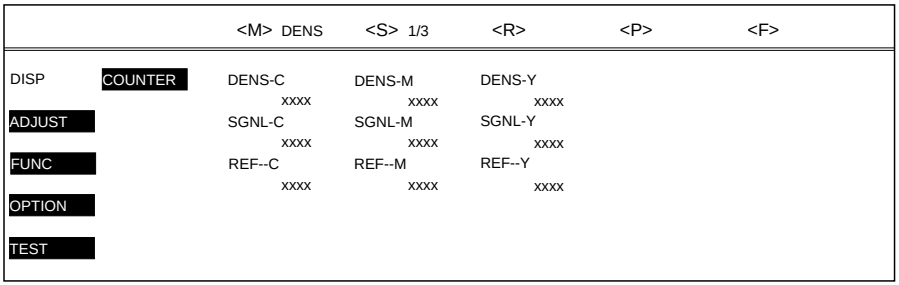
- XXX mm: Output converted value (mm)
- XXX: Output value (0 to 1023) of MFSVR/SVR1/SVR2




F00-200-05

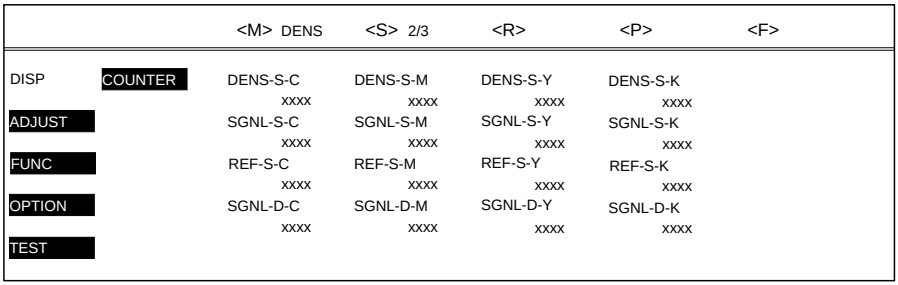
| | |
|---|---|
| OIL-TMP | Indicates the temperature of the fixing oil.<br>(Output from the fixing oil thermistor TH5) |
| OILT-TMP | Indicates the temperature of the fixing oil heater.<br>(Output from the fixing oil thermistor TH6) |
| FIX-U-SB | Indicates the temperature of the fixing upper roller end.<br>(Output from the fixing upper thermistor TH2) |
| FIX-L-SB | Indicates the temperature of the fixing lower roller end.<br>(Output from the fixing lower thermistor TH4) |

# <DENS (developer density)>



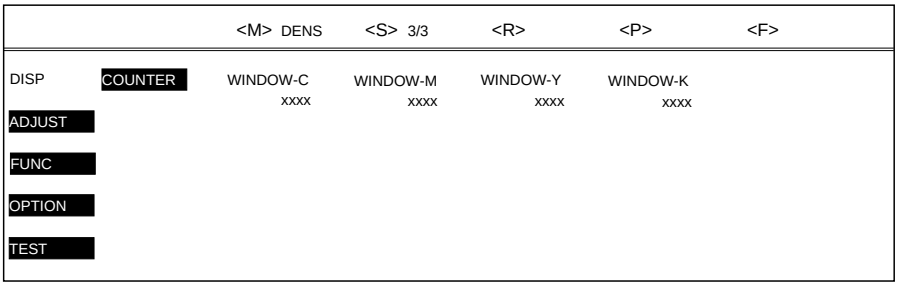

F00-200-06

| | |
|---|---|
| DENS-C/M/Y | |
| | Indicates the discrepancy of the density of the developer on the developing cylinder (each color) in reference to the target value in %.<br>+: Darker than target value.<br>–: Lighter than target value.<br>The value is the result of computations based on SGNL and REF stored under ATR-INIT and SGNL and REF on the screen. |
| Remarks | Unit: 0.1%<br>Normal if between -20 and + 20. |
| SGNL-C/M/Y | |
| | Indicates the measurement (AD conversion) of the current density of the developer (each color).<br>Measurements are taken for each copy run. |
| Remarks | Normal if between 700 and 912. |
| REF-C/M/Y | |
| | Indicates the measurement (AD conversion) of the reference signal (each color).<br>Measurements are taken for each copy run. |
| Remarks | Normal if between 377 and 848. |




F00-200-07

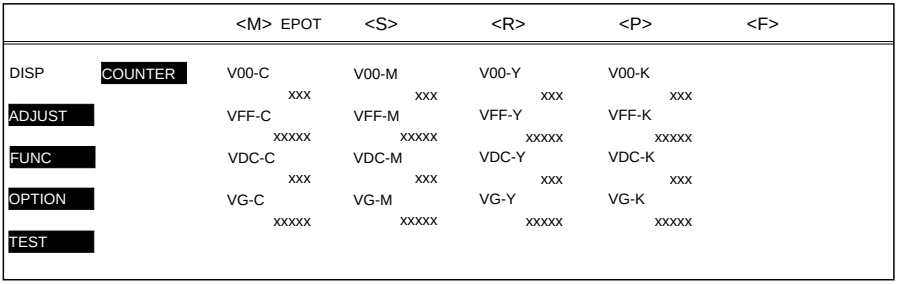
| | |
|---|---|
| DENS-S-C/M/Y/K | |
| | Indicates the density of the pattern on the drum (each color) in reference to the target value. |
| Remarks | Normal if between -40 and +40. |
| SGNL-S-C/M/Y/K | |
| | Indicates the measurement (AD conversion value) of the density of the toner on the drum (each color).<br>Measurements are taken for each copying run. |
| Remarks | For C, M, and Y, normal if between 640 and 850 (CMY).<br>For K, normal if between 192 and 389. |
| REF-S-C/M/Y/K | |
| | Indicates the measurement (AD conversion value) of the SALT reference signal (each color).<br>Measurements are taken for each copying run. |
| Remarks | For all colors, normal if between 464 and 544. |
| SGNL-D-C/M/Y/K | |
| | Indicates the measurement of the light reflected by the photosensitive drum. |
| Remarks | For C, M, and Y, normal if between 380 and 900.<br>For K, normal if between 300 and 720. |




F00-200-08

| | |
|---|---|
| WINDOW | Indicates the window soiling correction coefficient.<br>The value decreases when the SALT sensor becomes soiled. |
| Remarks | Normal if between 60 and 140. |

## <EPOT (photosensitive drum surface potential control data)>

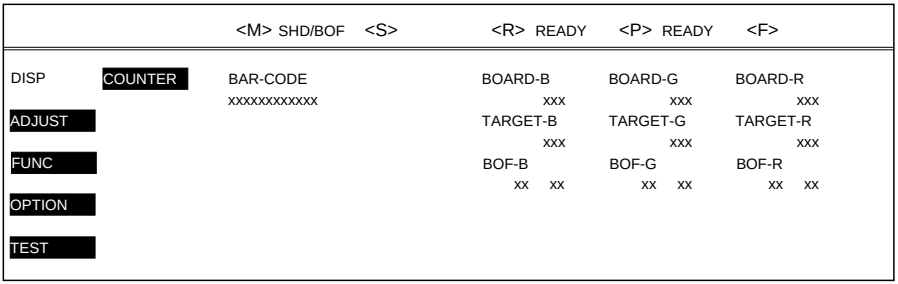



F00-200-09

| | |
|---|---|
| VOO-C/M/Y/K | |
| Remarks | Indicates the target value for VD (with laser output at 00).<br>Indicates the optimum value computed by potential control.<br>Unit: V<br>Optimum value: 350 to 800 |
| VFF-C/M/Y/K | |
| Remarks | Indicates the target value for VL (with laser output at off).<br>Indicates the optimum value computed by potential control.<br>Unit: V<br>Optimum value: 50 to 300 |
| VDC-C/M/Y/K | |
| Remarks | Indicates the target value for Vdc (developing bias DC component).<br>Indicates the optimum value computed by potential control.<br>Unit: V<br>Optimum value: 200 to 650 |
| VG-C/M/Y/K | |
| Remarks | Indicates the target value for Vg (grid bias).<br>Indicates the optimum value computed by potential control.<br>Unit: V<br>Optimum value: 300 to 800 |

The measurements of VOO and VFF may be checked by ‘EPC’ under ‘FUNC’.

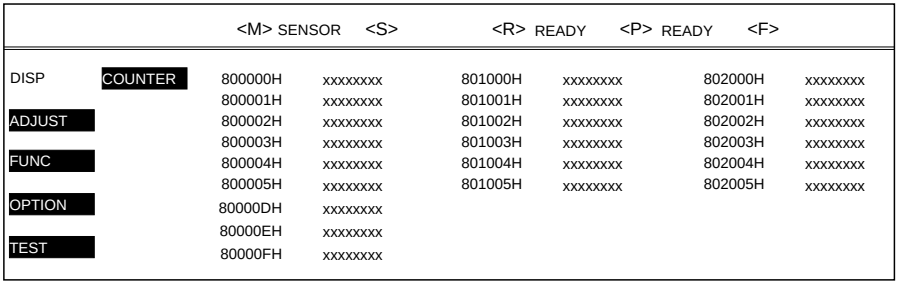
# <SHD/BOF (shading/black offset data)>




F00-200-10

| | |
|---|---|
| BAR-CODE | |
| | Indicates the bar code value of the standard white plate. |
| Remarks | The value is indicated only after executing 'FUNC > CCD > AUTO > ADJ'. (Thereafter, the value will not be indicated at power on/off.) |
| BOARD-B/G/R | |
| | Indicates the output of each CCD when the standard white plate is read. (output value after A/D conversion) |
| Remarks | Initial value: 211 |
| TARGET-B/G/R | |
| | Indicates the shading target value. |
| Remarks | Initial value: 233 |
| BOF-B/G/R | |
| | Indicates the output of each CCD when the scanning lamp is off. (odd bit/ even bit) |

# <SENSOR (sensor/DC controller input port)>




F00-200-11

800000H ~ 808004H

Indicates the input ports of the DC controller PCB. (800000H through 804010H)

| Address | | Connector | Description | Remarks |
|---|---|---|---|---|
| 800000 | 0 | SW2 | power switch | ON:1 OFF:0 |
| | 1 | – | AC input | AC input present: 0 |
| | 2 | TH6 | fixing oil/oil heater thermistor error detection | ready: 0; error: 1 |
| | 3 | FM35,36 | pre-fixing exhaust fan error detection | ready: 0; error: 1 |
| | 4 | H1,2 | fixing heater power error detection | error: 0 |
| | 5 | H3,4,5,6 | drum heater power error detection | error: 0 |
| | 6 | TH1,2,3,4 | fixing thermistor error detection | ready: 0; error: 1 |
| | 7 | TH8,9,10,11 | drum thermistor error detection | ready: 0; error: 1 |
| 800001 | 0 | – | counter error detection | error 1/ counter OFF: 1 |
| | 1 | – | auto shut-off open circuit detection | error 1/ port OFF: 1 |
| | 2 | – | 5V U error detection | ready: 1; error: 0 |
| | 3 | – | 24V U error detection | ready: 1; error: 0 |
| | 4 | – | overheat 5 V U detection | ready: 0; error: 1 |
| | 5 | – | overheat 24R detection | ready: 0; error: 1 |
| | 6 | – | overheat 24V U detection | ready: 0; error: 1 |
| | 7 | FM17,18 | power supply cooling fan 1/2 operation error detection | ready: 0; error: 1 |
| 800002 | 0 | M10 | multifeeder pickup motor PLL error detection | ready: 0; error: 1 |
| | 1 | M21 | photosensitive drum motor PLL error detection | ready: 0; error: 1 |
| | 2 | M29 | scanner motor PLL error detection | ready: 0; error: 1 |
| | 3 | M9 | fixing motor PLL error detection | ready: 0; error: 1 |
| | 4 | M20 | waste toner feed motor PLL error detection | ready: 0; error: 1 |
| | 5 | M19 | duplex feed motor PLL error detection | ready: 0; error: 1 |
| | 6 | M15 | polishing/oil removal motor PLL error detection | ready: 0; error: 1 |
| | 7 | – | not used | – |
| 800003 | 0 | M18 C | C developing motor PLL error detection | ready: 0; error: 1 |
| | 1 | M18 M | M developing motor PLL error detection | ready: 0; error: 1 |
| | 2 | M18 Y | Y developing motor PLL error detection | ready: 0; error: 1 |
| | 3 | M18 K | Bk developing motor PLL error detection | ready: 0; error: 1 |
| | 4 | PS41 | cassette 1 open/closed detection | connected: 1 |
| | 5 | PS42 | cassette 2 open/closed detection | connected: 1 |
| | 6 | FM4,5 | laser cooling fan error detection | ready: 0; error: 1 |
| | 7 | FM12,13 | scanner cooling fan error detention | ready: 0; error: 1 |
| 800004 | 0 | SW6 | multifeeder pickup cover open/closed detection | open: 0; closed: 1 |
| | 1 | SW1 | front cover open/closed detection | open: 1; closed: 0 |
| | 2 | SW3 | control key detection | ON:1 OFF:0 |
| | 3 | SW8003 | paper deck cover open/closed detection | open: 1; closed: 0 |
| | 4 | SW1 | buffer cover connection detection | open: 1; closed: 0 |
| | 5 | FM8,9 | primary suction fan error detection | ready: 0; error: 1 |
| | 6 | TH6 | oil thermistor open detection | error: 0 |
| | 7 | TP3 | oil system overheat detection | error: 0 |

| Address | | Connector | Description | Remarks |
|---|---|---|---|---|
| 800005 | 0 | – | fixing unit connection detention | connected: 0 |
| | 1 | – | fixing assembly knob connection detection | connected: 0 |
| | 2 | – | holding tray unit connection detection | connected: 0 |
| | 3 | – | transfer unit connection detection | connected: 0 |
| | 4 | PS22 | paper deck connection detection | connected: 0 |
| | 5 | – | buffer unit connection detection | connected: 0 |
| | 6 | FM6 | primary exhaust fan error detection | ready: 0; error: 1 |
| | 7 | FM7 | pre-fixing feeding fan error detection | ready: 0; error: 1 |
| 800006 | 0 | PS1 | registration paper sensor | paper present: 1 |
| | 1 | PS21 | pickup vertical path 1 sensor | paper present: 1 |
| | 2 | PS25 | pickup vertical path 2 sensor | paper present: 1 |
| | 3 | PS26 | pickup vertical path 3 sensor | paper present: 1 |
| | 4 | OHP sensor | transparency sensor | paper present: 1 |
| | 5 | FM32 | pickup cooling fan 2 error detection | ready: 0; error: 1 |
| | 6 | FM31 | fixing heat exhaust fan error detection | ready: 0; error: 1 |
| | 7 | FM20,27 | delivery lower cooling fan 2/3 error detection | ready: 0; error: 1 |
| 800007 | 0 | PS14 | post-registration sensor jam detection | paper present: 1 |
| | 1 | PS15 | separation sensor jam detection | paper present: 1 |
| | 2 | PS35 | inside delivery sensor jam detection | paper present: 0 |
| | 3 | PS34 | delivery sensor jam detection | paper present: 1 |
| | 4 | PS32 | delivery vertical path sensor | paper present: 1 |
| | 5 | PS33 | duplex reversal sensor | paper present: 0 |
| | 6 | PS8 | holding tray pre-feeding sensor 1 | paper present: 1 |
| | 7 | PS9 | holding tray pre-feeding sensor 2 | paper present: 0 |
| 800008 | 0 | PS30 | holding tray flapper assembly jam detection | paper present: 0 |
| | 1 | – | not used | – |
| | 2 | FM34 | delivery cooling fan error detection | error: 0 |
| | 3 | PS34 | delivery sensor | paper present: 0 |
| | 4 | TH1,2 | upper fixing thermistor open detection | error: 0 |
| | 5 | TH3,4 | lower fixing thermistor open detection | error: 0 |
| | 6 | TP1 | fixing assembly (upper) overheat detection | error: 0 |
| | 7 | TP2 | fixing assembly (lower) overheat detection | error: 0 |
| 800009 | 0 | SEU1 | cassette paper length sensor 1 | The paper length is detected |
| | 1 | SVR1 | cassette 1 paper length sensor 2 | by the combination of signals |
| | 2 | SEU2 | cassette 2 paper length sensor 1 | The paper length is detected |
| | 3 | SVR2 | cassette 2 paper length sensor 2 | by the combination of signals |
| | 4 | M16 | cassette 1 lifter motor overcurrent detection | error: 1 |
| | 5 | M17 | cassette 2 lifter motor overcurrent detection | error: 1 |
| | 6 | M8001 | paper deck lifter motor overcurrent detection | error: 1 |
| | 7 | M1 | multifeeder lifter motor overcurrent detection | error: 0 |

| Address | | Connector | Description | Remarks |
|---|---|---|---|---|
| 80000A | 0 | PS24 | cassette 1 lifter sensor | lifter up: 1 |
| | 1 | PS27 | cassette 2 lifter sensor | lifter down: 0 |
| | 2 | PS2 | multifeeder lifter sensor (upper) | detected: 0 |
| | 3 | PS3 | multifeeder lifter sensor (lower) | detected: 1 |
| | 4 | SW8002 | paper deck lifter upper limit detection | detected: 1 |
| | 5 | SW8002 | paper deck lifter lower limit detection | detected: 0 |
| | 6 | PS29 | duplex paper guide home position sensor | detected: 1 |
| | 7 | M31 | transfer belt waste toner motor overcurrent detection | error: 0 |
| 80000B | 0 | PS4 | multifeeder paper sensor (front) | paper present: 0 |
| | 1 | PS5 | multifeeder paper sensor (rear) | paper present: 0 |
| | 2 | SW6 | multifeeder pickup cover open/closed detection | detected:1 |
| | 3 | PS8003 | paper deck registration sensor | paper present: 1 |
| | 4 | PS23 | cassette 1 paper sensor | paper present: 1 |
| | 5 | PS28 | cassette 2 paper sensor | paper present: 1 |
| | 6 | SW8001 | paper deck detection sensor | paper present: 1 |
| | 7 | PS31 | holding tray paper sensor | paper present: 1 |
| 80000C | 0 | – | for factory adjustment | – |
| | 1 | – | for factory adjustment | – |
| | 2 | – | for factory adjustment | – |
| | 3 | – | for factory adjustment | – |
| | 4 | – | memory read delay (C) | H: enable |
| | 5 | – | memory read delay (M) | H: enable |
| | 6 | – | memory read delay (Y) | H: enable |
| | 7 | – | memory read delay (Bk) | H: enable |
| 80000D | 0 | TS1,5 | toner level sensor (C) | below level: 1 |
| | 1 | TS2,6 | toner level sensor (M) | below level: 1 |
| | 2 | TS3,7 | toner level sensor (Y) | below level: 1 |
| | 3 | TS4,8 | toner level sensor (Bk) | below level: 1 |
| | 4 | FM34 | delivery cooling fan error detection | ready: 0; error: 1 |
| | 5 | FM20 | delivery lower cooling fan 1 error detection | ready: 0; error: 1 |
| | 6 | FM32 | pickup cooling fan error detection | ready: 0; error: 1 |
| | 7 | FM33 | reversal assembly exhaust fan error detection | ready: 0; error: 1 |
| 80000E | 0 | PS11 | transfer belt cleaning web level sensor | web absent: 1 |
| | 1 | SW4 | waste toner lock detection switch | lock error: 0 |
| | 2 | PS6 | fixing oil level sensor | oil prevent: 1 |
| | 3 | PS36 | fixing web length sensor | web absent: 1 |
| | 4 | M12 | transfer belt cleaning web motor overcurrent detection | error: 1 |
| | 5 | FM37 | power supply cooling fan error detection | ready: 0; error: 1 |
| | 6 | FM21,22,23 | general exhaust fan error detection | ready: 0; error: 1 |
| | 7 | SW9 | rear cover open detection | ready: 0; error: 1 |

| Address | | Connector | Description | Remarks |
|---|---|---|---|---|
| 80000F | 0 | PS12 | transfer belt lifter sensor 1 | UP:01 |
| | 1 | PS13 | transfer belt lifter sensor 2 | DOWN:10 |
| | 2 | PS17 | transfer belt front end sensor 1 | detected: 0 |
| | 3 | PS18 | transfer belt rear end sensor 2 | detected: 0 |
| | 4 | PS19 | transfer belt front end sensor 3 | detected: 1 |
| | 5 | PS20 | transfer belt rear end sensor 4 | detected: 1 |
| | 6 | – | not used | – |
| | 7 | PS10 | transfer belt cleaning web rotation sensor | repeat 1 and 0 as rotating |
| 800010 | 0 | M35 | registration motor pulse count | count end: 1 |
| | 1 | M13 | transfer belt swing motor pulse count | count end: 1 |
| | 2 | M23 | duplex paper guide motor pulse count | count end: 1 |
| | 3 | – | not used | – |
| | 4 | – | for factory adjustment | – |
| | 5 | – | for factory adjustment | – |
| | 6 | – | image position correction CCD shutter (front) | open: 1 |
| | 7 | – | image position correction CCD shutter (rear) | open: 1 |
| 800011 | 0 | – | for factory adjustment | 00;GDD |
| | 1 | – | for factory adjustment | 01;GDE |
| | 2 | – | not used | – |
| | 3 | – | not used | – |
| | 4 | – | not used | – |
| | 5 | – | not used | – |
| | 6 | – | not used | – |
| | 7 | – | not used | – |
| 802000 | 0 | – | CPU leading edge signal | ON:1 |
| | 1 | – | for factory adjustment | – |
| | 2 | – | for factory adjustment | – |
| | 3 | – | for factory adjustment | – |
| | 4 | – | auto shut-off | ON:1 |
| | 5 | – | external PCB rest | rest: 0 |
| | 6 | – | 24 VDC remote | ON:1 |
| | 7 | – | phsync enable | enable: 1 |
| 802001 | 0 | – | for factory adjustment | – |
| | 1 | – | for factory adjustment | – |
| | 2 | – | for factory adjustment | – |
| | 3 | – | for factory adjustment | – |
| | 4 | – | all-night power supply switch | after power SW-ON: 1 |
| | 5 | TH12 | environment sensor | low humidity: 0 |
| | 6 | – | buffer unit power supply remote | ON;G0 |
| | 7 | – | flicker PCB control signal | ON;G0 |

| Address | | Connector | Description | Remarks |
|---|---|---|---|---|
| 802002 | 0 | M9 | fixing motor ON | ON:1 |
| | 1 | M9 | fixing motor speed switch | ON:1 |
| | 2 | – | not used | – |
| | 3 | M10 | multifeeder pickup motor ON | ON:1 |
| | 4 | M21 | photosensitive drum motor ON | ON:1 |
| | 5 | M29 | scanner motor ON | ON:1 |
| | 6 | M14 | transfer belt motor ON | ON:1 |
| | 7 | M20 | waste toner feeder motor ON | ON:1 |
| 802003 | 0 | M18 C | developing motor (C) ON | ON:1 |
| | 1 | M18 M | developing motor (M) ON | ON:1 |
| | 2 | M18 Y | developing motor (Y) ON | ON:1 |
| | 3 | M18 K | developing motor (Bk) ON | ON:1 |
| | 4 | LA2 | exposure lamp (C) ON | ON:1 |
| | 5 | LA3 | exposure lamp M) ON | ON:1 |
| | 6 | LA4 | exposure lamp (Y) ON | ON:1 |
| | 7 | LA5 | exposure lamp (Bk) ON | ON:1 |
| 802004 | 0 | FM7 | pre-rising feeding fan | ON:1 |
| | 1 | – | not used | – |
| | 2 | M15 | polishing/oil removing motor ON | ON:1 |
| | 3 | M15 | polishing/oil removing motor rotation direction | CW*/CCW |
| | 4 | CL17 | transfer belt lifter clutch ON | ON:1 |
| | 5 | M12 | transfer belt cleaning web motor ON | ON:1 |
| | 6 | SL18 | polishing roller solenoid ON | ON:1 |
| | 7 | M31 | transfer belt waste toner motor | ON:1 |
| 802005 | 0 | SL7 C | transfer blade solenoid (C) in contact | DOWN:01 |
| | 1 | SL7 C | transfer blade solenoid (C) off contact | UP:10 |
| | 2 | SL7 M | transfer blade solenoid (M) in contract | DOWN:01 |
| | 3 | SL7 M | transfer blade solenoid (M) off contact | UP:10 |
| | 4 | SL7 Y | transfer blade solenoid (Y) in contact | DOWN:01 |
| | 5 | SL7 Y | transfer blade solenoid (Y) off contact | UP:10 |
| | 6 | SL7 K | transfer blade solenoid (Bk) in contact | DOWN:01 |
| | 7 | SL7 K | transfer blade solenoid (Bk) off contact | UP:10 |
| 802006 | 0 | M24 C | primary wire cleaner motor (C) | rear: 01 |
| | 1 | M24 C | primary wire cleaner motor (C) | front: 10 |
| | 2 | M24 M | primary wire cleaner motor (M) | rear: 01 |
| | 3 | M24 M | primary wire cleaner motor (M) | front: 10 |
| | 4 | M24 Y | primary wire cleaner motor (Y) | rear: 01 |
| | 5 | M24 Y | primary wire cleaner motor (Y) | front: 10 |
| | 6 | M24 K | primary wire cleaner motor (Bk) | rear: 01 |
| | 7 | M24 K | primary wire cleaner motor (Bk) | front: 10 |

| Address | | Connector | Description | Remarks |
|---|---|---|---|---|
| 802007 | 0 | CL1 | toner supply clutch (C) | ON:1 |
| | 1 | CL2 | toner supply clutch (M) | ON:1 |
| | 2 | CL3 | toner supply clutch (Y) | ON:1 |
| | 3 | CL4 | toner supply clutch (Bk) upper | ON:1 |
| | 4 | CL5 | toner supply clutch (Bk) lower | ON:1 |
| | 5 | – | hopper sensor select | ON:1 |
| | 6 | M32 | separation wire cleaner motor | ON:1 |
| | 7 | M32 | separation wire cleaner motor | ON:1 |
| 802008 | 0 | SL3 | fixing take-up solenoid ON | ON:1 |
| | 1 | SL4 | fixing web releasing solenoid ON | ON:1 |
| | 2 | M30 | fixing lower web motor ON | ON:1 |
| | 3 | SL2 | fixing oil pump drive solenoid ON | ON:1 |
| | 4 | SL15 | separation claw releasing solenoid ON | ON:1 |
| | 5 | M22 | pre-fixing charging assembly wire cleaner motor | ON:1 |
| | 6 | M22 | pre-fixing charging assembly wire cleaner motor | ON:1 |
| | 7 | M4 | laser scanner motor speed switch | full speed: 0; half-speed: 1 |
| 802009 | 0 | H1 | fixing upper heater ON | ON:1 |
| | 1 | H2 | fixing lower heater ON | ON:1 |
| | 2 | H7,8 | cassette heater ON | ON:1 |
| | 3 | H9 | fixing oil heater ON | ON:1 |
| | 4 | H3 | drum heater (C) | ON:1 |
| | 5 | H4 | drum heater (M) | ON:1 |
| | 6 | H5 | drum heater (Y) | ON:1 |
| | 7 | H6 | drum heater (Bk) | ON:1 |
| 80200A | 0 | SALT C | SALT sensor LED (C) ON | ON:1 |
| | 1 | SALT M | SALT sensor LED (M) ON | ON:1 |
| | 2 | SALT Y | SALT sensor LED (Y) ON | ON:1 |
| | 3 | SALT K | SALT sensor LED (Bk) ON | ON:1 |
| | 4 | ATR C,M,Y | toner concentration sensor LED ON | ON:1 |
| | 5 | LED1,2 | pattern read LED ON | ON:1 |
| | 6 | SL17 C,M,Y,K | SLT sensor shutter solenoid (CM YBk) open | ON:1 |
| | 7 | SL17 C,M,Y,K | SLT sensor shutter solenoid (CMYBk) closed | ON:1 |
| 80200B | 0 | FM4,5 | laser cooling fan | ON:1 |
| | 1 | FM8,9 | primary suction fan ON | ON:1 |
| | 2 | FM6 | primary exhaust fan ON | ON:1 |
| | 3 | FM7 | pre-fixing feeding fan ON | ON:1 |
| | 4 | FM19,20,27 | delivery cooling fan ON | ON:1 |
| | 5 | FM34 | delivery lower fan ON | ON:1 |
| | 6 | FM7 | pre-fixing feeding fan speed switch | 1: full speed; 0: half-speed |
| | 7 | FM1,2,3 | delivery assembly exhaust fan speed switch | 0: full speed; 1: half-speed |

| Address | | Connector | Description | Remarks |
|---|---|---|---|---|
| 80200C | 0 | SL9 | cassette 1 pickup roller releasing solenoid ON | UP:1 |
| | 1 | SL10 | cassette 2 pickup roller releasing solenoid ON | UP:1 |
| | 2 | SL5 | multifeeder pickup roller releasing solenoid ON | UP:1 |
| | 3 | SL8001 | paper deck pickup roller releasing solenoid ON | UP:1 |
| | 4 | SL8 | duplex pickup roller releasing solenoid ON | UP:1 |
| | 5 | SL13 | paper feed roller solenoid ON | UP:1 |
| | 6 | FM24 | laser scanner motor cooling fan | ON:1 |
| | 7 | FM26 | pickup cooling fan | ON:1 |
| 80200D | 0 | CL12 | cassette 1 pickup cutch ON | ON:1 |
| | 1 | CL14 | cassette 2 pickup clutch ON | ON:1 |
| | 2 | CL7 | pper thickness detecting roller clutch | ON:1 |
| | 3 | CL6 | multifeeder pickup clutch ON | ON:1 |
| | 4 | CL8002 | paper deck pickup clutch ON | ON:1 |
| | 5 | – | not used | – |
| | 6 | CL10 | duplex pickup clutch ON | ON:1 |
| | 7 | FM28,29,30 | reversal assembly exhaust fan 1, 2, 3 | ON;1 |
| 80200E | 0 | SL16 | registration roller releasing solenoid ON | ON:1 |
| | 1 | OHP sensor | transparency sensor LED ON | ON:1 |
| | 2 | PTS1 | paper thickness sensor LED ON | ON:1 |
| | 3 | FM17,18 | power supply exhaust fan 1, 2 | ON:1 |
| | 4 | FM31 | fixing heat discharge fan | ON:1 |
| | 5 | FM32 | pickup cooling an 2 | ON:1 |
| | 6 | FM20,C27 | delivery lower cooling fan 2, 3 | ON:1 |
| | 7 | – | not used | – |
| 80200F | 0 | M16 | cassette 1 lifter motor ON | ON:1 |
| | 1 | M17 | cassette 2 lifter motor ON | ON:1 |
| | 2 | M1 | multifeeder lifter motor (up) | UP:01 |
| | 3 | M1 | multifeeder lifter motor (down) | DOWN:10 |
| | 4 | M8001 | paper deck lifter motor (up) | UP:01 |
| | 5 | M8001 | paper deck liter motor (down) | DOWN:11 |
| | 6 | M21,22,23 | general exhaust fan (IPU) | ON:1 |
| | 7 | M21,22,23 | general exhaust fan speed | 0: full speed;<br>1: half-speed |
| 802010 | 0 | FM34 | delivery cooling fan half-speed | “bit 0, 1=1, 0<br>half-speed” |
| | 1 | FM34 | delivery cooling fan full-speed | “bit 0, 1=1, 1<br>full-speed” |
| | 2 | CL16 | reversal assembly dive clutch ON | ON:1 |
| | 3 | M19 | duplex feeding motor ON | ON:1 |
| | 4 | SL14 | delivery paper deflecting plate solenoid ON | ON:1 |
| | 5 | SL11 L | duplex paper deflecting plate solenoid (L) ON | ON:1 |
| | 6 | SL11 M | duplex paper deflecting solenoid (M) ON | ON:1 |
| | 7 | SL11 S | duplex paper deflecting plate solenoid (S) ON | ON:1 |

