RICOH UNIVERSITY
Learning ◆ Knowledge ◆ Performance

# D062/D063/D065/D066
# SERVICE MANUAL

**(Book 1 of 2) 004778MIU**

**MAINFRAME**

LANIER RICOH SAVIN

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# D062/D063/D065/D066
# SERVICE MANUAL

(BOOK 1 OF 2) MAINFRAME

LANIER
RICOH
SAVIN

RICOH UNIVERSITY
Learning ◆ Knowledge ◆ Performance

# D062/D063/D065/D066
# SERVICE MANUAL

**Book 1 of 2**

**MAINFRAME**

004778MIU

LANIER RICOH SAVIN

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***Ricoh Americas Corporation***

# LEGEND

| PRODUCT CODE | COMPANY | | | |
|---|---|---|---|---|
| | GESTETNER | LANIER | RICOH | SAVIN |
| D062 | MP 6001/ MP6001 SP | LD360/ LD360sp | Aficio MP 6001/ MP 6001 SP | 9060/ 9060sp |
| D063 | MP 7001/ MP 7001SP | LD370/ LD370sp | Aficio MP 7001/ MP 7001 SP | 9070/ 9070sp |
| D065 | MP 8001/ MP 8001SP | LD380/ LD380sp | Aficio MP 8001/ MP 8001 SP | 9080/ 9080sp |
| D066 | MP 9001/ MP 9001SP | LD390/ LD390sp | Aficio MP 9001/ MP 9001 SP | 9090/ 9090sp |

# DOCUMENTATION HISTORY

| REV. NO. | DATE | COMMENTS |
|---|---|---|
| * | 06/2009 | Original Printing |
| | | |
| | | |
| | | |

# D062/D063/D065/D066

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## ENERGY SAVING

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SEE SECTION D454 FOR DETAILED TABLE OF CONTENTS

# Read This First

## Safety, Conventions, Trademarks

### Safety

#### Prevention of Physical Injury

1. Before disassembling or assembling parts of the machine and peripherals, make sure that they are unplugged.
2. The plug should be near the machine and easily accessible.
3. Note that some components of the machine and the paper tray unit are supplied with electrical voltage even if the main power switch is turned off.
4. If any adjustment or operation check has to be made with exterior covers off or open while the main switch is turned on, keep hands away from electrified or mechanically driven components.
5. If the [Start] key is pressed before the machine completes the warm-up period (the [Start] key starts blinking red and green ), keep hands away from the mechanical and the electrical components as the machine starts making copies as soon as the warm-up period is completed.
6. The inside and the metal parts of the fusing unit become extremely hot while the machine is operating. Be careful to avoid touching those components with your bare hands.
7. Always connect the power cord directly into a wall outlet. Never use an extension cord.
8. Inspect the power cord for damage. Never cut or attempt to modify the power cord in any way.
9. Keep the machine away from dust and high humidity. Never expose the machine to corrosive gases.
10. Never use flammable liquids or aerosols around the machine.
11. Never handle the power cord or plug with wet hands.

#### Health Safety Conditions

1. Never operate the machine without the ozone filters installed.
2. Always replace the ozone filters with the specified types at the proper intervals.
3. Toner and developer are non-toxic, but if you get either of them in your eyes by accident, it may cause temporary eye discomfort. Try to remove with eye drops or flush with water as first aid. If unsuccessful, get medical attention.
4. This machine employs an LED array in the scanner and image writing unit.

Important

- This machine is rated as a Class 1 LED Device. It is safe for both office and EDP use.

**Observance of Electrical Safety Standards**

1. The machine and its peripherals must be installed and maintained by a customer service representative who has completed the training course on those models.
2. The NVRAM on the controller board has a lithium battery which can explode if replaced incorrectly. Replace the NVRAM only with an identical type. However, the manufacturer recommends replacing the entire NVRAM, not just the battery. Never recharge or incinerate a used NVRAM battery. Dispose of a used NVRAM or NVRAM battery in accordance with local regulations.
3. The danger of explosion exists if the battery on the controller board is incorrectly replaced. Replace the battery only with the equivalent type recommended by the manufacturer. Discard the used controller board battery in accordance with the manufacturer's instructions and local regulations.
4. Test the breaker switches on the main machine and all peripheral devices at least once a year.

**Safety and Ecological Notes For Disposal**

1. Do not incinerate toner bottles or used toner. Toner dust may ignite suddenly when exposed to an open flame.
2. Dispose of used toner, developer, and organic photoconductors in accordance with local regulations. (These are non-toxic supplies.)
3. Dispose of replaced parts in accordance with local regulations.
4. When keeping used lithium batteries in order to dispose of them later, do not put more than 100 batteries per sealed box. Storing larger numbers or not sealing them apart may lead to chemical reactions and heat build-up.

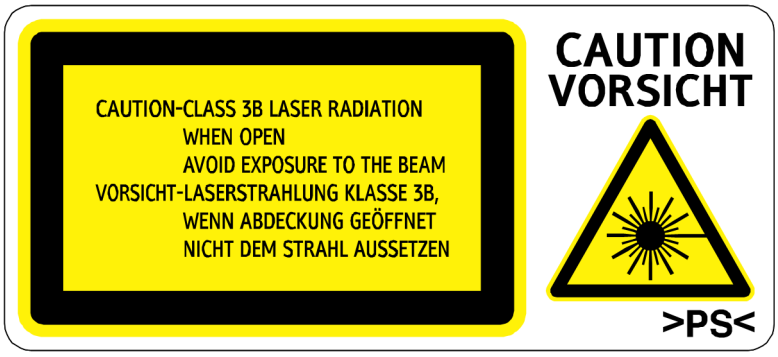
**⚠CAUTION**

- The danger of explosion exists if a battery of this type is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer. Discard used batteries in accordance with the manufacturer's instructions.

## Laser Safety

The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser-based optical units in the field. The optical housing unit can only be repaired in a factory or at a

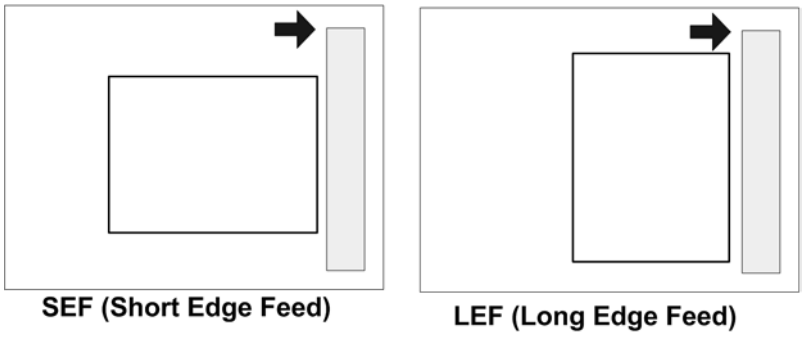
location with the requisite equipment. The laser subsystem is replaceable in the field by a qualified Customer Engineer. The laser chassis is not repairable in the field. Customer engineers are therefore directed to return all chassis and laser subsystems to the factory or service depot when replacement of the optical subsystem is required.

| ⚠WARNING |
| --- |
| Use of controls, or adjustment, or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.<br>**WARNING:**<br>Turn off the main switch before attempting any of the procedures in the Laser Unit section. Laser beams can seriously damage your eyes.<br>**CAUTION MARKING:**<br>  <br><br>Laser_decal_MT |

## Conventions and Trademarks

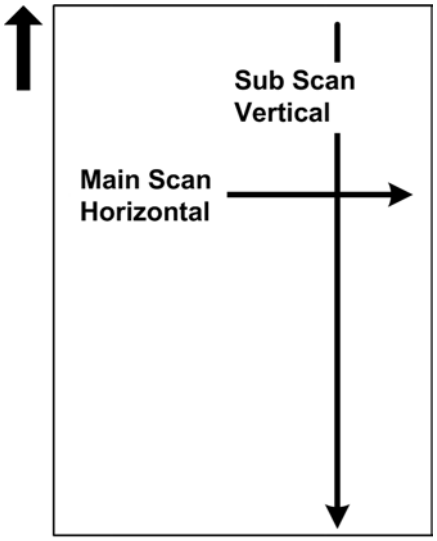
### Conventions

| Symbol | What it means |
| --- | --- |
| | Core Tech Manual |
| | Screw |
| | Connector |
| | E-ring |
| | C-ring |
| | Harness clamp |




C001

The notations "SEF" and "LEF" describe the direction of paper feed. The arrows indicate the direction of paper feed.

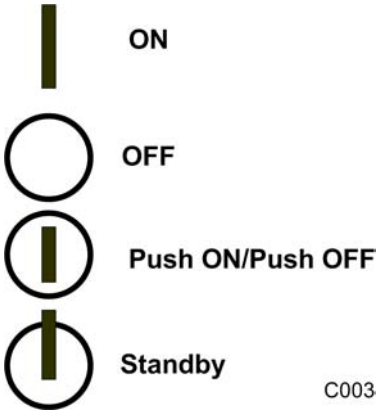



c002

In this manual "Horizontal" means the "Main Scan Direction" and "Vertical" means the "Sub Scan Direction" relative to the paper feed direction.

**Switches and Symbols**

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.




## Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

**⚠WARNING**

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

**⚠CAUTION**

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the machine or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine

Note

- This information provides tips and advice about how to best service the machine.

**Points to Confirm with Operators**

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described

in the operating instructions.

- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur:
  1. Something has spilled into the product.
  2. Service or repair of the product is necessary.
  3. The product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.
- Caution operators about storing extra toner cartridges. To prevent clumping on one end of the toner cartridge, it should always be stored horizontally on a flat service. A toner cartridge should never be stored on its end vertically.

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TAB POSITION 1
TAB POSITION 2
TAB POSITION 3
TAB POSITION 4
TAB POSITION 5
TAB POSITION 6
TAB POSITION 7
TAB POSITION 8

# PRODUCT INFORMATION

| REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| | | None |

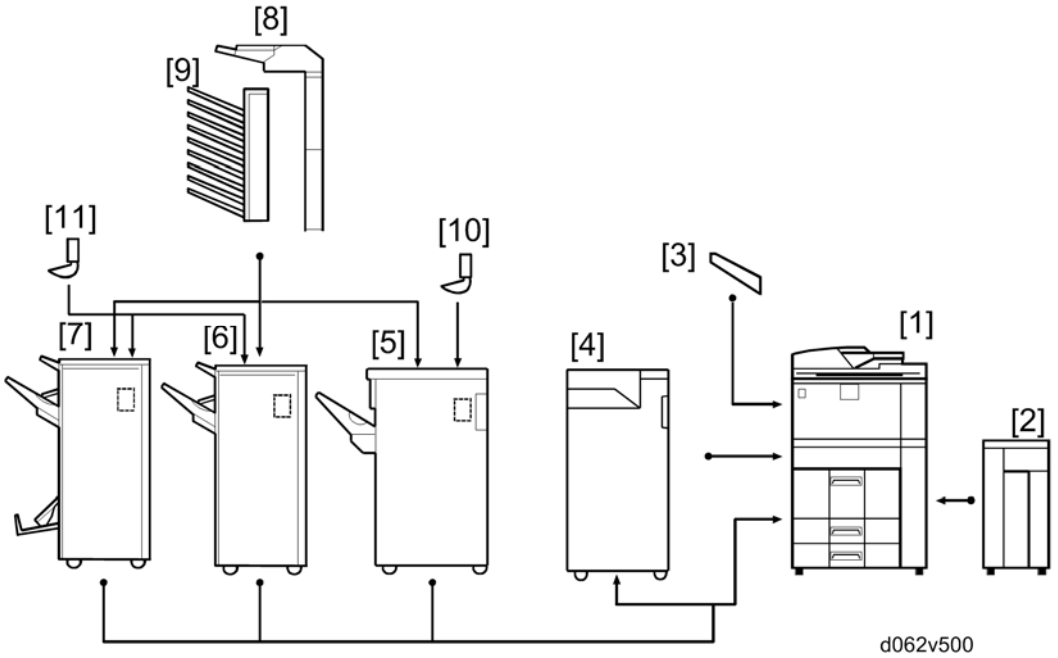
# 1. PRODUCT INFORMATION

## 1.1 SPECIFICATIONS

See "Appendices" for the following information:

- General Specifications
- Optional Equipment

# 1.2 MACHINE CONFIGURATION




| Item | Machine code | Number |
|---|---|---|
| Mainframe | D062/D063/ D065/D066 | 1 |
| A3/11" x 17" Tray Type 9001 | D482 | Inside mainframe |
| Tab Sheet Holder Type3260 | B499 | |
| RT43 (LCT) | B473 | 2 |
| LG Size Tray Type1075 | B474 | Inside LCT |
| Multi-Folding Unit FD5000 | D454 | 4 |
| Finisher SR4050 | D460 | 5 |
| Punch Unit Type 1075 NA 3/2 | B531 | Inside |
| Punch Unit Type 1075 EU 2/4 | B531 | Inside |
| Punch Unit Type 850 SC | B531 | Inside Finisher No. 5 |

| Item | Machine code | Number |
|---|---|---|
| Output Jogger Unit Type 1075 | B513 | 10 |
| Finisher SR4030 | D374 | 6 |
| Finisher SR4040 | D373 | 7 |
| Punch Unit Type 3260 NA 3/2 | B702 | Inside Finisher No. 6 or 7 |
| Punch Unit Type 3260 2/4 EU | B702 | Inside Finisher No. 6 or 7 |
| Punch Unit Type 3260 SC | B702 | Inside Finisher No. 6 or 7 |
| Output Jogger Unit Type3260 | B703 | 11 |
| Cover Interposer Tray Type 3260 | B704 | 8 |
| Mailbox CS391 | B762 | 9 |
| Copy Tray Type 2075 | B756 | 3 |
| Fax Option Type 9001 | D418 | Inside mainframe |
| G3 Interface Unit Type 9001 | D418 | |
| Copy Connector Type 3260 | B328 | |
| Optional Counter Interface Unit Type A | B870 | |
| Copy Data Security Unit Type F | B829 | |
| Gigabit Ethernet Type B | D377 | |
| File Format Converter Type E | D377 | In the I/F slot |
| IEEE 1284 Interface Board Type A | B679 | |
| IEEE 802.11a/g Interface Unit Type J | D377 | |
| IEEE 802.11g Interface Unit Type K | D377 | |
| Bluetooth Interface Unit Type 3245 | B826 | |
| Printer/Scanner Unit Type 9001 | D462 | In the SD card slot |

**Machine Configuration**

| Item | Machine code | Number |
|---|---|---|
| DataOverwriteSecurity Unit Type H | D377 | |
| Post Script3 Unit Type 9001 | D462 | |
| IPDS Unit Type 9001 | D462 | |
| HDD Encryption Unit Type A | D377 | |
| Browser Unit Type E | D430 | |
| USB2.0/SD Slot Type C | D464 | Outside mainframe |
| Card Reader Bracket | B498 | |
| Key Counter Bracket Type1027 | B452 | |

# 1.3 GUIDANCE FOR THOSE WHO ARE FAMILIAR WITH PREDECESSOR PRODUCTS

The D062/D063/D065/D066 series are successor models to the D052/D053/D054 series. If you have experience with the predecessor products, the following information will be of help when you read this manual.

**Different Points from Predecessor Products**

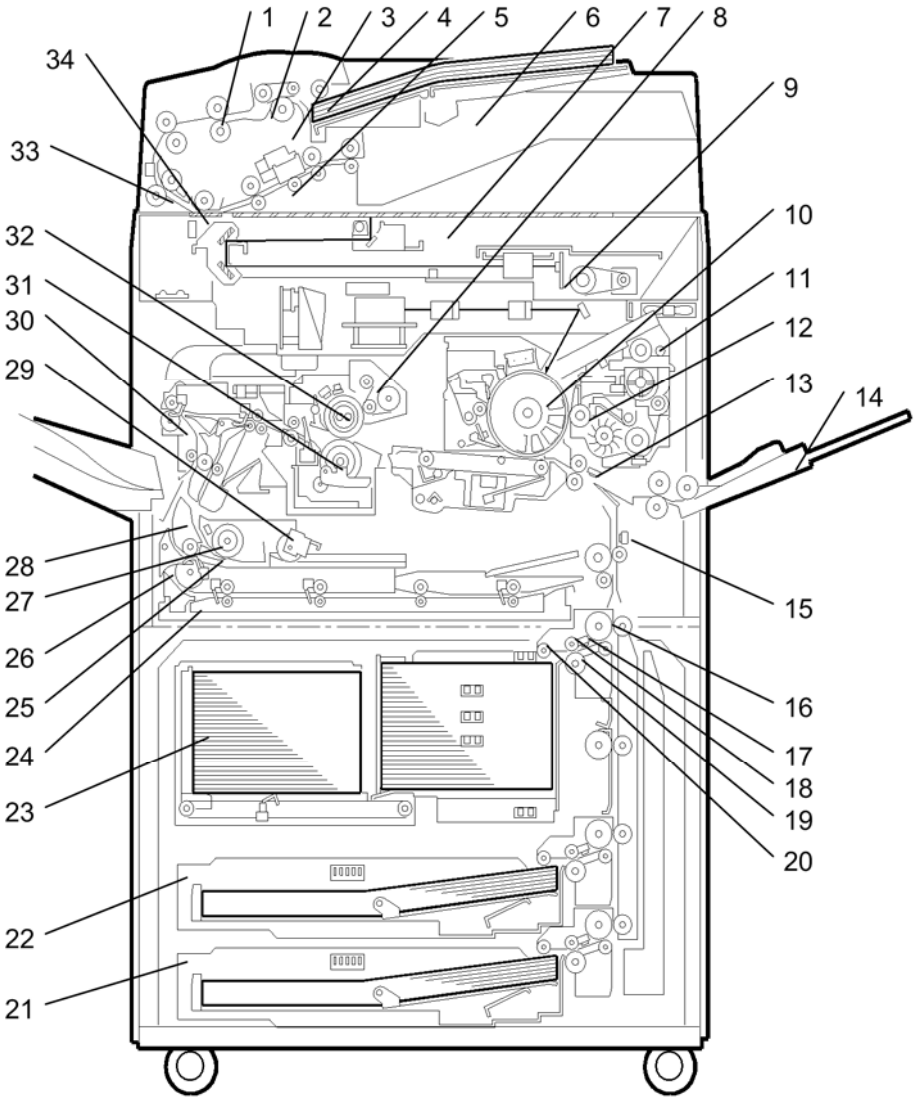
| | D062/D063/D065/D066 | D052/D053/D054 |
|---|---|---|
| SD Slot | 2 slots | 3 slots |
| I/F Slot | 2 slots | 4 slots |
| Model Line Up | 4 models<br>60cpm/70cpm/80cpm/90cpm | 3 models<br>60cpm/70cpm/80cpm |
| Fusing Unit | **D062/D063/D065:**<br>Fusing roller dia: 40mm<br>Pressure roller dia: 40mm<br>**D066:**<br>Fusing roller dia: 50mm<br>Pressure roller dia: 50mm | Fusing roller dia: 40mm<br>Pressure roller dia: 40mm |
| Scanner | Color | B/W |
| Development Unit | **Only for D066**:<br>Pressure release tube is attached.<br>No Fusing Pressure Release Mechanism (No Fusing pressure release motor, HP sensor) | - |
| Paper Feed Motor | **D062/D063/D065:**<br>Paper feed motor is installed in the paper feed unit. | Paper feed motor is installed in the paper feed unit. |

**Guidance for Those Who are Familiar with Predecessor Products**

| | D062/D063/D065/D066 | D052/D053/D054 |
|---|---|---|
| | **D066:**<br>Paper feed motor is installed at the rear of the mainframe. | |
| Fusing Lamp | 2 lamps | 3 lamps |
| ADF original size sensor | 4 sensors | 5 sensors |
| ADF Separation Sensor | Yes | No |
| HDD | 160GB | 80GB |
| Scan to USB/SD | Yes (Option) | No |

# 1.4 OVERVIEW

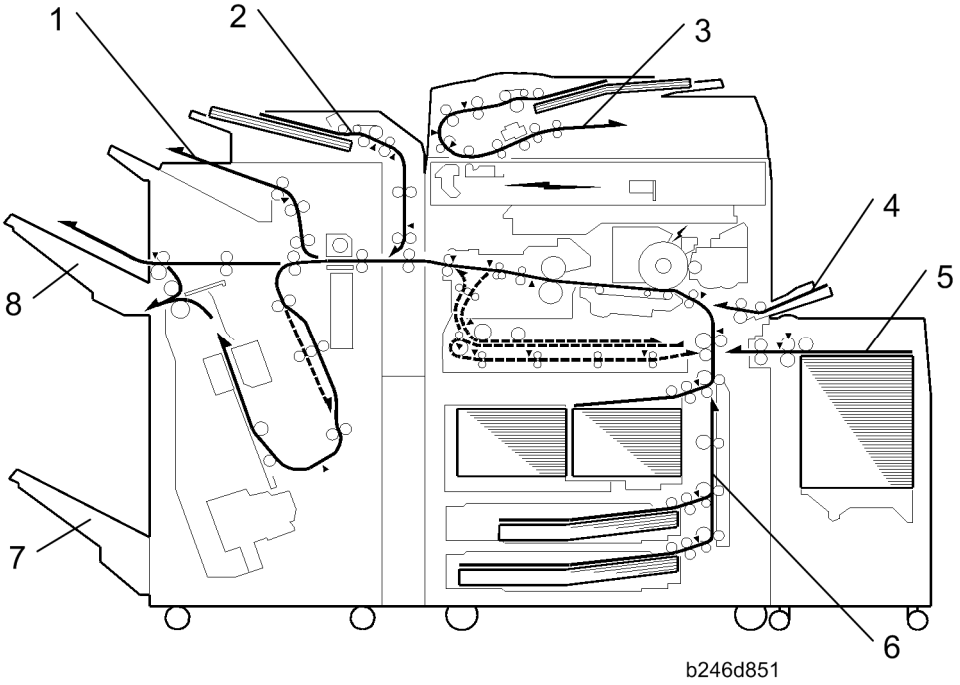
## 1.4.1 MECHANICAL COMPONENT LAYOUT



**Overview**

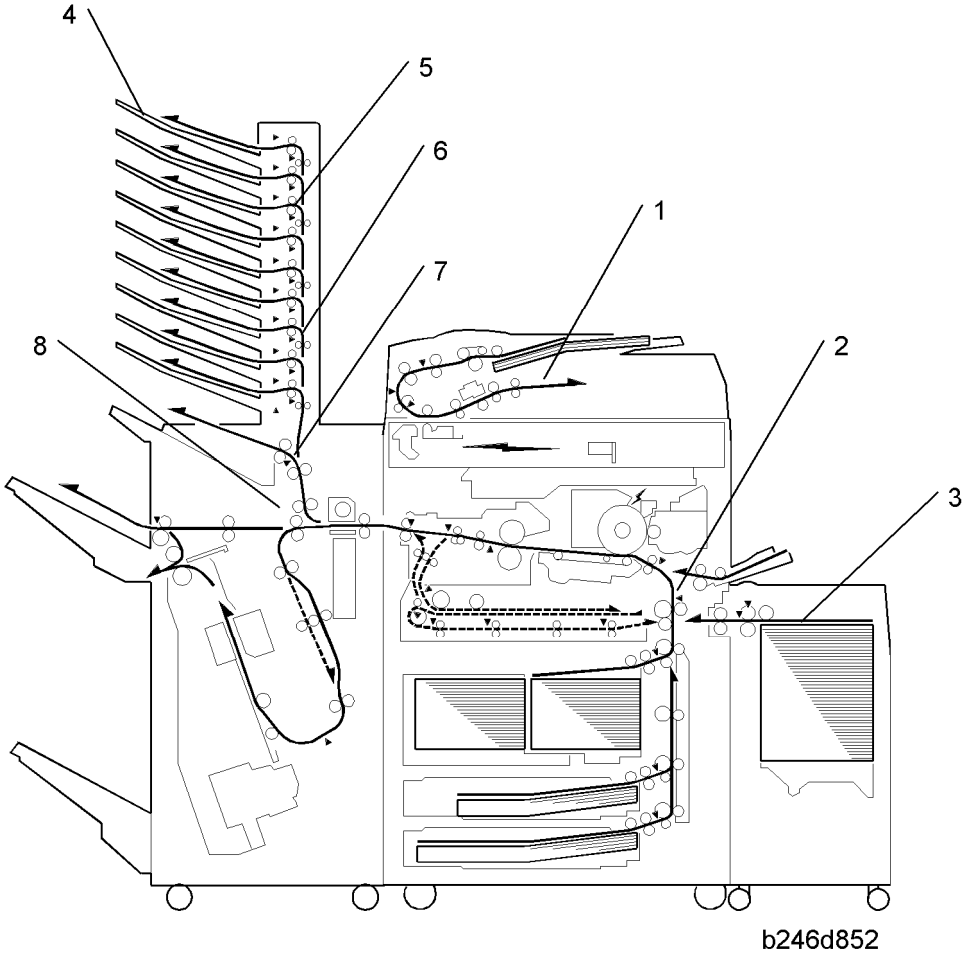
1. Entrance Roller (ADF)
2. Feed Belt (ADF)
3. Separation Roller (ADF)
4. Pick-up Roller (ADF)
5. CIS (Contact Image Sensor)
6. Original Feed-in Tray
7. Exposure Glass
8. Fusing Unit
9. CCD
10. OPC Drum
11. Development Unit
12. Development Roller
13. Registration Sensor
14. By-pass Tray
15. Relay Sensor
16. Grip Roller
17. Feed Sensor (Paper Tray)
18. Feed Roller (Paper Tray)
19. Separation Roller (Paper Tray)
20. Pick-up Roller (Paper Tray)
21. Universal Tray (Tray 3)
22. Universal Tray (Tray 2)
23. Tandem Tray (Tray 1)
24. Duplex Unit
25. Inverter
26. Inverter Exit Roller
27. Inverter Entrance Roller
28. Duplex Junction Gate
29. Reverse Trigger Roller
30. Exit Unit
31. Pressure Roller
32. Hot Roller
33. Scanning (ADF)
34. Exposure (ADF)

## 1.4.2 PAPER PATH (WITH COVER INTERPOSER TRAY)



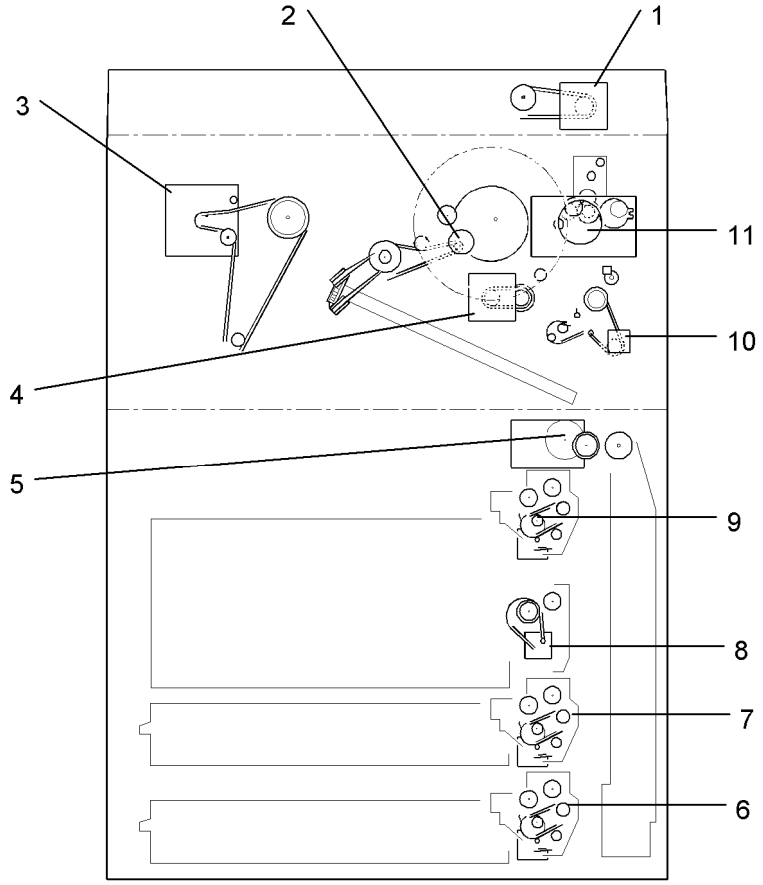

1. Proof Exit Tray
2. Cover Sheet Path
3. Original Path
4. By-pass Tray
5. LCT Feed
6. Vertical Transport Path
7. Finisher Exit Tray 2
8. Finisher Exit Tray 1

## 1.4.3 PAPER PATH (WITH 9-BIN MAILBOX)




1. Original Paper Path
2. Vertical Transport Path
3. LCT Feed
4. Selected Trays
5. Turn Gates
6. Mailbox Paper Path
7. Junction Gate (paper goes either up to the mailbox or out to the finisher's proof tray)
8. Junction Gates (two junction gates control the paper path inside the finisher)

## 1.4.4 DRIVE LAYOUT




b246d801

1. Scanner Motor
2. Drum Motor
3. Fusing/Exit Motor
4. Registration Motor
5. Toner Collection Motor
6. Paper Feed Motor 3
7. Paper Feed Motor 2
8. Lower Relay Motor
9. Paper Feed Motor 1
10. By-pass Motor
11. Development Motor

# INSTALLATION

| REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| 95 ~ 133 | 08/03/2009 | Key Counter Type A (B870) |
| 102 | 07/02/2009 | Added steps to USB installation |
| 126 | 07/02/2009 | Added Testing the SD Card/USB Slot |

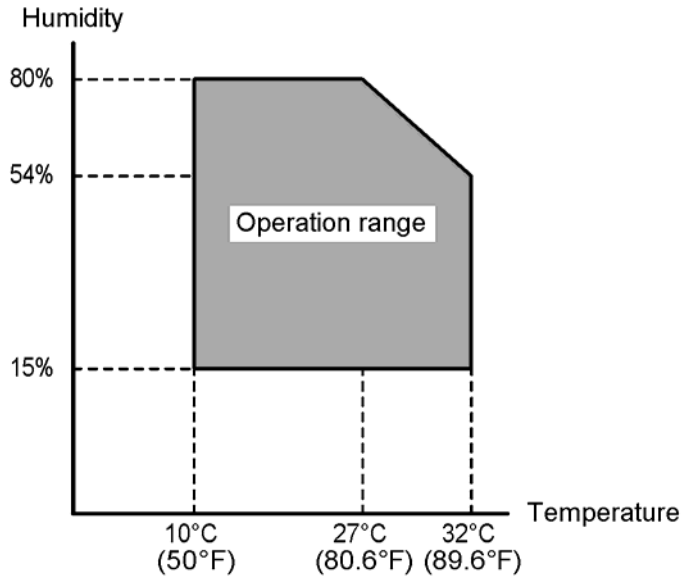
# 2. INSTALLATION

## 2.1 INSTALLATION REQUIREMENTS



### 2.1.1 OPERATING ENVIRONMENT

1. Temperature Range
   - Recommended: 15 °C to 25 °C (59 °F to 77 °F)
   - Possible: 10 °C to 32 °C (50 °F to 90 °F)
2. Humidity Range:
   - Recommended: 30% to 70 %RH
   - Possible: 15% to 80% RH (27 °C 80%, 32 °C 54%)
3. Ambient Illumination: Less than 1,500 lux (do not expose to direct sunlight or strong light.)
4. Ventilation: Room air should turn over at least 3 times per hour
5. Ambient Dust: Less than 0.10 mg/m$^3$




b064i502

6. If the place of installation is air-conditioned or heated, do not place the machine where it will be:
   - Subjected to sudden temperature changes
   - Directly exposed to cool air from an air-conditioner
   - Directly exposed to heat from a heater
7. Do not place the machine where it will be exposed to corrosive gases.

**Installation Requirements**

8. Do not install the machine at any location over 2,000 m (6,500 feet) above sea level.
9. Place the copier on a strong and level base with the front and back of the machine within ±5 mm (0.2") of level.
10. Do not place the machine where it may be subjected to strong vibrations.
11. Do not connect the machine to a power source shared with another electrical appliance.
12. The machine can generate an electromagnetic field which could interfere with radio or television reception.

## 2.1.2 MACHINE LEVEL

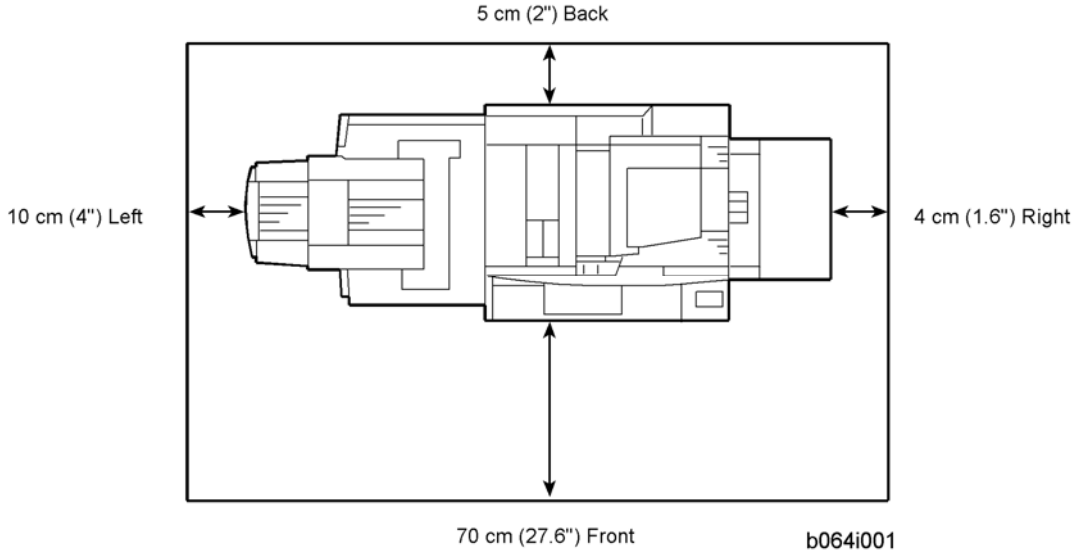
Front to back: Within ±5 mm (0.2") of level

Right to left: Within ±5 mm (0.2") of level

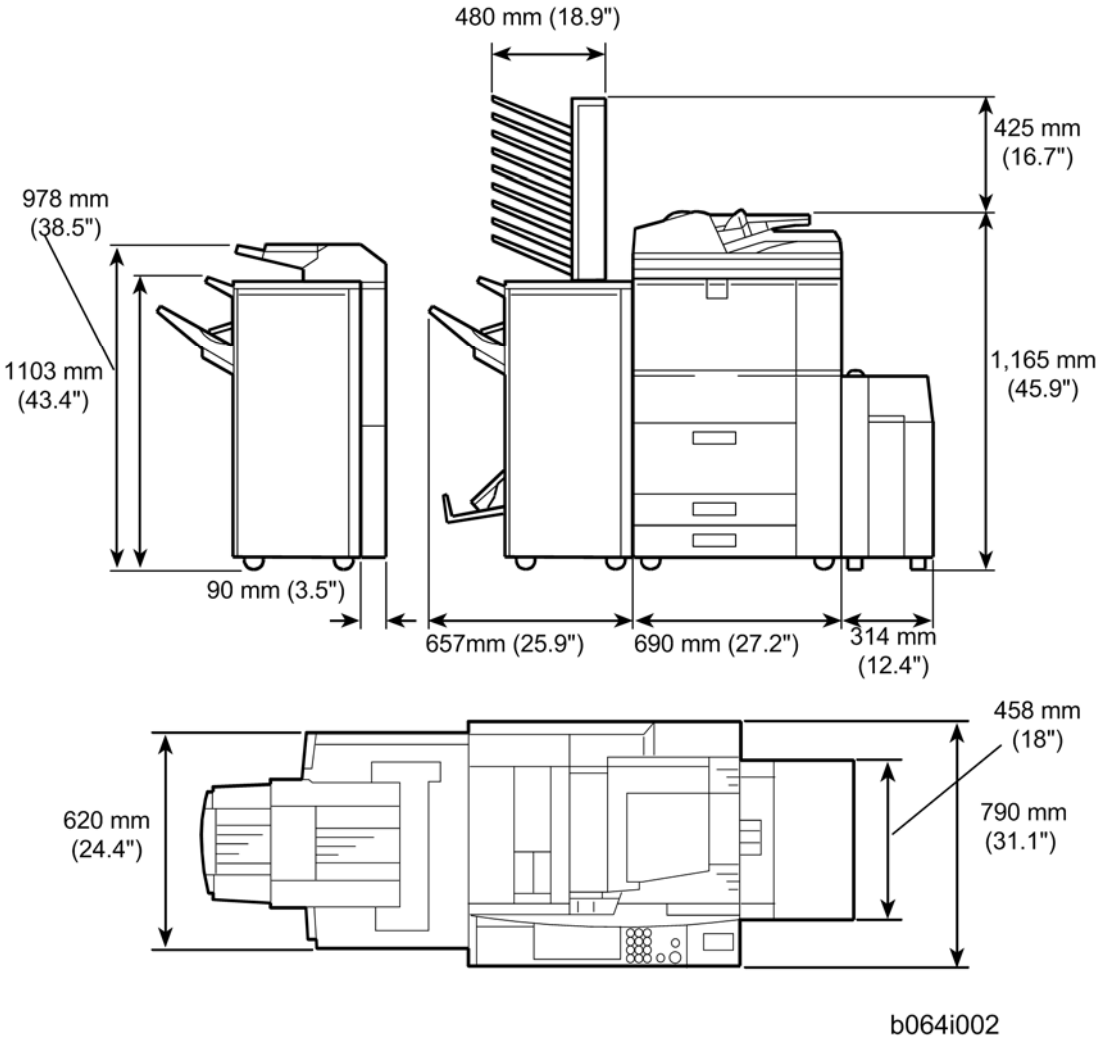
The machine legs may be screwed up or down in order to level the machine. Set a carpenter's level on the exposure glass.

## 2.1.3 MINIMUM SPACE REQUIREMENTS

Place the copier near the power source, providing minimum clearance as shown below. The same amount of clearance is necessary when optional peripheral devices are installed.



## 2.1.4 DIMENSIONS




## 2.1.5 PERIPHERAL/OPTION SUMMARY TABLE

The table below summarizes all the peripheral devices and controller options.

| Bnnn | Name | Class*1 | Comment |
|---|---|---|---|
| B452 | Key Counter Bracket Type 1027 | 1 | Common option |
| B473 | LCT RT43 | 1 | Paper bank for LT/A4 paper |
| B474 | 81/2"x 14" Paper Size Tray Type 1075 | 1 | Paper bank for LG paper |

**Installation Requirements**

| Bnnn | Name | Class*1 | Comment |
|---|---|---|---|
| D482 | A3/11" x 17" Tray Type 9001 | 1 | Installed in Tray 1 (Tandem Tray) |
| B498 | Card Reader Bracket | 1 | Connected directly to the mainframe |
| B499 | Tab Sheet Holder Type 3260 | 2 | Installed in Tray 1 (Tandem Tray) |
| B513 | Output Jogger Unit Type 1075 | 2 | Installed in D460 |
| D462 | Post Script3 Unit Type 9001 | 3 | SD card |
| D464 | USB2.0/SD Slot Type B | 3 | Installed in mainframe |
| B531-27 | Punch Unit Type 1075 EU 2/4 | 2 | Installed in D460 |
| B531-17 | Punch Unit Type 1075 NA 3/2 | 2 | Installed in D460 |
| D377 | File Format Converter Type E | 3 | Board |
| B679 | IEEE1284 Interface Board Type A | 3 | Board |
| D460 | Finisher SR4050 | 1 | Punching, sorting, shifting, corner stapling only |
| D373 | Finisher SR4040 | 1 | Punching, sorting, shifting, corner/booklet stapling |
| D374 | Finisher SR4030 | 1 | Punching, sorting, shifting, corner stapling only |
| B702-27 | Punch Unit Type 3260 EU 2/4 | 2 | Installed in D373, D374 |
| B702-17 | Punch Unit Type 3260 NA 2/3 | 2 | Installed in D373, D374 |
| B703 | Output Jogger Unit Type 3260 | 2 | Installed on D373, D374 |
| B513 | Output Jogger Unit Type 1075 | 2 | Installed on D460 |

| Bnnn | Name | Class*1 | Comment |
|---|---|---|---|
| B704 | Cover Interposer Type 3260 | 2 | Installed on the D374, D374, D460 |
| D377-06 | DataOverwriteSecurity Unit Type H | 3 | SD card |
| B756 | Copy Tray Type 2075 | 1 | Small output tray for mainframe |
| B762 | Mail Box CS391 | 2 | Installed on D373, D374 |
| B826 | Bluetooth Unit Type 3245 | 3 | Board |
| D430 | Browser Unit Type E | 3 | SD card |
| B829 | Copy Data Security Unit Type F | 3 | IPU Board |
| D462 | Printer/Scanner Unit Type 9001 | 3 | SD Card |
| B328 | Copy Connector Type 3260 | 1 | Links two mainframes |
| D463 | VM Card Type J | 3 | SD card |
| D377 | Gigabit Ethernet Type B | 3 | Board |
| D377 | IEEE 802.11a/g, g Interface Unit Type J | 3 | Board |
| D454 | Multi Folding Unit FD5000 | 1 | |
| D418-01 | Fax Option Type 9001 | 1 | Board |
| D418-05 | G3 Interface Unit Type 9001 | 1 | Board |

*1

Class 1: Peripheral units connected directly to the mainframe

Class 2: Components installed on or in peripheral units (punches, etc.)

Class 3: MFP controller options (SD cards, boards)

## 2.1.6 POWER REQUIREMENTS

**⚠CAUTION**

- Make sure that the wall outlet is near the main machine and easily accessible. Make sure the plug is firmly inserted in the outlet.
- Avoid multi-wiring.
- Be sure to ground the machine.
- Never set anything on the power cord.

| | |
|---|---|
| Input voltage level | North America D062/D063/D065 120 V, 60 Hz: 20 A or more<br>D066 208-240V, 12A |
| | Europe/Asia 220 V to 240 V, 50 Hz/60 Hz: 10 A or more |
| | Taiwan 110V, 60 Hz, 20A or more |
| Permissible voltage fluctuation | ±10% |

**⚠CAUTION**

- Never turn off the main power switch when the power LED is lit or flashing. To avoid damaging the hard disk or memory, press the operation power switch to switch the power off, wait for the power LED to go off, and then switch the main power switch off.

The Main Power LED lights or flashes at the following times:

- While the platen cover or ADF is open
- While the main machine is communicating with the network server
- While the machine is accessing the hard disk or memory when reading or writing data.

There are two power switches on the machine:

- **Main Power Switch:** Located on the front left corner of the machine and covered by a plastic cover. This switch should always remain on unless the machine is being serviced.
- **Operation Power Switch:** Located on the right side of the operation panel. This is the switch normally used by the customer to power the machine on and off.

# 2.2 MAIN MACHINE

## 2.2.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

| | Description | Q'ty |
|---|---|---|
| 1. | Model Name Decal (-29 Only) | 1 |
| 2. | Operation Instructions (-17, -19, -21, -29, -57 Only) | 2 |
| 3. | Support | 2 |
| 4. | Decal – Paper Size | 1 |
| 5. | Decal: Caution Chart: Paper Set: Direction | 1 |
| 6. | Leveling Shoe | 2 |
| 7. | Operating Instructions Holder | 2 |
| 8. | Decal – Cleaning - Multiple | 1 |
| 9. | Cloth – DF Exposure Glass | 1 |
| 10. | Cloth Holder | 1 |
| 11. | Decal – Toner Supply - Multiple | 1 |
| 12. | Decal: Power Source: Off | 1 |
| 13. | Decal Exposure Glass: Multiple | 1 |
| 14. | Decal – D1/E1 Multiple | 1 |
| 15. | EU Safety Sheet (-27, -67 only) | 1 |
| 16 | Clear Cover (-17, -29, -57 only) | 1 |
| 17 | Ferrite Core (RFC-13) | 1 |
| 18 | EULA Sheet: 18 languages (-28, -57, -67 only) | 1 |

**Main Machine**

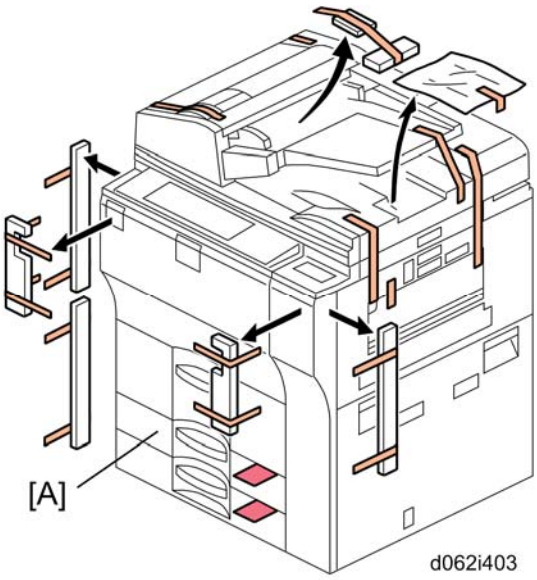
| | Description | Q'ty |
|---|---|---|
| 19 | DHCP Sheet | 1 |
| 20 | Decal: License Agreement 18 Languages (-28, -57, -67 only) | 1 |
| 21 | TEL Name Sheet (-21 only) | 1 |

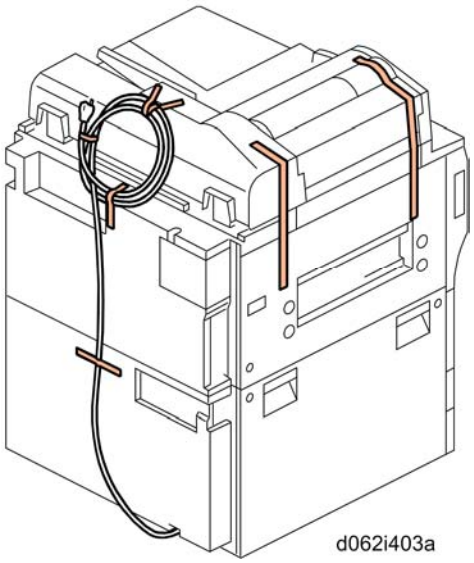
## 2.2.2 INSTALLATION PROCEDURE

### *Removing Tapes and Retainers*

**⚠CAUTION**

- To avoid serious injury, do not connect the power plug to the machine until you are instructed to do so.

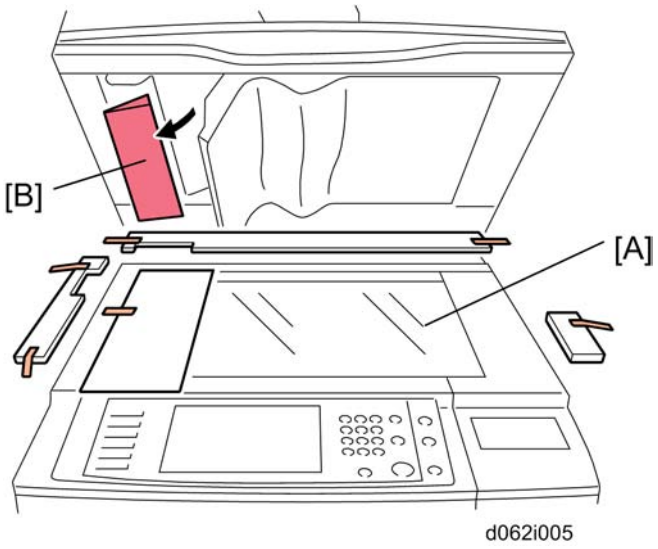


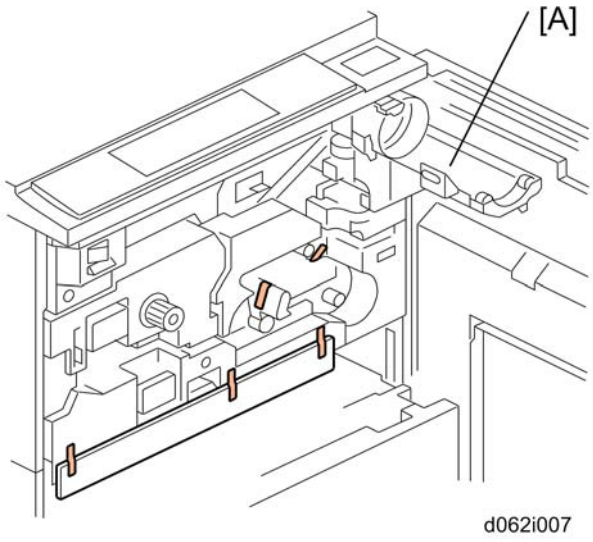

1. Unpack the machine and remove all the wrapping.
2. Remove all filament tape from the front of the machine.
3. Open the lower tray [A] and remove the operating instructions holder and foot risers.
4. Open the ADF feed cover and remove the tape and retainer.
5. Remove the tape from the back of the machine.

Note

- Save the filament tape and shipping retainers to prepare the machine for shipping in the future.

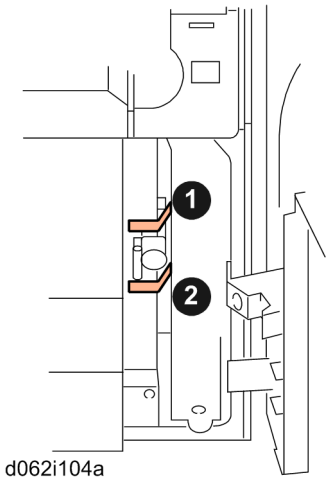



6. Raise the ADF and remove all the tape and shipping retainers around the exposure glass [A] and operation panel.
7. Remove the shipping retaining sheet [B] under the white pad.



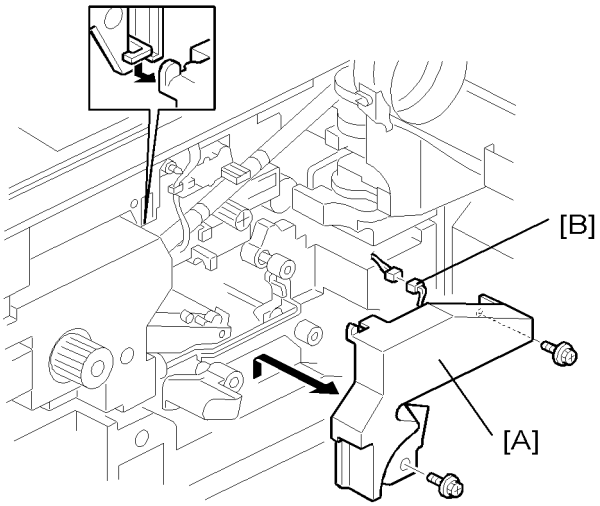

8. Open the front door, open the toner bottle holder [A], then remove all tape and shipping retainers.

**Main Machine**



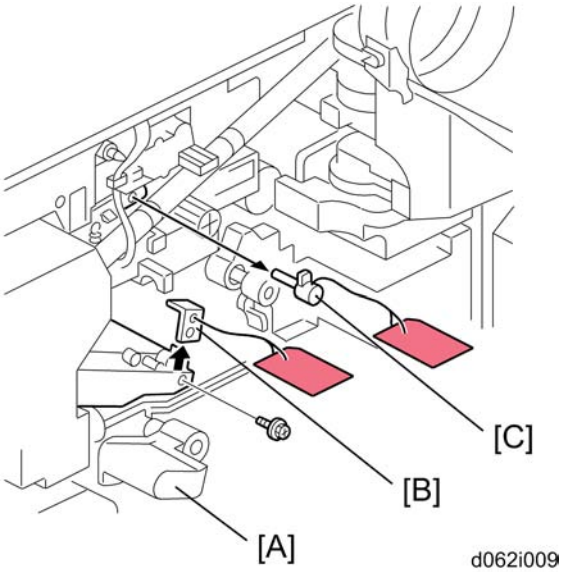

d062i104a

9. Open the right door and remove the tapes from the vertical transport plate.



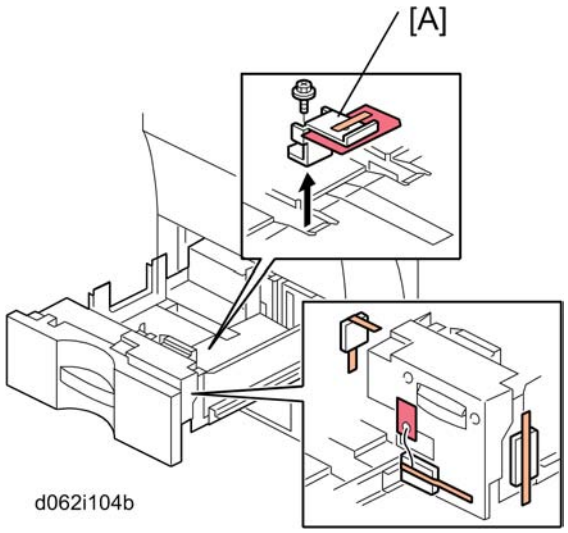

b064i008

10. Remove the PCU inner cover [A] ( x 2) and disconnect the fan motor [B] ( x 1).




d062i009

11. Lower the transfer unit by turning its knob [A].
12. Remove the bracket [B], and the red tag from the transfer belt ( x 1).
13. Remove the pin [C], and the red tag from the cleaning plate.

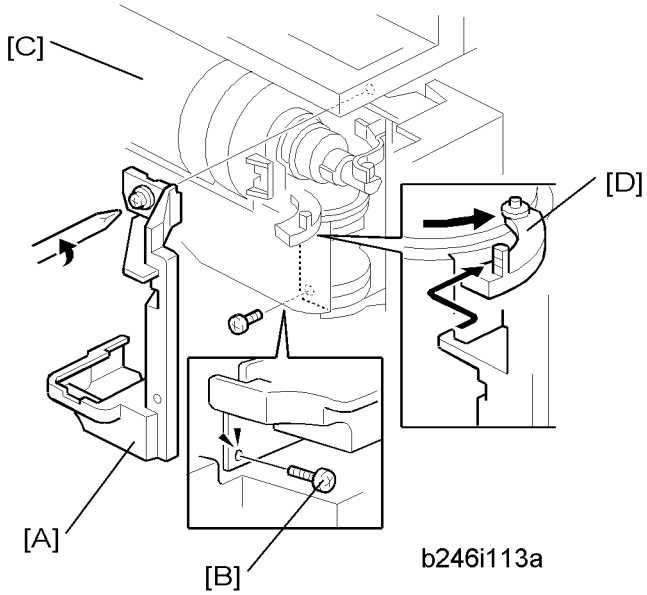



14. Open the tandem tray (top paper tray) and remove the metal retainer bracket [A] ( x 1) and wire, then the red tags (x2) and all tape.

## *Removing and Filling the Development Unit*

Important

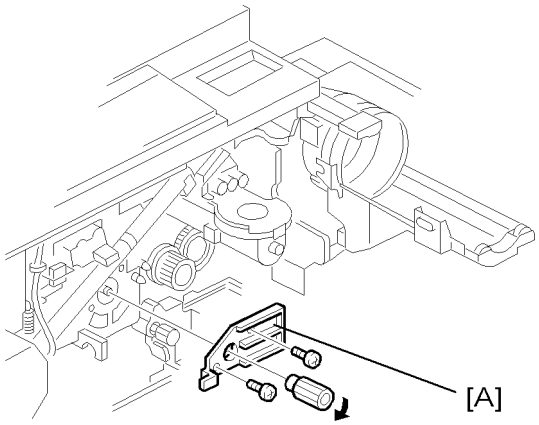
- Before you begin, remove the toner bottle if it is installed.
- The toner bottle holder can be damaged if it is in the machine when you do the procedure below.




1. Open the front door.

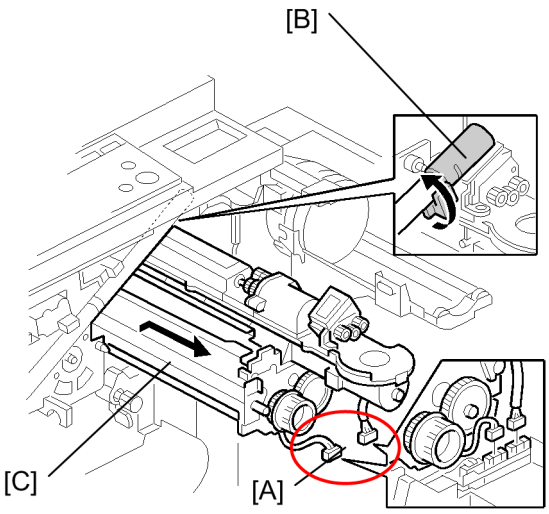
**Main Machine**

2. Remove the shutter cover [A] ( x 1).
3. Remove the lock screw [B].
4. Remove any remaining shipping tape [C].
5. Pull the toner bottle holder [D] and swing it to the right.




b064i302

6. Remove the face plate [A] of the development unit (knob x 1, x 2).



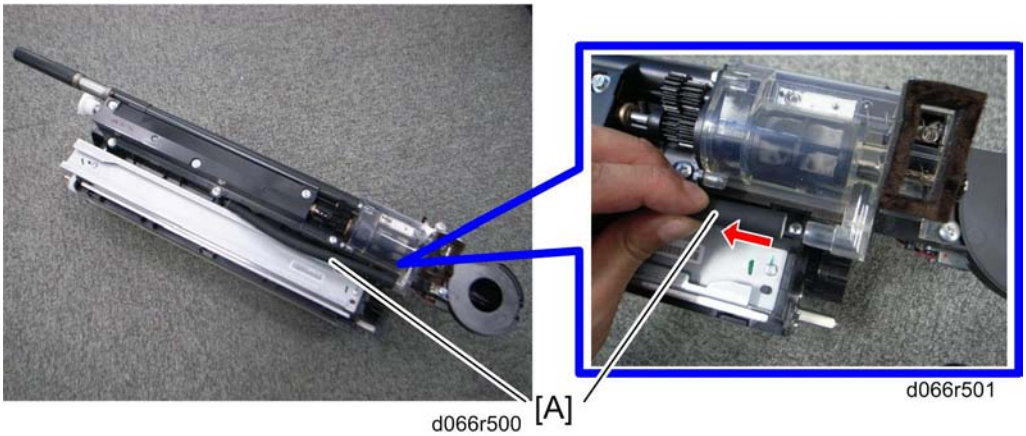

b064i303

7. Disconnect the development unit [A] ( x 2).

Note

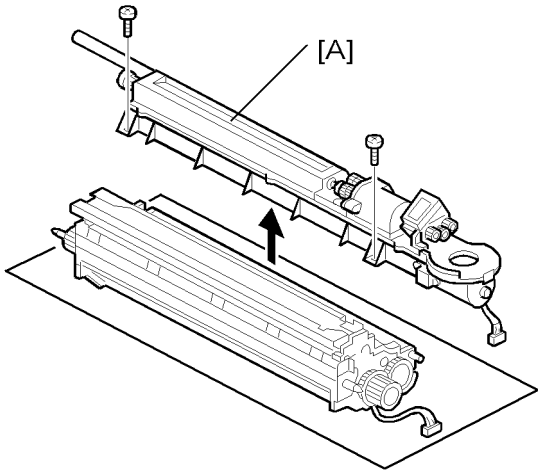
- If the LCT is installed, disconnect it. This lets the front door open far enough for development unit removal.

8. Close the supply pipe shutter [B].
9. While allowing the development unit [C] to slip to the right, slowly pull it out of the machine.



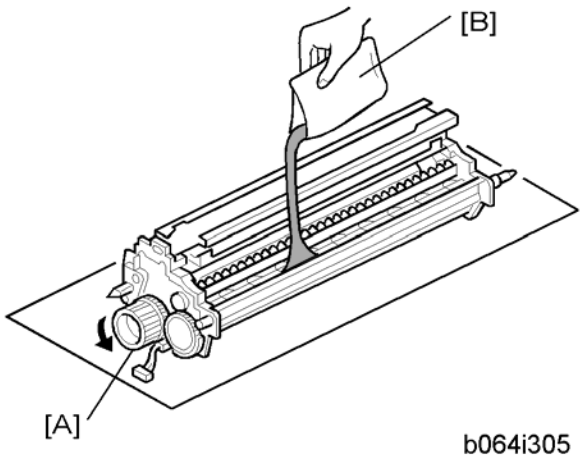

d066r500 d066r501

10. **For D066 only**, remove the pressure release tube [A].




b064i304

11. Toner hopper [A] (☛ p.4-43 "Developer Replacement").
12. Rotate the toner hopper slightly 10° to 20° as you slide it up to remove it.




b064i305

13. While turning the knob [A] slowly, pour in one pack of developer [B] from one end of the

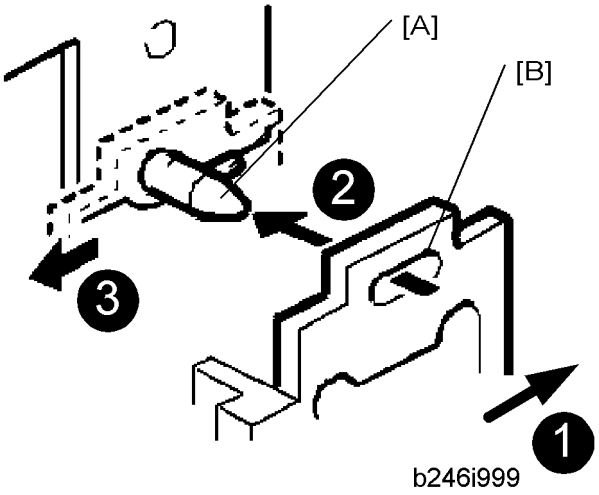
development unit to the other.

14. Make sure that the developer is evenly distributed. Note the developer lot number printed on the top edge of the bag. You will need the lot number when you execute SP2963 (Installation Mode).
15. Assemble the development unit, then re-install it in the machine.
16. Follow the instructions printed on the inside of the front door to install the toner bottle.

Note

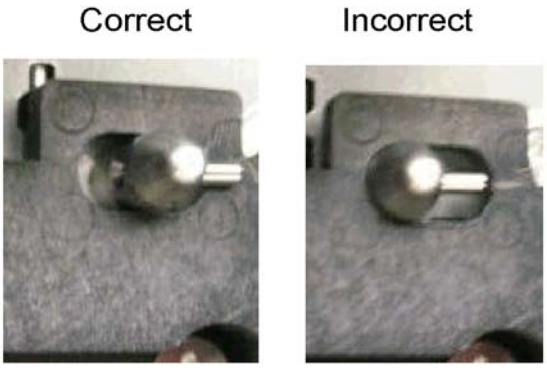
- If the door does not close, make sure that the pipe line shutter is rotated down. (See Step 7 above.)

## *Re-installing the Development Unit*



b246i999

1. Push the development unit to the right ❶.
2. While continuing to hold the unit to the right, push it into the machine.
3. Confirm that the pin [A] goes into the left side of the oval hole [B] in the development unit plate.
4. Push the development unit in completely ❷ until it stops, then push it to the left ❸.
5. Make sure you can see the horizontal pin in front of the plate as shown below.



b246i999a

Note

- If you cannot move the development unit plate behind the horizontal pin, turn the front gear of the unit to the left and try again.

6. Make sure the pipeline shutter is rotated down to the open position.
7. Reattach all removed parts.



### *Initializing the Drum Settings*

You must do SP2963 (Installation Mode) to 1) Initialize the developer and do a forced toner supply to the development unit, and 2) Initialize the auto process control settings.

- You must open the front door before you switch the machine on. If you do this, the machine does not do the short automatic process control procedure, which is usually done after the machine power is turned on.
- SP2963 must be done before you do sample copying or test printing.
- If you do not press “Execute” in Step 6, the auto process control items (potential sensor calibration, Vsg, Vref, etc.) will not initialize correctly.

1. Open the front door.
2. Connect the power cord.
3. Turn the main power switch on.
4. Go into the SP mode.
5. Close the front door.
6. Enter SP2963-002, then enter the lot number of the developer.
   - The lot number should be seven digits.
   - If seven digits are not entered before you do SP2963-001, the LCD shows error messages.
7. Do SP2963-001.

Note

- It may take approximately four minutes to initialize toner supply and the auto process control settings.

8. Press “Exit” to go out of the SP mode.
9. Attach the applicable decals (supplied with the machine) to the paper trays.
10. Check the copy quality and machine operation.

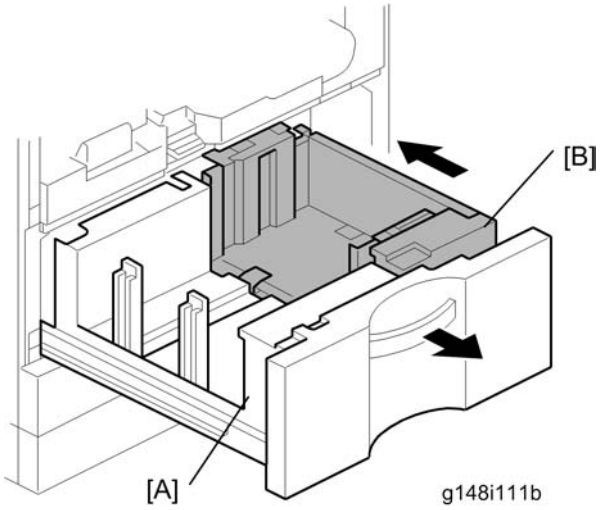
Important

- At installation, use SP2963 to enter the lot number, initialize the developer, and to force toner supply to the toner hopper.
- After you replace developer in a machine that has been already installed, do not use SP2963; use SP2801 (TD Sensor Initial Setting) instead to enter the lot number and initialize the TD sensor. (☛ p.4-43 "Developer Replacement")

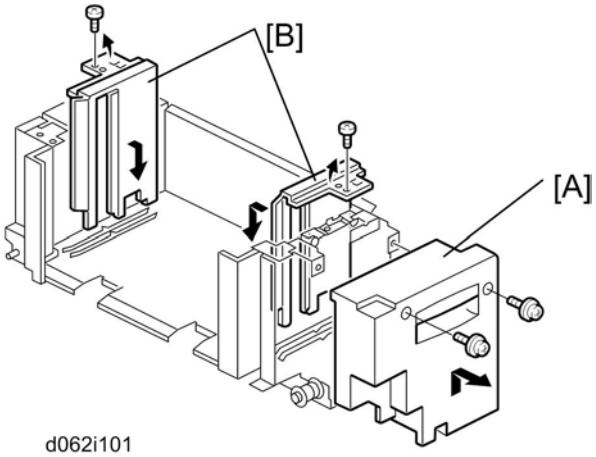
## *Tandem Tray*

Before shipping the machine, the tandem tray is set for A4 or LT LEF and must be adjusted if the customer wants to use the tandem tray for another paper size.

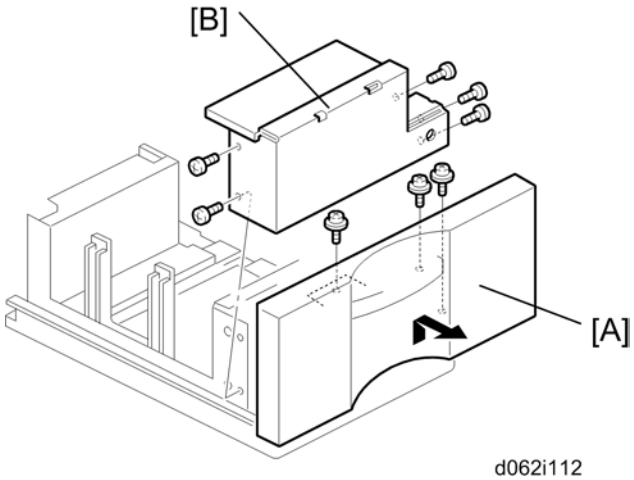
| Feed Station | Allowed Size |
|---|---|
| Tandem Tray (Tray 1) | A4 LEF, LT LEF |




1. Open the front cover.
2. Completely pull out the tandem feed tray [A] so that the right tandem tray [B] separates from the left tandem tray.

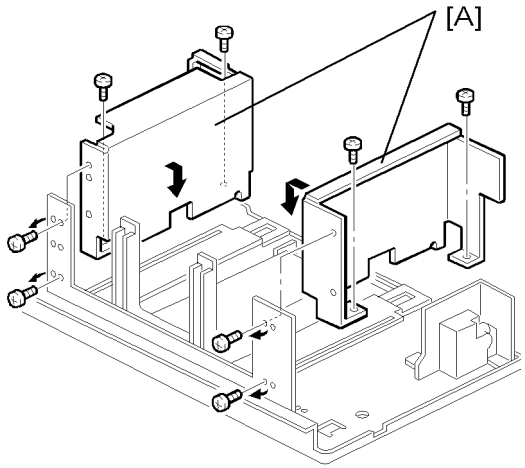



3. Remove the right tandem inner cover [A].
4. Re-position the side fences [B] ( x 2). The outer slot position is used when loading A4 size paper.
5. Re-install the right tandem inner cover [A].




d062i112

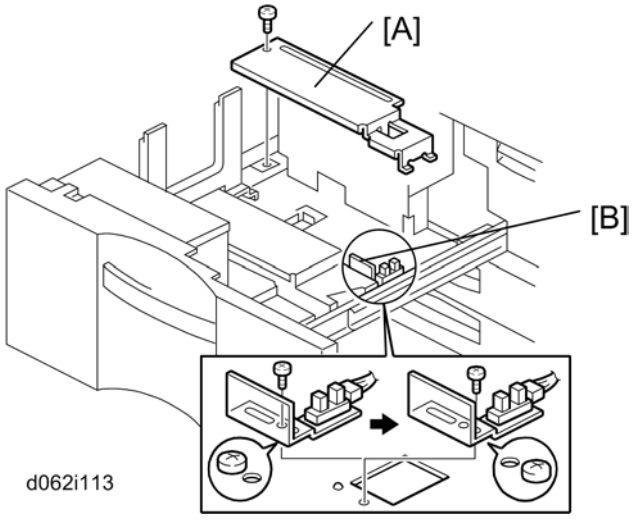
6. Remove the tray cover [A] ( x 3).
7. Remove the motor cover [B] ( x 5).




b064i523

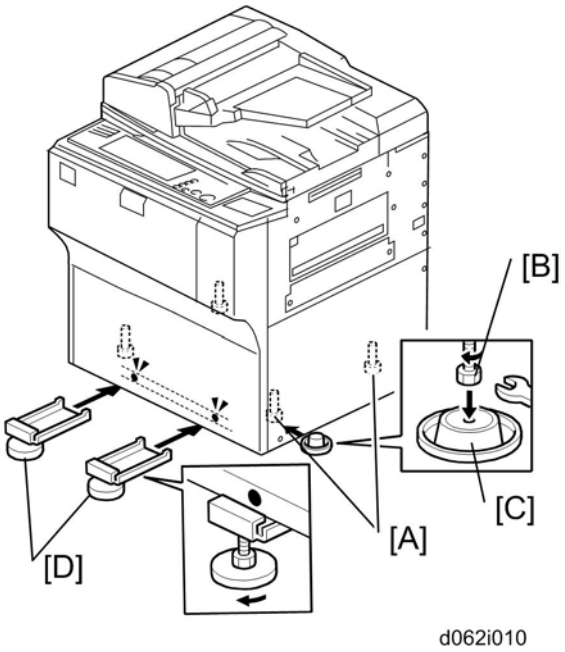
8. Re-position the side fences [A] ( x 8). The outer slot position is used when loading A4 size paper.
9. Re-install the motor cover and the tray cover.

**Main Machine**




10. Remove the rear bottom plate [A] ( x 1).
11. Re-position the return position sensor bracket [B] ( x 1). To use the paper tray for A4 size, put the screw in the left hole as shown. (For LT size, the screw should be placed on the right.)
12. Re-install the rear bottom plate.
13. Change the paper size using SP5959-001 (Paper Size – Tray 1). For details, see SP5959 in “Service Tables”.

## *Machine Level*




1. Set a stand [A] at two front foot of the machine.
2. Set the leveling shoes [C] (x2) under the feet [B], then level the machine.
   - Two leveling shoes should be installed at the front side.

3. Install two supports [D] at the front side of the machine.
4. Check the machine operation. With the customer, determine the best place to attach the cleaning reminder decal.



### *Date/Time Setting*

Use the User Tools menu to set the current date and time.

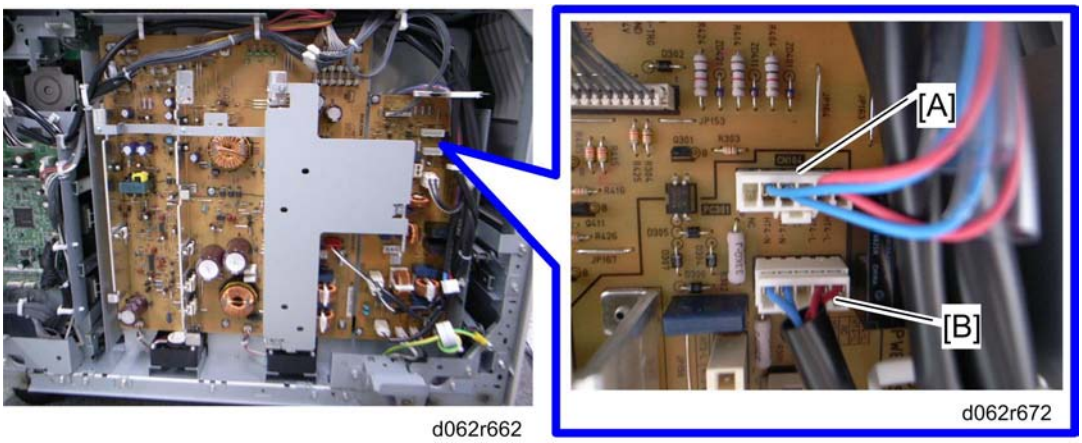
- On the operation panel, press the User Tools key.
- On the touch-panel, press “System Settings”.
- Press the “Timer Setting” tab.
- Press “Set Date” to enter the date.
- Press “Set Time” to enter the time.

### *SP Codes*

| | | |
|---|---|---|
| SP5812-001 | Service Telephone Number Settings | Enter the contact number of the customer engineer. This is the number displayed when a service call is issued. |
| SP5841-001 | Supply Name Setting – Toner Name Setting: Black | This name appears when the user presses the Inquiry on the User Tools screen. |
| SP5853 | Stamp Data Download | Do SP 5853 to copy stamp data to the hard disk, then turn the power off/on. |

### *Connecting the Drum Heater Connector and the Tray Heater Connector.*

1. Open the rear upper cover and the rear lower cover.

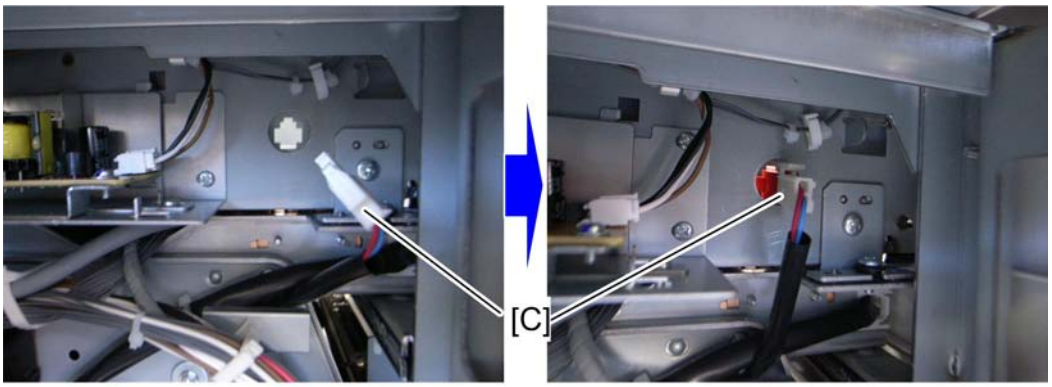



2. Connect the tray heater connector to the CN104 connector [A].
3. Connect the drum heater connector to the CN103 connector [B].

## *Installing the Scanner Heater*

1. Rear upper cover (☛ p.4-8)
2. Exposure glass (☛ p.4-11)
3. Operation panel (☛ p.4-6)
4. Left stay (☛ p.4-17 "Scanner Wire Replacement").


5. Install the scanner heater [A] (☞ x 2)
6. Fasten the cable with the harness clamps (☞ x 3).
7. Fasten the connector [B] on the rear side of the machine (☞ x 1).




d062r874 d062r876

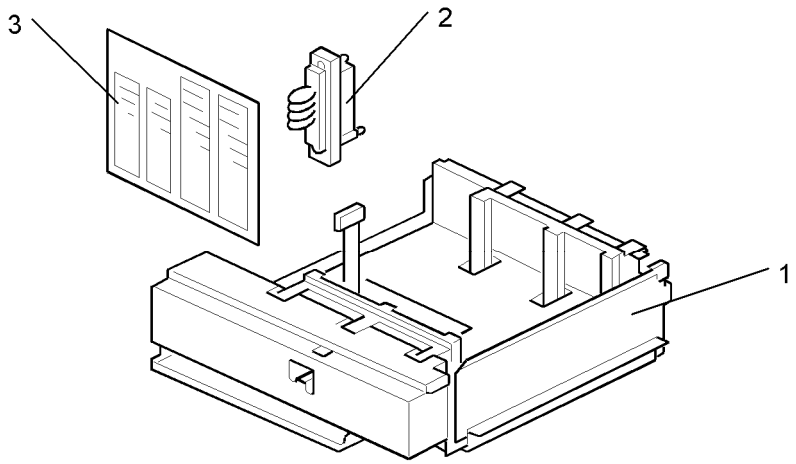
8. Connect the harness [C] to the connector [B] on the rear side of the machine.

# 2.3 A3/DLT FEEDER KIT (D482)

## 2.3.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

| | Description | Q'ty |
|---|---|---|
| 1. | A3/DLT Tray | 1 |
| 2. | Short connector | 1 |
| 3. | Page size decals | 1 |

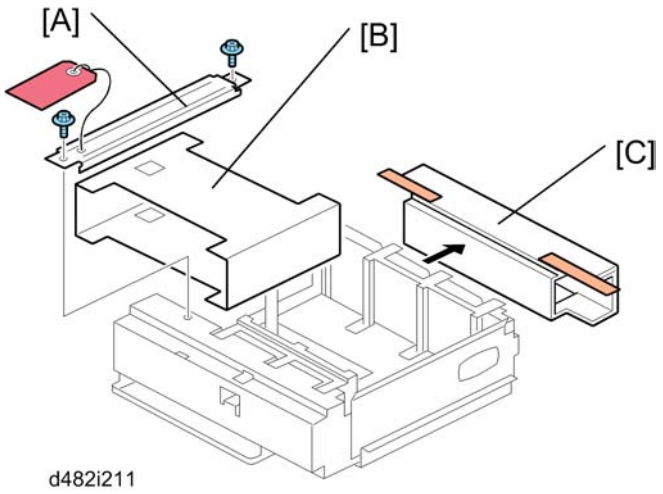



b475i001

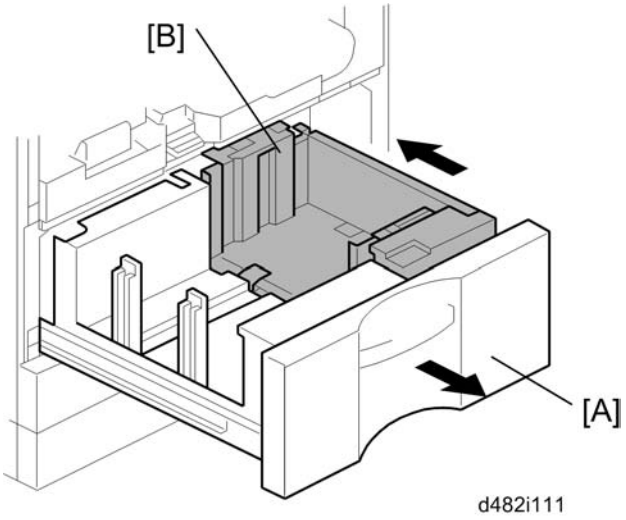
## 2.3.2 INSTALLATION PROCEDURE

**⚠CAUTION**

- Switch the machine off and unplug the machine before starting the following procedure.

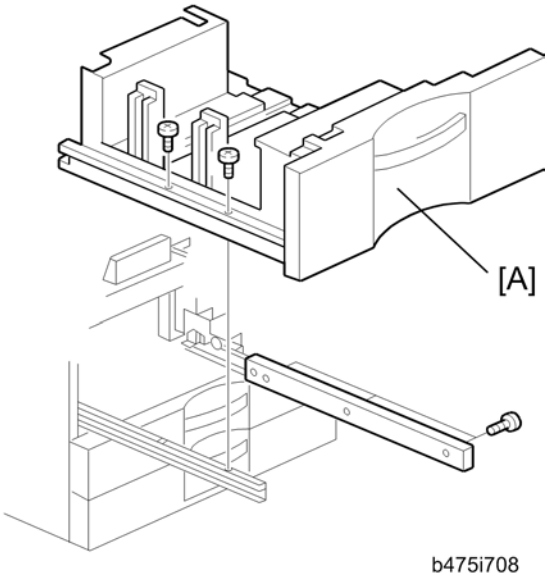



1. Remove the stay [A] (🔩 x 2).
2. Remove the retainers [B] [C].

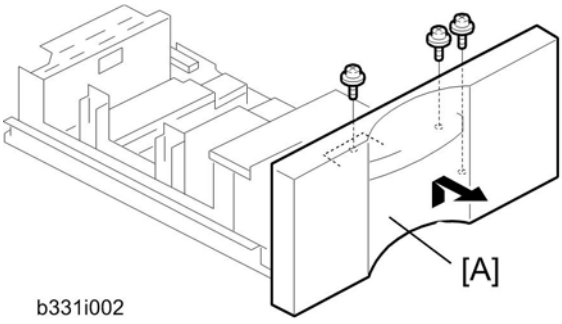



3. Draw out the tandem tray [A] completely to separate the left and right sides of the tray.
4. Push in the right tandem tray [B].

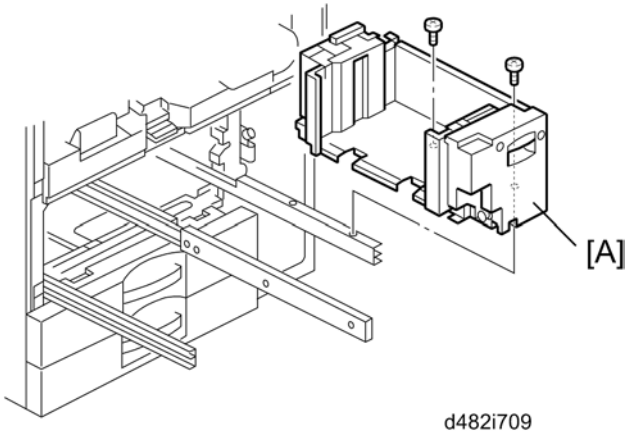
**A3/DLT Feeder Kit (D482)**



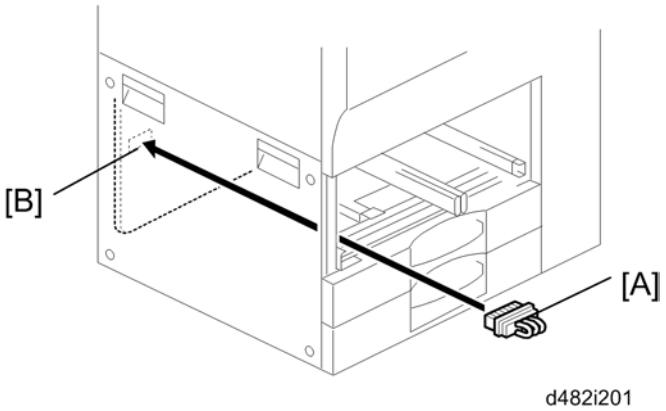

5. Remove the left tandem tray [A] ( x 5). Keep these screws.



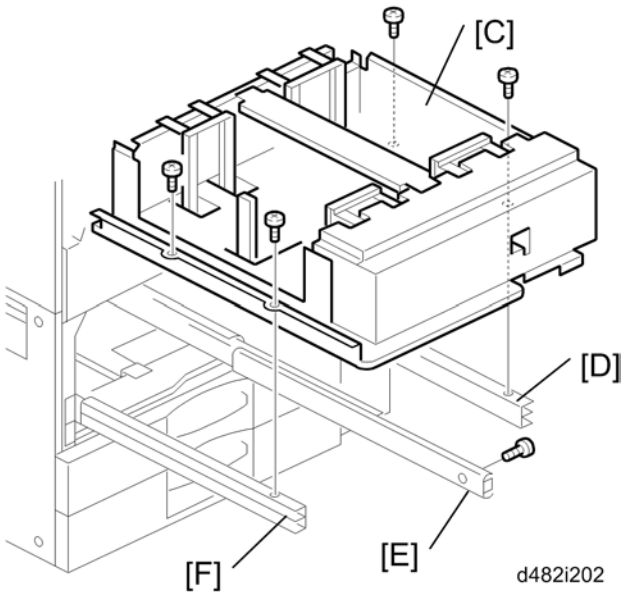

6. Remove the front cover [A] ( x 3).




7. Remove the right tandem tray [A] ( x 2). Keep these screws.




8. Connect the short connector [A] to the left tandem tray terminal [B].




9. Install the A3/DLT tray [C] on the right rail [D], center rail [E], and left rail [F]. Use the screws that you removed in Steps 3 and 4.

Note

- You must use the short, silver screws on the left and right rails. If you use one of the longer screws, it will stop the movement of the tray on the rails.

10. .Re-install the front cover.
11. Switch the machine on, enter the SP mode and select the paper size for Tray 1 with SP5959-001 (Paper Size – Tray 1). For details, see SP5959 in “Service Tables”.
12. Attach the appropriate decal for the selected paper size.

# 2.4 LCT (B473)

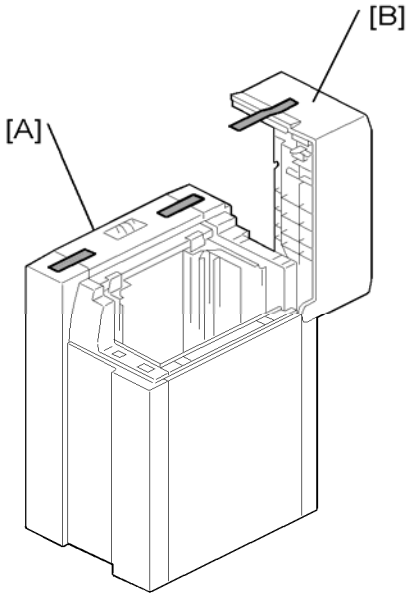
## 2.4.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

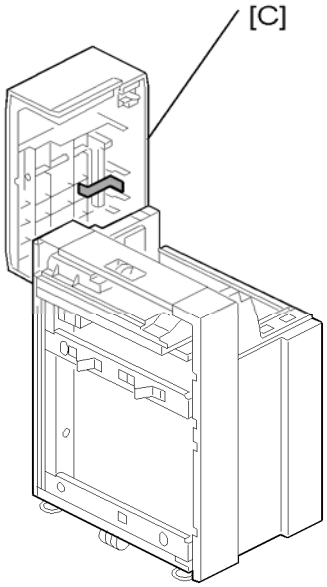
| | Description | Q'ty |
|---|---|---|
| 1. | Flat-head shoulder screw - M4 x 6 | 1 |
| 2. | Upper docking pins (grooved) | 2 |
| 3. | Lower docking pin (not grooved) | 1 |
| 4. | Installation Instructions | 1 |
| 5. | Paper Set Decal | 1 |

## 2.4.2 INSTALLATION PROCEDURE

### *Removing Tape*




b473i001



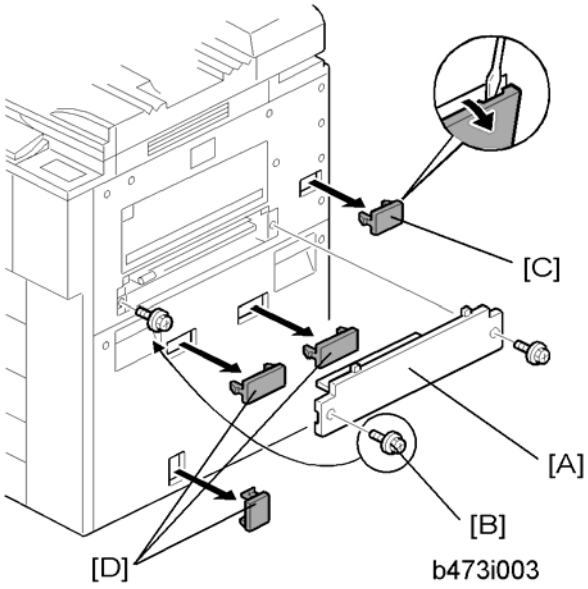

b473i002

1. Remove the filament tape from the body [A] and top cover [B] of the LCT.
2. Remove the tape under the lid [C] of the LCT.

## *Preparing the Main Machine*

**CAUTION**

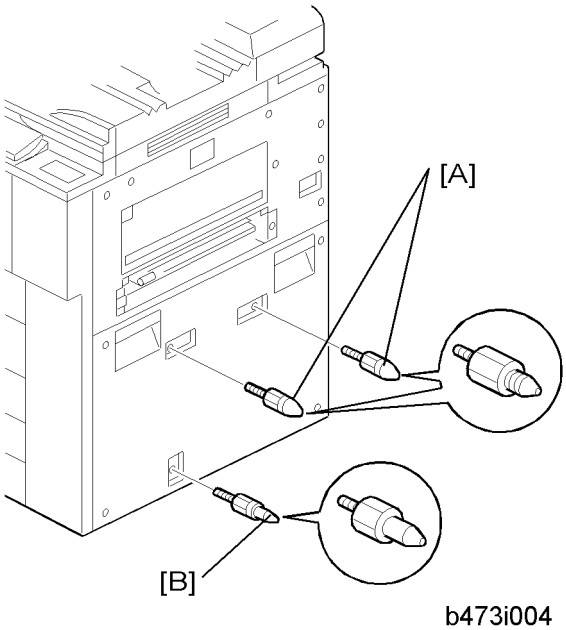
- Switch the machine off and unplug the machine before starting the following procedure.




b473i003

1. Remove the LCT installation cover [A] from the right side of the machine ( x 2).
2. Save the screw on the left [B]. You will need it to install the LCT.
3. Remove the LCT connector cover [C] (x 1) and the covers over the holes for the docking pins [D]. (x 3)

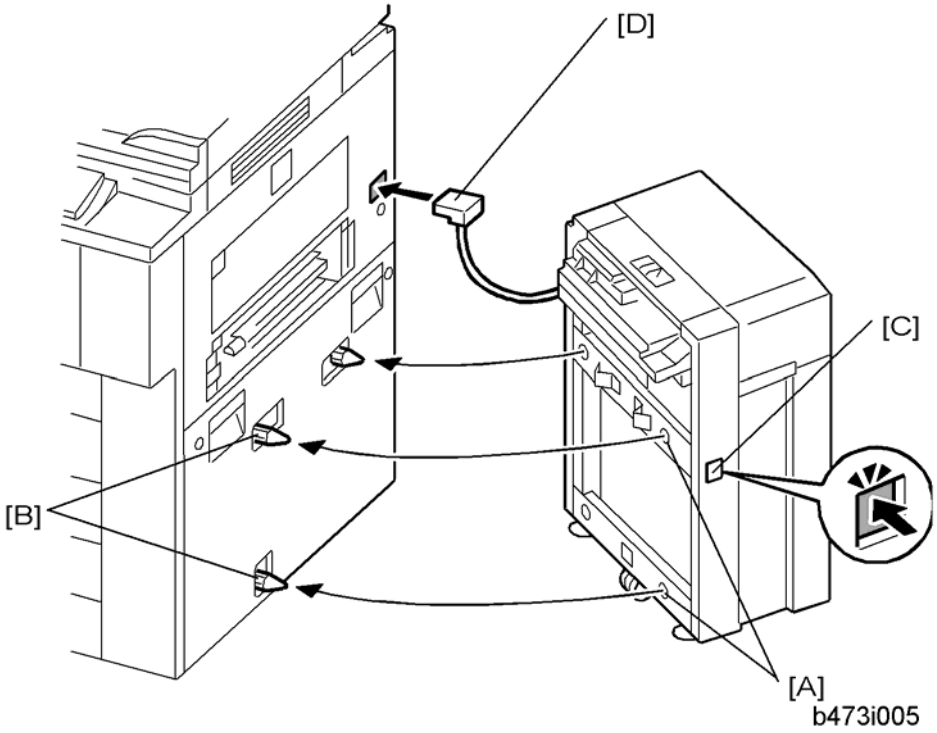
## *Installing the LCT*




b473i004

**LCT (B473)**

1. Insert the two upper docking pins (grooved) [A] into the upper slots and the lower docking pin [B] into the lower slot.

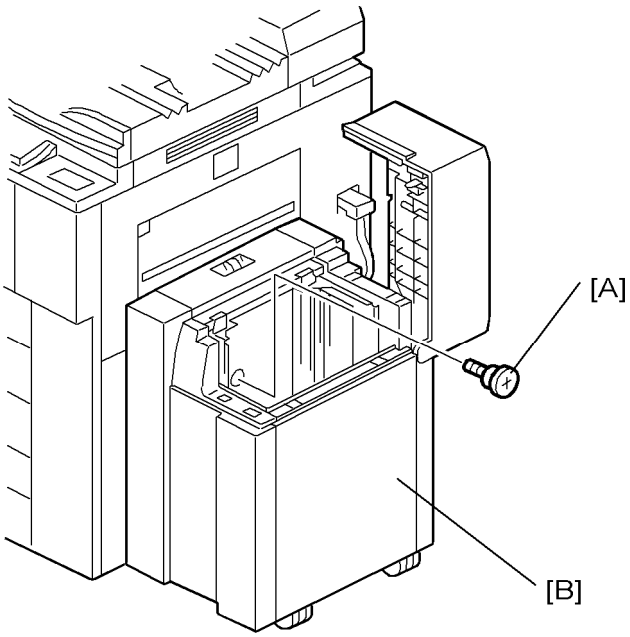



1. Align the holes on the side of the LCT [A] with the docking pins on the side of the machine [B], then slowly push the LCT onto the pins.

Note

- The release button [C] is used to unlock the LCT so it can be disconnected from the machine.

1. Connect the plug [D] of the LCT power cord to the side of the machine.




b473i006

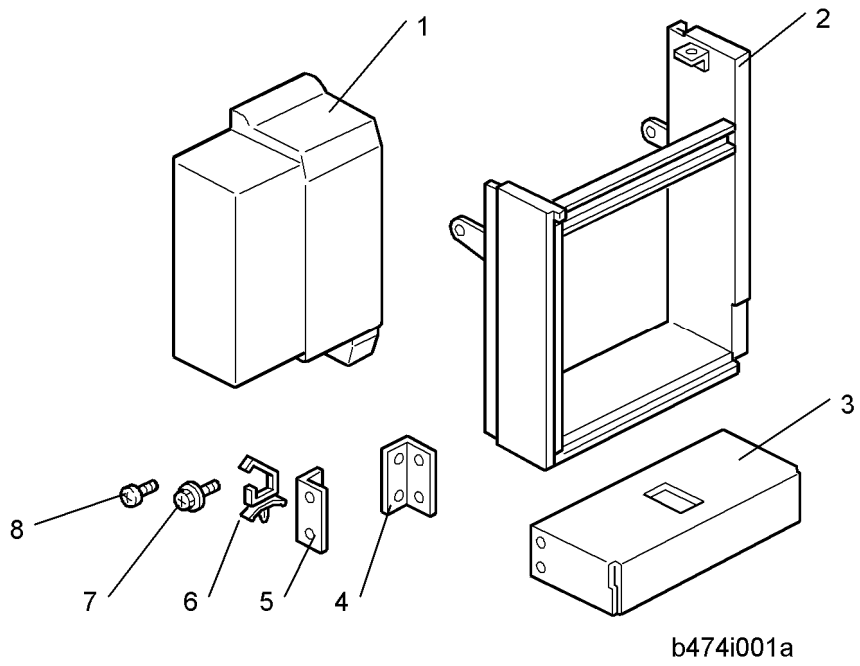
1. Insert the flat-head shoulder screw [A] into the hole and fasten it to lock the release lever in place.
   - For easier access to the hole for the screw [A], you can remove the right panel [B] ( x 2).
2. Switch the machine on and execute SP5959 005 (Paper Size – Tray 4 (LCT)) to select the paper size. For details, see SP5959 in “Service Tables.”

# 2.5 LG/B4 FEEDER KIT (B474)

## 2.5.1 ACCESSORY CHECK

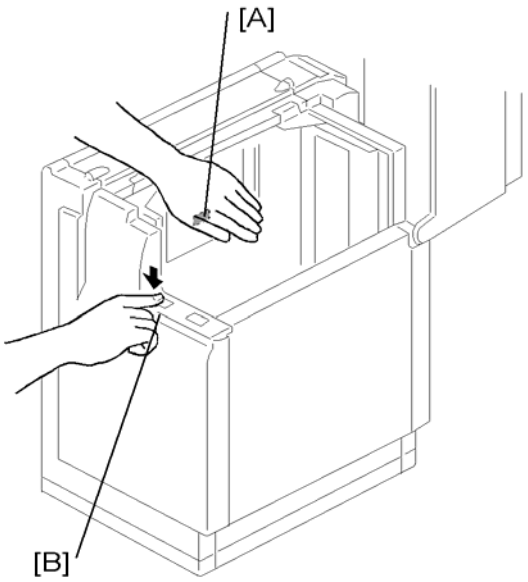
Check the accessories and their quantities against this list:

| | Description | Q"ty |
|---|---|---|
| 1. | Cover | 1 |
| 2. | B4/LG frame | 1 |
| 3. | Bottom plate extension | 1 |
| 4. | Rear bracket | 1 |
| 5. | Front bracket | 1 |
| 6. | Harness clamp | 1 |
| 7. | Tapping hex screws - M4 x 8 | 6 |
| 8. | Tapping screws - M4 x 8 | 4 |



## 2.5.2 INSTALLATION PROCEDURE

If the LCT is connected to the machine



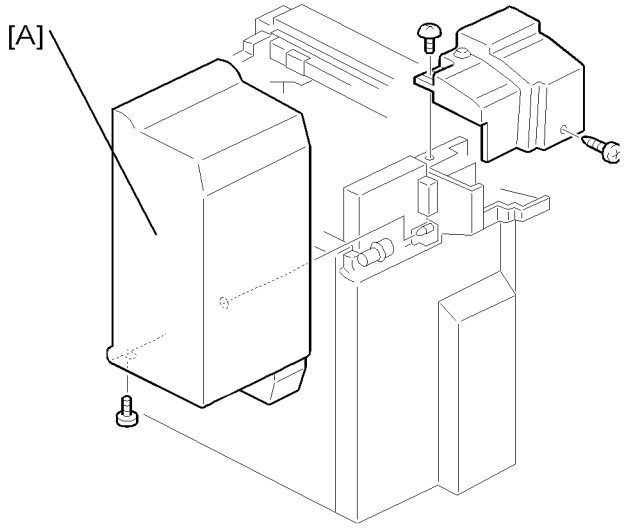

b474i507

1. Open the cover and remove the paper.
2. Lower the LCT tray. Cover the near end sensor [A], then press the tray down button [B] to lower the tray bottom plate.

**⚠CAUTION**

- Switch the machine off and unplug the machine before starting the following procedure.

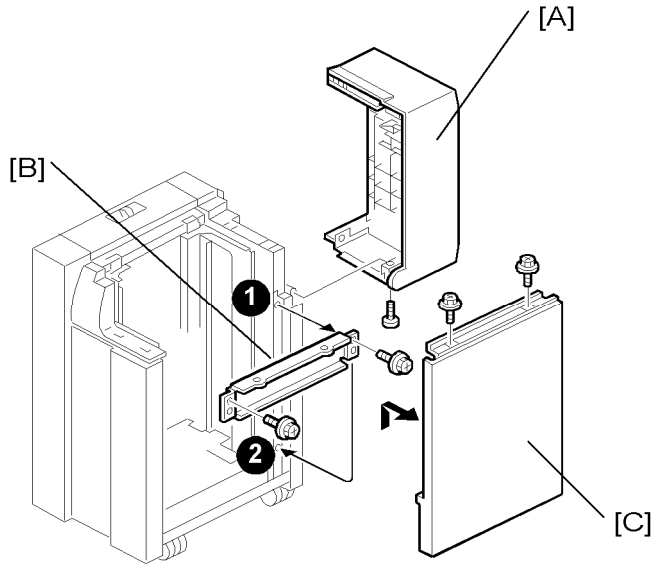
3. Disconnect the LCT from the machine.




b474i504

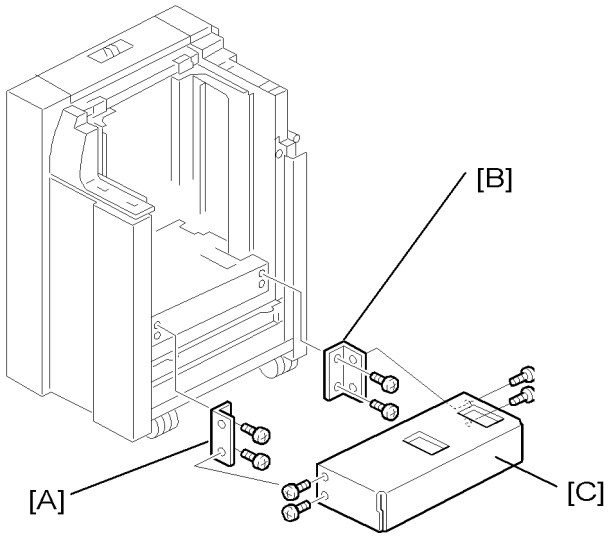
4. Remove the LCT upper cover [A].

**LG/B4 Feeder Kit (B474)**




b474i001

5. Remove the LCT cover [A] ( x 1).
6. Remove the right stay [B] at ❶ and re-attach it below at ❷ ( x 2).
7. Remove the right cover [C] ( x 2).



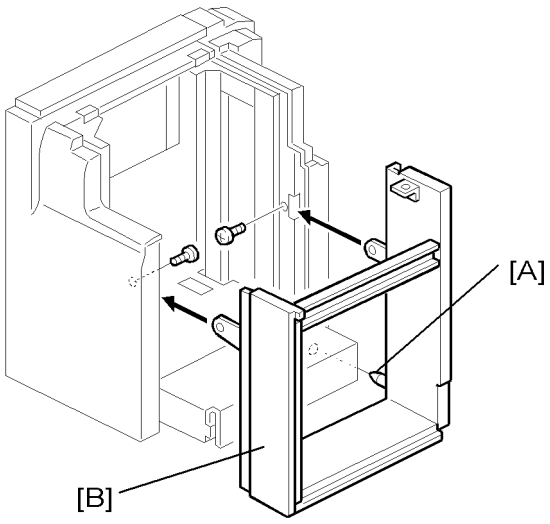

b474i502

8. Attach the front bracket [A] with the beveled corner down ( x 2).

Note

- If the brackets are difficult to install, raise the bottom plate with your hand.

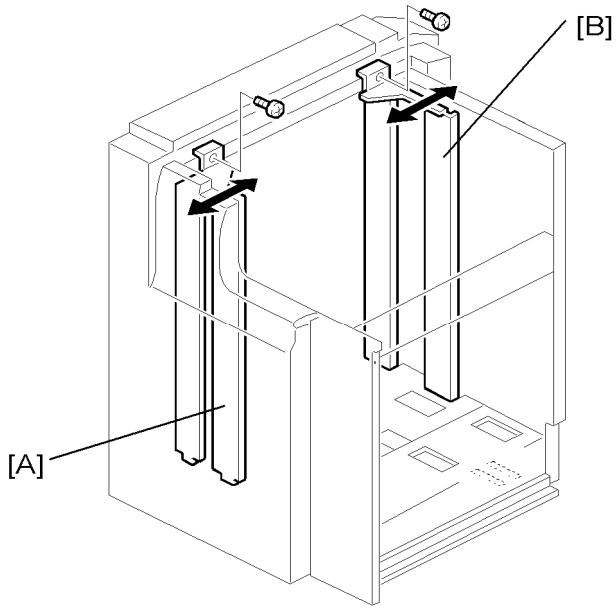
9. Attach the rear bracket [B] with the beveled corner down ( x 2).
10. Attach the bottom plate extension [C] with the hex nuts ( x 4).




b474i553

11. Align the positioning pin [A].
12. Attach the B4/LG frame [B] with the hex nuts ( x 2).

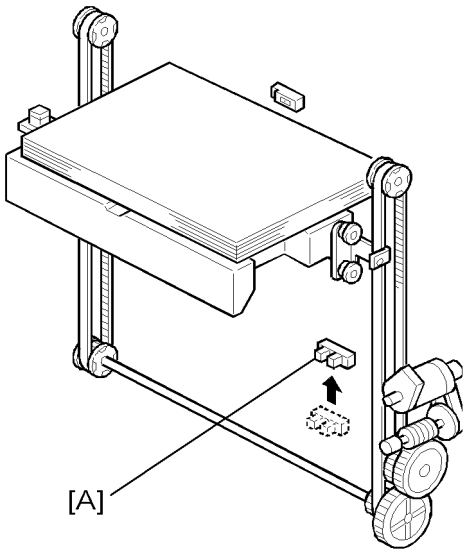
**The kit is set for B4. If you need to change the paper size to LG, do the following steps.**




b474i555

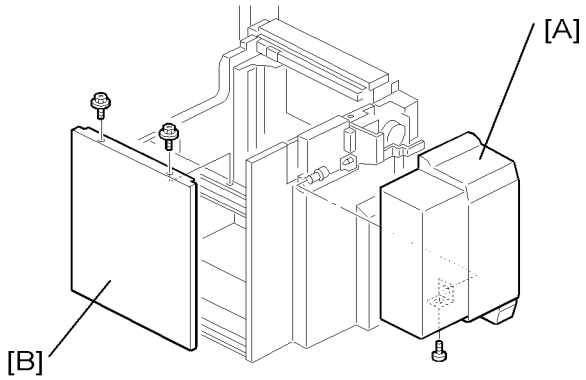
13. Move the front side fence [A] to the LG position and fasten ( x 1).
14. Move the rear side fence [B] to the LG position and fasten ( x 1).

**LG/B4 Feeder Kit (B474)**



b474i508

15. Change the position of the lower limit sensor [A] ( x 1).
16. Attach the harness (not shown) to the back of the plate and secure the sensor connector wire.



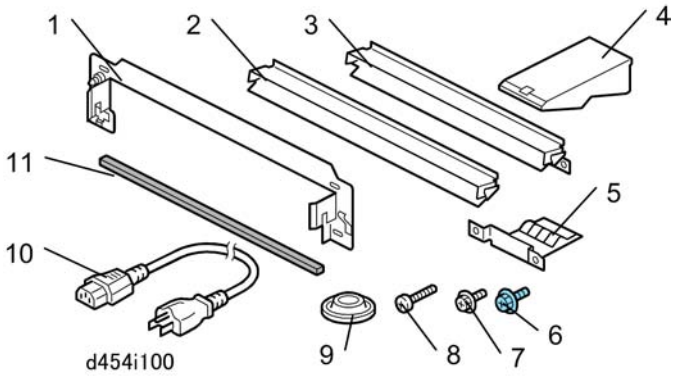
b474i506

17. Attach the LCT cover [A] provided with the kit ( x 1).
18. Re-attach the right cover [B] ( x 2).
19. Connect the LCT to the machine ( p.2-26 "LCT (B473)")
20. Switch the machine on, enter the SP mode, then use SP5959 005 (Paper Size – Tray 4 (LCT) to select the new paper size. For details, see SP5959 in "Service Tables".

# 2.6 MULTI FOLDING UNIT (D454)

## 2.6.1 ACCESSORIES

Check the quantity and condition of the accessories in the box against the following illustration and list.



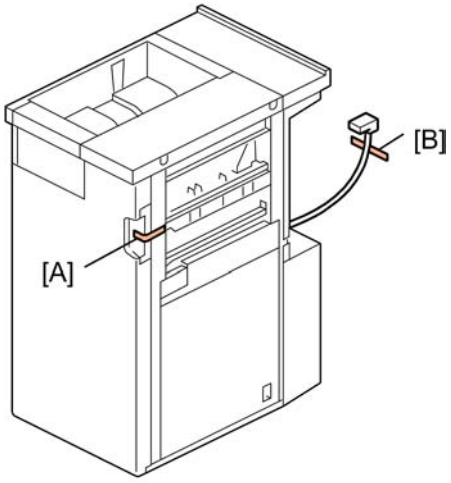

| No. | Description | Q'ty |
|---|---|---|
| 1. | Joint Bracket | 1 |
| 2. | Paper Guide – Long | 1 |
| 3. | Paper Guide – Short (Not used) | 1 |
| 4. | Proof Tray Auxiliary Plate | 1 |
| 5. | Ground Plate | 1 |
| 6. | Screws M3x6 | 2 |
| 7. | Screws M3x6 | 2 |
| 8. | Screws M4x14 | 4 |
| 9. | Leveling Shoes | 5 |
| 10. | Power Cord | 1 |
| 11. | Sponge Strip | 1 |

## 2.6.2 INSTALLATION

**⚠CAUTION**

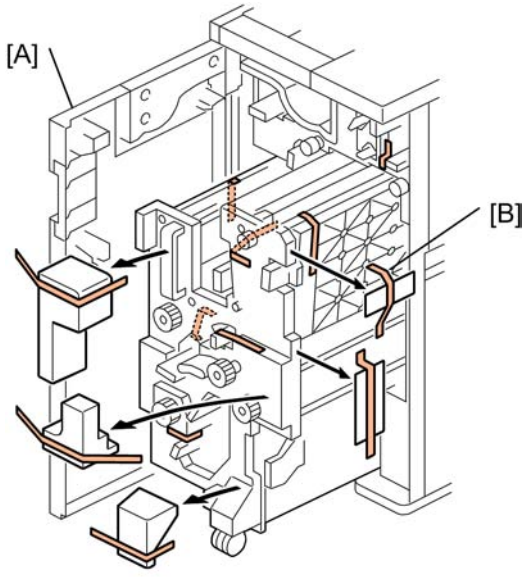
- The unit must be connected to a power source that is close to the unit and easily accessible.
- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

### *Tapes*




d454i101

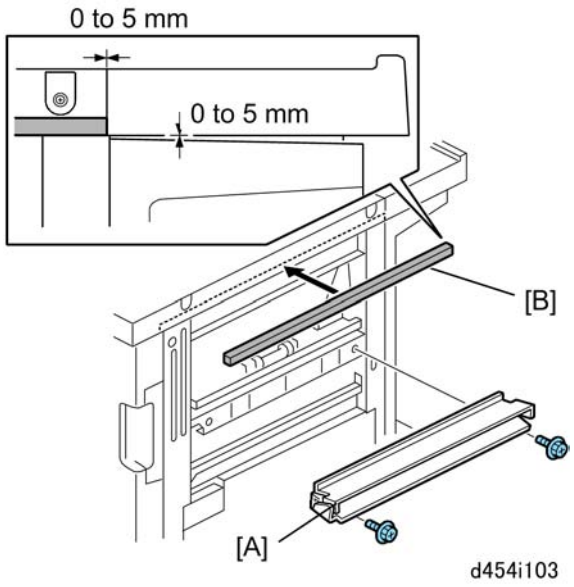
1. Remove tape from front [A] and rear [B].




d454i102

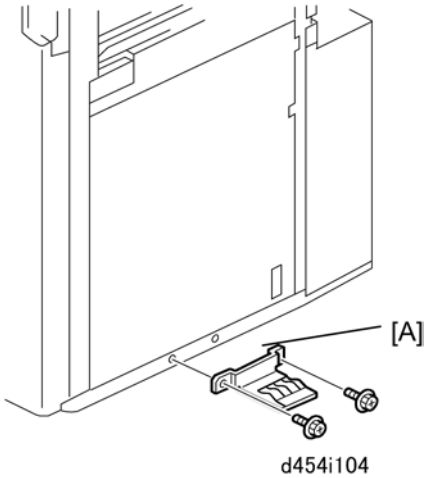
2. Open the front door [A].
3. Remove all tape from inside [B].

### *Paper Guide, Sponge Strip*



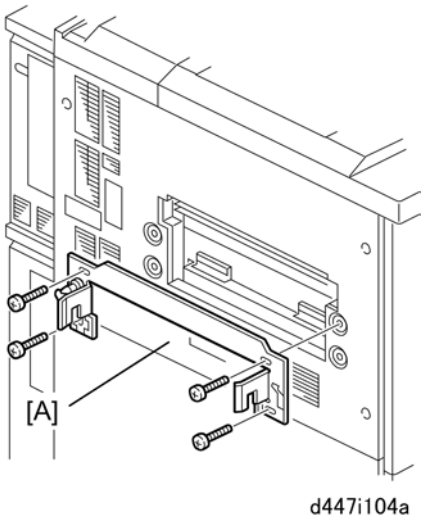

1. Select the short paper guide for this installation.
   - The long paper guide is not used.
2. Attach the short paper guide [A] ( x2 M3x6).
3. Peel the tape from the sponge strip [B] and attach the strip to the top right edge of the unit.

### *Ground Plate*

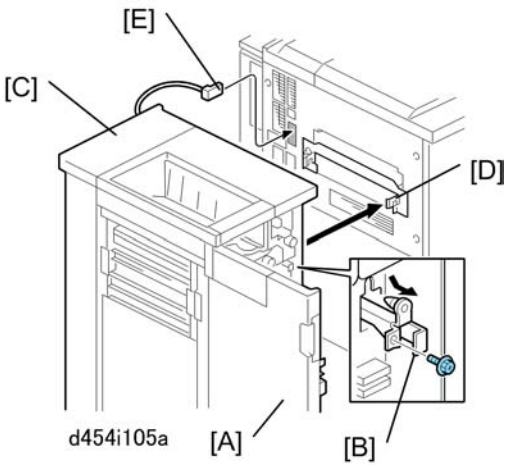



1. Attach the ground plate [A] to the lower right edge of the unit ( x2 M3x6).

## *Docking*



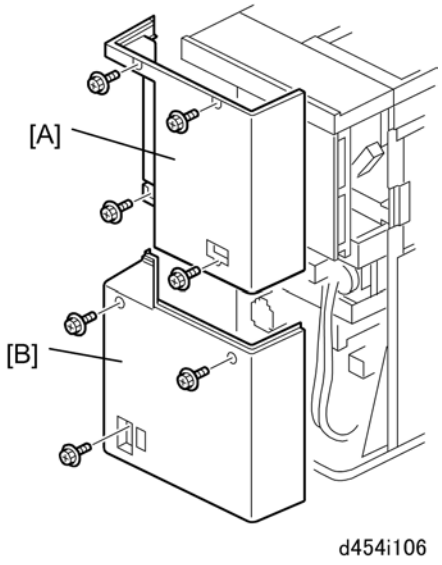

1. Fasten the joint bracket [A] to the left side of the upstream unit ( x4 M4x10).




2. Open the front door [A].
3. At the front right corner, remove the screw of the lock bar [B] ( x1 M3x6). **Keep this screw.**
4. Pull the lock bar toward you until it stops.
5. Slowly push the unit [C] against the left side of the upstream unit (or main machine) so that the lock bar is directly and squarely under the arms of the joint bracket.
6. Push the lock bar in completely so that it slides up into the notches in the arms on both ends of the joint bracket [D].
7. Fasten the lock bar by re-attaching the screw removed in **Step 3** ( x1).
8. Connect the I/F cable [E] to the upstream unit (or main machine).

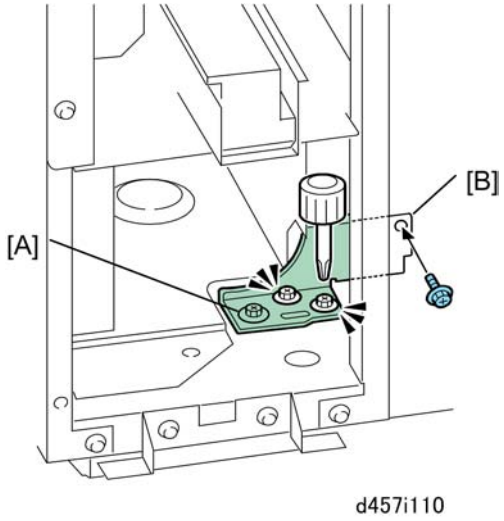
Note

- If you are connecting to the main machine, you must first remove the plastic cap on the I/F cable connection point.




d454i106

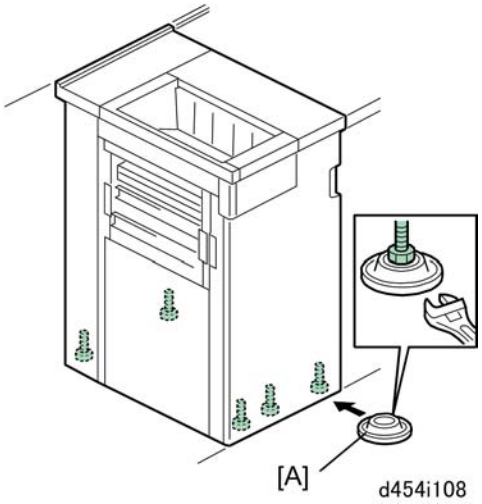
9. Remove:
   [A] Rear upper cover ( x4)
   [B] Rear lower cover ( x3)




d457i110

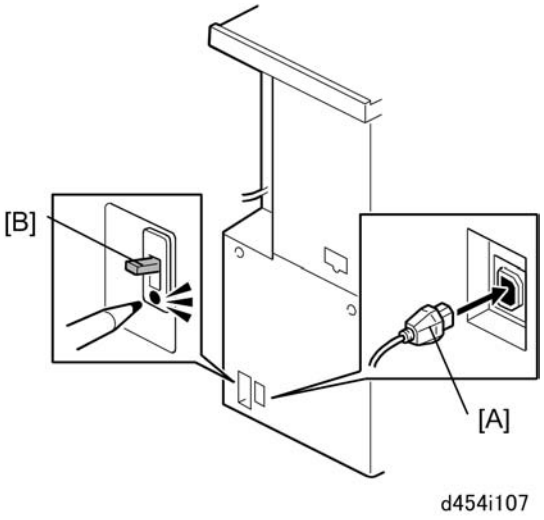
10. Use a short screwdriver to loosen bracket [A] ( x2).
11. Fasten the bracket to the upstream unit at [B] ( x1).
12. Tighten the screws ( x3).
13. Re-attach the rear covers.

## *Height Adjustment*



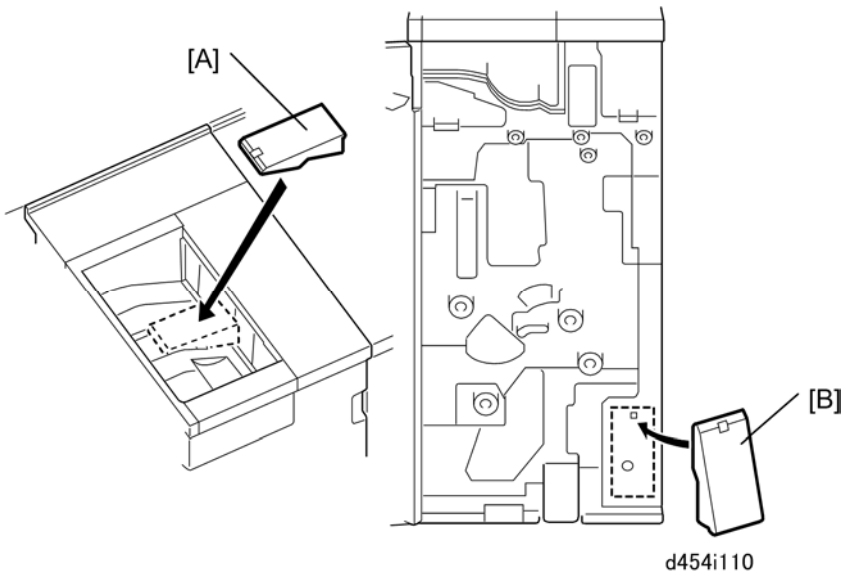

1. Set the leveling shoes [A].
2. Adjust the height of the unit and make sure that it is level.

## *Power Cord, Breaker Switch Test*




1. Insert the power cord socket [A] into the power connection point.
2. Connect the power supply cord plug into a power outlet.
3. Test the breaker switch [B].

### *Proof Tray Auxiliary Plate*



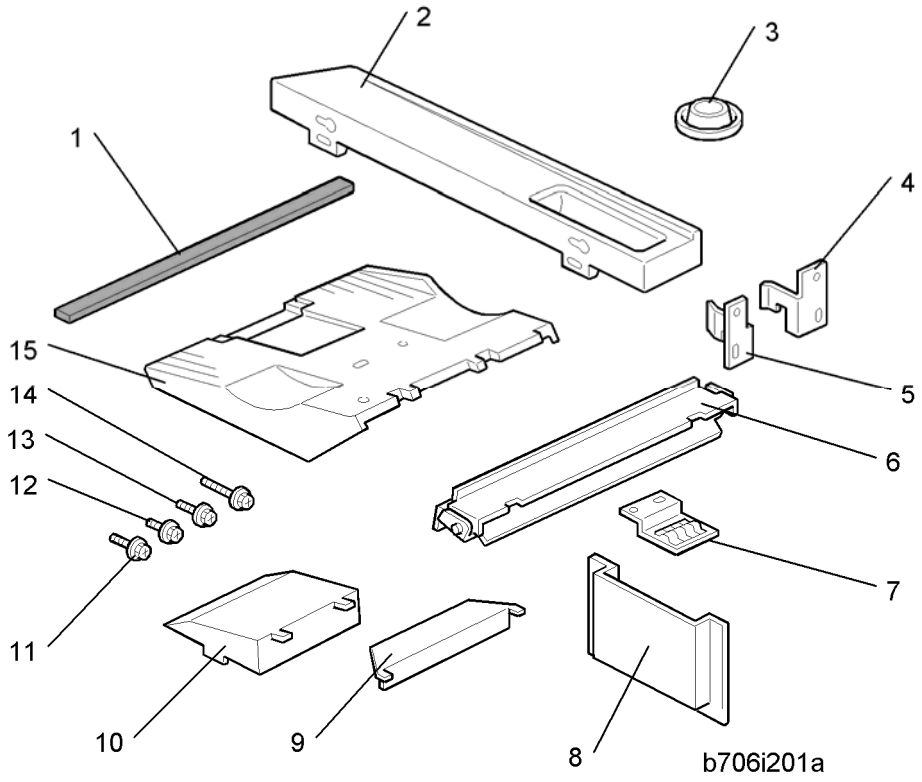

1. Install the proof tray auxiliary plate at [A].
   - Set the plate in the center aligned with the diagonal groove.
   - The back should be flat against the end fence.
2. When the plate is not being used, open the front door and store it at [B] inside the inner cover.
   - The plate should be used when Z-folded paper (all sizes) is output to the proof tray.
   - If the plate is not used with Z-folded output, the pages could mix and overlap.

# 2.7 3000-SHEET FINISHER (D460)

## 2.7.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

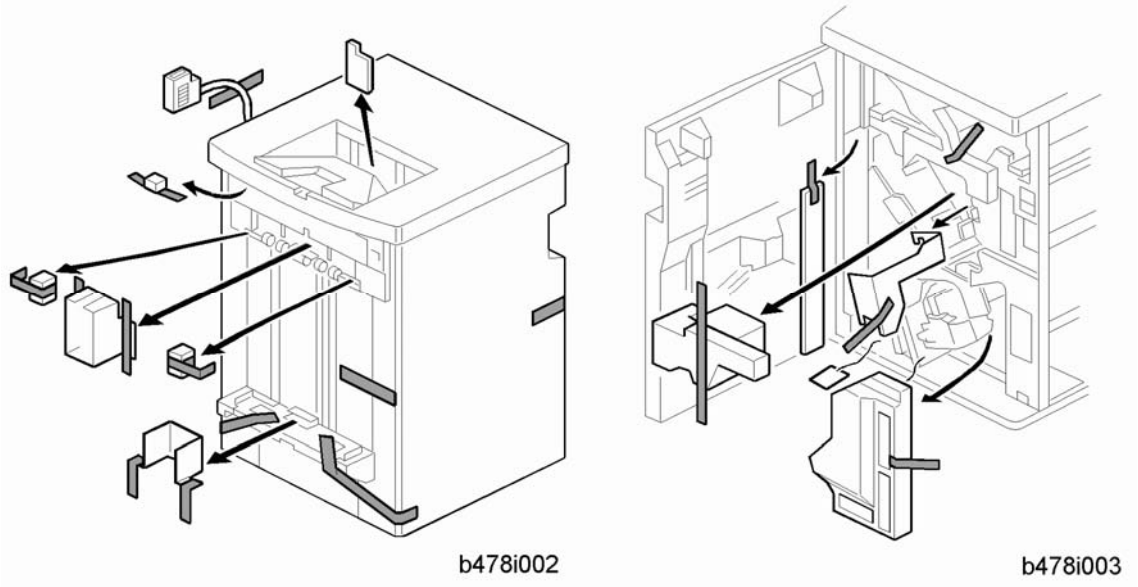
| | Description | Q"ty |
|---|---|---|
| 1. | Cushion | 1 |
| 2. | Table Extension | 1 |
| 3. | Leveling Shoes | 1 |
| 4. | Rear Joint Bracket | 1 |
| 5. | Front Joint Bracket | 1 |
| 6. | Entrance Guide Plate | 1 |
| 7. | Grounding Plate | 1 |
| 8. | Auxiliary Tray Holder | 2 |
| 9. | Auxiliary Tray - Proof | 2 |
| 10. | Auxiliary Tray - Shift | 2 |
| 11. | Tapping Screws - M4 x 8 | 2 |
| 12. | Tapping Screws - M3 x 6 | 4 |
| 13. | Tapping Screws - M3 x 8 | 4 |
| 14. | Phillips Screws w/washer - M4 x 14 | 4 |
| 15. | Shift Tray | 4 |




## 2.7.2 INSTALLATION

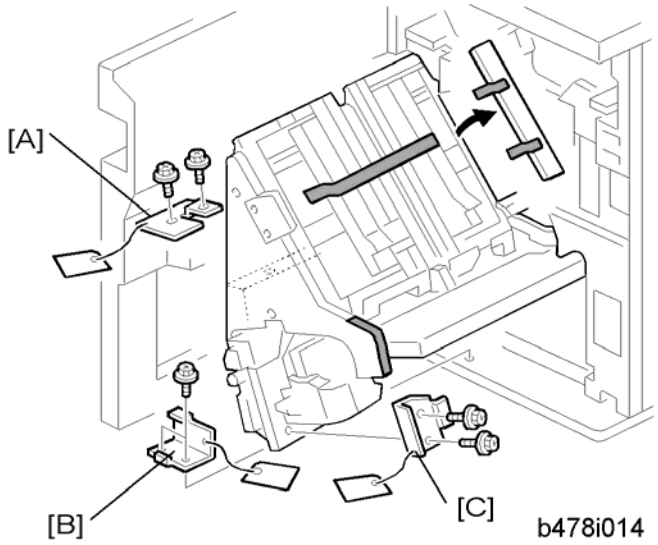
**⚠CAUTION**

- Unplug the machine power cord before starting the following procedure.

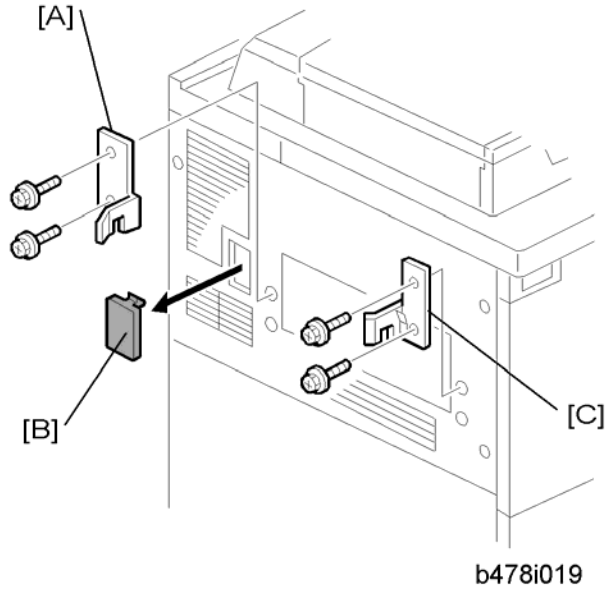



1. Unpack the finisher and remove all tapes and shipping retainers.

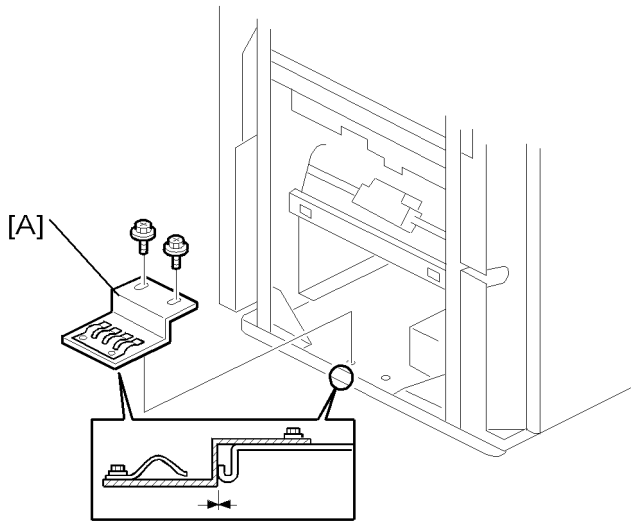
**3000-Sheet Finisher (D460)**




2. Open the front door and remove the shipping retainers. Remove brackets [A], [B], and [C] ( x 2 each).




3. Install the front rear bracket [A] and front joint bracket [B] ( x 2 each) (M4 x 14) on the left side of the copier.
4. Remove the connector cover [C].

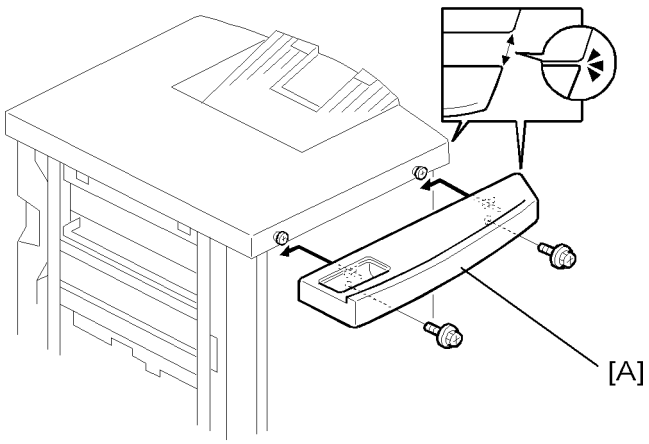



b478i004

5. Install the grounding plate [A] ( x 2) (M3 x 6).

Note

- Set the grounding plate so that there is no gap between the grounding plate and the bottom frame of the finisher (as shown).



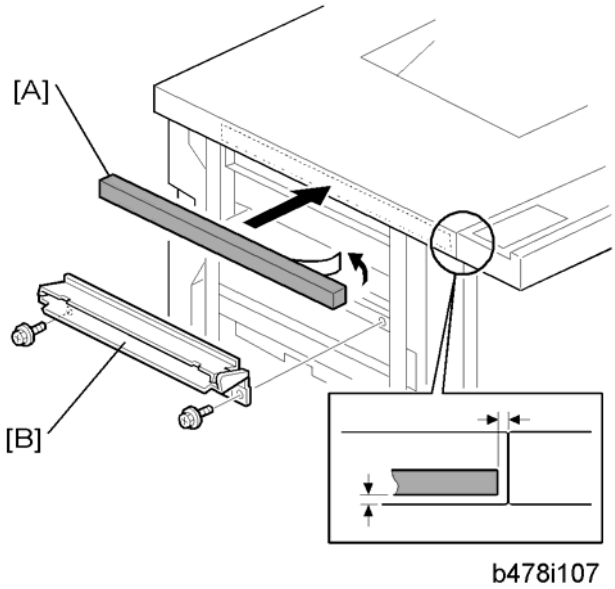

b478i005

6. Install the table extension [A] as shown ( x 2) (M4 x 8).

Note

- The edge of the table extension should be aligned with the edge of the finisher (as shown).

**3000-Sheet Finisher (D460)**

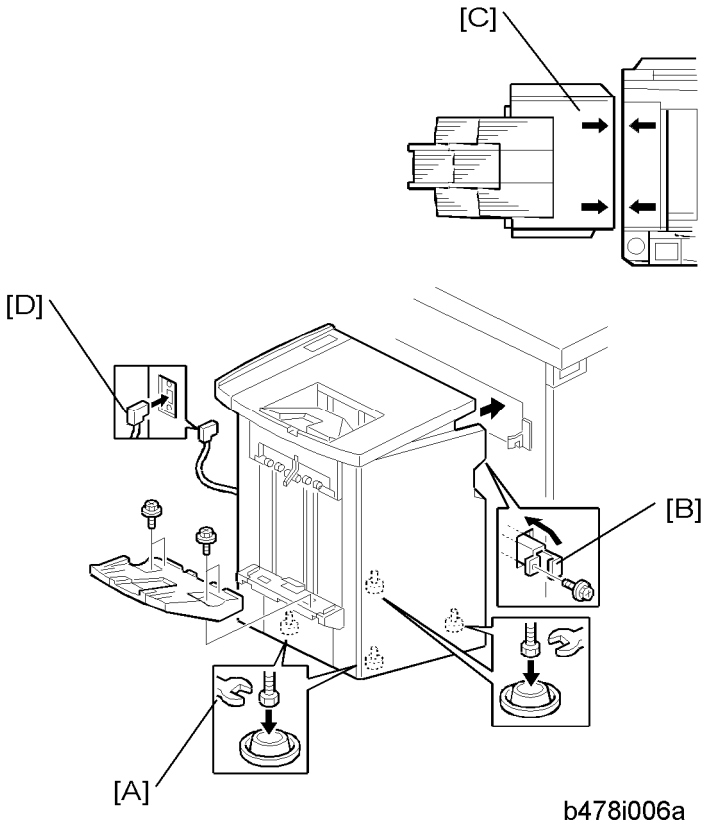



7. Attach the cushion [A] to the right side of the upper cover.

Note

- If you are installing the cover interposer tray, do not attach the cushion here. Attach it to the cover interposer tray. The cover interposer tray must be installed before you dock the finisher and tray with the main machine.

8. Install the entrance guide plate [B] ( x 2) (M3 x 6).




b478i006a

9. Attach the shift tray [A] ( x 4) (M3 x 8).
10. Open the front door of the finisher, and remove the screw from the locking lever, then pull out the locking lever [B].
11. Align the finisher on the joint brackets, and lock it in place by pushing in the locking lever [B].

Note

- Before securing the locking lever, make sure that the top edges of the finisher and the copier are parallel from front to rear as shown [C].

12. Secure the locking lever [B] ( x 1) and close the front door.
13. Connect the finisher cable [D] to the copier.
14. Set the leveling shoes (x 4) under the feet and level the machine.

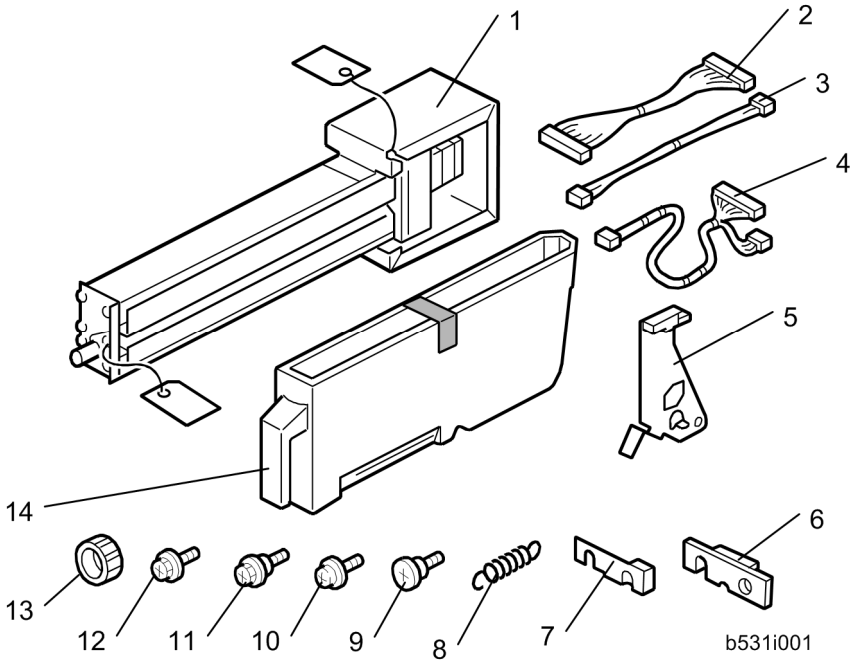
# 2.8 PUNCH UNIT (B531)

The Punch Unit B531/B812 can be installed only in the 3000-Sheet Finisher D460.

## 2.8.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

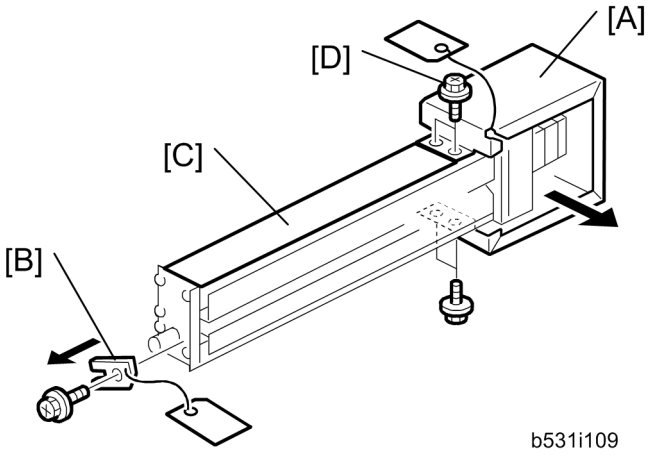
| | Description | Q"ty |
|---|---|---|
| 1. | Punch unit | 1 |
| 2. | Harness Connector Cable - PCB | 1 |
| 3. | Harness Connector Cable - HP Sensor 2 | 1 |
| 4. | Harness Connector Cable - HP Sensor 1, Hopper Full | 1 |
| 5. | Sensor Arm and Sensor | 1 |
| 6. | Spacer (2 mm) | 1 |
| 7. | Spacer (1 mm) | 2 |
| 8. | Spring | 1 |
| 9. | Step Screw (large) (M4 x 11) | 1 |
| 10. | Tapping Screw (M4 x 10) | 2 |
| 11. | Step Screw (small) (M3 x 4) | 1 |
| 12. | Machine Screw, Washer (M4 x 6) | 1 |
| 13. | Knob | 1 |
| 14. | Punch Waste Hopper | 1 |




## 2.8.2 INSTALLATION

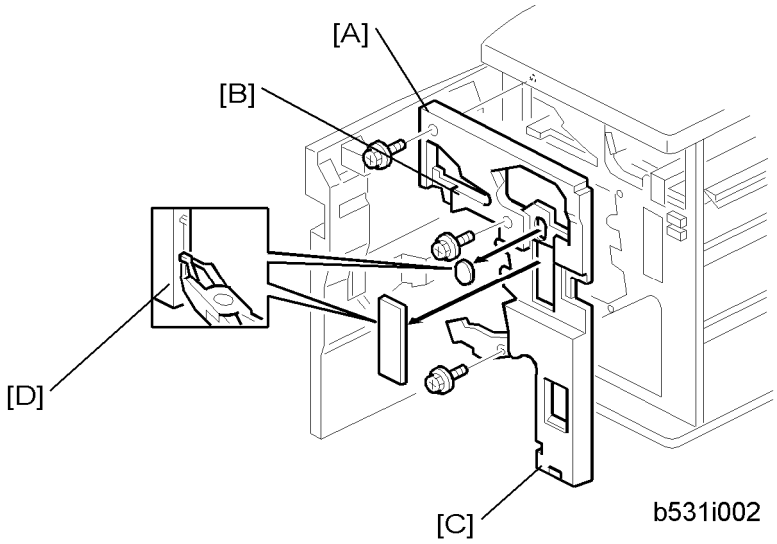
**⚠CAUTION**

- Switch the machine off and unplug the machine before starting the following procedure.

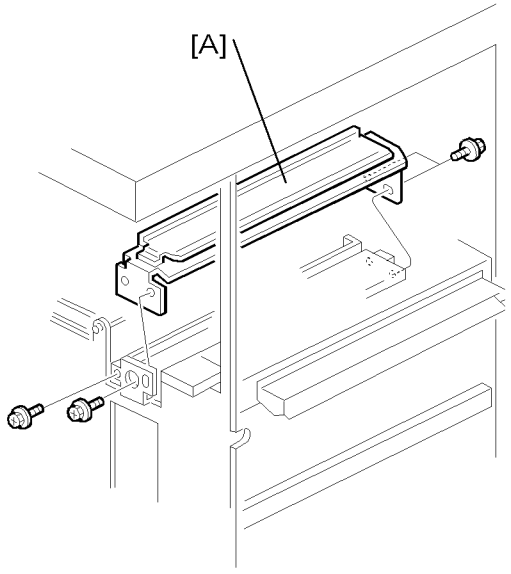



1. If the finisher is connected to the machine, disconnect it.
2. Open the front door and remove the rear cover ( x 2).
3. Unpack the punch unit and remove the motor protector plate [A] ( x 4) and the cam lock plate [B] ( x 1).
4. Reattach the cover bracket [C] ( [D] x 2).

**Punch Unit (B531)**

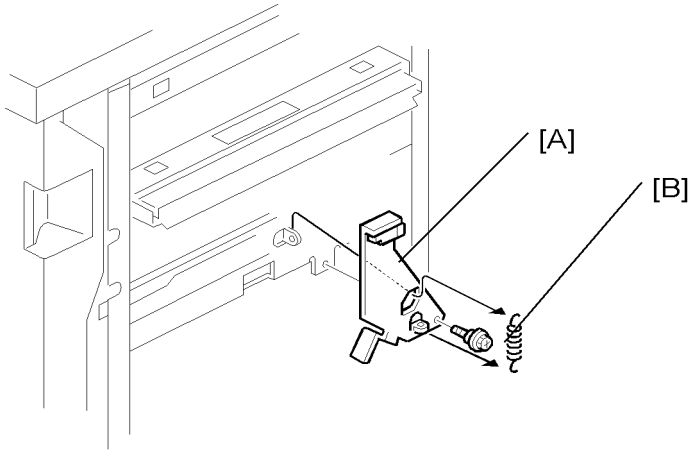



5. Remove the inner cover [A] ( x 3).
6. Behind the inner cover at [B] and [C], press the lock tab to the right to release the inner cover from the frame.
7. Remove the plastic knockouts [D].




b531i003

8. Remove the paper guide [A] ( x 4).



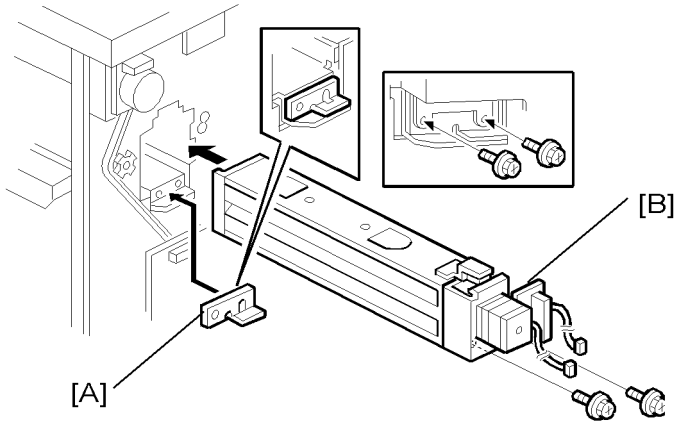

b531i004

9. Install the sensor arm [A] ( x 1, small step screw (M3 x 4).

Note

- Make sure that the sensor arm swings freely on the step screw.

10. Attach the spring [B].



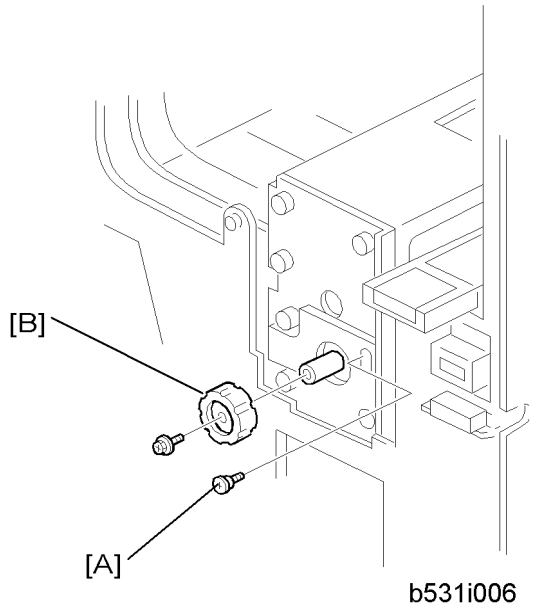

b531i005

11. At the rear, position the 2 mm spacer [A] and attach the punch unit [B] ( x 2, M4 x 10).

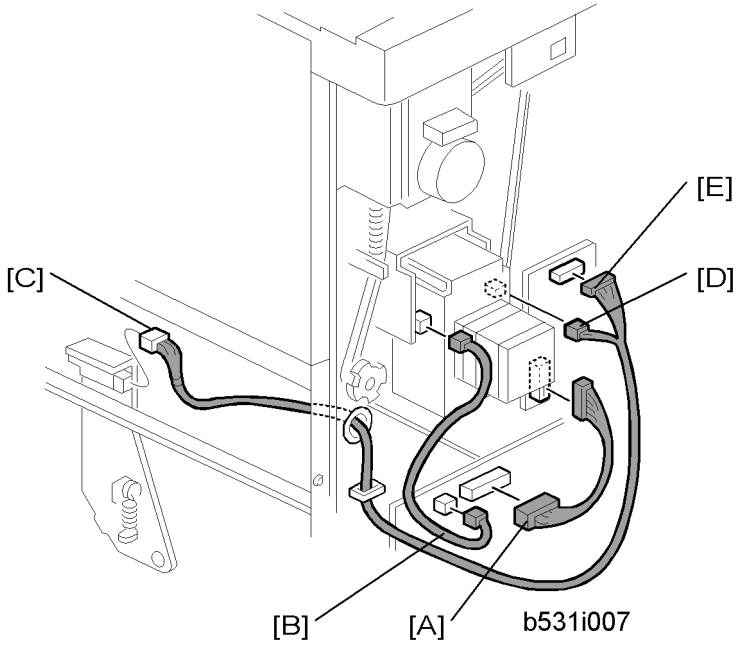
Important

- At the hole just above the lock lever, use one of the screws from the paper guide removed above to fasten the remaining two spacers to the frame.
- These extra spacers are used to adjust the horizontal position of the punch holes.

**Punch Unit (B531)**




12. At the front, secure the punch unit [A] with the large step screw ( x 1, M4 x 10).
13. Attach the punch unit knob [B] ( x 1).

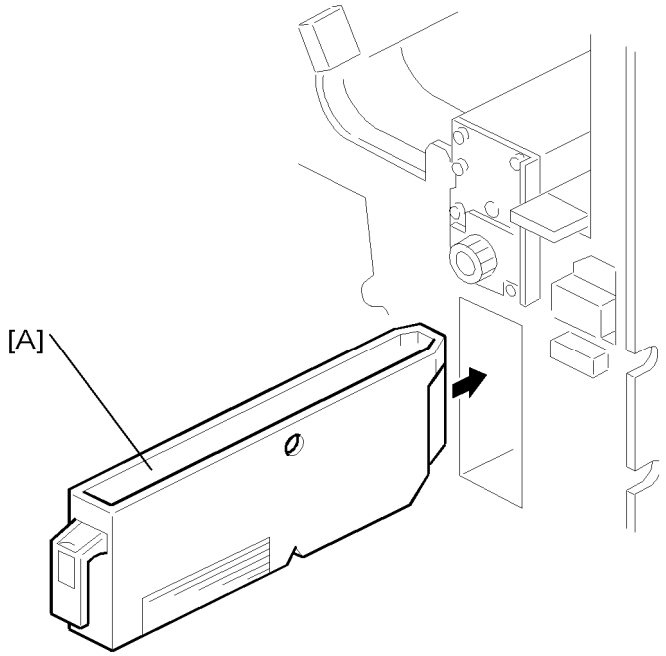



14. Connect the PCB harness connector [A] to CN129 of the finisher PCB and to CN600 of the punch unit PCB.
15. Connect the HP Sensor 2 harness connector [B] to CN130 of the finisher PCB and to HP Sensor 2.
16. Connect the single end of the hopper full sensor connector cable [C] to the hopper full sensor on the arm ( x 1, x 1), then connect the other two connectors to HP Sensor 1 [D] and CN620 [E] of the punch PCB.

Note

- No special DIP switch settings are required for this punch unit. The punch unit sends an identification signal to the machine, so it knows what type of punch unit has been installed.






b531i008

17. Slide the hopper [A] into the finisher.
18. Re-attach the inner cover and rear cover.
19. Close the front door and re-connect the finisher to the machine.

# 2.9 JOGGER UNIT (B513)

The Jogger Unit B531 can be installed only on the 3000-Sheet Finisher B706.

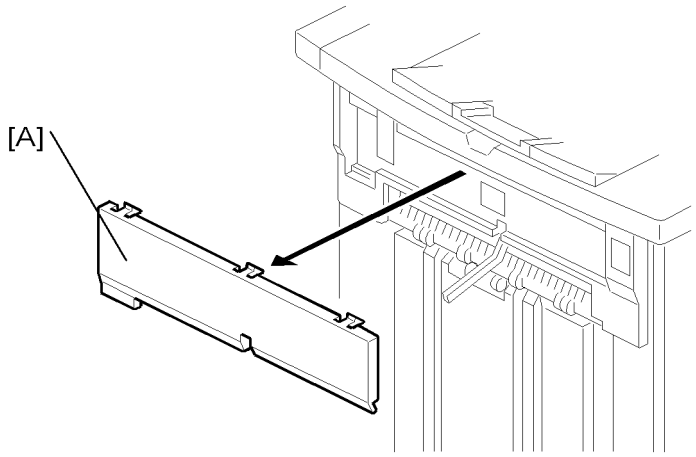
## 2.9.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

| | Description | Q'ty |
|---|---|---|
| 1. | Jogger Unit B513 | 1 |
| 2. | Tapping Screws - M3 x 6 | 2 |
| 3. | Installation Procedure | 1 |

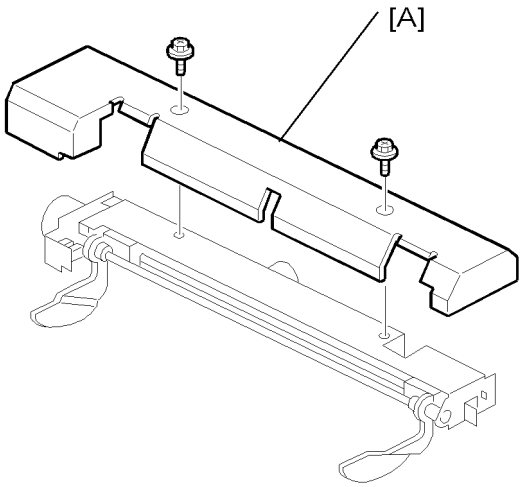
## 2.9.2 INSTALLATION PROCEDURE

1. Turn the main machine switch off and disconnect the finisher from the main frame.



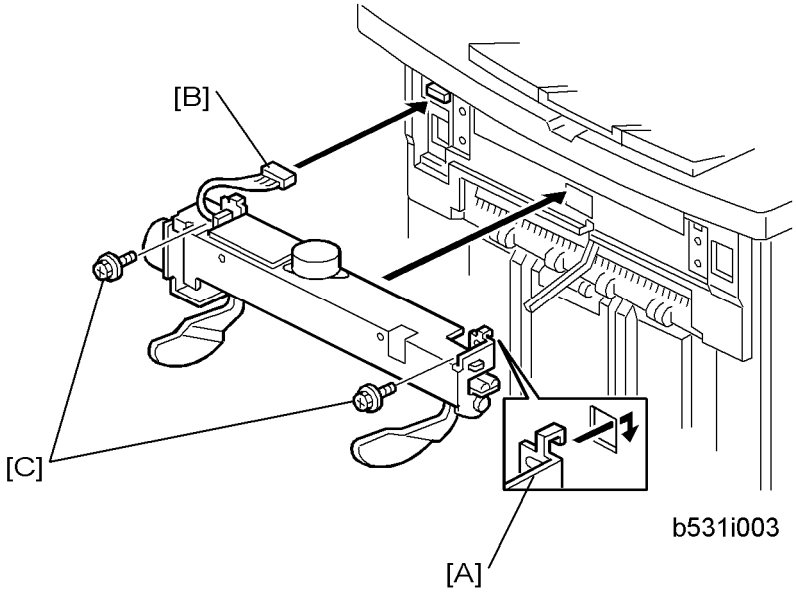

b513i001

2. Use the flat head of a screwdriver to remove the left upper cover [A] from the finisher and discard it.




b531i002

3. Remove the cover plate [A] from the jogger unit ( x 2). Keep the screws.




b531i003

4. With the jogger unit connector on the left side, hook the frame of the jogger unit [A] into the holes on the left and right side of the finisher frame.
5. On the left side, fasten the connector [B] to the socket ( x 1).
6. On the left and right side, attach the jogger unit frame to the side of the finisher with the screws [C] provided ( x 2).
7. Re-attach the jogger unit cover to its frame with the screws removed in step 2 ( x 2).

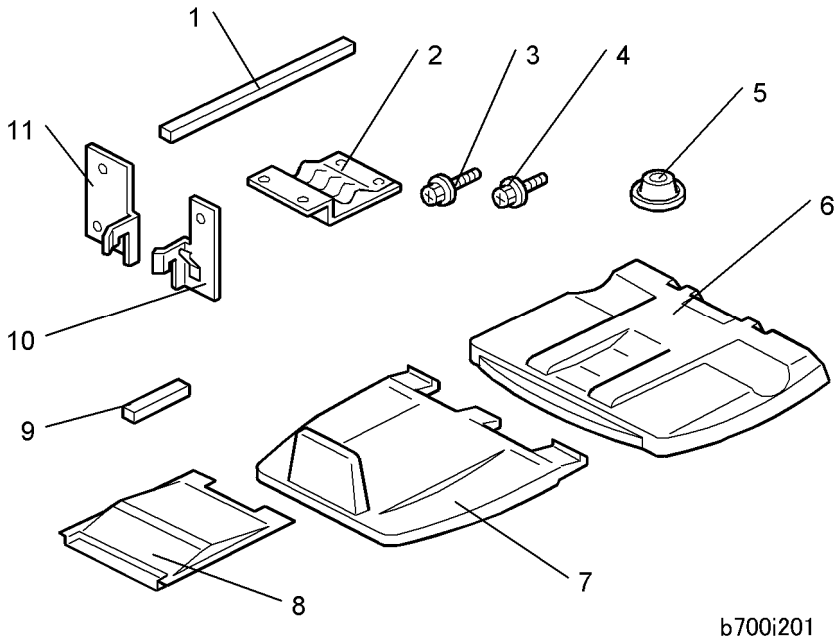
# 2.10 2000/3000-SHEET FINISHERS (D373/D374)

## 2.10.1 ACCESSORIES

Check the accessories from the box against the following list.

| | Description | Q'ty |
|---|---|---|
| 1. | Cushion (with double-sided tape) | 1 |
| 2. | Ground plate | 1 |
| 3. | Tapping screws - M4 x14 | 4 |
| 4. | Tapping screws - M3 x 8 | 1 |
| 5. | Leveling Shoes | 3 |
| 6. | Upper output tray | 1 |
| 7. | Lower output tray (D373 Only) | 1 |
| 8. | Auxiliary Tray | 1 |
| 9. | Gasket | 1 |
| 10. | Front joint bracket | 1 |
| 11. | Rear joint bracket | 1 |
| | Auxiliary Tray for Shift Tray (D373 Only – Not Shown) | 1 |
| | Auxiliary Tray for Proof Tray (D373 Only – Not Shown) | 1 |
| | Auxiliary Tray Storage Pocket (D373 Only – Not Shown) | 1 |

3 screws (M3x6) are provided for the D373.




## 2.10.2 INSTALLATION PROCEDURE

This section describes the common installation instructions for two peripheral devices:

- D373 Booklet Finisher. Does punching, shifting, corner stapling, and booklet (saddle-stitch) stapling.
- D374 Finisher. Does punching, shifting, and corner stapling but no booklet (saddle-stitch) stapling unit.

Note

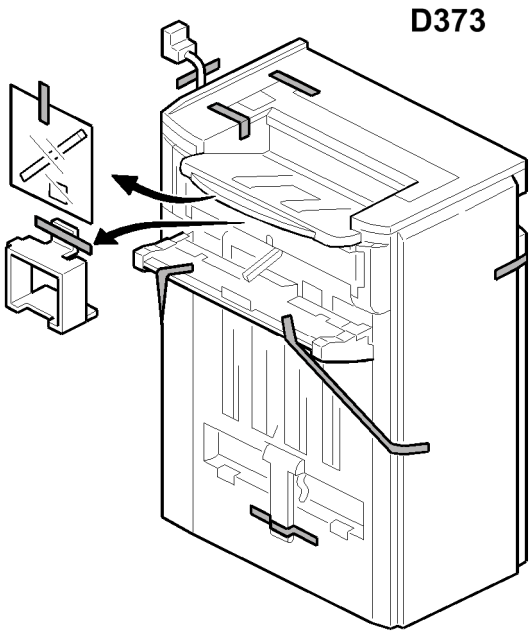
- Differences in the installation procedures are noted as “D373” or “D374”.

### *Removing Tapes and Retainers*

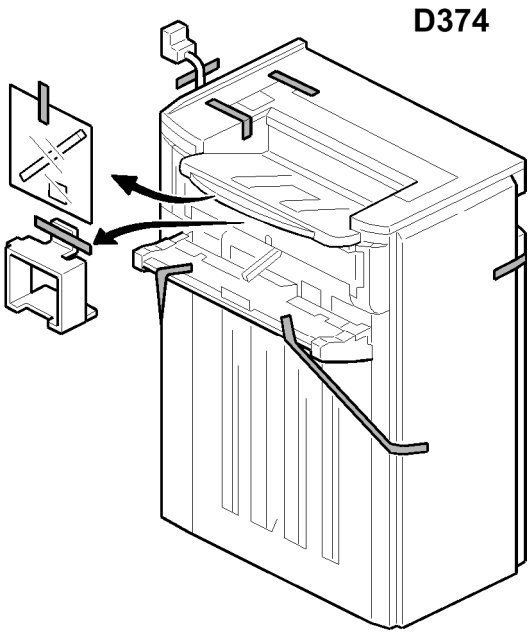
**WARNING**

- Always turn the machine off and unplug the machine before doing any of the following procedures.

**2000/3000-sheet Finishers (D373/D374)**

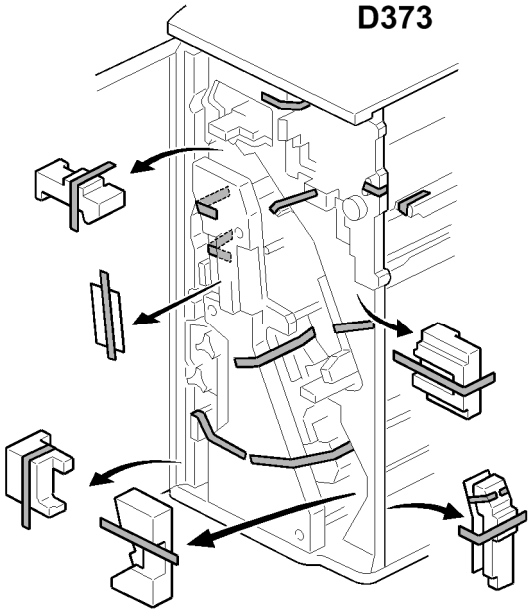



b700i102

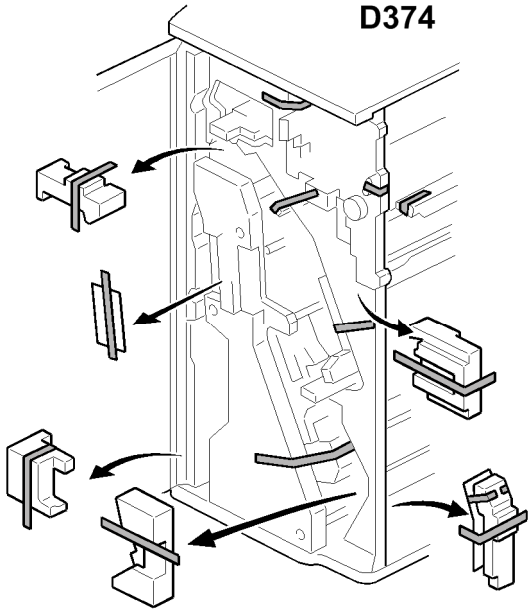



b701i102

1. Unpack the machine and remove all the wrapping.
2. Remove all filament tape and shipping retainers from the finisher.

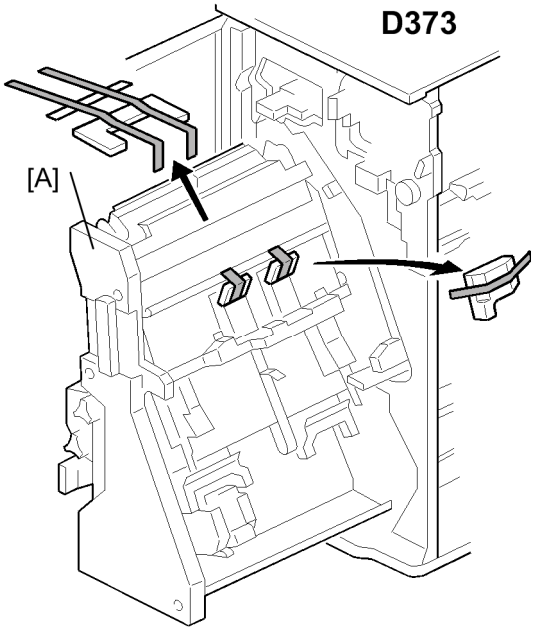



b700i202

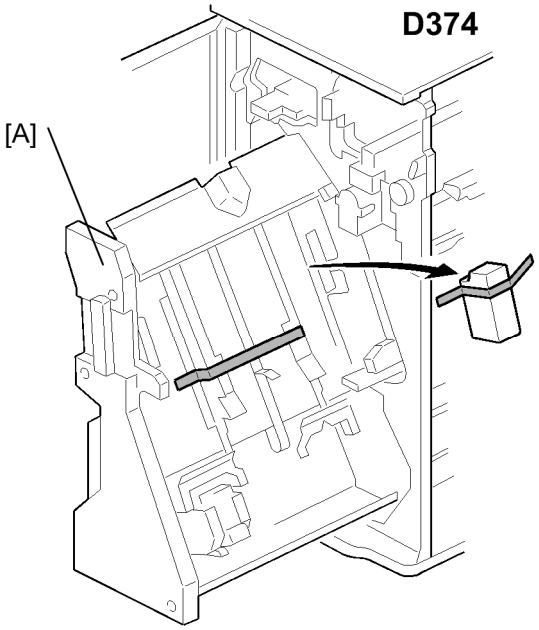



b701i202

3. Open the front door.
4. Remove all tapes and shipping retainers inside the finisher.



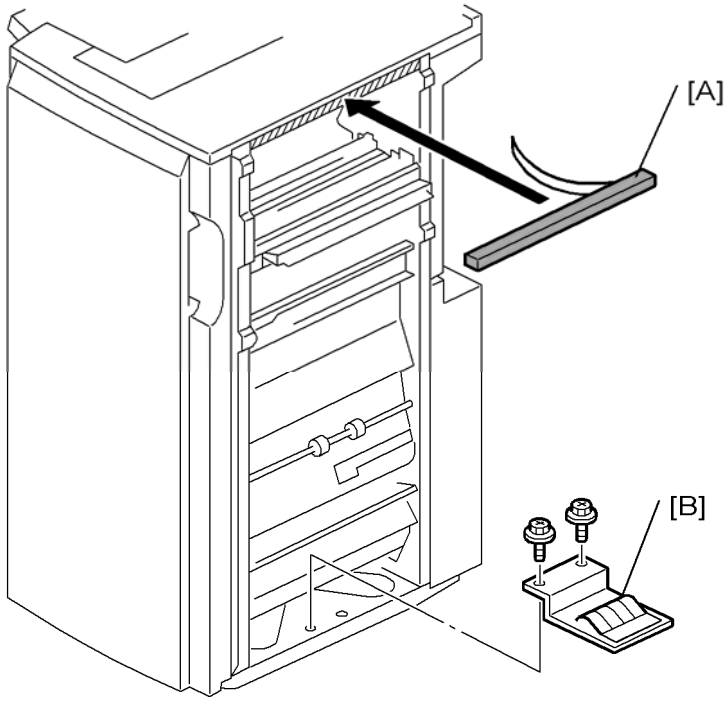

b700i204




b701i204

5. Pull out the jogger unit [A].
6. Remove the tapes and retainers.

### *Docking the Finisher*




b700i106

**If you are not installing the Cover Interposer B704:**

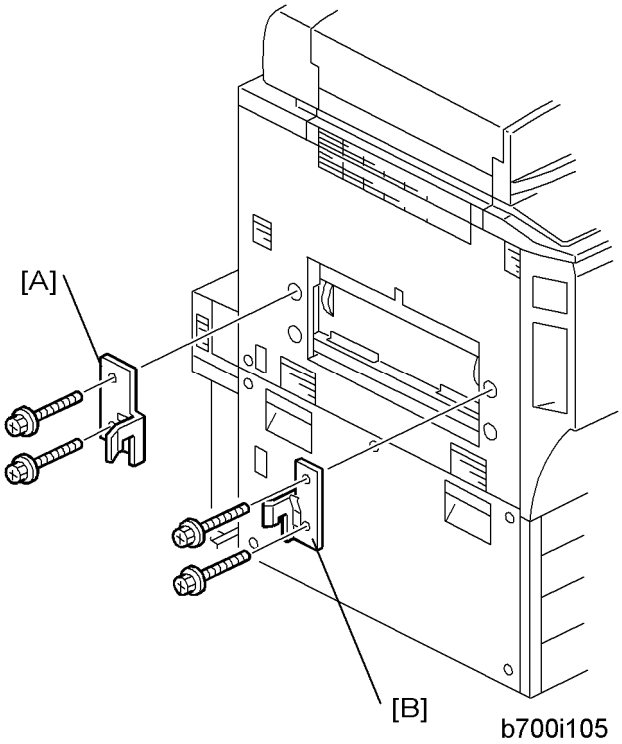
- Peel the strip from the sponge cushion [A] and attach it to the finisher then go to the next step.

**2000/3000-sheet Finishers (D373/D374)**

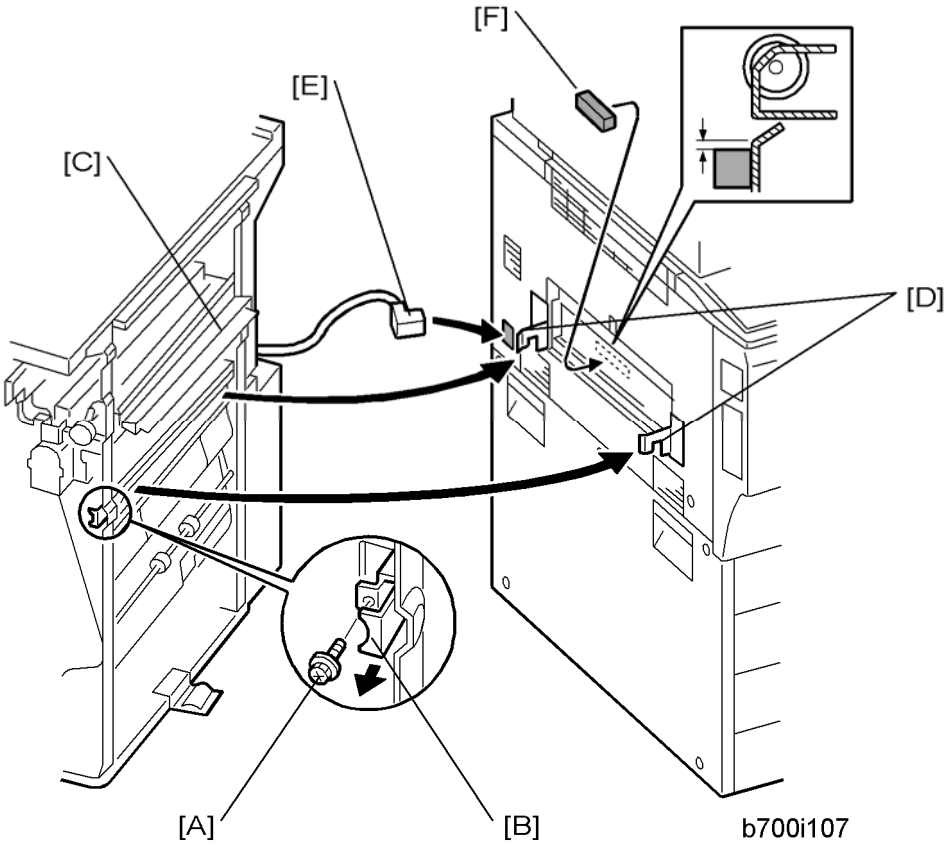
**If you are installing the Cover Interposer B704:**

- Do not attach the sponge cushion to the finisher. It must be attached to the cover interposer.
- Do not attach the grounding plate [B] to the finisher. It must be attached to the cover interposer.
- Install the interposer now. The cover interposer must be installed before you dock the finisher to the copier.

1. Use a short screwdriver to attach the grounding plate [B] ( x 2, M3 x 6).

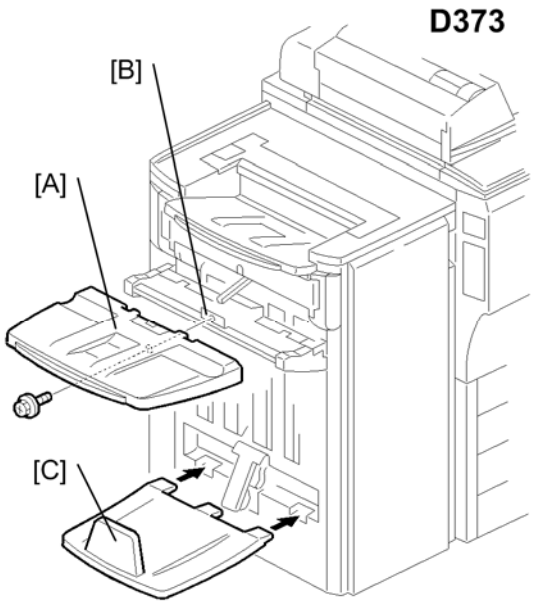



2. Attach the rear bracket [A] ( x 2, M4 x 14).
3. Attach the front bracket [B] ( x 2, M4 x 14).

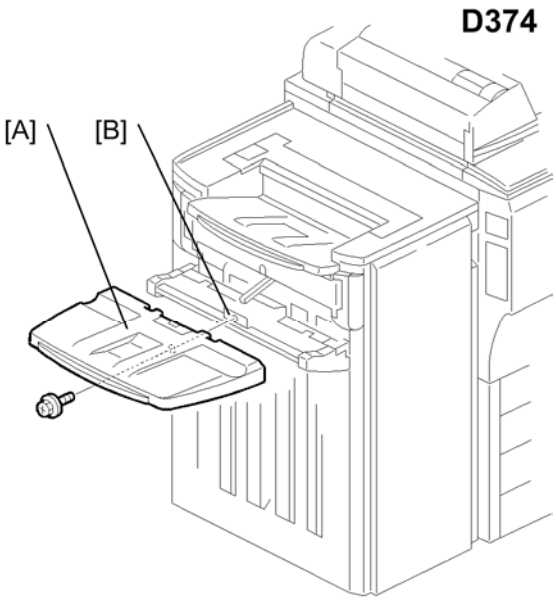



4. Remove the screw [A] to release the lock lever [B] ( x 1).
5. To avoid bending and damaging the paper entrance guide plates [C], slowly push the finisher against the side of the machine until the brackets [D] enter their slots.
6. Connect connector [E] to the main frame.
7. Attach the gasket seal [F] as shown.
8. Push the finisher against the machine.
9. Push in lock lever [B] then reattach the screw [A].

## *Attaching the Trays*




b700i208




b701i208

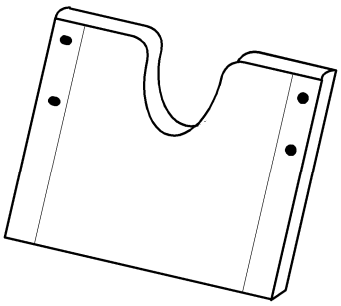
**D373**

1. Attach the upper output tray [A] ( x 1, M3 x 8).

Note

- Make sure the metal plate [B] overlaps the tray.

2. Attach the lower output tray [C].



B246I901

3. Use the round-head rivet (provided accessory) to fasten the auxiliary tray storage pocket to rear cover of the finisher.
4. Place the auxiliary trays for the shift tray and proof tray in the pocket.

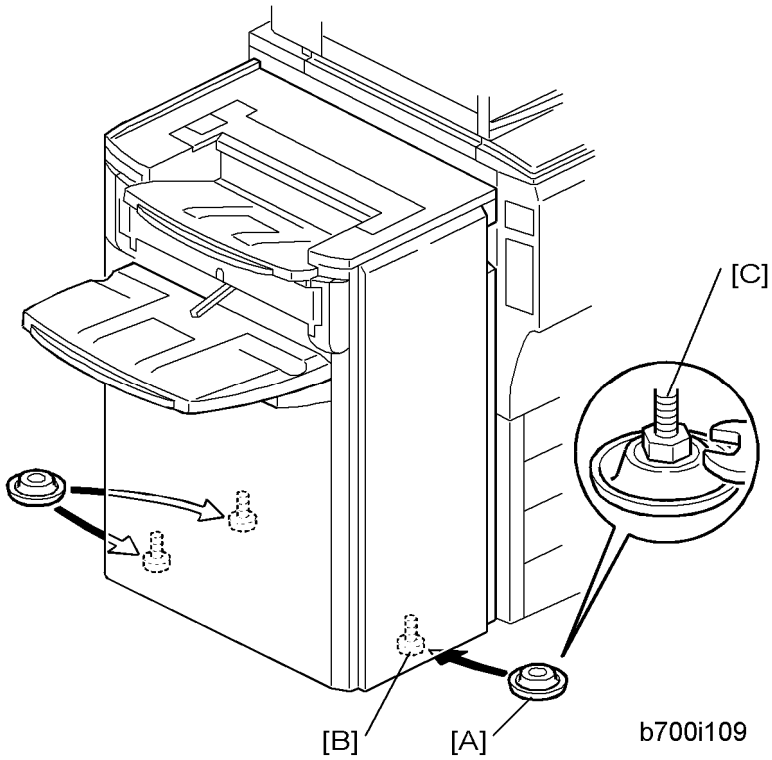
**D374**

1. Attach the output tray [A].

Note

- Make sure the metal plate [B] overlaps the tray.

### *Leveling the Finisher*




1. Set the leveling shoes [A] (x 3) under the feet [B].
2. Use a wrench to adjust the height of the screws [C] to level the machine.

### *Selecting the Staple Supply Name*

Enter the SP mode and execute the following information.

| | | |
|---|---|---|
| 5841* | Supply Name Setting | These names appear when the user prints the Inquiry List.<br>Press the Counter key, then press 'Print Inquiry List'.<br>Press the Inquiry button on the initial User Tools screen. |
| 013* | Staple Std | Enter the name of the staples in use for normal stapling (not booklet stapling). This setting should be done for both the D373 and D374. |
| 022 | Staple Bind | Enter the name of the staples in use for booklet stapling (saddle-stitching). This setting is required only for the D373. |

### *Enabling Booklet Binding (D373 Only)*

To enable booklet binding (saddle-stitching) for the D373, you must make sure that the

center-position stapling option is displayed.

1. Press the User Tools key.
2. Touch “Copier/Document Server Features”.
3. Touch the “Input/Output” tab, then touch “Stapling Position”.
4. Touch any “Stapling Position” button and touch the center (saddle-stitch) stapling symbol.
5. Exit the User Tools mode. Specify the number of copies, touch the center stapling symbol on the operation panel, then start the print job.

## *Auxiliary Trays*

The auxiliary trays are stored in the auxiliary tray storage pocket mounted on the back cover of the finisher.

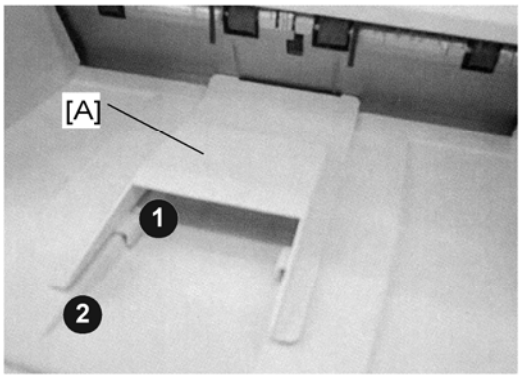
Make sure that the customer understands the following points about these auxiliary trays:

- The trailing edges of excessively curled or Z-folded paper can activate the tray full sensors before the tray is actually full.
- Once the "Exit Tray Full" message displays, the job cannot continue until some sheets are removed from the tray which is only partially full. The trays are designed to prevent this problem.
- The auxiliary tray for the shift tray should be installed for Z-folding jobs.
- The auxiliary tray for the proof tray should be installed only when excessively curled paper is triggering early "Exit Tray Full" alerts.
- Normally, both auxiliary trays should be placed in the pocket mounted on the back of the finisher.

**Proof Exit Auxiliary Tray**

Follow the procedures below to install the auxiliary tray for the proof tray.

1. First, remove the paper from the paper feed tray, turn it upside down, and continue printing. This may solve the problem.

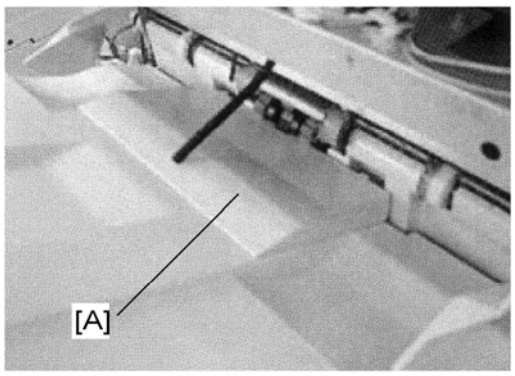



B246I903

2. If the "Exit Tray Full" alerts continue, set the proof auxiliary tray [A] on the proof tray on the top of the finisher.
3. Make sure that the arms ❶ of the auxiliary tray fit tightly over the ridges ❷ of the proof tray below.

**Shift Auxiliary Tray**

1. Open and close the front door of the finisher.
   - This initializes the finisher and moves the shift tray to the standby position.
2. Open the front door again and leave it open.




B246I902

3. Set the shift auxiliary tray [A] on the shift tray as shown.
4. Close the front door.
   - This initializes the finisher again and moves the shift tray to the new standby position with the auxiliary tray installed.
5. After the Z-folding job is finished, remove the tray and store it in the auxiliary tray storage pocket on the back of the finisher.
6. Open and close the front door to re-initialize the finisher and reset the standby position of the shift tray.

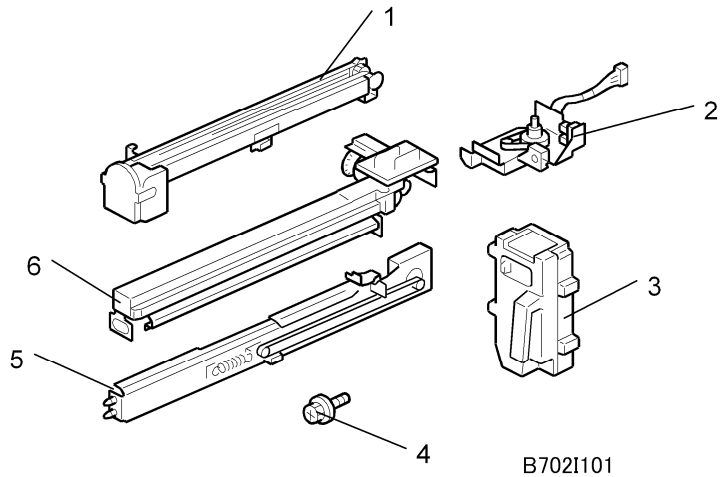
# 2.11 PUNCH UNIT (B702)

The Punch Unit B702 can be installed only in the 2000/3000-Sheet Finisher D373/D374.

## 2.11.1 ACCESSORIES

Check the accessories and their quantities against the following list.

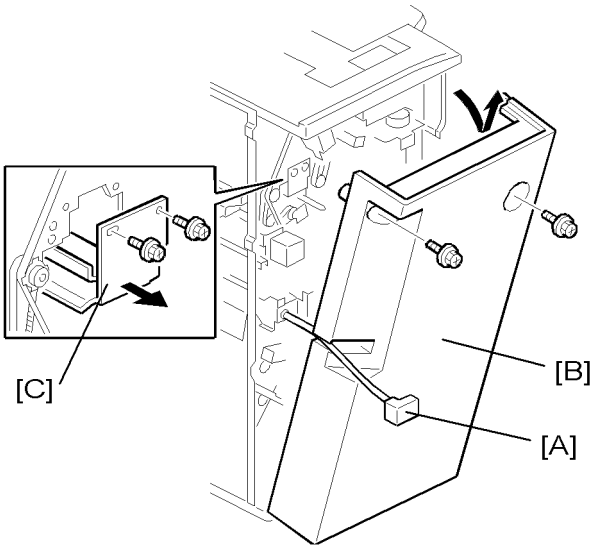
| | Description | Q'ty |
|---|---|---|
| 1. | Punchout Waste Unit | 1 |
| 2. | Slide Drive Unit | 1 |
| 3. | Punch Waste Hopper | 1 |
| 4. | Screws (M3 x 6) | 5 |
| 5. | Side-to-Side Detection Unit | 1 |
| 6. | Punching Unit | 1 |




## 2.11.2 INSTALLATION PROCEDURE

**⚠WARNING**

- Always turn the machine off and unplug the machine before doing any of the following procedures.



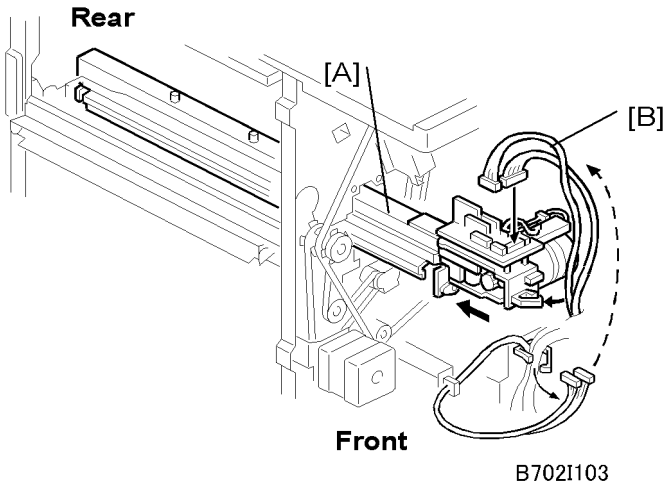

B702I102

1. If the finisher is connected to the copier, disconnect the power connector [A] and separate the finisher from the copier.
2. Remove the rear cover [B] ( x 2) and open the front door.

Note

- At the base of the back cover, be sure to disconnect the tabs that fasten the cover to the frame.

3. Remove the guide plate [C] ( x 2).



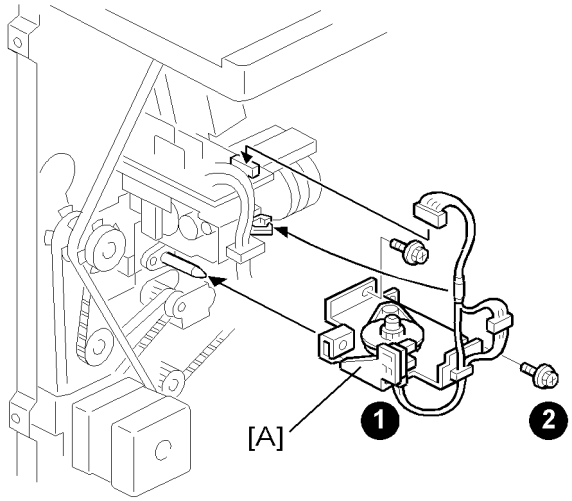

B702I103

4. Slide the punch unit [A] along its rails into the finisher. Make sure that pin engages correctly at the front and rear.
5. Connect and fasten the punch unit [B] ( x 2, x 1).

Note

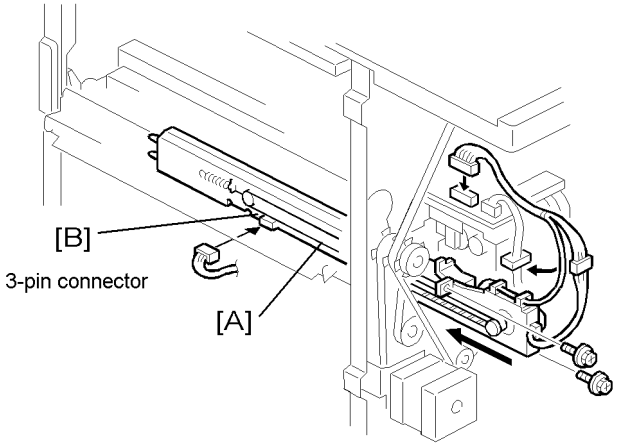
- The connectors are coiled and tied above the PCB on the right.

**Punch Unit (B702)**




B702I104

6. Fasten the slide drive unit [A] to finisher and connect it to the punch unit ( x 2, x 1). Press in on the slide drive unit at ❶ when you attach screw ❷.
7. Make sure that the punch unit moves freely and is not blocked by the screws.

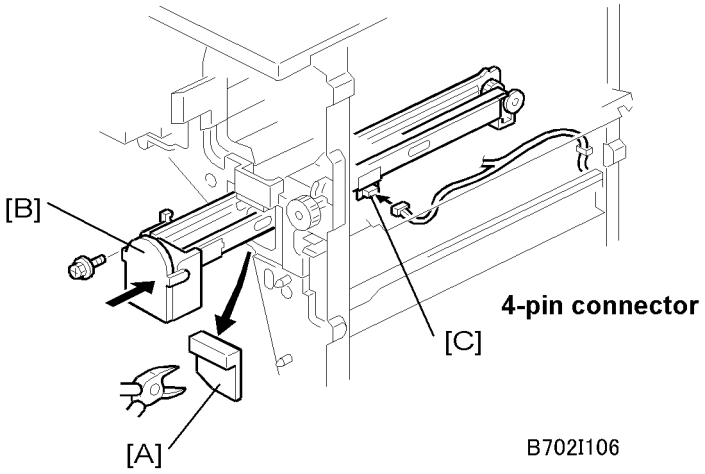



B702I105

8. Insert the side-to-side detection unit [A]. Make sure that the two pins are engaged correctly at the front.
9. Confirm that the side-to-side detection slides smoothly on its rails. If it does not, make sure that the rails are aligned with their grooves.
10. Fasten the side-to-side detection unit and connect it at the rear ( x 2, x 1, x 1).
11. Pull the short connector out of the connector [B] then connect it ( x 1).

Note

- This is the 3-pin connector.




12. At the front, use a pair of nippers to remove the knockout [A]
13. Insert the punch waste transport unit [B] into the finisher.

Note

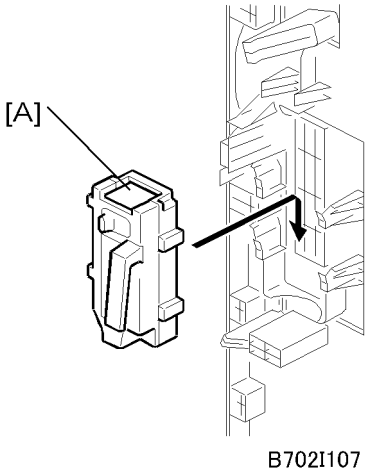
- Make sure that the punch waste transport unit slides smoothly on its rails. If it does not, make sure that the rails are aligned with the grooves.

14. Remove the short connector from the connector [C].

Note

- This is the 4-pin connector.

15. Connect connector and fasten the punch waste transport unit ( x 1, x 1, x 1).



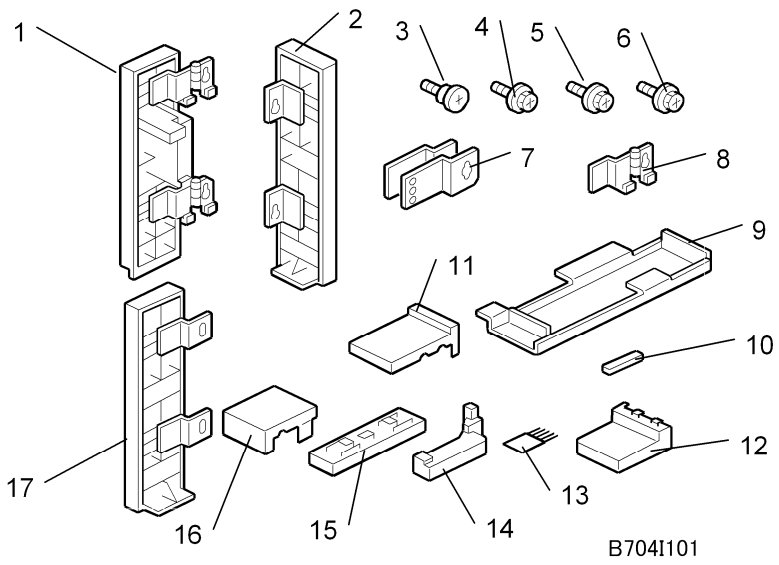

16. Set the hopper [A] in its holder.

# 2.12 COVER INTERPOSER TRAY (B704)

## 2.12.1 ACCESSORIES

Check the accessories and their quantities against the following list.

| | Description | Q'ty |
|---|---|---|
| 1. | Front door extension (top) | 1 |
| 2. | Rear cover extension (bottom) | 1 |
| 3. | Shoulder screws | 3 |
| 4. | Tapping screws – M4 x 8 | 9 |
| 5. | Tapping screws – M3 x 8 | 2 |
| 6. | Tapping screws – M3 x 6 | 5 |
| 7. | Adjuster plates | 2 |
| 8. | Hinge Bracket | 1 |
| 9. | Plate Extension (bottom) | 1 |
| 10. | Gasket Seals | 2 |
| 11. | Right Rear Cover Plate (D460 only) | 1 |
| 12. | Spacer | 1 |
| 13. | Anti-Static Brush | 1 |
| 14. | Spacer (D460 only) | 1 |
| 15. | Spacer (Not used) | 1 |
| 16. | Right front corner plate (D460 only) | 2 |
| 17. | Front door extension (bottom) | 1 |




## 2.12.2 INSTALLATION PROCEDURE

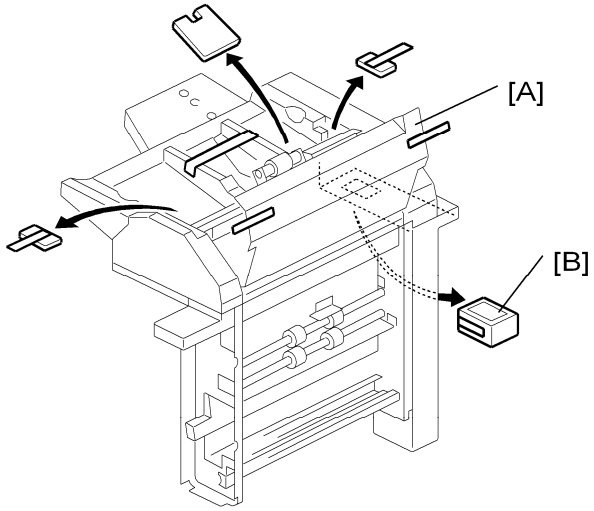
The Cover Interposer Tray B704 can be installed on only of the following finishers:

- 2000-Sheet Booklet Finisher D373
- 3000-Sheet Finisher D374
- 3000-Sheet Finisher D460

### *Removing Tapes and Retainers*

**⚠WARNING**

- Make sure that the finisher is disconnected from the main machine and that the copier is switched off and unplugged before starting the following procedure.

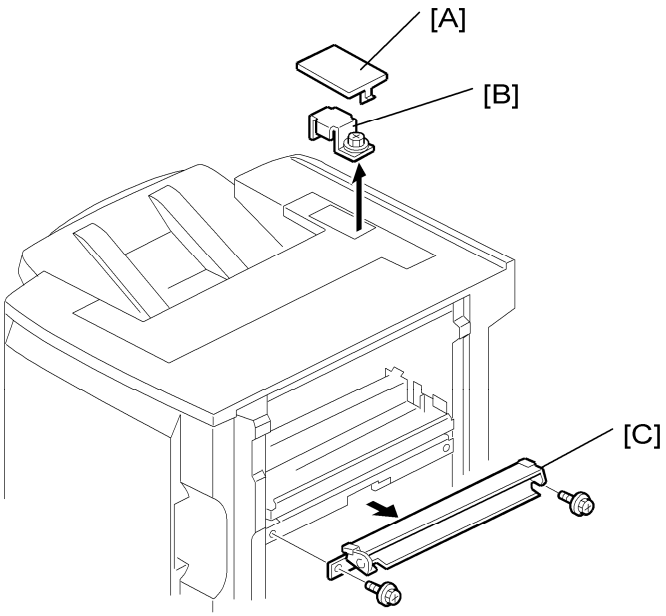



1. If the finisher is connected to the machine, disconnect it.

**Cover Interposer Tray (B704)**

2. Remove all tape and retainers from the cover interposer tray [A].
3. Remove the tape and cardboard [B] from the ground connector.

## *Preparing the Finisher (D373/D374/D460)*




B704I103

1. Remove the cover [A] of the relay connector.
2. Loosen the screw of the bracket [B] ( x 1) then remove the bracket.
3. Remove the guide plate [C]. (This guide plate will be attached to the cover interposer; do not discard it.)

Important

- If you are installing the cover interposer tray with a previously installed finisher D373/D374/D460, remove the sponge strip from the finisher and save it for re-attachment to the interposer tray.

4. Either:
   - If you are installing the D373/D374, attach the extensions to the finisher without modification. Go to "Attaching the Extensions for the D373/D374".
   - If you are installing the D460, modify the extensions and attach them to the finisher. Go to "Attaching the Extensions for the D460".

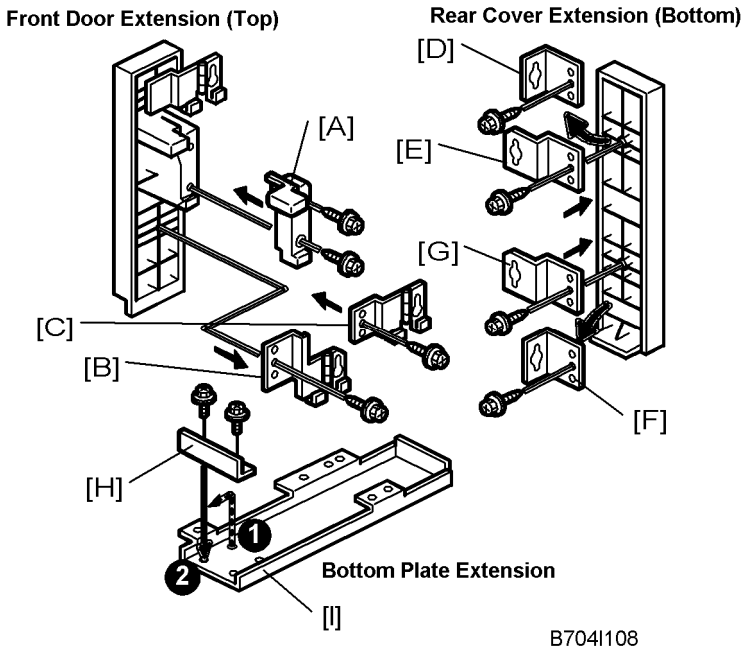
## *Attaching the Extensions for the D460*

Important

- The procedures in this section are for installation of the cover interposer with the D460 only.

- If you are installing the cover interposer with the D373/D374, go to the next section.

**Modify the Attachments for the D460**




Front Door Extension:

1. Attach spacer [A] to the front door extension (top) ( x 2).
2. Remove the lower hinge [B] and replace it with [C] ( x 2).

Rear Cover Extension (Bottom):

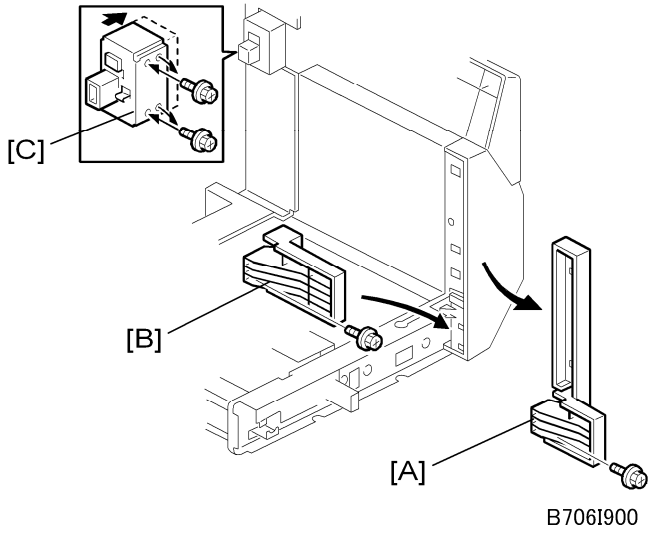
1. Remove [D] and replace it with [E] ( x 1).
2. Remove [F] and replace it with [G] ( x 1).

Plate Extension (Bottom):

1. Remove bracket [H] from ❶ and attach it to ❷ at the end of the bottom plate extension ( x 2).

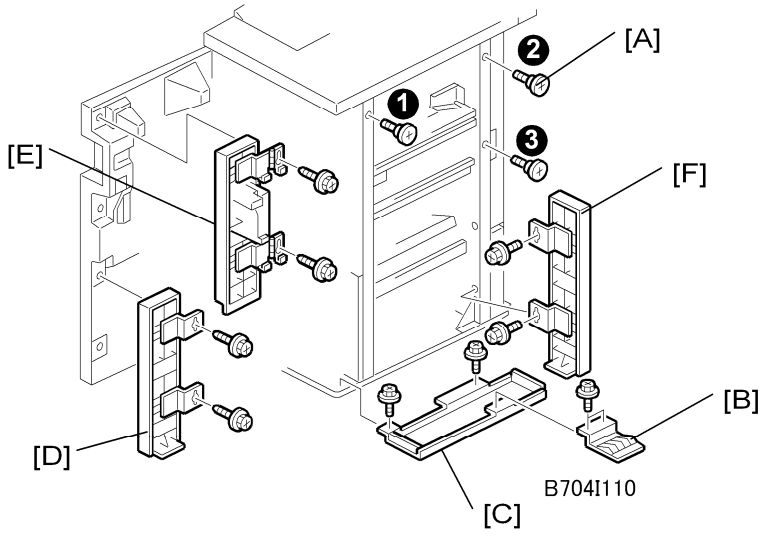
**Cover Interposer Tray (B704)**

## *Prepare the Cover Interposer for the D460*




1. Remove spacer [A] ( x 1).
2. Attach spacer [B] ( x 1).
3. Remove the screws from the connector case [C] ( x 2).
4. Push the connector case in the direction of the arrow until the second set of holes is aligned with the holes below, then attach the screws.

## *Attach the Extensions to the D460*




1. Attach the three shoulder screws [A] ❶❷❸ ( x 3).
2. If the finisher has been previously installed, remove the ground plate [B] from the finisher and keep the screws.
3. Attach the bottom plate [C] ( x 2, M3 x 6).
4. Attach the ground plate to the bottom plate ( x 2).

5. Attach the bottom front cover extension [D] ( x 2, M4 x 8).

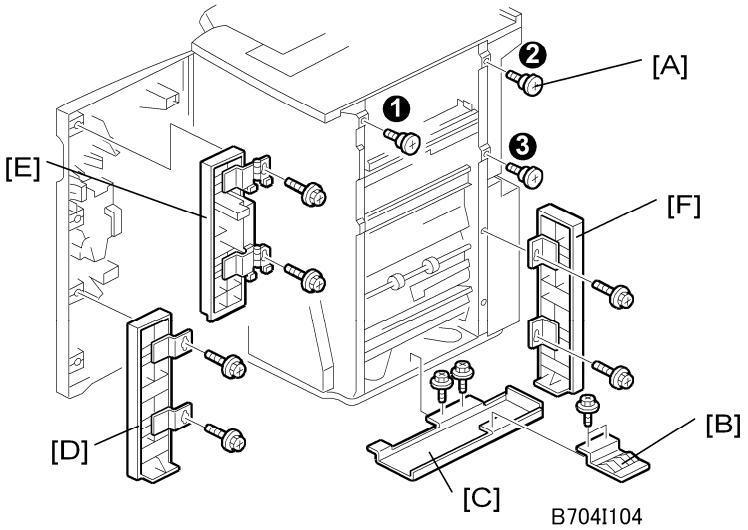
Note

- Attach this cover first.

6. Attach the top front cover extension [E] ( x 2, M4 x 8).
7. Set two screws into the holes provided for the rear cover extension [F] ( x 2, M3 x 6).
8. Set the keyholes of the rear cover extension over of the heads of the screws.
9. Press up on the bottom of the rear cover extension to close the gap at the top of the cover, then tighten the screws.



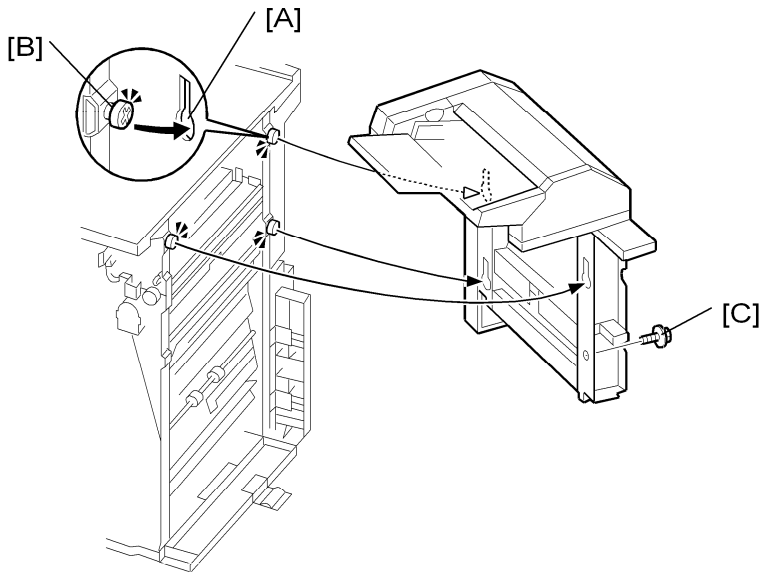
## *Attaching the Extensions for the D373/D374*




1. Attach the three shoulder screws [A] ❶❷❸ ( x 3).
2. If the finisher has been previously installed, remove the ground plate [B] from the finisher and save the screws
3. Attach the bottom plate [C] ( x 2, M3 x 6) then attach the ground plate to the bottom plate ( x 2).
4. Attach the bottom front cover extension [D] ( x 2, M4 x 8).
5. Attach the top front cover extension [E] ( x 2, M4 x 8).
6. Attach the rear cover extension [F] ( x 2, M3 x 6).

**Cover Interposer Tray (B704)**

## *Attaching the Interposer Tray (D373/D374/D460)*




B704I105

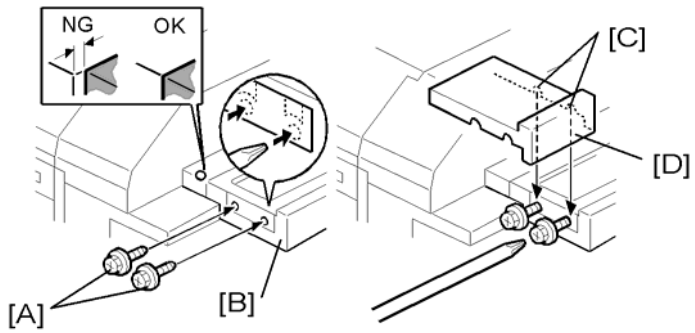
1. Pick up the cover interposer tray, align the keyholes [A] with the shoulder screws [B], then slide the cover interposer down onto the screws.
2. Secure the cover interposer with the screw [C] ( x 1, M3 x 6).
3. Either:
   - If you are installing the cover interposer tray on the D373/D374, skip the next section and go directly to “Docking the Finisher and Interposer to the Machine”.
   - If you are installing the cover interposer tray on the D460, go to the next section, install the corner plates on the D460, then go to “Docking the Finisher and Interposer to the Machine”.

## *Attaching the Corner Plates for the D460*

Important

- The corner plates are installed on the D460 only.

**Right Rear Corner Plate (D460 only)**



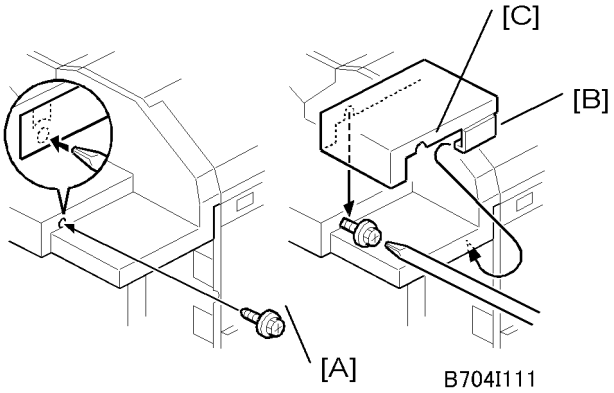

B704I112

1. Temporarily attach the screws [A] (with about two turns) to the right end of the finisher extension table [B] ( x 2, tapping M4 x 8)

Note

- The holes are not visible because they are covered with tape. Just punch the screws through the holes.

2. Align the cutouts [C] of the right rear corner plate [D] with the screws and attach the plate.
3. With a long screw driver inserted through the cutouts in the right rear corner plate [D], tighten the screws to fasten the right rear corner plate to the table extension [B].




B704I111

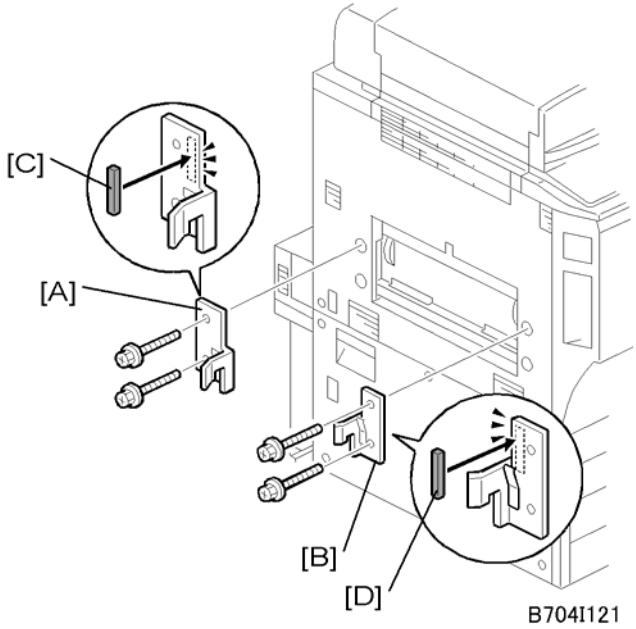
4. Temporarily attach the screw [A] (M4 x 8) with about two turns to fasten to the panel at the right front corner.

Note

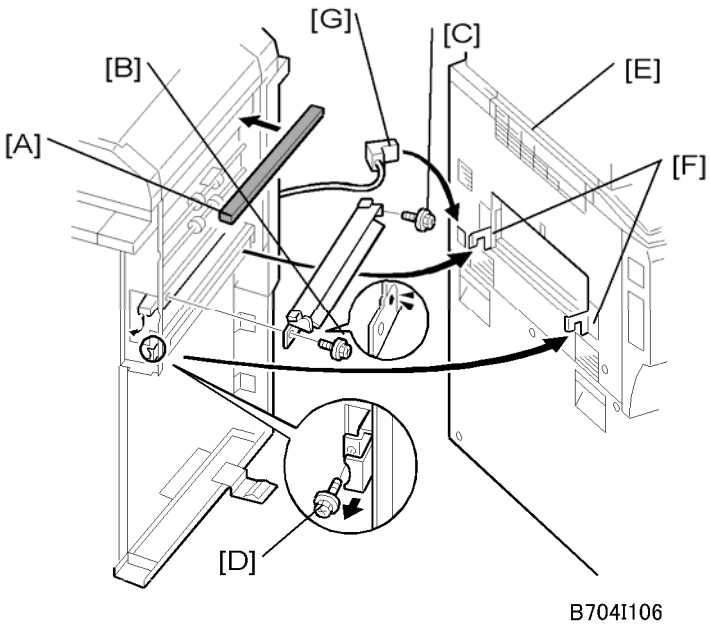
- The hole is not visible because it is covered with tape. Just punch the screw through the hole.

5. With the clamp [B] under the edge of the corner, align the cutout [C] in the right front corner plate with the screw, then snap it into position.
6. With a long screwdriver inserted into the plate cutout [C], tighten the screw to fasten the right front corner plate.

## *Docking the Finisher and Interposer to the Machine (D373/D374/D460)*




1. Attach the rear bracket [A] ( x 2, M4 x14).
2. Attach the front bracket [B] ( x 2, M4 x14).
3. Attach the gasket seals [C] and [D].




4. Attach the sponge strip [A] that is supplied with the finisher.
5. Attach the guide plate (removed from the finisher) to the cover interposer.
   - Attach the front end [B] of the plate ( x 1).
   - Attach the rear end of the plate with the anti-static brush [C] ( x 1).

Important

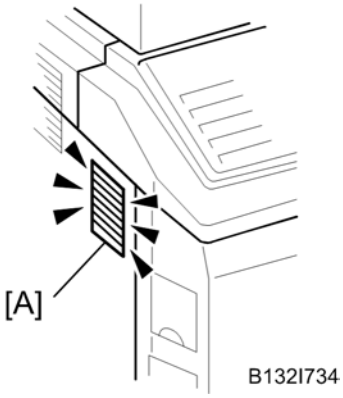
- Use the two small tapping screws that are supplied, and not the machine screws removed from the finisher guide plate.

6. Release the lock lever [D] ( x 1).
7. Attach the pad [E]. (This pad is provided with the finisher.)
8. Slowly push the finisher against the side of the machine until the brackets [F] go into the slots.

Important

- Move the finisher carefully, or you will bend the entrance guide plates.

9. Attach the lock lever [D] ( x 1).
10. Connect the connector [G] to the copier.




Important

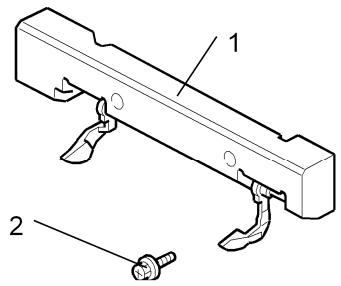
- Check the duct [A] on the left side of the machine.
- Make sure that the sponge does not prevent air flow through this duct.

# 2.13 OUTPUT JOGGER UNIT (B703)

## 2.13.1 ACCESSORIES

Check the accessories and their quantities against the following list.

| | Description | Q'ty |
|---|---|---|
| 1. | Jogger Unit | 1 |
| 2. | Tapping Screws - M3 x 6 | 2 |




B703I101

## 2.13.2 INSTALLATION PROCEDURE

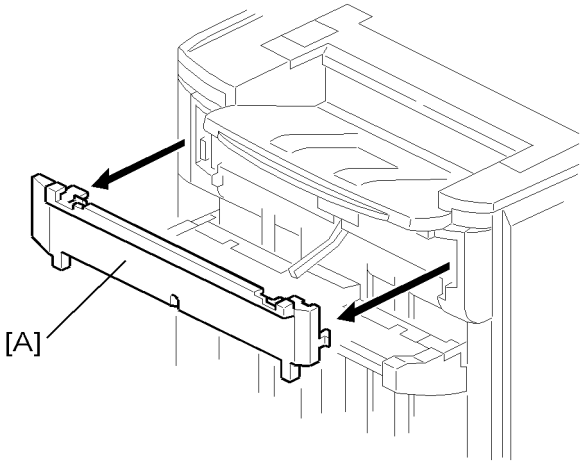
Important

- The Output Jogger Unit B703 can be installed only on the 2000/3000-Sheet Finisher D373/D374.

**WARNING**

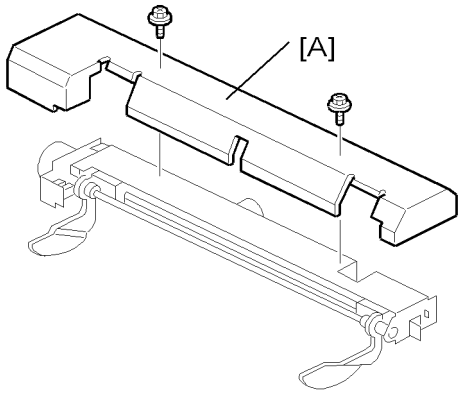
- Always switch the machine off and unplug the machine before doing any of the following procedures.

1. Turn the main machine switch off.
2. Disconnect the finisher from the main frame.



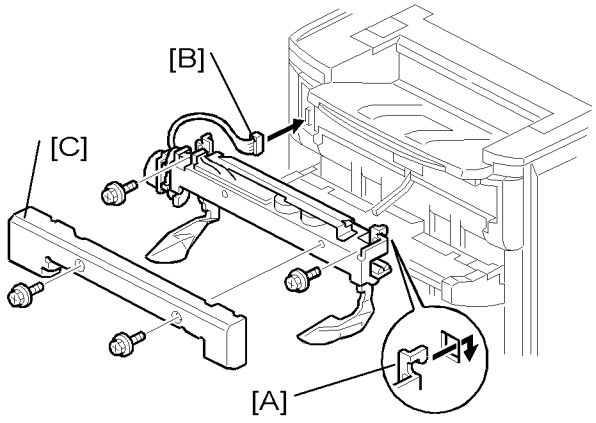

B703I103

3. Use the flat head of a screwdriver to remove the left upper cover [A].




B703I102

4. Remove the cover plate [A] ( x 2). Keep the screws.




B703I104

5. While you hold the jogger unit with the connector on the left, put the hooks of the frame of the jogger unit [A] into the holes in the left and right side of the finisher frame.
6. Fasten connector [B] to the socket ( x 1).

**Output Jogger Unit (B703)**

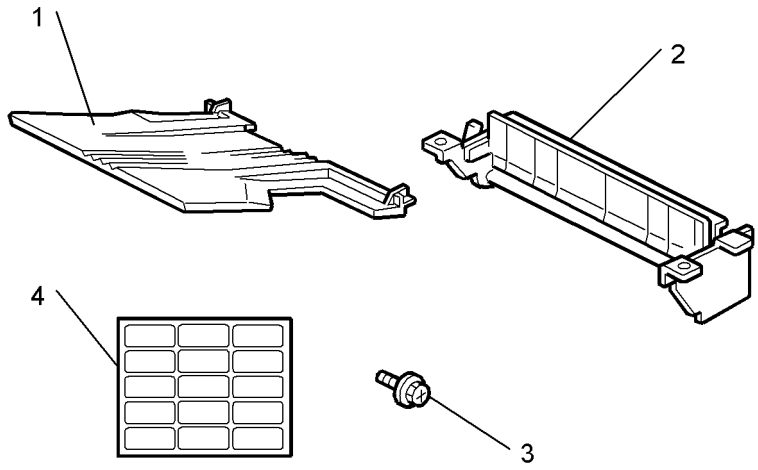
7. Attach the jogger unit to the finisher ( x 2).
8. Reattach the jogger unit cover [C] to the jogger unit ( x 2).
9. Set SP 6118 to 1 after you install the B703 jogger unit.

# 2.14 MAIL BOX (B762)

## 2.14.1 ACCESSORY CHECK

Check the accessories and their quantities against the following list.

| | Description | Q'ty |
|---|---|---|
| 1. | Trays | 9 |
| 2. | Guide plate | 1 |
| 3. | Tapping screws - M3x8 | 6 |
| 4. | Decals (bin display) | 1 |




b762i001a

## 2.14.2 INSTALLATION PROCEDURE

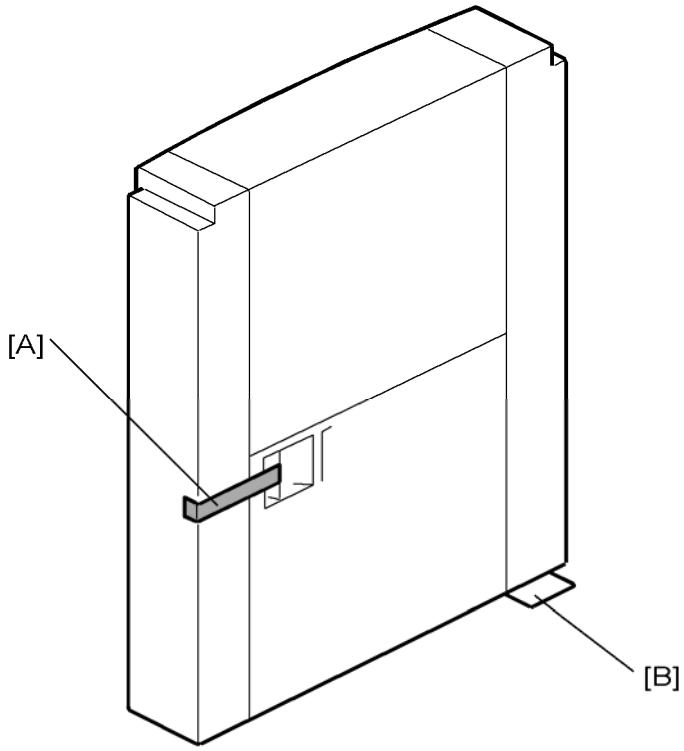
Important

- The Mail Box B762 can be installed only in the 2000/3000-Sheet Finisher D373/D374.

**WARNING**

- Switch the machine off and unplug the machine before starting the following procedure.

**Mail Box (B762)**

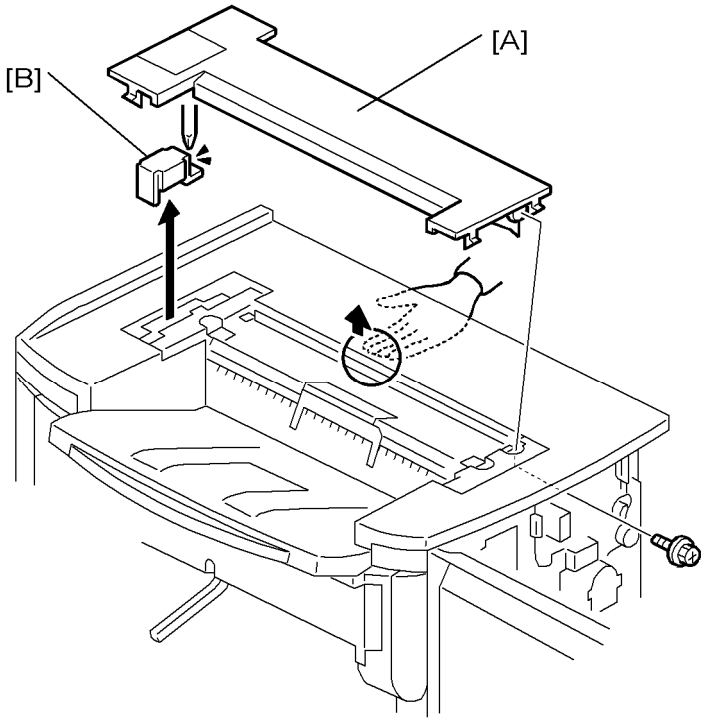



b762i101

1. Remove the filament tape [A].

Important

- Handle the mailbox carefully. The corner leaf [B] can be damaged easily.




b762i102

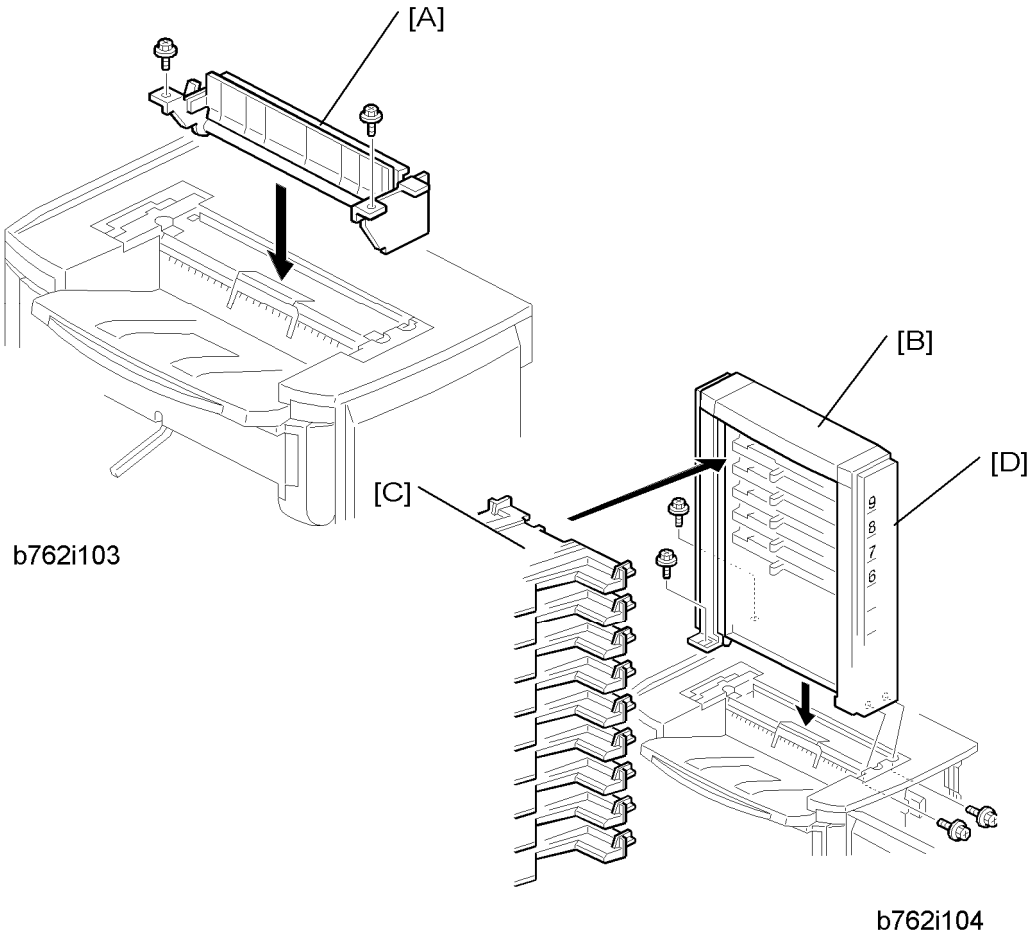
2. If the Cover Interposer Tray B704 is installed on the D373/D374, remove it.

Note

- The cover interposer tray and mailbox cannot be installed on the finisher at the same time.

3. Remove the top cover [A] of the finisher ( x 1).
4. Remove the bracket [B] ( x 1).

**Mail Box (B762)**




b762i103

b762i104

5. Attach the guide plate [A] to the top of the finisher ( x 2, M3x8).
6. Attach the mailbox [B] to the top of the finisher ( x 4, M3x8).
7. Attach the 9 trays [C] to the mailbox.
8. Give the decals [D] to the customer for notation and attaching at the correct location.

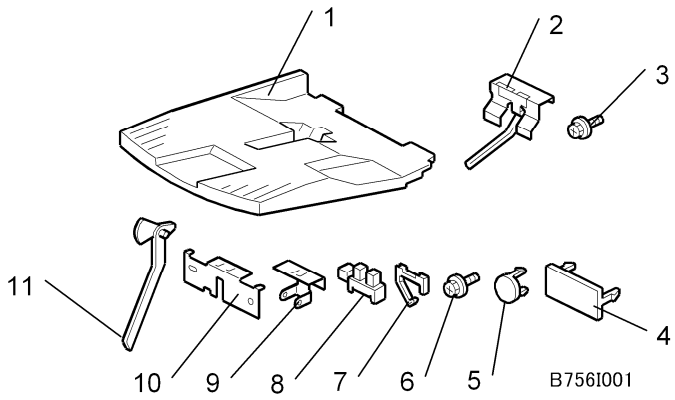
# 2.15 COPY TRAY (B756)

## 2.15.1 ACCESSORIES

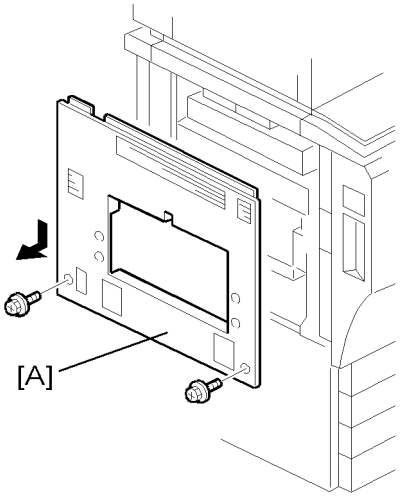
Check the accessories and their quantities against the following list.



| | Description | Q'ty |
|---|---|---|
| 1. | Copy Tray | 1 |
| 2. | Actuator Arm and Bracket (not used) | 1 |
| 3. | Tapping Screw (not used) | 2 |
| 4. | Large Cap | 1 |
| 5. | Small Cap | 4 |
| 6. | Tapping Screw (M4 x 8) | 1 |
| 7. | Harness Clamp | 1 |
| 8. | Paper Height Sensor | 1 |
| 9. | Actuator Arm Bracket | 1 |
| 10. | Sensor Bracket | 1 |
| 11. | Actuator Arm | 1 |

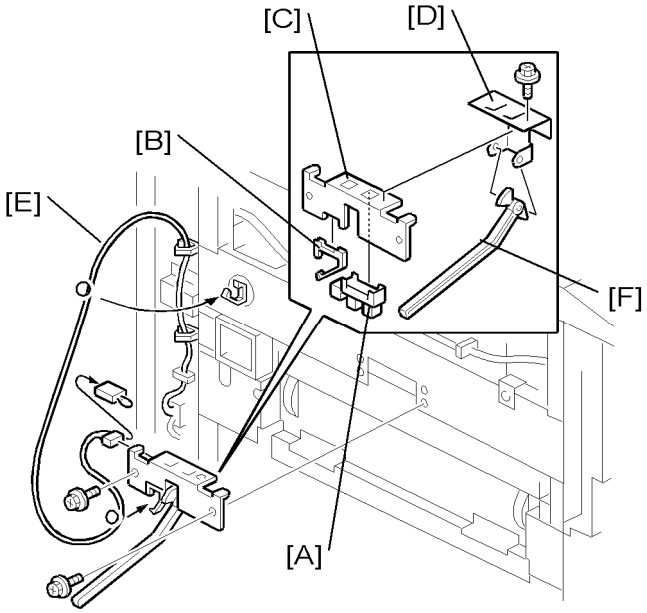


## 2.15.2 INSTALLATION



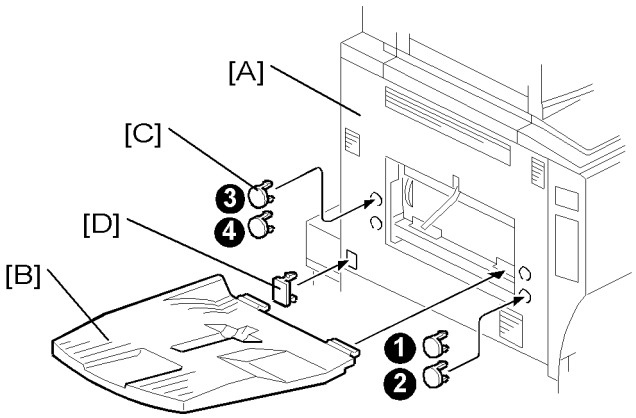

B756I101

1. Remove the left upper cover [A] ( x 2).




B756I003

2. Attach the paper height sensor [A] and harness clamp [B] to the sensor bracket [C].
3. Attach the sensor bracket and actuator arm bracket [D] to the copier ( x 3).
4. Attach the sensor harness [E] ( x 1, x 4).
5. Attach the actuator [F] to the arms of the actuator arm bracket.




B756I002

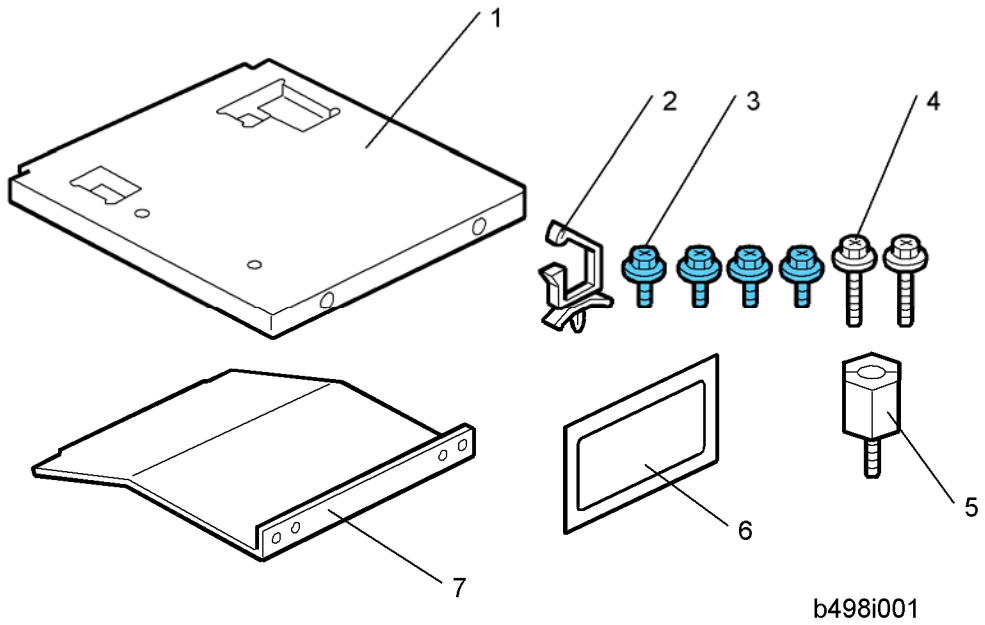
6. Reattach the left upper cover [A] ( x 2).
7. Attach the tray [B].
8. Attach the small caps [C] to the holes ❶, ❷, ❸, ❹.
9. Attach the large cap [D] to cover the finisher power connection point.

# 2.16 KEY CARD BRACKET (B498), KEY COUNTER BRACKET (B452)

## 2.16.1 KEY CARD BRACKET B498 ACCESSORIES

Check the accessories and their quantities against this list.

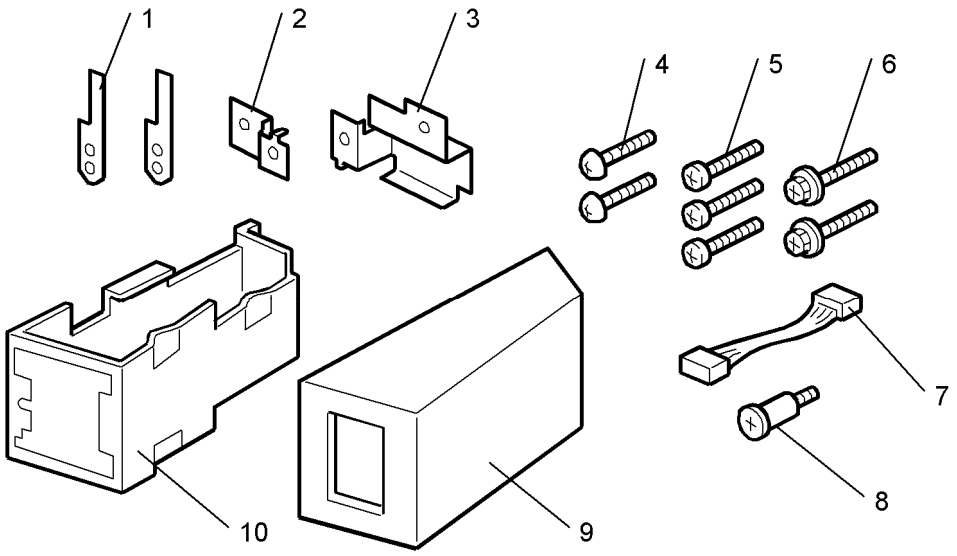
| Description | Qty |
|---|---|
| 1. Key Card Table | 1 |
| 2. Harness Clamp | 1 |
| 3. Tapping Screws (M3 x 8) | 4 |
| 4. Tapping Screws (M4 x 14) | 2 |
| 5. Stud | 1 |
| 6. Decal | 1 |
| 7. Key Card Table Support | 1 |



## 2.16.2 KEY COUNTER BRACKET B452 ACCESSORIES

Check the accessories and their quantities against this list.

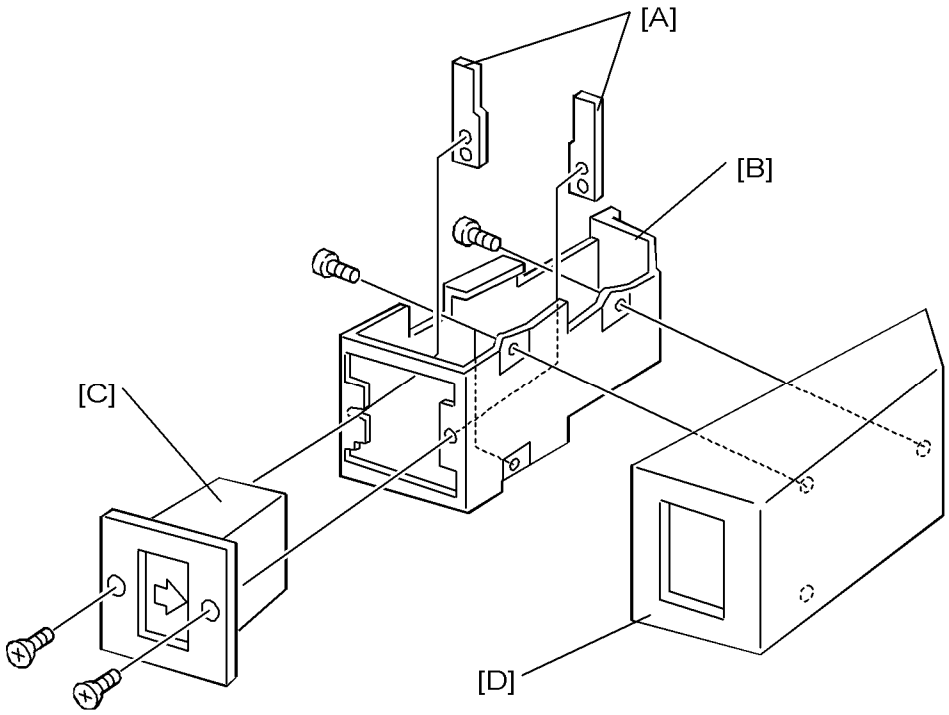
| Description | Qty |
|---|---|
| 1. Plate nuts | 2 |
| 2. Rear Bracket | 1 |
| 3. Front Bracket | 1 |
| 4. Tapping Screws (M3 x 6) | 2 |
| 5. Tapping Screws (M4 x 8) | 3 |
| 6. Tapping Screws (M4 x 16) | 2 |
| 7. Harness | 1 |
| 8. Shoulder Screw | 1 |
| 9. Key Counter Bracket Cover | 1 |
| 10. Key Counter Bracket | 1 |




b452i001

## 2.16.3 INSTALLATION

### *Assemble the Key Counter Bracket*



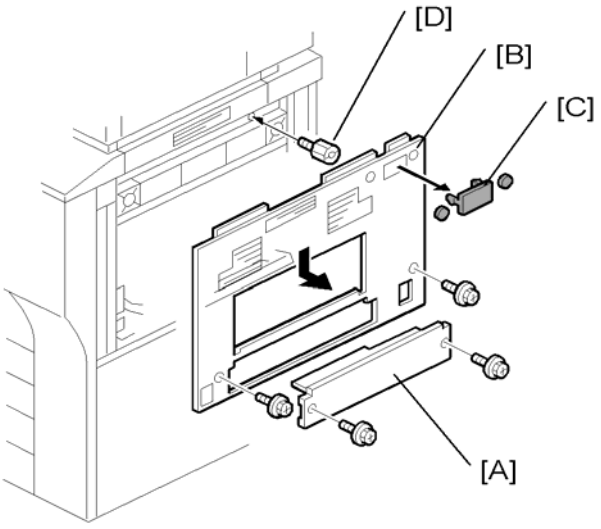

b452i002

1. Hold the key counter plate nuts [A] on the inner surface of the key counter bracket [B].
2. Attach the key counter holder [C] to the key counter bracket ( x2).
3. Attach the key counter bracket cover [D] ( x2).

### *Install the Key Card Bracket and Assembled Key Counter*

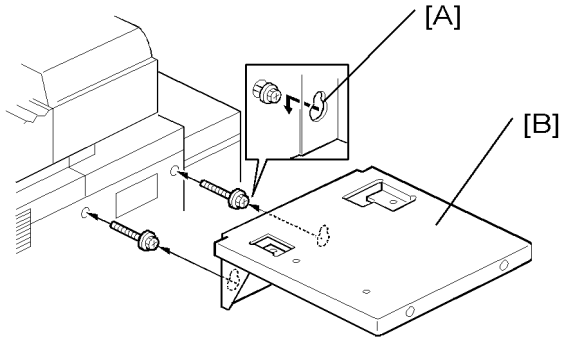
**⚠WARNING**

- Always turn the machine off and disconnect the machine power cord before you do this procedure.




b498i002

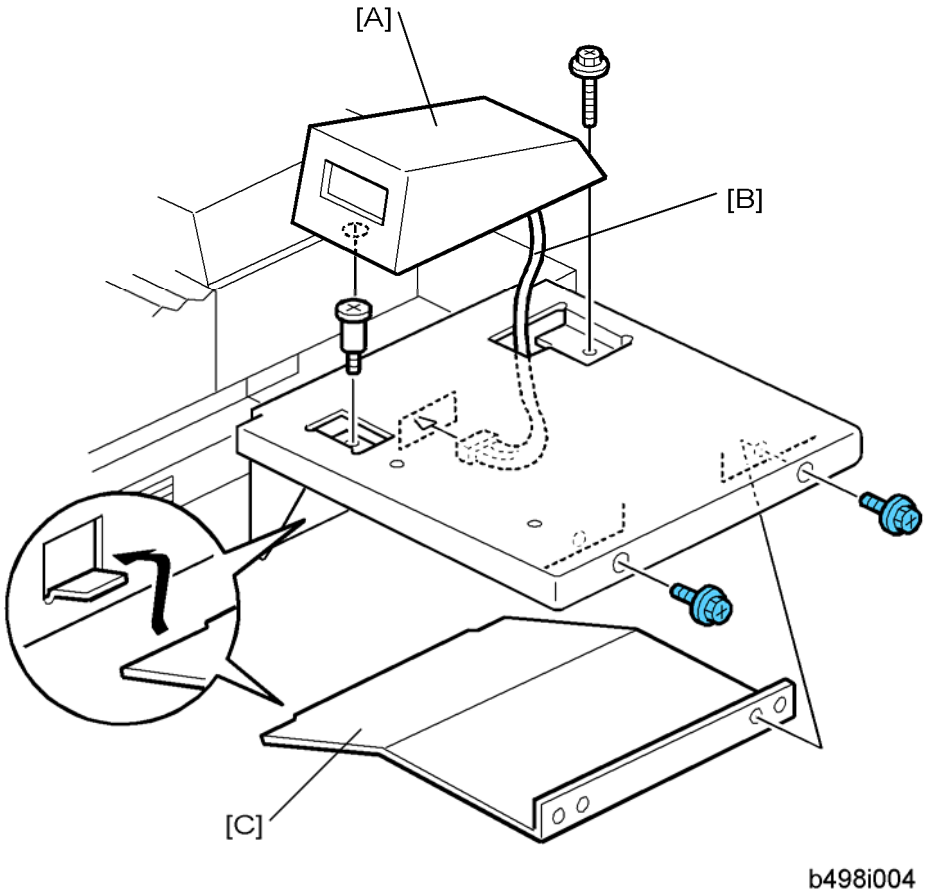
1. Remove the cover [A] ( x2).
2. Remove the right upper cover [B] ( x2).
3. Remove the three caps [C].
4. Attach the stud [D].




b498i003

5. Put the keyholes [A] of the key card table [B] over the heads of the shoulder screws, as shown above. Then tighten the screws to attach the table (M4 x 14, x2).

**Key Card Bracket (B498), Key Counter Bracket (B452)**



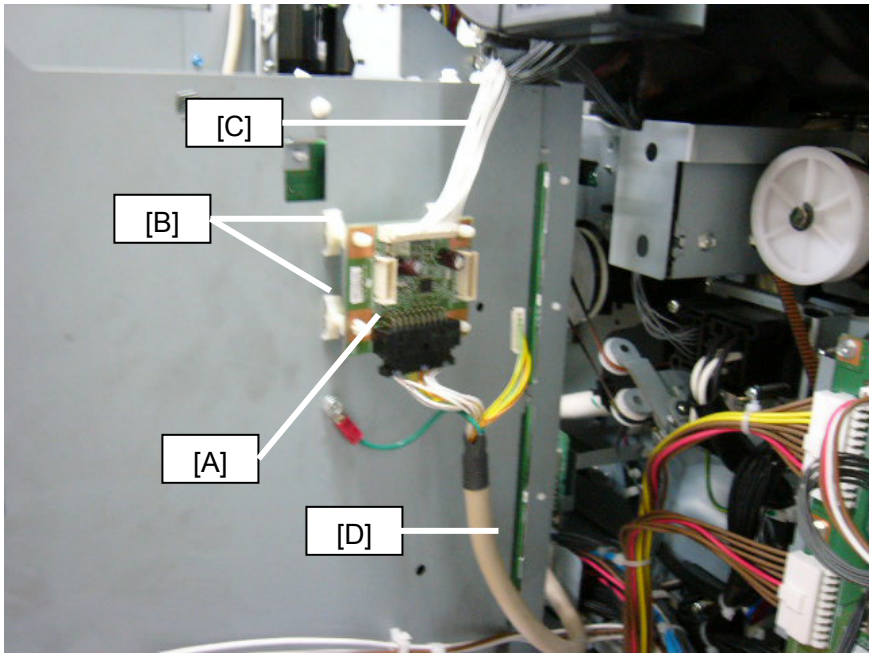

6. Attach the key counter bracket [A] ( x 2).
7. Attach the harness [B] to the key counter bracket and the machine ( x 1).
8. Attach the bracket support [C] to the side of the copier ( x 2).

# ⇒ 2.17 KEY COUNTER INTERFACE UNIT TYPE A (B870)

## 2.17.1 INSTALLATION

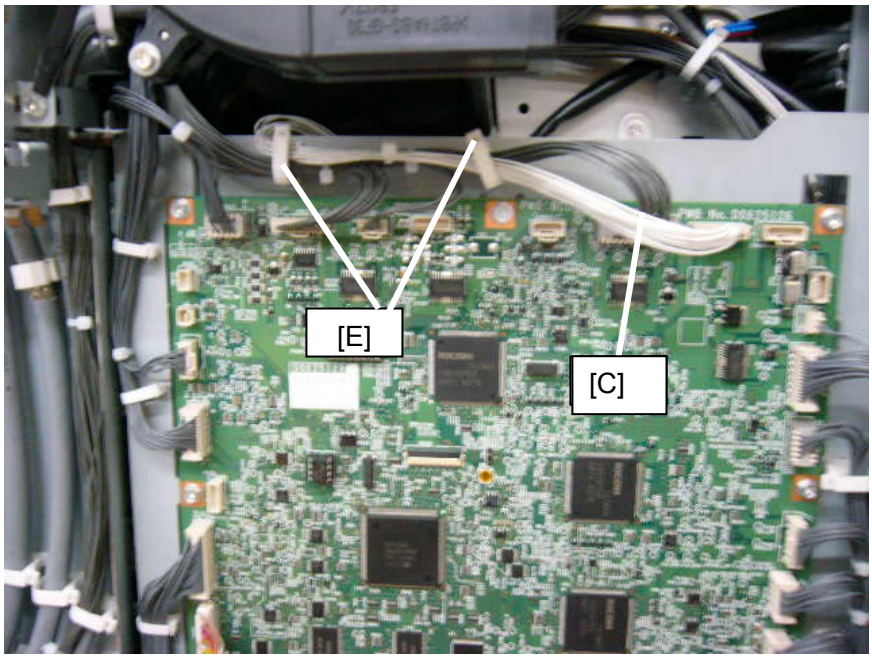


1. Attach the connection board [A] (rocking support [B] x 4).
2. Connect the harness [C] to CN003.
3. Connect the harness [D] to CN004.

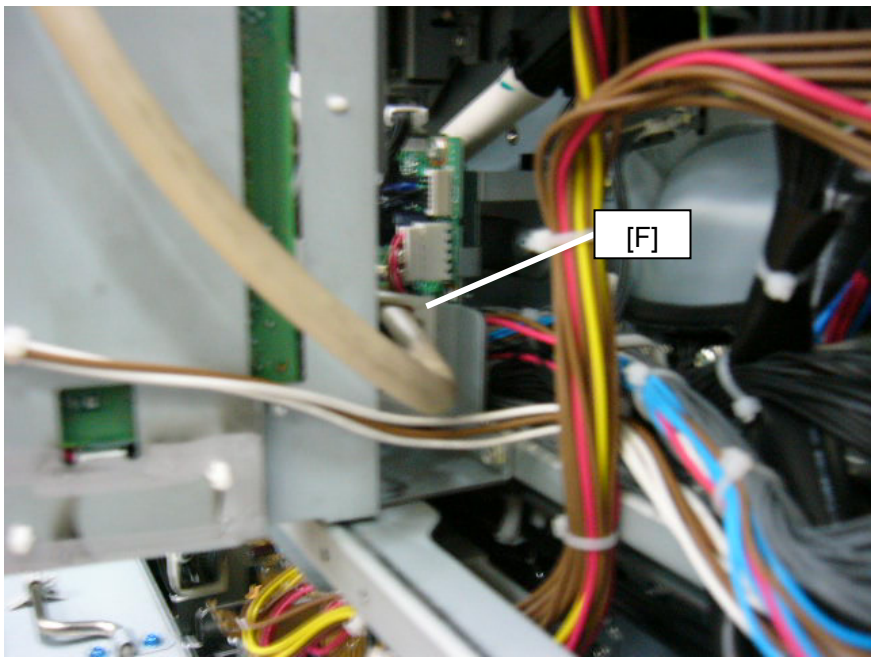



4. Connect the harness [C] to CN218 on the BCU.

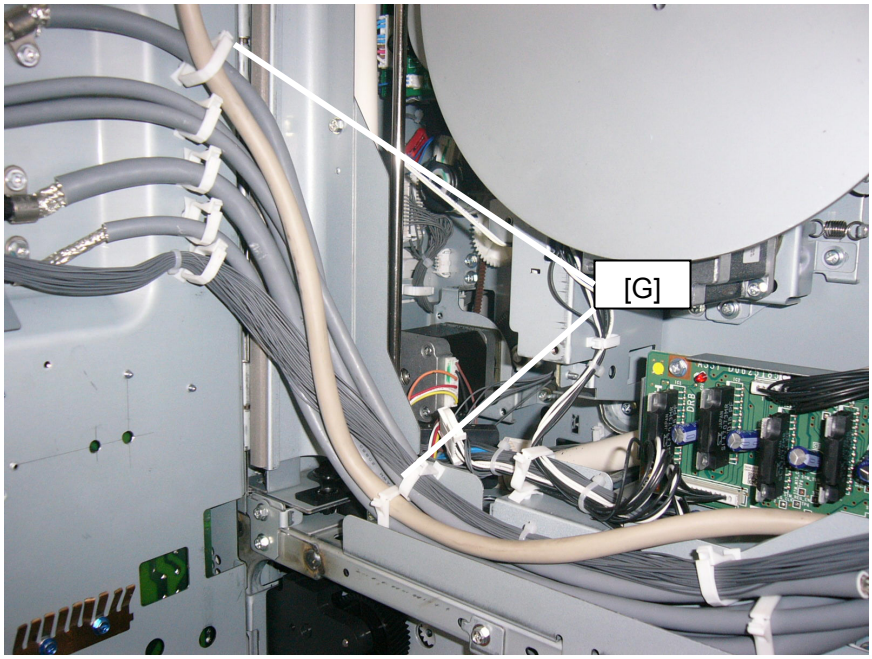
5. Clamp the harness at two points [E].



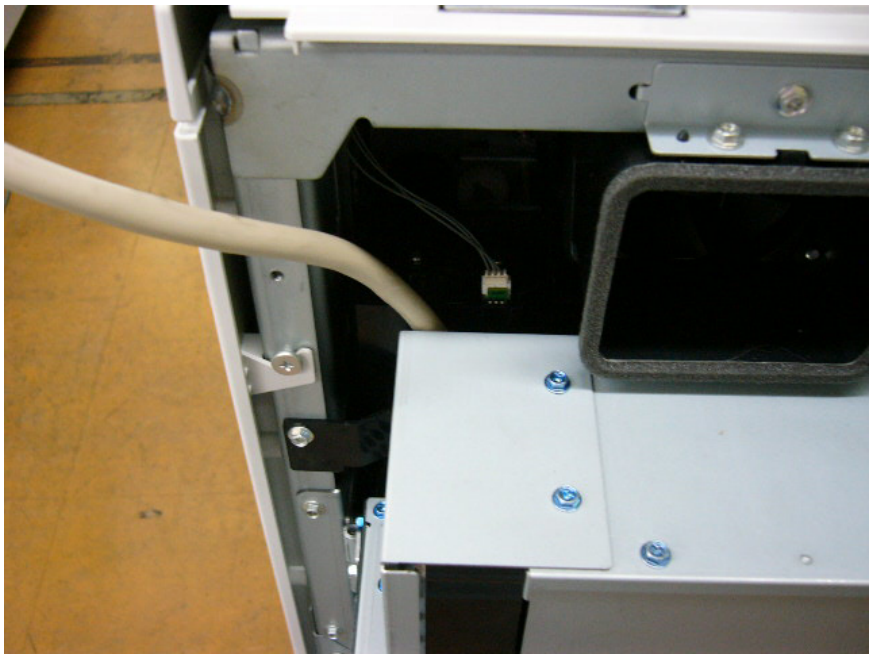

6. Pass the harness through the edge saddle [F].

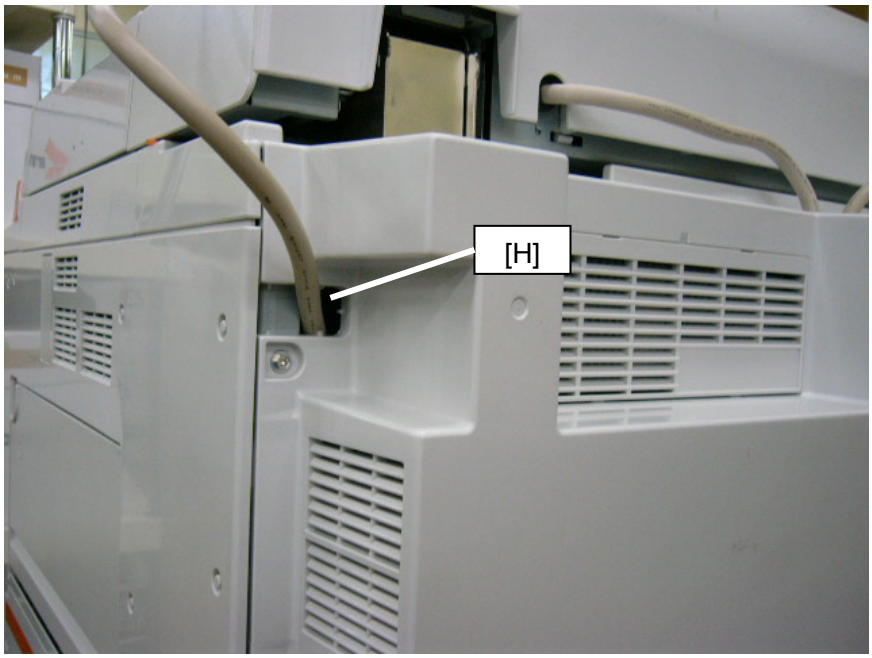


7. Clamp the harness at two points [G].



8. Pass the harness through the opening [H].

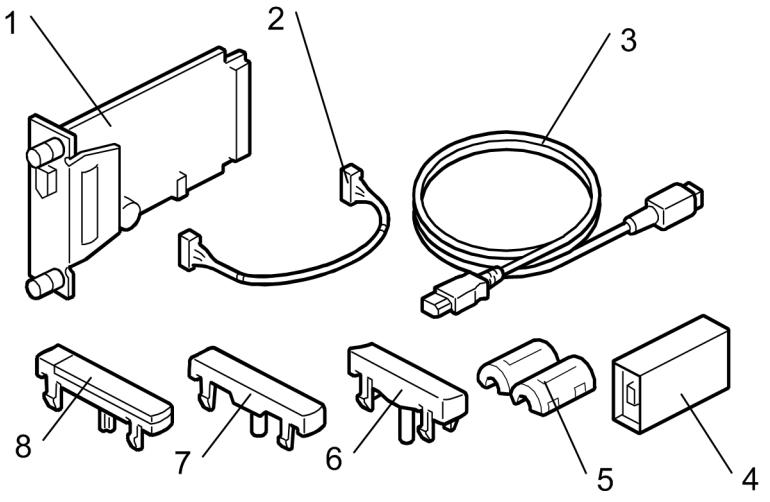




# 2.18 COPY CONNECTOR KIT (B328)

## 2.18.1 ACCESSORIES

| | Description | Q'ty |
|---|---|---|
| 1. | Copy Connector Board B328 | 2 |
| 2. | Power Repeater Cable | 2 |
| 3. | Coupling Interface Cable 1394 | 3 |
| 4. | Repeater Hub 1394 | 2 |
| 5. | Ferrite Core | 2 |
| 6. | Keytop for B234 (Not used) | 4 |
| 7 | Keytop | 4 |
| 8 | Keytop for B132 (Not used) | 8 |




b328i101a

## 2.18.2 PREPARATION

Before you begin the installation procedure:

- Measure the distance between the machines to be connected.
- Confirm that the printer/scanner option is installed on the machines.

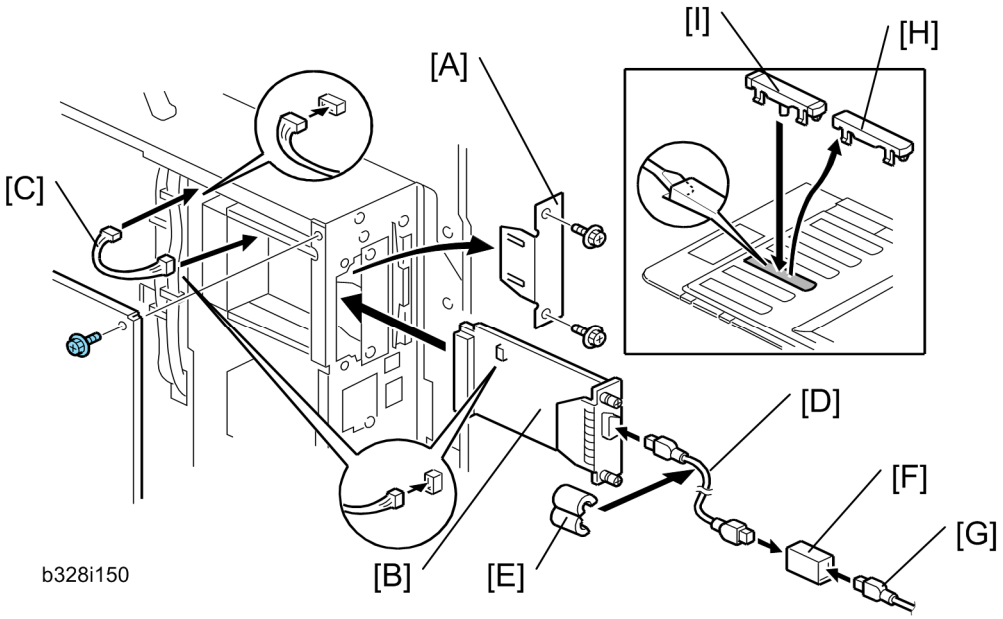
Determine the number of cables and repeater hubs that are necessary based on the distance measured between the machines.

| Distance | Power Repeater Hubs Required | Interface Cables Required |
|---|---|---|
| Up to 4.5 m (14.8 ft.) | None | 1 |
| 4.5 to 9.0 m (14.8 to 29.5 ft) | 1 | 2 |
| 9.0 to 13.5 m (29.5 to 112.5 ft.) | 2 | 3 |

- Install the key labeled “Printer/Other Function + Scanner” (or its equivalent symbol key-top for EU) on a machine with the printer/scanner option installed.
- Install the key labeled “Other Function” (or its equivalent symbol key-top for EU) on a machine without the printer/scanner option.

## 2.18.3 INSTALLATION

1. Remove these parts:
   - Rear upper cover ( x2) ( Replacement and Adjustment – Operation Panel and External Covers)
   - Rear lower cover ( x2) ( Replacement and Adjustment – Operation Panel and External Covers)
   - Controller box cover ( x 13)

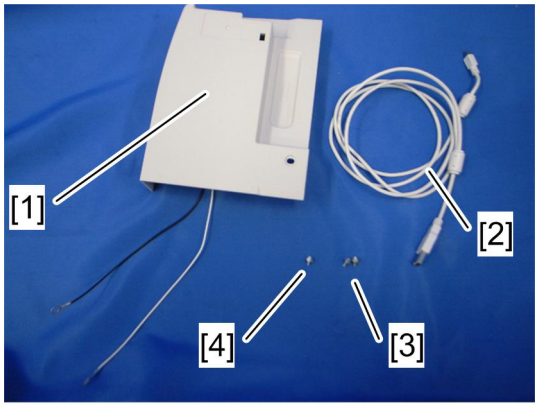



2. Remove the cover [A] of Slot B ( x 2).
3. Install the Copier Connection Kit Board B328 [B] in Slot B and fasten it ( x 2).
4. Connect the power repeater cable [C] to:
   - CN32 on the controller board
   - CN4 on the copy connector board
5. Reattach the controller box cover, rear upper and lower cover.
   Repeat Steps 1 to 5 to install the connector kit on the second machine.
6. Connect the end of the interface cable [D] to the copy connector board.
7. Attach the ferrite cores [E] to both ends of the interface cable.
8. If additional cable is required, connect the cables [G] with repeater hubs [F].
9. On the operation panel of each machine, remove the third cover [H] from the bottom ("Printer").
10. Install the appropriate key on each machine.
11. Attach the "Printer/Other Function" key [I] (or its equivalent symbol for EU) if the printer/scanner option is installed.
12. -or-
13. Attach the "Other Function" key [I] (or its equivalent symbol for EU) if the printer/scanner option is not installed.
14. Attach the other end of the connection cable to the copy connector board installed in the other machine.

# 2.19 USB2.0/SD SLOT TYPE C (D464)

## 2.19.1 ACCESSORIES

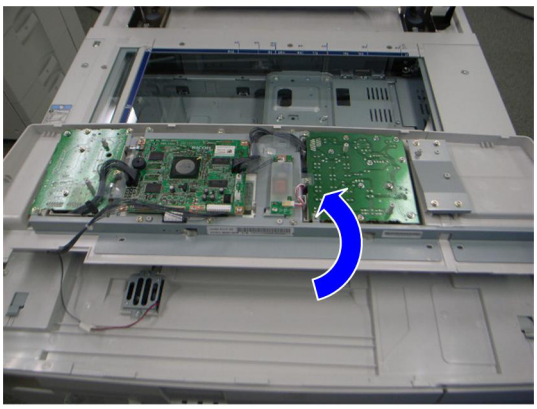
| | Description | Q"ty |
|---|---|---|
| 1. | USB2.0/SD Slot Type C | 1 |
| 2. | USB Cable | 1 |
| 3. | Tapping Screw | 2 |
| 4. | Screw | 1 |
| 5. | Decal | 1 |




d062i934

## 2.19.2 INSTALLATION

1. Rear upper cover (☞ p.4-8 "Rear Covers")
2. Right upper cover (☞ p.4-7 "Right Covers")
3. Left upper cover (☞ p.4-8)
4. Operation Panel (☞ p.4-6)

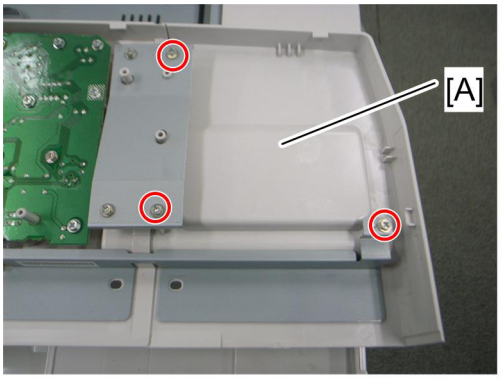


d062i920

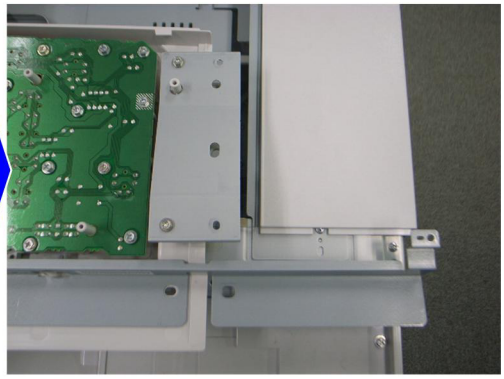
5. Turn the operation panel over and put it on the machine.

Note

- Put some cloths or sheets of paper between the machine and the operation panel, so as not to scratch the exposure glass.

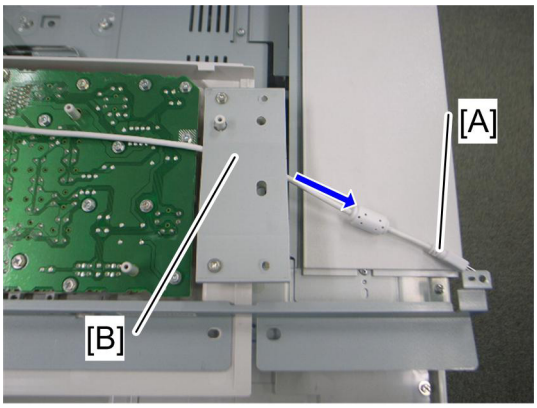



d062i921



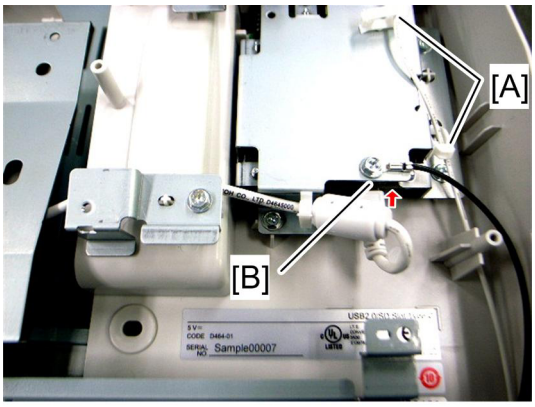
d062i922

6. Clip tray [A] ( x 3)



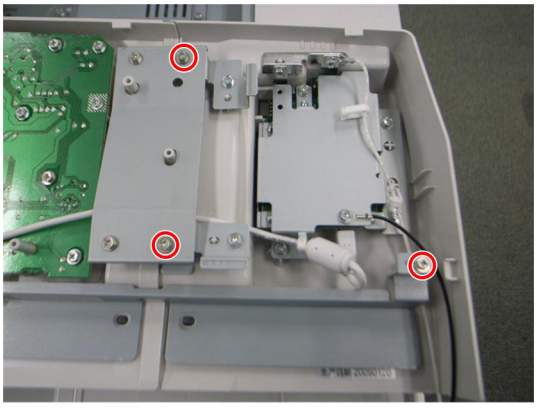

d062i923

7. Pass the USB cable [A] under the bracket [B].




d062r924

8. Secure the white ground wire with two clamps [A], and insert the USB Cable in the slot [B] on the USB2.0/SD Slot Type C.

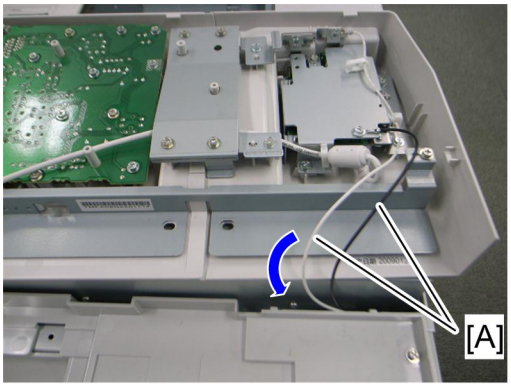


d062i925

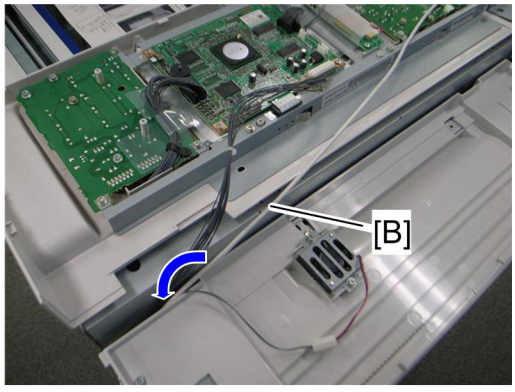
9. Install the USB2.0/SD Slot Type C on the operation panel ( x 3)

Note

- Use three screws provided with this kit. Tapping screws must be used to attach the USB2.0/SD Slot Type C to bracket [A] of the operation panel. The other screw must be installed on the right side [B].



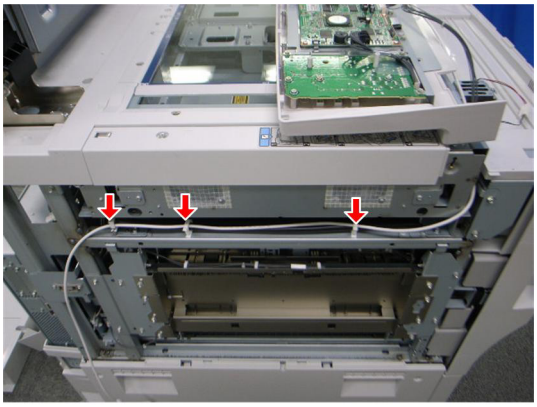

d062i926




d062i927

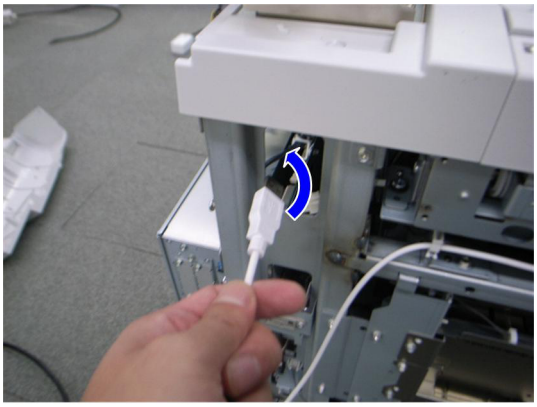
10. Put the ground wires [A] and the USB Cable [B] into the machine as shown in the

above diagrams.



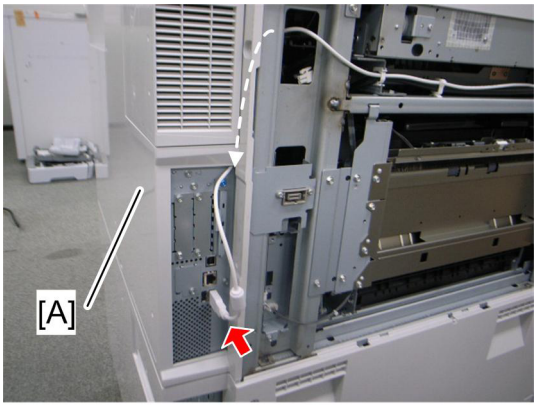
d062i928

11. Secure the USB Cable to the bracket ( x 3).



d062i932

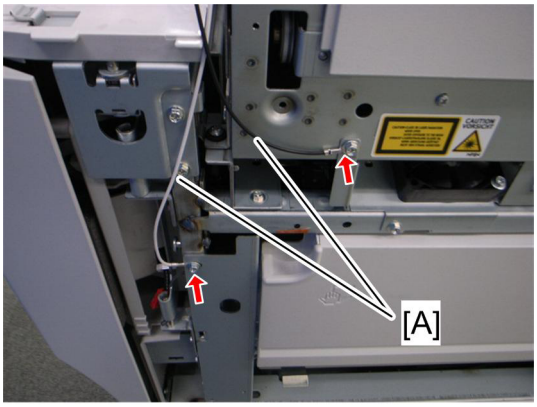
12. Pass the USB Cable to the rear side of the machine.




d062r933

13. Pass the USB Cable through the rear upper cover [A].
14. Install the rear upper cover ( p.4-8 "Rear Covers")
15. Insert the USB Cable in the USB slot on the controller box.

16. Re-install the left upper cover (☛ p.4-8 "Left Covers")




d062i930

17. Secure two ground wires [A] (each x 1) on the right side of the machine.
18. Re-install the right upper cover (☛ p.4-7 "Right Covers").
19. Re-install the operation panel (☛ p.4-6).
20. Plug in and power on the machine.
21. Enter Scanner SP Mode and change SP1013-001 from “0” to “1”.

Note

- If SP1013-001 is not set to “1” “Incompatible USB device connected” will be displayed.

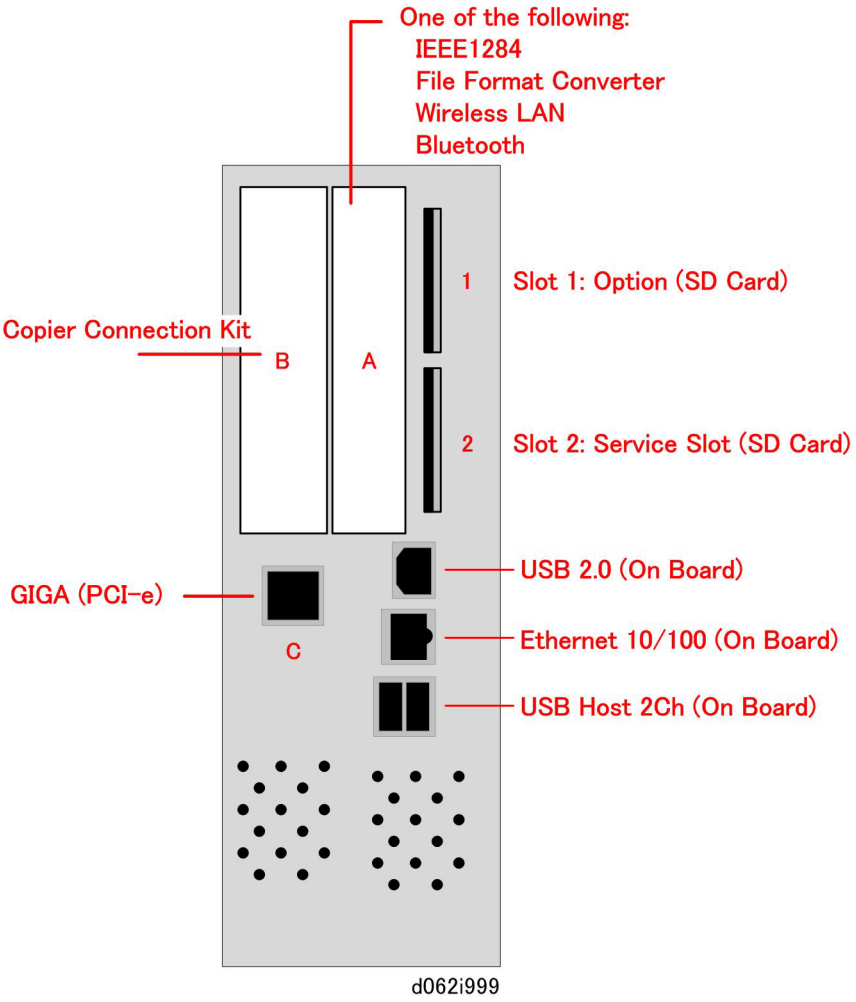
22. Perform SD Card/USB Slot test (☛ p.2-126 Testing the SD Card/USB Slot).

# 2.20 MFP OPTIONS

## 2.20.1 MERGING APPLICATIONS ON ONE SD CARD

### *Overview*

Two slots for boards and two slots for SD cards are provided on the controller box. Each board or SC card must be inserted into its assigned slot. The slot assignment of each item is listed in the table below.




Note

- If the customer wants to use more than one application on SD cards, applications must be merged on the same SD card.

Important

- The data necessary for authentication is transferred with the application program to the target SD card.
- Do not use an SD card if it was used with a computer before this time. Correct

operation is not guaranteed if this type of SD card is used.

- The SD card is the only evidence that the customer is licensed to use the application program. Also, the service technician may occasionally need to check the SD card and its data to solve problems. For these reasons SD cards must be stored with the machine.
- A licensing agreement prohibits copying of the PostScript SD card. However, you can copy any application from another SD card to the PS3 SD card.
- After an SD card has been used to move other applications onto that card, that SD card cannot be used for a different function.
- Never remove the System SD Card from Slot 1
- Before uploading to an SD card, always make sure that the write-protect switch is OFF. (It is very easy to accidentally turn on the write-protect switch when inserting or removing an SD card.)

### *Merging Applications*

Do this procedure to put more than one application on one SD card.

1. Turn off the main machine.
2. Remove the SD card slot cover ( x 1).
3. Put the Source SD card in Slot 2 (service slot). This card contains the application that you want to copy.

   Note

   - The PS3 SD card cannot be the source card (it cannot be copied).
4. Check the target SD card and confirm that its write-protect switch is OFF.
5. Insert the Target SD card into the SD card Slot 1.
6. Open the front door.
7. Turn the main machine on.
8. Do SP5873 001.
9. Touch "Execute".
10. Follow the instructions on the display and touch "Execute" to start copying.
11. When the display tells you copying is completed, touch "Exit".
12. Turn the main machine off.
13. Remove the Source SD card from Slot 2. Leave the target SD card in Slot 1.
14. Turn the main machine on.
15. Go into the User Tools mode and check that all the applications on the SD card in Slot 1 are enabled:
    - User Tools> System Settings> Administrator Tools> Firmware Version
16. Turn the main machine off again.

17. Reattach the SD card slot cover.
18. Return copied SD cards to the customer for safekeeping, or tape the copied SD cards to the inside of the front door.

Important

- Do not remove copied SD cards from the machine site.

Important

- After an SD card has been copied, it can no longer be used. However, it must be stored in the machine to serve as proof of purchase by the customer.
- The original card can also be used to perform an undo procedure (SP 5873 002). Before you store an SD card, label it carefully so it can be identified easily if you need to do the undo procedure (see below).

### *Undo Exec*

Do this procedure if you moved an option from the original SD card to another card by mistake and you need to restore the original SD card.

1. Turn the main switch OFF.
2. Put the SD card holding the merged applications in SD Card Slot 1.
3. Put the original destination SD card (the one removed from storage) into Slot 2

Note

- The SD card in Slot 2 must be the original SD card of the application you want to move from Slot 1 to Slot 2. You cannot use a blank SD card in Slot 1.

4. Turn the main switch ON.
5. Do SP5873-002 (Undo Exec).
6. Follow the instructions of the operation panel messages.
7. Turn the main switch OFF.
8. Remove the SD cards from the slots.
9. Turn the main switch ON.

