Model OR-C1
Machine Code:
D120/D121/D122/D139/D140/D141
Field Service Manual

July, 2011
Subject to change

Safety, Conventions, Trademarks

Safety

Prevention of Physical Injury

1. Before disassembling or assembling parts of the machine and peripherals, make sure that the machine and peripheral power cords 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. To prevent a fire or explosion, keep the machine away from flammable liquids, gases, and aerosols.

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.

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.

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.

Handling Toner

- Work carefully when removing paper jams or replacing toner bottles or cartridges to avoid spilling toner on clothing or the hands.

- If toner is inhaled, immediately gargle with large amounts of cold water and move to a well ventilated location. If there are signs of irritation or other problems, seek medical attention.

- If toner gets on the skin, wash immediately with soap and cold running water.

- If toner gets into the eyes, flush the eyes with cold running water or eye wash. If there are signs of irritation or other problems, seek medical attention.

- If toner is swallowed, drink a large amount of cold water to dilute the ingested toner. If there are signs of any problem, seek medical attention.

- If toner spills on clothing, wash the affected area immediately with soap and cold water. Never use hot water! Hot water can cause toner to set and permanently stain fabric.

- Always store toner and developer supplies such as toner and developer packages, cartridges, and bottles (including used toner and empty bottles and cartridges) out of the reach of children.

- Always store fresh toner supplies or empty bottles or cartridges in a cool, dry location that is not exposed to direct sunlight.

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.

WARNING FOR LASER UNIT
WARNING: Turn off the main switch before attempting any of the procedures in the Laser Unit section. Laser beams can seriously damage your eyes. CAUTION MARKING: laser_decal

Safety Precautions for This Machine
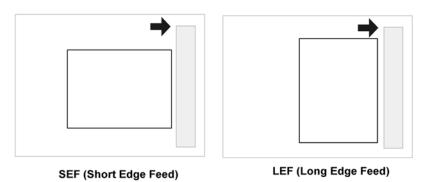
Before moving the mainframe:

- Disconnect all peripheral units (finisher, LCT, etc.) from the mainframe.
- Pull the slide handles out of the mainframe and use them to lift the mainframe.
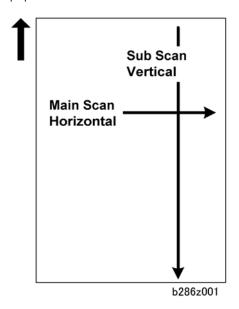
Conventions and Trademarks

Conventions

Symbol	What it means
CT	Core Tech Manual
🔩	Screw
🔌	Connector
ℂ	E-ring

Symbol	What it means
C-ring symbol	C-ring
Harness clamp symbol	Harness clamp
FFC	Flat Film Connector

SEF (Short Edge Feed)   **LEF (Long Edge Feed)**

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

b286z001

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

Trademarks

- Microsoft®, Windows®, and MS-DOS® are registered trademarks of Microsoft Corporation in the United States and /or other countries.
- PostScript® is a registered trademark of Adobe Systems, Incorporated.
- PCL® is a registered trademark of Hewlett-Packard Company.
- Ethernet® is a registered trademark of Xerox Corporation.
- PowerPC® is a registered trademark of International Business Machines Corporation.
- Other product names used herein are for identification purposes only and may be trademarks of their respective companies. We disclaim any and all rights involved with those marks.

TABLE OF CONTENTS

3. Preventive Maintenance

4. Replacement and Adjustment

5. System Maintenance

6. Troubleshooting

7. Energy Saving

1. Product Information

Specifications

See "Appendices" for the following information:

- General Specifications
- Supported Paper Sizes
- Software Accessories
- Optional Equipment

Machine Configuration

System Configuration and Options

d120p001

No.	Item	Comments
1	Main Machine D120/D121/D122/D139/D140/D141	
2	Platen Cover (D593)	
3	ARDF (D578)	
4	Paper Feed Unit (D579)	Required for item 5
5	Caster Table (D593)	

No.	Item	Comments
6	Paper Feed Unit (D580)	Required for item 14, 15
7	LCT (D581)	Required for item 14, 15
8	1-Bin Tray (D582)	
9	Bridge Unit (D584)	Required for item 13, 14, 15
10	Internal Shift Tray (D583)	
11	Internal Finisher (D586)	
12	USB2.0/SD Slot Type H (D594)	
13	500-Sheet Finisher (D585)	Requires item 9
14	1000-Sheet Finisher (D588)	Requires item 9 Requires item 6 or 7
15	Booklet Finisher (D589)	Requires item 9 Requires item 6 or 7
16	Copy Data Security Unit Type F (B829)	
17	Fax Unit (D596)	See Fax manual
18	Interface Board Controller Options	See **Note 1**
19	SD Card Controller Options	See **Note 2**
20	HDD Unit (D594)	
21	Bluetooth Interface Unit Type D (D566)	

Note 1:

The following interface boards are available for installation.

⭐ Important

- There is only one board slot on the back of the machine. Only one of these options can be installed.

These options can be installed at any time.

Interface Board
File Format Converter Type E (D377)

1

Interface Board
IEEE 1284 Interface Board Type A (B679)
IEEE 802.11a/g Interface Unit Type J (D377) -or- IEEE 802.11g Interface Unit Type K (D377)
Gigabit Ethernet Board Type A (G874)
Optional Counter Interface Unit Type A (B870)

Note 2:

The following options are provided on SD cards.

- Two SD card slots are available. If more than two options need to be installed, the applications can be moved to one SD card with SP5873-1.

These options can be installed at any time.

SD Cards
Browser Unit Type E (D430)
PostScript3 Unit Type 3352 (D595)
IPDS Unit Type 3352 (D595)
VM Card Type N (D594) [1] only for Basic models

[1]: Java-VM is standard for SP models.

Guidance for Those Who are Familiar with Predecessor Products

1

The D120/D121/D122/D139/D140/D141 series are successor models to the D084/D085 series. If you have experience with the predecessor products, the following information will be of help when you read this manual.
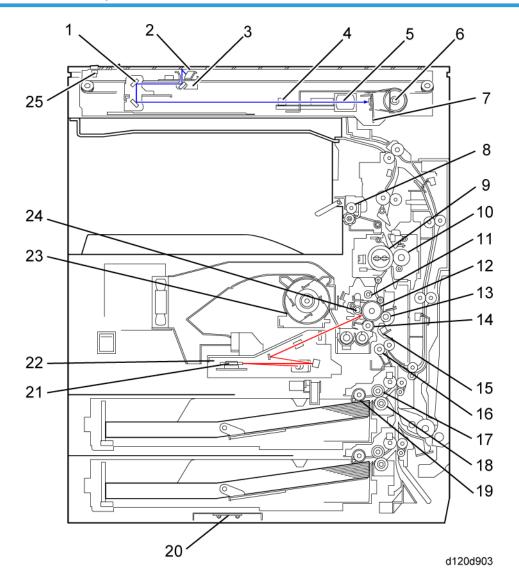
Different Points from Predecessor Products

	D120/D121/D122/D139/ D140/D141	D084/D085
Model Line Up	3 models 23 cpm/ 28 cpm/ 33cpm	2 models 28 cpm/ 33 cpm
Safety Shutdown Function	Available	Not available
Scanner Lamp	LED	Xenon
Paper Feed Method	FRR System	Friction Pad System
Data Overwrite Security	Standard	Option
HDD Encryption	Standard	Option
App2Me	Standard (SP model only) Included in Printer/Scanner SD card.	Standard
VM	Standard (SP model only) Included in Printer/Scanner SD card.	Standard
PDF Direct	Standard (SP model only) Included in Printer/Scanner, Printer, and PS3 SD card.	Option

Overview

Mechanical Components

d120d903

1. 2nd scanner	14. Development roller
2. Exposure lamp	15. ID sensor
3. 1st scanner	16. Registration roller
4. Original length sensor	17. Feed roller
5. Lens	18. Separation roller
6. Scanner motor	19. Pick-up roller
7. SBU board	20. Optional tray heater
8. Exit roller	21. Polygon mirror motor
9. Fusing hot roller	22. Laser unit
10. Fusing pressure roller	23. Toner supply bottle holder
11. Cleaning unit	24. Drum charge roller
12. OPC drum	25. Scanner home position sensor
13. Transfer roller	

Paper Path
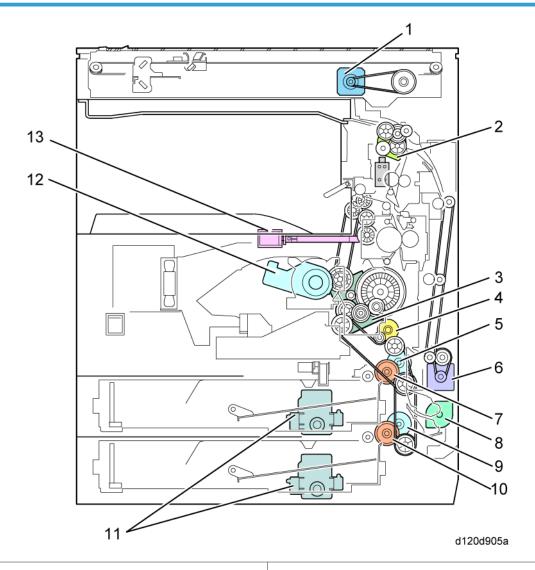
d120d904

1. Optional ADF	6. Optional Paper Feed Unit
2. Optional 1-bin Tray	7. Optional Finisher
3. Interchange Unit	8. Optional Bridge Unit
4. Duplex Unit	
5. By-pass Feed Tray	

Drive Layout

d120d905a

1. Scanner Motor	8. By-pass Motor
2. Inverter Motor	9. Lower Transport Clutch
3. Main Motor	10. Lower Paper Feed Clutch
4. Registration Clutch	11. Paper Tray Lift Motor
5. Upper Transport Clutch	12. Toner Supply Motor
6. Duplex Motor	13. Fusing drive release solenoid
7. Upper Paper Feed Clutch	

2. Installation

Installation Requirements

Environment
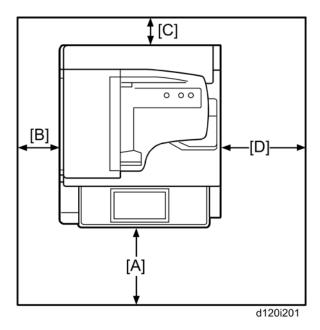
1. Temperature Range: 10 °C to 32 °C (50 °F to 89.6 °F)
2. Humidity Range: 15% to 80% RH
3. Ambient Illumination: Less than 1,500 lux (do not expose to direct sunlight.)
4. Ventilation: Room air should turn over at least 30 m^3/hr/person
5. Ambient Dust: Less than 0.10 mg/m^3
6. Avoid an area which is exposed to sudden temperature changes. This includes:
   - Areas directly exposed to cool air from an air conditioner.
   - Areas directly exposed to heat from a heater.
7. Do not place the machine in an area where it will be exposed to corrosive gases.
8. Do not install the machine at any location over 2,000 m (6,500 ft.) above sea level.
9. Place the copier on a strong and level base. (Inclination on any side should be no more than 5 mm.)
10. Do not place the machine where it may be subjected to strong vibrations.

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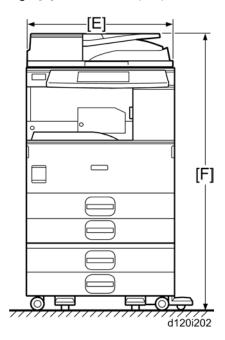
Front to back: Within 5 mm (0.2") of level

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

Minimum Space Requirements

Place the copier near the power source, and provide clearance as shown:

d120i201

- Front [A]: Over 400 mm (15.8")
- Left [B]: Over 100 mm (4")
- Rear [C]: Over 100 mm (4")
- Right [D]: Over 900 mm (36")

d120i202

- Width [E]: 587 mm (23.1")
- Height [F]: 1087 mm (42.8")

Note

- The 400 mm recommended for the space at the front is only for pulling out the paper tray. If an operator stands at the front of the copier, more space is required.

Power Requirements

2

⚠ CAUTION
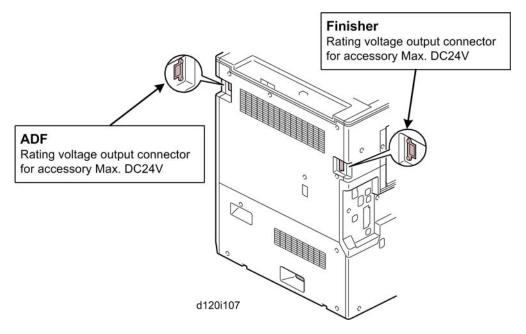
- Make sure that the wall outlet is near the copier and easily accessible.

- Make sure the plug is firmly inserted in the outlet.

- Avoid multi-wiring.

- Be sure to ground the machine.

1. Input voltage level
   - 120 V to 127 V, 60 Hz: More than 12 A
   - 220 V to 240 V, 50 Hz/60 Hz: More than 7 A
   - 110V, 50 Hz/60 Hz: More than 13 A

2. Permissible voltage fluctuation: 10 %

3. Do not set anything on the power cord.

Copier Installation

Power Sockets for Peripherals

⚠ CAUTION

- Rating voltages for peripherals.

Finisher
Rating voltage output connector
for accessory Max. DC24V

ADF
Rating voltage output connector
for accessory Max. DC24V

d120i107

Make sure to connect the cables to the correct sockets.

Accessory Check

Check the quantity and condition of the accessories in the box against the following list:
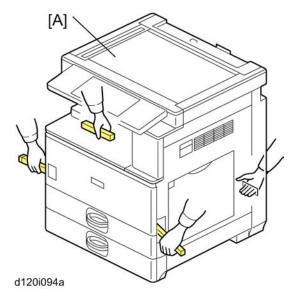
No.	Description	Q'ty
1	Paper Tray Decal	1
2	Emblem: Small	1
3	Emblem: Large	1
4	Model Name Decal	1
5	Precautions for Printing Decal	1

No.	Description	Q'ty
6	Copy Prohibition Display Decal	1
7	Operating Instructions – About This Machine	1
8	Operating Instructions – Troubleshooting	1
9	Quick Reference Guide - Copy	1
10	Quick Reference Guide - Printer (SP model only)	1
11	Quick Reference Guide - Scanner (SP model only)	1
12	Quick Reference Guide - App 2 Me (SP model only)	1
13	CD-ROM Operation Instruction - User	1
14	CD-ROM Operation Instruction - Administrator	1
15	CD-ROM Operation Instruction - App 2 Me (SP model only)	1
16	CD-ROM - SDK (SP model only)	1
17	CD-ROM - Printer/Scanner (SP model only)	1
18	CD-ROM - Printer (SP model only)	1
19	CD-ROM - Scanner (SP model only)	1
20	CD-ROM - Font	1
21	Cloth Holder	1
22	Cloth - DF Exposure Glass	1
23	Ferrite Core (SP model only)	1
24	Power Cord	1
25	Fax Stamp (SP model only)	1

2
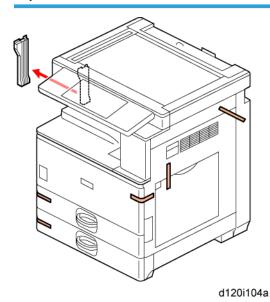
Installation Procedure

Unloading

d120i094a

When unloading the main machine [A] from a pallet, use grips and the handle.

Tapes and Retainers
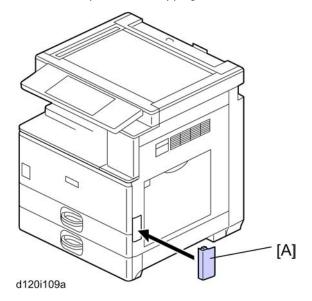
d120i104a

⚠CAUTION

- Unplug the machine power cord before you start the following procedure.
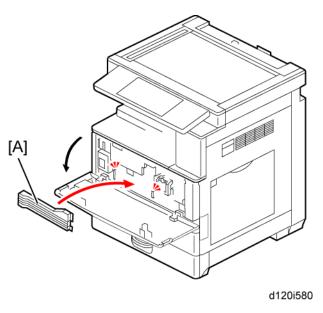
If the optional paper feed unit or the optional LCT is going to be installed now, put the copier on the paper feed unit or the LCT first, then install these options, then install the copier.

⬇Note

- Keep the shipping retainers after installing the machine. They will be reused if the machine is moved to another location in the future.

1. Remove the tapes and the shipping retainer on the exterior of the copier.

d120i109a
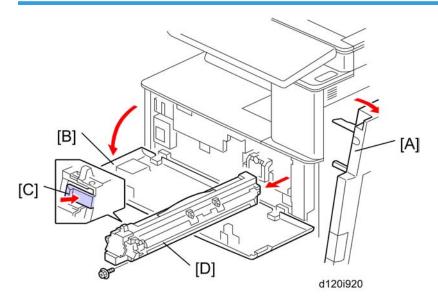
2. Attach the grip cover [A] to the main machine.

d120i580
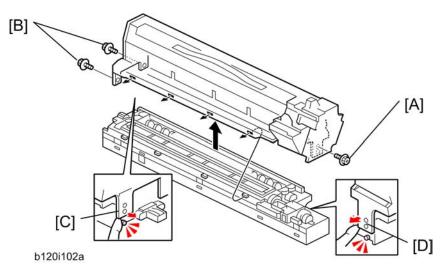
3. Open the front cover, and then keep the scanner unit stay [A] inside the front door.

Developer

d120i920
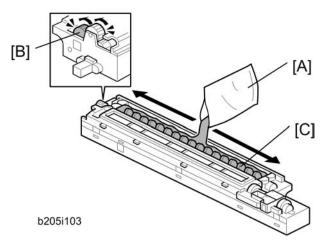
1. Spread the vinyl sheet provided with the developer kit on a flat surface.

2. Open the right cover [A].

3. Open the front cover [B].

4. Push the latch [C] and remove the PCU [D] (✐ x 1).

2

b120i102a

5. Remove the front screw [A] (🔩 x1)

6. Remove the rear screws [B] (🔩 x2)

7. Release the rear tab [C] then front tab [D], then separate the top and bottom.

⭐ **Important**

- **Be sure to release the rear tab first and the front tab second.**

b205i103
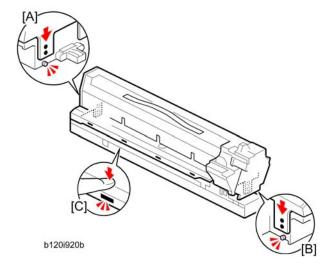
8. Open the developer pack [A].

9. While turning the black gear [B], slowly move the pack left and right and pour half of the developer over the auger [C].

10. Continue to turn the black gear until the developer is level.

11. While continuing to turn the black gear, slowly move the pack left and right and pour the remaining half of the developer over the auger until the developer is level.

⭐Important

- Be careful. Do not spill developer on the gears and sponges. If you accidentally spill developer on the gears or sponges, remove it with a magnet or the tip of a magnetized screwdriver.

Re-assembly

b120i920b
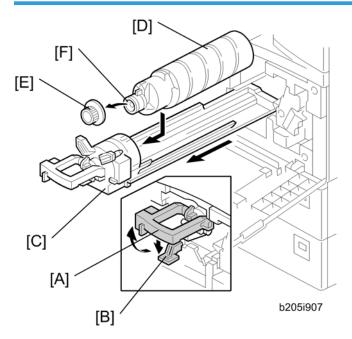
1. Make sure that all of the holes and tabs are engaged at [A], [B], and [C]. Then push down to lock the tabs on the front and rear end of the PCU.

2. Make sure that the holes for the screws on the front and rear end of the PCU are aligned correctly. If the holes are not aligned correctly, make sure that the tabs at the front, rear, and left side of the PCU are engaged correctly.

   ⭐Important

   - Reattach the rear screws (🔩 x 2) first, then reattach the front screw (🔩 x 1).

   - Do not push down on the top of the PCU when you attach the rear and front screws

3. Reinstall the PCU in the main machine (🔩 x 1).

Toner Bottle

b205i907
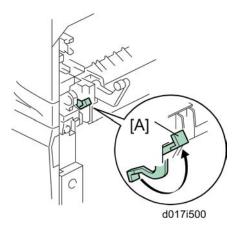
1. Raise the toner bottle holder lever [A], push lever [B] down, and pull the toner bottle holder [C] out.

2. Shake the toner bottle [D].

   ⬇ **Note**

   - Do not remove the toner bottle cap [E] until after shaking.

3. Unscrew the bottle cap [E] and insert the bottle into the holder.

   ⬇ **Note**
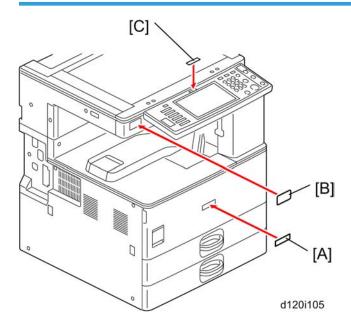
   - Do not touch the inner bottle cap [F].

4. Reposition the holder and press down the holder lever to secure the bottle.

5. Open the right cover.

d017i500
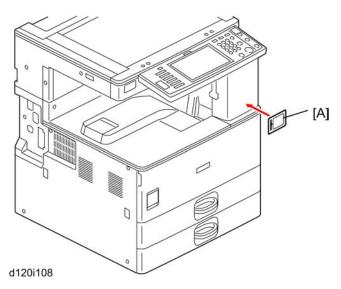
6. Rotate the green fusing pressure lever [A] to the up position.

Emblem, Decals

d120i105
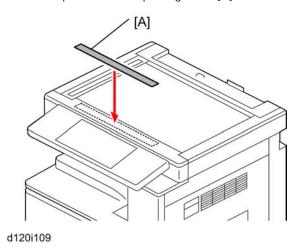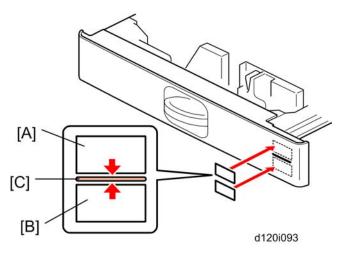
1. Attach the emblem [A] to the center of the front cover

2. Attach the model name decal [B] to the front left of the front scanner cover.

3. Attach the small emblem [C] to the top center on the operation panel.

d120i108

4. Attach the precautions for printing decal [A] to the front right cover.

d120i109
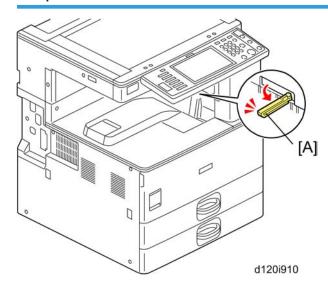
5. Attach the copy prohibition display decal [A] to the front of the exposure glass.

d120i093
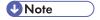
6. Attach the appropriate paper tray number decal [A] and paper size decal [B] above and below the line [C] on the tray of the paper feed unit.

Completion

d120i910
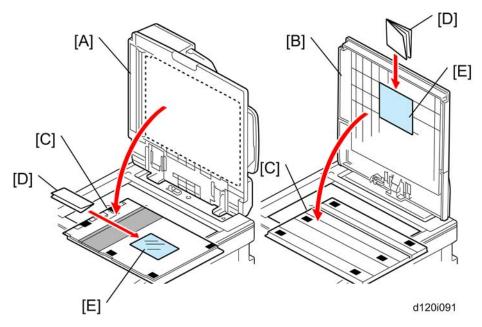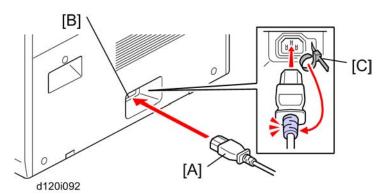
1. If the optional bridge unit will not be installed, swing the sensor feeler [A] out.

2. Install the optional ARDF or the optional platen cover (see ARDF (D578) or Platen Cover (D593)).

3. Pull out trays, and then adjust the side guides and end guide to match the paper size.

⬇Note

- To move the side guides, first pull out the tray fully, then push down the green lock at the rear of the tray.

2

d120i091

4. Open the ARDF [A] or platen cover [B].

5. Remove the platen [C] from the ARDF or platen cover.

6. Fold the SMC sheets into folio (for the ARDF) or quarto (for the platen cover).

7. Put the folded SMC sheets [D] in the pocket [E].

8. Align the platen on the exposure glass, and then close the ARDF or platen cover.

d120i092

9. Connect the power cord [A] to the inlet [B] of the main machine.

10. Secure the power cord with the clamp [C] installed in the main machine so that the power cord is never disconnected.

SP Settings

1. Turn on the main power switch.

2. Go into the SP mode and do SP2-801 (Developer Initialization).

3. Do SP5-181 and SP1-007-007 to set automatic paper size selection for the upper tray, lower tray, and by-pass tray.

Upper Tray (Size Adjust Tray 1)

5-181-001	A4 LEF/LT LEF	
5-181-002	A3/DLT	[0 to 1 / **0** / 1]
5-181-003	B4/LG	0: ISO (A3, A4, A5, etc.)
5-181-004	B5LEF/ExeLEF	1: USA (DLT, LT, EXE, etc.)
5-181-005	A5SEF/HLTSEF	

Lower Tray (Size Adjust Tray 2)

5-181-006	A4 LEF/LT LEF	
5-181-007	A3/DLT	[0 to 1 / **0** / 1]
5-181-008	B4/LG	0: ISO (A3, A4, A5, etc.)
5-181-009	B5LEF/ExeLEF	1: USA (DLT, LT, EXE, etc.)

By-Pass Tray (By-Pass Size Detection)

1-007-007	LTSEF/LG	[0 to 1 / **0** / 1] 0: ISO (A3, A4, A5, etc.) 1: USA (DLT, LT, EXE, etc.)
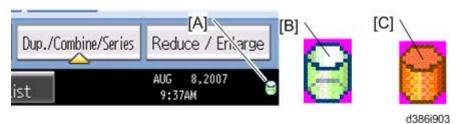
4. Enable the NIB and/or USB function.

   - To enable the NIB function, enter the SP mode and set SP5-985-001 (On Board NIC) to "1"(Enable).

   - To enable the USB function, enter the SP mode and set SP5-985-002 (On Board USB) to "1"(Enable).

5. Exit SP mode.

6. Do some test copies to make sure that the machine operates correctly.

Data Overwrite Security

Do the following procedure if a customer wants to use this function.

1. Do SP5-878-1(Option Setup - Data Overwrite Security) and touch [EXECUTE].

2. Go out of the SP mode, turn off the operation switch, then turn off the main power switch.

3. Turn the machine power on.

4. Press [User Tools] and select System Setting > Administrator Tools > Auto Erase Memory Setting > On

5. Exit from User Tools mode.

6. Check the display and make sure that the overwrite erase icon [A] is displayed.

7. Make a Sample Copy.

8. Check the overwrite erase icon.

- The icon [B] changes to [C] when job data is stored in the hard disk.

- The icon goes back to its usual shape [B] after this function has completed a data overwrite operation to the hard disk.

9. Do SP5990-005 (SP print mode - Diagnostic Report).

10. Look at the report:

- Under "[ROM No./Firmware Version]" check the number and version number listed for "HDD Format Option".

- Under "[Loading Program]" check the option number and version number listed for "GW_zoffy".

- These two version numbers should be identical.

11. Exit SP mode.
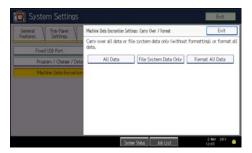
HDD Encryption

Do the following procedure if a customer wants to use this function.

1. Do SP5-878-2 (Option Setup - Encryption Option) and touch [EXECUTE]

2. Go out of the SP mode, turn off the operation switch, then turn off the main power switch.

3. Turn the machine power on.

4. Push [User Tools] and select System Setting > Administrator Tools > Machine Data Encryption Setting.

5. Press [Encrypt].

6. Select the data to be carried over to the hard disk and not to be reset

   To carry all of the data over to the hard disk, select [All data].To carry over only the machine setting data, select [File System Data Only]. To reset all of the data, select [Format All Data].

7. Press the [Start] Key.

   The encryption key for backup data is printed.

App 2 Me Setting (SP models only)

SP models have Java VM and "App 2 Me" as a standard.

Do the following procedure if a customer wants to use this function.

1. Press "User Tools" key on the operation panel.
2. Touch the "Extended Feature Settings" button twice.
3. Touch the "App 2 Me" line in the Startup Setting tab.

4. Touch the "Extended Feature Info" tab on the LCD.

5. Touch the "App 2 Me" line.

6. Set the setting of "Auto Start" to "On".

7. Touch the "Exit" button.

8. Exit the "User Tools" settings.

Transporting the Machine
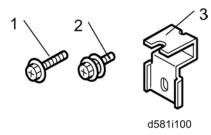
1. Do SP4-806-001 to move the scanner carriage from the home position. This prevents dust from falling into the machine during transportation.

Paper Feed Unit PB3120 (D579)

Accessory Check

Check the quantity and condition of the accessories against the following list.

No.	Description	Q'ty
1	Screw - M4 x 10	2
2	Screw with Spring Washer - M4 x 10	1
3	Securing bracket	2

d581i100

Installation Procedure

⚠CAUTION
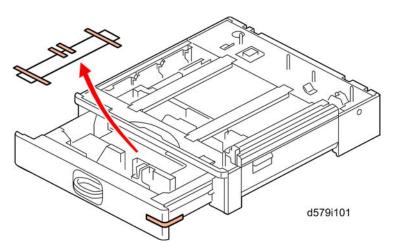
- Turn off the main power switch of the copier and unplug the power cord before you start the installation procedure.

- You need two or more persons to lift the copier. The copier is highly unstable when lifted by one person, and may cause human injury or property damage.

- Do not lift the copier with the paper feed unit installed. The handle and grips may be damaged.

⬇Note

- The one-tray paper feed unit must be installed on the caster table (D593). Prepare the caster table first before installing this unit.
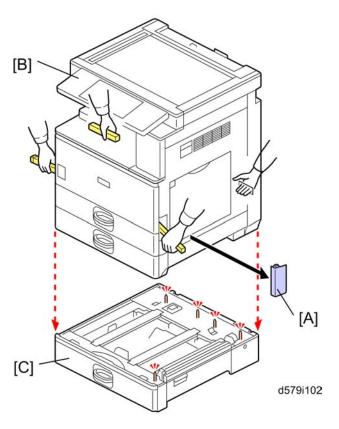
d579i101

1. Remove all tape on the paper feed unit.

2. Remove the paper tray and remove all tapes and padding.

3. Put the paper tray unit on the caster table (D593).

⬇ **Note**
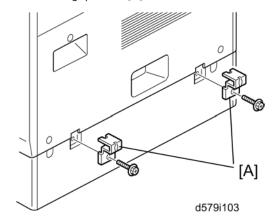
- For details about the installation of the caster table, see the "Installation Procedure of Caster Table (D593)" in this section.

2

d579i102
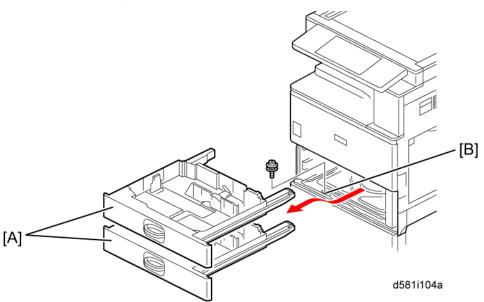
4. Remove the grip cover [A] at the front right of the main machine if this cover is attached.

5. Pull out three grips, then hold the handle and grips, and put the copier [B] on the paper feed unit [C].

⭐**Important**
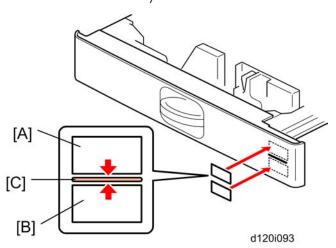
- **You need two or more persons to lift the copier.**

6. Attach the grip cover [A] to the main machine.

d579i103

7. Attach the securing brackets [A] (🔩 x 1; M4x10 each).

d581i104a
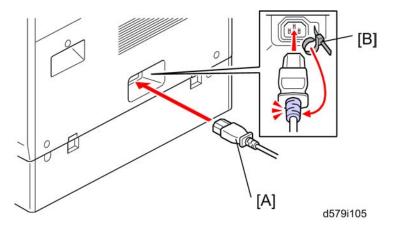
1. Remove the 1st and 2nc paper trays [A], and then secure the paper feed unit [B] (🔩 spring washer x 1; M4x 10).

2. Reinstall the 1st and 2nd trays.

d120i093

3. Attach the appropriate paper tray number decal [A] and paper size decal [B] above and below the line [C] on the tray of the paper feed unit.

🔽Note

- The paper tray number and size sheet is in the accessory box of the main machine.

4. Lock the caster stoppers for the front two casters under the paper feed unit.

5. Load paper into the paper tray and set the side fences and bottom fence.

d579i105

6. Connect the power cord [A] to the inlet of the main machine.

7. Secure the power cord with the clamp [B] on the main machine so that the power cord is never disconnected.

SP Settings

1. Connect the copier and turn on the main power switch.

2. Do SP5-181 to set automatic paper size detection for the upper tray of the paper tray unit.

Upper Tray (Size Adjust Tray 3)

5-181-011	A3/DLT	[0 to 1 / **0** / 1]
5-181-012	B4/LG	0: ISO (A3, A4, A5, etc.)
5-181-013	B5LEF/ExeLEF	1: USA (DLT, LT, EXE, etc.)

3. Exit SP mode.

4. Do some test copies to make sure that the machine operates correctly.
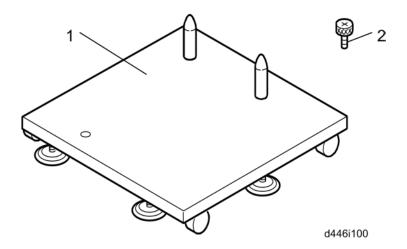
Caster Table Type D (D593)
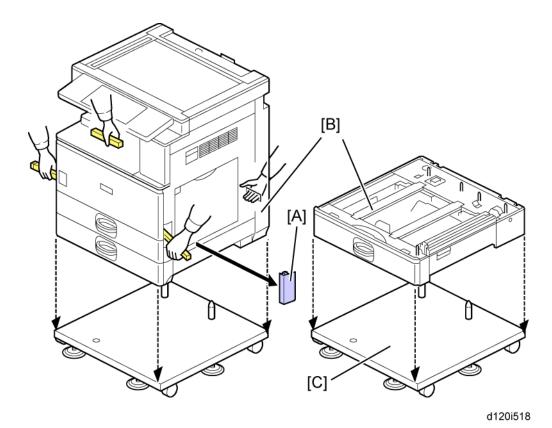
Component Check

No.	Description	Q'ty
1	Caster Table	1
2	Stud Screw	1

d446i100
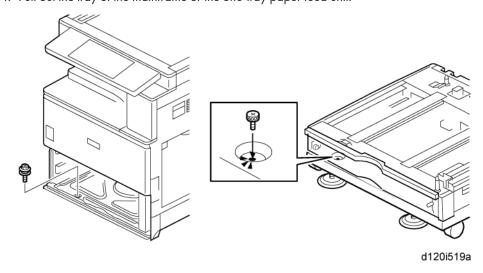
Installation Procedure

1. Put the caster table on a flat place.

d120i518

2. Remove the grip cover [A] at the front right of the main machine if this cover is attached.

3. Lift the mainframe or the one-tray paper feed unit [B], and then install it on the caster table [C].

4. Pull out the tray of the mainframe or the one-tray paper feed unit.

d120i519a

5. Secure the mainframe or the one-tray paper feed unit to the caster table (stud screw x 1)
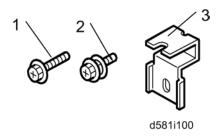
6. Reinstall the tray(s) in the mainframe or the one-tray paper feed unit.

7. Adjust the five leveling adjustors of the caster table.

2

2. Installation

Paper Feed Unit PB3130 (D580)

Accessory Check

Check the quantity and condition of the accessories against the following list.

No.	Description	Q'ty
1	Screw – M4 x 10	2
2	Screw with Spring Washer – M4 x 10	1
3	Securing Bracket	2

d581i100

Installation Procedure

⚠CAUTION

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

- The handles of the main machine for lifting must be inserted inside the machine and locked unless these handles are used for the installation or relocation of the main machine.

- You need two or more persons to lift the copier. The copier is highly unstable when lifted by one person, and may cause human injury or property damage.

52

d580i101

1. Remove all tape on the paper feed unit.

2. Remove the paper tray and remove all tapes and padding.

d580i102

3. Remove the grip cover [A] at the front right of the main machine if this cover is attached.

4. Pull out three grips, then hold the handle and grips, and put the copier [B] on the paper feed unit [C].

⭐**Important**
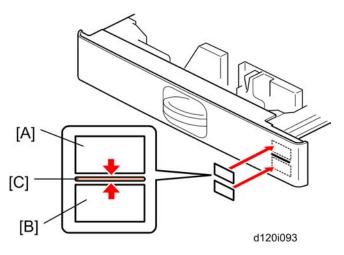
- You need two or more persons to lift the copier.

5. Attach the grip cover [A] to the main machine.

d581i103

6. Attach a securing bracket [A] to each side of the paper tray unit, as shown (🔩 x 1; M4x10 each).

d581i104a
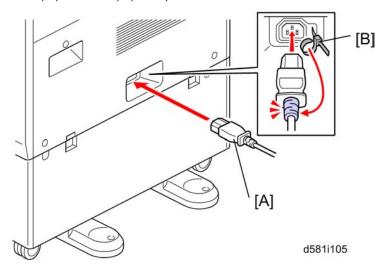
7. Remove the 1st and 2nd paper trays [A].

8. Fasten the paper tray unit at [B] (🔩 spring washer x 1; M4x10).

9. Reinstall the all paper trays.

d120i093

10. Attach the appropriate paper tray number decal [A] and paper size decal [B] above and below the line [C] on each tray of the paper feed unit.

Note

- The paper tray number and size sheet is in the accessory box of the main machine.

11. Lock the caster stoppers for the front two casters under the paper feed unit.

12. Load paper into the paper trays and set the side fences and bottom fence.

d581i105

13. Connect the power cord [A] to the inlet of the main machine.

14. Secure the power cord with the clamp [B] on the main machine so that the power cord is never disconnected.

SP Settings

1. Connect the copier and turn on the main power switch.

2. Do SP5-181 to set automatic paper size detection for the upper and lower tray of the paper tray unit.

Upper Tray (Size Adjust Tray 3)

5-181-011	A3/DLT	[0 to 1 / **0** / 1]
5-181-012	B4/LG	0: ISO (A3, A4, A5, etc.)
5-181-013	B5LEF/ExeLEF	1: USA (DLT, LT, EXE, etc.)

Lower Tray (Size Adjust Tray 4)

5-181-014	A4/LEF	
5-181-015	B3/DLT	[0 to 1 / **0** / 1]
5-181-016	B4/LG	0: ISO (A3, A4, A5, etc.)
5-181-017	B5LEF/ExeLEF	1: USA (DLT, LT, EXE, etc.)

3. Exit SP mode.
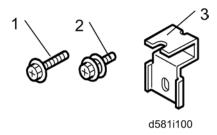
4. Do some test copies to make sure that the machine operates correctly.

LCIT PB3140 (D581)

Accessory Check

Check the quantity and condition of the accessories against the following list.

No.	Description	Q'ty
1	Screw – M4 x 10	2
2	Screw with Spring Washer - M4 x 10	1
3	Securing Bracket	2

d581i100

Installation Procedure

⚠ CAUTION

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

- The handles of the main machine for lifting must be inserted inside the machine and locked, unless these handles are used for the installation or relocation of the main machine.

- You need two or more persons to lift the copier. The copier is highly unstable when lifted by one person, and may cause human injury or property damage.

d581i101

d581i102
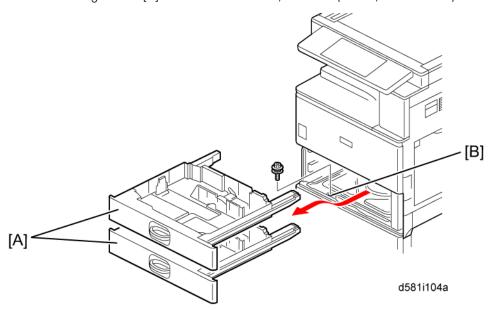
1. Remove the strips of tape.

2. Remove the grip cover [A] at the front right of the main machine if this cover is attached.

3. Pull out three grips, then hold the handle and grips, and put the copier [B] on the LCT [C].

   ⭐**Important**
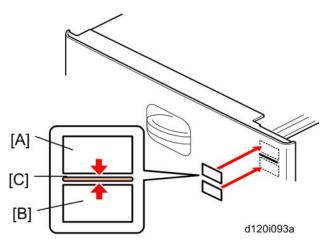
   - **You need two or more persons to lift the copier.**

4. Attach the grip cover [A] to the main machine.

2

d581i103

5. Attach a securing bracket [A] to each side of the LCT, as shown (✎ x 1; M4x10 each).

d581i104a
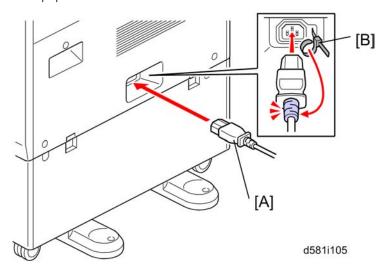
6. Remove the 1st and 2nd paper trays [A], and then secure the LCT [B] (✎ spring washer x 1; M4x10).

7. Reinstall the 1st and 2nd paper trays.

d120i093a

8. Attach the appropriate paper tray number decal [A] and paper size decal [B] to the line [C] on the tray of the LCT.

Note

- The paper tray number and size sheet is in the accessory box of the main machine.

9. Lock the caster stoppers for the front two casters under the paper feed unit.

10. Load paper into the LCT.

d581i105

11. Connect the power cord [A] to the inlet of the main machine.

12. Secure the power cord with the clamp [B] on the main machine so that the power cord is never disconnected.

SP Settings

1. Connect the copier and turn the main machine on.

2. Do SP5-181-010 to set automatic paper size detection for the LCT paper tray.

LCT Paper Tray (Size Adjust Tray 3 / LCT)
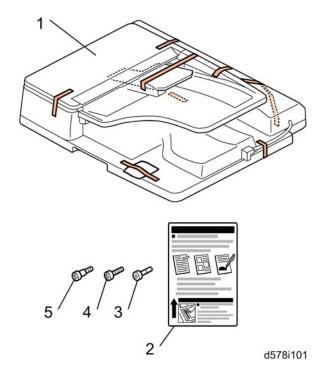
5-181-010	A4 LEF/LT LEF	[0 to 1 / **0** / 1] 0: ISO (A3, A4, A5, etc.) 1: USA (DLT, LT, EXE, etc.)

3. Exit SP mode.

4. Do some test copies to make sure that the machine operates correctly.

ARDF DF3060 (D578)

Component Check

Check the quantity and condition of the accessories against the following list.

No.	Description	Q'ty
1	ARDF	1
2	Original Setting and ARDF Exposure Glass Cleaning Decal	1
3	Stamp Cartridge	1
4	Knob Screw	2
5	Stud Screw	2
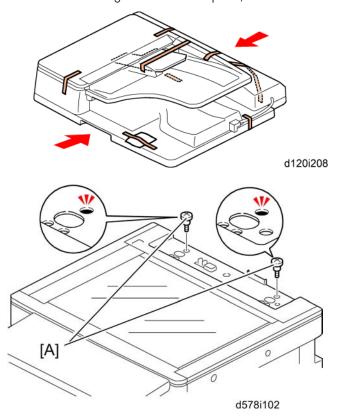
d578i101

Installation Procedure

⚠ CAUTION

- Unplug the copier power cord before starting the following procedure.
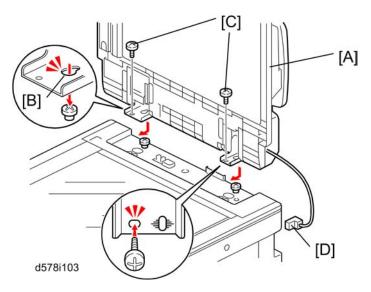
1. Remove all tapes and shipping retainers.

🔽 **Note**
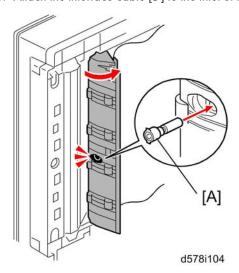
- When unloading the ARDF from a pallet, hold the front and rear side of the ARDF.

d120i208

[A]

d578i102
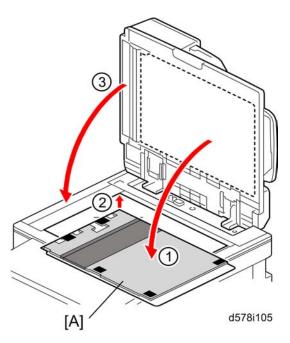
2. Insert the two stud screws [A] on the top of the machine.

d578i103
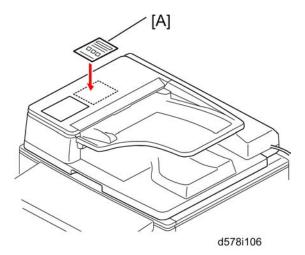
3. Mount the ARDF [A] by aligning the screw keyholes [B] of the ARDF support plate over the stud screws.

4. Slide the ARDF toward the front of the machine.

5. Secure the ARDF with the two knob screws [C].

6. Attach the interface cable [D] to the inlet of the machine.

d578i104

7. Install the stamp cartridge [A] in the ARDF.

d578i105

8. Peel off the platen sheet [A] and place it on the exposure glass.

9. Align the rear left corner (of the platen sheet) with the corner on the exposure glass.

10. Close the ARDF.

11. Open the ARDF and check that the platen sheet is correctly attached.

d578i106
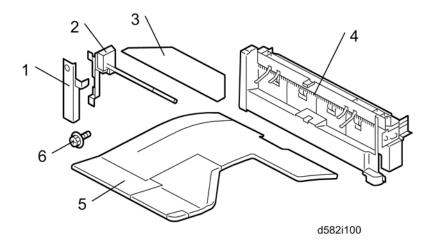
12. Attach the original setting and ARDF exposure glass cleaning decal [A] to the top cover as shown.

13. Plug in and turn on the main power switch, and then check the ARDF operation.

14. Make a full size copy. Check that the registrations (side-to side and leading edge) and image skew are correct. If they are not, adjust the registrations and image skew, referring to the service manual ("Copy Adjustments" in the "Replacements and Adjustments").

1 Bin Tray BN3090 (D582)

Component Check

Check the quantity and condition of the components against the following list.

No.	Description	Q'ty
1	Support Bar Cover	1
2	Tray Support Bar	1
3	Guide Mylar	1
4	1 Bin Tray Unit	1
5	Tray	1
6	Tapping Screw M3 x 8	2
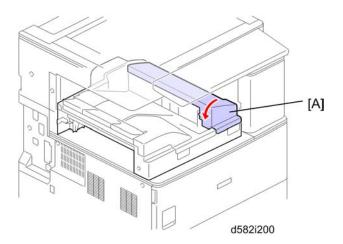
d582i100

Installation Procedure

⚠ CAUTION

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

1. Remove all tapes.

d582i200
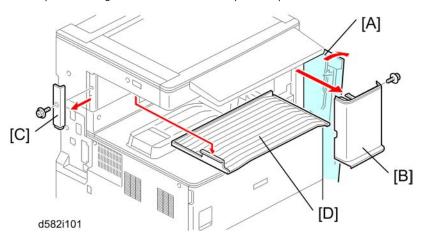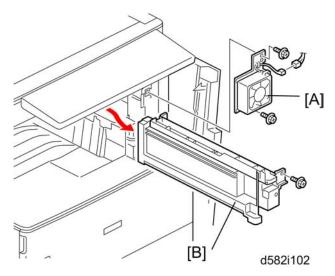
2. If the optional bridge unit has been installed, open the right guide [A] of the bridge unit.

   -or-
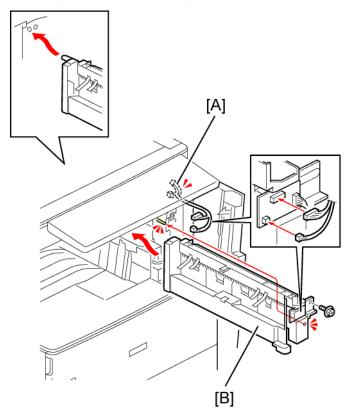
   If the optional bridge unit is not installed, skip this step.

d582i101

3. Open the right cover [A].

4. Remove the front right cover [B] (🔩 x 1).

5. Remove the left frame cover [C] (🔩 x 1).

   • Keep this screw for a later step.

6. Take out the duplex tray [D].

d582i102
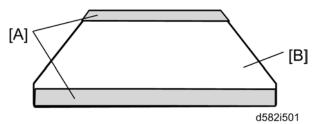
7. Remove the fusing fan [A] (✐ x 2, ▱ x 1)

8. Remove the duplex guide [B] (✐ x 1).

   • Keep this screw for a later step.
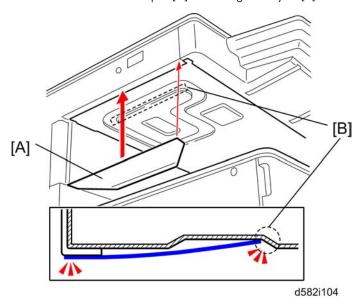
d582i103a

9. Remove the harness from the clamp [A].

10. Install the 1-bin tray unit [B] (✎ x 1, ▱ x 2).
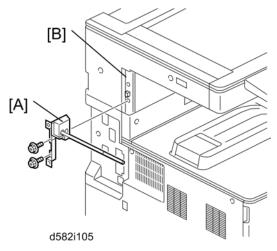
   • Use the screw which was removed in step 8.

11. Re-install the fusing fan (✎ x 2) and front right cover (✎ x 1).

d582i501
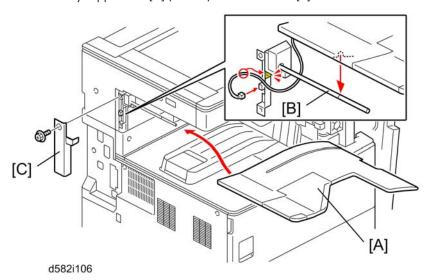
12. Peel off the double sided tapes [A] from the guide mylar [B].

d582i104

13. Attach the guide mylar [A] so that the short edge of the guide mylar is aligned with the sloping part [B] of the scanner unit bottom frame.

d582i105

14. Install the tray support bar [A] (✏ x 2) in the left frame [B] of the main machine.

d582i106
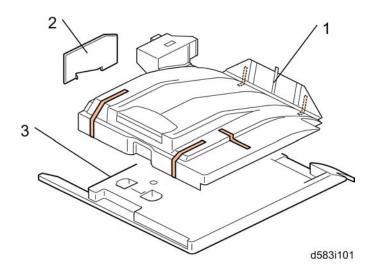
15. Install the tray [A], and then attach the tray to the tray support bar [B] (⬚ x 1, ⬚ x 1).

16. Attach the support bar cover [C] (✏ x 1).

   - Use the screw which was removed in step 5.

17. Turn on the main power switch and check the 1-bin tray unit operation.

Internal Shift Tray SH3050 (D583)

Component Check

Check the quantity and condition of the components against the following list.
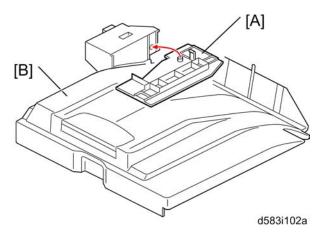
No.	Description	Q'ty	For this model
1	Shift Tray Unit	1	Yes
2	Drawer Cover	1	Yes
3	Base	1	Yes
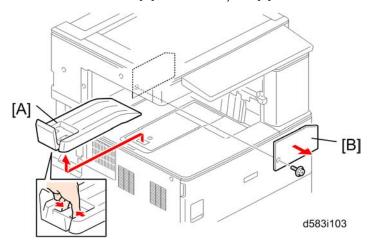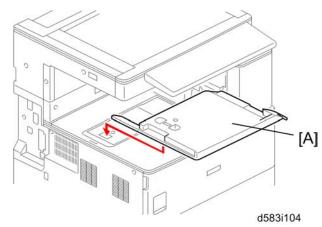
d583i101

Installation Procedure

⚠️CAUTION

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

1. Remove all tapes.

d583i102a
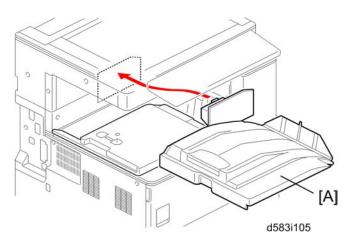
2. Attach the drawer cover [A] to the shift tray unit [B].

d583i103

3. Remove the inner tray [A].

4. Remove the connector cover [B] ($\mathscr{F}$ x 1).

d583i104
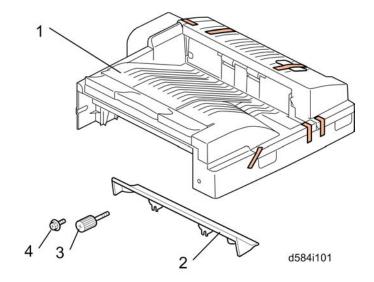
5. Install the shift tray base [A].

d583i105

6. Install the shift tray unit [A], as shown.

7. Turn on the main power switch and check the shift tray operation.

Bridge Unit BU3050 (D584)

Component List

Check the quantity and condition of the components against the following list.

No.	Description	Q'ty
1	Bridge Unit	1
2	Wide Extension Tray	1
3	Shoulder Screw	1
4	Screw	1
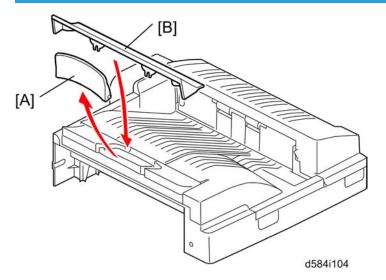
d584i101

Installation Procedure

⚠ CAUTION

- Unplug the copier power cord before starting the following procedure.
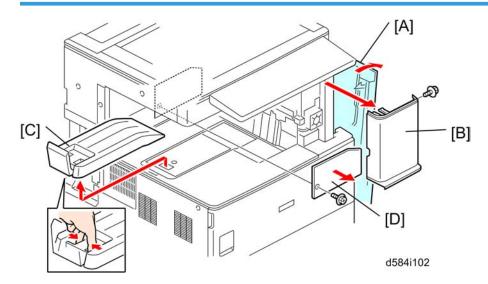
Only when installing this unit for use with Booklet Finisher (D589)

d584i104
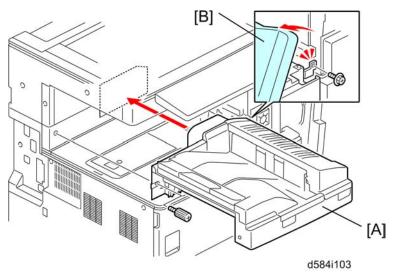
Replace the extension tray [A] with the wide extension tray [B] in the accessories of this unit only when Booklet Finisher (D589) is attached to the machine.

Installation Procedure

d584i102

1. Open the right cover [A].
2. Remove the front right cover [B] (🖉 x 1).
3. Remove the inner tray [C].
4. Remove the connector cover [D] (🖉 x 1).

d584i103
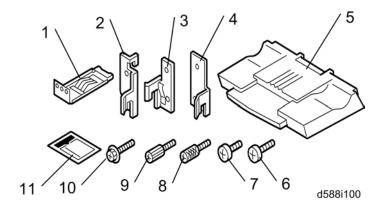
5. Install the bridge unit [A], and then secure it (🔩 shoulder screw x 1).

   • Open the bridge right cover [B] to secure the right screw.

6. Reinstall the front right cover (🔩 x 1).

7. Install the optional finisher (refer to the finisher installation procedure).

Finisher SR3090 (D588)

Accessory Check

Check the quantity and condition of the accessories against the following list.

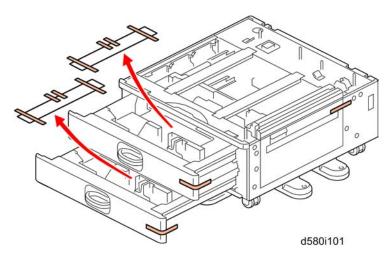| No.	Description	Q'ty	For this model
1	Grounding Plate	1	Yes
2	Rear Joint Bracket	1	Yes
3	Front Joint Bracket	1	Yes
4	Rear Joint Bracket	1	Not used
5	Copy Tray	1	Yes
6	Screw - M3 x 8	1	Yes
7	Screw - M4 x 13	4	Not used
8	Knob Screw - M3 x 8	1	Yes
9	Knob Screw - M4 x 10	1	Yes
10	Screw - M4 x 25	3	Yes
11	Staple Position Decal	1	Yes

d588i100

Installation Procedure

⚠ **CAUTION**
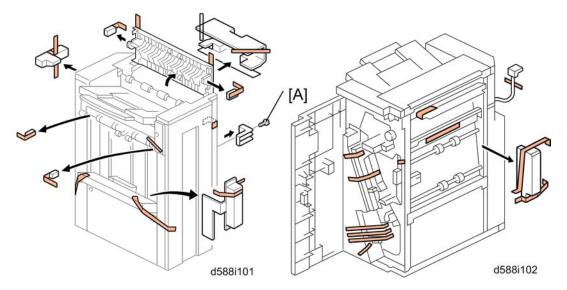
- Unplug the main machine power cord before starting the following procedure.

The following options must be installed before you install this finisher:
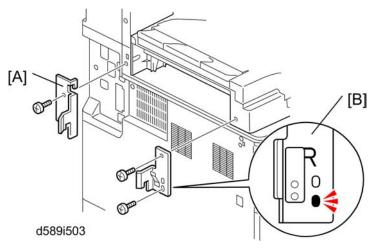
- Bridge Unit (D584) and either Paper Feed Unit (D580) or LCT (D581)

d588i101   d588i102

1. Unpack the finisher and remove the tapes.

   🅙 Note
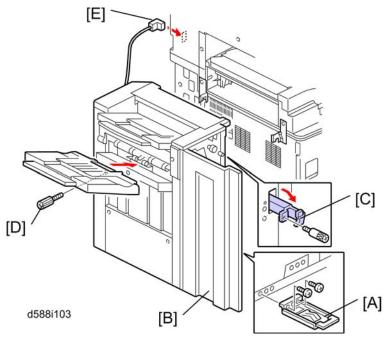
   - Be sure to keep screw [A]. It will be needed to secure the grounding plate in step 3.

d589i503
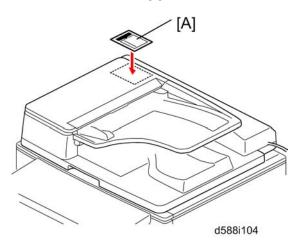
2. Install the rear joint bracket [A] (🔩 x 1; M4x25) and front joint bracket [B] (🔩 x 2; M4x25).

2

d588i103   [B]

3. Install the grounding plate [A] on the finisher (⌦ x 2; M3x8).

🖢Note

- Use the screw removed in step 1 and the screw from the accessory box.

4. Open the front door [B]. Then pull the locking lever [C].

5. Align the finisher on the joint brackets, and lock it in place by pushing the locking lever.

6. Secure the locking lever (⌦ x 1; knob M3x8) and close the front door.

7. Install the copy tray [D] (⌦ x 1; knob M4x10).

8. Connect the finisher cable [E] to the main machine.

d588i104

9. Attach the staple position decal [A] to the ARDF as shown.

10. Turn on the main power switch and check the finisher operation.
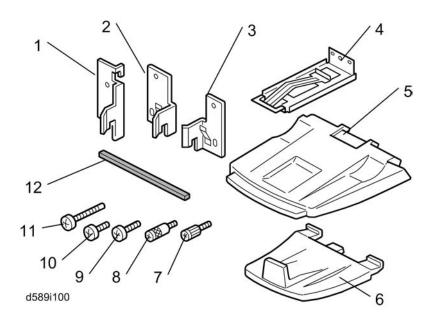
2

Booklet Finisher SR3100 (D589)

Accessory Check

Check the quantity and condition of the components against the following list.

No.	Description	Q'ty	For This Model
1	Rear Joint Bracket	1	Yes
2	Rear Joint Bracket	1	Not used
3	Front Joint Bracket	1	Yes
4	Grounding Plate	1	Yes
5	Upper Output Tray	1	Yes
6	Lower Output Tray	2	Yes
7	Short Knob screw	1	Yes
8	Long Knob screw	1	Yes
9	Screw (M4 x 13)	4	Not used
10	Screw (M3 x 8)	2	Yes
11	Screw (M4 x 25)	3	Yes
12	Cushion	2	Yes

d589i100

Installation Procedure

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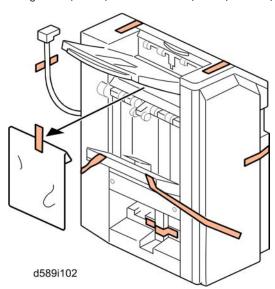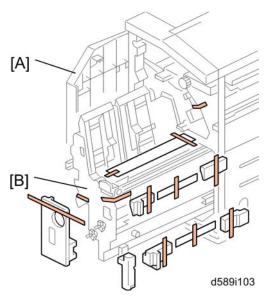
- Unplug the machine power cord before starting the following procedure.

Some optional units must be installed before installing this finisher (D589). Refer to the following:
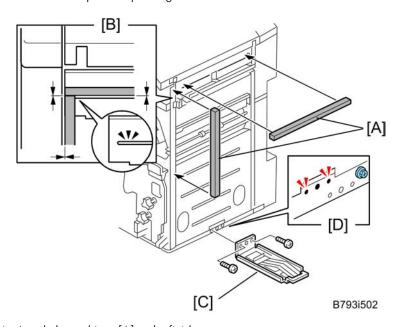
- Bridge Unit (D584) and either PFU (D580) or LCT (D581)

d589i102
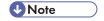
1. Unpack the finisher and remove all tapes and packing materials from the finisher.

d589i103
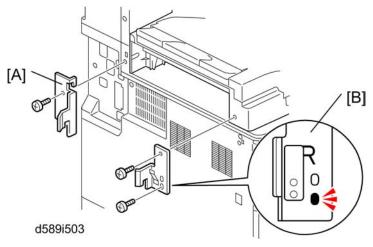
2. Open the front door [A] of the 1000-sheet booklet finisher, and then pull out the jogger unit [B].

3. Remove all tapes and packing materials from the inside of the finisher.

B793i502
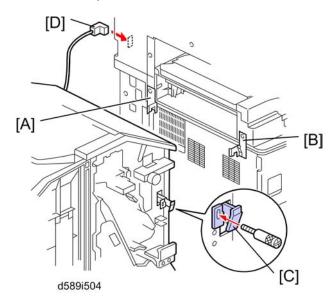
4. Attach the cushions [A] to the finisher.

Note
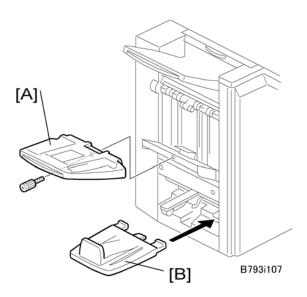
- Make sure that the cushions are placed within 0 to 1 mm [B] from the edge of the cover or frame.

5. Install the ground plate [C] on the finisher [D] (🔩 x 2; M3x8).

d589i503

6. Attach the rear joint bracket [A] (✎ x 1; M4x25).

7. Attach the front joint bracket [B] (✎ x 2; M4x25).

d589i504

8. Slowly push the finisher to the left side of the machine, keeping its front door open until the brackets [A] [B] go into their slots.

9. Push the lock lever [C], and then secure it (Long knob screw x 1).

10. Close the front door of the finisher.

11. Connect the finisher connector [D] to the machine.

[A]

[B]

B793i107

12. Install the upper output tray [A] (short knob screw x 1).

13. Install the lower output tray [B].

14. Turn on the main power switch.

15. Check the 1000-sheet booklet finisher operation.
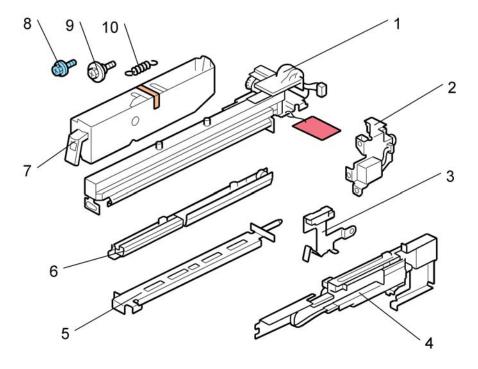
Punch Kit PU3000 (B807)

Component Check

Check the quantity and condition of the components against the following list.

No.	Description	Q'ty
1	Punch Unit	1
2	Punch Drive Motor	1
3	Hopper Full Sensor Arm	1
4	Sub-scan Registration Sensor Unit	1
5	Punch Unit Stay	1
6	Sub-scan Registration Sensor Guide	1
7	Hopper	1
8	Screw	8
9	Step Screw	1
10	Spring	1
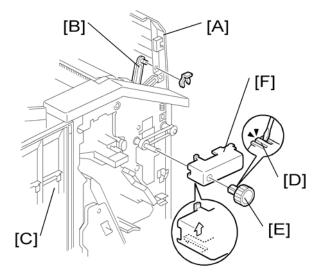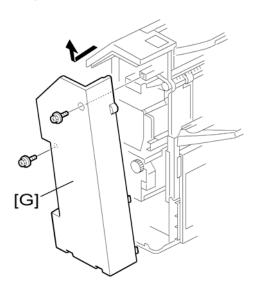
2

Installation

⚠️CAUTION
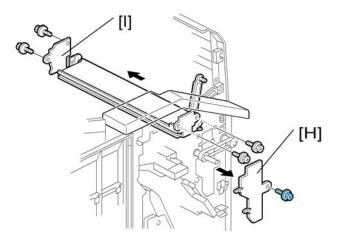
- Unplug the main machine power cord before starting the following procedure. If the 1000-sheet booklet finisher has been installed, disconnect it and pull it away from the machine.
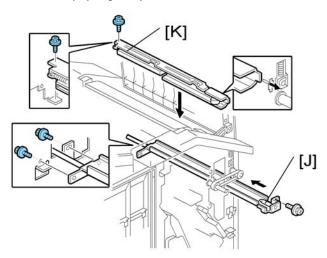
1. If the finisher is connected to the machine, disconnect it.

2. Open the top cover [A] and then release the guide arm [B] (🔘 x 1).

3. Open the front door [C].

4. Pull the hook [D] up then remove the knob [E].

5. Timing belt cover [F].
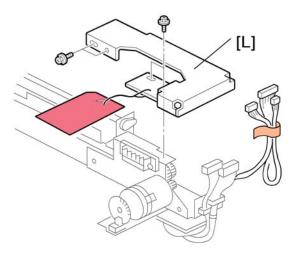
6. Rear cover of the 1000-sheet booklet finisher [G] (✏ x 2).

2
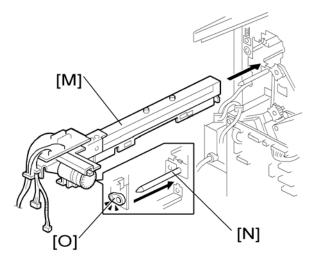
7. Cover bracket [H] (🔩 x 1)

8. Remove the paper guide plate [I] from the rear side (🔩 x 4).
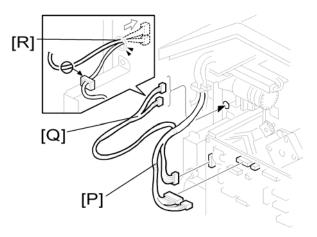
9. Install the punch unit stay [J] from the front side (🔩 x 3).

10. Install the sub-scan registration sensor guide [K] from the top (🔩 x 1).
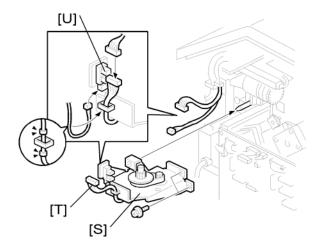
11. Remove the bracket [L] from the punch unit (🔩 x 1).
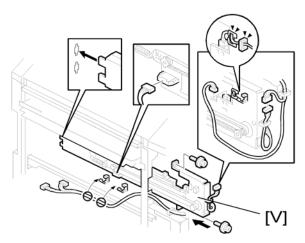
12. Install the punch unit [M] along the punch unit stay from the rear side.

13. Make sure to put the punch unit stay pin [N] through the hole [O].
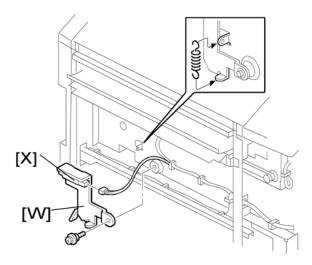
14. Connect the harnesses [P] to the main PCB.

15. Put the harnesses [Q] through the hole [R] in the rear frame (🔩 x 1).
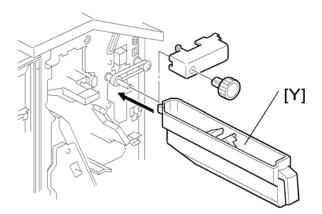
16. Install the punch drive motor [S] on the rear frame (🔩 x 2).

17. Connect the drive motor harness [T] to the harness from the punch unit (🔩 x 1).

18. Connect the home position sensor harness from the punch unit to the home position sensor [U].

19. Install the sub-scan registration sensor unit [V] from the rear side (✏ x 2).

20. Route and connect the harnesses as shown (🖼 x 2).

21. Install the hopper full sensor arm [W] (✏ x 1, spring x 1).

22. Connect the harness from the sub-scan registration sensor unit to the hopper full sensor [X].
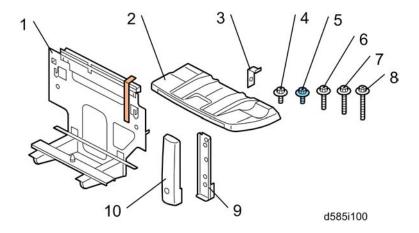
23. Install the hopper [Y] from the front side.

24. Reinstall the timing belt cover and knob.

25. Reinstall the rear cover (🔩 x 2).

26. Close the front door and top cover.

27. Install the 1000-sheet booklet finisher on the copier.

28. Plug in and turn on the main power switch.

29. Check the 1000-sheet booklet finisher operation.

Finisher SR3070 (D585)

Accessory Check

Check the quantity and condition of the accessories against the following list.

No	Description	Q'ty	For This Model
1	Unit Holder	1	Yes
2	Shift Tray	1	Yes
3	Holder Bracket	1	Yes
4	Screw: M3 x 8	4	Yes
5	Screw: M3 x 6	1	Yes
6	Screw: M4 x 14	4	Not used
7	Screw: M4 x 20	4	Yes
8	Screw: M4 x 25	3	Yes
9	Support Bracket	2	Yes
10	Support Bracket Cover	2	Yes
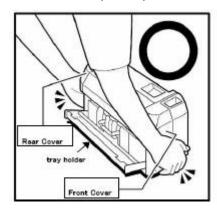
d585i100

Installation Procedure

⚠️CAUTION

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

⭐ **Important**
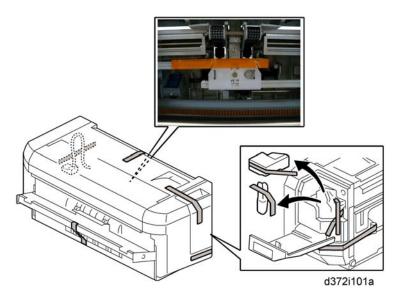
- **Whenever you lift or carry the SR3070, always hold it by the bottom edges of the front and rear covers, as shown below. If you do not, SC798 will occur when you attach the finisher. DO NOT hold the finisher by the tray holder.**
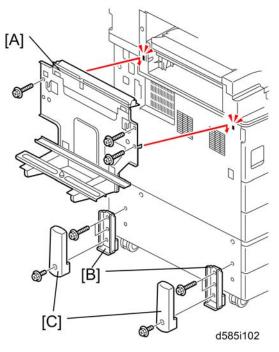
⬇️ **Note**
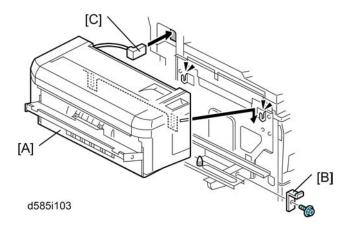
- Before you install Finisher SR3070, the optional bridge unit (D584) must be installed.

d372i101a

1. Unpack the finisher and remove the tapes.

d585i102
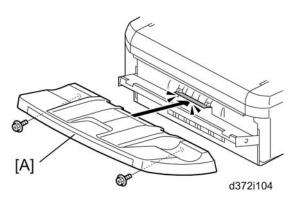
2. Install the unit holder [A] (✐ x 3; M4x25).

3. Install the support brackets [B] (✐ x 2 each; M4x20).

4. Install the support bracket covers [C] (✐ x 1 each; M3x8).

d585i103

5. Install the 500-sheet finisher [A].

6. Install the holder bracket [B] (✐ x 1; M3x6).

7. Connect the finisher cable [C].

d372i104

8. Install the shift tray [A] (✐ x 2; M3x8).

9. Turn on the main power switch and check the finisher operation.
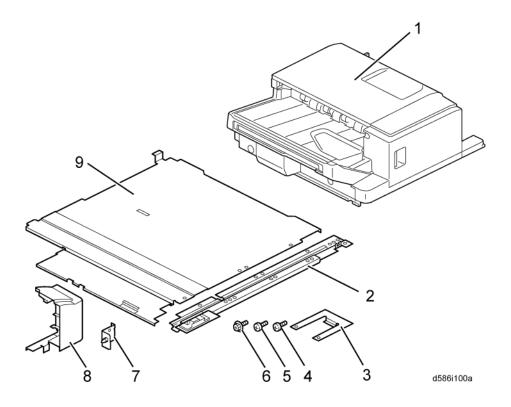
Internal Finisher Type 3352 (D586)

This procedure explains how to install the internal finisher, without installing the punch unit at the same time.

2

Component Check

Check the quantity and condition of the components against the following list.

No.	Description	Q'ty
1	Internal Finisher	1
2	Guide Rail	1
3	Stopper	1
4	Screw - M4 x 6	1
5	Bind Screw - M3 x 6	8
6	Screw - M3 x 6	2
7	Positioning Pin Bracket	1
8	Finisher Right Cover	1
9	Inner Bottom Plate	1

d586i100a

Installation Procedure

⚠️CAUTION
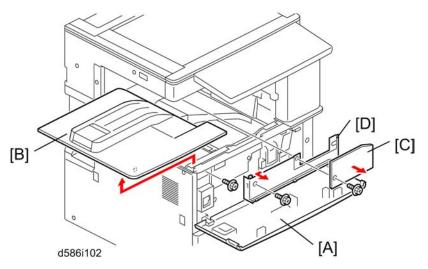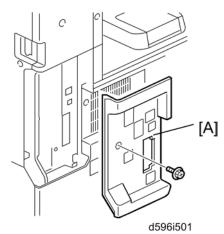
- Unplug the copier power cord before starting the following procedure.

