Model DI-C1LL
Machine Code: D112

Field Service Manual

30 July, 2010

Important Safety Notices

Responsibilities of the Customer Engineer

Customer Engineer

Maintenance shall be done only by trained customer engineers who have completed service training for the machine and all optional devices designed for use with the machine.

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the "CE Safety Guide".
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Shipping and Moving the Machine

⚠CAUTION

- Work carefully when lifting or moving the machine. If the machine is heavy, two or more customer engineers may be required to prevent injuries (muscle strains, spinal injuries, etc.) or damage to the machine if it is dropped or tipped over.
- Personnel moving or working around the machine should always wear proper clothing and footwear. Never wear loose fitting clothing or accessories (neckties, loose sweaters, bracelets, etc.) or casual footwear (slippers, sandals, etc.) when lifting or moving the machine.
- Always unplug the power cord from the power source before you move the product. Before you move the product, arrange the power cord so it will not fall under the product.

Power

⚠WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

⚠CAUTION

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

⚠CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

⚠CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.

- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

⚠CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use "My Ace" Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin "Silicone Oil Removal" (A024-50).

Lithium Batteries

⚠WARNING

- Always replace a lithium battery on a PCB with the same type of battery prescribed for use on that board. Replacing a lithium battery with any type other than the one prescribed for use on the board could lead to an explosion or damage to the PCB.
- Never discard used batteries by mixing them with other trash. Remove them from the work site and dispose of them in accordance with local laws and regulations regarding the disposal of such items.

Ozone Filters

⚠CAUTION

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

Power Plug and Power Cord

⚠WARNING

- Before serving the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

⚠WARNING

- Never incinerate used toner or toner cartridges.

- Toner or toner cartridges thrown into a fire can ignite or explode and cause serious injury. At the work site always carefully wrap used toner and toner cartridges with plastic bags to avoid spillage before disposal or removal.

⚠CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.
- Return used selenium drums to the service center for handling in accordance with company policy regarding the recycling or disposal of such items.

Points to Confirm with Operators

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

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Special Safety Instructions for Toner

Accidental Physical Exposure

⚠CAUTION

- 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.

Handling and Storing Toner

⚠WARNING

- Toner, used toner, and developer are extremely flammable.
- Never store toner, developer, toner cartridges, or toner bottles (including empty toner bottles or cartridges) in a location where they will be exposed to high temperature or an open flame.

⚠CAUTION

- 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.

Toner Disposal

⚠WARNING

- Never attempt to incinerate toner, used toner, or empty toner containers (bottles or cartridges). Burning toner can explode and scatter, causing serious burns.
- Always wrap used toner and empty toner bottles and cartridges in plastic bags to avoid spillage. Follow the local laws and regulations regarding the disposal of such items.
- Dispose of used toner and toner cartridges at one of our dealers or at an authorized collection site. Always dispose of used toner cartridges and toner bottles in accordance with the local laws and regulations regarding the disposal of such items.

Safety Instructions for this Machine

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.
2. The NVRAM on the system control board has a lithium battery which can explode if replaced incorrectly. Replace the NVRAM only with an identical one. The manufacturer recommends replacing the entire NVRAM. Do not recharge or burn this battery. Used NVRAM must be handled in accordance with local regulations.

Safety and Ecological Notes for Disposal

1. Do not incinerate toner bottles or used toner. Toner dust may ignite suddenly when exposed to an open flame.

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

⚠CAUTION

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

Laser Safety

The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser-based optical units in the field. The optical housing unit can only be repaired in a factory or at a location with the requisite equipment. The laser subsystem is replaceable in the field by a qualified Customer Engineer. The laser chassis is not repairable in the field. Customer engineers are therefore directed to return all chassis and laser subsystems to the factory or service depot when replacement of the optical subsystem is required.

⚠WARNING

- **Use of controls, or adjustment, or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.**

⚠WARNING

- WARNING: Turn off the main switch before attempting any of the procedures in the Laser Optics Housing Unit section. Laser beams can seriously damage your eyes.
- CAUTION MARKING:

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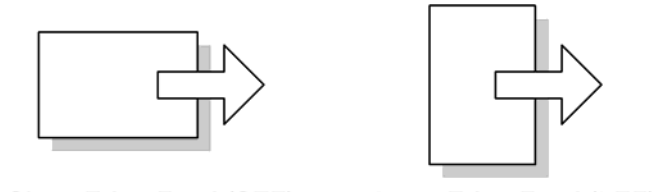
Symbols, Abbreviations and Trademarks

This manual uses several symbols and abbreviations. The meaning of those symbols and abbreviations are as follows:

	See or Refer to
	Clip ring
	Screw
	Connector
	Clamp
	E-ring
SEF	Short Edge Feed
LEF	Long Edge Feed



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

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4. Replacement and Adjustment

5. System Maintenance

6. Troubleshooting

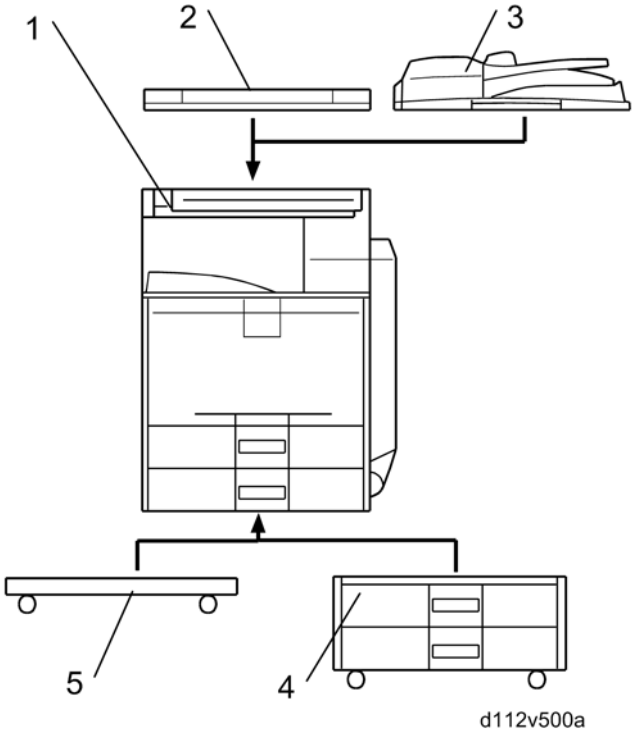
1. Product Information

Specifications

See "Appendices" for the following information:

- Mainframe Specifications
- Printer Specifications
- Scanner Specifications
- Supported Paper Sizes
- Software Accessories
- Optional Equipment

Machine Configuration



Item	Machine Code	Call out	Remarks
Mainframe	D112	[1]	
Platen cover	G329	[2]	One from the two; [3] is standard for NA and EU
ARDF	D366	[3]	
Two-tray paper feed unit	D331	[4]	One from [4] or [5]
Caster Table	D448	[5]	

Item	Machine code	Remark
Copy Data Security Unit	B829	-
Optional Counter Interface Unit	B870	-
Printer Enhanced Option	D435-05	You can only install one of these in SD slot 1 at a time
PictBridge	M344	

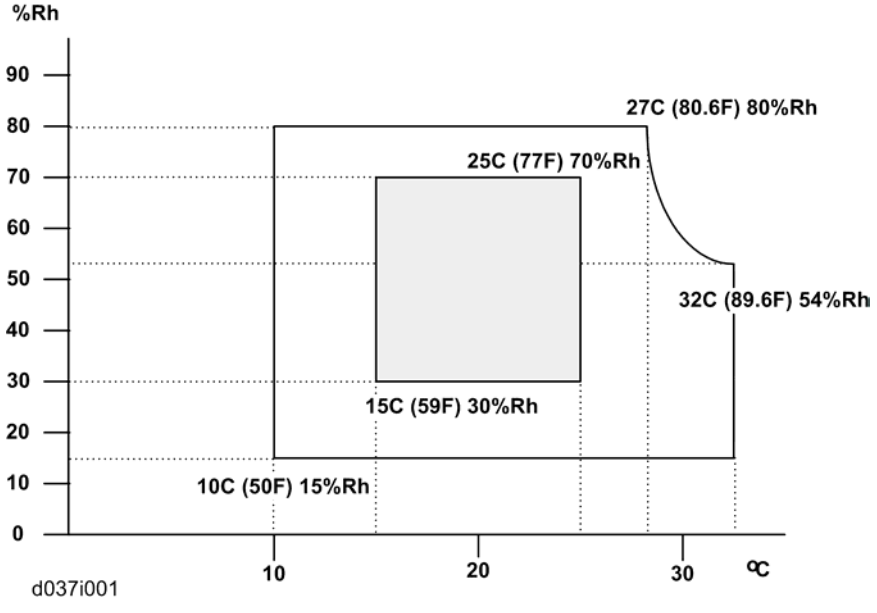
Overview

For "Overview" information, see "Appendices".

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 1500 lux (do not expose to direct sunlight)
4. Ventilation: 3 times/hr/person or more
5. Do not let the machine get exposed to the following:
   1) Cool air from an air conditioner
   2) Heat from a heater
6. Do not install the machine in areas that are exposed to corrosive gas.
7. Install the machine at locations lower than 2,500 m (8,200 ft.) above sea level.
8. Install the machine on a strong, level base. (Inclination on any side must be no more than 5 mm.)
9. Do not install the machine in areas that get strong vibrations.

Machine Level

Front to back: Within 5 mm (0.2")

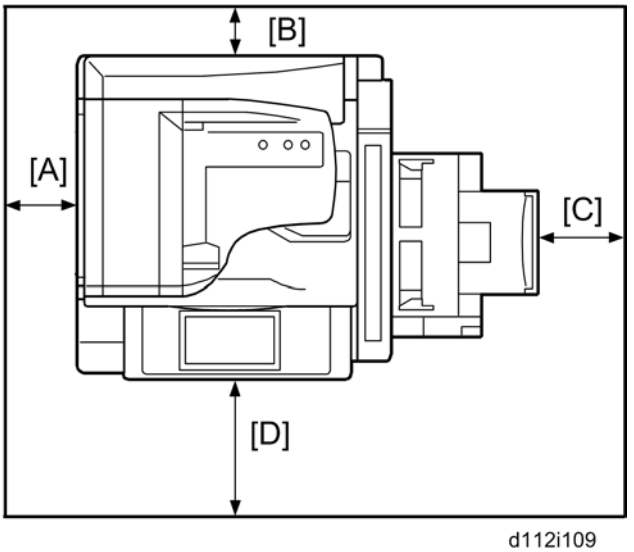
Right to left: Within 5 mm (0.2")

2

Machine Space Requirements

⚠CAUTION

- This machine, which uses high voltage power sources, can generate ozone gas. High ozone density is harmful to human health. Therefore, the machine must be installed in a well-ventilated room.



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A: Over 100 mm (3.9")

B: Over 100 mm (3.9")

C: Over 100 mm (3.9")

D: Over 100 mm (3.9")

Put the machine near the power source with the clearance shown above.

Power Requirements

⚠CAUTION

- Insert the plug firmly in the outlet.
- Do not use an outlet extension plug or cord.

- Ground the machine.