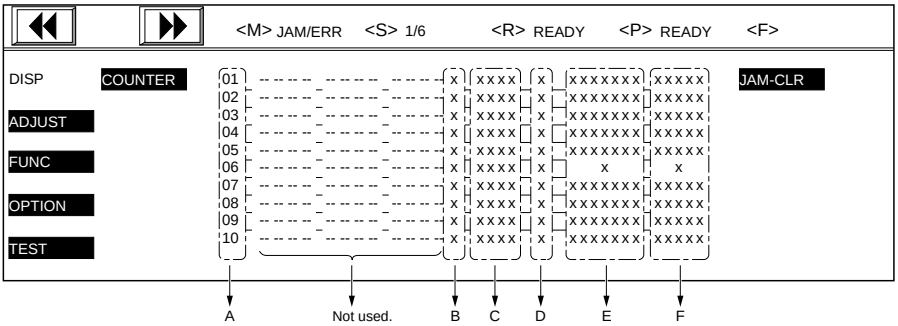
| Address | | Connector | Description | Remarks |
|---|---|---|---|---|
| 802011 | 0 | M2 | image position correction mirror slant correction motor (Y) | select: 0 |
| | 1 | M3 | image correction mirror ratio correction motor (Y) | select: 0 |
| | 2 | M5 | image position correction mirror slat correction motor (C) | select: 0 |
| | 3 | M6 | image position correction mirror ratio correction motor (C) | select: 0 |
| | 4 | M7 | image correction mirror slant correction motor (Bk) | select: 0 |
| | 5 | M8 | image position correction mirror ratio correction motor (Bk) | select: 0 |
| | 6 | PS39 | pattern read CCD shutter (closed -> open) | ON:1 |
| | 7 | PS40 | pattern read CCD shutter (open -> closed) | ON:1 |
| 804000 | 0 | CNT1 | total copy counter 1 | ON:1 |
| | 1 | CNT2 | total copy counter 2 | ON:1 |
| | 2 | CNT3 | total copy counter 3 | ON:1 |
| | 3 | CNT4 | total copy counter 4 | ON:1 |
| | 4 | CNT5 | total copy counter 5 | ON:1 |
| | 5 | CNT6 | total copy counter 6 | ON:1 |
| | 6 | – | for factory adjustment | – |
| | 7 | – | for factory adjustment | – |
| 804002 | 0 | – | for factory adjustment | – |
| | 1 | – | for factory adjustment | – |
| | 2 | – | for factory adjustment | – |
| | 3 | – | for factory adjustment | – |
| | 4 | – | for factory adjustment | – |
| | 5 | – | for factory adjustment | – |
| | 6 | – | for factory adjustment | – |
| | 7 | – | for factory adjustment | – |
| 804004 | 0 | – | for factory adjustment | – |
| | 1 | – | for factory adjustment | – |
| | 2 | – | for factory adjustment | – |
| | 3 | – | not used | – |
| | 4 | – | for factory adjustment | – |
| | 5 | – | for factory adjustment | – |
| | 6 | – | for factory adjustment | – |
| | 7 | – | for factory adjustment | – |
| 804006 | 0 | – | for factory adjustment | – |
| | 1 | – | for factory adjustment | – |
| | 2 | – | for factory adjustment | – |
| | 3 | – | for factory adjustment | – |
| | 4 | – | for factory adjustment | – |
| | 5 | – | for factory adjustment | – |
| | 6 | – | for factory adjustment | – |
| | 7 | – | for factory adjustment | – |

| Address | | Connector | Description | Remarks |
|---|---|---|---|---|
| 804008 | 0 | – | for factory adjustment | – |
| | 1 | – | for factory adjustment | – |
| | 2 | – | for factory adjustment | – |
| | 3 | – | for factory adjustment | – |
| | 4 | – | for factory adjustment | – |
| | 5 | – | for factory adjustment | – |
| | 6 | – | for factory adjustment | – |
| | 7 | – | for factory adjustment | – |
| 80400A | 0 | – | for factory adjustment | – |
| | 1 | – | for factory adjustment | – |
| | 2 | – | for factory adjustment | – |
| | 3 | – | for factory adjustment | – |
| | 4 | – | for factory adjustment | – |
| | 5 | – | for factory adjustment | – |
| | 6 | – | for factory adjustment | – |
| | 7 | – | for factory adjustment | – |
| 80400C | 0 | – | transfer current (C) ON | ON:1 |
| | 1 | – | transfer current (C) UP | UP:1 |
| | 2 | – | transfer current (M) ON | ON:1 |
| | 3 | – | transfer current (M) UP | UP:1 |
| | 4 | – | transfer current (Y) ON | ON:1 |
| | 5 | – | transfer current (Y) UP | UP:1 |
| | 6 | – | transfer current (Bk) ON | ON:1 |
| | 7 | – | transfer current (Bk) UP | UP:1 |
| 80400E | 0 | – | primary bias (C) ON) | ON:1 |
| | 1 | – | primary bias (M) ON | ON:1 |
| | 2 | – | primary bias (Y) ON | ON:1 |
| | 3 | – | primary bias (Bk) ON | ON:1 |
| | 4 | – | separation AC bias ON | ON:1 |
| | 5 | – | blank pulse enable | ON:1 |
| | 6 | – | stray toner blocking high-voltage ON | ON:1 |
| | 7 | – | transfer,separation,pre-fixing enable | ON:1 |
| 804010 | 0 | – | developing bias AC (C) ON | ON:1 |
| | 1 | – | developing bias AC (M) ON | ON:1 |
| | 2 | – | developing bias AC (Y) ON | ON:1 |
| | 3 | – | developing bias AC (Bk) ON | ON:1 |
| | 4 | – | developing bias DC (C) ON | ON:1 |
| | 5 | – | developing bias DC (M) ON | ON:1 |
| | 6 | – | developing bias DC (Y) ON | ON:1 |
| | 7 | – | developing bias DC (Bk) ON | ON:1 |

# <Jam/ERR>

The 1st through 4th screens show the most recent 40 jams (location and type).
The 5th and 6th screens provide histories of errors.

■ 1st through 4 th Screes (Jam code)




F00-200-12

A Jam history number (01 through 40; a higher number represents an older history)
B Jam location (See Table B on the next page.)
C Jam code (See Table C on the next page.)
D Pick-up location (See Table D on the next page.)
E Pick-up soft counter (by pick-up assembly)
F Paper Size

| | |
|---|---|
| JAM-CLR | Clear all jam histories |

### Table A Jam Location

| | |
|---|---|
| 0 | Body |
| 1 | RDF |
| 2 | Sorter |

### Table B Jam Code (high-order 2 digits)

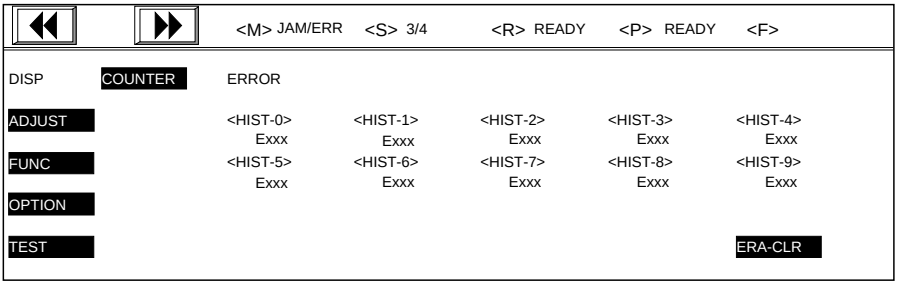
| | |
|---|---|
| 00 | Jam at accessory |
| 01 | Delay jam |
| 02 | Stationary jam |
| 10 | Jam at power-on or when the front cover, pick-up cover, or delivery cover is opened/closed. |
| 11 | Jam when the front cover, pick-up assembly cover, or delivery cover is opened/closed during copying operation. |

### Table C Jam Code (low-order 2 digits)

| | | |
|---|---|---|
| 01 | Registration paper sensor | PS1 |
| 02 | Pick-up vertical path 1 sensor | PS21 |
| 03 | Pick-up vertical path 2 sensor | PS25 |
| 04 | Pick-up vertical path 3 sensor | PS26 |
| 05 | Deck sensor | PS8003 |
| 31 | Registration rear sensor | PS14 |
| 32 | Separation sensor | PS15 |
| 33 | Internal delivery sensor | PS35 |
| 34 | Delivery sensor | PS34 |
| 35 | Buffer pass inlet paper sensor | PS8 (in Buffer Unit) |
| 36 | Sorter | PI3/4/7 (in Sorter) |
| 37 | Buffer pass delivery sensor | PS3 (in Buffer Unit) |
| 38 | Buffer pass reversal timing sensor | PS1 (in Buffer Unit) |
| 39 | Buffer pass reversal jam sensor | PS2 (in Buffer Unit) |
| 61 | Delivery vertical path sensor | PS38 |
| 62 | Delivery vertical path sensor 2 | PS32 |
| 63 | Duplexing unit reversal sensor | PS33 |
| 64 | Pre-duplex feeding sensor 1 | PS8 |
| 65 | Pre-duplex feeding sensor 2 | PS9 |
| 66 | Duplex paper sensor 1 | PS30 |
| 67 | Duplex paper sensor 2 | PS31 |

### Table D Pick-Up Location

| | |
|---|---|
| 1 | Upper cassette |
| 2 | Lower cassette |
| 3 | Paper deck |
| 8 | Multifeeder |
| 9 | Duplexing unit |

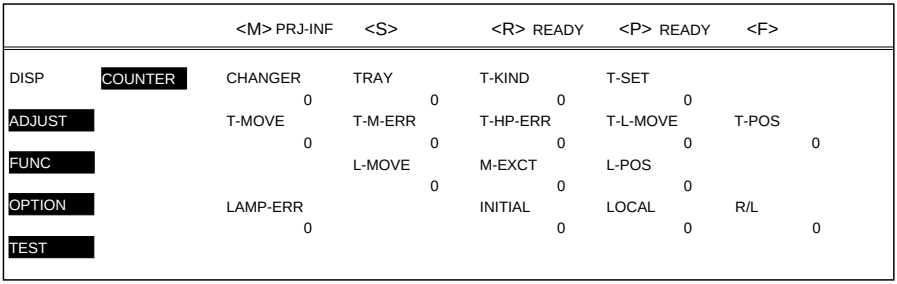



■ 5th/6th Screen (E code)

F00-200-13

| | |
|---|---|
| <CODE> | Indicates the appropriate error code (E) for the results of self diagnosis. |
| <E000> | Indicates detail codes for each error code. (See the descriptions on self diagnosis.) |
| <E012> | |
| <E020> | |
| <E030> | |
| <E040> | |
| <E061> | |
| <E072> | |
| <E073> | |
| <HIST-0> ~ <HIST-9> | Indicates a history of error codes (E).<br>• HIST-0 is the most recent. |
| ERA-CLR | Clears all error code histories. |

# <PRJ-INF (state of the projector)>

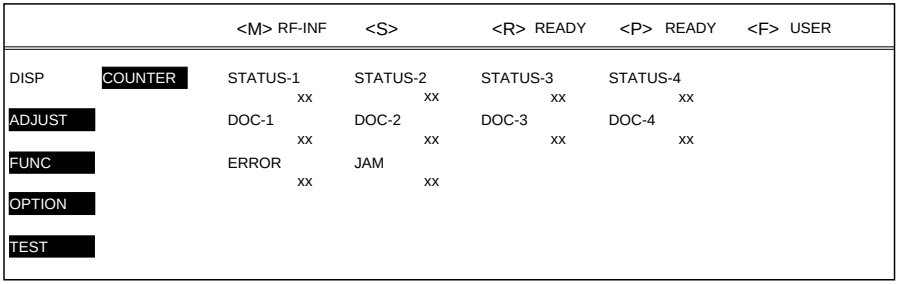



F00-200-14

| | |
|---|---|
| CHANGER | Indicates the presence/absence of a rotary changer. |
| State | 1: Present |
| TRAY | Indicates the presence/absence of a slide tray. |
| State | 1: Present |
| T-KIND | Indicates the type of tray. |
| State | 1: 140<br>0: 80 |
| T-SET | Indicates if a slide is set. |
| State | 1: Set |
| T-MOVE | Indicates that the tray is moving. |
| State | 1: Moving |
| T-M-ERR | Indicates an error in the mechanism that moves the tray. |
| State | 1: Error |
| T-HP-ERR | Indicates a tray home position error. |
| State | 1: Error |
| T-L-MOVE | Indicates that the tray is moving (local). |
| State | 1: Moving |

| | |
|---|---|
| T-POS | |
| | Indicates the position of the tray. 0: Home position |
| State | 1: Increases by 1 |
| L-MOVE | |
| | Indicates that the lens is moving. |
| State | 1: Moving |
| M-EXCT | |
| | Indicates the state of motor excitation. |
| State | 1: Excited |
| L-POS | |
| | Indicates the position of the lens. |
| State | 0: Home position |
| LAMP-ERR | |
| | Indicates an open circuit in the lamp. |
| State | 1: Open circuit |
| INITIAL | |
| | Indicates that initialization is under way. |
| State | 1: Processing |
| LOCAL | |
| | Indicates local movement. |
| State | 1: Operating |
| R/L | |
| | Indicates remote/local mode. |
| State | 0: Remote |
| | 1: Local |

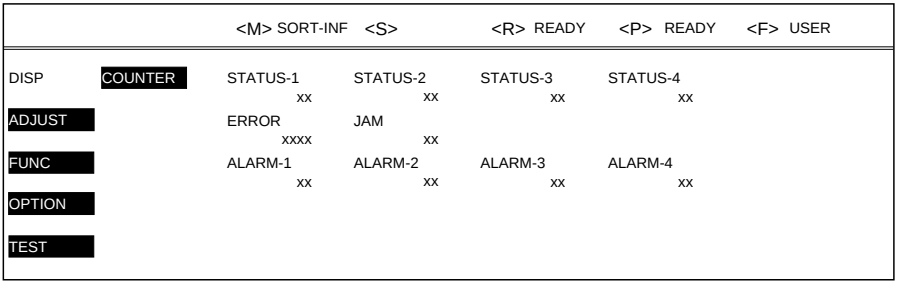
# <RF-INF (RDF state)>




F00-200-15

| | |
|---|---|
| STATUS-1/2/3/4 | For R&D |
| DOC-1/2/3/4 | For R&D |
| ERROR | Indicates the error code sent by the RDF controller PCB.<br>01H:equivalent of E401<br>02H:equivalent of E402<br>03H:equivalent of E403<br>04H:equivalent of E404<br>05H:equivalent of E405<br>06H:no corresponding error<br>07H:equivalent of E411<br>11H:equivalent of E411<br>21H:equivalent of E400 |
| JAM | Indicates the jam code sent by the RDF controller PCB.<br>See the details section in service manual of RDF. |
| ALARM | Indicates the alarm code sent by the RDF controller PCB.<br>01H:re-circulating bar idle rotation<br>02H:not used<br>03H:separation failure<br>04H:separation skew<br>05H:not used |

## <SORT-INF (SORT state)>




F00-200-16

**STATUS-1/2/3/4**

For R&D

**ERROR**

For R&D

**JAM**

Indicates the jam code sent by the sorter controller PCB.

- 03H:feeding delay jam
- 02H:feeding stationary jam
- 03H:staple jam
- 04H:power-on jam
- 08H:cover open jam (during feeding)
- 09H:cover open jam (other than during feeding)

**ALARM-1/2/3/4**

Indicates the alarm code sent by the sorter controller PCB.

ALARM-1

- 02H:overstacking

ALARM-2

- 02H:staple jam
- 03H:stapler safety mechanism activation
- 04H:stapler overstacking
- 05H:mixed paper sizes (horizontal)
- 07H:stapler unit absent
- 08H:separation failure
- 0AH:staple absent

ALARM-3/4

- for future use

# <BLT-DRFT (belt swing data display)>

<M> BLT-DRFT <S> <R> <P> <F>

DISP COUNTER
ADJUST
FUNC
OPTION
TEST

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DIR B -- > F | | | | BELT -- POS CENTER | | | |
| FST | XXXX | XXXX | XXXX | F TO B C. Time | XXXX | XXXX | |
| F TO B | XXXX | XXXX | XXXX | B TO F C. Time | XXXX | XXXX | |
| BST | XXXX | XXXX | XXXX | TOTAL | XXXX | XXXX | |
| B TO F | XXXX | XXXX | XXXX | | | | |

F00-200-17

## DIR

Indicates the present swing condition (direction) of the transfer belt.

DIR

B→F: moving (swinging) from rear to front

F→B: moving (swinging) from front to rear

State

Unit: 0.1 sec

## BELT--POS

Indicates the present condition (position) of the transfer belt.

BELT_POS

FRONT: near front

CENTER: near center

BACK: near rear

## FST

Indicates the time required by the transfer belt between when it reaches the transfer belt edge sensor (PS17, front) and when it leaves the sensor.

FST XXXX XXXX XXXX

Most recent data

Second most recent data

Third most recent data

State

Unit: 0.1 sec

## F TO B

Indicates the time required by the transfer belt between when it reaches the transfer belt edge sensor (PS17, front) and when it reaches the end sensor 2 (PS18, rear).

F TO B XXXX XXXX XXXX

Most recent data

Second most recent data

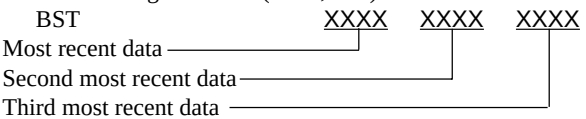
Third most recent data

State

Unit: 0.1 sec

**BST**

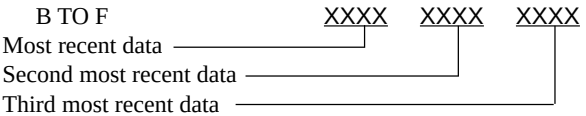
Indicates the time required by the transfer belt between when it reaches the transfer belt edge sensor 1 (PS18, rear) and when it leaves the sensor.




State — Unit: 0.1 sec

**B TO F**

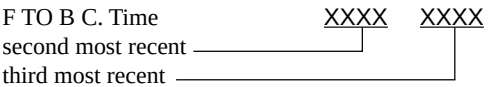
Indicates the time required by the transfer belt between when it reaches the transfer belt edge sensor 2 (PS18, rear) and when it reaches the end sensor 1 (PS17, front).




State — Unit: 0.1 sec

**F TO B C.Time**

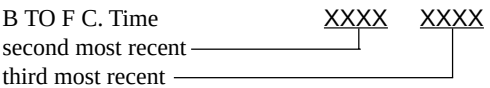
Indicates data (F TO B data minus FST data); time taken by the belt to move from front to back.




State — Unit: 0.1 sec

**B TO F C.Time**

Indicates data (B TO F data minus BST data); time taken by the belt to move from back to front.




State — Unit: 0.1 sec

**TOTAL**

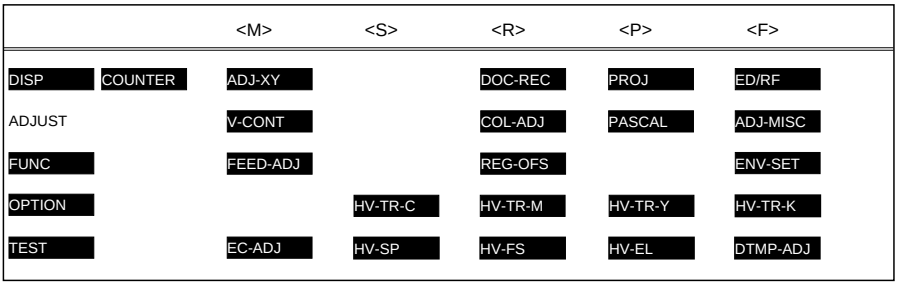
indicates data (F TO B data plus B TO F data); time taken by the belt to make a round trip.

State — Unit: 0.1 sec

## <USER (settings related to the indications on the screen of control panel)>

| | |
|---|---|
| LANGUAGE | Language used/destination of shipment.<br>example: <LANGUAGE XX.YY.ZZ.aa><br>XX: country<br>YY: language<br>ZZ: 00=CANON, 01=others<br>aa : 00:AB series, 01=Inch series, 02=A series, 03=all sizes |

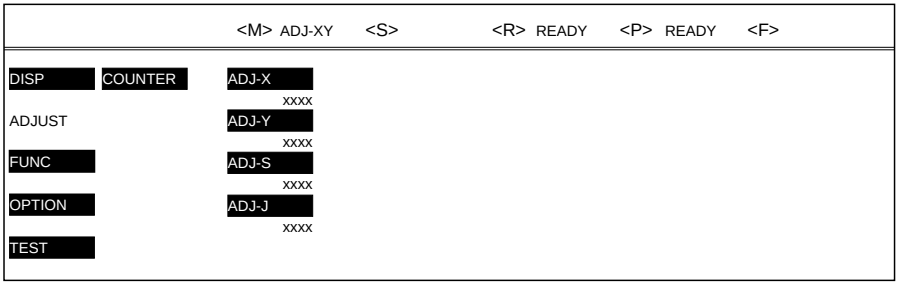
# 3 ADJUST (adjustment)




F00-300-01

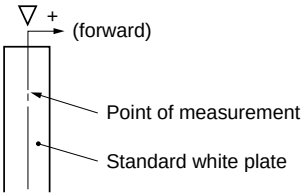
| | | |
|---|---|---|
| 1 | ADJ-XY | Adjusts the image read start position. |
| 2 | DOC-REC | Adjusts the original detection area/slide level. |
| 3 | PROJ | Adjusts the projector area. (only if the projector connected) |
| 4 | ED/RF | Adjusts the editor. |
| 5 | V-CONT | Adjusts the photosensitive drum surface potential contrast. |
| 6 | COL-ADJ | Corrects the color balance (for user). |
| 7 | PASCAL | Determines whether to use or not data obtained by auto gradation correction control and display of data related to auto gradation correction control. |
| 8 | ADJ-MISC | ADJ-MNISC (adjustments other than above) |
| 9 | FEED-ADJ | Adjusts the feeding position. |
| 10 | REG-OFS | For R & D |
| 11 | ENV-SET | Use it to set cassette heater operation conditions. |
| 12 | HV-TR C/M/Y/K | Fine-adjusts transfer high-voltage output by condition. |
| 13 | HV-SP | Fine-adjusts separation high-voltage output by condition. |
| 14 | HV-FS | Use it to make fine-adjustments for the pre-fixing high-voltage output according to conditions. |
| 15 | HV-EL | Use it to make fine-adjustments for the internal static eliminator high-voltage output according to conditions. |
| 16 | EC-ADJ | Use it to correct the rate of transmission of the EC coat glass. |
| 17 | DTMP-ADJ | Reserved for future. |

# <ADJ-XY (image read start position adjustment)>




F00-300-02

| | |
|---|---|
| ADJ-X *1 | Use it to make adjustments so that the image read start position (X direction, sub scanning direction) matches the reference point on the copyboard glass.<br>Fine-adjusts the distance from the original scanner home position sensor to the read start position.<br>Unit: Number of steps of the stepping motor.<br>• Follow the instructions on the next page. |
| **Settings range** | **0~+400**<br>**(–3.9~+3.9mm)**<br>**Unit: 0.11 mm (approx.)** |
| ADJ-Y *1 | Use it to make adjustments so that the image read start position (Y direction, main scanning direction) matches the reference point on the copyboard glass.<br>Unit: Pixel<br>• Follow the instructions on the next page. |
| **Settings range** | **–100~+100**<br>**(–2.5~+2.5mm)**<br>**Unit: 0.06mm (approx.)** |

| | |
|---|---|
| ADJ-S *1 | Use it to fine-adjust the point at which the standard white plate is measured for shading correction data.<br>• Unit: Number of steps of the stepping motor.<br>• Scratches or dirt, if any, on the standard white plate can cause conspicuous vertical white lines on copies. If such is noted, shift the point of measurement using 'ADJ-S'.<br>  <br><br>F00-300-03 |
| **Settings range** | **0~45**<br>**(0~4.8mm)**<br>**Unit: 0.11mm (approx.)** |
| ADJ-J *1 | Adjusts the preparatory time for the scanner motor. |
| **Settings range** | **450~550**<br>**Unit: 0.1msec (approx.)** |

Note 1: You must enter the appropriate value whenever you have replaced a PCB or initialized a RAM; record any new values on the service label for this purpose.

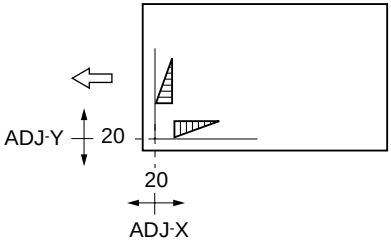
## ■ Adjusting the Image Read Start Position

You must check the point of retention ('FUNC → ATTRACT') before making the following adjustments:

1) Before starting service mode, turn OFF the original detection mechanism.
2) Select the <ADJ-XY> screen, and press the Start key.

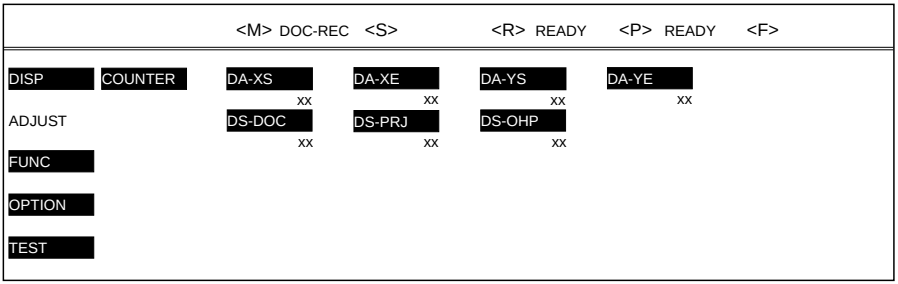
- The appropriate copying modes will be set automatically, and a copy will be made with a shift of about 20 mm as shown in following.

3) If any part of the image is missing, decrease the values of 'ADJ-X' and 'ADJ-Y'.
4) If an area outside the image is copied, increase the values of 'ADJ-X' and 'ADJ-Y'.




F00-300-04

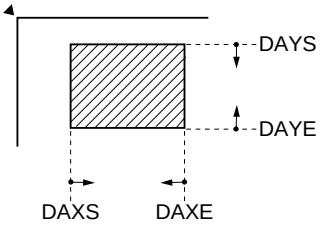
# <DOC-REC (original detection area/slice level)>




F00-300-05

## DA-XS *1 DA-XE DA-YS DA-YE

Fine-adjusts the original detection area.
The original must be placed correctly on the copyboard glass in original detection mode; if placed at an angle, the copies will have a black frame. To prevent the problem, set a value by which such frames will be erased.




F00-300-06

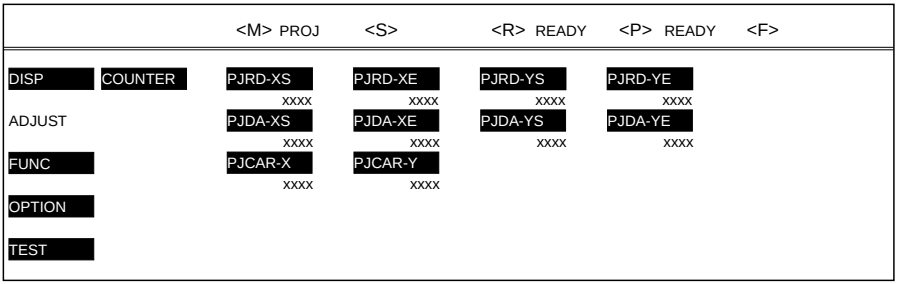
Any changes to the value will affect the frame erasing width in original detection mode when the projector is used.

**Settings range** **–99~99**
**(0~6.3mm)**
**Standard: XS=16**
**XE=16**
**YS=16**
**YE=16**
**Unit=0.06mm (approx.)**

| DS-DOC [*1] DS-PRJ DS-OHP | |
|---|---|
| | Adjusts the slice level for original detection.<br>You may enter any value as the slice level for original detection. A higher value increases detection capability but tends to lead to wrong detection.<br>DS-DOC:When detecting ordinary originals,<br>DS-PRJ:When detecting the projection area with the projector in use,<br>DS-OHP:When detecting film (6x6, 8x10) placed on the copyboard glass with the projector in use from the position of the reference sheet. |
| **Settings range** | **0~31**<br>**(Density level 0~248)**<br>**Standard:**<br>**DS-DOC=20**<br>**PRJ=28**<br>**OHP=22** |

Note 1: The value will return to the standard value when the RAM is initialized, requiring re-input. Be sure to record any new value on the service label.