Preparing before Installing the Internal Finisher
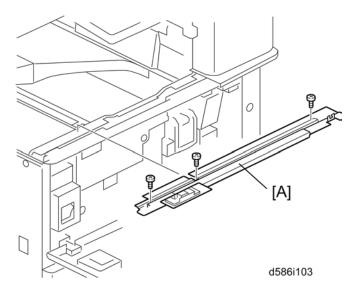
1. Remove all tapes from the internal finisher.

d586i102
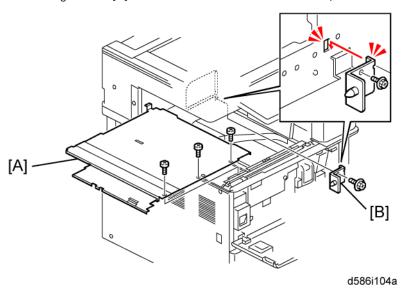
2. Open the front cover [A].

3. Remove the output tray [B] (🔩 x 1).

4. Remove the connector cover [C] (🔩 x 1).

5. Remove the inner rear cover [D] (🔩 x 1).

d596i501

6. Remove the controller cover [A] (🔩 x 1).

2

d586i103
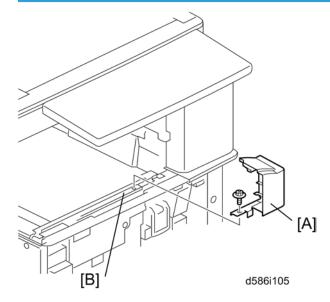
7. Install the guide rail [A] in the front frame of the main machine (🖉 bind screw x 3; M3x6).

d586i104a
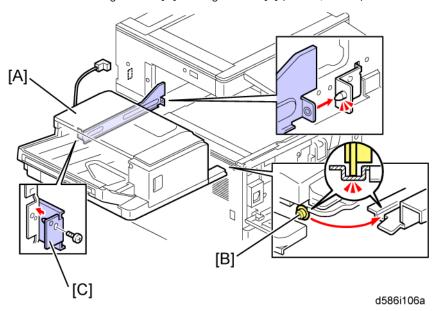
8. Install the inner bottom plate [A] (🖉 bind screw x 3; M3x6).

9. Install the positioning pin bracket [B] in the rear frame of the main machine (🖉 x 1; M3x6).
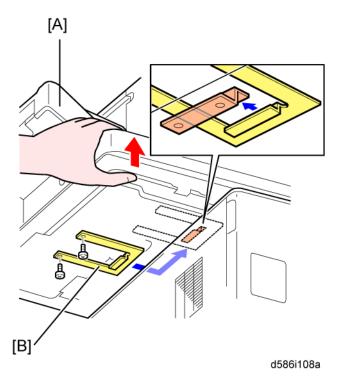
Internal Finisher Installation

d586i105
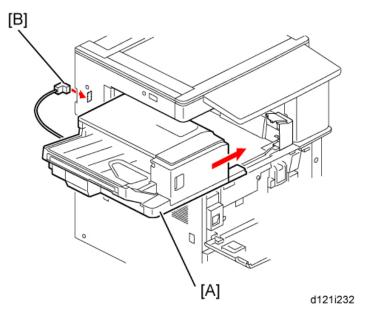
1. Attach the finisher right cover [A] to the guide rail [B] (✏ x 1; M3x6).

d586i106a

2. Install the internal finisher [A].

   • Align the wheel [B] at the front of the internal finisher with the groove on the guide rail when installing the internal finisher

3. Insert the rear rail [C] into the left frame of the main machine (✏ x 1: M4x6).

2

d586i108a

4. Push up the internal finisher [A] from the bottom, and then install the stopper [B] to the bottom side of the internal finisher (🔩 bind screw x 2; M3x6).

d121i232

5. Push the internal finisher [A], and then connect the cable [B] to the inlet of the main machine.

6. Reassemble the machine.

7. Turn on the main power switch.

8. Check the internal finisher operation.
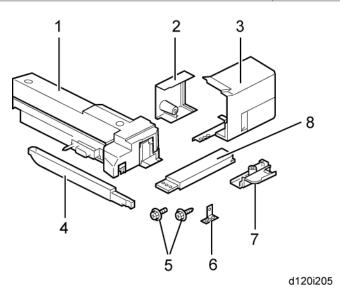
Punch Kit PU3020 (D587)

This procedure explains how to install the punch kit for the internal finisher, after installing the internal finisher.

Component Check
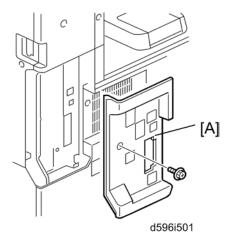
2

Check the quantity and condition of the components against the following list.

No.	Description	Q'ty
1	Punch Unit	1
2	Tray Lower Rear Cover	1
3	Punch Cover	1
4	Hopper	1
5	Screw: M3x6	7
6	Bracket	1
7	Tray Lower Front Cover	1
8	Front Right Lower Cover	1
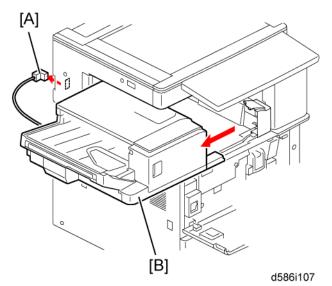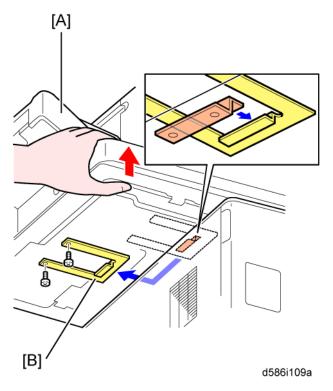
d120i205

Installation Procedure

⚠ CAUTION

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


d596i501

1. Remove the controller cover [A] (🔩 x 1).

d586i107
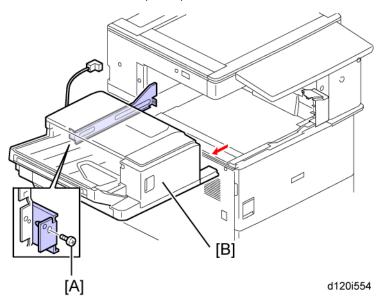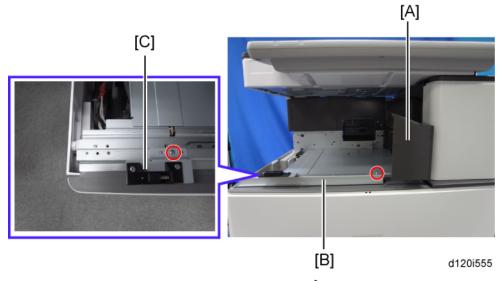
2. Disconnect the cable [A] from the inlet of the main machine.

3. Pull out the internal finisher [B].

d586i109a
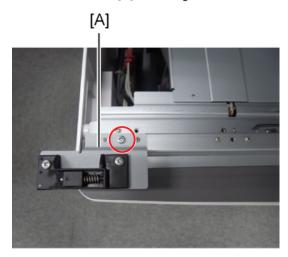
4. Push up the internal finisher [A] from the bottom, and then remove the stopper [B] from the bottom side of the internal finisher (🔩 x 2).

d120i554

5. Remove the screw from the rear rail [A].

6. Remove the internal finisher [B] by pulling it off the main machine.

d120i555
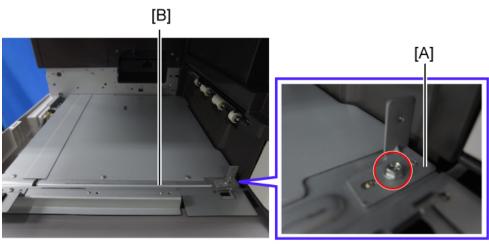
7. Remove the finisher right cover [A] from the guide rail [B] (✐ x 1).

8. Remove the bracket [C] form the guide rail.
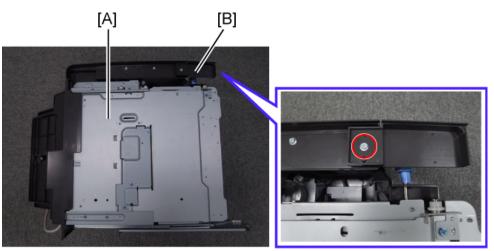
d120i210

9. Attach the bracket [A] removed in step 5 on the guide rail shown above.

d120i556
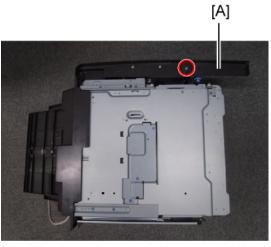
10. Install the bracket [A] on the guide rail [B] (🖉 x 1; M3x6).
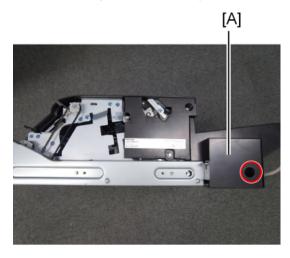
d120i557

11. Turn the internal finisher [A] over, and then remove the finisher front cover [B] (🖉 x 1).

[A]
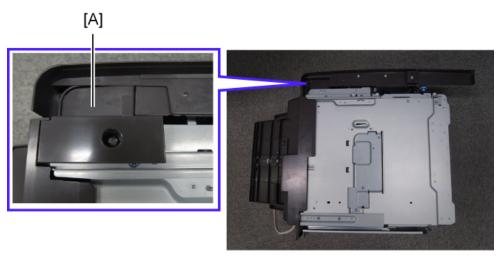
d120i558

12. Install the front right lower cover for punch unit [A] on the internal finisher (🖉 x 1; M3x6).

[A]
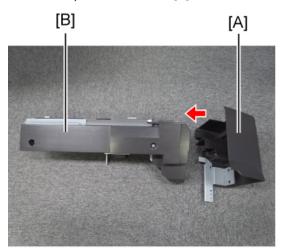
d120i559

13. Install the tray lower rear cover [A] on the rear side of the internal finisher (🖉 x 1; M3x6).

d120i560
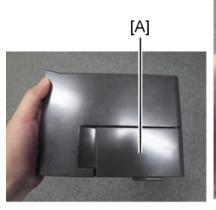
14. Install the tray lower front cover [A] on the internal finisher (🔧 x 1; M3x6).
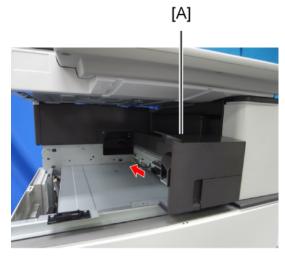
d120ri561

15. Attach the punch cover [A] to the punch unit [B].

d120i562
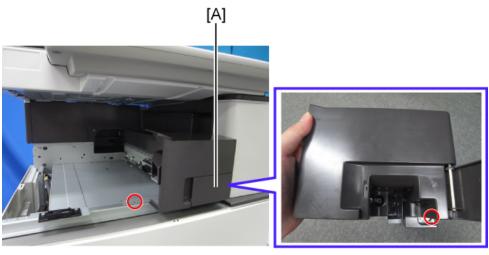
16. Open the punch cover's front door [A], and then secure the punch cover to the punch unit (✐ x 2: M3x6).
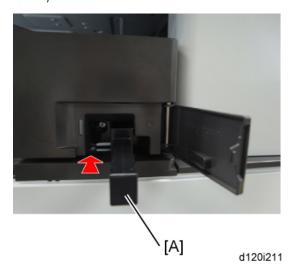
d120i563
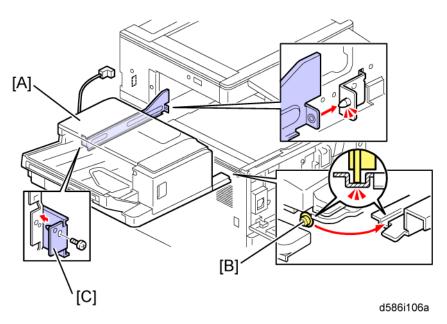
17. Install the punch unit [A] on the main machine.

d120i564
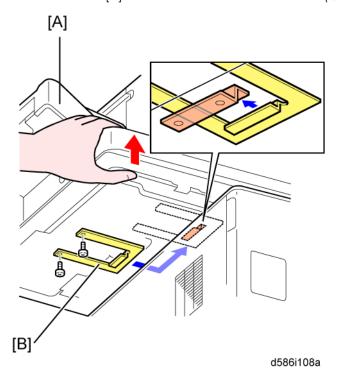
18. Open the punch cover's front door [A], and then secure the punch unit to the main machine (🖉 x 2: M3x6).

d120i211
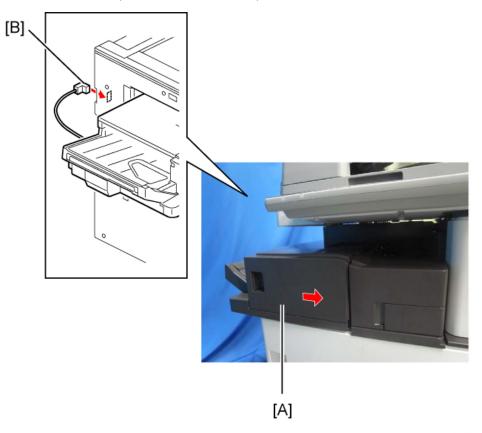
19. Install the hopper [A] from the front.

d586i106a

20. Install the internal finisher [A].

   • Align the wheel [B] at the front of the internal finisher with the groove on the guide rail when installing the internal finisher

21. Insert the rear rail [C] into the left frame of the main machine (🖋 x 1: M4x6).

d586i108a
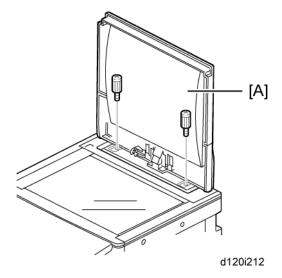
22. Push up the internal finisher [A] from the bottom, and then install the stopper [B] to the bottom side of the internal finisher (🔧 bind screw x 2; M3x6).
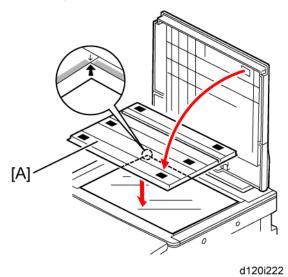
d121i232a

23. Push the internal finisher [A], and then connect the cable [B] to the inlet of the main machine.

24. Reassemble the machine.

25. Turn on the main power switch.

26. Check the internal finisher operation.

Platen Cover (D597)

d120i212

1. Install the platen cover [A] (✏ x 2).

d120i222

2. Remove the platen [A] from the platen cover.

3. Align the platen on the exposure glass, and then close the platen cover.
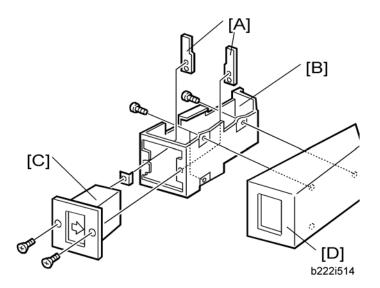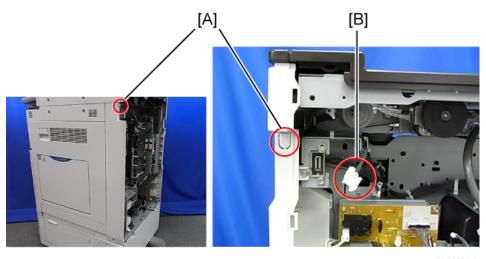
Key Counter Bracket Type H (A674)

Installation Procedure

Preparing before installing the key counter bracket

2

b222i514

1. Hold the key counter plate nuts [A] on the inside of the key counter bracket [B] and insert the key counter holder [C].

2. Secure the key counter holder to the bracket (🔩 x 2).

3. Install the key counter cover [D] (🔩 x 2).

4. Remove:

    • Upper rear cover (☞ p.181 "Upper Rear Cover")

    • Right rear cover (☞ p.181 "Right Rear Cover")

[A]   [B]

d120i581
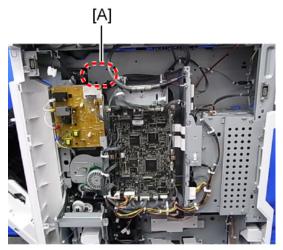
5. Cut off the part [A] of the right rear cover.

6. Connect the key counter harness to the connector [B] through the cut off part of the rear cover.

7. Peel off double sided tape on the key counter bracket and attach the key counter to the scanner right cover.

8. Reassemble the machine.

Optional Counter Interface Unit Type A (B870)

Installation Procedure

1. Remove the upper rear cover. (📖 p.181 "Upper Rear Cover")
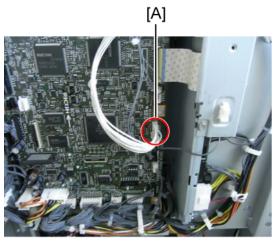
d120i517

2. Install the four stud stays in the location [A].

3. Install the optional counter interface board on the four stud stays.
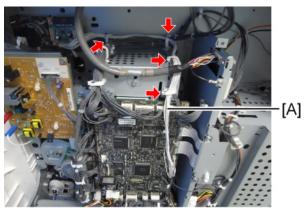
d120i515

4. Connect the harness to CN3 [A] on the optional counter interface board.
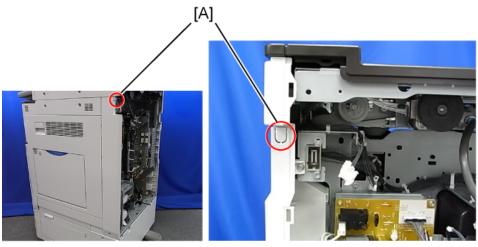
d120i514

5. Connect the other terminal of the harness to "CN345" [A] on the BCU.

d120i223

6. Route the harness [A] and clamp it with four clamps as shown above (🔖x 4).
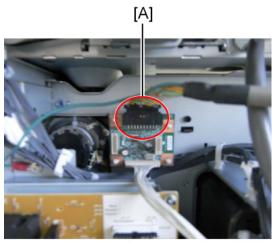
7. Remove the right rear cover. (📖 p.181 "Right Rear Cover")

d120i505

8. Cut off the part [A] of the right rear cover.
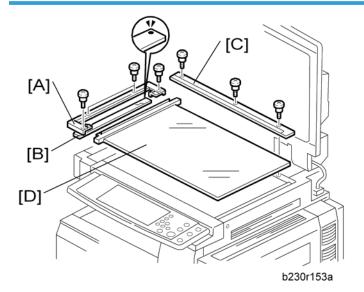
d120i516

9. Connect the harness from the optional counter device to "CN4" [A] on the optional counter interface board through the cut off part of the right rear cover.

10. Reassemble the machine.
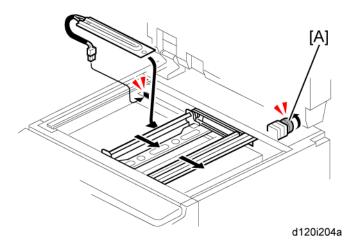
Heaters

Anti-Condensation Heater (Scanner Unit)

Installation Procedure

b230r153a
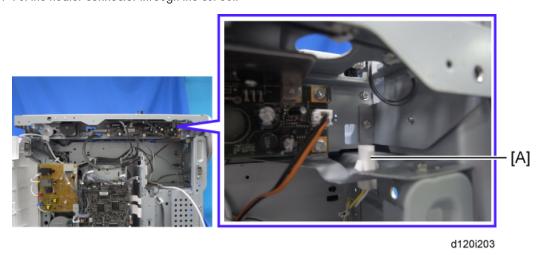
1. Remove the upper rear cover. (p.181 "Upper Rear Cover")

2. Open the ARDF or platen cover.

3. Remove:

   - [A] Glass cover (x 4)

   - [B] ARDF exposure glass

   - [C] Rear scale (x 3)

   - [D] Exposure glass with left scale

d120i204a

4. Move the scanner carriage to the right side by rotating the scanner motor [A].

5. Put the heater connector through the cut out.

d120i203

6. Connect the heater connector to [A] in the frame of the machine (🖨x 1).

d037i133
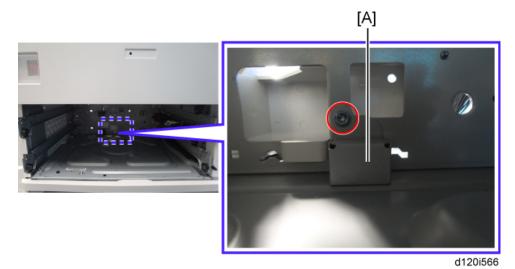
7. Install the heater in the scanner unit (✍ x 1).

8. Secure the cable cover [A] and the left side of the heater (✍ x 1).

9. Reassemble the machine.
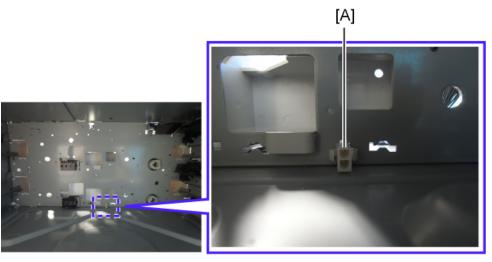
Tray Heater (Copier)

⚠CAUTION

- Disconnect the copier power cord before you start this procedure.

1. Pull out the 1st and 2nd paper trays.

2. Remove the lower rear cover (☞ p.181 "Lower Rear Cover").

d120i566

3. Remove the bracket [A] from the main machine (✍ x 1).

d120i567

4. Connect the heater cable to the ac cable at [A].

d120i568

5. Install the tray heater assembly [A] (🔩 x 1).

6. Reassemble the main machine and 1st and 2nd paper trays.

Tray Heater (Optional Paper Feed Unit)

For Installing the Tray Heater in D579

⚠CAUTION
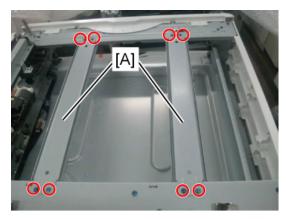
• Disconnect the copier power cord before you start this procedure.

1. If the optional paper feed unit has been installed to the main machine, remove it from the main mahchine.

2. Pull out the tray in the optional paper feed unit.

[A]

d120i587
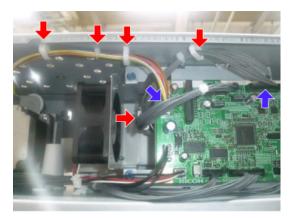
1. Remove the rear cover [A] of the optional paper feed unit (�helper x 2).

[A]

d120i588

2. Remove the upper stays [A] (�helper x 8).

d120i589

3. Remove the harness from the clamps (🖧x 5 : red arrows).
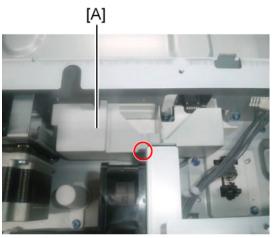
4. Remove the cables from the connectors (🗔 x 2 : blue arrows).
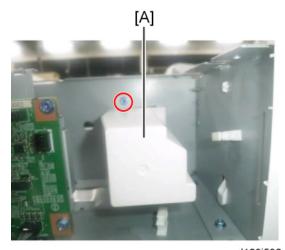
d120i590

5. Remove the upper rear stay [A] (🔩 x 8).

d120i591
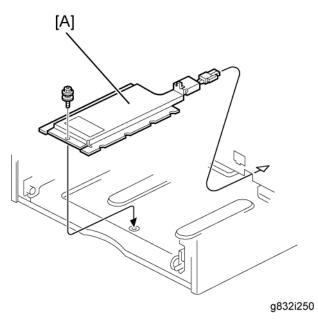
6. Remove the PCB cover [A] (✐ x 1).
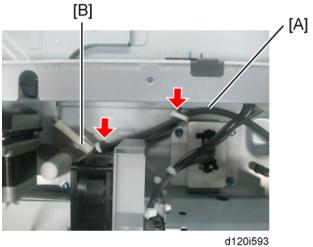
d120i592
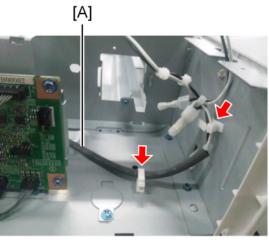
7. Remove the tray bar cover [A] (✐ x 1).

g832i250
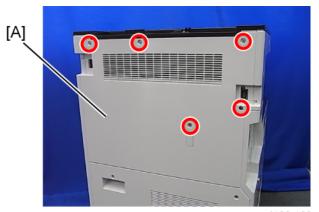
8. Install the tray heater [A] in the optional paper feed unit (🔩 x 1).

d120i593

9. Connect the harness [A] to the connector [B] of the tray heater (🔌 x 2).

d120i594
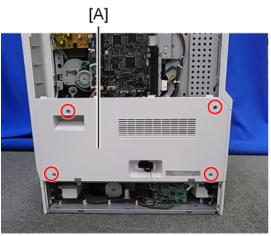
10. Route the harness [A] as shown and clamp it with two clamps (🖴 x 2).

11. Reassemble the optional paper feed unit except the rear cover.

12. Install the paper feed unit to the main machine.
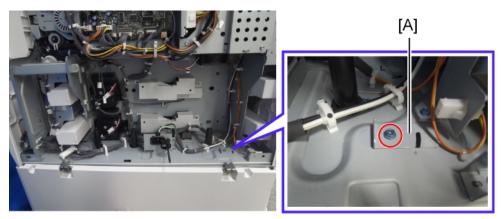
d120r120

13. Remove the upper rear cover [A] (🔩 x 5).
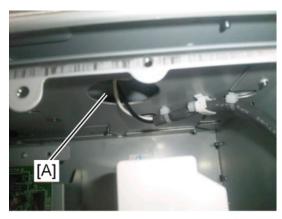
d120i595

14. Remove the lower rear cover [A] (🔩 x 4).
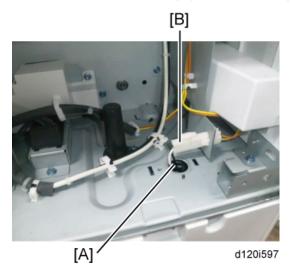
d120i571

15. Remove the harness cover bracket [A] from the main frame (🔩 x 1).

d120i596

16. Pass the harness from the lower paper feed unit through the hole [A].

d120i597
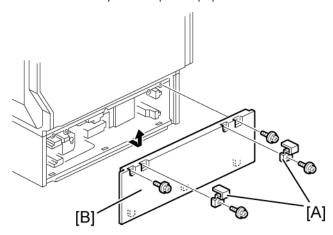
17. Connect the harness [A] to the connector [B] of the main frame.

18. Reassemble the main machine and optional paper feed unit.

For Installing the Tray Heater in D580

⚠CAUTION

- Disconnect the copier power cord before you start this procedure.

1. Pull out the two trays in the optional paper feed unit.
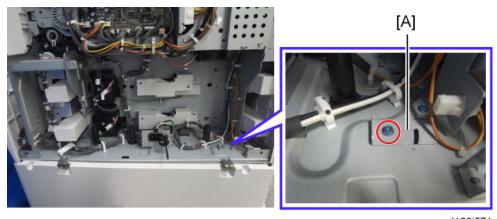
d120i569

2. Remove the joint bracket [A] (🔩 x 1 each).

3. Remove the cover [B] for the optional paper tray unit (✏ x 2).

d120i570
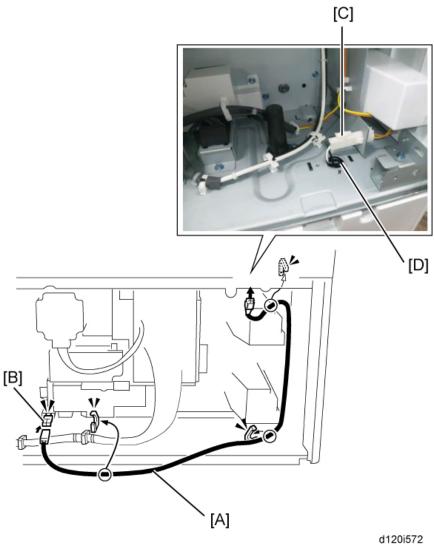
4. Pass the heater cable through the opening [A], and then install the tray heater in the optional paper feed unit (✏ x1).

5. Remove:

- Upper rear cover (☞ p.181 "Upper Rear Cover")

- Right rear cover (☞ p.181 "Right Rear Cover")

d120i571

6. Remove the harness cover bracket [A] from the main frame (✏ x 1).

d120i572

7. Connect the harness [A] to the connector [B] of the tray heater.

8. Route the harness [A] and clamp it as shown (🖧x 3).

9. Connect the harness [A] to the connector [C] of the main frame through the hole [D].

10. Reassemble the main machine and optional paper feed unit.
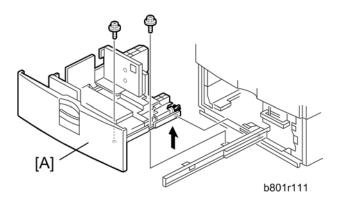
Tray Heater (Optional LCT)
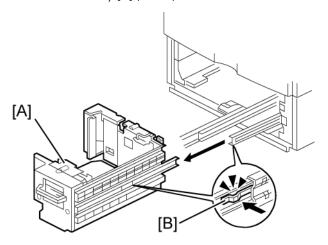
1. Pull out the LCT drawer.

   ⬇Note

   • If the right tray comes out with the left tray, push the right tray into the LCT.

b801r111

2. Remove the left tray [A] (🔩 x 2).
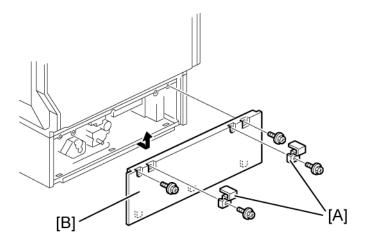
b801r112

3. Remove the right tray [A] while pressing down the stopper [B].

❗Note
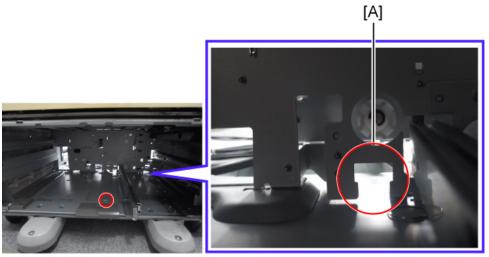
- While reinstalling the right tray, set the right tray on the guide rail and carefully push the tray in, making sure to keep the tray level.
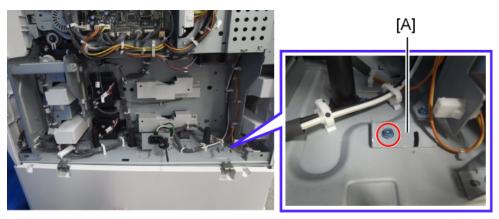
b801i251

4. Remove the two securing brackets [A] (✐ x 1 each), and then the rear cover [B] of the optional LCT (✐ x 2).
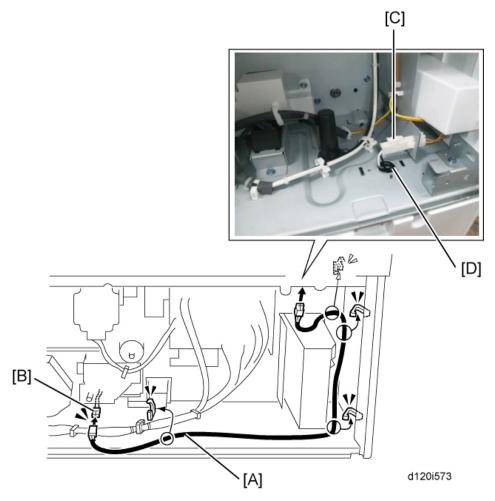
d120i579

5. Pass the heater cable through the opening [A], and then install the tray heater in the optional paper LCT (✐ x1).

6. Remove:

- Upper rear cover (☞ p.181 "Upper Rear Cover")

- Right rear cover (☞ p.181 "Right Rear Cover")

d120i571

7. Remove the harness cover bracket [A] from the main frame (✏ x 1).

d120i573

8. Connect the harness [A] to the connector [B] of the tray heater.

9. Route the harness [A] and clamp it with four clamps as shown (📎x 4).

10. Connect the harness [A] to the connector [C] of the main frame through the hole [D].

11. Reassemble the mainframe and the optional LCT.

Mechanical Counter

This counter is only used for NA models.

Accessory Check
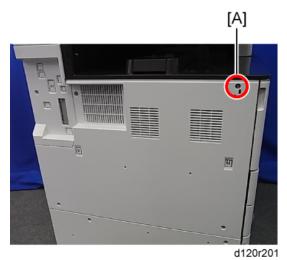
No.	Description	Q'ty
1	Mechanical counter	1
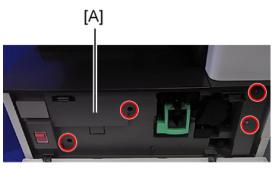
Installation

⚠CAUTION

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

1. Remove:

    - Output tray (☞ p.185 "Output Tray")
    - Front door (☞ p.178 "Front Door")

d120r201
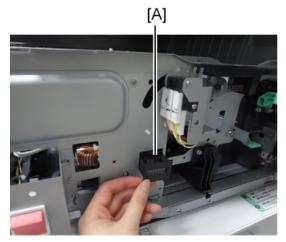
2. Remove the screw [A] of the left cover.

d120r203

3. Remove the front inner cover [A] (✏ x 4).

d120i224

4. Push the mechanical counter [A] into the machine.
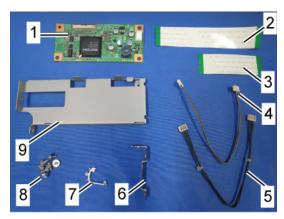
d120r205

5. Connect the harness [A] to the mechanical counter.

6. Reassemble the machine.

Copy Data Security Unit Type F (B829)

Component Check
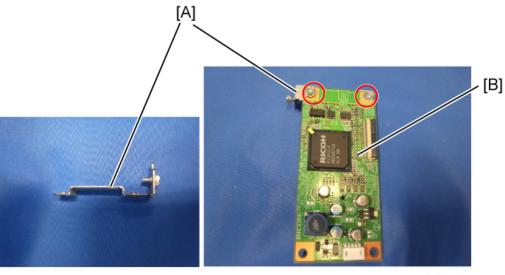
d120i225

No.	Description	Q'ty	For this model
1	ICIB-3	1	Yes
2	Flexible cable: Long	1	Not used
3	Flexible cable: Short	1	Not used
4	Harness	1	Not used
5	Harness with bands	1	Not used
6	Small Bracket	1	Yes
7	Saddle Clamp	1	Not used
8	Screws: M3x6	6	Yes
9	Bracket	1	Not used

Installation

⚠ CAUTION
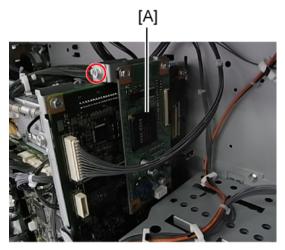
- Unplug the main machine power cord before you do the following procedure.

1. Remove the upper rear cover. (📖 p.181 "Upper Rear Cover")

141

d120r206

2. Attach the small bracket [A] to the ICIB-3 [B] (✐ x 2).
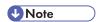
d120r207

3. Attach the ICIB-3 with small bracket [A] to the IPU (✐ x 1).

4. Reassemble the machine.

User Tool Setting

1. Plug in the machine and turn on the main power switch.

2. Go into the User Tools mode, and select System Settings > Administrator Tools > Copy Data Security Option > "On".

3. Exit User Tools.

4. Check the operation.

   ⬇Note
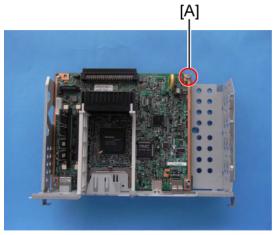
   - The machine will issue an SC165 error if the machine is powered on with the ICIB-3 removed and the "Data Security for Copying" feature set to "ON".

   - The machine will issue an uncertain SC165 error if ICIB-3 is defective when the machine is powered on and the "Data Security for Copying" feature is set to "OFF".

   - When you remove this option from the machine, first set this feature to "OFF" with the user tool before removing this board. If you forget to do this, "Data Security for Copying "feature cannot appear in the user tool setting. Also, SC165 will appear every time the machine is switched on, and the machine cannot be used.

5. Make sure that the machine can recognize the option.

Hard Disk (D594)

Accessory Check

No.	Description	Q'ty
1	HDD Unit	1
2	Screw	4
3	Connecting Board Unit	1
4	Keytop: Copy	2
5	Keytop: Document Server	2
6	Harness clamp	1
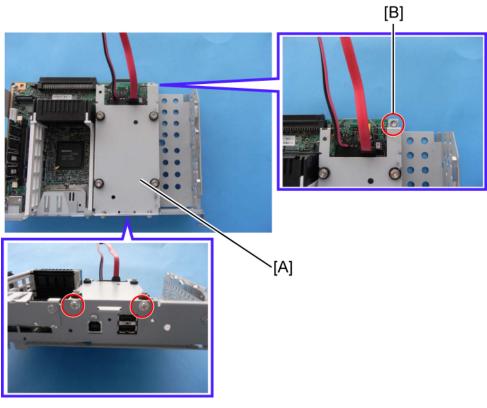
Installation

1. Remove the controller board unit. (☞ p.258 "Controller Board")
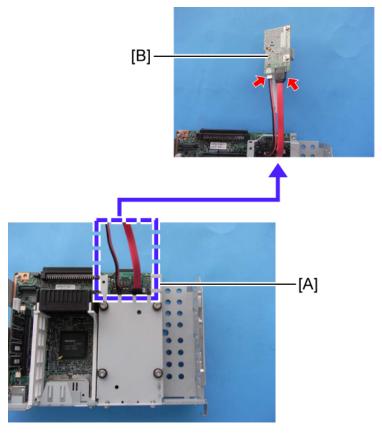
d120i509
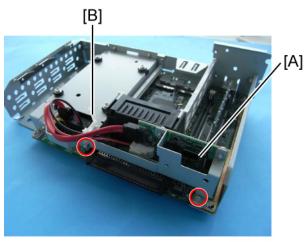
2. Remove the screw [A] on the controller board.

[B]

[A]

d120i510

3. Install the HDD unit [A] on the controller board unit (🔧 x 3). Use the screw removed in step 2 at [B].

d120i511
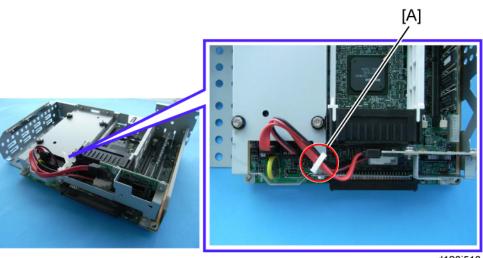
4. Connect the two cables [A] from the HDD unit to the connecting board [B] (⬛ x 2).
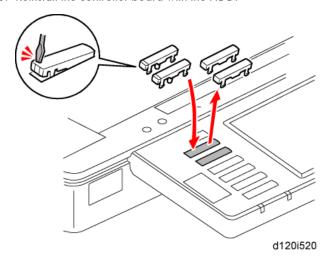
d120i512

5. Install the connecting board unit [A] on the controller board (🔧 x 2).

6. Install the harness clamp [B] on the HDD unit.

d120i513

7. Clamp the cables [A] to prevent them from sticking out.

8. Reinstall the controller board with the HDD.

d120i520

9. Remove the 1st and 2nd blank key tops.

10. Replace the blank key tops with the key tops received in the kit from top to bottom:

    - 1st Copy
    - 2nd Document Server

After Installing the HDD

1. Do **SP5-832-001** to format the hard disk.

2. Do **SP5-853-001** to copy the preset stamp data from the firmware to the hard disk.

3. Do **SP5-846-040** to copy the address book to the hard disk from the controller board.

4. Do **SP5-846-041** to let the user get access to the address book.

5. Turn the main power switch off and on.

2

File Format Converter Type E (D377)
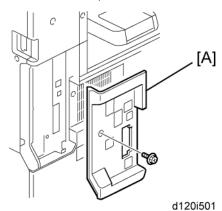
Accessory Check

Check the accessories and their quantities against this list:
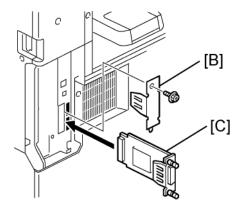
	Description	Q'ty
1.	File Format Converter (MLB: Media Link Board)	1

Installation

1. Turn off the main power switch.

d120i501

2. Remove the controller cover [A] (🔧 x1).

d120i504

3. Remove the board slot cover [B] (🔧 x2).

4. Touch a metal surface to discharge any static electricity from your hands.

5. Set the interface board [C] in the open slot.

6. Confirm that the board is inserted completely, then fasten it (🔩 x 2).

7. Turn on the main power switch.

8. Enter the SP mode and do SP5-990 to print an SMC Report.

2

9. Read the report and confirm that the interface board is installed correctly.

Browser Unit Type E (D430)

Accessories
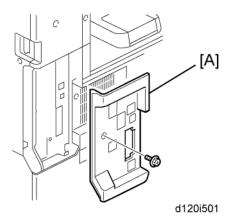
Check the accessories and their quantities against the table below.

Description	Q'ty
Browser Unit D430 SD Card	1
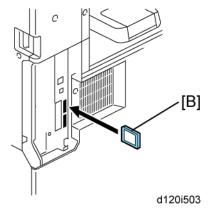
Installation

This option requires a HDD unit.

1. Switch the machine off.

d120i501

2. Remove the controller cover [A] (🔩 x1).

d120i503

3. Insert the browser SD card [B] into SD card slot 1 or slot 2.

2

4. Turn on the main power switch.

5. Push [User Tools]> [Login/Logout].

6. Login with the administrator user name and password.

7. Touch "Extended Feature Settings" twice.

8. Touch "SD Card" then touch the "Browser" line.

9. Under "Install to:" touch "Machine HDD"> "Next".

10. When you see "Ready to Install", check the information on the screen to confirm your previous selection.

11. Touch "OK". You will see "Installing..." then "Completed".

12. Touch "Exit" twice to return to the copy screen.

13. Turn off the main power switch.

14. Install the key for "Browser Unit" to the place where you want it.

15. Turn on the main power switch.

16. When the machine reaches the Ready condition, press the key that you installed in Step 14 above.

   ⬇ Note

   • A message will be displayed confirming that the browser option was successfully installed.

17. Turn off the main power switch.

18. Remove the SD card from the slot.

19. Attach the slot cover.

20. Tell a customer to keep the SD card in a safe place after you have installed the application program from the card to the HDD.

   This is because:

   • The SD card is the only proof that the user is licensed to use the application program.

   • You may need to check the SD card and its data to solve a problem in the future.

VM Card Type N (D594)

This option is only for basic models.
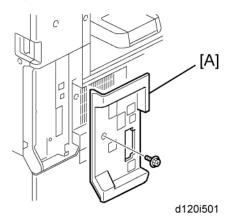
Accessories

Check the accessories and their quantities against the table below.
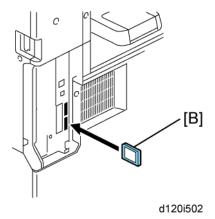
Description	Q'ty
1. VM SD Card	1
2. Decal	1

Installation

1. Switch the machine off.

d120i501

2. Remove the controller cover [A] (✐ x1).

d120i502

3. Insert the SD card [B] into SD Slot 2 (lower).

⭐**Important**

- **This SD card must be inserted into Slot 2, the lower slot.**

USB2.0/SD Slot Type H (D594)

Accessory Check
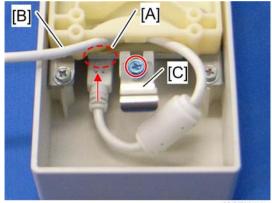
Check the quantity and condition of the accessories against the following list.

No.	Description	Q'ty
1	USB2.0/SD Slot	1
2	Ground Plate	1
3	USB Cable	1
4	Screw: M3 x 6 blue	1
5	Screw: M3 x 8	4
6	Screw: M3 x 6 (Used when the booklet finisher (D589) has been installed)	1
7	Bracket (Used when the booklet finisher (D589) has been installed)	1
8	Ground wire (Used when the booklet finisher has been installed)	1
9	Hook and loop fastener	1
10	Decal	1
11	Decal Small	1
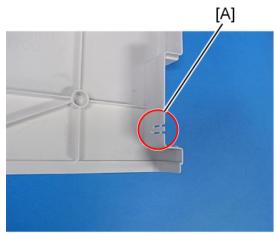
Installation Procedure

⭐ Important

- If the optional booklet finisher has been installed, see the procedure in "Installation if the optional booklet finisher has been installed" in this section.
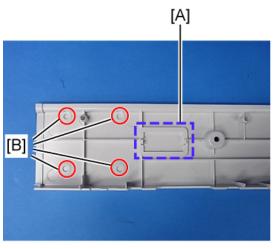
d027i111

1. Connect the USB cable [B] to the USB slot [A] in the USB2.0/SD Slot as shown above.

2. Attach the ground plate [C] to the bracket of the USB2.0/SD Slot (🔩 x 1: M3x6 blue).

3. Remove the upper left cover. (📖 p.180 "Upper Left Cover")

d120i507

4. Remove the part [A] of the upper left cover with pliers or a similar tool.
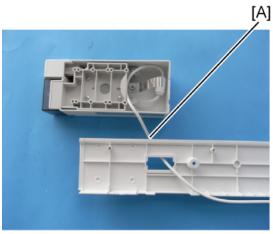
d120i508

5. Remove the part [A] on the upper left cover.

6. Make four holes in the upper left cover with a screwdriver as shown [B].

🔽Note
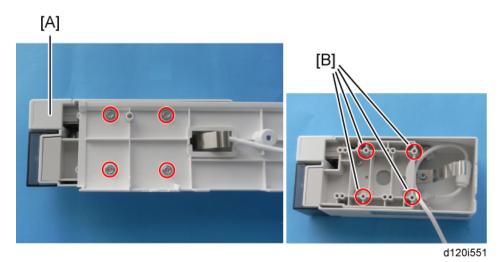
- Smooth the four holes in the upper left cover as shown [B].

d120i550
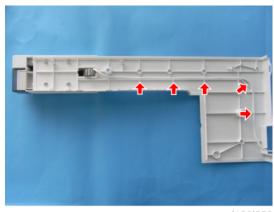
7. Put the USB cable [A] through the cutout in the upper left cover.

2

d120i551

8. Secure the USB2.0/SD Slot [A] with the upper left cover as shown above (🔧 x 4: M3x8).

🔽 Note
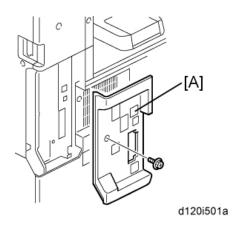
- Use the screw holes [B] as shown above.
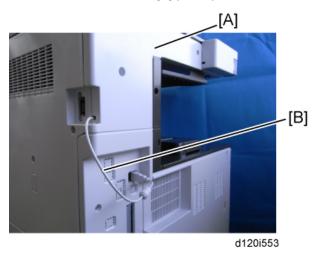
d120i552
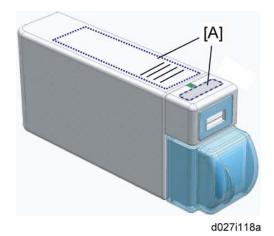
9. Route the USB cable through the gaps in the upper left cover.

d120i501a

10. Remove the controller cover [A] (🔩 x1), and then cut out the cover for the USB-A slots.

d120i553
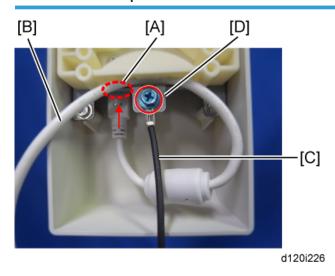
11. Attach the upper left cover [A] to the mainframe (🔩 x 2).

12. Reattach the controller cover (🔩 x 1).

13. Connect the USB cable [B] to USB-A as shown above.

14. Plug in and turn on the main power switch.

15. Change the setting of Printer SP1-013-002 from "0" to "1".

16. Change the setting of Printer SP1-110-002 from "0" to "1".

17. Exit the SP mode, and then check the operation of the USB2.0/SD Slot.

d027i118a
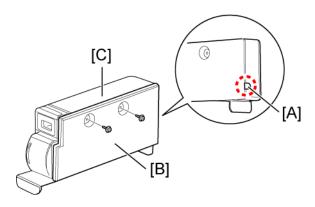
18. Attach the decals [A] to the USB2.0/SD Slot as shown above.

Installation if the optional booklet finisher has been installed

d120i226
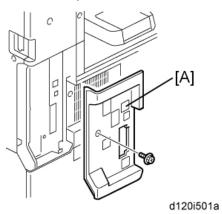
1. Connect the USB cable [B] to the USB slot [A] in the USB2.0/SD slot as shown above.
2. Connect the ground wire [C] to [D] in the USB2.0/SD Slot (🔩 x 1: M3x6 blue).
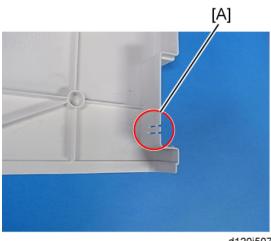
d120i582
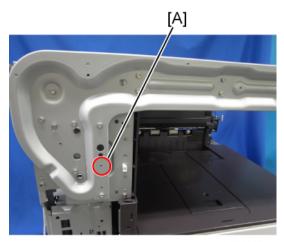
3. Cut out the part [A] on the back of the USB 2.0/SD slot with pliers or a similar tool, and route the USB cable and ground wire through [A].

4. Install the right cover [B] of the USB2.0/SD Slot [C] (🔩 x 2).

5. Remove the optional booklet finisher from the left side of the machine (🔩 x 1).

d120i501a

6. Remove the controller cover [A] (🔩 x1), and then cut out the cover for the USB-A slots.

7. Remove the upper left cover. (👉 p.180 "Upper Left Cover")

d120i507
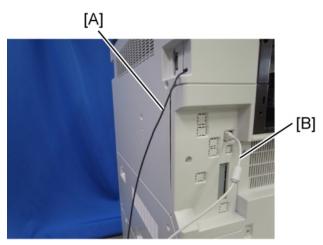
8. Remove the part [A] of the upper left cover with pliers or a similar tool.
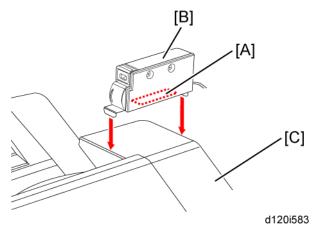
d120i206
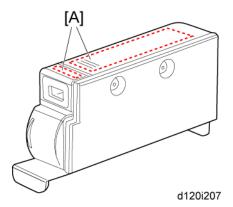
9. Secure the ground wire to the location [A] ($\mathscr{P}$ x 1).

d120i227

10. Reassemble the machine and route the ground wire [A] through the cutout in the upper left cover.

11. Connect the USB cable [B] to USB-A.

12. Install the optional booklet finisher to the left side of the machine.

d120i583

13. Peel off the backing paper from one side of the hook and loop fastener, and then stick it to the bottom of the USB2.0/SD slot [A].

14. Remove the other backing paper from the hook and loop fastener, and then attach the USB 2.0/ SD slot [B] to the middle position on the back of the optional booklet finisher [C].

15. Plug in and turn on the main power switch.

16. Change the setting of Printer SP1-013-002 from "0" to "1".

17. Change the setting of Printer SP1-110-002 from "0" to "1".

18. Exit the SP mode, and then turn off the main power switch.

19. Check the operation of the USB2.0/SD Slot.

d120i207

20. Attach the decals [A] to the USB2.0/SD Slot as shown above.

Testing the SD Card/USB Slot

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.

    🔱Note
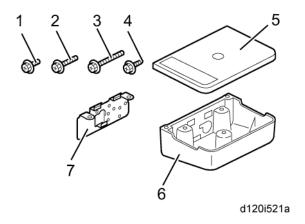
    • Do not remove the memory device while writing is in process.

Card Reader Bracket Type C3352 (D593)

Component Check
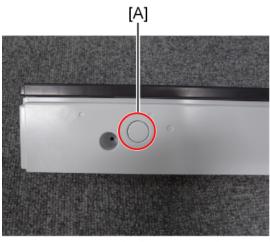
Check the quantity and condition of the accessories against the following list.

No	Description	Q'ty	For This Model
1	Screw: M3 x 8	2	Yes
2	Screw: M3 x 14	1	Not used
3	Screw: M4 x 25	1	Yes
4	Tapping Screw: M3 x 10	3	Yes
5	Upper Tray	1	Yes
6	Lower Tray	1	Yes
7	Tray Bracket	1	Yes

d120i521a

Installation Procedure

1. Remove the upper right cover. (p.182 " Upper Right Cover")

d120i229

2. Remove the cover [A] from the upper right cover.

d120i578

3. Make 3 holes for the M4 screw in the upper right cover with a screwdriver.

⭐**Important**

- **Do not open the 2 holes for the M3 screws all the way. This will make it impossible to tighten the M4 screw.**
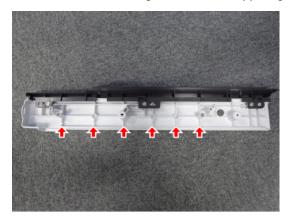
d120i228
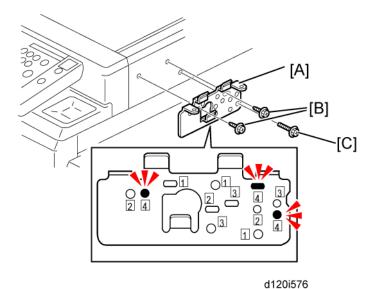
d120i598

4. Put the device cable through the hole in the upper right cover.
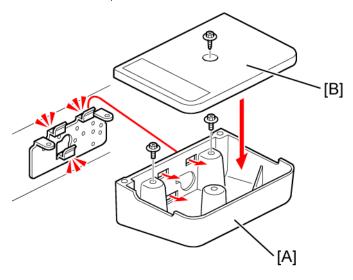
d120i584

5. Route the cable in the upper right cover

6. Reattach the upper right cover (✒ x 2).

167

d120i576

7. Attach the tray bracket [A] to the upper right cover (🖋 [B] x 2: M3x8 tapping screw, 🖋 [C] x 1: M4x25).

  • For this model, use the screw holes marked "4" on the table bracket.

d120i577
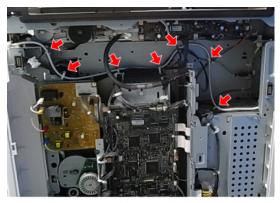
8. Attach the lower tray [A] to the tray bracket (🖋 x 2: M3x8).

9. Attach the upper tray [B] to the tray bracket (🖋 x 1: M3x8).

10. Connect the cable to the designated connector (the connector to use depends on the type of device to be connected).
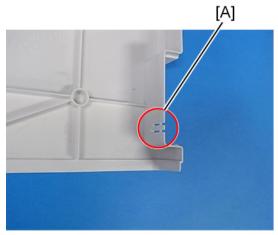
If you install the device with USB cable.

1. Remove the upper rear cover. (📖 p.181 "Upper Rear Cover")
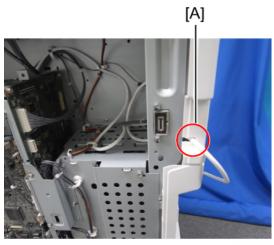
d120i585

2. Route the cable as shown above.

3. Remove the upper left cover. (📖 p.180 "Upper Left Cover")

[A]

d120i507

4. Remove the cut off part [A] of the upper left cover with pliers or a similar tool.

5. Reattach the upper left cover.

d120i586

6. Route the cable through the cut off part of the upper left cover [A], and then connect the cable to the designated connector (the connector to use depends on the type of device to be connected).

7. Reassemble the machine.

3. Preventive Maintenance

PM Tables

See "Appendices" for the following information:

- PM Tables

4. Replacement and Adjustment

Beforehand

⚠️ CAUTION

- Before installing options, please do the following:
- If there is a fax unit in the machine, print out all messages stored in the memory, the lists of user-programmed items, and the system parameter list.
- If there are printer jobs in the machine, print out all jobs in the printer buffer.
- Turn off the main power switch and disconnect the power cord, the telephone line, and the network cable.

⭐ **Important**

- **Always touch a grounded surface to discharge static electricity from your hands before you handle SD cards, printed circuit boards, or memory boards.**

Special Tools and Lubricants

Special Tools

No.	Part No.	Description	Q'ty	Availability
1	A1849501	Scanner Positioning Pin (2pcs/set)	1	Common – D086/D087/D088/D089
2	A2929500	Test Chart - S5S (10 pcs/set)	1	Common - General
3	A2309003	Adjustment Cam – Laser Unit	1	Common – D017/D018/D019/D020/D084/D085
4	A2309002	Positioning Pin – Laser Unit	1	Common – D017/D018/D019/D020/D084/D085
5	B6455010	SD-Card	1	Common - General
6	G0219350	Loop-back Connector	1	Common – D017/D018/D019/D020/D084/D085

Lubricants

No.	Part No.	Description	Q'ty	Availability
1	A2579300	Grease Barrierta – JFE 5 5/2	1	Common - General

4
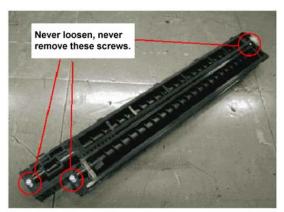
RTB 45
Correction

General Cautions

PCU (Photoconductor Unit)

The PCU consists of the OPC drum, development unit, charge roller, and cleaning unit. Follow the cautions below when handling a PCU.

- Never touch the drum surface with bare hands. When the drum surface is touched or becomes dirty, wipe it with a dry cloth or clean it with wet cotton. Wipe with a dry cloth after cleaning with the cotton.

- Never use alcohol to clean the drum; alcohol dissolves the drum surface.

- Store the PCU in a cool, dry place away from heat.

- Never expose the drum to corrosive gases such as ammonia gas.

- Never shake the used PCU. Doing so may cause toner and/or developer to spill out.

- Dispose of used PCUs in accordance with local regulations.

- Turn off the main power switch and disconnect the power cord before you start any of the procedures in this section. To prevent toner leakage, never loosen or remove the screws shown in the illustration below.

d017r901

Transfer Roller Unit

- Never touch the transfer roller surface with bare hands.

- Take care not to scratch the transfer roller as the surface is easily damaged.

Scanner Unit

- Clean the exposure glass with alcohol or with glass cleaner to reduce the amount of static electricity on the surface of the glass.
- Use a blower brush or a cotton pad with water to clean the mirrors and lens.
- Do not bend or crease the exposure lamp flat cable.
- Do not disassemble the lens unit. Doing so will throw the lens and the copy image out of focus.
- Do not turn any of the CCD positioning screws. Doing so will throw the CCD out of position.

Laser Unit

- Do not loosen the screws that secure the LD drive board to the laser diode casing. Doing so will throw the LD unit out of adjustment.
- Do not adjust the variable resistors on the LD unit, as they are adjusted in the factory.
- The polygon mirror and F-theta mirror are very sensitive to dust.
- Do not touch the glass surface of the polygon mirror motor unit with bare hands.

Fusing Unit

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

Paper Feed

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

Others

- The toner bottle should be replaced while the main switch is on.
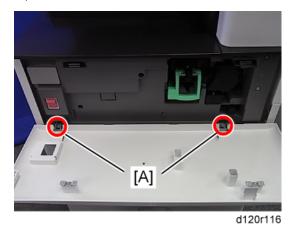
- If the optional tray and optics anti-condensation heaters have been installed, keep the copier power cord plugged in, even when the copier main power switch is turned off. This keeps the heaters energized.

4

Exterior Covers

Front Door

d120r115

1. Open the front door [A].

d120r116
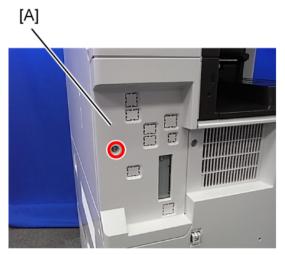
2. Remove the two pins [A], and then remove the front cover.

Controller Cover

d120r117
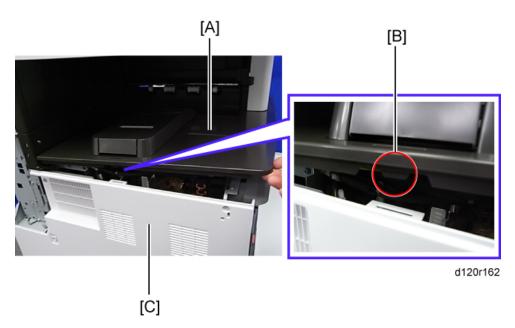
1. Remove the controller cover [A] (✎ x 1).

Left Cover

1. Remove the controller cover. (☞ p.179 "Controller Cover")

d120r118
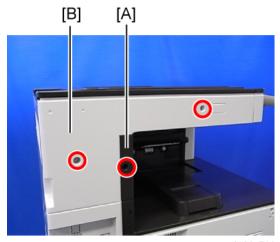
2. Remove the 4 screws of the left cover [A].

d120r162

3. Lift up the output tray [A] by disconnecting the tab [B], and then remove the left cover [C].

Upper Left Cover

1. Remove the controller cover. (p.179 "Controller Cover")

d120r516

2. Remove the left frame cover [A] (x1).
3. Remove the upper left cover [B] (x 2).

Upper Rear Cover
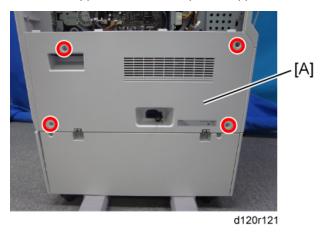
d120r120

1. Remove the upper rear cover [A] (✐ x 5).

Lower Rear Cover

1. Remove the upper rear cover. (☛ p.181 "Upper Rear Cover")

d120r121

2. Remove the lower rear cover [A] (✐ x 4).

Right Rear Cover

1. Remove:
   - Upper rear cover (☛ p.181 "Upper Rear Cover")
   - Lower rear cover (☛ p.181 "Lower Rear Cover")

[A]   [B]

d120r154

2. Open the right door [A].

3. Remove the right rear cover [B] (🔩 x 2).
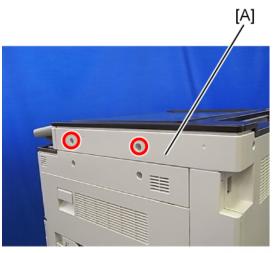
Upper Right Cover

d120r191

1. Remove a screw.

d120r122
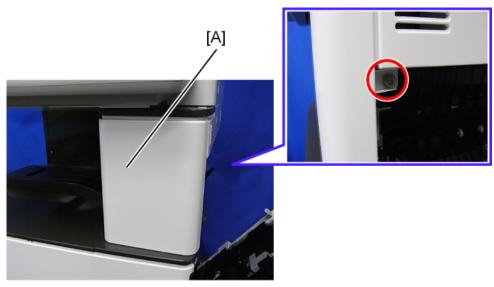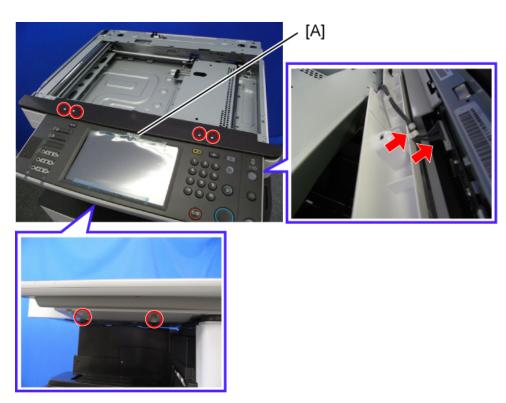
2. Remove the upper right cover [A] (🖉 x 2).

Operation Panel

d120r124
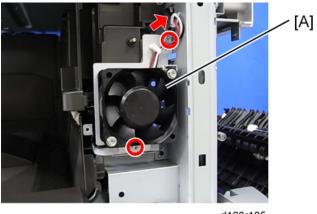
1. Open the right door.
2. Remove the front right cover [A] (🖉 x 1).

d120r102

3. Remove the operation panel [A] (✐ x6, 🔌 x1, 🔖 x1).

Paper Exit Cover
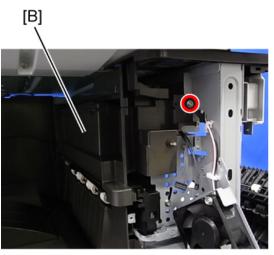
1. Remove the front right cover. (📖p.183 "Operation Panel")

d120r125

2. Remove the fusing fan with bracket [A] (✐ x2, 🔖 x1).

d120r126
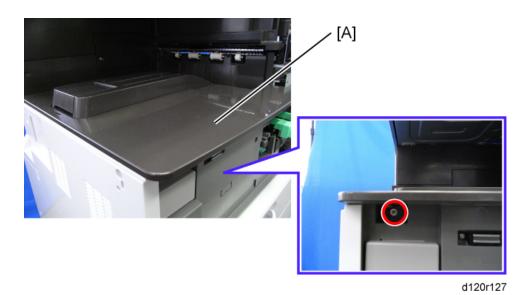
3. Remove the paper exit cover [B] (🗝 x 1).

Output Tray

d120r115

1. Open the front door [A].

d120r127
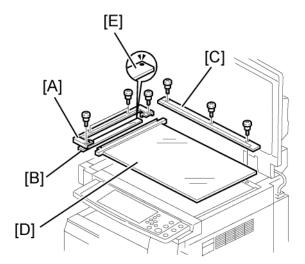
2. Remove the output tray [A] (🔩 x 1).

Scanner Unit

Exposure Glass

d120r186
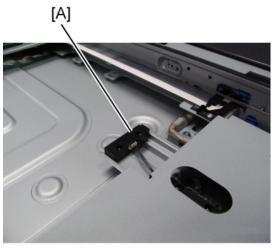
1. Remove the glass cover [A] (✏ x 4).

2. Remove the ARDF exposure glass [B].

3. Remove the rear scale (✏ x 3).

4. Replace the exposure glass with left scale.

   ↓Note

   • Position the blue marker [E] at the rear-left corner when you reattach the ARDF exposure glass.
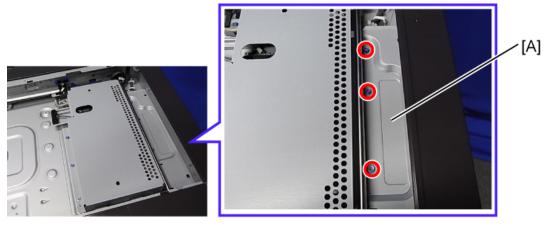
Original Length Sensors

1. Remove the exposure glass with left scale. (☞ p.187 "Exposure Glass")

[A]
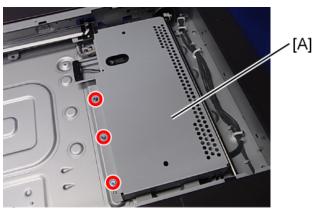
d120r100

2. Replace the original length sensor [A] (snap, 📖 x1).

[A]
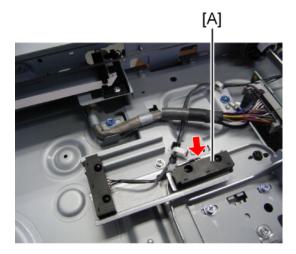
d120r131

3. Remove the SBU right cover [A] (✐ x3).

d120r132

4. Remove the SBU cover [A] (✎ x3).
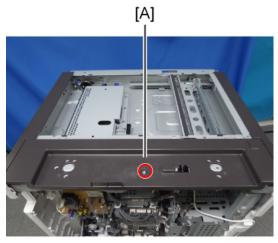
d120r515

5. Replace the original length sensor [A] (snap, 📖 x1).

Scanner Lamp

⭐**Important**
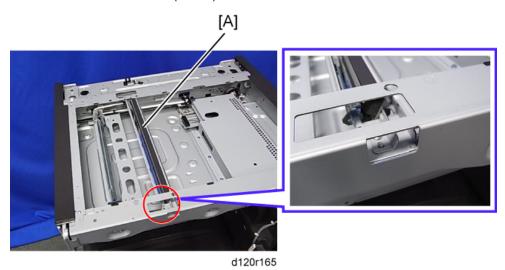
- Before replacing the scanner lamp, check and note the first three digits in the bar-code on the new scanner lamp. (👉 p.192 "Chromaticity rank adjustment")

1. Remove:

- ADF or platen cover
- Exposure glass (👉 p.187 "Exposure Glass")
- Operation panel (👉 p.183 "Operation Panel")

- Upper rear cover (p.181 "Upper Rear Cover")

[A]
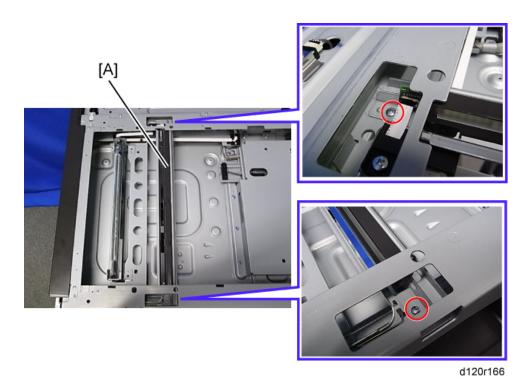
d120r168

2. Remove the scanner rear cover (x 1).

[A]

d120r165
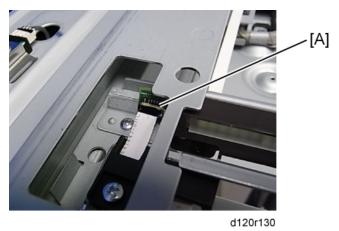
3. Move the scanner carriage [A] to the position shown above.

[A]

d120r166
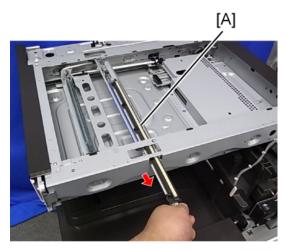
4. Remove the two screws on the scanner lamp [A].

[A]

d120r130

5. Disconnect the connector [A] (📖 x1).
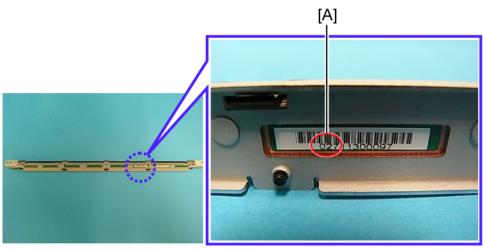
d120r167

6. Pull out the scanner lamp [A].

Chromaticity rank adjustment

Each scanner lamp has a specific chromaticity rank. The chromaticity rank is indicated by the bar-code on the new scanner lamp. After replacing the lamp, adjust the chromaticity rank to correspond to the new scanner lamp.

d120r169
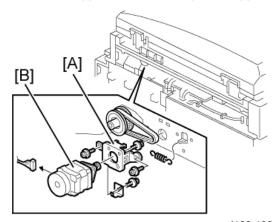
1. Check the first three digits [A] in the bar-code on the new scanner lamp before installing the new lamp.

2. After installing the new lamp, go to SP4-954-005 and enter the SP setting number referring to the table below.

1st Three Digits	SP Setting (SP4-954-005)	1st Three Digits	SP Setting (SP4-954-005)
020	3	047	12
021	2	048	11
022	1	049	10
023	6	050	15
024	5	051	14
025	4	052	13
026	9	053	18
027	8	054	17
028	7	055	16
029	12	186	3
030	11	187	2
031	10	188	1
032	15	189	6
033	14	190	5
034	13	191	4
035	18	192	9
036	17	193	8
037	16	194	7
038	3	195	12
039	2	196	11
040	1	197	10
041	6	198	15
042	5	199	14
043	4	200	13
044	9	201	18

4

1st Three Digits	SP Setting (SP4-954-005)	1st Three Digits	SP Setting (SP4-954-005)
045	8	202	17
046	7	203	16

Scanner Motor

1. Remove the upper rear cover. (📖 p.181 "Upper Rear Cover")
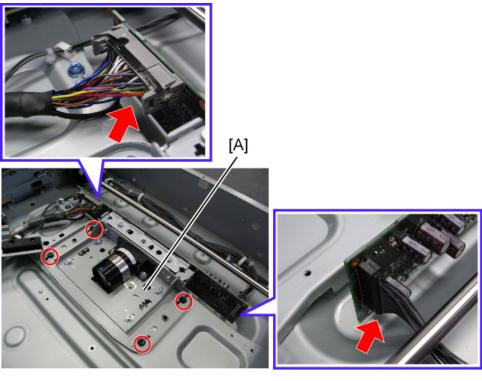
d120r192

2. Remove the scanner motor assembly [A] (🔩 x 2, 🔌 x 1, spring x 1).

3. Replace the scanner motor [B] (🔩 x 2)

Lens Block Unit

1. Remove:
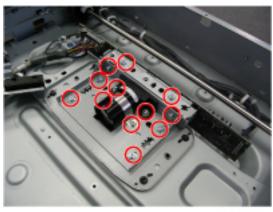
   • Exposure glass (📖 p.187 "Exposure Glass")

   • SBU right cover (📖 p.187 "Original Length Sensors")

   • SBU cover (📖 p.187 "Original Length Sensors")

d120r112

2. Replace the lens block unit [A] (✏ x 4, 🔲 x 2).

⭐ **Important**

- **Do not remove the other screws on the lens block unit**

d120r158

When reassembling
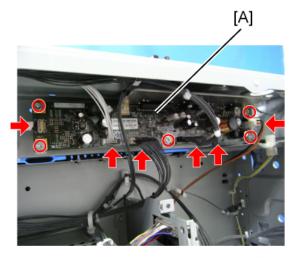
Adjust the following SP modes after you replace the sensor board unit:

- SP4–008 (Sub Scan Mag.)
- SP4–010 (Sub Scan Reg.)
- SP4–011 (Main Scan Reg.)
- SP4–688 (DF: Density Adjustment). This SP code adjusts the density level if the ID of outputs made in the DF and Platen mode is different.

For more details, see Image Adjustment: Scanning.

SIO Board

1. Remove the upper rear cover. (p.181 "Upper Rear Cover").
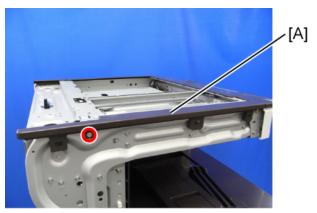
d120r103

2. Replace the SIO Board [A] (x 5, x 6).
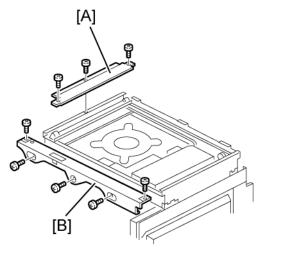
Front Scanner Wire

1. Remove:
    - Exposure glass (p.187 "Exposure Glass")
    - Upper rear cover (p.181 "Lower Rear Cover")
    - Upper left cover (p.180 "Upper Left Cover")

d120r128
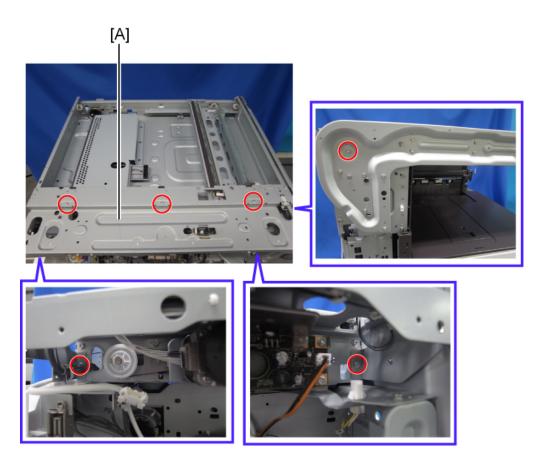
2. Remove the scanner left cover [A] (🔩 x1).