1. Input voltage level:

- 220 V to 240 V, 50 Hz/60 Hz: More than 8 A

1. Permissible voltage fluctuation: ±10 %
2. Do not put things on the power cord.

Optional Unit Combinations

Machine Options

No.	Options	Remarks
1	2-tray paper feed unit	One from No.1 or No.2
2	Caster table	
3	Platen cover	One from No.3 or No.4
4	ARDF	

Controller Options

No.	Options	Remarks
5	Printer Enhanced Option	One of these (SD card slot 1)
6	PictBridge	
7	Copy Data Security Unit	-
8	Optional Counter Interface Unit Type A	-
9	Key Counter Bracket Type H	-

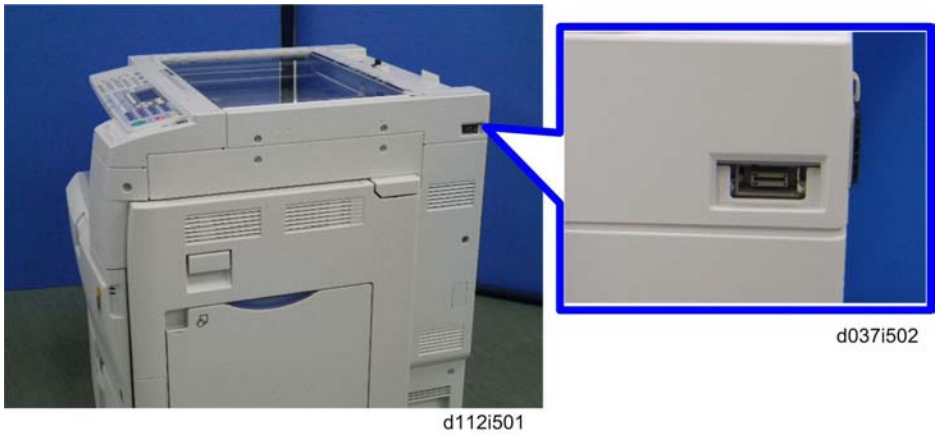
Copier Installation

Power Sockets for Peripherals

⚠CAUTION

Rating voltage for peripherals.

Make sure to plug the cables into the correct sockets.



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[1] ARDF: Rating voltage output connector for accessory Max. DC24V

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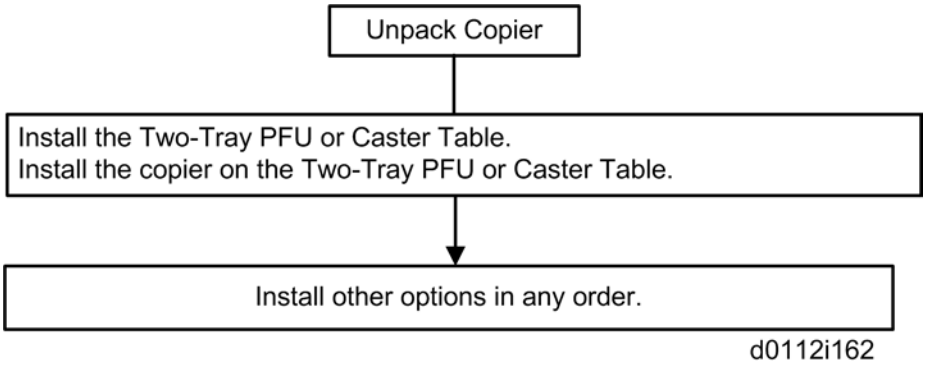
[2] Finisher: Rating voltage output connector for accessory Max. DC24V

Installation Flow Chart

This flow chart shows the best procedure for installation.



Accessory Check

Check the quantity and condition of these accessories.

No.	Description	Q'ty
1.	Certification	1
2.	Warranty Sheet (Chinese)	1
3.	Operating Instruction – About this machine	1
4.	Operating Instruction – Troubleshooting	1
5.	Operating Instruction – Quick Reference Copy Guide	1
6.	Operating Instruction – Quick Reference Printer Guide	1
7.	Operating Instruction – Quick Reference Scanner Guide	1
8.	Operating Instruction – Quick Reference Printer & Scanner Guide	1
9.	CD-ROM Instruction – About this machine	1
10.	CD-ROM Instruction – Troubleshooting	1
11.	CD-ROM Instruction –Copy/Document Server Reference	1
12.	CD-ROM Instruction –Printer Reference	1
13.	CD-ROM Instruction –Scanner Reference	1
14.	CD-ROM Instruction – Printer & Scanner Reference	1
15.	CD-ROM Instruction – Network & General Setting Guide	1

No.	Description	Q'ty
16.	CD-ROM Instruction – Security Reference	1

Installation Procedure

⚠CAUTION

- Remove the tapes from the development units before you turn the main switch on. The development units can be severely damaged if you do not remove the tapes.

Put the machine on the paper tray unit first if you install an optional paper tray unit at the same time. Then install the machine and other options.

Note

- Keep the shipping retainers after you install the machine. You may need them in the future if you transport the machine to another location.

Tapes and Retainers

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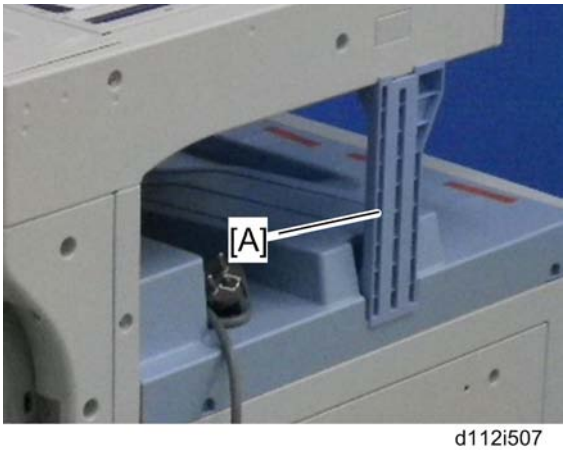
1. Remove all the tapes and retainers on the machine.
2. Remove all the tapes and retainers in trays 1 and 2.



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3. Remove the scanner unit stay [A].
4. Keep the scanner unit stay in the cutout in the inner tray.

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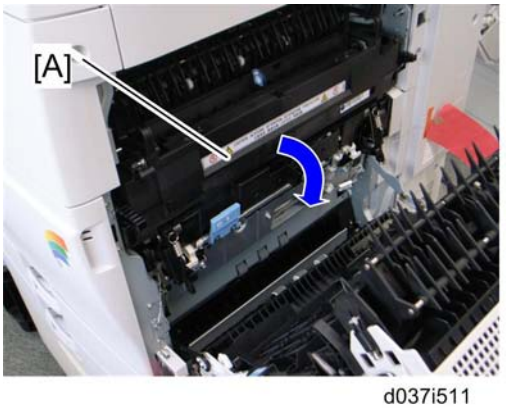
5. Open the right door [A].
6. Remove the sheet of paper [B].



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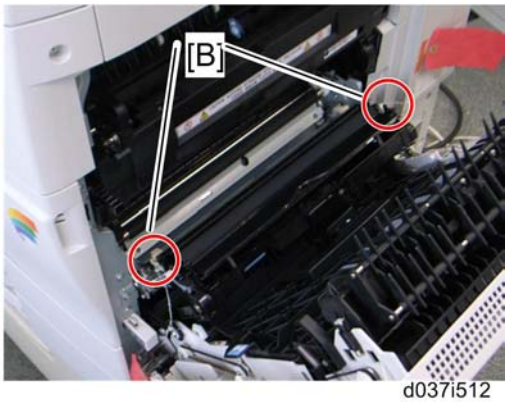

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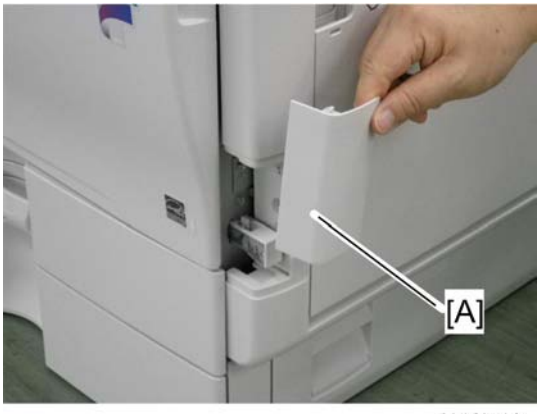
7. Open the paper transfer unit [A].

8. Remove the front and rear stoppers [B] with a red tag.
9. Close the right door.



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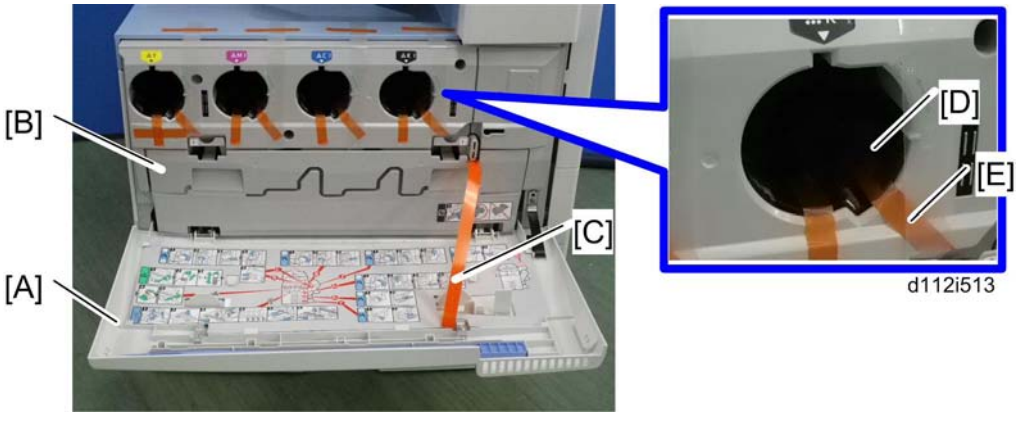
10. Attach the handle cover [A] to the front side of the right door.

Developer and Toner Bottles



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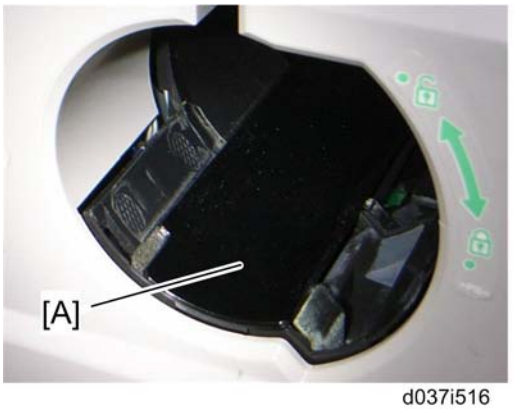
1. Open the front door [A] and remove the PCDU toner collection bottle [B].
2. Remove all tapes except the tape [C] from the four development units and from the toner hopper units.

Note

- Do not remove the tape [C] at this moment. You will find how to remove this tape later.
- The toner hopper cover [D] is removed with tape [E].
- Make sure that the all toner hopper covers are removed, when removing all tapes.



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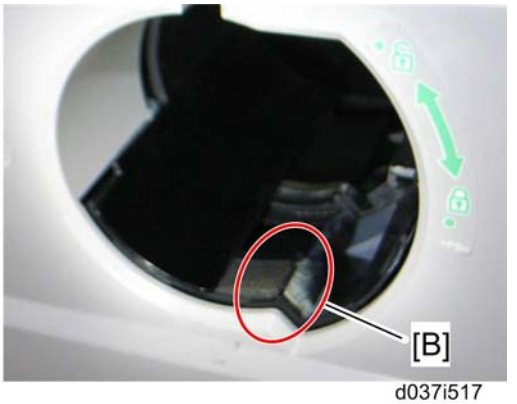

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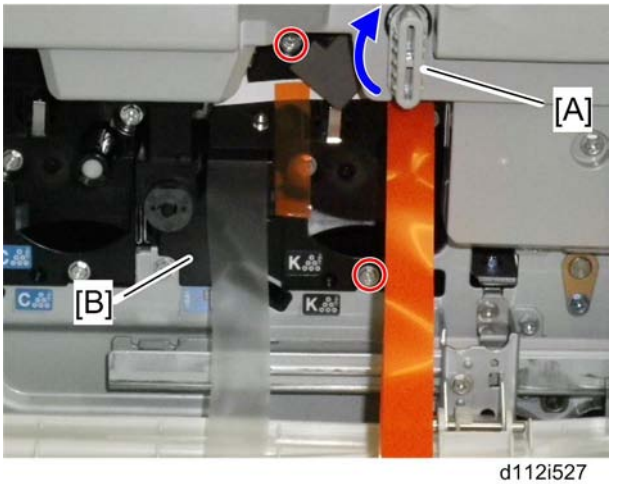
3. Check if the toner hopper shutter [A] is fully closed.