## 2.20.2 COMMON PROCEDURES

### *Inserting SD Cards*

Insert SD cards with the notched corner down.

The insertion point for the SD cards are offset slightly to the left. Make sure the SD card is inserted correctly before you push it into the slot.

Pushing in the SD Card also releases it for removal. Make sure the SD Card is inserted and locked in place. If it is partially out of the slot, push it in gently until it locks in place.

### *Storing Copied SD Cards*

Copied SD cards cannot be used. However, they must be stored at the site to server as proof of purchase by the customer.

Return copied SD cards to the customer for safekeeping, or tape the copied SD cards to the inside of the front door.

Do not remove copied SD cards from the machine site.

## 2.20.3 PRINTER SCANNER UNIT (D462)

### *Accessories*

| No. | Description | Q'ty |
|---|---|---|
| 1. | Caution Decal | 1 |
| 2. | Printer/Scanner SD Card | 1 |
| 3. | Printer Keytops (English/Symbol) | 2 |
| 4. | Scanner Keytops (English/Symbol) | 2 |
| 5. | EULA Sheet | 1 |
| 6. | FCC Decal | 1 |
| 7. | Memory DIMM 1GB | 1 |

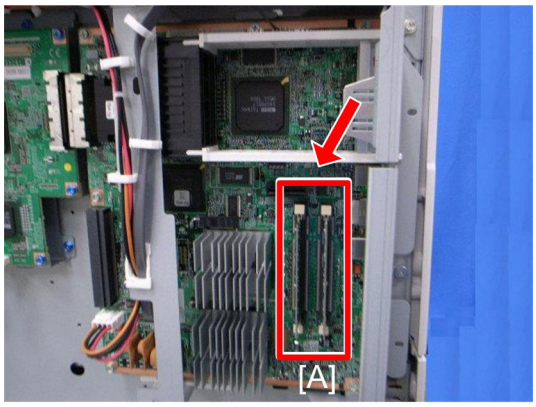
Important

- Only one Slot 1 is available for applications on SD cards. If more than one application is will be used, the applications must be moved onto one SD card with SP5873 -1.

### *Installation*

**⚠CAUTION**

- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

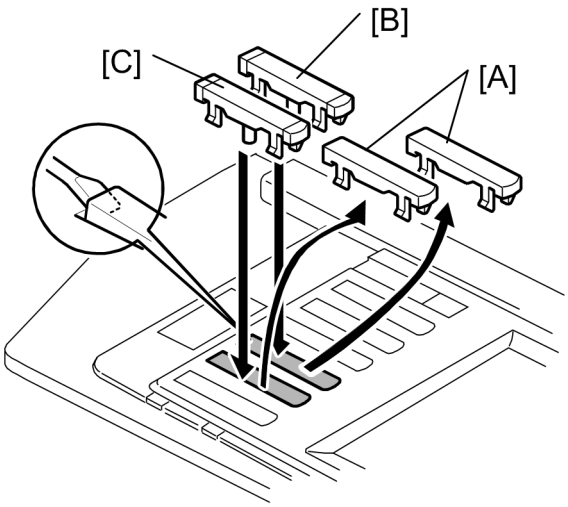



d062r681b

1. Switch the machine off.
2. Remove the controller box cover (☛ p.4-105 "CNT Board (Controller Board)").
3. Insert the memory DIMM in either slot [A].
4. Re-attach the controller box cover.
5. Insert the SD Card into Slot 1.

Important

- Push the SD Card in to release it for removal.
- Make sure the SD Card is inserted and locked in place. If it is partially out of the slot, push it in gently until it locks in place.




d462i107

6. On the operation panel, remove the dummy keytops [A] (second and third from the bottom) and discard them.
7. Install the "Printer" keytop [B] then the "Scanner" keytop [C]. Select either the English set or Symbol set for installation. The correct order is:
   - Printer (upper)
   - Scanner (lower)

8. Plug in the power cable and turn the main power switch on.
9. Change **SP5985 -1** and **-2** from "0" to "1".
10. Turn the main power switch off and on.
11. Follow the procedures in the Operation Instructions to complete the installation for the printer/scanner option.

## 2.20.4 POSTSCRIPT3 UNIT (D462-20/22/23)

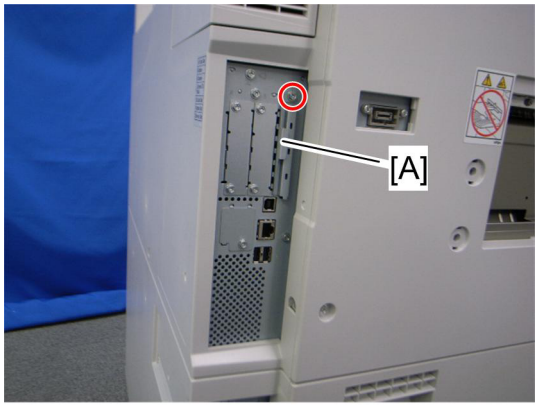
### *Accessories*

| | Description | Q'ty |
|---|---|---|
| 1. | PostScript3 Emulation SD Card | 1 |
| 2. | Decal | 1 |

Important

- Only Slot 1 is available for applications on SD cards. If more than one application will be used, the applications must be merged onto one SD card with SP5873 -1.

### *Installation*




d063i500

1. Switch the machine off.
2. Remove the SD card slot cover [A] ( x 1).
3. Insert the PS3 SD Card [B] into Slot 1.
4. Switch the machine on.

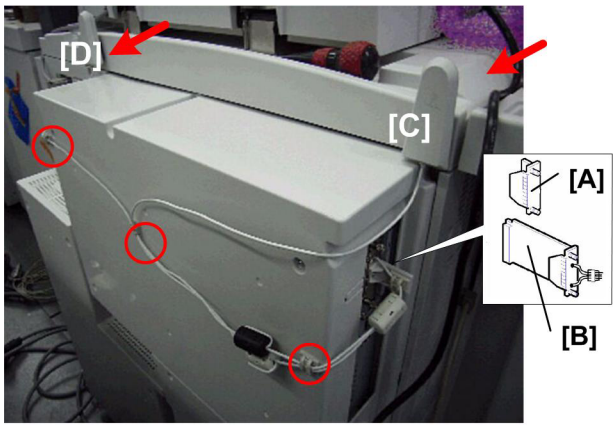
# 2.20.5 IEEE802.11A/G INTERFACE UNIT TYPE J (D377)

## *Accessories*

| | Description | Q'ty |
|---|---|---|
| 1. | Wireless LAN PCB (GW-WLAN) | 1 |
| 2. | Clamps | 8 |
| 3. | Velcro Fasteners | 2 |
| 4. | Wireless LAN Instructions | 1 |



## *Installation*




d377i001

1. Remove the cover of the interface slot A [A] ( x 2).
2. Touch a metal surface to discharge any static electricity from your hands.
3. Put the Wireless LAN board [B] in Slot A.
4. Confirm that the board is inserted completely, then fasten it ( x 2).
5. Pull the antennas away from machine and make sure that they are not tangled.
6. Look at the markings on the antenna bracket.
   - **ANT1**. Antenna 1 transmits and receives. The ferrite core on the Antenna 1 cable is black. It must be installed on the left rear corner of the main machine where it will not be obstructed by the operation panel.
   - **ANT2**. Antenna 2 only receives. It is installed on the right rear corner of the machine.
7. Attach ANT1 [C] to the left rear corner.

8. Attach ANT2 [D] to the right rear corner.
9. Route the cables and use the clamps to attach them as shown.

### *SP Mode Settings for 802.11a/g Wireless LAN*

The following SP commands can be set for 802.11a/g

1. Go into the SP mode
2. Touch "Copy SP" on the touch-panel to open the SP command selection screen.
3. Do SP5840-11.

| SP No. | Name | Function |
|---|---|---|
| 5840 011 | WEP Key Select | Used to select the WEP key (Default: 00). |

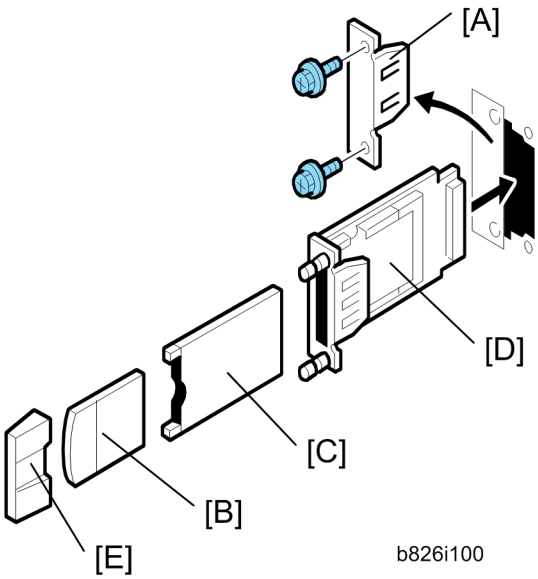
## 2.20.6 BLUETOOTH INTERFACE UNIT TYPE C (B826)

### *Accessories*

Check the quantity and condition of the accessories.

| No. | Description | Q'ty |
|---|---|---|
| 1 | Bluetooth card | 1 |
| 2 | Bluetooth card cover | 1 |
| 3 | Bluetooth board | 1 |
| 4 | Bluetooth card adapter | 1 |

### *Installation*




1. Switch the machine off.
2. Remove the cover of Slot A [A] ( x2).
3. Touch a metal surface to discharge any static charge from your hands.
4. With both labels facing up, insert the Bluetooth card [B] into the adapter [C].
5. With the labels facing down, insert the adapter [C] into the Bluetooth board [D].
6. Insert the interface board (with card and adapter inserted) into Slot B2.
7. Attach the card cover [E] (used to prevent static electricity).
8. Confirm that Bluetooth is installed correctly:
   User Tools> Printer Features> List/Test Print> Configuration Page

## 2.20.7 FILE FORMAT CONVERTER TYPE E (D377)

### *Accessory Check*

Check the accessories and their quantities against this list:

| | Description | Q'ty |
|---|---|---|
| 1. | File Format Converter (MLB: Media Link Board) | 1 |

### *Installation*

1. Switch the machine off.
2. Remove the cover of Slot A ( x 2).

3. Insert the file format converter board into Slot A and fasten it with the screws.
4. Switch the machine on.
5. Set **SP5836-3** to "1" to enable the print backup feature.
6. Confirm or set the following SP codes with the values in the table listed below.

| SP No. | Setting | SP No. | Setting |
|---|---|---|---|
| 5-836-1 | 1 | 5-836-73 | 0 |
| 5-836-2 | 0 | 5-836-85 | 1 |
| 5-836-3 | 1 | 5-836-86 | 2 |
| 5-836-72 | 0 | 5-836-91 | 50 |

7. Set the following SP codes according to the customer's needs.

| SP No. | Setting | Comment |
|---|---|---|
| SP5-836-94 | 2 | Selects JPEG2000 file format for documents copied from the document server to Palm2.<br>**Note:** Files backed up to Palm2 in J2K format cannot be edited by other software applications. |
| | 0 | Selects the TIFF file format for documents copied from the document server to Palm2.<br>**Note:** Select this so the backed up files can be used with other software applications (editing, OCR, etc.) with only slight loss in image quality. |
| SP-5836-98 | 1 | Applies dot correction and eliminates ghost images transferred from the back sides of double-sided originals when files are copied to Palm2. This selection also reduces the size of the file.<br>**Note:** This function is applied to both J2K and TIFF files and is particularly useful for copying large J2K documents quickly with only a slight loss in image quality. |
| | 0 | Does not apply the features of the "1" setting when files are |

| SP No. | Setting | Comment |
|---|---|---|
| | | copied to Palm2.<br>**Note:** This setting preserves the quality of the original image, especially with J2K files, but also requires more time for copying and requires more disk space to store the larger files. |



## 2.20.8 HDD ENCRYPTION UNIT TYPE A (D377)

### *Accessory*

Check the quantity and condition of the accessories in the box against the following illustration and list.

| No. | Description | Q'ty |
|---|---|---|
| 1. | SD Card | 1 |

### *Before You Begin the Procedure*

1. Make sure that the following settings are not at the factory default settings:
   - Supervisor login password
   - Administrator login name
   - Administrator login password

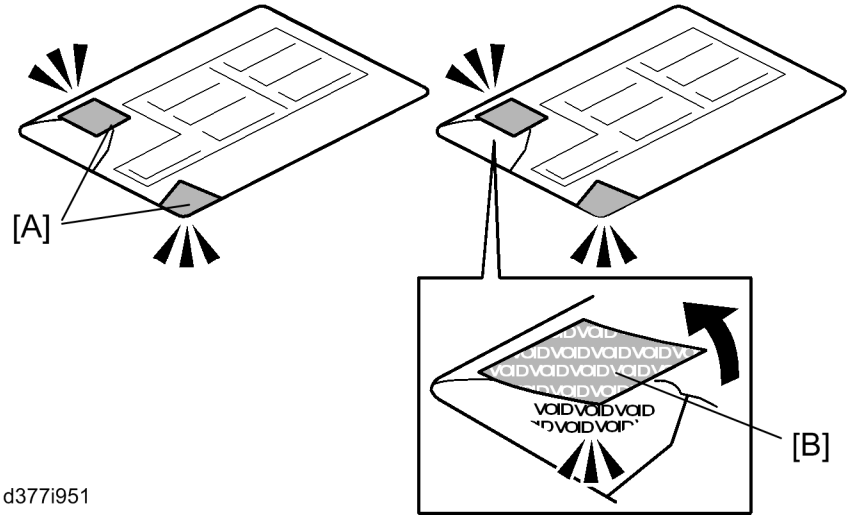
   Note
   - These settings must be set up by the customer before the encryption option can be installed.
2. Confirm that "Admin. Authentication" is on:
   [User Tools]> "System Settings"> "Administrator Tools"> "Administrator Authentication Management"> "Admin. Authentication"> "On"
   If this setting is "Off" tell the customer that this setting must be "On" before you can do the installation procedure.
3. Confirm that "Administrator Tools" is selected and enabled:
   [User Tools]> "System Settings"> "Administrator Tools"> "Administrator Authentication Management"> "Available Settings

   Note

- "Available Settings" is not displayed until "Admin. Authentication" is switched on.

If this setting is not selected tell the customer that this setting must be selected before you can do the installation procedure.

## *Seal Check and Removal*




d377i951

**CAUTION**

- You must check the box seals to make sure that they were not removed after the items were sealed in the box at the factory before you do the installation.

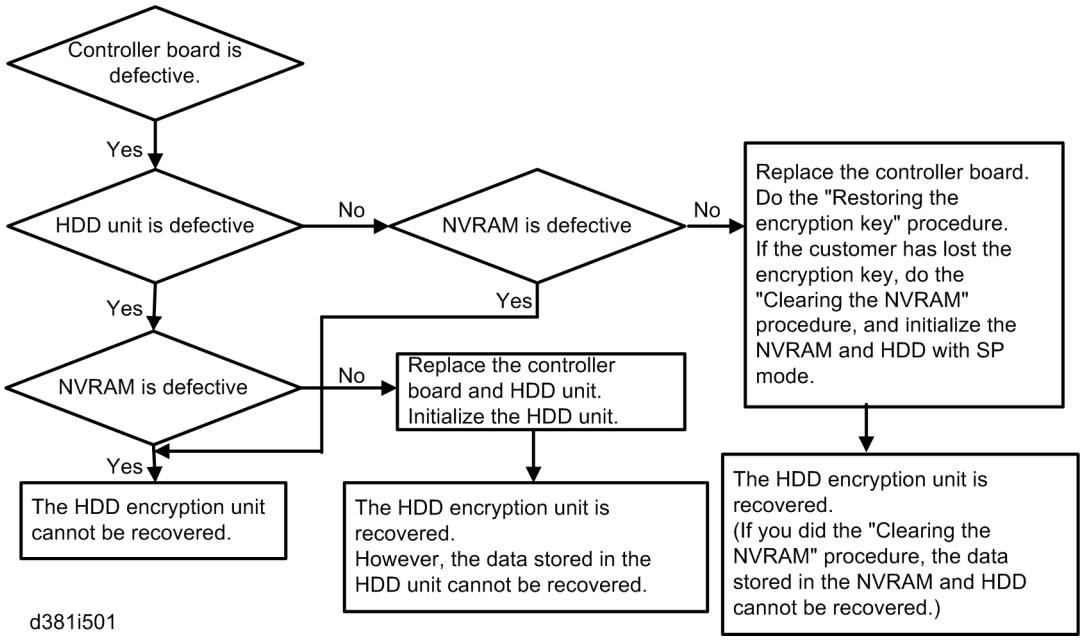
1. Check the box seals [A] on each corner of the box.
   - Make sure that a tape is attached to each corner.
   - The surfaces of the tapes must be blank. If you see "VOID" on the tapes, do not install the components in the box.
2. If the surfaces of the tapes do not show "VOID", remove them from the corners of the box.
3. You can see the "VOID" marks [B] when you remove each seal. In this condition, they cannot be attached to the box again.

## *Installation Procedure*

1. Remove the SD card slot cover ( x 1).
2. Insert the SD in SD Slot 1.
3. Turn on the main power switch.
4. Enter the SP mode.
5. Select **SP5878-2** (Option Setup – Encryption Option), and then touch [Execute].
6. Turn off the main power switch.
7. Remove the SD card.

8. Attach the slot cover [A] ( x 1).
9. Switch the machine on.

## Recovery from a Device Problem




## Restoring the encryption key

When replacing the controller board for a model in which the HDD encryption unit has been installed, updating the encryption key is required.

1. Prepare an SD card which is initialized.
2. Make the "restore_key" folder in the SD card.
3. Make an "nvram_key.txt" file in the "restore_key" folder in the SD card.
4. Ask an administrator to input the encryption key (this has been printed out earlier by the user) into the "nvram_key.txt" file.
5. Remove only the HDD unit.
6. Turn on the main power switch.
7. Confirm that the prompt on the LCD tells you to install the SD card (storing the encryption key) in the machine.
8. Turn off the main power switch.
9. Insert the SD card that contains the encryption key into slot 2.
10. Turn on the main power switch, and the machine automatically restores the encryption key in the flash memory on the controller board.
11. Turn off the main power switch after the machine has returned to normal status.
12. Remove the SD card from slot 2.

13. Reinstall the HDD unit.

### *Clearing the NVRAM*

When replacing the controller board for a model in which the HDD encryption unit has been installed and a customer has lost the encryption key, clearing the NVRAM is required to recover the HDD encryption unit.

1. Prepare an SD card which is initialized.
2. Make the "restore_key" folder in the SD card.
3. Make an "nvram_key.txt" file in the "restore_key" folder in the SD card.
4. Input "nvclear" into the "nvram_key.txt" file.
5. Turn on the main power switch.
6. Confirm that the prompt on the LCD tells you to install the SD card (storing the encryption key) in the machine.
7. Turn off the main power switch.
8. Insert the SD card that contains "nvclear" into slot 2.
9. Turn on the main power switch, and the machine automatically restores the encryption key in the flash memory on the controller board.
10. Turn off the main power switch after the machine has returned to normal status.
11. Remove the SD card from slot 2.
12. Turn on the main power switch.
13. Initialize the NVRAM (SP5801-1) and HDD unit (SP5832-1) with SP mode.
14. The user must enable the HDD encryption unit with a user tool.

## 2.20.9 DATA OVERWRITE SECURITY UNIT TYPE H (D377-06)

### *Accessories*

| No. | Description | Q'ty |
|---|---|---|
| 1. | Data Overwrite Security SD Card | 1 |
| 2. | Operating Instructions CD-ROM | 1 |
| 3. | Comments Sheet (17 languages) | 2 |

### *Before You Begin…*

1. Confirm that the Data Overwrite Security unit SD card is the correct type for the machine. The correct type for this machine is type "H".

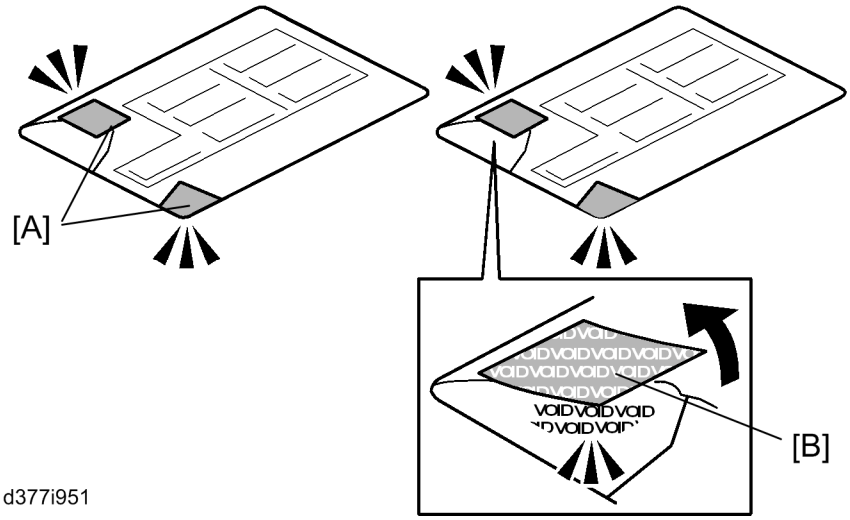
2. Make sure that the following settings are not at the factory default settings:
   - Supervisor login password
   - Administrator login name
   - Administrator login password

   Important
   - These settings must be set up by the customer before the Data Overwrite Security unit can be installed.
3. Confirm that "Admin. Authentication" is on:
   [User Tools]> "System Settings"> "Administrator Tools"> "Administrator Authentication Management"> "Admin. Authentication"> "On"
   If this setting is "Off", tell the customer that this setting must be "On" before you can do the installation procedure.
4. Confirm that "Administrator Tools" is selected and enabled:
   [User Tools]> "System Settings"> "Administrator Tools"> "Administrator Authentication Management"> "Available Settings

   Note
   - "Available Settings" is not displayed until Step 2 is done.

   If this setting is not selected, tell the customer that this setting must be selected before you can do the installation procedure.

### *Seal Check and Removal*




d377i951

**CAUTION**

- Turn off the main power switch and disconnect the power supply cord.

1. Check the two box seals [A] on the corners of the box.
   - Make sure that the seals are attached at both corners.
   - The surfaces of the tapes must be blank. If you see "VOID" on the tapes, do not

install the components in the box. Contact your sales division.

2. If the surfaces of the tapes do not show "VOID", remove them from the corners of the box.
3. After you remove each seal, the "VOID" marks [B] become visible. This prevents them from being reattached to the box.

## *Installation*

Important

- The DOS SD card must be inserted in SD card Slot 1.
- If the PostScript3 option is also installed, you must move the DOS application to the PostScript3 SD card with SP5873 -1.

1. If the machine is on, turn off the main power switch.
2. Disconnect the network cable.
3. Turn the main power switch on.
4. Turn the operation switch and main power switch off.
5. Remove the SD card slot cover ( x1).
6. Insert the SD card into SD card Slot 1.
7. Reconnect the network cable.
8. Turn the main power switch on.
9. Do **SP5878-001** and push [EXECUTE].
10. Go out of the SP mode.
11. Turn the operation switch off, then turn the main power switch off.
12. Do **SP5990-5** to print an SMC report.
13. Make sure the ROM number and firmware version in area [a] of the diagnostic report are the same as those in area [b].
    - Area [a]: "ROM Number/Firmware Version" – "HDD Format Option"
    - Area [b]: "Loading Program" - "GW4a_zoffyx"

| Diagnostic Report: | "ROM No. / Firmware Version" [a] | "Loading Program" [b] |
|---|---|---|
| DataOverwriteSecurity Unit | HDD Format Option: **D3775902A / 1.01x** | **GW4a_zoffyx: D3775902A / 1.01x** |

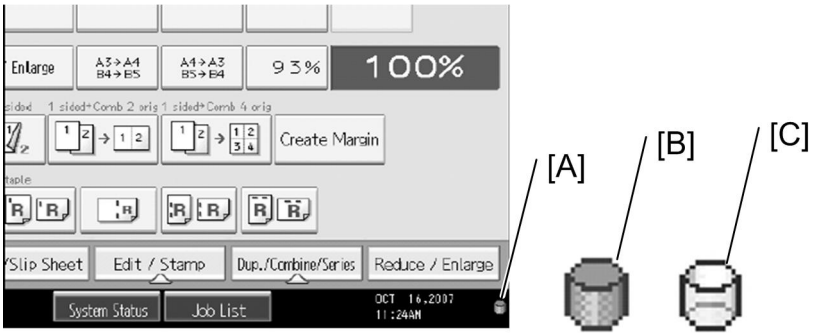
Important

- The same two numbers must be listed in both sections of the SMC report

If the numbers are not identical, this means the option was not installed correctly.

- Confirm that the label on the box of the DOS option says "H".
- Do the Data Overwrite Security unit installation again.

14. Turn "Auto Erase Memory Setting" on:
    [User Tools]> "System Settings"> "Administrator Tools"> "Auto Erase Memory Setting"> "On"
15. Exit User Tools.



d027i117

16. Check the display and make sure that the overwrite erase icon [A] is displayed.
17. Make a Sample Copy.
18. Check the overwrite erase icon [A].
    - The icon [B]: This icon is lit when there is temporary data to be overwritten, and blinks during overwriting.
    - The icon [C]: This icon is lit when there is no temporary data to be overwritten.

## 2.20.10 BROWSER UNIT TYPE E (D430)

### *Accessories*

| | Description | Q'ty |
|---|---|---|
| 1. | Browser Unit D430 SD Card | 1 |

### *Installation*

1. Switch the machine off.
2. Remove the SD card slot cover ( x1).
3. Insert the SD card into SD card Slot 2.

Note

- Pushing in the SD Card also releases it for removal.
- Make sure the SD Card is inserted and locked in place.
- If it is partially out of the slot, push it in gently until it locks in place.

4. Turn the machine on.
5. Push [User Tools].
6. Push [Login/Logout] on the operation panel
7. Login with the administrator user name and password.
8. Touch "Extended Feature Settings".
9. Touch "Extended Feature Settings" again.
10. Touch "SD Card".
11. Touch the "Browser" line.
12. Under "Install to:" touch "Machine HDD" and touch "Next"
13. When you see "Ready to Install" check the information on the screen to confirm you previous selection.
14. Touch "OK". You will see "Installing…" then "Completed".
15. Touch "Exit" twice to return to the copy screen.
16. Switch the machine off.
17. Replace the 6th key slot cover with the "Other Function" key cover.
18. Switch the machine on.
19. After the Copy screen appears, wait 30 sec. then press the "Other Function" key.
20. When you see this message: "The MFP Browser was successfully installed", switch the machine off and remove the SD card.

## 2.20.11 COPY DATA SECURITY UNIT TYPE C (B829)

### *Accessories*

| | Description | Q'ty |
|---|---|---|
| 1. | PCB IPU Option | 1 |

### *Installation*

In a new machine, the IPU does not have this application. You must always install a new IPU board when you install the Copy Data Security Unit option.

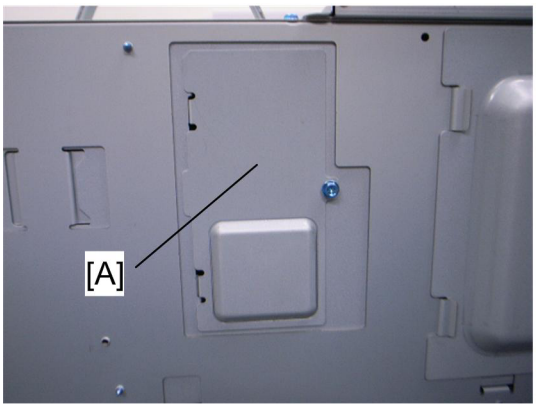
### *IPU*

Remove:

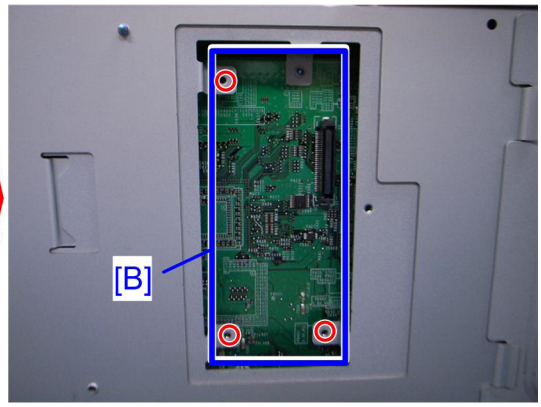
- Rear upper cover ( x2) ( p.4-8)
- Rear lower cover ( x2) ( p.4-8)

Remove:

- Screws and swing open the controller box ( x 3).




d062r709a




d062r709b

- IPU left cover [A] ( x1)

Install:

- Copy Data Security Unit Type C [B] ( x 3)

### *After Replacing the Copy Data Security Unit.*

1. Switch the machine on.
2. Login in as the System Administrator.
3. Push [User Tools].
4. Touch "System Settings".
5. Touch "Administrator Tools".
6. Touch next 2 or 3 times until you see "Data Security for Copying".
7. Touch "ON".
8. Touch "OK" to enable the setting.

## 2.20.12 VM CARD (D463)

### *Accessories*

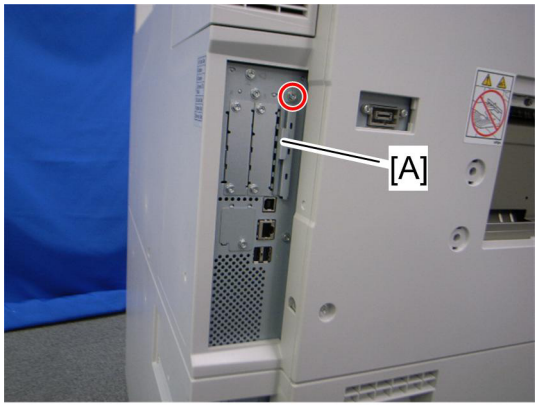
| | Description | Q'ty |
|---|---|---|
| 1. | VM Card D463 SD Card | 1 |
| 2. | Decal | 1 |

Important

- Only one slot (C2) is available for applications on SD cards. If more than one application is will be used, the applications must be merged onto one SD card with

SP5873 001.

## *Installation*



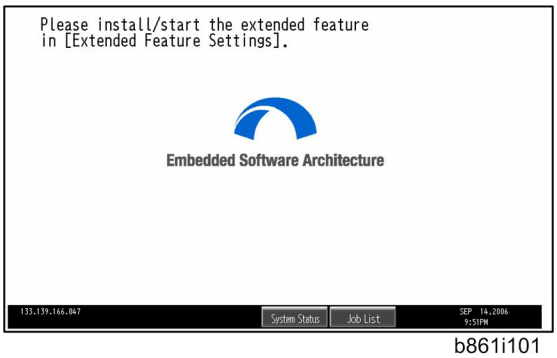

d063i500

1. Switch the machine off.
2. Remove the SD card slot cover [A] ( x1).
3. Insert the SD card [B] into SD slot 2.
4. Switch the machine on. The installation will start automatically.

Note

- The installation will take 5 to 10 minutes.

1. Replace the sixth key-slot cover with the "Other function" key.
2. Wait five minutes, and then press the "Other function" key. You will hear two beeps.
   - If the screen does not change, this means the installation is not finished yet. Wait a few more minutes and then press the "Other function" key again.
   - When the installation is finished, the following screen will appear.




b861i101

3. Set the heap size and stack size for the application.
4. Install the application using the installation procedure provided with the application.

# 2.20.13 IEEE1284 (B679)

## Accessories

| | Description | Q'ty |
|---|---|---|
| 1. | IEEE 1284 Centronics Board | 1 |



Only one PCI slot (A) is available for one of these options:

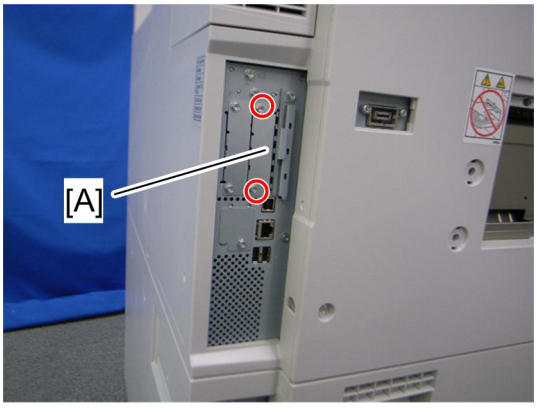
- Centronics 1284
- IEEE 801.11a/g, g (Wireless LAN) (D377)
- Bluetooth Interface Unit (B826)
- File Format Converter (D377)

Important

- If another card is installed in A, you must remove it before installing this card.

## Installation

1. Switch the machine off.




d063i501

2. Remove the cover [A] of Slot A ( x 2).
3. Insert the 1284 Centronics board [B] into Slot A and fasten it with the screws.

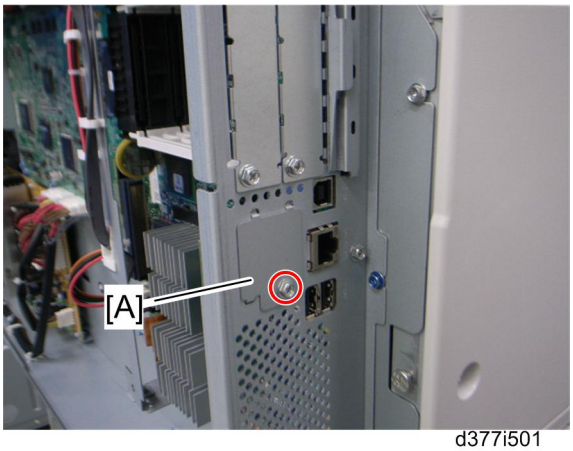
# 2.20.14 GIGABIT ETHERNET TYPE B (D377)

## *Accessories*

| | Description | Q'ty |
|---|---|---|
| 1. | Gigabit Ethernet | 1 |
| 2. | Ferrite Core | 1 |
| 3. | Screw | 2 |
| 4. | Cap for Network Slot | 1 |

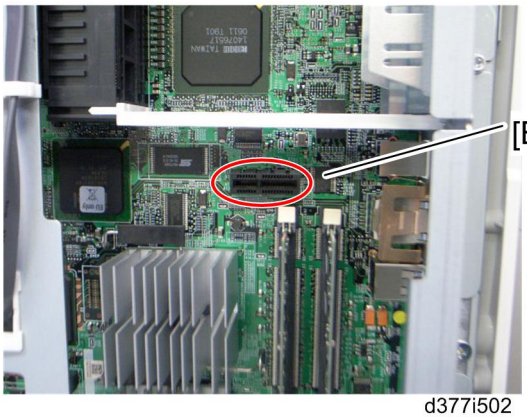
## *Installation*

1. Switch the machine off.
2. Remove the controller box cover (☛ p.4-105 "CNT Board (Controller Board)").

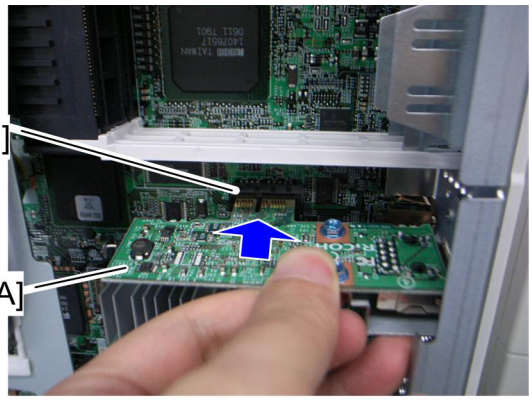



d377i501

3. Remove the Gigabit Ethernet slot cover [A] ( x 1).

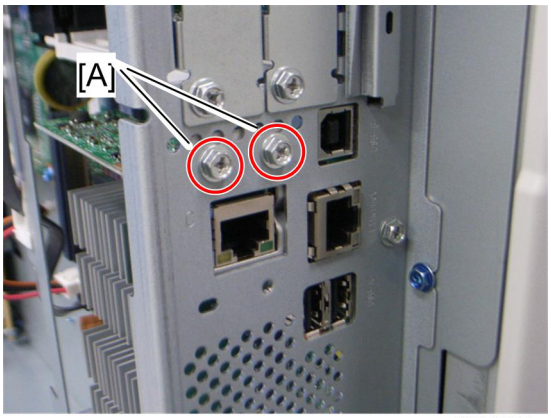



d377i502



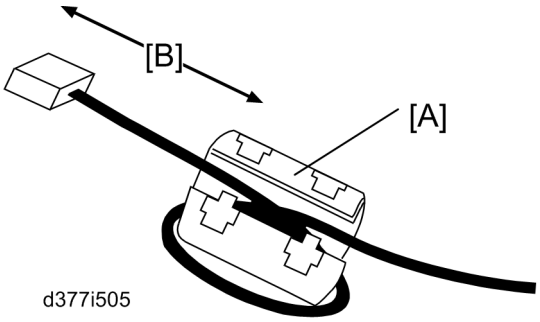

d377i503

4. Insert the Gigabit Ethernet board [A] in the slot [B] on the controller board.




d377i504

5. Fasten it with the screws [A].
6. Reassemble the machine.




d377i505

7. Attach the ferrite core [A] to the network cable.
   - [B]: 30 mm or more
8. Connect the network cable to the slot for Gigabit Ethernet.
9. Print a configuration page to confirm that the machine recognizes the installed board for USB2.0:
   User Tools > Printer Features > List/Test Print > Configuration Page

## 2.20.15 TESTING THE SD CARD/USB SLOT

### *USB 2.0/SD Slot Type C*

1. Insert an SD card or USB memory device in the slot.
   You can connect only one removable memory device at a time.
2. Close the media slot cover.
   If you leave the cover open, static electricity conducted through an inserted SD card could cause the machine to malfunction.
3. Make sure that no previous settings remain.
   If a previous setting remains, press the [Clear Modes] key.
4. Place an original on the exposure glass.
5. Press [Store File].
6. Press [Store to Memory Device].
7. Press [OK].
8. Press the [Start] key.
   When writing is complete, a confirmation message appears.
9. Press [Exit].
10. Remove the memory device from the media slot.
    Do not remove the memory device while writing is in process.

# PREVENTIVE MAINTENANCE

| REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| | | None |

# 3. PREVENTIVE MAINTENANCE

## 3.1 PM TABLES

See "Appendices" for the following information:

- PM Tables

# REPLACEMENT AND ADJUSTMENT

| REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| | | None |

# 4. REPLACEMENT AND ADJUSTMENT

## 4.1 GENERAL CAUTIONS

**⚠CAUTION**

- Never turn off the power switch while the machine is operating.
- If the machine is switched off during operation, the transfer belt, drum, or development unit could be damaged when it is removed or reinstalled in the machine.

### 4.1.1 DRUM

An organic photoconductor (OPC) drum is more sensitive to light and ammonia gas than a selenium drum. Follow the cautions below when handling an OPC drum.

1. Never expose the drum to direct sunlight.
2. Never expose the drum to direct light of more than 1,000 Lux for more than a minute.
3. Never touch the drum surface with bare hands. When the drum surface is touched with a finger or becomes dirty, wipe it with a dry cloth or clean it with wet cotton. Wipe with a dry cloth after cleaning with wet cotton.
4. Never use alcohol to clean the drum; alcohol dissolves the drum surface.
5. Store the drum in a cool, dry place away from heat.
6. Take care not to scratch the drum as the drum layer is thin and is easily damaged.
7. Never expose the drum to corrosive gases such as ammonia gas.
8. Always keep the drum in the protective sheet when keeping the drum unit, or the drum itself, out of the machine. Doing so avoids exposing it to bright light or direct sunlight, and will protect it from light fatigue.
9. Dispose of used drums in accordance with local regulations.
10. When installing a new drum, execute SP2962 (Adjustment of Drum Conditions).

### 4.1.2 DRUM UNIT

1. Before pulling out the drum unit, place a sheet of paper under the drum unit to catch any spilt toner.
2. Make sure that the drum unit is set in position and the drum stay is secured with a screw before the main switch is turned on. If the drum unit is loose, poor contact of the drum connectors may cause electrical noise, resulting in unexpected malfunctions (RAM data change is the worst case).

3. To prevent drum scratches, remove the development unit before removing the drum unit.

## 4.1.3 TRANSFER BELT UNIT

1. Never touch the transfer belt surface with bare hands.
2. Take care not to scratch the transfer belt, as the surface is easily damaged.
3. Before installing the new transfer belt, clean all the rollers and the inner part of the transfer belt with a dry cloth to prevent the belt from slipping.

## 4.1.4 SCANNER UNIT

1. When installing the exposure glass, make sure that the white paint is at the rear left corner.
2. Clean the exposure glass with alcohol or glass cleaner to reduce the amount of static electricity on the glass surface.
3. Use a cotton pad with water or a blower brush to clean the mirrors and lens.
4. Do not bend or crease the exposure lamp cable.
5. Do not disassemble the lens unit. Doing so will throw the lens and the copy image out of focus.
6. Do not turn any of the CCD positioning screws. Doing so will throw the CCD out of position.

## 4.1.5 LASER UNIT

1. Do not loosen the screws that secure the LD drive board to the laser diode casing. Doing so would throw the LD unit out of adjustment.
2. Do not adjust the variable resistors on the LD unit, as they are adjusted in the factory.
3. The polygon mirror and F-theta lenses are very sensitive to dust. Do not open the optical housing unit.
4. Do not touch the glass surface of the polygon mirror motor unit with bare hands.
5. After replacing the LD unit, do the laser beam pitch adjustment. Otherwise, an SC condition will be generated.

## 4.1.6 CHARGE CORONA

1. Clean the corona wires with a dry cloth. Do not use sandpaper or solvent.
2. Clean the charge corona casing with water first to remove NOx based compounds. Then clean it with alcohol if any toner still remains on the casing.
3. Clean the end block with a blower brush first to remove toner and paper dust. Then clean with alcohol if any toner still remains.

4. Do not touch the corona wires with bare hands. Oil stains from fingers may cause uneven image density on copies.
5. Make sure that the wires are correctly between the cleaner pads and that there is no foreign material (iron filings, etc.) on the casing.
6. When installing new corona wires, do not bend or scratch the wire surface. Doing so may cause uneven charge. Also be sure that the corona wires are correctly positioned in the end blocks.
7. Clean the grid plate with a blower brush (not with a dry cloth).
8. Do not touch the charge grid plate with bare hands. Also, do not bend the charge grid plate or make any dent in it. Doing so may cause uneven charge.

## 4.1.7 DEVELOPMENT

1. Be careful not to nick or scratch the development roller.
2. Place the development unit on a sheet of paper after removing it from the machine.
3. Never disassemble the development roller assembly. The position of the doctor plate is set with special tools and instruments at the factory to ensure the proper gap between the doctor blade and the development roller.
4. Clean the drive gears after removing used developer.
5. Dispose of used developer in accordance with local regulations.
6. Never load types of developer and toner into the development unit other than specified for this model. Doing so will cause poor copy quality and toner scattering.
7. Immediately after installing new developer, the TD sensor initial setting procedure should be performed with SP2801 (TD Sensor Initialization) to avoid damage to the machine. Do not perform the TD sensor initial setting with used developer. Do not make any copies before doing the TD sensor initial setting.
8. When using a vacuum cleaner to clean the development unit casing, always ground the casing with your fingers to avoid damaging the toner density sensor with static electricity.
9. When replacing the TD sensor, replace the developer, then execute SP2801 (TD Sensor Initialization) and SP2962 (Adjustment of Drum Conditions).

## 4.1.8 CLEANING

1. When servicing the cleaning section, be careful not to damage the edge of the cleaning blade.
2. Do not touch the cleaning blade with bare hands.
3. Before disassembling the cleaning section, place a sheet of paper under it to catch any toner falling from it.

## 4.1.9 FUSING UNIT

1. After installing the fusing thermistor, make sure that it is in contact with the hot roller and that it is movable.
2. Be careful not to damage the edges of the hot roller strippers or their tension springs.
3. Do not touch the fusing lamp and rollers with bare hands.
4. Make sure that the fusing lamp is positioned correctly and that it does not touch the inner surface of the hot roller.

## 4.1.10 PAPER FEED

1. Do not touch the surface of the pick-up, feed, and separation rollers.
2. To avoid paper misfeeds, the side fences and end fence of the paper tray must be positioned correctly to align with the actual paper size.

## 4.1.11 USED TONER

1. We recommend checking the amount of used toner at every EM.
2. Dispose of used toner in accordance with local regulations. Never throw toner into an open flame, for toner dust may ignite.

# 4.2 SPECIAL TOOLS AND LUBRICANTS

## 4.2.1 SPECIAL TOOLS

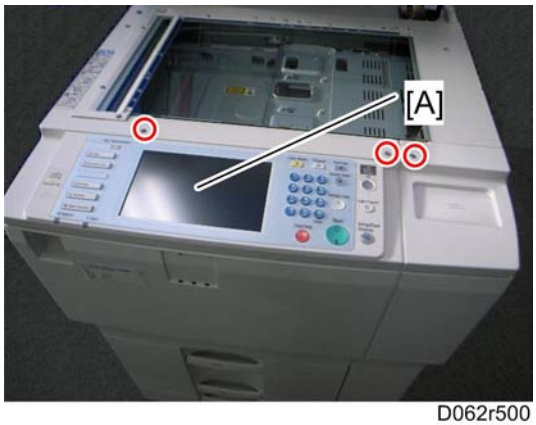
| Part No. | Description |
|---|---|
| A0069104 | Scanner Positioning Pin (4 pcs./set) |
| A2929500 | Test Chart – S5S (10 pcs./set) |
| A0299387 | Digital Multimeter – FLUKE 87 |
| VSST9500 | Test Chart – S5S – DF (10 Sheets/Set) |
| G0219350 | Loop Back Connector |
| B6455010 | SD (Secure Digital) Card – 64 MB |

## 4.2.2 LUBRICANTS

| Part No. | Description |
|---|---|
| A2579300 | Grease Barrierta – JFE 5 5/2 |
| 52039502 | Silicon Grease G-501 |
| 54429101 | Setting Powder |

# 4.3 OPERATION PANEL AND EXTERNAL COVERS

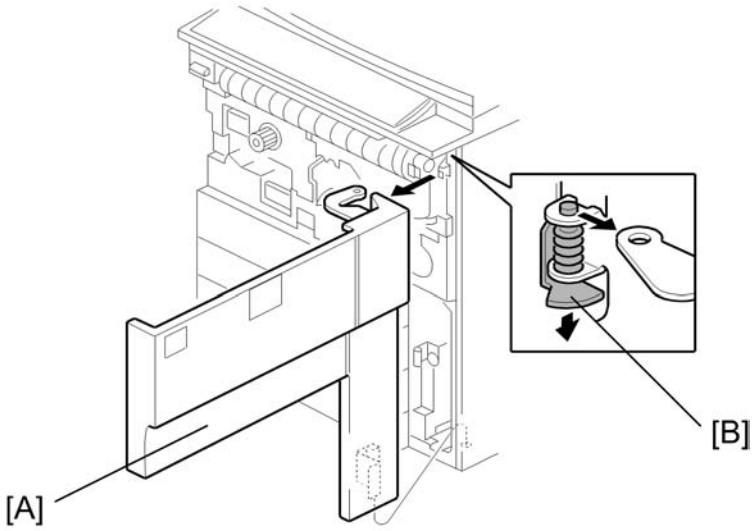
## 4.3.1 OPERATION PANEL




D062r500

1. Open the ADF.
2. Operation panel [A] ( x 3, x 1, ground cable x 1)

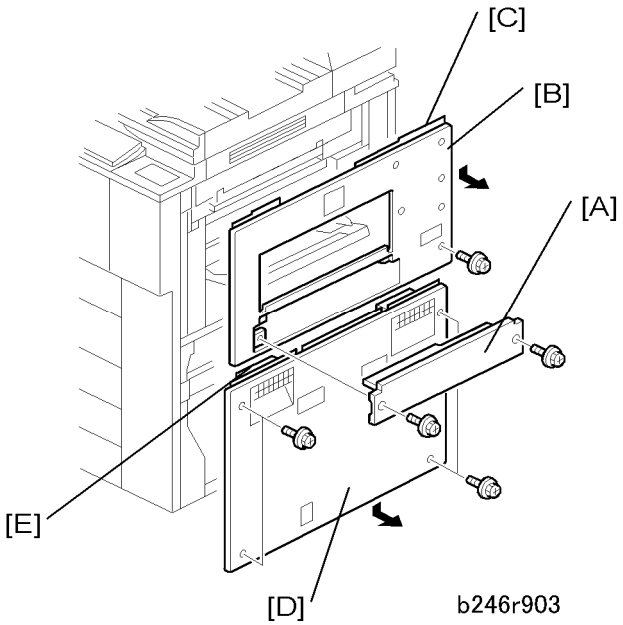
## 4.3.2 FRONT DOOR




d062r902a

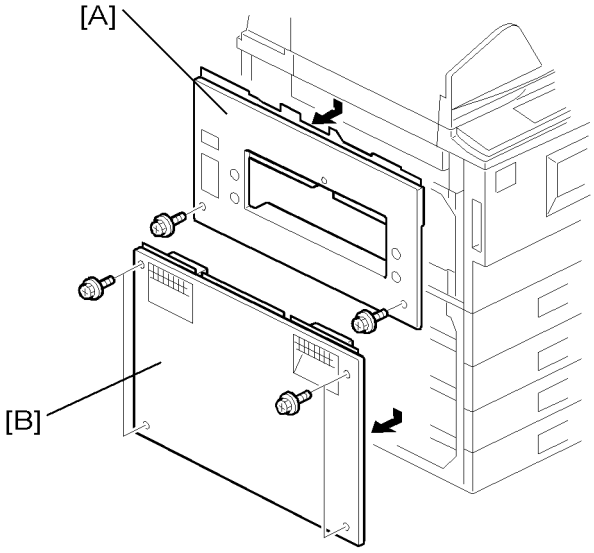
While supporting the front door [A] with one hand, press down on the hinge bracket [B] then raise the door slightly to remove it.

## 4.3.3 RIGHT COVERS




1. LCT entrance guide cover [A] ( x 2)
2. Right upper cover [B] ( x 2)
   - To remove the right cover, remove the LCT entrance guide plate, open the by-pass tray, then slide the right upper cover down to remove it.
   - Before tightening the screws when re-attaching, make sure that 1) the tabs [C] on the cover are engaged with the grooves on the machine, and 2) the catches on the cover are engaged with the shoulder screws.
3. Right lower cover [D] ( x 2)
   - After removing the screws, slide the cover down to remove it.
   - When re-attaching, before tightening the screws make sure that the tabs [E] on the cover are engaged with the grooves on the machine.

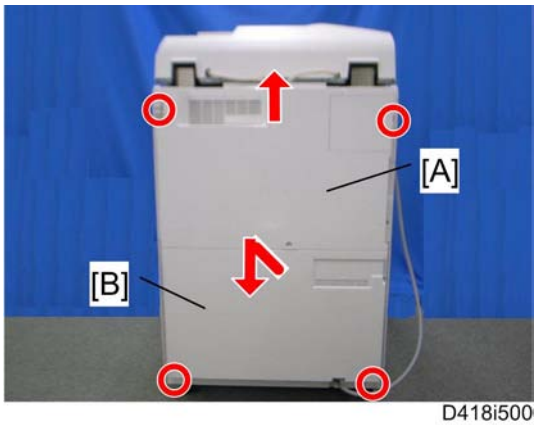
## 4.3.4 LEFT COVERS




b246r904

1. Left upper cover [A] ( x 2)
   - Slide down to remove.
   - When re-attaching, before tightening the screws make sure that 1) the tabs on the cover are engaged with the grooves on the machine, and 2) the catches on the cover are engaged with the shoulder screws.
2. Left lower cover [B] ( x 2)
   - Slide down to remove.
   - When re-attaching, before tightening the screws make sure that the tabs on the cover are engaged with the grooves on the machine.

## 4.3.5 REAR COVERS




D418i500

1. Rear upper cover [A] ( x 2)
   - Slide down to remove.

- When re-attaching, before tightening the screws make sure that the tabs on the cover are engaged with the shoulder screws.

2. Rear lower cover [B] ( x 2)
   - When re-attaching, before tightening the screws make sure that the tabs on the cover are engaged with the shoulder screws.

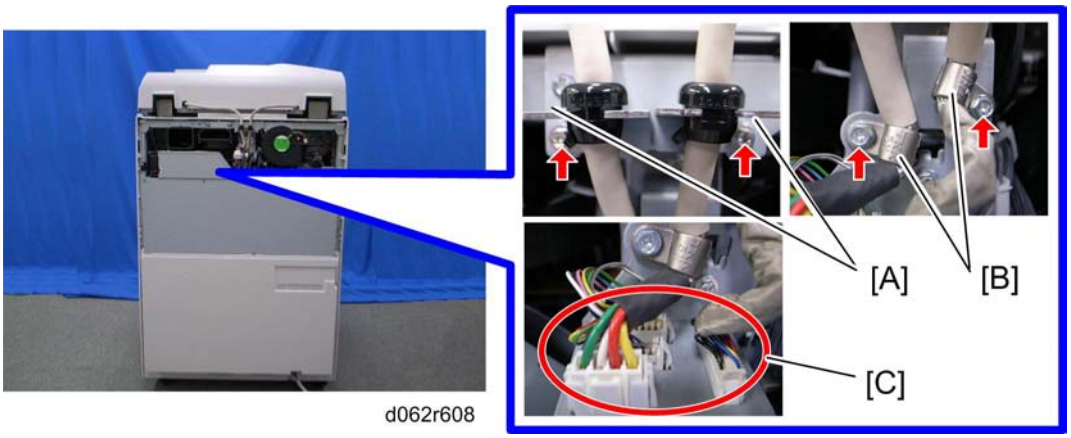
# 4.4 SCANNER

## 4.4.1 ADF AND TOP COVERS

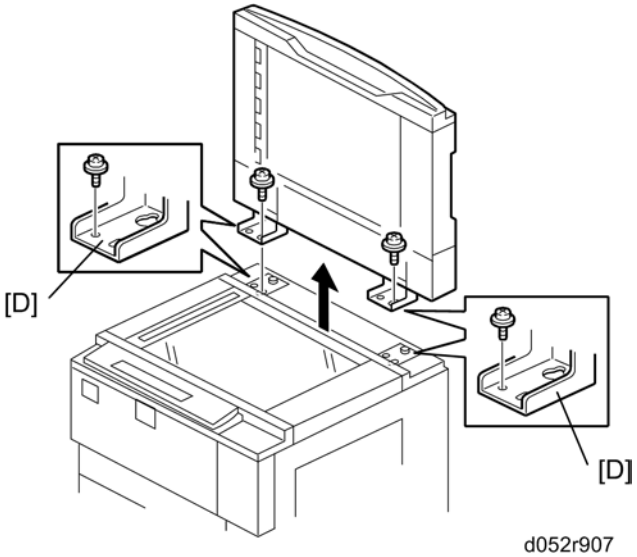
### *ADF*

Remove the following parts:

1. Rear upper cover and rear lower cover (p.4-8 "Rear Covers")

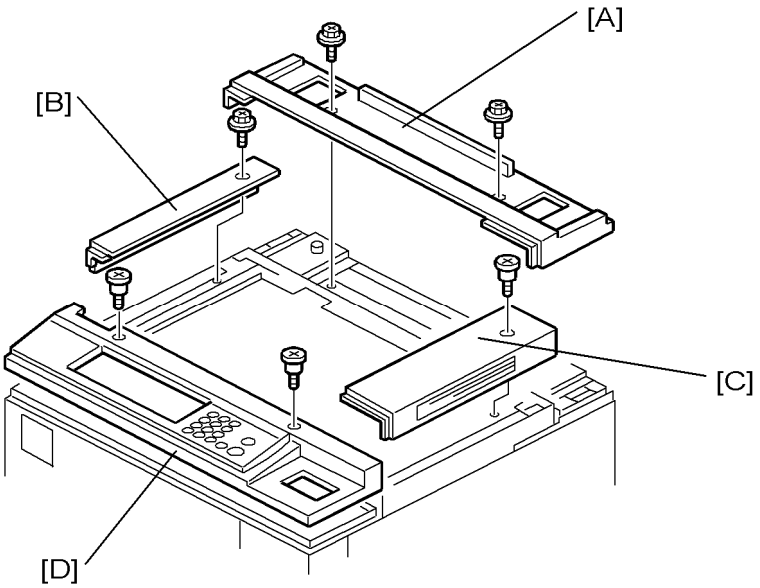



2. Cable brackets [A] (each x 1)
3. Nylon clamps [B] (each x 1)
4. Connectors [C] ( x 4)




5. ADF base left and right plates [D] ( x 2)
   - While holding the ADF firmly, slide the ADF back and lift the large end of the keyholes over the shoulder screws.

### *Top Covers*

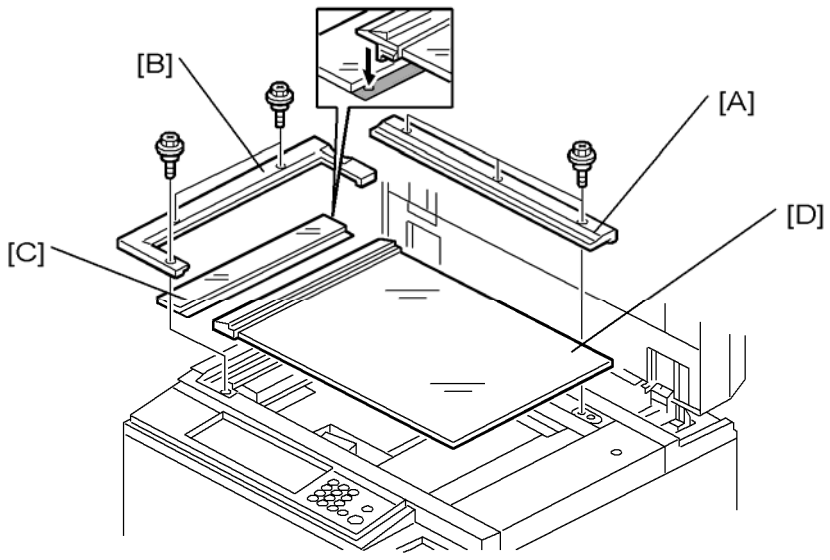



b246r908

Remove the following parts:

1. ADF (☛ p.4-10)
2. Top inside cover [A] ( x 2)
3. Top left cover [B] ( x 1)
4. Top right cover [C] ( x 1)
5. Operation panel [D] ( x 3, x 1, ground cable x 1)

## 4.4.2 EXPOSURE GLASS




b246r909

**Scanner**

1. Rear scale [A] ( x 3)
2. Left cover [B] ( x 3)
3. ADF exposure glass [C]
4. Exposure glass [D]

Note

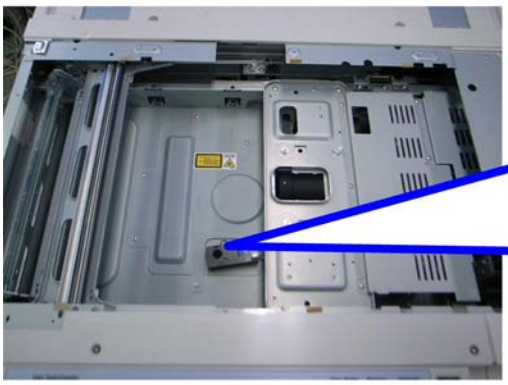
- Lift out the exposure glass and left scale together. The left scale is permanently attached to the exposure glass with double-sided tape. Do not remove the left scale from the exposure glass.

**When re-installing the exposure glass:**

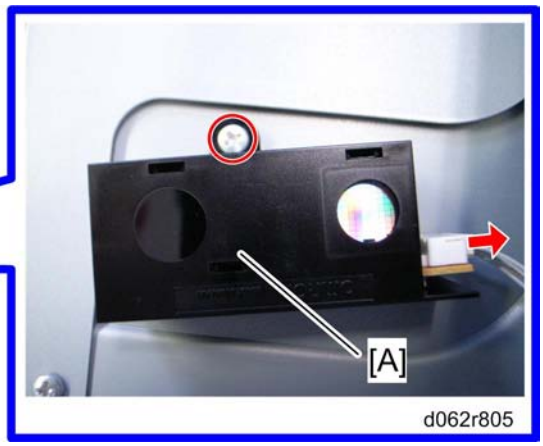
- Position the exposure glass first. Make sure that the arrow mark is in the upper left corner.
- When re-installing the left cover, make sure it is seated correctly.

## 4.4.3 SCANNER ORIGINAL SIZE SENSORS

1. Exposure glass ( p.4-11)

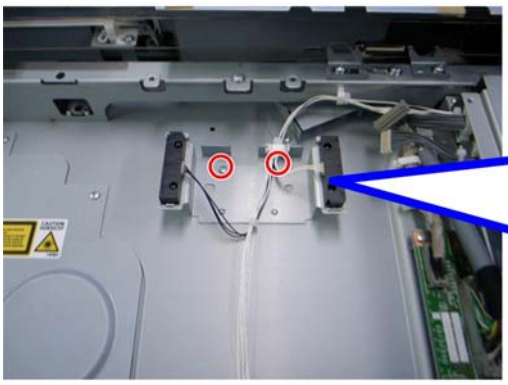


d062r804

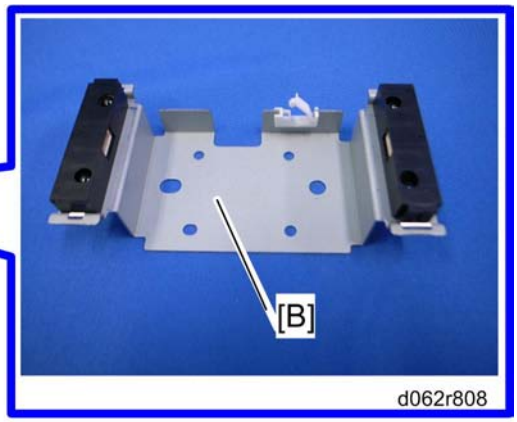



d062r805

2. Original width sensor [A] ( x 1, x 1)
3. Lens block ( p.4-13)



d062r807



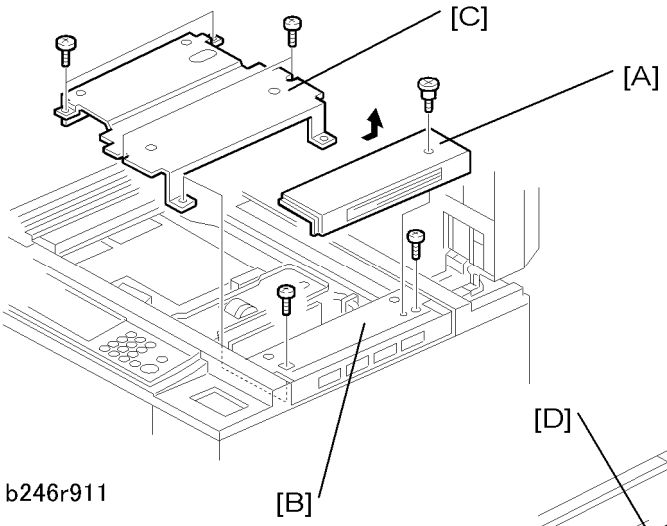

d062r808

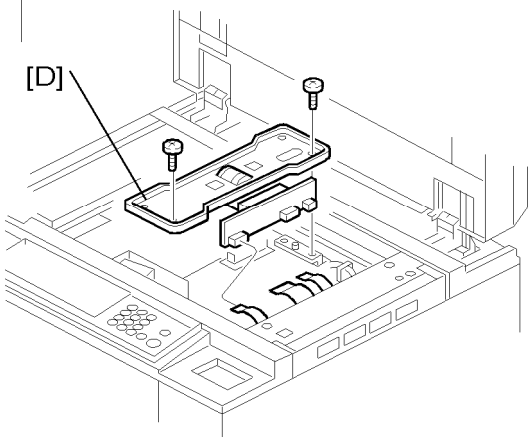
4. Original length sensor bracket[B] ( x 2, x 2)

Note

- For EU: Length sensor x 1
- For NA: Length sensor x 2

## 4.4.4 LENS BLOCK




1. Exposure glass (☛ p.4-11)
2. Lens cover [C] ( x 9)
3. Lens block [D] ( x 4, x 4)

Note

- To avoid damaging the lens block, never set it down on the side with the PCB; turn it over with the PCB up.

4. Re-assemble the machine, then perform the scanner and printer adjustments. (☛ p.4-133)

## 4.4.5 EXPOSURE LAMP

1. Exposure glass (☛ p.4-11)
2. Operation panel (☛ p.4-6)
3. Push the 1st scanner [B] to the cutout [A] in the scanner frame.

**Scanner**

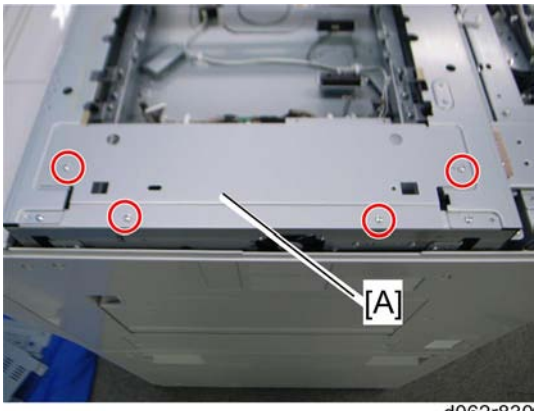
4. Exposure lamp [C] ( x 1, x 1, x 1)

Note

- Never touch the surface of the exposure lamp with bare fingers.

## 4.4.6 SIOB

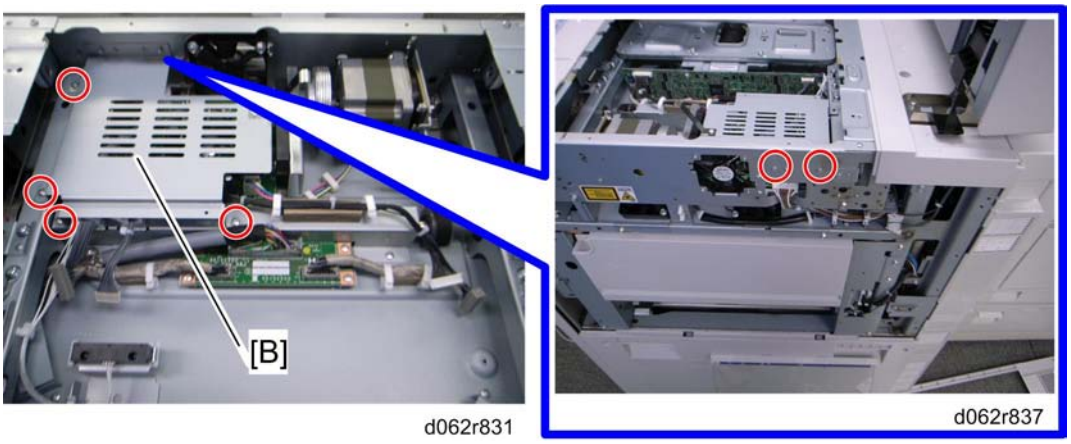
1. Lens block ( p.4-13)
2. Top right cover ( p.4-10 "ADF and Top Covers")




d062r830

Right Side

3. Top right bracket [A] ( x 4)
4. Right upper cover ( p.4-7 "Right Covers")




d062r831

d062r837

5. SIOB cover [B] ( x 6)


d062r834

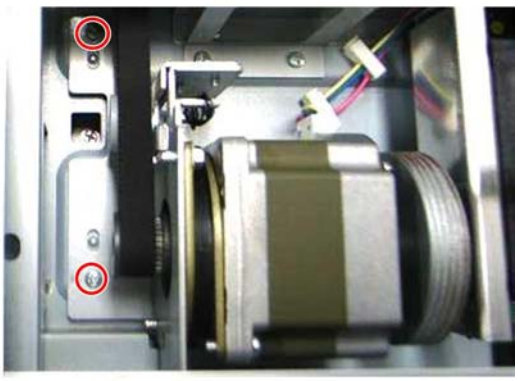
d062r837

6. SIOB [C] ( x 4, all s)

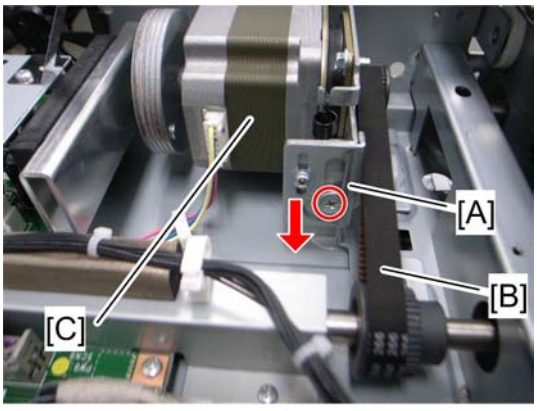
## 4.4.7 SCANNER MOTOR

1. SIOB cover ( p.4-14)


d062r884


d062r885

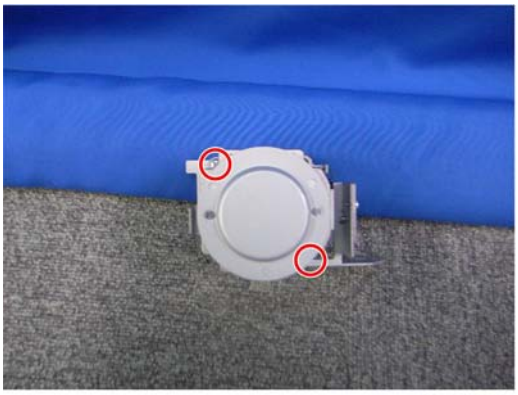
2. Remove three screws.



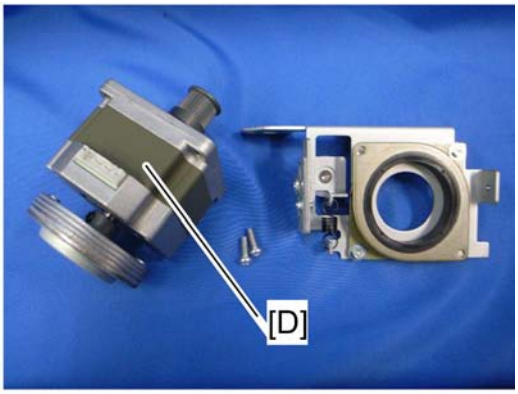
d062r880

3. Release a screw, move down the bracket [A], release the timing belt [B] and then remove the scanner motor bracket [C] ( x 1).

**Scanner**



d062r882

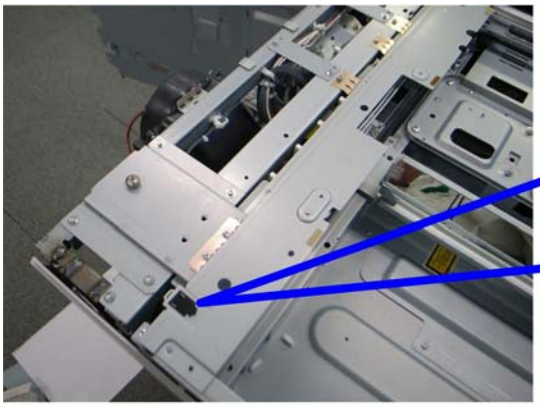



d062r883

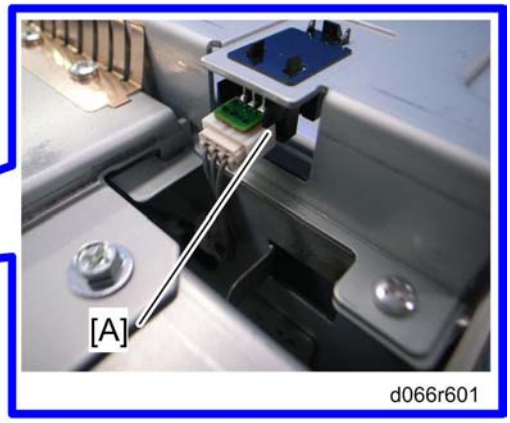
4. Scanner motor [D] ( x 2).

## 4.4.8 SCANNER HP SENSOR

1. ADF ( p.4-10)
2. Top inside cover ( p.4-11 "Top Covers")
3. Top right cover ( p.4-11 "Top Covers")



d066r600

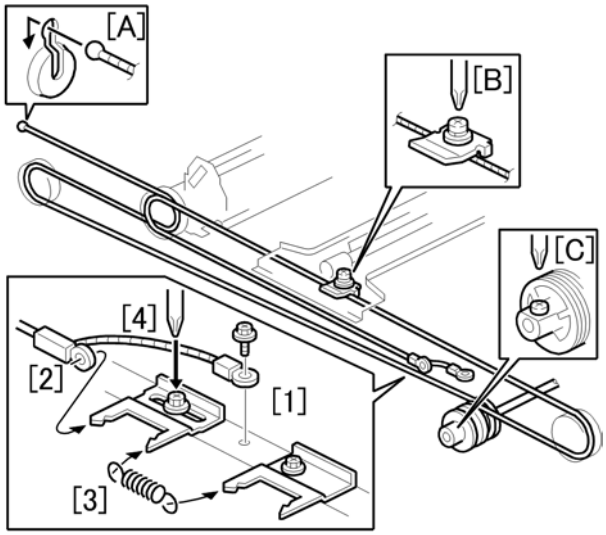



d066r601

4. Scanner HP Sensor [A] ( x 1, all hooks)

## 4.4.9 SCANNER WIRE REPLACEMENT

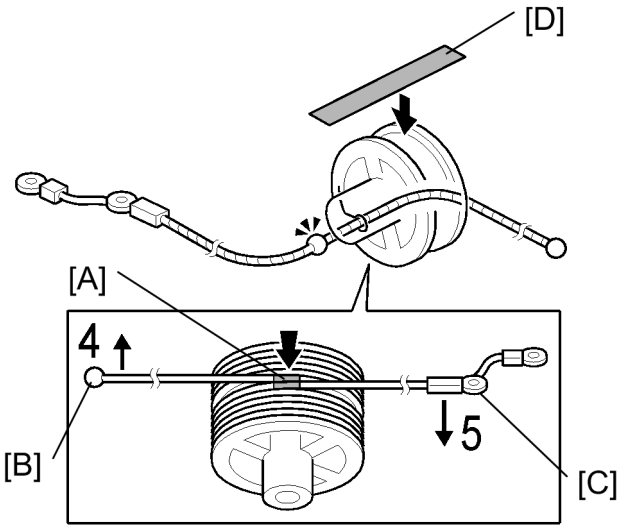
### *Scanner Wire Removal*




B132R137.WMF

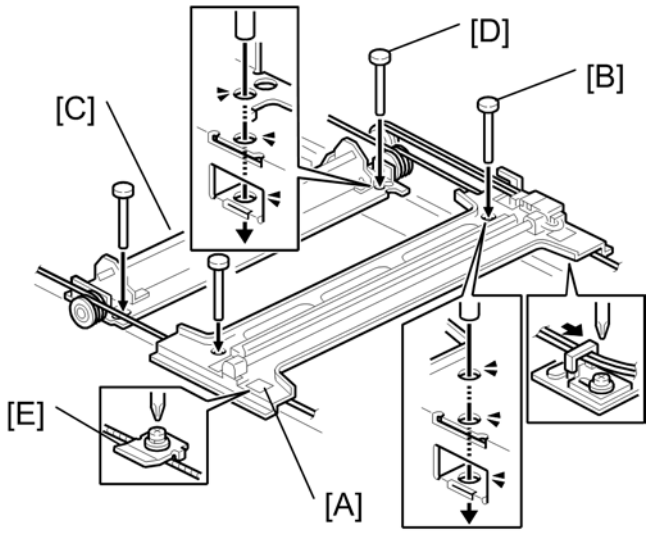
1. Disconnect ground wire [1] ( x1)
2. Disconnect the head of the wire [2] from tension bracket 1.
3. Remove spring [3].
4. Loosen the screw [4] of tension bracket 1.
5. Disconnect the end of the wire at [A].
6. Remove lock bracket [B] of the 1st scanner ( x1).
7. Disconnect the wire from the pulley [C] ( x1).
8. Remove the wire from the scanner.

## *Scanner Wire Reinstallation and Scanner Position Adjustment*




B132R136

1. Place the beads [A] on the middle of the wire in the openings in the pulley.
2. Wind the ball end of the wire [B] 4 times.
3. Wind the other end of the wire [C] 5 times.
4. Attach tape [D] across the pulley to temporarily hold the wires in place.




B132R138

5. Position the 1st scanner [A] so that the holes are aligned, and insert the positioning pins [B] (x4).
6. Position the 2nd scanner [C] so that its holes are aligned, and insert the positioning pins [D].
7. Attach the lock bracket [E] to fasten the wire to the 1st scanner.
8. Tighten the screw of the tension bracket.
9. Attach the pulley and tighten its lock screw.

10. Remove the positioning pins (x4).
11. Remove the tape from the pulley.
12. Slowly push the scanner left and right to confirm that the wires are engaged correctly.
    The 1st and 2nd scanners should move smoothly.

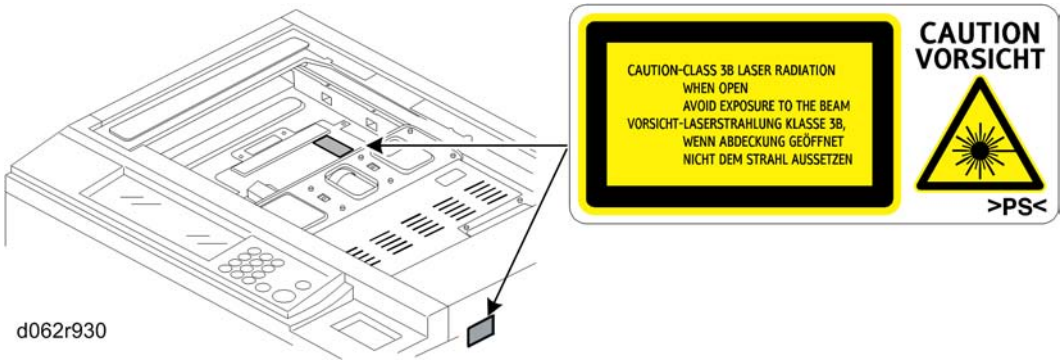
# 4.5 LASER UNIT

**⚠WARNING**

- Turn off the machine and unplug its power cord before performing any procedure in this section. Laser beams can seriously damage the eyes.
- This laser unit uses four laser beams produced by a Class IIIb LDA with a wavelength of 660 nm and intensity of 15 mW. Direct exposure to the eyes could cause permanent blindness.
- Before performing any replacement or adjustment of the laser unit, push the machine power switch to switch the machine off. Then unplug the machine from the power source.
- Do not touch the machine for 10 minutes. This allows enough time for the fusing unit to cool and for the polygon motor to stop rotating.
- Never power on the machine with any of these components removed: 1) LD unit, 2) polygon motor cover, 3) synchronization detector.

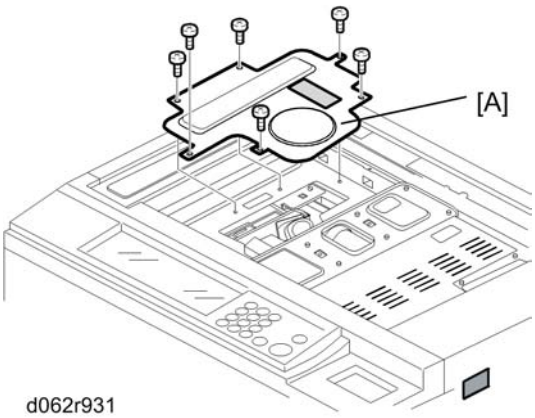
## 4.5.1 { XE "CAUTION DECALS" }CAUTION DECALS

Two caution decals are provided for the laser section.




## 4.5.2 LD UNIT, POLYGON MOTOR AND POLYGON MOTOR DRIVE BOARD

1. Exposure glass (☞ p.4-11)

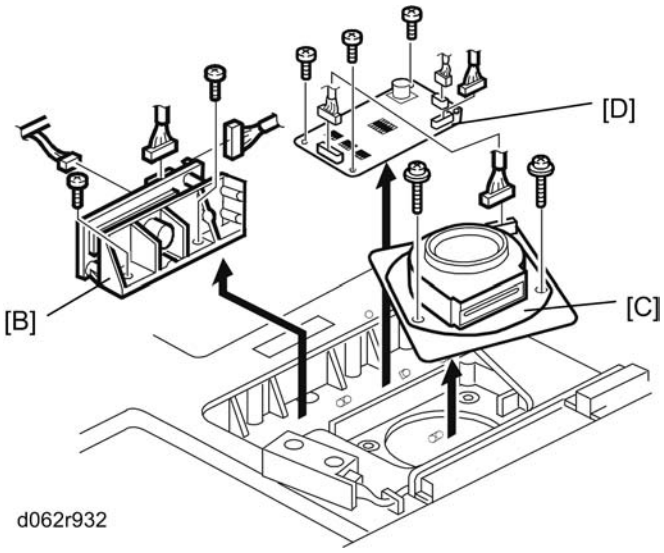



2. Polygon motor cover [A] ( x 6)

**CAUTION**

- An accidental static discharge could damage the LDB (Laser Diode Board). Touch a metal surface to discharge any static electricity from your hands.
- The polygon motor rotates at extremely high speed and continues to rotate after switching the machine off. To avoid damaging the motor, never remove the polygon motor within three minutes of switching off the machine and disconnecting its power plug.






3. Remove;
   - LD unit [B] ( x 2, x 3)
   - Polygon motor [C] ( x 3, x 1)
   - Polygon motor drive board [D] ( x 3, x 3)

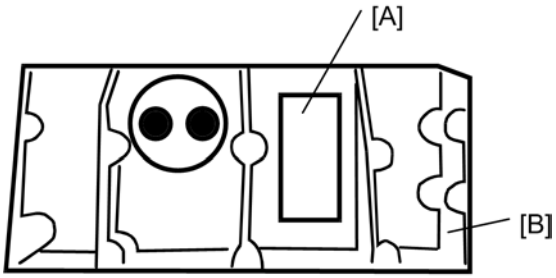
**CAUTION**

- Before fastening the polygon motor in place ( x 3, x 1), make sure that the glass panel of the laser port is facing to the right (toward the mirrors in the

optical path).

### *SP Adjustments*

1. Execute SP2962 (Automatic Adjustment of Drum Conditions) after replacing the LD unit, but only if SP3901 - Auto Process Control - is on.
2. Read the label [A] attached to the LD unit [B]. Execute SP2115 (Main Scan Beam Pitch Adjustment) and enter the numbers printed on the label.

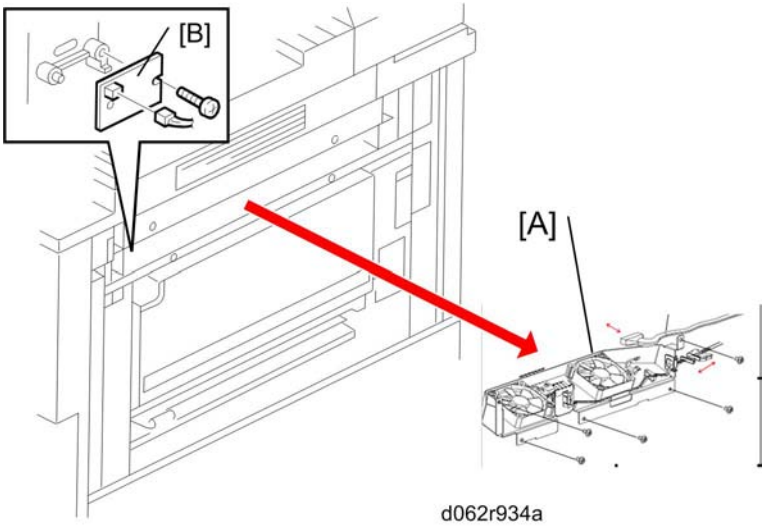


d062r933

   - The first line on the label is the machine number.
   - The second line on the label includes three numbers separated by slashes. Reading from left to right, these are the correct settings for SP2115 (Main Scan Beam Pitch Adjustment) 001 to 005.
   - Do not remove this label and make sure it is flat against the side of the LD unit.
3. Perform the printer adjustments. See "Print Image Adjustment"

## 4.5.3 LASER SYNCHRONIZATION DETECTOR REPLACEMENT

1. Right side cover (☛ p.4-7 "Right Covers")
2. If the optional LCT is installed, disconnect it ( x 1).



d062r934a

3. Development unit fans [A] ( x 5, x 2)
4. Synchronization detector [B] ( x 1, x 1)

5. After replacement, set SP1002-001 to 007 (Side-to-Side Registration) to the defaults.

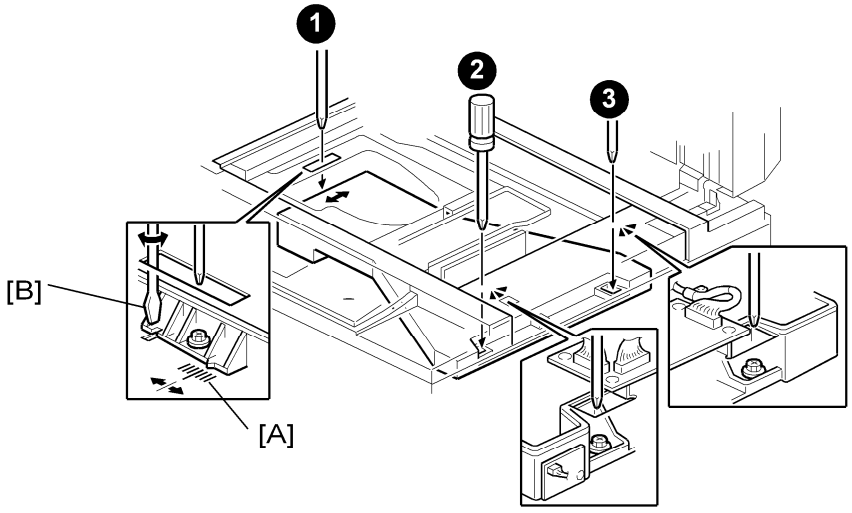
## 4.5.4 LASER UNIT ALIGNMENT

**⚠WARNING**

- If you have just disassembled the LD unit, to avoid serious damage to the eyes from accidental exposure to laser beams you must confirm that the machine has been re-assembled completely before operation.

This adjustment corrects the parallelogram pattern to the desired rectangular pattern for printing; it does not correct the skew of scanned images.

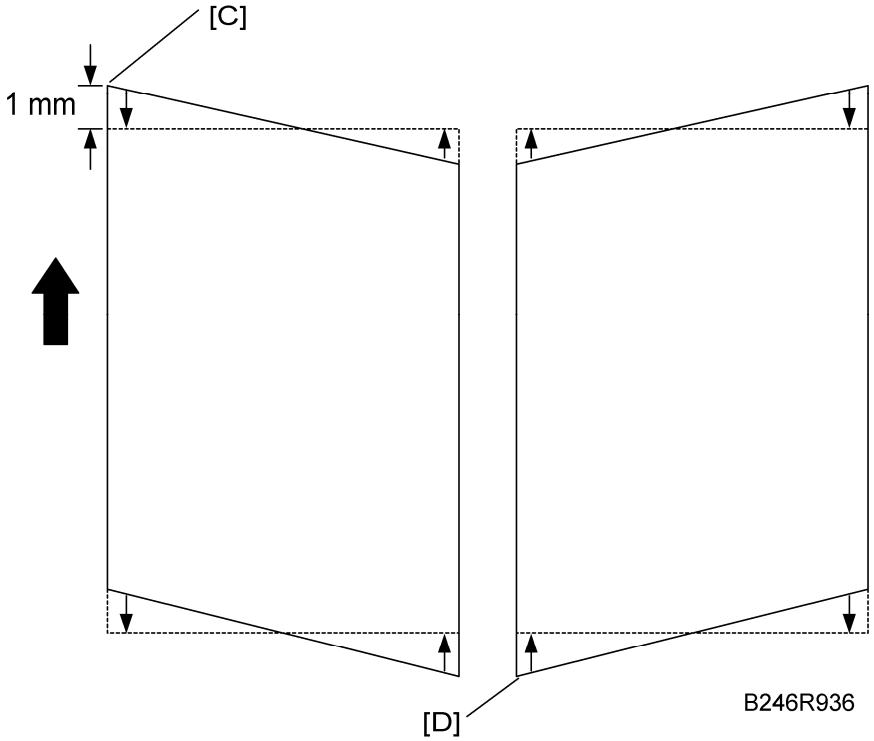
1. Execute SP2902-003 (Test Pattern - Printing Test Pattern) 018 to print the A4 LEF pattern. Check the printed patterns and estimate the angle of adjustment required.
2. Remove the exposure glass. (☛ p.4-11)
3. Remove the polygon motor cover. (☛ p.4-20 "LD Unit, Polygon Motor and Polygon Motor Drive Board")
4. Remove the right cover. (☛ p.4-7 "Right Covers")




B246R935

5. Loosen the screws of the laser exposure unit (🔩 x 3).
6. While watching the scale [A], use a flathead screwdriver [B] to move the laser exposure unit left or right to adjust the position of the unit.

**Laser Unit**

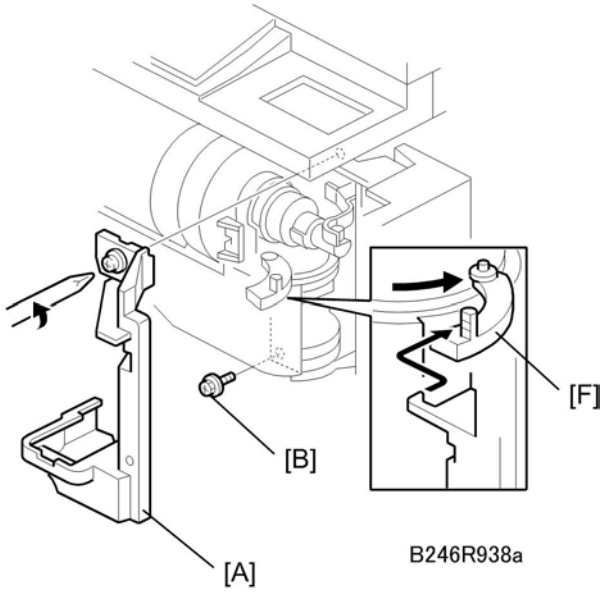



7. Adjust the position of the laser exposure unit.
   - If the pattern is skewed at the corner of the leading edge [C], move the unit so it moves the pointer on the scale toward the back.
   - If the pattern is skewed at the lower left corner of the trailing edge [D], move the unit so it moves the pointer on the scale toward the front.
   - The scale is set for increments of 1 mm.
8. After adjustment, tighten the screws on the laser exposure unit, re-assemble the machine and print the pattern again with SP2902-003 No.18.
9. Check the pattern. Repeat the procedure if more adjustment is required.

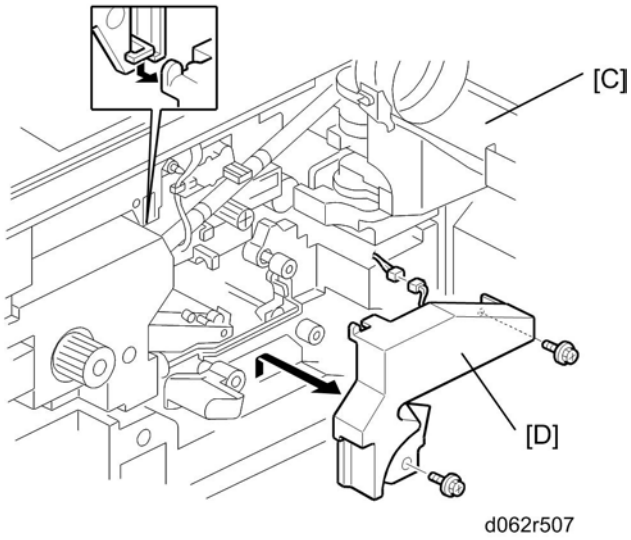
# 4.6 DRUM UNIT

## 4.6.1 DEVELOPMENT UNIT REMOVAL

### *Drum Removal*

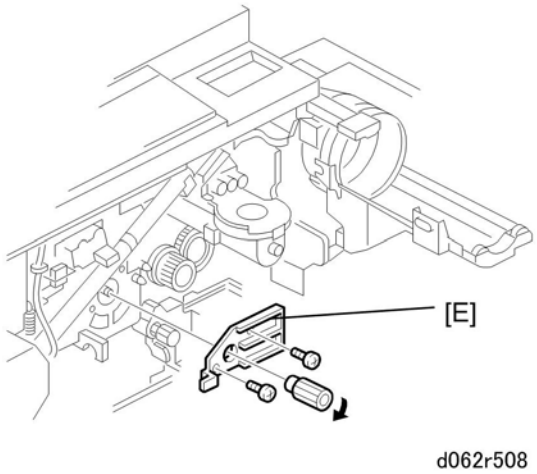



1. Open the front door.
2. Shutter cover [A] ( x 1)
3. Lock screw [B]




4. Toner bottle [C]
   - Pull the toner bottle holder out and swing the toner bottle holder to the right.
5. PCU inner cover [D] ( x 2, x 1)

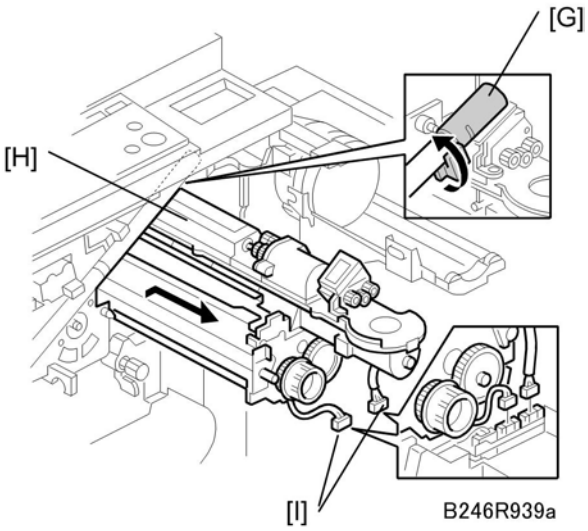
**Drum Unit**




6. Face plate (knob x 1, x 2) [E]

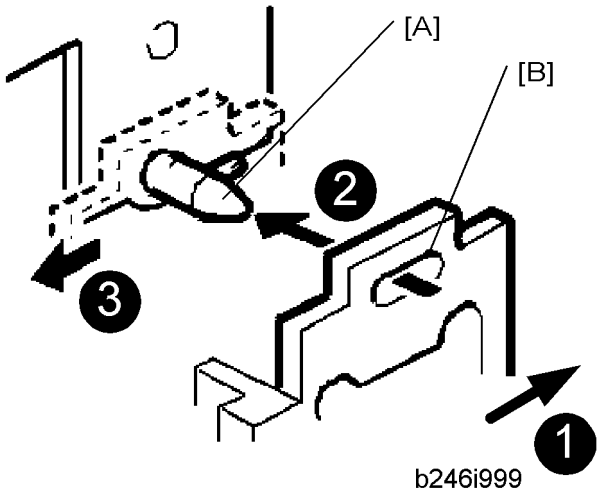
Important

- After re-installation, the tab [F] in the first illustration should be behind the stay and its pin below should be in the open track below.



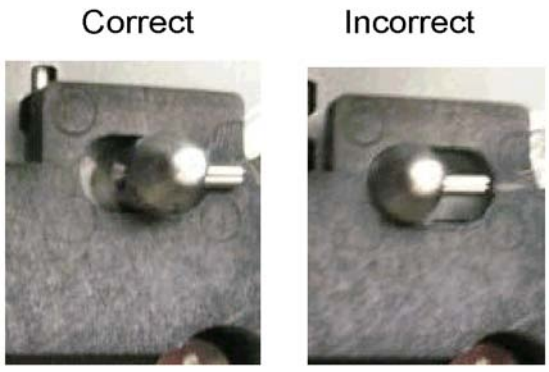

7. Close the supply pipe shutter [G].
8. Development unit [H] ( x 2 [I])
   - Allow the unit to slip to the right, then slowly pull it out of the machine.
   - If the LCT is installed, you may need to disconnect it so the front door can open far enough to allow removal of the development unit.

### *Drum Re-installation*



b246i999

1. Push the development unit to the right ❶.
2. While continuing to hold the unit to the right, push it into the machine.
3. Confirm that the pin [A] goes into the left side of the oval hole [B] in the development unit plate.
4. Push the development unit in completely ❷ until it stops, then push it to the left ❸.
5. Make sure you can see the horizontal pin in front of the plate as shown below.



b246i999a

Important

- If you cannot move the development unit plate behind the horizontal pin, turn the front gear of the unit to the left and try again.
- Make sure the pipeline shutter is rotated down to the open position.

6. Reattach all removed parts.

### *Replacement with a Used Development Unit*

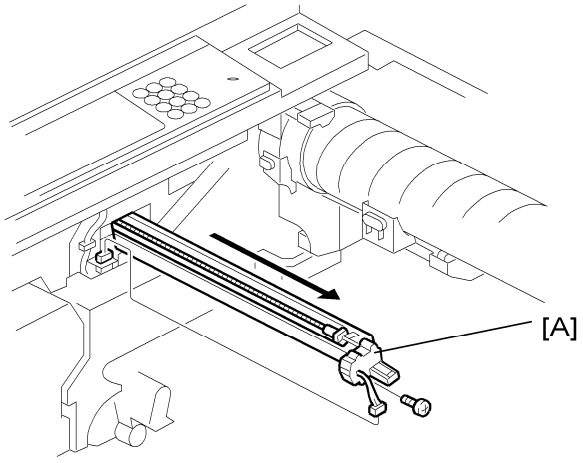
When using a development unit from another machine for test purposes, execute the following procedure.

1. Check the value of SP2220 (Vref Manual Setting) in both the machine containing the

test unit and the machine that you are going to move it to.

2. Install the test development unit, then input the $V_{REF}$ for this unit into SP2220.
3. After the test, reinstall the old development unit, and change SP2220 back to the original value.

## 4.6.2 CHARGE CORONA UNIT

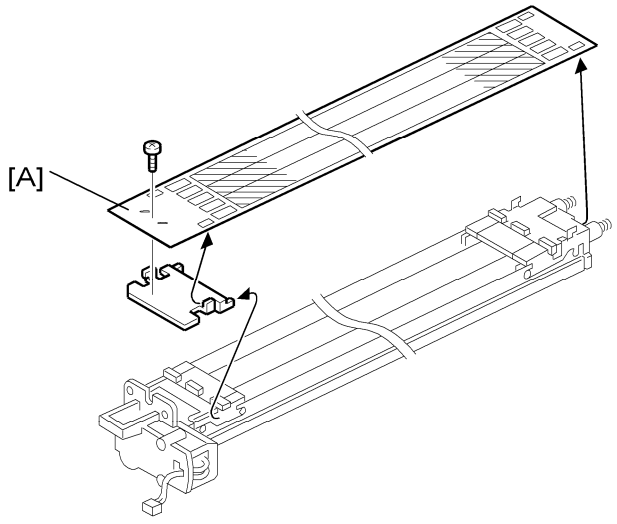



B246R941

- Remove the development unit. (☛ p.4-25)

1. Charge corona unit [A] (🔧 x 1, 🔩 x 1)

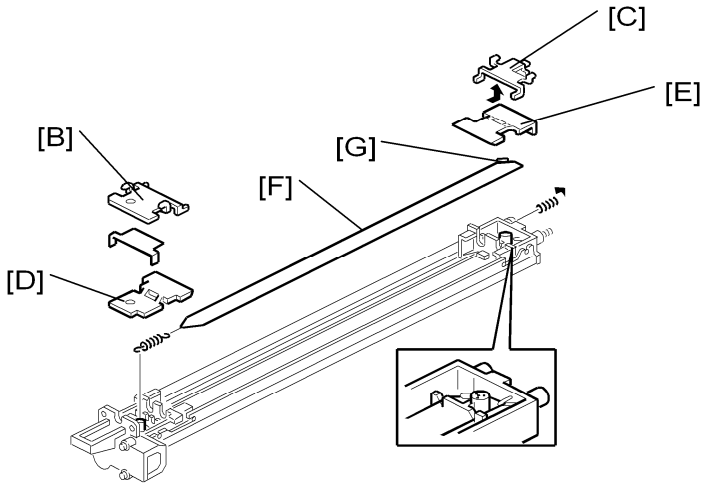
## 4.6.3 CHARGE CORONA WIRE AND GRID




B246R942

- Remove the charge corona unit. (☛ p.4-28)

1. Grid [A] (🔧 x 1)



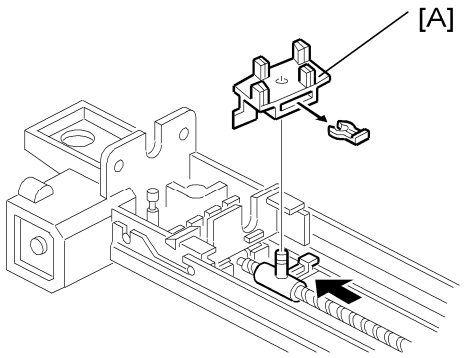

B246R943

2. Front bracket [B]
3. Rear bracket [C]
4. Front block cover [D]
5. Rear block cover [E]
6. Corona wire [F]
7. Disconnect the wire behind the grid bracket.

Important

- Never touch the charge corona wire with bare hands. Always protect it from dust, oil, etc.
- Never bend or knot the wire. Charge will not distribute evenly on a bent wire.
- Make sure that the wire seam [G] is as close as possible to the wire hook at the rear.
- At the front and back, make sure that the wire is threaded correctly into the grooves in the end blocks.
- After replacing the charge corona wire, make sure that the wire cleaner pads are engaged correctly with the wires.
- After replacing the wire, set SP2001-001 (Charge Roller Bias Adjustment – Applied Voltage for Image Processing) to the default.

## 4.6.4 CHARGE CORONA WIRE CLEANING PADS



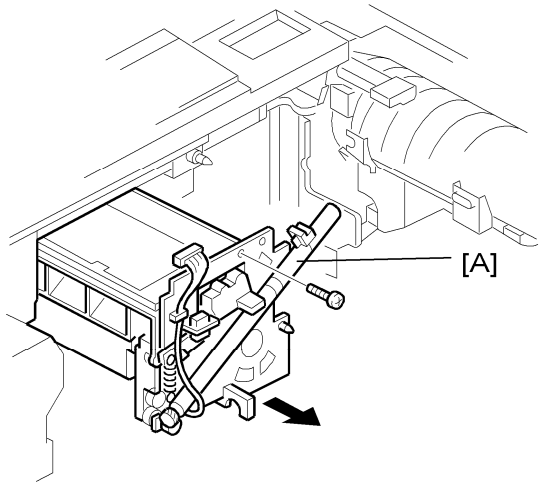

B246R944

Remove:

- Charge corona unit (☛ p.4-28).
- Charge corona wire and grid (☛ p.4-28)

1. Cleaning pad [A] ( x 1)

## 4.6.5 OPC DRUM REMOVAL

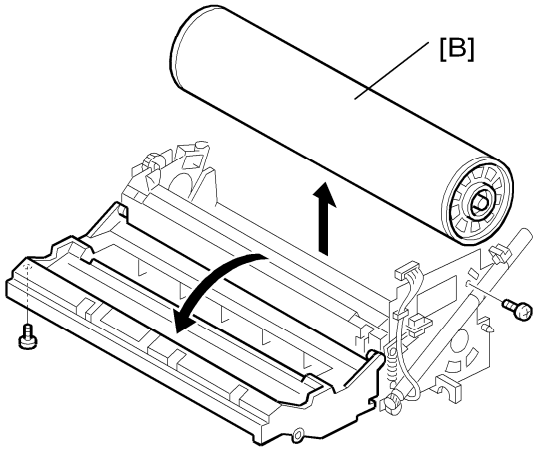



B246R945

Remove

- Development unit (☛ p.4-25).
- Charge corona unit (☛ p.4-28).

1. Drum unit [A] ( x 1, x 2)
   - Grasp the drum unit by the knob to remove it from the machine.



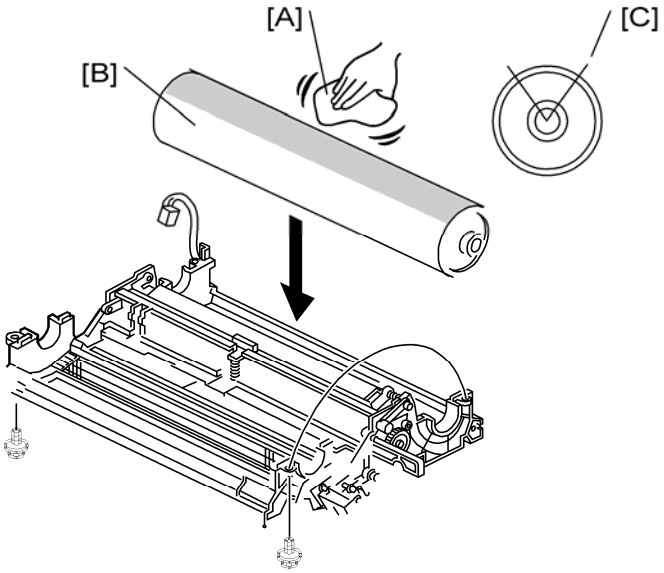

B246R946

2. OPC drum [B]
3. After replacing the drum, do the following SPs:
   - Set SP2001-001 (Charge Roller Bias Adjustment – Applied Voltage for Image Processing) to the default setting.
   - SP2962 (Adjustment of Drum Conditions), only if SP3901 (Auto Process Control) is on.

Important

- To avoid fingerprints on the surface of the OPC drum, never touch the surface of the drum with bare fingers.
- Never use alcohol to clean the surface of the OPC drum. Blow dry the OPC drum, then wipe clean with a clean, slightly damp cloth.
- Before installing a new drum, dust the surface of the OPC drum carefully with setting powder. (See below.)

## *Dusting the Drum Surface*




B246r947

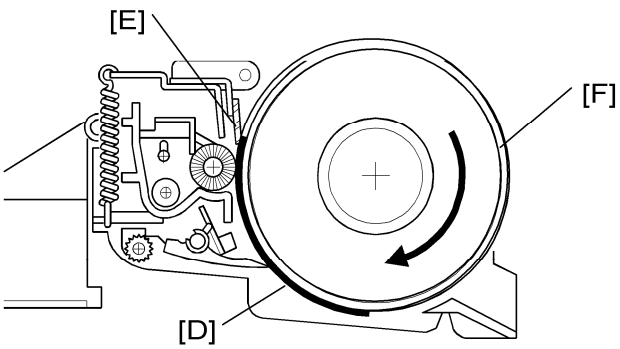
Important

- The surface of a new drum is less smooth, so you must apply Drum Setting Powder (P/N: 54429101) to the drum surface before installation.
- Failure to apply the drum powder before installation could damage the drum cleaning blade or scour the drum surface.

1. Apply the setting powder by tapping the powder bag [A] across the surface of the drum [B].
2. Cover the entire length of the drum over a 45-90 degree portion [C] (about 1/4 of the total drum surface). Apply enough powder so the area turns white.

Note

- If setting powder is not available, use waste toner instead of drum setting powder. However, this could cause dirty backgrounds on the first copies.



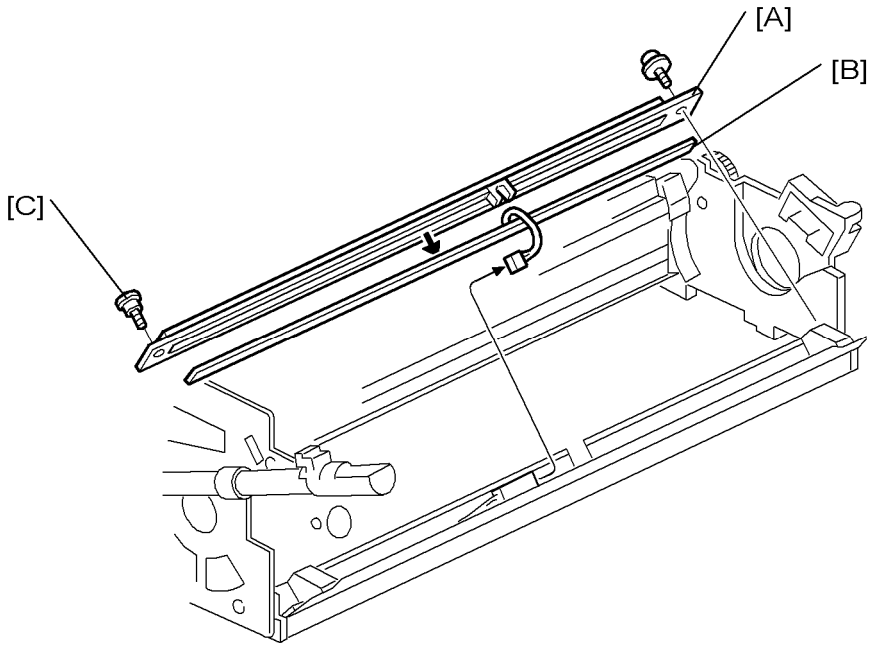

B246R948

3. Install the new drum in the OPC unit so that the powdered surface [D] faces the cleaning blade [E].
4. Rotate the drum once clockwise [F] until it stops again at the same position.

Important

- Never rotate the drum anti-clockwise.

## 4.6.6 PTL




Remove these parts:

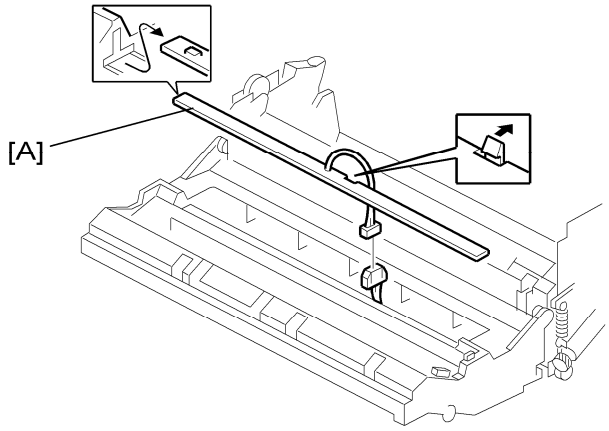
- OPC drum (☛ p.4-30)

1. PTL bracket [A] ( x 2)
2. PTL [B] ( x 1)

**Reinstallation**

- The shoulder screw [C] must be attached again at its initial location.

## 4.6.7 QUENCHING LAMP




B246R950

Remove:

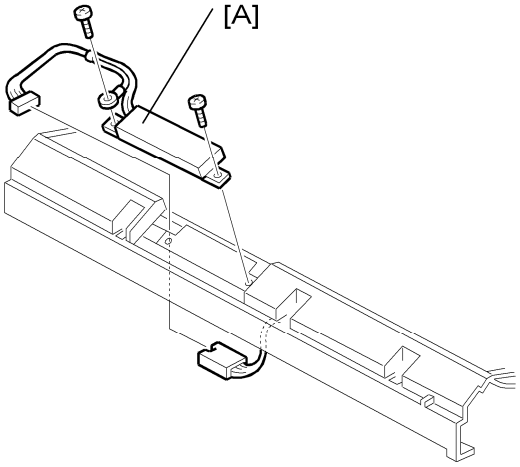
- OPC drum (☛ p.4-30).

1. Quenching lamp [A] (☞ x 1)
   - At the center, push back the hook to release the quenching lamp.

Note

   - Use only a blower brush to clean the quenching lamp.

## 4.6.8 DRUM POTENTIAL SENSOR



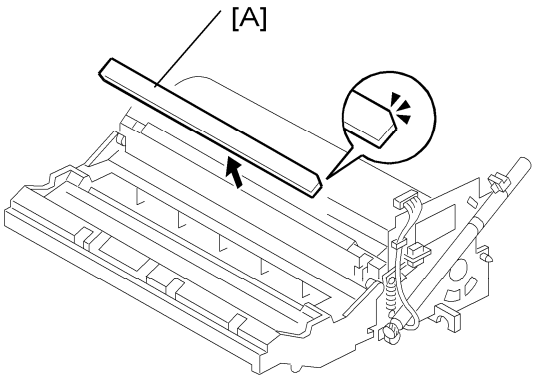

B246R951

Remove:

- OPC drum (☛ p.4-30).

1. Drum potential sensor [A] (☞ x 2, ☞ x 1)
2. After replacing the drum potential sensor, do SP2962 (Adjustment of Drum Conditions), only if SP3901 (Auto Process Control) is on).

## 4.6.9 CLEANING FILTER



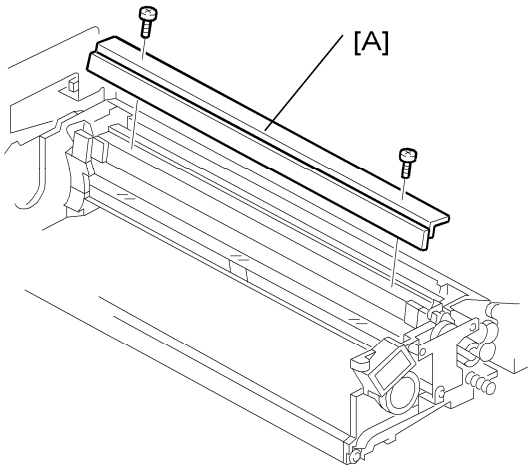

B246R952

Remove:

- OPC drum (☞ p.4-30)

1. Cleaning filter [A]

## 4.6.10 CLEANING BLADE




B246R953

Remove:

- OPC drum (☞ p.4-30).

1. Drum cleaning blade [A] (☞ x 2)

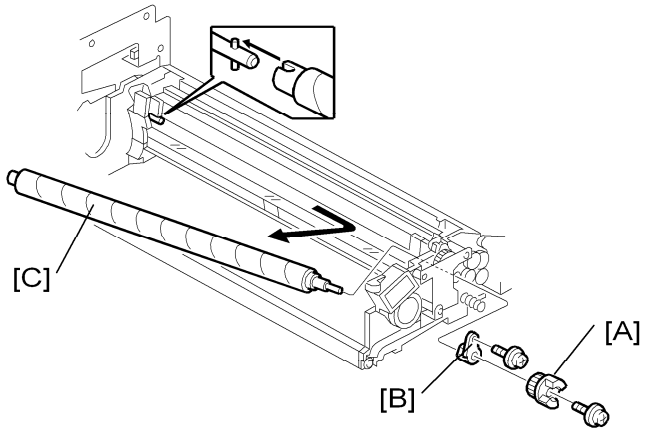
Important

- Clean the blade edge carefully with only a soft, clean cloth.
- Handle the blade carefully to avoid nicking its edge.
- New blades are treated with special setting powder, so avoid touching the edge of a new cleaning blade. If the edge of a new blade is accidentally wiped clean, dust it lightly with some toner before installing it.

**Drum Unit**

- Before installing a new blade, make sure that the blade side seals are not pinched by the blade.

## 4.6.11 CLEANING BRUSH




B246R954

Remove:

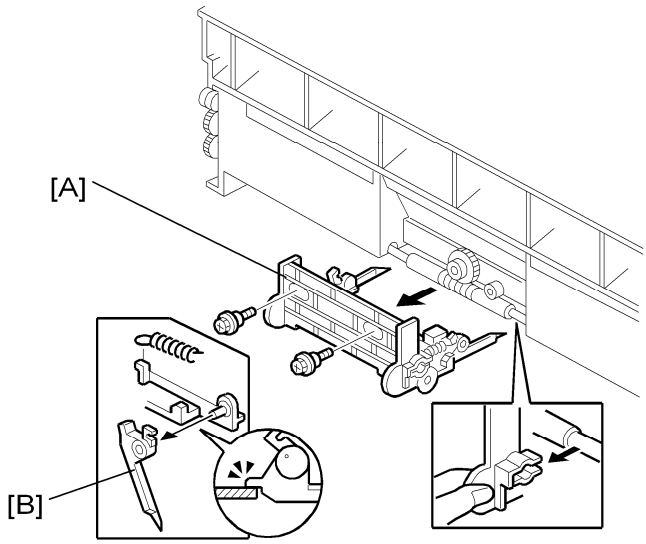
- OPC drum (☛ p.4-30)
- Drum cleaning blade (☛ p.4-35).

1. Coupling [A] ( x 1)
2. Inner bushing [B] ( x 1)
3. Cleaning brush [C]

Important

- Pull the shaft toward the rear to disengage the front of the shaft, then pull out.
- After replacing the cleaning brush, clean the ID sensor to make sure that it is clean and free of toner.
- Avoid touching the cleaning brush with bare hands.
- Check the entrance seals and confirm that they are not bent.

## 4.6.12 PICK-OFF PAWLS



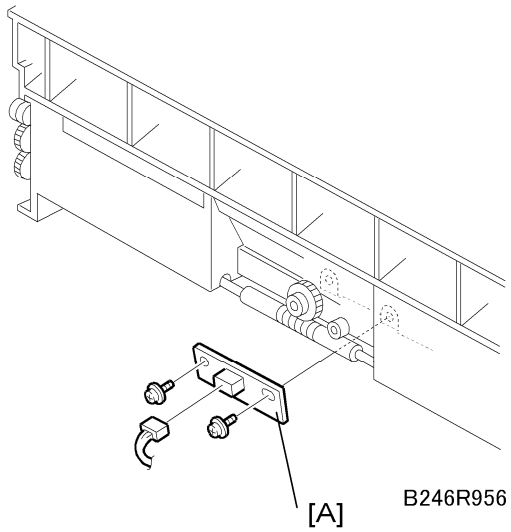

B246R955

Remove:

- OPC drum (☛ p.4-30)

1. Pick-off pawl bracket [A] (🔩 x 2)
2. Pick-off pawl [B] (spring x 1)

## 4.6.13 ID SENSOR




B246R956

Remove:

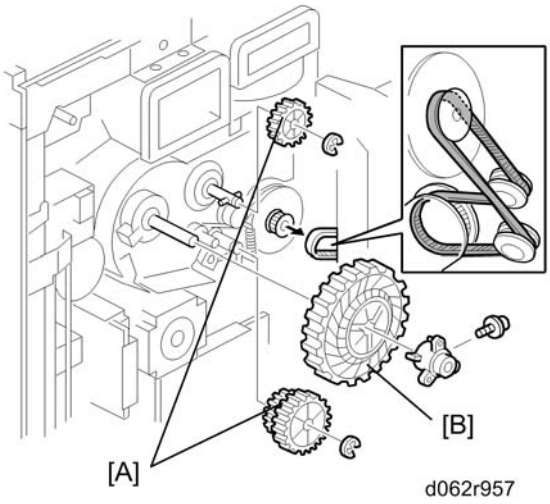
- OPC drum (☛ p.4-25)
- Pick-off pawls (☛ p.4-37)

1. ID sensor [A] (🔩 x 2, 🔌 x 1)

**Drum Unit**

2. After replacing the sensor, do the following SPs:
   - SP2962 (Adjustment of Drum Conditions), only if SP3901 (Auto Process Control) is on.
   - SP3001-002 (ID Sensor Initialization Setting).

## 4.6.14 DRUM MOTOR



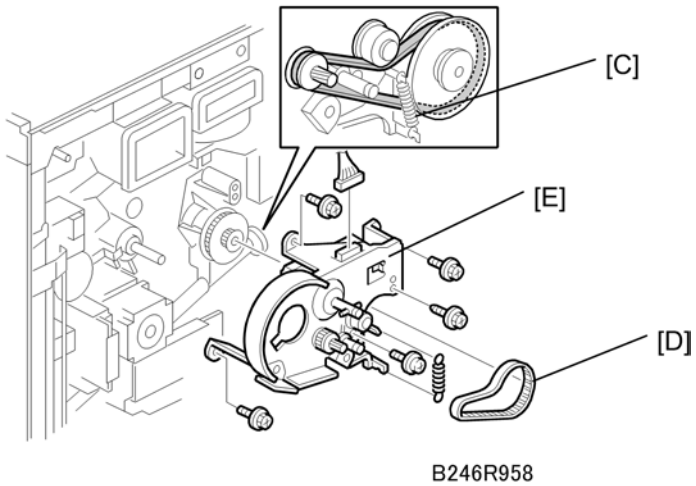

Remove:

- Rear covers (☛ p.4-8)
- Controller/IPU panel ( x 2) (not shown). The panel swings open like a door. You do not need to remove it.
- Flywheel ( x 3) (not shown)

1. Three gears [A] [B]( x 1, x 2, Timing belt x 1)

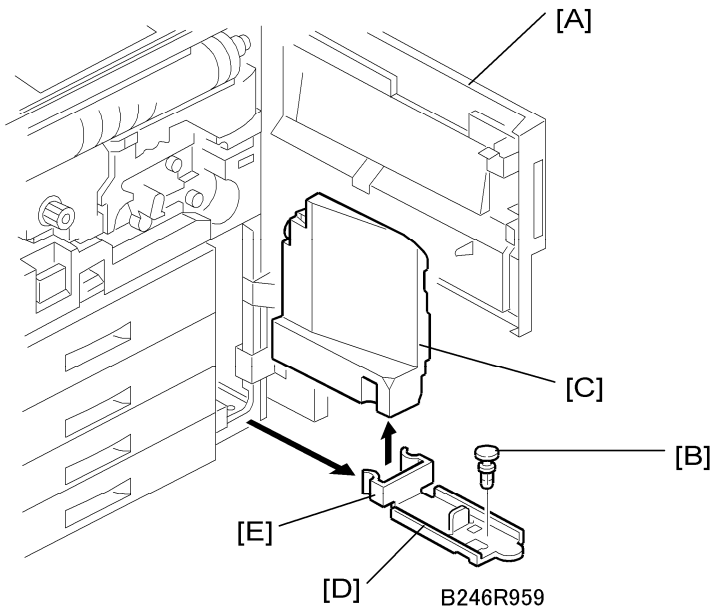
   Note

   - Gears [A] are different in each model.
   - D062 and D063 have black gears, but D065 and D066 have white ones.



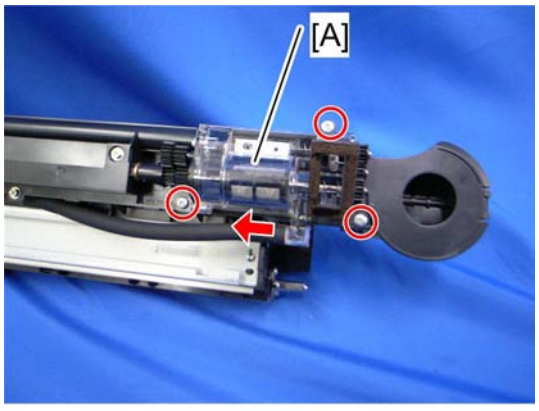
2. Spring [C]
3. Timing belt [D]
4. Drum motor [E] ( x 1, x 5)

## 4.6.15 TONER COLLECTION BOTTLE




1. Open the front door [A].
2. Remove the lock pin [B], then pull out the toner collection bottle [C] and its base [D].
3. Detach the bottle from the base clamp [E] and replace it.

## 4.6.16 TONER SEPARATION UNIT




d062r504

Remove:

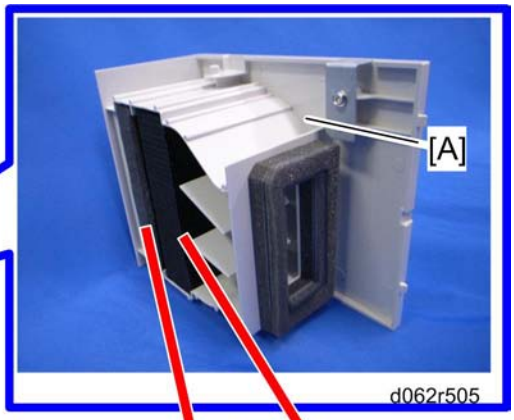
- Development unit( p.4-43 "Removal ")
- Pressure release tube, only for D066 ( p.4-43 "Developer Replacement")

**Drum Unit**

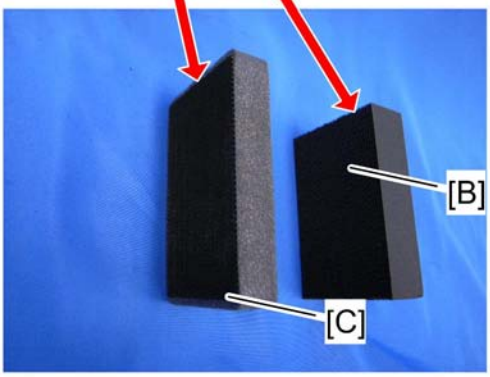
1. Toner separation unit [A] ( x 3, tube x 1)

## 4.6.17 OZONE FILTERS

d418i500



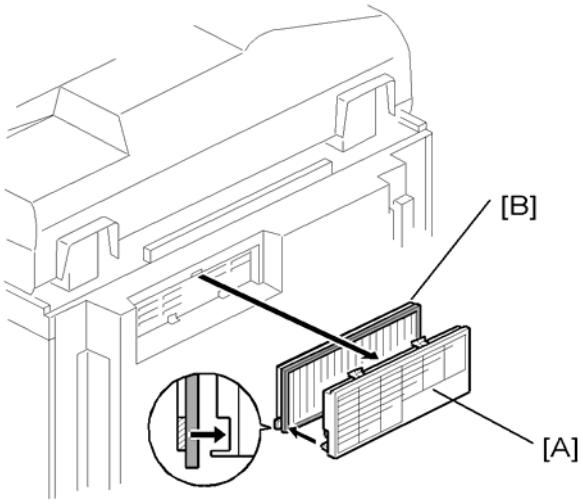

d062r505




d062r506

1. Filter cover [A] ( x 1). (The filter cover is on the back of the machine.)
2. Ozone filter (right) [B]
3. Ozone filter (left) [C]

## 4.6.18 OPTICS DUST FILTER

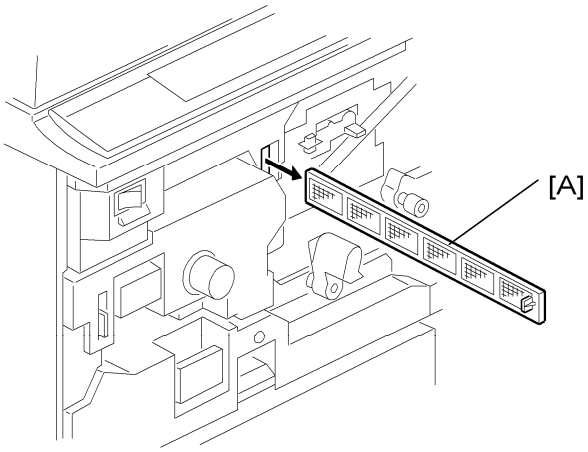



B246R962

1. Filter cover [A]
2. Optics dust filter [B]



## 4.6.19 INTERNAL DUST FILTER



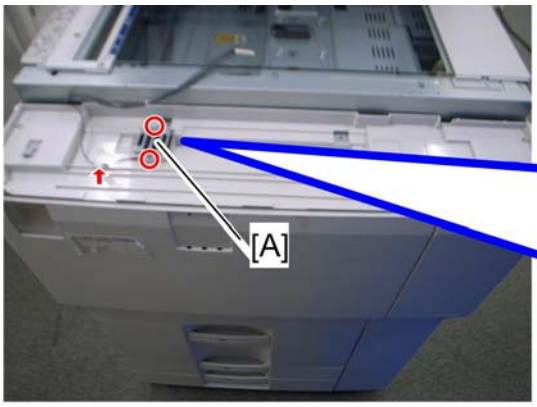

B2246R963

1. Open the front door.
2. Pull the toner bottle holder out and swing the toner bottle holder to the right.
3. Remove the PCU inner cover.
4. Pull out the internal dust filter [A].

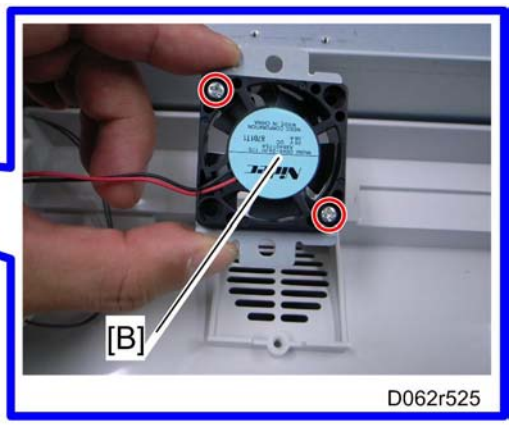
## 4.6.20 TONER COOLING FAN

1. Operation panel (☛ p.4-6)

**Drum Unit**




D062r524




D062r525

2. Toner cooling fan unit [A] ( x 2, x 1).
3. Toner cooling fan [B] ( x 2).

Note

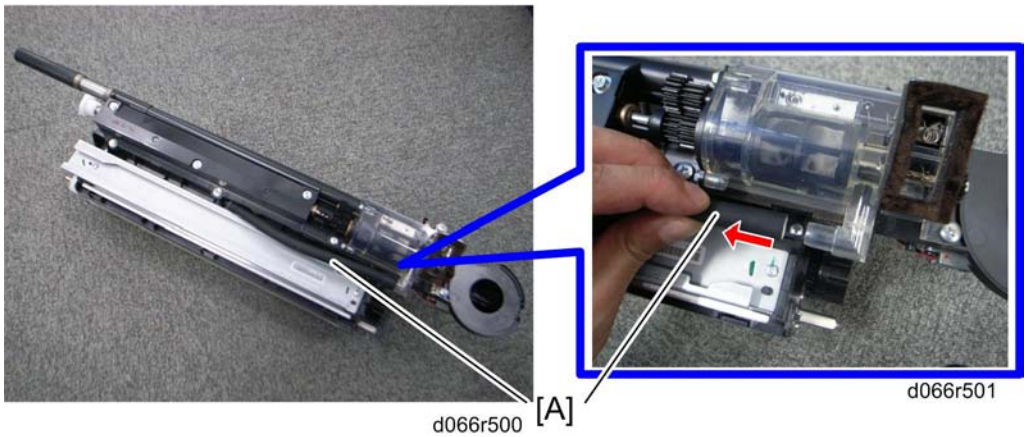
- Make sure the decal is facing down when reinstalled.

# 4.7 DEVELOPMENT UNIT

## 4.7.1 DEVELOPER REPLACEMENT

### *Preparation*

For **D066 only**, the pressure release tube [A] should be removed before removing the development unit.



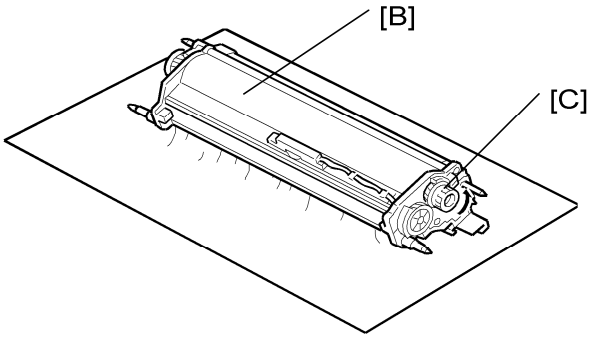

1. Development unit (☛ p.4-25 "Development Unit Removal")
2. Pressure release tube [A]

### *Removal*

1. Remove the toner hopper [A] (🔩 x 2)

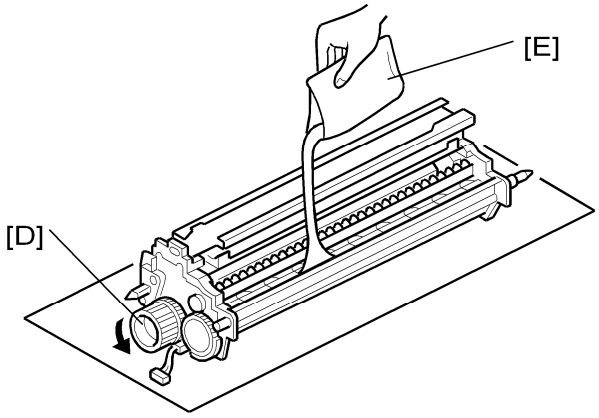

2. Rotate the toner hopper very slightly (10° to 20°) as you slide it up to remove it. To avoid toner spill, hold the hopper level as you remove it

**Development Unit**




B246R965

3. Hold the development [B] unit over a large sheet of paper, then slowly turn it upside down to empty the developer.
4. Turn the knob [C] through several complete rotations to empty all the developer in the development unit.
5. Clean the development sleeve and its side seals.
6. Turn the unit over and set it on another sheet of clean paper.
7. Note the developer lot number printed on the top edge of the bag. You will need the lot number when you input SP2801-2.
8. Clean the development roller shaft with a clean cloth and blower brush.




B246R966

9. While turning the knob [D] slowly, pour in one pack of developer [E] from one end of the development unit to the other.
10. Make sure that the developer is evenly distributed.
11. Continue to turn the knob several times to prevent clumping in the developer.

## *Reinstallation*

1. Hold the hopper perfectly level when re-attaching it, to prevent toner from entering the rails of the development filter.

Note

- Automatic process control starts automatically after the machine is switched on, so after replacing the developer, you should enter the SP mode and initialize the developer with SP2801 as soon as possible after switching the machine on.

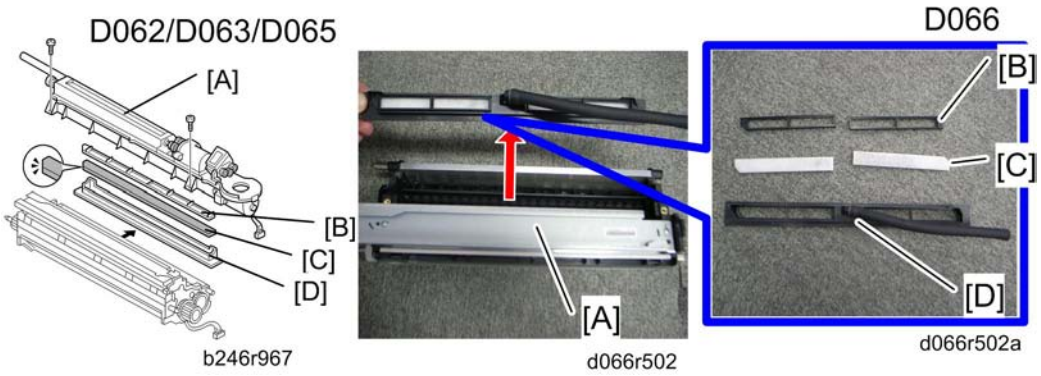
2. Do SP2801 (TD Sensor Initial Setting).
   - Open the front door.
   - Turn the machine on

   Note

   - If you open the front door, auto process control will not start. SP2801 must be done before auto process control starts.
   - Push Clear Modes
   - Enter the SP mode.
   - Close the front door.
   - Push "System SP" on the touch-panel.
   - Push ②⑧⓪①② to select SP2801-002.
   - On the soft keys, enter the lot number from the pack of developer, then push #.
   - Do SP2801-1.



## 4.7.2 DEVELOPMENT FILTER




Remove:

- Development unit (☞ p.4-25 "Drum Removal")
- Pressure release tube, only for D066 (☞ p.4-43 "Developer Replacement")

1. Toner hopper [A]
2. Filter bracket top [B]
3. Development filter [C]
4. Filter bracket [D]
   - Make sure that the rails where the development filter bracket [C] connects to the development unit are clean and free of toner. If there is any toner in the rails, wipe

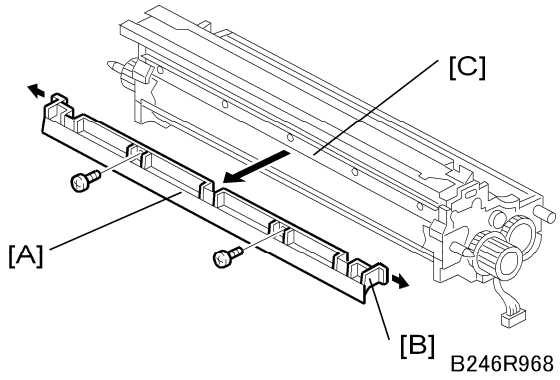
them clean.

- When installing a new filter, set the filter inside the filter case then place the case on top of the filter bracket [C]. The filter case closes any gaps at the edges of the filter to prevent toner scatter.

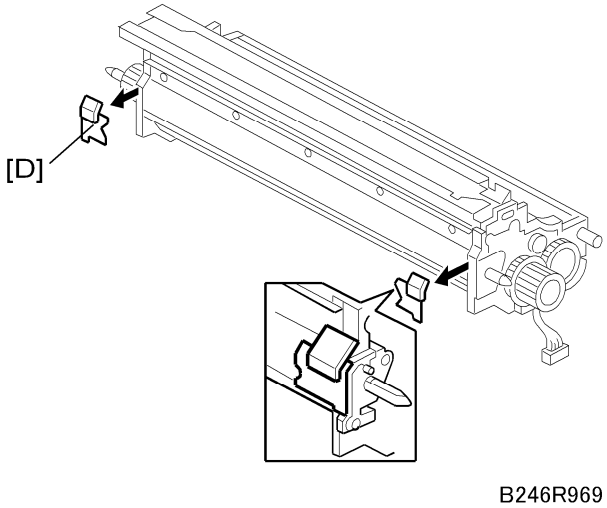
## 4.7.3 ENTRANCE SEAL AND SIDE SEALS

### *Removal*

- Development unit (☛ p.4-25 "Development Unit Removal")



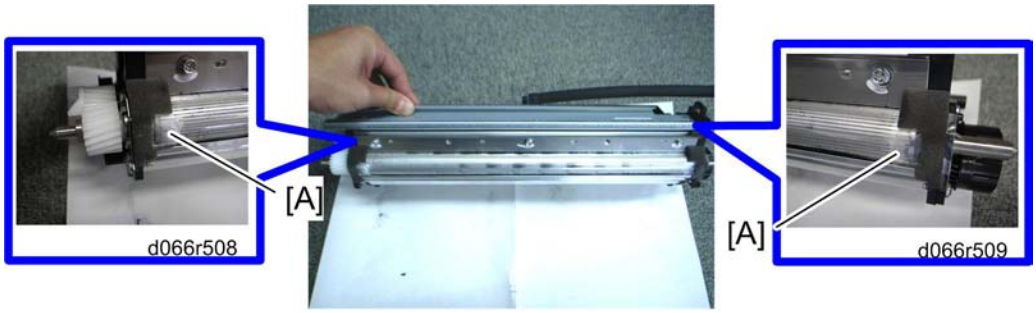

1. Entrance seal bracket [A] (🔩 x 2)
2. After removing the screws, press in the catches on either end [B] to release the entrance seal bracket, then remove it.
   - Clean the entrance seal bracket before re-installing it.
   - When re-installing, make sure the tabs [C] and notches are engaged at four locations.



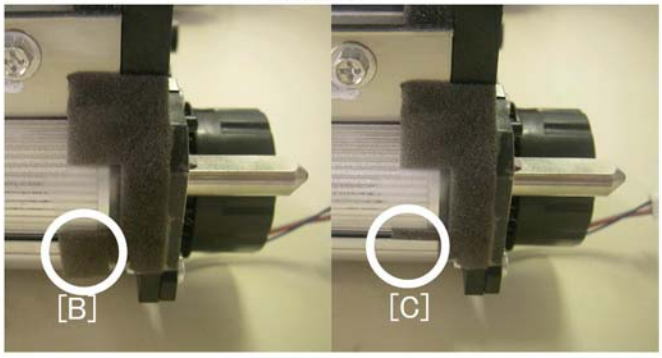

3. Side seals [D]
   - Remove the side seals from both ends, clean the area, and replace with new

seals.

### *Reinstalling*



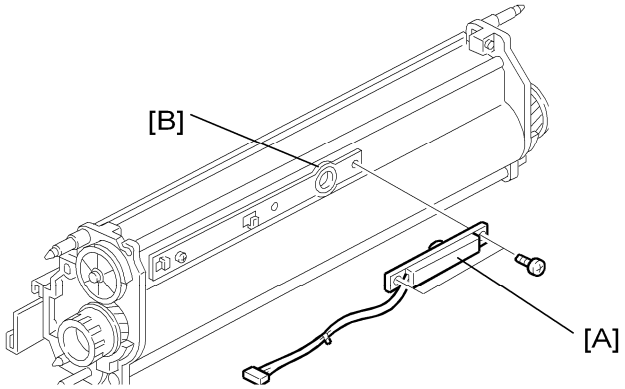

D066r507




d066r510a

1. Attach the seals [A] as shown in the above diagrams.
2. Reinstall the entrance seal bracket.
   - [B] is incorrect.
   - [C] is correct.

## 4.7.4 TD SENSOR




B246R970

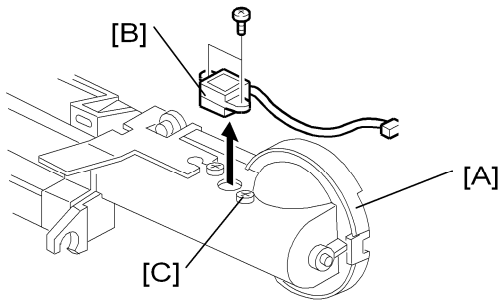
Remove:

- Development unit (☞ p.4-25 "Development Unit Removal")

1. TD sensor (🔩 x 1) [A]

2. Before installing a new TD sensor, clean the TD sensor port [B].
3. After replacing the TD sensor, do these SPs:
   - SP2801 TD Sensor Initial Setting
   - SP2962 Auto Process Control (only if SP3901 – Auto Process Control – is on).

## 4.7.5 TONER END SENSOR



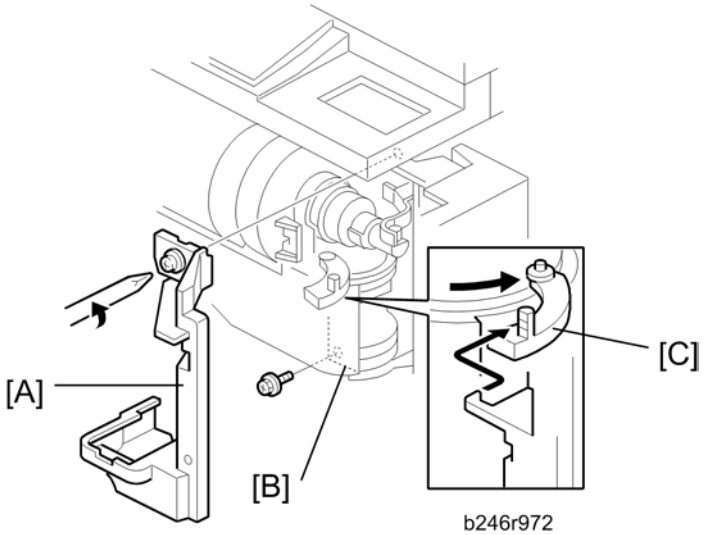
B246R971

Remove:

- Development unit (☛ p.4-43 "Removal ")

1. Toner hopper [A] (🔩 x 2)
2. Toner end sensor [B] (🔩 x 2)
   - Remove the screws carefully to avoid stripping the holes.
   - Before installing a new toner end sensor, clean the toner end sensor port [C].

## 4.7.6 TONER SUPPLY MOTOR



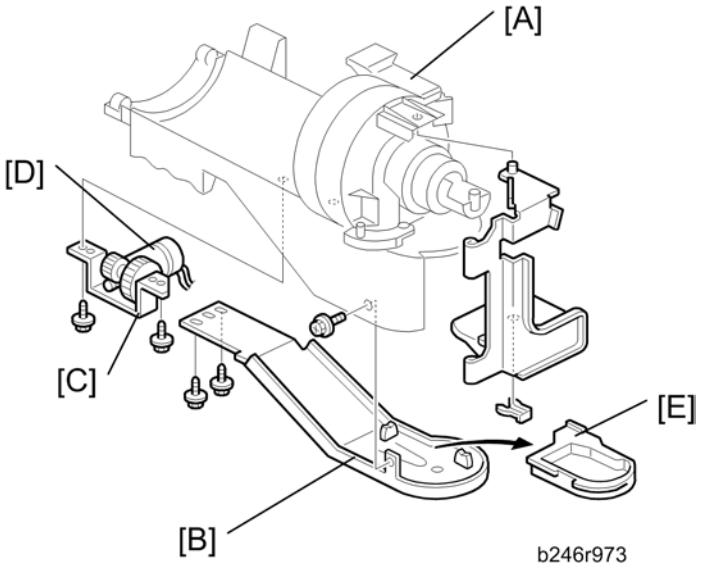
b246r972

1. Open the front door.
2. Swing the toner unit out of the machine and remove the toner bottle.
3. Bracket [A] (🔩 x 1)

4. Lock plate [B] ( x 1)

Note

- After re-installation, the tab [C] should be behind the stay and its pin below should be in the open track below.

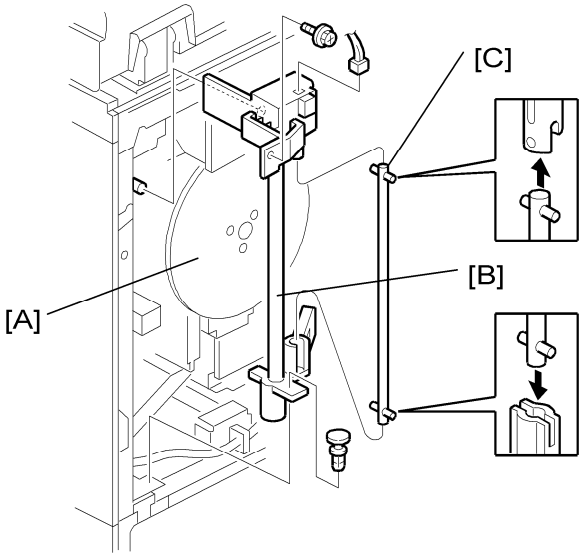



1. Toner bottle unit [A] ( x 1, harness x 1, x 1)
   - The c-clamp is under the toner unit.
   - Lift the toner bottle unit off the pegs and lay it on a piece of newspaper to avoid toner spill.
2. Bottom plate [B] ( x 3, harnesses x 2)
   - 2 screws on the bottom, 1 screw on the side.
3. Toner supply motor bracket [C] ( x 2)
4. Toner supply motor [D] ( x 2)

## *Cleaning Requirement*

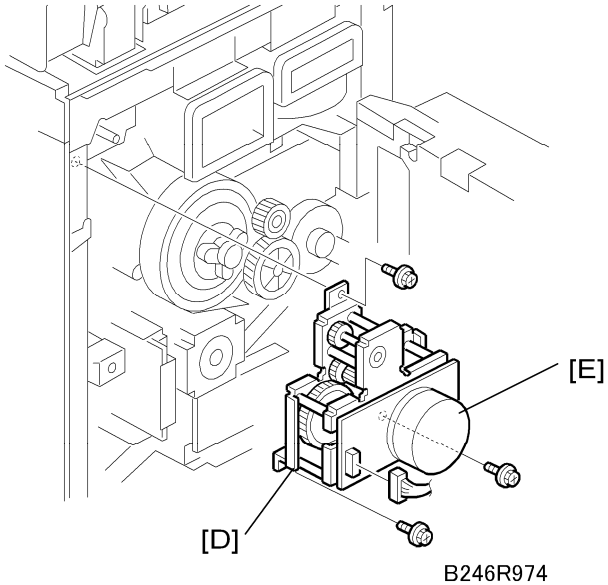
The toner pan [E] must be cleaned at every PM interval (300 K).

## 4.7.7 DEVELOPMENT MOTOR




B246R975

1. Flywheel [A] ( x 3)
2. Waste toner pump tube [B] ( x 1, x 1)
3. Drive rod [C]
   - Lift the toner pump tube to disengage the drive rod, pull out the rod, and push the rubber tube aside.

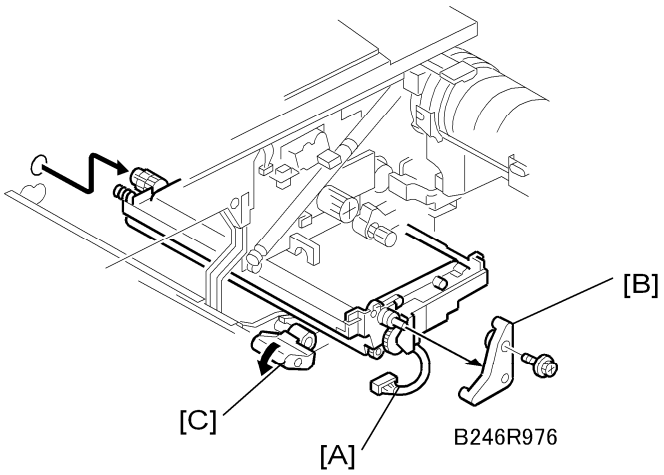



B246R974

4. Development motor bracket [D] ( x 3, x 1)
5. Development motor [E] ( x 4)

# 4.8 TRANSFER BELT UNIT

## 4.8.1 TRANSFER BELT UNIT REMOVAL



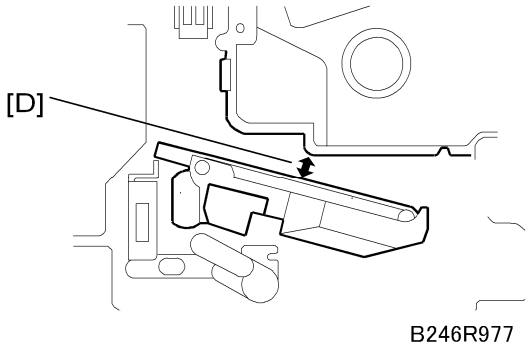

Note

- Before you begin, spread a mat or some clean paper on the floor where you intend to set the transfer belt unit.

Remove:

- OPC drum unit (☛ p.4-30)

1. Disconnect the transfer belt unit [A] ( x 1).
2. Remove the transfer belt unit stay [B] ( x 1).
3. While supporting the transfer belt unit with your hand, turn the release lever [C] counter-clockwise to release it, then pull the transfer belt unit out of the machine.



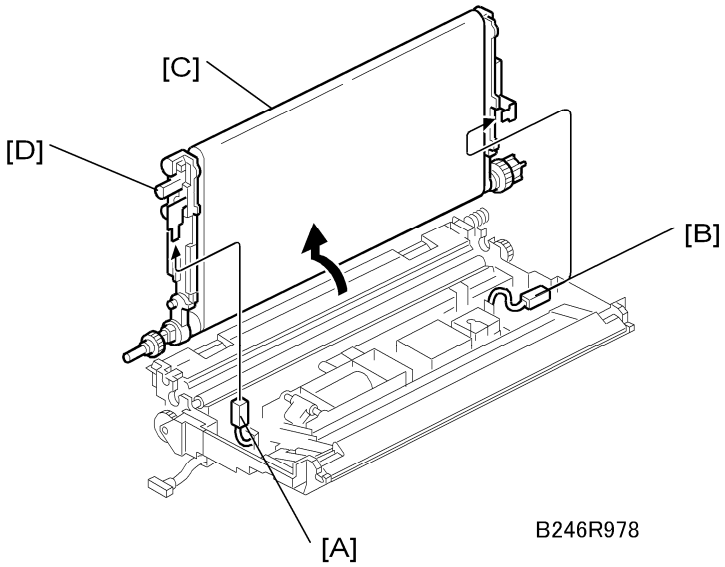

Important

- The transfer belt unit can be removed without removing the OPC drum unit.
- However, the transfer belt unit must be removed carefully to avoid scratching the surface of the transfer belt on the OPC drum unit [D].

**Transfer Belt Unit**

- Avoid touching the belt with bare hands.

## 4.8.2 TRANSFER BELT REMOVAL



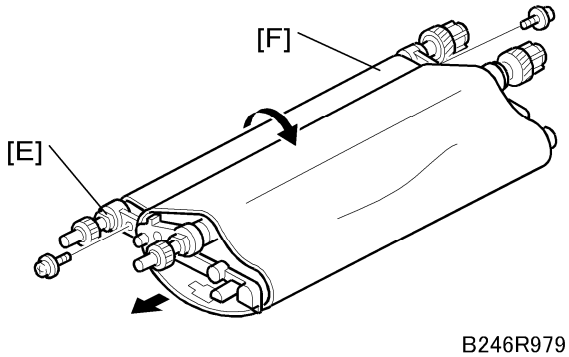

Remove:

- Transfer belt unit (☛ p.4-51)

1. Disconnect the ground terminal [A] and transfer current terminal [B] ( x 2). While doing this, hold the transfer belt unit [C] by its knobs [D].
2. Raise and stand the belt perpendicular to the unit and remove it.

Note

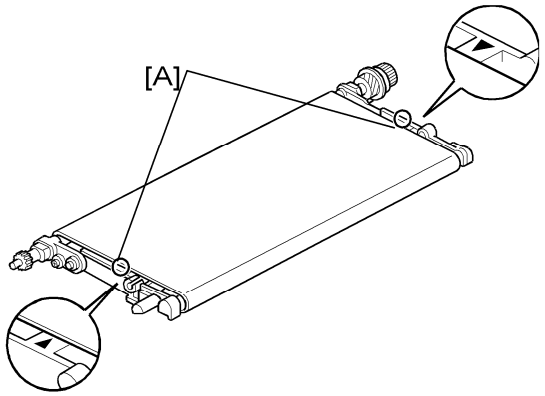
- To avoid scratching the belt on the guide, never rotate the belt unit farther than 90 degrees.




3. Release the drive roller [E] ( x 2).
4. Press in on the drive roller to collapse the unit into a “U” shape [F].
5. Remove the belt and replace it.

## *Re-installation*

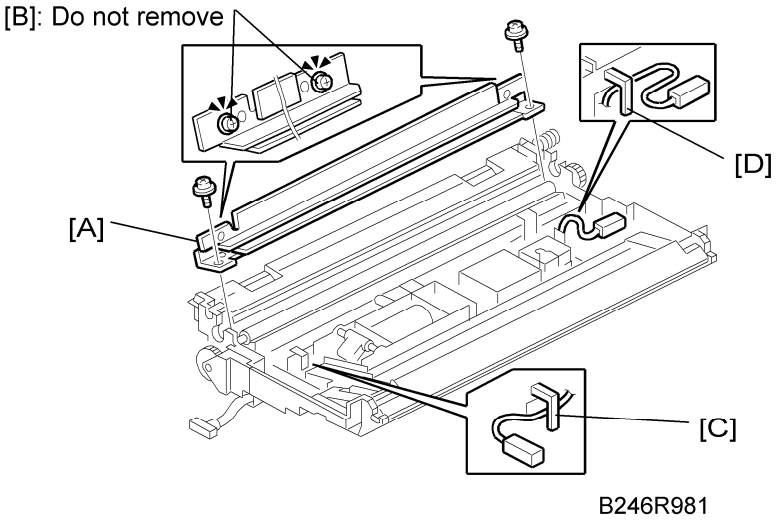
- Before re-assembling the transfer belt unit, use a clean cloth and alcohol to clean the contact points of the drive roller, idle roller, and transfer roller. Make sure these areas are clean and free from toner, paper dust, etc.
- Never touch the surface of the belt with bare hands and never apply alcohol to the surface of the belt. Clean it with a blower brush. Check the underside of the transfer belt and clean with the blower brush.




B246R980

- When re-assembling the transfer belt unit, make sure that the transfer belt is centered between the triangular marks [A] on either side of the unit.
- After re-assembly, make sure that the transfer belt is inside the transfer current terminal. The belt could be cut if it is not positioned correctly.
- Confirm that both the ground and transfer current terminal are connected and that the harnesses are not touching the release lever.
- After re-installing the transfer belt unit, turn the belt and confirm that the toner collection coil turns.
- The transfer belt and transfer roller cleaning blade must always be replaced together.

## 4.8.3 TRANSFER ROLLER CLEANING BLADE




Remove:

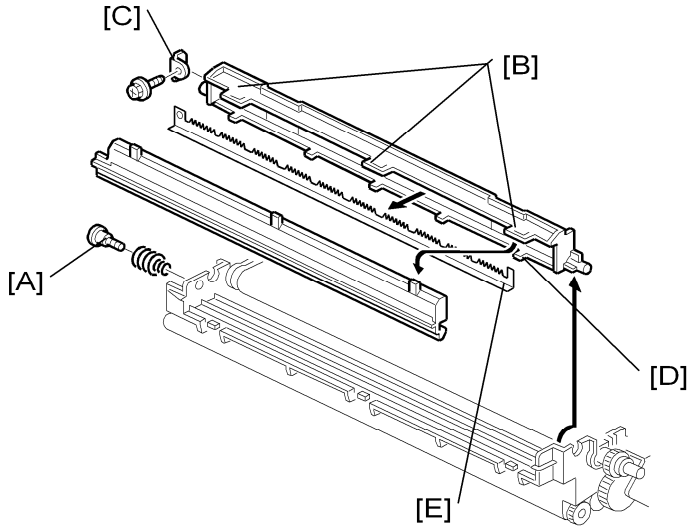
- Transfer belt unit (☛ p.4-51)
- Disassemble the transfer belt unit (☛ p.4-51)

1. Transfer roller cleaning blade [A] ( x 2, x 2)

Important

- Never remove the inner lock screws [B] of the transfer roller cleaning blade.
- When re-assembling, make sure that the clamps [C] and [D] are arranged as shown above to avoid contact with the release lever.
- The transfer roller cleaning blade should always be replaced when the transfer belt is replaced.
- Never touch the edge of a new transfer roller cleaning blade. The edge of the blade is dusted with setting powder. If the setting powder is removed accidentally, dust the edge of the blade with toner. This is especially important when only the transfer roller cleaning blade must be replaced without replacing the transfer roller.
- Work carefully around the transfer power pack located inside the transfer belt unit, especially when cleaning with a vacuum cleaner, to avoid damaging the power pack with static electricity.

## 4.8.4 DISCHARGE PLATE



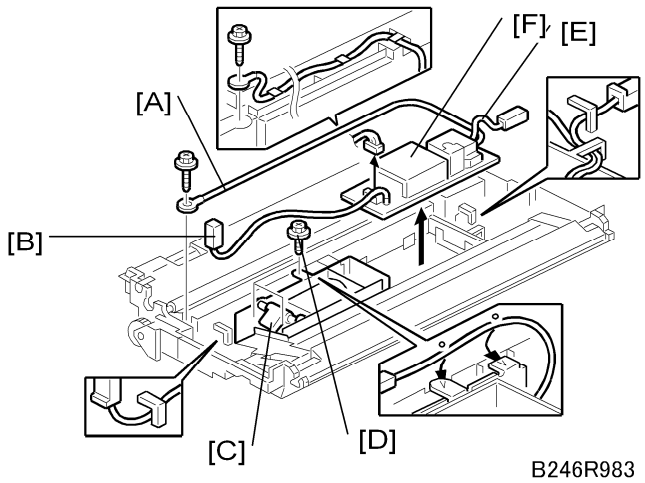

B246R982

1. Remove the transfer belt unit (☛ p.4-51)
2. Remove the shoulder screw and spring [A].
3. Rotate the discharge unit up, then lift it straight up to remove it.
4. Disconnect the three large tabs [B].
5. Remove the bracket [C] (🔩 x 1).
6. Disconnect the 6 small seal case tabs [D].
7. Remove the discharge plate [E].

### *Reinstallation*

1. Set the discharge plate and make sure that it is perfectly flat before re-connecting the tabs.
2. Before re-attaching the bracket [C], make sure that all the tabs are connected.

## 4.8.5 TRANSFER POWER PACK




Remove:

- Transfer belt unit (p.4-51)

1. Wire ( x 1) [A] (all wire guides)
2. Ground terminal wire [B] (wire guide x 1)
   - This terminal wire does not disconnect from the power pack.
   - Loosen the two left screws of the transfer belt lift solenoid [C], and remove the top screw [D] to free the ground terminal wire.
3. Transfer current terminal wire [E] (wire guides x 2)
4. Transfer power pack [F] ( x 1)
   - Disconnect the two standoffs on the right edge of the power pack and remove.

### *Re-installation*

- Confirm that the left edge of the power pack is below the tabs on the left.
- Confirm that the transfer current terminal wire is below the wire guides on the right.
- Pass the ground terminal wire under the top connector of the solenoid bracket and tighten all the screws of the solenoid bracket.
- Make sure the wire is below all the wire guides at the top.

# 4.9 FUSING UNIT

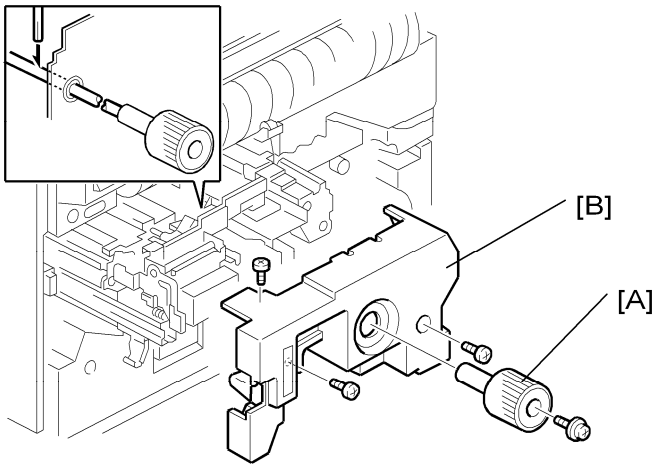
**⚠CAUTION**

- Switch off the machine, remove the plug from the power source, then allow sufficient time for the fusing unit to cool before you remove it from the machine.

## 4.9.1 FUSING UNIT REMOVAL

Note

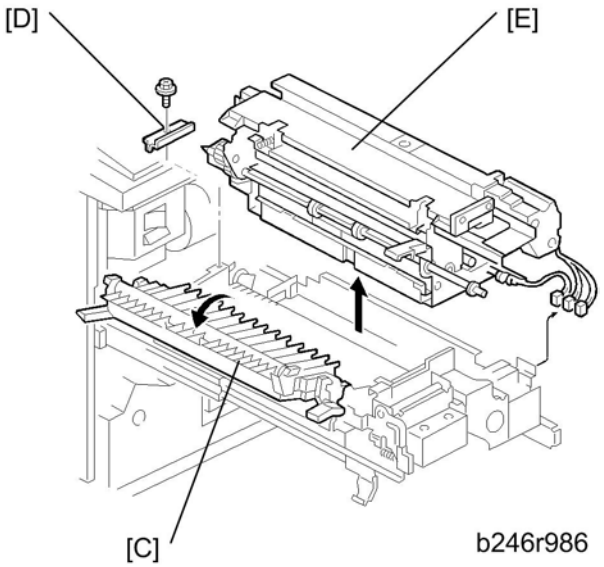
- Before you begin, spread a mat or some clean paper on the floor where you intend to set the fusing unit.




B246R984

1. Open the front door.
2. Pull out the transfer unit.
3. Knob [A] ( x 1)
   - Open D3 and D4 until you can see the hole in the shaft.
   - Insert the tip of a screwdriver into the hole of the shaft to hold it in position as the knob is turned to remove or install it.
4. Inner cover [B] ( x 3)
   - Pull the fusing unit release lever, then pull the unit out on the rail supports.
   - At reassembly, make sure that the harness of the web drive motor is not pinched by the inner cover.

**Fusing Unit**

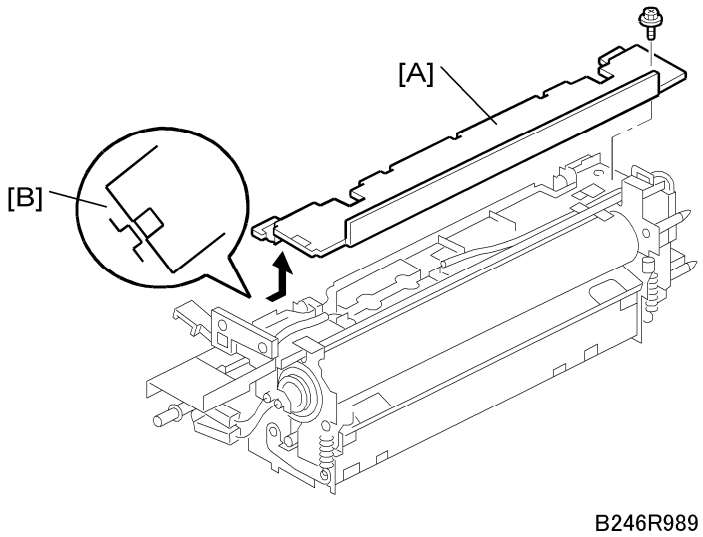



5. Open the exit separation pawl assembly [C].
6. Stopper bracket [D] ( x 1)
7. Fusing unit [E] ( x 2, x 2)

Important

- Support the bottom of the fusing unit with your hand as you remove it.

## 4.9.2 FUSING UNIT THERMISTORS AND THERMOSTATS




- Remove the fusing unit ( p.4-57)

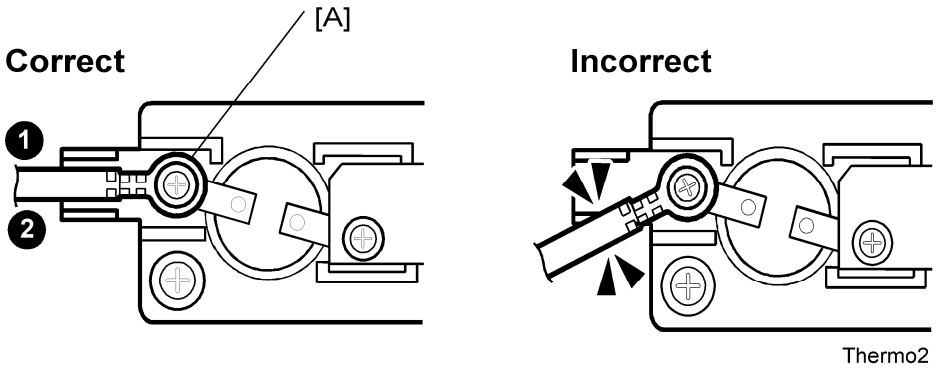
1. Upper cover [A] ( x 1)
2. Press in on the internal pawls [B] to release them then remove them.

Important

- Make sure that the pawls [B] engage correctly when you reinstall the unit.

The thermistor-thermostats are replaced as one unit. A disassembly procedure is not required.

### *Reinstallation*




Thermo2

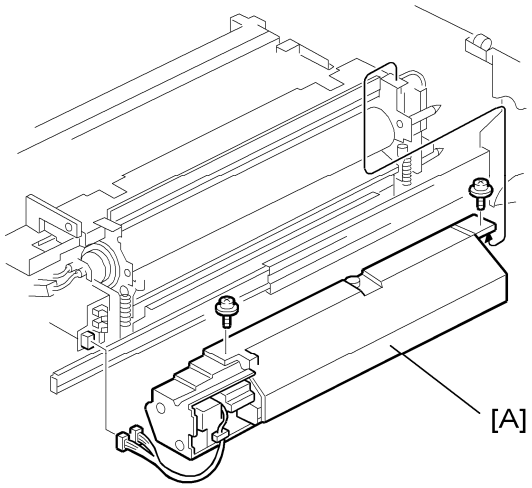
- To prevent damage to a thermostat, never touch its detection surface.
- Place the end of the thermostat harness that has the round lead [A] in between the two ribs ❶, ❷ in the bracket.
- Tighten the screw for the round lead [A] as tight as possible without damaging the screw or screw hole.

Important

- If the harness is not positioned between the between the bracket ribs ❶, ❷ (as shown under "Incorrect" below), this could cause an error (SC542 or SC545).

## 4.9.3 WEB CLEANING ROLLER

### *Web Unit Disassembly*

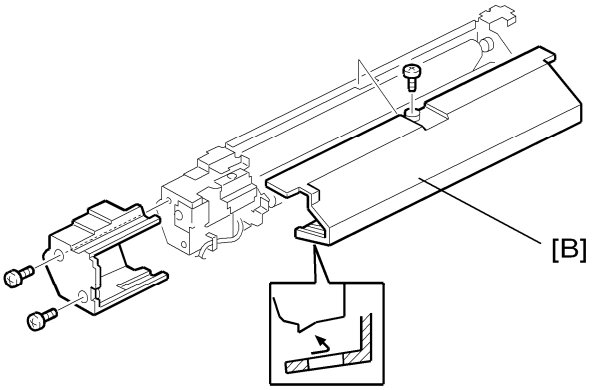



B246R993

1. Open the front door and pull out the fusing unit on its support rails.

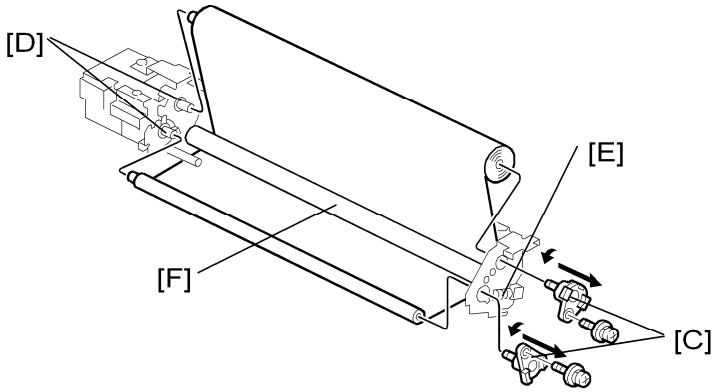
**Fusing Unit**

2. Web unit [A] ( x 2, x 2)
   - The web unit can be removed without removing the fusing unit from the machine.




B246R992

3. Upper cover [B] ( x 1)
   - Rotate the cover down slightly to remove.



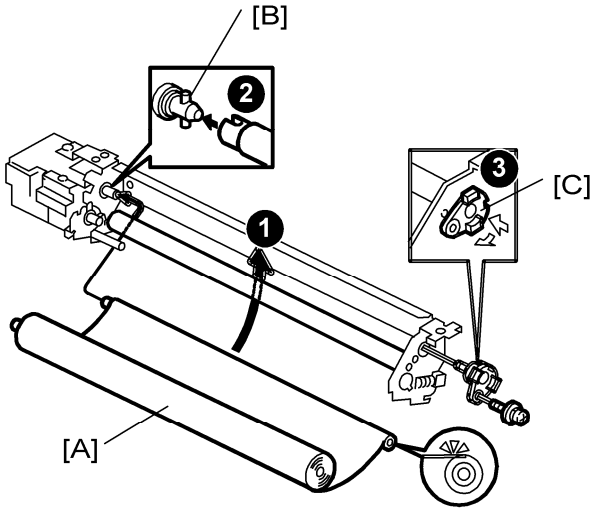

B246R994

4. Web shafts [C] ( x 2)
5. Remove the web cleaning rollers from the shaft driver pins [D].
6. Web bushing [E] (spring x 1)
7. Cleaning roller [F]

## *Reinstallation*

- After replacing the web with a new one, you must execute SP1902-001 (Fusing Web Used Area Display/Setting) to reset the web consumption count to zero. This SP code must be executed to release SC550.
- Be sure to print an SMC report before executing Memory All Clear (SP5801). After executing SP5801, be sure to re-enter the value recorded for SP1902-001 in the SMC report.

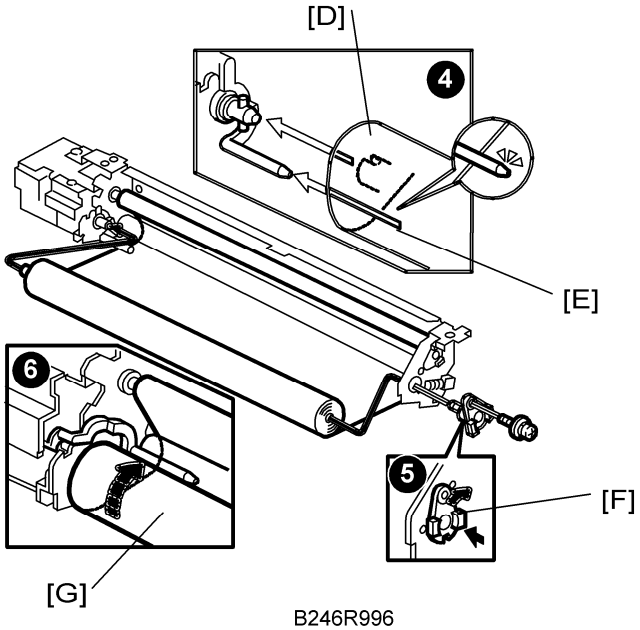
### *Web Unit Re-assembly*




B246R995



1. Attach the cleaning roller [A]
   - Insert the end of the web into the slot ❶.
2. Insert the drive pins [B] into the web shaft ❷.
3. After installing bushing [C], rotate the shaft right to lock it, then attach the lock screw ❸.




B246R996

4. Set the web [D] under the feeler [E] of the web end sensor ❹.
5. Attach bushing 2 [F] ❺.
6. Attach the new web roll [G] and wind it tight so no slack remains ❻.

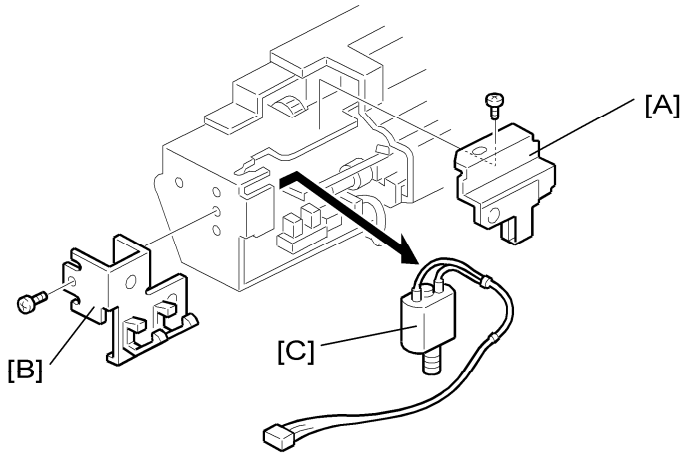
**Fusing Unit**

Important

- Before reassembling the machine, confirm that 1) there is no slack in the web roll, 2) the web is below the feeler of the web end sensor.

7. Attach the upper cover.
8. After installing a new web roll, reset SP1902-001 to zero.

## 4.9.4 WEB MOTOR AND WEB END SENSOR

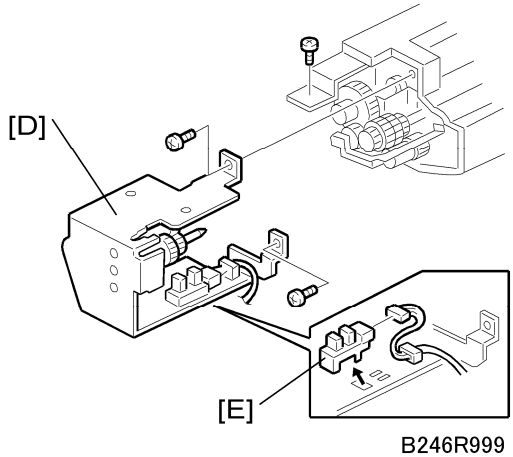



B246R997

Remove:

- Web unit and end cover (☛ p.4-59 "Web Unit Disassembly")

1. Bracket [A] ( x 1)
2. Web motor positioning bracket [B] ( x 1)
3. Web motor [C]



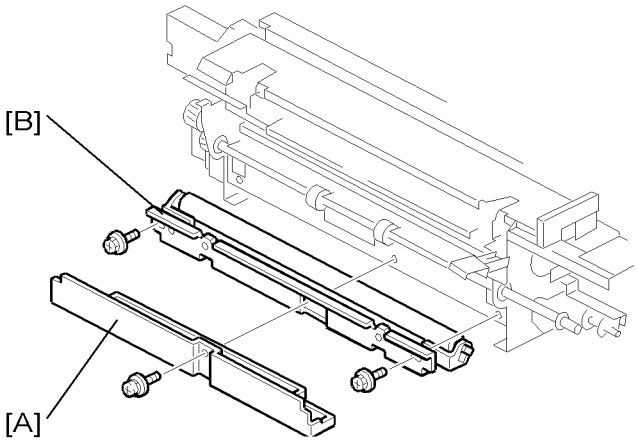

B246R999

4. Web motor/sensor mount [D] ( x 3)
5. Web end sensor [E] ( x 1, harness x 1)

### *Reinstallation*

- Make sure that the harness of the web driver motor is not pinched by the fusing inner cover

## 4.9.5 PRESSURE ROLLER CLEANING UNIT




B246R1001

Remove:

- Fusing unit (☛ p.4-57)

1. Cover [A] (🔩 x 1)
2. Cleaning roller [B] (🔩 x 2)
3. Cleaning roller [C] (🔩 x 1)

### *Reinstallation*

- When attaching the lower cover of the pressure roller cleaning roller, make sure that the tab [D] engages with the groove [E].
- If the bushings are noisy after replacement, lubricate them on both ends and the holes where the bushings are attached with Barietta Grease L553R.

## 4.9.6 FUSING LAMPS, HOT ROLLER, AND PRESSURE ROLLER

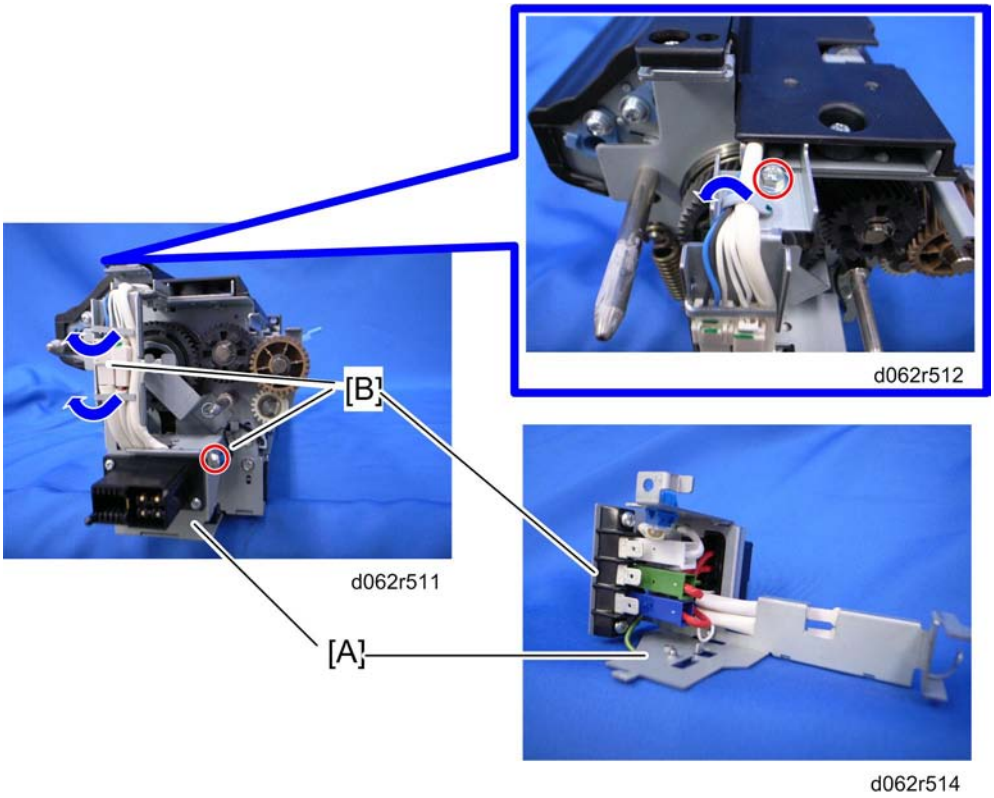
Note

- If you wish to remove the pressure roller only, without removing the hot roller and fusing lamps, please do not use this procedure. Use the procedure in the next section.

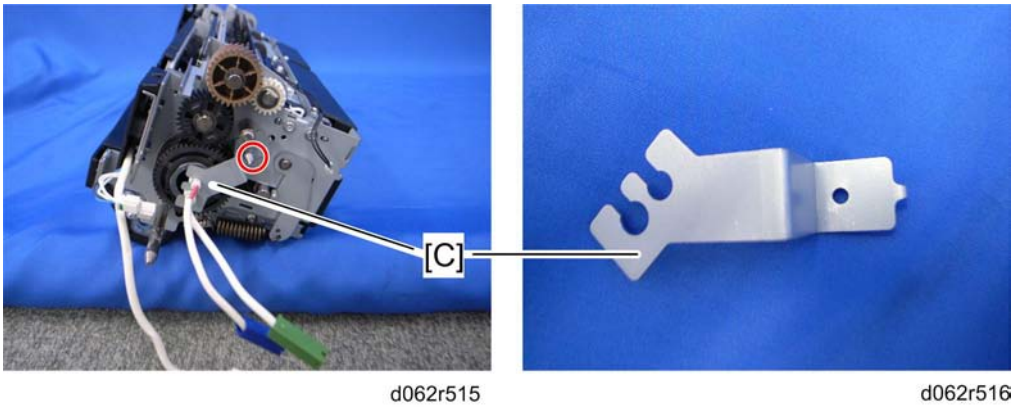
### *Fusing Lamps*

1. Fusing unit (☛ p.4-57)

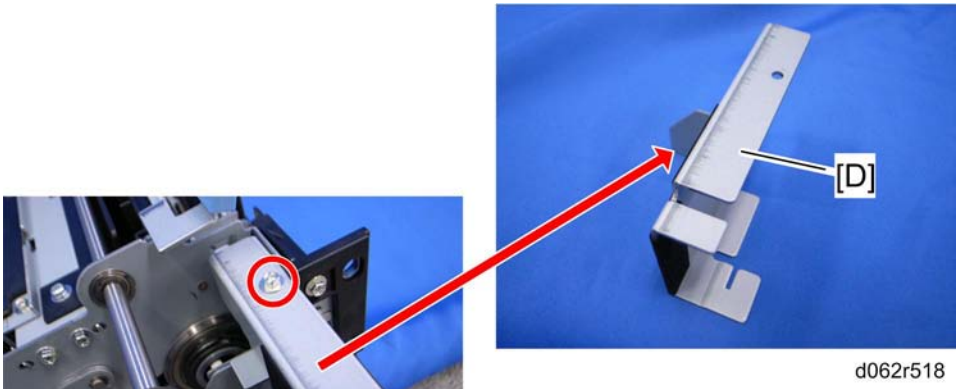
**Fusing Unit**



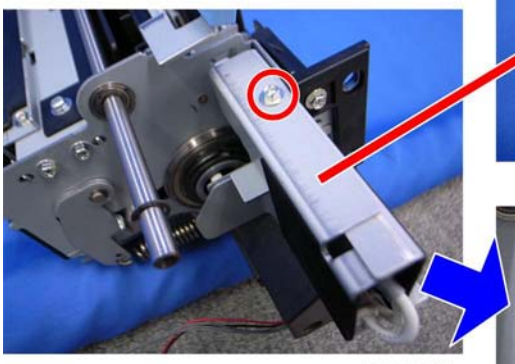

2. Rear terminal connector bracket [A] ( x 2, metal clamp x 3, [B] x 6)



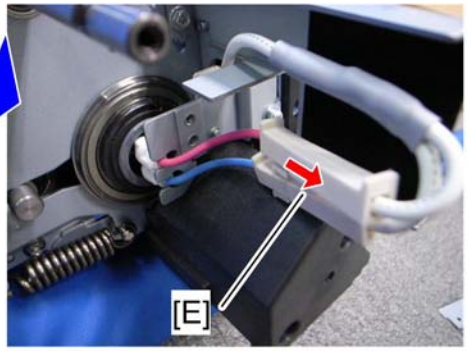

3. Rear fusing lamp holder [C] ( x 1)




d062r518

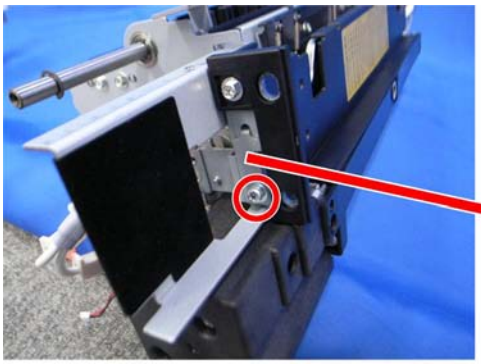


d062r517

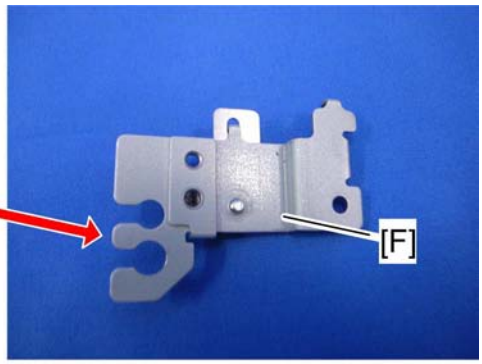



D062r519

4. Plate [D] ( x 1)
5. Disconnect two harnesses [E]



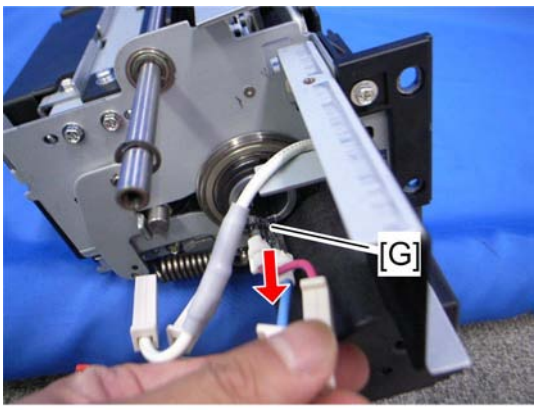
d062r520




d062r521

6. Front fusing holder [F] ( x 1)

**Fusing Unit**




d062r522

7. Fusing lamps [G] (x 2)

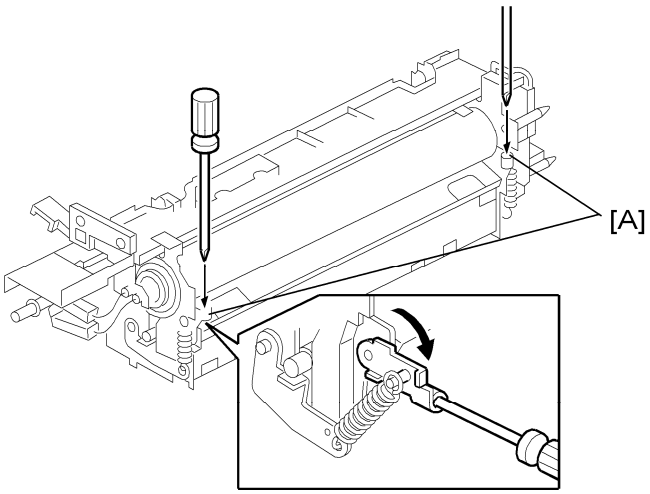
Note

- Be careful when you move the fusing lamps. Do not break them. Do not touch them with bare hands.

## *Hot Roller and Pressure Roller*

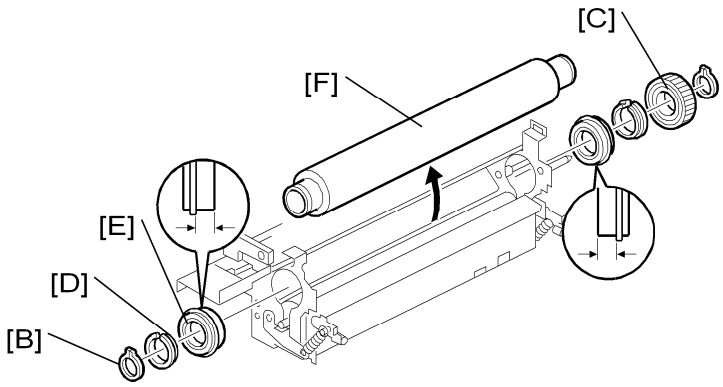
Use this procedure when you want to remove both rollers.

1. Remove the web unit (☛ p.4-59)



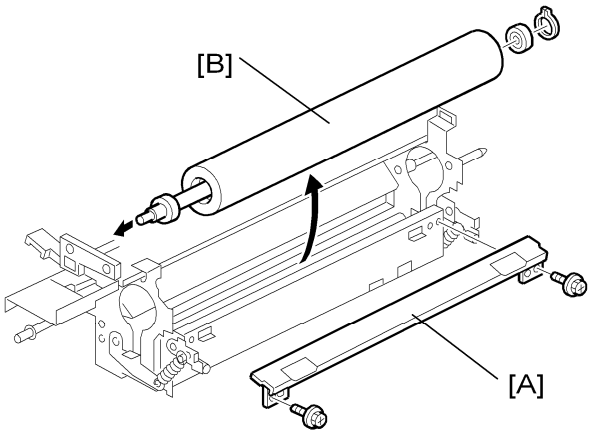

B246R1008

2. Pressure arm [A]
   - Insert the tips of two screwdrivers and press down to release.




B246R1009

3. C-clamps (both ends) [B]
4. Drive gear [C]
5. Bushings (both ends) [D]
6. Bearings [E]
7. Hot roller [F]



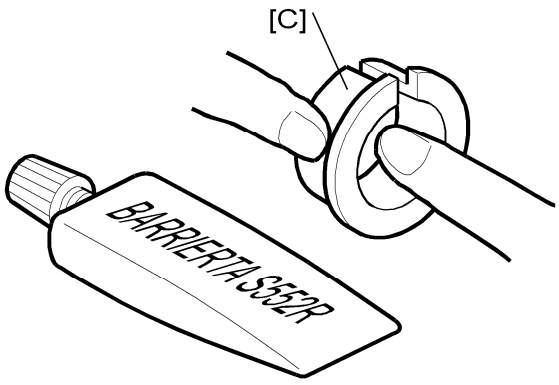

B246R1010

8. Entrance guide plate [A] ( x 2)
9. Pressure roller [B] ( x 2)

Note

- The pressure roller and pressure roller bearing should always be replaced together.

**Fusing Unit**




B246R1011

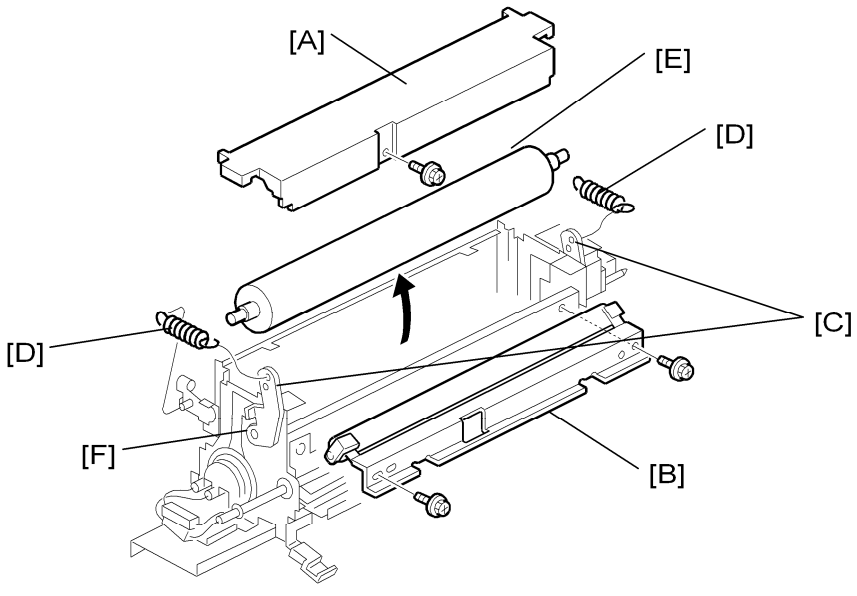
10. Lubricate the inner and outer surfaces [C] of the bushings with Barrierta S552R grease.

Note

- If the bushings are warm, allow them to cool before applying the Barrierta grease. Applying the grease while the bushings are hot could generate gas.

## 4.9.7 PRESSURE ROLLER

Use this procedure if you need to remove only the pressure roller.




B246R1014

Remove:

- Fusing unit (☛ p.4-57)

1. Turn the fusing unit upside down.
2. Lower cover [A] (🔩 x 1)

3. Pressure roller cleaning unit [B] ( x 2)
4. Release the pressure arms [C]
5. Use screw driver to lower the pressure arms on both ends of the pressure roller.
6. Pressure roller springs [D]
7. Pressure roller [E]

Important

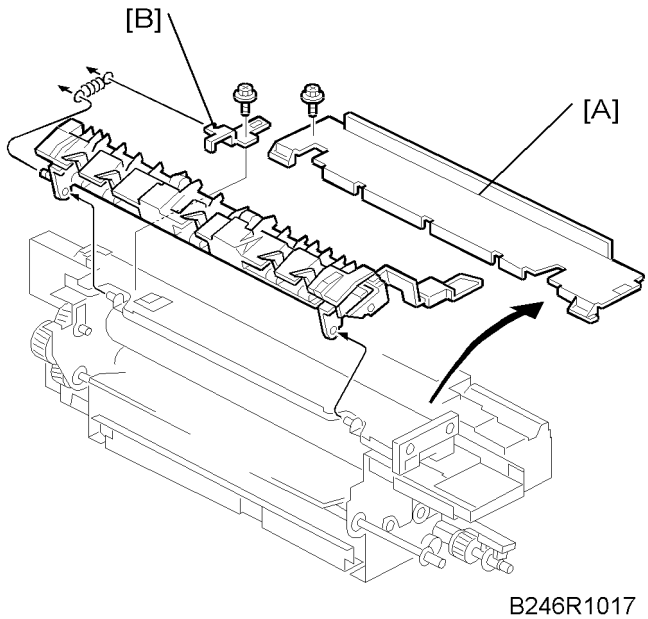
- The fusing lamps are fragile. Work carefully to avoid breaking them.
- During assembly, handle the roller carefully to avoid scratching it on the bracket.
- Make sure the tabs and grooves of the lower cover are engaged correctly before tightening the screw.

### *Spring Adjustment*

- Two holes [F] are provided on each pressure arm for the springs.
- Normally the springs should be attached to the lower holes.
- Attaching the springs to the upper holes exerts less pressure on the hot roller. Attach the springs to the upper holes only for especially thin paper.



## 4.9.8 STRIPPER PAWLS



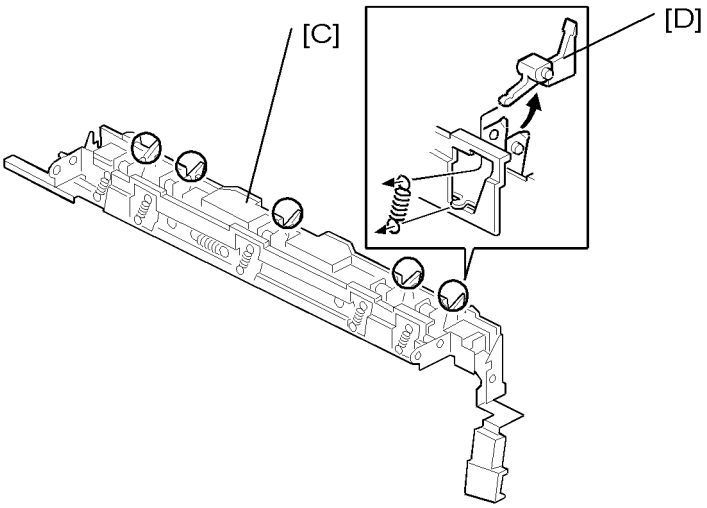

B246R1017

Remove:

- Fusing unit ( p.4-57)

1. Top cover [A]
2. Bracket [B] ( x 1, spring x 1)

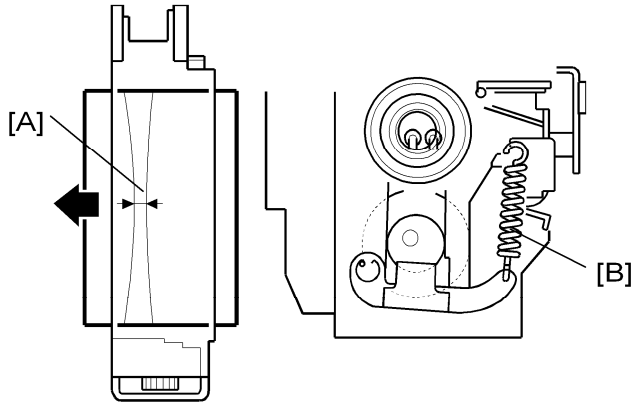
**Fusing Unit**




B246R1019

3. Inner cover [C] ( x 2)
4. Stripper pawl [D] ( x 1)

## 4.9.9 NIP BAND WIDTH ADJUSTMENT




B246R1030

1. After the machine is powered on with the main switch, make an A4/LT LEF copy, then stop the machine while the paper is still in the fusing unit by switching it off.

Note

- This is easier with an OHP sheet. Use an OHP sheet if you have one available.

2. Open the front door, then turn the fusing knob to feed out the copy.
3. Measure the width of the band on the part of the image where it is particularly black. The band, called the nip band [A], should be 9.0 ± 0.7 mm at the center.

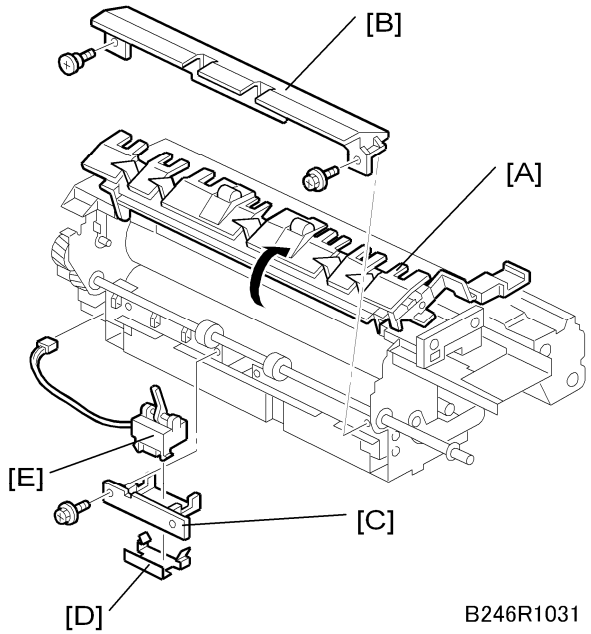
Note

- When the fusing is incorrect (wrinkles, offset, curl), measure the nip band

width.

- The nip band width can be adjusted by changing the position of the springs [B] on either end of the pressure roller.
- The fusing temperature can also be adjusted with SP1105 (Fusing Temperature Adjustment) for Normal, OHP, and Thick Paper.

## 4.9.10 FUSING UNIT EXIT SENSOR

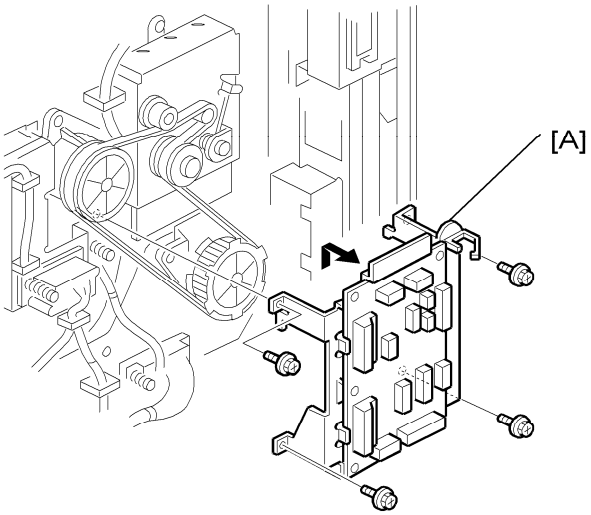



Remove:

- Fusing unit (p.4-57)

1. Open the hot roller stripper pawl unit [A]
2. Exit guide plate [B] ( x 2)
3. Fusing exit sensor holder [C] ( x 2)
4. Plate spring [D]
5. Fusing exit sensor [E] ( x 1, x 3)

## 4.9.11 FUSING/EXIT MOTOR

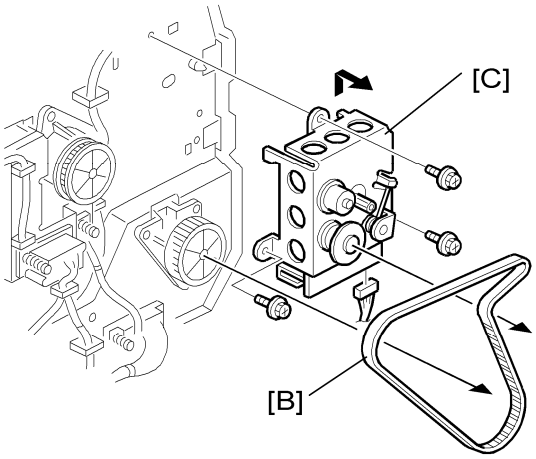



B246R1032

Remove:

- Rear upper cover (☞ p.4-8 "Rear Covers")

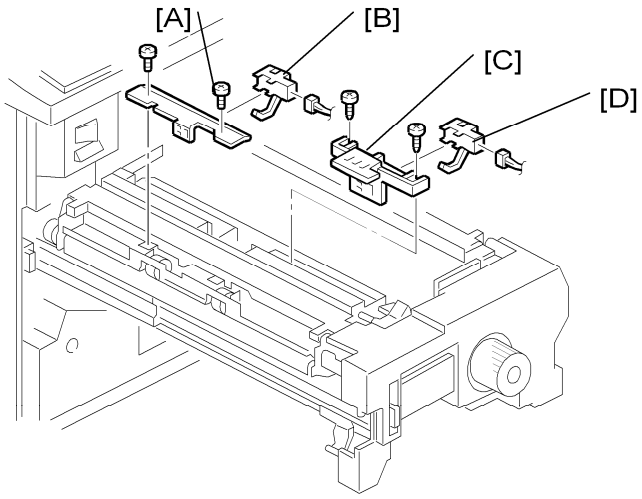
1. Open the BCU (🔩 x 4)
2. CNB bracket [A] (🔩 x 4, 🔌 x1, 🔌 x all)




B246R1034

3. Timing belt [B]
4. Fusing/exit motor bracket [C] (🔩 x 3)
5. Fusing/exit motor (🔩 x 2) inside the bracket (not shown)

## 4.9.12 FUSING EXIT SENSOR AND EXIT UNIT ENTRANCE SENSORS

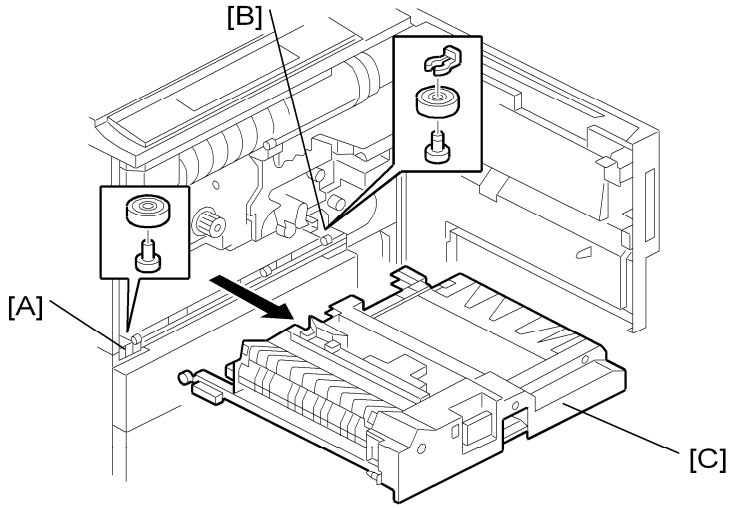



B246R1035

1. Open the front door and pull out the exit/inverter unit.
2. Fusing exit sensor bracket [A] ( x 2)
3. Fusing exit sensor [B] ( x 1)
4. Exit unit entrance sensor bracket [C] ( x 2)
5. Exit unit entrance sensor [D] ( x 1)

# 4.10 DUPLEX UNIT

## 4.10.1 DUPLEX UNIT REMOVAL



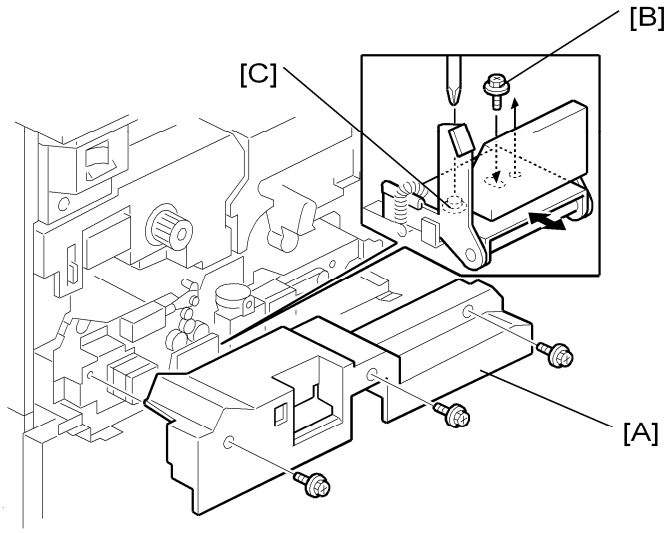

B246R1036

1. Open the front door and pull out the duplex unit.
2. Remove the slide rail roller on the left [A] and on the right [B] ( x 1).
3. Lift out the duplex unit [C].

### *Reinstallation*

- To re-install the duplex unit, insert the duplex unit partially, only until it enters the black guide rail, then re-attach each slide rail roller.
- Next, push the duplex unit into the machine completely. This method prevents interference from the guide plate during installation.

## 4.10.2 DUPLEX UNIT SIDE-TO-SIDE ADJUSTMENT




B246R1037

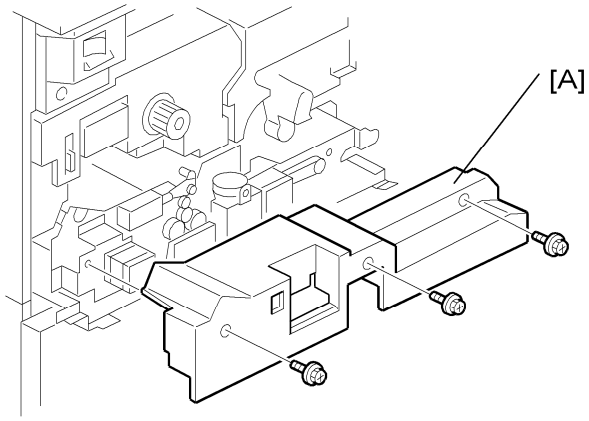
1. Remove the inner cover [A] ( x 3)
2. Move the handle lock screw [B] from the right to the center.
3. Loosen the left lock screw [C], then adjust the position of the duplex unit.

## 4.10.3 JOGGER FENCE ADJUSTMENT

| | |
|---|---|
| SP1008 | Duplex Fence Adjustment |
| | Execute this SP to adjust the distance between the jogger fences, if required. A smaller value shortens the distance. If the fences are too far apart, skewing may occur in the duplex tray. If the fences are too close, the paper may be creased in the duplex unit. For details, see "Service Tables". |

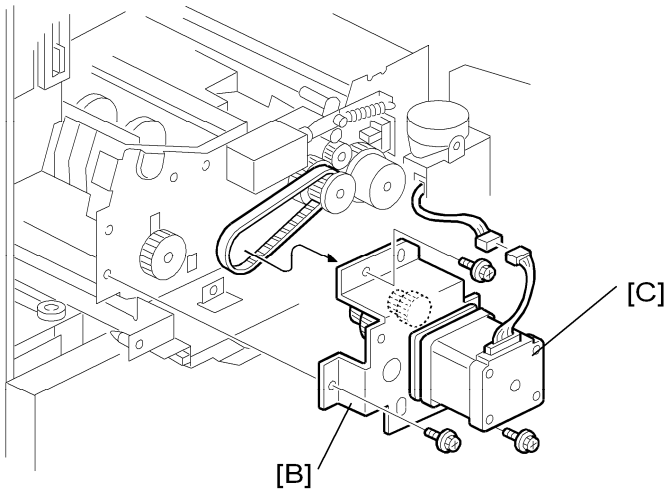
## 4.10.4 DUPLEX MOTORS

### *Duplex Inverter Motor*




B246R1038

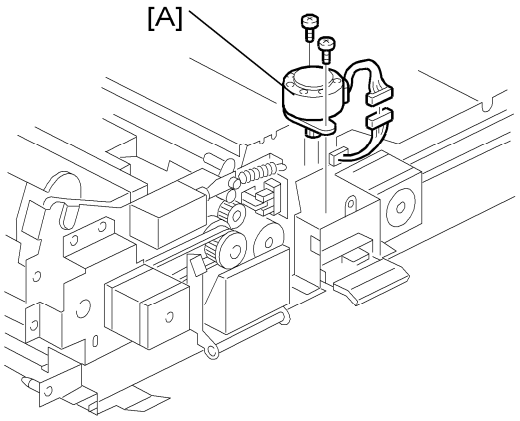
1. Remove the cover [A] ( x 3)




B246R1039

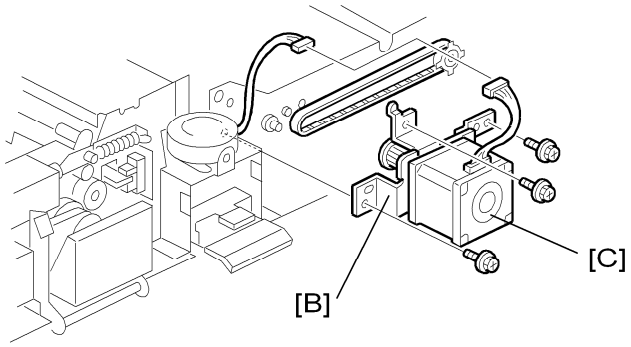
2. Inverter motor bracket [B] ( x 3)
3. Inverter motor [C] ( x 1, x 1, x 2, timing belt x 1)

## *Duplex Jogger and Transport Motors*




B246R1040

1. Jogger motor [A] ( x 1, x 2)

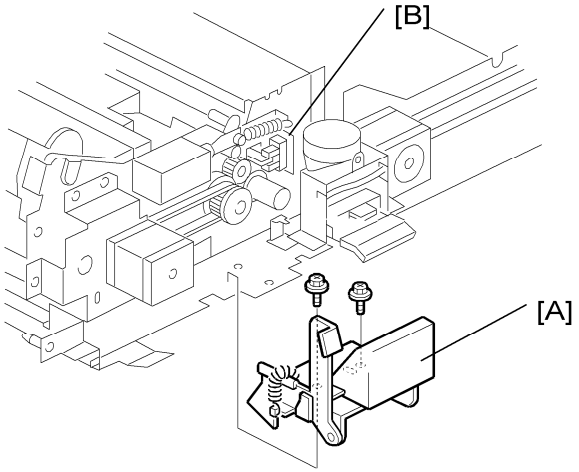



B246R1041

2. Transport motor bracket [B] ( x 1, x 1, x 3, timing belt x 1)
3. Transport motor [C] ( x 2)

## 4.10.5 DUPLEX SENSORS

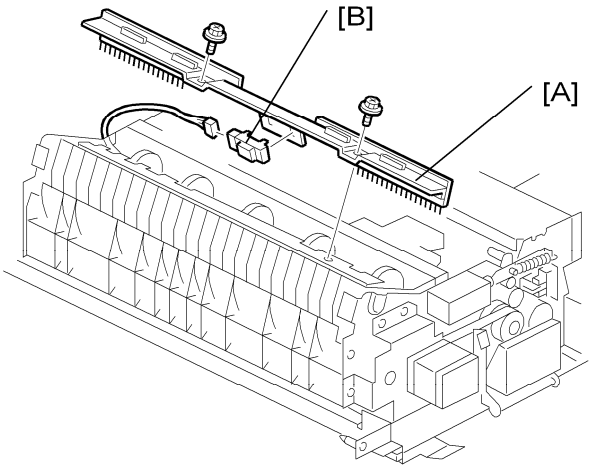
### *Jogger HP Sensor*




G148R591

1. Duplex unit release lever [A] ( x 2)
2. Jogger HP sensor [B] ( x 1, x 2, x 1)

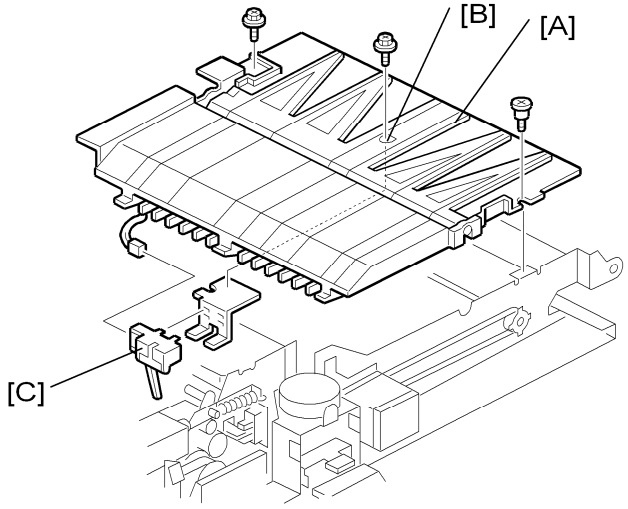
### *Duplex Entrance Sensor*




B246R1043

1. Bracket [A] ( x 2)
2. Duplex entrance sensor [B] ( x 1)

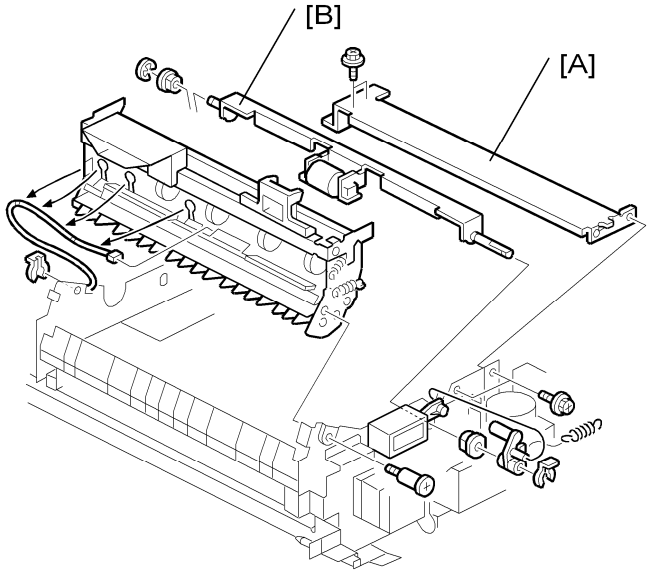
### *Duplex Transport Sensor 3*




B246R1045

1. Right half of table [A] ( x 2, x 1)
   - The front screw is a shoulder screw. Insert the screws in the correct holes when re-attaching.
2. Remove the screw [B] to release the sensor bracket below.
3. Transport sensor 3 [C] ( x 1)

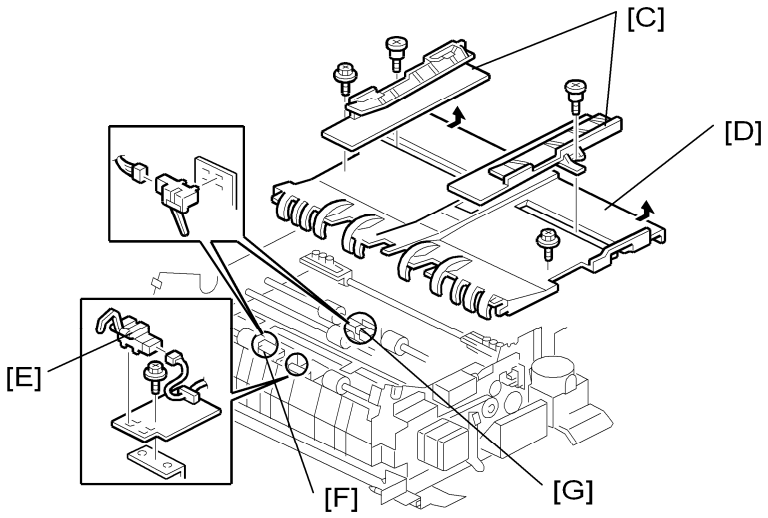
### *Inverter Exit Sensor, Transport Sensors 1 & 2*




B246R1046

1. Cross-stay [A] ( x 4)
2. Reverse trigger roller shaft [B]

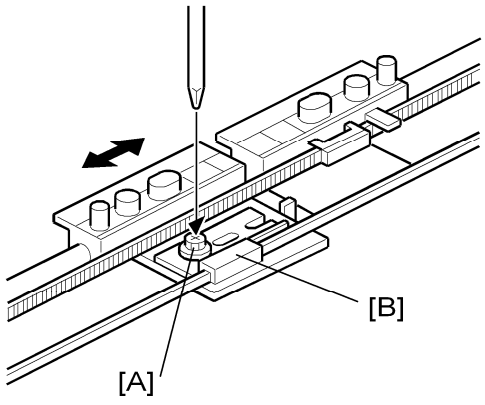
**Duplex Unit**



B246R1047

3. Jogger fences [C] ( x 1 each)
4. Left half of table [D] ( x 2)
   - The front screw is a shoulder screw. Insert the screws in the correct holes when re-attaching.
   - To avoid breaking the tabs under the left edge of the table, pull the table to the right to disengage the tabs and then remove.
5. Inverter exit sensor [E] ( x 1, x 1, x 1)
6. Transport sensor 1 [F] ( x 1, x 1)
7. Transport sensor 2 [G] ( x 1, x 1)

## 4.10.6 DUPLEX JOGGER BELT ADJUSTMENT



B246R1049

Remove:

- Cross stay (☛ p.4-79 "Inverter Exit Sensor, Transport Sensors 1 & 2")
- Reverse trigger roller shaft (☛ p.4-79 "Inverter Exit Sensor, Transport Sensors 1 &

2")

- Left half of the table
- Jogger motor bracket

Note

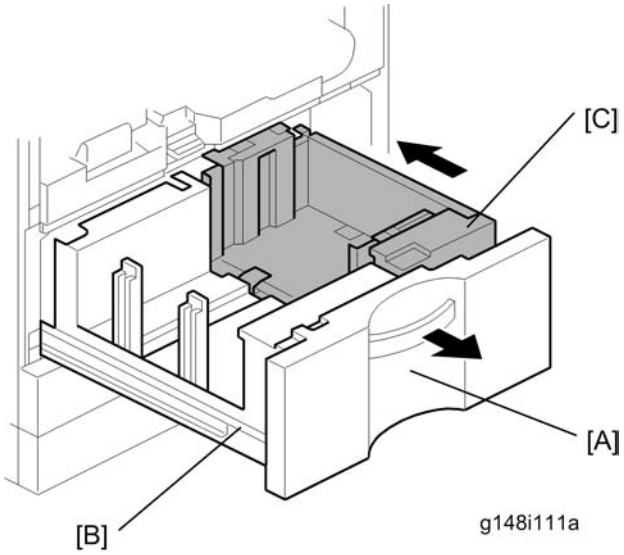
- Slip the one end of the belt around the gear below the jogger motor.
- Slip the other end of the belt around the gear at the other side of the duplex unit.

1. If you are replacing the belt, set both jogger fence brackets at the center of the belt and tighten the screw [A].
2. If you are adjusting the belt, loosen the screw and slide the plastic piece [B] on the belt to the left or right to adjust the position of the front fence, then tighten the screw.

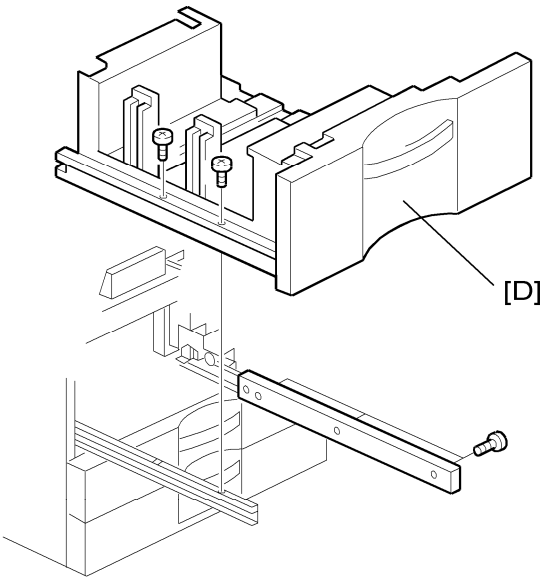
# 4.11 PAPER FEED

## 4.11.1 PAPER TRAY

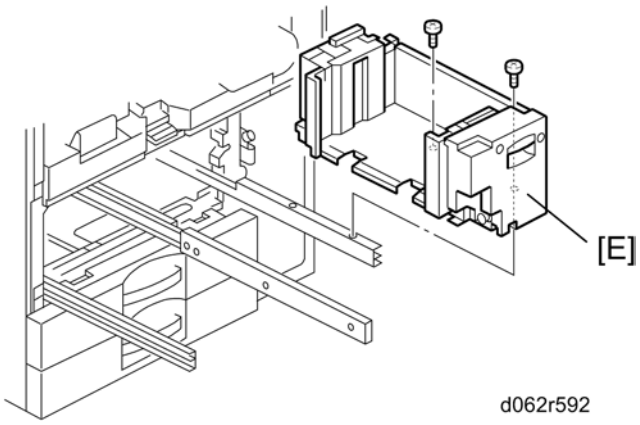
### *Tandem Tray*




1. Open the front door.
2. Pull out the tandem tray drawer [A] completely to separate the left [B] and right [C] sides of the tandem tray.

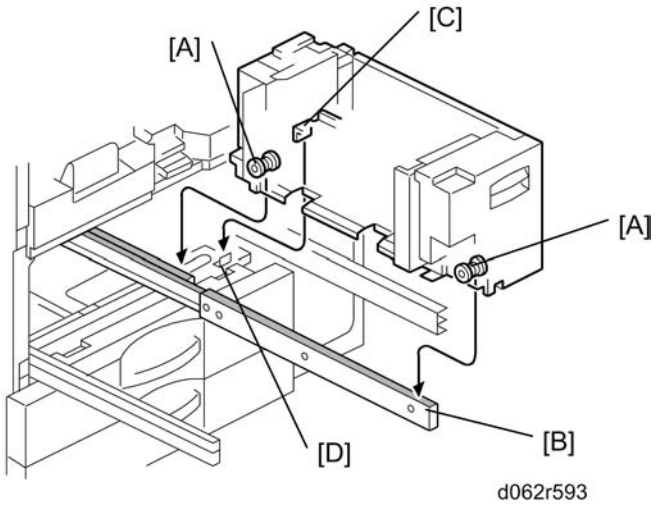



3. Remove the left tandem tray [D] ( x 5).



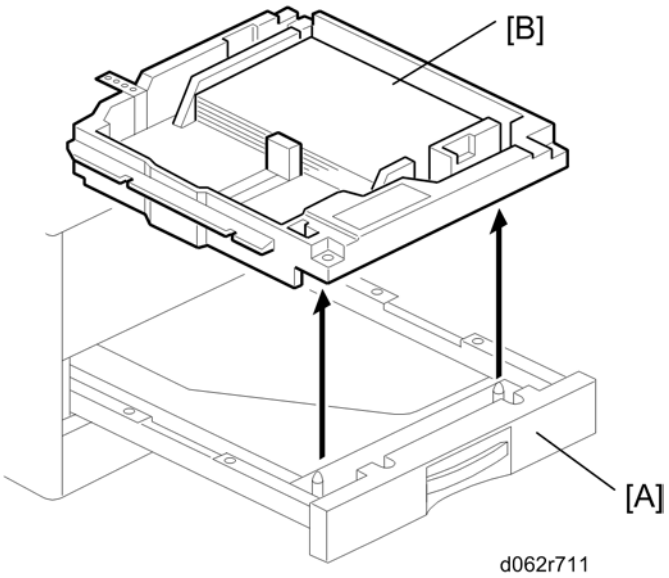

4. Right tandem tray [E] ( x 2).

**Reinstallation**



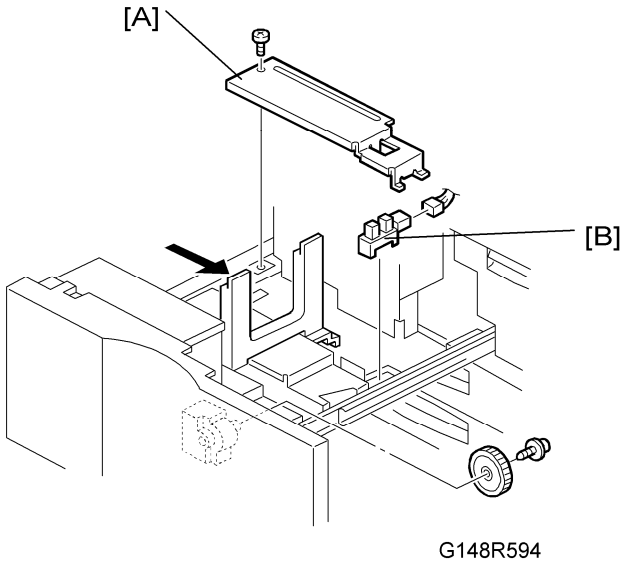

- When re-installing the right tandem tray, make sure that the wheels [A] ride on the slide rail [B].
- When re-installing the right tandem tray, make sure that the tandem tray stopper [C] is set behind the stopper [D] on the frame.

### *Universal Tray*



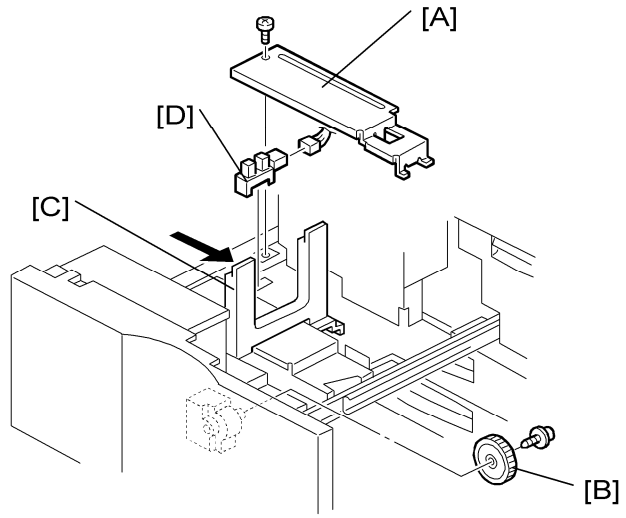

1. Pull tray 2 or tray 3 [A].
2. Lift the tray [B] out of the drawer.

## 4.11.2 REAR FENCE RETURN SENSOR REPLACEMENT




1. Turn off the machine.
2. Pull out the tandem feed tray.
3. Rear bottom plate [A] ( x 1)
4. Return sensor [B] ( x 1).

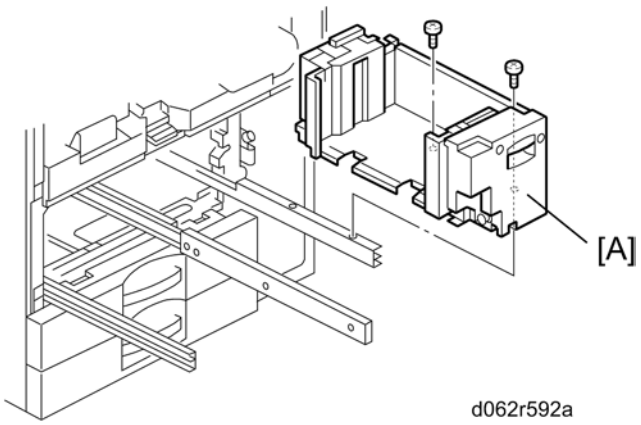
## 4.11.3 REAR FENCE HP SENSOR REPLACEMENT




G148R595

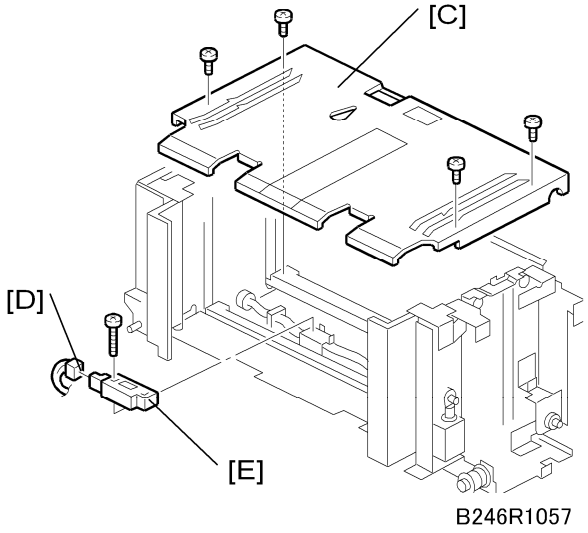
1. Turn off the machine.
2. Pull out the tandem feed tray.
3. Rear bottom plate [A] ( x 1).
4. Back fence transport gear [B] ( x 1)
5. Move the back fence [C] to the right.
6. Rear HP sensor [D] ( x 1)

## 4.11.4 TANDEM RIGHT TRAY PAPER SENSOR REPLACEMENT




d062r592a

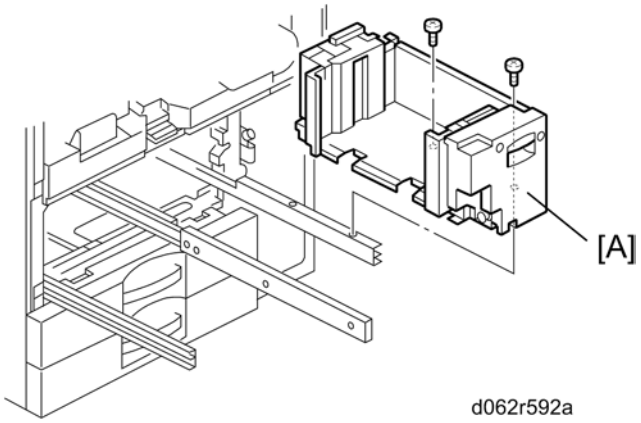
1. Turn off the machine.
2. Remove the right tandem tray ( p.4-82)
3. Inner cover [A] ( x 2)
4. Side fences [B] ( x 1 each)




5. Bottom plate [C] ( x 4)
6. Connector [D] ( x 1)
7. Sensor [E] ( x 1)

## 4.11.5 BOTTOM PLATE LIFT WIRE REPLACEMENT

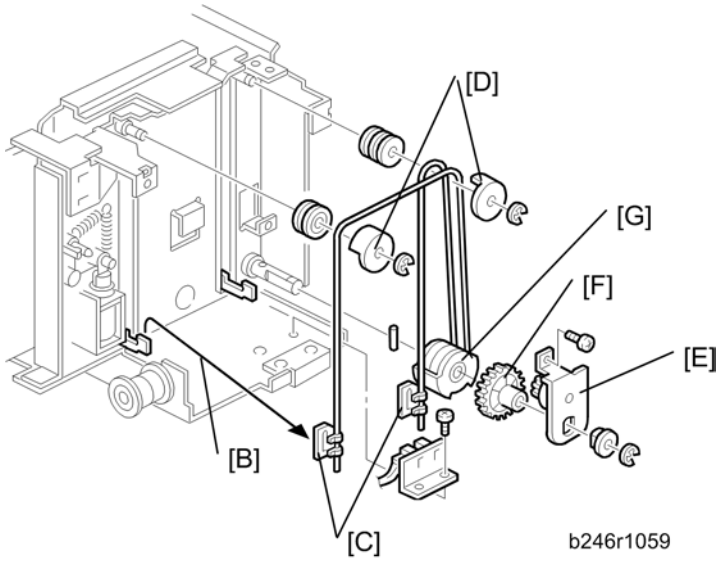
Before replacing the rear bottom plate lift wire, remove the front bottom plate lift wire. The shaft must be removed to replace the lift wire of the bottom plate.




Remove:

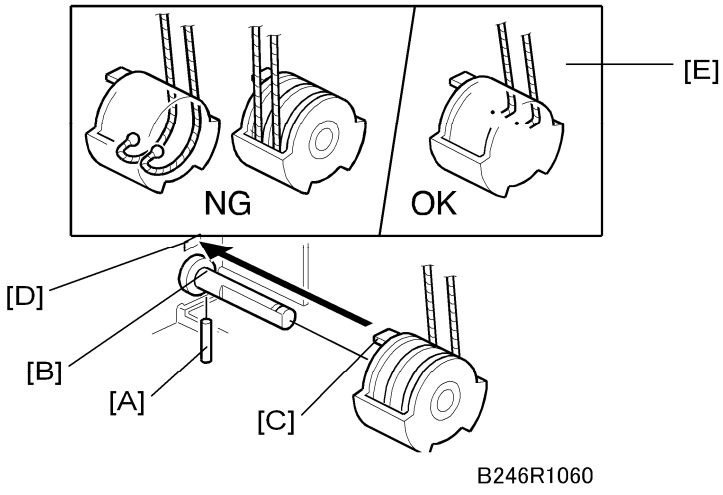
- Right tandem tray ( p.4-82 "Tandem Tray")

1. Remove the inner cover [A] ( x 2)




2. Remove the left stay [B].
3. Wire stoppers [C]
   - Slightly lift the front bottom plate and unhook.
4. Wire covers [D] ( x 1 each)
5. Bracket [E] ( x 1, x 1, bushing x 1)
6. Gear [F]
7. Bottom plate lift wire [G]

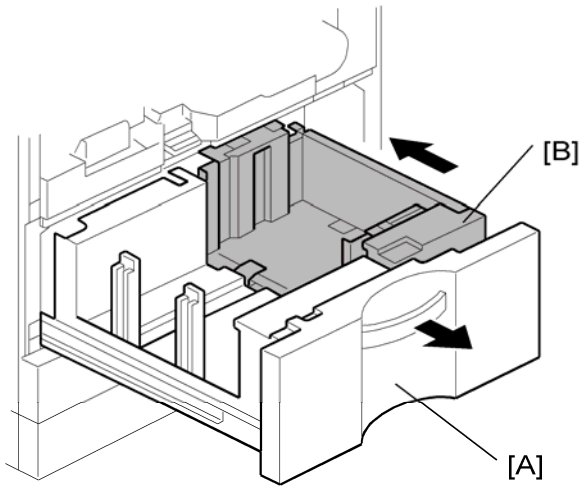
### *Reinstallation*




- Set the positioning pin [A] in the hole [B], and set the projection [C] in the hole [D].
- Position the wire as shown [E].
- Do not cross the wires.

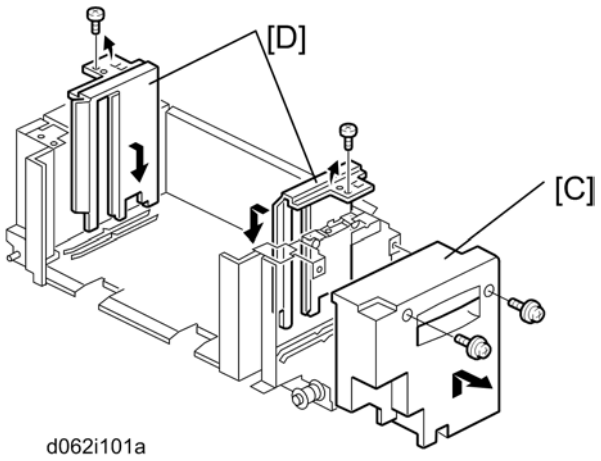
## 4.11.6 TANDEM TRAY PAPER SIZE CHANGE

At the factory, this tray is set up for A4 or LT LEF. Only A4 or LT LEF paper can be used for tandem feed.



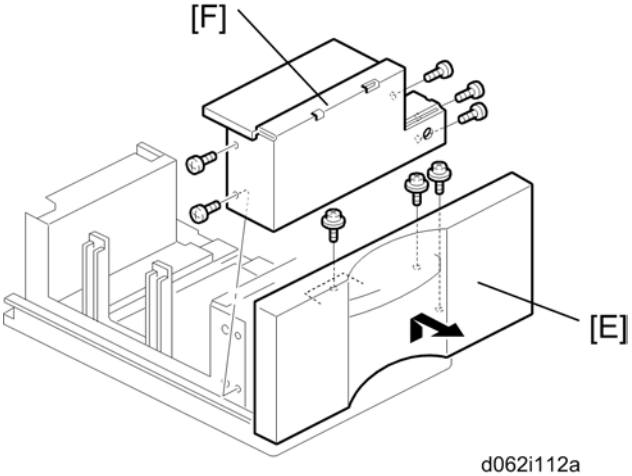

G148i111c

1. Open the front cover.
2. Completely pull out the tandem feed tray [A] to separate the right tandem tray [B] from the left tandem tray.



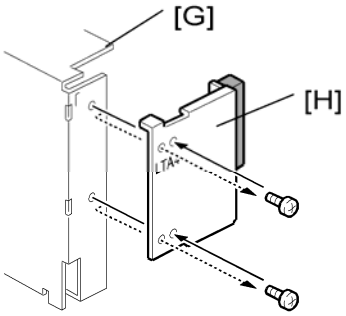

d062i101a

3. Remove the right tandem inner cover [C] ( x 2).
4. Re-position the side fences [D] ( x 1 each).
   - A4: Outer slot position
   - LT: Inner slot position
5. Re-install the right tandem inner cover.



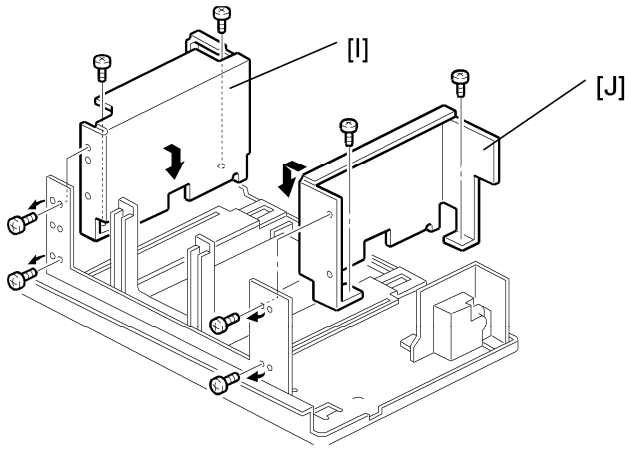

d062i112a

6. Remove the tray cover [E] ( x 3).
7. Remove the DC motor cover [F] ( x 5).




B246R1065

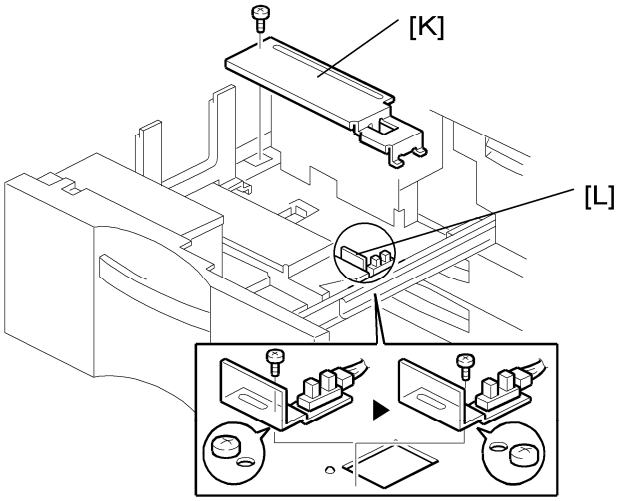
8. Remove the rear side fence [G] ( x 4) and re-position the rear cover [H] ( x 2).




B246R1064

9. Re-position the side fences [I] [J] ( x 4).
   - A4: Outer slot position
   - LT: Inner slot position

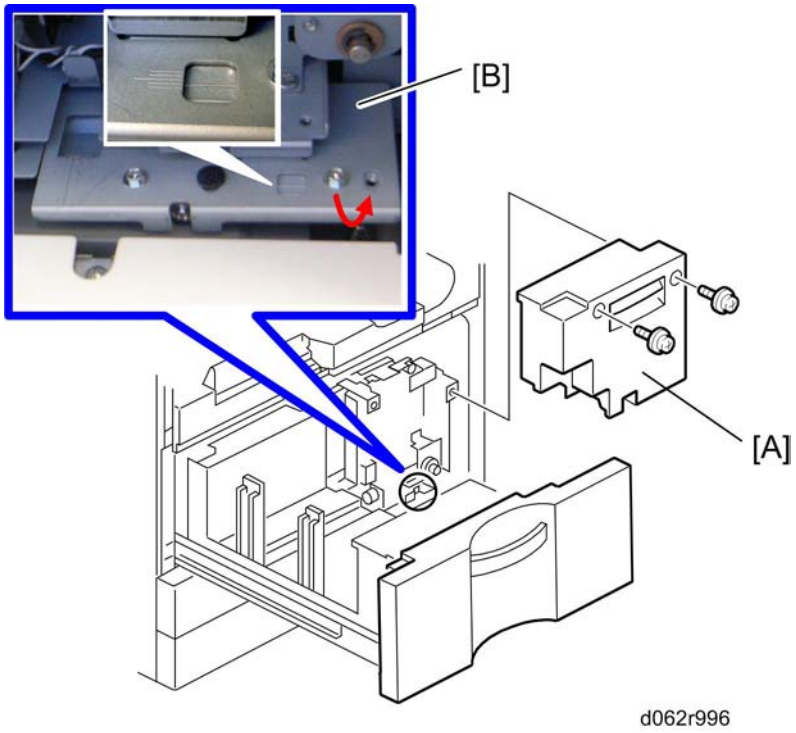
10. Re-install the DC motor cover and the tray cover.




G148i113c

11. Remove the rear bottom plate [K] ( x 1).
12. Re-position the return position sensor bracket [L] ( x 1).
    To use the paper tray for A4 size, set the screw in the left hole as shown. (For LT size, the screw should be placed on the right.)
13. Reinstall the rear bottom plate.
14. Input the new paper size into SP5959-001 (Paper Size – Tray 1).
15. Do the printer adjustments. See "Print Image Adjustment" at the end of this section.

## 4.11.7 TANDEM TRAY SIDE REGISTRATION




Normally the side registration of the image can be adjusted in the SP mode.

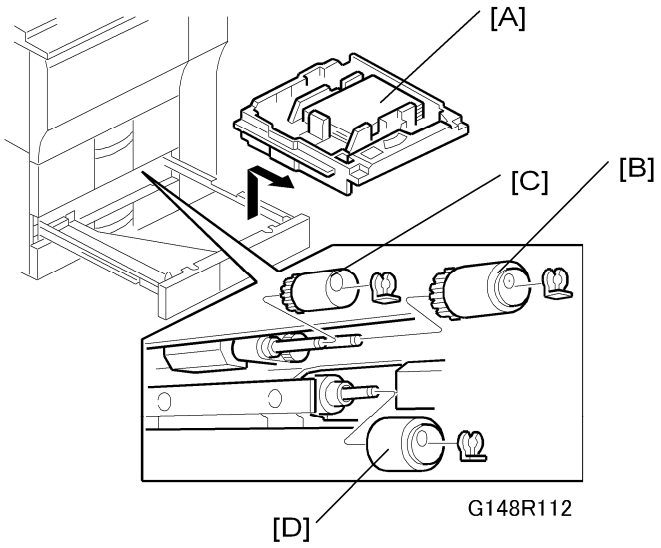
If the punch hole positions are not aligned from a particular feed station, however, you can manually adjust the side registration by changing the tray cover position for that tray, and then adjust the side registration of the image (☛ p.4-133 "Copy Image Adjustments: Printing/Scanning")

1. Pull out the tray and remove the right inner cover [A] ( x 2).
2. Loosen the screws and adjust the position of the plate [B].
   - Adjustment range: 0 ± 2.0 mm adjustment step: 1.0 mm/step

## 4.11.8 PICK-UP, FEED, SEPARATION ROLLER REPLACEMENT

1. Remove the tandem tray or universal tray (☛ p.4-82 "Paper Tray ").

**Paper Feed**

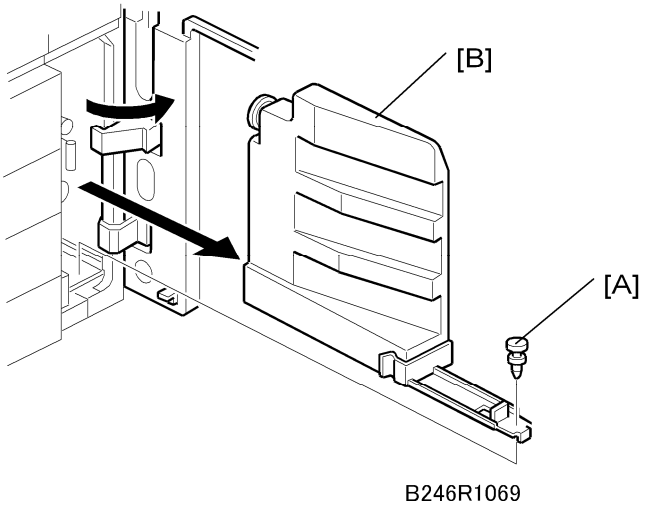



2. Feed roller [B] ( x 1)
3. Pick-up roller [C] ( x 1)
4. Separation roller [D] ( x 1)

Note

- The operation of the FRR mechanisms for the tandem tray (Tray 1) and universal trays (Tray 2, Tray 3), are similar. These rollers are interchangeable.
- Do not touch the surface of new rollers during replacement.

## 4.11.9 FEED UNIT

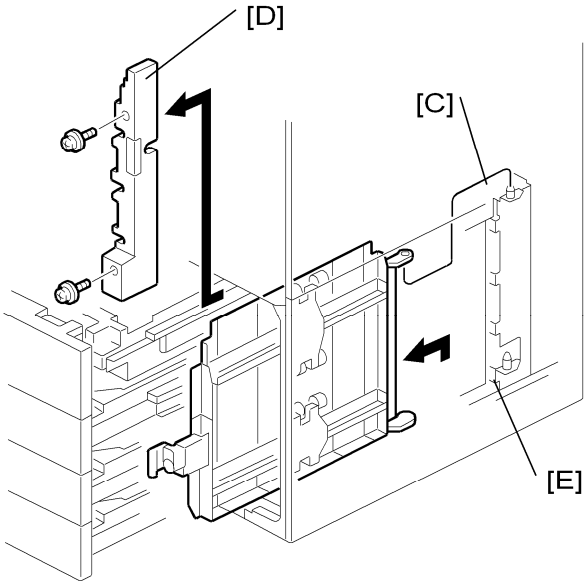



Remove:

- Front door ( p.4-6)
- LCT entrance guide cover and right lower cover ( p.4-97 "Relay Sensor")

- If the LCT is connected, disconnect it and pull it away from the machine.
- Pull out all three trays (do not remove).

1. Nylon peg [A]
2. Toner collection bottle [B]

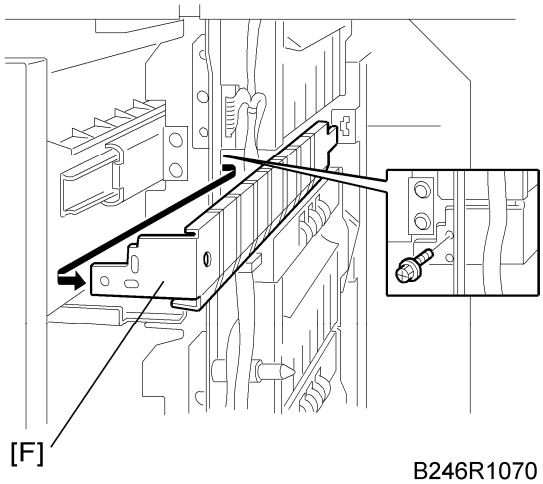



B246R1068

3. Vertical transport guide [C]
4. Inner cover [D] ( x 2)

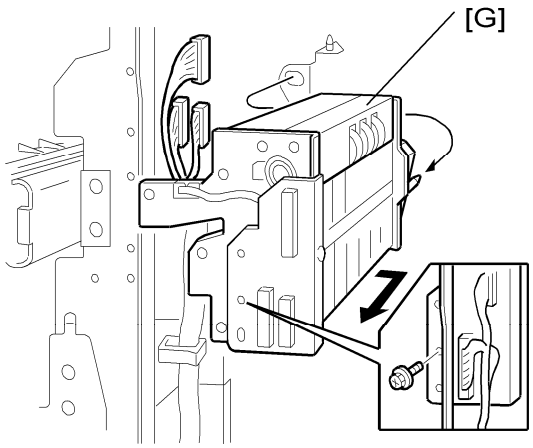
**Reinstallation**

- When re-installing the vertical transport guide, remove the lower right cover then insert from [E].




B246R1070

5. Guide plate [F] ( x 1) (1st feed unit only)



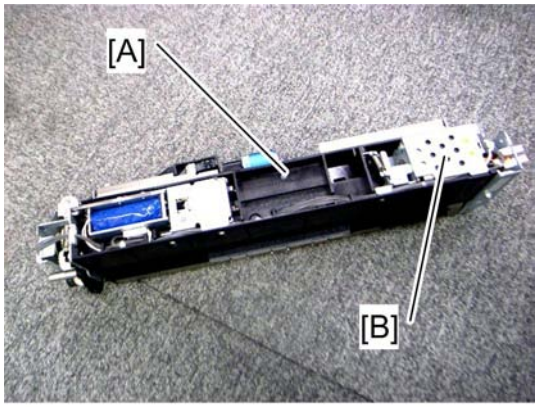

B246R1078

6. Feed unit [G] ( x 1, x 3 for D062/D063 or x 2 for D065/D066)
   - Insert your hand from the right and pull the feed unit forward.
   - To avoid hitting the unit on the sides of the machine, remove it carefully and slowly.

## 4.11.10 PAPER FEED MOTORS

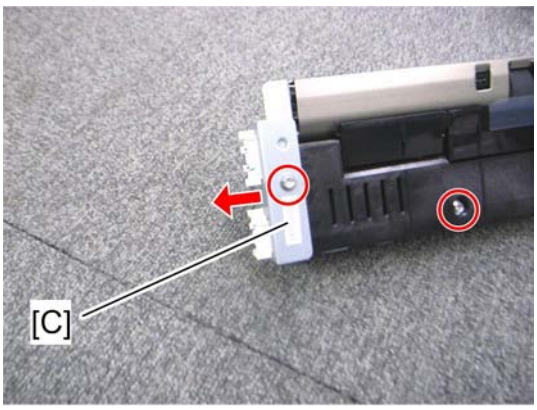
D062/D063 have the paper feed motor in each feed unit. However, D065/D066 have the feed motors at the rear of the machine.

### *For D062/D063*



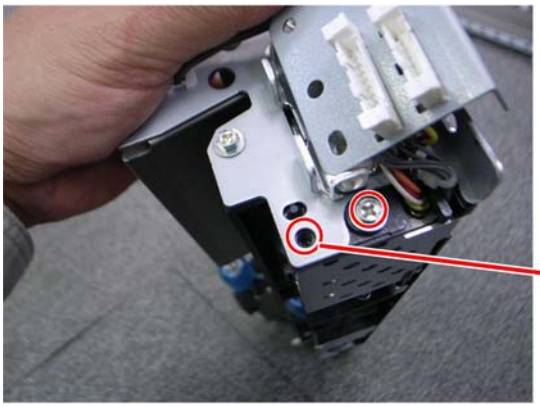

d062r900

1. Feed unit [A] ( p.4-92 "Feed Unit")
   - Paper feed motor [B]

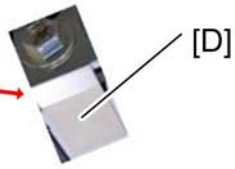



d062r901

2. Remove two screws and the connector bracket [C].
   - When removing bracket [C], no connectors need to be disconnected.

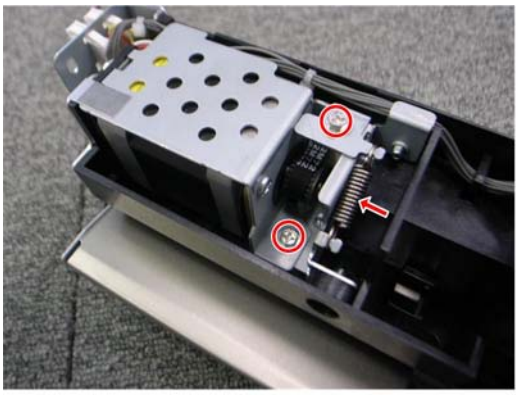


d062r902

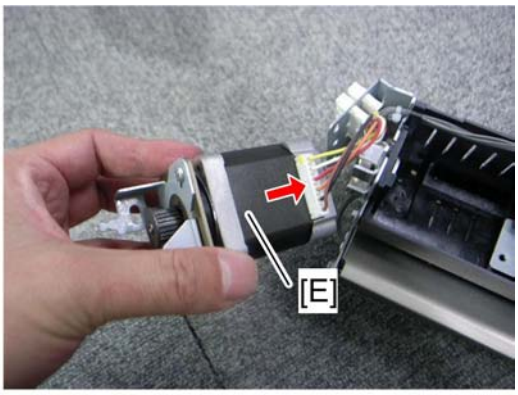



d062r903

3. Remove two screws and the bracket [D].



d062r904




d062r905

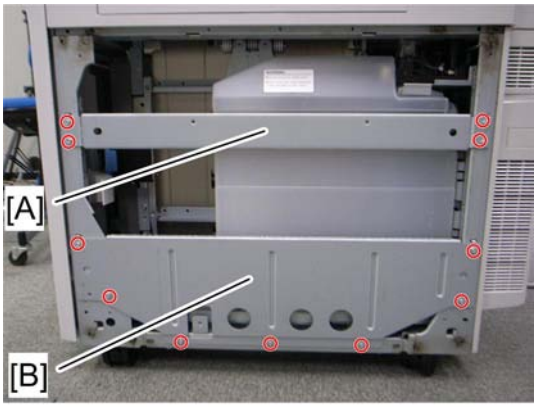
4. Remove two screws and a spring, and then remove the paper feed motor [E] ( x 1).

### *For D065/D066*

1. Right lower cover ( p.4-7 "Right Covers")
2. Feed unit ( p.4-92)

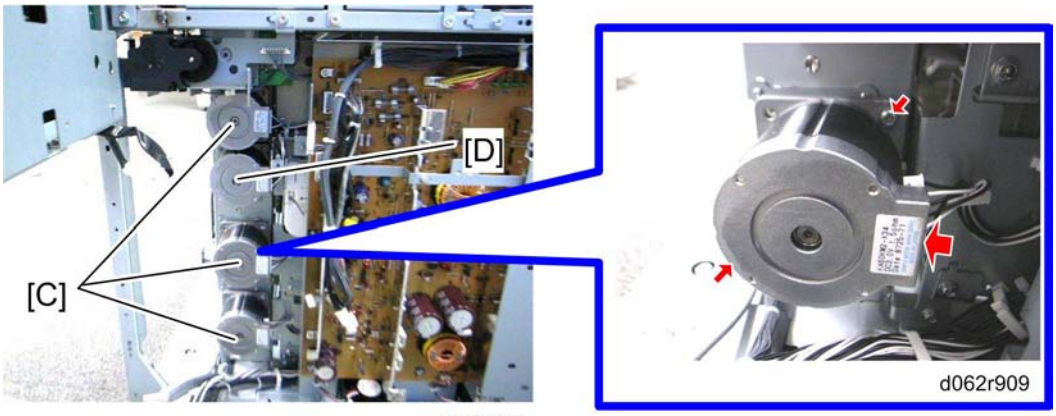
**Paper Feed**

- Remove the feed unit corresponding to the motor which will be removed.




d062r906

3. Remove the right stay [A] ( x 4) and bracket [B] ( x 7).
4. Open the controller box ( p.4-110 "BCU")
5. PFB bracket ( p.4-112)




d062r907

6. Paper feed motors [C] ( x 2 each, x 1).
7. Lower relay motor [D] ( x 2, x 1).

Note

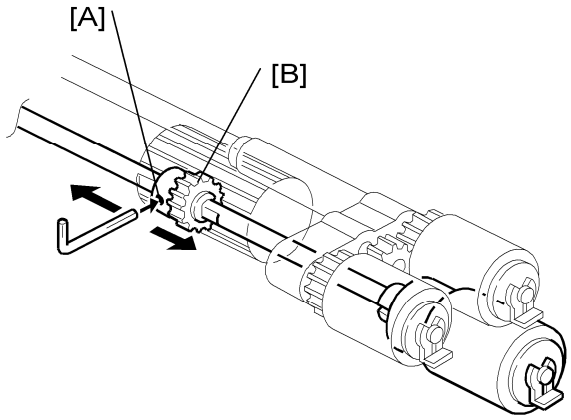
- The positions of the two screws which fasten the paper feed motor are different for each motor.
- Paper feed motor 1: Left upper and right lower.
- Paper feed motor 2 and 3: Right upper and left lower.

## 4.11.11 SEPARATION ROLLER PRESSURE ADJUSTMENT

The position of the drive gear for the separation roller can be changed in order to change the amount of pressure exerted by the separation roller. This adjustment can be done:

- When feeding special paper, especially thick paper

- When the customer is experiencing feed problems




B246R1079

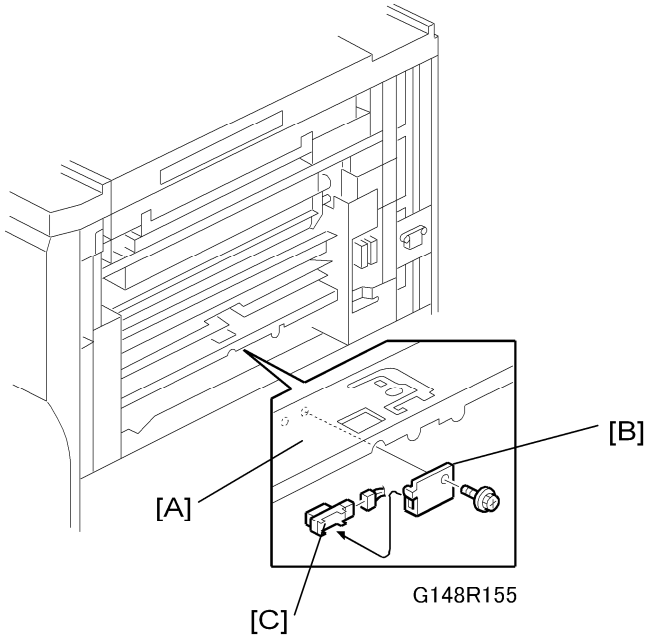
Remove:

- Feed unit (☞ p.4-92)

1. Loosen the hex screw [A].
2. The separation roller gear [B] is positioned at the groove before shipping.
3. Do one of the following:
   - To adjust for thick paper, move the separation roller gear [B] to the left to decrease the pressure.
   - To correct misfeeds, move the separation roller gear to the right to increase the pressure.



## 4.11.12 RELAY SENSOR

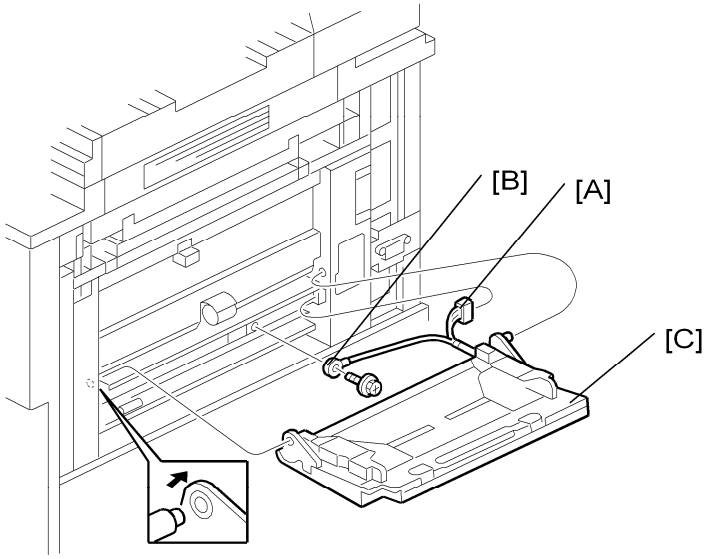



G148R155

**Paper Feed**

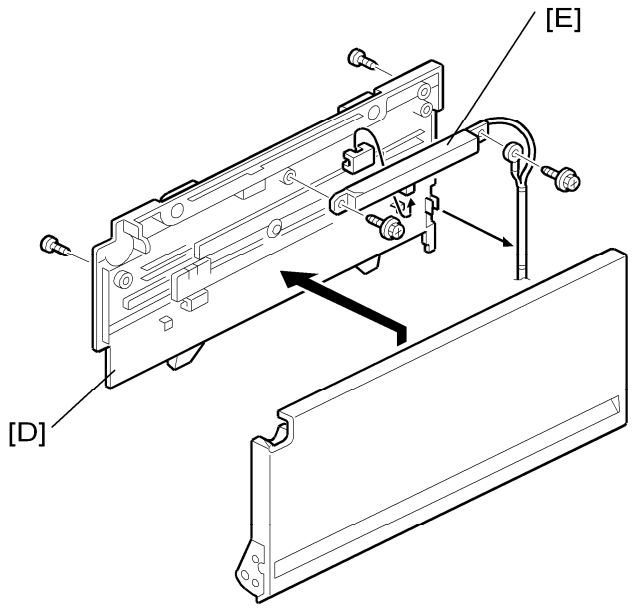
1. Remove the LCT entrance guide cover [A].
2. Relay sensor bracket [B] ( x 1)
3. Relay sensor [C] ( x 1)

## 4.11.13 BY-PASS PAPER SIZE DETECTION BOARD




B246R1091

1. Registration inner cover ( x 2)
   - Not shown. This cover is directly below the by-pass tray.
2. Connector [A] ( x 1)
3. Ground wire [B] ( x 1)
4. By-pass tray [C]
   - Disconnect the by-pass tray from the pins on both sides.




B246R1090

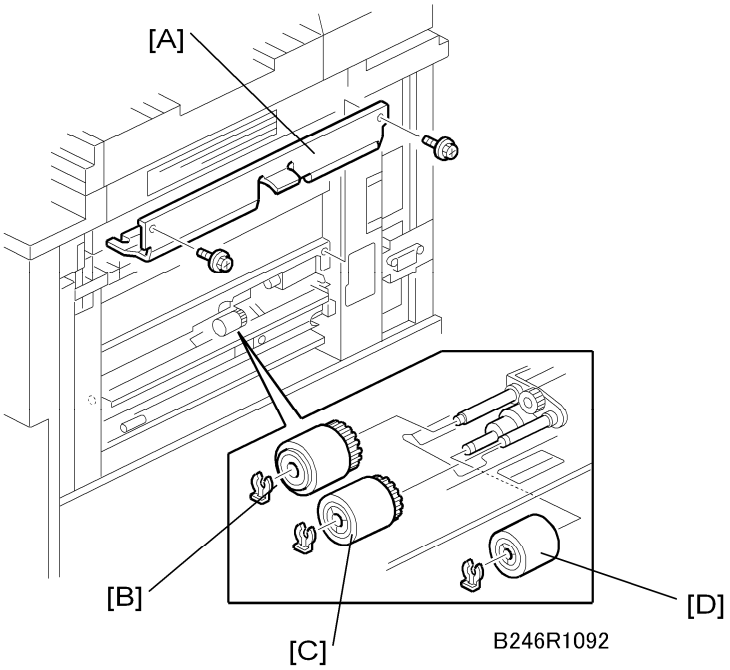
5. By-pass table [D] ( x 2)
6. By-pass paper size detection board [E] ( x 2)

### *Reinstallation*

After installation, execute SP1904 to calibrate the maximum and minimum paper sizes for the side fences:

- SP1904-001 By-pass Tray Paper Size Detection – Minimum Size: Move the side fences to the minimum size, then execute this SP.
- SP1904-002 By-pass Tray Paper Size Detection – Maximum Size: Move the side fences to the maximum size, then execute this SP.

## 4.11.14 BY-PASS TRAY ROLLERS

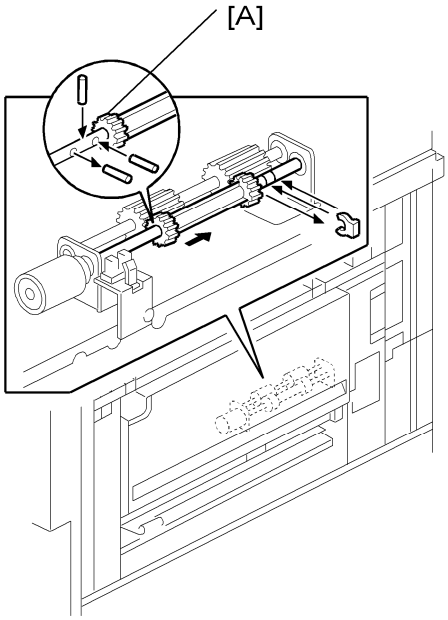



1. Right covers (☞ p.4-7)
2. By-pass tray (☞ p.4-98 "By-Pass Paper Size Detection Board")
3. By-pass cover [A] (🔩 x 2)
4. Feed roller [B] (x 1)
5. Pick-up roller [C] (x 1)
6. Separation roller [D] (x 1)

Note

- Even though the FRR mechanisms for the tandem tray (Tray 1), universal trays (Tray 2, Tray 3) by-pass tray and ADF are similar, the only rollers that are interchangeable are the tandem and universal trays (Trays 1, 2, 3).
- Do not touch the surface of new rollers during replacement.

## 4.11.15 BY-PASS SEPARATION ROLLER PRESSURE ADJUSTMENT




B246R1093

1. Loosen the separation roller gear [A].

   The position of the drive gear for the separation roller can be changed in order to change the amount of pressure exerted by the separation roller. This adjustment can be done:

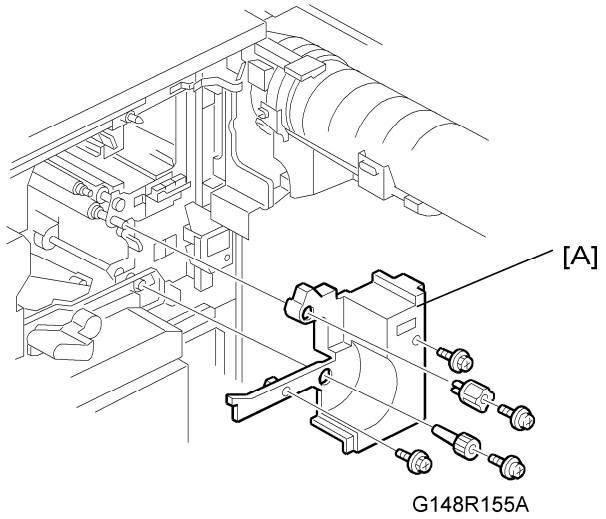
   - When feeding special paper, especially thick paper
   - When the customer experiences feed problems

   Note

   - The separation roller gear is positioned at the groove before shipping.

2. Move the separation roller gear right to increase the pressure to correct misfeeds.

## 4.11.16 REGISTRATION SENSOR

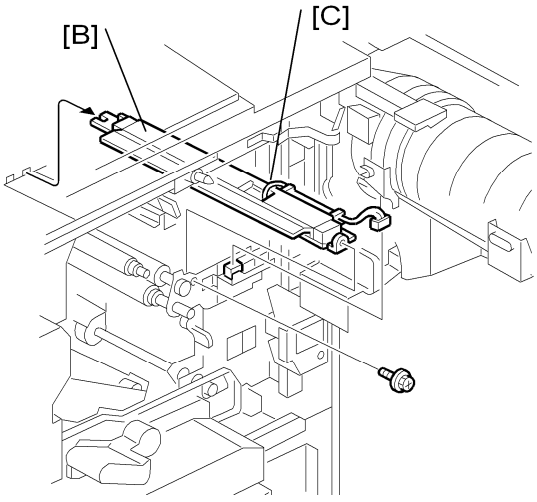



G148R155A

1. Inner cover [A] ( x 4)

   Remove:

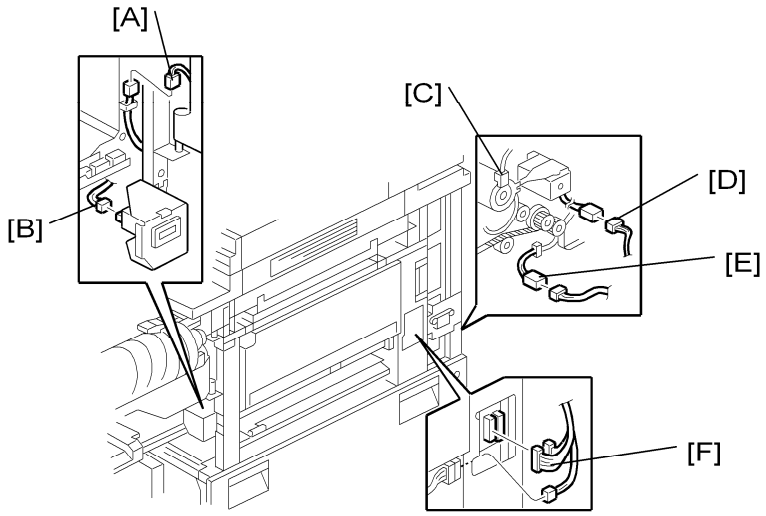
   - Development unit ( p.4-43 "Removal ")
   - Charge corona unit ( p.4-28)
   - OPC drum unit ( p.4-30 "OPC Drum Removal")




B246R1095

2. Paper dust removal unit [B] ( x 1, x 1)
3. Registration sensor [C]

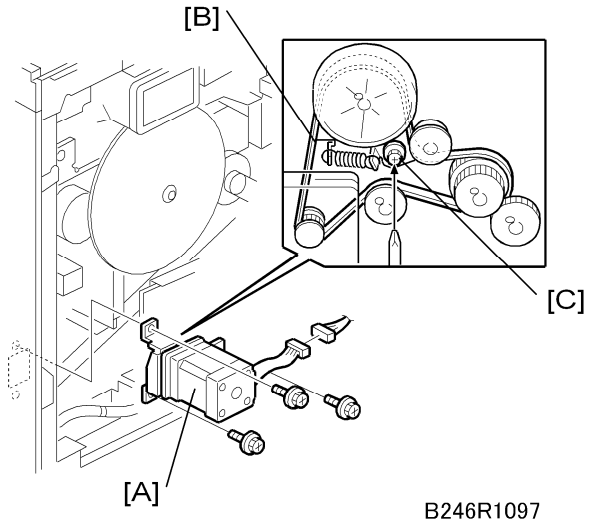
## 4.11.17 REGISTRATION AND BY-PASS UNIT REMOVAL




B246R1096

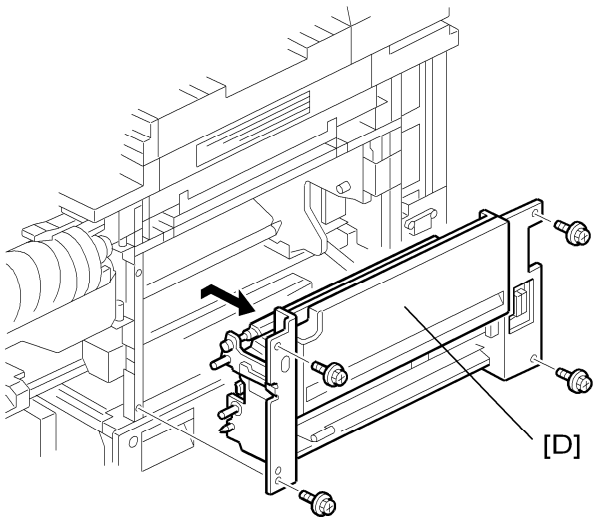
1. Remove the development unit. (☛ p.4-25 "Development Unit Removal")
2. Remove the inner cover. (🔩 x 4)
3. Disconnect the toner bottle holder connector [A] and counter connector [B].
4. Pull out the duplex unit about 10 cm.
   - Confirm that the registration roller is separated from the positioning pin.
5. Remove the right upper cover. (☛ p.4-7 "Right Covers")
6. Rear upper cover (☛ p.4-8 "Rear Covers")
7. Disconnect the following connectors:
   - Relay clutch connector [C]
   - Guide plate solenoid connector [D]
   - Guide plate sensor connector [E]
   - By-pass tray unit connectors [F]

**Paper Feed**




B246R1097

8. Remove the by-pass feed motor [A] ( x 3, x 1).
   - At re-installation, if the tension of the belt [B] is slack, loosen the screw on the tension bracket [C], move the screw to put more tension on the belt, then tighten the screw at the new position.




B246R1098

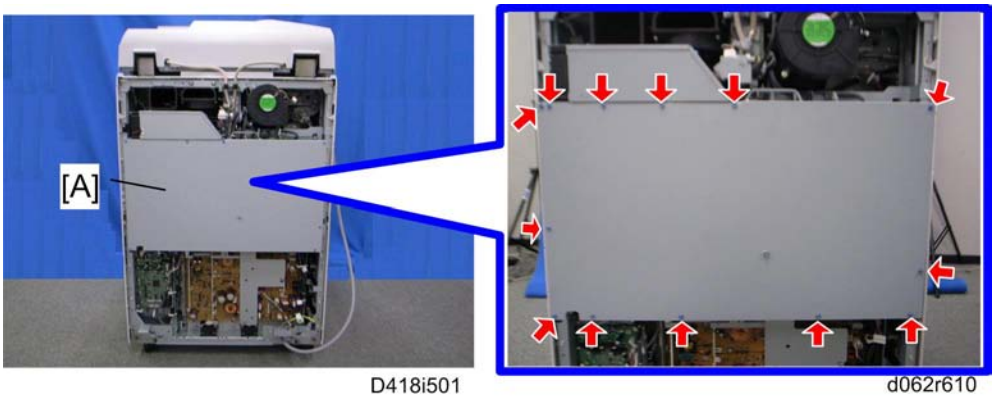
9. Remove the by-pass unit [D] ( x 4).

   When removing and installing the by-pass unit:
   - Make sure that the unit does not catch on any harnesses.
   - On re-installation, make sure that no harnesses are pinched between the unit and the machine frame.
   - You must re-install the by-pass unit with the duplex unit open.

# 4.12 PCBS AND HDD

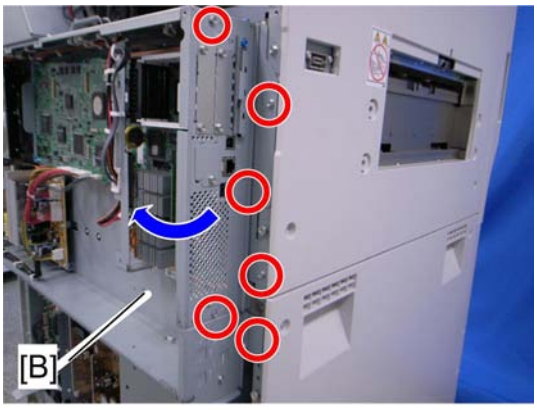
## 4.12.1 CNT BOARD (CONTROLLER BOARD)

1. Rear upper cover and rear lower cover (☛ p.4-8)



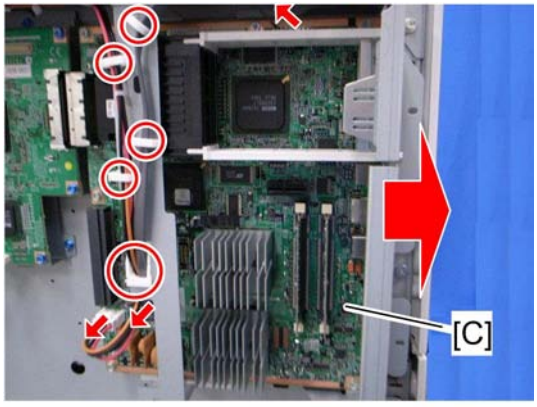

D418i501 d062r610

2. Controller box cover [A] (🔩 x 13)




d062r680a

3. Open the controller box [B] (🔩 x 6)



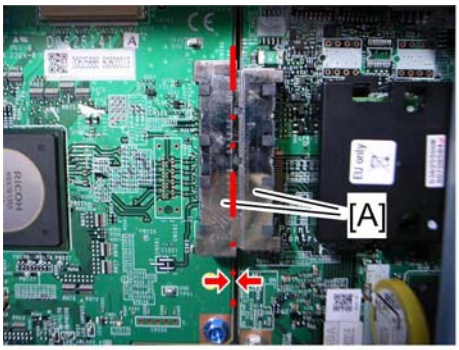

d062r681

**PCBs and HDD**

4. CNT board [C] ( x 3, x 5)

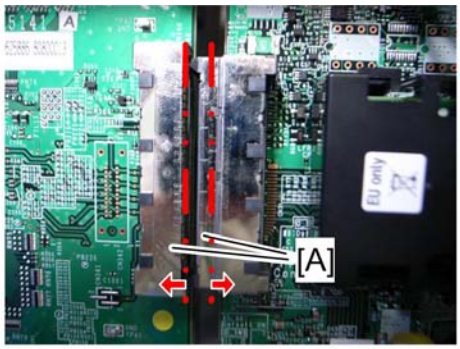
### *Reinstallation of CNT Board*

1. Remove the NVRAM from the old CNT board, and then install it on the new CNT board.
2. Install the new CNT board.




correct

d062r707




Incorrect

do62r708

3. Make sure the relay connectors [A] are connected securely.

Note

- Each model in this series has a different CNT board.
- If you install the wrong CNT board, the operation panel displays SC955-03.
- In this case, replace the CNT with the correct board.