3. Remove the operation panel. (☞ p.183 "Operation Panel")

4. Remove the scanner rear cover (☞ p.189 "Scanner Lamp")

d120r101
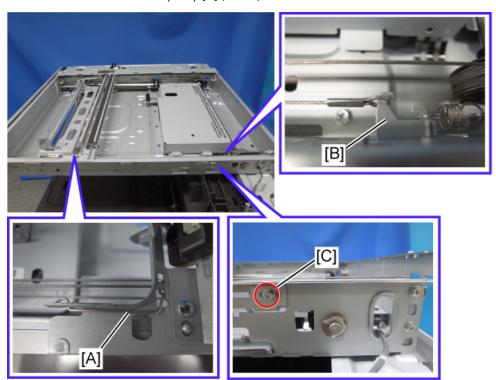
5. Remove the left stay [A] (🔩 x3).

6. Remove the front stay [B] (🔩 x5).

d120r193
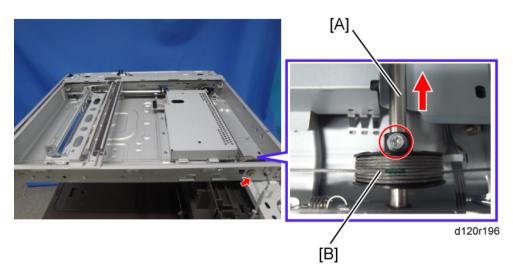
7. Remove the rear stay [A] (✎ x6, 🗂 x all).

8. Remove the scanner motor assembly. (☞ p.194 "Scanner Motor")

d120r102

9. Remove the rear scanner drive pulley [A] (🔩 x 1).

d120r195
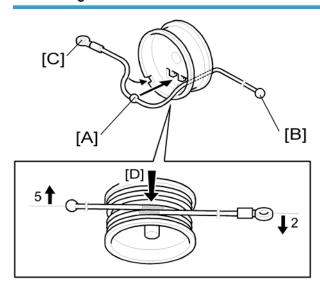
10. Remove the front scanner wire clamp [A].

11. Loosen the front scanner wire bracket [B] with screw [C].

d120r196

12. Remove the front scanner wire.

13. Move the shaft [A] in the red arrow direction (⊘x 1: at front), and remove the scanner drive pulley [B] (🔩 x 1).
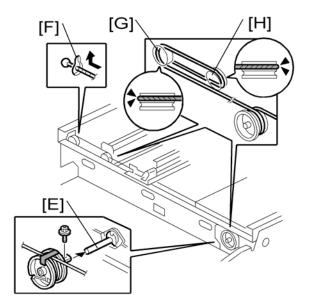
Reinstalling the Front Scanner Wire

1. Position the center ball [A] in the middle of the forked holder.

2. Pass the right end (with the ball) [B] through the square hole. Pass the left end (with the ring) [C] through the notch.

3. Wind the right end counterclockwise (shown from the machine's front) five times. Wind the left end clockwise twice.
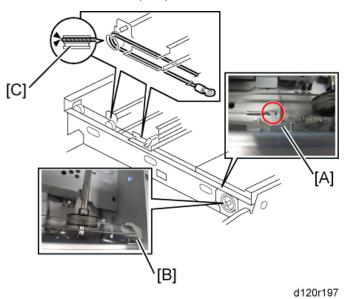
- The two red marks [D] come together when you have done this. Stick the wire to the pulley with tape. This lets you easily handle the assembly at the time of installation.

4. Install the drive pulley on the shaft [E].
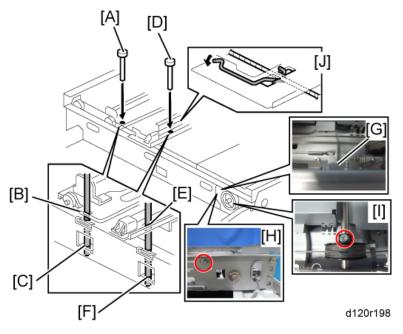
- Do not attach the pulley to the shaft with the screw at this time.

5. Insert the left end into the slit [F]. The end should go via the rear track of the left pulley [G] and the rear track of the movable pulley [H].

d120r197

6. Hook the right end onto the front scanner wire bracket [A]. The end should go via the front track of the right pulley [B] and the front track of the movable pulley [C].

➡️**Note**

- Do not attach the scanner wire bracket with the screw at this time.

d120r198

7. Remove the tape from the drive pulley.

8. Insert a scanner-positioning pin [A] through the 2nd carriage hole [B] and the left holes [C] in the front rail. Insert another scanner positioning pin [D] through the 1st carriage hole [E] and the right holes in the front rail [F].

9. Insert two more scanner positioning pins through the holes in the rear rail.

10. Screw the drive pulley to the shaft [I].

11. Screw the scanner wire bracket [G] to the front rail with screw [H].

12. Install the scanner wire clamp [J].

13. Pull out the positioning pins.

➡️**Note**
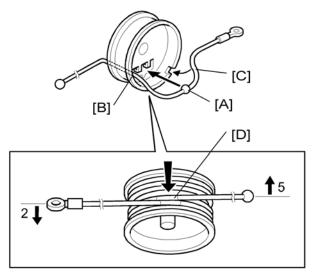
- Make sure the 1st and 2nd carriages move smoothly after you remove the positioning pins. Do steps 8 through 13 again if they do not.

Rear Scanner Wire

Reinstalling the Rear Scanner Wire

d017r164a

1. Position the center ball [A] in the middle of the forked holder.

2. Pass the left end (with the ball) [B] through the drive pulley notch.

3. Pass the right end (with the ring) [C] through the drive pulley notch.

4. Wind the left end [B] clockwise (from the machine front) five times.

5. Wind the right end [C] counterclockwise twice.

   🔻Note

   • The two red marks [D] come together after winding. Attach the wire to the pulley with tape. This lets you easily handle the assembly at installation.

6. Install the drive pulley on the shaft.

   🔻Note

   • Do not attach the pulley on the shaft with the screw at this time.

7. Install the wire.

   🔻Note

   • The winding of the wire on the three pulleys at the rear of the scanner should be the same as the winding on the three pulleys at the front. This must show as a mirror image.

   • At the front of the machine, the side of the drive pulley with the two windings must face the front of the machine.

• At the rear of the machine, it must face the rear.
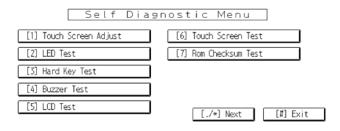
Touch Panel Position Adjustment

The touch panel must be recalibrated if it is not functioning correctly or after replacing these items:

• Operation panel

• Controller board
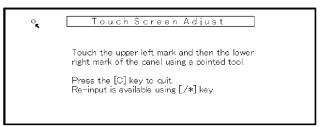
Do not use items [2] to [9] on the Self-Diagnostic Menu. These items are for design use only.

1. Press [Clear], press [1] [9] [9] [3], press ⊕ 5 times to open the Self-Diagnostics menu.


```
            Self  Diagnostic  Menu

[1] Touch Screen Adjust        [6] Touch Screen Test

[2] LED Test                   [7] Rom Checksum Test

[3] Hard Key Test

[4] Buzzer Test

[5] LCD Test                        [./*] Next      [#] Exit
```

b178r548a

2. On the touch screen press Touch Screen Adjust (or press [1]).

3. Use a pointed (not sharp) tool to press the upper left mark ⚲.


```
⚲
              Touch Screen Adjust

       Touch the upper left mark and then the lower
       right mark of the panel using a pointed tool.

       Press the [C] key to quit.
       Re-input is available using [/*] key.
```

b178r549

4. Press the lower right mark when ⚲ shows.

5. Touch a few spots on the touch panel to make sure that the marker + shows exactly where the screen is touched.

6. Press Cancel. Then start from Step 2 again if the + mark does not show where the screen is touched.

7. Press [#] OK on the screen (or press [#]) when you are finished.

8. Touch [#] Exit on the screen to close the Self-Diagnostic menu. Save the calibration settings.
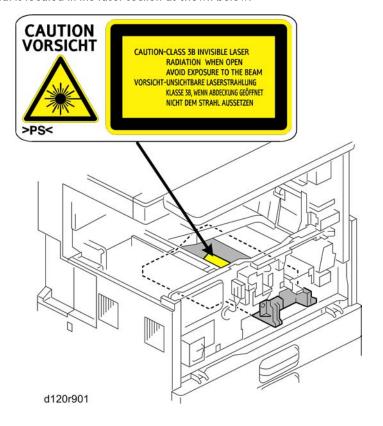
Laser Unit

⚠ WARNING

- Turn off the main power switch and disconnect the power cord before you start any of the procedures in this section. Laser beams can seriously damage your eyes.

Caution Decal Locations

The caution decal is located in the laser section as shown below.
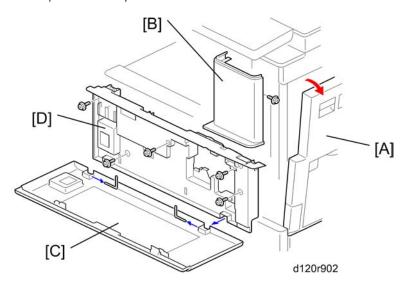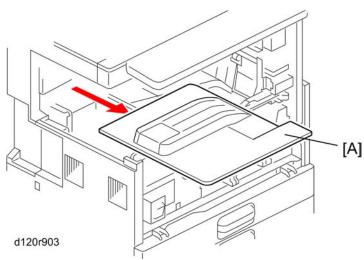
d120r901

Laser Unit

⚠ WARNING

- Turn off the main power switch and disconnect the power cord before you start this procedure in this section. Laser beams can seriously damage your eyes.

1. Remove the following options if these have been installed.

   - Finisher

- Bridge unit
- Optional shift tray

d120r902
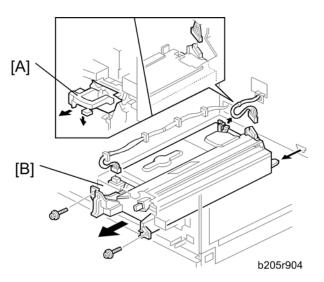
2. Open the duplex unit [A].

3. Remove the upper front cover [B] (✏ x1, Hook x1).

4. Remove the front cover [C] (Pins x2).

5. Remove the front inner cover [D] (✏ x5).

d120r903

6. Remove the output tray [A] (Hook x1).
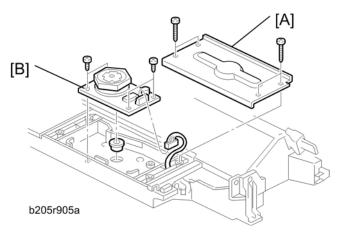
b205r904

7. Remove the toner supply unit [A].

8. Remove the laser unit [B] (✏ x2, 🔲 x2, 🔌 x1).

Polygon Mirror Motor

1. Remove the laser unit (📖 p.205 "Laser Unit").

b205r905a
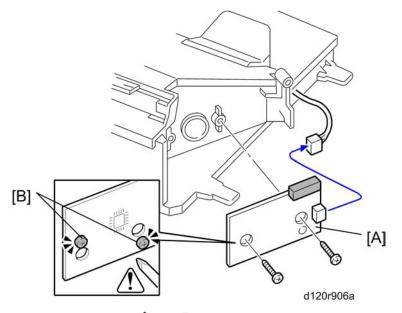
2. Remove the heat sink [A] (✏ x4).

3. Replace the polygon mirror motor [B] (✏ x4, 🔲 x1).

🔽 **Note**

- When you install the new polygon mirror motor, do not touch the surface of the mirror with bare hands.

207

LD Unit

1. Remove the laser unit. (📖 p.205 "Laser Unit")

d120r906a

2. Replace the LD unit [A] (🔩 x2, 🔌 x1).

⬇Note
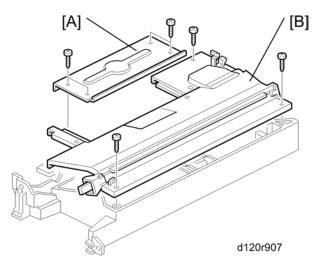
- Do not touch any variable resistors on the LD unit.
- Do not loose the screws [B].
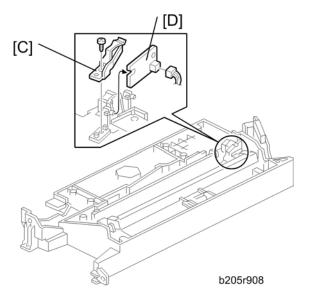
Laser Synchronization Detector

1. Remove the laser unit. (📖 p.205 "Laser Unit")

d120r907

2. Remove the heat sink [A] (✐ x4).

3. Remove the laser unit cover [B] (✐ x3).

b205r908
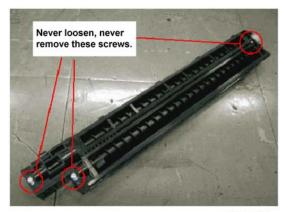
4. Remove the bracket [C] (✐ x1).

5. Replace the laser synchronization detector [D] (✐ x1).

Photoconductor Unit (PCU)
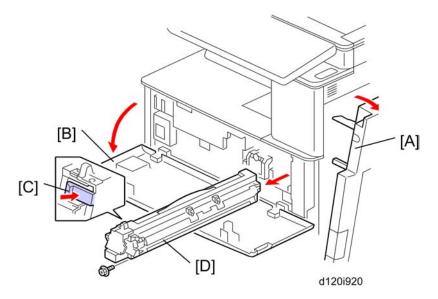
⚠CAUTION

- Turn off the main power switch and disconnect the power cord before you start any of the procedures in this section. To prevent toner leakage, never loosen or remove the screws shown in the illustration below.

Never loosen, never remove these screws.

d017r901

PCU Removal

[B]
[C]
[A]
[D]

d120i920
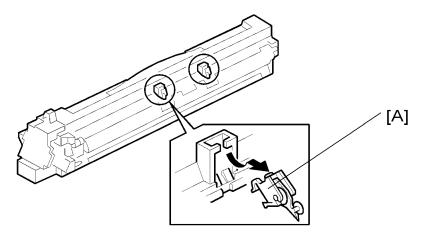
1. Open the right cover [A] and front cover [B].
2. Push the latch [C] and replace the PCU [D] (🔩 x 1).

◆Note

- Do not touch the drum surface with bare hands.

Pick-off Pawls

1. Remove the PCU. (📑 p.210 "PCU Removal")

[A]
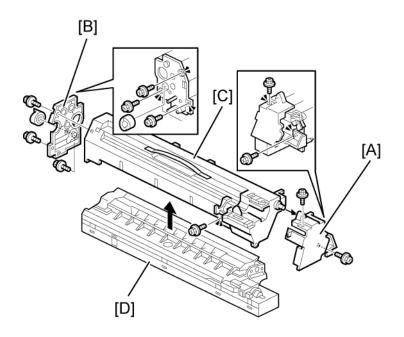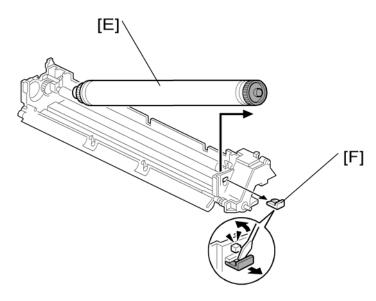
2. Hold the pawl [A] by its sides, pull it down and slowly twist it away from the PCU.

OPC Drum

1. Remove the PCU. (📑 p.210 "PCU Removal")

d120r170

2. Remove the front cover [A] (🔩 x2).

3. Remove the rear cover [B] (🔩 x3, Coupling x1).

4. Remove the top part [C] (🔩 x1).

5. Remove the bottom part [D].
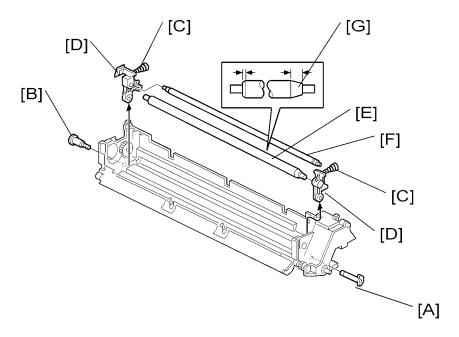
6. Replace the drum [E] (White clip x1 [F]).

Charge Roller, Cleaning Roller

1. Remove:

   - PCU (👈 p.210 "PCU Removal")

   - OPC drum (👈 p.211 "OPC Drum")

2. Remove the front stud [A].

3. Remove the rear shoulder screw [B] (🔩 x1).

4. Release the front and rear springs [C].

5. Remove the roller assembly [D] (Springs x2, Arms x2, Rollers x2)

6. Replace the charge roller [E].

7. Replace the cleaning roller [F].
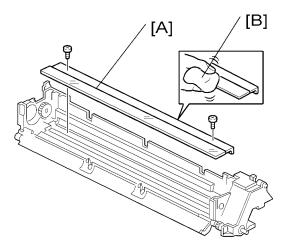
Re-installation: Charge Roller

- Put the end of the charge roller with the wide bevel [G] at the front of the PCU.

- The ends of the cleaning roller [F] are the same (put either end at the front).

- Make sure that the front stud of the roller assembly is put in the correct position.

- Install the front stud before you tighten the rear shoulder screw. Make sure that the head of the stud is put in the correct position.

Cleaning Blade

1. Remove:

    - PCU (☞ p.210 "PCU Removal")

    - OPC drum (☞ p.211 "OPC Drum")

    - Charge roller and cleaning roller (☞ p.213 "Charge Roller, Cleaning Roller ")
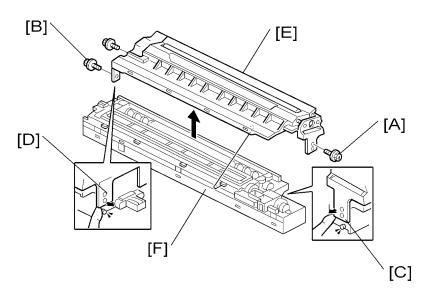
2. Replace the cleaning blade [A] (🔩 x2)

Reinstallation: Cleaning Blade
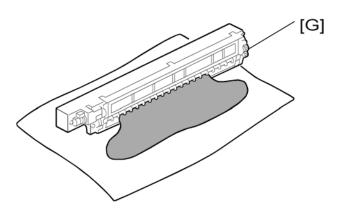
- To prevent damage to the new cleaning blade and OPC drum, apply some toner to the edge of the new blade [B].

- Install the new blade. Remove some toner from the edge of the old blade with your finger, and apply it evenly along the full length of the new blade.

Developer
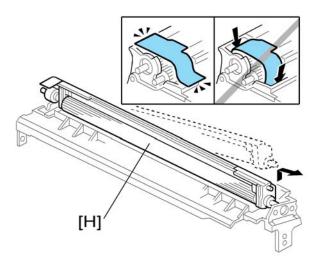
1. Spread the vinyl sheet provided with the developer kit on a flat surface.

2. Separate the top and bottom parts of the PCU. (☞ p.211 "OPC Drum")

3. Set the bottom on the vinyl sheet.

4. Remove the front screw [A] (🖊 x1)

5. Remove the rear screws [B] (🖊 x2).

6. Release the front tab [C].

7. Release the rear tab [D].

8. Separate the top [E] and bottom [F] of the development unit.
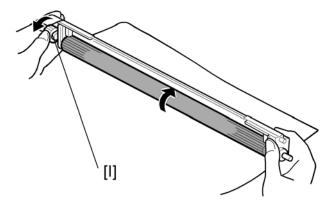
9. Turn the gears [G] to remove the developer from the bottom half.

10. Remove the development roller [H] from the development unit.

    ⭐**Important**
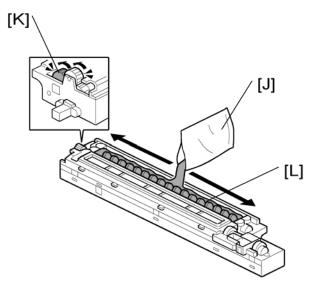
    - **At reinstallation, make sure that the mylar is positioned as shown.**

11. Turn the development roller gear [I] to remove toner from around the development roller.

12. Assemble the development unit.

    ⭐**Important**

    - **Dispose of the used developer according to the local laws and regulations regarding the disposal of such items.**

13. Open the developer pack [J]

14. While turning the black gear [K], slowly move the pack left and right and pour half of the developer over the auger [L].

15. Continue to rotate the black gear until the developer is level.
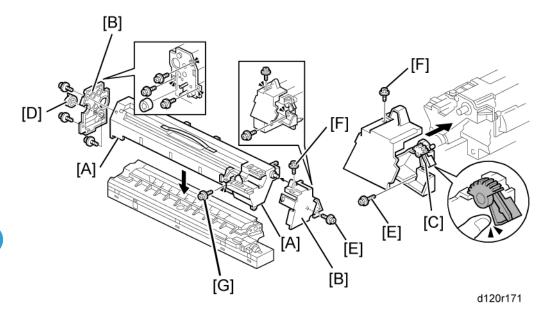
While continuing to turn the black gear, slowly move the pack left and right and pour the remaining half of the developer over the augur until the developer is level.

⭐ **Important**
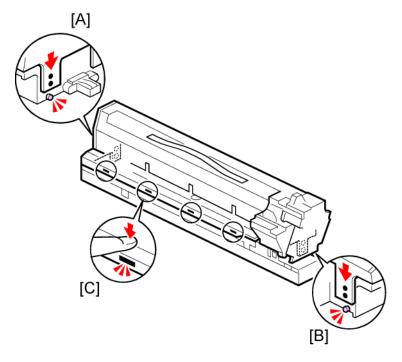
- Be careful. Do not spill developer on the gears or sponges.

- If you accidentally spill developer on the gears or sponges, remove it with a magnet or the tip of a magnetized screwdriver.

PCU Reassembly

Reassemble the PCU in this order:

d120r171

1. Attach the front frame pawls and front and rear [A].

2. Set the rear cover and front cover [B].

   - Never touch the lever [C] until after the top screw has been fastened.

3. Tighten the three screws and coupling [D].

   - Never press down on the top of the PCU when you reattach the rear or front cover.

4. Tighten the lower screw [E].

   - Always install the lower screw first to maintain the correct gap between the rollers.

5. Tighten the top screw [F].

   - Lift and lower the lever [C] to make sure that the shutter opens fully and operates smoothly.

6. Attach the side screw [G].

d120r105

7. Make sure that all of the holes and tabs on are engaged at [A], [B], and [C]. Then push down to lock the tabs on the front and rear end of the PCU.

8. Make sure that the holes for the screws on the front and rear end of the PCU are aligned correctly. If the holes are not aligned correctly, make sure that the tabs at the front, rear, and left side of the PCU are engaged correctly.
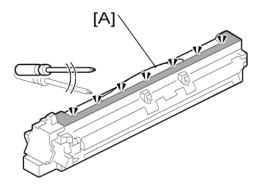
After Replacement of PCU Components

Do this procedure after you replace the PCU components and developer.

1. Assemble the PCU and install it in the machine.

2. Turn on the main power switch.

3. If you replaced developer, go into the SP mode and do SP2-801 (Developer Initialization).

4. Make 5 sample copies.

5. Check the copies.

   • If the copies are clean (no black dots), the replacement is completed.

   -or-

   • If you see black dots of toner that fell on the copies, go to the next step.

6. Remove the PCU from the machine.

7. Lightly tap the top of the PCU [A] with a screwdriver at 8 locations. These locations must be at equal intervals. Tap 2 or 3 times at each location, to make the toner fall into the development section.

8. Install the PCU in the machine.

9. Turn on the main power switch, and close the front door. After the machine turns the development roller for 10 seconds, go to the next step.

10. Open and close the door two more times. The total rotation time is 30 seconds.

11. If you replaced PCU components:

   - If A4/8$_{1/2}$" x11" paper is installed, make 4 copies or prints.
   - If A3/11" x 17" paper is installed, make 2 copies or prints.
   - To make solid black prints, use SP2-109 No.8.

   ⬇ Note

   - This step is not necessary if only the developer was replaced.

Transfer Unit

⚠ CAUTION

- Turn off the main power switch and disconnect the power cord before you start any of the procedures in this section.

Transfer Roller Unit

d120r104
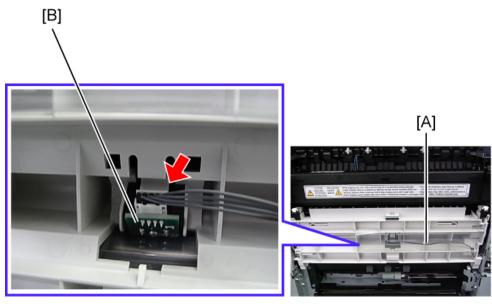
1. Open the right cover [A].

2. Replace the transfer roller unit [B] (Hook x1).

⬇Note

- Do not touch the transfer roller surface.

Image Density Sensor

1. Open the right cover.

2. Remove transfer roller unit. (☛ p.221 "Transfer Roller Unit")

d120r143

3. Displace the mylar [A] of the transfer roller guide.

4. Replace the image density sensor [B] (🔲 x1).

5. After you install a new sensor, initialize the new sensor with SP2-935.

Fusing/Exit
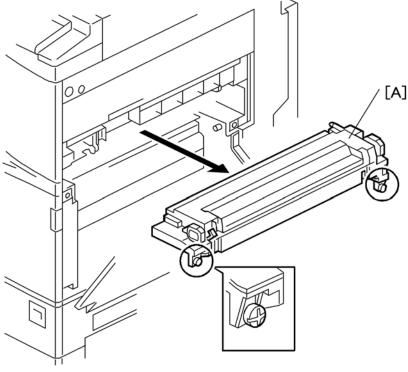
⚠ CAUTION

- Turn off the main power switch and disconnect the power cord before you start any of the procedures in this section.

Fusing Unit

⚠ CAUTION

- Allow time for the unit to cool before doing the following procedure.
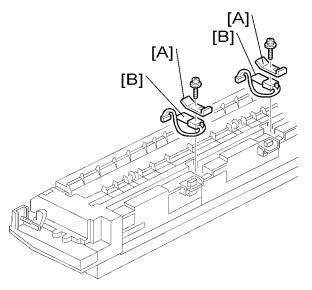
b205r932

1. Open the duplex unit.
2. Remove the fusing unit [A] (🖉 x2).

Thermistors

1. Remove the fusing unit. (📑 p.223 "Fusing Unit")

[A]
[B]
[A]
[B]

2. Remove the plates [A] (🔧 x1 each).

3. Replace the thermistors [B] (📖 x1).
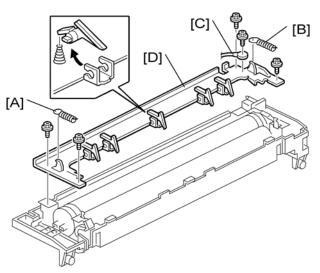
Thermostats

1. Remove the fusing unit. (👉 p.223 "Fusing Unit")

[B]

[A]

[C]
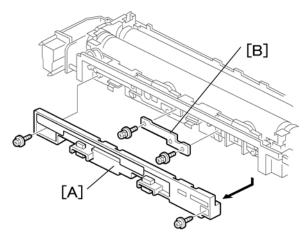
d120r113

2. Remove the fusing upper cover [A] ([B]: Screw with spring washer x2, [C]: Stud screw x2).
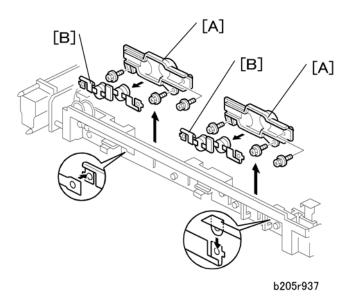
d017r504

3. Remove the pressure spring [A].

4. Remove the pressure spring [B].

5. Remove the ground wire [C] (🖉 x1).

6. Remove the hot roller stripper bracket [D] (🖉 x4).

b205r936
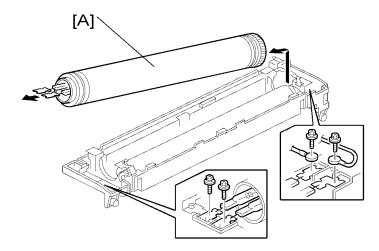
7. Remove the thermostat cover [A] (Tap 🖉 x 2).

8. Remove the plate [B] (🖉 x 2 , spring washers).

225

b205r937

9. Remove the thermostat holders [A] x2 (🔩 x3 each).

10. Replace the thermostats [B] x4.

Hot Roller and Fusing Lamps
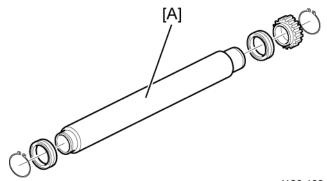
1. Remove the fusing unit. (📖 p.223 "Fusing Unit")

2. Remove these parts: (📖 p.224 "Thermostats").

   - Fusing upper cover

   - Pressure springs

   - Hot roller stripper bracket

3. Replace the fusing lamps (🔦 x4) and hot roller assembly [A].

   ⬇Note
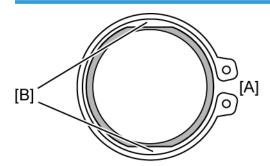
   - Do not touch the surface of the fusing lamp with bare hands.

   [A]

   d120r199
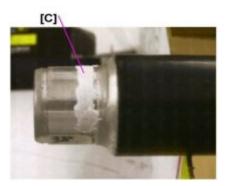
4. Replace the hot roller [A] (C-rings x2, Gear x1, Bushings x2).

Reinstallation

[B]   [A]
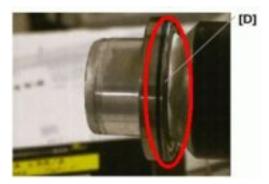
d120r200

1. At the rear (gear-side), attach the C-ring so that the opening [A] is 90 degrees from the D-cut sections [B] of the fusing roller.

   [C]

2. Apply enough grease at [C] so the metal surface is not visible.
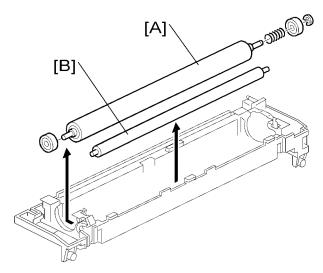
3. The grease should be visible after reattaching the bushing [D].

⭐**Important**

- Before you install the new hot roller, peel off 3 cm (1 inch) from both ends of the protective sheet on the new roller.
- Do not touch the surface of the rollers.
- When reinstalling the fusing lamp, secure the front screws first.
- Be careful not to damage the surface of the hot roller.

Pressure Roller/Cleaning Roller

1. Remove the fusing lamp and hot roller assembly. (☞ p.226 "Hot Roller and Fusing Lamps")

2. Replace the pressure roller [A] (☾ x1, Bushings x2, Spring x1).

3. Replace the cleaning roller [B].

❂Note
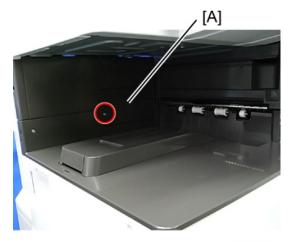
- Apply grease (Barrierta) to the inner surface of the bushing for the pressure roller.

- Do not touch the surface of the rollers.

Paper Exit Sensor/Paper Overflow Sensor

1. Remove:

    - Front right cover (☞ p.183 "Operation Panel")

    - Output tray (☞ p.185 "Output Tray")

    ❂Note
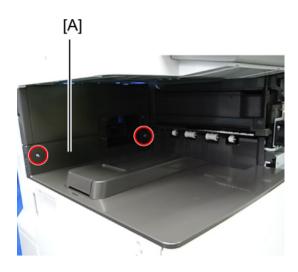
    - If the optional bridge unit, internal shift unit, or internal finisher has been installed, remove it.

d120r159

2. Remove the connector cover [A] (✇ x1).
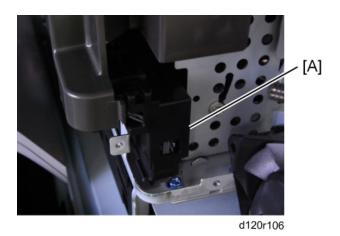
d120r160
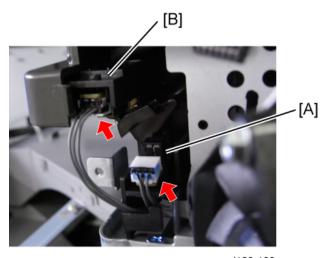
3. Remove the inner rear cover [A] (🖉 x2).

4. Remove the paper exit cover. (📖 p.184 "Paper Exit Cover")

d120r133

5. Remove the paper exit lower cover [A].

d120r106

6. Remove the sensor cover [A].

d120r108

7. Replace the exit sensor [A] (📖 x1).

8. Replace the overflow sensor [B] (📖 x1).

Paper Feed

⚠CAUTION

- Turn off the main power switch and disconnect the power cord before you start any of the procedures in this section.

Paper Feed Unit

1. Remove:

   - Paper feed clutch (📖 p.238 "Paper Feed Clutch")

   - Duplex unit (📖 p.245 "Duplex Unit")

2. Pull out the 1st and 2nd paper trays.

d120r172
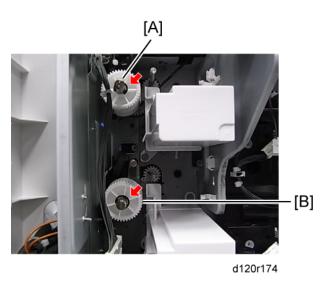
3. Remove the paper guide plate [A] (tab x 2 each)
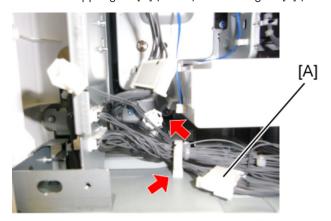
d120r173

4. Remove the harness cover [A] (🔩 x 1 each).

d120r174

5. Remove the upper gear [A] (⟲ x1) and lower gear [B] (⟲ x1).

d120r155

6. Remove the connector [A] (🔌 x2).

d120r175

7. Remove the paper feed unit [A] (✐ x 2, ▱ x 1 each).

   Pull the left side of the paper feed unit, and slide it to the left.
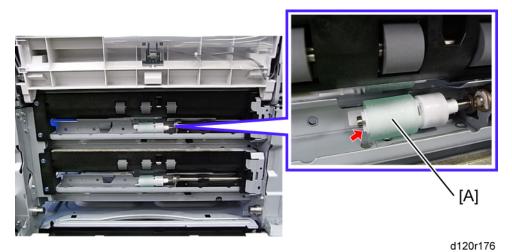
Separation Roller, Feed Roller

Tray 1 and Tray 2

1. Pull out the 1st and 2nd paper trays.

2. Remove the duplex unit (☞ p.245 "Duplex Unit")

d120r172

3. Remove the paper guide plate [A] (tab x 2 each).

d120r176
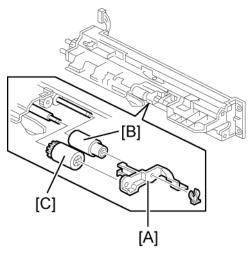
4. Replace the separation roller [A] (⟳ x 1).

d120r518

5. Remove the roller holder [A] (⚙ x 1).
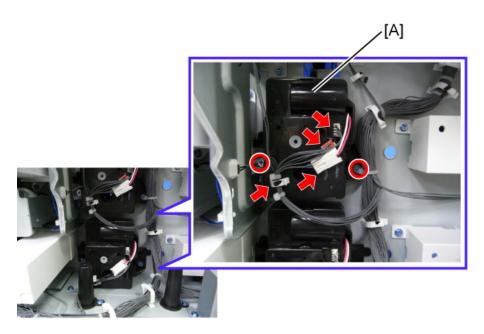
6. Replace the feed roller [B].

7. Replace the pick-up roller [C].

Paper Tray Lift Motors
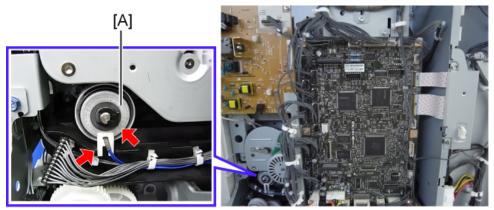
1. Remove:

   • Upper rear cover (☞ p.181 "Upper Rear Cover").

   • Lower rear cover (☞ p.181 "Lower Rear Cover").

2. Pull out the 1st and 2nd paper trays.

d120r134

3. Replace the paper lift motors [A] (🔧 x2 each, 🔌 x1, 🔲 x3 each).

Registration Clutch

1. Remove the upper rear cover (👈 p.181 "Upper Rear Cover")
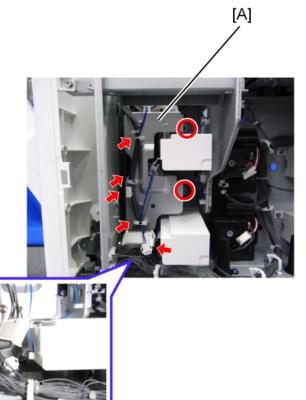
d120r136

2. Replace the registration clutch [A] (Ⓒ x1, 🔲 x1).
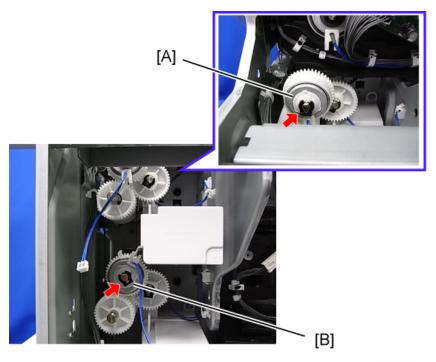
Transport Clutch

1. Remove:

- Upper rear cover (📖 p.181 "Upper Rear Cover")

- Lower rear cover (📖 p.181 "Lower Rear Cover")

d120r137

2. Remove the bracket [A] (🔧 x3, 🖲x 3, 📖 x 2).

d120r138

3. Replace the upper transport clutch [A] (⚙ x 1, 🔌 x 1).

4. Replace the lower transport clutch [B] (⚙ x 1, 🔌 x 1).

Paper Feed Clutch
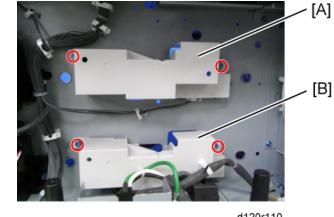
1. Remove the transport clutch. (👉 p.236 "Transport Clutch")

d120r139
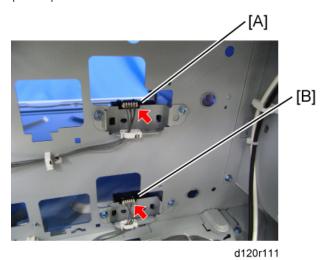
2. Replace the upper feed clutch [A] (⊘ x1, 🔌 x1, 🎴 x1).

3. Replace the lower feed clutch [B] (⊘ x1, 🔌 x1, 🎴 x1).

Paper Size Sensors

1. Remove:

   - Upper rear cover (📖 p.181 "Upper Rear Cover")

   - Lower rear cover (📖 p.181 "Lower Rear Cover")

2. Pull out the 1st and 2nd paper trays.

d120r110

3. Remove the tray 1 paper size sensor cover [A] (🔩 x 2) and/or, tray 2 paper size sensor cover [B] (🔩 x 2).

d120r111
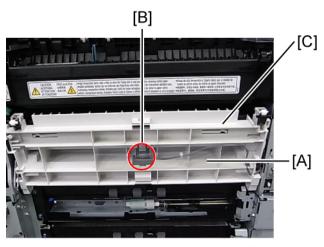
4. Replace the tray 1 paper size sensor [A] (🔌 x 1, Pawls x4) and/or tray 2 paper size sensor [B] (🔌 x 1, Pawls x4).

Registration Sensor

1. Remove the duplex unit (☛ p.245 "Duplex Unit").

d120r179

1. Displace the mylar [A] of the transfer roller guide.

2. Remove the image density sensor [B] (x1).

3. Open the transfer roller guide [C].
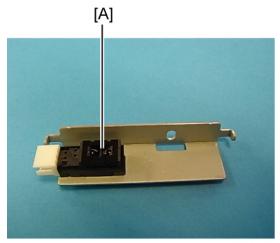
d120r180

4. Remove the paper guide plate [A] (x2).

d120r181

5. Remove the registration sensor bracket [A] (✐ x1, ▱ x1).
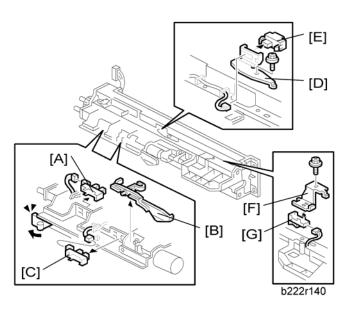
d120r182

6. Replace the registration sensor [A] (hook x4).

Vertical Transport, Paper Overflow, Paper End and Paper Feed Sensor

1. Remove the paper feed unit (📖 p.232 "Paper Feed Unit")

b222r140

2. Replace the paper overflow sensor [A].

3. Remove the paper end feeler [B] (hook, 🔲 x 1).

4. Replace the paper end sensor [C] (hook, 🔲 x 1)

5. Remove the vertical transport sensor bracket [D] (🔩 x 1, 🔌 x 1).

6. Replace the vertical transport sensor [E] (🔲 x 1, hook).

7. Remove the paper feed sensor bracket [F] (🔩 x 1).

8. Replace the paper feed sensor [G](🔲 x 1, hook).

Dust Collection Box

d120r140
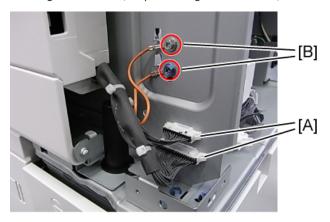
1. Open the front door.
2. Remove the dust collection box [A](🔧 x1).
3. Tap the dust collection box above a sheet of paper, to remove the paper dust.
4. Use a dry cloth to clean the inside of the dust collection box.

Duplex Unit
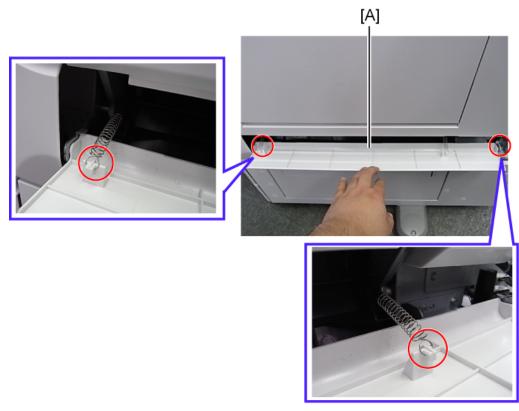
Duplex Unit

1. Remove:

    - Upper rear cover(p.181 "Upper Rear Cover")

    - Lower rear cover (p.181 "Lower Rear Cover")

    - Right rear cover (p.181 "Right Rear Cover")
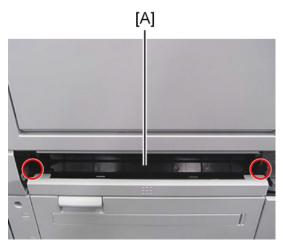
d120r501

2. Remove or disconnect two connectors [A].

3. Remove or disconnect two ground cables [B] (x 2).

d120r502
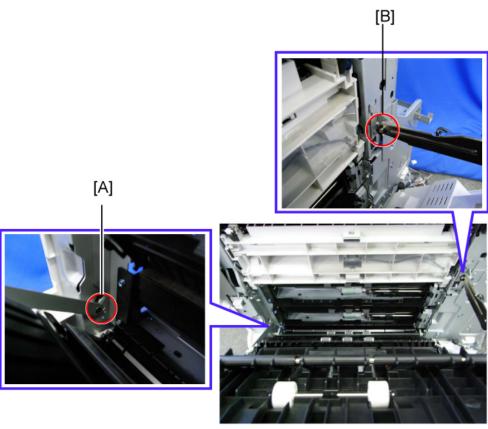
4. Remove the lower right cover [A] (spring x 2, tab x 2).

d120r503
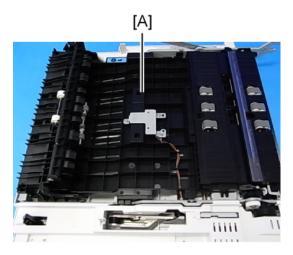
5. Remove the guide plate (tab x 2).

6. Open the duplex unit.

d120r504

7. Release the front arm [A] and rear arm [B] (🔩 x 1).

8. Slide the duplex unit to the front side, and then remove it.
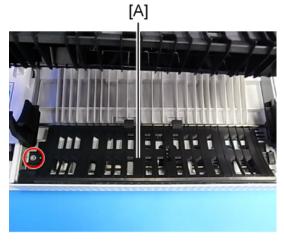
Duplex Entrance Sensor

1. Remove the duplex unit (☞ p.245 "Duplex Unit").
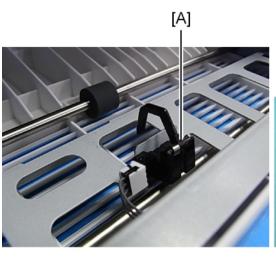
d120r506

2. Lift up the duplex guide plate [A] first when reinstalling the duplex outer guide plate.

d120r505

3. Remove the duplex outer guide plate [A] (🔩 x 1).
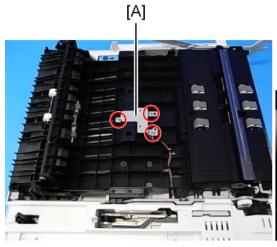
d120r507

4. Replace the duplex entrance sensor [A] (hook).

Duplex Exit Sensor

1. Remove the duplex unit (p.245 "Duplex Unit").
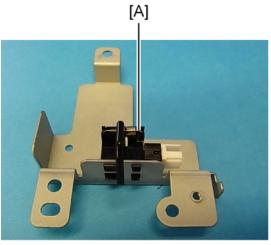
d120r508

2. Remove the duplex exit sensor assembly [A] (x 3, x 1).
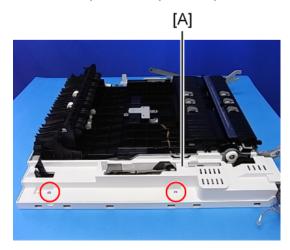
d120r509

3. Replace the duplex exit sensor [A] (hook).
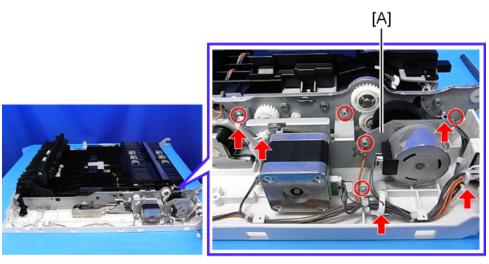
Duplex Motor/Bypass Motor

1. Remove the duplex unit (☞ p.245 "Duplex Unit").
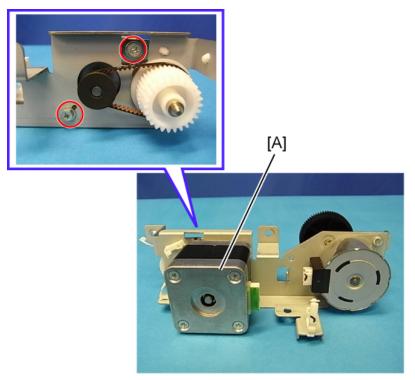
d120r510

2. Remove the duplex inner cover [A] (🖊 x 2).
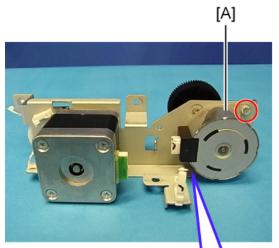
d120r511
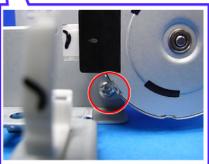
3. Remove the duplex entrance motor with the bracket [A] (✎ x 5, 🗐x 5, 🔌 x 2).

d120r512

4. Replace the separate the duplex entrance motor [A] from the bracket (✎ x 2).

[A]
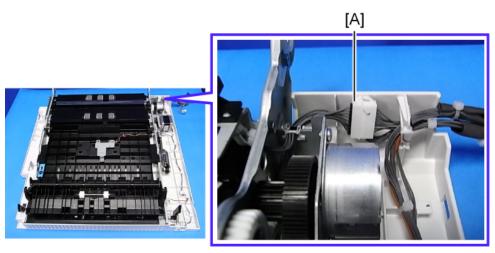
d120r513

5. Replace the by-pass motor [A] (🔩 x 2).
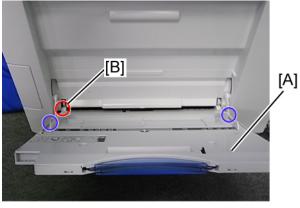
By-pass Tray Unit

1. Remove the duplex inner cover. (📖 p.250 "Duplex Motor/Bypass Motor ")

d120r514

2. Disconnect the harness [A].

d120r183

3. Open the by-pass tray unit [A].

4. Replace the by-pass tray unit (🔩x 2, hook [B]).

Note

- Use a flat-head screw driver or similar tool to push the hook [B] down.

By-pass Paper Length Sensor
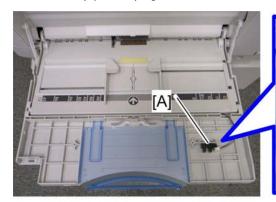
1. Open the by-pass tray unit.

d037r290

2. Remove the by-pass tray right cover [A] (🔧 x 2).
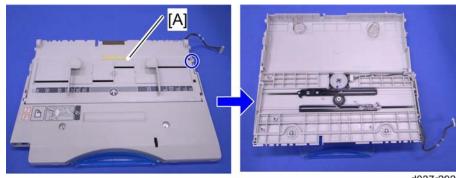
d037r291

3. Replace the by-pass paper length sensor [A] (🔌 x 1).
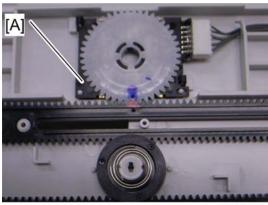
By-Pass Paper Size Sensor

1. Remove the by-pass tray unit ().

d037r292
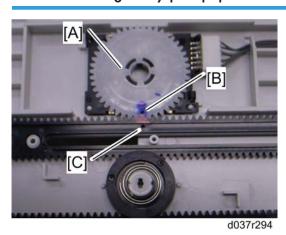
2. Remove the by-pass tray cover [A] (hook x 1).

d037r293

3. Replace the by-pass paper size sensor [A] (⬚ x 1).

When reinstalling the by-pass paper size sensor

d037r294

1. Adjust the projection [A] of the left side fence bar (it must be centered).

2. Install the by-pass paper size detection switch so that the hole [B] in this switch faces the projection [C] of the left side fence bar.

3. Reassemble the copier.

4. Plug in and turn on the main power switch.

5. Check this switch operation with SP5-803-046 (By-Pass Size Detection SW < Input Check).
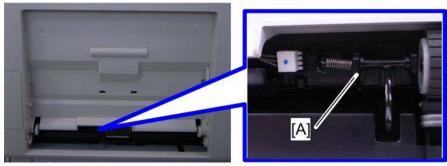
- Display on the LCD -

Paper Size	Display	Paper Size	Display
A3 SEF	00001001	A5 SEF	00001110
B4 SEF	00001011	B6 SEF	00001100

A4 SEF	00000011	A6 SEF	00001101
B5 SEF	00000111	Smaller A6 SEF	00001101

By-pass Paper End Sensor

1. Remove the by-pass tray unit. (p.252 "By-pass Tray Unit")

d037r300
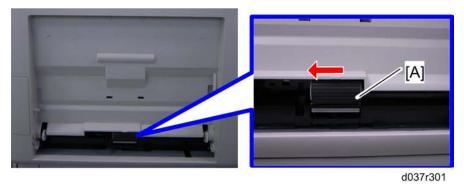
2. Replace the by-pass paper end sensor [A] (x 1, hook).

Reinstalling the By-pass Paper End Sensor

• Reinstall the right hook first and then the left hook using a flat-head screw driver or similar tool.

By-pass Feed Roller

1. Remove the by-pass tray unit. (p.252 "By-pass Tray Unit")

d037r301
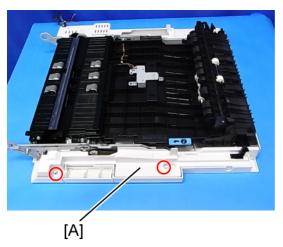
2. Replace the by-pass feed roller [A] (hook).
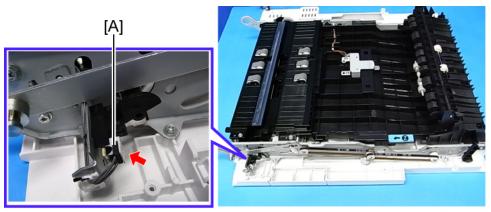
By-pass Tray HP Sensor

1. Remove the duplex unit. (📖 p.245 "Duplex Unit")

d120r184

2. Remove the duplex inner front cover [A] (🔩 x 2).

d120r185

3. Replace the by-pass HP sensor [A] (🔌 x 1, hook x4).

PCBs and Other Items

⚠️CAUTION

- Turn off the main power switch and disconnect the power cord before you start any of the procedures in this section.

Controller Board

⭐**Important**

- **If you intend to replace the NVRAM, upload its contents to an SD card with SP5-824 before you remove NVRAM and replace it with a new one. Never remove the NVRAM until after you have uploaded its contents.**
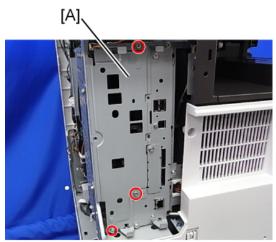
Before replacing the controller board in the model without HDD

When you replace the controller board in a model without a HDD, address book data can be copied from an old controller board to a new controller board using an SD card.

Copy the address book data to an SD card from the flash ROM on the controller board with **SP5-846-051** if possible.

Replacement Procedure
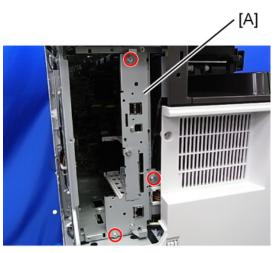
1. Remove the controller cover. (👉 p.179 "Controller Cover")

d120r144

2. Remove the FCU faceplate [A] (🔩 x3).
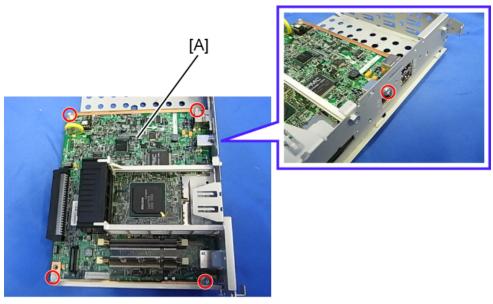
d120r145

3. Remove the controller board unit [A] ($\mathscr{F}$ x3).

⭐Important

- Before touching the controller board, always touch a metal surface to discharge any static that has accumulated on your hands.
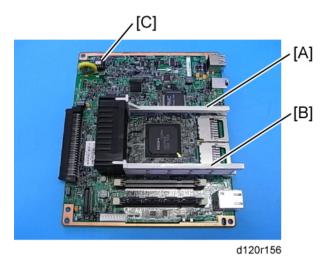
d120r146

4. Remove the controller board [A] ($\mathscr{F}$ x5).

⭐Important

- Before removing the controller board, remove the HDD and option interface boards.

d120r156

5. Remove the upper brace [A].

6. Remove the lower brace [B]

7. Remove the NVRAM [C] from the old board and install it on the new board.

8. If you have replaced the controller board, set the DIP switches on the new controller board to the same settings as the old board.

After installing the controller board

1. For a model without a HDD, do **SP5-846-052** to copy back the address book to the flash ROM on the controller board from the SD card to which you have already copied the address book data if possible.

2. If the customer is using the data encryption feature, the encryption key must be restored.

3. Turn the main power switch off and on.

NVRAM

The following data stored in the NVRAM will not be saved to the SD card when you perform an NVRAM data upload (SP5-824).

- Total counter value
- C/O, P/O counter values
- Duplex, A3/DLT/Over 420mm, Stapler, and Scanner counter values
- Engine SP data
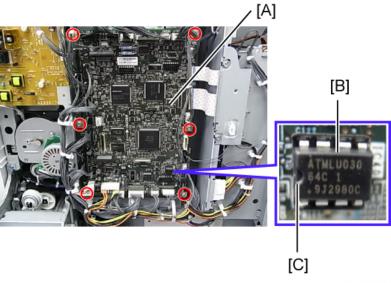
Therefore, whenever you perform an NVRAM upload/download, make sure to print out the SP Data List before you perform SP5-801-001 (Memory Clear: All Clear) or SP5-801-002 (Memory Clear: Engine).

1. Do SP5-990 001 to print the SMC report.

2. Stop all SDK applications if the VM card is installed.

3. Turn off the main power switch.

4. Remove the controller cover (🗡 x1). (📖 p.179 "Controller Cover")

5. Remove the VM card from SD card slot 2 if it is installed.

6. Put the SD card in SD card slot 2.

7. Turn on the main power switch.

8. Do SP5-824.

9. Touch "Execute" to start to upload the NVRAM data.

10. Turn off the main power switch and remove the SD card.

11. Remove the controller board. (📖 p.258 "Controller Board")

12. Remove the NVRAM and replace it with the new chip. (📖 p.258 "Controller Board")

13. Install the controller board.

14. Put the SD card with the NVRAM data in SD card slot 2.

15. Turn on the main power switch.

16. Do SP5-801 to initialize the new NVRAM.

17. To download the NVRAM data from the SD card in slot 2, do SP5-825.

18. Touch "Execute" to start to download the NVRAM data.

19. Turn off the main power switch and remove the SD card.

20. Turn on the main power switch.

21. Do SP5-990-001 to print another SMC report.

22. Compare this new SMC report with the report you printed in Step 1. If any of the SP settings are different, input the SP settings of the first report.

23. Do SP5-907 and input the brand and model name of the machine for Windows Plug & Play capability.

BCU Board

1. Remove:

   • Upper rear cover (📖 p.181 "Upper Rear Cover")

   • Lower rear cover (📖 p.181 "Lower Rear Cover")

d120r147

2. Replace the BCU board [A] (▨ x All, 🔧 x6).

3. Remove the NVRAM [B] from the old board and install it on the new board.

4. Set the DIP switches on the new BCU board to the same settings as the old board.

⬇Note

- Make sure the NVRAM is correctly installed on the BCU. Insert the NVRAM in the NVRAM slot with the "half-moon" pointing [C] to the left side.

When installing the new BCU

1. Remove the NVRAM from the old BCU.

2. Install the NVRAM on the new BCU after you replace the BCU.

3. Reassemble the machine.

4. Turn on the main power switch.

5. "SC995-01" occurs.

6. Enter the serial number with SP5-811-004.

7. Turn the main power switch off and on.

⬇Note
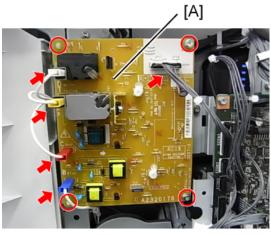
- Make sure you print out the SMC reports ("SP Mode Data" and "Logging Data") before you replace the NVRAM.

⚠CAUTION

- Keep NVRAM away from any objects that can cause static electricity. Static electricity can damage NVRAM data.

Power Pack

1. Remove:

    - Upper rear cover (☞ p.181 "Upper Rear Cover")

    - Lower rear cover (☞ p.181 "Lower Rear Cover")
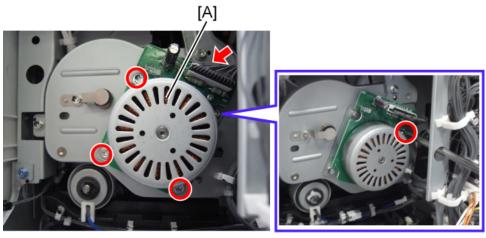
d120r148

2. Replace the power pack [A] (🔧 x 5, ✎ x2, Standoff x2).

Main Motor

1. Remove the upper rear cover (☞ p.181 "Upper Rear Cover")
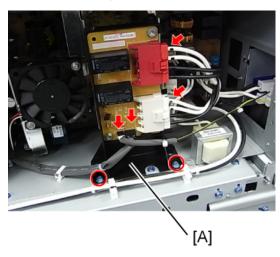
d120r135

2. Replace the main motor [A] (✏ x 4, 🔌 x 1).

SDB

1. Remove:
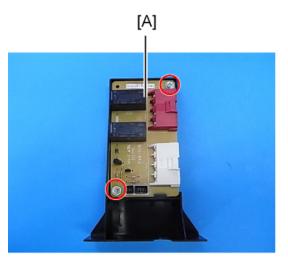
   • Optional finishers except internal finisher if it has been installed.

   • Left cover (☛ p.179 "Left Cover")

d120r149

2. Remove the SDB assembly [A] (🔌 x4, ✏ x2).
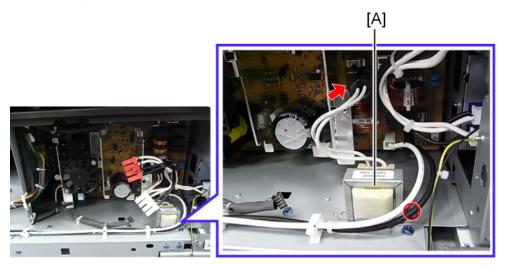
d120r161

3. Replace the SDB [A] (🖋 x2).
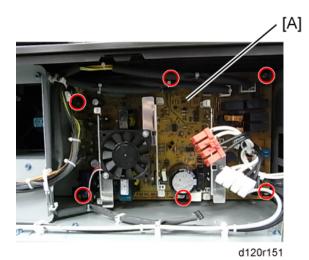
PSU

1. Remove:

   • Optional finishers except internal finisher if it has been installed.

   • SDB (📖 p.264 "SDB")

d120r150
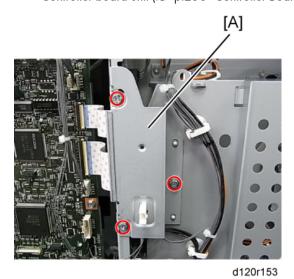
2. Remove the transformer [A] (🖋 x1, 🔌 x1) (For the 230 V machine only).

d120r151
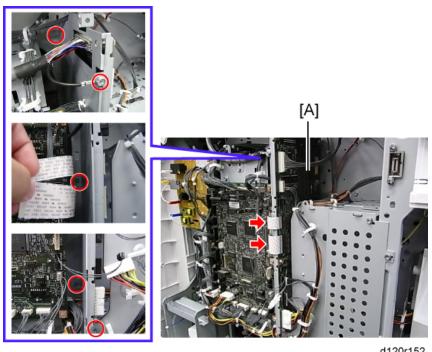
3. Replace the PSU [A] (📖 x all, 🔧 x5, Standoff x1).

IPU

1. Remove:

   • Upper rear cover. (📖 p.181 "Upper Rear Cover")

   • Lower rear cover. (📖 p.181 "Lower Rear Cover")

   • Controller board unit (📖 p.258 "Controller Board")

d120r153
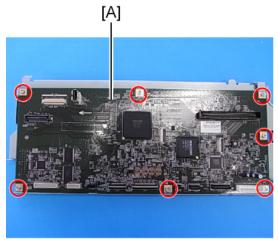
2. Remove the FFC cover [A] (🔧 x3).

266

d120r152

3. Remove the IPU with bracket [A] (🔩 x5, 🔌 x All, FFC x2).

d120r157

4. Replace the IPU [A] (🔩 x7).

HDD
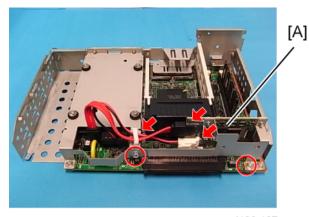
1. Before you replace the HDD:

   • Stop all SDK applications, and then remove it from the machine if the VM card is installed.

- Insert an SD card in SD card slot 2 (lower slot).

- Go into the SP mode.

- Do SP5-846 51 to upload the address book data to the SD card.

⭐**Important**
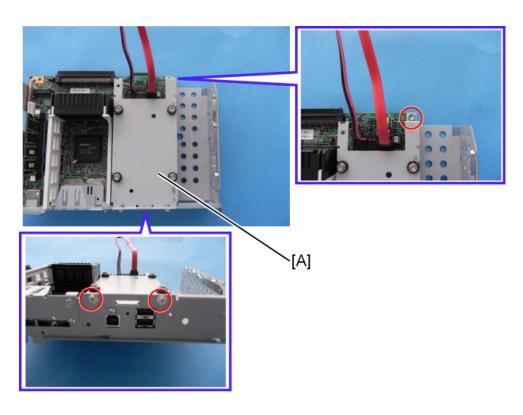
- **If the HDD is damaged, you may not be able to retrieve this data from the HDD.**

2. Remove the controller board. (📖 p.258 "Controller Board")
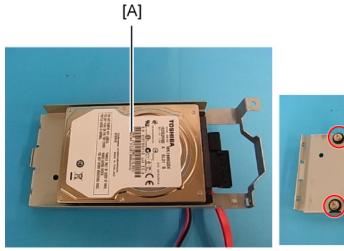
d120r187
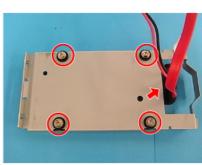
3. Remove the connecting board unit [A] (🔩 x2, 📇 x 2, 📇x 1).

d120r189

4. Remove the HDD unit [A] (🔩 x 3).

d120r188

5. Remove the old HDD [A] from its bracket (🔩 x4, 🔌 x2).

6. Install the new HDD unit.

7. Turn the main power switch off and on.

8. Format the HDD with SP5-832-1.

9. Do SP5-853 to copy the preset stamp data from the firmware to the hard disk.

10. Do SP5-846-52 to restore the address book data to the HDD.

After HDD Replacement:

- Never remove a used HDD unit from the work site (even if it is suspected of being damaged) without the consent of the client.

- The HDD must remain with the customer for disposal or safe keeping.

- The HDD may contain proprietary or classified (Confidential, Secret) information. Specifically, the HDD contains document server documents and data stored in temporary files created automatically during copy job sorting and jam recovery. Such data is stored on the HDD in a special format, so it cannot normally be read but it can possibly be recovered with illegal methods.

4

Copy Adjustments: Printing/Scanning

You must do these adjustment(s) after replacing any of the following parts:

- Scanner Wire
- Lens Block/SBU Assembly
- Scanner Drive Motor
- Polygon Mirror Motor
- Paper Side Fence
- Memory All Clear
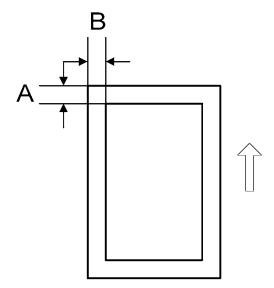
For more details about accessing SP modes, see Service Tables.

Printing

↓Note

- Make sure the paper is installed correctly in each paper tray before you start these adjustments.
- Use the Trimming Area Pattern (SP2-109-001, No.14) to print the test pattern for the following procedures.
- Set SP 2-109-001 to 0 again after completing these printing adjustments.

Registration - Leading Edge/Side-to-Side

A: Leading Edge Registration (3 ± 2 mm)

B: Side-to-side Registration (2 ± 1.5 mm)

1. Check the leading edge registration [A] for each paper feed station, and adjust them using SP1-001.

Tray	SP mode
Tray: Plain	SP1-001-002
Tray: Thick 1	SP1-001-003
Tray: Thick 2	SP1-001-004
By-pass: Plain	SP1-001-007
By-pass: Thick 1	SP1-001-008
By-pass: Thick 2	SP1-001-009
Duplex: Plain	SP1-001-013
Duplex: Thick 1	SP1-001-014
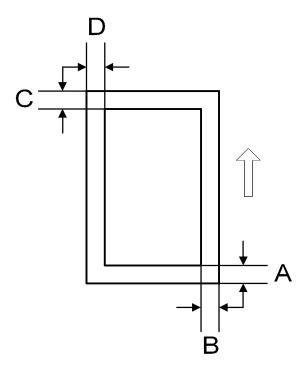
2. Check the side-to-side registration [B] for each paper feed station, and adjust them using SP1-002.

Tray	SP mode
By-pass	SP1-002-001
Tray 1	SP1-002-002
Tray 2	SP1-002-003
Tray 3 (Optional PFU tray 1 or LCT)	SP1-002-004
Tray 4 (Optional PFU tray 2)	SP1-002-005
Duplex (side 1)	SP1-002-006

Blank Margin

Note

- If the leading edge/side-to-side registration cannot be adjusted within the specifications, adjust the leading/left side edge blank margin.

A: Trailing Edge Blank Margin (3 ± 2 mm, duplex: 2 ± 2 mm)

B: Right Edge Blank Margin (2 + 2.5/-1.5 mm)

C: Leading Edge Blank Margin (-3 ± 2 mm)

D: Left Edge Blank Margin (-3 ±2 mm, duplex: -2 ± 1.5 mm)

1. Check the trailing edge [A], right edge [B], leading edge [C], left edge [D] blank margins, and adjust them using the following SP modes.

	SP mode
Leading Edge	SP2-103-001
Trailing Edge	SP2-103-002
Left Edge	SP2-103-003
Right Edge	SP2-103-004
Duplex: Trailing Edge: L Size: Plain	SP2-103-005
Duplex: Trailing Edge: M Size: Plain	SP2-103-006

	SP mode
Duplex: Trailing Edge: S Size: Plain	SP2-103-007
Duplex: Left Edge Plain	SP2-103-008
Duplex: Right Edge: Plain	SP2-103-009
Duplex: Trailing Edge: L Size: Thick	SP2-103-010
Duplex: Trailing Edge: M Size: Thick	SP2-103-011
Duplex: Trailing Edge: S Size: Thick	SP2-103-012
Duplex: Left Edge Thick	SP2-103-013
Duplex: Right Edge: Thick	SP2-103-014

- L Size: Paper Length is 297.1 mm or more
- M Size: Paper Length is 216.1 to 297 mm
- S Size: Paper Length is 216 mm or less.
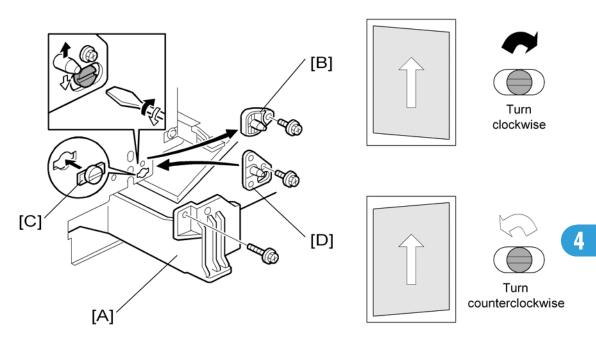
Main Scan Magnification

1. Use SP2-109-001, no.5 (Grid Pattern) to print the single-dot grid pattern.

2. Check the magnification, and adjust the magnification using SP2-102 (Magnification Adjustment Main Scan) if necessary. The specification is ± 1%.

Parallelogram Image Adjustment

Do the following procedure if a parallelogram is printed while adjusting the printing registration or the printing margin using a trimming area pattern.

Turn clockwise

Turn counterclockwise

⤵ Note

- The following procedure should be done after adjusting the side-to-side registration for each paper tray station.

1. Check whether the trimming area pattern (SP2-109, No.14) is printed as a parallelogram, as shown. If it is, do the following.
2. Remove the laser unit [A] (☞ p.205 "Laser Unit").
3. Remove the bracket [B] (☞ x2).
4. Install the adjusting cam [C] (P/N: A2309003).

RTB 45
Correction
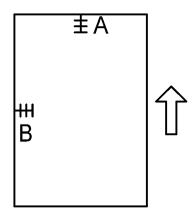
5. Secure the adjustment bracket [D] (P/N: A1849501) using the screw which was used for bracket [B]. However, do not tighten the screws at this time.
6. Adjusts the laser unit position by turning the adjusting cam. (Refer to the above illustration for the relationship between the image and the cam rotation direction).
7. Tighten the adjustment bracket.
8. Print the trimming area pattern to check the image. If it is still unsatisfactory, repeat steps 4 to 8.

Scanning

⤵ Note

- Before doing the following scanner adjustments, perform or check the printing registration/side-to-side adjustment and the blank margin adjustment.

- Use an S5S test chart to perform the following adjustments.

Registration: Platen Mode

A: Leading Edge Registration

B: Side-to-side Registration

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 using the following SP modes if necessary.
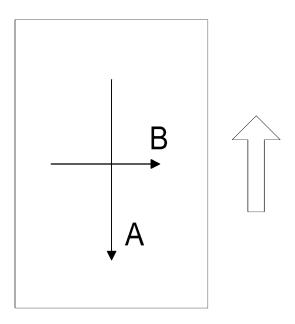
	SP mode
Leading Edge	SP4-010
Side-to-side	SP4-011

Magnification

♦Note

- Use an S5S test chart to do the following adjustment.
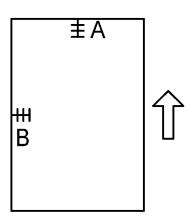
1. Place the test chart on the exposure glass and make a copy from one of the feed stations.

2. Check the magnification ratio. Use SP4-008 (Scanner Sub Scan Magnification) to adjust if necessary. Specification: ±0.9%.

ADF Image Adjustment

Registration

A: Leading Edge Registration

B: Side-to-side Registration

↓Note

- Make a temporary test chart as shown above using A3/DLT paper.

1. Place the temporary test chart on the ADF and make a copy from one of the feed stations.

2. Check the registration, and adjust using the following SP modes if necessary.

	SP mode
Side-to Side: Front	SP6-006-001
Side-to Side: Rear	SP6-006-002
Leading Edge	SP6-006-003
Buckle: Duplex front	SP6-006-005
Buckle: Duplex rear	SP6-006-006
Rear Edge Erase	SP6-006-007

Sub Scan Magnification

↓Note

- Make a temporary test chart as shown above using A3/DLT paper.

1. Place the temporary test chart on the ADF and make a copy from one of the feed stations.

2. Check the magnification, and adjust using the following SP modes if necessary. The specification is ±1%.

	SP mode
Sub scan magnification	SP6-017-001

Touch Screen Calibration

After clearing the memory, or if the touch panel 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.

1. Press ⊞, input 1993 at the ten-key pad, and then press ☺ 5 times to open the Self-Diagnostics menu.

b205r974

2. On the touch screen press "Touch Screen Adjust" (or press ① on the ten-key pad).

b205r975

3. Use a pointed (not sharp!) tool to press the mark at the upper left of the screen (°↖).

4. Press the mark at the lower right of the screen (↘o) after it appears.

5. Touch a few spots on the touch panel 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 ⊕ on the ten-key pad).

7. Touch [#] Exit on the screen to close the Self-Diagnostic menu and save the calibration settings.

4

5. System Maintenance

Service Program Mode

⚠️CAUTION

- Make sure that the data-in LED (⟳) is not on before you go into the SP mode. This LED indicates that some data is coming to the machine. When the LED is on, wait for the copier to process the data.

SP Tables

See "Appendices" for the following information:

- System SP Tables

Enabling and Disabling Service Program Mode

🔽Note

- The Service Program Mode is for use by service representatives only. If this mode is used by anyone other than service representatives for any reason, data might be deleted or settings might be changed. In such case, product quality cannot be guaranteed any more.

Entering SP Mode

For details, ask your supervisor.