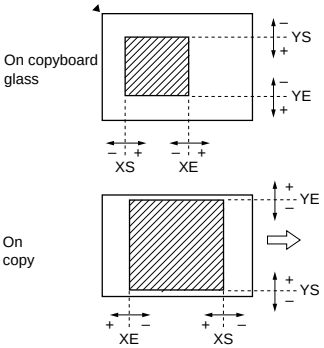
# <PROJ (projector area adjustment)>




F00-300-07

## PJRD-XS/-XE/-YS/-YE

Fine-adjusts the read area if original detection mechanism is off with the projector in use or if original detection fails when the original detection mechanism is on.




F00-300-08

**Settings range** **–300~+300**
**(–19.0~+19.0mm)**
**Standard=0**
**For XS/XE,**
**Unit: 0.11 mm (approx.)**
**For YS/YE,**
**Unit: 0.06 mm (approx.)**

## PJDA-XS/-XE/-YS/-YE

Fine-adjusts the area from which measurements are taken for original detection when the original detection mechanism is on with the projector in use.
• Use it also for the read area when the original detection mechanism is off in copyboard mode.
• The area for the standard value (0) is 5 mm inside the Fresnel lens.

**Settings range** **–99~+99**
**YS, YE**
**(–6.3~+6.3mm)**
**Unit: 0.06mm (approx.)**
**XS, XE**
**(–10.9~+10.9mm)**
**Unit: 0.11mm (approx.)**
**Standard: 0 (on copyboard glass)**

## PJCAR-X/-Y

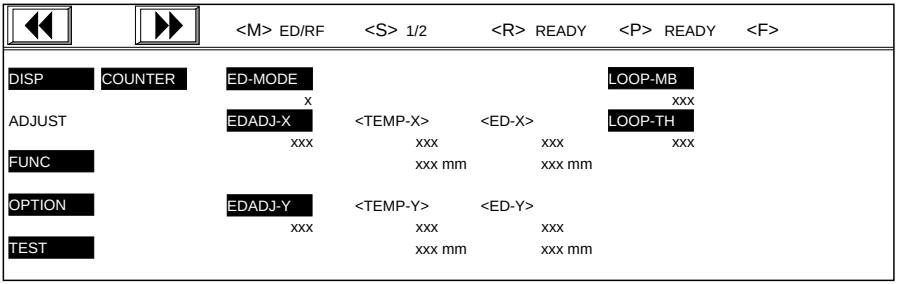
Use it to adjust the film reading range when the original detection mechanism is off with the auto changer in use.

**Settings range** **–100~100**
**Standard: 0**


REF.

PJDA affects the area from which measurements are taken not the area from which measurements have been taken. To erase the black frames on copies or decrease the width of such frames, adjust YE of DA-XS under DOC-REC.

# <ED/RF (editor/RF adjustment)>




F00-300-09

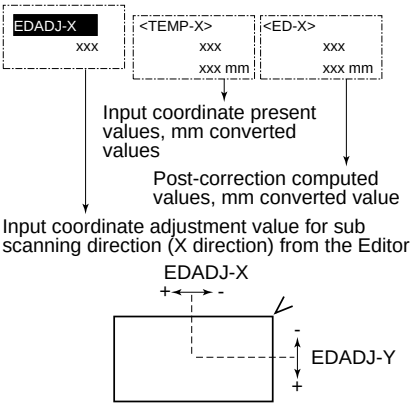
## ED-MODE *1

Switches editor operation mode.

**Settings**

**0: Normal operation**
**1: 1-point input check**
**2: Continuous input check**
**Standard: 0**

## EDADJ-X *1 <TEMP-X> <ED-X> EDADJ-Y <TEMP-Y> <ED-Y>



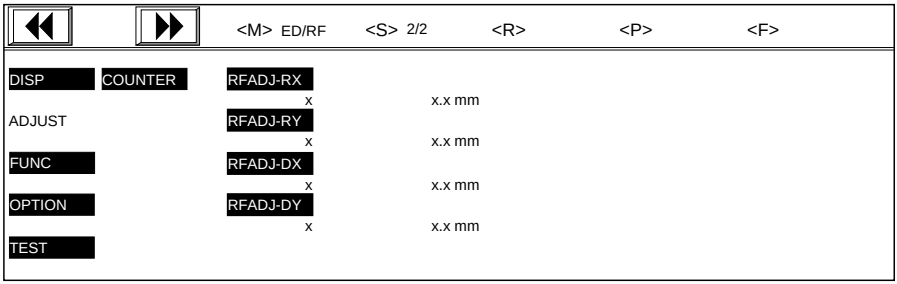

F00-300-10

**Settings range**

**–99~+99**
**(–12.6~+12.6mm)**
**Unit: 0.13mm (approx.)**
**Standard: 0**

| | |
|---|---|
| LOOP-MB *1 | |
| | Changes the processing method used to read images into memory for coloring in area specification/color creation.<br>If the value is increased, filling gaps will be easier; too high a value, however, will result in bleeding. |
| **Settings range** | **0~3**<br>**(Standard: 0)** |
| LOOP-TH *1 | |
| | If the slice level adjustment value is increased for binarization used for reading images into memory for area specification/color creation, finer lines may be read. |
| **Settings range** | **0~255**<br>**(Standard: 0)** |

Note 1: You must enter the appropriate value whenever you have replaced a PCB or initialized a RAM; record any new values on the service label for this purpose.



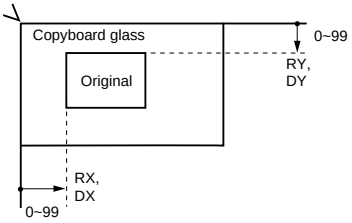

F00-300-11

## RFADJ-RX RFADJ-RY RFADJ-DX RFADJ-DY

Adjusts registration (with RF in use).
Corrects registration when originals are picked up from the RF.
Corrects in relation to main scanning direction →CCD read start position.
Corrects in relation to sub scanning direction →original read start timing.
RX → For correction in sub scanning direction when pick-up is from the RDF tray. *1
RY → For correction in main scanning direction when pick-up is from the RDF tray.

If RY=0 (initial value), the CCD starts reading at a point 2 mm away from the index for A4 and 11 mm away from the index for LTR.

DX → For correction in sub scanning direction when pick-up is from the manual feeding tray (feeding assembly).
DY → For correction in main scanning direction when pick-up is from the manual feeding tray (feeding assembly).

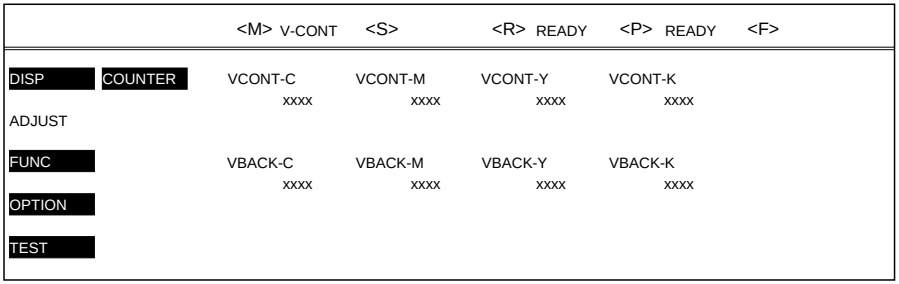



F00-300-12

| | |
|---|---|
| **Settings range** | **0~99**<br>**Unit:RX, DX=0.11mm (approx.) RY, DY=0.06mm (approx.)**<br>**(Standard: RX, DX=0 RY, DY=0)** |
| remarks | For this mode, you must have finished:<br>1. Adjusting the original stop position and<br>2. Adjusting the horizontal registration. |

Note 1: You must enter the appropriate value whenever you have replaced a PCB or initialized a RAM; record any new values on the service label for this purpose.

## <V-CONT (photosensitive drum surface potential contrast adjustment)>




F00-300-13

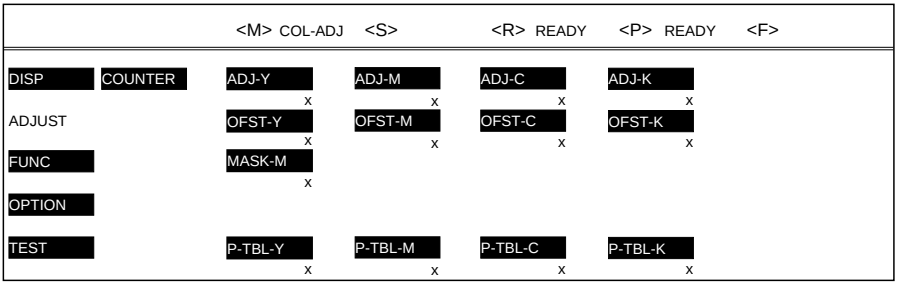
VCONT-C/M/Y/K

Indicates the present value of the target contrast potential.

VBACK-C/M/Y/K

Indicates the present value of de-fogging potential.

# <COL-ADJ (user color balance adjustment correction)>




F00-300-14

## ADJ-C/M/Y/K *1

Corrects user color balance adjustment.
• Be sure to set the setting for user color balance adjustment to 0 before using this mode.
• Follow the image adjustment basic procedure.

**Settings range** **–8~+8**
**Standard: 0**
**+: Darker**
**–: Lighter**

## OFST-C/M/Y/K *1

Adjusts light area density and color balance.
• Follow the image adjustment basic procedure.
• If fogging is noted, decrease the value.
• To increase reproducibility of images with extremely low density, increase the setting.

**Settings range** **–16 ~ +16**
**(Standard: Y=0**
**M=2**
**C=0**
**K=0)**

## MASK-M

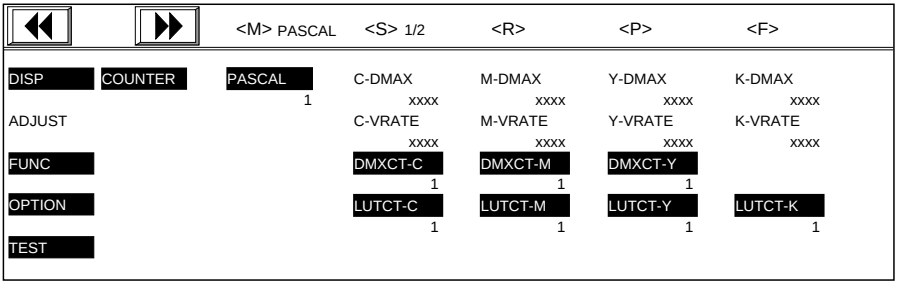
Use it to adjust the hue of magenta.
• Increase the setting if the gray area is greenish or bluish.
• Decrease the setting if the gray area is reddish.

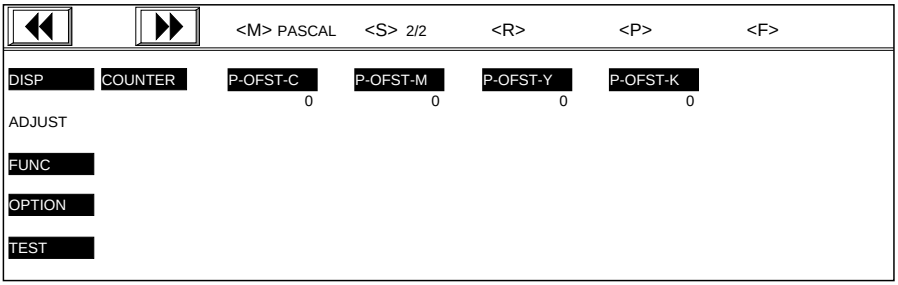
**Settings range** **-6 ~ +6 (standard: 4)**
Remarks
• It hardly affects areas other than the gray area.
• Its effects are felt only in print/photo mode or text print/photo mode.

| | |
|---|---|
| P-TBL-C/M/Y/K | |
| | Use it to make fine adjustments so that the hues will be closer to the hues of offset printing.<br>After comparing M/C/Y/K outputs against professionally (offset) printed material, if the print-out is lighter, increase the setting of 'P-TBL-M/C/Y/K'.<br>If the print-out is darker, decrease the setting of 'P-TBL-M/C/Y/K'. |
| **Settings range** | **–3 ~ + 3 (Standard: 0)**<br>**See the descriptions under 'OPTION > R-OPT > MANAGE'.** |
| P-TBL-C | |
| **Settings range** | **–3 ~ + 3 (Standard: 0)**<br>**See the descriptions under 'OPTION > R-OPT > MANAGE'.** |
| P-TBL-Y | |
| **Settings range** | **–3 ~ + 3 (Standard: 0)**<br>**See the descriptions under 'OPTION > R-OPT > MANAGE'.** |
| P-TBL-K | |
| **Settings range** | **–3 ~ + 3 (Standard: 0)**<br>**See the descriptions under 'OPTION > R-OPT > MANAGE'.** |

Note 1: You must enter the appropriate value whenever you have replaced a PCB or initialized a RAM; record any new values on the service label for this purpose.

# <PASCAL (auto gradation correction control)>




F00-300-15

| | |
|---|---|
| PASCAL | |
| | Determines whether to use or not data on gradation correction and contrast potential obtained by auto gradation correction control. |
| **Settings range** | **Set it to 0 when adjusting images; otherwise, be sure to set it to 1.**<br>**Standard: 1** |
| C/M/Y/K-VRATE | |
| | Indicates the offset value used to determine contrast potential. |
| DMXCT-C/M/Y | |
| | Use it to specify whether to use the solid density control data for each color obtained (auto gradation correction control).<br>0: Do not use.<br>1: Use. |
| **Settings** | **Standard value: 1** |

## LUTCT-C/M/Y/K

Use it to specify whether to use the gradation correction control data of each color (auto gradation correction control).
0: Do not use.
1: Use.

**Settings** **Standard value: 1**

## P-OFST-C/M/Y/K

Use it to set data for correction of the target value for high-density areas in auto gradation correction mode (i.e., to correct variation of CCD readings).

You must enter the value recorded on the service label once again if you have initialized the RAM on the DC controller PCB, since initialization returns it to the standard value.

Set to optimum value at time of shipment.

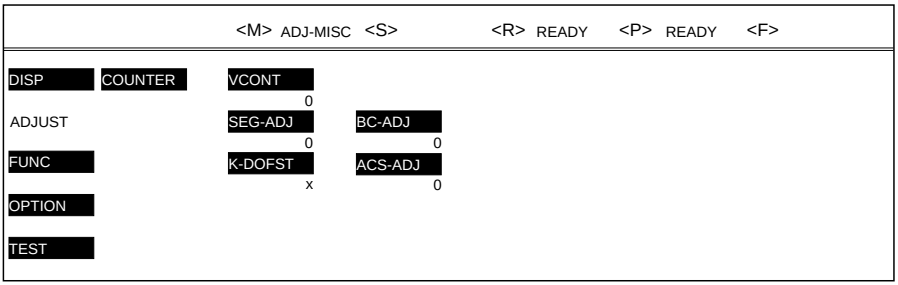
**Settings range** **-20 to +20 (Standard: 0)**
**+: Darker**
**–: Lighter**

REF.

- If the value of C-, M-, Y-, or K-DMAX is lower than 75, a fault may be assumed in the development of the color in question.
- If all values of C-, M-, Y-, and K-DMAX are lower than 75, a fault may be assumed in transfer or fixing.
- If the value of C-, M-, Y-, or K-DMAX is 120 or higher and copies have fogging, a fault is assumed in ATR of the color in question.

If you have changed the setting of 'PASCAL', 'DMXCT-C/M/Y', 'LUTCT-C/M/Y/K', or 'P-OFST-C/M/Y/K', be sure to execute auto gradation in user mode.

# <ADJ-MISC>




F00-300-16

## VCONT

Switches between auto and manual for target contrast potential (VG, VDC).

**Settings**

**0: Auto (set by auto gradation correction control)**

**1~8: Manual**

| | C Vcount | M Vcount | Y Vcount | K Vcount |
|---|---|---|---|---|
| 1 | 370.00 | 365.000 | 390.00 | 420.00 |
| 2 | 370.00 | 365.00 | 390.00 | 420.00 |
| 3 | 370.00 | 365.00 | 390.00 | 420.00 |
| 4 | 355.00 | 345.00 | 370.00 | 410.00 |
| 5 | 335.00 | 325.00 | 340.00 | 390.00 |
| 6 | 315.00 | 295.00 | 310.00 | 380.00 |
| 7 | 290.00 | 275.00 | 295.00 | 370.00 |
| 8 | 225.00 | 225.00 | 245.00 | 330.00 |
| 9 | xxxV | xxxV | xxxV | xxxV |
| 10 | xxxV | xxxV | xxxV | xxxV |
| 11 | xxxV | xxxV | xxxV | xxxV |
| 12 | xxxV | xxxV | xxxV | xxxV |

Remarks: 1~8 used for checks; normally, set it to 0 after a check.
9~12 not used. (for factory)

## SEG-ADJ

Fine-adjusts the separation level between text and photo in text/photo mode or text/halide mode.
+: Identifies photos better.
–: Identifies text better.
This mode corrects text/photo setting of user mode. *1

**Settings range**

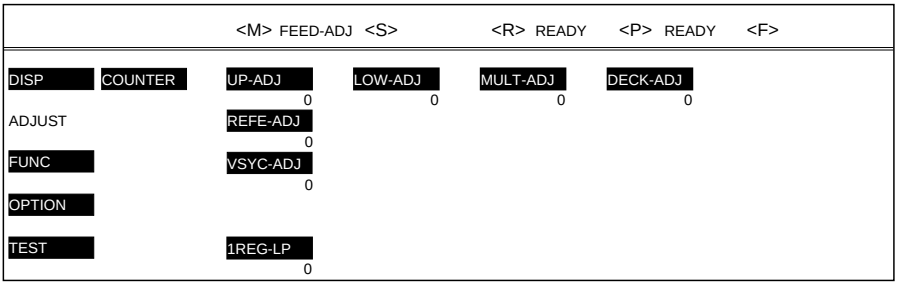
**–3~+3**

**(Standard: 0)**

| | |
|---|---|
| BC-ADJ | |
| | Use it to adjust the color space area identified as black text in black text processing. |
| **Settings range** | **-3 ~ +3 (standard: 0)**<br>**A higher setting will increase the color space area within which an original is identified as being a black text original.** |
| ACS-ADJ | |
| | Use it to adjust the color space area identified as chromatic in ACS evaluation.<br>Use it to make adjustments if a black-and-white copy is made as the result of ACS evaluation when copying an obviously chromatic original. |
| **Settings range** | **-6 ~ + 6 (standard: -2)**<br>**A higher setting will increase the color space area within which an original is identified as being chromatic.** |
| K-DOFST | |
| | Use it to correct the target value of the SALT signal.<br>If fogging is noted only for Bk, increase the setting to suppress. *1 |
| **Settings range** | **–4 ~ +4 (standard: 0)** |

Note 1: The value will return to the standard value when the RAM is initialized, requiring re-input. Be sure to record any new value on the service label.

## <FEED-ADJ (image position adjustment)>

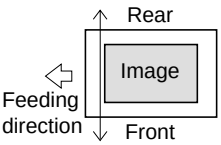



F00-300-17

### UP-ADJ

Adjusts the image write start position in main scanning direction when pick-up is from the upper cassette. Be sure to select the upper cassette on the User screen in advance.

**Settings range** **0 ~ 255 (standard: 128)**
**A higher value leads to a movement to the rear.**
**(unit: about 0.06mm)**

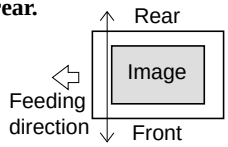



F00-300-18

### LOW-ADJ

Adjusts the image write start position in main scanning direction when pick-up is from the lower cassette. Be sure to select the upper cassette on the User screen in advance.

**Settings range** **0 ~ 255 (standard: 128)**
**A higher value leads to a movement to the rear.**
**(unit: about 0.06mm)**

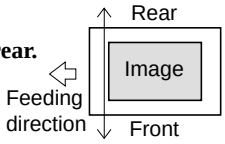



F00-300-19

MULT-ADJ

Adjusts the image write position in main scanning direction when pick-up is from the multifeeder. Be sure to select the upper cassette on the User screen in advance.

**Settings range** **0 ~ 255 (standard: 128)**
**A higher value leads to a movement to the rear.**
**(unit: about 0.06mm)**

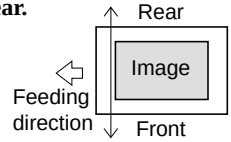



F00-300-20

DECK-ADJ (only if deck is connected)

Adjusts the image write start position in main scanning direction when pick-up is from the paper deck. Be sure to select the upper cassette on the User screen in advance.

**Settings range** **0 ~ 255 (standard: 128)**
**A higher value leads to a movement to the rear.**
**(unit: about 0.06mm)**



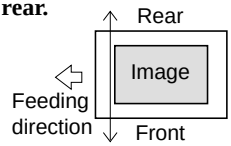

F00-300-21

Remarks Indicated only when a deck is connected.

REFE-ADJ

Adjusts the image write start position in main scanning direction for re-pick up operation.

**Settings range** **0 ~ 255 (standard: 128)**
**A higher value leads to a movement to the rear.**
**(unit: about 0.06mm)**

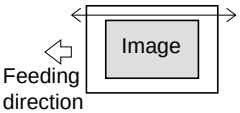



F00-300-22

VSYC-ADJ

Adjusts the image write start position in sub scanning direction.

**Settings range** **0 ~ 255 (standard: 128)**
**A higher setting will cause a shift toward the rear.**
**(unit: about 0.11mm)**



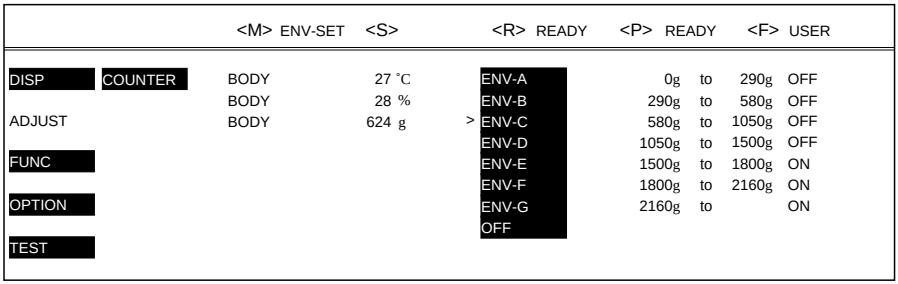

F00-300-23

| | |
|---|---|
| 1REG-LP | Use it to adjust the degree of arching copy paper at the rear of the registration roller (paper stop timing).<br>• A higher setting will increase the arching.<br>• Too low a setting can cause skew movement. |
| **Settings range** | **-6 ~ +6 (standard: 0)** |

## <EC-ADJ (correction of rate of transmission of EC coat glass)>

| | |
|---|---|
| EC-R/G/B | Enter the transmission rate correction value of EC coat glass; then, enter the OK key to set the input data.<br>Enter the value indicated on the label attached to the EC coat glass. |
| **Settings range** | **0 ~ 99 (standard: R = 48, G = 53, B = 70)** |

# <ENV-SET (setting operation conditions for the cassette)> heater



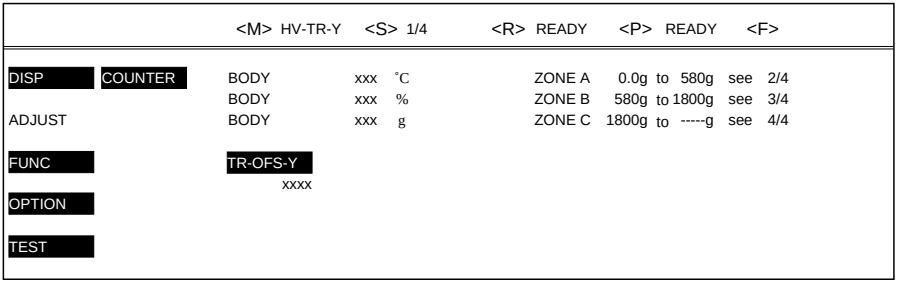

F00-300-24

| | |
|---|---|
| BODY °C | Indicates the machine internal temperature measured by the environment sensor. |
| Remarks | **Same as the reading under 'DISPLAY** > **ANALOG'** |
| BODY % | Indicates the machine internal humidity measured by the environment sensor. |
| Remarks | **Same as the reading under 'DISPLAY** > **ANALOG'** |
| BODY g | Indicates the machine internal humidity absolute value (g) measured by the environment sensor. |
| Remarks | **Same as the reading under 'DISPLAY** > **ANALOG'** |
| > | Indicates the present environment. |
| ENV-A~G | Sets ON/OFF of the cassette heater. |
| Remarks | **The heater will turn on if the internal humidity absolute value exceeds the setting.** |
| OFF | Sets to OFF for all environment. |

REF.

The settings of 'ENV-SET' are stored as soon as the CPU on the DC controller PCB is supplied with power (i.e., when the power plug is conected to the power outlet), and will be renewed every 8 hr.

## <HV-TR (transfer high-voltage output adjustment by condition)>




F00-300-25

**BODY °C**

Indicates the machine internal temperature measured by the environment sensor.

Remarks: Same as the reading under 'DISPLAY > ANALOG'

**BODY %**

Indicates the machine internal humidity measured by the environment sensor.

Remarks: Same as the reading under 'DISPLAY > ANALOG'

**BODY g**

Indicates the machine internal humidity absolute value (g) measured by the environment sensor.

Remarks: Same as the reading under 'DISPLAY > ANALOG'

**TRY-OFS-Y/M/C/K**

Adjusts the transfer high-voltage output.

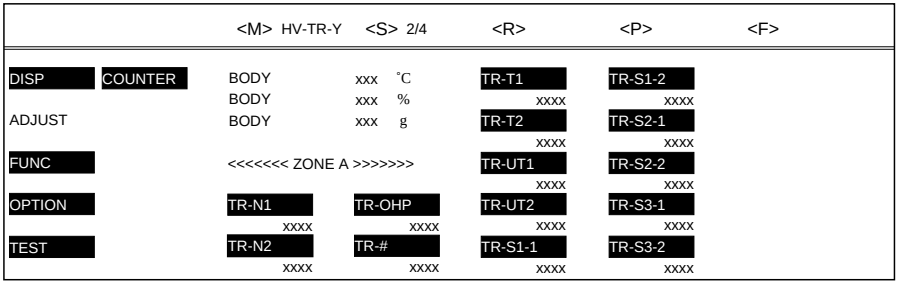
**Settings range**: **-5 ~ +5 (standard: 0)**
**Unit: 1.0 µA**

If you have changed the settings of 'TRY-OFS-C/M/Y/K', check to make sure that the value of 'TR-#' for each zone is '0'; otherwise, enter '0'.

**ZONE-A/B/C**

Indicates the machine internal humidity absolute value (g) in the three ranges of A through C.

Note 1: The setting of this item will return to the default value when the PCB is replaced or the RAM is cleared, requiring input once again. Be sure to record any new setting you have made on the service label.




F00-300-26

| | |
|---|---|
| BODY °C | |
| | Indicates the machine internal temperature measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| BODY % | |
| | Indicates the machine internal humidity measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| BODY g | |
| | Indicates the machine internal humidity absolute value (g) measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| <<<ZONE-A>>> | |
| | Indicates the zone in which the setting shown is effective. |
| TR-N1 | |
| | Effective in plain paper mode and, in addition, when copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)** |
| | **Unit: 1.0 µA** |
| TR-N2 | |
| | Effective in plain paper mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)** |
| | **Unit: 1.0 µA** |
| TR-OHP | |
| | Effective in OHP mode. |
| **Settings range** | **–5 ~ +5 (Standard: 0)** |
| | **Unit: 1.0 µA** |

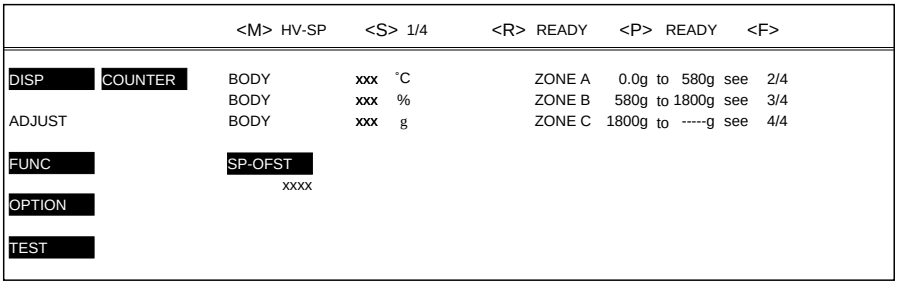
| | |
|---|---|
| TR-# | |
| | Effective during image position correction control. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 1.0 µA** |
| TR-T1 | |
| | Effective in thick paper mode and, in addition, copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 1.0 µA** |
| TR-T2 | |
| | Effective in thick paper mode and, in addition, copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 1.0 µA** |
| TR-UT1 | |
| | Effective in ultra thick paper mode and, in addition, when copying on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 1.0 µA** |
| TR-UT2 | |
| | Effective in ultra thick paper mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 1.0 µA** |
| TR-S1-1 | |
| | Effective in special paper 1 mode and, in addition, when copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 1.0 µA** |
| TR-S1-2 | |
| | Effective in special paper 1 mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 1.0 µA** |
| TR-S2-1 | |
| | Effective in special paper 2 mode and, in addition, when copying on a one-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 1.0 µA** |

| | |
|---|---|
| TR-S2-2 | |
| | Effective in special paper 2 mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 1.0 µA** |
| TR-S3-1 | |
| | Effective in special paper 3 mode and, in addition, when copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 1.0 µA** |
| TR-S3-2 | |
| | In special paper 3 mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 1.0 µA** |

The setting of this item will return to the default value when the PCB is replaced or the RAM is cleared, requiring input once again. Be sure to record any new setting you have made on the service label.


This mode will prove effective when correcting transfer faults under each item in question.