## 4.12.2 NVRAM

This machine has an electronic counting device that uses software to monitor the number of copies. In addition to the electronic counter of the NVRAM on the CNT board, the machine is also equipped with a mechanical counter.

### *NVRAM on the BCU*

1. Make sure that you have the SMC report (factory settings). This report comes with the machine.
2. Output the SMC data (SP5-990-001) if possible.
3. Turn the main switch off.
4. Install an SD card into SD card slot 2. Then turn the main power on.
5. Copy the NVRAM data to an SD card (SP5-824-001) if possible.
6. Turn off the main switch. Then unplug the power cord.
7. Replace the NVRAM on the BCU and reassemble the machine.
8. Plug in the power cord. Then turn the main switch on.

9. SC195 occurs.
10. Copy the data from the SD card to the NVRAM (SP5-825-001) if you have successfully copied them to the SD card.
11. Turn the main switch off. Then remove the SD card from SD card slot 2.
12. Turn the main switch on.
13. Specify the SP and UP mode settings.
14. Do the process control self-check.

Important

The following data stored in the NVRAM will **not** be saved to the SD card when you perform an NVRAM data upload (SP5824).

- Total counter value
- C/O, P/O counter values
- Duplex, A3/DLT/Over 420mm, Stapler, and Scanner counter values
- **Engine SP data**

Therefore, whenever you perform an NVRAM upload/download, make sure to print out the SP Data List **before** you perform **SP5801-001** (Memory Clear: All Clear) or **SP5801-002** (Memory Clear: Engine).

**NVRAM Upload/Download Procedure:**

1) Print out the SP Data List from **SP5990-002**.
2) Perform the NVRAM data upload (to the SD card) according to the procedure in the Service Manual.
3) Perform the memory clear (**SP5801-001 or -002**).
4) Perform the NVRAM data download (from the SD card) according to the procedure in the Service Manual.
5) Input the data listed above manually.

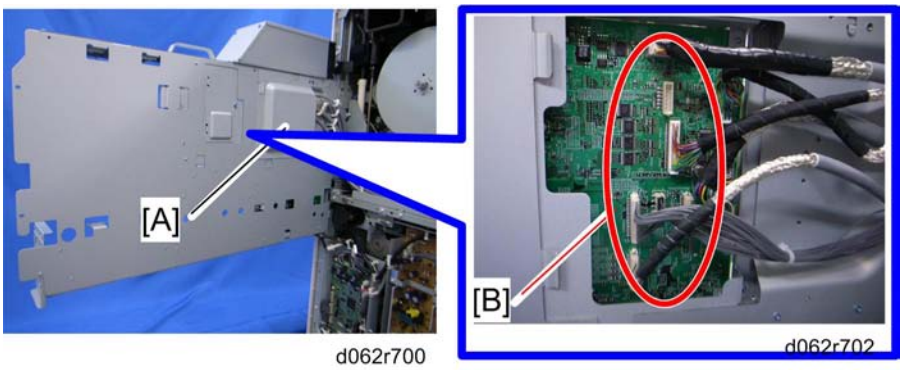
## *NVRAM on the Controller*

1. Make sure that you have the SMC report (factory settings). This report comes with the machine.
2. Output the SMC data (SP5-990-001) if possible.
3. Turn the main switch off. Then unplug the power cord.
4. Install a New NVRAM on the controller. Then reassemble the machine.

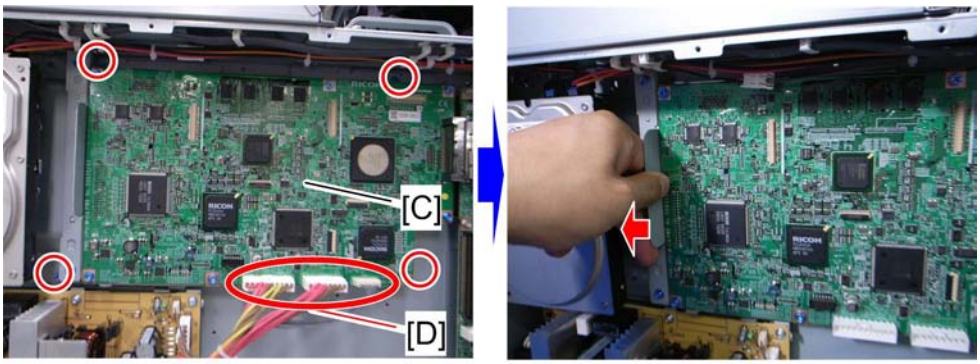
5. Turn the main switch on.
6. SC995-02 occurs and the machine rewrites SP5-811-005 automatically.
7. When the operation panel displays Copy Screen, turn the machine off and on.
8. Do the process control self-check.

## 4.12.3 IPU

1. Controller box cover (☛ p.4-105)



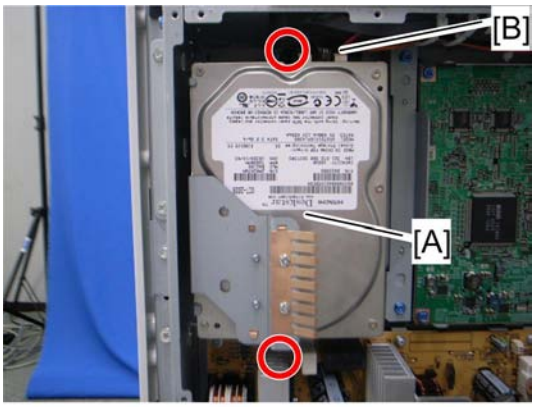

2. Open the controller box (🔩 x 3), then remove the bracket [A] (🔩 x 2)
3. Remove all harnesses [B]




4. IPU [C] (🔩 x 4, 🔩 x 3 [D])
5. After removing screws and harnesses, pull the IPU to the left.

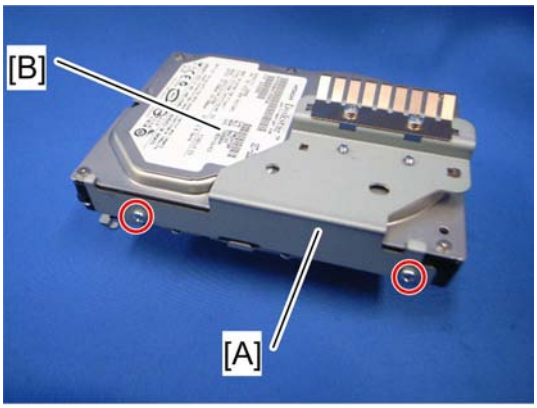
## 4.12.4 HDD

1. Controller box cover (☛ p.4-105 "CNT Board (Controller Board)")



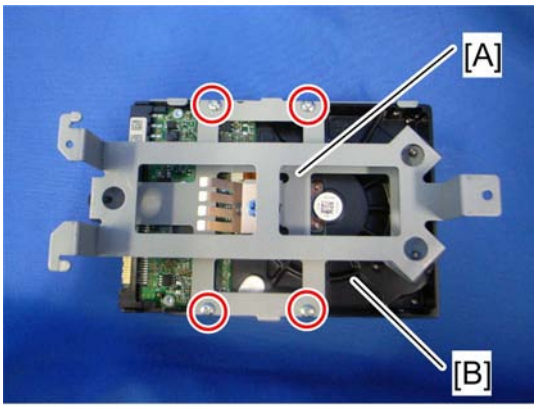

d062r710a

2. HDD assembly [A] ( x 2, x 2 [B])




d062r712a

3. Remove the bracket [A] ( x 2) from the HDD assembly [B]




d062r713a

4. HDD [B] ( x 4)

## *Reinstallation*

Important

- Explain to the customer that the following information stored on the HDD is lost when the HDD is replaced:

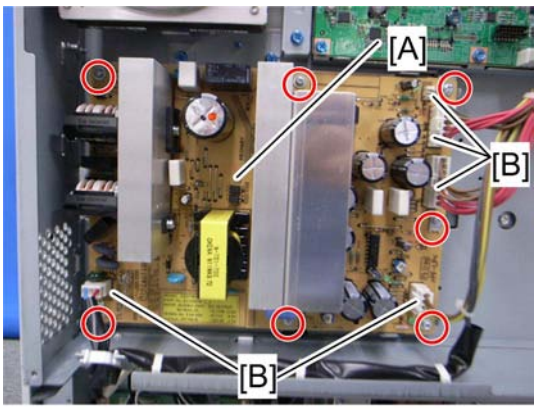
**PCBs and HDD**

- Document server documents
- Custom-made stamps
- Document server address book
- The address book and document server documents (if needed) must be input again.
- If the customer is using the Data Overwrite Security feature, the DOS function must be set up again. For more, see "Installation".
- The browser unit must also be installed again.

1. HDD [B] ( x 4)
2. After reinstalling a HDD, execute SP5832 001 (HDD Format – All) to format the hard disk.
3. Download the browser unit, see "Installation" of Browser Unit Type E.

## 4.12.5 CTL-PSU

1. Controller box cover ( p.4-105 "CNT Board (Controller Board)")

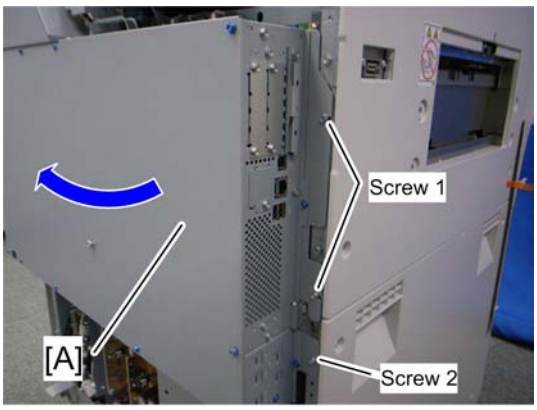


d062r720

2. CTL-PSU [A] ( x 7, x 5 [B])

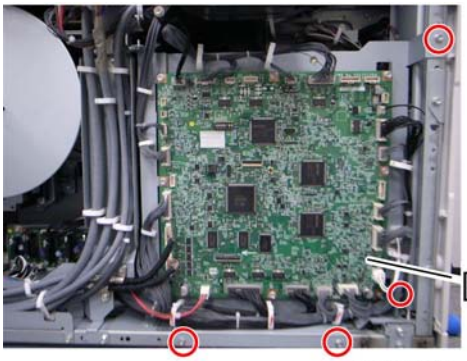
## 4.12.6 BCU

1. Rear upper cover and rear lower cover ( p.4-8)

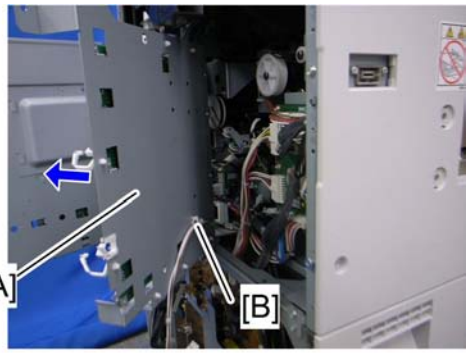



d062r603a

2. Open the controller box [A] ( x 3)

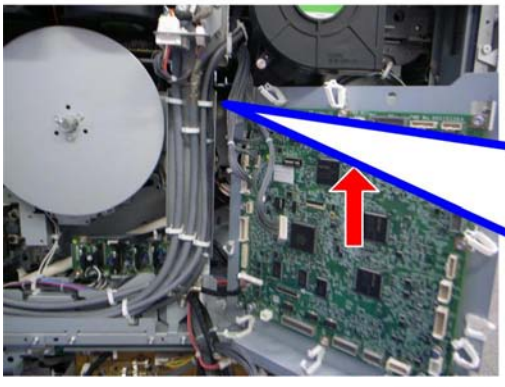



d062r622

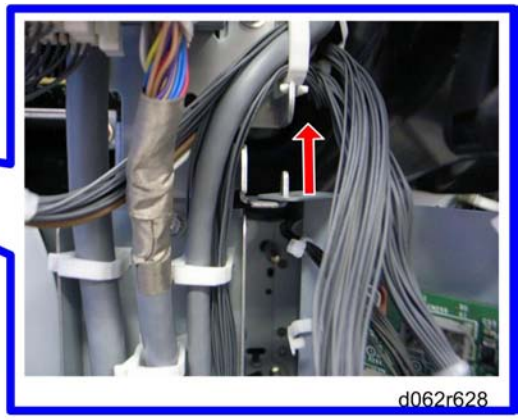



d062r625

3. Open the BCU bracket [A] ( x 4, all s, all s)
4. Do not forget to release the clamp [B].



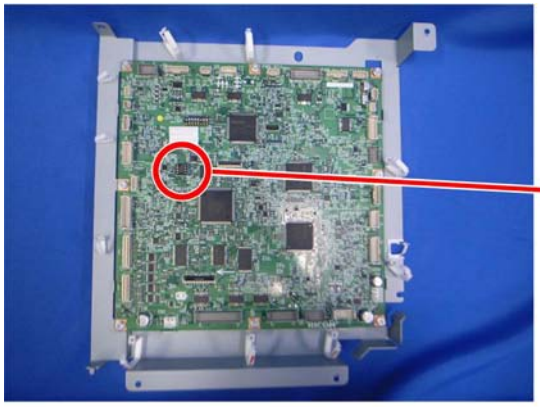
d062r626



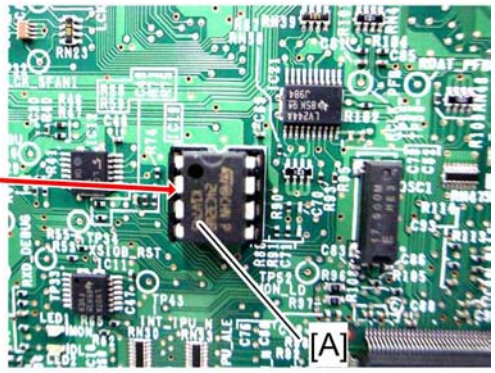
d062r628

5. Lift up the BCU bracket and remove it.

### *Replace the BCU.*



d062r629




d062r624

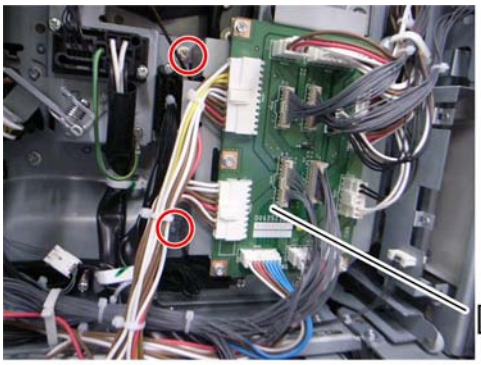
1. Remove the NVRAM from the old BCU, and then install it on the new BCU.
2. Install the BCU.
3. Turn on the machine, so that SC995-01 occurs.
4. Enter the SP mode (SP5-811-004), and then enter the machine code.
5. Exit the SP mode, and then reboot the machine.

Note

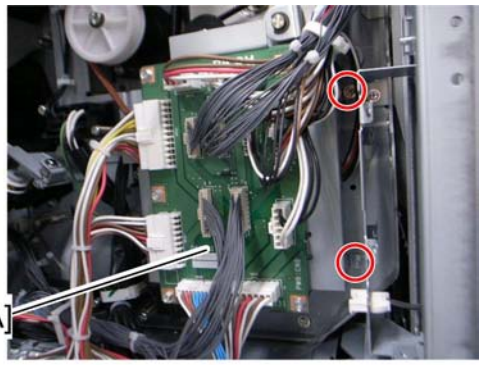
- When installing a new NVRAM, SC195 occurs. In this case, do SP5-811-002 and input the machine code.

## 4.12.7 CNB

1. Open the BCU bracket (☛ p.4-110 "BCU").
   - It is not necessary to release all the clamps and harnesses.



d062r633

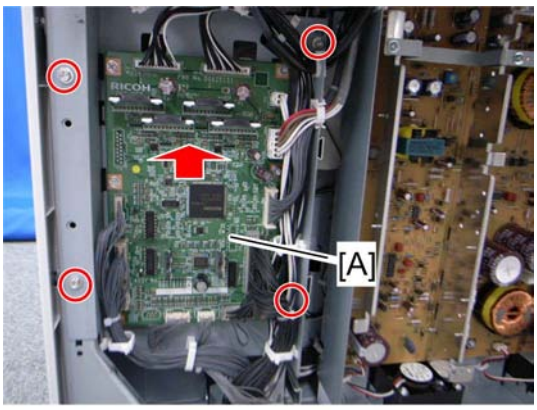



d062r632

2. CNB [A] (🔩 x 4, all harnesses)

## 4.12.8 PFB

1. Open the controller box (☛ p.4-105 "CNT Board (Controller Board)")

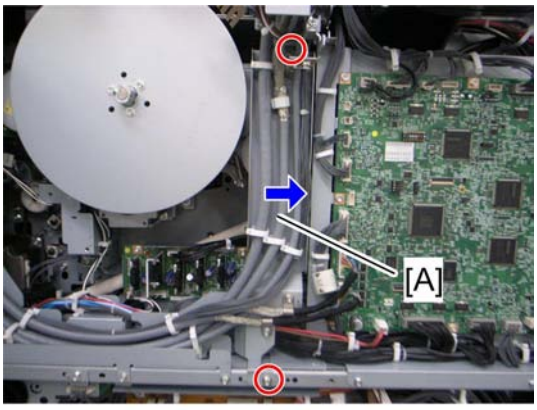



d062r650

2. PFB bracket [A] ( x 4, all s)

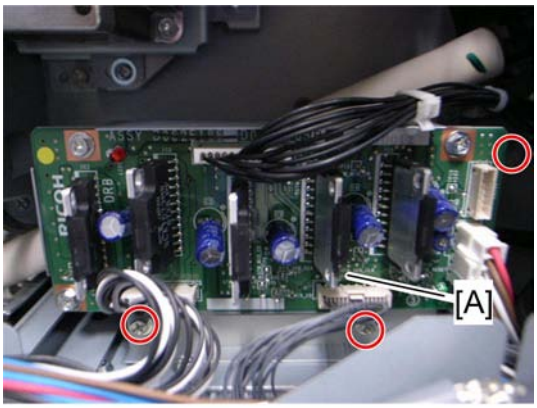
## 4.12.9 DRB

1. Open the controller box ( p.4-105 "CNT Board (Controller Board)")




d062r641

2. Move the stay [A] slightly to the right ( x 2)

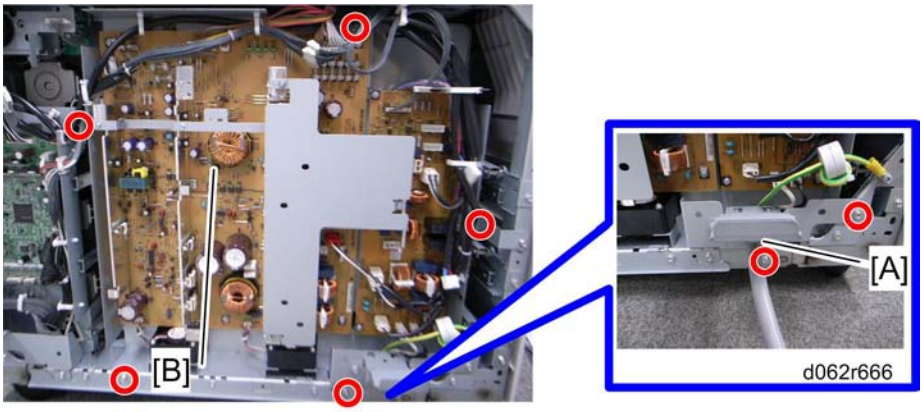



d062r640

3. DRB bracket [A] ( x 3, all s)

## 4.12.10 PSU

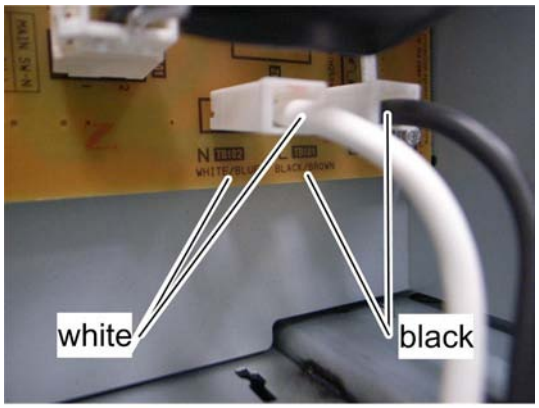
1. Open the controller box (☞ p.4-105 "CNT Board (Controller Board)")



d062r662

2. Power cord bracket [A] (🔩 x 2)
3. PSU assembly [B] (🔩 x 5)

### *Reinstallation of PSU*

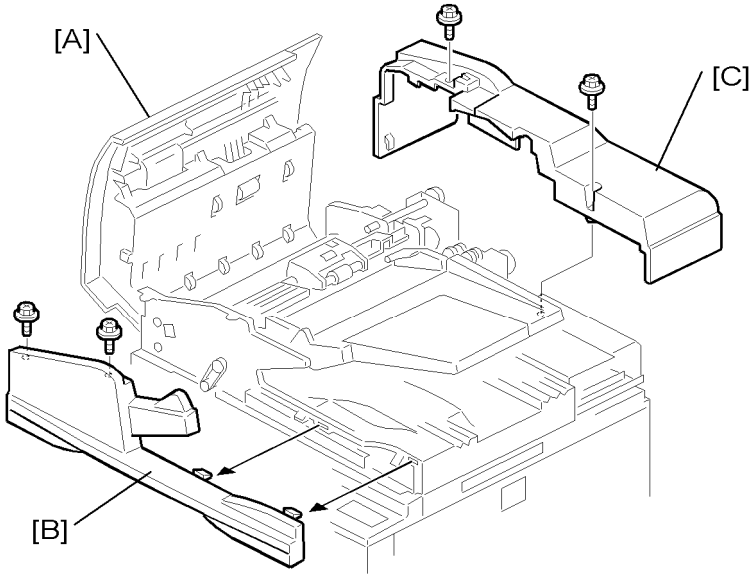


d062r670

Make sure the white cable and black cables are connected correctly.

# 4.13 ADF

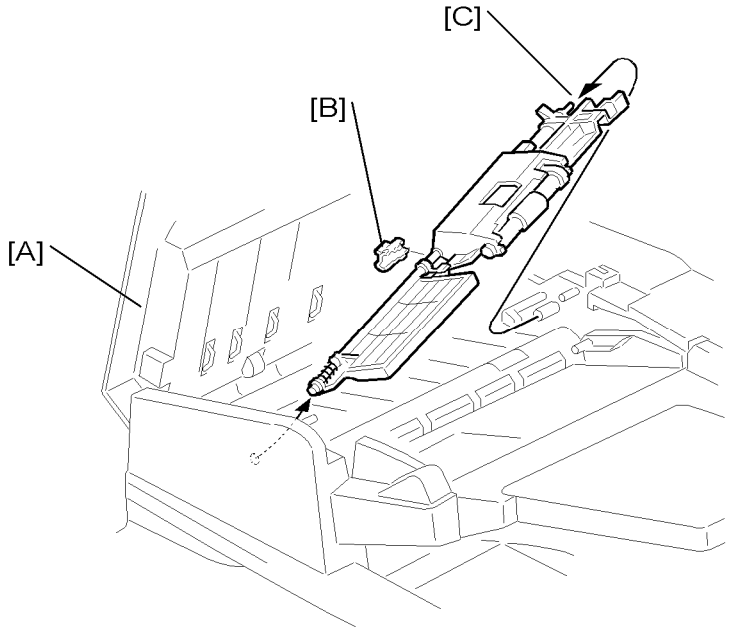
## 4.13.1 ADF COVERS




b246r866

1. Feed cover [A] ( x 2, all s, ground wire x 1).
2. Front cover [B] ( x 2)
   - Press down on the tabs to remove.
3. Rear cover [C] ( x 2)
   - Press down on the tabs to remove.

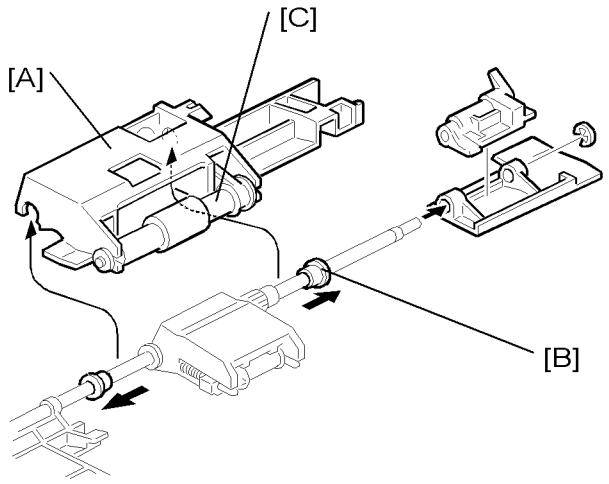
## 4.13.2 FEED UNIT




b246r867

1. Open the feed cover [A].
2. Remove the snap fitting [B].
3. Push the feed unit slowly to the left to disengage the shaft [C] on the right, then lift it out.

## 4.13.3 FEED BELT AND PICK-UP ROLLER



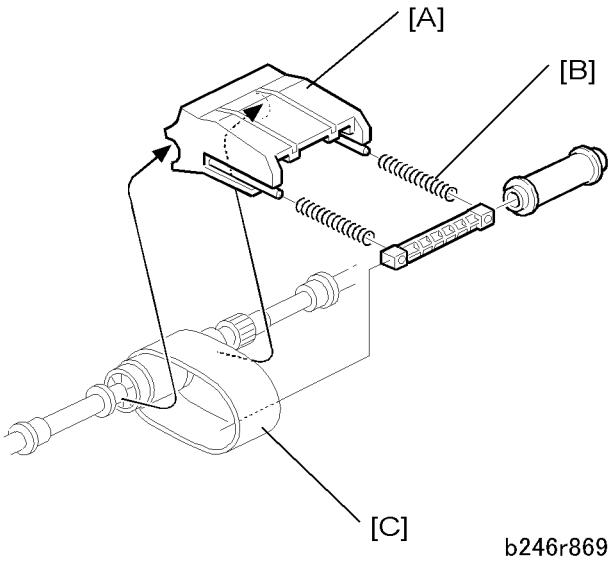

b246r868

1. Remove the feed unit (☞ p.4-116).
2. Remove the pick-up roller unit [A].

3. Remove the bushings [B].
4. Remove the pick-up roller [C].

Note

- At re-assembly, make sure that the tab on the front guide plate is above the pick-up roller.

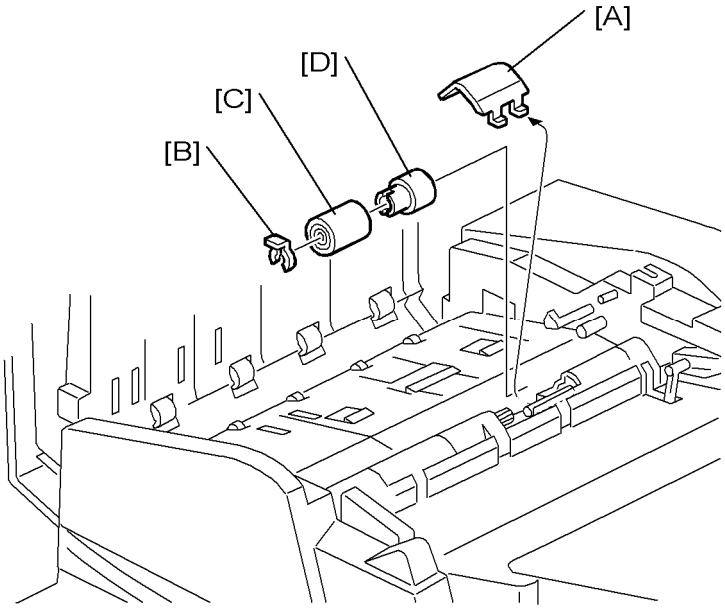



5. Hold the feed belt holder [A] by the left and right sides, then carefully pull it off the bushing. Do not let the springs [B] fall.
6. Remove the feed belt [C].

Note

- When re-assembling, set the pick-up roller springs first, then follow this procedure in reverse.

## 4.13.4 SEPARATION ROLLER

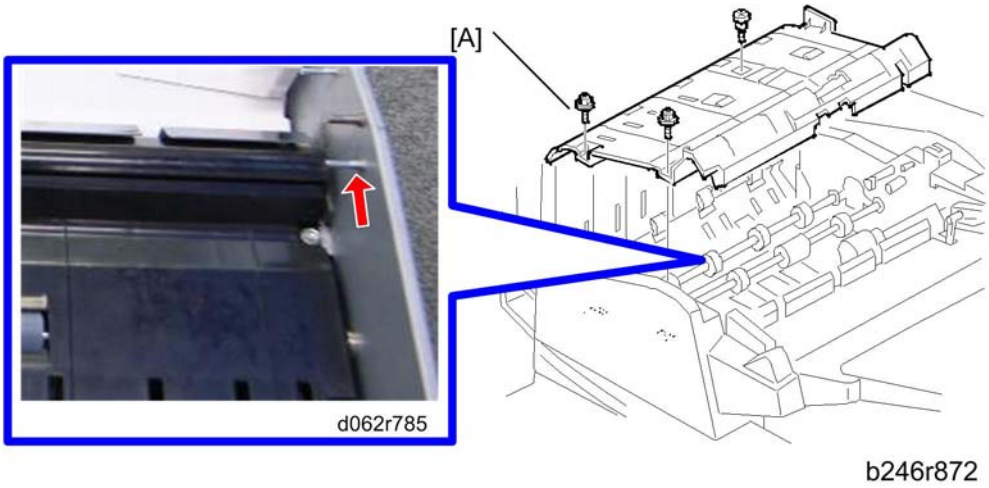



b246r870

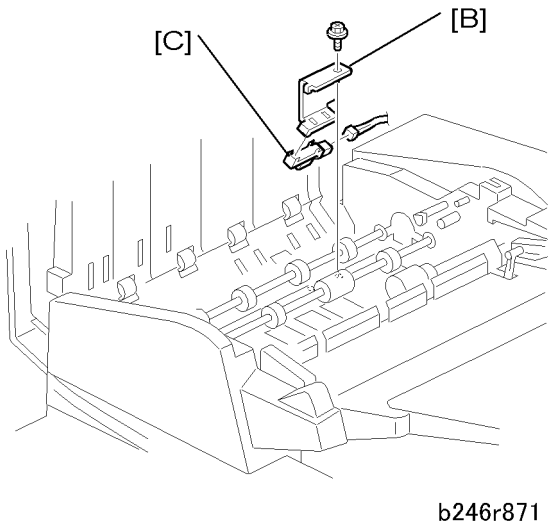
1. Open the feed cover.
2. Remove the feed unit (☛ p.4-116)
3. Separation roller cover [A]
   - Use the tip of a screwdriver to push up the cover.
4. Clip [B] (x 1)
5. Separation roller [C]
6. Torque limiter clutch [D]

## 4.13.5 REGISTRATION SENSOR

1. Open the feed cover.
2. Remove the feed unit (☛ p.4-116)

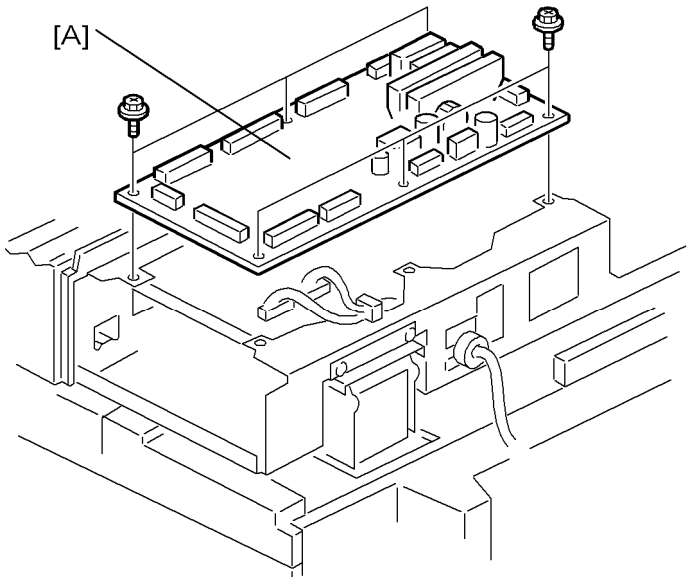



3. Remove the screw indicated above by a red arrow.
4. Guide plate [A] ( x 3)




5. Registration sensor bracket [B] ( x 1)
6. Registration sensor [C] ( x 1)

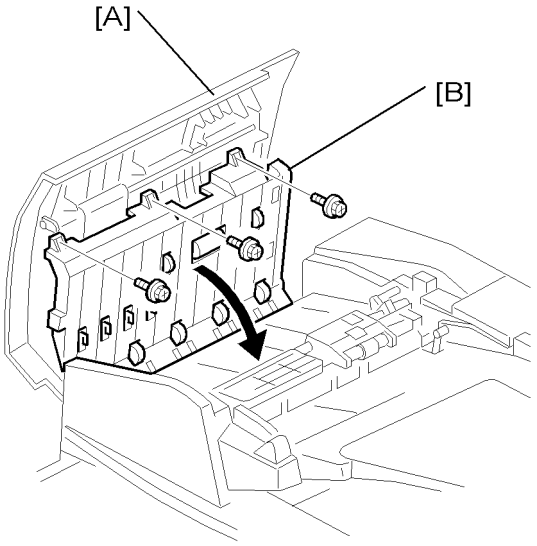
## 4.13.6 ADF CONTROL BOARD




b246r873

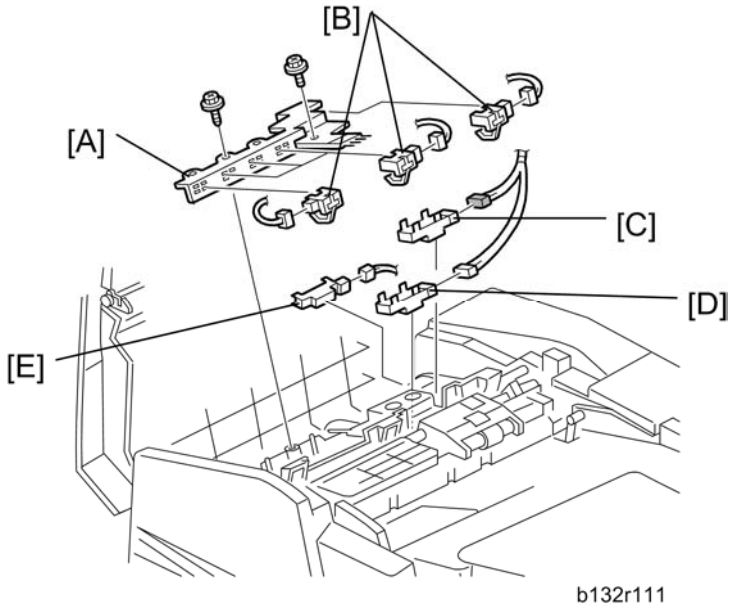
1. ADF rear cover (☛ p.4-115)
2. ADF board [A] ( x 4, all s)

## 4.13.7 ORIGINAL WIDTH, INTERVAL, SEPARATION AND SKEW CORRECTION SENSORS



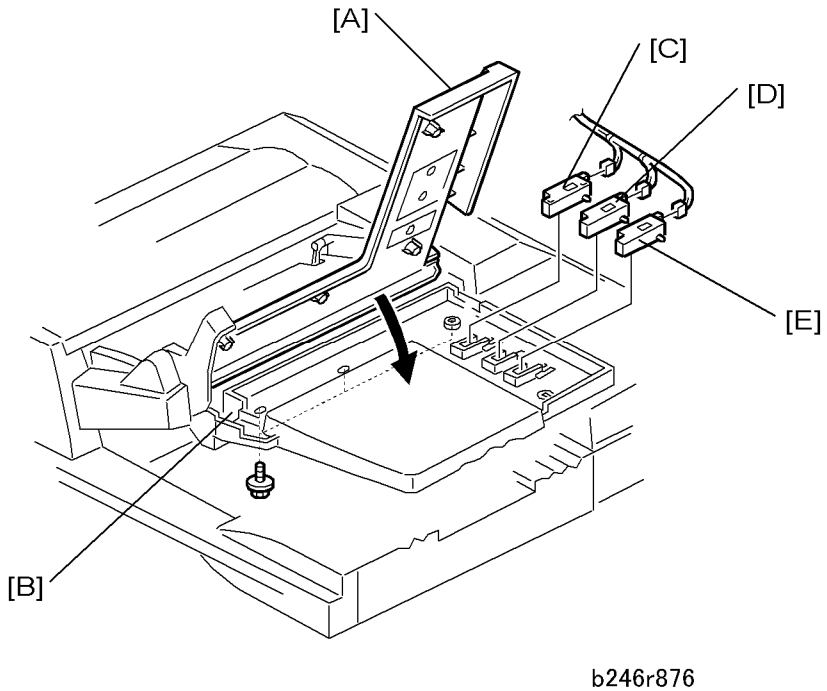

b246r874

1. Open the feed cover [A].
2. Guide plate [B] ( x 3)




3. Width sensor guide plate [A] ( x 2)
4. Original width sensors [B] (x 5, x 5)
5. Separation sensor [C] ( x 1)
6. Skew correction sensor [D] ( x 1)
7. Interval sensor [E] ( x 1)

## 4.13.8 ORIGINAL LENGTH SENSORS

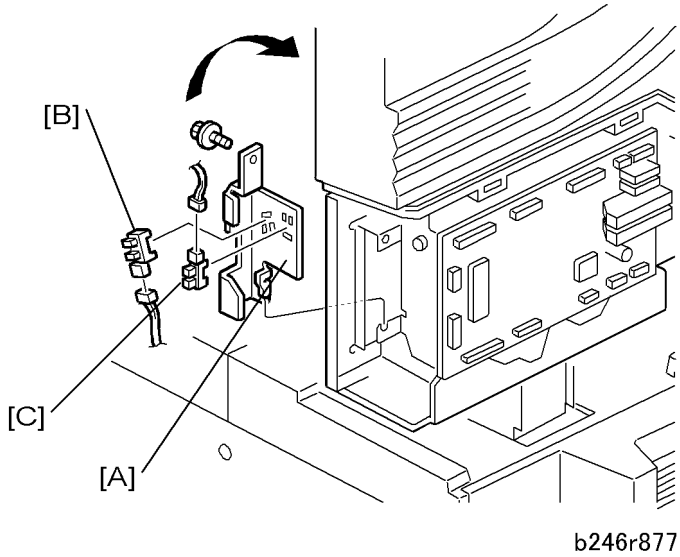



1. Open the original tray [A].

**ADF**

2. Lower cover [B] ( x 4)
3. Original length sensor 1 – B5 [C] ( x 1)
4. Original length sensor 2 – A4 [D] ( x 1)
5. Original length sensor 3 – LG [E] ( x 1)

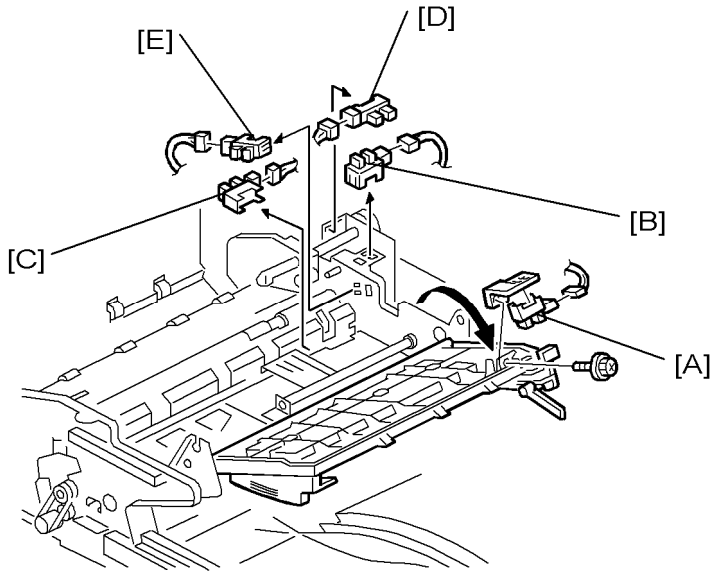
## 4.13.9 DF POSITION AND APS SENSORS




b246r877

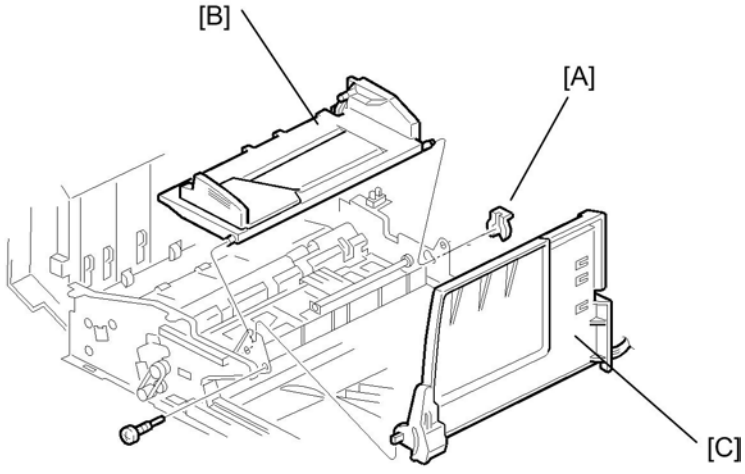
1. Open the ADF.
2. ADF rear cover ( p.4-115)
3. Bracket [A] ( x 1)
4. ADF position sensor [B] ( x 1)
5. APS sensor [C] ( x 1)

## 4.13.10 OTHER ADF SENSORS




b246r878

1. Open the feed cover.
2. Open the front door
3. Rear covers ( x 4) ( p.4-8)
4. Clips [A] ( x 1)
5. Original tray [B] ( x 1)
6. Bottom plate [C] ( x 1)
7. Original set sensor [D] ( x 1)
8. Feed cover sensor [E] ( x 1)



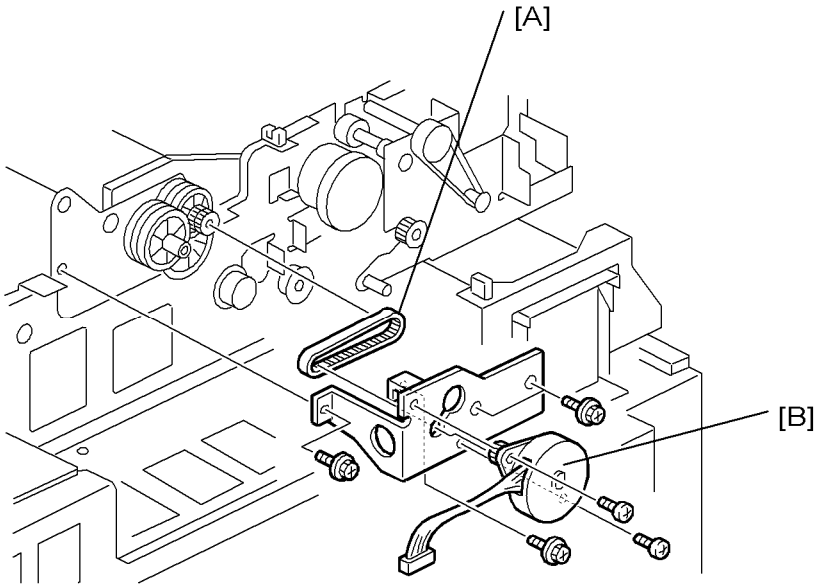

b246r879

9. Bottom plate HP sensor [A] ( x 1)

**ADF**

10. Pick-up roller HP sensor [B] ( x 1)
11. Bottom plate position sensor [C] ( x 1)

## 4.13.11 BOTTOM PLATE LIFT MOTOR

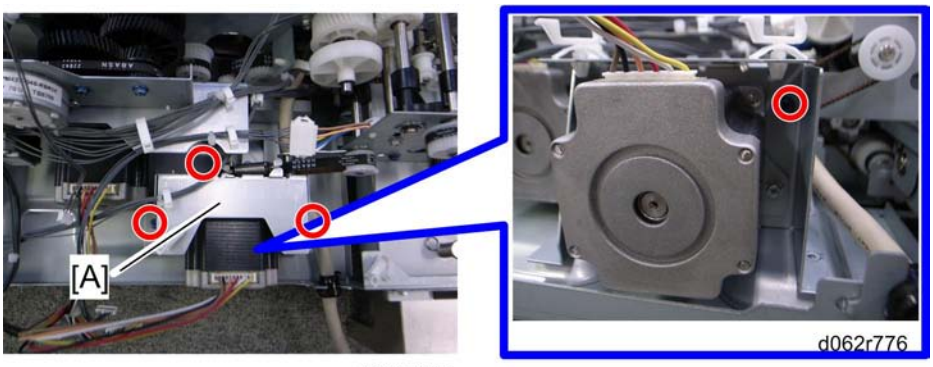



b246r880

1. Open the feed cover.
2. Rear cover ( p.4-8)
3. Bottom plate lift motor bracket [A] (harness x 1, x 1, x 3, timing belt x 1)
4. Bottom plate lift motor [B] ( x 2)

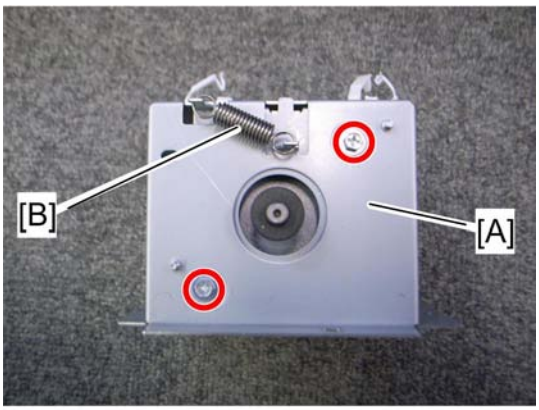
## 4.13.12 FEED MOTOR

1. Rear cover ( p.4-8)




d062r775

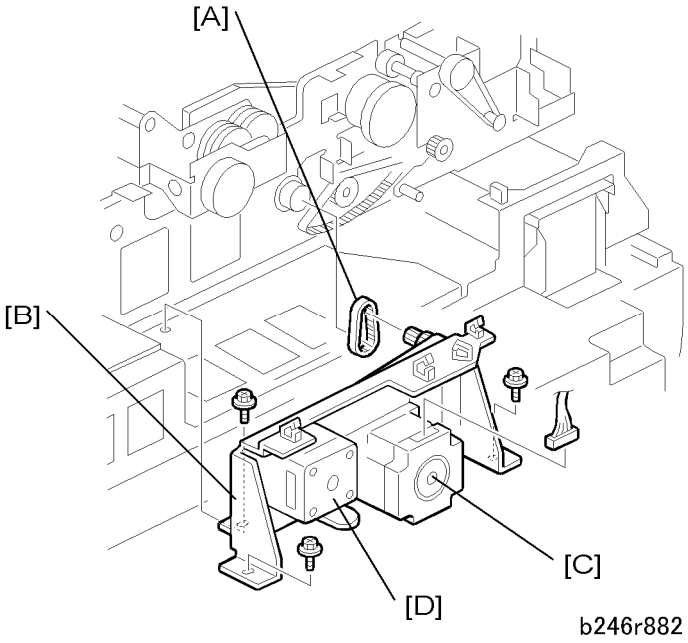
2. Feed motor bracket [A] ( x 4, x 1, belt x 1)




d062r777

3. Feed motor ( x 2, [B] x 1)

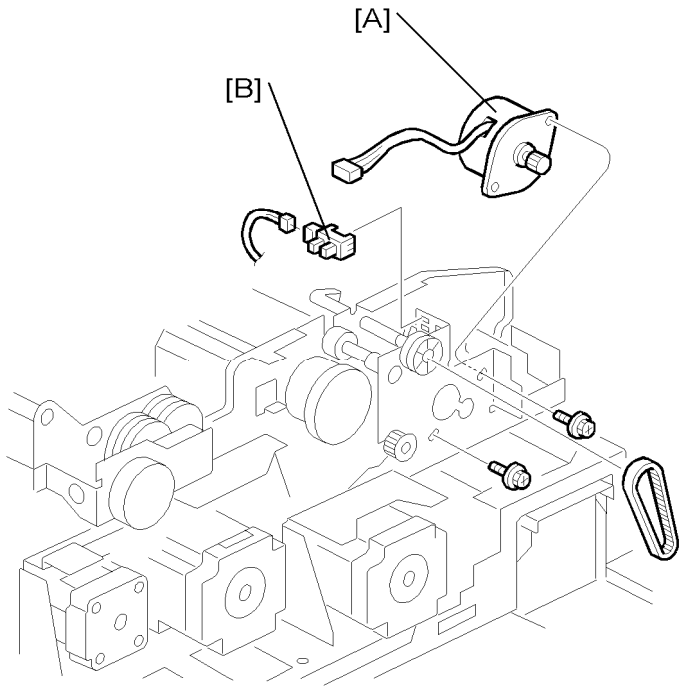
## 4.13.13 EXIT MOTOR AND TRANSPORT MOTOR




b246r882

1. Open the feed cover.
2. ADF rear cover ( p.4-115)
3. Bottom plate lift motor ( p.4-124)
4. Timing belt [A]
5. Exit/transport motor unit [B] ( x 3, x 2)
6. Transport motor [C] ( x 2)
7. Exit motor [D] ( x 2)

## 4.13.14 PICK-UP ROLLER MOTOR AND HP SENSOR




b246r883

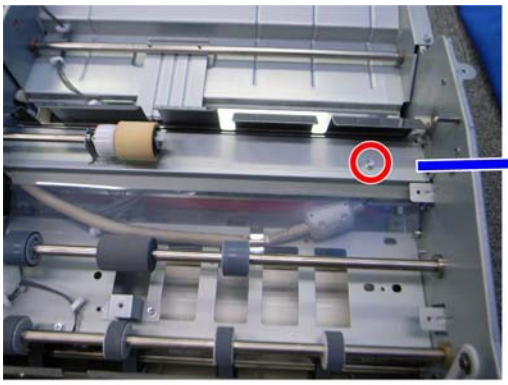
1. Open the feed cover.
2. ADF rear cover (☛ p.4-115)
3. Pick-up roller lift motor [A] ( x 2, x 1)
4. Pick-up roller HP sensor [B] ( x 1)

## 4.13.15 CIS UNIT

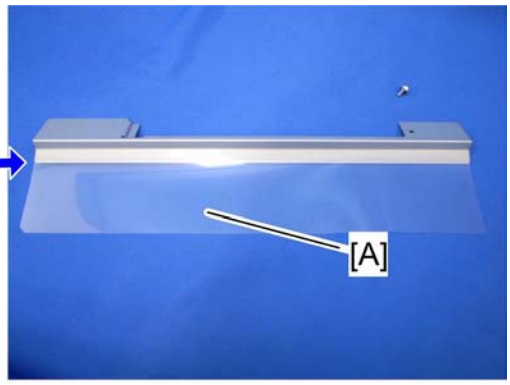
**⚠WARNING**

- Turn off the main power switch and unplug the machine before performing this procedure.

1. Open the feed cover.
2. Feed unit (☛ p.4-116)
3. Guide plate (☛ p.4-118)

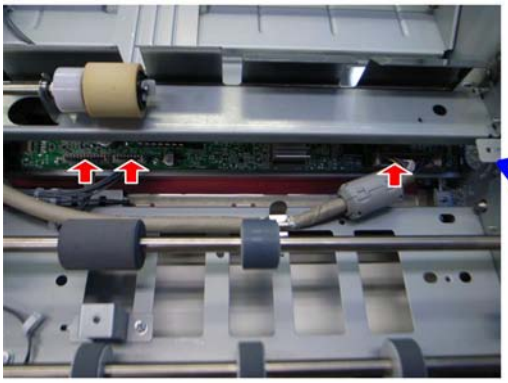


d062r778

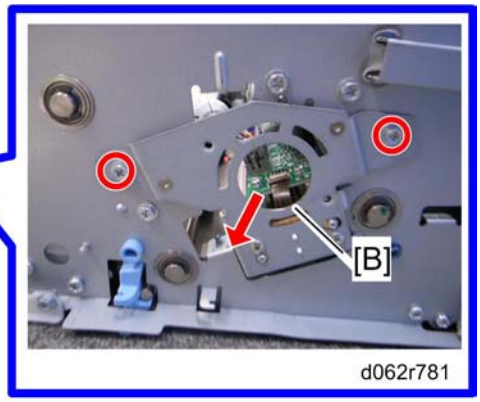



d062r779

4. Guide plate mylar [A] ( x 1)



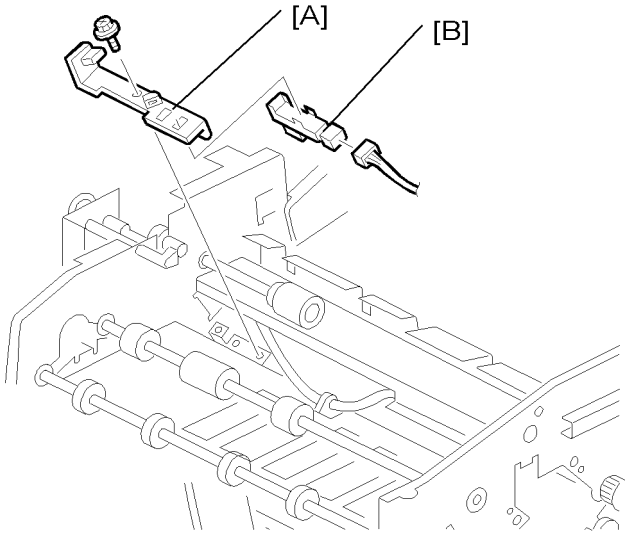
d062r780




d062r781

5. CIS unit [B] ( x 2, x 3)
   - Pull out the CIS unit carefully to avoid scratching the glass.

## 4.13.16 ADF EXIT SENSOR

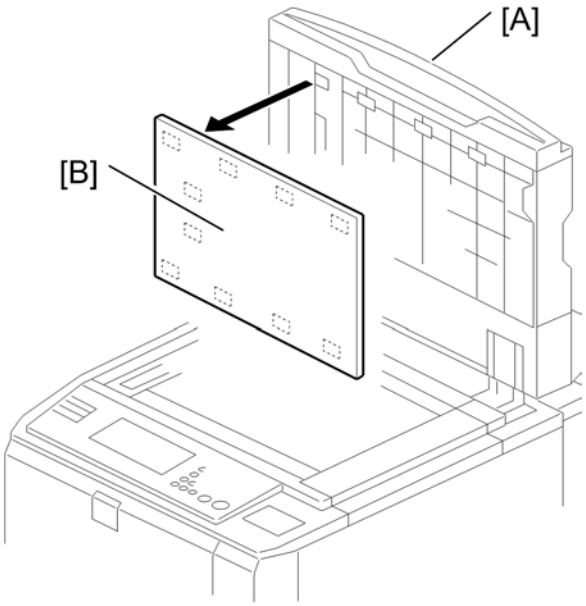



b246r886

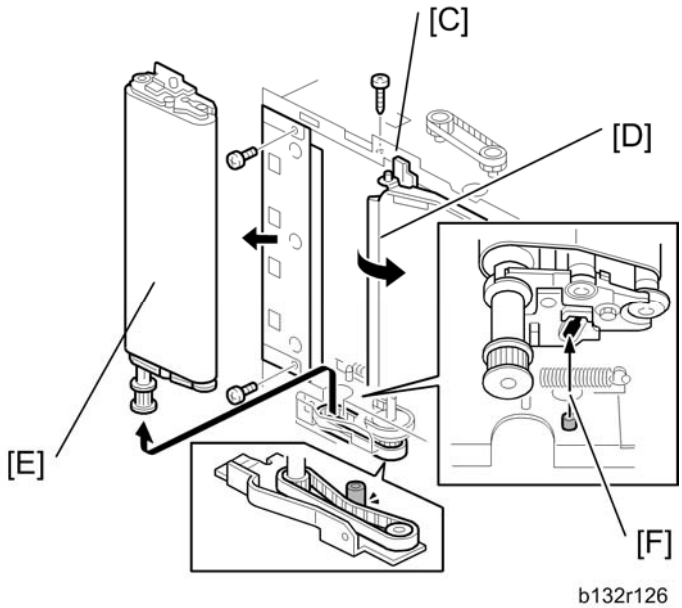
**ADF**

1. CIS Power Supply Board
2. Exit sensor bracket [A] ( x 1)
3. Exit sensor [B] ( x 1)

## 4.13.17 ADF TRANSPORT BELT ASSEMBLY




B132R102




b132r126

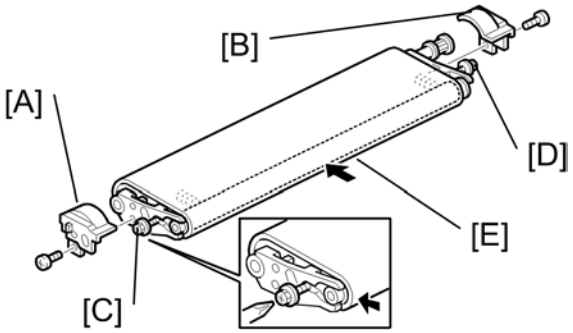
1. Open the ADF.
2. Raise the ADF [A] to the vertical position.
3. Pull off the white cover [B] (Velcro fasteners)
4. Release the stopper pin [C] of the transport guide [D].

5. Remove the transport belt unit [E] (Pin screw x1, Timing belt x1)

### *Reinstallation*

- Attach the timing belt as shown, then insert the pin screw [F] as shown.

### *Removing the Belt*

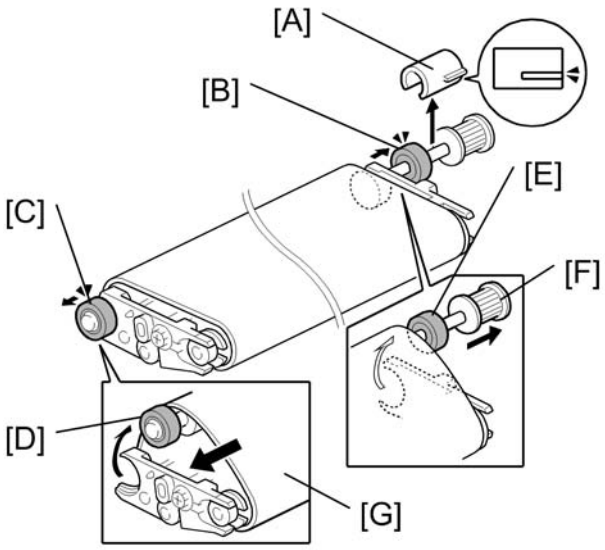



b132r127

1. Remove the front plastic cover [A] ( x1)
2. Remove the rear plastic cover [B] ( x1)
3. Loosen front lock screw [C]. Do not remove.
4. Loosen rear lock screw [D]. Do not remove. This releases the spring-loaded tension on the belt.
5. Grip the roller in the center [E], then squeeze the belt to bring the rollers together.
6. While squeezing the belt and rollers together in the center, tighten screws [C] and [D]. This compresses the spring and releases tension on the belt.

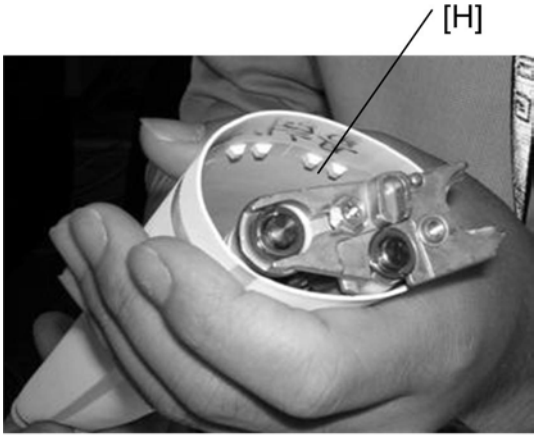
   **Important:** To avoid stripping the threads of the screws, do not apply excessive torque to these screws!
7. Release the belt and make sure that the belt is loose and that the rollers do not move. Repeat Steps 5 and 6 if the rollers expand and tighten the belt.

**ADF**




b132r139

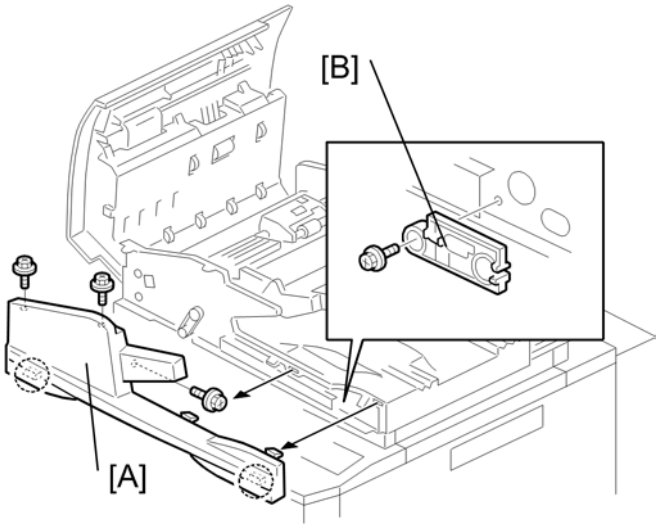
8. Remove the Teflon sleeve [A].
9. Push the rear shaft bearing [B] out of its bracket.
10. Push the front shaft bearing [C] out of its bracket.
11. Push the front end of the shaft [D] over the top of the bracket.
12. Push the rear end of the shaft [E] over the top of the bracket.
13. Pull the shaft [F] out of the belt.
14. Pull the belt [G] toward the front to remove it.
15. Slide the new belt over the assembly.
16. Insert the shaft [F] into the new belt, snap the shaft into its brackets, and push in the shaft bearings.




OrgB536

17. Make sure that studs on the underside of the belt [H] are aligned with the grooves in the Teflon rollers on each end of the shaft below.

### *Reinstalling the Belt*

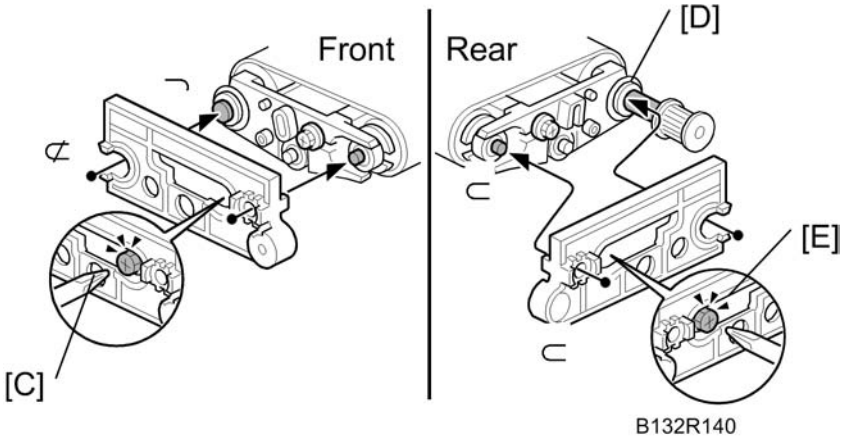



B132R104A

1. Remove the ADF front cover [A]
2. Take out the special tool [B].

Note

- The special tool [B] is attached to the front side plate. It is used to adjust the tension on the belt on both ends of the shaft.




B132R140

3. Fit the special tool onto the front (see "FRONT" in the above diagram).
4. Slowly loosen the front lock screw [C] until you see the tip of the shaft ❶ aligned with the hole ❷, then tighten the screw.

Important

- To avoid stripping the threads of the screws, do not apply excessive torque.

5. Remove the special tool and fit it onto the rear (see "REAR" in the above diagram).

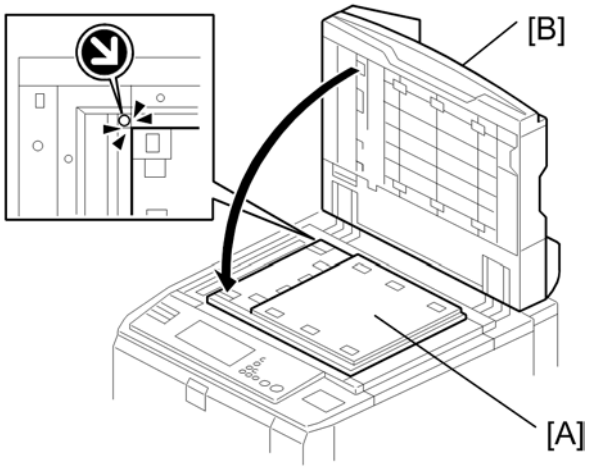
Note

- If the Teflon sleeve has been reattached at [D], remove it. Do not reattach the

sleeve until after adjusting the belt tension. (The special tool does not fit over the rear end with the Teflon sleeve attached.)

6. Slowly loosen the rear lock screw [E] until you see the tip of the shaft ❸ aligned with the hole ❹, then tighten the screw.
7. Re-install the Teflon sleeve.
8. Re-install the front and rear plastic cover.
9. Reinstall the transport belt assembly in the ADF.

### *Reattaching the White Cover*




b132r103

1. With its white side down, set the cover [A] on the exposure glass.
2. Make sure the upper left corner is aligned with the arrow at the corner of the exposure glass.
3. Close the ADF [B] on top of the cover.

# 4.14 COPY IMAGE ADJUSTMENTS:

# PRINTING/SCANNING

These adjustments must be performed after replacing any of the following parts:

- Scanner wires
- Lens block
- Scanner motor
- Polygon motor
- Tandem tray side fences
- Memory All Clear

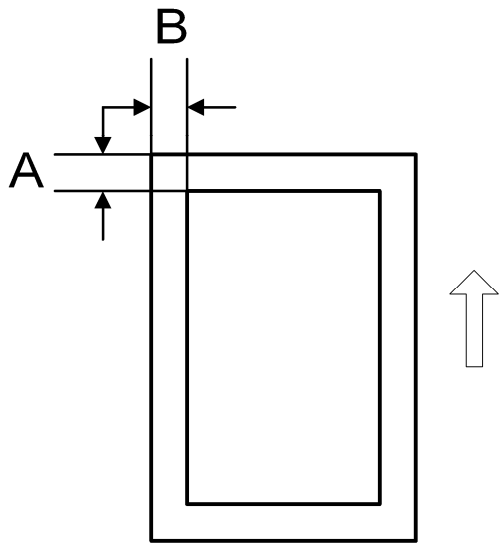
## 4.14.1 IMAGE ADJUSTMENTS: PRINTING

### *Preparation*

1. Make sure paper is installed correctly in each paper tray before you start these adjustments.
2. Use the Trimming Area Pattern (SP2-902-3, No. 18 to print the test pattern for the following procedures.
3. After completing these printing adjustments, be sure to set SP 2-902-3 to 0 again.

### *Registration - Leading Edge/Side-to-Side*

1. Check the leading edge registration, and adjust it using SP1-001.
   Specification: 3 ± 2mm.
2. Check side-to-side registration for each paper feed station, and adjust with the following SP modes.



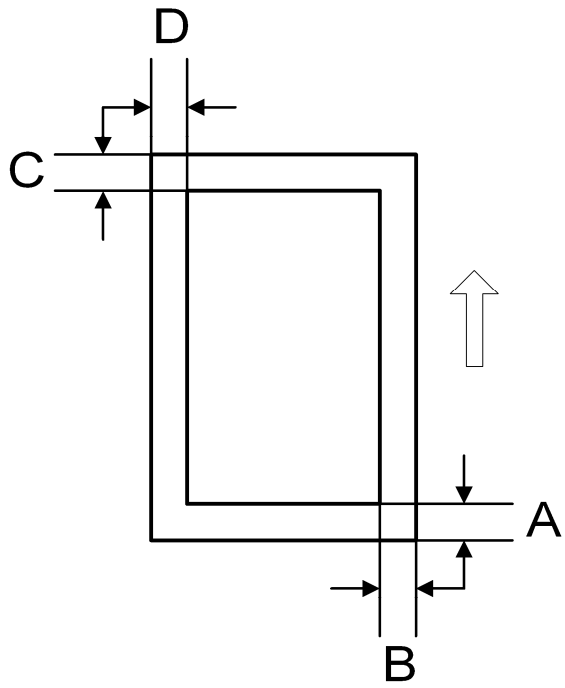

B140r887

| | SP mode | Specification |
|---|---|---|
| Tray 1 (Tandem Tray) | SP1002-001 | 0 ±1.5 |
| Tray 2 (Universal Tray) | SP1002-002 | |
| Tray 3 (Universal Tray) | SP1002-003 | |
| Tray 4 | SP1002-004 | Japan Only |
| LCT | SP1002-006 | 0±1.5 |
| Duplex Tray | SP1002-007 | 0±1.5 |

## *Blank Margin*

If the leading edge/side-to-side registration cannot be adjusted within specifications, adjust the leading/left side edge blank margin.

1. Check the trailing edge and right edge blank margins, and adjust them with the following SP modes.




B140R888



| Letter | What It Means |
|---|---|
| A | Trailing edge blank margin |
| B | Right edge blank margin |
| C | Leading edge blank margin |
| D | Left edge blank margin |

**SP2101 Print Erase Margin**

| | SP mode | Specification |
|---|---|---|
| Leading Edge | SP2101-001 | 2.5±2 mm |
| Trailing Edge | SP2101-002 | |
| Left edge | SP2101-003 | 2±1.5 mm |
| Right edge | SP2101-004 | |

### *Registration Buckle Adjustment*

When the customer is using special paper, buckle adjustment may be required if paper feed problems arise.

- If the buckle is too large, this can cause wrinkling, creasing, or jams caused by sheets overtaking the sheets ahead of them in the paper path.
- If the buckle is too small, this can cause jams at the registration roller or skew during paper feed.

1. Enter the SP mode.
2. Open SP1003.
   - To prevent wrinkling, creasing, or jams, set a smaller value.
   - To prevent jams at the registration roller or to eliminate skew, set a larger value.

| | |
|---|---|
| SP1003-001 | Registration Buckle Adjustment – Tray, LCT |
| SP1003-002 | Registration Buckle Adjustment – Duplex Tray |
| SP1003-003 | Registration Buckle Adjustment – Bypass Tray |
| Adjustment range | -9 mm → +9 mm (small → large buckle) |
| Initial value | 0 mm (Buckle = 10 mm) |

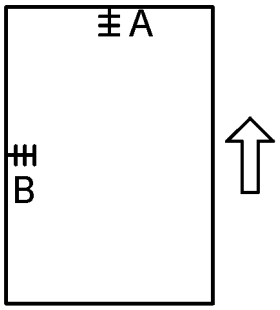
## 4.14.2 IMAGE ADJUSTMENTS: SCANNING

Before doing the following scanner adjustments, perform or check the printing registration/side-to-side adjustment and the blank margin adjustment.

Note

- Use an S-5-S test chart to perform the following adjustments.

### *Registration: Platen Mode*




b140r889

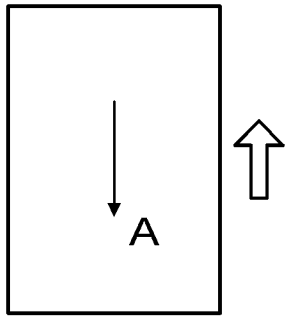
1. Place the test chart on the exposure glass and make a copy from one of the feed stations.
2. Check the leading edge and side-to-side registration, and adjust them with the following SP modes if necessary.

| SP No. | Name | Initial | Comment |
|---|---|---|---|
| SP4010 | Scanner Leading Edge Registration | 0 | A positive value shifts the image away from the leading edge, a negative value shifts it toward the leading edge. |
| SP4011 | Scanner Side-to-Side Registration | 0 | A positive value shifts the image toward the right edge, a negative value shifts it toward the left edge. |



## *Magnification*

Use an S-5-S test chart to perform the following adjustment.




b140r890

**Main Scan Magnification**

1. Place the test chart on the exposure glass and make a copy from one of the feed stations.
2. Check magnification, and then SP2909-001 (Main Scan Magnification - Copy) to adjust magnification if required. Specification: ±2%.

## *Sub Scan Magnification*

1. Place the test chart on the exposure glass and make a copy from one of the feed stations.
2. Check the magnification ratio. Use SP4008 (Scanner Sub Scan Magnification) to adjust if necessary. Specification: ±0.9%.

## 4.14.3 ADF SCANNING ADJUSTMENTS

### *Vertical Black Lines*

Vertical black lines in scanned images may be caused by dust or scratches on the ADF exposure glass. If the problem cannot be solved by cleaning the ADF exposure glass, execute SP4018 (Scanner Optical Axis Adjustment).

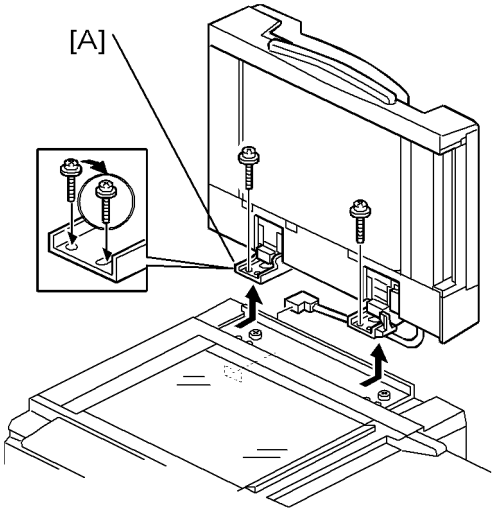
1. Adjust the scanner stopping position with SP4018-003 (just input a new value).
2. Store this value in the machine with SP4018-004.
3. Adjust the ADF registration for the front side scan with SP6006-003.
4. Make a test copy to check that the problem has been solved.

### *DIP Switch Settings (ADF Main Board)*

| SW 101 | | | | Operation Mode |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | |
| OFF | OFF | OFF | OFF | I/F Operation |
| ON | OFF | OFF | OFF | Free run (Simplex: each sheet stopped for registration) |
| OFF | ON | OFF | OFF | Free run (Simplex: continuous scanning) |
| ON | ON | OFF | OFF | Free run (Duplex: no registration) SP6009 (ADF Free Run) |
| ON | OFF | ON | OFF | Not used. |
| OFF | ON | ON | OFF | |
| ON | ON | ON | OFF | |
| OFF | OFF | OFF | ON | |
| ON | OFF | OFF | ON | Free run (Entrance mode *1, simplex, no registration) |
| OFF | ON | OFF | ON | Free run (Entrance mode, simplex, continuous scanning) |
| OFF | ON | ON | ON | Motor test (feed, transport, exit motors) |

*1: The entrance mode disregards paper size. Skew correction is performed at the scanning roller.

### *ADF Skew Correction*




b246r891

If the skew with A4 SEF paper is more than 0.5/200 mm in the main scan direction, you can adjust the position of the ADF hinge [A] or adjust the appropriate SP codes below.



| | |
|---|---|
| 6006* | ADF Registration Adjustment |
| 001 | ADF Horizontal Registration (Front)<br>Adjusts the side-to-side registration for the front in ADF mode.<br>[–3 to +3/0.1 mm] |
| 002 | ADF Horizontal Registration (Back)<br>Adjusts the side-to-side registration for the back in ADF mode.<br>[–3 to +3/0.1 mm] |
| 003 | ADF Vertical Registration (Front)<br>Adjusts the vertical registration for the front in ADF mode.<br>[–30 to +24/1 mm]<br>-30 = -5.1 mm<br>+24 = +4.1 mm |
| 004 | ADF Vertical Registration (Back)<br>Adjusts the vertical registration for the back in ADF mode.<br>[–30 to +30/1 mm]<br>-30 = -5.1 mm<br>+30 = +5.1 mm |

**Copy Image Adjustments: Printing/Scanning**

| | |
|---|---|
| 005 | ADF Buckle Adjustment 1<br>Adjusts the roller timing at the skew correction sensor/entrance roller. A larger setting causes more buckling.<br>[–12.0 to +12/1 mm]<br>-12 = -3.0 mm<br>+12 = +3.0 mm |
| 006 | ADF Buckle Adjustment 2<br>Adjusts the roller timing at the interval sensor/scanning roller. A larger setting causes more buckling.<br>[–8.0 to +8/1 mm]<br>-8 = -2 mm<br>+8 = +2 mm |
| 007 | ADF Trailing Edge Erase Margin (Front)<br>These settings adjust the erase margin for the trailing edges for the front.<br>[–20 to +20/1 mm]<br>-20 = -10 mm<br>+20 = +10 mm |
| 008 | ADF Trailing Edge Erase Margin (Back)<br>These settings adjust the erase margin for the trailing edges for the back.<br>[–20 to +20/1 mm]<br>-20 = -10 mm<br>+20 = +10 mm |

Note

- Normally, the interval sensor detects the leading edge of small originals (B6, A5, HLT), or originals for duplex copying, and delays the start of the scanning roller for the prescribed number of pulses to buckle the paper and correct skew. This feature can be switched on for all paper sizes with SP6020 (ADF Contact Mode In/Out). However, switching this feature on for all sizes reduces scanning speed slightly.

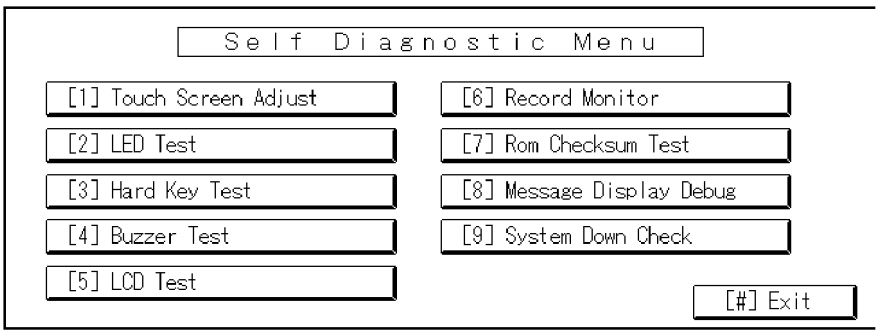
# 4.15 TOUCH SCREEN CALIBRATION

After clearing the memory, or if the touch screen detection function is not working correctly, follow this procedure to calibrate the touch screen.

Note

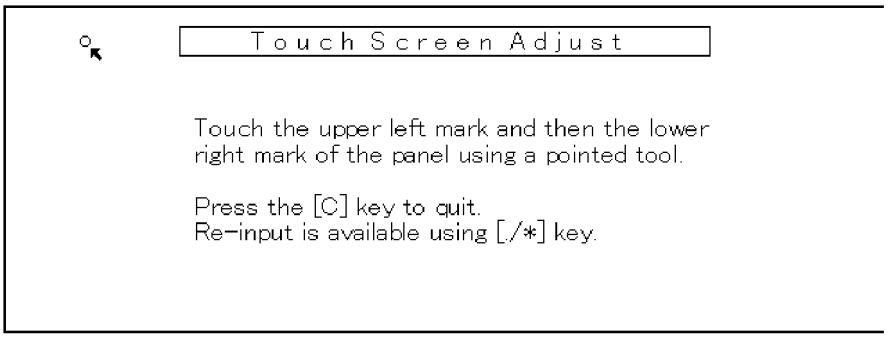
- Do not attempt to use items [2] to [9] on the Self-Diagnostic Menu. These items are for design use only. To avoid causing an error, do not touch the Reset key while doing this procedure.

1. Press , press 1993, and then press C 5 times to open the Self-Diagnostics menu.




b140r892

2. On the touch screen press “Touch Screen Adjust” (or press 1).




b140r893

3. Use a pointed (not sharp!) tool to press the upper left mark .
4. Press the lower right mark after it appears.
5. Touch a few spots on the touch screen to confirm that the marker (+) appears exactly where the screen is touched.
   If the + mark does not appear where the screen is touched, press Cancel and repeat from Step 2.
6. When you are finished, press [#] OK on the screen (or press #).
7. Touch [#] Exit on the screen to close the Self-Diagnostic menu and save the calibration settings.

# SYSTEM MAINTENANCE

| REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| 5 | 07/15/2009 | Updated Information – SP5801 |
| 20 ~ 21 | 07/15/2009 | Updated Information – Uploading/Downloading NVRAM Data |

# 5. SYSTEM MAINTENANCE

## 5.1 SERVICE PROGRAM MODE

### 5.1.1 GENERAL NOTES

The service program (SP) mode is used to check electrical data, change modes, and adjust values.

**⚠CAUTION**

- Never turn off the main power switch when the power LED is lit or flashing. To avoid damaging the hard disk or memory, press the operation power switch to switch the power off, wait for the power LED to go off, and then switch the main power switch off.

### 5.1.2 SERVICE MODE LOCK/UNLOCK

At locations where the machine contains sensitive data, the customer engineer cannot operate the machine until the Administrator turns the service mode lock off. This function makes sure that work on the machine is always done with the permission of the Administrator.

1. If you cannot go into the SP mode, ask the Administrator to log in with the User Tool and then set "Service Mode Lock" to OFF. After he or she logs in:
   - User Tools > System Settings > Administrator Tools > Service Mode Lock > OFF
   - This unlocks the machine and lets you get access to all the SP codes.
   - The CE can do servicing on the machine and turn the machine off and on. It is not necessary to ask the Administrator to log in again each time the machine is turned on.
2. If you must use the printer bit switches, go into the SP mode and set SP 5169 to "1".
3. After machine servicing is completed:
   - Change SP 5169 from "1" to "0".
   - Turn the machine off and on. Tell the administrator that you completed servicing the machine.
   - The Administrator will then set the "Service Mode Lock" to ON.

### 5.1.3 TO ENTER AND EXIT THE SERVICE PROGRAM MODE

Ask your supervisor how to enter and/or exit the service program mode.

## 5.1.4 TO SWITCH TO THE COPY WINDOW FOR TEST PRINTING

1. In the SP mode display, press Copy Window to switch to the copy operation screen when you need to select paper for a test print.
2. Use the copy window (copier mode) to select the appropriate settings (paper size, etc.) for the test print.
3. Press Start to execute the test print.
4. Press SP Mode (highlighted) to return to the SP mode screen and repeat from step 1.

### *Using the SP Mode*

SP command numbers can be entered directly (if you know the entire number) or the command can be selected from the menus.

### *Direct Entry*

SP5831 (Initial Setting Clear) an executable SP that initializes the User Tools settings, can be executed immediately by just entering the numbers.

1. Press 5831.
2. Press Enter #.
3. Press "Execute" on the touch panel.

If you know all seven digits of the SP code, enter the seven numbers and press Execute. However, if you do not know all the numbers, enter only the first four numbers of the seven-digit SP and press Enter #. The display goes immediately to the first SP of that group. Then you can use the buttons to browse to the desired selection.

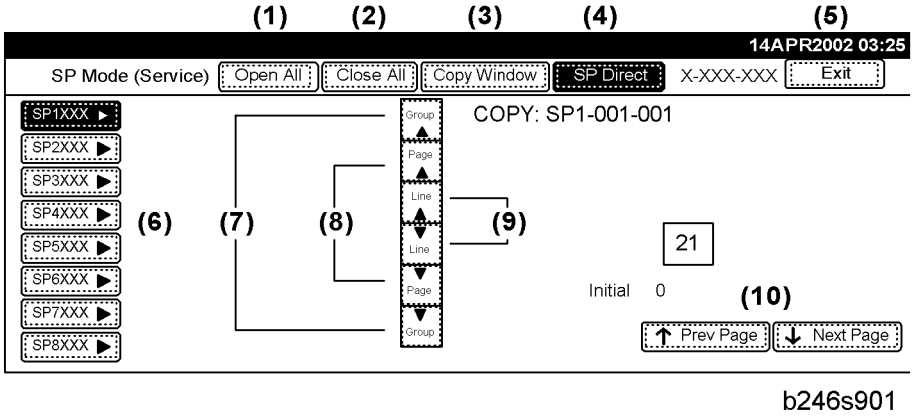
### *Button Selection Entry*

1. Refer to the SP Mode Tables at the end of this section to find the SP that you want to adjust.
2. Press the Group number on the left side SP Mode window that contains the SP that you want to adjust.
3. Use the scrolling buttons in the center of the SP mode window to display the SP number that you want to open, then press that number to expand the list.
4. Use the center touch-panel buttons to scroll to the number and title of the item that you want to set, and press #. The small entry box on the right is activated and displays the default or the current setting below.
5. To enter a setting
   - Press - to enter a minus sign. Then use the keypad to enter the appropriate number. The number you enter will write over the previous setting.

- Press # to enter the setting. (If you enter a number that is out of range, the key press is ignored.)
- When you are prompted to complete the selection, press Yes.

6. If you need to perform a test print, press Copy Window to open the copy window and select the settings for the test print. Press Start twice, then press SP Mode (highlighted) in the copy window to return to the SP mode display.
7. When you are finished, press Exit twice to return to the copy window.

## 5.1.5 SP MODE BUTTON SUMMARY

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Here is a short summary of the touch-panel buttons.

**(1): Open All.**

Opens all SP groups and sublevels.

**(2): Close All.**

Closes all open groups and sublevels and restores the initial SP mode display.

**(3): Copy Window.**

Opens the copy window (copy mode) so you can make test copies. To return to the SP mode screen, press SP Mode (highlighted) in the copy window.

**(4): SP Direct.**

Enter the SP code directly with the number keys if you know the SP number, then press #. (SP Direct must be highlighted before you can enter the number. Just press SP Direct if it is not highlighted.)

**(5): Exit.**

Press twice to leave the SP mode and return to the copy window to resume normal operation.

**(6): SPnxxx.**

Press any group number to open a list of SP codes and titles for that group. For example, to open the SP code list for SP1-nnn, press SP1XXX. If an SP has sublevels, it is marked

with a right pointing triangle.

**(7): Group.**

Press to scroll the display to the previous or next group.

**(8): Page.**

Press to scroll to the previous or next display in segments the size of the screen display (page).

**(9): Line.**

Press to scroll the display to the previous or next line, line by line.

**(10): Prev Page or Next Page.**

Press to move the highlight on the left to the previous or next selection in the list.

## 5.1.6 SP MODE PRINT (SMC PRINT)

You can print an SMC Report to check the machine's condition. The SMC Report gives a list of the SP commands and their settings.

| | |
|---|---|
| 5990 | SP Print Mode (SMC Print) |
| | In the SP mode, push "Copy Window" to move to the copy screen, select the paper size, then push Start. Select A4/LT (Sideways) or larger to make sure that all the information is printed. Push "SP Window" to go back to the SP mode, select the necessary SP Print Mode, and push Execute. |
| 001 | All (Data List) |
| 002 | SP (Mode Data List) |
| 003 | User Program Data |
| 004 | Logging Data |
| 005 | Self-Diagnostic Report |
| 006 | Non-Default (Prints only SPs that are set to values other than defaults.) |
| 007 | NIB Summary (Configuration, Systemlog, Nvramlog) |
| 008 | Capture Log |
| 021 | Copier User Program (Copy Management Report) |
| 022 | Scanner SP |
| 023 | Scanner User Program (Scanner Management Report) |

# 5.2 RESETS

## 5.2.1 MEMORY ALL CLEAR: SP5801

Before shipping, the SP mode data settings are printed in an SMC Report and attached to the exposure glass of the machine for your reference. Store this report in a safe place (next to the toner collection bottle, for example). It is a list of all the SP initial settings. Refer to this list if you need to initialize one or more SPs. The initial SP settings are also written in the SP mode tables at the end of this section.

As a rule, you should always print an SMC Report before initializing or adjusting the SP settings. The SMC Report provides a concise list of all the SP commands and their current settings. The report can be used for reference if the service manual is not available.

Executing Memory All Clear resets all the settings stored in the NVRAM to their default settings except the following:

| | |
|---|---|
| SP5811-001 | Machine serial number |
| SP5907 | Plug & Play Brand Name and Production Name Setting |

1. Execute SP5990 to print out all SMC Data Lists.
2. Open SP mode 5801.
3. Press the number for the item that you want to initialize. The number you select determines which application is initialized. For example, press 1 if you want to initialize all modules.

⇒

| | | |
|---|---|---|
| 5801 | Memory Clear (See **IMPORTANT NOTE** in Section 5.4.2.) | |
| | Resets NVRAM data to the default settings. Before executing any of these SP codes, print an SMC Report. | |
| 001 | All Clear | Initializes items 2 to 15 below. |
| 002 | Engine Clear | Initializes all registration settings for the engine and copy process settings. |
| 003 | SCS | Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information. |
| 004 | IMH Memory Clear | Initializes the image file system. (IMH: Image Memory Handler) |

**Resets**

| | | |
|---|---|---|
| 005 | MCS | Initializes the automatic delete time setting for stored documents. (MCS: Memory Control Service) |
| 006 | Copier application | Initializes all copier application settings. |
| 007 | Fax application | Initializes the fax reset time, job login ID, all TX/RX settings, local storage file numbers, and off-hook timer. |
| 008 | Printer application | Initializes the printer defaults, programs registered, the printer SP bit switches, and the printer CSS counter. |
| 009 | Scanner application | Initializes the defaults for the scanner and all the scanner SP modes. |
| 010 | Web Service/Network application | Deletes the Netfile (NFA) management files and thumbnails, and initializes the Job login ID.<br>Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software |
| 011 | NCS | Initializes the system defaults and interface settings (IP addresses also), the SmartNetMonitor for Admin settings, WebStatusMonitor settings, and the TELNET settings. (NCS: Network Control Service) |
| 012 | R-FAX | Initializes the job login ID, SmartNetMonitor for Admin, job history, and local storage file numbers. |
| 014 | Clear DCS Setting | Initializes the DCS (Delivery Control Service) settings. |
| 015 | Clear UCS Setting | Initializes the UCS (User Information Control Service) settings. |
| 016 | MIRS Setting | Initializes the MIRS (Machine Information Report Service) settings. |
| 017 | CCS | Initializes the CCS (Certification and Charge-control Service) settings. |
| 018 | SRM Clear | Initializes the SRM (System Resource Manager) settings. |
| 019 | LCS Clear | Initializes the LCS (Log Count Service) settings. |

4. Press Execute, then follow the prompts on the display to complete the procedure.
5. Make sure that you perform the following settings:
   - Execute SP2115 – Laser Beam Pitch Adjustment
   - Do the printer and scanner registration and magnification adjustments (See "Replacement and Adjustment – Copy Image Adjustments: Printing/Scanning").
   - Do the touch screen calibration (See "Replacement and Adjustment – Touch Screen Calibration").
   - Referring to the SMC data lists, re-enter any values, which had been changed from their factory settings.
   - Execute SP3001-002 – ID Sensor Initial Setting
   - Make sure that SP 5112 is set to 'enabled', or the user will not be able to use non-standard paper sizes.
   - Set SP 1902 001 (amount of fusing unit web used so far) to the most recent setting (see the SMC list).
6. Check the copy quality and the paper path, and do any necessary adjustments.

## 5.2.2 SOFTWARE AND SETTING RESET

### *Software Reset*

The software can be rebooted when the machine hangs up. Do one of these two steps.

Turn the main power switch off and on.

-or-

Push and hold down * # together for over 10 seconds. When the machine beeps once, release both buttons. After "Now loading. Please wait" is displayed for a few seconds, the copy window will open. The machine is ready for operation.

### *Resetting the System*

The system settings in the UP mode can be reset to their defaults with this procedure.

1. Make sure that the machine is in the copier standby mode.
2. Press the User Tools key.
3. Hold down the "#" key and touch the "System Setting" key.
4. A confirmation message will be displayed, then press "Yes".

### *Resetting Copy/Document Server Features Only*

The copy/document server settings in the UP mode can be reset to their defaults with this procedure.

1. Make sure that the machine is in the copier standby mode.
2. Push the User Tools key.

3. Hold down the "#" key and touch the "Copy/Document Server Features" key.
4. A message will be displayed, then press "Yes".

### *Resetting Scanner Features Only*

The scanner settings in the UP mode can be reset to their defaults with this procedure

1. Make sure that the machine is in the copier standby mode.
2. Push the User Tools key.
3. Hold down the "#" key and touch "Scanner Features" key.
4. A message will be displayed, then press "Yes"

# 5.3 TEST PATTERN PRINTING

## 5.3.1 PRINTING TEST PATTERN: SP2902-003

Some of these test patterns are used for copy image adjustments but most are used primarily for design testing. These test patterns do not use the IPU.

Note

- Do not operate the machine until the test pattern is printed out completely. Otherwise, an SC may occur.

1. Enter the SP mode and select SP2902-003.
2. Enter the number for the test pattern that you want to print and press #. (See the table below.)
3. When you are prompted to confirm your selection, press Yes to select the test pattern for printing.
4. Press Copy Window to open the copy window, then select the settings for the test print (paper size, etc.)
5. Press Start twice (ignore the “Place Original” messages) to start the test print.
6. After checking the test pattern, press SP Mode (highlighted) to return to the SP mode display.
7. Exit the SP mode.

### *Test Pattern Table*

These patterns can be selected for SP2902-003

| No. | Test Pattern |
|---|---|
| 0 | None |
| 1 | Alternating Dot Pattern (1-dot) |
| 2 | Alternating Dot Pattern (2-dot) |
| 3 | Alternating Dot Pattern (4-dot) |
| 4 | Alternating Dot Pattern (1024-dot) |
| 5 | Grid Pattern (1-dot): 0ch |
| 6 | Grid Pattern (1-dot): 1ch |

**Test Pattern Printing**

| No. | Test Pattern |
|---|---|
| 7 | Grid Pattern (1-dot): 2ch |
| 8 | Grid Pattern (1-dot): 3ch |
| 9 | Grid Pattern (1-dot pair) |
| 10 | Checkered Flag Pattern |
| 11 | Horizontal Line (2-dot) |
| 12 | Vertical Line (2-dot) |
| 13 | Horizontal Line (1-dot) |
| 14 | Vertical Line (1-dot) |
| 15 | Cross Stitch (Horizontal) |
| 16 | Cross Stitch (Vertical) |
| 17 | Argyle Pattern |
| 18 | Trimming Area |
| 19 | Full Dot Pattern |
| 20 | Black Band (Vertical) |
| 21 | Black Band (Horizontal) |
| 22 | Stair |
| 23 | Blank Image |
| 24 | Grid Pattern (1-dot): 0ch (with external data) |
| 25 | Trimming Area (with external data) |
| 26 | Argyle Pattern (with external data) |
| 27 | Outside Data |

## 5.3.2 IPU FRONT/BACK TEST PATTERNS: SP2902-001,002

- Front side pattern (SP2902-001). Generated by the IPU in place of data scanned from the front side of an original (CCD→SBU). Generated in the scanner image correction circuit.
- Back side pattern. (SP2902-002. Generated by the IPU in place of data scanner from the back side of an original (CIS→SBU). Generated in the scanner image correction circuit.

The IPU test patterns are primarily used for design purposes. However, they can be used as follows:

- To confirm that the IPU is processing images correctly.
- To fine tune the image processing parameters
- To help trace the causes of poor images. For example, if the IPU test patterns are normal when the machine is producing poor quality images, then the problem must be after the IPU.

1. Enter the SP mode, select SP2902.
2. Select 001 to print a test pattern for the front side, or select 002 to print a test pattern for the back side.
3. Scroll then select the number of the test pattern that you want to print (see the table below).
4. Press .
5. Press Copy Window to open the copy window, then select the settings for the test print (paper size, etc.)
6. Press Start to start the test print.
7. Press SP Mode (highlighted) to return to the SP mode display.

Note

- Patterns 6, 8, 9, and 11 are the best choices for testing and confirming the operation of the IPU.

### *Test Pattern Table*

These patterns can be selected for both SP2902-001 and 002.

| No. | Test Pattern |
|---|---|
| 0 | None |
| 1 | Vertical Line (1-dot) |

**Test Pattern Printing**

| No. | Test Pattern |
|---|---|
| 2 | Vertical Line (2-dot) |
| 3 | Horizontal Line (1-dot) |
| 4 | Horizontal Line (2-dot) |
| 5 | Independent Dot (1-dot) |
| 6 | Grid Pattern (1-dot) |
| 7 | Vertical Stripes |
| 8 | Grayscale Horizontal (16-level) |
| 9 | Grayscale Vertical )16-level) |
| 10 | Grayscale Vertical-Horizontal (16-level) |
| 11 | Cross Pattern |
| 12 | Argyle Pattern |
| 13 | Density Patch (256-level) |
| 14 | Density Patch (64-level) |
| 15 | Trimming Area |
| 16 | Bandwidth (Vertical) |
| 17 | Bandwidth (Horizontal) |
| 18 | Auto Create Vertical 1-dot Line (Main Scan) |
| 19 | Auto Create Horizontal 1-dot Line (Sub Scan) |
| 20 | Auto Create Vertical 2-dot Line (Main Scan) |
| 21 | Auto Create Horizontal 2-dot Line (Sub Scan) |
| 22 | Auto Create 1-dot Independent Dots |
| 23 | Auto Create Grid 1-dot Line |

| No. | Test Pattern |
|---|---|
| 24 | Auto Create Vertical Stripes |
| 25 | Auto Create Horizontal Stripes |
| 26 | Auto Create Grayscale Horizontal (20 mm) |
| 27 | Auto Create Grayscale Horizontal (40 mm) |
| 28 | Auto Create Grayscale Vertical (20 mm) |
| 29 | Auto Create Grayscale Vertical (40 mm) |
| 30 | Auto Create Argyle |

## 5.3.3 IPU PRINTING TEST PATTERN: SP2902-004

This test pattern is generated in the application input processing circuit in the IPU. The operation path is as follows:

Application input → Memory → Printer

This test pattern is primarily used for design purposes, but it can also be used to trace the source of problems beyond the IPU (in the application input) which are causing poor print quality.

1. Enter the SP mode and select SP2902-004.
2. Enter the number for the test pattern that you want to print and press #. (See the table below.)

| No. | Pattern |
|---|---|
| 0 | Off |
| 1 | Vertical Grayscale 20 |
| 2 | Horizontal Grayscale 40 |
| 3 | Horizontal Grayscale 20 |
| 4 | Horizontal Grayscale 25 |
| 5 | Caterpillar |

**Test Pattern Printing**

1. When you are prompted to confirm your selection, press Yes to select the test pattern for printing.
2. Press Copy Window to open the copy window, then select the settings for the test print (paper size, etc.)
3. Press Start twice (ignore the “Place Original” messages) to start the test print.
4. Press SP Mode (highlighted) to return to the SP mode display.
5. Switch the machine off and on.

# 5.4 UPDATING THE FIRMWARE

## 5.4.1 SOFTWARE UPDATE

### *Software Update Procedure*

SD cards are used to update the software and to back up important data. Here is a list of the firmware modules that can be updated or restored from an SD card:

- GW controller software
- BCU software
- LCDC (operation panel) software
- Network Sys (network) software
- Web Sys (Web Image Monitor)
- Document Server software
- NFA (Net File) software
- Printer application software
- Scanner application software
- DESS (encryption module) software

Important

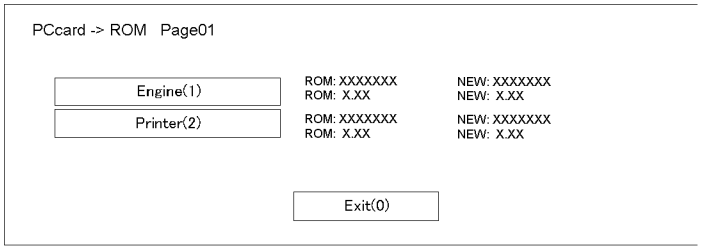
- Never connect or remove an IC card or SD card with the machine power turned on.
- Never turn the power off while the machine is downloading data from an IC card or SD card.
- The IC cards and SD card are precision items. Use them carefully.
- Never store IC cards or SD cards in a location where they are exposed to high temperature, high humidity, or direct sunlight.
- Never bend an IC card or SD card, scratch it, or expose it to strong vibration.
- Before uploading data to an SD card, always confirm that its write-protect switch is off.

### *Doing the Software Update Procedure*

An SD card with the software downloaded to it is necessary for this procedure.

1. Turn the main switch off.
2. Remove the SD card slot cover ( x 1).
3. Hold the SD card (the surface with printing must be away from the front of the machine), and install the SD card in slot 2.
4. Turn the main power switch on.
5. Stop until the version update screen is displayed. If the SD card contains more than

one software application, the screen will be almost the same as the one below. The screen below shows that the SC card contains two applications: "Engine" and "Printer".

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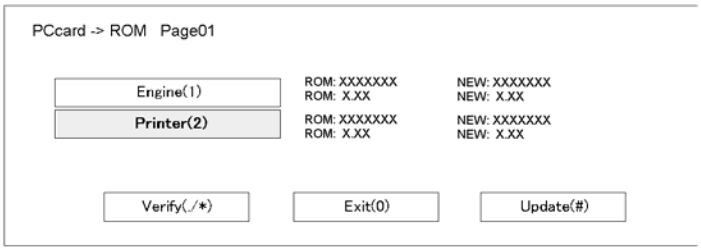
6. To select the item for upgrade, touch the selection on the touch panel, or push the corresponding key on the 10-key pad (1 to 5) of the operation panel. The number in parentheses tells you which key to push. When you make a selection, the [Verify(./*)] and [Update(#)] buttons come on the screen.

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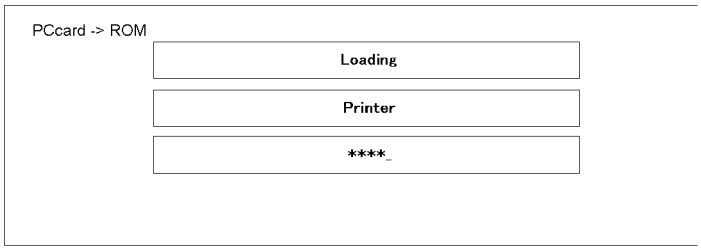
- If you push [Exit] (or the [0] key), you go back to the usual operation screen.
- Push the [Start] key on the operation panel to select and download all the options shown on the screen.
- Push the [Clear] key on the operation panel if you want to cancel your selections and make new ones.
- "ROM": This is the number and other version information of the ROM firmware installed in the machine at this time.
- "NEW": This is the number and other version information of the firmware on the SD card.

7. With the selected items shown in reverse color, push the [Update] button or the [#] key on the operation panel to start the update.
   After you push [Update]:

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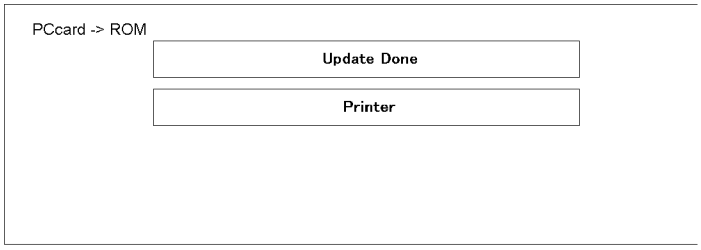
The middle bar shows the name of the module that the machine updates at this time. (The example above shows that the machine updates the "Printer" module at this time.)
The bottom bar is a progress bar. The "_" marks in the progress bar are replaced by "*" marks. This progress bar cannot be displayed during the firmware update for the operation panel. But, the LED of the [Start] key on the operation panel changes from red to green to show that the update of the operation panel firmware continues.
When the update is completed, you will see this screen.

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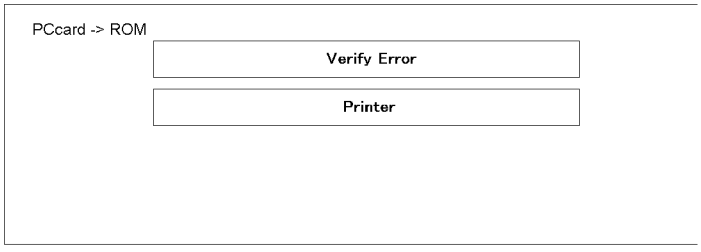
After the firmware update, you will see "Update Done" in the first bar. The name of the module in the bottom bar is the name of the last module that was updated (only the name of the last module is shown, if several modules were been updated).

8. Turn the power off and on. Then, select the items that you updated, and then push the [Verify] button. This is to check that the modules were updated correctly.
If you see "Verify Error" in the first bar on the screen, then you must do the procedure again for the module shown in the bottom bar.

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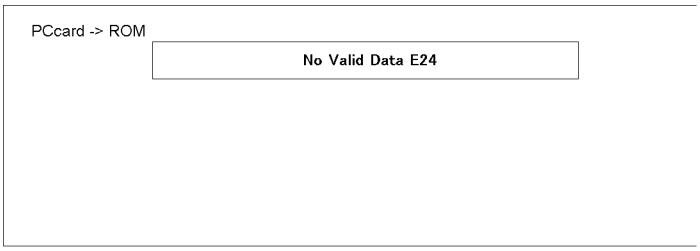
**Updating the Firmware**

Note

- The "Verify" procedure is not necessary but it is strongly recommended.

9. After the firmware is correctly updated, turn the main power switch off.
10. Push the SD card in a small distance to release it, then pull it out of the slot.
11. Turn the main power switch on, and check that the machine operates correctly.

## *Errors During Firmware Update*

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If an error occurs during a download, an error message will appear. The error code consists of the letter "E" and a number ("E20", for example).

**Error Message Table**

| No. | meaning | Solution |
|---|---|---|
| 20 | Cannot map logical address | Make sure the SD card is installed correctly, or use a different SD card. |
| 21 | Cannot access memory | HDD connection not correct, or replace hard disk. |
| 22 | Cannot decompress compressed data | The ROM data on the SD card is not correct, or data is damaged. |
| 23 | Error occurred when ROM update program started | Controller program defective. If the second attempt fails, replace the controller board. |
| 24 | SD card access error | Make sure the SD card is installed correctly, or use a different SD card. |
| 30 | No HDD available for stamp data download | HDD connection not correct or replace hard disks. |
| 31 | Data incorrect for continuous download | Install the SD card with the remaining data necessary for the download, then re-start the |

| | | |
|---|---|---|
| | | procedure. |
| 32 | Data incorrect after download interrupted | Do the recovery procedure for the module, then repeat the installation procedure. |
| 33 | Incorrect SD card version | The ROM data on the SD card is not correct, or data is damaged. |
| 34 | Module mismatch - Correct module is not on the SD card | The data on the SD is not correct. Get the correct data (Japan, Overseas, OEM, etc.) then install again. |
| 35 | Module mismatch – Module on SD card is not for this machine | SD update data is not correct. The data on the SD card is for a different machine. Get the correct data then install again. |
| 36 | Cannot write module – Cause other than E34, E35 | SD update data is not correct. The data on the SD card is for a different machine. Get the correct data then install again. |
| 40 | Engine module download failed | Replace the data for the module on the SD card and try again, or replace the BCU board. |
| 42 | Operation panel module download failed | Replace the data for the module on the SD card and try again, or replace the LCDC. |
| 43 | Stamp data module download failed | Replace the data for the module on the SD card and try again, or replace the hard disk. |
| 44 | Controller module download failed | Replace the data for the module on the SD card and tray again, or replace the controller board. |
| 50 | Electronic confirmation check failed | SD update data is not correct. The data on the SD card is for a different machine. Get the correct data then install again. |



### *Updating the LCDC for the Operation Panel*

1. Use this procedure to update the LCDC (LCD Control Board).
2. Turn the copier main switch off.
3. Put the SD card into slot 2.

4. Turn the copier main switch on.
5. Stop until the card utility screen is displayed.
   After approximately 10 seconds, the initial screen opens in English.
6. Touch [Opepanel.DOM].
7. Touch [UpDate(#)] to start the update.
   While the data downloads, the operation panel goes off.
   The LED on the [Start] key flashes red at 1/2 second intervals for approximately 6 minutes.
   When the update is completed, the [Start] key starts to flash at 1-second intervals.
8. Turn the copier main power switch off, remove the SD card, then turn the copier on again.

### *Downloading Stamp Data*

After you replace or format the HDD, download the stamp data from the controller firmware to the hard disk.

1. Go into the SP mode.
2. Select SP5853 then press "Execute".
3. Obey the instructions on the screen to complete the procedure.

## 5.4.2 UPLOADING/DOWNLOADING NVRAM DATA

⇒ The content of the NVRAM can be uploaded to and downloaded from an SD card.

**IMPORTANT NOTE:**
The following data stored in the NVRAM will **not** be saved on the SD Card when performing an NVRAM Data Upload (SP5824):

- Total count categories (SP7-003-*** Copy Counter)
- C/O, P/O Counter (SP7-006-*** C/O, P/O Count Display)
- Dupelx, A3/DLT/Over 420 mm, Stapler and Scanner application scanning counters (system settings).
- Engine SP Data

Therefore, whenever an NVRAM Upload/Download is performed, make sure to print out the SP Data List before performing SP5801-001 (Memory Clear: All Clear) or SP5801-002 (Memory Clear: Engine).

### *NVRAM Upload/Download Procedure:*

1) Print out the SP Data list from SP5990-002.
2) Perform the NVRAM Data Upload (to the SD Card) according to the procedure below.
3) Perform the Memory Clear (SP5801-001 or 002).
4) Perform the NVRAM Data Download (from the SD Card) according to the procedure below.
5) Manually input the data listed above.

### *Uploading Content of NVRAM to an SD card*

Do this procedure to upload SP code settings from NVRAM to an SD card.

Note

- Always upload this data to an SD card before you replace the NVRAM.

1. Before you turn the machine OFF, do SP5990 001 (SMC Print). This gives you a record of the NVRAM settings if the upload fails.
2. Turn the copier main power switch OFF.
3. Put the SD card into slot 2, then turn the copier ON.
4. Do SP5824 001 (NVRAM Data Upload) then push the "Execute" key
   When uploading is completed, a file is coped to the NVRAM folder on the SD card. The file is saved to this path and filename:
   NVRAM¥<serial number>.NV
   Here is an example for Serial Number "B0700017":
   NVRAM¥B0700017.NV
5. To prevent an error during the download, write the serial number of the machine on the SD card.

   Note

   - This is necessary because NVRAM data from more than one machine can be uploaded to the same SD card.

### *Downloading an SD Card to NVRAM*

Do this procedure to download SP data from an SD card to the NVRAM in the machine.

- If the SD card with the NVRAM data is damaged, or if the connection between the controller and BCU is defective, the NVRAM data download will not complete correctly.
- If the download does not complete correctly, do the download procedure again.
- If this does not complete correctly, input the NVRAM data manually from the SMC print that you made before you uploaded the NVRAM data.

1. Turn the copier main power switch OFF.
2. Put the SD card with the NVRAM data into slot 2.
3. Turn the copier main power switch ON.
4. Do SP5825-001 (NVRAM Data Download) and push the "Execute" key.

   Note

   - This procedure does **not** download the C/O, P/O Count data to the NVRAM:
   - The serial number of the file on the SD card must match the serial number of the machine. If the serial numbers do not match, the download will not complete correctly.

# 5.5 SERVICE PROGRAM MODE TABLES

## 5.5.1 SP TABLES

See "Appendices" for the following information:

- System SP Tables
- Printer SP Tables
- Scanner SP Tables

# 5.6 INPUT/OUTPUT CHECK

See "Appendices" for the following information:

- Input/Output Check

# 5.7 USING THE DEBUG LOG

This machine provides a debug log feature that allows the service technician to save and retrieve error information for analysis.

Every time an error occurs, debug information is recorded in RAM but this information is lost when the machine is switched off and on.

To capture this debug information, the Save Debug Log feature provides two main features:

- Switching on the debug feature so error information is saved directly to the HDD for later retrieval.
- Copying the error information from the HDD to an SD card.

When a user is experiencing problems with the machine, follow the procedures below to set up the machine so the error information is saved automatically to the HDD. Then attempt to duplicate the problem so the error data will be stored.

## 5.7.1 SETTING UP "SAVE DEBUG LOG"

The debug information cannot be saved until the “Save Debug Log” function is switched on and a target is selected.

### *To Switch Debug Log On*

1. To enter the SP mode, press △▽ together (5s), release, then press [#Enter].
2. Select SP5857.

| |
|---|
| SP5857 >><br>Save Debug Log |

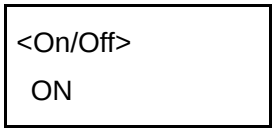
3. Push [#Enter].

| |
|---|
| SP5857-001<br>On/Off |

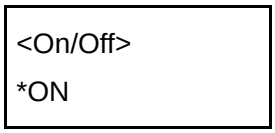
4. Push [#Enter].

| |
|---|
| <On/Off><br>*OFF |

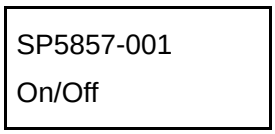
5. Push ▽.




6. Push [#Enter].




7. Push [Esc].

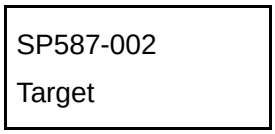



Do the next procedure to select the target.

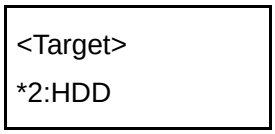
### *To Select the Target for the Debug Log File*

You can select either the HDD (default) or the SD card as the target. This procedure shows you how to select the SD card.

1. Push ▽.




2. Push [#Enter].




3. Push ▽.

**Using the Debug Log**

| |
|---|
| 3:SD |

4. Push [#Enter].

| |
|---|
| <Target><br>*3:SD |

5. Push [Esc] twic.

| |
|---|
| SP5857 >><br>Save Debug Log |

6. Do the next procedure to select the events that you want to record in the debug log file.

### *To Select Events*

1. Push ▽.

| |
|---|
| SP5858 >><br>DebugSaveWhen |

2. Push [#Enter].

| |
|---|
| SP5858-001<br>EngineSC Error |

Here is a list of the events that you can select. Any number of events can be selected.

| SP No. | Name | What It Does |
|---|---|---|
| SP5858-001 | EngineSC Error | Saves error data when an engine-related SC code occurs. |
| SP5858-002 | SystemSC Error | Saves error data when a controller-related SC Code occurs. |

| SP No. | Name | What It Does |
|---|---|---|
| SP5858-003 | Any SC Error | Saves error data only for the SC code that you specify by manually entering the SC code number. |
| SP5858-004 | Jam | Saves error data for jams. |

**Example 1: To Select Items 001, 002, or 004**

1. Push △ or ▽ to select 001, 002, or 003. This example shows the selection of 001.

```
SP5858-001
EngineSC Error
```

2. Push [#Enter].

```
<EngineSC Error>
*OFF
```

3. Push ▽.

```
<EngineSC Error>
 ON
```

4. Push [#Enter].

```
<EngineSC Error>
*ON
```

5. Push [Esc].

```
SP5858-001
EngineSC Error
```

6. Repeat this procedure to select either 002 or 004.

**Example 2: To set an SC code with 003**

This example shows you how to enter "672" for SC672.

Note

- For details about SC code numbers, please refer to the SC tables in Section "4. Troubleshooting".

1. Select "SP5858-003".

| |
|---|
| SP5858-003<br>Any SC Code |

2. Push [#Enter].

| |
|---|
| 0000000<br>_ |

3. Push [#Enter] to toggle the on the number display in the 2nd line.

| |
|---|
| 0000000<br>0 |

4. Push △ or ▽ to display "2".

| |
|---|
| 0000000<br>2 |

5. Push [#Enter] to enter the "2" in the line above.

| |
|---|
| 0000002<br>_ |

6. Push △ or ▽ to move the cursor to the next digit.

```
. 0000002
        _
```

7. Repeat Steps 2 to 6 to enter the "7".

```
. 0000072
        _
```

8. Repeat Steps 2 to 6 to enter the "6".

```
. 0000672
        _
```

9. Push [Esc] twice.

```
SP5858 >>
DebugSaveWhen
```

10. Do the next procedure to select one or more memory modules for the debug error data recording.

### *To select one or more memory modules for recording in the debug log file*

1. Select SP5859.

```
SP5859 >>
LogSaveKey No.
```

2. Push [#Enter].

```
SP5859
Key 1
```

3. Push [#Enter].

```
0000000
       _
```

Note

- The default settings for Keys 1 to 10 are all zero (“0”).

4. Select the number from the table below, then use these key presses to enter the number.

```
0002222
   _
```

| Key Press | What It Does |
|---|---|
| △ or ▽ | Moves the cursor to select the digit in the line above. |
| [#Enter] | Enters the number entry mode (displays a "0" at the cursor). |
| △ or ▽ | Selects the number to enter at the digit position in the line above. |
| [#Enter] | Enters the selected number in the line above and exits the entry mode you can select the next position with △ or ▽ |

5. Refer to the table below for the 4-digit numbers to enter for each key. (The acronyms in parentheses indicate the names of the modules.)

**4-Digit Entries for Keys 1 to 10**

| Key No. | Printer | Web |
|---|---|---|
| 1 | 2222 (SCS) | |
| 2 | 2223 (SRM) | |
| 3 | 256 (IMH) | |

| Key No. | Printer | Web |
|---|---|---|
| 4 | 1000 (ECS) | |
| 5 | 1025 (MCS) | |
| 6 | 4400 (GPS) | 5682 (NFA) |
| 7 | 4500 (PDL) | 6600 (WebDB) |
| 8 | 4600 (GPS-PM) | 3300 (PTS) |
| 9 | 2000 (NCS) | 6666 (WebSys) |
| 10 | 2224 (BCU) | 2000 (NCS) |

**Key to Acronyms**

| Acronym | Meaning |
|---|---|
| ECS | Engine Control Service |
| GPS | GW Print Service |
| GSP-PM | GW Print Service – Print Module |
| IMH | Image Memory Handler |
| MCS | Memory Control Service |
| NCS | Network Control Service |
| NFA | Net File Application |
| PDL | Printer Design Language |
| PTS | Print Server |
| SCS | System Control Service |
| SRM | System Resource Management |
| WebDB | Web Document Box (Document Server) |

**Using the Debug Log**

The machine is now set to record the debugging information automatically on the SD card or HDD (the target selected with SP5857-002) for the events that you selected SP5858 and the memory modules selected with SP5859.

Please keep the following important points in mind when you are doing this setting:

- The initial settings are all zero.
- These settings remain in effect until you change them. Be sure to check all the settings, especially the settings for Keys 6 to 10. To switch off a key setting, enter a zero for that key.
- You can select any number of keys from 1 to 10 (or all) by entering the corresponding 4-digit numbers from the table.
- One area of the disk is reserved to store the debug log. The size of this area is limited to 4 MB.

## 5.7.2 RETRIEVING THE DEBUG LOG FROM THE HDD

1. Insert the SD card into SD slot 2.
2. Enter the SP mode and execute SP5857-009 (HDD for SD (4MB)) to write the debugging data to the SD card.
3. Use a card reader to copy the file and send it for analysis to your local Ricoh representative by email, or just send the SD card by mail.

## 5.7.3 MORE ABOUT DEBUG LOG

### *SP5857-015: SD to SD (Any)*

This SP copies the log on an SD card (the file that contains the information written directly from shared memory) to a log specified by key number. The copy operation is executed in the log directory of the SD card inserted in the same slot. (This function does not copy from one slot to another.)

Each SD card can hold up to 4 MB of file data. Unique file names are created for the data during the copy operation to prevent overwriting files of the same name. This means that log data from more than one machine can be copied onto the same SC card.

This command does not execute if there is no log on the HDD for the name of the specified key.

### *SP5857-016: Make HDD LogFile*

This SP creates a 32 MB file to store a log on the HDD. However, this is not a completely empty file. The created file will hold the number “2225” as the SCS key number and other non-volatile information.

Even if this SP is not executed, a file is created on the HDD when the first log is stored on

the HDD, but this operation takes time. This creates the possibility that the machine may be switched off and on before the log can be created completely.

If you execute this SP to create the log file beforehand, this will greatly reduce the amount of time required to acquire the log information and save onto the HDD. With the file already created on the HDD for the log file, the data only needs to be recorded; a new log file does not require creation.

To create a new log file, execute SP5857-011 to delete the debug log data from the HDD and then execute this SP (SP5857-016).

### *SP5857-017: Make SD Log File*

This SP creates a 4 MB file to store a log on an SD card. However, this is not a completely empty file. The created file will hold the number “2225” as the SCS key number and other non-volatile information.

Even if this SP is not executed, a file is created on the SD card when the first log is stored on the SD card, but this operation takes time. This creates the possibility that the machine may be switched off and on before the log can be created completely.

If you execute this SP to create the log file beforehand, this will greatly reduce the amount of time required to acquire the log information and save onto the SD card. With the file already created on the SD card for the log file, the data only needs to be recorded; a new log file does not require creation.

To create a new log file, execute SP5857-012 to delete the debug log data from the SD card and then execute this SP (SP5857-017).

# 5.8 DIP SWITCH TABLES

## 5.8.1 BCU (BASE ENGINE CONTROL UNIT)

### *BCU Base Board DIP SW101*

| No. | Function | Default | Comments |
|---|---|---|---|
| 1 | DFU | - | |
| 2 | DFU | OFF | |
| 3 | DFU | OFF | |
| 4 | DFU | OFF | |
| 5 | DFU | OFF | |
| 6 | Region Selection | - | Japan: 6, 7, 8/ OFF, OFF, OFF |
| 7 | Region Selection | - | NA (115V): 6, 7, 8/ ON, OFF, OFF |
| 8 | Region Selection | - | EU (220/240V): 6, 7, 8/ OFF, ON, OFF |

DFU: Design, Factory Use only. Do not change these settings.

# TROUBLESHOOTING

| REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| | | None |

# 6. TROUBLESHOOTING

## 6.1 SERVICE CALL CONDITIONS

For "Service Call Conditions" information, see "Appendices".

# 6.2 IMPORTANT SP CODES

| | | |
|---|---|---|
| SP5802 | Free Run Mode | Execute this SP to force base engine to run in the free run mode for testing. |
| SP5803 | Input Check | Displays the signals received from sensors and switches. Refer to the detailed tables in "Service Tables". |
| SP5804 | Output Check | Switches electrical components one by one for testing. Refer to the detailed tables in "Service Tables". |
| SP5990 | SMC Printout | Prints the SMC Report. Some SC codes (logged SPs) are shown only in the SMC Report and do not show on the operation panel display. |
| SP7801 | ROM Version Display. | Displays the version number of the main machine and connected peripherals. |
| SP7832 | Self-Diagnostic Result Display | Execute this SP to display a list of error codes. No errors have occurred if nothing is displayed. |
| SP7801 | Firmware Version | Displays the current numbers of all versions of the firmware in the system. |
| SP7403 | Status of Issued SC | Execute to display the following information about the most recently issued SC: 1) Source file name, 2) SC number, 3) Result |

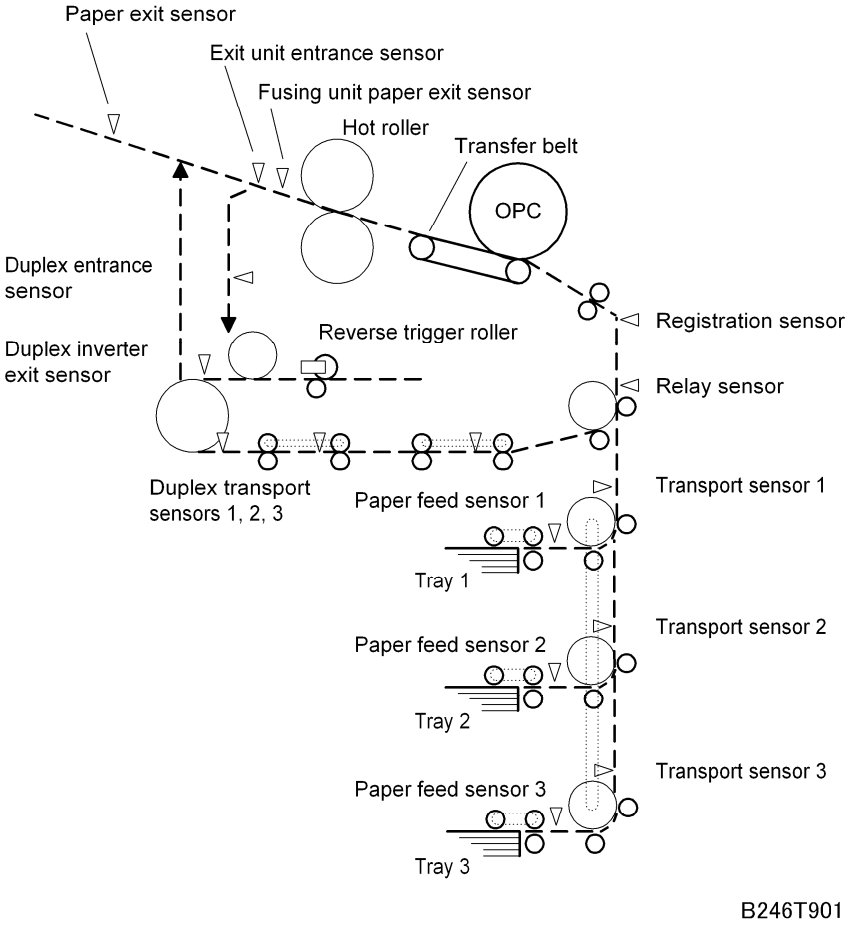
Note

- For more information about these and other SP codes, see “Service Tables”.

# 6.3 JAM DETECTION

## 6.3.1 SENSOR LOCATIONS

The illustration below shows the locations of the jam sensors.




## 6.3.2 FREQUENT PAPER JAMS

If there are frequent paper jams, check SP7504 in “Service Tables”. If these locations have frequent jams, do the procedures described below.

**Symptom 1: Jams when paper is fed from a by-pass tray that is not used frequently**

If the customer does not use the by-pass tray frequently, the rollers can become worn.

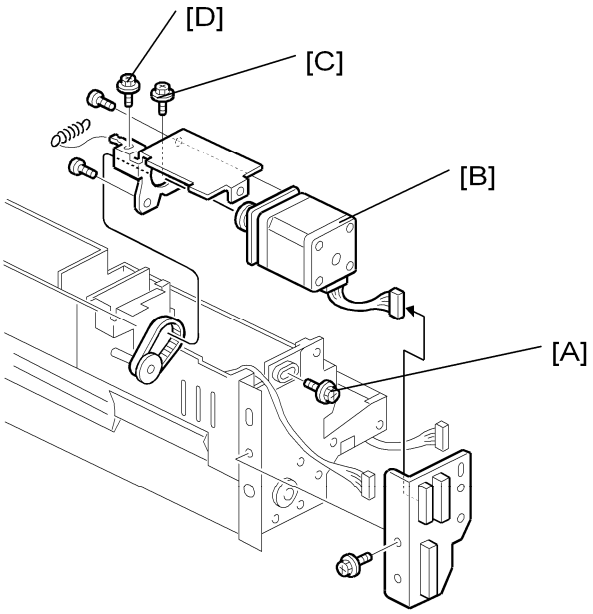
1. Visually check the by-pass tray pick-up, feed, and separation rollers.
2. If these rollers are paler than the rollers in paper trays that are more frequently used, replace the rollers in the by-pass tray.

Note

- For more details, see Replacement and Adjustment - By-Pass Tray Rollers.

**Jam Detection**

**Symptom 2: Jams with noise from the paper feed unit**




B246T905

1. Remove the paper feed unit.
2. Loosen screw [A].
3. Push the motor [B] toward the tray side, then tighten the screw [A].
4. Loosen screws [C] and [D], let the spring move the unit to the correct position, then tighten the screws.

**Symptom 3: Other**

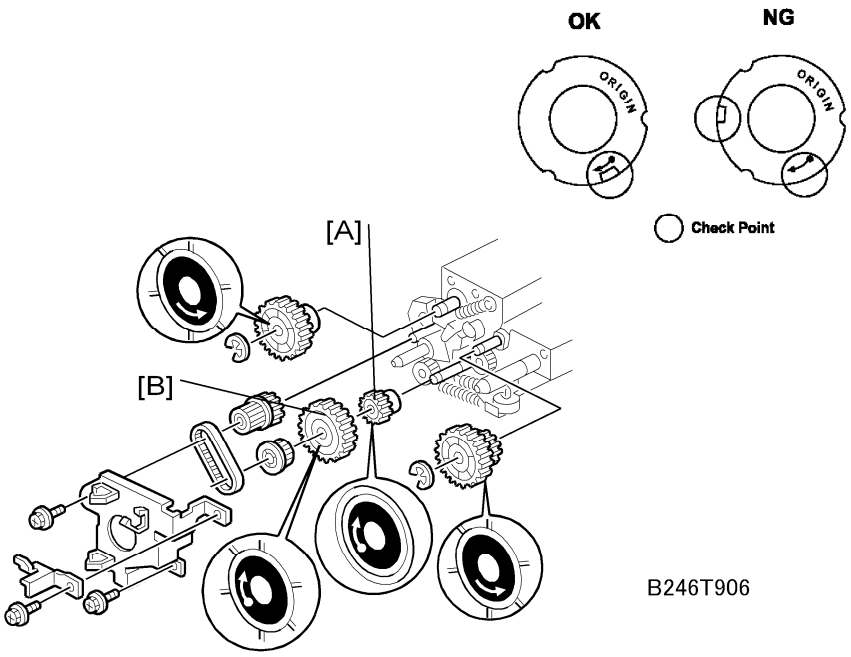
**If none of the two symptoms 1 or 2 applies, do this procedure.**

1. Use SP7504 to check the jam counts and find which SPs have high counts.
2. From the table and illustration below, find which gears must be replaced.
   Example: For tray 1, if SP7504-012 is high, replace gear A, or if SP7504-008 is high, replace gear B.

| Tray | SP7504 12 | SP7504 8 | SP7504 9 | SP7504 10 | SP7504 11 |
|---|---|---|---|---|---|
| Tray 1 | Gear [A] | Gear [B] | | | |
| Tray 2 | | Gear [A] | Gear [B] | | |
| Tray 3 | | | Gear [A] | Gear [B] | |
| Tray 4 | | | | Gear [A] | Gear [B] |

3. Clean the shafts and replace the necessary gears.

4. Replace a gear if its cutout and arrow are not in the same position.




5. When you replace Gear [A] or Gear [B], be sure to put the metal face on the outer side, and the arrow must be in view.
6. If a replacement gear is not available, do this as a temporary procedure:
   - Remove the paper feed unit.
   - Remove the gear.
   - Clean the gear shaft and inside the gear.
   - Attach the gear.
   - Install the paper feed unit.

# 6.4 PROGRAM DOWNLOAD

Here are some important points to keep in mind when downloading software:

- If an error interrupts download processing, the machine cannot operate normally with the program software only partially downloaded.
- When download processing execution starts, a progress bar ("***____") is displayed until the download completes successfully.
- If the download is interrupted while the asterisks are displayed, the machine does not attempt a re-try.
- The program that downloads firmware from an SD card is part of the GW controller software. If downloading this software is interrupted, the program stored in the machine may become corrupted. If this occurs, it may not be possible to restart the downloading program.
- If the GW controller software cannot be downloaded, software on other SD cards cannot be downloaded as well.
- If such problems occur, it may be possible to restart the program without replacing the controller board by setting controller DIP SW 1 to ON and then re-starting.

## 6.4.1 RECOVERY METHODS

When an error occurs during downloading, an error code is displayed on the operation panel.

- If the download procedure can be re-started, re-start the download procedure.
- If the download procedure cannot be downloaded for other than the GW controller, replace the board where the downloaded program is stored.
- If the download procedure cannot be downloaded for the GW controller, set DIP SW 1 to ON. Power the machine off and on to start the downloading program. After downloading has completed, set the DIP SW to OFF then power the machine off and on again.

## 6.4.2 DOWNLOAD ERROR CODES

| | Display | Details | Recovery |
|---|---|---|---|
| 01 | Reboot after card insert E01<br>Module ID Card No. | Controller ROM update error 1 | ▪ Use the correct card |
| | | When the update break data is | |

| | Display | Details | Recovery |
|---|---|---|---|
| | xx/xx | stored in NVRAM, the break module information and the decompression module capable of writing do not match. | |
| 02 | Download Error<br>E02 Power off/on | Controller ROM update error 2.<br>Error occurs during ROM update program initialization. | ▪ Turn the machine off/on to rewrite |
| 03 | Download Error<br>E03 Power off/on | Controller ROM update error 3<br>The ROM for the write operation does not exist. | ▪ Turn the machine off/on<br>▪ Install the missing ROM DIMM |
| 04 | Download Error<br>E04 Power off/on | Controller ROM update error 4<br>GZIP data confirmation fails. (CRC value check) | ▪ Turn the machine off/on<br>▪ Set DIP SW 1 to ON and retry<br>▪ Replace RAM DIMM<br>▪ Replace controller board |
| 05 | Download Error<br>E05 Power off/on | Controller ROM update error 5<br>Error occurs when writing to the device. | ▪ Turn the machine off/on<br>▪ Set DIP SW 1 to ON and retry<br>▪ Replace RAM DIMM<br>▪ Replace controller board |
| 06 | Download Error<br>E06<br>Power off/on | Controller ROM update error 6<br>CPU clock error. | ▪ Turn the machine power off/on.<br>▪ Set controller DIPSW-1 to ON to |

**Program Download**

| | Display | Details | Recovery |
|---|---|---|---|
| | | | force the machine to write to ROM.<br>▪ If you cannot force the machine to write, replace the controller board. |
| 19 | Download Error<br>E19 Power off/on | Controller ROM update error 7<br>Schedule data is unclear. | ▪ Software defective |
| 20 | Down Error E20<br>Power Off/On | System error 1 (+SC991)<br>The physical address cannot be mapped. Software/hardware is defective | ▪ Turn the machine off/on and re-try<br>▪ Replace controller board |
| 21 | Download Error<br>E21 Power Off/On | System error 2 (+SC991)<br>There is not sufficient memory to download. | ▪ Turn the machine off/on and re-try.<br>▪ Replace RAM<br>▪ Replace the controller board |
| 22 | Download Error<br>E22 Module ID<br>Card No xx/xx | System error 3 (+SC991)<br>Data fails to decompress. Card defective. | ▪ Turn the machine off/on and re-try.<br>▪ Replace card<br>▪ Replace controller board |
| | SC991 | System error 4<br>“Selfupdate” does not execute. Software defective. | ▪ Turn the machine off/on and re-try<br>▪ Set DIP SW 1 to ON and re-try<br>▪ Replace the controller board |
| 23 | Download Error | System error 5 | ▪ Turn the machine |

| | Display | Details | Recovery |
|---|---|---|---|
| | E24 Power Off/On | Card read/write error. Software or card defective. | off/on and re-try<br>▪ Replace the card<br>▪ Replace the controller board |
| 30 | No Valid Data E30 | Download dysfunction 1<br>Print download is not possible. Cannot download to HDD because HDD not installed or defective. | ▪ HDD defective<br>▪ HDD harness disconnected, defective |
| 31 | Reboot After Card Insert E31 Module ID Card No. xx/xx | Download dysfunction 2<br>Download continuity error with more than one card. The second or later card is not compatible. | ▪ Set the correct cards in the correct order |
| 32 | Reboot After Card Insert E32 Module ID Card No. xx/xx | Download dysfunction 3<br>Download interrupted because card is not correct, or power failure interrupted download. | ▪ Use the correct card<br>▪ If power failure caused the failure, remove the card and insert another. |
| 33 | No Valid Data E33 | Download dysfunction 4<br>Card version error. Attempted to download program using a card with the wrong version number. | ▪ Use the correct card |
| 34 | No Valid Data E34 | Download dysfunction 5<br>Specification error. DOM card set in EXP machine, or vice versa. | ▪ Use the correct card |
| 35 | No Valid Data E35 | Download dysfunction 6<br>Wrong model. The inserted card is for another model. | ▪ Use the correct card |

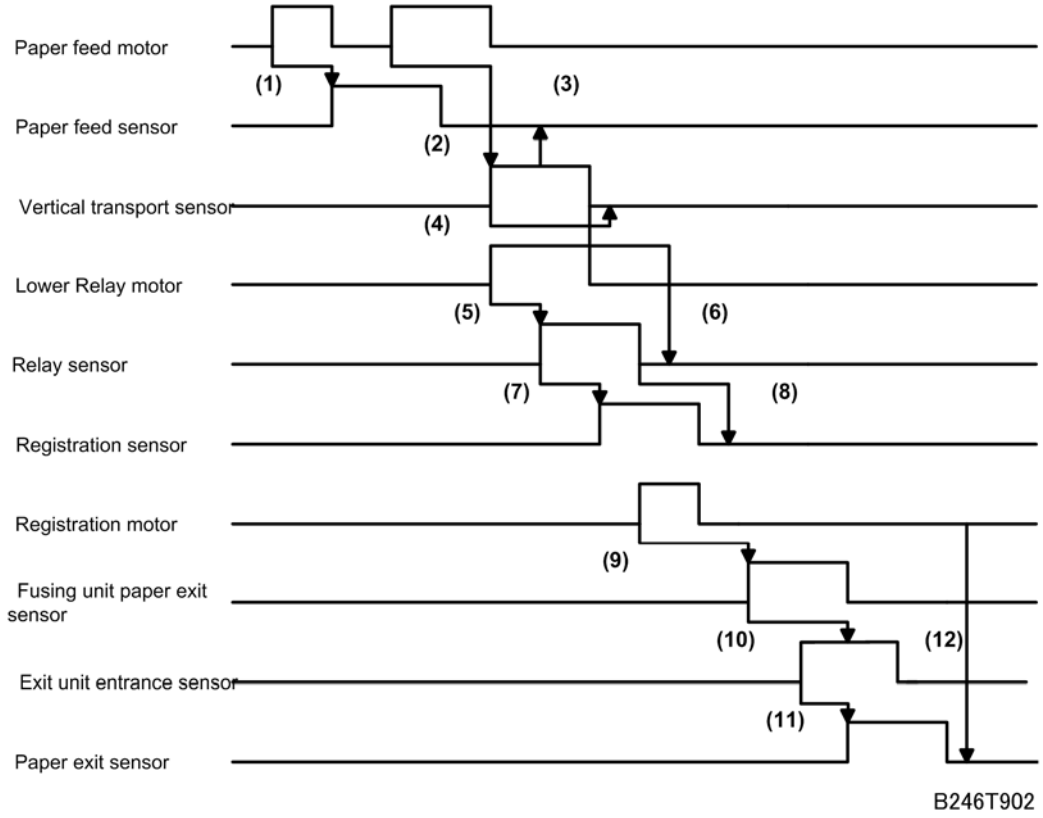
**Program Download**

| | Display | Details | Recovery |
|---|---|---|---|
| 36 | No Valid Data E36 | Download dysfunction 7<br>Module error. The program that you are attempting to download does not exist on the machine, or the contact points at the card and the machine slot are not connected. | ▪ Use the correct card, inserted correctly<br>▪ Install a ROM DIMM if none is installed |
| 37 | No Valid Data E37 | Download dysfunction 8<br>Edit option card error. You attempted to employ a used card. | ▪ Use an unused card |
| 40 | Download Error<br>E40 Module ID<br>Card No. xx/xx | Download result failure 1<br>Engine download failure. | ▪ Turn the machine off/on and re-try |
| 41 | Download Error<br>E41 Module ID<br>Card No. xx/xx | Download result failure 2<br>Fax download failure. | ▪ Turn the machine off/on and re-try |
| 42 | Download Error<br>E42 Module ID<br>Card No. xx/xx | Download result failure 3<br>Operation panel or language download failed. For this error, sometimes the message may not be displayed. | ▪ Turn the machine off/on and re-try |
| 43 | Download Error<br>E43 Module ID<br>Card No. xx/xx | Download result failure 4<br>Print download failed. | ▪ Turn the machine off/on and re-try |
| 44 | Download Error<br>E44<br>Module ID Card No. | Download result failure 5<br>The data targeted for the write operation could not be accessed. | ▪ Turn the machine power off/on.<br>▪ Set controller DIPSW-1 to ON to force the machine to write |

| | Display | Details | Recovery |
|---|---|---|---|
| | | | ▪ If you cannot force the machine to write, replace the controller board. |
| 50 | No Valid Data E50 | Download invalid<br>The source data for the update could not be authenticated. | ▪ Use the correct SD card. |
| 51 | (no display) | Remote ROM update failure 1<br>The source data for the ROM update is corrupted because the machine is operating and an SC code has been issued. | ▪ Turn the machine power off/on and try again. |
| 52 | (no display) | Remote ROM update failure 2<br>The source data received for the ROM update is corrupted; it failed a SUM check due to its abnormal length. | ▪ Try again with the correct data. |
| 53 | (no display) | Download result failure 6<br>The previous download in progress was cancelled. | ▪ Do the download procedure again. |

# 6.5 TIMING CHARTS

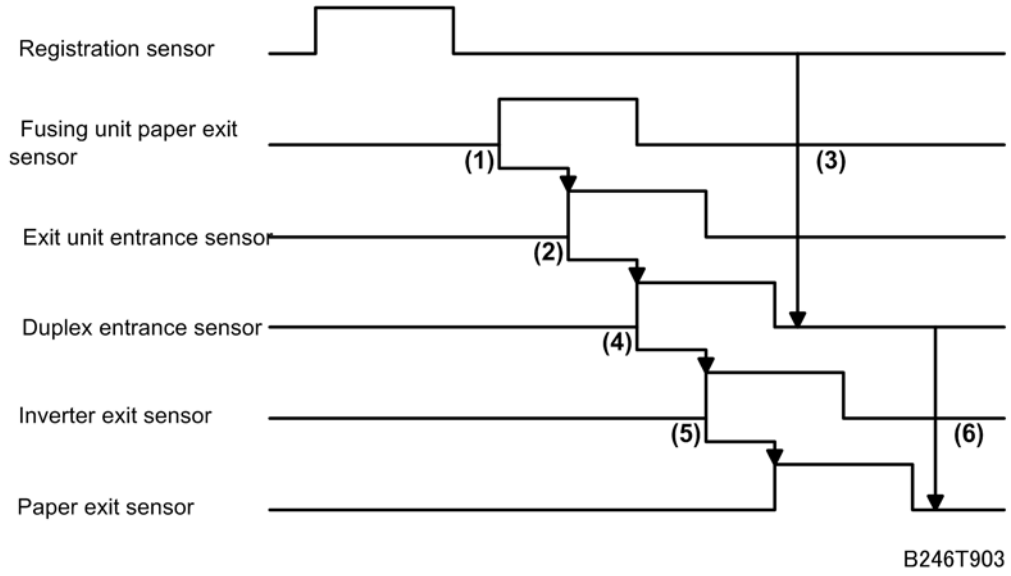
## 6.5.1 FEED, TRANSPORT, FEED OUT: FACE-UP




| | |
|---|---|
| (1): | Paper feed motor ON > Paper feed sensor does not switch ON at the correct time. |
| (2): | Paper feed motor ON > Vertical transport sensor does not switch ON at the correct time. |
| (3): | Vertical transport sensor ON> Paper feed sensor does not switch OFF at the correct time. |
| (4): | Vertical transport sensor ON > Vertical transport sensor does not switch OFF at the correct time. |
| (5): | Lower relay motor ON> Relay sensor does not switch ON at the correct time. |
| (6): | Vertical transport sensor OFF > Relay sensor does not switch OFF at the correct time. |

| | |
|---|---|
| (7): | Relay sensor ON > Registration sensor does not switch ON at the correct time. |
| (8): | Relay sensor OFF> Registration sensor does not switch OFF at the correct time. |
| (9): | Registration motor ON > Fusing unit paper exit sensor does not switch ON at the correct time. |
| (10): | Fusing unit paper exit sensor ON > Exit unit entrance sensor does not switch ON at the correct time. |
| (11): | Exit unit entrance sensor ON> Paper exit sensor does not switch ON at the correct time. |
| (12): | Registration motor OFF > Paper exit sensor does not switch OFF at the correct time. |

## 6.5.2 TRANSPORT, INVERTER, FEED OUT: FACE-DOWN

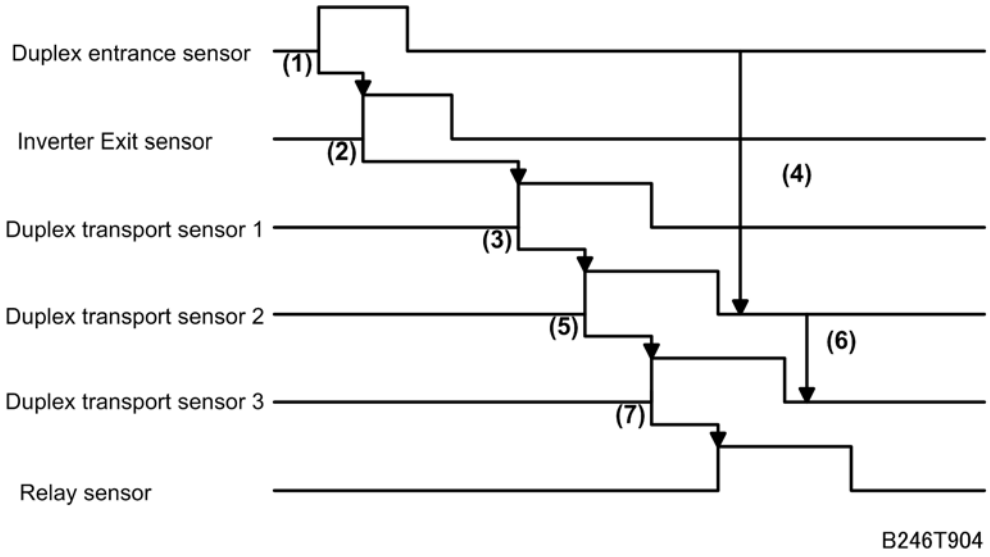



| | |
|---|---|
| (1): | From the registration sensor to the fusing unit exit, jam detection is the same as face-up feed out. |
| (2): | Exit unit entrance sensor ON > Duplex entrance sensor does not switch OFF at the correct time. |
| (3): | Registration sensor OFF > Duplex entrance sensor does not switch OFF at the |

**Timing Charts**

| | |
|---|---|
| | correct time. |
| (4): | Duplex entrance sensor ON > Inverter exit sensor does not switch OFF at the correct time. |
| (5): | Inverter exit sensor ON > Paper exit sensor does not switch ON at the correct time. |
| (6): | Duplex entrance sensor OFF > Paper exit sensor does not switch OFF at the correct time. (Paper remains at the duplex unit exit.) |

## 6.5.3 DUPLEX TRANSPORT




| | |
|---|---|
| (1): | Duplex entrance sensor ON > Inverter exit sensor does not switch ON at the correct time. |
| (2): | Inverter exit sensor ON > Duplex transport sensor 1 does not switch on at the correct time. |
| (3): | Duplex transport sensor 1 ON> Duplex transport sensor 2 does not switch on at the correct time. |
| (4): | Duplex entrance sensor ON > Duplex transport sensor 2 does not switch OFF at the correct time. |
| (5): | Duplex transport sensor 2 ON > Duplex transport sensor 3 does not switch ON at |

| | |
|---|---|
| | the correct time. |
| (6): | Duplex transport sensor 2 OFF > Duplex transport sensor 3 does not switch OFF at the correct time. |
| (7): | Duplex transport sensor 3 ON > Relay sensor does not switch on at the correct time. |

# 6.6 OTHER PROBLEMS

## 6.6.1 BLOWN FUSE CONDITIONS

| Fuse | Rating | | Symptom at Power On |
|---|---|---|---|
| | 115 V | 210~230V | |
| FU1 | 2A/125V | 6.3A/250V | Anti-condensation heater does not operate. |
| FU101 | 12A/125V | 6.3A/250V | No response. |
| FU103 | 6.3A/125V | 6.3A/250V | SC510 is displayed. |
| FU104 | 6.3A/125V | 6.3A/250V | Nothing displayed on LCD. |
| FU105 | 6.3A/125V | 6.3A/250V | “Door Open” is displayed. |
| FU106 | 6.3A/125V | 6.3A/250V | ADF does not operate. |
| FU107 | 6.3A/125V | 6.3A/250V | SC121 is displayed. |
| FU108 | 6.3A/125V | 6.3A/250V | Finisher does not work. |
| FU109 | 6.3A/125V | 6.3A/250V | “Door Open” is displayed. |
| FU110 | 6.3A/125V | 6.3A/250V | SC510 is displayed. |
| FU111 | 6.3A/125V | 6.3A/250V | Nothing is displayed on LCD. |

## 6.6.2 COMMON PROBLEMS

| Problem | Check | Inspect, Clean, Replace |
|---|---|---|
| Dirty Copies | Fusing Unit | Pressure roller |
| Jam – Fusing Unit | Fusing Unit | Hot roller |
| Jam – Fusing Unit | Fusing Unit | Hot roller strippers |
| Jam – Original | ADF | Pick-up, paper feed, separation rollers |

| | | |
|---|---|---|
| Lines (black or white) | Around the Drum | Cleaning blade, cleaning brush |
| Misfeed – Fusing Unit | Fusing Unit | Hot roller |
| Offset | Fusing Unit | Hot roller |
| Poor separation | Transfer Belt Unit | Transfer belt, transfer belt cleaning blade |
| SC300 ~ SC306 | Around the Drum | Charge corona wire, charge corona grid, charge corona wire cleaner. |
| Skew – Original | ADF | Pick-up, paper feed, separation rollers |
| Toner on transfer belt | Transfer Belt Unit | Transfer belt, transfer belt cleaning blade |
| Wrinkling | Fusing Unit | Pressure roller |

# ENERGY SAVING

| REVISION HISTORY | | |
|---|---|---|
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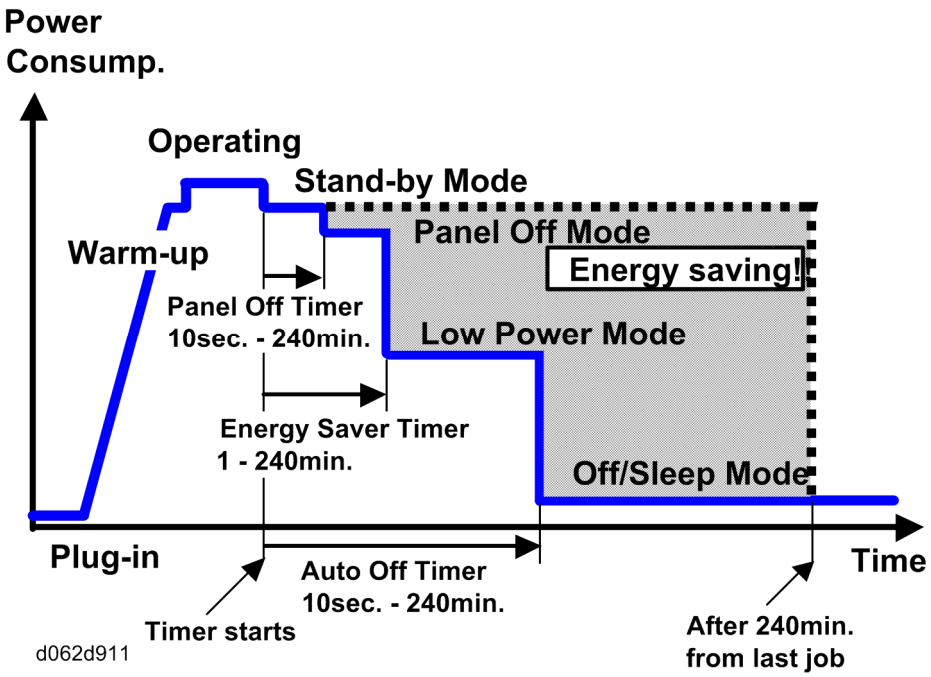
| | | None |

# 7. ENERGY SAVING

## 7.1 ENERGY SAVE

### 7.1.1 ENERGY SAVER MODES

Customers should use energy saver modes properly, to save energy and protect the environment.




The area shaded grey in this diagram represents the amount of energy that is saved when the timers are at the default settings. If the timers are changed, then the energy saved will be different. For example, if the timers are all set to 240 min., the grey area will disappear, and no energy is saved before 240 min. expires.

#### *Timer Settings*

The user can set these timers with User Tools (System settings > Timer setting)

- Panel off timer (10 sec – 240 min): Panel Off Mode. Default setting: 10 sec.
- Energy saver timer (1 – 240 min): Low Power Mode. Default setting: 1 minute
- Auto off timer (1 – 240 min): Off/Sleep Mode

  Default settings:

**Energy Save**

| | |
|---|---|
| D062/D063 | 1 min. |
| D065 | 16 min. |
| D066 | 15 min. |

Normally, Panel Off timer < Energy Saver timer < Auto Off timer. But, for example, if Auto Off timer < or = Panel Off timer and Energy Saver timer, the machine goes immediately to Off mode when the Auto Off timer expires. It skips the Panel Off and Energy Saver modes.

**Example**

- Panel off: 1 min.
- Low power: 15 min.
- Auto Off: 1 min.
- The machine goes to Off mode after 1 minute. Panel Off and Low Power modes are not used.

## *Return to Stand-by Mode*

**Low Power Mode**

The recovery time depends on the model and the region.

- D062/D063/D065: 10 sec.
- D066: 30 sec.

**Off/Sleep Mode**

Recovery time.

- D062/D063: Max 30 sec.
- D065: Max 60 sec.
- D066: Max 300 sec.

## *Recommendation*

We recommend that the default settings should be kept.

- If the customer requests that these settings should be changed, please explain that their energy costs could increase, and that they should consider the effects on the environment of extra energy use.
- If it is necessary to change the settings, please try to make sure that the Auto Off timer is not too long. Try with a shorter setting first, such as 30 min., then go to a longer one (such as 60 min.) if the customer is not satisfied.
- If the timers are all set to the maximum value, the machine will not begin saving energy until 240 minutes has expired after the last job. This means that after the customer has finished using the machine for the day, energy will be consumed that could otherwise

be saved.

- If you change the settings, the energy consumed can be measured using SP8941, as explained below.

## 7.1.2 ENERGY SAVE EFFECTIVENESS

SP 8941 (Machine Status) keeps a record of the amount of time that the machine spends in each mode.

- 8941-001: Operating mode
- 8941-002: Standby mode
- 8941-003: Panel off mode
- 8941-004: Low power mode
- 8941-005: Off/sleep mode

With this data, and the power consumption values from the specifications, we can estimate the amount of energy that is used by the machine.

This should only be used as a reference value, because the power consumption specifications are measured in a controlled environment with a constant power supply.

To get an exact measurement at the customers site, a watt meter must be used to measure the actual energy consumed.

To use SP8941 to calculate the energy consumed:

- At the start of the measurement period, read the values of SP8941 001 to 005.
- At the end of the measurement period, read the values of SP8941 001 to 005 again.
- Find the amount of time spent in each mode (subtract the earlier measurement from the later measurement).
- Multiply this by the power consumption spec for each mode.
- Convert the result to kWh (kilowatt hours)

Here is an example calculation.

| Machine Date | Power Consumption (W): **Data: a** | SP8941: Machine Status | Start Time: (min.) **Data: b** | End Time: (min.) **Data: c** | Time Differences (Data:b - Data: c) (min.) **Data: d** | Power Consumption (Data:a x Data:d) (Wmin.) **Data: e** |
|---|---|---|---|---|---|---|
| ① | 1081.8 | 001: | 21089.0 | 21386.0 | 297.0 | 321294.6 |

**Energy Save**

| Operating mode | | Operating Time | | | | |
|---|---|---|---|---|---|---|
| ② Ready mode (stand by) | 214.0 | 002: Standby Time | 306163.0 | 308046.0 | 1883.0 | 402962.0 |
| ③ Energy mode (Panel off) | 214.0 | 003: Energy Save Time | 71386.0 | 75111.0 | 3725.0 | 797150.0 |
| ④ Low power mode | 153.0 | 004: Low power Time | 154084.0 | 156340.0 | 2256.0 | 345168.0 |
| ⑤ Off/Sleep mode | 7.0 | 005: Off mode Time | 508776.0 | 520377.0 | 11601.0 | 81207.0 |
| Total Time of Data: d (min.) | | | | | 19762.0 | |
| Total Time of Data: d/60min. (Hour) | | | | | 329.37 | |
| Total Power Consumption of Data: e (Wmin.) | | | | | | 1947781.60 |
| Total Power Consumption of Data: e /60min./1000W (KWH) | | | | | | 32.46 |

# 7.2 PAPER SAVE

## 7.2.1 EFFECTIVENESS OF DUPLEX/COMBINE FUNCTION

Duplexing and the combine functions reduce the amount of paper used. This means that less energy overall is used for paper production, which improves the environment.

### *1. Duplex:*

Reduce paper volume in half!


d062d102

### *2. Combine mode:*

Reduce paper volume in half!


d062d100

### *3. Duplex + Combine:*

Using both features together can further reduce paper volume by 3/4!


d062d101

**Paper Save**

To check the paper consumption, look at the total counter and the duplex counter.

The total counter counts all pages printed.

- For one duplex page, the total counter goes up by 2.
- For a duplex job of a three-page original, the total counter goes up by 3.

The duplex counter counts pages that have images on both sides.

- For one duplex page, the duplex counter goes up by 1.
- For a duplex job of a three-page original, the duplex counter will only increase by 1, even though two sheets are used.

## *D062*

- Total counter: SP 8581-001
- Duplex counter: SP 8411-001
- Single-sided with combine mode: SP 8421-004
- Duplex with combine mode: SP 8421-005

The following table shows paper savings and how the counters increase for some simple examples of single-sided and duplex jobs

**Duplex mode:**

| Originals | Simplex Sheet used | Duplex Sheets used | **Paper Saved** | Total counter SP8501-001 | Duplex counter SP8411-001 |
|---|---|---|---|---|---|
| 1 | 1 | 1 | **0** | 1 | 0 |
| 2 | 2 | 1 | **1** | 2 | 1 |
| 3 | 3 | 2 | **1** | 3 | 1 |
| 4 | 4 | 2 | **2** | 4 | 2 |
| 5 | 5 | 3 | **2** | 5 | 2 |
| 10 | 10 | 5 | **5** | 10 | 5 |
| 20 | 20 | 10 | **10** | 20 | 10 |

If combine mode is used, the total and duplex counters work in the same way as explained previously. The following table shows paper savings and how the counters increase for some simple examples of duplex/combine jobs.

**2 in 1 mode:**

| Originals | Simplex Sheet used | Duplex Sheets used | **Paper Saved** | Total counter SP8501-001 | Duplex counter SP8421-004 |
|---|---|---|---|---|---|
| 1 | 1 | 1 | **0** | 1 | 1 |
| 2 | 2 | 1 | **1** | 1 | 1 |
| 3 | 3 | 2 | **1** | 2 | 2 |
| 4 | 4 | 2 | **2** | 2 | 2 |
| 5 | 5 | 3 | **2** | 3 | 2 |
| 10 | 10 | 5 | **5** | 5 | 5 |
| 20 | 20 | 10 | **10** | 10 | 10 |

**Duplex + 2 in 1 mode:**

| Originals | Simplex Sheet used | Duplex Sheets used | **Paper Saved** | Total counter SP8501-001 | Duplex counter SP8421-005 |
|---|---|---|---|---|---|
| 1 | 1 | 1 | **0** | 1 | 1 |
| 2 | 2 | 1 | **1** | 1 | 1 |
| 3 | 3 | 1 | **2** | 2 | 2 |
| 4 | 4 | 1 | **3** | 2 | 2 |
| 5 | 5 | 2 | **3** | 3 | 3 |
| 6 | 6 | 2 | **4** | 3 | 3 |
| 7 | 7 | 2 | **5** | 4 | 4 |
| 8 | 8 | 2 | **6** | 4 | 4 |
| 9 | 9 | 3 | **6** | 5 | 5 |
| 10 | 10 | 3 | **7** | 5 | 5 |

**Paper Save**

| Originals | Simplex Sheet used | Duplex Sheets used | **Paper Saved** | Total counter SP8501-001 | Duplex counter SP8421-005 |
|---|---|---|---|---|---|
| 11 | 11 | 3 | **8** | 6 | 6 |
| 12 | 12 | 3 | **9** | 6 | 6 |

# D062/D063/D065/D066
# SERVICE MANUAL APPENDICES

| REVISION HISTORY | | |
|---|---|---|
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# D062/D063/D065/D066 APPENDICES

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# GENERAL SPECIFICATIONS

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| | | None |

# 1. APPENDIX: GENERAL SPECIFICATIONS

## 1.1 GENERAL SPECIFICATIONS

### 1.1.1 COPIER

***Engine***

| | | |
|---|---|---|
| Configuration | Console | |
| | Original: Sheet/Book/Objects<br>Original Size<br>Max. A3/11" x 17"<br>Min. B6 SEF/5.5" x 8.5" (using ADF)<br>Original Alignment: Rear left corner | |
| Copy Paper Size | Paper tray, Duplex | A3/11" x 17" – A5/ 5.5" x 8.5" |
| | Bypass tray | A3/11" x 17" – A6 SEF/5.5" x 8.5" |
| | Non-standard sizes | Width: 139.7 – 297 mm (5.5" x 11.7")<br>Length: 139.7 – 432 mm (5.5" x 17") |
| Copy Paper Weight | Paper Tray | 52.3 to 127.9 g/m$^2$ (14 to 34 lb.) |
| | Duplex | 64 to 127.9 g/m$^2$ (17 to 34 lb.) |
| | | By-pass<br>▪ Standard: 52.3 to 157 g/m$^2$ (14 to 43 lb.)<br>Thick Paper mode: 52.3 to 216 g/m$^2$ (14 to 58 lb.) |
| Reproduction Ratios | 7 reduction ratios, 5 enlargement ratios<br>Metric (%): 400, 200, 141, 122, 115, 93, 82, 75, 71, 65, 50, 25<br>Inch (%): 400, 200, 155, 129, 121, 93, 85, 78, 73, 65, 50, 25 | |

**General Specifications**

| | | | |
|---|---|---|---|
| Copying Speed | D062: 60ppm<br>D063: 70ppm<br>D065: 80ppm<br>D066: 90ppm (A4, LT LEF) | | |
| First Copy Time | D062 | 4.2 s | (Tray 1, A4/LT LEF face-up, contact glass mode, APS off) |
| | D063 | 3.5 s | |
| | D065 | 3.5 s | |
| | D066 | 3.3 s | |
| Warm-up Time | D062/D063: Less than 30 seconds<br>D065: Less than 60 seconds<br>D066: Less than 300 seconds<br>From power on at 23°C (73.4°F) | | |
| | Less than 30 sec. at return from power off mode | | |
| Continuous Copying | 1 to 999 (Operation panel entry) | | |
| Paper Capacity | Tray 1 (tandem tray) | | 3100 sheets (1550 x2) |
| | Tray 2 | | 550 sheets |
| | Tray 3 | | 550 sheets |
| | Bypass tray | | 100 sheets (80 g/m$^2$, 20 lb.) |
| Paper Output | A4/8.5" x 11" and smaller | | 500 sheets |
| | B4 and larger | | 250 sheets |
| Power Source | North America | | D062/D063/D065:120V, 60Hz, 20A<br>D066: 208-240, 60Hz, 12A |
| | Europe/Asia | | D062/D063/D065: 220-240V, 50/60Hz, 10A<br>D066: 220-240V, 50/60Hz, 10A |
| | CHN/KOR/Taiwan | | D062/D063/D065: 110V, 60Hz, 20A<br>D066: 220V, 60Hz, 12A |

| | | |
|---|---|---|
| Power Consumption | Full System | NA:<br>D062/D063: Max. 1.8 kW<br>D065/D066: Max. 1.8 kW<br>EU:<br>D062/D063: Max. 1.9 kW<br>D065: Max. 1.95 kW<br>D066: Max. 1.9 kW |
| Energy Start | Implemented | |
| Memory | 512 MB / 1.5GB (Copy Printer model) | |
| HDD Capacity | 160 GB | |
| Allowed voltage fluctuation | 10% | |
| Dimensions (W x D x H) | 690 x 790 x 1165 mm (27.2 x 31.1 x 45.9 in.) | |
| Weight | Approx. 217 kg (478.4 lb.) | |
| Resolution | 1200 dpi (printing) 600 dpi (scanning) | |
| Gradation | 256 levels (scanning and printing) | |
| Toner Replenishment | Cartridge exchange (1100 g) | |
| Total Counter | Electric Counter | |

### *ADF*

| | |
|---|---|
| Original Size | Simplex: A3/11" x 17" – B6/5.5" x 8.5"<br>Duplex: A3/11" x 17" – B5/5.5" x 8.5" |
| Original Weight | Simplex: 40 to 128 g/$m^2$ (11 to 34 lb.)<br>Duplex: 52 to 128 g/$m^2$ (14 to 34 lb.) |
| Table Capacity | 250 sheets: 69g/$m^2$<br>(150 sheets: 80g/$m^2$, 20 lb. Bond) |
| Original Standard Position | Rear left corner |

**General Specifications**

| | |
|---|---|
| Separation | Feed belt and separation roller |
| Original Transport | Roller transport |
| Original Feed Order | From top original |
| Reproduction Range | 100% |
| Power Source | DC 24 V from the main machine |
| Power Consumption | Less than 110 W |
| Rated Voltage of Output Connector | Max. DC 24 V |
| Permissible voltage fluctuation | ±10% |
| Dimensions (W x D x H) | 680 x 560 x 180 mm (26.8" x 22.0" x 7.1") |
| Weight | 18 kg (39.6 lb.) |

## *Power Consumption*

**NA: 120V Model**

| | **Mainframe Only** | **Full System** |
|---|---|---|
| Warm-up | D062/D063: Approx. 1.41 kW<br>D065: Approx. 1.40 kW<br>D066: Approx. 1.71 kW | D062/D063: Approx. 1.43 kW<br>D065: Approx. 1.42 kW<br>D066: Approx. 1.73 kW |
| Stand-by | D062/D063: Approx. 294 kW<br>D065: Approx. 278 kW<br>D066: Approx. 310 kW | D062/D063: Approx. 317 kW<br>D065: Approx. 301 kW<br>D066: Approx. 333 kW |
| Printing | D062/D063: Approx. 1.55 kW<br>D065: Approx. 1.56 kW<br>D066: Approx. 1.75 kW | D062/D063: Approx. 1.67 kW<br>D065: Approx. 1.68 kW<br>D066: Approx. 1.87 kW |
| Maximum | D062/D063: Approx. 1.80 kW<br>D065/D066: Approx. 1.90 kW | D062/D063: Approx. 1.80 kW<br>D065/D066: Approx. 1.90 kW |

**EU: 220V to 240V Model**

| | Mainframe Only | Full System |
|---|---|---|
| Warm-up | D062/D063: Approx. 1.47 kW<br>D065: Approx. 1.51 kW<br>D066: Approx. 1.71 kW | D062/D063: Approx. 1.50 kW<br>D065: Approx. 1.53 kW<br>D066: Approx. 1.73 kW |
| Stand-by | D062/D063: Approx. 279 kW<br>D065: Approx. 288 kW<br>D066: Approx. 310 kW | D062/D063: Approx. 302 kW<br>D065: Approx. 311 kW<br>D066: Approx. 333 kW |
| Printing | D062/D063: Approx. 1.57 kW<br>D065: Approx. 1.58 kW<br>D066: Approx. 1.75 kW | D062/D063: Approx. 1.69 kW<br>D065: Approx. 1.77 kW<br>D066: Approx. 1.85 kW |
| Maximum | D062/D063: Approx. 1.90 kW<br>D065: Approx. 1.95 kW<br>D066: Approx. 1.90 kW | D062/D063: Approx. 1.90 kW<br>D065: Approx. 1.95 kW<br>D066: Approx. 1.90 kW |

## *Noise Emission*

**Noise Emission: Sound Power Level (NA)**

| | D062 | D063 | D065 | D066 |
|---|---|---|---|---|
| **Mainframe Only** | | | | |
| Standby | Less than 48.3 dB (A) | Less than 48.4 dB (A) | Less than 50.8 dB (A) | Less than 51.2 dB (A) |
| Printing | Less than 69.7 dB (A) | Less than 70.0 dB (A) | Less than 71.5 dB (A) | Less than 72.2 dB (A) |
| **Complete System** | | | | |
| Standby | Less than 49.0 dB (A) | Less than 49.1 dB (A) | Less than 52.9 dB (A) | Less than 52.9 dB (A) |
| Printing | Less than 74.8 dB (A) | Less than 75.0 dB (A) | Less than 75.5 dB (A) | Less than 76.3 dB (A) |

**General Specifications**

**Noise Emission: Sound Pressure Level (NA)**

| | D062 | D063 | D065 | D066 |
|---|---|---|---|---|
| **Mainframe Only** | | | | |
| Standby | Less than 35.8 dB (A) | Less than 35.9 dB (A) | Less than 37.7 dB (A) | Less than 38.0 dB (A) |
| Printing | Less than 54.5 dB (A) | Less than 57.6 dB (A) | Less than 58.5 dB (A) | Less than 58.7 dB (A) |
| **Complete System** | | | | |
| Standby | Less than 37.2 dB (A) | Less than 37.3 dB (A) | Less than 48.4 dB (A) | Less than 40.1 dB (A) |
| Printing | Less than 60.7 dB (A) | Less than 60.2 dB (A) | Less than 61.0 dB (A) | Less than 61.6 dB (A) |

**Noise Emission: Sound Power Level (EU)**

| | D062 | D063 | D065 | D066 |
|---|---|---|---|---|
| **Mainframe Only** | | | | |
| Standby | Less than 48.3 dB (A) | Less than 48.8 dB (A) | Less than 50.8 dB (A) | Less than 51.2 dB (A) |
| Printing | Less than 69.7 dB (A) | Less than 70.0 dB (A) | Less than 71.5 dB (A) | Less than 72.2 dB (A) |
| **Complete System** | | | | |
| Standby | Less than 49.0 dB (A) | Less than 49.1 dB (A) | Less than 52.9 dB (A) | Less than 52.9 dB (A) |
| Printing | Less than 74.8 dB (A) | Less than 75.0 dB (A) | Less than 75.5 dB (A) | Less than 76.3 dB (A) |

**Noise Emission: Sound Pressure Level (EU)**

| | D062 | D063 | D065 | D066 |
|---|---|---|---|---|
| **Mainframe Only** | | | | |
| Standby | Less than 35.8 dB (A) | Less than 35.9 dB (A) | Less than 37.7 dB (A) | Less than 38.0 dB (A) |
| Printing | Less than 54.5 dB (A) | Less than 57.6 dB (A) | Less than 58.5 dB (A) | Less than 58.7 dB (A) |
| **Complete System** | | | | |
| Standby | Less than 37.2 dB (A) | Less than 37.3 dB (A) | Less than 48.4 dB (A) | Less than 40.1 dB (A) |
| Printing | Less than 60.7 dB (A) | Less than 60.2 dB (A) | Less than 61.0 dB (A) | Less than 61.6 dB (A) |

Note

- The above measurements were made in accordance with ISO 7779. Full system measurements include the Mainframe + Finisher + LCT + Cover Interposer + Punch.

# 1.2 OPTIONAL EQUIPMENT

## 1.2.1 A3/11" X 17" TRAY TYPE 9001 (D482)

| | |
|---|---|
| Paper Size | A3, B4, 11" x 17", 8.5" x 14", A4 SEF, A4 LEF, 8.5" x 11" SEF, 11" x 8.5" LEF |
| Paper Weight | 52 to 163 g/$m^2$<br>16 to 40 lb. Bond<br>50 to 60 lb. Cover<br>90 lb. Index (no Tab) |
| Tray Capacity | 1,000 sheets (80 g/$m^2$, 20lb) |

## 1.2.2 RT43 (A4 LCT) (B473)

| | |
|---|---|
| Paper capacity | 4,000 sheets |
| Paper Sizes | A4 LEF, B5 LEF, 8.5" x 11" LEF *1 |
| Paper Weight | 52 to 128 g/$m^2$ (14 to 34 lb) |
| Pick-up and Feed | FRR (Feed and Reverse Roller) |
| Power Consumption | Less than 50 W (Max.) |
| Power Supply | DC24 V, 5V (powered by the main unit) |
| Rated Voltage of Output Connector | Max. DC 24 V |
| Dimensions (W x D x H) | 314 x 458 x 659 mm (12.4" x 18.1" x 25.9") |
| Weight | 20.0 kg (44 lb.) |

*1: In platen mode, APS (Auto Paper Select) with the original length and original width sensors are not used.

## 1.2.3 FINISHER SR4050 (3K FINISHER D460)

### *Upper Tray*

| | |
|---|---|
| Paper Capacity (80 g/m$^2$) | 500 sheets (A4, 8.5" x 11" and smaller) |
| | 250 sheets (B4, 8.5" x 14" and larger) |
| Paper Size | A3 to A6 SEF, 11" x 17" to 5.5" x 8.5", 12" x 18" |
| Paper Weight | 52 to 216 g/m$^2$ (14 to 58 lb) |
| Upper Tray Full Detection | Provided |

### *Shift Tray*

| | |
|---|---|
| Paper Capacity (80 g/m$^2$) | 3000 sheets (A4 LEF, B5 LEF, 8.5" x 11" LEF) |
| | 1500 sheets (A3, A4 SEF, B4 and B5 SEF, 11" x 17", 8.5" x 14", 8.5" x 11" SEF, 12" x 18") |
| | 500 sheets (A5 LEF, 5.5" x 8.5" LEF) |
| | 100 sheets (A5 SEF, 5.5" x 8.5" SEF) |
| Paper Size | A3 to A5, 11" x 17" to 5.5" x 8.5", 12" x 18" (including tab paper) |
| Paper Weight | 52 to 216 g/m$^2$ (14 to 58 lb) |
| Shift Tray Full Detection | Provided |

### *Stapler*

| | |
|---|---|
| Stapling Stack Size | A4, B5, 8.5" x 11" (Max. 100 Sheets)<br>A3, B4, 11" x 17", 8.5" x 14" (Max. 50 sheets) |
| Stapling Paper Size | A3 to B5<br>11" x 17" to 8.5" x 11" |
| Stapling Paper Weight | 64 to 80 g/m$^2$ (17 to 20 lb) |

**Optional Equipment**

<table>
<tr><td>Staple Position</td><td colspan="3">4 Modes<br>▪ 1 Staple: Front, Rear, Rear-Oblique<br>▪ 2 Stapes: 2 locations</td></tr>
<tr><td>Staple Capacity</td><td colspan="3">5000 staples/cartridge</td></tr>
<tr><td>Staple Supply</td><td colspan="3">Cartridge or Staple Replacement</td></tr>
<tr><td rowspan="5">Stapled Stack Size</td><td>Sheets</td><td>Sets</td><td>Sizes</td></tr>
<tr><td>10 to 100</td><td>200 to 30</td><td rowspan="2">A4 SEF, B5 SEF, 8.5" x 11" SEF<br>A4 LEF, B5 LEF, 8.5" x 11" LEF</td></tr>
<tr><td>2 to 9</td><td>150</td></tr>
<tr><td>10 to 50</td><td>150 to 30</td><td rowspan="2">A3, B4, 11" x 17", 8.5" x 14"</td></tr>
<tr><td>2 to 9</td><td>150</td></tr>
<tr><td>Trim Waste Staple Capacity</td><td colspan="3">30,000 or more</td></tr>
<tr><td>Waste Staple Hopper Full Detection</td><td colspan="3">Provided</td></tr>
<tr><td>Power Consumption</td><td colspan="3">Less than 100 W</td></tr>
<tr><td>Power Source</td><td colspan="3">DC 24 V (From Mainframe)</td></tr>
<tr><td>Size (W x D x H)</td><td colspan="3">800 x 730 x 980 mm (31.5" x 28.7" x 38.6")</td></tr>
<tr><td>Weight</td><td colspan="3">Less than 65 kg (143 lb.)</td></tr>
</table>

## 1.2.4 PUNCH UNIT TYPE 1075 (B531)

The Punch Unit B531 is installed in the Finisher SR4050 (D460).

<table>
<tr><td>Punch Hole Positions</td><td>2/3-hole (North America)<br>2/4-hole (Europe)</td></tr>
<tr><td colspan="2">Punch Paper Size</td></tr>
<tr><td>2-Hole (NA)</td><td>A5 to A3 SEF, 11" x 17" to 5.5" x 8.5" SEF<br>A5 to A4 LEF, 8.5" x 11" LEF, 5.5" x 8.5" LEF</td></tr>
</table>

| | |
|---|---|
| 3-Hole (NA) | A3 SEF, B4 SEF, 11" x 17" SEF<br>A4 LEF, B5 LEF, 8.5" x11" LEF |
| 4-Hole ( EUR/A) | A3 SEF, 11" x 17" SEF<br>A4 LEF, 8.5" x 11" LEF |
| Paper Weight | |
| 2-Hole (NA) | 52 g/m$^2$ to 163 g/m$^2$ (14 to 43 lb) |
| 3-Hole (NA) | 52 g/m$^2$ to 163 g/m$^2$ (14 to 43 lb) |
| 4-Hole (EUR/A) | 52 g/m$^2$ to 128 g/m$^2$ (14 to 34 lb) |
| Punch Waste Hopper Capacity | |
| 2-Hole (NA) | 10K |
| 3-Hole (NA) | 15K |
| 4-Hole (EUR/A) | 15K |
| Operation Modes | All (Shift, Proof, Staple) |

**DIP SW Settings**

The correct DIP SW settings of the Punch Unit 531 are provided in the table below for your reference only. The DIP switches of these punch units do not need to be changed at installation, or adjusted for operation.

| Punch Unit | Unit No. | DIP SW Settings | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| 2/3-Hole (NA) | B531-17 | 1 | 0 | 1 | 0 |
| 2/4-Hole (EUR/A) | B531-27 | 1 | 0 | 0 | 1 |

0: OFF, 1: ON

## 1.2.5 OUTPUT JOGGER UNIT TYPE 1075 (B513)

The Jogger Unit B513 is installed above the shift tray of the Finisher SR4050 (D460).

| | |
|---|---|
| Paper Size | A3 SEF, B4 SEF, 11" x 17" SEF<br>A4 LEF, B5 LEF, 8.5" x 11" LEF |
| Paper Weight | 52 g/$m^2$ to 216 g/$m^2$ (14 to 58 lb) |
| Weight | Less than 1.7 kg (3.7 lb.) |
| Dimensions (W x D x H) | 125 mm x 450 mm x 100 mm (5" x 17.7" x 4") |
| Power Supply | DC 24 V, DC 5V (From Finisher) |
| Power Consumption | 24 W |

## 1.2.6 LG SIZE TRAY TYPE 1075 (B474)

| | |
|---|---|
| Paper Size | B4, 8.5" x 14", A4 SEF, 8.5" x 11" SEF |
| Paper Weight | 52 to 128 g/m$^2$ (14 to 34 lb) |
| Tray Capacity | 1,000 sheets (80 g/m$^2$, 20lb) |

## 1.2.7 FINISHER SR4030 (3K FINISHER D374)

This finisher provides corner stapling only.

### *Finisher*

| | | | |
|---|---|---|---|
| Dimensions (W x D x H) | 657 x 613 x 960 mm | | |
| Weight | Less than 54 kg<br>Less than 56 kg with Punch Unit | | |
| Power Consumption | Less than 96 W | | |
| Noise | Less than 75 db | | |
| Configuration | Console type attached base-unit | | |
| Power Source | From base-unit | | |
| Proof Tray | Stack Capacity* | 250 sheets | A4, 8.5"x11" or smaller |
| | | 50 sheets | B4, 8.5"x14" or larger |
| | Paper Size | A5-A3 SEF, A6 SEF, A6 SEF<br>5.5"x8.5"-11"x17"SEF, 12"x18" SEF | |
| | Paper Weight | 52 g/m²-163 g/m²<br>14 lb Bond- 43 lb Bond / 90 lb Index / 60 lb Cover | |
| Shift Tray | Stack | 3,000 | A4 LEF, 1/2" x11" LEF |

**Optional Equipment**

| | | | |
|---|---|---|---|
| | Capacity* | sheets | |
| | | 1,500 sheets | A3 SEF, A4 SEF, B4 SEF, B5, 11"x17" SEF, $8_{1/2}$" x14" SEF, $8_{1/2}$" x 11" SEF, 12"x18" SEF |
| | | 500 sheets | A5 LEF** |
| | | 100 sheets | A5 SEF, B6 SEF, A6 SEF, $5_{1/2}$" x $8_{1/2}$",SEF |
| | Paper Size | A5 - A3 SEF, A6 SEF, B6 SEF, $5_{1/2}$" x $8_{1/2}$" - 11"x17" SEF, 12" x 18" SEF | |
| | Paper Weight | 52 g/m²-256 g/m²<br>14 lb Bond- 68 lb Bond / 140 lb Index / 90 lb Cover | |

## *Stapler*

| | | | |
|---|---|---|---|
| Paper Size | B5-A3<br>8.5"x11"-11"x17", 12"x18" | | |
| Paper Weight | 64 g/m²-90 g/m²<br>17 lb Bond-28 lb Bond | | |
| Staple Position | Top, Bottom, 2 Staple, Top-slant | | |
| Stapling Capacity | Same Paper Size | 50 sheets | A4, $_{1/2}$" x11" or smaller |
| | | 30 sheets | B4, $_{1/2}$" x14" or larger |
| | Mixed Paper Size | 30 sheets | A4 LEF + A3 SEF,<br>B5 LEF + B4 SEF,<br>$8_{1/2}$" x11" LEF + 11" x17" SEF |
| Staple Replenishment | Cartridge exchange / 5000 pins per cartridge | | |
| Stapled Stack | Paper Size | Pages/Set | Sets |

| | | | |
|---|---|---|---|
| Capacity (same size) | A4 LEF, 8.5"x11" LEF | 20-50 pages | 150-60 sets |
| | | 2-19 pages | 150 sets |
| | A4 SEF, B5, 8.5"x11" SEF | 15-50 pages | 100-30 sets |
| | | 2-14 pages | 100 sets |
| | Others | 15-30 pages | 100-33 sets |
| | | 2-14 pages | 100 sets |
| Stapled Stack Capacity (mixed sizes) | A4 LEF & A3 SEF,<br>B5 LEF & B4 SEF,<br>8.5"x11" LEF,<br>11" x17" SEF | 2-30 pages | 50 set |

## 1.2.8 FINISHER SR4040 (2K BOOKLET FINISHER D373)

This finisher provides booklet as well as corner stapling. Equipped with two trays, the upper tray holds stapled and shifted copies, and the lower tray holds booklet stapled and folded copies.

### *Finisher*

| | | |
|---|---|---|
| Dimensions (W x D x H) | 657 x 613 x 960 mm (25.9 x 24.1 x 37.8") | |
| Weight | Less than 63 kg (138.6 lb.) (no punch unit)<br>Less than 65 kg (143 lb.) (with punch unit) | |
| Power Consumption | Less than 96 W | |
| Noise | Less than 75 db | |
| Configuration | Console type attached base-unit | |
| Power Source | From base-unit | |
| Proof Tray | Stack Capacity* | 250 sheets A4, 8.5"x11" or smaller<br>50 sheets B4, 8.5"x14 or larger |

**Optional Equipment**

| | | | |
|---|---|---|---|
| | Paper Size | A5-A3 SEF, A6 SEF, A6 LEF<br>$5_{1/2}$" x$8_{1/2}$" to 11" x 17" SEF, 12"x18" SEF | |
| | Paper Weight | 52 g/m²-163 g/m²<br>14 lb Bond- 43 lb Bond / 90 lb Index / 60 lb Cover | |
| Shift Tray | Stack Capacity* | 2,000 sheets | A4 LEF, 8.5"x11" LEF |
| | | 1,000 sheets | A3 SEF, A4 SEF, B4 SEF, B5<br>11"x17" SEF, $8_{1/2}$" x14" SEF, $8_{1/2}$" x 11" SEF,<br>12"x18" SEF |
| | | 500 sheets | A5 LEF |
| | | 100 sheets | A5 SEF, B6 SEF, A6 SEF, $5_{1/2}$" x$8_{1/2}$" SEF |
| | Paper Size | A5 - A3 SEF, A6 SEF, B6 SEF<br>$5_{1/2}$" x$8_{1/2}$" to 11" x 17" SEF, 12" x 18" SEF | |
| | Paper Weight | 52 g/m²-256 g/m²<br>14 lb Bond- 68 lb Bond / 140 lb Index / 90 lb Cover | |

## *Stapler*

| | | | |
|---|---|---|---|
| Paper Size | B5-A3, 8.5"x11"-11"x17", 12"x18" | | |
| Paper Weight | 64 g/m²-90 g/m², 17 lb Bond-28 lb Bond | | |
| Staple Position | Top, Bottom, 2 Staple, Top-slant | | |
| Staples Capacity* | Same Paper Size | 50 sheets | A4, $8_{1/2}$" x 11" or smaller |
| | | 30 sheets | B4, $8_{1/2}$" x 14" or larger |
| | Mixed Paper Size | 30 sheets | A4 LEF & A3 SEF, B5 LEF & B4 SEF, $8_{1/2}$"x11" LEF & 11" x17" SEF |

| | | | |
|---|---|---|---|
| | Booklet Stapling | 15 sheets | A4 SEF, A3 SEF, B5 SEF, B4 SEF,<br>8.5"x11" SEF, 8.5"x14" SEF,<br>11"x17" SEF, 12"x18" SEF |
| Staple Replenishment | Corner staple | 5,000 staples per cartridge | |
| | Booklet staple | 2,000 staples per cartridge | |
| Corner Staple Capacity | Same Size | A4 LEF,<br>8.5"x11" LEF | 13-50 pages<br>2-12 pages |
| | | A4 SEF, B5,<br>8.5"x11" SEF | 10-50 pages<br>2-9 pages |
| | | Others | 10-30 pages<br>2-9 pages |
| | Mixed Size | A4 LEF + A3 SEF<br>B5 LEF + B4 SEF<br>8.5"x11" LEF + 11" x17" SEF | 2-30 pages |
| Booklet Staple Capacity | A4 SEF, A3 SEF, B5 SEF, B4 SEF<br>8.5"x11" SEF,<br>8.5"x14" SEF,<br>11"x17" SEF<br>12"x18" SEF | 2-5 pages<br>6-10 pages<br>11-15 pages | |

## *D373/D374 Paper Specifications*

| Paper Size | Plain Paper | | | Paper Type | |
|---|---|---|---|---|---|
| | Copier PPC | Used Paper | Recycled Paper | Colored Paper | Translucent Blueprint |
| A3 SEF | ● | — | ● | ● | ▲ |
| B4 SEF | ● | ▲ | ● | ● | ▲ |
| A4 SEF | ● | ▲ | ● | ● | ▲ |
| A4 LEF | ◆ | ▲ | ◆ | ◆ | ▲ |
| B5 SEF | ● | ▲ | ● | ● | ▲ |
| B5 LEF | ◆ | ▲ | ◆ | ◆ | ▲ |
| A5 SEF | ○ | — | — | — | — |
| A5 LEF | ○ | — | — | — | — |
| B6 SEF | ▲ | — | — | — | — |
| B6 LEF | ▲ | — | — | — | — |
| 12" x 18" SEF | ● | — | ● | ● | — |
| 11" x 17" SEF | ● | — | ● | ● | ▲ |
| $8_{1/2}$" x 14" | ● | — | ● | ● | ▲ |
| $8_{1/2}$" x 11" SEF | ● | — | ● | ● | ▲ |
| $8_{1/2}$" x 11" LEF | ◆ | ▲ | ◆ | ◆ | ▲ |
| $5_{1/2}$" x $8_{1/2}$" | ○ | — | — | ○ | — |
| $5_{1/2}$" x $8_{1/2}$" | ○ | — | — | ○ | — |

◆: Corner stapling, Shift, YES

●: Booklet stapling/folding, Shift, YES

○: Shift ONLY

▲: Shift NO

—: Not available

## 1.2.9 PUNCH UNIT TYPE 3260 (B702)

This punch unit is designed for use with the Finisher SR4040 (D373: both corner and booklet stapling) and Finisher SR4030 (D374: corner stapling only).

| | | | |
|---|---|---|---|
| Available Punch Units | NA | 2/3 hole switchable | |
| | EU | 2/4 holes switchable | |
| | Scandinavia | 4 holes | |
| Punch Waste Replenishment | NA 2-hole | Up to 5,000 sheets | |
| | NA 3-hole | Up to 5,000 sheets | |
| | EU 2-hole | Up to 14,000 sheets | |
| | EU 4-hole | Up to 7,000 sheets | |
| | Scandinavia 4-hole | Up to 7,000 sheets | |
| Paper Weight | 52 g/m²-163 g/m², 14 lb Bond to 43 lb Bond / 90 lb Index / 60 lb Cover | | |
| Paper Sizes | NA 2-hole | SEF | A5 to A3, $5_{1/2}$" x$8_{1/2}$" to 11"x17" |
| | | LEF | A5 - A4, $5_{1/2}$" x $8_{1/2}$", $8_{1/2}$" x 11" |
| | NA 3-hole | SEF | A3, B4, 11"x17" |
| | | LEF | A4, B5, $8_{1/2}$" x 11" |
| | EU 2-hole | SEF | A5 - A3, $5_{1/2}$" x $8_{1/2}$" to 11" x 17" |
| | | LEF | A5 to A4, $5_{1/2}$" x $8_{1/2}$", $8_{1/2}$" x 11" |
| | EU 4-hole | SEF | A3, B4, 11"x17" |
| | | LEF | A4, B5, $8_{1/2}$" x 11" |

**Optional Equipment**

| | | | |
|---|---|---|---|
| | Scandinavia 4-hole | SEF | A5 to A3, $5_{1/2}$" x $8_{1/2}$" to 11" x 17" |
| | | LEF | A5 - A4, $5_{1/2}$"x$8_{1/2}$", $8_{1/2}$" x 11" |

## 1.2.10 9-BIN MAILBOX (B762)

The mailbox can be installed on top of the Finisher SR4030 (D374), the Finisher SR4040 (D373), or the Finisher SR4050 (D460).

| | |
|---|---|
| Dimensions (w x d x h) | 540 x 600 x 660 mm (21.3 x 23.6 x 26 in.) |
| Weight | Less than 15 kg (33 lb.) |
| Power Consumption | Less than 48 W |
| Noise | Less than 74 dB |
| Number of Bins | 9 bins |
| Stack Capacity of each Bin | 100 sheets* |
| Paper Size | A5. A4, A3 |
| | $5_{1/2}$" x $8_{1/2}$", $8_{1/2}$" x11", $8_{1/2}$" x14", 11"x17" |
| Paper Weight | 52 - 128g/m² |
| | 14 lb – 34 lb Bond |

## 1.2.11 COVER INTERPOSER TRAY TYPE 3260 (B704)

| | |
|---|---|
| Dimension (W x D x H) | 500 x 600 x 600 mm (19.7 x 23.6 x 23.6 in.) |
| Weight | Less than 12 Kg (26.4 lb.) |
| Power Consumption | Less than 43 W |
| Noise | Less than 65 db |
| Stack Capability* | 200 Sheets |
| Paper Size | A5-A3, $5_{1/2}$" x $8_{1/2}$" - 11" x 17" |

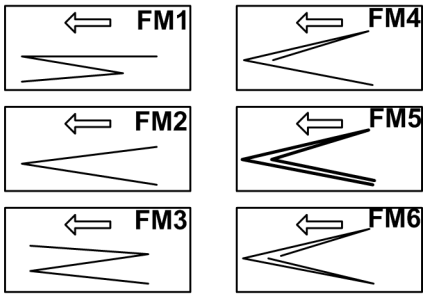
| | | |
|---|---|---|
| Paper Weight | | 64 g/m$^2$-216 g/m$^2$<br>17 lb. Bond- 80 lb. b Cover |
| Original Set Position | | Center |
| Original Set | Normal Feed | Face-up |
| | Booklet Feed | Face-down |

## 1.2.12 MULTI-FOLDING UNIT FD5000 (D454)

### *General*

| | | |
|---|---|---|
| Dimensions (W × D × H) | 470 × 980 × 730 mm (18.6 × 38.6 × 28.8 in.) | |
| Weight | Approx. 92 kg (202.9 lb.) | |
| Power Consumption | Maximum 270 W (A separate power source is required.) | |
| Power Source | 220 - 240 V, 50/60 Hz, 1.2 A | |
| Operating Environment | Temperature and humidity ranges: Same as main machine. | |
| Paper Weight | Single sheet mode:<br>64 to 103 g/m$^2$ (17 lb. Bond - 28 lb. Bond)<br>Multiple sheets mode:<br>64 to 80 g/m$^2$ (17 lb. Bond - 20 lb. Bond) | |
| Folding Methods | 6 (see below) | |
| Speed | Straight-Through | 100 to 700 mm/s |
| | Folding | 270 to 700 mm/s |
| Straight-Through Feed | Size | Postcard to 13x19.2" |
| | Type | Used paper: A3, A4, B4, B5<br>OHP: A4, B5<br>Tap paper: A4 LEF, LT LEF |
| Folding Methods | 6 (FM1 to FM6) | |

**Optional Equipment**




FM1: Z-Folding
FM2: Half Fold
FM3: Letter Fold-out
FM4: Letter Fold-in
FM5: Double Parallel Fold
FM6: Gate Fold

d454v900

| | | | |
|---|---|---|---|
| Paper Sizes (Folding) | | FM1 | A3, B4, DLT, LG, A4, LT, 12x18", 8-kai |
| | FM2 | | A3, B4, DLT, LG, A4, B5, LT 12x18", 12.6x18.5", 12.6x19.2", 13x18", 13x19", 13x19.2", 226x310 mm, 310x432 mm, SRA3, SRA4, 8-kai |
| | FM3 | | A3, B4, DLT, LG, A4, LT, B5, 12x18", 8-kai |
| | FM4 | | |
| | FM5 | | |
| | FM6 | | |
| Paper Weights (Folding) | | FM1 | 64 to 105 g/m$^2$ |
| | FM2 | | |
| | FM3 | | |
| | FM4 | | |
| | FM5 | | |
| | FM6 | | |
| Multiple Folding | | FM1 | Not allowed |

| | | | |
|---|---|---|---|
| | FM2 | | Max. 3 (64 to 80 g/m$^2$ only) |
| | FM3 | | Max. 3 (64 to 80 g/m$^2$ only) |
| | FM4 | | Max. 3 (64 to 80 g/m$^2$ , B4, A4, LT, B5 only) |
| | FM5 | | Not allowed |
| | FM6 | | |
| Line Speed (Only FM1 Z-Folded paper can exit downstream) | | | |
| No Fold | 350 mm/sec. to top tray<br>To downstream: Same as main machine. | | |
| FM1 | 700 mm/sec. to top tray (paper ≤ 355.6 mm long)<br>450 mm/sec. to top tray (paper < 355.6 mm long)<br>To downstream: Same as main machine. | | |
| FM2 | 1 Sheet: Same as main machine<br>2-3 Sheets: 454 mm/sec.<br>700 mm/sec. to top tray (paper ≤ 355.6 mm long)<br>350 mm/sec. to top tray (paper ≤ 279.4 <355.6 mm long)<br>250 mm/sec. to top tray (paper < 279.4 mm long) | | |
| FM3<br>FM4 | 1 Sheet: Same as main machine<br>2-3 Sheets: 454 mm/sec. to top tray<br>350 mm/sec. to top tray (paper ≤ 420 mm long)<br>250 mm/sec. to top tray (paper < 420 mm long) | | |
| FM5 | 1 Sheet: Same as main machine<br>350 mm/sec. to top tray (paper ≤ 420 mm long)<br>250 mm/sec. to top tray (paper < 420 mm long) | | |
| FM6 | 1 Sheet: Same as main machine as far as 3rd Stopper. At 3rd stopper feeds 50 mm at 100 mm/sec.<br>350 mm/sec. to top tray (paper ≤ 420 mm long)<br>250 mm/sec. to top tray (paper < 420 mm long) | | |
| Power Supply | | NA | AC 120V 60 Hz, 15A |
| | EU | | AC 220 to 240V, 50/60 Hz 10A |

**Optional Equipment**

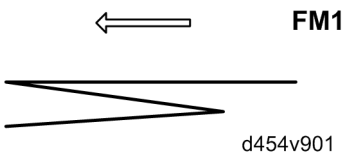
| | | | | |
|---|---|---|---|---|
| Power Consumption | | 270 W | | |
| Size (w x d x h) | | 466 x 980 x 730 mm (18.4 x 38.6 x 28.7 in.) | | |
| Level | | Less than 5 mm deviation at front/back, left/right | | |
| Weight | | 92 kg (203 lb) | | |
| Noise Level (dB A) | | Mode | Alone | System |
| | | No Folding | < 76 dB | --- |
| | | Folding | < 78 dB | < 83 dB |

## *Tray Capacity*

The capacity of the tray on top of the unit for folded paper is determined by these variables:

- Folding Methods (FM1 to FM6)
- Paper size
- Paper weight

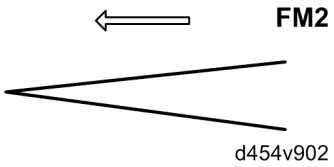
**Folding Mode FM1**




| Size | Weight (Standard) 64 to 80 g/m$^2$ | Weight (Heavy) 64 to 80 g/m$^2$ |
|---|---|---|
| 8-kai | 35 | 20 |
| 12x18" | 35 | 20 |
| A3 SEF | 35 | 20 |
| DLT | 35 | 20 |
| B4 SEF | 35 | 20 |
| LG SEF | 35 | 20 |
| A4 SEF | 30 | 20 |

| Size | Weight (Standard) 64 to 80 g/m$^2$ | Weight (Heavy) 64 to 80 g/m$^2$ |
|---|---|---|
| LT SEF | 30 | 20 |

**Folding Mode FM2**

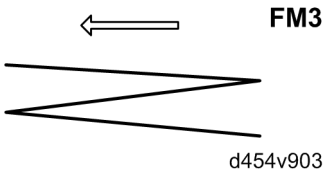



| Size | Weight (Standard) 64 to 80 g/m$^2$ | Weight (Heavy) 64 to 80 g/m$^2$ |
|---|---|---|
| 13x19.2" | 40 | 25 |
| 13x19" | 40 | 25 |
| 12.6x19.2" | 40 | 25 |
| 12.6x18.5" | 40 | 25 |
| 13x18" | 40 | 25 |
| SRA3 (320x450 mm) | 40 | 25 |
| SRA4 (225x320 mm) | 40 | 25 |
| 226x310 mm | 40 | 25 |
| 310x432 mm | 40 | 25 |
| 8-kai | 40 | 25 |
| 12x18" | 40 | 25 |
| A3 SEF | 40 | 25 |
| DLT | 40 | 25 |
| B4 SEF | 40 | 25 |

**Optional Equipment**

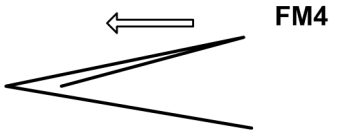
| Size | Weight (Standard) 64 to 80 g/m$^2$ | Weight (Heavy) 64 to 80 g/m$^2$ |
|---|---|---|
| LG SEF | 40 | 25 |
| A4 SEF | 50 | 50 |
| LT SEF | 50 | 50 |
| B5 SEF | 50 | 50 |

**Folding Mode FM3**




| Size | Weight (Standard) 64 to 80 g/m$^2$ | Weight (Heavy) 64 to 80 g/m$^2$ |
|---|---|---|
| 8-kai | 30 | 20 |
| 12x18" | 30 | 20 |
| A3 SEF | 30 | 20 |
| DLT | 30 | 20 |
| B4 SEF | 30 | 20 |
| LG SEF | 30 | 20 |
| A4 SEF | 40 | 30 |
| LT SEF | 40 | 30 |
| B5 SEF | 40 | 30 |

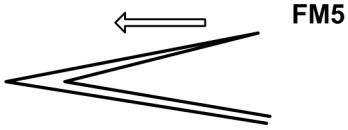
**Folding Mode FM4**




d454v904

| Size | Weight (Standard) 64 to 80 g/m$^2$ | Weight (Heavy) 64 to 80 g/m$^2$ |
|---|---|---|
| 8-kai | 40 | 20 |
| 12x18" | 40 | 20 |
| A3 SEF | 40 | 20 |
| DLT | 40 | 20 |
| B4 SEF | 40 | 20 |
| LG SEF | 40 | 20 |
| A4 SEF | 50 | 40 |
| LT SEF | 50 | 40 |
| B5 SEF | 50 | 40 |

**Folding Mode FM5**

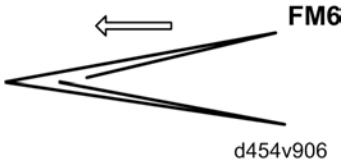



d454v905

| Size | Weight (Standard) 64 to 80 g/m$^2$ | Weight (Heavy) 64 to 80 g/m$^2$ |
|---|---|---|
| 8-kai | 30 | 20 |
| 12x18" | 30 | 20 |
| A3 SEF | 30 | 20 |

| Size | Weight (Standard) 64 to 80 g/m$^2$ | Weight (Heavy) 64 to 80 g/m$^2$ |
|---|---|---|
| DLT | 30 | 20 |
| B4 SEF | 30 | 20 |
| LG SEF | 30 | 20 |
| A4 SEF | 30 | 30 |
| LT SEF | 30 | 30 |
| B5 SEF | 30 | 30 |

**Folding Mode FM6**




| Size | Weight (Standard) 64 to 80 g/m$^2$ | Weight (Heavy) 64 to 80 g/m$^2$ |
|---|---|---|
| 8-kai | 50 | 20 |
| 12x18" | 50 | 20 |
| A3 SEF | 50 | 20 |
| DLT | 50 | 20 |
| B4 SEF | 50 | 20 |
| LG SEF | 50 | 20 |
| A4 SEF | 30 | 30 |
| LT SEF | 30 | 30 |
| B5 SEF | 30 | 30 |

# APPENDIX:
# PM TABLES

| APPENDIX 2 PM TABLES REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| | | None |

# 2. APPENDIX: PM TABLES

## 2.1 PM TABLES



The amounts mentioned (K=1,000) as the PM interval indicate the number of prints or copies unless stated otherwise. These numbers are based on the PM counter.

**Symbol key**: **C**: Clean, **R**: Replace, **L**: Lubricate, **I**: Inspect, **EM**: Emergency Maintenance, **AN**: As necessary, **Exp.**: Expected Life (K)

**⚠WARNING**

- Turn off the power switch and unplug the power cord before performing any procedure in this section. Laser beams can seriously damage the eyes.

### 2.1.1 MAIN MACHINE

#### *Scanner Optics*

| | 300K | 450K | 600K | AN | Exp. | Note |
|---|---|---|---|---|---|---|
| 1st, 2nd, 3rd Mirror | | | | C | | Optics cloth |
| Exposure Glass | C | | | C | | Damp cloth |
| Scanner Guide Rails | | | | C/L | | After cleaning with alcohol, lubricate scanner guide rails with Launa Oil. |
| Toner Shield Glass | C | | | C | | Optics cloth |
| Reflector | | | | C | | Optics cloth |
| Dust Filters | | | | C | | Blower brush |

#### *Around the Drum*

| | 300K | 450K | 600K | AN | Exp. | Note |
|---|---|---|---|---|---|---|
| Charge Corona Grid | R | | | | 300 | |
| Charge Corona Wire | R | | | C | 450 | Alcohol cloth |

**PM Tables**

| | 300K | 450K | 600K | AN | Exp. | Note |
|---|---|---|---|---|---|---|
| Charge Wire Cleaning Pad | R | | | | 450 | |
| Cleaning Blade | R | | | | 500 | |
| Cleaning Brush | R | | | | | |
| Charge Corona Casing | C | | | C | | Damp cloth |
| Internal Dust Filter | | | | C | | Blower brush |
| ID Sensor | C | | | C | | Blower brush. Do SP 3001 002 after cleaning. |
| Pick-off Pawls | I | | | I | | Replace if necessary. |
| Potential Sensor | C | | | C | | Blower brush |
| OPC Drum | | | | | 1,200 | Replace when an image problem occurs. |
| Quenching Lamp | C | | | C | | Dry cloth |
| Transfer Entrance Stay | C | | | C | | Dry cloth |
| Ozone Filter (Rear) | | | | | 4,500 | |
| Ozone Filter (Front) | R | | | | | |
| Cleaning Filter | R | | | | | |
| Cleaning Side Seal | | | | C | | Dry cloth |
| Cleaning Entrance Seal | | | | C | | Dry cloth |
| PTL | C | | | C | | Dry cloth |
| Toner Collection Bottle | | | | I | 1,500 | |
| Toner Pan | C | | | C | | Dry cloth |

### *Development Unit*

| | 300K | 450K | 600K | AN | Exp. | Note |
|---|---|---|---|---|---|---|
| Developer | R | | | | | PM cycle is 350K. |
| Development Filter | R | | | I | | |
| Development Roller | C | | | | | Dry cloth |
| Side Seals | C | | | C | | Blower brush, dry cloth |
| Entrance Seal | C | | | C | | Blower brush, dry cloth |
| Toner Hopper | C | | | C | | Dry cloth |
| Toner Bottle Holder | C | | | C | | Dry cloth |
| Toner Trap | C | | | C | | Dry cloth |
| Drive Gears | C | | | C | | Blower brush. |
| Development Roller Drive Shaft | C | | | C | | Clean with blower brush and dry cloth every time the developer is replaced. |
| Development Unit | C | | | C | | Dry cloth. |
| Paddle Roller Shaft | C | | | C | | Blower brush, dry cloth. |
| Used Toner Separation Unit | I | | R | | | |

### *Paper Feed*

| | 300K | 600K | 1000K | AN | Exp. | Note |
|---|---|---|---|---|---|---|
| Registration Rollers | C | | | | | Alcohol |
| Relay Rollers | C | | | | | Alcohol |
| Paper Dust Mylar | C | | | C | | Dry cloth |

**PM Tables**

| | 300K | 600K | 1000K | AN | Exp. | Note |
|---|---|---|---|---|---|---|
| Registration Sensor | C | | | | | Blower brush |
| Relay Sensor | C | | | | | Blower brush |
| Bypass Paper End Sensor | C | | | | | Blower brush |
| Grip Rollers | C | | | | | Dry cloth, blower brush |
| Vertical Guide Plate | C | | | | | Dry cloth |
| Paper Feed Guide Plate | C | | | | | Dry cloth |
| Vertical Transport Rollers | C | C | | | | Alcohol |
| Paper Feed Sensors | C | C | | | | Blower brush |
| Paper End Sensors | C | C | | | | Blower brush |
| Feed Rollers | | | R | | 1000 | See **Notes** below this table. |
| Pick-up Rollers | | | R | | 1000 | |
| Separation Rollers | | | R | | 1000 | |

**Notes:**

- Always replace pick-up, feed and separation rollers as a set.
- The target service life of the feed, pick-up, and separation rollers is 1000 K. However, they should be replaced sooner if the machine begins to jam or double-feed.

## *Transfer Belt Unit*

| | 300K | 450K | 600K | AN | Exp. | Note |
|---|---|---|---|---|---|---|
| Transfer Belt | | | R | | 750 | Use dry cloth to clean transfer belt. Always replace transfer belt and transfer roller cleaning blade together. |
| Transfer Roller Cleaning Blade | | | R | | 750 | |

| | 300K | 450K | 600K | AN | Exp. | Note |
|---|---|---|---|---|---|---|
| Transfer Entrance Guide Plate | C | | | | | Dry cloth |
| Transfer Drive Roller | C | | | | | Dry cloth |
| Transfer Idle Roller | C | | | | | Dry cloth |
| Transfer Bias Roller | C | | | | | Dry cloth |
| Transfer Exit Guide Plate | C | | | | | Dry cloth |
| Discharge Plate | R | | | | | |
| Transfer Belt Unit Casing | C | | | | | Dry cloth |
| Slide Rail Bracket | C | | | | | |

### *Fusing Unit and Paper Exit*

| | 300K | 450K | 900K | AN | Exp. | Note |
|---|---|---|---|---|---|---|
| Fusing Entrance Guide Plate | C | | | | | Dry cloth |
| Fusing Exit Guide Plate | C | | | | | Dry cloth |
| Fusing Lamps | I | | | | | |
| Hot Roller | | R | | | 450 | |
| Hot Roller Bearings | | R | | | 450 | |
| Pressure Roller | | R | | | 450 | |
| Pressure Roller Bearings | | R | | | 450 | |
| Pressure Cleaning Roller | | R | | | 450 | Replace as a set. |
| Pressure Cleaning Roller Bearings | | R | | | 450 | |

**PM Tables**

| | 300K | 450K | 900K | AN | Exp. | Note |
|---|---|---|---|---|---|---|
| Hot Roller Strippers | | R | | | 450 | |
| Thermistors x2 | | R | | | | |
| Cleaning Web | | R | | | | |
| Cleaning Web Pressure Roller | | R | | | | Replace roller and bushings together. |
| Cleaning Web Pressure Roller Bearings | | | R | | 900 | |
| De-Curler Rollers | C | | | | | Alcohol |
| Exit Static Discharge Brush | I | | | | | |
| Exit Rollers (Top, Bottom) | C | | | | | Alcohol |
| Transport Rollers | C | | | | | Alcohol |

## *Duplex*

| | 300K | 450K | 600K | AN | Exp. | Note |
|---|---|---|---|---|---|---|
| Entrance Sensor | C | | | C | | Blower brush |
| Inverter Exit Rollers | C | | | | | Alcohol |
| Reverse Trigger Rollers | C | | | | | Dry cloth |
| Transport Rollers | C | | | | | Dry cloth |
| Inverter Entrance Roller | C | | | | | Dry cloth |
| Entrance Anti-Static Brush | C | | | | | Dry cloth |
| Reverse Junction Gate | C | | | | | Dry cloth |

### *ADF*

The PM interval is for the number of originals that have been fed.

| | 300K | 400K | 600K | AN | Exp. | Note |
|---|---|---|---|---|---|---|
| Pick-up Roller | | | R | | | Alcohol, belt cleaner to clean paper feed belt. Replace these items together. |
| Separation Roller | | | R | | | |
| Paper Feed Belt | | | R | | | |
| ADF Transport Belt | | | R | | | |
| CIS Glass | C | C | C | | | Dry cloth |
| White Guide Plate | | R | | C | | Alcohol or dry cloth |
| Sensors | C | C | C | | | Blower brush. |
| Platen Cover Sheet | C | C | C | | | Water or alcohol |
| Drive Gears | L | L | L | | | Grease G501. |
| Transport Belt | C | C | C | | | Water or alcohol |
| Entrance Roller | C | C | C | | | |
| White Platen Roller | C | C | C | | | |
| Pre-Scanning Roller | C | C | C | | | |
| Scanning Roller | C | C | C | | | |
| Exit Roller | C | C | C | | | |

## 2.1.2 OPTIONAL PERIPHERAL DEVICES

### *RT43 (A4 LCT) (B473)*

| | 300K | 450K | 1000K | Exp. | Note |
|---|---|---|---|---|---|
| Pick-up Roller | | | R | 1000 | Always replace these rollers as a set. The target service life |
| Feed Roller | | | R | 1000 | |

**PM Tables**

| | 300K | 450K | 1000K | Exp. | Note |
|---|---|---|---|---|---|
| Separation Roller | | | R | 1000 | of the feed, pick-up, and separation rollers is 1000 K. However, they should be replaced sooner if the machine begins to jam or double-feed |

## *Cover Interposer Tray Type 3260 (B704)*

The cover interposer tray can be used with the Finisher SR4030 (D374), SR4040 (D373) or Finisher SR4050 (D460). The interposer tray is installed between the main machine and the finisher.

**Note**: The PM interval is for the number of sheets that have been fed.

| | 60K | 120K | 180K | Exp. | Note |
|---|---|---|---|---|---|
| Feed Belt | R | R | R | | Replace as a set. |
| Pick-up Roller | R | R | R | | |
| Separation Roller | R | R | R | | |
| Driver Rollers | C | C | C | | Damp clean cloth. |
| Idle Rollers | C | C | C | | Damp clean cloth. |
| Discharge Brush | C | C | C | | Damp clean cloth. |
| Sensors | C | C | C | | Blower brush. |

## *Finisher SR4050 (3K Finisher D460)*

| | 350K | 700K | 1050K | Exp. | Note |
|---|---|---|---|---|---|
| Drive rollers | I | I | I | | Alcohol |
| Idle rollers | I | I | I | | |
| Discharge brush | I | I | I | | |
| Bushings | I | I | I | | Lubricate with silicone oil if |

| | 350K | 700K | 1050K | Exp. | Note |
|---|---|---|---|---|---|
| | | | | | noisy. |
| Sensors | I | I | I | | Blow brush. |
| Jogger fences | I | I | I | | Make sure screws are tight. |
| Staple waste hopper | C | C | C | | Empty staple waste. |



### *Finisher SR4030 (D374)/ SR4040 (D373)*

| | 2400K | 3000K | 4000K | Exp. | Note |
|---|---|---|---|---|---|
| Covers | | | | I/C | Alcohol or water, dry cloth |
| Drive Rollers | | | | C | Damp cloth, dry cloth |
| Idle Rollers | | | | C | Damp cloth, dry cloth |
| Anti-Static Brush | | | | C | Dry cloth |
| Sensors | | | | C | Blower brush |
| Corner Stapler | | | R | | Print an SMC report with SP5990. Replace the unit if the staple count is 500K. |
| Booklet Stapler | | | R | | Print an SMC report with SP5990. Replace the unit if the staple count is 200K. |

### *Punch Unit Type 3260 (B702) for Finisher SR4030 (D374)/ SR4040 (D373)*

| | 2400K | 3000K | 4000K | EM | Note |
|---|---|---|---|---|---|
| Punch Waste Hopper | I | I | I | I | Remove and empty |
| Punch Unit | | | | C | Replace after 1000k punches. |

## *Multi-Folding Unit FD5000 (D454)*

| Part | PM Visit | Notes |
|---|---|---|
| Rollers (drive, idle rollers) | I/C | Alcohol, clean cloth |
| Anti-static brush | I/C | |
| Shafts | I/C | Lubricate with silicone oil if noisy. |
| Sensors | I/C | Blower brush |
| Positioning roller | I/C | Inspect for scratches or nicks |
| Fold rollers (1st, 2nd, 3rd) | I/C | Alcohol, clean cloth |
| Crease rollers (drive, idle roller) | I/C | |

### *Related SP Codes*

This is a list of the PM related SP codes. For details, refer to "Service Tables" in the "Appendices".

| | | |
|---|---|---|
| SP7803 | PM Counter Display | Displays the PM count since the last PM. |
| SP7804 | PM Counter Reset | Resets the PM count. |

# APPENDIX:
# SERVICE CALL CONDITIONS

| APPENDIX 3 SERVICE CALL CONDITIONS REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| 72 | 10/01/2009 | Added SC 995 |
| 82 | 09/23/2009 | Finisher D460 Jam Codes |

# 3. APPENDIX: SERVICE CALL CONDITIONS

## 3.1 SERVICE CALL CONDITIONS

### 3.1.1 SERVICE MODE LOCK/UNLOCK

At locations where the machine contains sensitive data, the customer engineer cannot operate the machine until the Administrator turns the service mode lock off. This function makes sure that work on the machine is always done with the permission of the Administrator.

1. If you cannot go into the SP mode, ask the Administrator to log in with the User Tool and then set "Service Mode Lock" to OFF. After he or she logs in:
   - User Tools > System Settings > Administrator Tools > Service Mode Lock > OFF
   - This unlocks the machine and lets you get access to all the SP codes.
   - The CE can do servicing on the machine and turn the machine off and on. It is not necessary to ask the Administrator to log in again each time the machine is turned on.
2. If you must use the printer bit switches, go into the SP mode and set SP 5169 to "1".
3. After machine servicing is completed:
   - Change SP 5169 from "1" to "0".
   - Turn the machine off and on. Tell the administrator that you completed servicing the machine.
   - The Administrator will then set the "Service Mode Lock" to ON.

### 3.1.2 SERVICE CALL CONDITIONS

There are 4 levels of service call conditions.

| Level | Definition | Reset Procedure |
|---|---|---|
| A | Fusing unit SCs displayed on the operation panel. The machine is disabled. The user cannot reset the SC. | Enter SP mode, do SP5810, then turn the power switch off/on. |
| B | SCs that disable only the features that use the defective item. Although these SCs are not shown to the user under normal conditions, they are displayed on the operation panel only when | Turn the main power switch off/on. |

**Service Call Conditions**

| Level | Definition | Reset Procedure |
|---|---|---|
| | the defective feature is selected. | |
| C | SCs that are not shown on the operation panel. They are internally logged. | Logging only |
| D | Turning the operation switch or the main power switch off/on resets SCs Displayed on the operation panel. These are re-displayed if the error occurs again. | Turn the operation switch or main power switch off/on. |

## 3.1.3 SC CODE DESCRIPTIONS

Important

- If a problem concerns electrical circuit boards, always disconnect then reconnect the connectors before replacing the PCBs.
- If a motor lock error occurs, first check the mechanical load before replacing motors or sensors.
- When a Level "A" or "B" SC occurs while in an SP mode, the display does not display the SC number. If this occurs, check the SC number after leaving the SP mode.

### *SC100: Scanning System*

| | | |
|---|---|---|
| 101 | D | Exposure Lamp Error |
| | | At trigger on, the lamp was not detected on. |
| | - | ▪ SBU board defective<br>▪ SIOB board defective<br>▪ IPU board defective<br>▪ BCU board defective<br>▪ Exposure lamp defective<br>▪ Lamp stabilizer defective<br>▪ Lamp stabilizer harness damaged, disconnected<br>▪ Standard white plate dirty, disconnected or has condensation<br>▪ DF white belt dirty |

| | | |
|---|---|---|
| | | ▪ DF glass dirty or has condensation<br>▪ Scanner mirror dirty, out of position or has condensation<br>▪ Lens dirty, out of position |

| | | |
|---|---|---|
| 120 | D | Scanner home position error 1 |
| | | The scanner HP sensor does not detect the OFF condition during initialization or copying. |
| | - | ▪ BCU, SIOB defective<br>▪ Scanner motor defective<br>▪ Scanner HP sensor defective.<br>▪ Harness between BCU, SIOB, scanner motor disconnected.<br>▪ Harness between scanner HP sensor and BCU disconnected.<br>▪ Scanner wire, timing belt, pulley, or carriage installed incorrectly. |

| | | |
|---|---|---|
| 121 | D | Scanner home position error 2 |
| | | The scanner HP sensor does not detect the ON condition during initialization or copying. |
| | - | ▪ BCU, SIOB defective<br>▪ Scanner motor defective<br>▪ Scanner HP sensor defective<br>▪ Harness between BCU, SIOB, scanner motor disconnected<br>▪ Harness between scanner HP sensor and BCU disconnected<br>▪ Scanner wire, timing belt, pulley or carriage installed incorrectly. |

| | | |
|---|---|---|
| 141 | D | Black level detection error |
| | | The black level cannot be adjusted within the target during auto gain control. |
| | | ▪ Harness between SBU – SIOB is disconnected.<br>▪ Harness between SIOB – BCU is disconnected.<br>▪ Defective SBU<br>▪ Defective BCU |

**Service Call Conditions**

| | | |
|---|---|---|
| | | 1. Check the SBU-SIOB/SIOB-BCU harness connections or replace these harnesses.<br>2. Replace the SBU.<br>3. Replace the BCU |

| | | |
|---|---|---|
| 142 | D | White level detection error |
| | | The white level cannot be adjusted to the second target level within the target during auto gain control. |
| | - | ▪ Dirty exposure lamp or optics section<br>▪ SBU board defective<br>▪ SIOB defective<br>▪ IPU board defective<br>▪ BCU board defective<br>▪ Harnesses are disconnected.<br>▪ Exposure lamp defective<br>▪ Lamp stabilizer defective<br>▪ Scanner motor defective |
| | | 1. Clean the exposure glass, white plate, mirrors, and lens.<br>2. Check if the exposure lamp is lit during initialization.<br>3. Check the harness connection.<br>4. Replace the exposure lamp.<br>5. Replace the scanner motor.<br>6. Replace the SBU board, SIOB, IPU board or BCU board. |

| | | |
|---|---|---|
| 143 | C | SBU auto gain error |
| | | The white level cannot be adjusted to the first target level within the target during auto gain control. |
| | - | ▪ SBU board defective<br>▪ SIOB board defective<br>▪ IPU board defective<br>▪ BCU board defective<br>▪ Scanner motor defective |

| | | |
|---|---|---|
| | | ▪ Exposure lamp defective<br>▪ Exposure lamp stabilizer defective<br>▪ Harness between exposure lamp and lamp stabilizer is disconnected<br>▪ Harness between lamp stabilizer – SIOB is disconnected<br>▪ Harness between SBU - SIOB is disconnected<br>▪ Harness between SIOB - BCU is disconnected<br>▪ Harness between SBU – IPU is disconnected<br>▪ Harness between IPU - BCU is disconnected<br>▪ White plate is installed incorrectly or is dirty<br>▪ Scanning mirrors of the exposure unit are dirty or out of position |

| | | |
|---|---|---|
| 144 | D | SBU transmission error |
| | | After the SBU switches on, the BCU detects one of the following conditions on the SBU:<br>▪ 1 s after power on, the SYDO signal does not go high, even after 1 retry.<br>▪ 1 s after power on, the SYDO signal goes high, but the SBU ID could not be read after 3 attempts. |
| | - | ▪ SBU defective<br>▪ SIOB defective<br>▪ BCU defective<br>▪ Harness between the SBU - SIOB is disconnected<br>▪ Harness between the SIOB - BCU is disconnected<br>▪ Harness between the SIOB – PSU is disconnected |

| | | |
|---|---|---|
| 161 | D | IPU error |
| 001 | D | The error result of self-diagnostic by the ASIC on the BICU is detected. |
| | | ▪ Defective BICU<br>▪ Defective connection between BICU and SBU |
| | | 1. Check the connection between BICU and SBU.<br>2. Replace the BICU. |
| 002 | D | The machine detects an error during an access to the Ri. |

**Service Call Conditions**

| | | |
|---|---|---|
| | | ▪ Defective BICU board |
| | | Replace the BICU board. |
| 003 | D | The IPU fails to configure or initialize the DRAM. |
| | | ▪ Defective BICU board |
| | | Replace the BICU board. |

| | | |
|---|---|---|
| 165 | D | Copy data security unit error B829 |
| | | The copy data security option is installed by not operating correctly. |
| | | ▪ Copy data security card corrupted<br>▪ The board is not installed or the board is defective |

| | | |
|---|---|---|
| 181 | D | Inverter Fan Error |
| | | When the exposure lamp is triggered on, the inverter fan motor does not rotate. |
| | - | ▪ SIOB defective<br>▪ BCU defective<br>▪ Inverter fan motor defective<br>▪ Harness between the inverter fan motor - SIOB is disconnected<br>▪ Harness between the SIOB – BCU is disconnected<br>▪ Harness between the SIOB – PSU is disconnected |

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| 182 | D | Scanner Fan Error: Right Side |
| | | The fan located on the right side of the exposure unit is not rotating. |
| | - | ▪ Check the fan connections<br>▪ Fan defective<br>▪ Check SBU connection<br>▪ SBU defective |

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| 185 | D | CIS transmission error |
| | | Error caused during ASIC register's automatic initialization on the CIS, or during transmission between the CIS – DF. |
| | - | ▪ Harness between the CIS – DF is disconnected<br>▪ CIS defective |

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| 186 | D | CIS LED error |
| | | LED on the CIS causes error<br>▪ During initializing, the ration of the average between leading-edge area and rear-edge is beyond the permissible level (0.7 – 1.43).<br>▪ During scanning, the shading data peak is under 32(8bit). |
| | | ▪ Harness CN210 and CN220 on ADF are disconnected.<br>▪ Otherwise, replace CIS. |

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| 187 | D | CIS BK level error |
| | | The BK level scanned by CIS is abnormal.<br>The BK level average of R, G or B is/are not from 2 to 62.<br>0 < Calibrated BK data level < 255(10bit). |
| | | ▪ Turn off the machine.<br>▪ Make sure CN210 and CN220 are connected firmly.<br>▪ Turn on the machine. |

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| 188 | D | CIS white level error |
| | | The shading data peak detected from the CIS is abnormal. |
| | | ▪ CIS defective |
| | - | 1. Make sure CN210 and CN220 are connected firmly.<br>2. Replace the CIS. |

**Service Call Conditions**

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| 189 | D | CIS gray balance adjustment error |
| | | The adjustment error occurs during the test after adjusting the gray balance. |
| | | ▪ CIS defective |
| | | 1. Retry the gray balance adjustment.<br>2. If the machine does not recover, do the following steps.<br>▪ Turn off the machine.<br>▪ Make sure CN210 and CN220 are connected firmly.<br>▪ Turn on the machine.<br>3. If the machine does not recover, replace the CIS. |

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| 195 | D | Machine serial number error |
| | | The number registered for the machine serial number does not match. |
| | - | 1. Confirm the correct serial number of the machine in the specifications.<br>**Important:**<br>When SC195 occurs, the serial number must be input. Contact your technical supervisor. |

## *SC200: Exposure*

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| 202 | D | Polygon mirror motor error 1: Timeout at ON |
| | | The polygon mirror motor unit did not enter "Ready" status within 20 sec. after the motor was turned on, |
| | - | ▪ The polygon mirror motor PCB connector is loose, broken, or defective<br>▪ Polygon mirror motor PCB defective<br>▪ Polygon mirror motor defective<br>▪ IPU defective |

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| 203 | D | Polygon mirror motor error 2: Timeout at OFF |
| | | The polygon mirror motor did not leave "Ready" within 3 sec. after the motor |

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| | | was switched off. (The XSCRDY signal did not go HIGH (inactive) within 3 sec.) |
| | - | ▪ The polygon mirror motor PCB connector is loose, broken, or defective<br>▪ Polygon mirror motor PCB defective<br>▪ Polygon mirror motor defective<br>▪ IPU defective |

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| 204 | D | Polygon mirror motor error 3: XSCRDY signal error |
| | | The polygon mirror motor "Ready" signal goes inactive (HIGH) while images are being produced or the synchronization signal is being output. |
| | - | ▪ Polygon mirror motor PCB connector loose, broken, defective<br>▪ Polygon mirror motor PCB defective<br>▪ Polygon mirror motor defective |

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| 205 | D | Polygon mirror motor error 4: Unstable timeout |
| | | The "Ready" signal (XSCRDY) was detected as unstable for more than 20 sec. while the polygon mirror motor was operating at normal speed. |
| | - | ▪ Electrical noise on the line with the motor signals<br>▪ Polygon mirror motor PCB connector loose, broken, defective<br>▪ Polygon mirror motor PCB defective<br>▪ IPU defective |

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| 220 | D | Laser synchronization detection error |
| | | The 1st laser synchronization detection unit could not detect the line synchronization signal (DETP0) within 500 ms while the polygon mirror motor was operating at normal speed.<br>**Note:** The unit polls for the signal every 50 ms. This SC is issued after the 10th attempt fails to detect the signal. |
| | - | ▪ Laser synchronization board connector loose, broken, defective<br>▪ Laser synchronization detection board is not installed correctly (out of |

**Service Call Conditions**

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| | | alignment)<br>▪ Laser synchronization board defective<br>▪ IPU defective |

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| 221 | D | Laser Synchronization Detector Error: K Leading Edge (Not LD0) |
| | | While the polygon motor is rotating normally, no synchronizing detection signal is output for black, leading edge for any LD other than LD0. |
| | - | ▪ Harness between the laser synchronizing detector and I/F unit is disconnected, defective<br>▪ Check all connections between LD unit, LDB, IPU<br>▪ LD unit<br>▪ LDB defective<br>▪ IPU defective |

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| 230 | D | FGATE ON error: K |
| | | The PFGATE ON signal does not assert within 5 seconds after processing the image in normal job or MUSIC for start position [K]. |
| | | ▪ Defective ASIC<br>▪ Poor connection between controller and BICU.<br>▪ Defective BICU |
| | | 1. Check the connection between the controller board and the BICU.<br>2. Replace the BICU.<br>3. Replace the controller board. |

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| 231 | D | FGATE OFF error: K |
| | | ▪ The PFGATE ON signal still asserts within 5 seconds after processing the image in normal job or MUSIC for end position [K].<br>▪ The PFGATE ON signal still asserts when the next job starts. |
| | | See SC 230 for troubleshooting details. |

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| 240 | C | LD error: K |
| | | The BICU detects LDB error a few times consecutively when LDB unit turns on after LDB initialization. |
| | | ▪ Worn-out LD<br>▪ Disconnected or broken harness of the LD |
| | | 1. Replace the harness of the LD.<br>2. Replace the laser optics housing unit.<br>3. Replace the BICU. |



## *SC300: Image Development System (1)*

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| 300 | D | Charge corona output error |
| | | The feedback voltage from the charge corona unit is detected too high 9 times. |
| | - | ▪ Charge corona power pack defective<br>▪ Charge corona harness disconnected<br>▪ Poor charge corona unit connection |

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| 303 | D | Charge corona grid leak |
| | | When the high voltage is output to the corona grid, feedback voltage exceeds the prescribed value 9 times. |
| | - | ▪ Charge corona power pack defective<br>▪ Charge corona harness disconnected<br>▪ Poor charge corona unit connection |

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| 304 | D | Charge grid circuit open |
| | | When high voltage goes to the corona grid, feedback voltage is more than the set value 9 times. This feedback voltage is used to update PWM for output control. |

**Service Call Conditions**

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| | - | ▪ Charge corona unit defective or disconnected<br>▪ Charge corona harness defective<br>▪ Charge corona power pack is defective. |

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| 305 | D | Charge corona wire cleaner error 1 |
| | | The charge cleaner pad does not arrive at the home position:<br>Motor locked within 4 s after switching on, or does not lock within 30 s.<br>Motor locked within 10 s after reversing, or does not lock within 30 s. |
| | - | ▪ Charge corona wire cleaner motor defective<br>▪ Motor driver defective |

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| 306 | C | Charge corona wire cleaner error 2 |
| | | Charge corona motor is disconnected. (The current at the charge corona motor is detected less than 83 mA.) |
| | - | ▪ Charge corona wire cleaner motor connector is defective or disconnected. |

Note

- When SC310 to SC317 are logged, the machine halts without displaying the SC number. These SC codes log an abnormal condition at the potential sensor only when SP3901 (Auto Process Control) is set to on.

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| 310 | C | Potential sensor calibration error 1 |
| | | During drum potential sensor calibration, the drum potential sensor output voltage does not meet specification when test voltages (–100V, –800V) are applied to the drum. |
| | - | ▪ Potential sensor defective<br>▪ Potential sensor harness disconnected<br>▪ Potential sensor connector defective or disconnected<br>▪ IOB defective<br>▪ OPC connector defective<br>▪ Development power pack defective |

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|---|---|---|
| 311 | C | Potential sensor calibration error 2 |
| | | During drum potential sensor calibration, the drum potential sensor output voltage does not meet specification when test voltages (–100V, –800V) are applied to the drum. |
| | - | ▪ Potential sensor defective<br>▪ Potential sensor harness disconnected<br>▪ Potential sensor connector defective or disconnected<br>▪ IOB defective<br>▪ OPC connector defective<br>▪ Development power pack defective |

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| 312 | C | Potential sensor calibration error 3 |
| | | During drum potential sensor calibration when adjusting the drum potential (VD), the drum potential sensor detects VD higher than VG (grid voltage).<br>-or-<br>When adjusting VD (drum surface potential of black areas after exposure), even after 5 adjustments of VG (charge corona grid potential), VD could not be set in the target range (–800±10 + VL + 130V) |
| | - | ▪ Potential sensor defective<br>▪ Potential sensor harness disconnected<br>▪ Potential sensor connector defective or disconnected<br>▪ IOB defective<br>▪ OPC connector defective<br>▪ Development power pack defective<br>▪ Charge corona unit worn out, dirty |

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| 314 | C | Potential sensor calibration error 4 |
| | | During drum potential sensor calibration when adjusting the drum potential (VH) for LD power adjustment, the first time the VH pattern is made, the drum potential sensor detects that VH is more than 500V:<br>VH > –500 + VL + 130 V |

**Service Call Conditions**

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|---|---|---|
| | - | ▪ Potential sensor defective<br>▪ Potential sensor harness disconnected<br>▪ Potential sensor connector defective or disconnected<br>▪ IOB defective<br>▪ OPC connector defective<br>▪ LD defective |

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| 315 | C | Potential sensor calibration error 5 |
| | | During drum potential sensor calibration, when -100V is applied to the drum, the output value is out of the prescribed range. |
| | - | ▪ Potential sensor defective<br>▪ Potential sensor harness disconnected<br>▪ Potential sensor connector defective or disconnected<br>▪ IOB defective<br>▪ OPC connector defective<br>▪ Development power pack defective |

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|---|---|---|
| 316 | C | Potential sensor calibration error 6 |
| | | During drum potential sensor calibration, when -800V is applied to the drum, the output value is out of the prescribed range. |
| | - | ▪ Potential sensor defective<br>▪ Potential sensor harness disconnected<br>▪ Potential sensor connector defective or disconnected<br>▪ IOB defective<br>▪ OPC connector defective<br>▪ Development power pack defective |

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| 317 | C | Potential sensor calibration error 7 |
| | | During drum potential sensor calibration, when VL is adjusted, the pattern surface potential VL pattern is not within range 0V to -400V. (VL is the potential after exposing a white pattern.) |
| | - | ▪ Potential sensor defective<br>▪ Potential sensor harness disconnected<br>▪ Potential sensor connector defective or disconnected<br>▪ IOB defective<br>▪ OPC connector defective<br>▪ Charge corona power pack defective<br>▪ Development power pack defective |

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| 340 | C | TD sensor output error |
| | | TD sensor output voltage (Vt), measured during each copy cycle, is detected 10 times at one of the following levels:<br>Vt = 0.5 volts or lower<br>Vt = 4.0 volts or higher |
| | - | ▪ TD sensor defective<br>▪ TD sensor harness disconnected<br>▪ TD sensor connector disconnected or defective<br>▪ IOB defective<br>▪ Toner bottle motor defective<br>**Note:** When the TD sensor is defective, the toner supply is controlled using pixel count and the ID sensor. |

**Service Call Conditions**

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| 341 | D | TD sensor adjustment error 1 |
| | | During the TD sensor auto adjustment, the TD sensor output voltage (Vt) is 2.5 volts or higher even though the control voltage is set to the minimum value (PWM = 0). When this error occurs, SP2-906-1 reads 0.00V.<br>**Note:**<br>This SC is released only after correct adjustment of the TD sensor has been achieved. Switching the machine off and on will cancel the SC display, but does not release ID sensor toner supply. |
| | - | ▪ TD sensor defective<br>▪ TD sensor harness disconnected<br>▪ TD sensor connector disconnected or defective<br>▪ IOB defective<br>▪ Toner bottle motor defective<br>**Note:**<br>When the TD sensor is defective, the toner supply is controlled using pixel count and the ID sensor. |

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| 342 | D | TD sensor adjustment error 2 |
| | | During the TD sensor auto adjustment, the TD sensor output voltage (Vt) does not enter the target range (3.0 ± 0.1V) within 20 s. When this error occurs, the display of SP2-906-1 reads 0.00V.<br>**Note:**<br>This SC is released only after correct adjustment of the TD sensor has been achieved. Switching the machine off and on will cancel the SC display, but does not release ID sensor toner supply. |
| | - | ▪ TD sensor defective<br>▪ TD sensor harness disconnected<br>▪ TD sensor connector disconnected or defective<br>▪ IOB defective |

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| 345 | D | Development output abnormal |
| | | The high voltage applied to the development unit is detected 10 times higher than the upper limit (45%) of PWM. |
| | - | ▪ Development power pack defective<br>▪ Development bias leak due to poor connection, defective connector |

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| 350 | C | ID sensor error 1 |
| | | One of the following ID sensor output voltages was detected twice consecutively when checking the ID sensor pattern.<br>Vsp greater than or equals 2.5V<br>Vsg less than 2.5<br>Vsp = 0V<br>Vsg = 0 |
| | - | ▪ ID sensor defective<br>▪ ID sensor harness disconnected<br>▪ ID sensor connector defective<br>▪ IOB defective<br>▪ ID sensor pattern not written correctly<br>▪ Incorrect image density<br>▪ Charge power pack defective<br>▪ ID sensor dirty |

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| 351 | C | ID sensor error 2 |
| | | The ID sensor output voltage is 5.0V and the PWM signal input to the ID sensor is 0 when checking the ID sensor pattern. |
| | - | ▪ ID sensor defective<br>▪ ID sensor harness disconnected<br>▪ ID sensor connector defective<br>▪ IOB defective<br>▪ ID sensor pattern not written correctly<br>▪ Incorrect image density |

**Service Call Conditions**

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|---|---|---|
| | | ▪ Charge power pack defective<br>▪ ID sensor dirty |

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| 352 | C | ID sensor error 3 |
| | | For 2 s during the ID sensor pattern check, the ID sensor pattern edge voltage is not 2.5V or the pattern edge is not detected within 800 ms. |
| | - | ▪ ID sensor defective<br>▪ ID sensor harness disconnected<br>▪ ID sensor connector defective<br>▪ IOB defective<br>▪ ID sensor pattern not written correctly<br>▪ Incorrect image density<br>▪ Charge power pack defective<br>▪ ID sensor dirty |

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| 353 | C | ID sensor error 4 |
| | | One of the following ID sensor output voltages is detected at ID sensor initialization.<br>Vsg less than 4.0V when the maximum PWM input (255) is applied to the ID sensor.<br>Vsg greater than or equal to 4.0V when the minimum PWM input (0) is applied to the ID sensor. |
| | - | ▪ ID sensor defective<br>▪ ID sensor harness disconnected<br>▪ ID sensor connector defective<br>▪ IOB defective<br>▪ ID sensor pattern not written correctly<br>▪ Incorrect image density<br>▪ Charge power pack defective<br>▪ ID sensor dirty |

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| 354 | C | ID sensor error 5 |
| | | Vsg falls out of the adjustment target (4.0 ±0.2V) during Vsg checking. |
| | - | ▪ ID sensor defective<br>▪ ID sensor harness disconnected<br>▪ ID sensor connector defective<br>▪ IOB defective<br>▪ ID sensor pattern not written correctly<br>▪ Incorrect image density<br>▪ Charge power pack defective<br>▪ ID sensor dirty |

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| 355 | C | ID sensor error 6 |
| | | The Vp value, which measures the reflectivity of the ID sensor pattern, was not in the range of -70V to -400V. |
| | - | ▪ Potential sensor defective<br>▪ Potential sensor harness defective<br>▪ Potential sensor disconnected<br>▪ IOB defective<br>▪ OPC unit connector defective<br>▪ Charge corona power pack defective<br>▪ Charge corona wire dirty, broken |

### *SC400: Image Development (2)*

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| 401 | D | Transfer output abnormal |
| | | When the transfer is output, the feedback voltage remains higher than 4V for 60 ms. |
| | - | ▪ Transfer power pack defective<br>▪ Transfer current terminal, transfer power pack disconnected, damaged connector |

**Service Call Conditions**

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| 402 | D | Transfer output abnormal release detection | |
| | | When the transfer is output, there is hardly any feedback voltage within 60 ms even with application of 24% PWM. | |
| | - | ▪ Transfer power pack defective<br>▪ Transfer unit harness disconnected<br>▪ Transfer connector loose, defective | |

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| 430 | C | Quenching lamp error | |
| | | At the completion of auto process control initialization, the potential of the drum surface detected by the potential sensor is more than -400V, the prescribed value. | ▪ Quenching lamp defective<br>▪ Quenching lamp harness disconnected<br>▪ Quenching lamp connector loose, defective |

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| 440 | D | Main motor lock | |
| | | The main motor lock signal remains low for 2 seconds while the main motor is on. | ▪ Drive mechanism overloaded<br>▪ Motor driver board defective |

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| 441 | D | Development motor lock | |
| | | The development motor lock signal remains high for 2 seconds while the development motor is on. | ▪ Drive mechanism overloaded due to toner clumping in the wasted toner path<br>▪ Motor driver board defective |
| | | If this SC is returned on a machine in the field, inspect the toner supply unit coil. If the gear is not damaged replace the coil. If the gear is damaged, the gear shaft is probably deformed, so replace the entire unit. | |

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| 490 | D | Main fan error | |
| | | The main fan motor lock signal goes high for 5 s while the fan is on. | ▪ Fan motor overloaded due to obstruction<br>▪ Fan connector disconnected |

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| 495 | D | Toner recycling unit error | |
| | | Encoder pulse does not change for 3 s after the main motor switches on. | ▪ Waste toner transport has stopped due to motor overload<br>▪ Toner end sensor detective, disconnected |

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| 496 | D | Toner collection bottle error | |
| | | The toner collection bottle set switch remains off when the front door is closed. | ▪ No toner collection bottle set<br>▪ Poor connection of the switch connector |

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| 497 | D | Toner collection motor error | |
| | | The toner collection motor connector set signal remains off for 1 s. | ▪ Toner pump motor defective<br>▪ Motor connector loose, disconnected |

### *SC500: Feed, Transport, Duplexing, and Fusing Systems*

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| 501 | B | Tray 1 lift malfunction | |
| | | ▪ The lift sensor is not activated within 10 s after the tray lift motor starts lifting the bottom plate.<br>▪ When the tray lowers, the tray lift sensor does not go off within 1.5 s. | ▪ Tray lift motor defective, disconnected<br>▪ Paper or other obstacle trapped between tray and motor<br>▪ Pick-up solenoid disconnected, blocked by an obstacle<br>▪ Too much paper loaded in tray |

**Service Call Conditions**

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| | | ▪ Tray overload detected when the tray is set.<br>▪ The lower limit sensor of the LCT does not detect the lower limit within 10 s. | **Note**<br>▪ At first, the machine displays a message asking the operator to reset the tray.<br>▪ This SC will not display until the operator has pulled the tray out and pushed it in 3 times.<br>▪ If the operator turns the machine off/on before the 3rd opening and closing of the tray, the 3-count is reset. |

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| 502 | B | Tray 2 lift malfunction | |
| | | ▪ The lift sensor is not activated within 10 s after the tray lift motor starts lifting the bottom plate.<br>▪ When the tray lowers, the tray lift sensor does not go off within 1.5 s.<br>▪ Tray overload detected when the tray is set. | ▪ Tray lift motor defective or disconnected<br>▪ Paper or other obstacle trapped between tray and motor<br>▪ Pick-up solenoid disconnected or blocked by an obstacle<br>▪ Too much paper loaded in tray<br>**Note**<br>▪ At first, the machine displays a message asking the operator to reset the tray.<br>▪ This SC will not display until the operator has pulled the tray out and pushed it in 3 times.<br>▪ If the operator turns the machine off/on before the 3rd opening and closing of the tray, the 3-count is reset. |

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| 503 | B | Tray 3 lift malfunction | |
| | | ▪ The lift sensor is not activated within 10 s after the tray lift motor starts lifting the bottom plate.<br>▪ When the tray lowers, the tray lift sensor does not go off within 1.5 s.<br>▪ Tray overload detected when the tray is set. | ▪ Tray lift motor defective or disconnected<br>▪ Paper or other obstacle trapped between tray and motor<br>▪ Pick-up solenoid disconnected or blocked by an obstacle<br>▪ Too much paper loaded in tray<br>**Note**<br>▪ At first, the machine displays a message asking the operator to reset the tray.<br>▪ This SC will not display until the operator has pulled the tray out and pushed it in 3 times.<br>▪ If the operator turns the machine off/on before the 3rd opening and closing of the tray, the 3-count is reset. |

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| 504 | B | Tray 4 lift malfunction | |
| | | ▪ The lift sensor is not activated within 10 s after the tray lift motor starts lifting the bottom plate.<br>▪ When the tray lowers, the tray lift sensor does not go off within 1.5 s.<br>▪ Tray overload detected when the tray is set. | ▪ Tray lift motor defective or disconnected<br>▪ Paper or other obstacle trapped between tray and motor<br>▪ Pick-up solenoid disconnected or blocked by an obstacle<br>▪ Too much paper loaded in tray<br>**Note**<br>▪ At first, the machine displays a message asking the operator to reset the tray.<br>▪ This SC will not display until the operator has pulled the tray out and |

**Service Call Conditions**

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| | | | pushed it in 3 times.<br>▪ If the operator turns the machine off/on before the 3rd opening and closing of the tray, the 3-count is reset. |

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| 507 | B | LCT feed motor malfunction | |
| | | One of the following conditions is detected:<br>▪ The LD signal from the feed motor is detected abnormal for 50 ms after the motor switches on.<br>▪ At power on, the motor is detected loose or disconnected. | ▪ Feed motor defective<br>▪ Feed motor connector disconnected<br>▪ Obstacle interfering with mechanical movement of motor. |

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| 510 | B | LCT tray malfunction | |
| | | One of the following conditions is detected:<br>▪ When the bottom plate is lifted, the upper limit sensor does not come on for 18 s.<br>▪ When the bottom plate is lowered, the lower limit sensor does not come on for 18 s.<br>▪ After lift begins, the upper limit sensor does not switch on before the pick-up solenoid switches on.<br>▪ The paper end sensor switches on during lift and | ▪ Tray lift motor defective or connector disconnected<br>▪ Lift sensor defective or disconnected<br>▪ Pick-up solenoid defective or disconnected<br>▪ Paper end sensor defective |

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| | | the upper limit sensor does not switch on for 2.5 s, and a message prompts user to reset paper. | |

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| 515 | B | Tandem rear fence motor error | |
| | | One of the conditions is detected:<br>▪ The return sensor does not switch on within 10 s. after the rear fence motor switches on.<br>▪ The HP sensor does not switch on 10 s. after the rear fence motor switches on.<br>▪ The HP sensor and return sensor switch on at the same time. | ▪ Rear fence motor defective or poor connection<br>▪ Paper or other obstacle interfering with operation of the sensors<br>▪ Paper or other obstacle trapped between tray and motor<br>▪ Motor mechanical overload due to obstruction<br>▪ Return sensor or HP sensor defective or dirty<br>**Note**<br>▪ This problem will not issue the SC code on the operation panel.<br>▪ The machine will prompt the operator to reset tray by opening and closing it.<br>▪ If the problem persists, the machine will display again and the tray cannot be used. |

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| 520 | C | Duplex jogger motor error 1 | |
| | | When the jogger fence moves to the home position, the jogger HP sensor does not turn on even if the jogger fence motor has moved the jogger fence 153.5 mm. | ▪ Paper or other obstacle has jammed mechanism<br>▪ Sensor connector disconnected or defective<br>▪ Sensor defective |

**Service Call Conditions**

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| 521 | C | Duplex jogger motor error 2 | |
| | | When the jogger fence moves from the home position, the jogger fence HP sensor does not turn off even if the jogger motor has moved the jogger fence 153.5 mm. | ▪ Paper or other obstacle has jammed mechanism<br>▪ Sensor connector disconnected or defective<br>▪ Sensor defective |

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| 531 | D | Fusing exit motor error | |
| | | The PLL lock signal was low for 2 s during motor operation. | ▪ Motor lock caused by physical overload<br>▪ Motor drive PCB defective |

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| 541 | A | Fusing thermistor open | |
| | | The fusing temperature detected by the center thermistor was below 0°C for 7 s. | ▪ Thermistor open<br>▪ Thermistor connector defective<br>▪ Thermistor damaged, or out of position<br>▪ Fusing temperature –15% less than the standard input voltage |

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| 542 | A | Fusing temperature warm-up error | |
| | | One of the following occurred:<br>▪ After power on, or after closing the front door, the hot roller does not reach the 100°C control temperature within 25 s.<br>▪ 5 sec. after temperature rise started, temperature remained below 21°C after 5 | ▪ Fusing lamp disconnected<br>▪ Thermistor warped, out of position<br>▪ Thermostat not operating |

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| | | samplings.<br>▪ Fusing unit did not attain reload temperature within 48 s. of the start of fusing temperature control. | |

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| 543 | A | Fusing lamp overheat error 1 (software) | |
| | | Central thermistor detected a temperature of 240°C at the center of the hot roller. Fusing temperature control software error | ▪ PSU defective<br>▪ IOB defective<br>▪ BICU defective |

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| 544 | A | Fusing lamp overheat error 1 (hardware) | |
| | | The center thermistor or an end thermistor detected a temperature of 250°C on the hot roller. | ▪ PSU defective<br>▪ IOB defective<br>▪ BICU defective |

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| 545 | A | Fusing lamp overheat error 2 | |
| | | After hot roller reaches warmup temperature, the fusing lamps remained on at full capacity for 11 samplings (1.8 s. duration) while the hot roller was not rotating. | ▪ Thermistor damaged, or out of position<br>▪ Fusing lamp disconnected |

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| 547 | D | Zero cross signal malfunction | |
| | | One of the following conditions is detected 10 times:<br>▪ When the main switch is on, | ▪ Noise on the AC power line |

**Service Call Conditions**

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| | | the frequency measured by the number of zero cross signals for 500 ms is larger than 66Hz or smaller than 45 Hz.<br>▪ The interval between one zero cross signal and the next is 7.5 ms or shorter 3 times consecutively for 500 ms. | |

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| 551 | A | Fusing thermistor error 1 | |
| | | The end thermistor (contact type) was less than 0C (32F) for more than 7 seconds. | ▪ Thermistor disconnected<br>▪ Thermistor connector defective |

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| 552 | A | Fusing thermistor error 2 | |
| | | The end thermistor (contact type) could not detect:<br>▪ 100°C 25 seconds after the start of the warmup cycle.<br>▪ A change in temperature more than than 16 degrees for 5 seconds.<br>▪ The reload temperature with 56 seconds after the start of the fusing temperature control cycle. | ▪ Fusing lamp disconnected<br>▪ Thermistor bent, damaged<br>▪ Thermistor position incorrect |

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| 553 | A | Fusing thermistor error 3 | |
| | | The end thermistor (contact type) was at 240°C (464°F) for more | ▪ PSU defective<br>▪ IOB control board defective |

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| | | than 1 second. The temperature is read 10 times every second. (at 0.1 s intervals). | ▪ BICU control board defective |

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| 555 | A | Fusing lamp error | |
| | | After the start of the warmup cycle, a fusing lamp was at full power for 1.8 s but the hot roller did not turn. | ▪ Thermistor bent, out of position<br>▪ Fusing lamp disconnected<br>▪ Circuit breaker opened |

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| 557 | C | Zero cross signal error | - |
| | | High frequency noise was detected on the power line. | ▪ No action required. The SC code is logged and the operation of the machine is not affected. |

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| 559 | A | Fusing jam: 3 counts | |
| | | At the fusing exit sensor the paper was detected late for three pulse counts (lag error), and SP1159 was on. | ▪ If this SC occurs, the machine cannot be used until the service technician cancels the SC code.<br>▪ This SC occurs only if SP1159 has been set to "1" (On). (Default: 0 (Off)). |

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| 569 | D | Fusing pressure release motor error | |
| | | During copying, the HP sensor could not detect the actuator, tried again 3 times and could not detect. | ▪ Motor lock because of too much load<br>▪ Motor driver defective<br>▪ HP sensor defective, disconnected, connector defective, harness damaged |

**Service Call Conditions**

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|---|---|---|---|
| 590 | D | Toner collection motor error | |
| | | The toner collection motor sensor output does not change for 3 s while the toner collection motor is on. | ▪ Motor lock due to obstruction<br>▪ Motor driver board defective<br>▪ Motor connection loose, defective<br>▪ Toner collection motor sensor disconnected, sensor defective<br>▪ Rotational transmission shaft (ϕ6 x 30) missing |

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| 599 | D | 1-bin Exit Motor Error (Japan Only) | |
| | | The transport lock sensor output does not change within 300 ms after the motor switches on. | ▪ Motor overload<br>▪ Motor driver defective |

## *SC600: Data Communication*

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| 620 | D | BICU/ADF communication/timeout error | |
| | | After 1 data frame is sent to the finisher MBX, an ACK signal is not received within 100 ms, and is not received after 3 retries. | ▪ Serial line connection unstable<br>▪ External noise on the line |

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| 621 | D | BICU/Finisher communication/break error | |
| | | During communication with the finisher MBX, the BICU received a break (Low) signal from the finisher. | ▪ Serial line connection unstable<br>▪ External noise on the line |

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| 623 | D | BICU/Tray 1 to 4 communication/timeout error | |
| | | After 1 data frame is sent to the | ▪ Serial line connection unstable |

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| | | trays, an ACK signal is not received within 100 ms, and is not received after 3 retries. | ▪ External noise on the line |

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| 625 | B | VBCU-DTMB (DMC1) communication error | |
| | | Communication between the VBCU and DMC (main) was interrupted. An ACK/NAK signal was not received within 100 ms after a data frame was sent and three retries failed. | ▪ Check the DTMB harness connections at the DTMB and VBCU<br>▪ DTMB defective<br>▪ PSU defective<br>▪ VBCU defective<br>▪ 5V power supply defective |

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| 626 | D | BICU, LCT communication/timeout error | |
| | | After 1 data frame is sent to the LCT, an ACK signal is not received within 100 ms, and is not received after 3 retries. | ▪ Serial line connection unstable<br>▪ External noise on the line |

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|---|---|---|---|
| 627 | D | BICU, LCT communication/break reception error | |
| | | During communication with the LCT, the BICU received a break (Low) signal. | ▪ Serial line connection unstable<br>▪ External noise on the line |

**Service Call Conditions**

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|---|---|---|
| 628 | B | Fan folder communication error 1 |
| | | The main machine issued a timeout three failed attempts to communicate with the fan folder unit. Possible causes:<br>▪ There was no answer from the fan folder within 100 ms in response to data sent from the main machine.<br>▪ The fan folder unit was switched off while folding was in progress.<br>▪ The main machine received an illegal command from the fan folder.<br>▪ 60 sec. after the main machine fed the document to the fan folder, the fan folder failed to notify the main machine that the folded document has exited the fan folder. |
| | | ▪ Fan folder not connected to main machine<br>▪ Fan folder main control unit connector loose, broken, defective<br>▪ Fan folder main control unit defective |

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| 629 | B | Fan folder communication error 2: Cross Folder |
| | | There was no answer from the fan folder within 100 ms in response to data sent from the main machine. |
| | | ▪ Fan folder not connected to main machine<br>▪ Fan folder main control unit connector loose, broken, defective<br>▪ Fan folder main control unit defective |

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|---|---|---|---|---|
| 632 | B | Charge Unit Device Error 1 | Japan Only | GW |
| 633 | B | Charge Unit Device Error 2 | Japan Only | GW |
| 634 | B | Charge Unit Device Error 3 | Japan Only | GW |
| 635 | B | Charge Unit Device Error 4 | Japan Only | GW |

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| 636 | CTL | SD Card Error |
| 01 | D | Expanded authentication module error |
| | | There is no expanded authentication module in the machine.<br>The SD card or the file of the expanded authentication module is broken.<br>There is no DESS module in the machine. |
| | | ▪ No expanded authentication module<br>▪ Defective SD card<br>▪ No DESS module |
| | | 1. Install the expanded authentication module.<br>2. Install the SD card.<br>3. Install the DESS module. |
| 02 | D | Version error |
| | | The version of the expanded authentication module is not correct. |
| | | ▪ Incorrect module version |
| | | 1. Install the correct file of the expanded authentication module. |

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| 641 | B | Engine-to-controller communication error | GW |
| | | The controller sent a frame to the main machine engine but there was no response as demanded by RAPI protocol. The frame was sent 3 times at 100 ms intervals. This SC was issued after the 3rd attempt failed. | |
| | | ▪ Examine the connection between the controller and the engine board.<br>▪ Replace the engine board if the error is frequent. | |

**Service Call Conditions**

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| 650 | D | NRS Modem Communication Error | GW |
| | | One of the following factors could be the cause of this error:<br>▪ In the User Tools, check the settings for the dial-up user name and dial-up password.<br>▪ Modem has been disconnected.<br>▪ Modem board disconnected. | |
| | | Check the following for a machine that is using Cumin (NRS modem):<br>▪ An error was returned during the dialup connection<br>▪ A network was detected at startup<br>▪ At startup, the machine detected that the NIB was disabled, or did not detect a modem board | |

For more details about this SC code error, execute SP5990 to print an SMC report so you can read the error code. The error code is not displayed on the operation panel. Here is a list of error codes:

| Error | Problem | Solution |
|---|---|---|
| 1 | Failure to certify dial-up | In the User Tools, check the dial-up user and dial-up password settings |
| 4 | Illegal modem setting | Check the setting of SP5816 160 to determine whether the setting for the AT command is correct. If this SP setting is correct, then the problem is a bug in the software. |
| 5 | Poor connection due to low power supply on the line. | The problem is on the external power supply line, so there is no corrective action on the machine. |
| 11 | Data in the NVRAM became corrupted when the network enable switch and Cumin-M were enabled at the same time. | Use SP5985 1 and set the NIC to "0" (Disable) to disable the network board. |
| 12 | The modem board could not enable the NIB. | Replace the modem board. |

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|---|---|---|---|
| 651 | C | Illegal Remote Service Dial-up | GW |
| | | An expected error occurred when Cumin-M dialed up the NRS Center. | |
| | | ▪ Software bug<br>▪ No action is required because only the count is logged | |

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| 670 | B | Engine Startup Error | GW |
| | | At power on or after the machine leaves the energy conservation mode:<br>▪ ENGRDY signal does not assert<br>▪ IPURDY signal does not assert<br>After power on and the prescribed time has elapsed:<br>▪ No EC response from the engine<br>▪ No PC response from the engine<br>▪ No SC response from the engine<br>During machine operation mode:<br>▪ Write to Rapi drive failure (could not locate destination on the PCI)<br>▪ After the /ENGRDY signal asserts with no effect. | |
| | | ▪ BICU Ö Controller Board disconnected<br>▪ BICU board defective<br>▪ Controller board defective<br>▪ Mother board defective<br>▪ Software error; switch off/on, if that fails, change the engine firmware<br>▪ PSU-E or PSU-C defective | |

| | | | |
|---|---|---|---|
| 671 | D | Illegal Engine Board | GW |
| | | An illegal engine board was detected by the firmware at power on. | |
| | | ▪ Replace BICU | |

**Service Call Conditions**

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|---|---|---|---|
| 672 | B | Controller Startup Error | GW |
| | | The line between the controller board and the operation panel does not open correctly when the machine is powered on, or after the machine was powered on communication between the controller and operation panel is suspended.<br>The controller board and operation panel could not exchange the handshake (FDH) and acknowledge (FEH) signals within 15 s of the operation panel reset after power on, or after 2 retries there was no response to the transmission line confirmation command issued every 30 s from the operation panel to the controller board. | |
| | | ▪ Controller board defective<br>▪ Controller board installed incorrectly<br>▪ Operation panel harness connection loose or incorrect | |

## *SC700: Peripherals*

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|---|---|---|---|
| 701 | D | ADF bottom plate motor error | |
| | | ▪ Bottom plate position sensor does not detect the plate after the bottom plate lift motor switches on to lift the plate.<br>▪ Bottom plate HP sensor does not detect the plate after the bottom plate motor reverses to lower the plate. | ▪ Bottom plate position sensor defective<br>▪ Bottom plate HP sensor defective<br>▪ Bottom plate motor defective<br>▪ ADF main board defective |

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|---|---|---|
| 705 | D | ARDF bottom plate lift motor |
| | | The bottom plate HP sensor does not detect the home position of the bottom plate after the bottom plate lift motor switches on and lowers the bottom plate.<br>The bottom plate position sensor does not detect the position of the plate after the lift motor switches on and raises the bottom plate. |

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| | | ▪ ARDF feed motor disconnected, defective<br>▪ Bottom plate HP sensor disconnected, defective<br>▪ ARDF main board defective |

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| 720 | D | Finisher transport motor error | |
| | | The encoder pulse of the finisher transport motor does not change state (high/low) within 600 ms and does not change after 2 retries. | ▪ Finisher transport motor defective<br>▪ Transport motor harness disconnected, or defective<br>▪ Finisher main board defective |

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| 721 | B | Finisher jogger motor error | |
| | | ▪ The finisher jogger HP sensor remains de-activated for more 1,000 pulses when returning to home position.<br>▪ The finisher jogger HP sensor remains activated for more than 1,000 pulses when moving away from home position. | ▪ Jogger HP sensor defective<br>▪ Jogger mechanism overload<br>▪ Jogger motor defective (not rotating)<br>▪ Finisher main board defective<br>▪ Harness disconnected or defective |

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|---|---|---|---|
| 724 | B | Finisher staple hammer motor error (D460) | |
| | | The staple hammer motor did not return to the home position within the prescribed time (340 ms). | ▪ Staple hammer HP sensor loose, broken, defective<br>▪ Electrical overload on the stapler drive PCB elect<br>▪ Staple hammer motor defective<br>▪ Finisher main board defective |

**Service Call Conditions**

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|---|---|---|---|
| 725 | B | Exit guide motor | |
| | | The status of the exit guide sensor did not change at the prescribed time during operation of the exit guide. | Exit guide open sensor loose, broken, defective.<br>Exit guide motor defective<br>Finisher main board defective |

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| 726 | B | Front shift jogger motor error (B703) | |
| | | The sides fences do not retract within the prescribed time after the shift jogger motor switches on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Shift jogger motor disconnected, defective<br>▪ Shift jogger motor overloaded due to obstruction<br>▪ Shift jogger HP sensor disconnected, defective |

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|---|---|---|---|
| 727 | B | Rear shift jogger motor (B703) | |
| | | The side fences do not retract within the prescribed time after the shift jogger motor switches on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | Motor harness disconnected, loose, defective<br>Motor defective<br>Motor overload<br>HP defective |

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|---|---|---|---|
| 728 | B | Shift jogger retraction motor error (B703) | |
| | | The side fences do not retract within the prescribed time after the retraction motor switches on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Motor harness disconnected, loose, defective<br>▪ Motor defective<br>▪ Motor overload<br>▪ HP defective |

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|---|---|---|---|
| 740 | B | Finisher corner stapler motor error | |
| | | The stapler motor does not switch off within the prescribed time after operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Staple jam<br>▪ Number of sheets in the stack exceeds the limit for stapling<br>▪ Stapler motor disconnected, defective |

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| 741 | B | Finisher corner stapler rotation motor error | |
| | | The stapler does not return to its home position within the specified time after stapling. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Stapler rotation motor disconnected, defective<br>▪ Stapler rotation motor overloaded due to obstruction<br>▪ Stapler rotation HP sensor disconnected, defective |

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| 742 | B | Finisher stapler movement motor error | |
| | | The stapler HP sensor is not activated within the specified time after the stapler motor turned on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Stapler movement motor disconnected, defective<br>▪ Stapler movement motor overloaded due to obstruction<br>▪ Stapler HP sensor disconnected, defective |

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| 743 | B | Booklet stapler motor error 1 | |
| | | The front stapler unit saddle-stitch motor does not start operation within the specified time. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Front motor disconnected, defective<br>▪ Front motor overloaded due to obstruction |

**Service Call Conditions**

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|---|---|---|---|
| 744 | B | Booklet stapler motor error 2 | |
| | | The rear stapler unit saddle-stitch motor does not start operation within the specified time. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Rear motor disconnected, defective<br>▪ Rear motor overloaded due to obstruction |

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| 745 | D | Feed-Out Belt Motor Error (D373/B830) |
| | | The stack feed-out belt HP sensor does not activate within the specified time after the stack feed-out belt motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code. |
| | | If the motor is operating<br>1. Stack feed-out HP sensor harness loose, broken, defective<br>2. Stack feed-out HP sensor defective<br>If the motor is not operating:<br>1. Feed-out motor blocked by an obstruction<br>2. Feed-out motor harness loose, broken, defective<br>3. Feed-out motor defective<br>4. Booklet finisher main board defective |

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| 746 | D | Stack Plate Motor Error 1: Front Motor (B830) |
| | | The stack plate HP sensor (front) does not activate within 500 ms after the motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code. |
| | | If the motor is operating<br>1. Front stack plate HP sensor harness loose, broken, defective<br>2. Front stack plate HP sensor defective<br>If the motor is not operating:<br>1. Motor blocked by an obstruction<br>2. Motor harness loose, broken, defective<br>3. Motor defective |

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| | | 4. Booklet finisher main board defective |

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| 747 | D | Stack Plate Motor Error 2: Center Motor (B830) |
| | | The stack plate HP sensor (center) does not activate within 500 ms after the motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code. |
| | | If the motor is operating<br>1. Center stack plate HP sensor harness loose, broken, defective<br>2. Center stack plate HP sensor defective<br>If the motor is not operating:<br>1. Motor blocked by an obstruction<br>2. Motor harness loose, broken, defective<br>3. Motor defective<br>4. Booklet finisher main board defective |

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| 748 | D | Stack Plate Motor Error 3: Rear Motor (B830) |
| | | The stack plate HP sensor (rear) does not activate within 500 ms after the motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code. |
| | | If the motor is operating<br>1. Rear stack plate HP sensor harness loose, broken, defective<br>2. Rear stack plate HP sensor defective<br>If the motor is not operating:<br>1. Motor blocked by an obstruction<br>2. Motor harness loose, broken, defective<br>3. Motor defective<br>4. Booklet finisher main board defective |

**Service Call Conditions**

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|---|---|---|---|
| 750 | B | Finisher tray 1 (upper tray lift) motor error | |
| | | The upper tray paper height sensor does not change its status with the specified time after the tray raises or lowers. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Tray lift motor disconnected, defective<br>▪ Upper tray paper height sensor disconnected, defective<br>▪ Finisher main board connection to motor loose<br>▪ Finisher main board defective |

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| 753 | B | Return roller motor error | |
| | | Occurs during the operation of the lower tray pressure motor. | ▪ Motor harness disconnected, loose, defective<br>▪ Motor overloaded<br>▪ Home position sensor harness disconnected, loose, defective<br>▪ Home position defective |

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| 755 | D | Shift Motor Error: 3K Finisher (B830) |
| | | The shift tray half-turn sensors:<br>Failed twice to detect the shift tray at the home position at the specified time.<br>-or-<br>Failed twice to detect that the shift tray had left the home position. |
| | | If the motor is operating<br>1. Half-turn sensor 1, 2 harnesses loose, broken, defective<br>2. One of the half-turn sensors is defective<br>If the motor is not operating:<br>1. Motor blocked by an obstruction<br>2. Motor harness loose, broken, defective<br>3. Motor defective<br>4. Finisher main board defective |

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| 760 | D | Finisher punch motor error | |
| | | The punch HP sensor is not activated within the specified time after the punch motor turned on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Punch HP sensor disconnected, defective<br>▪ Punch motor disconnected, defective<br>▪ Punch motor overload due to obstruction |

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| 761 | B | Finisher folder plate motor error | |
| | | The folder plate moves but is not detected at the home position within the specified time. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Folder plate HP sensor disconnected, defective<br>▪ Folder plate motor disconnected, defective<br>▪ Folder plate motor overloaded due to obstruction. |

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| 763 | D | Punch movement motor error | |
| | | Occurs during operation of the punch unit. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Motor harness disconnected, loose, defective<br>▪ Motor defective |

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| 764 | D | Paper position sensor slide motor error | |
| | | Occurs during operation of the punch unit. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Motor harness disconnected, loose, defective<br>▪ Motor defective |

**Service Call Conditions**

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|---|---|---|---|
| 765 | B | Folding unit bottom fence lift motor | |
| | | The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Motor harness disconnected, loose, defective<br>▪ Motor defective |

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| 766 | B | Clamp roller retraction motor error | |
| | | The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Motor harness disconnected, loose, defective<br>▪ Motor defective |

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| 767 | B | Stack junction gate motor error | |
| | | Occurs during operation of the punch unit. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | ▪ Motor harness disconnected, loose, defective<br>▪ Motor overload<br>▪ Motor defective |

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|---|---|---|---|
| 770 | B | Cover interposer tray bottom plate motor error | |
| | | After the motor starts to raise the bottom plate, the bottom plate position sensor does not detect the plate at the specified time (3 s).<br>After the motor starts to lower the bottom plate, the bottom plate HP sensor does not detect the bottom plate. | ▪ Bottom plate position sensor, disconnected, defective<br>▪ Bottom plate HP sensor disconnected, defective |

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| 775 | B | Jogger Top Fence Motor: 3K Finisher B830 |
| | | The top fence HP sensor detected that:<br>The top fence did not arrive at the home position within the specified number of pulses.<br>-or-<br>The top fence failed to leave the home position within the specified number of pulses. |
| | | If the jogger top fence motor is operating:<br>1. Top fence HP sensor harness loose, broken, defective<br>2. Top fence HP sensor defective<br>If the jogger top fence motor is not operating:<br>1. Motor blocked by an obstruction<br>2. Motor harness loose, broken, defective<br>3. Motor defective<br>4. Finisher main board defective |

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|---|---|---|
| 776 | B | Jogger Bottom Fence Motor (B830) |
| | | The bottom fence HP sensor detected that:<br>The bottom fence did not arrive at the home position at the specified time.<br>-or-<br>The bottom fence failed to leave the home position at the specified time. |
| | | If the jogger bottom fence motor is operating:<br>1. Bottom fence HP sensor harness loose, broken, defective<br>2. Bottom fence HP sensor defective<br>If the jogger bottom fence motor is not operating:<br>1. Motor blocked by an obstruction<br>2. Motor harness loose, broken, defective<br>3. Motor defective<br>4. Finisher main board defective |

**Service Call Conditions**

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|---|---|---|---|
| 778-1 | D | Horizontal Transport Motor Error | Multi Folder (D454) |
| | | The motor drive PCB detected an error at the motor. | |
| | | ▪ Motor harness or connector loose, broken, defective<br>▪ Motor or motor drive board defective | |

| | | | |
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| 778-2 | D | Top Tray Exit Motor | Multi Folder (D454) |
| | | The motor drive PCB detected an error at the motor. | |
| | | ▪ Motor harness or connector loose, broken, defective<br>▪ Motor or motor drive board defective | |

| | | | |
|---|---|---|---|
| 778-3 | D | Top Tray JG Motor | Multi Folder (D454) |
| | | The top tray JG HP sensor did not detect the top tray junction gate at (or out of) its home position. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code. | |
| | | ▪ Top tray JG HP sensor dirty<br>▪ Sensor harness or connector loose, broken, defective<br>▪ Top tray JG motor harness or connector loose, broken, defective<br>▪ Sensor defective<br>▪ Motor or motor drive board defective | |

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|---|---|---|---|
| 778-4 | D | Entrance JG Motor | Multi Folder (D454) |
| | | The entrance junction gate HP sensor did not detect the entrance junction gate at (or out of) its home position. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code. | |
| | | ▪ Entrance JG HP sensor dirty<br>▪ Sensor harness or connector loose, broken, defective<br>▪ Entrance JG motor harness or connector loose, broken, defective<br>▪ Sensor defective<br>▪ Motor or motor drive board defective | |

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|---|---|---|---|
| 779 | B | Z-fold stopper 1 Motor error | |
| | | The bottom fence HP sensor detected that:<br>The bottom fence did not arrive at the home position at the specified time.<br>-or-<br>The bottom fence failed to leave the home position at the specified time. | ▪ Motor overcurrent<br>▪ Motor driver overheat<br>▪ Motor harness loose |

| | | | |
|---|---|---|---|
| 780 | B | Z-Fold feed motor error | |
| | | The feed motor does not attain the prescribed speed within the specified time. | ▪ Feed motor disconnected, defective<br>▪ Feed motor overloaded due to obstruction<br>▪ Feed motor lock |

| | | | |
|---|---|---|---|
| 781 | B | Z-Fold lower stopper motor | |
| | | The lower stopper motor does not attain the prescribed speed within the specified time. | ▪ Lower stopper motor disconnected, defective<br>▪ Lower stopper motor overloaded due to obstruction<br>▪ Lower stopper HP sensor disconnected, defective |

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|---|---|---|---|
| 782 | B | Z-Fold upper stopper motor | |
| | | The upper stopper was not detected at the home position after the motor remained on long enough to move it 128.7 mm. | ▪ Upper stopper motor disconnected, defective<br>▪ Upper stopper motor overloaded due to obstruction<br>▪ Upper stopper HP sensor |

**Service Call Conditions**

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|---|---|---|---|
| | | | disconnected, defective |

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| 783-1 | B | 2nd Stopper Motor Error | Multi Folder (D454) |
| | | The 2nd stopper HP sensor did not detect the 2nd stopper in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code. | |
| | | ▪ 2nd stopper HP sensor dirty<br>▪ Sensor harness or connector loose, broken, defective<br>▪ 2nd stopper motor harness or connector loose, broken, defective<br>▪ Sensor defective<br>▪ Motor or motor drive board defective | |

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|---|---|---|---|
| 783-2 | B | 3rd Stopper Motor Error | Multi Folder (D454) |
| | | The 3rd stopper HP sensor did not detect the 3rd stopper in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code. | |
| | | ▪ 3rd stopper HP sensor dirty<br>▪ Sensor harness or connector loose, broken, defective<br>▪ 3rd stopper motor harness or connector loose, broken, defective<br>▪ Sensor defective<br>▪ Motor or motor drive board defective | |

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| 783-3 | B | 1st Fold Motor Error | Multi Folder (D454) |
| | | The motor drive PCB detected an error at the motor. | |
| | | ▪ Motor harness or connector loose, broken, defective<br>▪ Motor or motor drive board defective | |

| | | | |
|---|---|---|---|
| 783-4 | B | 2nd Fold Motor Error | Multi Folder (D454) |
| | | The motor drive PCB detected an error at the motor. | |

| | | |
|---|---|---|
| | | ▪ Motor harness or connector loose, broken, defective<br>▪ Motor or motor drive board defective |

| | | | |
|---|---|---|---|
| 783-5 | B | Crease Motor Error | Multi Folder (D454) |
| | | The motor drive PCB detected an error at the motor. | |
| | | ▪ Motor harness or connector loose, broken, defective<br>▪ Motor or motor drive board defective | |

| | | | |
|---|---|---|---|
| 783-6 | B | Dynamic Roller Transport Motor Error | Multi Folder (D454) |
| | | The motor drive PCB detected an error at the motor. | |
| | | ▪ Motor harness or connector loose, broken, defective<br>▪ Motor or motor drive board defective | |

| | | | |
|---|---|---|---|
| 783-7 | B | Reg. Roller Transport Motor Error | Multi Folder (D454) |
| | | The motor drive PCB detected an error at the motor. | |
| | | ▪ Motor harness or connector loose, broken, defective<br>▪ Motor or motor drive board defective | |

| | | | |
|---|---|---|---|
| 783-8 | B | Dynamic Roller Lift Motor Error | Multi Folder (D454) |
| | | The dynamic roller HP sensor did not detect the dynamic roller in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code. | |
| | | ▪ Dynamic roller HP sensor dirty<br>▪ Sensor harness or connector loose, broken, defective<br>▪ Dynamic roller lift motor harness or connector loose, broken, defective<br>▪ Sensor defective<br>▪ Motor or motor drive board defective | |

**Service Call Conditions**

| | | | |
|---|---|---|---|
| 783-9 | B | Registration Roller Release Motor Error | Multi Folder (D454) |
| | | The registration roller HP sensor did not detect the registration roller in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code. | |
| | | ▪ Registration roller HP sensor dirty<br>▪ Sensor harness or connector loose, broken, defective<br>▪ Registration roller release motor harness or connector loose, broken, defective<br>▪ Sensor defective<br>▪ Motor or motor drive board defective | |

| | | | |
|---|---|---|---|
| 783-10 | B | Fold Plate Motor Error | Multi Folder (D454) |
| | | The fold plate HP sensor did not detect the fold plate in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code. | |
| | | ▪ Fold plate HP sensor dirty<br>▪ Sensor harness or connector loose, broken, defective<br>▪ Fold plate motor harness or connector loose, broken, defective<br>▪ Sensor defective<br>▪ Motor or motor drive board defective | |

| | | | |
|---|---|---|---|
| 783-11 | B | Jogger Fence Motor | Multi Folder (D454) |
| | | The jogger fence HP sensor did not detect the jogger fence in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code. | |
| | | ▪ Jogger fence HP sensor dirty<br>▪ Sensor harness or connector loose, broken, defective<br>▪ Jogger fence motor harness or connector loose, broken, defective<br>▪ Sensor defective<br>▪ Motor or motor drive board defective | |

| | | | |
|---|---|---|---|
| 783-12 | B | Positioning Roller Motor Error | Multi Folder (D454) |
| | | The positioning roller HP sensor did not detect the positioning roller in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code. | |
| | | ▪ Positioning roller HP sensor dirty<br>▪ Sensor harness or connector loose, broken, defective<br>▪ Positioning roller motor harness or connector loose, broken, defective<br>▪ Sensor defective<br>▪ Motor or motor drive board defective | |

| | | | |
|---|---|---|---|
| 783-13 | B | FM2 Direct-Send JG Motor | Multi Folder (D454) |
| | | The direct-send JG HP sensor did not detect the direct-send JG in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code. | |
| | | ▪ FM2 direct-send JG HP sensor dirty<br>▪ Sensor harness or connector loose, broken, defective<br>▪ FM2 direct-send JG motor harness or connector loose, broken, defective<br>▪ Sensor defective<br>▪ Motor or motor drive board defective | |

| | | | |
|---|---|---|---|
| 783-14 | B | FM6 Pawl Motor | Multi Folder (D454) |
| | | The FM6 pawl HP sensor did not detect the FM6 pawl in (or out of) its home position. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code. | |
| | | ▪ FM6 pawl HP sensor dirty<br>▪ Sensor harness or connector loose, broken, defective<br>▪ FM6 pawl motor harness or connector loose, broken, defective | |

**Service Call Conditions**

| | | |
|---|---|---|
| | | ▪ Sensor defective<br>▪ Motor or motor drive board defective |

| | | | |
|---|---|---|---|
| 784 | B | Z-fold timing unit fold timing sensor adjustment error | |
| | | The A/D (Digital/Analog) input value did not change even after the D/A (Digital/Analog) output value changed. | ▪ Fold timing sensor connector loose, broken, defective<br>▪ Fold timing sensor defective<br>▪ Fold timing sensor, mylar covered with paper dust<br>▪ Mylar disconnected. |

| | | | |
|---|---|---|---|
| 785 | B | Z-fold leading edge sensor adjustment error | |
| | | The A/D input value did not change even after the D/A output value changed. | ▪ Leading edge sensor connector loose, broken, defective<br>▪ Leading edge sensor defective<br>▪ Leading edge sensor, mylar covered with paper dust<br>▪ Mylar disconnected. |

| | | | |
|---|---|---|---|
| 786 | B | Z-fold EEPROM error | |
| | | The write operation to the Z-folding EEPROM failed after 2 attempts | ▪ EEPROM defective |

| | | | |
|---|---|---|---|
| 789 | | Z-fold top tray exit motor error | |
| | | The motor driver detects an error. | ▪ Motor overcurrent<br>▪ Motor driver overheat |

| | | | |
|---|---|---|---|
| 790 | B | Finisher staple trimming hopper full | |
| | | The staple waste hopper is full of cut staples. | ▪ If the hopper is full, empty the hopper<br>▪ If the hopper is not full, the hopper full sensor is disconnected, defective |



### *SC800: Overall System*

| | | | |
|---|---|---|---|
| 816 | D | Energy save I/O subsystem error | |
| | | The energy save I/O subsystem is defective or this system detects the controller board error. | ▪ Reboot the machine.<br>▪ Replace the controller board. |

| | | | |
|---|---|---|---|
| 817 | D | Monitor Error | |
| | | This is a file detection and electronic file signature check error when the boot loader attempts to read the self-diagnostic module, system kernel, or root system files from the OS Flash ROM, or the items on the SD card in the controller slot are false or corrupted. | ▪ OS Flash ROM data defective; change the controller firmware<br>▪ SD card data defective; use another SD card |

**Error Codes**

| Code | Meaning |
|---|---|
| 0x0000 0000 | BIOS boot error |
| 0x0000 0001 | Primary boot start load error |

**Service Call Conditions**

| | |
|---|---|
| 0x0000 0002 | Secondary boot load error (Boot3.Elf) |
| 0x0000 0003 | Self-diagnostic module error (Diag.Elf) |
| 0x0000 0004 | Kernel start error (Netbsd) |
| 0x0000 0005 | Root file system file read error (Rootfs) |
| 0xffff ffff | Other error |

Example: Data in the self-diagnostic module, system kernel, or root system files are corrupted or do not exist in OS flash ROM or on the SD card
Files in the self-diagnostic module, kernel, or root file system on the SD card have been falsified or altered

- Before discarding the SD card, try to update the data on the card. If the error occurs again, the card may be defective.
- Be sure to use an SD card that contains the correct electronic signature.