Exiting SP Mode

- Press "Exit" on the LCD twice to return to the copy window.
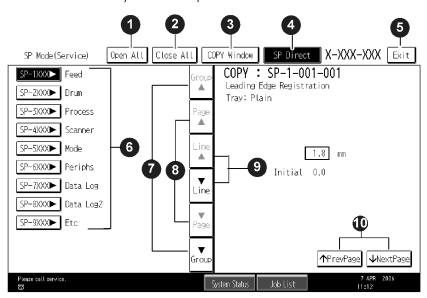
Types of SP Modes

- System SP: SP modes related to the engine functions
- Printer SP: SP modes related to the controller functions
- Scanner SP: SP modes related to the scanner functions
- Fax SP: SP modes related to the fax functions

Select one of the Service Program modes (System, Printer, Scanner, or Fax) from the touch panel as shown in the diagram below after you access the SP mode. This section explains the functions of the System/Printer/Scanner SP modes. Refer to the Fax service manual for the Fax SP modes.

SP Mode Button Summary

Here is a short summary of the touch-panel buttons.

1	Opens all SP groups and sublevels.
2	Closes all open groups and sublevels and restores the initial SP mode display.

3	Opens the copy window (copy mode) so you can make test copies. Press SP Mode (highlighted) in the copy window to return to the SP mode screen,
4	Enter the SP code directly with the number keys if you know the SP number. Then press ⊕. (The required SP Mode number will be highlighted when pressing ⊕. If not, just press the required SP Mode number.)
5	Press two times to leave the SP mode and return to the copy window to resume normal operation.
6	Press any Class 1 number to open a list of Class 2 SP modes.
7	Press to scroll the show to the previous or next group.
8	Press to scroll to the previous or next display in segments the size of the screen display (page).
9	Press to scroll the show the previous or next line (line by line).
10	Press to move the highlight on the left to the previous or next selection in the list.

5
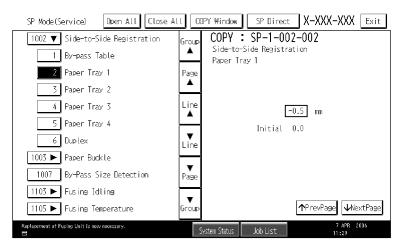
Switching Between SP Mode and Copy Mode for Test Printing

1. In the SP mode, select the test print. Then press "Copy Window".

2. Use the copy window (copier mode), to select the appropriate settings (paper size, etc.) for the test print.

3. Press Start ⊚ to start the test print.

4. Press SP Mode (highlighted) to return to the SP mode screen and repeat from step 1.

Selecting the Program Number

Program numbers have two or three levels.

1. Refer to the Service Tables to find the SP that you want to adjust before you begin.

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 show 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 it. The small entry box on the right activates and shows the below default or the current settings.

→Note

- Refer to the Service Tables for the range of allowed settings.

5. Do this procedure to enter a setting:

   - Press ☺ to toggle between plus and minus and use the keypad to enter the appropriate number. The number you enter writes over the previous setting.

   - Press ⊕ to enter the setting. (The value is not registered if you enter a number that is out of range.)

   - Press "Yes" when you are prompted to complete the selection.

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 ◉ and then press SP Mode (highlighted) in the copy window to return to the SP mode display.

7. Press Exit two times to return to the copy window when you are finished.

Exiting Service Mode

Press the Exit key on the touch-panel.

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 service the machine and turn the machine power switch off and on. It is not necessary to ask the Administrator to log in again each time the main power switch is turned on.

2. Go into the SP mode and set SP5-169 to "1" if you must use the printer bit switches.

3. After machine servicing is completed:

   - Change SP5-169 from "1" to "0".

   - Turn the machine power switch off and on. Tell the administrator that you have completed servicing the machine.

   - The Administrator will then set the "Service Mode Lock" to ON.

Remarks

The following symbols are used in the SP mode tables.

FA: Factory setting

(Data may be adjusted from the default setting at the factory. Refer to the factory setting sheets enclosed. You can find it under the jammed paper removal decal.)

DFU: Design/Factory Use only

Do not touch these SP modes in the field.

A sharp (#) to the right hand side of the mode number column means that the main power switch must be turned off and on to effect the setting change.

An asterisk (*) to the right hand side of the mode number column means that this mode is stored in the NVRAM. If you do a RAM clear, this SP mode will be reset to the default value. "ENG" and "CTL" show which NVRAM contains the data.

- ENG: NVRAM on the BCU board
- CTL: NVRAM on the controller board

The settings of each SP mode are explained in the right-hand column of the SP table in the following way.

[Adjustable range / **Default setting** / Step] Alphanumeric

🔽 Note

- If "Alphanumeric" is written to the right of the bracket as shown above, the setting of the SP mode shows on the screen using alphanumeric characters instead of only numbers. However, the settings in the bracket in the SP mode table are explained by using only the numbers.

SSP: This denotes a "Special Service Program" mode setting.

Firmware Update

To update the firmware for this machine, you must have the new version of the firmware downloaded onto an SD (Secure Digital) Card. The SD Card is inserted into SD Card Slot 2 on the left rear side of the controller box.

Type of Firmware

Type of firmware	Function	Location of firmware	Message shown
Engine	Printer engine control	BCU Flash ROM	Engine
System/Copy Application	Operating system	Flash ROM on the controller board	System/Copy
Printer Application	Feature application	Flash ROM on the controller board	Printer
Scanner Application	Feature application	Flash ROM on the controller board	Scanner
Fax Application	Feature application	Flash ROM on the controller board	Fax
NIB	Network Interface	Flash ROM on the controller board	Network Support
Operation Panel	Panel control	Operation Panel	Lcdc.
Fax FCU	Fax control	FCU	GWFCU3.5-1(WW)
Remote Fax	Fax control	Flash ROM on the controller board	Remote Fax
Language	Language firmware Two languages can be selected from 16 languages.	Operation Panel	Language 1
			Language 2
WebDocBox	Document server application	Flash ROM on the controller board	Web Uapl
WebSys	Web Service application	Flash ROM on the controller board	Web Support

Type of firmware	Function	Location of firmware	Message shown
PDF	PDF direct printing		PDF
PS	Page description language (PostScript3)	PS3 SD card	PS
RPCS	Page description language (RPCS for XPS driver data process)	Flash ROM on the controller board	RPCS
MediaPrint:JPEG/IFF	MediaPrint control	Flash ROM on the controller board	MediaPrint:JPEG/TIFF
Netfile Application	Feature application	Flash ROM on the controller board	NetworkDocBox
Summary font	Summary fonts	Flash ROM on the controller board	FONT
PCL Font	PCL fonts	Flash ROM on the controller board	FONT1
PS 3 font	Post Script 3 fonts	Flash ROM on the controller board	FONT2
ARDF	ARDF control	ARDF	ADF
Finisher	Finisher control	Finisher	Finisher
Java VM	SDK application	Java VM SD card	SDK
Data Overwrite Security	Security application	Flash ROM on the controller board	HDD Format Option

Before You Begin

An SD card is a precision device. Always observe the following precautions when you handle SD cards:

- Always switch the machine off before you insert an SD card. Never insert the SD card into the slot with the power on.
- Do not remove the SD card from the service slot after the power has been switched on.
- Never switch the machine off while the firmware is downloading from the SD card.

- Keep SD cards in a safe location where they are not exposed to high temperature, high humidity, or exposure to direct sunlight.

- Always handle SD cards with care. Do not bend or scratch them. Do not let the SD card get exposed to shock or vibration.

- Make sure that the write protection of an SD card is unlocked when you download an application to it. If not, downloading fails and a download error (e.g. Error Code 44) occurs during a firmware upgrade.

Keep the following points in mind when you use the firmware update software:

- "Upload" means to send data from the machine to the SD card. "Download" means to send data from the SD card to the machine.

- To select an item on the LCD, touch the appropriate button on the soft touch-screen of the LCD, or, press the appropriate number key on the 10-key pad of the operation panel. For example, when "Exit (0)" shows on the screen you can touch the Exit button on the screen, or, press the ⊘ button on the operation panel of the copier.

- Make sure that the machine is disconnected from the network to prevent a print job for arriving while the firmware update is in progress before you start the firmware update procedure.

Updating Firmware

Preparation

- If the SD card is blank, make a "romdata" folder on the SD card.

- If the card already contains a "romdata" folder, copy the "firmware" to the folder.

Updating Procedure

1. Turn off the main power switch.

2. Remove the controller cover (🔧 x 1).

3. Insert the SD card into SD Card Slot 2. Make sure the label on the SD card faces the front side of the machine.

4. Slowly push the SD card into the slot so it locks in place. You will hear it click. Make sure the SD card locks in place.

   🔽 Note

   - To remove the SD, push it in to unlock the spring lock. Then release it so it pops out of the slot.

5. Disconnect the network cable from the copier if the machine is connected to a network.

6. Switch the main power switch on. After about 45 seconds, the initial version update screen appears on the LCD in English.

7. On the screen, touch the button or press the corresponding number key on the operation panel to select the item in the menu that you want to update.

ROM/NEW	What it means
ROM:	Tells you the number of the module and name of the version currently installed. The first line is the module number, the second line the version name.
NEW:	Tells you the number of the module and name version on the SD card. The first line is the module number, the second line the version name.

↓Note

- Controller, engine and operation panel firmware cannot be updated at the same time. It is recommended to update firmware modules one by one.

8. Touch "UpDate (#)" (or ⊕) to start the update.

↓Note

- The progress bar does not show for the operation panel firmware after you touch "OpPanel". The power on key flashes on and off at 0.5 s intervals when the LCDC firmware is updating. The power key flashes on and off at three seconds intervals when the update is finished.

9. The "Update is Done" message appears on the operation panel after completing the updating. The message differs depending on the firmware that has been updated.

10. Switch the copier main power switch off when you see the "Update is Done" message or follow the procedure that is displayed on the operation panel.

11. Press in the SD card to release it. Then remove it from the slot.

12. Switch the copier on for normal operation.
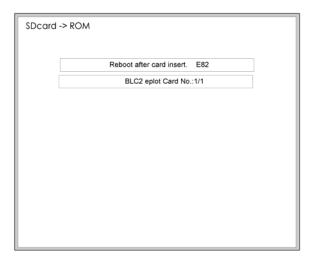
Error Messages

An error message shows in the first line if an error occurs during the download.

The error code consists of the letter "E" and a number. The example above shows error "E24" displayed. For details, refer to the Error Message Table. ()

Firmware Update Error

If a firmware update error occurs, this means the update was cancelled during the update because the module selected for update was not on the SD card.

```
SDcard -> ROM

                    Reboot after card insert.    E82
                    BLC2 eplot Card No.:1/1
```

5 Recovery after Power Loss

If the ROM update is interrupted as a result of accidental loss of power while the firmware is updating, then the correct operation of the machine cannot be guaranteed after the machine is switched on again. If the ROM update does not complete successfully for any reason, then in order to ensure the correct operation of the machine, the ROM update error will continue to show until the ROM is updated successfully.

In this case, insert the card again and switch on the machine to continue the firmware download automatically from the card without the menu display.

Updating the LCDC for the Operation Panel

Do the following procedure to update the LCDC (LCD Control Board).

1. Turn off the main power switch.

2. Remove the SD slot cover (🖊 x 1).

3. Insert the SD card into SD Card Slot 2.

4. Switch the copier main switch on.

5. The initial screen opens in English after about 45 seconds.

6. Touch "Ope Panel.xx".

7. "xx" differs depending on the destination.

8. Touch "UpDate(#) or (⊕) to start the update.

9. Downloading starts after about 9 seconds.

10. The operation panel goes off and the main power on key flashes in red at 0.5 s intervals when the data is downloading. The same key starts flashing in green at 1 s intervals when the update is finished.

11. Switch the copier main power switch off and remove the SD card. Then switch the copier on.

Update Procedure for App2Me Provider

Follow this procedure to update App2Me if a new version is available.

1. Push the [User/Tools] key on the operation panel.

2. If an administrator setting is registered for the machine, Step 3 and Step 4 are required. Otherwise, skip to step 5.

3. Push [Login/Logout] on the operation panel.

4. Login with the administrator user name and password.

5. Touch "Extended Feature Settings" twice on the LCD.

6. Touch each of the applications until the status changes to "Stop".

7. Turn off the main power switch, and then remove the SD Card which contains Java-VM.
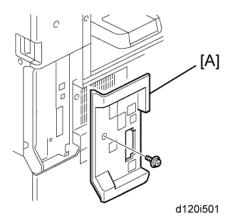
d377i501

8. Prepare the newer App2Me Provider zip file from the Firmware Download Center, and then unzip the zip file. (The folder name is "337051920".)

9. Copy the App2Me Provider folder into the specified path for the SD Card which contains Java-VM. The path is:

"SD_Card Drive\ sdk\dsdk\dist\337051920"

10. Turn the SD card label face to the front of the machine, and then push it slowly into Slot 2 (lower slot) until you hear a click.

11. Turn on the main power switch.

12. Press [User Tools] on the operation panel.

13. Touch the "Extended Feature Settings" button twice.

14. Touch the "Extended Feature Info" tab on the LCD.

15. Touch the "App2Me" line.

16. Set the setting of the "Auto Start" to "On".

17. Touch the "Exit" button.

18. Exit the [User Tools/Counter] settings.

⭐**Important**
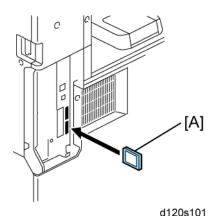
- App2Me and all other running applications on the SD Card which contains Java-VM must be shut down before removing the SD Card contains Java-VM in order to update the firmware, back up NVRAM, install the browser unit, or execute application move or undo with SP5-873.

- After the SD Card which contains Java-VM is re-inserted, App2Me (and any other Java-VM applications used by the customer) must be switched on after the machine is switched on.

Browser Unit Update Procedure

d120i501

1. Remove the controller cover [A] (✒ x1).

d120s101

2. Turn the SD-card label face of the browser unit to the front of the machine. Then push it slowly into slot 1 or slot 2 [A] until you hear a click.

3. Plug in and turn on the main power switch.

4. Push the "User Tools" key.

   - If an administrator setting is registered for the machine, step 5 and 6 are required. Otherwise, skip to the step 7

5. Push the "Login/ Logout" key.

6. Login with the administrator user name and password.

7. Touch "Extended Feature Settings" twice on the LCD.

8. Touch "Uninstall" on the LCD.

9. Touch the "Browser" line

10. Confirmation message appears on the LCD.

11. Touch "Yes" to proceed.

12. Reconfirmation message appears on the LCD.

13. Touch "Yes" to uninstall the browser unit.

14. You will see "Uninstalling the extended feature... Please wait.", and then "Completed".

15. Touch "Exit" to go back to the setting screen.

16. Exit "User/Tools" setting, and then turn off the main power switch.

17. Remove the SD card of the browser unit from the SD card slot.

18. Overwrite the updated program in the "sdk" folder of the browser unit application with PC.

19. Do the "Installation Procedure" to install the browser unit.

Handling Firmware Update Errors

An error message shows in the first line if an error occurs during a download. The error code consists of the letter "E" and a number ("E20", for example).

Error Message Table
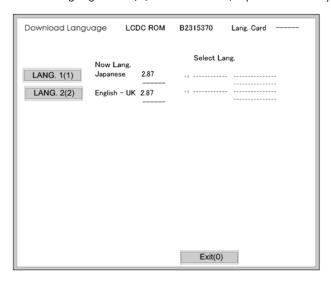
Code	Meaning	Solution
20	Cannot map logical address	Make sure the SD card is inserted correctly.
21	Cannot access memory	HDD connection incorrect or replace hard disks.
22	Cannot decompress compressed data	Incorrect ROM data on the SD card, or data is corrupted.
23	Error occurred when ROM update program started	Controller program abnormal. If the second attempt fails, replace controller board.
24	SD card access error	Make sure SD card inserted correctly, or use another SD card.
30	No HDD available for stamp data download	HDD connection incorrect or replace hard disks.
31	Data incorrect for continuous download	Insert the SD card with the remaining data required for the download, the re-start the procedure.
32	Data incorrect after download interrupted	Execute the recovery procedure for the intended module download, then repeat the installation procedure.
33	Incorrect SD card version	Incorrect ROM data on the SD card, or data is corrupted.
34	Module mismatch - Correct module is not on the SD card)	SD update data is incorrect. Acquire 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 incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.
36	Cannot write module – Cause other than E34, E35	SD update data is incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.

40	Engine module download failed	Replace the update data for the module on the SD card and try again, or replace the BCU board.
42	Operation panel module download failed	Replace the update data for the module on the SD card and try again, or replace the LCDC.
43	Stamp data module download failed	Replace the update data for the module on the SD card and try again, or replace the hard disks.
44	Controller module download failed	Replace the update data for the module on the SD card and tray again, or replace controller board.
50	Electronic confirmation check failed	SD update data is incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.

5

Installing Another Language

Many languages are available. But you can only switch between two languages at a time. Do the following procedure to select the two languages you want. You can select both of the languages you want from the user interface on the operation panel.
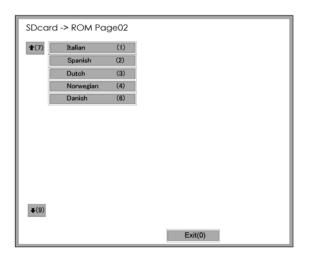
1. Switch the copier main power switch off.

2. Remove the controller cover (🔩 x 1).

3. Insert the SD card with the language data into SD Card Slot 2.

4. Switch the copier main power switch on. The initial screen opens after about 45 seconds.

5. Touch "Language Data (2)" on the screen (or press the "2" key).

6. Touch "LANG. 1(1)" or "LANG. 2(2)"

Key	What it does
LANG. 1(1)	Touch this button on the screen (or press the "1" key on the 10-key pad) to open the next screen so you can select the 1st language.
LANG. 1(2)	Touch this button on the screen (or press the "2" key on the 10-key pad) to open the next screen so you can select the 2nd language.
Exit (0)	Touch this key on the screen (or press the "0" key on the 10-key pad) to quit the update procedure and return to normal screen.

7. Touch "LANG 1(1)" to select the 1st Language. Touch "LANG (2)" to select the 2nd Language.

8. Touch the appropriate button on the screen (or press the number on the 10-keypad) to select a language as the 1st (or 2nd) language.

   • If a language is already selected, it will show in reverse.

   • Touching "Exit (0)" returns you to the previous screen.

9. If you do not see the language that you want to select, touch "↑(7)" or "↓(9)" on the screen (or press the "7" or "9" key) to show more choices.
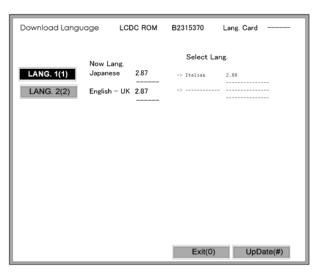
   The Download Screen opens after you select a language.

   The 1st or 2nd language selected for updating shows.

   The following show to right of the selection:

   • 1. The first column shows the language currently selected.

   • 2. The 2nd column shows the language selected to replace that language.

   The example below shows that the download will replace "Japanese" with "Italian" as the 1st language.

10. Touch "Update(#)" on the screen (or press ⊕) to start the download.

    Another screen with a progress bar does not show when the language is downloading.

    The following occur at the time the language is downloading:

    • The operation panel switches off.

    • The LED on the power on key flashes rapidly.

11. After the message of installation completed has shown on the LCD, switch the copier main power switch off. Then remove the SD card from the slot.

12. Switch the copier main power switch on to resume normal operation.

Reboot/System Setting Reset

Software Reset

You can reboot the software with one of the following two procedures:

1. Turn the main power switch off and on.

2. Press and hold down ⊙ and ⊕ together for over 10 seconds. When the machine beeps once, release both buttons. After "Now loading. Please wait" shows for a few seconds, the copy window will open. The machine is ready for normal operation.

System Settings and Copy Setting Reset

System Setting Reset

The system settings in the UP mode can be reset to their defaults. Use the following procedure.

1. Press User Tools/Counter ⬥/⒓₃.

2. Hold down ⊕ and then press System Settings.

> **⬇Note**
>
> • You must press ⊕ first.

3. Press yes when the message prompts you to confirm that you want to reset the system settings.

4. Press exit when the message tells you that the settings have been reset.

Copier Setting Reset

Use the following procedure to reset the copy settings in the UP mode to their defaults.

1. Press User Tools/Counter ⬥/⒓₃.

2. Hold down ⊕ and then press Copier/Document Server Settings.

⬇Note

- You must press ⊕ first.

3. Press "Yes" when the message prompts you to confirm that you want to reset the Copier Document Server settings.

4. Press exit when the message tells you that the settings have been reset.
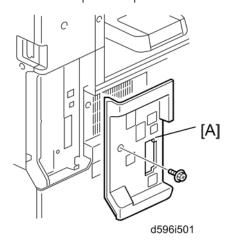
NVRAM Data Upload/Download

Uploading Content of NVRAM to an SD card
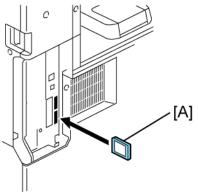
Do the following procedure to upload SP code settings from NVRAM to an SD card.

⬇**Note**

- This data should always be uploaded to an SD card before the NVRAM is replaced.

- Make sure that the write protection of an SD card is unlocked

1. Do SP5-990-001 (SMC Print) before you switch the machine off. You will need a record of the NVRAM settings if the upload fails.

2. Switch the copier main power switch off.

d596i501

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

d120s101

4. Insert the SD card [A] into SD slot 2. Then switch the copier on.

5. Execute SP5-824-001 (NVRAM Data Upload) and then press the "Execute" key.

6. The following files are coped to an NVRAM folder on the SD card when the upload procedure is finished. The file is saved to the path and the following filename:

NVRAM\<serial number>.NV

Here is an example with Serial Number "K5000017114":

NVRAM\K5000017114.NV

7. In order to prevent an error during the download, be sure to mark the SD card that holds the uploaded data with the number of the machine from which the data was uploaded.

🔽 Note

- You can upload NVRAM data from more than one machine to the same SD card.

Downloading an SD Card to NVRAM

Do the following procedure to download SP data from an SD card to the NVRAM in the machine.

- The NVRAM data down load may fail if the SD card with the NVRAM data is damaged, or if the connection between the controller and BCU is defective.
- Do the download procedure again if the download fails.
- Do the following procedure if the second attempt fails:
- Enter the NVRAM data manually using the SMC print you created before uploading the NVRAM data.

1. Switch the copier main power switch off.
2. Remove the controller cover (🔧 x 1).
3. Insert the SD card with the NVRAM data into SD slot 2.
4. Switch the copier main power switch on.
5. Do SP5-825-001 (NVRAM Data Download) and press the "Execute" key.

🔽 Note

- The serial number of the file on the SD card must match the serial number of the machine for the NVRAM data to download successfully. The download fails if the serial numbers do not match.

This procedure does not download the following data to the NVRAM:

- Total Count
- C/O, P/O Count

Address Book Upload/Download
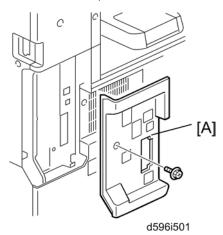
Information List

The following information is possible to be uploaded and downloaded.
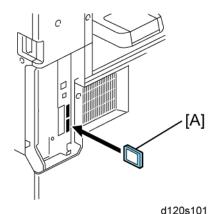
Information	
• Registration No. • User Code • E-mail • Protection Code • Fax Destination • Fax Option • Group Name • Key Display	• Select Title • Folder • Local Authentication • Folder Authentication • Account ACL • New Document Initial ACL • LDAP Authentication

Download

1. Prepare a formatted SD card.

2. Make sure that the write-protection on the SD card is off.

3. Turn off the main power switch.

d596i501

4. Remove the controller cover [A] (✏ x 1).

d120s101

5. Install the SD card [A] into the SD card slot 2 (for service use).

6. Turn on the main power switch.

7. Enter the SP mode.

8. Do SP5-846-051 (Backup All Addr Book).

9. Exit the SP mode, and then turn off the main power switch.

10. Remove the SD card from the SD card slot 2.

11. Install the controller cover.

↓Note

- If the capacity of SD card is not enough to store the local user information, an error message is displayed.

- Carefully handle the SD card, which contains user information. Do not take it back to your location.

Upload

1. Turn off the main power switch.

2. Remove the controller cover (🖊 x 1).

3. Install the SD card, which has already been uploaded, into the SD card slot 2.

4. Turn on the main power switch.

5. Enter the SP mode.

6. Do SP5-846-052 (Restore All Addr Book).

7. Exit the SP mode, and then turn off the main power switch.

8. Remove the SD card form the SD card slot 2.

9. Install the controller cover.

Note

- The counter in the user code information is initialized after uploading.

- The information of an administrator and supervisor cannot be downloaded nor uploaded.

- If there is no data of address book information in the SD card, an error message is displayed.

5

LED and DIP Switches

LEDs

Controller

Number	Normal	Controller Software Download	Error
LED 1	Off	Blinking	Off
LED 2	Blinking	Blinking	Lit or Off

BCU

Number	Normal	Controller Software Download	Error
LED 1	Lit	Lit	Off or Blinking
LED 2	Blinking	Lit	Lit (except downloading) or Off

DIP Switches

Controller

SW2

Number	OFF	ON
1	Boot from SD card	Default: Boot from Flash ROM
2 to 4	Default: OFF DFU	---

BCU

SW102

RTB 32 Deleted	Destination	Bit			
		1	2	3	4
	Japan	OFF	OFF	OFF	OFF
	NA	ON	OFF	OFF	OFF
	EU/ASIA	OFF	ON	OFF	OFF

Using the Debug Log

Overview

This machine provides a Save Debug Log feature that allows the Customer Engineer to save and retrieve error information for analysis.

Every time an error occurs, debug information is recorded in volatile memory. 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:
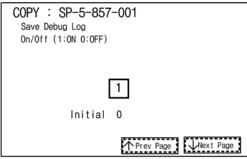
- Switching on the debug feature so error information is saved directly to the HDD for later retrieval.
- Copying the error information from the HDD to an SD card.

Do the following procedure below to set up the machine so the error information is saved automatically to the HDD when a user has problems with the machine. Then ask the user to reproduce the problem.

Switching ON and Setting UP Save Debug Log

The debug information cannot be saved until the "Save Debug Log" function has been switched on and a target has been selected.

1. Enter the SP mode and switch the Save Debug Log feature on.
   - Enter the SP mode.
   - Touch "System SP".
   - On the LCD panel, open SP5857.
2. Under "5857 Save Debug Log", touch "1 On/Off".
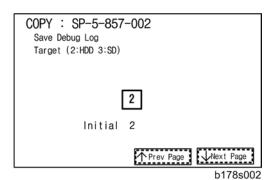
```
COPY : SP-5-857-001
   Save Debug Log
   On/Off (1:ON 0:OFF)


            ┌───┐
            │ 1 │
            └───┘

      Initial  0


              ┌─────────┐ ┌─────────┐
              │↑Prev Page│ │↓Next Page│
              └─────────┘ └─────────┘
```
b178s001

3. On the control panel keypad, press "1". Then press ⊕. This switches the Save Debug Log feature on.

Note

- The default setting is "0" (OFF). This feature must be switched on in order for the debug information to be saved.

```
COPY : SP-5-857-002
Save Debug Log
Target (2:HDD 3:SD)


        2

   Initial  2


            Prev Page    Next Page
```
b178s002

4. Select the target destination where the debug information will be saved. Under "5857 Save Debug Log", touch "2 Target", enter "2" with the operation panel key to select the hard disk as the target destination. Then press ⊕.

Note

- Select "3 SD Card" to save the debug information directly to the SD card if it is inserted in the service slot.

5. Now touch "5858" and specify the events that you want to record in the debug log. SP5-858 (Debug Save When) provides the following items for selection.
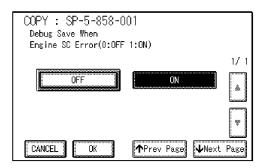
1	Engine SC Error	Saves data when an engine-related SC code is generated.
2	Controller SC Error	Saves debug data when a controller-related SC Code is generated.
3	Any SC Error	Saves data only for the SC code that you specify by entering code number.
4	Jam	Saves data for jams.

Note

- More than one event can be selected.
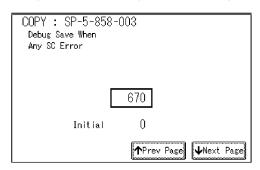
Example 1: To Select Items 1, 2, 4

Touch the appropriate items(s). Press "ON" for each selection. This example shows "Engine SC Error" selected.

5

Example 2: To Specify an SC Code

Touch "3 Any SC Error", enter the 3-digit SC code number with the control panel number keys. Then press ⊕. This example shows an entry for SC670.

⬇Note

- For details about SC code numbers, please refer to the SC tables in Section 4. "Troubleshooting".

6. Select one or more memory modules for reading and recording debug information. Touch "5859".
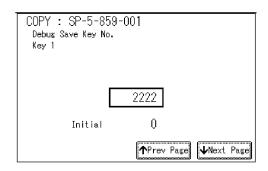
   Under "5859" press the necessary key item for the module that you want to record.

   Enter the appropriate 4-digit number. Then press ⊕.

⬇Note

- Refer to the two tables below for the 4-digit numbers to enter for each key.

The example below shows "Key 1" with "2222" entered.

```
COPY : SP-5-859-001
  Debug Save Key No.
  Key 1


              2222

      Initial      0

                ↑Prev Page  ↓Next Page
```

The following keys can be set with the corresponding numbers. (The initials in parentheses indicate the names of the modules.)

4-Digit Entries for Keys 1 to 10

Key No.	Copy	Printer	Scanner	Web
1	2222 (SCS)			
2	14000 (SRM)			
3	256 (IMH)			
4	1000 (ECS)			
5	1025 (MCS)			
6	4848 (COPY)	4400 (GPS)	5375 (Scan)	5682 (NFA)
7	2224 (BCU)	4500 (PDL)	5682 (NFA)	6600 (WebDB)
8		4600 (GPS-PM)	3000 (UCS)	3300 (PTS)
9		2000 (NCS)	2000 (NCS)	6666 (WebSys)
10		2224 (BCU)	4126 (DCS)	2000 (NCS)

⬇ Note

- The default settings for Keys 1 to 10 are all zero ("0").

Key to Acronyms

Acronym	Meaning	Acronym	Meaning
ECS	Engine Control Service	NFA	Net File Application
GPS	GW Print Service	PDL	Printer Design Language

Acronym	Meaning	Acronym	Meaning
GSP-PM	GW Print Service – Print Module	PTS	Print Server
IMH	Image Memory Handler	SCS	System Control Service
MCS	Memory Control Service	SRM	System Resource Management
NCS	Network Control Service	WebDB	Web Document Box (Document Server)

7. The machine is now set to record the debugging information automatically on the HDD (the target selected with SP5-857-002) for the events that you selected with SP5-858 and the memory modules selected with SP5-859.

Please keep the following important points in mind when you do this setting:

- Note that the number entries for Keys 1 to 5 are the same for the Copy, Printer, Scanner, and Web memory modules.

- 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.

- You cannot mix settings for the groups (COPY, PRINTER, etc.) for 006 to 010. For example, if you want to create a PRINTER debug log you must select the settings from the 9 available selections for the "PRINTER" column only.

- One area of the disk is reserved to store the debug log. The size of this area is limited to 4 MB.

Retrieving the Debug Log from the HDD

Retrieve the debug log by copying it from the hard disk to an SD card.

1. Insert the SD card into slot 2 (service slot) of the copier.

2. Enter the SP mode and execute SP5-857-009 (Copy HDD to SD Card (Latest 4 MB)) 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. You can also send the SD card by regular mail if you want.

Recording Errors Manually

SC errors and jams only are recorded to the debug log automatically. Please instruct the user to do the following immediately after occurrence to save the debug data for any other errors that occur while the customer engineer is not on site. Such problems also include a controller or panel freeze.

🔽 **Note**

- You must previously switch on the Save Debug Feature (SP5-857-001) and select the hard disk as the save destination (SP5-857-002) if you want to use this feature.

1. Press ⬛ (Clear Modes).on the operation panel when the error occurs.
2. On the control panel, enter "01". Then hold down 😊 for at least 3 seconds until the machine beeps and then release it. This saves the debug log to the hard disk for later retrieval with an SD card by the service representatives.
3. Switch the machine off and on to resume operation.

    The debug information for the error is saved on the hard disk. This lets the service representative retrieve it on their next visit by copying it from the HDD to an SD card.

Debug Log Codes

SP5-857-015 Copy SD Card-to-SD Card: Any Desired Key

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 SD card. This command does not execute if there is no log on the HDD for the name of the specified key.

SP5-857-016 Create a File on HDD to Store a Log

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 (it takes some time to complete this operation). 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 need to be created. To create a new log file, do SP5-857-011 to delete the debug log data from the HDD. Then do SP5-857-016.

SP5-857-017 Create a File on SD Card to Store a Log

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 (it takes some time to complete this operation). 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, do SP5-857-012 to delete the debug log data from the SD card. Then do SP5-857-017.

User Tools
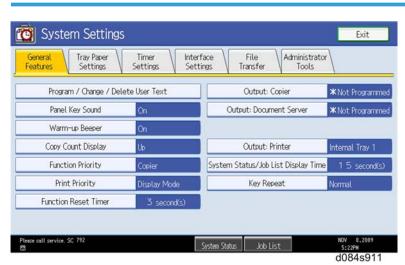
The user program (UP) mode can be accessed by users and operators, and by sales and service staff. UP mode is used to input the copier's default settings. The user can reset the default settings at any time. (See 'System Setting and Copy Setting Reset'.)

UP Mode Initial Screen: User Tools/Counter Display

d084s910

To enter the UP mode, press User Tools/Counter.

System Settings

d084s911

315

In the User Tools/Counter display, press System Settings.

- Click a tab to display the settings.

- If the Next button is lit in the lower right corner, press it to display more options.

- Make the settings, press Exit to return to the User Tools/Counter display, and then press Exit to return to the copy window.

Copier/Document Server Features
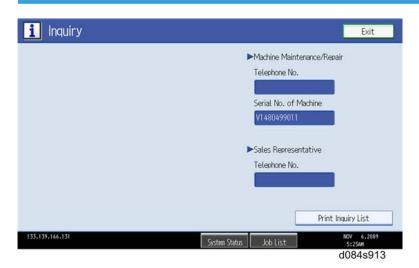
In the User/Tools Counter display, press Copy/Document Server Settings.

- Click a tab to display the settings.

- If the Next button is lit in the lower right corner, press it to display more options.

- Make the settings, press Exit to return to the User Tools/Counter display, and then press Exit to return to the copy window.

Printer, Facsimile, Scanner Settings

In the User/Tools Counter display, press Printer Settings, Facsimile, or Scanner Settings to open the appropriate screen and then click the tab to display more settings.

Inquiry

d084s913

In the User/Tools Counter display, press Inquiry.

The following SP mode settings will be displayed.

- Service Telephone Number

- Serial Number of Machine

- Sales Representative Telephone No.

Counter

d084s914

In the User/Tools Counter display, press Counter.

View the settings, press Exit to return to the User Tools/Counter display, and then press Exit to return to the copy window.

6. Troubleshooting

Service Call Conditions
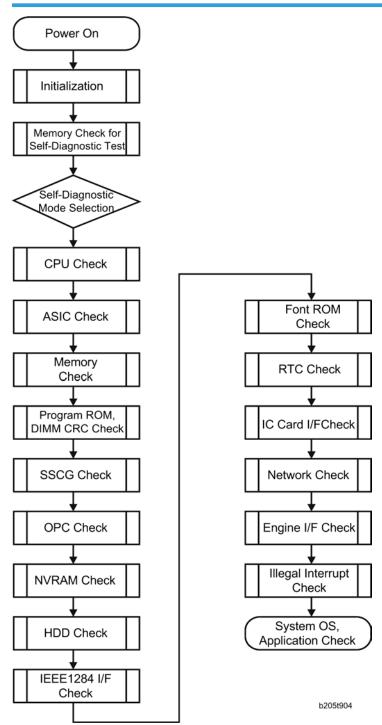
For "Service Call Conditions" information, see "Appendices".

Self-Diagnostic Mode

Self-Diagnostic Mode at Power On

As soon as the main machine is powered on, the controller waits for the initial settings of the copy engine to take effect and then starts an independent self-diagnostic test program. The self-diagnostic test follows the path of the flow chart shown below and checks the CPU, memory, HDD, and so on. An SC code is displayed in the touch panel if the self-diagnostic program detects any malfunction or abnormal condition.

Self-Diagnostic Test Flow Chart

b205t904

Detailed Self-Diagnostic Mode

Purpose

In addition to the self-diagnostic test initiated every time the main machine is powered on, you can set the machine in a more detailed diagnostic mode manually in order to test other components or conditions that are not tested during self-diagnosis after power on.

The following device is required in order to put the machine in the detailed self-diagnosis mode.

Also, the printer/scanner unit and the optional Centronics (IEEE1284) interface must be installed.

Part No.	Name
G0219350	Parallel Loopback Connector

Executing Detailed Self-Diagnosis

Follow this procedure to do the detailed self-diagnosis.
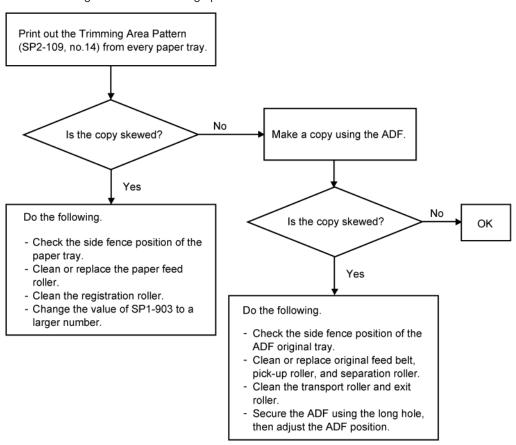
1. Switch off the machine, and connect the parallel loopback device to the Centronics I/F port.

2. Hold down the ⊕ button, press and hold down the ☉ button, and then while pressing both keys at the same time, switch on the machine.

   - You will see "Now Loading" on the touch-panel, and then you will see the results of the test.

A report like the one below is printed every time a detailed self-diagnostic test is executed, whether errors were detected or not.

M O DEL NAM E XXXX

| | Serial No. ABCD000034 | Firmware P/# | : ACP82XXXX | [1/ 1] |
| Self - Diagnosis Report | | Firmware Version | : 2. 49. 01 | Wed Nov 22 13: 15: 30 2000 |

[System Construction]
Kernel Version : Net BSD 1. 3. 3 (SH_NYO_KO_HAM A_RO M) #0: Sat Nov 11 16: 15: 35 JST 2000
CPU System Bus Clock : 100. 0 M Hz   CPU Ppehe Clock : 200. 0 M Hz
Board Type : 7   ASIC Version : 1397306160
RTC Existence : existence   RAM Capacity : 100. 663296 M B
HDD Existence : existence   HDD M odel :

[Total Counter]
0001000

[Program No. @]
MAIN : ACP82XXXX   ENGINE : Ver 1. 96
LCDC : V1. 39   PI :
ADF : B3515620B   SIB : B0045383
FIN :   FIN_SDL :
BANK : A6825150   LCT :
MBX :   FCU :
DPX :

[Error List @@@]

SC CODE	(ERROR CODE)	SC CODE	(ERROR CODE)	SC CODE	(ERROR CODE)	SC CODE
SC835 (1110)		SC820 (0001)		SC820 (0002)		SC820 (0003)
SC820 (0004)		SC820 (0005)				

Skewed Image

Do the following to fix a skewed image problem.

Print out the Trimming Area Pattern (SP2-109, no.14) from every paper tray.

Is the copy skewed?

No → Make a copy using the ADF.

Yes ↓

Do the following.

- Check the side fence position of the paper tray.
- Clean or replace the paper feed roller.
- Clean the registration roller.
- Change the value of SP1-903 to a larger number.

Is the copy skewed?

No → OK

Yes ↓

Do the following.

- Check the side fence position of the ADF original tray.
- Clean or replace original feed belt, pick-up roller, and separation roller.
- Clean the transport roller and exit roller.
- Secure the ADF using the long hole, then adjust the ADF position.

d120t101

Image Problems

Skewed, Trapezoid and Parallelogram Images
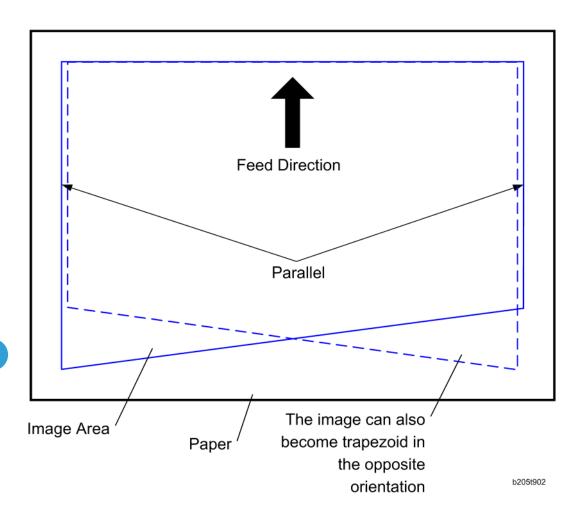
Skewed Images

- The image's leading and trailing edges are parallel.

- The image's left and right edges are also parallel.

- But, all four sides are not parallel with the paper edge.

Feed Direction

Parallel

Parallel

The image can also become skewed in the opposite direction

Paper

Image Area

b205t901
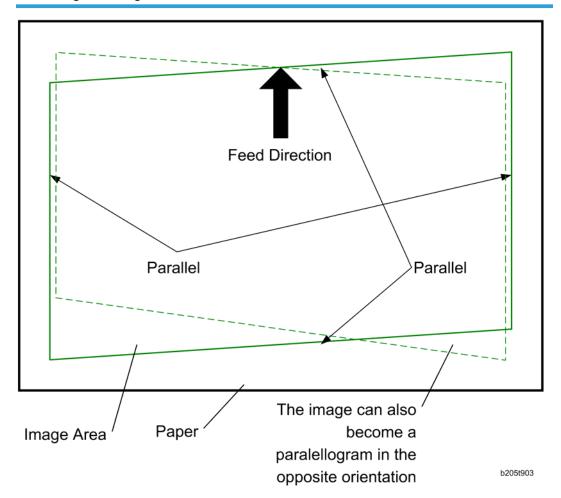
Trapezoid Images

- Only the image's trailing edge is not parallel with the paper edge. The other 3 sides are parallel to the paper's edges.

Feed Direction

Parallel

Image Area

Paper

The image can also become trapezoid in the opposite orientation

b205t902

Parallelogram Images

Feed Direction

Parallel

Parallel

Image Area   Paper   The image can also
become a
paralellogram in the
opposite orientation

b205t903
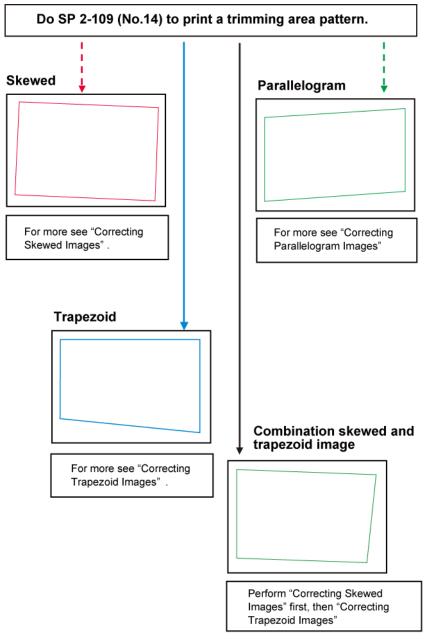
- Like skewed images, the leading/trailing edges and left/right edges are parallel to each other. But, the leading and trailing edges are not parallel to the paper's edges.

Checking Images with the Trimming Pattern

Do SP 2-109 (No.14) to print a trimming area pattern.

Skewed

For more see "Correcting Skewed Images" .

Parallelogram

For more see "Correcting Parallelogram Images"

Trapezoid

For more see "Correcting Trapezoid Images" .

Combination skewed and trapezoid image

Perform "Correcting Skewed Images" first, then "Correcting Trapezoid Images"

d120t102

Correcting the Images

Correcting Skewed Images

1. Test pattern (Trimming Pattern) mode check

Is the image skewed?	
No	Yes
	1. Adjust the side fences. There must be no gap between the fences and the paper stack.
	2. Adjust the paper registration: SP1-002 and 003.

2. Platen mode check

Set an original flush against the left and rear scales and make a copy. **Does the image come out as a parallelogram?**	
No	Yes
	Attach the Scanner Holder (a supporter that is normally attached during shipping)
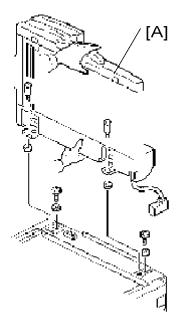
3. ADF mode check
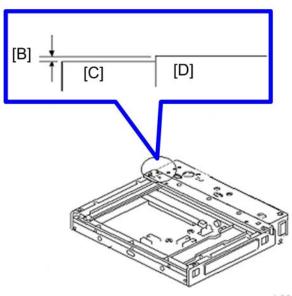
Feed an original through the ADF. **Is the image skewed?**		
No	Yes	
	Do the front and rear transport rollers feed the original straight?	
	No	Yes
		Change the position of the right hinge screw to the longer hole, and make small position adjustments that are necessary.
	Do Procedure A below.	

Procedure complete.		

Procedure A

1. Remove the ADF [A], machine rear cover, scanner left cover, and scanner rear cover.

b205t906

2. Measure the height difference [B] between the hinge bracket [C] and scanner housing [D].

3. If the difference is 0.5 mm or more:

Add a spacer (t = 0.5 to 0.8) between the hinge bracket (mainframe) and ADF left hinge, to lift the left side of the ADF

-or-
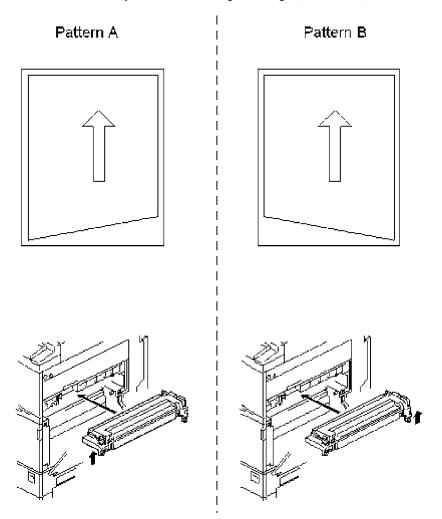
Adjust the stepped height difference between the hinge bracket and scanner housing until it is within 0 ±0.3 mm.

↓Note

- This is necessary because skew occurs when the hinge bracket more than 0.3 mm lower than the scanner housing.

Correcting Trapezoid Images

Procedure 1: Minor Adjustment of the Fusing Unit Height (front-to-rear)

1. Print out the Trimming Pattern (SP2-109 No.14).

2. If the image is a pattern A trapezoid:

   a) Remove and reinstall the Fusing Unit.

   b) Tighten the left fixing screw while you push up the unit's left side (until it stops).

3. If the image is a pattern B trapezoid, do the same for the unit's right side.

4. If the image is still printed out as a trapezoid, do Procedure 2 below.

Procedure 2: Minor Adjustment of the Fusing Unit Position (front-to-rear)

1. Remove and reinstall the fusing unit, then add a washer (t = 0.5 to 1.6) to the front fixing screw.

   ⬇Note

   - This will increase the distance from the mainframe stay.

2. Check the image.

   - Still NG: Go to the next step.

   - OK: Adjustment Complete.

3. Add more washers (t = 0.5 to 1.6, as above).

   ⬇Note

   - Too many washers can cause wrinkling in the paper.

   - Still NG: Go to the next step.

   - OK: Adjustment Complete.

4. Remove the fusing unit and all the washers added in steps 1 and 2 above.

5. Then, add washer(s) in the same way for the rear side.

Recommended Washers:

t = 0.5, 07080040Z or 07080040G

t = 0.8, 07080050Z or 07080050G

Correcting Parallelogram Images

For the procedure, see "Parallelogram Image Adjustment".

Jam Detection

Paper Jam Display

SP7-507 shows the paper jam history.

```
CODE :011
SIZE   :05h
TOTAL:000034
DATE  :Fri Feb 15 11:44:50 2006
```

- **CODE**: Indicates the jam code.
- **SIZE**: Indicates the paper Size Code.
- **TOTAL**: Indicates the total counter (SP7-502-001).
- **DATE**: indicates the date when the jam occurred.

Jam Codes and Display Codes

SP7-504 shows how many jams occurred at each location.

Jam Code SP	Display	Description	LCD Display
7-504-003	Tray 1: On	Paper is not fed from tray 1.	A
7-504-004	Tray 2: On	Paper is not fed from tray 2.	A
7-504-005	Tray 3: On	Paper is not fed from tray 3 (LCT).	Y
7-504-006	Tray 4: On	Paper is not fed from tray 4.	Y
7-504-008	Bypass: On	Paper is not fed from the by-pass tray.	A
7-504-009	Duplex: On	Paper is jammed at the duplex unit.	Z
7-504-011	Vertical Trans. 1: On	Vertical transport sensor 1 does not detect paper from tray 1.	A
7-504-012	Vertical Trans .2: On	Vertical transport sensor 2 does not detect paper from tray 2.	A

Jam Code SP	Display	Description	LCD Display
7-504-013	Vertical Trans .3: On	Vertical transport sensor 1 or relay sensor does not detect paper from tray 3 (LCT).	Y
7-504-017	Registration: On	Registration sensor does not detect paper.	A
7-504-020	Paper Exit: On	Paper exit sensor does not detect paper.	C
7-504-021	Bridge Tray Exit: On	Tray exit sensor (bridge unit) does not detect paper.	D
7-504-022	Bridge Relay: On	Relay sensor (bridge unit) does not detect paper.	D
7-504-024	Inverter: On	Junction gate jam sensor does not detect paper.	C
7-504-025	Duplex Exit: On	Duplex exit sensor does not detect paper.	Z
7-504-027	Duplex Entrance: On	Duplex entrance sensor does not detect paper again after paper has passed this sensor.	Z
7-504-051	Vertical Trans. 1: Off	Vertical transport sensor 1 does not turn off.	A
7-504-052	Vertical Trans. 2: Off	Vertical transport sensor 2 does not turn off.	A
7-504-053	Vertical Trans. 3 (PFU): Off	Vertical transport sensor 3 or relay sensor 1 does not turn off.	Y
7-504-054	Vertical Trans. 4 (PFU): Off	Vertical transport sensor 4 does not turn off.	Y
7-504-057	Registration Sensor: Off	Registration sensor does not turn off.	B
7-504-060	Paper Exit: Off	Paper exit sensor does not turn off.	C
7-504-061	Bridge Tray Exit: Off	Tray exit sensor (bridge unit) does not turn off.	D
7-504-062	Bridge Relay: Off	Relay sensor (bridge unit) does not turn off.	D
7-504-064	Inverter: Off	Junction gate jam sensor does not turn off.	C
7-504-065	Duplex Exit: Off	Duplex exit sensor does not turn off.	Z
7-504-067	Duplex Ent: Off	Duplex entrance sensor does not turn off after paper has passed this sensor.	Z

6

Jam Code SP	Display	Description	LCD Display
7-504-100	Finisher Entrance (D588)	Paper does not reach the entrance sensor or stay at the entrance sensor.	R1-R2
7-504-101	Finisher Shift Tray Exit (D588)	Paper does not reach the lower tray exit sensor or stay at the lower tray exit sensor.	R1-R2
7-504-102	Finisher Staple (D588)	Paper does not reach the staple tray entrance sensor or stay at the staple tray entrance sensor.	R3-R5
7-504-103	Finisher Exit (D588)	Lower tray exit sensor does not detect paper after the stack feed-out belt has fed paper. Lower tray exit sensor still detects paper after the stack feed-out belt has returned to the home position.	R3-R5
7-504-105	Finisher Tray Lift Motor (D588)	Stack height sensor does not detect paper after the lower tray has lifted up. Stack height sensor still detects paper after the lower tray has lifted down.	R1-R2
7-504-106	Finisher Jogger Motor (D588)	Jogger fence HP sensor does not turn off after the jogger fence has moved from its home position. Jogger fence HP sensor does not turn on after the jogger fence has returned to its home position.	R3-R5
7-504-107	Finisher Shift Motor (D588)	Shift roller HP sensor does not turn off after the shift roller has moved from its home position. Shift roller HP sensor does not turn on after the shift roller has returned to its home position.	R1-R2
7-504-108	Finisher Staple Motor (D588)	Stapler HP sensor does not turn off after the stapler has moved from its home position. Stapler HP sensor does not turn on after the stapler has returned to its home position.	R3-R5

6

Jam Code SP	Display	Description	LCD Display
7-504-109	Finisher Exit Motor (D588)	Stack belt HP sensor does not turn off after the stack feed-out belt has moved from its home position. Stack feed-out belt HP sensor does not turn on after the stack feed-out belt has returned to its home position.	R3-R5
7-504-130	FIN Entrance (D589)	Paper does not reach the entrance sensor or stay at the entrance sensor.	R1-R3
7-504-131	FIN Proof Tray Exit (D589)	Paper does not reach the proof tray exit sensor or stays at the proof tray exit sensor.	R1-R3
7-504-132	FIN Shift Tray (D589)	Paper does not reach the shift tray exit sensor or stays at the shift tray exit sensor.	R1-R3
7-504-133	FIN Staple Exit (D589)	Paper does not reach the staple tray exit sensor or stays at the staple tray exit sensor.	R4-R6
7-504-134	FIN Exit (D589)	Exit sensor does not detect paper.	R4-R6
7-504-135	Finisher Fold (D589)	Paper does not reach the fold unit entrance sensor or stay at the fold unit entrance sensor.	R7-R11
7-504-136	FIN Fold Exit (D589)	Paper does not reach the fold unit exit sensor or stay at the fold unit exit sensor.	R7-R11
7-504-137	Exit Guide Gate Motor (D589)	Exit guide plate HP sensor does not turn off after the guide plate has moved from its position. Exit guide plate HP sensor does not turn on after the guide plate has returned to its position.	R1-R3
7-504-138	FIN Staple Shift Motor (D589)	Stapler unit HP sensor does not turn off after the stapler unit has moved from its position. Stapler unit HP sensor does not turn on after the stapler unit has returned to its position.	R7-R11

6

Jam Code SP	Display	Description	LCD Display
7-504-139	FIN Paper Punch Motor (D589)	Punch encoder sensor does not turn on/off after the punch drive motor has turned on. Punch movement HP sensor does not turn on/off after the punch movement motor has turned on. Paper position slide HP sensor does not turn on/off after the paper position sensor slide motor has turned on.	R1-R3
7-504-140	FIN Tray Lift Motor (D589)	Shift Tray position sensor does not detect paper after the shift tray has lifted up. Shift Tray position sensor still detects paper after the shift tray has moved down.	R1-R3
7-504-141	FIN Jogger Motor (D589)	Jogger fence HP sensor does not turn off after the jogger fence has moved from its home position. Jogger fence HP sensor does not turn on after the jogger fence has returned to its home position.	R7-R11
7-504-142	FIN Shift Motor (D589)	Shift motor HP sensor does not turn off after the shift roller has moved from its home position. Shift motor HP sensor does not turn on after the shift roller has returned to its home position.	R1-R3
7-504-143	FIN Fold Plate Motor (D589)	Fold plate HP sensor does not turn off after the shift fold plate has moved from its home position. Fold plate HP sensor does not turn on after the s fold plate has returned to its home position.	R7-R11
7-504-144	FIN Staple Motor (D589)	Corner stapler does not finish stapling after a specified time. Booklet stapler does not finish stapling after a specified time.	R7-R11

6

Jam Code SP	Display	Description	LCD Display
7-504-145	FIN Exit Motor (D589)	Stack feed-out belt HP sensor does not turn off after the stack feed-out belt has moved from its home position. Stack feed-out belt HP sensor does not turn on after the stack feed-out belt has returned to its home position.	R7-R11
7-504-146	FIN Stack 1 Release Motor (D589)	Stopper S HP sensor does not turn off after the stopper S has moved from its home position. Stopper S HP sensor does not turn on after the stopper S has returned to its home position.	R7-R11
7-504-147	FIN Stack 2 Release Motor (D589)	Lower clamp roller HP sensor does not turn off after the lower clamp roller has moved from its home position. Lower clamp roller HP sensor does not turn on after the lower clamp roller has returned to its home position.	R7-R11
7-504-148	FIN Stopper Motor (D589)	Bottom fence HP sensor does not turn off after the bottom fence has moved from its home position. Bottom fence HP sensor does not turn on after the bottom fence has returned to its home position.	R7-R11
7-504-160	Entrance Sn:ON (D585)	Paper does not reach the entrance sensor.	R1
7-504-161	Entrance Sn (D585)	Paper stays at the entrance sensor.	R1
7-504-162	FIN Entrance (D585)	Sensor does not detect paper.	R2
7-504-163	Positioning Roller (D585)	Positioning roller HP sensor does not turn off after the positioning roller has moved from its home position. Positioning roller HP sensor does not turn on after the positioning roller has returned to its home position.	R1

6

Jam Code SP	Display	Description	LCD Display
7-504-164	Front Jogger Motor (D585)	Front fence HP sensor does not turn off after the front fence has moved from its home position. Front fence HP sensor does not turn on after the front fence has returned to its home position.	R1
7-504-165	Rear Jogger Motor (D585)	Rear fence HP sensor does not turn off after the rear fence has moved from its home position. Rear fence HP sensor does not turn on after the rear fence has returned to its home position.	R1
7-504-166	Exit Motor (D585)	Feed out belt HP sensor does not turn on after the feed out belt motor has turned off. Feed out belt HP sensor does not turn off after the feed out belt motor has turned on.	R1
7-504-167	FIN Staple Shift Motor (D585)	Stapler HP sensor does not turn off after the finisher stapler movement motor has turned on. Stapler HP sensor does not turn on after the finisher stapler movement motor has turned off.	R1
7-504-168	FIN Staple Motor (D585)	Corner stapler does not finish stapling after a specified time.	R1
7-504-169	FIN Tray Lift Motor (D585)	Paper height sensor does not turn on after the output tray has lifted up. Paper height sensor does not turn off after the output tray has moved down.	R1
7-504-170	FIN Stack Height SOL (D585)	Paper height sensor does not turn on after the edge depressor has retracted from the stack. Paper height sensor does not turn off after the edge depressor has touched the top of the stack.	R1

6

Jam Code SP	Display	Description	LCD Display
7-504-190	FIN Entrance: ON (D586)	Paper does not reach the entrance sensor.	R1-R2
7-504-191	FIN Entrance: OFF (D586)	Paper stays at the entrance sensor.	R1-R2
7-504-192	FIN Trans ON (D586)	Paper does not reach the vertical transport sensor.	R1-R2
7-504-193	FIN Trans: OFF (D586)	Paper stays at the vertical transport sensor.	R1-R2
7-504-194	FIN Entrance (D586)	Exit sensor does not detect paper.	R1-R2
7-504-195	FIN Front Jogger Motor (D586)	Front fence HP sensor does not turn off after the front fence has moved from its home position. Front fence HP sensor does not turn on after the front fence has returned to its home position.	R1-R2
7-504-196	FIN Rear Jogger Motor (D586)	Rear fence HP sensor does not turn off after the rear fence has moved from its home position. Rear fence HP sensor does not turn on after the rear fence has returned to its home position.	R1-R2
7-504-197	FIN Shift Roller Motor (D586)	Shift motor HP sensor does not turn off after the shift roller has moved from its home position. Shift motor HP sensor does not turn on after the shift roller has returned to its home position.	R1-R2
7-504-198	FIN Positioning Roller (D586)	Positioning roller HP sensor does not turn off after the positioning roller has moved from its home position. Positioning roller HP sensor does not turn on after the positioning roller has returned to its home position.	R1-R2
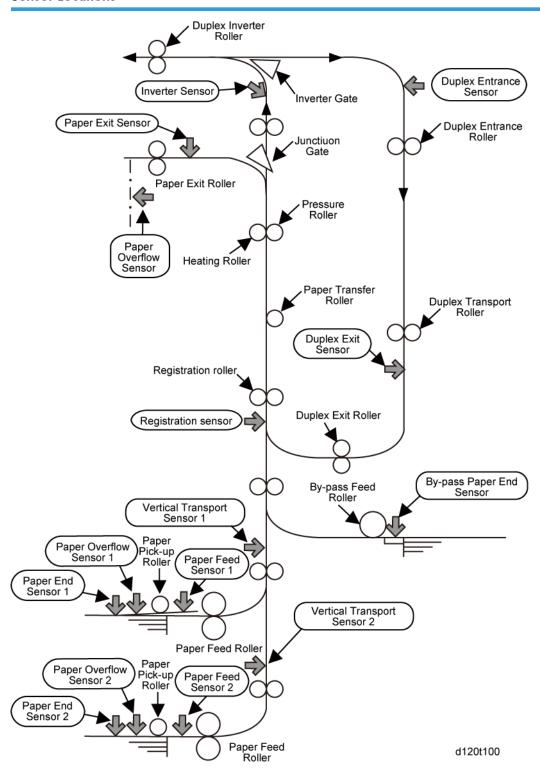
Jam Code SP	Display	Description	LCD Display
7-504-199	FIN Paper Exit Plate Motor (D586)	Exit guide plate HP sensor does not turn off after the guide plate has moved from its position. Exit guide plate HP sensor does not turn on after the guide plate has returned to its position.	R1-R2
7-504-200	FIN Staple Shift Motor (D586)	Stapler HP sensor does not turn off after the finisher stapler movement motor has turned on. Stapler HP sensor does not turn on after the finisher stapler movement motor has turned off.	R1-R2
7-504-201	FIN Tray Lift Motor (D586)	Paper height sensor does not turn on after the output tray has lifted up. Paper height sensor does not turn off after the output tray has moved down.	R1-R2
7-504-202	FIN Staple Motor (D586)	Corner stapler does not finish stapling after a specified time.	R1-R2
7-504-203	FIN Stack Height SOL (D586)	Paper height sensor does not turn on after the edge depressor has retracted from the stack. Paper height sensor does not turn off after the edge depressor has touched the top of the stack.	R1-R2
7-504-204	FIN Punch Motor (D586)	Punch encoder sensor does not turn on/off after the punch drive motor has turned on. Paper position slide HP sensor does not turn on/off after the paper position sensor slide motor has turned on.	R1-R2
7-504-205	FIN Punch Movement Motor (D586)	Punch movement HP sensor does not turn on/off after the punch movement motor has turned on.	R1-R2

6

Jam Code SP	Display	Description	LCD Display
7-504-206	FIN Registration Motor (D586)	Paper position slide HP sensor does not turn on after the paper position sensor slide motor has turned off. Paper position slide HP sensor does not turn off after the paper position sensor slide motor has turned on.	R1-R2
7-504-230	Fin Exit	Paper exit sensor does not detect paper.	R1-R2
7-504-231	Insufficient Data	Data is Insufficient.	R1-R2

Paper Size Code

Size Code	Paper Size	Size Code	Paper Size
05	A4 LEF	141	B4 SEF
06	A5 LEF	142	B5 SEF
14	B5 LEF	160	DLT SEF
38	LT LEF	164	LG SEF
44	HLT LEF	166	LT SEF
132	A3 SEF	172	HLT SEF
133	A4 SEF	255	Others
134	A5 SEF	-	-

Sensor Locations

d120t100

343

Electrical Component Defects

Sensors

Component	CN	PCB	State	
Small Paper Size Sensor (S1)	307-A2	BCU	Open	The CPU cannot detect the paper size properly.
			Shorted	
1st Tray Paper Size Sensor (S2)	307-A5, A6, A8	BCU	Open	The CPU cannot detect the paper size properly.
			Shorted	
			Shorted	
2nd Tray Paper Size Sensor (S3)	307-A13, A14, A16	BCU	Open	The CPU cannot detect the paper size properly.
			Shorted	
			Shorted	
1st Paper Height Sensor 1 (S4)	307-B2	BCU	Open	Remaining paper volume in Tray 1 or 2 on the LCD is wrong.
			Shorted	
1st Paper Height Sensor 2 (S5)	307-B5	BCU	Open	Remaining paper volume in Tray 1 or 2 on the LCD is wrong.
			Shorted	
2nd Paper Height Sensor 1 (S6)	307-B10	BCU	Open	Remaining paper volume in Tray 1 or 2 on the LCD is wrong..
			Shorted	
2nd Paper Height Sensor 2 (S7)	307-B11	BCU	Open	Remaining paper volume in Tray 1 or 2 on the LCD is wrong..
			Shorted	
2nd Paper Overflow Sensor (S8)	308-B13	BCU	Open	Paper overflow sensor detects the top of the paper loaded in the 2nd paper tray, even if no paper is placed in the 2nd paper tray
			Shorted	Paper overflow sensor does not detect the top of the paper loaded in the 2nd paper tray, even if paper is placed in the 2nd paper tray

Component	CN	PCB	State	
2nd Paper End Sensor (S9)	308-B10	BCU	Open	The Paper End indicator does not light even if there is no paper in the 2nd paper tray.
			Shorted	The Paper End indicator lights even if paper is placed in the 2nd paper tray.
2nd Vertical Transport Sensor (S10)	308-B13	BCU	Open	Jam A (Jam 12)
			Shorted	Jam A (Jam 1)
2nd Paper Feed Sensor (S11)	308-B17	BCU	Open	Jam A (Jam 4)
			Shorted	
1st Paper Overflow Sensor (S12)	308-A13	BCU	Open	Paper overflow sensor detects the top of the paper loaded in the 1st paper tray, even if no paper is placed in the 1st paper tray
			Shorted	Paper overflow sensor does not detect the top of the paper loaded in the 1st paper tray, even if paper is placed in the 1st paper tray
1st Paper End Sensor (S13)	308-A10	BCU	Open	The Paper End indicator does not light even if there is no paper in the 1st paper tray.
			Shorted	The Paper End indicator lights even if paper is placed in the 1st paper tray.
1st Vertical Transport Sensor (S14)	308-A17	BCU	Open	Jam A (Jam 11)
			Shorted	Jam A (Jam 1)
1st Paper Feed Sensor (S15)	308-A4	BCU	Open	Jam A (Jam 3)
			Shorted	
Duplex Unit Entrance Sensor (S16)	314-8	BCU	Open	Jam Z (Jam 27)
			Shorted	Jam Z (Jam 1)

6

Component	CN	PCB	State	
Duplex Unit Exit Sensor (S17)	314-11	BCU	Open	Jam Z (Jam 25)
			Shorted	Jam Z (Jam 1)
By-pass Tray HP Sensor (S18)	316-13	BCU	Open	SC 508 is displayed.
			Shorted	
By-pass Paper End Sensor (S19)	316-10	BCU	Open	Paper end is not detected when there is no paper in the by-pass paper tray.
			Shorted	Paper end is detected when there is paper in the paper tray.
By-pass Paper Length Sensor (S20)	316-7	BCU	Open	Paper size error
			Shorted	
By-pass Paper Size Sensor (S21)	316-1, 2, 4, 5	BCU	Open	Paper size error
			Shorted	
Paper Exit Sensor (S22)	324-2	BCU	Open	JAM C (JAM 20)
			Shorted	JAM C (JAM 1)
Paper Overflow Sensor (S23)	324-5	BCU	Open	The paper overflow message is not displayed when the paper overflow condition exists.
			Shorted	The paper overflow message is displayed.
TD Sensor (S24)	327-3	BCU	Open	SC 390 is displayed.
			Shorted	
ID Sensor (S25)	321-4	BCU	Open	SC 355 is displayed.
			Shorted	
Registration Sensor (S26)	321-6	BCU	Open	Jam A (Jam 17)
			Shorted	Jam B (Jam 57)
Inverter Sensor (S27)	331-10	BCU	Open	Jam Z (Jam 24)
			Shorted	Jam Z (Jam 1)

6

Component	CN	PCB	State	
Original Length Sensor 1 (S28)	313-01	SIO	Open	The CPU cannot detect the original size properly. APS and ARE do not function correctly.
			Shorted	
Original Length Sensor 2 (S29)	313-22	SIO	Open	The CPU cannot detect the original size properly. APS and ARE do not function correctly.
			Shorted	
Scanner H.P Sensor (S30)	336-2	BCU	Open	SC120
			Shorted	SC121
Platen Cover Sensor (S31)	336-5	BCU	Open	APS and ARE do not function properly.
			Shorted	No Symptom.

Switches

Component	CN	PCB	State	
Front Door Safety Switch (SW1)	321-1/3	BCU	Open	The Cover Open indicator is not lit even if the front cover is opened.
			Shorted	The Cover Open indicator is lit even if the front cover is closed.
Right Door Open Switch (SW2)	321-9	BCU	Open	The Cover Open indicator is not lit even if the right cover is opened.
			Shorted	The Cover Open indicator is lit even if the right cover is closed.

6

Blown Fuse Conditions

⚠CAUTION

- Use a correct rating fuse for the fuse replacement. Never use a wrong rating fuse. If do so, the machine may be damaged.

Fuse	Rating		Symptom when turning on the main switch
	115 V	220 to 240 V	
PSU			
FU1	15 A/250 V	8 A/250V	No response.
FU2	10 A/250 V	5 A/250 V	No response
FU3	2 A/250 V	2 A/250V	Anti-condensation/Tray Heater does not turn on.
FU4	5 A/250 V	5 A/250V	Optional finisher does not work then SC792 is displayed. Paper reaches the bridge unit and stays.
FU5	5 A/250 V	5 A/250 V	All motors do not rotate. "Cover Open" appears.
FU6	5 A/250 V	5 A /250V	SC is displayed.
FU7	5 A/250 V	5 A/250 V	The touch panel does not turn on and all motors do not rotate.
FU8	6.3 A/250 V	6.3 A/250 V	No response

6
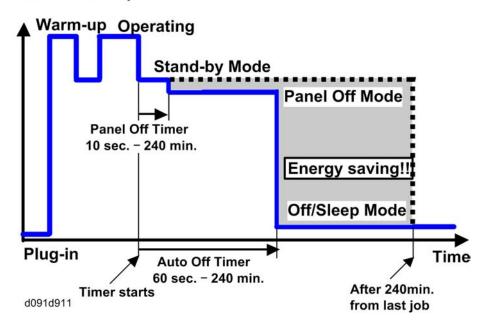
7. Energy Saving

Energy Save

Energy Saver Modes

Customers should use energy saver modes properly, to save energy and protect the environment.

d091d911

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: 1 min.
- Auto off timer (1 – 240 min): Off/Sleep Mode. Default setting: 1 min.

Normally, Panel Off timer < Auto Off timer. But, for example, if Auto Off timer < or = Panel Off 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.

- 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

Recovery time from Off/Sleep Mode

- Machine without HDD: Less than 11 sec.

- Machine with HDD: Less than 10 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.

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 Condition	SP8941: Machine Status	Time at Start (min.) ①	Time at End (min.) ②	Running time (hour) (②-①)/ 60 = ③	Power consumption Spec. (W) ④	Power consumption (KWH) (③x④)/1000 = ⑤
Operating	001: Operating Time	21089.0	21386.0	5.0	1081.8	5.35
② Stand by (Ready)	002: Standby Time	306163.0	308046.0	31.4	214.0	6.72
③ Energy save (Panel off)	003: Energy Save Time	71386.0	75111.0	62.1	214.0	13.29
④ Low power	004: Low Power Time	154084.0	156340.0	37.6	146.0	5.49
⑤ Off/Sleep	005: Off Mode Time	508776.0	520377.0	193.4	7.0	1.35
Total ⑥						32.20

7
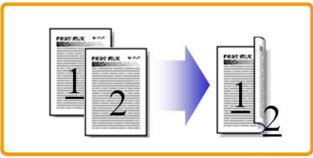
Paper Save

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:
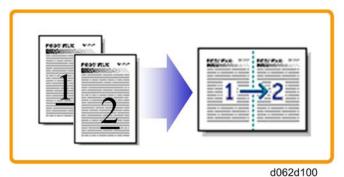
Reduce paper volume in half!

d062d102

2. Combine mode:

Reduce paper volume in half!

d062d100
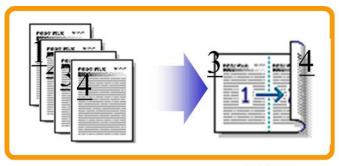
3. Duplex + Combine:

Using both features together can further reduce paper volume by 3/4!

d062d101

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.

How to calculate the paper reduction ratio

How to calculate the paper reduction ratio, when compared with Single-sided copying, with no 2-in-1 combine mode

Paper reduction ratio (%) = Number of sheets reduced: A/Number of printed original images: B x 100

- Number of sheets reduced: A

    = Output pages in duplex mode/2 + Number of pages in Single-sided with combine mode + Number of pages in Duplex with combine mode x 3/2
    A = ((2) + (3) + (4))/2 + (5) + (6) x 3/2

- Number of printed original images: B

    = Total counter6 + Number of pages in Single-sided with combine mode + Number of pages in Duplex with combine mode
    B = (1) + (5) + (6)

- (1) Total counter: SP 8581 001 (pages)

- (2) Single-sided with duplex mode: SP 8421 001 (pages)

- (3) Double-sided with duplex mode: SP 8421 002 (pages)

- (4) Book with duplex mode: SP 8421 003 (pages)

- (5) Single-sided with combine mode: SP 8421 004 (pages)

- (6) Duplex with combine mode: SP 8421 005 (pages)

Model OR-C1
Machine Code:
D120/D121/D122/D139/D140/D141

Appendices

August, 2011
Subject to change

TABLE OF CONTENTS

1. Appendix: General Specifications

Specifications

General Specifications

Main Machine

Configuration:	Desktop
Copy Process:	Dry electrostatic transfer system
Originals:	Sheet, Book
Original Size:	Platen/ARDF: Max. A3/11" x 17"
Copy Paper Size	Tray 1: A6 SEF to A3/DLT, Custom, Postcard, Envelopes Tray 2: A5 to A3, DLT, Custom Bypass: A6 SEF to A3/DLT, Postcard, Custom
Custom Sizes (W x L)	Tray 1: 100 to 297 mm x 148 to 432 mm Tray 2: 182 to 297 mm x 148 to 432 mm Bypass: 90 to 305 mm x 148 to 1260 mm
Duplexing	A5/HLT to A3/DLT
Paper Weight	Tray 1 and Tray 2: 52 to 157 g/m^2 (14 to 42 lbs.) Bypass: 52 to 157 g/m^2 (14 to 42 lbs.) Duplex: 52 to 105 g/m^2 (14 to 28 lbs.)
Copy Speed	D120/D139: 23 cpm (A4 LEF/Letter LEF) D121/D140: 28 cpm (A4 LEF/Letter LEF) D122/D141: 33 cpm (A4 LEF/Letter LEF)
Resolution	600 dpi
Gradation	Read: 256-level (1-dot) Write: 3 or 4-level (2-dot), 2 level (1-dot)

1st Copy Print Time	D120/D139: 5.4 sec (A4/LT LEF, Tray 1) D121/D122/D140/D141: 4.5 sec. (A4/LT LEF, Tray 1)
Warm-up Time	Main Power Switch: Less than 14 sec. (without HDD) Less than 20 sec. (with HDD) Off/Sleep: Less than 11 sec (without HDD) Less than 10 sec (with HDD)
Continuous Copies	001 to 999 Sheets
Zoom	Platen Mode: 25% to 400%, in 1% step ARDF Mode: 25% to 400%, in 1% step
Paper Supply	Tray 1: 500 Sheets Tray 2: 550 Sheets Bypass: 100 Sheets
Output Capacity	A4, smaller: 500 Sheets face-down B4, larger: 250 Sheets face-down
Power Source	NA: 120 to 127 V 60 Hz EU, Asia, China: 220 to 240V 50/60 Hz Taiwan: 110V 60 Hz

Power Consumption	Full System (Operating)	Less than 1.6 KW
	Off Mode	Less than 1.65 W
	Sleep Mode	Less than 4 W (NA) Less than 4.2 W (EU)

1

Dimensions (W x D x H)	Standard	No PTU: 587 x 653 x 709 mm (23.1" x 25.7" x 30") With PTU: 587 x 653 x 950 mm (23.1" x 25.7" x 37.4")
	Full System	All Options: 1152 x 653 x 1085 mm (45.3" x 25.7" x 42.7")
Weight	Less than 65 kg (143 lbs.) (basic model)	
Noise Emission (Sound Power Level)	Stand-by (Mainframe only):	40 dB (D120/D121/D139/ D140) 42.9 dB (D122/D141)
	Operating (Mainframe only):	64.1 dB (D120/D139) 65.8 dB (D121/D140) 67.6 dB (D122/D141)
	Operating (Full-System):	68.1 dB (D120/D139) 69.8 dB (D121/D140) 71.6 dB (D122/D141)

⬇ Note

- The above measurements were made in accordance with ISO 7779.