Note

- If the toner hopper shutter is not fully closed and the inlet [B] of the toner hopper unit is visible, the toner bottle cannot be installed properly.



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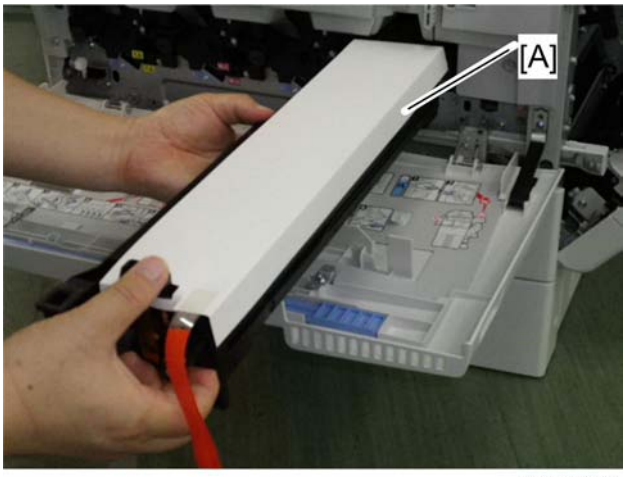
4. Press the ITB lock lever [A] and turn it up as shown above.
5. Remove the black PCDU [B] (x 2).



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6. Remove the cover sheet [A] from the black PCDU.
7. Reinstall the black PCDU into the mainframe (x 2).
8. Reinstall the PCDU toner collection bottle.
9. Shake each toner bottle five or six times.
10. Slide the toner bottles in toner bottle cartridges, then turn each one to the right (clockwise).
11. Close the front door.

Paper Trays

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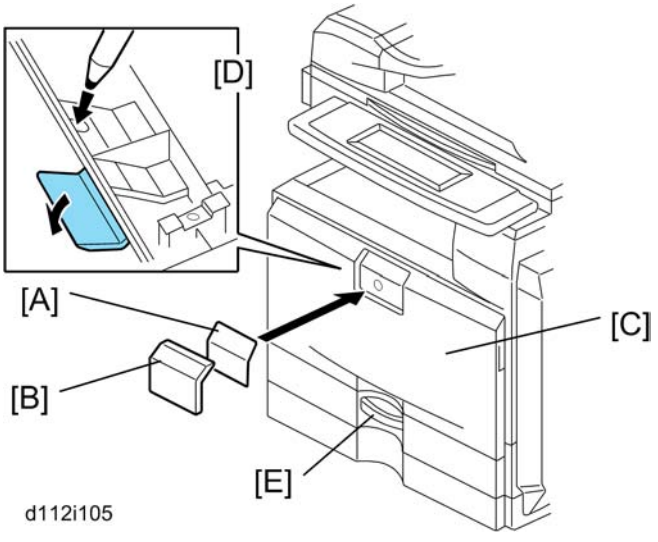
1. Pull each paper tray [A] out. Then adjust the side guides and end guide to match the paper size.

Note

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

Emblem and Decals



1. Attach the correct emblem [A] and the cover [B] to the front door [C] of the machine, if the emblem is not attached.

Note

- If you want to change the emblem that has been already attached, remove the panel with an object (not a sharp object) as shown [D], and then install the correct emblem.

2. Attach the correct paper tray number and size decals to the paper tray [E].

Note

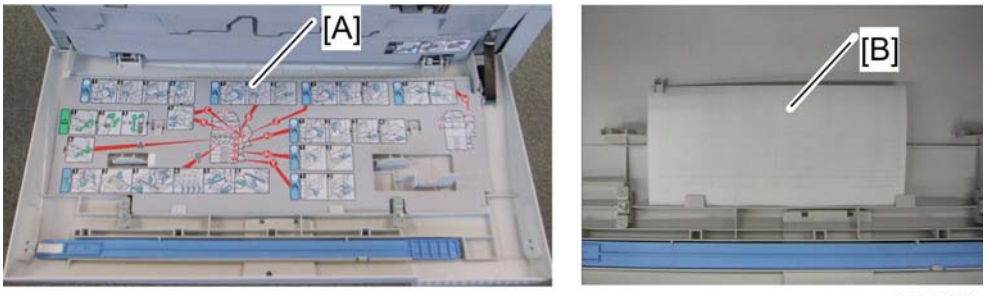
- Paper tray number and size decals are also used for the optional paper tray or the optional LCT. Keep these decals for use with these optional units.

Initialize the Developer

1. Make sure that the platen or ARDF is closed and the main power is turned off.
2. Plug in the machine.
3. Turn the main power switch on. The machine automatically starts the initialization procedure. The Start button LED (⏲) turns green when this procedure has finished.
4. Make copies of image samples (text, photo, and text/photo modes).
5. Do the Automatic Color Calibration process (ACC) for each mode (Copy mode, Printer 600 x 600 dpi, Printer 1800 x 600 dpi, and Printer 1200 x 1200 dpi) as follows ((Printer 1200 x 1200 dpi is for D038/D041 only):
   - 1) Print the ACC test pattern (User tools > Maintenance > ACC > Start).
   - 2) Put the printout on the exposure glass.

- 3) Put 10 sheets of white paper on top of the test chart.
- 4) Close the ARDF or the platen cover.
- 5) Press "Start Scanning" on the LCD panel. The machine starts the ACC.

6. Check that the sample image has been copied normally.
7. Open the front cover.



d037i136

8. Remove the instruction guide sheet [A], and make sure the SMC report [B] is stored as shown above. Then replace the instruction guide sheet.

Settings Relevant to the Service Contract

Change the necessary settings for the following SP modes if the customer has made a service contract.

Note

- You must select one of the counter methods (developments/prints) in accordance with the contract (☛ SP5045-001).

Counting method		
SP No.	Function	Default
SP5-045-001	Specifies if the counting method used in meter charge mode is based on developments or prints. NOTE: You can set this one time only. You cannot change the setting after you have set it for the first time.	"0": Developments
A3/11" x 17" double counting		
SP No.	Function	Default
SP5-104-001	Specifies whether the counter is doubled for A3/11" x 17" paper. When you have to change this setting, contact your supervisor.	"No": Single counting
Service Tel. No. Setting		

SP No.	Function	Default
SP5-812-001 through 004	5812-002 programs the service station fax number. The number is printed on the counter list when the meter charge mode is selected. This lets the user fax the counter data to the service station.	

Settings for @Remote Service

Note

- Prepare and check the following check points before you visit the customer site. For details, ask the @Remote key person.

Check points before making @Remote settings

1. The setting of SP5816-201 in the mainframe must be "0".
2. Print the SMC with SP5990-002 and then check if a device ID2 (SP5811-003) must be correctly programmed.
   - 6 spaces must be put between the 3-digit prefix and the following 8-digit number (e.g. xxx_____xxxxxxxx).
   - ID2 (SP5811-003) and the serial number (SP5811-001) must be the same (e.g. ID2: A01_____23456789 = serial No. A0123456789)
3. The following settings must be correctly programmed.
   - Proxy server IP address (SP5816-063)
   - Proxy server Port number (SP5816-064)
   - Proxy User ID (SP5816-065)
   - Proxy Password (SP5816-066)
4. Get a Request Number

Execute the @Remote Settings

1. Enter the SP mode.
2. Input the Request number which you have obtained from @Remote Center GUI, and then enter [OK] with **SP5816-202**.
3. Confirm the Request number, and then click [EXECUTE] with **SP5816-203**.
4. Check the confirmation result with **SP5816-204**.

Value	Meaning	Solution/ Workaround
0	Succeeded	-
1	Request number error	Check the request number again.

Value	Meaning	Solution/ Workaround
3	Communication error (proxy enabled)	Check the network condition.
4	Communication error (proxy disabled)	Check the network condition.
5	Proxy error (Illegal user name or password)	Check Proxy user name and password.
6	Communication error	Check the network condition.
8	Other error	See "SP5816-208 Error Codes" below this.
9	Request number confirmation executing	Processing... Please wait.

5. Make sure that the screen displays the Location Information with **SP5816-205** only when it has been input at the Center GUI.
6. Click [EXECUTE] to execute the registration with **SP5816-206**.
7. Check the registration result with **SP5816-207**.

Value	Meaning	Solution/ Workaround
0	Succeeded	-
1	Request number error	Check the request number again.
2	Already registered	Check the registration status.
3	Communication error (proxy enabled)	Check the network condition.
4	Communication error (proxy disabled)	Check the network condition.
5	Proxy error (Illegal user name or password)	Check Proxy user name and password.
8	Other error	See "SP5816-208 Error Codes" below this.
9	Request number confirmation executing	Processing... Please wait.

8. Exit the SP mode.

SP5816-208 Error Codes

Cause	Code	Meaning	Solution/ Workaround
Operation Error, Incorrect Setting	-12002	Inquiry, registration attempted without acquiring Request No.	Obtain a Request Number before attempting the Inquiry or Registration.
	-12003	Attempted registration without execution of a confirmation and no previous registration.	Perform Confirmation before attempting the Registration.
	-12004	Attempted setting with illegal entries for certification and ID2.	Check ID2 of the mainframe.
	-12005	@Remote communication is prohibited. The device has an Embedded RC gate-related problem.	Make sure that "Remote Service" in User Tools is set to "Do not prohibit".
	-12006	A confirmation request was made after the confirmation had been already completed.	Execute registration.
	-12007	The request number used at registration was different from the one used at confirmation.	Check Request No.
	-12008	Update certification failed because mainframe was in use.	Check the mainframe condition. If the mainframe is in use, try again later.

Cause	Code	Meaning	Solution/ Workaround
Error Caused by Response from GW URL	-2385	Other error	
	-2387	Not supported at the Service Center	
	-2389	Database out of service	
	-2390	Program out of service	
	-2391	Two registrations for the same mainframe	Check the registration condition of the mainframe
	-2392	Parameter error	
	-2393	External RCG not managed	
	-2394	Mainframe not managed	
	-2395	Box ID for external RCG is illegal.	
	-2396	Mainframe ID for external RCG is illegal.	
	-2397	Incorrect ID2 format	Check the ID2 of the mainframe.
	-2398	Incorrect request number format	Check the Request No.

Moving the Machine

This section shows you how to manually move the machine from one floor to another floor. See the section "Transporting the Machine" if you have to pack the machine and move it a longer distance.

- Remove all trays from the optional paper feed unit.

Transporting the Machine

Main Frame

1. Do SP 4806-001 to move the scanner carriage from the home position. This prevents dust from falling into the machine during transportation.
2. Make sure there is no paper left in the paper trays. Then fix down the bottom plates with a sheet of paper and tape.
3. Do one of the following:

- Attach shipping tape to the covers and doors.
- Shrink-wrap the machine tightly.