<table>
<tr><td rowspan="9">819</td><td rowspan="9">D</td><td colspan="2">Fatal kernel error</td><td></td></tr>
<tr><td colspan="2">Due to a control error, a RAM overflow occurred during system processing. One of the following messages was displayed on the operation panel.</td><td>▪ System program defective<br>▪ Controller board defective<br>▪ Optional board defective<br>▪ Replace controller firmware</td></tr>
<tr><td>0x5032</td><td>HAIC-P2 error</td><td></td></tr>
<tr><td>0x5245</td><td>Link-up fail</td><td></td></tr>
<tr><td>0x5355</td><td>L2 Status Time Out</td><td></td></tr>
<tr><td>0x696e</td><td>gwinit died</td><td></td></tr>
<tr><td>0x766d</td><td>Vm_pageout: VM is full</td><td></td></tr>
<tr><td>554C</td><td>USB loader defect</td><td></td></tr>
<tr><td>Other</td><td></td><td></td></tr>
</table>

| | | | | |
|---|---|---|---|---|
| 820 | D | 0008 | Self-diagnostic Error: CPU: System Call Exception | GW |
| | | 0612 | Self-diagnostic Error: CPU: ASIC Interrupt Error | GW |
| | | ▪ System program defective<br>▪ Controller board defective<br>▪ Optional board defective<br>▪ Replace controller firmware<br>**Note**: For more details about this SC code error, execute SP5990 to print an SMC report so you can read the error code. The error code is not displayed on the operation panel. | | |



Note

- For more details about this SC code error, execute SP5990 to print an SMC report so you can read the error code. The error code is not displayed on the operation panel.

| | | | | |
|---|---|---|---|---|
| 821 | D | Self-diagnostic error: ASIC | | |
| | | The Write & Verify check of the ASIC returned an error.<br>**Note**: The main ASIC module on the controller board controls the bus of the ROM device. | | ▪ Replace the controller board |
| | | 0B00 | ASIC register check error | |
| | | 0x0Bnn | ASIC is not detected. | |

Note

- For more details about this SC code error, execute SP5990 to print an SMC report so you can read the error code. The error code is not displayed on the operation panel.

**Service Call Conditions**

| | | | | |
|---|---|---|---|---|
| 822 | B | Self-diagnostic error: HDD | | |
| | | 3003 | Check performed when HDD is installed:<br>▪ HDD device busy for over 31 s.<br>▪ After a diagnostic command is set for Sthe HDD, but the device remains busy for over 6 s.<br>A diagnostic command is issued to the HDD device but the result is an error | ▪ HDD defective<br>▪ HDD harness disconnected, defective<br>▪ Controller board defective |
| | | 3004 | No response to the self-diagnostic command from the ASIC to the HDDs | ▪ HDD defective |
| | | 3013 | Mandolin does not respond, the HDD device remains BUSY for more than 31 s, or the BUSY signal does not drop within 6 s after the diagnostic command is issued to the HDDs. | ▪ HDD defective<br>▪ HDD connector loose or defective<br>▪ Controller defective |
| | | 3014 | Error returned from HDD in response to the self-diagnostic command, Mandolin could not be located due to a read/write error at the HDD register. | ▪ HDD defective |

| | | |
|---|---|---|
| 823 | CTL B | Self-diagnostic error: NIB<br>[XXXX]: Detailed error code |
| [6101] | | MAC address check sum error<br>The result of the MAC address check sum does not match the check sum stored in ROM. |
| [6104] | | PHY IC error<br>The PHY IC on the controller cannot be correctly recognized. |
| [6105] | | PHY IC loop-back error<br>An error occurred during the loop-back test for the PHY IC on the controller. |
| - | | 1. Replace the controller. |

| | | | |
|---|---|---|---|
| 824 | D | Self-diagnostic error 4: NVRAM | |
| | | One or more of the following conditions exist:<br>▪ NVRAM not present.<br>▪ NVRAM damaged<br>▪ NVRAM socket damaged | ▪ NVRAM defective<br>▪ Controller board defective<br>▪ NVRAM backup battery exhausted<br>▪ NVRAM socket damaged<br>**Note**: In every case, the controller board must be replaced. |

| | | | |
|---|---|---|---|
| 829 | D | Self-diagnostic Error: Optional RAM | ▪ Replace the optional memory board<br>▪ Controller board defective |
| | | The optional RAM returned an error during the self-diagnostic test. | |

Note

- For more details about SC 833, SC834 and other errors, execute SP5990 to print an SMC report so you can read the error code. The error code is not displayed on the operation panel. The additional error codes (0F30, 0F31, etc. are listed in the SMC report.

**Service Call Conditions**

| | | | |
|---|---|---|---|
| 833 | D | Self-diagnostic error 8: Engine I/F ASIC | |
| 0F30<br>0F31 | | ASIC (Mandolin) for system control could not be detected. After the PCI configuration, the device ID for the ASIC could not be checked. | ▪ ASCI (Mandolin) for system control is defective<br>▪ Interface between North Bridge and AGPI is defective<br>▪ Replace the mother board |
| 0F41 | | The read/write check done for resident RAM on the mother board could not be done correctly. | ▪ Memory device defective<br>▪ Replace the mother board |
| 50B1 | | Could not initialize or read the bus connection. | ▪ Bus connection defective, loose<br>▪ SSCG defective<br>▪ Replace the mother board |
| 50B2 | | Value of the SSCG register is incorrect. | ▪ Bus connection loose, defective<br>▪ SSCG defective<br>▪ Replace the mother board |

| | | | |
|---|---|---|---|
| 834 | D | Self-diagnostic error 9: Optional Memory RAM DIMM | |
| 5101 | | The write/verify check for the optional RAM chip on the engine mother board gave an error. | ▪ Controller defective<br>▪ Mother board defective |

| | | | |
|---|---|---|---|
| 838 | D | Self-diagnostic Error: Clock Generator | |
| | | A verify error occurred when setting data was read from the clock generator via the I2C bus. | ▪ Replace the controller board |

| | | | |
|---|---|---|---|
| 851 | B | IEEE 1394 I/F error | |
| | | Driver setting incorrect and cannot be used by the 1394 I/F. | ▪ NIB (PHY), LINK module defective; change the Interface Board<br>▪ Controller board defective |

| | | | |
|---|---|---|---|
| 853 | B | Wireless LAN Error 1 | |
| | | During machine start-up, the machine can get access to the board that holds the wireless LAN, but not to the wireless LAN card (802.11b or Bluetooth). | ▪ Wireless LAN card missing (was removed) |

| | | | |
|---|---|---|---|
| 854 | D | Wireless LAN Error 2 | GW |
| | | The board that holds the wireless LAN card can be accessed, but the wireless LAN card (802.11b/Bluetooth) itself could not be accessed while the machine was operating. | |
| | | ▪ Wireless LAN card has been removed. | |

| | | | |
|---|---|---|---|
| 855 | D | Wireless LAN Error 3 | GW |
| | | An error is detected for the wireless LAN card (802.11b or Bluetooth). | |
| | | ▪ Wireless LAN card defective<br>▪ Wireless card connection not tight | |

| | | | |
|---|---|---|---|
| 856 | D | Wireless LAN Error 4 | GW |
| | | An error is detected for the wireless LAN board (802.11b or Bluetooth). | |
| | | ▪ Wireless LAN card board defective.<br>▪ PCI connector loose (External controller interface board). | |

**Service Call Conditions**

| | | | |
|---|---|---|---|
| 857 | D | USB I/F Error 1 | GW |
| | | The USB driver is unstable and generated an error. The USB I/F cannot be used. | |
| | | ▪ USB board or controller board defective | |

| | | | |
|---|---|---|---|
| 858 | B | Data Encryption Error 1 | |
| | | These are errors of the HDD Data Encryption Option D377. | |
| | 0 | Key Acquistion | Key could be acquired.<br>▪ Replace the controller board |
| | 1 | HDD Key Setting Error | The key was acquired but the HDD could not be set.<br>▪ Turn the machine power off/on several times.<br>▪ Replace the controller board. |
| | 2 | NVRAM Read Error | NVRAM data conversion failed (mismatch with nvram.conf)<br>▪ Replace the NVRAM |
| | 30 | NVRAM Before Replace Error | DFU. May occur during development.<br>▪ Turn the machine power off/on several times.<br>▪ Replace the controller board. |
| | 31 | Other Error | An unexpected error occurred while data was being converted. This error is the same as SC991. See SC991 below. |

| | | | |
|---|---|---|---|
| 859 | B | Data Encryption Error 2 | |
| | | These are errors of the HDD Data Encryption Option D377. | |
| | 8 | HDD Check Error | Data conversion was attempted with no HDD unit present.<br>▪ Confirm that HDD unit installed correctly |

| | | | |
|---|---|---|---|
| | | | ▪ Initialize HDD with SP5832-1<br>**Note**: After installation, a new HDD should be formatted with SP5832-1 |
| | 9 | Power Loss During Data Conversion | Data conversion stopped before NVRAM/HDD data was converted.<br>▪ Format HDD with SP5832-1 |
| | 10 | Data Read Command Error | More than two illegal DMAC communications were returned.<br>▪ HDD defective<br>▪ Format HDD with SP5832-1<br>▪ Replace HDD |



| | | | |
|---|---|---|---|
| 860 | B | HDD startup error at power on | |
| | | HDD is connected but a driver error is detected.<br>The driver does not respond with the status of the HDD within 30 s. | ▪ HDD is not initialized<br>▪ Level data is corrupted<br>▪ HDD is defective |

| | | | |
|---|---|---|---|
| 861 | B | HDD Error 2: HDD Startup | GW |
| | | The hard disks were detected at power on, but the disks were not detected within 30s after recovery from the energy conservation mode. | |
| | | ▪ Cable between the hard disks and controller board disconnected or loose<br>▪ Hard disk power connector loose<br>▪ One of the hard disks is defective<br>▪ Controller defective | |

| | | | |
|---|---|---|---|
| 862 | D | Bad sector overflow | |
| | | There more 100 bad sectors in image storage area of the HDD. | ▪ HDD defective<br>▪ Format HDD with SP4911-2 |

**Service Call Conditions**

| | | | |
|---|---|---|---|
| 863 | D | HDD data read failure | |
| | | The data written to the HDD cannot be read normally, due to bad sectors generated during operation. | ▪ HDD defective<br>**Note**: If the bad sectors are generated at the image partition, the bad sector information is written to NVRAM, and the next time the HDD is accessed, these bad sectors will not be accessed for read/write operation. |

| | | | |
|---|---|---|---|
| 864 | D | HDD data CRC error | |
| | | During HDD operation, the HDD cannot respond to a CRC error query. Data transfer did not execute normally while data was being written to the HDD. | ▪ HDD defective |

| | | | |
|---|---|---|---|
| 865 | D | HDD access error | |
| | | HDD responded to an error during operation for a condition other than those for SC863, 864. | ▪ HDD defective. |

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|---|---|---|---|
| 866 | B | SC card error 1: Confirmation | |
| | | The machine detects an electronic license error in the application on the SD card in the controller slot immediately after the machine is turned on. The program on the SD card contains electronic confirmation license data. If the program does not contain this license data, or if the result of the check shows that the license data in the program on the SD card is incorrect, then the checked program cannot execute and this SC code is displayed. | ▪ Program missing from the SD card<br>▪ Download the correct program for the machine to the SD card |

| | | | |
|---|---|---|---|
| 867 | D | SD card error 2: SD card removed | |
| | | The SD card in the boot slot when the machine was turned on was removed while the machine was on. | ▪ Insert the SD card, then turn the machine off and on. |

| | | | |
|---|---|---|---|
| 868 | D | SD card error 3: SC card access | |
| | | An error occurred while an SD card was used. | ▪ SD card not inserted correctly<br>▪ SD card defective<br>▪ Controller board defective<br>**Note**: If you want to try to reformat the SC card, use SD Formatter Ver 1.1. |

**Service Call Conditions**

| | | | |
|---|---|---|---|
| 870 | B | Address Book Data Error | GW |
| | | Address book data stored on the hard disk was detected as abnormal when it was accessed from either the operation panel or the network.<br>The address book data cannot be read from the HDD or SD card where it is stored, or the data read from the media is defective. | |
| | | ▪ Software defective, switch off/on, and change the controller firmware if the problem is not solved.<br>▪ HDD defective<br>**Recommended Recovery**<br>▪ Execute SP5846 050 (UCS Settings – Initialize all Directory Info.) to initialize all address book data.<br>▪ Initialize the user information with SP5832 006 (HDD Formatting – User Information 1) and SP5832 007 (HDD Formatting – User Information 2)<br>▪ Replace the HDDs.<br>▪ Boot the machine from the SD card. | |

| | | | |
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| 872 | D | HDD mail RX data error | GW |
| | | An HDD error was detected immediately after power on. The HDD may be defective or the machine was accidentally powered off while the HDD was being accessed. | |
| | | ▪ Reformat the HDD with SP5832-7 (Mail RX Data)<br>▪ Replace the HDD | |

| | | | |
|---|---|---|---|
| 873 | D | HDD mail send data error | GW |
| | | An error was detected on the HDD immediately after the machine was turned on, or power was turned of while the machine used the HDD. | |
| | | ▪ Do SP5832-007 (Format HDD – Mail TX Data) to initialize the HDD.<br>▪ Replace the HDD. | |

| | | | |
|---|---|---|---|
| 874 | D | Delete All Error 1: HDD | GW |
| | | A data error was detected for the HDD/NVRAM after the "Delete All" option was used.<br>**Note**: The source of this error is the Data Overwrite Security Unit running from an SD card. | |
| | | ▪ Turn the main switch off/on and try the operation again.<br>▪ Install the Data Overwrite Security Unit again. For more, see section "MFP Options" in "Installation".<br>▪ HDD defective. | |

| | | | |
|---|---|---|---|
| 875 | D | Delete All Error 2: Data area | GW |
| | | An error occurred while the machine deleted data from the HDD<br>Note: The source of this error is the Data Overwrite Security Unit running from an SD card. | |
| | | ▪ Turn the main switch off/on and try the operation again. | |

| | | | |
|---|---|---|---|
| 876 | D | Log data abnormal | |
| | | An error was detected in the handling of the log data at power on or during machine operation. This can be caused by switching the machine off while it is operating. | ▪ Software error. Update the firmware<br>▪ NVRAM defective<br>▪ HDD defective |

| | | | |
|---|---|---|---|
| 877 | B | Data Overwrite Security SD card error | GW |
| | | An error occurred, preventing successful execution of the Data Overwrite Security function, even though it has been set up and enabled. | ▪ DOS card is not inserted completely into the SD card slot<br>▪ DOS card has been removed from the SD card slot.<br>▪ DOS card is damaged.<br>**Note**:<br>▪ If the SD card has been removed (or |

**Service Call Conditions**

| | | | |
|---|---|---|---|
| | | | was not installed correctly), switch the machine off, insert the SD card, then switch on the machine again.<br>▪ If the SD card has been damaged, procure a new SD card, replace the NVRAM, then do the DOS option installation. |

| | | | |
|---|---|---|---|
| 878 | D | TPM electronic authentication error | |
| | | The system hash value registered in TPM and the value registered in USB flash memory are not same during system booting. | ▪ The system module was updated through the prescribed update root, so the controller board became defective.<br>▪ USB flash memory did not work correctly. |

| | | | |
|---|---|---|---|
| 880 | D | Media Link Board Error | GW |
| | | A request for access to the Media Link Board was not answered within the specified time. | ▪ Media Link Board defective. |

## *SC900: Miscellaneous*

| | | | |
|---|---|---|---|
| 900 | C | Electrical Total Counter Error | |
| | | The total counter contains data that is not a number. | ▪ NVRAM disturbed unexpectedly.<br>▪ NVRAM defective<br>NVRAM data corrupted. |

| | | | |
|---|---|---|---|
| 901 | D | Mechanical total counter error | |
| | | The mechanical counter is not connected. | ▪ Mechanical total counter defective<br>▪ Mechanical total counter connector not connected |

**HDD Status Codes Displayed on Debug Console**

| Display | Meaning |
|---|---|
| (-1) | HDD not connected |
| (-2) | HDD not ready |
| (-3) | No level |
| (-4) | Partition type incorrect |
| (-5) | Error returned during level read or check |
| (-6) | Error returned during level read or check |
| (-7) | "filesystem" repair failed |
| (-8) | "filesystem" mount failed |
| (-9) | Drive does not answer command |
| (-10) | Internal kernel error |
| (-11) | Size of drive is too small |
| (-12) | Specified partition does not exist |
| (-13) | Device file does not exist |

**Recovery Procedure 1**

If the machine returns SC codes for HDD errors (SC860 ~ SC865), please follow the recovery procedures described for these SC codes.

**Recovery Procedure 2**

If the machine does not return one of the five HDD errors (SC860 ~ SC865), turn the machine off and on. If this does not solve the problem, then initialize the NetFile partition on the HDD with SP5832 011 (HDD Formatting – Ridoc I/F).

NetFiles: Jobs printed from the document server using a PC and DeskTopBinder

Before initializing the NetFile partition on the HDD please inform the client that:

1. Received faxes on the delivery server will be lost
2. All captured documents will be lost

**Service Call Conditions**

3. DeskTopBinder/Print Job Manager/Desk Top Editor job history will be cleared
4. Documents stored on the document server will not be lost.
5. The first time the network accesses the machine, the management information must be reconfigured (this will require a significant amount of time).
6. Execute SP5832 011 then turn the machine off and on.

**Recovery Procedure 3**

If "Procedure 2" does not solve the problem, execute SP5832 001 (HDD Formatting - All), then turn the machine off and on.

Executing SP5832 001 erases all document and address book data stored on the hard disks. Be sure to consult with the customer before executing this SP code.

**Recovery Procedure 4**

If "Recovery Procedures 1 to 3" fail to correct the problem, replace the HDD.

| | | |
|---|---|---|
| 910 | D | External Controller Error 1 |
| 911 | D | External Controller Error 2 |
| 912 | D | External Controller Error 3 |
| 913 | D | External Controller Error 4 |
| 914 | D | External Controller Error 5 |
| | | The external controller alerted the machine about an error. |
| | | Please refer to the instructions for the external controller. |

| | | |
|---|---|---|
| 919 | B | External Controller Error 6 |
| | | While EAC (External Application Converter), the conversion module, was operating normally, the receipt of a power line interrupt signal from the FLUTE serial driver was detected, of BREAK signal from the other station was detected. |
| | | ▪ Power outage at the EFI controller.<br>▪ EFI controller was rebooted.<br>▪ Connection to EFI controller loose. |

| | | |
|---|---|---|
| 920 | D | Printer Error 1 |
| | | An internal application error was detected and operation cannot continue. |
| | | ▪ Software defective, switch off/on, or change the controller firmware if the problem is not solved.<br>▪ Insufficient memory |

| | | |
|---|---|---|
| 921 | D | Printer Error 2 |
| | | When the printer application started, the font to use could not be found on the SD card. |
| | | ▪ The font is not on the SD card |

| | | |
|---|---|---|
| 925 | D | Net File Function Error |

| | | | |
|---|---|---|---|
| 953 | D | Scanner image setting error | |
| | | The settings required for image processing using the scanner are not sent from the IPU. | ▪ Software defective |

| | | | |
|---|---|---|---|
| 954 | D | Printer image setting error | |
| | | The settings required for image processing using the printer controller are not sent from the IPU. | ▪ Software defective |

| | | | |
|---|---|---|---|
| 955 | D | Memory setting error | |
| | | The settings that are required for image processing using the memory are not sent from the IPU. | ▪ Software defective |

**Service Call Conditions**

| | | | |
|---|---|---|---|
| 964 | D | Printer ready error | |
| | | The print ready signal is not generated for more than 17 seconds after the IPU received the print start signal. | ▪ Software defective |

| | | | |
|---|---|---|---|
| 984 | D | Print image data transfer error | |
| | | After a data transfer begins from the controller to the engine via the PCI bus, the transfer does not end within 15 s. | ▪ Controller (SIMAC) board defective<br>▪ BICU defective<br>▪ BICU/controller disconnected |

| | | | |
|---|---|---|---|
| 985 | D | Scanned image data transmission error | |
| | | After a data transfer begins from the engine to the controller via the PCI bus, the transfer does not end within 3 s. | ▪ Controller (SIMAC) board defective<br>▪ BICU defective<br>▪ BICU/controller disconnected |

| | | | |
|---|---|---|---|
| 986 | D | Software error 1 | |
| | | The write parameter received by the write module at the beginning of the setting table is NULL. | ▪ Controller (SIMAC) board defective<br>▪ BICU defective<br>▪ BICU/controller disconnected |

| | | | |
|---|---|---|---|
| 990 | B | Software Performance Error 1 | GW |
| | | An unexpected operation was encountered by the software. | |
| | | ▪ Software crash, reboot the machine<br>▪ If the HDDs have just been replaced, be sure to download the stamp data (SP 5853).<br>▪ With SP5990 004(SMC Report – Logging Data), print the most recent information for SC990. | |

| | | |
|---|---|---|
| | | ▪ The SC990 information displays the file name, line number, and value. Report this information to your technical supervisor. For example: **Funciton.c LINE: 123 VAL: 0** |

| | | | |
|---|---|---|---|
| 991 | C | Software Error | GW |
| | | The software performs an unexpected function and the program cannot continue. Recovery processing allows the program to continue. | |
| | | ▪ Software defective, re-boot*1 | |

*1: In order to get more details about SC991:

1. Execute SP7403 or print an SMC Report (SP5990) to read the history of the 10 most recent logged errors.
2. If you press the zero key on the operation panel with the SP selection menu displayed, you will see detailed information about the recently logged SC991, including the software file name, line number, and so on. Of these two methods, 1) is the recommended method, because another SC could write over the information for the previous SC.

| | | | |
|---|---|---|---|
| 992 | C | Undefined Error (No SC Code) | GW |
| | | An error not controlled by the system occurred (the error does not come under any other SC code). | |
| | | ▪ Software defective<br>▪ Turn the machine power off and on. The machine cannot be used until this error is corrected.<br>▪ Re-install firmware | |

| | | | |
|---|---|---|---|
| 994 | C | Operation Panel Management Records Exceeded | GW |
| | | An error occurred because the number of records exceeded the limit for images managed in the service layer of the firmware. This can occur if there are too many application screens open on the operation panel. | |
| | | No action required because this SC does not interfere with operation of the machine. | |

| | | |
|---|---|---|
| 995 | -001 | BCU Serial number incorrect or BCU RAM incorrect. |
| | -002 | No Serial Number or NVRAM replaced (Power Cycle Machine). |
| | -003 | Controller Serial Number icorrect or wrong Controller PCB or defective Controller. |
| | -004 | Serial number mismatch between BCU and Controller PCBs. |

| | | | |
|---|---|---|---|
| 997 | B | Application Selection Error | GW |
| | | An application did not start after pressing the appropriate key on the operation panel. | |
| | | ▪ Software bug; change the firmware for the application that failed<br>▪ A RAM or DIMM option required by the application is not installed or not installed correctly. | |

| | | |
|---|---|---|
| 998 | CTL D | Application start error |
| | | No applications start within 60 seconds after the power is turned on. |
| | | ▪ Loose connection of RAM-DIMM, ROM-DIMM<br>▪ Defective controller<br>▪ Software problem |
| | | 1. Check the setting of SP5875-001. If the setting is set to "1 (OFF)", change it to "0 (OFF)".<br>2. Check if the RAM-DIMM and ROM-DIMM are correctly connected.<br>3. Reinstall the controller system firmware.<br>4. Replace the controller. |

## 3.1.4 ADDITIONAL SC CODES PRINTED IN SMC REPORT

These codes are also used in the SMC report. Codes that have the same number in this series are identified by an additional 4-digit hexadecimal number.

| | | | |
|---|---|---|---|
| 820 | 0001 | TLB conversion (store) exception error | ▪ Unexpected error in CPU device:<br>▪ Controller board defective<br>▪ Boot monitor or self-diagnostic program corrupted |
| 820 | 0002 | TLB miss (load) exception error | |
| 820 | 0003 | TLB miss (store) exception error | |
| 820 | 0004 | Read address exception error | |
| 820 | 0005 | Write address exception error | |

| | | | |
|---|---|---|---|
| 820 | 0006 | Command bus exception error | |
| 820 | 0007 | Data bus exception error | |
| 820 | 0008 | System call exception error | |
| 820 | 0009 | Break exception error | |
| 820 | 000A | Illegal command exception error | |
| 820 | 000B | Potential sensor exception error | |
| 820 | 000C | Overflow exception error | |
| 820 | 000D | UTLB miss exception error | |
| 820 | 0010 | Allocation 0 error | |
| 820 | 0011 | Allocation 1 error | |
| 820 | 0012 | Allocation 2 error | |
| 820 | 0013 | Allocation 3 error | |
| 820 | 0014 | Allocation 4 error | |
| 820 | 0015 | Allocation 5 error | |
| 820 | 00FF | Non-initialization allocation error | ▪ CPU defective<br>▪ Local bus defective<br>▪ Controller board defective |
| 820 | 0601 | Read address exception error | ▪ CPU device error<br>▪ Controller board defective |
| 820 | 0602 | Write address exception error | |
| 820 | 0605 | System call exception error | |
| 820 | 0606 | Break point exception error | |
| 820 | 0607 | Illegal command exception error | |
| 820 | 060A | Allocation 0 mask exception error | ▪ CPU device error<br>▪ ASIC device error |
| 820 | 060B | Allocation 1 mask exception error | |

**Service Call Conditions**

| | | | |
|---|---|---|---|
| 820 | 060C | Allocation 2 mask exception error | ▪ Controller board defective |
| 820 | 060D | Allocation 3 mask exception error | |
| 820 | 060E | Allocation 4 mask exception error | |
| 820 | 0610 | CPU timer 2 allocation set error | ▪ CPU device error<br>▪ Controller board defective |
| 820 | 0612 | ASIC allocation error | ▪ ASIC device error<br>▪ Controller board defective<br>▪ Peripheral device defective |
| 820 | 06FF | CPU master clock error | ▪ CPU device error<br>▪ Error in CPU initialization data (ASIC error)<br>▪ Controller board defective |
| 820 | 0702 | Command cache error | ▪ CPU cache defective<br>▪ Controller board defective<br>▪ Memory error (insufficient speed) |
| 820 | 0709 | Data cache error | ▪ CPU device error<br>▪ Boot mode setting for CPU error<br>▪ Controller defective<br>▪ Insufficient memory |
| 820 | 070A | Data cache clear error | |
| 820 | 0801 | TLB virtual address error | ▪ CPU device defective (controller board defective) |
| 820 | 0804 | TLB global error | |
| 820 | 0807 | UTLB miss error | |
| 820 | 0808 | TLB read miss error | |
| 820 | 0809 | TLB write miss error | |
| 820 | 080A | TLB mode file error | |
| 820 | 4002 | Single-precision calculation error | ▪ CPU error (controller |

| | | | |
|---|---|---|---|
| 820 | 4003 | Double-precision calculation error | board defective) |
| 820 | 4004 | Exception error | |
| 820 | 4005 | Exception mask error | |
| 822 | 3003 | HDD timeout | ▪ HDD defective<br>▪ HDD connector disconnected, defective<br>▪ ASIC device error (controller board defective) |
| 822 | 3004 | Self-diagnostic command error | ▪ HDD defective |
| 823 | 6101 | MAC address SUM error | ▪ NIB (PHY) board defective<br>▪ Controller board defective |
| 823 | 6104 | PHY chip ID illegal | |
| 823 | 6105 | PHY loopback error | |
| 824 | 1401 | NVRAM verify error | ▪ NVRAM defective |
| 826 | 1501 | Clock error | ▪ Optional NVRAM defective |
| 826 | 15FF | RTC non-detection error | ▪ Incompatible NVRAM installed<br>▪ NVRAM battery defective |
| 826 | 0201 | Resident memory verify error | ▪ Memory on controller board defective<br>▪ RAM DIMM defective |
| 828 | 0101 | Boost trap code (CODE) error | ▪ Software storage error (re-install software)<br>▪ Controller board defective |
| 828 | 0104 | ROM FS error | ▪ ROM device error |
| 828 | 0105 | Forgery prevention error | ▪ Forgery prevention chip defective<br>▪ Forgery prevention chip error |

**Service Call Conditions**

| | | | |
|---|---|---|---|
| | | | ▪ Replace the controller, ROM, or RAM DIMM |
| 829 | 0301 | Option memory 0 verify error | ▪ Controller board internal memory error<br>▪ RAM DIMM defective |
| 829 | 0302 | Option memory 0 configuration information error | |

| | | | |
|---|---|---|---|
| 835 | 1102 | Verify error | ▪ Loopback connector error (controller board defective) |
| 835 | 110C | DMA verify error | ▪ Loopback connector error |
| | | | ▪ Controller board defective |
| 835 | 1120 | Loopback connector non-detection | ▪ Loopback connector not set |
| | | | ▪ Loopback connector error |
| | | | ▪ Controller board defective |
| 836 | 1601 | Font ROM 0 error | |
| 837 | 1602 | Font ROM 1 error | |
| 838 | 2701 | Verify error | |
| 853 | D | IEEE802 11b card startup error | Not used. |
| 854 | D | IEEE802 11b card access error | Not used. |
| 855 | D | IEEE802 11b card error | Not used. |
| 856 | D | IEEE802 11b card connection board error | Not used. |

| | | |
|---|---|---|
| 870 | B | Address book data error |
| | | The address book in the hard disk is accessed. An error is detected in the |

| | | |
|---|---|---|
| | | address book data; address book data is not read; or data is not written into the address book.<br>NOTE: To recover from the error, do any of the following countermeasures:<br>Format the address book by using SP5-832-008 (all data in the address book–including the user codes and counters–is initialized)<br>Initialize the user data by using SP5-832-006 and -007 (the user codes and counters are recovered when the main switch is turned on).<br>Replace the hard disk (the user codes and counters are recovered when the main switch is turned on). |
| | | ▪ Data corruption<br>▪ Defective hard disk<br>▪ Defective software |



| | | |
|---|---|---|
| 900 | C | Electrical Total Counter Error |
| | | The total counter contains data that is not a number. |
| | | ▪ NVRAM disturbed unexpectedly<br>▪ NVRAM defective<br>▪ NVRAM data corrupted |

| | | | |
|---|---|---|---|
| 920 | D | Printer error | |
| | | The printer program cannot be continued. | ▪ Defective hardware<br>▪ Data corruption<br>▪ Defective software |

| | | | |
|---|---|---|---|
| 925 | D | Net file error | |
| | | The management file for net files is corrupted; net files are not normally read.<br>Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software | ▪ Defective hardware<br>▪ Data corruption<br>▪ Defective software |

**Service Call Conditions**

| | | | |
|---|---|---|---|
| 992 | C | Other system SCs | |
| | | The controller received an unknown SC code from the engine. | ▪ Contact your product specialist. |

| | | | |
|---|---|---|---|
| 993 | D | Network error | |
| | | The ASIC program of GW controller cannot be continued. | ▪ Defective ASIC<br>▪ Defective GW controller |

## 3.1.5 JAM CODES

Here are lists of SC codes that are printed in the SMC report; they do not appear on the operation panel display.

### *ADF: Paper Jam Errors*

| No. | Location | Position Code |
|---|---|---|
| 003 | Separation Sensor: On | P1 |
| 004 | Skew Correction Sensor: On | P1 |
| 005 | Interval Sensor: On | P2 |
| 006 | Registration Sensor: On | P2 |
| 007 | Exit Sensor: On | P2 |
| 053 | Separation Sensor: Off | P1 |
| 054 | Skew Correction Sensor: Off | P1 |
| 055 | Interval Sensor: Off | P2 |
| 056 | Registration Sensor: Off | P2 |
| 057 | Exit Sensor: Off | P2 |

### *Main Unit and LCT (B474): Paper Jam Errors*

| No. | Location | Position Code |
|---|---|---|
| 1 | Initial Jam (Power On) | A1 |
| 3 | 1st Paper Feed SN: Late | A1 |
| 4 | 2nd Paper Feed SN: Late | A1 |
| 5 | 3rd Paper Feed SN: Late | A1 |
| 6 | 4th Paper Feed SN: Late (Japan Only) | A1 |
| 7 | LCT Feed SN: Late | U |
| 8 | 1st Vertical Transport SN: Late | A1 |
| 9 | 2nd Vertical Transport SN: Late | A1 |
| 10 | 3rd Vertical Transport SN: Late | A1 |
| 11 | 4th Vertical Transport SN: Late (Japan Only) | A1 |
| 12 | Relay SN: Late | B |
| 13 | Registration SN: Late | B/C |
| 14 | Fusing Exit SN: Late | D |
| 15 | Exit Unit Entrance SN: Late | E |
| 16 | Paper Exit SN: Late | E |
| 19 | Duplex Entrance SN: Late | E |
| 20 | Duplex Transport SN 1: Late | F |
| 21 | Duplex Transport SN 2: Late | F |
| 22 | Duplex Transport SN 3: Late | F |
| 23 | Duplex Exit SN: Late | E |
| 24 | LCT Relay SN: Late | U |

**Service Call Conditions**

| No. | Location | Position Code |
|---|---|---|
| 34 | By-pass Paper Feed SN: Late | A2 |
| 45 | Sort Tray: Paper Exit SN: Late | R |
| 46 | Sort Tray: Tray Lift Motor | R |
| 47 | Sort Tray: Shift Tray Motor | R |
| 53 | 1st Paper Feed SN: Lag | A1 |
| 54 | 2nd Paper Feed SN: Lag | A1 |
| 55 | 3rd Paper Feed SN: Lag | A1 |
| 56 | 4th Paper Feed SN: Lag (Japan Only) | A1 |
| 57 | LCT Feed SN: Lag | U |
| 58 | 1st Vertical Transport SN: Lag | A1 |
| 59 | 2nd Vertical Transport SN: Lag | A1 |
| 60 | 3rd Vertical Transport SN: Lag | A1 |
| 61 | 4th Vertical Transport SN: Lag (Japan Only) | A1 |
| 62 | Relay SN: Lag | B |
| 63 | Registration SN: Lag | B/C |
| - | - | - |
| 66 | Paper Exit SN: Lag | E |
| 69 | Duplex Entrance SN: Lag | E |
| - | - | - |
| 71 | Duplex Transport SN 2: Lag | F |
| 72 | Duplex Transport SN 3: Lag | F |
| - | - | - |

| No. | Location | Position Code |
|---|---|---|
| 74 | LCT Relay SN: Lag | B |
| 84 | By-pass Paper Feed SN: Lag | A2 |

### *Finisher D374: Jam Codes*

| No. | Location | Position Code |
|---|---|---|
| 101 | Entrance Sensor | R1 to R4 |
| 102 | Proof Tray Exit Sensor | R1 to R4 |
| 103 | Exit Sensor | R1 to R4 |
| 104 | Staple Entrance Sensor | R5 to R8 |
| 105 | Exit After Jogging | R5 to R8 |
| 106 | Corner Stapling | S1 |
| 109 | Shift Tray Motor | R1 to R4 |
| 110 | Jogger Fence Motor | R5 to R8 |
| 111 | Shift Roller Motor | R1 to R4 |
| 112 | Stapler Shift Motor | R5 to R8 |
| 113 | Stapler Motor | R5 to R8 |
| 115 | Feed Out Belt Motor | R5 to R8 |
| 116 | Paper Punch Motor | R1 to R4 |

### *Finisher D373: Jam Codes*

| No. | Location | Position Code |
|---|---|---|
| 121 | Entrance Sensor | R1 to R4 |

| No. | Location | Position Code |
|---|---|---|
| 122 | Proof Tray Exit Sensor | R1 to R4 |
| 123 | Exit Sensor | R1 to R4 |
| 124 | Staple Entrance Sensor | R5 to R7 |
| 125 | Exit After Jogging | R8 to R12 |
| 126 | Corner Stapling | S1 |
| 127 | Saddle Stapling | S2 |
| 128 | Paper Folding | R8 to R12 |
| 129 | Shift Tray Motor | R1 to R4 |
| 130 | Jogger Fence Motor | R8 to R12 |
| 131 | Shift Roller Motor | R1 to R4 |
| 132 | Stapler Shift Motor | R8 to R12 |
| 133 | Stapler Motor | R8 to R12 |
| 134 | Folder Plate Motor | R8 to R12 |
| 135 | Feed Out Belt Motor | R8 to R12 |
| 136 | Paper Punch Motor | R1 to R4 |

## ⇒ *Finisher D460: Jam Codes*

| No. | Location | Position Code |
|---|---|---|
| 151 | Entrance Sensor | R1 to R3 |
| 152 | Proof Tray Exit Sensor | R1 to R3 |
| 153 | Shift Exit Sensor | R1 to R3 |
| 154 | Stapler Exit Sensor | R4 to R7 |

| No. | Location | Position Code |
|---|---|---|
| 155 | Pre-Stack | R4 to R7 |
| 156 | Feed Out | R4 to R7 |
| 158 | Upper Trans Motor | R1 to R3 |
| 159 | Shift Tray Motor | R1 to R3 |
| 160 | Positioning Roller Motor | R4 to R7 |
| 161 | Jogger Fence Motor | R4 to R7 |
| 162 | Stack Plate Motor (Center) | R4 to R7 |
| 163 | Stack Plate Motor (Front) | R4 to R7 |
| 164 | Stack Plate Motor (Rear) | R4 to R7 |
| 165 | Shift Motor | R1 to R3 |
| 166 | Drag Drive Motor | R1 to R3 |
| 167 | Shift Tray Jogger Motor | R1 to R3 |
| 168 | Shift Tray Jogger Retraction Motor | R1 to R3 |
| 169 | Exit Guide Motor | R4 to R7 |
| 170 | Staple Hammer Motor | - |
| 171 | Stapler Movement Motor | R4 to R7 |
| 172 | Stapler Rotation Motor | R4 to R7 |
| 173 | Stack Feed-Out Belt Motor | R4 to R7 |
| 174 | Punch Motor | R1 to R3 |
| 175 | Top Fence Motor | R4 to R7 |
| 176 | Bottom Fence Motor | R4 to R7 |
| 197 | Main Machine Set. Incorrect | R1 to R3 / R4 to R7 |

### *Mailbox B471: Jam Codes*

| No. | Location | Position Code |
|---|---|---|
| 201 | Vertical Transport Sensor 1 | W |
| 202 | Vertical Transport Sensor 2 | W |
| 203 | Vertical Transport Sensor 3 | W |
| 204 | Vertical Transport Sensor 4 | W |
| 205 | Vertical Transport Sensor 5 | W |

### *Cover Interposer Tray B470: Jam Codes*

| No. | Location | Position Code |
|---|---|---|
| 251 | Paper Feed Sensor | Q |
| 252 | Vertical Transport Path | Q1 to Q3 |
| 253 | Bottom Plate Position Sensor | Q |

### *Multi-Folding Unit D454: Jam Codes*

| No. | Location | Position Code |
|---|---|---|
| 351 | Entrance SN: Late | N1 to N5 |
| 352 | Entrance SN: Lag | N1 to N5 |
| 353 | Top Tray Exit SN: Late | N1 to N5 |
| 354 | Top Tray Exit SN: Lag | N1 to N5 |
| 355 | Horizontal Path Exit SN: Late | N1 to N5 |
| 356 | Horizontal Path Exit SN: Lag | N1 to N5 |

| No. | Location | Position Code |
|---|---|---|
| 357 | 1st Stopper HP SN: Late | N6 to N22 |
| 358 | 1st Stopper HP SN: Lag | N6 to N22 |
| 359 | 2nd Stopper HP SN: Late | N6 to N22 |
| 360 | 2nd Stopper HP SN: Lag | N6 to N22 |
| 361 | 3rd Stopper HP SN: Late | N6 to N22 |
| 362 | 3rd Stopper HP SN: Lag | N6 to N22 |
| 363 | Skew Correction Jam | N6 to N22 |
| 364 | Folded Paper Path Jam | N1 to N5 |
| 366 | Entrance JG Motor Jam | N1 to N5 |
| 367 | Fold JG Motor Jam | N1 to N5 |
| 368 | 1st Stopper Motor Jam | N6 to N22 |
| 369 | 2nd Stopper Motor Jam | N6 to N22 |
| 370 | 3rd Stopper Motor Jam | N6 to N22 |
| 371 | Dynamic Roller Trans. Motor Jam | N6 to N22 |
| 372 | Registration Roller Release Motor Jam | N6 to N22 |
| 373 | Fold Plate Motor Jam | N6 to N22 |
| 374 | Jogger Fence Motor Jam | N6 to N22 |
| 375 | Positioning Roller Motor Jam | N6 to N22 |
| 376 | Direct-Send JG Motor Jam | N6 to N22 |
| 377 | FM6 Pawl Motor Jam | N6 to N22 |
| 399 | Main Machine Set. Incorrect | N1 to N5 / N6 to N22 |

**Service Call Conditions**

## *Z-Folding Unit B660 Jam Codes*

| No. | Location | Related SC Code |
|---|---|---|
| 169 | Paper Feed Sensor: Paper Late | --- |
| 170 | Paper Feed Sensor: Paper Remains | --- |
| 171 | Fold Timing Sensor: Paper Late | --- |
| 172 | Fold Timing Sensor: Paper Remains | --- |
| 173 | Leading Edge Exit Sensor: Paper Late | --- |
| 174 | Leading Edge Exit Sensor: Paper Remains | --- |
| 175 | Upper Stopper Path Sensor: Paper Late | --- |
| 176 | Upper Stopper Path Sensor: Paper Remains | --- |
| 177 | Lower Exit Sensor: Paper Late | --- |
| 178 | Lower Exit Sensor: Paper Remains | --- |
| 181 | Upper Exit Sensor: Paper Late | --- |
| 182 | Upper Exit Sensor: Paper Remains | --- |
| 183 | Paper Fold Motor Lock | --- |
| 184 | Lower Stopper Motor Lock | --- |
| 185 | Upper Stopper Motor Lock | --- |

# APPENDIX:
# SERVICE PROGRAM MODE TABLES

| APPENDIX 4 SERVICE PROGRAM MODE TABLES REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| 90 | 11/20/2009 | SP5227 |
| 106 | 10/01/2009 | SP5811 |
| 148 ~ 149 | 09/16/2009 | SP5985 |
| 173 | 10/01/2009 | SP6890 |

# 4. APPENDIX: SERVICE PROGRAM MODE TABLES

## 4.1 SERVICE PROGRAM MODE TABLES

### 4.1.1 SERVICE TABLE KEY

| Notation | What it means |
|---|---|
| [range/step] | Example: [–9 to +9/0.1 mm]<br>The default setting can be adjusted in 0.1mm steps in the range ±9. |
| Italics | Comments added for reference. |
| * | An asterisk marks the SP's that are reset to their factory default settings after an NVRAM reset. |
| DFU | Denotes "Design or Factory Use". Do not change this value. |
| Japan Only | The feature or item is for Japan only. Do not change this value. |
| SEF | Short Edge Feed |
| LEF | Long Edge Feed |
| NIA | No Information Available (May 2009) |

### 4.1.2 SYSTEM SP TABLES

***SP1xxx Feed***

| | |
|---|---|
| 1001* | Leading Edge Registration |
| | Adjusts the printing leading edge registration using the trimming area pattern (SP2902-003, No.18).<br>[–9 to +9/**0**/0.1mm]<br>Specification: 3±2mm |

**Service Program Mode Tables**

| | | |
|---|---|---|
| 1002* | Side-to-Side Registration | |
| | Adjusts printing side-to-side registration for each feed station, using test pattern (SP2902-003, No.18).<br>These SP's should be adjusted after replacing the laser synchronization detector or the laser optical unit. | |
| 001 | Tray-1 | [–9 to +9/**0**/0.1 mm] |
| 002 | Tray-2 | |
| 003 | Tray-3 | |
| 004 | Tray-4 (Japan Only) | |
| 005 | By-pass Tray | |
| 006 | LCT | |
| 007 | Duplex Tray | |

| | |
|---|---|
| 1003 | Registration Buckle Adjustment |
| | Adjusts the registration motor timing. This timing determines the amount of paper buckle at registration. (A higher setting causes more buckling.)<br>[–9 to +9/**0**/1 mm] |
| 001* | Tray LCT |
| 002 | Duplex Tray |
| 003* | By-pass Tray |

| | |
|---|---|
| 1007 | By-pass Feed Paper Size Display |
| -001 | Use this SP to confirm the size of the paper detected in the by-pass tray if paper is skewing during feeding. |

| | |
|---|---|
| 1008* | Duplex Fence Adjustment |

| | |
|---|---|
| | Adjusts the distance between front and rear fences. A smaller value shortens the distance. If the fences are too far apart, skewing may occur in the duplex tray. If the fences are too close, the paper may be creased in the duplex unit.<br>[–5 to +5/**0**/0.1 mm] |

| | |
|---|---|
| 1102 | Fusing Temperature Adjustment |
| | Adjusts the temperature of the fusing units. |
| 001 | Duplex Actual Temperature<br>[0 to 1 /**0**/1] |
| 002 | Duplex Balance Temp (Center Thermistor)<br>[-30 to 0/**-15**/1] |
| 003 | Duplex Balance Temp (End Thermistor)<br>[-30 to 0/**-15**/1] |

| | |
|---|---|
| 1103 | Fusing Idling |
| 001 | IdlingTime (Normal)<br>D062/D063: [0 to 300 /**0**/1sec] *For only TWN [0 to300/**8**/1sec]<br>D065: [0 to 300 /**26**/1sec] *For only TWN [0 to300/**28**/1sec]<br>D066: [0 to 300 /**160**/1sec] |
| -002 | IdlingTime (Low)<br>D062/D063: [0 to 300 /**66**/1sec] *For only TWN [0 to300/**68**/1sec]<br>D065: [0 to 300 /**86**/1sec] *For only TWN [0 to300/**88**/1sec]<br>D066: [0 to 300 /**200**/1sec] |
| 003 | IdlingTime (LowPower)<br>D062/D063/D066: [0 to 300 /**0**/1sec]<br>D065: [0 to 300 /**15**/1sec] |
| 004 | **Japan only**<br>IdlingTime (LowVoltage)<br>*For only C4c (DOM): [0 to 300 /**8**/1sec] |
| 005 | **Japan only** |

| | |
|---|---|
| | IdlingTime (CapacitatorLowVoltage)<br>*For only C4c (DOM): [0 to 300 /**90**/1sec] |

| | | |
|---|---|---|
| 1105* | Fusing Temperature Adjustment | |
| | Adjusts the fusing temperature of the hot roller for plain paper, OHP or thick paper. | |
| 001 | Normal Time (Center Thermistor) | Fusing temperature during the ready condition and during printing.<br>D062/D063/D065: [180 to 205/**190**/1 degree C]<br>D066: [180 to 205/**185**/1 degree C] |
| 002 | Normal Time (End Thermistors) | Fusing temperature during the ready condition<br>D062/D063/D065: [150 to 205/**190**/1 degree C]<br>D066: [150 to 200/**185**/1 degree C] |
| 003 | OHP (Center Thermistor) | Fusing temperature during printing:<br>D062/D063/D065: [150 to 205/**190**/1 degree C]<br>D066: [150 to 200/**170**/1 degree C] |
| 004 | OHP (End Thermistor) | Fusing temperature during printing:<br>D062/D063/D065: [150 to 205/**190**/1 degree C]<br>D066: [150 to 200/**170**/1 degree C] |
| 005 | Thick Paper (Center Thermistor) | Fusing temperature during printing:<br>D062/D063/D065: [180 to 205/**200**/1 degree C]<br>D066: [150 to 200/**195**/1 degree C] |
| 006 | Thick Paper (End Thermistors) | Fusing temperature during printing:<br>D062/D063/D065: [180 to 205/**200**/1 degree C]<br>D066: [150 to 200/**195**/1 degree C] |
| 007 | Normal Paper (Center Thermistor) | Fusing temperature during printing:<br>D062/D063/D065: [150 to 230/**190**/1 degree C]<br>D066: [150 to 200/**185**/1 degree C] |
| 008 | Normal Paper (End Thermistor) | Fusing temperature during printing:<br>D062/D063/D065: [150 to 205/**190**/1 degree C] |

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|---|---|---|
| | | D066: [150 to 200/**185**/1degree C] |
| 009 | Small Size – Normal Paper (Center) | Fusing temperature at center of hot roller when printing on normal paper:<br>D062/D063/D065: [150 to 205/**190**/1 degree C]<br>D066: [150 to 200/185/1 degree C] |
| 010 | Small Size – Thick Paper (Center) | Fusing temperature at center of hot roller when printing on thick paper:<br>D062/D063/D065: [150 to 205/**190**/1 degree C]<br>D066: [150 to 200/**195**/1 degree C] |

| 1106 | Fusing Temperature Display | |
|---|---|---|
| 001 | Center Temperature | Shows the temperature of the hot roller detected by the thermistor at the center of the hot roller. |
| 002 | End Temperature | Shows the temperature of the hot roller detected by the thermistors at the ends of the hot roller. |
| 003 | Pressure Roller Temperature | Shows the temperature of the hot roller detected by the thermistors at the pressure roller. |

| 1107 | Start Fusing Adjustment | |
|---|---|---|
| | This SP allows you to set when to start the fusing temperature adjustment for the center and end heating lamps. | |
| 001 | Center Lamp Temperature | D062/D063/D065: [150 to 205/**205**/1 deg C]<br>D066: [150 to 190/190/1 deg C] |
| 002 | End Lamp Temperature | |
| 003 | Center Lamp Actual Time | D062/D063/D065: [0 to 120/**60**/1 sec.]<br>D066: [0 to 60/10/1 sec.] |
| 004 | End Lamp Actual Time | D062/D063/D065: [0 to 120/**55**/1 sec]<br>*For Only TWN [0 to 120/**60**/1 sec]<br>D066: [0 to 60/**10**/1 sec] |

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|---|---|---|
| 005 | Center Lamp Temp (Small Size Paper) | D062/D063/D065: [180 to 205/**205**/1 deg C]<br>D066: [175 to 190/**190**/1 deg C] |
| 006 | End Lamp Actual Time (Small Size Paper) | D062/D063/D065: [0 to 120/**60**/1 sec.]<br>D066: [0 to 60/**10**/1 sec] |
| 007 | Center Lamp Temp (Thick Paper) | D062/D063/D065: [180 to 205/**205**/1 deg C]<br>D066: [175 to 200/**200**/1 deg C] |
| 008 | End Lamp Actual Time (Thick Paper) | D062: [0 to 120/**0**/1 sec.]<br>D063/D065: [0 to 120/**5**/1 sec.]<br>D066: [0 to 120/**10**/1 sec.] |
| 009 | **Japan only**<br>Capacitator for Check Start Fusing Temperature | C4c: [170 to 205/**200**/1 deg C] |
| 010 | **Japan only**<br>Capacitator for Check Start Fusing Lamp ON Time | C4c: [0 to 120/**0**/1 sec.] |

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|---|---|---|
| 1109 | Measure Nip Width | |
| 001 | Execute | 0 or 1 |
| 002 | Adjust Value | [200 to 400/**300**/10mm] |

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| 1112 | Hot Roller Temperature for Auto Process Control |
| 001 | Sets the temperature of the hot roller for auto process control to start.<br>[70 to 150/**140**/1°C] DFU |

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| 1159 | Fusing Jam: SC Setting |
| 001 | This SP determines what the machine does if paper jams occur in the fusing unit for three consecutive sheets of paper.<br>0: (default): A jam alert is shown on the screen. The customer can remove the jam and the machine works normally after that. |

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| | 1: SC559 occurs. The technician must remove the jam. |

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| 1901* | CPM Down Setting for Special Paper | |
| | Selects the speed (copies per minute) for copying on thick paper or tab sheets. A slower speed makes fusing better. This setting has no effect on fusing temperature. | |
| 001 | Thick Paper | D062/D063/D065: [0 to 4/**2**/1 step]<br>D066: [0 to 4/3/1 step]<br>0: 25 cpm<br>1: 35 cpm<br>2: 40 cpm<br>3: 45 cpm<br>4: 55 cpm |
| 002 | Tab Sheet | [0 to 4/**0**/1 step]<br>0: 25 cpm<br>1: 35 cpm<br>2: 40 cpm<br>3: 45 cpm<br>4: 55 cpm |

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| 1902* | Fusing Web Motor Control |
| 001 | Fusing Web Used Area Display/Setting |
| | Displays the percentage of the web consumption in 1% steps (0% to 100%). This setting must be reset to zero after the web is replaced.<br>[0 to 120/**0**/1 %] |
| 002 | Fusing Web Motor Operation Interval |
| | Adjusts the interval of copy operation time (seconds) after which the web motor is driven.<br>D062: [5 to 50/**18**/1 s]<br>D063: [5 to 50/**16**/1 s]<br>D065: [5 to 50/**15**/1 s] |

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| | D066: [5 to 50/**14**/1 s] |
| 004 | Web Near End Value |
| | Adjusts the timing of the web near end alert by changing the amount of web that has been used before the alert is triggered.<br>[0 to 100/**80**/1 %] |
| 005 | Web Roll Coefficient |
| | Determines the coefficient of the web take-up time from cleaning toner from the roller while taking into consideration the take-up time for web buckle. DFU<br>[10 to 20/**9**/1] |
| 006 | Web Length (0: 20m 1: 22.7m 2:28.5m 3:32m) |
| | Set the length of web.<br>[0 to 3 / **x** /1]<br>D062/D063/D065: x = **3**, D066: x = **2** |

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| 1903* | Web Job End |
| 001 | Yes/No |
| | This determines whether the web motor is driven at the end of a job.<br>[0 to 1/1]<br>0: Off<br>1: On<br>Enable when too much paper dust is causing copies to blacken. |
| 002 | Job End Condition (Continuous PPC Time) |
| | At the end of a job, the web motor is driven if the job lasted longer than the value of this SP mode. Only valid if SP1903-001 is set to 'On'.<br>[1 to 99/**7**/1s] |
| 003 | Job End Frequency |
| | If the web motor is driven at the end of a job, this SP determines how many times the web motor operation is executed.<br>[1 to 5/**2**/1] |

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| 1904 | By-pass Tray Paper Size Correction |
| 001 | Minimum Size |
| | Calibrates the minimum paper width position of the sensor (100 mm). Move the side fences to the 100 mm position then press Execute. |
| 002 | Maximum Size |
| | Calibrates the maximum paper width position of the sensor (A3). Move the side fences to the A3 position then press Execute. |

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| 1905* | Thick Paper – By-pass Tray |
| | Adjusts the by-pass feed clutch operation for thick paper.<br>[0 to 1/**1**/1]<br>1: On: 30 ms<br>0: Off: |
| | This setting switches the by-pass feed clutch on for 30 ms when the registration motor turns on. It only happens when thick paper is selected, to help this paper pass through the registration rollers. |

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| 1906 | Temperature/Humidity Sensor |
| 001 | Temperature Sensor |

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| 1907 | Pre-Fusing Idling On/Off |
| | Pre-fusing idling: The hot roller turns freely to increase its temperature before thick paper or OHP goes through the fusing unit.<br>[0 to 1/1/1]<br>0: Pre-fusing idling is not done.<br>1: The fusing motor turns the hot roller with no paper in the fusing unit. This ensures that the hot roller reaches the correct temperature. It is only done for thick paper or OHP. In this mode, the paper stops at the registration roller, then |

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| | roller resumes its rotation after the hot roller reaches the correct temperature. | |
| 001 | Thick Mode (1:ON/0:OFF) | Thick Paper Normal Size |
| 002 | Thick Mode: Small Paper Size (1:ON/0:OFF) | Thick Paper Small Size |
| 003 | Normal Mode (1:ON/0:OFF) | Normal Paper Normal Size |
| 004 | Normal Mode: Small Paper Size (1:ON/0:OFF) | Normal Paper Small Size |
| 005 | Middle Thick (1:ON/0:OFF) | Middle Thick Paper Normal Size |
| 006 | Middle Thick: Small Paper Size (1:ON/0:OFF) | Middle Thick Paper Small Size |

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| 1908 | Pre-Fusing Idling |
| 001 | 1:ON/0:OFF |
| 002 | **This SP is for only D066.**<br>Low Temp. Standby (Pre-Idling)<br>[0 to 180 /**0**/ 1sec] |
| 003 | **This SP is for only D066.**<br>Low Temp. Sleep Mode (Pre-Idling)<br>[0 to 180/**60**/ 1sec] |

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|---|---|
| 1909 | LowSpeedMode |
| 001 | LowSpeedMode (Not used) |
| 002 | LowSpeedMode ProcessControl(Not used) |

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| 1910 | Capacitator Status: **Japan only** |
| 001 | Latest Capacity |
| 002 | Current Voltage |

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| 003 | Charge Time |
| 004 | Worn-out Counter |
| 005 | Charged Power |

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| 1920 | Capacitator Charge Setting: **Japan only** |

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| 1926 | Capacitator Discharge: S-Size: **Japan only** |

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| 1927 | Capacitator Discharge Setting: **Japan only** |

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| 1921 | Idling Control: **Japan only** |
| -001 | After Job Interval<br>C4c: [0 to 30 /**0**/1sec] |
| -002 | After Job Target Temperature<br>C4c: [190 to 205/**200**/1deg] |

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| 1922 | Heater Full Power Setting: **Japan only** |
| -001 | 0: OFF/1: ON |

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| 1923 | HV Fusing Temp Cont |
| -001 | 0: OFF/1: ON |

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| 1924 | 10 Sec. Recovery Temperature: **Japan only** |
| -001 | Temperature Sensor<br>C4c: [15 to 25/**20**/1] |

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| 1925 | Idling Setting: **Japan only** |

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| -001 | Power On Middle Thick<br>0 or 1 |
| -002 | Power On Thick<br>0 or 1 |

## *SP2xxx Drum*

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|---|---|
| 2001* | Charge Roller Bias Adjustment |
| 001 | Applied Voltage for Image Processing |
| | Adjusts the voltage applied to the grid plate during copying when auto process control is off.<br>[600 to 1500/**900**/10 V]<br>After replacing the charge corona wire or the drum, reset to the factory default setting. |
| 002 | ID Sensor Pattern: Adjustment of Applied Voltage |
| | Adjusts the voltage applied to the grid plate when the ID sensor pattern is created.<br>[600 to 1500/**800**/10 V] |
| 003 | Setting for Total Bias Current |
| | Adjusts the total current applied to the charge corona wire. DFU<br>[900 to 1500/**1300**/10 μA] |
| 004 | Setting for Total Bias Current of Grid |
| | Adjusts the voltage applied to the grid plate during copying when auto process control is on.<br>[600 to 1500/**900**/10 V]<br>This voltage changes every time auto process control starts up (every time the machine is switched on). |
| 005 | Total Bias Grid Voltage: OHP Total |
| | Adjusts the voltage applied to the grid plate when OHP mode is selected. |

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| | [600 to 1500/**650**/10 V]<br>Use this if there is a copy quality problem when making OHP's. |
| 006 | Total Bias Grid Current: Photo Mode Total |
| | Adjusts the voltage applied to the grid plate when Photo mode is selected.<br>[1400 to 2800/**1500**/10 μA] |

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| 2101* | Printing Erase Margin | |
| | These settings adjust the erase margin for the leading, trailing, left, and right edges. | |
| 001 | Leading Edge | [0 to 9/**2.5**/0.1 mm], Specification: 3±2 mm |
| 002 | Trailing Edge | [0 to 9/**2**/0.1 mm], Specification: 3±2 mm |
| 003 | Left Edge | [0 to 9/**2**/0.1 mm], Specification: 2±1.5 mm |
| 004 | Right Edge | |

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| 2103 | LD Power Adjustment **DFU** | |
| | Note: This is an SSP mode. To enter SSP mode, push [Reset], enter "107", then hold down [Clear] for at least 3 sec. When you see "Copy SP" on the touch panel, press and hold down [#] then touch "Copy SP". | |
| 001 | LD0 Power Adjustment | These SP codes allow adjustment of the laser intensity for each of the four channels.<br>[-64 to +64/**0**/1] |
| 002 | LD1 Power Adjustment | |
| 003 | LD2 Power Adjustment | |
| 004 | LD3 Power Adjustment | |
| 005 | LD0 Adjustment | These SP codes allow adjustment of the start/end timing of |

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| | Start/End | the adjustments performed for SP2103 001-004.<br>[0 to 1/0/1]<br>0: LD beam OFF<br>1: LD beam ON |
| 006 | LD1 Adjustment Start/End | |
| 007 | LD2 Adjustment Start/End | |
| 008 | LD3 Adjustment Start/End | |

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|---|---|
| 2104* | Small Pitch Banding Reduction |
| 001 | Reduction Mode On/Off Setting:1200 dpi |
| | Switches on/off the setting that corrects uneven images generated during 1200 dpi printing.<br>[0 to 1/1]<br>1: On<br>0: Off<br>Unevenness may appear in dot patterns or narrowly spaced horizontal lines, i.e. some areas may appear lighter or darker than others. |
| 002 | Reduction Mode On: 1200 dpi Printing |
| | Adjusts the amount of correction for uneven images generated during 1200 dpi printing.<br>[–20 to +10/**-8**/1] |
| 003 | Reduction Mode On/Off: 1200 dpi Copying |
| | Switches on/off the setting that corrects uneven images generated during 1200 dpi copying.<br>[0 to 1/1]<br>1: On<br>0: Off |
| 004 | Reduction Mode On: 1200 dpi Copying |
| | Adjusts the amount of correction of uneven image generated during 1200 dpi |

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| | copying.<br>[–20 to +10/**0**/1] |

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| 2111 | FCI Shade Detection | |
| | Allows shading detection if FCI (Fine Character Adjustment) smoothing is on. With this SP switched on, photos and painted areas are detected, and FCI is not applied in these areas. FCI is used for outputs in printer mode. | |
| 001 | Matrix Size (>600 dpi) | [0 to 128/**18**/1] |
| 002 | Threshold Value (>600 dpi) | [0 to 128/**4**/1] |
| 003 | Matrix Size (<400 dpi) | [0 to 128/**18**/1] |
| 004 | Threshold Value (<400 dpi) | [0 to 128/**4**/1] |

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| 2114* | Binary Edge Processing Parameter | |
| | Allows setting a parameter for binary edge processing for the printer application with FCI switched off. The value for this SP is enabled only when the printer is initialized. In all other cases, the data registered in the software are enabled. This SP allows adjustment of image quality if the desired effect cannot be achieved with the default settings for edge processing. However, some settings could cause defective images on white paper. | |
| 001 | Leading Edge Pixel Level (1200 dpi) | [2 to 15/**7**/1] |
| 002 | Trailing Edge Pixel Level (1200 dpi) | [2 to 15/**14**/1] |
| 003 | Continuous Pixel Level (1200 dpi) | [2 to 15/**15**/1] |
| 004 | Independent Dot Pixel Level (1200 dpi) | [2 to 15/**15**/1] |
| 005 | Leading Edge Pixel Level (600 dpi) | [2 to 15/**7**/1] |
| 006 | Trailing Edge Pixel Level (600 dpi) | [2 to 15/**15**/1] |
| 007 | Continuous Pixel Level (600 dpi) | |
| 008 | Independent Dot Pixel Level (600 dpi) | |

**Service Program Mode Tables**

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|---|---|---|
| 2115 | Main Scan Beam Pitch Adjustment | |
| | A label attached to the LD unit service part lists the correct settings. Refer to these settings when adjusting the beam pitch for LD0 to LD3. | |
| 001 | Pitch Adjustment Between LD0 and LD2 | [-100 to 100/**0**/1 µm] |
| 002 | Pitch Adjustment Between LD1 and LD3 | [-100 to 100/**0**/1 µm] |
| 003 | Pitch Adjustment Between LD0 and LD1 | [-999 to 999/**0**/1 µm] |
| 004 | Main Scan: Front Between LD0 and LD1 | [-100 to 100/**0**/1 µm] |
| 005 | Main Scan: Rear Between LD0 and LD1 | [-100 to 100/**0**/1 µm] |

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| 2201* | Development Bias Adjustment |
| 001 | Dev. Bias (Image) |
| | Adjusts the development bias for copying when process control is off<br>[100 to 800/**550**/10 V]<br>Adjust as a temporary measure to compensate for an aging drum until the old drum can be replaced. |
| 002 | Dev. Bias (ID Sensor Pattern) |
| | Adjusts the development bias used to create the ID sensor pattern. DFU<br>[100 to 800/**360**/10 V]<br>This SP and SP2201-004 must be changed together by the same amount. |
| 003 | Dev. Bias (OHP) |
| | Adjusts the development bias for copying with OHP sheets.<br>[100 to 800/**300**/10 V] |
| 004 | ID Sensor Pattern Dev. Potential |
| | Adjusts the development potential to create the ID sensor pattern. DFU<br>[140 to 380/**240**/10 V]<br>This SP and SP2201-002 must be changed together by the same amount. |

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| 005 | Vb Target Voltage Setting |
| | Sets the Vb target development bias voltage (Vb). DFU<br>[100 to 800/**550**/1 V] |

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| 2207* | Forced Toner Supply |
| 001 | Rotates the toner bottle to supply toner to the toner supply unit. Press Execute to force toner supply.<br>Use to determine if toner supply is operating correctly. If forcing toner supply with this SP does not darken the image, then toner supply is not operating correctly. |

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| 2208* | Toner Supply Mode |
| 001 | Selects the toner supply mode: Sensor Control or Image Pixel Count.<br>[0 to 1/1]<br>0: Sensor Control<br>1: Pixel Count<br>Select Image Pixel Count only if the TD sensor has failed and cannot be replaced immediately, so that the customer can use the machine. Return the setting to Sensor Control after replacing the sensor. |

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| 2209* | Toner Supply Rate |
| 001 | Adjusts the toner supply rate.<br>[50 to 2000/**850**/5 mg per sec]<br>Increasing this value reduces the time the toner supply clutch remains on. Use a lower value if the user tends to make many copies that have large areas of black. |

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| 2210* | ID Sensor Pattern Interval |
| 001 | Adjusts the time interval between making ID sensor patterns onto the drum for Vsp/Vsg detection. |

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| | [0 to 200/**10**/1]<br>Reduce the interval for copies that contain a high proportion of black. |

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| 2220* | Vref Manual Setting |
| | Adjusts the TD sensor reference voltage (Vref) manually.<br>[1 to 4/**2.5**/0.01 V]<br>Change this value after replacing the development unit with another one that already contains toner. For example, when using a development unit from another machine for test purposes, do the following:<br>▪ Check the value of SP2220 in both the machine containing the test unit and the machine that you are going to move it to.<br>▪ Install the test development unit, then input the VREF for this unit into SP2220.<br>▪ After the test, put back the old development unit, and change SP2220 back to the original value. |

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| 2223* | Vt Display |
| | Displays the current TD sensor output voltage.<br>[0 to 5 / **4** / 0.02 V] |

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| 2301* | Transfer Current Adjustment | |
| | Adjusts the current applied to the transfer belt during copying.<br>Note: If this SP is too high, toner on the paper can go back to the drum. | |
| 001 | Main: Image: Front | D062: [10 to 200/**50**/1 μA]<br>D063/D065: [10 to 200/**65**/1 μA]<br>D066: [10 to 200/**80**/1 μA] |
| 002 | Main: Image: Back | |
| 003 | By-pass Image: Front | D062/D063/D065: [10 to 200/**75**/1 μA]<br>D066: [10 to 200/**80**/1 μA] |
| 004 | Postcard (Japan Only) | [10 to 200/**165**/1 μA] |
| 005 | Paper Interval | [10 to 200/**15**/1 μA] |

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| 006 | Tab Paper | D062/D063/D065: [10 to 200/**75**/1 μA]<br>D066: [10 to 200/**80**/1 μA] |
| 007 | Thick Paper: Front | [10 to 200/**120**/1 μA] |
| 008 | OHP: Front Side | D062bd: [10 to 200/**75**/1 μA]<br>D066: [10 to 200/**80**/1 μA] |
| 009 | Tracing Paper: Front | [10 to 200/**120**/1 μA] |
| 010 | Image Leading Edge Front | D062: [10 to 200/**50**/1 μA]<br>D063/D065: [10 to 200/**65**/1 μA]<br>D066: [10 to 200/**80**/1 μA] |
| 011 | Image Trailing Edge Front | |
| 012 | Image Leading Edge Back | |
| 013 | Image Trailing Edge Back | |
| 014 | Bypass Image Leading Edge | D062/D063/D065: [10 to 200/**75**/1 μA]<br>D066: [10 to 200/**80**/1 μA] |
| 015 | Bypass Image Trailing Edge | |
| 016 | Image Leading Edge: Postcard | [10 to 200/**165**/1 μA] |
| 017 | Image Trailing Edge: Psotcard | |
| 018 | Image Leading Edge: Tab Paper | D062/D063/D065: [10 to 200/**75**/1 μA]<br>D066: [10 to 200/**80**/1 μA] |
| 019 | Image Trailing Edge: Tab Paper | |
| 020 | Image Leading Edge: Thick Paper | [10 to 200/**120**/1 μA] |
| 021 | Image Trailing Edge: Thick Paper | |
| 022 | Image Leading Edge: OHP | D062/D063/D065: [10 to 200/**75**/1 μA]<br>D066: [10 to 200/**80**/1 μA] |
| 023 | Image Trailing Edge: OHP | |
| 024 | Image Leading Edge: Tracing Paper | [10 to 200/**120**/1 μA] |
| 025 | Image Trailing Edge: Tracing Paper | |

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| 2506* | Continuous Operation Time Cleaning Setting |

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| 001 | Operation Setting |
| | Determines whether multiple copy jobs are stopped at regular intervals for: 0) Stopping and reversing the drum motor to clean the cleaning blade edge, and 1) creating an ID sensor pattern to correct toner density control.<br>[0 to 1/1]<br>0: No<br>1: Yes<br>The interval is set with SP2506-002. Use if the drum gets dirty or images get too pale or too dark during a long job. |
| 002 | Time Setting |
| | Selects the interval at which multi-copy jobs are stopped.<br>[1 to 100/**15**/1 min.] |

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| 2507* | ID Sensor Patterning During Job |
| 001 | Operation Setting |
| | Determines whether an ID sensor pattern is created during copy jobs.<br>[0 to 1/1]<br>0: Off<br>1: On |
| 002 | No. of Copies |
| | Selects the interval (number of copies) between ID sensor patterns when 1 is selected for SP2507-001<br>[0 to 10,000/**100**/1] |

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| 2602 | PTL Setting (1st /2nd Copy Side) |
| | Turns the PTL off and on. The PTL (Pre-Transfer Lamp) decreases the charge on the drum to make better separation of the paper from the drum, and prevents stripper pawl marks on the leading edges of copies.<br>**Note**:<br>▪ The PTL operates only when copying with plain paper or translucent paper. It |

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| | does not operate when copying with OHP, index sheets, or thick paper.<br>▪ If blurring occurs in images at the leading edges of copies, switch SP2602-001 off (set to "0"). | |
| 001 | ON/OFF Setting (1st Side) | Turns the PTL lamp on/off during transfer to the front side of the paper at normal speed. This setting is always off when thick paper or OHPs are fed.<br>[0 to 1/1]<br>0: Off<br>1: On<br>The timing can be adjusted with SP2602-002. |
| 002 | OFF Timing (1st Side) | Adjusts the length of the space from the leading edge where PTL quenching is applied to the front side at normal speed. For example, if you select +3, then quenching will be done 3 mm from the leading edge on the front side.<br>[-10 to 20/**3**/1 mm] |
| 003 | ON/OFF Setting (2nd Side) | Turns the PTL lamp on/off during transfer to the front side of the paper at normal speed.<br>[0 to 1/1]<br>0: Off<br>1: On |
| 004 | OFF Timing (2nd Side) | Adjusts the length of the space from the leading edge where PTL quenching is applied to the back side at normal speed. For example, if you select +3, then quenching will be done 3 mm from the leading edge on the back side.<br>[-10 to 20/**3**/1 mm] |

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| 2801* | TD Sensor Initial Setting |
| -001 | Press the EXECUTE button to do the TD sensor initial setting. This SP mode controls the voltage applied to the TD sensor to make the TD sensor output about 3.0 V.<br>When SP2967 is on, the TD sensor output is set to about 2.5 V.<br>**Note**: Execute this SP only after replacing the TD sensor or developer. |

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| -002 | TD Sensor Initial Setting Developer Lot Number Input |

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| 2803 | Charge Cleaner Start Time |
| 001 | Press EXECUTE button to clean the charge corona wire manually.<br>When copy density across the paper is uneven, clean the wire with this mode. |

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| 2804 | Charge Cleaner Operation Setting |
| 001 | Operation Mode |
| | Determines whether the charge corona wire is cleaned at regular intervals.<br>[0 to 1/1]<br>0: No<br>1: Yes<br>The time interval between cleaning is set with SP2804-002. |
| 002 | Number of Sheets |
| | Sets the interval (number of sheets printed) between charge corona wire cleanings.<br>[100 to 10,000/**5000**/100] |

| | |
|---|---|
| 2813 | Exposure Gamma Table **DFU** |
| | Is the gamma table is used when the printing test pattern is done with SP2902 003.<br>[0 to 1/1]<br>0: Gamma table used in the printing test pattern.<br>1: Forces test pattern output with SP2902 003. The write exposure gamma table is not applied. Current image mode selection or other settings are ignored. |

| | |
|---|---|
| 2901 | Humidity Control |
| 001 | 0: OFF 1:ON |
| | [0 or 1/ **0** / -] |

| | |
|---|---|
| 002 | Humidity Thresh: Trans. Bias |
| | [0 to 100 / **70** / 1%] |

| | |
|---|---|
| 2902 | Test Pattern Printing |
| 003 | Test Pattern |
| | Produces the printer test patterns. (See "Test Pattern Printing" in the Main Chapters.)<br>[0 to 26 / **0** / 1] |

| | |
|---|---|
| 2906* | TD Sensor Control Voltage and Check |
| 001 | TD Sensor Control Voltage |
| | Adjustment mode for production. DFU<br>[4.0 to 12.0/**9.7**/0.1 V] |
| 002 | Auto Adjust Set |
| | Displays the TD sensor data stored when SP2801 (TD Sensor Initial Settings) is executed.<br>[4.0 to 12.0/**9.7**/0.1 V] |

| | |
|---|---|
| 2909* | Main Scan Magnification |
| 001 | Copy |
| | Adjusts magnification in the main scan direction for copying.<br>[–2.0 to +2.0/**0**/0.1%] |

| | |
|---|---|
| 2910* | Writing Sub Scan |
| 001 | Adjusts magnification in the main scan direction for copying.<br>[–1.0 to +1.0/**0**/0.1%] |

**Service Program Mode Tables**

| | |
|---|---|
| 2912* | Drum Reverse Rotation |
| 001 | Rotation Amount |
| | Sets the length of time the drum is reversed to clean the drum cleaning blade.<br>[1 to 3/**1**/1]<br>To calculate the actual time of reverse rotation, multiply the selected value by 15 ms. |
| 002 | Rotation Interval |
| | Determines the frequency of drum reverse rotation for blade cleaning.<br>[0 to 6/**0**/1 min.] |

| | | |
|---|---|---|
| 2913* | Temperature & Humidity Display | |
| 001 | Ambient Temperature | Shows the internal temperature of the machine.<br>[-128 to 127/**0**/ 1°C] |

| | |
|---|---|
| 2920* | LD Off Check |
| | Checks if the LD turns off or on when the front door is opened. DFU<br>[0 to 1/1]<br>0: On<br>1: Off |

| | |
|---|---|
| 2930* | Transfer Idle Cleaning |
| | When resolution changes from 400 to 600 dpi, the LD writes a pattern on the drum. Toner is applied, and this must be cleaned off the belt. This SP mode determines whether bias is applied to the transfer belt cleaning bias roller at this time. DFU<br>[0 to 1/1]<br>0: Off<br>1: On<br>Switching this function on adds 3 s to the job time. |

| 2931* | Transfer Current On/Off Timing: LCT | |
|---|---|---|
| 001 | La1 (Front) | Adjusts on transfer current ON timing for front side copying.<br>[–30 to +30/**20**/1 mm] |
| 002 | La1f (Front) | Adjusts the area where the transfer is applied for the leading edge during front side copying.<br>[0 to +20/**0**/1 mm] |
| 003 | Lc1r (Front) | Adjusts the area where the transfer current is applied for the trailing edge during front side copying.<br>[0 to +20/**0**/1 mm] |
| 004 | Off Timing: Lc1 (Front) | Adjusts the transfer current OFF timing for front side copying.<br>[–30 to +30/**20**/1 mm] |
| 005 | On Timing: La2 (Back) | Adjusts on transfer current ON timing for back side copying.<br>[–30 to +30/**0**/1 mm] |
| 006 | Leading Edge: La2f (Back) | Adjusts the area where the transfer current is applied for the leading edge during back side copying.<br>[0 to +20/**0**/1 mm] |
| 007 | Trailing Edge: Lc2r (Back) | Adjusts the area where the transfer current is applied for the trailing edge during back side copying.<br>[0 to +20/**0**/1 mm] |
| 008 | On Timing: Lc2 (Back) | Adjusts the transfer current ON timing for back side copying.<br>[–30 to +30/**20**/1 mm] |
| 009 | On Timing: Thick Paper | Adjusts on transfer current ON timing for copying thick paper from the LCT.<br>[–30 to +30/**0**/1 mm] |
| 010 | Leading Edge: Thick Paper | Adjusts the area where the transfer current is applied for the leading edge during copying with thick paper from the LCT.<br>[0 to +20/**0**/1 mm] |
| 011 | Trailing Edge: Thick Paper | Adjusts the area where the transfer current is applied for the trailing edge during copying with thick paper from the LCT. |

| | | |
|---|---|---|
| | | [0 to +20/**0**/1 mm] |
| 012 | Timing: Thick Paper Lc | Adjusts the transfer current OFF timing for copying thick paper from the LCT.<br>[–30 to +30/**15**/1 mm] |
| 013 | On Timing: M-Thick | Adjusts the transfer current ON timing for copying with M-thick paper from the LCT.<br>[–30 to +30/**0**/1 mm] |
| 014 | Leading Edge: M-Thick | Adjusts the area where the transfer current is applied for the leading edge during copying with M-thick paper from the LCT.<br>[0 to +20/**0**/1 mm] |
| 015 | Trailing Edge:M-Thick | Adjusts the area where the transfer current is applied for the trailing edge during copying with M-thick paper from the LCT.<br>[0 to +20/**0**/1 mm] |
| 016 | Off Timing: M-Thick | Adjusts the transfer current OFF timing for copying with M-thick paper from the LCT.<br>[–30 to +30/**15**/1 mm] |
| 017 | On Timing: After Punch | Adjusts the transfer current ON timing for copying with punch from the LCT.<br>[–30 to +30/**20**/1 mm] |
| 018 | Leading Edge: After Punch | Adjusts the area where transfer current is applied for the leading edge during copying with punch.<br>[0 to +20/**0**/1 mm] |
| 019 | Trailing Edge: After Punch | Adjusts the area where transfer current is applied for the trailing edge during copying with punch.<br>[0 to +20/**0**/1 mm] |
| 020 | Off Timing: After Punch | Adjusts the transfer current OFF timing for copying with punch from the LCT.<br>[–30 to +30/**-16**/1 mm] |

| 2932 | Transfer Current On/Off Timing: Tray1 | |
|---|---|---|
| 001 | La1 (Front) | Adjusts on transfer current ON timing for front side copying.<br>[–30 to +30/**20**/1 mm] |
| 002 | La1f (Front) | Adjusts the area where the transfer is applied for the leading edge during front side copying.<br>[0 to +20/**0**/1 mm] |
| 003 | Lc1r (Front) | Adjusts the area where the transfer current is applied for the trailing edge during front side copying.<br>[0 to +20/**0**/1 mm] |
| 004 | Off Timing: Lc1 (Front) | Adjusts the transfer current OFF timing for front side copying.<br>[–30 to +30/**20**/1 mm] |
| 005 | On Timing: La2 (Back) | Adjusts on transfer current ON timing for back side copying.<br>[–30 to +30/**0**/1 mm] |
| 006 | Leading Edge: La2f (Back) | Adjusts the area where the transfer current is applied for the leading edge during back side copying.<br>[0 to +20/**0**/1 mm] |
| 007 | Trailing Edge: Lc2r (Back) | Adjusts the area where the transfer current is applied for the trailing edge during back side copying.<br>[0 to +20/**0**/1 mm] |
| 008 | On Timing: Lc2 (Back) | Adjusts the transfer current ON timing for back side copying.<br>[–30 to +30/**20**/1 mm] |
| 009 | On Timing: Thick Paper | Adjusts on transfer current ON timing for copying thick paper f.<br>[–30 to +30/**0**/1 mm] |
| 010 | Leading Edge: Thick Paper | Adjusts the area where the transfer current is applied for the leading edge during copying with thick paper.<br>[0 to +20/**0**/1 mm] |
| 011 | Trailing Edge: Thick Paper | Adjusts the area where the transfer current is applied for the trailing edge during copying with thick paper.. |

| | | |
|---|---|---|
| | | [0 to +20/**0**/1 mm] |
| 012 | Timing: Thick Paper Lc | Adjusts the transfer current OFF timing for copying thick paper.<br>[–30 to +30/**15**/1 mm] |
| 013 | On Timing: M-Thick | Adjusts the transfer current ON timing for copying with M-thick paper.<br>[–30 to +30/**0**/1 mm] |
| 014 | Leading Edge: M-Thick | Adjusts the area where the transfer current is applied for the leading edge during copying with M-thick paper.<br>[0 to +20/**0**/1 mm] |
| 015 | Trailing Edge:M-Thick | Adjusts the area where the transfer current is applied for the trailing edge during copying with M-thick paper.<br>[0 to +20/**0**/1 mm] |
| 016 | Off Timing: M-Thick | Adjusts the transfer current OFF timing for copying with M-thick paper.<br>[–30 to +30/**15**/1 mm] |
| 017 | On Timing: After Punch | Adjusts the transfer current ON timing for copying with punch.<br>[–30 to +30/**20**/1 mm] |
| 018 | Leading Edge: After Punch | Adjusts the area where transfer current is applied for the leading edge during copying with punch.<br>[0 to +20/**0**/1 mm] |
| 019 | Trailing Edge: After Punch | Adjusts the area where transfer current is applied for the trailing edge during copying with punch.<br>[0 to +20/**0**/1 mm] |
| 020 | Off Timing: After Punch | Adjusts the transfer current OFF timing for copying with punch.<br>[–30 to +30/**-16**/1 mm] |

| | |
|---|---|
| 2933 | Transfer Current On/Off Timing: Tray2 |

| | | |
|---|---|---|
| 001 | La1 (Front) | Adjusts on transfer current ON timing for front side copying.<br>[–30 to +30/**20**/1 mm] |
| 002 | La1f (Front) | Adjusts the area where the transfer is applied for the leading edge during front side copying.<br>[0 to +20/**0**/1 mm] |
| 003 | Lc1r (Front) | Adjusts the area where the transfer current is applied for the trailing edge during front side copying.<br>[0 to +20/**0**/1 mm] |
| 004 | Off Timing: Lc1 (Front) | Adjusts the transfer current OFF timing for front side copying.<br>[–30 to +30/**20**/1 mm] |
| 005 | On Timing: La2 (Back) | Adjusts on transfer current ON timing for back side copying.<br>[–30 to +30/**0**/1 mm] |
| 006 | Leading Edge: La2f (Back) | Adjusts the area where the transfer current is applied for the leading edge during back side copying.<br>[0 to +20/**0**/1 mm] |
| 007 | Trailing Edge: Lc2r (Back) | Adjusts the area where the transfer current is applied for the trailing edge during back side copying.<br>[0 to +20/**0**/1 mm] |
| 008 | On Timing: Lc2 (Back) | Adjusts the transfer current ON timing for back side copying.<br>[–30 to +30/**20**/1 mm] |
| 009 | On Timing: Thick Paper | Adjusts on transfer current ON timing for copying thick paper f.<br>[–30 to +30/**0**/1 mm] |
| 010 | Leading Edge: Thick Paper | Adjusts the area where the transfer current is applied for the leading edge during copying with thick paper.<br>[0 to +20/**0**/1 mm] |
| 011 | Trailing Edge: Thick Paper | Adjusts the area where the transfer current is applied for the trailing edge during copying with thick paper..<br>[0 to +20/**0**/1 mm] |

| | | |
|---|---|---|
| 012 | Timing: Thick Paper Lc | Adjusts the transfer current OFF timing for copying thick paper.<br>[–30 to +30/**15**/1 mm] |
| 013 | On Timing: M-Thick | Adjusts the transfer current ON timing for copying with M-thick paper.<br>[–30 to +30/**0**/1 mm] |
| 014 | Leading Edge: M-Thick | Adjusts the area where the transfer current is applied for the leading edge during copying with M-thick paper.<br>[0 to +20/**0**/1 mm] |
| 015 | Trailing Edge:M-Thick | Adjusts the area where the transfer current is applied for the trailing edge during copying with M-thick paper.<br>[0 to +20/**0**/1 mm] |
| 016 | Off Timing: M-Thick | Adjusts the transfer current OFF timing for copying with M-thick paper.<br>[–30 to +30/**15**/1 mm] |
| 017 | On Timing: After Punch | Adjusts the transfer current ON timing for copying with punch.<br>[–30 to +30/**20**/1 mm] |
| 018 | Leading Edge: After Punch | Adjusts the area where transfer current is applied for the leading edge during copying with punch.<br>[0 to +20/**0**/1 mm] |
| 019 | Trailing Edge: After Punch | Adjusts the area where transfer current is applied for the trailing edge during copying with punch.<br>[0 to +20/**0**/1 mm] |
| 020 | Off Timing: After Punch | Adjusts the transfer current OFF timing for copying with punch.<br>[–30 to +30/**-16**/1 mm] |

| | | |
|---|---|---|
| 2934 | Transfer Current On/Off Timing: Tray3 | |
| 001 | La1 (Front) | Adjusts on transfer current ON timing for front side copying. |

| | | |
|---|---|---|
| | | [–30 to +30/**20**/1 mm] |
| 002 | La1f (Front) | Adjusts the area where the transfer is applied for the leading edge during front side copying.<br>[0 to +20/**0**/1 mm] |
| 003 | Lc1r (Front) | Adjusts the area where the transfer current is applied for the trailing edge during front side copying.<br>[0 to +20/**0**/1 mm] |
| 004 | Off Timing: Lc1 (Front) | Adjusts the transfer current OFF timing for front side copying.<br>[–30 to +30/**20**/1 mm] |
| 005 | On Timing: La2 (Back) | Adjusts on transfer current ON timing for back side copying.<br>[–30 to +30/**0**/1 mm] |
| 006 | Leading Edge: La2f (Back) | Adjusts the area where the transfer current is applied for the leading edge during back side copying.<br>[0 to +20/**0**/1 mm] |
| 007 | Trailing Edge: Lc2r (Back) | Adjusts the area where the transfer current is applied for the trailing edge during back side copying.<br>[0 to +20/**0**/1 mm] |
| 008 | On Timing: Lc2 (Back) | Adjusts the transfer current OFF timing for back side copying.<br>[–30 to +30/**20**/1 mm] |
| 009 | On Timing: Thick Paper | Adjusts on transfer current ON timing for copying thick paper f.<br>[–30 to +30/**0**/1 mm] |
| 010 | Leading Edge: Thick Paper | Adjusts the area where the transfer current is applied for the leading edge during copying with thick paper.<br>[0 to +20/**0**/1 mm] |
| 011 | Trailing Edge: Thick Paper | Adjusts the area where the transfer current is applied for the trailing edge during copying with thick paper..<br>[0 to +20/**0**/1 mm] |

| | | |
|---|---|---|
| 012 | Timing: Thick Paper Lc | Adjusts the transfer current OFF timing for copying thick paper.<br>[–30 to +30/**15**/1 mm] |
| 013 | On Timing: M-Thick | Adjusts the transfer current ON timing for copying with M-thick paper.<br>[–30 to +30/**0**/1 mm] |
| 014 | Leading Edge: M-Thick | Adjusts the area where the transfer current is applied for the leading edge during copying with M-thick paper.<br>[0 to +20/**0**/1 mm] |
| 015 | Trailing Edge:M-Thick | Adjusts the area where the transfer current is applied for the trailing edge during copying with M-thick paper.<br>[0 to +20/**0**/1 mm] |
| 016 | Off Timing: M-Thick | Adjusts the transfer current OFF timing for copying with M-thick paper.<br>[–30 to +30/**15**/1 mm] |
| 017 | On Timing: After Punch | Adjusts the transfer current ON timing for copying with punch.<br>[–30 to +30/**20**/1 mm] |
| 018 | Leading Edge: After Punch | Adjusts the area where transfer current is applied for the leading edge during copying with punch.<br>[0 to +20/**0**/1 mm] |
| 019 | Trailing Edge: After Punch | Adjusts the area where transfer current is applied for the trailing edge during copying with punch.<br>[0 to +20/**0**/1 mm] |
| 020 | Off Timing: After Punch | Adjusts the transfer current OFF timing for copying with punch.<br>[–30 to +30/**-16**/1 mm] |

| | |
|---|---|
| 2935* | Transfer Current On/Off Timing: Tray 4 **Japan Only** |
| 001 To 020 | |

| | | |
|---|---|---|
| 2936 | Transfer Current On/Off Timing: Bypass Tray | |
| 001 | On Timing: La1 (Front) | Adjusts on transfer current ON timing for front side copying.<br>[–30 to +30/**20**/1 mm] |
| 002 | La1f (Front) | Adjusts the area where the transfer is applied for the leading edge during front side copying.<br>[0 to +20/**0**/1 mm] |
| 003 | Lc1r (Front) | Adjusts the area where the transfer current is applied for the trailing edge during front side copying.<br>[0 to +20/**0**/1 mm] |
| 004 | Off Timing: Lc1 (Front) | Adjusts the transfer current OFF timing for front side copying.<br>[–30 to +30/**20**/1 mm] |
| 005 | On Timing: La2 (Back) | Adjusts on transfer current ON timing for back side copying.<br>[–30 to +30/**0**/1 mm] |
| 006 | Leading Edge: La2f (Back) | Adjusts the area where the transfer current is applied for the leading edge during back side copying.<br>[0 to +20/**0**/1 mm] |
| 007 | Trailing Edge: Lc2r (Back) | Adjusts the area where the transfer current is applied for the trailing edge during back side copying.<br>[0 to +20/**0**/1 mm] |
| 008 | On Timing: Lc2 (Back) | Adjusts the transfer current ON timing for back side copying.<br>[–30 to +30/**20**/1 mm] |
| 009 | On Timing: Thick Paper | Adjusts on transfer current ON timing for copying thick paper f.<br>[–30 to +30/**0**/1 mm] |
| 010 | Leading Edge: Thick Paper | Adjusts the area where the transfer current is applied for the leading edge during copying with thick paper.<br>[0 to +20/**0**/1 mm] |
| 011 | Trailing Edge: | Adjusts the area where the transfer current is applied for the |

| | | |
|---|---|---|
| | Thick Paper | trailing edge during copying with thick paper..<br>[0 to +20/**0**/1 mm] |
| 012 | Off Timing: Thick Paper Lc | Adjusts the transfer current OFF timing for copying thick paper.<br>[–30 to +30/**20**/1 mm] |
| 013 | On Timing: OHP | Adjusts on transfer current ON timing for copying with OHP.<br>[–30 to +30/**0**/1 mm] |
| 014 | Leading Edge: OHP | Adjusts the area where the transfer current is applied for the leading edge during copying with OHP.<br>[0 to +20/**0**/1 mm] |
| 015 | Trailing Edge: OHP | Adjusts the area where the transfer current is applied for the trailing edge during copying with OHP.<br>[0 to +20/**0**/1 mm] |
| 016 | Off Timing: OHP | Adjusts the transfer current OFF timing for copying with OHP.<br>[–30 to +30/**20**/1 mm] |
| 017 | On Timing: M-Thick | Adjusts the transfer current ON timing for copying with M-thick paper.<br>[–30 to +30/**0**/1 mm] |
| 018 | Leading Edge: M-Thick | Adjusts the area where the transfer current is applied for the leading edge during copying with M-thick paper.<br>[0 to +20/**0**/1 mm] |
| 019 | Trailing Edge: M-Thick | Adjusts the area where the transfer current is applied for the trailing edge during copying with M-thick paper.<br>[0 to +20/**0**/1 mm] |
| 020 | Off Timing: M-Thick | Adjusts the transfer current OFF timing for copying with M-thick paper.<br>[–30 to +30/**15**/1 mm] |
| 021 | On Timing: After Punch | Adjusts the transfer current ON timing for copying with punch. |

| | | |
|---|---|---|
| | | [–30 to +30/**20**/1 mm] |
| 022 | Leading Edge: After Punch | Adjusts the area where transfer current is applied for the leading edge during copying with punch.<br>[0 to +20/**0**/1 mm] |
| 023 | Trailing Edge: After Punch | Adjusts the area where transfer current is applied for the trailing edge during copying with punch.<br>[0 to +20/**0**/1 mm] |
| 024 | Off Timing: After Punch | Adjusts the transfer current OFF timing for copying with punch.<br>[–30 to +30/**-16**/1 mm] |

| | |
|---|---|
| 2940* | Reface Mode |
| | Determines if a blade bend prevention pattern is made when the ID sensor pattern is made. This setting controls the pattern count. **DFU**<br>[0 to 100/**0**/1]<br>Increase the setting if the rotation of the drum is not smooth, that is, when drum rotation is making noise. |

| | | |
|---|---|---|
| 2950 | Vh Pattern Create | Vh Pattern Creation Setting **DFU** |
| 001 | Exposure Level | [0 to 15/**7**/1] |
| 002 | Offset Light Amount | [-100 to 0/**-45**/1] |

| | |
|---|---|
| 2960 | Process Interval Additional Time. **DFU** |
| | [0 to 7/**0**/1 sec] |

| | |
|---|---|
| 2961 | Developer Adjust Mode **DFU** |

| | |
|---|---|
| 2962 | Automatic Adjustment of Drum Conditions |

| | |
|---|---|
| | Push [Execute] to execute the process control cycle manually.<br>Note: This SP executes only if SP3901 is enabled. |

| | |
|---|---|
| 2963 | Installation Mode |
| | Use the keyboard display to enter the lot number of the developer. (The lot number is embossed on the top edge of the developer pack.)<br>Press "Execute" to initialize the developer and force toner supply to the toner hopper at machine installation.<br>**Important**: After you replace developer in a machine that has been already installed, do not use SP2963 to initialize the developer. Use SP2801 (TD Sensor Initial Setting) to initialize the TD sensor. |
| 001 | Execute |
| 002 | Developer Lot Number Input |

| | |
|---|---|
| 2964* | Transfer Cleaning Blade Forming |
| 001 | Pattern Interval Setting |
| | Selects the interval for application of a strip of toner across drum and transfer belt to prevent the drum cleaning blade and belt cleaning blade from sticking and bending against the drum or belt.<br>[0 to 200/**0**/1] **DFU**<br>If set to zero, then no pattern is created. |
| 002 | Pattern Light Amount Setting |
| | Adjusts the intensity of light that is used to create the blade protection pattern.<br>[0 to 4/**2**/1] **DFU** |
| 003 | Transfer Current On/Off Setting |
| | Determines whether transfer current is switched on or off while the blade protection pattern is created. DFU<br>Sets Off, toner is applied to the entire cleaning area and drum cleaning blade.<br>[0 to 1/1]<br>0: Off |

| | |
|---|---|
| | 1: On |

| | |
|---|---|
| 2966* | Drum Conditions: Periodic Adjustment Interval Setting |
| 002 | Sets the time interval between automatic adjustments.<br>[1 to 24/**24**/1 hour] |

| | |
|---|---|
| 2967* | Developer Density Adjustment Mode |
| | Determines whether the amount of toner is checked during auto process control with only the TD sensor. With this feature on, the machine uses the TD sensor only.<br>[0 to 1/1]<br>0: Off<br>1: On<br>During auto process control execution after the main switch is turned on, the toner amount in the development unit is normally checked and adjusted using the ID sensor. However, in some environments, such as where there could be traces ammonia in the air, copies could appear dirty or too dark because the ID sensor reading is not reliable. |

| | |
|---|---|
| 2968 | Toner Exit Mode |
| | Press Execute to force used toner into the toner collection bottle. The moving components of the cleaning and toner collection areas will rotate for about 60 sec. with the transfer belt released. |

| | | |
|---|---|---|
| 2969* | Toner Bottle Revolution | |
| 001 | Copy Count Setting | Sets the standard number of copies by using the number of toner bottle rotations. **DFU**<br>[50 to 500/**100**/1] |
| 002 | Count Reset | Press "Execute" to reset the toner bottle rotation count. **DFU** |

| | | |
|---|---|---|
| 003 | Copy Count Display 1 | Used to check the number of toner bottle rotations.<br>[0 to 0xFFFF/**0**/0] |

| | |
|---|---|
| 2970 | Transfer Belt Resistance: Display **DFU** |
| | [0 to 0xFFFF/**0**/0 Mohm] |

| | | |
|---|---|---|
| 2971 | Trans. Interval Output **DFU** | |
| 001 | Voltage | [0 to 0xFFFF/**0**/0 V] |
| 002 | Current | [0 to 0xFFFF/**0**/0 μA] |

| | |
|---|---|
| 2972* | Toner Bottle Cool. Fan Drive Control |
| 001 | Switches fan control On/Off.<br>[0 to 1/1]<br>0: Off. The toner bottle fan switches off when the machine's operation switch is turned off and when the machine enters the night mode.<br>1: On: Toner bottle fan remains on.<br>Switch on in an extremely hot environment to prevent the toner from overheating and clumping. |

## *SP3xxx Processing*

| | |
|---|---|
| 3001* | ID Sensor Initial Setting |
| 001 | ID Sensor PWM Setting |
| | Recovers the machine when an SC is logged because the ID Sensor Initial Setting is not done after doing an NVRAM Clear or replacing the NVRAM. Reset this SP to the factory setting in this case.<br>[0 to 255/**70**/1] |
| 002 | ID Sensor Initialization |

| | |
|---|---|
| | Performs the ID sensor initial setting. The ID sensor output for the bare drum (VSG) is adjusted to 4.0 ± 0.2V.<br>Press "Execute".<br>This SP mode should be performed after:<br>(1) Replacing or cleaning the ID sensor, (2) Replacing the NVRAM, (3) Clearing NVRAM, (4) Replacing the BICU board. |

| | |
|---|---|
| 3103* | ID Sensor Output Display |
| 001 | Vsg |
| | Displays the current value of the ID sensor output after checking the bare drum surface.<br>[0 to 5/**0**/0.01 V] |
| 002 | Vsp |
| | Displays the current value of the ID sensor output after checking the ID sensor pattern image.<br>[0 to 5/**0**/0.01 V] |
| 003 | Vpdp |
| | Displays the current value of the ID sensor output immediately after Vsp is output when the charge potential drops. This reading is used to test and determine characteristics for design.<br>[0 to 5/**0**/0.01 V]<br>**Note**: If the ID sensor output is abnormal, an SC is logged and the displays change:<br>▪ SC350-01 logged: Vsp/Vsg/Vsdp = 0.00/0.00/0.00<br>▪ SC350-02 logged: Vsp/Vsg/Vsdp = 5.00/5.00/5.00<br>▪ SC350-03 logged: Vsp/Vsg/Vsdp = 0.01/0.01/0.01 |

| | |
|---|---|
| 3901* | Auto Process Control On/Off Setting |
| | Determines whether the machine checks and corrects the drum potential (Vd) |

| | |
|---|---|
| | and LD power when the fusing temperature is lower than 100°C at power-on.<br>[0 to 1/**1**/1]<br>0: Off<br>1: On<br>This setting attempts to change the Vd setting consistent with the OPC, the charge corona unit, and environment to improve the reliability of the system. |

| | |
|---|---|
| 3902* | Drum Condition Display |
| 001 | Auto Process Control On/Off |
| | Displays whether auto process control is switched on or off (0:Off, 1:On)<br>When auto processing control is turned on, displays only when the potential sensor is calibrated correctly. Auto process control is not executed when this SP is switched off.<br>[0 to 1/**1**/1]<br>0: Off<br>1: On |
| 002 | Vd |
| | Displays drum dark potential, the standard potential, electrical potential of the black areas after exposure.<br>[100 to 970/**800**/1] |
| 003 | Vh |
| | Displays standard halftone drum potential, used for laser power adjustment.<br>[100 to 500/**300**/1] |
| 004 | Vg |
| | Displays the charge grid voltage resulting from the latest Vd adjustment.<br>[0 to 0xFFFF/**0**/0] |
| 005 | LD Level |
| | Displays the LD power correction value as a result of the latest Vh adjustment.<br>[-127 to 127/**0**/0] |

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| 006 | ID Sensor Pattern Potential |
| | Displays Vid, the latest drum surface voltage measured on the ID sensor pattern.<br>[0 to 0xFFFF/**0**/0] |
| 007 | Vql |
| | Displays the drum potential after quenching.<br>[0 to 0xFFFF/**0**/0] |
| 008 | Vl |
| | Shows the standard electrical potential of white areas on the drum after exposure.<br>[-32767 to 32768/**0**/0] |

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| 3903* | Drum Rotation Time Extension Mode |
| 001 | (0:OFF/1:ON) |
| | Turns on the drum rotation mode. This increases the time that the drum turns freely after the machine is turned on. After this function is turned on with this SP, it will be enabled only when SP3904 001 is set to "2". If SP3904 001 is set to "0" or "1", the extra drum rotation mode will not be enabled.<br>[0 to 1/1]<br>0: Extra drum rotation mode is off.<br>1: After auto process control, the drum continues to turn until the fusing unit gets to its operation temperature. Use this setting to decrease out-of-focus copy images when the machine is used immediately after power-on. |
| 002 | Drum Rotation Time |
| | Sets the amount of time the drum turns in the drum rotation mode before the first copy after the machine is turned on. SP3903-001 must be on or this setting has no effect.<br>[120 to 600/**240**/1] |

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| 3904 | Warm Up Short Mode |

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| | Controls when corona wire cleaning is done to adjust the length of time that is necessary for startup.<br>[0 to 2/**0**/1]<br>0: Charge corona wire not cleaned when the machine is turned on.<br>Warmup Time: 30 sec. (Short Process Control is done)<br>1: Charge corona wire cleaned only when the machine is turned on.<br>Warmup Time: 30 sec. + 40 sec. (for cleaning) = 70 sec. (Short Process Control is done)<br>2: Normal startup procedure at power on:<br>Warmup Time: 240 sec. (Full process control is done)<br>▪ Potential sensor calibrated<br>▪ Drum starts to turn when fusing unit gets to the warmup temperature (not done during Short Process Control)<br>▪ Potential sensor readings are used to adjust development bias, grid voltage, laser diode.<br>▪ ID sensor calibrated (not done during Short Process Control)<br>▪ TD sensor calibrated (not done during Short Process Control) |

## *SP4xxx Scanner*

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|---|---|
| 4008* | Sub Scan Magnification Adj |
| | Fine adjusts the magnification in the sub scan direction for scanning by changing the speed of the scanner motor.<br>[–1.0 to +1.0/0.1 %]<br>Setting a lower value reduces the speed of the motor and lengthens the image in the sub scan direction (direction of paper feed).<br>Setting a higher value increases the speed of the motor speed and shortens the image in the sub scan direction. |

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| 4010* | Sub Scan Registration Adj |
| | Adjust the registration of the leading edge for scanning in the sub scan direction.<br>[-3.0 to +3.0/0.1mm]<br>This setting ensures that the point where the original strikes the registration roller matches the point where the F-GATE signal will trigger the start of scanning in the |

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| | main scan direction.<br>Setting a larger value shifts the image away from the leading edge, and a smaller value shifts the image toward the leading edge. |

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| 4011* | Scanner Main Scan Registration Adj |
| | Adjusts the side-to-side registration for scanning in the main scan direction across the page.<br>[–2.5 to 2.5/0.1mm]<br>Setting a negative value shifts the image toward the left edge, and setting a positive value shifts the image toward the right edge. |

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|---|---|---|
| 4012* | Set Scale Mask | |
| | These settings adjust the margins (erase margins) of the scanned area on the sheet. The leading, trailing, right, and left margins can be set independently. | |
| 001 | Book: Sub Scan: Leading Edge | [0 to 3/0.1 mm] |
| 002 | Book: Sub Scan: Trailing Edge | |
| 003 | Book: Main Scan: Leading Edge (Rear) | |
| 004 | Book: Main Scan: Trailing Edge (Front) | |
| 005 | ADF: Sub Scan: Leading Edge | |
| 007 | ADF: Main Scan: Leading Edge (Rear) | |
| 008 | ADF: Main Scan: Trailing Edge (Front) | |

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| 4013 | Scanner Free Run | |
| | Switches on/off a scanner free run. The scanning area is A3.<br>Press "On" or "Off". | |
| 001 | Book Mode: Lamp Off | Performs a scanner free run with the exposure lamp off. |
| 002 | Book Mode: Lamp On | Performs a scanner free run with the exposure lamp on. |

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| 4014* | Scan |
| 001 | Execute 1 scan with HP detection On. |

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| 4020 | DF Dust Check |
| | This feature checks the ADF exposure glass for dust that can cause black lines in copies. If dust is detected, a message is displayed, but the process does not stop. |
| 001 | Dust Detect: On/Off: Front |
| | Issues a warning if there is dust on the narrow scanning glass of the ADF when the original size is detected before a job starts. This function can detect dust on the white plate above the scanning glass, as well as dust on the glass. Sensitivity of the level of detection is adjusted with SP4020-002.<br>[0 to 1/1]<br>0: Off. No dust warning.<br>1: On. Dust warning. This warning does not stop the job.<br>**Note:** Before switching this setting on, clean the ADF scanning glass and the white plate above the scanning glass. |
| 002 | Detect Level: Front |
| | Adjusts the sensitivity for dust detection on the ADF scanning glass. This SP is available only after SP4020-001 is switched on.<br>[0 to 8/1]<br>▪ If you see black streaks in copies when no warning has been issued, raise the setting to increase the level of sensitivity.<br>▪ If warnings are issued when you see no black streaks in copies, lower the setting.<br>▪ Dust that triggers a warning could move be removed from the glass by the originals in the feed path. If the dust is removed by passing originals, this is not detected and the warning remains on. |
| 003 | Correction Level: Front |
| | Sets the level for vertical line correction (the black vertical lines caused by dust on the ADF exposure glass). |

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| | [0 to 7/1]<br>0: No vertical line correction.<br>1-7: Enables and sets the level for vertical line correction. If you select a higher number, this can decrease the unwanted lines caused by dust. But, it can also erase thin vertical lines of the original. |
| 011 | Detect Level: Rear |
| | Adjusts the sensitivity for dust detection on the ADF scanning glass. This SP is available only after SP4020-001 is switched on.<br>[0 to 1/1]<br>▪ If you see black streaks in copies when no warning has been issued, raise the setting to increase the level of sensitivity.<br>▪ If warnings are issued when you see no black streaks in copies, lower the setting.<br>Dust that triggers a warning could move be removed from the glass by the originals in the feed path. If the dust is removed by passing originals, this is not detected and the warning remains on. |
| 012 | Correction Level: Rear |
| | Sets the level for vertical line correction (the black vertical lines caused by dust on the ADF exposure glass).<br>[0 to 8/1]<br>0: No vertical line correction.<br>1-7: Enables and sets the level for vertical line correction. If you select a higher number, this can decrease the unwanted lines caused by dust. But, it can also erase thin vertical lines of the original. |

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|---|---|
| 4301 | Operation Check APS Sensor |
| | Displays the APS sensor output signals when an original is placed on the exposure glass. If a non-standard size is placed on the glass, asterisks (*) are displayed. |

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| 4303* | Set Minimum Size for APS |

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| | Selects whether or not the copier determines that the original is A5/HLT size when the APS sensor does not detect the size.<br>[0 to 1/1]<br>0: Not detected<br>1: A5 SEF (5 1/2" x 8 1/2")<br>If "1" is selected, paper sizes that cannot be detected by the APS sensors are detected as A5 SEF. If "0" is selected, "Cannot detect original size" will be shown. |

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| 4305 | 8K/16K Detection |
| | Changes APS size detection<br>[0 to 3 / 0 / 1]<br>0 : Normal<br>1 : A4-LEF LT-SEF<br>If the paper is LEF, detects A4, if SEF detects LT<br>2 : LT-LEF A4 SEF<br>If paper is LEF, detects LT, if SEF detects A4.<br>3: 8-kai, 16-kai<br>▪ A3, B4 > 8-kai SEF<br>▪ A4 SEF, B5 SEF, A5 SEF > 16-kai SEF<br>▪ A4 LEF, B5 LEF, A5 LEF > 16-kai LEF |

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|---|---|---|
| 4400 | Original Edge Mask Setting | |
| | This SP sets the mask area to remove shadows when scanning originals from the exposure glass in Book mode.<br>**Note:** "LE" denotes "leading edge" and "TE" denotes "trailing edge". | |
| 001 | Book:Sub Scan:Leading Edge | [0 to 3/0/0.1 mm] |
| 002 | Book:Sub Scan:Trailing Edge | |
| 003 | Book:Main Scan:Leading Edge (Rear) | |
| 004 | Book:Main Scan:Trailing Edge (Front) | |
| 005 | ADF: Sub Scan: Leading Edge | [0 to 3/2/0.1 mm] |

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|---|---|---|
| 007 | ADF: Main Scan: Leading Edge (Rear) | [0 to 3/0/0.1 mm] |
| 008 | ADF: Main Scan: Trailing Edge (Front) | |

| 4417 | IPU Test Pattern Setting | |
|---|---|---|
| 001 | 0 | Scanner Data |
| | 1 | 256-Gradation: Main Scan A |
| | 2 | 256-Gradation: Main Scan B |
| | 3 | 256-Gradation: Main Scan C |
| | 4 | 256-Gradation: Main Scan D |
| | 5 | 256-Gradation: Sub Scan |
| | 6 | Small Grid Pattern |
| | 7 | Slanted Grid Pattern |
| | 8 | 256 Gradations: K |
| | 9 | 16-Step Check Pattern |
| | 10 | Gray Patch 1: 16-Step |
| | 11 | Gray Patch 2: 16-Step |
| | 12 | Gray Patch: 64-Step |
| | 13 | Large Grid |
| | 14 | Uneven Density Check |
| | 15 | Banding Check 1 |
| | 16 | Banding Check 2 |
| | 17 | Overall Coverage |
| | 18 | Shading Check |
| | 19 | Text Check |

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|---|---|---|
| | 20 | Scan Image + Grid B |
| | 21 | Scan Image + Black Grade B |
| | 22 | Scan Image + Density Uneven C |
| | 23 | Scan Image + Slanted Grid C |
| | 24 | Scan Image + Slanted Grid D |
| | 25 | 18-Level Grayscale: Text |
| | 26 | 18-Level Grayscale: Photo |
| | 27 | 256-Level Grayscale: Text |
| | 28 | 256-Level Grayscale: Photo |

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|---|---|
| 4429 | Select Copy Data Security |
| 001 | Copying<br>[0 to 3/ **3** / 1] |
| 002 | Scanning<br>[0 to 3/ **3** / 1] |
| 003 | Fax Operation<br>[0 to 3/ **3** / 1] |

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|---|---|---|
| 4460 | Digital AE | |
| | This SP sets the lower limit and level for background removal when background removal is selected with a scanner application. | |
| 001 | Low Limit Value | [0 to 1023/**392**/1] |
| 002 | Background level | [0 to 1023/**972**/1] |

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|---|---|
| 4540 | Print Coverage Correction |
| 001 | RY Phase: Option |

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|---|---|
| | [0 to 255/ 0 / 1] |
| 002 | RY Phase: R<br>[0 to 255/ 0 / 1] |
| 003 | RY Phase: G<br>[0 to 255/ 0 / 1] |
| 004 | RY Phase: B<br>[0 to 255/ 0 / 1] |
| 005 | YR Phase: Option<br>[0 to 255/ 0 / 1] |
| 006 | YR Phase: R<br>[0 to 255/ 0 / 1] |
| 007 | YR Phase: G<br>[0 to 255/ 0 / 1] |
| 008 | YR Phase: B<br>[0 to 255/ 0 / 1] |
| 009 | YG Phase: Option<br>[0 to 255/ 0 / 1] |
| 010 | YG Phase: R<br>[0 to 255/ 0 / 1] |
| 011 | YG Phase: G<br>[0 to 255/ 0 / 1] |
| 012 | YG Phase: B<br>[0 to 255/ 0 / 1] |
| 013 | GY Phase: Option<br>[0 to 255/ 0 / 1] |
| 014 | GY Phase: R<br>[0 to 255/ 0 / 1] |
| 015 | GY Phase: G |

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|---|---|
| | [0 to 255/ 0 / 1] |
| 016 | GY Phase: B<br>[0 to 255/ 0 / 1] |
| 017 | GC Phase: Option<br>[0 to 255/ 0 / 1] |
| 018 | GC Phase: R<br>[0 to 255/ 0 / 1] |
| 019 | GC Phase: G<br>[0 to 255/ 0 / 1] |
| 020 | GC Phase: B<br>[0 to 255/ 0 / 1] |
| 021 | CG Phase: Option<br>[0 to 255/ 0 / 1] |
| 022 | CG Phase: R<br>[0 to 255/ 0 / 1] |
| 023 | CG Phase: G<br>[0 to 255/ 0 / 1] |
| 024 | CG Phase: B<br>[0 to 255/ 0 / 1] |
| 025 | CB Phase: Option<br>[0 to 255/ 0 / 1] |
| 026 | CB Phase: R<br>[0 to 255/ 0 / 1] |
| 027 | CB Phase: G<br>[0 to 255/ 0 / 1] |
| 028 | CB Phase: B<br>[0 to 255/ 0 / 1] |
| 029 | BC Phase: Option |

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|---|---|
| | [0 to 255/ 0 / 1] |
| 030 | BC Phase: R<br>[0 to 255/ 0 / 1] |
| 031 | BC Phase: G<br>[0 to 255/ 0 / 1] |
| 032 | BC Phase: B<br>[0CBo 255/ 0 / 1] |
| 033 | BM Phase: Option<br>[0 to 255/ 0 / 1] |
| 034 | BM Phase: R<br>[0 to 255/ 0 / 1] |
| 035 | BM Phase: G<br>[0 to 255/ 0 / 1] |
| 036 | BM Phase: B<br>[0 to 255/ 0 / 1] |
| 037 | MB Phase: Option<br>[0 to 255/ 0 / 1] |
| 038 | MB Phase: R<br>[0 to 255/ 0 / 1] |
| 039 | MB Phase: G<br>[0 to 255/ 0 / 1] |
| 040 | MB Phase: B<br>[0 to 255/ 0 / 1] |
| 041 | MR Phase: Option<br>[0 to 255/ 0 / 1] |
| 042 | MR Phase: R<br>[0 to 255/ 0 / 1] |
| 043 | MR Phase: G |

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|---|---|
| | [0 to 255/ 0 / 1] |
| 044 | MR Phase: B<br>[0 to 255/ 0 / 1] |
| 045 | RM Phase: Option<br>[0 to 255/ 0 / 1] |
| 046 | RM Phase: R<br>[0 to 255/ 0 / 1] |
| 047 | RM Phase: G<br>[0 to 255/ 0 / 1] |
| 048 | RM Phase: B<br>[0 to 255/ 0 / 1] |

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|---|---|
| 4550 | Scanning: Text/Drawing |
| 4551 | Scanning: Text |
| 4552 | Scanning: Test Dropout Color |
| 4553 | Scanning: Text/Photo |
| 4554 | Scanning: Photo |
| 4565 | Scanning: Grayscale |
| 4570 | Scanning: Color Text/Photo |
| 4571 | Scanning: Color Gloss Photo |
| 4572 | Scanning: Auto Color |
| 005 | MTF Level: 0-15 (0:OFF, 15:High) |
| | Sets the MTF level (Modulation Transfer Function) designed to improve image contrast. Set higher for stronger effect, lower for weaker effect.<br>[0 to 15/8/1] |
| 006 | Smoothing Level: 0-7 (0:Low, 7:High) |

| | |
|---|---|
| | Use to remove "jaggies" if they appear. Set higher for smoother.<br>[0 to 7/4/1] |
| 007 | Brightness: 1-255 |
| | Set higher for darker, set lower for lighter.<br>[1 to 255/128/1] |
| 008 | Contrast: 1-255 |
| | Set higher for more contrast, set lower for less contrast.<br>[1 to 255/128/1] |
| 009 | Independent Dot Erase: 0-7 (0:Low, 7 High) |
| | This SP sets the level for removing dots when a color original is scanned with a scanner software application. The higher the setting, the greater the effect applied for removing background dots.<br>[0 to 7/0/1] |

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|---|---|
| 4580 | FAX Application: Text/Chart |
| 4581 | FAX Application: Text |
| 4582 | FAX Application: Text/Photo |
| 4583 | FAX Application: Photo |
| 4584 | FAX Application: Original 1 |
| 4585 | FAX Application: Original 2 |
| 005 | MTF Level: 0-15 (0:OFF, 15:High) |
| | Sets the MTF level (Modulation Transfer Function) designed to improve image contrast. Set higher for stronger effect, lower for weaker effect.<br>[0 to 15/8/1] |
| 006 | Smoothing Level: 0-7 (0:Low, 7:High) |
| | Use to remove "jaggies" if they appear. Set higher for smoother.<br>[0 to 7/4/1] |

| | |
|---|---|
| 007 | Brightness: 1-255 |
| | Set higher for darker, set lower for lighter.<br>[1 to 255/128/1] |
| 008 | Contrast: 1-255 |
| | Set higher for more contrast, set lower for less contrast.<br>[1 to 255/128/1] |
| 009 | Independent Dot Erase: 0-7 (0:Low, 7 High) |
| | This SP sets the level for removing dots when a color original is scanned with a scanner software application. The higher the setting, the greater the effect applied for removing background dots.<br>[0 to 7/0/1] |
| 010 | Texture Erase: 0-2 |
| | [0 to 2/0/1] |

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|---|---|
| 4600* | Display the ID of ASIC |
| 001 | Displays the VSBCNT ID code confirmed by reading the SBU after the SBU adjusts automatically at power on.<br>[0 to FFh/1] |
| 002 | Displays the DAGL_L ID code confirmed by reading the SBU after the SBU adjusts automatically at power on.<br>[0 to FFh/1] |
| 003 | Displays the DAGL_F ID code confirmed by reading the SBU after the SBU adjusts automatically at power on.<br>[0 to FFh/1] |

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|---|---|
| 4609* | Gray Balance Adj Value: R **DFU** |
| 001 | Displays the reference voltage for Red adjusted by gray balance adjustment. |
| 4610* | Gray Balance Adj Value: G **DFU** |

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|---|---|
| 001 | Displays the reference voltage for Green adjusted by gray balance adjustment. |
| 4611 | Gray Balance Adj Value: B **DFU** |
| 001 | Displays the reference voltage for Blue adjusted by gray balance adjustment. |

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|---|---|
| 4615 | Gray Balance Adj Value: R (Factory Setting) **DFU** |
| 001 | Displays the reference voltage for Red adjusted at factory. |
| 4616 | Gray Balance Adj Value: G (Factory Setting) **DFU** |
| 001 | Displays the reference voltage for Green adjusted at factory. |
| 4617 | Gray Balance Adj Value: B (Factory Setting) **DFU** |
| 001 | Displays the reference voltage for Blue adjusted at factory. |

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|---|---|
| 4628 | Gain Range Adj Value: R **DFU** |
| 001 | R FC:F:R |
| 003 | R FC:L:R |
| 005 | R BK:F:R |
| 007 | R BK:L:R |

| | |
|---|---|
| 4629 | Gain Range Adj Value: G **DFU** |
| 001 | R FC:F:G |
| 003 | R FC:L:G |
| 005 | R BK:F:G |
| 007 | R BK:L:G |

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|---|---|
| 4630 | Gain Range Adj Value: B **DFU** |
| 001 | R FC:F:B |

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|---|---|
| 003 | R FC:L:B |
| 005 | R BK:F:B |
| 007 | R BK:L:B |

| | |
|---|---|
| 4631 | Gain Adj Value R **DFU** |
| 001 | R FC:F:RE |
| 002 | R FC:F:RO |
| 003 | R FC:L:RE |
| 004 | R FC:L:RO |
| 005 | R BK:F:RE |
| 006 | R BK:F:RO |
| 007 | R BK:L:RE |
| 008 | R BK:L:RO |

| | |
|---|---|
| 4632 | Gain Adj Value G **DFU** |
| 001 | R FC:F:GE |
| 002 | R FC:F:GO |
| 003 | R FC:L:GE |
| 004 | R FC:L:GO |
| 005 | R BK:F:GE |
| 006 | R BK:F:GO |
| 007 | R BK:L:GE |
| 008 | R BK:L:GO |

| 4633 | Gain Adj Value B **DFU** |
|---|---|
| 001 | R FC:F:BE |
| 002 | R FC:F:BO |
| 003 | R FC:L:BE |
| 004 | R FC:L:BO |
| 005 | R BK:F:BE |
| 006 | R BK:F:BO |
| 007 | R BK:L:BE |
| 008 | R BK:L:BO |

| 4641 | Loop Number: White Level **DFU** |
|---|---|
| 001 | FC |
| 002 | BK |

| 4646 | Error Flag Auto – Adj Scanner |
|---|---|
| 001 | Gain1:First |
| | Displays the eroor flag for the gain 1 first data.<br>0: No error, 1: Error<br>b11: GAIN_ERR1_BK_F_BO<br>b10: GAIN_ERR1_BK_F_BE<br>b 9: GAIN_ERR1_FC_F_BO<br>b 8: GAIN_ERR1_FC_F_BE<br>b 7: GAIN_ERR1_BK_F_GO<br>b 6: GAIN_ERR1_BK_F_GE |
| 002 | Gain1:Last |
| | Displays the eroor flag for the gain 1 last data.<br>0: No error, 1: Error |

| | |
|---|---|
| | b11: GAIN_ERR1_BK_L_BO<br>b10: GAIN_ERR1_BK_ L _BE<br>b 9: GAIN_ERR1_FC_ L _BO<br>b 8: GAIN_ERR1_FC_ L _BE<br>b 7: GAIN_ERR1_BK_ L _GO<br>b 6: GAIN_ERR1_BK_ L _GE |
| 003 | Gain2:First |
| | Displays the eroor flag for the gain 1 first data.<br>0: No error, 1: Error<br>b11: GAIN_ERR2_BK_F_BO<br>b10: GAIN_ERR2_BK_F_BE<br>b 9: GAIN_ERR2_FC_F_BO<br>b 8: GAIN_ERR2_FC_F_BE<br>b 7: GAIN_ERR2_BK_F_GO<br>b 6: GAIN_ERR2_BK_F_GE |
| 004 | Gain2:Last |
| | Displays the eroor flag for the gain 1 last data.<br>0: No error, 1: Error<br>b11: GAIN_ERR2_BK_L_BO<br>b10: GAIN_ERR2_BK_ L _BE<br>b 9: GAIN_ERR2_FC_ L _BO<br>b 8: GAIN_ERR2_FC_ L _BE<br>b 7: GAIN_ERR2_BK_ L _GO<br>b 6: GAIN_ERR2_BK_ L _GE |
| 005 | Black Level :First :FC |
| | Displays the eroor flag for the first full color data at the black level adjustment.<br>0: No error, 1: Error<br>b11: BLACK_ERR_FC_F_BOO<br>b10: BLACK_ERR_FC_F_BEO<br>b 9: BLACK_ERR_FC_F_BOE<br>b 8: BLACK_ERR_FC_F_BEE<br>b 7: BLACK_ERR_FC_F_GOO |

| | |
|---|---|
| | b 6: BLACK_ERR_FC_F_GEO |
| 006 | Black Level :Last :FC |
| | Displays the eroor flag for the last full color data at the black level adjustment.<br>0: No error, 1: Error<br>b11: BLACK_ERR_FC_L_BOO<br>b10: BLACK_ERR_FC_ L _BEO<br>b 9: BLACK_ERR_FC_ L _BOE<br>b 8: BLACK_ERR_FC_ L _BEE<br>b 7: BLACK_ERR_FC_ L _GOO<br>b 6: BLACK_ERR_FC_ L _GEO |
| 007 | Black Level :First :BK |
| | Displays the eroor flag for first B/W data at the black level adjustment.<br>0: No error, 1: Error<br>b11: BLACK_ERR_BK_F_BOO<br>b10: BLACK_ERR_BK_F_BEO<br>b 9: BLACK_ERR_BK_F_BOE<br>b 8: BLACK_ERR_BK_F_BEE<br>b 7: BLACK_ERR_BK_F_GOO<br>b 6: BLACK_ERR_BK_F_GEO |
| 008 | Black Level :Last :BK |
| | Displays the eroor flag for last B/W data at the black level adjustment.<br>0: No error, 1: Error<br>b11: BLACK_ERR_BK_L_BOO<br>b10: BLACK_ERR_BK_ L _BEO<br>b 9: BLACK_ERR_BK_ L _BOE<br>b 8: BLACK_ERR_BK_ L _BEE<br>b 7: BLACK_ERR_BK_ L _GOO<br>b 6: BLACK_ERR_BK_L_GEO |

| | |
|---|---|
| 4647 | [Read Hard Error] |
| 001 | Power-ON |

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|---|---|
| | Displays the result of the SBU connection check.<br>[0 to 35535 / **0** / 1digit /step]<br>0: OK, Other: SBU connection check failure<br>If the SBU connection check fails, SC144 occurs. |

| 4677 | Gain Range Adj Value **DFU** |
|---|---|
| 001 | FC:F:R:Factory Setting |
| 003 | FC:L:R:Factory Setting |
| 005 | BK:F:R:Factory Setting |
| 007 | BK:L:R:Factory Setting |

| 4678 | Gain Range Adj Value **DFU** |
|---|---|
| 001 | FC:F:G:Factory Setting |
| 003 | FC:L:G:Factory Setting |
| 005 | BK:F:G:Factory Setting |
| 007 | BK:L:G:Factory Setting |

| 4679 | Gain Range Adj Value **DFU** |
|---|---|
| 001 | FC:F:B:Factory Setting |
| 003 | FC:L:B:Factory Setting |
| 005 | BK:F:B:Factory Setting |
| 007 | BK:L:B:Factory Setting |

| 4680 | Gain Range Adj Value **DFU** |
|---|---|
| 001 | FC:F:RE:Factory Setting |
| 002 | FC:F:RO:Factory Setting |

| | |
|---|---|
| 003 | FC:L:RE:Factory Setting |
| 004 | FC:L:RO:Factory Setting |
| 005 | BK:F:RE:Factory Setting |
| 006 | BK:F:RO:Factory Setting |
| 007 | BK:L:RE:Factory Setting |
| 008 | BK:L:RO:Factory Setting |

| | |
|---|---|
| 4681 | Gain Range Adj Value **DFU** |
| 001 | FC:F:GE:Factory Setting |
| 002 | FC:F:GO:Factory Setting |
| 003 | FC:L:GE:Factory Setting |
| 004 | FC:L:GO:Factory Setting |
| 005 | BK:F:GE:Factory Setting |
| 006 | BK:F:GO:Factory Setting |
| 007 | BK:L:GE:Factory Setting |
| 008 | BK:L:GO:Factory Setting |

| | |
|---|---|
| 4682 | Gain Range Adj Value **DFU** |
| 001 | FC:F:BE:Factory Setting |
| 002 | FC:F:BO:Factory Setting |
| 003 | FC:L:BE:Factory Setting |
| 004 | FC:L:BO:Factory Setting |
| 005 | BK:F:BE:Factory Setting |
| 006 | BK:F:BO:Factory Setting |

| | |
|---|---|
| 007 | BK:L:BE:Factory Setting |
| 008 | BK:L:BO:Factory Setting |

| | |
|---|---|
| 4690 | White Level Peak Data **DFU** |
| 001 | FC:F:RE |
| 002 | FC:F:RO |
| 003 | FC:L:RE |
| 004 | FC:L:RO |
| 005 | BK:F:RE |
| 006 | BK:F:RO |
| 007 | BK:L:RE |
| 008 | BK:L:RO |

| | |
|---|---|
| 4691 | White Level Peak Data **DFU** |
| 001 | FC:F:GE |
| 002 | FC:F:GO |
| 003 | FC:L:GE |
| 004 | FC:L:GO |
| 005 | BK:F:GE |
| 006 | BK:F:GO |
| 007 | BK:L:GE |
| 008 | BK:L:GO |

| | |
|---|---|
| 4692 | White Level Peak Data **DFU** |

| | |
|---|---|
| 001 | FC:F:BE |
| 002 | FC:F:BO |
| 003 | FC:L:BE |
| 004 | FC:L:BO |
| 005 | BK:F:BE |
| 006 | BK:F:BO |
| 007 | BK:L:BE |
| 008 | BK:L:BO |

| 4693 | Black Level Data **DFU** |
|---|---|
| 001 | FC:F:REE |
| 002 | FC:F:ROE |
| 003 | FC:F:REO |
| 004 | FC:F:ROO |
| 005 | FC:L:REE |
| 006 | FC:L:ROE |
| 007 | FC:L:REO |
| 008 | FC:L:ROO |
| 009 | BK:F:REE |
| 010 | BK:F:ROE |
| 011 | BK:F:REO |
| 012 | BK:F:ROO |
| 013 | BK:L:REE |
| 014 | BK:L:ROE |

| | |
|---|---|
| 015 | BK:L:REO |
| 016 | BK:L:ROO |

| 4694 | Black Level Data **DFU** |
|---|---|
| 001 | FC:F:GEE |
| 002 | FC:F:GOE |
| 003 | FC:F:GEO |
| 004 | FC:F:GOO |
| 005 | FC:L:GEE |
| 006 | FC:L:GOE |
| 007 | FC:L:GEO |
| 008 | FC:L:GOO |
| 009 | BK:F:GEE |
| 010 | BK:F:GOE |
| 011 | BK:F:GEO |
| 012 | BK:F:GOO |
| 013 | BK:L:GEE |
| 014 | BK:L:GOE |
| 015 | BK:L:GEO |
| 016 | BK:L:GOO |

| 4695 | Black Level Data **DFU** |
|---|---|
| 001 | FC:F:BEE |
| 002 | FC:F:BOE |

| | |
|---|---|
| 003 | FC:F:BEO |
| 004 | FC:F:BOO |
| 005 | FC:L:BEE |
| 006 | FC:L:BOE |
| 007 | FC:L:BEO |
| 008 | FC:L:BOO |
| 009 | BK:F:BEE |
| 010 | BK:F:BOE |
| 011 | BK:F:BEO |
| 012 | BK:F:BOO |
| 013 | BK:L:BEE |
| 014 | BK:L:BOE |
| 015 | BK:L:BEO |
| 016 | BK:L:BOO |

| | |
|---|---|
| 4700* | Display CIS ID |
| | Reads and displays the ID of the CIS board at power. |

| | |
|---|---|
| 4705 | GB |
| | Operation |
| 001* | Displays whether density adjustment was executed for the CIS, using the white roller.<br>[0 to 1/1]<br>0: Not executed, 1: Executed |
| 002 | Result Operation |

| | |
|---|---|
| | Starts the standard white density adjustment for the CIS. Place 5 sheets of A3 on the exposure glass, then press Execute. A message is displayed to indicate the success or failure of the adjustment. **DFU** |

| | |
|---|---|
| 4706* | GB Target R **DFU** |
| 001 | [0 to 1023 / **689** / 1 digit] |
| 4707* | GB Target G **DFU** |
| 001 | [0 to 1023 / **684** / 1 digit] |
| 4708* | GB Target B **DFU** |
| 001 | [0 to 1023 / **669** / 1 digit] |

| | |
|---|---|
| 4709* | GB Chart Level R |
| 001 | Displays the GB chart level for Red signal:<br>[0 to 1023 / **-** / 1 digit] |
| 4710* | GB Chart Level G |
| 001 | Displays the GB chart level for Green signal:<br>[0 to 1023 / **-** / 1 digit] |
| 4711* | GB Chart Level B |
| 001 | Displays the GB chart level for Blue signal:<br>[0 to 1023 / **-** / 1 digit] |

| | |
|---|---|
| 4712* | GB Adj Value R **DFU** |
| 4713* | GB Adj Value G **DFU** |
| 4714* | GB Adj Value B **DFU** |
| 001 | [-512 to 512 / 0 / -] |

| | |
|---|---|
| 4745 | Image Level ErrorFlag |
| | Displays the image error flag. |
| 4746 | GB Adj ErrorFlag |
| | Displays the GB adjustment error flag. |
| 4747 | CIS Hardware Error Flag |
| | Displays the CIS error flag. |

| | |
|---|---|
| 4748 | Main Scan White Level: AVG R |
| | Leading Edge |
| 001 | Displays the average level of the main scan white for the leading edge of Red signal.<br>[0 to 255 / - / 1 digit] |
| | Trailing Edge |
| 002 | Displays the average level of the main scan white for the trailing edge of Red signal.<br>[0 to 255 / - / 1 digit] |

| | |
|---|---|
| 4749 | Main Scan White Level: AVG G |
| | Leading Edge |
| 001 | Displays the average level of the main scan white for the leading edge of Green signal.<br>[0 to 255 / - / 1 digit] |
| | Trailing Edge |
| 002 | Displays the average level of the main scan white for the trailing edge of Green signal.<br>[0 to 255 / - / 1 digit] |

**Service Program Mode Tables**

| | |
|---|---|
| 4750 | Main Scan White Level: AVG B |
| 001 | Leading Edge |
| | Displays the average level of the main scan white for the leading edge of Blue signal.<br>[0 to 255 / - / 1 digit] |
| 002 | Trailing Edge |
| | Displays the average level of the main scan white for the trailing edge of Blue signal.<br>[0 to 255 / - / 1 digit] |

| | |
|---|---|
| 4784* | White Level Peak Range R |
| 001 | Min: FC |
| | Adjusts the lower limit threshold for the white level peak range of Red signal in the full color mode.<br>[0 to 255 / **64** / 1 digit] |
| 002 | Max: FC |
| | Adjusts the upper limit threshold for the white level peak range of Red signal in the full color mode.<br>[0 to 255 / **245** / 1 digit] |
| 003 | Min: BK |
| | Adjusts the lower limit threshold for the white level peak range of Red signal in the B/W mode.<br>[0 to 255 / **64** / 1 digit] |
| 004 | Max: BK |
| | Adjusts the upper limit threshold for the white level peak range of Red signal in the B/W mode.<br>[0 to 255 / **245** / 1 digit] |

| | |
|---|---|
| 4785* | White Level Peak Range G |
| 001 | Min: FC |
| | Adjusts the lower limit threshold for the white level peak range of Green signal in the full color mode.<br>[0 to 255 / **64** / 1 digit] |
| 002 | Max: FC |
| | Adjusts the upper limit threshold for the white level peak range of Green signal in the full color mode.<br>[0 to 255 / **245** / 1 digit] |
| 003 | Min: BK |
| | Adjusts the lower limit threshold for the white level peak range of Green signal in the B/W mode.<br>[0 to 255 / **64** / 1 digit] |
| 004 | Max: BK |
| | Adjusts the upper limit threshold for the white level peak range of Green signal in the B/W mode.<br>[0 to 255 / **245** / 1 digit] |

| | |
|---|---|
| 4786* | White Level Peak Range G |
| 001 | Min: FC |
| | Adjusts the lower limit threshold for the white level peak range of Blue signal in the full color mode.<br>[0 to 255 / **64** / 1 digit] |
| 002 | Max: FC |
| | Adjusts the upper limit threshold for the white level peak range of Blue signal in the full color mode.<br>[0 to 255 / **245** / 1 digit] |
| 003 | Min: BK |

| | |
|---|---|
| | Adjusts the lower limit threshold for the white level peak range of Blue signal in the B/W mode.<br>[0 to 255 / **64** / 1 digit] |
| | Max: BK |
| 004 | Adjusts the upper limit threshold for the white level peak range of Blue signal in the B/W mode.<br>[0 to 255 / **245** / 1 digit] |

| | |
|---|---|
| 4787* | White Level Peak Data R |
| | Factory: FC |
| 001 | Displays the factory setting data of white level peak data for Red in the full color mode.<br>[0 to 255 / **-** / 1 digit] |
| | Factory: BK |
| 002 | Displays the factory setting data of white level peak data for Red in the B/W mode.<br>[0 to 255 / **-** / 1 digit] |

| | |
|---|---|
| 4788* | White Level Peak Data G |
| | Factory: FC |
| 001 | Displays the factory setting data of white level peak data for Green in the full color mode.<br>[0 to 255 / **-** / 1 digit] |
| | Factory: BK |
| 002 | Displays the factory setting data of white level peak data for Green in the B/W mode.<br>[0 to 255 / **-** / 1 digit] |

| | |
|---|---|
| 4789* | White Level Peak Data G |
| 001 | Factory: FC |
| | Displays the factory setting data of white level peak data for Green in the full color mode.<br>[0 to 255 / - / 1 digit] |
| 002 | Factory: BK |
| | Displays the factory setting data of white level peak data for Green in the B/W mode.<br>[0 to 255 / - / 1 digit] |

| | |
|---|---|
| 4790 | White Level Peak Data R |
| 001 | FC |
| | Displays the current red data of white level peak data for Red in the full color mode.<br>[0 to 255 / - / 1 digit] |
| 002 | BK |
| | Displays the current red data of white level peak data for Red in the B/W mode.<br>[0 to 255 / - / 1 digit] |

| | |
|---|---|
| 4791 | White Level Peak Data G |
| 001 | FC |
| | Displays the current red data of white level peak data for Green in the full color mode.<br>[0 to 255 / - / 1 digit] |
| 002 | BK |
| | Displays the current red data of white level peak data for Green in the B/W mode.<br>[0 to 255 / - / 1 digit] |

| | |
|---|---|
| 4792 | White Level Peak Data G |
| | FC |
| 001 | Displays the current red data of white level peak data for Green in the full color mode.<br>[0 to 255 / **-** / 1 digit] |
| | BK |
| 002 | Displays the current red data of white level peak data for Green in the B/W mode.<br>[0 to 255 / **-** / 1 digit] |

| | |
|---|---|
| 4793 | Black Level Data R |
| 4794 | Black Level Data G |
| 4795 | Black Level Data B |
| 001 to 024 | Displays the current red data of black level for each color signal and chip.<br>[0 to 255 / **-** / 1 digit] |

| | |
|---|---|
| 4796* | Chip Color Stripe Correct **DFU** |

| | |
|---|---|
| 4797* | Digital AE: Back **DFU** |
| 001 | Low Limit Value [0 to 1023/ **392** / 1 digit] |
| 002 | Background level [0 to 1023/ **972** / 1 digit] |

| | |
|---|---|
| 4798 | LED Lighting Duty: Back **DFU** |
| 001 | FC |
| 002 | BK |

| | |
|---|---|
| 4799 | TEST Pattern |
| 001 | Select |
| | [0 to 4 / **0** / 1] |
| 002 | Fixed Value Setting |
| | [0 to 1023 / **512** / 1 digit] |

| | |
|---|---|
| 4800 | DF Density Adj Value **DFU** |
| 001 | RED [0 to 255 / **94** / 1 digit] |
| 002 | GREEN [0 to 255 / **91** / 1 digit] |
| 003 | BLUE [0 to 255 / **85** / 1 digit] |

| | |
|---|---|
| 4802 | Scanner Free run |
| 001 | DF mode :Lamp Off |
| | Execute the scanner free run with the lamp off. |
| 002 | DF mode :Lamp On |
| | Execute the scanner free run with the lamp on. |

| | |
|---|---|
| 4803* | Home Position Adj Value |
| 001 | Adjusts the caridge HP position.<br>[-3 to 3 / 0 / 0.1 mm]<br>+ value: The home position of the caridge unit is moved away from the leading edge.<br>-value: The home position of the caridge unit is moved close to the leading edge. |

| | |
|---|---|
| 4804 | Home Position Operation |

| | |
|---|---|
| 001 | Executes the homing movement of the caridge unit. |

| | |
|---|---|
| 4806* | FL Correction ON/OFF |
| | Turns on or off the FL correction for each color..<br>[0 or 1 / **0** / 1]<br>0: OFF, 1: ON |
| 001 | RED |
| 002 | GREEN |
| 003 | BLUE |

| | |
|---|---|
| 4808 | Result FL Detection |
| | Displays the each data of the FL correction.<br>[0 to 1023 / - / 1] |
| 001 to 020 | FR1 to FR20 |
| 021 to 040 | LR1 to LR20 |
| 041 to 060 | FG1 to FG20 |
| 061 to 080 | LG1 to LG20 |
| 081 to 100 | FB1 to FB20 |

| | |
|---|---|
| 101 to 120 | LB1 to LB20 |

| | |
|---|---|
| 4809 | Result FL Correction |
| | Displays the each confirmation data of the FL correction.<br>[0 to 1023 / - / 1] |
| 001 to 020 | FR1 to FR20 |
| 021 to 040 | LR1 to LR20 |
| 041 to 060 | FG1 to FG20 |
| 061 to 080 | LG1 to LG20 |
| 081 to 100 | FB1 to FB20 |
| 101 to 120 | LB1 to LB20 |

| | | |
|---|---|---|
| 4903 | Image Quality Adjustment | |
| | These SP codes adjust the sharpness and granularity of printed images. | |
| 001 | Independent Dot Erase: Text | [0 to 7 / 0 / 1] |

| | | |
|---|---|---|
| 002 | Independent Dot Erase: Copy/Original | 0: Softest<br>1: Soft Mode<br>4: Normal (**Default**)<br>6: Sharp Mode<br>7: Sharpest |

| | |
|---|---|
| 4905 | Gradation Processing Selection **DFU** |

| | | |
|---|---|---|
| 4907 | SBU Test Pattern | |
| 001 | Select Test Pattern | 0: Normal<br>1: Fixed Value<br>2: Main Scan Grayscale<br>3: Sub Scan Grayscale<br>4: Checked Pattern |
| 002 | Set Output Level | Output level in case of setting SP4-907-1 to 1.<br>[0 to 1023/**512**/1] |

| | |
|---|---|
| 4918 -009 | Manual Gamma Adjustment **DFU** |
| | |

| | |
|---|---|
| 4991 | IPU Image Pass Selection RGB Frame Memory **DFU** |
| | [0 to 11/**2**/1] |

| | |
|---|---|
| 4993 | High Light Correction **DFU** |
| | [0 to 9/**4**/1] |
| 001 | Sensitivity Selection |
| 002 | Range Selection |

| | |
|---|---|
| 4994 | Adj Text/Photo recognition Level High Compression PDF **DFU** |
| | [0 to 2/**1**/1] |

### *SP5xxx Mode*

| | |
|---|---|
| 5024 | mm/inch Display Selection |
| | Selects whether mm or inches are used in the display.<br>**Note:** After selecting the number, you must turn the main power switch off and on.<br>Europe/Asia model: [0 = mm / 1 = inch]<br>American model: [0 = mm / 1 = inch] |

| | |
|---|---|
| 5037 | Status Lamp Mode |
| | 0: OFF / 1: ON **Not Used** |

| | |
|---|---|
| 5045 | Accounting Counter |
| | Selects the counting method if the meter charge mode is enabled with SP5-930-001.<br>**Note:** You can change the setting only one time.<br>[0 to 1/ 1]<br>0: Development counter. Shows the total counts for color (Y, M, C) and black (K).<br>1: Paper counter. Shows the total page counts for: Black Total, Black Copies, Black Prints. |

| | |
|---|---|
| 5047 | Paper Display |
| 001 | Backing Paper Display |
| | Determines whether the tray loaded with paper printed on one side is displayed on the operation panel.<br>[0 to 1/0/1] |

| | |
|---|---|
| | 0: Not displayed, 1: Displayed |
| 002 | Punched Paper |
| | Determines whether the tray loaded with punched paper is displayed on the operation panel.<br>[0 to 1/1/1]<br>0: Disabled, 1: Enabled |

| | |
|---|---|
| 5055 | Display IP Address |
| | Switches the banner display of MFP device display on and off.<br>[0 to 1 / 0 / 1]<br>[OFF] ON |

| | |
|---|---|
| 5056 | Coverage Counter Display |
| | Displays or does not display the coverage counter in the counter list for the machine administorator.<br>[0 to 1/0/1]<br>0: Not displayed, 1: Displayed |

| | |
|---|---|
| 5062 | Part Replacement Alert Display |
| | Enables/disables the appearance of the PM parts in the yield list on the operation panel. PM parts can be selected independently for display.<br>[ON] OFF<br>**Note**: SP5066 must be set to "1: Display". |
| 001 | #Development Unit |
| 002 | Developer |
| 003 | #Drum Unit |
| 004 | Drum Pick-off Pawls |
| 005 | #Drum Cleaning Unit |

| | |
|---|---|
| 006 | Cleaning Blade |
| 007 | Cleaning Brush |
| 008 | Drum Cleaning Unit Filter |
| 009 | #Charge Unit |
| 010 | Grid Plate |
| 011 | Charge Corona Wire |
| 012 | Cleaning Pad |
| 013 | Cushion |
| 014 | #Pre-Charge Unit |
| 015 | Pre-Charge Corona Wire |
| 016 | Pre-Charge Grid Plate |
| 017 | #Fusing Unit |
| 018 | Hot Roller Strippers |
| 019 | Hot Roller |
| 020 | Pressure Roller |
| 021 | #Fusing Cleaning Unit |
| 022 | Web Roll |
| 023 | Web Cleaning Roll |
| 024 | Web Brake Pad |
| 025 | Toner Suction Bottle |
| 026 | Toner Suction Motor |
| 027 | Tray 1 Roller Assembly |
| 028 | Feed Roller – Tray 1 |

| | |
|---|---|
| 029 | Pick-up Roller – Tray 1 |
| 030 | Separation Roller – Tray 1 |
| 031 | Tray 2 Roller Assembly |
| 032 | Feed Roller – Tray 2 |
| 033 | Pick-up Roller – Tray 2 |
| 034 | Separation Roller – Tray 2 |
| 035 | Tray 3 Roller Assembly |
| 036 | Feed Roller – Tray 3 |
| 037 | Pick-up Roller – Tray 3 |
| 038 | Separation Roller – Tray 3 |
| 040 | Transfer Belt |
| 041 | Transfer Belt Cleaning Blade |
| 042 | Toner Filter |
| 043 | ADF Transfer Belt |
| 044 | ADF Separation Roller |
| 045 | ADF Feed Belt |
| 046 | ADF Pick-up Roller |
| 047 | Tray 4 Roller Assembly |
| 048 | Feed Roller – Tray 4 |
| 049 | Pick-up Roller – Tray 4 |
| 050 | Separation Roller – Tray 4 |
| 051 | Tray 5 Roller Assembly |
| 052 | Feed Roller – Tray 5 |

| | |
|---|---|
| 053 | Pick-up Roller – Tray 5 |
| 054 | Separation Roller – Tray 5 |
| 055 | Tray 6 Roller Assembly |
| 056 | Feed Roller – Tray 6 |
| 057 | Pick-up Roller – Tray 6 |
| 058 | Separation Roller – Tray 6 |
| 059 | Tray 7 Roller Assembly |
| 060 | Feed Roller – Tray 7 |
| 061 | Pick-up Roller – Tray 7 |
| 062 | Separation Roller – Tray 7 |
| 063 | Toner Collection Unit |
| 100 | Blade Cradle |
| 101 | Blade |
| 102 | Glue Vat Unit |

| | |
|---|---|
| 5066 | PM Parts Display |
| | Determines whether the PM parts button is displayed on the initial screen.<br>[*0: No Display]  [1: Display]<br>**Note**: Individual PM parts can be selected for display or no display with SP5062. |

| | |
|---|---|
| 5067 | Part Replacement Operation Type |
| | Configures the PM parts display for either the customer engineer (Service) or user.<br>[***0**: Service]  [1: User]<br>**Note**: SP5066 must be set to "1: Display". |
| 001 | #Development Unit |

| | |
|---|---|
| 002 | Developer |
| 003 | #Drum Unit |
| 004 | Drum Pick-off Pawls |
| 005 | #Drum Cleaning Unit |
| 006 | Cleaning Blade |
| 007 | Cleaning Brush |
| 008 | Drum Cleaning Unit Filter |
| 009 | #Charge Unit |
| 010 | Grid Plate |
| 011 | Charge Corona Wire |
| 012 | Cleaning Pad |
| 013 | Cushion |
| 014 | #Pre-Charge Unit |
| 015 | Pre-Charge Corona Wire |
| 016 | Pre-Charge Grid Plate |
| 017 | #Fusing Unit |
| 018 | Hot Roller Strippers |
| 019 | Hot Roller |
| 020 | Pressure Roller |
| 021 | #Fusing Cleaning Unit |
| 022 | Web Roll |
| 023 | Web Cleaning Roll |
| 024 | Web Brake Pad |

| | |
|---|---|
| 025 | Toner Suction Bottle |
| 026 | Toner Suction Motor |
| 027 | Tray 1 Roller Assembly |
| 028 | Feed Roller – Tray 1 |
| 029 | Pick-up Roller – Tray 1 |
| 030 | Separation Roller – Tray 1 |
| 031 | Tray 2 Roller Assembly |
| 032 | Feed Roller – Tray 2 |
| 033 | Pick-up Roller – Tray 2 |
| 034 | Separation Roller – Tray 2 |
| 035 | Tray 3 Roller Assembly |
| 036 | Feed Roller – Tray 3 |
| 037 | Pick-up Roller – Tray 3 |
| 038 | Separation Roller – Tray 3 |
| 040 | Transfer Belt |
| 041 | Transfer Belt Cleaning Blade |
| 042 | Toner Filter |
| 043 | ADF Transfer Belt |
| 044 | ADF Separation Roller |
| 045 | ADF Feed Belt |
| 046 | ADF Pick-up Roller |
| 047 | Tray 4 Roller Assembly |
| 048 | Feed Roller – Tray 4 |

| | |
|---|---|
| 049 | Pick-up Roller – Tray 4 |
| 050 | Separation Roller – Tray 4 |
| 051 | Tray 5 Roller Assembly |
| 052 | Feed Roller – Tray 5 |
| 053 | Pick-up Roller – Tray 5 |
| 054 | Separation Roller – Tray 5 |
| 055 | Tray 6 Roller Assembly |
| 056 | Feed Roller – Tray 6 |
| 057 | Pick-up Roller – Tray 6 |
| 058 | Separation Roller – Tray 6 |
| 059 | Tray 7 Roller Assembly |
| 060 | Feed Roller – Tray 7 |
| 061 | Pick-up Roller – Tray 7 |
| 062 | Separation Roller – Tray 7 |
| 063 | Toner Collection Unit |
| 100 | Blade Cradle |
| 101 | Blade |
| 102 | Glue Vat Unit |

| | |
|---|---|
| 5112 | Non-Std. Paper Sel |
| | Determines whether a non-standard paper size can be input for the universal cassette trays (Tray 2, Tray 3)<br>[0 to 1/1]<br>0: No<br>1: Yes. If "1" is selected, the customer will be able to input a non-standard paper |

| | |
|---|---|
| | size using the UP mode. |

| | |
|---|---|
| 5113 | Optional Counter Type |
| 001 | Default Optional Counter Type |
| | Selects the type of counter:<br>0: None<br>1: Key Card (RK3, 4)<br>2: Key Card Down<br>3: Pre-paid Card<br>4: Coin Lock<br>5: MF Key Card<br>11: Exp Key Card (Add)<br>12: Exp Key Card (Deduct)<br>**Note**: Items 1, 2, 3, 5, 5 are for **Japan Only** |
| 002 | External Optional Counter Type |
| | Enables the SDK application. This lets you select a number for the external device for user access control.<br>**Note:** "SDK" refers to software on an SD card.<br>[0 to 3/1]<br>0: None<br>1: Expansion Device 1<br>2: Expansion Device 2<br>3: Expansion Device 3 |

| | |
|---|---|
| 5114 | Optional Counter I/F |
| | This SP sets the machine for the MF Key Card Extension.<br>**0**: OFF, 1: ON |

| | |
|---|---|
| 5118 | Disable Copying |
| | Temporarily denies access to the machine. **Japan Only**<br>[0 to 1/1] |

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|---|---|
| | 0: Release for normal operation<br>1: Prohibit access to machine |

| | |
|---|---|
| 5120 | Mode Clear Opt. Counter Removal |
| | Do not change. **Japan Only**<br>[0 to 2/ 0 / 1]<br>0: Yes. Normal reset<br>1: Standby. Resets before job start/after completion<br>2: No. Normally no reset |

| | |
|---|---|
| 5121 | Counter Up Timing **SSP** |
| | Determines whether the optional key counter counts up at paper feed-in or at paper exit.<br>[0 to 1/1]<br>0: Feed count, 1: No feed count |

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|---|---|
| 5126 | Set F-size Document |
| | Sets the original size that the machine detects for F sizes.<br>[0 to 2/1]<br>0: 8hf x 13<br>1: 8hf x 13qr<br>2: 8 x 13<br>**Note:** hf = 1/2, qr = 1/4 |

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|---|---|
| 5127 | APS OFF Mode |
| | This SP can be used to switch APS (Auto Paper Select) off when a coin lock or pre-paid key card device is connected to the machine.<br>[0 to 1/1]<br>0: On, 1: Off |

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|---|---|
| 5129 | F Paper Size Selection |
| | Sets the paper size that the machine detects when the 8 x 13 dial setting on a paper cassette is used (LT/DLT version).<br>[0 to 2/1]<br>0: 8 x 13<br>1: 8hf x 13<br>2: 8qr x 13<br>**Note**: hf = 1/2, qr = 1/4 |

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|---|---|
| 5131* | Paper Size Type Selection |
| | Selects the paper size type (for originals and copy paper). (Only needs to be adjusted if the optional printer controller is installed)<br>[0 to 3/1]<br>0: JP<br>1: NA<br>2: EU, AA, TWN, KOR<br>3: CH (China)<br>After changing the value, turn the power switch off and on. |

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|---|---|
| 5150 | Bypass Length Setting |

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|---|---|
| 5162 | App. Switch Method |
| | Controls if the application screen is changed with a hardware switch or a software switch.<br>[0 to 1/1]<br>0: Soft Key Set, 1: Hard Key Set |

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|---|---|
| 5167 | Fax Printing Mode at Optional Counter Off |
| | Determines the Fax print mode when the optional counter is off.<br>0: Print automatically.<br>1: Not do auto-print. |

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|---|---|
| 5169 | CE Login |
| | If you will change the printer bit switches, you must 'log in' to service mode with this SP before you go into the printer SP mode.<br>[0 to 1/1]<br>0: Off. Printer bit switches cannot be adjusted.<br>1: On. Printer bit switches can be adjusted. |

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|---|---|
| 5179 | By-pass tray paper size error display |
| | Set the by-pass tray paper size error display to ON/OFF.<br>0: OFF / 1: ON |

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|---|---|
| 5182 | HDD Page Mgmt |
| | These SP codes are used to change the configuration of the TEMP partition for raw data on the HDD so the local storage (LS) area can be expanded.<br>▪ The SP codes below cannot be set together.<br>▪ If one is selected that SP is enabled and the other reset to its default value.<br>▪ For example, if 002 is set to on (1) when 001 is already set to on (1), 002 will be set to on (1) and 001 will automatically reset to its default value (0: Normal). |
| 001 | Release LS Limit |
| | Normally LS can handle up to 15,000 pages. Use this SP code to select expansion of the page storage area.<br>[0 to 1/**0**/1]<br>0: Normal, 1: Allow Expansion |
| 002 | Change Pages/Doc |
| | The configuration of the TEMP area on the HDD must be changed in order to increase the number of pages that 1 document can hold when it is stored on the HDD. If the size of the LS area is increased, the size of the TEMP area must be decreased. Changing this SP increases the default value for the size of the LS area from 5,000 pages to 20,000 pages. A larger setting is not possible. |

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|---|---|
| | [0 to 1/**0**/1]<br>0: Normal, 1:Allow Expansion |

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|---|---|
| 5188 | Copy NV Version |
| | Copies NV version to another NVRAM.<br>**Note**: NVRAM version management automatically initializes the NV for each machine. |

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|---|---|
| 5191 | Mode Set |
| | This setting determines whether the machine is allowed to move into energy save mode.<br>**1**: Allowed<br>0: Not allowed |

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|---|---|
| 5195 | Limitless SW |
| | Selects the paper feed mode priority (productivity or tray). This is activated only when a customer selects the "Auto paper Select".<br>▪ **Productivity priority.** Changes the feed station as soon as the machine detects the priority tray even the paper still remains in the current tray.<br>▪ **Tray priority.** This changes the feeding tray after the paper in the tray where the machine has been feeding paper has run out of paper.<br>[0 to 1/0/1]<br>0: Productivity priority<br>1: Tray priority |

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|---|---|
| 5196 | CE Login |
| | 0: Does not execute CE Login or 1: Execute CE login |

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|---|---|
| 5199 | Paper Set After Staple End |
| | Enables or disables feeding out of the finisher without stapling. |

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|---|---|
| | [0: OFF] [1:ON] |
| | 0: OFF<br>Paper feeds out with stapling at the maximum number of the finishing stapling when the machine gets a multiple printing job (over maximum number).<br>1: ON<br>Paper feeds out without stapling at the maximum number of the finisher stapling when the machine gets a multiple printing job (over maximum number) |

| | |
|---|---|
| 5212 | Page Numbering |
| 003 | Duplex Printout Left/Right Position |
| | Horizontally positions the page numbers printed on both sides during duplexing.<br>[-10 to +10/1 mm]<br>0 is center, minus is left, + is right. |
| 004 | Duplex Printout High/Low Position |
| | Vertically positions the page numbers printed on both sides during duplexing.<br>[-10 to +10/1 mm]<br>0 is center, minus is down, + is up. |

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|---|---|
| 5227 | Page Numbering (Bates Stamp) |
| 200 | Change Page No. Display |
| | This SP code determines whether the page number adjustment display is on or off.<br>[0 to 1/0/1]<br>0: Display off, 1: Display on |
| 201 | Allow Page No. Entry |
| | This SP specifies the number of digits to display for the entry of the starting page number.<br>[2 to 9/9/1] |
| 202 | Zero Surplus Setting |

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|---|---|
| | This setting determines whether page numbers are prefixed with excess zeros when the number is smaller than the number of assigned digits. For example, with this setting on and 3 digits have been specified, the number "3" appears as "003". With this setting off, the number "3" will appear as a "3" without the zeros.<br>[0 to 1/0/1]<br>0: No excess zeros, 1: Excess zeros displayed |

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|---|---|
| 5302 | Set Time **DFU** |
| | Sets the time clock for the local time. This setting is done at the factory before delivery. The setting is GMT expressed in minutes.<br>[–1440 to 1440/1 min.]<br>JA: +540 (Tokyo)<br>NA: -300 (NY)<br>EU: +6- (Paris)<br>CH: +480 (Peking)<br>TW: +480 (Taipei)<br>AS: +480 (Hong Kong) |

| | | |
|---|---|---|
| 5307 | Summer Time | |
| | Lets you set the machine to adjust its date and time automatically with the change to Daylight Savings time in the spring and back to normal time in the fall.<br>This SP lets you set these items:<br>Day and time to go forward automatically in April.<br>Day and time to go back automatically in October.<br>Set the length of time to go forward and back automatically.<br>The settings for 002 and 003 are done with 8-digit numbers: | |
| | Digits | Meaning |
| | 1st, 2nd | Month. 4: April, 10: October (for months 1 to 9, the first digit of 0 cannot be input, so the eight-digit setting for 002 or 003 becomes a seven-digit setting) |
| | 3rd | Day of the week. 0: Sunday, 1: Monday |

| | | |
|---|---|---|
| | 4th | The number of the week for the day selected at the 3rd digit. If "0" is selected for "Sunday", for example, and the selected Sunday is the start of the 2nd week, then input a "2" for this digit. |
| | 5th, 6th | The time when the change occurs (24-hour as hex code). Example: 00:00 (Midnight) = 00, 01:00 (1 a.m.) = 01, and so on. |
| | 7th | The number of hours to change the time. 1 hour: 1 |
| | 8th | If the time change is not a whole number (1.5 hours for example), digit 8 should be 3 (30 minutes). |
| 001 | Setting | Enables/disables the settings for 002 and 003.<br>[0 to 1/1]<br>0: Disable, 1: Enable |
| 003 | Rule Set (Start) | The start of summer time. |
| 004 | Rule Set (End) | The end of summer time. |

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|---|---|
| 5401 | Access Control **DFU** |
| | This SP adjusts the settings below when installing and SDK application.<br>**Note**: "SDK" is the "Software Development Kit". This data can be converted from SAS (VAS) when installed or uninstalled. |
| 103 | Default Document ACL |
| | Used to assign the default access user access privileges to their own documents on the document server. |
| 162 | Extend Certification Detail |
| | Logout without an IC card.<br>[0 to 1/0/1]<br>0: Not allowed (default)<br>1: Allowed |
| 200 | SDK1 Unique ID |

| | |
|---|---|
| 201 | SDK1 Certification Method |
| 210 | SDK2 Unique ID |
| 211 | SDK2 Certification Method |
| 220 | SDK3 Unique ID |
| 221 | SDK3 Certification Method |
| 230 | SDK(Type TF) Unique ID |
| 240 | Detail Option: Unique ID |

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|---|---|
| 5404 | User Code Count Clear |
| | Clears the counts for the user codes assigned by the key operator to restrict the use of the machine. Press [Execute] to clear. |

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|---|---|
| 5411 | LDAP Certification |
| 004 | Easy Certification |
| | Determines whether easy LDAP certification is done.<br>[0 or 1 / **1** / 1] 1: On, 0: Off |
| 005 | Password Null Not Permit |
| | Enabled only when SP5411-4 is set to "1" (On).<br>[0 or 1 / **0** / -]<br>0: Password NULL not permitted.<br>1: Password NULL permitted. |

| | |
|---|---|
| 5413 | Lockout Setting |
| 001 | Lockout On/Off |
| | Switches the local address book account lock on/off.<br>[0 or 1 / **0** / -]<br>0: Off, 1: On |

| | |
|---|---|
| 002 | Lockout Threshold |
| | Sets a limit on the frequency of lockouts for account lockouts.<br>[1 to 10 / **5** / 1/step] |
| 003 | Cancellation On/Off |
| | Determines whether the system waits the prescribed time for input of a correct user ID and password after an account lockout has occurred.<br>[0 or 1 / **0** / -]<br>0: Off (no wait time, lockout not cancelled)<br>1: On (system waits, cancels lockout if correct user ID and password are entered. |
| 004 | Cancellation Time |
| | Determines the length of time that the system waits for correct input of the user ID and password after a lockout has occurred. This setting is used only if SP5413-3 is set to "1" (on).<br>[1 to 999 / **60** / 1 min./step] |
| 005 | Counter Clear Time |
| | Not used. |

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|---|---|
| 5414 | Access Mitigation |
| 001 | Mitigation On/Off |
| | Switches on/off masking of continuously used IDs and passwords that are identical.<br>[0 or 1 / **0** / -]<br>0: Off, 1: On |
| 002 | Mitigation Time |
| | Sets the length of time for excluding continuous access for identical user IDs and passwords.<br>[0 to 60 / **15** / 1 min./step] |

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|---|---|
| 5415 | Password Attack |
| 001 | Permissible Number |
| | Sets limit on the number of attacks on the system with random passwords to gain illegal access to the system.<br>[0 to 100 / 30 / 1 attempt/step] |
| 002 | Detect Time |
| | Sets the time limit to stop a password attack once such an attack has been detected.<br>[1 to 10 / 5 / 1 sec./step] |

| | |
|---|---|
| 5416 | Access Information |
| 001 | Access Use Max Num |
| | Limits the number of users used by the access exclusion and password attack detection functions.<br>[50 to 200 / **200** / 1 users/step] |
| 002 | Access Password Max Num |
| | Limits the number of passwords used by the access exclusion and password attack detection functions.<br>[50 to 200 / **200** / 1 password/step] |
| 003 | Monitor Interval |
| | Sets the processing time interval for referencing user ID and password information.<br>[1 to 10 / **3** / 1 sec./step] |

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|---|---|
| 5417 | Access Attack |
| 001 | Access Permissible Number |
| | Sets a limit on access attempts when an excessive number of attempts are detected for MFP features. |

| | |
|---|---|
| | [0 to 500 / **100** / 1/step] |
| 002 | Attack Detect Time |
| | Sets the length of time when the frequency of access to MFP features are monitored.<br>[10 to 30 / **10** / 1 sec./step] |
| 003 | Productivity Fall Wait |
| | Sets the wait time to slow down the speed of certification when an excessive number of access attempts have been detected.<br>[0 to 9 / **3** / 1 sec./step] |
| 004 | Attack Max Number |
| | Sets a limit on the number of requests received for certification in order to slow down the certification speed when an excessive number of access attempts have been detected.<br>[50 to 200 / **200** / 1 attempt/step] |

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|---|---|
| 5420 | User Authentication |
| | These settings should be done with the System Administrator.<br>**Note**: These functions are enabled only after the user access feature has been enabled. |
| 001 | Copy |
| | Determines whether certification is required before a user can use the copy applications.<br>[0 or 1/ **0** /1]<br>0: On, 1: Off |
| 011 | Document Server |
| | Determines whether certification is required before a user can use the document server.<br>[0 or 1/ **0** /1]<br>0: On, 1: Off |

| | | |
|---|---|---|
| 031 | Scanner | |
| | Determines whether certification is required before a user can use the scanner applications.<br>[0 or 1/ **0** /1]<br>0: On, 1: Off | |
| 041 | Printer | |
| | Determines whether certification is required before a user can use the printer applications.<br>[0 or 1/ **0** /1]<br>0: On, 1: Off | |
| 051 | SDK1 | Determines whether certification is required before a user can use the SDK application.<br>[0 or 1 / **0** / 1] 0: ON. 1: OFF |
| 061 | SDK2 | |
| 071 | SDK3 | |

| | |
|---|---|
| 5430 | Auth Dialog Message Change |
| 001 | Message Change On/Off |
| 002 | Message Text Download |
| 003 | Message Text ID |
| | [0 to 1/0/1<br>0: OFF<br>1: ON |

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|---|---|
| 5431 | External Auth User Preset |
| | Allows or does not allow the copying for each data.<br>[0 or 1 / 1 / -]<br>0: Not allowed copying, 1: Allowed copying |
| 010 | Tag |

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|---|---|
| 011 | Entry |
| 012 | Group |
| 020 | Mail |
| 030 | Fax |
| 031 | FaxSub |
| 032 | Folder |
| 033 | ProtectCode |
| 034 | SmtpAuth |
| 035 | LdapAuth |
| 036 | Smb Ftp Fldr Auth |
| 037 | AcntAcl |
| 038 | Document Acl |
| 040 | CertCrypt |

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|---|---|
| 5481 | Authentication Error Code |
| | These SP codes determine how the authentication failures are displayed. |
| 001 | System Log Disp |
| | Determines whether an error code appears in the system log after a user authentication failure occurs.<br>[0 or 1/ **0** /1]<br>0: Off, 1: On |
| 002 | Panel Disp |
| | Determines whether an error code appears on the operation panel after a user authentication failure occurs.<br>[0 or 1/ **0** /1]<br>0: Off, 1: On |

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|---|---|
| 5490 | MF Key Card |
| | Sets operation of the MF key card.<br>[0 to 1/0/1]<br>1: Allowed<br>0: Not allowed<br>1: Certification executes with a user code (9999 9999). Printing executes and the counter increments for the user code.<br>0: Certification executes without a user code but printing is cancelled. |

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|---|---|
| 5501 | PM Alarm |
| | Sets the count level for the PM alarm.<br>[0 to 9999 / 0 / 1]<br>0: Alarm disabled<br>The PM alarm goes off when the print count reaches this value multiplied by 1,000. |

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|---|---|
| 5504 | Jam Alarm **Japan Only** |
| | Sets the alarm to sound for the specified jam level (document misfeeds are not included). RSS use only<br>[0 to 3 / 3 / 1 step]<br>0: Zero (Off)<br>1: Low (2.5K jams)<br>2: Medium (3K jams)<br>3: High (6K jams) |

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|---|---|
| 5505 | Error Alarm |
| | Sets the error alarm level. **Japan only DFU**<br>[0 to 255 / 50 / 100 copies per step] |

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|---|---|
| 5507 | Supply Alarm |

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|---|---|---|
| 001 | Paper Supply Alarm | |
| | Switches the control call on/off for the paper supply. **DFU**<br>0: Off, 1: On<br>0: No alarm.<br>1: Sets the alarm to sound for the specified number transfer sheets for each paper size (A3, A4, B4, B5, DLT, LG, LT, HLT) | |
| 002 | Staple Supply Alarm | |
| | Switches the control call on/off for the stapler installed in the finisher. **DFU**<br>0: Off, 1: On<br>0: No alarm<br>1: Alarm goes off for every 1K of staples used. | |
| 003 | Toner Supply Alarm | |
| | Switches the control call on/off for the toner end. **DFU**<br>0: Off, 1: On<br>If you select "1" the alarm will sound when the copier detects toner end. | |
| 080 | Toner Call Timing | |
| | Changes the timing of the "Toner Supply Call" via the NRS, when the following conditions occur.<br>**0:** Toner is replaced (default)<br>1: Toner near end or End | |
| 128 | Interval: Others | The "Paper Supply Call Level: nn" SPs specify the paper control call interval for the referenced paper sizes.<br>[00250 to 10000 / 1000 / 1 Step] |
| 132 | Interval: A3 | |
| 133 | Interval: A4 | |
| 134 | Interval: A5 | |
| 141 | Interval: B4 | |
| 142 | Interval: B5 | |
| 160 | Interval: DLT | |
| 164 | Interval: LG | |

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|---|---|---|
| 166 | Interval: LT | |
| 172 | Interval: HLT | |

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|---|---|---|
| 5508 | CC Call **Japan Only** | |
| 001 | Jam Remains | Enables/disables initiating a call.<br>[0 to 1/1]<br>0: Disabled, 1: Enabled |
| 002 | Continuous Jams | |
| 003 | Continuous Door Open | |
| 011 | Jam Detection: Time Length | |
| | Sets the length of time to determine the length of an unattended paper jam.<br>[03 to 30/1]<br>This setting is enabled only when SP5508-004 is enabled (set to 1). | |
| 012 | Jam Detection Continuous Count | |
| | Sets the number of continuous paper jams required to initiate a call.<br>[02 to 10/1]<br>This setting is enabled only when SP5508-004 is enabled (set to 1). | |
| 013 | Door Open: Time Length | |
| | Sets the length of time the remains opens to determine when to initiate a call.<br>[03 to 30/1]<br>This setting is enabled only when SP5508-004 is enabled (set to 1). | |

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|---|---|
| 5513 | Parts Alarm Level Count **Japan Only** |
| 001 | Normal |
| | Sets the parts replacement alarm counter to sound for the number of copies.<br>[1 to 9999 / 350 / 1] |
| 002 | DF |
| | Sets the parts replacement alarm counter to sound for the number of scanned originals. |

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|---|---|
| | [1 to 9999 / 350 / 1] |

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|---|---|---|
| 5515 | SC/Alarm Setting | |
| | With NRS (New Remote Service) in use, these SP codes can be set to issue an SC call when an SC error occurs. If this SP is switched off, the SC call is not issued when an SC error occurs. | |
| 001 | SC Call | [0 to 1/1/1]<br>0: Off, 1: On |
| 002 | Service Parts Near End Call | |
| 003 | Service Parts End Call | |
| 004 | User Call | |
| 006 | Communication Test Call | [0 or 1 / **1** / - ]<br>0: Off<br>1: On |
| 007 | Machine Information Notice | |
| 008 | Alarm Notice | |
| 010 | Supply Automatic Ordering Call | [0 to 1/0/1] |
| 011 | Supply Management Report Call | |
| 012 | Jam/Door Open Call | [0 to 1/1/1] |

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|---|---|
| 5801 | Memory Clear |
| | Resets NVRAM data to the default settings. Before executing any of these SP codes, print an SMC Report.<br>Important<br>The following data stored in the NVRAM will **not** be saved to the SD card when you perform an NVRAM data upload (SP5824).<br>➢ Total counter value<br>➢ C/O, P/O counter values<br>➢ Duplex, A3/DLT/Over 420mm, Stapler, and Scanner counter values |

| | | |
|---|---|---|
| | ➢ **Engine SP data**<br>Therefore, whenever you perform an NVRAM upload/download, make sure to print out the SP Data List **before** you perform **SP5801-001** (Memory Clear: All Clear) or **SP5801-002** (Memory Clear: Engine).<br>**NVRAM Upload/Download Procedure:**<br>1) Print out the SP Data List from **SP5990-002**.<br>2) Perform the NVRAM data upload (to the SD card) according to the procedure in the Service Manual.<br>3) Perform the memory clear (**SP5801-001 or -002**).<br>4) Perform the NVRAM data download (from the SD card) according to the procedure in the Service Manual.<br>5) Input the data listed above manually. | |
| 001 | All Clear | Initializes items 2 to 15 below. |
| 002 | Engine Clear | |
| | Initializes all registration settings for the engine and copy process settings. | |
| 003 | SCS | |
| | Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information. | |
| 005 | MCS | |
| | Initializes the automatic delete time setting for stored documents.<br>(MCS: Memory Control Service) | |
| 006 | Copier application | |
| | Initializes all copier application settings. | |
| 007 | Fax application | |
| | Initializes the fax reset time, job login ID, all TX/RX settings, local storage file numbers, and off-hook timer. | |

**Service Program Mode Tables**

| | |
|---|---|
| 008 | Printer application |
| | Initializes the printer defaults, programs registered, the printer SP bit switches, and the printer CSS counter. |
| 009 | Scanner application |
| | Initializes the defaults for the scanner and all the scanner SP modes. |
| 010 | Web Service/Network application |
| | Deletes the Netfile (NFA) management files and thumbnails, and initializes the Job login ID.<br>Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software |
| 012 | R-FAX |
| | Initializes the job login ID, SmartDeviceMonitor for Admin, job history, and local storage file numbers. |
| 014 | Clear DCS Setting |
| | Initializes the DCS (Delivery Control Service) settings. |
| 015 | Clear UCS Setting |
| | Initializes the UCS (User Information Control Service) settings. |
| 016 | MIRS Setting |
| | Initializes the MIRS (Machine Information Report Service) settings. |
| 017 | CCS |
| | Initializes the CCS (Certification and Charge-control Service) settings. |
| 018 | SRM Clear |
| | Initializes the SRM (System Resource Manager) settings. |
| 019 | LCS Clear |
| | Initializes the LCS (Log Count Service) settings. |

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|---|---|
| 020 | Web Uapl |
| | NIA |
| 021 | ECS |
| | Initializes the ECS settings. |

| | |
|---|---|
| 5802<br>-001 | Printer Free Run |
| | Make a base engine free run.<br>[0 to 1/**0**/1]<br>0: Release free run mode, 1:Enable free run mode<br>Return this setting to off (0) after testing is completed.<br>Finisher connectors should be disconnected and duplex mode should be off. |

| | |
|---|---|
| 5803 | Input Check |
| | See "p.4-241 "Copier Input Check: SP5803"" in the "Input/Output Check" section. |

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|---|---|
| 5804 | Output Check |
| | See "p.4-251 "Copier Output Check: SP5804"" in the "Input/Output Check" section. |

| | |
|---|---|
| 5807 | Option Connection Check |
| | This SP displays whether the devices listed below are connected or not.<br>1: Connected, 0: Not connected. |
| 001 | ADF (1: Connect) |
| 002 | Bank (1: Connect) |
| 003 | LCT (1: Connect) |
| 004 | Fin (1: Connct) |

| | |
|---|---|
| 5811 | Machine Serial Number Set **SSP** |
| -001 | Set Controller Serial Number |
| -004 | Set BCU Serial Number |
| -005 | Display Serial Number *[1] |

*[1] To display serial number, press C/M 1-4-3 C/S C/S Hold.

| | |
|---|---|
| 5812 | Service Tel. No. Setting |
| 001 | Service |
| | Inputs the telephone number of the CE (displayed when a service call condition occurs.) |
| 002 | Facsimile |
| | Use this to input the fax number of the CE printed on the Counter Report (UP mode). |
| 003 | Supply |
| | Displayed on the initial SP screen. |
| 004 | Operation |
| | Sales representative telephone number. |

| | | | |
|---|---|---|---|
| 5816 | Remote Service | *CTL | **-** |
| 001 | I/F Setting | | |
| | Selects the remote service setting.<br>[0 to 2 / **2** / 1 /step]<br>0: Remote service off<br>1: CSS remote service on<br>2: @Remote service on | | |
| 002 | CE Call | | |
| | Performs the CE Call at the start or end of the service.<br>[0 or 1 / **0** / 1 /step]<br>0: Start of the service<br>1: End of the service | | |

| | |
|---|---|
| | **NOTE:** This SP is activated only when SP 5816-001 is set to "2". |
| 003 | Function Flag |
| | Enables or disables the remote service function.<br>[0 to 1 / **0** / 1 /step]<br>0: Disabled, 1: Enabled<br>**NOTE:** This SP setting is changed to "1" after @Remote registor has been completed. |
| 007 | SSL Disable |
| | Uses or does not use the RCG certification by SSL when calling the RCG.<br>[0 to 1 / **0** / 1 /step]<br>0: Uses the RCG certification<br>1: Does no use the RCG certification |
| 008 | RCG Connect Timeout |
| | Specifies the connect timeout interval when calling the RCG.<br>[1 to 90 / **10** / 1 second /step] |
| 009 | RCG Write Timeout |
| | Specifies the write timeout interval when calling the RCG.<br>[1 to 100 / **60** / 1 second /step] |
| 010 | RCG Read Timeout |
| | Specifies the read timeout interval when calling the RCG.<br>[1 to 100 / **60** / 1 second /step] |
| 011 | Port 80 Enable |
| | Enables/disables access via port 80 to the SOAP method.<br>[0 or 1 / **0** / – ]<br>0: Disabled, 1: Enabled |
| 013 | RFU (Remote Frimware Update) Timing |
| | Selects the RFU timing.<br>[0 or 1 / **1** / – ] |

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| | 0: RFU is executed whenever update request is received.<br>1: RFU is executed only when the machine is in the sleep mode. |
| 021 | RCG – C Registed |
| | This SP displays the Embedded RC Gate installation end flag.<br>0: Installation not completed<br>1: Installation completed |
| 022 | RCG – C Regist Detail |
| | This SP displays the Embedded RC Gate installation status.<br>0: RCG device not registered<br>1: RCG device registered<br>2: Device registered |
| 023 | Connect Type (N/M) |
| | This SP displays and selects the Embedded RC Gate connection method.<br>[0 or 1 / **0** / 1 /step<br>0: Internet connection<br>1: Dial-up connection |
| 061 | Cert. Expire Timing **DFU** |
| | Proximity of the expiration of the certification. |
| 062 | Use Proxy |
| | This SP setting determines if the proxy server is used when the machine communicates with the service center. |
| 063 | Proxy Host |
| | This SP sets the address of the proxy server used for communication between Embedded RC Gate-N and the gateway. Use this SP to set up or display the customer proxy server address. The address is necessary to set up Embedded RC Gate-N.<br>Note<br>▪ The address display is limited to 128 characters. Characters beyond the 128 character are ignored. |

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| | ▪ This address is customer information and is not printed in the SMC report. |
| 064 | Proxy Port Number |
| | This SP sets the port number of the proxy server used for communication between Embedded RC Gate-N and the gateway. This setting is necessary to set up Embedded RC Gate-N.<br>Note<br>▪ This port number is customer information and is not printed in the SMC report. |
| 065 | Proxy User Name |
| | This SP sets the HTTP proxy certification user name.<br>Note<br>▪ The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored.<br>▪ This name is customer information and is not printed in the SMC report. |
| 066 | Proxy Password |
| | This SP sets the HTTP proxy certification password.<br>Note<br>▪ The length of the password is limited to 31 characters. Any character beyond the 31st character is ignored.<br>▪ This name is customer information and is not printed in the SMC report. |
| 067 | CERT: Up State |
| | Displays the status of the certification update. |
| | 0: The certification used by Embedded RC Gate is set correctly. |
| | 1: The certification request (setAuthKey) for update has been received from the GW URL and certification is presently being updated. |
| | 2: The certification update is completed and the GW URL is being notified of the successful update. |

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| | 3 | The certification update failed, and the GW URL is being notified of the failed update. |
| | 4 | The period of the certification has expired and new request for an update is being sent to the GW URL. |
| | 11 | A rescue update for certification has been issued and a rescue certification setting is in progress for the rescue GW connection. |
| | 12 | The rescue certification setting is completed and the GW URL is being notified of the certification update request. |
| | 13 | The notification of the request for certification update has completed successfully, and the system is waiting for the certification update request from the rescue GW URL. |
| | 14 | The notification of the certification request has been received from the rescue GW controller, and the certification is being stored. |
| | 15 | The certification has been stored, and the GW URL is being notified of the successful completion of this event. |
| | 16 | The storing of the certification has failed, and the GW URL is being notified of the failure of this event. |
| | 17 | The certification update request has been received from the GW URL, the GW URL was notified of the results of the update after it was completed, but a certification error has been received, and the rescue certification is being recorded. |
| | 18 | The rescue certification of No. 17 has been recorded, and the GW URL is being notified of the failure of the certification update. |
| 068 | CERT: Error | |
| | Displays a number code that describes the reason for the request for update of the certification. | |
| | 0 | Normal. There is no request for certification update in progress. |
| | 1 | Request for certification update in progress. The current certification has expired. |

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| | 2 | An SSL error notification has been issued. Issued after the certification has expired. |
| | 3 | Notification of shift from a common authentication to an individual certification. |
| | 4 | Notification of a common certification without ID2. |
| | 5 | Notification that no certification was issued. |
| | 6 | Notification that GW URL does not exist. |
| 069 | CERT: Up ID | The ID of the request for certification. |
| 083 | Firmware Up Status | Displays the status of the firmware update. |
| 084 | Non-HDD Firm Up | This setting determines if the firmware can be updated, even without the HDD installed.<br>0: Not allowed update<br>1: Allowed update |
| 085 | Firm Up User Check | This SP setting determines if the operator can confirm the previous version of the firmware before the firmware update execution. If the option to confirm the previous version is selected, a notification is sent to the system manager and the firmware update is done with the firmware files from the URL. |
| 086 | Firmware Size | Allows the service technician to confirm the size of the firmware data files during the firmware update execution. |
| 087 | CERT: Macro Ver. | Displays the macro version of the @Remote certification. |
| 088 | CERT: PAC Ver. | Displays the PAC version of the @Remote certification. |
| 089 | CERT: ID2 Code | Displays ID2 for the @Remote certification. Spaces are displayed as underscores (_). |

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| | | Asteriskes (*) indicate that no @Remote certification exists. "000000_____" indicates "Common certification". |
| 090 | CERT: Subject | Displays the common name of the @Remote certification subject. CN = the following 17 bytes. Spaces are displayed as underscores (_). Asterisks (*) indicate that no @Remote certification exists. "000000_____" indicates "Common certification". |
| 091 | CERT: Serial No. | Displays serial number for the @Remote certification. Asterisks (*) indicate that no @Remote certification exists. |
| 092 | CERT: Issuer | Displays the common name of the issuer of the @Remote certification. CN = the following 30 bytes. Asteriskes () indicate that no @Remote certification exists. |
| 093 | CERT: Valid Start | Displays the start time of the period for which the current @Remote certification is enabled. |
| 094 | CERT: Valid End | Displays the end time of the period for which the current @Remote certification is enabled. |
| 150 | Selection Country | |
| | **Not used** | |
| 151 | Line Type Automatic Judgment | |
| | **Not used** | |
| 152 | Line Type Judgment Result | |
| | **Not used** | |
| 153 | Selection Dial/Push | |
| | **Not used** | |

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| 154 | Outside Line/Outgoing Number | | |
| | **Not used** | | |
| 156 | Dial Up User Name | | |
| | **Not used** | | |
| 157 | Dial Up Password | | |
| | **Not used** | | |
| 161 | Local Phone Number | | |
| | **Not used** | | |
| 162 | Connection Timing Adjustment: Incoming | | |
| | **Not used** | | |
| 163 | Access Point | | |
| | **Not used** | | |
| 164 | Line Connecting | | |
| | **Not used** | | |
| 173 | Modem Serial Number | | |
| | **Not used** | | |
| 174 | Retransmission Limit | | |
| | **Not used** | | |
| 187 | FAX TX Priority | - | |
| | **Not used** | | |
| 200 | Manual Polling | - | **Not used** |
| 201 | Regist: Status | | |
| | Displays a number that indicates the status of the @Remote service device.<br>0: Neither the @Remote device nor Embedded RCG Gate is set. | | |

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| | 1: The Embedded RCG Gate is being set. Only Box registration is completed. In this status, @Remote device cannot communicate with this device.<br>2: The Embedded RCG Gate is set. In this status, the @Remote device cannot communicate with this device.<br>3: The @Remote device is being set. In this status the Embedded RCG Gate cannot be set.<br>4: The @Remote module has not started. | |
| 202 | Letter Number | Allows entry of the request number needed for the Embedded RCG Gate. |
| 203 | Confirm Execute | Executes the confirmation request to the @Remote Gateway. |
| 204 | Confirm Result | |
| | Displays a number that indicates the result of the confirmation executed with SP5816-203.<br>0: Succeeded<br>1: Confirmation number error<br>2: Registration in progress<br>3: Proxy error (proxy enabled)<br>4: Proxy error (proxy disabled)<br>5: Proxy error (Illegal user name or password)<br>6: Communication error<br>7: Certification update error<br>8: Other error<br>9: Confirmation executing | |
| 205 | Confirm Place | |
| | Displays the result of the notification sent to the device from the Gateway in answer to the confirmation request. Displayed only when the result is registered at the Gateway. | |
| 206 | Register Execute | Executes "Embedded RCG Registration". |
| 207 | Register Result | |
| | Displays a number that indicates the registration result. | |

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| | 0: Succeeded<br>2: Registration in progress<br>3: Proxy error (proxy enabled)<br>4: Proxy error (proxy disabled)<br>5: Proxy error (Illegal user name or password)<br>6: Communication error<br>7: Certification update error<br>8: Other error<br>9: Registration executing | | |
| 208 | Error Code | | |
| | Displays a number that describes the error code that was issued when either SP5816-204 or SP5816-207 was executed. | | |
| | **Cause** | **Code** | **Meaning** |
| | Illegal Modem Parameter | -11001 | Chat parameter error |
| | | -11002 | Chat execution error |
| | | -11003 | Unexpected error |
| | Operation Error, Incorrect Setting | -12002 | Inquiry, registration attempted without acquiring device status. |
| | | -12003 | Attempted registration without execution of an inquiry and no previous registration. |
| | | -12004 | Attempted setting with illegal entries for certification and ID2. |
| | | -12005 | @Remote communication is prohibited. The device has an Embedded RC gate-related problem. |
| | | -12006 | A confirmation request was made after the confirmation had been already completed. |

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| | | -12007 | The request number used at registration was different from the one used at confirmation. |
| | | -12008 | Update certification failed because mainframe was in use. |
| | Error Caused by Response from GW URL | -2385 | Attempted dial up overseas without the correct international prefix for the telephone number. |
| | | -2387 | Not supported at the Service Center |
| | | -2389 | Database out of service |
| | | -2390 | Program out of service |
| | | -2391 | Two registrations for same device |
| | | -2392 | Parameter error |
| | | -2393 | RCG device not managed |
| | | -2394 | Device not managed |
| | | -2395 | Box ID for RCG device is illegal |
| | | -2396 | Device ID for RCG device is illegal |
| | | -2397 | Incorrect ID2 format |
| | | -2398 | Incorrect request number format |
| 250 | CommLog Print | Prints the communication log. | |

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| 5821 | Remote Service Address | | |
| 002 | RCG IP Address | *CTL | Sets the IP address of the RCG (Remote Communication Gate) destination for call processing at the remote service center. |

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| 5824 | NVRAM Data Upload<br><br>Uploads the UP and SP mode data (except for counters and the serial number) from NVRAM on the control board to an SD card.<br>Note: While using this SP mode, always keep the front cover open. This prevents a software module accessing the NVRAM during the upload.<br>Important<br>The following data stored in the NVRAM will **not** be saved to the SD card when you perform an NVRAM data upload (SP5824).<br>➢ Total counter value<br>➢ C/O, P/O counter values<br>➢ Duplex, A3/DLT/Over 420mm, Stapler, and Scanner counter values<br>➢ **Engine SP data**<br>Therefore, whenever you perform an NVRAM upload/download, make sure to print out the SP Data List **before** you perform **SP5801-001** (Memory Clear: All Clear) or **SP5801-002** (Memory Clear: Engine).<br>**NVRAM Upload/Download Procedure:**<br>6) Print out the SP Data List from **SP5990-002**.<br>7) Perform the NVRAM data upload (to the SD card) according to the procedure in the Service Manual.<br>8) Perform the memory clear (**SP5801-001 or -002**).<br>9) Perform the NVRAM data download (from the SD card) according to the procedure in the Service Manual.<br>10) Input the data listed above manually. |

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| 5825 | NVRAM Data Download<br><br>Downloads data from an SD card to the NVRAM in the machine. After downloading is completed, remove the SD card and turn the machine power off and on. |

**Service Program Mode Tables**

| 5828 | Network Setting | *CTL | - |
|---|---|---|---|
| 050 | 1284 Compatibility (Centro) | Enables or disables 1284 Compatibility.<br>[0 or 1 / **1** / 1 / step]<br>0: Disabled, 1: Enabled | |
| 052 | ECP (Centro) | Enables or disables ECP Compatibility.<br>[0 or 1 / **1** / 1 / step]<br>0: Disabled, 1: Enabled<br>Note<br>▪ This SP is activated only when SP5-828-50 is set to "1". | |
| 065 | Job Spooling | Enables/disables Job Spooling.<br>[0 or 1 / **0** / 1 / step]<br>0: Disabled, 1: Enabled | |
| 066 | Job Spooling Clear: Start Time | Treatment of the job when a spooled job exists at power on.<br>0: ON (Data is cleared)<br>**1**: OFF (Automatically printed) | |
| 069 | Job Spooling (Protocol) | Validates or invalidates the job spooling function for each protocol.<br>**0**: Validates<br>1: Invalidates<br>bit0: LPR<br>bit1: FTP<br>bit2: IPP<br>bit3: SMB<br>bit4: BMLinkS<br>bit5: DIPRINT<br>bit6: sftp<br>bit7: (Reserved) | |
| 090 | TELNET (0: OFF 1: ON) | Enables or disables the Telnet protocol.<br>[0 or 1 / **1** / – ]<br>0: Disable, 1: Enable | |

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| 091 | Web (0: OFF 1: ON) | Enables or disables the Web operation.<br>[0 or 1 / **1** / – ]<br>0: Disable, 1: Enable |
| 145 | Active IPv6 Link Local Address | This is the IPv6 local address link referenced on the Ethernet or wireless LAN (802.11b) in the format:<br>"Link Local Address" + "Prefix Length"<br>The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. |
| 147 | Active IPv6 Stateless Address 1 | These SPs are the IPv6 status addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11b) in the format:<br>"Status Address" + "Prefix Length"<br>The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. |
| 149 | Active IPv6 Stateless Address 2 | |
| 151 | Active IPv6 Stateless Address 3 | |
| 153 | Active IPv6 Stateless Address 4 | |
| 155 | Active IPv6 Stateless Address 5 | |
| 156 | IPv6 Manual Address | This SP is the IPv6 manually set address referenced on the Ethernet or wireless LAN (802.11b) in the format:<br>"Manual Set Address" + "Prefix Length"<br>The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. |
| 158 | IPv6 Gateway Address | This SP is the IPv6 gateway address referenced on the Ethernet or wireless LAN (802.11b). The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. |
| 161 | IPv6 Stateless Auto Setting | Enables or disables the automatic setting for IPv6 stateless. |

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| | | [0 or 1 / **1** / 1 /step]<br>0: Disable, 1: Enable |
| 236 | Web Item Visible | Displays or does not display the Web system items.<br>[0 x 0000 to 0 x ffff / **0 x ffff**] 0: Not displayed, 1: Displayed<br>bit0: Net RICOH<br>bit1: Consumable Supplier<br>bit2-15: Reserved (all) |
| 237 | Web shopping Link Visible | Displays or does not display the link to Net RICOH on the top page and link page of the web system.<br>[0 to 1 / **1** / 1]<br>0: Not display, 1:Display |
| 238 | Web Supplies Link visible | Displays or does not display the link to Consumable Supplier on the top page and link page of the web system.<br>[0 to 1 / **1** / 1]<br>0: Not display, 1:Display |
| 239 | Web Link 1 Name | This SP confirms or changes the URL1 name on the link page of the web system. The maximum characters for the URL name are 31 characters. |
| 240 | Web Link 1 URL | This SP confirms or changes the link to URL1 on the link page of the web system. The maximum characters for the URL are 127 characters. |
| 241 | Web Link 1 visible | Displays or does not display the link to URL1 on the top page of the web system.<br>[0 to 1 / **1** / 1]<br>0: Not display, 1:Display |
| 242 | Web Link 2 Name | Same as "-239" |
| 243 | Web Link 2 URL | Same as "-240" |

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| 244 | Web Link 2 visible | Same as "-241" |

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| 5831 -002 | Initial Setting Mode Clear |
| | Press [EXECUTE] to restore the inisial settings of all SP codes to their initial (factory) settings.<br>**Note**: This SP does not reset time settings or user tool settings. |

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| 5832 | HDD |
| | Enter the SP number for the partition to initialize, then press #. When the execution ends, cycle the machine power off and on. |
| 001 | HDD Formatting (All) |
| 002 | HDD Formatting (IMH) |
| 003 | HDD Formatting (Thumbnail) |
| 004 | HDD Formatting (Job Log) |
| 005 | HDD Formatting (Printer Fonts) |
| 006 | HDD Formatting (User Info1) |
| 007 | Mail RX Data |
| 008 | Mail TX Data |
| 009 | HDD Formatting (Data for Design) |
| 010 | HDD Formatting (Log) |
| 011 | HDD Formatting (Ridoc I/F) (for Ridoc Desk Top Binder) |

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| 5836 | Capture Setting |
| 001 | Capture Function (0:Off 1:On) |
| | With this function disabled, the settings related to the capture feature cannot be initialized, displayed, or selected. |

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| | [0 to 1/1]<br>0: Disable, 1: Enable |
| 002 | Panel Setting |
| | Determines whether each capture related setting can be selected or updated from the initial system screen.<br>[0 to 1/1]<br>0: Disable, 1: Enable<br>The setting for SP5836-001 has priority. |
| 003 | Print Back-up Function |
| | Determines whether the print back-up function setting can be changed.<br>[0 to 1/1]<br>0: Disable, 1: Enable |
| 072 | Reduction for Copy B&W Text<br>[0 to 6/1] 0: 1, 1: 1/2, 2: 1/3, 3: 1/4, 6: 2/3 |
| 073 | Reduction for Copy B&W Other<br>[0 to 6/1] 0: 1, 1: 1/2, 2: 1/3, 3: 1/4, 6: 2/3 |
| 075 | Reduction for Printer B&W<br>[0 to 6/1] 0: 1, 1: 1/2, 2: 1/3, 3: 1/4, 6: 2/3 |
| 076 | Reduction for Printer B&W HQ<br>[0 to 6/1] 0: 1, 1: 1/2, 2: 1/3, 3: 1/4, 6: 2/3 |
| 081 | Format for Copy Color<br>[0 to 3/1]<br>0:JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR |
| 082 | Format for Copy B&W Text<br>[0 to 3/1]<br>0:JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR |
| 083 | Format for Copy B&W Other<br>[0 to 3/1]<br>0:JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR |

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| 084 | Format for Printer Color<br>[0 to 3/1]<br>0:JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR |
| 085 | Format for Printer B&W<br>[0 to 3/1]<br>0:JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR |
| 086 | Format for Printer B&W HQ<br>[0 to 3/1]]<br>0:JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR |
| 091 | Default for JPEG<br>[5 to 95/1]<br>Sets the JPEG format default for documents sent to the document management server with the MLB, with JPEG selected as the format.<br>Enabled only when optional File Format Converter (MLB: Media Link Board) is installed. |
| 092 | Hgih Quality for JPEG<br>Determines the quality level of JPEG images for high quality sent to the Document Server via the MLB (Media Link Board)<br>[5 to 95/60/1] |
| 093 | Low Quality for JPEG<br>Determines the quality level of JPEG images for low quality sent to the Document Server via the MLB (Media Link Board)<br>[5 to 95/40/1] |
| 094 | Default Format for Back Up Files<br>Sets the format for backup files created when the print backup function is used.<br>[0 to 4/0/1]<br>0: TIFF<br>1: JPEG<br>2: J2K<br>3: PDF Single<br>4: PDF Multi |

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| 095 | Default Resolution for Back Up Files |
| | Sets the resolution for backup files (JPEG, TIFF) when the print backup function is used. This SP can be used only after JPEG or TIFF is selected<br>for SP5836-094<br>[0 to 6/2/1]<br>0: 1/1<br>1: 1/2<br>3: 1/4<br>6: 2/3 (Unavailable for some models) |
| 096 | Default User Name for Backup Files |
| | Sets the user name when the print backup function is used.<br>Limit: 8 alphanumeric characters. |
| 097 | Default Compression for Backup Files |
| | This SP sets the compression rate for JPEG backup files when the print backup function is used. This SP operates only after SP5826-094 has been set for "1" (JPEG).<br>[0 to 2/0/1] |
| 098 | Back Projection Removal |
| | Removes the ghost images fransferred from the back sides of double-sided originals.<br>1: Enable, 0: Disable |
| 101 | Primary srv IP address |
| | Sets the IP address of the PC designated to operate as the primary capture server (CS).<br>[000.000.000.000] |
| 102 | Primary srv scheme |
| | Sets the IO device of the primary CS remotely.<br>Max. characters: 6 |
| 103 | Primary svr port number |

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| | Use to set the IO device for the primary CS remotely.<br>[1 to 65535/80/1] |
| 104 | Primary srv URL path |
| | Use to set the IO device for the primary CS remotely.<br>Max. characters: 16 |
| 111 | Secondary srv IP address |
| | Sets the IP address of the PC designated to operate as the secondary capture server (CS).<br>[000.000.000.000] |
| 112 | Secondary srv scheme |
| | Sets the IO device of the secondary CS remotely.<br>Max. characters: 6 |
| 113 | Secondary srv port number |
| | Sets the IO device of the secondary CS remotely.<br>Max. characters: 6 |
| 114 | Secondary srv URL path |
| | Sets the IO device of the secondary CS remotely.<br>Max. characters: 6 |
| 120 | Default Reso Rate Switch |
| | Sets the IO device of the CS remotely.<br>[0 to 1/0/1] |
| 121 | Reso: Copy (Color) |
| | Sets the IO device of the CS remotely. [0 to 6/3/1]<br>0: 600dpi, 1: 400dpi, 2: 300dpi, 3: 200dpi,<br>4: 150dpi, 5: 100dpi, 6: 75dpi |
| 122 | Reso: Copy (Mono) |
| | Sets the IO device of the CS remotely: [0 to 6/3/1] |

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| | 0: 600dpi, 1: 400dpi, 2: 300dpi, 3: 200dpi,<br>4: 150dpi, 5: 100dpi, 6: 75dpi |
| 123 | Reso: Print (Color) |
| | Sets the IO device of the CS remotely: [0 to 6/3/1]<br>0: 600dpi, 1: 400dpi, 2: 300dpi, 3: 200dpi,<br>4: 150dpi, 5: 100dpi, 6: 75dpi |
| 124 | Reso: Print (Mono) |
| | Sets the IO device of the CS remotely: [0 to 6/3/1]<br>0: 600dpi, 1: 400dpi, 2: 300dpi, 3: 200dpi,<br>4: 150dpi, 5: 100dpi, 6: 75dpi |
| 125 | Reso: Fax (Color) |
| | Sets the IO device of the CS remotely: [0 to 6/3/1]<br>0: 600dpi, 1: 400dpi, 2: 300dpi, 3: 200dpi,<br>4: 150dpi, 5: 100dpi, 6: 75dpi |
| 126 | Reso: Fax (Mono) |
| | 0: 600dpi, 1: 400dpi, 2: 300dpi, 3: 200dpi,<br>4: 150dpi, 5: 100dpi, 6: 75dpi |
| 127 | Reso: Scan (Color) |
| | 0: 600dpi, 1: 400dpi, 2: 300dpi, 3: 200dpi,<br>4: 150dpi, 5: 100dpi, 6: 75dpi |
| 128 | Reso: Scan (Mono) |
| | 0: 600dpi, 1: 400dpi, 2: 300dpi, 3: 200dpi,<br>4: 150dpi, 5: 100dpi, 6: 75dpi |
| 141 | All addr Info Switch |
| | Expands the scope of used resources and performance. Switch this off if this feature is not being used.<br>[0 to 1/1/1]<br>1: ON |

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| | 0: OFF |
| 142 | Stand-by Doc Max Number |
| | Expands the scope of used resources and performance. Switch this off if this feature is not being used.<br>[0 to 1/1/1]<br>1: ON<br>2: OFF |

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| 5840 | IEEE 802.11 |
| 006 | Channel MAX |
| | Sets the maximum range of the bandwidth for the wireless LAN. This bandwidth setting varies for different countries.<br>[1 to 14/1] |
| 007 | Channel MIN |
| | Sets the minimum range of the bandwidth for operation of the wireless LAN. This bandwidth setting varies for different countries.<br>[1 to 14/1] |
| 011 | WEP Key Select |
| | Determines how the initiator (SBP-2) handles subsequent login requests.<br>[0 to 1/1]<br>0: If the initiator receives another login request while logging in, the request is refused.<br>1: If the initiator receives another login request while logging in, the request is refused and the initiator logs out.<br>Note: Displayed only when the wireless LAN card is installed. |
| 042 | Fragment Thresh |
| | Adjusts the fragment threshold for the IEEE802.11 card.<br>[256 to 2346 / 2346 / 1]<br>This SP is displayed only when the IEEE802.11 card is installed. |

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| 043 | 11g CTS to Self |
| | Determines whether the CTS self function is turned on or off.<br>[0 to 1 / 1 / 1] 0: Off, 1: On<br>This SP is displayed only when the IEEE802.11 card is installed. |
| 044 | 11g Start Time |
| | Selects the slot time for IEEE802.11.<br>[0 to 1 / 0 / 1] 0: 20 mm, 1: 9 mm |
| 045 | WPA Debug Lvl1 |
| | Selects the debug level for WPA authentication application.<br>[1 to 3 / 3 / 1] 1: Info, 2: warning, 3: error<br>This SP is displayed only when the IEEE802.11 card is installed. |

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| 5841 | Supply Name Setting |
| | Press the [User Tools] key. These names appear when the user presses the Inquiry button on the User Tools screen. |
| 001 | Toner Name Setting: Black |
| 008 | Paste Name |
| 011 | Staple Std 1 |
| 012 | Staple Std 2 |
| 013 | Staple Std 3 |
| 014 | Staple Std 4 |
| 021 | Staple Bind 1 |
| 022 | Staple Bind 2 |
| 023 | Staple Bind 3 |
| 031 | Ring Name (50/black) |
| 032 | Ring Name (50/white) |

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|---|---|
| 033 | Ring Name (100/black) |
| 034 | Ring Name (100/white) |

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|---|---|
| 5842 | GWS Analysis Setting **DFU** |
| | This settings select the output mode for debugging information as each network file is processed. |
| 001 | Setting 1 |
| | Default: **00000000** Do not change<br>Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software |
| 002 | Setting 2 |
| | Adjusts the debug program modesetting.<br>Bit7: 5682 mmseg-log setting<br>0: Date/Hour/Minute/Second<br>1: Minute/Second/Msec.<br>0 to 6: Not used |

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|---|---|
| 5844 | USB |
| 001 | Transfer Rate |
| | Sets the speed for USB data transmission.<br>[Full Speed]<br>[Auto Change] |
| 002 | Vendor ID |
| | Sets the vendor ID:<br>Initial Setting: 0x05A Ricoh Company<br>[0x0000 to 0xFFFF/1] **DFU** |
| 003 | Product ID |
| | Sets the product ID. |

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|---|---|
| | [0x0000 to 0xFFFF/1] **DFU** |
| 004 | Device Release No. |
| | Sets the device release number of the BCD (binary coded decimal) display.<br>[0000 to 9999/1]<br>Enter as a decimal number. NCS converts the number to hexadecimal number recognized as the BCD. |
| 005 | Fixed USB Port |
| | Selects the PnP name standardization mode.<br>[0 to 2 / **0** / 1/step]<br>0: Disable<br>1: Level 1<br>2: Level 2 |
| 006 | PnP Model Name |
| | Specifies PnP name for USB device. |
| 007 | PnP Serial Number |
| | Specifies PnP serial number for USB device. |
| 100 | Notify Unsupport |
| | Displays or does not display USB unsupport message.<br>[0 or 1 / **1** / -]<br>0: Not displayed, |

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| 5845 | Delivery Server Setting | *CTL | - |
| | Provides items for delivery server settings. | | |
| 001 | FTP Port No. | [0 to 65535 / **3670** / 1 /step] | |
| | Sets the FTP port number used when image files to the Scan Router Server. | | |
| 002 | IP Address (Primary) | Range: **000.000.000.000** to 255.255.255.255 | |

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|---|---|---|
| | Use this SP to set the Scan Router Server address. The IP address under the transfer tab can be referenced by the initial system setting. | |
| 006 | Delivery Error Display Time | [0 to 999 / **300** / 1 second /step] |
| | Use this setting to determine the length of time the prompt message is displayed when a test error occurs during document transfer with the NetFile application and an external device. | |
| 008 | IP Address (Secondary) | Range: **000.000.000.000** to 255.255.255.255 |
| | Specifies the IP address assigned to the computer designated to function as the secondary delivery server of Scan Router. This SP allows only the setting of the IP address without reference to the DNS setting. | |
| 009 | Delivery Server Model | [0 to 4/ **0** / 1 /step] |
| | Allows changing the model of the delivery server registered by the I/O device.<br>0: Unknown<br>1: SG1 Provided<br>2: SG1 Package<br>3: SG2 Provided<br>4: SG2 Package | |
| 010 | Delivery Svr Capability | [0 to 255 / **0** / 1 /step] |
| | Changes the capability of the registered that the I/O device registered. | |
| | Bit7 = 1 Comment information exits | |
| | Bit6 = 1 Direct specification of mail address possible | |
| | Bit5 = 1 Mail RX confirmation setting possible | |
| | Bit4 = 1 Address book automatic update function exists | |
| | Bit3 = 1 Fax RX delivery function exists | |
| | Bit2 = 1 Sender password function exists | |
| | Bit1 = 1 Function to link MK-1 user and Sender exists | |

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|---|---|---|
| | Bit0 = 1 Sender specification required (if set to 1, Bit6 is set to "0") | |
| 011 | Delivery Svr Capability (Ext) | [0 to 255 / **0** / 1 /step] |
| | Changes the capability of the registered that the I/O device registered. | |
| | Bit7 = 1 Address book usage limitation (Limitation for each authorized user)<br>Bit6 = 1 RDH authorization link<br>Bit5 to 0: Not used | |
| 013 | Server Scheme (Primary) **DFU** | |
| | This is used for the scan router program. | |
| 014 | Server Port Number (Primary) **DFU** | |
| | This is used for the scan router program. | |
| 015 | Server URL Path (Primary) **DFU** | |
| | This is used for the scan router program. | |
| 016 | Server Scheme (Secondary) **DFU** | |
| | This is used for the scan router program. | |
| 017 | Server Port Number (Secondary) **DFU** | |
| | This is used for the scan router program. | |
| 018 | Server URL Path (Secondary) **DFU** | |
| | This is used for the scan router program. | |
| 022 | Rapid Sending Control | |
| | Enables or disables the prevention function for the continuous data sending error.<br>[0 to 1 / **0** / -]<br>0: Disable, 1: Enable | |

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| 5846 | UCS Settings | *CTL | - |

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| 001 | Machine ID (For Delivery Server) | Displays ID |
| | Displays the unique device ID in use by the delivery server directory. The value is only displayed and cannot be changed. This ID is created from the NIC MAC or IEEE 1394 EUI. The ID is displayed as either 6-byle or 8-byte binary. | |
| 002 | Machine ID Clear (For Delivery Server) | Clears ID |
| | Clears the unique ID of the device used as the name in the file transfer directory. Execute this SP if the connection of the device to the delivery server is unstable. After clearing the ID, the ID will be established again automatically by cycling the machine off and on. | |
| 003 | Maximum Entries | [2000 to 20000/ **2000** /1 /step] |
| | Changes the maximum number of entries that UCS can handle.<br>If a value smaller than the present value is set, the UCS managed data is cleared, and the data (excluding user code information) is displayed. | |
| 006 | Delivery Server Retry Timer | [0 to 255 / **0** / 1 /step] |
| | Sets the interval for retry attempts when the delivery server fails to acquire the delivery server address book. | |
| 007 | Delivery Server Retry Times | [0 to 255 / **0** / 1 /step] |
| | Sets the number of retry attempts when the delivery server fails to acquire the delivery server address book. | |
| 008 | Delivery Server Maximum Entries | [2000 to 50000 / **2000** / 1/step] |
| | Sets the maximum number account entries of the delivery server user information managed by UCS. | |
| 010 | LDAP Search Timeout | [1 to 255 / **60** / 1 /step] |
| | Sets the length of the timeout for the search of the LDAP server. | |
| 020 | WSD Maximum Entries | |
| 040 | Addr Book Migration (SD => HDD) | |

**Service Program Mode Tables**

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|---|---|---|
| | Not used in this machine. | |
| 041 | Fill Addr Acl Info. | |
| | This SP must be executed immediately after installation of an HDD unit in a basic machine that previously had no HDD. The first time the machine is powered on with the new HDD installed, the system automatically takes the address book from the NVRAM and writes it onto the new HDD. However, the new address book on the HDD can be accessed only by the system administrator at this stage. Executing this SP by the service technician immediately after power on grants full address book access to all users.<br>Procedure<br>1. Turn the machine off.<br>2. Install a new HDD.<br>3. Turn the machine on.<br>4. The address book and its initial data are created on the HDD automatically.<br>5. However, at this point the address book can be accessed by only the system administrator or key operator.<br>6. Enter the SP mode and do SP5846-041. After this SP executes successfully, any user can access the address book. | |
| 043 | Addr Book Media | Displays the slot number where an address book data is in.<br>[0 to 30 / **-** /1]<br>0: Unconfirmed<br>1: SD Slot 1<br>2: SD Slot 2<br>4: USB Flash ROM<br>20: HDD<br>30: Nothing |
| 047 | Initialize Local Addr Book | Clears the local address book information, including the user code. |
| 048 | Initialize Delivery Addr Book | Clears the distribution address book information, except the user code. |
| 049 | Initialize LDAP Addr Book | Clears the LDAP address book information, |

| | | |
|---|---|---|
| | | except the user code. |
| 050 | Initialize All Addr Book | Clears all directory information managed by UCS, including all user codes. |
| 051 | Backup All Addr Book | Uploads all directory information to the SD card. |
| 052 | Restore All Addr Book | Downloads all directory information from the SD card. |
| 053 | Clear Backup Info | Deletes the address book data from the SD card in the service slot.<br>Deletes only the files that were uploaded from this machine.<br>This feature does not work if the card is write-protected.<br>Note<br>▪ After you do this SP, go out of the SP mode, and then turn the power off.<br>▪ Do not remove the SD card until the Power LED stops flashing. |
| 060 | Search Option | |
| | This SP uses bit switches to set up the fuzzy search options for the UCS local address book.<br>Bit: Meaning<br>0: Checks both upper/lower case characters<br>1: Japan Only<br>2: Japan Only<br>3: Japan Only<br>4 to 7: Not Used | |
| 062 | Complexity Option 1 | |
| | Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to **upper case** and sets the length of the password. | |

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| | [0 to 32 / **0** / 1 /step]<br>Note<br>▪ This SP does not normally require adjustment.<br>▪ This SP is enabled only after the system administrator has set up a group password policy to control access to the address book. | |
| 063 | Complexity Option 2 **DFU** | |
| 064 | Complexity Option 3 **DFU** | |
| 065 | Complexity Option 4 **DFU** | |
| 091 | FTP Auth Port Setting | Specifies the FTP port for getting a distribution server address book that is used in the identification mode.<br>[0 to 65535 / **3671** / 1 /step] |
| 094 | Encryption Stat | Shows the status of the encryption function for the address book data. |

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| 5847 | Resolution Reduction | |
| | 5847-002 through 5847-006 changes the default settings of image data sent externally by the Net File page reference function. [0 to 2/1]<br>5847 21 sets the default for JPEG image quality of image files controlled by NetFile.<br>"Repository" refers to jobs to be printed from the document server with a PC and the DeskTopBinder software. | |
| 002 | Rate for Copy B&W Text | [0 to 6/1]<br>0: 1x<br>1: 1/2x<br>2: 1/3x<br>3: 1/4x<br>4: 1/6x<br>5: 1/8x<br>6: 2/3x1<br>"6: 2/3x" applies to 003, 005 only. |
| 003 | Rate for Copy B&W Other | |
| 005 | Rate for Printer B&W | |
| 007 | Rate for Printer B&W 1200dpi | |

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| 021 | Network Quality Default for JPEG |
| | Sets the default value for the quality of JPEG images sent as NetFile pages. This function is available only with the MLB (Media Link Board) option installed.<br>[5 to 95/1] |

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| 5848 | Web Service | |
| | 5847 2 sets the 4-bit switch assignment for the access control setting. Setting of 0001 has no effect on access and delivery from Scan Router.<br>5847 100 sets the maximum size of images that can be downloaded. The default is equal to 1 gigabyte. | |
| 002 | Acc. Ctrl.: Repository (only Lower 4 Bits) | 0000: No access control<br>0001: Denies access to DeskTop Binder. |
| 003 | Acc. Ctrl.: Doc. Svr. Print (Lower 4 Bits) | Switches access control on/off.<br>0000: OFF, 0001: ON |
| 004 | Acc. Ctrl.: User Directory (Lower 4 Bits) | |
| 009 | Acc. Ctrl.: Job Control (Lower 4 Bits) | |
| 011 | Acc. Ctrl: Device Management (Lower 4 Bits) | |
| 021 | Acc. Ctrl: Delivery (Lower 4 Bits) | |
| 022 | Acc. Ctrl: User Administration (Lower 4 Bits) | |
| 100 | Repository: Download Image Max. Size | [1 to 1024/1 K] |
| 210 | Setting: Log Type: Job 1 | Switches access control on/off.<br>0000: OFF, 0001: ON |
| 211 | Setting: Log Type: Job 2 | |
| 212 | Setting: LogType Access | |

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| 213 | Setting: Primary Srv **DFU** | |
| 214 | Setting: Secondary Srv | |
| | Specifies the maximum size of the image data that the machine can download.<br>[1 to 1024 / **1024** / 1 MB /step] | |
| 215 | Setting: Start Time | - |
| 216 | Setting: Interval Time | |
| 217 | Setting: Timing | |

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| 5849 | Installation Date |
| | Displays or prints the installation date of the machine. |
| 001 | Display |
| | The "Counter Clear Day" has been changed to "Installation Date" or "Inst. Date". |
| 002 | Switch to Print |
| | Determines whether the installation date is printed on the printout for the total counter.<br>[0 to 1/1]<br>0: No Print, 1: Print |
| 003 | Total Counter |
| | Displays the total count from the day set with SP5849-001.<br>[0 to 9999 9999] |

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| 5850 003 | Address Book Function |
| | Not used |

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| 5851 | Bluetooth Mode |
| | Sets the operation mode for the Bluetooth unit. Press either key. |

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| | [**0**: Public] [1: Private] |

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| 5853 | Stamp Data Download |
| | Push [Execute] to download the fixed stamp data from the machine ROM onto the hard disk. Then these stamps can be used by the system. If this is not done, the user will not have access to the fixed stamps ("Confidential", "Secret", etc.). You must always execute this SP after replacing the HDD or after formatting the HDD. Always switch the machine off and on after executing this SP. |

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| 5856 | Remote ROM Update |
| | When set to "1" allows reception of firmware data via the local port (IEEE 1284) during a remote ROM update. This setting is reset to zero after the machine is cycled off and on. Allows the technician to upgrade the firmware using a parallel cable.<br>[0 to 1/1]<br>0: Not allowed, 1: Allowed |

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| 5857 | Save Debug Log | *CTL | - |
| 001 | On/Off (1:ON 0:OFF) | **0**: OFF, 1: ON | |
| | Switches the debug log feature on and off. The debug log cannot be captured until this feature is switched on. | | |
| 002 | Target (2: HDD 3: SD) | **2**: HDD, 3: SD Card | |
| | Selects the storage device to save debug logs information when the conditions set with SP5-858 are satisfied.<br>[ 2 to 3 / **2** / 1 /step] | | |
| 005 | Save to HDD | | |
| | Saves the debug log of the input SC number in memory to the HDD.<br>A unique file name is generated to avoid overwriting existing file names on the SD Card. Up to 4MB can be copied to an SD Card. 4 MB segments can be | | |

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| | copied one by one to each SD Card. |
| 006 | Save to SD Card |
| | Saves the debug log of the input SC number in memory to the SD card. |
| 009 | Copy HDD to SD Card (Latest 4 MB) |
| 010 | Copy HDD to SD Card (Latest 4 MB Any Key) |
| 011 | Erase HDD Debug Data |
| 012 | Erase SD Card Debug Data |
| 013 | Free Space on SD Card |
| 014 | Copy SD to SD (Latest 4 MB) |
| 015 | Copy SD to SD (Latest 4 MB Any Key) |
| 016 | Make HDD Debug |
| 017 | Make SD Debug |

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| 5858 | Debug Save When |
| | These SPs select the content of the debugging information to be saved to the destination selected by SP5857-002.<br>SP5858-003 stores one SC specified by number. |
| 001 | Engine SC Error (0:OFF 1:ON) |
| | Stores SC codes generated by copier engine errors. |
| 002 | Controller SC Error (0:OFF 1:ON) |
| | Stores SC codes generated by GW controller errors. |
| 003 | Any SC Error (0:OFF 1:ON) |
| | [0 to 65535 / 0 / 1 ] |
| 004 | Jam (0:OFF 1:ON) |

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| | Stores jam errors. |

| 5859 | Debug Log Save Function | |
|---|---|---|
| 001 | Key 1 | These SPs allow you to set up to 10 keys for log files for functions that use common memory on the controller board.<br>[-9999999 to 9999999/1] |
| 002 | Key 2 | |
| 003 | Key 3 | |
| 004 | Key 4 | |
| 005 | Key 5 | |
| 006 | Key 6 | |
| 007 | Key 7 | |
| 008 | Key 8 | |
| 009 | Key 9 | |
| 010 | Key 10 | |

| 5860 | SMTP/POP3/IMAP4 |
|---|---|
| 020 | Partial Mail Receive Timeout |
| | [1 to 168/72/1]<br>Sets the amount of time to wait before saving a mail that breaks up during reception. The received mail is discarded if the remaining portion of the mail is not received during this prescribed time. |
| 021 | MDN Response RFC2298Compliance |
| | Determines whether RFC2298compliance is switched on for MDN reply mail.<br>[0 to 1/1]<br>0: No, 1: Yes |
| 022 | SMTP Auth. From Field Replacement |
| | Determines whether the FROM item of the mail header is switched to the |

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| | validated account after the SMTP server is validated.<br>[0 to 1/1]<br>0: No. "From" item not switched.<br>1: Yes. "From" item switched. |
| 025 | SMTP Auth Direct Sending |
| | Occasionally, all SMTP certifications may fail with SP5860 006 set to "2" to enable encryption during SMTP certification for the SMTP server. This can occur if the SMTP server does not meet RFC standards. In such cases you can use this SP to set the SMTP certification method directly. However, this SP can be used only after SP5860 003 has been set to "1" (On).<br>Bit0: LOGIN<br>Bit1: PLAIN<br>Bit2: CRAM_MD5<br>Bit3: DIGEST_MD5<br>Bit4 to Bit 7: Not Used |
| 026 | S/MIME: MIME Header Settings |
| | Selects the MIME header type of an e-mail sent by S/MIME.<br>[0 to 2 / **0** / 1]<br>0: Microsoft Outlook Express standard<br>1: Internet Draft standard<br>2: RFC standard |

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| 5866 | E-Mail Report |
| | This SP controls operation of the email notification function. |
| 001 | Report Validity |
| | Enables or disables the e-mail notification to @Remote.<br>[0 or 1 / **0** / 1 ]<br>0: Enable, 1: Disable |
| 005 | Add Date Field |
| | Disables and re-enables the addition of a date field to the email notification. |

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| | [0 to 1/0/1] |

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| 5870 | Common Key Info Writing | |
| | Writes to flash ROM the common proof for validating the device for NRS specifications. | |
| 001 | Writing | Note: These SPs are for future use and currently are not used. |
| 003 | Initialize | Initializes the set certification.<br>When the GW controller board is replaced with a new one for repair, you must execute the "Initiralize (-003)" and "Writing (-001)" just after the new board replacement.<br>**NOTE:** Turn off and on the main power switch after the "Initiralize (-003)" and "Writing (-001)" have been done. |

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| 5873 | SD Card Appli Move | |
| | Allows you to move applications from one SD card another. | |
| 001 | Move Exec | Executes the move from one SD card to another. |
| 002 | Undo Exec | This is an undo function. It cancels the previous execution. |

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| 5875 | SC Auto Reboot |
| | This SP determines whether the machine reboots automatically when an SC error occurs.<br>**Note:** The reboot does not occur for Type A and C SC codes. |
| 001 | Reboot Setting |
| | [0 to 1/0/1]<br>0: On, 1: Off<br>On: default: 0 (Reboots automatically) The machine reboots automatically when the machine issues an SC error and logs the SC error code. If the same SC occurs again, the machine does not reboot.<br>OFF: 1 (Does not reboot automatically. Changing this setting to "0" sets the |

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| | machine to reboot automatically after an SC occurs. |
| | Reboot Type |
| 002 | This setting determines how the machine reboots after an SC code is issued.<br>[0 to 1/0/1]<br>0: Allows manual reboot, 1: Automatic reboot |

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| 5878 | Option Setup |
| | This SP enables the DOS application (Data Overwrite Security). Do this SP after installing Data Overwrite Security Unit.) |
| 001 | Data Overwrite Security |
| | Enables the Data Overwrite Security unit.<br>Touch [EXECUTE] on the operation panel. Then cycle the machine off/on. |
| 002 | HDD Encryption |
| | Enables the Copy Data Security unit.<br>Touch [EXECUTE] on the operation panel. Then cycle the machine off/on. |

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| 5881 | Fixed Phase Block Erasing |
| | Touch [EXECUTE] on the operation panel. Then erase all the fixed phase block. |

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| 5885 | WIM Settings **DFU** | |
| 020 | Doc Svr Acc Ctrl | |
| | **Bit** | Meaning |
| | 0 | Forbid all document server access (1) |
| | 1 | Forbid user mode access (1) |
| | 2 | Forbid print function (1) |
| | 3 | Forbid fax TX (1) |

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| | 4 | Forbid scan sending (1) |
| | 5 | Forbid downloading (1) |
| | 6 | Forbid delete (1) |
| | 7 | Reserved |

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| 101 | Set Encryption |
| | Determines whether the scanned documents with the WIM are encrypted when they are transmitted by an e-mail.<br>[0 or 1 / **0** / -]<br>0: Not encrypted, 1: Encrypted |

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| 5887 | SD Get Counter | | |
| | This SP determines whether the ROM can be updated. | | |
| 001 | - | *CTL | |
| | This SP sends a text file to an SD card inserted in SD card Slot 2 (lower slot). The operation stores. The file is stored in a folder created in the root directory of the SD card called SD_COUNTER. The file is saved as a text file (*.txt) prefixed with the number of the machine.<br>1. Insert the SD card in SD card Slot 2 (lower slot).<br>2. Select SP5887 then touch [EXECUTE].<br>3. Touch [Execute] in the message when you are prompted. | | |

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| 5888 | Personal Information Protect |
| | Selects the protection level for logs.<br>[0 to 1 / **0** / 1]<br>0: No authentication, No protection for logs<br>1: No authentication, Protected logs (only an administrator can see the logs) |

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| 5893 | SDK Application Couner |
| | Displays the counter name of each SDK application. |

**Service Program Mode Tables**

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| 001 | SDK-1 |
| 002 | SDK-2 |
| 003 | SDK-3 |
| 004 | SDK-4 |
| 005 | SDK-5 |
| 006 | SDK-6 |

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| 5894 | External Charge Unit Setting Switch Charge Mode |
| | [0 to 2/0/1] |

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| 5896 | Copy/Printer Priority |

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| 5899 | PM Double Count |
| | This SP sets the PM counter to count double for paper longer than 420 mm.<br>[0 to 1/0/1]<br>0: OFF<br>1: PM registers a double-count for paper longer than 420 mm in the sub scan direction. |

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| 5907 | Plug & Play Maker/Model Name |
| | Selects the brand name and the production name for Windows Plug & Play. This information is stored in the NVRAM. If the NVRAM is defective, these names should be registered again.<br>After selecting, press the "Original Type" key and "#" key at the same time.<br>When the setting is completed, the beeper sounds five times. |

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| 5913 | Switchover Permission Time |
| | If no key is pressed when there is an application with display control rights, |

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| | these SP settings allow the system to shift to the application standing by after the specified time as elapse. |
| 001 | Print Application Timer |
| | This SP switches the switchover permission timer on/off.<br>[0 to 1/1/1]<br>0: OFF<br>1: ON |

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| 5915 | Mechanical Counter Detection |
| | Displays whether the mechanical counter is installed in the machine.<br>[0 to 2]<br>0: Not detected<br>1: Detected<br>2: Unknown |

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| 5952 | Fact Adjust Mode |

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| 5959 | Paper Size | |
| | 001 | Tray 1 |
| | | Select a paper size for the tray 1.<br>[0 or 1 / **NA: 1, Others: 0** / 1]<br>0: A4, 1: $8^{1/2}$x11 |
| | 005 | Tray 4 (LCT) **Japan only** |
| | 006 | Cover Sheet |

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| 5967 | Copy Server: Set Function |
| | Enables and disables the document server. This is a security measure that prevents image data from being left in the temporary area of the HDD. After changing this setting, you must switch the main switch off and on to enable the |

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| | new setting.<br>[0 to 1/1]<br>0: ON, 1: OFF |

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| 5974 | Cherry Server |
| | Selects which version of the Scan Router application program, "Light" or "Full (Professional)", is installed.<br>[0 to 1 / 0 / 1 /step]<br>0: Light version (supplied with this machine)<br>1: Full version (optional) |

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| **5985** | Device Setting | |
| | The NIC and USB support features are built into the GW controller. Use this SP to enable and disable these features. In order to use the NIC and USB functions built into the controller board, these SP codes must be set to "1". | |
| 001 | On Board NIC | [0 to 2 / **0** / 1 /step]<br>0: OFF, 1: ON, 2: ON: Limited<br>When the "Function limitation" is set, "On board NIC" is limited only for the @Remote or LDAP/NT authentication.<br>Note<br>▪ Other network applications such as WebImageMonitor, @Remote, or LDAP/NT authentication are not available when this SP is set to "2". Even if you can change the initial settings of those network applications, settings may not actually work. |
| 002 | On Board USB | [0 or 1 / **0** / 1/step]<br>0: OFF, 1: ON |

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| 5990 | SP Print Mode | SMC Print |
| | In the SP mode, press Copy Window to move to the copy screen, select the paper size, then press Start. Select A4/LT (Sideways) or larger to ensure that all the information prints. Press SP Window to return to the SP mode, select the desired print, and press Execute. | |
| 001 | All (Data List) | |

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| 002 | SP (Mode Data List) |
| 003 | User Program Data |
| 004 | Logging Data |
| 005 | Diagnostic Report |
| 006 | Non-Default (Prints only SPs set to values other than defaults.) |
| 007 | NIB Summary |
| 008 | Capture Log |
| 021 | Copier User Program |
| 022 | Scanner SP |
| 023 | Scanner User Program |

### *SP6xxx Peripherals*



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|---|---|
| 6006* | ADF Registration Adjustment |
| 001 | ADF S-to-S Registration (Front)<br>Adjusts the side-to-side registration for the front in ADF mode.<br>[–3 to +3/**0**/0.1 mm] |
| 002 | ADF S-to-S Registration (Back)<br>Adjusts the side-to-side registration for the back in ADF mode.<br>[–3 to +3/**0**/0.1 mm] |
| 003 | ADF L-Edge Registration (Front)<br>Adjusts the vertical registration for the front in ADF mode.<br>[–5 to +5/**0**/0.1 mm] |
| 004 | ADF L-Edge Registration (Back)<br>Adjusts the vertical registration for the back in ADF mode.<br>[–5 to +5/**0**/0.1 mm] |
| 005 | ADF Buckle Adjustment 1<br>Adjusts the roller timing at the skew correction sensor/entrance roller. A higher setting causes more buckling.<br>[–3 to +3/**0**/0.1 mm] |
| 006 | ADF Buckle Adjustment 2 |

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|---|---|
| | Adjusts the roller timing at the interval sensor/scanning roller. A higher setting causes more buckling.<br>[3 to -2/**0**/0.1 mm] |
| 007 | ADF Trailing Edge Erase Margin (Front)<br>These settings adjust the erase margin for the trailing edges for the front.<br>[–5 to +5/**-1**/0.1 mm] |
| 008 | ADF Trailing Edge Erase Margin (Back)<br>These settings adjust the erase margin for the trailing edges for the back.<br>[–5 to +5/**-1**/0.1 mm] |

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| 6007 | ADF Input Check |
| | See "p.4-255 "ADF Input Check: SP6007"" in the "Input/Output Check" section. |

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| 6008 | ADF Output Check |
| | See "p.4-256 "ADF Output Check: SP6008"" in the "Input/Output Check" section. |

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| 6009 | DF Free Run |
| | Performs an ADF free run in duplex original mode. |

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| 6010 | Stamp Position Adj. |
| | Adjust the position of "Finished" stamp.<br>[-5 to 5 / **0** / 0.1 mm] |

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|---|---|
| 6016 | Original Size Determination Priority |
| | Allows selection of alternate settings for automatic original size detection.<br>[0 to 255/**0**/1] |

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| 6017 | Sheet Through Magnification |

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|---|---|
| | Allows settings for the velocity of the sheet through.<br>[-5 to 5/**0**/0.1] |

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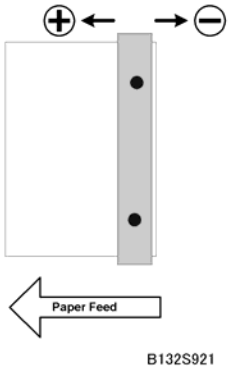
| 6020* | ADF Skew Correction Mode In/Out |
| | If the original is small (B6, A5, HLT), the delay sensor detects the leading edge of the sheet and delays the original at the entrance roller for the prescribed number of pulses to buckle the leading edge and correct skew.<br>[0 to 1/1]<br>0: Delay skew correction only for small originals<br>1: Delay skew correction for all originals, regardless of size. (May reduce the scanning speed of the ADF) |

| | | |
|---|---|---|
| 6101 | Punch Hole Position Adjustment | |
| | Adjusts the punch hole positions in the direction of paper feed.<br>NA: North America<br>JPN: Japan<br>EU: Europe<br>NEU: Northern Europe (Scandinavia) | |
| 001 | JPN/EU: 2-Hole | [-7.5 to +7.5/0.5 mm]<br>+ Value: Shifts punch unit in the direction of feed.<br>- Value: Shift punch unit against direction of feed.<br>  <br><br>B132S921 |
| 002 | JPN/NA: 3-Hole | |
| 003 | EU: 4-Hole | |
| 004 | NEU: 4-Hole | |
| 005 | NA: 2-Hole | |
| 006 | JPN: 1-1Hole | |

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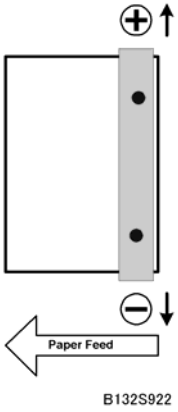
| 6102 | Punch Hole Position Adjustment |
| | Adjusts the punch position perpendicular to the direction of feed. |

| | | |
|---|---|---|
| | [-2 to +2/**0**/0.4 mm]<br>+ Value: Shifts punch unit toward back of the finisher.<br>- Value: Shift punch unit toward front of the finisher.<br>NA: North America<br>JPN: Japan<br>EU: Europe<br>NEU: Northern Europe (Scandinavia) | |
| 001 | JPN: 2-Hole |  |
| 002 | JPN/NA:<br>3-Hole | |
| 003 | EU: 4-Hole | |
| 004 | NEU: 4-Hole | |
| 005 | NA: 2-Hole | |

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|---|---|---|
| 6103 | Skew Correction: Buckle Adj. | |
| | This SP corrects punch hole alignment by correcting the skew of each sheet. To do this, it adjusts the amount of time the finisher entrance roller remains off while the exit roller of the machine remains on. This buckles the leading edge of the sheet slightly against the finisher entrance roller while it remains off. | |
| 001 | A3 SEF | [-5 to +5/**0**/0.25 mm] |
| 002 | B4 SEF | + Value: Increases the time that the finisher entrance roller remains off.<br>- Value: Descreases the time that the finisher entrance roller remains off. |
| 003 | A4 SEF | |
| 004 | A4 LEF | |
| 005 | B5 SEF | |
| 006 | B5 LEF | |
| 007 | DLT SEF | |

| | | |
|---|---|---|
| 008 | LG SEF | |
| 009 | LT SEF | |
| 010 | LT LEF | |
| 011 | 12" x 18" | |
| 012 | Other | |

| | | |
|---|---|---|
| 6104 | Skew Correction Control | |
| | This SP determines whether the finisher entrance roller stops to correct skew when paper enters the finisher. | |
| 001 | A3 SEF | [0 to 1/**0**/1]<br>0: No adjustment. Quickly restores the default setting if you forget what the other settings do.<br>0: Paper stops for skew correction<br>1: Paper does not stop |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | A4 LEF | |
| 005 | B5 SEF | |
| 006 | B5 LEF | |
| 007 | DLT SEF | |
| 008 | LG SEF | |
| 009 | LT SEF | |
| 010 | LT LEF | |
| 011 | 12" x 18" | |
| 012 | Other | |

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|---|---|
| 6105 | Jogger Fence Fine Adjust |
| | This SP adjusts the distance between the jogger fences and the sides of the stack on the finisher stapling tray. The adjustment is done perpendicular to the |

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|---|---|---|
| | direction of paper feed. | |
| 001 | A3 SEF | [-1.5 to +1.5/0/0.5 mm]<br>+ Value: Increases the distance between jogger fences and the sides of the stack.<br>- Value: Decreases the distance between the jogger fences and the sides of the stack. |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | A4 LEF | |
| 005 | B5 SEF | |
| 006 | B5 LEF | |
| 007 | DLT SEF | |
| 008 | LG SEF | |
| 009 | LT SEF | |
| 010 | LT LEF | |
| 011 | 12" x 18" | |
| 012 | Other | |

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|---|---|---|
| 6106 | Adjust Output Jog Position | |
| | Use this SP code to adjust the positions of the jogger fences when the pages are aligned (jogged) horizontally in the optional output jogger unit. The jogger fences close in on the sides of the stack on the paper tray. These side fences move in and out perpendicular to the direction of paper feed.<br>[-1.5 to +1.5 / **0** / 0.5 mm]<br>▪ The higher the setting, the narrower the jogger span and the smaller the gaps between the fences and the edges of the paper. Stacking is tighter.<br>▪ The lower the setting, the wider the jogger span and the wider the gaps between the fences and the edges of the paper. Stacking is not as tight. | |
| 001 | A3 SEF | The settings are done for each paper size.<br>SEF denotes "Short Edge Feed". |
| 002 | B4 SEF | |

| | | |
|---|---|---|
| 003 | A4 SEF | LEF denotes "Long Edge Feed". |
| 004 | A4 LEF | |
| 005 | B5 LEF | |
| 006 | A5 LEF | |
| 007 | DLT SEF | |
| 008 | LG SEF | |
| 009 | LT SEF | |
| 010 | LT LEF | |
| 011 | HLT LEF | |
| 012 | Other | |

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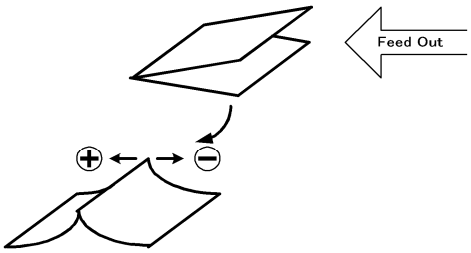
|---|---|---|
| 6109 | Staple Position Adjustment | |
| | Use this SP to shift the position of the stapling done by the corner stapler of the finisher. This SP shifts the staple position forward and back across the direction of paper feed.<br>▪ Use the "●" key to toggle between + and –.<br>▪ A larger value shifts the stapling position to shift forward.<br>▪ A smaller value shifts the stapling position backward.<br>▪ The settings are done for each paper size.<br>[-3.5 to +3.5 / **0** / 0.5 mm] | |
| 001 | A3 SEF | The settings are done for each paper size.<br>SEF denotes "Short Edge Feed".<br>LEF denotes "Long Edge Feed". |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | A4 LEF | |
| 005 | B5 SEF | |
| 006 | B5 LEF | |

| | | |
|---|---|---|
| 007 | DLT SEF | |
| 008 | LG SEF | |
| 009 | LT SEF | |
| 010 | LT LEF | |
| 011 | 12" x 18" | |
| 012 | Other | |

| | | |
|---|---|---|
| 6113 | Folder Position Adj. (Sub-Scan) | |
| | This SP corrects the folding postion when paper is stapled and folded. | |
| 001 | A3 SEF | [-3 to +3/0.2 mm]<br>+ Value: Shifts staple position toward the crease.<br>- Value: Shifts staple position away from the crease.<br>  <br><br>B132S924 |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | B5 SEF | |
| 005 | DLT SEF | |
| 006 | LG SEF | |
| 007 | LT SEF | |
| 008 | 12" x 18" | |
| 009 | Other | |

| | | |
|---|---|---|
| 6114 | Folding Number A3 SEF | |
| 001 | A3 SEF | This SP sets the number of times the folding rollers are driven forward and reverse to sharpen the crease of a folded booklet before it exits the folding unit of the Booklet Finisher.<br>When set at the default (0):<br>▪ The folding blade pushes the center of the stack into the |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | B5 SEF | |

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|---|---|---|
| 005 | DLT SEF | nip of the folding roller.<br>▪ The folding rollers rotate ccw to crease the booklet, reverse cw, then rotate ccw again to crease the booklet fold twice before feeding to the folding unit exit rollers.<br>[1 to 6/0/1]<br>0:2, 1:5, 2:10, 3:15, 4:20, 5:25, 6:30 (passes) |
| 006 | LG SEF | |
| 007 | LT SEF | |
| 008 | 12" x 18" | |
| 009 | Other | |

| 6115 | Pre-stack Number | |
|---|---|---|
| 001 | A4 LEF | This SP sets the number of sheets sent to the pre-stack tray.<br>With this SP set to the default (3):<br>3 sheets are sent to the pre-stack tray.<br>When the 4th sheet feeds, the 4th sheet and 3 sheets from the pre-stack tray are sent to the stapling tray together.<br>**Note**: You may need to adjust this setting or switch it off when feeding thick or slick paper.<br>[0 to 4/**3**/1]<br>0: None<br>1: 1 sheet<br>2: 2 sheets<br>3: 3 sheets<br>4: 4 sheets |
| 002 | LT LEF | |
| 003 | B5 LEF | |
| 004 | 10.5"x7.25" | |
| 005 | A4 SEF | |
| 006 | LT SEF | |
| 007 | B5 SEF | |
| 008 | 10.5"x7.25" | |
| 009 | Other | |

| 6118 | Jogger Off/On (B706) | |
|---|---|---|
| 001 | A3 SEF | This SP switches the jogging operation of the output jogger unit attached to the side of the finisher off and on.<br>[0 to 1/0/1] 0: Off, 1: On<br>**Note**: After installation of the Output Jogger Unit B703, this SP must be set to "1" for the jogging motor to operate the jogging fences. |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | A4 LEF | |
| 005 | LT LEF | |
| 006 | B5 LEF | |

| | | |
|---|---|---|
| 007 | DLT SEF | |
| 008 | LG SEF | |
| 009 | LT SEF | |
| 010 | LT LEF | |
| 011 | HLT LEF | |
| 012 | Other | |

| | | | |
|---|---|---|---|
| 6120* | Finisher Free Run (D373/D374) | | |
| | Selects the free run mode during testing. | | |
| 001 | Free Run 1 VIC | Stapling Mode | Stapling only |
| 002 | Free Run 2 VIC | All Mode | All finisher operation is tested |
| 003 | Free Run 3 VIC | Packing Mode | Before you move the finisher to a new location, do this SP. When you switch on the machine after you moved it, the finisher automatically goes to the ready condition. |

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|---|---|
| 6121 | Finisher Input Check: Finisher 1 (Finisher D373/D374) |
| | See "p.4-258 "Finisher 1 Input Check: SP6121 (D373/D374)"" in the "Input/Output Check" section. |

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|---|---|
| 6122 | Finisher Input Check: Finisher 2 (Finisher D460) |
| | See "p.4-263 "Finisher 2 Input Check: SP6122"" in the "Input/Output Check" section. |

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|---|---|
| 6124 | Finisher Output Check: Finisher 1 (Finisher D373/D374) |

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|---|---|
| | See "p.4-261 "Finisher 1 Output Check: SP6124"" in the "Input/Output Check" section. |

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| 6125 | Finisher Output Check: Finisher 2 (Finisher D460) |
| | See "p.4-265 "Finisher 2 Output Check: SP6124"" in the "Input/Output Check" section. |

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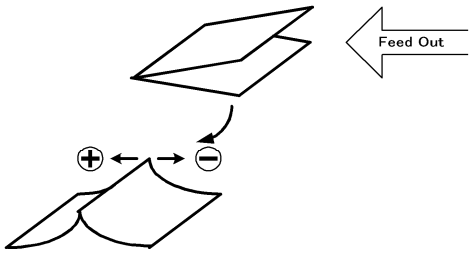
|---|---|---|
| 6126 | Fold Position Setting (D373) | |
| | This SP corrects the folding position when paper is stapled and folded in the D373Booklet Finisher. | |
| 001 | A3 SEF | [-3 to +3/**0**/0.2 mm]<br>▪ + Value: Shifts staple position toward the crease.<br>▪ - Value: Shifts staple position away from the crease.<br>  <br><br>B132S924 |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | B5 SEF | |
| 005 | DLT SEF | |
| 006 | LG SEF | |
| 007 | LT SEF | |
| 008 | 12"x18" SEF | |
| 009 | Custom Size | |

| | | |
|---|---|---|
| 6127 | Staple Jogging Times (Finisher D460) | |
| 001 | A3 SEF | Touch [1:+1 Time] to have the jogger fences press against the sides of the stack on the staple tray one more time to align the stack for corner stapling.<br>[*0:Default] or [1:+1 Time] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | A4 LEF | |

| | | |
|---|---|---|
| 005 | B5 SEF | |
| 006 | B5 LEF | |
| 007 | DLT SEF | |
| 008 | LG SEF | |
| 009 | LT SEF | |
| 010 | LT LEF | |
| 011 | Other | |

| 6250 | Finisher Input Check | |
|---|---|---|
| 001 | SortTray Transport Sensor | Turn on the electrical components of the finisher individually for test purposes. |
| 002 | SortTray Shift Sensor | |
| 003 | SortTray Lower Limit Sensor | |
| 004 | SortTray Paper Height Sensor | |
| 005 | SortTray Door Switch | |
| 006 | SortTray Spare Sensor | |

| 6251 | Finisher Output Check | |
|---|---|---|
| 001 | SortTray Transport Motor: Continuous | Turn on the electrical components of the finisher individually for test purposes. |
| 002 | SortTray Transport Motor: 1 Operation | |
| 003 | SortTray Shift Tray Motor: 1 Operation | |
| 004 | SortTray Tray Lift Motor: Up | |
| 005 | SortTray Tray Lift Motor: Down | |
| 006 | SortTray Tray Lift Motor: 1 Operation | |

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|---|---|
| 6252 | Finisher Free Run: SortTray |
| | Turn on the electrical components of the finisher individually for test purposes. |

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|---|---|---|
| 6300 | Z-Fold Position Adjustment (Finisher: D454) | |
| 001 | A3 SEF | [2 to 40 / **2** / 1 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 007 | 12"x18" | |
| 008 | Other | |

| | | |
|---|---|---|
| 6301 | Fine Adjust Z-Fold (Finisher: D454) | |
| 001 | 1st Fold A3 SEF | [-4 to 4 / **0** / 0.2 mm] |
| 002 | 1st Fold B4 SEF | |
| 003 | 1st Fold A4 SEF | |
| 004 | 1st Fold DLT SEF | |
| 005 | 1st Fold LG SEF | |
| 006 | 1st Fold LT SEF | |
| 007 | 1st Fold 12"x18" | |
| 008 | 1st Fold Other | |
| 009 | 2nd Fold A3 SEF | |
| 010 | 2nd Fold B4 SEF | |

| | | |
|---|---|---|
| 011 | 2nd Fold A4 SEF | |
| 012 | 2nd Fold DLT SEF | |
| 013 | 2nd Fold LG SEF | |
| 014 | 2nd Fold LT SEF | |
| 015 | 2nd Fold 12"x18" | |
| 016 | 2nd Fold Other | |

| | |
|---|---|
| 6309 | Fold Unit (D454) Input Check |
| | See "p.4-266 "Finisher 3 Input Check: SP6309"" in the "Input/Output Check" section. |

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|---|---|
| 6310 | Fold Unit (D454) Output Check |
| | See "p.4-267 "Finisher 3 Output Check: SP6310"" in the "Input/Output Check" section. |

| | | |
|---|---|---|
| 6311 | Fold Unit (D454) Free Run | |
| 001 | Free Run 1 | |
| 002 | Free Run 2 | |
| 003 | Free Run 3 | |
| 004 | Free Run 4 | |

| | | |
|---|---|---|
| 6312 | Fine Adjust Z-Fold 1 (D454) | |
| 001 | A3 SEF | [-4 to 4 / **0** / 0.2 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |

| | | |
|---|---|---|
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 007 | 12"x18" | |
| 008 | 8-Kai | |
| 019 | Other | |

| 6313 | Fine Adjust Z-Fold 2 (D454) | |
|---|---|---|
| 001 | A3 SEF | [-4 to 4 / **0** / 0.2 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 007 | 12"x18" | |
| 008 | 8-Kai | |
| 019 | Other | |

| 6314 | FM2 Equal Halves Fold Fine Adj. (D454) | |
|---|---|---|
| 001 | A3 SEF | [-4 to 4 / **0** / 0.2 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |

| | | |
|---|---|---|
| 006 | LT SEF | |
| 007 | 12"x18" | |
| 008 | 8-Kai | |
| 009 | B5 SEF | |
| 010 | 13"x19.2" | |
| 011 | 13"x19" | |
| 012 | 12.6"x19.2" | |
| 013 | 12.6"x18.5" | |
| 014 | 13"x18" | |
| 015 | SRA3 | |
| 016 | SRA4 | |
| 017 | 226x310 | |
| 018 | 310x432 | |
| 019 | Other | |

| 6315 | FM3 Equal 3rds Fold1 Fine Adj. (D454) | |
|---|---|---|
| 001 | A3 SEF | [-4 to 4 / **0** / 0.2 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 007 | 12"x18" | |
| 008 | 8-Kai | |

| | | |
|---|---|---|
| 009 | B5 SEF | |
| 019 | Other | |

| 6316 | FM3 Equal 3rds Fold2 Fine Adj. (D454) | |
|---|---|---|
| 001 | A3 SEF | [-4 to 4 / **0** / 0.2 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 007 | 12"x18" | |
| 008 | 8-Kai | |
| 009 | B5 SEF | |
| 019 | Other | |

| 6317 | FM4 3rds 1 Flap In Fold1 Fine Adj. (D454) | |
|---|---|---|
| 001 | A3 SEF | [-4 to 4 / **0** / 0.2 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 007 | 12"x18" | |
| 008 | 8-Kai | |

| | | |
|---|---|---|
| 009 | B5 SEF | |
| 019 | Other | |

| 6318 | FM4 3rds 1 Flap In Fold2 Fine Adj. (D454) | |
|---|---|---|
| 001 | A3 SEF | [-4 to 4 / **0** / 0.2 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 007 | 12"x18" | |
| 008 | 8-Kai | |
| 009 | B5 SEF | |
| 019 | Other | |

| 6319 | FM5 4ths "V" Center Fold1 Fine Adj. (D454) | |
|---|---|---|
| 001 | A3 SEF | [-4 to 4 / **0** / 0.2 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 007 | 12"x18" | |
| 008 | 8-Kai | |

| | | |
|---|---|---|
| 009 | B5 SEF | |
| 019 | Other | |

| 6320 | FM5 4ths "V" Center Fold2 Fine Adj. (D454) | |
|---|---|---|
| 001 | A3 SEF | [-4 to 4 / **0** / 0.2 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 007 | 12"x18" | |
| 008 | 8-Kai | |
| 009 | B5 SEF | |
| 019 | Other | |

| 6321 | FM6 4ths 2 Flaps In Fold1 Fine Adj. (D454) | |
|---|---|---|
| 001 | A3 SEF | [-4 to 4 / **0** / 0.2 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 008 | 8-Kai | |
| 009 | B5 SEF | |

| | | |
|---|---|---|
| 019 | Other | |

| | | |
|---|---|---|
| 6322 | FM6 4ths 2 Flaps In Fold2 Fine Adj. (D454) | |
| 001 | A3 SEF | [-4 to 4 / **0** / 0.2 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 008 | 8-Kai | |
| 009 | B5 SEF | |
| 019 | Other | |

| | | |
|---|---|---|
| 6323 | FM6 4ths 2 Flaps In Fold3 Fine Adj. (D454) | |
| 001 | A3 SEF | [-4 to 4 / **0** / 0.2 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 007 | 12"x18" | |
| 008 | 8-Kai | |
| 009 | B5 SEF | |
| 019 | Other | |

| 6324 | Jogger Fence Position Adjust (D454) | |
|---|---|---|
| 001 | A3 SEF | [-2 to 2 / **0** / 0.5 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 007 | 12"x18" | |
| 008 | 8-Kai | |
| 009 | B5 SEF | |
| 019 | Other | |

| 6325 | Registration Buckle Adjust (D454) | |
|---|---|---|
| 001 | A3 SEF | [-4 to 2 / **0** / 1 mm] |
| 002 | B4 SEF | |
| 003 | A4 SEF | |
| 004 | DLT SEF | |
| 005 | LG SEF | |
| 006 | LT SEF | |
| 007 | 12"x18" | |
| 008 | 8-Kai | |
| 009 | B5 SEF | |
| 019 | Other | |

| | |
|---|---|
| 6326 | Registration Buckle Adjust Select |
| | Adjusts the registration motor timing. This timing determines the amount of paper buckle at registration. (A higher setting causes more buckling.) |

| | | |
|---|---|---|
| 6350 | Mail Box Input Check | |
| 001 | Paper Detect Sn 1 | Turn on the electrical components of the finisher individually for test purposes. |
| 002 | Vertical Transport Sn 1: Bin1 | |
| 003 | Paper Overflow Sn 1 | |
| 004 | Paper Detect Sn 2 | |
| 005 | Vertical Transport Sn2: Bin3 | |
| 006 | Paper Overflow Sn 2 | |
| 007 | Paper Detect Sn 3 | |
| 008 | Paper Overflow Sn 3 | |
| 009 | Paper Detect Sn 4 | |
| 010 | Vertical Transport Sn3: Bin5 | |
| 011 | Paper Overflow Sn 4 | |
| 012 | Paper Detect Sn 5 | |
| 013 | Paper Overflow Sn 5 | Turn on the electrical components of the finisher individually for test purposes. |
| 014 | Paper Detect Sn 6 | |
| 015 | Vertical Transport Sn4: Bin7 | |
| 016 | Paper Overflow Sn 6 | |
| 017 | Paper Detect Sn 7 | |
| 018 | Paper Overflow Sn 7 | |

| | | |
|---|---|---|
| 019 | Paper Detect Sn 8 | |
| 020 | Vertical Transport Sn 5:Bin9 | |
| 021 | Paper Overflow Sn 8 | |
| 022 | Paper Detect Sn 9 | |
| 023 | Paper Overflow Sn 9 | |
| 024 | Door Open Switch | |

| | | |
|---|---|---|
| 6351 | Mail Box Output Check | |
| 001 | Vertical Transport Motor | Turn on the electrical components of the finisher individually for test purposes. |
| 002 | Junction Gate SOL 1 | |
| 003 | Turn Gate SOL 1 | |
| 004 | Turn Gate SOL 2 | |
| 005 | Turn Gate SOL 3 | |
| 006 | Turn Gate SOL 4 | |
| 007 | Turn Gate SOL 5 | |
| 008 | Turn Gate SOL 6 | |
| 009 | Turn Gate SOL 7 | |
| 010 | Turn Gate SOL 8 | |

| | |
|---|---|
| 6352 | Mail Box Free Run |
| 001 | Free Run 1 |

| | | |
|---|---|---|
| 6450 | Cover Feeder Size Change | |
| 001 | All A3 | [0 to 1 / **0** / 1] |

| | | |
|---|---|---|
| 002 | EU, CHN: 8.5x13 | [0 to 2 / **0** / 1] |
| 003 | NA: 8.5x14 | [0 to 1 / **0** / 1] |
| 004 | NA: 11x8.5 | [0 to 1 / **0** / 1] |
| 005 | NA: 8.5x11 | [0 to 1 / **0** / 1] |
| 006 | EU, CHN: 8K | [0 to 1 / **0** / 1] |
| 007 | EU, CHN: 16K (267x195) | [0 to 1 / **0** / 1] |
| 008 | EU, CHN: 16K (195x267) | [0 to 1 / **0** / 1] |

| 6451 | Cover Feeder Input Check | |
|---|---|---|
| 001 | Paper Feed Cover Sensor | [0 to 1 / **0** / 1] |
| 002 | Bottom Plate HP Sensor | [0 to 1 / **0** / 1] |
| 003 | Paper Near End Sensor | [0 to 1 / **0** / 1] |
| 004 | Paper Set Sensor | [0 to 1 / **0** / 1] |
| 005 | Bottom Plate HP Sensor | [0 to 1 / **0** / 1] |
| 006 | Grip Sensor | [0 to 1 / **0** / 1] |
| 007 | Guide Plate Set Sensor | [0 to 1 / **0** / 1] |
| 008 | Exit Sensor | [0 to 1 / **0** / 1] |
| 009 | Paper Set Sensor | [0 to 1 / **0** / 1] |
| 010 | Width Sensor 1 | [0 to 1 / **0** / 1] |
| 011 | Width Sensor 2 | [0 to 1 / **0** / 1] |
| 012 | Width Sensor 3 | [0 to 1 / **0** / 1] |
| 013 | Length Sensor 1 | [0 to 1 / **0** / 1] |
| 014 | Length Sensor 2 | [0 to 1 / **0** / 1] |
| 015 | Length Sensor 3 | [0 to 1 / **0** / 1] |

| | |
|---|---|
| 6801 | Stamp Unit |
| | Sets the stamp unit to set or unset.<br>[0 to 1/1]<br>0: set, 1: unset |

| | |
|---|---|
| 6830 | Extra Staples |
| | More than the standard number of corner staples can be loaded.<br>This SP recognizes the maximum number of staples (This Setting + Standard Number).<br>▪ If the number of the maximum for staples is increased, and the mechanical warranty of the unit can be guaranteed, then the setting can take effect without changing the controller software.<br>▪ However, assurance that mechanical performance can be guaranteed is required before changing the setting to increase the staple load for more than the maximum in the feed / exit specifications. Raising this setting without quality assurance could damage the machine. |
| 001 | 0 to 50 (Initial: 0)<br>[0 to 50 /0/1] |
| 002 | 0 to 50 (Initial: 0)<br>[0 to 50 /0/1] |

⇒

| | |
|---|---|
| 6890 | Punch Function Enabled (Z-Fold) |
| | Switch Z-Folding OFF and ON. Deault: 0 (OFF)<br>0: No, 1: Yes |

| | |
|---|---|
| 6900* | ADF Bottom Plate Setting |
| | Sets the timing for raising and lowering the bottom plate of the ADF.<br>[0 to 1/1]<br>0: Original set, 1: Copy start |

| | | |
|---|---|---|
| 6910 | Intermittent Shading | |
| 001 | ON/OFF | Select ON or OFF of the intermittent shading in running the copy app.<br>0: OFF (do shading every time) / 1: ON |

| | | |
|---|---|---|
| 002 | Interval 1 | Set the interval 1 to the shading in doing intermittent shading.<br>[0 to 60 / **5** / 1] |
| 003 | Interval 2 | Set the interval 2 to the shading in doing intermittent shading.<br>[0 to 60 / **10** / 1] |
| 004 | Interval 1 time | Set the interval from interval 1 to interval 2.<br>[0 to 60 / **7** / 1] |

## *SP7xxx Data Logs*

| | |
|---|---|
| 7001* | Main Motor Operation Time |
| 001 | Displays the total drum rotation time. |

| | |
|---|---|
| 7401 | Total SC Counter |
| | Displays the total number of SCs logged. |

| | |
|---|---|
| 7403 | SC History |
| | Displays the latest 10 service call codes |
| 001 | Latest |
| 002 | Latest 1 |
| 003 | Latest 2 |
| 004 | Latest 3 |
| 005 | Latest 4 |
| 006 | Latest 5 |
| 007 | Latest 6 |

| | |
|---|---|
| 008 | Latest 7 |
| 009 | Latest 8 |
| 010 | Latest 9 |

| | |
|---|---|
| 7502 | Total Paper Jam Counter |
| | Displays the total number of copy jams. |

| | |
|---|---|
| 7503 | Total Original Jam Counter |
| | Displays the total number of copy jams. |

| 7504 | Paper Jam Loc | |
|---|---|---|
| Displays the list of possible locations where a jam could have occurred. These jams are caused by the failure of a sensor to activate. These are jams when the paper does not activate the sensor.<br>▪ Paper late error: Paper failed to arrive at prescribed time.<br>▪ Paper lag error: Paper failed to leave at prescribed time. | | |
| 001 | At Power On | |
| 003 | 1st Paper Feed SN: Late | |
| 004 | 2nd Paper Feed SN: Late | |
| 005 | 3rd Paper Feed SN: Late | |
| 006 | 4th Paper Feed SN: Late | |
| 008 | 1st Vertical Transport SN: Late | |
| 009 | 2nd Vertical Transport SN: Late | |
| 010 | 3rd Vertical Transport SN: Late | |
| 011 | 4th Vertical Transport SN: Late | |
| 012 | Relay SN: Late | |

| | | |
|---|---|---|
| 013 | Registration SN: Late | |
| 014 | Fusing Exit SN: Late | |
| 015 | Exit Unit Entrance SN: Late | |
| 016 | Paper Exit SN: Late | |
| 017 | LCT Paper Feed SN: Late | |
| 018 | LCT Relay SN: Late | |
| 019 | Duplex Entrance SN: Late | |
| 020 | Duplex Transport SN 1: Late | |
| 021 | Duplex Transport SN 2: Late | |
| 022 | Duplex Transport SN 3: Late | |
| 023 | Duplex Exit SN: Late | |
| 034 | By-pass Paper Feed SN: Late | |
| 045 | Sort Tray: Paper Exit SN: Late | |
| 046 | Sort Tray: Tray Lift Motor | |
| 047 | Sort Tray: Shift Tray Motor | |
| 053 | 1st Paper Feed SN: Lag | |
| 054 | 2nd Paper Feed SN: Lag | |
| 055 | 3rd Paper Feed SN: Lag | |
| 056 | 4th Paper Feed SN: Lag | |
| 058 | 1st Vertical Transport SN: Lag | |
| 059 | 2nd Vertical Transport SN: Lag | |
| 060 | 3rd Vertical Transport SN: Lag | |
| 061 | 4th Vertical Transport SN: Lag | |

| | | |
|---|---|---|
| 062 | Relay SN: Lag | |
| 063 | Registration SN: Lag | |
| 066 | Paper Exit SN: Lag | |
| 067 | LCT Paper Feed SN: Lag | |
| 068 | LCT Relay SN: Lag | |
| 069 | Duplex Entrance SN: Lag | |
| 071 | Duplex Transport SN 2: Lag | |
| 072 | Duplex Transport SN 3: Lag | |
| 084 | By-pass Paper Feed SN: Lag | |
| 095 | Sort Tray: Paper Exit SN: Lag | |
| 101 | Finisher: Entrance Sensor | |
| 102 | Finisher: Proof Tray Exit Sensor | |
| 103 | Finisher: Exit Sensor | |
| 104 | Finisher: Staple Entrance Sensor | |
| 105 | Finisher: Exit After Jogging | |
| 106 | Finisher: Corner Stapling | |
| 109 | Finisher: Shift Tray Motor | |
| 110 | Finisher: Jogger Fence Motor | |
| 111 | Finisher: Shift Roller Motor | |
| 112 | Finisher: Stapler Shift Motor | |
| 113 | Finisher: Stapler Motor | |
| 115 | Finisher: Feed Out Belt Motor | |
| 116 | Finisher: Paper Punch Motor | |

| | | |
|---|---|---|
| 121 | Finisher: Entrance Jam | |
| 122 | Finisher: Proof Tray Exit | |
| 123 | Finisher: Shift Tray Exit | |
| 124 | Finisher: Stapler Exit | |
| 125 | Finisher: Exit After Jogging | |
| 126 | Finisher: Corner Stapling | |
| 127 | Finisher: Saddle Stapling | |
| 128 | Finisher: Paper Folding | |
| 129 | Finisher: Shift Tray Motor | |
| 130 | Finisher: Jogger Fence Motor | |
| 131 | Finisher: Shift Roller Motor | |
| 132 | Finisher: Stapler Shift Motor | |
| 133 | Finisher: Stapler Motor | |
| 134 | Finisher: Folder Plate Motor | |
| 135 | Finisher: Feed Out Belt Motor | |
| 136 | Finisher: Paper Punch Motor | |
| 151 | Fin: Entrance Sensor | |
| 152 | Fin: Proof Tray Exit Sn | |
| 153 | Fin: Shift Exit Sn | |
| 154 | Fin: Stapler Exit | |
| 155 | Fin: Pre-Stack | |
| 156 | Fin: Feed Out | |
| 158 | Fin: Upper Trans Motor | |

| | | |
|---|---|---|
| 159 | Fin: Shift Tray Motor | |
| 160 | Fin: Positioning Roller Motor | |
| 161 | Fin: Jogger Fence Motor | |
| 162 | Fin: Stack Plate Motor (Center) | |
| 163 | Fin: Stack Plate Motor (Front) | |
| 164 | Fin: Stack Plate Motor (Rear) | |
| 165 | Fin: Shift Motor | |
| 166 | Fin: Drag Drive Motor | |
| 167 | Fin: Shift Tray Jogger Motor | |
| 168 | Fin: Shift Tray Jogger Retraction Motor | |
| 169 | Fin: Exit Guide Motor | |
| 170 | Fin: Staple Hammer Motor | |
| 171 | Fin: Stapler Movement Motor | |
| 172 | Fin: Stapler Rotation Motor | |
| 173 | Fin: Stack Feed-Out Belt Motor | |
| 174 | Fin: Punch Motor | |
| 175 | Fin: Top Fence Motor | |
| 176 | Fin: Bottom Fence Motor | |
| 198 | Plocmatic Jam | |
| 199 | GBC Jam | |
| 201 | Mail Bin: Vertical Transport Sn 1 | |
| 202 | Mail Bin: Vertical Transport Sn 2 | |
| 203 | Mail Bin: Vertical Transport Sn 3 | |

| | | |
|---|---|---|
| 204 | Mail Bin: Vertical Transport Sn 4 | |
| 205 | Mail Bin: Vertical Transport Sn 5 | |
| 251 | Cover Interposer: Paper Feed Sn | |
| 252 | Cover Interposer: V-Transport Path | |
| 253 | Cover Interposer: Bottom Plate Pos. Sn | |

| | | |
|---|---|---|
| 7505 | Original Jam Detection | |
| | Displays the list of possible locations where an original jam could have occurred. These jams are caused by the failure of a sensor to activate. | |
| 001 | At Power On | |
| 003 | Skew Correction Sensor: On | |
| 004 | Registration Sensor: On | |
| 005 | Original Exit Sensor: On | |
| 006 | Registration Sensor: On | |
| 007 | Original Exit Sensor: On | |
| 053 | Skew Correction Sensor: Off | |
| 054 | Registration Sensor: Off | |
| 055 | Original Exit Sensor: Off | |
| 056 | Registration Sensor: Off | |
| 057 | Original Exit Sensor: Off | |

| | | |
|---|---|---|
| 7506 | Jam Count by Paper Size | |
| | Displays the total number of jams by paper size. | |
| 005 | A4 LEF | Displays the total number of jams by paper size. |

| | | |
|---|---|---|
| 006 | A5 LEF | |
| 014 | B5 LEF | |
| 038 | LT LEF | |
| 044 | HLT LEF | |
| 132 | A3 | Displays the total number of jams by paper size. |
| 133 | A4 SEF | |
| 134 | A5 SEF | |
| 141 | B4 SEF | |
| 142 | B5 SEF | |
| 160 | DLT SEF | Displays the total number of jams by paper size. |
| 164 | LG SEF | |
| 166 | LT SEF | |
| 172 | HLT SEF | |
| 255 | Others | |

| 7507 | Plotter Jam History | |
|---|---|---|
| 001 | Last | Displays the copy jam history (the most recent 10 jams)<br>Sample Display:<br>CODE:007<br>SIZE:05h<br>TOTAL:0000334<br>DATE:Mon Mar 15 11:44:50 2000<br>where:<br>CODE is the SP7504-* number (see above).<br>SIZE is the ASAP paper size code in hex.<br>TOTAL is the total jam error count<br>DATE is the date the jams occurred. |
| 002 | Latest 1 | |
| 003 | Latest 2 | |
| 004 | Latest 3 | |
| 005 | Latest 4 | |
| 006 | Latest 5 | |
| 007 | Latest 6 | |
| 008 | Latest 7 | |

| | | |
|---|---|---|
| 009 | Latest 8 | |
| 010 | Latest 9 | |

| Size | Code | Size | Code | Size | Code |
|---|---|---|---|---|---|
| A4 (S) | 05 | A3 (L) | 84 | DLT (L) | A0 |
| A5 (S) | 06 | A4 (L) | 85 | LG (L) | A4 |
| B5 (S) | 0E | A5 (L) | 86 | LT (L) | A6 |
| LT (S) | 26 | B4 (L) | 8D | HLT (L) | AC |
| HLT (S) | 2C | B5 (L) | 8E | Others | FF |

| | | |
|---|---|---|
| 7508 | Original Jam History | |
| | Displays the original jam history of the transfer unit in groups of 10, starting with the most recent 10 jams. Display contents are as follows:<br>CODE is the SP7-505-* number.<br>SIZE is the paper size code in hex. (See "Paper Size Hex Codes" below.)<br>TOTAL is the total jam error count (SP7-003)<br>DATE is the date the previous jam occurred | |
| 001 | Last | Sample Display:<br>CODE: 007<br>SIZE: 05h<br>TOTAL: 0000334<br>DATE: Mon Mar 15 11:44:50 2000 |
| 002 | Latest 1 | |
| 003 | Latest 2 | |
| 004 | Latest 3 | |
| 005 | Latest 4 | |
| 006 | Latest 5 | |
| 007 | Latest 6 | |
| 008 | Latest 7 | |
| 009 | Latest 8 | |

| | | |
|---|---|---|
| 010 | Latest 9 | |

**Paper Size Hex Codes**

These codes are displayed by SP7507 and SP7508.

| Paper Size | Code (hex) | Paper Size | Code (hex) |
|---|---|---|---|
| A4 LEF | 05 | B4 SEF | 8D |
| A5 LEF | 06 | B5 SEF | 8E |
| B5 LEF | 0E | DLT SEF | A0 |
| LT LEF | 26 | LG SEF | A4 |
| HLT LEF | 2C | LT SEF | A6 |
| A3 SEF | 84 | HLT SEF | AC |
| A4 SEF | 85 | Others | FF |
| A5 SEF | 86 | | |

| | | |
|---|---|---|
| 7509 | Paper Jam Loc: Fold Unit | |
| 046 | Paper Feed: Late | |
| 047 | Paper Feed: Lag | |
| 048 | Pressure Timing SN: Late | |
| 049 | Pressure Timing SN: Lag | |
| 050 | Contact Timing SN: Late | |
| 051 | Contact Timing SN: Lag | |
| 052 | 2nd Stopper Motor: Late | |
| 053 | 2nd Stopper Motor: Lag | |
| 054 | Paper Exit Sensor 1: Late | |

| | | |
|---|---|---|
| 055 | Paper Exit Sensor 1: Lag | |
| 058 | Paper Exit Sensor 3: Late | |
| 059 | Paper Exit Sensor 3: Lag | |
| 060 | Brushless Motor | |
| 061 | Lower Stopper Motor Jam | |
| 062 | Upper Stopper Motor Jam | |
| 096 | Entrance SN: Late | |
| 097 | Entrance SN: Lag | |
| 098 | Top Tray Exit SN: Late | |
| 099 | Top Tray Exit SN: Lag | |
| 100 | Horizontal Path Exit SN: Late | |
| 101 | Horizontal Path Exit SN: Lag | |
| 102 | 1st Stopper HP SN: Late | |
| 103 | 1st Stopper HP SN: Lag | |
| 104 | 2nd Stopper HP SN: Late | |
| 105 | 2nd Stopper HP SN: Lag | |
| 106 | 3rd Stopper HP SN: Late | |
| 107 | 3rd Stopper HP SN: Lag | |
| 108 | Skew Correction Jam | |
| 109 | Folded Paper Path Jam | |
| 111 | Entrance JG Motor Jam | |
| 112 | Fold JG Motor Jam | |
| 113 | 1st Stopper Motor Jam | |

| | | |
|---|---|---|
| 114 | 2nd Stopper Motor Jam | |
| 115 | 3rd Stopper Motor Jam | |
| 116 | Dynamic Roller Trans. M Jam | |
| 117 | Regist. Roller Release M Jam | |
| 118 | Fold Plate Motor Jam | |
| 119 | Jogger Fence Motor Jam | |
| 120 | Positioning Roller Motor Jam | |
| 121 | Direct-Send JG Motor Jam | |
| 122 | FM6 Pawl Motor Jam | |

| | |
|---|---|
| 7617 | Parts PM Counter Display |
| 001 | Normal |
| 002 | Document Feed |

| | | |
|---|---|---|
| 7618 | Parts PM Counter Reset **Japan Only** | |
| 001 | Normal | Clears the counter of SP7617- 001. |
| 002 | Document Feed | Clears the counter of SP7617- 002 |

| | |
|---|---|
| 7621 | Display PM Count |
| | 0 to 99999999 |
| 7622 | Clear PM Count |
| | This SP clears the PM counts for the components below. |
| 7623 | Unit PM Target |
| | 0 to 99999999 |

**Service Program Mode Tables**

| | |
|---|---|
| 7624 | Part Replacement Operation ON/OFF |
| 7625 | Pg Count History: Latest 1 |
| | 0 to 99999999 |
| 7626 | Pg Count History: Latest 2 |
| | 0 to 99999999 |
| 7627 | Pg Count History: Latest 3 |
| | 0 to 99999999 |
| 001 | Developer |
| 002 | Hot Roller |
| 003 | Pressure Roller |
| 004 | Hot Roller Bearings |
| 005 | Pressure Roller Bearings |
| 006 | Hot Roller Strippers |
| 007 | Cleaning Roller |
| 008 | Cleaning Roller Bearings |
| 009 | Web Roll |
| 010 | Web Cleaning Roller |
| 011 | Web Bushings |
| 012 | Development Filter |
| 013 | Toner Recycling Unit |
| 014 | Pressure Release Filter |
| 015 | Charge Corona Wire |
| 016 | Grid Plate |

| | |
|---|---|
| 017 | Cleaning Pad |
| 018 | Cleaning Blade |
| 019 | Cleaning Brush |
| 020 | Transfer Belt |
| 021 | Transfer Belt Cleaning Blade |
| 022 | Ozone Filter |
| 023 | ADF Pick-up Roller |
| 024 | ADF Feed Belt |
| 025 | ADF Separation Roller |
| 026 | Feed Roller-Tray1 |
| 027 | Pick-up Roller-Tray1 |
| 028 | Separation Roller-Tray1 |
| 029 | Feed Roller-Tray2 |
| 030 | Pick-up Roller-Tray2 |
| 031 | Separation Roller-Tray2 |
| 032 | Feed Roller-Tray3 |
| 033 | Pick-up Roller-Tray3 |
| 034 | Separation Roller-Tray3 |
| 035 | Feed Roller-Tray4 |
| 036 | Pick-up Roller-Tray4 |
| 037 | Separation Roller-Tray4 |
| 038 | Feed Roller-LCT |
| 039 | Pick-up Roller-LCT |

| | |
|---|---|
| 040 | Separation Roller-LCT |
| 041 | Feed Belt Cover Feeder |
| 042 | Pick-up Roller Cover Feeder |
| 043 | Separation Roller Cover Feeder |
| 044 | ADF Transport Belt |

| | |
|---|---|
| 7628 -001 | Clear PM Counter Clear Exceeded Counts |
| | Clear the PM counter of all the PM parts that exceed the timing of exchanging. |
| -002 | Clear PM Counter Reset All Counts |
| | Clear all the PM counters. |

| | |
|---|---|
| 7801* | Displays the ROM version numbers of the main machine and connected peripheral devices. |
| 005 | ROM No. ADF |
| 007 | ROM No.Finisher |
| 009 | ROM No.Bank |
| 010 | ROM No.LCT |
| 011 | ROM No.Mail Box |
| 020 | ROM No.Cover Interposer |
| 024 | ROM No.Capacitaotr (**JPN only**) |
| 025 | ROM No.Holding Unit |
| 105 | Fireware ADF |
| 107 | Fireware Finisher |
| 109 | Fireware Bank |

| | |
|---|---|
| 110 | Fireware LCT |
| 111 | Fireware Mail Box |
| 120 | Fireware Cover Interposer |
| 124 | Fireware Capacitor (**JPN only**) |
| 125 | Fireware Holding Unit |

| | |
|---|---|
| 7803 | PM Counter Display |
| | Displays the PM counter since the last PM. |

| | |
|---|---|
| 7804 | PM Counter Reset |
| | Resets the PM counter. |

| | |
|---|---|
| 7807 | SC/Jam Counter Reset |
| | Resets the SC and jam counters. To reset, press [1].<br>This SP does not reset the jam history counters: SP7-507, SP7-508. |

| | |
|---|---|
| 7826 | MF Error Counter **Japan Only** |
| | Displays the number of counts requested of the card/key counter. |
| 001 | Error Total |
| | A request for the count total failed at power on. This error will occur if the device is installed but disconnected. |
| 002 | Error Staple |
| | The request for a staple count failed at power on. This error will occur if the device is installed but disconnected. |

| | |
|---|---|
| 7827 | MF Error Counter Clear |

| | |
|---|---|
| | Press [Execute] to reset to 0 the values of SP7826. **Japan Only** |

| | |
|---|---|
| 7832 | Self-Diagnose Result Display |
| | Push [#] to display a list of error codes. Nothing is displayed if no errors have occurred. |

| | |
|---|---|
| 7834 | Clear Pixel Coverage Data. |
| | Push [EXECUTE] to clear the coverage data. |
| 001 | Last & Average |
| 002 | Toner Bottles In Use |
| 003 | Page Counts (2 Prev. Toner Bottles) |
| 004 | Pixel Coverage Clear |

| | |
|---|---|
| 7836 | Total Memory Size |
| | Displays the contents of the memory on the controller board. |

| | |
|---|---|
| 7852 | DF Glass Dust Check |
| 001 | Dust Detection Counter<br>[0 to 65535/**0**/1] |
| 002 | Dust Counter Clear Counter<br>[0 to 65535/**0**/1] |
| 003 | Dust Detection Counter: Back<br>[0 to 65536/**0**/1] |

| | |
|---|---|
| 7901 | Assert Info. |
| 001 | File Name |

| | |
|---|---|
| 002 | Number of Lines |
| 003 | Location |

| | |
|---|---|
| 7954 | Consumption Rate Counter |
| | Shows the consumption rate, expressed as a percentage (%). |
| 001 | Developer |
| 002 | Hot Roller |
| 003 | Pressure Roller |
| 004 | Hot Roller Bearings |
| 005 | Pressure Roller Bearings |
| 006 | Hot Roller Srippers |
| 007 | Cleaning Roller |
| 008 | Cleaning Roller Bearings |
| 009 | Web Roll |
| 010 | Web Cleaning Roller |
| 011 | Web Bushings |
| 012 | Development Filter |
| 013 | Toner Recycling Unit |
| 014 | Pressure Release Filter |
| 015 | Charge Corona Wire |
| 016 | Grid Plate |
| 017 | Cleaning Pad |
| 018 | Cleaning Blade |
| 019 | Cleaning Brush |

| | |
|---|---|
| 020 | Transfer Belt |
| 021 | Transfer Belt Cleaning Blade |
| 022 | Ozone Filter |
| 023 | ADF Pick-up Roller |
| 024 | ADF Feed Belt |
| 025 | ADF Separation Roller |
| 026 | Feed Roller – Tray1 |
| 027 | Pick – up Roller – Tray1 |
| 028 | Separation Roller – Tray 1 |
| 029 | Feed Roller – Tray 1 |
| 030 | Pick - up Roller – Tray 2 |
| 031 | Separation Roller – Tray 2 |
| 032 | Feed Roller – Tray 3 |
| 033 | Pick-up Roller – Tray 3 |
| 034 | Separation Roller – Tray 3 |
| 035 | Feed Roller Tray 4 |
| 036 | Pick - up Roller – Tray 4 |
| 037 | Separation Roller – Tray 4 |
| 038 | Feed Roller – LCT |
| 039 | Pick – up Roller - LCT |
| 040 | Separation Roller - LCT |
| 041 | Feed Belt Cover Feeder |
| 042 | Pick – up Roller Cover Feeder |

| | |
|---|---|
| 043 | Separation Roller Cover Feeder |
| 044 | ADF Transport Belt |

| | |
|---|---|
| 7999 | Engine Debug Log Switch |
| 001 | [0 to 100/**0**/1] |

### *System SP8-nnn: Data Log2*

Many of these counters are provided for features that are currently not available, such as sending color faxes, and so on. However, here are some Group 8 codes that when used in combination with others, can provide useful information.