- Full System: Mainframe + ADF + 1-bin Sorter + Paper Tray Unit + Bridge Unit + Finisher

Printer Controller

Printing Speed:	D120/D139: Maximum 23 ppm (A4/LT LEF) D121/D140: Maximum 28 ppm (A4/LT LEF) D122/D141: Maximum 33 ppm (A4/LT LEF)

Printer Languages:	PCL 6/5e PDF Direct Adobe PostScript 3 (optional) IPDS (optional) MediaPrint: JPEG/TIFF (optional)
Resolution and Gradation:	PCL 5e: 300 x 300 dpi 600 x 600 dpi : Fast (1-bit) PCL 6: 600 x 600 dpi : Fast (1-bit) PDF Direct: 300 x 300 dpi/600 x 600 dpi PS3: 300 x 300 dpi/600 x 600 dpi XPS: 600 x 600 dpi : Fast (1-bit) IPDS: 300 x 300 dpi/ 600 x 600 dpi
Printing speed:	D120/D139: 23 ppm (A4/LT LEF) D121/D140: 28 ppm (A4/LT LEF) D122/D141: 33 ppm (A4/LT LEF)
Resident Fonts:	PCL 6/5e (Standard): 45 Compatible fonts 13 International fonts 6 Bitmap fonts Adobe PostScript 3 (Optional): 136 fonts IPDS (Optional): 108 fonts

Host Interfaces:	USB2.0 Type A and Type B: Standard
	Ethernet (100 Base-TX/10 Base-T): Standard
	Gigabit Ethernet (1000 Base-T): Optional
	IEEE1284 parallel x 1: Optional
	IEEE802.11a/b/g (Wireless LAN): Optional
	Bluetooth (USB type): Optional
Network Protocols:	TCP/IP (IPv4, IPv6), IPX/SPX
RAM	Maximum
	Basic model: 512 MB
	SP model: 1 GB (Resident 512 MB + Additional 512 MB)
	⬇ Note
	• Additional 512 MB (basic model) is required for all printer/scanner unit and printer units.

Scanner Specification

Standard Scanner Resolution:	Main scan/Sub scan 600 dpi
Scanning Speed	29 ipm (E-mail/Scan-to-Folder/Network Delivery Scanner (A4 LEF, Text 200 dpi, Compression (Default Level))
Available scanning Resolution Range:	100 to1200 dpi (when used as a Network TWAIN scanner)
	100, 200, 300, 400, 600 dpi (when used as a network delivery scanner, Scan-to-Folder, Scan-to-Email, or Document Server storage)
Grayscales/Fullcolor:	1 bit or 8 bits/pixel each for RGB
Interface:	Ethernet 10Base-T / 100Base-TX, Gigabit Ethernet (1000Base-T), Wireless LAN (IEEE 802.11a/b/g,g)
Compression Method:	B&W: TIFF (MH, MR, MMR), Gray Scale
	Full Color: JPEG
Video Memory Capacity:	109.41 MB (A4, Full Color, 600dpi)

Image Storage Capacity:	Number of originals per file: Maximum 1,000 pages
	Maximum of files: 3,000 files
	Max.Storage on Doc.Server: 9,000 pages (B&W (ITU-T No.1/200 dpi MMR)

Software Accessories

The printer drivers and utility software are provided on one CD-ROM. An auto-run installer allows you to select which components to install.

Printer Drivers

Printer Language	Windows XP, Server 2003, Server 2008, Vista, 7	MacOSX10.2 or later
PCL5c / PCL6	Yes	No
PS3	Yes	Yes
RPCS	No	No

Note

- The PCL5c/6 and PS3 drivers are provided on printer/scanner CD-ROM.
- The PS3 drivers are all genuine Adobe PS drivers, except for Windows XP/Server 2003/Server 2008/Vista/7. A PPD file for each operating system is provided with the driver.
- The PPD installer for Macintosh supports Mac OS X 10.2 or later versions.

Scanner and LAN Fax drivers

Printer Language	Windows XP, Server 2003, Server 2008, Vista, 7	MacOSX10.2 or later
Network TWAIN	Yes	No
LAN-FAX	Yes	No

1

⬇ Note

- The Network TWAIN and LAN Fax drivers are provided on the printer and scanner drivers CD-ROM.

- This software lets you fax documents directly form your PC. Address Book Editor and Cover Sheet Editor are to be installed as well. (These require the optional fax unit.)

Utility Software

Software	Description
Font Manager (XP/Vista)	A font management utility with screen fonts for the printer This is provided on the printer scanner CD-ROM
Smart Device Monitor for Admin (XP/Server 2003/Server 2008/Vista/7)	A printer management utility for network administrators. NIB setup utilities are also available. This is provided on the web.
DeskTopBinder – SmartDeviceMonitor for Client (XP/Server 2003/Server 2008/Vista/7)	A printer management utility for client users. A utility for peer-to-peer printing over a NetBEUI or TCP/IP network. A peer-to-peer print utility over a TCP/IP network. This provides the parallel printing and recovery printing features. This is provided on the web.
Printer Utility for Mac (Mac)	A utility for peer-to-peer printing over a NetBEUI or TCP This software provides several convenient functions for printing from Macintosh clients. This is provided on the web.
DeskTopBinder Lite (XP/Server 2003/Server 2008/Vista/7)	DeskTopBinder Lite itself can be used as personal document management software and can manage both image data converted from paper documents and application files saved in each client's PC. This is provided on the web.

Supported Paper Sizes

Paper Feed (North America)

BT: By-pass Tray, T1: Tray 1, T2/3/4: Tray 2/3/4, LCT: Large Capacity Tray: 2000-sheet, DU: Duplex Unit

Paper	Size (W x L)	BT	T1	T2/3/4	LCT	DU
A3 W	12" x 18"	M	-	-	-	-
A3 SEF	297 x 420mm	M	S	S	-	M
A4 SEF	210 x 297mm	M	A	A	-	M
A4 LEF	297 x 210mm	M	S	S	S	M
A5 SEF	148 x 210mm	M	M	-	-	M
A5 LEF	210 x 148mm	M	S	A	-	M
A6 SEF	105 x 148mm	M	A	-	-	-
B4 SEF	257 x 364mm	M	S	S	-	M
B5 SEF	182 x 257mm	M	A	A	-	M
B5 LEF	257 x 182mm	M	S	M	-	M
B6 SEF	128 x 182mm	M	M	-	-	-
Ledger	11" x 17"	A	A	A	-	M
Letter SEF	8.5" x 11"	A	A	A	-	M
Letter LEF	11" x 8.5"	A	A	A	M	M
Legal SEF	8.5" x 14"	M	A	A	-	M
Government Legal SEF	8.25" x 14"	M	M	M	-	M
Half Letter SEF	5.5" x 8.5"	A	A	A	-	M
Executive SEF	7.25" x 10.5"	M	M	M	-	M
Executive LEF	10.5" x 7.25"	M	A	A	-	M

Paper	Size (W x L)	BT	T1	T2/3/4	LCT	DU
F SEF	8" x 13"	M	M	M	-	M
Foolscap SEF	8.5" x 13"	M	M	M	-	M
Folio SEF	8.25" x 13"	M	M	M	-	M
	11" x 15"	M	M	M	-	M
	10" x 14"	M	M	M	-	M
	8" x 10"	M	M	M	-	M
8K	267 x 390mm	M	M	M	-	M
16K SEF	195 x 267mm	M	M	M	-	M
16K LEF	267 x 195mm	M	M	M	-	M
Custom		M	M	M	-	-
Com10 Env.	4.125" x 9.5"	M	M	-	-	-
Monarch Env.	3.875" x 7.5"	M	M	-	-	-
C6 Env.	114 x 162mm	M	M	-	-	-
C5 Env.	162 x 229mm	M	M	-	-	-
DL Env.	110 x 220mm	M	M	-	-	-

Remarks:

A	Supported: the sensor detects the paper size.
M	Supported: the user specifies the paper size.
S	Supported: depends on a technician adjustment
-	Not supported

Paper Feed (Europe/ Asia)

BT: By-pass Tray, T1: Tray 1, T2/3/4: Tray 2/3/4, LCT: Large Capacity Tray: 2000-sheet, DU: Duplex Unit

Paper	Size (W x L)	BT	T1	T2/3/4	LCT	DU
A3 W	12" x 18"	M	-	-	-	-
A3 SEF	297 x 420mm	A	A	A	-	M
A4 SEF	210 x 297mm	A	A	A	-	M
A4 LEF	297 x 210mm	A	A	A	M	M
A5 SEF	148 x 210mm	A	M	-	-	M
A5 LEF	210 x 148mm	A	A	A	-	M
A6 SEF	105 x 148mm	M	M	-	-	-
B4 SEF	257 x 364mm	A	A	A	-	M
B5 SEF	182 x 257mm	A	A	A	-	M
B5 LEF	257 x 182mm	A	A	A	-	M
B6 SEF	128 x 182mm	A	M	-	-	-
Ledger	11" x 17"	M	S	S	-	M
Letter SEF	8.5" x 11"	M	A	A	-	M
Letter LEF	11" x 8.5"	M	S	S	S	M
Legal SEF	8.5" x 14"	M	S	S	-	M
Government Legal SEF	8.25" x 14"	M	M	M	-	M
Half Letter SEF	5.5" x 8.5"	M	S	S	-	M
Executive SEF	7.25" x 10.5"	M	M	M	-	M
Executive LEF	10.5" x 7.25"	M	S	S	-	M
F SEF	8" x 13"	M	M	M	-	M
Foolscap SEF	8.5" x 13"	M	M	M	-	M

1

Paper	Size (W x L)	BT	T1	T2/3/4	LCT	DU
Folio SEF	8.25" x 13"	M	M	M	-	M
	11" x 15"	M	M	M	-	M
	10" x 14"	M	M	M	-	M
	8" x 10"	M	M	M	-	M
8K	267 x 390mm	M	M	M	-	M
16K SEF	195 x 267mm	M	M	M	-	M
16K LEF	267 x 195mm	M	M	M	-	M
Custom		M	M	M	-	-
Com10 Env.	4.125" x 9.5"	M	M	-	-	-
Monarch Env.	3.875" x 7.5"	M	M	-	-	-
C6 Env.	114 x 162mm	M	M	-	-	-
C5 Env.	162 x 229mm	M	M	-	-	-
DL Env.	110 x 220mm	M	M	-	-	-

Remarks:

A	Supported: the sensor detects the paper size.
M	Supported: the user specifies the paper size.
S	Supported: depends on a technician adjustment
-	Not supported

Paper Exit (Mainframe and optional trays)

Main: Mainframe/ 1-bin: 1-bin tray/ Shift: Shift Tray

Paper	Size (W x L)	Main	1-bin	Shift
A3 W	12" x 18"	Y	-	Y

Paper	Size (W x L)	Main	1-bin	Shift
A3 SEF	297 x 420 mm	Y	Y	Y
A4 SEF	210 x 297 mm	Y	Y	Y
A4 LEF	297 x 210 mm	Y	Y	Y
A5 SEF	148 x 210 mm	Y	Y	Y
A5 LEF	210 x 148 mm	Y	Y	Y
A6 SEF	105 x 148 mm	Y	-	Y
B4 SEF	257 x 364 mm	Y	Y	Y
B5 SEF	182 x 257 mm	Y	Y	Y
B5 LEF	257 x 182 mm	Y	Y	Y
B6 SEF	128 x 182 mm	Y	-	Y
Ledger	11" x 17"	Y	Y	Y
Letter SEF	8.5" x 11"	Y	Y	Y
Letter LEF	11" x 8.5"	Y	Y	Y
Legal SEF	8.5" x 14"	Y	Y	Y
Government Legal SEF	8.25" x 14"	Y	Y	Y
Half Letter SEF	5.5" x 8.5"	Y	Y	Y
Executive SEF	7.25" x 10.5"	Y	Y	Y
Executive LEF	10.5" x 7.25"	Y	Y	Y
F SEF	8" x 13"	Y	Y	Y
Foolscap SEF	8.5" x 13"	Y	Y	Y
Folio SEF	8.25" x 13"	Y	Y	Y
	11" x 15"	Y	Y	Y
	10" x 14"	Y	Y	Y
	8" x 10"	Y	Y	Y

1

Paper	Size (W x L)	Main	1-bin	Shift
8K	267 x 390 mm	Y	-	Y
16K SEF	195 x 267 mm	Y	-	Y
16K LEF	267 x 195 mm	Y	-	Y
Custom		Y	Y	Y
Com10 Env.	4.125" x 9.5"	Y	-	Y
Monarch Env.	3.875" x 7.5"	Y	-	Y
C6 Env.	114 x 162 mm	Y	-	Y
C5 Env.	162 x 229 mm	Y	-	Y
DL Env.	110 x 220 mm	Y	-	Y

Remarks:

Y	Supported
-	Not supported

Paper Exit (1000-Sheet Booklet Finisher)

MF: Main Frame, Prf: Proof, Clr: Clear, Shf: Shift, Stp: Staple, SS: Saddle Stitch

Paper	Size (W x L)	MF	1000-sheet booklet finisher (Shift/Staple)				
			Prf	Clr	Shf	Stp	SS
A3 W	12" x 18"	Y	Y	Y	-	-	-
A3 SEF	297 x 420 mm	Y	Y	Y	Y	30	10
A4 SEF	210 x 297 mm	Y	Y	Y	Y	50	10
A4 LEF	297 x 210 mm	Y	Y	Y	Y	50	-
A5 SEF	148 x 210 mm	Y	Y	-	-	-	-
A5 LEF	210 x 148 mm	Y	Y	-	-	-	-
A6 SEF	105 x 148 mm	Y	Y	-	-	-	-

Paper	Size (W x L)	MF	1000-sheet booklet finisher (Shift/Staple)				
			Prf	Clr	Shf	Stp	SS
B4 SEF	257 x 364 mm	Y	Y	Y	Y	30	10
B5 SEF	182 x 257 mm	Y	Y	-	-	50	10
B5 LEF	257 x 182 mm	Y	Y	Y	Y	50	-
B6 SEF	128 x 182 mm	Y	Y	-	-	-	-
Ledger	11" x 17"	Y	Y	Y	Y	30	10
Letter SEF	8.5" x 11"	Y	Y	Y	Y	50	10
Letter LEF	11" x 8.5"	Y	Y	Y	Y	50	-
Legal SEF	8.5" x 14"	Y	Y	Y	Y	30	10
Government Legal SEF	8.25" x 14"	Y	Y	Y	Y	30	-
Half Letter SEF	5.5" x 8.5"	Y	Y	-	-	-	-
Executive SEF	7.25" x 10.5"	Y	Y	Y	Y	50	-
Executive LEF	10.5" x 7.25"	Y	Y	Y	Y	50	-
F SEF	8" x 13"	Y	Y	Y	Y	30	-
Foolscap SEF	8.5" x 13"	Y	Y	Y	Y	30	-
Folio SEF	8.25" x 13"	Y	Y	Y	Y	30	-
	11" x 15"	Y	Y	Y	Y	30	-
	10" x 14"	Y	Y	Y	Y	30	-
	8" x 10"	Y	Y	Y	Y	50	-
8K	267 x 390 mm	Y	Y	Y	Y	30	-
16K SEF	195 x 267 mm	Y	Y	Y	Y	50	-
16K LEF	267 x 195 mm	Y	Y	Y	Y	50	-
Custom		Y	Y	Y	-	-	-
Com10 Env.	4.125" x 9.5"	Y	-	-	-	-	-

1

Paper	Size (W x L)	MF	1000-sheet booklet finisher (Shift/Staple)				
			Prf	Clr	Shf	Stp	SS
Monarch Env.	3.875" x 7.5"	Y	-	-	-	-	-
C6 Env.	114 x 162 mm	Y	-	-	-	-	-
C5 Env.	162 x 229 mm	Y	-	-	-	-	-
DL Env.	110 x 220 mm	Y	-	-	-	-	-

MF: Main Frame, E2P: Europe 2 Holes Punch, N2P: North America 2 Holes Punch, N3P: North America 3 Holes Punch, E4P: Europe 4 Holes Punch, S4P: North Europe 4 Holes Punch

Paper	Size (W x L)	MF	1000-sheet booklet finisher (Punch)				
			E2P	N2P	N3P	E4P	S4P
A3 W	12" x 18"	Y	-	-	-	-	-
A3 SEF	297 x 420 mm	Y	Y	Y	Y	Y	Y
A4 SEF	210 x 297 mm	Y	Y	-	-	-	Y
A4 LEF	297 x 210 mm	Y	Y	Y	Y	Y	Y
A5 SEF	148 x 210 mm	Y	-	Y	-	-	-
A5 LEF	210 x 148 mm	Y	Y	-	-	-	-
A6 SEF	105 x 148 mm	Y	-	-	-	-	-
B4 SEF	257 x 364 mm	Y	Y	Y	Y	Y	Y
B5 SEF	182 x 257 mm	Y	Y	Y	-	-	Y
B5 LEF	257 x 182 mm	Y	Y	Y	Y	Y	Y
B6 SEF	128 x 182 mm	Y	-	-	-	-	-
Ledger	11" x 17"	Y	Y	Y	Y	Y	Y
Letter SEF	8.5" x 11"	Y	Y	Y	-	-	-
Letter LEF	11" x 8.5"	Y	Y	Y	Y	Y	Y
Legal SEF	8.5" x 14"	Y	Y	Y	-	-	Y

1

Paper	Size (W x L)	MF	1000-sheet booklet finisher (Punch)				
			E2P	N2P	N3P	E4P	S4P
Government Legal SEF	8.25" x 14"	Y	Y	Y	-	-	Y
Half Letter SEF	5.5" x 8.5"	Y	Y	Y	-	-	Y
Executive SEF	7.25" x 10.5"	Y	Y	Y	-	-	Y
Executive LEF	10.5" x 7.25"	Y	Y	Y	Y	Y	Y
F SEF	8" x 13"	Y	Y	Y	-	-	Y
Foolscap SEF	8.5" x 13"	Y	Y	Y	-	-	Y
Folio SEF	8.25" x 13"	Y	Y	Y	-	-	Y
	11" x 15"	Y	-	-	-	-	-
	10" x 14"	Y	-	-	-	-	-
	8" x 10"	Y	Y	Y	-	-	Y
8K	267 x 390 mm	Y	Y	Y	Y	Y	Y
16K SEF	195 x 267 mm	Y	Y	Y	-	-	Y
16K LEF	267 x 195 mm	Y	Y	Y	Y	Y	Y
Custom		Y	-	-	-	-	-
Com10 Env.	4.125" x 9.5"	Y	-	-	-	-	-
Monarch Env.	3.875" x 7.5"	Y	-	-	-	-	-
C6 Env.	114 x 162 mm	Y	-	-	-	-	-
C5 Env.	162 x 229 mm	Y	-	-	-	-	-
DL Env.	110 x 220 mm	Y	-	-	-	-	-

Remarks:

Y	Supported
10	Output up to 10 sheets

30	Output up to 30 sheets
50	Output up to 50 sheets
-	Not supported

Paper Exit (1000-Sheet Finisher and 500-Sheet Finisher)

MF: Main Frame, Prf: Proof, Clr: Clear, Shf: Shift, Stp: Staple

Paper	Size (W x L)	MF	1000-sheet finisher				500-sheet finisher		
			Prf	Clr	Shf	Stp	Clr	Shf	Stp
A3 W	12" x 18"	Y	Y	Y	-	-	-	-	-
A3 SEF	297 x 420 mm	Y	Y	Y	Y	30	Y	Y	30
A4 SEF	210 x 297 mm	Y	Y	Y	Y	50	Y	Y	50
A4 LEF	297 x 210 mm	Y	Y	Y	Y	50	Y	Y	50
A5 SEF	148 x 210 mm	Y	Y	-	-	-	-	-	-
A5 LEF	210 x 148 mm	Y	Y	-	-	-	-	-	-
A6 SEF	105 x 148 mm	Y	-	-	Y	30	Y	-	-
B4 SEF	257 x 364 mm	Y	Y	Y	Y	30	Y	Y	30
B5 SEF	182 x 257 mm	Y	Y	Y	Y	50	Y	Y	50
B5 LEF	257 x 182 mm	Y	Y	-	-	50	Y	Y	50
B6 SEF	128 x 182 mm	Y	Y	-	-	-	Y	-	-
Ledger	11" x 17"	Y	Y	Y	Y	30	-	Y	30

Paper	Size (W x L)	MF	1000-sheet finisher				500-sheet finisher		
			Prf	Clr	Shf	Stp	Clr	Shf	Stp
Letter SEF	8.5" x 11"	Y	Y	Y	Y	50	Y	Y	50
Letter LEF	11" x 8.5"	Y	Y	Y	Y	50	Y	Y	50
Legal SEF	8.5" x 14"	Y	Y	Y	Y	30	Y	Y	30
Government Legal SEF	8.25" x 14"	Y	Y	Y	Y	30	Y	Y	30
Half Letter SEF	5.5" x 8.5"	Y	Y	-	-	-	-	-	-
Executive SEF	7.25" x 10.5"	Y	Y	Y	Y	50	Y	Y	50
Executive LEF	10.5" x 7.25"	Y	Y	Y	Y	50	Y	Y	50
F SEF	8" x 13"	Y	Y	Y	Y	30	Y	Y	30
Foolscap SEF	8.5" x 13"	Y	Y	Y	Y	30	Y	Y	30
Folio SEF	8.25" x 13"	Y	Y	Y	Y	30	Y	Y	30
	11" x 15"	Y	Y	Y	Y	30	Y	Y	30
	10" x 14"	Y	Y	Y	Y	30	Y	Y	30
	8" x 10"	Y	Y	Y	Y	50	Y	Y	50
8K	267 x 390 mm	Y	Y	Y	Y	30	Y	Y	30
16K SEF	195 x 267 mm	Y	Y	Y	Y	50	Y	Y	50
16K LEF	267 x 195 mm	Y	Y	Y	Y	50	Y	Y	50
Custom		Y	Y	-	-	-	Y	Y	-
Com10 Env.	4.125" x 9.5"	Y	-	-	-	-	-	-	-
Monarch Env.	3.875" x 7.5"	Y	-	-	-	-	-	-	-
C6 Env.	114 x 162 mm	Y	-	-	-	-	-	-	-

Paper	Size (W x L)	MF	1000-sheet finisher				500-sheet finisher		
			Prf	Clr	Shf	Stp	Clr	Shf	Stp
C5 Env.	162 x 229 mm	Y	-	-	-	-	-	-	-
DL Env.	110 x 220 mm	Y	-	-	-	-	-	-	-

Remarks:

Y	Supported
30	Output up to 30 sheets
50	Output up to 50 sheets
-	Not supported

Paper Exit (Internal Finisher)

MF: Main Frame, Clr: Clear, Shf: Shift, Stp: Staple,

Paper	Size (W x L)	MF	Internal finisher(Shift/Staple)		
			Clr	Shf	Stp
A3 W	12" x 18"	Y	-	-	-
A3 SEF	297 x 420 mm	Y	Y	30	Y
A4 SEF	210 x 297 mm	Y	Y	50	Y
A4 LEF	297 x 210 mm	Y	Y	50	Y
A5 SEF	148 x 210 mm	Y	-	-	-
A5 LEF	210 x 148 mm	Y	-	-	-
A6 SEF	105 x 148 mm	Y	-	-	-
B4 SEF	257 x 364 mm	Y	Y	30	Y
B5 SEF	182 x 257 mm	Y	Y	50	Y
B5 LEF	257 x 182 mm	Y	Y	50	Y

1

Paper	Size (W x L)	MF	Internal finisher(Shift/Staple)		
			Clr	Shf	Stp
B6 SEF	128 x 182 mm	Y	-	-	-
Ledger	11" x 17"	Y	Y	30	Y
Letter SEF	8.5" x 11"	Y	Y	50	Y
Letter LEF	11" x 8.5"	Y	Y	50	Y
Legal SEF	8.5" x 14"	Y	Y	30	Y
Government Legal SEF	8.25" x 14"	Y	-	30	-
Half Letter SEF	5.5" x 8.5"	Y	-	-	-
Executive SEF	7.25" x 10.5"	Y	Y	50	Y
Executive LEF	10.5" x 7.25"	Y	Y	50	-
F SEF	8" x 13"	Y	-	-	-
Foolscap SEF	8.5" x 13"	Y	-	30	Y
Folio SEF	8.25" x 13"	Y	Y	30	-
	11" x 15"	Y	-	-	-
	10" x 14"	Y	-	-	-
	8" x 10"	Y	-	-	-
8K	267 x 390 mm	Y	Y	30	Y
16K SEF	195 x 267 mm	Y	Y	30	Y
16K LEF	267 x 195 mm	Y	Y	30	Y
Custom		Y	-	-	-
Com10 Env.	4.125" x 9.5"	Y	-	-	-
Monarch Env.	3.875" x 7.5"	Y	-	-	-
C6 Env.	114 x 162 mm	Y	-	-	-
C5 Env.	162 x 229 mm	Y	-	-	-

Paper	Size (W x L)	MF	Internal finisher(Shift/Staple)		
			Clr	Shf	Stp
DL Env.	110 x 220 mm	Y	-	-	-

1

MF: Main Frame, E2P: Europe 2 Holes Punch, N2P: North America 2 Holes Punch, N3P: North America 3 Holes Punch, E4P: Europe 4 Holes Punch, S4P: North Europe 4 Holes Punch

Paper	Size (W x L)	MF	Internal finisher(Punch)				
			E2P	N2P	N3P	E4P	S4P
A3 W	12" x 18"	Y	-	-	-	-	Y
A3 SEF	297 x 420 mm	Y	Y	Y	Y	Y	Y
A4 SEF	210 x 297 mm	Y	Y	-	-	Y	Y
A4 LEF	297 x 210 mm	Y	Y	Y	Y	Y	Y
A5 SEF	148 x 210 mm	Y	-	-	-	-	Y
A5 LEF	210 x 148 mm	Y	-	-	-	-	Y
A6 SEF	105 x 148 mm	Y	-	-	-	-	Y
B4 SEF	257 x 364 mm	Y	-	-	-	Y	Y
B5 SEF	182 x 257 mm	Y	-	-	-	Y	Y
B5 LEF	257 x 182 mm	Y	-	-	-	Y	Y
B6 SEF	128 x 182 mm	Y	-	-	-	-	Y
Ledger	11" x 17"	Y	Y	Y	Y	Y	Y
Letter SEF	8.5" x 11"	Y	Y	-	-	-	Y
Letter LEF	11" x 8.5"	Y	Y	Y	Y	Y	Y
Legal SEF	8.5" x 14"	Y	Y	-	-	Y	Y
Government Legal SEF	8.25" x 14"	Y	-	-	-	-	Y
Half Letter SEF	5.5" x 8.5"	Y	-	-	-	-	Y
Executive SEF	7.25" x 10.5"	Y	Y	-	-	Y	Y

Paper	Size (W x L)	MF	Internal finisher(Punch)				
			E2P	N2P	N3P	E4P	S4P
Executive LEF	10.5" x 7.25"	Y	-	-	-	-	Y
F SEF	8" x 13"	Y	-	-	-	-	Y
Foolscap SEF	8.5" x 13"	Y	Y	-	-	Y	Y
Folio SEF	8.25" x 13"	Y	-	-	-	-	Y
	11" x 15"	Y	-	-	-	-	Y
	10" x 14"	Y	-	-	-	-	Y
	8" x 10"	Y	-	-	-	-	Y
8K	267 x 390 mm	Y	-	-	-	-	Y
16K SEF	195 x 267 mm	Y	-	-	-	-	Y
16K LEF	267 x 195 mm	Y	-	-	-	-	Y
Custom		Y	-	-	-	-	Y
Com10 Env.	4.125" x 9.5"	Y	-	-	-	-	Y
Monarch Env.	3.875" x 7.5"	Y	-	-	-	-	Y
C6 Env.	114 x 162 mm	Y	-	-	-	-	Y
C5 Env.	162 x 229 mm	Y	-	-	-	-	Y
DL Env.	110 x 220 mm	Y	-	-	-	-	Y

Remarks:

Y	Supported
30	Output up to 30 sheets
50	Output up to 50 sheets
-	Not supported

Platen/ARDF Original Size Detection

Size (width x length) [mm]	Platen Inches	ARDF Inches	Platen Metric	ARDF Metric
A3 (297 x 420) L	-	Y	Y*3	Y
B4 (257 x 364) L	-	-	Y*3	Y
A4 (210 x 297) L	Y*3	Y	Y*3	Y
A4 (297 x 210) S	Y*3	Y	Y*3	Y
B5 (182 x 257) L	-	-	Y*3	Y
B5 (257 x 182) S	-	-	Y*3	Y
A5 (148 x 210) L	-	-	Y*1	Y
A5 (210 x 148) S	-	-	Y*3	Y
B6 (128 x 182) L	-	-	-	-
B6 (182 x 128) S	-	-	-	-
11" x 17" (DLT)	Y	Y*2	-	Y*2
11" x 15"	-	Y*2	-	-
10" x 14"	-	Y	-	-
8.5" x 14" (LG)	Y	Y*2	-	-
8.5" x 13" (F4)	-	Y*2	Y*4	Y*4
8.25" x 13"	-	-	Y*4	Y*4
8" x 13"(F)	-	-	Y*4	Y*4
8.5" x 11" (LT)	Y*3	Y*2	Y*3	Y*2
11" x 8.5" (LT)	Y*3	Y*2	Y*3	Y*2
8" x 10"	-	Y*2	-	-
5.5" x 8.5" (HLT)	Y*1	Y	-	-
8.5" x 5.5" (HLT)	Y	Y	-	-

8K (267 x 390)	-	-	Y*3	Y*2
16K L (195 x 267)	-	-	Y*3	Y*2
16K S (267 x 195)	-	-	Y*3	Y*2
7.25" x 10.5" (Executive)	-	Y	-	-
10.5" x 7.25" (Executive)	-	Y*2	-	-

*1: Use SP4-303 to detect original sizes as A5 lengthwise/HLT when the message "Can-t detect original size" shows.

*2: The machine can detect the paper size depending on the setting of SP6-016-1.

*3: The machine can detect the paper size depending on the setting of SP4-305-1.

*4: The machine can detect the paper size depending on the setting of SP5-126-1.

Remarks:

Y	Supported
-	Not supported

Optional Equipment

ARDF (D578)

Paper Size/Weight:	Simplex	Size	A3 to A5, DLT to HLT
		Weight	40 to 128 g/m^2 (10 to 34 lbs.)
	Duplex	Size	A3 to A5, DLT to HLT
		Weight	52 to 105 g/m^2 (14 to 28 lbs.)
Table Capacity:	50 sheets (80 g/m^2, 20 lbs.)		
Original Standard Position:	Rear left corner		
Separation:	Feed belt and separation roller		
Original Transport:	Roller transport		
Original Feed Order:	From the top original		

1

Supported Magnification Ratios:	33.3 to 200 %
Power Source:	DC 24V, 5V from the scanner unit
Power Consumption:	50 W or less
Dimensions (W × D × H) :	550 x 496 x 120 mm (21.7" x 19.5" x 4.7")
Weight:	10 kg (22 lbs.)

1-Bin Tray (D582)

Paper Size:	A5 LEF to A3, HLT to DLT
Paper Weight:	60 g/m^2 to 105 g/m^2 (16 lbs. to 28 lbs.)
Tray Capacity:	100 sheets (80 g/m^2, 20 lbs.): A4 or smaller 50 sheets (80 g/m^2, 20 lbs.): B4 or larger
Power Source:	DC 5 V (from copier)
Power Consumption:	1 W
Weight:	2 kg (4.4 lbs.)
Dimensions (W x D x H):	502 x 417 x 142 mm (19.8" x 16.4" x 5.6")

Bridge Unit (D584)

Paper Size:	Standard sizes: A6 LEF to A3, HLT to DLT Non-standard sizes: Width: 90 to 305 mm, Length: 148 to 600 mm
Paper Weight:	52 g/m^2 to 157 g/m^2 (14 lbs. to 42 lbs.)
Tray Capacity:	125 sheets (80 g/m^2, 20 lbs.): B4 or larger 250 sheets (80 g/m^2, 20 lbs.): A4 or smaller 10 sheets: Envelopes
Power Source:	DC 24 V, 5 V (form copier)

Dimensions (W x D x H):	420 x 513 x 145 mm (16.5" x 20.2" x 5.7")
Weight	4.0 kg (8.8 lbs.)

Shift Tray Unit (D583)

Paper Size:	Standard Size: A6 LEF to A3, HLT LEF to DLT Non-standard Size: Width: 90 to 305 mm, Length: 148 to 600 mm
Paper Weight:	57 to 157 g/m^2 (14 to 42 lbs.)
Tray Capacity:	125 sheets (80 g/m^2, 20 lbs.): B4 or larger 250 sheets (80 g/m^2, 20 lbs.): A4 or smaller
Power Source:	DC 5 V, 24 V (from copier)
Power Consumption:	Max: 4.4 W Average: 3.9 W
Weight:	2 kg (4.4 lbs.)
Dimensions (W x D x H):	423 x 467 x 113 mm (16.7" x 18.4" x 4.4")(without basement) 423 x 469 x 122 mm (16.7" x 18.5" x 4.8") (with basement)

Paper Feed Unit (D579)

Paper Size:	A5 to A3, $5^1/_2$" x $8^1/_2$" SEF to 11" x 17"
Paper Weight:	52 – 157 g/m^2, 14 – 42 lbs.
Tray Capacity:	550 sheets (80 g/m^2, 20 lbs.) x 1 tray
Paper Feed System:	FRR
Paper Height Detection:	5 steps (100%, 70%, 30%, 10%, Empty)

1

Power Source:	• 24 Vdc and 5Vdc (from the copier/printer):
	• 120 Vac (120 V version) from the copier/printer when the optional tray heater is installed
	• 220 – 240 Vac (230 V version) from the copier/printer when the optional tray heater is installed
Power Consumption:	Max: 37 W
	Average: 22 W
Weight:	15 kg (33 lbs.)
Dimensions (W x D x H):	580 x 629 x 120 mm (22.8" x 24.8" x 4.7")

Paper Feed Unit (D580)

Paper Size:	A5 to A3, $5^1/_2$" x $8^1/_2$" SEF to 11" x 17"
Paper Weight:	52 – 157 g/m^2, 14 – 42 lbs.
Tray Capacity:	550 sheets (80 g/m^2, 20 lbs.) x 2 trays
Paper Feed System:	FRR
Paper Height Detection:	5 steps (100%, 70%, 30%, 10%, Empty)
Power Source:	• 24 Vdc and 5Vdc (from the copier/printer):
	• 120 Vac (120 V version) from the copier/printer when the optional tray heater is installed
	• 220 – 240 Vac (230 V version) from the copier/printer when the optional tray heater is installed
Power Consumption:	Max: 40 W
	Average: 25 W
Weight:	26 kg (57 lbs.)
Dimensions (W x D x H):	580 x 629 x 260 mm (22.8" x 24.8" x 10.2")

LCT (D581)

Paper Size:	A4 LEF/LT LEF

Paper Weight:	52 g/m^2 to 157 g/m^2, 14lbs. to 42lbs.
Tray Capacity:	2,000 sheets (80 g/m^2, 20lbs.)
Remaining Paper Detection:	5 steps (100%, 70%, 30%, 10%, Empty): Right Tray 4 steps (100%, 70%, 30%, Empty): Left Tray
Power Source:	• DC 24 V, 5 V (from copier/printer) • 120 Vac (120 V version) from the copier/printer when the optional tray heater is installed • 220 – 240 Vac (230 V version) from the copier/printer when the optional tray heater is installed
Power Consumption:	45 W (Max.)/27 W (Ave.)
Weight:	26 kg (57 lbs.)
Dimensions (W x D x H):	580 x 629 x 260 mm (22.8" x 24.7" x 10.2")

500-Sheet Finisher (D585)

Face-down Output Size	12"x18", A3 SEF to A6 SEF, DLT to HLT SEF Shift sizes: A3 SEF to B5 SEF A5, B6, A6 SEF labels possible
Paper Thickness	52 g/m^2 (14 lbs.) to 157 g/m^2 (42 lbs.) Up to 253 g/m^2 (68 lbs.) without shift
Stapling	
Stack Height for Stapling	50 sheets: A4, LT and smaller 30 sheets: B4, LG and larger
Size	A3 SEF to B5 SEF (can be mixed if same width)
Stack Thickness	64 g/m^2 (16 lbs.) to 157 g/m^2 (42 lbs.)
Stapling Positions	Front/Oblique: 1, Front/Parallel: 1 Rear/Oblique: 1, Rear/Parallel: 1, 2 locations
Output Tray Capacity	
Non-staple Mode	500 sheets: A4, LT and smaller

1

Staple Mode	250 sheets: B4, LG and larger Stack Size (Stapling)	Stacks	Size
	2 to 9 Sheets	55 to 46	A4, B5, LT LEF
	10 to 50 Sheets	45 to 10	
	2 to 9 Sheets	55 to 27	A4, B5, LT SEF
	10 to 50 Sheets	25 to 8	
	2 to 9 Sheets	55 to 27	A3, B4, DLT, LG
	10 to 30 Sheets	25 to 8	
Stacking	Non-Stapling Mode	Vertical: 15 mm or less	
		Horizontal: 15 mm or less	
Jogging Precision			
2 to 30 Sheets	2 mm		
31 to 50 Sheets	3 mm		
Dimensions (W x D x H)	396 x 551 x 276 mm (15.6" x 21.7" x 10.9")		
Weight	12 kg (26.4 lbs.)		

1000-Sheet Finisher (D588)

Upper Tray

Paper Size:	A3 to A6 11" x 17" to 5.5" x 8.5"
Paper Weight:	60 to 157 g/m^2 (16 to 42 lbs.)
Paper Capacity:	250 sheets (A4 LEF/8.5" x 11" SEF or smaller) 50 sheets (A4, 8.5" x 11" or smaller) 30 sheets (B4, 8.5" x 14" or larger)

Lower Tray

Paper Size:	No staple mode: A3 to B5, DLT to HLT Staple mode: A3, B4, A4, B5, DLT to LT			
Paper Weight:	No staple mode: 60 to 157 g/m^2 (16 to 42 lbs.) Staple mode: 64 to 90 g/m^2 (17 to 24 lbs.)			
Stapler Capacity:	30 sheets (A3, B4, DLT, LG) 50 sheets (A4, B5 LEF, LT)			
Paper Capacity:	No staple mode: 1,000 sheets (A4/LT or smaller: 80 g/m^2, 20 lbs.) 500 sheets (A3, B4, DLT, LG: 80 g/m^2, 20 lbs.) Staple mode: (80 g/m^2, 20 lbs., number of sets)			
	Set Size	2 to 9	10 to 50	-
	Size		10 to 30	31 to 50
	A4/LT LEF B5 LEF	100	100 to 20	100 to 20
	A4/LT SEF	100	50 to 10	50 to 10
	A3, B4, DLT, LG	50	50 to 10	-
Staple positions:	1 Staple: 2 positions (Front, Rear) 2 Staples: 2 positions (Upper, Left)			
Staple Replenishment:	Cartridge (5,000 staples/cartridge)			
Power Source:	DC 24 V, 5 V (from the copier/printer)			
Power Consumption:	50 W			
Weight:	25 kg (55.2 lbs.)			
Dimensions (W x D x H):	527 x 520 x 790 mm (20.8" x 20.5" x 31.1")			

1

1000-Sheet Booklet Finisher (B589) and Punch Unit (B807)

Print Paper Size:	No punch mode: A3/11" x 17" to A5/8.5" x 5.5" (LEF) Punch mode: 2 holes: A3/11" x 17" to B6/5.5" x 8.5" (SEF) or A4/8.5" x 11" to A5/8.5" x 5.5" (LEF) 3 holes: A3, B4, 11" x 17" (SEF) or A4, B5, 8.5" x 11" (LEF) 4 holes (Europe): A3, B4, 11" x 17" (SEF) or A4, B5, 8.5" x 11" (LEF) 4 holes (North Europe): A3/11" x 17" to B6/5.5" x 8.5" (SEF) Staple mode: A3/11" x 17" to B5/8.5" x 11"
Paper Weight:	No punch mode: 52 to 256 g/m^2 (14 to 68 lbs.) (Shift tray) 52 to 105 g/m^2 (14 to 28 lbs.) (Proof tray) Punch mode: 52 to 163 g/m^2 (14 to 43 lbs.) Staple mode: 64 to 90 g/m^2 (17 to 24 lbs.) Label/Thick paper/OHP cannot be stapled
Tray Capacity:	[Proof tray] 100 sheets: A4, 8.5" x 11" or less 50 sheets: B4, 8.5" x 14" or more [Shift tray] 1000 sheets: A4, 8.5" x 11" (LEF) or smaller 500 sheets: B4, 8.5" x 14" or larger
Staple capacity:	Single size: 50 sheets: A4, 8.5" x 11" or smaller 30 sheets: B4, 8.5" x 14" or larger

1

Staple position:	3 positions
	1-staple: 2 positions (Top Left, Top Right)
	2-staples: 1 positions
Staple replenishment:	Cartridge (5000 staples)
Power consumption:	60 W
Dimensions (W x D x H):	535 x 600 x 930 mm (21.1" x 23.6" x 36.6")

Weight	Without punch unit:	48 kg (105.8 lbs.)
	With punch unit:	50 Kg (110.3 lbs.)

Internal Finisher (D586) and Punch Unit (D587)

Print Paper Size:	**No punch mode**:
	Standard Size:
	A3/11" x 17" to B6/5.5" x 8.5" (SEF)
	Non Standard Size:
	Width 90 to 30.5 mm (3.5" to 12")
	Length 148 to 1260 mm (5.8" to 49.6")
	Punch mode:
	2 holes:
	A3, A4, B4, B5 or 11" x 17", 8.5" x 14" (SEF), 8.5" x 13" (SEF), 8.5" x 11", 7.25" x 10.5"
	3 holes:
	A3, A4 (LEF) or 11" x 17", 8.5" x 11" (LEF)
	4 holes (Europe):
	A3, A4 (LEF) or 11" x 17", 8.5" x 11" (LEF)
	4 holes (Scandinavia):
	A3, A4, B4, B5 or 11" x 17", 8.5" x 14" (SEF), 8.5" x 13" (SEF), 8.5" x 11", 7.25" x 10.5"
	Staple mode:
	A3/11" x 17" to B5/8.5" x 11"

Paper Weight:	No punch mode: 52 to 256 g/m^2 (14 to 68 lbs.) Punch mode: 52 to 105 g/m^2 (14 to 28 lbs.) Staple mode: 52 to 105 g/m^2 (14 to 28 lbs.) Label/Thick paper/OHP cannot be stapled
Tray Capacity:	500 sheets: A4, 8.5" x 11" or less 250 sheets: B4, 8.5" x 14" or more
Staple capacity:	50 sheets: A4, 8.5" x 11" or smaller 30 sheets: B4, 8.5" x 14" or larger
Staple position:	3 positions 1-staple: 2 positions (Top/ Bottom) 2-staples: 1 position
Staple replenishment:	Cartridge (5000 staples)
Power consumption:	50 W + 12 W (Punch Unit)
Dimensions (W x D x H):	**Finisher:** 495 x 477 x 161 mm (19.5" x 18.7" x 6.3") **Punch Unit:** 171 x 459 x 136 mm (6.7" x 18.1" x 5.4")

Weight:	Without punch unit:	13 kg (28.6 lbs.)
	With punch unit:	17 kg (37.4 lbs.)

2. Appendix: PM Tables

PM Table

🔽 **Note**

- The amounts mentioned as the PM interval indicate the number of prints.
- After carrying out PM, clear the maintenance counter (SP7-804).

Preventive Maintenance Items

Chart: A4 (LT)/5%

Mode: 3 copies / original (prints/job)

Ratio 30%

Environment: Normal temperature and humidity

Yield may change depending on circumstances and print conditions.

Symbol keys: C: Clean, R: Replace, L: Lubricant, I: Inspect

Mainframe

Item	EM	120K	240K	360K	NOTE
Scanner/Laser Optics					
Reflector		C	C	C	Optics cloth
1st Mirror	C	C	C	C	Optics cloth
2nd Mirror	C	C	C	C	Optics cloth
3rd Mirror	C	C	C	C	Optics cloth
Scanner Guide Rails		C	C	C	Do not use alcohol.
Platen Sheet Cover	C	I	I	I	Replace the platen sheet, if necessary. Dry cloth or alcohol
Exposure Glass		C	C	C	Dry cloth or alcohol
Toner Shield Glass		C	C	C	Optics cloth

2

Item	EM	120K	240K	360K	NOTE
APS Sensor		C	C	C	Dry cloth or blower brush
Around the Drum					
Transfer/Separation Unit		R	R	R	
ID Sensor		C	C	C	Perform the ID sensor initial setting (SP2-935) after cleaning (blower brush)
PCU		RTB 28 PM intervals for PCU are changed			
Drum		R	R	R	Do SP2801. This initializes the developer and resets the TD and ID sensor outputs to their defaults. It also resets the PCU counter.
Charge Roller		R	R	R	
Cleaning Roller		R	R	R	
Cleaning Blade		R	R	R	
Pick-off Pawls		R	R	R	
Developer		R	R	R	
Paper Feed					
Registration Rollers	C	C	C	C	Clean with water
Paper Feed Roller	C	C	C	C	Dry cloth
Separation Roller	C	C	C	C	Dry cloth
Pick-up Roller	C	C	C	C	Dry cloth
Paper Feed Guides	C	C	C	C	Clean with alcohol.
Relay Rollers	C	C	C	C	Clean with water.
Dust collection box	C	C	C	C	Remove, empty, clean
Fusing Unit and Paper Exit					
Fusing Entrance and Exit Guide Plates		C	C	C	Clean with water or alcohol.

Item	EM	120K	240K	360K	NOTE
Hot Roller		R	R	R	Clean with water or alcohol.
Pressure Roller		R	R	R	
Fusing Thermistors		R	R	R	
Cleaning Roller		C	C	C	
Cleaning Roller Bushings		C	C	C	
Hot Roller Strippers		R	R	R	
Hot Roller and Pressure Roller Bushings	L	L	L	L	Grease Barrierta JFE5 5/2 (A0289300)
Paper Exit Guide Ribs		C	C	C	Clean with water or alcohol.
Duplex					
Rollers		C	C	C	Clean with water.

ARDF (D578)

Item	EM	80K (Original)	NOTE
Pick-up Roller	C	R	Clean with water
Feed Belt	C	R	Clean with water
Separation Roller	C	R	Clean with water
Other Rollers	C	C	Clean with water
Gears	L		Lubricate, if necessary
Platen Sheet	C	C	Clean with water or alcohol

Paper Feed Unit (D579)

Itme	EM	NOTE
Paper Feed Roller	C	Clean with water

Itme	EM	NOTE
Pick-up Roller	C	Dry cloth
Separation Roller	C	Clean with alcohol.
Relay Rollers	C	Clean with water.
Bottom Plate Pad	C	Clean with water.

Paper Feed Unit (D580)

Itme	EM	NOTE
Paper Feed Roller	C	Clean with water
Pick-up Roller	C	Dry cloth
Separation Roller	C	Clean with alcohol.
Relay Rollers	C	Clean with water.
Bottom Plate Pad	C	Clean with water.

LCT (D581)

Itme	EM	NOTE
Paper Feed Roller	C	Clean with water
Pick-up Roller	C	Dry cloth
Separation Roller	C	Clean with alcohol.
Relay Rollers	C	Clean with water.
Bottom Plate Pad	C	Clean with water.

1000-Sheet Finisher (D588)

Item	EM	NOTE
Rollers	C	Clean with water or alcohol.

Item	EM	NOTE
Brush Roller	I	Replace if necessary.
Discharge Brush	C	Clean with a dry cloth
Sensors	C	Blower brush
Jogger Fences	I	Replace if necessary.

1000-Sheet Booklet Finisher (D589)

Item	EM	NOTE
Rollers	C	Damp cloth
Discharge Brush	C	Dry cloth
Sensors	C	Blower brush
Punch Kit		
Punch Chads	C	Discard chads.

500-Sheet Finisher (D585)

Item	EM	NOTE
Rollers	C	Damp cloth
Discharge Brush	C	Dry cloth
Sensors	C	Blower brush

1 Bin Tray (D582)

Item	EM	NOTE
Rollers	C	Dry or damp cloth
Copy Tray	C	Dry or damp cloth
Sensors	C	Blower brush

Internal Finisher (D586)

Item	EM	NOTE
Rollers	C	Clean with water or alcohol.
Sensors	C	Blower brush
Punch Chads	C	Discard chads.

Others Yield Parts

The parts mentioned in these tables have a target yield. However, the total copy/print volume made by the machine will not reach the target yield within the machine's targeted lifetime if the machine is used under the target usage conditions (ACV, color ratio, P/J, and C/O). So, these parts are categorized not as PM parts but as yield parts (EM parts).

Item	600K	NOTE
Development Case	C	

3. Appendix: Service Call Conditions

Service Call Conditions

Summary

There are 4 levels of service call conditions.

Level	Definition	Reset Procedure
A	To prevent damage to the machine, the main machine cannot be operated until the SC has been reset by a service representative (see the note below).	Enter SP mode, go into SP5810, press [Execute], turn the main power switch off and 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 the defective feature is selected.	Turn the operation switch or main switch off and on.
C	The SC history is updated. The machine can be operated as usual.	The SC will not be displayed. Only the SC history is updated.
D	Turning the main switch off then on resets SCs displayed on the operation panel. These are re-displayed if the error occurs again.	Turn the operation switch off and on.

When a Level "D" SC code occurs

When a Level D SC occurs, a screen opens on the operation panel to tell the operator:

- An error occurred

- The job in progress will be erased

- The machine will reboot automatically after approximately 30 seconds.

The operator can wait until the machine reboots automatically or touch "Reset" on the screen to reset the machine immediately and go back to the copy screen.

If the operator does not touch "Reset"

The next message tells the operator that the machine will reset automatically and that the previous job was lost and must be started again. After reading the message, the operator touches "Confirm" on the screen. The next screen shows the number and title of the SC code, and stops until the operator turns the machine off and on.

If the operator touches "Reset"

If the operator touches "Reset" to bypass the 30-second interval for the machine to reboot, the machine reboots immediately and the operation panel displays the copy screen.

⭐ Important

- Do not try to use the operation panel during an automatic reboot. If the Remote Service System is in use, the SC code is sent immediately to the Service Center

SC Code Classification

The table shows the classification of the SC codes:

Class 1	Section	SC Code	Detailed section
1XX	Scanning	100 -	Scanner
		190 -	Unique for a specific model
2XX	Laser exposure	200 -	Polygon motor
		220 -	Synchronization control
		230 -	FGATE signal related
		240 -	LD control
		280 -	Unique for a specific model
		290 -	Shutter
3XX	Image development 1	300 -	Charge
		330 -	Drum potential
		350 -	Development
		380 -	Unique for a specific model

Class 1	Section	SC Code	Detailed section
4XX	Image development 2	400 -	Image transfer
		420 -	Paper separation
		430 -	Cleaning
		440 -	Around drum
		460 -	Unit
		480 -	Others
5XX	Paper feed / Fusing	500 -	Paper feed
		515 -	Duplex
		520 -	Paper transport
5XX	Paper feed / Fusing	530 -	Fan motor
		540 -	Fusing
		560 -	Others
		570 -	Unique for a specific model
6XX	Communication	600 -	Electrical counters
		620 -	Mechanical counters
		630 -	Account control
		640 -	CSS
		650 -	Network
		670 -	Internal data processing
		680 -	Unique for a specific model
7XX	Peripherals	700 -	Original handling
		720 -	Two-tray finisher
		740 -	Booklet finisher

3

Class 1	Section	SC Code	Detailed section
8XX	Controller	800 -	Error after ready condition
		820 -	Diagnostics error
		860 -	Hard disk
		880 -	Unique for a specific model
9XX	Others	900 -	Counter
		920 -	Memory
		990 -	Others

SC1xx: Scanning

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
101	D	Exposure lamp error
		The standard white level could not be set properly when scanning the white plate during automatic white level adjustment.
		• White plate dirty
		• Spurious electrical noise on power supply line
		• Exposure lamp connection loose, broken, defective
		• Exposure lamp defective
		• High voltage power supply (power pack) harness loose, broken, defective
		• SBU defective
		• BCU defective
		• SIO defective
		1. Check and clean the scanner mirror(s) and scanner lens.
		2. Check and clean the shading plate.
		3. Replace the exposure lamp.
		4. Replace the scanner mirror(s) or scanner lens.
		5. Replace the SBU board.
		6. Replace the BCU board.
		7. Replace the SIO board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
120	D	Scanner home position error 1
		The scanner home position sensor does not detect the "OFF" condition during operation.
121	D	Scanner home position error 2
		The scanner HP sensor did not turn on during scanner initialization or copying.
-	-	• Scanner motor driver defective • Scanner motor defective • Harness between SIO board and scanner motor disconnected • Scanner HP sensor defective • Harness between SIO and HP sensor disconnected
		1. Check the cable connection between the SIO board and scanner motor. 2. Check the cable connection between the SIO and HP sensor. 3. Replace the scanner motor. 4. Replace the HP sensor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
141	D	Black level correction error
		Black level correction could not be set properly during automatic adjustment.
		• Harnesses at the SBU, IPU, BCU loose, broken, defective. • SBU defective • IPU defective • BCU defective
		1. Check the cable connection 2. Replace the SBU. 3. Replace the IPU. 4. Replace the BCU.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
142	D	White level correction error
		White level correction could not be set properly during automatic adjustment.
		• Harnesses at SBU, IPU, BCU loose, broken, defective • Spurious electrical noise on power supply line • White plate dirty or missing • Anti-condensation heater (option) in scanner unit not operating • Exposure lamp harness, loose, broken, defective • Exposure lamp defective • SBU defective • IPU defective • BCU defective • SIO Defective
		1. Clean the exposure glass, white plate, mirrors, and lens. 2. Check if the exposure lamp is lit during initialization. 3. Check the harness connection between SBU, BCU and IPU. 4. Check the anti-condensation heater (option) is installed correctly. 5. Replace the exposure lamp. 6. Replace the SBU board. 7. Replace the IPU board. 8. Replace the BCU board. 9. Replace the SIO board.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
144	D	SBU communication error
		Connection to the SBU could not be confirmed, possibly due to a defect in the BCU detection port.
		• Harness connection at IPU, BCU, SBU loose, broken, defective • Spurious electrical noise on power supply line • IPU defective • BCU defective • SBU defective
		1. Replace the harness. 2. Replace the IPU. 3. Replace the SBU. 4. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
161	D	IPU error
001	D	The error result of self-diagnostic by the ASIC on the BCU is detected.
		• Defective BCU • Defective connection between BCU and SBU
		1. Check the connection between BCU and SBU. 2. Replace the BCU.
002	D	The machine detects an error during an access to the Ri.
		• Defective BCU board
		Replace the BCU board.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
165	D	Copy Data Security Unit error
		• The copy data security board is not detected when the copy data security function is set "ON" with the initial setting. • A device check error occurs when the copy data security function is set "ON" with the initial setting.
		• Incorrect installation of the copy data security board • Defective copy data security board
		1. Reinstall the copy data security board. 2. Replace the copy data security board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
195	D	Serial Number Mismatch
		• Serial number stored in the memory does not have the correct code.
		• NVRAM defective • BCU replaced without original NVRAM
		1. Check the serial number with SP5-811-002. 2. If the stored serial number is incorrect, contact your supervisor.

SC 2xx: Exposure

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
202	D	Polygon motor error 1: ON timeout
		The polygon mirror motor did not reach the targeted operating speed within 10 sec. after turning on or changing speed
203	D	Polygon motor error 1: OFF timeout
		The polygon mirror motor did not leave READY status within 3 sec. after polygon motor switched off.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
204	D	Polygon motor error 1: XSCRDY signal error
		The XSCRDY signal remained HIGH for 200 ms while the LD unit was firing.
-	-	• Polygon motor/driver board harness loose or broken • Polygon motor/driver board defective • Laser optic unit defective • IPU defective
		1. Replace the polygon motor. 2. Replace the laser optics housing unit. 3. Replace the harness. 4. Replace the IPU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
220	D	Laser synchronization detection error: LD0
		The laser synchronizing detection signal for the start position of the LD was not output for two sec. after LDB unit turned on with the polygon motor rotating normally.
		• Laser synchronizing detection board harness loose or broken. • Laser synchronization detection board defective • LDB unit defective • IPU defective
		1. Check the connectors. 2. Replace the laser-synchronizing detector. 3. Replace the LDB. 4. Replace the IPU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
230	D	FGATE ON error
		The FGATE signal did not assert within the prescribed time. (The BCU generates the FGATE signal and sends it to the LD unit when the registration sensor switches on.)

SC230
RTB 44

3

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
231	D	FGATE OFF error
		The FGATE signal did not go off within the prescribed time. (The BCU generates the FGATE signal and sends it to the LD unit when the registration sensor switches on.)
		• BCU, Controller board harness loose or broken • BCU defective • Controller board defective
		1. Check the connection between the controller board and the BCU. 2. Replace the BCU. 3. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
240	C	LD error
		The IPU detected a problem at the LD unit.
		• LD unit harness broken, defective • BCU harness broken defective • LD unit defective • BCU defective
		1. Replace the harness of the LD. 2. Replace the laser optics housing unit. 3. Replace the harness of the BCU. 4. Replace the BCU.

SC3xx: Image Processing – 1

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
302	D	Charge level output error
		The PWM output level was detected higher than 50% after 10 consecutive samplings.
		• Harness of the high voltage power supply board (power pack) is loose, broken. • PCU connection loose or broken
		1. Replace the harness of the power pack. 2. Replace the harness of the PCU. 3. Replace the PCU.

3

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
355	C	ID sensor error
		• One of the following conditions occurred when the ID sensor pattern was calibrated during printing: Vsp > 2.5V Vsg < 2.5V Vsp = 0V Vsg = 0V • The following conditions occurred simultaneously when the ID sensor pattern was calibrated during printing: Vsg = 5V PWM = 0 (LED current drop) • Error occurred during automatic adjustment of Vsg: Vsg output did not attain 4V, even with PWM = 1023 (maximum current for LED) Vsg output was greater than 4V, even with PWM=1 (no current for the LED)
		• ID sensor dirty or defective • ID sensor harness disconnected, or connector damaged • BCU defective • High voltage power supply board (power pack) defective • Scanning system or image creation system malfunction
		1. Replace the ID sensor harness. 2. Replace the ID sensor. 3. Replace the harness of the high voltage power supply board (power pack). 4. Replace the harness of the BCU. 5. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
389	C	TD sensor error 1
		TD sensor output was less than 0.5V, or more than 0.5V 10 times in succession. If the fax unit is installed, this SC is issued immediately. If the fax unit is not installed, this SC is issued after the prescribed number of copies has printed.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
390	D	TD sensor error 2
		The TD sensor outputs less than 0.5V or more than 4.0V 10 times consecutively during copying.
		Note: If the fax option is installed, this SC is issued immediately.
		If the fax option is not installed, this SC is issued after the prescribed number of pages is copied.
		• TD sensor abnormal
		• Poor connection of the PCU
		1. Replace the TD sensor.
		2. Replace the harness of PCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
391	D	Development bias leak
		The PWM output level was detected higher than 50% after 10 consecutive samplings.
		• High voltage power supply board (power pack) harness loose, broken.
		• PCU connection loose or broken
		1. Replace the harness of the high voltage power supply board (power pack).
		2. Replace the harness of the PCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
392	B	TD sensor initial setting error
		Initialization of the new PCU unit failed (the drum and development roller did not start rotating)
		• ID sensor harness loose, broken • TD sensor harness loose, broken • ID sensor defective • TD sensor defective
		1. Replace the harness of the ID sensor. 2. Replace the the ID sensor. 3. Replace the harness of the TD sensor. 4. Replace the TD sensor.

SC4xx: Image Processing - 3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
401	D	Transfer roller leak error 1
		A transfer roller current leak signal wad detected. (The current feedback signal for the transfer roller was not detected within the correct time.)
		• High voltage supply board set incorrectly or defective • Transfer roller set incorrectly or damaged • Transfer unit set incorrectly
		1. Check the high voltage supply board is set correctly. 2. Check the harness of the high voltage supply board. 3. Replace the high voltage supply board. 4. Check the transfer roller is set correctly. 5. Replace the transfer roller. 6. Check the transfer unit is set correctly.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
402	D	Transfer roller leak error 2
		A transfer roller current leak signal is detected. The current feedback signal for the transfer roller is not detected within the correct time.
		• Transfer roller set incorrectly or damaged • High voltage supply board set incorrectly or defective
		1. Check the high voltage supply board is set correctly. 2. Check the harness of the high voltage supply board. 3. Replace the high voltage supply board. 4. Check the transfer roller is set correctly. 5. Replace the transfer roller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
411	D	Separation bias leak error
		A separation bias leak signal was detected.
		• High voltage supply board defective • Discharge plate defective
		1. Check the harness of the high voltage supply board. 2. Replace the high voltage supply board. 3. Replace the discharge plate.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
490	D	Toner supply motor leak error r
		More than 1 ampere supplied to the toner supply motor for longer than 200 ms.
		• Toner supply motor defective
		1. Replace the toner transport motor.

3

SC5xx: Paper Feed and Fusing

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
500	D	Main motor lock
		The machine detected motor lock (motor is not operating correctly)
		• An obstruction has blocked operation of the main motor • Main motor harness loose or broken • Main motor or main motor driver board defective • Overload on the main motor
		1. Replace the harness of the main motor. 2. Replace the motor. 3. Replace the main motor driver board. 4. Check for the blockages in the main motor mechanism.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
501	B	Paper Tray 1 error
502	B	Paper Tray 2 error
-	-	• When the tray lift motor rotates counterclockwise, (if the upper limit is not detected within 10 seconds), the machine asks the user to reset the tray. • When the tray lift motor rotates clockwise, (if the upper limit is not detected within 1.5 seconds), the machine asks the user to reset the tray. If one of these conditions occurs three consecutive times, the SC is generated.
		• Disconnected or defective paper lift sensor • Disconnected or defective tray lift motor • Defective bottom plate lift mechanism • Too much paper in the tray • Defective IOB
		1. Check if the paper is not loaded too much. 2. Check if the bottom plate smoothly moves up and down manually. 3. Check and/or replace the tray lift motor/ paper lift sensor. 4. Replace the IOB.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
503	B	Tray 3 error (Paper Feed Unit or LCT)
		This SC is generated if the following condition occurs 3 consecutive times. **For the paper feed unit:** • When the tray lowers, the tray lift sensor does not go off within 15 sec. **For the LCT:** • When the main switch is turned on or when the LCT is set, if the end fence is not in the home position (home position sensor ON), the tray lift motor stops. • If the upper limit does not go off for 8 seconds even the tray lift motor turns on to lower the tray after the upper limit has been detected at power on.
		For the paper feed unit: • Defective tray lift motor or connector disconnection • Defective lift sensor or connector disconnection **For the LCT:** • Defective stack transport clutch or connector disconnection • Defective tray motor or connector disconnection • Defective end fence home position sensor or connector disconnection
		1. Check the cable connections. 2. Check and/or replace the defective component.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
504	B	Tray 4 error (3 Tray Paper Feed Unit)
		This SC is generated if the following condition occurs 3 consecutive times. • When the tray lowers, the tray lift sensor does not go off within 1.5 sec.
		1. Check the cable connections. 2. Check and/or replace the defective component.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
508	B	By-pass bottom plate error
		The signal from the by-pass tray HP sensor does not change for 1.0 second after the by-pass motor has rotated counterclockwise. If this condition occurs three consecutive times, the SC is generated.
		• Disconnect or defective harness of the by-pass motor • Defective or disconnected connection for the by-pass motor. • Defective by-pass motor • Disconnect or defective harness of the by-pass HP sensor • Defective or disconnected connection for the by-pass HP sensor. • Defective by-pass HP sensor
		Check the operation of the by-pass motor with SP5804-023. No operation: 1. Check the harness connection of the by-pass tray and duplex unit. 2. Replace the by-pass motor. Operation: Check the operation of the by-pass HP sensor with SP5803-048 while the by-pass motor is rotating. No change of Bit 0 1. Check the harness connection of the by-pass HP sensor. 2. Replace the by-pass HP sensor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
530	D	Ventilation fan: front error
531	D	Ventilation fan: rear error

SC530, 531
RTB 41: Correction

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	The motor lock signal error is detected for 10 seconds after the motor lock signal was first detected. • Defective ventilation fan: front or rear • Disconnected or defective harness • Defective DRB • Defective BCU 1. Check or replace the harness. 2. Replace the ventilation fan: front (SC530) or rear (SC531). 3. Replace the DRB. 4. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
532	D	Laser unit fan error The motor lock signal error is detected for 10 seconds after the motor lock signal was first detected. • Defective laser unit fan • Disconnected or defective harness • Defective drive board • Defective BCU 1. Replace the laser unit fan. 2. Check the harness of the laser unit fan. 3. Replace the harness of the laser unit fan. 4. Replace the drive board. 5. Replace the BCU.

SC532
RTB 41: Correction

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
541	A	Fusing thermistor open (center)
		The temperature of the hot roller remained below 0°C for 5 sec at the center of the hot roller.
		• Fusing thermistor out of its position because of incorrect installation • Fusing thermistor disconnected or defective • Power supply not within rated range (15% or more below rating)
		1. Check the fusing thermistor is set correctly. 2. Replace the fusing thermistor. 3. Check the power supply source.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
542	A	Fusing temperature warm-up error (center)
		• The fusing temperature did not reach the standby temperature within 20 sec. at the center of the hot roller after the main switch turned on.
		• Fusing thermistor defective or out of position • Fusing lamp disconnected • Thermistor defective • Fusing lamp defective
		1. Check the fusing thermistor is set correctly. 2. Replace the fusing thermistor. 3. Check the fusing lamp is connected. 4. Replace the fusing lamp.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
543	A	Fusing overheat error 1 (center)
		The fusing thermistor detected a fusing temperature over 230°C for 5 sec. at the center of the hot roller.
		• TRIAC short on PSU (PSU defective) • BCU board defective • Fusing thermistor defective
		1. Replace the PSU. 2. Replace the BCU board. 3. Replace the thermistor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
544	A	Fusing overheat error 2 (center)
		A fusing temperature over 250°C is detected at the center of the hot roller by the fusing temperature monitor circuit in the BCU board. The power was interrupted for more than 0.3 sec.
		• TRIAC short on PSU (PSU defective) • BCU board defective • Fusing thermistor defective • Power supply voltage unstable
		1. Replace the PSU. 2. Replace the BCU board. 3. Replace the thermistor. 4. Check the power supply source.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
545	A	**Fusing overheat error 3 (center)** After warmup, the center of the hot roller attained full operating temperature and maintained this temperature for 10 sec. without the hot roller rotating. • Center hot roller thermistor installed incorrectly, disconnected. • Center hot roller thermistor defective 1. Check the hot roller thermistor is set correctly. 2. Replace the hot roller thermistor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
547	D	• The zero cross signal is detected for 0.05 seconds three times even though the heater relay is off when turning on the main power. • The zero cross signal is not detected for 2 seconds even though the heater relay is on after turning on the main power or closing the front door. • Defective fusing lamp relay • Defective fusing lamp relay circuit • Unstable power supply 1. Replace the fusing lamp relay. 2. Check the power supply source.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
551	A	**Fusing thermistor open (end)** The temperature of the hot roller remained below 0°C for 5 sec. at the end of the hot roller. • Fusing thermistor out of its position because of incorrect installation • Fusing thermistor disconnected or defective • Power supply not within rated range (15% or more below rating) 1. Check the fusing thermistor is set correctly. 2. Replace the fusing thermistor. 3. Check the power supply source.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
552	A	Fusing temperature warm-up error (end)
		The fusing temperature did not reach the standby temperature within 20 sec. at the center of the hot roller after the main switch turned on.
		• Fusing thermistor defective or out of position • Fusing lamp disconnected • Thermistor defective • Fusing lamp defective
		1. Check the fusing thermistor is set correctly. 2. Check the fusing lamp is connected correctly. 3. Replace the fusing thermistor. 4. Replace the fusing lamp.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
553	A	Fusing overheat error 1 (end)
		The fusing thermistor detected a fusing temperature over 230°C for 5 sec. at the center of the hot roller.
		• TRIAC short on PSU (PSU defective) • BCU board defective • Fusing thermistor defective
		1. Replace the PSU. 2. Replace the BCU board. 3. Replace the thermistor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
554	A	Fusing overheat error 2 (end)
		A fusing temperature over 250°C is detected at the center of the hot roller by the fusing temperature monitor circuit in the BCU board. The power was interrupted for more than 0.3 sec.
		• TRIAC short on PSU (PSU defective) • BCU board defective • Fusing thermistor defective • Power supply voltage unstable
		1. Replace the PSU. 2. Replace the BCU board. 3. Replace the thermistor. 4. Check the power supply source.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
555	A	Fusing overheat error 3 (end)
		After warmup, the center of the hot roller attained full operating temperature and maintained this temperature for 10 sec. without the hot roller rotating.
		• Center hot roller thermistor installed incorrectly, disconnected. • Center hot roller thermistor defective
		1. Check the hot roller thermistor is set correctly. 2. Replace the hot roller thermistor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
557	C	Zero cross waveform signal error
		The waveform of the zero cross signal was detected out of range.
		• Electrical noise on the power supply line
		Check the power supply source.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
559	A	Consecutive fusing unit paper jams
		Three consecutive paper jams occurred in the fusing unit.
		The paper jam counter for the fusing unit reaches 3 times. The paper jam counter clears after the paper feeds correctly.
		Note: This SC is issued only if SP1159 is set to "1".
		• Paper jam in the fusing unit.
		1. Remove the paper jam in the fusing unit.
		2. Make sure that the paper path in the fusing unit is clear.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
590	D	Exhaust fan motor error
		The CPU detects an exhaust fan lock signal consecutively 200 ms.
		• Poor connection of the exhaust fan motor
		• Too much load on the motor drive
		1. Check the connection of the exhaust fan motor.
		2. Check for blockages in the motor drive mechanism.

SC590
RTB 41: Correction

SC6xx: Device Communication

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
620	D	Communication error between IPU and ADF
		A break occurred in the connection between the IPU and ADF
		• Finisher serial cable connection loose, broken • BCU defective • Finisher main board defective • External noise
		1. Check the cable connection of the ARDF. 2. Shut out the external noise. 3. Replace the ARDF. 4. Replace the BCU board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
621	D	Finisher communication error
622	D	Paper tray unit communication error

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	While the IOB communicates with an optional unit, an SC code is displayed if one of following conditions occurs. • The IOB receives the break signal which is generated by the peripherals only just after the main switch is turned on. • When the IOB does not receive an OK signal from a peripheral 100ms after sending a command to it. The IOB resends the command. The IOB does not receive an OK signal after sending the command 3 times.
		• Cable problems • IOB problems • BCU problems • PSU problems in the machine • Main board problems in the peripherals
		1. Check if the cables of peripherals are correctly connected. 2. Replace the PSU if no power is supplied to peripherals. 3. Replace the IOB or main board of peripherals. 4. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
632	B	Counter device error 1
		After 3 attempts to send a data frame to the optional counter device via the serial communication line, no ACK signal was received within 100 ms.
		• Serial line between the optional counter device, the relay board and copier control board is disconnected or damaged • Make sure that SP5113 is set to enable the optional counter device.
		Check the connection between the main machine and optional counter device.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
633	B	Key/card counter device error 2
		During communication with the device, the MCU received a break (Low) signal.
		• Serial line from the device to the main machine is unstable, disconnected, or defective
		1. Check if the setting of the SP5113 is correctly set. 2. Check the connection between the main machine and optional counter device.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
634	B	Key/card counter device error 3
		The backup battery of the counter device RAM is low.
		• RAM backup battery exhausted • Counter device defective
		Replace the counter device.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
635	B	Key/card counter device error 4
		After installation of the device a message alerts user to a battery voltage abnormal error.
		• Device control board defective • Device control board backup battery defective
		Replace the counter device.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
636	D	OSM User Code File Error
		The correct "usercode" file could not be found in the root folder of the SD card because the file is not present, or the existing file is corrupted or the wrong type file.
		• Make sure the eccm.mod file is in the root folder of the SD card. **Note**: The usercode files are created with the User Setting Tool "IDissuer.exe".
		Check the eccm.mod file is in the root folder of the SD card.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
641	D	Engine-Controller Communication Error: Non-Response
		There was no response to a frame sent from the controller board to the engine.
		Turn the machine power off/on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
650	CTL	Communication error of the remote service modem (Cumin-M)
-001	-	Authentication error
		The authentication for the Cumin-M failed at dial up connection.
		• Incorrect SP settings • Disconnected telephone line • Disconnected modem board
		Check and set the correct user name (SP5816-156) and password (SP5816-157).
-004	-	Incorrect modem setting
		Dial up fails due to the incorrect modem setting.
		Same as -001
		Check and set the correct AT command (SP5819-160).