Note

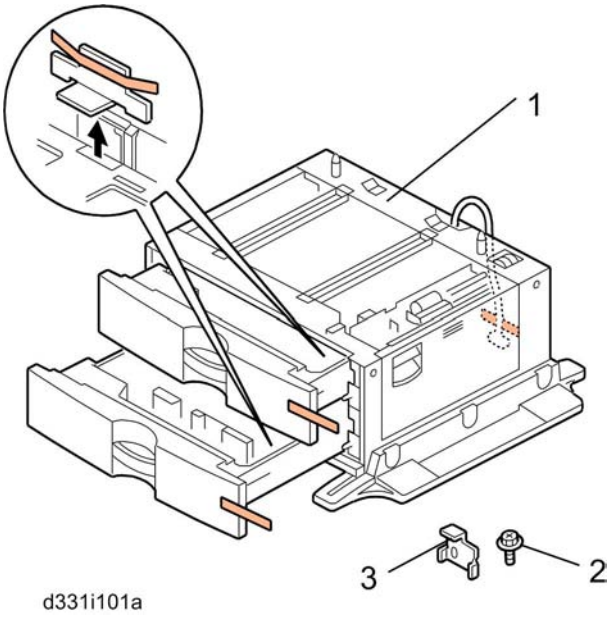
- After you move the machine, Make sure you do the "Auto Color Registration" as follows. This optimizes color registration.
- Do the "Forced Line Position Adj. Mode c" (SP2-111-3).
- Then do the "Forced Line Position Adj. Mode a" (SP2-111-1).
  To check if SP 2-111-1 was successful, watch the screen during the process. A message is displayed at the end. Also, you can check the result with SP 2-194-10 to -12.
- Make sure that the side fences in the trays are correctly positioned to prevent color registration errors.

Paper Feed Unit (D331)

Accessory Check

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

No.	Description	Q'ty
1	Paper Feed Unit	1
2	Screw - M4 x 10	4
3	Securing Bracket	2

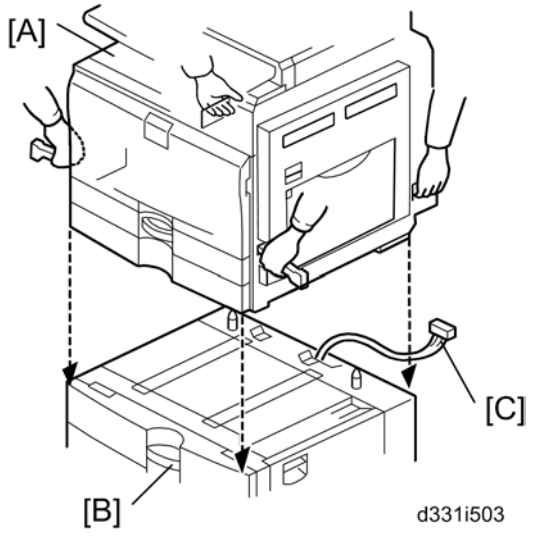


Installation Procedure

⚠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.

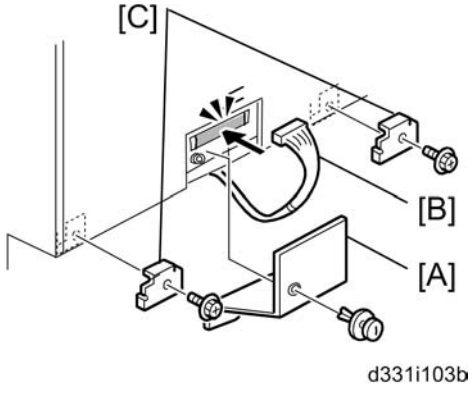
1. Remove the strips of tape.



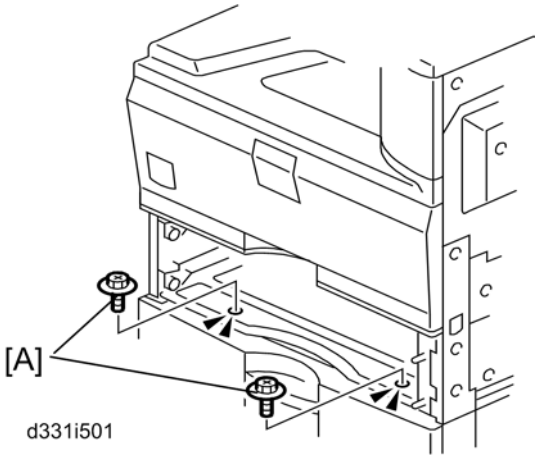
2. Set the copier [A] on the paper tray unit [B].

Note

- When installing the copier, be careful not to pinch the cable [C].



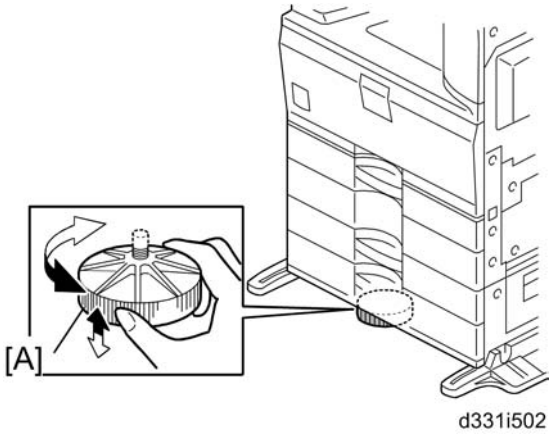
3. Remove the connector cover [A] (rivet screw x 1).
4. Connect the cable [B] to the copier, as shown.
5. Attach a securing bracket [C] to each side of the paper tray unit, as shown (x 1: M3 x 8 each).
6. Re-install the connector cover.



7. Remove the tray 1 (☛ p.189).
    - Loosen the screws at right and left rails.
8. Remove the front lower cover (☛ p.101).
9. Secure the paper tray unit with two screws (M4 x 10) [A].
10. Reinstall all the paper trays.
11. Attach the appropriate paper tray number decal and paper size decal to each handle of the trays.

Note

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



12. Rotate the adjuster [A] until the machine cannot be pushed across the floor.
13. Load paper into the paper trays and select the proper paper size.
14. Turn on the main switch.
15. Adjust the registration for each tray (☛ p.79 "Image Adjustment").
    - For tray 2, use SP1002-004

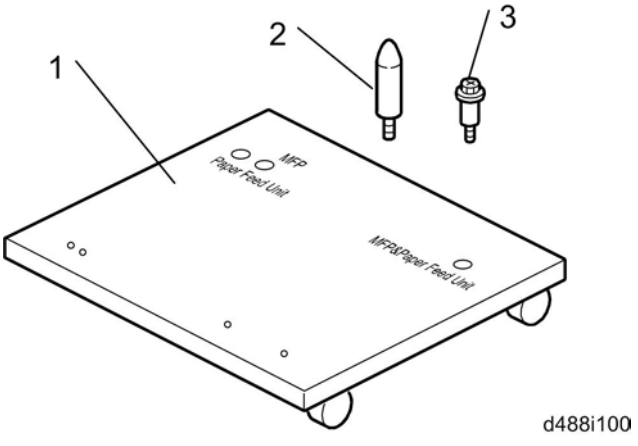
- For tray 3, use SP1002-005

16. Check the machine's operation and copy quality.

Caster Table (D448)

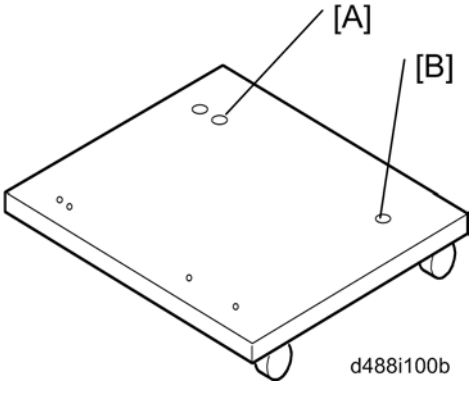
Component Check

No.	Description	Q'ty
1	Caster Table	1
2	Pin	2
3	Step Screw	2

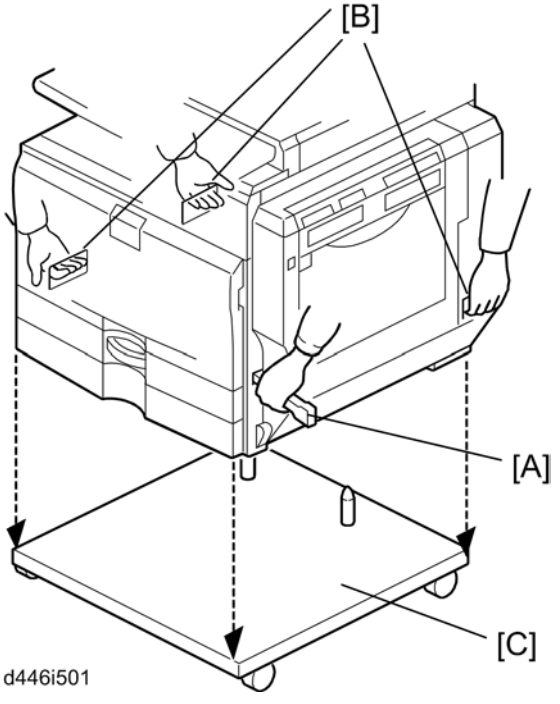


Installation Procedure

1. Put the caster table on a flat place.



2. Install the two pins in the screw holes [A] [B].

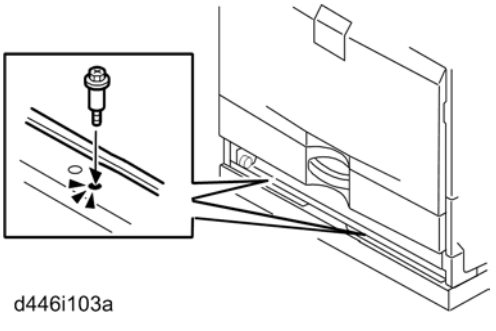


3. Grasp the handle [A] and grips [B] of the machine.

Note

- Hold the handle and grips of the machine when you lift and move the machine.

4. Lift the copier, and then install it on the caster table [C].
5. Remove the front lower cover (p.101).



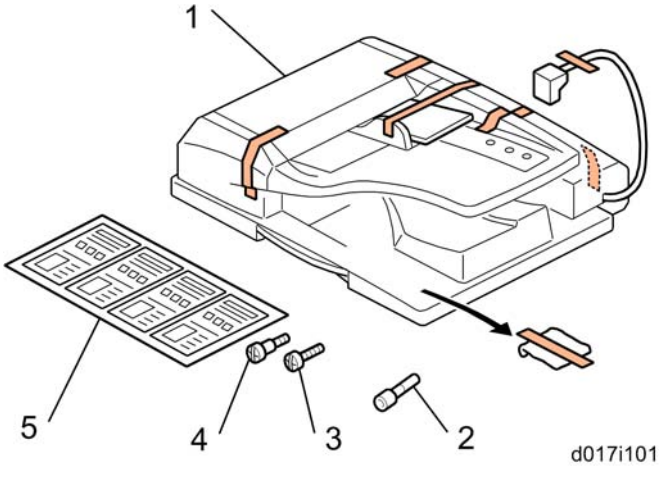
6. Secure the machine to the caster table (step screw x 2)
7. Reinstall the tray and front lower cover in the mainframe.
8. Adjust the five leveling adjustors of the caster table.