Note

- This machine does not have a fax function.

| SP Numbers | What They Do |
|---|---|
| SP8211 to SP8216 | The number of pages scanned to the document server. |
| SP8401 to SP8406 | The number of pages printed from the document server |
| SP8691 to SP8696 | The number of pages sent from the document server |

Specifically, the following questions can be answered:

- How is the document server actually being used?
- What application is using the document server most frequently?
- What data in the document server is being reused?

Most of the SPs in this group are prefixed with a letter that indicates the mode of operation (the mode of operation is referred to as an 'application'). Before reading the Group 8 Service Table, make sure that you understand what these prefixes mean.

| PREFIXES | WHAT IT MEANS | |
|---|---|---|
| T: | Total: (Grand Total). | Grand total of the items counted for all applications (C, F, P, etc.).. |
| C: | Copy application. | Totals (pages, jobs, etc.) executed for each application |

**Service Program Mode Tables**

| PREFIXES | WHAT IT MEANS | |
|---|---|---|
| P: | Print application. | when the job was not stored on the document server. |
| S: | Scan application. | |
| L: | Local storage (document server) | Totals (jobs, pages, etc.) for the document server. The L: counters work differently case by case. Sometimes, they count jobs/pages stored on the document server; this can be in document server mode (from the document server window), or from another mode, such as from a printer driver or by pressing the Store File button in the Copy mode window. Sometimes, they include occasions when the user uses a file that is already on the document server. Each counter will be discussed case by case. |
| O: | Other applications (external network applications, for example) | Refers to network applications such as Web Image Monitor. Utilities developed with the SDK (Software Development Kit) will also be counted with this group in the future. |

The Group 8 SP codes are limited to 17 characters, forced by the necessity of displaying them on the small LCDs of printers and faxes that also use these SPs. Read over the list of abbreviations below and refer to it again if you see the name of an SP that you do not understand.

**Key for Abbreviations**

| ABBREVIATION | WHAT IT MEANS |
|---|---|
| / | "By", e.g. "T:Jobs/Apl" = Total Jobs "by" Application |
| > | More (2> "2 or more", 4> "4 or more" |
| AddBook | Address Book |
| Apl | Application |
| B/W | Black & White |
| Bk | Black |

| ABBREVIATION | WHAT IT MEANS |
|---|---|
| C | Cyan |
| ColCr | Color Create |
| ColMode | Color Mode |
| Comb | Combine |
| Comp | Compression |
| Deliv | Delivery |
| DesApl | Designated Application. The application (Copy, Fax, Scan, Print) used to store the job on the document server, for example. |
| Dev Counter | Development Count, no. of pages developed. |
| Dup, Duplex | Duplex, printing on both sides |
| Emul | Emulation |
| FC | Full Color |
| FIN | Post-print processing, i.e. finishing (punching, stapling, etc.) |
| Full Bleed | No Margins |
| GenCopy | Generation Copy Mode |
| GPC | Get Print Counter. For jobs 10 pages or less, this counter does not count up. For jobs larger than 10 pages, this counter counts up by the number that is in excess of 10 (e.g., for an 11-page job, the counter counts up 11-10 =1) |
| IFax | Internet Fax |
| ImgEdt | Image Edit performed on the original with the copier GUI, e.g. border removal, adding stamps, page numbers, etc. |
| K | Black (YMCK) |
| LS | Local Storage. Refers to the document server. |

**Service Program Mode Tables**

| ABBREVIATION | WHAT IT MEANS |
|---|---|
| LSize | Large (paper) Size |
| Mag | Magnification |
| MC | One color (monochrome) |
| NRS | New Remote Service, which allows a service center to monitor machines remotely. "NRS" is used overseas, "CSS" is used in Japan. |
| Org | Original for scanning |
| OrgJam | Original Jam |
| Palm 2 | Print Job Manager/Desk Top Editor: A pair of utilities that allows print jobs to be distributed evenly among the printers on the network, and allows files to moved around, combined, and converted to different formats.. |
| PC | Personal Computer |
| PGS | Pages. A page is the total scanned surface of the original. Duplex pages count as two pages, and A3 simplex count as two pages if the A3/DLT counter SP is switched ON. |
| PJob | Print Jobs |
| Ppr | Paper |
| PrtJam | Printer (plotter) Jam |
| PrtPGS | Print Pages |
| R | Red (Toner Remaining). Applies to the wide format model A2 only. This machine is under development and currently not available. |
| Rez | Resolution |
| SC | Service Code (Error SC code displayed) |
| Scn | Scan |
| Sim, Simplex | Simplex, printing on 1 side. |

| ABBREVIATION | WHAT IT MEANS |
|---|---|
| S-to-Email | Scan-to-E-mail |
| SMC | SMC report printed with SP5990. All of the Group 8 counters are recorded in the SMC report. |
| Svr | Server |
| TonEnd | Toner End |
| TonSave | Toner Save |
| TXJob | Send, Transmission |
| WSD | Web Services Devices |
| YMC | Yellow, Magenta, Cyan |
| YMCK | Yellow, Magenta, Cyan, Black |



Note

- All of the Group 8 SPs are reset with SP5 801 1 Memory All Clear, or the Counter Reset SP7 808.

| | | |
|---|---|---|
| 8001 | T:Total Jobs | These SPs count the number of times each application is used to do a job.<br>[0 to 9999999/ 0 / 1]<br>**Note:** The L: counter is the total number of times the other applications are used to send a job to the document server, plus the number of times a file already on the document server is used. |
| 8002 | C:Total Jobs | |
| 8004 | P:Total Jobs | |
| 8005 | S:Total Jobs | |
| 8006 | L:Total Jobs | |

- These SPs reveal the number of times an application is used, not the number of pages processed.
- When an application is opened for image input or output, this counts as one job.
- Interrupted jobs (paper jams, etc.) are counted, even though they do not finish.
- Only jobs executed by the customer are counted. Jobs executed by the customer

engineer using the SP modes are not counted.

- When using secure printing (when a password is required to start the print job), the job is counted at the time when either "Delete Data" or "Specify Output" is specified.
- When a copy job on the document server is printed, SP8022 also increments, and when a print job stored on the document server is printed, SP8024 also increments.
- When an original is both copied and stored on the document server, the C: and L: counters both increment.
- When a print job is stored on the document server, only the L: counter increments.
- When the user presses the Document Server button to store the job on the document server, only the L: counter increments.
- When the user enters document server mode and prints data stored on the document server, only the L: counter increments.
- When an image received from Palm 2 is received and stored, the L: counter increments.
- When the customer prints a report (user code list, for example), the O: counter increments.

| | | |
|---|---|---|
| 8011 | T:Jobs/LS | These SPs count the number of jobs stored to the document server by each application, to reveal how local storage is being used for input.<br>[0 to 9999999/ 0 / 1]<br>The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel. |
| 8012 | C:Jobs/LS | |
| 8014 | P:Jobs/LS | |
| 8015 | S:Jobs/LS | |
| 8016 | L:Jobs/LS | |
| 8017 | O:Jobs/LS | |

- When a scan job is sent to the document server, the S: counter increments. When you enter document server mode and then scan an original, the L: counter increments.
- When a print job is sent to the document server, the P: counter increments.
- When a network application sends data to the document server, the O: counter increments.
- When an image from Palm 2 is stored on the document server, the O: counter increments.

| | | |
|---|---|---|
| 8021 | T:Pjob/LS | These SPs reveal how files printed from the document server were stored on the document server originally.<br>[0 to 9999999/ 0 / 1]<br>The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel. |
| 8022 | C:Pjob/LS | |
| 8024 | P:Pjob/LS | |
| 8025 | S:Pjob/LS | |
| 8026 | L:Pjob/LS | |
| 8027 | O:Pjob/LS | |

- When a copy job stored on the document server is printed with another application, the C: counter increments.
- When an application like DeskTopBinder merges a copy job that was stored on the document server with a print job that was stored on the document server, the C: and P: counters both increment.
- When a job already on the document server is printed with another application, the L: counter increments.
- When a scanner job stored on the document server is printed with another application, the S: counter increments. If the original was scanned from within document server mode, then the L: counter increments.
- When images stored on the document server by a network application (including Palm 2), are printed with another application, the O: counter increments.
- When a copy job stored on the document server is printed with a network application (Web Image Monitor, for example), the C: counter increments.



| | | |
|---|---|---|
| 8031 | T:Pjob/DesApl | These SPs reveal what applications were used to output documents from the document server.<br>[0 to 9999999/ 0 / 1]<br>The L: counter counts the number of jobs printed from within the document server mode screen at the operation panel. |
| 8032 | C:Pjob/DesApl | |
| 8034 | P:Pjob/DesApl | |
| 8035 | S:Pjob/DesApl | |
| 8036 | L:Pjob/DesApl | |
| 8037 | O:Pjob/DesApl | |

- When documents already stored on the document server are printed, the count for the application that started the print job is incremented.
- When the print job is started from a network application (Desk Top Binder, Web Image Monitor, etc.) the L: counter increments.

| | | |
|---|---|---|
| 8041 | T:TX Jobs/LS | These SPs count the applications that stored files on the document server that were later accessed for transmission over the telephone line or over a network (attached to an e-mail).<br>[0 to 9999999/ 0 / 1]<br>**Note:** Jobs merged for sending are counted separately.<br>The L: counter counts the number of jobs scanned from within the document server mode screen at the operation panel. |
| 8042 | C:TX Jobs/LS | |
| 8044 | P:TX Jobs/LS | |
| 8045 | S:TX Jobs/LS | |
| 8046 | L:TX Jobs/LS | |
| 8047 | O:TX Jobs/LS | |

- When a stored copy job is sent from the document server, the C: counter increments.
- When images stored on the document server by a network application or Palm2 are sent as an e-mail, the O: counter increments.

| | | |
|---|---|---|
| 8051 | T:TX Jobs/DesApl | These SPs count the applications used to send files from the document server over the telephone line or over a network (attached to an e-mail). Jobs merged for sending are counted separately.<br>[0 to 9999999/ 0 / 1]<br>The L: counter counts the number of jobs sent from within the document server mode screen at the operation panel. |
| 8052 | C:TX Jobs/DesApl | |
| 8054 | P:TX Jobs/DesApl | |
| 8055 | S:TX Jobs/DesApl | |
| 8056 | L:TX Jobs/DesApl | |
| 8057 | O:TX Jobs/DesApl | |

- If the send is started from Desk Top Binder or Web Image Monitor, for example, then the O: counter increments.

| | | |
|---|---|---|
| 8061 | T:FIN Jobs | |
| | [0 to 9999999/ 0 / 1]<br>These SPs total the finishing methods. The finishing method is specified by the application. | |
| 8062 | C:FIN Jobs | |
| | [0 to 9999999/ 0 / 1]<br>These SPs total finishing methods for copy jobs only. The finishing method is specified by the application. | |
| 8064 | P:FIN Jobs | |
| | [0 to 9999999/ 0 / 1]<br>These SPs total finishing methods for print jobs only. The finishing method is specified by the application. | |
| 8065 | S:FIN Jobs | |
| | [0 to 9999999/ 0 / 1]<br>These SPs total finishing methods for scan jobs only. The finishing method is specified by the application.<br>**Note:** Finishing features for scan jobs are not available at this time. | |
| 8066 | L:FIN Jobs | |
| | [0 to 9999999/ 0 / 1]<br>These SPs total finishing methods for jobs output from within the document server mode screen at the operation panel. The finishing method is specified from the print window within document server mode. | |
| 8067 | O:FIN Jobs | |
| | [0 to 9999999/ 0 / 1]<br>These SPs total finishing methods for jobs executed by an external application, over the network. The finishing method is specified by the application. | |
| 806x 1 | Sort | Number of jobs started in Sort mode. When a stored copy job is set for Sort and then stored on the document server, the L: counter increments. (See SP8066 1) |

| | | |
|---|---|---|
| 806x 2 | Stack | Number of jobs started out of Sort mode. |
| 806x 3 | Staple | Number of jobs started in Staple mode. |
| 806x 4 | Booklet | Number of jobs started in Booklet mode. If the machine is in staple mode, the Staple counter also increments. |
| 806x 5 | Z-Fold | Number of jobs started In any mode other than the Booklet mode and set for folding (Z-fold). |
| 806x 6 | Punch | Number of jobs started in Punch mode. When Punch is set for a print job, the P: counter increments. (See SP8064 6.) |
| 806x 7 | Other | Reserved. Not used. |

| | |
|---|---|
| 8071 | T:Jobs/PGS |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the number of jobs broken down by the number of pages in the job, regardless of which application was used. |
| 8072 | C:Jobs/PGS |
| | [0 to 9999999/ 0 / 1]<br>These SPs count and calculate the number of copy jobs by size based on the number of pages in the job. |
| 8074 | P:Jobs/PGS |
| | [0 to 9999999/ 0 / 1]<br>These SPs count and calculate the number of print jobs by size based on the number of pages in the job. |
| 8075 | S:Jobs/PGS |
| | [0 to 9999999/ 0 / 1]<br>These SPs count and calculate the number of scan jobs by size based on the number of pages in the job. |

| | | | |
|---|---|---|---|
| 8076 | L:Jobs/PGS | | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count and calculate the number of jobs printed from within the document server mode window at the operation panel, by the number of pages in the job. | | |
| 8077 | O:Jobs/PGS | | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count and calculate the number of "Other" application jobs (Web Image Monitor, Palm 2, etc.) by size based on the number of pages in the job. | | |
| 807x 1 | 1 Page | 807x 8 | 21 to 50 Pages |
| 807x 2 | 2 Pages | 807x 9 | 51 to 100 Pages |
| 807x 3 | 3 Pages | 807x 10 | 101 to 300 Pages |
| 807x 4 | 4 Pages | 807x 11 | 301 to 500 Pages |
| 807x 5 | 5 Pages | 807x 12 | 501 to 700 Pages |
| 807x 6 | 6 to 10 Pages | 807x 13 | 701 to 1000 Pages |
| 807x 7 | 11 to 20 Pages | 807x 14 | 1001 to Pages |

- For example: When a copy job stored on the document server is printed in document server mode, the appropriate L: counter (SP8076 0xx) increments.
- Interrupted jobs (paper jam, etc.) are counted, even though they do not finish.
- If a job is paused and re-started, it counts as one job.
- If the finisher runs out of staples during a print and staple job, then the job is counted at the time the error occurs.
- For copy jobs (SP 8072) and scan jobs (SP 8075), the total is calculated by multiplying the number of sets of copies by the number of pages scanned. (One duplex page counts as 2.)
- The first test print and subsequent test prints to adjust settings are added to the number of pages of the copy job (SP 8072).
- When printing the first page of a job from within the document server screen, the page is counted.

| | |
|---|---|
| 8131 | T:S-to-Email Jobs |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the total number of jobs scanned and attached to an e-mail, regardless of whether the document server was used or not. |
| 8135 | S:S-to-Email Jobs |
| | These SPs count the number of jobs scanned and attached to an e-mail, without storing the original on the document server. |

- These counters count jobs, not pages.
- If the job is stored on the document server, after the job is stored it is determined to be color or black-and-white then counted.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- If several jobs are combined for sending to the Scan Router, Scan-to-Email, or Scan-to-PC, or if one job is sent to more than one destination. each send is counted separately. For example, if the same document is sent by Scan-to-Email as well as Scan-to-PC, then it is counted twice (once for Scan-to-Email and once for Scan-to-PC).

| | |
|---|---|
| 8141 | T:Deliv Jobs/Svr |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the total number of jobs scanned and sent to a Scan Router server. |
| 8145 | S:Deliv Jobs/Svr |
| | These SPs count the number of jobs scanned in scanner mode and sent to a Scan Router server. |

- These counters count jobs, not pages.
- The jobs are counted even though the arrival and reception of the jobs at the Scan Router server cannot be confirmed.
- If even one color image is mixed with black-and-white images, then the job is counted as a "Color" job.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be delivered, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

| | |
|---|---|
| 8151 | T:Deliv Jobs/PC |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the total number of jobs scanned and sent to a folder on a PC (Scan-to-PC).<br>**Note:** At the present time, 8151 and 8155 perform identical counts. |
| 8155 | S:Deliv Jobs/PC |
| | These SPs count the total number of jobs scanned and sent with Scan-to-PC. |



- These counters count jobs, not pages.
- If the job is cancelled during scanning, it is not counted.
- If the job is cancelled while it is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

| | |
|---|---|
| 8171 | T: Deliv Jobs/WSD |
| | Total jobs for WSD (WS-Scanner for Web Services Devices). |
| 8175 | S: Deliv Jobs/WSD |
| | Total number of jobs scanned for WSD. |

| | | |
|---|---|---|
| | 001 | B/W |
| | 002 | Color |
| | 003 | ACS |

| | | |
|---|---|---|
| 8191 | T:Total Scan PGS | These SPs count the pages scanned by each application that uses the scanner to scan images.<br>[0 to 9999999/ 0 / 1] |
| 8192 | C:Total Scan PGS | |
| 8195 | S:Total Scan PGS | |
| 8196 | L:Total Scan PGS | |

- SP 8191 to 8196 count the number of scanned sides of pages, not the number of physical pages.
- These counters do not count reading user stamp data, or reading color charts to adjust color.
- Previews done with a scanner driver are not counted.
- A count is done only after all images of a job have been scanned.
- Scans made in SP mode are not counted.

Examples:

- If 3 B5 pages and 1 A3 page are scanned with the scanner application but not stored, the S: count is 4.
- If both sides of 3 A4 sheets are copied and stored to the document server using the Store File button in the Copy mode window, the C: count is 6 and the L: count is 6.
- If both sides of 3 A4 sheets are copied but not stored, the C: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

| | | |
|---|---|---|
| 8201 | T:LSize Scan PGS | [0 to 9999999/ 0 / 1]<br>These SPs count the total number of large pages input with the scanner for scan and copy jobs.<br>**Note:** These counters are displayed in the SMC Report, and in the User Tools display. |
| 8205 | S:LSize Scan PGS | [0 to 9999999/ 0 / 1] |

| | | |
|---|---|---|
| | | These SPs count the total number of large pages input with the scanner for scan jobs only.<br>**Note:** These counters are displayed in the SMC Report, and in the User Tools display. |

| | | |
|---|---|---|
| 8211 | T:Scan PGS/LS | These SPs count the number of pages scanned into the document server.<br>[0 to 9999999/ 0 / 1]<br>The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen |
| 8212 | C:Scan PGS/LS | |
| 8215 | S:Scan PGS/LS | |
| 8216 | L:Scan PGS/LS | |

- Reading user stamp data is not counted.
- If a job is cancelled, the pages output as far as the cancellation are counted.
- If the scanner application scans and stores 3 B5 sheets and 1 A4 sheet, the S: count is 4.
- If pages are copied but not stored on the document server, these counters do not change.
- If both sides of 3 A4 sheets are copied and stored to the document server, the C: count is 6 and the L: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

| | | |
|---|---|---|
| 8221 | ADF Org Feeds | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the number of pages fed through the ADF for front and back side scanning. | |
| 8221 1 | Front | Number of front sides fed for scanning:<br>With an ADF that can scan both sides simultaneously, the Front side count is the same as the number of pages fed for either simplex or |

| | | |
|---|---|---|
| | | duplex scanning.<br>With an ADF that cannot scan both sides simultaneously, the Front side count is the same as the number of pages fed for duplex front side scanning. (The front side is determined by which side the user loads face up.) |
| 8221 2 | Back | Number of rear sides fed for scanning:<br>With an ADF that can scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex scanning.<br>With an ADF that cannot scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex rear-side scanning. |

- When 1 sheet is fed for duplex scanning the Front count is 1 and the Back count is 1.
- If a jam occurs during the job, recovery processing is not counted to avoid double counting. Also, the pages are not counted if the jam occurs before the first sheet is output.

| | | |
|---|---|---|
| 8231 | Scan PGS/Mode | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the number of pages scanned by each ADF mode to determine the work load on the ADF. | |
| 8231 1 | Large Volume | Selectable. Large copy jobs that cannot be loaded in the ADF at one time. |
| 8231 2 | SADF | Selectable. Feeding pages one by one through the ADF. |
| 8231 3 | Mixed Size | Selectable. Select "Mixed Sizes" on the operation panel. |
| 8231 4 | Custom Size | Selectable. Originals of non-standard size. |
| 8231 5 | Platen | Book mode. Raising the ADF and placing the original directly on the platen. |

- If the scan mode is changed during the job, for example, if the user switches from ADF

to Platen mode, the count is done for the last selected mode.

- If the user selects "Mixed Sizes" for copying in the platen mode, the Mixed Size count is enabled.
- In the SADF mode if the user copies 1 page in platen mode and then copies 2 pages with SADF, the Platen count is 1 and the SADF count is 3.

| | | |
|---|---|---|
| 8241 | T:Scan PGS/Org | [0 to 9999999/ 0 / 1]<br>These SPs count the total number of scanned pages by original type for all jobs, regardless of which application was used. |
| 8242 | C:Scan PGS/Org | [0 to 9999999/ 0 / 1]<br>These SPs count the number of pages scanned by original type for Copy jobs. |
| 8245 | S:Scan PGS/Org | [0 to 9999999/ 0 / 1]<br>These SPs count the number of pages scanned by original type for Scan jobs. |
| 8246 | L:Scan PGS/Org | [0 to 9999999/ 0 / 1]<br>These SPs count the number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen |

| | 8241 | 8242 | 8243 | 8245 | 8246 |
|---|---|---|---|---|---|
| 824x 1: Text | Yes | Yes | Yes | Yes | Yes |
| 824x 2: Text/Photo | Yes | Yes | Yes | Yes | Yes |
| 824x 3: Photo | Yes | Yes | Yes | Yes | Yes |
| 824x 4: GenCopy, Pale | Yes | Yes | No | Yes | Yes |
| 824x 5: Map | Yes | Yes | No | Yes | Yes |

| | | | | | |
|---|---|---|---|---|---|
| 824x 6: Normal/Detail | Yes | No | Yes | No | No |
| 824x 7: Fine/Super Fine | Yes | No | Yes | No | No |
| 824x 8: Binary | Yes | No | No | Yes | No |
| 824x 9: Grayscale | Yes | No | No | Yes | No |

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.

| | | |
|---|---|---|
| 8251 | T:Scan PGS/ImgEdt | These SPs show how many times Image Edit features have been selected at the operation panel for each application.<br>Some examples of these editing features are:<br>▪ Erase> Border<br>▪ Erase> Center<br>▪ Image Repeat<br>▪ Centering<br>▪ Positive/Negative<br>[0 to 9999999/ 0 / 1]<br>**Note:** The count totals the number of times the edit features have been used. A detailed breakdown of exactly which features have been used is not given. |
| 8252 | C:Scan PGS/ImgEdt | |
| 8256 | L:Scan PGS/ImgEdt | |
| 8257 | O:Scan PGS/ImgEdt | |

The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen.

| | | |
|---|---|---|
| 8281 | T:Scan PGS/TWAIN | These SPs count the number of pages scanned using a TWAIN driver. These counters reveal how the TWAIN driver is used for delivery functions.<br>[0 to 9999999/ 0 / 1]<br>**Note:** At the present time, these counters perform identical counts. |
| 8285 | S:Scan PGS/TWAIN | |

| | | |
|---|---|---|
| 8291 | T:Scan PGS/Stamp | These SPs count the number of pages stamped with the stamp in the ADF unit.<br>[0 to 9999999/ 0 / 1]<br>The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen |
| 8295 | S:Scan PGS/Stamp | |
| 8296 | L:Scan PGS/Stamp | |

| | |
|---|---|
| 8301 | T:Scan PGS/Size |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by size the total number of pages scanned by all applications. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-441]. |
| 8302 | C:Scan PGS/Size |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by size the total number of pages scanned by the Copy application. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-442]. |

**Service Program Mode Tables**

| | | |
|---|---|---|
| 8305 | S:Scan PGS/Size | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by size the total number of pages scanned by the Scan application. Use these totals to compare original page size (scanning) and output page size [SP 8-445]. | |
| 8306 | L:Scan PGS/Size | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by size the total number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen. Use these totals to compare original page size (scanning) and output page size [SP 8-446]. | |
| 830x 1 | A3 | |
| 830x 2 | A4 | |
| 830x 3 | A5 | |
| 830x 4 | B4 | |
| 830x 5 | B5 | |
| 830x 6 | DLT | |
| 830x 7 | LG | |
| 830x 8 | LT | |
| 830x 9 | HLT | |
| 830x 10 | Full Bleed | |
| 830x 254 | Other (Standard) | |
| 830x 255 | Other (Custom) | |

| | | |
|---|---|---|
| 8311 | T:Scan PGS/Rez | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings. | |
| 8315 | S:Scan PGS/Rez | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings.<br>**Note:** At the present time, 8311 and 8315 perform identical counts. | |
| 831x 1 | 1200dpi to | |
| 831x 2 | 600dpi to 1199dpi | |
| 831x 3 | 400dpi to 599dpi | |
| 831x 4 | 200dpi to 399dpi | |
| 831x 5 | to 199dpi | |



- Copy resolution settings are fixed so they are not counted.

| | | |
|---|---|---|
| 8381 | T:Total PrtPGS | These SPs count the number of pages printed by the customer. The counter for the application used for storing the pages increments.<br>[0 to 9999999/ 0 / 1]<br>The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter. |
| 8382 | C:Total PrtPGS | |
| 8384 | P:Total PrtPGS | |
| 8385 | S:Total PrtPGS | |
| 8386 | L:Total PrtPGS | |
| 8387 | O:Total PrtPGS | |

- When the A3/DLT double count function is switched on with SP5104, 1 A3/DLT page is counted as 2.
- When several documents are merged for a print job, the number of pages stored are counted for the application that stored them.

**Service Program Mode Tables**

- These counters are used primarily to calculate charges on use of the machine, so the following pages are not counted as printed pages:
- Blank pages in a duplex printing job.
- Blank pages inserted as document covers, chapter title sheets, and slip sheets.
- Reports printed to confirm counts.
- All reports done in the service mode (service summaries, engine maintenance reports, etc.)
- Test prints for machine image adjustment.
- Error notification reports.
- Partially printed pages as the result of a copier jam.

| | |
|---|---|
| 8391 | LSize PrtPGS |
| | [0 to 9999999/ 0 / 1]<br>These SPs count pages printed on paper sizes A3/DLT and larger.<br>**Note:** In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine. |

| | | |
|---|---|---|
| 8401 | T:PrtPGS/LS | These SPs count the number of pages printed from the document server. The counter for the application used to print the pages is incremented.<br>The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.<br>[0 to 9999999/ 0 / 1] |
| 8402 | C:PrtPGS/LS | |
| 8404 | P:PrtPGS/LS | |
| 8405 | S:PrtPGS/LS | |
| 8406 | L:PrtPGS/LS | |

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the L: count.

| | | |
|---|---|---|
| 8411 | Prints/Duplex | This SP counts the amount of paper (front/back counted as 1 page) used for duplex printing. Last pages printed only on one side are not counted. |

| | | |
|---|---|---|
| | | [0 to 9999999/ 0 / 1] |

| | |
|---|---|
| 8421 | T:PrtPGS/Dup Comb |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by binding and combine, and n-Up settings the number of pages processed for printing. This is the total for all applications. |
| 8422 | C:PrtPGS/Dup Comb |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the copier application. |
| 8424 | P:PrtPGS/Dup Comb |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the printer application. |
| 8425 | S:PrtPGS/Dup Comb |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the scanner application. |
| 8426 | L:PrtPGS/Dup Comb |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by binding and combine, and n-Up settings the number of pages processed for printing from within the document server mode window at the operation panel. |
| 8427 | O:PrtPGS/Dup Comb |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by Other applications |

| | | |
|---|---|---|
| 842x 1 | Simplex> Duplex | |
| 842x 2 | Duplex> Duplex | |
| 842x 3 | Book> Duplex | |
| 842x 4 | Simplex Combine | |
| 842x 5 | Duplex Combine | |
| 842x 6 | 2> | 2 pages on 1 side (2-Up) |
| 842x 7 | 4> | 4 pages on 1 side (4-Up) |
| 842x 8 | 6> | 6 pages on 1 side (6-Up) |
| 842x 9 | 8> | 8 pages on 1 side (8-Up) |
| 842x 10 | 9> | 9 pages on 1 side (9-Up) |
| 842x 11 | 16> | 16 pages on 1 side (16-Up) |
| 842x 12 | Booklet | |
| 842x 13 | Magazine | |

- These counts (SP8421 to SP8427) are especially useful for customers who need to improve their compliance with ISO standards for the reduction of paper consumption.
- Pages that are only partially printed with the n-Up functions are counted as 1 page.

Here is a summary of how the counters work for Booklet and Magazine modes:

| Booklet | | Magazine | |
|---|---|---|---|
| Original Pages | Count | Original Pages | Count |
| 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | 2 |
| 3 | 2 | 3 | 2 |
| 4 | 2 | 4 | 2 |
| 5 | 3 | 5 | 4 |

| | | | |
|---|---|---|---|
| 6 | 4 | 6 | 4 |
| 7 | 4 | 7 | 4 |
| 8 | 4 | 8 | 4 |

| | | |
|---|---|---|
| 8431 | T:PrtPGS/ImgEdt | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the total number of pages output with the three features below, regardless of which application was used. | |
| 8432 | C:PrtPGS/ImgEdt | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the total number of pages output with the three features below with the copy application. | |
| 8434 | P:PrtPGS/ImgEdt | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the total number of pages output with the three features below with the print application. | |
| 8436 | L:PrtPGS/ImgEdt | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the total number of pages output from within the document server mode window at the operation panel with the three features below. | |
| 8437 | O:PrtPGS/ImgEdt | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the total number of pages output with the three features below with Other applications. | |
| 843x 1 | Cover/Slip Sheet | Total number of covers or slip sheets inserted. The count for a cover printed on both sides counts 2. |
| 843x 2 | Series/Book | The number of pages printed in series (one side) or printed as a book with booklet right/left pagination. |

| | | |
|---|---|---|
| 843x 3 | User Stamp | The number of pages printed where stamps were applied, including page numbering and date stamping. |

| | |
|---|---|
| 8441 | T:PrtPGS/Ppr Size |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by print paper size the number of pages printed by all applications. |
| 8442 | C:PrtPGS/Ppr Size |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by print paper size the number of pages printed by the copy application. |
| 8444 | P:PrtPGS/Ppr Size |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by print paper size the number of pages printed by the printer application. |
| 8445 | S:PrtPGS/Ppr Size |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by print paper size the number of pages printed by the scanner application. |
| 8446 | L:PrtPGS/Ppr Size |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by print paper size the number of pages printed from within the document server mode window at the operation panel. |
| 8447 | O:PrtPGS/Ppr Size |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by print paper size the number of pages printed by other applications. |

| | |
|---|---|
| 844x 1 | A3 |
| 844x 2 | A4 |
| 844x 3 | A5 |
| 844x 4 | B4 |
| 844x 5 | B5 |
| 844x 6 | DLT |
| 844x 7 | LG |
| 844x 8 | LT |
| 844x 9 | HLT |
| 844x 10 | Full Bleed |
| 844x 254 | Other (Standard) |
| 844x 255 | Other (Custom) |



- These counters do not distinguish between LEF and SEF.

| | | |
|---|---|---|
| 8451 | PrtPGS/Ppr Tray | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the number of sheets fed from each paper feed station. | |
| 8451 1 | Bypass | Bypass Tray |
| 8451 2 | Tray 1 | Copier |
| 8451 3 | Tray 2 | Copier |
| 8451 4 | Tray 3 | Paper Tray Unit (Option) |
| 8451 5 | Tray 4 | Paper Tray Unit (Option) |
| 8451 6 | Tray 5 | LCT (Option) |

| | | |
|---|---|---|
| 8451 7 | Tray 6 | Currently not used. |
| 8451 8 | Tray 7 | Currently not used. |
| 8451 9 | Tray 8 | Currently not used. |
| 8451 10 | Tray 9 | Currently not used. |

| | |
|---|---|
| 8461 | T:PrtPGS/Ppr Type |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by paper type the number pages printed by all applications.<br>▪ These counters are not the same as the PM counter. The PM counter is based on feed timing to accurately measure the service life of the feed rollers. However, these counts are based on output timing.<br>▪ Blank sheets (covers, chapter covers, slip sheets) are also counted.<br>▪ During duplex printing, pages printed on both sides count as 1, and a page printed on one side counts as 1. |
| 8462 | C:PrtPGS/Ppr Type |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by paper type the number pages printed by the copy application. |
| 8464 | P:PrtPGS/Ppr Type |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by paper type the number pages printed by the printer application. |
| 8466 | L:PrtPGS/Ppr Type |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by paper type the number pages printed from within the document server mode window at the operation panel. |
| 846x 1 | Normal |
| 846x 2 | Recycled |
| 846x 3 | Special |

| | |
|---|---|
| 846x 4 | Thick |
| 846x 5 | Normal (Back) |
| 846x 6 | Thick (Back) |
| 846x 7 | OHP |
| 846x 8 | Other |

| | |
|---|---|
| 8471 | PrtPGS/Mag |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by magnification rate the number of pages printed. |
| 8471 1 | - 49% |
| 8471 2 | 50% to 99% |
| 8471 3 | 100% |
| 8471 4 | 101% to 200% |
| 8471 5 | 201% - |

- Counts are done for magnification adjusted for pages, not only on the operation panel but performed remotely with an external network application capable of performing magnification adjustment as well.
- Magnification adjustments done with printer drivers with PC applications such as Excel are also counted.
- Magnification adjustments done for adjustments after they have been stored on the document server are not counted.
- Magnification adjustments performed automatically during Auto Reduce/Enlarge copying are counted.
- The magnification rates of blank cover sheets, slip sheets, etc. are automatically assigned a rate of 100%.

| | |
|---|---|
| 8481 | T:PrtPGS/TonSave |
| 8484 | P:PrtPGS/TonSave |

| | |
|---|---|
| | These SPs count the number of pages printed with the Toner Save feature switched on.<br>**Note:** These SPs return the same results as this SP is limited to the Print application.<br>[0 to 9999999/ 0 / 1] |

| | | |
|---|---|---|
| 8511 | T:PrtPGS/Emul | [0 to 9999999/ 0 / 1] |
| | These SPs count by printer emulation mode the total number of pages printed. | |
| 8514 | P:PrtPGS/Emul | [0 to 9999999/ 0 / 1] |
| | These SPs count by printer emulation mode the total number of pages printed. | |
| 8514 1 | RPCS | |
| 8514 2 | RPDL | |
| 8514 3 | PS3 | |
| 8514 4 | R98 | |
| 8514 5 | R16 | |
| 8514 6 | GL/GL2 | |
| 8514 7 | R55 | |
| 8514 8 | RTIFF | |
| 8514 9 | PDF | |
| 8514 10 | PCL5e/5c | |
| 8514 11 | PCL XL | |
| 8514 12 | IPDL-C | |
| 8514 13 | BM-Links | Japan Only |

| | | |
|---|---|---|
| 8514 14 | Other | |

- SP8511 and SP8514 return the same results as they are both limited to the Print application.
- Print jobs output to the document server are not counted.

| | |
|---|---|
| 8521 | T:PrtPGS/FIN |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by finishing mode the total number of pages printed by all applications. |
| 8522 | C:PrtPGS/FIN |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by finishing mode the total number of pages printed by the Copy application. |
| 8524 | P:PrtPGS/FIN |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by finishing mode the total number of pages printed by the Print application. |
| 8525 | S:PrtPGS/FIN |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by finishing mode the total number of pages printed by the Scanner application. |
| 8526 | L:PrtPGS/FIN |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by finishing mode the total number of pages printed from within the document server mode window at the operation panel. |
| 852x 1 | Sort |
| 852x 2 | Stack |

| | |
|---|---|
| 852x 3 | Staple |
| 852x 4 | Booklet |
| 852x 5 | Z-Fold |
| 852x 6 | Punch |
| 852x 7 | Other |

Note

- If stapling is selected for finishing and the stack is too large for stapling, the unstapled pages are still counted.
- The counts for staple finishing are based on output to the staple tray, so jam recoveries are counted.

| | | |
|---|---|---|
| 8531 | Staples | This SP counts the amount of staples used by the machine.<br>[0 to 9999999/ 0 / 1] |

| | | |
|---|---|---|
| 8541 | T: GPC Counter | **Japan Only** |
| 8544 | C: GPC Counter | |

| | |
|---|---|
| 8581 | T:Counter |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the total output broken down by color output, regardless of the application used. In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine.<br>**Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only. |

| | |
|---|---|
| 8591 | O:Counter |
| | [0 to 9999999/ 0 / 1] |

| | |
|---|---|
| | These SPs count the totals for A3/DLT paper use, number of duplex pages printed, and the number of staples used. These totals are for Other (O:) applications only. |
| 8591 1 | A3/DLT |
| 8591 2 | Duplex |
| 8591 3 | Staple |

| | | |
|---|---|---|
| 8621 | Func Use Counter **NIA** | |
| | 001 to 064 | Function 001 to 064 |

| | |
|---|---|
| 8651 | T:S-to-Email PGS |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by color mode the total number of pages attached to an e-mail for both the Scan and document server applications.<br>**Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only. |
| 8655 | S:S-to-Email PGS |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by color mode the total number of pages attached to an e-mail for the Scan application only.<br>**Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only. |

Note

- The count for B/W and Color pages is done after the document is stored on the HDD. If the job is cancelled before it is stored, the pages are not counted.
- If Scan-to-Email is used to send a 10-page document to 5 addresses, the count is 10 (the pages are sent to the same SMTP server together).
- If Scan-to-PC is used to send a 10-page document to 5 folders, the count is 50 (the document is sent to each destination of the SMB/FTP server).
- Due to restrictions on some devices, if Scan-to-Email is used to send a 10-page

document to a large number of destinations, the count may be divided and counted separately. For example, if a 10-page document is sent to 200 addresses, the count is 10 for the first 100 destinations and the count is also 10 for the second 100 destinations, for a total of 20.).

| | |
|---|---|
| 8661 | T:Deliv PGS/Svr |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by color mode the total number of pages sent to a Scan Router server by both Scan and LS applications.<br>**Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only. |
| 8665 | S:Deliv PGS/Svr |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by color mode the total number of pages sent to a Scan Router server by the Scan application.<br>**Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only. |

Note

- The B/W and Color counts are done after the document is stored on the HDD of the Scan Router server.
- If the job is canceled before storage on the Scan Router server finishes, the counts are not done.
- The count is executed even if regardless of confirmation of the arrival at the Scan Router server.

| | |
|---|---|
| 8671 | T:Deliv PGS/PC |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by color mode the total number of pages sent to a folder on a PC (Scan-to-PC) with the Scan and LS applications.<br>**Note:** This SP is expanded for color MFP and color LP machines. For this |

| | | |
|---|---|---|
| | machine, the count is done for black only. | |
| 8675 | S:Deliv PGS/PC | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count by color mode the total number of pages sent with Scan-to-PC with the Scan application.<br>**Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only. | |
| 8691 | T:TX PGS/LS | These SPs count the number of pages sent from the document server. The counter for the application that was used to store the pages is incremented.<br>[0 to 9999999/ 0 / 1]<br>The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter. |
| 8692 | C:TX PGS/LS | |
| 8694 | P:TX PGS/LS | |
| 8695 | S:TX PGS/LS | |
| 8696 | L:TX PGS/LS | |

Note

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the count.
- If several documents are merged for sending, the number of pages stored is counted for the application that stored them.

| | |
|---|---|
| 8701 | TX PGS/Port |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the number of pages sent by the physical port used to send them. For example, if a 3-page original is sent to 4 destinations via ISDN G4, the count for ISDN (G3, G4) is 12. |
| 8701 1 | PSTN-1 |
| 8701 2 | PSTN-2 |
| 8701 3 | PSTN-3 |
| 8701 4 | ISDN (G3,G4) |

| | |
|---|---|
| 8701 5 | Network |

| | |
|---|---|
| 8711 | T:Scan PGS/Comp |
| | [0 to 9999999/ 1]<br>These SPs count the number of compressed pages scanned into the document server, counted by the formats listed below. |
| 8711 1 | JPEG/JPEG2000 |
| 8711 2 | TIFF (Multi/Single) |
| 8711 3 | PDF |
| 8711 4 | Other |

| | |
|---|---|
| 8715 | S:Scan PGS/Comp |
| | [0 to 9999999/ 1]<br>These SPs count the number of compressed pages scanned by the scan application, counted by the formats listed below. |
| 8715 1 | JPEG/JPEG2000 |
| 8715 2 | TIFF (Multi/Single) |
| 8715 3 | PDF |
| 8715 4 | Other |

| | |
|---|---|
| 8721 | T: Deliv: PGS/WSD |
| | Total number of pages sent via WSD (WS-Scanner for Web Services Devices). |
| 8725 | S: Deliv PGS/WSD |
| | Total number of pages sent via WSD (WS-Scanner for Web Services Devices). |

| | | |
|---|---|---|
| | 001 | B/W |
| | 002 | Color |

| | |
|---|---|
| 8741 | RX PGS/Port |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the number of pages received by the physical port used to receive them. |
| 8741 1 | PSTN-1 |
| 8741 2 | PSTN-2 |
| 8741 3 | PSTN-3 |
| 8741 4 | ISDN (G3,G4) |
| 8741 5 | Network |

| | |
|---|---|
| 8771 | Dev Counter |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the frequency of use (number of rotations of the development rollers) for black and other color toners.<br>**Note:** For machines that do not support color, the Black toner count is the same as the Total count. |

| | |
|---|---|
| 8781 | Pixel Coverage Ratio |
| | This SP displays the number of toner bottles used. The count is done based on the equivalent of 1,000 pages per bottle. |

| | | |
|---|---|---|
| 8791 | LS Memory Remain | This SP displays the percent of space available on the document server for storing documents.<br>[0 to 100/ 0 / 1] |

| | | |
|---|---|---|
| 8801 | Toner Remain | This SP displays the percent of toner remaining for each color. This SP allows the user to check the toner supply at any time.<br>[0 to 100/ 0 / 1] |

Note

- This precise method of measuring remaining toner supply (1% steps) is better than other machines in the market that can only measure in increments of 10 (10% steps).
- This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only

| | | | |
|---|---|---|---|
| 8851 | Toner Coverage 0-10% | [0 to 9999999]<br>These SPs count the percentage of dot coverage for black and other color toners. | |
| 88511 | K | Black toner | |
| 88512 | M | Magenta toner | Do not display for this machine. |
| 88513 | C | Cyan toner | |
| 88514 | Y | Yellow toner | |

| | | | |
|---|---|---|---|
| 8861 | Toner Coverage 11-20% | [0 to 9999999]<br>These SPs count the percentage of dot coverage for black and other color toners. | |
| 88611 | K | Black toner | |
| 8861 | M | Magenta toner | Do not display for this machine. |

| | | | |
|---|---|---|---|
| 2 | | | |
| 88613 | C | Cyan toner | |
| 88614 | Y | Yellow toner | |

| | | | |
|---|---|---|---|
| 8871 | Toner Coverage 21-30% | [0 to 9999999]<br>These SPs count the percentage of dot coverage for black and other color toners. | |
| 88711 | K | Black toner | |
| 88712 | M | Magenta toner | Do not display for this machine. |
| 88713 | C | Cyan toner | |
| 88714 | Y | Yellow toner | |

| | | | |
|---|---|---|---|
| 8881 | Toner Coverage 31 -% | [0 to 9999999]<br>These SPs count the percentage of dot coverage for black and other color toners. | |
| 88811 | K | Black toner | |
| 88812 | M | Magenta toner | Do not display for this machine. |
| 88813 | C | Cyan toner | |

| | | | |
|---|---|---|---|
| 88814 | Y | Yellow toner | |

| | | |
|---|---|---|
| 8891 | Page/Toner Bottle | Total number of pages per toner bottle. |
| 8921 | Cvr Cnt/Total | Total number of pages to date. |

| | |
|---|---|
| 8901 | Coverage Display (Toner Bottle: Previous) **DFU** |
| 8911 | Coverage Display (Toner Bottle: Before Previous) **DFU** |

| | | |
|---|---|---|
| 8941 | Machine Status | |
| | [0 to 9999999/ 0 / 1]<br>These SPs count the amount of time the machine spends in each operation mode. These SPs are useful for customers who need to investigate machine operation for improvement in their compliance with ISO Standards. | |
| 8941 1 | Operation Time | Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating). |
| 8941 2 | Standby Time | Engine not operating. Includes time while controller saves data to HDD. Does not include time spent in Energy Save, Low Power, or Off modes. |
| 8941 3 | Energy Save Time | Includes time while the machine is performing background printing. |
| 8941 4 | Low Power Time | Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing. |

| | | |
|---|---|---|
| 8941 5 | Off Mode Time | Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches. |
| 8941 6 | SC | Total down time due to SC errors. |
| 8941 7 | PrtJam | Total down time due to paper jams during printing. |
| 8941 8 | OrgJam | Total down time due to original jams during scanning. |
| 8941 9 | Supply PM Wait End | Total down time due to toner end. |

| | | | |
|---|---|---|---|
| 8951 | AddBook Register | | |
| | These SPs count the number of events when the machine manages data registration. | | |
| 8951 1 | User Code | User code registrations. | [0 to 9999999/ 0 / 1] |
| 8951 2 | Mail Address | Mail address registrations. | |
| 8951 4 | Group | Group destination registrations. | |
| 8951 6 | F-Code | F-Code box registrations. | |
| 8951 7 | Copy Program | Copy application registrations with the Program (job settings) feature. | [0 to 255 / 0 / 255] |
| 8951 9 | Printer Program | Printer application registrations with the Program (job settings) feature. | |
| 8951 10 | Scanner Program | Scanner application registrations with the Program (job settings) feature. | |



## 4.1.3 PRINTER SP TABLES

| **1001** | **Bit Switch** | | |
|---|---|---|---|
| 001 | Bit Switch 1 | 0 | 1 |

| | | | | |
|---|---|---|---|---|
| | bit 0 | DFU | - | - |
| | bit 1 | DFU | - | - |
| | bit 2 | DFU | - | - |
| | bit 3 | **No I/O Timeout** | 0: Disable | 1: Enable |
| | | Enable: The MFP I/O Timeout setting will have no effect. I/O Timeouts will never occur. | | |
| | bit 4 | **SD Card Save Mode** | 0: Disable | 1: Enable |
| | | Enable: Print jobs will be saved to an SD Card in the GW SD slot. | | |
| | bit 5 | DFU | - | - |
| | bit 6 | DFU | - | - |
| | bit 7 | **[RPCS,PCL]: Printable area frame border** | 0: Disable | 1: Enable |
| | | Enable: The machine prints all RPCS and PCL jobs with a border on the edges of the printable area. | | |

| **1001** | **Bit Switch** | | | |
|---|---|---|---|---|
| 002 | Bit Switch 2 | | 0 | 1 |
| | bit 0 | DFU | - | - |
| | bit 1 | DFU | - | - |
| | bit 2 | **Applying a collation Type** | Shift Collate | Normal Collate |
| | | A collation type (shift or normal) will be applied to all jobs that do not already have a "Collate Type" configured.<br>Note<br>▪ If #5-0 is enabled, this Bit Switch has no effect. | | |
| | bit 3 | **[PCL5e/c,PS]: PDL Auto Switching** | 0: Enable | 1: Disable |
| | | Disable: The MFPs ability to change the PDL processor mid-job. | | |

| | | | | |
|---|---|---|---|---|
| | | Some host systems submit jobs that contain both PS and PCL5e/c. If Auto PDL switching is disabled, these jobs will not be printed properly. | | |
| | bit 4 | DFU | - | - |
| | bit 5 | DFU | - | - |
| | bit 6 | DFU | - | - |
| | bit 7 | DFU | - | - |

| **1001** | **Bit Switch** | | | |
|---|---|---|---|---|
| 003 | Bit Switch 3 | | 0 | 1 |
| | bit 0 | DFU | - | - |
| | bit 1 | DFU | - | - |
| | bit 2 | **[PCL5e/c]: Legacy HP compatibility** | 0: Disable | 1: Enable |
| | | Enable: Uses the same left margin as older HP models such as HP4000/HP8000.<br>In other words, the left margin defined in the job (usually "<ESC>*r0A") will be changed to "<ESC>*r1A" | | |
| | bit 3 | DFU | - | - |
| | bit 4 | DFU | - | - |
| | bit 5 | DFU | - | - |
| | bit 6 | DFU | - | - |
| | bit 7 | DFU | - | - |

| **1001** | **Bit Switch** | | |
|---|---|---|---|
| 004 | Bit Switch 4 **DFU** | - | - |

| **1001** | **Bit Switch** |
|---|---|

| | | | | |
|---|---|---|---|---|
| 005 | Bit Switch 5 | | 0 | 1 |
| | bit 0 | **Show "Collate Type", "Staple Type" and "Punch Type" buttons on the operation panel.** | Disable | Enable |
| | | If enabled, users will be able to configure a Collate Type, Staple Type, and Punch Type from the operation panel. The available types will depend on the device and configured options.<br>After enabling the function, the settings will appear under:<br>"User Tools > Printer Features > System" | | |
| | bit 1 | DFU | - | - |
| | bit 2 | DFU | - | - |
| | bit 3 | **[PS] PS Criteria** | Pattern3 | Pattern1 |
| | | Change the number of PS criterion used by the PS interpreter to determine whether a job is PS data or not.<br>Pattern3: includes most PS commands.<br>Pattern1: A small number of PS tags and headers | | |
| | bit 4 | **Increase max number of the stored jobs to 1000 jobs.** | Disable (100) | Enable (1000) |
| | | Enable: Changes the maximum number of jobs that can be stored on the HDD via Job Type settings to 1000. The default is 100. | | |
| | bit 5 | **Face-up output** | Disable | Enable |
| | | Enable: All print jobs will be output face-up in the destination tray. | | |
| | bit 6 | **Method for determining the image rotation for the edge to bind on.** | Disable | Enable |
| | | Enable: the image rotation will be performed as they were in the specifications of older models for the binding of pages of mixed orientation jobs.<br>The old models are below:<br>- PCL: before October 2004 models | | |

| | | | | |
|---|---|---|---|---|
| | | - PS/PDF/RPCS: before March 2005 models | | |
| | bit 7 | Letterhead mode printing | Disable | Enable (Duplex) |
| | | Routes all pages through the duplex unit.<br>Disable: Simplex pages or the last page of an odd-paged duplex job, are not routed through the duplex unit. This could result in problems with letterhead/pre-printed pages.<br>Only affects pages specified as Letterhead paper. | | |

| **1001** | **Bit Switch** | | |
|---|---|---|---|
| 006 | Bit Switch 6 **DFU** | - | - |

| **1001** | **Bit Switch** | | | |
|---|---|---|---|---|
| 007 | Bit Switch 7 | | 0 | 1 |
| | bit 0 | **Print path** | Disable | Enable |
| | | Enable: Simplex pages (in mixed simplex/duplex PS/PCL5 jobs only) and the last page of an odd paged duplex job (PS, PCL5, PCL6), are always routed through the duplex unit. Not having to switch paper paths increases the print speed slightly. | | |
| | bit 1 | DFU | - | - |
| | bit 2 | DFU | - | - |
| | bit 3 | DFU | - | - |
| | bit 4 | DFU | - | - |
| | bit 5 | DFU | - | - |
| | bit 6 | DFU | - | - |
| | bit 7 | DFU | - | - |

**Service Program Mode Tables**

| **1001** | **Bit Switch** | | | |
|---|---|---|---|---|
| 008 | Bit Switch 8 | | 0 | 1 |
| | bit 0 | DFU | - | - |
| | bit 1 | DFU | - | - |
| | bit 2 | DFU | - | - |
| | bit 3 | **[PCL,PS]: Allow BW jobs to print without requiring User Code** | Disable | Enable |
| | | Enable: BW jobs submitted without a user code will be printed even if usercode authentication is enabled.<br>Note<br>▪ Color jobs will not be printed without a valid user code. | | |
| | bit 4 | DFU | - | - |
| | bit 5 | DFU | - | - |
| | bit 6 | DFU | - | - |
| | bit 7 | DFU | - | - |

| 1003 | Clear setting |
|---|---|
| 001 | Initialize Printer System<br>Initializes the settings in the printer feature settings of UP mode. |
| 003 | Delete Program **DFU** |

| 1004 | Print Summary |
|---|---|
| | Touch [Execute] to print the printer summary sheets. |

| 1005 | Display Version. |
|---|---|
| | Printer Application Version |

| | |
|---|---|
| Displays the version of the controller firmware. | |

| | |
|---|---|
| 1006 | Sample/Locked Print |
| | This SP disables/enables use of the document server.<br>[0 or 1/ **0** /1]<br>0: Enabled. Document server can be used.<br>1: Disabled. Document server cannot be used. |



## 4.1.4 SCANNER SP TABLES

| | |
|---|---|
| 1001 | Scan Nv Version |
| | Displays the scanner firmware version stored in NVRAM in a 9-digit format: Func. Name_Model Name_History No. |

| | |
|---|---|
| 1004 | Compression Type |
| | Selects the compression type for binary picture processing.<br>[1 to 3/ **1** /1]<br>1: MH, 2: MR, 3: MMR |

| | |
|---|---|
| 1005 | Erase Margin (Remote Scan) |
| | Creates an erase margin for all edges of the scanned image.<br>If the machine has scanned the edge of the original, create a margin.<br>[0 to 5/ **0** /1 mm] |

| | |
|---|---|
| 1009 | Remote Scan Disable |

| | |
|---|---|
| | This SP switches the TWAIN scanner function on/off. This is one of the scanner application functions.<br>[0 or 1 / **0** / 1]<br>0: ON (enabled-<br>1: OFF (disabled) |

| | |
|---|---|
| 1010 | Non Display Clear Light PDF |
| | This SP switches the Clear Light PDF display off/on.<br>[0 or 1 / **0** / 1]<br>0: Display ON<br>1: Display OFF |

| | |
|---|---|
| 1011 | Org Count Display |
| | This SP codes switches the original count display on/off.<br>[0 or 1 / **0** / 1]<br>0: OFF (no display)<br>1: ON (count displays) |

| | |
|---|---|
| 1012 | User Info Release |
| | This SP code sets the machine to release or not release the following items at job end]<br>▪ Destination (E-mail/Folder/CS)<br>▪ Sender name<br>▪ Mail Text<br>▪ Subject line<br>▪ File name<br>[0 or 1 / **1** / 1]<br>1: Release<br>0: Do not release |

| | |
|---|---|
| 1013 | Multi Media Func |

| | |
|---|---|
| | This SP code enables/disables the multi-media function.<br>[0 or 1 / **0** / 1]<br>0: Disable<br>1: Enable |

| | | | |
|---|---|---|---|
| 2021 | Compression Ratio of Grayscale | | |
| | 001 | Compression Ratio 1 (Normal Image) | [5 to 95 / **20** / 1] |
| | 002 | Compression Ratio 2 (High Quality Image) | [5 to 95 / **40** / 1] |
| | 003 | Compression Ratio 3 (Low Quality Image) | [5 to 95 / **65** / 1] |
| | 004 | Compression Ratio 4 (HighLv2 Quality Image) | [5 to 95 / **80** / 1] |
| | 005 | Compression Ratio 5 (LowLvl2 Quality Image) | [5 to 95 / **95** / 1] |

| | | | |
|---|---|---|---|
| 2024 | Compression ratio of ClearLight PDF | | |
| | Selects the compression ratio for clearlight PDF for the two settings that can be selected at the operation panel. | | |
| 2024 1 | Compression Ratio (Normal) | *CTL | [5 to 95 / **25** / 1 /step ] |
| 2024 2 | Compression Ratio (High) | | [5 to 95 / **20** / 1 /step ] |

# 4.2 INPUT/OUTPUT CHECK

## 4.2.1 COPIER INPUT CHECK: SP5803

This procedure allows you to test sensors and other components of the machine. After you select one of the categories below by number, you will see a small 8-bit table with the number of the bit and its current setting (0 or 1). The bits are numbered 0 to 7, reading right to left.

**Input/Output Check**

1. Enter the SP mode and select SP5803.
2. Enter the number (1 to 13) for the item that you want to check. A small box will be displayed on the SP mode screen with a series of 0's and 1's.
   The meaning of the display is as follows.

| | |
|---|---|
| Bit | 7 6 5 4 3 2 1 0 |
| Setting | 1 1 0 0 1 0 1 0 |

3. Check the status of each item against the corresponding bit numbers listed in the table below.

| **SP5803-001: Paper Feed 1** | | | |
|---|---|---|---|
| **Bit** | **Description** | **Reading** | |
| | | **0** | **1** |
| 7 | Rear Side Fence Close Sensor | Activated | Deactivated |
| 6 | Rear Side Fence Open Sensor | Activated | Deactivated |
| 5 | Front Side Fence Close Sensor | Activated | Deactivated |
| 4 | Front Side Fence Open Sensor | Activated | Deactivated |
| 3 | Near End Sensor | (see tables below) | |
| 2 | Paper Height 1 Sensor | | |
| 1 | Paper Height 2 Sensor | | |
| 0 | Paper Height 3 Sensor | | |

| **SP5803-002: Paper Feed 2** | | | |
|---|---|---|---|
| **Bit** | **Description** | **Reading** | |
| | | **0** | **0** |
| 7 | 2nd Paper Size Switch | See Paper Size Tables Below | |

| | | |
|---|---|---|
| 6 | 2nd Paper Size Switch | |
| 5 | 2nd Paper Size Switch | |
| 4 | 2nd Paper Size Switch | |
| 3 | 2nd Paper Size Switch | |
| 2 | Not used | |
| 1 | Not used | |
| 0 | Not used | |

| | 1500 sheets | 1000 sheets | | | 400 sheets | | | 70 sheets |
|---|---|---|---|---|---|---|---|---|
| bit-3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| bit-2 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 |
| bit-1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |
| bit-0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |

| **SP5803-003: Paper Feed 3** | | | |
|---|---|---|---|
| **Bit** | **Description** | **Reading** | |
| | | **0** | **0** |
| 7 | 3rd Paper Size Switch | See Paper Size Tables Below. | |
| 6 | 3rd Paper Size Switch | | |
| 5 | 3rd Paper Size Switch | | |
| 4 | 3rd Paper Size Switch | | |
| 3 | 3rd Paper Size Switch | | |
| 2 | Not used | | |
| 1 | Not used | | |

**Input/Output Check**

| | | |
|---|---|---|
| 0 | Not used | |

**Universal Tray Size Detection – N.A. models only**

| Paper Size | Switch Setting (LOW = pressed) | | | | | Panel Display |
|---|---|---|---|---|---|---|
| 11" x 17" | LOW | HIGH | HIGH | HIGH | HIGH | 11" x 17" SEF |
| 81/2" x 14" | LOW | LOW | HIGH | HIGH | HIGH | 81/2" x 14" SEF |
| 81/2" x 11" | HIGH | LOW | LOW | HIGH | HIGH | 81/2" x 11" SEF |
| 11" x 8 ½" | LOW | HIGH | LOW | LOW | HIGH | 81/2" x 11" LEF |
| 51/2" x 81/2" | LOW | LOW | HIGH | LOW | LOW | 51/2" x 81/2" SEF |
| 81/2" x 51/2" | LOW | LOW | LOW | HIGH | LOW | 81/2" x 51/2" LEF |
| 8" x 101/2" | LOW | LOW | LOW | LOW | HIGH | 8" x 101/2" SEF |
| 7¼" x 101/2" | HIGH | LOW | LOW | LOW | LOW | 71/4" x 101/2" SEF |
| 8" x 13" | HIGH | HIGH | LOW | LOW | LOW | 8" x 13" SEF |
| * | HIGH | HIGH | HIGH | HIGH | LOW | In the user tool setting. |

**Universal Tray Size Detection – EU/ASIA models**

| Paper Size | Switch Setting (LOW = pressed) | | | | | Panel Display |
|---|---|---|---|---|---|---|
| A3 SEF | LOW | HIGH | HIGH | HIGH | HIGH | A3 SEF |
| 81/4" x 13" | LOW | LOW | HIGH | HIGH | HIGH | 81/4" x 13" SEF |
| A4 SEF | HIGH | LOW | LOW | HIGH | HIGH | A4 SEF |
| A4 LEF | LOW | HIGH | LOW | LOW | HIGH | A4 LEF |
| 81/2" x 13" | LOW | LOW | HIGH | LOW | LOW | 81/2" x 13" SEF |
| A5 SEF | LOW | LOW | LOW | HIGH | LOW | A5 SEF |

| | | | | | | |
|---|---|---|---|---|---|---|
| A5 LEF | LOW | LOW | LOW | LOW | HIGH | A5 LEF |
| * | HIGH | HIGH | HIGH | HIGH | LOW | In the user tool setting |

| SP5803-004: Paper Feed 4 | | | |
|---|---|---|---|
| **Bit** | **Description** | **Reading** | |
| | | **0** | **1** |
| 7 | 1st Paper Height | Less than 30% | 30% or more |
| 6 | Japan only | | |
| 5 | 2nd Paper Height | Less than 30% | 30% or more |
| 4 | 3rd Paper Height | Less than 30% | 30% or more |
| 3 | 1st Paper Near End | Near End | Not Near End |
| 2 | Japan only | | |
| 1 | 2nd Paper Near End | Near End | Not Near End |
| 0 | 3rd Paper Near End | Near End | Not Near End |

| SP5803-005: Paper Feed 5 | | | |
|---|---|---|---|
| **Bit** | **Item** | **Reading** | |
| | | **0** | **1** |
| 7 | Japan Only | | |
| 6 | | | |
| 5 | | | |
| 4 | | | |
| 3 | | | |
| 2 | Right Tray Paper Sensor | Present | Not Present |

**Input/Output Check**

| | | | |
|---|---|---|---|
| 1 | Tray Type | 3 trays | 4 trays |
| 0 | Not used | | |

| **SP5803-006: Paper Feed 6** | | | |
|---|---|---|---|
| **Bit** | **Description** | **Reading** | |
| | | **0** | **1** |
| 7 | Left Tandem Tray Set | Set | Not set |
| 6 | Japan only | | |
| 5 | Japan only | | |
| 4 | Rear Fence HP Sensor | Deactivated | Activated |
| 3 | Japan only | | |
| 2 | Rear Fence Return Sensor | Deactivated | Activated |
| 1 | Left Tray Paper Sensor | Paper present | Paper not present |
| 0 | Right Tandem Tray Set | Set | Not set |

| **SP5803-007: Paper Feed 7** | | | |
|---|---|---|---|
| **Bit** | **Item** | **0** | **1** |
| 7 | 1st Paper Feed Sensor | Present | Not present |
| 6 | Japan Only | --- | --- |
| 5 | 2nd Paper Feed Sensor | Present | Not present |
| 4 | 3rd Paper Feed Sensor | Present | Not present |
| 3 | 1st Vertical Transport Sensor | Present | Not present |
| 2 | Japan Only | --- | --- |

| | | | |
|---|---|---|---|
| 1 | 2nd Vertical Transport Sensor | Present | Not present |
| 0 | 3rd Vertical Transport Sensor | Present | Not present |

| SP5803-008: Paper Feed 8 | | | |
|---|---|---|---|
| **Bit** | **Item** | **0** | **1** |
| 7 | 1st Tray Lift Sensor | Off | On |
| 6 | Japan Only | Off | On |
| 5 | 2nd Tray Lift Sensor | Off | On |
| 4 | 3rd Tray Lift Sensor | Off | On |
| 3 | 1st Paper End Sensor | Paper | No Paper |
| 2 | Japan Only | Paper | No Paper |
| 1 | 2nd Paper End Sensor | Paper | No Paper |
| 0 | 3rd Paper End Sensor | Paper | No Paper |

| SP5803-009: Paper Feed 9 | | | |
|---|---|---|---|
| **Bit** | **Description** | **Reading** | |
| | | **0** | **1** |
| 7 | Not used | | |
| 6 | Not used | | |
| 5 | Toner Overflow SW | Switch not pressed | Switch pressed |
| 4 | Toner Collection Bottle Set SW | Switch pressed | Switch not pressed |
| 3 | Not used | | |
| 2 | Not used | | |

**Input/Output Check**

| | | | |
|---|---|---|---|
| 1 | Not used | | |
| 0 | Not used | | |

SP5803-010: Paper Feed 10 DFU

SP5803-011: Paper Feed 11 DFU

**SP5803-011: DIP Switches DFU**

**SP5803-013: Exit**

| Bit | Description | Reading | |
|---|---|---|---|
| | | 0 | 1 |
| 7 | Toner Collection Motor Sensor | Deactivated | Activated |
| 6 | Toner End Sensor | Toner end | Not toner end |
| 5 | Toner Collection Coil Sensor | Deactivated | Activated |
| 4 | Not used | | |
| 3 | Exit Unit Set | Set | Not set |
| 2 | Paper Exit Sensor | Paper present | Paper not present |
| 1 | Exit Unit Entrance Sensor | Paper present | Paper not present |
| 0 | Web End Sensor | Not web end | Web end |

**SP5803-014: Duplex**

| Bit | Description | Reading | |
|---|---|---|---|
| | | 0 | 1 |
| 7 | Not used | | |

| | | | |
|---|---|---|---|
| 6 | Duplex Unit Set | Set | Not set |
| 5 | Duplex Transport 3 Sensor | Paper present | Paper not present |
| 4 | Duplex Transport 2 Sensor | Paper present | Paper not present |
| 3 | Duplex Transport 1 Sensor | Paper present | Paper not present |
| 2 | Duplex Jogger HP Sensor | Deactivated | Activated |
| 1 | Duplex Inverter Sensor | Paper not present | Paper present |
| 0 | Duplex Entrance Sensor | Paper not present | Paper present |



**SP5803-015: Lock Detection 1**

| Bit | Description | Reading | |
|---|---|---|---|
| | | 0 | 1 |
| 7 | Key Card Set | Set | Not set |
| 6 | Development Motor Lock | Not locked | Locked |
| 5 | Fusing/Exit Motor Lock | Locked | Not locked |
| 4 | Drum Motor Lock | Not locked | Locked |
| 3 | CPM | 60 CPM | 75 CPM |
| 2 | Not used | | |
| 1 | Not used | | |
| 0 | Not used | | |

**SP5803-016: Lock Detection 2**

**Input/Output Check**

| Bit | Description | Reading | |
|---|---|---|---|
| | | 0 | 1 |
| 7 | Charge Corona Leak | Leaked | Not leaked |
| 6 | Not used | | |
| 5 | Toner Collection Motor Lock | Locked | Not locked |
| 4 | Exhaust Fan Lock | Locked | Not locked |
| 3 | Not used | | |
| 2 | Not used | | |
| 1 | Not used | | |
| 0 | Not used | | |

| SP5803-017: Registration Sensor | | | |
|---|---|---|---|
| **Bit** | **Description** | **Reading** | |
| | | **0** | **1** |
| 7 | Not used | | |
| 6 | Not used | | |
| 5 | Front Door Open | Open | Closed |
| 4 | Copy Tray Full Sensor | Not full | Full |
| 3 | Guide Plate Position Sensor | Closed | Open |
| 2 | Relay Sensor | Paper present | Paper not present |
| 1 | By-pass Paper End Sensor | Paper present | Paper not present |
| 0 | Registration Sensor | Paper present | Paper not present |

| 5803 | Input Check | | |
|---|---|---|---|
| | Description | Reading | |
| 0 | | 1 | |
| 019 | LD-0 Iop Monitor | [0 to 99.5 / - / 0.5 mA] | |
| 020 | LD-1 Iop Monitor | [0 to 99.5 / - / 0.5 mA] | |
| 021 | LD-2 Iop Monitor | [0 to 99.5 / - / 0.5 mA] | |
| 022 | LD-3 Iop Monitor | [0 to 99.5 / - / 0.5 mA] | |
| 023 | Capacitor Port 1 | Japan only | |
| 024 | Capacitor Port 5 | | |
| 025 | Capacitor Port 7 | | |
| 200 | Scanner HP Sensor | HP | Not HP |
| 201 | Platen Cover Sensor | Close | Open |
| 202 | Scanner fan lock signal | Rotation | Locked |

## 4.2.2 COPIER OUTPUT CHECK: SP5804

Important

- Motors keep turning in this mode regardless of upper or lower limit sensor signals. To prevent mechanical or electrical damage, do not keep an electrical component on for a long time.

1. Open SP mode 5804.
2. Select the SP number that corresponds to the component you wish to check. (Refer to the table on the next page.)
3. Press On then press Off to test the selected item.

Note

- You cannot exit and close this display until you press off to switch off the output check currently executing. Do not keep an electrical component switched on for a long time.

## *SP5804 Output Check Table*

| 5804 | Output Check |
|---|---|
| | Turns on the electrical components individually for testing. This is the output check for the main machine. |
| 001 | Feed Motor 1 |
| 002 | Feed Motor 2 |
| 003 | Feed Motor 3 |
| 004 | Feed Motor 4 |
| 005 | By-pass Feed Clutch |
| 006 | LCT Feed Motor |
| 009 | Pick-up SOL 1 |
| 010 | Pick-up SOL 2 |
| 011 | Pick-up SOL 3 |
| 012 | Pick-up SOL 4 |
| 013 | By-pass Pick-up SOL |
| 014 | LCT Pick-up SOL |
| 017 | Reverse Release SOL 1 |
| 018 | Reverse Release SOL 2 |
| 019 | Reverse Release SOL 3 |
| 020 | Reverse Release SOL 4 |
| 022 | Tandem Connection Release SOL |
| 023 | Left Tandem Lock SOL |
| 024 | Tandem Transport Motor |
| 027 | Relay Motor |

| | |
|---|---|
| 028 | Main Motor |
| 031 | Fusing Exit Motor |
| 032 | Fusing Removal Motor |
| 039 | Registration Motor |
| 040 | Guide Plate Release SOL |
| 041 | Exit Junction SOL |
| 043 | Inverter Duplex Motor |
| 044 | Duplex Transport Motor |
| 045 | Duplex Entrance Gate SOL |
| 046 | Inverter Jogger SOL |
| 047 | Duplex Transport CL |
| 048 | Duplex Jogger |
| 052 | Development Roller CL |
| 053 | Development Motor |
| 054 | Used Toner Motor |
| 055 | Web Motor |
| 056 | Toner Bottle Motor |
| 057 | Transfer/Separation SOL |
| 062 | Quenching Lamp |
| 063 | Charge Corona |
| 064 | Grid Wire |
| 067 | Development Bias |
| 069 | Transfer Bias |

**Input/Output Check**

| | |
|---|---|
| 070 | ID Sensor LED |
| 075 | Duplex Unit Fan |
| 076 | Main Ventilation Fan |
| 077 | Main Suction Fan |
| 078 | Main Vacuum Fan |
| 079 | OPC Fan |
| 080 | FIN Juction SOL (Proof) |
| 081 | FIN Juction SOL (Stapler) |
| 082 | FIN End Roller SOL |
| 084 | Total Counter |
| 085 | FIN Main Motor 1 |
| 086 | FIN Main Motor 2 |
| 087 | FIN Exit Motor |
| 088 | FIN Staple Motor |
| 089 | FIN Punch Motor |
| 090 | LD DC Lamp |
| 092 | FIN Tray Lift Motor |
| 093 | FIN Jogger Motor |
| 094 | FIN Staple Transport Motor |
| 095 | FIN Exhaust Motor |
| 096 | FIN Shift Motor |
| 097 | FIN Staple Slant Motor |
| 098 | Status Lamp (Green) |

| | |
|---|---|
| 099 | Status Lamp (Red) |
| 100 | PTL |
| 200 | Scanner Fanmotor |
| 202 | Scanner Lamp |
| 203 | Scanner Motor |

## 4.2.3 ADF INPUT CHECK: SP6007

1. Open SP mode SP6007.
2. Select the SP number that corresponds to the component you wish to check. (Refer to the table below.)
3. Press On then press Off to test the selected item. You cannot exit and close this display until you click Off to switch off the output check currently executing.



| 6007 | ADF Input Check | | |
|---|---|---|---|
| | Description | Reading | |
| 0 | | 1 | |
| 001 | Original Length Sensor 1 (B5) | No paper | Paper detected |
| 002 | Original Length Sensor 2 (A4) | No paper | Paper detected |
| 003 | Original Length Sensor 3 (LG) | No paper | Paper detected |
| 004 | Original Width Sensor 1 | No paper | Paper detected |
| 005 | Original Width Sensor 2 | No paper | Paper detected |
| 006 | Original Width Sensor 3 | No paper | Paper detected |
| 007 | Original Width Sensor 4 | No paper | Paper detected |
| 008 | Original Width Sensor 5 | No paper | Paper detected |
| 009 | Original Set Sensor | No paper | Paper detected |
| 010 | Separation Sensor | No paper | Paper detected |

**Input/Output Check**

| | | | |
|---|---|---|---|
| 011 | Skew Correction Sensor | No paper | Paper detected |
| 012 | Interval Sensor | No paper | Paper detected |
| 013 | Registration Sensor | No paper | Paper detected |
| 014 | Exit Sensor | No paper | Paper detected |
| 015 | Feed Cover Sensor | Open | Close |
| 016 | DF Position Sensor | Open | Close |
| 018 | Pick-up Roller HP Sensor | Not HP | HP |
| 020 | APS Start Sensor | Not Start | Start |
| 021 | Bottom Plate HP Sensor | Not HP | HP |
| 022 | Bottom Plate Posirion Sensor | Not Correct Position | Correct Position |

## 4.2.4 ADF OUTPUT CHECK: SP6008

1. Open SP mode SP6008.
2. Select the SP number that corresponds to the component you wish to check. (Refer to the table below.)
3. Press On then press Off to test the selected item. You cannot exit and close this display until you click Off to switch off the output check currently executing.

| | |
|---|---|
| 6008 | ADF Output Check |
| | Turns on the ADF electrical components individually for testing. |
| 001 | Feed Motor: Forward |
| 002 | Feed Motor: Reverse |
| 003 | Transport Motor: Forward |
| 004 | Exit Motor: Forward |
| 008 | Stamp Solenoid |

| | |
|---|---|
| 009 | Pick-up Motor: Forward |
| 010 | Bottom Plate Motor: Reverse |

## 4.2.5 FINISHER 1 INPUT CHECK: SP6121 (D373/D374)

| 6140 | Bit | Description | Reading | |
|---|---|---|---|---|
| | | | 0 | 1 |
| 6140 1 | Entrance Sensor | | Paper not detected | Paper detected |
| 6140 2 | Proof Exit Sensor | | Paper not detected | Paper detected |
| 6140 3 | Proof Full Detection Sensor | | Not Full | Full |
| 6140 4 | Trailing Edge Detection: Shift | | Paper not detected*1 | Paper detected*1 |
| 6140 5 | Staple Exit Sensor | | Paper not detected | Paper detected |
| 6140 6 | Shift HP Sensor | | Not HP | HP |
| 6140 7 | Shift Exit Sensor | | Paper not detected | Paper detected |
| 6140 8 | Exit Guide Plate HP Sensor | | Not HP | HP |
| 6140 9 | Paper Detection Sensor: Staple | | Paper not detected | Paper detected |
| 6140 10 | Paper Detection Sensor: Shift | | Paper not detected | Paper detected |
| 6140 11 | Paper Full Sensor: 2000-Sheet | | Not Full | Full |
| 6140 12 | Oscillating Back Roller HP Sensor | | Not HP | HP |
| 6140 13 | Jogger HP Sensor | | Not HP | HP |
| 6140 14 | Exit Junction Gate HP Sensor | | HP | Not HP |
| 6140 15 | Staple Tray Paper Sensor | | Paper not | Paper detected |

| 6140 | Bit | Description | Reading | |
|---|---|---|---|---|
| | | | 0 | 1 |
| | | | detected | |
| 6140 16 | Staple Moving HP Sensor | | Not HP | HP |
| 6140 17 | Skew HP Sensor | | Not HP | HP |
| 6140 18 | Limit SW | | Not Limit | Limit |
| 6140 19 | DOOR SW | | Closed | Open |
| 6140 20 | Stapler 1 Rotation | | Not HP | HP |
| 6140 21 | Staple Detection | | Staple not detected | Staple detected |
| 6140 22 | Staple Leading Edge Detection | | Staple not detected | Staple detected |
| 6140 23 | Punch Moving HP Sensor | | Not HP | HP |
| 6140 24 | Punch Registration HP Sensor | | Not HP | HP |
| 6140 25 | Punch Registratioin Detection Sensor | | Paper not detected | Paper detected |
| 6140 26 | Punch Chad Full Sensor | | Not Full | Full |
| 6140 27 | Punch HP | | Not HP | HP |
| 6140 28 | Punch Selection DIPSW 1 | | See *[1] | |
| 6140 29 | Punch Selection DIPSW 2 | | See *[1] | |
| 6140 30 | Stack Junction Gate Open/Closed HP Sensor | | Not HP | HP |
| 6140 31 | Leading Edge Detection Sensor | | Paper not detected | Paper detected |
| 6140 32 | Drive Roller HP Sensor | | Not HP | HP |

**Input/Output Check**

| 6140 | Bit | Description | Reading | |
|---|---|---|---|---|
| | | | 0 | 1 |
| 6140 33 | Arrival Sensor | | Paper not detected | Paper detected |
| 6140 34 | Rear Edge Fence HP Sensor | | Not HP | HP |
| 6140 35 | Folder Cam HP Sensor | | Not HP | HP |
| 6140 36 | Folder Plate HP Sensor | | Not HP | HP |
| 6140 37 | Folder Pass Sensor | | Paper not detected | Paper detected |
| 6140 38 | Saddle Full Sensor: Front | | Paper not detected*2 | Paper detected*2 |
| 6140 39 | Saddle Full Sensor: Rear | | Paper not detected*2 | Paper detected*2 |
| 6140 40 | Saddle Stitch Stapler 1 Rotation: Front | | Not HP | HP |
| 6140 41 | Saddle Stitch Detection: Front | | Staple not detected | Staple detected |
| 6140 42 | Saddle Stitch Leading Edge Detection: Front | | Staple not detected | Staple detected |
| 6140 43 | Saddle Stitch Stapler 1 Rotation: Rear | | Not HP | HP |
| 6140 44 | Saddle Stitch Detection: Rear | | Staple not detected | Staple detected |
| 6140 45 | Saddle Stitch Leading Edge Detection: Rear | | Staple not detected | Staple detected |
| 6140 46 | Full Sensor: 3000-Sheet | | Not Full | Full |
| 6140 47 | Exit Jogger HP Sensor: Front | | Not used in the machine | |

| 6140 | Bit | Description | Reading | |
|---|---|---|---|---|
| | | | 0 | 1 |
| 6140 48 | Exit Jogger HP Sensor: Rear | | Not used in the machine | |
| 6140 49 | Exit Jogger HP Sensor: Upper | | Not used in the machine | |

*1: Combination of DIP SW 1 and SW 2

| DIP SW 1 | DIP SW 2 | Punch Type |
|---|---|---|
| 0 | 0 | Japan |
| 1 | 0 | Europe |
| 0 | 1 | North America |
| 1 | 1 | North Europe |

*2: Please refer to "Lower Tray (B804 Only)" in the Service Manual for the "2000/3000 (Booklet) Finisher".



## 4.2.6 FINISHER 1 OUTPUT CHECK: SP6124

| 6124 | Finisher Output Check: Finisher 1 (Finisher D373/D374) | |
|---|---|---|
| 001 | Entrance Motor | Turn on the electrical components of the finisher individually for test purposes. |
| 002 | Upper Feed Motor | |
| 003 | Lower Feed Motor | |
| 004 | Exit Motor | |
| 005 | Knock Roller Motor | |
| 006 | Shift Motor | |
| 007 | Exit Guide Plate Open / Close Motor | |
| 008 | Tray Lift Motor | |
| 009 | Stack Roller Motor | |

**Input/Output Check**

| | | |
|---|---|---|
| 010 | Jogger Motor | |
| 011 | Stack Feed-out Motor | Turn on the electrical components of the finisher individually for test purposes. |
| 012 | Staple Moving Motor | |
| 013 | Staple Skew Motor | |
| 014 | End Stapler Motor | |
| 015 | Upper Junction Gate Solenoid | |
| 016 | Lower Junction Gate Solenoid | |
| 017 | Knock Solenoid | |
| 018 | Trailing Edge Hold Solenoid | |
| 019 | Saddle Stitch Hold Solenoid | |
| 020 | Stack Junction Gate Open / Close | |
| 021 | Trailing Edge Fence Moving Motor | Turn on the electrical components of the finisher individually for test purposes. |
| 022 | Saddle Stitch Staple Motor: Front | |
| 023 | Saddle Stitch Staple Motor: Rear | |
| 024 | Folder Plate Motor | |
| 025 | Folder Roller Motor | |
| 026 | Clamp Roller Motor | |
| 027 | Punch Motor | |
| 028 | Punch Moving Motor | |
| 029 | Punch Registration Detection Motor | |
| 030 | Exit Jogger Motor: Front | |
| 031 | Exit Jogger Motor: Rear | |
| 032 | Exit Jogger Release Motor | |

## 4.2.7 FINISHER 2 INPUT CHECK: SP6122

| 6122 | Finisher Input Check: Finisher 2 (Finisher D460) | |
|---|---|---|
| 001 | Entrance Sensor | |
| 002 | Proof Exit Sensor | |
| 003 | Shift Exit Sensor | |
| 004 | Staple Exit Sensor | |
| 005 | Tray Lower Sensor | |
| 006 | Stack Feed-out HP Sensor | |
| 007 | Jogger HP Sensor | |
| 008 | Shift HP Sensor | |
| 009 | Stapler Moving HP Sensor | |
| 010 | Staple HP Sensor | |
| 011 | Staple Cartfidge Sensor | |
| 012 | Staple Tray Paper Sensor | |
| 013 | Door Sensor | |
| 014 | Punch Unit Sensor | |
| 015 | Punch HP1 Sensor | |
| 016 | Punch Chad Full Sensor | |
| 017 | Paper Detection Sensor: Staple | |
| 018 | Paper Detection Sensor: Shift | |
| 019 | Stapler Cartridge Set Sensor | |
| 020 | Proof Full Sensor | |
| 021 | Staple Moving HP Sensor | |

**Input/Output Check**

| | | |
|---|---|---|
| 022 | Stape Waste Hopper Sensor | |
| 023 | Pre-stack Tray Paper Sensor | |
| 024 | Hold HP Sensor | |
| 025 | Exit Guide HP Sensor | |
| 026 | Stapler Reverse Sensor | |
| 027 | Stapler Sensor | |
| 028 | Front Hold HP Sensor | |
| 029 | Rear Hold HP Sensor | |
| 030 | Knock Hold HP Sensor | |
| 031 | Reverse Drive HP Sensor | |
| 032 | Paper Sensor | |
| 033 | Tray Lower Sensor | |
| 034 | Punch HP 2 Sensor | |
| 035 | Shift Jogger Sensor | |
| 036 | Shift Jogger HP Sensor | |
| 037 | Shift Jogger Release HP Sensor | |
| 038 | Front Door Safety Switch | |
| 039 | Top Fence HP Sensor | |
| 040 | Bottom Fence HP Sensor | |
| 041 | Lower Tray Full Sn (Z-Folded Paper) | |

## 4.2.8 FINISHER 2 OUTPUT CHECK: SP6124

| 6125 | Finisher Output Check: Finisher 2 (Finisher D460) | |
|---|---|---|
| 001 | Main Motor | Turn on the electrical components of the finisher individually for test purposes. See " Finisher 2 Output Check: SP6125" |
| 002 | Shift Tray Exit Motor | |
| 003 | Proof Junction Gate SOL | |
| 004 | Shift Relay Motor | |
| 005 | Jogger Motor | |
| 006 | Stapler Moving Motor | |
| 007 | Stapler Motor | |
| 008 | Punch Motor | |
| 009 | Stapler Solenoid | |
| 010 | Knock Roller Motor | |
| 011 | Stack Feed-out Motor | Turn on the electrical components of the finisher individually for test purposes. See "Finisher 2 Output Check: SP6125" |
| 012 | Shift Motor | |
| 013 | Staple Lift Motor | |
| 014 | Staple Exit Motor | |
| 015 | Exit Motor | |
| 016 | Hold Motor | |
| 017 | Pre-stack Solenoid | |
| 018 | Guide Solenoid | |
| 019 | Stapler Release Solenoid | |
| 020 | Front Hold Motor | |
| 021 | Rear Hold Motor | Turn on the electrical components of |

**Input/Output Check**

| | | |
|---|---|---|
| 022 | Reverse Drive Motor | the finisher individually for test purposes. See " Finisher 2 Output Check: SP6125" |
| 023 | Reverse Feed Motor | |
| 024 | Exit Jogger Motor | |
| 025 | Exit Jogger Release Motor | |
| 026 | Jogger Top Fence Motor | |
| 027 | Jogger Bottom Fence Motor | |

## 4.2.9 FINISHER 3 INPUT CHECK: SP6309

| | | |
|---|---|---|
| 6309 | Fold Unit (D454) Input Check | |
| 001 | Entrance Sensor | Turn on the electrical components of the finisher individually for test purposes. |
| 002 | Entrance JG HP Sensor | |
| 004 | Registration Sensor | |
| 005 | Dynamic Roller HP Sensor | |
| 006 | Registration Roller HP Sensor | |
| 007 | Fold Plate HP Sensor | |
| 008 | Jogger Fence HP Sensorr | |
| 009 | Positioning Roller HP Sensor | |
| 010 | 1st Stopper Paper Sensor | |
| 011 | 1st Stopper HP Sensor | |
| 012 | 2nd Stopper Paper Sensor | |
| 013 | 2nd Stopper HP Sensor | |
| 014 | 3rd Stopper Paper Sensor | |
| 015 | 3rd Stopper HP Sensor | |

| | | |
|---|---|---|
| 016 | Direct-Send JG HP Sensor | |
| 017 | FM6 Pawl HP Sensor | |
| 018 | Top Tray Paper Path Sensor | |
| 019 | Top Tray Exit Sensor | |
| 020 | Horizontal Path Exit Sensor | |
| 021 | Top Ttay Full Sensor | |
| 023 | Door Open Switch | |
| 024 | Horizontal Path Paper Sensor | |
| 025 | Vertical Path Paper Sensor | |
| 026 | Bypass Entrance Paper Sensor | |
| 027 | Bypass Exit Paper Sensor | |



## 4.2.10 FINISHER 3 OUTPUT CHECK: SP6310

| 6310 | Fold Unit (D454) Output Check | |
|---|---|---|
| 001 | Horizontal Transport Motor | Turn on the electrical components of the finisher individually for test purposes. |
| 002 | Top Tray Transport Motor | |
| 003 | Top Tray Exit Motor | |
| 004 | Dynamic Roller Transport Motor | |
| 005 | Registration Roller Transport Motor | |
| 007 | Entrance JG Motor | |
| 008 | 1st Stopper Motor | |
| 009 | 2nd Sopper Motor | |
| 010 | 3rd Stopper Motor | |

**Input/Output Check**

| | | |
|---|---|---|
| 011 | Dynamic roller Lift Motor | |
| 012 | Registration Roller Release Motor | |
| 013 | Fold Plate Motor | |
| 014 | Jogger Fence Motor | Turn on the electrical components of the finisher individually for test purposes. |
| 015 | Positioning Roller Motor | |
| 016 | Direct-Send JG Motor | |
| 017 | FM6 Pawl Motor | |
| 018 | 1st Fold Motor | |
| 019 | 2nd Fold Motor | |
| 020 | Crease Motor | |
| 021 | Bypass JG Solenoid | |
| 022 | Exit JG Solenoid | |
| 023 | Top Tray JG Solenoid | |
| 024 | LE Stop Pawl Solenoid | |
| 025 | Reverse JG Solenoid | |

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# SERVICE MANUAL

**(Book 2 of 2) 004778MIU**

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# SERVICE MANUAL

**Book 2 of 2**

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# LEGEND

| PRODUCT CODE | COMPANY | | | |
|---|---|---|---|---|
| | GESTETNER | LANIER | RICOH | SAVIN |
| D062 | MP 6001/ MP6001 SP | LD360/ LD360sp | Aficio MP 6001/ MP 6001 SP | 9060/ 9060sp |
| D063 | MP 7001/ MP 7001SP | LD370/ LD370sp | Aficio MP 7001/ MP 7001 SP | 9070/ 9070sp |
| D065 | MP 8001/ MP 8001SP | LD380/ LD380sp | Aficio MP 8001/ MP 8001 SP | 9080/ 9080sp |
| D066 | MP 9001/ MP 9001SP | LD390/ LD390sp | Aficio MP 9001/ MP 9001 SP | 9090/ 9090sp |

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# LARGE CAPACITY TRAY
# B473

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|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| | | None |

# LARGE CAPACITY TRAY B473

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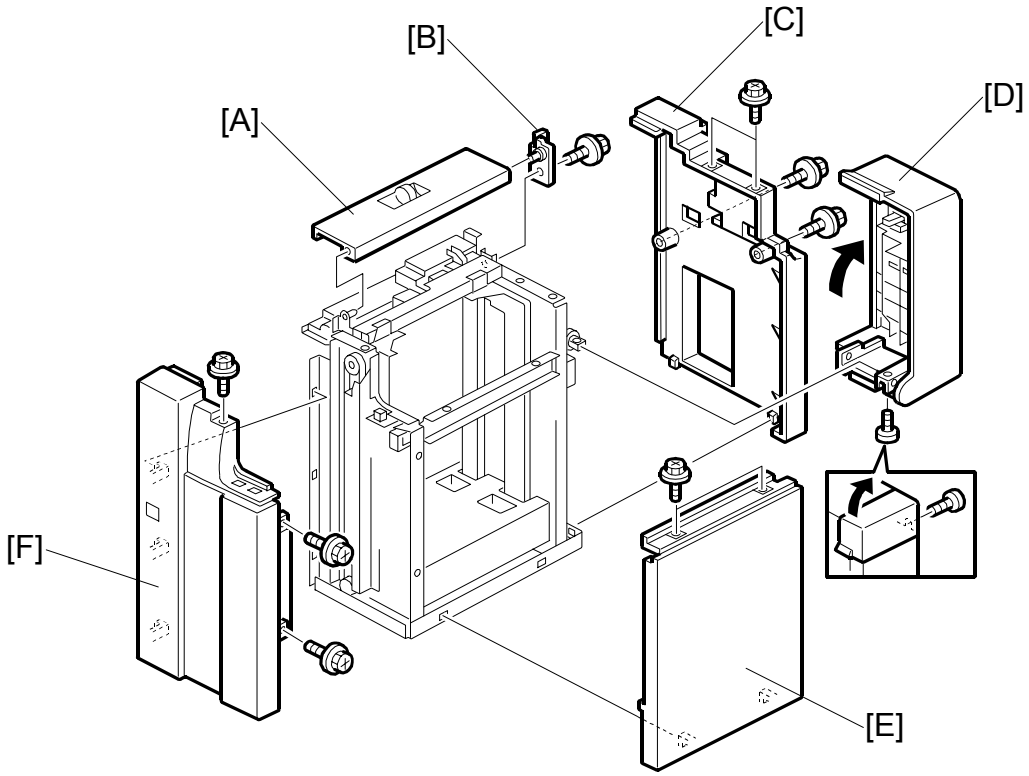
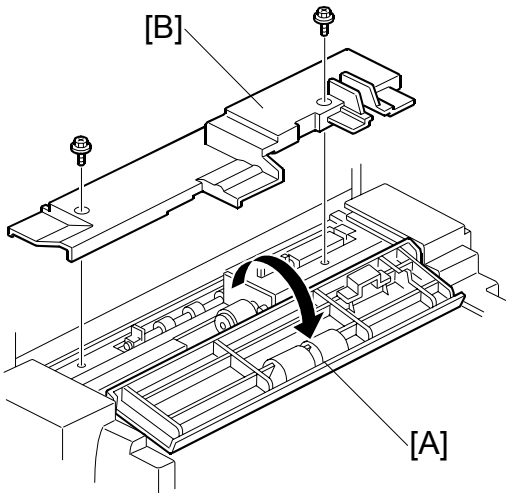
# 1. REPLACEMENT AND ADJUSTMENT

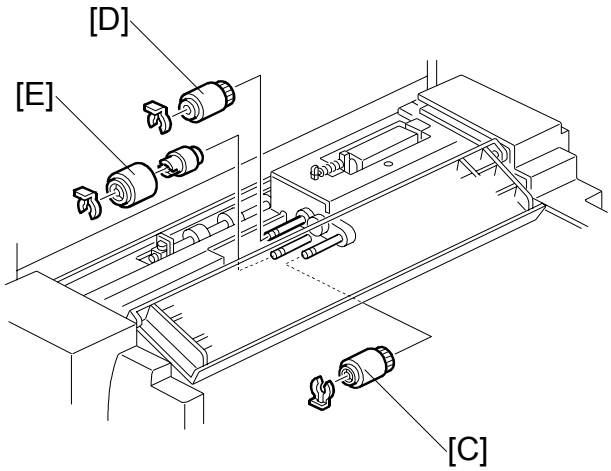
## 1.1 EXTERNAL COVERS




[A]: Transport cover
[B]: Transport cover hinge (🔩 x 1)
[C]: Rear cover (🔩 x 4)
[D]: Top cover (🔩 x 1)
[E]: Right cover (🔩 x 2)
[F]: Front cover (🔩 x 3)

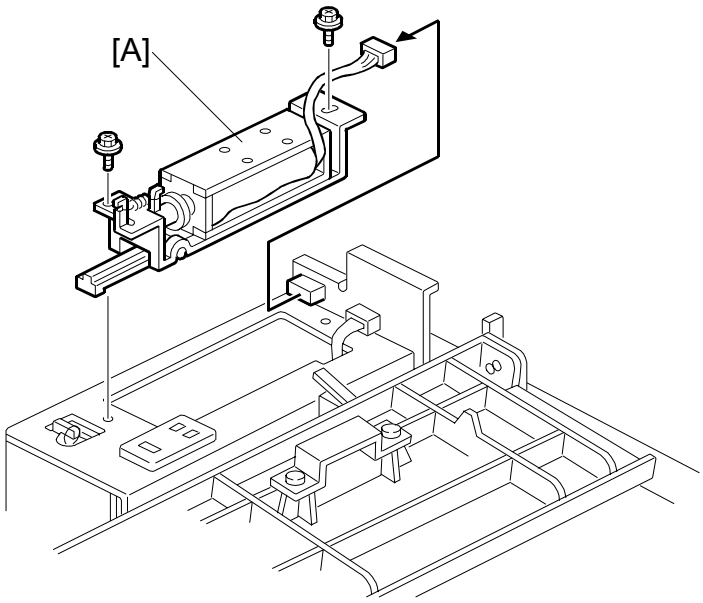
# 1.2 PICK-UP/FEED/SEPARATION ROLLERS




[A]: Open the transport cover
[B]: Bracket cover ( x 2)
[C]: Pick-up roller ( x 1)
[D]: Feed roller ( x 1)
[E]: Separation roller ( x 1)

# 1.3 PICK-UP SOLENOID





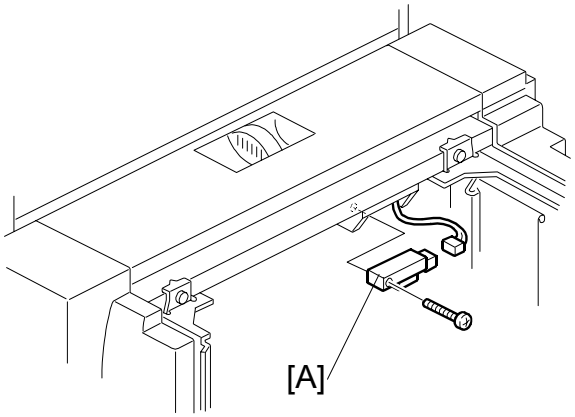

Rear cover (x 4)

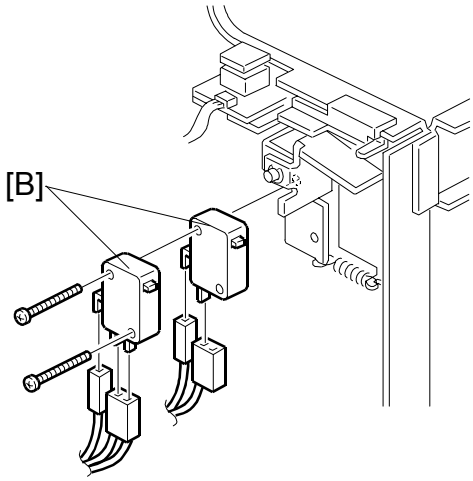
Open the transport cover (☛ 1.2)

Bracket cover (☛ 1.2)

[A]: Pick-up solenoid (x 2, x 1)

# 1.4 PAPER END SENSOR, UPPER COVER SWITCHES



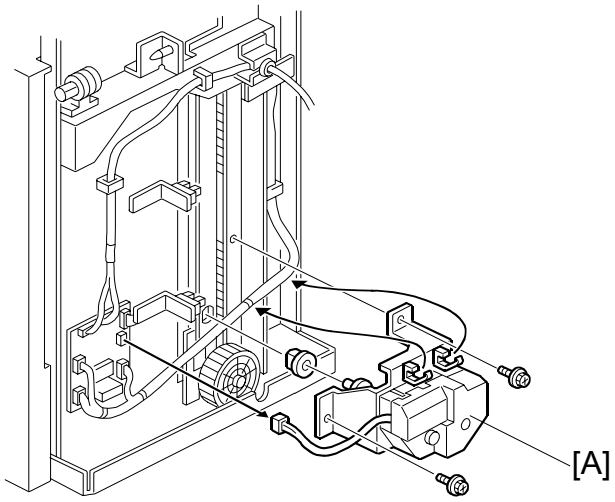

Open the top cover.

Right cover (☛ 1.1)

[A]: Paper end sensor (☞ x 1)

[B]: Upper cover switches 1, 2 (☞ x 2)

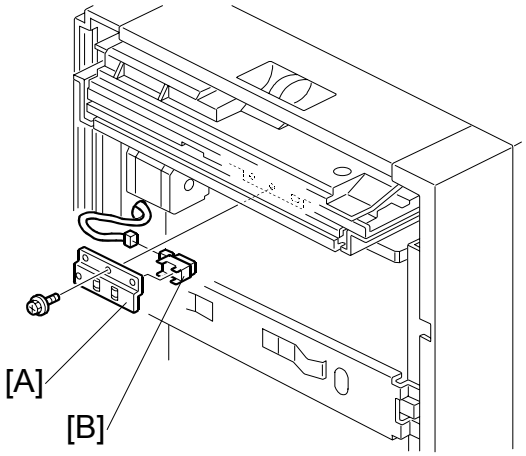
## 1.5 TRAY MOTOR





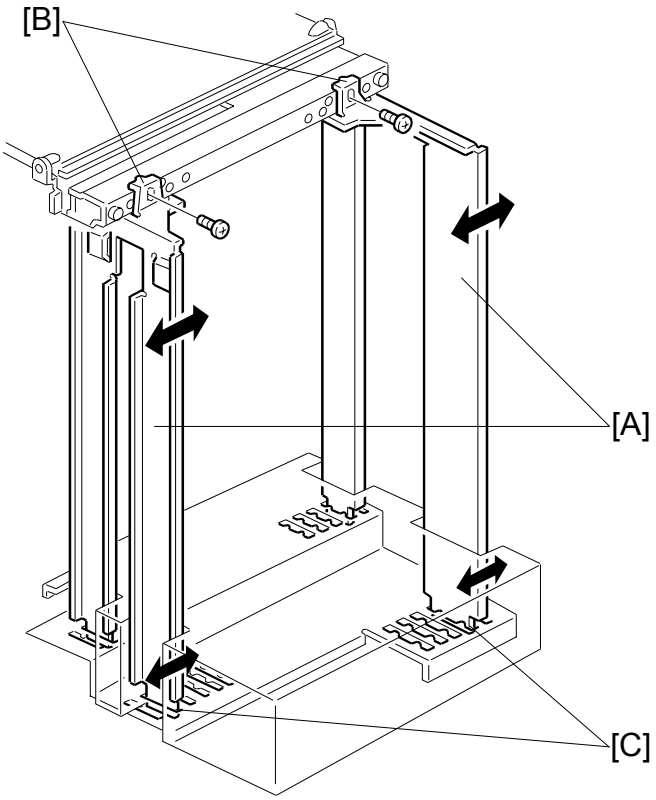

Rear cover (☛ 1.1)
[A]: Tray motor (🔩 x 2, 🖐 x 1)

## 1.6 PAPER STACK SENSOR




Disconnect the LCT from the machine
[A]: Sensor cover (🔩 x 1)
[B]: Paper stack sensor (🖐 x 1)

# 1.7 PAPER SIZE ADJUSTMENT



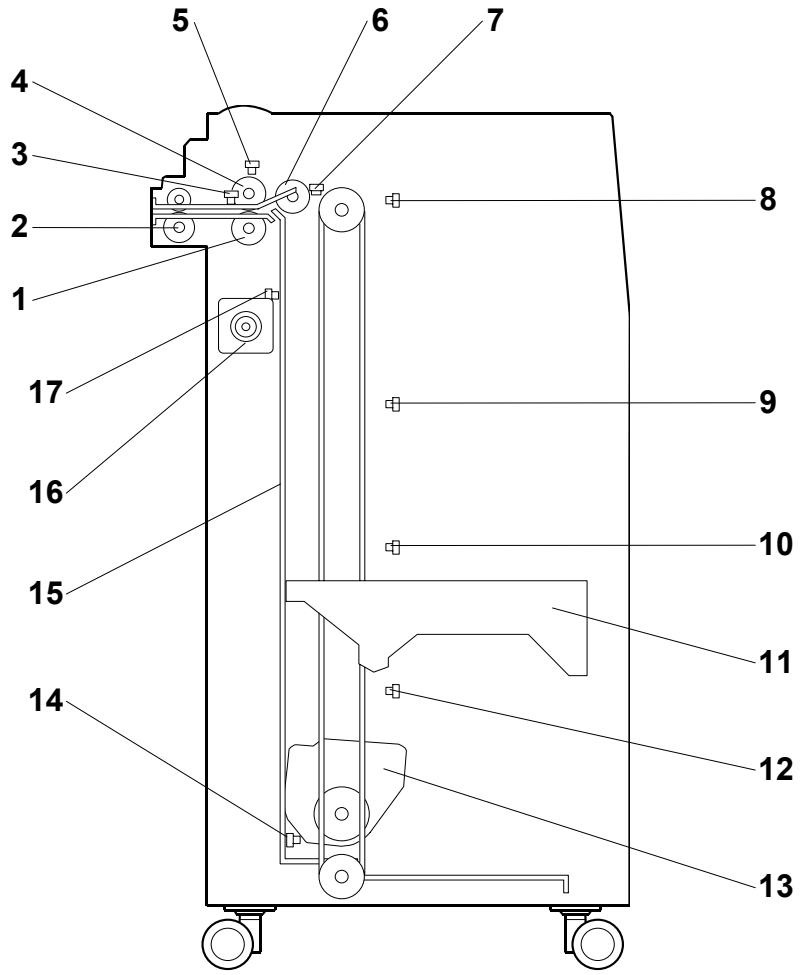

The side fences [A] can be adjusted for A4 Sideways, B5 Sideways, or LT sideways at the top [B] and bottom brackets [C].

After changing the side fences to accept another paper size, you must execute SP5959 005 (Paper Type – Tray 4) and select the paper size of the side fence positions. For details, see SP5959 in section “5. Service Tables” of the B064/B065 manual.

# 2. DETAILS

## 2.1 OVERVIEW

### 2.1.1 LCT MAIN COMPONENTS




1. Separation Roller
2. Transport Roller
3. Feed Sensor
4. Feed Roller
5. Lift Sensor
6. Pick-up Roller
7. Paper End Sensor
8. Paper Near End Sensor
9. Paper Height Sensor 1
10. Paper Height Sensor 2
11. Paper Tray
12. Paper Height Sensor 3
13. Paper Tray Motor
14. Low Limit Sensor
15. Tray Drive Belt
16. Feed Motor
17. Stack Sensor

**Pick-up, Separation, Feed**. Non-contact, maintenance free FRR sysem. (CT Handling Paper> Paper Feed Methods> **Forward and Reverse Roller (FRR)**)

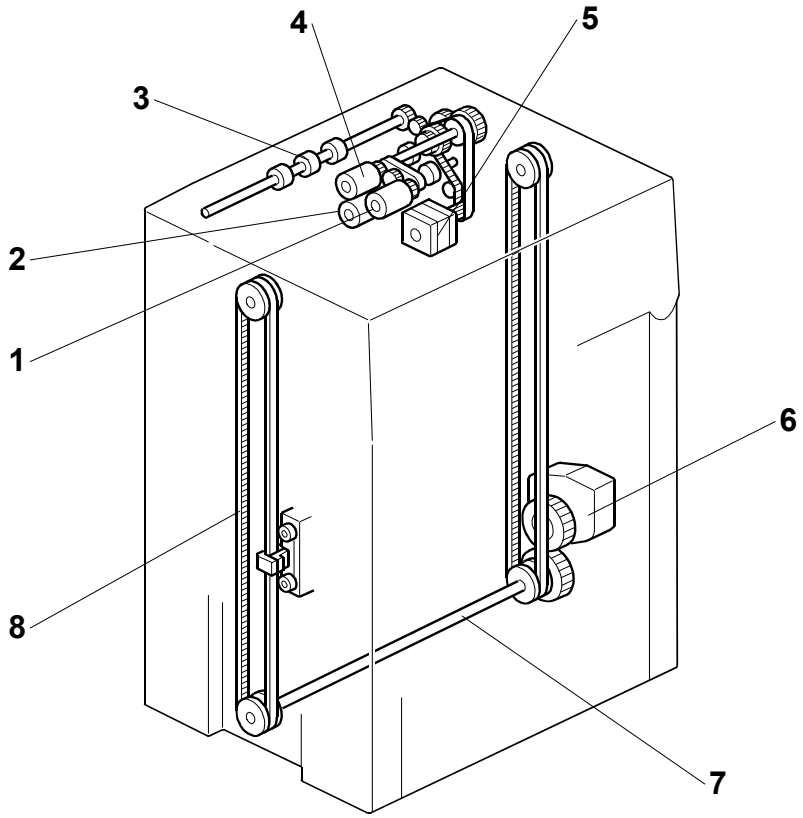
**Tray Lift**. Tray lift motor and timing belt raise and lower the paper tray.

**Paper Size Detection**. The side fences cannot be adjusted by customers. The paper size must be entered with SP5959 005. For details, see SP5959 in section "4. Service Tables."

**Paper Height Detection**. A feeler and four photointerrupters are used.

**Paper End Detection**. A reflective sensor on the upper stay detects paper end.

## 2.1.2 LCT DRIVE LAYOUT

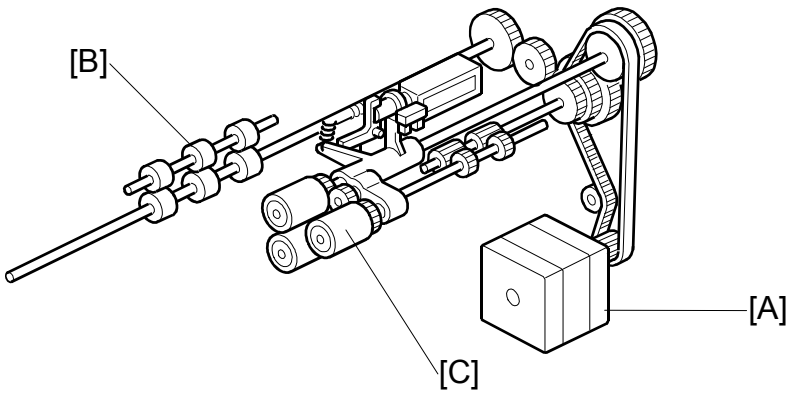



1. Pick-up Roller
2. Separation Roller
3. Transport Rollers
4. Feed Roller
5. Feed Motor
6. Tray Motor
7. Tray Lift Shaft
8. Tray Drive Belt

# 2.2 PAPER FEED AND SEPARATION

A standard FRR system is used. It consists of the pick-up, feed, and separation rollers.

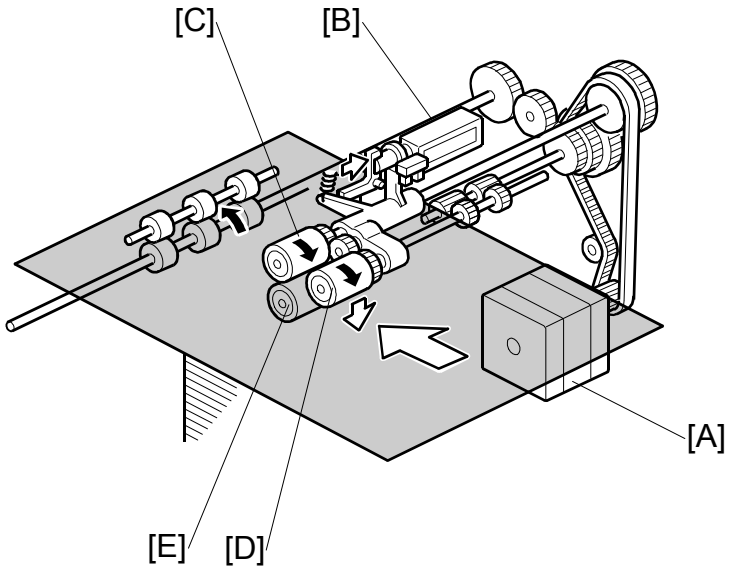
## 2.2.1 STARTING PAPER FEED




The feed motor [A] drives the transport rollers [B].

The separation roller [C], which is free to rotate in the direction indicated by the arrow, remains at rest.

## 2.2.2 FEED AND SEPARATION






The feed motor [A] switches on, then the pick-up solenoid [B] switches on and transfers drive to the paper feed roller [C] and pick-up roller [D].

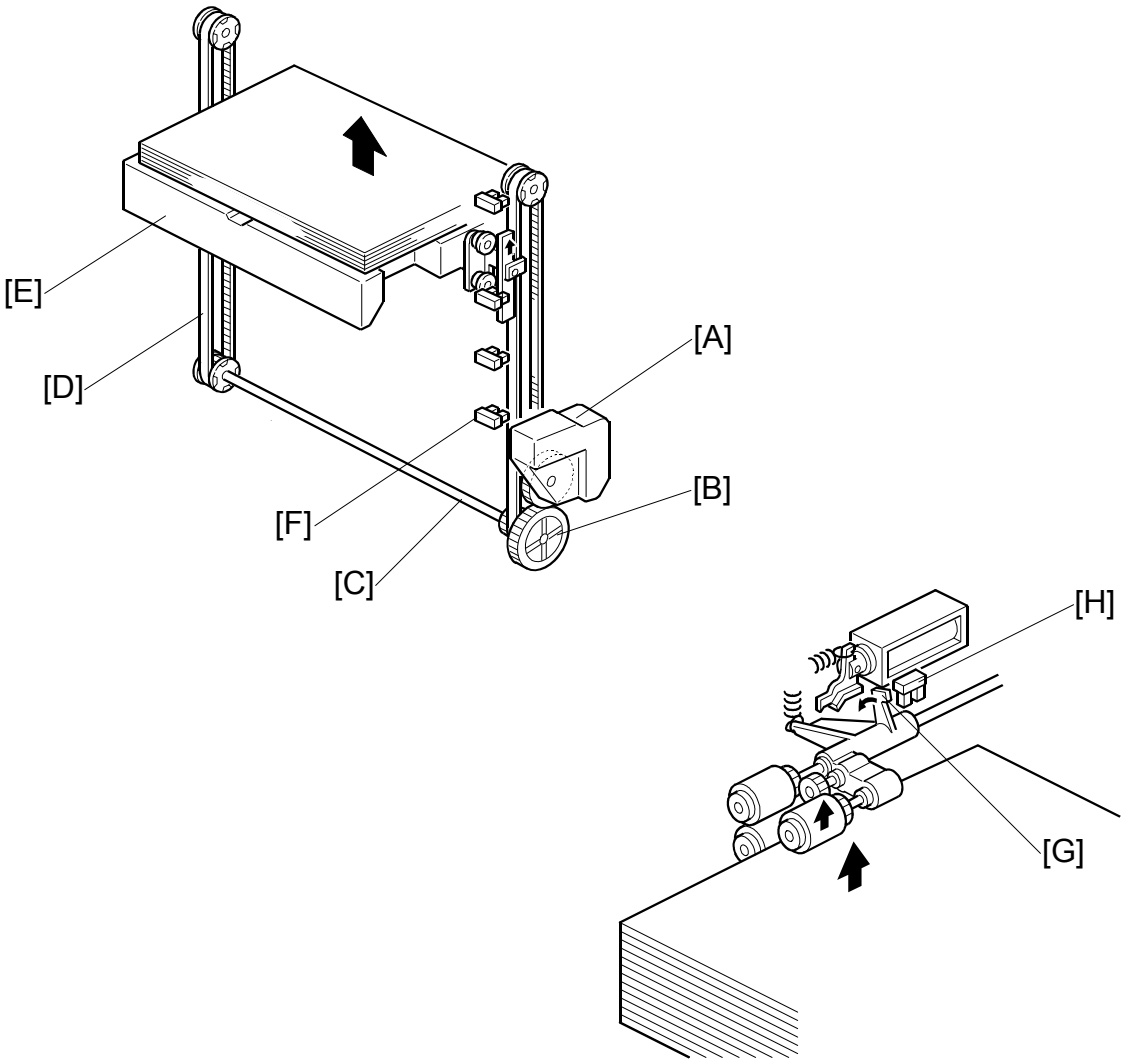
The rotating pick-up roller lowers and feeds the first sheet when it contacts the top of the stack.

The separation roller [E], in contact with the feed roller, only allows one sheet out of the tray.

As soon as the paper feed sensor (not shown) detects the leading edge of the paper, it switches off the pick-up solenoid which raises the pick-up roller. The feed roller feeds the sheet to the registration roller.

This process is repeated for each sheet.

# 2.3 PAPER LIFT

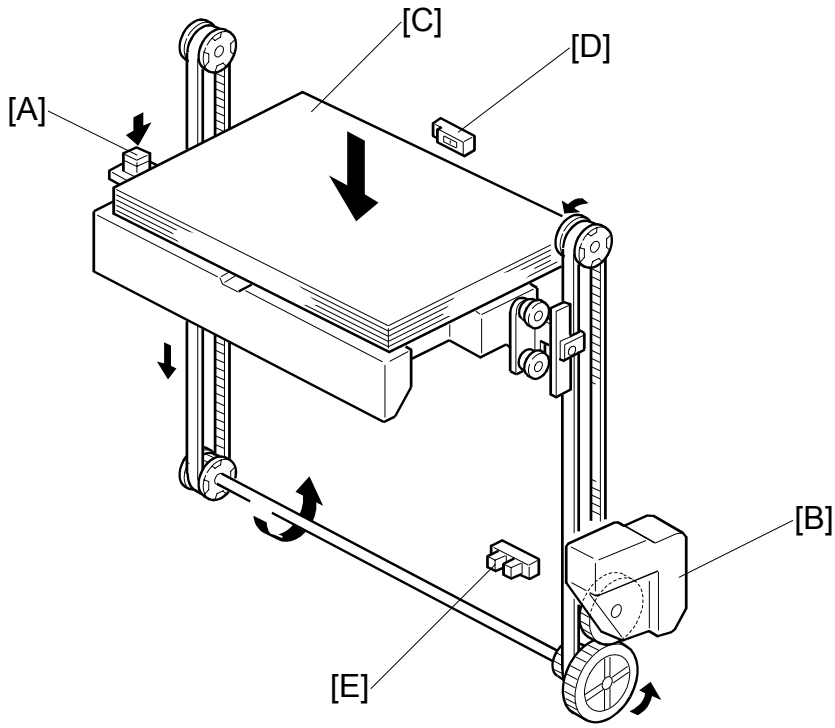



Tray motor [A] → Gear [B] → Shaft [C] → Tray belts [D] raise and lower the paper tray [E].

After paper is set in the LCT and the upper cover is closed, if the paper height sensor [F] is not activated, the tray motor lowers the tray and stops. When the paper height sensor activates, the tray motor lifts the tray.

After several sheets have been fed, the paper level lowers, the actuator [G] activates the lift sensor [H], and switches on the motor again. The motor raises stack until the actuator de-activates the lift sensor.

This cycle repeats to maintain the correct height of the stack until the end of the job.






Pressing the tray down button [A] reverses the rotation of the tray motor [B] and lowers the tray [C].

The tray lowers until the stack sensor [D] detects the top of the stack and stops the tray motor.

- This mechanism lowers the tray by 5 cm, which gives the user enough space to add 500 sheets of paper.
- If the down switch is then pressed again, the bottom plate moves down once again by 5 cm. This allows the customer to replenish paper in convenient amounts and at the same position.

A lower limit sensor [E] (triggered by an actuator on the bottom of the tray) is also provided to stop the tray motor if the stack sensor should fail.

**Summary**

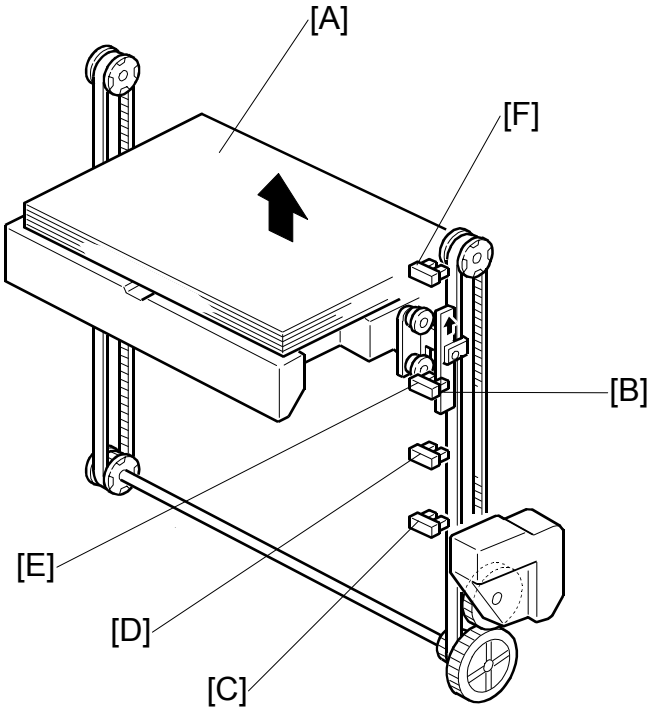
The tray raises when:

- The main power switch is turned on
- When the lift sensor switches on during copying
- The top cover is closed and the lift sensor switches on

The tray lowers when:

- The tray down button is pressed.
- The paper end sensor signals that there is no paper in the tray.

# 2.4 PAPER HEIGHT DETECTION




As paper is consumed from the top of the stack [A], the paper tray rises and the actuator [B] attached to the tray passes through paper height sensor 3 [C], paper height sensor 2 [D], and paper height sensor 1 [E] until the actuator reaches the paper near end sensor [F].

The operation panel displays a message for each paper height until the actuator reaches the near-end sensor, then a message warns the user that the tray is nearly empty.

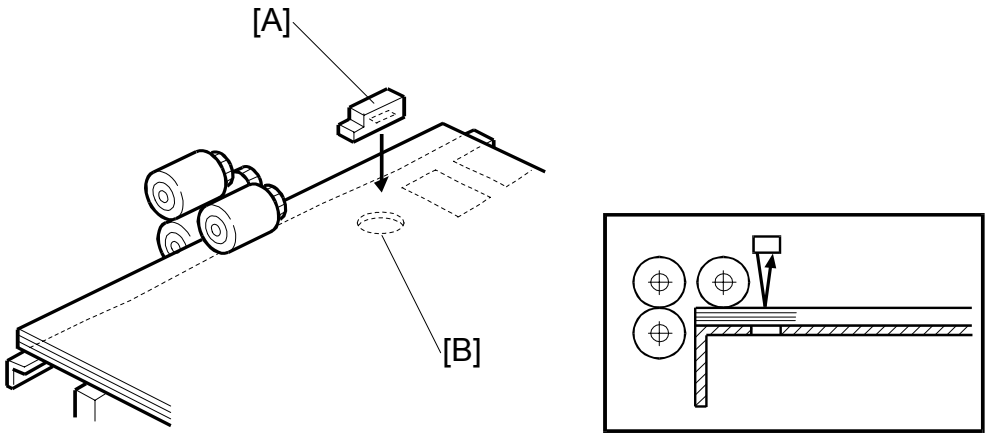
The table summarizes the relation between sensor detection and the number of sheets remaining in the stack.

| Sheet Remaining | Bars *1 | Sensors | | | |
|---|---|---|---|---|---|
| | | Near-end | P.Height 1 | P.Height 2 | P.Height 3 |
| 75 | 1 | ● | — | — | — |
| 1500 | 2 | ❍ | ● | — | — |
| 2500 | 3 | ❍ | ❍ | ● | — |
| 3500 | 4 | ❍ | ❍ | ❍ | ● |

*1: The number of vertical bars in the paper height display on the operation panel.

●: Actuator blocking the sensor gap.
❍: Sensor gap is open

# 2.5 PAPER END DETECTION






The paper end sensor [A] monitors the light reflected by each sheet on top of the stack.

When the last sheet feeds, the cutout [B] is exposed, and the paper end sensor receives no reflected light from below because there is no paper and this signals paper end.

# 3000-SHEET FINISHER/JOGGER UNIT/PUNCH UNIT B478/B513/B531

| REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| | | None |

# OUTPUT JOGGER UNIT B513/PUNCH UNIT B531

## TABLE OF CONTENTS

# 1. INSTALLATION

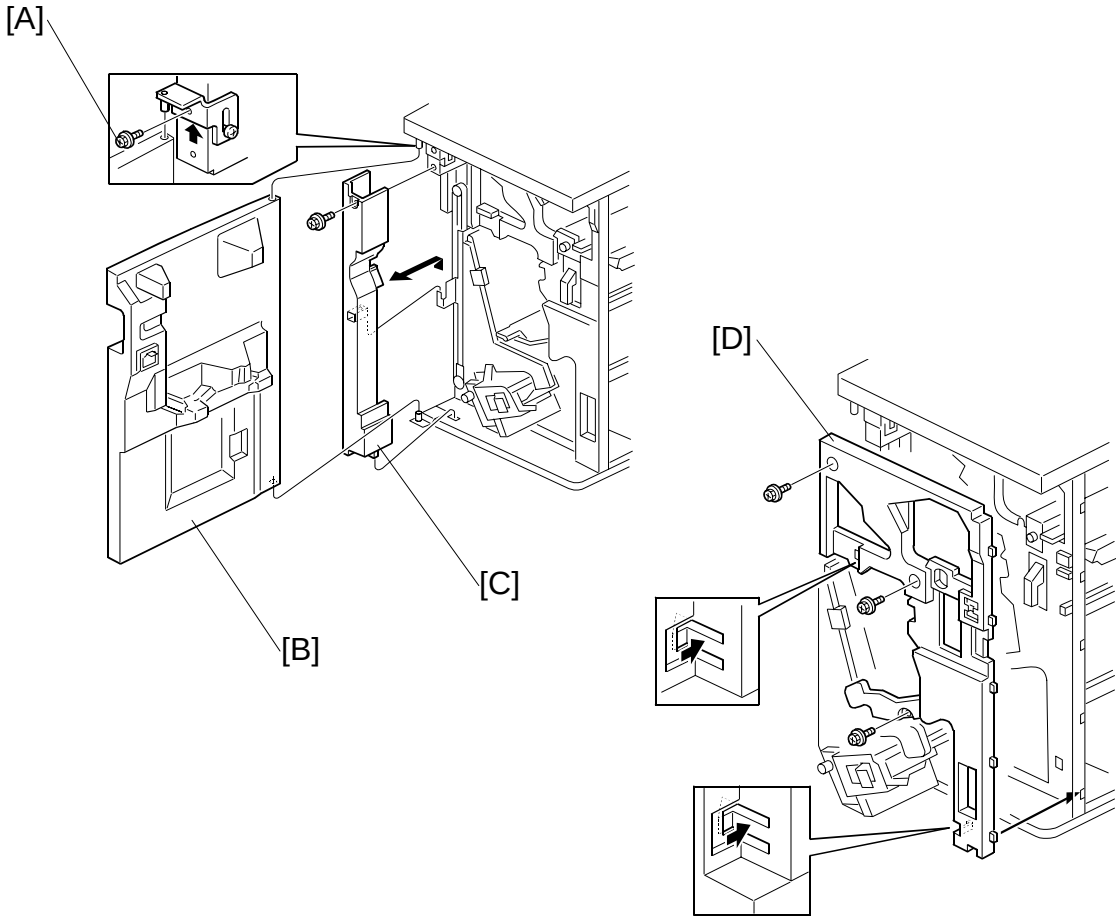
For details about installing the 3000 Sheet Finisher B478, please refer to the instructions you received with the instructions or the “1. Installation” in the main machine service manual.

# 2. PREVENTIVE MAINTENANCE

For details about the 3000 Sheet Finisher B478 PM table, please refer to Section “2. Preventive Maintenance” in the main Service Manual.

# 3. REPLACEMENT AND ADJUSTMENT

## 3.1 DOOR AND COVER






### *Front Door*

1. Remove the front door screw [A] (🔩 x 1).
2. Remove the front door [B].

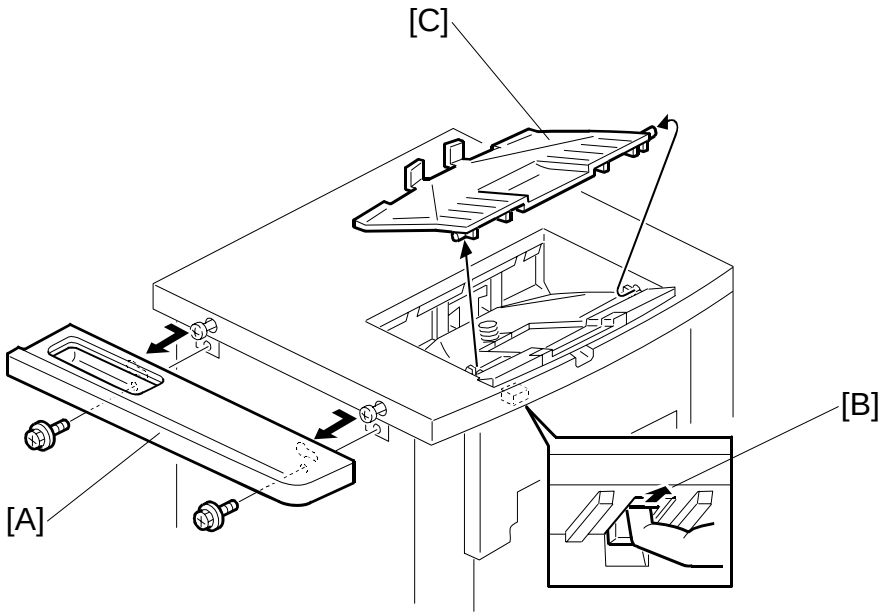
### *Left Inner Cover*

1. Remove the front door.
2. Remove the left inner cover [C] (🔩 x 1).

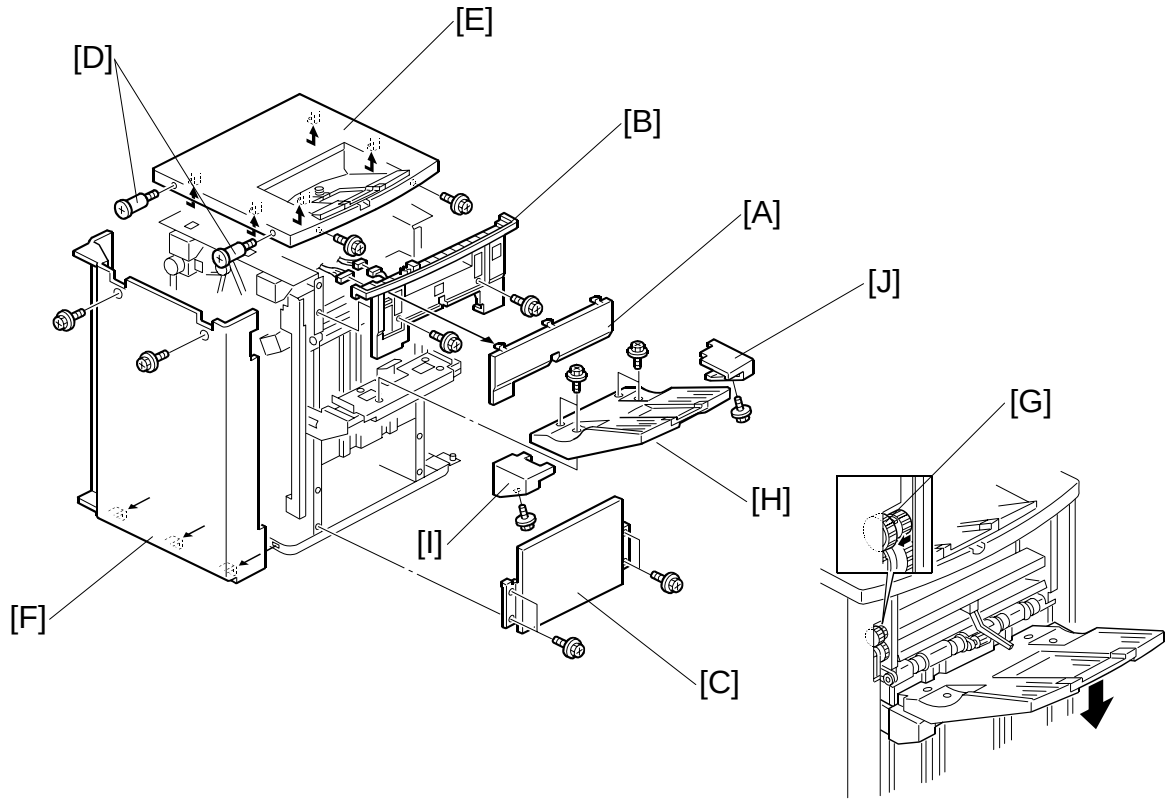
### *Inner Cover*

1. Remove the inner cover [D] (🔩 x 3).

### *Side Table and Upper Tray*




1. Remove the side table [A] (☞ x 2). Slide to the right to remove it.
2. Click the release lever [B] and remove the upper tray [C].






### *Left Covers*

1. Remove the left upper panel [A].
2. Remove the left upper cover [B] (x 2, x 2).
3. Remove the door and left inner cover. (See “Front Door and Left Inner Cover Replacement”.)
4. Remove the rear cover [F] (x 2).
5. Remove the left lower cover [C] (x 4).

### *Rear Cover and Top Cover*

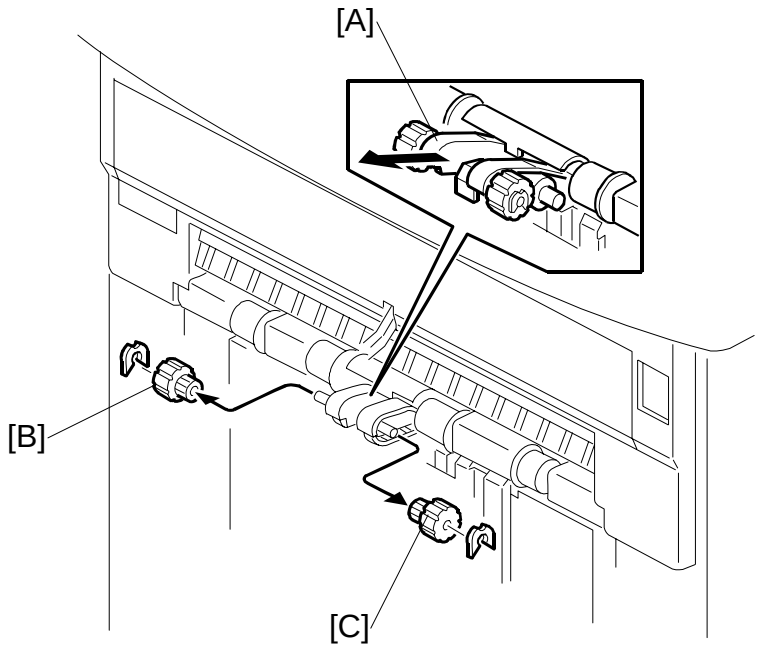
1. Remove the upper tray. (See “Side Table and Upper Tray”.)
2. Remove the step screws [D] (x 2).
3. Remove the top cover [E] (x 2). Slide to the right to remove.
4. Remove the rear cover [F] (x 2).

### *Shift Tray*

1. If you need to lower the shift tray, support the bottom of the tray with your hand, then pull the gear toward you [G] to release the tray and lower it.
2. Remove the shift tray [H] (x 4).
3. Remove the shift tray rear cover [I] and front cover [J] (x 1 each).

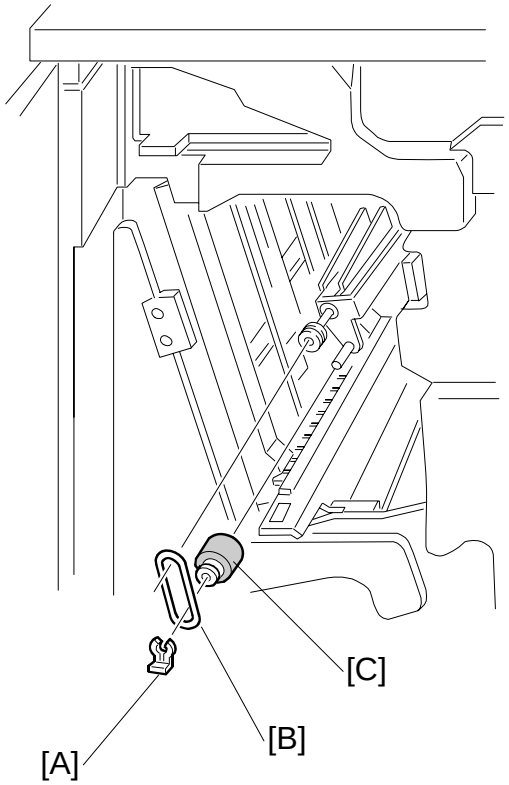
# 3.2 ROLLERS

## 3.2.1 SHIFT POSITIONING ROLLER



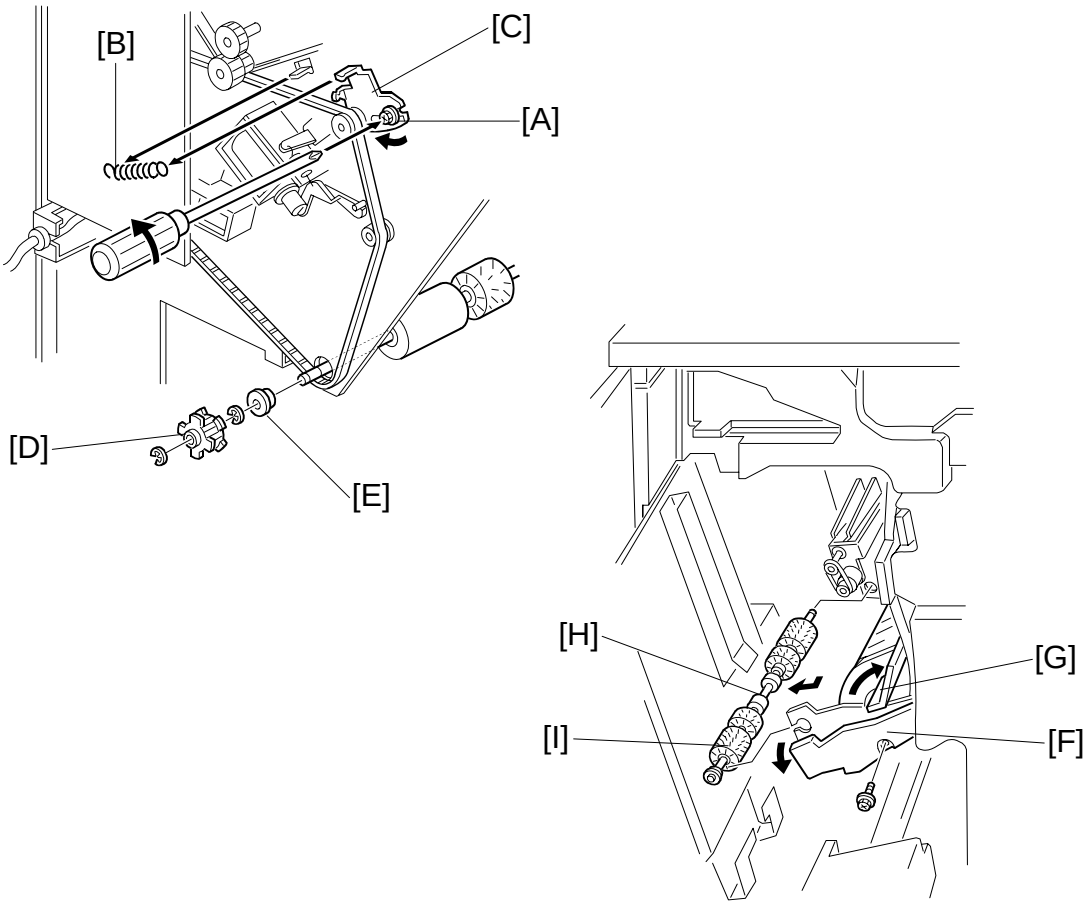

1. Above the shift tray, pull the roller mount [A] out.
2. Remove the rollers [B] and [C] (⟲ x 1 each)

## 3.2.2 POSITIONING ROLLER



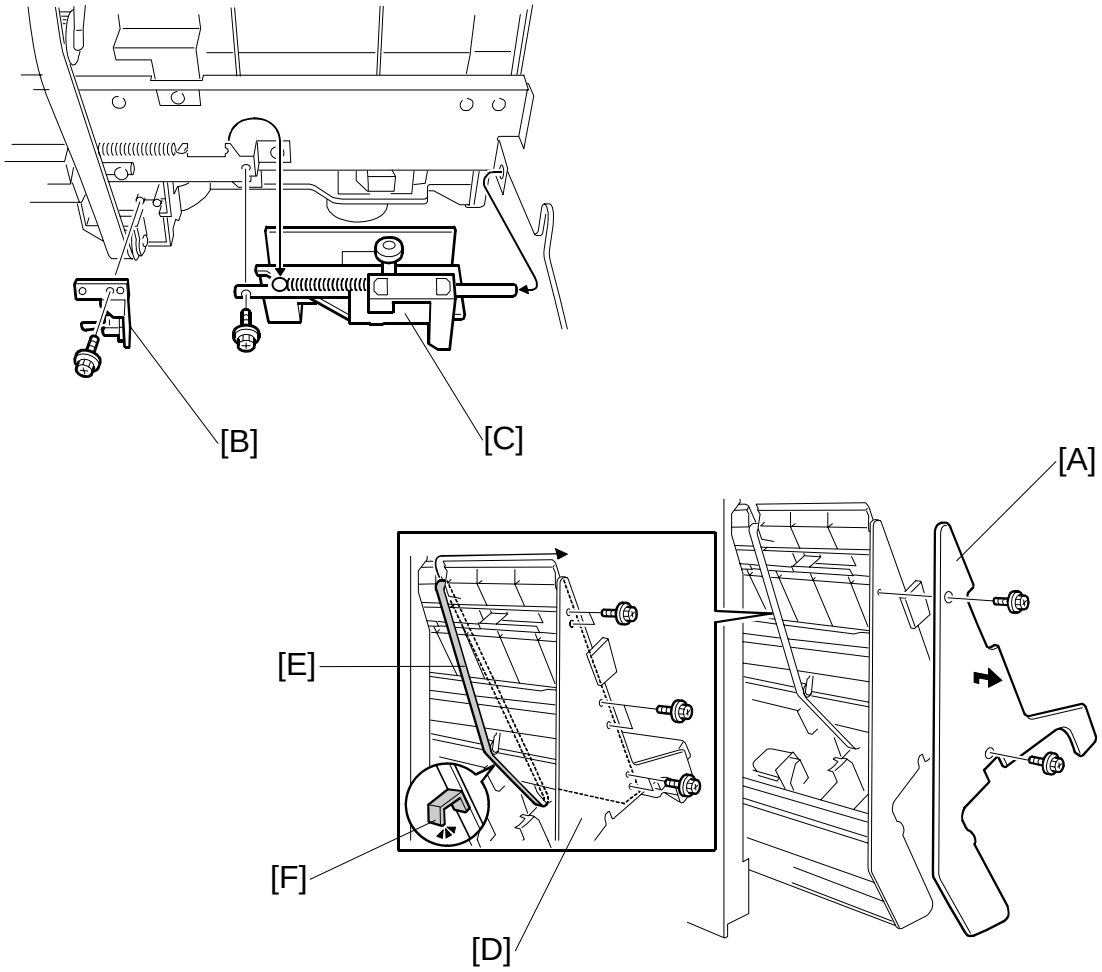

1. Open the front door.
2. Remove the snap ring [A].
3. Release the rubber belt [B].
4. Replace the positioning roller [C].

## 3.2.3 ALIGNMENT BRUSH ROLLER




1. Open the front door and pull out the staple unit.
2. Remove the rear cover.
3. Remove the main board and all connectors (x 8).
4. Remove the screw [A] and tension spring [B] for the tension bracket [C], and release the tension of the timing belt.
5. Remove the pulley [D] and bushing [E] (x 2).
6. Remove the inner cover [F] (x 1).
7. Open the guide [G], then remove the alignment brush roller assembly [H] (x 1).
8. Remove the alignment brush roller [I] (x 1, bushing x 1 front/back).

## 3.3 STACK FEED-OUT BELT

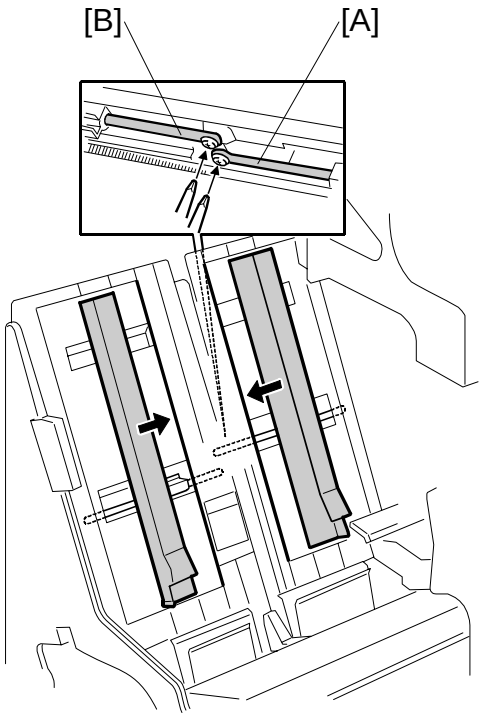





1. Open the front door.
2. Pull out the jogger and stapler unit.
3. Remove the inner cover [A] (x 2).
4. Remove the sensor bracket [B] (x 1, x 1, clamp x 1).
5. Remove the front guide [C] (x 1, spring x 1).
   **NOTE:** When re-installing, make sure that the flat end of the shaft is against the plate.
6. Remove the front panel [D] from the stays (x 6).
7. Remove the old belt [E] from the bottom, center, then the top.

**NOTE:** 1) Make sure the ribbed side of the new belt and pawl [F] are facing down.
2) Make sure the new belt is engaged at all three rollers.

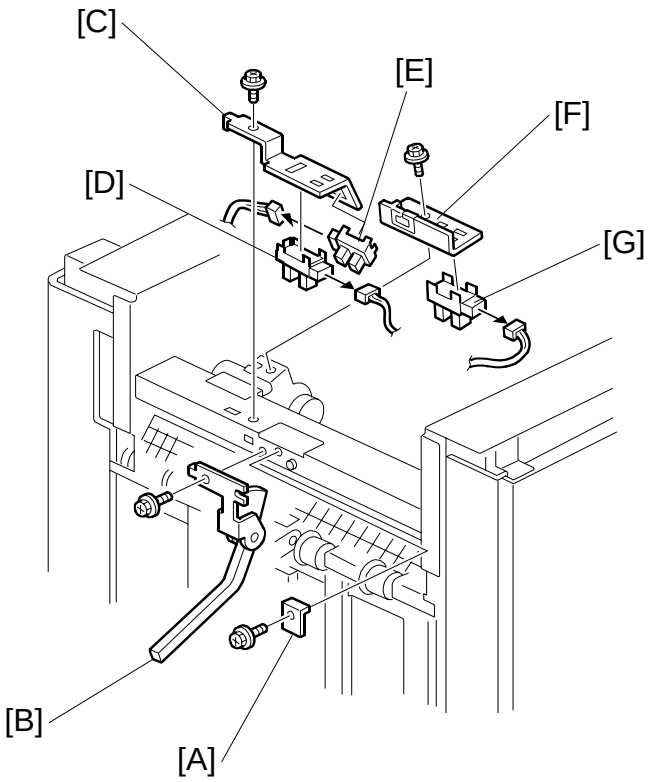
# 3.4 JOGGER FENCE




1. Open the front door.
2. Pull out the jogger and stapler unit.
3. Push both fences to the center.
4. Remove the left jogger fence [A] (🔩 x 1)
5. Remove the right jogger fence [B] (🔩 x 1).
   **NOTE:** If the screws are difficult to remove or re-attach, remove the jogger fence belt and spring plate.

# 3.5 SENSORS

## 3.5.1 STACK HEIGHT 1, 2 AND EXIT GUIDE OPEN SENSOR





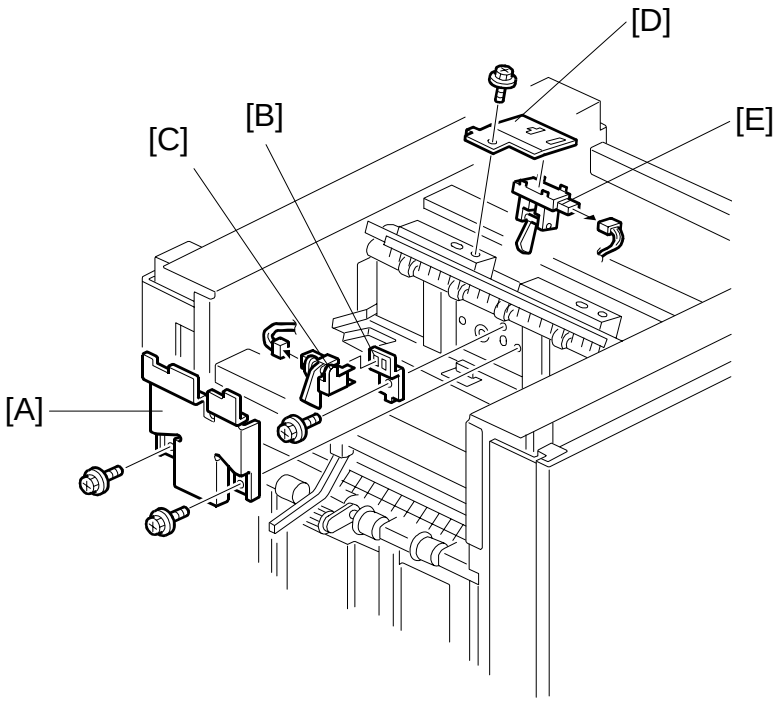

### *Stack Height Sensors 1 and 2*

1. Remove the top cover. (☛ 3.1)
2. Remove the left upper panel and left upper cover (☞ x 2, ☜ x 2).
3. Remove the protector plate [A] (☞ x 1).
4. Remove the sensor feeler [B] (☞ x 1).
5. Remove the sensor bracket [C] (☞ x 1).
6. Replace the stack height sensor 1 [D] (☜ x 1) or 2 [E] (☜ x 1).

### *Exit Guide Open Sensor*

1. Remove the sensor bracket [F] (☞ x 1).
2. Replace the exit guide open sensor [G] (☜ x 1).

## 3.5.2 UPPER TRAY PAPER LIMIT AND EXIT SENSOR



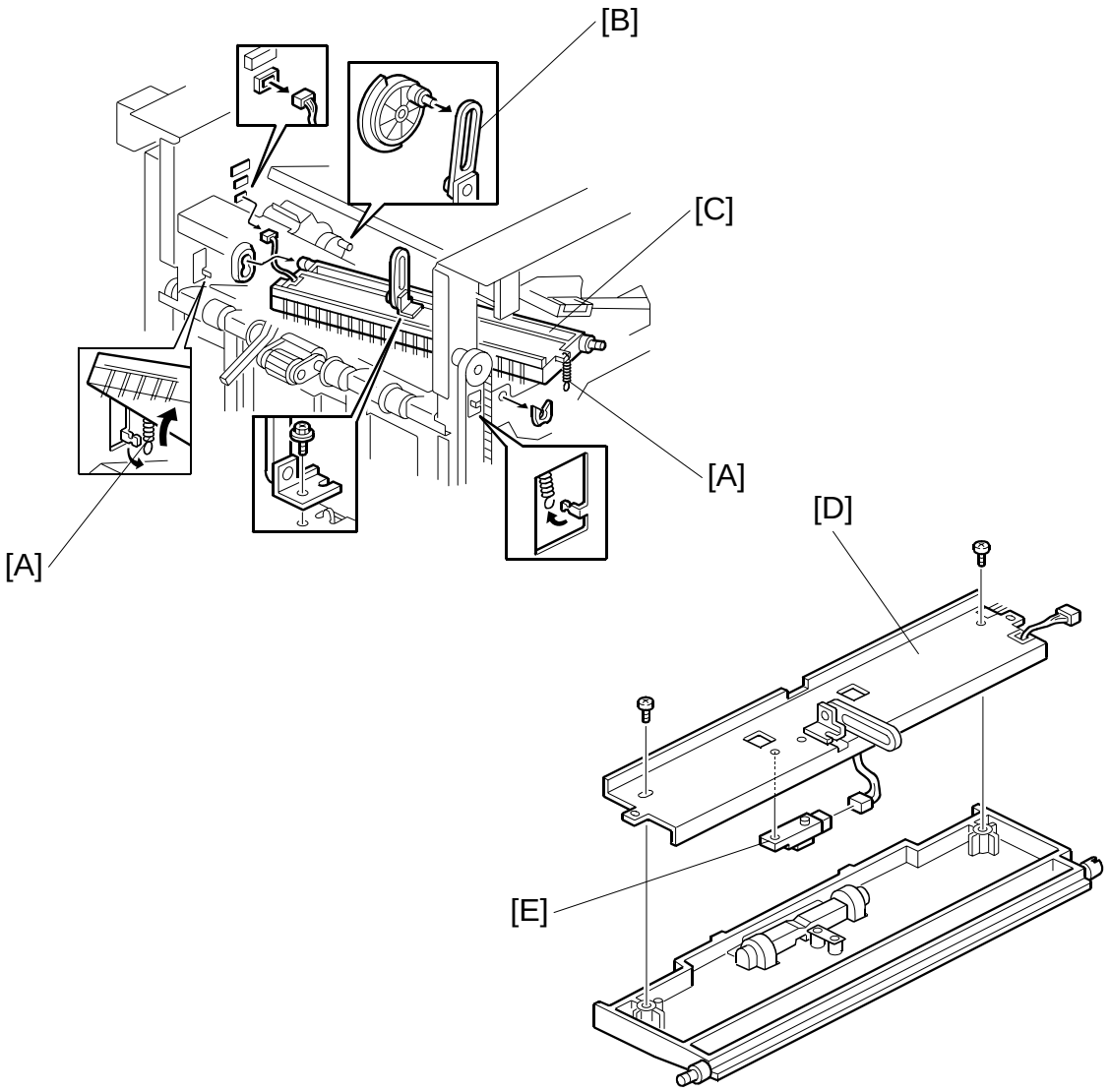

### *Upper Tray Paper Limit Sensor*

1. Remove the top cover.
2. Remove the sensor cover [A] (☞ x 2).
3. Remove the sensor bracket [B] (☞ x 1).
4. Replace the upper tray paper limit sensor [C] (☜ x 1).

### *Upper Tray Exit Sensor*

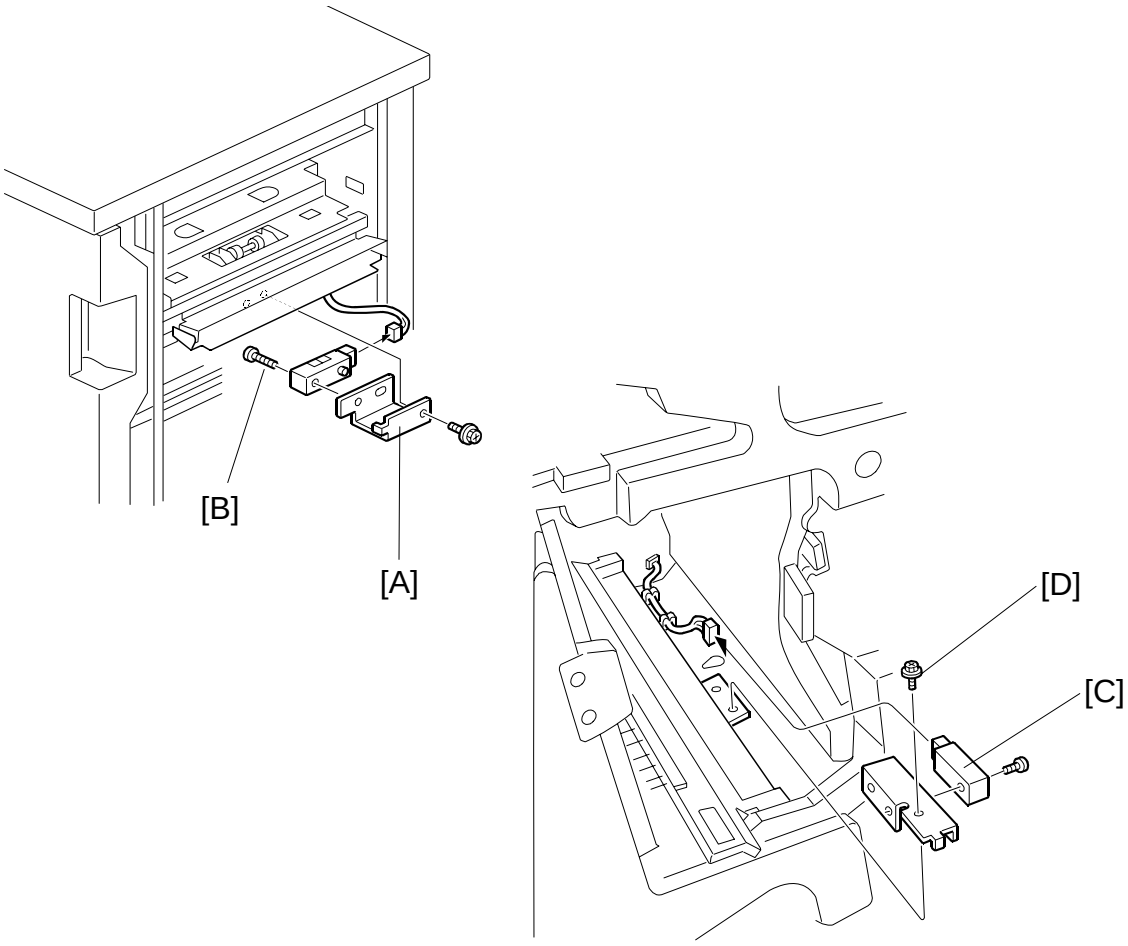
5. Remove the sensor bracket [D] (☞ x 1).
6. Replace the upper tray exit sensor [E] (☜ x 1).

## 3.5.3 SHIFT TRAY EXIT SENSOR




1. Remove the top cover.
2. Open the front door.
3. Remove the inner cover.
4. Release the upper exit guide springs [A] (x 2).
5. Disconnect the link [B] from the cam (x 1).
6. Remove the upper exit guide [C] (x 1, x 1).
7. Remove the guide stay [D] (x 2).
8. Replace the shift tray exit sensor [E] (x 1, x 1).

## 3.5.4 ENTRANCE AND STAPLER TRAY ENTRANCE SENSORS



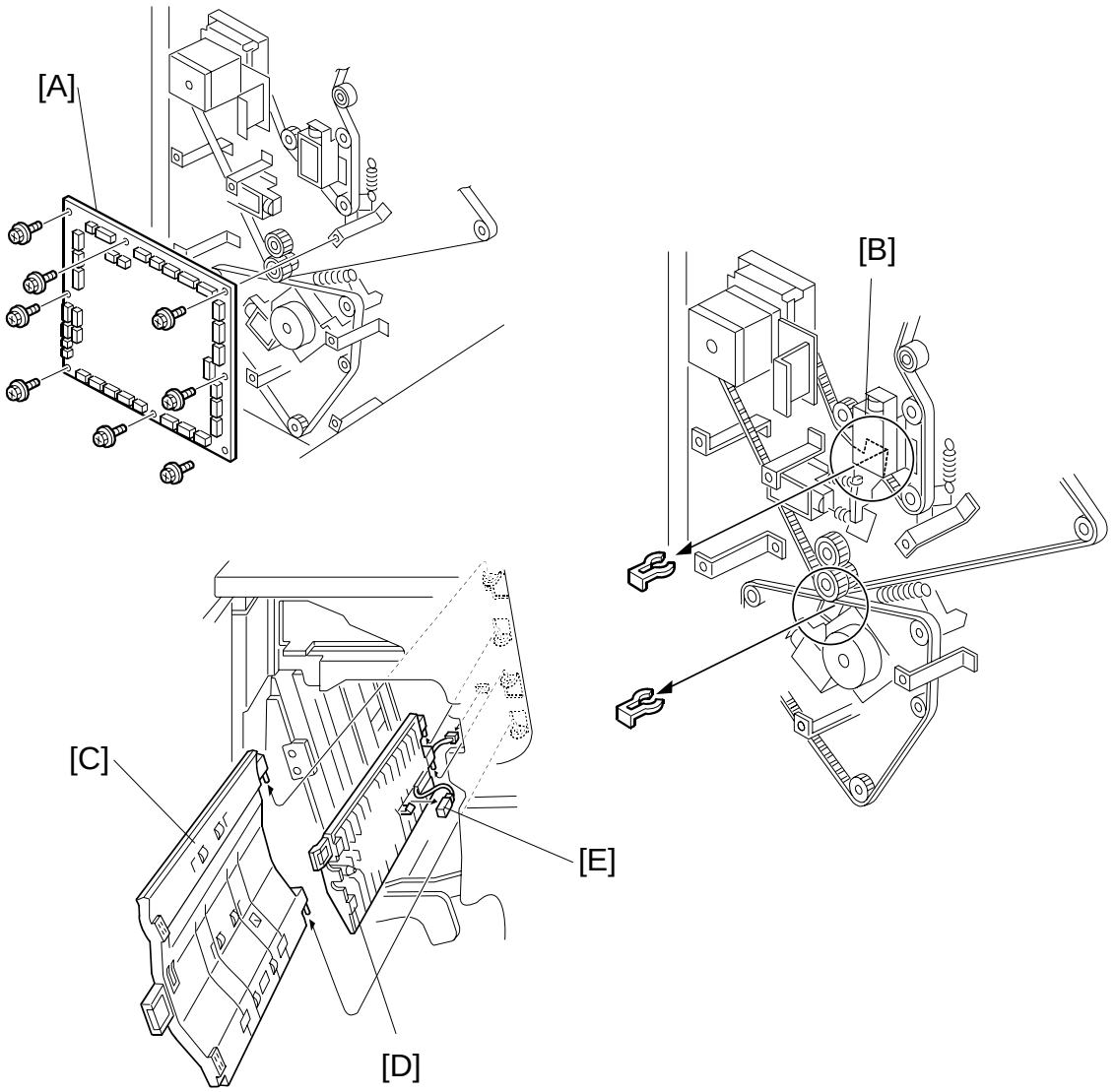

### *Entrance Sensor*

1. Disconnect the finisher from the copier.
2. Remove the sensor bracket [A] (x 1).
3. Replace the entrance sensor [B] (x 1, x 1).

### *Stapler Tray Entrance Sensor*

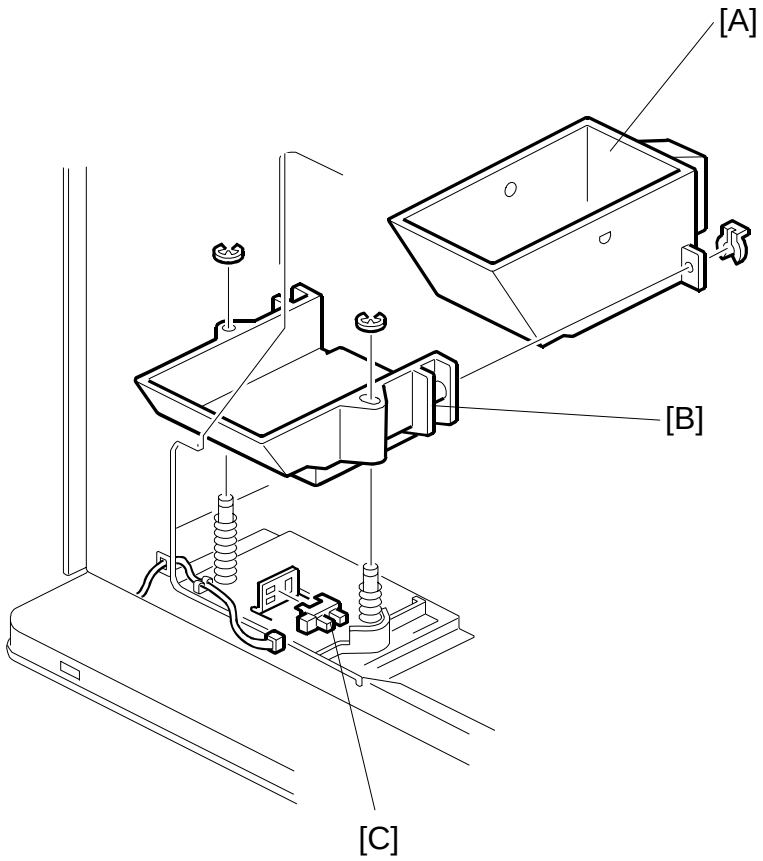
1. Open the front door.
2. Remove the sensor bracket [C] (x 1).
3. Replace the stapler tray entrance sensor [D] (x 1, x 1).

## 3.5.5 PRE-STACK PAPER SENSOR



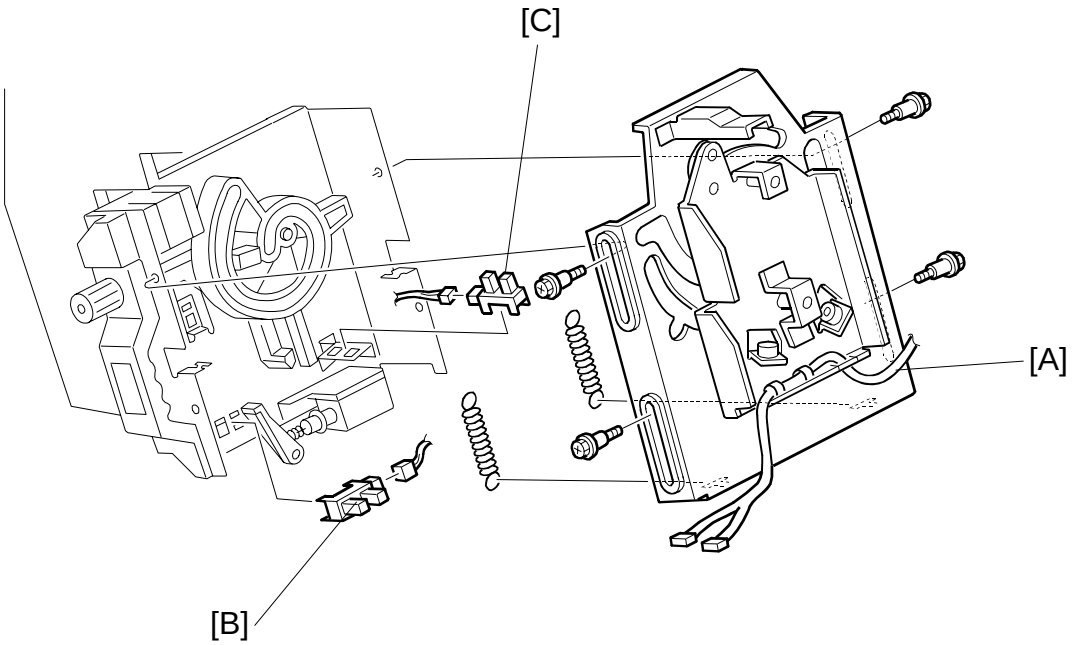

1. Remove the rear cover.
2. Remove the main board [A] (x 8, x all).
3. Release the guide [B] (x 2).
4. Open the front door.
5. Remove the left vertical transport guide [C].
6. Remove the middle vertical transport guide [D] (x 1).
7. Replace the pre-stack paper sensor [E] (x 1).

## 3.5.6 STAPLE WASTE HOPPER SENSOR




1. Open the front door, pull out the stapler unit, then remove the rear cover.
2. Remove the rear cover ( x 2).
3. Remove the staple waste hopper [A] ( x 1).
4. Remove the hopper holder [B] ( x 2).
5. Replace the staple waste hopper sensor [C] ( x 1).

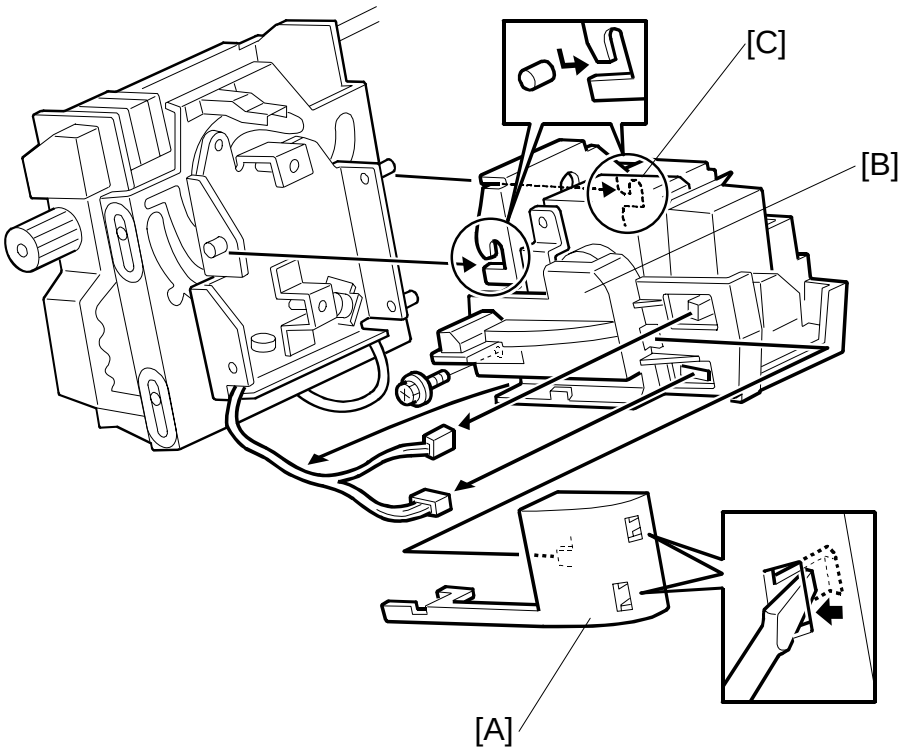
## 3.5.7 STAPLER ROTATION HP AND STAPLER RETURN SENSORS





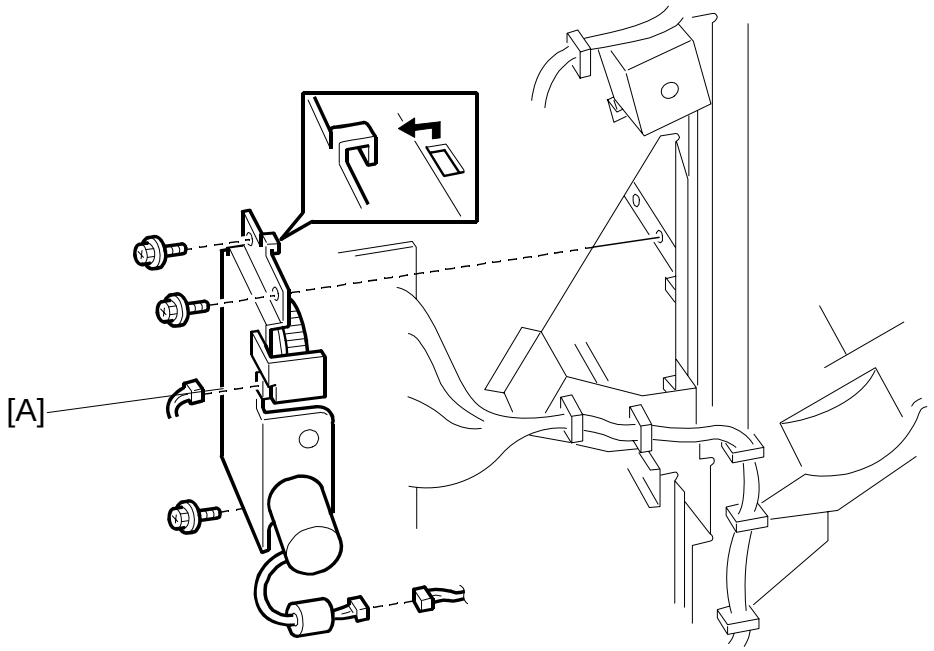

1. Remove the stapler unit. (See next page.)
2. Remove the stapler mount bracket [A] ( x 4, springs x 2).
3. Replace the stapler rotation HP sensor [B] ( x 1).
4. Replace the stapler return sensor [C] ( x 1).

## 3.6 STAPLER




1. Open the front door and pull out the staple tray.
2. Remove the stapler unit harness cover [A].
3. Remove the stapler cover [B] ( x 1, x 2).
4. Lift the stapler off of the pegs [C].

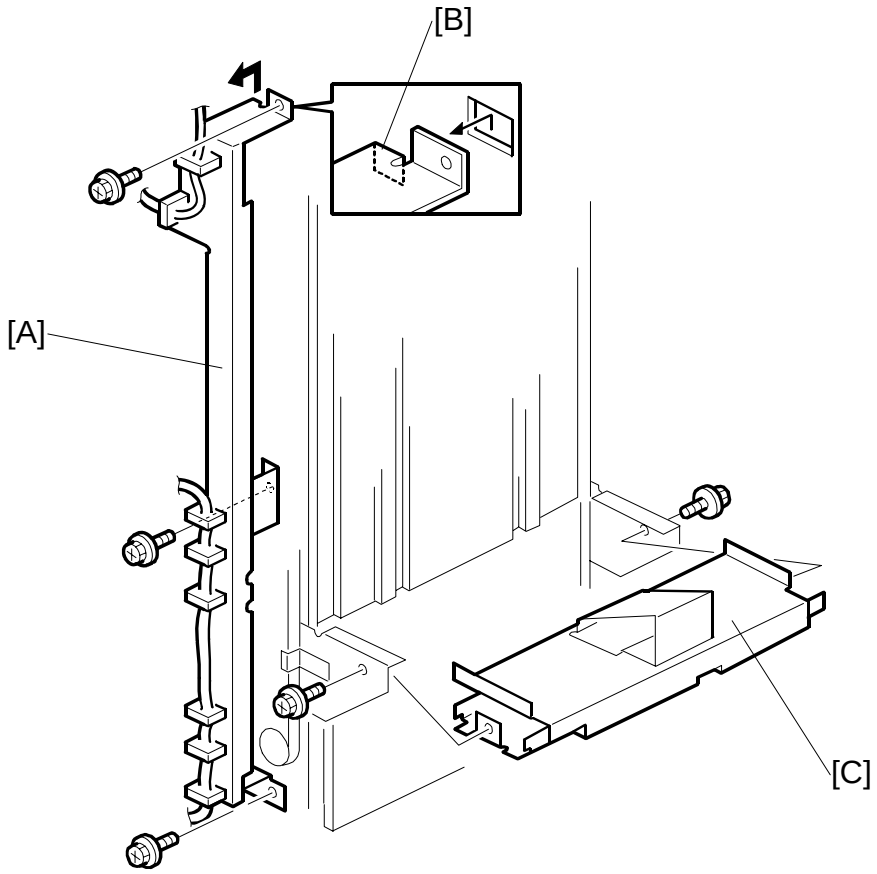
# 3.7 SHIFT TRAY MOTOR



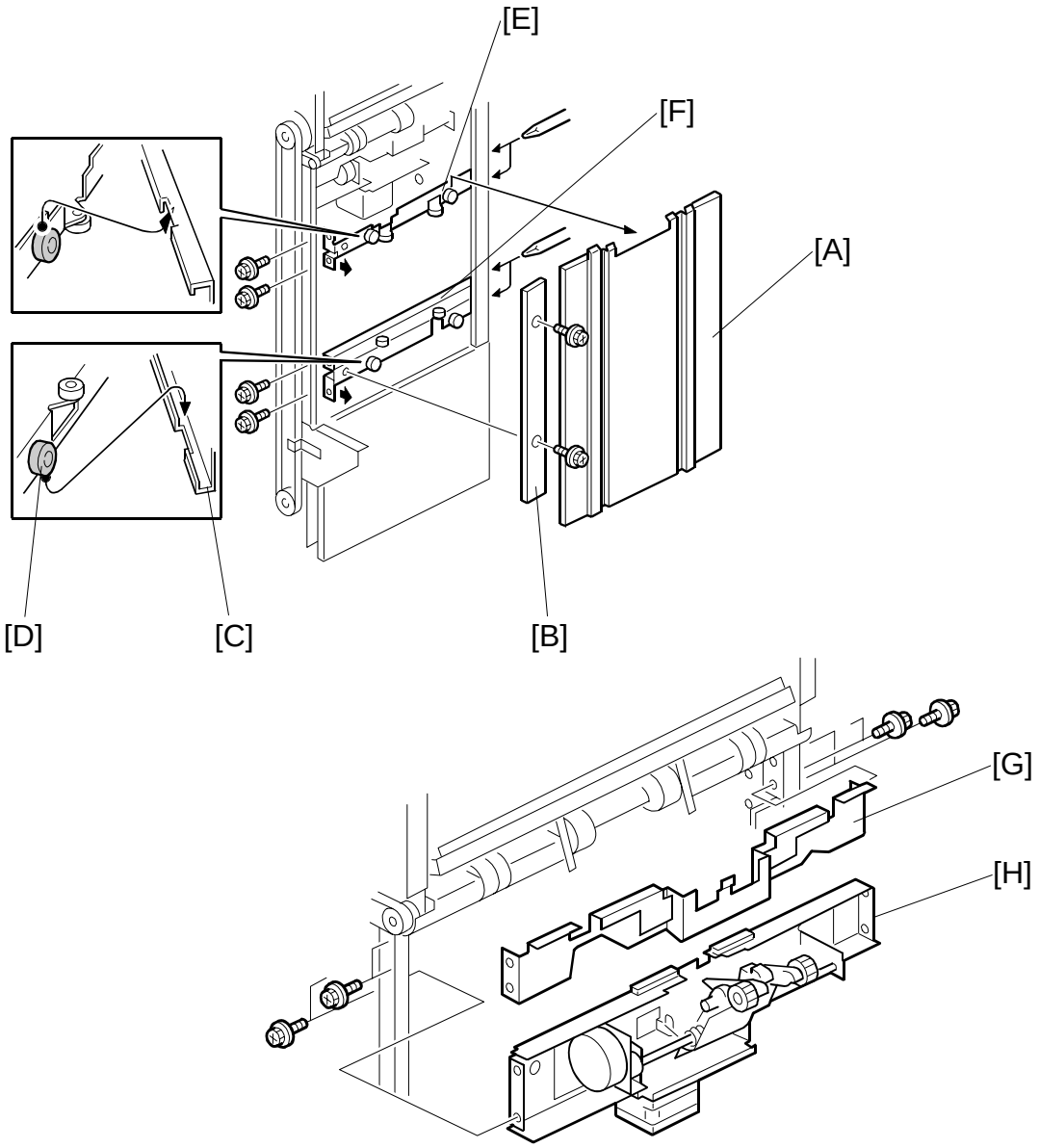



1. Remove the front door and rear cover (☛ 3.1).
2. Shift motor [A] (x 2, x 3)

## 3.7.1 STACKING ROLLER/ROLLER DRAG MOTORS, RETURN HP SENSOR

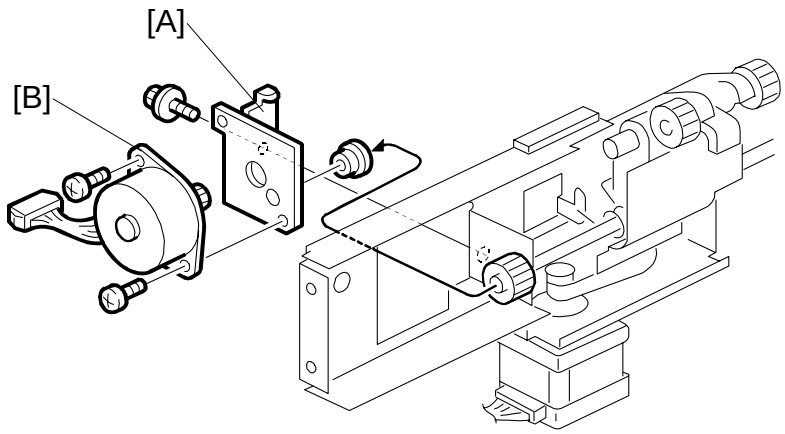


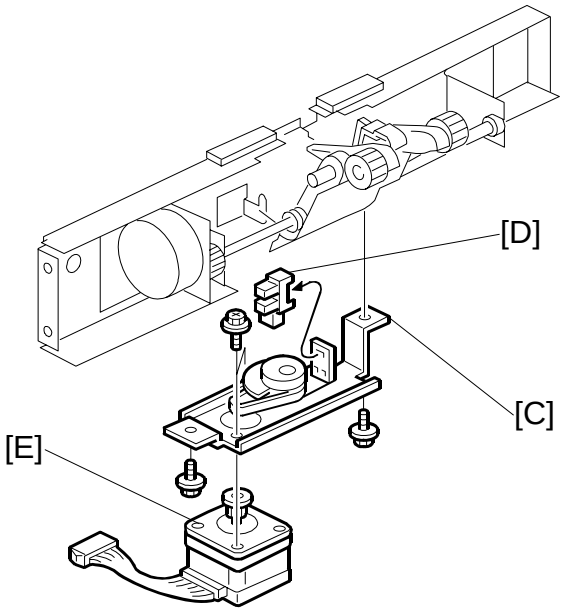

1. Do the procedures to remove the front door and all covers, with the exception of the left lower cover and top cover (labeled [C]: and [E]).
   **NOTE:** Be sure to lower the shift tray by pulling the gear toward you. The shift tray must be down.
2. Remove the shift tray motor. (☛ 3.7)
3. Remove the left stay [A] (🔩 x 3).
4. Unhook the stay at top [B].
5. Remove the shift tray mounting plate [C] (🔩 x 2).






6. Remove the end fence [A] and plate [B] (x 2).
7. Disengage the end fence races [C] from the rollers [D] behind the fence.
8. Remove the upper stay [E] (x 4).
9. Remove the lower stay [F] (x 4).
10. Remove the cover [G] (x 4).
11. Remove the stacking roller/drag motor stay [H] (x 3, x 4).
    **NOTE:** Make sure the motor and sensor connectors are disconnected before removing.

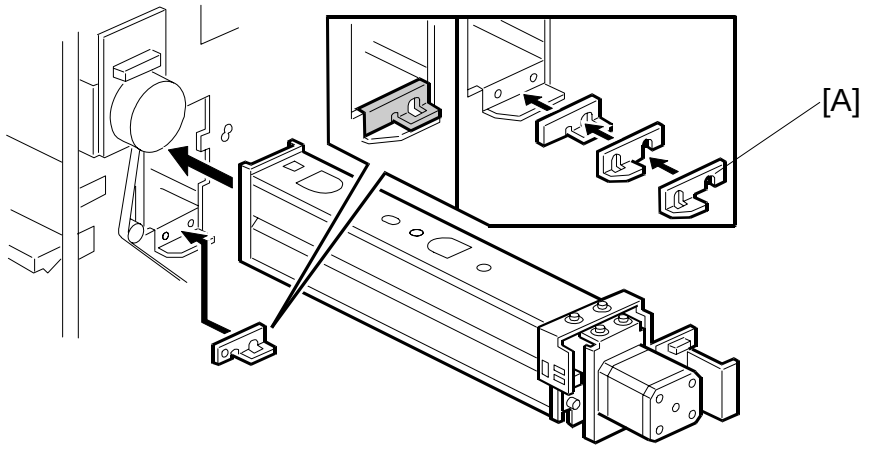



12. Remove the stacking motor bracket [A] (bushing x 1, x 1).
13. Remove the stacking motor [B] ( x 2).
14. Remove the roller drag motor bracket [C] ( x 2).
15. Remove return HP sensor [D].
16. Remove the roller drag motor [E] ( x 1).

# 3.8 PUNCH UNIT B531 (OPTION)

## 3.8.1 PUNCH POSITION ADJUSTMENT






The position of the punched holes can be adjusted in two ways.

### *Front to Rear Adjustment*

Three spacers [A] are provided with the punch unit for manual adjustment of the hole position in the main scan direction:

- 2 mm (x 1)
- 1 mm (x 2)

**NOTE:** One spacer was installed at installation and the remaining spacers were fastened with a screw to the rear frame of the finisher under the rear cover and slightly above the lock bar.

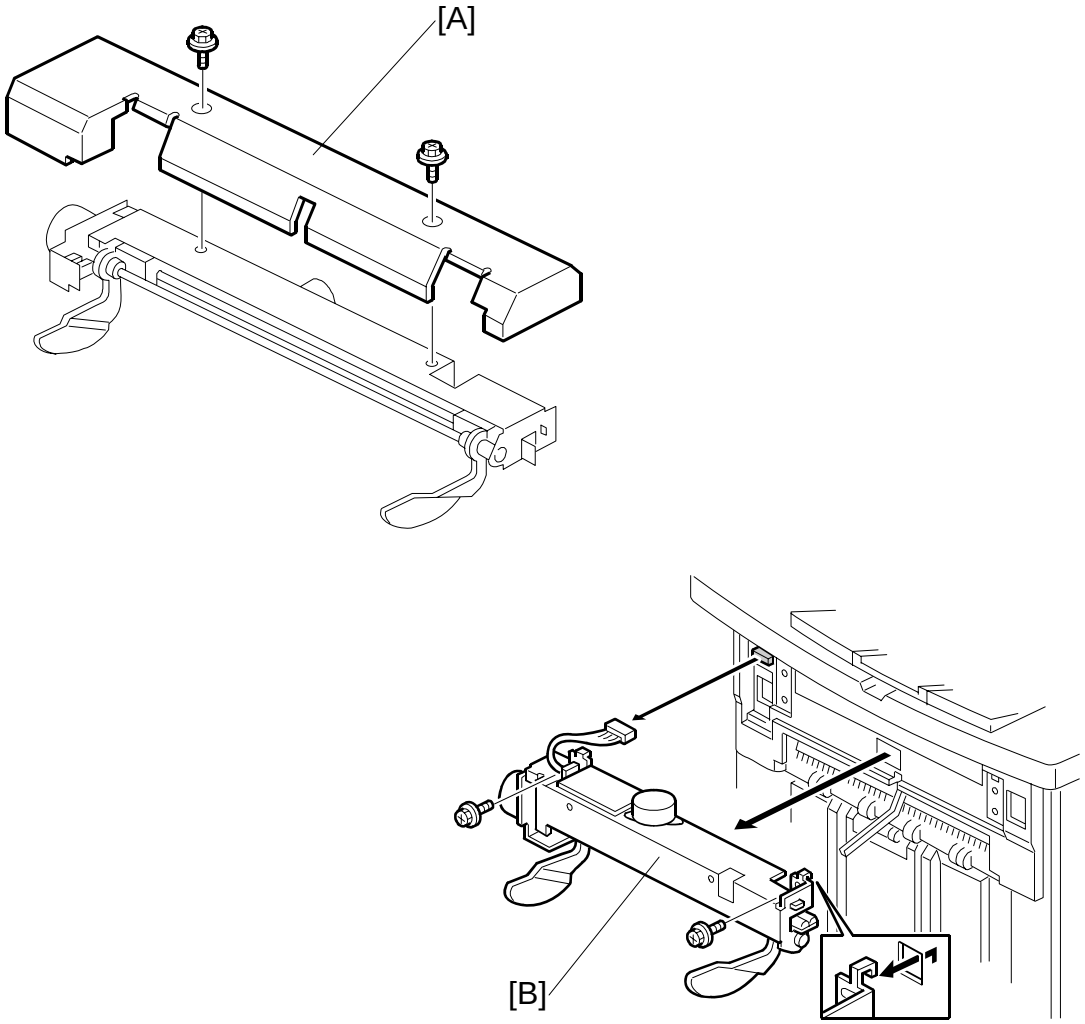
### *Right to Left Adjustment*

The position of the punched holes can be adjusted right to left in the sub scan direction with SP6-113 Punch Hole Position Adjustment. The position can be adjusted in the range ±7.5 mm in 0.5 mm steps. The default setting is 0.

Press the ⊙/⊗ key to toggle the ± selection. A +VE value shifts the punch holes left toward the edge of the paper, and a -VE value shifts the holes right away from the edge.

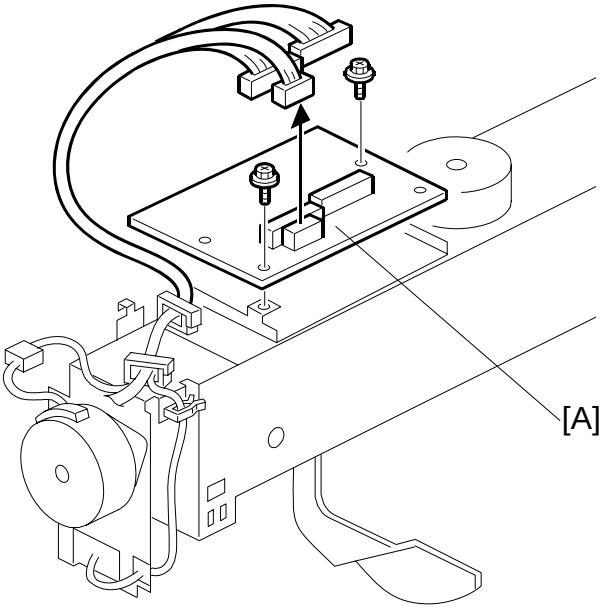
# 3.9 JOGGER UNIT B513 (OPTION)

## 3.9.1 JOGGER UNIT



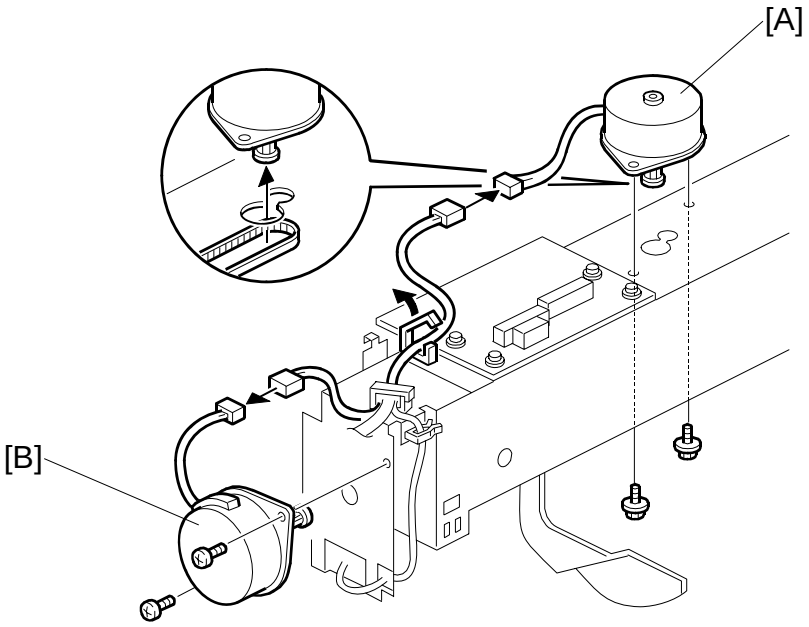

1. Remove the jogger unit cover [A] (x 2).
2. Remove the jogger unit [B] (x 2, x 1).

## 3.9.2 JOGGER UNIT PCB




1. Remove the jogger unit from the finisher. (☛ 3.9.1)
2. Remove the jogger unit control PCB [A] (🔩 x 2, 🖑 x 3).

## 3.9.3 JOGGER UNIT MOTOR




1. Remove the jogger unit from the finisher. (☛ 3.9.1)
2. Remove the shift jogger motor [A] (🔩 x 2, ✋ x 1).
3. Remove the shift jogger lift motor [B] (🔩 x 2, ✋ x 1).

# 4. TROUBLESHOOTING

If the machine logs an SC code in the display of the operation panel, see “Section 4 Troubleshooting” of the Service Manual. Section 4 contains a complete list of all service codes and how to troubleshoot the problem.

# 5. SERVICE TABLES

For details about 3000-Sheet Finisher B478 SP codes, please refer to “5. Service Tables” in the main machine service manual.

## 5.1 DIP SWITCHES

| DPS100 | | | | Description |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | |
| 0 | 0 | 0 | 0 | Default |
| 0 | 0 | 1 | 0 | Free run: A4 LEF, staple mode |
| 0 | 0 | 0 | 1 | Free run: staple and tray shift |

**NOTE:** Do not use any other settings.

## 5.2 TEST POINTS

| No. | Label | Monitored Signal |
|---|---|---|
| TP100 | (5V) | +5 V |
| TP101 | (GND) | Ground |
| TP102 | (RXD) | RXD |
| TP103 | (TXD) | TXD |

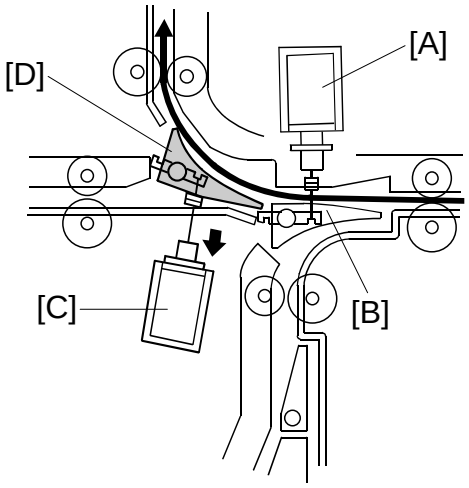
## 5.3 FUSES

| No. | Function |
|---|---|
| FU100 | Protects 24 V. |

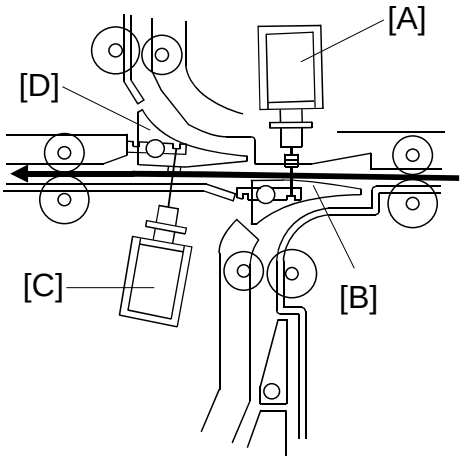
# 6. DETAILS

## 6.1 TRAY AND STAPLER JUNCTION GATE

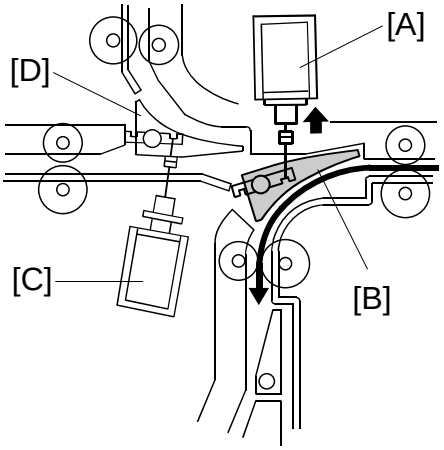
**Upper Tray Mode**




**Sort/Stack Mode**



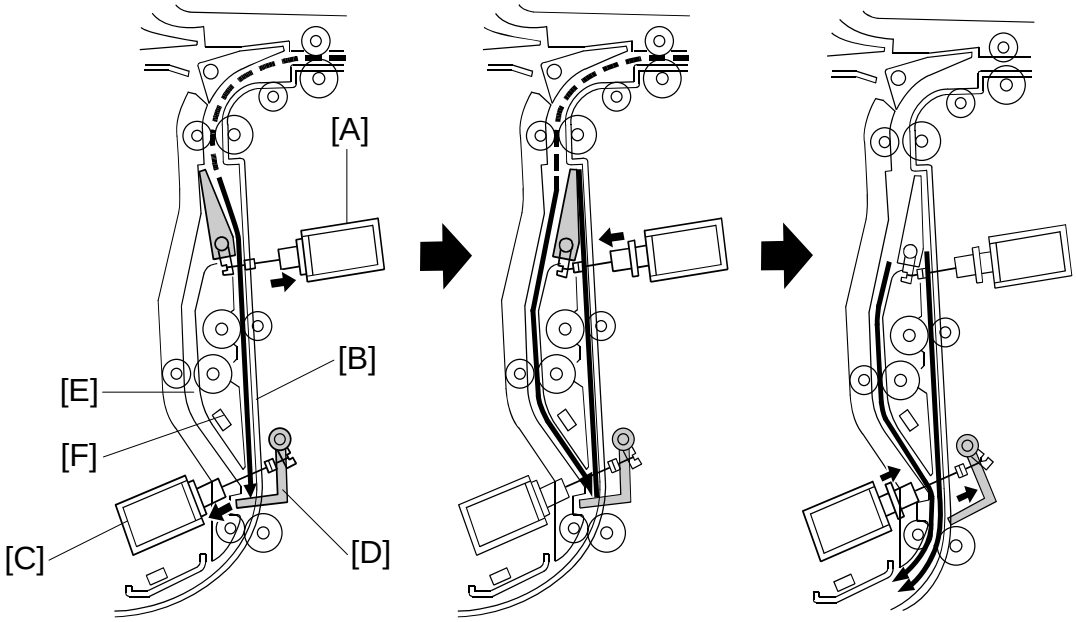

**Staple Mode**




Depending on the finishing mode, the copies are directed up, straight through, or down by the combinations of open and closed junction gates.

| Solenoid/Gate | | Selected Operation Mode | | |
|---|---|---|---|---|
| | | Upper Tray | Sort/Stack | Staple |
| [A] | Stapler junction gate solenoid | Off | Off | ON |
| [B] | Stapler junction gate | Closed | Closed | OPEN |
| [C] | Tray junction gate solenoid | ON | Off | Off |
| [D] | Tray junction gate | OPEN | Closed | Closed |

# 6.2 PAPER PRE-STACKING



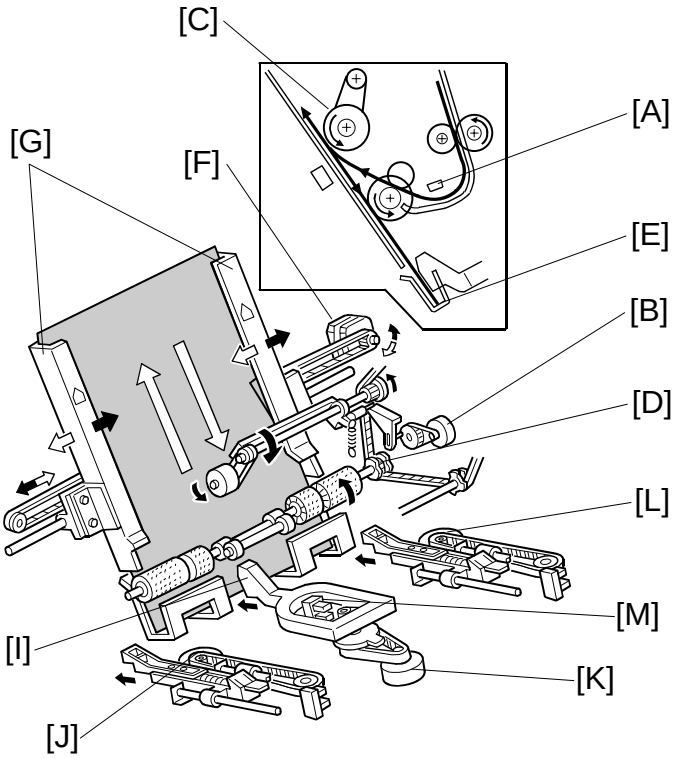

This mechanism improves productivity in staple mode. It is only used when copying on A4, LT, or B5 (all LEF).

During stapling, the copier has to wait. This mechanism reduces the wait by holding the first two sheets of a job while the previous job is still being stapled. It only works during the second and subsequent sets of a multi-set copy job.

The pre-stack junction gate solenoid [A] turns on 120 mm after the 1st sheet of paper turns on the entrance sensor, and this directs the sheet to the pre-stack tray [B]. (This sheet cannot be fed to the stapler yet, because the first set is still being stapled.) The pre-stack paper stopper solenoid [C] turns on 350 mm after the 1st sheet turns on the entrance sensor. The pre-stack paper stopper [D] then stops the paper.

The pre-stack junction gate solenoid turns off 230 mm after the trailing edge of the 1st sheet passes through the entrance sensor, and the 2nd sheet is sent to the paper guide [E]. The pre-stack paper stopper is released about 40 mm after the 2nd sheet turns on the pre-stack stopper sensor [F], and the two sheets of copy paper are sent to the stapler tray. All sheets after the 2nd sheet go to the stapler tray via the paper guide [E].

# 6.3 JOGGER UNIT PAPER POSITIONING





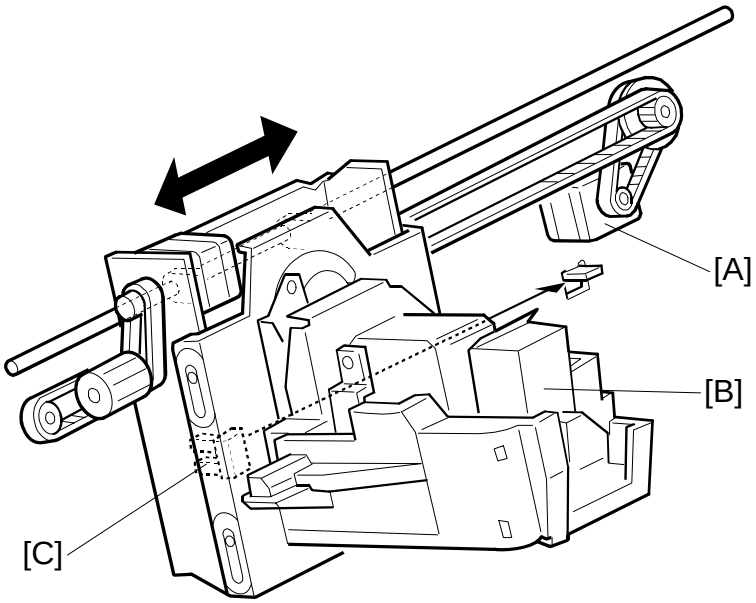

In the staple mode, as every sheet of paper arrives in the jogger unit, it is vertically and horizontally aligned, then the staple edge is pressed flat to ensure the edge of the stack is aligned correctly for stapling.

**Vertical Paper Alignment:** About 60 ms after the trailing edge of the copy passes the staple tray entrance sensor [A], the positioning roller motor [B] is energized to push the positioning roller [C] into contact with the paper. The positioning roller and alignment brush roller [D] rotate to push the paper back and align the trailing edge of the paper against the stack stopper [E].

**Horizontal Paper Alignment:** When the print key is pressed, the jogger motor [F] turns on and the jogger fences [G] move to the wait position about 7.2 mm wider than the selected paper size on both sides. When the trailing edge of the paper passes the staple unit entrance sensor, the jogger motor moves the jogger fences 3.7 mm towards the paper. Next, the jogger motor turns on again for 3.5 mm for the horizontal paper alignment then goes back to the wait position.

**Paper Stack Correction:** After the paper is aligned in the stapler tray, the left [J], center [K], and right [L] stack plate motors switch on briefly and drive the front stack, center stack, and rear stack plates against the edge of the stack to flatten the edge completely against the staple tray for stapling. When the next copy paper turns on the stapler entrance sensor, the stack plate motor turns on and returns to its home position. The home position is detected by stack plate HP sensor [M].

# 6.4 STAPLER UNIT MOVEMENT



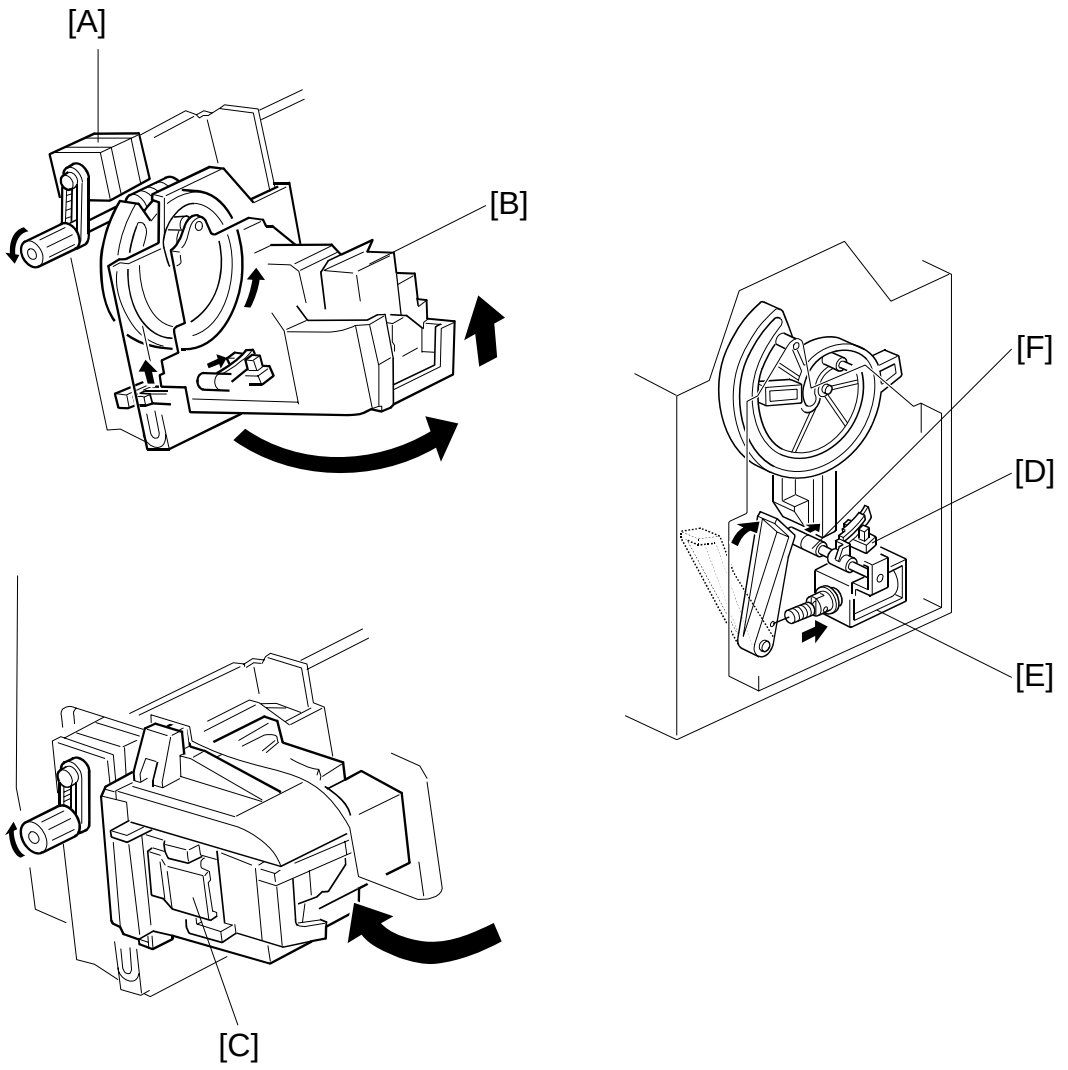

***Side-to-Side***

The stapler motor [A] moves the stapler [B] from side to side. After the start key is pressed, the stapler moves from its home position to the stapling position.

If two-staple-position mode is selected, for the first stack the stapler moves to the rear stapling position first, staples, moves to the front position, staples and waits at the front. For the second stack, the stapler staples the front corner first, then moves to the rear corner and staples.

**NOTE:** For continuous stapling jobs, the corners are stapled rear then front for the odd number stacks and stapled front then rear for even number stacks.

After the job is completed, the stapler returns to its home position. This is detected by the stapler HP sensor [C].






### *Rotation (1)*

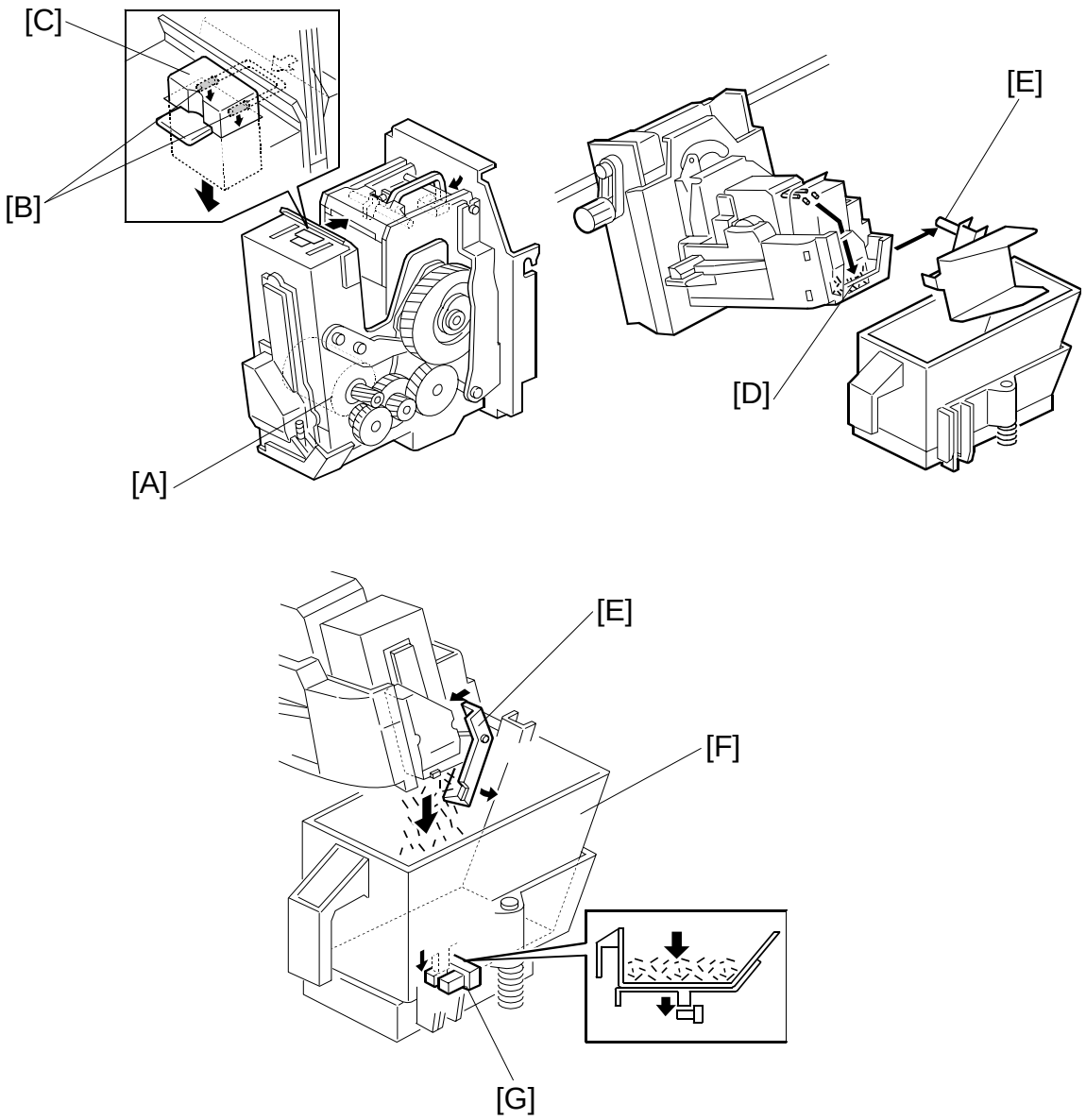
In the oblique staple position mode, the stapler rotation motor [A] rotates the stapler units [B] 45° to counterclockwise after it moves to the stapling position.

### *Rotation (2)*

When the staple end condition arises, the stapler motor moves the stapler to the front and the stapler rotation motor rotates the stapler unit to clockwise to remove the staple cartridge [C]. This allows the user to add new staples.

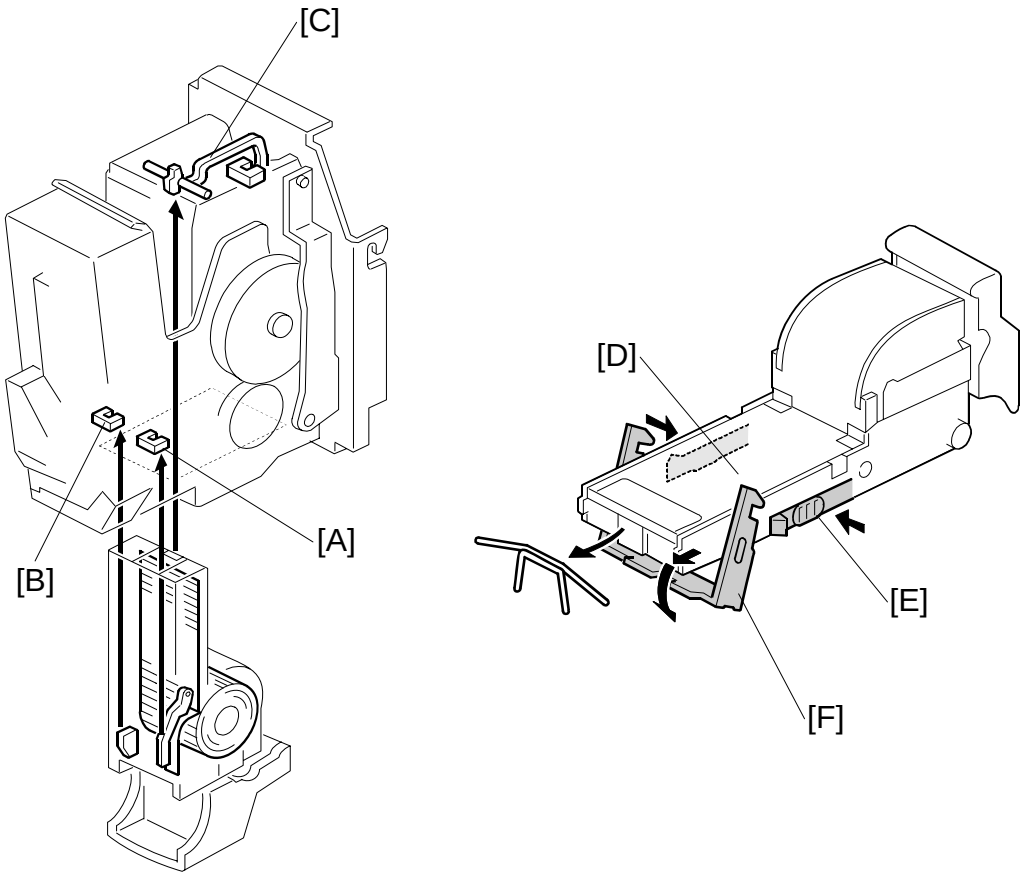
Once the staples have been installed, and the front door closed, the stapler unit returns to its home position. As the stapler unit is returning to the home position, the stapler return sensor [D] is activated, the return solenoid [E] turns on and it assists the guide roller [F] to return to its guide (this guide directs the stapler during rotation).

# 6.5 STAPLER




When the aligned copies are brought to the stapling position by the positioning roller and jogger fences, the staple hammer motor [A] starts stapling.

During stapling, the stapler trims off the excess length [B] of the staples by lowering the cutter [C]. This excess length depends on the number of copies in the set; there will be very little for a stack containing 100 sheets. The staple waste drops into the tray [D] in the stapler. When the stapler unit returns to its home position, the tray hits the shaft [E] and the tray opens. The staple waste drops into the staple waste hopper [F]. When the staple waste hopper is full, the actuator on its base activates the staple waste hopper sensor [G]. An SC737 (Full Finisher Staple Waste Hopper) is displayed.



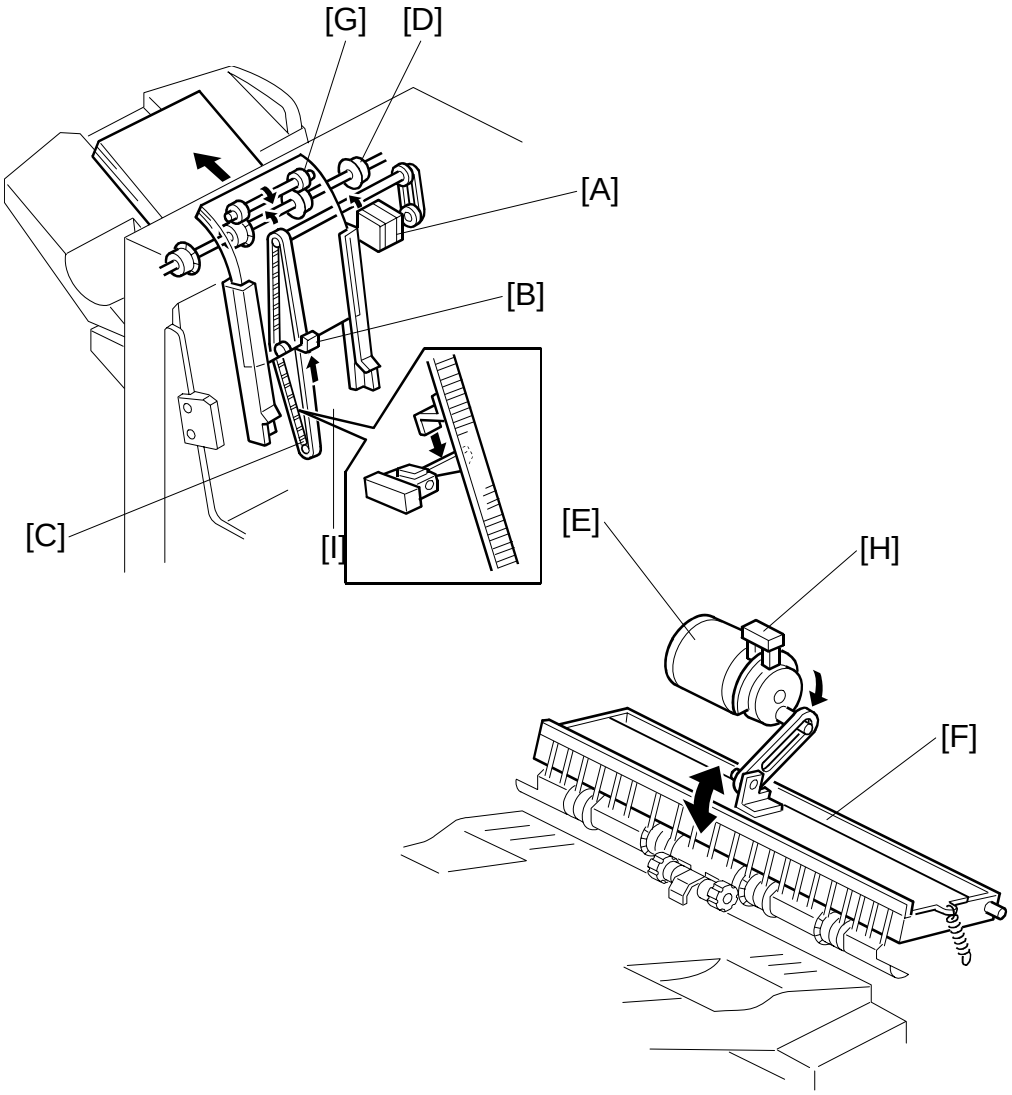



The stapler has a staple end sensor [A], cartridge set sensor [B] and staple hammer HP sensor [C].

When a staple end or no cartridge condition is detected, a message is displayed advising the operator to install a staple cartridge. If this condition is detected during a copy job, the indication will appear, and the copy job will stop.

The staple cartridge has a clinch area [D] where jammed staples collect. The operator can remove the jammed staples from the clinch area by pressing in the releases [E] on both sides, then lowering the bracket lever [F].

## 6.6 FEED-OUT

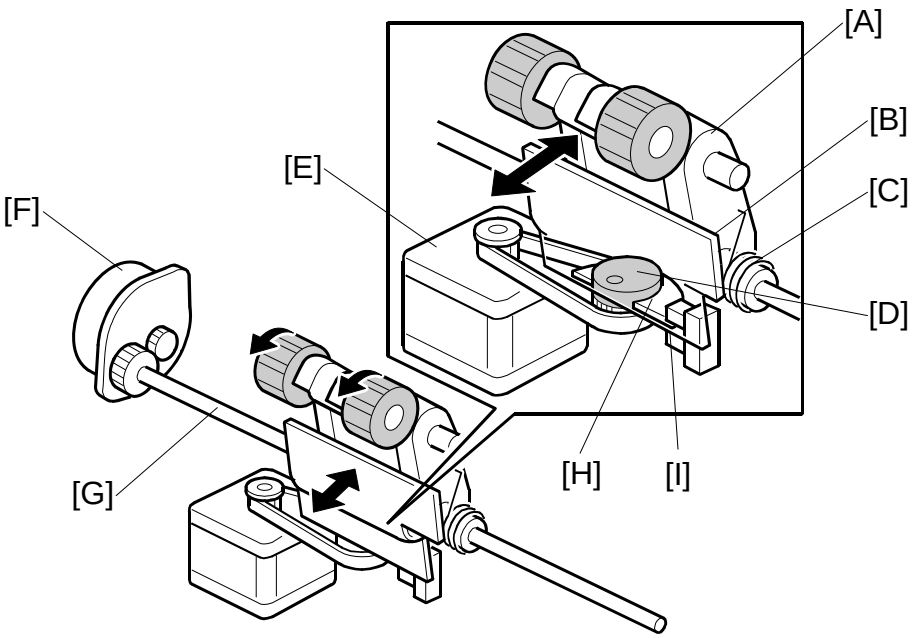



After the copies have been stapled, the stack feed-out motor [A] starts. The pawl [B] on the stack feed-out belt [C] transports the set of stapled copies up and feeds it to the shift tray exit roller [D]. When stapling starts, the exit guide motor [E] opens the upper exit guide [F], which includes the upper shift tray exit roller [G], in order to feed out the leading edge of the copy set smoothly. The exit guide motor turns on again a certain time after stapling is complete, and the upper exit guide plate is lowered. Then the shift tray exit roller takes over the stack feed-out.

The on-off timing of the exit guide motor is detected by the exit guide open sensor [H].

The stack-feed-out motor turns off when the pawl actuates the stack feed-out belt home position sensor [I].

# 6.7 PAPER EXIT STACKING






The stacking roller assembly [A] is fastened to a plate [B] on a shaft by a spring [C]. The cam [D], in contact with the bottom of the plate, is connected to the stacking roller drag motor [E] via a timing belt.

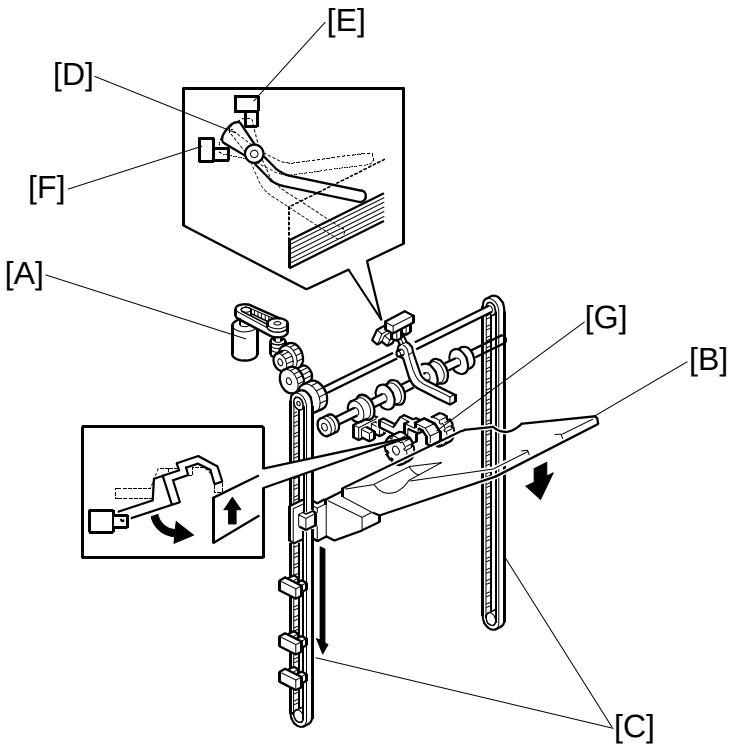
The stacking roller drag motor and timing belt rotate the cam against the bottom of the plate to move the rollers forward and back with each sheet ejected onto the shift tray.

The stacking roller motor [F] drives the shaft [G] that rotates the stacking rollers counter-clockwise as the rollers move back. The simultaneous rotation and backward movement of the roller assembly pulls each sheet back toward the copier to align the edges of the stack on the shift tray.

The actuator [H] is mounted on the cam and rotating with both rotating clockwise) and detects the roller assembly home position when the actuator leaves the gap of the return drive HP sensor [I] and signals the machine that the rollers are at the home position. The machine uses this information to control paper feed timing and confirm that the mechanism is operating correctly. The cam and actuator make one complete rotation for every sheet fed out of the machine onto the shift tray.

# 6.8 SHIFT TRAY

## 6.8.1 OVERVIEW



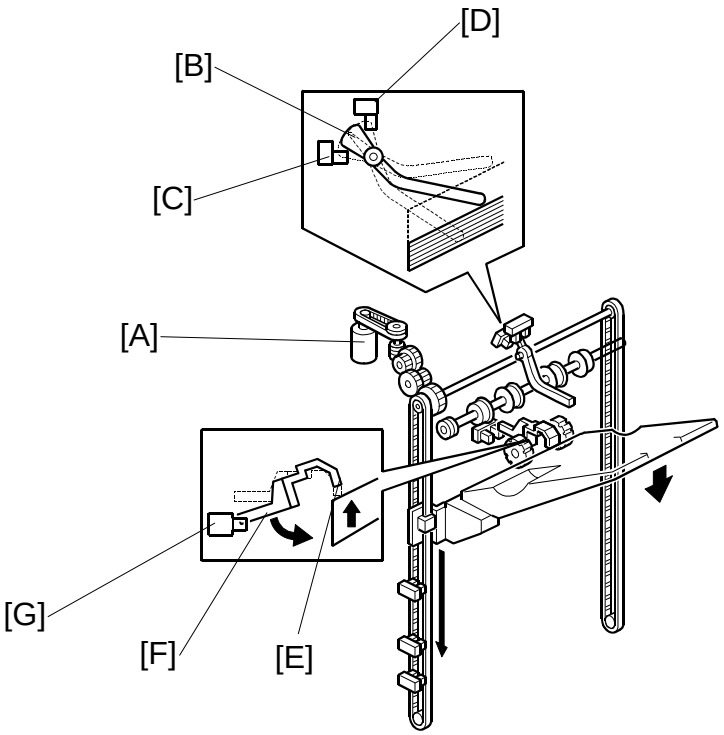

The shift tray lift motor [A] controls the vertical position of the shift tray [B] through gears and timing belts [C].

### *Stand-by Mode*

After the main switch is turned on, or when the stack is removed from the tray, the end of the feeler on the tray falls and its actuator [D] rotates up into staple mode HP sensor 2 [E] (S7) and switches it on. This switches on the lift motor, which raises the tray until the tray pushes the actuator out of the sensor [E]. Then, the lift motor stops the shift tray; this is the home position (the actuator [D] is between the two sensors [E] and [F].

The shift tray upper limit switch (SW1) prevents the drive gear from being damaged if staple mode HP sensor 2 [E] fails. In case of a failure, when the shift tray pushes up the actuator [G] and positioning rollers, the switch will cut the power to the shift tray lift motor.

## 6.8.2 SHIFT TRAY UP/DOWN MOVEMENT






### *Sort/Stack Mode (Shift Mode)*

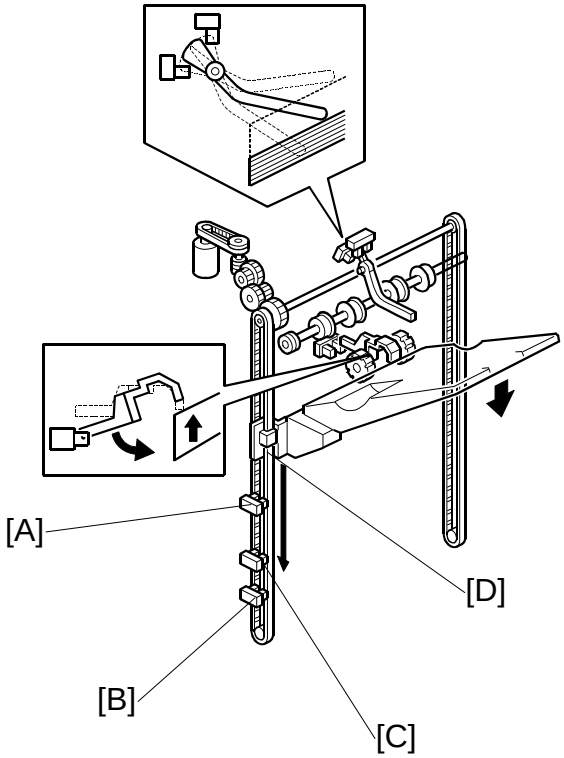
The shift tray moves to home position, which is when the actuator [F] has just exited the shift mode home position sensor [G] (S12). During feed-out, the tray is lowered automatically at prescribed intervals; sensor [D] (S7) is ignored. When the stack is removed from the tray, the end of the feeler [E] between the arms of the stacking roller falls, and its actuator [F] enters sensor [G] (S12) and switches it on. This switches on the lift motor [A], which raises the tray until the actuator leaves the sensor. Then, the lift motor stops the tray; this is the home position.

In sort/stack mode, if S12 fails when the tray is being lifted, the shift tray upper limit switch (SW1) prevents the drive gear from being damaged.

### *Staple Mode*

The shift tray moves to home position, which is when the actuator [B] is between the staple mode home position sensors [C] and [D]. During feed-out, the shift tray is lowered automatically at prescribed intervals. When the stack is removed from the tray, the tray returns to the home position for stand-by mode. (☛ 6.8.1)

## 6.8.3 SHIFT TRAY LOWER LIMIT DETECTION



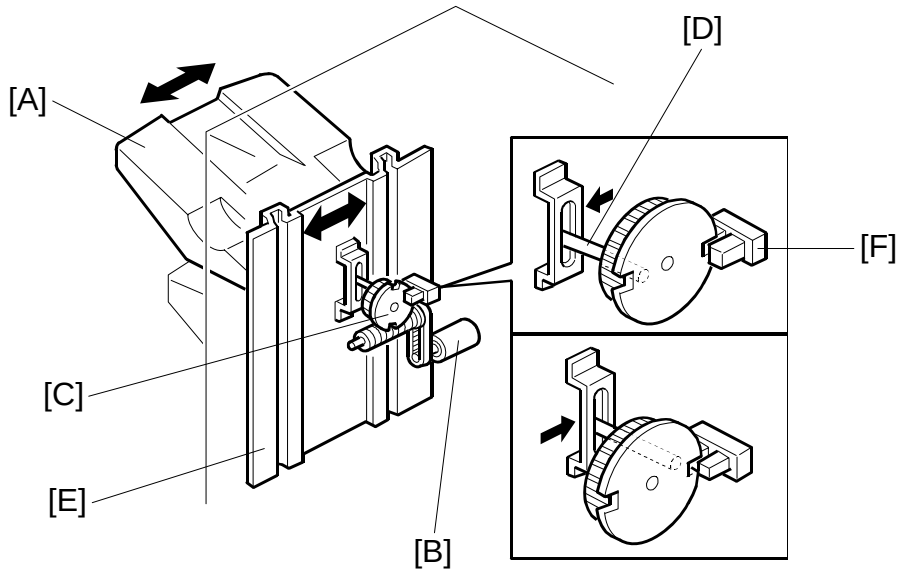

This machine has two shift tray lower limit sensors: shift lower limit sensor [A] (S9) for large paper (B4 and larger) and shift lower limit sensor [B] (S11) for small paper (smaller than B4).

**NOTE:** Sensor [C] (S10) is not used.

When the actuator [D] enters sensor [A] while using large paper (about 1500 sheets are on the tray), a message will be displayed and copying will stop.

When the actuator [D] enters sensor [B] while using small paper (about 3,000 sheets are on the tray), a message will be displayed and copying will stop.

# 6.9 SHIFT TRAY SIDE-TO-SIDE MOVEMENT






In sort/stack mode, the shift tray [A] moves from side to side to separate the sets of copies.

The horizontal position of the shift tray is controlled by the shift motor [B] and shift gear disk [C]. After one set of copies is made and delivered to the shift tray, the shift motor turns on, driving the shift gear disk and the shaft [D]. The end fence [E] is positioned by the shaft, creating the side-to-side movement.

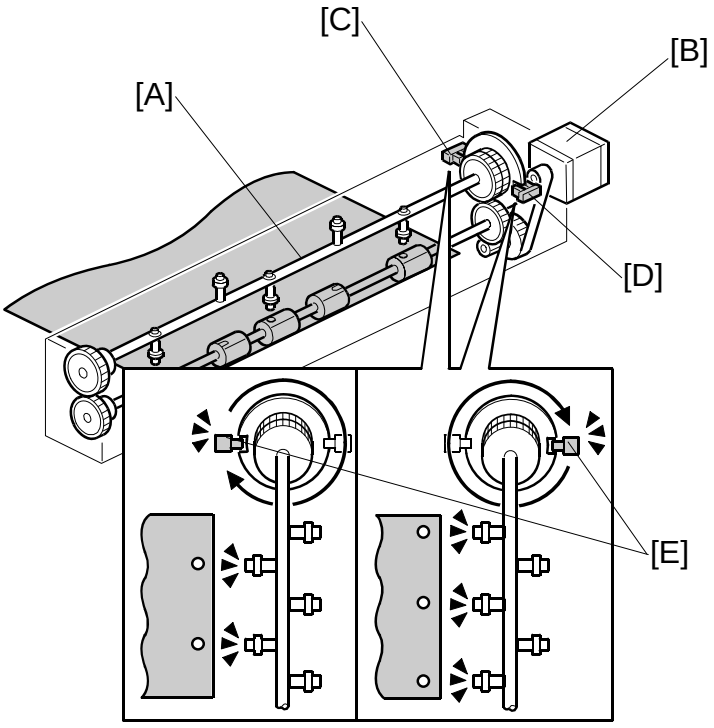
When the shift gear disk has rotated 180 degrees (when the shift tray is fully shifted across), the cut-out in the shift gear disk turns on the shift tray half-turn sensor [F] and the shift motor stops. The next set of copies is then delivered. The motor turns on, repeating the same process and moving the tray back to the previous position.

# 6.10 JAM CONDITIONS

1. The entrance sensor does not turn on when the copier has fed paper 426 mm after the copier exit sensor turned off.
2. The entrance sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
3. The upper tray exit sensor does not turn on when the upper transport motor has fed paper 574 mm after the entrance sensor turned on.
4. The upper tray exit sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
5. In sort/stack mode, the shift tray exit sensor does not turn on when the upper transport motor has fed paper 733 mm after the entrance sensor turned on.
6. In sort/stack mode, the shift tray exit sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
7. In staple mode, the stapler tray entrance sensor does not turn on when the upper and lower transport motor have fed paper 835 mm after the entrance sensor turned on.
8. In staple mode, the stapler tray entrance sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
9. In staple mode, the stapler tray paper sensor does not turn off within 250 pulses of the stack feed-out motor after it started.
10. In staple mode, the shift tray exit sensor does not turn off within 1,260 ms after the stack feed-out motor started.

# 6.11 PUNCH UNIT B531 (OPTION)

## 6.11.1 PUNCH UNIT DRIVE





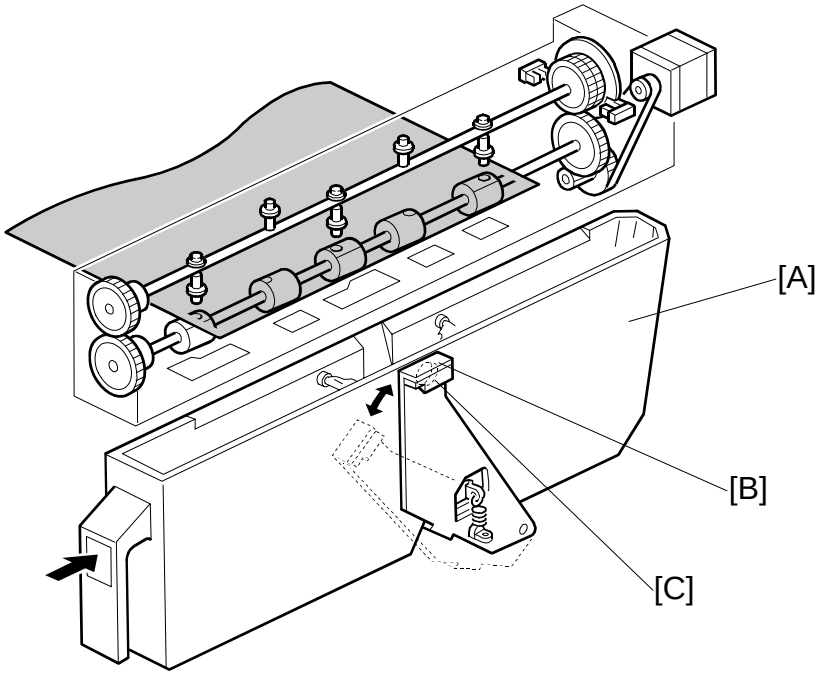

The punch unit makes 2 or 3 holes at the trailing edge of the paper. The number of holes depends on a selection made on the operation panel.

The cam [A] has 2 punches on one side and 3 punches on the other, and is turned by the punch motor [B]. The punch motor turns on immediately after the trailing edge of the paper passes the entrance sensor. The punches on the cam rotate downward and punch holes in the paper.

After punching a sheet of paper, the cam returns to home position and stops. Home position depends on whether 2 holes or 3 holes are being made, so there are two punch HP sensors. Punch HP sensor 1 [C] is used when 2-hole punching is selected, and punch HP sensor 2 [D] is used when 3-hole punching is selected. When the cut-out [E] enters the slot of the punch HP in use (sensor 1 or 2-hole punching or sensor 2 for 3/4-hole punching) the motor stops.

The knob (not shown) on the front end of the punch unit can be turned in either direction to clear paper jammed in the punch unit.

## 6.11.2 PUNCH WASTE COLLECTION




Punch waste is collected in the punch waste hopper [A] positioned under the punch unit.

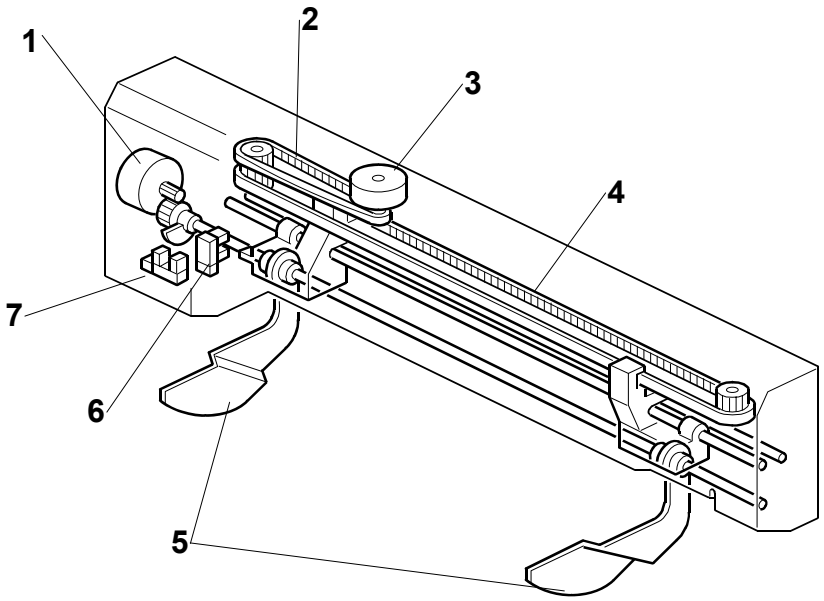
When the level of the punch waste in the hopper rises as far as the hole [B] in the hopper, the punch waste sensor [C] turns on, stops the job, and triggers a message on the operation to indicate that the hopper is full and must be removed and emptied.

The job resumes automatically after the hopper is emptied and returned to the finisher.

The punch waste hopper sensor also functions as the hopper set sensor. When the hopper is not in the finisher, or if it is not inserted completely, the spring loaded sensor arm rotates up and to the right with the punch waste sensor away from the hole in the hopper holder and a message is displayed. The message in this case is the same as the hopper full message.

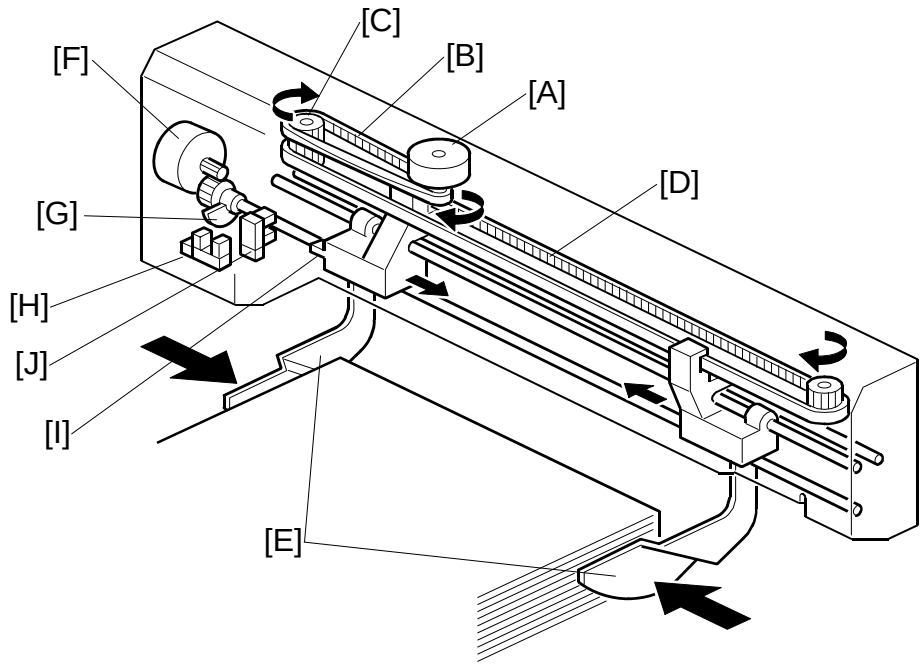
# 6.12 JOGGER UNIT B513 (OPTION)

## 6.12.1 JOGGER UNIT MECHANICAL LAYOUT




1. Shift Jogger Fence Lift Motor
2. Shift Jogger Motor Timing Belt
3. Shift Jogger Motor
4. Shift Jogger Fence Timing Belt
5. Shift Jogger Fences
6. Shift Jogger HP Sensor
7. Shift Jogger Lift HP Sensor

## 6.12.2 JOGGER UNIT DRIVE




At prescribed intervals, the jogger motor [A] switches on and drives the jogger timing belt [B], gear [C] and jogger fence timing belt [D] which drives the shift jogger fences [E] against the sides of the stack to align its edges.

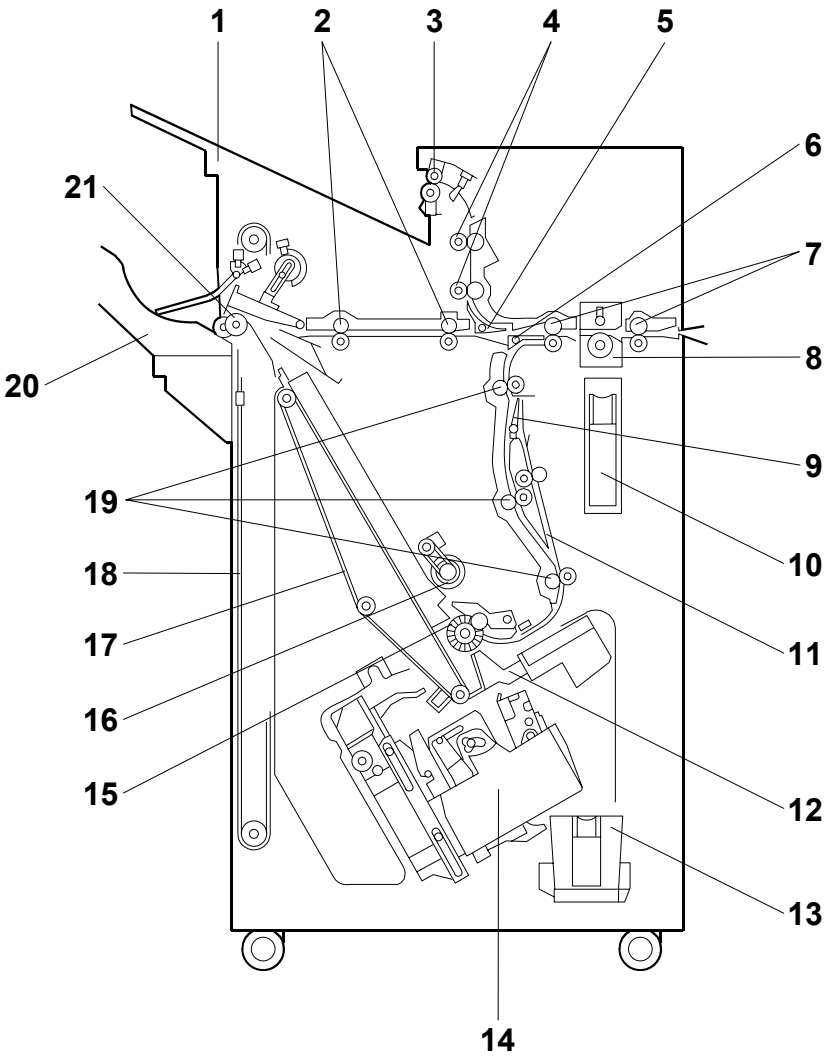
At the end of the job, the jogger fence lift motor [F] switches on and raises the fences until the actuator [G] leaves the slot of the shift jogger fence lift HP sensor [H] and shuts off the shift jogger fence lift motor.

At the same time, the jogger motor reverses and drives the fences away from the sides of the stack until the actuator [I] deactivates the shift jogger fence HP sensor [J] and switches off the jogger motor.

The jogger fences remain up in the standby position until the next job starts.

# 7. OVERALL MACHINE INFORMATION

## 7.1 MECHANICAL COMPONENT LAYOUT




1. Upper Tray
2. Middle Transport Rollers
3. Upper Tray Exit Roller
4. Upper Transport Rollers
5. Tray Junction Gate
6. Stapler Junction Gate
7. Entrance Rollers
8. Punch Unit
9. Pre-stack Junction Gate
10. Punch Waste Hopper
11. Pre-stack Tray
12. Stack Plate
13. Staple Waste Hopper
14. Stapler
15. Alignment Brush Roller
16. Positioning Roller
17. Stack Feed-out Belt
18. Shift Tray Drive Belt
19. Lower Transport Rollers
20. Shift Tray
21. Shift Tray Exit Roller

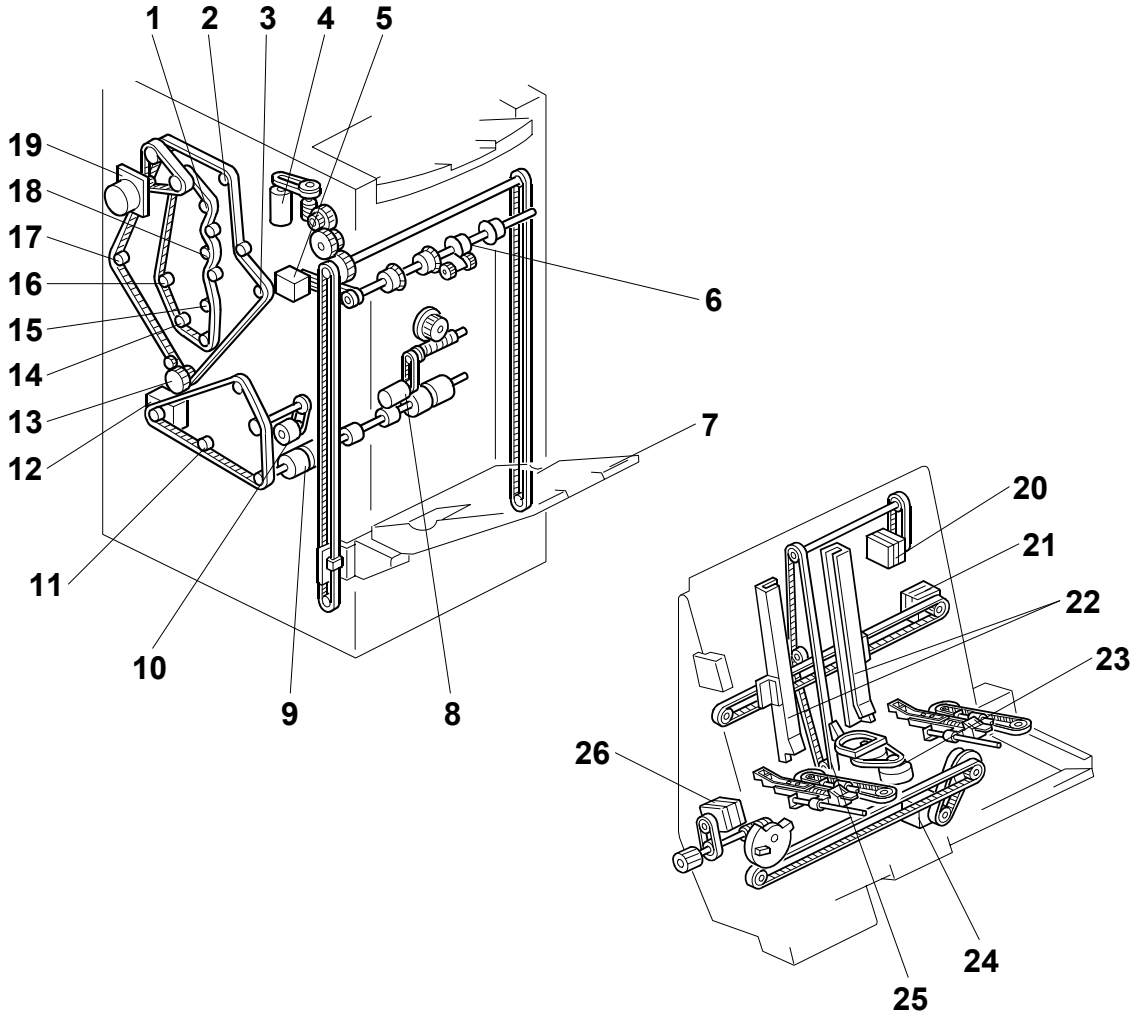
# 7.2 ELECTRICAL COMPONENT DESCRIPTION

| Symbol | Name | Function |
|---|---|---|
| **Motors** | | |
| M01 | Shift Tray Exit | Drives the exit roller for the shift tray. |
| M02 | Shift Tray Lift | Moves the shift tray up or down. |
| M03 | Exit Guide | Opens and closes the upper exit guide. |
| M04 | Lower Transport | Drives the lower transport rollers, the positioning roller and the alignment brush roller |
| M05 | Shift | Moves the shift tray from side to side. |
| M06 | Positioning Roller | Moves the positioning roller into contact with the paper. |
| M07 | Stacking Roller Drag | Moves the stacking roller in and out. |
| M08 | Stacking Roller | Rotates the stacking roller. |
| M09 | Jogger | Moves the jogger fences. |
| M10 | Stack Feed-Out Belt | Drives the stack feed-out belt. |
| M11 | Stack Plate - Center | Presses down the center of the edge for stapling. |
| M12 | Stapler | Moves the staple unit from side to side. |
| M13 | Stack Plate – Front | Presses down the front corner of the edge for stapling. |
| M14 | Stack Plate – Rear | Presses down the rear corner of the edge for stapling. |
| M15 | Stapler Rotation | Rotates the stapler 45 degrees for oblique stapling. |
| M16 | Staple Hammer | Drives the staple hammer. |
| M17 | Punch | Drives the punch shaft and roller. Punch Unit B531 (option). |
| M18 | Upper Transport | Drives the entrance rollers, the middle and upper transport rollers, and upper tray exit roller. |
| M19 | Shift Jogger | Drives the shift jogger fences against the sides of the sheets to align the stack, then reverses to return them to the home position. Jogger Unit B513 (option). |
| M20 | Shift Jogger Lift | Raises the shift jogger fences after aligning the stack, then reverses and lowers them when returning to the home position. Jogger Unit B513 (option). |
| **BOARDS** | | |
| PCB | Main | Controls the finisher and communicates with the copier. |
| PCB | Stapler | Controls the stapler unit. |
| PCB | Punch | Passes signals between the punch unit and the finisher main board. Punch Unit B531 (option). |
| PCB | Jogger | Controls the shift/jogger unit B513 (option). |
| **SENSORS** | | |
| S01 | Entrance | Detects the copy paper entering the finisher and checks for misfeeds. |
| S02 | Upper Tray Exit | Checks for misfeeds at the upper tray. |

| Symbol | Name | Function |
|---|---|---|
| S03 | Upper Tray Limit | Detects when the paper stack height in the upper tray is at its upper limit. |
| S04 | Shift Tray Exit | Checks for misfeeds at the shift tray exit. |
| S05 | Exit Guide Open | Detects whether the guide plate is opened or not. |
| S06 | Staple Mode HP 1 | Detects the shift tray home position for standby mode and for staple mode. |
| S07 | Staple Mode HP 2 | Detects the shift tray home position for standby mode and for staple mode. |
| S09 | Shift Lower Limit – Large Paper | Detects the lower limit for the shift tray when large paper sizes are being used |
| S10 | Shift Tray Lower Limit 2 | Not used. |
| S11 | Shift Tray Lower Limit 3 | Detects when the shift tray is at its lower limit. |
| S12 | Shift Mode HP | Detects the shift tray home position in sort/stack mode. |
| S13 | Stacking Roller HP | Detects when the stacking roller is at home position. |
| S14 | Shift Tray Half-Turn | Detects whether the shift tray is at either the front or home HP. |
| S15 | Pre-Stack Tray Paper | Determines when to turn off the pre-stack paper stopper solenoid. |
| S16 | Stapler Tray Exit | Detects jams at the staple tray exit. |
| S17 | Positioning Roller HP | Detects the home position of the positioning roller. |
| S18 | Stack Feed-Out Belt HP | Detects the home position of the stack feed-out belt. |
| S19 | Stapler Tray Paper | Detects the copy paper in the stapler tray. |
| S20 | Jogger HP | Detects the home position of the shift jogger fences. |
| S21 | Stack Plate - Center HP | Detects the home position of the center stack plate. |
| S22 | Stack Plate – Front | Detects the home position of the front stack plate. |
| S23 | Stack Plate – Rear | Detects the home position of the rear stack plate. |
| S24 | Stapler HP | Detects the home position of the staple unit for side-to-side movement. |
| S25 | Stapler Rotation HP | Detects the home position of the stapler unit for 45-degree rotation. |
| S26 | Stapler Return | Detects the on timing of the stapler return solenoid. |
| S27 | Staple Waste Hopper | Detects when the staple waste hopper is full. |
| S28 | Punch Waste Hopper | Detects when the punch waste hopper is full and detects when the punch tray is set. Punch Unit B531 (option). |
| S29 | Punch HP 1 | Detects the cam home position for the 2-hole punch. Punch Unit B531 (option). |
| S30 | Punch HP 2 | Detects the cam home position for 3/4 punch. Punch Unit B531 (option). |
| S31 | Shift Jogger HP | Detects the home position of the jogger unit arms during paper alignment. Jogger Unit B513 (option). |
| S32 | Shift Jogger Lift HP | Detects the when both shift jogger fences are at the lowered position and ready to move against the sides of the stack. Jogger Unit B513 (option). |

| Symbol | Name | Function |
|---|---|---|
| **SOLENOIDS** | | |
| SOL1 | (Upper) Tray Junction Gate | Drives the tray junction gate. |
| SOL2 | Stapler Junction Gate | Drives the stapler junction gate. |
| SOL3 | Pre-Stack Junction Gate | Drives the pre-stack junction gate. |
| SOL4 | Pre-stack Paper Stopper | Drives the stopper pawl of the pre-stacking tray. |
| SOL5 | Stapler Return | Positions the stapler correctly on its return from the staple supply point. |
| **SWITCHES** | | |
| SW1 | Shift Tray Upper Limit | Cuts the power to the shift tray lift motor when the shift tray position is at its upper limit. |
| SW2 | Front Door Safety | Cuts the dc power when the front door is opened. |
| SW3 | Emergency Stop | Switches the current job off and on to allow time for the operator to remove paper from the shift tray. |

# 7.3 DRIVE LAYOUT




1. Upper Transport Roller 2
2. Upper Tray Exit Roller
3. Lower Transport Roller 2
4. Shift Tray Lift Motor
5. Shift Tray Exit Motor
6. Shift Tray Exit Roller
7. Shift Tray
8. Shift Motor
9. Staple Tray Exit Roller
10. Positioning Roller
11. Lower Transport Roller 3
12. Lower Transport Motor
13. Lower Transport Rollers 2
14. Lower Transport Roller 1
15. Transport Roller 1
16. Entrance Roller 2
17. Entrance Roller
18. Upper Transport Roller 1
19. Upper Transport Motor
20. Stack Feed-out Motor
21. Jogger Motor
22. Jogger Fence
23. Stack Plate Motor
24. Stapler Motor
25. Stack Feed-out Belt
26. Stapler Rotation Motor

# COVER INTERPOSER TRAY
# B704

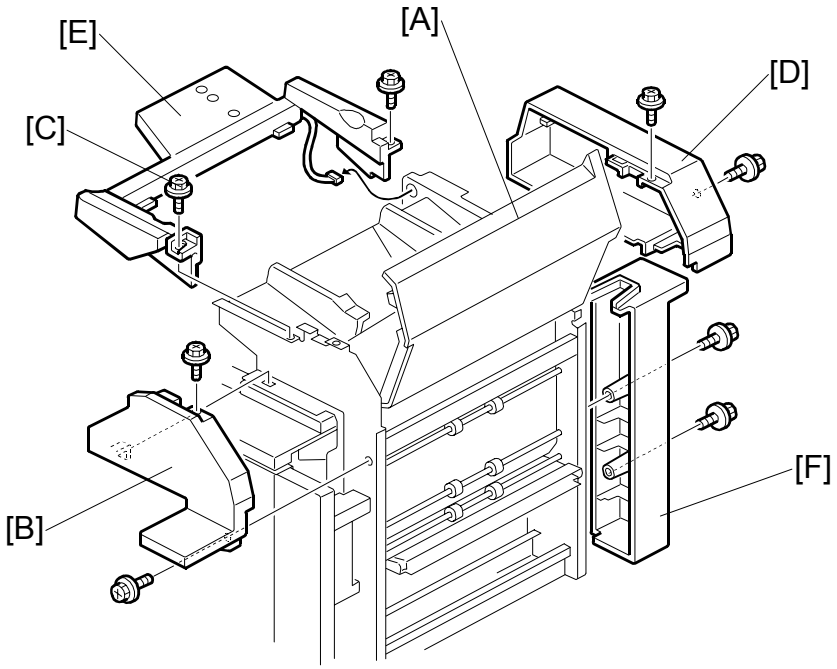
| REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| | | None |

# COVER INTERPOSER TRAY B704

## TABLE OF CONTENTS

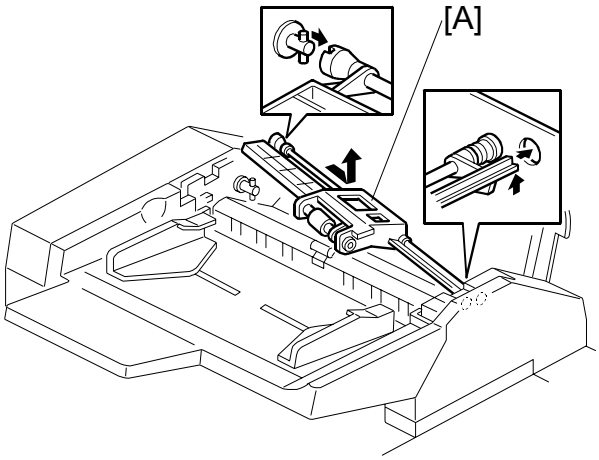
# 1. REPLACEMENT AND ADJUSTMENT

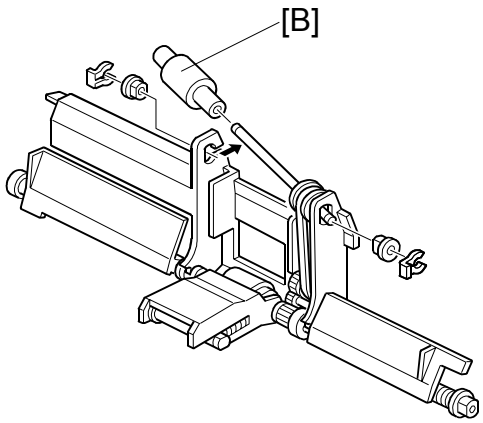
## 1.1 EXTERNAL COVERS




[A]: Open the feed cover.
[B]: Upper front cover (🔩 x 2)
**NOTE:** To remove the upper front cover, screw [C] must be removed.
[D]: Rear upper cover (🔩 x 2)
[E]: Slip sheet tray (🔩 x 2, 🔌 x 1)
[F]: Rear middle cover (🔩 x 2)

# 1.2 FEED UNIT AND PICK-UP ROLLER



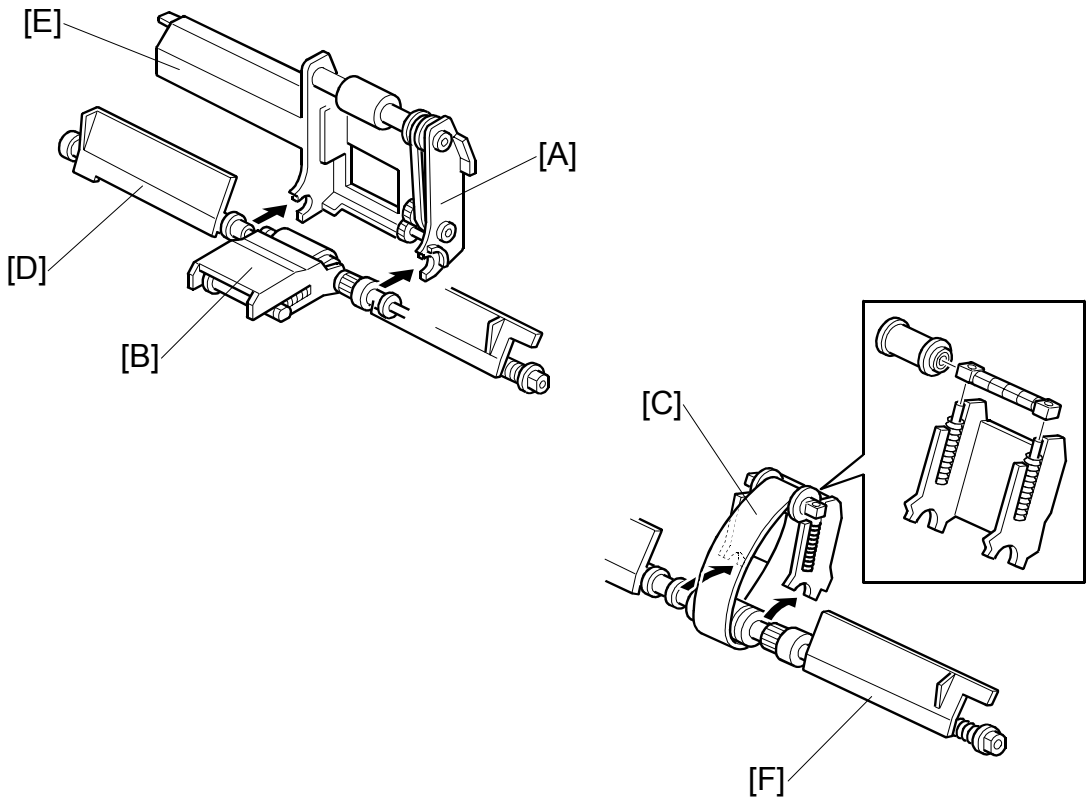

Open the feed cover.

[A]: Feed unit

- The unit is spring loaded. Push it to the right to release it, then lift it out.

[B]: Pick-up roller (x 2, bushings x 2)

# 1.3 FEED BELT




Feed unit (☛ 1.2)

[A]: Pick-up roller unit.
- Pull the unit away from the bushings in the direction of the arrow.

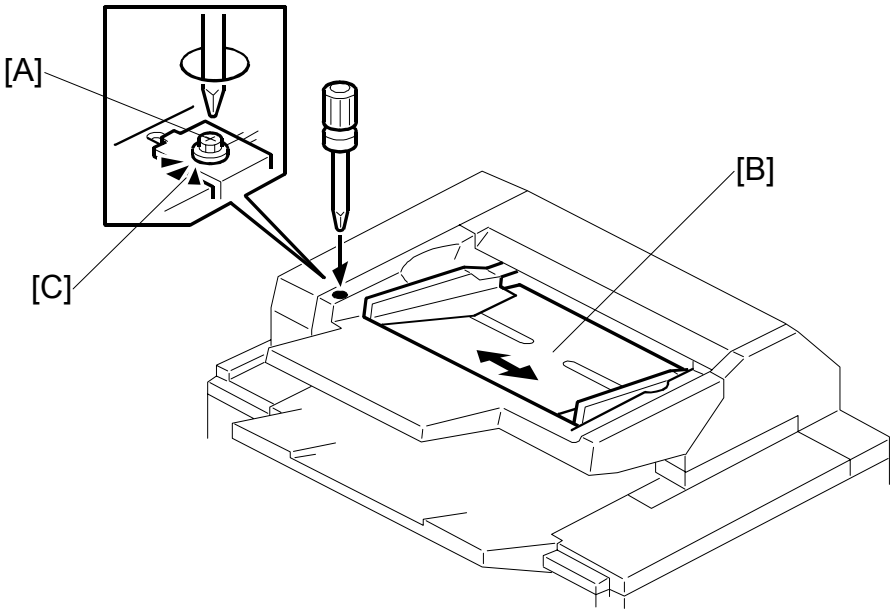
[B]: Feed belt holder
- Hold the feed belt holder by the sides, then lift up to separate from the holder.
- Pull slowly to avoid losing the springs.

[C]: Feed belt.

**Re-assembly**

1. Position the pick-up roller unit [A] and feed belt holder [B] as shown above.
2. On the rear side, slide out the bushing, and rotate [D] until its flat side is parallel with [E], then snap it on.
3. On the front side, rotate [F] until its flat side is parallel with [D], then snap it on. Viewed from the bottom, the plates must be aligned.

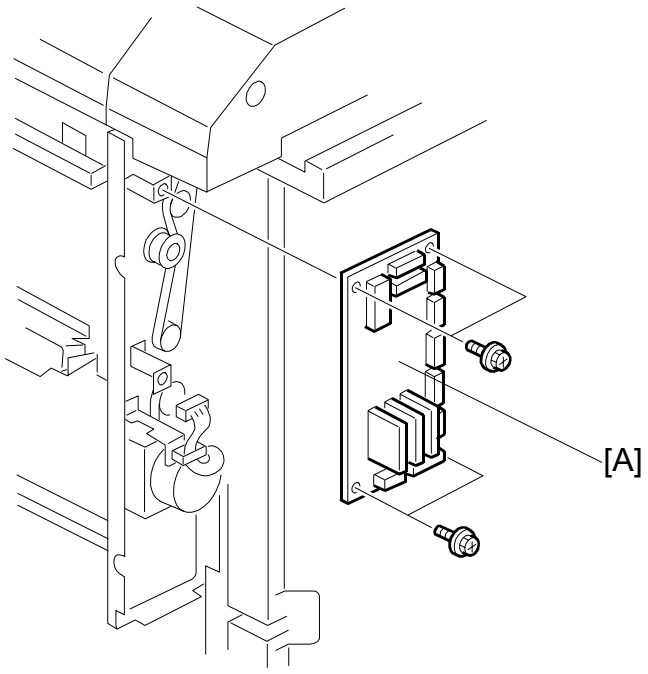
# 1.4 GUIDE PLATE ADJUSTMENT




Adjust the guide plate if the holes punched in the covers or slip sheets are not correctly aligned with holes punched in the other sheets.

1. Open the feed cover.
2. Loosen the screw [A].
3. Push the table [B] left or right to change its position, then tighten the screw.
   **NOTE:** If you want to see the scale [C], you must remove the rear cover and the support tray.

# 1.5 MAIN BOARD




Open the top cover.

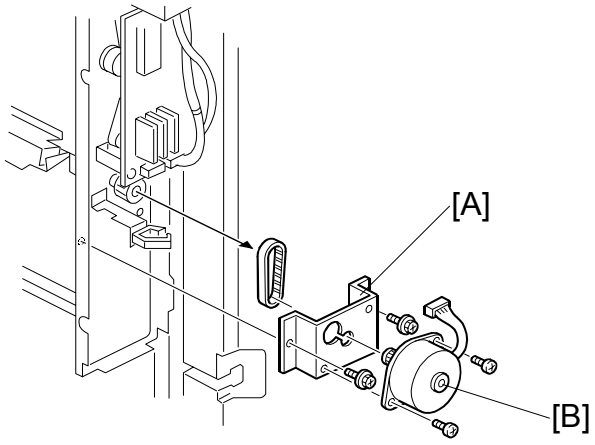
Rear cover (x 1)

[A]: Main board (x 9, x 4)

**NOTE:** All DIP switch settings on the main board of the cover sheet unit should be set to OFF.

# 1.6 MOTOR REPLACEMENT

## 1.6.1 VERTICAL TRANSPORT MOTOR



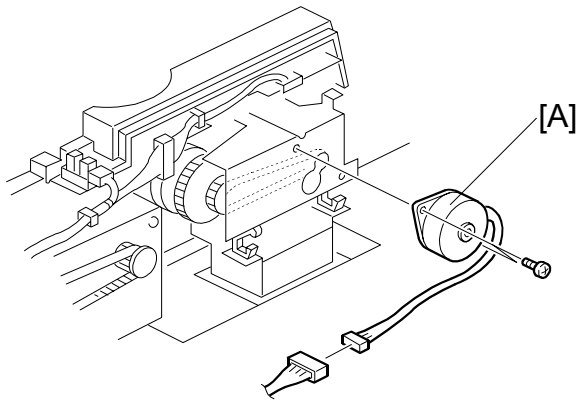

Open the top cover.