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-005	-	Communication line error
		The supplied voltage is not sufficient due to the defective communication line or defective connection.
		Same as -001
		Consult with the user's local telephone company.
-011	-	Incorrect network setting
		Both the NIC and Cumin-M are activated at the same time.
		Same as -001
		Disable the NIC with SP5985-1.
-012	-	Modem board error
		The modem board does not work properly even though the setting of the modem board is installed with a dial up connection.
		Same as -001
		1. Install the modem board. 2. Replace the modem board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
651	C	Incorrect dial up connection
		-001: Program parameter error
		-002: Program execution error
		An unexpected error occurs when the modem (Embedded RCG-M) tries to call the center with a dial up connection.
		• Caused by a software bug
		No action required because this SC does not interfere with operation of the machine.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
652	C	ID2 mismatching
		ID2 for @Remote certification is mismatching between the controller board and NVRAM.
		• Used controller board installed • Used NVRAM installed
		1. Install the correct controller board or new controller board. 2. Install the correct NVRAM or new NVRAM.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
653	B	ID2 error
		ID2 stored in the NVRAM is incorrect.
		• Used NVRAM installed
		Clear the ID2 in the NVRAM, and then input a correct ID2.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)	
669	D	EEPROM Communication Error	
		[1]	Open communication error: ID error
		[2]	Open communication error: Channel error
		[3]	Open communication error: Device error
		[4]	Open communication error: Communication failed error
		[5]	Open communication error: Communication time error
		[6]	Open communication error: Communication suspended error
		[7]	Open communication error: Buffer full error
		[8]	Close communication error: No error code
		[9]	Close communication error: ID error
		[10]	Close communication error: No error code
		[11]	Data write error: ID error
		[12]	Data write error: Channel error
		[13]	Data write error: Device error
		[14]	Data write error: Communication suspended error
		[15]	Data write error: Communication time over error
		[16]	Data write error: Communication suspended error

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)	
		[17]	Data write error: Buffer full error
		[18]	Data write error: No error code
		[19]	Data read error: ID error
		[20]	Data read error: Channel error
		[21]	Data read error: Device error
		[22]	Data read error: Communication failed error
		[23]	Data read error: Communication time over error
		[24]	Data read error: Communication suspended error
		[25]	Data read error: Buffer full error
		The machine failed to detect a match between the read/write data for the EEPROM on the BCU after 3 attempts.	
		- EEPROM installed incorrectly - EEPROM defective. Turn the machine power off/on after replacing the EEPROM. - BCU defective.	
		1. Install the EEPROM correctly. 2. Replace the EEPROM. 3. Replace the BCU.	

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
670	D	Engine response error
		After powering on the machine, a response is not received from the engine within 30 seconds.
		• BCU installed incorrectly • BCU defective • Controller board defective
		1. Install the BCU correctly. 2. Replace the BCU. 3. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
671	D	Engine board mismatch error
		Engine board and controller mismatch detected.
		• Wrong engine board installed. • Wrong controller board installed. • Check the type of engine board and controller board.
		1. Replace the BCU. 2. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
672	D	Controller-to-operation panel communication error at startup
		After powering on the machine, the communication circuit between the controller and the operation panel is not opened, or communication with controller is interrupted after a normal startup.
		• Controller stalled • Controller board installed incorrectly • Controller board defective • Operation panel connector loose or defective
		1. Check the harness connection. 2. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
674	D	Transmission error in controller board
		Video transmission error is detected in the controller board.
	-01	M2P error
		M2P error is occurred during transmitting the video data to the ASIC.
		• Defective Controller Board
		1. Turn the main switch off and on. 2. Replace the controller board.
	-02	PCI error
		ASIC could not access to the PCI.
		• Defective Controller Board
		1. Turn the main switch off and on. 2. Replace the controller board.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
687	D	Memory address (PER) command error
		The BCU did not receive a memory address command from the controller with the prescribed time once the paper reached the registration sensor.
		• Harness connection at BCU, Controller board loose or broken • Defective HDD • Defective BCU • Defective Controller Board
		1. Check if the controller board is firmly connected to the BCU. 2. Replace the controller board. 3. Replace the HDD 4. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
690	D	GAVD communication error
		• The I2C bus device ID is not identified during initialization. • A device-status error occurs during I2C bus communication. • The I2C bus communication is not established due to an error other than a buffer shortage.
		• Loose connection • Defective BCU • Defective LD controller board
		1. Turn the main switch off and on. 2. Check the cable connection. 3. Replace the laser optics-housing unit. 4. Replace the BCU board.

SC7xx: Peripherals

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
720	B	Upper transport motor error
		The upper transport motor in the finisher is not operating.
		• Upper transport motor drive is obstructed (jammed paper, paper scraps, etc.) • The motor harness loose or broken • Upper transport motor defective
		1. Check for blockages in the upper transport motor mechanism. 2. Replace the upper transport motor. 3. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
721	B	Front fence motor error
		The jogger fence motor in the finisher is not operating.
		• Jogger motor drive is obstructed (jammed paper, paper scraps, etc.) • The motor harness loose or broken • Jogger fence HP sensor dirty, loose, defective • Jogger fence motor defective
		1. Check the connections and cables for the components mentioned above. 2. Check for blockages in the jogger fence motor mechanism. 3. Replace the jogger fence HP sensor and/or jogger motor. 4. Replace the finisher main board.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
723	B	Feed-out belt motor error
		The feed-out belt did not return to the home position within the prescribed time.
		• Feed-out belt motor drive is obstructed (jammed paper, paper scraps, etc.) • Motor harness loose or broken • Feed-out belt HP sensor dirty, disconnected, broken • Motor defective
		1. Check the connections and cables for the components mentioned above. 2. Check for blockages in the feed-out belt motor mechanism. 3. Replace the feed-out belt HP sensor and/or feed-out motor. 4. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
725	B	Finisher exit guide plate motor error
		The exit guide plate HP sensor did not activate within the prescribed time after the exit guide plate motor turned on.
		• Finisher exit guide plate motor drive is obstructed (jammed paper, paper scraps, etc.) • Exit guide plate motor harness loose, broken • Exit guide plate HP sensor harness loose, broken • Exit guide plate motor defective • Exit guide plate HP sensor defective
		1. Check the connections and cables for the components mentioned above. 2. Check for blockages in the exit guide plate motor mechanism. 3. Replace the exit guide plate position sensor and/or exit guide plate motor. 4. Replace the finisher main board.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
730	B	Shift tray motor error
		The shift tray motor in the 1000-sheet finisher is not operating.
		• Shift motor drive is obstructed (jammed paper, paper scraps, etc.) • Shift motor harness loose, broken • Shift tray HP sensor harness loose, broken • Shift motor defective • Shit tray HP sensor defective
		1. Check the connections and cables for the components mentioned above. 2. Check for blockages in shift tray motor mechanism. 3. Replace the shift tray HP sensor and/or shift tray motor. 4. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
731	B	Exit motor error
		The exit motor in the finisher is not operating.
		• Exit motor drive is obstructed (jammed paper, paper scraps, etc.) • The motor harness loose or broken • Exit motor defective
		1. Check for blockages in the exit motor mechanism. 2. Replace the exit motor. 3. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
740	B	Corner stapler motor error
		The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. **For 1000-sheet (booklet) finisher** • The stapler motor does not switch off within the prescribed time after operating. • The HP sensor of the staple unit does not detect the home position after the staple unit moves to its home position. The HP sensor of the staple unit detects the home position after the staple unit moves from its home position.
		• Staple jam • Number of sheets in stack exceeds allowed number of sheets for stapling • Stapler motor obstructed • Stapler motor defective
		1. Check the connections and cables for the components mentioned above. 2. Replace the HP sensor and/or stapler motor. 3. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
742	B	Stapler movement motor
		The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		For 1000-sheet (booklet) finisher • The stapler HP sensor is not activated within the specified time after the stapler motor turned on.
		• Stapler or motor drive is blocked by obstruction • Motor harness loose or broken • Stapler HP sensor harness loose, broken • Motor defective • Stapler HP sensor defective
		1. Check the connection of the stapler movement motor. 2. Check the connection of the stapler home position sensor. 3. Replace the stapler home position sensor. 4. Replace the stapler movement motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
746	B	Stack feed motor error
		The stack feed HP sensor in the 1000-sheet booklet finisher did not detect "ON" twice (once: jam error) within the prescribed time after the stack feed motor turned on. -or- • The stack feed HP sensor did not detect "OFF" twice (once: jam error) for the specified time after the stack feed motor turned on.
		• Motor drive obstructed • Stack feed motor harness loose, broken • Stack feed motor defective
		1. Check the connections and cables for the stack feed motor and HP sensor. 2. Check for blockages in the stack feed motor mechanism. 3. Replace the stack feed HP sensor and/or stack feed motor 4. Replace the finisher main board.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
747	B	Lower transport motor error
		The lower transport motor in the finisher is not operating.
		• Lower transport motor drive is obstructed (jammed paper, paper scraps, etc.) • The motor harness loose or broken • Lower transport motor defective
		1. Check for blockages in the upper transport motor mechanism. 2. Replace the upper transport motor. 3. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
750	B	Tray lift motor error
		The tray lift motor in the 1000-sheet booklet finisher is not operating.
		• Motor harness loose, broken • Motor drive obstructed • Stack height sensor dirty, harness loose, broken • Motor defective • Stack height sensor defective
		1. Check the connections to the shift tray motor. 2. Replace the shift tray motor. 3. Check the connections to the stack height sensor. 4. Replace the stack height sensor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
760	B	Finisher punch motor error (D589)
		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 harness loose, broken • Punch motor harness loose, broken • Punch motor obstructed • Punch motor defective • Punch HP sensor defective
		1. Check the connections and cables for the punch motor and HP sensor. 2. Check for blockages in the punch motor mechanism. 3. Replace the punch motor harness. 4. Replace the punch HP sensor and/or punch motor 5. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
761	B	Folder plate motor error (D589)
		The folder plate in the 1000-sheet booklet finisher moved but was not detected at the home position within the prescribed time. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Folder plate motor drive obstructed • Folder plate HP sensor harness loose, broken • Folder plate motor harness loose, broken • Folder plate motor defective • Folder plate HP sensor defective
		1. Check the connections and cables for the folder plate motor and HP sensor. 2. Check for blockages in the folder plate motor mechanism. 3. Replace the folder plate motor harness. 4. Replace the folder plate HP sensor and/or folder plate motor 5. Replace the finisher main board.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
763	B	Punch movement motor error (D589)
		The punch unit moved but it was not detected at the home position within the prescribed time. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Motor harness loose, broken • Motor drive obstructed • Motor defective
		1. Check the connections to the punch movement motor. 2. Replace the punch movement motor

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
764	B	Paper position slide motor error (D589)
		The paper position sensor detected movement of the slide but the slide was not detected at the home position within the prescribed time. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Motor harness loose, broken • Motor drive obstructed • Motor defective
		1. Check the connections to the paper position sensor slide motor. 2. Replace the paper position sensor slide motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
765	B	Bottom fence lift motor error (D589)
		The bottom fence HP sensor 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.
		• Motor harness loose, broken • Motor drive obstructed • Motor defective
		1. Check the connections to the bottom fence lift motor. 2. Replace the bottom fence lift motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
766	B	Paper position sensor slide motor error (D589)
		The paper position sensor 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.
		• Motor harness loose, broken • Motor drive obstructed • Motor defective
		1. Check the connections to the paper position sensor slide motor. 2. Replace the paper position sensor slide motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
770	B	Shift motor error (D583)
		The shift motor HP sensor does not detect any change for 1.86 seconds after the shift motor has turned on at power on or during its operation.
		• Defective shift motor • Defective shift motor HP sensor
		1. Check the connections to the shift motor and the shift motor HP sensor. 2. Defective shift motor or the shift motor HP sensor.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
791	D	Bridge unit error
		The machine recognizes the finisher, but does not recognize the bridge unit.
		• Defective connector • Broken harness
		1. Check the connections between the bridge unit and the machine. 2. Install a new bridge unit.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
792	B	Finisher error
		The machine does not recognize the finisher, but recognizes the bridge unit.
		• Defective connector • Defective harness • Incorrect installation
		1. Check the connections between the finisher and the machine. 2. Install a new finisher.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
793-01	B	Front jogger motor error with 1-bin tray (D586)
794-01	D	Front jogger motor error without 1-bin tray (D586)

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	The machine does not detect a correct signal from the front jogger fence HP sensor while the front jogger motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Defective front jogger motor • Loosen connection • Motor overload • Defective front jogger fence HP sensor
		1. Replace the front jogger fence HP sensor. 2. Replace the front jogger motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
793-02	B	Rear jogger motor error with 1-bin tray (D586)
794-02	D	Rear jogger motor error 1-bin tray (D586)
-	-	The machine does not detect a correct signal from the rear jogger fence HP sensor while the rear jogger motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Defective rear jogger motor • Loosen connection • Motor overload • Defective rear jogger fence HP sensor
		1. Replace the rear jogger fence HP sensor. 2. Replace the rear jogger motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
793-03	B	Pick-up roller contact motor error with 1-bin tray (D586)
794-03	D	Pick-up roller contact motor error without 1-bin tray (D586)

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	The machine does not detect a correct signal from the pick-up roller HP sensor while the pick-up roller contact motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. • Defective pick-up roller contact motor • Loosen connection • Motor overload • Defective pick-up roller HP sensor 1. Replace the pick-up roller HP sensor. 2. Replace the pick-up roller contact motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
793-04	B	Exit guide plate motor error with 1-bin tray (D586)
794-04	D	Exit guide plate motor error without 1-bin tray (D586)
-	-	The machine does not detect a correct signal from the exit guide plate HP sensor while the exit guide plate motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. • Defective exit guide plate motor • Loosen connection • Motor overload • Defective exit guide plate HP sensor 1. Replace the exit guide plate HP sensor. 2. Replace the exit guide plate motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
793-05	B	Output tray motor error with 1-bin tray (D586)
794-05	D	D error without 1-bin tray (D586)

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	The machine does not detect a correct signal from the stack height detection lever sensor while the output tray motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Defective output tray motor • Loosen connection • Motor overload • Defective stack height detection lever sensor
		1. Replace the stack height detection lever sensor. 2. Replace the output tray motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
793-06	B	Stack height detection lever motor error with 1-bin tray (D586)
794-06	D	Stack height detection lever motor error without 1-bin tray (D586)
-	-	The machine does not detect a correct signal from the stack height detection lever HP sensor while the stack height detection lever motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Defective stack height detection lever motor • Loosen connection • Motor overload • Defective stack height detection lever HP sensor • Defective stack height detection lever sensor
		1. Replace the stack height detection lever sensor. 2. Replace the output tray motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
793-07	B	Punch drive motor error with 1-bin tray (D586)
794-07	D	Punch drive motor error without 1-bin tray (D586)

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	The machine does not detect a correct signal from the punch position sensor while the punch drive motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Defective punch drive motor • Loosen connection • Motor overload • Defective punch position sensor
		1. Replace the punch position sensor . 2. Replace the punch drive motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
793-08	B	Punch movement motor error with 1-bin tray (D586)
794-08	D	Punch movement motor error without 1-bin tray (D586)
-	-	The machine does not detect a correct signal from the punch position sensor while the punch movement motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Defective punch movement motor • Loosen connection • Motor overload • Defective punch position sensor
		1. Replace the punch position sensor. 2. Replace the punch movement motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
793-09	B	Paper position sensor unit motor error with 1-bin tray (D586)
794-09	D	Paper position sensor unit motor error without 1-bin tray (D586)

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	The machine does not detect a correct signal from the paper position detection unit HP sensor while paper position sensor unit motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Defective paper position sensor unit motor • Loosen connection • Motor overload • Defective paper position detection unit HP sensor
		1. Replace the paper position detection unit HP sensor. 2. Replace the paper position sensor unit motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
793-11	B	Stapler unit motor error with 1-bin tray (D586)
794-11	D	Stapler unit motor error without 1-bin tray (D586)
-	-	The machine does not detect a correct signal from the paper position detection unit HP sensor while the stapler unit motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Defective paper position sensor unit motor • Loosen connection • Motor overload • Defective paper position detection unit HP sensor
		1. Replace the paper position detection unit HP sensor. 2. Replace the paper position sensor unit motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
793-12	B	Shift roller motor error with 1-bin tray (D586)
794-12	D	Shift roller motor error without 1-bin tray (D586)

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	The machine does not detect a correct signal from the shift roller HP sensor while the shift roller motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Defective paper position sensor unit motor • Loosen connection • Motor overload • Defective shift roller HP sensor
		1. Replace the shift roller HP sensor. 2. Replace the paper position sensor unit motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
798 -01	B	Upper limit switch error (D585)
		The upper limit switch of the 500-sheet finisher (D585) is pushed due to tray lift error or some problems.
		• Upper limit switch pulled up • Defective upper limit swtich
		1. Check the harness. 2. Check for blockage around the upper limit switch. 3. Replace the upper limit switch.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
798 -02	B	Finisher jogger motor error (D585)
		The machine does not detect a correct signal from the front jogger fence HP sensor while the front jogger motor is operating. The 1st failure issues an original jam message, and the 2nd failure issues this SC code.
		• Jogger HP sensor disconnected, defective • Jogger motor disconnected, defective • Jogger motor overloaded due to obstruction • Finisher main board and jogger motor
		1. Check or replace the harness. 2. Check for blockages in the jogger motor mechanism. 3. Replace the jogger HP sensor. 4. Replace the jogger motor. 5. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
798 -03	B	Rear fence motor error (D585)
		The machine does not detect a correct signal from the rear jogger fence HP sensor while the rear jogger motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Rear jogger motor drive is obstructed (jammed paper, paper scraps, etc.) • The rear jogger fence motor harness loose or broken • Rear jogger fence HP sensor dirty, loose, defective • Rear jogger fence motor defective
		1. Check or replace the harness. 2. Check for blockages in the rear jogger motor drive mechanism. 3. Replace the rear jogger fence HP sensor. 4. Replace the rear jogger fence motor.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
798 -04	B	Stack feed-out motor error (D585)
		The machine does not detect a correct signal from the stack feed-out HP sensor while the stack feed-out motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Defective stack feed-out HP sensor • Overload on the stack feed-out motor • Defective stack feed-out motor • Defective main board • Disconnected or defective harness
		1. Check or replace the harness. 2. Check for blockages in the stack feed-out mechanism. 3. Replace the stack feed-out HP sensor. 4. Replace the stack feed-out motor. 5. Replace the main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
798 -05	B	Positioning roller arm motor error (D585)
		The machine does not detect a correct signal from the positioning roller HP sensor while the positioning roller arm motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Disconnected or defective harness • Overload on the positioning roller arm motor • Defective positioning roller arm motor • Defective positioning roller HP sensor
		1. Check or replace the harness. 2. Check for blockages in the positioning roller arm mechanism. 3. Replace the positioning roller arm motor. 4. Replace the positioning roller HP sensor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
798 -06	B	Corner stapler motor error (D585)
		The machine does not detect a correct signal from the stapler HP sensor while the stapler motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Staple jam • Motor overload • Defective stapler motor
		1. Check the connections and cables for the components mentioned above. 2. Replace the HP sensor and/or stapler motor 3. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
798 -07	B	Stapler movement motor error (D585)
		The machine does not detect a correct signal from the stapler home position sensor while the stapler movement motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Motor overload • Loose connection of the stapler home position sensor • Loose connection of the stapler movement motor • Defective stapler home position sensor • Defective stapler movement motor
		1. Check the connection of the stapler movement motor. 2. Check the connection of the stapler home position sensor. 3. Replace the stapler home position sensor. 4. Replace the stapler movement motor.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
798 -08	B	Tray lift motor error (D585)
		The machine does not detect a correct signal from the paper height sensor while the Tray lift motor is operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Motor overload • Loose connection of the shift tray motor • Defective shift tray motor
		1. Check the connections to the tray lift motor. 2. Replace the tray lift motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
798 -09	B	Edge depressor solenoid error (D585)
		Paper height sensor is ON when the edge depressor solenoid switches ON and the edge depressors start lower. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		• Solenoid harness loose, broken • Solenoid obstructed • Paper height sensor dirty, harness loose, broke • Solenoid defective • Paper height sensor defective
		1. Check or replace the solenoid harness. 2. Check for blockages in the stack pressure mechanism. 3. Replace the paper height sensor.

SC8xx: Overall System

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
816	D	Energy saving I/O sub-system error
		The energy saving I/O sub-system detects an error.
		• Controller board defective
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
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 • SD card data defective; use another SD card

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
818	D	Watchdog timer error
		The watchdog timer detect the error even if system processing normally.
		• System program defective • Controller board defective • Optional board defective
		1. Turn the main switch off and on. 2. Replace controller firmware. 3. Replace controller board. 4. Replace the options.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
819	C	Fatal kernel error
		Due to a control error, a RAM overflow occurred during system processing. One of the following messages was displayed on the operation panel.
		• System program defective • Controller board defective • Optional board defective
		Replace controller firmware

Note: For more details about this SC code error, execute SP5990 to print an SMC report so that you can read the error code. The error code is not displayed on the operation panel.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820	D	Self-diagnostics error: CPU [XXXX]: Detailed error code
[0001] to [06FF] [0801] to [4005]		CPU error During the self-diagnostic, the controller CPU detects an error. There are 47 types of error code (0001 to 4005) depending on the cause of the error. The CPU detects an error and displays the specific error code with the program address where the error occurs.
		• System firmware problem • Defective controller
		1. Turn the main switch off and on. 2. Reinstall the controller system firmware. 3. Replace the controller. When the problem cannot be fixed with the above procedure, the following information displayed on the screen needs to be fed back to a technical support center. • SC code • Detailed error code • Program address

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
[0702] [0709] [070A]		CPU/Memory Error
		• System firmware problem • Defective RAM-DIMM • Defective controller
		1. Reinstall the controller system software. 2. Replace the RAM-DIMM. 3. Replace the controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
821	D	Self-diagnostics error: ASIC [XXXX]: Detailed error code
[0B00]		ASIC error
		The write-&-verify check error has occurred in the ASIC.
		Defective ASIC device
		Replace the controller.
[0B06]		ASIC detection error
		The I/O ASIC for system control is not detected.
		Defective ASIC Defective North Bridge and PCI I/F
		Replace the controller board.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
[0D05]		Self-diagnosis error: ASIC
		The CPU checks if the ASIC timer works correctly compared with the CPU timer. If the ASIC timer does not function in the specified range, this SC code is displayed.
		System firmware problem Defective RAM-DIMM Defective controller
		1. Reinstall the controller system firmware. 2. Replace the RAM-DIMM. 3. Replace the controller board.
[50A1]		Video bridge device (ASIC) error 1
		The CPU does not detect the video bridge device.
		Defective I/F between the video bridge device and controller
		Replace the controller.
[50A2]		Video bridge device (ASIC) register error 1
		The CPU detects the video bridge device, but detects error data from the video bridge device.
		Defective I/F between the video bridge device and controller
		Replace the controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
822	B	Self-diagnostic error: HDD (Hard Disk Drive) [XXXX]: Detailed error code
[3003]		Timeout error
[3004]		Command error
-	-	When the main switch is turned on or starting the self-diagnostic, the HDD stays busy for the specified time or more.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	• Loose connection • Defective HDD • Defective controller
-	-	1. Check that the HDD is correctly connected to the controller. 2. Replace the HDD. 3. Replace the controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
823	B	Self-diagnostic error: NIB [XXXX]: Detailed error code
[6101]		MAC address check sum error The result of the MAC address check sum does not match the check sum stored in ROM.
[6104]		PHY IC error The PHY IC on the controller cannot be correctly recognized.
[6105]		PHY IC loop-back error An error occurred during the loop-back test for the PHY IC on the controller.
-		Replace the controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
824	C	Self-diagnosis error: Standard NVRAM The controller cannot recognize the standard NVRAM installed or detects that the NVRAM is defective.
[1401]		• Loose connection • Defective standard NVRAM • Defective controller
		1. Check the standard NVRAM is firmly inserted into the socket. 2. Replace the NVRAM. 3. Replace the controller

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
826	C	Self-diagnostic Error: RTC/optional NVRAM
[1501]		The one second counted by the RTC is different from the one second counted by the CPU on the controller.
		• Defective the RTC device
		Replace the RTC device.
[15FF]		The RTC device is not detected.
		• Defective RTC device • NVRAM without RTC installed • Discharged backup battery
		Replace the NVRAM with another NVRAM with an RTC device.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
827	C	Self-diagnostic error: Standard SDRAM DIMM [XXXX]: Detailed error code
[0201]		Verification error
		Error detected during a write/verify check for the standard RAM (SDRAM DIMM).
		• Loose connection • Defective SDRAM DIMM • Defective controller
		1. Turn the main switch off and on. 2. Replace the SDRAM DIMM. 3. Replace the controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
828	C	Self-diagnostic error: ROM [XXXX]: Detailed error code

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
[0101]		Check sum error 1 The boot monitor and OS program stored in the ROM DIMM is checked. If the check sum of the program is incorrect, this SC code is displayed.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
829	B	Self-diagnostic error: Optional RAM [XXXX]: Detailed error code
[0301]		Verification error
		Error detected during a write/verify check for the optional RAM (SDRAM DIMM).
		• Loose connection • Defective SDRAM DIMM • Defective controller
		1. Turn the main switch off and on. 2. Replace the SDRAM DIMM. 3. Replace the controller.
[0302]		Memory structure data error
		The memory structure data error for the optional RAM (SDRAM DIMM) is detected when the self-diagnostic is executed.
		• Defective RAM DIMM • Defective SPD ROM on RAM DIMM • Defective 12C bus
		Replace the RAM DIMM.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
833	C	Self-diagnostic error 8: Engine I/F ASIC
[0F30] [0F31]		ASIC for system control could not be detected. After the PCI configuration, the device ID for the ASIC could not be checked.
		Replace the IPU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
[0F41]		ASIC for system control could not be detected. After the PCI configuration, the device ID for the ASIC could not be checked.
		Replace the IPU.
[50B1]		Could not initialize or read the bus connection.
		Check for loose connections at the mother board.
		Replace the IPU.
[50B2]		Value of the SSCG register is incorrect.
		Check for loose connections at the mother board.
		Replace the IPU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
835	B	Self-diagnostic error: Centronic device
[1102]		Loopback connector is connected but check results in an error.
		• IEEE1284 connector error • Centronic loopback connector defective
		Replace the controller board.
[110C]		Loopback connector is connected but check results in an error.
		• ASIC device error • IEEE1284 connector error • Centronic loopback connector defective
		Replace the controller board.
[1120]		Centronic loopback connector is not connected for detailed self-diagnostic test.
		• Centronic loopback connector not connected correctly • Centronic loopback connector defective • ASIC device defective
		Replace the controller board.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
838	C	Self-diagnostic Error: Clock Generator
[2701]		A verify error occurred when setting data was read from the clock generator via the I2C bus.
		• Defective clock generator • Defective I2C bus • Defective I2C port on the CPU
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
839	C	USB flash error
		This is a self-diagnostic error. The device ID of the on-board USB flash ROM was not recognized.
		• Defective controller board.
		Replace the controller board

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
840	B	EEPROM error 1: EEPROM access
		During the I/O processing, reading error is occurred. The 3rd reading failure issues this SC code. • During the I/O processing, writing error is occurred.
		• Defective EEPROM
		Replace the EEPROM.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
841	B	EEPROM error 2: EEPROM read/write error
		Mirrored data of the EEPROM is different from the original data in EEPROM.
		Data in the EEPROM is overwritten for some reasons.
		Turn the main switch off and on.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
842	B	Flash ROM verification error
		Verification error of the flash ROM on the controller board occurs.
		⬇Note
		• This SC is logged at 1st error detection.
		• SC819 is issued at 2nd error detection.
		• Defective flash ROM (controller board)
		Replace the flash ROM.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
851	B	IEEE 1394 I/F Abnormal
		IEEE1394 interface error.
		• IEEE1394 interface board defective
		• Controller board defective
		1. Turn the main switch off and on.
		2. Replace the IEEE1394 interface board.
		3. Replace the controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
853	B	Wireless LAN board error 1
		At startup the wireless LAN board could be accessed, but the wireless LAN board (IEEE 802.11b or Bluetooth) could not access the controller board.
		• Wireless LAN board not installed when the machine was turned on
		Check the wireless LAN board is installed correctly.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
854	B	Wireless LAN board error 2
		The board that holds the wireless LAN board can be accessed, but the wireless LAN board (802.11b or Bluetooth) itself cannot be accessed while the machine is operating
		• Wireless LAN board has been removed during machine operation.
		Check the wireless LAN board is installed correctly.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
855	B	Wireless LAN board error 3
		An error was detected for the wireless LAN board (802.11b or Bluetooth).
		• Wireless LAN board defective • Wireless board connection not tight
		1. Check the connection. 2. Replace the wireless LAN/Bluetooth card.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
857	B	USB I/F Error
		The USB driver is unstable and generated an error. The USB I/F cannot be used. The USB driver can generate three types of errors: RX, CRC, and STALL errors. Only the STALL error can generate this SC code.
		• USB 2.0 disconnected • Controller board defective
		1. Check the connection. 2. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
858	A	Data encryption conversion error
		A serious error occurred during data encryption.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
[0]	A	Key acquisition error: The controller fails to get a new encryption key.
		• Defective controller board
		Replace the controller board.
[1]	A	HDD key setting error: The controller fails to copy a new encryption key to the HDD.
		Defective SATA chip on the controller board
		• Turn the machine power off/on • If the error reoccurs, replace the controller board
[2]	A	NVRAM data encryption error 1: An error occurs while the NVRAM data is encrypted.
		Defective NVRAM on the controller board
		• Replace the NVRAM
[30]	A	NVRAM data encryption error 2: An error occurs before the NVRAM data is encrypted.
		Defective controller board
		• Turn the machine power off/on • If the error reoccurs, replace the controller board
[31]	A	Other error: A serious error occurs while the data is encrypted.
		See SC991

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
859	B	HDD data encryption error
		Encryption of data on the hard disk failed.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
[8]	B	HDD check error: The HDD is not correctly installed. • No HDD installed • Unformatted HDD • The encryption key on the controller is different from the one on the HDD 1. Install the HDD correctly. 2. Initialize the HDD.
[9]	B	Power loss during encryption • Power failure during the data encryption Format the HDD.
[10]		Data read/write error • The DMAC error is detected twice or more. See SC863 below.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
860	B	HDD error 1 The hard disk connection is not detected because it is defective or has not been formatted • Cable between HDC and HDD loose or defective • HDD power connector loose or defective • HDD not formatted • HDD defective 1. Check the cable between HDC and HDD. 2. Reformat the HDD. 3. Replace the HDD. 4. Replace the controller board.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
861	B	HDD error 2
		The HDD did not enter the ready status within 30 sec. after power on.
		• Cable between HDC and HDD loose or defective • Cable between HDC and HDD loose or defective • HDD power connector loose or defective • HDD defective
		1. Check the cable between HDC and HDD. 2. Reformat the HDD. 3. Replace the HDD. 4. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
862	D	Bad sector number error
		The number of bad sectors in the HDD (image data area) goes over 101.
		• Defective HDD
		1. Format the HDD with SP5-832-002. 2. Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
863	D	HDD error 3
		Startup without HD data lead. Data stored on the hard disk is not read correctly, due to a bad sector on the HDD
		• HDD defective • Controller board defective
		1. Format the HDD with SP5-832-002. 2. Replace the HDD. 3. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
863	D	HDD error 4
		HD data CRC error. During operation of the HD, the HD responded with a CRC error.
		• HDD defective • Controller board defective
		1. Format the HDD with SP5-832-002. 2. Replace the HDD. 3. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
864	D	HDD error 4
		While reading data from the HDD or storing data in the HDD, data transmission fails.
		• Defective HDD
		1. Format the HDD with SP5-832-002. 1. Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
865	D	HDD error 5
		HDD responded to an error during operation for a condition other than those for SC863 or 864.
		• Defective HDD
		1. Format the HDD with SP5-832-002. 1. Replace the HDD.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
866	B	SD card error 1: Recognition error
		The SD card in the slot contains illegal program data.
		• SD-card data is corrupted.
		Use only SD cards that contain the correct data.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
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 power was on.
		• The SD card is ejected from the slot.
		1. Install the SD card. 2. Turn the main switch off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
868	D	SD card error 3: SD card access
		An error occurred while an SD card was used.
		• SD card not inserted correctly • SD card defective • Controller board defective **Note**: If you want to try to reformat the SD card, use SD Formatter Ver 1.1.
		1. Check the SD card is inserted correctly. 2. Replace the SD card. 3. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
870	B	Address Book Data Error
		Address book data stored on the hard disk was detected as abnormal when it was accessed from either the operation panel or the network.
		• Defective software program • Defective HDD • Incorrect path to the server
		1. Initialize the address book data (SP5-846-050). 2. Initialize the user information (SP5-832-006). 3. Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
872	B	HDD mail RX data abnormal
		An error was detected at power on. The data received during mail receive could be neither read nor written.
		• Defective HDD • Power failure during an access to the HDD
		1. Turn the main switch off and on. 2. Initialize the HDD partition (SP5-832-007). 3. Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
873	B	HDD mail TX data error
		An error was detected on the HDD immediately after the machine was turned on, or power was turned off while the machine used the HDD.
		• Defective HDD • Power failure during an access to the HDD
		1. Do SP5832-8 (Format HDD – Mail TX Data) to initialize the HDD. 2. Replace the HDD.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
874	D	Delete All error 1: HDD
		A data error was detected for the HDD/NVRAM after the Delete All option was used. **Note**: The source of this error is the Data Overwrite Security Unit D362 running from an SD card.
		• Data Overwrite Security Unit (SD card) not installed • Defective HDD
		1. Turn the main switch off/on, and try the operation again. 2. Install the Data Overwrite Security Unit. 3. Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
875	D	Delete All error 2: Data area
		An error occurred while the machine deleted data from the HDD. **Note**: The source of this error is the Data Overwrite Security Unit running from an SD card.
		• The logical format for the HDD fails.
		Turn the main switch off/on, and try the operation again.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
876	CTL D	Log Data Error
		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.
	-001	Log Data Error 1
		• Damaged log data file in the HDD
		Initialize the HDD with SP5832-004.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-002		Log Data Error 2
		• An encryption module not installed
		1. Disable the log encryption setting with SP9730-004 ("0" is off.) 2. Install the DESS module.
-003		Log Data Error 3
		• Invalid log encryption key due to defective NVRAM data
		1. Initialize the HDD with SP5832-004. 2. Disable the log encryption setting with SP9730-004 ("0" is off.)
-004		Log Data Error 4
		• Unusual log encryption function due to defective NVRAM data
		Initialize the HDD with SP5832-004.
-005		Log Data Error 5
		• Installed NVRAM or HDD which is used in another machine
		1. Reinstall the previous NVRAM or HDD. 2. Initialize the HDD with SP5832-004.
-099		Log Data Error 99
		• Other than the above causes
		Ask your supervisor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
877	B	Data Overwrite Security SD card error
		The 'all delete' function did not execute but the Data Overwrite Security Unit is installed and activated.
		• Defective SD card • SD card not installed
		1. Replace the NVRAM and then install the new SD card. 2. Check and reinstall the SD card.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
878	D	TPM electronic recognition error
		The main machine firmware failed to recognize TPM because USB flash is not operating or a system module was updated incorrectly.
		• Incorrect updating for the system firmware • Defective flash ROM on the controller board
		Replace the controller board

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
880	D	File format converter error
		A request for access to the File Format Converter (MLB) was not answered within the specified time.
		• File format converter disconnected • Defective file format converter
		1. Check the file format converter is connected correctly. 2. Replace the file format converter.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
881	D	Authentication area error
		Authentication application error is detected.
		• Error data in an authentication application reaches the management limit.
		Turn the main switch off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
899	D	Software performance error
		If the processing program shows abnormal performance and the program is abend, this SC is issued.
		• Controller board defective • Software defective
		1. Replace the controller board. 2. Turn the main switch off and on. 3. Update the firmware on the controller.

SC9xx: Miscellaneous

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
900	D	Electrical total counter error
		The total count contains something that is not a number.
		• NVRAM incorrect type • NVRAM defective • NVRAM data scrambled • Unexpected error from external source
		1. Check the connection between the NVRAM and controller. 2. Replace the NVRAM. 3. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
901	D	Mechanical total counter error
		The counter was moved during standby or while it is operating, possibly damaging the connector.
		• Counter defective
		Check the connection of the mechanical counter

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
920	B	Printer Error 1
		An internal application error was detected and operation cannot continue.
		• Software defective • Unexpected hardware resource (e.g., memory shortage)
		1. Software defective; switch off/on, or change the controller firmware if the problem is not solved 2. Insufficient memory

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
921	B	Printer error 2
		When the application started, the necessary font was not on the SD card.
		• A necessary font is not found in the SD card. • The SD card data is corrupted.
		Check that the SD card has the correct data.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
925	B	Network File Error
		The file that manages NetFile is corrupted and operation cannot continue.
		• Software defective • Files on the HDD corrupted
		1. Do SP5-832 to format the HDD. 2. Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
990	B	Software performance error
		The software attempted to perform an unexpected operation due to: 1) software bug, 2) incorrect internal parameter, 3) insufficient working memory.
		• Defective software • Defective controller • Software error
		• Turn the machine power off/on • Reinstall the controller and/or main firmware **Note**: When this SC occurs, the file name, address, and data will be stored in NVRAM. This information can be checked by using SP7-403. Note the above data and the situation in which this SC occurs. Then report the data and conditions to your technical control center.

RTB 42
SC990 note
Modified

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
991	C	Software continuity error
		The software attempted to perform an unexpected operation. However, unlike SC990, the object of the error is continuity of the software.
		• Software program error • Internal parameter incorrect, insufficient working memory.
		This SC is not displayed on the LCD (logging only).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
992	D	Unexpected Software Error
		Software encountered an unexpected operation not defined under any SC code.
		• Software defective • An error undetectable by any other SC code occurred
		Print the "Logging Data" with SP5990-004 and then check the SP7990. If 498-Engine is found in the SP7990; 1. Check the harness connection of the temperature/humidity sensor. 2. Replace the temperature/humidity sensor.

3

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
994	C	OCS record limitation error
		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 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.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
995	D	Controller Board Mismatch
-001		• Defective BCU • NVRAM Replacement error
		1. Install the previous NVRAM. 2. Input the serial number with SP5811-004, and turn the main power switch off/on.
-002		• Defective NVRAM • Defective controller
		1. Update the controller firmware. 2. Install a new NVRAM, and turn off and on the main power switch after SC995-002 has occurred.
-003		• Incorrect type controller installed • Defective controller
		Replace the controller with the correct type.
-004		• Incorrect model controller installed.
		Replace the controller with the correct model.

RTB 28
Notes added for SC995

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
997	CTL B	Application function selection error
		The application selected by the operation panel key does not start or ends abnormally.
		• Software (including the software configuration) defective • An option required by the application (RAM, DIMM, board) is not installed • Nesting of the fax group addresses is too complicated
		1. Check the devices necessary for the application program. If necessary devices have not been installed, install them. 2. Check that application programs are correctly configured. 3. For a fax operation problem, simplify the nesting of the fax group addresses. 4. Take necessary countermeasures specific to the application program. If the logs can be displayed on the operation panel, see the logs.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
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 • Defective controller • Software problem
		1. Check the setting of SP5875-001. If the setting is set to "1 (OFF)", change it to "0 (OFF)". 2. Check if the RAM-DIMM and ROM-DIMM are correctly connected. 3. Reinstall the controller system firmware. 4. Replace the controller.

Note 1

If a problem always occurs under specific conditions (for example. printer driver setting, image file), the problem may be caused by a software error. In this case, the following data and information need to be sent back to your product specialist. Please understand that it may take some time to get a reply on how to solve the problem, because in some cases the design staff in Japan must analyze the data.

- Symptom / Possible Causes / Action taken
- Summary sheet (SP mode "Printer SP", SP1-004 [Print Summary])

- SMC - All (SP5-990-001)
- SMC - Logging (SP5-990-004)
- Printer driver settings used when the problem occurs
- All data displayed on the screen (SC code, error code, and program address where the problem is logged.)
- Image file which causes the problem, if possible

3

4. Appendix: Service Program Mode Tables

System SP Tables-1

SP1xxx: Feed

1001*	Leading Edge Registration	
2	Tray: Plain	Adjusts the printing leading edge registration from each paper feed station using the Trimming Area Pattern (SP2902 Pattern No. 10). [–9.0 to +9.0 / **+0.0** / 0.1 mm/step] Use the ⊙ key to toggle between + and – before entering the value. The specification is 3 ± 2 mm. See "Replacement and Adjustment - Copy Adjustment" for details.
3	Tray: Middle Thick	
4	Tray: Thick	
7	By-pass: Plain	
8	By-pass: Middle Thick	
9	By-pass: Thick	
13	Duplex: Plain	
14	Duplex: Middle Thick	

1002*	Side-to-Side Registration	
1	By-pass Table	Adjusts the printing side-to-side registration from each paper feed station using the Trimming Area Pattern (SP2902 Pattern No. 10). [–4.0 to +4.0 / **+0.0** / 0.1 mm/step] Use the ⊙ key to toggle between + and – before entering the value. The specification is 2 ± 1.5 mm. See "Replacement and Adjustment - Copy Adjustment" for details.
2	Paper Tray 1	
3	Paper Tray 2	
4	Paper Tray 3	
5	Paper Tray 4	
6	Duplex	

1003*	Paper Buckle

2	Paper Tray 1: Plain	
3	Tray 1: Middle Thick	
4	Paper Tray 1: Thick	
7	Paper Tray 2/3/4/LCT: Plain	
8	Paper Tray 2/3/4/LCT: Middle Thick	Adjusts the paper feed clutch timing at registration. The paper feed clutch timing determines the amount of paper buckle at registration. (A larger setting leads to more buckling.)
9	Paper Tray 2/3/4/LCT: Thick	[–9 to 5 / 0 / 1 mm/step]
12	By-pass: Plain	
13	By-pass: Middle Thick	
14	By-pass: Thick	
18	Duplex: Plain	
19	Duplex: Middle Thick	

1007*	By-pass Paper Size
	Controls paper size detection for the by-pass feed table.
1	LG Detection [0 to 1 / 0 / -] 0: LTSEF, 1: LG

1101*	Flicker Control
	Switches flicker control on/off. [0 = Off / 1 = On]

1103*	Fusing Idling

1	Fusing Idling	Switches fusing idling on/off. [0 = Off / 1 = On / 2 = Off plus machine temperature check] Switch on if fusing on the 1st and 2nd copies is incomplete (this may occur if the room is cold.)
2	Reload Permit Setting:Reload Temp.:Center	Adjusts the reload temperature at the center and both ends of the hot roller when the temperature inside the machine is 17°C or higher. [100 to 150 / 130 / 1°C/step]
3	Reload Permit Setting:Reload Temp.:Ends	
4	Reload Permit Setting:Reload Temp.:Cold:Center	Adjusts the reload temperature at the center and both ends of the hot roller when the temperature inside the machine is 16°C or lower. [100 to 150 / 130 / 1°C/step]
5	Reload Permit Setting:Reload Temp.:Cold:Ends	

1105*	Fusing Temperature Adjustment	
1	Roller Center:Plain1	Adjusts the fusing temperature at the center and both ends of the hot roller for plain paper 1. D120/D139:[120 to 200 / 155 / 1°C/step] D121/D122/D140/D141:[120 to 200 / 165 / 1°C/step]
2	Roller Ends:Plain1	
3	Roller Center:Plain2	Adjusts the fusing temperature at the center and both ends of the hot roller for plain paper 2. D120/D139:[120 to 200 / 160 / 1°C/step] D121/D122/D140/D141:[120 to 200 / 170 / 1°C/step]
4	Roller Ends:Plain2	
5	Roller Center:M-Thick	Adjusts the fusing temperature at the center and both ends of the hot roller for middle thick paper. D120/D139:[120 to 200 / 165 / 1°C/step] D121/D122/D140/D141:[120 to 200 / 175 / 1°C/step]
6	Roller Ends:M-Thick	

4

7	Thick Paper - Roller Center	Adjusts the additional temperature for the center and both ends of the hot roller for thick paper.
8	Thick Paper - Roller Ends	D120/D139:[0 to 40 / **25** / 1°C/step] D121/D122/D140/D141:[0 to 40 / **20** / 1°C/step]
9	Center Minus:Thin	Adjusts the subtract temperature for the center and both ends of the hot roller for thick paper.
10	Ends Minus:Thin	[0 to 20 / **5** / 1°C/step]
11	Energy Saver	Adjusts the fusing temperature at the center and both ends of the hot roller for energy saver mode. D120/D139:[0 to 200 / **135** / 1°C/step] D121/D122/D140/D141:[0 to 200 / **145** / 1°C/step]
12	Wait Temp: Center Minus	Adjusts the subtract temperature for the center and both ends of the hot roller in stand-by mode.
13	Wait Temp: Ends Minus	[0 to 30 / **5** / 1 °C]
14	After Warming-up Time	In this machine, fusing temperature is kept 10°C higher than the normal temperature for a short while after the machine warms up. This SP selects the length of time that this temperature is used. [0 to 180 / **12** / 1s/step]
15	After Warming-up - No. of Page	In this machine, fusing temperature is kept 10°C higher than the normal temperature for a number of pages after the machine has warmed up. This SP selects the number of pages made at this temperature. [0 to 10 / **3** / 1 page/step]
16	Low:Center Add:Plain	Adjusts the additional temperature for the center and both ends of the hot roller for printing on thin paper/plain paper 1/plain paper 2/middle thick paper when the temperature inside the machine is 16 °C or lower.
17	Low:Ends Add:Plain	[0 to 30 / **5** / 1 °C]

18	Low:Center Add:Thick	Adjusts the additional temperature for the center and both ends of the hot roller for printing on thick paper when the temperature inside the machine is 16 °C or lower. [0 to 30 / **5** / 1 °C]
19	Low:Ends Add:Thick	
20	Registration Waiting:Plain1	Turns the registration waiting mode on or off for each paper type. [0 to 1 / **0** / 1] 0=Off, 1=On The paper waits at the registration roller until the fusing temperature reaches the prescribed temperature (adjustable with SP1105-024 to -31).
21	Registration Waiting:Plain2	
22	Registration Waiting:M-Thick	
23	Registration Waiting:Thick	Turns the registration waiting mode on or off for each paper type. [0 to 1 / **1** / 1] 0=Off, 1=On The paper waits at the registration roller until the fusing temperature reaches the prescribed temperature (adjustable with SP1105-024 to -31).
24	Waiting:Center Minus:Plain1	Adjusts the offset value for each re-load temperature to exit the registration waiting mode. [0 to 60 / **10** / 1 deg]
25	Waiting:Ends Minus:Plain1	
26	Waiting:Center Minus:Plain2	
27	Waiting:Ends Minus:Plain2	
28	Waiting:Center Minus:M-Thick	
29	Waiting:Ends Minus:M-Thick	
30	Waiting:Center Minus:Thick	
31	Waiting:Ends Minus:Thick	

4

32	Down Temp:No. of Page	When the fusing temperature at the center of the hot roller is lowered due to consecutive printing, the lowered temperature is kept until the number of sheets set here is printed. [0 to 20 / **5** / 1 sheet]
33	Copy Down Temp	When the fusing temperature at both ends of the hot roller is lowered due to consecutive printing, the lowered temperature is kept until the number of sheets set here are printed. [0 to 20 / **5** / 1 sheet]
34	Copy Down Temp:Center	Adjusts the subtract temperature for the center and both ends of the hot roller when the machine lowers the temperature due to consecutive printing. [0 to 30 / **1** / 1 deg]
35	Copy Down Temp:Ends	
36	Copy Down Temp:Add:Center	Adjusts the additional temperature until a specified period of time passes or a specified number of sheets are printed after reload. [0 to 30 / **5** / 1 deg]
37	Copy Down Temp:Add:Ends	
38	Feed Permit Setting:Thick	Adjusts the temperature at which feeding thick paper is permitted. Thick paper can be fed when the specified fusing temperature minus the actual temperature is the same as or smaller than this setting. [0 to 60 / **20** / 1 deg]

1106	Fusing Temperature Display	
1	Roller Center	Displays the fusing temperature for the center or both ends of the hot roller.
2	Roller Ends	
3	In the Machine at Power On	Displays the temperature in the machine at power on. This temperature is monitored by the thermistor on the BCU board.

1108*	Fusing Soft Start Setting

1	Warming-up	Adjusts the fusing temperature control cycle when the machine is warming up. [100 to 2000 / **1000** / 100 msec]
2	Print	Adjusts the fusing temperature control cycle when the machine is printing. [100 to 2000 / **1000** / 100 msec]
3	Wait	Adjusts the fusing temperature control cycle [100 to 2000 / **1000 (North America, Taiwan), 2000 (Other countries)** / 100 msec]

1112*	Image Proc. Temp. Correction	
1	Temp.:Normal:Level1	Specifies the correction temperature for the level 1 of the job image control. [−25 to 10 / **0** / 1 deg]
2	Temp.:Normal:Level2	Specifies the correction temperature for the level 2 of the job image control. [−25 to 10 / **−5** / 1 deg]

1124*	CPM Down Setting	
	Specifies the settings for the CPM down mode.	
6	High:1st CPM	Specifies the 1st CPM down ratio against the normal CPM in the high temperature condition. [10 to 100 / **60** / 5 %/step]
7	High:2nd CPM	Specifies the 2nd CPM down ratio against the normal CPM in the high temperature condition. [10 to 100 / **50** / 5 %/step]
8	High:3rd CPM	Specifies the 3rd CPM down ratio against the normal CPM in the high temperature condition. [10 to 100 / **25** / 5 %/step]
9	High:1st CPM Down Temp.:A3	Specifies the heating roller temperature for 1st CPM down of A3 paper size. [100 to 250 / **215** / 1 deg/step]

4

10	High:2nd CPM Down Temp.:A3	Specifies the heating roller temperature for 2nd CPM down of A3 paper size. [100 to 250 / **220** / 1 deg/step]
11	High:3rd CPM Down Temp.:A3	Specifies the heating roller temperature for 3rd CPM down of A3 paper size. [100 to 250 / **225** / 1 deg/step]
12	High:1st CPM Down Temp.:A4	Specifies the heating roller temperature for 1st CPM down of A4 paper size. [100 to 250 / **215** / 1 deg/step]
13	High:2nd CPM Down Temp.:A4	Specifies the heating roller temperature for 2nd CPM down of A4 paper size. [100 to 250 / **220** / 1 deg/step]
14	High:3rd CPM Down Temp.:A4	Specifies the heating roller temperature for 3rd CPM down of A4 paper size. [100 to 250 / **225** / 1 deg/step]
15	High:1st CPM Down Temp.:B5:Press	Specifies the pressure roller temperature for 1st CPM down of B5 paper size. [100 to 250 / **200** / 1 deg/step]
16	High:2nd CPM Down Temp.:B5:Press	Specifies the pressure roller temperature for 2nd CPM down of B5 paper size. [100 to 250 / **205** / 1 deg/step]
17	High:3rd CPM Down Temp.:B5:Press	Specifies the pressure roller temperature for 3rd CPM down of B5 paper size. [100 to 250 / **210** / 1 deg/step]
18	High:1st CPM Down Temp.:A5:Press	Specifies the pressure roller temperature for 1st CPM down of A5 paper size. [100 to 250 / **200** / 1 deg/step]
19	High:2nd CPM Down Temp.:A5:Press	Specifies the pressure roller temperature for 2nd CPM down of A5 paper size. [100 to 250 / **205** / 1 deg/step]

4

20	High:3rd CPM Down Temp.:A5:Press	Specifies the pressure roller temperature for 3rd CPM down of A5 paper size. [100 to 250 / **210** / 1 deg/step]
21	High:1st CPM Down Temp.:A6:Press	Specifies the pressure roller temperature for 1st CPM down of A6 paper size. [100 to 250 / **200** / 1 deg/step]
22	High:2nd CPM Down Temp.:A6:Press	Specifies the pressure roller temperature for 2nd CPM down of A6 paper size. [100 to 250 / **205** / 1 deg/step]
23	High:3rd CPM Down Temp.:A6:Press	Specifies the pressure roller temperature for 3rd CPM down of A6 paper size. [100 to 250 / **210** / 1 deg/step]
24	Judging Interval	Specifies the interval for CPM down judgement. [1 to 250 / **10** / 1 sec/step]

1152*****	Fusing Nip Band Check	
	Checks the fusing nip band.	
1	Execute	Executes the fusing nip band check from the by-pass tray.
2*****	Pre-idling Time	Specifies the fusing rotation time before executing SP1152-001. [0 to 999 / **20** / 1 sec/step]
3*****	Stop Time	Specifies the time for paper staying at the nip. [0 to 100 / **20** / 1 sec/step]

1159*****	Fusing Jam Detection
	Disables or enables the consecutive jam error for the fusing unit. [0 to 1 / **0** / 1 Step] When set to "1" (on) this SC code is issued after the 3rd consecutive jam in the fusing unit.

1801*****	MotorSpeedAdjust

1	MainMotor:150	[−4 to 4 / **0** / 0.01 %/step]
2	MainMotor:122	[−4 to 4 / **0** / 0.01 %/step]
10	Duplex:Low	[−4 to 4 / **0** / 0.01 %/step]
11	Duplex:High	[−4 to 4 / **0** / 0.01 %/step]
24	Reverse:Low	[−4 to 4 / **0** / 0.01 %/step]
29	Reverse:High	[−4 to 4 / **0** / 0.01 %/step]

1903*	Feed Cl Re-energize	
	Adjusts the paper feed amount allowed by the clutch after correcting the skew at registration. When paper jams occur after restarting paper feed after registration, increase the value to help the registration roller feed the paper.	
1	By-pass Feed	
2	Tray 1 Feed	[0 to 10 / **5** / 1 mm/step]
3	Other Trays	

1907*	Paper Feed Timing Adj.	
1	Feed Solenoid ON	
5	Inverter Stop Position	[-10 to 10 / **0** / 1mm /step]
15	Re-Feed Stop Position	
20	Bank1: Feed Solenoid ON: Plain	The feed solenoid turns on A mm before the pick-up roller feed out the trailing edge of the paper.
21	Bank1: Feed Solenoid ON: Middle Thick	A=(Original length − 80) x B / 100 B=setting value [35 to 85 / **60** / 5% /step]

22	Bank1: Feed Solenoid ON: Thick 1	The feed solenoid turns on A mm before the pick-up roller feed out the trailing edge of the paper. A=(Original length − 80) x B / 100 B=setting value [35 to 85 / **35** / 5% /step]
23	Bank2: Feed Solenoid ON: Plain	The feed solenoid turns on A mm before the pick-up roller feed out the trailing edge of the paper. A=(Original length − 80) x B / 100 B=setting value [35 to 85 / **60** / 5% /step]
24	Bank2: Feed Solenoid ON: Middle Thick	
25	Bank2: Feed Solenoid ON: Thick 1	The feed solenoid turns on A mm before the pick-up roller feed out the trailing edge of the paper. A=(Original length − 80) x B / 100 B=setting value [35 to 85 / **35** / 5% /step]
26	Bank1: Feed Clutch OFF: Plain	The feed solenoid turns off A mm after the pick-up roller feed out the trailing edge of the paper. A=4 + B B=setting value [-10 to 10 / **0** / 1mm /step]
27	Bank1: Feed Clutch OFF: Middle Thick	
28	Bank1: Feed Clutch OFF: Thick 1	
29	Bank2: Feed Clutch OFF: Plain	
30	Bank2: Feed Clutch OFF: Middle Thick	
31	Bank2: Feed Clutch OFF: Thick 1	
32	Bank Feed Wait Position	Stop and hold the paper A mm after the leading edge of the paper activates the vertical transport sensor. A=setting value [-20 to 20 / **0** / 1mm /step]

1908*	Paper Feed Timing Adj.

15	Junction Gate SOL1: ON	[-10 to 10 / **0** / 1mm /step]
17	Junction Gate SOL1: OFF	
20	Bridge Junction Gate SOL ON: Plain	The bridge junction gate solenoid turns on A mm after the leading edge of the paper activates the paper exit sensor.
21	Bridge Junction Gate SOL ON: Middle Thick	A=setting value
22	Bridge Junction Gate SOL ON: Thick 1	[0 to 20 / **0** / 1mm /step]
23	Bridge Junction Gate SOL OFF: Plain	The bridge junction gate solenoid turns off A mm after the leading edge of the paper activates the paper exit sensor.
24	Bridge Junction Gate SOL OFF: Middle Thick	A=setting value
25	Bridge Junction Gate SOL OFF: Thick 1	[0 to 50 / **0** / 1mm /step]

1950*	Fan Cooling Time Set
	Adjust the rotation time for the fan motor (Fan for PSU, fusing, heater, controller box) after a job end.
	[10 to 600 / **10** / 1 sec]

1991*	Max Fusing Lamp Duty **DFU**	
	These SP codes are debugging tools.	
1	Roller Center	[40 to 100/**100**/10%]
2	Roller Ends	
3	After Warming-up – Center	
4	After Warming-up - Ends	

1996*	Heater Forced Off After Printing
	Adjusts the period of time the fusing fan is off after printing. After the final sheet exits the fusing unit, the machine turns the fan off by setting the fusing temperature to reload temperature.
	[0 to 120/**1**/1 sec]

System SP Tables-2

SP2xxx: Drum

2001*	Charge Roller Bias
	Setting (Copying)
1	Adjusts the voltage applied to the charge roller during printing. This value will be changed automatically when the charge roller bias correction is performed. Note that if this value is changed, the charge roller voltage will be corrected based on the new voltage. [−2100 to −1500 / **−1700** / 10 V/step]
	Adjust ID Sensor Pattern
2	Adjusts the voltage applied to the charge roller when making the Vsdp ID sensor pattern (for charge roller bias correction). The actual charge roller voltage is this value plus the value of SP2001 1. [0 to 400 / **200** / 10 V/step]
	Temporary Input
3	Inputs the charge roller voltage temporarily for test purposes. **Do not change the value.** [0 to −2500 / **0** / 10 V/step]

2005*	Charge Bias Correction
	Vsdp Min
1	Adjusts the lower threshold value for the charge roller correction. When the value of Vsdp/Vsg is less than this value, the charge roller voltage increases by 50V (e.g. from −500 to −550). The size of the increase depends on SP2005 3. [0 to 100 / **90** / 1%/step]

2	Vsdp Max	
	Adjusts the upper threshold value for the charge roller correction.	
	When the value of Vsdp/Vsg is greater than this value, the charge roller voltage decreases by 50V (e.g. from −550 to −500). The size of the decrease depends on SP2005 3.	
	[0 to 100 / **95** / 1 %/step]	
3	Charge Roller Bias Correction (Step)	
	Adjusts the size of the charge roller voltage correction.	
	[0 to 200 / **50** / 1 V/step]	

4

2102*	Main Scan Mag. Adjustment
	Adjusts the magnification in the main scan direction for copy mode and printer mode. Press "Clear/Stop" key to toggle plus or minus.
	[−0.5 to 0.5 / **0** / 0.1 %]

2103	Erase Margin Adjust	
1	Leading Edge	
	Adjusts the leading edge erase margin.	
	The specification is 3 ±2 mm. See "Replacement and Adjustment - Copy Adjustment" for details.	
	[0.0 to 4.0 / **3.0** / 0.1 mm/step]	
2	Trailing Edge	
	Adjusts the trailing edge erase margin.	
	The specification is 0.5 mm or more. See "Replacement and Adjustment - Copy Adjustment" for details.	
	[0.0 to 4.0 / **3.0** / 0.1 mm/step]	
3	Left Side	
	Adjusts the left edge erase margin.	
	The specification is 2 ±1.5 mm. See "Replacement and Adjustment - Copy Adjustment" for details.	
	[0.0 to 4.0 / **2.0** / 0.1 mm/step]	

4	Right Side
	Adjusts the right edge erase margin.
	The specification is 2 +2.5/-1.5 mm. See "Replacement and Adjustment - Copy Adjustment" for details.
	[0.0 to 4.0 / **2.0** / 0.1 mm/step]
5	Duplex Trail.: L Size: Plain
	Adjusts the trailing edge erase margin on the reverse side of duplex copies for plain paper longer than 297 mm.
	The actual trailing edge erase margin on the reverse side is this value plus the value of SP2101-2.
	The specification is 0.5 mm or more. See "Replacement and Adjustment - Copy Adjustment" for details
	[0.0 to 4.0 / **1.2** / 0.1 mm/step]
6	Duplex Trail.: M Size: Plain
	Adjusts the trailing edge erase margin on the reverse side of duplex copies for plain paper of length 216.1 to 297 mm.
	The actual trailing edge erase margin on the reverse side is this value plus the value of SP2101-2.
	The specification is 0.5 mm or more. See "Replacement and Adjustment - Copy Adjustment" for details
	[0.0 to 4.0 / **0.8** / 0.1 mm/step]
7	Duplex Trail.: S Size: Plain
	Adjusts the trailing edge erase margin on the reverse side of duplex copies for plain paper of length 216 mm or less.
	The actual trailing edge erase margin on the reverse side is this value plus the value of SP2101-2.
	The specification is 0.5 mm or more. See "Replacement and Adjustment - Copy Adjustment" for details
	[0.0 to 4.0 / **0.6** / 0.1 mm/step]

4

8	Duplex Left: Plain
	Adjusts the left side erase margin on the reverse side of duplex copies.
	The actual left side erase margin on the reverse side is this value plus the value of SP2101-3.
	The specification is 2 ±1.5 mm. See "Replacement and Adjustment - Copy Adjustment" for details.
	[0.0 to 1.5 / **0.3** / 0.1 mm/step]
9	Duplex Right: Plain
	Adjusts the right side erase margin on the reverse side of duplex copies.
	The actual right side erase margin on the reverse side is this value plus the value of SP2101-4.
	The specification is 2 +2.5/−1.5 mm. See "Replacement and Adjustment - Copy Adjustment" for details.
	[0.0 to 1.5 / **0.3** / 0.1 mm/step]
10	Duplex Trail.: L Size: Thick
	Adjusts the trailing edge erase margin on the reverse side of duplex copies for thick paper longer than 297 mm.
	The actual trailing edge erase margin on the reverse side is this value plus the value of SP2101-2.
	The specification is 0.5 mm or more. See "Replacement and Adjustment - Copy Adjustment" for details
	[0.0 to 4.0 / **1** / 0.1 mm/step]
11	Duplex Trail.: M Size: Thick
	Adjusts the trailing edge erase margin on the reverse side of duplex copies for thick paper of length 216.1 to 297 mm.
	The actual trailing edge erase margin on the reverse side is this value plus the value of SP2101-2.
	The specification is 0.5 mm or more. See "Replacement and Adjustment - Copy Adjustment" for details
	[0.0 to 4.0 / **0.6** / 0.1 mm/step]

12	Duplex Trail.: S Size: Thick
	Adjusts the trailing edge erase margin on the reverse side of duplex copies for thick paper of length 216 mm or less.
	The actual trailing edge erase margin on the reverse side is this value plus the value of SP2101-2.
	The specification is 0.5 mm or more. See "Replacement and Adjustment - Copy Adjustment" for details
	[0.0 to 4.0 / **0.4** / 0.1 mm/step]
13	Duplex Left: Thick
	Adjusts the left side erase margin on the reverse side of duplex copies on thick paper.
	The actual left side erase margin on the reverse side is this value plus the value of SP2101-3.
	The specification is 2 ±1.5 mm. See "Replacement and Adjustment - Copy Adjustment" for details.
	[0.0 to 1.5 / **0.1** / 0.1 mm/step]
14	Duplex Right: Thick
	Adjusts the right side erase margin on the reverse side of duplex copies on thick paper.
	The actual right side erase margin on the reverse side is this value plus the value of SP2101-4.
	The specification is 2 +2.5/−1.5 mm. See "Replacement and Adjustment - Copy Adjustment" for details.
	[0.0 to 1.5 / **0.1** / 0.1 mm/step]

2105*	LD Power Adjustment
1	LD Power Adjustment
	[50 to 255 / **139 (D120/D139), 171 (D121/D122/D140/D141)** / 1/step]
	Adjusts the LD power.
2	LD Power Adjustment Unit
	Adjusts the LD power adjustment unit.
	[−50 to 50 / **0** / 0.1 %]

2109	Test Pattern

4

1	Pattern Select
	Prints the test patterns. Select the number of the test pattern that you want to print. When adjusting the printing registration, select no.14 (Trimming Area). [0 to 21 / **0** / 1 step]
2	Test Pattern Density
	Adjusts the test pattern density. [0 to 15 / **15** / 1 step]

Test Patterns for SP2109

0	None	11	Independent Pattern (1dot)
1	Vertical Line (1 dot)	12	Independent Pattern (2dot)
2	Vertical Line (2dot)	13	Independent Pattern (4dot)
3	Horizontal Line (1dot)	14	Trimming Area
4	Horizontal Line (2 dot)	15	Black Band (Horizontal)
5	Grid Vertical Line	16	Black Band (Vertical)
6	Grid Horizontal Line	17	Checker Flag Pattern
7	Grid Pattern Small	18	Grayscale (Vertical)
8	Grid Pattern Large	19	Grayscale (Horizontal)
9	Argyle Pattern Small	20	Full Dot Pattern
10	Argyle Pattern Large	21	All White Pattern

2201*	Development Bias Adjust
	Printing
1	Adjusts the development bias during printing. This can be adjusted as a temporary measure if faint copies appear due to an aging drum. [−1500 to 0 / **−650** / 10 V/step]

	2	ID Sensor Pattern
		Adjusts the development bias for making the ID sensor pattern.
		The actual development voltage for the ID sensor pattern is this value plus the value of SP2201-1.
		This should not be used in the field, because it affects ID sensor pattern density, which affects toner supply.
		[0 = N (200V) / 1 = H (240V) / 2 = L (160V) / 3 = HH (280V) / 4 = LL (120V)]

4

2210*		Bias Off Time
	1	Charge Bias
		Adjusts the charge voltage (-1200V) application time.
		When the charge voltage and development bias are turned off at the same time, toner or carrier will be attracted to the drum. To reduce the toner or carrier attraction, the machine applies −1200V to the charge roller before the development bias is turned off. This SP adjusts the time for applying the charge.
		[10 to 150 / **100** / 10 ms /step]
	2	Development Bias
		Adjusts the development bias off time.
		[10 to 200 / **80** / 10 ms/step]

2211*	PCU Reverse Interval
	Adjusts the PCU reverse interval for cleaning during a job.
	When the machine has made this number of copies in the middle of a job, the machine reverses to clean the edge of the cleaning blade. After cleaning, the machine resumes the job. Set to a shorter interval if thin white lines appear on printouts.
	[0 to 999 / **100** / 1 sheet/step]
	0: Never cleans during job
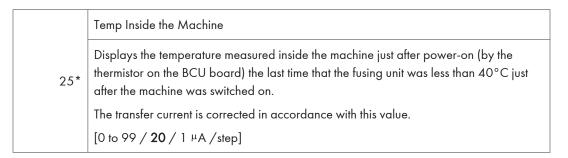
2213*	Copies After Toner Near End
	Selects the number of copies that can be made after toner near-end has been detected.
	[**0 = 50 pages** / 1 = 20 pages]
	If the user normally makes copies with a high proportion of black, reduce the interval.

143

2220*	Vsg/Vsp/Vsdp/Vt/Vtref Display	
1	Vsp	
2	Vsg	
3	Vsdp	Displays the individual Vsp, Vsg, Vdsp, Vt, and Vtref values.
4	Vt	
5	Vtref	

2301*	Transfer Current Adjust
1*	Thin:1side:Image Area
	Adjusts the transfer current for copying. [−4 to 4/ **0** / 1 μA /step]
2*	Thin:1side:Lead Edge
	Adjusts the transfer current for copying. [−4 to 4/ **0** / 1 μA /step]
3*	Thin:1side:Trail Edge
	Adjusts the transfer current for copying. [−4 to 4/ **0** / 1 μA /step]
4*	Thin:2side:Image Area
	Adjusts the transfer current for copying. [−4 to 4/ **0** / 1 μA /step]
5*	Thin:2side:Lead Edge
	Adjusts the transfer current for copying. [−4 to 4/ **0** / 1 μA /step]
6*	Thin:2side:Trail Edge
	Adjusts the transfer current for copying. [−4 to 4/ **0** / 1 μA /step]

4

7*	Plain:1side:Image Area
	Adjusts the transfer current for copying.
	[−4 to 4/ **0** / 1 µA /step]
8*	Plain:1side:Lead Edge
	Adjusts the transfer current for copying.
	[−4 to 4/ **0** / 1 µA /step]
9*	Plain:1side:Trail Edge
	Adjusts the transfer current for copying.
	[−4 to 4/ **0** / 1 µA /step]
10*	Plain:2side:Image Area
	Adjusts the transfer current for copying.
	[−4 to 4/ **0** / 1 µA /step]
11*	Plain:2side:Lead Edge
	Adjusts the transfer current for copying.
	[−4 to 4/ **0** / 1 µA /step]
12*	Plain:2side:Trail Edge
	Adjusts the transfer current for copying.
	[−4 to 4/ **0** / 1 µA /step]
13*	Middle:1side:Image Area
	Adjusts the transfer current for copying.
	[−4 to 4/ **0** / 1 µA /step]
14*	Middle:1side:Lead Edge
	Adjusts the transfer current for copying.
	[−4 to 4/ **0** / 1 µA /step]
15*	Middle:1side:Trail Edge
	Adjusts the transfer current for copying.
	[−4 to 4/ **0** / 1 µA /step]

4

16*	Middle:2side:Image Area	
	Adjusts the transfer current for copying. [−4 to 4/ **0** / 1 μA /step]	
17*	Middle:2side:Lead Edge	
	Adjusts the transfer current for copying. [−4 to 4/ **0** / 1 μA /step]	
18*	Middle:2side:Trail Edge	
	Adjusts the transfer current for copying. [−4 to 4/ **0** / 1 μA /step]	
19*	Thick:1side:Image Area	
	Adjusts the transfer current for copying. [−4 to 4/ **0** / 1 μA /step]	
20*	Thick:1side:Lead Edge	
	Adjusts the transfer current for copying. [−4 to 4/ **0** / 1 μA /step]	
21*	Thick:1side:Trail Edge	
	Adjusts the transfer current for copying. [−4 to 4/ **0** / 1 μA /step]	
22	Input:1side	
	Adjusts the transfer current for copying. [0 to 30 / **0** / 1 μA /step]	
23	Input:2side	
	Adjusts the transfer current for copying. [0 to 30 / **0** / 1 μA /step]	
24*	Non Image Area	
	Adjusts the transfer current for copying. [0 to 30 / **10** / 1 μA /step]	

25*	Temp Inside the Machine
	Displays the temperature measured inside the machine just after power-on (by the thermistor on the BCU board) the last time that the fusing unit was less than 40°C just after the machine was switched on.
	The transfer current is corrected in accordance with this value.
	[0 to 99 / **20** / 1 µA /step]

2302*		Transfer Current Switch Timing
	1	Transfer Current Switch Timing Lead Edge
		Adjusts the transfer current switch timing based on FGATE assert.
		[−10 to 10 / **0** / 1 mm]
	2	Transfer Current Switch Timing Trail Edge
		Adjusts the transfer current switch timing based on FGATE negate.
		[−10 to 10 / **0** / 1 mm]

2303*		Transfer Roller Cleaning Bias
	1	Positive
		Adjusts the positive current of the paper transfer roller for cleaning the paper transfer roller.
		[0 to 20 / **10** / 1 µA]
	2	Negative
		Adjusts the negative current of the paper transfer roller for cleaning the paper transfer roller.
		[0 to 20 / **4** / 1 µA]

2801	Developer Initialization
	Initializes the developer and resets the TD and ID sensor outputs to their defaults. Do this SP after you fill the PCU with developer at machine installation and every time developer is replaced.

4

2802	Developer Mixing
	Mixes the developer and checks Vt. The machine mixes the developer for 2 minutes and while doing this, it reads the TD sensor output (Vt). It does not initialize the TD sensor output.
	If the machine has not been used for a long time, prints may have a dirty background. In this case, use this SP mode to mix the developer.

2803*		Developer Initialization Data
	1	Vtref
		When the machine detects a new PCU (photoconductor unit) in the machine, it checks the heat seals at the creation of the first ID sensor pattern. After the agitator is rotated for 30 sec., the machine creates the second ID sensor pattern and corrects the reference value of the TD sensor. The corrected reference value for the TD sensor is recorded here.
	2	ID Sensor PWM Value
		Displays the PWM value of the ID sensor after performing the developer initialization.

2901*		Separation Voltage Adjust
	1	1side:Lead Edge
		Adjusts the voltage that is applied to the separation plate during printing at the leading edge of the paper on the front side.
		If the copies have pawl marks at the leading edge, increase this voltage.
		[−4000 to 0 / **−1800** / 100 V/step]
	2	1side:Image Area
		Adjusts the voltage that is applied to the separation plate during printing on the image area of the paper on the front side.
		If the copies have pawl marks in the image area, increase this voltage.
		[−4000 to 0 / **−1800** / 100 V/step]

		2side:Lead Edge	
	3	Adjusts the voltage applied to the separation plate, during printing at the leading edge of the paper on the rear side. See SP2901 1. [–4000 to 0 / **–2100** / 100 V/step]	
		2side:Image Area	
	4	Adjusts the voltage applied to the separation plate, during printing at the image area of the paper on the rear side. See SP2901 2. [–4000 to 0 / **–2100** / 100 V/step]	
		Switching Timing Lead Edge	
	5	Adjusts the separation voltage switch timing based on FGATE assert. [-20 to 20 / **15** / 1 mm]	

		Tailing Control	
2906*			
		Shift Range	
	1	Shifts the image across the page at the interval specified by SP2906 2. When making many copies of an original that contains vertical lines (such as a table), separation may not work correctly, then a tailing image will occur (ghosts of the vertical lines will continue past the bottom of the table). This SP prevents this problem. [0.0 to 1.0 / **0.0** / 0.1 mm/step]	
		Number of Sheets	
	2	Changes the interval for the image shift specified by SP2906 1. [0 to 10 / **0** / 1 page/step]	

		Filter Setting	
2907*		Adjusts the line width for the copy mode. The default setting disables this function. A number smaller than the default makes lines thinner, a number larger than the default makes lines thicker.	
	1	Text: Multilevel Copy	[0 to 10 / **6** / 1 step]
	2	Photo: Multilevel Copy	[0 to 10 / **5** / 1 step]

3	Text/Photo: Multilevel Copy	
4	Pale: Multilevel Copy	[0 to 10 / **5** / 1 step]
5	Generation: Multilevel Copy	

2908	**Forced Toner Supply**
	Forces the toner bottle to supply toner to the toner supply unit.
	Press Execute on the touch panel to start.
	During this process, the machine supplies toner until the toner concentration in the development unit reaches a standard level. However, if the toner concentration does not reach a standard level, the machine supplies toner for 2 minutes maximum.