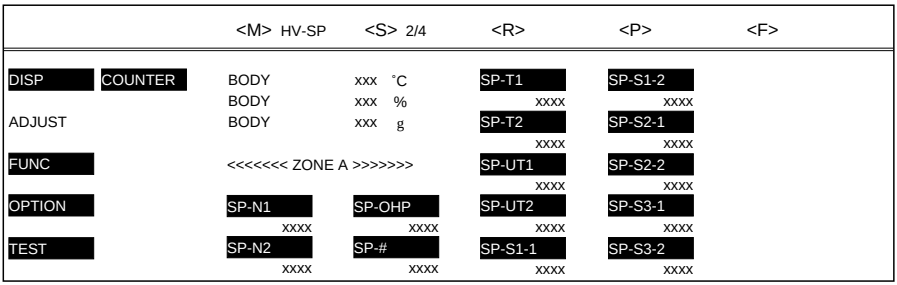
## <HV-SP (separation high-voltage output fine-adjustment by condition)>




F00-300-27

| | |
|---|---|
| BODY °C | |
| | Indicates the machine internal temperature measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| BODY % | |
| | Indicates the machine internal humidity measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| BODY g | |
| | Indicates the machine internal humidity absolute value (g) measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| SP-OFST | |
| | Adjusts the transfer high-voltage output. |
| **Settings range** | **–5 ~ +5 (Standard: 0)** |
| | **Unit: 25 µA** |
| ZONE-A/B/C | |
| | Indicates the machine internal humidity absolute value (g) in the three ranges of A through C. |

Note 1: The setting of this item will return to the default value when the PCB is replaced or the RAM is cleared, requiring input once again. Be sure to record any new setting you have made on the service label.




F00-300-28

| | |
|---|---|
| BODY °C | |
| | Indicates the machine internal temperature measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| BODY % | |
| | Indicates the machine internal humidity measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| BODY g | |
| | Indicates the machine internal humidity absolute value (g) measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| <<<ZONE-A>>> | |
| | Indicates the zone in which the setting shown is effective. |
| SP-N1 | |
| | Effective in plain paper mode and, in addition, when copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| SP-N2 | |
| | Effective in plain paper mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |

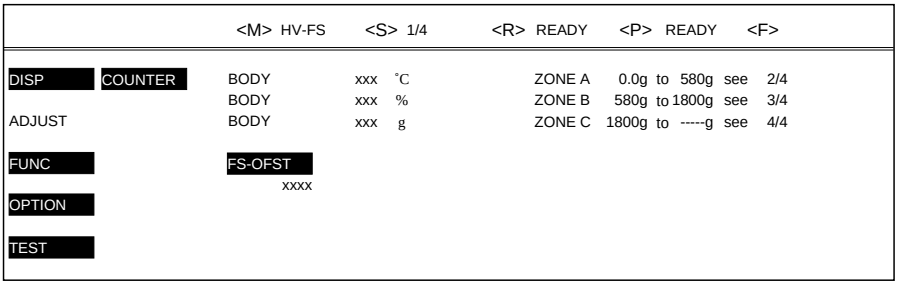
| | |
|---|---|
| SP-OHP | Effective in OHP mode. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| SP-# | Effective during image position correction control. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| SP-T1 | Effective in thick paper mode and, in addition, copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| SP-T2 | Effective in thick paper mode and, in addition, copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| SP-UT1 | Effective in ultra thick paper mode and, in addition, when copying on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| SP-UT2 | Effective in ultra thick paper mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| SP-S1-1 | Effective in special paper 1 mode and, in addition, when copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| SP-S1-2 | Effective in special paper 1 mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |

| | |
|---|---|
| SP-S2-1 | Effective in special paper 2 mode and, in addition, when copying on a one-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| SP-S2-2 | Effective in special paper 2 mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| SP-S3-1 | Effective in special paper 3 mode and, in addition, when copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| SP-S3-2 | In special paper 3 mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |

The setting of this item will return to the default value when the PCB is replaced or the RAM is cleared, requiring input once again. Be sure to record any new setting you have made on the service label.


This mode will prove effective when correcting image distortion, separation faults, or feeding faults under each item in question.

# <HV-FS (fine-adjustment for pre-fixing high-voltage output according to conditions)>

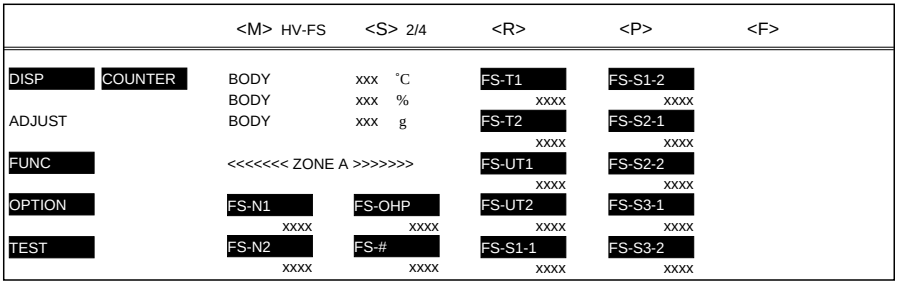



F00-300-29

| | |
|---|---|
| BODY °C | |
| | Indicates the machine internal temperature measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| BODY % | |
| | Indicates the machine internal humidity measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| BODY g | |
| | Indicates the machine internal humidity absolute value (g) measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| FS-OFST *1 | |
| | Adjusts the transfer high-voltage output. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| ZONE-A/B/C | |
| | Indicates the machine internal humidity absolute value (g) in the three ranges of A through C. |
| STMT-MD *1 | |
| | Adjust the high-voltage output for size of STMT |
| **Settings range** | **–1 ~ +9 (Standard: 0)** |


If stray toner occurs for STMT size images before fixing, increase the setting (so that the high-voltage output will increase) to limit the problem. However, keep in mind that too high a setting will cause the paper to stick to the guide before fixing, turning into a jam.

Note 1: The setting of this item will return to the default value when the PCB is replaced or the RAM is cleared, requiring input once again. Be sure to record any new setting you have made on the service label.




F00-300-30

| | |
|---|---|
| BODY °C | |
| | Indicates the machine internal temperature measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| BODY % | |
| | Indicates the machine internal humidity measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| BODY g | |
| | Indicates the machine internal humidity absolute value (g) measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| <<<ZONE-A>>> | |
| | Indicates the zone in which the setting shown is effective. |
| FS-N1 | |
| | Effective in plain paper mode and, in addition, when copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| FS-N2 | |
| | Effective in plain paper mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| FS-OHP | |
| | Effective in OHP mode. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |

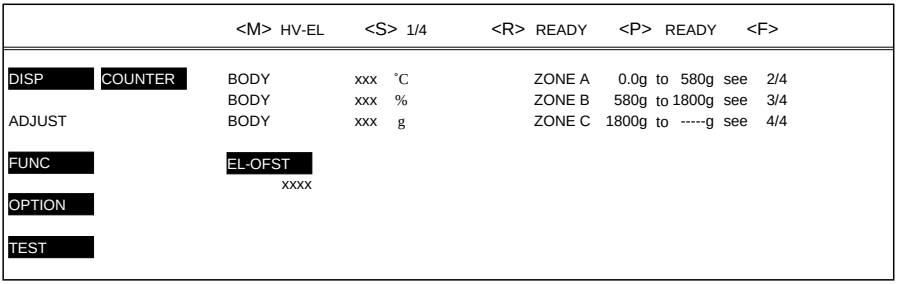
| | |
|---|---|
| FS-# | |
| | Effective during image position correction control. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| FS-T1 | |
| | Effective in thick paper mode and, in addition, copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| FS-T2 | |
| | Effective in thick paper mode and, in addition, copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| FS-UT1 | |
| | Effective in ultra thick paper mode and, in addition, when copying on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| FS-UT2 | |
| | Effective in ultra thick paper mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| FS-S1-1 | |
| | Effective in special paper 1 mode and, in addition, when copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| FS-S1-2 | |
| | Effective in special paper 1 mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |

| | |
|---|---|
| FS-S2-1 | |
| | Effective in special paper 2 mode and, in addition, when copying on a one-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| FS-S2-2 | |
| | Effective in special paper 2 mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| FS-S3-1 | |
| | Effective in special paper 3 mode and, in addition, when copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |
| FS-S3-2 | |
| | In special paper 3 mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +5 (Standard: 0)**<br>**Unit: 25 µA** |

The setting of this item will return to the default value when the PCB is replaced or the RAM is cleared, requiring input once again. Be sure to record any new setting you have made on the service label.


This mode will prove effective when correcting image distortion under each item in question.

## <HV-EL (fine-adjustment for internal static eliminator high-voltage output according to conditions)>




F00-300-31

**BODY °C**

Indicates the machine internal temperature measured by the environment sensor.

Remarks: Same as the reading under 'DISPLAY > ANALOG'

**BODY %**

Indicates the machine internal humidity measured by the environment sensor.

Remarks: Same as the reading under 'DISPLAY > ANALOG'

**BODY g**

Indicates the machine internal humidity absolute value (g) measured by the environment sensor.

Remarks: Same as the reading under 'DISPLAY > ANALOG'

**EL-OFST**

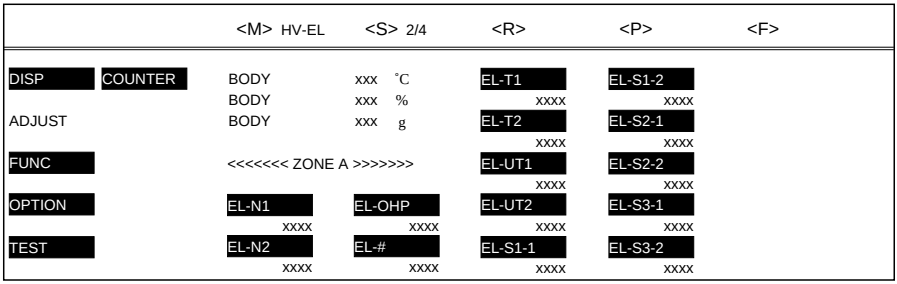
Adjusts the transfer high-voltage output.

**Settings range: –5 ~ +1 (Standard: -2)**
**Unit: 0.5 kV**

**ZONE A/B/C**

Indicates the machine internal humidity absolute value (g) in the three ranges of A through C.

Note 1: The setting of this item will return to the default value when the PCB is replaced or the RAM is cleared, requiring input once again. Be sure to record any new setting you have made on the service label.




F00-300-32

| | |
|---|---|
| BODY °C | |
| | Indicates the machine internal temperature measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| BODY % | |
| | Indicates the machine internal humidity measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| BODY g | |
| | Indicates the machine internal humidity absolute value (g) measured by the environment sensor. |
| Remarks | Same as the reading under 'DISPLAY > ANALOG' |
| <<<ZONE-A>>> | |
| | Indicates the zone in which the setting shown is effective. |
| EL-N1 | |
| | Effective in plain paper mode and, in addition, when copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |
| EL-N2 | |
| | Effective in plain paper mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |
| EL-OHP | |
| | Effective in OHP mode. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |

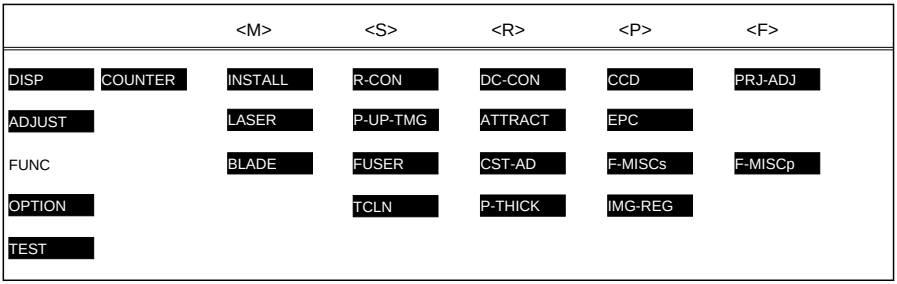
| | |
|---|---|
| EL-# | |
| | Effective during image position correction control. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |
| EL-T1 | |
| | Effective in thick paper mode and, in addition, copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |
| EL-T2 | |
| | Effective in thick paper mode and, in addition, copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |
| EL-UT1 | |
| | Effective in ultra thick paper mode and, in addition, when copying on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |
| EL-UT2 | |
| | Effective in ultra thick paper mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |
| EL-S1-1 | |
| | Effective in special paper 1 mode and, in addition, when copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |
| EL-S1-2 | |
| | Effective in special paper 1 mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |
| EL-S2-1 | |
| | Effective in special paper 2 mode and, in addition, when copying on a one-sided copy. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |

| | |
|---|---|
| EL-S2-2 | |
| | Effective in special paper 2 mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |
| EL-S3-1 | |
| | Effective in special paper 3 mode and, in addition, when copying on a one-sided copy or on the 1st side of a two-sided copy. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |
| EL-S3-2 | |
| | In special paper 3 mode and, in addition, when copying on the 2nd side of a two-sided copy. |
| **Settings range** | **–5 ~ +1 (Standard: -2)**<br>**Unit: 0.5 kV** |

The setting of this item will return to the default value when the PCB is replaced or the RAM is cleared, requiring input once again. Be sure to record any new setting you have made on the service label.


This mode will prove effective when correcting transfer faults or soiling on the back of copies under each item in question.

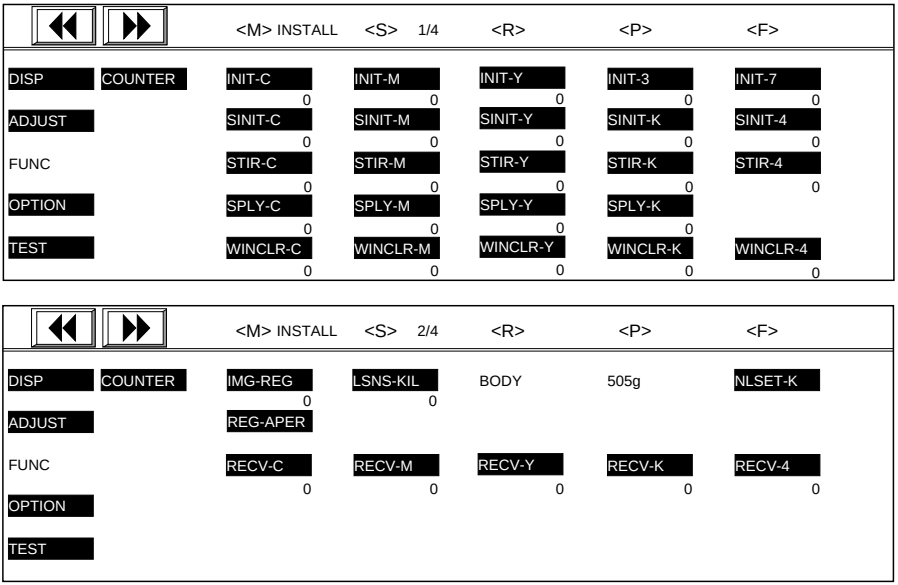
# 4. FUNCTION (function/inspection)




F00-400-01

| | | |
|---|---|---|
| 1 | INSTALL | INSTALL for installation |
| 2 | R-CON | Reader controller PCB-related adjustment |
| 3 | DC-CON | DC controller PCB-related adjustment |
| 4 | CCD | CCD-related adjustment |
| 5 | PRJ-ADJ | Projector-related adjustment |
| 6 | LASER | Laser adjustment |
| 7 | P-UP-TMG | Pick-up timing adjustment |
| 8 | ATTRACT | Retention point adjustment |
| 9 | EPC | Photosensitive drum potential measurement |
| 10 | BLADE | Transfer blade/transfer belt cleaning blade operation |
| 11 | FUSER | Fixing assembly-related adjustment |
| 12 | CST-AD | Cassette paper width adjustment |
| 13 | F-MISCs | Reader-related operation/inspection |
| 14 | F-MISCp | Printer-related operation/inspection |
| 15 | TCLN | Polishing roller/oil removing roller operation |
| 16 | P-THICK | Paper sensor adjustment |
| 17 | IMG-REG | Image position correction control operation/inspection |

# <INSTALL (at time of installation)>

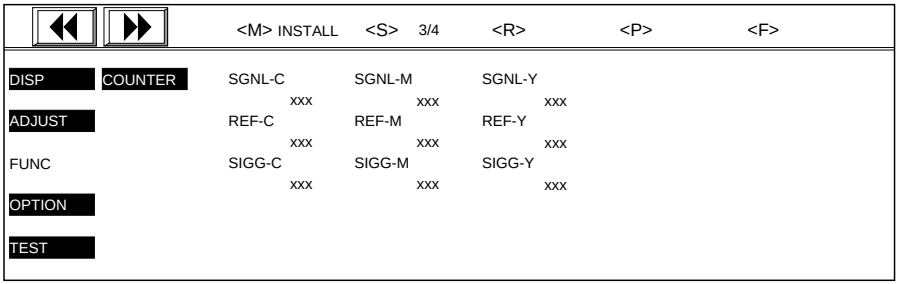



F00-400-02

| | |
|---|---|
| INIT-C/M/Y | Use it to read in the initial value of the toner density signal (SGNL, REF) of the specified color.<br>• The value will be indicated on screen 3/4. Record it to the service label. |
| INIT-3 | Reads the initial value of the toner density signal (SGNL, REF) of three colors (C, M, Y) in sequence.<br>• The value will be indicated on screen 3/4. Record it to the service label. |
| INIT-7 | Reads the initial value of the toner density signal (SGNL, REF) of the ATR and SALT sensors in sequence.<br>• The value will be indicated on screens 3/4 and 4/4. Record it to the service label. |

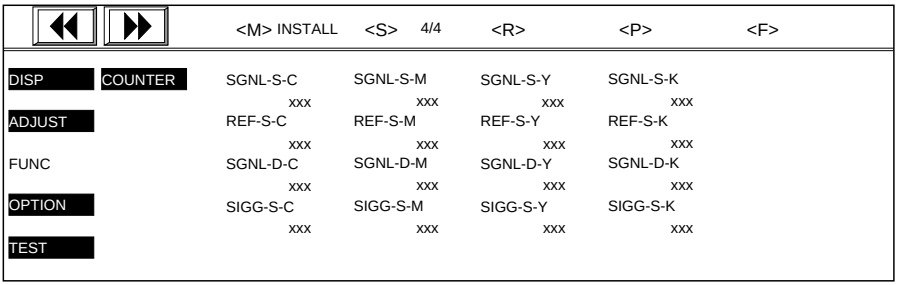
| | |
|---|---|
| SINIT-C/M/Y/K | Reads the initial value of the SALT signal (SGNL, REF) of the specified color.<br>• The value will be indicated on screen 4/4. Record it to the service label. |
| SINIT-4 | Reads the initial value of the SALT signal (SGNL, REF) of four colors (C, M, Y, K) in sequence.<br>• The value will be indicated on screen 4/4. Record it to the service label. |
| STIR-C/M/Y/K | Stirs the starter of the specified color. |
| STIR-4 | Stirs the starters of the four colors. |
| SPLY-C/M/Y/K | Rotates the cylinder of the developing assembly to supply starter of the specified color. |
| IMG-REG | Turns on or off the image position auto correction function.<br>0: OFF<br>1: ON |
| LSNS-KIL | Turns on or off the toner sensor output mode for moving up/down the hopper.<br>0: OFF<br>1: ON |
| Remarks | Initial: 0<br>Used only at time of installation. |

| | |
|---|---|
| NLSET-K | Use it to suppress fogging of Bk, if noted in a low-humidity environment, as follows:<br>1. In the environment in question, check to make sure that the moisture content is 5 g (indicated as '500 g' on the screen) or less.<br>2. Replace the Bk developer. (See the descriptions of 'replacing the developer' in chapter 2. CLC1000 Service Handbook however, do not execute auto gradation correction as yet.)<br>3. Execute 'FUNC>INSTALL (2nd page)>NLSET-K' in service mode. (about 1 min)<br>4. Check to make sure that 'PASCAL' in 'ADJUST>PASCAL' in service mode is '1'.<br>5. Execute auto gradation correction in user mode. |
| REG-APER | Executes auto correction of the read-in coordinates of the image position correction pattern. |
| RECV-C/M/Y/K | Rotates the cylinder of the developing assembly to draw developer out of the developing assembly of the specified color.<br>• Be sure to place the developer collecting container under the developer before opening of the developer supply mouth.<br>⚠ This mode is NOT to be executed at time of installation. |
| RECV-4 | Rotates the cylinders of the developing assemblies to draw the developers out of the developing assemblies for four colors. |
| WINCLR-C/M/Y/K | Use it to read in the initial value of the window soiling correction coefficient of a specific color. |
| WINCLR-4 | Use it to read in the initial value of the window soiling correction coefficient of the four colors. |




F00-400-03

| | |
|---|---|
| SGNL-C/M/Y | |
| | Indicates the value of the toner density signal when INIT is executed as ATR control.<br>Be sure to record the reading on the label. |
| Remarks | For SGNL-C, SGNL-M, and SGNL-Y, normally, 818 ±41. |
| REF-C/M/Y | |
| | Indicates the value of the toner density reference signal when INIT is executed as ATR control.<br>Be sure to record the reading on the label. |
| SIGG-C/M/Y | |
| | Indicates the gain value (gain value used to set SGNL-C/SGNL-M/SGNL-Y to 818) for the toner density signal during ATR control.<br>Be sure to record the reading on the label. |




F00-400-04

SGNL-S-C/M/Y/K

Indicates the value of the SALT signal.
Be sure to record the reading on the label.

REF-S-C/M/Y/K

Indicates the value of the SALT reference signal.
Be sure to record the reading.

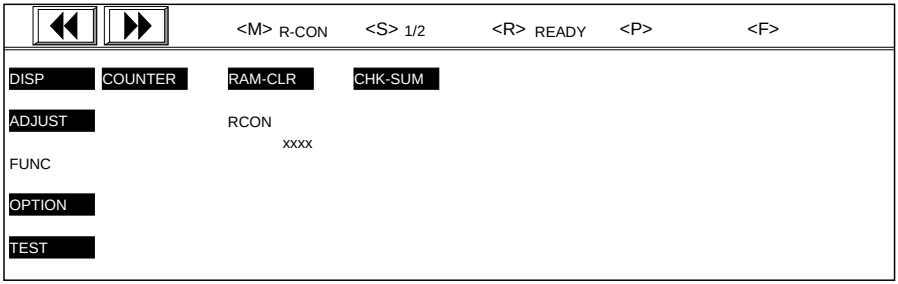
SGNL-D-C/M/Y/K

Indicates the value of the light reflected by the photosensitive drum.
Be sure to record the reading.

SIGG-S-C/M/Y/K

Indicates the value of the gain for the SALT signal.
Be sure to record the reading.

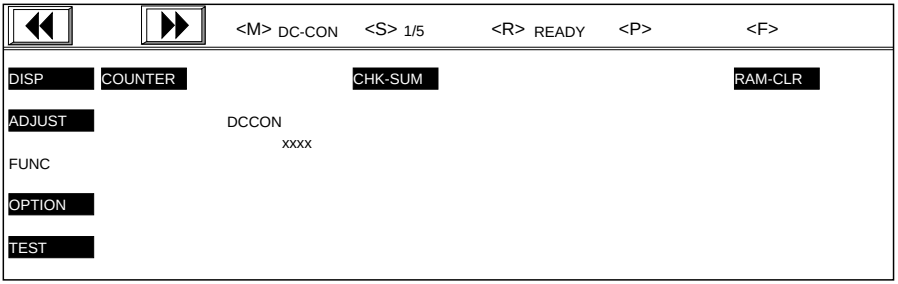
# <R-CON (reader controller PCB-related adjustment)>




F00-400-05

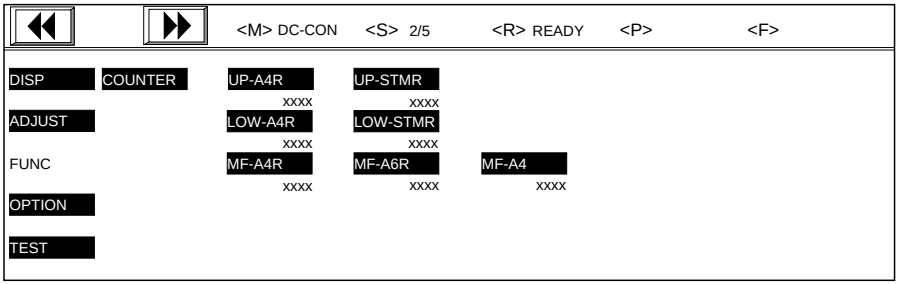
| | |
|---|---|
| RAM-CLR | |
| | Clears the all data of RAM on the reader controller PCB and sets the standard value. |
| Remarks | The power switch will automatically turn off when 'RAM-CLR' is executed. The contents of the RAM are replaced with the initial settings when the power switch is turned on thereafter. |
| CHK-SUM | |
| | Starts a check of the DIMM ROM on the reader controller PCB, i.e., totals the RAM data. |
| Remarks | During operation, '<R>READY->BUSY'. |
| RCON | |
| | Indicates the check sum value of DIMM ROM on the reader controller PCB. |
| Remarks | Indicates only when 'CHK-SUM' is executed. |

# <DC-CON (DC controller PCB-related adjustment)>




F00-400-06

| | |
|---|---|
| RAM-CLR | Clears the all data of RAM on the DC controller PCB and sets the standard value. |
| Remarks | The contents of the RAM will not be replaced with the initial settings until the CPU on the DC controller PCB is powered, requiring you to turn off the power switch and disconnect and then connect the power plug after executing 'RAM-CLR'. |
| CHK-SUM | Starts a check of the ROM on the DC controller PCB, i.e., totals the data in RAM. |
| DCCON | Indicates the check sum value of DIMM ROM on the DC controller PCB. |
| Remarks | Indicates only when 'CHK-SUM' is executed. |

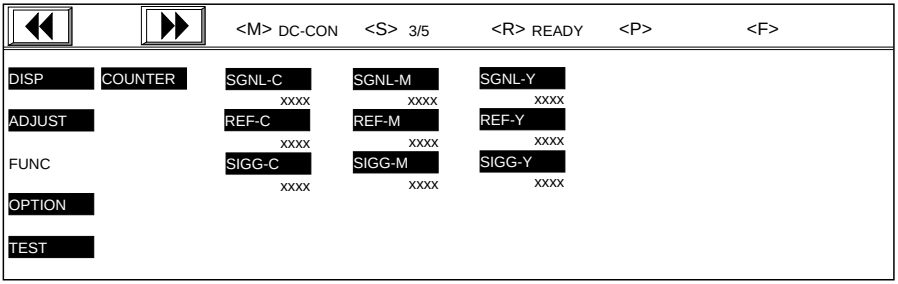



F00-400-07

■ Entering Backup Data

If you have executed 'RAM-CLR' for the DC controller PCB, use this screen to enter the data recorded on the service label.

| | |
|---|---|
| UP-A4R | Enters the adjustment value for paper width detection reference point 1 for cassette 1. |
| UP-STMR | Enters the adjustment value for paper width detection reference point 2 for cassette 1. |
| LOW-A4R | Enters the adjustment value for paper width detection reference point 1 for cassette 2. |
| LOW-STMR | Enters the adjustment value for paper width detection reference point 2 for cassette 2. |
| MF-A4R | Enters the adjustment value for paper width detection reference point 1 for the multifeeder. |
| MF-A6R | Enters the adjustment value for paper width detection reference point 2 for the multifeeder. |
| MF-A4 | Enters the adjustment value for paper width detection reference point 3 for the multifeeder. |

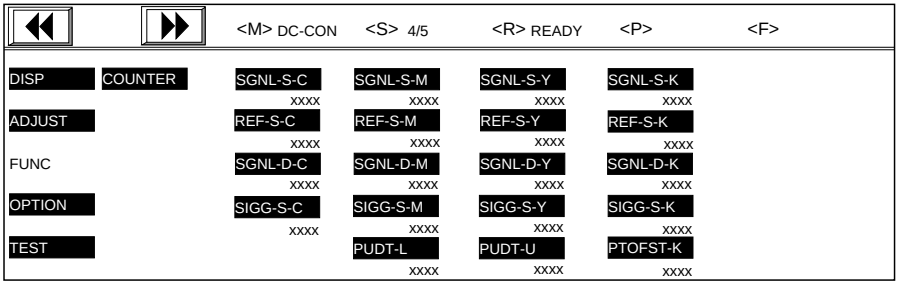



F00-400-08

■ Entering Backup Data

If you have executed 'RAM-CLR' for the DC controller PCB, use this screen to enter the data recorded on the service label.

| | |
|---|---|
| SGNL-C/M/Y | Enters the value of the toner density signal when INIT is executed as ATR control. |
| REF-C/M/Y | Enters the value of the toner density reference signal when INIT is executed as ATR control. |
| SIGG-C/M/Y | Enters the value of the gain for the toner density signal during ATR control (gain used to set SGNL-C, SGNL-M, and SGNL-Y to 818). |

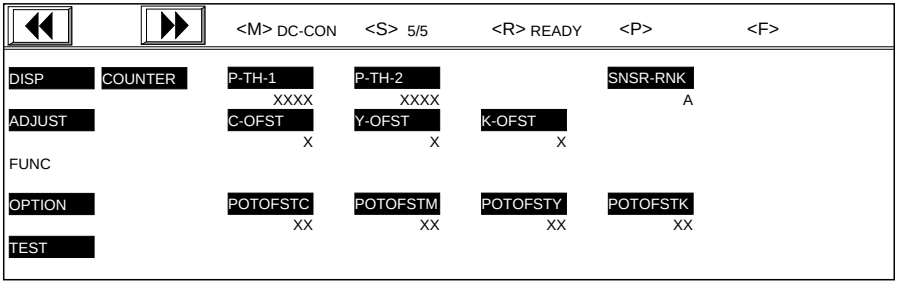



F00-400-09

■ Entering Backup Data

If you have executed 'RAM-CLR' for the DC controller PCB, use this screen to enter the data recorded on the service label.

| | |
|---|---|
| SGNL-S-C/M/Y/K | Use it to enter the value of the SALT signal. |
| REF-S-C/M/Y/K | Use it to enter the value of the SALT reference signal. |
| SGNL-D-C/M/Y/K | Use it to enter the value of the signal representing the intensity of light reflected by the photosensitive drum. |
| SIGG-S-C/M/Y/K | Use it to enter the value of the gain for the SALT signal. |
| PT-OFST-K | Use it to enter the adjustment value of the density pattern for SALT. |
| PUDT-U/L | Use it to enter the adjustment value for pick-up timing adjustment (P-UP-TMG). |