Rear middle cover (x 1) (☛ 1.1)

[A]: Motor bracket (x 1, harness x 1, x 2, timing belt x 1)

[B]: Motor (x 2)

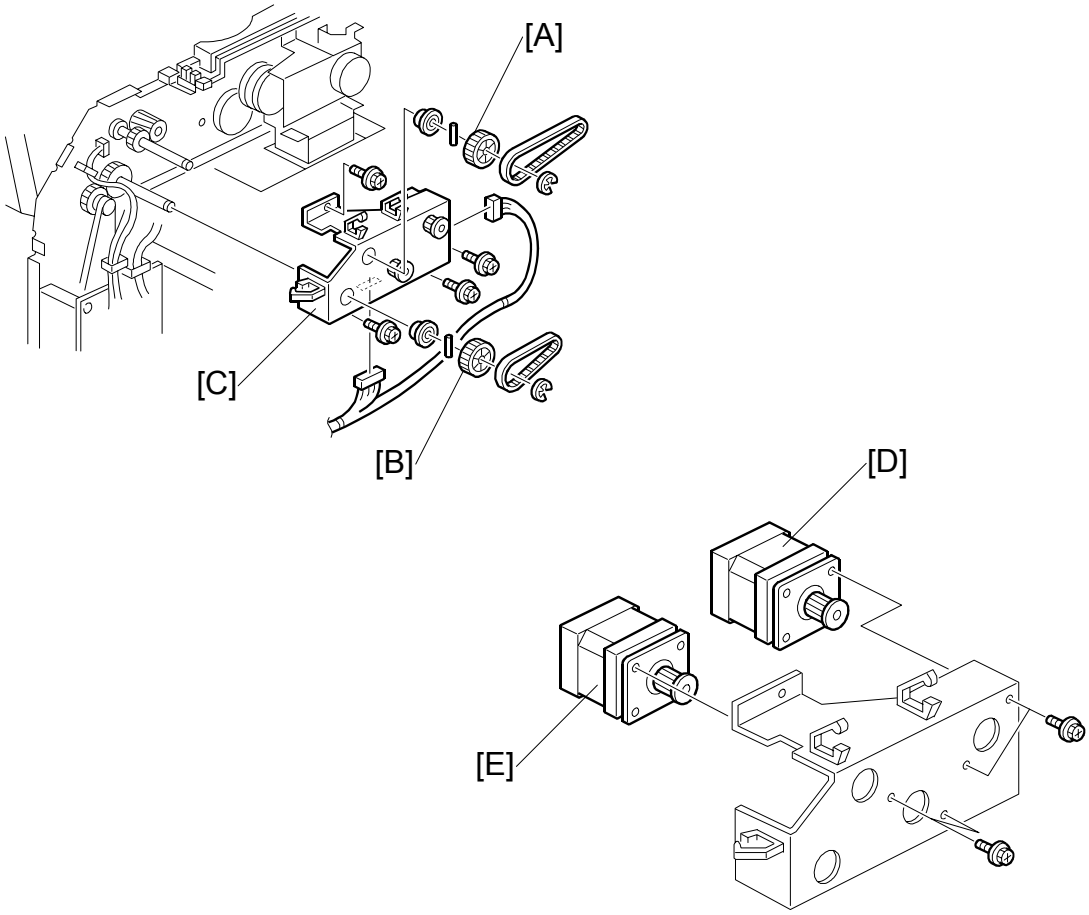
## 1.6.2 BOTTOM PLATE LIFT MOTOR




Rear upper cover (☛ 1.1)

[A]: Bottom plate lift motor (harness x 2, x 1, x 2)

## 1.6.3 FEED MOTOR, TRANSPORT MOTOR




Rear upper cover (☛ 1.1)

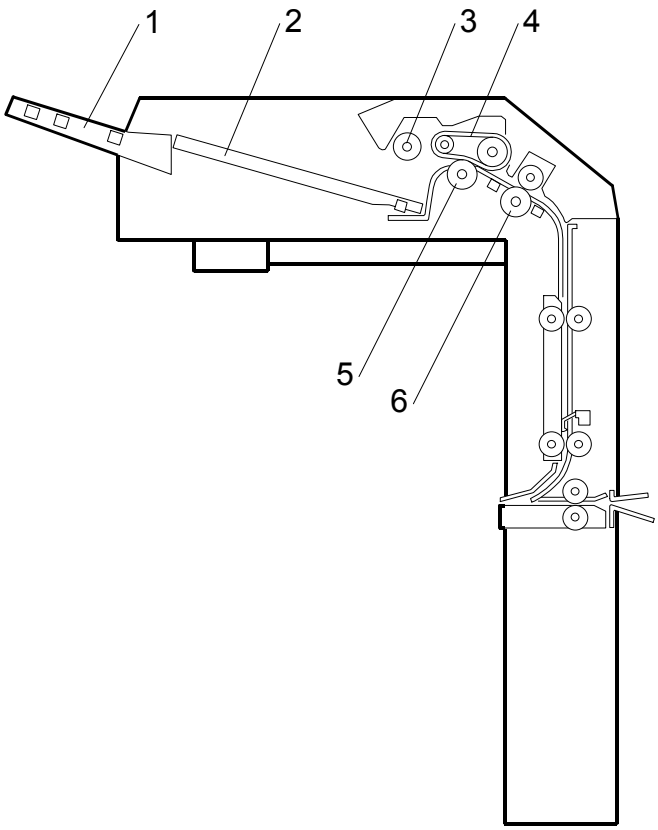
**NOTE:** When removing the feed gear and transport gear, hold one hand under the gear to catch the pin as it falls from the hole in the shaft.

[A]: Feed gear (ℂ x 1, pin x 1, timing belt x 1, bushing x 1)
[B]: Transport gear (ℂ x 1, pin x 1, timing belt x 1, bushing x 1)
[C]: Motor bracket (harness x 5, 𝒻 x 4)
[D]: Feed motor (🖳 x 1, 𝒻 x 2)
[E]: Transport motor (🖳 x 1, 𝒻 x 2)

# 2. DETAILS

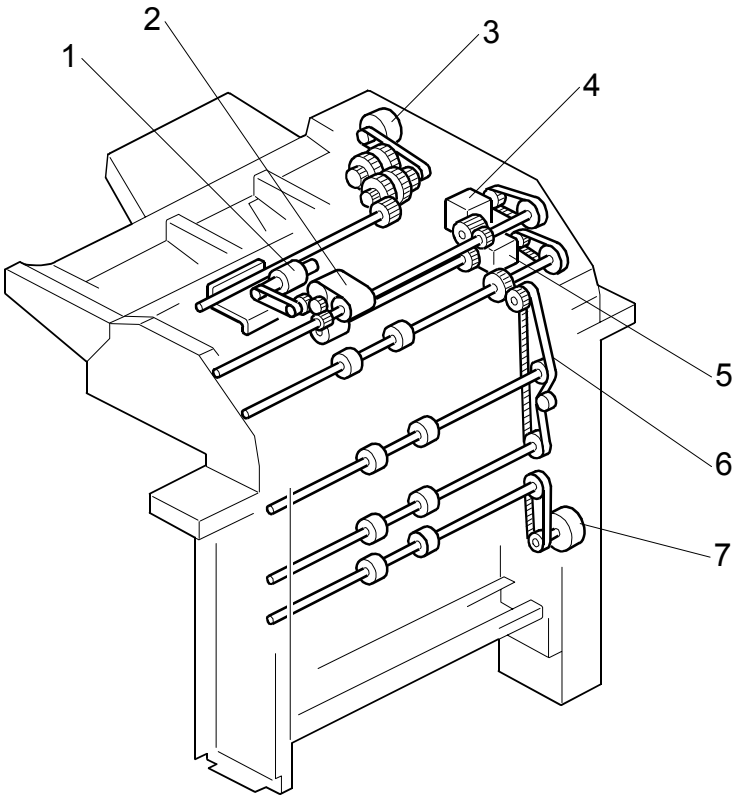
## 2.1 OVERVIEW

### 2.1.1 MAIN LAYOUT




1. Support tray
2. Slip sheet tray
3. Pick-up roller
4. Feed belt
5. Separation roller
6. Grip roller

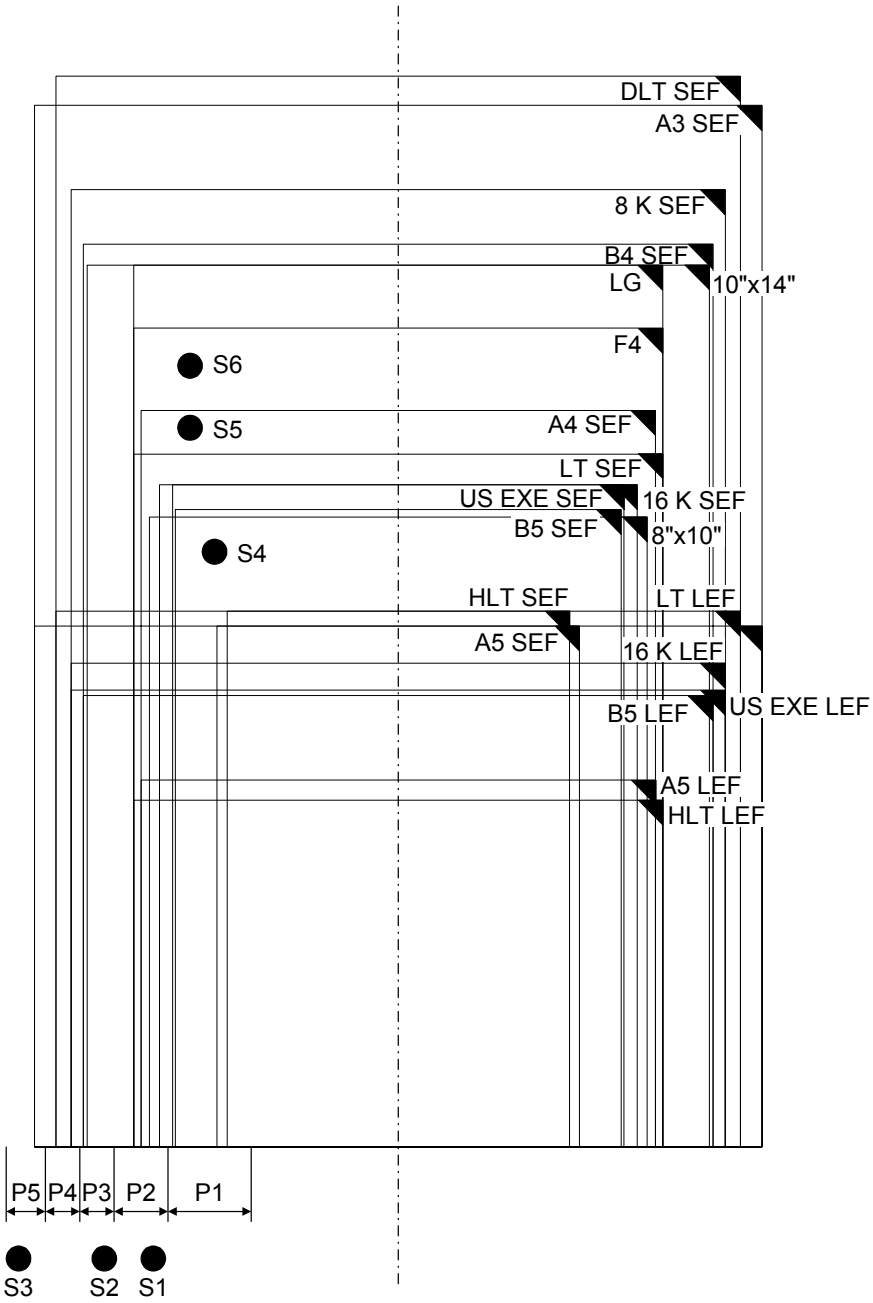
## 2.1.2 DRIVE LAYOUT




1. Pick-up Roller
2. Feed Belt
3. Bottom Plate Lift Motor
4. Feed Motor
5. Transport Motor
6. Timing Belt
7. Vertical Transport Motor

## 2.1.3 PAPER SIZE DETECTION

The width sensors [A] (S1, S2, S3) and length sensors [B] (S4, S5, S6) detect the width and length of the original on the interposer feed tray.



The table below lists the sensor output for each paper size.

| | S1 | S2 | S3 | S4 | S5 | S6 |
|---|---|---|---|---|---|---|
| A3 | 0 | 1 | 1 | 1 | 1 | 1 |
| B4 | 1 | 1 | 0 | 1 | 1 | 1 |
| A4 SEF | 1 | 0 | 0 | 1 | 1 | 0 |
| A4 LEF | 0 | 1 | 1 | 0 | 0 | 0 |
| B5 SEF | 0 | 0 | 0 | 1 | 0 | 0 |
| B5 LEF | 1 | 1 | 0 | 0 | 0 | 0 |
| A5 SEF | 0 | 0 | 0 | 0 | 0 | 0 |
| A5 LEF | 1 | 0 | 0 | 0 | 0 | 0 |
| 11" x 17" | 1 | 1 | 1 | 1 | 1 | 1 |
| 10" x 14" SEF | 1 | 1 | 0 | 1 | 1 | 1 |
| 8 1/2" x 14" | 1 | 0 | 0 | 1 | 1 | 1 |
| 8 1/2" x 13" | 1 | 0 | 0 | 1 | 1 | 1 |
| 8 1/2" x 11" | 1 | 0 | 0 | 1 | 0 | 0 |
| 11" x 8 1/2" | 1 | 1 | 1 | 0 | 0 | 0 |
| 8" x 10" | 1 | 0 | 0 | 1 | 0 | 0 |
| 5 1/2" x 8 1/2" | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 1/2" x 5 1/2" | 1 | 0 | 0 | 0 | 0 | 0 |
| 7 1/2" x 10 1/2" (US Exec.) | 0 | 0 | 0 | 1 | 0 | 0 |
| 10 1/2" x 7 1/2" (US Exec.) | 1 | 1 | 1 | 0 | 0 | 0 |
| 8 K | 1 | 1 | 1 | 1 | 1 | 1 |
| 16 K SEF | 1 | 0 | 0 | 1 | 0 | 0 |
| 16 K LEF | 1 | 1 | 1 | 0 | 0 | 0 |

The cover interposer tray detects all the paper sizes listed above. However, there are some limitations on the display of the correct paper size.

| | | North America | Europe/Asia |
|---|---|---|---|
| B4 SEF | 257 x 364 mm | Displays 10"x14 *1 | |
| B5 SEF | 182 x 257 | Displays "US Exec." *1 | |
| A5 SEF | 148 x 210 | Displays "HLT SEF" *1 | |
| A5 LEF | 210 x 148 | Displays "HLT LEF" *1 | |
| DLT SEF | 11" x 17" | | Displays "8K LEF" *2 |
| LG SEF | 8 1/2" x 14" | | Displays "F4 SEF" *2 |
| LT SEF | 8 1/2" x 11" | | Displays "16 K SEF" *2 |
| LT LEF | 11" x 8 1/2" | | Displays "16 K LEF" *2 |

*1: Cannot be corrected.

*2: B064 series: Can be corrected with SP5959 006 (Paper Size – Cover Sheet).
B140 series: Can be corrected with SP5158

### B064 series: Paper Size Detection

#### North America

Execute SP5959 006 and enter the correct number for the size of the paper loaded for feeding from the cover interposer tray.

| Loaded | Display (Default) | To Select for Display | Enter |
|---|---|---|---|
| 8 1/2" x 13" | 8 1/2" x 14" | 8 1/2" x 13" | 165 |
| 10 1/2" x 7 1/2" | 8 1/2" x 11" | 10 1/2" x 7 1/2" | 173 |
| 8" x 10" | 8 1/2" x 11" | 8" x 10" | 171 |

#### Europe/Asia

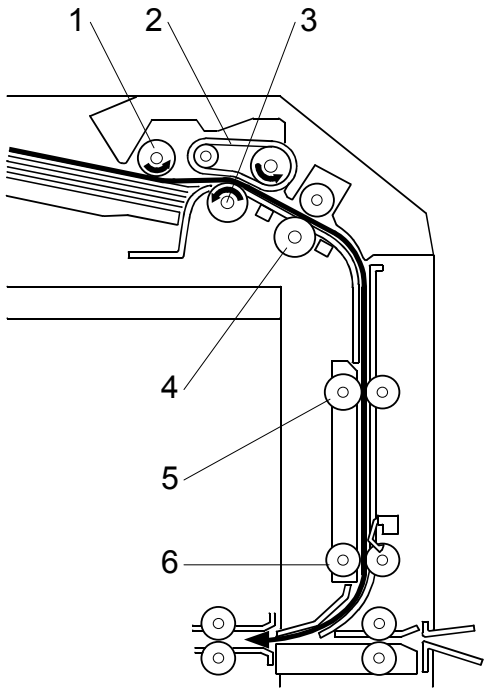
Execute SP5959 006 and enter the correct number for the size of the paper loaded for feeding from the cover interposer tray.

| Loaded | Display (Default) | To Select for Display | Enter |
|---|---|---|---|
| 11" x 17" | 8 K | 11" x 17" | 160 |
| 8 1/2" x 11" | 16 K SEF | 8 1/2" x 11" | 166 |
| 11" x 8 1/2" | 16 K LEF | 11" x 8 1/2" | 38 |
| 8 1/4" x 13" | 8 1/2" x 13" SEF | 8 1/4" x 13" | 168 |

### B070/B071, B140 series: Paper Size Detection

Some paper sizes are almost the same and cannot be detected as different sizes by the sensors. To select the sizes that are detected, use SP 5158.

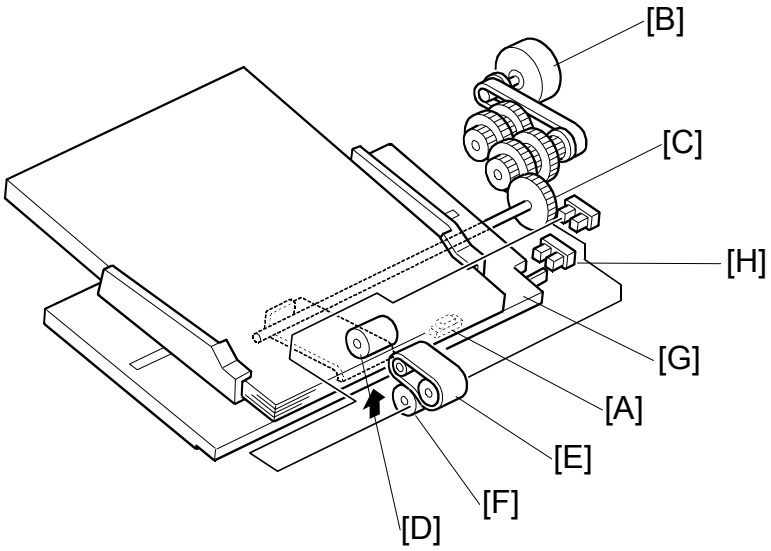
## 2.1.4 PAPER PATH




1. Pick-up Roller
2. Feed Belt
3. Separation Roller
4. Grip Roller
5. Transport Roller 1
6. Transport Roller 2

The paper feeds from the tray, to the feed belt, then to the grip roller and down into the paper path to the finisher below.

# 2.2 PAPER FEED




### *Power On*

When paper is placed on the tray, the paper set sensor [A] in the tray actuates and switches on the bottom plate lift motor [B]. The top of the stack raises the pick-up roller unit until the actuator on this unit actuates the pick-up roller position sensor [C] and switches the motor off.

### *Paper Separation and Feed*

The pick-up roller [D] picks up the original, and the feed belt [E] feeds the sheet to the grip roller. The separation roller [F] reverses if more than one sheet is fed

### *Bottom Tray Lift*

As sheets feed from the top of the stack:

- The pick-up roller unit descends until the actuator on the pick-up roller unit drops out of the pick-up roller position sensor [C].
- The bottom plate lift motor switches on to raise the stack until the actuator enters the pick-up roller unit position sensor again and switches the motor off.
- This repeats until the end of the job or until paper runs out.

### *Paper Near-end*

Near-end is detected when the actuator [G] on the bottom plate enters the near-end sensor [H].

### *Paper End*

After the last sheet feeds the paper set sensor [A] goes off and signals paper out.

# 9-BIN MAILBOX
# B762

| REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| | | None |

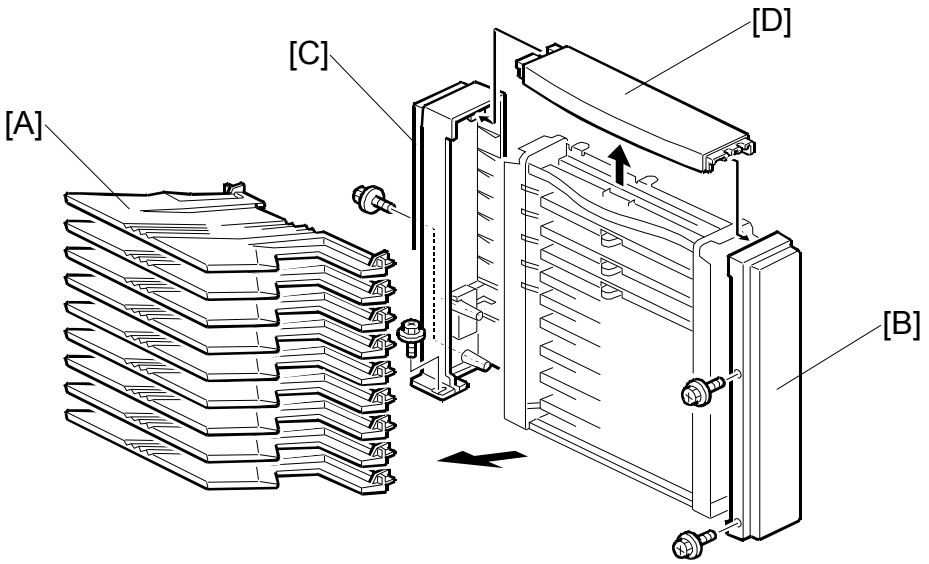
# 9-BIN MAILBOX B762

## TABLE OF CONTENTS

# 1. REPLACEMENT AND ADJUSTMENT

**⚠CAUTION**
**Switch the machine off and unplug the machine before starting and procedure in this section.**

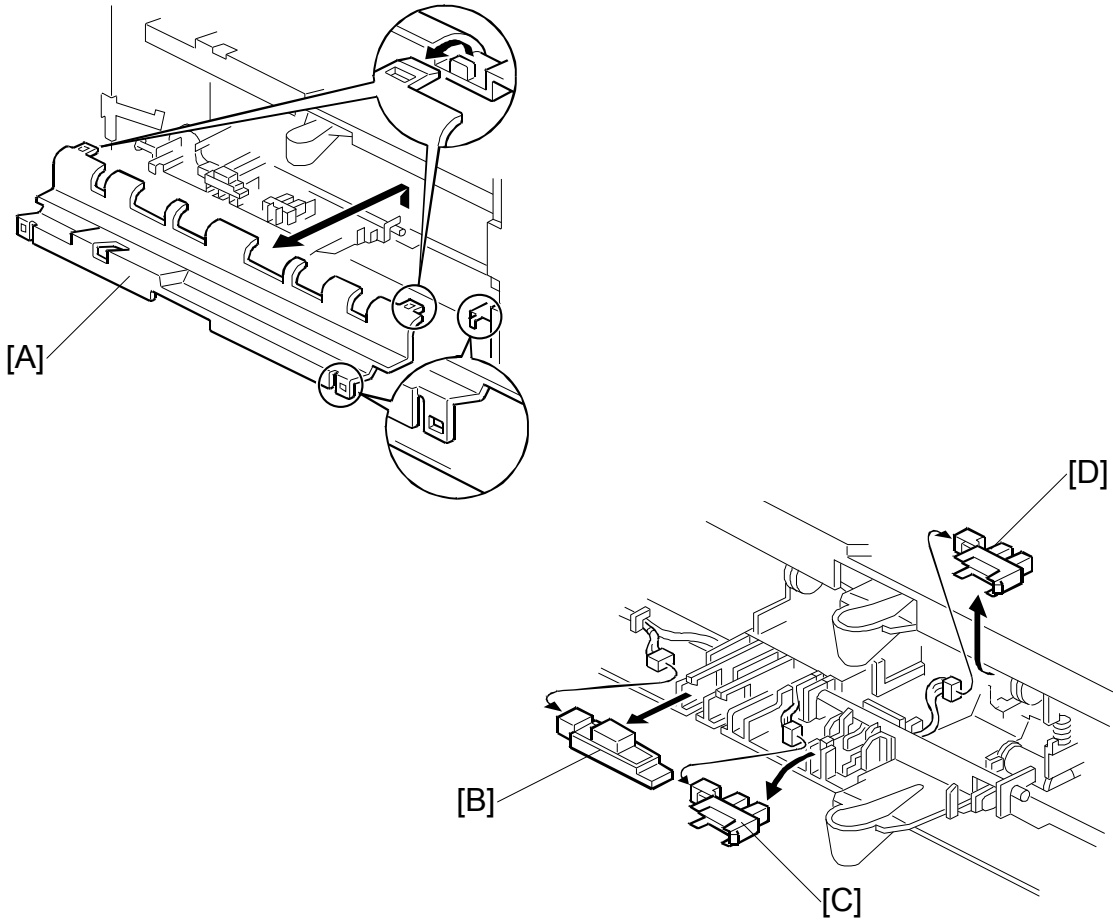
## 1.1 COVERS AND TRAYS




[A]: Trays
- Grip each tray by the front and lift out.

[B]: Front cover (x 2)
[C]: Rear cover (x 3)
[D]: Top cover

# 1.2 SENSORS




Remove the tray (☛ 1.1)

[A]: Bin cover

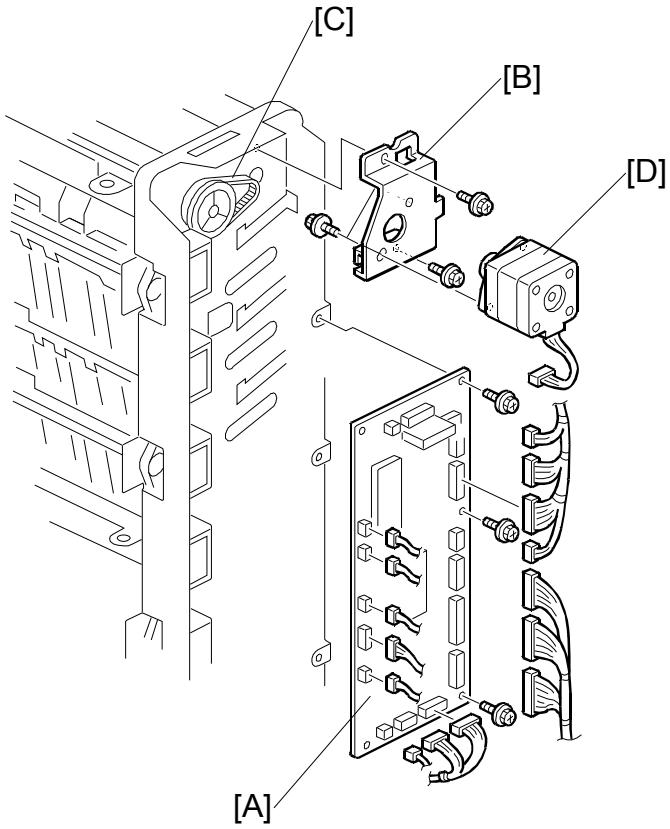
[B]: Tray sensor (🖑 x 1)

[C]: Tray overflow sensor (🖑 x 1)

[D]: Vertical transport sensor (🖑 x 1)

- Raise the pawl, then grip the bottom of the sensor to remove.

# 1.3 MAIN MOTOR AND CONTROL BOARD



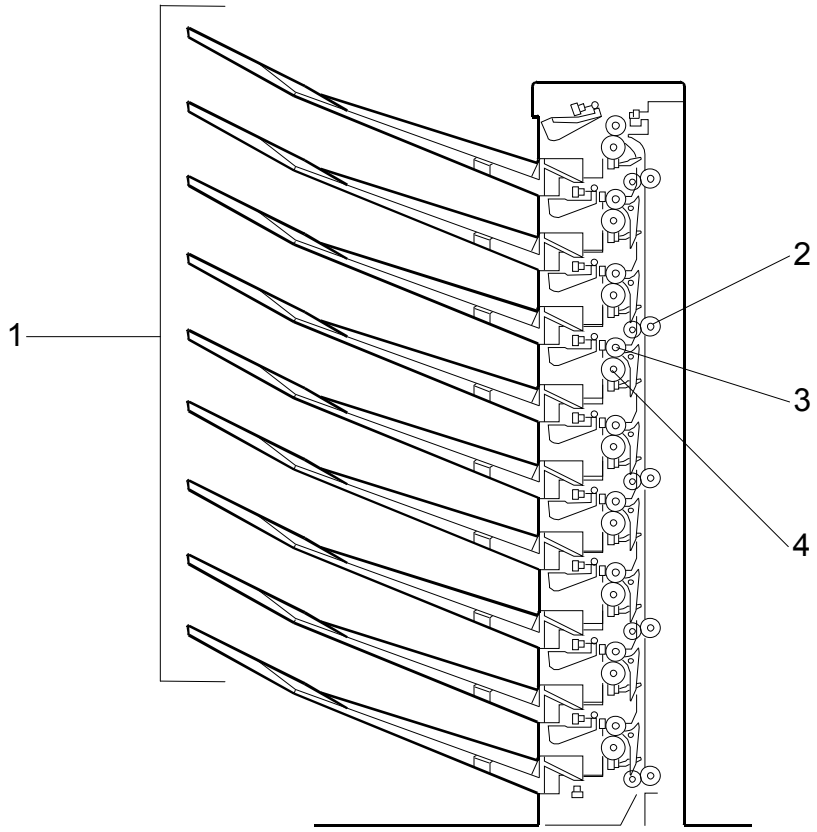

Rear cover (☛ 1.1)

[A]: Control board (🔩 x 3, 🖐 x 17)
[B]: Main motor bracket (main motor 🖐 x 1, 🔩 x 2)
[C]: Timing belt
[D]: Main motor (🔩 x 1)

# 2. DETAILS

## 2.1 OVERVIEW

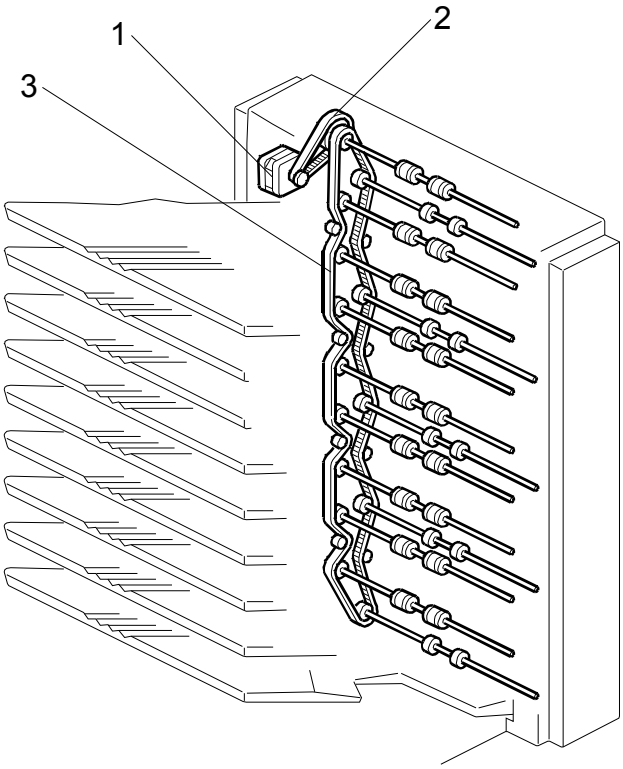
### 2.1.1 MAIN COMPONENT LAYOUT




1. Bins (x 9)
2. Vertical Transport Rollers (x 5)
3. Turn Gates (x 8)
4. Exit Rollers (x 9)

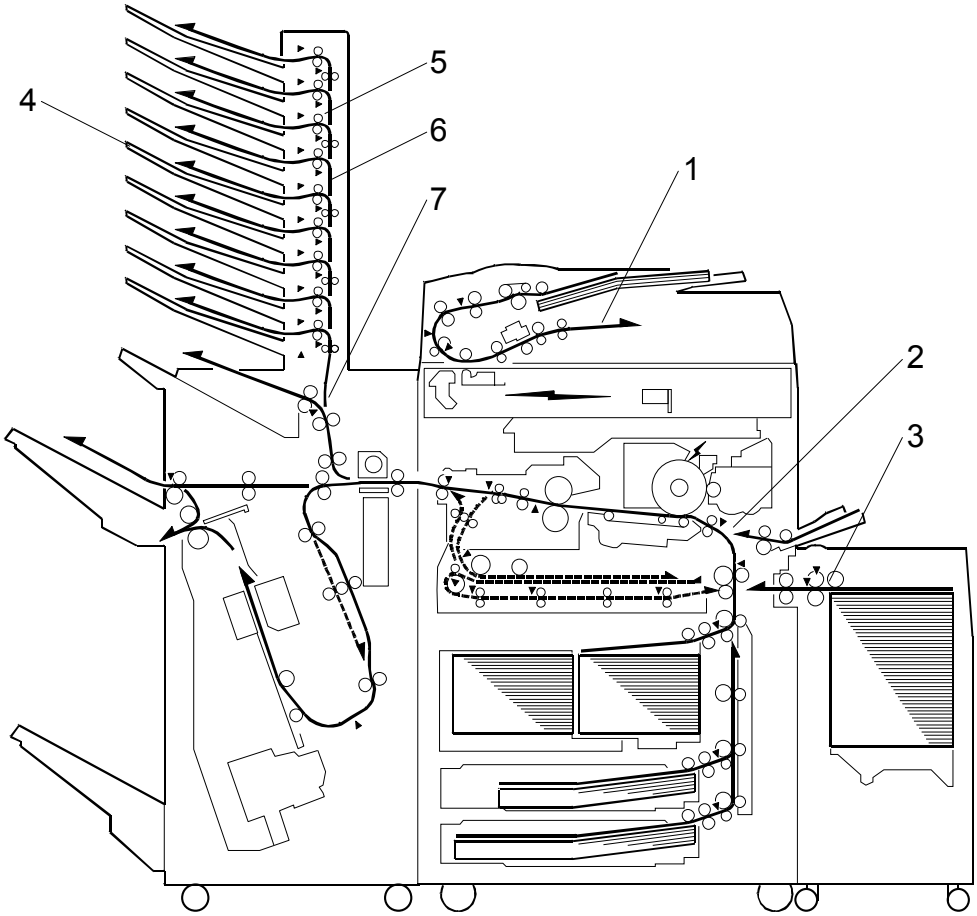
The trays are 1 to 9 (bottom to top). The numbers are clearly marked on the side of the unit. The top tray does not require a turn gate. When the top tray is selected for output, all turn gates remain closed, leaving only the top bin open.

## 2.1.2 DRIVE LAYOUT




1. Main Motor
2. Main Timing Belt
3. Timing Belt

## 2.1.3 PAPER PATH

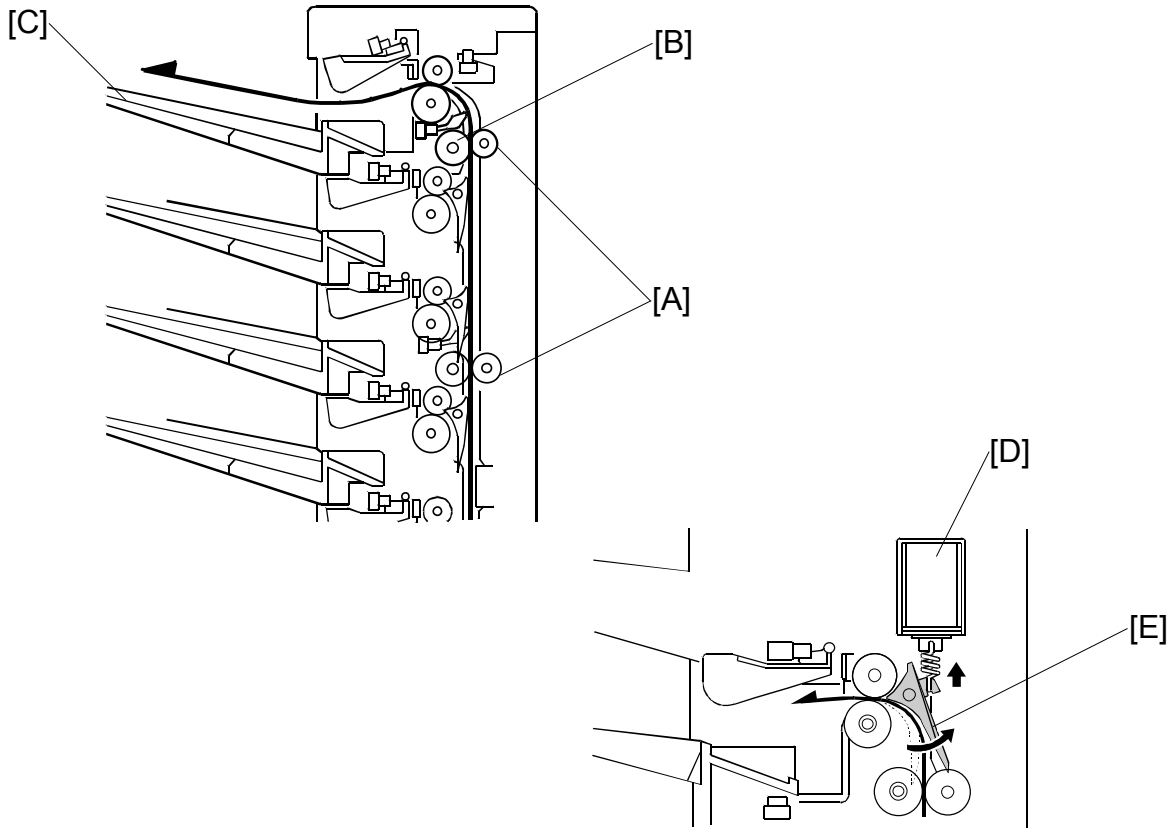



1. Original Paper Path
2. Vertical Transport Path
3. LCT Feed
4. Selected Trays
5. Turn Gates
6. Mailbox Paper Path
7. Junction Gate (paper goes either up to the mailbox or out to the finisher's proof tray)

The solenoid for the junction gate (7) is part of the mailbox.

# 2.2 BASIC OPERATION

## 2.2.1 PAPER PATH






The unit is mounted on top the finisher and connected to the finisher by a 14-pin connector. When the leading edge of the paper passes and activates the entrance sensor of the finisher, the mailbox main motor switches on and the mailbox vertical transport rollers [A] begin to turn. The exit roller [B] feeds the paper out to the selected tray [C].

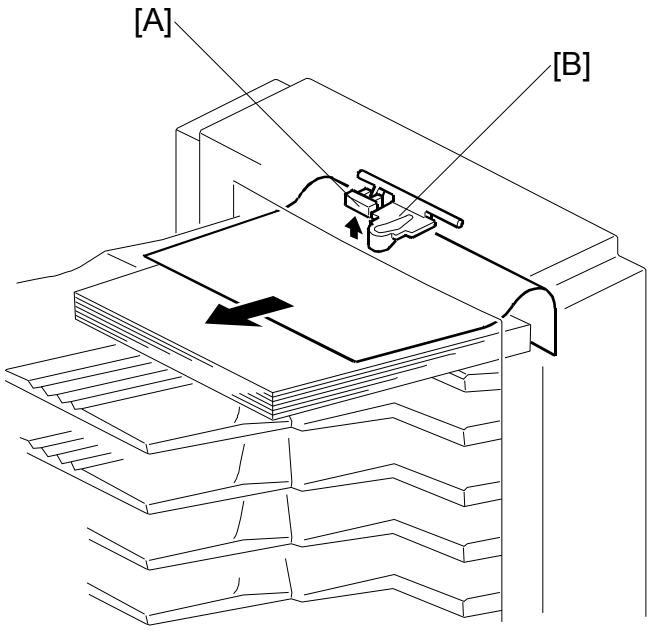
A solenoid [D] opens and closes the junction gate [E]. When a solenoid switches on, the gate opens and directs to the paper to the tray.

**NOTE:** When the top tray (bin 9) is selected, all solenoids are off and closed, allowing the paper to pass to the top tray (bin 9 does not require a solenoid).

When the last sheet is fed out, it switches off the vertical transport sensor, and both the mailbox main motor and the junction gate solenoid of the selected bin switch off. The mailbox normally feeds paper at 372 mm/s, about the same speed as the finisher. (The finisher speed is 370 mm/s.)

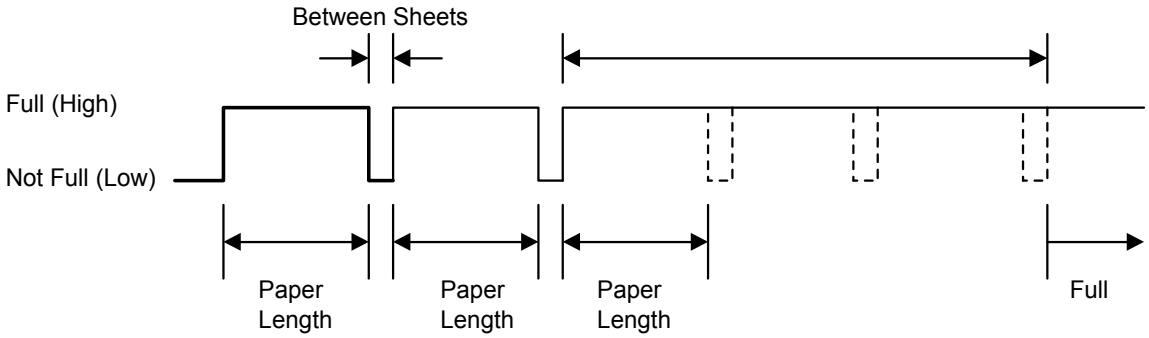
# 2.3 OVERFLOW DETECTION

## 2.3.1 OVERVIEW




An overflow sensor [A] and actuator [B] are above the exit of each paper tray. The actuator, mounted on a swivel arm, remains in contact with the top of the stack. The actuator rises as the stack becomes higher until it activates the sensor. Then, a tray full message appears on the operation panel and the job halts. If the paper is removed before the tray is full, the job continues.

## 2.3.2 DETECTION TIMING




When the mailbox exit sensor goes high for the prescribed time (T), the machine determines that the tray is full. The value of T is calculated, regardless of paper size, as follows:

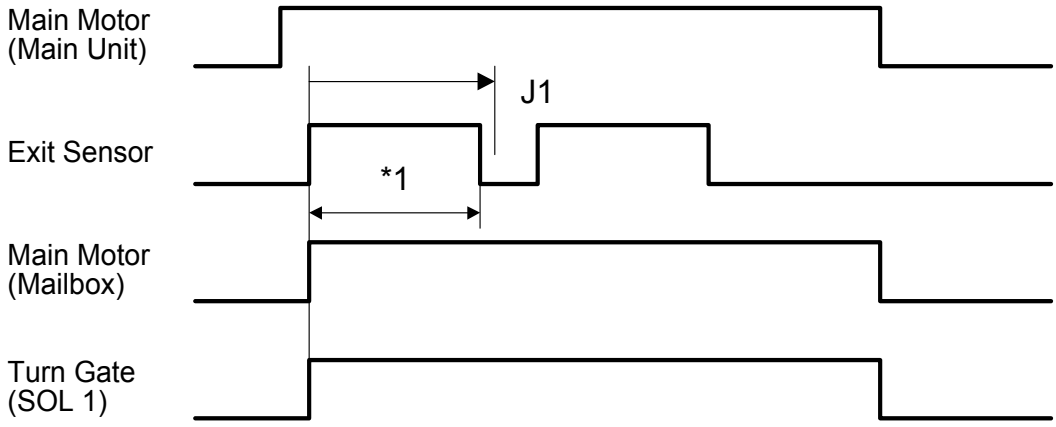
T (s) = (60/s x max. size ppm) x 3 s

After the tray full sensor switches on, if it remains on for the feeding of eight additional sheets, then this notifies the machine that the tray is full.

“T” is calculated as shown below. For example, for a minimum ppm of 12 prints (regardless of paper size), the value T is 15 s. Then, if the sensor detects paper for 15 s or more, the machine stops the copy job.

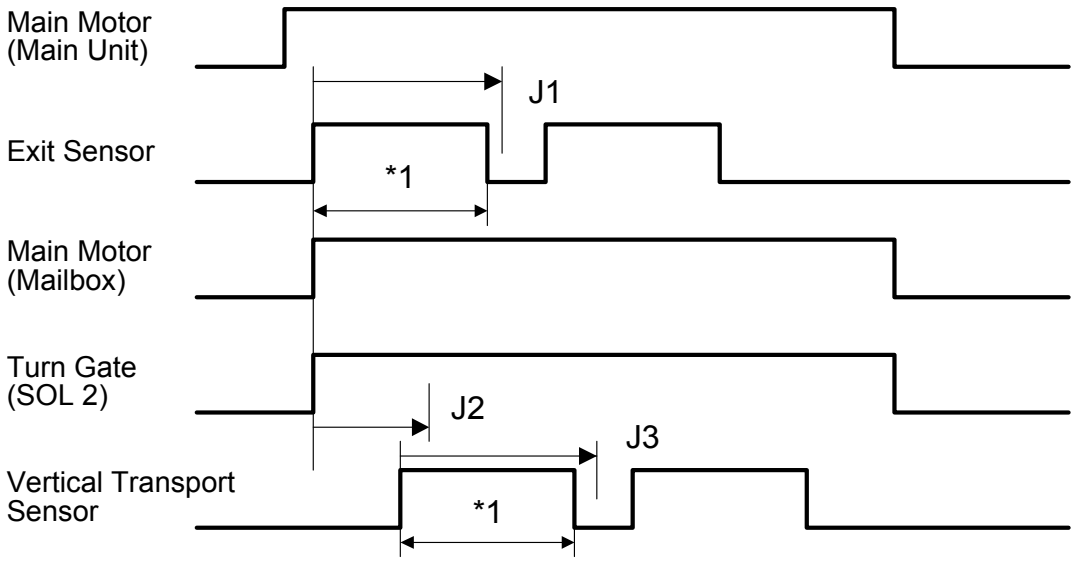
# 2.4 PAPER MISFEED DETECTION TIMING

## 2.4.1 A4 SIDEWAYS (LEF) → 1ST BIN TRAY




***1: Time required for A4 LEF**

## 2.4.2 A4 SIDEWAYS (LEF) → 2ND ~ 9TH BIN TRAY




***1: Time required for A4 Sideways (LEF)**
***2: Feed to 9th Tray: All SOLs OFF.**

**J1 Timing:** After the leading edge of the sheet activates the mailbox exit sensor, a misfeed is detected if the sensor does not switch off within:

X+0.5 s

Where X = The amount of time prescribed for the paper size to pass the sensor. (X = 1.74 s for A4 Sideways for example)

**J2 Timing:** After the mailbox paper exit sensor is activated, the machine determines that the paper has not yet fed and detects a misfeed if the vertical transport sensor does not activate within the time prescribed for the paper size (1.94 s for A4 paper, for example)

**J3 Timing:** After the vertical transport sensor is activated, a misfeed is detected if the vertical transport sensor does not turn off within:

X+0.52 s

Where X = The amount of time prescribed for the paper size to pass the sensor. (X = 2.26 s for A4 Sideways for example)

# FINISHER
# SR4010/SR4040/SR4020/SR4030
# D373/D374

| REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| | | None |

# FINISHER SR4010/SR4040/SR4020/ SR4030 D373/D374

## TABLE OF CONTENTS

# Read This First

## Safety and Symbols

### Replacement Procedure Safety

**⚠CAUTION**

- Turn off the main power switch and unplug the machine before beginning any of the replacement procedures in this manual.

### Symbols Used in this Manual

This manual uses the following symbols.

☛: See or Refer to

: Screws

: Connector

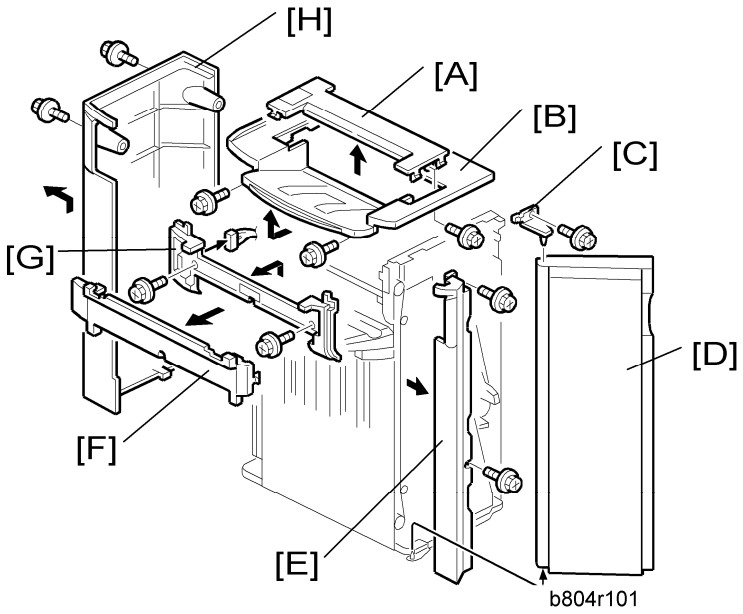
: Clip ring

: E-ring

# 1. REPLACEMENT AND ADJUSTMENT

## 1.1 COVERS

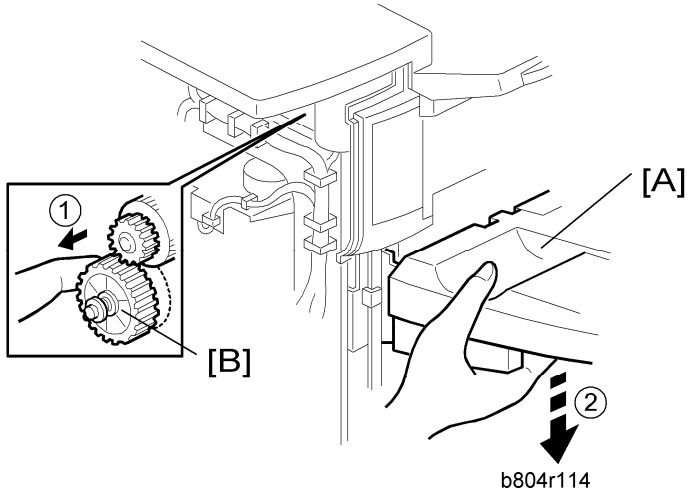
### 1.1.1 EXTERIOR COVERS



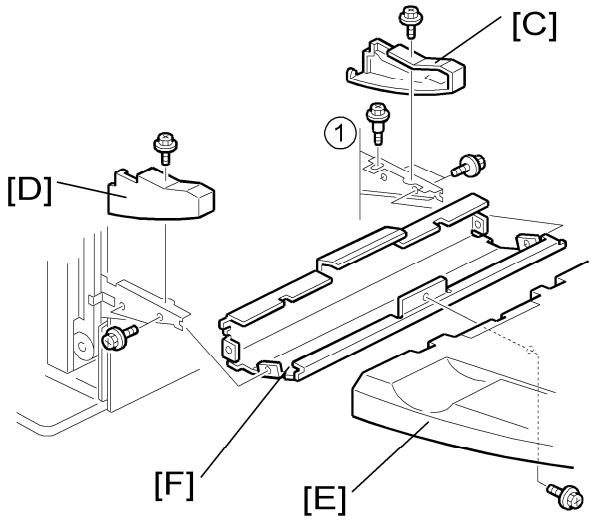

1. Open the front door [D].
2. Small upper cover [A] (x1)
3. Upper cover [B] (x2)
4. Front door bracket [C] (x1)
5. Front door [D]
6. Front left side cover [E] (x2)
7. Cover [F]
8. Paper exit cover [G] (x2)
9. Rear cover [H] (x2)

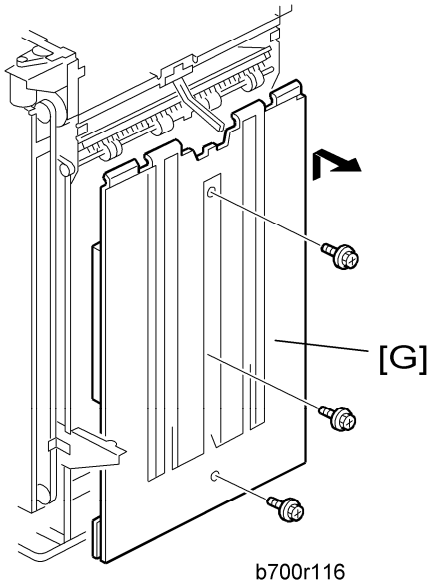
## 1.1.2 UPPER TRAY, END FENCE

1. Remove the rear cover. (* "Exterior Covers")




1. Support the tray [A] with your right hand.
2. Pull gear [B] toward you ① to release.
3. Slowly lower the tray ② until it stops.

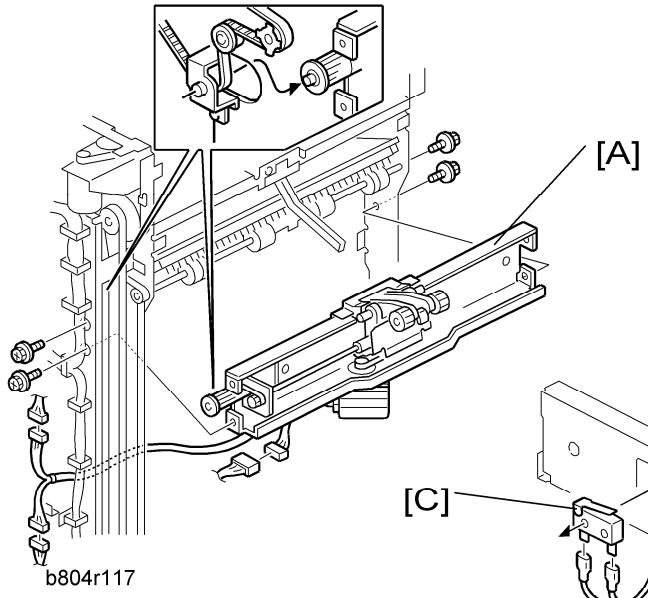


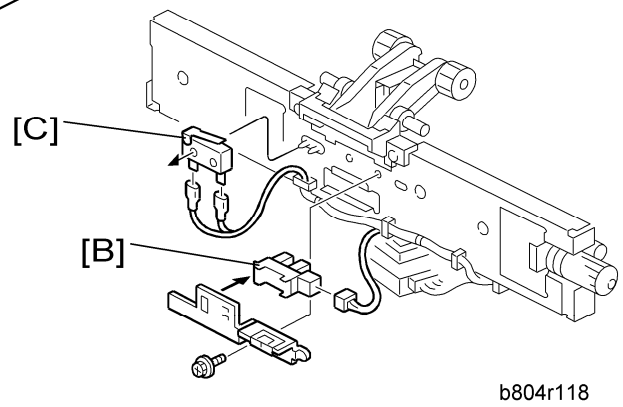




4. Front side cover [C] (x1)
5. Rear side cover [D] (x1)
6. Upper tray [E] (x1)
7. Tray bracket [F] (x4, x1 shoulder screw ①)
8. End Fence [G](x3)

# 1.2 MAIN UNIT

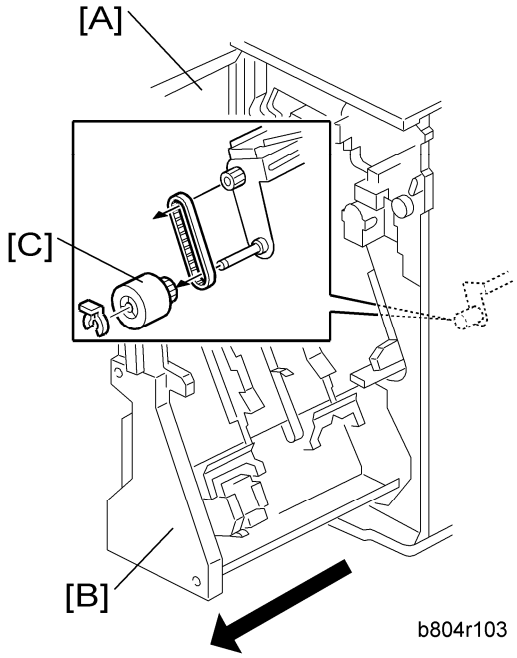
## 1.2.1 UPPER TRAY LIMIT SENSOR, LIMIT SWITCH



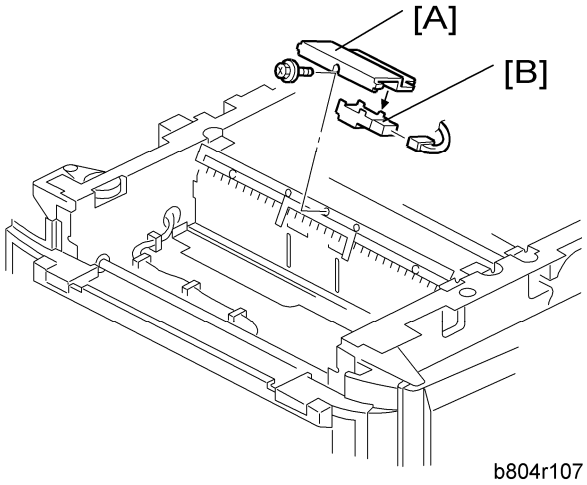

1. Front door, front left side cover, rear cover, upper cover (☛ "Exterior Cover")
2. End fence (☛1.1.2 "Upper Tray, End Fence")
3. Upper tray exit mechanism [A] (x4, x3)
4. Upper tray limit sensor [B] (x1, x1)
5. Upper tray limit switch [C] (x2)

## 1.2.2 POSITIONING ROLLER




1. Open the front door [A].
2. Pull out the stapling unit [B].
3. Positioning roller [C] (x1, timing belt x1)

## 1.2.3 PROOF TRAY EXIT SENSOR

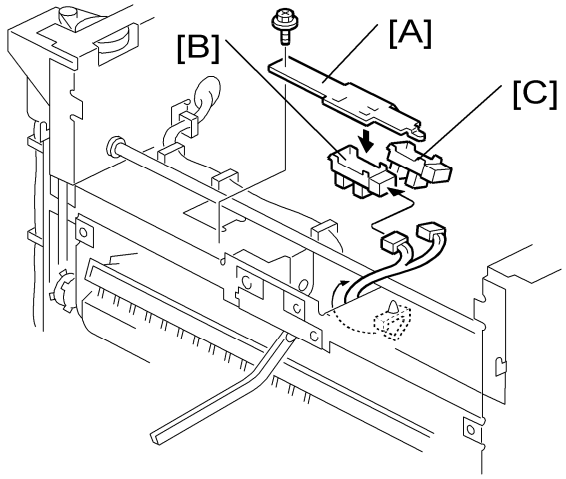



1. Small upper cover (1.1.1 "Exterior Cover")
2. Proof tray exit sensor bracket [A] (x1)

Main Unit

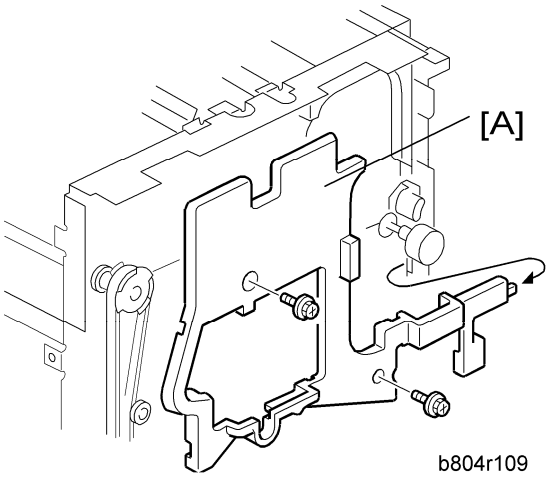
3. Proof tray exit sensor [B] (☞ x1)

## 1.2.4 UPPER TRAY HEIGHT SENSORS 1, 2

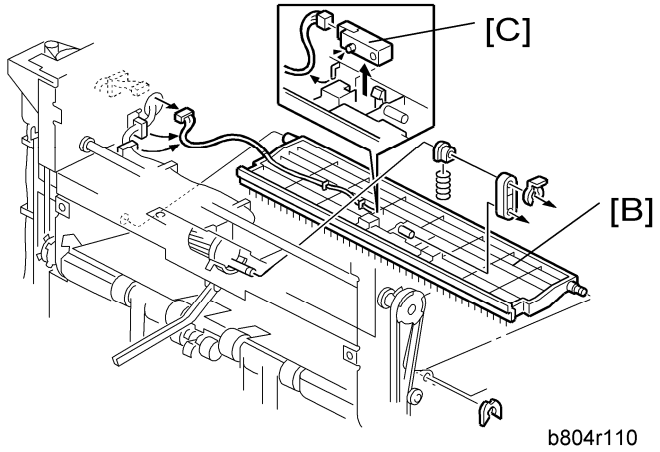



1. Small upper cover, upper cover (☛1.1.1 "Exterior Cover")
2. Upper tray paper height sensor bracket [A] (☞ x1)
3. Upper tray paper height sensor [B] – staple mode (S08) (☞ x1)
4. Upper tray paper height sensor [C] – non-staple mode (S09) (☞ x1)

## 1.2.5 EXIT GUIDE PLATE, UPPER TRAY EXIT SENSOR

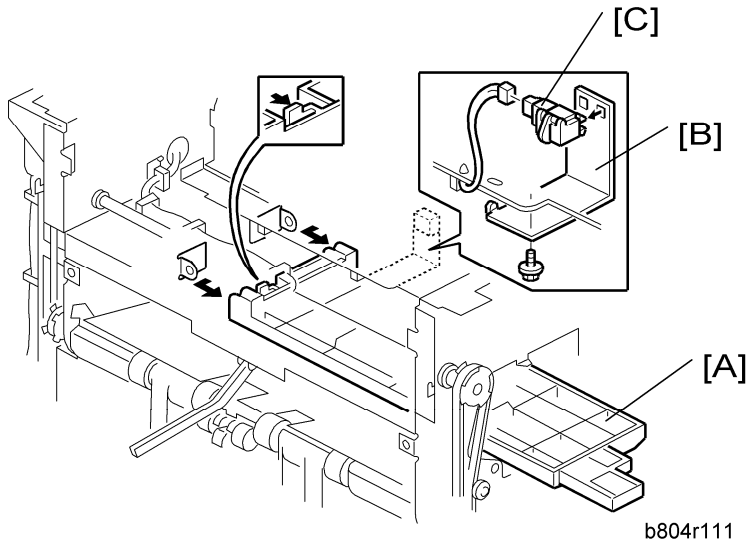



1. Rear cover, Upper covers, Front door, Cover, Paper exit cover (☛1.1.1 "Exterior Cover")
2. Inner cover [A] (☞ x2)



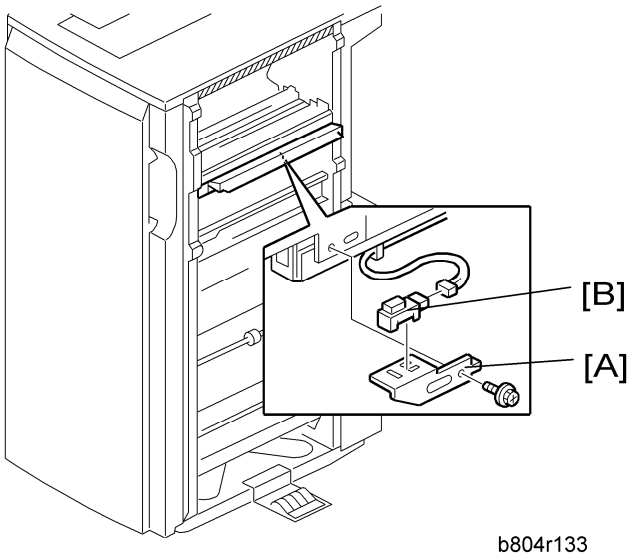

3. Exit guide plate [B] (x1, Link and spring, x1, x1)
4. Upper tray exit sensor [C] (S6) (x1)

## 1.2.6 PROOF TRAY FULL SENSOR




1. Exit guide plate. (1.2.5 "Exit Guide Plate, Upper Tray Exit Sensor")
2. Guide plate [A] (hook x 2)
3. Sensor bracket [B] (x1)
4. Proof tray full sensor [C] (S11) (x1)

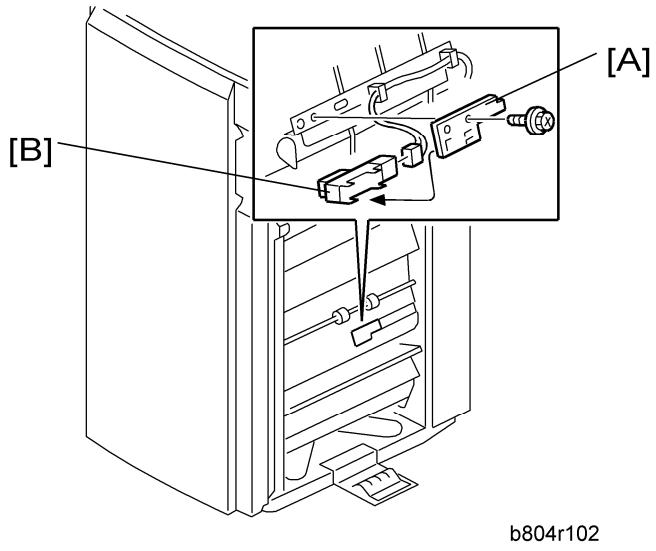
## 1.2.7 FINISHER ENTRANCE SENSOR




1. Disconnect the finisher if it is connected to the copier.
2. Sensor bracket [A] (x1)
3. Finisher entrance sensor [B] (S1) (x1)



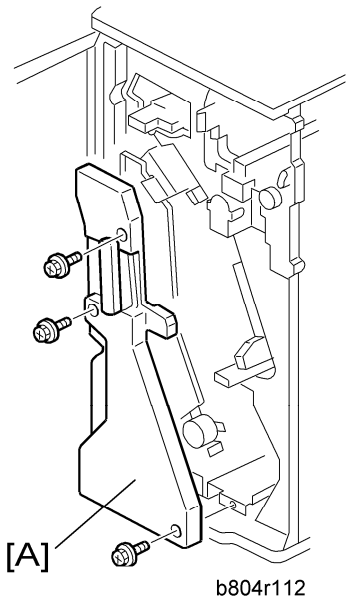
## 1.2.8 PRE-STACK TRAY EXIT SENSOR



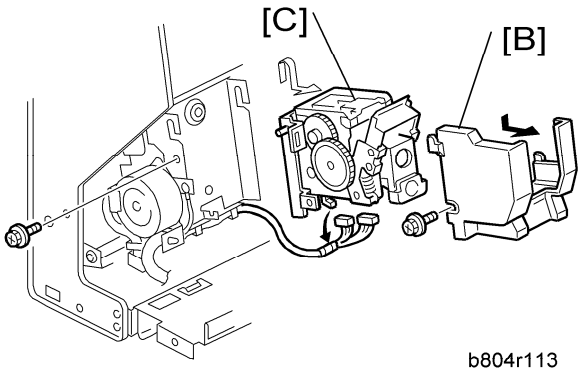

1. Disconnect the finisher if it is connected to the copier.
2. Sensor bracket [A]
3. Pre-stack tray exit sensor [B] (S2)

# 1.3 STAPLER UNIT

## 1.3.1 CORNER STAPLER



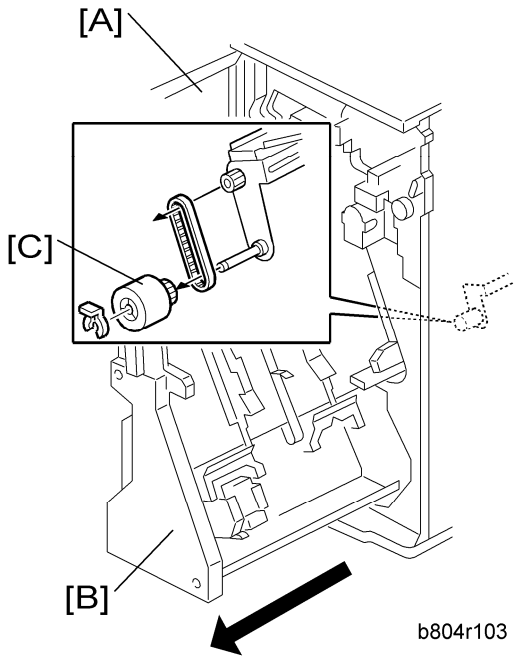

b804r112




b804r113

1. Open the front door.
2. Pull out the stapler unit.
3. Inner cover [A] (x3)
4. Stapler unit holder [B] (x1)
5. Corner stapler [C] (M20) (x1)

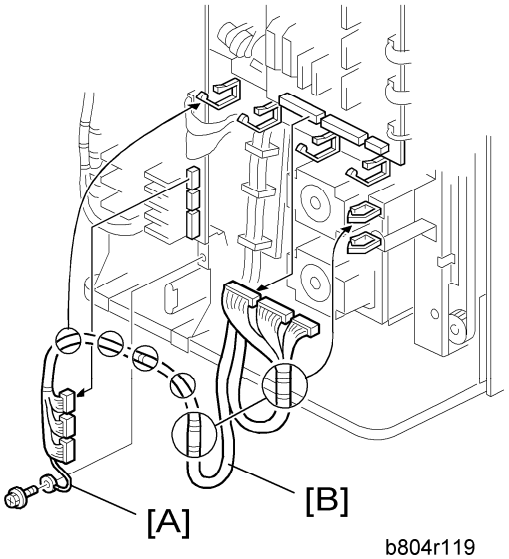
## 1.3.2 POSITIONING ROLLER



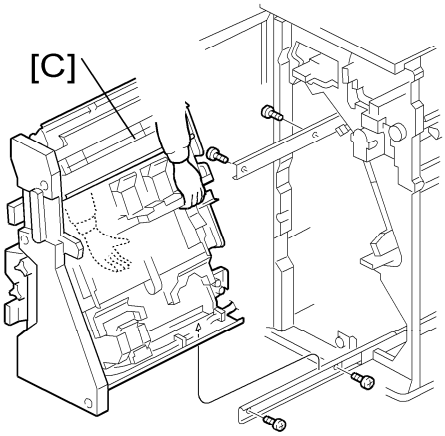

1. Open the front door [A].
2. Pull out the stapling unit [B].
3. Positioning roller [C] (⛭ x1, timing belt x1)

# 1.4 FOLD UNIT

## 1.4.1 FOLD UNIT




b804r119



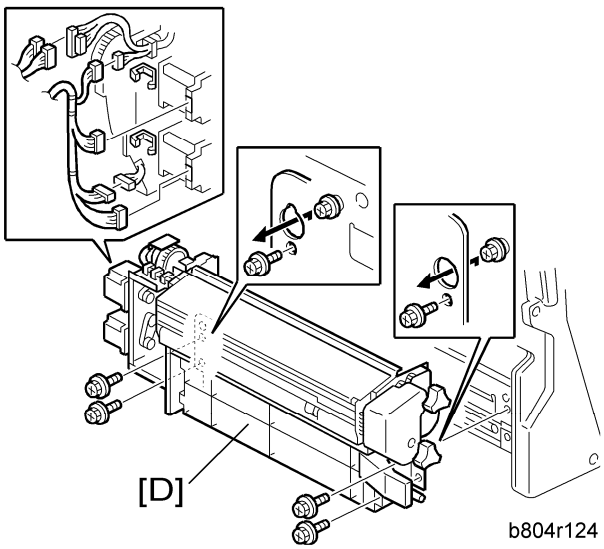

b804r801

1. Remove the back cover (☛1.1.1 "Exterior Covers").
2. Open the front door.

**⚠CAUTION**

- The stapler unit is heavy.

3. Ground cable [A] (🔩 x1)
4. Harness [B] (🔩 x6, 🔩 x6)
5. Stapler unit [C] (🔩 x4)




b804r124

Fold Unit

Important

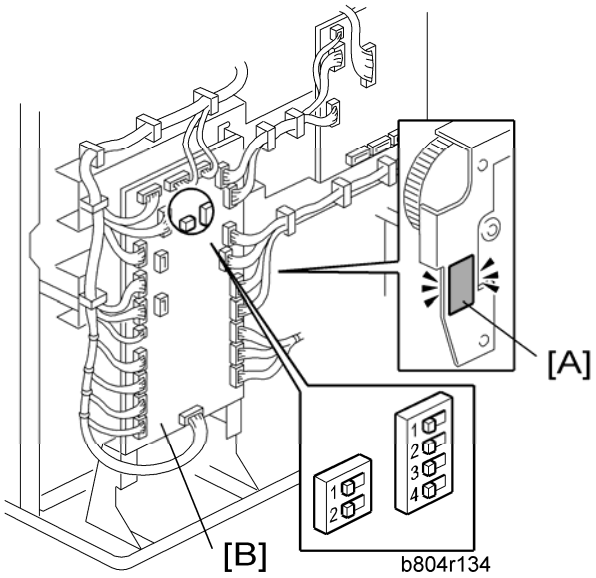
- Support the fold unit with your hand to prevent it from falling.

**CAUTION**

- The fold unit is heavy.

6. Folding unit [D] (x4, x2, x6)

**If you have replaced the folding unit:**

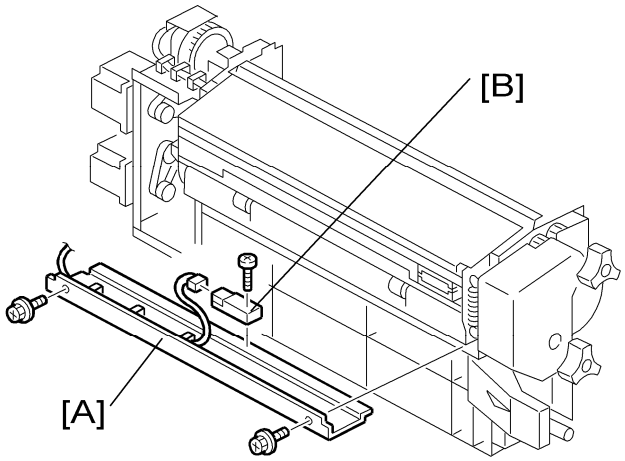



1. Read the DIP SW settings on the decal [A] attached to the back of the new folding unit.
2. Check the DIP SW settings on the main board [B] of the finisher.
3. If these settings are different, change these settings to match the settings printed on the decal attached to the folding unit.

Note

- Set DIP switches 1 to 4 (the switch set on the right). Do not touch the other DIP switches.

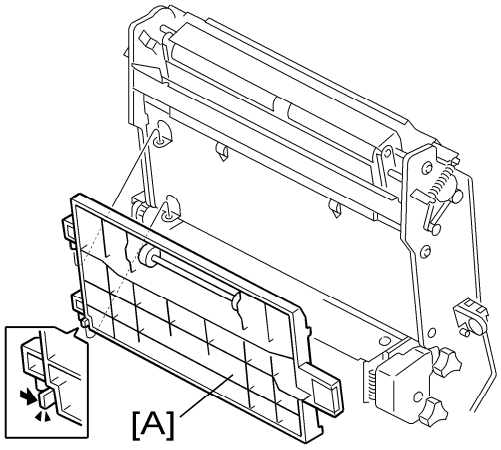
## 1.4.2 FOLD UNIT ENTRANCE SENSOR



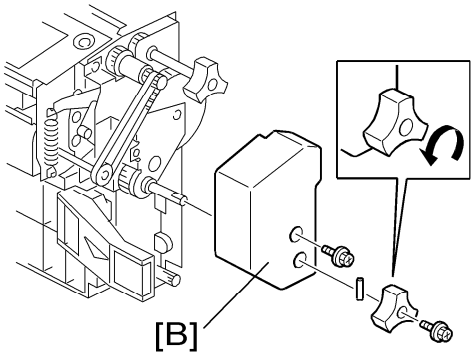

b804r132

1. Pull out the stapler unit (☛1.3.2 "Positioning Roller").
2. Fold unit entrance sensor bracket [A] (☞ x2)
3. Fold unit entrance sensor [B] (S26) (☞ x1, ☞ x1)

## 1.4.3 FOLD UNIT EXIT SENSOR



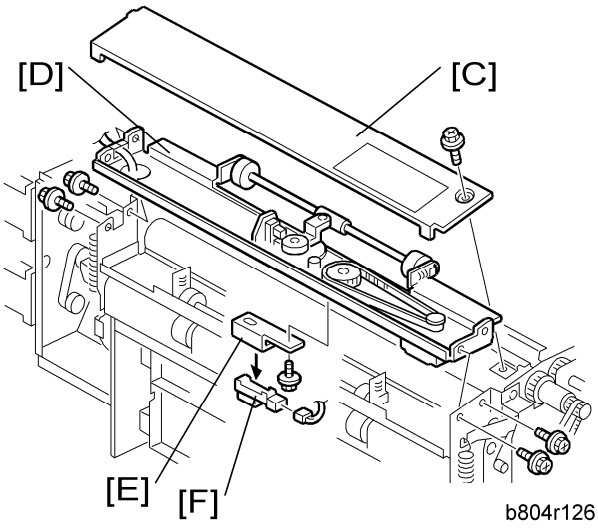

b804r121




b804r125

1. Open the front door.
2. Pull out the stapler unit (☛1.3.2 "Positioning Roller").
3. Fold unit vertical guide plate [A]
4. Fold unit inner cover [B] (☞ x2, Spring pin x1)

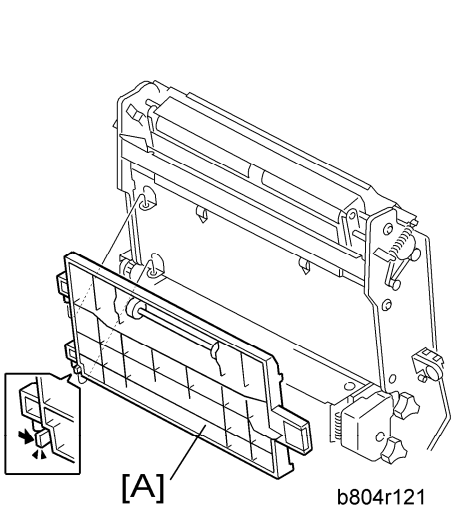
Fold Unit

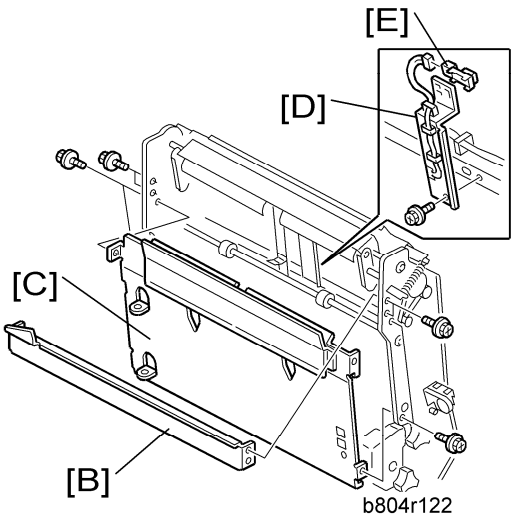



5. Fold unit upper cover [C] (x1)
6. Paper clamp mechanism [D] (x4)
7. Fold unit exit sensor bracket [E] (x1)
8. Fold unit exit sensor [F] (S31) (x1)



## 1.4.4 STACK PRESENT SENSOR



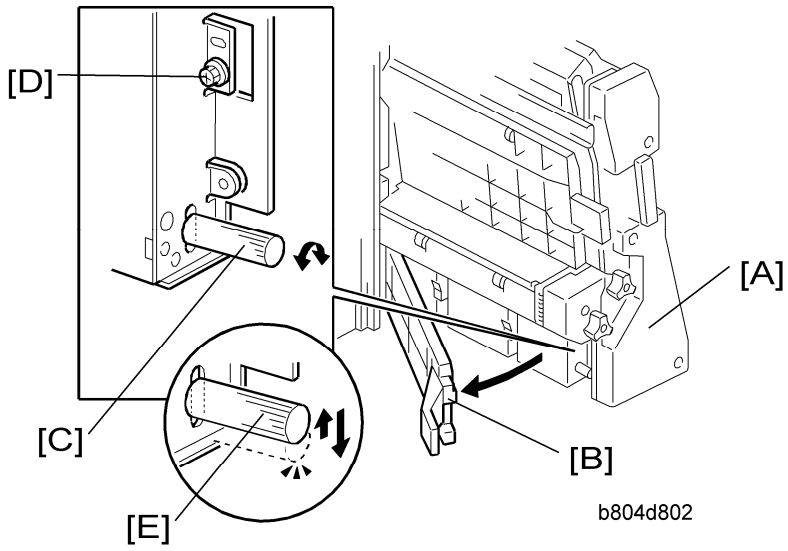

Important

- If you intend to correct the horizontal and vertical skew for the fold unit at the same time, do those adjustments first, then replace the sensor. (1.4.5 "Folding Horizontal Skew Adjustment" or "Fold Vertical Skew Adjustment")

1. Remove the stapler unit (1.4.1 "Fold Unit")

2. Guide plate [A].
3. Stay [B] (x4)
4. Left plate [C] (x4)
5. Sensor bracket [D] (x1)
6. Stack present sensor [E] (S32) (x1)

## 1.4.5 FOLDING HORIZONTAL SKEW ADJUSTMENT (FOR B804 ONLY)




Important

- The fold unit is adjusted for optimum performance before the finisher is shipped from the factory. Do this adjustment only if the edges of folded booklets are not even.

1. Switch the copier on and enter the SP mode.
2. Europe, Asia: Use **SP6-134-001** (this is for A3 paper). North America: Use **SP6-134-005** (this is for DLT paper).

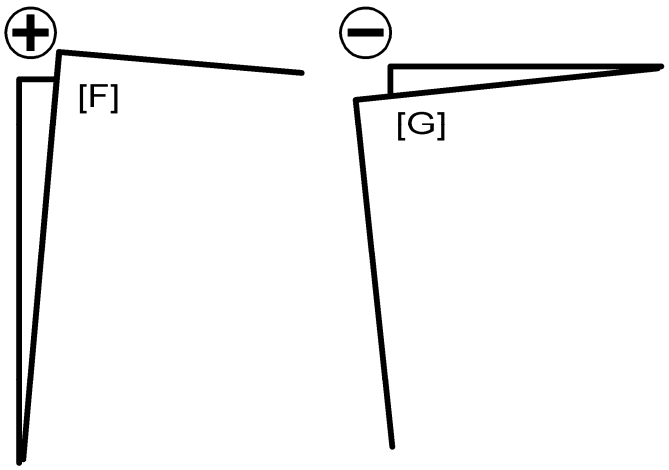
Note

- If the original setting of SP6-134-001 or -005 is not "0", then you must do the vertical skew adjustment (☛1.4.6 "Fold Vertical Skew Adjustment") after you finish this horizontal skew procedure.

3. Use the 10-key pad to input "-2" (mm) for the SP value. (Press ●/× to enter the minus sign.)
4. Press [#] then exit the SP mode.

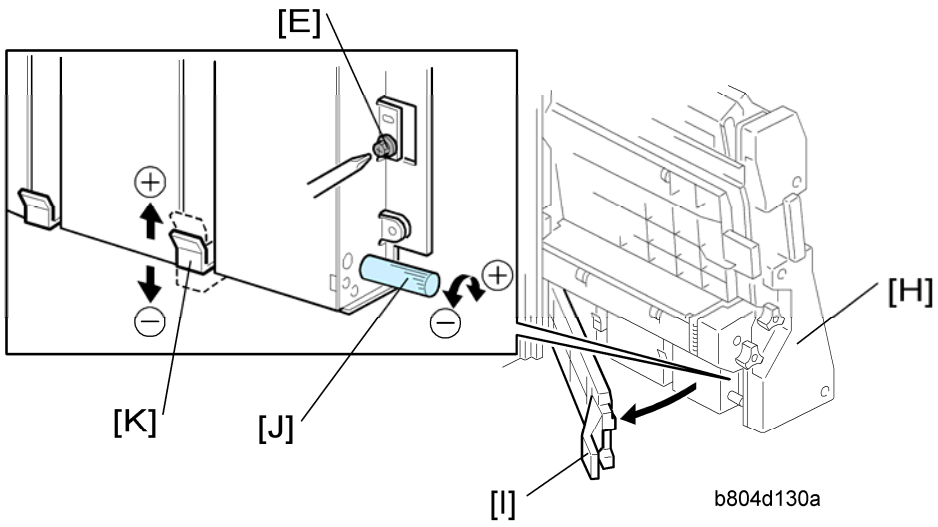
Fold Unit

5. Open the front door and pull the stapler unit [A] out of the finisher.
6. Open the guide plate [B].
7. Loosen the adjustment screw [C] and then tighten until it stops. (Do not over tighten.)
8. Remove the lock screw [D].
9. Raise the tip [E] of the adjustment screw very slightly and allow it to descend under its own weight.




b804r901

10. Push the stapler unit into the finisher and close the front door.
11. Do a folding test.
    - Switch the copier on.
    - Put one page of A3 or DLT paper in the ARDF.
    - On the copier operation panel, select booklet stapling.
    - Press [Start]. One sheet is folded.
12. Remove the sheet from the lower tray.
13. Hold the folded sheet with the creased side pointing down and face-up (the same way that it came out of the finisher).
14. Referring to the diagram, determine if the skew is + [F] or - [G].




15. Open the front door of the finisher and pull the stapler unit [H] out.
16. Open the guide plate [I].
17. Turn the adjustment screw [J] to correct the amount of skew you measured from the test sheet.
    - For + skew [F], turn the adjustment screw (clockwise).
    - For – skew [G], turn the adjustment screw to the left (counter-clockwise).
    - Every click in the +/– direction adjusts the fold position by 0.1 mm by moving the bottom fence [K].
18. Raise the tip of the adjustment screw [J] and allow it to lower under its own weight.
19. Attach and tighten the lock screw [L].
20. Push the stapler unit into the machine, close the front door, then turn the copier on.
21. Europe, Asia: Do **SP6-134-001** (this is for A3 paper). North America: **Do SP6-134-005** (this is for DLT paper).
22. Reset it to "0".
23. Do the test again.
24. If the result is satisfactory, this completes the adjustment. -or- If some skew remains, repeat this adjustment.

Note

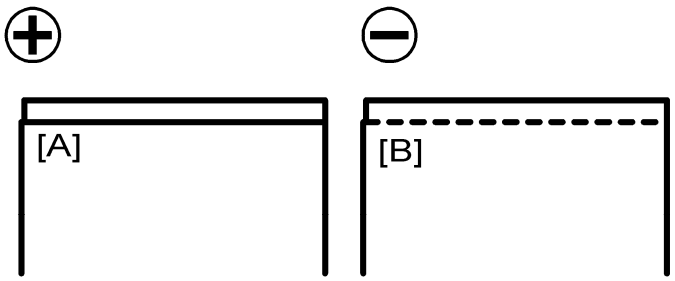
- After doing this adjustment, adjust for vertical skew, if necessary. (☛1.4.6 "Fold Vertical Skew Adjustment")

## 1.4.6 FOLD VERTICAL SKEW ADJUSTMENT (FOR B804 ONLY)

Important

- The fold unit is adjusted for optimum performance before the finisher is shipped from the factory. Do this adjustment only if the edges of folded booklets are not even.

1. Switch the copier on.
2. Do a folding test.
   - Switch the copier on.
   - Put one page of A3 or DLT paper in the ARDF.
   - On the copier operation panel, select booklet stapling.
   - Press [Start]. One sheet is folded.
3. Hold the folded sheet with the creased side pointing down, and face-up (the same way that it came out of the finisher).



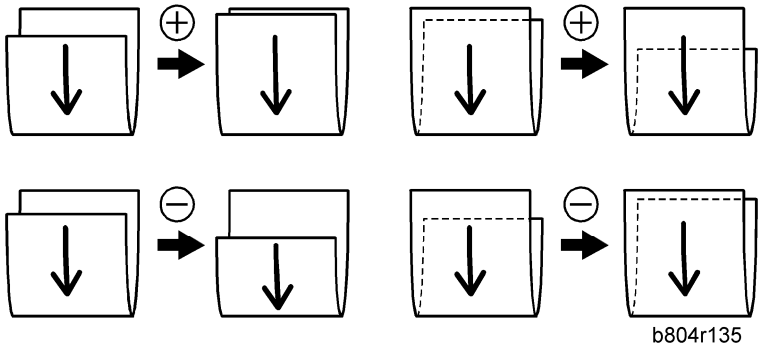

b804r902

4. Referring to the diagram, determine if the skew is positive [A] or negative [B].
5. Measure the amount of skew.
6. Enter the SP mode
   - Europe, Asia: Use **SP6-134-001** (this is for A3 paper).
   - North America: Use **SP6-134-005** (this is for DLT paper).
7. Enter one-half the measured amount of skew. Example: If the measure amount of skew is -1.2 mm, enter -0.6 mm

   Note

   - The range for measurement is –3.0 mm to +3.0 mm in 0.2 mm steps for every notch adjustment.
8. Exit the SP mode and do the test again (steps 2 to 5).
9. Repeat this procedure until the skew is corrected.

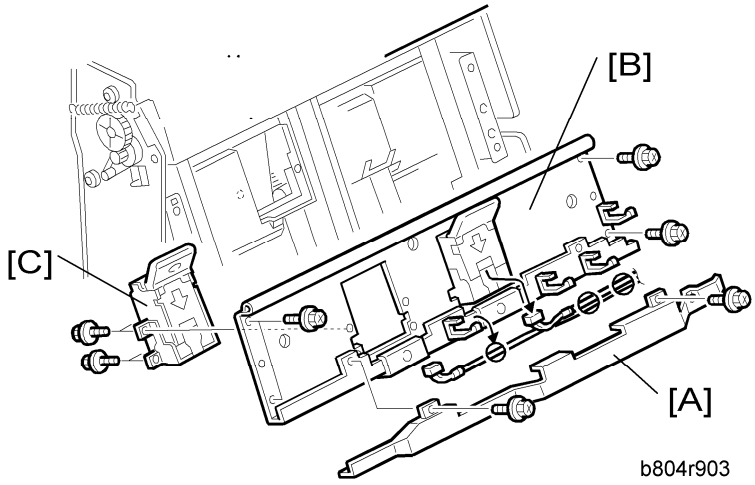
   The illustration below shows the effects of +/- adjustment with SP6113. (The vertical arrows show the direction of paper feed.)



b804r135

# 1.5 BOOKLET STAPLER UNIT

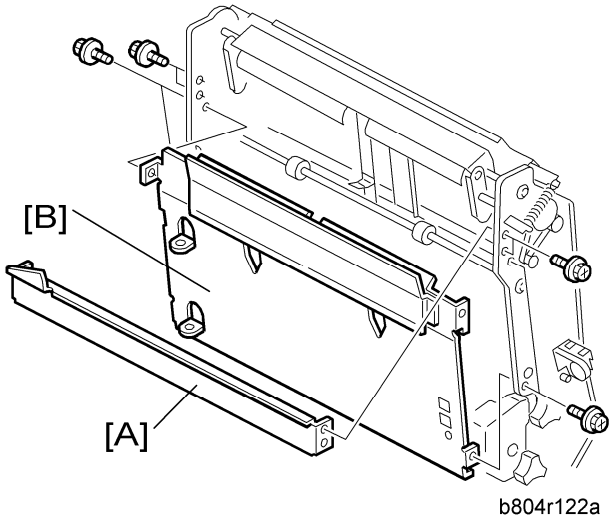
## 1.5.1 BOOKLET STAPLER



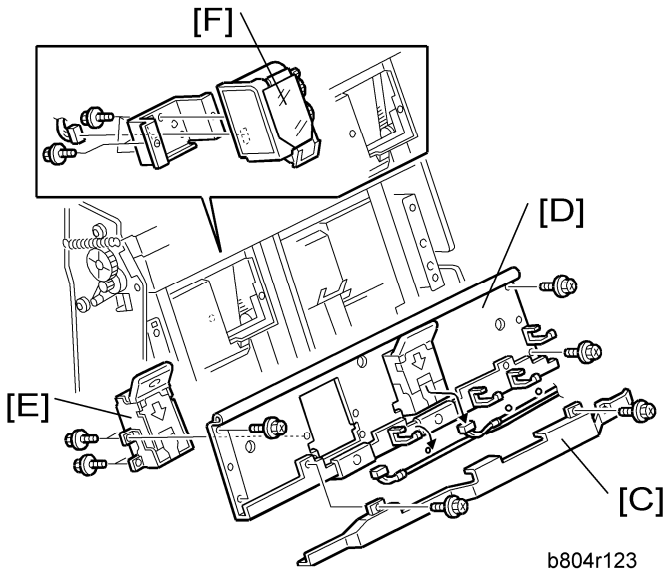

1. Open the front door.
2. Pull out the stapler unit (☛1.2.2 "Positioning Roller").
3. Harness cover [A] (x2)
4. Booklet stapler support stay [B] (x4, x2, x4)
5. Stapler [C] (x4)

## 1.5.2 BOOKLET STAPLER MOTOR

1. Open the front door.
2. Remove the stapler unit. (☛1.4.1 "Fold Unit")




3. Stay [A] (x4).
4. Left plate [B] (x4)




5. Harness cover [C] (x2)
6. Booklet stapler support stay [D] (x4, x2, x4)
7. Booklet stapler [E] (x4)
8. Booklet stapler motor [F] (x2, x1)

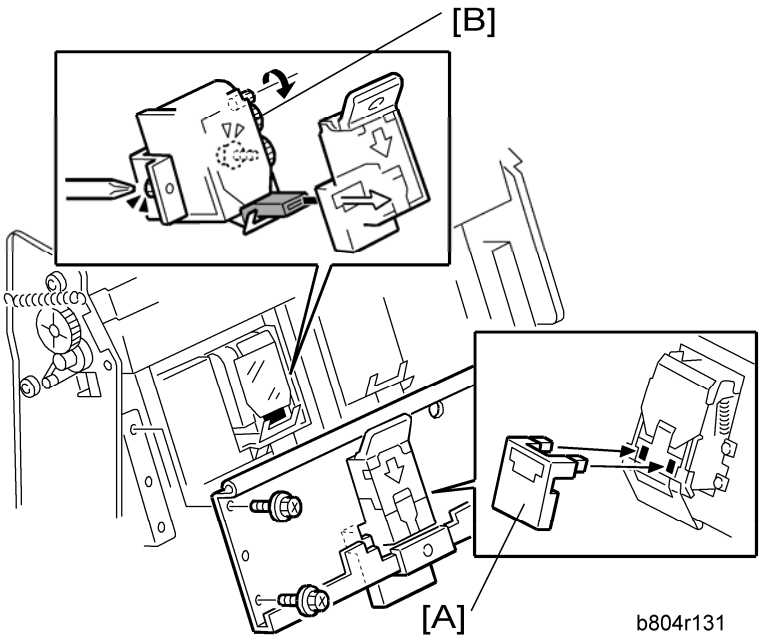
## *To Reattach the Booklet Stapler Motor*

1. Reattach the booklet stapler motor.

Important

- Do not tighten the screws.

Booklet Stapler Unit




2. Attach the special tool [A] and reattach the booklet stapler stay.

Note

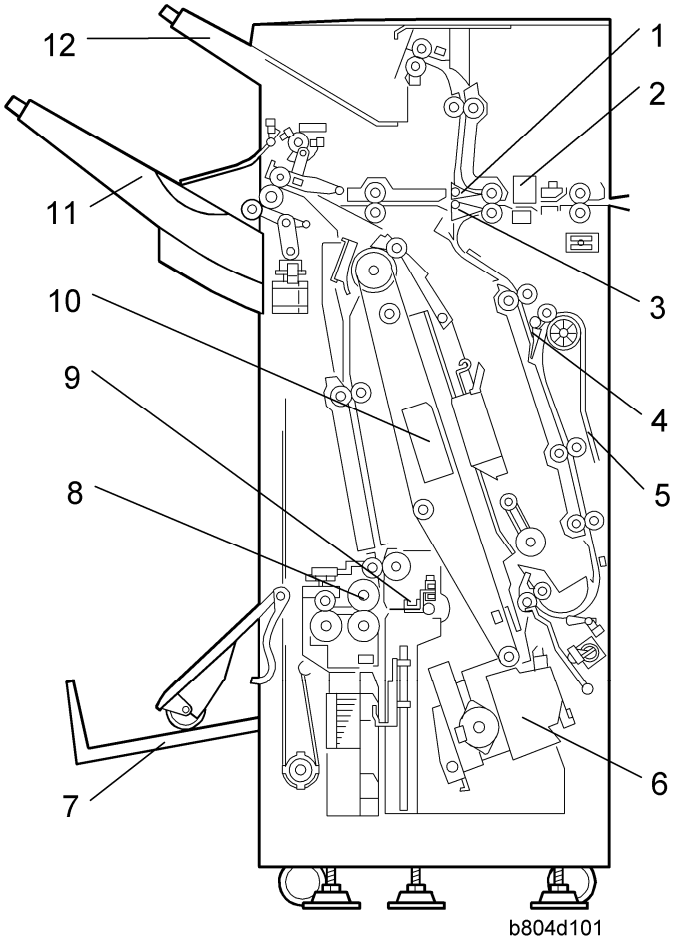
- This tool is included with the stapler spare part.

3. Turn the gear [B] with your finger until it stops.
4. Tighten the screws to attach to the booklet stapler motor.
5. Remove the stay again and remove the special tool.
6. Reattach the booklet stapler stay.
7. Push the stapler unit into the machine.

# 2. DETAILED SECTION DESCRIPTIONS

## 2.1 COMPONENT LAYOUT

### 2.1.1 GENERAL LAYOUT




| | |
|---|---|
| 1. Proof Tray Junction Gate | 7. Lower Tray (Booklet)*[1] |
| 2. Punch Unit | 8. Folder Rollers*[1] |
| 3. Stapler Junction Gate | 9. Folder Plate*[1] |
| 4. Pre-Stack Junction Gate | 10. Booklet Stapler*[1] |
| 5. Pre-Stack Tray | 11. Upper Tray (Shift) |
| 6. Corner Stapler (M20) | 12. Proof Tray |

Component Layout

*[1]: B804 Only

### *Paper direction*

The operation of the proof tray and stapler junction gates direct the flow of the paper once it enters the finisher:

| Proof Junction Gate | Stapler Junction Gate | Paper Feeds |
|---|---|---|
| Closed | Closed | Paper feeds straight through |
| **Open** | Closed | Paper feeds to the proof tray |
| Closed | **Open** | Paper feds to the staple tray |



### *Proof tray*

Copies are sent to the proof tray (12) when neither sorting nor stapling are selected for the job.

### *Upper tray*

The upper tray (11) receives copies that are sorted and shifted and also receives copies that have been corner stapled. Corner stapling is provided on both the B804 and the B805.

### *Pre-stack tray*

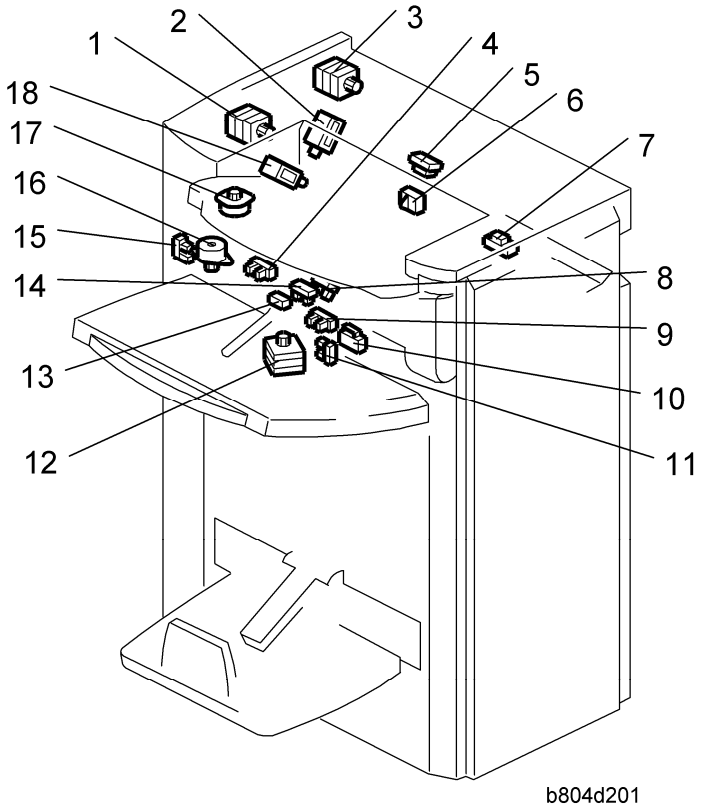
The pre-stack tray (5) has a switchback mechanism to increase the productivity of stapling. (☛2.3 "Pre-Stacking) Pre-stacking is done for corner stapling in the B804/B805 and for booklet stapling in the B804.

### *Lower tray*

The lower tray (7) receives copies that have been center folded and stapled (booklet stapling). Booklet stapling is not provided on the B805.

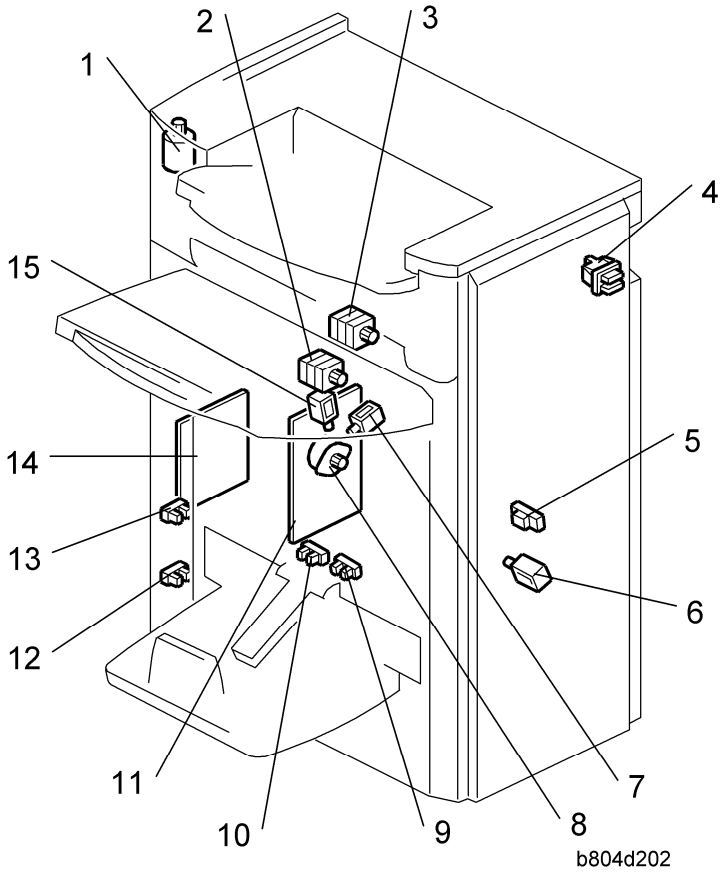
## 2.1.2 ELECTRICAL COMPONENTS

### *Upper Area B804/B805*




| | |
|---|---|
| 1. Upper/Proof Exit Motor (M4)<br>2. Stapling Tray Junction Gate Solenoid (SOL2)<br>3. Upper Transport Motor (M2)<br>4. Exit Guide Plate HP Sensor (S7)<br>5. Proof Tray Exit Sensor (S10)<br>6. Proof Tray Full Sensor (S11)<br>7. Finisher Entrance Sensor (S1)<br>8. Upper Tray Paper Height Sensor (S9) (Non-Staple Mode)<br>9. Upper Tray Limit Sensor (S12) | 10. Upper Tray Limit Switch (SW2)<br>11. Stacking Roller HP Sensor (S13)<br>12. Stacking Sponge Roller Motor (M10)<br>13. Upper Tray Exit Sensor (S6)<br>14. Upper Tray Paper Height Sensor (S8) (Staple Mode)<br>15. Shift Roller HP Sensor (S5)<br>16. Shift Roller Motor (M18)<br>17. Exit Guide Plate Motor (M19)<br>18. Proof Junction Gate Solenoid (SOL1) |

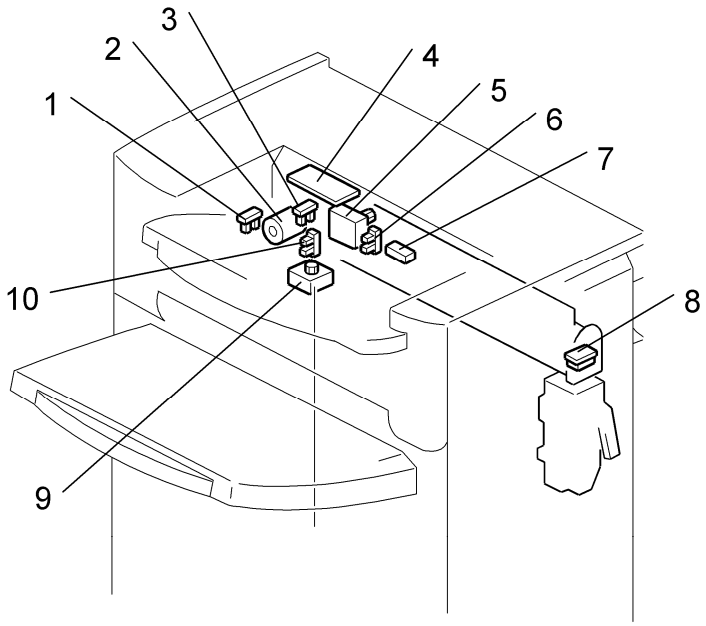
### *Lower Area B804/B805*




| | |
|---|---|
| 1. Upper Tray Lift Motor (M21)<br>2. Lower Transport Motor (M3)<br>3. Entrance Motor (M1)<br>4. Front Door Safety Switch (SW1)<br>5. Pre-Stack Tray Exit Sensor (S2)<br>6. Stapling Edge Pressure Plate Solenoid (SOL4)<br>7. Positioning Roller Solenoid (SOL3) | 8. Positioning Roller Motor (M14)<br>9. Lower Tray Full Sensor – Front (S34)*1<br>10. Lower Tray Full Sensor – Rear (S33)*1<br>11. Main Board (PCB1)<br>12. Upper Tray Full Sensor – (S20) *2<br>13. Upper Tray Full Sensor – (S19)<br>14. Booklet Stapler Board (PCB2)*1<br>15. Booklet Pressure Roller Solenoid – (SOL5) *1 |

*1: B804 Only, *2: B805 Only

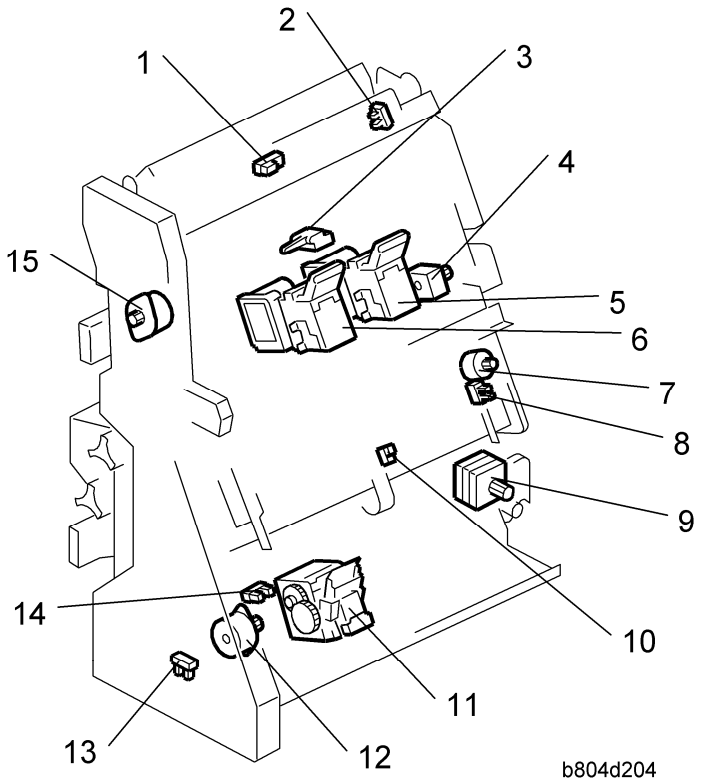
## *Punch Unit B702*




b804d203a

| | |
|---|---|
| 1. Punch Encoder Sensor (S24)<br>2. Punch Drive Motor (M24)<br>3. Punch HP Sensor (S24)<br>4. Punch Unit Board (PCB3)<br>5. Paper Position Sensor Slide Motor (M7) | 6. Paper Position Slide HP Sensor (S22)<br>7. Paper Position Sensor (S3)<br>8. Punch Hopper Full Sensor (S4)<br>9. Punch Movement Motor (M9)<br>10. Punch Movement HP Sensor (S21) |

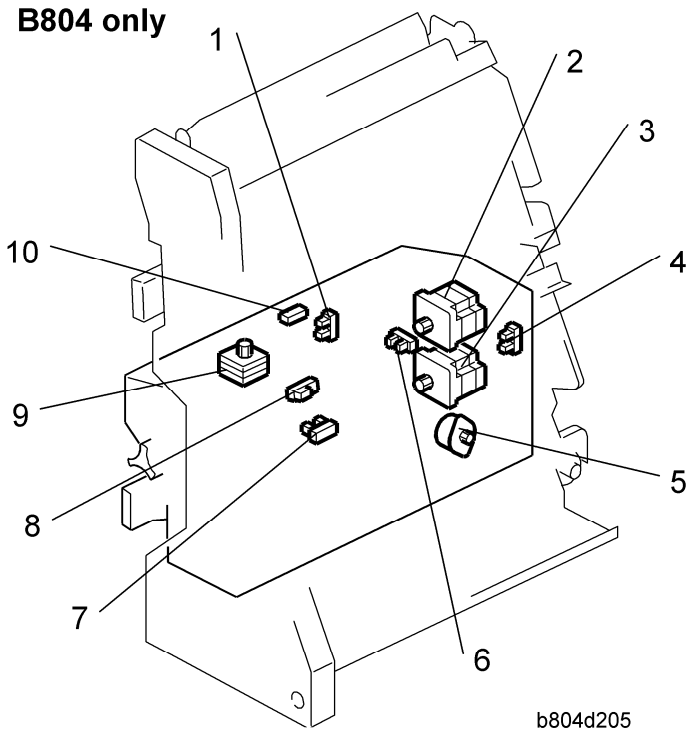
### *Stacker/Stapler - B804/B805*




| | |
|---|---|
| 1. Stack Present Sensor (S32)*[1] | 7. Jogger Fence Motor (M15) |
| 2. Stack Junction Gate HP Sensor (S27)*[1] | 8. Jogger Fence HP Sensor (S15) |
| 3. Stack Feed Out Belt HP Sensor (S16) | 9. Corner Stapler Movement Motor (M6) |
| 4. Feed Out Belt Motor (M5) | 10. Stapling Tray Paper Sensor (S14) |
| 5. Booklet Stapler EH185R – Rear (M23)*[1] | 11. Corner Stapler EH530 (M20) |
| 6. Booklet Stapler EH185R – Front (M22)*[1] | 12. Corner Stapler Rotation Motor (M13) |
| | 13. Corner Stapler HP Sensor (S17) |
| | 14. Stapler Rotation HP Sensor (S18) |
| | 15. Stack Junction Gate Motor (M17) *[1] |

*[1]: B804 Only

### *B804 Fold unit*




| | |
|---|---|
| 1. Clamp Roller HP Sensor (S25) | 6. Fold Cam HP Sensor (S30) |
| 2. Fold Roller Motor (M12) | 7. Fold Bottom Fence HP Sensor (S28) |
| 3. Fold Plate Motor (M11) | 8. Fold Unit Entrance Sensor (S26) |
| 4. Fold Plate HP Sensor (S29) | 9. Clamp Roller Retraction Motor (M8) |
| 5. Fold Unit Bottom Fence Lift Motor (M16) | 10. Fold Unit Exit Sensor (S31) |

## 2.1.3 SUMMARY OF ELECTRICAL COMPONENTS

Here is a general summary of all the electrical components of the B804/B805 finishers.

Note

- In the table below a number that appears in bold text (**M8**, etc.) denotes a component that is on the 2000/3000 Sheet Finisher B804 only.

Component Layout

| No. | Component | Function |
|---|---|---|
| **Boards (PCB)** | | |
| PCB1 | Main Board | The main board that controls the finisher |
| PCB2 | Booklet Stapler Board | A separate board that controls booklet finishing. |
| PCB3 | Punch Unit Board | The board that controls the punch unit. |
| **Motors** | | |
| M1 | Finisher Entrance Motor | Drives 1) the finisher entrance rollers, 2) and the punch waste transport belt of the punch unit. |
| M2 | Upper Transport Motor | Drives the paper feed rollers that feed paper 1) to the proof tray, 2) straight-through to the upper tray, 3) the pre-stack tray entrance roller. |
| M3 | Lower Transport Motor | Drives paper feed rollers forward and reverse in the pre-stack tray for the switchback, and drives the other rollers in the lower transport area. |
| M4 | Upper/Proof Tray Exit Motor | Drives 1) proof tray exit rollers, 2) extension and retraction of the stacking sponge roller, 3) upper tray exit rollers. |
| M5 | Feed Out Belt Motor | Drives the feed out belt that moves the stapled stacks out of the stapling tray after stapling. |
| M6 | Corner Stapler Movement Motor | Moves the corner stapler horizontally on a steel rod to position the stapler at the stapling position at 1) the front, 2) the rear (straight stapling), 3) the rear (diagonal stapling), or 4) the front and rear for double stapling. |
| M7 | Paper Position Sensor Slide Motor | Drives the movement of the paper position slide that holds the paper position sensor (S3) that detects the position of the paper. |
| **M8** | Clamp Roller Retraction Motor | Drives a large cam that alternately clamps and unclamps the clamp retraction roller, the idle roller of the clamp roller pair. When these rollers are clamped, they |

| No. | Component | Function |
|---|---|---|
| | | are part of the paper feed path and feed the stack toward the bottom fence of the fold unit. When the idle roller is retracted, the stacks falls a very short distance (3 mm) onto the fold unit bottom fence below. These rollers remain unclamped while the bottom fence positions the stack for folding and while the stack is folded by the fold rollers. |
| M9 | Punch Movement Motor | Drives the front/back movement of the punch unit to position it correctly for stapling the paper below. |
| M10 | Stacking Sponge Roller Motor | Rotates the stacking roller that drags each sheet back against the end fence to jog the bottom of each sheet after feed out to the upper tray. |
| **M11** | Fold Plate Motor | Drives the fold plate that pushes the center of the stack into the nip of the fold rollers to start the fold. |
| **M12** | Fold Roller Motor | Rotates forward and drives the fold rollers that fold the stack and feed it out of the fold unit, reverses to feed the fold once more into the fold unit, and then rotates forward again to feed the fold out of the fold unit. |
| M13 | Corner Stapler Rotation Motor | Swivels the corner stapler and positions it so the staple fires at an oblique angle at the rear corner of the paper stack. |
| M14 | Positioning Roller Motor | Drives the positioning roller in the stapling tray. |
| M15 | Jogger Fence Motor | Drives the jogger fences in the stapling tray to jog both sides of the stack before stapling. |
| **M16** | Fold Unit Bottom Fence Lift Motor | Raises the bottom fence and stops when the center of the vertical stack is opposite the edge of the horizontal fold blade. The distance for raising the blade is prescribed as one-half the size of the paper selected for the job. For large paper, (A3, B4) the bottom fence first |

Component Layout

| No. | Component | Function |
|---|---|---|
| | | lowers the stack 10 mm below the fold position, and then raises it to the fold position. |
| **M17** | Stack Junction Gate Motor | Drives the large cam that operates the stack junction gate at the top of the stapling tray. When this gate is open, it directs the ascending stack to the upper tray if it has been corner stapled, or if it is closed the gate turns the booklet stapled stack down so it falls onto the bottom fence of the folding unit. |
| M18 | Shift Roller Motor | Drives the shift roller that operates in shift mode to stagger document sets as they feed out to the upper tray (making them easier to separate). |
| M19 | Exit Guide Plate Motor | Drives the mechanism that raises and lowers the exit guide plate. |
| M20 | Corner Stapler EH530 | This is the roving corner stapler, mounted on a steel rail that staples 1) at the front, 2) at the rear (straight staple), 3) at the rear (diagonal staple), and 4) font and rear (two staples). |
| M21 | Upper Tray Lift Motor | Raises and lowers the upper tray during feed out to keep the tray at the optimum height until it is full. |
| **M22** | Booklet Stapler EH185R: Front | Booklet stapler. Staples paper stacks in the center before they are folded. |
| **M23** | Booklet Stapler EH185R: Rear | Booklet stapler. Staples paper stacks in the center before they are folded. |
| M24 | Punch Drive Motor | Fires the punches that punch the holes in the paper. |
| **Sensors** | | |
| S1 | Finisher Entrance Sensor | Provides two functions: (1) Detects paper entering the finisher from the copier, and (2) Signals a jam if it detects paper at the entrance when the copier is switched on. |

| No. | Component | Function |
|---|---|---|
| S2 | Pre-stack Tray Exit Sensor | Detects 1) paper fed from the pre-stack tray to the stapling tray, and detects 2) paper in the pre-stack when the copier is switched on. (This sensor performs no timing function. The entire flow of paper through the pre-stacking mechanism is controlled by motor pulse counts.) |
| S3 | Paper Position Sensor | The photosensor that detects the edge of the paper and sends this information to the punch unit board where it is used to position the punch for punching the holes in the paper. |
| S4 | Punch Hopper Full Sensor | 1) A photosensor that detects and signals that the punch hopper is filled with punch waste and needs emptying, and 2) confirms the presence of the punch hopper and signals an error if it is missing or not installed completely. |
| S5 | Shift Roller HP Sensor | Located near the shift roller motor, controls the front-to-back movement of the shift roller as shifts paper during straight-through feed. |
| S6 | Upper Tray Exit Sensor | A flat, photo sensor located inside the guide plate, detects the leading edge and trailing edge of the paper as it feeds out to the upper tray during straight-through jobs (with and without stapling). When paper is fed to the upper tray, at the paper output slot this sensor signals an error when it detects (1) paper has failed to leave the paper exit (lag error), (2) detects paper has failed to arrive at the paper exit (late error), (3) detects paper is in the exit slot when the machine is turned on. |
| S7 | Exit Guide Plate HP Sensor | Controls the vertical movement of the control exit guide . The guide plate is in the home position when the guide plate is down and the actuator interrupts the sensor gap. |

Component Layout

| No. | Component | Function |
|---|---|---|
| S8 | Upper Tray Paper Height Sensor (Staple Mode) | This is the upper sensor of the upper/lower paper height sensor pair that controls the lift of the upper tray. This sensor detects the paper height of the stack in the upper tray when the copier is operating in the staple mode. |
| S9 | Upper Tray Paper Height Sensor (Non-Staple Mode) | This is the lower sensor of the upper/lower paper height sensor pair that controls the lift of the upper tray. When the machine is switched on, the upper tray rises until the actuator on the tray triggers this sensor to switch off the upper tray lift motor. |
| S10 | Proof Tray Exit Sensor | This sensor detects and times the feeding of paper to the proof tray. It also detects whether paper is present at the proof tray exit when the copier is switched on. |
| S11 | Proof Tray Full Sensor | The top of the stack in the proof tray increases until it nudges the feeler of this sensor. The sensor then signals that the proof tray is full and the job halts until some paper is removed from the proof tray. |
| S12 | Upper Tray Limit Sensor | This sensor controls the position of the upper tray 1) during straight-through feed out, 2) during shift feed out, 3) when the machine is turned on. The machine obeys the signal of whichever sensor is actuated first.<br>An actuator attached to an arm triggers this sensor. The tip of the same arm depresses the upper tray limit switch. If the sensor fails, the tip of the arm will activate the upper tray limit microswitch (SW2) and stop the lift of the upper tray.<br>**Note**: When the machine is turned on, the upper tray position is controlled by either this sensor or the upper tray paper height sensor (S9). |
| S13 | Stacking Roller HP Sensor | Controls the forward and back motion of the stacking roller (a sponge roller) located at the output slot of the upper tray. The sponge roller drags each ejected sheet |

| No. | Component | Function |
|---|---|---|
| | | back against the end fence of the upper tray to keep the bottom of the stack aligned. |
| S14 | Stapling Tray Paper Sensor | A photo sensor that detects whether paper is in the stapling tray. When this sensor detects paper, the bottom fence motor raises or lowers the bottom fence to position the selected paper size for booklet stapling. |
| S15 | Jogger Fence HP Sensor | Detects the home position of the jogger fences. When the actuator on the jogger fence interrupts this sensor, the jogger fence is in its home position and the jogger fence motor (M15) stops. |
| S16 | Stack Feed-Out Belt HP Sensor | Controls the position of the stack feed-out pawl on the stack feed-out belt. Once the actuator on the feed belt nudges the feeler of this sensor near the top of the stapling unit, the feed out belt motor (M5) remains on for the time prescribed to position the pawl at the home position to catch the next stack. |
| S17 | Corner Stapler HP Sensor | Located at the front the stapling tray and mounted above the steel rod where the corner stapler travels, this sensor detects the home position of the corner stapler. The corner stapler is in its home position when the actuator on the corner stapler unit interrupts this sensor. |
| S18 | Stapler Rotation HP Sensor | Controls the angle of the position of the corner stapler during oblique stapling. |
| S19 | Upper Tray Full Sensor (B804/B805) | **B804**: When the actuator on the side of the upper fence enters the gap of this sensor, the sensor signals that the upper tray is at its lowest position (full) and stops the job.<br>**B805**: One of two upper tray full sensors. This is the higher tray full sensor for A3 and other heavy paper. The other upper tray full sensor (20) is for lighter paper. |

Component Layout

| No. | Component | Function |
|---|---|---|
| S20 | Upper Tray Full Sensor (B805 only) | **B804**: This sensor is not used on the booklet finisher. There is only one upper tray full sensor (S18).<br>**B805**: One of two upper tray full sensors. This is the lower tray full sensor for A4 and smaller paper. The other upper tray full sensor (19) is for larger paper. |
| S21 | Punch Unit HP Sensor | Switches off the punch movement motor when the punch unit returns to its home position. Pulse counts determine where the punch unit pauses for punching and reversing. |
| S22 | Paper Position Side HP Sensor | Controls the movement of the paper position detection unit. Switches on when the horizontal detection unit is at the home position (HP is the reference point). |
| S23 | Punch HP Sensor | Detects the home position of the punch unit and controls the vertical movement of the punches when they fire. |
| S24 | Punch Encoder Sensor | When the punch mode is selected for the job (2-hole, 3-hole, etc.), the machine controls the operation of the punch drive (M24) motor which drives a small encoder shaped like a notched wheel. This wheel is rotated forward and reverse precisely to select which punches are moved up and down during the punch stroke. |
| **S25** | Clamp Roller HP Sensor | Controls the movement of the clamp retraction roller (the idle roller of the clamp roller pair). |
| **S26** | Fold Unit Entrance Sensor | Detects 1) the leading edge of the stack during booklet stapling, and 2) also used to signal an alarm if a paper is detected at the entrance of the fold unit when the copier is turned on. |
| **S27** | Stack Junction Gate HP Sensor | Controls the opening and closing of the stack junction gate. Switches on when the stack junction gate is open and at the home position. |

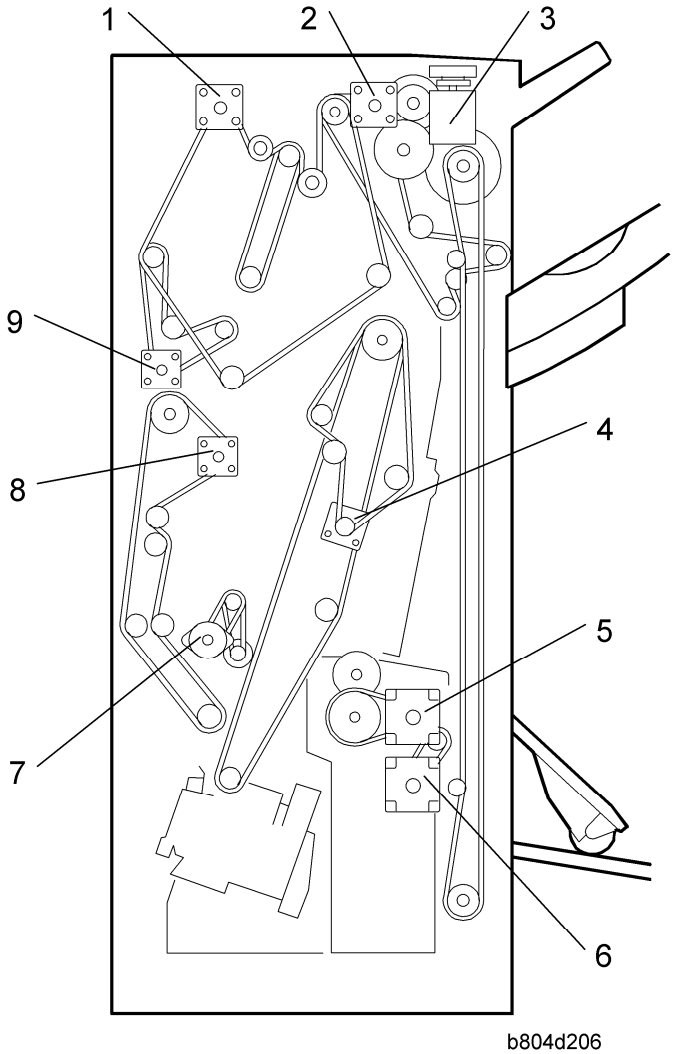
| No. | Component | Function |
|---|---|---|
| **S28** | Fold Bottom Fence HP Sensor | Controls the movement of the bottom fence in the folding unit using pulse counts based on the size of the paper selected for the job to position the stack correctly for feeding. |
| **S29** | Fold Plate HP Sensor | Along with the fold plate cam HP sensor (S30) this sensor controls the movement of the fold plate . The fold plate has arrived at the home position when the edge of the plate enters the gap of this sensor. |
| **S30** | Fold Plate Cam HP Sensor | Along with the fold plate HP sensor (S29), this sensor controls the movement of the fold plate. The actuator mounted on the end of the roller that drives the folder plate forward and back makes three full rotations, i.e. the actuator passes the sensor gap twice and stops on the 3rd rotation and reverses. This accounts for the left and right movement of fold plate. |
| **S31** | Fold Unit Exit Sensor | 1) Detects the folded edge of the stack as it feeds out from the nip of the fold rollers, stops the rollers, and reverses them so the fold feeds back into the nip, 2) when the folded booklet finally emerges from the nip of the fold rollers, detects the leading and trailing edge of the booklet to make sure that it feeds out correctly. |
| **S32** | Stack Present Sensor | This sensor determines whether there is paper at the turn junction gate when the machine is turned on. If a stack is present, this triggers a jam alert. (This sensor performs no dynamic function such as pulse counting, etc. It only detects whether paper is at the top of the folding unit when power its turned on.) |
| **S33** | Lower Tray Full Sensor - Rear | This rear sensor is the lower sensor of the lower tray full sensor pair. Two actuators are attached to the actuator arm that touches the top of stapled and folded booklets as they feed out. The on/off combinations of the two |

Component Layout

| No. | Component | Function |
|---|---|---|
| | | sensors are used to detect when the tray is full and stop the job. (The lower tray is stationary. At tray full, the job halts until booklets are removed from the lower tray.) |
| **S34** | Lower Tray Full Sensor - Front | This front sensor is the higher sensor of the lower tray full sensor pair. Two actuators are attached to the actuator arm that touches the top of stapled and folded booklets as they feed out. The on/off combinations of the two sensors are used to detect when the tray is full and stop the job. (The lower tray is stationary. At tray full, the job halts until booklets are removed from the lower tray.) |
| **Solenoids** | | |
| SOL1 | Proof Junction Gate Solenoid | Opens and closes the proof tray junction gate. When the solenoid switches on, it opens the gate and paper is diverted to the proof tray. When this gate is closed, the paper goes straight to the upper tray. I |
| SOL2 | Stapling Tray Junction Gate Solenoid | Directs paper to the stapling tray. When this solenoid is on, paper feeds straight through. When this solenoid is off, paper feeds to the stapler tray below. |
| SOL3 | Positioning Roller Solenoid | Engages the stapler transport motor and the positioning roller of the stapling tray. The positioning roller pushes each sheet down against the bottom fence to align the bottom the stack for stapling. (The jogger fences align the sides.) |
| SOL4 | Stapling Edge Pressure Plate Solenoid | Operates the pressure plate of the stapling unit. The pressure plate presses down the edge of stack in the stapling tray so it is tight for stapling. |
| **SOL5** | Booklet Pressure Roller Solenoid | When the paper stack in the stapling tray feeds to the folding unit, this solenoid turns on and operates the roller that pushes on the surface of the stack to flatten it. |

| No. | Component | Function |
|---|---|---|
| **Switches** | | |
| SW1 | Front Door Safety Switch | The safety switch cuts the dc power when the front door is opened. |
| SW2 | Upper Tray Limit SW | A micro-switch cuts the power to the upper tray lift motor when the upper tray reaches its upper limit. This switch duplicates the function of the upper tray limit sensor (S12) and stops the upper tray if S12 fails. |

## 2.1.4 DRIVE LAYOUT




b804d206

Component Layout

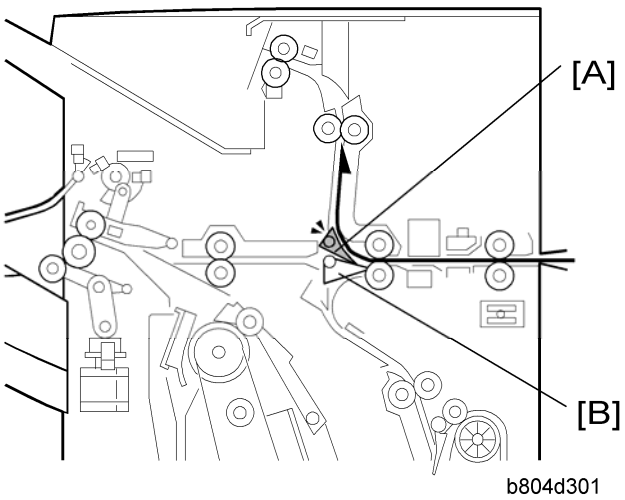
| | |
|---|---|
| 1. Upper Transport Motor (M2)<br>2. Upper/Proof Exit Motor (M4)<br>3. Upper Tray Lift Motor (M21)<br>4. Feed-Out Belt Motor (M5)<br>5. Fold Roller Motor*[1] (M12) | 6. Folder Plate Motor*[1] (M11)<br>7. Positioning Roller Motor (M14)<br>8. Lower Transport Motor (M3)<br>9. Entrance Motor (M1) |

*[1]: B804 Only

# 2.2 JUNCTION GATES

The positions of the proof tray and staple tray junction gates determine the direction of paper feed after paper enters the finisher.

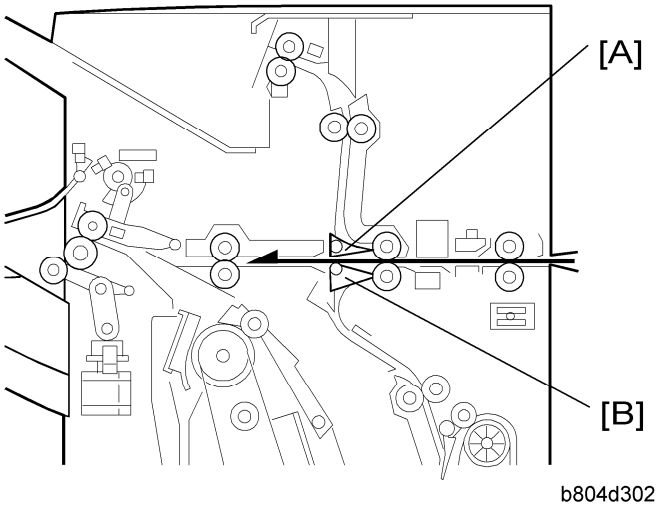
## 2.2.1 PROOF MODE




b804d301

Proof tray junction gate [A] opens. Staple tray junction gate [B] remains closed.
The proof tray junction gate directs paper to the proof tray above.

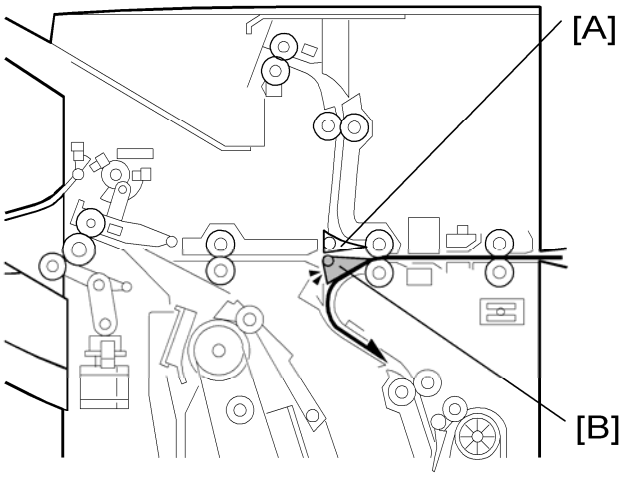
## 2.2.2 SHIFT MODE




b804d302

Proof tray junction gate [A] remains closed. Staple tray junction gate [B] remains closed.
With both junction gates closed, the paper goes to the upper tray.

## 2.2.3 STAPLE MODE

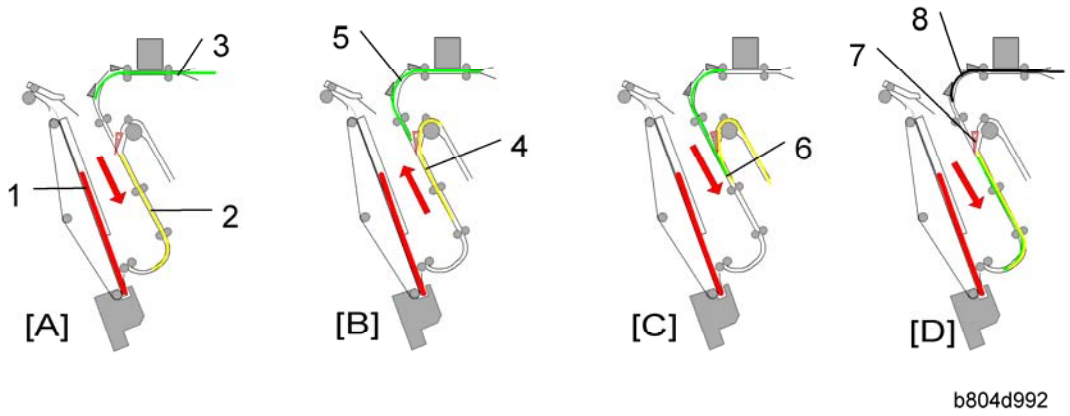



b804d303

Proof tray junction gate [A] remains closed. Staple tray junction gate [B] opens

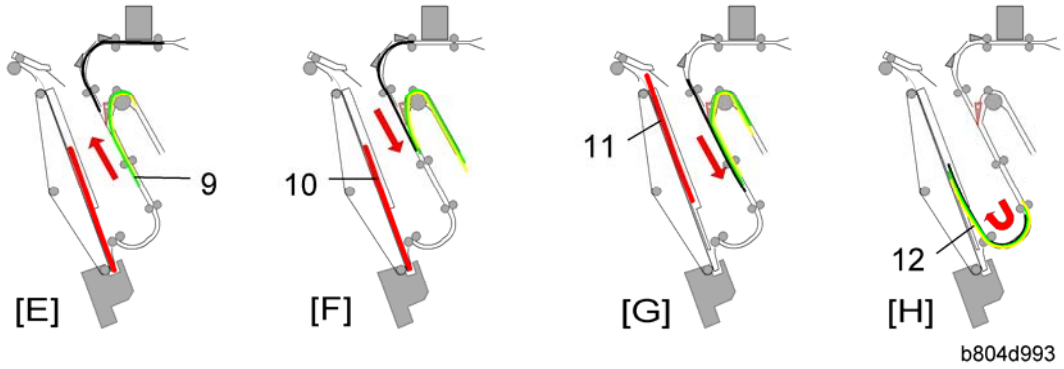
The staple tray junction gate directs the paper to the staple tray below for jogging and stapling.

## 2.3 PRE-STACKING




This example describes what happens to Set 2 during the feed and stapling cycle of sets that contain three pages.

- [A]: While the Set 1 is being stapled in the staple tray [1], the 1st sheet of Set 2 [2] feeds to the pre-stack tray, and the 2nd sheet of Set 2 [3] enters the finisher.
- [B]: The pre-stack junction gate opens and the 1st sheet of Set 2 [4] switches back to the top of the pre-stack tray as the 2nd sheet of Set 2 [5] starts to descend.
- [C]: As the 2nd sheet of Set 2 continues to descend, the 1st sheet of Set 2 is fed from the pre-stack tray. At this time the leading edges [6] of both sheets are even.
- [D]: The trailing edges of the 1st and 2nd sheets of Set 2 pass the junction gate [7] as the 3rd sheet of Set 2 [8] enters the finisher.




- [E]: The 1st and 2nd sheets of Set 2 [9] switch back together into the top of the pre-stack and wait for the 3rd of Set 2 sheet to arrive.
- [F]: The stapling of Set 1 in the staple tray [10] is completed.
- [G]: Set 1 [11] exits the staple tray.
- [H]: The three sheets of Set 2 [12] feed together into the stapler tray for stapling.

Pre-stacking is only done for A4, B5, and LT paper.

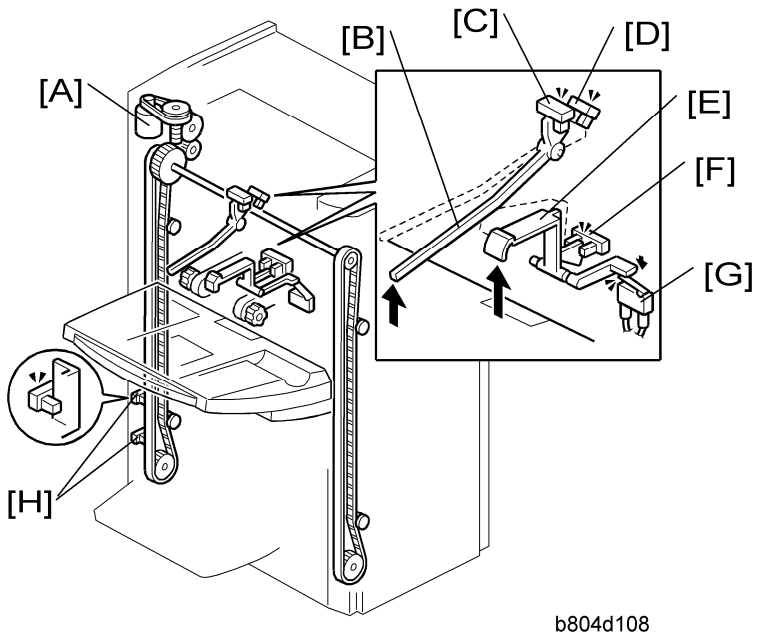
Pre-Stacking

In one-staple mode, one sheet goes to the pre-stacking tray. Then two sheets go to the stapler tray at the same time.

In two-staple mode and booklet mode, three sheets go to the pre-stacking tray. Then four sheets go to the stapler tray at the same time.

# 2.4 TRAY MOVEMENT MECHANISM

## 2.4.1 UPPER TRAY




[A]: Upper Tray Lift Motor
[B]: Upper Feeler
[C]: Upper Tray Paper Height Sensor 1 (Staple Mode)
[D]: Upper Tray Paper Height Sensor 2 (Non-Staple Mode)
[E]: Lower Feeler
[F]: Upper Tray Limit Sensor
[G]: Upper Tray Limit Switch
[H]: Upper Tray Full Sensors

Important

- The B804 (shown above) has only one upper tray full sensor (the higher sensor at [H]).
- The B805 has two upper tray full sensors (the upper and lower sensor at [H]). On the B805 the upper sensor detects tray full for heavier paper (A3, DLT, B4, LG, 12 x 18”), and the lower sensor detects tray full for lighter paper (A4, LT, etc.).
- The tray full capacity is 2,000 sheets (B804) for A4, LT and 3,000 sheets (B805) for

Tray Movement Mechanism

A4, LT.

Five sensors and one switch control the operation of the upper tray lift motor [A].

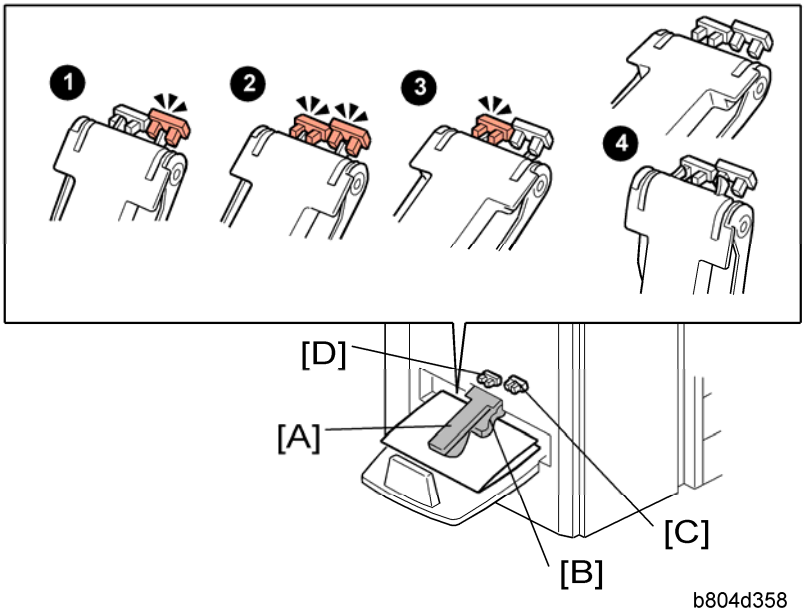
**Upper Tray Raising and Lowering**

| Operation Mode | Sensors, Switch | | | | Action |
|---|---|---|---|---|---|
| | [C] | [D] | [F] | [G] | |
| Standby (Non-Staple Mode) | OFF | OFF | | | Stops the lift motor at the standby position when the actuator of the upper feeler deactivates sensor [C] (when it is between sensors [C] and [D]).<br>**Note:** Sensor [F] and switch [G] are used as backup if sensor [C] fails or if the upper tray is not attached. |
| Straight Through | | | ON | | **Non-staple mode operation:** During operation, tray lift is controlled only by sensor [F]. When the actuator leaves sensor [F], the tray lowers until the actuator reactivates sensor [F]. |
| Shift | | | ON | | |
| Standby (Staple Mode) | ON | | | | **Standby:** The upper tray stops and waits for the paper output when the actuator activates sensor [C]. [D] is not used for staple mode<br>**Staple Mode Operation:**<br>▪ The upper tray lowers the prescribed distance immediately after the stack exits.<br>▪ The upper tray rises until the actuator activates sensor [C] and stops the tray lift motor (and the tray) to wait for the next set.<br>▪ Sensor [F] and switch [G] are used as backup if sensor [C] fails. |

**Tray Full**

| | |
|---|---|
| B804 | When the actuator on the tray activates the upper tray full sensor [H] the tray lift motor [A] switches off. Operation resumes after some copies are removed from the tray. Upper Tray Capacity: 2,000 sheets (A4, LT) |
| B805 | The operation of the upper tray full sensor is the same as the B804. Capacity: 1,500 sheets for A3, B4 or other large paper.<br>An additional upper tray full sensor (below sensor [H]) allows more sheets to stack on the upper tray. Capacity: 3,000 sheets (A4, LT) |

## 2.4.2 LOWER TRAY (B804 ONLY)




The lower tray sensor actuator arm [A] rests on the top of the stack of stapled booklets as they are output to the lower tray. A flap depressor [B] keeps the open ends of the booklets down.

The front lower tray full sensor (S34) [C] and rear lower tray full sensor (S33) [D] detect when the lower tray is full of booklets.

Important

- The front lower tray full sensor is mounted higher than the rear lower tray full sensor.
- The lower tray is stationary. When it becomes full, the stapling and folding job stops until booklets are removed from the tray.

Tray Movement Mechanism

- If the lower tray is not installed (this is detected if the front and rear sensors remain OFF), the machine will not operate in the booklet staple and fold mode. When booklet mode is selected, the tray full message appears on the operation panel.

The combinations of the two actuators and two sensors as the actuator arm rises determines the number of booklets that the lower tray can hold before the job stops.
The tray full detection depends on the size of the paper and the number of sheets in one stapled and folded booklet.
In the table below, the conditions (❶ Ready ❷ Full 1, ❸ Full 2 ❹ Full 3: See the illustration on the previous page) refer to the states of the sensors described on the previous page.

| Condition | Front Sensor | Rear Sensor |
|---|---|---|
| Ready | ON | OFF |
| Full 1 | ON | ON |
| Full 2 | OFF | ON |
| Full 3 (or lower tray not installed) | OFF | OFF |

In the tables below:

- "Sht" denotes "sheets in a stack".
- "Cnt" denotes "Count" (see below for an explanation).

After a booklet is feed out, the fold roller motor stops the exit roller. The machine then monitors the tray full sensors every 100 ms. The machine checks for a certain condition, based on the size of the paper and the number of sheets in the booklet.
An example is shown below. Tell the operators that the number of sheets that the lower tray can hold will vary greatly.

**Lower Tray Full Condition Table**

**A3 (DLT)**

| | 1 Sht | 2 Sht | 3 Sht | 4 Sht | 5 Sht | 6 Sht | 7 Sth | 8 Sht | 9 Sht | … |
|---|---|---|---|---|---|---|---|---|---|---|
| **Full 1** | 3 Cnt | — | — | — | — | — | — | — | — | … |
| **Full 2** | — | 5 Cnt | 15 Cnt | — | — | — | — | — | — | … |
| **Full 3** | — | — | — | 7 Cnt | 13 Cnt | 4 Cnt | 2 Cnt | 2 Cnt | 2 Cnt | … |

**A4 (LT)**

| | 1 Sht | 2 Sht | 3 Sht | 4 Sht | 5 Sht | 6 Sht | 7 Sth | 8 Sht | 9 Sht | … |
|---|---|---|---|---|---|---|---|---|---|---|
| **Full1** | 16 Cnt | — | — | — | — | — | — | — | — | … |
| **Full 2** | — | 10 Cnt | 10 Cnt | 15 Cnt | 20 Cnt | 15 Cnt | 10 Cnt | 8 Cnt | 8 Cnt | … |
| **Full 3** | — | — | — | | | | | | | … |

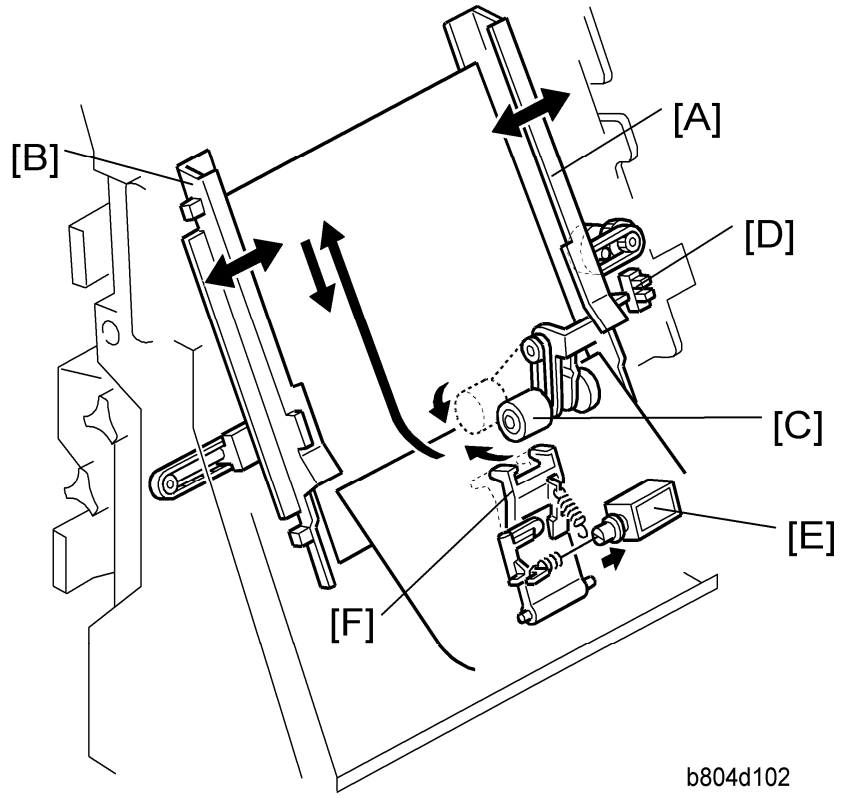
**Examples:**

After the copier makes a booklet with 1 sheet of A3/DLT paper, the machine checks every 100 ms for the ‘Full 1’ condition. If the Full 1 condition occurs 3 times, the machine detects that the tray is full.

After the copier makes a booklet with 5 sheets of A4/LT paper, the machine checks every 100 ms for the ‘Full 2’ condition. If the Full 2 condition occurs 20 times, the machine detects that the tray is full.

# 2.5 CORNER STAPLING

## 2.5.1 STACKING AND JOGGING




[A]: Jogger Fence Motor (M15)
[B]: Jogger Fences
[C]: Positioning Roller
[D]: Jogger Fence HP Sensor (S15)
[E]: Stapling Edge Pressure Plate Solenoid (SOL4)
[F]: Pressure Plate

At the beginning of the job, the jogger fence motor (M15) [A] switches on and moves the jogger fences [B] to the standby position (7.5 mm from the sides of the selected paper size). When each sheet passes the pre-stack tray exit sensor (S2) and enters the stapling tray:

- The jogger fence motor switches on and moves the jogger fences to within 5.5 mm of the sides of the selected paper size.
- The positioning roller solenoid (SOL3) switches on for the time prescribed for the paper

size. This pushes the positioning roller [C] onto the sheet and pushes it down onto bottom fence. This aligns the edge of the stack.

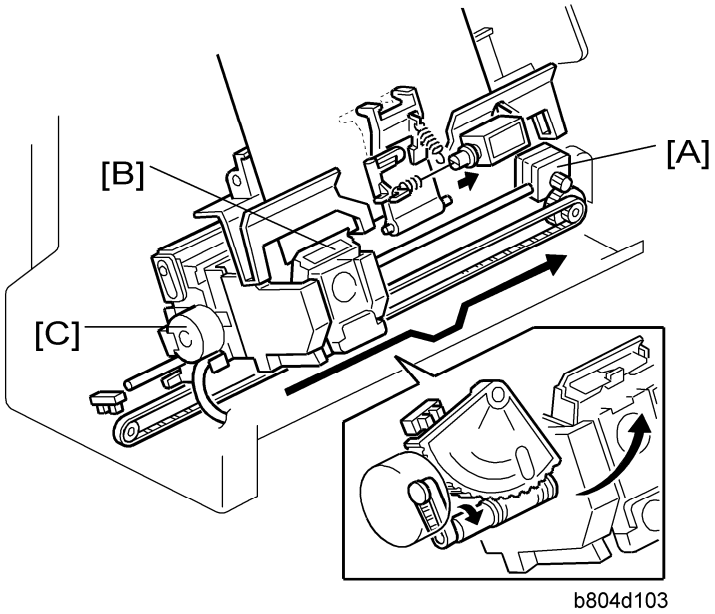
Next, the jogger fence motor:

- Switches on again and moves the jogger fences to within 2.6 mm of the sides of the stack to align the sides of the stack.
- Reverses and moves the fences to the standby position (7.5 mm away for the sides) and waits for the next sheet.
- The jogger fence HP sensor [D] switches off the jogger motor at the end of the job.

After the last sheet feeds:

- The stapling edge pressure plate solenoid [E] (SOL4) switches on and pushes the pressure plate [F] onto the stack to press down the edge for stapling.
- The corner stapler staples the stack.

## 2.5.2 STAPLER MOVEMENT




[A]: Stapler Movement Motor
[B]: Stapler
[C]: Stapler Rotation Motor

Corner Stapling

The stapler performs horizontal and rotational movement in each of the four staple modes:

- Front 1 staple
- Rear 1 staple
- Rear diagonal staple
- Rear/Front 2 staples

The stapler movement motor [A] drives a timing belt that moves stapler [B] left and right on its stainless steel rail.

The stapler rotation motor [C] rotates the stapler into position for diagonal stapling at the rear.

- The stapler movement motor switches on and moves the stapler the standby stapling position. (This is the stapling position for the paper size selected for the job.)
- The stapler movement motor switches off and the stapler waits for the signal to fire (or swivel and for diagonal stapling).

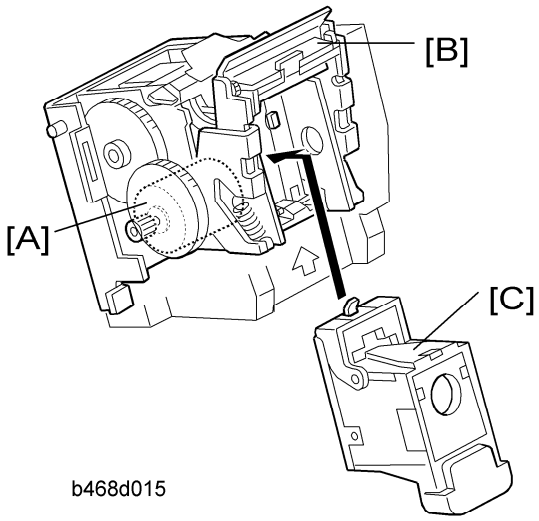
If the stack is to be stapled at two positions:

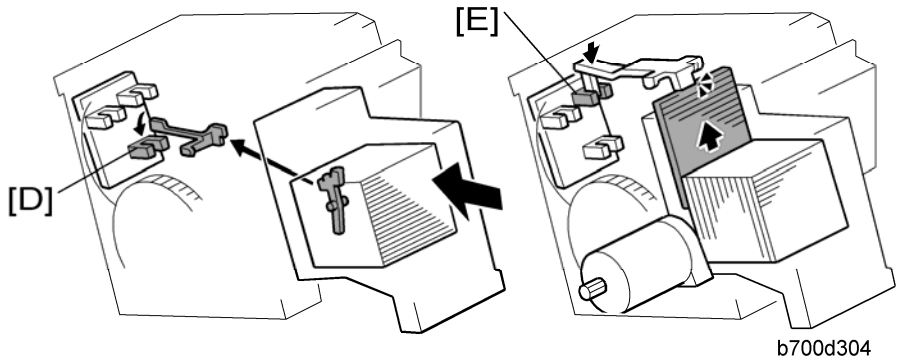
- The stapler movement motor moves the stapler to the front position and staples the front.
- The stapler movement motor moves the stapler to the rear and the stapler staples the rear.

If the stack is stapled at the rear with a diagonal staple, the staple moves to the rear. When it is time for stapling, the rotation motor rotates the stapler to the correct angle and holds the stapler in that position while the stapler fires.

The stapling positions can be fine adjusted with **SP6-133-001**.

## 2.5.3 CORNER STAPLING



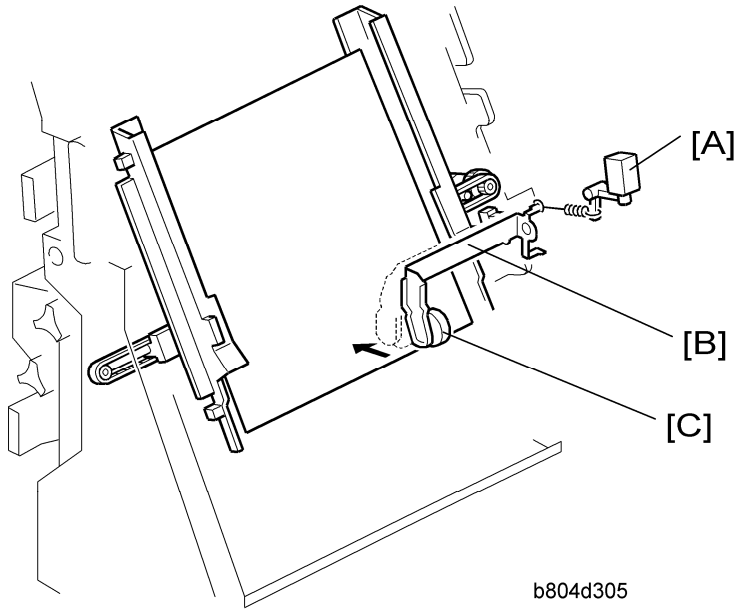

Staple firing is driven by the stapler motor [A] inside the stapler unit. The stapler hammer [B] fires the stapler [C].

The cartridge set sensor [D] detects the cartridge at the correct position.

The staple end sensor [E] detects the staple end condition.

# 2.6 BOOKLET STAPLING (B804 ONLY)

## 2.6.1 BOOKLET PRESSURE MECHANISM



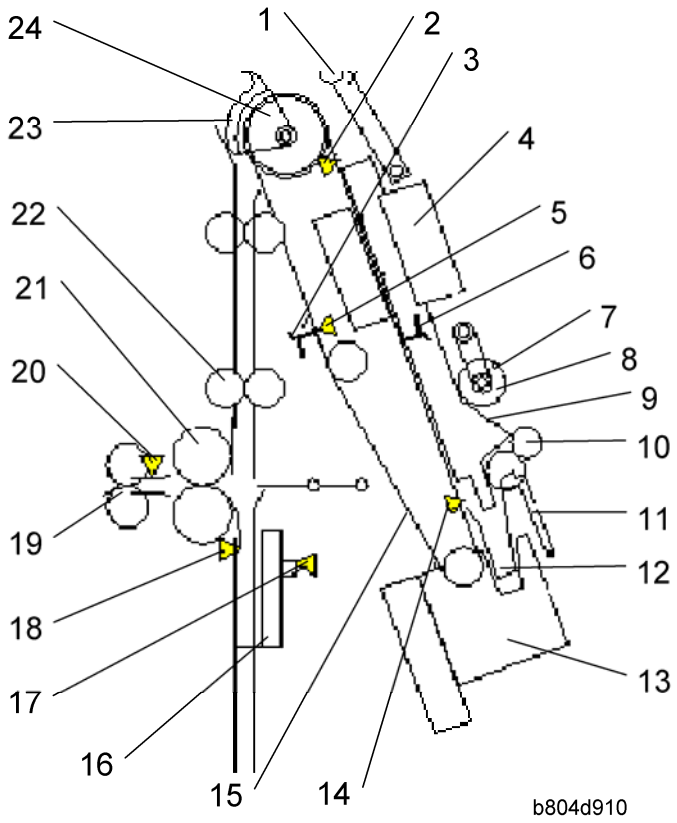

| |
|---|
| [A]: Booklet Pressure Roller Solenoid (SOL5) |
| [B]: Booklet Pressure Roller Arm |
| [C]: Booklet Pressure Roller |

As soon as the edges are aligned by the positioning roller and the jogger fences, the stack feed out belt moves.

In booklet mode, immediately after the edges are aligned by the positioning roller and jogger fences, the booklet pressure solenoid switches on and the booklet pressure roller presses down on the stack until booklet stapling is finished. This prevents the stack from shifting during stapling.

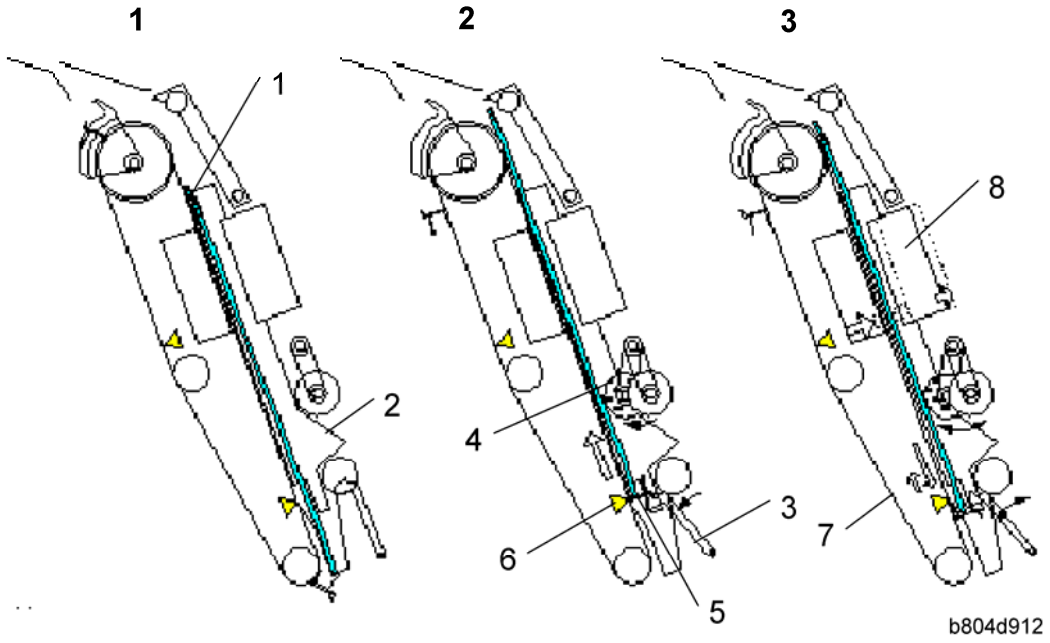
## 2.6.2 BOOKLET STAPLING AND FOLDING

### *Overview*




| | |
|---|---|
| 1. Leading Edge Pressure Roller | 13. Corner Stapler (M20) |
| 2. Stack Present Sensor (S32) | 14. Stapling Tray Paper Sensor (S14) |
| 3. Feed Out Belt Pawl 1 | 15. Feed Out Belt |
| 4. Booklet Staplers x2 (M22, M23) | 16. Fold Unit Bottom Fence |
| 5. Stack Feed Out Belt HP Sensor (S16) | 17. Fold Bottom Fence HP Sensor (S28) |
| 6. Feed Out Belt Pawl 2 | 18. Fold Unit Entrance Sensor (S26) |
| 7. Positioning Roller | 19. Fold Unit Exit Rollers x2 |
| 8. Booklet Pressure Roller (Rear) | 20. Fold Unit Exit Sensor (S31) |
| 9. Jogger Fences x2 | 21. Fold Rollers x2 |
| 10. Pre-Stack Exit Roller | 22. Clamp Rollers x2 |
| 11. Pressure Plate | 23. Stack Junction Gate |
| 12. Stapling Tray Bottom Fence | 24. Stack Transport Roller |

Booklet Stapling (B804 Only)




**1:**

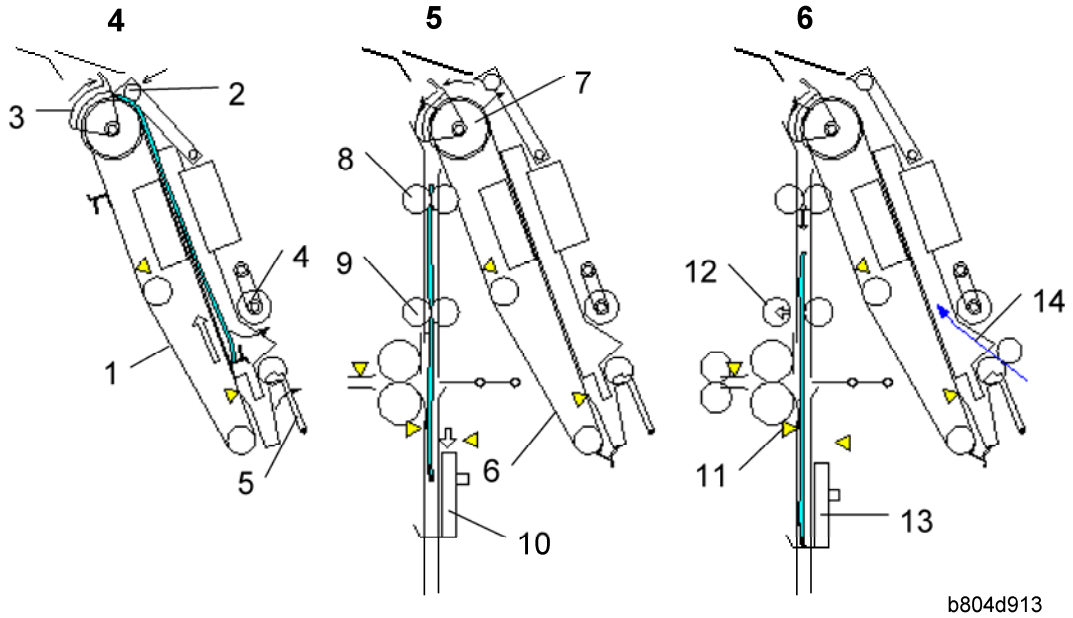
The last sheet of the stack [1] enters the stapling tray. The jogger fences [2] jog the last sheet into position (based on the width of the selected paper size) and then retract and stop 1 mm away from the sides of the stack.

**2:**

The pressure plate [3] and booklet pressure roller [4] press down on the sheet. The stack feed out belt switches on and the pawl [5] on the feed out belt catches the bottom of the stack and raises it. The stapling tray sensor [6] detects the trailing edge of the paper stack.

**3:**

The feed out belt [7] raises the stack to the prescribed stapling position and stops. The jogger fences move to the sides of the stack and the booklet staplers [8] staple the stack.




**4:**

The jogger fences remain 1 mm away from the sides of the stack. The feed out belt [1] raises the stack until the top of the stack is 10 mm past the leading edge pressure roller [2] and stops. The leading edge pressure roller descends and applies pressure to the top of the stack. The stack junction gate [3] (normally open) closes. The pressure roller [4] and pressure plate [5] retract.

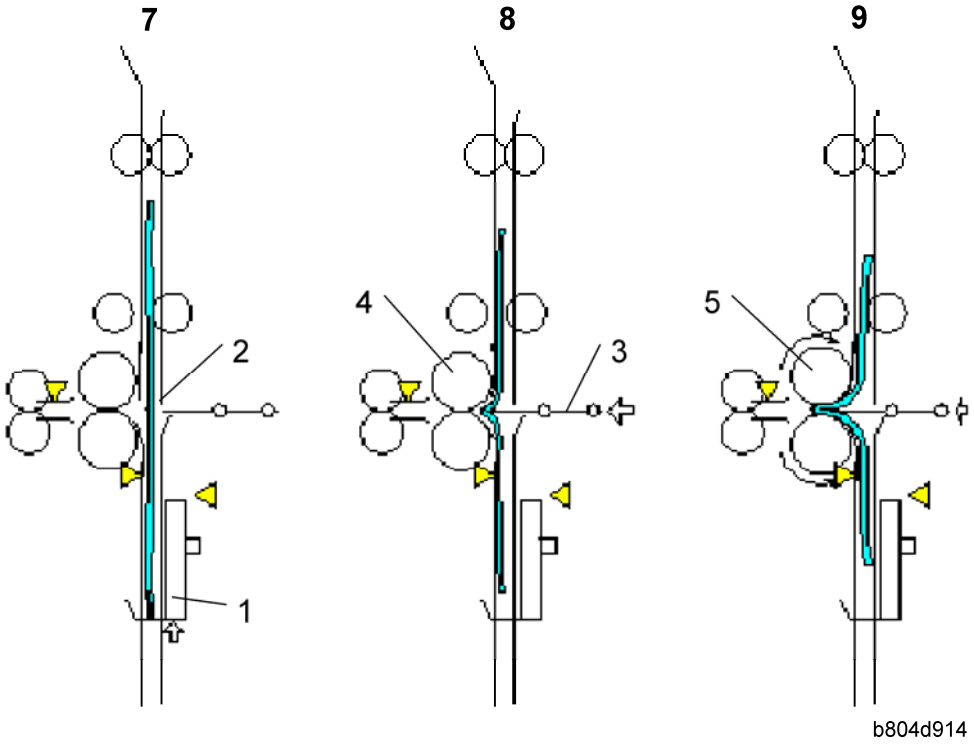
**5:**

The feed out belt [6], transport rollers [7], [8], and clamp rollers [9] rotate and feed the stack past the closed stack junction, over the top and down toward the bottom fence [10]. At the same time, the fold unit bottom fence descends from its home position and stops 10 mm below the fold position.

**6:**

The rollers feed the leading edge of the stack to within 3 mm of the stack stopper of the bottom fence [13]. The fold unit entrance sensor [11] detects the stack and opens the clamp rollers [12]. The stack drops 3 mm onto the fold unit bottom fence [13]. At this time, the first sheet [14] of the next stack feeds to the stapling tray.

Booklet Stapling (B804 Only)




**7:**

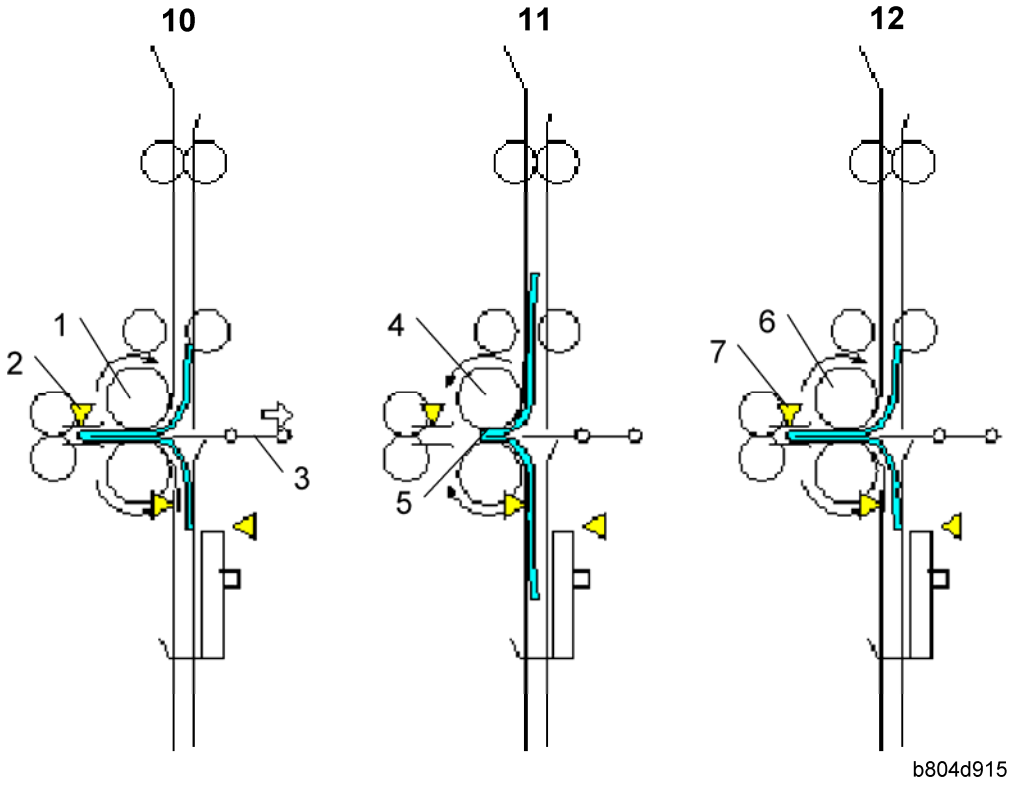
The bottom fence [1] raises the stack to the prescribed fold position [2].

**8:**

The fold plate [3] moves to the left and advances 1/3 its maximum horizontal stroke and exerts 20 kg (44 lb.) of pressure at the fold rollers [4].

**9:**

With the fold plate pushing the stack into nip of the fold rollers [5], the fold rollers begin to rotate and fold the stack as it feeds out.




**10:**

When the fold rollers [1] feed the stack 10 mm past the nip, the fold plate retracts until it no longer touches the stack. The fold unit exit sensor [2] detects the folded edge of the stack and stops the fold rollers.

**11:**

The rotation of the fold rollers [4] reverses and feeds the folded edge back until only 3 mm of the fold [5] remains at the nip.

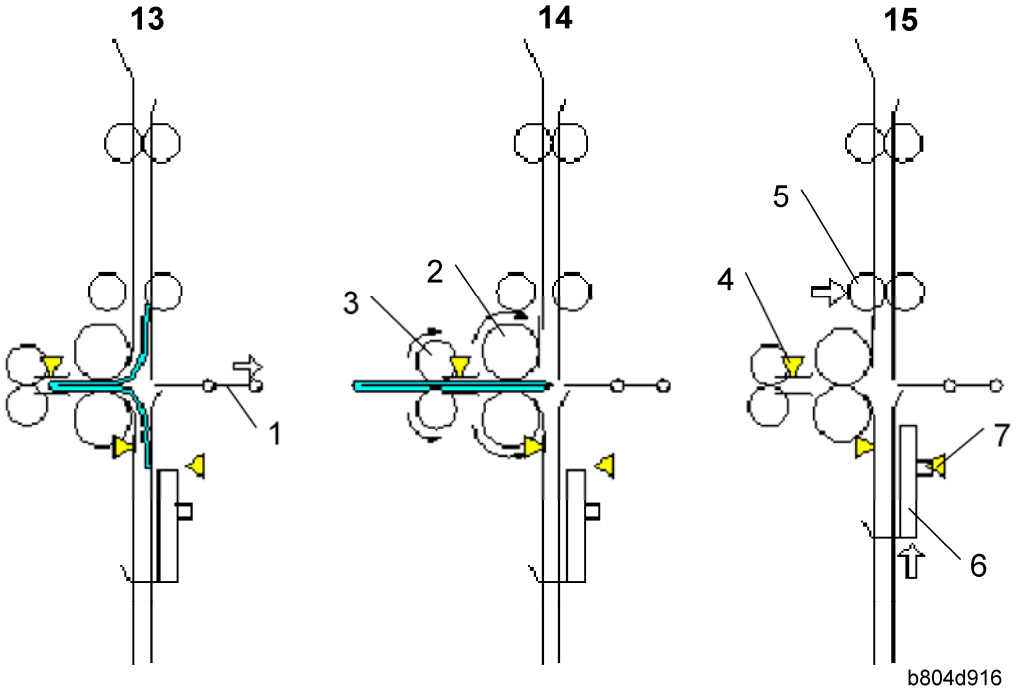
**12:**

The fold rollers [6] rotate forward once again feed out. The fold unit exit sensor [7] once again detects the edge of the fold.

Note

- You can do **SP6-136-001** to increase the sharpness of the fold. The number of forward and reverse feeds can be set in the range of 2 to 30. The machine repeats Steps 11 and 12. For more, please refer to Section "Service Tables".

Booklet Stapling (B804 Only)




**13:**

With the feed of the stack halted, the fold plate [1] retracts. The fold plate HP sensor (not shown) detects the fold plate and stops it at its home position.

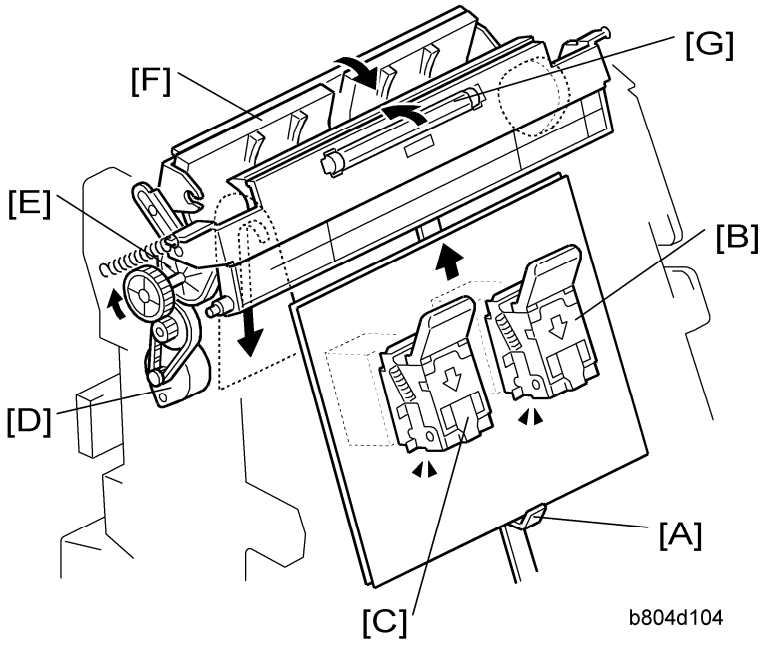
**14:**

The fold rollers [2] and fold unit exit rollers [3] begin to rotate together and feed out the folded booklet to the lower tray.

**15:**

Once the trailing edge of the stack passes the fold unit exit sensor [4], the clamp rollers [5] close to be ready to feed the next stack. The fold unit bottom fence [6] descends. The bottom fence HP sensor [7] stops the bottom fence when it detects the actuator on the bottom fence.

## 2.6.3 BOOKLET STAPLING AND FOLDING MECHANISMS




**Booklet Stapler**

[A]: Feed Out Belt Pawl. Raises the stack to stapling position.

[B]: Booklet Stapler EH185R – Rear

[C]: Booklet Stapler EH185R – Front

**Stack Junction Gate**

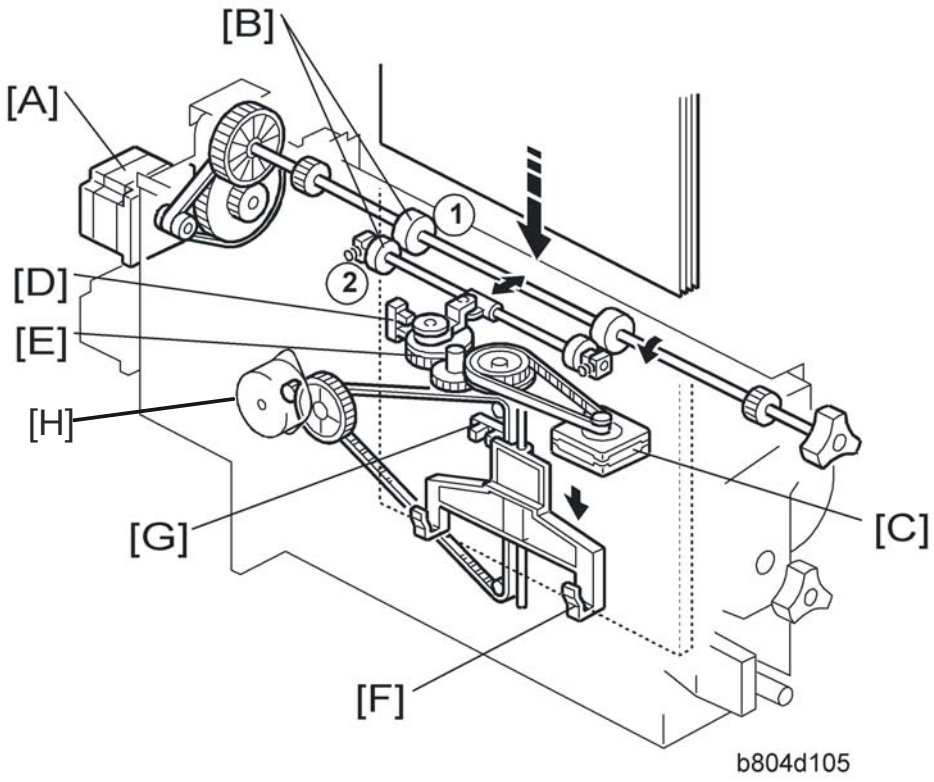
[D]: Stack Junction Gate Motor. Drives a timing belt and stack junction gate cam.

[E]: Stack Junction Gate Cam. Opens and closes the stack junction gate.

[F]: Stack Junction Gate. The stack junction gate motor and stack junction gate cam close the stack junction gate. The feed out belt pawl raises the stapled stack and sends it over the top and down to the fold unit.

[G]: Leading Edge Pressure Roller. Presses down on the leading edge of the stack after booklet stapling.

Booklet Stapling (B804 Only)






**Clamp Roller**

[A]: Fold Roller Motor. Drives the stationary clamp drive roller ① as well as the fold rollers (see next page).

[B]: Clamp Rollers.

① Clamp Roller – Drive. Rotated by the fold roller motor, this stationary roller feeds the stack down with the retracting roller closed.

② Clamp Roller – Retracting. Opened and closed by the retraction motor [C].

[C]: Clamp Roller Retraction Motor. Operates the clamp roller cam that retracts the retracting clamp roller. The clamp rollers feed the stack to within 3 mm of the bottom fence when closed and then open to drop the stack onto the bottom fence.

[D]: Clamp Roller HP Sensor. Controls the rotation of the clamp roller retraction motor and cam that open and close the retracting clamp roller.

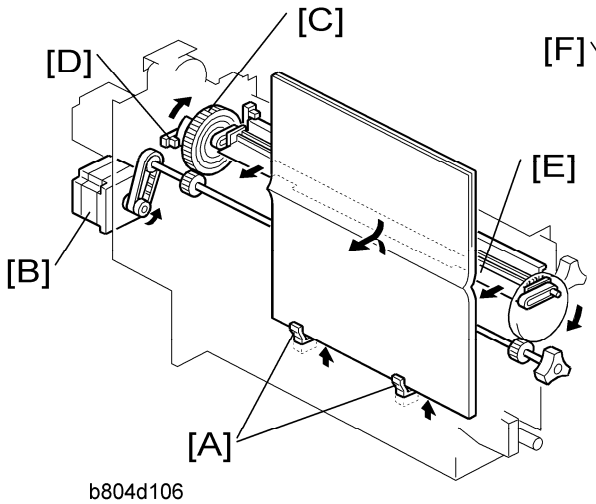
[E]: Clamp Roller Cam. Forces open the spring loaded retracting clamp roller.

**Bottom Fence**

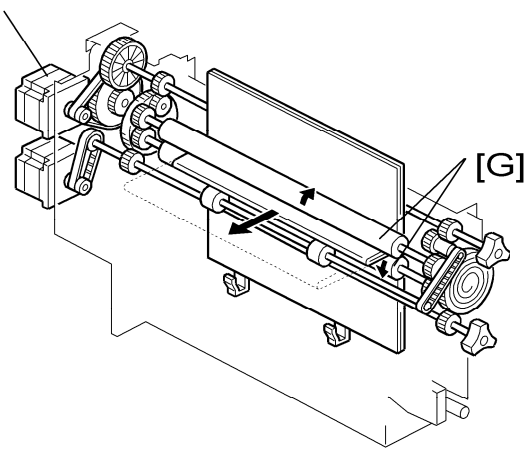
[F]: Bottom Fence. Raises the booklet stapled stack to the fold position.

[G]: Bottom Fence HP Sensor. Detects the actuator on the bottom fence and stops it at the home position after folding.

[H]: Bottom Fence Lift Motor. Raises the bottom fence and stapled stack to the fold position prescribed for the paper size.



b804d106



b804d107

**Fold Plate**

[A]: Bottom Fence Stack Stoppers. Catches the stack after it is released by the clamp rollers.

[B]: Fold Plate Motor. Drives the timing belt and gears that move the fold plate.

[C]: Fold Plate Cam. Controls the movement of the fold plate to the left (into the nip of the fold rollers) and right (toward the fold plate home position).

[D]: Fold Plate HP Sensor. Controls operation of the fold plate motor.

[E]: Fold Plate. Moves left and pushes the stack into the nip of the fold rollers and then moves right to retract.

**Fold Rollers**

[F]: Fold Roller Motor. Drives forward to feed out the stack at the fold and then reverses to feed the fold in to sharpen the crease, and then drives forward again to feed out the folded stack. This reverse/forward cycle is done once.

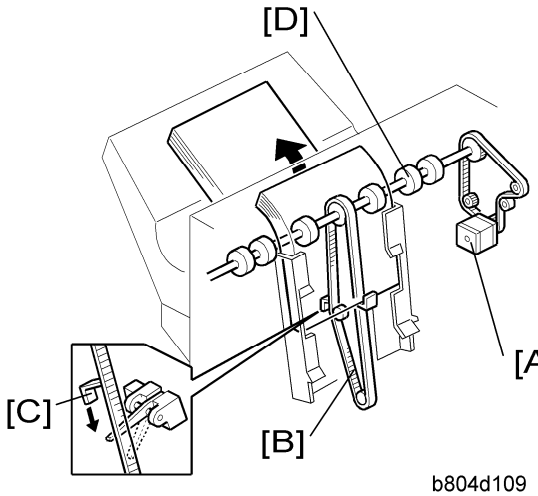
Note

- This cycle can be repeated by changing the setting of SP6114.

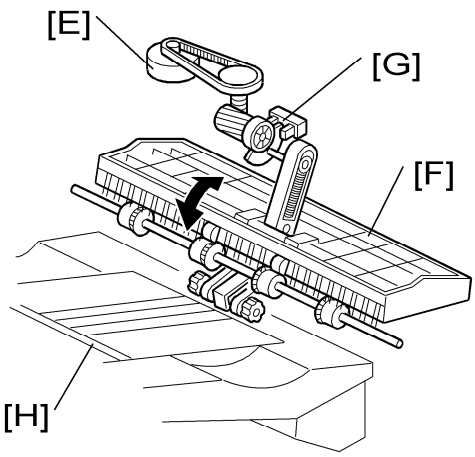
[G]: Fold Rollers. Driven by the fold roller motor, this roller pair feeds out the stack at its fold, reverses to feed in the stack to, and then feeds forward again (assisted by the fold unit exit rollers – not shown) to feed out the stack to the lower tray.

# 2.7 UPPER TRAY OUTPUT

## 2.7.1 FEED OUT




b804d109




b804d107



[A]: Feed Out Belt Motor
[B]: Stack Feed-Out Belt
[C]: Pawl
[D]: Exit Rollers
[E]: Exit Guide Plate Motor
[F]: Exit Guide Plate
[G]: Exit Guide Plate HP Sensor
[H]: Upper Tray

After the stack is stapled, the feed out belt motor [A] switches on and drives the feed out belt [B].

The pawl [C] attached to the feed out belt catches on the stack and lifts the stack toward the feed out slot.

The exit guide plate [F] remains open as the stack emerges at a prescribed distance away from the exit roller.

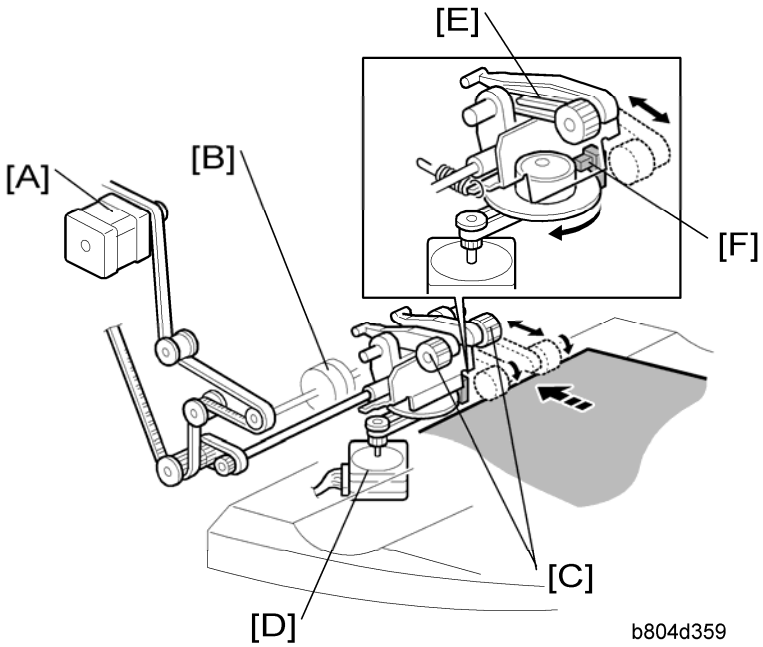
Next, the exit guide plate closes and the exit roller feeds the stack out.

The opening and closing of the exit guide plate is controlled by the rising and falling of a link driven by a rotating cam attached to the shaft of the exit guide plate motor [E].

The feed out belt motor stops 300 ms to prevent the stapled stack from rising too high. Next, the feed out belt motor switches on again, then the pawl actuates its home position sensor and switches off the motor.

There are two output pawls on the feed out belt to improve the productivity of the feed out operation.

## 2.7.2 FEED OUT STACKING




Upper/proof exit motor [A] drives feed roller [B] and stacking sponge roller [C].

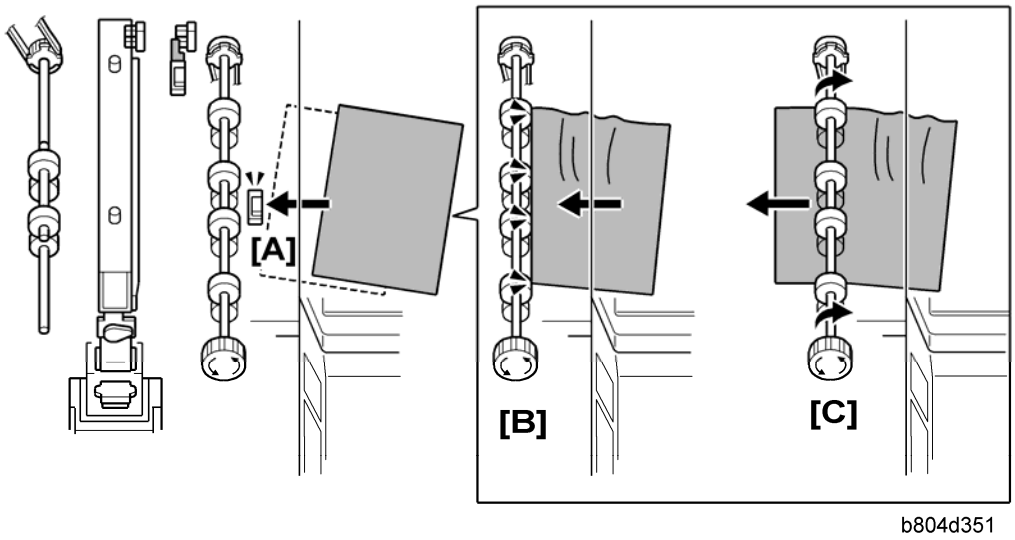
Stacking sponge roller motor [D] moves the sponge roller forward and back with link [E].

The position of the stacking sponge roller [C] is controlled by the stacking sponge roller motor which is switched on and off by the stacking roller HP sensor [F].

# 2.8 PUNCH UNIT B702 (FOR B804/B805)

## 2.8.1 OVERVIEW OF OPERATION

### *Skew Correction before Punching*




This punch unit corrects for paper skew and then positions the punch unit to punch holes at the correct position. Each sheet is punched one at a time.

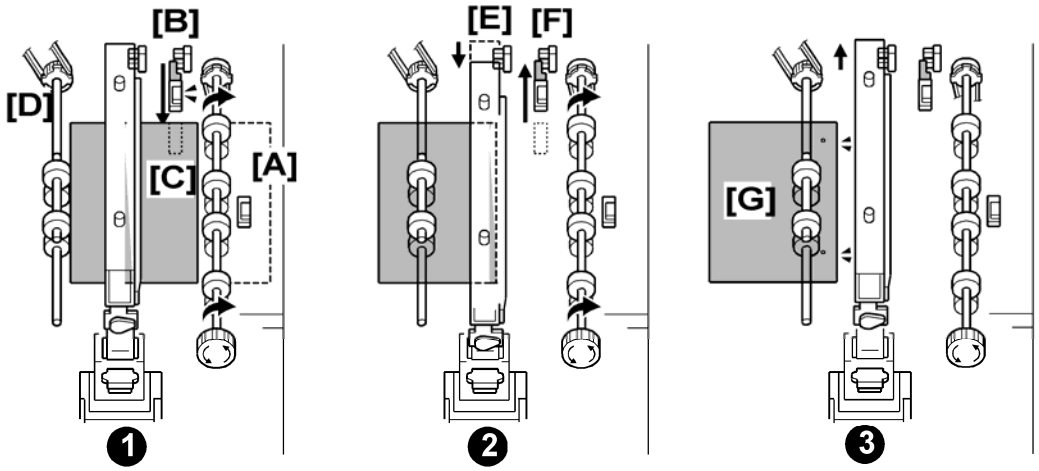
Paper feeds out of the copier. The finisher entrance sensor [A] detects the leading edge of the sheet.

The finisher entrance roller [B] stops rotating briefly while the copier exit rollers continue to rotate. This buckles the paper against the finisher entrance roller to correct skew. The finisher entrance roller [C] starts to rotate again and feeds the sheet into the finisher.

These SP codes adjust the skew operation in the punch unit:

- **SP6130**. This SP corrects the punch hole alignment. To do this, it corrects the skew of each sheet by adjusting the amount of time the finisher entrance roller remains off while the exit roller of the machine remains on. For more, see Section "Service Tables".
- **SP6131**. This SP determines whether the finisher entrance roller stops to correct skew when paper enters the finisher. You can use this SP to disable the skew correction. For more, see Section "Service Tables".

### *Punch Unit Position Correction*




b804d352

These operations (skew correction before punching, and punch unit position correction) increase the accuracy of the punch alignment.

❶:

The trailing edge of the sheet passes the finisher entrance sensor [A].

The paper position slide unit [B] moves the paper position sensor [C] forward to the edge of the paper.

The paper position sensor detects the position of the paper edge and sends this information to the punch unit board. The machine uses the detected position of the paper edge to calculate the correct position for punching.

The upper transport motor switches on and rotates the feed rollers [D] the prescribed distance to position the paper under the punch unit.

❷:

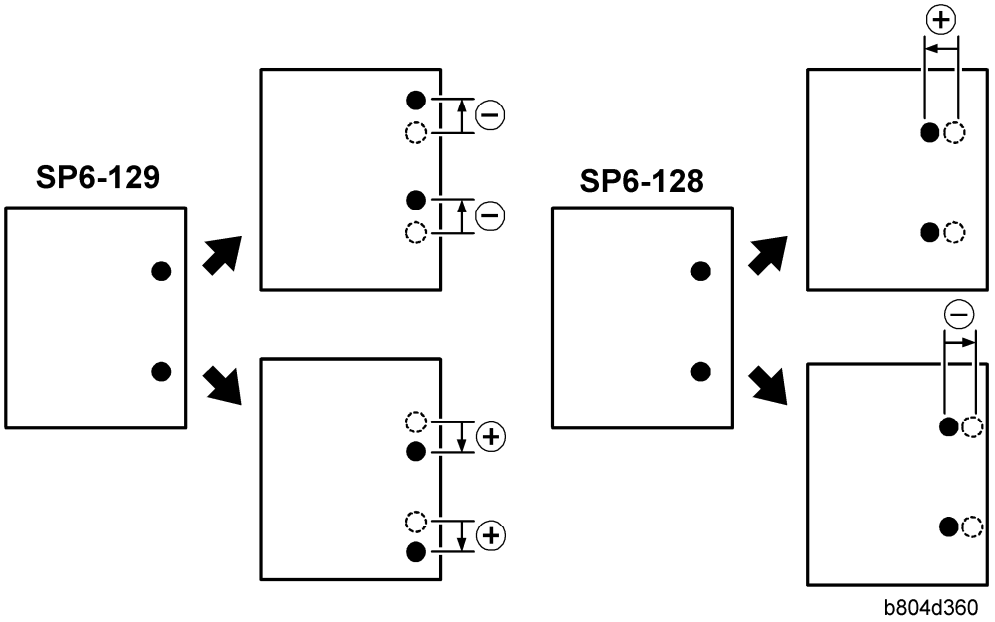
Using the result of the position calculation, the punch unit control board moves the punch unit [E] to the adjusted punch position.

The paper position slide unit and its paper sensor, move back to the paper position slide home position sensor [F], and the punch unit fires the punches to make the holes.

❸:

The feed rollers [G] feed the punched paper out of the punch unit and into the paper path.

Punch Unit B702 (For B804/B805)





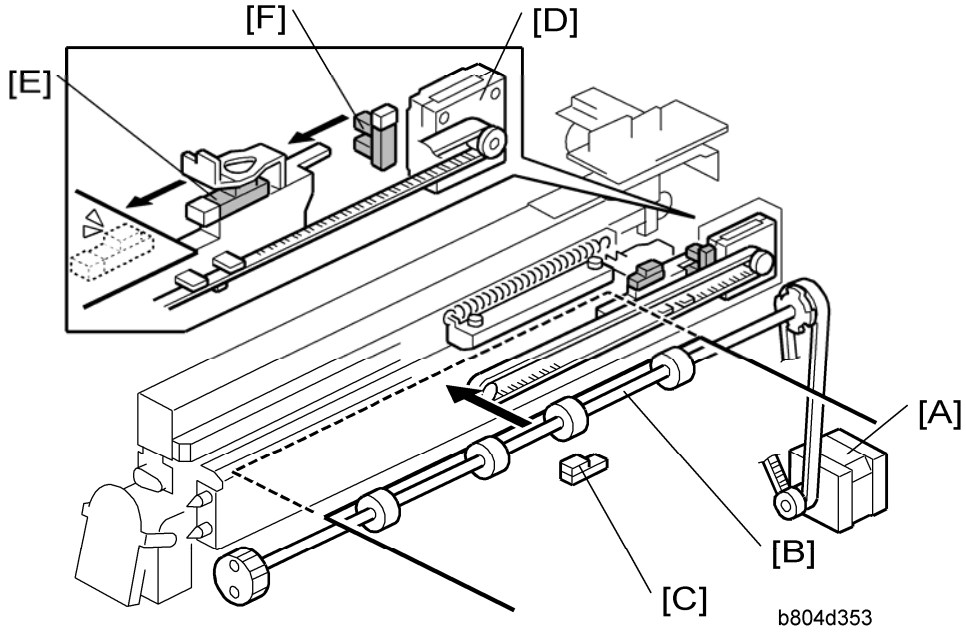

These SP codes adjust the punch hole alignment:

- **SP6-128** Adjusts the punch positions in the direction of paper feed.
- **SP6-129** Adjusts the punch position perpendicular to the direction of feed.

For more, see Section "Service Tables".

## 2.8.2 PUNCH MECHANISMS

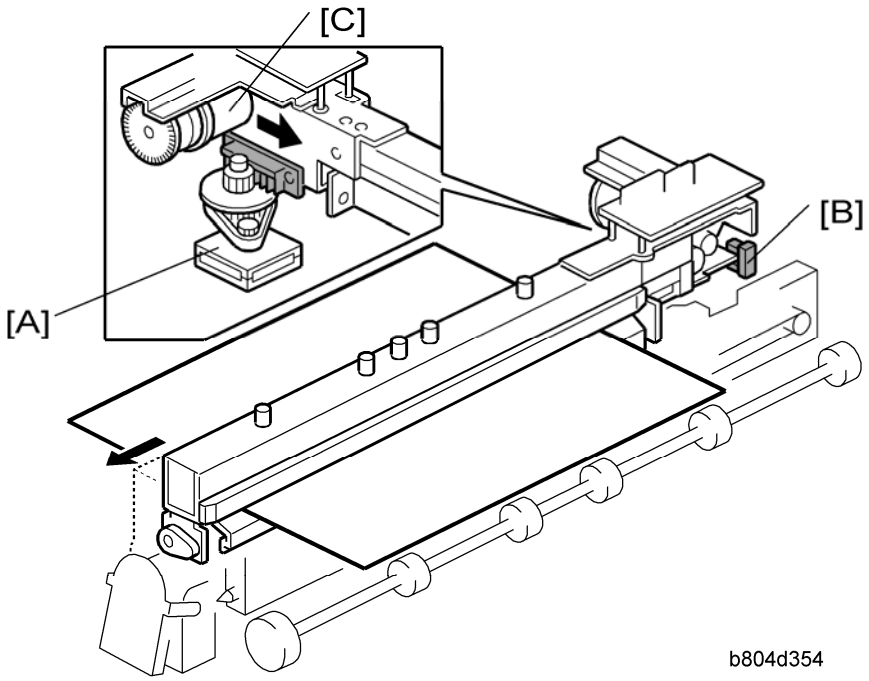
### *Paper Position Detection*



[A]: Finisher Entrance Motor (M1)
[B]: Finisher Entrance Roller
[C]: Finisher Entrance Sensor (S1)
[D]: Paper Position Sensor Slide Motor (M7)
[E]: Paper Position Sensor (S27)
[F]: Paper Position Sensor Slide HP Sensor (S22)

The finisher entrance motor (M1) [A] drives the finisher entrance rollers [B] that feed paper from the copier into the finisher. The finisher entrance sensor (S1) [C] detects paper when it enters the finisher, and detects paper jams.
The paper position slide sensor motor (M7) [D] extends and retracts the paper position slide that holds the paper position sensor (S27) [E]. The paper position sensor detects the position of the paper edge. The detected position of the paper is used to calculate and position the punch unit for punching.
The paper position slide HP sensor (S22) [F] detects the paper position slide when it retracts and stops the paper position slide motor so the slide stops at its home position.

### *Punch Unit Movement*

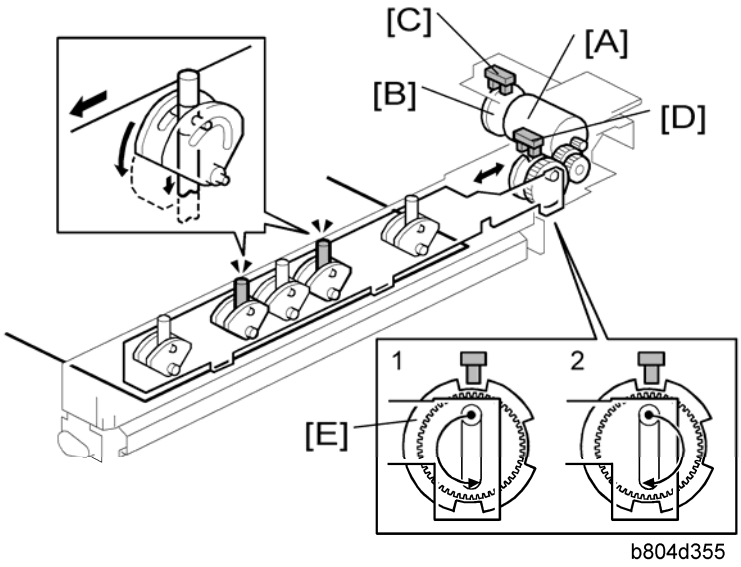


Punch Unit B702 (For B804/B805)

[A]: Punch Movement Motor (M9)
[B]: Punch Movement HP Sensor (S21)
[C]: Punch Drive Motor (M24)

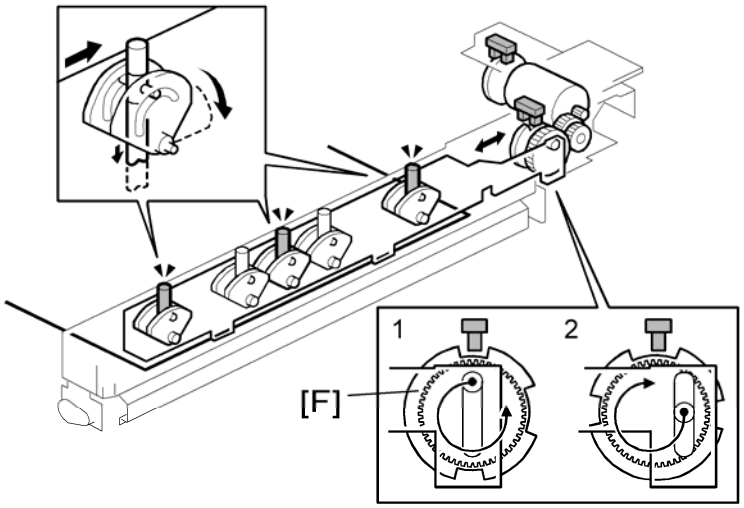
The punch movement motor (M9) [A] extends and retracts the punch unit to position it at the correct position for punching.
The punch movement HP sensor (S21) [B] detects the position when it retracts, switches off the punch position movement motor, and stops the punch unit at its home position.
The punch drive motor (M24) [C] fires the punches that punch holes in the paper below.

### *Punch Selection and Firing*




[A]: Punch Drive Motor (M24)
[B]: Punch Encoder Wheel
[C]: Punch Encoder Sensor (S24)
[D]: Punch HP Sensor (S23)

The punch drive motor (M24) [A] turns the small, notched encoder wheel [B] through the gap in the punch encoder sensor [C] (S24). The sensor output is used to control the punch timing.



b804d356

The timing for 2-hole punching [E] is different from 3-hole punching [F].

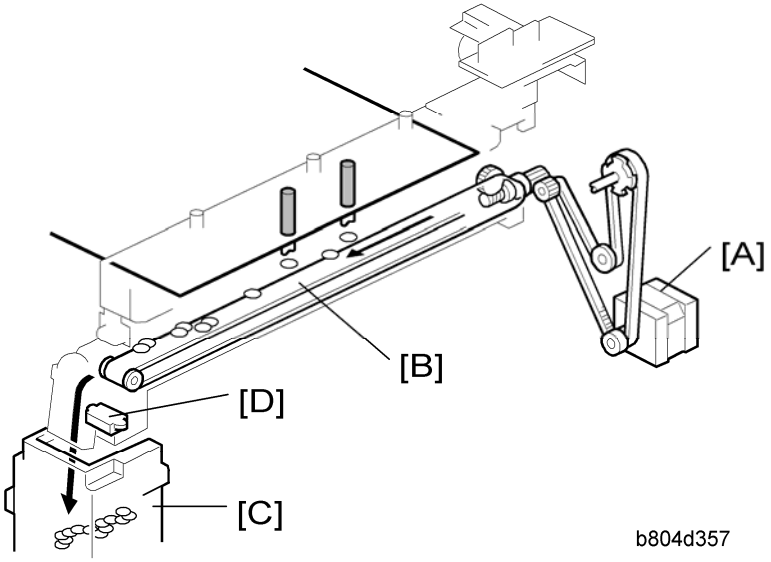
When the punch unit is at the punching position, the punch motor turns until the encoder detects the starting position for 2-hole or 3-hole punching.

- This is the '1' position in the diagrams (the top diagram is for 2-hole punching, and the bottom diagram is for 3-hole punching).

Then, the punch drive motor turns counter-clockwise to the '2' position. This movement punches the holes in the paper.

Then, the punch drive motor turns clockwise to the '1' position, to be ready for the next sheet of paper.

## 2.8.3 PUNCH HOPPER MECHANISM



b804d357

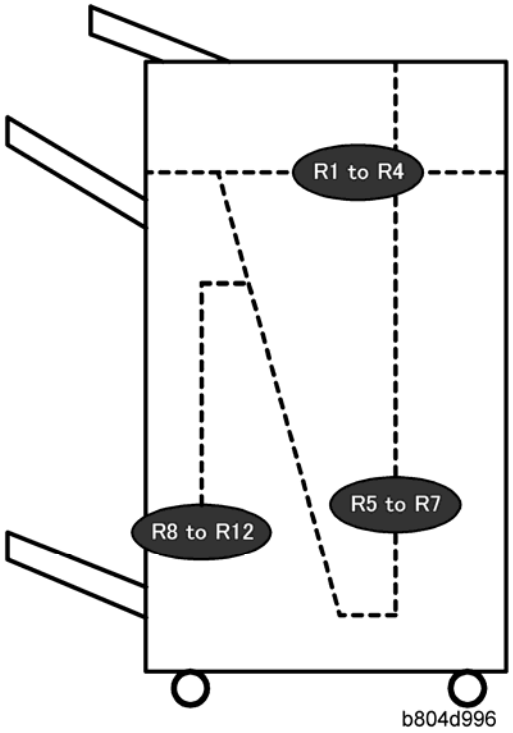
Punch Unit B702 (For B804/B805)

[A]: Finisher Entrance Motor (M1)
[B]: Punch Waste Belt
[C]: Punch Waste Hopper
[D]: Punch Hopper Full Sensor (S4)

The finisher entrance motor (M1) [A] drives the timing belt and gears that rotate the punch waste belt [B].
The punchouts fall from the punch unit onto the belt. The belt moves the punchouts to the front and dumps them in the punch waste hopper [C].
The punch hopper full sensor [D]:

- Signals that the hopper is full when it detects the top of the stack of punchouts that have collected in the hopper.
- It also detects when the punch hopper is set properly.

# 2.9 FINISHER JAM DETECTION




| Display | Mode | Jam | What It Means |
|---|---|---|---|
| R1 to R3 | Proof<br>Shift<br>Staple | Finisher entrance sensor late | After main machine exit sensor goes OFF, finisher entrance sensor does not go ON even after enough time to feed 450 mm. |
| | | Finisher entrance sensor lag | After finisher entrance sensor goes ON, it does not go OFF after enough time to feed a sheet 1.5 times its length has elapsed. |
| R3 | Proof | Proof exit sensor late | After finisher entrance sensor goes ON, proof exit sensor does not go ON even after enough time to feed 450 mm. |
| | | Proof exit sensor lag | After finisher entrance sensor goes OFF, proof exit sensor does not go OFF even after enough time to feed 450 mm. |

Finisher Jam Detection

| Display | Mode | Jam | What It Means |
|---|---|---|---|
| R4 | Shift | Upper tray exit sensor late | After finisher entrance sensor goes ON, upper tray exit sensor does not go ON even after enough time to feed 485 mm. |
| | | Upper tray exit sensor lag | After finisher entrance sensor goes OFF, upper tray exit sensor does not go OFF even after enough time to feed 650 mm. |
| R5 to R7 | Staple | Pre-stack tray exit sensor lag | After finisher entrance sensor goes ON, pre-stack tray exit sensor does not go ON even after enough time to feed 650 mm. |
| | | Pre-stack tray exit sensor late | After finisher entrance sensor goes ON, pre-stack tray exit sensor does not go OFF even after enough time to feed 1650 mm. |
| R8 to R12 | Booklet Staple (B700 Only) | Fold unit entrance sensor late (S26) | The fold unit entrance sensor goes not go ON after enough time has elapsed to feed 1.5 times the length of the stack after the leading edge of the stack reaches the stack present sensor (S32). |
| | | Fold unit exit sensor late (S31) | The fold unit exit sensor does not go ON after enough time has elapsed for the stack to feed 1.5 times its length from the fold position. |
| | | Fold unit exit sensor lag (S31) | After the fold unit exit sensor goes ON, it does not go OFF after enough time has elapsed to feed 442.9 mm. |

# FAX OPTION TYPE 9001
# D418

| REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| 43 | 10/05/2009 | Error Code 31-21 added. |

# FAX OPTION TYPE 9001 D418

## TABLE OF CONTENTS

# Read This First

## Important Safety Notices

### ⚠WARNING

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use a telephone or cellular phone to report a gas leak in the vicinity of the leak.

### ⚠CAUTION

- Before installing the fax unit, switch off the main switch, and disconnect the power cord.
- The fax unit contains a lithium battery. The danger of explosion exists if a battery of this type is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer. Discard batteries in accordance with the manufacturer's instructions and local regulations.

Note

- **Note for Australia**:
- Unit must be connected to Telecommunication Network through a line cord which meets the requirements of ACA Technical Standard TS008.

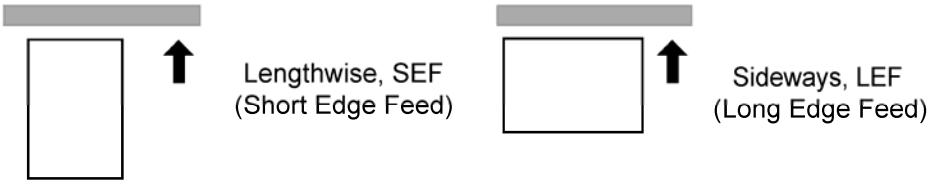
## Symbols and Abbreviations

### Conventions Used in this Manual

This manual uses several symbols.

| Symbol | What it means |
|---|---|
|  | Refer to section number |
|  | Screw |

| | |
|---|---|
|  | Connector |
|  | E-ring |
|  | Clip ring |
|  | Clamp |




## Cautions, Notes, etc.

The following headings provide special information:

**⚠WARNING**

- Failure to obey warning information could result in serious injury or death.

**⚠CAUTION**

- Obey these guidelines to ensure safe operation and prevent minor injuries.

**Important**

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.
- Always obey these guidelines to avoid serious problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine. bold is added for emphasis.

**Note**

- This document provides tips and advice about how to best service the machine.

# 1. INSTALLATION

## 1.1 INSTALLATION: FAX OPTION TYPE 9001 (D418-00)

### 1.1.1 COMPONENT CHECK

Check the quantity and condition of the components against the following list.

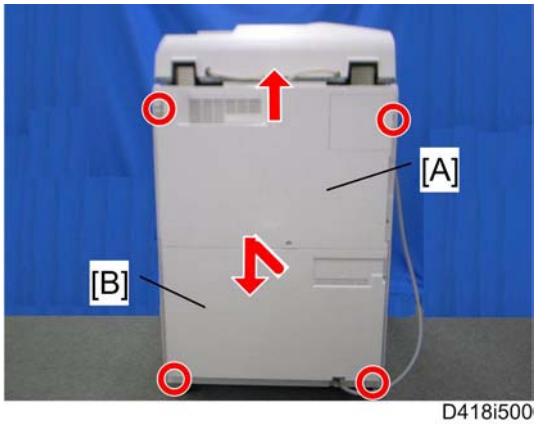
| No. | Description | Q'ty |
|---|---|---|
| 1. | FCU | 1 |
| 2. | Interface Board | 1 |
| 3. | Fax Keytop | 2 |
| 4. | Ferrite Core (ZCAT1730-730A) | 1 (NA/TWN) |
| 4' | Ferrite Core (TFC-25-15-12A) | 1 (EU/AA/CHN) |
| 5. | Ferrite Core (RFC-9) | 1 |
| 6. | Screws (Blue M3 x 6) | 7 |
| 7. | Speaker Unit | 1 |
| 8. | Super G3 Decal | 1 |
| 9. | Clamp | 2 |
| 10. | Telephone Cable (NA only) | 1 |
| 11. | FCC Decal (NA Only) | 1 |
| 12. | Serial Number Decal | 1 |
| 13. | Multi-Language Decals | 1 (Excluding NA) / 2 (EU) |
| 14. | EMC Address Decal | 1 (EU only) |
| 15. | Quick Reference Guide | 1 (Excluding EU) |

## 1.1.2 FCU INSTALLATION

**⚠CAUTION**

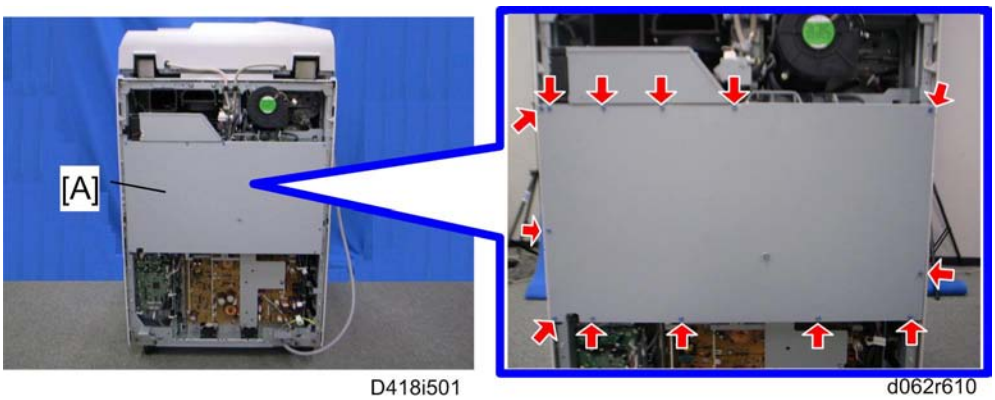
- Before installing this fax unit:
- 1) Print out all data in the printer buffer.
- 2) Turn off the main power switch and disconnect the power cord and the network cable.

### *FCU (D418-00)*



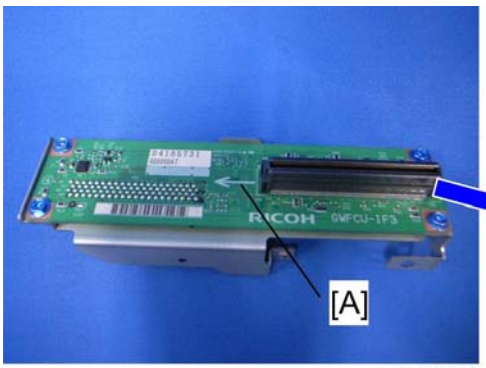
D418i500

1. Remove the rear upper cover [A] ( x 2).
   - Slide the rear upper cover up, and then remove it.
2. Remove the rear lower cover [B] ( x 2).
   - First slide up the rear lower cover, then slide it down.

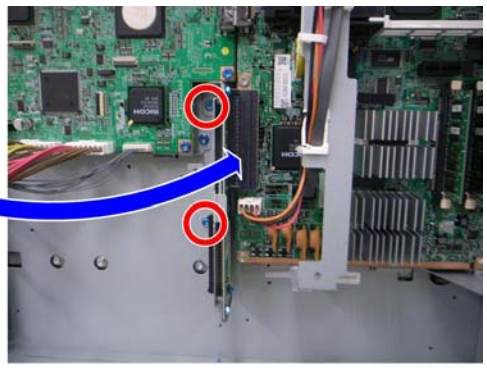


D418i501 d062r610

3. Controller box cover [A] ( x 13).

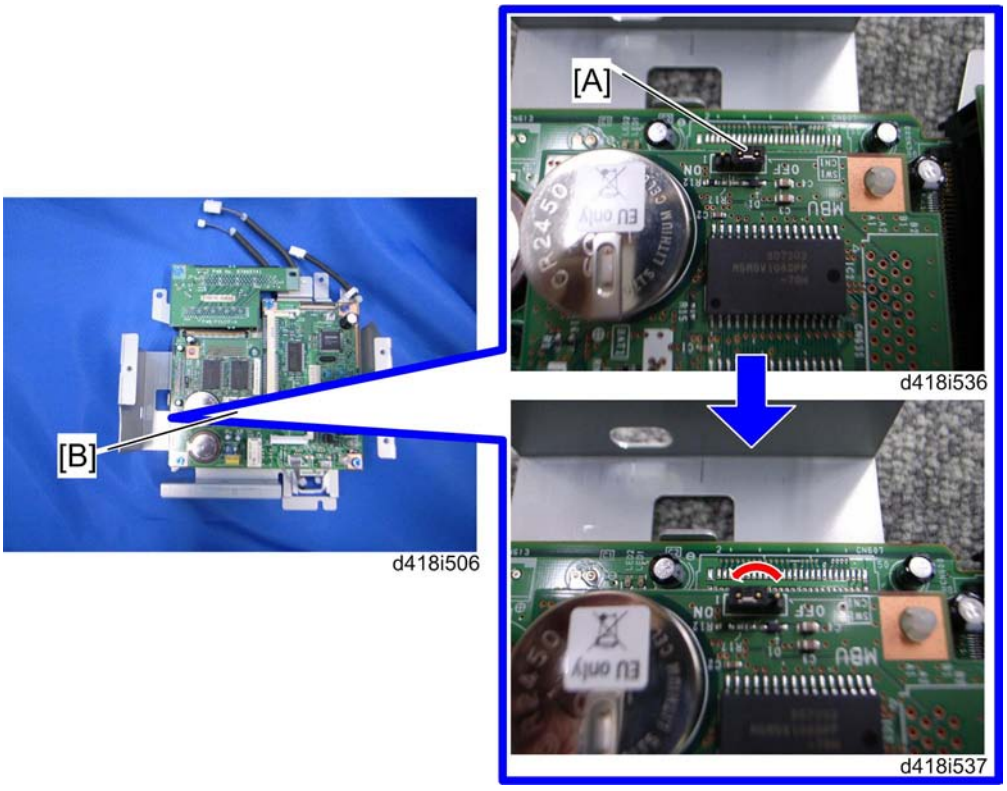



D418i504



D418i505

4. Attach the interface board [A] to the controller board securely ( x 2).




d418i506

d418i536

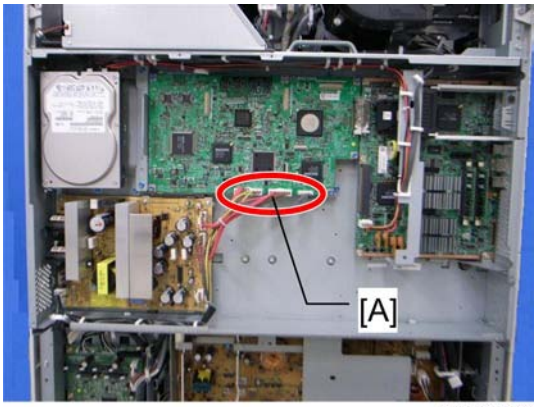
d418i537

5. Remove the jumper [A] on the MBU [B] and set it to the ON position.

Important

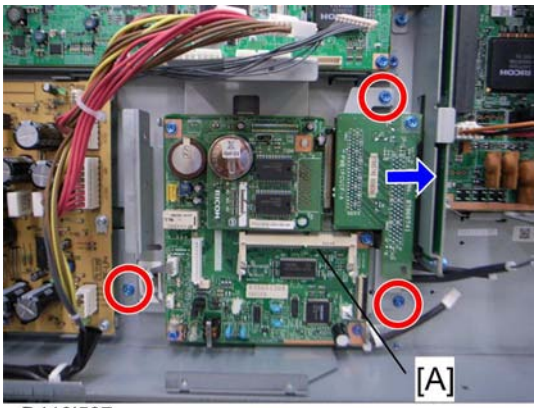
- If the jumper remains at the OFF position, this will cause SC672 (Controller Startup Error) to appear.

**Installation: Fax Option Type 9001 (D418-00)**



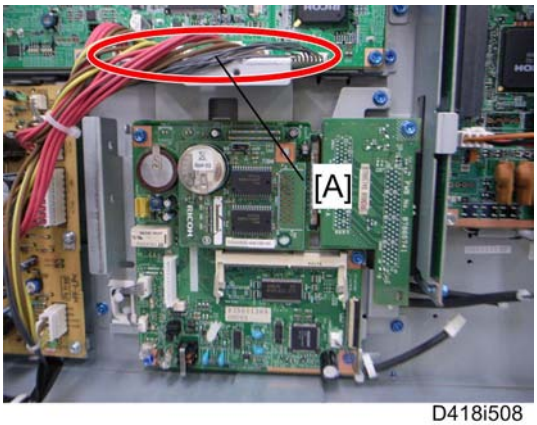

D418i503

6. Disconnect three harnesses [A] on the IPU.



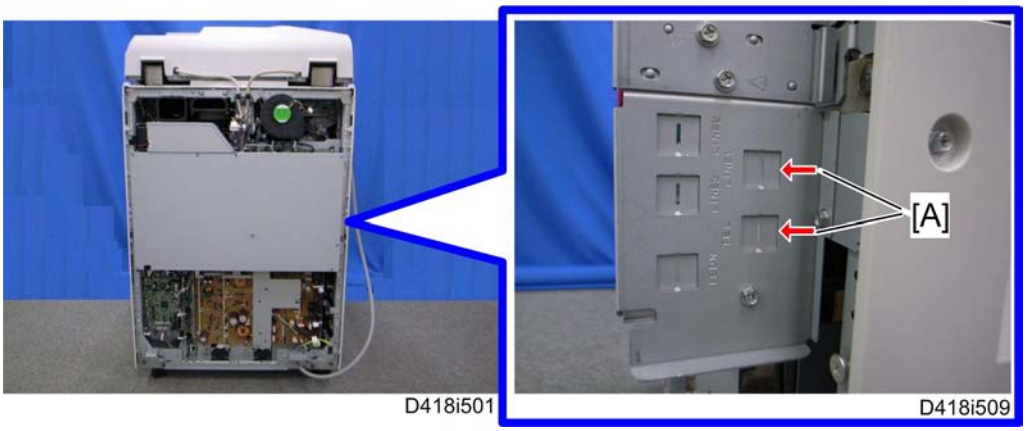

D418i507

7. Install the FCU [A] in the interface board ( x 3).

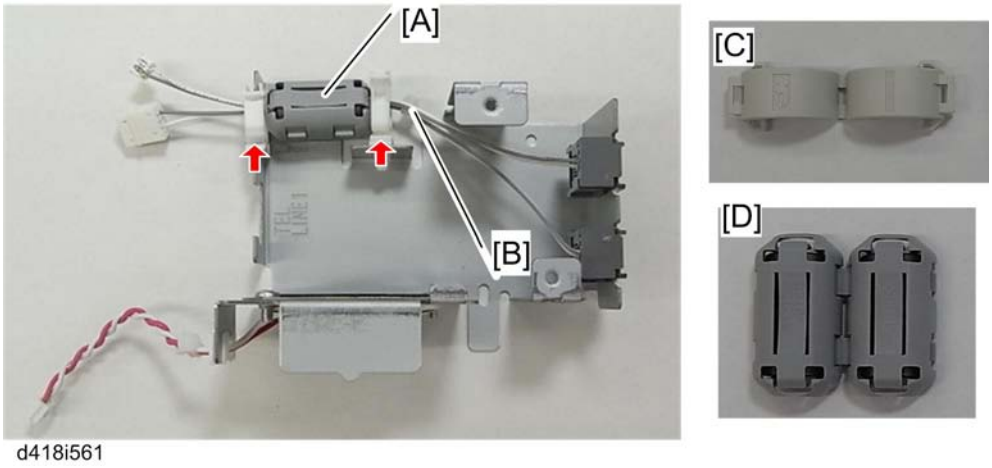



D418i508

8. Connect three harnesses [A] to the IPU.




9. Remove the two cut-outs [A] from the controller box with a flat-headed screwdriver.

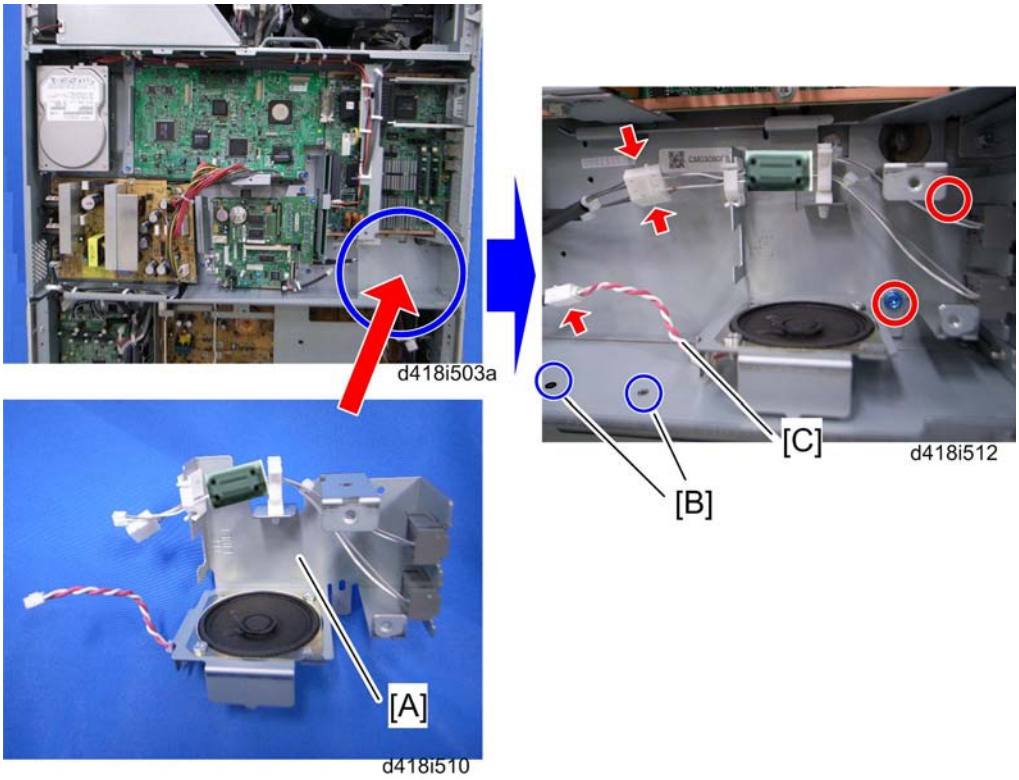



10. Attach the ferrite core [A] to the cables [B] on the speaker unit, and then clamp the cables ( x 2).

Note

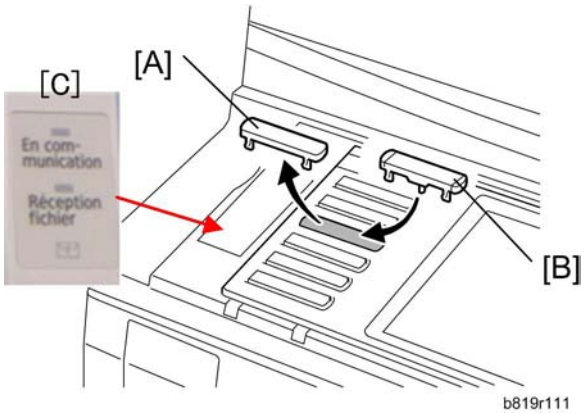
- The required ferrite core is different depending on the area. For EU/ ASIA/ China, use the ferrite core (ZCAT1730-730A) [C]. For NA/ Taiwan, use the ferrite core (TFC-25-15-12A) [D].

**Installation: Fax Option Type 9001 (D418-00)**

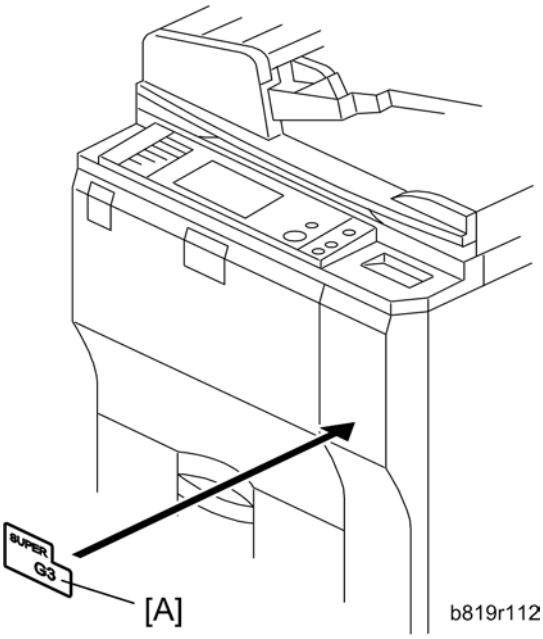



11. Attach the speaker unit [A] to the controller box ( x 2, x 3).
12. Attach two clamps at [B] and fasten the speaker harness [C] ( x 2).
13. Reattach the controller box cover ( x 13).
14. Reattach the rear lower cover ( x 2).
15. Reattach the rear upper cover ( x 2).

## *Key Installation and Decal Attachment*




1. Remove the blank keytop [A] (3rd from the top) and replace it with one of the provided keytops [B] (either the "Facsimile" keytop or the fax symbol keytop).
2. Attach the multi-language decal [C] (EU only).



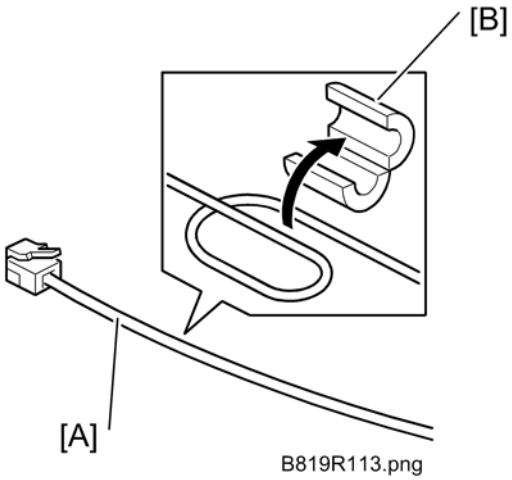

3. Attach the decal [A] (SUPER G3) to the front door.
4. Attach the serial number decal under the copier serial number decal on the rear cover of the machine.
5. Attach the FCC decal to the rear cover of the machine (NA only).
6. Put the power plug into the outlet and turn on the main power of the machine.

Note

- Make sure that the outlet is grounded.
- "SRAM formatted" shows on the operation panel after you have turned the main switch on. Turn the main switch off and on again for normal use.

7. Make sure that the date and time are correctly set.

## *Line Connection and Settings*




1. Loop one end of the telephone cable [A] once, then enclose it with the ferrite core

(RFC-9) [B] as shown.

Note

- Attach the ferrite core at least 9 cm (3.5 in.) from the connector.

2. Connect the telephone cable to the "LINE 1" jack.

# 1.2 INSTALLATION: G3 INTERFACE UNIT TYPE 9001 (D418-06)

## 1.2.1 COMPONENT CHECK

Check the quantity and condition of the components against the following list.

| No. | Description | Q'ty |
|---|---|---|
| 1. | G3 Interface Unit | 1 |
| 2. | G3 Connector Bracket | 1 |
| 3. | CCUIF Harness | 1 |
| 4. | Screws (Blue M3 x 6) | 5 |
| 5. | Edge Saddle Clamp | 1 |
| 6. | Clamp | 1 |
| 7. | Ferrite Core (RFC-5) | 1 |
| 8. | Ferrite Core (RFC-9) | 1 |
| 9. | FFC (Flexible Flat Cable) | 1 |
| 10. | Telephone Cable (NA Only) | 1 |
| 11. | FCC Decal (NA Only) | 1 |
| 12. | EMC Address Decal (EU Only) | 1 |

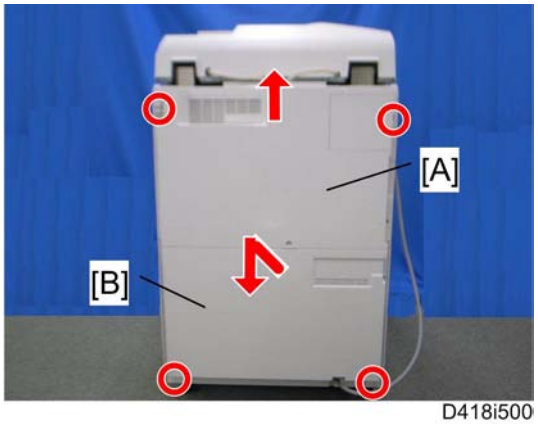
## 1.2.2 G3 INTERFACE UNIT INSTALLATION

**⚠CAUTION**

- Before installing this fax unit:
- 1) Print out all data in the printer buffer.
- 2) Turn off the main power switch and disconnect the power cord and the network cable.

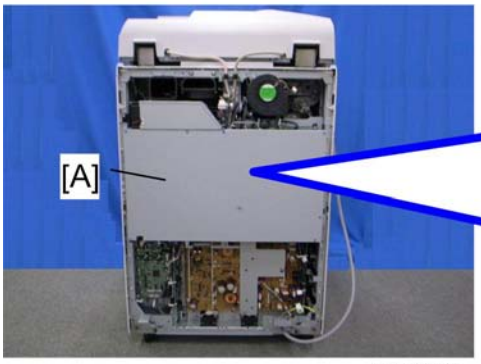
**Installation: G3 Interface Unit Type 9001 (D418-06)**

## *One G3 Interface Unit Installation*

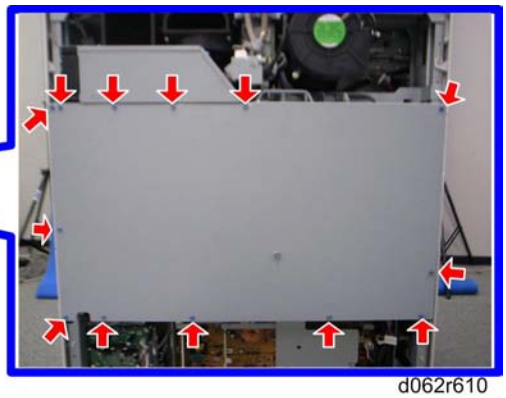


D418i500

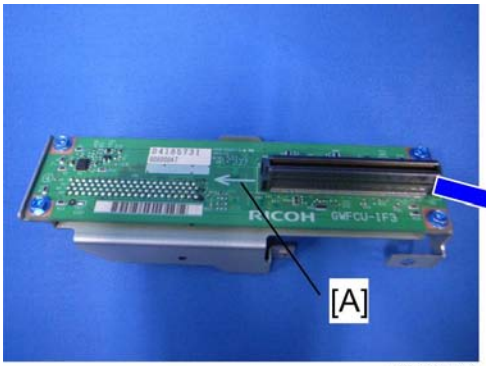
1. Remove the rear upper cover [A] ( x 2).
   - Slide the rear upper cover up, and then remove it.
2. Remove the rear lower cover [B] ( x 2).
   - First slide up the rear lower cover, then slide it down.



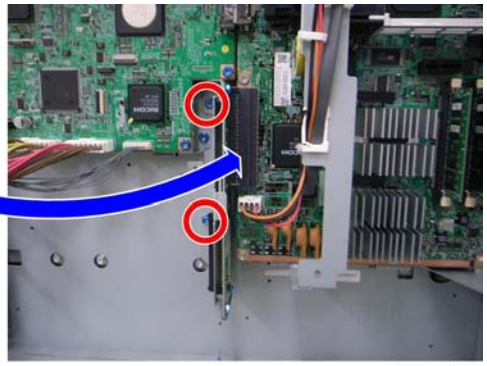
D418i501


d062r610

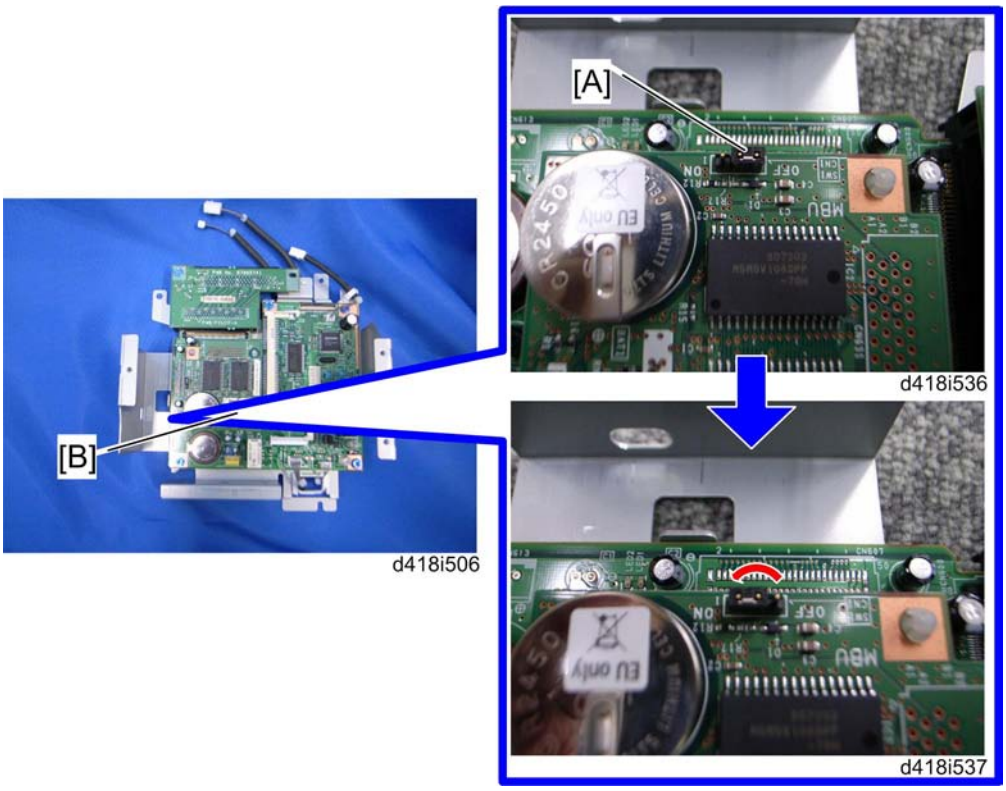
3. Controller box cover [A] ( x 13).



D418i504


D418i505

4. Attach the interface board [A] to the controller board securely ( x 2).



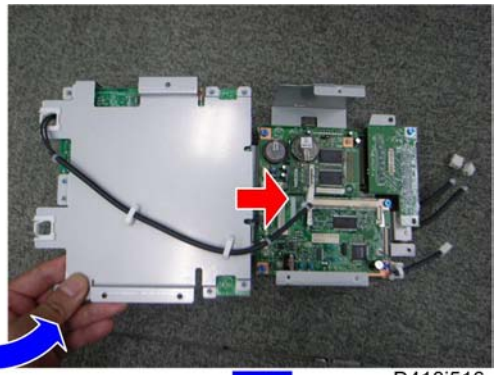

5. Remove the jumper [A] on the MBU [B] and set it to the ON position.

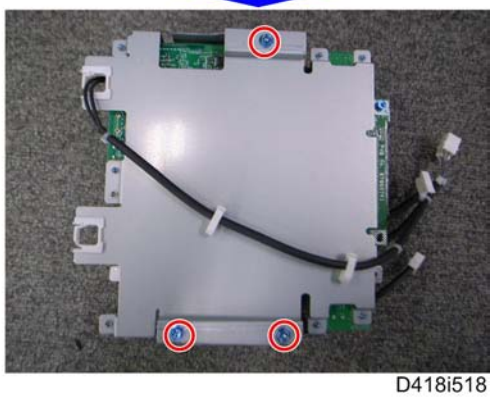
Important

- If the jumper remains at the OFF position, this will cause SC672 (Controller Startup Error) to appear.

**Installation: G3 Interface Unit Type 9001 (D418-06)**

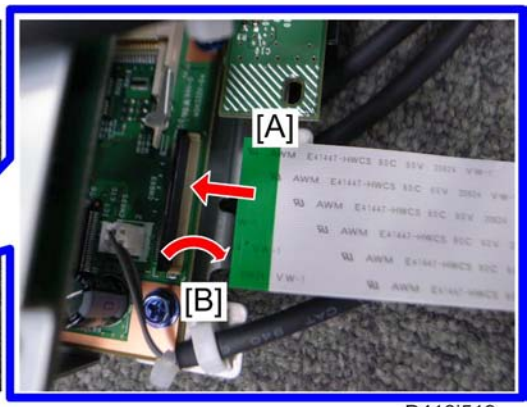
D418i515


D418i516


D418i518

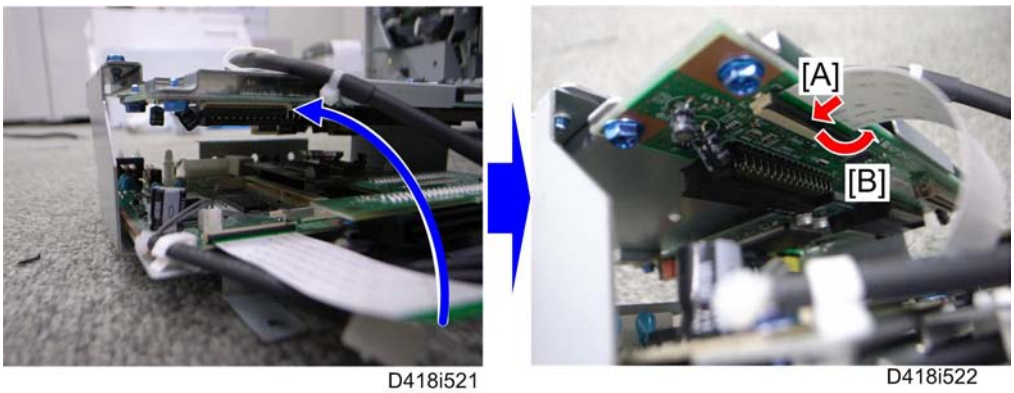
6. Install the G3 interface unit [A] on the FCU ( x 3).
   - Put the G3 interface unit on the FCU.
   - Tighten three screws.


D418i518



D418i519

7. Connect the FFC (Flexible Flat Cable) to the FCU.
   - [A]: Insert the FFC securely as shown above.
   - [B]: Lock the stopper.

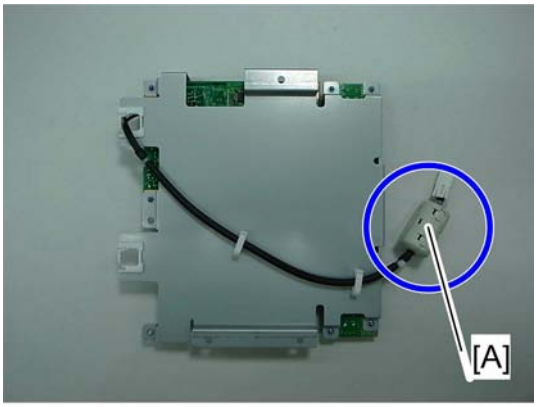



D418i521 D418i522

8. Connect the other edge of the FFC to the G3 interface unit.
   - [A]: Insert the FFC securely as shown above.
   - [B]: Lock the stopper.

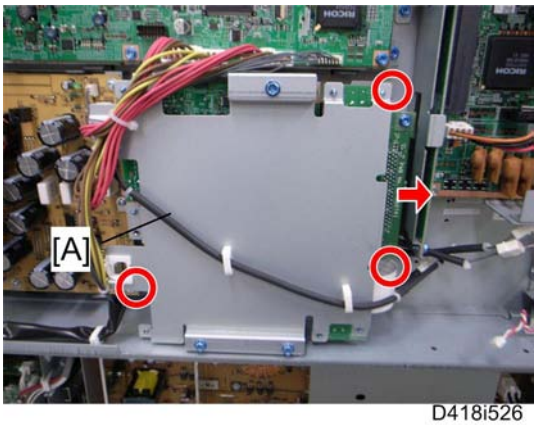
Note

- Make sure that both green sides of the FFC face each other




D418i543

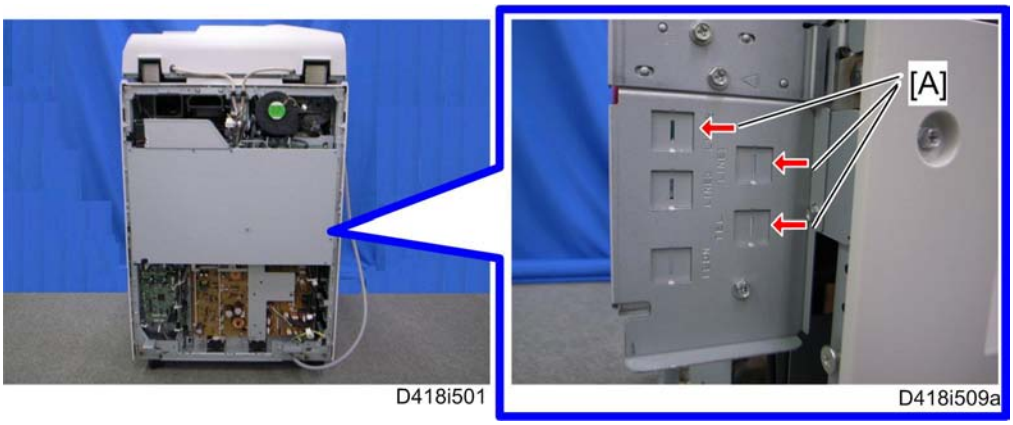
9. Attach the ferrite core (RFC-5) [A] to the cable.



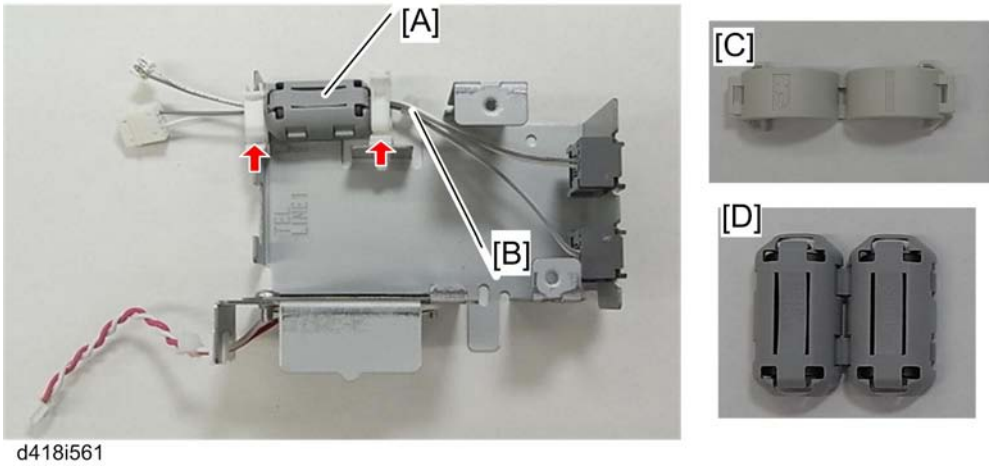

D418i526

10. Install the FCU assembly [A] in the interface board ( x 3).

**Installation: G3 Interface Unit Type 9001 (D418-06)**



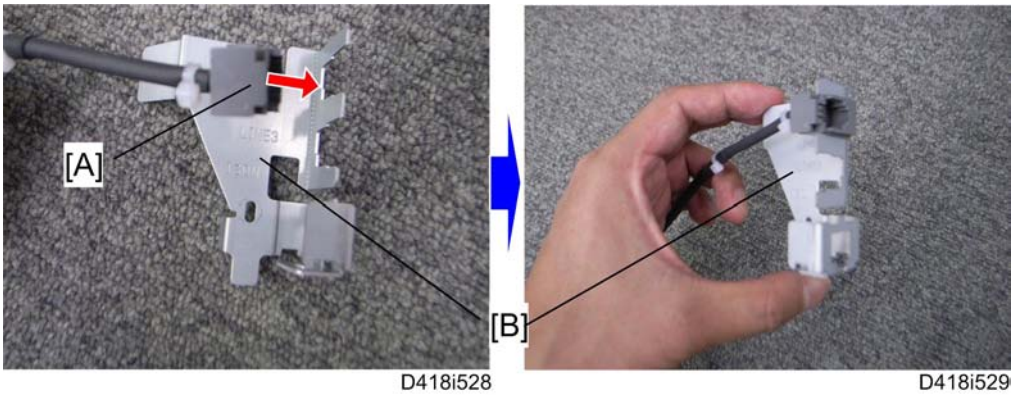

11. Remove the three cut-outs [A] from the controller box with a flat-headed screwdriver.



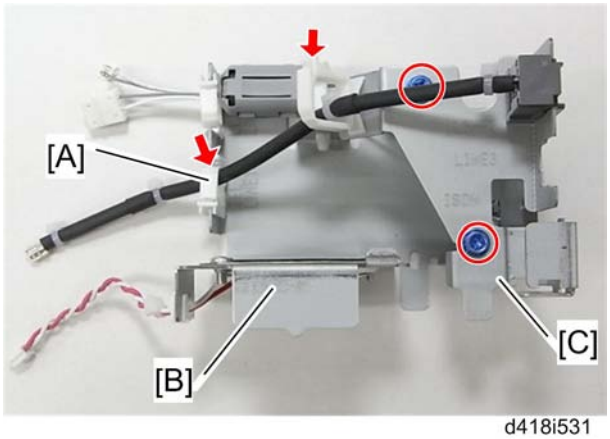

12. Attach the ferrite core (provided with the Fax Unit) [A] to the cables [B] on the speaker unit, and then clamp the cables ( x 2).

Note

- The required ferrite core is different depending on the area. For EU/ ASIA/ China, use the ferrite core (ZCAT1730-730A) [C]. For NA/ Taiwan, use the ferrite core (TFC-25-15-12A) [D].

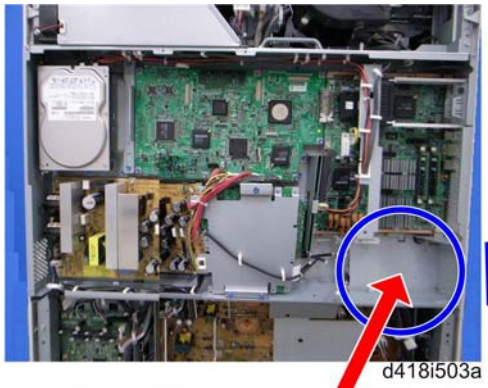


13. Attach the modular jack [A] to the G3 connector bracket [B].

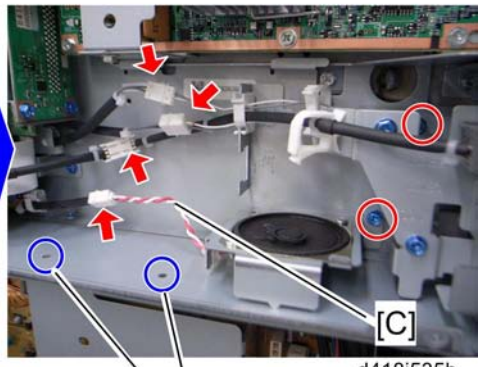


d418i531

14. Attach the edge saddle clamp [A] to the speaker unit [B].
15. Attach the G3 connector bracket [C] to the speaker unit [B] ( x 2, x 2).


d418i503a

d418i563



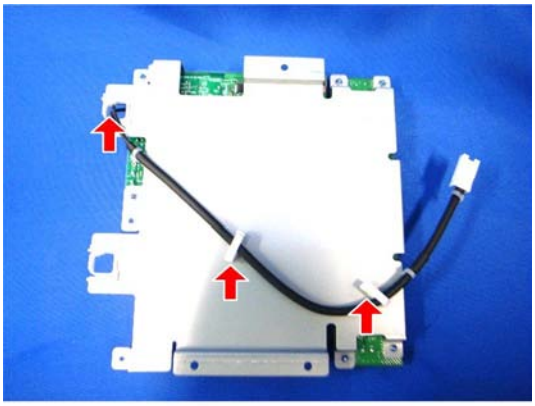
d418i535b

16. Install the speaker assembly [A] ( x 2, x 4).
17. Attach two clamps at [B] and fasten the speaker harness [C] ( x 2).
18. Reattach the controller box cover ( x 13).
19. Reattach the rear lower cover ( x 2).
20. Reattach the rear upper cover ( x 2).

**Installation: G3 Interface Unit Type 9001 (D418-06)**

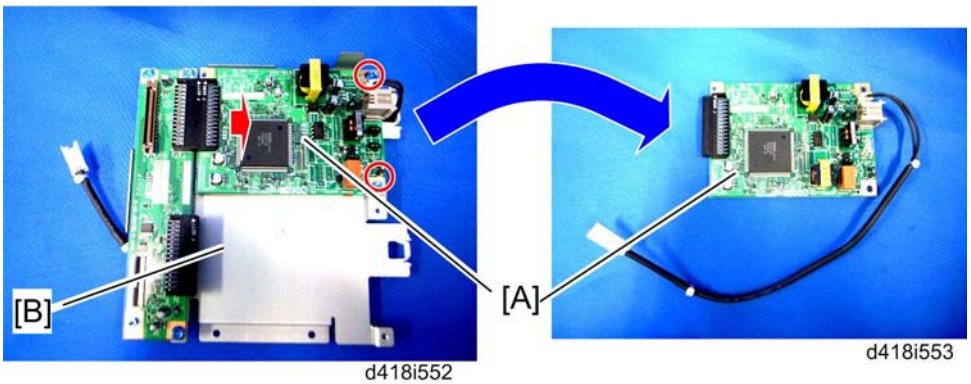
## *Two G3 Interface Units Installation*

1. Do steps from 1 to 5 of "One G3 Interface Unit Installation".



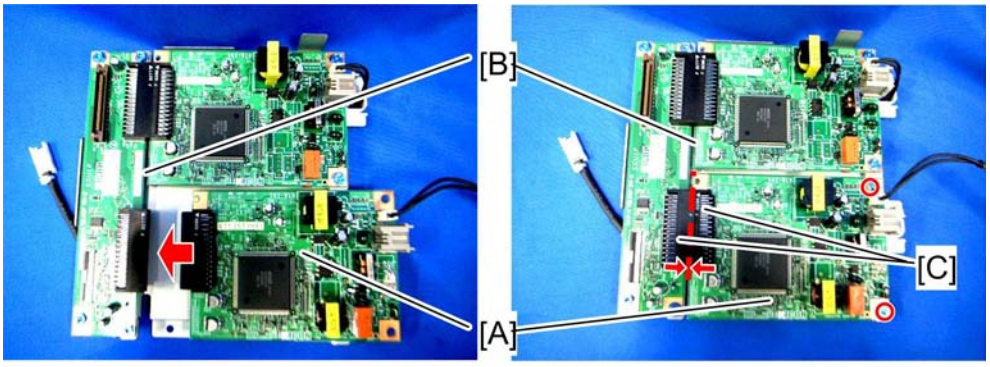
D418i551

2. Release three clamps on the second G3 unit.




d418i552 d418i553

3. Remove the G3 board [A] from the second G3 interface unit [B] ( x 2).

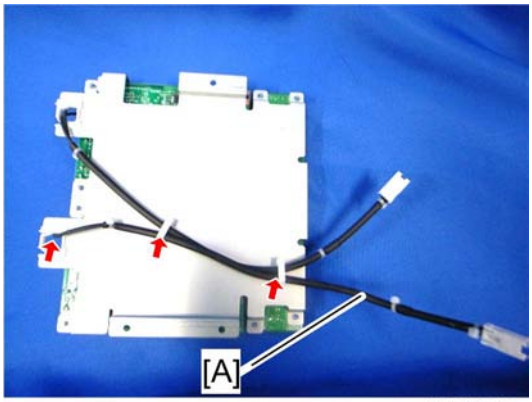



D418i554 D418i555

4. Attach the G3 board [A] to the first G3 interface unit [B] ( x 2)

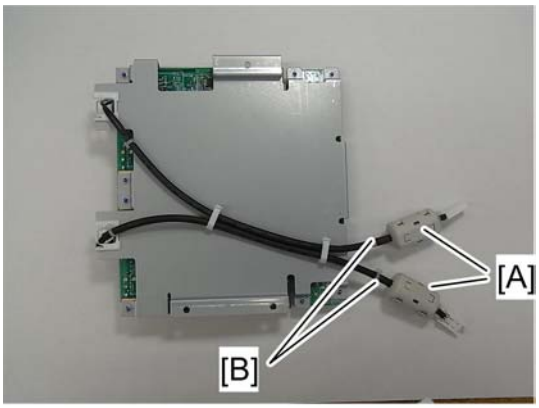
Note

- Make sure that the board-to-board connectors [C] are securely connected.



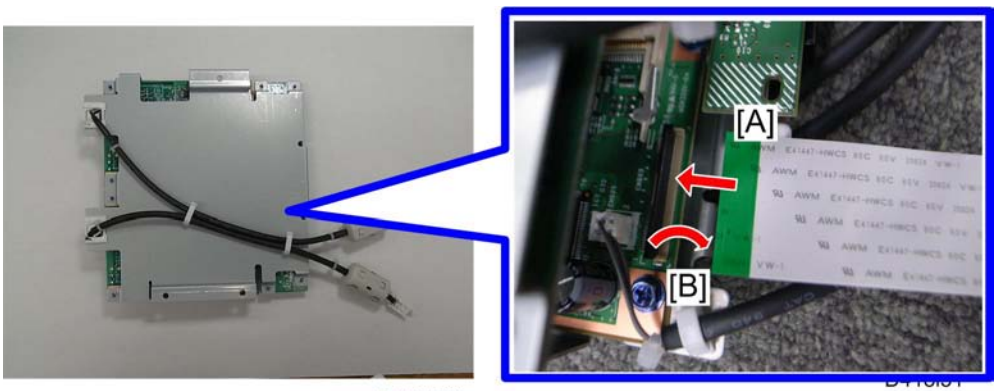

d416i556

5. Clamp the cable [A] from the second G3 board ( x 3).




D418i560

6. Attach the ferrite cores (RFC-5) [A] to each cable [B].

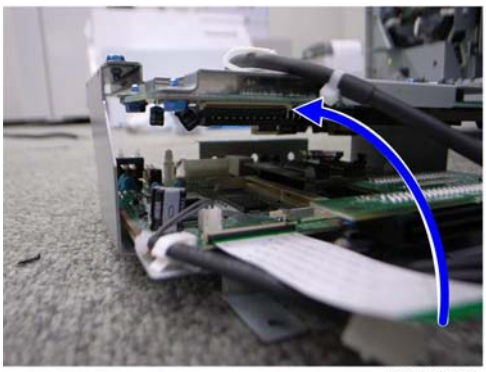



D418i560

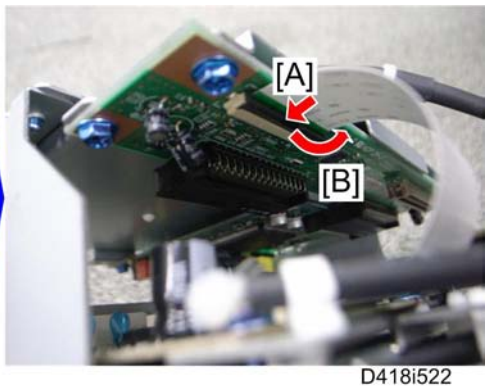
9

7. Connect the FFC (Flexible Flat Cable) to the FCU.
   - [A]: Insert the FFC as shown above.
   - [B]: Lock the stopper.

**Installation: G3 Interface Unit Type 9001 (D418-06)**



D418i521

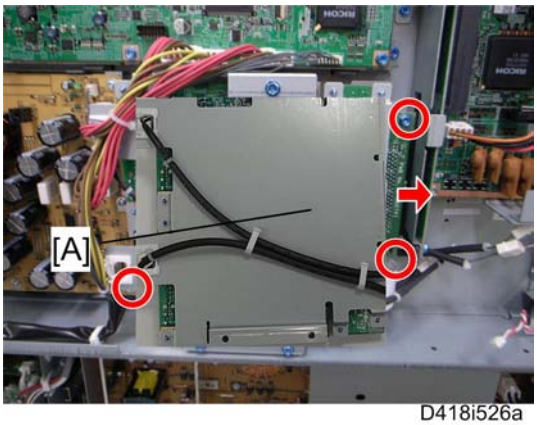



D418i522

8. Connect the other side of the FFC to the G3 interface unit.
   - [A]: Insert the FFC as shown above.
   - [B]: Lock the stopper down.

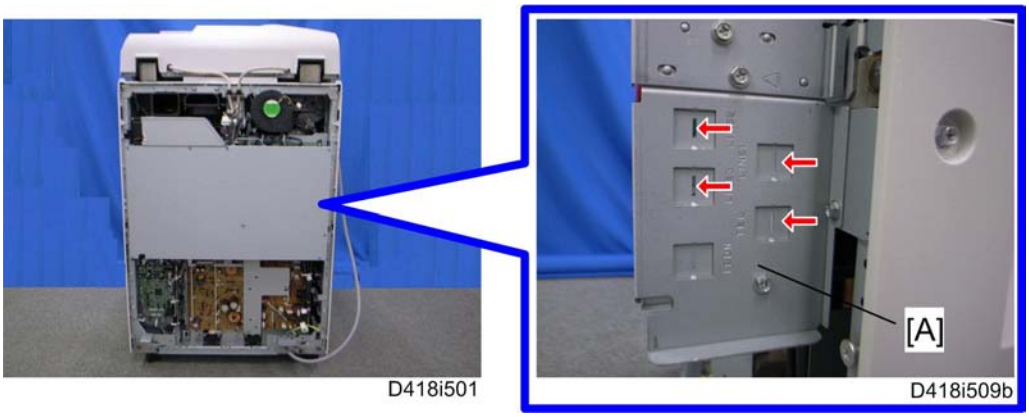
Note

   - Make sure that both green sides of the FFC face each other.




D418i526a

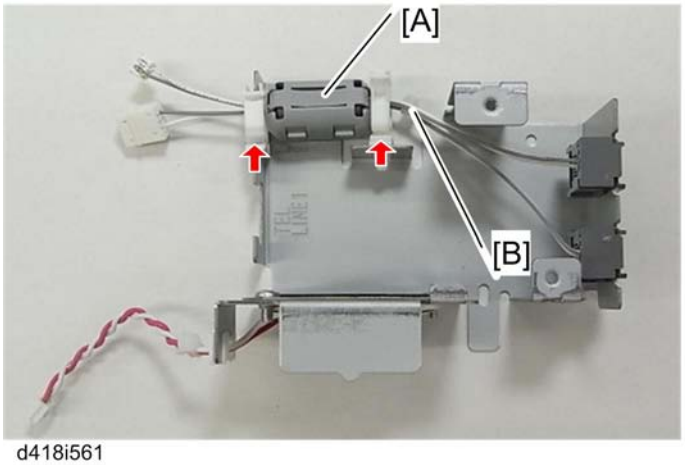
9. Install the FCU assembly [A] in the interface board ( x 3).




D418i501

D418i509b

10. Remove the four cut-outs [A] from the controller box with a flat-headed screwdriver.



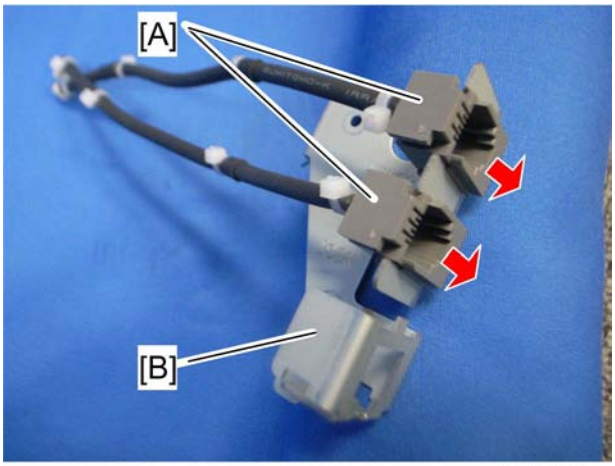



d418i561

11. Attach the ferrite core (provided with the Fax Unit) [A] to the cables [B] on the speaker unit, and then clamp the cables ( x 2).

Note

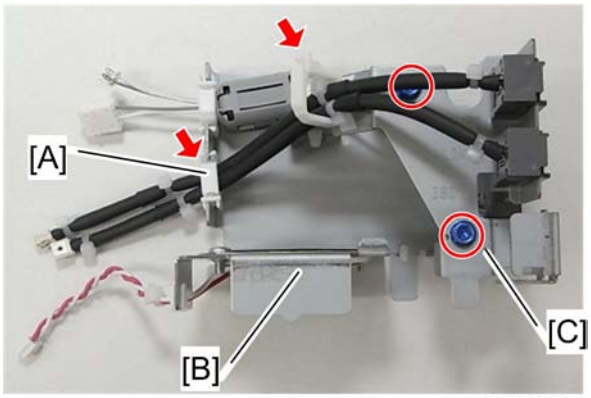
- The required ferrite core is different depending on the area. For EU/ ASIA/ China, use the ferrite core (ZCAT1730-730A) [C]. For NA/ Taiwan, use the ferrite core (TFC-25-15-12A) [D].



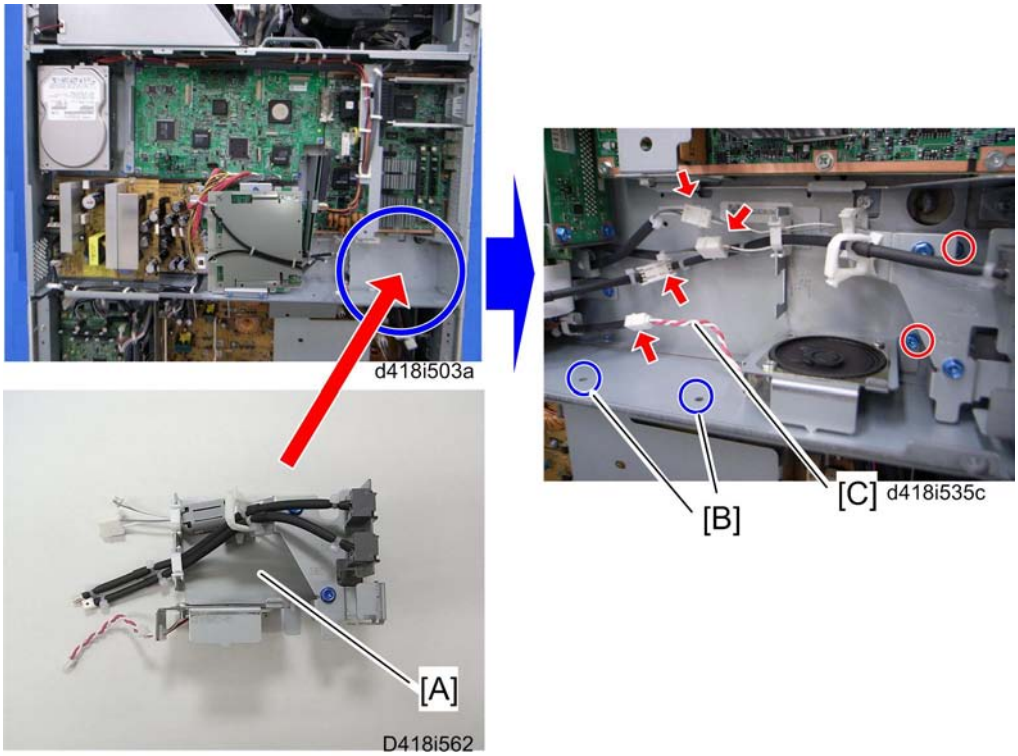

d418i557

12. Attach two modular jacks [A] to the G3 connector bracket [B].

**Installation: G3 Interface Unit Type 9001 (D418-06)**

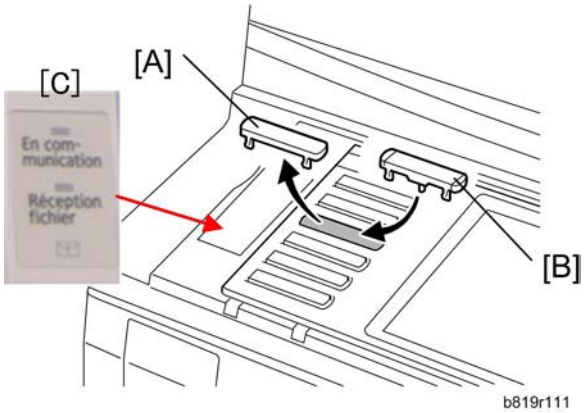



13. Attach the edge saddle clamp [A] to the speaker unit [B].
14. Attach the G3 connector bracket [C] to the speaker unit [B] ( x 2, x 2).

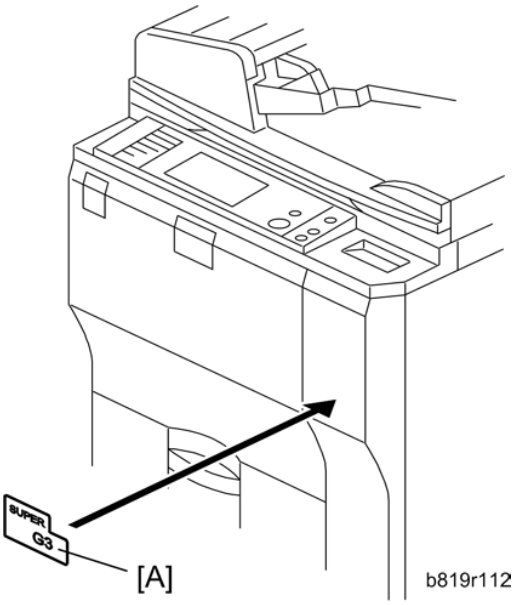



15. Install the speaker assembly [A] ( x 2, x 4).
16. Attach two clamps at [B] and fasten the speaker harness [C] ( x 2).
17. Reattach the controller box cover ( x 13).
18. Reattach the rear lower cover ( x 2).
19. Reattach the rear upper cover ( x 2).

## *Key Installation and Decal Attachment*




1. Remove the blank keytop [A] (3rd from the top) and replace it with one of the keytops provided [B] (either the "Facsimile" keytop or the fax symbol keytop).
2. Attach the multi-language decal [C] (EU only).




3. Attach the decal [A] (SUPER G3) to the front door.
4. Attach the serial number decal under the copier serial number decal on the rear cover of the machine.
5. Attach the FCC decal to the rear cover of the machine (NA only).
6. Put the power plug into the outlet and turn on the main power of the machine.

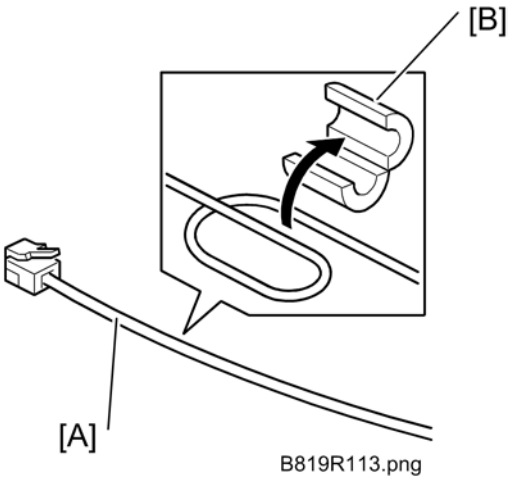
Note

- Make sure that the outlet is grounded.
- "SRAM formatted" shows on the operation panel after you have turned the main switch on. Turn the main switch off and on again for normal use.

7. Make sure that the date and time are correctly set.

**Installation: G3 Interface Unit Type 9001 (D418-06)**

## *Line Connection and Settings*




1. Loop one end of the telephone cable [A] once, then enclose it with the ferrite core (RFC-9) [B] as shown.

   Note

   - Attach the ferrite core at least 9 cm (3.5 in.) from the connector.
   - Attach a ferrite core to the 2nd G3 line if two G3 boards are installed.
2. Connect the telephone cable to "LINE 2" jack.

   -or-

   If two G3 boards are installed, connect the cables to "LINE 2" and "LINE 3" jacks.
3. Connect the machine power cord to the power supply, then turn on the main power switch.
4. Enter the Service Mode.
5. Touch "Fax SP"
6. Do these communication switch settings:

| | |
|---|---|
| **SP1104-23 (Switch 16)** | Set Bit 1 "1". |
| | Set Bit 3 "1" if two G3 boards are installed. |

7. Exit the Service Mode and turn the machine off/on with the main power switch.
8. Do SP5990-001 to print the system parameter list, then confirm that "G3" is listed as an option.
9. Enter the Service Mode and set the items required for PSTN communication.
   - If one G3 line is installed, use SP3103 (PSTN-1 Port Settings) to do the PSTN settings.
   - If two G3 lines are installed, use SP3103 (PSTN-1 Port Settings) and SP3104 (PSTN-2 Port Settings) to do the PSTN settings for the first and second G3 line.

# 2. REPLACEMENT AND ADJUSTMENT

## 2.1 FCU

1. When you replace the FCU board, remove the MBU board from the old FCU board and install it on the new FCU board.
2. Set the correct date and time with the User Tools:
   - User Tools> System Settings> Timer Setting> Set Date/Time

   Note

   - Do not turn off the battery switch (SW1).
   - Do SP6101 to print the system parameters. Then check the settings.

# 3. TROUBLESHOOTING

## 3.1 ERROR CODES

If an error code occurs, retry the communication. If the same problem occurs, try to fix the problem as suggested below. Note that some error codes appear only in the error code display and on the service report.