2915*	**Polygon Motor Idling Time**	
	Selects the polygon motor idling time.	
	The polygon motor starts rotating up to its operation speed if the user 1) sets an original, 2) touches a key, or 3) opens the platen cover or document feeder. This shortens the time to the first copy. However, with the default (10 s) set, the motor stops if the user does nothing for 10 s after doing one of the actions above, and stops 10 s at the end of a job.	
	Note: If set at "0", the polygon motor never turns off during stand-by. However, when the machine goes into energy saver mode, the polygon motor turns off regardless of this timer.	
1	Idling Time ADJ	[0 to 60/**15**/1]
2	Post Idling Time ADJ	[0 to 60/**10**/1]

2921*	**Toner Supply Mode**
	Selects the toner supply mode.
	[**0 = Normal** 1 / 1 = Normal 2 / 2 = Fixed 1 / 3 = Fixed 2]
	Normally, only use setting 0. Change to 3 temporarily if the TD sensor is defective. Do not use settings 1 and 2; these are for designer's use only.

2922*	Toner Supply Time
	Adjusts the toner supply motor on time for sensor supply mode.
	This SP is effective only when SP2921 is "0" or "1".
	[0.1 to 5.0 / **0.6** / 0.1 s/step]
	Increasing this value increases the toner supply motor on time. So, use a high value if the user tends to make lots of copies that have a high proportion of black.

2923*	Toner Recovery Time
	Adjusts the toner supply motor on time during recovery from toner near-end/end.
	This SP is effective only when SP2921 is "0", "1", or "2".
	[1 to 60 / **30** / 1 s/step]
	Note that toner recovery is done in a 3-second cycle. So, the input value should be a multiple of 3 (e.g. 3, 6, 9). See "Toner Density Control" for more details.

2925*	Toner Supply Ratio
	Adjusts the toner supply rate for fixed toner supply mode.
	This SP is effective only when SP2921 is "2" or "3".
	Increasing this value increases the toner supply motor on time. So, use a high value if the user tends to make lots of copies that have a high proportion of black. See "Toner Density Control" for more details.
	[0 to 7 / **0** / 1/step]
	0: t, 1: 2t, 2: 4t, 3: 8t, 4: 12t, 5: 16t, 6: On continuously, 7: 0 s
	t: 200 ms

2926*	Standard Vt **DFU**
	Adjusts Vts (Vt for a new PCU). The TD sensor output is adjusted to this value during the TD sensor initial setting process. This SP is effective only when SP2921 is "0", "1", or "2".
	[0.00 to 5.00 / **2.50** / 0.05 V/step]

2927*	ID Sensor Control
	Selects whether the ID sensor is used or not for toner density control. [0 = No / **1 = Yes**] If this value is "0", dirty background may occur after the machine has not been used for a long time.

2928	Toner End Clear
	Clears the toner end condition. Press Execute on the touch panel to clear the toner end condition without adding new toner. When you press Execute, the following are cleared: • Toner end indicator (goes out) • Toner near-end counter • Toner near-end level When making a lot of copies after changing this setting to "1", the carrier may be attracted to the drum when the toner runs out, which may damage the drum.

2929*		Vref Adjustment
	1	Upper Limit
		Adjusts the upper limit for Vref. [0.5 to 3.5 / **3.10** / 0.05 V/step]
	2	Lower Limit
		Adjusts the lower limit for Vref. [0.5 to 3.5 / **1.40** / 0.05 V/step]

2930*	TD Sensor Manual Setting
	Adjusts the TD sensor output. [0 to 5 / **0.0V** / 0.05V/step]

2931*	TD (V/wt%) Setting
	Adjusts the TD sensor sensitivity (coefficient: S) for toner density control. [0.01 to 1.50 / **0.4** / 0.01/step]

2932*	Toner Density Control Level	
	Adjusts the toner density control threshold level. [0 = Normal / 1 = Dark / 2 = Light / 3 = Darker / 4 = Lighter] Use this SP when you want to adjust the image density.	

2933*	ID Sensor Control Correction	
	Adjusts the ID sensor control coefficient. [0.5 to 3 / 1 / 0.1/step]	

2934*	ID Sensor PWM Setting	
1	Display	Displays the PWM of the ID Sensor LED.
3	Upper Limit Correction	Corrects the upper limit of the PWM for the ID sensor LED. [0 to 1023 / 100 / 1/step]

2935	ID Sensor Initialization
	Performs the ID sensor initial setting. Press Execute on the touch panel to start. Perform this setting after replacing or cleaning the ID sensor.

2992*	Copies After TD Sensor Error
	Selects the number of copies that can be made after a TD sensor error has been detected. When the machine copies this amount, an SC condition will occur. If the optional fax unit is installed, the SC condition occurs immediately regardless of the number of prints (this is because the sender of the fax cannot check the image quality of the printout). [0 or 1 / 0 / -] 0:100 Pages, 1:200 Pages

2995*	ID Sensor Detection Interval

4

1	Warming-up	
	If the period of time specified here elapses before the machine returns to full operation from the energy saver or auto off mode, ID sensor warming-up is performed. [0 to 999 / **480** / 1 min]	
2	Number of Pages	
	The machine makes an ID sensor pattern after the specified number of prints has been made. [0 to 999 / **300** / 1 sheet/step]	
3	Job End/Interrupt	
	Determines when the ID sensor reads the ID sensor pattern. [0 or 1 / **0** / -] 0: Job End. Read pattern at job end. 1: Interrupt. Read pattern at interval set with SP2995-2, even if the job is not completed.	

2996*	Transfer Roller Cleaning	
	These SP codes determine how the transfer roller is cleaned.	
1	0:OFF 1:ON	
	Selects whether the transfer roller is cleaned. Transfer roller cleaning is necessary only when black spots occur in the image areas of copies. This can occur when bad environmental conditions increase the toner density. Set this to "1" when dirty background appears on the reverse side of the first page of a copy job. However, the first copy time will be longer regardless of the SP2996 001 setting. [**0 = No** / 1 = Yes]	

2	Interval	
	This SP sets the page interval for transfer roller cleaning when SP2996 001 is set to "1" (Yes). Increase this setting only when absolutely necessary. A higher setting increases wear on the PCU. [0to100/**50**/1 sheets] **Note:** This SP does not execute for the first copy after power on or when the machine returns from the energy save or auto off mode. This SP setting does cannot correct poor copies if there is a problem with the TD sensor.	

2998*	PCU Reverse Rotation Time	
1	Wait Time	
	Adjusts the waiting time for starting to rotate the drum in reverse after the end of each job. The wait time calculation formula is as follows. [0 to 999 / **300** / 1] This SP is adjusted in units of 30 ms (1 step = 30 ms, 2 steps = 60 ms, etc.) If "0" is selected, the drum reverses immediately at the end of the job.	
2	Reverse Time	
	Adjusts the drum reverse rotation time. [0 to 99 / **60** / 1] This SP is adjusted in units of 60 ms (1 step = 6 ms, 2 steps = 12 ms, etc.) If "0" is selected, the drum does not reverse at the end of the job.	
3	Brake Time	
	Adjusts the length of time of braking to stop reverse rotation of the drum.: **DFU** [0 to 99/0/1] This SP is adjusted in units of 6 ms (1 step = 6 ms, 2 steps = 12 ms, etc.) If "0" is selected, the drum stops reverse rotation immediately.	

4

System SP Tables-3

SP3xxx

There are no Group 3 SP codes for this machine.

4

System SP Tables-4

SP4xxx: Scanner

4008*	**Sub Scan Mag.Adjustment**
	Adjusts the magnification of the sub scan direction during scanning. Changing this value changes the scanner motor speed. Press ⊙ to toggle ±.
	[−1 to 1 / **0** / 0.1%]

4010*	**L-Edge Regist Adjustment**
	Adjusts the leading edge registration for scanning. Press ⊙ to toggle ±.
	[−2 to 2 / **0** / 0.1 mm]
	As you enter a negative value, the image moves toward the leading edge.

4011*	**S-to-S Regist Adjustment**
	Adjusts side-to-side registration for scanning. Press ⊙ to toggle ±.
	[−2.5 to +2.5 / **0.0** / 0.1 mm step]
	As you enter negative values, the image will disappear at the left, and as you enter positive values, the image will appear at the left.

4012*		**Scanner Erase Margin: Scale**
		Adjusts the erase margin at each side for scanning in book mode and ADF mode.
		🔽 **Note**
		• Do not adjust this unless the user wishes to have a scanner margin that is greater than the printer margin.
		• These settings are adjusted to erase shadows caused by the gap between the original and the scale of the scanner unit.
	1	Book: Leading Edge — [0 to 3.0 / **1.0** / 0.1 mm / step]
	2	Book: Trailing Edge — [0 to 3.0 / **0.0** / 0.1 mm / step]
	3	Book: Left — [0 to 3.0 / **1.0** / 0.1 mm / step]

4

4	Book: Right	
5	ADF: Leading Edge	[0 to 3.0 / **0.0** / 0.1 mm / step]
7	ADF: Right	
8	ADF: Left	

4013	Scanner Free Run	
	Performs a scanner free run with the exposure lamp on or off.	
1	Lamp OFF	[0 to 1 / **0** / 1]
2	Lamp ON	0=Off, 1=On

4014	Scan	
	Performs a scanner free run with or without HP sensor check.	
1	HP Detection Enable	• Touch [Execute] to start this feature.
2	HP Detection Disable	• Press the ☺ (Clear/Stop) key to stop.

4020	Dust Check
	This function checks the narrow scanning glass of the ADF for dust that can cause black lines in copies. If dust is detected a system banner message is displayed, but processing does not stop.
1	Dust Detect:On/Off
	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 2. [0 to 1 / **1** / 1] 0: Off. No dust warning. 1: On. Dust warning. This warning does not stop the job. ⬇Note • Before switching this setting on, clean the ADF scanning glass and the white plate above the scanning glass.

	Dust Detect:Lvl	
2	Adjusts the sensitivity for dust detection on the ADF scanning glass. This SP is available only after SP4020 1 is switched on. [0 to 8 / **4** / 1] If you see black streaks in copies when no warning has been issued, raise the setting to increase the level of sensitivity. If warnings are issued when you see not black streaks in copies, lower the setting. **Note**: Dust that triggers a warning could 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.	
3	Dust Reject:Lvl	
	Selects the level of the sub scan line correction when using the ARDF. [0 to 4 / **0** / 1 /step] 0: Off, 1: Weakest, 2: Weak, 3: Strong, 4: Strongest	

4301	APS Operation Check
	Displays the status of the APS sensors and platen/DF cover sensor.

4303*	APS Min. Size
	Selects if the copier defaults to A5 SEF/LEF if the APS sensor cannot detect the size of a small original. [0 to 1/ **0** /1] 0: No Original (Not detected as A5) 1: A5-Lengthwise (Detected as A5 SEF)

4305*	8K/16K Detection
	Selects whether the machine determines that the original is A4/LT, or 8K/16K. 8K/16K is not available for USA models. [**0 = Normal** (LT for USA models, A4 for Europe/Asia models) 1 = A4-Sideways LT-Lengthwise 2 = LT-Sideways A4-Lengthwise 3 = 8K/16K]

4
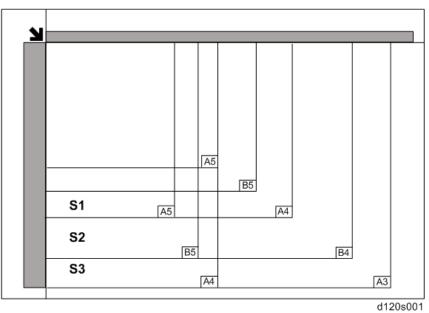
4308*	Scan Size Detection Detection ON/OFF	
	Selects whether the machine detects the original size. [0 to 1 / **1** / 1] 0: Off, 1: On	

4309*	Scan Size Detect:Setting	
1	Original Density Thresh	[0 to 255 / **18** / 1 digit]
2	Detection Time	[20 to 100 / **60** / 20 msec]
3	Lamp ON:Delay Time	[0 to 200 / **40** / 20 msec]
4	LED PWM Duty	[0 to 100 / **60** / 1 %]

4310	Scan Size Detect Value	
	Displays the detected value by CCD. Each detection point for paper size and color is displayed on the LCD.	
1	S1:R	
2	S1:G	
3	S1:B	
4	S2:R	
5	S2:G	[0 to 255 / **0** / 1 digit]
6	S2:B	
7	S3:R	
8	S3:G	
9	S3:B	

⬇ **Note**

- Each detection point (S1, S2, S3) in SP4310 is as follows.

d120s001

4400*	Scanner Erase Margin	
	These SPs set the area to be masked during platen (book) mode scanning.	
1	Book: Leading Edge	
2	Book: Trailing Edge	
3	Book: Left	
4	Book: Right	[0 to 3.0 / **0.0** / 0.1 mm/step]
5	ADF: Leading Edge	
7	ADF: Right	
8	ADF: Left	

4417	IPU Test Pattern		
	Selects the IPU test Pattern.		
	Test Pattern Selection	[0 to 28 / **0** / 1]	
		0: Scanned image	15: Gray pattern (1)
		1: Gradation main scan A	16: Gray pattern (2)
		2: Gradation main scan B	17: Gray pattern (3)
		3: Gradation main scan C	18: Shading pattern
		4: Gradation main scan D	19: Thin line pattern
		5: Gradation sub scan (1)	20: Scanned + Grid pattern
		6: Grid pattern (1)	21: Scanned + Grid scale
		7: Slant grid pattern	22: Scanned + Color patch
		8: Gradation K	23: Scanned + Slant Grid C
		9: Check pattern 16	24: Scanned + Slant Grid D
		10: Gray patch 16 (1)	25: Gray Scale 18 text
		11: Gray patch 16 (2)	26: Gray Scale 18 photo
		12: Gray patch 64	27: Gray Scale 256 text
		13: Grid pattern (2)	28: Gray Scale 256 photo
		14: Color patch K	

4429*	Select Copy Data Security	
	Adjusts the ICI density level.	
1	Copying	
2	Scanning	[0 to 3 / **3** / 1 /step]
3	Fax Operation	

4450	Scan Image Path Selection
	Determines the method of image path detection.

1	Black Subtraction ON/OFF	Switches black image path detection on/off: 0: ON, **1: OFF**
2	SH ON/OFF	Switches shading image path detection on/off **0: OFF**, 1: ON

4460*	Digital AE Set	
	Specifies the detection threshold for background deletion in ADS mode.	
1	Low Limit	[0 to 1023 / **364** / 1 digit]
2	Background Level	[512 to 1535 / **932** / 1 digit/step]

4550*	Scan Apli:Txt/Print
4551*	Scan Apli:Txt
4552*	Scan Apli:Txt Dropout
4553*	Scan Apli:Txt/Photo
4554*	Scan Apli:Photo
4565*	Scan Apli:GrayScale
4570*	Scan Apli:Col Txt/Photo
4571*	Scan Apli:Col Gloss Photo
4572*	Scan Apli:AutoCol
	MTF: 0(Off) 1-15 (Weak-Strong)
5	[0 to 15 / **8** / 1 /step] 0: MTF Off When the CCD converts the original image to electrical signals, the contrast is reduced due to the influence that adjacent white and black pixels have on one another as a result of lens properties. Typically, you may see very narrow width and spacing between black and white areas. MTF corrects this problem and emphasizes image detail.

6	Smoothing	Selects the level of smoothing for originals that contain dithered images. [0 to 7 / **4** / 1 / step] 0: Default (Off) → 7: Strongest
7	Brightness	Sets the overall brightness of the image. [1 to 255/ **128** / 1 / step] 1: Weakest ← 128: Default → 255: Strongest
8	Contrast	Sets the overall contrast of the image. [1 to 255/ **128** / 1 / step] 1: Weakest ← 128: Default → 255: Strongest
9	Ind. Dot Erase	Sets the level of independent dot erasure to improve the appearance of background. [0 to 7/ **0** / 1 / step] 0: Default (Off) → 7: Strongest

4580*	Fax Apli:Txt/Chart
4581*	Fax Apli:Txt
4582*	Fax Apli:Txt/Photo
4583*	Fax Apli:Photo
4584*	Fax Apli:Original 1
4585*	Fax Apli:Original 2
5	MTF: 0(Off) 1-15 (Weak-Strong) [0 to 15 / **8** / 1 /step] 0: MTF Off When the CCD converts the original image to electrical signals, the contrast is reduced due to the influence that adjacent white and black pixels have on one another as a result of lens properties. Typically, you will see very narrow width and spacing between black and white areas. MTF corrects this problem and emphasizes image detail.

6	Smoothing	Selects the level of smoothing for originals that contain dithered images. [0 to 7 / **4** / 0 / step] 0: Default (Off) → 7: Strongest
7	Brightness	Sets the overall brightness of the image. [1 to 255/ **128** /1] 1: Weakest ← 128: Default → 255: Strongest
8	Contrast	Sets the overall contrast of the image. [1 to 255/ **128** /1] 1: Weakest ← 128: Default → 255: Strongest
9	Ind. Dot Erase	Sets the level of independent dot erasure to improve the appearance of background. [0 to 7/ **0** / 1 /step] 0: Default (Off) → 7: Strongest
10	Text Erasure	Sets the erasure level of textures. Set higher for stronger effect, lower for weaker effect. [0 to 2 / **0** / 1 /step] 0: Not activated **Note**: This SP code exists for SP4580, SP4582 and SP4583 only.

4600	SBU Version Display	
	Displays the version number of the SBU.	
1	SBU ID	[0 to 0xFF / **0** / 1]
2	GASBU-N ID	[0 to 0xFF / **0** / 1]
3	VSP5100 ID	[0 to 0xFF / **0** / 1]

4602	Scanner Memory Access	
1	Scanner Memory Access	Enables the read and write check for the SBU registers.

4603	AGC Execution
	Executes the AGC.
1	HP Detection Enable
2	HP Detection Disable

4604	FGATE Open/Close
	Opens or closes the FGATE signal. This SP automatically returns to the default status (close) after exiting this SP.
	[0 or 1 / **0** / 1 / step]
	0: OFF, 1: ON
	Note:
	• When the registration sensor goes ON, the BCU generates the FGATE signal and sends it to the LD units.
	• As soon as the LD units receive the FGATE signal, they send a feedback signal to the BCU.
	• SC230, SC231 if the FGATE signal fails to switch on or off.

4609*	Gray Balance Set: R	
	Adjusts the gray balance of the red signal for each scanning mode.	
1	Book Scan	[-384 to 255 / **-46** / 1 digit]
2	DF Scan	

4610	Gray Balance Set: G	
	Adjusts the gray balance of the green signal for each scanning mode.	
1	Book Scan	[-384 to 255 / **-20** / 1 digit]
2	DF Scan	

| 4611* | Gray Balance Set: B |
| | Adjusts the gray balance of the blue signal for each scanning mode. |

	1	Book Scan	[-384 to 255 / **-28** / 1 digit]
	2	DF Scan	

4623		Black Level Adj. Display **Note**: • RE: Red Even signal • RO: Red Odd signal	
	1	Latest: RE Color	Displays the black offset value for the even red signal in the CCD circuit board. [0 to 16383 / **0** / 1 digit/step]
	2	Latest: RO Color	Displays the black offset value for the odd red signal in the CCD circuit board. [0 to 16383 / **0** / 1 digit/step]

4624		Black Level Adj. Display **Note**: • GE: Green Even signal • GO: Green Odd signal	
	1	Latest: GE Color	Displays the black offset value for the even green signal in the CCD circuit board. [0 to 16383 / **0** / 1 digit/step]
	2	Latest: GO Color	Displays the black offset value for the odd green signal in the CCD circuit board. [0 to 16383 / **0** / 1 digit/step]

4625		Black Level Adj. Display **Note**: • BE: Blue Even signal • BO: Blue Odd signal	
	1	Latest: BE Color	Displays the black offset value for the even blue signal in the CCD circuit board. [0 to 16383 / **0** / 1 digit/step]

4

	2	Latest: BO Color	Displays the black offset value for the odd blue signal in the CCD circuit board. [0 to 16383 / **0** / 1 digit/step]

4628	Analog Gain Adjust Latest: R Color	
	Displays the gain value of the amplifiers on the controller for Red. [0 to 7 / **0** / 1 digit/step]	

4629	Analog Gain Adjust Latest: G Color	
	Displays the gain value of the amplifiers on the controller for Green. [0 to 7 / **0** / 1 digit/step]	

4630	Analog Gain Adjust Latest: B Color	
	Displays the gain value of the amplifiers on the controller for Blue. [0 to 7 / **0** / 1 digit/step]	

4631	Digital Gain Adjust		
	Displays the gain value of the amplifiers on the controller for Red.		
	1	Latest: RE Color	[0 to 1023 / **0** / 1 digit]
	2	Latest: RO Color	

4632	Digital Gain Adjust		
	Displays the gain value of the amplifiers on the controller for Green.		
	1	Latest: GE Color	[0 to 1023 / **0** / 1 digit]
	2	Latest: GO Color	

4633	Digital Gain Adjust		
	Displays the gain value of the amplifiers on the controller for Blue.		
	1	Latest: BE Color	[0 to 1023 / **0** / 1 digit]
	2	Latest: BO Color	

4645	Scan Adjust Error	
	Displays the error value of the white level or black level adjustment.	
1	White Level	[0 to 65535 / **0** / 1 digit]
2	Black Level	

4647	SBU Error
	Displays the result of the SBU connection check.

4654*	Black Level Adj. Display	
	RE: Red Even signal, RO: Red Odd signal	
1	Last Correct Value: RE Color	Displays the previous black offset value for the even red signal in the CCD circuit board. [0 to 16383 / **0** / 1 digit/step]
2	Last Correct Value: RO Color	Displays the previous black offset value for the odd red signal in the CCD circuit board. [0 to 16383 / **0** / 1 digit/step]

4655*	Black Level Adj. Display	
	GE: Green Even signal, GO: Green Odd signal	
1	Last Correct Value: GE Color	Displays the previous black offset value for the even green signal in the CCD circuit board. [0 to 16383 / **0** / 1 digit/step]
2	Last Correct Value: GO Color	Displays the previous black offset value for the odd green signal in the CCD circuit board. [0 to 16383 / **0** / 1 digit/step]

4656*	Black Level Adj. Display	
	BE: Blue Even signal, BO: Blue Odd signal	
1	Last Correct Value: BE Color	Displays the previous black offset value for the even blue signal in the CCD circuit board. [0 to 16383 / **0** / 1 digit/step]

4

	2	Last Correct Value: BO Color	Displays the previous black offset value for the odd blue signal in the CCD circuit board. [0 to 16383 / **0** / 1 digit/step]

	Analog Gain Adjust Last Correct Value: R Color
4658*	Displays the previous gain value of the amplifiers on the controller for Red. [0 to 7 / **0** / 1 digit/step]

	Analog Gain Adjust Last Correct Value: G Color
4659*	Displays the previous gain value of the amplifiers on the controller for Green. [0 to 7 / **0** / 1 digit/step]

	Analog Gain Adjust Last Correct Value: B Color
4660*	Displays the previous gain value of the amplifiers on the controller for Blue. [0 to 7 / **0** / 1 digit/step]

		Digital Gain Adjust
4661*		RE: Red Even signal, RO: Red Odd signal
	1	Last Correct Value: RE Color	Displays the previous 2nd black offset value for the even red signal in the CCD circuit board. [0 to 1023 / **0** / 1 digit/step]
	2	Last Correct Value: RO Color	Displays the previous 2nd black offset value for the odd red signal in the CCD circuit board. [0 to 1023 / **0** / 1 digit/step]

		Digital Gain Adjust
4662*		GE: Green Even signal, GO: Green Odd signal
	1	Last Correct Value: GE Color	Displays the previous 2nd black offset value for the even green signal in the CCD circuit board. [0 to 1023 / **0** / 1 digit/step]

	2	Last Correct Value: GO Color	Displays the previous 2nd black offset value for the odd green signal in the CCD circuit board. [0 to 1023 / **0** / 1 digit/step]

4663*	Digital Gain Adjust		
	BE: Blue Even signal, BO: Blue Odd signal		
	1	Last Correct Value: BE Color	Displays the previous 2nd black offset value for the even blue signal in the CCD circuit board. [0 to 1023 / **0** / 1 digit/step]
	2	Last Correct Value: BO Color	Displays the previous 2nd black offset value for the odd blue signal in the CCD circuit board. [0 to 1023 / **0** / 1 digit/step]

4673*	Black Level Adj. Display **DFU**		
	RE: Red Even signal, RO: Red Odd signal		
	1	Factory Setting: RE Color	Displays the factory setting values of the black level adjustment for the even red signal in the CCD circuit board.
	2	Factory Setting: RO Color	Displays the factory setting values of the black level adjustment for the odd red signal in the CCD circuit board.

4674*	Black Level Adj. Display **DFU**		
	GE: Green Even signal, GO: Green Odd signal		
	1	Factory Setting: GE Color	Displays the factory setting values of the black level adjustment for the even green signal in the CCD circuit board.
	2	Factory Setting: GO Color	Displays the factory setting values of the black level adjustment for the odd green signal in the CCD circuit board.

4675*	Black Level Adj. Display **DFU**	
	BE: Blue Even signal, BO: Blue Odd signal	

	1	Factory Setting: BE Color	Displays the factory setting values of the black level adjustment for the even blue signal in the CCD circuit board.
	2	Factory Setting: BO Color	Displays the factory setting values of the black level adjustment for the odd blue signal in the CCD circuit board.

4677*	Analog Gain Adjust Factory Setting: R Color **DFU**
	Displays the factory setting values of the gain adjustment for Red.

4678*	Analog Gain Adjust Factory Setting: G Color **DFU**
	Displays the factory setting values of the gain adjustment for Green.

4679*	Analog Gain Adjust Factory Setting: B Color **DFU**
	Displays the factory setting values of the gain adjustment for Blue.

4680*		Digital Gain Adjust **DFU**
		Displays the gain value of the amplifiers on the controller for Red.
	1	Factory Setting: RE Color
	2	Factory Setting: RO Color

4681*		Digital Gain Adjust **DFU**
		Displays the gain value of the amplifiers on the controller for Green.
	1	Factory Setting: GE Color
	2	Factory Setting: GO Color

4682*		Digital Gain Adjust **DFU**
		Displays the gain value of the amplifiers on the controller for Blue.
	1	Factory Setting: BE Color
	2	Factory Setting: BO Color

4688*	Scan Image Density Adjustment ARDF
	Adjusts the white shading parameter when scanning an image with the DF. Adjusts the density level if the ID of outputs made in the DF and Platen mode is different.
	[80 to 120 / **104** / 1%/ step]

4690	White Peak Level Read **DFU**
	Displays the peak level of the white level scanning.
1	RE
2	RO

4691	White Peak Level Read **DFU**
	Displays the peak level of the white level scanning.
1	GE
2	GO

4692	White Peak Level Read **DFU**
	Displays the peak level of the white level scanning.
1	BE
2	BO

4693	Black Peak Level Read **DFU**
	Displays the peak level of the black level scanning.
1	RE
2	RO

4694	Black Peak Level Read **DFU**
	Display the peak level of the black level scanning.
1	GE
2	GO

4

4695		Black Peak Level Read **DFU**
		Display the peak level of the black level scanning.
	1	BE
	2	BO

4802		DF Shading Free Run	
		Executes the scanner free run for shading movement with the exposure lamp on or off. The free run moves the scanning lamp a short distance and immediately returns it to its home position.	
	1	Lamp OFF	• Touch [ON] to start the free run
	2	Lamp ON	• Be sure to touch "OFF" to stop the free run.

4804	Home Position
	Moves the exposure lamp a short distance and immediately returns it to its home position. Touch [Execute]> "Completed"> [Exit].

4806	Carriage Save
	Moves the exposure lamp a short distance away from the home position and stops.
	• Touch [Execute]> "Completed"> [Exit]
	• Do SP4804 to return the exposure lamp to its home position.
	Note
	• This SP is done before shipping the machine to another location.
	• Turning the machine power off/on also returns the exposure lamp to its home position.

4807	SBU Test Pattern Change

	Selects the test pattern generated by the controller board.
	[0 to 255 / **0** / 1 /step]
	0: Default (Scanning Image)
	1: Grid pattern
	2: Gradation main scan
	3: Gradation sub scan
	4 to 255: Default (Scanning Image)

4810	PWM **DFU**

4811	LED White Level Peak Read **DFU**

4812	LED White Level Peak Read **DFU**

4903*	Filter Setting	
	This SP code sets the threshold value for independent dot erase.	
	• The "0" setting disables independent dot erase.	
	• A higher setting detects more spurious dots for erasing. However, this could cause dots to erase in images that contain areas filled by dithering.	
1	Ind Dot Erase: Text	[0 to 7/ **0** /1]
2	Ind Dot Erase: Generation Copy	

4905*	Select Gradation Level
	Changes the parameters for dithering.
	[0 to 255 / **0** / 1 /step]

4906*	Filter Setting: Other **DFU**	
	Outline level Adj	[0 to 10 / **0** / 1]

4918	Manual Gamma Adjustment **DFU**

4954*	Read/Restore Std

1	Scan New Chart	Executes new chart scanning.
2	Recall Previous Chart	Recalls the previous scanned chart.
4	Set Standard Chart	Restores a new chart data as a standard chart data.
5*	Chromaticity Rank	Adjusts chromaticity rank. When replacing the scanner lamp, select a number according to the barcode on the new scanner lamp. [0 to 255 / **0** / 1]

4991	IPU Image Pass [Path] Selection RGB Frame Memory	
	Selects the image path. Enter the number to be selected using the 10-key pad. [0 to 11/ **2** / 1]	
	0	Scanner input RGB images
	1	Scanner I/F RGB images
	2	RGB images done by Shading correction (Shading ON, Black offset ON)
	3	Shading data
	4	Inner pattern data: Gray scale
	5	RGB images done by Line skipping correction
	6	RGB images done by Digital AE
	7	RGB images done by Vertical line correction
	8	RGB image done by Scanner gamma correction
	9	RGB image done by Filtering correction
	10	RGB images done by Full color ADS
	11	RGB image done by Color correction

4993*	Highlight Correction
	Selects the level of highlight correction.

1	Sensitivity Selection	Selects the Highlight correction level. [0 to 9 / **4** / 1 /step] 0: weakest sensitivity 9: strongest sensitivity
2	Range Selection	Selects the range level of Highlight correction. [0 to 9 / **4** / 1 /step] 0: weakest skew correction, 9: strongest skew correction

4994*	Text/Photo Detection Level Adj. High Compression PDF
	Selects the definition level between Text and Photo for high compression PDF. [0 to 2 / **1** / 1 /step] 0: Text priority 1: Normal 2: Photo priority

4996*	White Paper Detection Level
	Selects the threshold level of the original background density. [0 to 6 / **3** / 1/step] 0: Lightest 6: Darkest

4

System SP Tables-5

SP5xxx: Mode

5024*	mm/inch Display Selection
	Selects whether mm or inches are used in the display.
	Note: After selecting the number, you must turn the main power switch off and on.
	[0-1 / Europe/Asia model: 0, American model: 1 / 1]
	0: mm
	1: inch

5045*	Accounting Counter
	Selects whether the printer counter is displayed on the LCD.
	[0-1 / **0** / 1]
	0: Displays the total counter only.
	1: Displays both total counter and printer counter.

5047*	Paper Display
	Determines whether the tray loaded with paper printed on one side is displayed.
	[0 to 1 / **0** / 1]
	0: Not displayed
	1: Displayed

5052*	Return Time Priority Type
	Select the priority to return to the stand-by mode.
	[0 to 1 / **0** / 1]
	0: Energy Save have priority
	1: Return time have priority

5055*	Display IP Address
	Display or does not display the IP address on the LCD.
	[0 to 1 / **0** / 1]
	0: OFF, 1: ON

5056*	Coverage Counter Display
	Display or does not display the coverage counter on the LCD.
	[0 to 1 / **0** / 1]
	0: Not displayed, 1: Displayed

5061*	Toner Remaining Icon Display Change
	Display or does not display the remaining toner display icon on the LCD.
	[0 to 1 / **0** / 1]
	0: Not displayed, 1: Displayed

5062*	Parts PM System Setting
	Display or does not display the PM part yield on the LCD.
	[0 to 1 / **0** / 1]
	0: Not displayed, 1: Displayed
1	PCU

5066*	Parts PM Display Setting **DFU**

5067*	Parts PM System Setting
	Selects the service maintenance or user maintenance for each PM parts.
	If the user service is selected, PM alert is displayed on the LCD.
	[0 to 1 / **0** / 1]
	0: Service, 1: User
1	PCU

4

5071		Set Bypass Paper Size
		Turn on or off the paper size confirmation pop-up on the LED. This pop-up prevents mismatching between a paper size selected by the operation panel and an actual paper size on the by-pass tray. [0 to 1 / **0** / 1] 0: Off, 1: On
	1	PCU

5104*		A3/DLT Double Count **(SSP)**
		Specifies whether the counter is doubled for A3/DLT. "Yes" counts except from the bypass tray. When "Yes" is selected, A3 and DLT paper are counted twice, that is A4 x2 and LT x2 respectively.

5113*		Optional Counter Type
		Default Optional Counter Type
	1	Selects the type of counter: 0: None 1: Key Card (RK3, 4) **Japan only** 2: Key Card Down 3: Pre-paid Card 4: Coin Lock 5: MF Key Card (Must be enabled with SP5114) 11: Exp Key Card (Add) 12: Exp Key Card (Deduct)

5114*		Optional Counter I/F
		MF Key Card Extension
	1	Use this SP to change the setting to "1" only when the "5" (MF Key Card) is selected with SP5113-001. [**0**: Not installed/ 1: Installed (scanning accounting)]

5118*	Disable Copying
	This program disables copying.
	[0: Not disabled/ 1: Disabled]

5120*	Mode Clear Opt. Counter Removal
	This program disables copying.
	[0: Yes (removed)/ 1: Standby (installed but not used)/ 2: No (not removed)]

5121*	Counter Up Timing
	Determines whether the optional key counter counts up at paper feed-in or at paper exit.
	[0 or 1 / 0 / 1]
	0: Feed
	1: Exit

5126*	F Size Original Setting
	Selects the F-size original setting.
	[0 to 2 / 0 / 1 /step]
	0: 8.5" x 13" (Foolscap)
	1: 8.25" x 13" (Folio)
	2: 8" x 13" (F)

5127*	APS OFF Mode
	This program disables the APS.
	[0: Not disabled/ 1: Disabled]

4

5131*	Paper Size Type Selection
	Selects the paper size (type) for both originals and copy paper.
	[0 to 2 / DIP SW setting / 1 step]
	0: Japan
	1: North America
	2: Europe
	After changing the setting, turn the copier off and on. If the paper size of the archive files stored on the HDD is different, abnormal copies could result. Ask the customer to restore the archive files.

5150	Bypass Length Setting
	Sets up the by-pass tray for long paper.
	[0 to 1 / **0** / 1]
	0: Off
	1: On. Sets the tray for feeding paper up to 600 mm long.
	With this SP selected on, paper jams are not detected in the paper path.

5162*	App. Switch Method
	Controls if the application screen is changed with a hardware switch or a software switch.
	[0 or 1 / **0** / 1]
	0: Soft Key Set
	1: Hard Key Set

5167*	Fax Printing Mode at Optional Counter Off
	Enables or disables the automatic print out without an accounting device. This SP is used when the receiving fax is accounted for by an external accounting device.
	0: Automatic printing
	1: No automatic printing

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. [0 or 1 / **0** / 1] 0: Off. Printer bit switches cannot be adjusted. 1: On. Printer bit switches can be adjusted.

5181*	Size Adjust	
	Adjusts the paper size for each tray.	
1	Tray 1:1	[0 to 1 / **0 (EU/ASIA), 1 (NA)** / 1 /step] 0: A4 LEF, 1: LT LEF
2	Tray 1: 2	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A3, 1: DLT
3	Tray 1: 3	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B4, 1: LG
4	Tray 1: 4	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B5 LEF, 1: Exe LEF
5	Tray 1: 5	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A5SEF, 1: HLTSEF
6	Tray 2: 1	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A4 LEF, 1: LT LEF
7	Tray 2: 2	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A3, 1: DLT
8	Tray 2: 3	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B4, 1: LG
9	Tray 2: 4	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B5 LEF, 1: Exe LEF
10	Tray 3: 1	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A4 LEF, 1: LT LEF

4

11	Tray 3: 2	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A3, 1: DLT
12	Tray 3: 3	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B4, 1: LG
13	Tray 3: 4	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B5 LEF, 1: Exe LEF
14	Tray 4: 1	[0 to 2 / **0 (EU/ASIA), 1 (NA)** / -] 0: A4LEF, 1: LTLEF
15	Tray 4: 2	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A3, 1: DLT
16	Tray 4: 3	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B4, 1: LG
17	Tray 4: 4	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B5 LEF, 1: Exe LEF

5186*	RK 4: Setting **Japan Only**
	Enables or disables the prevention for RK4 (accounting device) disconnection. If the RK4 is disconnected for 10 seconds when this SP is set to "1 (Enable)", the machine automatically jams a sheet of paper and stops. [0 or 1 / **0** / 1/step] 0: Disable 1: Enable

5188*	Copy NV Version **DFU**

5195*	Limitless SW **DFU**

	Paper Exit After Staple End
5199	This SP determines whether a machine that normally cannot continue to output paper if staple supply runs can continue to operate. [0 to 1 / **0** / 1] 0: OFF. Paper cannot exit if no staples are available. 1: ON. Paper can exit with no staples.

5212*	Page Numbering	
3	Duplex Printout Left/Right Position	Horizontally positions the page numbers printed on both sides during duplexing. [−10 to 10 / **0** / 1 mm] 0 is center, minus is left, + is right.
4	Duplex Printout High/Low Position	Vertically positions the page numbers printed on both sides during duplexing. [−10 to 10 / **0** / 1 mm] 0 is center, minus is down, + is up.

	Set Time **DFU**
5302*	Sets the time clock for the local time. This setting is done at the factory before delivery. The setting is GMT expressed in minutes. [−1440 to 1440 / - / 1 min.] JA: +540 (Tokyo) NA: -300 (NY) EU: +6- (Paris) CH: +480 (Peking) TW: +480 (Taipei) AS: +480 (Hong Kong)

4

		Summer Time	
5307		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. This SP lets you set these items: • Day and time to go forward automatically in April. • Day and time to go back automatically in October. • Set the length of time to go forward and back automatically. 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	The number of the week for the day selected at the 4th 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.
		4th	Day of the week. 0: Sunday, 1: Monday
		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).
	1	Setting	Enables/disables the settings for 002 and 003. [0 to 1 / **1 (NA/EU), 0 (ASIA)** / 1 /step] 0: Disable 1: Enable
	3	Rule Set (Start)	The start of summer time.
	4	Rule Set (End)	The end of summer time.

5401*	Access Control **DFU**	
	This SP stores the settings that limit uses access to SDK application data.	
103	Default Document ACL	Used to assign the default access user access privileges to their own documents on the document server. [0 to 3 / **0** / 1 step] 0: View, 1: Edit, 2: Edit/Delete, 3: Full control.
104	Authentication Time	Specifies the timeout of the authentication. [0 to 255 / **0** / 1 sec./step] 0: 60 seconds 1 to 250 seconds
162	Extend Certification Detail	Selects the log out type for the extend authentication device. Bit 0: Log-out without an IC card 0: Not allowed (default) 1: Allowed
200	SDK1 Unique ID	"SDK" is the "Software Development Kit". This data can be converted from SAS (VAS) when installed or uninstalled. **DFU**
201	SDK1 Certification Method	
210	SDK2 Unique ID	
211	SDK2 Certification Method	
220	SDK3 Unique ID	
221	SDK3 Certification Method	
230	Certification Device	Enables or disables the SDK certification. • Bit 0: SDK certification 0: Disable (default), 1: Enable • Bit 1: Not used • Bit 2: Administrator log in 0: Disable (default), 01: Enable

4

240	Detail Option	Enables or disables the log out confirmation option. • Bit 0: Log out confirmation option 0: Enable (default), 1: Disable Selects the automatic log out time. • Bit 1 and 2: Automatic log out timer reduction 00: 60 seconds (default), 01: 10 seconds, 10: 20 seconds, 11: 30 seconds

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.

5411*	LDAP Certification
4	Easy Certification Determines whether easy LDAP certification is done. [0 or 1 / **1** / 1] 1: On 0: Off
5	Password Null Not Permit This SP is referenced only when SP5411-4 is set to "1" (On). [0 or 1 / **0** / 1] 0: Password NULL not permitted. 1: Password NULL permitted.
6	Detail Option Determines whether LDAP option (anonymous certification) is turned on or off. [0 to 255 / **0** / 1] 0: OFF 1: ON

5413*	Lockout Setting

	1	Lockout On/Off Switches on/off the lock on the local address book account. [0 or 1 / **0** / 1] 0: Off 1: On
	2	Lockout Threshold Sets a limit on the frequency of lockouts for account lockouts. [5 to 10 / **5** / 1]
	3	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. [0 or 1 / **0** / 1] 0: Off (no wait time, lockout not cancelled) 1: On (system waits, cancels lockout if correct user ID and password are entered.
	4	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). [1 to 9999 / **60** /1 min.]

5414*		Access Mitigation
	1	Mitigation On/Off Switches on/off masking of continuously used IDs and passwords that are identical. [0 or 1 / **0** / 1] 0: Off 1: On
	2	Mitigation Time Sets the length of time for excluding continuous access for identical user IDs and passwords. [0 to 60 / **15** / 1 min]

5415*	Password Attack

	1	Permissible Number Sets the number of attempts to attack the system with random passwords to gain illegal access to the system. [0 to 100 / **30** / 1 attempt]
	2	Detect Time Sets the time limit to stop a password attack once such an attack has been detected. [1 to 10 / **5** / 1 sec.]

5416*		Access Information
	1	Access User Max Number Limits the number of users used by the access exclusion and password attack detection functions. [50 to 200 / **200** / 1 users]
	2	Access Password Max Number Limits the number of passwords used by the access exclusion and password attack detection functions. [50 to 200 / **200** /1 passwords]
	3	Monitor Interval Sets the processing time interval for referencing user ID and password information. [1 to 10 / **3** / 1 sec.]

5417*		Access Attack
	1	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]
	2	Attack Detect Time Sets the length of time for monitoring the frequency of access to MFP features. [10 to 30 / **10** / 1 sec.]

		Productivity Fall Waite
3		Sets the wait time to slow down the speed of certification when an excessive number of access attempts have been detected.
		[0 to 9 / **3** / 1 sec.]
4		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.
		[50 to 200 / **200** / 1 attempt]

		User Authentication
5420*		These settings should be done with the System Administrator.
		Note: These functions are enabled only after the user access feature has been enabled.
1		Copy
		Determines whether certification is required before a user can use the copy applications.
		[0 or 1 / **0** / 1]
		0: On
		1: Off
11		Document Server
		Determines whether certification is required before a user can use the document server.
		[0 or 1 / **0** / 1]
		0: On
		1: Off
21		Fax
		Determines whether certification is required before a user can use the fax application.
		[0 or 1 / **0** / 1]
		0: On
		1: Off

4

31	Scanner Determines whether certification is required before a user can use the scan applications. [0 or 1 / **0** / 1] 0: On 1: Off	
41	Printer Determines whether certification is required before a user can use the printer applications. [0 or 1 / **0** / 1] 0: On 1: Off	
51	SDK1	[0 or 1 / **0** / 1] 0: ON. 1: OFF Determines whether certification is required before a user can use the SDK application.
61	SDK2	
71	SDK3	

5430*	Auth Dialog Message Change
1*	Message Change On/Off Turns on or off the displayed message change for the authentication. [0 or 1 / **0** / 1] 0: Off, 1: On
2	Message Text Download Executes the message download for the authentication.
3	Message Text ID Inputs message text for the authentication.

5431*	External Auth User Preset
10	Tag Turns on or off the tag copy permission for the external authentication. [0 or 1 / **1** / -] 0: Not permit, 1: Permit

11	Entry Turns on or off the copy permission of the entry information for the external authentication. [0 or 1 / 1 / -] 0: Not permit, 1: Permit
12	Group Turns on or off the copy permission of the group information for the external authentication. [0 or 1 / 1 / -] 0: Not permit, 1: Permit
20	Mail Turns on or off the copy permission of the mail information for the external authentication. [0 or 1 / 1 / -] 0: Not permit, 1: Permit
30	Fax [0 or 1 / 1 / -] 0: Not permit, 1: Permit Turns on or off the copy permission of the fax information for the external authentication.
31	FaxSub Turns on or off the copy permission of the fax additional information for the external authentication. [0 or 1 / 1 / -] 0: Not permit, 1: Permit
32	Folder Turns on or off the copy permission of the folder information for the external authentication. [0 or 1 / 1 / -] 0: Not permit, 1: Permit

4

33	ProtectCode Turns on or off the copy permission of the protection code information for the external authentication. [0 or 1 / 1 / -] 0: Not permit, 1: Permit
34	SmtpAuth Turns on or off the copy permission of the SMTP information for the external authentication. [0 or 1 / 1 / -] 0: Not permit, 1: Permit
35	LdapAuth Turns on or off the copy permission of the LDAP information for the external authentication. [0 or 1 / 1 / -] 0: Not permit, 1: Permit
36	Smb Ftp Fldr Auth Turns on or off the copy permission of the SMB/FTP information for the external authentication. [0 or 1 / 1 / -] 0: Not permit, 1: Permit
37	AcntAcl Turns on or off the copy permission of the account ACL information for the external authentication. [0 or 1 / 1 / -] 0: Not permit, 1: Permit
38	DocumentAcl Turns on or off the copy permission of the document ACL information for the external authentication. [0 or 1 / 1 / -] 0: Not permit, 1: Permit

40	CertCrypt Turns on or off the copy permission of the authentication information for the external authentication. [0 or 1 / **1** / -] 0: Not permit, 1: Permit
50	UserLimitCount Turns on or off the copy permission of the maximum number information for the external authentication. [0 or 1 / **1** / -] 0: Not permit, 1: Permit

4

5481*	Authentication Error Code
	These SP codes determine how the authentication failures are displayed.
1	System Log Disp Determines whether an error code appears in the system log after a user authentication failure occurs. [0 or 1 / **0** / -] 0: Off 1: On
2	Panel Disp Determines whether an error code appears on the operation panel after a user authentication failure occurs. [0 or 1 / **1** / 1] 1: On 0: Off

5490*	MF Keycard **Japan Only** Sets up operation of the machine with a keycard. [0 or 1 / **0** / 1] 0: Disabled. Cancels operation if no code is input. 1: Enabled. Allows operation if another code is input and decrements the counter once for use of the entered code.

5491*	Optional Counter
	Determines whether to cancel the job when MK1 keycard is pulled out from the machine during job.
	[0 to 11111111 / **0** / 1]
	0: On. Cancels the job.
	1: Off. Allows operation if MK1 keycard is pulled out from the machine during the job.

5501*		PM Alarm
	1	PM Alarm Level
		[0 to 9999 / **0** / 1 / step]
		0: Alarm off
		1 to 9999: Alarm goes off when Value (1 to 9999) x 1000 > PM counter
	2	Original Count Alarm
		[0 or 1 / **1** / -]
		0: No alarm sounds
		1: Alarm sounds after the number of originals passing through the ARDF > 10,000

5504*	Jam Alarm
	Sets the alarm to sound for the specified jam level (document misfeeds are not included).
	[0 to 3 / **3** / 1 step]
	0: Zero (Off)
	1: Low (2.5K jams)
	2: Medium (3K jams)
	3: High (6K jams)

5505*	Error Alarm
	Sets the error alarm level.
	[0 to 255 / **20 (D120/D139), 25 (D121/D140), 35 (D122/D141)** / 100 copies / step]

5507*	Supply Alarm

1	Paper Supply Alarm (0:Off 1:On)	Switches the control call on/off for the paper supply. **DFU** **0: Off**, 1: On 0: No alarm. 1: Sets the alarm to sound for the specified number transfer sheets for each paper size (A3, A4, B4, B5, DLT, LG, LT, HLT)
2	Staple Supply Alarm (0:Off 1:On)	Switches the control call on/off for the stapler installed in the finisher. **DFU** 0: Off, **1: On** 0: No alarm 1: Alarm goes off for every 1K of staples used.
3	Toner Supply Alarm (0:Off 1:On)	Switches the control call on/off for the toner end. **DFU** 0: Off, **1: On** If you select "1" the alarm will sound when the copier detects toner end.
80	Toner Call Timing	Changes the timing of the "Toner Supply Call" via the @Remote, when the following conditions occur. 0: At replacement 1: At near end
128*	interval: Others	The "Paper Supply Call Level: nn" SPs specify the paper control call interval for the referenced paper sizes. **DFU** [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	
166*	Interval: LT	
172*	Interval: HLT	

4

5508*	CC Call	
1	Jam Remains	Enables/disables initiating a call.
2	Continuous Jams	[0 or 1 / **1** / 1] 0: Disable
3	Continuous Door Open	1: Enable
11	Jam Detection: Time Length	Sets the length of time to determine the length of an unattended paper jam. [3 to 30 / **10** / 1 minute]
12	Jam Detection: Continuous Count	Sets the number of continuous paper jams required to initiate a call. [2 to 10 / **5** / 1 time]
13	Door Open: Time Length	Sets the length of time the remains opens to determine when to initiate a call. [3 to 30 / **10** / 1 minute]

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.	
1	SC Call	[0 or 1 / **1** / -] 0: Off 1: On
2	Service Parts Near End Call	
3	Service Parts End Call	
4	User Call	
6	Communication Test Call	[0 or 1 / **1** / -] 0: Off 1: On
7	Machine Information Notice	
8	Alarm Notice	
10	Supply Automatic Ordering Call	
11	Supply Management Report Call	
12	Jam/Door Open Call	

5801	Memory Clear	
	Resets NVRAM data to the default settings. Before executing any of these SP codes, print an SMC Report.	
1	All Clear	Initializes items 2 to 15 below.
2	Engine	Initializes all registration settings for the engine and copy process settings.
3	SCS	Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information.
4	IMH Memory Clear	Initializes the image file system. (IMH: Image Memory Handler)
5	MCS	Initializes the automatic delete time setting for stored documents. (MCS: Memory Control Service)
6	Copier application	Initializes all copier application settings.
7	Fax application	Initializes the fax reset time, job login ID, all TX/RX settings, local storage file numbers, and off-hook timer.
8	Printer application	Initializes the printer defaults, programs registered, the printer SP bit switches, and the printer CSS counter.
9	Scanner application	Initializes the defaults for the scanner and all the scanner SP modes.
10	Web Service	Deletes the Netfile (NFA) management files and thumbnails, and initializes the Job login ID. Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software
11	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)

4

12	R-FAX	Initializes the job login ID, SmartNetMonitor for Admin, job history, and local storage file numbers.
14	Clear DCS Setting	Initializes the DCS (Delivery Control Service) settings.
15	Clear UCS Setting	Initializes the UCS (User Information Control Service) settings.
16	MIRS Setting	Initializes the MIRS (Machine Information Report Service) settings.
17	CCS	Initializes the CCS (Certification and Charge-control Service) settings.
18	SRM Memory Clear	Initializes the SRM (System Resource Manager) settings.
19	LCS	Initializes the LCS (Log Count Service) settings.
20	Web Uapli	Initializes Web application settings.
21	ECS	Initializes ECS (Engine Control Service).

5803	Input Check	
	Displays signals received from sensors and switches. Press the 🔲 (Clear Modes) key to exit	
1	Tray 1: Paper Size Sensor	
2	Tray 2: Paper Size Sensor	
3	Tray 1: Tray Set Sensor	
4	Tray 2: Tray Set Sensor	
5	Tray 1: Paper Height Sensor 1	
6	Tray 1: Paper Height Sensor 2	
7	Tray 2: Paper Height Sensor 1	
8	Tray 2: Paper Height Sensor 2	
9	Tray 1: Paper End Sensor	

10	Tray 2: Paper End Sensor
11	Tray 1: Paper Lift Sensor
12	Tray 2: Paper Lift Sensor
13	1st Paper Leading Edge Sensor
14	2nd Paper Leading Edge Sensor
15	By-pass: Paper Size Sensor
16	By-pass: Paper End Sensor
17	By-pass: Paper Length Sensor
18	By-pass: Home Position Sensor
19	Paper Exit Sensor
20	Paper Feed Sensor 1
21	Paper Feed Sensor 2
22	Registration Sensor
23	Interchange Sensor
24	Duplex: Exit Sensor
25	Duplex: Entrance Sensor
26	Paper Overflow Sensor
27	Front Safety Sw - 24V
28	Front Safety Sw - 5V
29	Right Cover Open
30	Duplex Fan Lock
31	CTL Fan Lock
33	Fan Lock
34	Bottle Motor Lock
35	Main Motor Lock
36	Interchange Unit Set

4

37	PCU Set
38	Fusing Unit Set
39	Key Card Set
40	Mechanical Counter Set
41	Key Counter Set
42	BCU Version
87	BANK_VFEEDSNS1
88	BANK_VFEEDSNS2
89	BANK_FEEDSNS1
90	BANK_FEEDSNS2
91	BANK_VFEEDCOVER
200	Scanner HP Sensor
201	Platen Cover Sensor

5804	Output Check	
	Turns on electrical components individually for test purposes.	
1	Main Motor: CW: High	
2	Main Motor: CW: Low	
3	Main Motor: CCW: High	
4	Main Motor: CCW: Low	
5	Duplex Motor: CCW: 425.3	
6	Duplex Motor: CCW: 345	
7	Duplex Motor: CCW: 153	
8	Duplex Motor: CCW: 123.8	
9	Interchange Motor: CW: 424	
10	Interchange Motor: CW: 345.1	

11	Interchange Motor: CW: 152	
12	Interchange Motor: CW: 123.8	
13	Interchange Motor: CCW: 424	
14	Interchange Motor: CCW: 345.1	
15	Interchange Motor: CCW: 152	
16	Interchange Motor: CCW: 123.8	
17	By-pass Feed Motor: CW: High	
18	By-pass Feed Motor: CW: Low	
19	By-pass Feed Motor: CCW	
20	Toner Bottle Motor	
21	1st Tray Up	
22	1st Tray Down	
23	2nd Tray Up	
24	2nd Tray Down	
25	Exhaust Fan Motor: High	
26	Exhaust Fan Motor: Low	
27	Duplex Fan	
28	CTL Fan	
29	PSU Fan	
32	Registration CL	
33	1st Paper Feed CL	
34	2nd Paper Feed CL	
35	Paper Transport CL1	
36	Paper Transport CL2	
37	Pick Up SOL1	
38	Pick Up SOL2	

4

39	Interchange SOL	
40	Fusing SOL	
41	Dehumidification Heater	
42	PP.: Image Transfer: -	PP. means "Power Pack" (PCBs).
43	PP.: Image Transfer: +	
44	PP.: Separation Voltage	
45	PP.: Development	
46	PP.: Charge	
47	P Sensor	
48	Anti-static LED	
49	Polygon Motor: High	
50	Polygon Motor: Low	
51	LD On	Laser diode - Do not use
163	BANK_MT:203mm/s	
164	BANK_MT:165mm/s	
165	BANK_MT:150mm/s	
166	BANK_MT:122mm/s	
169	BANK_FEEDCL1	
170	BANK_FEEDCL2	
171	BANK_PICKUPSOL1	
172	BANK_PICKUPSOL2	
202	Scanner Lamp	

5810	SC Reset
	Resets all level A service call conditions, such as fusing errors. To clear the service call, touch "Execute" on the LCD, then turn the main power switch off/on.

5811	Machine Serial **DFU**
2	Display Displays the machine serial number.
4	BICU Inputs the serial number.

5812*	Service Tel. No. Setting	
1	Service	Inputs the telephone number of the CE (displayed when a service call condition occurs.)
2	Facsimile	Use this to input the fax number of the CE printed on the Counter Report (UP mode). **Not Used**
3	Supply	Displayed on the initial SP screen.
4	Operation	Allows the service center contact telephone number to be displayed on the initial screen.

5816*	Remote Service	
1*	I/F Setting	Selects the remote service setting. [0 to 2 / **2** / - /step] 0: Remote service off 1: **DFU** 2: @Remote service on
2*	CE Call	Performs the CE Call at the start or end of the service. [0 or 1 / **1** / 1 /step] 0: Start of the service 1: End of the service **NOTE:** This SP is activated only when SP 5816-001 is set to "1".

4

3*	Function Flag
	Enables or disables the remote service function.
	[0 to 1 / **0** / 1 /step]
	0: Disabled, 1: Enabled
	NOTE: This SP setting is changed to "1" after @Remote register has been completed.
7*	SSL Disable
	Uses or does not use the RCG certification by SSL when calling the RCG.
	[0 to 1 / **0** / 1 /step]
	0: Uses the RCG certification
	1: Does no use the RCG certification
8*	RCG Connect Timeout
	Specifies the connect timeout interval when calling the RCG.
	[1 to 90 / **30** / 1 second /step]
9*	RCG Write Timeout
	Specifies the write timeout interval when calling the RCG.
	[0 to 100 / **60** / 1 second /step]
10*	RCG Read Timeout
	Specifies the read timeout interval when calling the RCG.
	[0 to 100 / **60** / 1 second /step]
11*	Port 80 Enable
	Enables/disables access via port 80 to the SOAP method.
	[0 or 1 / **0** / –]
	0: Disabled, 1: Enabled
13*	RFU (Remote Firmware Update) Timing
	Selects the RFU timing.
	[0 or 1 / **1** / –]
	0: RFU is executed whenever update request is received.
	1: RFU is executed only when the machine is in the sleep mode.

21*	RCG – C Registed **DFU**
	This SP displays the Embedded RC Gate installation end flag.
	0: Installation not completed
	1: Installation completed
23*	Connect Type (N/M)
	This SP displays and selects the Embedded RC Gate connection method.
	0: Internet connection
	1: Dial-up connection
61*	Cert. Expire Timing **DFU**
	Proximity of the expiration of the certification.
62*	Use Proxy **DFU**
	This SP setting determines if the proxy server is used when the machine communicates with the service center.
	0: proxy server is used
	1: proxy server is not used
63*	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.
	Note
	• The address display is limited to 128 characters. Characters beyond the 128 character are ignored.
	• This address is customer information and is not printed in the SMC report.
64*	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.
	Note
	• This port number is customer information and is not printed in the SMC report.

4

65*	Proxy User Name
	This SP sets the HTTP proxy certification user name.
	⬇ **Note**
	• The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored.
	• This name is customer information and is not printed in the SMC report.
66*	Proxy Password
	This SP sets the HTTP proxy certification password.
	⬇ **Note**
	• The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored.
	• This name is customer information and is not printed in the SMC report.
67*	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.
	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.

4

		CERT: Error	
68*		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.	
	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.	
69*	CERT: Up ID		The ID of the request for certification.
83*	Firmware Up Status		Displays the status of the firmware update.
85*	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.
86*	Firmware Size		Allows the service technician to confirm the size of the firmware data files during the firmware update execution.
87	CERT: Macro Ver.		Displays the macro version of the @Remote certification.
88	CERT: PAC Ver.		Displays the PAC version of the @Remote certification.
89	CERT: ID2 Code		Displays ID2 for the @Remote certification. Spaces are displayed as underscores (_). Asterisks (*) indicate that no @Remote certification exists. "000000_____" indicates "Common certification".

90	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".
91	CERT: Serial No.	Displays serial number for the @Remote certification. Asterisks (*) indicate that no @Remote certification exists.
92	CERT: Issuer	Displays the common name of the issuer of the @Remote certification. CN = the following 30 bytes. Asterisks () indicate that no @Remote certification exists.
93	CERT: Valid Start	Displays the start time of the period for which the current @Remote certification is enabled.
94	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	
154*	Outside Line/Outgoing Number	
	Not used	
156*	Dial Up User Name	
	Not used	
157*	Dial Up Password	
	Not used	

4

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.	
	0: Neither the @Remote device nor Embedded RCG Gate is set.	
	1: The Embedded RCG Gate is being set. Only Box registration is completed. In this status, @Remote device cannot communicate with this device.	
	2: The Embedded RCG Gate is set. In this status, the @Remote device cannot communicate with this device.	
	3: The @Remote device is being set. In this status the Embedded RCG Gate cannot be set.	
	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.	
	0: Succeeded	
	1: Confirmation number error	
	3: Proxy error (proxy enabled)	
	4: Proxy error (proxy disabled)	
	5: Proxy error (Illegal user name or password)	
	6: Communication error	
	8: Other error	
	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.	
	0: Succeeded	
	1: Confirmation number error	
	2: Registration in progress	
	3: Proxy error (proxy enabled)	
	4: Proxy error (proxy disabled)	
	5: Proxy error (Illegal user name or password)	
	6: Communication error	
	8: Other error	
	9: Registration executing	

4

	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
208	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.
		-12007	The request number used at registration was different from the one used at confirmation.
		-12008	Update certification failed because mainframe was in use.
		-12009	ID2 between NVRAM and self-signed certificate is different.
		-12010	Certificate area is not initialized.

		-2385	Attempted dial up overseas without the correct international prefix for the telephone number.
	Error Caused by Response from GW URL	-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
209	Instl Clear	Releases the machine from its Embedded RCG Gate setup. **NOTE:** Turn off and on the main power switch after this setting has been changed.	
250	CommLog Print	Prints the communication log.	

5821*	Remote Service Address **Japan Only**	
2	RCG IP Address	Sets the IP address of the RCG (Remote Communication Gate) destination for call processing at the remote service center. [00000000htoFFFFFFFFh/1]

5824	NVRAM Data Upload
	Uploads the NVRAM data to an SD card. Push Execute. **Note**: When uploading data in this SP mode, the front door must be open.

5825	NVRAM Data Download
	Downloads data from an SD card to the NVRAM in the machine. After downloading is completed, remove the card and turn the machine power off and on.

5828*	Network Setting
50*	1284 Compatibility (Centro)
	Enables and disables bi-directional communication on the parallel connection between the machine and a computer. [0 or 1 / 1 / 1] 0:Off 1: On
52*	ECP (Centro)
	Disables and enables the ECP feature (1284 Mode) for data transfer. [0 or 1 / 1 / 1] 0: Disabled 1: Enabled
65*	Job Spooling
	Switches job spooling on and off. [0 or 1 / 0 / 1] 0: No spooling, 1: Spooling enabled
66*	Job Spool Clear: Start Time
	This SP determines whether the job interrupted at power off is resumed at the next power on. This SP operates only when SP5828 065 is set to 1. [0 or 1 / 1 / 1] 1: Resumes printing spooled jog. 0: Clears spooled job.

69*	Job Spooling (Protocol)			
	This SP determines whether job spooling is enabled or disabled for each protocol. This is a 8-bit setting.			
	[0 or 1 / 1 / 1]			
	0: No spooling, 1: Spooling enabled			
	0	LPR	4	BMLinks (Japan Only)
	1	FTP (Not Used)	5	DIPRINT
	2	IPP	6	Reserved (Not Used)
	3	SMB	7	Reserved (Not Used)
90*	TELNET (0:OFF 1:ON)			
	Disables or enables Telnet operation. If this SP is disabled, the Telnet port is closed.			
	[0 or 1 / 1 / 1]			
	0: Disable			
	1: Enable			
91*	Web (0:OFF 1:ON)			
	Disables or enables the Web operation.			
	[0 or 1 / 1 / 1]			
	0: Disable			
	1: Enable			
145	Active IPv6 Link Local Address			
	This is the IPv6 local address referenced on the Ethernet or wireless LAN (802.11) in the format:			
	"Link-Local address" + "Prefix Length"			
	The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. These notations can be abbreviated. See "Note: IPV6 Addresses " below this table.			

4

147	Active IPv6 Status Address 1	These SPs are the IPv6 stateless addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11) in the format: "Stateless Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
149	Active IPv6 Status Address 2	
151	Active IPv6 Status Address 3	
153	Active IPv6 Status Address 3	
155	Active IPv6 Status Address 4	
156*	IPv6 Manual Address	
	This SP is the IPv6 manually set address referenced on the Ethernet or wireless LAN (802.11) in the format: "Manual Set Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. These notations can be abbreviated. See "Note: IPV6 Addresses" below this table.	
158*	IPv6 Gateway Address	
	This SP is the IPv6 gateway address referenced on the Ethernet or wireless LAN (802.11). The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. These notations can be abbreviated. See "Note: IPV6 Addresses " below this table.	

Note: IPV6 Addresses

Ethernet and the Wireless LAN (802.11) reference the IPV6 "Link-Local address + Prefix Length". The IPV6 address consists of 128 bits divided into 8 blocks of 16 bits:

aaaa:bbbb:cccc:dddd:eeee:ffff:gggg:hhhh:

The prefix length is inserted at the 17th byte (Prefix Range: 0x0~0x80). The initial setting is 0x40(64).

For example, the data:

2001123456789012abcdef012345678940h

is expressed:

2001:1234:5678:9012:abcd:ef01:2345:6789: prefixlen 64

However, the actual IPV6 address display is abbreviated according to the following rules.

Rules for Abbreviating IPV6 Addresses

1. The IPV6 address is expressed in hexadecimal delimited by colons (:) with the following characters:

0123456789abcdefABCDEF

2. A colon is inserted as a delimiter every 4th hexadecimal character.

fe80:0000:0000:0000:0207:40ff:0000:340e

3. The notations can be abbreviated by eliminating zeros where the MSB and digits following the MSB are zero. The example in "2" above, then, becomes:

fe80:0:0:0207:40ff:0:340e

4. Sections where only zeros exist can be abbreviated with double colons (::). This abbreviation can be done also where succeeding sections contain only zeros (but this can be done only at one point in the address). The example in "2" and "3" above then becomes:

fe80::207:40ff:0:340e (only the first null sets zero digits are abbreviated as "::")

-or-

fe80:0:0:0:207:40ff::340e (only the last null set before "340e" is abbreviated as "::")

161*	IPv6 Stateless Auto Setting Enables/disables the stateless automatic setting for Ethernet/wireless LAN operation. [0 or 1 / **1** / 1] 1: Enable 0: Disable
236*	Web Item Invisible Determines whether each item can be set in Websys. [0x0000 to 0xffff/0xffff] 0: Not displayed, 1: Displayed Bit 0: NetRICOH Bit 1: Vendor for consumables Bit 2-15: Reserved
237*	Web Shopping Link Invisible Determines whether the NetRICOH link is displayed on the Websys top page and link page. [0 or 1 / **1** / 1] 1: Display 0: No display

4

238*	Web Supplies Link Invisible Determines whether the consumable vendor link is displayed on the Websys top page and link page. [0 or 1 / **1** / 1] 1: Display 0: No display
239*	Web Link 1 Name Determines whether an name entered for "URL1" is displayed on the Websys link page. The name length is limited to 31 characters.
240*	Web Link 1 URL Sets the URL referenced for URL1 linked to the Websys linked page. The link name is limited to 127 characters.
241*	Web Link 1 Visible Determines whether the link for URL1 is displayed on the Websys top page. [0 or 1 / **1** / 1] 1: Display 0: No display
242*	Web Link 2 Name Determines whether a name entered for "URL2" is displayed on the Websys link page. The name length is limited to 31 characters.
243*	Web Link 2 URL Sets the URL referenced for URL2 linked to the Websys linked page. The link name is limited to 127 characters.
244*	Web Link 2 Visible Determines whether the link for URL2 is displayed on the Websys top page. [0 or 1 / **1** / 1] 1: Display 0: No display

5831	InitialSettingClear
	Execute to clears the initial setting mode.

5832		HDD Formatting
		Enter the SP number for the partition to initialize, then press #. When the execution ends, cycle the machine off and on.
	1	HDD Formatting (All)
	2	HDD Formatting (IMH)
	3	HDD Formatting (Thumbnail)
	4	HDD Formatting (Job Log)
	5	HDD Formatting (Printer Fonts)
	6	HDD Formatting (User Info)
	7	Mail RX Data
	8	Mail TX Data
	9	HDD Formatting (Data for Design)
	10	HDD Formatting (Log)
	11	HDD Formatting (Ridoc I/F) (for Ridoc Desk Top Binder)

5836*		Capture Setting
	1	Capture Function (0:Off 1:On)
		With this function disabled, the settings related to the capture feature cannot be initialized, displayed, or selected.
		[0 to 1 / **0** / 1]
		0: Disable
		1: Enable
	2	Panel Setting
		Determines whether each capture related setting can be selected or updated from the initial system screen.
		[0 to 1 / **0** / 1]
		0: Enable
		1: Disable
		The setting for SP5836-001 has priority.

72	Reduction for Copy B&W Text	[0 to 6 / **0** / 1] 0:1, 1:1/2, 2:1/3, 3:1/4, 6:2/3
73	Reduction for Copy B&W Other	[0 to 6 / **0** / 1] 0:1, 1:1/2, 2:1/3, 3:1/4, 6:2/3
75	Reduction for Printer B&W	[0 to 6 / **0** / 1] 0 1, 1:1/2, 2:1/3, 3:1/4, 6:2/3
78	Reduction for Printer B&W 1200dpi	[1 to 5 / **1** / 1] 1:1/2, 3:1/4, 4:1/6, 5:1/8
82	Format for Copy B&W Text	[0 to 3 / **1** / 1] 0: JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR
83	Format Copy B&W Other	[0 to 3 / **1** / 1] 0: JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR
85	Format for Printer B&W	[0 to 3 / **1** / 1] 0: JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR
91	Default for JPEG	[5 to 95 / **50** / 1]
	Sets the JPEG format default for documents sent to the document management server with the MLB, with JPEG selected as the format. Enabled only when optional File Format Converter (MLB: Media Link Board) is installed.	
101	Primary srv IP address	Sets the IP address for the primary capture server. This is basically adjusted by the remote system.
102	Primary srv scheme	This is basically adjusted by the remote system.
103	Primary srv port number	This is basically adjusted by the remote system.
104	Primary srv URL path	Sets the IP address for the primary capture server. This is basically adjusted by the remote system.
111	Secondary srv IP address	This is basically adjusted by the remote system.
112	Secondary srv scheme	This is basically adjusted by the remote system.
113	Secondary srv port number	This is basically adjusted by the remote system.
114	Secondary srv URL path	This is basically adjusted by the remote system.

120	Default Reso Rate Switch	This is basically adjusted by the remote system.
122	Reso: Copy (Mono)	[0 to 255 / **3** / 1/step]
	Selects the resolution for BW copy mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi/ 6: 75dpi	
124	Reso: Print (Mono)	[0 to 255 / **3** / 1/step]
	Selects the resolution for BW print mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi/ 6: 75dpi	
126	Reso: Fax (Mono)	[0 to 255 / **3** / 1/step]
	Selects the resolution for BW fax mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi/ 6: 75dpi	
127	Reso: Scan (Color)	[0 to 255 / **4** / 1/step]
	Selects the resolution for color scanning mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi/ 6: 75dpi	
128	Reso: Scan (Mono)	[0 to 255 / **3** / 1/step]
	Selects the resolution for BW scanning mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi/ 6: 75dpi	
141	All Addr Info Switch	[0 or 1 / **1** / -] 0: Off, 1: On
	Turns on or off the all address information transmission for the captured resources.	
142	Stand-by Doc Max Number	[10 to 9999 / **2000** / 1/step]
	Selects the maximum number of captured documents to be transmitted to the document server.	

5840*	IEEE 802.11

4

6	Channel MAX	
	Sets the maximum range of the bandwidth for the wireless LAN. This bandwidth setting varies for different countries. [1 to 14 / **11 (NA), 13 (EU), 14 (JPN)** / 1] JPN: 1 to 14, NA: 1 to 11, EU: 1 to 13	
7	Channel MIN	
	Sets the minimum range of the bandwidth for operation of the wireless LAN. This bandwidth setting varies for different countries. [1 to 14 / **1** / 1] JPN: 1 to 14, NA: 1 to 11, EU: 1 to 13	
8	Transmission Speed	[0 x 00 to 0 x FF / **0 x FF to Auto** / -]
	0 x FF to Auto [Default] 0 x 11 - 55M Fix 0 x 10 - 48M Fix 0 x 0F - 36M Fix 0 x 0E - 18M Fix 0 x 0D - 12M Fix 0 x 0B - 9M Fix 0 x 0A - 6M Fix	0 x 07 - 11M Fix 0 x 05 - 5.5M Fix 0 x 08 - 1M Fix 0 x 13 - 0 x FE (reserved) 0 x 12 - 72M (reserved) 0 x 09 - 22M (reserved)
11	WEP Key Select	
	Selects the WEP key. Bit 1 and 0 **00: Key1,** 01: Key2 (Reserved), 10: Key3 (Reserved), 11: Key4(Reserved) **Note**: Displayed only when the wireless LAN card is installed.	
42	Fragment Thresh	
	Adjusts the fragment threshold for the IEEE802.11 card. [256 to 2346 / **2346** / 1] This SP is displayed only when the IEEE802.11 card is installed.	

43	11g CTS to Self
	Determines whether the CTS self function is turned on or off. [0 to 1 / **1** / 1] 0: Off, 1: On This SP is displayed only when the IEEE802.11 card is installed.
44	11g Slot Time
	Selects the slot time for IEEE802.11. [0 to 1 / **0** / 1] 0: 20 μs, 1: 9 μs This SP is displayed only when the IEEE802.11 card is installed.
45	WPA Debug Lvl
	Selects the debug level for WPA authentication application. [1 to 3 / **3** / 1] 1: Info, 2: warning, 3: error This SP is displayed only when the IEEE802.11 card is installed.

5841*	Supply Name Setting	
	Press the User Tools key. These names appear when the user presses the Inquiry button on the User Tools screen.	
	1	Toner Name Setting: Black	
	7	Org Stamp	
	11	StapleStd1	
	12	StapleStd2	
	13	StapleStd3	
	14	StapleStd4	
	21	StapleBind1	
	22	StapleBind2	
	23	StapleBind3	

| 5842* | GWWS Analysis **DFU** |
| | This is a debugging tool. It sets the debugging output mode of each Net File process |

	1	Setting 1
	2	Setting 2

5844*		USB
	1	Transfer Rate
		Sets the speed for USB data transmission.
		[Full Speed]
		[Auto Change]
	2	Vendor ID
		Sets the vendor ID:
		Initial Setting: 0x05A Ricoh Company
		[0x0000 to 0xFFFF/1] **DFU**
	3	Product ID
		Sets the product ID.
		[0x0000 to 0xFFFF/1] **DFU**
	4	Device Release No.
		Sets the device release number of the BCD (binary coded decimal) display.
		[0000 to 9999 / **100** / 1] **DFU**
		Enter as a decimal number. NCS converts the number to hexadecimal number recognized as the BCD.
	5	Fixed USB Port
		This SP standardizes for common use the model name and serial number for USB PnP (Plug & Play). It determines whether the driver requires re-installation.
		[0 to 2 / **0** / 4]
		0: Off
		1: Level 1
		2: Level 2

4

6	PnP Model Name
	This SP sets the model name to be used by the USB PnP when "Function Enable (Level 2) is set so the USB Serial No. can have a common name (SP5844-5).
	Default: **Laser Printer** (up to 20 characters allowed).

7	PnP Serial Number
	This SP sets the serial number to be used by the USB PnP when "Function Enable (Level 2) set so the USB Serial No. can have a common name (SP5844-5).
	Default: None (up to 12 characters allowed for entry).
	• Make sure that this entry is the same as the serial number in use.
	• At initialization the serial number generated from the model name is used, not the setting of this SP code.
	• At times other than initialization, the value set for this SP code is used.