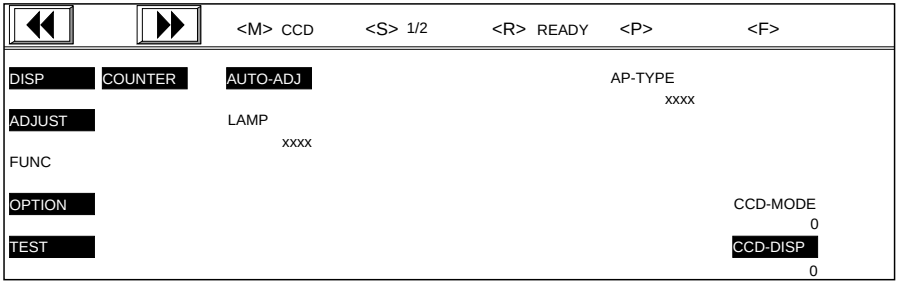

F00-400-10

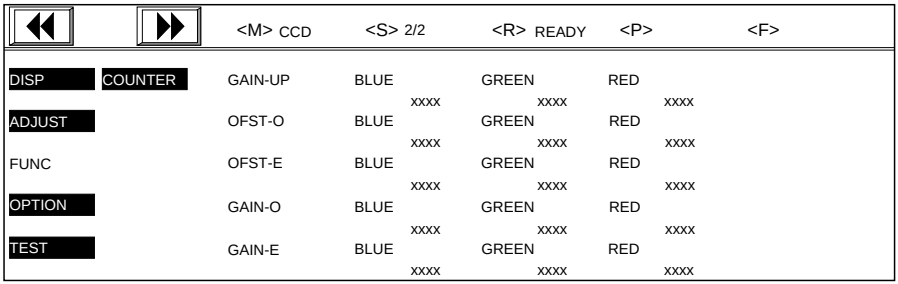
■ Entering Backup Data

If you have executed 'RAM-CLR' for the DC controller PCB, use this screen to enter the data recorded on the service label.

| | |
|---|---|
| P-TH-1/2 | Enters the output characteristics of the paper thickness sensor set at time of shipment from the factory. |
| SNSR-RNK | Enters the characteristics of the paper thickness sensor to be installed newly. |
| Remarks | The values A through E change by toggle operation. |
| C/Y/K-OFST | Use it to enter the offset value for the image position correction pattern. |
| | ⚠ Do not enter any values other than those on the service data sheet. |
| POTOFSTC/M/Y/K | Use it to enter the offset value for the potential sensor. |

# <CCD (CCD-related adjustment)>

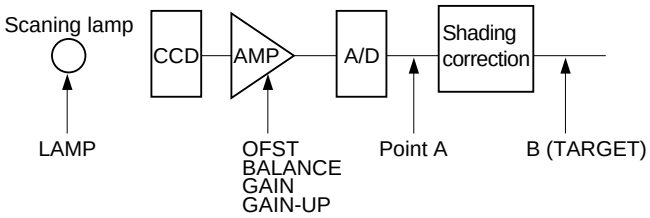



F00-400-11

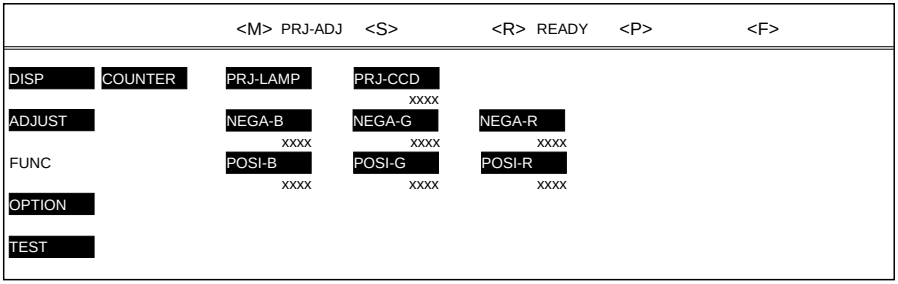
| | |
|---|---|
| AUTO-ADJ | Use it to specify the start of auto adjustment.The bar code data recorded on the standard white plate is read, and offset adjustment, intensity adjustment for the scanning lamp, and gain adjustment are executed in sequence.<br>The display changes as follows: <R>RADY → Bar code → OeAdj → Offdj → LampAdj → GainAdj → OeAdj → InitBAdj → Gz-bar. |
| Remarks | Adjustments are made so that the value of point A is identical to the setting obtained from the bar code data recorded on the standard white plate. |
| LAMP | Use it to indicate the level adjustment value of the scanning lamp. |
| CCD-MODE | Use it to indicate whether the mode selected in user mode is normal mode or precious metal mode.<br>0: normal mode<br>1: precious metal mode |

| | |
|---|---|
| CCD-DISP | Use it to switch the display data for the following in service mode: 'FUNC>CCD'<br>0: indicate display in normal mode (default)<br>1: indicate data in precious metal mode |
| TARGET | Use it to display the shading adjustment correction value (target value of point B).<br>BLUE Use it to indicate the data of BLUE.<br>GREEN Use it to indicate the data of GREEN.<br>RED Use it to indicate the data of RED. |
| GAIN-UP<br><br>Remarks | Use it to indicate the setting of the gain-up mode (precious metal mode) for the analog processor PCB<br>0: normal mode<br>255: precious metal mode |
| OFFST | Indicates the value for offset level adjustment of the odd bits of the CCD.<br>BLUE Indicates the data for blue of the offset level.<br>GREEN Indicates the data for green of the offset level.<br>RED Indicates the data for red of the offset level. |
| BALANCE | Indicates the value for balance level adjustment of the even and odd bits of the CCD.<br>BLUE Indicates the data for blue of the balance level.<br>GREEN Indicates the data for green of the balance level.<br>RED Indicates the data for red of the balance level. |
| GAIN | Indicates the value for gain level adjustment of the CCD.<br>BLUE Indicates the data for blue of the gain level.<br>GREEN Indicates the data for green of the gain level.<br>RED Indicates the data for red of the gain level. |




F00-400-12

# <PRJ-ADJ (projector adjustment)>




F00-400-13

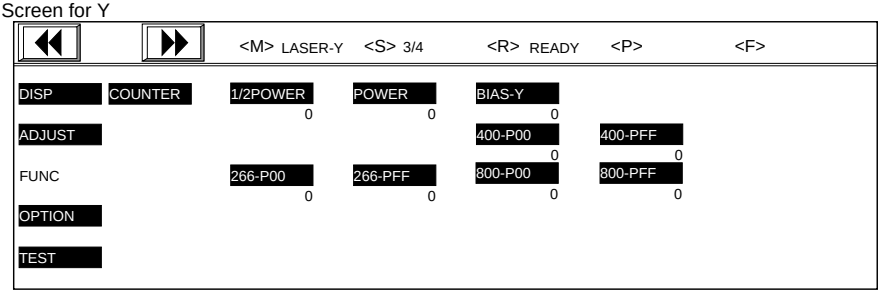
| | |
|---|---|
| PRJ-LAMP | Keeps the lamp of the film projector ON for 1 min. (A press on the PRJ-LAMP key turns it off.) |
| PRJ-CCD | Adjusts the gain for the CCD and reads the appropriate data for installation work. |
| NEGA-B [*1] NEGA-G NEGA-R | Adjusts the target value for shading when making copies of negative film using the film projector.<br>• A higher value will make the images darker.<br>B→Y<br>G→M<br>R→C |
| **Settings range** | **–100~+100** |

| | |
|---|---|
| POSI-B [*1] POSI-G POSI-R | |
| | Adjusts the target value for shading correction when making copies of positive film using the film projector.<br>• A lower value will make the images darker.<br>B→Y<br>G→M<br>R→C |
| **Settings range** | **–100~+100** |

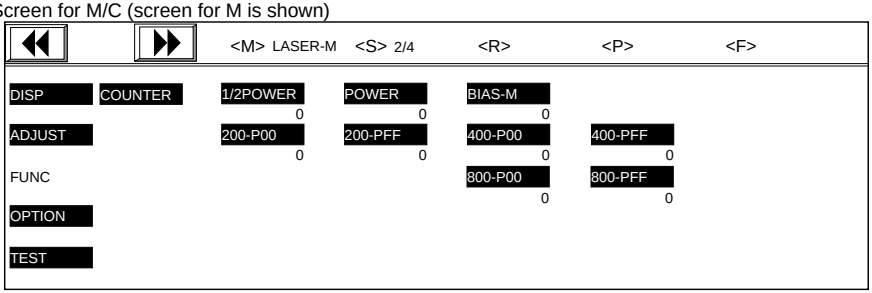
Note 1: You must enter the appropriate value whenever you have replaced the reader controller PCB or initialized a RAM; record any new values on the service label for this purpose.

# <LASER (laser adjustment)>

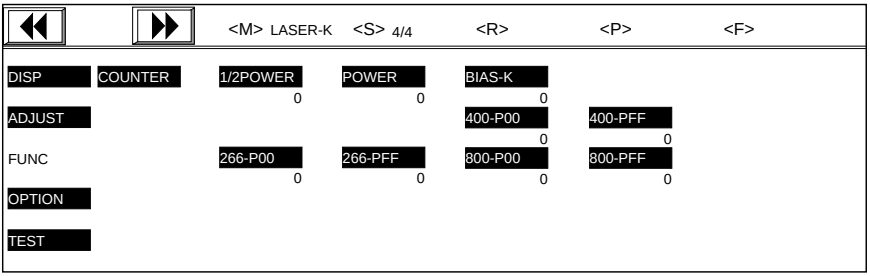
Screen for Y




Screen for M/C (screen for M is shown)



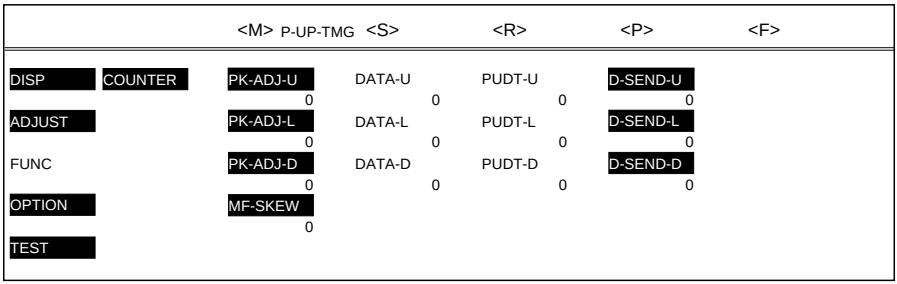

Screen for Bk




F00-400-14

| | |
|---|---|
| 1/2POWER | |
| | Turns ON the laser output for laser power minimum value adjustment. |
| Remarks | A press on the Stop key will turn off the laser output. |
| POWER | |
| | Turns ON the laser output for laser power maximum value adjustment. |
| Remarks | A press on the Stop key will turn off the laser output. |
| BIAS-(C, M, Y, K) | |
| | Turns ON the laser output for laser power bias value adjustment. |
| Remarks | A press on the Stop key will turn off the laser output. |
| 400-P00-(C, M, Y, K)<br>800-P00-(C, M, Y, K) | |
| | Turns ON the laser output corresponding to V00 to check V00 in text mode. |
| Remarks | A press on the Stop key will turn off the laser output. |
| 200-P00-(M, C)<br>266-P00-(Y, K) | |
| | Turns ON the laser output corresponding to V00 to check V00 in photo mode. |
| Remarks | A press on the Stop key will turn off the laser output. |
| 400-PFF-(C, M, Y, K)<br>800-PFF-(C, M, Y, K) | |
| | Turns ON the laser output corresponding to V00 to check VFF in text mode. |
| Remarks | A press on the Stop key will turn off the laser output. |
| 200-PFF-(M, C)<br>266-PFF-(Y, K) | |
| | Turns ON the laser output corresponding to V00 to check VFF in photo mode. |
| Remarks | A press on the Stop key will turn off the laser output. |

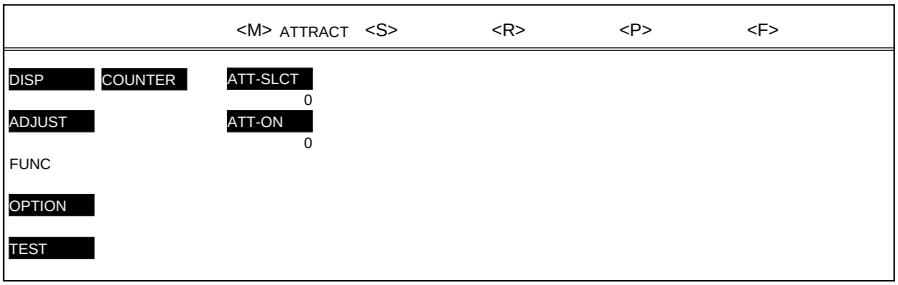
# <P-UP-TMG (pick-up timing adjustment)>




F00-400-15

| | |
|---|---|
| PK-ADJ-U/L | Use it to execute automatic pick-up from the upper/lower cassette, thereby obtaining the pick-up timing adjustment value.<br>Be sure to place A4 or LTR paper in the upper and lower cassettes before executing the operation. |
| DATA-U/L/D | Use it to indicate the data obtained by 'PK-ADJ-U/L/D'. |
| PUDT-U/L/D | Use it to indicate the maximum value of the data obtained by 'PK-AJD-U/L/D'. |
| D-SEND-U/L/D | Use it to write the obtained data into memory. |
| MF-SKEW<br><br>**Settings** | Use it to execute skew removing operation twice when pick-up is from the multifeeder tray (effective only when the paper type is set to 'thickest').<br>0: Remove skew by registration roller<br>1: Remove skew by registration roller and feeding roller<br>**Use it if thick paper tends to move askew.** |
| PK-ADJ-D<br><br>**Settings** | Use it to start automatic pick-up from the paper deck and to obtain the pick-up timing adjustment value.<br>This mode is an adjustment mode for LTR paper. As such, be sure to deposit LTR paper in the paper deck in advance.<br>**Use the mode if a discrepancy is noted along the leading edges of LTR copies.** |

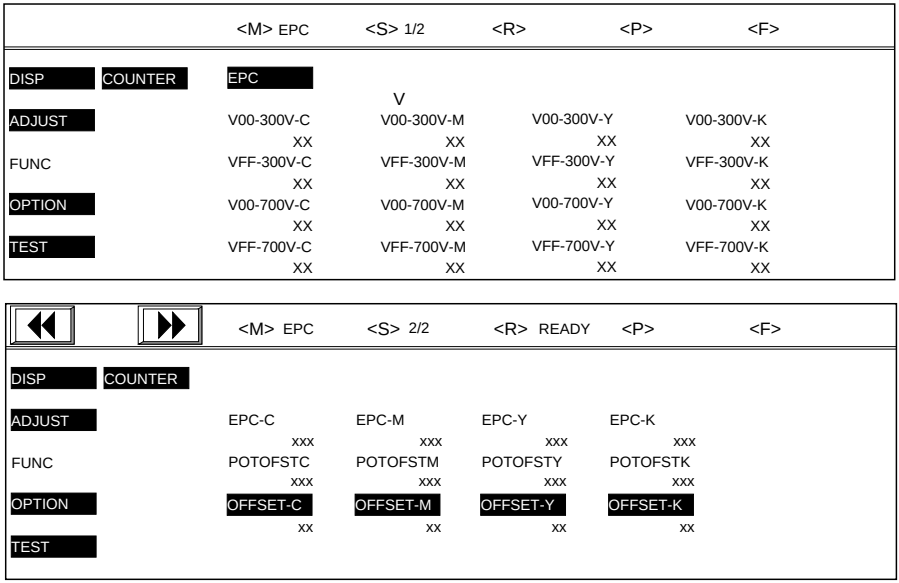
## <ATTRACT (retention position adjustment)>




F00-400-16

| | |
|---|---|
| ATT-SLCT | Selects the source of paper for checking the point of retention.<br>Source of paper<br>1 Upper cassette<br>2 Lower cassette<br>3 Paper deck<br>4 Multifeeder<br>5 Duplexing pick-up assembly<br>Use A4/LTR paper for the mode. |
| ATT-ON | Starts operations according to the settings under ATT-SLCT, and stops automatically with paper retained on the transfer belt.<br>Use A4/LTR paper for the mode. |

# <EPC (photosensitive drum potential measurement)>

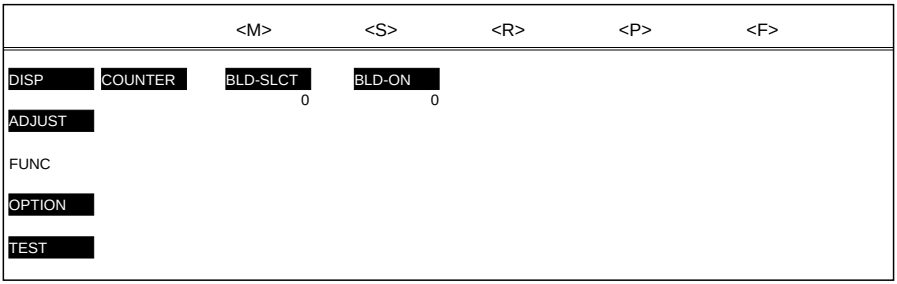



F00-400-17

| | |
|---|---|
| EPC | |
| | Executes potential measurement on the photosensitive drum. |
| Remarks | The potential measurement data is used for the next copying run. |
| POTOFSTC/M/Y/K | |
| | Indicates the offset value for the potential sensor. |
| OFFSET | |
| | Executes offset adjustment on the potential measurement circuit of the photosensitive drum. |
| Remarks | The potential measurement data is used for the next copying run. |
| V00-300V | |
| | Indicates the photosensitive drum surface potential when the grid bias potential of the primary charging assembly is –300 V and the laser output is V00. |
| Remarks | Approximate value: 250~350 |

| | |
|---|---|
| V00-700V | |
| | Indicates the photosensitive drum surface potential when the grid bias potential of the primary charging assembly is –700 V and the laser output is V00. |
| Remarks | Approximate value: 650~750 |
| VFF-300V | |
| | Indicates the photosensitive drum surface potential when the grid bias potential of the primary charging assembly is –300 V and the laser output is VFF. |
| Remarks | Approximate value: 10~150 |
| VFF-700V | |
| | Indicates the photosensitive drum surface potential when the grid bias potential of the primary charging assembly is –700 V and the laser output is VFF. |
| Remarks | Approximate value: 50~250 |

## <BLADE (transfer blade/transfer belt cleaning blade operation)>




F00-400-18

**BLD-SLCT**

Use it to determine the combination of ways to operate the transfer blade and the transfer belt cleaning blade.

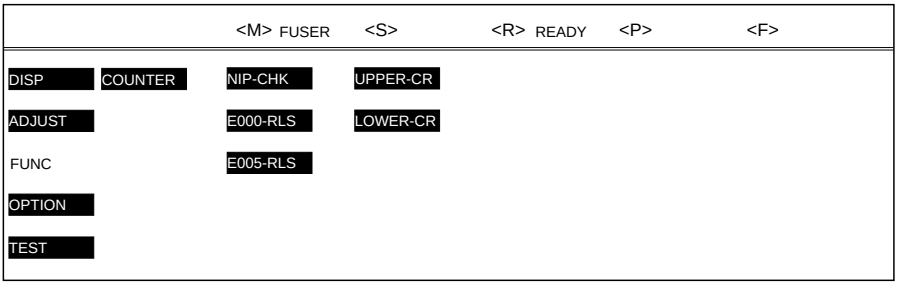
• Press 'BLD-SLCT', enter a number on the keypad, and press the 'OK' key.

| | Transfer blade | Transfer cleaning blade |
|---|---|---|
| 1 | In contact | Off contact |
| 2 | Off contact | In contact |
| 3 | In contact | In contact |

**BLD-ON**

Starts operation according to the settings under BLD-SLCT. In 10 sec, the blade will take off-contact position.

## <FUSER (fixing assembly-related adjustment)>

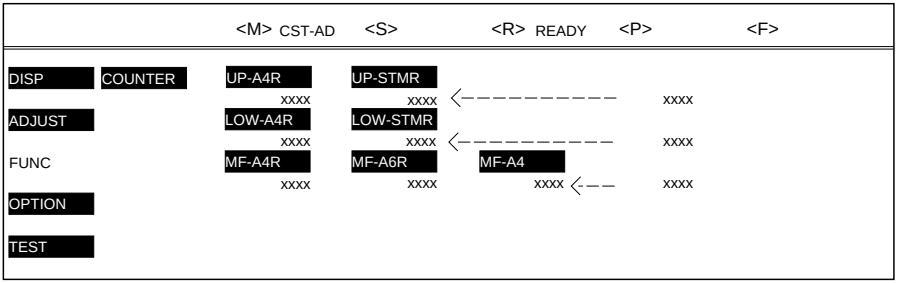



F00-400-19

| | |
|---|---|
| NIP-CHK | |
| | Measures the fixing assembly nip.<br>Paper is stopped once at the point of fixing and then delivered.<br>Sine the operation uses cassette 1 as the source of paper, 'NO PAPER' will be indicated over 'P' if no paper exists in cassette 1. The notation changes to 'READY' when paper is supplied. |
| Remarks | Press NIP-CHK to execute.<br>The notation over 'P' changes from READY to SERVICE and then to READY to end the execution. |
| E000-RLS | |
| | Clears E000.<br>Be sure to turn off and then on the power switch after execution. |
| Remarks | The notation over 'P' changes from ERROR to BUSY and then to ERROR.<br>Turn off and on the power switch to clear. |
| E005-RLS | |
| | Clears E005.<br>Be sure to turn off and then on the power switch after execution. |
| Remarks | The notation over 'P' changes from ERROR to BUSY and then to ERROR.<br>Turn off and on the power switch to clear. |
| UPPER-CR | |
| | Use it to adjust the fixing temperature value (upper roller).<br>If you have replaced the fixing assembly, enter the value recorded on the label attached to the fixing assembly.<br>Thereafter, be sure to turn off and then on the power switch. |

| | |
|---|---|
| LOWER-CR | |
| | Use it to adjust the fixing temperature value (lower roller).<br>If you have replaced the fixing assembly, enter the value recorded on the label attached to the fixing assembly.<br>Thereafter, be sure to turn off and then on the power switch. |
| **Settings range** | **–3 ~ +3 (At time of shipment: 0)** |
| |  Do not enter a value other than the one indicated on the label. |

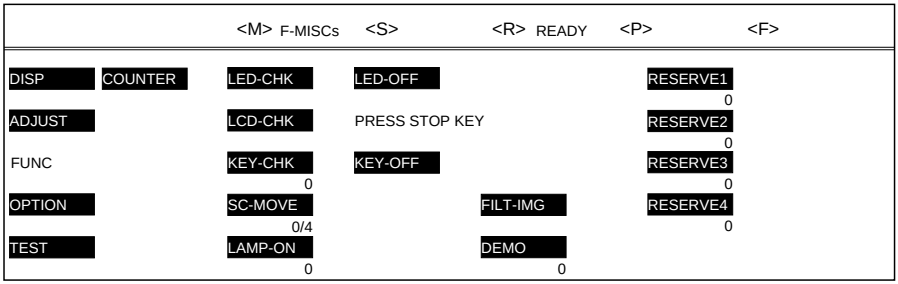
# <CST-AD (cassette paper width adjustment)>




F00-400-20

| | |
|---|---|
| UP-A4R | Executes automatic adjustment of paper width detection reference point 1 for cassette 1. |
| UP-STMR | Executes automatic adjustment of paper width detection reference point 2 for cassette 1. |
| LOW-A4R | Executes automatic adjustment of paper width detection reference point 1 for cassette 2. |
| LOW-STMR | Executes automatic adjustment of paper width detection reference point 2 for cassette 2. |
| MF-A4R | Executes automatic adjustment of paper width detection reference point 1 for the multifeeder. |
| MF-A6R | Executes automatic adjustment of paper width detection reference point 2 for the multifeeder. |
| MF-A4 | Executes automatic adjustment of paper width detection reference point 3 for the multifeeder. |

# <F-MISCs (reader-related operation/inspection)>




F00-400-21

| | |
|---|---|
| LED-CHK | Starts an activation check on the LED. |
| LED-OFF | Starts an activation check on the LED. |
| LCD-CHK | Starts an activation check on the LCD. (The notation becomes highlighted.) |
| Remarks | A press on the Stop key ends the check. |
| KEY-CHK | Starts an input check on the key. (See the detail for KEY-CHK.) |
| Remarks | Indicates the number/name of the input key in question. |

■ Details of KEY-CHK

| Key | Key name |
|---|---|
| 0 to 9 | 0~9 |
| Reset | RESET |
| Stop | STOP |
| Two-Sided | A |
| One-Touch Adjust | B |
| Color Adjust | C |
| Extended Zoom | D |
| Frame Erase | E |
| Color Create | F |
| Page Separate | G |
| Shift | H |
| Image Create | I |
| Area Select | K |
| Synthesize | L |

| | |
|---|---|
| User Mode | M |
| Cover | N |
| Transparency Insert | O |
| Start | START |
| Pre-Heat | STAND BY |
| Interrupt | INTERRUPT |
| Clear | CLEAR |
| ID | ID |
| Call | CALL |

## KEY-OFF

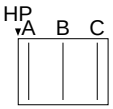
Ends the input check on the key.

## SC-MOVE

Starts a check on the scanner.
Each press on SC-MOVED changes the notation and the operation as follows:

| Notation | Operation |
|---|---|
| 0/4 | HP |
| 1/4 | A→B |
| 2/4 | B→C |
| 3/4 | C→HP |

T00-400-05




F00-400-22

## LAMP-ON

Starts a check on the scanning lamp.
Each press on LAMP-ON changes the notation and the operation as follows:

| Notation | Operation |
|---|---|
| 0→1 | ON when intensity data 80 (light) |
| 1→0 | ON when Intensity data 00 (dark) |

Remarks: Each press on the key switches between ‘00’ and ‘80’ for the intensity data.
• ‘00’ represents OFF.

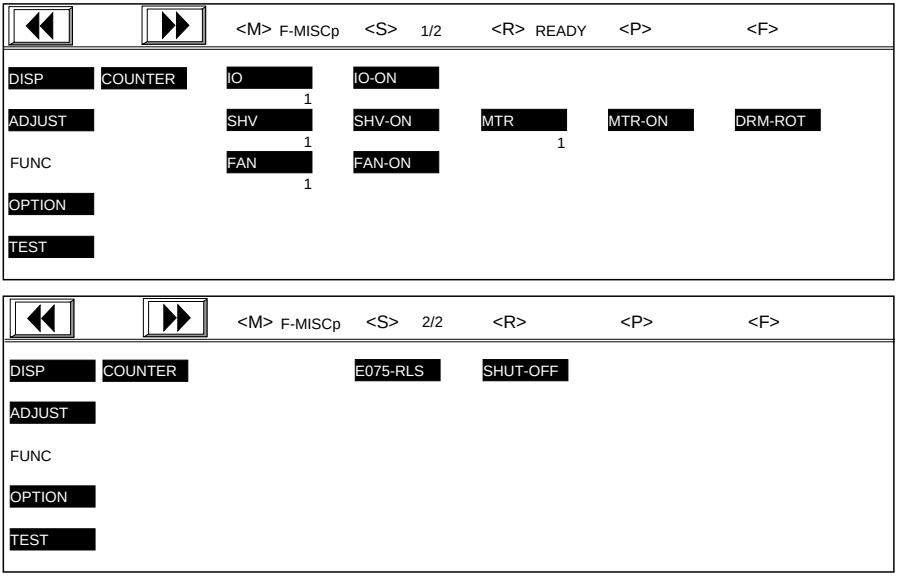
## DEMO

Reserved.

## RESERVE1/2/3/4

Reserved.