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| 0-00 | DIS/NSF not detected within 40 s of Start being pressed | ▪ Check the line connection.<br>▪ Check the NCU - FCU connectors.<br>▪ The machine at the other end may be incompatible.<br>▪ Replace the NCU or FCU.<br>▪ Check for DIS/NSF with an oscilloscope.<br>▪ If the rx signal is weak, there may be a bad line. |
| 0-01 | DCN received unexpectedly | ▪ The other party is out of paper or has a jammed printer.<br>▪ The other party pressed Stop during communication. |
| 0-03 | Incompatible modem at the other end | ▪ The other terminal is incompatible. |
| 0-04 | CFR or FTT not received after modem training | ▪ Check the line connection.<br>▪ Check the NCU - FCU connectors.<br>▪ Try changing the tx level and/or cable equalizer settings.<br>▪ Replace the FCU or NCU.<br>▪ The other terminal may be faulty; try sending to another machine.<br>▪ If the rx signal is weak or defective, there may be a bad line. |

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| | | **Cross reference**<br>▪ Tx level - NCU Parameter 01 (PSTN)<br>▪ Cable equalizer - G3 Switch 07 (PSTN)<br>▪ Dedicated Tx parameters - Section 4 |
| 0-05 | Unsuccessful after modem training at 2400 bps | ▪ Check the line connection.<br>▪ Check the NCU - FCU connectors.<br>▪ Try adjusting the tx level and/or cable equalizer.<br>▪ Replace the FCU or NCU.<br>▪ Check for line problems.<br>**Cross reference**<br>▪ See error code 0-04. |
| 0-06 | The other terminal did not reply to DCS | ▪ Check the line connection.<br>▪ Check the FCU - NCU connectors.<br>▪ Try adjusting the tx level and/or cable equalizer settings.<br>▪ Replace the NCU or FCU.<br>▪ The other end may be defective or incompatible; try sending to another machine.<br>▪ Check for line problems.<br>**Cross reference**<br>▪ See error code 0-04. |
| 0-07 | No post-message response from the other end after a page was sent | ▪ Check the line connection.<br>▪ Check the FCU - NCU connectors.<br>▪ Replace the NCU or FCU.<br>▪ The other end may have jammed or run out of paper.<br>▪ The other end user may have disconnected the call.<br>▪ Check for a bad line.<br>▪ The other end may be defective; try sending to another machine. |

**Error Codes**

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| 0-08 | The other end sent RTN or PIN after receiving a page, because there were too many errors | ▪ Check the line connection.<br>▪ Check the FCU - NCU connectors.<br>▪ Replace the NCU or FCU.<br>▪ The other end may have jammed, or run out of paper or memory space.<br>▪ Try adjusting the tx level and/or cable equalizer settings.<br>▪ The other end may have a defective modem/NCU/FCU; try sending to another machine.<br>▪ Check for line problems and noise.<br>**Cross reference**<br>▪ Tx level - NCU Parameter 01 (PSTN)<br>▪ Cable equalizer - G3 Switch 07 (PSTN)<br>▪ Dedicated Tx parameters - Section 4 |
| 0-14 | Non-standard post message response code received | ▪ Check the FCU - NCU connectors.<br>▪ Incompatible or defective remote terminal; try sending to another machine.<br>▪ Noisy line: resend.<br>▪ Try adjusting the tx level and/or cable equalizer settings.<br>▪ Replace the NCU or FCU.<br>**Cross reference**<br>▪ See error code 0-08. |
| 0-15 | The other terminal is not capable of specific functions. | ▪ The other terminal is not capable of accepting the following functions, or the other terminal's memory is full.<br>▪ Confidential rx<br>▪ Transfer function<br>▪ SEP/SUB/PWD/SID |
| 0-16 | CFR or FTT not detected after modem training in | ▪ Check the line connection.<br>▪ Check the FCU - NCU connectors. |

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| | confidential or transfer mode | ▪ Replace the NCU or FCU.<br>▪ Try adjusting the tx level and/or cable equalizer settings.<br>▪ The other end may have disconnected, or it may be defective; try calling another machine.<br>▪ If the rx signal level is too low, there may be a line problem.<br>**Cross reference**<br>▪ See error code 0-08. |
| 0-20 | Facsimile data not received within 6 s of retraining | ▪ Check the line connection.<br>▪ Check the FCU - NCU connectors.<br>▪ Replace the NCU or FCU.<br>▪ Check for line problems.<br>▪ Try calling another fax machine.<br>▪ Try adjusting the reconstruction time for the first line and/or rx cable equalizer setting.<br>**Cross reference**<br>▪ Reconstruction time - G3 Switch 0A, bit 6<br>▪ Rx cable equalizer - G3 Switch 07 (PSTN) |
| 0-21 | EOL signal (end-of-line) from the other end not received within 5 s of the previous EOL signal | ▪ Check the connections between the FCU, NCU, & line.<br>▪ Check for line noise or other line problems.<br>▪ Replace the NCU or FCU.<br>▪ The remote machine may be defective or may have disconnected.<br>**Cross reference**<br>▪ Maximum interval between EOLs and between ECM frames - G3 Bit Switch 0A, bit 4 |
| 0-22 | The signal from the other end was interrupted for more than the acceptable modem carrier drop time | ▪ Check the line connection.<br>▪ Check the FCU - NCU connectors.<br>▪ Replace the NCU or FCU.<br>▪ Defective remote terminal. |

**Error Codes**

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| | (default: 200 ms) | ▪ Check for line noise or other line problems.<br>▪ Try adjusting the acceptable modem carrier drop time.<br>**Cross reference**<br>▪ Acceptable modem carrier drop time - G3 Switch 0A, bits 0 and 1 |
| 0-23 | Too many errors during reception | ▪ Check the line connection.<br>▪ Check the FCU - NCU connectors.<br>▪ Replace the NCU or FCU.<br>▪ Defective remote terminal.<br>▪ Check for line noise or other line problems.<br>▪ Try asking the other end to adjust their tx level.<br>▪ Try adjusting the rx cable equalizer setting and/or rx error criteria.<br>**Cross reference**<br>▪ Rx cable equalizer - G3 Switch 07 (PSTN)<br>▪ Rx error criteria - Communication Switch 02, bits 0 and 1 |
| 0-30 | The other terminal did not reply to NSS(A) in AI short protocol mode | ▪ Check the line connection.<br>▪ Check the FCU - NCU connectors.<br>▪ Try adjusting the tx level and/or cable equalizer settings.<br>▪ The other terminal may not be compatible.<br>**Cross reference**<br>▪ Dedicated tx parameters - Section 4 |
| 0-32 | The other terminal sent a DCS, which contained functions that the receiving machine cannot handle. | ▪ Check the protocol dump list.<br>▪ Ask the other party to contact the manufacturer. |
| 0-52 | Polarity changed during communication | ▪ Check the line connection.<br>▪ Retry the communication. |

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| 0-55 | FCE does not detect the SG3-V34. | ▪ FCU firmware or board defective.<br>▪ SG3-V34 firmware or board defective. |
| 0-56 | The stored message data exceeds the capacity of the mailbox in the SG3-V34. | ▪ SG3-V34 firmware or board defective. |
| 0-70 | The communication mode specified in CM/JM was not available (V.8 calling and called terminal) | ▪ The other terminal did not have a compatible communication mode (e.g., the other terminal was a V.34 data modem and not a fax modem.)<br>▪ A polling tx file was not ready at the other terminal when polling rx was initiated from the calling terminal. |
| 0-74 | The calling terminal fell back to T.30 mode, because it could not detect ANSam after sending CI. | ▪ The calling terminal could not detect ANSam due to noise, etc.<br>▪ ANSam was too short to detect.<br>▪ Check the line connection and condition.<br>▪ Try making a call to another V.8/V.34 fax. |
| 0-75 | The called terminal fell back to T.30 mode, because it could not detect a CM in response to ANSam (ANSam timeout). | ▪ The terminal could not detect ANSam.<br>▪ Check the line connection and condition.<br>▪ Try receiving a call from another V.8/V.34 fax. |
| 0-76 | The calling terminal fell back to T.30 mode, because it could not detect a JM in response to a CM (CM timeout). | ▪ The called terminal could not detect a CM due to noise, etc.<br>▪ Check the line connection and condition.<br>▪ Try making a call to another V.8/V.34 fax. |
| 0-77 | The called terminal fell | ▪ The calling terminal could not detect a JM due |

**Error Codes**

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| | back to T.30 mode, because it could not detect a CJ in response to JM (JM timeout). | to noise, etc.<br>▪ A network that has narrow bandwidth cannot pass JM to the other end.<br>▪ Check the line connection and condition.<br>▪ Try receiving a call from another V.8/V.34 fax. |
| 0-79 | The called terminal detected CI while waiting for a V.21 signal. | ▪ Check for line noise or other line problems.<br>▪ If this error occurs, the called terminal falls back to T.30 mode. |
| 0-80 | The line was disconnected due to a timeout in V.34 phase 2 – line probing. | The guard timer expired while starting these phases. Serious noise, narrow bandwidth, or low signal level can cause these errors.<br>**If these errors happen at the transmitting terminal:**<br>▪ Try making a call at a later time.<br>▪ Try using V.17 or a slower modem using dedicated tx parameters.<br>▪ Try increasing the tx level.<br>▪ Try adjusting the tx cable equalizer setting.<br>**If these errors happen at the receiving terminal:**<br>▪ Try adjusting the rx cable equalizer setting.<br>▪ Try increasing the tx level.<br>▪ Try using V.17 or a slower modem if the same error is frequent when receiving from multiple senders. |
| 0-81 | The line was disconnected due to a timeout in V.34 phase 3 – equalizer training. | |
| 0-82 | The line was disconnected due to a timeout in the V.34 phase 4 – control channel start-up. | |
| 0-83 | The line was disconnected due to a timeout in the V.34 control channel restart sequence. | |
| 0-84 | The line was disconnected due to abnormal signaling in V.34 phase 4 – control channel start-up. | ▪ The signal did not stop within 10 s.<br>▪ Turn off the machine, then turn it back on.<br>▪ If the same error is frequent, replace the FCU. |

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| 0-85 | The line was disconnected due to abnormal signaling in V.34 control channel restart. | ▪ The signal did not stop within 10 s.<br>▪ Turn off the machine, then turn it back on.<br>▪ If the same error is frequent, replace the FCU. |
| 0-86 | The line was disconnected because the other terminal requested a data rate using MPh that was not available in the currently selected symbol rate. | ▪ The other terminal was incompatible.<br>▪ Ask the other party to contact the manufacturer. |
| 0-87 | The control channel started after an unsuccessful primary channel. | ▪ The receiving terminal restarted the control channel because data reception in the primary channel was not successful.<br>▪ This does not result in an error communication. |
| 0-88 | The line was disconnected because PPR was transmitted/received 9 (default) times within the same ECM frame. | ▪ Try using a lower data rate at the start.<br>▪ Try adjusting the cable equalizer setting. |
| 2-11 | Only one V.21 connection flag was received | ▪ Replace the FCU. |
| 2-12 | Modem clock irregularity | ▪ Replace the FCU. |
| 2-13 | Modem initialization error | ▪ Turn off the machine, then turn it back on.<br>▪ Update the modem ROM.<br>▪ Replace the FCU. |

**Error Codes**

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| 2-23 | JBIG compression or reconstruction error | ▪ Turn off the machine, then turn it back on.<br>▪ Replace the EXFUNC board if the error is frequent. |
| 2-24 | JBIG ASIC error | ▪ Turn off the machine, then turn it back on.<br>▪ Replace the EXFUNC board if the error is frequent. |
| 2-25 | JBIG data reconstruction error (BIH error) | ▪ JBIG data error<br>▪ Check the sender's JBIG function.<br>▪ Update the MBU ROM. |
| 2-26 | JBIG data reconstruction error (Float marker error) | |
| 2-27 | JBIG data reconstruction error (End marker error) | |
| 2-28 | JBIG data reconstruction error (Timeout) | |
| 2-29 | JBIG trailing edge maker error | ▪ FCU defective<br>▪ Check the destination device. |
| 2-50 | The machine resets itself for a fatal FCU system error | ▪ If this is frequent, update the ROM, or replace the FCU. |
| 2-51 | The machine resets itself because of a fatal communication error | ▪ If this is frequent, update the ROM, or replace the FCU. |
| 2-53 | Snd msg() in the manual task is an error because the mailbox for the operation task is full. | ▪ The user did the same operation many times, and this gave too much load to the machine. |
| 4-01 | Line current was cut | ▪ Check the line connector.<br>▪ Check the connection between FCU and NCU.<br>▪ Check for line problems. |

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| | | ▪ Replace the FCU or the NCU. |
| 4-10 | Communication failed because of an ID Code mismatch (Closed Network) or Tel. No./CSI mismatch (Protection against Wrong Connections) | ▪ Get the ID Codes the same and/or the CSIs programmed correctly, then resend.<br>▪ The machine at the other end may be defective. |
| 5-10 | DCR timer expired | ▪ Replace the FCU. |
| 5-20 | Storage impossible because of a lack of memory | ▪ Temporary memory shortage.<br>▪ Test the SAF memory.<br>▪ Replace the FCU or optional EXMEM board |
| 5-21 | Memory overflow | |
| 5-23 | Print data error when printing a substitute rx or confidential rx message | ▪ Test the SAF memory.<br>▪ Ask the other end to resend the message.<br>▪ Replace the FCU or optional EXMEM board. |
| 5-25 | SAF file access error | ▪ Replace the FCU or EXMEM board. |
| 6-00 | G3 ECM - T1 time out during reception of facsimile data | ▪ Try adjusting the rx cable equalizer.<br>▪ Replace the FCU or NCU. |
| 6-01 | G3 ECM - no V.21 signal was received | |
| 6-02 | G3 ECM - EOR was received | |
| 6-04 | G3 ECM - RTC not detected | ▪ Check the line connection.<br>▪ Check connections from the NCU to the FCU.<br>▪ Check for a bad line or defective remote terminal.<br>▪ Replace the FCU or NCU. |

**Error Codes**

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| 6-05 | G3 ECM - facsimile data frame not received within 18 s of CFR, but there was no line fail | ▪ Check the line connection.<br>▪ Check connections from the NCU to the FCU.<br>▪ Check for a bad line or defective remote terminal.<br>▪ Replace the FCU or NCU.<br>▪ Try adjusting the rx cable equalizer<br>**Cross reference**<br>▪ Rx cable equalizer - G3 Switch 07 (PSTN) |
| 6-06 | G3 ECM - coding/decoding error | ▪ Defective FCU.<br>▪ The other terminal may be defective. |
| 6-08 | G3 ECM - PIP/PIN received in reply to PPS.NULL | ▪ The other end pressed Stop during communication.<br>▪ The other terminal may be defective. |
| 6-09 | G3 ECM - ERR received | ▪ Check for a noisy line.<br>▪ Adjust the tx levels of the communicating machines.<br>▪ See code 6-05. |
| 6-10 | G3 ECM - error frames still received at the other end after all communication attempts at 2400 bps | ▪ Check for line noise.<br>▪ Adjust the tx level (use NCU parameter 01 or the dedicated tx parameter for that address).<br>▪ Check the line connection.<br>▪ Defective remote terminal. |
| 6-21 | V.21 flag detected during high speed modem communication | ▪ The other terminal may be defective or incompatible. |
| 6-22 | The machine resets the sequence because of an abnormal handshake in the V.34 control channel | ▪ Check for line noise.<br>▪ If the same error occurs frequently, replace the FCU.<br>▪ Defective remote terminal. |
| 6-99 | V.21 signal not stopped | ▪ Replace the FCU. |

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| | within 6 s | |
| 13-17 | SIP user name registration error | ▪ Double registration of the SIP user name.<br>▪ Capacity for user-name registration in the SIP server is not sufficient. |
| 13-18 | SIP server access error | ▪ Incorrect initial setting for the SIP server.<br>▪ Defective SIP server. |
| 14-00 | SMTP Send Error | Error occurred during sending to the SMTP server. Occurs for any error other than 14-01 to 16. For example, the mail address of the system administrator is not registered. |
| 14-01 | SMTP Connection Failed | Failed to connect to the SMTP server (timeout) because the server could not be found.<br>▪ The PC is not ready to transfer files.<br>▪ SMTP server not functioning correctly.<br>▪ The DNS IP address is not registered.<br>▪ Network not operating correctly.<br>▪ Destination folder selection not correct. |
| 14-02 | No Service by SMTP Service (421) | SMTP server operating incorrectly, or the destination for direct SMTP sending is not correct.<br>▪ Contact the system administrator and check that the SMTP server has the correct settings and operates correctly.<br>▪ Contact the system administrator for direct SMTP sending and check the sending destination. |
| 14-03 | Access to SMTP Server Denied (450) | Failed to access the SMTP server because the access is denied.<br>▪ SMTP server operating incorrectly. Contact the system administrator to determine if there is a problem with the SMTP server and to check that the SMTP server settings are |

**Error Codes**

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| | | correct.<br>▪ Folder send destination is incorrect. Contact the system administrator to determine that the SMTP server settings and path to the server are correct.<br>▪ Device settings incorrect. Confirm that the user name and password settings are correct.<br>▪ Direct SMTP destination incorrect. Contact the system administrator to determine if there is a problem at the destination at that the settings at the destination are correct. |
| 14-04 | Access to SMTP Server Denied (550) | ▪ SMTP server operating incorrectly<br>▪ Direct SMTP sending not operating correctly |
| 14-05 | SMTP Server HDD Full (452) | Failed to access the SMTP server because the HDD on the server is full.<br>▪ Insufficient free space on the HDD of the SMTP server. Contact the system administrator and check the amount of space remaining on the SMTP server HDD.<br>▪ Insufficient free space on the HDD where the destination folder is located. Contact the system administrator and check the amount of space remaining on the HDD where the target folder is located.<br>▪ Insufficient free space on the HDD at the target destination for SMTP direct sending. Contact the system administrator and check the amount of space remaining on the target HDD. |
| 14-06 | User Not Found on SMTP Server (551) | The designated user does not exist.<br>▪ The designated user does not exist on the SMTP server. |

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| | | ▪ The designated address is not for use with direct SMTP sending. |
| 14-07 | Data Send to SMTP Server Failed (4XX) | Failed to access the SMTP server because the transmission failed.<br>▪ PC not operating correctly.<br>▪ SMTP server operating incorrectly<br>▪ Network not operating correctly.<br>▪ Destination folder setting incorrect.<br>▪ Direct SMTP sending not operating correctly. |
| 14-08 | Data Send to SMTP Server Failed (5XX) | Failed to access the SMTP server because the transmission failed.<br>▪ SMTP server operating incorrectly<br>▪ Destination folder setting incorrect.<br>▪ Direct SMTP sending not operating correctly.<br>▪ Software application error. |
| 14-09 | Authorization Failed for Sending to SMTP Server | ▪ POP-Before-SMTP or SMTP authorization failed.<br>▪ Incorrect setting for file transfer |
| 14-10 | Addresses Exceeded | Number of broadcast addresses exceeded the limit for the SMTP server. |
| 14-11 | Buffer Full | The send buffer is full so the transmission could not be completed. Buffer is full due to using Scan-to-Email while the buffer is being used send mail at the same time. |
| 14-12 | Data Size Too Large | Transmission was cancelled because the detected size of the file was too large. |
| 14-13 | Send Cancelled | Processing is interrupted because the user pressed Stop. |
| 14-30 | MCS File Creation Failed | Failed to create the MCS file because:<br>▪ The number of files created with other |

**Error Codes**

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| | | applications on the Document Server has exceeded the limit.<br>▪ HDD is full or not operating correctly.<br>▪ Software error. |
| 14-31 | UFS File Creation Failed | UFS file could not be created:<br>▪ Not enough space in UFS area to handle both Scan-to-Email and IFAX transmission.<br>▪ HDD full or not operating correctly.<br>▪ Software error. |
| 14-32 | Cancelled the Mail Due to Error Detected by NFAX | Error detected with NFAX and send was cancelled due to a software error. |
| 14-33 | No Mail Address For the Machine | Neither the mail address of the machine nor the mail address of the network administrator is registered. |
| 14-34 | Address designated in the domain for SMTP sending does not exist | Operational error in normal mail sending or direct SMTP sending.<br>▪ Check the address selected in the address book for SMTP sending.<br>▪ Check the domain selection. |
| 14-50 | Mail Job Task Error | Due to an FCU mail job task error, the send was cancelled:<br>▪ Address book was being edited during creation of the notification mail.<br>▪ Software error. |
| 14-51 | UCS Destination Download Error | Not even one return notification can be downloaded:<br>▪ The address book was being edited.<br>▪ The number for the specified destination does not exist (it was deleted or edited after the job was created). |

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| 14-60 | Send Cancel Failed | The cancel operation by the user failed to cancel the send operation. |
| 14-61 | Notification Mail Send Failed for All Destinations | All addresses for return notification mail failed. |
| 15-01 | POP3/IMAP4 Server Not Registered | At startup, the system detected that the IP address of the POP3/IMAP4 server has not been registered in the machine. |
| 15-02 | POP3/IMAP4 Mail Account Information Not Registered | The POP3/IMAP4 mail account has not been registered. |
| 15-03 | Mail Address Not Registered | The mail address has not been registered. |
| 15-10 | DCS Mail Receive Error | Error other than 15-11 to 15-18. |
| 15-11 | Connection Error | The DNS or POP3/IMAP4 server could not be found:<br>▪ The IP address for DNS or POP3/IMAP4 server is not stored in the machine.<br>▪ The DNS IP address is not registered.<br>▪ Network not operating correctly. |
| 15-12 | Authorization Error | POP3/IMAP4 send authorization failed:<br>▪ Incorrect IFAX user name or password.<br>▪ Access was attempted by another device, such as the PC.<br>▪ POP3/IMAP4 settings incorrect. |
| 15-13 | Receive Buffer Full | Occurs only during manual reception. Transmission cannot be received due to insufficient buffer space. The buffer is being used for mail send or Scan-to-Email. |

**Error Codes**

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| 15-14 | Mail Header Format Error | The mail header is not standard format. For example, the Date line description is incorrect. |
| 15-15 | Mail Divide Error | The e-mail is not in standard format. There is no boundary between parts of the e-mail, including the header. |
| 15-16 | Mail Size Receive Error | The mail cannot be received because it is too large. |
| 15-17 | Receive Timeout | May occur during manual receiving only because the network is not operating correctly. |
| 15-18 | Incomplete Mail Received | Only one portion of the mail was received. |
| 15-31 | Final Destination for Transfer Request Reception Format Error | The format of the final destination for the transfer request was incorrect. |
| 15-39 | Send/Delivery Destination Error | The transmission cannot be delivered to the final destination:<br>▪ Destination file format is incorrect.<br>▪ Could not create the destination for the file transmission. |
| 15-41 | SMTP Receive Error | Reception rejected because the transaction exceeded the limit for the “Auth. E-mail RX” setting. |
| 15-42 | Off Ramp Gateway Error | The delivery destination address was specified with Off Ramp Gateway OFF. |
| 15-43 | Address Format Error | Format error in the address of the Off Ramp Gateway. |
| 15-44 | Addresses Over | The number of addresses for the Off Ramp Gateway exceeded the limit of 30. |

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| 15-61 | Attachment File Format Error | The attached file is not TIFF format. |
| 15-62 | TIFF File Compatibility Error | Could not receive transmission due to:<br>▪ Resolution error<br>▪ Image of resolution greater than 200 dpi without extended memory.<br>▪ Resolution is not supported.<br>▪ Page size error<br>▪ The page size was larger than A3.<br>▪ Compression error<br>▪ File was compressed with other than MH, MR, or MMR. |
| 15-63 | TIFF Parameter Error | The TIFF file sent as the attachment could not be received because the TIFF header is incorrect:<br>▪ The TIFF file attachment is a type not supported.<br>▪ The TIFF file attachment is corrupted.<br>▪ Software error. |
| 15-64 | TIFF Decompression Error | The file received as an attachment caused the TIFF decompression error:<br>▪ The TIFF format of the attachment is corrupted.<br>▪ Software error. |
| 15-71 | Not Binary Image Data | The file could not be received because the attachment was not binary image data. |
| 15-73 | MDN Status Error | Could not find the Disposition line in the header of the Return Receipt, or there is a problem with the firmware. |
| 15-74 | MSDN Message ID Error | Could not find the Original Message ID line in the header of the Return Receipt, or there is a problem with the firmware. |

**Error Codes**

| Code | Meaning | |
|---|---|---|
| 15-80 | Mail Job Task Read Error | Could not receive the transmission because the destination buffer is full and the destination could not be created (this error may occur when receiving a transfer request or a request for notification of reception). |
| 15-81 | Repeated Destination Registration Error | Could not repeat receive the transmission because the destination buffer is full and the destination could not be created (this error may occur when receiving a transfer request or a request for notification of reception). |
| 15-91 | Send Registration Error | Could not receive the file for transfer to the final destination:<br>▪ The format of the final destination or the transfer destination is incorrect.<br>▪ Destinations are full so the final and transfer destinations could not be created. |
| 15-92 | Memory Overflow | Transmission could not be received because memory overflowed during the transaction. |
| 15-93 | Memory Access Error | Transaction could not complete due to a malfunction of SAF memory. |
| 15-94 | Incorrect ID Code | The machine rejected an incoming e-mail for transfer request, because the ID code in the incoming e-mail did not match the ID code registered in the machine. |
| 15-95 | Transfer Station Function | The machine rejected an incoming e-mail for transfer because the transfer function was unavailable. |
| 22-00 | Original length exceeded the maximum scan length | ▪ Divide the original into more than one page.<br>▪ Check the resolution used for scanning. Lower the scan resolution if possible. |

| Code | Meaning | Suggested Cause/Action |
|---|---|---|
| | | ▪ Add optional page memory. |
| 22-01 | Memory overflow while receiving | ▪ Wait for the files in the queue to be sent.<br>▪ Delete unnecessary files from memory.<br>▪ Transfer the substitute reception files to another fax machine, if the machine's printer is busy or out of order.<br>▪ Add an optional SAF memory card or hard disk. |
| 22-02 | Tx or rx job stalled due to line disconnection at the other end | ▪ The job started normally but did not finish normally; data may or may not have been received fully.<br>▪ Restart the machine. |
| 22-04 | The machine cannot store received data in the SAF | ▪ Update the ROM<br>▪ Replace the FCU. |
| 22-05 | No G3 parameter confirmation answer | ▪ Defective FCU board or firmware. |
| 23-00 | Data read timeout during construction | ▪ Restart the machine.<br>▪ Replace the FCU |
| 25-00 | The machine software resets itself after a fatal transmission error occurred | ▪ Update the ROM<br>▪ Replace the FCU. |
| ⇒ 31-21 | LAN Fax Error | • It was cancelled received LAN Fax images during store the image to SAF of FCU.<br>• The LAN Fax transmission of a message was cancelled by the LAN Fax driver. |
| F0-xx | V.34 modem error | ▪ Replace the FCU. |
| F6-xx | SG3-V34 modem error | ▪ Update the SG3-V34 modem ROM.<br>▪ Replace the SG3-V34 board.<br>▪ Check for line noise or other line problems.<br>▪ Try communicating another V.8/V.34 fax. |

# 3.2 IFAX TROUBLESHOOTING

Use the following procedures to determine whether the machine or another part of the network is causing the problem.

| Communication Route | Item | Action | Remarks |
|---|---|---|---|
| General LAN | 1. Connection with the LAN | ▪ Check that the LAN cable is connected to the machine.<br>▪ Check that the LEDs on the hub are lit. | |
| | 2. LAN activity | ▪ Check that other devices connected to the LAN can communicate through the LAN. | |
| Between IFAX and PC | 1. Network settings on the PC | ▪ Check the network settings on the PC. | ▪ Is the IP address registered in the TCP/IP properties in the network setup correct? Check the IP address with the administrator of the network. |
| | 2. Check that PC can connect with the machine | ▪ Use the “ping” command on the PC to contact the machine. | ▪ At the MS-DOS prompt, type ping then the IP address of the machine, then press Enter. |

| Communication Route | Item | Action | Remarks |
|---|---|---|---|
| | 3. LAN settings in the machine | ▪ Check the LAN parameters<br>▪ Check if there is an IP address conflict with other PCs. | ▪ Use the “Network” function in the User Tools.<br>▪ If there is an IP address conflict, inform the administrator. |
| Between machine and e-mail server | 1. LAN settings in the machine | ▪ Check the LAN parameters<br>▪ Check if there is an IP address conflict with other PCs. | ▪ Use the “Network” function in the User Tools.<br>▪ If there is an IP address conflict, inform the administrator. |
| | 2. E-mail account on the server | ▪ Make sure that the machine can log into the e-mail server.<br>▪ Check that the account and password stored in the server are the same as in the machine. | ▪ Ask the administrator to check. |
| | 3. E-mail server | ▪ Make sure that the client devices which have an account in the server can send/receive e-mail. | ▪ Ask the administrator to check.<br>▪ Send a test e-mail with the machine’s own number as the destination. |

**IFAX Troubleshooting**

| Communication Route | Item | Action | Remarks |
|---|---|---|---|
| | | | The machine receives the returned e-mail if the communication is performed successfully. |
| Between e-mail server and internet | 1. E-mail account on the Server | ▪ Make sure that the PC can log into the e-mail server.<br>▪ Check that the account and password stored in the server are the same as in the machine. | ▪ Ask the administrator to check. |
| | 2. E-mail server | ▪ Make sure that the client devices which have an account in the server can send/receive e-mail. | ▪ Ask the administrator to check.<br>▪ Send a test e-mail with the machine's own number as the destination. The machine receives the returned e-mail if the communication is performed successfully. |
| | 3. Destination e-mail address | ▪ Make sure that the e-mail address is actually used. | |

| Communication Route | Item | Action | Remarks |
|---|---|---|---|
| | | ▪ Check that the e-mail address contains no incorrect characters such as spaces. | |
| | 4. Router settings | ▪ Use the “ping” command to contact the router.<br>▪ Check that other devices connected to the router can sent data over the router. | ▪ Ask the administrator of the server to check. |
| | 5. Error message by e-mail from the network of the destination. | ▪ Check whether e-mail can be sent to another address on the same network, using the application e-mail software.<br>▪ Check the error e-mail message. | ▪ Inform the administrator of the LAN. |

# 3.3 IP-FAX TROUBLESHOOTING

## 3.3.1 IP-FAX TRANSMISSION

### *Cannot send by IP Address/Host Name*

| Check Point | | Action |
|---|---|---|
| 1 | LAN cable connected? | Check the LAN cable connection. |
| 2 | Specified IP address/host name correct? | Check the IP address/host name. |
| 3 | Firewall/NAT is installed? | Cannot breach the firewall. Send by using another method (Fax, Internet Fax) |
| 4 | Transmission sent manually? | Manual sending not supported. |
| 5 | IP address of local machine registered? | Register the IP address. |
| 6 | Remote terminal port number setting other than 1720? | Send by specifying the port number. |
| 7 | Specified port number correct? | Confirm the port number of the remote fax. |
| 8 | DNS server registered when host name specified? | Contact the network administrator. |
| 9 | Remote fax a T.38 terminal? | Check whether the remote fax is a T38 terminal. |
| 10 | Remote fax switched off or busy? | Check that the remote fax is switched on. |
| 11 | Network bandwidth too narrow? | Request the network administrator to increase the bandwidth. |
| | | Raise the delay level.<br>IPFAX SW 01 Bit 0 to 3 |

| Check Point | | Action |
|---|---|---|
| | | IP-Fax bandwidth is the same as the DCS speed. Set IP-Fax SW00 Bit 6 to 1. |
| 12 | Remote fax cancelled transmission? | Check whether the remote fax cancelled the transmission. |

### *Cannot send via VoIP Gateway*

| Check Point | | Action |
|---|---|---|
| 1 | LAN cable connected? | Check the LAN cable connection. |
| 2 | VoIP Gateway T.38 standard? | Contact the network administrator. |
| 3 | VoIP Gateway installed correctly? | Contact the network administrator. |
| 4 | VoIP Gateway power switched on? | Contact the network administrator. |
| 5 | Is the IP address/host name of the specified Gateway correct? | Check the IP address/host name. |
| 6 | Number of the specified fax correct? | Check the remote fax number. |
| 7 | Firewall/NAT is installed? | Cannot breach the firewall. Send by using another method (Fax, Internet Fax) |
| 8 | Transmission sent manually? | Manual sending not supported. |
| 9 | IP address of local fax registered? | Register the IP address. |
| 10 | DNS registered when host name specified? | Contact the network administrator. |
| 11 | Remote fax a G3 fax? | Check that the remote fax is a G3 fax. |
| 12 | G3 fax is connected to VoIP gateway? | Check that G3 fax is connected. |

**IP-Fax Troubleshooting**

| Check Point | | Action |
|---|---|---|
| 13 | Remote G3 fax turned on? | Check that G3 fax is switched on. |
| 14 | Network bandwidth too narrow? | Request the network administrator to increase the bandwidth. |
| | | Raise the network delay level. IPFAX SW 01 Bit 0 to 3 |
| | | IP-Fax bandwidth is the same as the DCS speed. Set IP-Fax SW00 Bit 6 to 1. |

## *Cannot send by Alias Fax number.*

| Check Point | | Action |
|---|---|---|
| 1 | LAN cable connected? | Check the LAN cable connection. |
| 2 | Number of specified Alias fax correct? | Confirm the Alias of the remote fax. Error Code: 13-14 |
| 3 | Firewall/NAT installed? | Cannot breach the firewall. Send by using another method (Fax, Internet Fax) |
| 4 | Transmission sent manually? | Manual sending not supported. |
| 5 | Gatekeeper installed correctly? | Contact the network administrator. |
| 6 | Gatekeeper power switched on? | Contact the network administrator. |
| 7 | IP address/host name of Gatekeeper correct? | Check the IP address/host name. |
| 8 | DNS server registered when Gatekeeper host name specified? | Contact the network administrator. |
| 9 | Enable H.323 SW is set to on? | Check the settings.<br>See User Parameter SW 34 Bit 0 |

| Check Point | | Action |
|---|---|---|
| 10 | IP address of local fax registered? | Register the IP address of the local fax. |
| 11 | Alias number of local fax registered? | Register the Alias number of the local fax. |
| 12 | Remote fax registered in Gatekeeper? | Contact the network administrator. |
| 13 | Remote fax a T.38 terminal? | Check whether the remote fax is a T38 terminal. |
| 14 | Remote fax switched off or busy? | Contact the network administrator. |
| 15 | Network bandwidth too narrow? | Request the system administrator to increase the bandwidth. |
| | | Raise the delay level. IPFAX SW 01 Bit 0 to 3 |
| | | Lower the modem transmission baud rate. IPFAX SW 05 |
| 16 | Remote fax cancelled transmission? | Check whether the remote fax cancelled the transmission. |

## 3.3.2 IP-FAX RECEPTION

### *Cannot receive by IP Address/Host name*

| Check Point | | Action |
|---|---|---|
| 1 | LAN cable connected? | Check the LAN cable connection. |
| 2 | Firewall/NAT is installed? | Cannot breach the firewall. Send by using another method (Fax, Internet Fax) |
| 3 | IP address of local fax registered? | Register the IP address. |
| 4 | Port number specified at remote sender fax (if required)? | Request the sender to specify the port number. |

**IP-Fax Troubleshooting**

| Check Point | | Action |
|---|---|---|
| 5 | Specified port number correct (if required)? | Request the sender to check the port number. |
| 6 | DNS server registered when host name specified on sender side? | Contact the network administrator.<br>**Note:** The sender machine displays this error code if the sender fax is a Ricoh model. |
| 7 | Network bandwidth too narrow? | Request the system administrator to increase the bandwidth. |
| | | Lower the start modem reception baud rate on the receiving side. IPFAX SW06 |
| 8 | Remote fax cancelled transmission? | Check whether the remote fax cancelled the transmission. |

### *Cannot receive by VoIP Gateway.*

| Check Point | | Action |
|---|---|---|
| 1 | LAN cable connected? | Check the LAN cable connection. |
| 2 | Firewall/NAT is installed? | Cannot breach the firewall. Request the remote fax to send by using another method (Fax, Internet Fax) |
| 3 | VoIP Gateway installed correctly? | Contact the network administrator. |
| 4 | VoIP Gateway power switched on? | Contact the network administrator. |
| 5 | IP address/host name of specified VoIP Gateway correct on sender's side? | Request the remote fax to check the IP address/host name. |
| 6 | DNS server registered when host name specified on sender side? | Contact the network administrator. |
| 7 | Network bandwidth too narrow? | Request the network administrator to |

| Check Point | | Action |
|---|---|---|
| | | increase the bandwidth. |
| 8 | G3 fax connected? | Check that G3 fax is connected. |
| 9 | G3 fax power switched on? | Check that G3 fax is switched on. |

### *Cannot receive by Alias Fax number.*

| Check Point | | Action |
|---|---|---|
| 1 | LAN cable connected? | Check the LAN cable connection. |
| 2 | Firewall/NAT is installed? | Cannot the breach firewall. Request the remote fax to send by using another method (Fax, Internet Fax) |
| 3 | Gatekeeper installed correctly? | Contact the network administrator.<br>**Note:** The sender machine displays this error code if the sender fax is a Ricoh model. |
| 4 | Power to Gatekeeper switched on? | Contact the network administrator.<br>**Note:** The sender machine displays this error code if the sender fax is a Ricoh model. |
| 5 | IP address/host name of Gatekeeper correct on the sender's side? | Request the sender to check the IP address/host name.<br>**Note:** The sender machine displays this error code if the sender fax is a Ricoh model. |
| 6 | DNS server registered when Gatekeeper host name specified on sender's side? | Contact the network administrator.<br>**Note:** The sender machine displays this error code if the sender fax is a Ricoh model. |

**IP-Fax Troubleshooting**

| Check Point | | Action |
|---|---|---|
| 7 | Enable H.323 SW is set to on? | Request the sender to check the settings.<br>User Parameter SW 34 Bit 0<br>**Note:** Only if the remote sender fax is a Ricoh fax. |
| 8 | Local fax IP address registered? | Register the IP address. |
| 9 | Local fax Alias number registered? | Register the Alias number. |
| 10 | Network bandwidth too narrow? | Request the system administrator to increase the bandwidth. |
| | | Lower the start modem reception baud rate on the receiving side.<br>IPFAX SW06 |
| 11 | Remote fax cancelled transmission? | Check whether the remote fax cancelled the transmission. |
| 12 | Local fax registered in Gatekeeper? | Contact the network administrator.<br>**Note:** The sender machine displays this error code if the sender fax is a Ricoh model. |

# 4. SERVICE TABLES

## 4.1 CAUTIONS

**⚠CAUTION**

- Never turn off the main power switch when the power LED is lit or flashing. To avoid damaging the hard disk or memory, press the operation power switch to switch the power off, wait for the power LED to go off, and then switch the main power switch off.

Note

- The main power LED (⏻) lights or flashes while the platen cover or ARDF is open, while the main machine is communicating with a facsimile or the network server, or while the machine is accessing the hard disk or memory for reading or writing data.

# 4.2 SERVICE PROGRAM TABLES

## 4.2.1 SP1-XXX (BIT SWITCHES)

| 1 | Mode No. | | Function |
|---|---|---|---|
| 101 | System Switch | | |
| | 001 – 032 | 00 – 1F | Changes the bit switches for system settings for the fax option.<br>See section 4.2 Bit Switches |
| 102 | Ifax Switch | | |
| | 001 – 016 | 00 – 0F | Changes the bit switches for internet fax settings for the fax option.<br>See section 4.2 Bit Switches |
| 103 | Printer Switch | | |
| | 001 – 016 | 00 – 0F | Changes the bit switches for printer settings for the fax option.<br>See section 4.2 Bit Switches |
| 104 | Communication Switch | | |
| | 001 – 032 | 00 – 1F | Changes the bit switches for communication settings for the fax option.<br>See section 4.2 Bit Switches |
| 105 | G3-1 Switch | | |
| | 001 – 016 | 00 – 0F | Changes the bit switches for the protocol settings of the standard G3 board.<br>See section 4.2 Bit Switches |
| 106 | G3-2 Switch | | |
| | 001 – 016 | 00 – 0F | Changes the bit switches for the protocol settings of the optional G3 board.<br>See section 4.2 Bit Switches |

| 1 | Mode No. | | Function |
|---|---|---|---|
| 107 | G3-3 Switch | | |
| | 001 – 016 | 00 – 0F | Changes the bit switches for the protocol settings of the optional G3 board. See section 4.2 Bit Switches |
| 108 | G4 Internal Switch | | |
| | 001 – 032 | 00 – 1F | Not used (Do not change the bit switches) |
| 109 | G4 Parameter Switch | | |
| | 001 – 016 | 00 – 0F | Not used (Do not change the bit switches) |
| 111 | IP fax Switch | | |
| | 001 – 016 | 00 – 0F | Changes the bit switches for optional IP fax parameters. See section 4.2 Bit Switches |

## 4.2.2 SP2-XXX (RAM DATA)

| 2 | Mode No. | | Function |
|---|---|---|---|
| 101 | RAM Read/Write | | |
| | 001 | | Changes RAM data for the fax board directly. See section 4.5 Service RAM Addresses. |
| 102 | Memory Dump | | |
| | 001 | G3-1 Memory Dump | Prints out RAM data for the fax board. See section 4.5 Service RAM Addresses. |
| | 002 | G3-2 Memory Dump | Prints out RAM data for the optional SG3 board. |

| 2 | Mode No. | | Function |
|---|---|---|---|
| | 003 | G3-3 Memory Dump | Prints out RAM data for the optional SG3 board. |
| | 004 | G4 Memory Dump | Not used.<br>Prints out RAM data for the SiG4 board. |
| 103 | G3-1 NCU Parameters | | |
| | 001 – 023 | CC, 01 – 22 | NCU parameter settings for the standard G3 board.<br>See section 4.3 NCU Parameters. |
| 104 | G3-2 NCU Parameters | | |
| | 001 – 023 | CC, 01 – 22 | NCU parameter settings for the optional G3 board.<br>See section 4.3 NCU Parameters. |
| 105 | G3-3 NCU Parameters | | |
| | 001 – 023 | CC, 01 – 22 | NCU parameter settings for the optional G3 board.<br>See section 4.3 NCU Parameters. |

## 4.2.3 SP3-XXX (TEL LINE SETTINGS)

| 3 | Mode No. | | Function |
|---|---|---|---|
| 101 | Service Station | | |
| | 001 | Fax Number | Enter the fax number of the service station. |
| | 002 | Select Line | Select the line type. |
| 102 | Serial Number | | |
| | 000 | | Enter the fax unit's serial number. |

| 3 | Mode No. | | Function |
|---|---|---|---|
| 103 | PSTN-1 Port Settings | | |
| | 001 | Select Line | Select the line type setting for the G3-1 line. If the machine is installed on a PABX line, select “PABX”, “PABX(GND)” or “PABX(FLASH)”. |
| | 002 | PSTN Access Number | Enter the PSTN access number for the G3-1 line. |
| | 003 | Memory Lock Disabled | If the customer does not want to receive transmissions using Memory Lock on this line, turn this SP on. |
| 104 | PSTN-2 Port Settings | | |
| | 001 | Select Line | Select the line setting for the G3-2 line. If the machine is installed on a PABX line, select “PABX”, “PABX(GND)” or “PABX(FLASH)”. |
| | 002 | PSTN Access Number | Enter the PSTN access number for the G3-2 line. |
| | 003 | Memory Lock Disabled | If the customer does not want to receive transmissions using Memory Lock on this line, change this SP to on. |
| | 004 | Transmission Disabled | If you turn this SP on, the machine does not send any fax messages on the G3-2 line. |
| 105 | PSTN-3 Port Settings | | |
| | 001 | Select Line | Select the line setting for the G3-3 line. If the machine is installed on a PABX line, select “PABX”, “PABX(GND)” or “PABX(FLASH)”. |
| | 002 | PSTN Access | Enter the PSTN access number for the |

**Service Program Tables**

| 3 | Mode No. | | Function |
|---|---|---|---|
| | | Number | G3-3 line. |
| | 003 | Memory Lock Disabled | If the customer does not want to receive transmissions using Memory Lock on this line, change this SP to on. |
| | 004 | Transmission Disabled | If you turn this SP on, the machine does not send any fax messages on the G3-3 line. |
| 106 | ISDN Port Settings | | |
| | 001 | Select Line | Not used (Do not change the bit switches) |
| | 002 | PSTN Access Number | |
| | 003 | Memory Lock Disabled | |
| 106 | 004 | Transmission Disabled | |
| 107 | IPFAX Port Settings | | |
| | 001 | H323 Port | |
| | 002 | SIP Port | |
| | 003 | RAS Port | |
| | 004 | Gatekeeper port | |
| | 005 | T.38 Port | |
| | 006 | SIP Server Port | |
| | 007 | IPFAX Protocol Priority | Select "H323" or "SIP". |
| 201 | FAX SW | | |
| | 001 – 032 | 00 – 1F | |

## 4.2.4 SP4-XXX (ROM VERSIONS)

| 4 | Mode No. | | Function |
|---|---|---|---|
| 101 | 001 | FCU ROM Version | Displays the FCU ROM version. |
| 102 | 001 | Error Codes | Displays the latest 64 fax error codes. |
| 103 | 001 | G3-1 ROM Version | Displays the G3-1 modem version. |
| 104 | 001 | G3-2 ROM Version | Displays the G3-2 modem version. |
| 105 | 001 | G3-3 ROM Version | Displays the G3-3 modem version. |
| 106 | 001 | G4 ROM Version | Not used (Do not change the bit switches) |
| 107 | 001 | Charge ROM Version | Not used (Do not change the bit switches) |

## 4.2.5 SP5-XXX (INITIALIZING)

| 5 | Mode No. | | Function |
|---|---|---|---|
| 101 | Initialize SRAM | | |
| | 000 | | Initializes the bit switches and user parameters, user data in the SRAM, files in the SAF memory, and clock. |
| 102 | Erase All Files | | |
| | 000 | | Erases all files stored in the SAF memory. |
| 103 | Reset Bit Switches | | |
| | 000 | | Resets the bit switches and user parameters. |
| 104 | Factory setting | | |
| | 000 | | Resets the bit switches and user parameters, user data in the SRAM and files in the SAF memory. |

| 5 | Mode No. | | Function |
|---|---|---|---|
| 105 | Initialize All Bit Switches | | |
| | 000 | | Initializes all the current bit switch settings. |
| 106 | Initialize Security Bit Switches | | |
| | 000 | | Initializes only the security bit switches. If you select automatic output/display for the user parameter switches, the security settings are initialized. |

## 4.2.6 SP6-XXX (REPORTS)

| 6 | Mode No. | | Function | |
|---|---|---|---|---|
| 101 | System Parameter List | | | |
| | 000 | | Touch the “ON” button to print the system parameter list. | |
| 102 | Service Monitor Report | | | |
| | 000 | | Touch the “ON” button to print the service monitor report. | |
| 103 | G3 Protocol Dump List | | | |
| | 001 | G3 All Communications | Prints the protocol dump list of all communications for all G3 lines. | |
| | 002 | G3-1 (All Communications) | Prints the protocol dump list of all communications for the G3-1 line. | |
| 103 | 003 | G3-1 (1 Communication) | Prints the protocol dump list of the last communication for the G3-1 line. | |
| | 004 | G3-2 (All Communications) | Prints the protocol dump list of all communications for the G3-2 line. | |
| | 005 | G3-2 (1 | Prints the protocol dump list of the last | |

| 6 | Mode No. | | Function |
|---|---|---|---|
| | | Communication) | communication for the G3-2 line. |
| | 006 | G3-3 (All Communications) | Prints the protocol dump list of all communications for the G3-3 line. |
| | 007 | G3-3 (1 Communication) | Prints the protocol dump list of the last communication for the G3-3 line. |
| 104 | G4 Protocol Dump List | | |
| | 001 | Dch + Bch 1 | Not used (Do not change the bit switches) |
| | 002 | Dch | |
| | 003 | Bch 1 Link Layer | |
| | 004 | Dch Link Layer | |
| | 005 | Dch +Bch 2 | |
| | 006 | Bch 2 Link Layer | |
| 105 | All Files print out | | |
| | 000 | | Prints out all the user files in the SAF memory, including confidential messages. **Note:** Do not use this function, unless the customer is having trouble printing confidential messages or recovering files stored using the memory lock feature. |
| 106 | Journal Print out | | |
| | 001 | All Journals | The machine prints all the communication records on the report. |
| | 002 | Specified Date | The machine prints all communication records after the specified date. |
| 107 | Log List Print out | | |

| 6 | Mode No. | | Function |
|---|---|---|---|
| | 001 | All log files | These log print out functions are for designer use only. |
| | 002 | Printer | |
| | 003 | SC/TRAP Stored | |
| | 004 | Decompression | |
| | 005 | Scanner | |
| | 006 | JOB/SAF | |
| | 007 | Reconstruction | |
| | 008 | JBIG | |
| | 009 | Fax Driver | |
| | 010 | G3CCU | |
| | 011 | Fax Job | |
| | 012 | CCU | |
| | 013 | Scanner Condition | |
| 108 | IP Protocol Dump List | | |
| | 001 | All Communications | Prints the protocol dump list of all communications for the IP fax line. |
| | 002 | 1 Communication | Prints the protocol dump list of the last communication for the IP fax line. |

## 4.2.7 SP7-XXX (TEST MODES)

These are the test modes for PTT approval.

| 7 | Function |
|---|---|
| 101 | G3-1 Modem Tests |
| 102 | G3-1 DTMF Tests |

| 7 | Function |
|---|---|
| 103 | Ringer Test |
| 104 | G3-1 V34 (S2400baud) |
| 105 | G3-1 V34 (S2800baud) |
| 106 | G3-1 V34 (S3000baud) |
| 107 | G3-1 V34 (S3200baud) |
| 108 | G3-1 V34 (S3429baud) |
| 109 | Recorded Message Test |
| 110 | G3-2 Modem Tests |
| 111 | G3-2 DTMF Tests |
| 112 | G3-2 V34 (S2400baud) |
| 113 | G3-2 V34 (S2800baud) |
| 114 | G3-2 V34 (S3000baud) |
| 115 | G3-2 V34 (S3200baud) |
| 116 | G3-2 V34 (S3429baud) |
| 117 | G3-3 Modem Tests |
| 118 | G3-3 DTMF Tests |
| 119 | G3-3 V34 (S2400baud) |
| 120 | G3-3 V34 (S2800baud) |
| 121 | G3-3 V34 (S3000baud) |
| 122 | G3-3 V34 (S3200baud) |
| 123 | G3-3 V34 (S3429baud) |
| 124 | IG3-1 Modem Tests - Not used |

| 7 | Function |
|---|---|
| 125 | IG3-1 DTMF Tests - Not used |
| 126 | IG3-1 V34 (S2400baud) - Not used |
| 127 | IG3-1 V34 (S2800baud) - Not used |
| 128 | IG3-1 V34 (S3000baud) - Not used |
| 129 | IG3-1 V34 (S3200baud) - Not used |
| 130 | IG3-1 V34 (S3429baud) - Not used |
| 131 | IG3-2 Modem Tests - Not used |
| 132 | IG3-2 DTMF Tests - Not used |
| 133 | IG3-2 V34 (S2400baud) - Not used |
| 134 | IG3-2 V34 (S2800baud) - Not used |
| 135 | IG3-2 V34 (S3000baud) - Not used |
| 136 | IG3-2 V34 (S3200baud) - Not used |
| 137 | IG3-2 V34 (S3429baud) - Not used |

## 4.2.8 SP9-XXX (DESIGN SWITCH MODE)

| 9 | Mode No. | Function |
|---|---|---|
| 702 | Design Switch | **DFU** |

# 4.3 BIT SWITCHES - 1

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

## 4.3.1 SYSTEM SWITCHES

| System Switch 00 (SP No. 1-101-001) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Dedicated transmission parameter programming<br>0: Disabled<br>1: Enabled | Set this bit to 1 before changing any dedicated transmission parameters.<br>Reset this bit to 0 after programming dedicated transmission parameters. |
| 1 | Not used | Do not change |
| 2 | Technical data printout on the Journal<br>0: Disabled<br>1: Enabled | 1: Instead of the personal name, the following data are listed on the Journal for each G3 communication. |
| | Example:<br>**0000 32V34 288/264 L0100 03 04**<br>(1) (2)(3) (4) (5) (6) (7) (8)<br>(1): EQM value (Line quality data). A larger number means more errors.<br>(2): Symbol rate (V.34 only)<br>(3): Final modem type used<br>(4): Starting data rate (for example, 288 means 28.8 kbps)<br>(5): Final data rate<br>(6): Rx revel (see below for how to read the rx level)<br>(7): Total number of error lines that occurred during non-ECM reception. | |

**Bit Switches - 1**

| System Switch 00 (SP No. 1-101-001) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | (8): Total number of burst error lines that occurred during non-ECM reception.<br>Note<br>▪ EQM and rx level are fixed at "FFFF" in tx mode.<br>▪ The seventh and eighth numbers are fixed at "00" for transmission records and ECM reception records. | |
| | Rx level calculation<br>Example:<br>**0000 32V34 288/264 L0100 03 04**<br>(1) (2)(3) (4) (5) (6) (7) (8)<br>The four-digit hexadecimal value (N) after "L" indicates the rx level.<br>The **high** byte is given first, followed by the **low** byte. Divide the decimal value of N by -16 to get the rx level.<br>In the above example, the decimal value of N (= 0100 [H]) is 256.<br>So, the actual rx level is 256/-16 = -16 dB | |
| 3 | Not used | Do not change this setting. |
| 4 | Line error mark print<br>0: OFF, 1: ON (print) | When "1" is selected, a line error mark is printed on the printout if a line error occurs during reception. |
| 5 | G3/G4 communication parameter display<br>0: Disabled<br>1: Enabled | This is a fault-finding aid. The LCD shows the key parameters (see below). This is normally disabled because it cancels the CSI display for the user.<br>Be sure to reset this bit to 0 after testing. |
| 6 | Protocol dump list output after each communication<br>0: Off<br>1: On | This is only used for communication troubleshooting. It shows the content of the transmitted facsimile protocol signals. Always reset this bit to 0 after finishing testing.<br>If system switch 09 bit 6 is at "1", the list is only printed if there was an error during the communication. |

| System Switch 00 (SP No. 1-101-001) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 7 | Not used | Do not change the setting. |

**G3 Communication Parameters**

| | |
|---|---|
| Modem rate | 336: 33600 bps 168: 16800 bps<br>312: 31200 bps 144: 14400 bps<br>288: 28800 bps 120: 12000 bps<br>264: 26400 bps 96: 9600 bps<br>240: 24000 bps 72: 7200 bps<br>216: 21600 bps 48: 4800 bps<br>192: 19200 bps 24: 2400 bps |
| Resolution | S: Standard (8 x 3.85 dots/mm)<br>D: Detail (8 x 7.7 dots/mm)<br>F: Fine (8 x 15.4 dots/mm)<br>SF: Superfine (16 x 15.4 dots/mm)<br>21: Standard (200 x 100 dpi)<br>22: Detail (200 x 200 dpi)<br>44: Superfine (400 x 400 dpi) |
| Compression mode | MMR: MMR compression<br>MR: MR compression<br>MH: MH compression<br>JBO: JBIG compression (Optional mode)<br>JBB: JBIG compression (Basic mode) |
| Communication mode | ECM: With ECM<br>NML: With no ECM |
| Width and reduction | A4: A4 (8.3"), no reduction<br>B4: B4 (10.1"), no reduction<br>A3: A3 (11.7"), no reduction |
| I/O rate | 0: 0 ms/line |

**Bit Switches - 1**

| | |
|---|---|
| | 5: 5 ms/line<br>10: 10 ms/line<br>20: 20 ms/line<br>25: 2.5 ms/line<br>40: 40 ms/line<br>Note<br>▪ "40" is displayed while receiving a fax message using AI short protocol. |

**System Switch 01** - Not used (Do not change the factory settings.)

| System Switch 02 (SP No. 1-101-003) | | | | |
|---|---|---|---|---|
| **No** | **Function** | | | **Comments** |
| 0 | Not used | | | Do not change these settings. |
| 2 | Forced reset after transmission stalls<br>0: Off<br>1: On | | | With this setting on, the machine resets itself automatically if a transmission stalls and fails to complete the job. |
| 3 | Not used | | | Do not change these settings. |
| 4 | File retention time<br>0: Depends on User Parameter 24 [18(H)]<br>1: No limit | | | 1: A file that had a communication error will not be erased unless the communication is successful. |
| 5 | Not used | | | Do not change this setting. |
| 6-7 | Memory read/write by RDS | | | (0,0): All RDS systems are always locked out.<br>(0,1), (1,0): Normally, RDS systems are locked out, but the user can temporarily switch RDS on to allow RDS operations to take place. RDS will automatically be locked out again after a |
| | Bit 7 | Bit 6 | Setting | |
| | 0 | 0 | Always disabled | |
| | 0 | 1 | User selectable | |

| System Switch 02 (SP No. 1-101-003) | | | | |
|---|---|---|---|---|
| **No** | **Function** | | | **Comments** |
| | 1 | 0 | User selectable | certain time, which is stored in System Switch 03. Note that if an RDS operation takes place, RDS will not switch off until this time limit has expired.<br>(1,1): At any time, an RDS system can access the machine. |
| | 1 | 1 | Always enabled | |
| | | | | |

| System Switch 03 (SP No. 1-101-004) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0<br>to<br>7 | Length of time that RDS is temporarily switched on when bits 6 and 7 of System Switch 02 are set to "User selectable" | 00 - 99 hours (BCD).<br>This setting is only valid if bits 6 and 7 of System Switch 02 are set to "User selectable".<br>The default setting is 24 hours. |

| System Switch 04 (SP No. 1-101-005) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-2 | Not used | Do not change these settings. |
| 3 | Printing dedicated tx parameters on Quick/Speed Dial Lists<br>0: Disabled<br>1: Enabled | 1: Each Quick/Speed dial number on the list is printed with the dedicated tx parameters (10 bytes each).<br>The first 10 bytes of data are the programmed dedicated tx parameters; 34 bytes of data are printed (the other 24 bytes have no use for service technicians). |
| 4-7 | Not used | Do not change these settings. |

**System Switch 05** - Not used (Do not change the factory settings.)

**Bit Switches - 1**

| |
|---|
| **System Switch 06** - Not used (Do not change the factory settings.) |
| **System Switch 07** - Not used (Do not change the factory settings.) |
| **System Switch 08** - Not used (Do not change the factory settings.) |

| System Switch 09 (SP No. 1-101-010) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Addition of image data from confidential transmissions on the transmission result report<br>0: Disabled 1: Enabled | If this feature is enabled, the top half of the first page of confidential messages will be printed on transmission result reports. |
| 1 | Inclusion of communications on the Journal when no image data was exchanged.<br>0: Disabled 1: Enabled | 0: Communications that reached phase C (message tx/rx) of the T.30 protocol are listed on the Journal.<br>1: Communications that reached phase A (call setup) of T.30 protocol are listed on the Journal. This will include telephone calls. |
| 2 | Automatic error report printout<br>0: Disabled 1: Enabled | 0: Error reports will not be printed.<br>1: Error reports will be printed automatically after failed communications. |
| 3 | Printing of the error code on the error report<br>0: No 1: Yes | 1: Error codes are printed on the error reports. |
| 4 | Not used | Do not change this setting. |
| 5 | Power failure report<br>0: Disabled 1: Enabled | 1: A power failure report will be automatically printed after the power is switched on if a fax message disappeared from the memory when the power was turned off last. |
| 6 | Conditions for printing the protocol dump list<br>0: Print for all communications | This switch becomes effective only when system switch 00 bit 6 is set to 1.<br>1: Set this bit to 1 when you wish to print a |

| System Switch 09 (SP No. 1-101-010) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | 1: Print only when there is a communication error | protocol dump list only for communications with errors. |
| 7 | Priority given to various types of remote terminal ID when printing reports<br>0: RTI > CSI > Dial label > Tel. number<br>1: Dial label > Tel. number > RTI > CSI | This bit determines which set of priorities the machine uses when listing remote terminal names on reports.<br>Dial Label: The name stored, by the user, for the Quick/Speed Dial number. |

| System Switch 0A (SP No. 1-101-011) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Automatic port selection<br>0: Disabled, 1: Enabled | When "1" is selected, a suitable port is automatically selected if the selected port is not used. |
| 1-3 | Not used | Do not change these settings. |
| 4 | Dialing on the ten-key pad when the external telephone is off-hook<br>0: Disabled 1: Enabled | 0: Prevents dialing from the ten-key pad while the external telephone is off-hook. Use this setting when the external telephone is not by the machine, or if a wireless telephone is connected as an external telephone.<br>1: The user can dial on the machine's ten-key pad when the handset is off-hook. |
| 5 | On hook dial<br>0: Disabled 1: Enabled | 0: On hook dial is disabled. |
| 6-7 | Not used | Do not change the factory settings |

**Bit Switches - 1**

| |
|---|
| **System Switch 0B** - Not used (Do not change the factory settings.) |
| **System Switch 0C** - Not used (Do not change the factory settings.) |
| **System Switch 0D** - Not used (Do not change the factory settings.) |

| **System Switch 0E (SP No. 1-101-015)** | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-1 | Not used | Do not change the settings. |
| 2 | Enable/disable for direct sending selection<br>0: Direct sending off<br>1: Direct sending on | Direct sending cannot operate when the capture function is on during sending. Setting this switch to "1" enables direct sending without capture. Setting this switch to "0" masks the direct sending function on the operation panel so it cannot be selected. |
| 3 | Action when the external handset goes off-hook<br>0: Manual tx and rx operation<br>1: Memory tx and rx operation (the display remains the same) | 0: Manual tx and rx are possible while the external handset is off-hook. However, memory tx is not possible.<br>1: The display stays in standby mode even when the external handset is used, so that other people can use the machine for memory tx operation. Note that manual tx and rx are not possible with this setting. |
| 4-7 | Not used | Do not change these settings. |

| System Switch 0F (SP No. 1-101-016) | | | |
|---|---|---|---|
| **No** | **Function** | | **Comments** |
| 0 to 7 | Country/area code for functional settings (Hex) | | This country/area code determines the factory settings of bit switches and RAM addresses. However, it has no effect on the NCU parameter settings and communication parameter RAM addresses.<br>Cross reference<br>NCU country code:<br>SP No. 2-103-001 for G3-1<br>SP No. 2-104-001 for G3-2<br>SP No. 2-105-001 for G3-3 |
| | 00: France | 11: USA | |
| | 01: Germany | 12: Asia | |
| | 02: UK | 13: Japan | |
| | 03: Italy | 14: Hong Kong | |
| | 04: Austria | 15: South Africa | |
| | 05: Belgium | 16: Australia | |
| | 06: Denmark | 17: New Zealand | |
| | 07: Finland | 18: Singapore | |
| | 08: Ireland | 19: Malaysia | |
| | 09: Norway | 1A: China | |
| | 0A: Sweden | 1B: Taiwan | |
| | 0B: Switz. | 1C: Korea | |
| | 0C: Portugal | 20: Turkey | |
| | 0D: Holland | 21: Greece | |
| | 0E: Spain | 22: Hungary | |
| | 0F: Israel | 23: Czech | |
| | 10: --- | 24: Poland | |

**Bit Switches - 1**

| System Switch 10 (SP No. 1-101-017) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-7 | Threshold memory level for parallel memory transmission | Threshold = N x 128 KB + 256 KB<br>N can be between 00 - FF(H)<br>Default setting: 02(H) = 512 KB |

| System Switch 11 (SP No. 1-101-018) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | TTI printing position<br>0: Superimposed on the page data<br>1: Printed before the data leading edge | Change this bit to 1 if the TTI overprints information that the customer considers to be important (G3 transmissions). |
| 1 | TSI (G3) printing position<br>0: Superimposed on the page data<br>1: Printed before the data leading edge | Change this bit to 1 if the TSI (G3) overprints information that the customer considers to be important. |
| 2 | Not used | Do not change the factory settings. |
| 3 | TTI used for broadcasting<br>0: The TTIs selected for each Quick/Speed dial are used<br>1: The same TTI is used for all destinations | 1: The TTI (TTI_1 or TTI_2) which is selected for all destinations during broadcasting. |
| 4-7 | Not used | Do not change the factory settings. |

| System Switch 12 (SP No. 1-101-019) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-7 | TTI printing position in the main | TTI: 08 to 92 (BCD) mm |

| System Switch 12 (SP No. 1-101-019) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | scan direction | Input even numbers only.<br>This setting determines the print start position for the TTI from the left edge of the paper. If the TTI is moved too far to the right, it may overwrite the file number which is on the top right of the page. On an A4 page, if the TTI is moved over by more than 50 mm, it may overwrite the page number. |

| |
|---|
| **System Switch 13** - Not used (do not change these settings) |
| **System Switch 14** - Not used (do not change these settings) |

<table>
<tr><th colspan="5">System Switch 15 (SP No. 1-101-022)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td>0</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
<tr><td>1</td><td colspan="3">Going into the Energy Saver mode automatically<br>0: Enabled<br>1: Disabled</td><td>1: The machine will restart from the Energy Saver mode quickly, because the +5V power supply is active even in the Energy Saver mode.</td></tr>
<tr><td>2-3</td><td colspan="3">Not used</td><td>Do not change these settings.</td></tr>
<tr><td rowspan="3">4-5</td><td colspan="3">Interval for preventing the machine from entering Energy Saver mode if there is a pending transmission file.</td><td rowspan="3">If there is a file waiting for transmission, the machine does not go to Energy Saver mode during the selected period.<br>After transmitting the file, if there is no file waiting for transmission, the machine goes to the Energy Saver mode.</td></tr>
<tr><td>Bit 5</td><td>Bit 4</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>1 min</td></tr>
</table>

**Bit Switches - 1**

| System Switch 15 (SP No. 1-101-022) | | | | |
|---|---|---|---|---|
| **No** | **Function** | | | **Comments** |
| | 0 | 1 | 30 min | |
| | 1 | 0 | 1 hour | |
| | 1 | 1 | 24 hours | |
| 6-7 | Not used | | | Do not change |

| System Switch 16 (SP No. 1-101-023) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Parallel Broadcasting<br>0: Disabled<br>1: Enabled | 1: The machine sends messages simultaneously using all available ports during broadcasting. |
| 1 | Priority setting for the G3 line.<br>0: PSTN-1 > PSTN-2 or 3<br>1: PSTN-2 or 3 > PSTN-1 | This function allows the user to select the default G3 line type. The optional SG3 units are required to use the PSTN-2 or 3 setting. |
| 2-7 | Not used | Do not change these settings. |

| |
|---|
| **System Switch 17** - Not used (do not change these settings) |
| **System Switch 18** - Not used (do not change these settings) |

| System Switch 19 (SP No. 1-101-026) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-5 | Not used | Do not change the settings. |
| 6 | Extended scanner page memory after memory option is installed<br>0: Disabled | 0: After installing the memory expansion option, the scanner page memory is extended to 4 MB from 2 MB.<br>1: If this bit is set to 1 after installing the |

| System Switch 19 (SP No. 1-101-026) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | 1: Enabled | memory expansion option, the scanner page memory is extended to 12 MB. But the SAF memory decreases to 18 MB. |
| 7 | Special Original mode<br>0: Disabled<br>1: Enabled | 1: If the customer frequently wishes to transmit a form or letterhead which has a colored or printed background, change this bit to "1". "Original 1" and "Original 2" can be selected in addition to the "Text", "Text/Photo" and "Photo" modes. |

| System Switch 1A (SP No. 1-101-027) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0<br>to<br>7 | LS RX memory capacity threshold setting<br>00-FF (0-1020 Kbyte: Hex) | Sets the value to x4KB. When the amount of available memory drops below this setting, RX documents are printed to conserve memory. Initial setting 0x80 (512 KB) |

| |
|---|
| **System Switch 1B** - Not used (do not change these settings) |
| **System Switch 1C** - Not used (do not change these settings) |

| System Switch 1D (SP No. 1-101-030) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | RTI/CSI/CPS code display<br>0: Enable<br>1: Disable | 0: RTI, CSI, CPS codes are displayed on the top line of the LCD panel during communication.<br>1: Codes are switched off (no display) |
| 1-7 | Not used | Do not change this setting. |

**Bit Switches - 1**

| System Switch 1E (SP No. 1-101-031) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Communication after the Journal data storage area has become full<br>0: Impossible<br>1: Possible | 0: When this switch is on and the journal history becomes full, the next report prints. If the journal history is not deleted, the next transmission cannot be received. This prevents overwriting communication records before the machine can print them.<br>1: If the buffer memory of the communication records for the Journal is full, fax communications are still possible. But the machine will overwrite the oldest communication records.<br>Note<br>▪ This setting is effective only when Automatic Journal printout is enabled but the machine cannot print the report (e.g., no paper). |
| 1 | Action when the SAF memory has become full during scanning<br>0: The current page is erased.<br>1: The entire file is erased. | 0: If the SAF memory becomes full during scanning, the successfully scanned pages are transmitted.<br>1: If the SAF memory becomes full during scanning, the file is erased and no pages are transmitted.<br>Note<br>▪ This setting is effective only when Automatic Journal printout is enabled but the machine cannot print the report (e.g., no paper). |
| 2 | RTI/CSI display priority<br>0: RTI 1: CSI | This bit determines which identifier, RTI or CSI, is displayed on the LCD while the machine is communicating in G3 non-standard mode. |

| System Switch 1E (SP No. 1-101-031) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 3 | File No. printing<br>0: Enabled<br>1: Disabled | 1: File numbers are not printed on any reports. |
| 4 | Action when authorized reception is enabled but authorized RTIs/CSIs are not yet programmed<br>0: All fax reception is disabled<br>1: Faxes can be received if the sender has an RTI or CSI | If authorized reception is enabled but the user has stored no acceptable sender RTIs or CSIs, the machine will not be able to receive any fax messages.<br>If the customer wishes to receive messages from any sender that includes an RTI or CSI, and to block messages from senders that do not include an RTI or CSI, change this bit to "1", then enable Authorized Reception.<br>Otherwise, keep this bit at "0 (default setting)". |
| 5-7 | Not used | Do not change the settings |

| System Switch 1F (SP No. 1-101-032) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Not used | Do not change the settings. |
| 1 | Report printout after an original jam during SAF storage or if the SAF memory fills up<br>0: Enabled<br>1: Disabled | 0: When an original jams, or the SAF memory overflows during scanning, a report will be printed.<br>Change this bit to "1" if the customer does not want to have a report in these cases.<br>Memory tx – Memory storage report<br>Parallel memory tx – Transmission result report |
| 2 | Not used | Do not change the settings. |
| 3 | Received fax print start timing (G3 reception) | 0: The machine prints each page immediately after the machine receives it. |

**Bit Switches - 1**

| System Switch 1F (SP No. 1-101-032) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | 0: After receiving each page<br>1: After receiving all pages | 1: The machine prints the complete message after the machine receives all the pages in the memory. |
| 4-6 | Not used | Do not change the factory settings. |
| 7 | Action when a fax SC has occurred<br>0: Automatic reset<br>1: Fax unit stops | 0: When the fax unit detects a fax SC code other than SC1201 and SC1207, the fax unit automatically resets itself.<br>1: When the fax unit detects any fax SC code, the fax unit stops.<br>**Cross Reference**<br>Fax SC codes - See "Troubleshooting" |

# 4.4 BIT SWITCHES - 2

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

## 4.4.1 I-FAX SWITCHES

| I-fax Switch 00 (SP No. 1-102-001) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| Original Width of TX Attachment File | | This setting sets the maximum size of the original that the destination can receive. (Bits 3~7 are reserved for future use or not used.) |
| 0 | A4 | 0: Off (not selected), 1: On (selected)<br>If more than one of these three bits is set to "1", the larger size has priority. For example, if both Bit 2 and Bit 1 are set to "1" then the maximum size is "A3" (Bit 2).<br>When mail is sent, there is no negotiation with the receiving machine at the destination, so the sending machine cannot make a selection for the receiving capabilities (original width setting) of the receiving machine. The original width selected with this switch is used as the RX machine's original width setting, and the original is reduced to this size before sending. The default is A4.<br>If the width selected with this switch is higher than the receiving machine can accept, the machine detects this and this causes an error. |
| 1 | B4 | |
| 2 | A3 | |
| 3-6 | Reserved | |
| 7 | Not used | |

**Bit Switches - 2**

<table>
<tr><th colspan="3">I-fax Switch 01 (SP No. 1-102-002)</th></tr>
<tr><th>No</th><th>Function</th><th>Comments</th></tr>
<tr><td colspan="2">Original Line Resolution of TX Attachment File</td><td>These settings set the maximum resolution of the original that the destination can receive.</td></tr>
<tr><td>0</td><td>200x100 Standard</td><td rowspan="7">0: Not selected<br>1: Selected<br>If more than one of these three bits is set to "1", the higher resolution has priority. For example, if both Bit 0 and Bit 2 are set to "1" Then The Resolution is set for "Bit 2 200 x 400.</td></tr>
<tr><td>1</td><td>200x200 Detail</td></tr>
<tr><td>2</td><td>200x400 Fine</td></tr>
<tr><td>3</td><td>300 x 300 Reserve</td></tr>
<tr><td>4</td><td>400 x 400 Super Fine</td></tr>
<tr><td>5</td><td>600 x 600 Reserve</td></tr>
<tr><td>6</td><td>Reserve</td></tr>
<tr><td>7</td><td colspan="2">mm/inch</td></tr>
<tr><td></td><td colspan="2">This setting selects mm/inch conversion for mail transmission.<br>0: Off (No conversion), 1: On (Conversion)<br><br>When on (set to "1"), the machine converts millimeters to inches for sending mail. There is no switch for converting inches to millimeters.<br>Unlike G3 fax transmissions which can negotiate between sender and receiver to determine the setting, mail cannot negotiate between terminals; the mm/inch selection is determined by the sender fax.<br>When this switch is Off (0):<br>▪ Images scanned in inches are sent in inches.<br>▪ Images scanned in mm are sent in mm.<br>▪ Images received in inches are transmitted in inches.<br>▪ Images received in mm are transmitted in mm.<br>When this switch is On (1):<br>▪ Images scanned in inches are sent in inches.<br>▪ Images scanned in mm are converted to inches.<br>▪ Images received in inches are transmitted in inches.<br>▪ Images received in mm are converted to inches.</td></tr>
</table>

| I-fax Switch 02 (SP No. 1-102-003) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | RX Text Mail Header Processing | |
| | This setting determines whether the header information is printed with text e-mails when they are received.<br>0: Prints only text mail.<br>1: Prints mail header information attached to text mail.<br>When a text mail is received with this switch On (1), the "From" address and "Subject" address are printed as header information.<br>When a mail with only binary data is received (a TIFF-F file, for example), this setting is ignored and no header is printed. | |
| 1 | Output from Attached Document at E-mail TX Error | |
| | This setting determines whether only the first page or all pages of an e-mail attachment are printed at the sending station when a transmission error occurs. This allows the customer to see which documents have not reached their intended destinations if sent to the wrong e-mail addresses, for example.<br>0: Prints 1st page only.<br>1: Prints all pages. | |
| 2-3 | Text String for Return Receipt | |
| | This setting determines the text string output for the Return Receipt that confirms the transmission was received normally at the destination. | |
| | 00: "Dispatched"<br>Sends from PC mail a request for a Return Receipt. Receives the Return Receipt with "dispatched" in the 2nd part:<br>Disposition: Automatic-action/MDN-send automatically; dispatched<br>The "dispatched" string is included in the Subject string.<br>01: "Displayed"<br>Sends from PC mail a request for a Return Receipt. Receives the Return Receipt with "displayed" in the 2nd part:<br>Disposition: Automatic-action/MDN-send automatically; displayed | |

**Bit Switches - 2**

| I-fax Switch 02 (SP No. 1-102-003) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | The "displayed" string is included in the Subject string.<br>10: Reserved<br>11: Reserved<br>A mail requesting a Return Receipt sent from an IFAX with this switch set to "00" (for "dispatched") received by Microsoft Outlook 2000 may cause an error. If any setting other than "displayed" (01) causes a problem, change the setting to "01" to enable normal sending of the Return Receipt. | |
| 4 | Media accept feature | |
| | This setting adds or does not add the media accept feature to the answer mail to confirm a reception.<br>0: Does not add the media accept feature to the answer mail<br>1: Adds the media accept feature to the answer mail.<br>Use this bit switch if a problem occurs when the machine receives an answer mail, which contains the media accept feature field. | |
| 5-6 | Not Used | |
| 7 | Image Resolution of RX Text Mail | |
| | This setting determines the image resolution of the received mail.<br>0: 200 x 200<br>1: 400 x 400<br>The "1" setting requires installation of the Function Upgrade Card in order to have enough SAF (Store and Forward) memory to receive images at 400 x 400 resolution. | |

| I-fax Switch 03 (SP No. 1-102-004) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Original Output at Transfer Station | |
| | This setting determines whether the original is output at the transfer station when it is received from the sender that initiated the transfer transmission. This feature | |

| I-fax Switch 03 (SP No. 1-102-004) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | is the same as for G3 transfer transmissions.<br>0: Received original not output at the transfer station.<br>1: Received original output. The original is printed after the transfer station has transferred it to the destinations, so its output confirms that the original has been transferred. | |
| 1 | Transfer Result Report | |
| | This setting determines when a Transfer Result Report is generated and returned to the transfer requestor.<br>0: Returns the report after each transfer.<br>1: Returns the report only if an error occurred during transfer. | |
| 2 | Destination Error Handling for Reception Transfer Request | |
| | This setting restricts transfer transmission based on whether the final destinations are correct or not.<br>0: The transfer station transmits to correct destinations only (addresses with no errors in them).<br>1: If any address has an error in it, the transfer station transfers no transmissions and returns a transfer transmission failure report to the requestor that initiated the transfer.<br>There is no negotiation between the transfer initiator and the transfer station to determine whether the final destination addresses are correct or not. This setting determines whether or not the transfer station transfers the transmissions if there is a mistake in even one of the final destination addresses. | |
| 3 | Polling ID Check for Reception of Transfer Request | |
| | This setting determines whether the polling IDs of incoming transmissions are checked to ensure that the polling IDs match.<br>0: Receives and transfers only messages that have matching polling IDs.<br>1: Receives and transfers all messages, even if the polling IDs do not match. | |
| 4-7 | Not Used | |

**Bit Switches - 2**

| I-fax Switch 04 (SP No. 1-102-005) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Subject for Delivery TX/Memory Transfer | |
| | This setting determines whether the RTI/CSI registered on this machine or the RTI/CSI of the originator is used in the subject lines of transferred documents.<br>0: Puts the RTI/CSI of the originator in the Subject line. If this is used, either the RTI or CSI is used. Only one of these can be received for use in the subject line.<br>1: Puts the RTI/CSI registered on this machine in the Subject line.<br>When this switch is used to transfer and deliver mail to a PC, the information in the Subject line that indicates where the transmission originated can be used to determine automatically the destination folder for each e-mail. | |
| 1 | Subject corresponding to mail post database<br>0: Standard subject<br>1: Mail post database subject<br>The standard subject is replaced by the mail post database subject in the following three cases:<br>1) When the service technician sets the service (software) switch.<br>2) When memory sending or delivery specified by F code is applied by the SMTP server<br>3) With relay broadcasting (1st stage without the Schmidt 4 function).<br>Note<br>▪ This switch does not apply for condition 3) when the RX system is set up for memory sending, delivery by F-code, sending with SMTP RX and when operators are using FOL (to prevent problems when receiving transmissions). | |
| 2-7 | Not Used | |

| I-fax Switch 05 (SP No. 1-102-006) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Mail Addresses of SMTP Broadcast Recipients | |
| | Determines whether the e-mail addresses of the destinations that receive | |

| I-fax Switch 05 (SP No. 1-102-006) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | transmissions broadcasted using SMTP protocol are recorded in the Journal.<br>For example:<br>"1st destination + Total number of destinations: 9" in the Journal indicates a broadcast to 9 destinations.<br>0: Not recorded<br>1: Recorded | |
| 1 | Determines whether the I-fax automatically redials when an error occurs.<br>0: OFF<br>1: ON | |
| 2-7 | Not Used | |

| |
|---|
| **I-fax Switch 06** - Not used (do not change the settings) |
| **I-fax Switch 07** - Not used (do not change the settings) |

| I-fax Switch 08 (SP No. 1-102-009) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-7 | Memory Threshold for POP Mail Reception | |
| | This setting determines the amount of SAF (Store and Forward) memory. (SAF stores fax messages to send later for transmission to more than one location, and also holds incoming messages if they cannot be printed.) When the amount of SAF memory available falls below this setting, mail can no longer be received; received mail is then stored on the mail server.<br>00-FF (0 to 1024 KB: HEX)<br>The hexadecimal number you enter is multiplied by 4 KB to determine the amount of memory. | |

**Bit Switches - 2**

| I-fax Switch 09 (SP No. 1-102-010) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-3 | Not used | Do not change the settings |
| 4-7 | Restrict TX Retries | This setting determines the number of retries when connection and transmission fails due to errors.<br>01-F (1-15 Hex) |

| |
|---|
| **I-fax Switch 0A** - Not used (do not change the settings) |
| **I-fax Switch 0B** - Not used (do not change the settings) |
| **I-fax Switch 0C** - Not used (do not change the settings) |
| **I-fax Switch 0D** - Not used (do not change the settings) |
| **I-fax Switch 0E** - Not used (do not change the settings) |

| I-fax Switch 0F (SP No. 1-102-016) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Delivery Method for SMTP RX Files | |
| | This setting determines whether files received with SMTP protocol are delivered or output immediately.<br>0: Off. Files received via SMTP are output immediately without delivery.<br>1: On. Files received via SMTP are delivered immediately to their destinations. | |
| 1 | Signature for SMTP | |
| | This setting determines whether a signature is put on an e-mail via SMTP.<br>0: No signature<br>1: Signature | |
| 2 | This setting determines whether an e-mail via SMTP is encrypted.<br>0: Not encrypted | |

| I-fax Switch 0F (SP No. 1-102-016) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | 1: Encrypted | |
| 3-7 | Not used | |

## 4.4.2 PRINTER SWITCHES

| Printer Switch 00 (SP No. 1-103-001) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Select page separation marks<br>0: Off<br>1: On | 0: If a 2 page RX transmission is split, [*] is printed in the bottom right corner of the 1st page and only a [2] is printed in the upper right corner of the 2nd page.<br>1: If a 2 page RX transmission is split into two pages, for example, [*] [2] is printed in the bottom right corner of the 1st page and only a [2] is printed in the upper right corner of the 2nd page.<br>Note<br>▪ This helps the user to identify pages that have been split because the size of the paper is smaller than the size of the document received. (When A5 is used to print an A4 size document, for example.) |
| 1 | Repetition of data when the received page is longer than the printer paper<br>0: Off<br>1: On | 1: Default. 10 mm of the trailing edge of the previous page are repeated at the top of the next page.<br>0: The next page continues from where the previous page stopped without any repeated text. |
| 2 | Prints the date and time on received fax messages<br>0: Disabled | This switch is only effective when user parameter 02 - bit 2 (printing the received date and time on received fax messages) is enabled. |

**Bit Switches - 2**

| Printer Switch 00 (SP No. 1-103-001) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | 1: Enabled | 1: The machine prints the received and printed date and time at the bottom of each received page. |
| 3-7 | Not used | Do not change the settings. |

| Printer Switch 01 (SP No. 1-103-002) | | | | |
|---|---|---|---|---|
| **No** | **Function** | | | **Comments** |
| 0-2 | Not used | | | Do not change the settings. |
| 3-4 | Maximum print width used in the setup protocol | | | These bits are only effective when bit 7 of printer switch 01 is "1". |
| | Bit 4 | Bit 3 | Setting | |
| | 0 | 0 | Not used | |
| | 0 | 1 | A3 | |
| | 1 | 0 | B4 | |
| | 1 | 1 | A4 | |
| 5-6 | Not used | | | Do not change the settings. |
| 7 | Received message width restriction in the protocol signal to the sender<br>0: Disabled<br>1: Enabled | | | 0: The machine informs the transmitting machine of the print width depending on the paper size available from the paper feed stations.<br>Refer to the table on the next page for how the machine chooses the paper width used in the setup protocol (NSF/DIS).<br>1: The machine informs the transmitting machine of the fixed paper width which is specified by bits 3 and 4 above. |

**Relationship between available paper sizes and printer width used in the setup protocol**

| Available Paper Size | Printer width used in the Protocol (NSF/DIS) |
|---|---|
| A4 or 8.5" x 11" | 297 mm width |
| B5 | 256 mm width |
| A5 or 8.5" x 5.5" | 216 mm width |
| No paper available (Paper end) | 216 mm width |

| Printer Switch 02 (SP No. 1-103-003) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | 1st paper feed station usage for fax printing<br>0: Enabled<br>1: Disabled | 0: The paper feed station can be used to print fax messages and reports.<br><br>1: The specified paper feed station will not be used for printing fax messages and reports.<br>Note<br>▪ Do not disable usage for a paper feed station which has been specified by User Parameter Switch 0F (15), or which is used for the Specified Cassette Selection feature. |
| 1 | 2nd paper feed station usage for fax printing<br>0: Enabled<br>1: Disabled | |
| 2 | 3rd paper feed station usage for fax printing<br>0: Enabled<br>1: Disabled | |
| 3 | 4th paper feed station usage for fax printing<br>0: Enabled<br>1: Disabled | |
| 4 | LCT usage for fax printing<br>0: Enabled<br>1: Disabled | |

**Bit Switches - 2**

| Printer Switch 02 (SP No. 1-103-003) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 5-7 | Not used | Do not change the settings. |

| Printer Switch 03 (SP No. 1-103-004) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Length reduction of received data<br>0: Disabled<br>1: Enabled | 0: Incoming pages are printed without length reduction.<br>(Page separation threshold: Printer Switch 03, bits 4 to 7)<br>1: Incoming page length is reduced when printing.<br>(Maximum reducible length: Printer Switches 04, bits 0 to 4) |
| 1-3 | Not used | Do not change the settings |
| 4<br>to<br>7 | Page separation setting when sub scan compression is forbidden<br>00-0F (0-15 mm: Hex)<br>Default: 6 mm | Page separation threshold (with reduction disabled with switch 03-0 above).<br>For example, if this setting is set to "10", and A4 is the selected paper size:<br>If the received document is 10 mm or less longer than A4, then the 10 mm are cut and only 1 page prints.<br>If the received document is 10 mm longer than A4, then the document is split into 2 pages. |

<table>
<tr><th colspan="8">Printer Switch 04 (SP No. 1-103-005)</th></tr>
<tr><th>No</th><th colspan="4">Function</th><th colspan="3">Comments</th></tr>
<tr><td rowspan="7">0<br>to<br>4</td><td colspan="7">Maximum reducible length when length reduction is enabled with switch 03-0 above.<br>[Maximum reducible length] = [Paper length] + (N x 5mm)<br>"N" is the decimal value of the binary setting of bits 0 to 4.</td></tr>
<tr><td>Bit 4</td><td>Bit 3</td><td>Bit 2</td><td>Bit 1</td><td>Bit 0</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0 mm</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>5 mm</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>20 mm</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>155 mm</td></tr>
<tr><td colspan="7">For A5 sideways and B5 sideways paper<br>[Maximum reducible length] = [Paper length] + 0.75 x (N x 5mm)</td></tr>
<tr><td rowspan="6">5<br>6</td><td colspan="7">Length of the duplicated image on the next page, when page separation has taken place.</td></tr>
<tr><td colspan="2">Bit 6</td><td colspan="2">Bit 5</td><td colspan="2">Setting</td></tr>
<tr><td colspan="2">0</td><td colspan="2">0</td><td colspan="2">4 mm</td></tr>
<tr><td colspan="2">0</td><td colspan="2">1</td><td colspan="2">10 mm</td></tr>
<tr><td colspan="2">1</td><td colspan="2">0</td><td colspan="2">15 mm</td></tr>
<tr><td colspan="2">1</td><td colspan="2">1</td><td colspan="2">Not used</td></tr>
<tr><td>7</td><td colspan="3">Not used.</td><td colspan="3">Do not change the setting.</td></tr>
</table>

**Printer Switch 05** - Not used (do not change the settings)

**Bit Switches - 2**

| Printer Switch 06 (SP No. 1-103-007) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Printing while a paper cassette is pulled out, when the Just Size Printing feature is enabled.<br>0: Printing will not start<br>1: Printing will start if another cassette has a suitable size of paper, based on the paper size selection priority tables. | Cross reference<br>Just size printing on/off – User switch 05, bit 5 |
| 1-7 | Not used. | Do not change the settings. |

| Printer Switch 07 (SP No. 1-103-008) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Reduction for Journal printing<br>0: Off<br>1: On | 1: The Journal is reduced to 91% to ensure that there is enough space in the left margin for punch holes or staples. |
| 2-3 | Not used. | Do not change the settings. |
| 4 | List of destinations in the Communication Failure Report for broadcasting<br>0: All destinations<br>1: Only destinations where communication failure occurred | 1: Only destinations where communication failure occurred are printed on the Communication Failure Report. |
| 5-7 | Not used. | Do not change the settings. |

| |
|---|
| **Printer Switch 08** - Not used (do not change the settings) |
| **Printer Switch 09** - Not used (do not change the settings) |
| **Printer Switch 0A** - Not used (do not change the settings) |

| |
|---|
| **Printer Switch 0B** - Not used (do not change the settings) |
| **Printer Switch 0C** - Not used (do not change the settings) |
| **Printer Switch 0D** - Not used (do not change the settings) |

<table>
<tr><th colspan="5">Printer Switch 0E (SP No. 1-103-015)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td>0</td><td colspan="3">Paper size selection priority<br>0: Width<br>1: Length</td><td>0: A paper size that has the same width as the received data is selected first.<br>1: A paper size which has enough length to print all the received lines without reduction is selected first.</td></tr>
<tr><td>1</td><td colspan="3">Paper size selected for printing A4 width fax data<br>0: 8.5" x 11" size<br>1: A4 size</td><td>This switch determines which paper size is selected for printing A4 width fax data, when the machine has both A4 and 8.5" x 11" size paper.</td></tr>
<tr><td>2</td><td colspan="3">Page separation<br>0: Enabled<br>1: Disabled</td><td>1: If all paper sizes in the machine require page separation to print a received fax message, the machine does not print the message (Substitute Reception is used). After a larger size of paper is set in a cassette, the machine automatically prints the fax message.</td></tr>
<tr><td rowspan="6">3-4</td><td colspan="3">Printing the sample image on reports</td><td rowspan="6">"Same size" means the sample image is printed at 100%, even if page separation occurs.<br>User Parameter Switch 19 (13H) bit 4 must be set to "0" to enable this switch.<br>Refer to Detailed Section Descriptions for more on this feature.</td></tr>
<tr><td>Bit 4</td><td>Bit 3</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>The upper half only</td></tr>
<tr><td>0</td><td>1</td><td>50% reduction<br>(sub-scan only)</td></tr>
<tr><td>1</td><td>0</td><td>Same size</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
</table>

**Bit Switches - 2**

| Printer Switch 0E (SP No. 1-103-015) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 5-6 | Not used | Do not change the settings. |
| 7 | Equalizing the reduction ratio among separated pages<br>(Page Separation)<br>0: Enabled<br>1: Disabled | 0: When page separation has taken place, all the pages are reduced with the same reduction ratio.<br>1: Only the last page is reduced to fit the selected paper size when page separation has taken place. Other pages are printed without reduction. |

| Printer Switch 0F (SP No. 1-103-016) | | | | |
|---|---|---|---|---|
| **No** | **Function** | | | **Comments** |
| 0-1 | Smoothing feature | | | (0, 0) (0, 1): Disable smoothing if the machine receives halftone images from other manufacturers fax machines frequently. |
| | Bit 1 | Bit 0 | Setting | |
| | 0 | 0 | Disabled | |
| | 0 | 1 | Disabled | |
| | 1 | 0 | Enabled | |
| | 1 | 1 | Not used | |
| 2 | Duplex printing<br>0: Disabled<br>1: Enabled | | | 1: The machine always prints received fax messages in duplex printing mode: |
| 3 | Binding direction for Duplex printing<br>0: Left binding<br>1: Top binding | | | 0: Sets the binding for the left edge of the stack.<br>1: Sets the binding for the top of the stack. |
| 4-7 | Not used | | | Do not change the settings. |

# 4.5 BIT SWITCHES - 3

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

## 4.5.1 COMMUNICATION SWITCHES

<table>
<tr><th colspan="5">Communication Switch 00 (SP No. 1-104-001)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="6">0-1</td><td colspan="3">Compression modes available in receive mode</td><td rowspan="6">These bits determine the compression capabilities to be declared in phase B (handshaking) of the T.30 protocol.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Modes</td></tr>
<tr><td>0</td><td>0</td><td>MH only</td></tr>
<tr><td>0</td><td>1</td><td>MH/MR</td></tr>
<tr><td>1</td><td>0</td><td>MH/MR/MMR</td></tr>
<tr><td>1</td><td>1</td><td>MH/MR/MMR/JBIG</td></tr>
<tr><td rowspan="6">2-3</td><td colspan="3">Compression modes available in transmit mode</td><td rowspan="6">These bits determine the compression capabilities to be used in the transmission and to be declared in phase B (handshaking) of the T.30 protocol.</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Modes</td></tr>
<tr><td>0</td><td>0</td><td>MH only</td></tr>
<tr><td>0</td><td>1</td><td>MH/MR</td></tr>
<tr><td>1</td><td>0</td><td>MH/MR/MMR</td></tr>
<tr><td>1</td><td>1</td><td>MH/MR/MMR/JBIG</td></tr>
<tr><td>4</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
</table>

**Bit Switches - 3**

| Communication Switch 00 (SP No. 1-104-001) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 5 | JBIG compression method: Reception<br>0: Only basic supported<br>1: Basic and optional both supported | Change the setting when communication problems occur using JBIG compression. |
| 6 | JBIG compression method: Transmission<br>0: Basic mode priority<br>1: Optional mode priority | Change the setting when communication problems occur using JBIG compression. |
| 7 | Closed network (reception)<br>0: Disabled<br>1: Enabled | 1: Reception will not go ahead if the polling ID code of the remote terminal does not match the polling ID code of the local terminal. This function is only available in NSF/NSS mode. |

<table>
<tr><th colspan="5">Communication Switch 01 (SP No. 1-104-002)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td>0</td><td colspan="3">ECM<br>0: Off 1: On</td><td>If this bit is set to 0, ECM is switched off for all communications.<br>In addition, V.8 protocol and JBIG compression are switched off automatically.</td></tr>
<tr><td>1</td><td colspan="3">Not used</td><td>Do not change the setting.</td></tr>
<tr><td rowspan="7">2-3</td><td colspan="3">Wrong connection prevention method</td><td rowspan="7">(0,1): The machine will disconnect the line without sending a fax message, if the last 8 digits of the received CSI do not match the last 8 digits of the dialed telephone number. This does not work when manually dialed.<br>(1,0): The same as above, except that only the last 4 digits are compared.<br>(1,1): The machine will disconnect the line without sending a fax message, if the other end does not identify itself with an RTI or CSI.<br>(0,0): Nothing is checked; transmission will always go ahead.<br>Note<br>▪ This function does not work when dialing is done from the external telephone.</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>None</td></tr>
<tr><td>0</td><td>1</td><td>8 digit CSI</td></tr>
<tr><td>1</td><td>0</td><td>4 digit CSI</td></tr>
<tr><td>1</td><td>1</td><td>CSI/RTI</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>4-5</td><td colspan="3">Not used</td><td>Do not change the setting.</td></tr>
<tr><td rowspan="4">6-7</td><td colspan="3">Maximum printable page length available</td><td rowspan="4">The setting determined by these bits is informed to the transmitting terminal in the pre-message protocol exchange (in the DIS/NSF frames).</td></tr>
<tr><td>Bit 7</td><td>Bit 6</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>No limit</td></tr>
<tr><td>0</td><td>1</td><td>B4 (364 mm)</td></tr>
</table>

**Bit Switches - 3**

| Communication Switch 01 (SP No. 1-104-002) | | | | |
|---|---|---|---|---|
| **No** | **Function** | | | **Comments** |
| | 1 | 0 | A4 (297 mm) | |
| | 1 | 1 | Not used | |

| Communication Switch 02 (SP No. 1-104-003) | | | |
|---|---|---|---|
| **No** | **Function** | **Comments** | |
| 0 | G3 Burst error threshold<br>0: Low 1: High | If there are more consecutive error lines in the received page than the threshold, the machine will send a negative response. The Low and High threshold values depend on the sub-scan resolution, and are as follows. | |
| | | 100 dpi | 6(L) → 12(H) |
| | | 200 dpi | 12(L) → 24(H) |
| | | 300 dpi | 18(L) → 36(H) |
| | | 400 dpi | 24(L) → 48(H) |
| 1 | Acceptable total error line ratio<br>0: 5% 1: 10% | If the error line ratio for a page exceeds the acceptable ratio, RTN will be sent to the other end. | |
| 2 | Treatment of pages received with errors during G3 reception<br>0: Deleted from memory without printing<br>1: Printed | 0: Pages received with errors are not printed. | |
| 3 | Hang-up decision when a negative code (RTN or PIN) is received during G3 immediate transmission<br>0: No hang-up, 1: Hang-up | 0: The next page will be sent even if RTN or PIN is received.<br>1: The machine will send DCN and hang up if it receives RTN or PIN. | |

| Communication Switch 02 (SP No. 1-104-003) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | | This bit is ignored for memory transmissions or if ECM is being used. |
| 4-7 | Not used | Do not change the settings. |

| Communication Switch 03 (SP No. 1-104-004) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-7 | Maximum number of page retransmissions in a G3 memory transmission | 00 - FF (Hex) times.<br>This setting is not used if ECM is switched on.<br>Default setting - 03(H) |

| |
|---|
| **Communication Switch 04** - Not used (do not change the settings) |
| **Communication Switch 05** - Not used (do not change the settings) |
| **Communication Switch 06** - Not used (do not change the settings) |
| **Communication Switch 07** - Not used (do not change the settings) |
| **Communication Switch 08** - Not used (do not change the settings) |

| Communication Switch 09 (SP No. 1-104-010) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-7 | IP-Fax dial interval setting | Adjusts the interval of I-fax dialing.<br>The interval of I-fax dialing is calculated with the following formula.<br>[Interval time = specified value with this switch x 0.2 ms] |

**Bit Switches - 3**

| Communication Switch 0A (SP No. 1-104-011) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Point of resumption of memory transmission upon redialing<br>0: From the error page<br>1: From page 1 | 0: The transmission begins from the page where transmission failed the previous time.<br>1: Transmission begins from the first page, using normal memory transmission. |
| 1-7 | Not used | Do not change the settings. |

| Communication Switch 0B (SP No. 1-104-012) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-3 | **Not used** | Do not change the settings. |
| 4 | Printout of the message when acting as a Transfer Station<br>0: Disabled, 1: Enabled | When the machine is acting as a Transfer Station, this bit determines whether the machine prints the fax message coming in from the Requesting Terminal. |
| 5-7 | Not used | Do not change the settings. |

**Communication Switch 0C** - Not used (do not change the settings)

| Communication Switch 0D (SP No. 1-104-014) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-7 | The available memory threshold, below which ringing detection (and therefore reception into memory) is disabled | 00 to FF (Hex), unit = 4 kbytes<br>(e.g., 06(H) = 24 kbytes)<br>One page is about 24 kbytes.<br>The machine refers to this setting before each fax reception. If the amount of remaining memory is below this threshold, the machine cannot receive any fax messages.<br>If this setting is kept at 0, the machine will detect |

| Communication Switch 0D (SP No. 1-104-014) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | | ringing signals and go into receive mode even if there is no memory available. This will result in communication failure. |

| Communication Switch 0E (SP No. 1-104-015) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-7 | Minimum interval between automatic dialing attempts | 06 to FF (Hex), unit = 2 s<br>(e.g., 06(H) = 12 s)<br>This value is the minimum time that the machine waits before it dials the next destination. |

**Communication Switch 0F** – Not used (do not change the settings.)

| Communication Switch 10 (SP No. 1-104-017) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-7 | Memory transmission: Maximum number of dialing attempts to the same destination | 01 – FE (Hex) times |

**Communication Switch 11** – Not used (do not change the settings.)

| Communication Switch 12 (SP No. 1-104-019) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-7 | Memory transmission: Interval between dialing attempts to the | 01 – FF (Hex) minutes |

**Bit Switches - 3**

| Communication Switch 12 (SP No. 1-104-019) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | same destination | |

| |
|---|
| **Communication Switch 13** – Not used (do not change the settings.) |

<table>
<tr><th colspan="5">Communication Switch 14 (SP No. 1-104-021)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td>0</td><td colspan="3">Inch-to-mm conversion during transmission<br>0: Disabled, 1: Enabled</td><td>0: In immediate transmission, data scanned in inch format are transmitted without conversion.<br>In memory transmission, data stored in the SAF memory in mm format are transmitted without conversion.<br>Note: When storing the scanned data into SAF memory, the fax unit always converts the data into mm format.<br>1: The machine converts the scanned data or stored data in the SAF memory to the format which was specified in the set-up protocol (DIS/NSF) before transmission.</td></tr>
<tr><td>1-5</td><td colspan="3">Not used</td><td>Do not change the factory settings.</td></tr>
<tr><td rowspan="4">6-7</td><td colspan="3">Available unit of resolution in which fax messages are received</td><td rowspan="4">For the best performance, do not change the factory settings.<br>The setting determined by these bits is informed to the transmitting terminal in the pre-message protocol exchange (in the DIS/NSF frames).</td></tr>
<tr><td>Bit 7</td><td>Bit 6</td><td>Unit</td></tr>
<tr><td>0</td><td>0</td><td>mm</td></tr>
<tr><td>0</td><td>1</td><td>inch</td></tr>
<tr><td></td><td>1</td><td>0</td><td>mm and inch</td><td></td></tr>
</table>

| Communication Switch 14 (SP No. 1-104-021) | | | | |
|---|---|---|---|---|
| **No** | **Function** | | | **Comments** |
| | 1 | 1 | Not used | |

**Communication Switch 15** – Not used (do not change the settings)

| Communication Switch 16 (SP No. 1-104-023) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Not used | Do not change the settings. |
| 1 | Optional G3 unit (G3-2)<br>0: Not installed<br>1: Installed | Change this bit to 1 when installing the first optional G3 unit. |
| 2 | Not used | |
| 3 | Select PSTN connection<br>0: Off<br>1: On | This switch enables the G3-2.<br>0: Off, no connection<br>1: Recognizes and enables G3-2.<br>This switch can be used only after G3-2 has been installed. |
| 4-7 | Not used | Do not change the settings. |

| Communication Switch 17 (SP No. 1-104-024) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | SEP reception<br>0: Disabled<br>1: Enabled | 0: Polling transmission to another maker's machine using the SEP (Selective Polling) signal is disabled. |
| 1 | SUB reception<br>0: Disabled | 0: Confidential reception to another maker's machine using the SUB (Sub-address) signal is |

**Bit Switches - 3**

| Communication Switch 17 (SP No. 1-104-024) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | 1: Enabled | disabled. |
| 2 | PWD reception<br>0: Disabled<br>1: Enabled | 0: Disables features that require PWD (Password) signal reception. |
| 3-4 | Not used | Do not change the settings. |
| 5 | PSTN dial-in routing<br>0: Off<br>1: On | Enables or disables the dial-in routing for PSTN connection. |
| 6 | **Not used** | Do not change the settings. |
| 7 | Action when there is no box with an F-code that matches the received SUB code<br>0: Disconnect the line<br>1: Receive the message (using normal reception mode) | Change this setting when the customer requires. |

| Communication Switch 18 (SP No. 1-104-025) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-4 | Not used | Do not change the settings. |
| 5 | IP-Fax dial-in routing selection<br>0: Off<br>1: On | 1: Transfers received data to each IP-Fax dial-in number.<br>The IP-Fax dial-in number is a 4 digit-number. |
| 6 | PSTN 2 dial-in routing<br>0: Off<br>1: On | Enables or disables the dial-in routing for PSTN 2 connection. |
| 7 | PSTN 3 dial-in routing | Enables or disables the dial-in routing for PSTN 3 |

| Communication Switch 18 (SP No. 1-104-025) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | 0: Off<br>1: On | connection. |

| |
|---|
| **Communication Switch 19** - Not used (do not change the settings) |
| **Communication Switch 1A** - Not used (do not change the settings) |

| Communication Switch 1B (SP No. 1-104-028) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-7 | Extension access code (0 to 7) to turn V.8 protocol On/Off<br>0: On<br>1: Off | If the PABX does not support V.8/V.34 protocol procedure, set this bit to "1" to disable V.8.<br>Example: If "0" is the PSTN access code, set bit 0 to 1. When the machine detects "0" as the first dialed number, it automatically disables V.8 protocol. (Alternatively, if "3" is the PSTN access code, set bit 3 to 1.) |

| Communication Switch 1C (SP No. 1-104-029) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-1 | Extension access code (8 and 9) to turn V.8 protocol On/Off<br>0: On<br>1: Off | Refer to communication switch 1B.<br>Example: If "8" is the PSTN access code, set bit 0 to 1. When the machine detects "8" as the first dialed number, it automatically disables V.8 protocol. (If "9" is the PSTN access code, use bit 1.) |
| 2-7 | Not used | Do not change the settings. |

| |
|---|
| **Communication Switch 1D** - Not used (do not change the settings) |

**Bit Switches - 3**

| |
|---|
| **Communication Switch 1E** - Not used (do not change the settings) |
| **Communication Switch 1F** - Not used (do not change the settings) |

# 4.6 BIT SWITCHES - 4

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

## 4.6.1 G3 SWITCHES

<table>
<tr><th colspan="5">G3 Switch 00 (SP No. 1-105-001)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="8">0<br>1</td><td colspan="3">Monitor speaker during communication (tx and rx)</td><td rowspan="8">(0, 0): The monitor speaker is disabled all through the communication.<br>(0, 1): The monitor speaker is on up to phase B in the T.30 protocol.<br>(1, 0): Used for testing. The monitor speaker is on all through the communication. Make sure that you reset these bits after testing.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>Disabled</td></tr>
<tr><td>0</td><td>1</td><td>Up to Phase B</td></tr>
<tr><td>1</td><td>0</td><td>All the time</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>2</td><td colspan="3">Monitor speaker during memory transmission<br>0: Disabled 1: Enabled</td><td>1: The monitor speaker is enabled during memory transmission.</td></tr>
<tr><td>3-5</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
<tr><td>6</td><td colspan="3">G3 mode selection for the direct connection<br>0: Off</td><td>1: G3 communication through the direct line is enabled.</td></tr>
</table>

**Bit Switches - 4**

| G3 Switch 00 (SP No. 1-105-001) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | 1:On | |
| 7 | Not used | Do not change the settings. |

| G3 Switch 01 (SP No. 1-105-002) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Not used | Do not change the settings. |
| 1-3 | Not used | Do not change the settings. |
| 4 | DIS frame length<br>0: 10 bytes 1: 4 bytes | 1: The bytes in the DIS frame after the 4th byte will not be transmitted (set to 1 if there are communication problems with PC-based faxes which cannot receive the extended DIS frames). |
| 5 | Not used | Do not change the setting. |
| 6 | Forbid CED/AMsam output<br>0: Off<br>1: On (Forbid output) | Do not change this setting (Default: 0: Off), unless communication problem is caused by a CED or ANSam transmission. |
| 7 | Not used | Do not change the setting. |

| G3 Switch 02 (SP No. 1-105-003) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | G3 protocol mode used<br>0: Standard and non-standard<br>1: Standard only | Change this bit to 1 only when the other end can only communicate with machines that send T.30-standard frames only.<br>1: Disables NSF/NSS signals (these are used in non-standard mode communication) |
| 1-4 | Not used | Do not change the settings. |

| G3 Switch 02 (SP No. 1-105-003) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 5 | Use of modem rate history for transmission using Quick/Speed Dials<br>0: Disabled<br>1: Enabled | 0: Communications using Quick/Speed Dials always start from the highest modem rate.<br>1: The machine refers to the modem rate history for communications with the same machine when determining the most suitable rate for the current communication. |
| 6 | Not Used | Do not change the settings. |
| 7 | Short preamble<br>0: Disabled 1: Enabled | Refer to Appendix B in the Group 3 Facsimile Manual for details about Short Preamble. |

| G3 Switch 03 (SP No. 1-105-004) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | DIS detection number (Echo countermeasure)<br>0: 1<br>1: 2 | 0: The machine will hang up if it receives the same DIS frame twice.<br>1: Before sending DCS, the machine will wait for the second DIS which is caused by echo on the line. |
| 1 | Not Used | Do not change the settings. |
| 2 | V.8 protocol<br>0: Disabled<br>1: Enabled | 0: V.8/V.34 communications will not be possible.<br>Note<br>▪ Do not set to 0 unless the line condition is always bad enough to slow down the data rate to 14.4 kbps or lower. |
| 3 | ECM frame size<br>0: 256 bytes<br>1: 64 bytes | Keep this bit at "0" in most cases. |
| 4 | CTC transmission conditions<br>0: After one PPR signal | 0: When using ECM in non-standard (NSF/NSS) mode, the machine sends a CTC to drop back the |

**Bit Switches - 4**

| G3 Switch 03 (SP No. 1-105-004) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | received<br>1: After four PPR signals received (ITU-T standard) | modem rate after receiving a PPR, if the following condition is met in communications at 14.4, 12.0, 9.6, and 7.2 kbps.<br>$\sqrt{NTransmit \leq NResend}$<br>NTransmit- Number of transmitted frames<br>NResend- Number of frames to be retransmitted<br>1: When using ECM, the machine sends a CTC to drop back the modem rate after receiving four PPRs.<br>PPR, CTC: These are ECM protocol signals.<br>This bit is not effective in V.34 communications. |
| 5 | Modem rate used for the next page after receiving a negative code (RTN or PIN)<br>0: No change 1: Fallback | 1: The machine's tx modem rate will fall back before sending the next page if a negative code is received. This bit is ignored if ECM is being used. |
| 6 | Not used | Do not change the settings |
| 7 | Select detection of reverse polarity in ringing<br>0: Off<br>1: On | This switch is used to prevent reverse polarity in ringing on the phone line (applied to PSTN-G3 ringing). Do not change this setting<br>0: No detection (Outside Japan)<br>1: Detection (Inside Japan only) |

| G3 Switch 04 (SP No. 1-105-005) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-3 | Training error detection threshold | 0 - F (Hex); 0 - 15 bits<br>If the number of error bits in the received TCF is below this threshold, the machine informs the |

| G3 Switch 04 (SP No. 1-105-005) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | | sender that training has succeeded. |
| 4-7 | Not used | Do not change the settings. |

| G3 Switch 05 (SP No. 1-105-006) | | | | | | |
|---|---|---|---|---|---|---|
| **No** | **Function** | | | | | **Comments** |
| 0-3 | Initial Tx modem rate (kbps) | | | | | These bits set the initial starting modem rate for transmission.<br>Use the dedicated transmission parameters if you need to change this for specific receivers.<br>If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually.<br>Cross reference<br>V.8 protocol on/off - G3 switch 03, bit 2 |
| | Bit 3 | Bit 2 | Bit 1 | Bit 0 | kbps | |
| | 0 | 0 | 0 | 1 | 2.4 | |
| | 0 | 0 | 1 | 0 | 4.8 | |
| | 0 | 0 | 1 | 1 | 7.2 | |
| | 0 | 1 | 0 | 0 | 9.6 | |
| | 0 | 1 | 0 | 1 | 12.0 | |
| | 0 | 1 | 1 | 0 | 14.4 | |
| | 0 | 1 | 1 | 1 | 16.8 | |
| | 1 | 0 | 0 | 0 | 19.2 | |
| | 1 | 0 | 0 | 1 | 21.6 | |
| | 1 | 0 | 1 | 0 | 24.0 | |
| | 1 | 0 | 1 | 1 | 26.4 | |
| | 1 | 1 | 0 | 0 | 28.8 | |
| | 1 | 1 | 0 | 1 | 31.2 | |
| | 0 | 0 | 1 | 1 | 33.6 | |

**Bit Switches - 4**

<table>
<tr><th colspan="5">G3 Switch 05 (SP No. 1-105-006)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td></td><td colspan="3">Other settings - Not used</td><td></td></tr>
<tr><td rowspan="6">4-5</td><td colspan="3">Initial modem type for 9.6 k or 7.2 kbps.</td><td rowspan="6">These bits set the initial modem type for 9.6 and 7.2 kbps, if the initial modem rate is set at these speeds.</td></tr>
<tr><td>Bit 5</td><td>Bit 4</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>V.29</td></tr>
<tr><td>0</td><td>1</td><td>V.17</td></tr>
<tr><td>1</td><td>0</td><td>V.34</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
<tr><td>6-7</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
</table>

<table>
<tr><th colspan="7">G3 Switch 06 (SP No. 1-105-007)</th></tr>
<tr><th>No</th><th colspan="5">Function</th><th>Comments</th></tr>
<tr><td rowspan="12">0-3</td><td colspan="5">Initial Rx modem rate(kbps)</td><td rowspan="12">These bits set the initial starting modem rate for reception.<br>Use a lower setting if high speeds pose problems during reception.<br>If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually.<br>Cross reference<br>V.8 protocol on/off - G3 switch 03, bit2</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Bit 1</td><td>Bit 0</td><td>kbps</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>2.4</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>4.8</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>7.2</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>0</td><td>9.6</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>1</td><td>12.0</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>0</td><td>14.4</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>1</td><td>16.8</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>0</td><td>19.2</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>1</td><td>21.6</td></tr>
</table>

<table>
<tr><th colspan="8">G3 Switch 06 (SP No. 1-105-007)</th></tr>
<tr><th>No</th><th colspan="6">Function</th><th>Comments</th></tr>
<tr><td rowspan="6"></td><td>1</td><td>0</td><td>1</td><td>0</td><td>24.0</td><td rowspan="6"></td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>1</td><td>26.4</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>0</td><td>28.8</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>1</td><td>31.2</td></tr>
<tr><td colspan="5">Other settings - Not used</td></tr>
<tr><td rowspan="8">4-7</td><td colspan="6">Modem types available for reception<br>The setting of these bits is used to inform the transmitting terminal of the available modem type for the machine in receive mode.<br>If V.34 is not selected, V.8 protocol must be disabled manually.<br>Cross reference<br>V.8 protocol on/off - G3 switch 03, bit 2</td></tr>
<tr><td>Bit 7</td><td>Bit 6</td><td>Bit 5</td><td>Bit 4</td><td colspan="2">Types</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td colspan="2">V.27ter</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td colspan="2">V.27ter, V.29</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td colspan="2">V.27ter, V.29, V.33</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>0</td><td colspan="2">V.27ter, V.29, V.17/V.33</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>1</td><td colspan="2">V.27ter, V.29, V.17/V33, V.34</td></tr>
<tr><td colspan="6">Other settings - Not used</td></tr>
</table>

**Bit Switches - 4**

<table>
<tr><th colspan="3">G3 Switch 07 (SP No. 1-105-008)</th></tr>
<tr><th>No</th><th>Function</th><th>Comments</th></tr>
<tr><td rowspan="2">0-1</td><td>PSTN cable equalizer<br>(tx mode: Internal)<br><table><tr><td>Bit 1</td><td>Bit 0</td><td>Setting</td></tr><tr><td>0</td><td>0</td><td>None</td></tr><tr><td>0</td><td>1</td><td>Low</td></tr><tr><td>1</td><td>0</td><td>Medium</td></tr><tr><td>1</td><td>1</td><td>High</td></tr></table></td><td rowspan="2">Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange.<br>Use the dedicated transmission parameters for specific receivers.<br><br>Also, try using the cable equalizer if one or more of the following symptoms occurs.<br>Communication error<br>Modem rate fallback occurs frequently.<br>Note<br>▪ This setting is not effective in V.34 communications.</td></tr>
<tr><td>2-3</td><td>PSTN cable equalizer<br>(rx mode: Internal)<br><table><tr><td>Bit 3</td><td>Bit 2</td><td>Setting</td></tr><tr><td>0</td><td>0</td><td>None</td></tr><tr><td>0</td><td>1</td><td>Low</td></tr><tr><td>1</td><td>0</td><td>Medium</td></tr><tr><td>1</td><td>1</td><td>High</td></tr></table></td></tr>
<tr><td>4</td><td>PSTN cable equalizer<br>(V.8/V.17 rx mode: External)</td><td>Keep this bit at "1".</td></tr>
</table>

| G3 Switch 07 (SP No. 1-105-008) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | 0: Disabled<br>1: Enabled | |
| 5 | Not used | Do not change the settings. |
| 6 | Parameter selection for the dial tone detection<br>0: Normal parameter<br>1: Specific parameter | 0: This uses a fixed table in ROM for the dial tone detection.<br>1: This uses a SRAM value that can be adjusted for the dial tone detection. Select this if the dial tone cannot be detected when "Normal parameter: 0" is selected. |
| 7 | Not used | Do not change the settings. |

| |
|---|
| **G3 Switch 08** - Not used (do not change the settings) |
| **G3 Switch 09** - Not used (do not change the settings) |

| G3 Switch 0A (SP No. 1-105-011) | | | | |
|---|---|---|---|---|
| **No** | **Function** | | | **Comments** |
| 0-1 | Maximum allowable carrier drop during image data reception | | | These bits set the acceptable modem carrier drop time.<br>Try a longer setting if error code 0-22 is frequent. |
| | Bit 1 | Bit 0 | Value (ms) | |
| | 0 | 0 | 200 | |
| | 0 | 1 | 400 | |
| | 1 | 0 | 800 | |

**Bit Switches - 4**

| G3 Switch 0A (SP No. 1-105-011) | | | | |
|---|---|---|---|---|
| **No** | **Function** | | | **Comments** |
| | 1 | 1 | Not used | |
| 2 | Select cancellation of high-speed RX if carrier signal lost while receiving<br>0: Off<br>1: On | | | This switch setting determines if high-speed receiving ends if the carrier signal is lost when receiving during non-ECM mode |
| 3 | Not used | | | Do not change the settings |
| 4 | Maximum allowable frame interval during image data reception.<br>0: 5 s 1: 13 s | | | This bit set the maximum interval between EOL (end-of-line) signals and the maximum interval between ECM frames from the other end.<br>Try using a longer setting if error code 0-21 is frequent. |
| 5 | Not used | | | Do not change the settings. |
| 6 | Reconstruction time for the first line in receive mode<br>0: 6 s 1: 12 s | | | When the sending terminal is controlled by a computer, there may be a delay in receiving page data after the local machine accepts set-up data and sends CFR. This is outside the T.30 recommendation. But, if this delay occurs, set this bit to 1 to give the sending machine more time to send data. Refer to error code 0-20.<br>ITU-T T.30 recommendation: The first line should come within 5 s of CFR. |
| 7 | Not used | | | Do not change the settings. |

| |
|---|
| **G3 Switch 0B** Not used (do not change the settings). |
| **G3 Switch 0C** Not used (do not change the settings). |

| G3 Switch 0E (SP No. 1-105-015) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0-7 | Set CNG send time interval<br>Some machines on the receiving side may not be able to automatically switch the 3-second CNG interval. | |
| | High order bit | 3000-2250ms: 3000-50xNms<br>3000 – 50 x Nms 0F (3000 ms) ≤ N ≤ FF (2250 ms) |
| | Low order bit | 00-0E(3000-3700ms: 3000+50xNms<br>3000 – 50 x Nms 0F (3000 ms) ≤ N ≤ 0F (3700 ms) |

| G3 Switch 0F (SP No. 1-105-016) | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Alarm when an error occurred in Phase C or later<br>0: Disabled<br>1: Enabled | If the customer wants to hear an alarm after each error communication, change this bit to "1". |
| 1 | Alarm when the handset is off-hook at the end of communication<br>0: Disabled<br>1: Enabled | If the customer wants to hear an alarm if the handset is off-hook at the end of fax communication, change this bit to "1". |
| 2-3 | Not used | Do not change the settings. |
| 4 | Sidaa manual calibration setting<br>0: Off<br>1: On | 1: manually calibrates for communication with a line, whose current change occurs such as an optical fiber line. |
| 5-7 | Not used | Do not change the settings. |

# 4.7 BIT SWITCHES - 5

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

## 4.7.1 G3-2 AND G3-3 SWITCHES

These switches require an optional G3 interface unit.
G3-2 and -3 switches are the same as for G3-1 switches.

## 4.7.2 G4 INTERNAL SWITCHES

The G4 internal switches (SW00 to 1F) are displayed but do not change these settings.

## 4.7.3 G4 PARAMETER SWITCHES

The G4 parameter switches (SW00 to 0F) are displayed but do not change these settings.

# 4.8 BIT SWITCHES - 6

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

## 4.8.1 IP FAX SWITCHES

| IP Fax Switch 00 (SP No. 1-111-001) | | |
|---|---|---|
| **No.** | **Function** | **Comments** |
| 0 | Not used | Do not change this setting. |
| 1 | IP Fax Transport<br>0: TCP, 1: UDP | Selects TCP or UDP protocol for IP-Fax |
| 2 | IP Fax single port selection<br>0: OFF, 1: ON (enable) | Selects single data port. |
| 3 | IP Fax double ports (single data port) selection<br>0: OFF, 1: ON (enable) | Selects whether IP-Fax uses a double port. |
| 4 | IP Fax Gatekeeper<br>0: OFF, 1: ON (enable) | Enables/disables the gatekeeper for IP-Fax. |
| 5 | IP Fax T30 bit signal reverse<br>0: LSB first, 1: MSB first | Reverses the T30 bit signal. |
| 6 | IP Fax max bit rate setting<br>0: Not affected, 1: Affected | When "0" is selected, the max bit rate does not affect the value of the DIS/DCS.<br>When "1" is selected, the max bit rate affects the value of the DIS/DCS. |

**Bit Switches - 6**

| IP Fax Switch 00 (SP No. 1-111-001) | | |
|---|---|---|
| **No.** | **Function** | **Comments** |
| 7 | IP Fax received telephone number confirmation<br>0: No confirmation, 1: Confirmation | When "0" is selected, fax data is received without checking the telephone number.<br>When "1" is selected, fax data is received only when confirming that the telephone number from the sender matches the registered telephone number in this machine. If this confirmation fails, the line is disconnected. |

| IP Fax Switch 01 (SP No. 1-111-002) | | | | | |
|---|---|---|---|---|---|
| **No.** | **Function** | | | **Comments** | |
| 0-3 | IP Fax delay level setting<br>Selects the acceptable delay level.<br>Level 0 is the highest quality<br>Default is "0000" (level 0). | | | | |
| | Bit 3 | Bit 2 | Bit 1 | Bit 0 | |
| | 0 | 0 | 0 | 0 | Level 0 |
| | 0 | 0 | 0 | 1 | Level 1 |
| | 0 | 0 | 1 | 0 | Level 2 |
| | 0 | 0 | 1 | 1 | Level 3 |
| 4-7 | IP Fax preamble wait time setting | | | Selects the preamble wait time.<br>[00 to 0f]<br>There are 16 values in this 4-bit binary switch combination.<br>Waiting time: set value level x 100 ms<br>Max: 0f (1500 ms) Min: 00 (No wait time)<br>The default is "0000" (00H). | |

| IP Fax Switch 02 (SP No. 1-111-003) | | |
|---|---|---|
| **No.** | **Function** | **Comments** |
| 0 | IP Fax bit signal reverse setting<br>0: Maker code setting<br>1: Internal bit switch setting | When "0" is selected, the bit signal reverse method is decided by the maker code.<br>When "1" is selected, the bit signal reverse method is decided by the internal bit switch.<br>When communicating between IP Fax devices, LSB first is selected.) |
| 1 | IP Fax transmission speed setting<br>0: Modem speed<br>1: No limitation | Selects the transmit speed for IP Fax communication. |
| 2 | SIP transport setting<br>0: TCP<br>1: UDP | This bit switch sets the transport that has priority for receiving IP Fax data.<br>This function is activated only when the sender has both TCP and UDP. |
| 3 | CCM connection<br>0: No CCM connection<br>1: CCM connection | When "1" is selected, only the connection call message with H.323 or no tunneled H.245 is transmitted via CCM. |
| 4 | Message reception selection from non-registered SIP server<br>0: Answer<br>1: Not answer | 0: This answers the INVITE message from the SIP server not registered for the machine.<br>1: This does not receive the INVITE message from the SIP server not registered for the machine and send a refusal message. |
| 5 | ECM communication setting<br>0: No limit for image compression<br>1: Limit for image compression | 0: This does not limit the type of the image compression with ECM communication.<br>1: When the other end machine is Ciscco, this permits the image compression other than JBIG or MMR with ECM communication. |

**Bit Switches - 6**

| IP Fax Switch 02 (SP No. 1-111-003) | | |
|---|---|---|
| **No.** | **Function** | **Comments** |
| 6-7 | Not used | Do not change these settings. |

| IP Fax Switch 03 (SP No. 1-111-004) | | |
|---|---|---|
| **No.** | **Function** | **Comments** |
| 0 | Effective field limitation for G3 standard function information<br>0: OFF, 1: 4byte (DIS) | Limits the effective field for standard G3 function information. |
| 1 | Switching between G3 standard and G3 non standard<br>0: Enable switching<br>1: G3 standard only | Enables/disables switching between G3 standard and G3 non-standard. |
| 2 | AI modem rate function<br>0: OFF, 1: ON (enable) | Enables/disables the AI modem rate. |
| 3 | ECM frame size selection at transmitting<br>0: 256byte, 1: 64byte | Selects the ECM frame size for sending. |
| 4 | DIS detection times for echo prevention<br>0: 1 time, 1: 2 times | Sets the number of times for DIS to detect echoes. |
| 5 | CTC transmission selection<br>0: PPRx1<br>1: PPRx4 | When "0" is selected, the transmission condition is decided by error frame numbers.<br>When "1" is selected, the transmission condition is based on the ITU-T method. |
| 6 | Shift down setting at receiving negative code<br>0: OFF, 1: ON | Selects whether to shift down when negative codes are received. |

| IP Fax Switch 03 (SP No. 1-111-004) | | |
|---|---|---|
| **No.** | **Function** | **Comments** |
| 7 | Not used | Do not change this setting. |

| IP Fax Switch 04 (SP No. 1-111-005) | | |
|---|---|---|
| **No.** | **Function** | **Comments** |
| 0-3 | TCF error threshold | Sets the TCF error threshold level. [00 to 0f]<br>The default is "1111" (0fH). |
| 4-7 | Not used | Do not change these settings. |

| IP Fax Switch 05 (SP No. 1-111-006) | | | | | | |
|---|---|---|---|---|---|---|
| **No.** | **Function** | | | | | **Comments** |
| 0-3 | Modem bit rate setting for transmission (kbps) | | | | | Sets the modem bit rate for transmission. The default is "0110" (14.4K bps). |
| | Bit 3 | Bit 2 | Bit 1 | Bit 0 | kbps | |
| | 0 | 0 | 0 | 1 | 2.4 | |
| | 0 | 0 | 1 | 1 | 4.8 | |
| | 0 | 0 | 1 | 1 | 7.2 | |
| | 0 | 1 | 0 | 0 | 9.6 | |
| | 0 | 1 | 0 | 1 | 12.0 | |
| | 0 | 1 | 1 | 0 | 14.4 | |
| | 0 | 1 | 1 | 1 | 16.8 | |
| | 1 | 0 | 0 | 0 | 19.2 | |
| | 1 | 0 | 0 | 1 | 21.6 | |
| | 1 | 0 | 1 | 0 | 24.0 | |

**Bit Switches - 6**

<table>
<tr><th colspan="8">IP Fax Switch 05 (SP No. 1-111-006)</th></tr>
<tr><th>No.</th><th colspan="6">Function</th><th>Comments</th></tr>
<tr><td rowspan="4"></td><td>1</td><td>0</td><td>1</td><td>1</td><td>26.4</td><td rowspan="4"></td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>0</td><td>28.8</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>1</td><td>31.2</td></tr>
<tr><td>1</td><td>1</td><td>1</td><td>0</td><td>33.6</td></tr>
<tr><td rowspan="6">4-5</td><td colspan="5">Modem setting for transmission</td><td rowspan="6">Sets the modem type for transmission.<br>The default is "00" (V29).</td></tr>
<tr><td colspan="2">Bit 5</td><td colspan="2">Bit 4</td><td>Types</td></tr>
<tr><td colspan="2">0</td><td colspan="2">0</td><td>V29</td></tr>
<tr><td colspan="2">0</td><td colspan="2">1</td><td>V17</td></tr>
<tr><td colspan="2">1</td><td colspan="2">0</td><td>V34</td></tr>
<tr><td colspan="2">1</td><td colspan="2">1</td><td>Not used</td></tr>
<tr><td>6-7</td><td colspan="5">Not used</td><td>Do not change these settings.</td></tr>
</table>

<table>
<tr><th colspan="6">IP Fax Switch 06 (SP No. 1-111-007)</th></tr>
<tr><th>No.</th><th colspan="4">Function</th><th>Comments</th></tr>
<tr><td>0-3</td><td colspan="5">Modem bit rate setting for reception<br>Sets the modem bit rate for reception. The default is "0110" (14.4K bps).</td></tr>
<tr><td rowspan="5">4-7</td><td colspan="5">Modem setting for reception<br>Sets the modem type for reception. The default is "0100" (V27ter, V29, V17).</td></tr>
<tr><td>Bit 7</td><td>Bit 6</td><td>Bit 5</td><td>Bit 4</td><td>Types</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>V.27ter</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>V.27ter, V.29</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>V.27ter, V.29, V.33</td></tr>
</table>

| IP Fax Switch 06 (SP No. 1-111-007) | | | | | |
|---|---|---|---|---|---|
| **No.** | **Function** | | | | **Comments** |
| | 0 | 1 | 0 | 0 | V.27ter, V.29, V.17/V.33 |
| | Other settings - Not used | | | | |

| IP Fax Switch 07 (SP No. 1-111-008) | | |
|---|---|---|
| **No.** | **Function** | **Comments** |
| 0 | TSI information<br>0: Not added, 1: Added | Adds or does not add TSI information to NSS(S). |
| 1 | DCN transmission setting at T1 timeout<br>0: Not transmitted<br>1: Transmitted | Transmits or does not transmit DCN at T1 timeout. |
| 2 | Not used | Do not change this setting. |
| 3 | Hang up setting at DIS reception disabled<br>0: No hang up<br>1: Hang up after transmitting DCN | Sets whether the machine disconnects after DIS reception. |
| 4 | Number of times for training<br>0: 1 time, 1: 2 times | Selects the number of times training is done at the same bit rate. |
| 5 | Space CSI transmission setting at no CSI registration<br>0: Not transmitted<br>1: Transmitted | When "0" is selected, frame data is enabled. When "1" is selected, the transmitted data is all spaces. |
| 6-7 | Not used | Do not change these settings. |

**Bit Switches - 6**

| IP Fax Switch 08 (SP No. 1-111-009) | | | | |
|---|---|---|---|---|
| **No.** | **Function** | | | **Comments** |
| 0-1 | T1 timer adjustment | | | Adjusts the T1 timer.<br>The default is "00" (35 seconds). |
| | Bit 1 | Bit 0 | | |
| | 0 | 0 | 35 s | |
| | 0 | 1 | 40 s | |
| | 1 | 0 | 50 s | |
| | 1 | 1 | 60 s | |
| 2-3 | T4 timer adjustment | | | Adjust the T4 timer.<br>The default is "00" (3 seconds). |
| | Bit 3 | Bit 2 | | |
| | 0 | 0 | 3 s | |
| | 0 | 1 | 3.5 s | |
| | 1 | 0 | 4 s | |
| | 1 | 1 | 5 s | |
| 4-5 | T0 timer adjustment | | | Adjusts the fail safe timer. This timer sets the interval between "setup" data transmission and T.38 phase decision. If your destination return is late on the network or G3 fax return is late, adjust the longer interval timer.<br>The default is "00" (75 seconds). |
| | Bit 5 | Bit 4 | | |
| | 0 | 0 | 75 s | |
| | 0 | 1 | 120 s | |
| | 1 | 0 | 180 s | |
| | 1 | 1 | 240 s | |
| 6-7 | Not used | | | Do not change these settings. |

| IP Fax Switch 09 (SP No. 1-111-010) | | |
|---|---|---|
| **No.** | **Function** | **Comments** |
| 0 | Network I/F setting for SIP connection<br>0: IPv4<br>1: IPv6. | Selects the connection type (IPV4 or IPV6) to connect to the SIP server. |
| 1 | Network I/F setting for Fax communication<br>0: Same setting as SIP server connection<br>1: Automatic setting | 0: The I/F setting for fax communication follows the setting for SIP server connection.<br>1: The negotiation between the SIP server and the device decides whether IPv4 or IPv6 is used for the I/F setting for fax communication. |
| 2 | Record-route setting<br>0: Disable<br>1: Enable | 0: Disables the record-route function of the SIP server.<br>1: Enables the record-route function of the SIP server. |
| 3-7 | Not used. | Do not change these settings. |

# 4.9 NCU PARAMETERS

The following tables give the RAM addresses and the parameter calculation units that the machine uses for ringing signal detection and automatic dialing. The factory settings for each country are also given. Most of these must be changed by RAM read/write (SP2-102), but some can be changed using NCU Parameter programming (SP2-103, 104 and 105); if SP2-103, 104 and 105 can be used, this will be indicated in the Remarks column. The RAM is programmed in hex code unless (BCD) is included in the Unit column.

Note

- The following addresses describe settings for the standard NCU.
- Change the fourth digit from "5" to "6" (e.g. 680500 to 680600) for the settings for the first optional G3 interface unit and from "5" to "7" (e.g. 680700) for the settings for the second optional G3 interface unit.

| Address | Function | Unit | Remarks |
|---|---|---|---|
| 680500 | Country/Area code for NCU parameters | | |
| | Use the Hex value to program the country/area code directly into this address, or use the decimal value to program it using SP2-103-001 | | |

| Country/Area | Decimal | Hex | Country/Area | Decimal | Hex |
|---|---|---|---|---|---|
| France | 00 | 00 | Hong Kong | 20 | 14 |
| Germany | 01 | 01 | South Africa | 21 | 15 |
| UK | 02 | 02 | Australia | 22 | 16 |
| Italy | 03 | 03 | New Zealand | 23 | 17 |
| Austria | 04 | 04 | S'pore | 24 | 18 |
| Belgium | 05 | 05 | Malaysia | 25 | 19 |
| Denmark | 06 | 06 | China | 26 | 1A |
| Finland | 07 | 07 | Taiwan | 27 | 1B |
| Ireland | 08 | 08 | Korea | 28 | 1C |

| Address | Function | | | Unit | | Remarks | |
|---|---|---|---|---|---|---|---|
| | Norway | 09 | 09 | Turkey | | 32 | 20 |
| | Sweden | 10 | 0A | Greece | | 33 | 21 |
| | Switz. | 11 | 0B | Hungary | | 34 | 22 |
| | Portugal | 12 | 0C | Czech | | 35 | 23 |
| | Country/Area | Decimal | Hex | Country/Area | | Decimal | Hex |
| | Holland | 13 | 0D | Poland | | 36 | 24 |
| | Spain | 14 | 0E | | | | |
| | Israel | 15 | 0F | | | | |
| | USA | 17 | 11 | | | | |
| 680501 | Line current detection time | | | 20 ms | | Line current detection is disabled.<br>Line current is not detected if 680501 contains FF. | |
| 680502 | Line current wait time | | | | | | |
| 680503 | Line current drop detect time | | | | | | |
| 680504 | PSTN dial tone frequency upper limit (high byte) | | | Hz (BCD) | | If both addresses contain FF(H), tone detection is disabled. | |
| 680505 | PSTN dial tone frequency upper limit (low byte) | | | | | | |
| 680506 | PSTN dial tone frequency lower limit (high byte) | | | Hz (BCD) | | If both addresses contain FF(H), tone detection is disabled. | |
| 680507 | PSTN dial tone frequency lower limit (low byte) | | | | | | |
| 680508 | PSTN dial tone detection time | | | 20 ms | | If 680508 contains FF(H), the machine pauses for the pause time (address 68050D / 68050E). | |
| 680509 | PSTN dial tone reset time (LOW) | | | | | | |
| 68050A | PSTN dial tone reset time (HIGH) | | | | | | |

**NCU Parameters**

| Address | Function | Unit | Remarks |
|---|---|---|---|
| 68050B | PSTN dial tone continuous tone time | | Italy: See Note 2. |
| 68050C | PSTN dial tone permissible drop time | | |
| 68050D | PSTN wait interval (LOW) | | |
| 68050E | PSTN wait interval (HIGH) | | |
| 68050F | PSTN ring-back tone detection time | 20 ms | Detection is disabled if this contains FF. |
| 680510 | PSTN ring-back tone off detection time | 20 ms | |
| 680511 | PSTN detection time for silent period after ring-back tone detected (LOW) | 20 ms | |
| 680512 | PSTN detection time for silent period after ring-back tone detected (HIGH) | 20 ms | |
| 680513 | PSTN busy tone frequency upper limit (high byte) | Hz (BCD) | If both addresses contain FF(H), tone detection is disabled. |
| 680514 | PSTN busy tone frequency upper limit (low byte) | | |
| 680515 | PSTN busy tone frequency lower limit (high byte) | Hz (BCD) | If both addresses contain FF(H), tone detection is disabled. |
| 680516 | PSTN busy tone frequency lower limit (low byte) | | |
| 680517 | PABX dial tone frequency upper limit (high byte) | Hz (BCD) | If both addresses contain FF(H), tone detection is disabled. |
| 680518 | PABX dial tone frequency upper limit (low byte) | | |
| 680519 | PABX dial tone frequency lower limit (high byte) | Hz (BCD) | If both addresses contain FF(H), tone detection is disabled. |
| 68051A | PABX dial tone frequency lower limit | | |

| Address | Function | Unit | Remarks |
|---|---|---|---|
| | (low byte) | | |
| 68051B | PABX dial tone detection time | 20 ms | If 68051B contains FF, the machine pauses for the pause time (680520 / 680521). |
| 68051C | PABX dial tone reset time (LOW) | | |
| 68051D | PABX dial tone reset time (HIGH) | | |
| 68051E | PABX dial tone continuous tone time | | |
| 68051F | PABX dial tone permissible drop time | | |
| 680520 | PABX wait interval (LOW) | | |
| 680521 | PABX wait interval (HIGH) | | |
| 680522 | PABX ringback tone detection time | 20 ms | If both addresses contain FF(H), tone detection is disabled. |
| 680523 | PABX ringback tone off detection time | 20 ms | |
| 680524 | PABX detection time for silent period after ringback tone detected (LOW) | 20 ms | If both addresses contain FF(H), tone detection is disabled. |
| 680525 | PABX detection time for silent period after ringback tone detected (HIGH) | 20 ms | |
| 680526 | PABX busy tone frequency upper limit (high byte) | Hz (BCD) | If both addresses contain FF(H), tone detection is disabled. |
| 680527 | PABX busy tone frequency upper limit (low byte) | | |
| 680528 | PABX busy tone frequency lower limit (high byte) | Hz (BCD) | If both addresses contain FF(H), tone detection is disabled. |
| 680529 | PABX busy tone frequency lower limit (low byte) | | |
| 68052A | Busy tone ON time: range 1 | 20 ms | |
| 68052B | Busy tone OFF time: range 1 | | |

**NCU Parameters**

| Address | Function | Unit | Remarks |
|---|---|---|---|
| 68052C | Busy tone ON time: range 2 | | |
| 68052D | Busy tone OFF time: range 2 | | |
| 68052E | Busy tone ON time: range 3 | | |
| 68052F | Busy tone OFF time: range 3 | 20 ms | |
| 680530 | Busy tone ON time: range 4 | | |
| 680531 | Busy tone OFF time: range 4 | | |
| 680532 | Busy tone continuous tone detection time | | |
| 680533 | Busy tone signal state time tolerance for all ranges, and number of cycles required for detection (a setting of 4 cycles means that ON-OFF-ON or OFF-ON-OFF must be detected twice).<br>Tolerance (±) | | |
| | Bit 1 / Bit 0 / | | |
| | 0 / 0 / 75% | | |
| | 0 / 1 / 50% | | |
| | 1 / 0 / 25% | | |
| | 1 / 1 / 12.5% | | |
| | Bits 2 and 3 must always be kept at 0.<br>Bits 7, 6, 5, 4 - number of cycles required for cadence detection | | |
| 680534 | International dial tone frequency upper limit (high byte) | Hz (BCD) | If both addresses contain FF(H), tone detection is disabled. |
| 680535 | International dial tone frequency upper limit (low byte) | | |
| 680536 | International dial tone frequency lower limit (high byte) | Hz (BCD) | If both addresses contain FF(H), tone detection is |

| Address | Function | Unit | Remarks |
|---|---|---|---|
| 680537 | International dial tone frequency lower limit (low byte) | | disabled. |
| 680538 | International dial tone detection time | 20 ms | If 680538 contains FF, the machine pauses for the pause time (68053D / 68053E).<br>Belgium: See Note 2. |
| 680539 | International dial tone reset time (LOW) | | |
| 68053A | International dial tone reset time (HIGH) | | |
| 68053B | International dial tone continuous tone time | | |
| 68053C | International dial tone permissible drop time | | |
| 68053D | International dial wait interval (LOW) | | |
| 68053E | International dial wait interval (HIGH) | | |
| 68053F | Country dial tone upper frequency limit (HIGH) | Hz (BCD) | If both addresses contain FF(H), tone detection is disabled. |
| 680540 | Country dial tone upper frequency limit (LOW) | | |
| 680541 | Country dial tone lower frequency limit (HIGH) | | If both addresses contain FF(H), tone detection is disabled. |
| 680542 | Country dial tone lower frequency limit (LOW) | | |
| 680543 | Country dial tone detection time | 20 ms | If 680543 contains FF, the machine pauses for the pause time (680548 / |
| 680544 | Country dial tone reset time (LOW) | | |

**NCU Parameters**

| Address | Function | Unit | Remarks |
|---|---|---|---|
| 680545 | Country dial tone reset time (HIGH) | | 680549). |
| 680546 | Country dial tone continuous tone time | | |
| 680547 | Country dial tone permissible drop time | 20 ms | |
| 680548 | Country dial wait interval (LOW) | | |
| 680549 | Country dial wait interval (HIGH) | | |
| 68054A | Time between opening or closing the DO relay and opening the OHDI relay | 1 ms | See Notes 3, 6 and 8. SP2-103-012 (parameter 11). |
| 68054B | Break time for pulse dialing | 1 ms | See Note 3. SP2-103-013 (parameter 12). |
| 68054C | Make time for pulse dialing | 1 ms | See Note 3. SP2-103-014 (parameter 13). |
| 68054D | Time between final OHDI relay closure and DO relay opening or closing | 1 ms | See Notes 3, 6 and 8. SP2-103-015 (parameter 14). This parameter is only valid in Europe. |
| 68054E | Minimum pause between dialed digits (pulse dial mode) | 20 ms | See Note 3 and 8. SP2-103-016 (parameter 15). |
| 68054F | Time waited when a pause is entered at the operation panel | | SP2-103-017 (parameter 16). See Note 3. |
| 680550 | DTMF tone on time | 1 ms | SP2-103-018 (parameter |

| Address | Function | Unit | Remarks |
|---|---|---|---|
| | | | 17). |
| 680551 | DTMF tone off time | | SP2-103-019 (parameter 18). |
| 680552 | Tone attenuation level of DTMF signals while dialing | -N x 0.5 –3.5 dBm | SP2-103-020 (parameter 19).<br>See Note 5. |
| 680553 | Tone attenuation value difference between high frequency tone and low frequency tone in DTMF signals | -dBm x 0.5 | SP2-103-021 (parameter 20).<br>The setting must be less than –5dBm, and should not exceed the setting at 680552h above.<br>See Note 5. |
| 680554 | PSTN: DTMF tone attenuation level after dialling | -N x 0.5 –3.5 dBm | SP2-103-022 (parameter 21). See Note 5. |
| 680555 | ISDN: DTMF tone attenuation level after dialling | -dBm x 0.5 | See Note 5 |
| 680556 | Not used | | Do not change the settings. |
| 680557 | Time between 68054Dh (NCU parameter 14) and 68054Eh (NCU parameter 15) | 1 ms | This parameter takes effect when the country code is set to France. |
| 680558 | Not used | | Do not change the setting. |
| 680559 | Grounding time (ground start mode) | 20 ms | The Gs relay is closed for this interval. |
| 68055A | Break time (flash start mode) | 1 ms | The OHDI relay is open for this interval. |

**NCU Parameters**

<table>
<tr><th>Address</th><th>Function</th><th>Unit</th><th>Remarks</th></tr>
<tr><td>68055B</td><td>International dial access code (High)</td><td rowspan="2">BCD</td><td rowspan="2">For a code of 100:<br>68055B - F1<br>68055C - 00</td></tr>
<tr><td>68055C</td><td>International dial access code (Low)</td></tr>
<tr><td>68055D</td><td>PSTN access pause time</td><td>20 ms</td><td>This time is waited for each pause input after the PSTN access code. If this address contains FF[H], the pause time stored in address 68054F is used. Do not set a number more than 7 in the UK.</td></tr>
<tr><td rowspan="6">68055E</td><td rowspan="6">Progress tone detection level, and cadence detection enable flags</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Bit 7</td><td>Bit 6</td><td>Bit 5</td><td>dBm</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>-25.0</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>-35.0</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>-30.0</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>-40.0</td></tr>
<tr><td colspan="4">Bits 2, 0 - See Note 2.</td></tr>
<tr><td>68055F<br>to<br>680564</td><td>Not used</td><td></td><td>Do not change the settings.</td></tr>
<tr><td>680565</td><td>Long distance call prefix (HIGH)</td><td>BCD</td><td rowspan="2">For a code of 0:<br>680565 - FF<br>680566 - FF</td></tr>
<tr><td>680566</td><td>Long distance call prefix (LOW)</td><td>BCD</td></tr>
<tr><td>680567<br>to<br>680571</td><td>Not used</td><td></td><td>Do not change the settings.</td></tr>
</table>

| Address | Function | Unit | Remarks |
|---|---|---|---|
| 680572 | Acceptable ringing signal frequency: range 1, upper limit | 1000/ N (Hz). | SP2-103-003 (parameter 02). |
| 680573 | Acceptable ringing signal frequency: range 1, lower limit | | SP2-103-004 (parameter 03). |
| 680574 | Acceptable ringing signal frequency: range 2, upper limit | | SP2-103-005 (parameter 04). |
| 680575 | Acceptable ringing signal frequency: range 2, lower limit | | SP2-103-006 (parameter 05). |
| 680576 | Number of rings until a call is detected | 1 | SP2-103-007 (parameter 06).<br>The setting must not be zero. |
| 680577 | Minimum required length of the first ring | 20 ms | See Note 4.<br>SP2-103-008 (parameter 07). |
| 680578 | Minimum required length of the second and subsequent rings | 20 ms | SP2-103-009 (parameter 08). |
| 680579 | Ringing signal detection reset time (LOW) | 20 ms | SP2-103-010 (parameter 09). |
| 68057A | Ringing signal detection reset time (HIGH) | | SP2-103-011 (parameter 10). |
| 68057B to 680580 | Not used | | Do not change the settings. |
| 680581 | Interval between dialing the last digit and switching the Oh relay over to the external telephone when dialing from the operation panel in handset mode. | 20 ms | Factory setting: 500 ms |

**NCU Parameters**

<table>
<tr><th>Address</th><th colspan="3">Function</th><th>Unit</th><th>Remarks</th></tr>
<tr><td rowspan="12">680582</td><td colspan="3">Bits 0 and 1 - Handset off-hook detection time</td><td></td><td></td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Setting</td><td></td><td></td></tr>
<tr><td>0</td><td>0</td><td>200 ms</td><td></td><td></td></tr>
<tr><td>0</td><td>1</td><td>800 ms</td><td></td><td></td></tr>
<tr><td colspan="2">Other</td><td>Not used</td><td></td><td></td></tr>
<tr><td colspan="3">Bits 2 and 3 - Handset on-hook detection time</td><td></td><td></td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Setting</td><td></td><td></td></tr>
<tr><td>0</td><td>0</td><td>200 ms</td><td></td><td></td></tr>
<tr><td>0</td><td>1</td><td>800 ms</td><td></td><td></td></tr>
<tr><td colspan="2">Other</td><td>Not used</td><td></td><td></td></tr>
<tr><td colspan="3">Bits 4 to 7 - Not used</td><td></td><td></td></tr>
<tr><td>680583<br>to<br>6805A0</td><td colspan="3">Not used</td><td></td><td>Do not change the settings.</td></tr>
<tr><td>6805A1</td><td colspan="3">Acceptable CED detection frequency upper limit (high byte)</td><td rowspan="2">BCD (Hz)</td><td rowspan="2">If both addresses contain FF(H), tone detection is disabled.</td></tr>
<tr><td>6805A2</td><td colspan="3">Acceptable CED detection frequency upper limit (low byte)</td></tr>
<tr><td>6805A3</td><td colspan="3">Acceptable CED detection frequency lower limit (high byte)</td><td rowspan="2">BCD (Hz)</td><td rowspan="2">If both addresses contain FF(H), tone detection is disabled.</td></tr>
<tr><td>6805A4</td><td colspan="3">Acceptable CED detection frequency lower limit (low byte)</td></tr>
<tr><td>6805A5</td><td colspan="3">CED detection time</td><td>20 ms<br>± 20 ms</td><td>Factory setting: 200 ms</td></tr>
<tr><td>6805A6</td><td colspan="3">Acceptable CNG detection</td><td>BCD (Hz)</td><td>If both addresses contain</td></tr>
</table>

| Address | Function | Unit | Remarks |
|---|---|---|---|
| | frequency upper limit (high byte) | | FF(H), tone detection is disabled. |
| 6805A7 | Acceptable CNG detection frequency upper limit (low byte) | | |
| 6805A8 | Acceptable CNG detection frequency lower limit (high byte) | BCD (Hz) | If both addresses contain FF(H), tone detection is disabled. |
| 6805A9 | Acceptable CNG detection frequency lower limit (low byte) | | |
| 6805AA | Not used | | Do not change the setting. |
| 6805AB | CNG on time | 20 ms | Factory setting: 500 ms |
| 6805AC | CNG off time | 20 ms | Factory setting: 3000 ms |
| 6805AD | Number of CNG cycles required for detection | | The data is coded in the same way as address 680533. |
| 6805AE | Not used | | Do not change the settings. |
| 6805AF | Acceptable AI short protocol tone (800Hz) detection frequency upper limit (high byte) | Hz (BCD) | If both addresses contain FF(H), tone detection is disabled. |
| 6805B0 | Acceptable AI short protocol tone (800Hz) detection frequency upper limit (low byte) | | |
| 6805B1 | Acceptable AI short protocol tone (800Hz) detection frequency lower limit (high byte) | Hz(BCD) | If both addresses contain FF(H), tone detection is disabled. |
| 6805B2 | Acceptable AI short protocol tone (800Hz) detection frequency lower limit (low byte) | | |

**NCU Parameters**

| Address | Function | Unit | Remarks |
|---|---|---|---|
| 6805B3 | Detection time for 800 Hz AI short protocol tone | 20 ms | Factory setting: 360 ms |
| 6805B4 | PSTN: Tx level from the modem | -N – 3 dBm | SP2-103-002 (parameter 01). |
| 6805B5 | PSTN: 1100 Hz tone transmission level | - N 6805B4 - 0.5N 6805B5 –3.5 (dB)<br>See Note 7. | |
| 6805B6 | PSTN: 2100 Hz tone transmission level | - N6805B4 - 0.5N 6805B6 –3 (dB)<br>See Note 7. | |
| 6805B7 | PABX: Tx level from the modem | - dBm | |
| 6805B8 | PABX: 1100 Hz tone transmission level | - N 6805B7 - 0.5N 6805B8 (dB) | |
| 6805B9 | PABX: 2100 Hz tone transmission level | - N 6805B7 - 0.5N 6805B9 (dB) | |
| 6805BD | Modem turn-on level (incoming signal detection level) | -37-0.5N (dBm) | |
| 6805BE to 6805C6 | Not used | | Do not change the settings. |
| 6805C7 | Bits 0 to 3 – Not used.<br>Bit 4 – V.34 protocol dump - 0: Simple, 1: Detailed (default)<br>Bits 5 to 7 – Not used. | | |
| 6805C8 to 6805D9 | Not used | | Do not change the settings. |
| 6805DA | T.30 T1 timer | 1 s | |
| 6805E0 bit 3 | Maximum wait time for post message | 0: 12 s<br>1: 30 s | 1: Maximum wait time for post message (EOP/EOM/MPS) can be |

| Address | Function | Unit | Remarks |
|---|---|---|---|
| | | | changed to 30 s. Change this bit to "1" if communication errors occur frequently during V.17 reception. |
| 6805E3 | Voltage setting to detect off-hook for voltage/DP detection for an externally connected line. | 0: Auto<br>1: Fixed V | Do not change these settings |
| | Here is a summary of the fixed voltage settings (1: Fixed) for an externally connected line. | | |

| Bit 7 | Bit 6 | Bit 5 | Bit 4 | |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | Not used |
| 0 | 0 | 0 | 1 | 2.75 V |
| 0 | 0 | 1 | 0 | 5.5 V |
| 1 | 0 | 0 | 0 | 22 V |
| 1 | 1 | 1 | 1 | 41.25 V |

| | | | | |
|---|---|---|---|---|
| 6805E4 | Bit 1 sets the level of the call signal, Bit 3 sets the call signal impedance | Bit 1 | 0 | RT=0 (Low) |
| | | | 1 | RT=1 (High |
| | | Bit 3 | 0 | RZ=0 (High) |
| | | | 1 | RZ=1 (Composite) |
| 6805E5 | Bit 0 sets the ring detection method, Bit 1 sets the ring detection method | Bit 0 | 0 | RT=0 (Low) |
| | | | 1 | RT=1 (High |
| | | Bit 1 | 0 | Use RDTP |

If any setting is changed, select a setting that is higher than the default setting.

**NCU Parameters**

| Address | Function | | | | Unit | Remarks |
|---|---|---|---|---|---|---|
| | when fixed. | | 1 | Use RDTN | | |
| | Here is a summary of the voltages for the detection of off-hook for DP detection. | | | | | |
| | Bit 7 | Bit 6 | Bit 5 | Bit 4 | | |
| | 0 | 0 | 0 | 0 | Not used | |
| | 0 | 0 | 0 | 1 | 2.75 V | |
| | 0 | 0 | 1 | 0 | 5.5 V | |
| | 1 | 0 | 0 | 0 | 22 V | |
| | 1 | 1 | 1 | 1 | 41.25 V | |

**Notes**

1. If a setting is not required, store FF in the address.
2. Italy and Belgium only
   RAM address 68055E: the lower four bits have the following meaning.
   Bit 2 - 1: International dial tone cadence detection enabled (Belgium)
   Bit 1 - Not used
   Bit 0 - 1: PSTN dial tone cadence detection enabled (Italy)
   If bit 0 or bit 2 is set to 1, the functions of the following RAM addresses are changed.
   680508 (if bit 0 = 1) or 680538 (if bit 2 = 1): tolerance for on or off state duration (%), and number of cycles required for detection, coded as in address 680533.
   68050B (if bit 0 = 1) or 68053B (if bit 2 = 1): on time, hex code (unit = 20 ms)
   68050C (if bit 0 = 1) or 68053C (if bit 2 = 1): off time, hex code (unit = 20 ms)
3. Pulse dial parameters (addresses 68054A to 68054F) are the values for 10 pps. If 20 pps is used, the machine automatically compensates.
4. The first ring may not be detected until 1 to 2.5 wavelengths after the time specified by this parameter.
5. The calculated level must be between 0 and 10.
   The attenuation levels calculated from RAM data are:
   High frequency tone: – 0.5 x N680552/680554–3.5 dBm

– 0.5 x N680555 dBm

Low frequency tone:– 0.5 x (N680552/680554 + N680553) –3.5 dBm

– 0.5 x (N680555 + N680553) dBm

N680552, for example, means the value stored in address 680552(H)

6. Ds and Di relay timing

   68054A: Europe - Between Ds opening and Di opening, France - Between Ds closing and Di opening

   68054D: Europe - Between Ds closing and Di closing, France - Between Ds opening and Di closing

7. Tone signals which frequency is lower than 1500Hz (e.g., 800Hz tone for AI short protocol) refer to the setting at 6805B5h. Tones which frequency is higher than 1500Hz refer to the setting at 6805B6h.
8. 68054A, 68054D, 68054E: The actual inter-digit pause (pulse dial mode) is the sum of the period specified by the RAM addresses 68054A, 68054D, and 68054E.

# 4.10 DEDICATED TRANSMISSION PARAMETERS

There are two sets of transmission parameters: Fax and E-mail

Each Quick Dial Key and Speed Dial Code has eight bytes of programmable parameters allocated to it. If transmissions to a particular machine often experience problems, store that terminal's fax number as a Quick Dial or Speed Dial, and adjust the parameters allocated to that number.

The programming procedure will be explained first. Then, the eight bytes will be described.

## 4.10.1 PROGRAMMING PROCEDURE

1. Set the bit 0 of System Bit Switch 00 to 1.
2. Enter Address Book Management mode ([User Tools]> System Settings> Key Operator> Address Book Management).
3. Select the address book that you want to program.
4. For the fax parameter, select "Fax Dest.", for the E-mail parameter, select "E-mail", then press "Start". Make sure that the LED of the Start button lights green.
5. The settings for the switch 00 are now displayed. Press the bit number that you wish to change.
6. To scroll through the parameter switches, either:
7. Do one of the following:
   Select the next switch: press "Next"
   or
   Select the previous switch: "Prev." until the correct switch is displayed. Then go back to step 6.
8. After the setting is changed, press "OK".
9. After finishing, reset bit 0 of System Bit Switch 00 to 0.

## 4.10.2 PARAMETERS

### *Fax Parameters*

The initial settings of the following fax parameters are all FF(H). This means that all the parameters are disabled.

| Switch 00 |
|---|
| **Function and Comments** |
| ITU-T T1 time (for PSTN G3 mode)<br>If the connection time to a particular terminal is longer than the NCU parameter setting, |

| Switch 00 |
|---|
| **Function and Comments** |
| adjust this byte. The T1 time is the value stored in this byte (in hex code), multiplied by 1 second.<br>Range: 0 to 120 s (00h to 78h)<br>FFh - The local NCU parameter factory setting is used.<br>Do not program a value between 79h and FEh. |

**Switch 01**

| No | Function | | | | | | Function |
|---|---|---|---|---|---|---|---|
| 0 to 4 | Tx level | | | | | | If communication with a particular remote terminal often contains errors, the signal level may be inappropriate. Adjust the Tx level for communications with that terminal until the results are better.<br>If the setting is “Disabled”, the NCU parameter 01 setting is used.<br>Note<br>▪ Do not use settings other than listed on the left. |
| | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 | | |
| | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 0 | 0 | 0 | 0 | 1 | -1 | |
| | 0 | 0 | 0 | 1 | 0 | -2 | |
| | 0 | 0 | 0 | 1 | 1 | -3 | |
| | 0 | 0 | 1 | 0 | 0 | -4 | |
| | . . . and so on until . . . | | | | | | |
| | 0 | 1 | 1 | 1 | 1 | -15 | |
| | If all five bits are at 1, the setting is ‘Disabled’. | | | | | | |
| 5 to 7 | Cable equalizer | | | | | | Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange when calling the number stored in this |
| | Bit 7 | Bit 6 | Bit 5 | | | | |
| | 0 | 0 | 0 | None | | | |
| | 0 | 0 | 1 | Low | | | |

**Dedicated Transmission Parameters**

| Switch 01 | | | | | |
|---|---|---|---|---|---|
| **No** | **Function** | | | | **Function** |
| | 0 | 1 | 0 | Medium | Quick/Speed Dial.<br>Also, try using the cable equalizer if one or more of the following symptoms occurs.<br>▪ Communication error with error codes such as 0-20, 0-23, etc.<br>▪ Modem rate fallback occurs frequently.<br>Note<br>▪ Do not use settings other than listed on the left.<br>▪ If the setting is “Disabled”, the bit switch setting is used. |
| | 0 | 1 | 1 | High | |
| | 1 | 1 | 1 | Disabled | |
| | | | | | |

| Switch 02 | | | | | | |
|---|---|---|---|---|---|---|
| **No** | **Function** | | | | | **Comments** |
| 0 to 3 | Initial Tx modem rate (kbps) | | | | | If training with a particular remote terminal always takes too long, the initial modem rate may be too high. Reduce the initial Tx modem rate using these bits.<br>For the settings 14.4 or kbps slower, Switch 04 bit 4 must be changed to 0.<br>Note<br>▪ Other settings: Not used<br>If the setting is “Disabled”, the bit switch setting is used. |
| | Bit 3 | Bit 2 | Bit 1 | Bit 0 | | |
| | 0 | 0 | 0 | 0 | Not used | |
| | 0 | 0 | 0 | 1 | 2.4 | |
| | 0 | 0 | 1 | 0 | 4.8 | |
| | 0 | 0 | 1 | 1 | 7.2 | |
| | 0 | 1 | 0 | 0 | 9.6 | |
| | 0 | 1 | 0 | 1 | 12.0 | |
| | 0 | 1 | 1 | 0 | 14.4 | |

<table>
<tr><th colspan="7">Switch 02</th></tr>
<tr><th>No</th><th colspan="5">Function</th><th>Comments</th></tr>
<tr><td rowspan="9"></td><td>0</td><td>1</td><td>1</td><td>1</td><td>16.8</td><td rowspan="9"></td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>0</td><td>19.2</td></tr>
<tr><td>1</td><td>0</td><td>0</td><td>1</td><td>21.6</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>0</td><td>24.0</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>1</td><td>26.4</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>0</td><td>28.8</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>1</td><td>31.2</td></tr>
<tr><td colspan="5">If all bits are at ‘1’, the setting is ‘Disabled’<br>Note<br>▪ Other settings: Not used</td></tr>
<tr><td>4-7</td><td colspan="5">Not used</td><td>Do not change the settings.</td></tr>
</table>

<table>
<tr><th colspan="5">Switch 03</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="8">0-1</td><td colspan="3">Inch-mm conversion before tx</td><td rowspan="8">The machine uses inch-based resolutions for scanning. If “inch only” is selected, the printed copy may be slightly distorted at the other end if that machine uses mm-based resolutions.<br>If the setting is “Disabled”, the bit switch setting is used.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>Inch-mm conversion available</td></tr>
<tr><td>0</td><td>1</td><td>Inch only</td></tr>
<tr><td>1</td><td>0</td><td>Not used</td></tr>
<tr><td>1</td><td>1</td><td>Disabled</td></tr>
<tr><td></td><td></td><td></td></tr>
</table>

**Dedicated Transmission Parameters**

<table>
<tr><th colspan="5">Switch 03</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="8">2-3</td><td colspan="3">DIS/NSF detection method</td><td rowspan="8">(0, 1): Use this setting if echoes on the line are interfering with the set-up protocol at the start of transmission. The machine will then wait for the second DIS or NSF before sending DCS or NSS.<br>If the setting is “Disabled”, the bit switch setting is used.</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>First DIS or NSF</td></tr>
<tr><td>0</td><td>1</td><td>Second DIS or NSF</td></tr>
<tr><td>1</td><td>0</td><td>Not used</td></tr>
<tr><td>1</td><td>1</td><td>Disabled</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>4</td><td colspan="3">V.8 protocol<br>0: Off<br>1: Disabled</td><td>If transmissions to a specific destination always end at a lower modem rate (14,400 bps or lower), disable V.8 protocol so as not to use V.34 protocol.<br>0: V.34 communication will not be possible.<br>If the setting is “Disabled”, the bit switch setting is used.</td></tr>
<tr><td>5</td><td colspan="3">Compression modes available in transmit mode<br>0: MH only<br>1: Disabled</td><td>This bit determines the capabilities that are informed to the other terminal during transmission.<br>If the setting is “Disabled”, the bit switch setting is used.</td></tr>
<tr><td rowspan="5">6<br>7</td><td colspan="3">ECM during transmission</td><td rowspan="5">For example, if ECM is switched on but is not wanted when sending to a particular terminal, use the (0, 0) setting.<br>Note that V.8/V.34 protocol and JBIG compression are automatically disabled if ECM is disabled.</td></tr>
<tr><td>Bit 7</td><td>Bit 6</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>Off</td></tr>
<tr><td>0</td><td>1</td><td>On</td></tr>
<tr><td>1</td><td>0</td><td>Not used</td></tr>
</table>

| Switch 03 | | | | |
|---|---|---|---|---|
| **No** | **Function** | | | **Comments** |
| | 1 | 1 | Disabled | If the setting is “Disabled”, the bit switch setting is used. |
| | | | | |

| |
|---|
| **Switch 04** - Not used (do not change the settings) |
| **Switch 05** - Not used (do not change the settings) |
| **Switch 06** - Not used (do not change the settings) |
| **Switch 07** - Not used (do not change the settings) |
| **Switch 08** - Not used (do not change the settings) |
| **Switch 09** - Not used (do not change the settings) |

### *E-mail Parameters*

The initial settings of the following e-mail parameters are all "0" (all parameters disabled).

| Switch 00 | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | HM Compression mode for e-mail attachments<br>0: Off<br>1: On | Switches HM compression on and off for files attached to e-mails for sending. |
| 1 | HR Compression mode for e-mail attachments<br>0: Off<br>1: On | Switches HR compression on and off for files attached to e-mails for sending. |
| 2 | MMR Compression mode for e-mail attachments | Switches MMR compression on and off for files attached to e-mails for sending. |

**Dedicated Transmission Parameters**

| Switch 00 | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | 0: Off<br>1: On | |
| 3-6 | Not used | Do not change these settings. |
| 7 | Designates the bits to reference for compression method of e-mail attachments<br>0: Registered (Bit 0 to 6)<br>1: No registration. | The "0" selection (default) references the settings for Bits 00, 01, 02 above. The "1" selection ignores the selections of Bits 00, 01, 02. |

| Switch 01 | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Original width of e-mail attachment: A4<br>0: Off<br>1: On | Sets the original width of the e-mail attachment as A4. |
| 1 | Original width of e-mail attachment: B4<br>0: Off<br>1: On | Sets the original width of the e-mail attachment as B4. |
| 2 | Original width of e-mail attachment: A3<br>0: Off<br>1: On | Sets the original width of the e-mail attachment as A3. |
| 3-6 | Not used | Do not change these settings. |
| 7 | Designates the bits to reference for original size of e-mail attachments | The "0" selection (default) references the settings for Bits 00, 01, 02 above. The "1" selection ignores the selections of Bits 00, 01, 02. |

| Switch 01 | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| | 0: Registered (Bit 0 to 6)<br>1: No registration. | |

| Switch 02 | | |
|---|---|---|
| **No** | **Function** | **Comments** |
| 0 | Line resolution of e-mail attachment: 200 x 100<br>0: Off<br>1: On | Sets the line resolution of the e-mail attachment as 200 x100. |
| 1 | Line resolution of e-mail attachment: 200 x 200<br>0: Off<br>1: On | Sets the line resolution of the e-mail attachment as 200 x 200. |
| 2 | Line resolution of e-mail attachment: 200 x 400<br>0: Off<br>1: On | Sets the line resolution of the e-mail attachment as 200 x 400. |
| 3 | Not used | Do not change these settings. |
| 4 | Line resolution of e-mail attachment: 400 x 400<br>0: Off<br>1: On | Sets the line resolution of the e-mail attachment as 400 x 400. |
| 5-6 | Not used | Do not change these settings. |
| 7 | Designates the bits to reference for original size of e-mail attachments<br>0: Registered (Bit 0 to 6)<br>1: No registration. | The "0" selection (default) references the settings for Bits 00, 01, 02, 04 above. The "1" selection ignores the selections of Bits 00, 01, 02, 04. |

**Dedicated Transmission Parameters**

| |
|---|
| **Switch 03** - Not used (do not change the settings) |
| **Switch 04** - Not used (do not change the settings) |
| **Switch 05** - Not used (do not change the settings) |
| **Switch 06** - Not used (do not change the settings) |
| **Switch 07** - Not used (do not change the settings) |
| **Switch 08** - Not used (do not change the settings) |
| **Switch 09** - Not used (do not change the settings) |

# 4.11 SERVICE RAM ADDRESSES

Note

- Do not change the settings which are marked as “Not used” or “Read only.”

**680001 to 680004(H) -** ROM version (Read only)

- 680001(H) - Revision number (BCD)
- 680002(H) - Year (BCD)
- 680003(H) - Month (BCD)
- 680004(H) - Day (BCD)

**680006 to 680015(H) -** Machine’s serial number (16 digits - ASCII)

**680018(H) -** Total program checksum (low)

**680019(H) -** Total program checksum (high)

**680020 to 68003F(H) -** System bit switches

**680050 to 68005F(H) -** Printer bit switches

**680060 to 68007F(H) -** Communication bit switches

**680080 to 68008F(H) -** G3 bit switches

**680090 to 68009F(H) -** G3-2 bit switches

**6800A0 to 6800AF(H) -** G3-3 bit switches

**6800D0(H) -** User parameter switch 00 (SWUER_00): Not used

**6800D1(H) -** User parameter switch 01 (SWUSR_01): Not used

**6800D2(H) -** User parameter switch 02 (SWUSR_02)

- Bit 0: Forwarding mark printing on forwarded messages, 0: Disabled, 1: Enabled
- Bit 1: Center mark printing on received copies (this switch is not printed on the user parameter list), 0: Disabled, 1: Enabled
- Bit 2: Reception time printing (this switch is not printed on the user parameter list), 0: Disabled, 1: Enabled
- Bit 3: TSI print on received messages, 0: Disabled, 1: Enabled
- Bit 4: Checkered mark printing (this switch is not printed on the user parameter list), 0: Disabled, 1: Enabled
- Bit 5: Not used
- Bit 6: Not used
- Bit 7: Not used

**6800D3(H) -** User parameter switch 03 (SWUSR_03: Automatic report printout)

- Bit 0: Transmission result report (memory transmissions), 0: Off, 1: On
- Bit 1: Not used
- Bit 2: Memory storage report, 0: Off, 1: On

- Bit 3: Polling reserve report (polling reception), 0: Off, 1: On
- Bit 4: Polling result report (polling reception), 0: Off, 1: On
- Bit 5: Transmission result report (immediate transmissions), 0: Off, 1: On
- Bit 6: Polling clear report, 0: Off, 1: On
- Bit 7: Journal, 0: Off, 1: On

**6800D4(H) -** User parameter switch 04 (SWUSR_04: Automatic report printout)

- Bit 0: Automatic confidential reception report output, 0: Off, 1: On
- Bit 1: Automatic communication failure report and transfer result report output, 0: Off, 1: On
- Bits 2 to 3: Not used
- Bit 4: Indicates the parties, 0: Not indicated, 1: Indicated
- Bit 5: Include sender's name on reports, 0: Off, 1: On
- Bit 6: Not used
- Bit 7: Inclusion of a sample image on reports, 0: Off, 1: On

**6800D5(H) -** User parameter switch 05 (SWUSR_05)

- Bit 0: Substitute reception when the base copier is in an SC condition, 0: Enabled, 1: Disabled
- Bits 1 and 2: Condition for substitute rx when the machine cannot print messages (Paper end, toner end, jam, and during night mode)

| Bit 2 | Bit 1 | Setting |
|---|---|---|
| 0 | 0 | The machine receives all the fax messages. |
| 0 | 1 | The machine receives fax messages with RTI or CSI. |
| 1 | 0 | The machine receives fax messages with the same ID code. |
| 1 | 1 | The machine does not receive anything. |

- Bit 3: Not used
- Bit 4: Not used
- Bit 5: Just size printing, 0: Off, 1: On
- Bit 6: Not used
- Bit 7: Add paper display when a cassette is empty. 0: Off, 1: On

**6800D6(H) -** User parameter switch 06 (SWUSR_06)

- Bits 0 to 5: Not used

- Bit 6: Scan sequence in Book transmission, 0: Left page then right page, 1: Right page then left page
- Bit 7: Not used

**6800D7(H) -** User parameter switch 07 (SWUSR_07)

- Bits 0 and 1: Not used
- Bit 2: Parallel memory transmission, 0: Off, 1: On
- Bits 3 to 7: Not used

**6800D8(H) -** User parameter switch 08 (SWUSR_08)

- Bits 0 and 1: Not used
- Bit 2: Authorized reception

  0: Only faxes from senders whose RTIs/CSIs are specified for this feature are accepted.

  1: Only faxes from senders whose RTIs/CSIs are not specified for this feature are accepted.
- Bits 3 to 7: Not used

**6800D9(H) -** User parameter switch 09 (SWUSR_09): Not used

**6800DA(H) -** User parameter switch 10 (SWUSR_0A)

- Bit 0: Not used
- Bit 1: 2 into 1, 0: Off, 1: On
- Bit 2: Not used
- Bit 3: Page reduction, 0: Off, 1: On
- Bit 4: Not used
- Bit 5: Reception file printout, 0: Disabled, 1: Enabled
- Bit 6: Use both e-mail notification and printed reports to confirm the transmission results, 0: Off, 1: On
- Bit 7: Not used

**6800DB(H) -** User parameter switch 11 (SWUSR_0B)

- Bit 0: Not used
- Bit 1: Not used
- Bits 2 to 5: Not used
- Bit 6: Printout of messages received while acting as a forwarding station, 0: Off, 1: On
- Bit 7: Polling Standby duration, 0: Once, 1: No limit

**6800DC(H) -** User parameter switch 12 (SWUSR_0C): Not used

**6800DD(H) -** User parameter switch 13 (SWUSR_0D): Not used

**6800DE(H) -** User parameter switch 14 (SWUSR_0E)

- Bit 0: Message printout while the machine is in Night Printing mode, 0: On, 1: Off

- Bit 1: Maximum document length detection
  0: Double letter, 1: Longer than double-letter (well log) – up to 1,200 mm
- Bit 2: Batch transmission, 0: Off, 1: On
- Bit 3: Fax mode settings, such as resolution, before a mode key (Copy, Fax, Printer, or Scanner) is pressed, 0: Not cleared, 1: Cleared
- Bits 4 to 6: Not used
- Bit 7: Manual service call (sends the system parameter list to the service station), 0: Off, 1: On

**6800DF(H) -** User parameter switch 15 (SWUSR_0F)

Note

- This switch is not printed on the user parameter list.

Bits 0, 1 and 2: Cassette for fax printout

| Bit 2 | Bit 1 | Bit 0 | Setting |
|---|---|---|---|
| 0 | 0 | 1 | 1st paper feed station |
| 0 | 1 | 0 | 2nd paper feed station |
| 0 | 1 | 1 | 3rd paper feed station |
| 1 | 0 | 0 | 4th paper feed station |
| 1 | 0 | 1 | LCT |

Other settings: Not used

- Bits 3 and 4: Not used
- Bit 5: Using the cassette specified by bits 0, 1 and 2 above only, 0: On, 1: Off
- Bits 6 and 7: Not used

**6800E0(H) –** User parameter switch 16 (SWUSR_10)

Note

- This switch is not printed on the user parameter list.

- Bits 0 and 1: Not used
- Bit 2: Paper size selection priority for an A4 size fax message when A4/LT size paper is not available, 0: A3 has priority, 1: B4 has priority
- Bits 3 to 7: Not used

**6800E1(H) –** User parameter switch 17 (SWUSR_11)

- Bit 0: IFAX Group Destination Selection/Release Method

| | |
|---|---|
| 0 | Priority Select Mode |
| | Select the priority destination according to input mode. The Group button reflects either email or fax input mode. Released as soon as the entry mode is selected, regardless of the current entry mode. |
| 1 | All Select Mode |
| | Acquires all registered members regardless of entry mode. If both email and fax are registered, both are selected. The Group button reflects either email or fax input mode. All registered members are released, regardless of the entry mode. If both email/fax are registered, both are released. |

- Bit 1: Not used
- Bit 2: Inclusion of the “Add” button when a sequence of Quick/Speed dials is selected for broadcasting, 0:Not needed, 1: Needed
- Bits 3 to 6: Not used
- Bit 7: Press “Start” key without an original when using the on hook dial or the external telephone
  0: Displays “Cannot detect original size”
  1: Receives fax messages.

**6800E2(H) -** User parameter switch 18 (SWUSR_12)

- Bit 0: TTI date, 0: Off, 1: On
- Bit 1: TTI sender, 0: Off, 1: On
- Bit 2: TTI file number, 0: Off, 1: On
- Bit 3: TTI page number, 0: Off, 1: On
- Bit 4 to 7: Not used

**6800E3(H) -** User parameter switch 19 (SWUSR_13)

- Bit 0: Offset sort function for the fax (only using the shift tray on the 1,000 sheet finisher), 0: Disabled, 1: Enabled
- Bit 1: Journal format
  0: The Journal is separated into transmissions and receptions
  1: The Journal is separated into G3-1, G3-2, and G3-3 communications
- Bit 2: Action when the paper cassette that was selected by the specified cassette selection feature becomes empty.
  (This switch is not printed on the user parameter list.)

0: The machine will not print any received files until paper is added.

1: The machine will use other cassettes to print received files that are not specified by this feature.

- Bit 3: 90° image rotation during B5 portrait Tx, 0: Off, 1: On
  (This switch is not printed on the user parameter list.)
- Bit 4: Reduction of sample images on reports to 50% in the main scan and sub-scan directions. (This switch is not printed on the user parameter list.)
  0: Technician adjustment (printer switch 0E bits 3 and 4)
  1: 50% reduction
- Bit 5: Use of A5 size paper for reports (This switch is not printed on the user parameter list.)
  0: Off, 1: On
- Bits 6 and 7: Not used

**6800E4(H) -** User parameter switch 20 (SWUSR_14)

- Bit 0: Automatic printing of the LAN fax result report, 0: Off, 1: On
- Bit 1: Not used
- Bits 2 to 5: Store documents in memory which could not be printed from PC fax (LAN fax) driver

| Bit 5 | Bit 4 | Bit 3 | Bit 2 | Setting (minutes) |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| . . . and so on, until . . . | | | | |
| 1 | 1 | 1 | 0 | 14 |
| 1 | 1 | 1 | 1 | 15 |

- Bits 6 and 7: Not used.

**6800E5(H) -** User parameter switch 21 (SWUSR_15)

- Bit 0: Print results of sending reception notice request message, 0: Disabled (print only when error occurs), 1: Enabled
- Bit 1: Respond to e-mail reception acknowledgment request, 0: Disabled, 1: Enabled
- Bit 2: Not used
- Bit 3: File format for forwarded folders, 0: TIFF, 1:PDF

- Bit 4: Transmit Journal by E-mail, 0: Disabled, 1: Enabled
- Bit 5: Not used
- Bit 6: Network error display, 0: Displayed, 1: Not displayed
- Bit 7: Transmit error mail notification, 0: Enabled, 1: Disabled

**6800E6(H) -** User parameter switch 22 (SWUSR_16)

Note

- This switch is not printed on the user parameter list.

- Bit 0: Dial tone detection (PSTN 1), 0: Disabled, 1: Enabled
- Bit 1: Dial tone detection (PSTN 2), 0: Disabled, 1: Enabled
- Bit 2: Dial tone detection (PSTN 3), 0: Disabled, 1: Enabled
- Bits 3 to 7: Not used

**6800E7(H) -** User parameter switch 23 (SWUSR_17) : Not used

**6800E8(H) -** User parameter switch 24 (SWUSR_18)

- Bits 0 and 1: File retention time (Cross reference: System switch 02 bit 4)

| Bit 1 | Bit 0 | Setting |
|---|---|---|
| 0 | 0 | File retention impossible |
| 0 | 1 | 24 hours |
| 1 | 0 | File retention impossible |
| 1 | 1 | 72 hours |

- Bits 2 to 7: Not used

**6800E9(H) -** User parameter switch 25 (SWUSR_19)

- Bit 0 and 1: Not used
- Bit 2: Not used
- Bit 3: Not used
- Bit 4: RDS operation

  0: Not acceptable

  1: Acceptable for the limit specified by system switch 03

  Note

  - This bit is only effective when RDS operation can be selected by the user (see system switch 02).
- Bits 5 to 7: Not used

**6800EA(H) to 6800EF(H) -** User parameter switches 26 to 31 (SWUSR_1A to 1F): Not

**Service RAM Addresses**

used

**6800F0(H) -** User parameter switch 32 (SWUSR_20)

- Bit 0: Quotation priority for a destination when there is no destination of the specified type

  0: Paper output priority

  Priority order

  1. IP-fax destination, 2. Fax Number, 3. E-mail address, 4. Folder

  1: Electric output order

  Priority order

  1. E-mail address, 2. Folder, 3. IP-fax destination, 4. Fax number
- Bits 1 to 7: Not used

**6800F1(H) -** User parameter switch 33 (SWUSR_21): Not used

**6800F2(H) -** User parameter switch 34 (SWUSR_22)

- Bit 0: Gatekeeper server used with IP-Fax, 0: Disabled, 1: Enabled
- Bit 1: SIP server used with IP-Fax, 0: Disabled, 1: Enabled

**680100 to 68010F(H) -** G4 Parameter Switches – Not used

**680110 to 68012F(H) -** G4 Internal Switches – Not used

**680170 to 68017F(H) -** IFAX Switches

**680180 to 68018F(H) -** IP-FAX Switches

**680190 to 6801AF(H) -** Service station's fax number (SP3-101)

**6801B0 to 6801B9(H) -** Own fax PABX extension number

**6801BA to 6801C3(H) -** Own fax number (PSTN)

**6801C4 to 6801D7(H) -** Own fax number (ISDN G4) – Not used

**6801D8 to 6801E3(H) -** The first subscriber number (ISDN G3) – Not used

**6801E4 to 6801EF(H) -** The second subscriber number (ISDN G3) – Not used

**6801F0 to 6801FB(H) -** The first subscriber number (ISDN G4) – Not used

**6801FC to 680207(H) -** The second subscriber number (ISDN G4) – Not used

**680208 to 68021B(H) -** PSTN-1 RTI (Max. 20 characters - ASCII) - See the following note.

**68021C to 68022F(H) -** PSTN-2 RTI (Max. 20 characters - ASCII) - See the following note.

**680230 to 680246(H) -** PSTN-3 RTI (Max. 20 characters - ASCII) - See the following note.

**680247 to 680286(H) -** TTI 1 (Max. 64 characters - ASCII) - See the following note.

**680287 to 6802C6(H) -** TTI 2 (Max. 64 characters - ASCII) - See the following note.

**6802C7 to 680306(H) -** TTI 3 (Max. 64 characters - ASCII) - See the following note.

**680307 to 68031A(H) -** PSTN-1 CSI (Max. 20 characters - ASCII)

**68031B to 68032E(H) -** PSTN-2 CSI (Max.20 characters - ASCII)

**68032F to 680342(H) -** PSTN-3 CSI (Max.20 characters - ASCII)

**680343(H) -** Number of PSTN-1 CSI characters (Hex)

**680344(H) -** Number of PSTN-2 CSI characters (Hex)

**680345(H) -** Number of PSTN-3 CSI characters (Hex)-

- If the number of characters is less than the maximum (20 for RTI, 64 for TTI), add a stop code (00[H]) after the last character.

**680380 to 680387(H) -** Last power off time (Read only)

- 680380(H) - 01(H) - 24-hour clock, 00(H) - 12-hour clock (AM), 02(H) - 12-hour clock (PM)
- 680381(H) - Year (BCD)
- 680382(H) - Month (BCD)
- 680383(H) - Day (BCD)
- 680384(H) - Hour
- 680385(H) - Minute
- 680386(H) - Second
- 680387(H) - 00: Monday, 01: Tuesday, 02: Wednesday, . . . and so on until . . ., 06: Sunday

**680394(H) -** Optional equipment (Read only – Do not change the settings)

- Bit 0: Page Memory, 0: Not installed, 1: Installed
- Bit 1: SAF Memory, 0: Not installed, 1: Installed
- Bits 2 to 7: Not used

**680395(H) -** Optional equipment (Read only – Do not change the settings)

- Bits 0 to 3: Not used
- Bit 4: G3-2, 0: Not installed, 1: Installed
- Bit 5: G3-3, 0: Not installed, 1: Installed
- Bit 6 and 7: Not used

**680406 to 68040A -** Option G3 board (G3-2) ROM information (Read only)

- 680406(H) - Suffix (BCD)
- 680407(H) - Version (BCD)
- 680408(H) - Year (BCD)
- 680409(H) - Month (BCD)
- 68040A(H) - Day (BCD)

**68040B to 68040F -** Option G3 board (G3-3) ROM information (Read only)

- 68040B(H) - Suffix (BCD)
- 68040C(H) - Version (BCD)
- 68040D(H) - Year (BCD)
- 68040E(H) - Month (BCD)

**Service RAM Addresses**

- 68040F(H) - Day (BCD)

**680410(H) -** G3-1 Modem ROM version (Read only)

**680412(H) -** G3-2 Modem ROM version (Read only)

**680414(H) -** G3-3 Modem ROM version (Read only)

**680420(H) -** Number of multiple sets print (Read only)

**680476(H) -** Time for economy transmission (hour in 24h clock format - BCD)

**680477(H) -** Time for economy transmission (minute - BCD)

**680492(H) -** Transmission monitor volume, 00 - 07(H)

**680493(H) -** Reception monitor volume, 00 - 07(H)

**680494(H) -** On-hook monitor volume, 00 - 07(H)

**680495(H) -** Dialing monitor volume, 00 - 07(H)

**680496(H) -** Buzzer volume, 00 - 07(H)

**680497(H) -** Beeper volume, 00 - 07(H)

**69ED04 to 69F003(H) -** SIP server address (Read only)

- 69ED04(H) - Proxy server - Main (Max. 128 characters - ASCII)
- 69ED84(H) - Proxy server - Sub (Max. 128 characters - ASCII)
- 69EE04(H) - Redirect server - Main (Max. 128 characters - ASCII)
- 69EE84(H) - Redirect server - Sub (Max. 128 characters - ASCII)
- 69EF04(H) - Registrar server - Main (Max. 128 characters - ASCII)
- 69EF84(H) - Registrar server - Sub (Max. 128 characters - ASCII)

**69F004(H) -** Gatekeeper server address - Main (Max. 128 characters - ASCII)

**69F084(H) -** Gatekeeper server address - Sub (Max. 128 characters - ASCII)

**69F104(H) -** Alias Number (Max. 128 characters - ASCII)

**69F184(H) -** SIP user name (Max. 128 characters - ASCII)

**69F204(H) -** Gateway address information (Max. 128 characters - ASCII)

**6A0DC0(H) -** Stand-by port number for H.232 connection

**6A0DC2(H) -** Stand-by port number for SIP connection

**6A0DC4(H) -** RAS port number

**6A0DC6(H) -** Gatekeeper port number

**6A0DC8(H) -** Port number of data waiting for T.38

**6A0DCA(H) -** Port number of SIP server

**6A0DCC(H) -** Priority for SIP and H.323, 0: H.323, 1: SIP

**6A0DCD(H) -** SIP function, 0: Disabled, 1: Enabled

**6A0DCE(H) -** H.323 function, 0: Disabled, 1: Enabled

**6BEBFE(H) -** Dial tone detection frequency – Upper limit (High)

Defaults: NA: 06, EU: 06, ASIA: 06

**6BEBFF(H) -** Dial tone detection frequency – Upper Limit (Low)

Defaults: NA: 50, EU: 50, ASIA: 50

**6BEC00(H) -** Dial tone detection frequency – Lower Limit (High)

Defaults: NA: 03, EU: 02, ASIA: 02

**6BEC01(H) -** Dial tone detection frequency – Lower Limit (Low)

Defaults: NA: 60, EU: 90, ASIA: 90

**6BEC02(H) -** Dial tone detection waiting time (20 ms)

Defaults: NA: 64, EU 64, ASIA: 64

**6BEC03 to 6BEC04 -** Dial tone detection monitoring time (20 ms)

Defaults

| Area | 6BEC03 | 6BEC04 |
|---|---|---|
| NA | F4 | 01 |
| EU | F4 | 01 |
| ASIA | F4 | 01 |

**6BEC05(H) -** Dial tone detect judge time (20 ms)

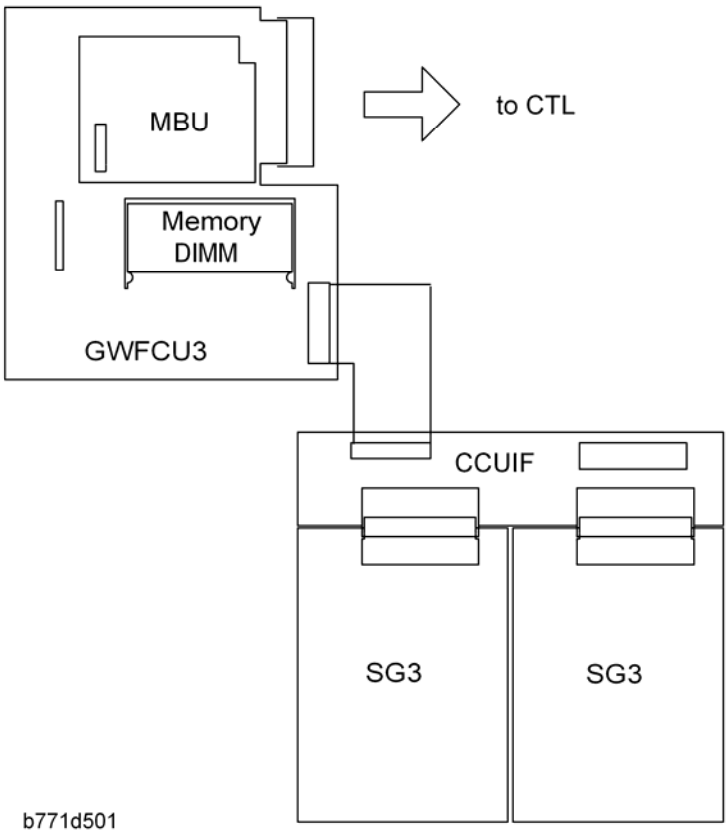
Defaults: NA: 64, EU: 1B, ASIA: 32

**6BEC06(H) -** Dial tone disconnect permission time (20 ms)

Defaults: NA: 11, EU: 0F, ASIA: 11

# 5. DETAILED SECTION DESCRIPTIONS

## 5.1 OVERVIEW




The basic fax unit consists of two PCBs: an FCU and an MBU.

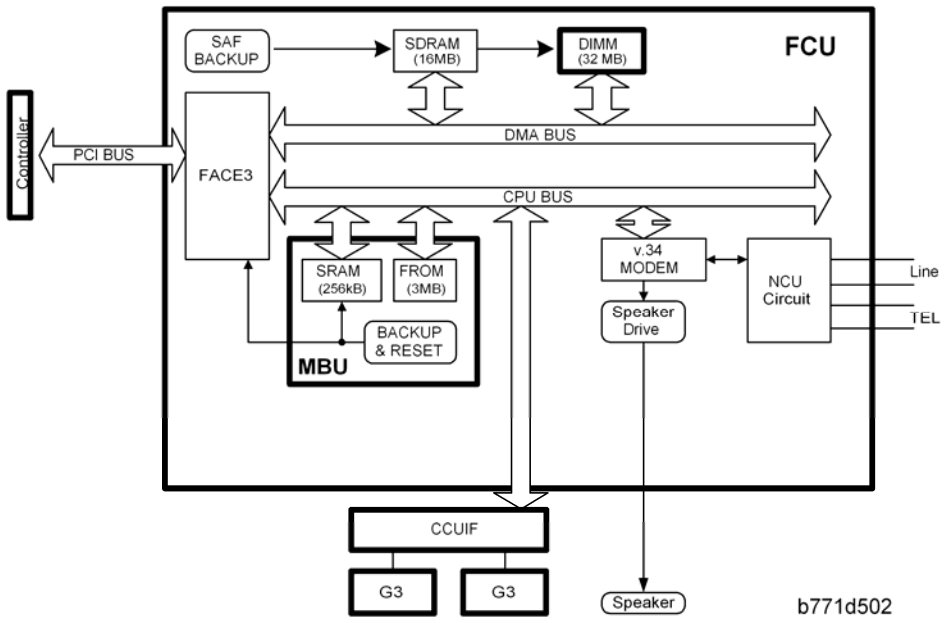
The FCU controls all the fax communications and fax features, in cooperation with the controller board. The MBU contains the ROM and SRAM. Also, the FCU has an NCU circuit.

Fax Options:

- Extra G3 Interface option: This provides one more analog line interface. This allows full dual access. Two extra G3 interface options can be installed.
- Memory Expansion: This expands the SAF memory and the page memory (used for image rotation); without this expansion, the page memory is not big enough for image rotation at 400 dpi, so transmission at 400 dpi is not possible.

# 5.2 BOARDS

## 5.2.1 FCU




The FCU (Facsimile Control Unit) controls fax communications, the video interface to the base copier's engine, and all the fax options.

**FACE3 (Fax Application Control Engine)**

- CPU
- Data compression and reconstruction (DCR)
- DMA control
- Clock generation
- DRAM backup control

**Modem (FAME)**

- V.34, V33, V17, V.29, V.27ter, V.21, and V.8

**DRAM**

- The 16 MB of DRAM is shared as follows.
  - SAF memory: 4MB
  - Working memory: 4MB
  - Page memory: 8MB
  - The SAF memory is backed up by a rechargeable battery.

**Memory Back-up**

- A rechargeable battery backs up the SAF memory (DRAM) for 1 hour.

## 5.2.2 MBU

On this board, the flash ROM contains the FCU firmware, and the SRAM contains the system data and user parameters. Even if the FCU is changed, the system data and user parameters are kept on the MBU board.

**ROM**

- 3MB flash ROMs for system software storage
- 2MB (16bit x 1MB) + 1MB (16bit x 512K)

**SRAM**

- The 256 KB SRAM for system and user parameter storage is backed up by a lithium battery.

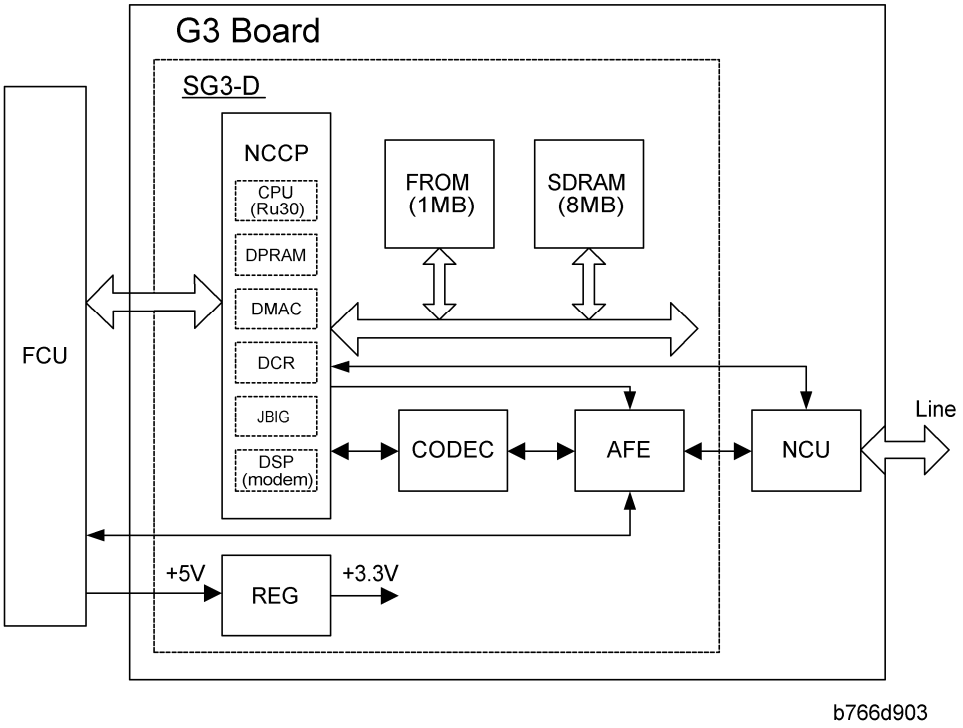
**Memory Back-up**

- A lithium battery backs up the system parameters and programmed items in the SRAM, in case the base copier's main switch is turned off.

**Switches**

| Item | Description |
|---|---|
| SW1 | Switches the SRAM backup battery on/off. |

## 5.2.3 SG3 BOARD



The SG3 board allows up to three simultaneous communications when used in combination with the FCU and optional G3 boards. The NCU is on the same board as the common SG-3 board. This makes the total board structure smaller. But, the specifications of the SG3 board do not change.

**NCCP (New Communication Control Processor)**

- Controls the SG3 board.
- CPU (RU30)
- DPRAM (Dual Port RAM): Handshaking with the FCU is done through this block.
- DMA controller
- JBIG
- DSP V34 modem (RL5T892): Includes the DTMF Receiver function
- DCR for MH, MR, MMR, and JBIG compression and decompression

**FROM**

- 1Mbyte flash ROM for SG3 software storage and modem software storage

**SDRAM**

- 4Mbyte DRAM shared between ECM buffer, line buffer, and working memory

**AFE (Analog Front End)**

- Analog processing

**CODEC (COder-DECoder)**

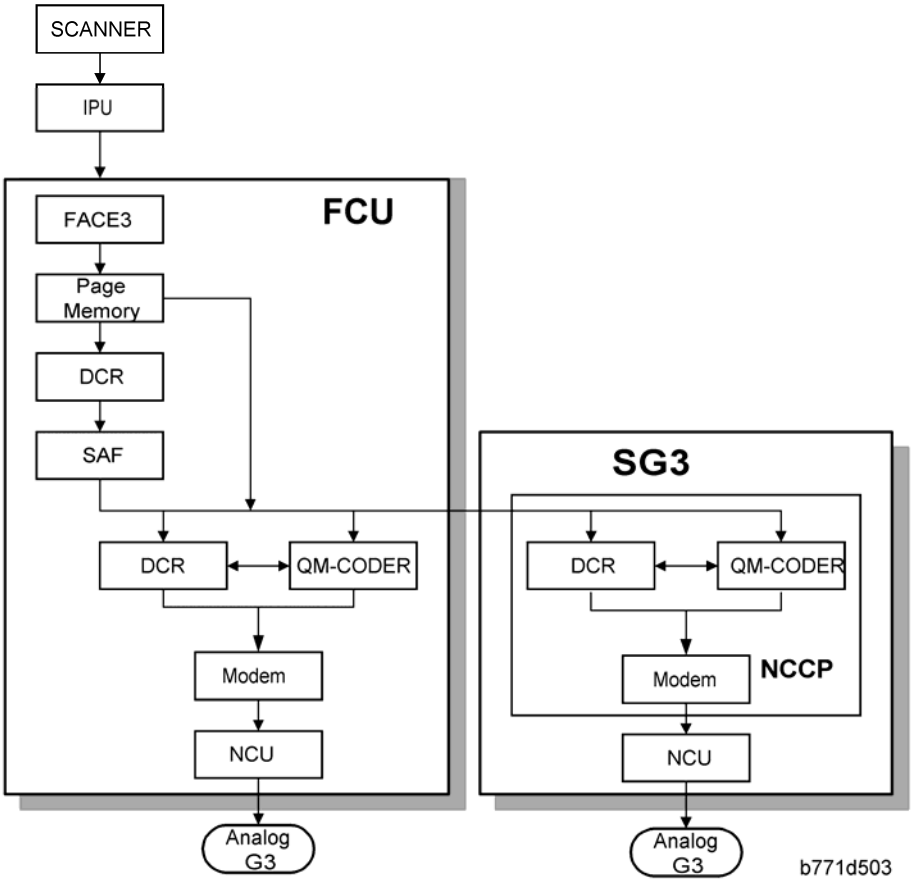
- A/D & D/A conversions for modem

**REG**

- Generates +3.3 V from the +5V from the FCU

# 5.3 VIDEO DATA PATH

## 5.3.1 TRANSMISSION




### *Memory Transmission and Parallel Memory Transmission*

The base copier's scanner scans the original at the selected resolution in inch format. The IPU processes the data and transfers it to the FCU.

Note

- When scanning a fax original, the IPU uses the MTF, independent dot erase and thresholding parameter settings programmed in the fax unit's scanner bit switches, not the copier's SP modes.

Then, the FCU converts the data to mm format, and compresses the data in MMR or raw format to store it in the SAF memory. If image rotation will be done, the image is rotated in page memory before compression.

At the time of transmission, the FCU decompresses the stored data, then re-compresses and/or reduces the data if necessary for transmission. The NCU transmits the data to the line.

### *Immediate Transmission*

The base copier's scanner scans the original at the resolution agreed with the receiving terminal. The IPU video processes the data and transfers it to the FCU.

Note

- When scanning a fax original, the IPU uses the MTF, independent dot erase and thresholding parameter settings programmed in the fax unit's scanner bit switches, not the copier's SP modes.

Then the FCU stores the data in page memory, and compresses the data for transmission. The NCU transmits the data to the line.

### *JBIG Transmission*

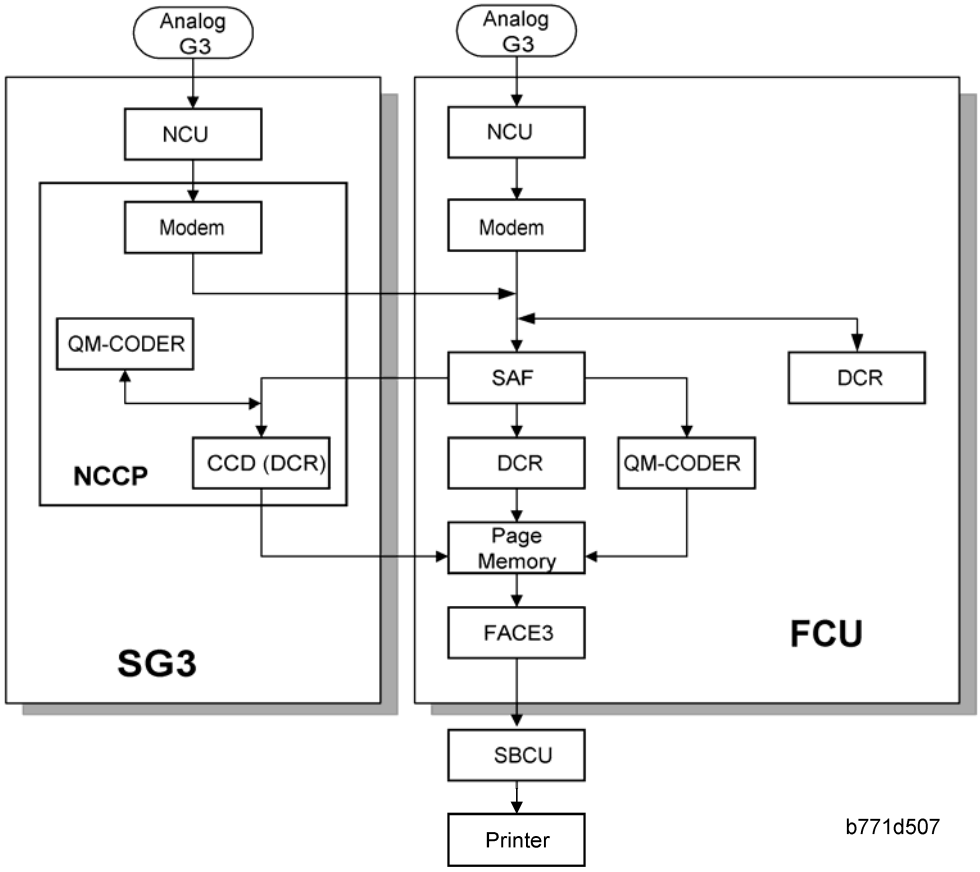
**Memory transmission:** If the receiver has JBIG compression, the data goes from the DCR to the QM-Coder. Then the NCU transmits the data to the line. When an optional G3 unit (SG3) is installed and PSTN2 is selected as the line type, JBIG compression is available, but only for the PSTN-2 line.

**Immediate transmission:** If the receiver has JBIG compression, the data goes from the page memory to the QM-Coder. Then the NCU transmits the data to the line. When an optional G3 unit (SG3) is installed and PSTN2 is selected as the line type, JBIG compression is available, but only for the PSTN-2 line.

### *Adjustments*

- Priority for the line used for G3 transmissions (PSTN 1/PSTN 2 or 3): System switch 16 bit 1

## 5.3.2 RECEPTION




First, the FCU stores the incoming data from either an analog line to the SAF memory. (The data goes to the FACE3 at the same time, and is checked for error lines/frames.)
The FCU then decompresses the data and transfers it to page memory. If image rotation will be done, the image is rotated in the page memory. The data is transferred to the IPU.
If the optional G3 unit is installed, the line that the message comes in on depends on the telephone number dialled by the other party (the optional G3 unit has a different telephone number from the main fax board).

**JBIG Reception**

When data compressed with JBIG comes in on PSTN-1 (the standard analog line), the data is sent to the QM-CODER for decompression. Then the data is stored in the page memory, and transferred to the IPU.
When data compressed with JBIG comes in on PSTN-2 (optional extra analog line), the data is sent to the QM-CODER on the SG3 board for decompression.

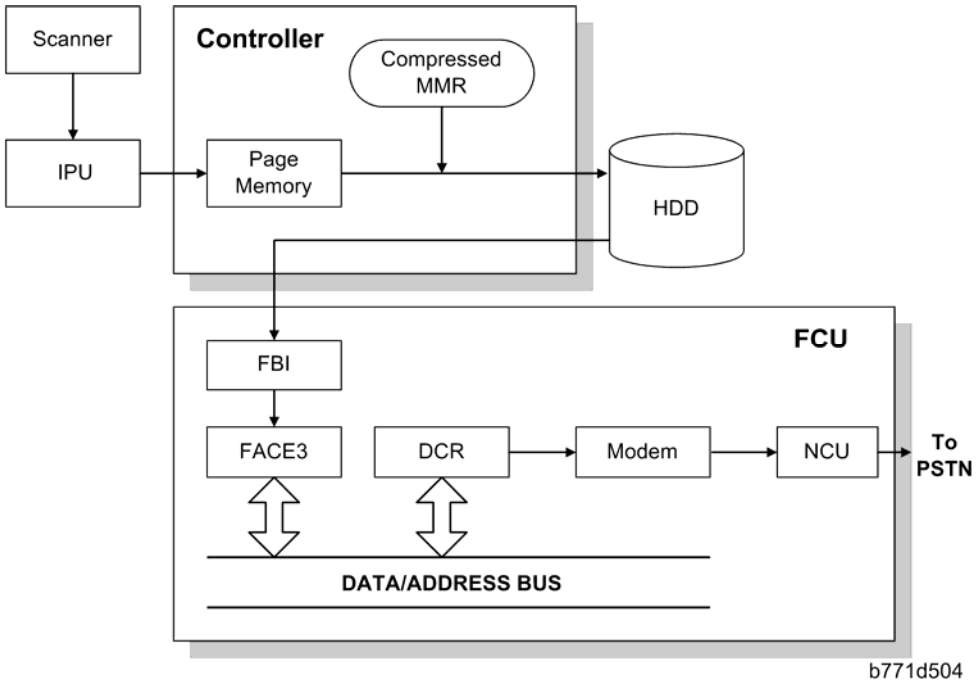
# 5.4 FAX COMMUNICATION FEATURES

## 5.4.1 MULTI-PORT

When the optional extra G3 Interface Unit is installed, communication can take place at the same time through the two or three lines at once.

| Option | Available Line Type | Available protocol Combinations |
|---|---|---|
| Standard only | PSTN | G3 |
| Extra G3 Interface Unit (single) | PSTN + PSTN | G3 + G3 |
| Extra G3 Interface Unit (double) | PSTN + PSTN +PSTN | G3 + G3 +G3 |

## 5.4.2 DOCUMENT SERVER




The base copier's scanner scans the original at the selected resolution. The IPU video processes the data and transfers it to the controller board.

Then the controller stores the data in the page memory for the copier function, and

compresses the data in MMR (by software) to store it in the HDD. If image rotation will be done, the image is rotated in the page memory before compression.

For transmission, the stored image data is transferred to the FCU. The FCU decompresses the image data, then recompresses and/or reduces the data if necessary for transmission. The NCU transmits the data to the line.

The documents can be stored in the HDD (Document Server) from the fax application. The stored documents in the document sever can be used for the fax transmission in many times. More than one document and the scanned document can be combined into one file and then the file can be transmitted.

- When using the document server, the SAF memory is not used.
- The document is compressed with MMR and stored.
- Up to 9,000 pages can be stored (1 file: Up to 1,000 pages) from the fax application.
- Only stored documents from the fax application can be transmitted.
- Scanned documents are given a name automatically, such as “FAX001”. But it is possible to change the file name, user name and password.
- Up to 30 files can be selected at once.

Note

- The compression method of the fax application is different from the copy application. The storing time is longer than the copier storing.
- When selecting “Print 1st page”, the stored document will be reduced to A4 size.

## 5.4.3 INTERNET MAIL COMMUNICATION

### *Mail Transmission*

**T.37 simple and full modes**

This machine supports T.37 full mode. (ITU-RFC232). The difference between T.37 simple mode and full mode is as follows.

| Function | T.37 Simple Mode | T.37 Full Mode |
|---|---|---|
| Resolution | 200 x 100<br>200 x 200 | 200 x100<br>200 x 200<br>200 x 400<br>400 x 400 (if available) |
| RX Paper Width | A4 | A4, B4, A3 |
| RX Data Compression Method | MH | MH (default), MR, MMR, |

| Function | T.37 Simple Mode | T.37 Full Mode |
|---|---|---|
| Signals | Image data transmission only | Image data transmission, exchange of capability information between the two terminals, and acknowledgement of receipt of fax messages |

**Data Formats**

The scanned data is converted into a TIFF-F formatted file.

The fields of the e-mail and their contents are as follows:

| Field | Content |
|---|---|
| From | Mail address of the sender |
| Reply To | Destination requested for reply |
| To | Mail address of the destination |
| Bcc | Backup mail address |
| Subject | From CSI or RTI (Fax Message No. xxxx) |
| Content Type | Multipart/mixed<br>Attached files: image/tiff |
| Content Transfer Encoding | Base 64, 7-bit, 8-bit, Quoted Printable |
| Message Body | MIME-converted TIFF-F (MIME standards specify how files are attached to e-mail messages) |

**Direct SMTP Transmission**

Internet Fax documents can be sent directly to their destinations without going through the SMTP server. (Internet Faxes normally transmit via the SMTP server.)

For example:

| | |
|---|---|
| **e-mail address**: | gts@ricoh.co.jp |
| **SMTP server address**: | gts.abcd.com |

In this case, this feature destination e-mail address (gts@ricoh.co.jp) is read as the SMTP server address "gts.abcd.com", and the transmissions bypass the SMTP server.

**Selectable Options**

These options are available for selection:

- With the default settings, the scan resolution can be either standard or detail. Inch-mm conversion before TX depends on IFAX SW01 Bit 7. Detail resolution will be used if Super Fine resolution is selected, unless Fine resolution is enabled with IFAX SW01.
- The requirements for originals (document size, scan width, and memory capacity) are the same as for G3 fax memory TX.
- The default compression is TIFF-F format.
- IFAX SW00: Acceptable paper widths for sending
- IFAX SW09: Maximum number of attempts to the same destination

**Secure Internet Transmission**

SMTP Authentication:

- User Tools> System Settings> File Transfer> SMTP Authentication

POP Before SMTP:

- User Tools> System Settings> File Transfer> POP Before SMTP

## *Mail Reception*

**Three Types**

This machine supports three types of e-mail reception:

- POP3 (Post Office Protocol Ver. 3.)
- IMAP4 (Internet Messaging Access Protocol)
- SMTP (Simple Mail Transfer Protocol)

Note

- For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – Mail Reception

**POP3/IMAP4 Mail Reception Procedure**

The machine automatically picks up e-mail from the server at an interval which is adjustable in the range 2 to 1440 min. in 1-minute steps:

- User Tools> System Settings> File Transfer> E-mail Reception Interval

**SMTP Reception**

1. The IFAX must be registered as an SMTP server in the MX record of the DNS server, and the address of the received mail must specify the IFAX.
2. To enable SMTP reception: User Tools> System Settings> File Transfer> Reception Protocol

- Even if the MX record on the DNS server includes the IFAX, mail cannot be received with SMTP until SMTP reception is enabled:
- However, if SMTP reception is selected and the machine is not registered in the MX record of the DNS server, then either IMAP4 or POP3 is used, depending on the setting: User Tools> System Settings> File Transfer> Reception Protocol

**Mail Delivery Conditions: Transferring Mail Received With SMTP**

1. The machine must be set up for SMTP mail delivery:
   - User Tools> Facsimile Features> E-mail Settings> SMTP RX File Delivery Settings
2. If the user wishes to limit this feature so that the machine will only deliver mail from designated senders, the machine's "Auth. E-mail RX" feature must be set (User Tools> Facsimile Features> E-mail Settings> SMTP RX File Delivery Settings).
3. If the "SMTP RX File Delivery Setting" is set to 0 to prohibit SMTP receiving, and if there is mail designated for delivery, then the machine responds with an error. (User Tools> Facsimile Features> E-mail Settings> SMTP RX File Delivery Settings)
4. If the quick dial, speed dial, or group dial entry is incorrect, the mail transmission is lost, and the IFAX issues an error to the SMTP server and outputs an error report.

**Auth. E-mail RX**

In order to limit access to mail delivery with IFAX, the addresses of senders must be limited using the Access Limit Entry. Only one entry can be registered.

1. Access Limit Entry
   For example, to limit access to @IFAX.ricoh.co.jp:

| | |
|---|---|
| gts@IFAX.ricoh.co.jp | Matches and is delivered. |
| gts@IFAX.abcde.co.jp | Does not match and is not delivered. |
| IFAX@ricoh.co.jp | Does not match and is not delivered. |

2. Conditions
   - The length of the Access Limit Entry is limited to 127 characters.
   - If the Access Limit Entry address and the mail address of the incoming mail do not match, the incoming mail is discarded and not delivered, and the SMTP server responds with an error. However, in this case an error report is not output.
   - If the Access Limit Entry address is not registered, and if the incoming mail specifies a delivery destination, then the mail is delivered unconditionally.

## *Handling Mail Reception Errors*

**Abnormal files**

When an error of this type occurs, the machine stops receiving and commands the server to erase the message. Then the machine prints an error report and sends information about the error by e-mail to the sender address (specified in the “From” or “Reply-to” field of the message). If there is an incomplete received message in the machine memory, it will be erased.

The machine prints an error message when it fails to send the receive error notification after a certain number of attempts.

The following types of files are judged to be abnormal if one or more of the following are detected:

1. Unsupported MIME headers.

   Supported types of MIME header

| Header | Supported Types |
|---|---|
| Content-Type | Multipart/mixed, text/plain, message/rfc822 Image/tiff |
| Charset | US-ASCII, ISO 8859 X. Other types cannot be handled, and some garbage may appear in the data. |
| Content-Transfer-Encoding | Base 64, 7-bit, 8-bit, Quoted Printable |

2. MIME decoding errors
3. File format not recognized as TIFF-F format
4. Resolution, document size, or compression type cannot be accepted

**Remaining SAF capacity error**

The machine calls the server but does not receive e-mail if the remaining SAF capacity is less than a certain value (the value depends on IFAX Switch 08. The e-mail will be received when the SAF capacity increases (for example, after substitute reception files have been printed). The error handling method for this type of error is the same as for “Abnormal files”. If the capacity of the SAF memory drops to zero during reception, the machine operates in the same way as when receiving an abnormal file (refer to “Abnormal files” above).

## *Secure Internet Reception*

To enable password encryption and higher level security: User Tools> System Settings> File Transfer> POP3/IMAP4 Settings> Encryption (set to “On”)

### *Transfer Request: Request By Mail*

For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – Transfer Request

The fields of the e-mail and their contents are as follows:

| Field | Content |
|---|---|
| From | E-mail address of the requesting terminal |
| To | Destination address (Transfer Station address) |
| Bcc | Backup mail address |
| Subject | From TSI (Fax Message No. xxxx) |
| Content-Type | Multipart/mixed<br>Text/Plain (for a text part), image/tiff (for attached files) |
| Content-Transfer-Encoding | Base 64, 7-Bit, 8-bit, Quoted Printable |
| Mail body (text part) | RELAY-ID-: xxxx (xxxx: 4 digits for an ID code)<br>RELAY: #01#*X#**01…. |
| Message body | MIME-converted TIFF-F. |

### *E-Mail Options (Sub TX Mode)*

The following features are available as options for mail sending: entering a subject, designating the level of importance, confirming reception of the mail.

**Subject and Level of Importance**

You can enter a subject message with: Sub TX Mode> E-mail Options

The Subject entry for the mail being sent is limited to 64 characters. The subject can also be prefixed with an “Urgent” or “High” notation.

- How the Subject Differs According to Mail Type -

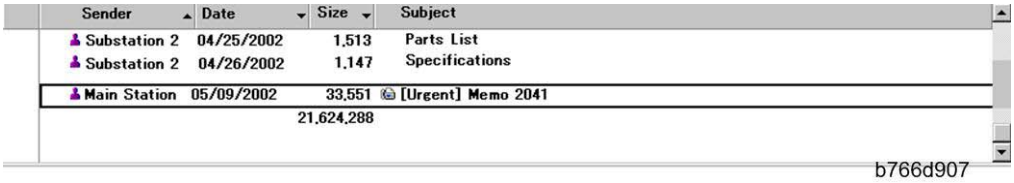
| Mail Type | Item 1 | Item 2 | Item 3 |
|---|---|---|---|
| Subject Entry | --- | Entry Condition | Fax Message No.<br>+ |

**Fax Communication Features**

<table>
<tr><th>Mail Type</th><th>Item 1</th><th colspan="2">Item 2</th><th>Item 3</th></tr>
<tr><td rowspan="4">No Subject Entry</td><td></td><td colspan="2">1. “CSI” (“RTI”)</td><td rowspan="4">File No.</td></tr>
<tr><td></td><td>2. “RTI”</td><td>CSI not registered</td></tr>
<tr><td></td><td>3. “CSI”</td><td>RTI not registered</td></tr>
<tr><td></td><td>4. None</td><td>CSI, RTI not registered</td></tr>
<tr><td rowspan="4">Confirmation of Reception</td><td rowspan="4">From</td><td colspan="2">1. “CSI” (“RTI”)</td><td rowspan="2">Normal:<br>Return Receipt (dispatched).<br>You can select “displayed” with IFAX SW02 Bits 2 and 3.</td></tr>
<tr><td>2. “RTI”</td><td>CSI not registered</td></tr>
<tr><td>3. “CSI”</td><td>RTI not registered</td><td rowspan="2">Error:<br>Return Receipt (processed/error)</td></tr>
<tr><td>4. None</td><td>CSI, RTI not registered</td></tr>
<tr><td rowspan="4">Mail delivery, memory transfer, SMTP receiving and delivery</td><td rowspan="4">From</td><td>RTI or CSI of the station designated for delivery</td><td>Mail delivery</td><td rowspan="4">Fax Message No. + File Number</td></tr>
<tr><td>RTI or CSI of sender</td><td>Mail sending from G3 memory</td></tr>
<tr><td>Mail address of sender</td><td>Memory sending</td></tr>
<tr><td>Mail address of sender</td><td>SMTP receiving and delivery (Off Ramp Gateway)</td></tr>
<tr><td>Mail error notification</td><td>---</td><td colspan="3">Error Message No. xxxx From CSI (RTI)</td></tr>
</table>

Items 1, 2, and 3 in the table above are in the Subject.

- Subjects Displayed on the PC -




**E-mail Messages**

After entering the subject, you can enter a message with: Sub TX Mode> E-mail Options

An e-mail message (up to 5 lines) can be pre-registered with: User Tools> System Settings> File Transfer> Program/Change/Delete E-mail Message

- Limitations on Entries -

| Item | Maximum |
|---|---|
| Number of Lines | 5 lines |
| Line Length | 80 characters |
| Name Length | 20 characters |

**Message Disposition Notification (MDN)**

For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – E-mail Options

The network system administrator can confirm whether a sent mail has been received correctly or not. This confirmation is done in four steps.

1. Send request for confirmation of mail reception. To enable or disable this request (known as MDN): Sub TX Mode> E-mail Options
2. Mail reception (receive confirmation request)
3. Send confirmation of mail reception
4. Receive confirmation of mail reception

The other party's machine will not respond to the request unless the two conditions below are met:

- The other party's machine must be set up to respond to the confirmation request.
- The other party's machine must support MDN (Message Disposition Notification).

- Setting up the Receiving Party -

The receiving party will respond to the confirmation request if:

1. The "Disposition Notification To" field is in the received mail header (automatically inserted in the 4th line in the upper table on the previous page, if MDN is enabled), and

2. Sending the disposition notification must be enabled (User Parameter Setting SW21 (15 [H]) Bit 1 for this model). The content of the response is as follows:

| | |
|---|---|
| Normal reception: | “Return Receipt (dispatched)” in the Subject line |
| IFAX SW02 (Bit 2, 3) | “Return Receipt (displayed)” in the Subject line |
| Error: | “Return Receipt (processed/error)” in the Subject line |

**Handling Reports**

- Sending a Request for a Return Receipt by Mail -

After the mail sender transmits a request for a return receipt, the mail sender’s journal is annotated with two hyphens (--) in the Result column and a “Q” in the Mode column.

- Mail Receipt (Request for Receipt Confirmation) and Sending Mail Receipt Response -

After the mail receiver sends a response to the request for a return receipt, the mail receiver’s journal is annotated with two hyphens (--) in the Result column and an “A” in the Mode column.

- Receiving the Return Receipt Mail -

- After the mail sender receives a return receipt, the information in the mail sender’s journal about the receipt request is replaced, i.e. the journal is annotated with “OK” in the Result column.
- When the return receipt reports an error, the journal is annotated with an “E” in the Result column.
- The arrival of the return receipt is not recorded in the journal as a separate communication. Its arrival is only reported by the presence of “OK” or “E” in the Result column.
- If the mail address used by the sender specifies a mailing list (i.e., a Group destination; the machine sends the mail to more than one location. See “How to set up Mail Delivery”), the Result column of the Journal is updated every time a return receipt is received. For example, if the mailing list was to 5 destinations, the Result column indicates the result of the communication with the 5th destination only. The results of the communications to the first 4 destinations are not shown.

  Exceptions:

  If one of the communications had an error, the Result column will indicate E, even if subsequent communications were OK.

  If two of the communications had an error, the Journal will indicate the destination for the first error only.

- Report Sample -

| DATE | TIME | ADDRESS | MODE | TIME | PAGE |
|---|---|---|---|---|---|
| | | RESULT | | | |
| MAY. 5 | 10:15 | fuser_01@dom1g. ricoh. co. | Mail SM | 0'09" | 2 |
| | 10:16 | fuser_01@dom1g. ricoh. co. | Mail SMQ | 0'05" | 1 |
| | 10:17 | s_tadashi@dom1g. ricoh. co. | Mail SMQ | 0'09" | 2 |
| | 10:19 | m_masataka@dom1g. ricoh. co. | Mail SMA | 0'05" | 1 |
| | | OK | | | |

b771d506

# 5.5 IP-FAX

## 5.5.1 WHAT IS IP-FAX?

For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – IP-FAX

## 5.5.2 T.38 PACKET FORMAT

TCP is selected by default for this machine, but you can change this to UDP with IPFAX SW 00 Bit 1.

### *UDP Related Switches*

<table>
<tr><th colspan="7">IP-Fax Switch 01</th></tr>
<tr><th>No.</th><th colspan="5">Function</th><th>Comments</th></tr>
<tr><td rowspan="6">0-3</td><td colspan="5">Select IP FAX Delay Level</td><td rowspan="6">Raise the level by selecting a higher setting if too many transmission errors are occurring on the network.<br>If TCP/UDP is enabled on the network, raise this setting on the T.30 machine. Increasing the delay time allows the recovery of more lost packets.<br>If only UDP is enabled, increase the number of redundant packets.<br>Level 1~2: 3 Redundant packets<br>Level 3: 4 Redundant packets</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Bit 1</td><td>Bit 0</td><td>Level</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>2</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>3</td></tr>
</table>

## 5.5.3 SETTINGS

User parameter switch 34 (22[H]), bit 0

IP-Fax Gate Keeper usage, 0: No, 1: Yes

IP Fax Switches: Various IP-FAX settings (see the bit switch table)

# 6. SPECIFICATIONS

## 6.1 GENERAL SPECIFICATIONS

| | |
|---|---|
| Type: | Desktop type transceiver |
| Circuit: | PSTN (max. 3ch.)<br>PBX |
| Connection: | Direct couple |
| Original Size: | Book (Face down)<br>▪ Maximum Length: 432 mm [17 ins]<br>▪ Maximum Width: 297 mm [11.7 ins]<br>ARDF (Face up)<br>Single-sided document<br>▪ Length: 128 - 1200 mm [5.0 - 47.2 ins]<br>▪ Width: 105 - 297 mm [4.1 - 11.7 inch]<br>Double-sided document<br>▪ Length: 128 - 432 mm [5.0 - 17 inch]<br>▪ Width: 105 - 297 mm [4.1 - 11.7 inch] |
| Scanning Method: | Flat bed, with CCD |
| Resolution: | G3<br>▪ 8 x 3.85 lines/mm (Standard)<br>▪ 8 x 7.7 lines/mm (Detail)<br>▪ 8 x 15.4 line/mm (Fine) Note1<br>▪ 16 x15.4 line/mm (Super Fine) See Note.<br>▪ 200 x 100 dpi (Standard)<br>▪ 200 x 200 dpi (Detail)<br>▪ 400 x 400 dpi (Super Fine) Note - Optional Expansion Memory required. |
| Transmission Time: | G3: 3 s at 28800 bps; Measured with G3 ECM using memory for an ITU-T #1 test document (Slerexe letter) at standard |

**General Specifications**

| | |
|---|---|
| | resolution |
| Data Compression: | MH, MR, MMR<br>JBIG |
| Protocol: | Group 3 with ECM |
| Modulation: | V.34, V.33, V.17 (TCM), V.29 (QAM),<br>V.27ter (PHM), V.8, V.21 (FM) |
| Data Rate: | G3: 33600/31200/28800/26400/24000/21600/<br>19200/16800/14400/12000/9600/7200/4800/2400 bps<br>Automatic fallback |
| I/O Rate: | With ECM: 0 ms/line<br>Without ECM: 2.5, 5, 10, 20, or 40 ms/line |
| Memory Capacity: | ECM: 128 KB<br>SAF<br>▪ Standard: 4 MB<br>▪ With optional Expansion Memory: 28 MB (4 MB+ 24 MB)<br>Page Memory<br>▪ Standard: 4 MB (Print: 2 MB + Scanner: 2 MB)<br>▪ With optional Expansion Memory: 12 MB (4 MB + 8 MB) (Print 8 MB + Scanner: 4 MB) |

# 6.2 CAPABILITIES OF PROGRAMMABLE ITEMS

The following table shows how the capabilities of each programmable item will change after the optional Fax Function Upgrade Unit is installed.

| Item | Standard |
|---|---|
| Quick Dial | 2000 |
| Groups | 100 |
| Destination per Group | 500 |
| Destinations dialed from the ten-key pad overall | 500 |
| Programs | 100 |
| Auto Document | 6 |
| Communication records for Journal stored in the memory | 200 |
| Specific Senders | 30 |

The following table shows how the capabilities of the document memory will change after the optional Fax Function Upgrade Unit and the Expansion Memory are installed.

| | Without the Expansion Memory | With the Expansion Memory |
|---|---|---|
| Memory Transmission files | 400 | 400 |
| Maximum number of pages for memory transmission | 1000 | 1000 |
| Memory capacity for memory transmission (see the Note below) | 320 | 2240 |

Note

- Measured using an ITU-T #1 test document (Slerexe letter) at standard resolution, with auto image density mode, and in Text mode.

# 6.3 IFAX SPECIFICATIONS

**Connectivity**

Local area network

Ethernet 100base-Tx/10base-T

IEEE1394 (IP over 1394)

IEEE802.11b (wireless LAN)

**Resolution**

**Main scan:** 400 dpi, 200 dpi

**Sub scan:** 400 dpi, 200 dpi, 100 dpi

**Note:** To use 400 dpi, IFAX SW01 Bit 4 must be set to "1".

**Transmission Time**

1 s (through a LAN to the server)

Conditions:

- ITU-T #1 test document (Slerexe Letter)
- MTF correction: OFF
- TTI: None
- Resolution: 200 x 100 dpi
- Communication speed: 10 Mbps
- Correspondent device: E-mail server
- Line conditions: No terminal access

**Document Size**

Maximum message width is A4/LT.

**Note:** To use B4 and A3 width, IFAX SW00 Bit 1 (B4) and/or Bit 2 (A3) must be set to "1".

**E-mail File Format**

Single/multi-part

MIME conversion

Image: TIFF-F (MH, MR, MMR)

**Protocol**

**Transmission:** SMTP, TCP/IP

**Reception:** POP3, SMTP, IMAP4, TCP/IP

**Data rate**

100 Mbps(100base-Tx)

10 Mbps (10base-T)

**Authentication method**

SMTP-AUTH

POP before SMTP

A-POP

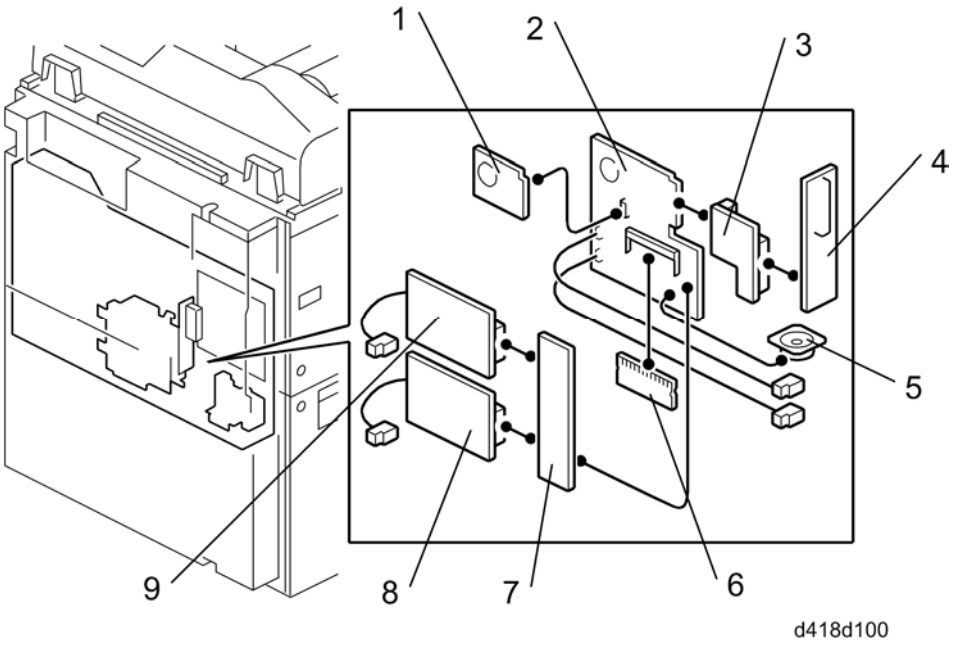
**Remark**

The machine must be set up as an e-mail client before installation. Any client PCs connected to the machine through a LAN must also be e-mail clients, or some features will not work (e.g. Autorouting).

# 6.4 IP-FAX SPECIFICATIONS

| | |
|---|---|
| Network: | LAN: Ethernet/10base-T, 100base-TX<br>IEEE1394 (IP over 1394),<br>IEEE802.11b (wireless LAN) |
| Scan line density: | 8 x 3.85 lines/mm, 200x100dpi (standard character),<br>8 x 7.7lines/mm, 200x200dpi (detail character),<br>8 x 15.4lines/mm (fine character: optional expansion memory required),<br>16 x 15.4lines/mm, 400x400dpi (super fine character: optional expansion memory required) |
| Original size: | Maximum A3 or 11"x 17" (DLT) |
| Maximum scanning size: | Standard: A3, 297mm x 432mm<br>Irregular: 297mm x 1200mm |
| Transmission protocol: | Recommended: T.38 Annex protocol, TCP, UDP/IP communication |
| Compatible machines: | IP-Fax compatible machines |
| IP-Fax transmission: | Specify IP address and send fax to an IP-Fax compatible fax through a network.<br>Also capable of sending fax from a G3 fax connected to the public telephone lines via a VoIP gateway. |
| IP-Fax reception: | Receive a fax sent from an IP-Fax compatible fax through a network.<br>Also capable of receiving fax from a G3 fax connected the public telephone lines via a VoIP gateway. |

# 6.5 FAX UNIT CONFIGURATION




| Component | Code | No. | Remarks |
|---|---|---|---|
| FCU | D418-01 | 2 | Included with fax option unit |
| MBU | | 1 | |
| Speaker Assembly | | 5 | |
| Interface Board (IF-A) | | 3 | |
| Interface Board (IF3) | | 4 | |
| CCU I/F Board | D418-05 | 7 | Included with optional G3 interface unit. |
| G3 Board | | 9 | |
| G3 Board | D418-05 | 8 | Included with optional G3 interface unit. |
| Expansion Memory | B447 | 6 | Common with R-C4/4.5 |
| Handset Type 1018 | B433 | - | USA only. Common with R-C4/4.5 |

# MULTI-FOLDING UNIT FD5000
# D454

| REVISION HISTORY | | |
|---|---|---|
| **Page** | **Date** | **Added/Updated/New** |
| | | None |

# MULTI-FOLDING UNIT FD5000 D454

## TABLE OF CONTENTS

# Read This First

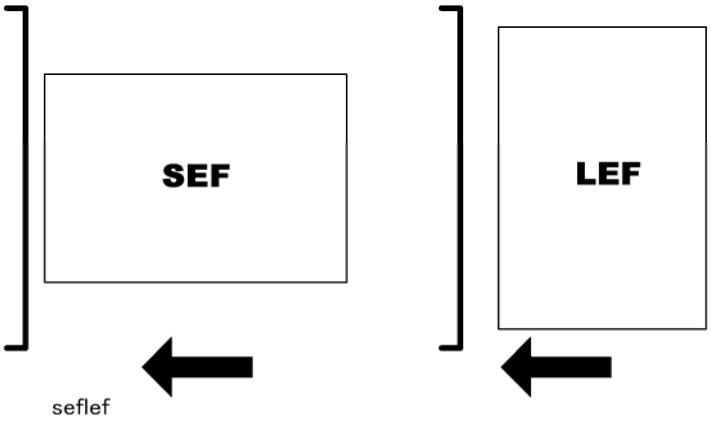
## Safety, Conventions, Trademarks

### Conventions

#### Common Terms

This is a list of symbols and abbreviations used in this manual.

| Symbol | What it means |
|---|---|
| CT | Core Tech Manual |
| | Screw |
| | Connector |
| | E-ring |
| | C-ring |
| | Harness clamp |
| FFC | Flexible Film Cable |
| JG | Junction Gate |
| LE | Leading Edge of paper |
| LEF | Long Edge Feed |
| SEF | Short Edge Feed |
| TE | Trailing Edge of paper |
| S31E | The "Emitter" sensor of a sensor pair |
| S31R | The "Receptor" sensor of a sensor pair |




The notations "SEF" and "LEF" describe the direction of paper feed, with the arrows indicating paper feed direction.

## Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

**⚠WARNING**

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

**⚠CAUTION**

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the finisher or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

- This information provides tips and advice about how to best service the machine.

## General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

### Safety Information

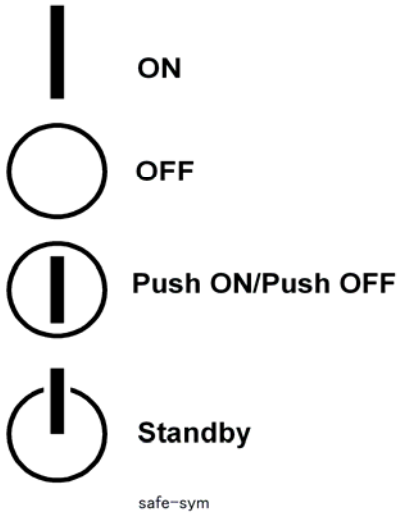
Always obey the following safety precautions when using this product.

### Safety During Operation

In this manual, the following important symbols and notations are used.

### Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.




## Responsibilities of the Customer Engineer

### Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the “CE Safety Guide”.
- Use only consumable supplies and replacement parts designed for use of the machine.

## Before Installation, Maintenance

### Power

**⚠WARNING**

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

### Installation, Disassembly, and Adjustments

**⚠CAUTION**

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

**Special Tools**

**⚠CAUTION**

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

## During Maintenance

**General**

**⚠CAUTION**

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

**Safety Devices**

**⚠WARNING**

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

**Organic Cleaners**

**⚠CAUTION**

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use “My Ace” Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin “Silicone Oil Removal” (A024-50).

**Ozone Filters**

**⚠CAUTION**

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

**Power Plug and Power Cord**

**⚠WARNING**

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.

- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

## After Installation, Servicing

### Disposal of Used Items

**⚠CAUTION**

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

### Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

## Safety Instructions for this Machine

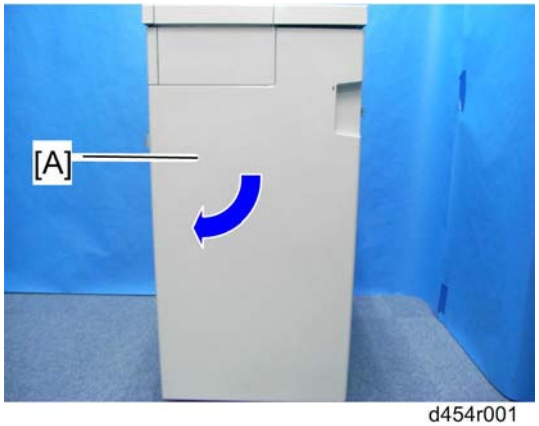
1. The installation must be done by trained service technicians.
2. This machine weighs 316 kg. (695 lb.). At least four persons are required to remove the machine from its pallet and position it for installation.
3. To prevent fire hazards never use flammable solvents around the machine.
4. Never place any object on the machine.
5. If anything falls into the machine, turn off the main power switch on the right side of the machine, then disconnect the power cord from the power source.
6. Locate the machine on a sturdy flat surface where it will not be exposed to excessive vibration.
7. To avoid fire hazard, confirm that the ventilation ports are not blocked, so air can flow freely.
8. Gas generated by the molten glue can irritate the eyes, throat, and nose. The machine should always be used in a well ventilated room.
9. To avoid the dangers of fire and electrical shock, make sure that the machine is never exposed to:
   - Excessive high temperatures and/or humidity
   - Dust
   - Water
   - Direct sunlight
   - Open flame
   - Corrosive gases

**Trademarks**

# 1. REPLACEMENT AND ADJUSTMENT

## 1.1 EXTERIOR AND INNER COVERS

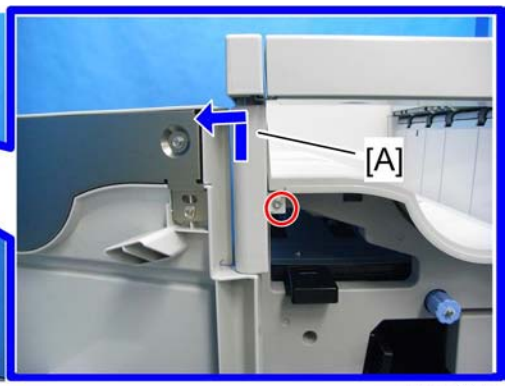
### 1.1.1 FRONT DOOR UPPER COVER



d454r001

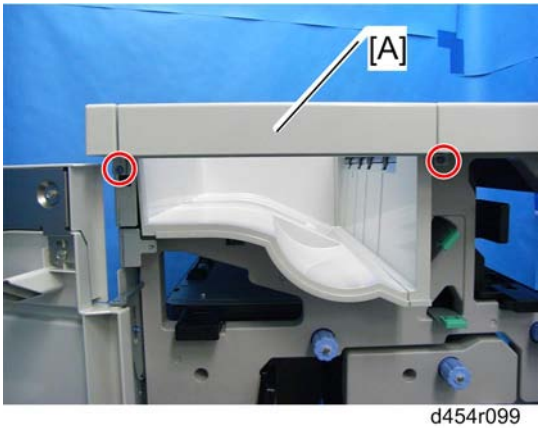
1. Open the front door [A].


d454r002



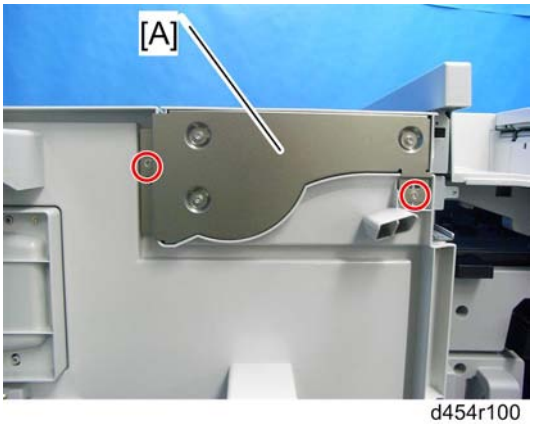
d454r098

2. Hinge cover [A] ( x 1)



d454r099

3. Cross-piece [A] ( x 2)



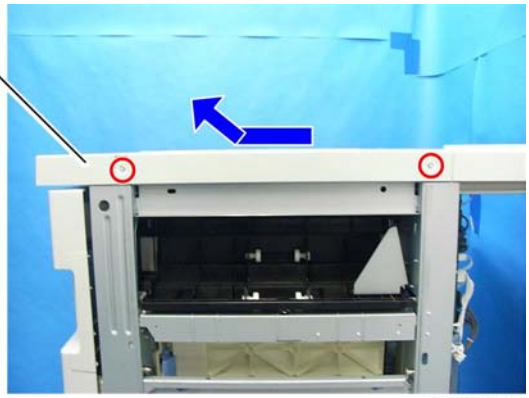
d454r100

4. Front door upper cover [A] ( x 2)

## 1.1.2 TOP COVER

1. Open the front door.
2. Hinge cover (☛ p.1 "Front Door Upper Cover")
3. Cross-piece (☛ p.1 "Front Door Upper Cover")

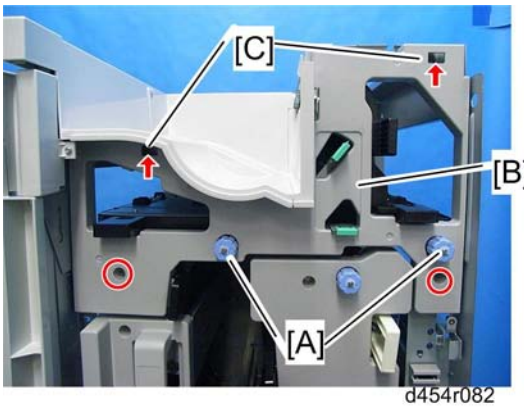
d454r021


d454r020

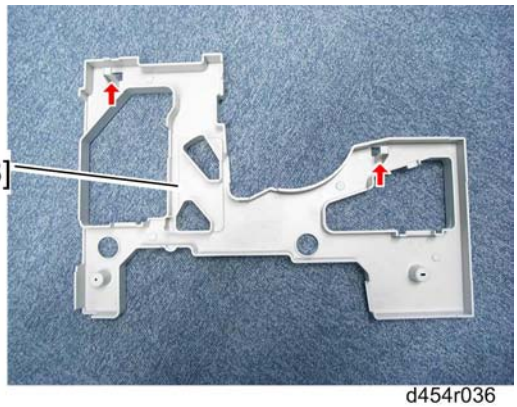
4. Top cover [A] ( x 2)

## 1.1.3 INNER UPPER COVER

1. Top cover (☛ p.2)



d454r082

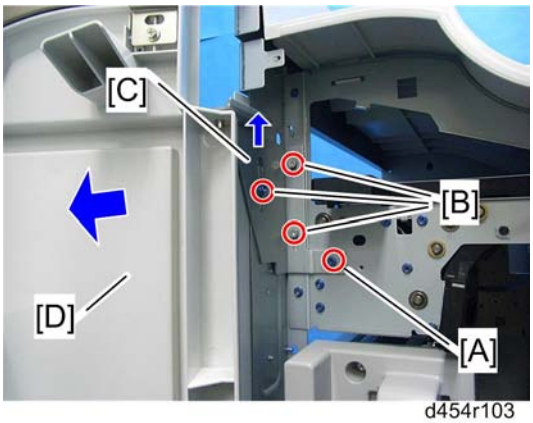


d454r036

2. Remove the knobs [A] ( x 1 each).
3. Inner upper cover [B] ( x 2)
   - Release the hooks [C] to remove the inner upper cover.

## 1.1.4 FRONT DOOR

1. Top cover (☛ p.2)
2. Inner upper cover (☛ p.2)

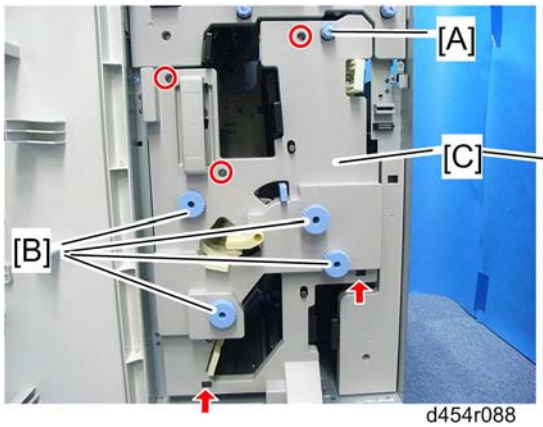


d454r103

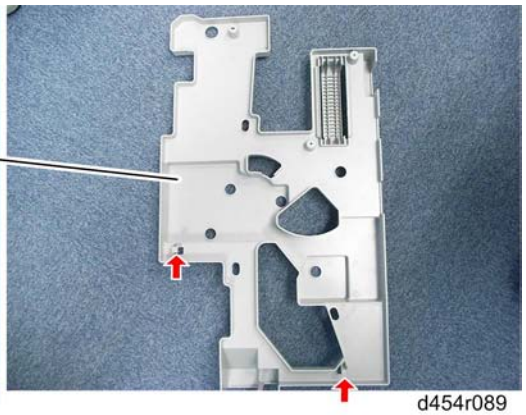
3. Remove the screw [A].
4. Loosen three screws [B].
5. Lift up the hinge bracket [C].
6. Front door [D]

## 1.1.5 FOLDING UNIT COVER

1. Open the front cover.



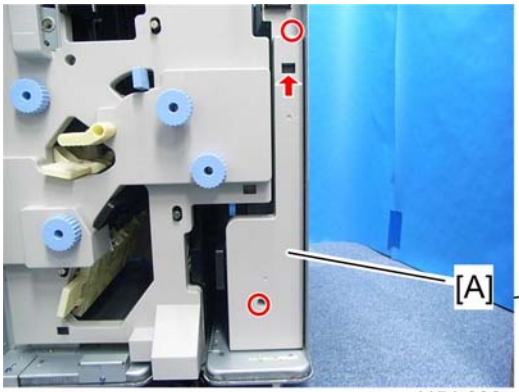
d454r088


d454r089

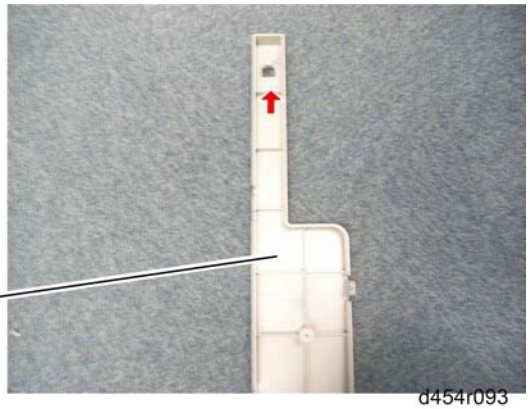
2. Remove the knob [A] ( x 1).
3. Remove four knobs [B] ( x 1 each).
4. Folding unit cover [C] ( x 3, hook x 2)

## 1.1.6 INNER LOWER COVER

1. Open the front cover.

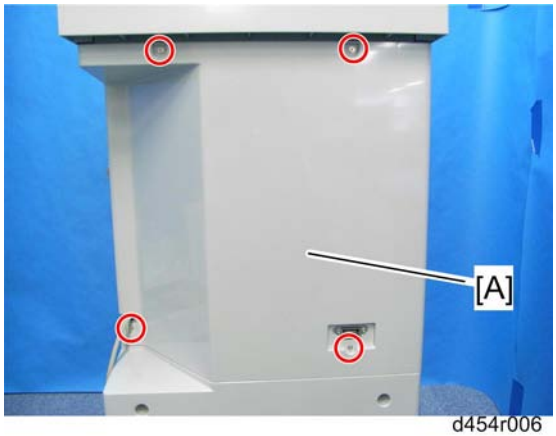


d454r092


d454r093

2. Inner lower cover [A] ( x 1, hook)

## 1.1.7 REAR UPPER COVER



d454r006

1. Rear upper cover [A] ( x 4)

## 1.1.8 REAR LOWER COVER

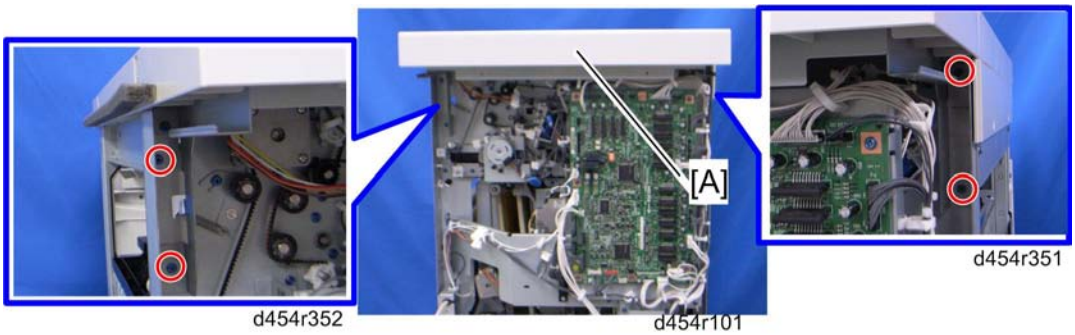
1. Rear upper cover (☛ p.4)

d454r007

2. Rear lower cover [A] ( x 3)

## 1.1.9 TOP REAR COVER

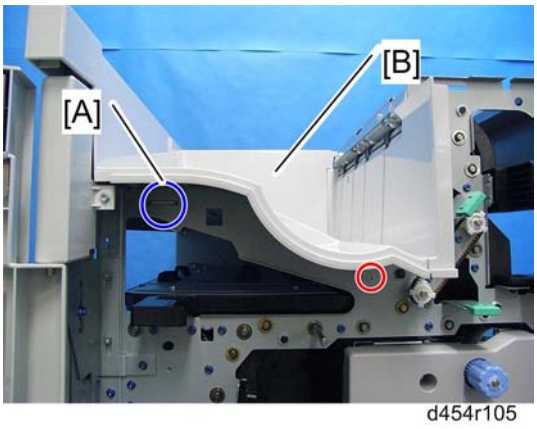
1. Rear upper cover (☛ p.4)




2. Top rear cover [A] ( x 4)

## 1.1.10 TOP TRAY

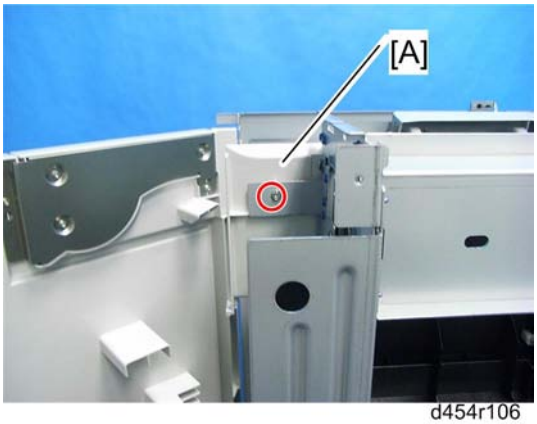
1. Top rear cover (☛ p.5)
2. Inner upper cover (☛ p.2)




3. Release the hook [A], and remove the top tray [B] ( x 1).

## 1.1.11 TOP TRAY RIGHT COVER

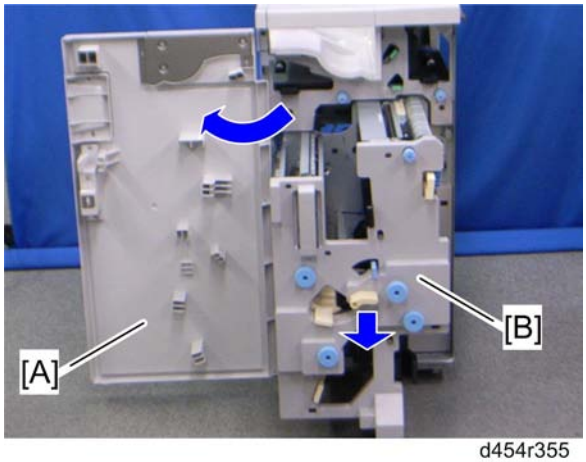
1. Top tray (☛ p.5)



d454r106

2. Top tray right cover [A] ( x 1)

## 1.1.12 PULLING OUT THE FOLDING UNIT DRAWER



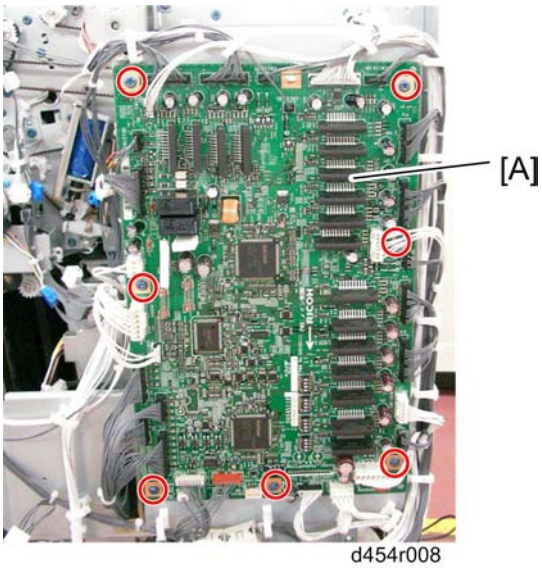
d454r355

1. Open the front door [A]
2. Pull out the folding unit drawer [B].

# 1.2 ELECTRICAL COMPONENTS: REAR SIDE

## 1.2.1 MAIN BOARD

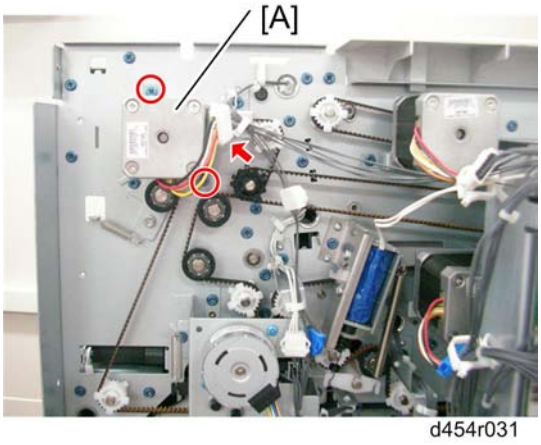
1. Rear upper cover (☛ p.4)



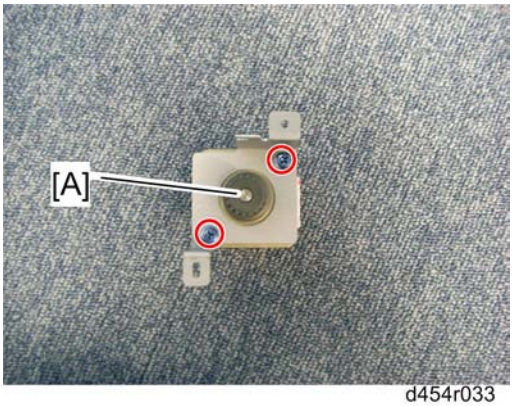

2. Main board [A] (☞ x all, 🔧 x 7)

## 1.2.2 HORIZONTAL TRANSPORT MOTOR

1. Rear upper cover (☛ p.4)
2. Top rear cover (☛ p.5)




3. Horizontal transport motor bracket [A] (☞ x 1, 🔧 x 2)

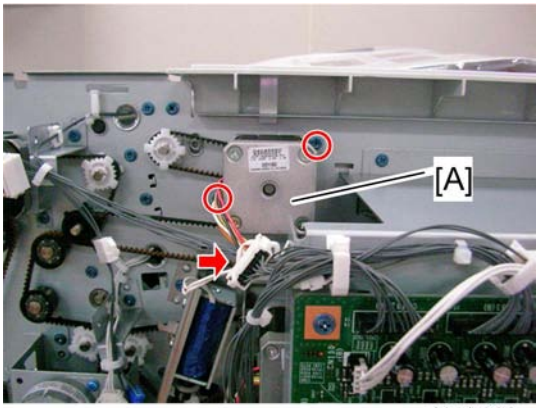


d454r033

4. Horizontal transport motor [A] ( x 2)

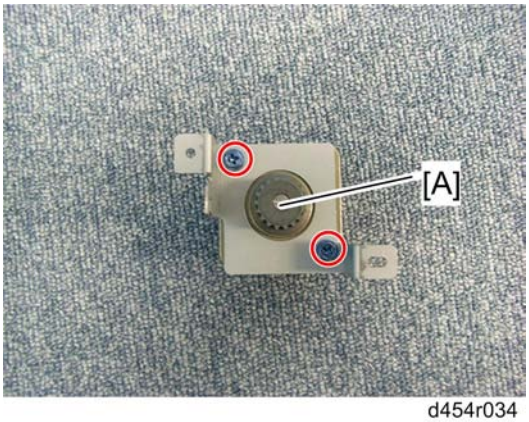
## 1.2.3 TOP TRAY EXIT MOTOR

1. Rear upper cover (☛ p.4)
2. Top rear cover (☛ p.5)



d454r032

3. Top tray exit motor bracket [A] ( x 1, x 1, x 2)



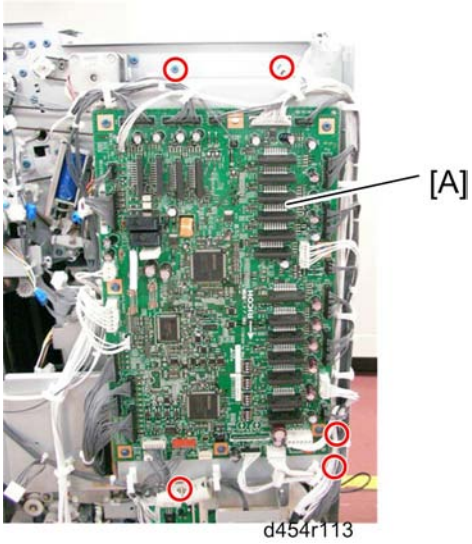
d454r034

4. Top tray exit motor [A] ( x 2)

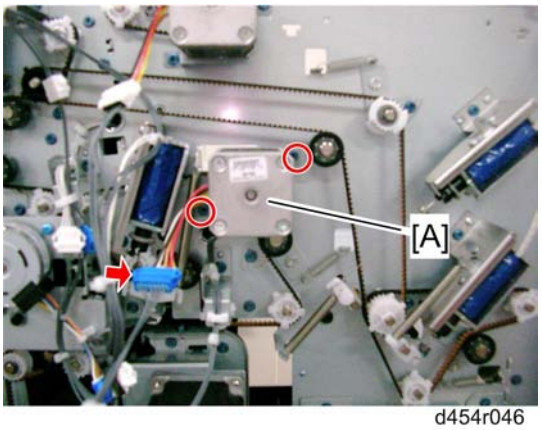
## 1.2.4 TOP TRAY TRANSPORT MOTOR

1. Rear upper cover (☛ p.4)

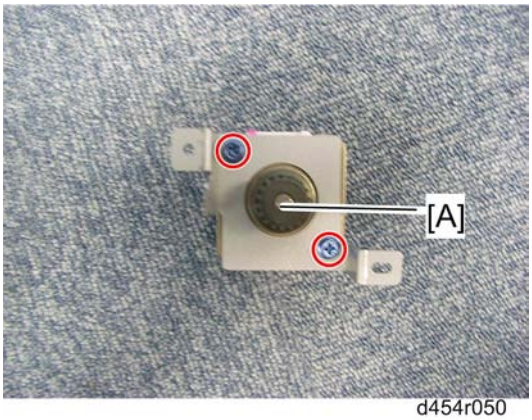
2. Top rear cover (☛ p.5)




3. Main board bracket [A] ( x all, x 5, ground cable x 1)



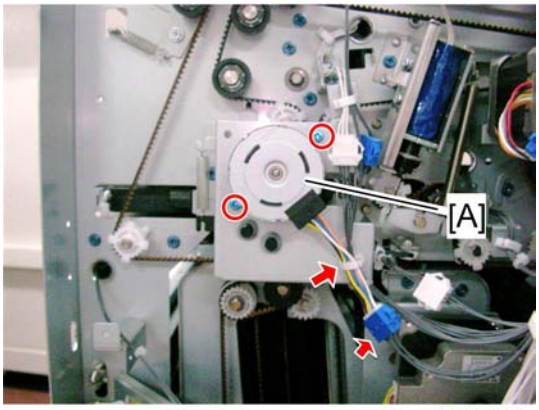

4. Top tray transport motor bracket [A] ( x 1, x 2)




5. Top tray transport motor [A] ( x 2)

## 1.2.5 ENTRANCE JG (JUNCTION GATE) MOTOR

1. Rear upper cover (☛ p.4)

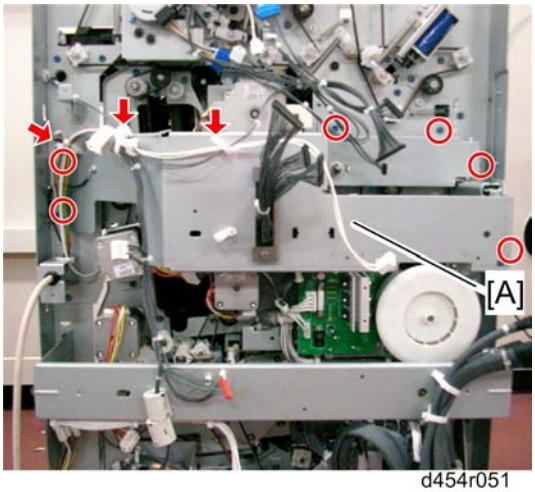



d454r016

2. Entrance JG motor [A] ( x 1, x 1, x 2)

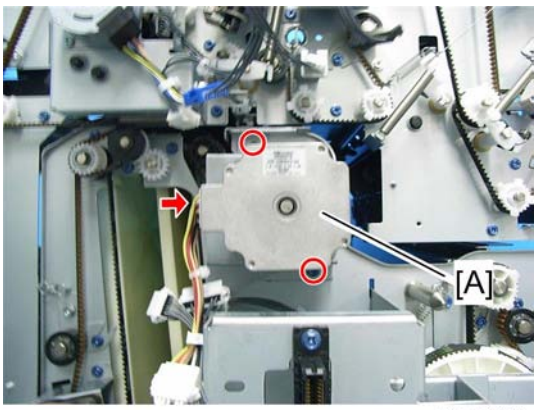
## 1.2.6 DYNAMIC ROLLER LIFT MOTOR

1. Rear upper cover (☛ p.4)
2. Top rear cover (☛ p.5)
3. Main board bracket (☛ p.8 "Top Tray Transport Motor")



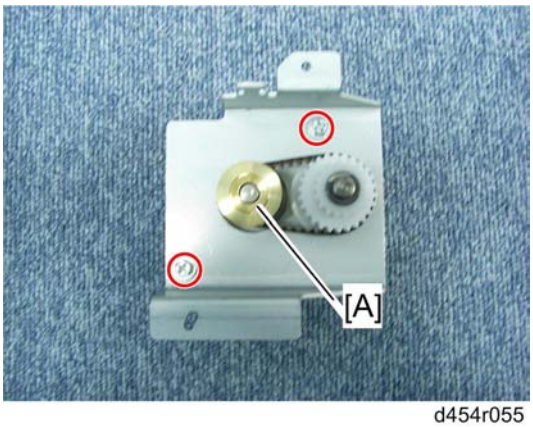

d454r051

4. Rear upper stay [A] ( x 3, x 6)




d454r052

5. Dynamic roller lift motor bracket [A] ( x 1, x 2)

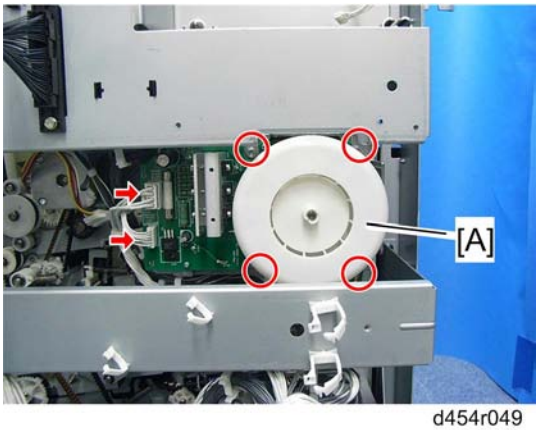



d454r055

6. Dynamic roller lift motor [A] ( x 2)

## 1.2.7 CREASE MOTOR

1. Rear upper cover ( p.4)
2. Rear lower cover ( p.4)
3. Top rear cover ( p.5)
4. Main board bracket ( p.8 "Top Tray Transport Motor")

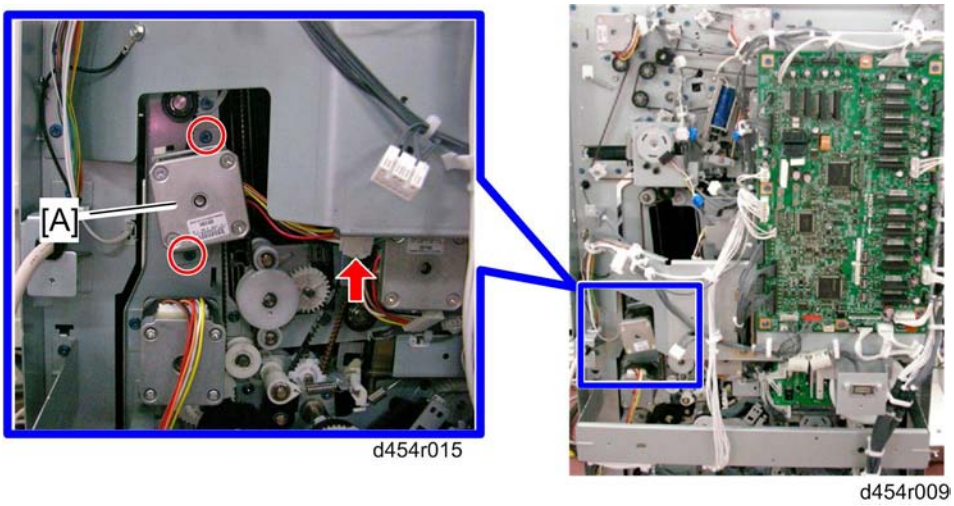



d454r049

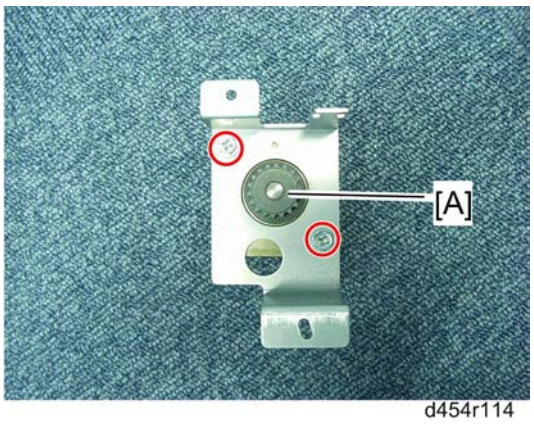
5. Crease motor [A] ( x 2, x 4)

## 1.2.8 DYNAMIC ROLLER TRANSPORT MOTOR

1. Rear upper cover (☛ p.4)



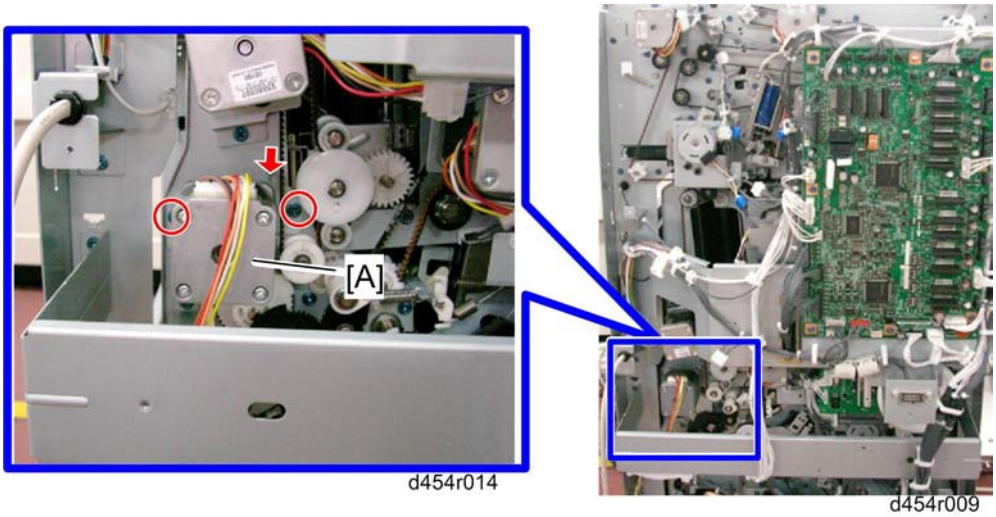

2. Dynamic roller transport motor bracket [A](🔩 x 1, 🔧 x 2)



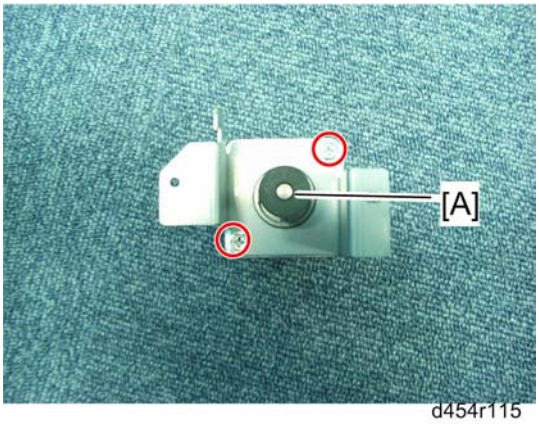

3. Dynamic roller transport motor (🔧 x 2)

## 1.2.9 REGISTRATION ROLLER RELEASE MOTOR

1. Rear upper cover (☛ p.4)
2. Rear lower cover (☛ p.4)



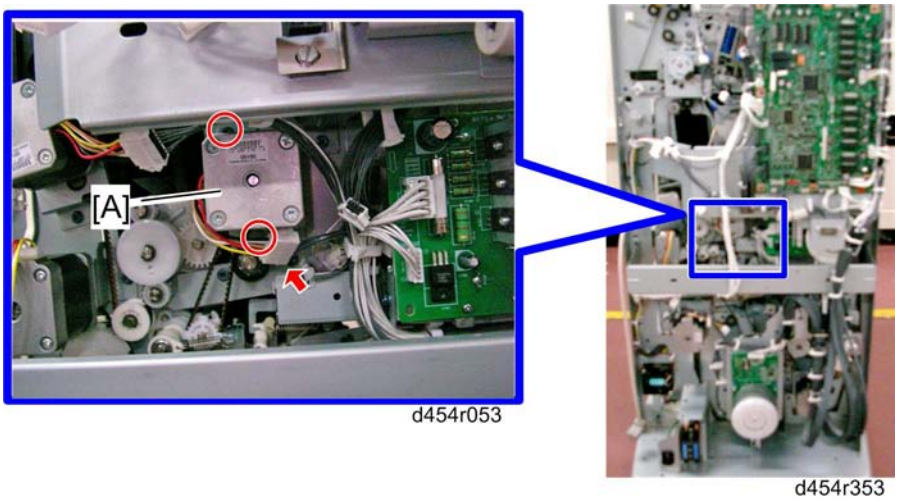

3. Registration roller release motor bracket [A] ( x 1, x 2)



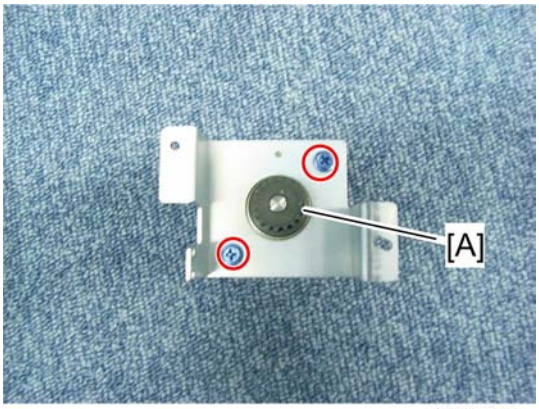

4. Registration roller release motor [A] ( x 2)

## 1.2.10 REGISTRATION ROLLER TRANSPORT MOTOR

1. Rear upper cover ( p.4)
2. Rear lower cover ( p.4)



3. Registration roller transport motor bracket [A] ( x 1, x 2)



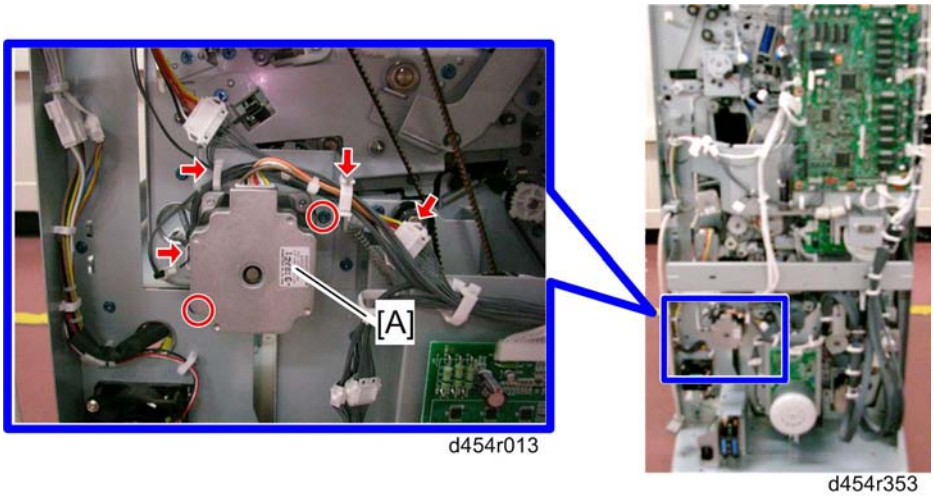

d454r054

4. Registration roller transport motor [A] ( x 2)

# 1.3 ELECTRICAL COMPONENTS: 1ST STOPPER

## 1.3.1 FOLD PLATE MOTOR

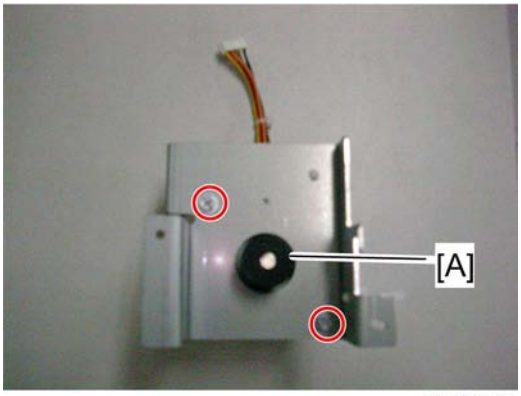
1. Rear upper cover (☛ p.4)
2. Rear lower cover (☛ p.4)




d454r013

d454r353

3. Fold plate motor bracket [A] ( x 3, x 1, x 2)

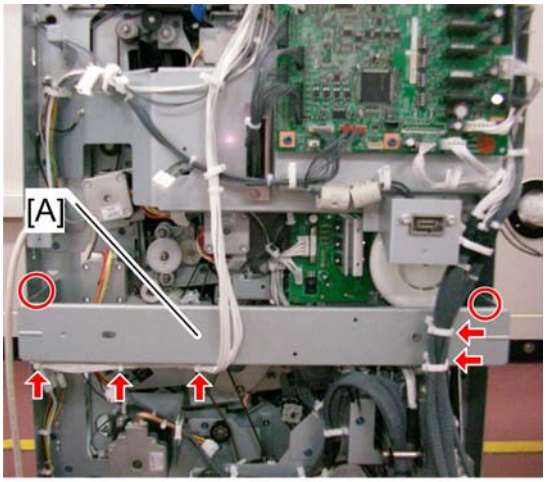



d454r018

4. Fold plate motor [A] ( x 2)

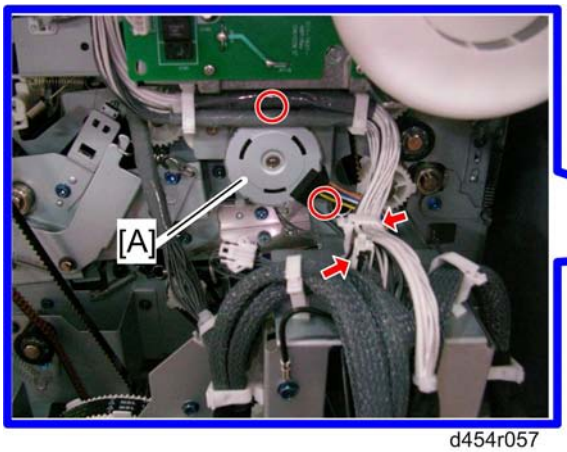
## 1.3.2 DIRECT-SEND JG MOTOR

1. Rear upper cover (☛ p.4)
2. Rear lower cover (☛ p.4)

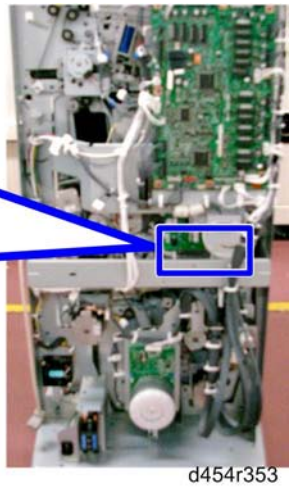


d454r354

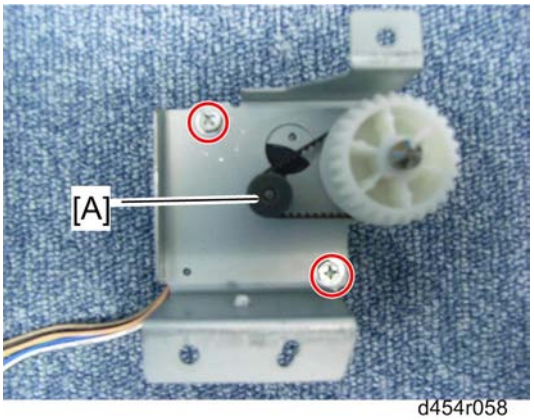
3. Rear lower stay [A] ( x 5, x 2)



d454r057


d454r353

4. Direct-Send JG motor bracket [A] ( x 1, x 1, x 2)

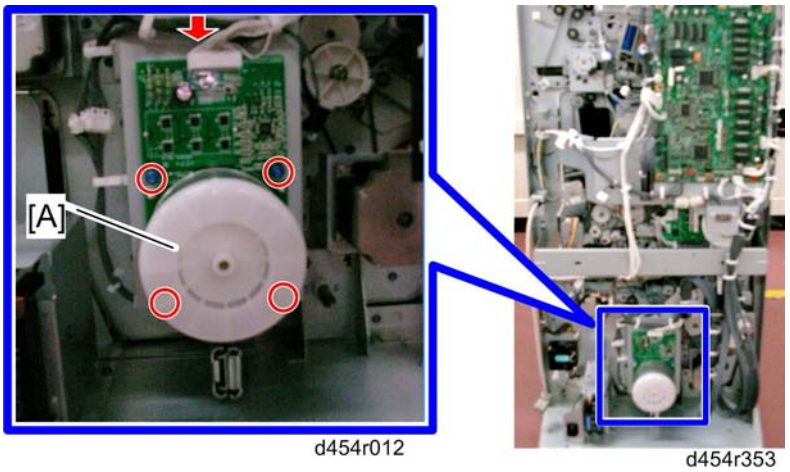


d454r058

5. Direct-Send JG motor [A] ( x 2)

## 1.3.3 1ST FOLD MOTOR

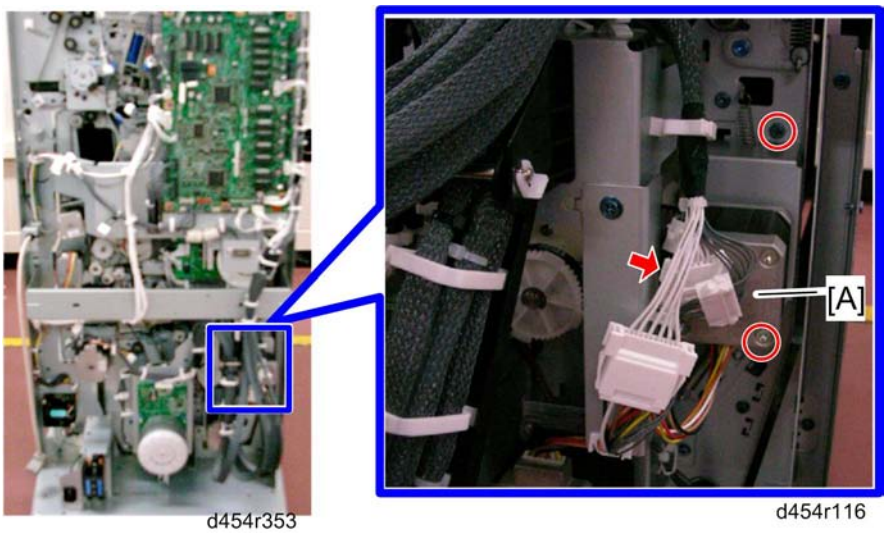
1. Rear upper cover (☛ p.4)
2. Rear lower cover (☛ p.4)



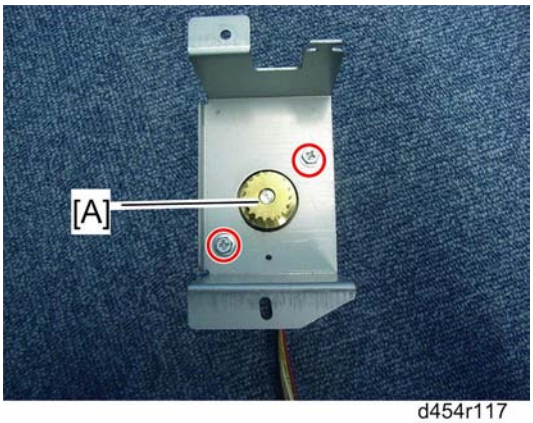

3. 1st fold motor [A] ( x 1, x 4)

## 1.3.4 FM6 PAWL MOTOR

1. Rear upper cover (☛ p.4)
2. Rear lower cover (☛ p.4)




3. FM6 pawl motor bracket [A] ( x 1, x 1, x 2)

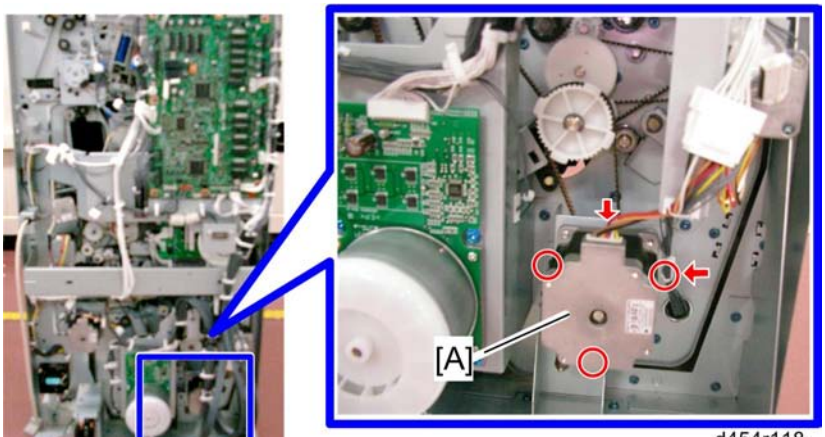


d454r117

4. FM6 pawl motor [A] ( x 2)

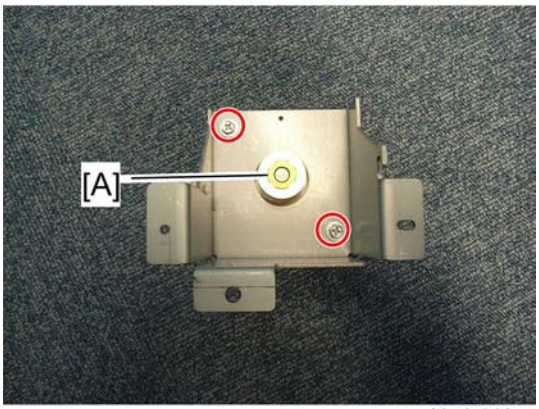
## 1.3.5 2ND FOLD MOTOR

1. Rear upper cover (☛ p.4)
2. Rear lower cover (☛ p.4)



d454r353 d454r118

3. 2nd fold motor bracket [A] ( x 1, x 1, x 3)

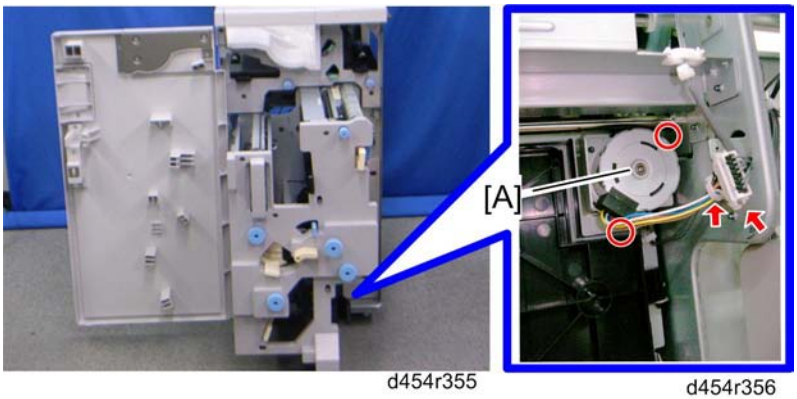


d454r119

4. 2nd fold motor [A] ( x 2)

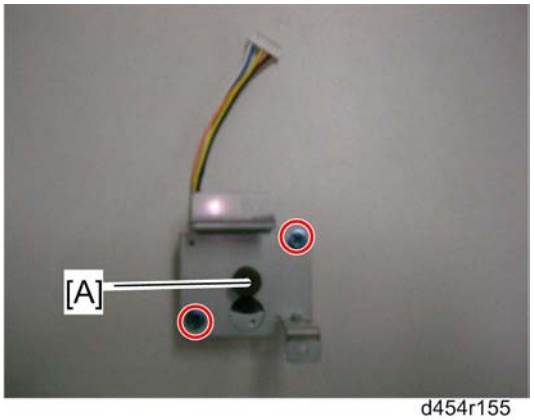
## 1.3.6 JOGGER FENCE MOTOR

1. Pull out the folding unit drawer (☛ p.6).



d454r355 d454r356

2. Jogger fence motor bracket [A] ( x 1, x 1, x 2)

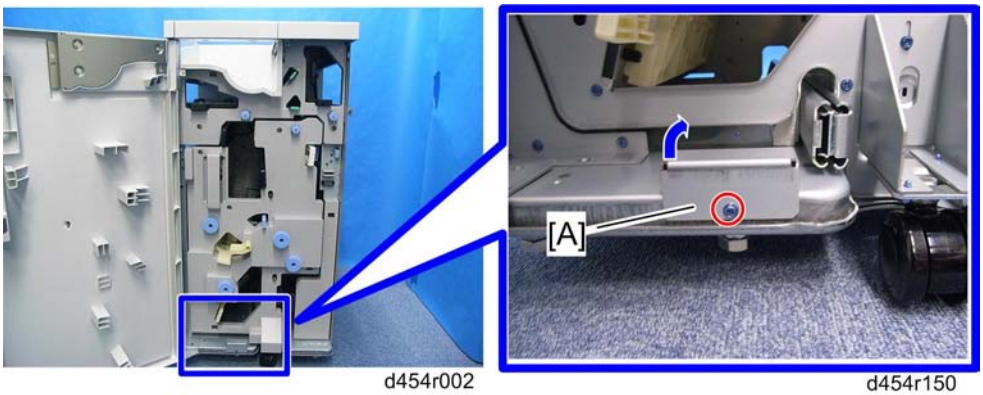


d454r155

3. Jogger fence motor [A] ( x 2)

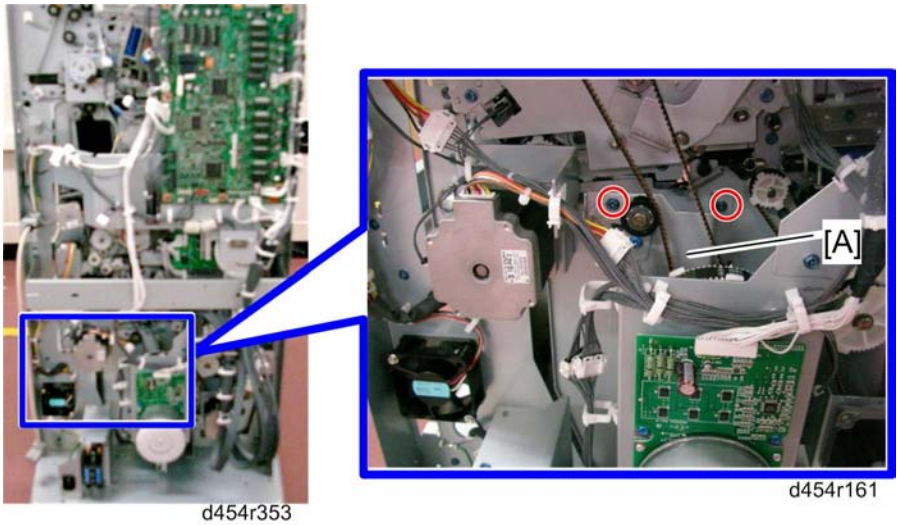
## 1.3.7 1ST STOPPER UNIT

1. Folding unit cover (☛ p.3)
2. Rear upper cover (☛ p.4)
3. Rear lower cover (☛ p.4)

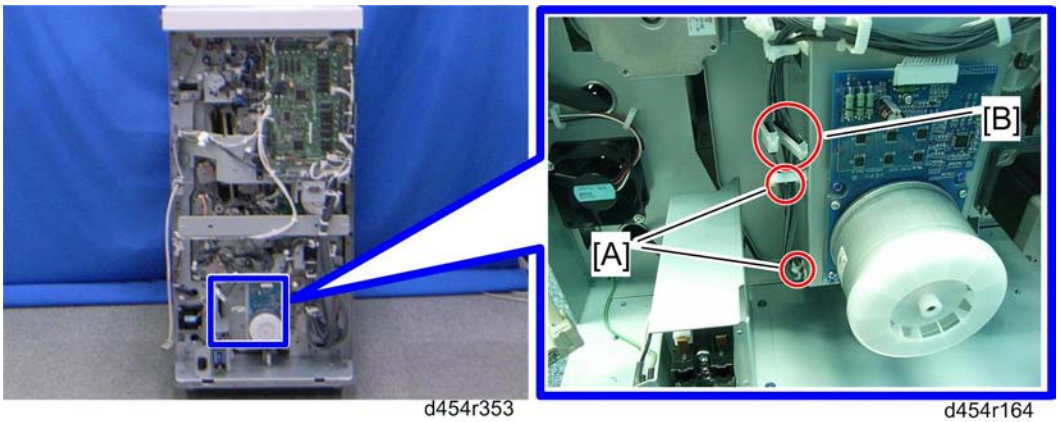


d454r002 d454r150

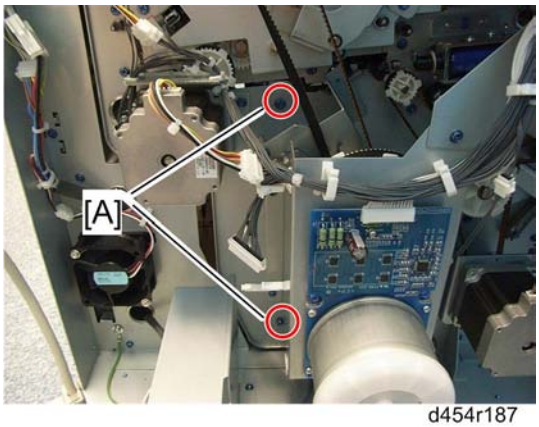
4. Drawer stopper [A] ( x 1)



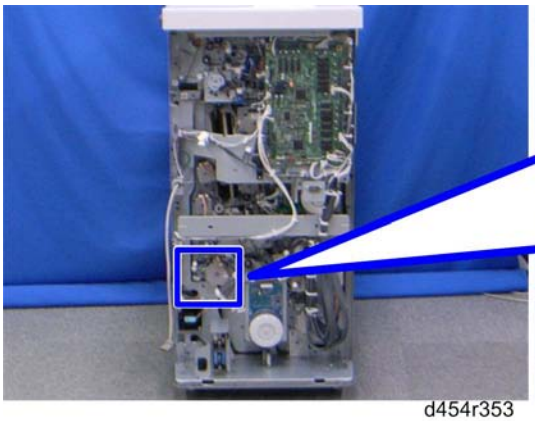

5. Belt tension bracket [A] ( x 2)

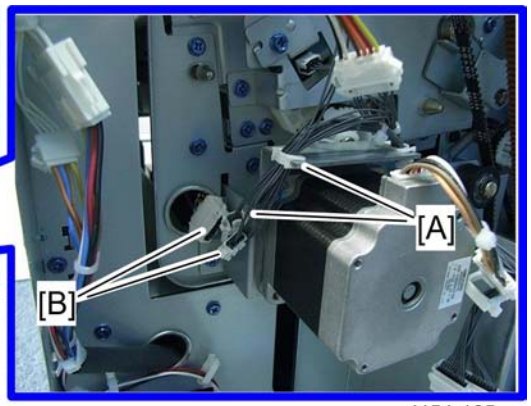



6. Release two clamps [A].
7. Disconnect two connectors [B].



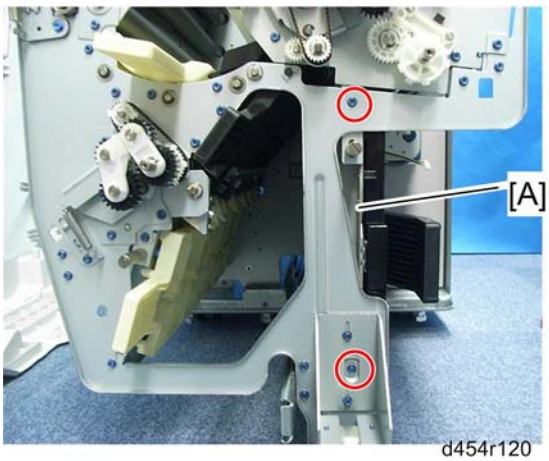

8. Remove two screws [A].


d454r353

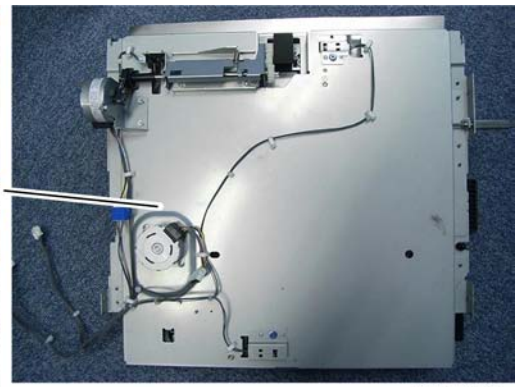


d454r165

9. Release two clamps [A].
10. Disconnect two connectors [B].
11. Pull out the folding unit drawer (☛ p.6).



d454r120


d454r143

12. Hold the 1st stopper unit [A], and then remove it ( x 2).

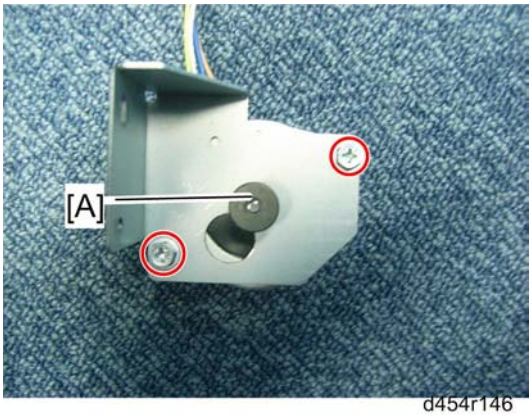
Important

- The 1st stopper unit cannot hang the folding unit drawer without the two screws. If you remove the 1st stopper unit without any support, the 1st stopper unit can fall and be broken.