ARDF (D366)

Component Check

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

No.	Description	Q'ty
1	ARDF	1
2	Stamp Cartridge	1
3	Knob Screw	2
4	Stud Screw	2
5	Attention Decal – Top Cover	1

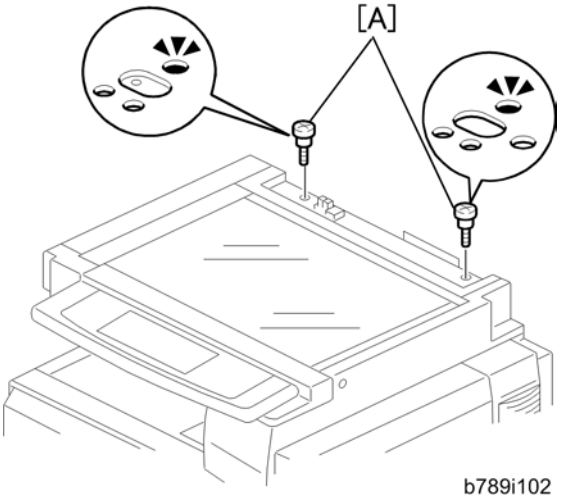


Installation Procedure

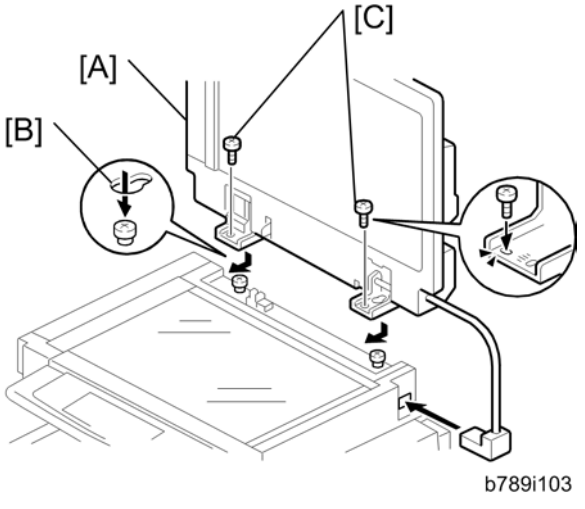
⚠CAUTION

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

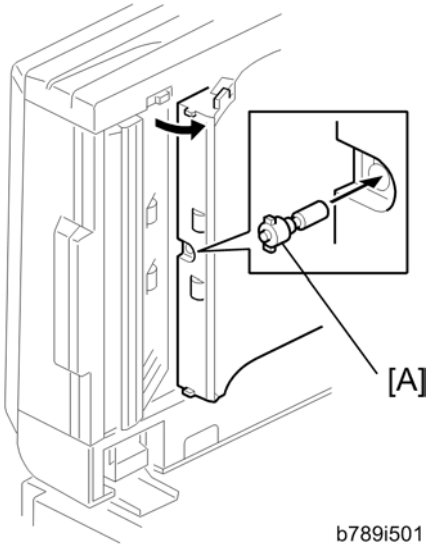
1. Remove all tapes and shipping retainers.



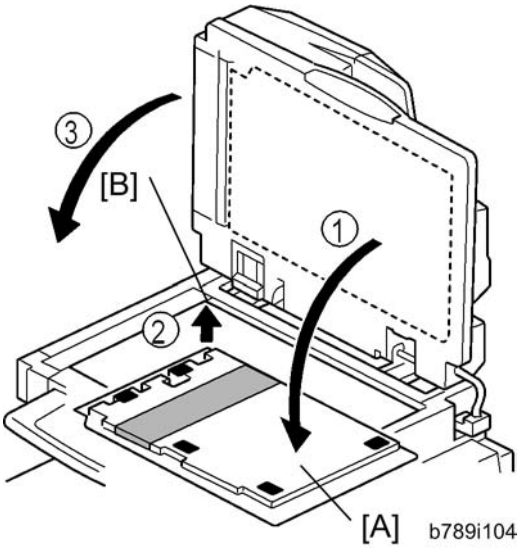
2. Insert the two stud screws [A] on the top of the machine.



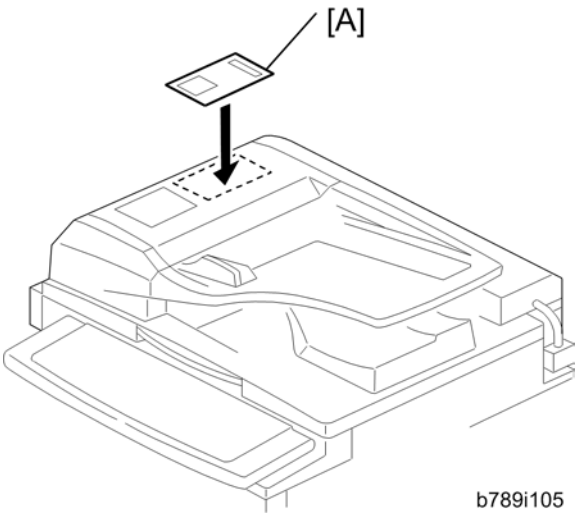
3. Mount the ARDF [A] by aligning the screw keyholes [B] of the ARDF support plate over the stud screws.
4. Slide the ARDF toward the front of the machine.
5. Secure the ARDF with the two knob screws [C].



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

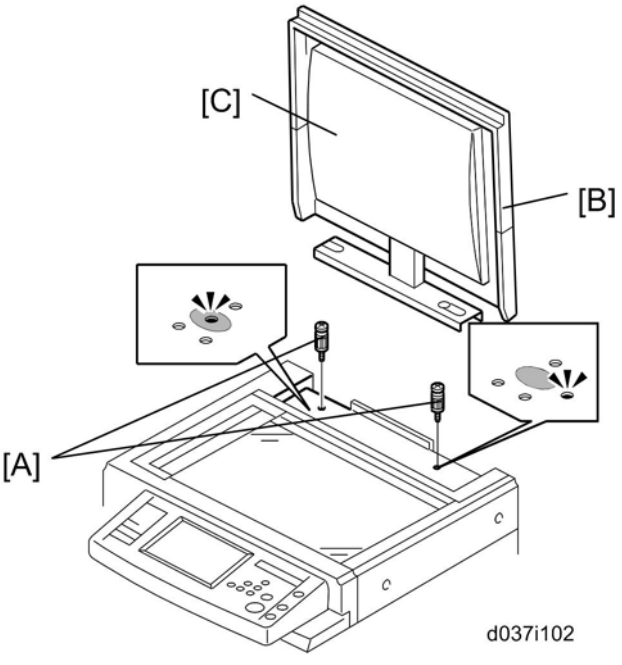


7. Peel off the platen sheet [A] and place it on the exposure glass.
8. Align the rear left corner (of the platen sheet) with the corner [B] on the exposure glass.
9. Close the ARDF.
10. Open the ARDF and check that the platen sheet is correctly attached.



11. Attach the decal [A] to the top cover as shown. Choose the language that you want.
12. Plug in and turn on the main power switch of the machine, and then check the ARDF operation.
13. 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 (see p.79 "Image Adjustment" in the "Replacements and Adjustments" chapter).

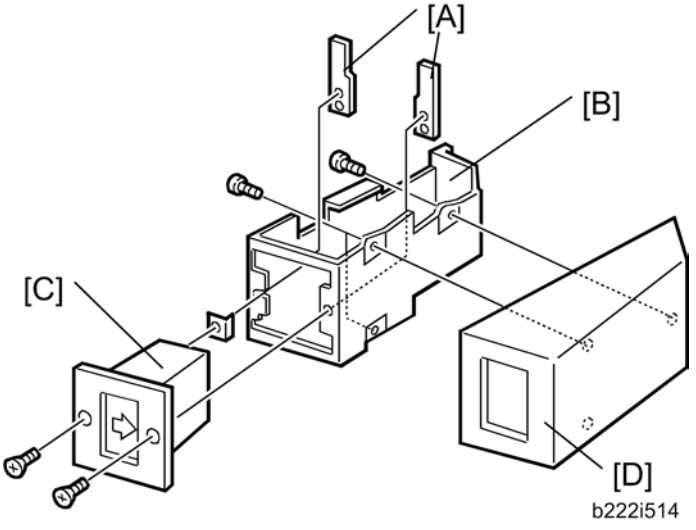
Platen Cover Installation (G329)



1. Install the stud screws [A] (x 2) on the top cover as shown.
2. Position the platen cover bracket [B] on the heads of the stud screws, and slide the platen cover [C] to the left.

Key Counter Bracket

Installation Procedure

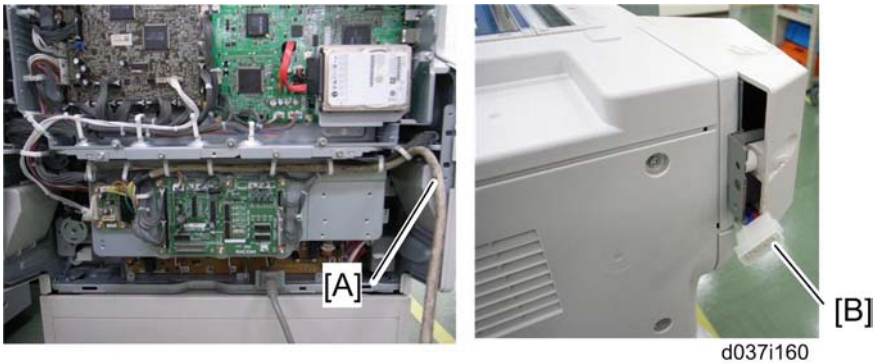


1. Hold the key counter plate nuts [A] on the inside of the key counter bracket [B] and insert the key counter holder [C].
2. Secure the key counter holder to the bracket (x 2).
3. Install the key counter cover [D] (x 2).
4. Rear cover (p.94)

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

d037i161

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



d037i160

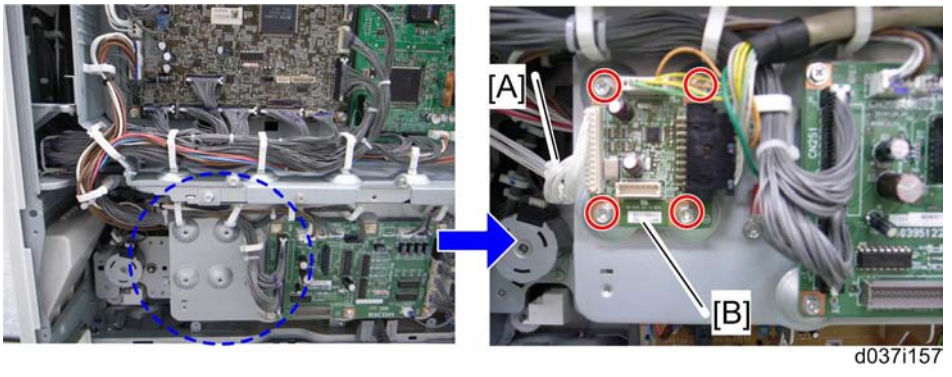
7. Connect the key counter cable [A] to the connector [B].
8. Reassemble the machine.

Key Counter Interface Unit

Installation Procedure

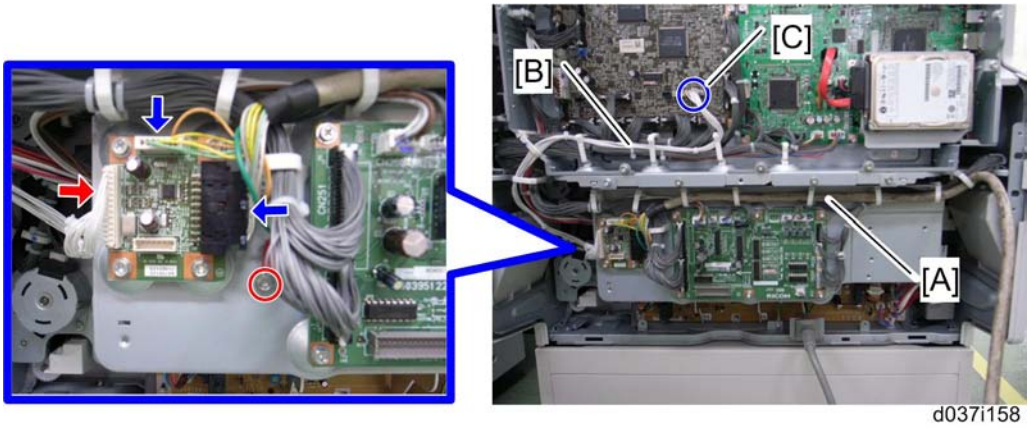
d037i156

1. Rear cover (☛ p.94)
2. Rear lower cover (☛ p.94)
3. Cut off the part [A] of the rear cover.



d037i157

4. Attach the clamp [A] to the DRB bracket.
5. Install the key counter interface board [B] on the DRB bracket (x 4).



d037i158

6. Connect and route the key counter cable [A] to the connector on the key counter interface board as shown above (ground screw x 1, x 6).
7. Connect and route the harness [B] to the connector on the key counter interface board and connector CN216 [C] on the BCU (x 5)

d037i159

8. Pull the key counter cable through from the cutout and connect it to the connector [A] of the key counter unit.
9. Reassemble the machine.