# <F-MISCp (printer-related operation/inspection)>




F00-400-23

| | |
|---|---|
| IO | Use it to select the type of IO (input/output) check.<br>See the details section. |
| IO-ON | Use it to start an IO (input/output) check. |
| SHV | Use it to select the type of check on the high-voltage output.<br>Enter a number on the keypad, and press the OK key.<br>See the details section in SHV. |
| SHV-ON | Use it to start a check on the high-voltage output.<br>Press the Stop key to stop operation. |
| MTR | Use it to select the type of check on the motor.<br>Enter a number on the keypad, and press the OK key.<br>See the details section in MTR. |

| | |
|---|---|
| MRT-ON | Use it to start a check on the motor.<br>Press the Stop key to stop the operation. |
| FAN<br><br>Remarks | Use it to select the type of check on the fan.<br>Enter a number on the keypad, and press the OK key.<br>See the details section in FAN. |
| FAN-ON | Use it to start a check on the fan.<br>Press the Stop key to stop the operation. |
| DRM-ROT | Use it to cause the drum to rotate idly for 10 min.<br>Press the Stop key to stop.<br>⚠ Be sure to release the transfer belt before execution. |
| E075/RLS | Use it to clear 'E075'.<br>After execution, check to make sure that the transfer belt is at the correct position; then, turn off and then on the power switch. |
| SHUT-OFF | Use it to check the operation of the auto power-off mechanism. |

■ Details of IO

| No. | Parts name | No. | Parts name |
|---|---|---|---|
| 1 | not used | 26 | Multifeeder pickup clutch (CL6) |
| 2 | Transfer belt lifter clutch (CL17) | 27 | Multifeeder feeding clutch (CL7) |
| 3 | Polishing roller solenoid (SL18) | 28 | not used |
| 4 | Y transfer blade solenoid (SL7Y) | 29 | Paper deck pickup clutch (CL8002) |
| 5 | M transfer blade solenoid (SL7M) | 30 | Duplex pickup roller clutch (CL10) |
| 6 | C transfer blade solenoid (SL7C) | 31 | Registration roller releasing solenoid (SL16) |
| 7 | K transfer blade solenoid (SL7Bk) | | |
| 8 | C toner supply clutch (CL1) | 32 | not used |
| 9 | M toner supply clutch (CL2) | 33 | not used |
| 10 | Y toner supply clutch (CL3) | 34 | not used |
| 11 | Bk toner (upper) supply clutch (CL4) | 35 | not used |
| 12 | Bk toner (lower) supply clutch (CL5) | 36 | not used |
| 13 | Fixing web take up solenoid (SL3) | 37 | Reversing roller drive clutch (CL16) |
| 14 | Fixing web releasing solenoid (SL4) | 38 | Delivery paper deflecting solenoid (SL14) |
| 15 | Fixing oil pump drive solenoid (SL2) | | |
| 16 | Separation claw releasing solenoid (SL15) | 39 | Duplexing unit paper deflecting plate solenoid (L; SL11L) |
| 17 | SALT sensor shutter (SL17Y, M, C, Bk) | 40 | uplexing unit paper deflecting plate solenoid (M; SL11M) |
| 18 | Cassette 1 pickup roller releasing solenoid (SL9) | 41 | Duplexing unit paper deflecting plate solenoid (S; SL11S) |
| 19 | Cassette 2 pickup roller releasing solenoid (SL10) | 42 | not used |
| 20 | Multifeeder pickup roller releasing solenoid (SL5) | 43 | not used |
| 21 | Paper deck pickup roller releasing solenoid (SL8001) | 44 | not used |
| 22 | not used | 45 | Pre-exposure lamp |
| 23 | Paper feed roller solenoid (SL13) | 46 | Fixing motor (138 mm/s) |
| 24 | Cassette 1 pickup clutch (CL12) | 47 | ATR LED |
| 25 | Cassette 2 pickup clutch (CL14) | 48 | SALT-Y LED |
| | | 49 | SALT-M LED |
| | | 50 | SALT-C LED |
| | | 51 | SALT-K LED |

■ Details of SHV

| No. | High-voltage output | Control |
|---|---|---|
| 1 | Primary C charging assembly, grid C output, auxiliary high-voltage Y (–350 µA), developing bias CDC (–370 V) output | Transfer lifter DOWN, photosensitive drum motor ON, pre-exposure ON, primary C output, grid C output (500 V), auxiliary high-voltage output C (–350 µA), developing bias CDC (–370 V) output IB<br>(Waits for a stop command, or 60 sec.)<br>Primary C output, grid C output (500 V), auxiliary high-voltage output C (–350 µA), developing bias CDC (–370 V) output OFF, pre-exposure OFF, photosensitive drum motor OFF |
| 2 | Primary M charging assembly, grid M output, auxiliary high-voltage Y (–350 µA), developing bias MDC (–370 V) output | Transfer lifter DOWN, photosensitive drum motor ON, pre-exposure ON, primary M output, grid M output (500 V), auxiliary high-voltage output M (–350 µA), developing bias MDC (–370 V) output IB<br>(Waits for a stop command, or 60 sec.)<br>Primary M output, grid M output (500 V), auxiliary high-voltage output M (–350 µA), developing bias MDC (–370 V) output OFF, pre-exposure OFF, photosensitive drum motor OFF |
| 3 | Primary Y charging assembly, grid Y output, auxiliary high-voltage Y (–350 µA), developing bias YDC (–370 V) output | Transfer lifter DOWN, photosensitive drum motor ON, pre-exposure ON, primary Y output, grid Y output (500 V), auxiliary high-voltage output Y (–350 µA), developing bias YDC (–370 V) output IB<br>(Waits for a stop command, or 60 sec.)<br>Primary Y output, grid Y output (500 V), auxiliary high-voltage output Y (–350 µA), developing bias YDC (–370 V) output OFF, pre-exposure OFF, photosensitive drum motor OFF |
| 4 | Primary K charging assembly, grid K output, auxiliary high-voltage Y (–350 µA), developing bias KDC (–370 V) output | Transfer lifter DOWN, photosensitive drum motor ON, pre-exposure ON, primary K output, grid K output (500 V), auxiliary high-voltage output K (–350 µA), developing bias KDC (–370 V) output IB<br>(Waits for a stop command, or 60 sec.)<br>Primary K output, grid K output (500 V), auxiliary high-voltage output K (–350 µA), developing bias KDC (–370 V) output OFF, pre-exposure OFF, photosensitive drum motor OFF |

| No. | High-voltage output | Control |
|---|---|---|
| 5 | Primary Y/M/C/K primary charging assembly, C/M/Y/K grid output, C/M/Y/K transfer high-voltage, developing bias C/M/Y/K-DC (–370 V) output, internal static eliminator assembly, separation charging assembly output | Transfer lifter UP, photosensitive drum motor ON, pre-exposure ON, belt motor ON, transfer blade ON<br>C/M/Y/K primary output, grid output (500 V), developing bias DC (-370 V) output, internal static eliminator assembly output, separation charging output, transfer charging output ON<br>(Waits for a stop command while the transfer belt makes 10 rotations.)<br>Transfer charging output, internal static eliminator assembly output, separation charging output OFF, transfer blade OFF, post rotation sequence |
| 6 | Developing bias C-AC/DC output, anti-stray toner high-voltage output | Developing bias C-AC/DC output, anti-stray toner high-voltage output ON<br>(Waits for a stop command, or 60 sec.)<br>Developing bias C-AC/DC output, anti-stray toner high-voltage output OFF |
| 7 | Developing bias M-AC/DC output, anti-stray toner high-voltage output | Developing bias M-AC/DC output, anti-stray toner high-voltage output ON<br>(Waits for a stop command, or 60 sec.)<br>Developing bias M-AC/DC output, anti-stray toner high-voltage output OFF |
| 8 | Developing bias Y-AC/DC output, anti-stray toner high-voltage output | Developing bias Y-AC/DC output, anti-stray toner high-voltage output ON<br>(Waits for a stop command, or 60 sec.)<br>Developing bias Y-AC/DC output, anti-stray toner high-voltage output OFF |
| 9 | Developing bias K-AC/DC output, anti-stray toner high-voltage output | Developing bias K-AC/DC output, anti-stray toner high-voltage output ON<br>(Waits for a stop command, or 60 sec.)<br>Developing bias K-AC/DC output, anti-stray toner high-voltage output OFF |

■ Details of MTR

| No. | Motor | Control |
|---|---|---|
| 1 | M10 (Multifeeder pickup motor) *1 | Operates for 10 sec, stops for 3 sec, and then operates for 10 sec and stops. |
| 2 | M21 (photosensitive drum motor) *1 | Operates for 10 sec, stops for 3 sec, and then operates for 10 sec and stops. |
| 3 | M4 (laser scanner motor) *1 | Operates for 10 sec, stops for 3 sec, and then operates for 10 sec and stops. |
| 4 | M20 (waste toner feed motor) *1 | Operates for 10 sec, stops for 3 sec, and then operates for 10 sec and stops. |
| 5 | M18C, M18M, M18Y, M18Bk (C/M/Y/K developing motor) *1 | Operates for 10 sec, stops for 3 sec, and then operates for 10 sec and stops. |
| 6 | M9 (fixing motor) *1 | Rotates for 10 sec at standard speed (138 mm/sec) for plain paper (64 to 104 g), for 10 sec at standard speed (90 mm/sec) for thick paper (157 g), for 10 sec at standard speed (68 mm/sec) for ultra thick paper (209 g), for 10 sec at gloss speed (45 mm/sec) for ultra thick paper (209 g), and stops for 3 sec. |
| 7 | M14 (transfer belt motor) *1 | Operates for an equivalent of 2 rotations of the belt and stops for 3 sec; then, operates for an equivalent of 2 rotations, and stops. |
| 8 | M11 (pre-fixing feed motor) *1 | Rotates for 10 sec at standard speed (138 mm/sec) for plain paper (64 to 104 g), for 10 sec at standard speed (90 mm/sec) for thick paper (157 g), for 10 sec at standard speed (68 mm/sec) for ultra thick paper (209 g), for 10 sec at gloss speed (45 mm/sec) for ultra thick paper (209 g), and stops for 3 sec. |
| 9 | Buffer pass unit motor *1 | Rotates for 10 sec at standard speed (138 mm/sec) for plain paper (64 to 104 g), for 10 sec at standard speed (90 mm/sec) for thick paper (157 g), for 10 sec at standard speed (68 mm/sec) for ultra thick paper (209 g), for 10 sec at gloss speed (45 mm/sec) for ultra thick paper (209 g), and stops for 3 sec. |
| 10 | M19 (duplex feed motor) *1 | Operates for 10 sec, stops for 3 sec, and then operates for 10 sec and stops. |
| 11 | M15 (polishing/oil removing motor) *1 | Rotates CCW/CW for 10 sec, stops for 3 sec, rotates CCW for 10, and then stops. |
| 12 | M24Y, M24M, M24C, M24Bk (primary charging wire cleaner motor) | Cleans by a single back-and-forth trip. |
| 13 | Fixing web motor | Operates for 5 sec and then stops. |

Note 1: Its operation stops in response to a press on the Stop key.

| No. | Motor | Control |
|---|---|---|
| 14 | M12 (Transfer belt cleaning motor) | Operates for 1 sec and then stops. |
| 15 | M2 (mirror slant correction motor for Y) | Rotates CW for a single full turn, rotates CCW for a single turn, and then stops. |
| 16 | M3 (mirror ratio correction motor for Y) | Rotates CW for a single full turn, rotates CCW for a single turn, and then stops. |
| 17 | M5 (mirror slant correction motor for C) | Rotates CW for a single full turn, rotates CCW for a single turn, and then stops. |
| 18 | M6 (mirror ratio correction motor for C) | Rotates CW for a single full turn, rotates CCW for a single turn, and then stops. |
| 19 | M7 (mirror slant correction motor for Bk) | Rotates CW for a single full turn, rotates CCW for a single turn, and then stops. |
| 20 | M8 (mirror ratio correction motor for Bk) | Rotates CW for a single full turn, rotates CCW for a single turn, and then stops. |
| 21 | M13 (transfer belt swing motor) | Rotates CW for a single full turn, rotates CCW for a single turn, and then stops. |
| 22 | M23 (duplexing paper jogging guide motor) | Executes home position detection, stops for 3 sec, moves to A4 position, stops for 3 sec, moves to B4 position, stops for 3 sec, moves to A4R position, stops for 3 sec, moves to B5R position, stops for 3 sec, and then moves to home position. |
| 23 | M28 (duplex reversal motor) | Rotates for draw-in operation for 3 sec, rotates for feed-out operation for 3 sec, stops for 1 sec, rotates for draw-in for 3 sec, rotates for feed-out for 3 sec, and then stops. |
| 24 | M16 (cassette1 lifter motor) | Rotates for lifter-up operation for 3 sec, and then stops. (Return the lifter by hand.) |
| 25 | M17 (cassette2 lifter motor) | Rotates for lifter-up operation for 3 sec, and then stops. (Return the lifter by hand.) |
| 26 | M1 (multifeeder lifter motor) | Rotates for lifter-up operation for 3 sec, stops for 3 sec, rotates for lifter-down operation for 3 sec, and then stops. |
| 27 | M8001 (paper deck motor) | Rotates for lifter-down operation for 10 sec, rotates for lifter-up operation for 10 sec, and then stops. |
| 28 | Registration shutter motor | Executes a single registration shutter open/close operation. |
| 29 | Y/C/Bk image correction mirror Ratio correction motor (M3, M6, M8) | Operates the image correction mirror, and generates a test pattern (PG=06, grid); then, returns the mirror to original position.<br>(Each motor may be assumed to be operating normally if a discrepancy exists between the M grid and the grid of each color.)<br>Pick-up will be from the cassette 1; be sure to put A4/LTR paper in the cassette in advance. |
| 30 | Y/C/Bk image correction mirror Slant correction motor (M2, M5, M7) | |

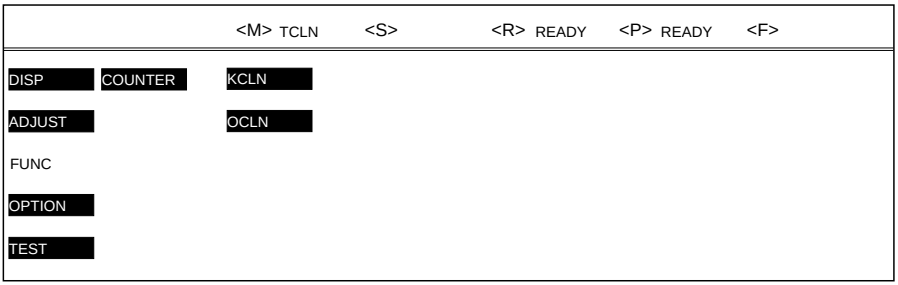
| No. | Motor | Control |
|---|---|---|
| 31 | M38(cassette1 pickup motor) | Operates for 10sec,stops for 3sec,and then operates for 10 sec and stops |
| 32 | M39(cassette2 pickup motor) | Operates for 10sec,stops for 3sec,and then operates for 10 sec and stops |
| 33 | M37(re-pickup motor) | Operates for 10sec,stops for 3sec,and then operates for 10 sec and stops |
| 34 | M36(paper deck pickup motor) | Operates for 10sec,stops for 3sec,and then operates for 10 sec and stops |
| 35 | M35(registration motor) | Operates for 10sec,stops for 3sec,and then operates for 10 sec and stops |
| 36 | M2(buffer unit reversal motor) | Operates for 10sec,stops for 3sec,and then operates for 10 sec and stops |

■ Details of FAN

| Type | Fan | Control |
|---|---|---|
| 1 | Laser cooling fan (FM4, front; FM5, rear) | On for 5 sec, off for 5 sec; then, remains on continuously. |
| 2 | Primary suction fan (FM8, left; FM9, right) | ON for 5 sec, off for 5 sec; then, on for 5 sec and stops. |
| 3 | Primary exhaust fan (FM6) | On for 5 sec, off for 5 sec; then, on for 5 sec and stops. |
| 4 | Pre-fixing feeding fan (FM7) | Rotates at high-speed for 10sec, then, rotates at low-speed for 10sec, and stops. |
| 5 | Pre-fixing feeding fan (FM7) low-speed rotation | On for 5 sec, off for 5 sec; then, operates continuously. |
| 6 | Delivery assembly exhaust fan 1 (FM1), 2 (FM2), 3 (FM3) high-speed rotation | |
| 7 | Delivery assembly exhaust fan 1 (FM1), 2 (FM2), 3 (FM3) low-speed rotation | |
| 8 | Delivery lower cooling fan1 (FM19)<br>Delivery lower cooling fan2 (FM20)<br>Delivery lower cooling fan3 (FM27) | FM27 rotates for 10sec, thereafter, FM19/20 rotates for 10sec and then stops. |
| 9 | Delivery colling fan (FM34) | Rotates at high-speed for 10sec;then, rotates at low-speed for 10sec, and stops. |
| 10 | All fans | The cooling fan rotates at high-speed for 5 sec and then at low-speed for 5 sec:<br>• Delivery assembly exhaust fan 1 (FM1)<br>• Delivery assembly exhaust fan 2 (FM2)<br>• Delivery assembly exhaust fan 3 (FM3)<br>• Pre-fixing feed fan (FM7)<br>• General delivery fan 1 (FM21)<br>• General exhaust fan 2 (FM22)<br>• General exhaust fan 3 (FM 23)<br>• Delivery cooling fan (FM34)<br>To stop the operation, turn off the power switch. |


Press the Stop key to stop the operation, thereby returning to normal state.

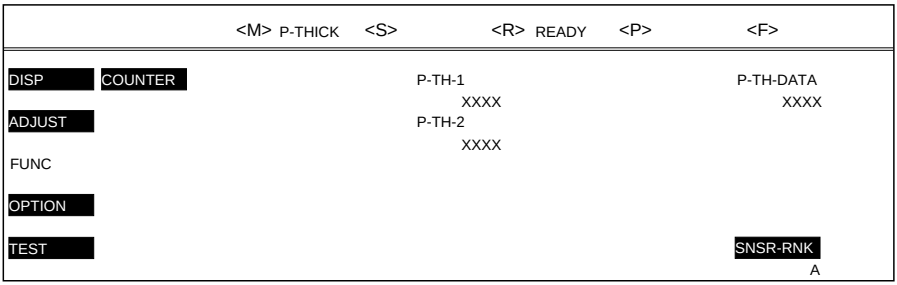
## <TCLN (polishing roller/oil removing roller operation)>




F00-400-24

| | |
|---|---|
| KCLN | |
| | Use it to bring the polishing roller in contact while moving the transfer belt.<br>The operation will stop after last rotating sequence. (for about 30 sec).<br>During operation, the notation is 'P' SERVICE. |
| Remarks | Stops automatically after operating for a specific period of time. |
| OCLN | |
| | Butts the oil removing roller against the transfer belt, and rotates both the transfer belt and the oil removing roller (for about 30 sec).<br>During operation, the notation is 'P' SERVICE. |
| Remarks | Stops automatically after operating for a specific period of time. |

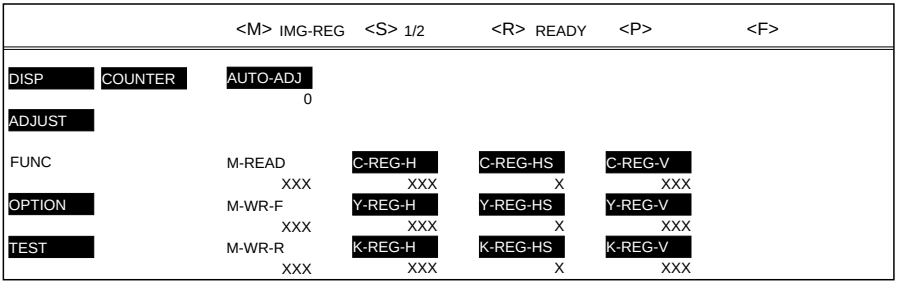
# <P-THICK (paper thickness sensor adjustment)>




F00-400-25

| | |
|---|---|
| P-TH-1/2 | Indicates the output characteristics of the paper thickness sensor set at time of shipment from the factory. |
| SNSR-RNK | Enters the characteristics (A through E) of the paper thickness sensor to be installed newly. |
| Remarks | Values A through E change by toggle operation. |
| P-TH-DATA | Indicates the data on paper that has been fed. |

# <IMG-REG (image position correction control)>




F00-400-26

**AUTO-ADJ**

Use it to execute the series of operations for image position correction control.
<P>READY→SERVICE→READY

Remarks: 1 min (approx.)

**M-READ**

Use it to indicate the start position of reading the pattern for M.

**M-W-F**
**M-W-R**

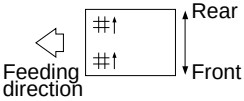
Use it to indicate the start position of writing the pattern for M.
F: Front.
R: Rear.

**Y/C/K-REG-H**

Use it to correct the write start position of the pattern for Y/C/K. (rough adjustment in main scanning direction)

Do not use this item unless 'E194' is indicated (error that disables image position correction)

Remarks: A higher setting shifts the pattern to the rear.




F00-400-27

**Settings range** **0 ~ 255**
**Standard: 128**
**Unit: 1 pixel (63.5µm)**

## Y/C/K-REG-HS

Use it to correct the write start position of the pattern for Y/C/K. (fine adjusment in main scanning divection)

Do not use this item unless ‘E194’ is indicated (error that disables image position correction).

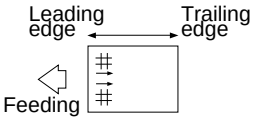
**Settings range** **0 ~ 3**
**Standard:** **0**
**Unit:** **1/4 pixel**

## Y/C/K-REG-V

Use it to correct the write start position of the pattern for Y/C/K. (fine adjustment in main scanning direction)
Use it to correct the write start position of the pattern for Y/C/K. (sub scanning direction)

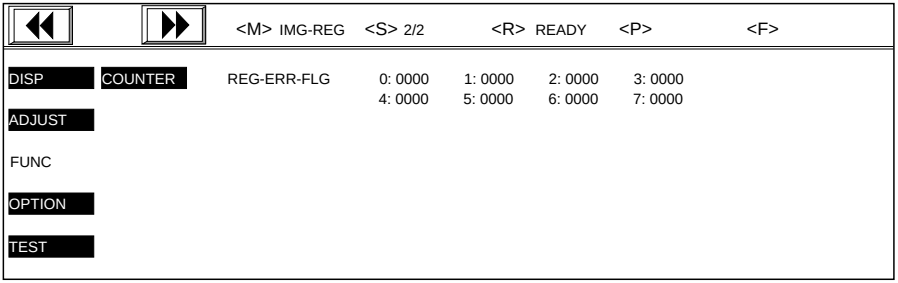
Do not use this item unless ‘E194’ is indicated (error that disables image position correction).

Remarks: A higher setting will shift the pattern to the trailing edge.




F00-400-28

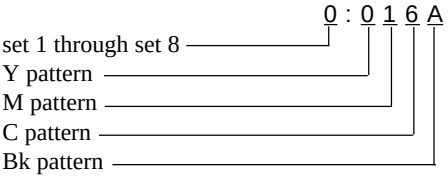
**Settings range** **0 ~ 255**
**Standard:** **128**
**Unit:** **1 pixel (63.5µm)**



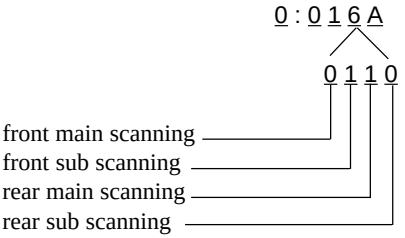

F00-400-29

## REG-ERR-FLG

Indicates how the image position correction pattern is read.
0:0000 through 7:0000 corresponds to 8 sets of patterns.
('0000' indicates the absence of an error; if an error is found in all 8 sets, 'E194' will be indicated. If any of the sets is '0000', its data will be used for correction.)

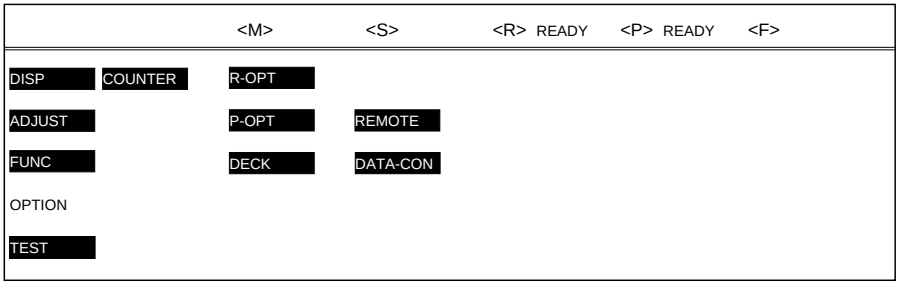



4-bit data is assigned to each color data, and a '1' is assigned where an error exists.




In the case of the above, an error exists on the pattern for C of set 1 at front in sub scanning direction and at rear in main scanning direction.

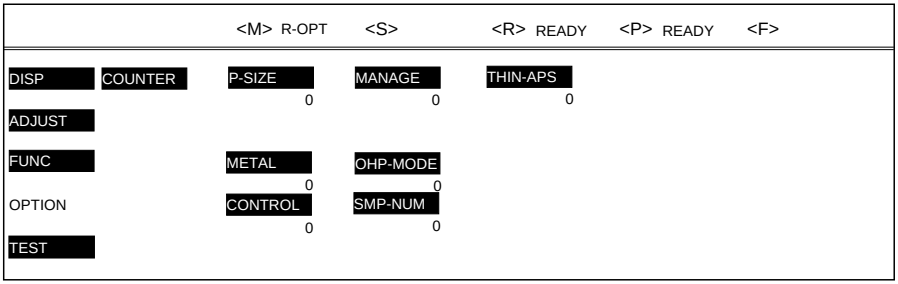
# 5 OPTION (options mode)




F00-500-01

| | | |
|---|---|---|
| 1 | R-OPT | Selects reader-related machine settings. |
| 2 | P-OPT | Adjusts the cleaning mode transfer drum stop position. |
| 3 | REMOTE | Sets conditions for connection with an external controller. |
| 4 | DECK | Sets conditions for connection with a paper deck. |
| 5 | DATA-CON | Use it to disconnect the copy Data Controller-A1 DA unit-A1. |

# <R-OPT (reader-related machine settings)>




F00-500-02

## P-SIZE*1

Identifies the size of paper and transparency film of the copier.

**Settings**

**0: AB-configuration**
**1: Inch-configuration**
**2: A-configuration**
**3: All**

## METAL*1

Determines whether to use or not metal mode in user mode.

**Settings**

**0: Not available**
**1: Available (Standard: 0)**

## CONTROL*1

Use it to enable copying, printing, and scanning in the absence of the following input:

- control key inserted
- card inserted (with Control Card-IV/Card Reader-B1 connected)
- ID number entered (when pre-set)

**Settings**

**0 to 44 (default: 0)**
**(Each digit may be between 0 and 4; if set to '0', conditional operation is not enabled.)**

Remarks

Value of Each Digit and Enabled Operations
1st digit: operation settings when control key is turned off
2nd digit: operation setting when card is not inserted
3rd digit: operation setting when ID No. is not entered

| Value of digit | BW copy | Color copy | BW print | Color print | Scan |
|---|---|---|---|---|---|
| 0 | × | × | × | × | × |
| 1 | × | × | × | × | × |
| 2 | × | × | o | o | × |
| 3 | o | × | × | × | × |
| 4 | o | × | o | o | × |

o: enabled ×: disabled

EX 1 If the setting is '2',
When the control key is turned off, black-and-white printing/color printing is enabled.
When the control card is not inserted, none is enabled.
When the ID No. is not entered, none is enabled.

EX 2 If the setting is '431',
When the control key is turned off, none is enabled.
When the card is not inserted, black-and-white copying is enabled.
When the ID No. is not entered, black-and-white copying/black-and-white printing/color printing is enabled.

Caution

<Count for Conditional Operation>

| Counter | Control key turned off | Card not inserted | ID number not entered |
|---|---|---|---|
| Counter on user mode screen | o | o | o |
| Card counter | o | △ | o |
| ID No. counter | o | o | × |

○: increment △: increment as needed ×: do not increment

— Guide to the Table —

a. Counter on the User Mode Screen

• The count is incremented regardless of the settings for conditional operation.

b. Card Counter

If the Control Card-IV is connected,

• If the setting for the absence of a card (2nd digit) is '3' or '4', the count is not incremented regardless of the presence/absence of a card in black-and-white copying mode.
• If the setting or the absence of a card (2nd digit) is '2' or '4', the counter is not incremented regardless of the presence/absence of a card in black-and-white printing/color printing mode.

If the Card Reader-B1 is connected,

• If the setting for the absence of a card (2nd digit) is '3' or '4', the counter is not incremented in the absence of a card in black-and-white copying mode.
• In black-and-white printing/color printing mode, the counter is not incremented regardless of the setting for conditional operation.
However, the OA counter of the Copy Data Controller-A1 is incremented regardless of the setting for unconditional operation.

c. ID No. Counter

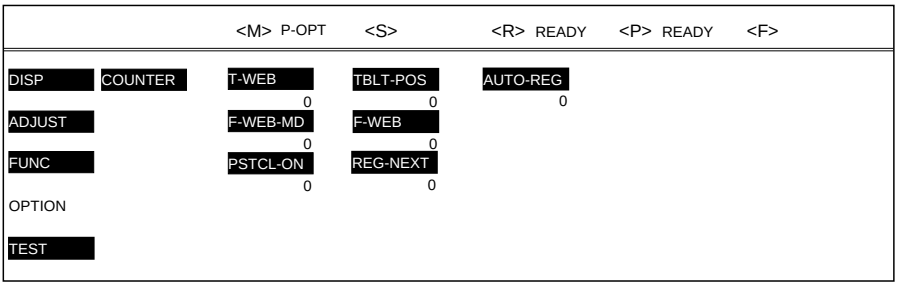
• If the setting for the absence of an ID No. (3rd digital) is '3' or '4', the counter is not incremented regardless of an ID No. input in black-and-white copying mode.
• If the setting for the absence of an ID No. (3rd digit) is '2' or '4', the counter is not incremented regardless of an ID No. input in black-and-white printing/color printing mode.

| | |
|---|---|
| MANAGE | |
| | Use it to bring the hues closer to those of professional printing.<br>If 'MANAGE' is set to '1', the Pro Print key will be indicated on the user mode screen. |
| **Settings** | **0: Standard**<br>**1: Professional printing (standard: 1)**<br>**For fine-adjustment, see the descriptions for 'AJDUST>COL-ADJ>P-TBL-M/C/Y/K'** |
| OHP-MODE | |
| | Select the maximum density when making a copy outo a transparencies. |
| **Settings** | **0~2 (Standard: 0)**<br>**If the value is increased, the density becomes darker.** |
| SMP-NUM | |
| | Use it to change the range of sampling of the data representing the color selected on an original for color conversion. |
| **Settings** | **0: sample selected color in area of 2x2 (standard)**<br>**1: sample selected color in area of 4x4** |
| Remarks | In the case of an original composed of dots, correct color identification may not be identified; if such is the case, set it to '1' to increase the number of samplings. |
| THIN-APS *1 | |
| | Use it to enable auto paper selection for thin paper. |
| **Settings** | **0: disable auto paper selection (standard)**<br>**1: enable auto paper selection** |
| Remarks | Thin paper will not be selected if of the following modes is selected:<br>• sort, group, staple<br>• double-sided |
| SCAN-DWN *1 | |
| | Use it to reduce the acceleration speed of the scanner. |
| **Settings** | **0: standard speed. (default)**<br>**1: acceleration speed reduced from standard.** |
| | REF. If the image along the leading edge of copies is blurred, the acceleration speed of the scanner may be reduced to eliminate the problem. |

Note 1: You must enter the appropriate value whenever you have replaced reader controller PCB or initialized a RAM; record any new values on the service label for this purpose.

REF. Overhead projectors may be either a reflecting type or a transmitting type. It is best to lower the copy image maximum density for a transmitting type projector. Change the value according to the type of projector used by the user.