## 1.3.8 POSITIONING ROLLER MOTOR

1. 1st stopper unit (☛ p.19)

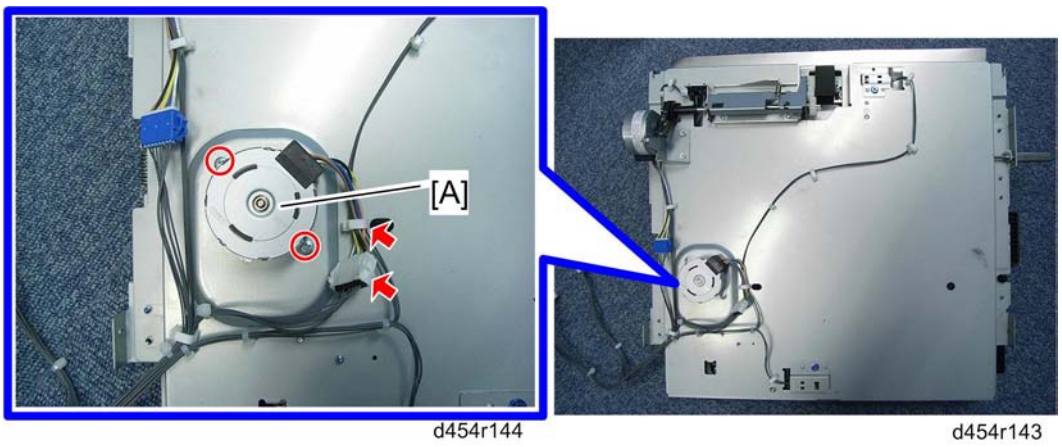

2. Positioning roller motor bracket [A] ( x 1, x 1, x 2)




3. Positioning roller motor [A] ( x 2)

## 1.3.9 1ST STOPPER MOTOR

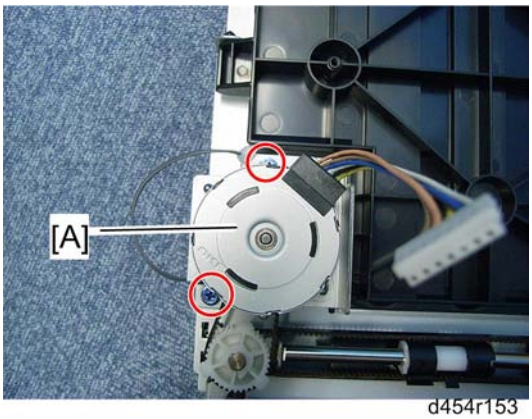
1. 1st stopper unit (p.19)



2. 1st stopper motor [A] ( x 1, x 1, x 2)

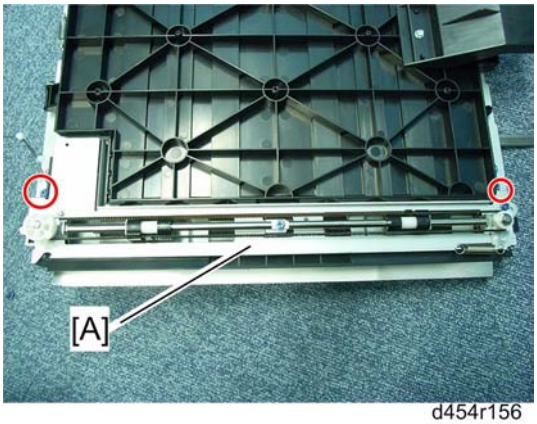
## 1.3.10 JOGGER FENCE HP SENSOR

1. 1st stopper unit (☛ p.19)



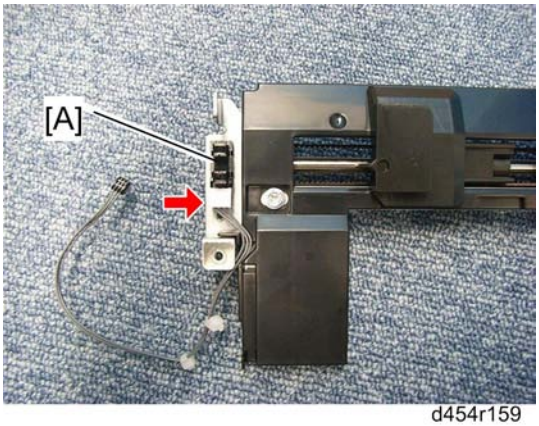
d454r153

2. Jogger fence motor bracket [A] ( x 2)



d454r156

3. Jogger fence timing belt bracket [A] ( x 2)

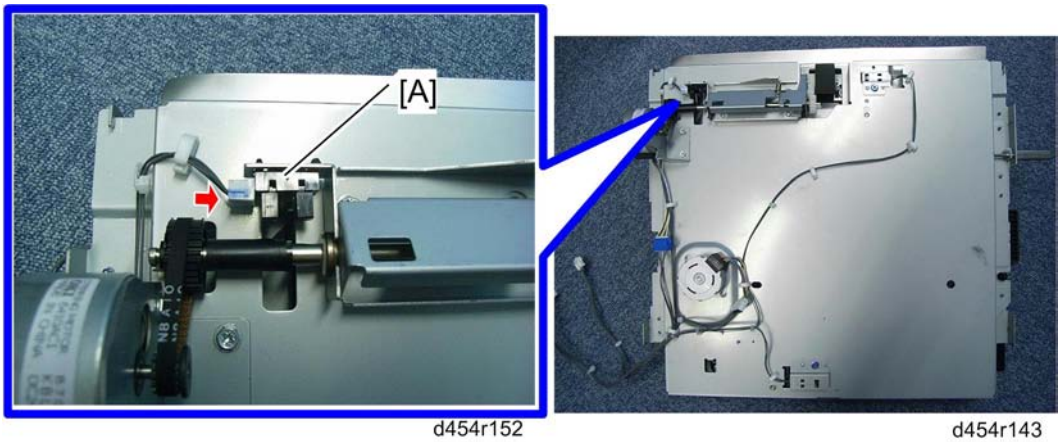


d454r159

4. Jogger fence HP sensor [A] (hooks, x 1)

## 1.3.11 POSITIONING ROLLER HP SENSOR

1. 1st stopper unit (☛p.19)




d454r152 d454r143

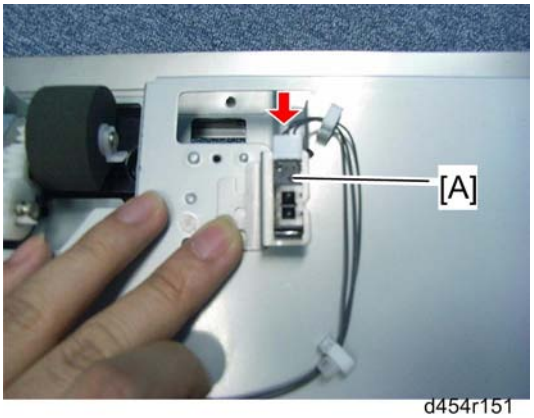
2. Positioning Roller HP sensor [A] (hooks, x 1)

## 1.3.12 1ST STOPPER PAPER SENSOR

1. 1st stopper unit (☛ p.19)


d454r143 d454r149

2. 1st stopper paper sensor bracket [A] ( x 1)




d454r151

3. 1st stopper paper sensor [A] (hooks)

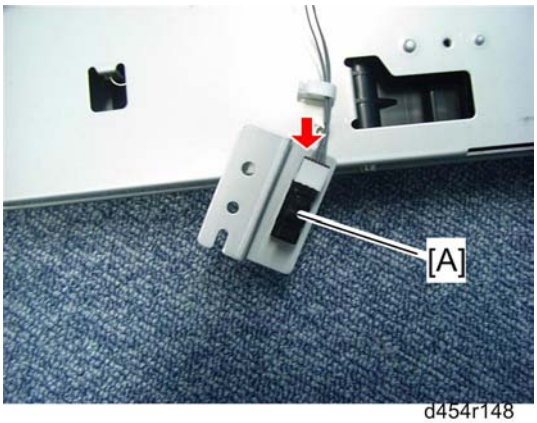
## 1.3.13 1ST STOPPER HP SENSOR

1. 1st stopper unit (☛ p.19)


d454r143

d454r147

2. 1st stopper HP sensor bracket [A] ( x 1)

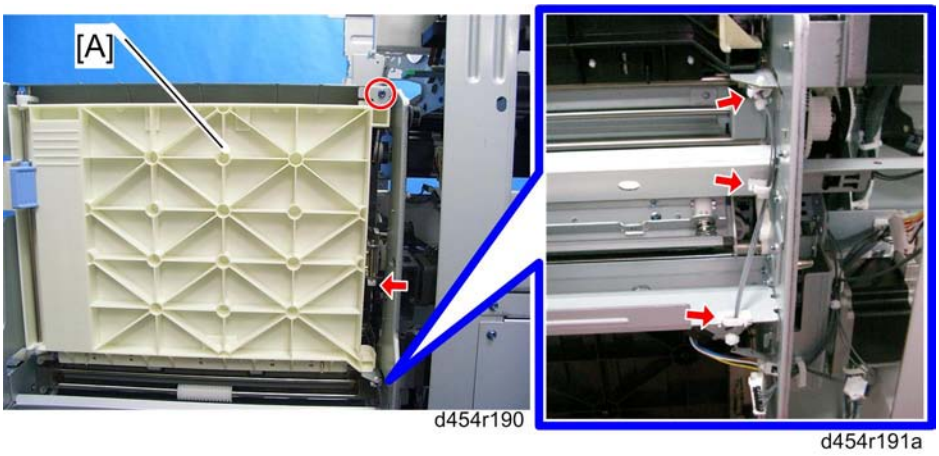



d454r148

3. 1st stopper HP sensor [A] (hooks)

## 1.3.14 REGISTRATION SENSOR

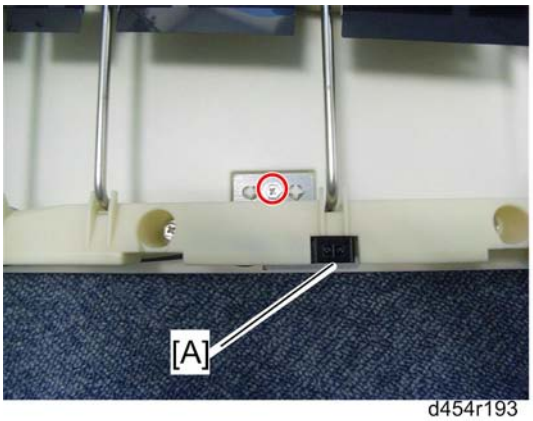
1. Pull out the folding unit drawer (☛ Pull Out the Folding Unit Drawer)



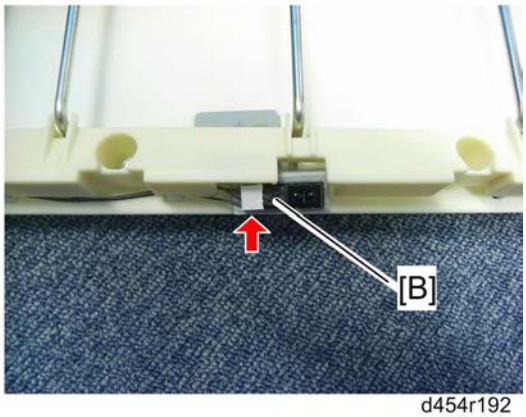

d454r190

d454r191a

2. Jam removal door [A] ( x 3, x 1, x 1)




d454r193



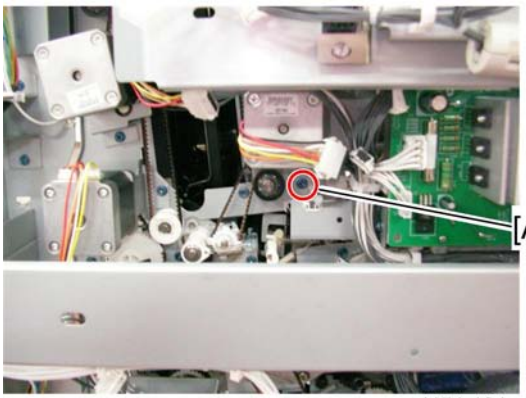

d454r192

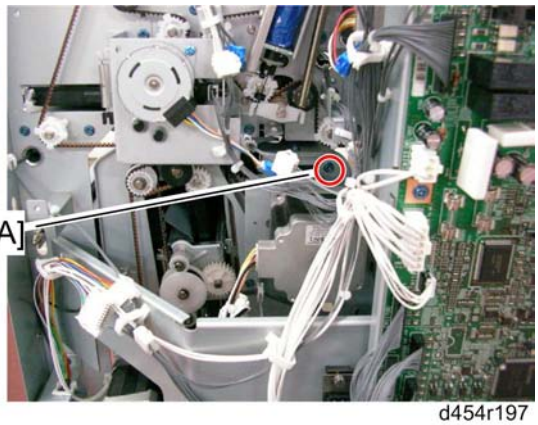
3. Registration sensor bracket [A] ( x 1)
4. Registration sensor [B] (hooks, x 1)

# 1.4 ELECTRICAL COMPONENTS: 2ND STOPPER

## 1.4.1 2ND STOPPER UNIT

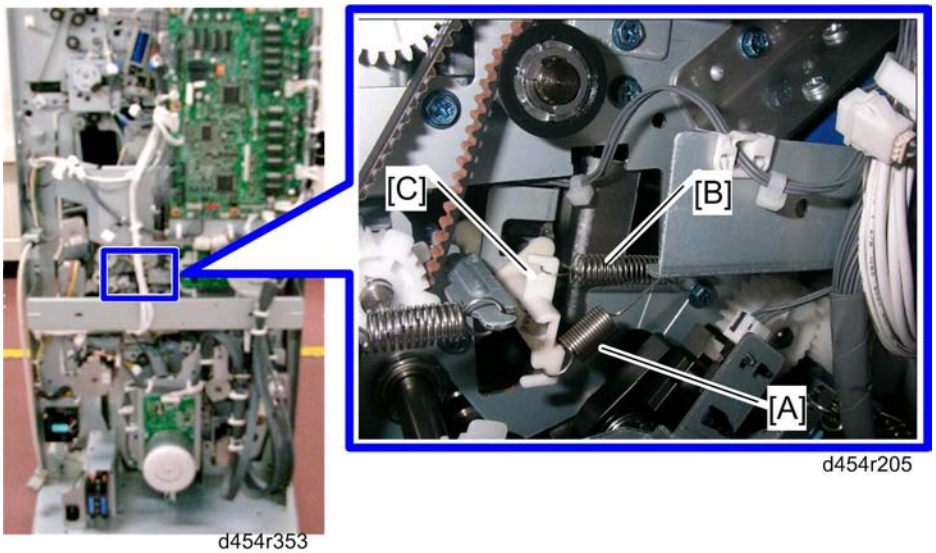
1. 1st stopper unit (☛ p.19)
2. Jam removal door (☛ p.25 "Registration Sensor")


d454r194



d454r197

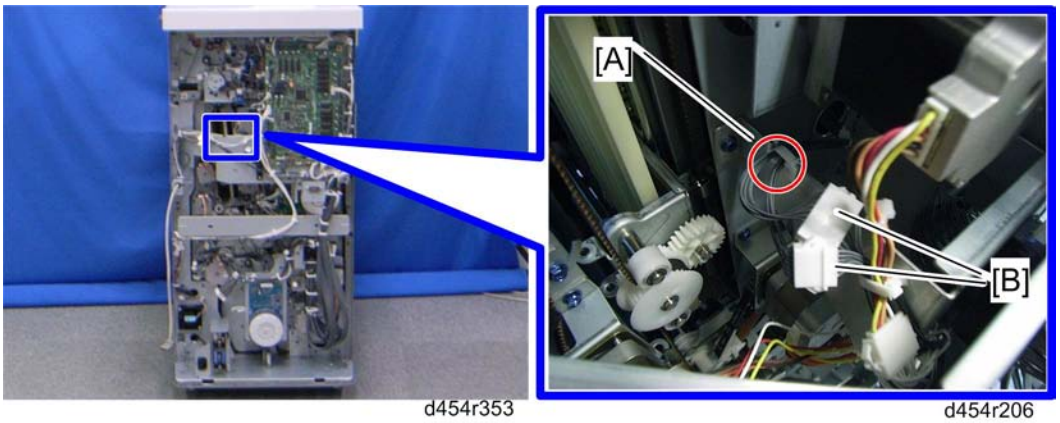
3. Remove two screws [A] at the rear side of the folding unit drawer.



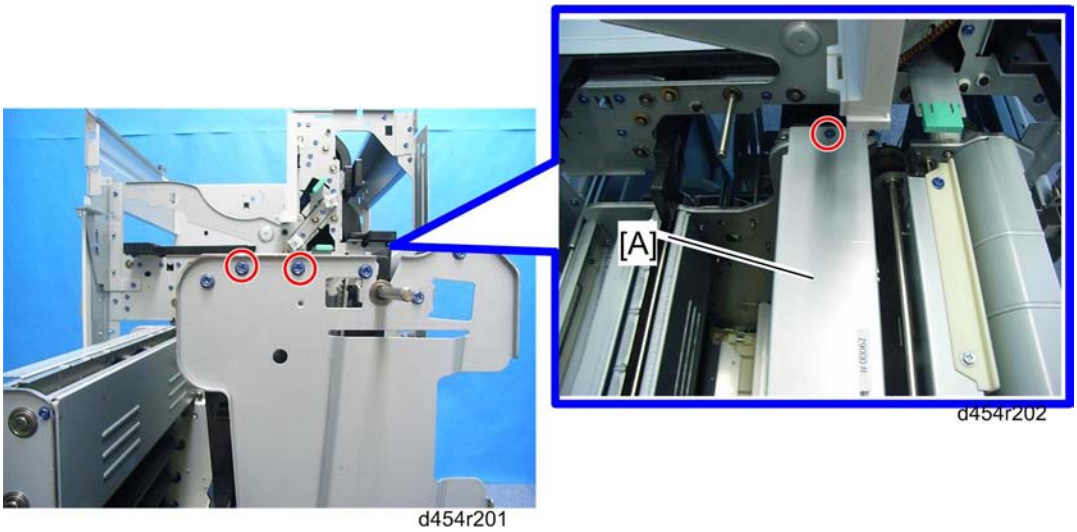
d454r205

d454r353

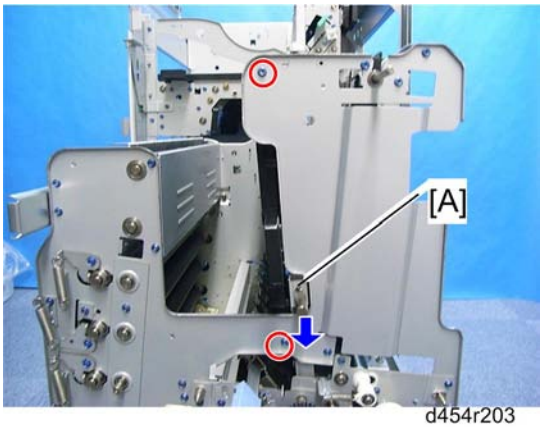
4. Remove the spring [A] for the solenoid spring [B] for the guide plate.
5. Remove the arm [C] for the guide plate.



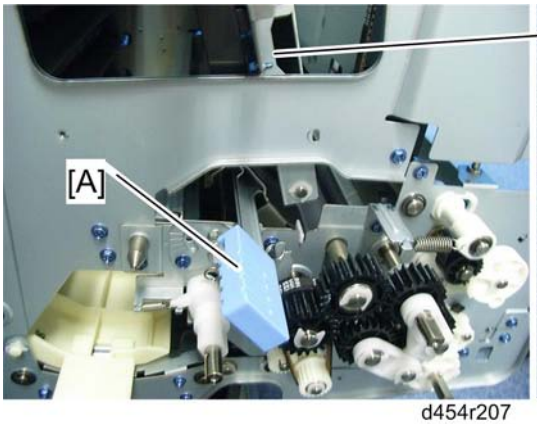

6. Release the clamp [A] and disconnect two connectors [B].
7. Pull out the folding unit drawer.



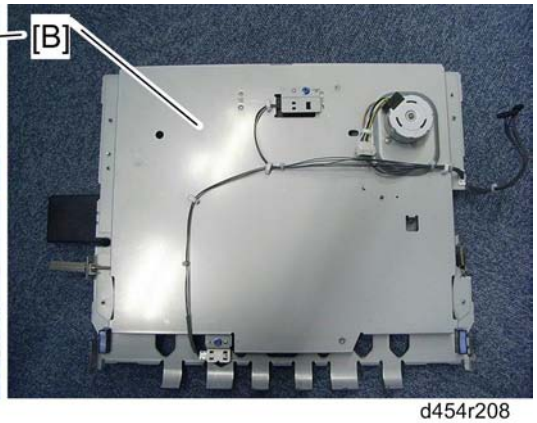

8. Top stay [A] ( x 3)




9. Move down the 2nd stopper unit [A] a little bit ( x 2).



d454r207



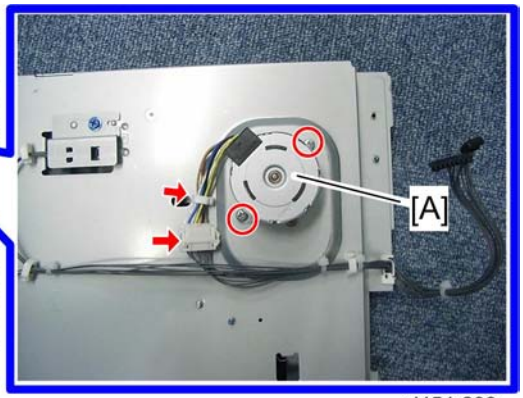
d454r208

10. Open the jam removal door [A], and then remove the 2nd stopper unit [B].

## 1.4.2 2ND STOPPER MOTOR

1. 2nd stopper unit (☛ p.27)


d454r207



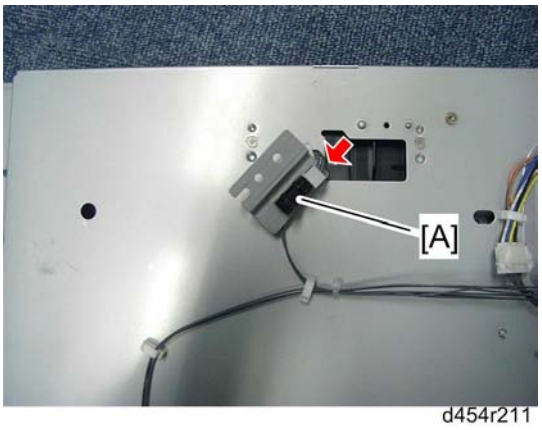
d454r209

2. 2nd stopper motor [A] ( x 1, x 1, x 2)

## 1.4.3 2ND STOPPER HP SENSOR

1. 2nd stopper unit (☛ p.27)

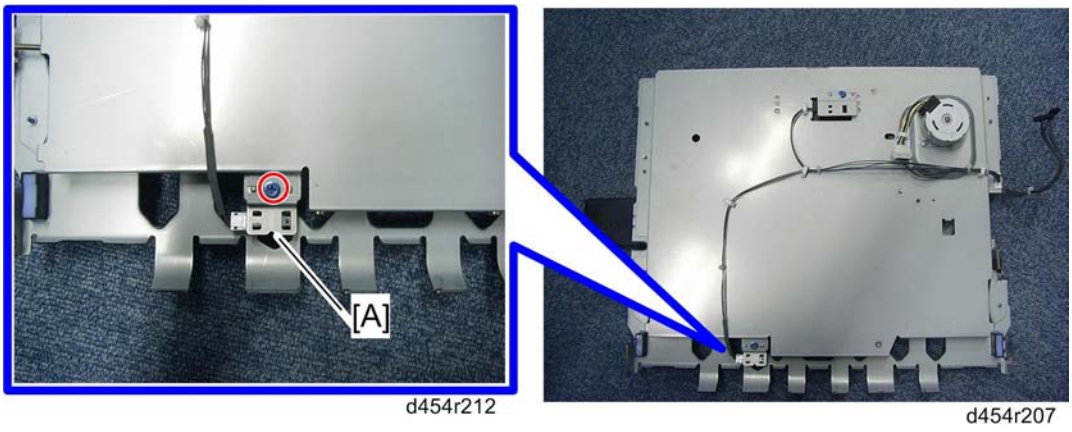

2. 2nd stopper HP sensor bracket [A] ( x 1)



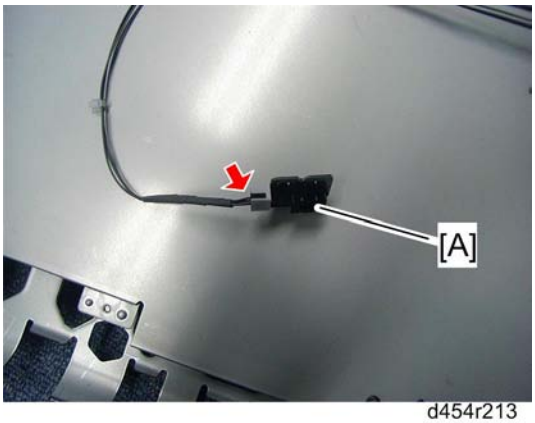

3. 2nd stopper HP sensor [A] (hooks, x 1)

## 1.4.4 2ND STOPPER PAPER SENSOR

1. 2nd stopper unit (☛ p.27)




2. 2nd stopper paper sensor bracket [A] ( x 1)

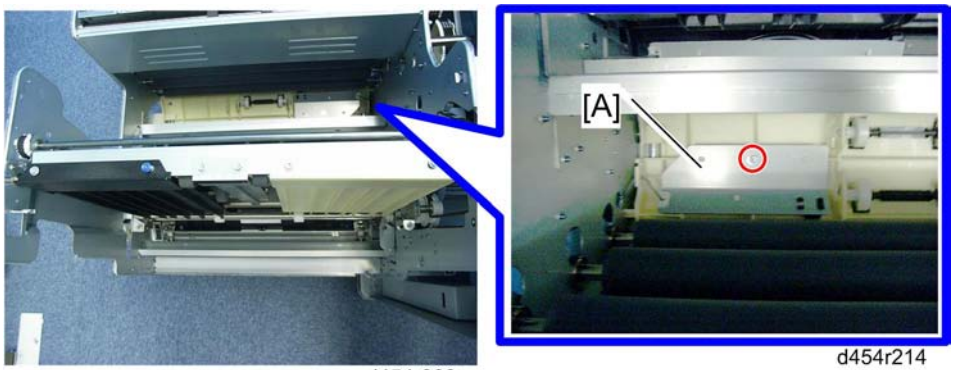


d454r213

3. 2nd stopper paper sensor [A] ( x 1)

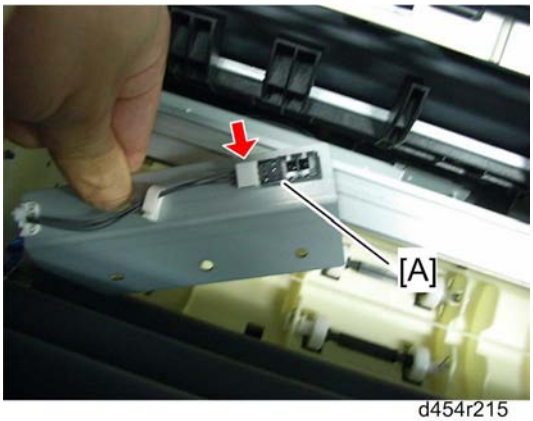
## 1.4.5 BYPASS EXIT PAPER SENSOR

1. Pull out the folding unit drawer.
2. 2nd stopper unit (☛ p.27)



d454r222 d454r214

3. Bypass exit paper sensor bracket [A] ( x 1)



d454r215

4. Bypass exit paper sensor [A] ( x 1)

# 1.5 ELECTRICAL COMPONENTS: 3RD STOPPER

## 1.5.1 3RD STOPPER UNIT

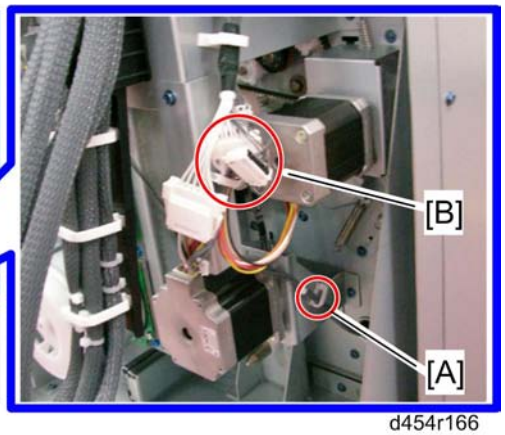
1. Folding unit cover (☛ p.3)
2. Rear upper cover (☛ p.4)
3. Rear lower cover (☛ p.4)


d454r002

d454r150

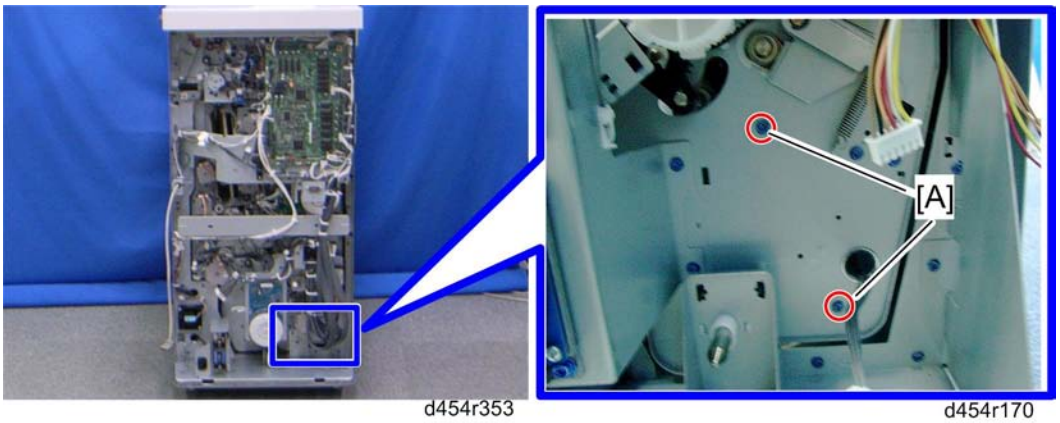
4. Drawer stopper [A] ( x 1)


d454r353

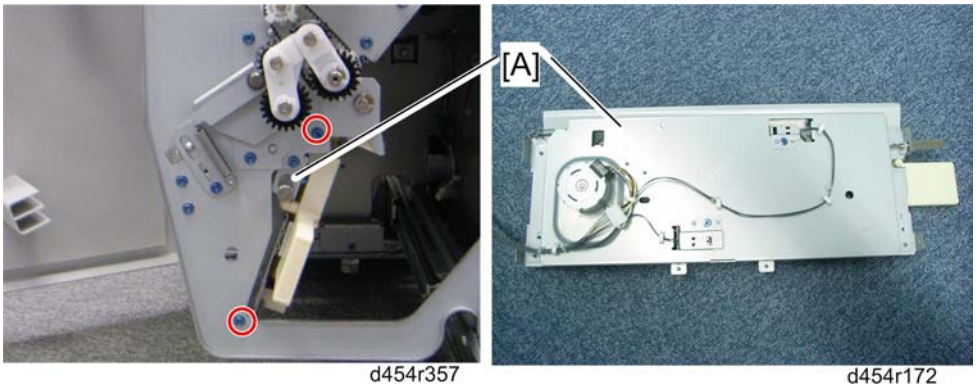


d454r166

5. Release the clamp [A].
6. Disconnect two connectors [B].
7. 2nd fold motor bracket (☛ p.18 "2nd Fold Motor")




8. Remove two screws [A].



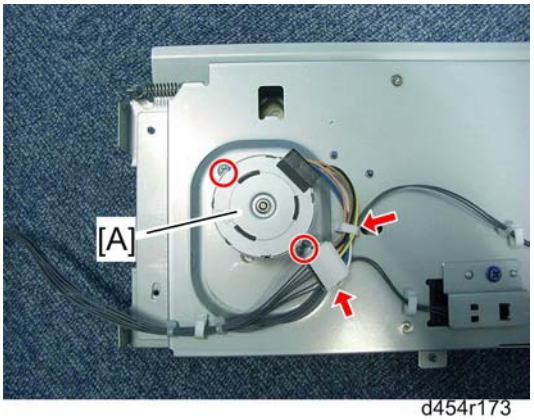

9. Hold the 3rd stopper unit [A], and then remove it ( x 2).

Important

- The 3rd stopper unit cannot hang the folding unit drawer without the two screws. If you remove the 1st stopper unit without any support, the 3rd stopper unit can fall and be broken.

## 1.5.2 3RD STOPPER MOTOR

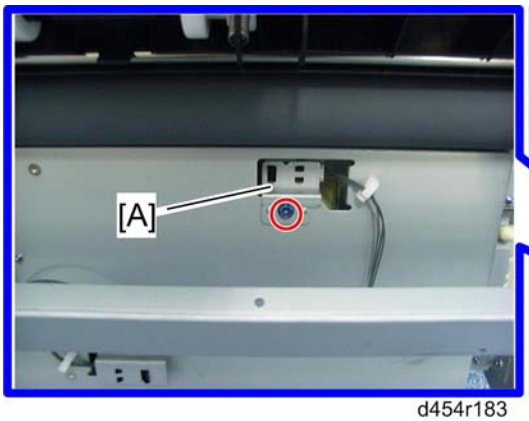
1. 3rd stopper unit (☛ p.32)



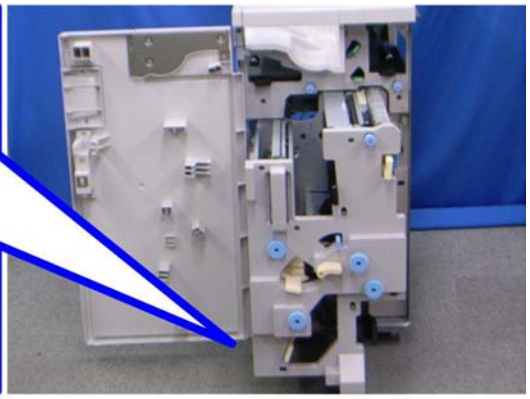

2. 3rd stopper motor [A] ( x 1, x 1, x 2)

## 1.5.3 3RD STOPPER PAPER SENSOR

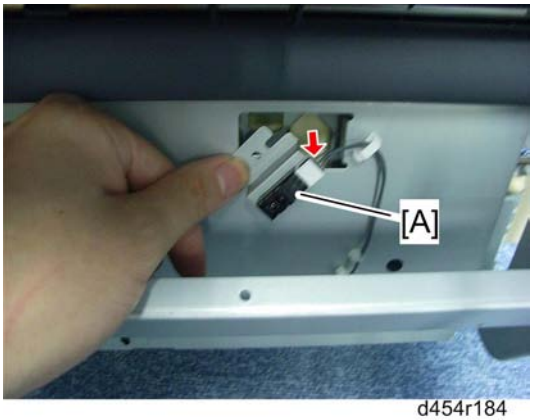
1. Pull out the folding unit drawer.



d454r183


d454r355

2. 3rd stopper paper sensor bracket [A] ( x 1)

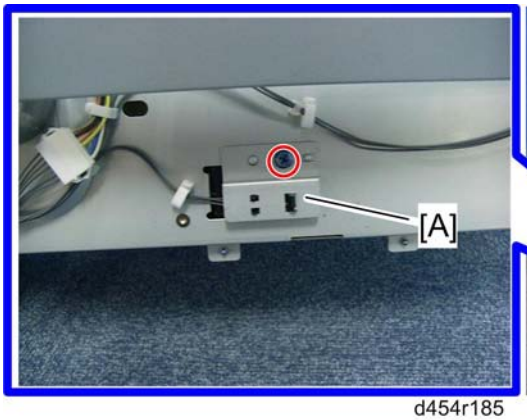


d454r184

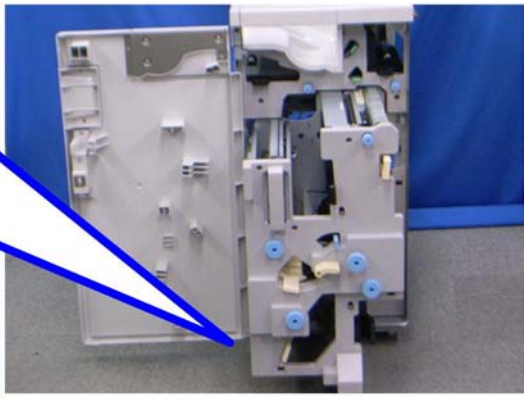
3. 3rd stopper paper sensor [A] ( x 1)

## 1.5.4 3RD STOPPER HP SENSOR

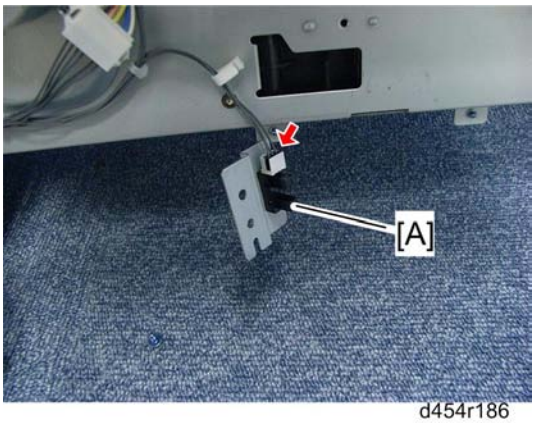
1. Pull out the folding unit drawer.



d454r185


d454r355

2. 3rd stopper HP sensor bracket [A] ( x 1)

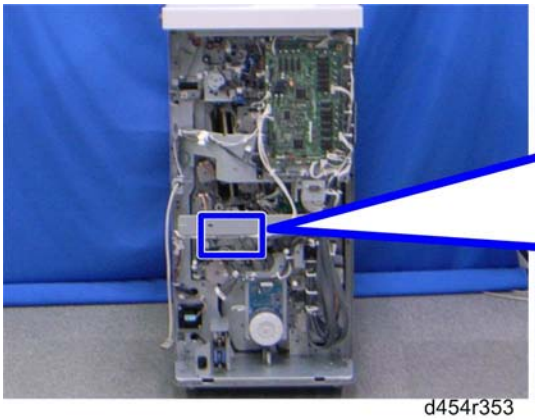


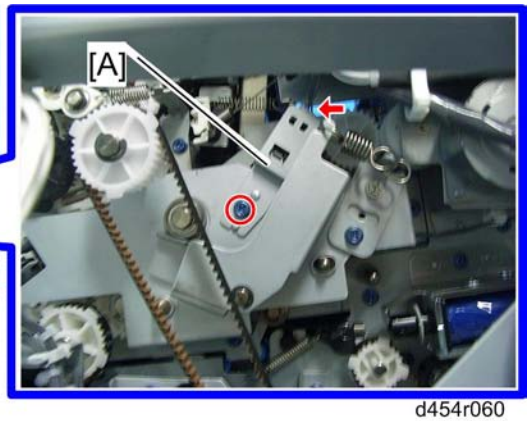
d454r186

3. 3rd stopper HP sensor [A] ( x 1)

## 1.5.5 DIRECT-SEND JG (JUNCTION GATE) HP SENSOR

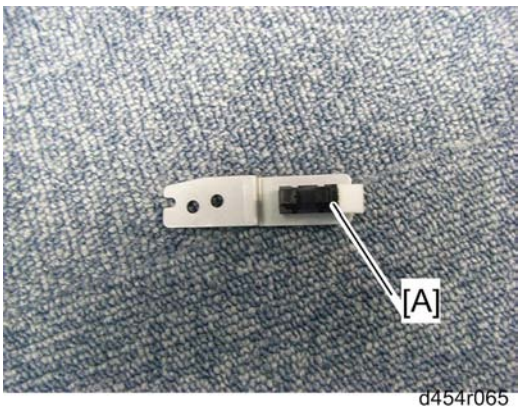
1. Rear upper cover (☛ p.4)
2. Rear lower cover (☛ p.4)


d454r353



d454r060

3. Direct-Send JG HP sensor bracket [A] ( x 1, x 1)



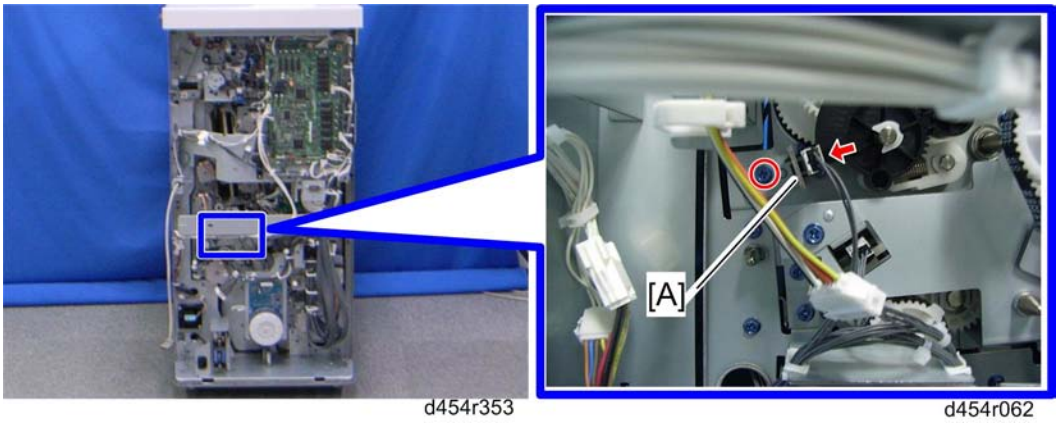
d454r065

4. Direct-Send JG HP sensor [A] (hooks)

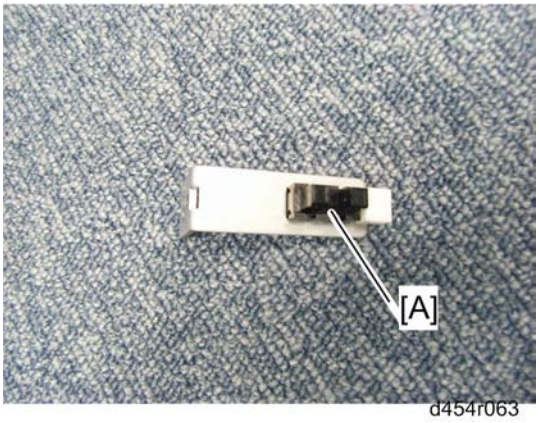
## 1.5.6 REGISTRATION ROLLER HP SENSOR

1. Rear upper cover (☛ p.4)

2. Rear lower cover (☛ p.4)



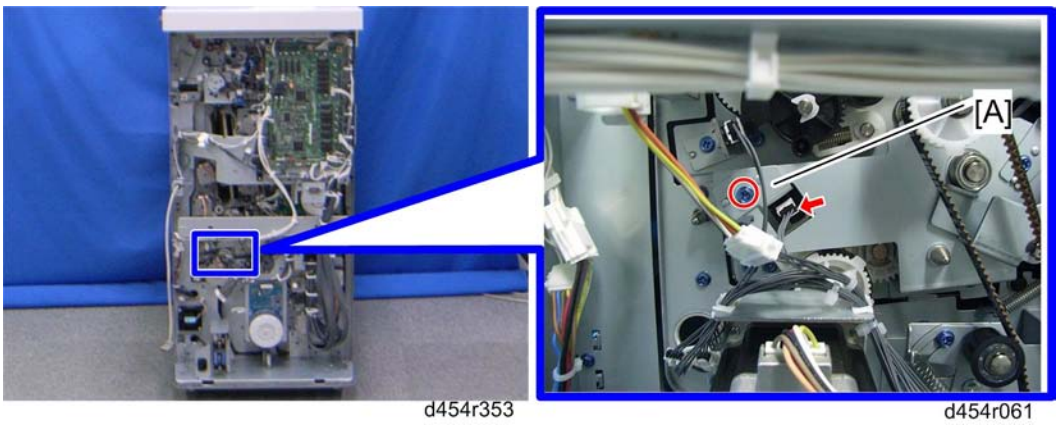

3. Registration roller HP sensor bracket [A] ( x 1, x 1)



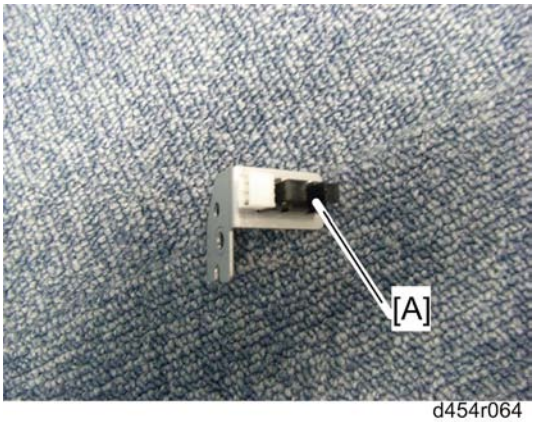

4. Registration roller HP sensor [A] (hooks)

## 1.5.7 FOLD PLATE HP SENSOR

1. Rear upper cover (☛ p.4)
2. Rear lower cover (☛ p.4)



3. Fold plate HP sensor bracket [A] ( x 1, x 1)

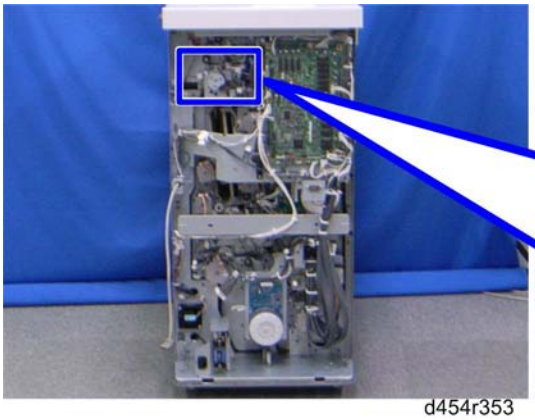


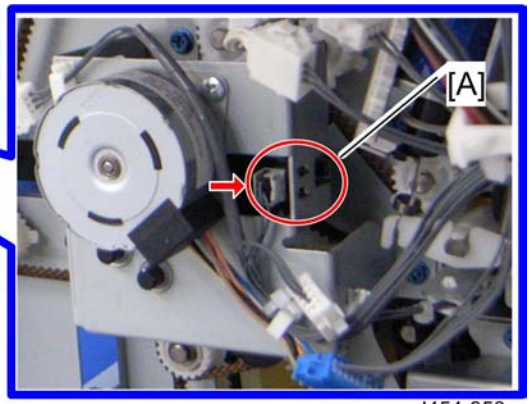
d454r064

4. Fold plate HP sensor [A] (hooks)

## 1.5.8 ENTRANCE JG (JUNCTION GATE) HP SENSOR

1. Rear upper cover (☛ p.4)


d454r353

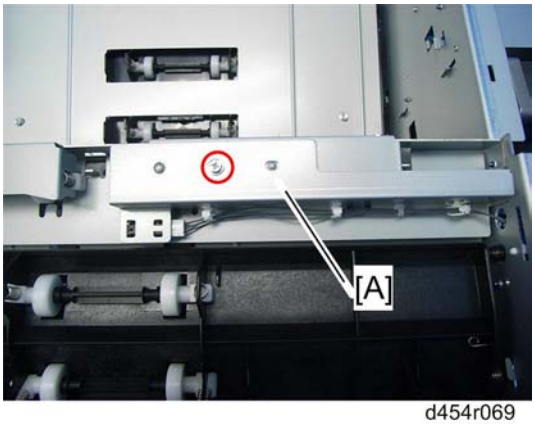


d454r358

2. Entrance JG HP sensor [A] (hooks, x 1)

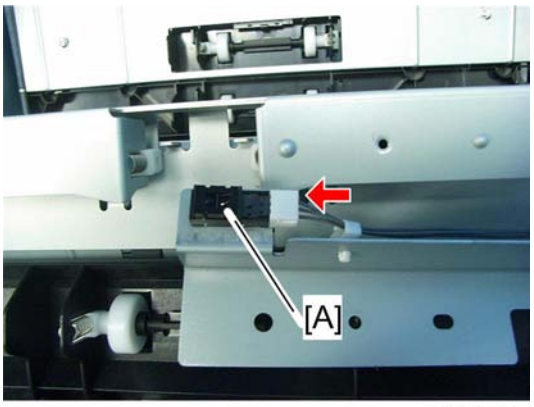
## 1.5.9 TOP TRAY EXIT SENSOR

1. Top cover (☛ p.2)




d454r069

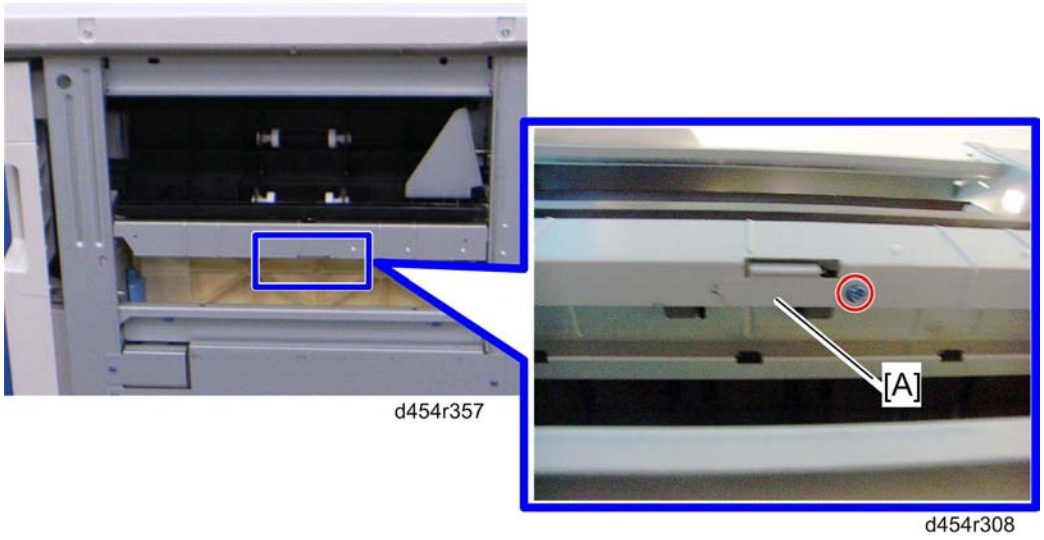
2. Top tray exit sensor bracket [A] ( x 1)




d454r070

3. Top tray exit sensor [A] ( x 1)

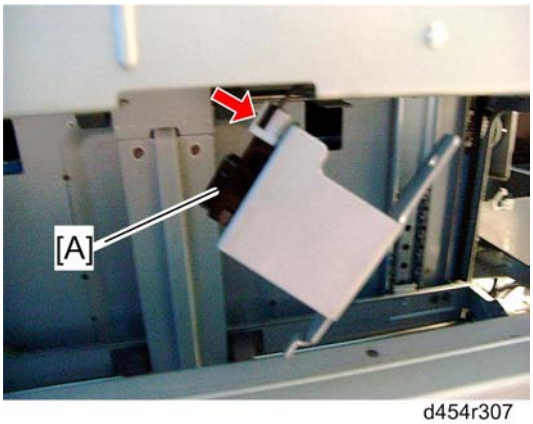
## 1.5.10 ENTRANCE SENSOR




d454r357

d454r308

1. Entrance sensor bracket [A] ( x 1)

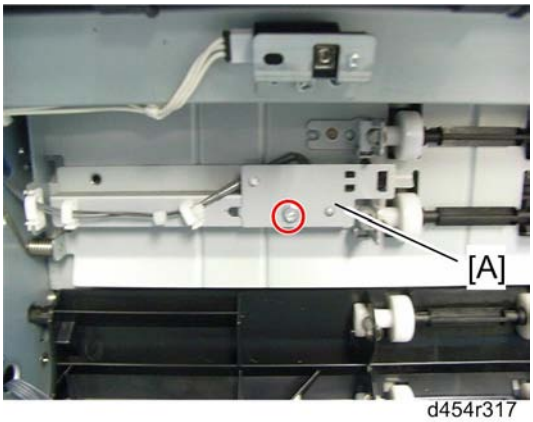


d454r307

2. Entrance sensor [A] (hooks, x 1)

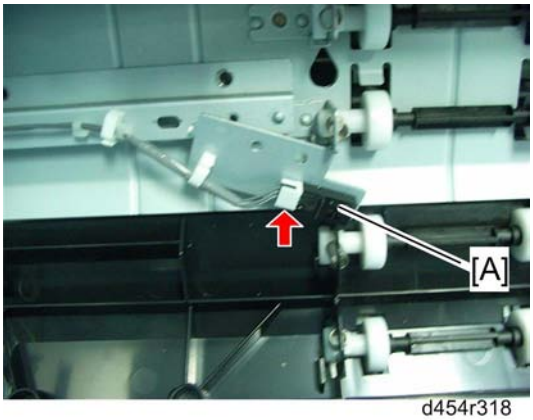
## 1.5.11 TOP TRAY EXIT SENSOR

1. Top tray right cover (p.5)



d454r317

2. Top tray exit sensor bracket [A] ( x 1)



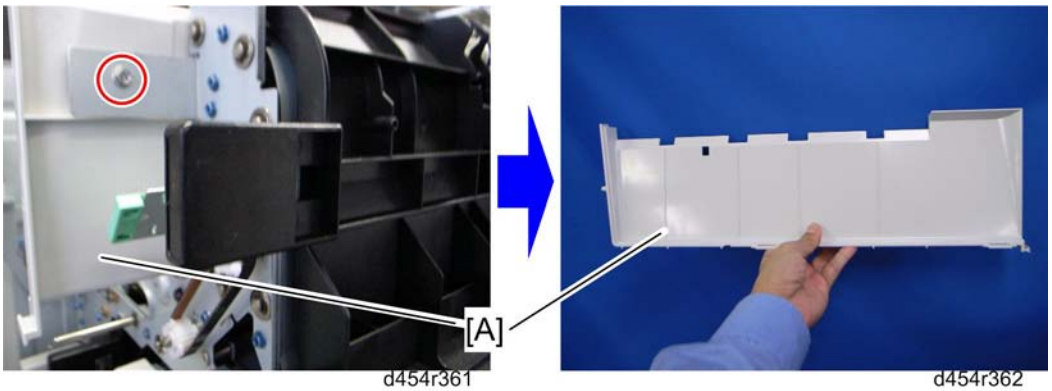
d454r318

3. Top tray exit sensor [A] (hooks, x 1)

# 1.6 ELECTRICAL COMPONENTS: MAIN 1

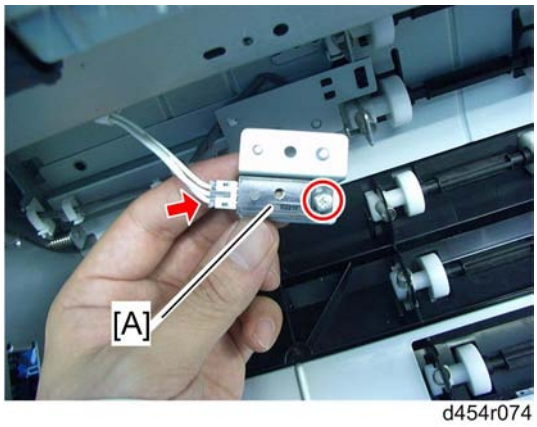
## 1.6.1 TOP TRAY FULL SENSOR (E)

1. Top tray (☛ p.5)




2. Paper exit cover [A] (🔩 x 1)

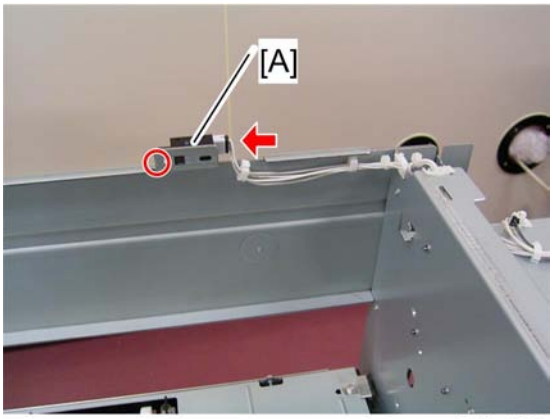

3. Top tray full sensor (E) bracket (🔩 x 1)




4. Top tray full sensor (E) [A] (🔩 x 1,✋ x 1)

## 1.6.2 TOP TRAY FULL SENSOR (R)

1. Top tray (☛ p.5)

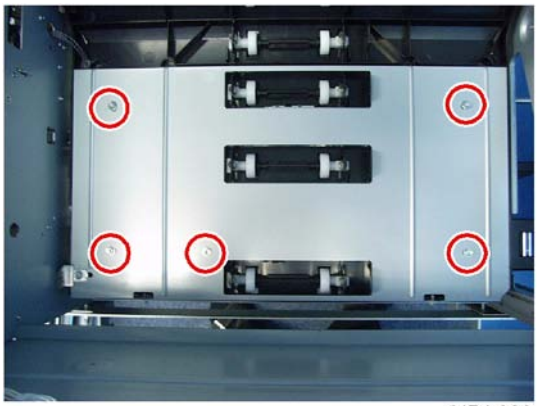



d454r067

2. Top tray full sensor (R) [A] (🔩 x 1,✋ x 1)

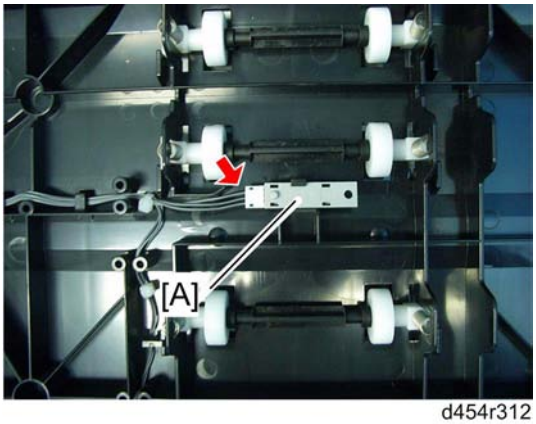
## 1.6.3 VERTICAL PATH PAPER SENSOR

1. Top tray (☛ p.5)



d454r309

2. Remove the bracket (🔩 x 5)

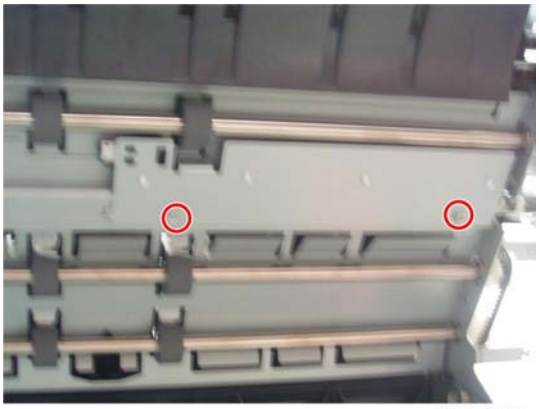



d454r312

3. Vertical path paper sensor [A] (✋ x 1, hooks)

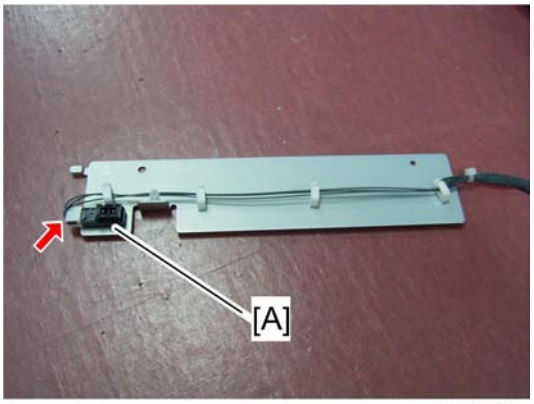
## 1.6.4 HORIZONTAL PATH PAPER SENSOR

1. Top tray (☛ p.5)



d454r371

2. Remove the bracket (🔩 x 2)

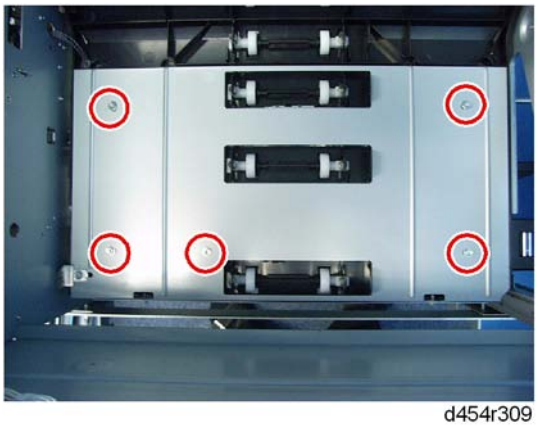



d454r372

3. Horizontal path paper sensor [A] (✋ x 1)

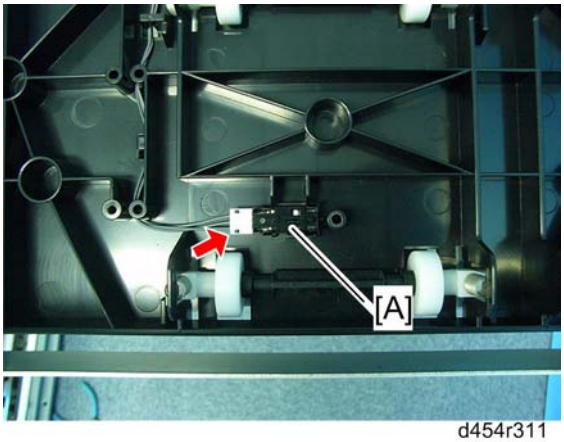
## 1.6.5 HORIZONTAL PATH EXIT SENSOR

1. Top tray (☛ p.5)



d454r309

2. Remove the bracket (🔩 x 5)

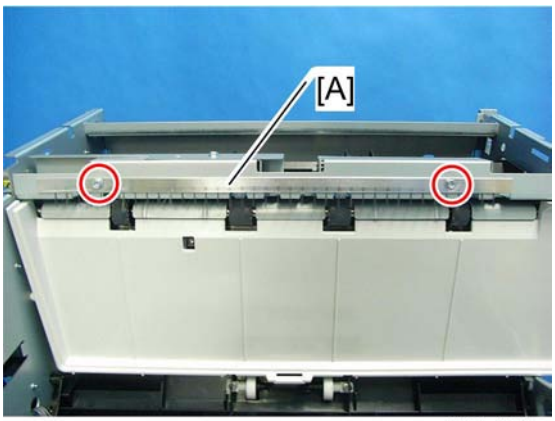


d454r311

3. Horizontal path exit sensor (☞ [A] x 1)

## 1.6.6 DISCHARGE BRUSH 1

1. Top cover (☛ p.2)

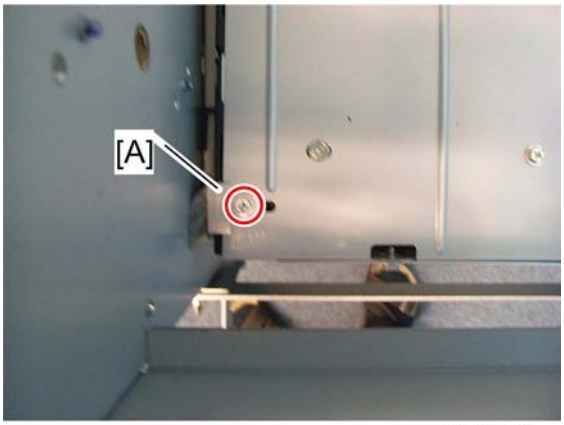


d454r314

2. Discharge brush 1 [A] (☞ x 2)

## 1.6.7 DISCHARGE BRUSH 2

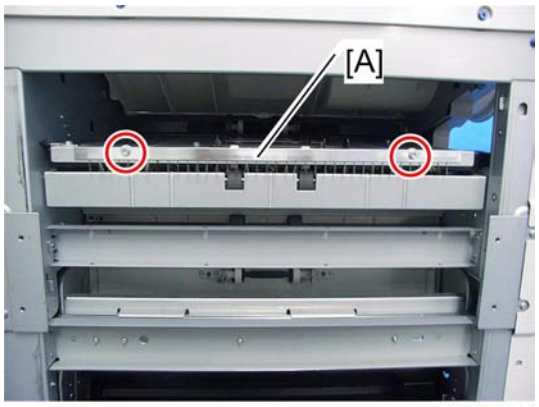
1. Top tray (☛ p.5)




d454r313

2. Discharge brush 2 [A] (🔩 x 1)

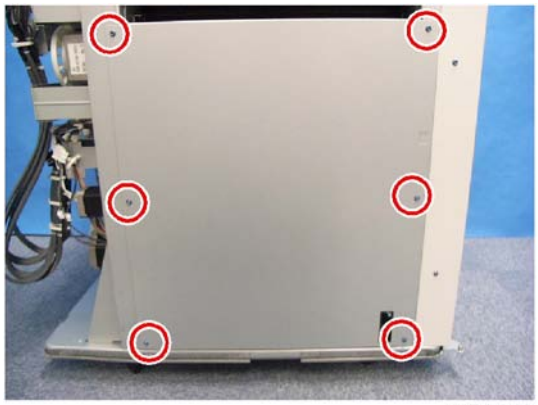
## 1.6.8 DISCHARGE BRUSH 3




d454r350

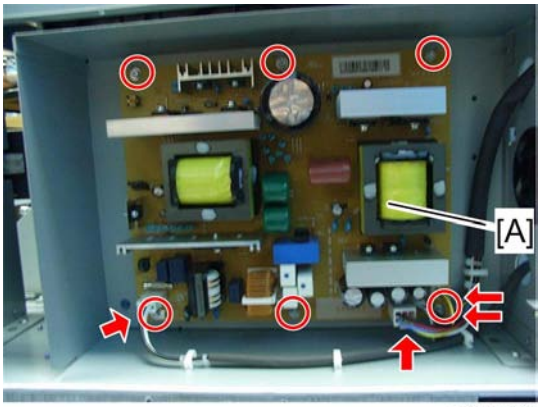
1. Discharge brush 3 [A] (🔩 x 2)

## 1.6.9 PSU



d454r349

1. Left lower bracket (🔩 x 6)

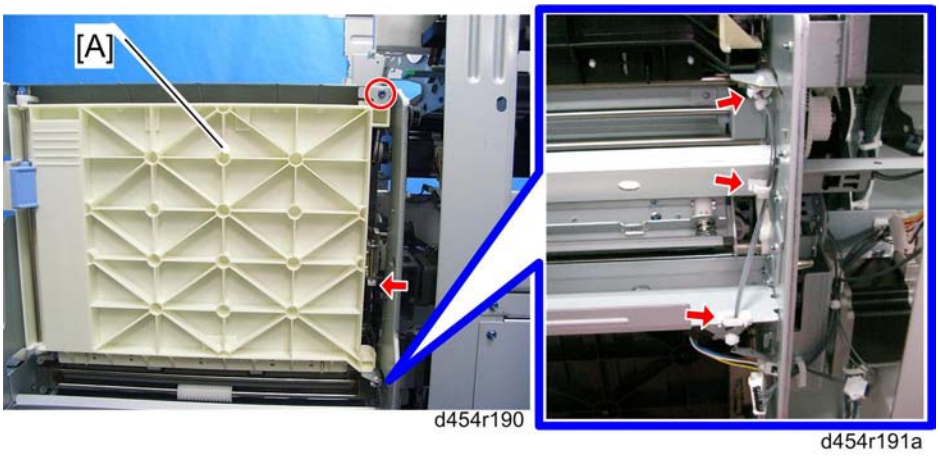


d454r178

2. PSU [A] (x 6, x 4)

## 1.6.10 FIRST FOLD UNIT

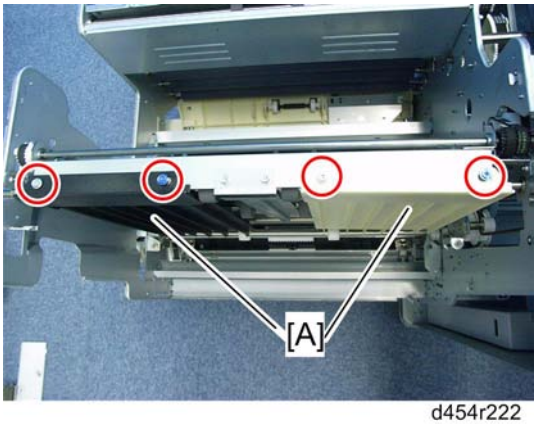
1. 1st stopper unit (☛ p.19)



d454r190

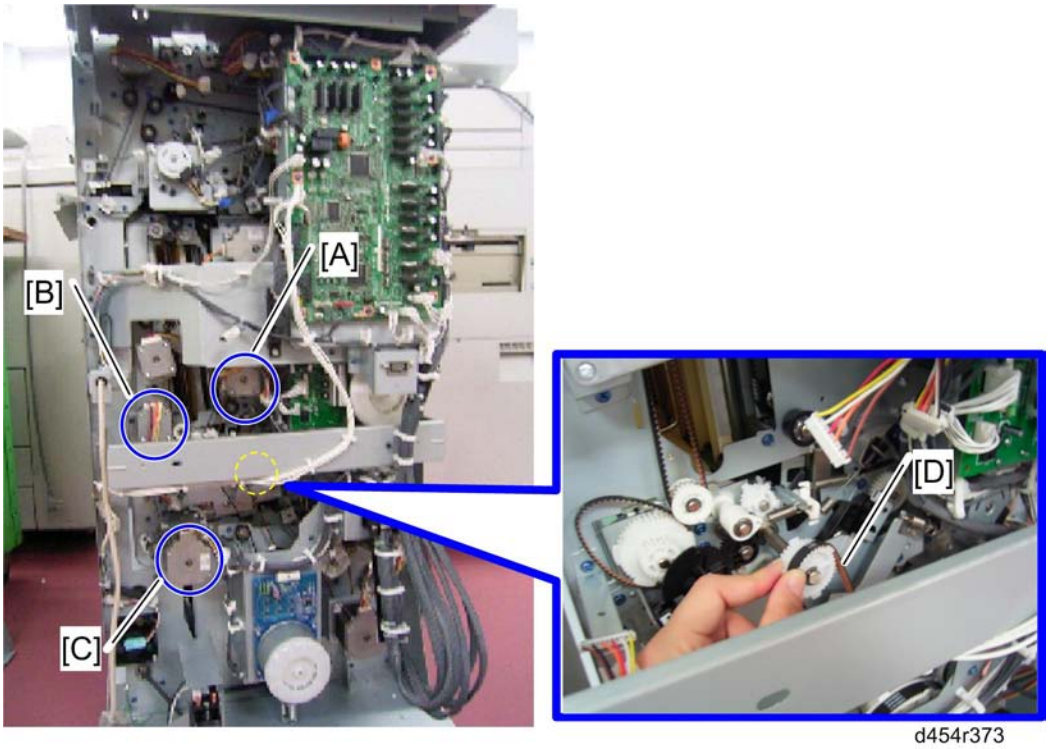
d454r191a

2. Jam removal door [A] ( x 1, x 3, x 1)



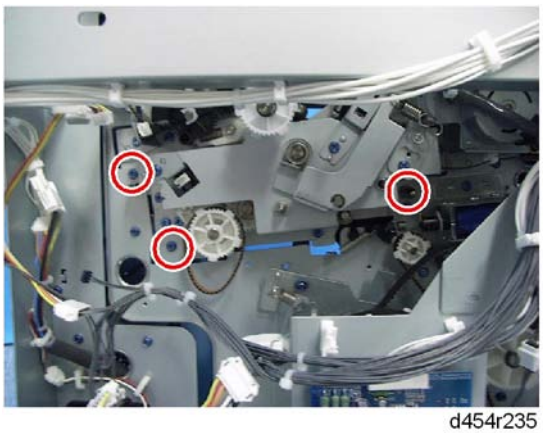
d454r222

3. Remove two guide plates [A] (each x 2)

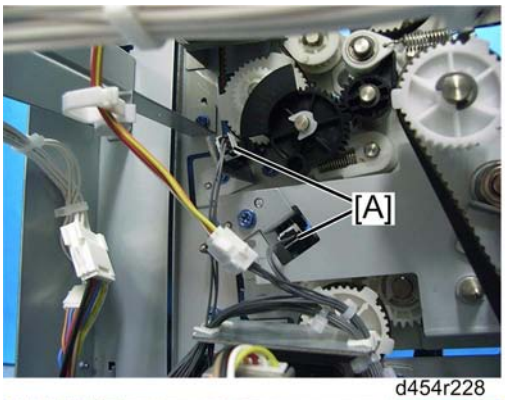


d454r373

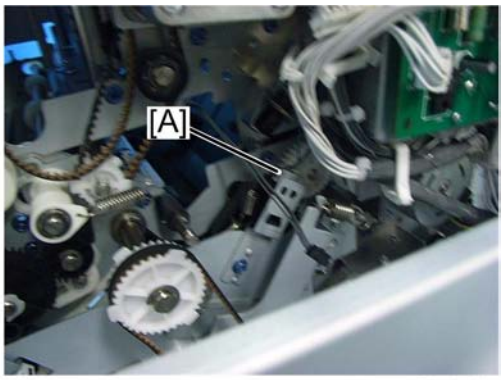
4. Registration roller transport motor bracket [A] (☛ p.13 "Registration Roller Transport Motor")
5. Registration roller release motor bracket [B] (☛ p.12 "Registration Roller Release Motor")
6. Fold plate motor bracket [C] (☛ p.15 "Fold Plate Motor")
7. Timing belt of the 1st plate motor [D]


d454r235

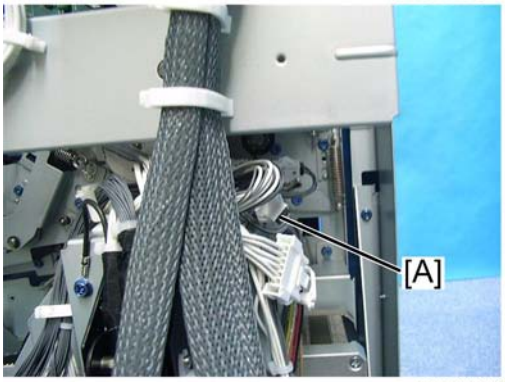
8. Remove three screws on the rear side.




d454r228

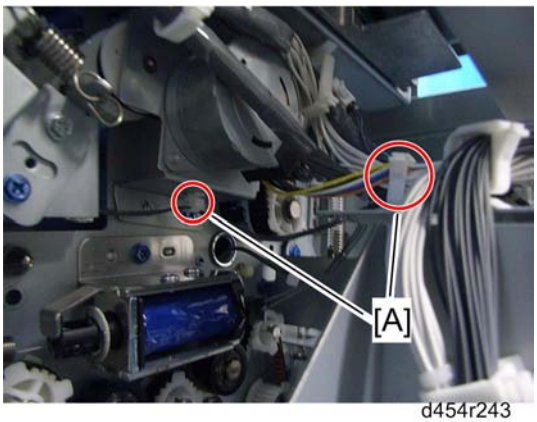



d454r227



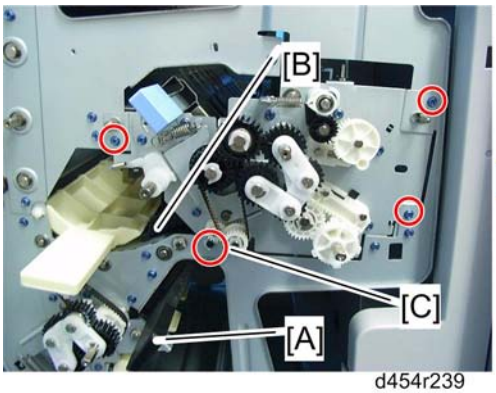

d454r246

9. Disconnect four harnesses [A] on the rear side.




d454r243

10. Release two clamps [A].



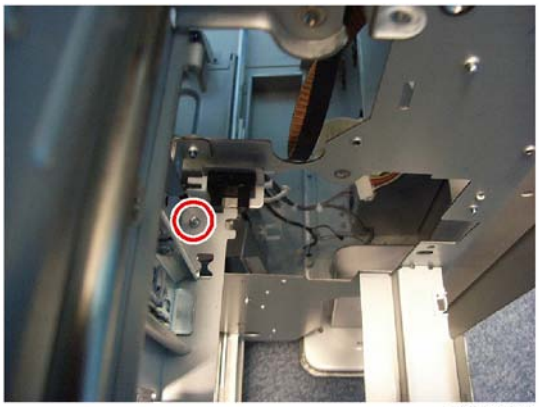
d454r239


d454r250

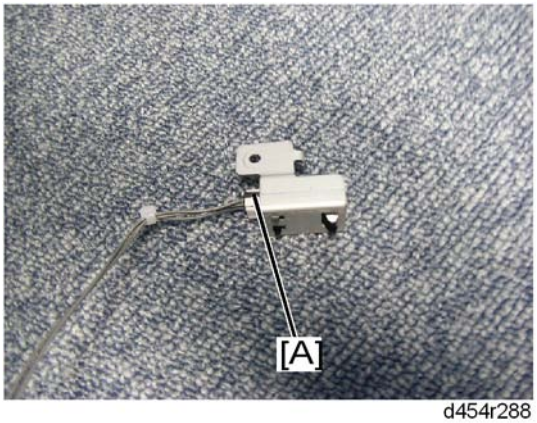
11. Lower guide plate [A], keep the upper guide plate [B] up a little and remove the first fold unit (x 3, snap fit [C] x 1)

## 1.6.11 DYNAMIC ROLLER HP SENSOR

1. First fold unit (☛ p.45)


d454r320

2. Dynamic roller HP sensor bracket (x 1)



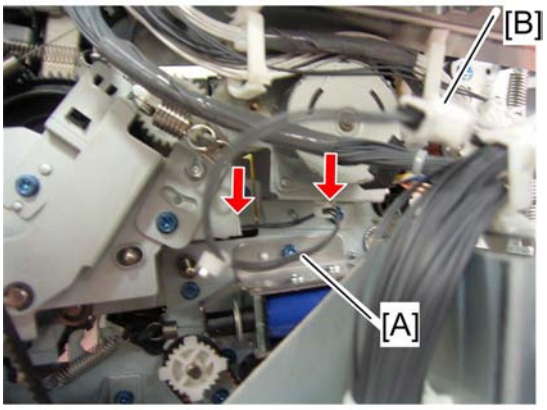
d454r288

3. Dynamic roller HP sensor [A] (x 1)

# 1.7 ELECTRICAL COMPONENTS: MAIN 2

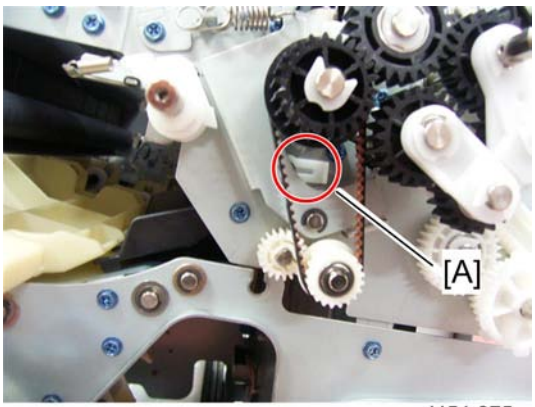
## 1.7.1 BYPASS ENTRANCE PAPER SENSOR

1. Folding unit cover (☛ p.3)
2. Rear upper cover (☛ p.4)
3. Rear lower cover (☛ p.4)



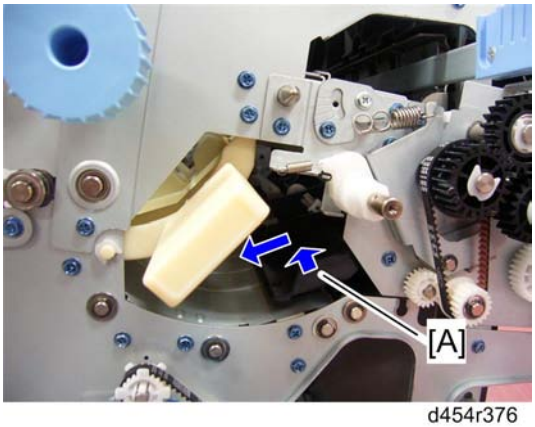
d454r374

4. Disconnect the bypass entrance paper sensor harness [A] from the connector [B] (🖘 x 2).



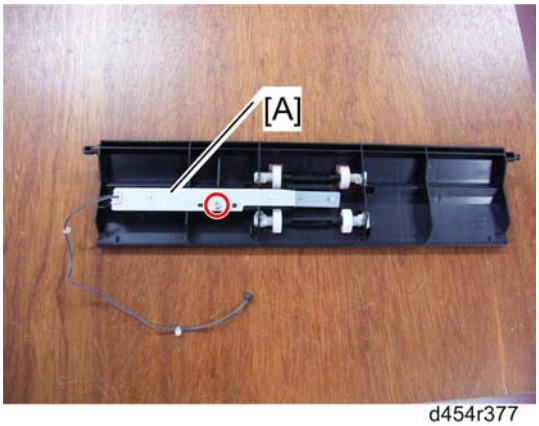
d454r375

5. Remove the clip [A] for the bypass entrance guide plate.



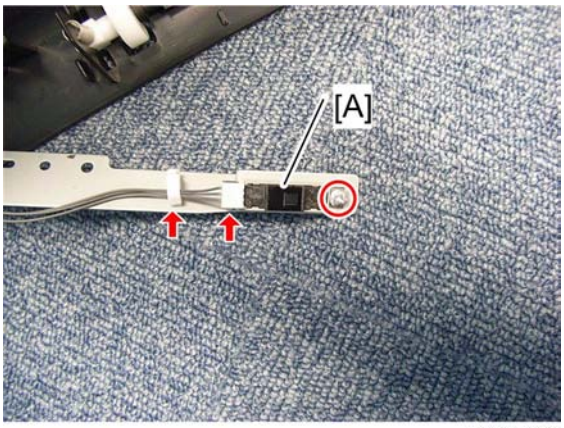

d454r376

6. Push the bypass entrance guide plate [A] to the rear, then slide it to the left, and remove it.




d454r377

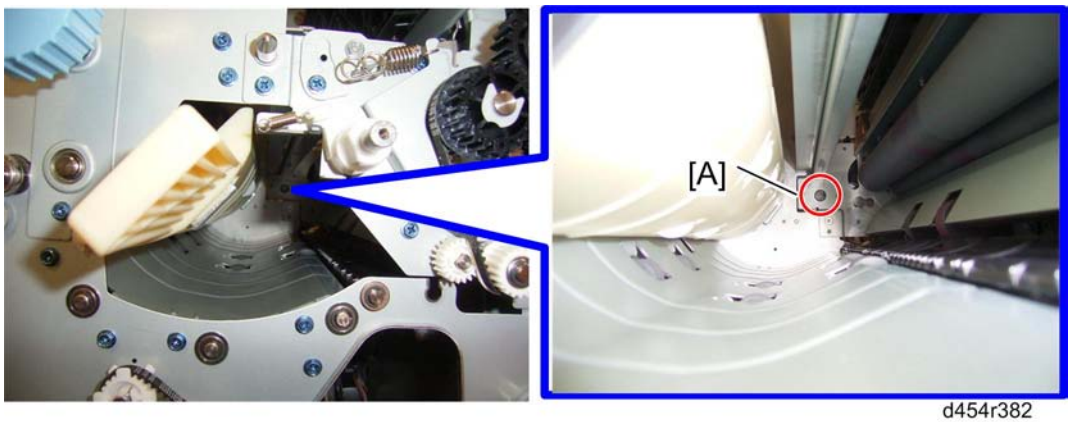
7. Bypass entrance paper sensor bracket [A] (x 1)




d454r286

8. Bypass entrance paper sensor [A] (x 1, x 1, x 1)

### *Reinstalling the bypass entrance paper sensor*

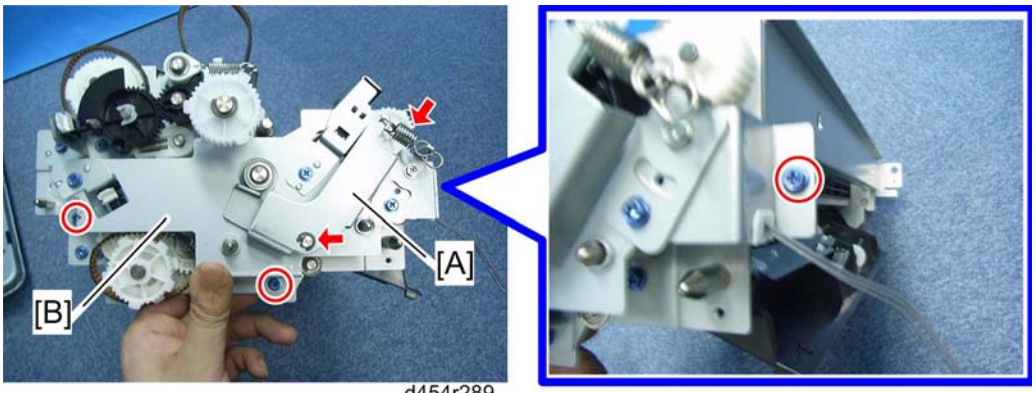



d454r382

Put the harness of the bypass entrance paper sensor through the hole [A] in the rear frame of the drawer.

## 1.7.2 FIRST/ SECOND/ THIRD FOLD ROLLER

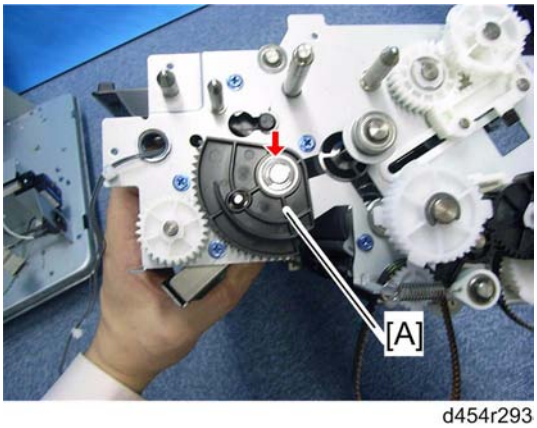
1. First fold unit (☛ p.45)




d454r289

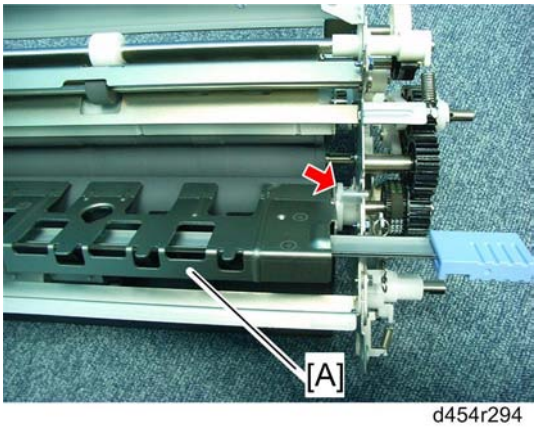
d454r291

2. Tension bracket [A] (spring x 1, ℂ x 1)
3. Rear bracket [B] (🔩 x 3)



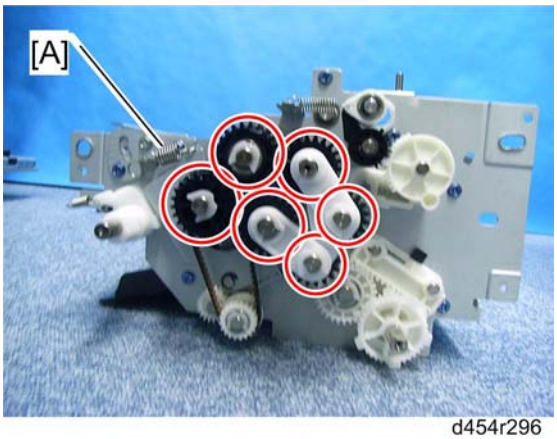

d454r293

4. Remove the gear [A] (ℂ x 1)



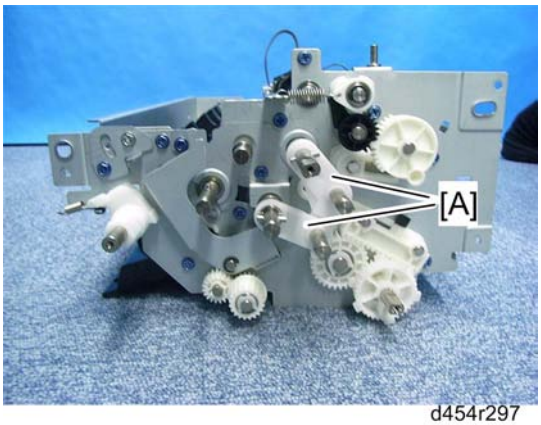
d454r294

5. Guide plate [A] (x 1)



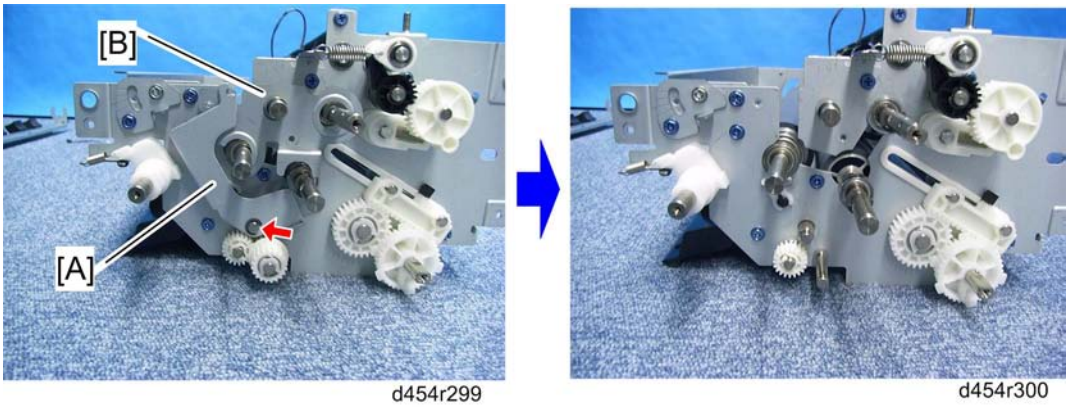
d454r296

6. Remove the spring [A] at the front side.
7. Remove six gears (clip x 1 each)



d454r297

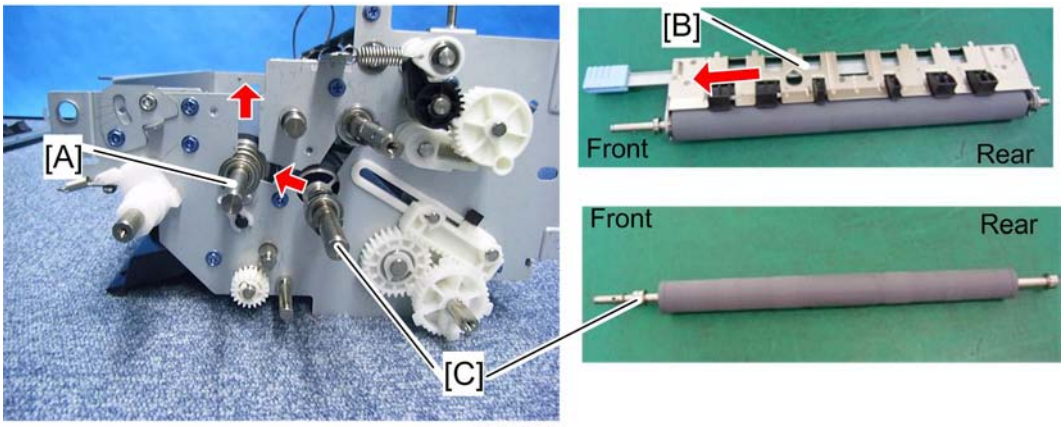
8. Remove the links [A] (clip x 1 each).



d454r299

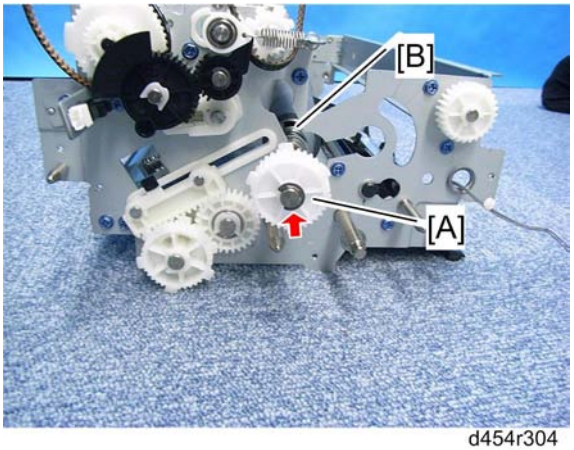
d454r300

9. Tension bracket [A] (ℂ x 1)
10. Remove the front bracket [B] (🔩 x 2).



d454r300

11. Third fold roller with the guide plate [A]
12. Remove the guide plate [B].
13. Second fold roller [C].

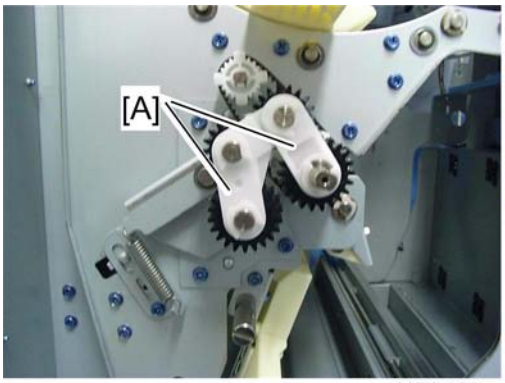


d454r304

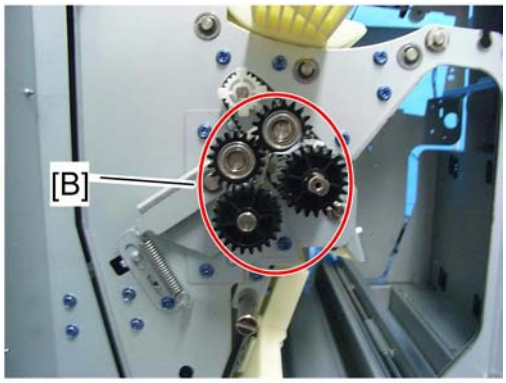
14. Remove the gear [A] (ℂ x 1), and then the first fold roller [B].

## 1.7.3 FOURTH / FIFTH FOLD ROLLER

1. Rear upper cover (☛ p.4)
2. Rear lower cover (☛ p.4)
3. Drawer stopper (☛ p.32 "3rd Stopper Unit")

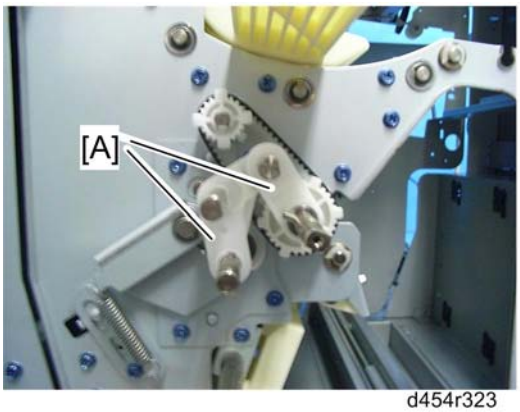


d454r321

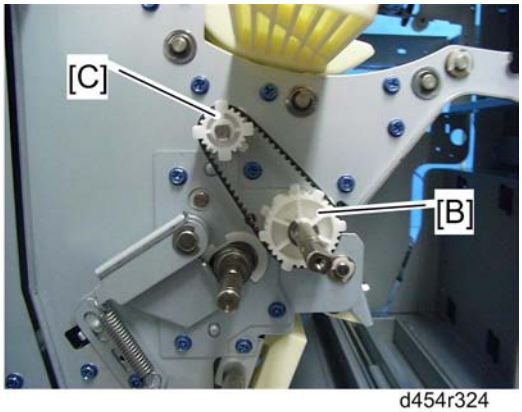


d454r322

4. Remove the links [A] on the front side (clip x 2 each).
5. Remove four gears [B].

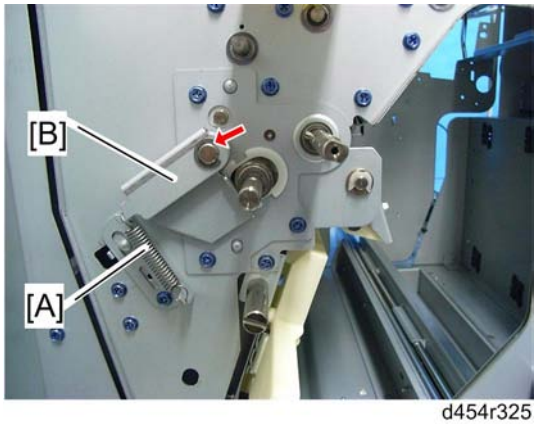


d454r323



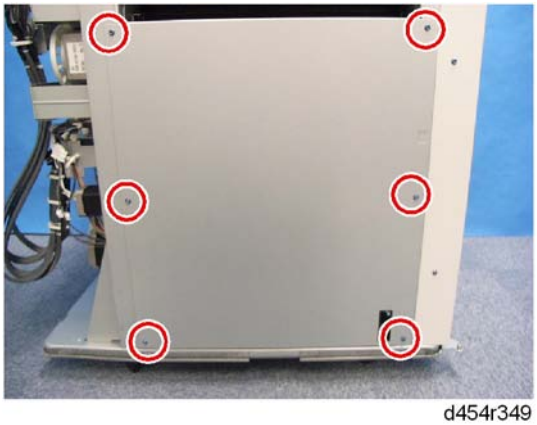
d454r324

6. Remove the links [A] (pin x 1 each)
7. Remove the gear [B] (ℂ x 1), and the gear [C] (timing belt x 1).

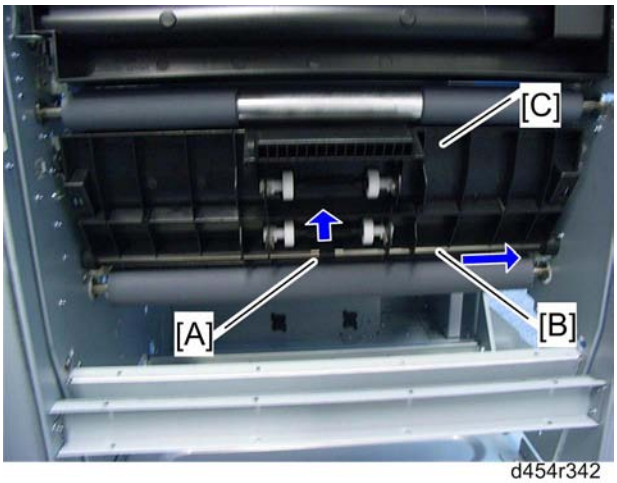


d454r325

8. Remove the spring [A] and the tension bracket [B] (ℂ x 1).

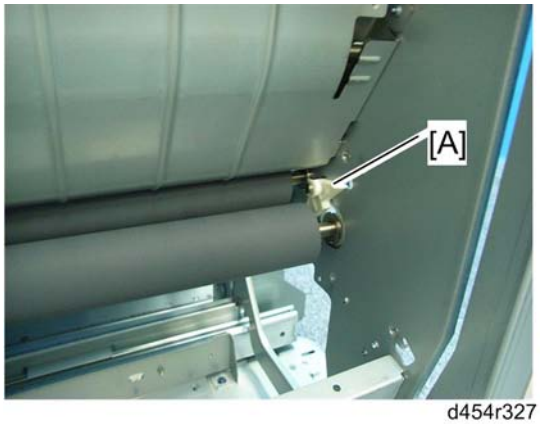

d454r349

9. Left lower bracket (🔩 x 6)

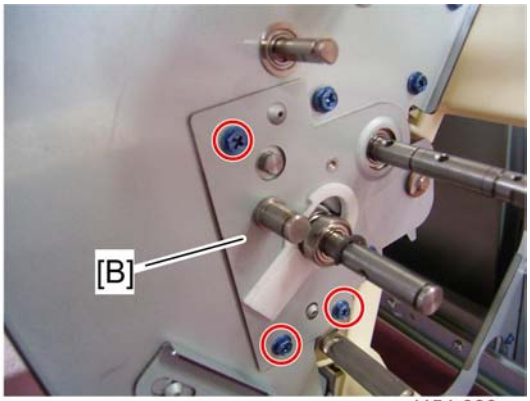


d454r342

10. Lift up the hook [A] to release the guide plate shaft [B].
11. Move the guide plate shaft [B] to the front side (arrow direction), and then remove the guide plate [C].

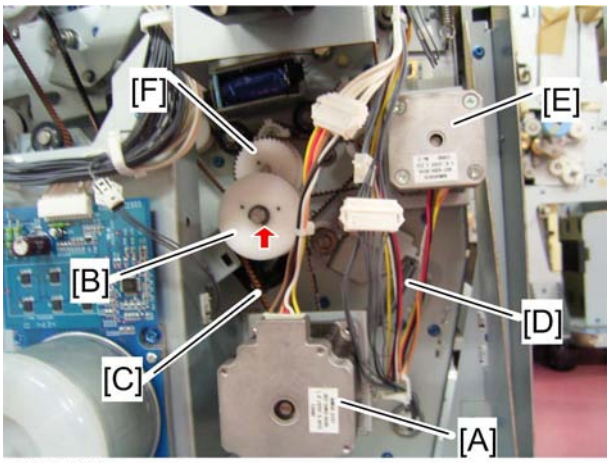



d454r327



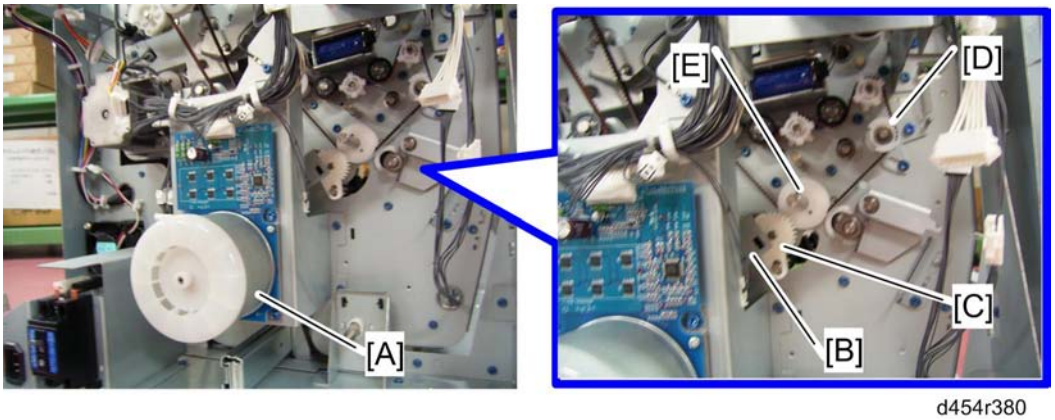

d454r339

12. Remove the cam [A] on the front side.
13. Fold roller fixing front plate [B] (☞ x 3)



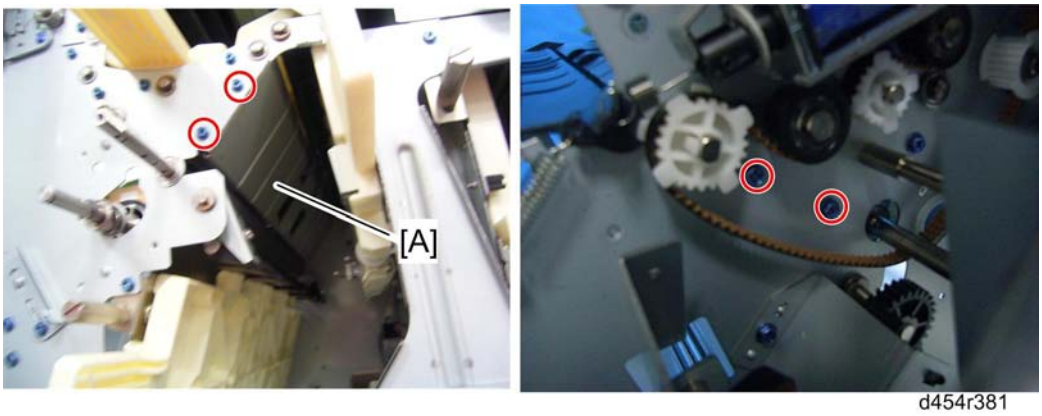

d454r341

14. 2nd fold motor [A] (☛ p.18)
15. 2nd fold pulley gear [B] (℃ x 1) and idle gear
16. Timing belt [C]
17. Spring [D]
18. FM6 pawl motor [E] (☛ p.17)
19. Pulley gear [F]

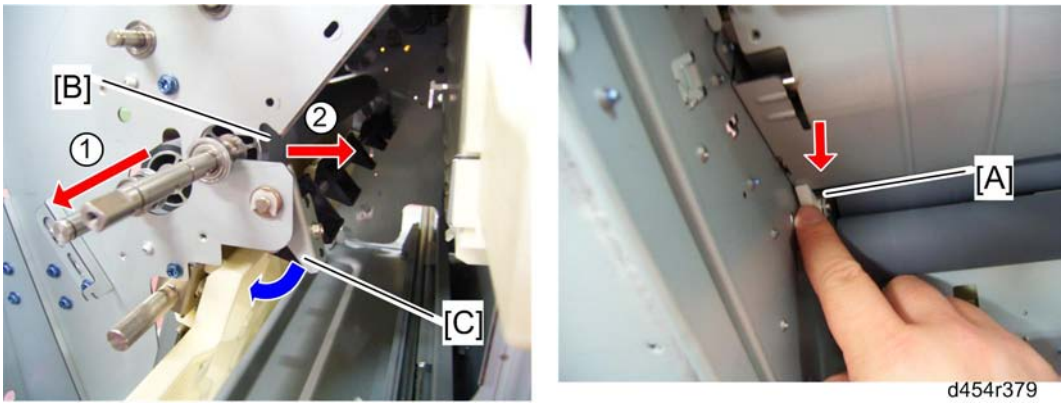



d454r380

20. 1st fold motor [A] (☛ p.17)
21. FM6 pawl HP sensor bracket [B]
22. FM6 pawl cam gear [C]
23. Release the tension bracket [D], and then remove the transmission pulley gear [E] (pin x 1)



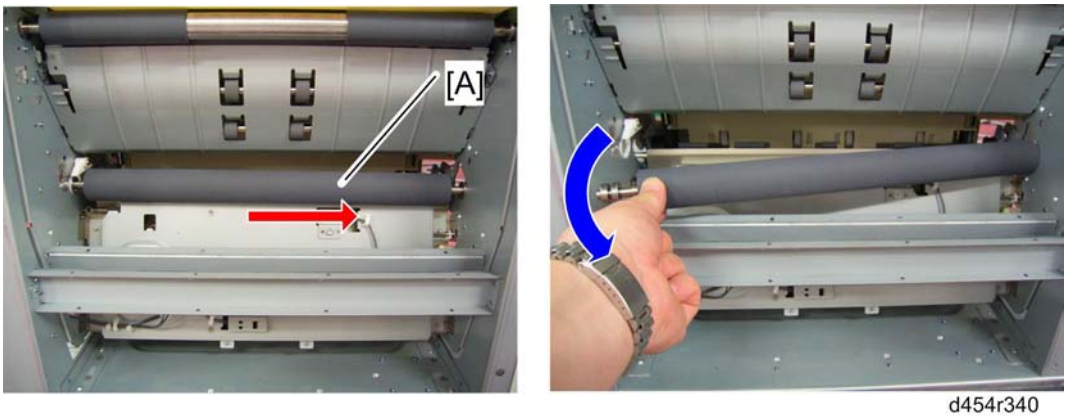

24. Remove the entrance guide plate [A] at the 2nd fold unit (🔩 x 4).




25. Hold the fourth fold roller cam [A] at the rear of the drawer unit.
26. Pull the fourth fold roller [B] to the front side ①.
27. Keep the FM6 pawl [C] open, and then remove the fourth fold roller ②.

Note

- Hold the holder [A] when pulling the fourth fold roller [B] in the ① direction.



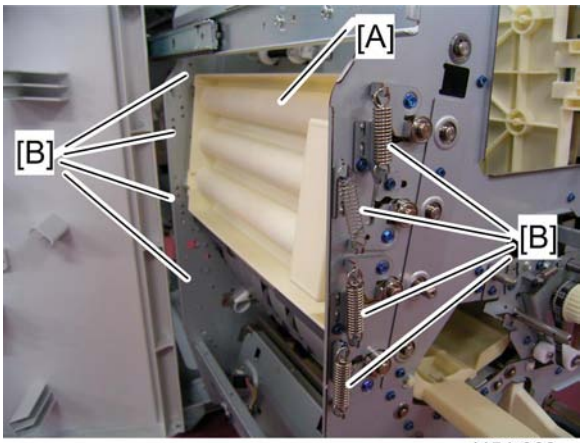
d454r340

28. Remove the fifth fold roller [A].

## 1.7.4 CREASE ROLLERS

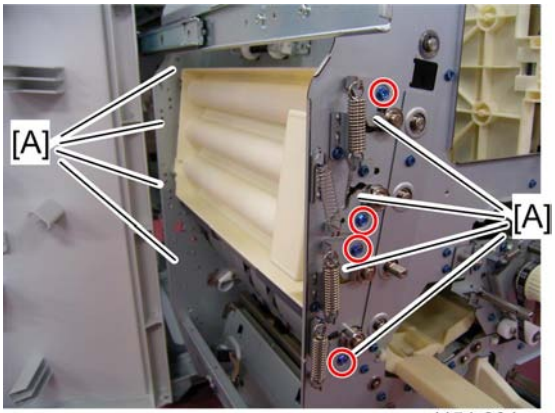
### *Crease Rollers: Idle Rollers*

1. Folding Unit Cover (☛ p.3)
2. Drawer stopper (☛ p.32 "3rd Stopper Unit")
3. Pull out the folding unit drawer fully (☛ p.6).



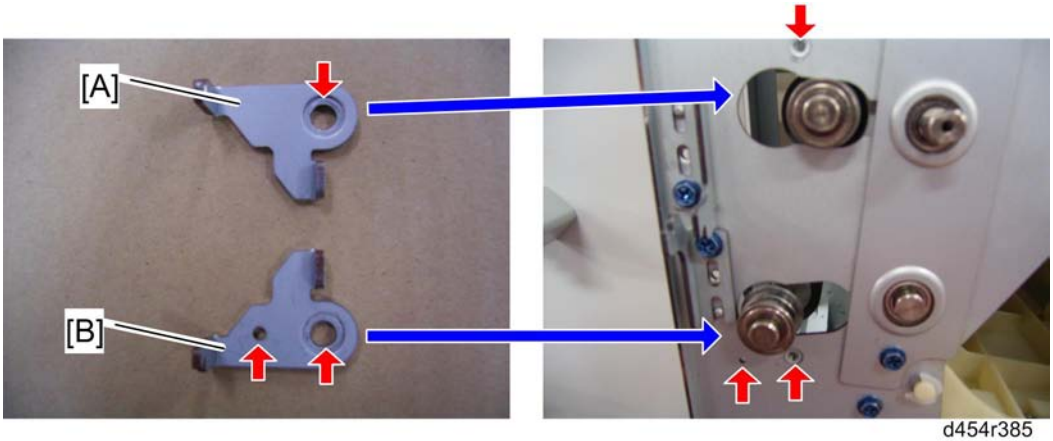
d454r383

4. Crease jam removal door [A]
5. Tension springs [B] (front: 4, rear: 4)
   - The lowest spring should be a black one when reinstalling the springs.



d454r384

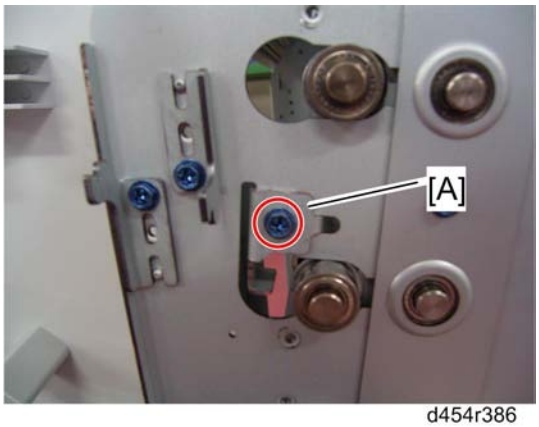
6. Tension brackets [A] (🔩 x 1 each/ front: 4, rear: 4)



d454r385

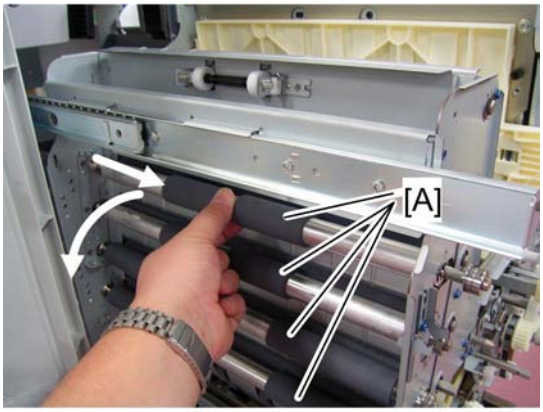
There are two types of tension brackets at the crease roller area. The difference between these brackets is the number of screw holes ([A]: one hole, [B]: two holes).

- Attach a bracket [A] with one hole to the crease roller frame with one hole.
- Attach a bracket [B] with two holes to the crease roller frame with two holes.



d454r386

7. Magnet attachment bracket [A] (🔩 x 1)

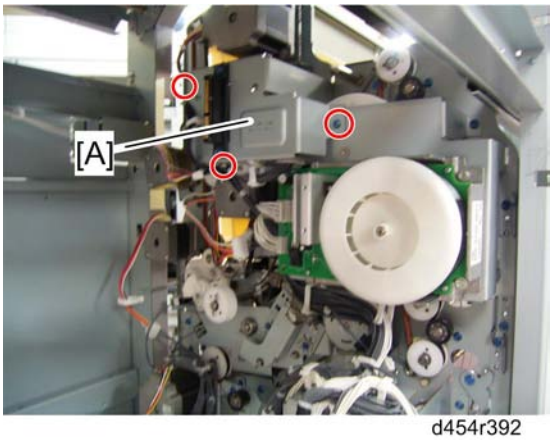


d454r387

8. Crease rollers: idle rollers [A]

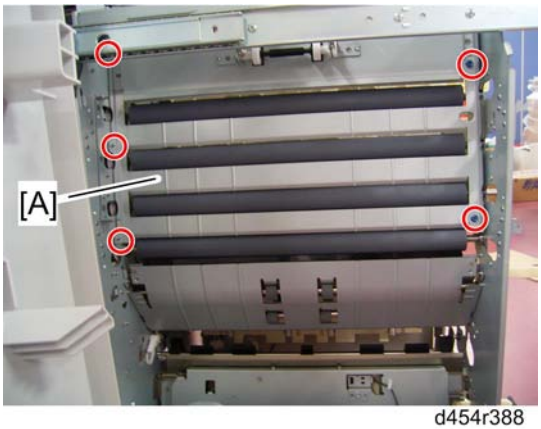
## *Crease Rollers: Drive Rollers*

1. Crease Rollers: Idle Rollers (described above)
2. Rear upper cover (☛ p.4)
3. Rear lower cover (☛ p.4)
4. Main board bracket (☛ p.8 "Top Tray Transport Motor")
5. Rear upper stay (☛ p.10 "Dynamic Roller Lift Motor")



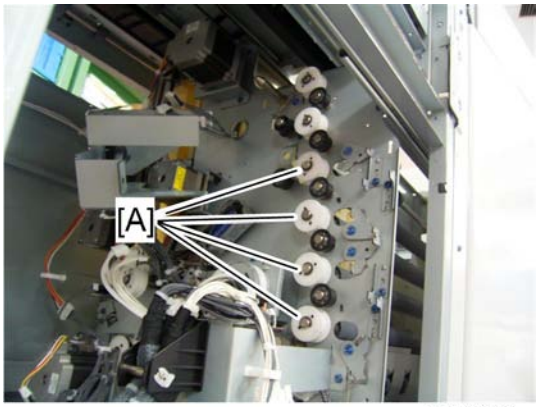
d454r392

6. Drawer connector bracket [A] (🔩 x 3)
7. Crease motor (☛ p.11)



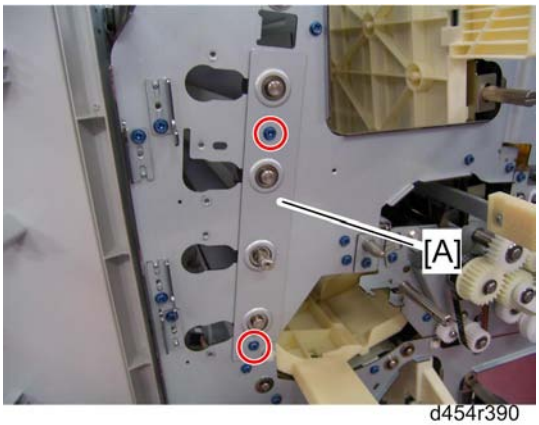
d454r388

8. Crease path guide plate [A] (🔩 x 5)



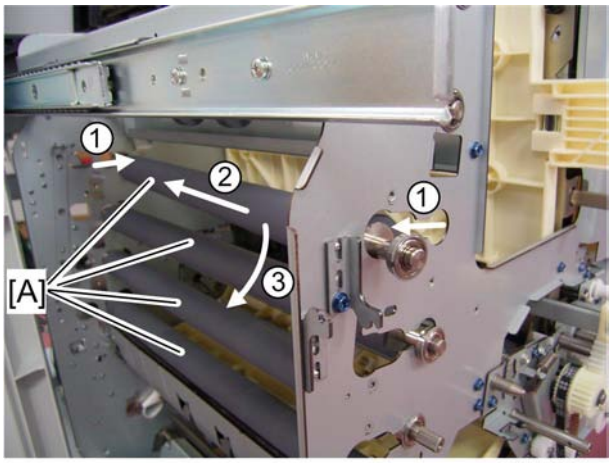
d454r389

9. Crease roller pulley gears [A] (ℂ x 1 each)



d454r390

10. Crease roller fixing plate [A] (🔩 x 2)




d454r391

11. Crease rollers: drive rollers [A]

# 1.8 FOLD ADJUSTMENTS

## 1.8.1 FINE FOLD ADJUSTMENT

### *Before You Begin*

The fold positions can be adjusted in the User Tools (Operators, Skilled Operators) and the engine SP mode.

| Mode | Fold | User Tools*[1] | SP |
|---|---|---|---|
| FM1 | 1st | 0501 Adjust Z-fold Position 1 | 6750 |
| | 2nd | 0502 Adjust Z-fold Position 2 | 6751 |
| FM2 | 1st | 0503 Adjust Half Fold Position | 6752 |
| FM3 | 1st | 0504 Adjust Letter Fold-out Position 1 | 6753 |
| | 2nd | 0505 Adjust Letter Fold-out Position 2 | 6754 |
| FM4 | 1st | 0506 Adjust Letter Fold-in Position 1 | 6755 |
| | 2nd | 0507 Adjust Letter Fold-in Position 2 | 6756 |
| FM5 | 1st | 0508 Adjust Double Parallel Fold Position 1 | 6757 |
| | 2nd | 0509 Adjust Double Parallel Fold Position 2 | 6758 |
| FM6 | 1st | 0510 Adjust Gate Fold Position 1 | 6759 |
| | 2nd | 0511 Adjust Gate Fold Position 2 | 6760 |
| | 3rd | 0512 Adjust Gate Fold Position 3 | 6761 |

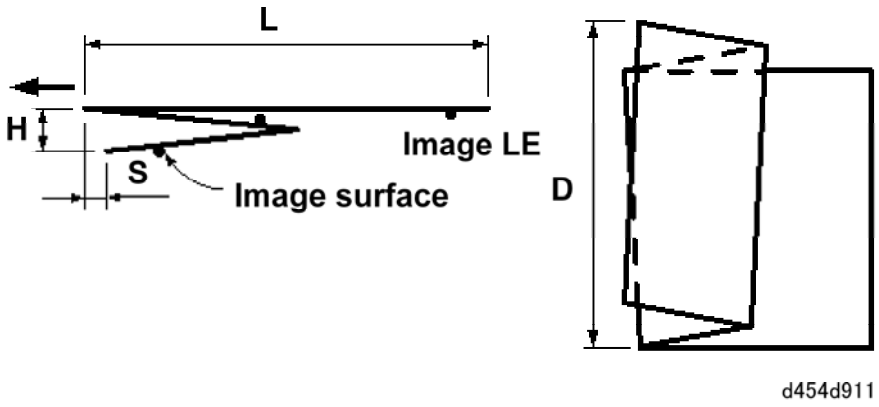
*[1]: These numbers are the same for Operators and Skilled Operators.

### *FM1 Z-Folding*

**User Tool Adjustment (Operator, Skilled Operator)**

The following standard adjustment of "S" can be done by the operator or skilled operator in the User Tools mode. Only "S" can be adjusted by the operator, as shown in the table below.

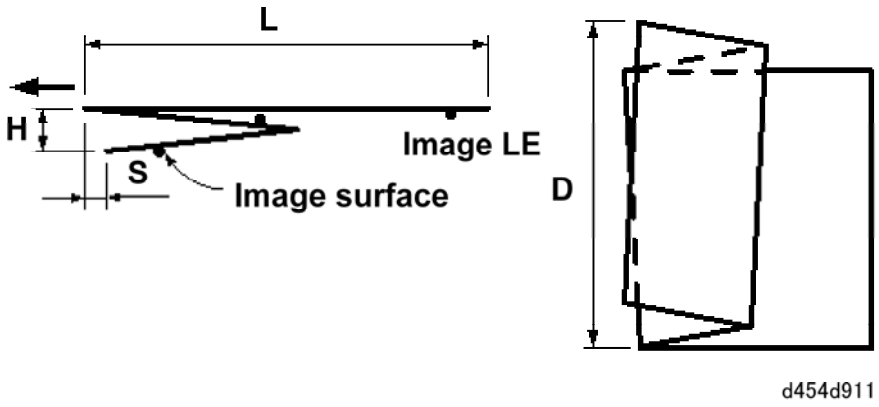
**Replacement and Adjustment**




| Size | Setting | Default | Range |
|---|---|---|---|
| A3 SEF | S | 2 mm | 2 to 25 mm |
| B4 SEF | S | 2 mm | 2 to 17 mm |
| A4 SEF | S | 2 mm | 2 to 17 mm |
| DLT | S | 2 mm | 2 to 20 mm |
| LG | S | 2 mm | 2 to 17 mm |
| LT SEF | S | 2 mm | 2 to 17 mm |
| Other | S | 2 mm | 2 to 17 mm |
| **Pitch Adj.** | **1 mm** | | |

**Engine SP Adjustment**

The following fine adjustment of "S" and "L" can be done by the customer engineer in the SP mode. "L" can be adjusted only for the paper sizes listed in the table below.




| Size | Setting | Default | Range | Setting | Default | Range |
|---|---|---|---|---|---|---|
| A3 SEF | S | 0 mm | ±4 mm | L | 0 mm | ±4 mm |
| B4 SEF | S | 0 mm | ±4 mm | L | 0 mm | ±4 mm |
| A4 SEF | S | 0 mm | ±4 mm | L | 0 mm | ±4 mm |
| DLT | S | 0 mm | ±4 mm | L | 0 mm | ±4 mm |
| LG | S | 0 mm | ±4 mm | L | 0 mm | ±4 mm |
| LT SEF | S | 0 mm | ±4 mm | L | 0 mm | ±4 mm |
| 12"x18" | S | 0 mm | ±4 mm | L | 0 mm | ±4 mm |
| 8-Kai | S | 0 mm | ±4 mm | L | 0 mm | ±4 mm |
| Other | S | 0 mm | ±4 mm | L | 0 mm | ±4 mm |
| **Pitch Adj.** | **0.2 mm** | | | | | |

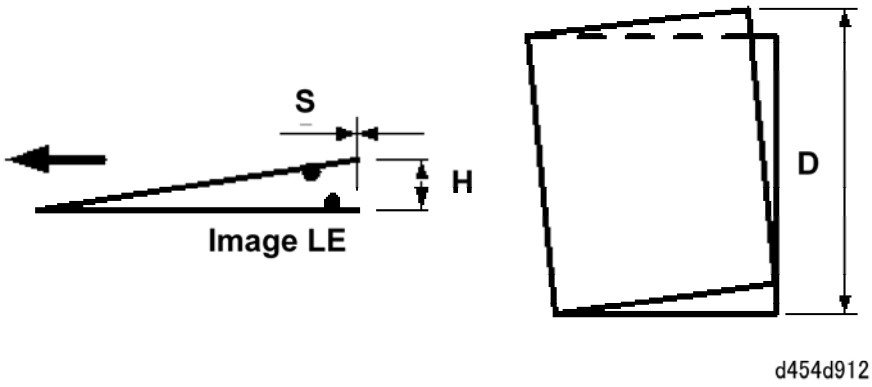


## *FM2 Half Fold*

**User Tool Adjustment (Operator, Skilled Operator)**

The following standard adjustment of "S" can be done by the operator or skilled operator in the User Tools mode. Only "S" can be adjusted by the operator, as shown in the table below.

**Replacement and Adjustment**



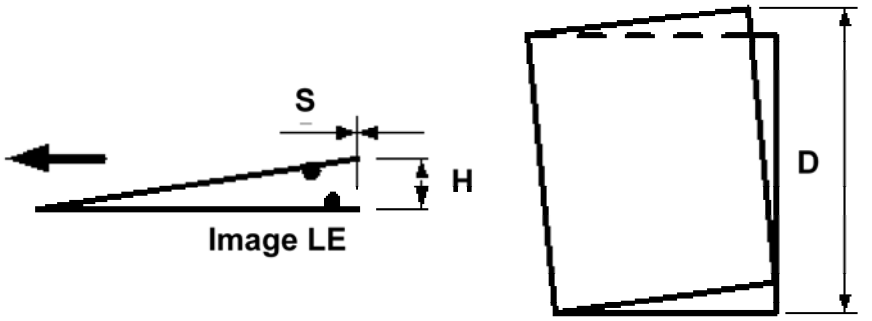

| Size | Setting | Default | Range |
|---|---|---|---|
| A3 SEF | S | 0 mm | ±10 mm |
| B4 SEF | S | 0 mm | ±10 mm |
| A4 SEF | S | 0 mm | ±10 mm |
| DLT | S | 0 mm | ±10 mm |
| LG | S | 0 mm | ±10 mm |
| LT SEF | S | 0 mm | ±10 mm |
| Other | S | 0 mm | ±10 mm |
| **Pitch Adj.** | **±1 mm** | | |

**Notes**

- No folding adjustment can be done for 13"x19.2", 13"x19", 12.6"x19.2"

**Engine SP Adjustment**

The following fine adjustment of "S" can be done by the customer engineer in the SP mode.




| Size | Setting | Default | Range |
|---|---|---|---|
| 13"x19.2" | S | 0 mm | ±4 mm |
| 13"x19" | S | 0 mm | ±4 mm |
| 12.6"x19.2" | S | 0 mm | ±4 mm |
| 12.6"x18.5" | S | 0 mm | ±4 mm |
| 13"x18" | S | 0 mm | ±4 mm |
| SR A3 (320x450 mm) | S | 0 mm | ±4 mm |
| SR A4 (225x320 mm) | S | 0 mm | ±4 mm |
| 226x310 mm | S | 0 mm | ±4 mm |
| 310x432 mm | S | 0 mm | ±4 mm |
| A3 SEF | S | 0 mm | ±4 mm |
| B4 SEF | S | 0 mm | ±4 mm |
| A4 SEF | S | 0 mm | ±4 mm |
| B5 SEF | S | 0 mm | ±4 mm |
| DLT | S | 0 mm | ±4 mm |
| LG | S | 0 mm | ±4 mm |

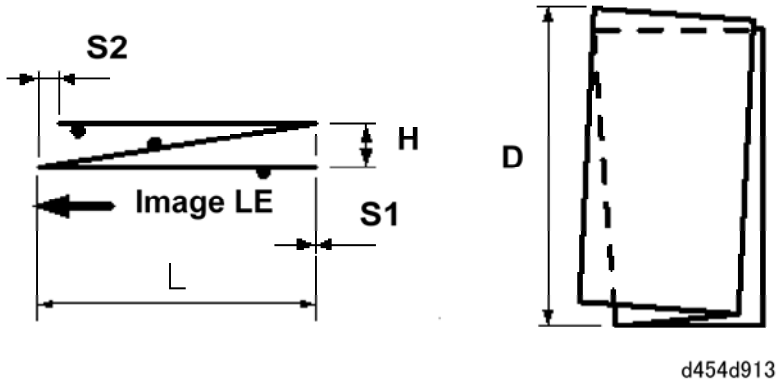
**Replacement and Adjustment**

| Size | Setting | Default | Range |
|---|---|---|---|
| LT SEF | S | 0 mm | ±4 mm |
| 12"x18" | S | 0 mm | ±4 mm |
| 8-Kai | S | 0 mm | ±4 mm |
| Other | S | 0 mm | ±4 mm |
| **Pitch Adj.** | 0.2 mm | | |

## *FM3 Letter Fold-out*

**User Tool Adjustment (Operator, Skilled Operator)**

The following standard adjustment of "S1" can be done by the operator or skilled operator in the User Tools mode. Only "S1" can be adjusted by the operator, as shown in the table below.

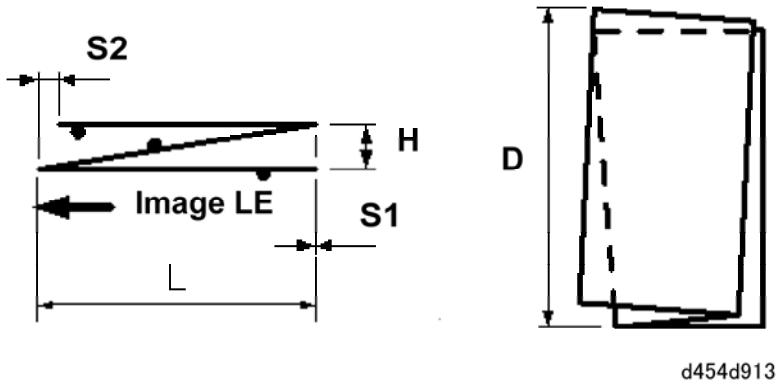



| Size | Setting | Default | Range | Setting | Default | Range |
|---|---|---|---|---|---|---|
| A3 SEF | S1 | 0 mm | ±10 mm | --- | --- | --- |
| B4 SEF | S1 | 0 mm | ±10 mm | --- | --- | --- |
| A4 SEF | S1 | 0 mm | ±10 mm | --- | --- | --- |
| DLT | S1 | 0 mm | ±10 mm | --- | --- | --- |
| LG | S1 | 0 mm | ±10 mm | --- | --- | --- |

| Size | Setting | Default | Range | Setting | Default | Range |
|---|---|---|---|---|---|---|
| LT SEF | S1 | 0 mm | ±10 mm | --- | --- | --- |
| Other | S1 | 0 mm | ±10 mm | --- | --- | --- |
| **Pitch Adj.** | **1 mm** | | | | | |

**Engine SP Adjustment**

The following fine adjustment of "S2" and "L" can be done by the customer engineer in the SP mode.

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| Size | Setting | Default | Range | Setting | Default | Range |
|---|---|---|---|---|---|---|
| A3 SEF | L | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| B4 SEF | L | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| A4 SEF | L | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| B5 SEF | L | 0 mm | ±3 mm | S2 | 0 mm | ±3 mm |
| DLT | L | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| LG | L | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| LT SEF | L | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| 12"x18" | L | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |

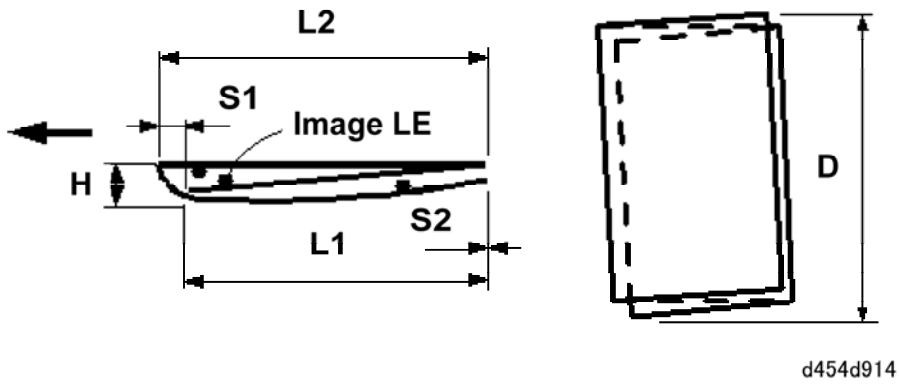
**Replacement and Adjustment**

| Size | Setting | Default | Range | Setting | Default | Range |
|---|---|---|---|---|---|---|
| 8-Kai | L | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| Other | L | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| **Pitch Adj.** | 0.2 mm | | | | | |

## *FM4 Letter Fold-in*

**User Tool Adjustment (Operator, Skilled Operator)**

The following standard adjustment of "S1" can be done by the operator or skilled operator in the User Tools mode. Only "S1" can be adjusted by the operator as shown in the table below.

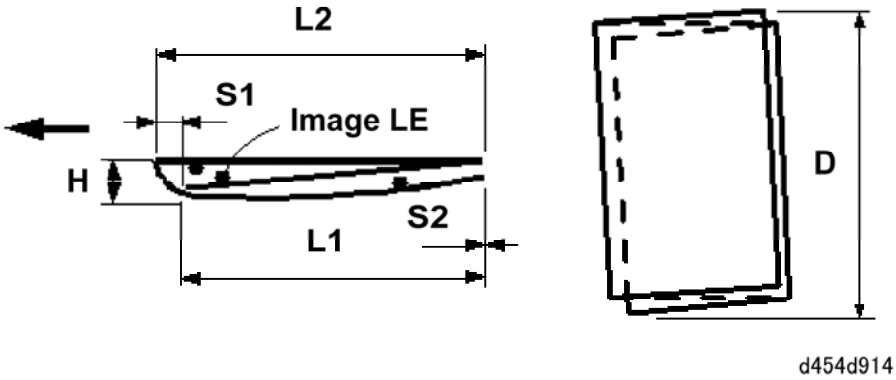



| Size | Setting | Default | Range | Setting | Default | Range |
|---|---|---|---|---|---|---|
| A3 SEF | S1 | 2 mm | 2 to 7 mm | --- | --- | --- |
| B4 SEF | S1 | 2 mm | 2 to 7 mm | --- | --- | --- |
| A4 SEF | S1 | 2 mm | 2 to 7 mm | --- | --- | --- |
| DLT | S1 | 2 mm | 2 to 7 mm | --- | --- | --- |
| LG | S1 | 2 mm | 2 to 7 mm | --- | --- | --- |
| LT SEF | S1 | 2 mm | 2 to 7 mm | --- | --- | --- |

| Size | Setting | Default | Range | Setting | Default | Range |
|---|---|---|---|---|---|---|
| Other | S1 | 2 mm | 2 to 7 mm | --- | --- | --- |
| **Pitch Adj.** | 1 mm | | | | | |

**Engine SP Adjustment**

The following fine adjustment of "L1" and "L2" can be done by the customer engineer in the SP mode.




| Size | Setting | Default | Range | Setting | Default | Range |
|---|---|---|---|---|---|---|
| A3 SEF | L1 | 0 mm | ±4 mm | S1 | 0 mm | ±4 mm |
| B4 SEF | L1 | 0 mm | ±4 mm | S1 | 0 mm | ±4 mm |
| A4 SEF | L1 | 0 mm | ±4 mm | S1 | 0 mm | ±4 mm |
| B5 SEF | L1 | 0 mm | ±4 mm | S1 | 0 mm | ±4 mm |
| DLT | L1 | 0 mm | ±4 mm | S1 | 0 mm | ±4 mm |
| LG | L1 | 0 mm | ±4 mm | S1 | 0 mm | ±4 mm |
| LT SEF | L1 | 0 mm | ±4 mm | S1 | 0 mm | ±4 mm |
| 12"x18" | L1 | 0 mm | ±4 mm | S1 | 0 mm | ±4 mm |
| 8-Kai | L1 | 0 mm | ±4 mm | S1 | 0 mm | ±4 mm |

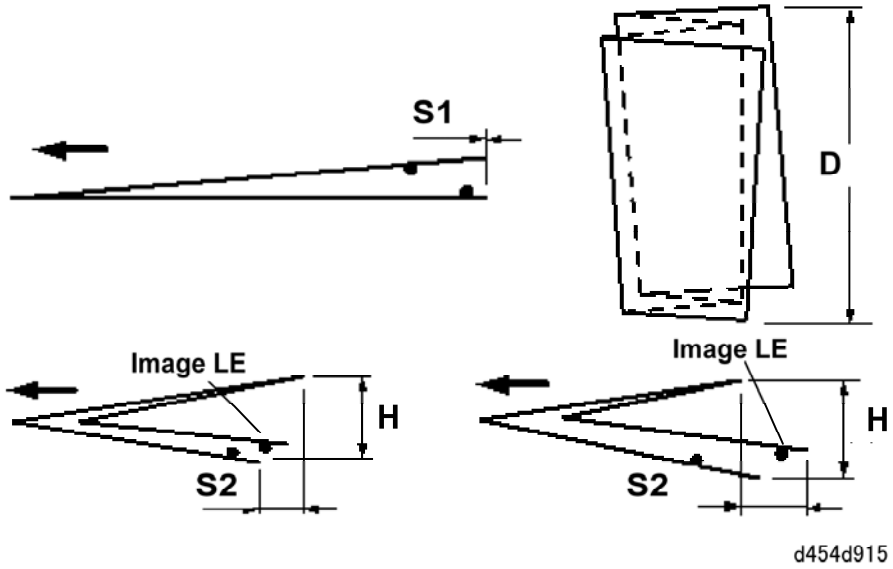
**Replacement and Adjustment**

| Size | Setting | Default | Range | Setting | Default | Range |
|---|---|---|---|---|---|---|
| Other | L1 | 0 mm | ±4 mm | S1 | 0 mm | ±4 mm |
| **Pitch Adj.** | 0.2 mm | | | | | |

## *FM5 Double Parallel Fold*

**User Tool Adjustment (Operator, Skilled Operator)**

The following standard adjustment of "S1" can be done by the operator or skilled operator in the User Tools mode. Only "S1" can be adjusted by the operator as shown in the table below.

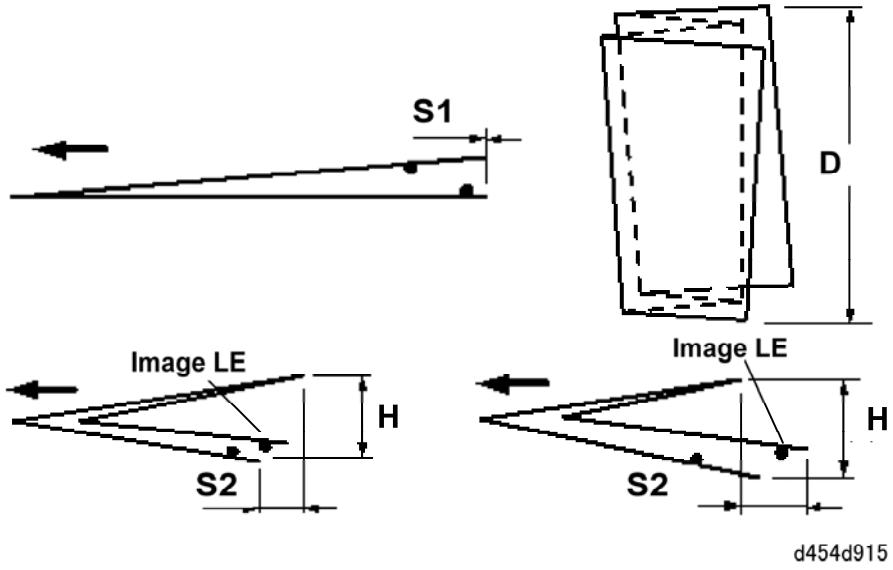



| Size | Setting | Default | Range |
|---|---|---|---|
| A3 SEF | S1 | 0 mm | ±10 mm |
| B4 SEF | S1 | 0 mm | ±10 mm |
| A4 SEF | S1 | 0 mm | ±10 mm |
| DLT | S1 | 0 mm | ±10 mm |
| LG | S1 | 0 mm | ±10 mm |

| Size | Setting | Default | Range |
|---|---|---|---|
| LT SEF | S1 | 0 mm | ±10 mm |
| Other | S1 | 0 mm | ±10 mm |
| **Pitch Adj.** | **1 mm** | | |

**Engine SP Adjustment**

The following fine adjustment of "S1" and "S2" can be done by the customer engineer in the SP mode.




| Size | Setting | Default | Range | Setting | Default | Range |
|---|---|---|---|---|---|---|
| A3 SEF | S1 | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| B4 SEF | S1 | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| A4 SEF | S1 | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| B5 SEF | S1 | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| DLT | S1 | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| LG | S1 | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |

**Replacement and Adjustment**

| Size | Setting | Default | Range | Setting | Default | Range |
|---|---|---|---|---|---|---|
| LT SEF | S1 | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| 12"x18" | S1 | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| 8-Kai | S1 | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| Other | S1 | 0 mm | ±4 mm | S2 | 0 mm | ±4 mm |
| **Pitch Adj.** | **0.2 mm** | | | | | |

## *FM6 Gate Fold*

**User Tool Adjustment (Operator, Skilled Operator)**

The following standard adjustment of "S1" and "S2" can be done by the operator or skilled operator in the User Tools mode.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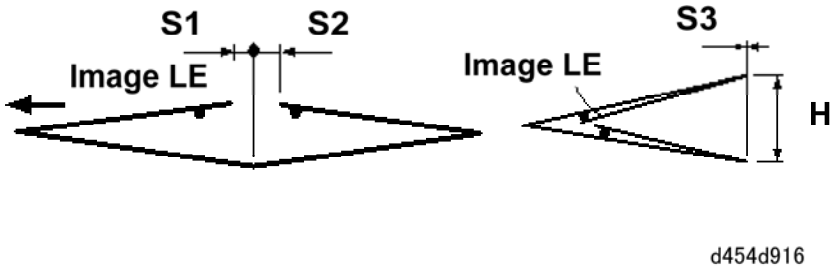
| Size | Setting | Default | Range |
|---|---|---|---|
| A3 SEF | S1, S2 | 2 mm | 2 to 12 mm |
| B4 SEF | S1, S2 | 2 mm | 2 to 12 mm |
| A4 SEF | S1, S2 | 2 mm | 2 to 12 mm |
| DLT | S1, S2 | 2 mm | 2 to 12 mm |
| LG | S1, S2 | 2 mm | 2 to 12 mm |
| LT SEF | S1, S2 | 2 mm | 2 to 12 mm |

| Size | Setting | Default | Range |
|---|---|---|---|
| Other | S1, S2 | 2 mm | 2 to 12 mm |
| **Pitch Adj.** | **1 mm** | | |

**Engine SP Adjustment**

The following fine adjustment of "S1", "S2", and "S3" can be done by the customer engineer in the SP mode.




| Size | Setting | Default | Range |
|---|---|---|---|
| A3 SEF | S1 | 0 mm | ±4 mm |
| B4 SEF | S1 | 0 mm | ±4 mm |
| A4 SEF | S1 | 0 mm | ±4 mm |
| B5 SEF | S1 | 0 mm | ±4 mm |
| DLT | S1 | 0 mm | ±4 mm |
| LG | S1 | 0 mm | ±4 mm |
| LT SEF | S1 | 0 mm | ±4 mm |
| 8-Kai | S1 | 0 mm | ±4 mm |
| Other | S1 | 0 mm | ±4 mm |
| **Pitch Adj.** | 0.2 mm | | |

**Replacement and Adjustment**

| Size | Setting | Default | Range |
|---|---|---|---|
| A3 SEF | S2 | 0 mm | ±4 mm |
| B4 SEF | S2 | 0 mm | ±4 mm |
| A4 SEF | S2 | 0 mm | ±4 mm |
| B5 SEF | S2 | 0 mm | ±4 mm |
| DLT | S2 | 0 mm | ±4 mm |
| LG | S2 | 0 mm | ±4 mm |
| LT SEF | S2 | 0 mm | ±4 mm |
| 8-Kai | S2 | 0 mm | ±4 mm |
| Other | S1 | 0 mm | ±4 mm |
| **Pitch Adj.** | 0.2 mm | | |

| Size | Setting | Default | Range |
|---|---|---|---|
| A3 SEF | S3 | 0 mm | ±4 mm |
| B4 SEF | S3 | 0 mm | ±4 mm |
| A4 SEF | S3 | 0 mm | ±4 mm |
| B5 SEF | S3 | 0 mm | ±4 mm |
| DLT | S3 | 0 mm | ±4 mm |
| LG | S3 | 0 mm | ±4 mm |
| LT SEF | S3 | 0 mm | ±4 mm |
| 12"x18" | S3 | 0 mm | ±4 mm |
| 8-Kai | S3 | 0 mm | ±4 mm |
| Other | S1 | 0 mm | ±4 mm |
| **Pitch Adj.** | 0.2 mm | | |

# 1.9 SKEW ADJUSTMENT

## 1.9.1 MANUAL ADJUSTMENTS BY SERVICE TECHNICIAN

### *Before You Begin*

These adjustments can be done by the service technician adjusting the set and adjustment screws on the multi-folder unit.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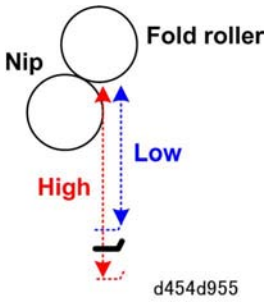
The illustration above shows the positions of the three stoppers inside the machine. The positioning of the stoppers is critical because this determines the types of folding.

### *Front and Rear*

The terms "Front" and "Rear" are critical to understanding how paper is skewing during folding. These terms are defined relative to the positioning of the paper in the paper path as it feeds and exits.

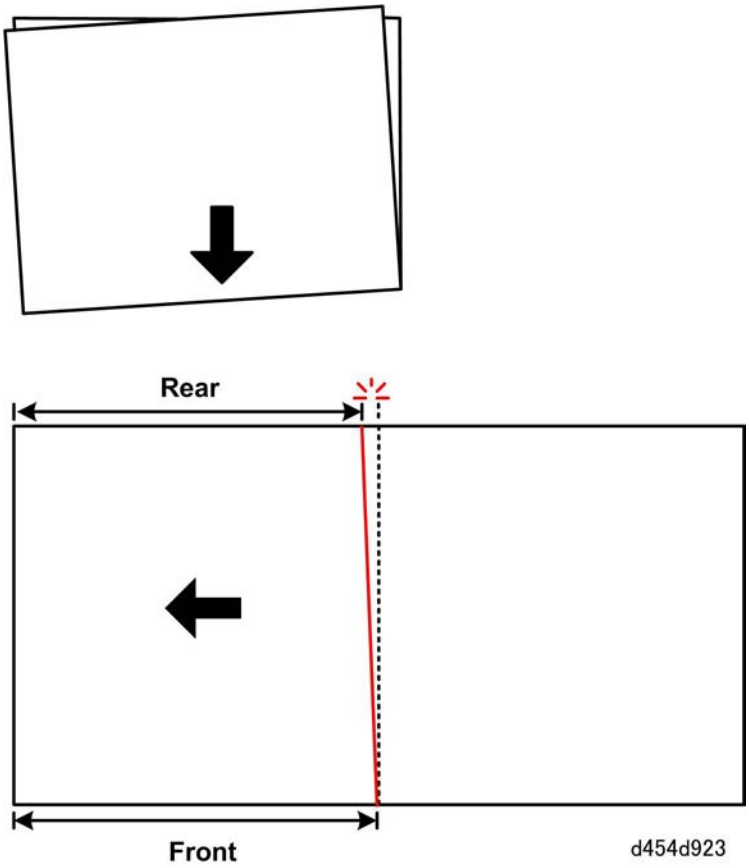
- "High" means the distance from the nip of the fold roller to the stopper is too far on one end of the fence.
- "Low" means the distance from the nip of the fold roller to the stopper is too short.

**Replacement and Adjustment**



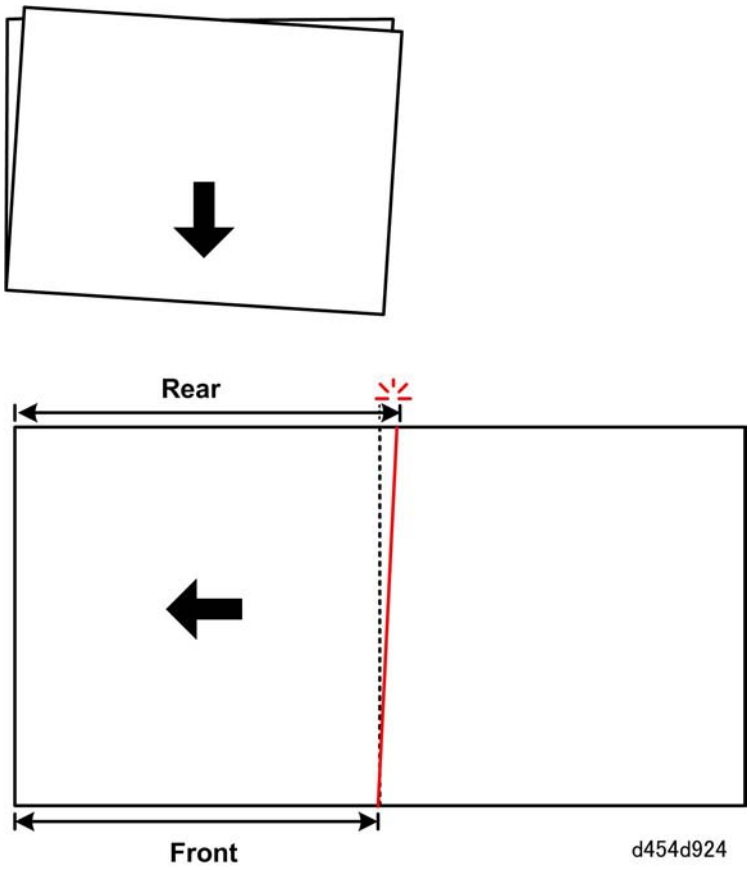

Two examples are shown below.

**Example 1: High (Stopper Too Far From The Nip)**




The black arrow shows the direction of paper feed from right to left. When the skew sheet is opened the **Front** edge is **longer** than the **Rear** edge.

**Example 2: FM2: Low (Stopper to Close to the Nip)**



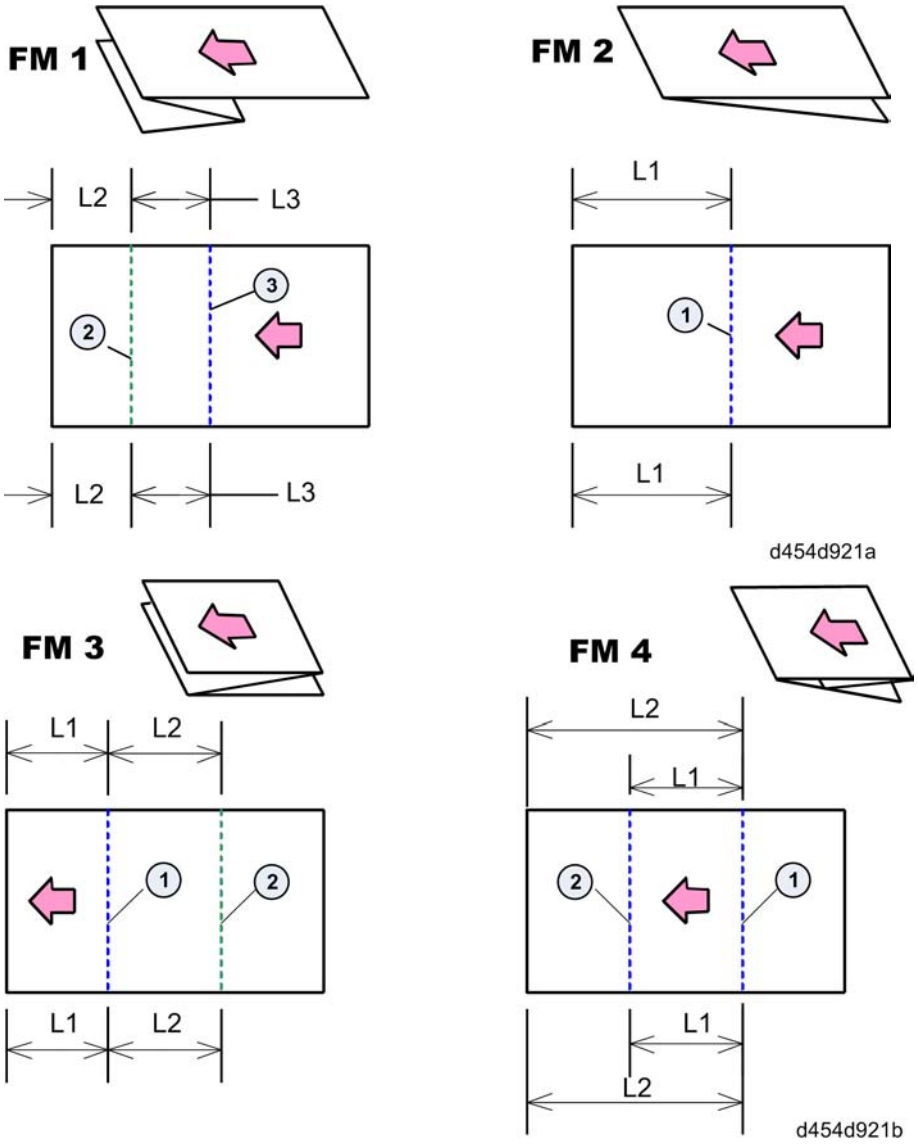

The black arrow shows the direction of paper feed from right to left. When the skew sheet is opened the **Front** edge is **shorter** than the **Rear** edge.

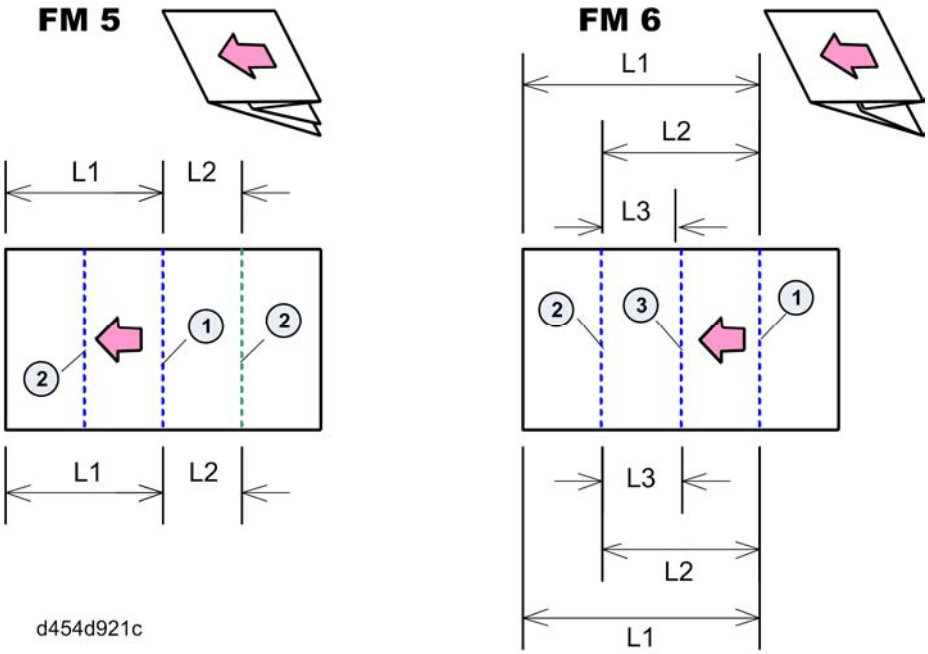
## *Skew Correction Reference Diagrams and Table*

### Skew Correction Reference Diagrams

### Key

| Symbol/Color | What It Means |
|---|---|
| ① | Stopper 1 needs adjustment |
| ② | Stopper 2 needs adjustment |
| ③ | Stopper 3 needs adjustment |
| **Blue line** | Peak fold (points left) |
| **Green line** | Valley fold (points right) |



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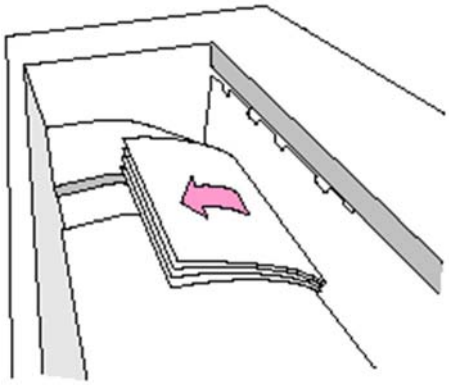
## *General Procedure*



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1. Retrieve the first folded paper from the top of the multi-folder. The first sheet is on the bottom of the stack.
2. If a fold is skewed, spread the paper out in the direction of paper feed shown in the diagrams above.
3. Carefully measure the distances between the folds between L1, L2, L3.
4. Compare the **Front** and **Rear** measurements.
5. Refer to the table below to determine where the paper is skewing and what type of adjustment is required.

**Skew Correction Reference Table**

**Replacement and Adjustment**

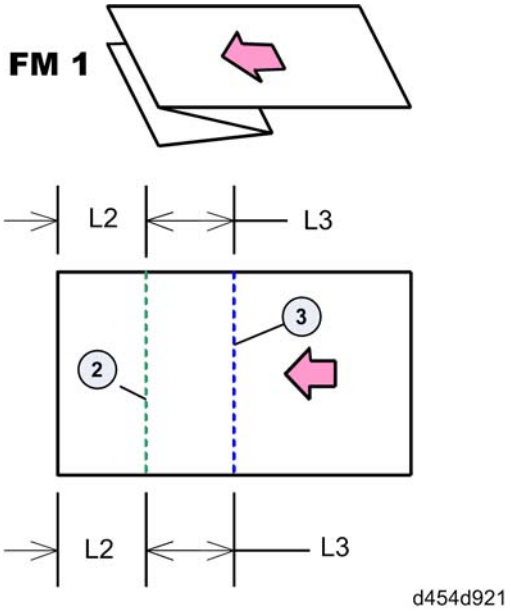
| | L1 | L2 | L3 | S1 | S2 | S3 |
|---|---|---|---|---|---|---|
| FM1 | --- | **F** Long | **F** Long | --- | Lower **F** | Raise **F** |
| | --- | **F** Short | **F** Short | --- | Raise **F** | Lower **F** |
| FM2 | **F** Long | --- | --- | Raise **F** | --- | --- |
| | **F** Short | --- | --- | Lower **F** | --- | --- |
| FM3 | **F** Long | **F** Long | --- | Raise **F** | Lower **F** | --- |
| | **F** Short | **F** Short | --- | Lower **F** | Raise **F** | --- |
| FM4 | **F** Long | **F** Long | --- | Raise **F** | Lower **F** | --- |
| | **F** Short | **F** Short | --- | Lower **F** | Raise **F** | --- |
| FM5 | **F** Long | **F** Long | --- | Raise **F** | Lower **F** | --- |
| | **F** Short | **F** Short | --- | Lower **F** | Raise **F** | --- |
| FM6 | **F** Long | **F** Long | **F** Long | Lower **F** | Lower **F** | Raise **F** |
| | **F** Short | **F** Short | **F** Short | Raise **F** | Raise **F** | Lower **F** |

**Table Key**

You must refer to the "Skew Correction Reference Diagrams". The following abbreviations are used in the table above.

| Term | What It Means |
|---|---|
| **F** Long | **Front** measurement of L1, L2, or L3 is **longer** than **Rear**.. |
| **F** Short | **Front** measurement of L1, L2, or L3 is **shorter** than **Rear**.. |
| **S1, S2, S3** | Refers to Stopper 1, Stopper 2, Stopper. In the diagrams these are annotated as: ①, ②, ③ respectively. |
| Raise **F** | Raise the front end of the stopper fence. For more, see below. |
| Lower **F** | Lower the front end of the stopper fence. For more, see below. |

**Example: FM1 (Z-fold)**




First, compare the L2 measurements.

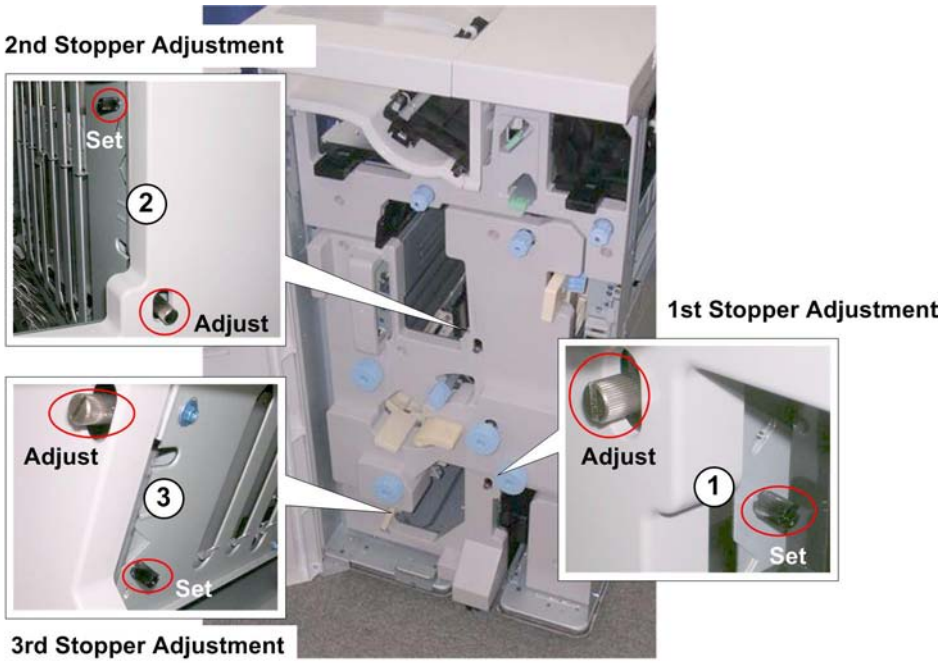
- In this example, imagine that L2 is longer at the front than at the rear.
- Look at the table, in the row for FM1, and the column for L2.
  - ‘F Long’ means Front measurement longer than Rear
  - ‘F Short’ means Rear measurement longer than Front
- L2 is longer at the front, so we have an ‘F Long’ situation.
- Then look at the next line, below ‘F Long’. It says ‘Lower F on S2’.
- This means you must lower the front end of stopper 2.

Then, compare the L3 measurements.

- In this example, imagine that L3 is longer at the front than at the rear.
- Look at the table, in the row for FM1, and the column for L3.
  - ‘F Long’ means Front measurement longer than Rear
  - ‘F Short’ means Rear measurement longer than Front
- L3 is longer at the front, so we have an ‘F Long’ situation again.
- Then look at the next line, below ‘F Long’. It says ‘Raise F on S3’.
- This means you must raise the front end of stopper 3.

## *Stopper Adjustment Procedures*

1. Use the "Skew Correction Reference Diagrams" and "Skew Correction Reference Table" in the previous section to determine the location of the skew and which stopper needs adjustment.
2. Now you are ready to do the adjustment on the multi-folder unit.

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3. The illustration above shows the location for each stopper adjustment.
   - Each stopper is equipped with two screws.
   - The black plastic screw is the Set screw and the metal silver screw is the Adjustment screw.

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4. Remove the Set screw.

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5. Turn the Adjustment screw to do the adjustment for the stopper.

**1st, 3rd Stopper**

- Turn the Adjustment screw **clockwise** to **lower** the front end of the fence.

  -or-

- Turn the Adjustment screw **counter-clockwise** to **raise** the front of the fence.

**2nd Stopper**

- Turn the Adjustment screw **clockwise** to **raise** the front end of the fence.

  -or-

- Turn the Adjustment screw **counter-clockwise** to **lower** the front of the fence.

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6. Fasten the Set screw in the hole of the diagonal cutout near the hole where you removed it.

Note

- The diagonal cut may be above or below the original hole, depending on which

stopper you are adjusting.

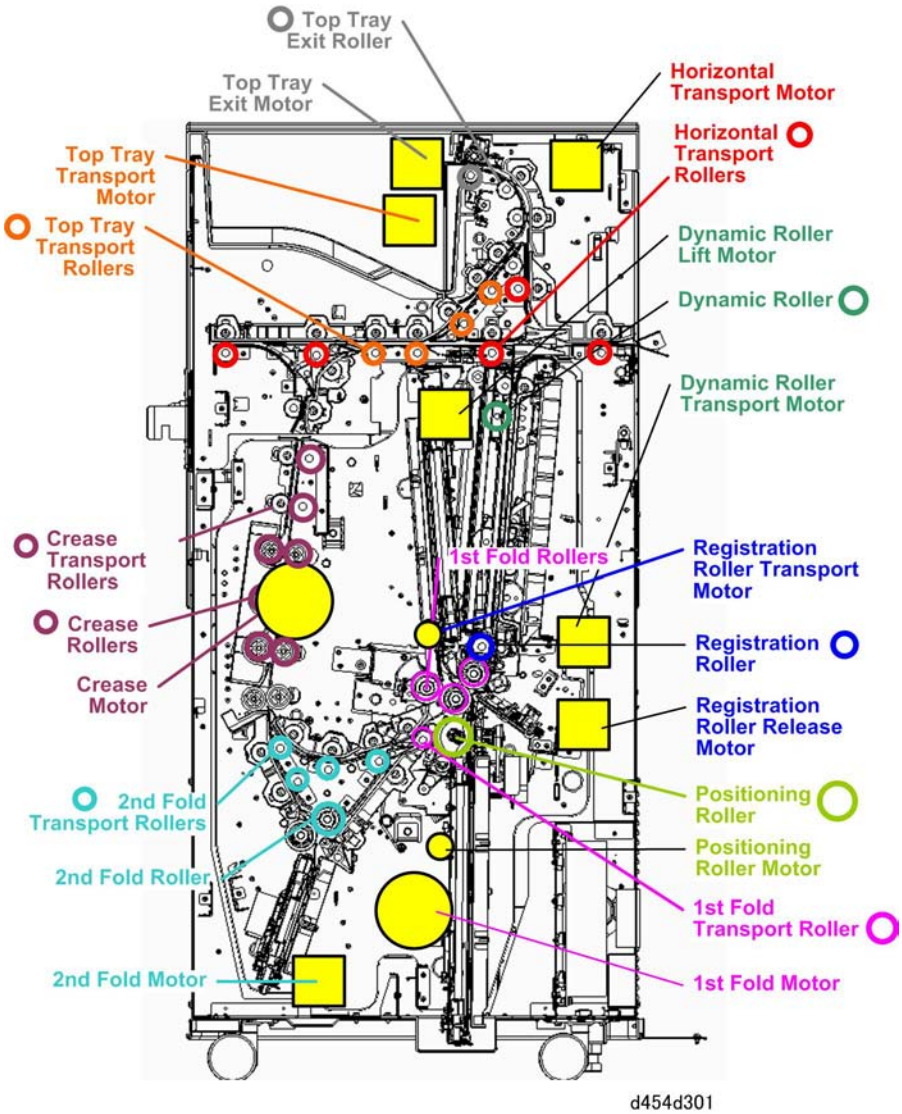
- The photo above shows the Set screw for Stopper 2.

7. Tighten the Set screw so the plate holds the adjustment.

# 2. DETAILS

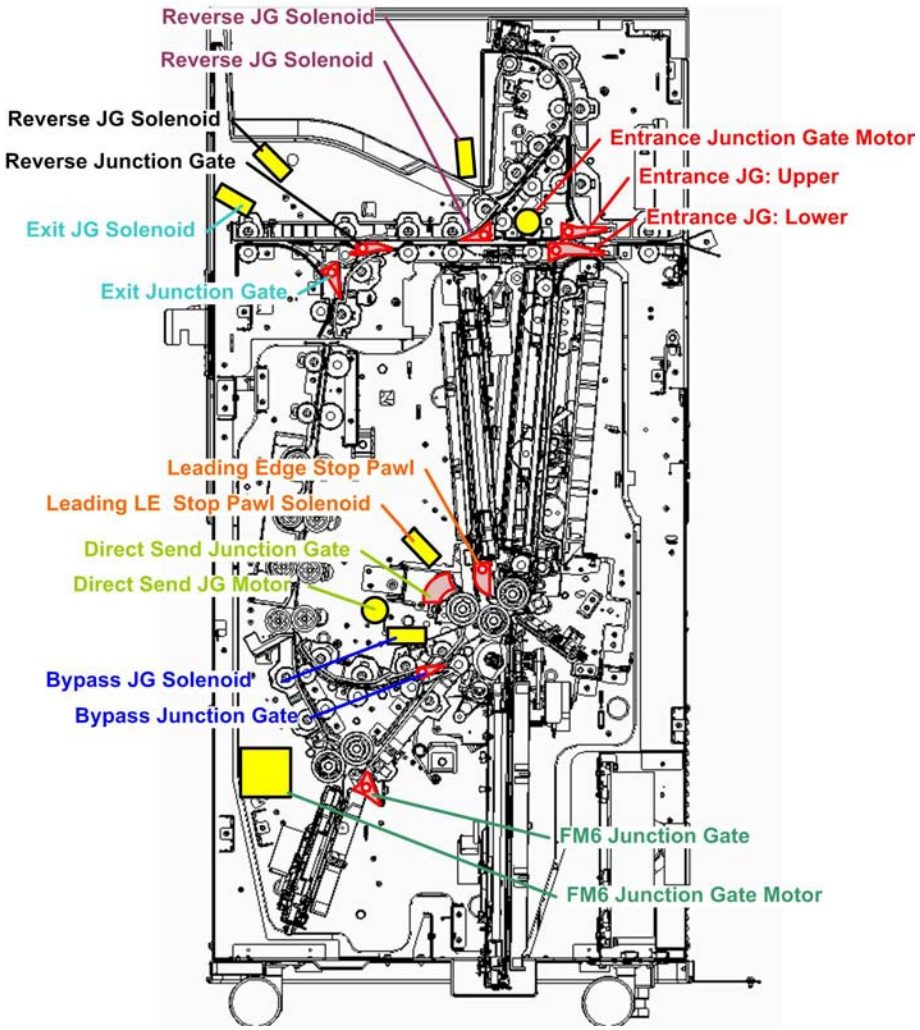
## 2.1 OVERVIEW

### 2.1.1 MOTORS, ROLLERS



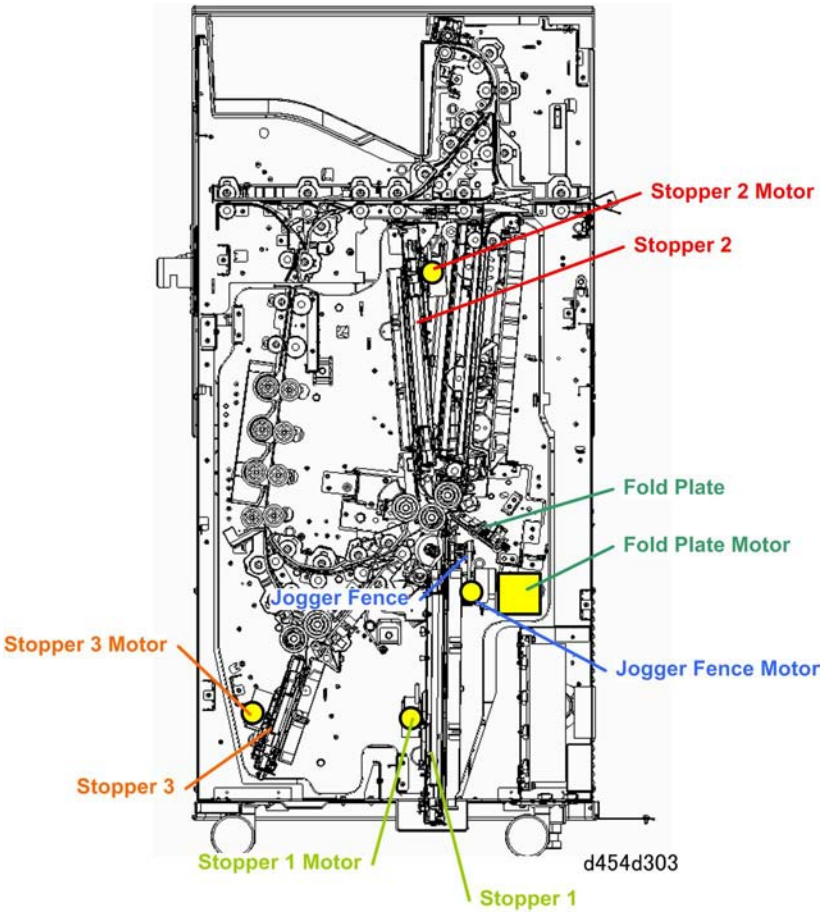

The illustration above shows the roller groups and their related motors.

## 2.1.2 JUNCTION GATES, JUNCTION GATE SOLENOIDS




The illustration above shows the paper path junction gates and the solenoids and motors that operate them.

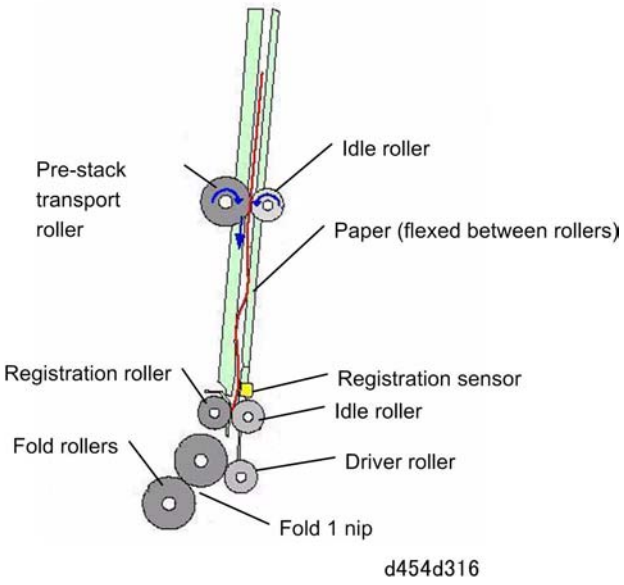
## 2.1.3 STOPPERS, STOPPER MOTORS




The illustration above shows the stoppers and the motors that operate them.

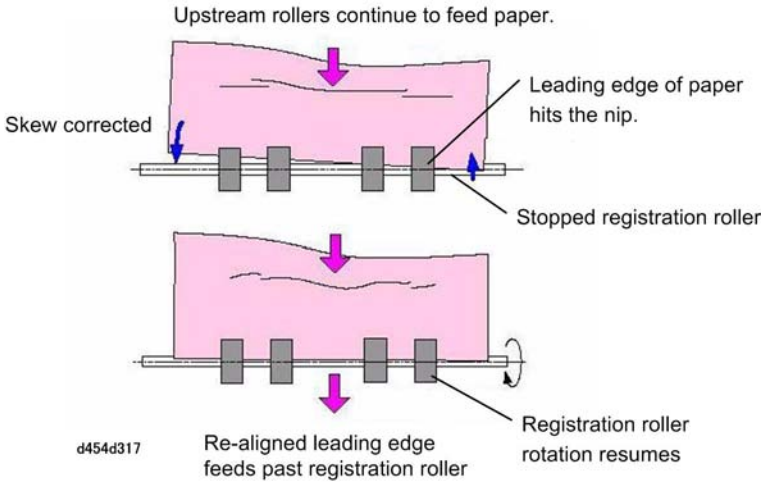
# 2.2 PAPER PATH

## 2.2.1 PAPER REGISTRATION

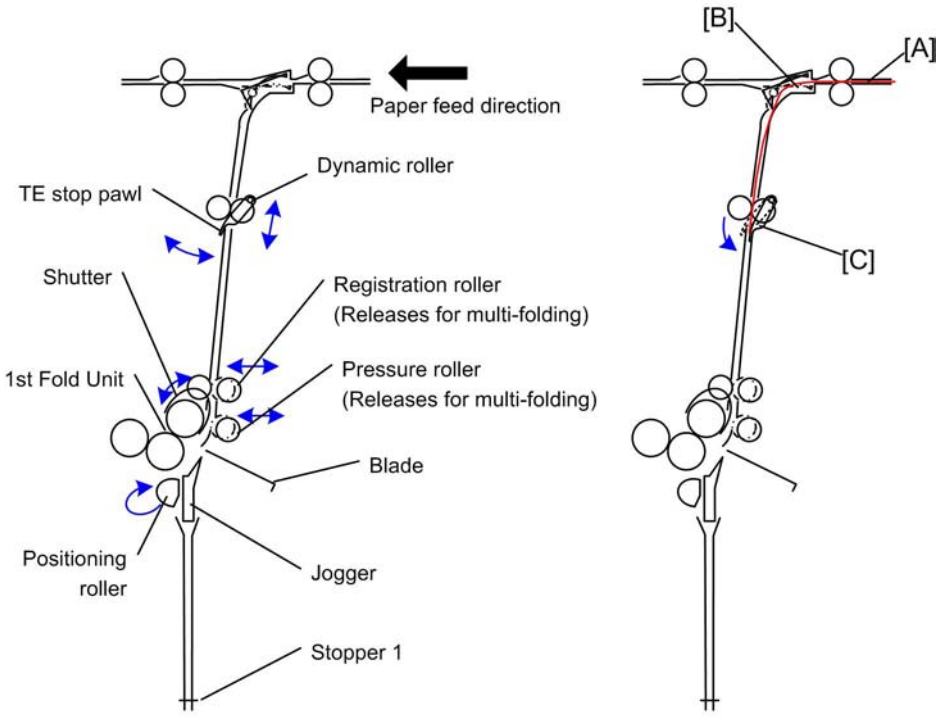



When paper is fed to the pre-stacker, the position of each sheet in the paper path is adjusted to correct skew:

- Leading edge of the sheet hits the registration roller and stops.
- The upstream rollers continue to rotate 5 mm.
- The leading edge of the paper buckles against the stationary registration roller to correct skew.
- The registration roller starts rotating again after the paper has been straightened in the paper path.



## 2.2.2 PRE-STACKING



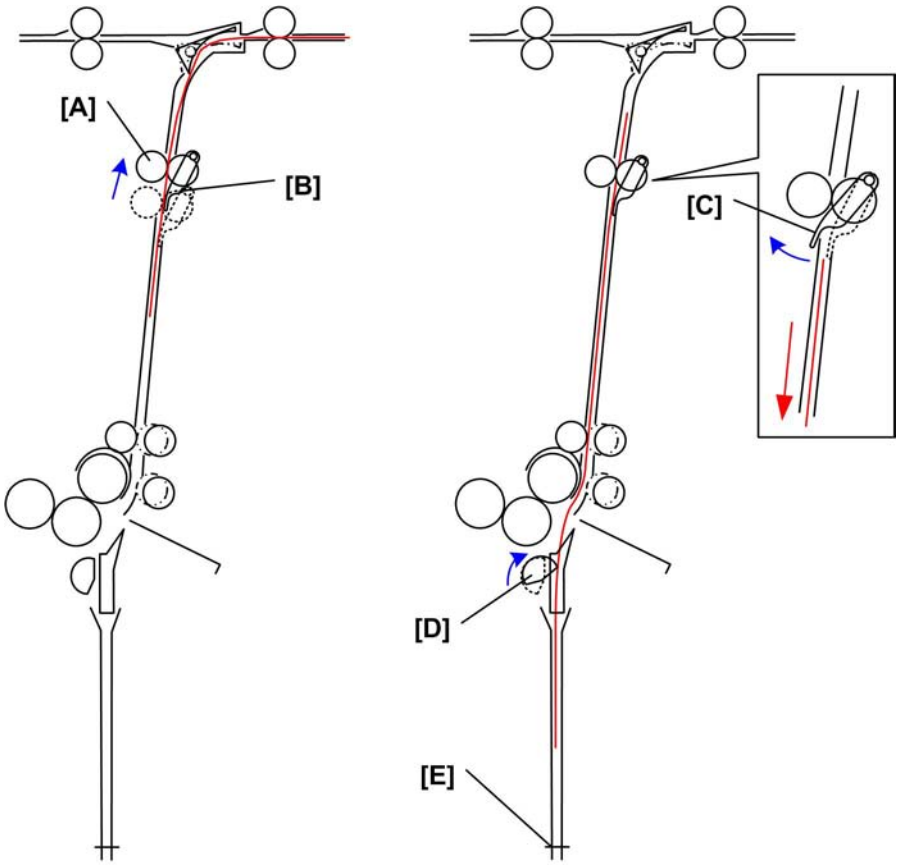

d454d304

Up to three sheets of paper can be pre-stacked for folding.

The left illustration shows the parts that operate during pre-stacking.

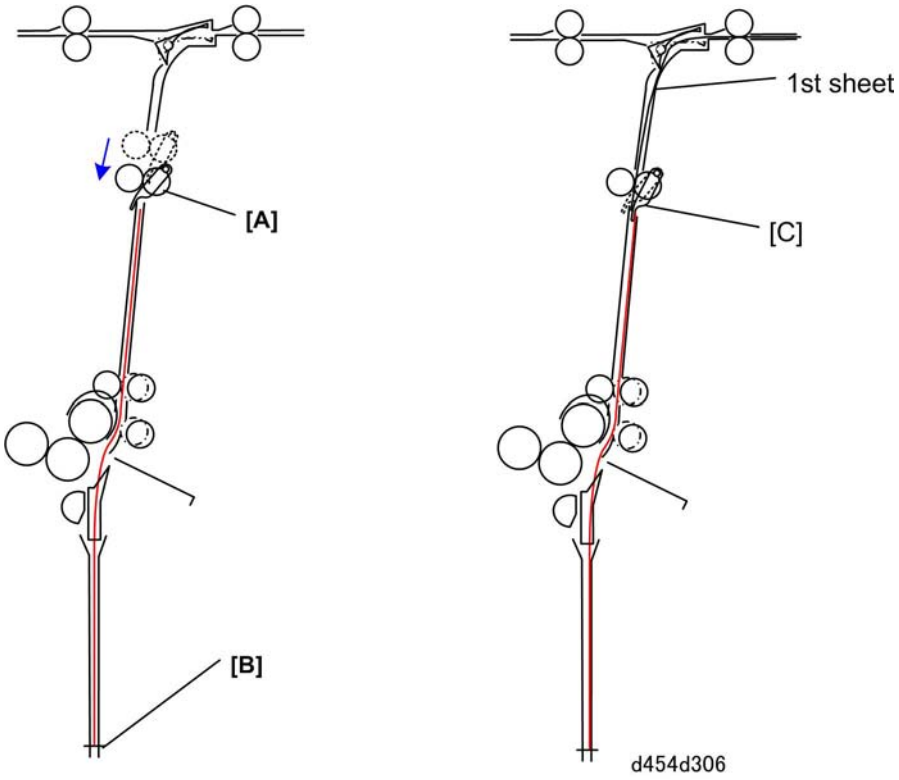
- The paper enters the machine [A].
- The lower entrance junction gate [B] opens and guides the paper to the TE stop pawl [C].
- The paper pushes the TE stop pawl aside so it can pass.

**Details**




d454d305

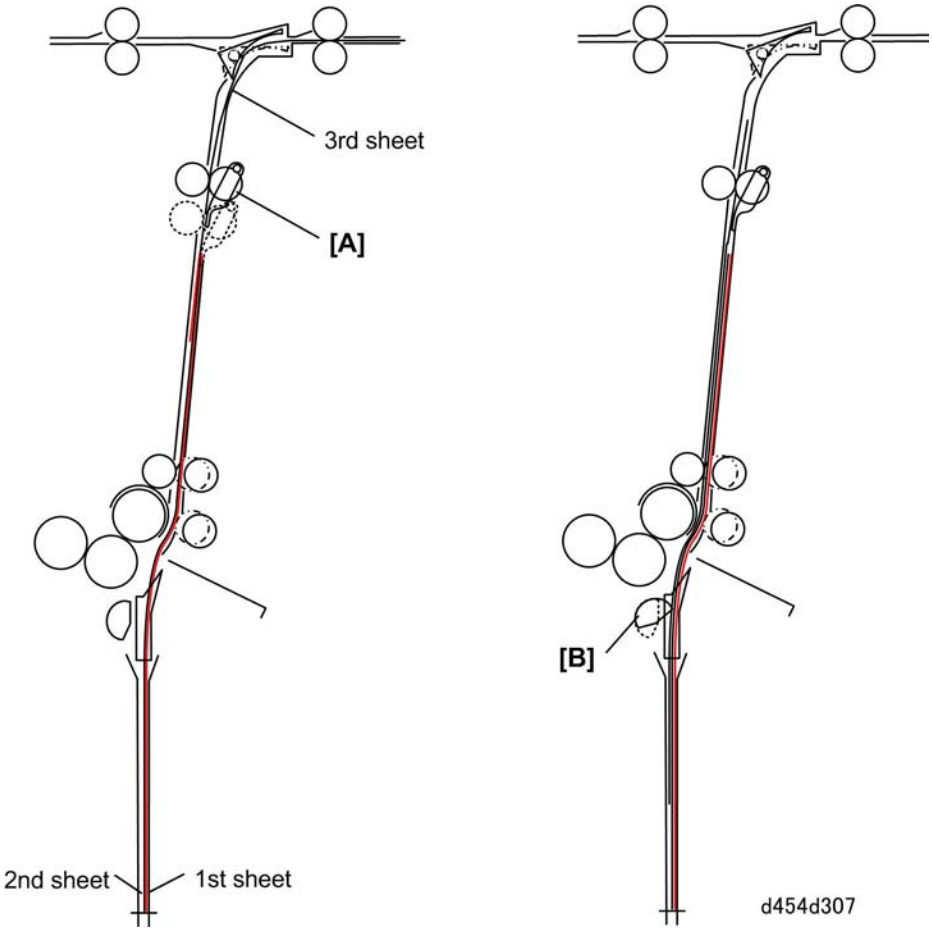
The dynamic roller [A] raises after the leading edge of the paper passes the TE stop pawl [B]. The TE stop pawl returns to its home position [C] after the trailing edge of the sheet passes. After the trailing edge of the paper passes the dynamic roller, the positioning roller [D] starts to rotate and feeds the paper as far as stopper 1 [E].



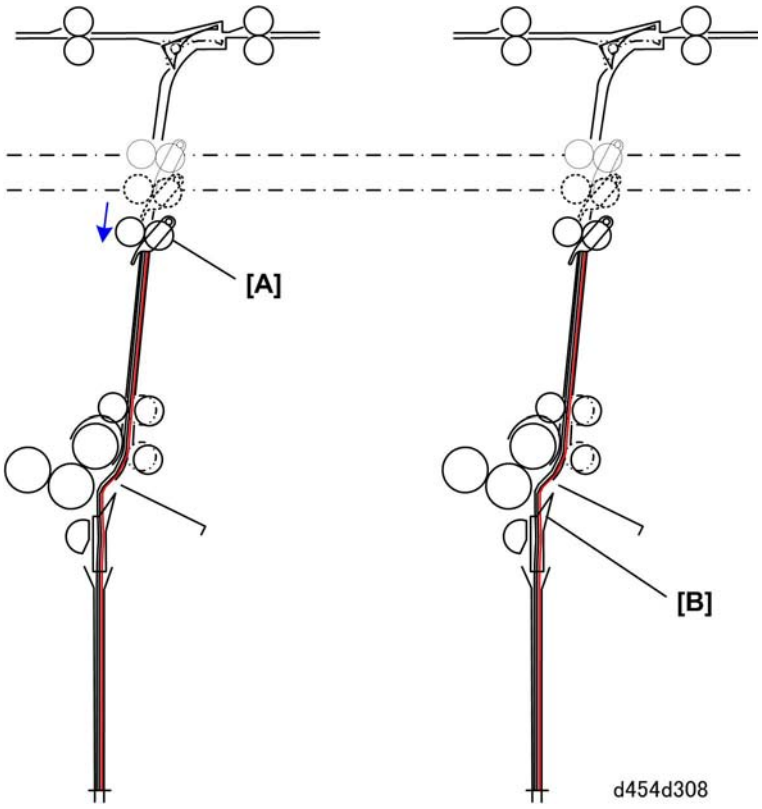

The dynamic roller [A] lowers when the leading edge reaches stopper 1 [B] within the time prescribed for feeding for the size of the paper selected for the job.

The TE stop pawl [C] presses on the 1st sheet to prevent the leading edge of the 2nd sheet from hitting it. The operation sequence for stacking the 2nd and 3rd sheets is the same as that of the 1st sheet.

**Details**



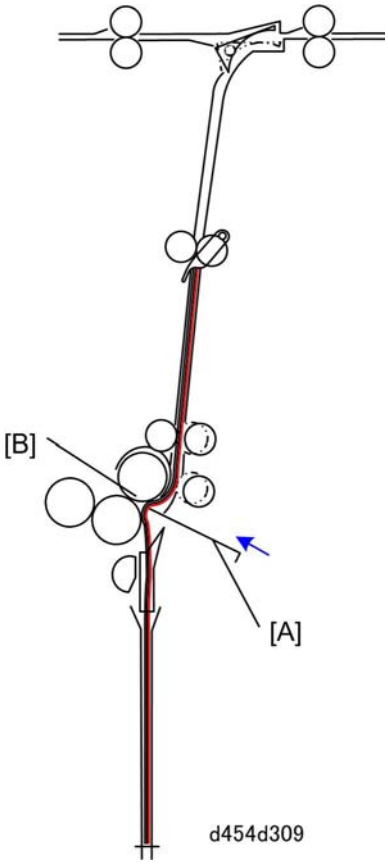

The dynamic roller [A] raises after the leading edge of the 3rd (and last sheet) passes the TE stop pawl. The position roller [B] rotates twice only after the last sheet has been pre-stacked.




After the last sheet has been pre-stacked, the TE stop pawl [A] lowers and the sheets are jogged vertically (top to bottom).

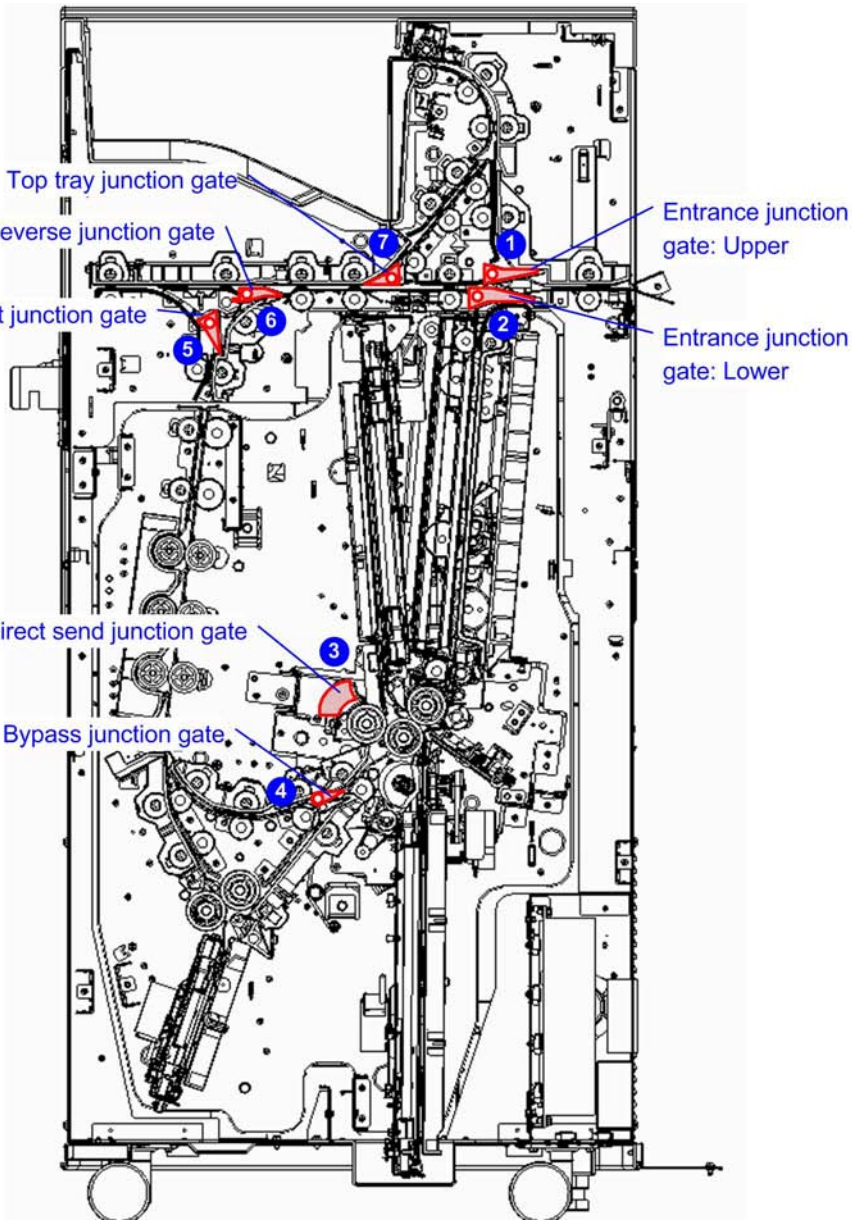
Next, with the TE stop pawl pressing down on the trailing edges of the stacked sheets, the stack [B] is jogged horizontally (front to back).

**Details**




Finally, after all three sheets have been pre-stacked and jogged, the fold blade [A] pushes the stacked sheets into the nip of the fold rollers [B].

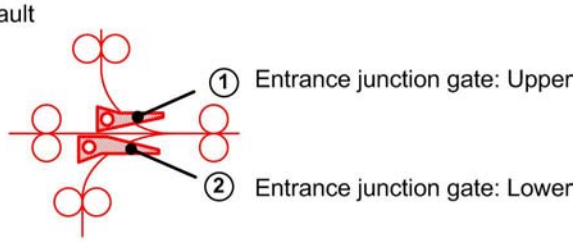
## 2.2.3 JUNCTION GATES




### *Entrance Junction Gates*

**① ② Entrance Junction Gates**

Default

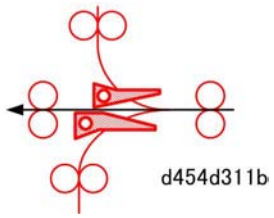



d454d311a

**Details**

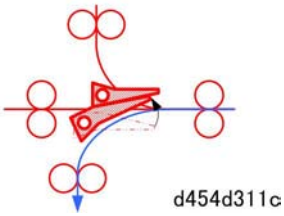
There are two junction gates in the paper path at the entrance of the multi-folder.

Straight-Through




Both junction gates remain at their home positions when paper is fed straight through the multi-fold unit to the next unit downstream.

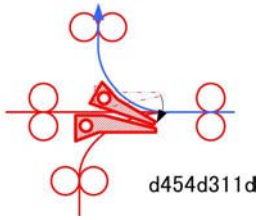
For Folding




When folding is selected, the lower entrance junction gate raises and guides the paper to the fold units below:

- Upper entrance junction gate remains at default position.
- Lower junction gate rotates up and guides paper down.

Exit to Top Tray



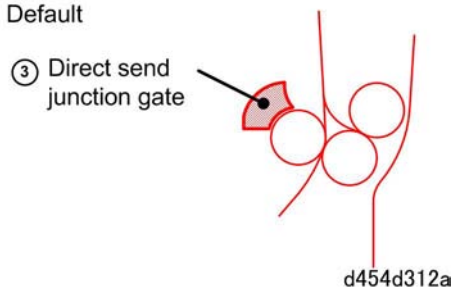

When draft copies are sent to the top tray:

- The upper entrance junction gate rotates down.
- The lower junction gate remains at default position.

## *Direct Send Junction Gate*

③ **Direct Send Junction Gate**

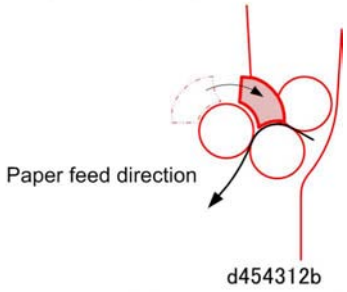
Default




d454d312a

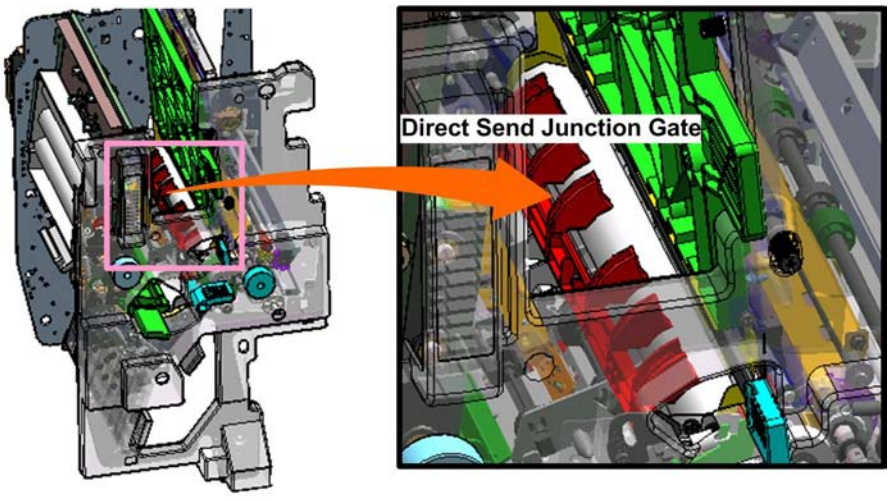
This is the direct send junction gate at its home position.

For FM1 (Half Fold) Only




d454312b

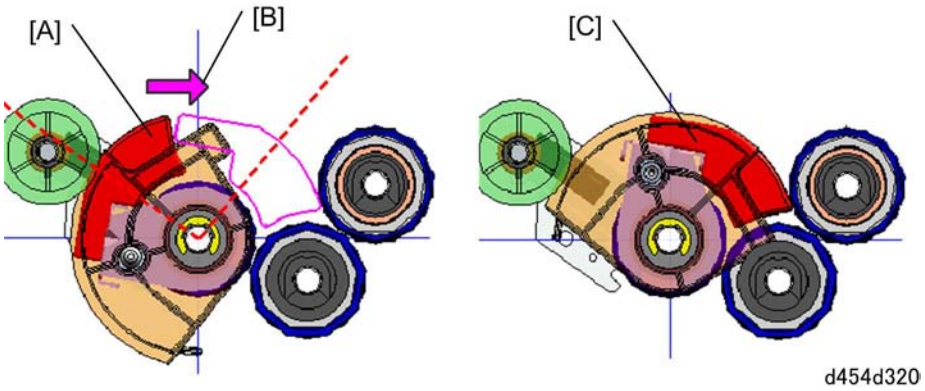
The junction gate rotates to the right and paper is sent downstream without passing stopper 2. This is down for FM2 mode only when the paper is folded into equal halves.




d454d319

The illustration above shows the actual location and appearance of the direct send junction gate.

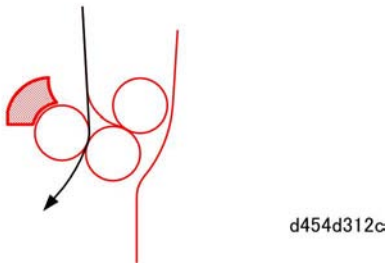
**Details**




For all fold modes other than FM2 (Half Fold) the direct send junction gate remains at its home position.

- For FM2 the direct send junction gate motor rotates the junction gate [B] to position [C].
- After the job is finished the motor rotates the junction gate back to its home position [A].

Other Fold Modes

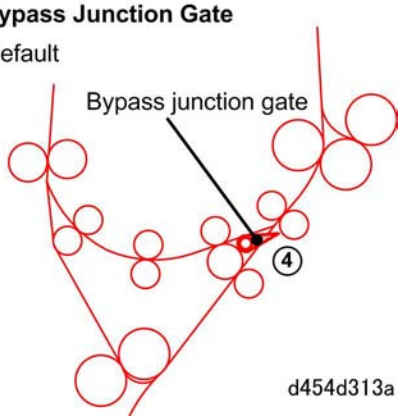



For the other fold modes (FM1, FM3 to FM6) the junction gate remains at its home position and does not touch the paper.

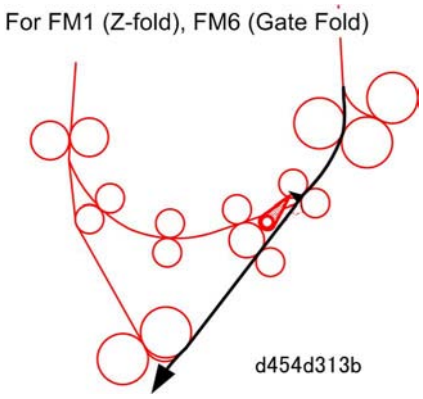
## *Bypass Junction Gate*

④ **Bypass Junction Gate**

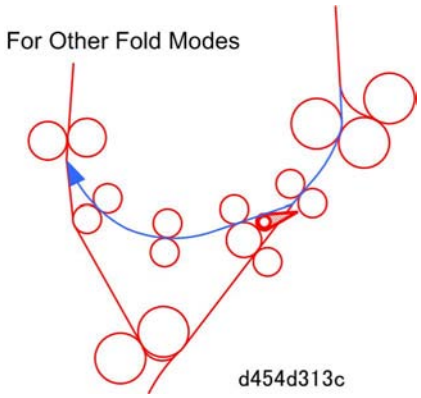
Default




This is the bypass junction gate at its home position.



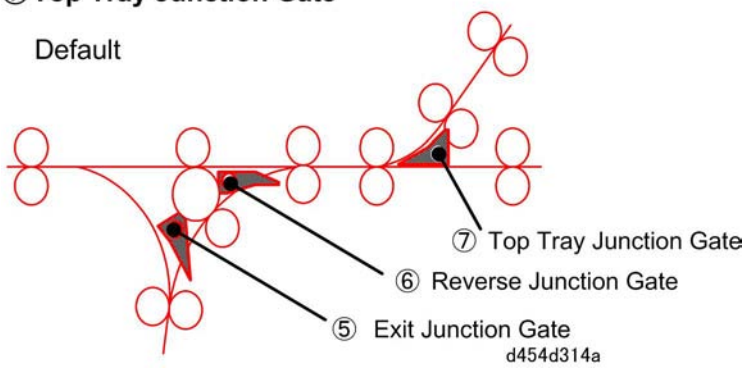

When FM1 (Z-fold) or FM6 (Gate Fold) is selected, the bypass junction gate raises and allows paper to pass to folder unit 2.




For fold modes other than FM1, FM6 the bypass junction gate remains at it default position. Paper passes over the top of the bypass junction gate and into the bypass paper path.

### *Exit, Reverse, and Top Tray Junction Gates*

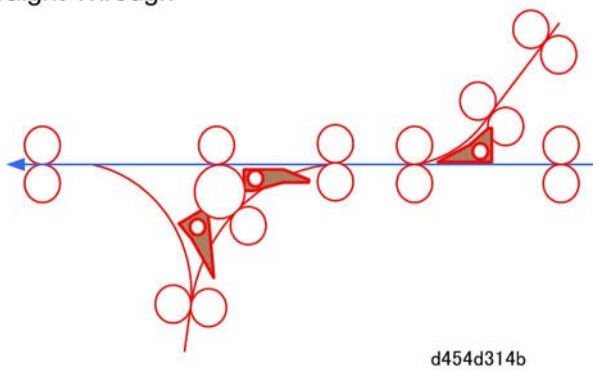
**⑤Exit Junction Gate**
**⑥Reverse Junction Gate**
**⑦Top Tray Junction Gate**




These three junction gates are shown above at their default positions.

**Details**

Straight Through



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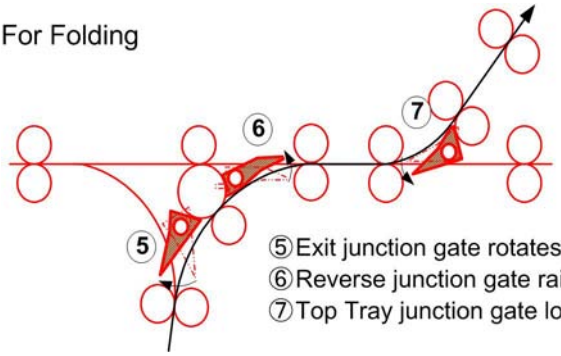
For straight-through paper feed the junction gates remain at their home positions. Paper passes straight through the multi-folder to the next peripheral unit downstream.

For Folding




d454d314c

All three junction gates operate to guide folded paper to the top tray:

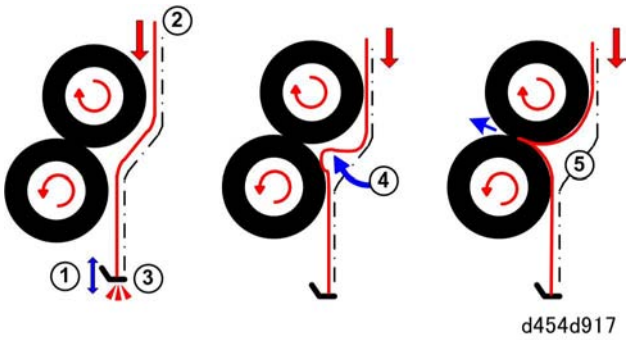
- Exit junction gate rotates left
- Reverse junction gate raises
- Top tray junction gate lowers

This sequence guides the folded paper to the top tray.

**Note**: Only Z-folded paper is allowed to exit the multi-folder and pass downstream to other peripheral units. In this case, the junction gates remain at their default positions. The exit junction gate sensor (5) guides the paper toward the multi-folder exit above.

# 2.3 PAPER FOLDING

## 2.3.1 FLEX-NIP FOLDING



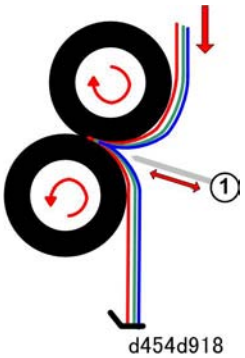
d454d917

This machine uses the flex-nip method to fold paper.

In this method of folding a stopper fence ① is raised or lowered to the correct height for the size of the paper and the type of fold to be done. A sheet of paper ② descends, hits the stopper and stops. However, the upstream rollers continue to rotate. This causes the paper ④ to bulge and flex toward the nip of the rotating fold rollers on the left. When the paper ⑤ reaches the rotating rollers it feeds into the nip. The rollers catch the paper, pull it into the nip, and form the fold.

In this machine:

- There are three fold stoppers placed at strategic positions in the fold path.
- Not all the stoppers are used for folding. Only the stoppers needed for the type of folding are used.

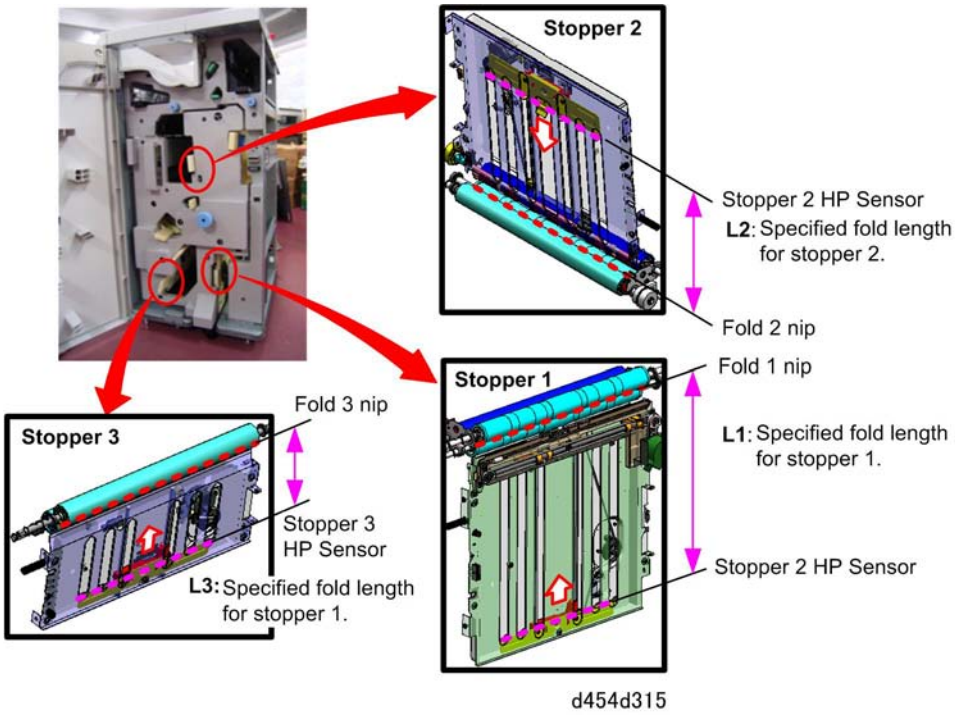


d454d918

When two or more sheets are fed together, a fold assist plate ① pushes the flexed paper toward the rotating fold rollers. The fold plate is used only when more than one sheet of paper is fed at a time. Up to three sheets can be fed.

**Details**

## 2.3.2 STOPPER LOCATIONS

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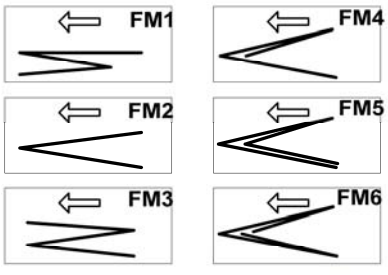
The illustration above shows the stopper locations. Note the locations of Stopper 1, Stopper 2, and Stopper 3.

## 2.3.3 FOLDING METHODS

There are six Folding Methods (FM):

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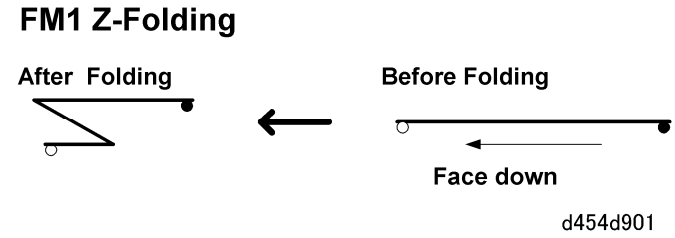
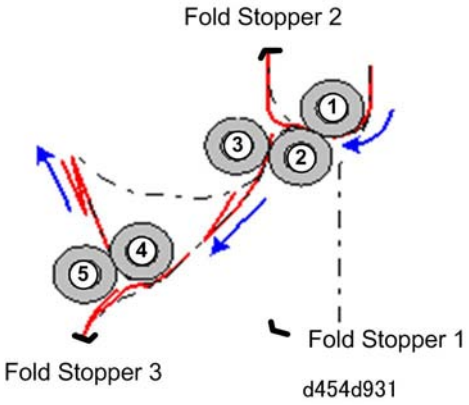
| | |
|---|---|
| FM1 | Z-Folding |
| FM2 | Half Fold |
| FM3 | Letter Fold-out |
| FM4 | Letter Fold-in |

| | |
|---|---|
| FM5 | Double Parallel Fold |
| FM6 | Gate Fold |

## *FM1 Z-Folding*



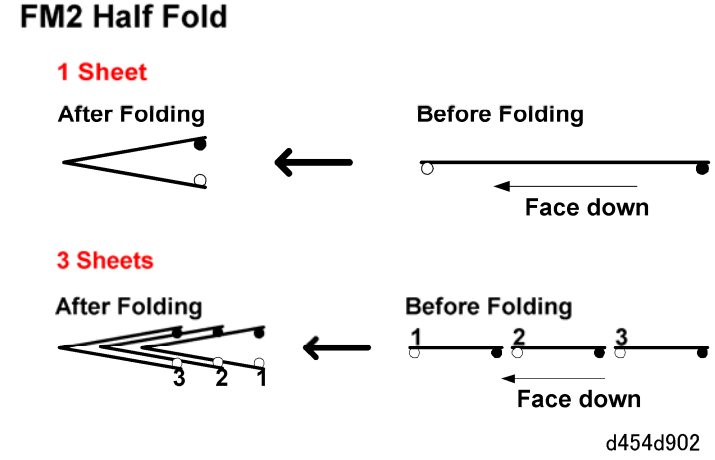



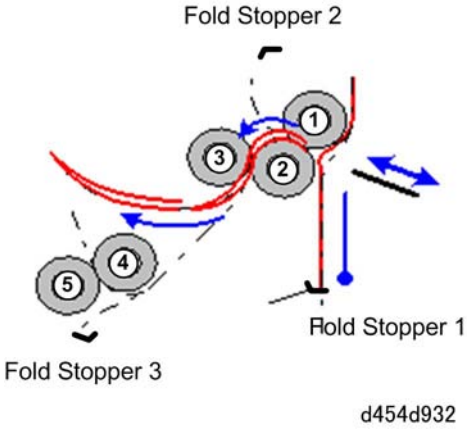

In Fold Method 1 (FM1):

- The leading edge of the paper feeds into the nip of fold rollers ① and ②.
- The paper is stopped by Fold Stopper 2. The paper flexes toward the nip of fold rollers ② and ③ which performs the first fold.
- Next, the paper is stopped by Fold Stopper 3. The paper flexes toward the nip of fold rollers ④ and ⑤ which performs the second fold and feeds the paper into the exit path.
- Fold Stopper 1 is not used.

**Details**

## *FM2 Half Fold*

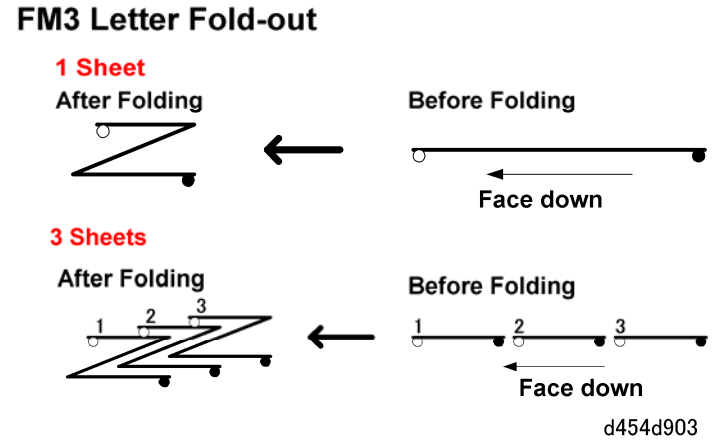


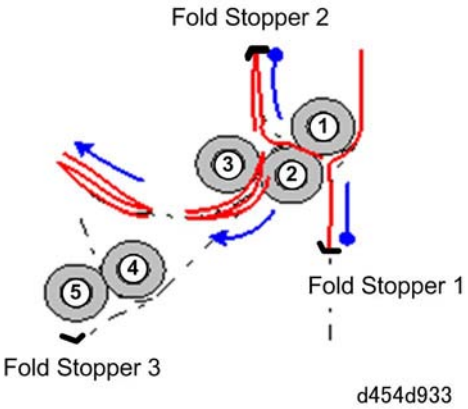




In Fold Method 2 (FM2):

- The leading edge of the paper is stopped by Fold Stopper 1.
- The paper flexes toward the nip of fold rollers ① and ② which performs the first fold and feeds the folded edge of the paper into the nip of fold rollers ② and ③.
- Fold rollers ② and ③ feed the paper into the exit path.
- Fold Stoppers 2, and 3 are not used.

## *FM3 Letter Fold-out*



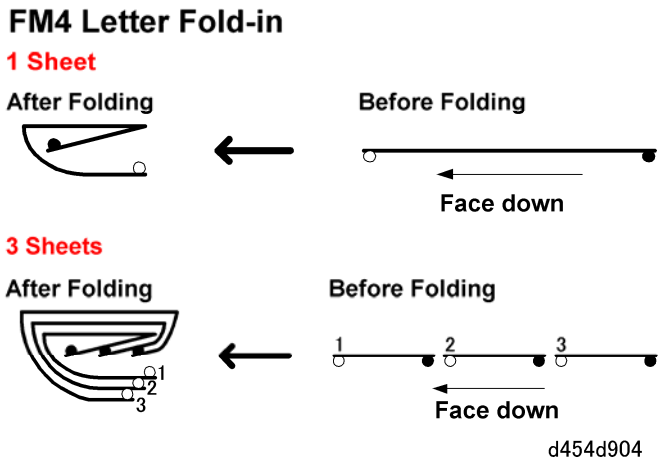



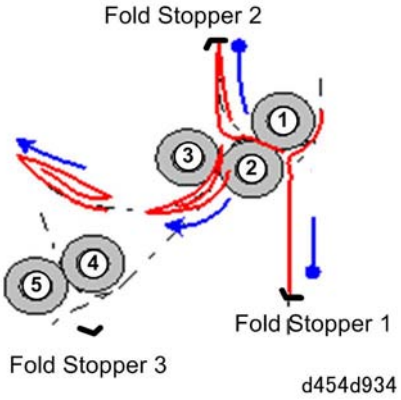

In Fold Method 3 (FM3):

- The leading edge of the paper is stopped by Fold Stopper 1.
- The paper flexes toward the nip of fold rollers ① and ② which performs the first fold.
- Fold Stopper 2 stops the paper and flexes it into the nip of fold rollers ② and ③.
- Fold rollers ② and ③ perform the second crease and feed the folded paper in exit path.
- Fold Stoppers 3 is not used.

**Details**

## *FM4 Letter Fold-in*




In Fold Method 4 (FM4):

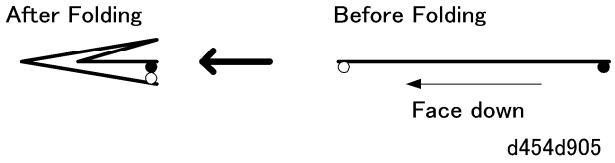
- The leading edge of the paper is stopped by Fold Stopper 1.
- The paper flexes toward the nip of fold rollers ① and ② which performs the first fold.
- Fold Stopper 2 stops the paper and flexes it into the nip of fold rollers ② and ③.
- Fold rollers ② and ③ perform the second crease and feed the folded paper in exit path.
- Fold Stopper 3 is not used.

FM3 and FM4 follow the same sequence but the resultant fold is different:

- In FM3 Fold Stopper 1 is positioned high so a short length of paper is allowed to feed before flexing toward the nip starts.
- In FM4 Fold Stopper 1 is positioned low so a long length of paper is allowed to feed before flexing toward the hip starts.
- This positioning of Fold Stopper 1 accounts for the difference in folding at the next nip.

## *FM5 Double Parallel Fold*

### FM5: Double Parallel Fold

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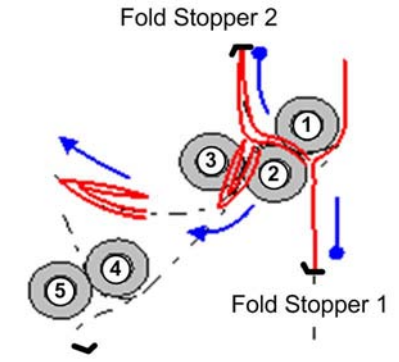


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In Fold Method 5 (FM5):

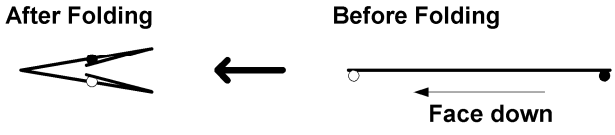
- The leading edge of the paper is stopped by Fold Stopper 1.
- The paper flexes toward the nip of fold rollers ① and ② which performs the first fold.
- Fold Stopper 2 stops the paper and flexes it into the nip of fold rollers ② and ③.
- Fold rollers ② and ③ perform the second crease and feed the folded paper in exit path.
- Fold Stopper 3 is not used.

FM3, FM4, and FM5 follow the same sequence but the resultant fold is different:

- In FM5 Fold Stopper 1 is positioned so the paper will fold into halves when it enters the first nip.
- This critical positioning of Fold Stopper 1 accounts for the difference in folding at the next nip.

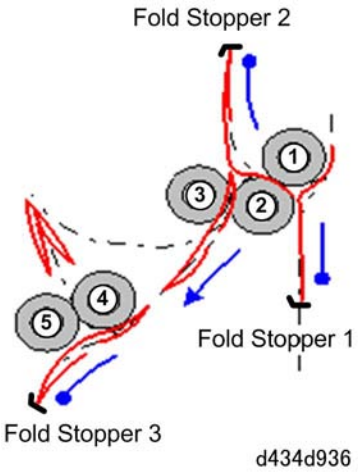
## *FM6 Gate Fold*

### FM6 Gate Fold



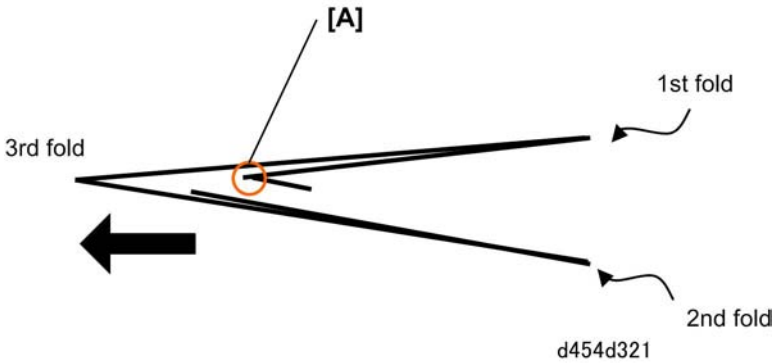

d454d906

**Details**

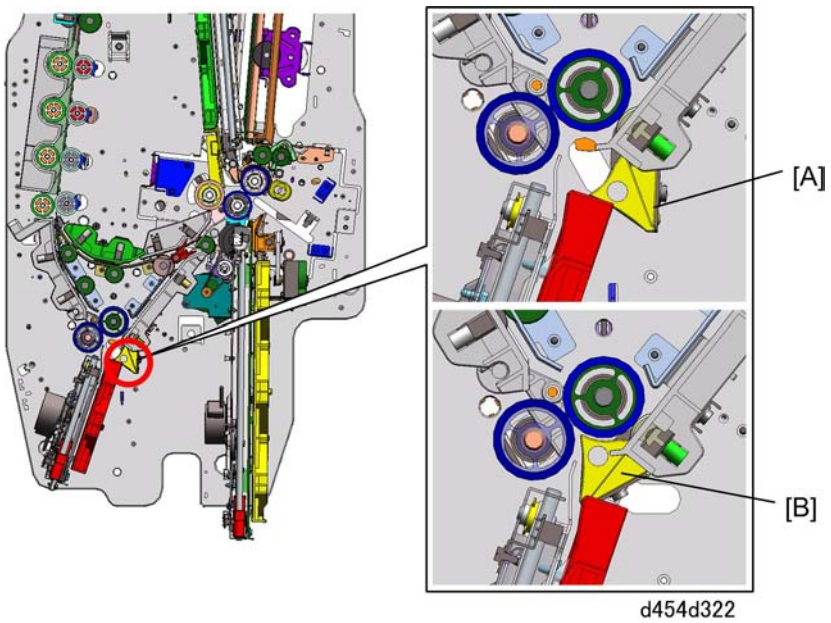



In Fold Method 6 (FM6):

- The leading edge of the paper is stopped by Fold Stopper 1.
- The paper flexes toward the nip of fold rollers ① and ② which performs the first fold.
- Fold Stopper 2 stops the paper and flexes it into the nip of fold rollers ② and ③.
- Fold rollers ② and ③ perform the second fold and feed the folded paper to Stopper 3.
- Fold Stopper 3 stops the paper and flexes it into the nip of fold roller ④ and ⑤.
- Fold roller ④ and ⑤ form the third crease and feed the folding paper into the exit path.
- All three stoppers are used with this method.

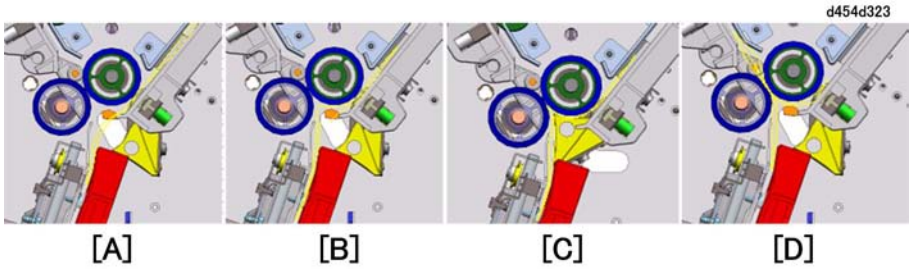



A mechanism is provided to prevent the leading edge from catching and folding over on itself [A] when the 3rd fold is done.




Operation sequence for folding three sheets:

- At power on (initialization) the FM6 junction gate [A] moves to home position.
- The three sheets are pre-stacked then the first two folds are done
- The FM6 stop pawl moves to the operation position [B].




| | |
|---|---|
| [A] | After the 2nd fold the sheet(s) are sent to the 3rd stopper for the last fold. |
| [B] | The leading edge of the sheets(s) hit stopper 3 and the upstream rollers continue rotate (equivalent to 18 mm of feed) to flex paper toward the fold rollers. |
| [C] | The edge of the FM6 pawl is raised to flatten the leading edge so it cannot bend back on itself as the paper enters the nip of the fold rollers. |
| [D] | When the 3rd fold starts the FM6 pawl returns to its home position. |

### *Fold Adjustments with SP Codes*

The fold positions can be adjusted in the User Tools (Operators, Skilled Operators) and the engine SP mode.

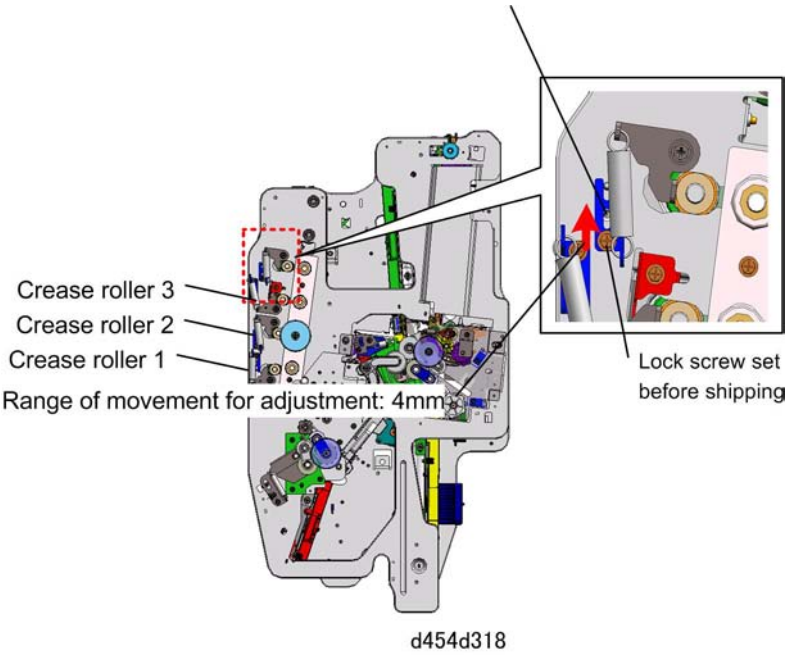
**Details**

| Mode | Name | Fold | User Tools*[1] | SP*[2] |
|---|---|---|---|---|
| FM1 | Z-Fold | 1st | 0501 | 6750 |
| | | 2nd | 0502 | 6751 |
| FM2 | Equal Halves | 1st | 0503 | 6752 |
| FM3 | LT Fold Out | 1st | 0504 | 6753 |
| | | 2nd | 0505 | 6754 |
| FM4 | LT Fold In | 1st | 0506 | 6755 |
| | | 2nd | 0507 | 6756 |
| FM5 | Double Parallel | 1st | 0508 | 6757 |
| | | 2nd | 0509 | 6758 |
| FM6 | Gate Fold | 1st | 0510 | 6759 |
| | | 2nd | 0511 | 6760 |
| | | 3rd | 0512 | 6761 |

*[1]: These numbers are the same for Operators, Skilled Operators.

*[2]: The ranges for these SP codes are the same: [-4 to +4 / **0** / 0.2 mm]

## 2.3.4 CREASE ROLLERS



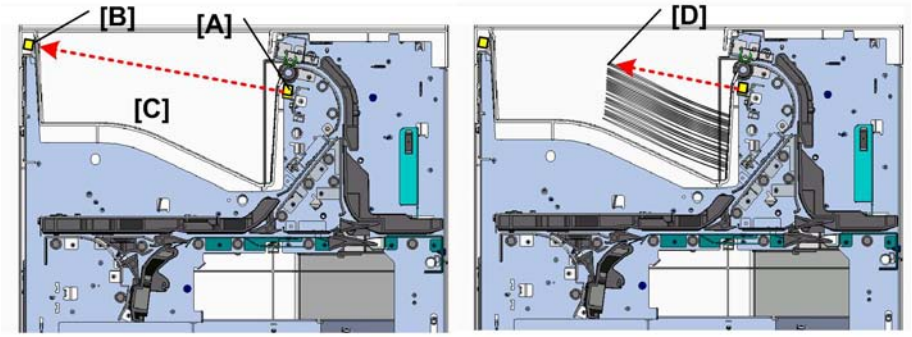

The amount of pressure exerted by the crease rollers can be adjusted. This can be done to eliminate splitting that can occur with coated paper and other types of media. The adjustment is a manual adjustment done on springs.]

**Adjustment range**

| | R1 | R2 | R3 | R4 |
|---|---|---|---|---|
| Default Load | 26 N | 45 N | | |
| Load Adjustment Possible (Hook 4 mm Distance) | -4.5 N | -9.5 N | | |

A projection fixed in slot and attached to a spring shortens the length to roller can be lowered. There are four crease rollers. Springs at the front and rear ends of each roller can be adjusted.

# 2.4 TRAY FULL

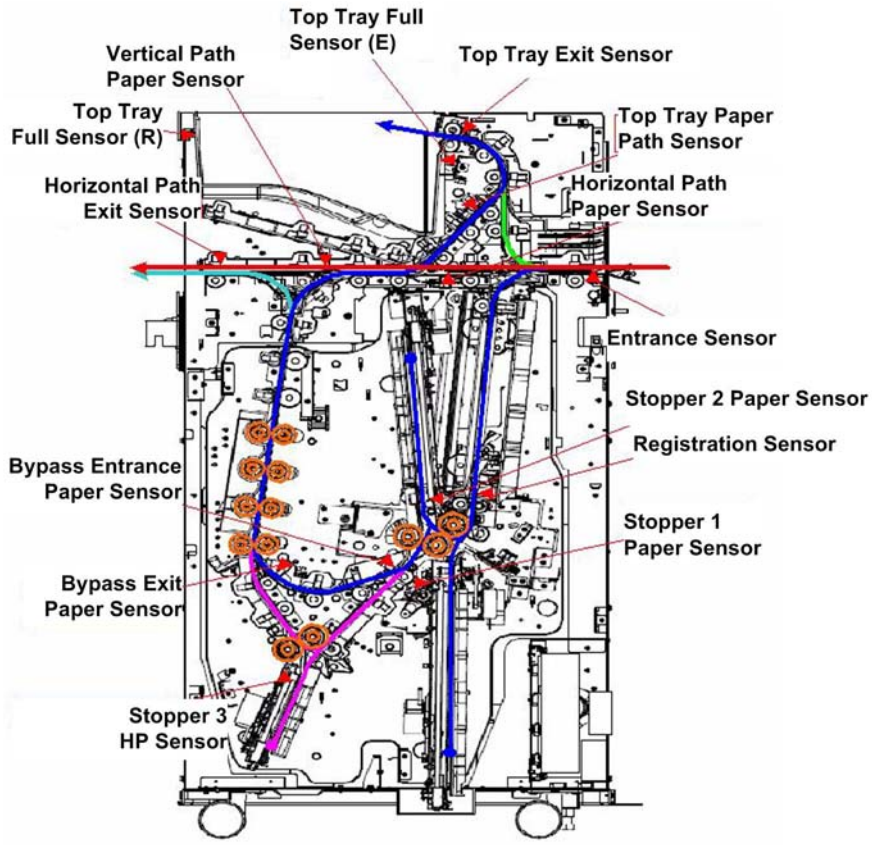



A pair sensors are used to detect the tray full condition. At the start of every job:

- Tray full sensor (Emitter) [A] emits a signal to tray full sensor (Receptor) [B].
- As long as the signal remains unbroken the multi-folder will continue to operate and feed folded paper to the top of the unit [C].
- When the top of the stack grows high enough to interrupt the signal between the tray full sensors [D], this will signal the machine to shut down the line temporarily.
- After the operator removes the stack from the top tray, folding and paper exit will resume.

# 2.5 ELECTRICAL COMPONENTS

## 2.5.1 TRANSPORT SENSORS

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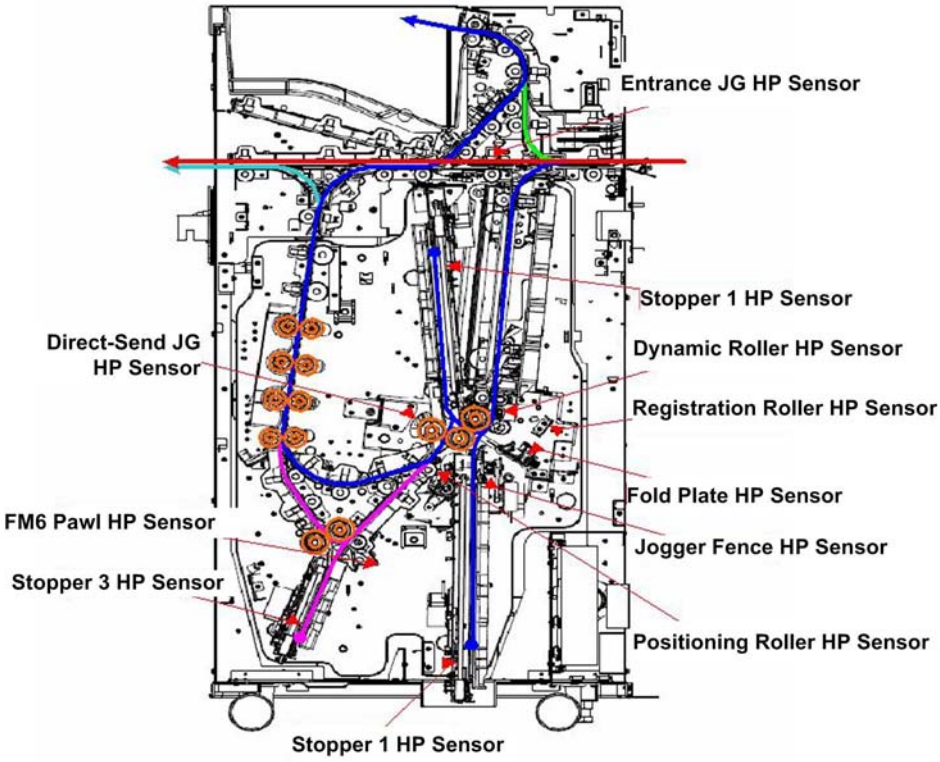
## 2.5.2 OPERATION SENSORS

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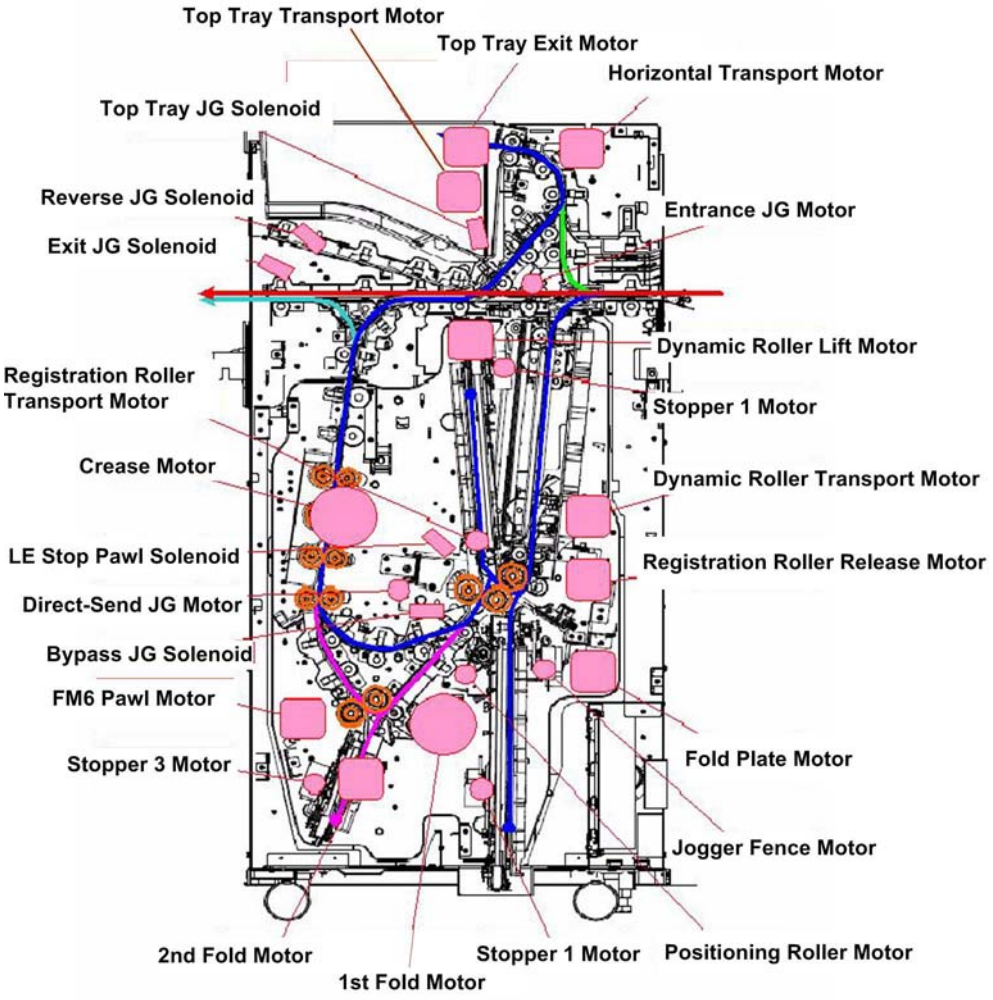
## 2.5.3 MOTORS, SOLENOIDS

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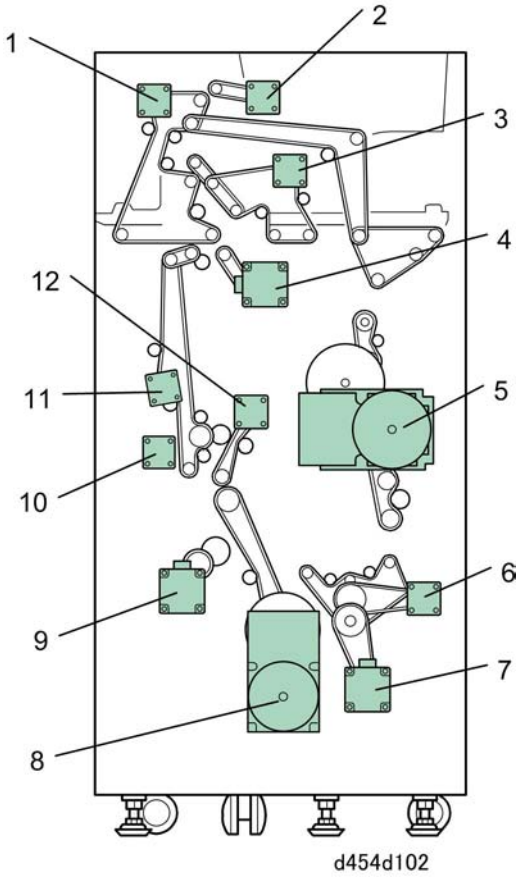
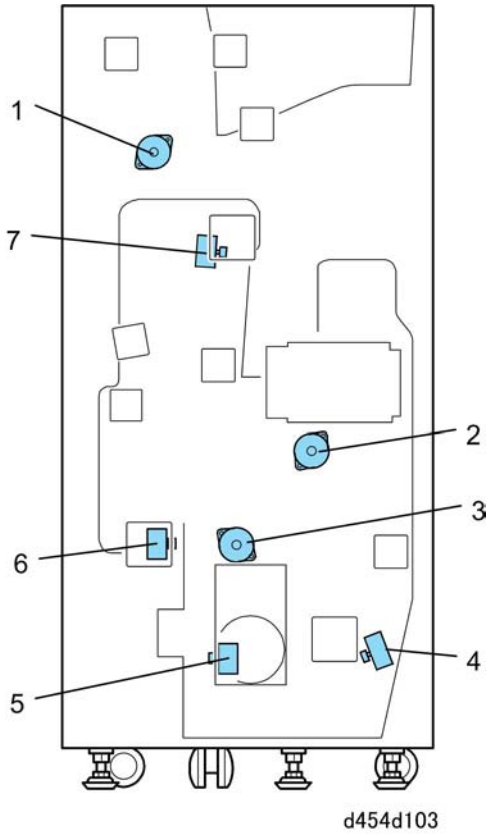
## 2.5.4 PAPER TRANSPORT MOTORS



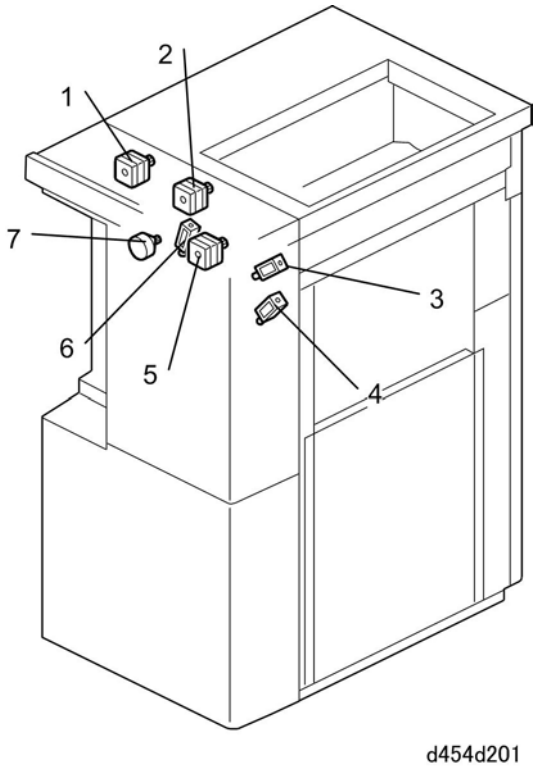

| | | | |
|---|---|---|---|
| 1. | Horizontal Transport Motor | 7. | 2nd Fold Motor |
| 2. | Top Tray Exit Motor | 8. | 1st Fold Motor |
| 3. | Top Tray Transport Motor | 9. | Fold Plate Motor |
| 4. | Dynamic Roller Lift Motor | 10. | Registration Roller Release Motor |
| 5. | Crease Motor | 11. | Dynamic Roller Transport Motor |
| 6. | FM6 Pawl Motor | 12. | Registration Roller Transport Motor |

## 2.5.5 FOLD MOTORS



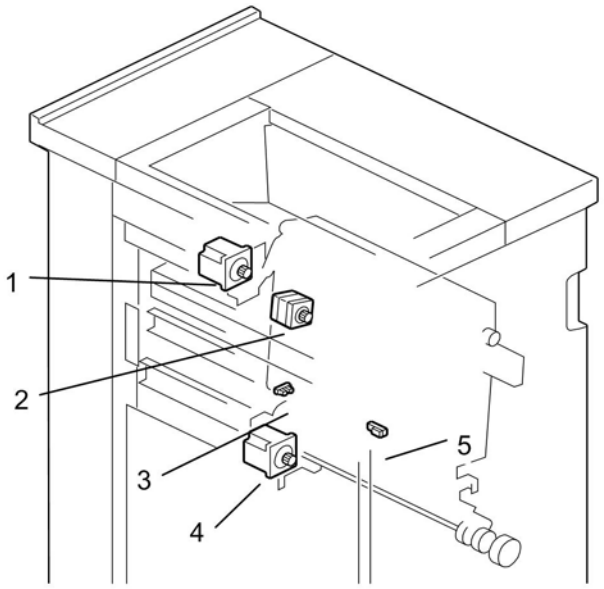

| | |
|---|---|
| 1. | Entrance JG Motor |
| 2. | Direct Send JG Motor |
| 3. | Positioning Roller Motor |
| 4. | Stopper 3 Motor |
| 5. | Stopper 1 Motor |
| 6. | Jogger Fence Motor |
| 7. | Stopper 2 Motor |

## 2.5.6 MOTORS, SOLENOIDS AROUND THE TOP TRAY




| | |
|---|---|
| 1. | Horizontal Transport Motor |
| 2. | Top Tray Exit Motor |
| 3. | Reverse JG Solenoid |
| 4. | Exit JG Solenoid |
| 5. | Top Tray Transport Motor |
| 6. | Entrance JG Solenoid |
| 7. | Top Tray JG Solenoid |

## 2.5.7 MOTORS, SENSORS TOP

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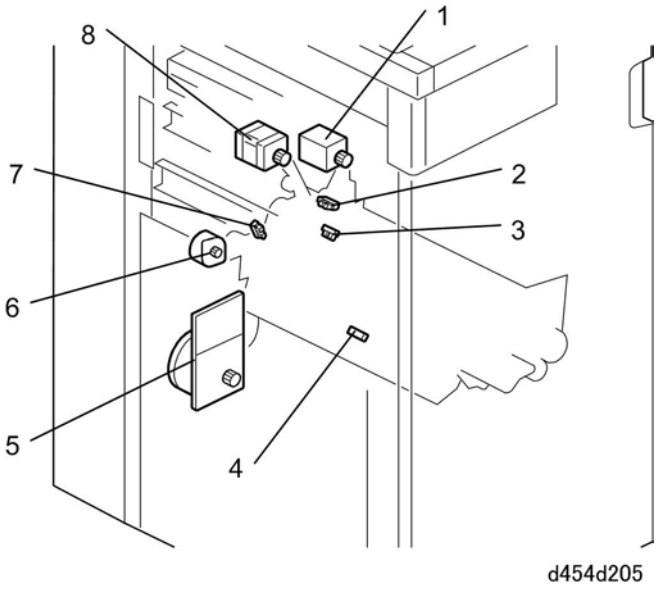
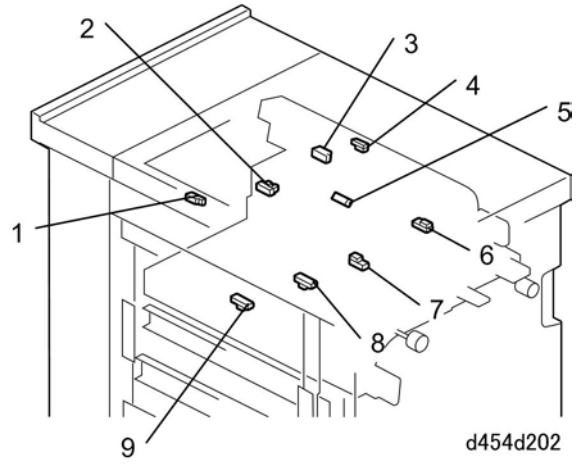
| | |
|---|---|
| 1. | Dynamic Roller Lift Motor |
| 2. | Dynamic Roller Transport Motor |
| 3. | Dynamic Roller HP Sensor |
| 4. | Fold Plate Motor |
| 5. | Registration Sensor |

## 2.5.8 MOTORS, SENSORS BOTTOM



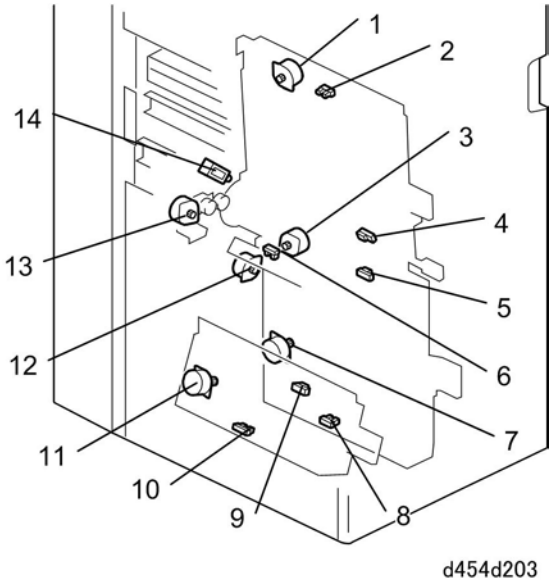

| | |
|---|---|
| 1. | Registration Roller Release Motor |
| 2. | Jogger Fence HP Sensor |
| 3. | Fold Plate HP Sensor |
| 4. | FM6 Pawl HP Sensor |
| 5. | 1st Fold Motor |
| 6. | Positioning Roller Motor |
| 7. | Direct Send JG HP Sensor |
| 8. | Registration Roller Transport Motor |

## 2.5.9 SENSORS AROUND TOP TRAY

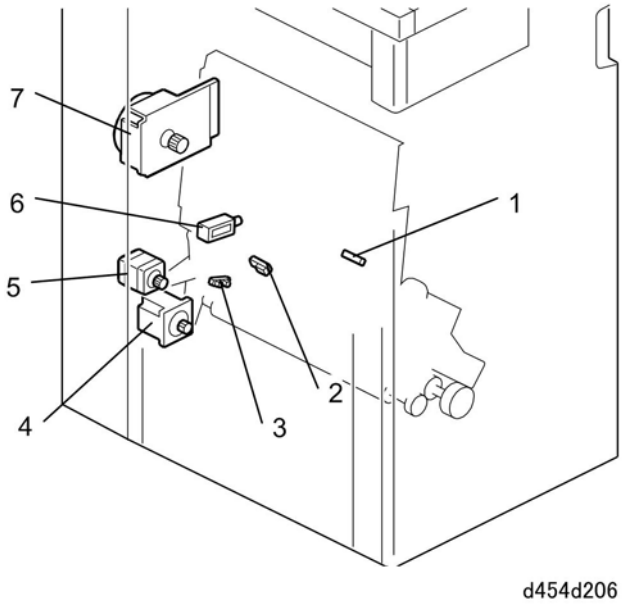



| | |
|---|---|
| 1. | Top Tray Full Sensor (R) |
| 2. | Entrance JG HP Sensor |
| 3. | Top Tray Full Sensor (E) |
| 4. | Top Tray Exit Sensor |
| 5. | Top Tray Paper Path Sensor |
| 6. | Entrance Sensor |
| 7. | Horizontal Path Paper Sensor |
| 8. | Vertical Path Paper Sensor |
| 9. | Horizontal Path Exit Sensor |

## 2.5.10 FOLD MOTORS, SENSORS, SOLENOIDS



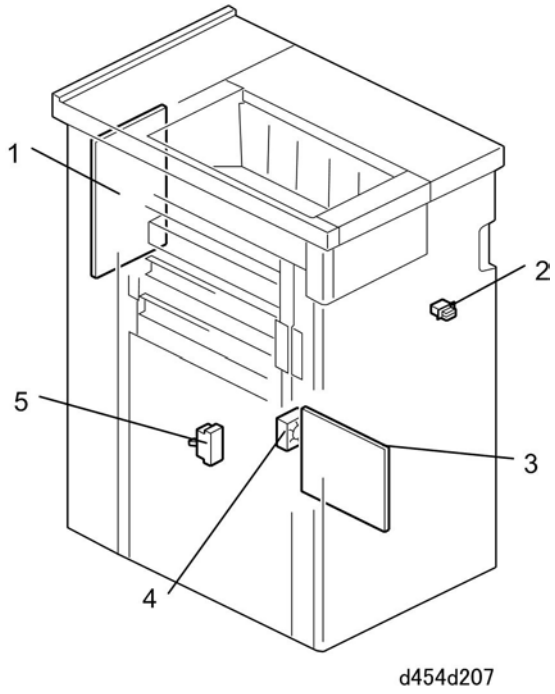

| | | | |
|---|---|---|---|
| 1. | Stopper 2 Motor | 8. | Stopper 1 HP Sensor |
| 2. | Stopper 2 HP Sensor | 9. | Stopper 3 Paper Sensor |
| 3. | Jogger Fence Motor | 10. | Stopper 3 HP Sensor |
| 4. | Stopper 2 Paper Sensor | 11. | Stopper 3 Motor |
| 5. | Stopper 1 Paper Sensor | 12. | Positioning Roller Motor |
| 6. | Positioning Roller HP Sensor | 13. | Direct Send JG Motor |
| 7. | Stopper 1 Motor | 14. | LE Stop Pawl Solenoid |




| | |
|---|---|
| 1. | Bypass Entrance Paper Sensor |
| 2. | Bypass Exit Paper Sensor |
| 3. | FM6 Pawl HP Sensor |
| 4. | 2nd Fold Motor |
| 5. | FM6 Pawl Motor |
| 6. | Bypass JG Solenoid |
| 7. | Crease Motor |

**Details**

## 2.5.11 BOARDS, SWITCHES, FAN




| | |
|---|---|
| 1. | Main Board |
| 2. | Front Door Switch |
| 3. | PSU |
| 4. | PSU Fan |
| 5. | Breaker Switch |

## 2.5.12 COMPONENT LIST

| Motors | | |
|---|---|---|
| M | Entrance JG Motor | Operates the entrance junction that directs paper from the upstream device to the 1) horizontal paper path, 2) paper fold path, 3) top tray. |

| Motors | | |
|---|---|---|
| M | Top Tray Transport Motor | Drives the transport rollers that feed unfolded paper to the downstream unit. Reverses and feeds folded paper to the folded paper tray. |
| M | Horizontal Transport Motor | Drives the entrance roller at the entrance where the paper from the upstream device is received. Drives the exit roller that feeds the paper out to the downstream unit. Drives other transport rollers in the horizontal paper path. |
| M | Top Tray Exit Motor | Drives the exit roller that feeds paper into the top tray. |
| M | 1st Fold Motor | Drives the 1st fold roller. |
| M | Jogger Fence Motor | Moves the jogger fence according to the width of the paper to align its edges. |
| M | Positioning Roller Motor | Operates the positioning roller when the paper strikes stopper 1 when more that one sheet of paper is stacked for folding. |
| M | Stopper 1 Motor | Moves Stopper 1 to the correct position for folding according to the paper size. |
| M | Fold Plate Motor | Operates the fold plate for the first fold during multi-sheet folding. Operates Stopper 1 1 during Z-folding. |
| M | Registration Roller Release Motor | Releases the pressure of the registration roller so paper can be stacked for multi-sheet folding. |
| M | Dynamic Roller Lift Motor | Raises and lowers the dynamic roller to the correct position for folding. |
| M | Stopper 2 Motor | Moves Stopper 2 to the correct position for folding according to the paper size. |

**Details**

| Motors | | |
|---|---|---|
| M | Dynamic Roller Transport Motor | Drives the Dynamic roller. |
| M | Registration Roller Transport Motor | Drives the registration roller. |
| M | Direct-Send JG Motor | Operates the direct send junction gate to the Stopper 2. |
| M | FM6 Pawl Motor | Drives the double-flap pawl that prevents bending of the leading edge when the 3rd fold is executed for FM6 folding (Fourths with 2 Flaps In) |
| M | Stopper 3 Motor | Moves Stopper 3 to the correct position for folding according to the paper size. |
| M | 2nd Fold Motor | Drives 3rd fold roller. Reverses when the paper does not pass through the 3rd fold unit. |
| M | Crease Motor | Drives the crease rollers. |

| Sensors | | |
|---|---|---|
| S | Top Tray Exit Sensor | Checks for the presence of paper at power on. Detects paper jams at the exit of the top tray. Used to create timing for control of paper fed to the top tray. |
| S | Entrance Sensor | Checks for the presence of paper at power on. Detects paper jams of paper fed from the upstream unit. Used to create timing for operation of the shift roller during multiple-sheet folding. |
| S | Entrance JG HP Sensor | Detects when the entrance junction gate is in and out of its home position. |

| Sensors | | |
|---|---|---|
| S | Horizontal Path Paper Sensor | Checks for the presence of paper at power on. |
| S | Top Tray Paper Path Sensor | Checks for the presence of paper at power on. Also checks for jams during paper feed. |
| S | Top Tray Full Sensor (E) | Detects when the top tray is full. |
| S | Top Tray Full Sensor (R) | Detects when the top tray is full. |
| S | Horizontal Path Exit Sensor | Checks for the presence of paper at power on. Checks for paper jams when paper exits to the downstream unit. Used to create timing for paper exit to the downstream unit. |
| S | Vertical Path Paper Sensor | Checks for the presence of paper at power on. |
| S | Positioning Roller HP Sensor | Detects when the jog roller is in and out of its home position. |
| S | Stopper 1 Paper Sensor | Checks for the presence of paper at power on. Also checks for jams during paper feed. Detects the condition of the stacked sheets during multi-sheet folding. |
| S | Stopper 1 HP Sensor | Detects when Stopper 1 is in and out of its home position. |
| S | Jogger Fence HP Sensor | Detects when jogger fence is in and out of its home position. |
| S | FM6 Pawl HP Sensor | Detects when the FM! pawl is in and out of its home position. |
| S | Registration Sensor | Checks for the presence of paper at power on. Also checks for jams during paper |

**Details**

| Sensors | | |
|---|---|---|
| | | feed. Used to create timing for registration buckle adjustment during paper feed. Detects the condition of the stacked sheets during multi-sheet folding. |
| S | Registration Roller HP Sensor | Detects when registration roller is in and out of its home position. |
| S | Dynamic Roller HP Sensor | Detects when dynamic roller is in and out of its home position. |
| S | Fold Plate HP Sensor | Detects when the fold plate is in and out of its home position. |
| S | Direct-Send JG HP Sensor | Detects when the direct-send junction gate is in and out of its home position. |
| S | Stopper 2 Paper Sensor | Checks for the presence of paper at power on. Also checks for jams during paper feed. Used to create operation timing of the LE pawl solenoid. |
| S | Stopper 2 HP Sensor | Detects when Stopper 2 is in and out of its home position. |
| S | Bypass Exit Paper Sensor | Checks for the presence of paper at power on. |
| S | Bypass Entrance Paper Sensor | Checks for the presence of paper at power on. |
| S | Stopper 3 Paper Sensor | Checks for the presence of paper at power on. Also checks for jams during paper feed. Used to create the timing that operates the 2nd fold motor during FM6 folding.. |
| S | Stopper 3 HP Sensor | Detects when Stopper 3 is in and out of its home position. |

| Switches | | |
|---|---|---|
| SW | Breaker Switch | - |
| SW | Front Door Switch (SW1) | Detects when the front door is opened or closed. When the front door is opened the interlock switch cuts off the 24V power supply. |

| Solenoids | | |
|---|---|---|
| SOL | Top Tray JG Solenoid | Operates the junction gate that sends the paper to the top tray after the direction of the paper has been reversed up and out of the horizontal paper path. |
| SOL | Exit JG Solenoid | Operates the exit junction gate that directs paper from the multi-fold unit to the exit for the downstream unit or to the exit for the folded paper tray. |
| SOL | Reverse JG Solenoid | Operates the junction gate that opens the horizontal feed path to paper sent from the fold crease unit. |
| SOL | LE Stop Pawl Solenoid | Operates the pawl that prevents bending of the leading edge while the paper is being folded in the 2nd fold unit. |
| SOL | Bypass JG Solenoid | Operates the bypass junction gate which directs paper from the 2nd fold unit to either the bypass or the 3rd fold unit. |

| Boards | | |
|---|---|---|
| PCB | PSU | Supplies the 24V power for the operation of the motors and solenoids, and the 5V power for the main board and sensors. |
| PCB | PSU Fan | Cools the PSU. |

**Details**

| Boards | | |
|---|---|---|
| PCB | Main Board | Controls operation of the motors, solenoids, sensors, and interface with the main machine. |