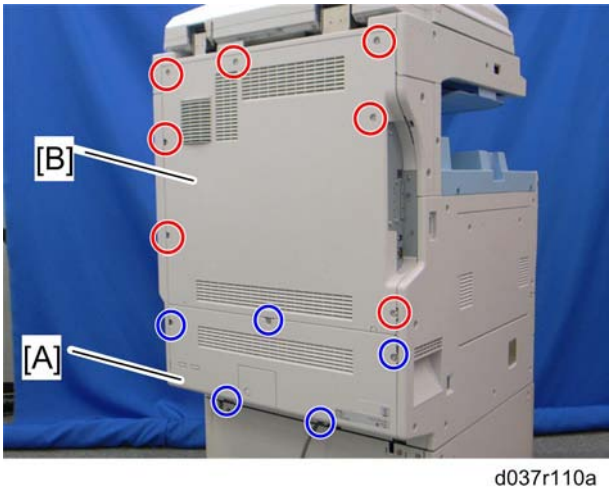
Copy Data Security Unit Type F (B829)

Installation

2

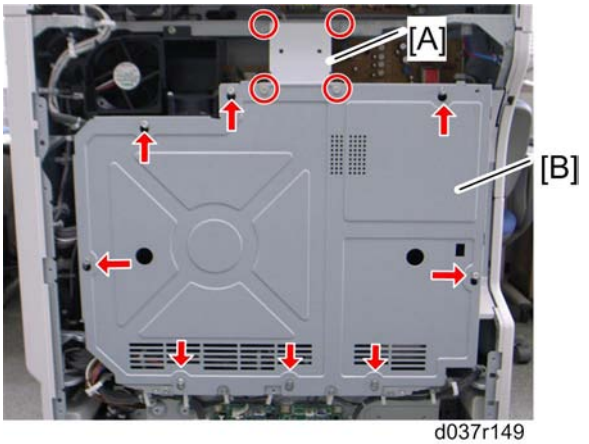
⚠CAUTION

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



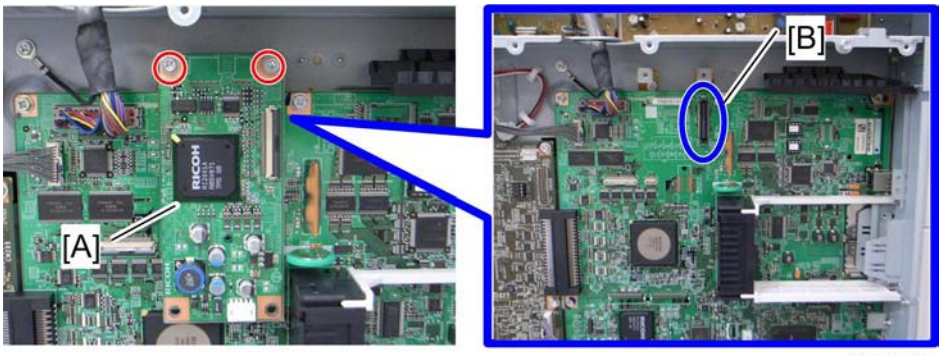
d037r110a

1. Remove the rear lower cover [A] of the machine (x 5).
2. Remove the rear cover [B] of the machine (x 7)



d037r149

3. Scanner cable bracket [A] (x 4)
4. Loosen the eight screws, and slide up the controller box cover [B].



5. Attach the ICIB-3 (copy data security board) [A] to CN 504 [B] on the BCU (x 2).
6. Reassemble the machine.

User Tool Setting

1. Plug in 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 the machine is powered on with the defective ICIB-3 and the "Data Security for Copying" feature set to "OFF".
- When you remove this option from the machine, first set the setting 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. And then SC165 will appear every time the machine is switched on, and the machine cannot be used.

Make sure that the machine can recognize the option (see "Check All Connections" at the end of this section).

Anti-Condensation Heater

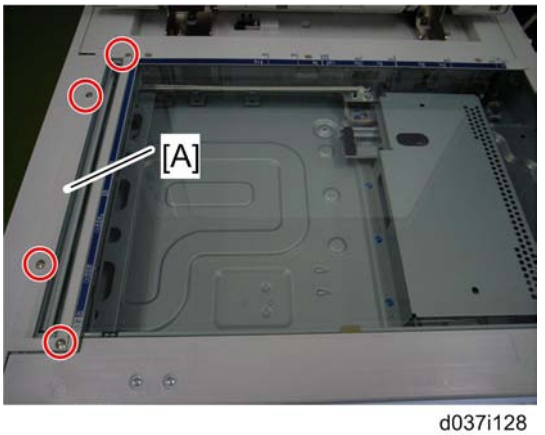
Installation Procedure

2

Note

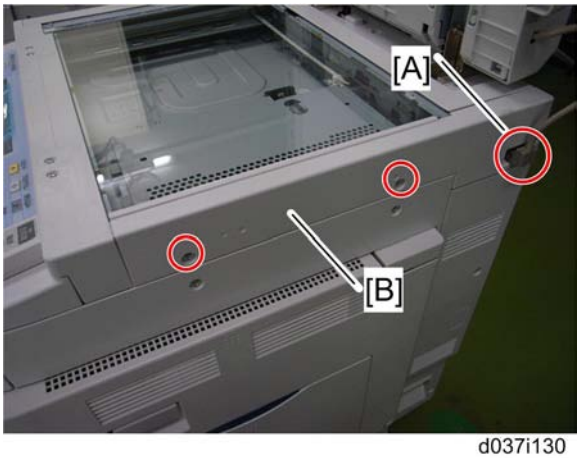
- This heater is supplied as a spare part.

1. Rear cover (☛ p.94)
2. Open the ARDF or platen cover.



d037i128

3. Glass cover [A] (stepped screw x 4)



d037i130

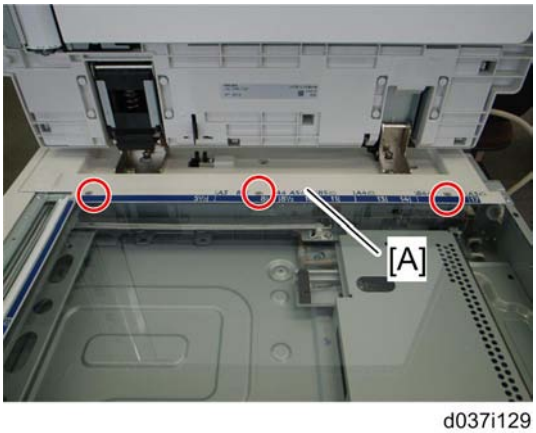
4. Disconnect the DF I/F cable [A].
5. Scanner right cover [B] (x 2)

d037r125 d037r126

6. ARDF exposure glass [A]

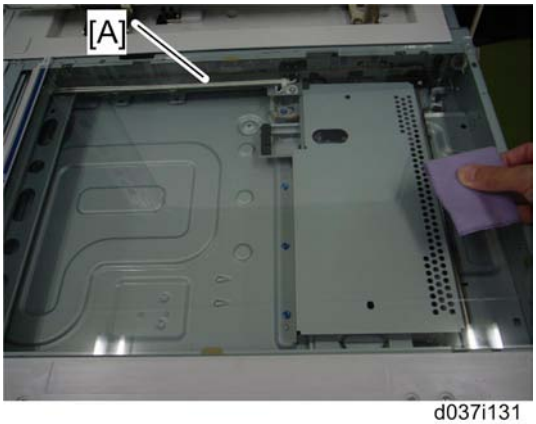
Note

- Position the white marker [B] at the rear-left corner when you reattach the ARDF exposure glass.



d037i129

7. Rear scale [A] (stepped screw x 3)

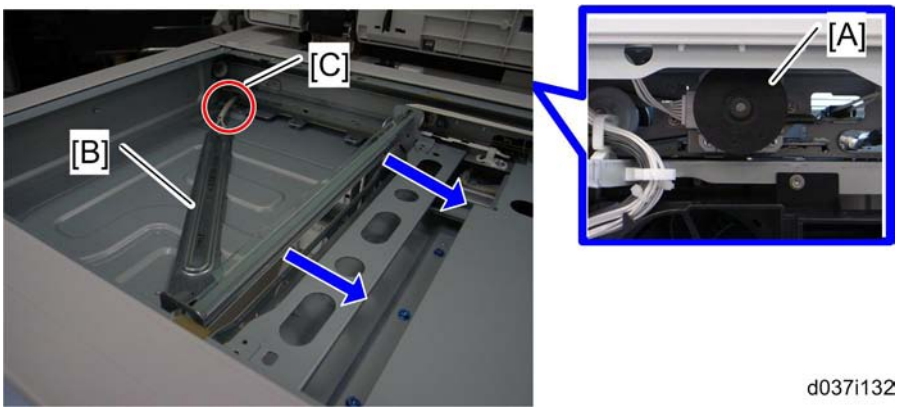


d037i131

8. Exposure glass [A] with left scale.

Note

- Position the marker at the front-left corner when you reattach the exposure glass.

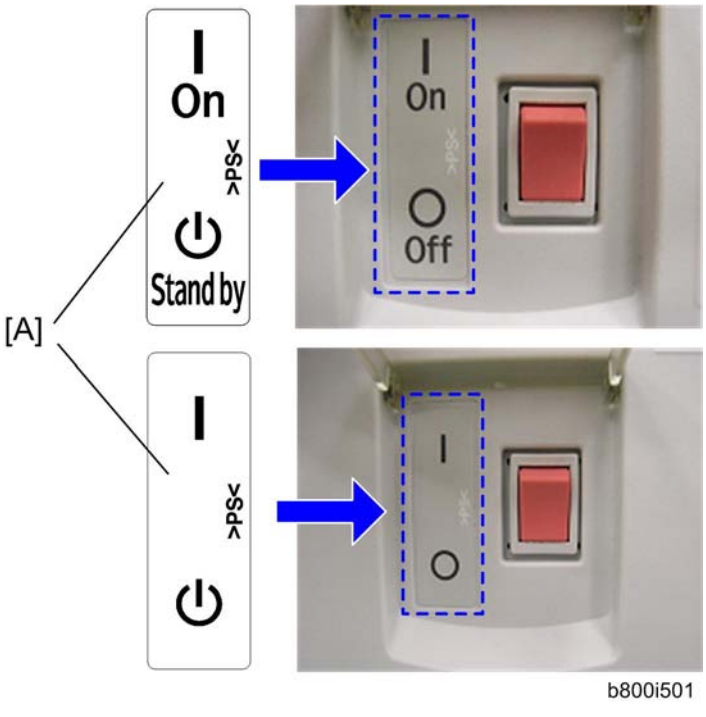


9. Move the scanner carriage fully across to the right side by rotating the scanner motor [A] at the rear of the machine.
10. Put the connector of the heater [B] through the cutout [C].