## <P-OPT (Making settings Retated to the Printer unit)>

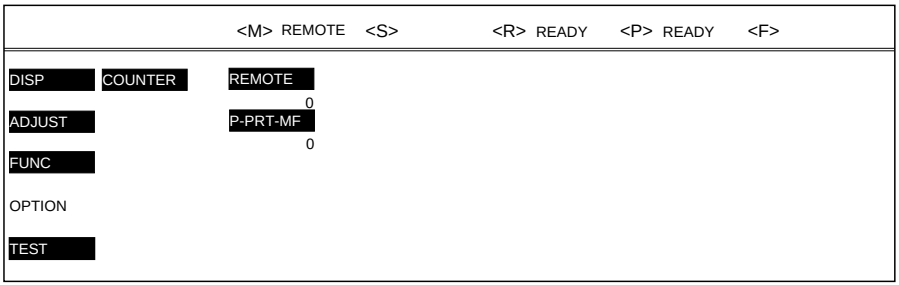



F0-500-03

| | |
|---|---|
| T-WEB *1 | |
| | Changes the frequency at which the transfer belt cleaning web turns on. |
| **Settings range** | **1~5**<br>**(Standard: 3)** |
| TBLT-POS *1 | |
| | Changes the stop position of the transfer belt. |
| **Settings range** | **–2~2**<br>**Unit: 2 mm**<br>**(Standard: 0)** |
| F-WEB-MD | |
| | Changes the ON/OFF sequence of the web solenoid when the fixing web solenoid is turned on.<br>At present, the setting is always '1'. |
| **Settings** | **Standard: 1** |
| F-WEB *1 | |
| | Changes the frequency at which the fixing web solenoid turns on. |
| **Settings range** | **1~255**<br>**(Standard: 8)** |
| PSTCL-ON | |
| | Enabling or disabling the charging mechanism after display cleaning turn it on or off as needed if memory of the edge of a sheet occurs in a low-temperature environment or cyan or black dots occur in the images. |
| **Setting** | **0: Normal**<br>**1: All environment ON** |

| | |
|---|---|
| REG-NEXT | |
| | Use it to delay the timing at which the first sheet of paper is picked up to prevent lines in main scanning direction near 188 mm from the leading edge of paper. |
| **Settings** | **0: normal operation**<br>**1: delay pickup timing (standard: 0)** |
| Remarks | The potential on the transfer belt is not stable when the first copy is made, with the photosensitive drum at times developing paper traces (drum memory) caused by the leading edge of paper. The traces will collect toner, and a line will occur on the next copy near 188 mm from its leading edge. |
| AUTO-REG *1 | |
| | Turn off the interlock between the image position correction and the start key. |
| **Settings** | **0: Turn on the interlock with a start key.**<br>**1: Turn off the interlock with a start key.** |
| Note 1: | The value will return to the standard value when the RAM is initialized, requiring re-input. Be sure to record any new value on the service label. |

# <REMOTE (making settings for use of extemal controller)>

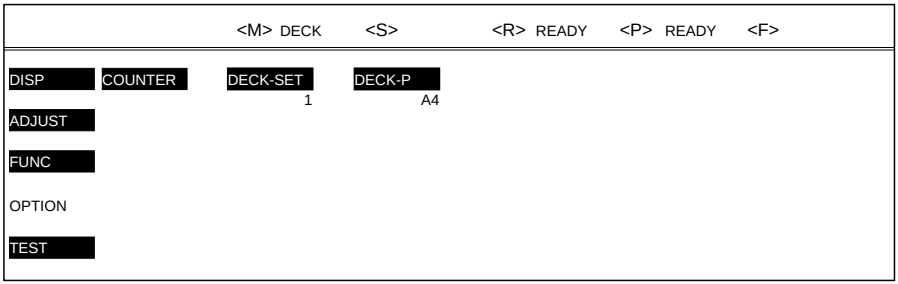



F00-500-04

| | |
|---|---|
| REMOTE | |
| | Use it to set priorities on parameters selected by the controller. |
| **Settings** | **0: Use only the settings made on the copier's control panel. For the items that can be selected only on the controller, the factory settings will be used.**<br>**1: Use the settings of the items that can be selected on the controller; for the rest of the items, use those selected on the copier.**<br>**2: Use the settings of the items that can be selected on the controller; for the rest of the items, use the factory settings.** |
| P-RPT-MF *1 | |
| | Use it to set priorities on multifeeder setting data in case the mult: feeding is selected from the control panel. |
| **Settings** | **0: Use only the settings made on the copier's control panel. For the items that can be selected only on the controller, the factory settings will be used.**<br>**1: Use the settings of the items that can be selected on the controller; for the rest of the items, use those selected on the copier.**<br>**2: Use the settings of the items that can be selected on the controller; for the rest of the items, use the factory settings.** |

Note 1: You must enter the appropriate value whenever you have replaced the reader controller PCB or initialized a RAM; record any new values on the service label for this purpose.

## <Deck (Settings for the Paper Deck)>




F00-500-05

DECK-SET *1

Specifies the presence/absence of a paper deck.
0: Absent
1: A4PD
2: A3PD

**Settings** **Standard: 1**

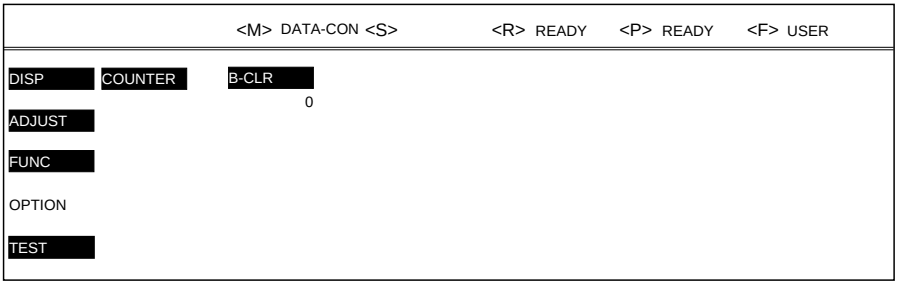
DECK-P *1

Selects the size of paper used in the paper deck.

**Settings** **Each press on the key scans through the sizes. (Standard: A4)**

Note 1: You must enter the appropriate value whenever you have replaced the reader controller PCB or initialized a RAM; record any new values on the service label for this purpose.

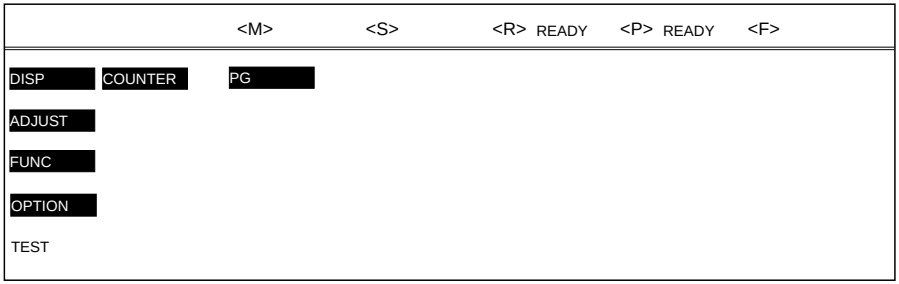
## <DATA-CON (disconnecting the Copy Data Controller-A1/DA unit -A1)>




F00-500-06

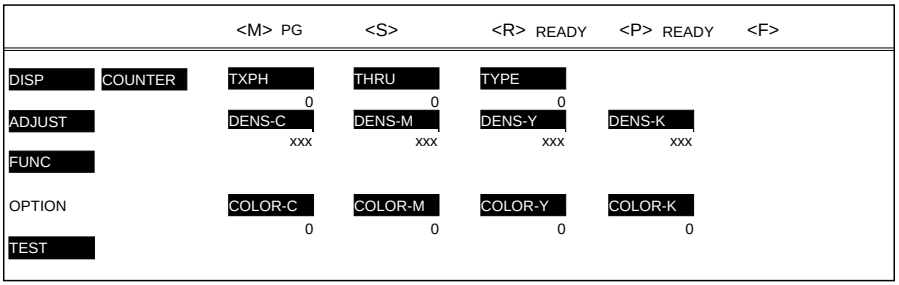
| | |
|---|---|
| B-CLR | |
| | Connecting the Copy Data Controller-A1/DA unit-A1 will automatically sets it to '1'.<br>Be sure to set it to '0' when temporarily separating the Copy Data Controller-A1/DA unit-A1 during service work. |
| Remarks | 'E717' will be indicated if you separate the Copy Data Controller-A1/DA unit-A1 without setting it to '0'.rating the Copy Data Controller-A1/DA unit-A1 during service work. |

# 6. TEST (test print)




F00-600-01

## <PG (Generates test prints)>




F00-600-02

| | |
|---|---|
| TXPH | |
| | Switches between text mode and photo mode.<br>04: 400-lines text mode<br>14: 200-lines photo mode<br>24: 800-lines<br>34: Auto switching<br>Not valid if TYPE is set to 6 (grid). |
| Operation | Each press causes the following sequential change.<br>→04→14→24→34 |
| THRU | |
| | Switches the gate array of the laser controller PCB.<br>Not valid if TYPE is set to 5 (halftone).<br>0: Use gate array<br>1: Do not use gate array |
| Operation | Each press causes the setting to alternate between ‘0’ and ‘1’. |

## TYPE

Selects the type of test print.

| PGTYPE | Descriptionm |
|---|---|
| 0 | Image from CCD (normal copying) |
| 1 | For R&D |
| 2 | 256 colors |
| 3 | 256 gradations |
| 4 | 17 gradations |
| 5 | Full face halftone |
| 6 | Grid |
| 7 | Image position correction control pattern |
| 8 | For R& D |
| 9 | For R&D |
| 10 | MCYK horizontal stripe |
| 11 | For R&D |
| 12 | For R&D |
| 13 | For R&D |
| 14 | Full color 17 gradations |
| 15 | For R&D |
| 16 | Not used |
| 17 | For R&D |
| 18 | For R&D |
| 19 | For R&D |
| 20 | For R&D |
| 21 | For R&D |
| 22 | For R&D |

Remarks: Enter the appropriate number (1 through 16) using the keypad, and press the Start key to generate test prints. In the case of 3, 4, 5, or 6, the color may be selected in color mode (user mode).
• Be sure to return the setting to 0 after generating the test print.

## DENS-C/M/Y/K

Selects the density of each color for full face halftone for PGTYPE=5.

**Settings range** **0~255**
**Standard: 128**

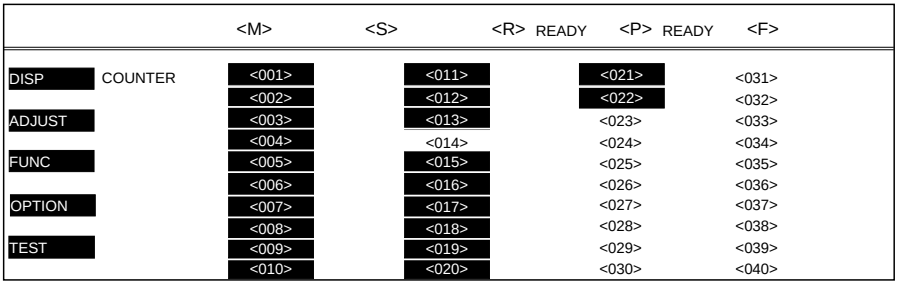
## COLOR-C/M/Y/K

Use it to select the color to generate for each PG.
1: Generate.
0: Do not generate.
Standard value: 1

Be sure to set TYPE back to 0 when leaving test print mode.

# 7. COUNTER (counter)

## <Total (Itemized counter list)>

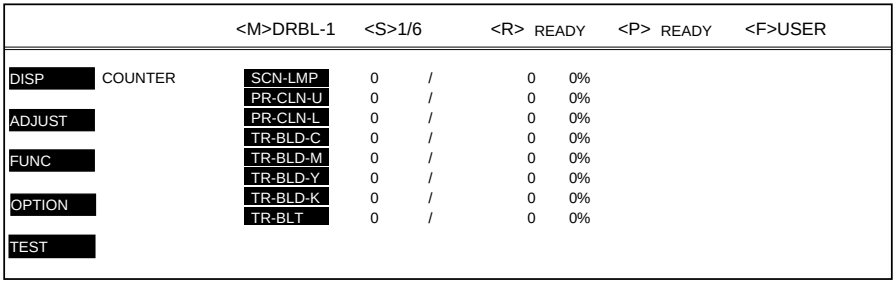



F00-700-01

- After 999999, the reading returns to 000000.
- When a Level 3 item (except 038, 039, 040) is pressed and the Clear key is pressed after the item has been highlighted, the counter reading of the item will return to 00000.
- Check the value of Level 3 item 038 whenever you have replaced the cleaning web of the fixing assembly. If not 0, press E005-RLS under FUSER of FUNC to clear the counter reading.
  In addition, executing RAM-CLR for the reader controller PCB will reset all readings of the Level 3 items to 000000 (except 038, 039, 040).

| Item | Description |
|---|---|
| 001 | Indicates the number of times the Y developing assembly has been used. |
| 002 | Indicates the number of times the M developing assembly has been used. |
| 003 | Indicates the number of times the C developing assembly has been used. |
| 004 | Indicates the number of times the Bk developing assembly has been used. |
| 005 | Indicates the number of Y-mono copies. |
| 006 | Indicates the number of M-mono copies. |
| 007 | Indicates the number of C-mono copies. |
| 008 | Indicates the number of Bk-mono copies. |
| 009 | Indicates the number of 3-color copies. |
| 010 | Indicates the number of 4-color copies. |
| 011 | Indicates the total number of copies. |
| 012 | Indicates the total number or printouts. |
| 013 | Indicates the number of sheets generated using the synthesis function. |
| 014 | Indicates the total number of sheets (copies + printouts + synthesized printouts). |
| 015 | Indicates the number of sheets picked up from cassette 1. |
| 016 | Indicates the number of sheets picked up from cassette 2. |
| 017 | Indicates the number of sheets picked up from Paper deck. |
| 018 | Indicates the number of sheets picked up from the multifeeder. |
| 019 | Indicates the number of sheets picked up from the duplexing unit. |
| 020 | Indicates the number of scans made by the scanner. |
| 021 | Indicates the number of copies made using the film projector. (reserved) |
| 022 | Indicates the number of pick-ups from the RF. |
| 023 | Reserved |
| 024 | Reserved |
| 025 | Reserved |
| 026 | Reserved |
| 027 | Reserved |
| 028 | Reserved |
| 029 | Reserved |
| 030 | Reserved |
| 031 | Reserved |
| 032 | Reserved |
| 033 | Reserved |
| 034 | Reserved |
| 035 | Reserved |
| 036 | Reserved |
| 037 | Reserved |
| 038 | Indicates the number of times the solenoid has turned ON from when the absence of web has been detected until E005 is indicated.(initially, ‘270’; incremented by 1 for each activation) |
| 039 | Indicates the number of copies to be made until the next time the primary charging wire automatic cleaning mechanism turns on. (initially, ‘5000’; count down by 1 per copy) |
| 040 | Indicates the number of copies to be made until the next time the polishing roller cleaning mechanism turns on.(initially, ‘5000’; count down by 1 per copy) |

# <DRBL-1 (Consumables Counter of Copier)>




F00-700-02

The machine is equipped with corsumables counters (DRBL-1/DRBL-2/PRDC-1), proriding references for parts replaced on a periodical basis or parts requiring replacement.

EX.

| C1-PU-RL | / | 00098400 | / | 0120000 | / | 82% | !! | 000027 |
|---|---|---|---|---|---|---|---|---|
| [1] | | [2] | | [3] | | [4] | [5] | [6] |

[1] Indicates the name of the part. In the case of the example, the primary charging wire.
[2] Indicates the counter reading (number of actual sheets handled) ; clear it by pressing the clear key after replacing the part.
[3] Indicates the limit setting (guide to replacement) ; the setting may be changed by selecting the image and using the keypad.
[4] Indicates the ratio of counter readings to limt levels.
[5] A single exclamation mark (!) will be indicated between 90% and 100% ; two marks at 100% or higher.
[6] Indicates an estimated number of days to replacement ; in the case of the example, 27 days.

| | | | |
|---|---|---|---|
| SCN-LMP | the time for lighting of scanning lamp(LA1) | | [unit:sec] |
| PR-CLN-U | primary charging wire cleaning pad (upper) | | [unit:copy] |
| PR-CLN-L | primary charging wire cleaning pad (lower) | | [unit:copy] |
| TR-BLD-C | the number of copies passed through the transfer blade unit(C) | count two per one large size copy | [unit:copy] |
| TR-BLD-M | the number of copies passed through the transfer blade unit(M) | count two per one large size copy | [unit:copy] |
| TR-BLD-Y | the number of copies passed through the transfer blade unit(Y) | count two per one large size copy | [unit:copy] |
| TR-BLD-K | the number of copies passed through the transfer blade unit(K) | count two per one large size copy | [unit:copy] |
| TR-BLT | the number of copies passed through thetransfer belt | count two per one large size copy | [unit:copy] |
| PT-DRM-C | the number of copies passed through the drum(C) | | [unit:copy] |

| | | | |
|---|---|---|---|
| PT-DRM-M | the number of copies passed through the drum(M) | | [unit:copy] |
| PT-DRM-Y | the number of copies passed through the drum(Y) | | [unit:copy] |
| PT-DRM-K | the number of copies passed through the drum(K) | | [unit:copy] |
| CLN-BLD | the number of copies passed through the transfer cleaning blade | | [unit:copy] |
| DV-UNT-C | the number of copies passed through the developing cylinder(C) | | [unit:copy] |
| DV-UNT-M | the number of copies passed through the developing cylinder(M) | | [unit:copy] |
| DV-UNT-Y | the number of copies passed through the developing cylinder(Y) | | [unit:copy] |
| DV-UNT-K | the number of copies passed through the developing cylinder(K) | | [unit:copy] |
| C1-PU-RL | the number of copies passed through the pickup roller(cassette1) | | [unit:copy] |
| C1-SP-RL | the number of copies passed through the separation roller(cassette1) | | [unit:copy] |
| C1-FD-RL | the number of copies passed through the pickup roller(cassette1) | | [unit:copy] |
| C2-PU-RL | the number of copies passed through the pickup roller(cassette2) | | [unit:copy] |
| C2-SP-RL | the number of copies passed through the separation roller(cassette2) | | [unit:copy] |
| C2-FD-RL | the number of copies passed through the pickup roller(cassette2) | | [unit:copy] |
| M-PU-RL | the number of copies passed through the multifeeder pickup roller | | [unit:copy] |
| M-SP-RL | the number of copies passed through the multifeeder separation roller | | [unit:copy] |
| M-FD-RL | the number of copies passed through the multifeeder pickup roller | | [unit:copy] |
| FX-UP-RL | the number of copies passed through the upper fixing roller | count two per one large size copy | [unit:copy] |
| FX-LW-RL | the number of copies passed through the lower fixing roller | count two per one large size copy | [unit:copy] |
| FHTR-U | the number of copies passed through the upper fixing heater | count two per one large size copy | [unit:copy] |
| FHTR-L | the number of copies passed through the lower fixing heater | count two per one large size copy | [unit:copy] |
| FX-WEB-U | the number of copies passed through the upper fixing web | the limit of FX-WEB is set to 186,000 | [unit:time] |
| FX-WEB-L | the number of copies passed through the lower fixing web | the limit of FX-WEB is set to 186,000 | [unit:time] |
| OIL-APBL | the number of copies passed through the oil applying brade | | [unit:copy] |
| WST-TNR | the number of copies passed through the waste toner box | count two per one large size copy | [unit:copy] |
| PRM-GR-C | the number of copies passed through the primary grid wire(C) | | [unit;copy] |

| | | |
|---|---|---|
| PRM-GR-M | the number of copies passed through the primary grid wire(M) | [unit:copy] |
| PRM-GR-Y | the number of copies passed through the primary grid wire(Y) | [unit:copy] |
| PRM-GR-K | the number of copies passed through the primary grid wire(K) | [unit:copy] |
| PRM-UT-C | the number of copies passed through the primary charging assembly(C) | [unit:copy] |
| PRM-UT-M | the number of copies passed through the primary charging assembly(M) | [unit:copy] |
| PRM-UT-Y | the number of copies passed through the primary charging assembly(Y) | [unit:copy] |
| PRM-UT-K | the number of copies passed through the primary charging assembly(K) | [unit:copy] |
| PRM-WR-C | the number of copies passed through the primary charging wire(C) | [unit:copy] |
| PRM-WR-M | the number of copies passed through the primary charging wire(M) | [unit:copy] |
| PRM-WR-Y | the number of copies passed through the primary charging wire(Y) | [unit:copy] |
| PRM-WR-K | the number of copies passed through the primary charging wire(K) | [unit:copy] |
| TR-WEB | the number of copies passed through the transfer belt web | [unit:copy] |
| D-CLNB-C | the number of copies passed through the drum cleaning blade(C) | [unit:copy] |
| D-CLNB-M | the number of copies passed through the drum cleaning blade(M) | [unit:copy] |
| D-CLNB-Y | the number of copies passed through the drum cleaning blade(Y) | [unit:copy] |
| D-CLNB-K | the number of copies passed through the drum cleaning blade(K) | [unit:copy] |

## <DRBL-2 (Consumables Counter of Accessory)>

| | | | |
|---|---|---|---|
| PD-PU-RL | the number of copies passed through the paper deck pickup roller | the number of copies picked up from paper deck | [unit:copy] |
| PD-FD-RL | the number of copies passed through the paper deck separation roller | the number of copies picked up from paper deck | [unit:copy] |
| PD-SP-RL | the number of copies passed through the paper deck feeding roller | the number of copies picked up from paper deck | [unit:copy] |

# Error Code

# Contents



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# Self Diagnosis

CPU on the CLC5000's image processor and DC controller PCB is equipped with a mechanism to check the condition of the machine (sensors, in particular). The mechanism runs a check as necessary and indicates the presence of an error upon detection.

See the tables that follow for descriptions of codes; you may check these codes using 'JAM/ERROR' under 'DISPLAY' in service mode.

'0001' will be used for the detailed code column of errors without a detailed code.

## E000

| | |
|---|---|
| Cause | See the descriptions that follow. |
| Description | |
| | "xx" represents the heater.<br>xx=01: upper heater<br>xx=02: lower heater |
| Cause | Fixing thermistor (short circuit)<br>Triac (short circuit)<br>DC controller PCB (faulty) |
| Description | |
| | xx01 The overheating detection circuit on the DC controller PCB has detected an overheating condition (upper heater : 230°C lower heater : 220°C or more).<br>xx02 The main thermistor has detected overheating condition (upper heater : 215°C lower heater : 208°C or more). |
| Cause | Fixing thermistor (poor contact, open circuit)<br>Fixing heater (open circuit)<br>Triac (faulty)<br>DC controller PCB (faulty) |
| Description | |
| | xx05 A difference of 60°C or higher is detected between the reading of the main thermistor and that of the sub thermistor.<br>xx20 When control is to 160°C or less, a rise in temperature of 10°C or more does not occur within 4 min.<br>xx40 The temperature drops to 140°C or less during temperature control for standby.<br>xx50 The temperature drops to 140°C or less during temperature control for printing. |

| | |
|---|---|
| Cause | The oil heater thermistor or the oil thermistor has a short circuit; the AC driver PCB is faulty; or the DC controller PCB is faulty. |
| Description | 0061 The oil thermistor has detected overheating (180°C).<br>0071 The oil thermistor has detected overheating (220°C).<br>0081 The high-temperature detection circuit on the DC controller PCB has detected overheating (190°C for the oil thermistor output; 230°C for the oil heater thermistor). |
| Cause | The oil heater thermistor or the oil thermistor has an open circuit; the AC driver PCB is faulty; or the DC controller PCB is faulty. |
| Description | 0062 At the end of the WAIT period, the output of the oil thermistor does not reach 50°C.<br>0072 At the end of the WAIT period, the oil heater thermistor does not reach 50°C.<br>0082 The output of the oil heater thermistor does not reach 50ºC within 2min after the oil heater has gone ON; as detedted by the low-temperature detection circuit on the DC controller PCB (after the oil temperature has reached a specific level). |

# E004

| | |
|---|---|
| Cause | Triac (short circuit) |
| Description | 0001 The triac is ON after the CPU on the DC controller PCB has turned ON the fixing heater triac drive signal.<br>0002 The triac is ON after the CPU on the DC controller PCB has turned OFF the triac drive signal for the drum heater. |

# E005

| | |
|---|---|
| Cause | • Cleaning web (inside fixing assembly; taken up)<br>• Web length sensor (PS36; faulty)<br>• DC controller PCB (faulty) |
| Description | The cleaning web solenoid has turned ON 270 times after the web length sensor detected the lever. |

## E006

**Cause**

- Fixing drawer connector (fault)
- Fixing lever switch (SW5; fault)
- DC controller PCB (fault)

**Description**

0001 The fixing drawer connector connection signal CONNECT goes '0' when the front cover is closed (i.e., the cover connector is disconnected).

0002 The fixing lever switch signal F-KBLK goes '1' when the front cover is closed (i.e., the releasing lever is not set).

## E012

**Cause**

- Drum drive system (overload)
- Drum motor (M21; error)
- DC controller PCB (faulty)

**Description**

0001 The rotation speed of the motor has deviated from a specific value for 0.1 sec or more.

## E013

**Cause**

- Waste toner feeding motor (faulty)
- Waste toner feeding screw (rotation fault)
- DC controller PCB (faulty)

**Description**

0001 The rotation speed of the waste toner feeding motor has deviated from a specific value for 0.1 sec or more (PLL signal '0').

0002 The waste toner lock detection switch (SW4) has been pressed for 0.1 sec or more.

## E014

**Cause**

- Fixing motor (M9; error)
- DC controller PCB (faulty)

**Description**

The rotation speed of the motor has deviated from a specific value for 0.1 sec or more.

## E015

**Cause**

- Multifeeder pickup motor (M10; faulty)
- DC controller PCB (faulty)

**Description**

- The clock pulses of the pick-up motor cannot be detected.
- The rotation speed of the motor has deviated from a specific speed for 0.1 sec or more.

## E017

Cause
- Duplex feeding motor (M19; faulty)
- DC controller PCB (faulty)

Description

The rotation speed of the duplex feeding motor has deviated from a specific value for 0.1 sec or more (PLL signal '0').

## E018

Cause
- Polishing/oil removing motor (M15; faulty)
- DC controller PCB (faulty)

Description

The rotation speed of the polishing/oil removing motor has deviated from a specific value for 0.1 sec or more.

## E020

Cause

The descriptions are by detail Code.

Description

Toner Density Fault
xx represents the color for the developing assembly.
xx=01: C
xx=02: M
xx=03: Y
xx=04: Bk
The notations in the descriptions are as follows:
SGNL, toner density signal; REF, reference signal.

Cause
- Photosensitive drum (deterioration)
- SALT sensor (faulty)
- Stirring (developer inside developing assembly; faulty)
- Stray light (to sensor; no cover, front door open)

Description

xx3A The variation of the following is 47 or more for 5 samplings of the density data when sampling during copying sequence:
SGNL-S-C, SGNL-S-M, SGNL-S-Y, SGNL-S-K

Cause
- SALT sensor (faulty)
- Stirring (developer inside developing assembly; faulty)
- Stray light (to sensor; no cover, front door open)
- Photosensitive drum (deterioration)
- SALT sensor (soiled window, damage)
- Photosensitive drum (dirt; cleaning failure)

Description

xx3B The variation of the following is 47 or more for 5 samplings of the density data when sampling during copying sequence:
REF-S-C, REF-S-M, REF-S-Y, REF-S-K

# E020

xx40 When setting initial data (upon installation, for example), the average value after sampling of the following values is 848 or higher:
SGNL-S-C, SGNL-S-M, SGNL-S-Y, SGNL-S-K; or,
the value of SGNL-S-K is 352 or higher.

xx41 When setting initial data (upon installation, for example), the average value after sampling of the following values is 848 or higher:
REF-S-C, REF-S-M, REF-S-Y, REF-S-K; or,
the value of REF-S-K is 544 or higher.

xx42 When setting initial data (upon installation, for example), the value of the following is 255:
SIGG-S-C, SIGG-S-M, SIGG-S-Y, SIGG-S-K

xx43 When setting initial data (upon installation, for example), the gain of the SALT reference signal for each color is 255.

xx45 When setting initial data (upon installation, for example), the average value after sampling of the following values is 512 or higher:
SGNL-S-C, SGNL-S-M, SGNL-S-Y; or,
the value of SGNL-S-K is 144 or lower.

xx46 When setting initial data (upon installation, for example), the average value after sampling of the following values is 336 or less:
REF-S-C, REF-S-M, REF-S-Y; or,
the value of REF-S-K is 464 or lower.

xx47 When setting initial data (upon installation, for example), the average value after sampling of the following values is 0:
SIGG-S-C, SIGG-S-M, SIGG-S-Y, SIGG-S-K.

xx48 When setting initial data (upon installation, for example), the average gain after sampling of the SALT reference signal for each color is 0.

Cause

Back-up data (DC controller PCB; error)
Be sure to execute RAM clear, and enter the value recorded on the service label.
(Or, initial settings may be missing.)

Description

xx4A During copying sequence, the average value after sampling of the following values is 848 or higher:
SGNL-S-C, SGNL-S-M, SGNL-S-Y; or,
the value of SGNL-S-K is 445 or higher.

xx4B During copying sequence, the average value after sampling of the following values is 848 or higher:
SGNL-S-C, SGNL-S-M, SGNL-S-Y; or,
the value of REF-S-K is 544 or higher.

xx4C During copying sequence, the average value after sampling of the following values is 512 or lower:
SGNL-S-C, SGNL-S-M, SGNL-S-Y; or,
the value of SGNL-S-K is 102 or lower.

# E020

xx4D During copying sequence, the average value after sampling of the following values is 336 or lower:
REF-S-C, REF-S-M, REF-S-Y; or,
the value of REF-S-K is 464 or lower.

Cause
SALT sensor (fault)

Description

xx4F The value of 'SGNL-S-C/M/Y/K', which has been obtained by averaging samplings during copying sequence is 1008 or more.

Cause
- SALT sensor (faulty)
- Stirring (developer inside developing assembly; faulty)
- Stray light (to sensor; no cover, front cover open)
- Photosensitive drum (deterioration)

Description

xx50 When setting initial data (upon installation, for example), the gain cannot be set (i.e., no change is noted in the value of SGNL between GAIN: 20H and GAIN: E0).

0455 An appropriate patch cannot be obtained when setting initial data (e.g., at time of installation).

Cause
- SALT sensor (dirt on window, damage)
- Photosensitive drum (dirt; cleaning failure)

Description

xx60 During multiple initial rotation (at power-on, for example), the window cleaning correction value is 60% or lower.

xx70 During multiple initial rotation (at power-on, for example), the window cleaning correction value is 140% or lower.

Cause
Back-up data (DC controller PCB; error)
Be sure to execute RAM clear, and enter the value recorded on the service label.
(Or, initial settings may be missing.)