100	Notify Unsupport
	This SP determines whether an alert message appears on the control panel when a a USB device (unsupported device) that cannot use an A-connector is connected.
	[0 to 1 / **1** / 1]
	0: Function enable
	1: Function disable
	• An unsupported device is a device that cannot use the functions of the USB device. For example, a USB mouse cannot be used even if it connected.
	• If the PictBridge option is not mounted, even if a digital camera is connected it cannot be used because it is an unsupported device.

5845*	Delivery Server Setting
	These are delivery server settings.
1	FTP Port No.
	[0 to 65535 / **3670** / 1]
2	IP Address (Primary)
	Use this SP to set the Scan Router Server address. The IP address under the transfer tab can be used with the initial system setting.
	[0 to FFFFFFFF/ **0** / 1]

4

6	Delivery Error Display Time
	Use this setting to set the length of time that the message is shown when a test error occurs during document transfer with the NetFile application and an external device.
	[0 to 999 / **300** / 1 sec]
8	IP Address (Secondary)
	Sets the IP address that is given to the computer that is the secondary delivery server for Scan Router. This SP lets you set only the IP address, and does not refer to the DNS setting.
9	Delivery Server Model
	Lets you change the model of the delivery server that is registered by the I/O device.
	[0 to 4 / **0** / 1]
	0: Unknown
	1: SG1 Provided
	2: SG1 Package
	3: SG2 Provided
	4: SG2 Package
10	Delivery Svr. Capability
	Changes the functions that the registered I/O device can do.
	[0 to 255 / **0** / 1]
	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
	Bit0 = 1 Sender specification required (if set to 1, Bit6 is set to "0")
11	Delivery Svr.Capability (Ext)
	These settings are for future use. They will let you increase the number of registered devices (in addition to those registered for SP5845 010).
	There are eight bits (Bit 0 to Bit 7). All are unused at this time.

4

	13	Server Scheme (Primary)
	14	Server Port Number (Primary)
	15	Server URL Path (Primary)
	16	Server Scheme (Secondary)
	17	Server Port Number (Secondary)
	18	Server URL Path (Secondary)
	22	Rapid Sending Control

5846*		UCS Setting
	1	Machine ID (for Delivery Server)
		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.
	2	Machine ID Clear (Delivery Server)
		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.
	3	Maximum Entries
		Changes the maximum number of entries that UCS can handle.
		[2000 to 20000 / **2000** / 1]
		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.
	6	Delivery Server Retry Timer
		Sets the interval for retry attempts when the delivery server fails to acquire the delivery server address book.
		[0 to 255 / **0** / 1]
		0: No retries

4

7	Delivery Server Retry Times
	Sets the number of retry attempts when the delivery server fails to acquire the delivery server address book.
	[0 to 255 / **0** / 1]
8	Delivery Server Maximum Entries
	Lets you set the maximum number of account entries and information about the users of the delivery server controlled by UCS.
	[2000 to 20000 / **2000** / 1]
10	LDAP Search Timeout
	Sets the length of the time-out for the search of the LDAP server.
	[1 to 255 / **60** / 1]
20	WSD Maximum Entries
	WSD (Web Services on Devices) is the Microsoft standard for connectivity to web-service enabled devices.
	[50 to 250 / **250** / 1]
21	Folder Auth Change
	This SP determines whether the user login information (Login User name and Password) or address (destination setting in the address book for Scan-to-SMB) is used to permit folder access. The machine must be cycled off/on for this setting to take effect if it is changed.
	[0 to 1 / **0** / 1]
	0: Uses operator login information (initial value of main machine)
	1: Uses address authorization information

4

40	Addr Book Migration (USB -> HDD)
	This SP moves the address book data from an SD card to the HDD. You must cycle the machine off and on after executing this SP.
	Turn the machine off.
	Install the HDD.
	Insert the SD card with the address book data in SD card slot C3.
	Turn the machine on.
	Do SP5846 040.
	Turn the machine off.
	Remove the SD card from SD card slot C3.
	Turn the machine on.
	Note
	• Executing this SP overwrites any address book data already on the HDD with the data from the SD card.
	• We recommend that you back up all directory information to an SD card with SP5846 051 before you execute this SP.
	• After the address book data is copied to HDD, all the address book data is deleted from the source SD card. If the operation fails, the data is not erased from the SD card.
41	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.
	Procedure
	1. Turn the machine off.
	2. Install the new HDD.
	3. Turn the machine on.
	4. The address book and its initial data are created on the HDD automatically. However, at this point the address book can be accessed by only the system administrator or key operator.
	5. Enter the SP mode and do SP5846 041. After this SP executes successfully, any user can access the address book.

		Addr Book Media	
43		Displays the slot number where an address book data is in. [0 to 30 / - /1]	
		0: Unconfirmed 1: SD Slot 1 2: SD Slot 2 4: USB Flash ROM	20: HDD 30: Nothing
47		Initialize Local Address Book	
		Clears all of the address information from the local address book of a machine managed with UCS.	
48		Initialize Delivery Addr Book	
		Push [Execute] to delete all items (this does not include user codes) in the delivery address book that is controlled by UCS.	
49		Initialize LDAP Addr Book	
		Push [Execute] to delete all items (this does not include user codes) in the LDAP address book that is controlled by UCS.	
50		Initialize All Addr Book	
		Clears everything (including user's codes) in the directory information managed by UCS. However, the accounts and passwords of the system administrators are not deleted.	
51		Backup All Addr Book	
		Uploads all directory information to the SD card. Do this SP before replacing the HDD. The operation may not succeed if the HDD is damaged.	
52		Restore All Addr Book	
		Downloads all directory information from the SD card. Upload the address book from the old HDD with SP5846 51 before removing it. Do SP5846 52 after installing the new HDD.	

53	Clear Backup Info.
	Deletes the address book uploaded from the SD card in the slot. Deletes only the files uploaded for that machine. This feature does not work if the card is write-protected.
	Note: After you do this SP, go out of the SP mode, turn the power off. Do not remove the SD card until the Power LED stops flashing.

60	Search Option
	This SP uses bit switches to set up the fuzzy search options for the UCS local address book.

Bit	Meaning
0	Checks both upper/lower case characters
1	Japan Only
2	
3	
4	Not Used
5	Not Used
6	Not Used
7	Not Used

62	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.
	[0 to 32 / **0** / 1]
	Note:
	• This SP does not normally require adjustment.
	• This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.

4

63	Complexity Option 2
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to lower case and defines the length of the password.
	[0 to 32 / **0** / 1]
	Note
	• This SP does not normally require adjustment.
	• This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.
64	Complexity Option 3
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to numbers and defines the length of the password.
	[0 to 32 / **0** / 1]
	Note
	• This SP does not normally require adjustment.
	• This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.
65	Complexity Option 4
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to symbols and defines the length of the password.
	[0 to 32 / **0** / 1]
	Note
	• This SP does not normally require adjustment.
	• This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.
91	FTP Auth. Port Settings
	Sets the FTP port to get the delivery server address book that is used in the individual authorization mode.
	[0 to 65535 / **3671** / 1]

94	Encryption Stat		
	Shows the status of the encryption function of the address book on the LDAP server. [0 to 255 / - / 1] No default		

5847*	Rep Resolution Reduction		
	5847 1 through 5847 6 changes the default settings of image data sent externally by the Net File page reference function. [0 to 2/1] 5847 21 sets the default for JPEG image quality of image files controlled by NetFile. "NetFile" refers to jobs to be printed from the document server with a PC and the DeskTopBinder software.		
2	Rate for Copy B&W Text	[0 to 6/ **0** / 1]	0: 1x
3	Rate for Copy B&W Other	[0 to 6/ **0** / 1]	1: 1/2x 2: 1/3x
5	Rate for Printer B&W	[0 to 6/ **0** / 1]	3: 1/4x 4: 1/6x 5: 1/8x 6: 2/3x1 1: "6: 2/3x" applies to 003, 005, 006 only.
21	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. [5 to 95 / **50** / 1]		

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. 5847 100 sets the maximum size of images that can be downloaded. The default is equal to 1 gigabyte.	
2	Acc. Ctrl.: Repository (only Lower 4 Bits)	0000: No access control 0001: Denies access to DeskTop Binder.

3	Acc. Ctrl.: Doc. Svr. Print (Lower 4 Bits)	
4	Acc. Ctrl.: User Directory (Lower 4 Bits)	
7	Acc. Ctrl Comm. Log Fax (Lower 4 Bits)	
9	Acc. Ctrl.: Job Control (Lower 4 Bits)	Switches access control on and off.
11	Acc. Ctrl: Device Management (Lower 4 Bits)	0000: OFF, 0001: ON
21	Acc. Ctrl: Delivery (Lower 4 Bits)	
22	Acc. Ctrl: User Administration (Lower 4 Bits)	
99	Repository: Download Image Setting **DFU**	
100	Repository: Download Image Max. Size	[1 to 2048 / **2048** / 1 MB]
210	Setting: Log Type: Job 1 **DFU**	
211	Setting: Log Type: Job 2 **DFU**	
212	Setting: Log Type: Access **DFU**	
213	Setting: Primary Srv **DFU**	
214	Setting: Secondary Srv **DFU**	
215	Setting: Start Time **DFU**	
216	Setting: Interval Time **DFU**	
217	Setting: Timing **DFU**	

5849*	Installation Date	
	Displays or prints the installation date of the machine.	
1	Display	Displays the installation date. The installation date is set automatically after test copies are done at the installation site.

2	Switch to Print	Determines whether the installation date is printed on the printout for the total counter. [0 or 1/ **1** / -] 0: OFF (No Print) 1: ON (Print)
3	Total Counter	-

5850*	Address Book Function **Japan Only**
	The machine is shipped ready to use with a G3 line. Use this SP to switch all at once to G4 after adding a G4 line. If the G4 line becomes unusable for some reason, you can use this SP to switch easily back to G3. Just touch [Replacement].

5851	Bluetooth
	Sets the operation mode for the Bluetooth Unit. Press either key. [**0: Public**] [1: Private]

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.

5856	Remote ROM Update
2	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 [0 or 1 / **0** / 1] 0: Not allowed 1: Allowed

5857*	Save Debug Log

1	On/Off (1:ON 0:OFF)
	Switches on the debug log feature. The debug log cannot be captured until this feature is switched on. [0 or 1 / **0** / 1] 0: OFF 1: ON
2	Target (2: HDD 3: SD)
	Selects the destination where the debugging information generated by the event selected by SP5858 will be stored if an error is generated [2 to 3 / **2** / 1] 2: HDD 3: SD Card
5	Save to HDD
	Specifies the decimal key number of the log to be written to the hard disk.
6	Save to SD Card
	Specifies the decimal key number of the log to be written to the SD Card.
9	Copy HDD to SD Card (Latest 4 MB)
	Takes the most recent 4 MB of the log written to the hard disk and copies them to the SD Card. 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 copied one by one to each SD Card.
10	Copy HDD to SD Card Latest 4 MB Any Key)
	Takes the log of the specified key from the log on the hard disk and copies it to the SD Card. A unique file name is generated to avoid overwriting existing file names on the SD Card. Up to 4 MB can be copied to an SD Card. 4 MB segments can be copied one by one to each SD Card. This SP does not execute if there is no log on the HDD with no key specified.
11	Erase HDD Debug Data
	Erases all debug logs on the HDD

12	Erase SD Card Debug Data		
	Erases all debug logs on the SD Card. If the card contains only debugging files generated by an event specified by SP5858, the files are erased when SP5857 010 or 011 is executed.		
	To enable this SP, the machine must be cycled off and on.		
13	Free Space on SD Card		
	Displays the amount of space available on the SD card.		
14	Copy SD to SD (Latest 4MB)		
	Copies the last 4MB of the log (written directly to the card from shared memory) onto an SD card.		
15	Copy SD to SD (Latest 4MB Any Key)		
	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.		
16	Make HDD Debug		
	This SP creates a 32 MB file to store a log on the HDD.		
17	Make SD Debug		
	This SP creates a 4 MB file to store a log on an SD card.		

5858*	Debug Save When	
	These SPs select the content of the debugging information to be saved to the destination selected by SP5857 002.	
	SP5858 3 stores one SC specified by number.	
1*	Engine SC Error (0:OFF 1:ON)	Stores SC codes generated by copier engine errors.
2*	Controller SC Error (0:OFF 1:ON)	Stores SC codes generated by GW controller errors.
3*	Any SC Error (0:OFF 1:ON)	[0 to 65535 / 0 / 1]
4*	Jam (0:OFF 1:ON)	Stores jam errors.

5859*	Debug Save Key No.

4

1	Key 1	
2	Key 2	
3	Key 3	
4	Key 4	
5	Key 5	These SPs allow you to set up to 10 keys for log files for functions that use common memory on the controller board. [00000000 to 9999999 / - / 1]
6	Key 6	
7	Key 7	
8	Key 8	
9	Key 9	
10	Key 10	

5860*	SMTP/POP3/IMAP4
20	**Partial Mail Receive Timeout**
	[1 to 168 / **72** / 1 hour]
	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.
21	**MDN Response RFC2298 Compliance**
	Determines whether RFC2298 compliance is switched on for MDN reply mail.
	[0 or 1 / **1** / -]
	0: No
	1: Yes
22	**SMTP Auth. From Field Replacement**
	Determines whether the FROM item of the mail header is switched to the validated account after the SMTP server is validated.
	[0 or 1 / **0** / -]
	0: No. "From" item not switched.
	1: Yes. "From" item switched.

25	SMTP Auth Direct Sending	
	Occasionally, SMTP certification may fail with encryption enabled 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 encryption has been enabled. Bit 0: LOGIN Bit 1: PLAIN Bit 2: CRAM_MD5 Bit 3: DIGEST_MD5 Bit 4 to Bit 7: Not Used	
26	S/MIMI: MIME Header Setting	
	Selects the MIME header type of an E-mail sent by S/MIME. [0 to 2 / **0** / 1] 0: Microsoft Outlook Express standard 1: Internet Draft standard 2: RFC standard	

5866*	E-Mail Report	
1	Report Validity	Enables or disables the E-mail alert function. [0 or 1 / **0** / –] 0: Enabled, 1: Disabled
5*	Add Date Field	Adds or does not add the date field to the header of the alert mail. [0 or 1 / **0** / –] 0: Not added, 1: Added

5869*	RAM Disk Setting
	Turns on or off the e-mail function. [0 or 1 / **0** / -] 0: ON, 1: OFF

5870	Common Key Info Writing
	Writes to flash ROM the common proof for validating the device for NRS specifications.

1	Writing	Rewrites the common certification used for the @Remote.
3	Initialize	Initializes the set certification.

5873	SD Card Apli. Move	
	Allows you to move applications from one SD card another. For more, see "SD Card Appli Move" in the chapter "System Maintenance (Main Chapters).	
1	Move Exec	Executes the move from one SD card to another.
2	Undo Exec	This is an undo function. It cancels the previous execution.

4

5875*	SC Auto Reboot	
	This SP determines whether the machine reboots automatically when an SC error occurs. **Note**: The reboot does not occur for Type A, B or C SC codes.	
1	Reboot Setting	[0 to 1 / **0** / 1] 0: The machine reboots automatically after the machine issues an SC error and logs the SC error code. If the same SC occurs again, the machine does not reboot. 1: The machine does not reboot when an SC error occurs.
2	Reboot Type	[0 to 1 / **0** / 1] 0: Manual reboot, 1: Automatic reboot

5878	Option Setup
	Use this SP to enable the Data Overwrite Security option or HDD Encryption Option after installation.
1	Data Overwrite Security
2	HDD Encryption

5879	Editing Option Setup **DFU**
	This SP is used to install the edit option card.

5881	Fixed Phase Block Erasing **DFU**

5885*	Set WIM Function	
20	Doc Svr Acc Ctrl	Close or disclose the functions of web image monitor. **0**: OFF, 1: ON Bit: 0: Forbid all document server access 1: Forbid user mode access 2: Forbid print function 3: Forbid Fax 4: Forbid scan sending 5: Forbid download 6: Forbid delete 7: Forbid guest user
50	DocSvr Format	Selects the display type for the document box list. [0 to 2 / **0** / 1] 0: Thumbnail, 1: Icon, 2: Details
51	DocSvr Trans	Sets the number of documents to be displayed in the document box list. [5 to 20 / **10** / 1]
100	Set Signature	[0 to 2 / **0** / 1/step] 0: Signature for each e-mail 1: Signature for all e-mails 2: No signature
	Selects whether the signature is added to the scanned documents with the WIM when they are transmitted by an e-mail.	
101	Set Encryption	Determines whether the scanned documents with WIM are encrypted when they are transmitted by an e-mail. [0 to 1 / **0** / 1] 0: Not encrypted, 1:Encryption
200	Detect Mem Leak	**Not used**
201	DocSvr Timeout	**Not used**

5887	SD Get Counter **DFU**
	This SP determines whether the ROM can be updated.
1	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. 1. Insert the SD card in SD card Slot 2 (lower slot). 1. Select SP5887 then touch [EXECUTE]. 2. Touch [Execute] in the message when you are prompted.

4

| 5888* | Personal Information Protect |
| | Selects the protection level for logs.
[0 to 1 / **0** / 1}
0: No authentication, No protection for logs
1: No authentication, Protected logs (an administrator can see the logs) |

5893	SDK Application Counter
	Displays the counter name of each SDK application.
1	SDK-1
2	SDK-2
3	SDK-3
4	SDK-4
5	SDK-5
6	SDK-6

| 5894 | External Counter Setting **DFU** |

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.
	After selecting, press the "Original Type" key and "#" key at the same time. When the setting is completed, the beeper sounds five times.

5908	LCT Paper Size
	Specifies the paper size in LCT.
	[0 or 1 / **0** / -]
	0: A4
	1: LT

5913*	Switchover Permission Time
	Print Application Timer
2	Sets the length of time to elapse before allowing another application to take control of the display when the application currently controlling the display is not operating because a key has not been pressed.
	[0 to 30 / **3** / 1 s]

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 new setting.
	[0 to 1 / **0** / -]
	0: ON
	1: OFF

4

5974*	Cherry Server	
	Selects which version of the Scan Router application program, "Light" or "Full (Professional)", is installed. [0 to 1 / **0** / 1 /step] 0: Light version (supplied with this machine) 1: Full version (optional)	

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".	
1	On Board NIC	
	[0 to 2 / **0** / 1 /step] 0: Disable, 1: Enable, 2: Function limitation When the "Function limitation" is set, "On board NIC" is limited only for the NRS or LDAP/NT authentication. ⬇**Note** • Other network applications than NRS or LDAP/NT authentication are not available when this SP is set to "2". Even though you can change the initial settings of those network applications, the settings do not work.	
	On Board USB	
	[0 or 1 / **0** / 1/step] 0: Disable, 1: Enable	

5987*	Mech. Counter	
	This SP detects that a mechanical counter device is removed. If it is detected, SC610 occurs. **0: OFF**. 1: ON	

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.
1	All (Data List)
2	SP (Mode Data List)
3	User Program
4	Logging Data
5	Diagnostic Report
6	Non-Default (Prints only SPs set to values other than defaults.)
7	NIB Summary
8	Capture Log
21	Copier User Program
22	Scanner SP
23	Scanner User Program
24	SDK/J Summary
25	SDK/J Application Info

5994	Mirroring Engine

5995*	Factory Mode	**DFU**

System SP Tables-6

SP6xxx: Peripherals

6006*	ADF Adjustment	
	Side-to-Side Regist: Front	
1	Adjusts the side-to-side registration of originals with the ARDF. [-3.0 to 3.0 / **0** / 0.1 mm/step]	
	Side-to-Side Regist: Rear	
2	Adjusts the side-to-side registration of originals with the ARDF. [-3.0 to 3.0 / **0** / 0.1 mm/step]	
	Leading Edge Registration	
3	Adjusts the leading registration of originals with the ARDF. [-5.0 to 5.0 / **0** / 0.1 mm/step]	
5	Buckle: Duplex Front	Adjust the amount of paper buckle to correct original skew for the front and rear sides. [-5.0 to 5.0 / **0** / 0.1 mm/step]
6	Buckle: Duplex Rear	
	Rear Edge Erase	
7	Adjusts the erase margin at the original trailing edge. [-5.0 to 5.0 / **0** / 0.1 mm/step]	

6007	ADF Input Check
	Displays the signals received from the sensors and switches of the ARDF. Only Bit 0 is used for ADF input check.

1	Original Length 1 (B5 Detection Sensor)	
2	Original Length 2 (A4 Detection Sensor)	
3	Original Length 3 (LG Detection Sensor)	
4	Original Width 1	
5	Original Width 2	**0: Paper not detected**
6	Original Width 3	1: Paper detected
7	Original Width 4	
9	Original Detection	
11	Skew Correction	
13	Registration Sensor	
14	Exit Sensor	
15	Feed Cover Sensor	**0: Cover closed**, 1: Cover open
16	Lift Up Sensor	**0: ADF closed**, 1: ADF open
23	Rear Edge Detection	**0: Paper not detected** 1: Paper detected

6008	ADF Output Check	
	Switches on each electrical component (motors, solenoids, etc.) of the ARDF for testing.	
3	Feed Motor Forward	
4	Feed Motor Reverse	
5	Relay Motor Forward	
6	Relay Motor Reverse	
11	Inverter Solenoid	
12	Stamp	

14	Feed Clutch	
15	Feed Solenoid	

6009	ADF Free Run
	Performs an ARDF free run in duplex mode. Press [ON] to start, press [OFF] to stop.
	Note: This is a general free run controlled from the copier.

6010*	Stamp Position Adj.
	Adjusts the stamp position in the sub-scan direction in fax mode.
	[−5.0 to +5.0 / **0** / 0.1 mm/step]

6016*	Original Size Detect Setting

Specifies the original size for a size detected by the original sensor, since original sensors cannot recognize all sizes.

(7) 0000 0000 (0)

Different bits are used for detection, depending on the location as shown below.

Bit	Size	Location
7	A4 (L)/LT (L)	Japan only
6	11" x 15"/DLT (L)	
5	DLT (L)/ 11" x 15"	NA only
4	LT (S)/ US Exec (S)	
3	LT (L)/ 8" x 10" (L)	
2	LG (L)/ F4 (L)	
1	A4 (L)/ 16K (L)	EU/AA only
0	8K (L)/ DLT (L)	

6017*	DF Magnification Adj.
	Adjusts the magnification in the sub-scan direction for the ARDF.
	[-5.0 to 5.0 / **0** / 0.1 %/step]

4

6128	Punch Position: Sub Scan	
	Adjusts the punching position in the sub scan direction.	
1	Domestic 2Hole (Europe 2Hole)	
2	North America 3Hole	
3	Europe 4Hole	[-7.5 to 7.5 / 0 / 0.5 mm/step]]
4	North Europe 4Hole	
5	North Europe 2Hole	

6129	Punch Position: Main Scan	
	Adjusts the punching position in the main scan direction.	
1	Domestic 2Hole (Europe 2Hole)	
2	North America 3Hole	
3	Europe 4Hole	[-2.0 to 2.0 / 0 / 0.4 mm/step]]
4	North Europe 4Hole	
5	North Europe 2Hole	

6130	Skew Correction: Buckle Adj.
	Adjusts the paper buckle for each paper size (D589 finisher).

4

1	A3T (SEF)	
2	B4T (SEF)	
3	A4T (SEF)	
4	A4Y (LEF)	
5	B5T (SEF)	
6	B5Y (LEF)	[-5.0 to 5.0 / 0 / 0.2 mm/step]]
7	DLT-T (SEF)	
8	LG-T (SEF)	
9	LT-T (SEF)	
10	LT-Y (LEF)	
11	12" x 18"	
12	Other	

6131	Skew Correction Control
	Selects the skew correction control for each paper size. These are only activated for D589.

4

1	A3T (SEF)	
2	B4T (SEF)	
3	A4T (SEF)	
4	A4Y (LEF)	
5	B5T (SEF)	[0 or 1 / **0** / 1/step]]
6	B5Y (LEF)	0: No (No skew correction)
7	DLT-T (SEF)	1: Roller Stop Skew Correction
8	LG-T (SEF)	
9	LT-T (SEF)	
10	LT-Y (LEF)	
11	12" x 18"	
12	Other	

6132	Jogger Fence Fine Adj
	This SP adjusts the distance between the jogger fences and the sides of the stack on the finisher stapling tray in the D585/D586/D589 finisher. The adjustment is done perpendicular to the direction of paper feed.

4

1	A3T (SEF)	
2	B4T (SEF)	
3	A4T (SEF)	
4	A4Y (LEF)	
5	B5T (SEF)	[-1.5 to 1.5 / **0** / 0.5 /step]
6	B5Y (LEF)	+ Value: Increases distance between jogger fences and the sides of the stack.
7	DLT-T (SEF)	- Value: Decreases the distance between the jogger fences and the sides of the stack.
8	LG-T (SEF)	
9	LT-T (SEF)	
10	LT-Y (LEF)	
11	12" x 18"	
12	Other	

6133	Staple Position Adjustment
	Adjusts the staple position for each finisher (D585/D586/D588/D589).
	+ Value: Moves the staple position to the rear side.
	- Value: Moves the staple position to the front side.
	[-3.5 to 3.5 (D588/D589), -2.0 to 2.0 (D585/D586) / **0** / 0.5/step]

6134	Saddle Stitch Position Adjustment
	Use this SP to adjust the stapling position of the booklet stapler when paper is stapled and folded in the Booklet Finisher D589.

	1	A3T (SEF)	
	2	B4T (SEF)	
	3	A4 T (SEF)	
	4	B5 T (SEF)	[-3.0 to 3.0 / **0** / 0.2 mm/step]
	5	DLT-T (SEF)	+ Value: Shifts staple position toward the crease.
	6	LG-T (SEF)	- Value: Shifts staple position away from the crease.
	7	LT-T (SEF)	
	8	12" x 18"	
	9	Other	

6135		Folder Position Adjustment	
		This SP corrects the folding position when paper is stapled and folded in the Booklet Finisher D589.	
	1	A3T (SEF)	
	2	B4 T (SEF)	
	3	A4 T (SEF)	
	4	B5 T (SEF)	[-3.0 to 3.0 / **0** / 0.2 mm/step]
	5	DLT-T (SEF)	+ Value: Shifts staple position toward the crease.
	6	LG-T (SEF)	- Value: Shifts staple position away from the crease.
	7	LT-T (SEF)	
	8	12" x 18"	
	9	Other	

6136	Folding Number
	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.
	[2 to 30/ **2** /1 times]

6137		Fin. Free Run
1	Free Run 1	D585/D589: Free run for paper edge stapling. D588: System free run. D586: Shift free run. Remove the staple cartridge from D585/D589 finisher before performing this SP.
2	Free Run 2	D588: Free run for durability testing. D589: Free run for booklet stapling. D586: Free run for paper edge stapling. Remove the staple cartridge from D586/D589 finisher before performing this SP.
3	Free Run 3	D585/D586/D589: Shipping free run. Simulates standby conditions during shipping.
4	Free Run 4	**DFU**

6138		FIN (TIG) Input Check		1000-Sheet Finisher D589
		Note: The names in parentheses are the names used in the service manuals.		
		Component	**0**	**1**
	1	Interference Escape Sensor (Stapler Safety Sensor)	Inactive	Active
	2	Staple Moving HP Sensor (Staple Unit HP Sensor)	Not HP	At HP
	3	Stuck Relay1 Release HP Sensor (Stopper S HP Sensor)	Not HP	At HP
	4	Exit Junction Gate HP Sensor (Stack Feed Out HP Sensor)	At HP	Not HP
	5	Jogger HP Sensor (Jogger Fence HP Sensor)	Not HP	At HP
	6	Staple Tray Paper Sensor (Staple Tray Paper Sensor)	No Paper	Paper

7	Rear Edge Fence HP Sensor (Paper Stack Stopper HP Sensor)	Not HP	At HP
8	Saddle Stitch Exit Sensor	Paper	No Paper
9	Stuck Relay2 Roller HP Sensor (Clamp Roller HP Sensor)	At HP	Not HP
10	Folder Tray Full Sensor 1 (Bottom Tray HP 1 Sensor)	Full	Not full
11	Folder Tray Full Sensor 2 (Bottom Tray HP 2 Sensor)	Not full	Full
12	Folder Plate HP Sensor (Fold Plate HP Sensor)	Not HP	At HP
13	Saddle Stitch Arrival Sensor (Fold Unit Entrance Sensor)	No Paper	Paper
14	Folder Cam HP Sensor (Fold Plate Cam HP Sensor)	Not HP	At HP
15	Staple Exit Sensor (Stapler Tray Exit Sensor)	Paper	No Paper
16	Shift Tray Paper Sensor (Shift Tray Paper Position Sensor)	No Tray	Tray
17	Shift Tray Full	Full	Nor full
18	Shift Roller HP Sensor	Not HP	At HP
20	Entrance Sensor (Finisher Entrance Sensor)	Paper	No Paper
21	Shift Exit Sensor (Shift Tray Exit Sensor)	No Paper	Paper
22	Proof Exit Sensor (Proof Tray Exit Sensor)	Paper	No Paper
23	Exit Guide Plate HP Sensor	Not HP	At HP

4

24	Proof Full Sensor (Proof Tray Full Sensor)	Not full	Full
25	Upper Cover Sensor	Open	Close
26	Door SW (Front Door Switch)	Close	Open
27	Clincher Timing Sensor	Encoder	
28	Clincher HP Sensor	At HP	Not HP
29	Driver Timing Sensor	Encoder	
30	Staple Near End	Staples Remain	Staples N.E.
31	Self Priming	Staples	No Staples
32	Driver HP Sensor	At HP	Not HP
33	Punch Registration Detection HP Sensor	Not HP	At HP
34	Punch Moving HP Sensor (Punch Movement HP Sensor)	Not HP	At HP
35	Punch HP Sensor (Punch HP Sensor)	At HP	Not HP
36	Punch Pulse Count Sensor (Punch Encoder Sensor)	Encoder	
37	Punch Chad Full Sensor (Punch Hopper Full Sensor)	Not full	Full
38	Punch Registration Detection Sensor (Paper Position Sensor)	Paper	No Paper

6139	FIN (KIN) Input Check	1000-Sheet Finisher D588	
	Note: The names in parentheses are the names used in the service manuals.		
	Component	**0**	**1**
1	Entrance Sensor	Paper	No Paper
2	Shift Exit Sensor (Lower Tray Exit Sensor)	No Paper	Paper

3	Staple Entrance Sensor (Stapler Tray Entrance Sensor)	Paper	No Paper
4	Staple Moving HP Sensor (Stapler HP Sensor)	Not HP	At HP
5	Jogger HP Sensor (Jogger Fence HP Sensor)	Not HP	At HP
6	Stack Feed-out Belt HP Sensor	At HP	Not HP
7	Staple Tray Paper Sensor	No Paper	Paper
8	Staple Rotation Sensor (Staple Rotation HP Sensor)	Not HP	At HP
9	Staple Sensor	Staples	No Staples
10	Staple READY Detection	Staples	No Staples
11	Exit Guide Plate HP (Exit Guide Plate HP Sensor)	Not HP	At HP
12	Shift HP Sensor	Not HP	At HP
13	Paper Sensor (Stack Height Sensor)	No Tray	Tray
14	Tray Lower Sensor (Lower Tray Lower Limit Sensor)	Lower limit	Not Lower Limit
15	Proof Full Sensor (Paper Limit Sensor)	Not Full	Full

	FIN (ELB) Input Check	500-Sheet Finisher D585	
6141	Displays the signals received from sensors and switches of the finisher. **Note**: • The names in parentheses below are the names used in the service manuals. "0" means LOW, "1" means HIGH.		
	Component	0	1

1	Entrance Sensor	Paper	No Paper
2	Hitroll HP Sensor (Positioning Roller HP Sensor)	Not HP	At HP
3	Front Jogger HP Sensor (Front Fence HP Sensor)	Not HP	At HP
4	Rear Jogger HP Sensor (Rear Fence HP Sensor)	Not HP	At HP
5	Staple Tray Paper Sensor	Paper	No Paper
6	Staple Moving HP Sensor (Stapler HP Sensor)	Not HP	At HP
7	Stack Feed-Out Belt HP Sensor	Not HP	At HP
8	Shift Tray Paper Sensor	Not HP	At HP
9	Upper Cover Sensor	Not HP	At HP
10	Stapler Rotation Sensor	HP	Not HP
11	Staple Near End Sensor	HP	Not HP
12	Self Priming (Stapler)	HP	Not HP
13	Shift Tray Limit Sensor (Tray Upper Limit SW)	Not Full	Full

6142	FIN (RUB) Input Check		Inner Finisher D586	
	Displays the signals received from sensors and switches of the finisher. **Note**: • The names in parentheses below are the names used in the service manuals. "0" means LOW, "1" means HIGH.			
	Component		**0**	**1**
1	Entrance Sensor			
2	Carry Sensor (Feed Sensor)			

3	Exit Sensor (Paper Exit Sensor)		
4	Staple Tray Paper Sensor		
5	Front Jogger HP Sensor (Jogger Fence HP Sensor (Front))		
6	Rear Jogger HP Sensor (Jogger Fence HP Sensor (Back))		
7	Sft Roller HP Sensor (Shift Roller HP Sensor)		
8	Hitroll HP Sensor		
9	Ext Guide Plate HP Sensor		
10	Staple Moving HP Sensor		
11	Shift Tray Paper Sensor		
12	Shift Tray Limit Sensor		
13	Staple Rotation Sensor		
14	Staple Near End Sensor		
15	Self Priming Sensor		
16	Stopper HP Sensor		
17	Punch HP Sensor		
18	Punch Pluse Count Sensor		
19	Punch Chad Full Sensor		
20	Punch Moving HP Sensor		
21	Punch Registration Detection HP Sensor		
22	Punch Registration Detection Sensor		
23	Slide Door SW		
24	Shift Tray Upper Limit SW		

4

6143	FIN (TIG) Output Check		1000-Sheet Finisher D589
	Displays the signals received from sensors and switches of the booklet finisher. **Note**: In the table below, "Display" is what you see on the screen, and "Component" is the name used in the service manuals.		
	Display		**Component**
1	Shift Motor		Shift Tray Motor
2	Entrance Motor		-
3	Staple Relay Motor		Stapler Unit Motor
4	Knock Solenoid		-
5	Junction Gate SOL 1		Proof Tray Gate Solenoid
6	Junction Gate SOL 2		Staple Tray Gate Solenoid
7	Folder Roller Rotation Motor		Fold Roller Motor
8	Staple Motor		Staple Fold Motor
10	Exit Guide Plate Motor		-
11	Shift Relay Motor		Upper Transport Motor
12	Tray Motor		Shift Tray Motor
13	Stack Feed-out Motor		Positioning Roller Solenoid
14	Stuck Relay1 Motor		Upper Clamp Roller Motor
15	Stuck Relay1 Release Motor		Upper Retraction Motor
16	Rear Edge Fence Drive Motor		Bottom Fence Lift Motor
17	Folder Plate Motor		-
18	Drive Roller Oscillating Motor		Lower Retraction Motor
19	Staple Moving Motor		Staple Unit Driver Motor
20	Jogger Motor		Jogger Motor
21	Punch Registration Moving Motor		Paper Position Sensor Slide Motor
22	Punch Motor		-

23	Punch Moving Motor	Punch Movement Motor

6144	FIN (KIN) Output Check	1000-Sheet Finisher D588
	Displays the signals received from sensors and switches of the booklet finisher. **Note**: In the table below, "Display" is what you see on the screen, and "Component" is the name used in the service manuals.	
	Display	**Component**
1	Relay Up Motor	Upper Transport Motor
2	Relay Down Motor	Lower Transport Motor
3	Exit Motor	-
4	Proof Junction Gate SOL	Tray Junction Gate Solenoid
5	Tray Up Motor	Lower Tray Lift Motor
6	Jogger Motor	Jogger Fence Motor
7	Staple Moving Motor	Stapler Motor
8	Staple Motor	Stapler Hammer
9	Staple Junction Gate SOL	Stapler Junction Gate Solenoid
10	Positioning Roller Solenoid	Positioning Roller Solenoid
11	Stack Feed-out Motor	-
12	Shift Motor	-
13	Exit Guide Plate Motor	-

6146	FIN (ELB) Output Check	500-Sheet Finisher D585
	Displays the signals received from sensors and switches of the finisher. **Note**: In the table below, "Display" is what you see on the screen, and "Component" is the name used in the service manuals.	
	Display	**Component**
1	Carry Motor	Transport Motor
2	Hitroll Motor	Positioning Roller Arm Motor

3	Front Jogger Motor	Front Fence Motor
4	Rear Jogger Motor	Rear Fence Motor
5	Staple Moving Motor	Stapler Movement Motor
6	Stack Feed-Out Motor	Feed-Out Belt Motor
7	Tray Motor	Tray Lift Motor
8	Staple Motor	Stapler Motor
9	Stopper Solenoid	Stack Depressor Solenoid

4

6147	FIN (RUB) Output Check	500-Sheet Finisher D586
	Displays the signals received from sensors and switches of the finisher. **Note**: In the table below, "Display" is what you see on the screen, and "Component" is the name used in the service manuals.	
	Display	**Component**
1	Entrance Motor	Entrance Roller Motor
2	Carry Motor	Feed Roller Motor
3	Exit Motor	Exit Roller Motor
4	Front Jogger Motor	Jogger Fence Motor (Front)
5	Rear Jogger Motor	Jogger Fence Motor (Back)
6	Shift Motor	Shift Roller Motor
7	Hitroll Motor	Pick-up Roller Motor
8	Exit Guide Plate Motor	Exit Guide Plate Motor
9	Staple Moving Motor	Stapler Unit Motor
10	Tray Motor	Output Tray Motor
11	Staple Motor	Stapler Unit Motor
12	Stopper Motor	Stack height detection lever Motor
13	Punch Motor	Punch Drive Motor
14	Punch Moving Motor	Punch Movement Motor

	15	Punch Registration Moving Motor	Paper Position Sensor Unit Motor	

	Input Check			
6150	Displays the signals received from sensors and switches of the bridge unit.			
	Component		**0**	**1**
1	Relay: Paper Exit Sensor		Paper detected	Paper not detected
2	Relay: Paper Feed Sensor		Paper detected	Paper not detected
3	Relay/Shift Unit Set		Set	Not set
4	Relay: Exit Cover Sensor		Closed	Open
5	Relay: Feed Cover Sensor		Closed	Open

	OUTPUT Check	
6151	Displays the signals received from sensors and switches of the bridge unit.	
	Display	**Description**
1	Relay: Feed Motor: Reset	Bridge Unit: Feed Motor: Enable
2	Relay: Feed Motor: Enable	Bridge Unit: Feed Motor: CCW: High
3	Relay: Feed Motor: CCW: High	Bridge Unit: Feed Motor: CCW: Low
4	Relay: Feed Motor: CCW: Low	Bridge Unit: Junction Gate SOL
5	Relay: Junction Gate SOL	Bridge Unit: Feed Motor: Reset

	Input Check			
6152	Displays the signals received from sensors and switches of the bridge unit.			
	Component		**0**	**1**
2	ShiftTray: Position Sensor		Tray position: front	Tray position: rear

6153	OUTPUT Check	
	Displays the signals received from sensors and switches of the shift tray.	
	Display	**Description**
1	ShiftTray: Motor	-

6154	INPUT Check		
	Displays the signals received from sensors and switches of the bridge unit.		
	Component	**0**	**1**
1	1 bin: Set Detection	Set	Not set
2	1BIN: Paper Feed Sensor	Paper detected	Paper not detected
3	1BIN: Paper Remain		

6155	OUTPUT Check	
	Displays the signals received from sensors and switches of the 1-bin tray.	
	Display	**Description**
1	1BIN: Reversal Output Signal	-

6800	Sheet Conversion (Thick Paper)
	Allows the punch feature in Z-hold mode.
	[1 to 3 / **3** / 1]
	1: 1 sheet
	2: 2 sheets
	3: 3 sheets

		Extra Staples
6830*		More than the standard number of sheets can be stapled. This SP sets the additional number of sheets (This Setting + Standard Number = maximum number of sheets).
		• 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.
		• 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.
	1	Staple positions other than booklet stapling
		[0 to 50 / **0** / 1]
	2	2 Booklet stapling
		[0 to 50 / **0** / 1]

4

System SP Tables-7

SP7xxx: Data Log

7401*	Total SC Counter
	Displays the total number of service calls that have occurred.

7403*		SC History	
	1	Latest	Displays the most recent 10 service calls.
	2	Latest 1	
	3	Latest 2	
	4	Latest 3	
	5	Latest 4	
	6	Latest 5	
	7	Latest 6	
	8	Latest 7	
	9	Latest 8	
	10	Latest 9	

7404*	SC991 History

1	Latest	
2	Latest 1	
3	Latest 2	
4	Latest 3	
5	Latest 4	Displays the 10 most recently detected SC991 codes.
6	Latest 5	
7	Latest 6	
8	Latest 7	
9	Latest 8	
10	Latest 9	

7504*	Paper Jam Loc ON: On check, OFF: Off Check Displays the number of jams according to the location where jams were detected. **NOTE:** The LCT is counted as the 3rd feed station.
1	At Power On
3	Tray 1: On
4	Tray 2: On
5	Tray 3: On
6	Tray 4: On
8	Bypass: On
9	Duplex: On
11	Vertical Trans. 1: On
12	Vertical Trans .2: On
13	Vertical Trans .3: On
17	Registration: On

4

20	Paper Exit: On
21	Bridge Tray Exit: On
22	Bridge Relay: On
24	Inverter: On
25	Duplex Exit: On
27	Duplex Entrance: On
51	Vertical Trans. 1: Off
52	Vertical Trans. 2: Off
53	Vertical Trans. 3 (PFU): Off
54	Vertical Trans. 4 (PFU): Off
57	Registration Sensor: Off
60	Paper Exit: Off
61	Bridge Tray Exit: Off
62	Bridge Relay: Off
64	Inverter: Off
65	Duplex Exit: Off
67	Duplex Ent: Off
100	Finisher Entrance: KIN (D588)
101	Finisher Shift Tray Exit: KIN (D588)
102	Finisher Staple: KIN (D588)
103	Finisher Exit: KIN (D588)
105	Finisher Tray Lift Motor: KIN (D588)
106	Finisher Jogger Motor: KIN (D588)
107	Finisher Shift Motor: KIN (D588)
108	Finisher Staple Motor: KIN (D588)
109	Finisher Exit Motor : KIN (D588)

130	FIN Entrance: TIG (D589)
131	FIN Proof Tray Exit: TIG (D589)
132	FIN Shift Tray: TIG (D589)
133	FIN Staple Exit: TIG (D589)
134	FIN Exit: TIG (D589)
135	Finisher Fold: TIG (D589)
136	FIN Fold Exit: TIG (D589)
137	Exit Guide Gate Motor: TIG (D589)
138	FIN Staple Shift Motor: TIG (D589)
139	FIN Paper Punch Motor: TIG (D589)
140	FIN Tray Lift Motor: TIG (D589)
141	FIN Jogger Motor: TIG (D589)
142	FIN Shift Motor: TIG (D589)
143	FIN Fold Plate Motor: TIG (D589)
144	FIN Staple Motor: TIG (D589)
145	FIN Exit Motor: TIG (D589)
146	FIN Stack 1 Release Motor: TIG (D589)
147	FIN Stack 2 Release Motor: TIG (D589)
148	FIN Stopper Motor: TIG (D589)
160	Entrance Sn:ON
161	Entrance Sn: OFF
162	FIN Entrance
163	Positioning Roller
164	Front Jogger Motor
165	Rear Jogger Motor
166	Exit Motor

4

167	FIN Staple Shift Motor: ELB (D585)
168	FIN Staple Motor: ELB (D585)
169	FIN Tray Lift Motor: ELB (D585)
170	FIN Stack Height SOL: ELB (D585)
190	FIN Entrance: ON: RUB (D586)
191	FIN Entrance: OFF: RUB (D586)
192	FIN Trans ON: RUB (D586)
193	FIN Trans: OFF: RUB (D586)
194	FIN Entrance: RUB (D586)
195	FIN Front Jogger Motor: RUB (D586)
196	FIN Rear Jogger Motor: RUB (D586)
197	FIN Shift Roller Motor: RUB (D586)
198	FIN Positioning Roller: RUB (D586)
199	FIN Paper Exit Plate Motor: RUB (D586)
200	FIN Staple Shift Motor: RUB (D586)
201	FIN Tray Lift Motor: RUB (D586)
202	FIN Staple Motor: RUB (D586)
203	FIN Stack Height SOL: RUB (D586)
204	FIN Punch Motor: RUB (D586)
205	FIN Punch Movement Motor: RUB (D586)
206	FIN Registration Motor: RUB (D586)
230	Fin Exit
231	Insufficient Data

7505*	Original Jam Det
	Displays the total number of original jams by location. These jams occur when the original does not activate the sensors. **Note** • Lag. Jam occurs when the paper remains at the sensor for longer than the prescribed time. • Late: Jam occurs because paper fails to arrive at the prescribed time.
1	At Power On
3	Skew Correction Sensor: On
4	Registration Sensor: On
5	Original Exit Sensor: On
53	Skew Correction Sensor: Off
54	Registration Sensor: Off
55	Original Exit Sensor: Off

7506*	Jam Count by Paper Size

5	A4 LEF	Displays the total number of copy jams by paper size.
6	A5 LEF	
14	B5 LEF	
38	LT LEF	
44	HLT LEF	
132	A3 SEF	
133	A4 SEF	
134	A5 SEF	
141	B4 SEF	
142	B5 SEF	
160	DLT SEF	
164	LG SEF	
166	LT SEF	
172	HLT SEF	
255	Others	

7507*	Plotter Jam History

1	Latest	Displays the copy jam history (the most recent 10 jams)
2	Latest 1	Sample Display:
3	Latest 2	CODE:007
4	Latest 3	SIZE:05h
5	Latest 4	TOTAL:0000334
6	Latest 5	DATE: Mon Mar 15 11:44:50 2000
7	Latest 6	where:
8	Latest 7	CODE is the SP7504-*** number (see above.
9	Latest 8	SIZE is the ASAP paper size code in hex.
10	Latest 9	TOTAL is the total jam error count (SP7502)

TOTAL is the total jam error count (SP7502)

DATE is the date the jams occurred.

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

1	Latest	Displays the original jam history (the most recent 10 jams).
2	Latest 1	Sample Display:
3	Latest 2	CODE:007
4	Latest 3	SIZE:05h
5	Latest 4	TOTAL:0000334
6	Latest 5	DATE: Mon Mar 15 11:44:50 2000
7	Latest 6	where:
8	Latest 7	CODE is the SP7505*** number (see above.
9	Latest 8	SIZE is the ASAP paper size code in hex.
10	Latest 9	TOTAL is the total error count (SP7503) DATE is the date the jams occurred.

7624*		Parts Replacement Operation ON/OFF
1	PCU	[0 or 1 / **1** / -] 0: No (Not PM maintenance) 1: Yes (PM maintenance)

7801	ROM No./Firmware Version
	This SP codes display the firmware versions of all ROMs in the system, including the mainframe, the ARDF, and peripheral devices.

7803*		PM Counter Display
		Displays the PM counter since the last PM.
1	Paper	
2	Sheets 60K Part	
3	Sheets 120K Part	
4	Distance (mm) 60 K	
5	Distance (mm) 120 K	
6	Distance 60K	

	7	Distance 120K

7804	PM Counter Resets	
	Resets the PM counter. To reset, press Execute on the touch panel.	
1	Paper	
2	60K part	
3	120K part	

7807	SC/Jam Counter Reset	
	Resets the SC and jam counters. To reset, press Execute on the touch panel.	
	This SP does not reset the jam history counters: SP7507, SP7508.	

7826*	MF Error Counter **Japan Only**	
	Displays the number of counts requested of the card/key counter.	
1	Error Total	A request for the count total failed at power on. This error will occur if the device is installed but disconnected.
2	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 **Japan Only**
	Press Execute to reset to 0 the values of SP7826. **Japan Only**

7832	Self-Diagnose Result Display
	Execute to open the "Self-Diagnostics Result Display" to view details about errors. Use the keys in the display on the touch-panel to scroll through all the information. If no errors have occurred, you will see the "No Error" message on the screen.

7836	Total Memory Size
	Displays the memory capacity of the controller system.

4

7852*	DF Glass Dust Check	
	Counts the number of occurrences (0 to 65,535) when dust was detected on the scanning glass of the ADF.	
1*	Dust Detection Counter	Counts the occurrences. Counting is done only if SP4020 1 (ADF Scan Glass Dust Check) is switched on.
2*	Dust Detection Clear Counter	Clears the count. Memory All Clear (SP5801) resets this counter to zero.

4

| 7856* | Zero Cross |
| | Stores and displays the detected zero cross frequency for main power ac. |

7901*	Assert Info. **DFU**	
	These SP numbers display the results of the occurrence of the most recent SC code generated by the machine.	
1*	File Name	Module name
2*	Number of Lines	Number of the lines where error occurred.
3*	Location	Value

7906	Last PM Count
	Displays the most recent PM count for 60K and 120K service parts ("60K" and "120" refer to service life).
2	Sheets 60K Part
3	Sheets 120K Part
4	Distance (mm) 60 K
5	Distance (mm) 120 K
6	Distance 60K
7	Distance 120K

7907		Before 2 PM Count
		Displays the PM count before the most recent PM count for 60K and 120K service parts ("60K" and "120" refer to service life).
	2	Sheets 60K Part
	3	Sheets 120K Part
	4	Distance (mm) 60 K
	5	Distance (mm) 120 K
	6	Distance 60K
	7	Distance 120K

7908		Before 3 PM Count
		Displays the PM count two counts the most recent PM count for 60K and 120K service parts ("60K" and "120" refer to service life).
		Sheets 60K Part
	3	Sheets 120K Part
	4	Distance (mm) 60 K
	5	Distance (mm) 120 K
	6	Distance 60K
	7	Distance 120K

4

System SP Tables-8

SP8xxx: Data Log 2

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.

SP Numbers	What They Do
SP8211 - SP8216	The number of pages scanned to the document server.
SP8401 - SP8406	The number of pages printed from the document server
SP8691 - 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 when the job was not stored on the document server.
F:	Fax application.	
P:	Print application.	
S:	Scan application.	

Prefixes	What It Means	
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
C	Cyan
ColCr	Color Create
ColMode	Color Mode
Comb	Combine
Comp	Compression

Abbreviation	What It Means
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.
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

Abbreviation	What It Means
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.
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
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.

8001	T:Total Jobs	These SPs count the number of times each application is used to do a job.
8002	C:Total Jobs	[0 to 9999999/ **0** / 1]
8003	F:Total Jobs	**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.
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.

- A job is counted as a fax job when the job is stored for sending.

- When a fax is received to fax memory, the F: counter increments but the L: counter does not (the document server is not used).

- A fax broadcast counts as one job for the F: counter (the fax destinations in the broadcast are not counted separately).

- A fax broadcast is counted only after all the faxes have been sent to their destinations. If one transmission generates an error, then the broadcast will not be counted until the transmission has been completed.

- A printed fax report counts as one job for the F: counter.

- The F: counter does not distinguish between fax sending or receiving.

- 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. However, for fax reports and reports executed from the fax application, the F: 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. [0 to 9999999/ 0 / 1] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8012	C:Jobs/LS	
8013	F: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.

- When a fax is sent to the document server, the F: counter increments.

8021	T:Pjob/LS	These SPs reveal how files printed from the document server were stored on the document server originally. [0 to 9999999/ 0 / 1] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8022	C:Pjob/LS	
8023	F: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.

- When a fax on the document server is printed, the F: counter increments.

8031	T:Pjob/DesApl	These SPs reveal what applications were used to output documents from the document server. [0 to 9999999/ **0** / 1] The L: counter counts the number of jobs printed from within the document server mode screen at the operation panel.
8032	C:Pjob/DesApl	
8033	F: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, or as a fax image by I-Fax). [0 to 9999999/ **0** / 1] **Note**: • Jobs merged for sending are counted separately. • 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	
8043	F: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, or as a fax image by I-Fax). Jobs merged for sending are counted separately. [0 to 9999999/ **0** / 1] 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	
8053	F: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]
	These SPs total the finishing methods. The finishing method is specified by the application.	
8062	C:FIN Jobs	[0 to 9999999/ **0** / 1]
	These SPs total finishing methods for copy jobs only. The finishing method is specified by the application.	

8063	F:FIN Jobs	[0 to 9999999/ **0** / 1]
	These SPs total finishing methods for fax jobs only. The finishing method is specified by the application. **Note**: Finishing features for fax jobs are not available at this time.	
8064	P:FIN Jobs	[0 to 9999999/ **0** / 1]
	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]
	These SPs total finishing methods for scan jobs only. The finishing method is specified by the application. **Note**: Finishing features for scan jobs are not available at this time.	
8066	L:FIN Jobs	[0 to 9999999/ **0** / 1]
	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]
	These SPs total finishing methods for jobs executed by an external application, over the network. The finishing method is specified by the application.	
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)
2	Stack	Number of jobs started out of Sort mode.
3	Staple	Number of jobs started in Staple mode.
4	Booklet	Number of jobs started in Booklet mode. If the machine is in staple mode, the Staple counter also increments.
5	Z-Fold	Number of jobs started In any mode other than the Booklet mode and set for folding (Z-fold).
6	Punch	Number of jobs started in Punch mode. When Punch is set for a print job, the P: counter increments. (See SP8064 6.)
7	Other	Reserved. Not used.

8	Inside-Fold	Half-Fold **Not Used**
9	Three-IN-Fold	Letter Fold-in **Not Used**
10	Three-OUT-Fold	Letter Fold-out **Not Used**
11	Four-Fold	Double Parallel Fold **Not Used**
12	KANNON-Fold	Gate Fold **Not Used**
13	Perfect-Bind	Perfect Binder **Not Used**
14	Ring-Bind	Ring Binder **Not Used**

8071	T:Jobs/PGS	[0 to 9999999/ **0** / 1]
	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]
	These SPs count and calculate the number of copy jobs by size based on the number of pages in the job.	
8073	F:Jobs/PGS	[0 to 9999999/ **0** / 1]
	These SPs count and calculate the number of fax jobs by size based on the number of pages in the job.	
8074	P:Jobs/PGS	[0 to 9999999/ **0** / 1]
	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]
	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]
	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.	

4

8077	O:Jobs/PGS		[0 to 9999999/ **0** / 1]	
	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.			
	1	1 Page	8	21 to 50 Pages
	2	2 Pages	9	51 to 100 Pages
	3	3 Pages	10	101 to 300 Pages
	4	4 Pages	11	301 to 500 Pages
	5	5 Pages	12	501 to 700 Pages
	6	6 to10 Pages	13	701 to 1000 Pages
	7	11 to 20 Pages	14	More than 1001 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.
- Printing a fax report counts as a job and increments the F: counter (SP 8073).
- 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.

8111	T:FAX TX Jobs	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) sent by fax, either directly or using a file stored on the document server, on a telephone line.	
8113	F:FAX TX Jobs	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) sent by fax directly on a telephone line.	

- These counters count jobs, not pages.

- This SP counts fax jobs sent over a telephone line with a fax application, including documents stored on the document server.

- If the mode is changed during the job, the job will count with the mode set when the job started.

- If the same document is faxed to both a public fax line and an I-Fax at a destination where both are available, then this counter increments, and the I-Fax counter (812x) also increments.

- The fax job is counted when the job is scanned for sending, not when the job is sent.

8121	T:IFAX TX Jobs	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) sent, either directly or using a file stored on the document server, as fax images using I-Fax.	
8123	F:IFAX TX Jobs	[0 to 9999999/ **0** / 1]
	These SPs count the number of jobs (color or black-and-white) sent (not stored on the document server), as fax images using I-Fax.	

- These counters count jobs, not pages.

- The counters for color are provided for future use; the color fax feature is not available at this time.

- The fax job is counted when the job is scanned for sending, not when the job is sent.

8131	T:S-to-Email Jobs		[0 to 9999999/ **0** / 1]
	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.		
	1	B/W	Monochrome
	2	Color	Color
	3	ACS	Automatic Color Selection

- 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]
	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.		
1	B/W	Monochrome	
2	Color	Color	
3	ACS	Automatic Color Selection	

- 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]
	These SPs count the total number of jobs scanned and sent to a folder on a PC (Scan-to-PC).		
8155	S:Deliv Jobs/PC		
	These SPs count the total number of jobs scanned and sent with Scan-to-PC.		
1	B/W	Monochrome	
2	Color	Color	

	3	ACS	Automatic Color Selection

- 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.

8161	T:PCFAX TX Jobs	These SPs count the number of PC Fax transmission jobs. A job is counted from when it is registered for sending, not when it is sent.
8163	F:PCFAX TX Jobs	[0 to 9999999/ **0** / 1]

- This counts fax jobs started from a PC using a PC fax application, and sending the data out to the destination from the PC through the copier.

8171	T: Deliv Jobs/WSD	These SPs count the pages scanned by WS. [0 to 9999999/ **0** / 1]
8175	S: Deliv Jobs/WSD	
8181	T: Scan to Media Jobs	
8185	S: Scan to Media Jobs	
	1	B/W
	2	Color
	3	ACS

8191	T:Total Scan PGS	These SPs count the pages scanned by each application that uses the scanner to scan images. [0 to 9999999/ **0** / 1]
8192	C:Total Scan PGS	
8193	F: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]
	These SPs count the total number of large pages input with the scanner for scan, fax and copy jobs. **Note**: These counters are displayed in the SMC Report, and in the User Tools display.	
8203	F:LSize Scan PGS	[0 to 9999999/ **0** / 1]
	These SPs count the total number of large pages input with the fax jobs. Large size paper (A3/DLT) scanned for scan jobs are not counted. **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. Large size paper (A3/DLT) scanned for fax transmission are not counted. **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 . [0 to 9999999/ **0** / 1] 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	
8213	F: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]
	These SPs count the number of pages fed through the ADF for front and back side scanning.		
	1	Front	Number of front sides fed for scanning: 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. 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.)
	2	Back	Number of rear sides fed for scanning: With an ADF that can scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex scanning. 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]
	These SPs count the number of pages scanned by each ADF mode to determine the work load on the ADF.		
	1	Large Volume	Selectable. Large copy jobs that cannot be loaded in the ADF at one time.
	2	SADF	Selectable. Feeding pages one by one through the ADF.

	3	Mixed Size	Selectable. Select "Mixed Sizes" on the operation panel.
	4	Custom Size	Selectable. Originals of non-standard size.
	5	Platen	Book mode. Raising the ADF and placing the original directly on the platen.
	6	Mixed 1side/2side	Single-side, double-side scanning.

- 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.

- The user cannot select mixed sizes or non-standard sizes with the fax application so if the original's page sizes are mixed or non-standard, these are not counted.

- 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]
	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]
	These SPs count the number of pages scanned by original type for Copy jobs.	
8243	F:Scan PGS/Org	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages scanned by original type for Fax jobs.	
8245	S:Scan PGS/Org	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages scanned by original type for Scan jobs.	
8246	L:Scan PGS/Org	[0 to 9999999/ **0** / 1]
	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
1: Text	Yes	Yes	Yes	Yes	Yes
2: Text/Photo	Yes	Yes	Yes	Yes	Yes
3: Photo	Yes	Yes	Yes	Yes	Yes

4: GenCopy, Pale	Yes	Yes	No	Yes	Yes
5: Map	Yes	Yes	No	Yes	Yes
6: Normal/Detail	Yes	No	Yes	No	No
7: Fine/Super Fine	Yes	No	Yes	No	No
8: Binary	Yes	No	No	Yes	No
9: Grayscale	Yes	No	No	Yes	No
10: Color	Yes	No	No	Yes	No
11: Other	Yes	Yes	Yes	Yes	Yes

- 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. Some examples of these editing features are:
8252	C:Scan PGS/ImgEdt	
8255	S:Scan PGS/ImgEdt	
8256	L:Scan PGS/ImgEdt	
8257	O:Scan PGS/ImgEdt	- Erase> Border - Erase> Center - Image Repeat - Centering - Positive/Negative [0 to 9999999/ **0** / 1] **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.

- 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.
8285	S:Scan PGS/TWAIN	[0 to 9999999/ **0** / 1]

8291	T:Scan PGS/Stamp	These SPs count the number of pages stamped with the stamp in the ADF unit.
8293	F:Scan PGS/Stamp	[0 to 9999999/ **0** / 1]
8295	S:Scan PGS/Stamp	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

	T:Scan PGS/Size	[0 to 9999999/ **0** / 1]
8301	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].	
	C:Scan PGS/Size	[0 to 9999999/ **0** / 1]
8302	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].	
	F:Scan PGS/Size	[0 to 9999999/ **0** / 1]
8303	These SPs count by size the total number of pages scanned by the Fax application. Use these totals to compare original page size (scanning) and output page size [SP 8-443].	
	S:Scan PGS/Size	[0 to 9999999/ **0** / 1]
8305	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].	
	L:Scan PGS/Size	[0 to 9999999/ **0** / 1]
8306	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].	

1	A3
2	A4
3	A5
4	B4
5	B5
6	DLT
7	LG
8	LT
9	HLT
10	Full Bleed
254	Other (Standard)
255	Other (Custom)

8311	T:Scan PGS/Rez	[0 to 9999999/ **0** / 1]
	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]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings. Note: At the present time, 8311 and 8315 perform identical counts.	
	1	1200dpi to
	2	600dpi to 1199dpi
	3	400dpi to 599dpi
	4	200dpi to 399dpi
	5	to 199dpi

- Copy resolution settings are fixed so they are not counted.

- The Fax application does not allow finely-adjusted resolution settings so no count is done for the Fax application.

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. [0 to 9999999/ **0** / 1] 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	
8383	F:Total PrtPGS	
8384	P:Total PrtPGS	
8385	S:Total PrtPGS	
8386	L:Total PrtPGS	
8387	O:Total PrtPGS	

4

- 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.

- 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]
	These SPs count pages printed on paper sizes A3/DLT and larger. **Note**: In addition to being displayed in the SMC Report, These counters appear in the SMC report as well as on the machine display.	

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.
8402	C:PrtPGS/LS	
8403	F:PrtPGS/LS	
8404	P:PrtPGS/LS	The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8405	S:PrtPGS/LS	
8406	L:PrtPGS/LS	[0 to 9999999/ **0** / 1]

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the L: count.

- Fax jobs done with Web Image Monitor and Desk Top Binder are added to the F: 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]
	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]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the copier application.	
8423	F:PrtPGS/Dup Comb	[0 to 9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the fax application.	
8424	P:PrtPGS/Dup Comb	[0 to 9999999/ **0** / 1]
	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]
	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]	
	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]	
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by Other applications			
1	Simplex> Duplex			
2	Duplex> Duplex			
3	Book> Duplex			
4	Simplex Combine			
5	Duplex Combine			
6	2>	2 pages on 1 side (2-Up)		
7	4>	4 pages on 1 side (4-Up)		
8	6>	6 pages on 1 side (6-Up)		
9	8>	8 pages on 1 side (8-Up)		
10	9>	9 pages on 1 side (9-Up)		
11	16>	16 pages on 1 side (16-Up)		
12	Booklet			
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]		
	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]		
	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]		
	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]		
	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]		
	These SPs count the total number of pages output with the three features below with Other applications.			
	1	Cover/Slip Sheet	Total number of covers or slip sheets inserted. The count for a cover printed on both sides counts 2.
	2	Series/Book	The number of pages printed in series (one side) or printed as a book with booklet right/left pagination.
	3	User Stamp	The number of pages printed where stamps were applied, including page numbering and date stamping.

4

8441	T:PrtPGS/Ppr Size	[0 to 9999999/ **0** / 1]
	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]
	These SPs count by print paper size the number of pages printed by the copy application.	
8443	F:PrtPGS/Ppr Size	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the fax application.	
8444	P:PrtPGS/Ppr Size	[0 to 9999999/ **0** / 1]
	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]
	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]
	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]
	These SPs count by print paper size the number of pages printed by Other applications.	

1	A3
2	A4
3	A5
4	B4
5	B5
6	DLT
7	LG
8	LT
9	HLT
10	Full Bleed
254	Other (Standard)
255	Other (Custom)

- These counters do not distinguish between LEF and SEF.

8451	PrtPGS/Ppr Tray		[0 to 9999999/ **0** / 1]
	These SPs count the number of sheets fed from each paper feed station.		
1	Bypass	Bypass Tray	
2	Tray 1	Copier	
3	Tray 2	Copier	
4	Tray 3	Paper Tray Unit (Option)	
5	Tray 4	Paper Tray Unit (Option)	
6	Tray 5	LCT (Option)	
7	Tray 6	500-Sheet Finisher	
8	Tray 7	Currently not used.	
9	Tray 8	Currently not used.	
10	Tray 9	Currently not used.	

11	Tray 10	Currently not used.
12	Tray 11	Currently not used.
13	Tray 12	Currently not used.
14	Tray 13	Currently not used.
15	Tray 14	Currently not used.
16	Tray 15	Currently not used.

8461	T:PrtPGS/Ppr Type	[0 to 9999999/ **0** / 1]
	These SPs count by paper type the number pages printed by all applications. • 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. • Blank sheets (covers, chapter covers, slip sheets) are also counted. • 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]
	These SPs count by paper type the number pages printed by the copy application.	
8463	F:PrtPGS/Ppr Type	[0 to 9999999/ **0** / 1]
	These SPs count by paper type the number pages printed by the fax application.	
8464	P:PrtPGS/Ppr Type	[0 to 9999999/ **0** / 1]
	These SPs count by paper type the number pages printed by the printer application.	
8466	L:PrtPGS/Ppr Type	[0 to 9999999/ **0** / 1]
	These SPs count by paper type the number pages printed from within the document server mode window at the operation panel.	
1	Normal	
2	Recycled	
3	Special	
4	Thick	

	5	Normal (Back)
	6	Thick (Back)
	7	OHP
	8	Other

8471		PrtPGS/Mag	[0 to 9999999/ **0** / 1]
		These SPs count by magnification rate the number of pages printed.	
	1	to 49%	
	2	50% to 99%	
	3	100%	
	4	101% to 200%	
	5	201% to	

- 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.
	Note: These SPs return the same results because this SP is limited to the Print application.
	[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.		
	1	RPCS	
	2	RPDL	
	3	PS3	
	4	R98	
	5	R16	
	6	GL/GL2	
	7	R55	
	8	RTIFF	
	9	PDF	
	10	PCL5e/5c	
	11	PCL XL	
	12	IPDL-C	
	13	BM-Links	**Japan Only**
	14	Other	
	15	IPDS	

- SP8511 and SP8514 return the same results because 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]
	These SPs count by finishing mode the total number of pages printed by all applications.	

8522	C:PrtPGS/FIN	[0 to 9999999/ **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Copy application.	
8523	F:PrtPGS/FIN	[0 to 9999999/ **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Fax application.	
8524	P:PrtPGS/FIN	[0 to 9999999/ **0** / 1]
	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]
	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]
	These SPs count by finishing mode the total number of pages printed from within the document server mode window at the operation panel. **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.	
1	Sort	
2	Stack	
3	Staple	
4	Booklet	
5	Z-Fold	
6	Punch	
7	Other	
8	Inside-Fold	
9	Three-IN-Fold	

4

10	Three-OUT-Fold	
11	Four-Fold	
12	KANNON-Fold	
13	Perfect-Bind	
14	Ring-Bind	

8531	Staples	This SP counts the amount of staples used by the machine. [0 to 9999999/ **0** / 1]

8551	T: PrtBooks/FIN		
8552	O: PrtBooks/FIN		
8554	P: PrtBooks/FIN		
8556	L: PrtBooks/FIN		
	1	Perfect-Bind	**Not Used**
	2	Ring-Bind	**Not Used**

8581	T:Counter		[0 to 9999999/ **0** / 1]
	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.		

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.		
	1	A3/DLT	
	2	Duplex	

8601		Coverage Counter	[0 to 9999999/ **0** / 1]
		These SPs count the total coverage for each color and the total printout pages for each printing mode.	
	1	B/W	
	2	B/W Printing Pages	

8617		SDK Apli Counter	[0 to 9999999/ **0** / 1]
		These SPs count the total printout pages for each SDK applicaion.	
	1	SDK-1	
	2	SDK-2	
	3	SDK-3	
	4	SDK-4	
	5	SDK-5	
	6	SDK-6	

8621	Func Use Counter **DFU**
1 to 64	Function 001 to Function 064

8631		T:FAX TX PGS	[0 to 9999999/ **0** / 1]
		These SPs count by color mode the number of pages sent by fax to a telephone number.	
8633		F:FAX TX PGS	[0 to 9999999/ **0** / 1]
		These SPs count by color mode the number of pages sent by fax to a telephone number.	

- If a document has color and black-and-white pages mixed, the pages are counted separately as B/W or Color.

- At the present time, this feature is provided for the Fax application only so SP8631 and SP8633 are the same.

- The counts include error pages.

- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.

- Polling transmissions are counted but polling RX are not.

- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8641	T:IFAX TX PGS	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the number of pages sent by fax to as fax images using I-Fax.	
8643	F:IFAX TX PGS	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the number of pages sent by Fax as fax images using I-Fax.	

- If a document has color and black-and-white pages mixed, the pages are counted separately as B/W or Color.

- At the present time, this feature is provided for the Fax application only so SP8641 and SP8643 are the same.

- The counts include error pages.

- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.

- Polling transmissions are counted but polling RX are not.

- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8651	T:S-to-Email PGS	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the total number of pages attached to an e-mail for both the Scan and document server applications.	
8655	S:S-to-Email PGS	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the total number of pages attached to an e-mail for the Scan application only.	
1	B/W	
2	Color	

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]
	These SPs count by color mode the total number of pages sent to a Scan Router server by both Scan and LS applications.	
8665	S:Deliv PGS/Svr	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the total number of pages sent to a Scan Router server by the Scan application.	
1	B/W	
2	Color	

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]
	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.	
8675	S:Deliv PGS/PC	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the total number of pages sent with Scan-to-PC with the Scan application.	
1	B/W	
2	Color	

8681	T:PCFAX TXPGS	These SPs count the number of pages sent by PC Fax. These SPs are provided for the Fax application only, so the counts for SP8681 and SP8683 are the same. [0 to 9999999/ **0** / 1]
8683	F:PCFAX TXPGS	

- This counts pages sent from a PC using a PC fax application, from the PC through the copier to the destination.
- When sending the same message to more than one place using broadcasting, the pages are only counted once. (For example, a 10-page fax is sent to location A and location B. The counter goes up by 10, not 20.)

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. [0 to 9999999/ **0** / 1] 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	
8693	F: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 are counted for the application that stored them.
- When several documents are sent by a Fax broadcast, the F: count is done for the number of pages sent to each destination.

8701		TX PGS/Port	[0 to 9999999/ **0** / 1]
		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.	
	1	PSTN-1	
	2	PSTN-2	
	3	PSTN-3	
	4	ISDN (G3,G4)	

	5	Network

8711	T:Scan PGS/Comp	[0 to 9999999/ **0** / 1]
	These SPs count the number of compressed pages scanned into the document server, counted by the formats listed below.	
	1	JPEG/JPEG2000
	2	TIFF (Multi/Single)
	3	PDF
	4	Other
	5	PDF/Comp

8 715	S:Scan PGS/Comp	[0 to 9999999/ **0** / 1]
	These SPs count the number of compressed pages scanned by the scan application, counted by the formats listed below.	
	1	JPEG/JPEG2000
	2	TIFF (Multi/Single)
	3	PDF
	4	Other
	5	PDF/Comp

8721	T: Deliv PGS/WSD	[0 to 9999999/ **0** / 1]
8725	S: Deliv PGS/WSD	[0 to 9999999/ **0** / 1]
8731	T: Scan PGS/Media	[0 to 9999999/ **0** / 1]
8735	S: Scan PGS/Media	[0 to 9999999/ **0** / 1]
	1	B/W
	2	Color

8741		RX PGS/Port	[0 to 9999999/ **0** / 1]
		These SPs count the number of pages received by the physical port used to receive them.	
	1	PSTN-1	
	2	PSTN-2	
	3	PSTN-3	
	4	ISDN (G3,G4)	
	5	Network	

8771	Dev Counter	[0 to 9999999/ **0** / 1]
	These SPs count the frequency of use (number of rotations of the development rollers) for black and other color toners.	

8781	Toner_Bottl_Info.	[0 to 9999999/ **0** / 1]
	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. [0 to 100/ **0** / 1]

8801	Toner Remain	[0 to 100/ **0** / 1]
	This SP displays the percent of toner remaining for each color. This SP allows the user to check the toner supply at any time.	
	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.	

4

8851	Cvr Cnt: 0-10%	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages for each coverage range.	
11	0 to 2%:BK	
21	3 to 4%:BK	
31	5 to 7%:BK	
41	8 to 10%:BK	

8861	Cvr Cnt: 11-20%	[0 to 9999999/ **0** / 1]
	These SPs count the percentage of dot coverage for black other color toners.	
1	K	Black toner

8871	Cover Cnt: 21-30%	[0 to 9999999/ **0** / 1]
	These SPs count the percentage of dot coverage for black other color toners.	
1	K	Black toner

8881	Cover Cnt: 31% -	[0 to 9999999/ **0** / 1]
	These SPs count the percentage of dot coverage for black other color toners.	
1	K	Black toner

8891	Page/Toner Bottle **DFU**
8901	Page/Toner_Prev1 **DFU**
8911	Page/Toner_Prev2 **DFU**

8921	Cvr Cnt/Total	[0 to 9999999/ **0** / 1]
	Displays the total coverage and total printout number for each color.	
1	Coverage (%): BK	
11	Coverage / P: BK	

8941	Machine Status		[0 to 9999999/ **0** / 1]
	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.		
	1	Operation Time	Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).
	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.
	3	Energy Save Time	Includes time while the machine is performing background printing.
	4	Low Power Time	Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.
	5	Off Mode Time	Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.
	6	SC	Total down time due to SC errors.
	7	PrtJam	Total down time due to paper jams during printing.
	8	OrgJam	Total down time due to original jams during scanning.
	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.

1	User Code	User code registrations.	[0 to 9999999/ **0** / 1]
2	Mail Address	Mail address registrations.	
3	Fax Destination	Fax destination registrations.	
4	Group	Group destination registrations.	
5	Transfer Request	Fax relay destination registrations for relay TX.	
6	F-Code	F-Code box registrations.	
7	Copy Program	Copy application registrations with the Program (job settings) feature.	[0 to 255 / **0** / 255]
8	Fax Program	Fax application registrations with the Program (job settings) feature.	
9	Printer Program	Printer application registrations with the Program (job settings) feature.	
10	Scanner Program	Scanner application registrations with the Program (job settings) feature.	

8999	Admin. Counter List	[0 to 9999999/ **0** / 1]
	Displays the total coverage and total printout number for each color.	
1	Total	
3	Copy: BW	
7	Printer: BW	

10	Fax Print: BW
12	A3/DLT
13	Duplex
15	Coverage: BW (%)
17	Coverage: BW Print Page
101	Transmission Total: Color
102	Transmission Total: BW
103	FAX Transmission
104	Scanner Transmission: Color
105	Scanner Transmission: BW

4