11. Move the scanner carriage to the left side as shown above by rotating the scanner motor at the rear of the machine.
12. Install the heater in the scanner unit (x 1).
13. Secure the cable cover [A] and the left side of the heater (x 1).

d037i134

14. Attach a clamp as shown above.
15. Connect the harness [A] of the heater to the connector [B] in the frame of the machine.
16. Reassemble the machine.



b800i501

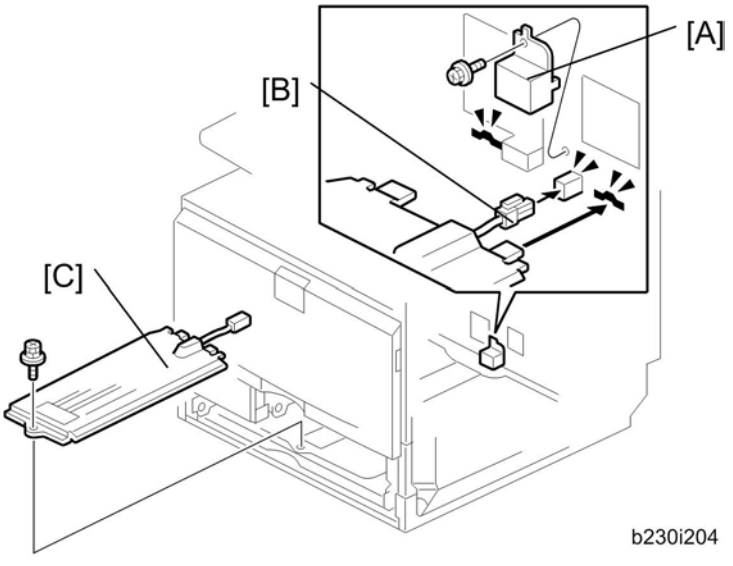
17. Attach the on/standby decal [A] to the left-hand side of the main power switch.

Tray Heater (Mainframe)

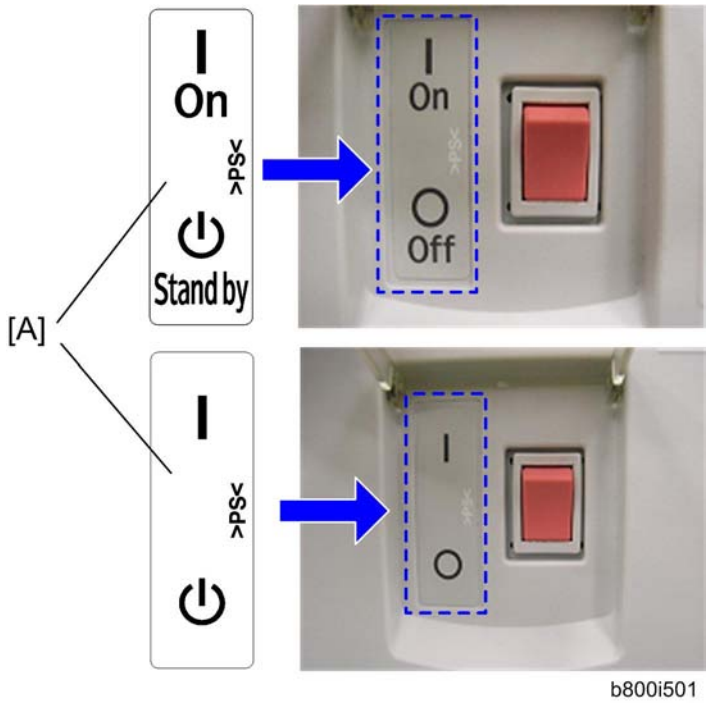
Installation Procedure

Note

- This heater is supplied as a spare part.

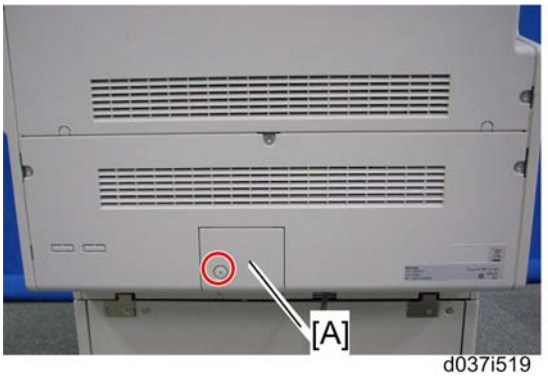


1. Remove trays 1 and front lower cover from the machine (☛ Front Lower Cover).
2. Remove the connector cover [A] (x 1).
3. Connect the connector [B] of the heater to the connector of the main machine.
4. Install the heater [C] inside the machine (x 1)
5. Reassemble the machine.

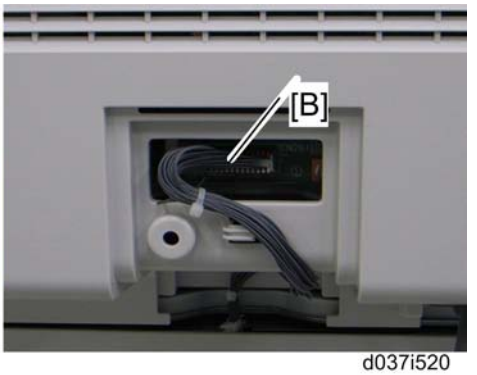


6. Attach the on/standby decal [A] to the left-hand side of the main power switch.

Tray Heaters (Optional Unit)

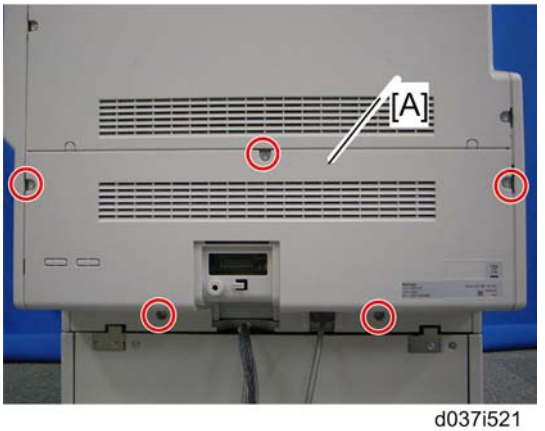


d037i519



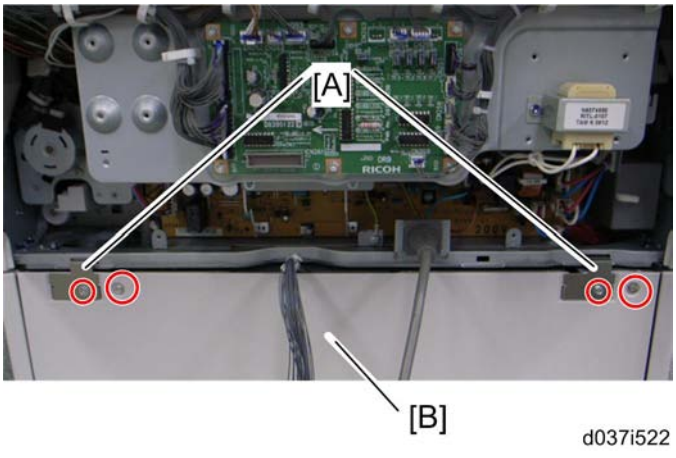
d037i520

1. Remove the rear connector cover [A] (rivet screw x 1) of the mainframe.
2. Disconnect the harness [B].

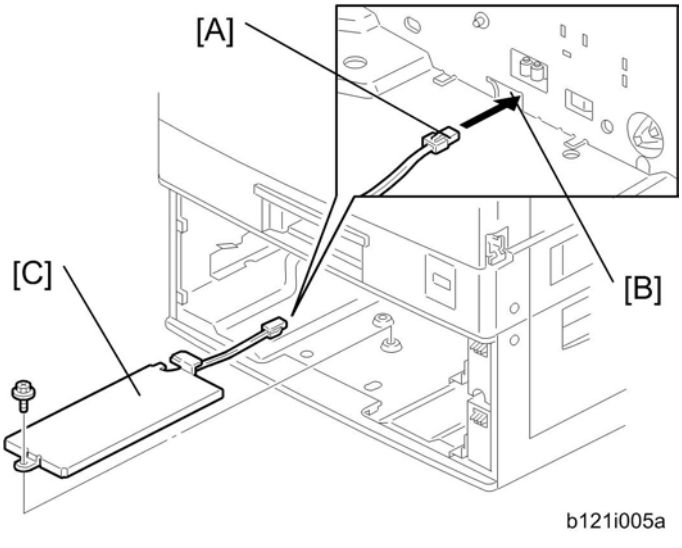


d037i521

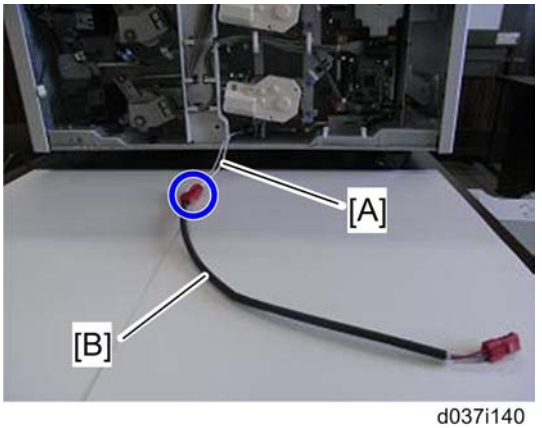
3. Remove the rear lower cover [A] of the mainframe (x 5).
4. Pull out all the 1st tray and front lower cover of the paper feed unit (Front Lower Cover).



5. Remove the securing brackets [A] (x 1 each), and then rear cover [B] of the paper feed unit (x 2).

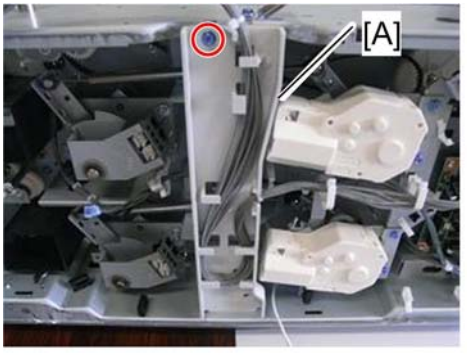


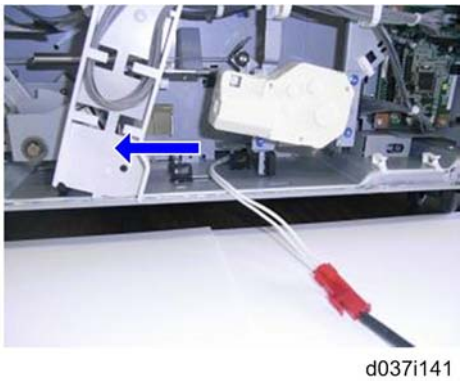
6. Pass the connector [A] through the opening [B].
7. Install the tray heater [C] (x 1).



d037i140

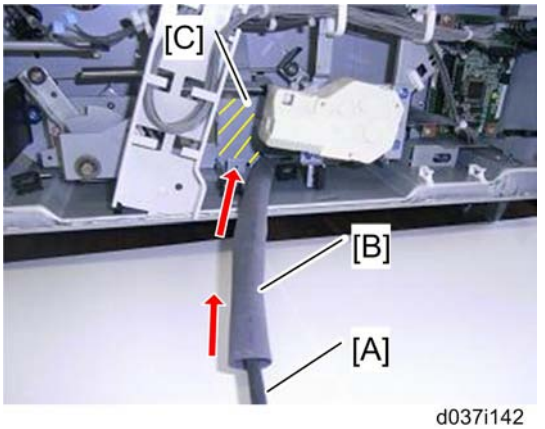
8. Connect heater harness [A] of the heater to the relay harness [B].





d037i141

9. Remove the harness guide [A] (x 1), and move it in the blue arrow direction as shown above.

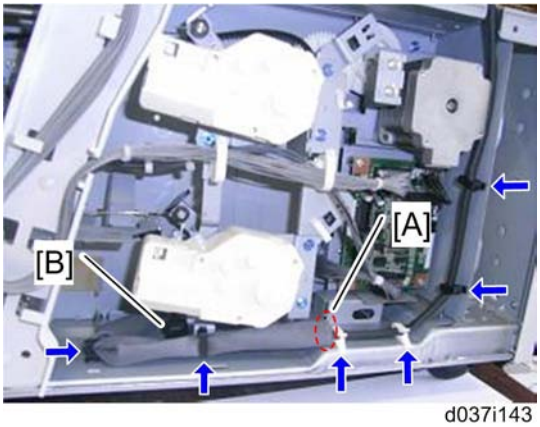


d037i142

10. Insert the heater harness [A] into the tube [B], and push the tube against the rear frame of the paper feed unit as shown above.