Description

xx80 During copying sequence, the initial setting for the following is 848 or higher because of an error in the memory back-up data:
SGNL-S-C, SGNL-S-M, SGNL-S-Y; or, the value of SGNL-S-K is 352 or higher.

xx81 During copying sequence, the initial setting for the following is 848 or higher because of an error in the memory back-up data:
REF-S-C, REF-S-M, REF-S-Y; or,
the value of REF-S-K is 544 or higher.

xx82 During copying sequence, the value of the following is 255 because of an error in the memory back-up data:
SIGG-S-C, SIGG-S-M, SIGG-S-Y, SIGG-S-K

# E020

xx85 During copying sequence, the initial setting for the following is 512 or lower because of an error in the memory back-up data:
SGNL-S-C, SGNL-S-M, SGNL-S-Y; or,
the value of SGNL-S-K is 144 or lower.

xx86 During copying sequence, the initial setting of the following is 336 or lower because of an error in the memory back-up data:
REF-S-C, REF-S-M, REF-S-Y; or
the value of REF-S-K is 464 or lower.

xx87 During copying sequence, the value of the following is 0 because of an error in the memory back-up data:
SIGG-S-C, SIGG-S-M, SIGG-S-Y, SIGG-S-K.

xx88 During copying sequence, the data on the light (in the absence of toner) reflected by each photosensitive drum is 16 or lower because of an error in the memory back-up data.

xx89 During copying sequence, the data for window soiling correction is 16 or lower because of an error in the memory backup data.

xx8A The value of ';REF-S-C/M/Y/K' which has been obtained by averaging samplings setting initial data is 16 or less.

xx8F During copying sequence, the gain of the SALT reference signal for each color is NOT 128 because of an error in the memory back-up data.

Cause: SALT sensor shutter (fault)

Description

xx90 Extreme changes have occurred in the window soiling correction value 10 times or more.

xx91 An error has occurred in the data 10 times or more as a result of window soiling correction.

Cause

- Developer (deterioration)
- Developing cylinder (rotation failure)
- Developing assembly (locking failure)
- Toner density sensor (faulty)
- Developer (inside developing assembly; stirring failure)
- Toner level sensor (faulty)

Description

xxAA During copying sequence, the variation in 5 samplings of the following values is 47 or higher:
SGNL-C, SGNL-M, SGNL-Y

xxAB During copying sequence, the variation in 5 samplings of the following values is 47 or higher:
REF-C, REF-M, REF-Y

xxB0 When setting initial data, the average after sampling of the following values is 859 or higher:
SGNL-C, SGNL-M, SGNL-Y

# E020

xxB1 When setting initial data, the average after sampling of the following values is 859 or higher:
REF-C, REF-M, REF-Y

xxB2 When setting initial data, the average after sampling of the following values is 255.
SIGG-C, SIGG-M, SIGG-Y

xxB5 When setting initial data, the average after sampling of the following values is 777 or lower:
SGNL-C, SGNL-M, SGNL-Y

xxB6 When setting initial data, the average of the following values after sampling is 205 or lower:
REF-C, REF-M, REF-Y

xxB7 When setting initial data, the average of the following values after sampling is 0:
SIGG-C, SIGG-M, SIGG-Y

xxBA During copying sequence, the average of the following values after sampling is 1013 or higher:
SGNL-C, SGNL-M, SGNL-Y

Cause

- Developing assembly (deterioration)
- Developing cylinder (rotation failure)
- Developing assembly (locking failure)
- Toner density sensor (faulty)
- Developer (inside developing assembly; stirring fault)
- Toner level sensor (faulty)

Description

xxBB During copying sequence, the value of the following is 30% or more higher than the initial setting:
REF-C, REF-M, REF-Y

xxBC During copying sequence, the average of the following values after sampling is 306 or higher:
SGNL-C, SGNL-M, SGNL-Y

xxBD During copying sequence, the value of the following is 30% or more lower than the initial setting:
REF-C, REF-M, REF-Y

xxBF When setting initial data, the values of the following cannot be set:
SIGG-C, SIGG-M, SIGG-Y

Cause

- Toner sensor (faulty)
- Toner stirring screw (faulty)

Description

xxF1 The C/M/Y hopper error sensor has detected the absence of toner.

04F2 The Bk hopper error sensor has detected the absence of toner 10 times or more continuously.

## E020

Cause
- Developer (deterioration)
- Developing cylinder (rotation failure)
- Toner density sensor (faulty)
- Developer (inside developing assembly; stirring fault)
- Toner level sensor (faulty)

Description

xxD0 The value of the toner supply time correction data based on 'SGNL-C/M/Y' is 141 or more for 20 copies or more during copying sequence.

xxE0 The value of the toner supply time correction data based on 'SGNL-C/M/Y' is -188 or less for 20 copies or more during copying sequence.

## E023

Cause
- Developing motor (faulty)
- DC controller PCB (faulty)
- Developing cylinder (rotation failure)

Description

0101 The rotation speed of the C developing motor (M18C) has deviated from a specific value for 0.1 sec or more (PLL signal '0').

0201 The rotation speed of the M developing assembly (M18M) has deviated from a specific value for 0.1 sec or more (PLL signal '0').

0301 The rotation speed of the Y developing motor (M18Y) has deviated from a specific value for 0.1 sec or more (PLL signal '0').

0401 The rotation speed of the Bk developing motor (M18Bk) has deviated from a specific speed for 0.1 sec or more (PLL signal '0').

## E030

Cause
- Counter (open circuit)
- DC controller PCB (faulty)

Description

Check immediately before the counter turns ON and OFF.
(Normal if the counter drive signal is '0' when the counter turns ON; normal if the counter drive signal is '1' when the counter turns OFF.)

## E032

Cause: Data communication (error between Copy Data Controller-A1 and copier)

Description

After the copier has generated the copy start signal, count pulses have not been detected by the data Controller-A1 within a specific period of time.

## E040

Cause: The cassette lifter motor is faulty, or the DC controller PCB is faulty.

Description:

0001 The error detection circuit on the DC controller PCB has detected overcurrent in the upper cassette lifter motor drive circuit.

0002 The error detection circuit on the DC controller PCB has detected overcurrent in the lower cassette lifter motor drive circuit.

Cause:

- Multifeeder lifter motor (M1; faulty)
- DC controller PCB (faulty)

Description:

0101 The upper lifter sensor (PS2) does not turn ON within 6 sec after the multifeeder lifter motor (M1) has turned ON.

0102 The lower lifter sensor (PS3) does not turn ON within 6 sec after the multifeeder lifter motor (M1) has turned ON.

0103 The error detection circuit of the DC controller PCB detects overcurrent in the multifeeder lifter drive circuit.

## E041

Cause:

- Paper deck motor (M8001; faulty)
- Paper deck lifter upper switch (SW8001; faulty)
- Paper deck lifter lower limit switch (SW8002; faulty)
- DC controller PCB (faulty)

Description:

0001 The paper deck lifter upper limit switch (SW8001) does not turn on within 40 sec after the paper deck motor (M8001) has turned ON.

0002 The paper deck lifter lower switch (SW8002) does not turn on within 40 sec after the paper deck motor (M8001) has turned ON.

0003 The error detection circuit on the DC controller PCB has detected overcurrent in the deck lifter motor drive circuit.

## E044

Cause: The paper width set for the cassette or the multifeeder is wrong, or the slide resistor is faulty.

Description:

0001 Wrong paper width for multifeeder

0002 Wrong paper width for upper cassette

0003 Wrong paper width for lower cassette

## E050

Cause
- Duplex paper jogging guide motor (M23; faulty)
- Duplex paper jogging guide home position sensor (PS29; faulty)
- DC controller PCB (faulty)

Description

0001 The duplexing unit stacking guide home position sensor (PS29) does not turn ON within 4 sec after the duplex paper jogging guide motor (M23) has turned ON.

0002 The duplex paper jogging guide home position sensor (PS29) remains ON for 1 sec or more after the duplexing unit stacking guide motor (M23) has turned ON.

## E061

Cause

Description

Potential Control Fault
high-order 2 digits
xx=00: common error
xx=01: C
xx=02: M
xx=03: Y
xx=04: Bk

Cause
- Potential measurement unit (faulty)
- DC controller PCB (faulty)
- Pre-exposure lamp (fault)

Description

xx01 The difference between VD1 measured during the 1st rotation and VD1 measured during the 2nd rotation is 30 V or more.

xx02 The difference between VD2 measured during the 1st rotation and VD2 measured during the 2nd rotation is 30 V or more.

xx03 The difference between VL1 measured during the 1st rotation and VL1 measured during the 2nd rotation is 30 V or more.

xx04 The difference between VL2 measured during the 1st rotation and VL2 measured during the 2nd rotation is 30 V or more.

Cause
- Primary/Pre-primary charging assembly (faulty)
- HVDC (faulty)
- Pre-exposure lamp (faulty)

Description

xx10 The measurement of VD1 is 500 V or higher and, in addition, the measurement of VD2 is 900 V or higher.

# E061

Cause
- Primary charging assembly (faulty)
- HVDC (faulty)

Description

xx11 The measurement of VD1 is 900 V or higher and, in addition, the measurement of VD2 is 900 V or higher.

Cause
- Video controller PCB (faulty)
- Laser unit (faulty)

Description

xx12 The measurement of VD1 is 200 V or lower and, in addition, the measurement of VD2 is 600 V or lower.

xx13 The measurement of VD1 is 150 V or lower and, in addition, the measurement of VD2 is 300 V or lower.

Cause
- Primary charging assembly (faulty)
- HVDC (faulty)

Description

xx14 The measurement of VD1 is 150 V or lower and, in addition, the measurement of VD2 is 150 v or lower.

Cause
- Potential measurement unit (faulty)
- DC controller PCB (faulty)

Description

xx15 The measurement of VD1, VD2, VL1, or VL2 is 10 V or lower.

Cause
- Video controller PCB (faulty)
- Laser unit (faulty)
- Scanner (faulty)

Description

xx16 The difference between VD1 and VL1 measurements is 20 V or less and, in addition, the measurement of VD1 is 200 V or more.

The difference between VD2 and VL2 measurements is 200 V or less and, in addition, the VD2 measurement is 600 V or higher.

Cause
- Video controller PCB (faulty)
- Laser intensity (poor adjustment)
- Laser unit (faulty)

Description

xx17 The VL1 measurement is 200 V or higher and, in addition, the VL2 measurement is 400 V or higher.

# E061

Cause
- Laser unit (faulty)
- Laser shutter (faulty)
- Photosensitive drum (faulty)
- Scanner (faulty)
- Video controller PCB (faulty)
- Laser intensity (adjustment faulty)

Description

xx20 The computation value of V00 is the upper limit value (800 V) or higher.

xx21 The computation value (750 V) of Vdc is the upper limit value (750 V) or higher.

xx22 The computation value of Vg is the upper limit value (950 V) or higher.

xx23 The computation value of V00 is the upper limit value (950 V) or higher.

Cause
- Potential measurement unit (faulty)
- HVDC (faulty)
- Laser unit (faulty)
- Video controller PCB (faulty)
- Laser intensity (adjustment fault)

Description

xx24 The computation value of Vdc is the lower limit value (200 V) or lower.

xx25 The computation value of V00 is the lower limit value (325 V) or lower.

xx26 The computation value of Vg is the lower limit value (250 V) or lower.

xx27 The computation value of VFF is the lower limit value (700 V) or lower.

xx28 The computation value of VFF is the lower limit value (0 V) or lower.

Cause
- Video controller PCB (faulty)
- Laser unit (faulty)
- Laser intensity (adjustment fault)
- Photosensitive drum (faulty)
- Scanner (faulty)
- Potential measurement unit (faulty)
- HVDC (faulty)

# E061

Description

xx30 The measurement of VD1 is 400 V or higher.
xx31 The measurement of VD1 is 200 V or lower.
xx32 The measurement of VD2 is 800 V or higher.
xx33 The measurement of VD2 is 500 V or lower.
xx34 The measurement of VL1 is 200 V or higher.
xx35 The measurement of VL2 is 400 V or more.
xx36 The measurement of VL2 is 0 V or lower.

Cause

- Potential measurement unit (faulty)
- DC controller PCB (faulty)

Description

xx50 The difference between the computation value of Vdc measured previously and the computation value of Vdc measured currently is 30 V or more.
xx51 The difference between the computation value of Vg measured previously and the computation value of Vg measured currently is 30 V or more.

Cause

- Potential measurement unit (faulty)
- HVDC (faulty)
- Video controller PCB (faulty)
- Laser unit (faulty)
- Laser shutter (faulty)
- Scanner (faulty)
- Environment sensor (faulty)
- Photosensitive drum (faulty)
- Photosensitive drum (poor grounding)

Description

xx52 The computation value of V00 is the upper limit value (325 V) or higher.
xx53 The computation value of V00 is the lower limit value (325 V) or lower.

## E062

Cause

Description

Drum Temperature Control Fault
- xx=00: common error
- xx=01: C
- xx=02: M
- xx=03: Y
- xx=04: Bk

Cause
- DC controller PCB (faulty)
- AC driver (faulty)

Description

xx01 The drum temperature is 57°C or more for 0.5 sec or more.

xx02 The drum temperature has dropped below 15°C or less after it has reached a specific temperature.

Cause

Drum thermistor (faulty)

Description

0010 The drum thermistor has an open circuit or a short circuit.

## E072

Cause
- Belt cleaner drive motor
- Transfer belt unit
- DC controller

Description

The sensor output does not change after a specific period of time (6 sec).

## E073

Cause
- Transfer drawer connector (fault)
- DC controller PCB (fault)
- Transfer belt edge sensor (fault)

Description

0001 The connect signal CONNECT of the transfer assembly frame goes '0' when the front cover is closed.

0002 The transfer belt edge sensor 4 (PS20) and the transfer belt edge sensor 1 (PS17) detected the belt at the same time.

0003 The transfer belt edge sensor 3 (PS19) and the transfer belt edge sensor 2 (PS18) detected the belt at the same time.

0004 The transfer belt edge sensor 3 (PS19) and the transfer belt edge sensor 4 (PS20) detected the belt at the same time.

0005 The transfer belt edge sensor 1 (PS17) and the transfer belt edge sensor 2 (PS18) detected the belt at the same time.

## E074

Cause
- Transfer belt lifter sensor 1 (PS12), 2 (PS13)
- Transfer belt lifter clutch (CL17; faulty)
- DC controller PCB (faulty)

Description

The transfer belt lifter sensor 1 (PS12) or 2 (PS13) does not go '1' (ON) within a specific period of time after the transfer belt lifter clutch (CL17) has turned ON.

## E075

Cause
- Transfer belt edge sensor 1 (PS17; fault)
- Transfer belt edge sensor 2 (PS18; fault)
- Transfer belt edge sensor 1 (PS19; fault)
- Transfer belt edge sensor 2 (PS20; fault)
- Transfer belt swing motor (M13; fault)
- DC controller PCB (fault)

Description

0001 The transfer belt edge sensor 1 (PS17) does not turn off 200 sec after it has detected the belt.
0002 The transfer belt edge sensor 2 (PS18) does not turn off 200 sec after it has detected the belt.
0003 The transfer belt edge sensor 3 (PS19) detected the transfer belt.
0004 The transfer belt edge sensor 4 (PS20) detected the transfer belt.

## E076

Cause

The transfer belt cleaner belt motor is faulty; the connection between the motor and the DC controller PCB is faulty; or the DC controller PCB is faulty.

Description

0001 The error detection circuit on the DC controller PCB has detected overcurrent in the transfer belt waste toner motor drive circuit.

Cause

The transfer belt cleaner web has been taken up; the web length sensor is faulty; or the DC controller PCB is faulty.

Description

0002 An excess load is imposed on the transfer belt cleaning web motor (M12) because of the shortage of the web, causing the cleaning web rotation sensor (PS10) to detect faulty rotation.

## E077

**Cause**

The transfer belt waste toner motor is faulty; the connection between the moor and the DC controller PCB is faulty; or the DC controller PCB is faulty.

**Description**

0001 The error detection circuit on the DC controller PCB has detected overcurrent in the transfer belt waste toner motor drive circuit.

## E100

**Cause**

- Laser unit (faulty)
- Laser driver PCB (faulty)
- Image processor PCB (faulty)

**Description**

xx01 At the start of potential control, the BD signal is not detected for 1 sec or more.

xx02 The operation ON current used to obtain optimum intensity is larger than a specific value.

## E110

**Cause**

- Laser scanner drive system (overload)
- Laser scanner motor (M4; faulty)
- DC controller PCB (faulty)

**Description**

The rotation speed of the motor has deviated from a specific value for 0.1 sec or more.

## E194

**Cause**

- CCD unit for pattern reading (faulty)
- PCB for pattern reading (faulty)
- DC controller PCB (faulty)

In addition, a fault in the primary charging assembly or the transfer belt may have prevented the formation of a pattern.

**Description**

xx01 The center of a pattern cannot be determined.

xx02 The center position (difference) in relation to the M pattern is 61 or more in main scanning direction.

xx03 The center position (difference) in relation to the M pattern is 113 or more for C and Bk and 141 or more for Y in sub scanning direction.

0001 After the shutter motor has started to rotate, the shutter open sensor does not turn on after a specific period of time.

0002 After the shutter motor has started to rotate, the shutter closed sensor does not turn on after a specific period of time.

## E220

Cause

The scanning lamp has deteriorated or has an open circuit; the lamp regulator PCB is faulty; or the reader controller PCB is faulty.

Description

The lamp does not turn on 500 msec after the scanning lamp ON signal has been generated. Or, the lamp fails to turn off 500 msec after the scan ning lamp OFF signal has been generated.

## E226

Cause

The reader suction fan (FM12/13) is faulty.

Description

The reader suction fan (FM12/13) has stopped to rotate.

## E249

Cause

The memory elements on the PCB are not connected, have poor contact, or are faulty.

Description

0001 An error has occurred in the course of a read/write check of the memory on the IP memory PCB.

0002 An error has occurred in the course of a read/write check of the memory on the ED board.

## E260

Cause

- DC power supply PCB unit (faulty)
- DC controller PCB (faulty)
- DC power supply cooling fan (faulty)

Description

0001 When the power switch is turned ON, 5V is not present on the DC controller PCB.

0002 When the power switch is turned on with the front cover closed, 24 V is not present on the DC controller PCB.

0003 The thermal switch has detected overheating of the 5V system on the DC power supply PCB.

0004 The thermal switch has detected overheating in the 24VR system on the DC power supply PCB.

0005 The thermal switch has detected overheating in the 24VU system on the DC power supply PCB.

0006 The DC power supply cooling fan is not rotating normally.

## E350

Cause: ECO-ID PCB (faulty)

Description:

- The ECO-ID PCB is not mounted.
- The connection between ECO-ID PCB and reader controller PCB is faulty.

During the power switch has been turned ON, the communication between ECO-ID PCB and the reader controller is not normal.

## E351

Cause: Image processor PCB (faulty)

Description:

The communication within the image processor PCB is faulty.

## E620

Cause:

- IP-MAIN PCB (faulty)
- IP-ED PCB (faulty)

Description:

The communication between the IP-ED PCB and the IP-MAIN PCB is interrupted for 5 sec or more.

## E700

Cause:

- DC controller PCB (faulty)
- Reader unit controller PCB (faulty)
- Power supply PCB (faulty)

Description:

The communication between the DC controller PCB and the reader unit controller PCB is disrupted for 5 sec or more.

# RDF

The CPU on the RDF controller PCB is equipped with a mechanism to check the condition of the machine (sensors, in particular). The mechanism runs a check as necessary and indicates on the copier's control panel the presence of an error upon detection.

| | |
|---|---|
| **E400** | |
| Cause | Data communication with copier (faulty) |
| Description | Communication with the copier is monitored at all times. The communication is disrupted for 5 sec or more. |
| **E401** | |
| Cause | • Pick-up motor (M1; faulty)<br>• Pick-up roller home position sensor 1 (S8; faulty) |
| Description | The sensor state does not change even after the pick-up motor has been driven for more than 2 sec. |
| **E402** | |
| Cause | • Belt motor (M3; faulty)<br>• Belt motor clock sensor (S11; faulty) |
| Description | The number of belt motor clock pulses is less than a specific value for 100 ms. |
| **E403** | |
| Cause | • Reversing motor (M2; faulty)<br>• Slip sensor (S10; faulty) |
| Description | The number of slip clock pulses is below a specific value for 100 ms. |
| **E404** | |
| Cause | • Delivery motor (M5; faulty)<br>• Delivery motor clock sensor (S12; faulty) |
| Description | The number of delivery motor clock pulses is below a specific value for 200 ms. |

## E405

| | |
|---|---|
| Cause | • Pick-up motor (M1; faulty)<br>• Pick-up motor clock sensor (S12; faulty) |
| Description | The number of pick-up motor clock pulses is below a specific value for 200 ms. |

## E407

| | |
|---|---|
| Cause | • Pick-up motor (M6; faulty)<br>• Tray position sensor (S25; faulty) |
| Description | The sensor state does not change even the tray ascent motor is driven for 2 sec or more. |

## E408

| | |
|---|---|
| Cause | • Feeding motor (M8; faulty)<br>• Feeding motor clock sensor (S22; faulty) |
| Description | The number of feeding motor clock pulses is below a specific value for 100 ms. |

## E411

| | |
|---|---|
| Cause | • Registration sensor 1 (S3; faulty)<br>• Skew sensor 1 (S4; faulty)<br>• Manual feed registration sensor (S19; faulty)<br>• Image leading edge sensor (S20; faulty)<br>• Original sensor 1 (S7; faulty) |
| Description | The output of each sensor in the absence of paper is higher than a specific value. |

# Sorter

## E510

Cause: There is no clock signal from the clock sensor (P15) of the feeding motor for 250 ms or more.

Description: There is no clock signal from the clock sensor (P15) of the feeding motor fopr 250 ms or more.

## E516

Cause: Low-speed feeding motor (M10; rotation failure)

Description: There is no clock signal from the clock sensor (P123) of the feeding motor for 250 ms or more.

## E517

Cause: The locking cam home position for the buffer pass unit cannot be de tected.

Description:

- 0001 The upper cam solenoid 1 is damaged, the upper cam sensor 1 is damaged, or the position of the upper cam sensor light-blocking plate is faulty.
- 0002 The upper cam solenoid 2 is damaged, the upper cam sensor 2 is damaged, or the position of the upper cam sensor light-blocking plate is faulty.
- 0003 The upper cam solenoid 1 or 2 is damaged, both upper cam sensor 1 and 2 are damaged, or the position of the upper cam sensor light-blocking plate is wrong.
- 0004 Either or both of the upper cam solenoids are damaged, or the position of the upper cam sensor light-blocking plate is faulty.
- 0005 The upper cam solenoid or the sensor is damaged.
- 0006 A serial port communication sensor read attempt has failed (mismatch in echo back).
- 0007 A serial port communication unit read attempt has failed (mismatch in echo back).
- 0008 A serial port communication unit write attempt has failed (mismatch in echo back).
- 0009 A serial port communication unit write attempt has failed (mismatch in write execution echo back).
- 0011 The lower cam solenoid 1 is damaged, the lower cam sensor 1 is damaged, or the position of the lower cam sensor light-blocking plate is faulty.

| | |
|---|---|
| | 0012 The lower cam solenoid 2 is damaged, the lower cam sensor 2 is damaged, or the position of the lower cam sensor light-blocking plate is faulty.<br>0013 Either lower cam solenoid 1 or 2 is damaged , both lower cam sensors 1 and 2 are damaged, or the position of the lower cam sensor light-blocking plate is faulty.<br>0014 Either or both of the upper cam solenoids are damaged, or the position of the lower cam sensors light-blocking plate is faulty.<br>0015 Either the lower cam solenoid or the sensor is damaged. |
| **E522** | |
| Cause<br>Description | Push bar motor (M7; rotation failure)<br><br>The operation does not end within 2000 ms after the motor drive signal has been generated. |
| **E523** | |
| Cause<br>Description | Reference wall motor (M6; rotation failure)<br><br>The operation does not end within 2000 ms after the motor drive signal has been generated. |
| **E524** | |
| Cause<br>Description | Multi guide motor (M5; rotation failure)<br><br>The operation does not end within 2000 ms after the motor drive signal has been generated. |
| **E525** | |
| Cause<br>Description | Bin paper sensor 1 (S3, S4; auto adjustment fault)<br><br>Auto adjustment of the bin paper sensor 1 (S3, S4) cannot be executed; or, an error has occurred in the auto adjustment value. |
| **E526** | |
| Cause<br>Description | Bin paper sensor 2 (S6, S7; auto adjustment)<br><br>Auto adjustment of the bin paper sensor (S6, S7) cannot be executed; or, an error has occurred in the auto adjustment value. |
| **E530** | |
| Cause<br>Description | Guide bar motor (M8 rotation failure)<br><br>The operation does not end within a specific time after the motor drive signal has been generated: 5000 ms if front retrieval, and 2000 ms otherwise. |

## E531

Cause
Description

Stapler unit drive motor (M4; rotation failure)

- The operation does not end within 2000 ms after the motor drive signal has been generated.
- There is no clock signal from the clock sensor (P18) of the motor for 250 ms or more.
- The input signal from the shifting home position sensor (P19) for 1000 ms or more.

## E532

Cause
Description

Stapler unit shift motor (M3; rotation failure)

The operation does not end within 5000 ms after the motor drive signal has been generated.

## E533

Cause
Description

Stapler paper sensor auto adjustment (faulty)

Auto adjustment of the stapler paper sensor cannot be executed; or, an error has occurred in the auto adjustment value.

## E540

Cause
Description

Bin shift motor (M9; rotation failure)

- The operation does not end within a specific period of time after the motor drive signal has been generated: 20000 ms during initialization, and 2000 ms otherwise.
- There is no clock signal from the clock plate sensor of the motor for 250 ms or more.
- The input signal from the lead cam position sensor (P120) does not change for 2000 ms or more.

## E599

Cause
Description

DC output (from sorter controller; faulty)

An error has occurred in the DC output (24 VL, 24 VP) from the sorter controller PCB.

# Projector

## E634

| | |
|---|---|
| Cause | Film projector lamp (faulty) |
| Description | See the Service Manual for the film projector. |

## E718

| | |
|---|---|
| Cause | • IP-MAIN PCB (faulty)<br>• Film projector controller PCB (faulty) |
| Description | The communication between the IP-MAIN PCB and the film projector is interrupted for 5 sec or more. |

## E800

| | |
|---|---|
| Cause | • Power switch<br>• DC controller PCB<br>• DC harness |
| Description | An interruption in the auto shut-off signal is detected for 1 sec or more. |

# Fan Error

## E804

Cause Description: Power supply unit (DCP1) cooling fan FM 17/18 (error)

0001 The rotation of the cooling fan for the power supply unit (DCP1) has stopped.

## E805

Cause Description: The delivery assembly exhaust fan (FM1/2/3) is faulty.

0001 The delivery assembly exhaust fan (FM1/2/3) has stopped to rotate.

Cause Description: The general exhaust fan (FM21/22/23) is faulty.

0001 The general exhaust fan (FM21/22/23) has stopped to rotate.

## E807

Cause Description: The laser cooling fan (FM4/5) is faulty.

0001 The laser cooling fan (FM4/5) has stopped to rotate.

Cause Description: The laser scanner motor cooling fan (FM24) is faulty.

0002 The laser scanner motor cooling fan (FM24) has stopped to rate.

Cause Description: The digital unit cooling fan 3 (FM16) is faulty.

0003 The digital unit cooling fan 3 (FM16) has stopped to rotate.

Cause Description: The digital unit cooling fan 1/2 (FM14/15) is faulty.

0004 The digital unit cooling fan 1/2 (FM14/15) has stopped to rotate.

## E822

Cause Description: The pre-fixing feed fan (FM7) is faulty.

0001 The pre-fixing feed fan (FM7) has stopped to rotate.

Cause Description: The delivery lower cooling fan (FM19/20/27) is faulty.

0002 The delivery lower cooling fan (FM19/20/27) has stopped to ro tate.

Cause Description: The reversing assembly exhaust fan (FM28/29/30/33) is faulty.

0003 The reversing assembly exhaust fan (FM28/29/30/33) has stopped to rotate.

| | |
|---|---|
| Cause | The fixing heat discharge fan (FM31) is faulty. |
| Description | |
| | 0004 The fixing heat discharge fan (FM31) is faulty. |
| Cause | The delivery cooling fan (FM34) is faulty. |
| Description | |
| | 0005 The delivery cooling fan (FM34) has stopped to rotate. |
| Cause | The pre-fixing exhaust fan (FM35/36) is faulty. |
| Description | |
| | 0006 The pre-fixing exhaust fan (FM35/36) has stopped to rotate. |

## E824

| | |
|---|---|
| Cause | The primary exhaust fan (FM6) is faulty. |
| Description | |
| | 0001 The primary exhaust fan (FM6) has stopped to rotate. |
| Cause | The primary suction fan (FM8/9) is faulty. |
| Description | |
| | 0002 The primary suction fan (FM8/9) has stopped to rotate. |

## E826

| | |
|---|---|
| Cause | The pickup cooling fan (FM26/32) is fault. |
| Description | |
| | 0001 The pickup cooling fan (FM26/32) has stopped to rotate. |

1. If the self diagnosis mechanism has been activated, you can reset the machine by turning its power switch off and then on.
   This, however, does not apply to ‘E000’; if allowed with the thermistor out of order, such would heat and damage the fixing roller.
2. If ‘E005’ (ADD CLEANING BELT) is indicated, replace the cleaning web and execute ‘E005-RLS’ of ‘FUSER’ under ‘FUNC’ in service mode.
3. Even after clearing the E indication by turning off the power switch, a description of the last E indication may be checked using ‘JAM/ERROR’ under ‘DISPLAY’ in service mode.

- Clearing E000

1) Start service mode, and select ‘FUSER’ under ‘FUNC’.
2) Press ‘E000-RLS’.
3) Turn off and then on the power switch.

- Clearing E005

1) Start service mode, and select ‘FUSER’ under ‘FUNC’.
2) Press ‘E005-RLS’.
3) Turn off and then on the power switch.

- Clearing E075

1) Start service mode, and select ‘F-MISCp’ under ‘FUNC’.
2) Press ‘E075-RLS’.
3) Turn off and then on the power switch.

- Clearing ‘E004’

1) Turn off the power switch.
2) Disconnect and connect the power plug from and to to the power outlet.
3) Turn on the power switch.

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