Note

- Make sure that the tube is contact with the rear frame [C].



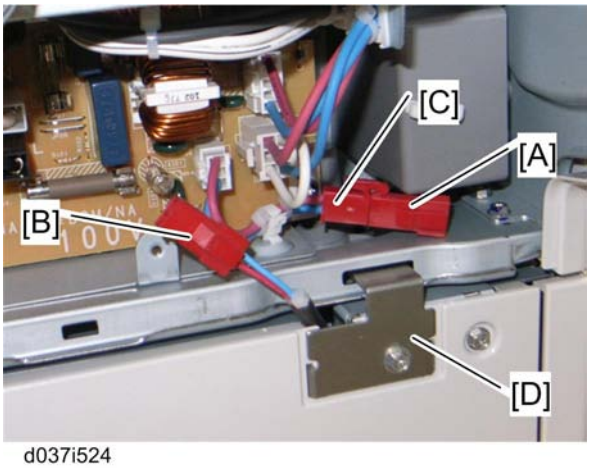
d037i143

11. Route the relay harness as shown above (x 6).

Note

- Make sure that the edge of the tube [A] is placed as shown above.
- The clamp [B] is not used.

12. Reinstall the harness guide.
13. Reattach the rear cover of the paper feed unit (x 2) and securing brackets (x 1 each).

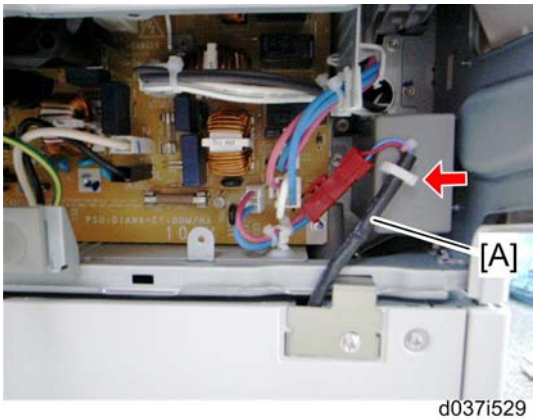


d037i524

14. Remove the connector cap [A] from the tray heater harness.
15. Connect the relay harness [B] to the tray heater harness [C] of the mainframe.

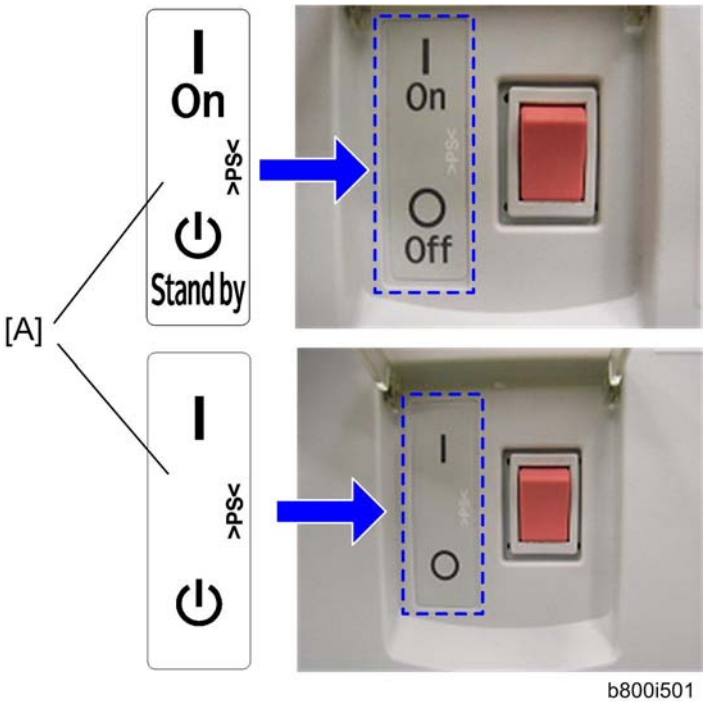
Note

- Do not connect the relay harness [B] to the tray heater harness of the mainframe before installing the securing bracket [D]. Otherwise, the securing bracket may pinch the relay harness.



d037i529

16. Clamp the harness [A] as shown above (x 1).
17. Reinstall the rear lower cover of the mainframe (x 5).
18. Reinstall all the tray cassettes.



b800i501

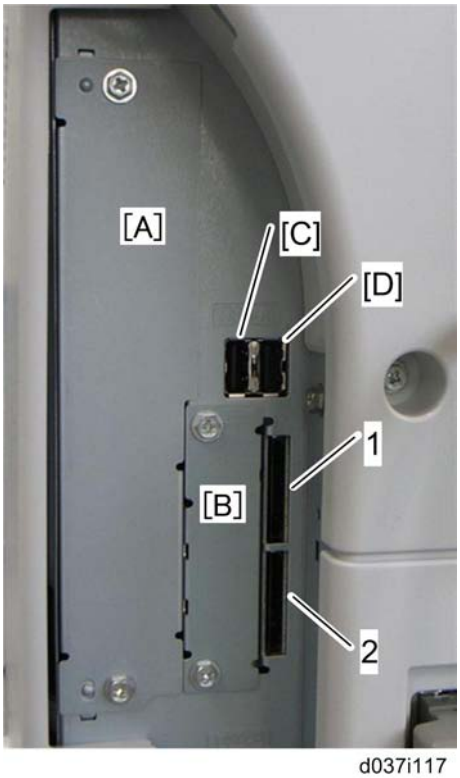
19. Attach the on/standby decal [A] to the left-hand side of the main power switch.

Controller Options

Overview

This machine has I/F card slots for optional I/F connections and SD card slot applications.

After you install an option, check that the machine can recognize it (see "Check All Connections" at the end of this section).



d037i117

I/F Card Slots

- Slot [A] and [B] are not used.

SD Card Slots

- Slot 1 is used for "Printer Enhanced Option" and "PictBridge".
- Slot 2 is used for service only (for example, updating the firmware).

USB Slots

- Left-side USB slot [C]: Used for connecting a digital camera (only works if PictBridge is installed).
- Right-side USB slot [D]: Not used

SD Card Appli Move

Overview

The service program "SD Card Appli Move" (SP5-873) lets you copy application programs from one SD card to another SD card.

Make sure that the target SD card has enough space.

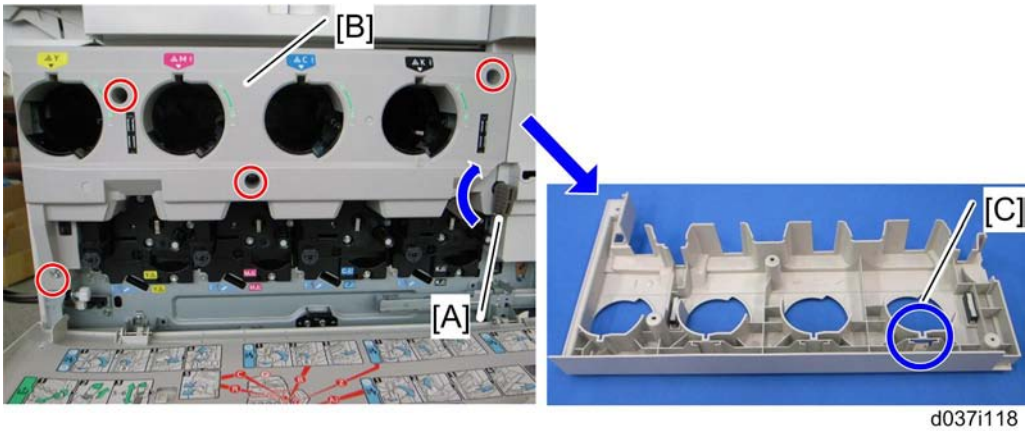
1. Enter SP5873 "SD Card Appli Move".
2. Then move the application from the SD Card in Slot 2 to the SD Card in Slot 1.

   Note

   - Do steps 1-2 again if you want to move another application program.
3. Exit the SP mode.

Be very careful when you do the SD Card Appli Move procedure:

- The data necessary for authentication is transferred with the application program from an SD card to another SD card. Authentication fails if you try to use the SD card after you copy the application program from one card to another card.
- Do not use the SD card if it has been used before for other purposes. Normal operation is not guaranteed when such an SD card is used.



d037i118

- Hold down the ITB lock lever [A] and turn it in the arrow direction.
- Remove the inner cover [B] (x 4), and then keep the SD card in the place [C] after you copy the application program from one card to another card. This is done for the following reasons:

1) The SD card can be the only proof that the user is licensed to use the application program.

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

Move Exec

The menu "Move Exec" (SP5-873-001) lets you copy application programs from the original SD card to another SD card.

Important

- **Do not turn ON the write protect switch of the system SD card or application SD card on the machine. If the write protect switch is ON, a download error (e.g. Error Code 44) occurs during a firmware upgrade or application merge.**

1. Turn the main switch off.
2. Make sure that an SD card is in SD Card Slot 1. The application program is copied to this SD card.
3. Insert the SD card with the application program in SD Card Slot 2.The application program is copied from this SD card.
4. Turn the main switch on.
5. Start the SP mode.
6. Select SP5-873-001 "Move Exec".
7. Follow the messages shown on the operation panel.
8. Turn the main switch off.
9. Remove the SD card from SD Card Slot 2.
10. Turn the main switch on.
11. Check that the application programs run normally.

Undo Exec

"Undo Exec" (SP5-873-002) lets you copy back application programs from an SD card to the original SD card. You can use this program when, for example, you have mistakenly copied some programs by using Move Exec (SP5-873-001).

Important

- **Do not turn ON the write protect switch of the system SD card or application SD card on the machine. If the write protect switch is ON, a download error (e.g. Error Code 44) occurs during a firmware upgrade or application merge.**

1. Turn the main switch off.
2. Insert the original SD card in SD Card Slot 2. The application program is copied back into this card.

3. Insert the SD card with the application program in SD Card Slot 1.The application program is copied back from this SD card.
4. Turn the main switch on.
5. Start the SP mode.
6. Select SP5-873-002 "Undo Exec".
7. Follow the messages shown on the operation panel.
8. Turn the main switch off.
9. Remove the SD card from SD Card Slot 2.

Note

- This step assumes that the application programs in the SD card are used by the machine.

10. Turn the main switch on.
11. Check that the application programs run normally.
12. Make sure that the machine can recognize the option (see 'Check All Connections' at the end of this section).

3. Preventive Maintenance

Maintenance Tables

See "Appendices" for the following information:

- Preventive Maintenance Items
- Other Yield Parts

PM Parts Settings

Before Removing the Old PM Parts

1. Enter the SP mode.
2. Output the SMC logging data with SP5-990-004.
3. Set the following SPs to "1" before you turn the power off. Then, the machine will reset the PM counters automatically. In the case of developer, the developer initialization will also be done automatically.
4. Exit the SP mode.

Item	SP
Development Unit	Black: 3902-001 Cyan: 3902-002 Magenta: 3902-003 Yellow: 3902-004
Drum Unit	Black: 3902-009 Cyan: 3902-010 Magenta: 3902-011 Yellow: 3902-012
ITB Unit	3902-013
Fusing Unit	3902-014
Fusing Roller	3902-015
Fusing Belt	3902-016
ITB Cleaning Unit	3902-017
PTR Unit	3902-018
PCDU Toner Collection Bottle	3902-019*1
ITB Toner Collection Bottle	3902-020*1

Note

- *1: Only if the toner collection bottle is replaced before the machine detects near-full.

For the following units, there is a new unit detection mechanism. It is not necessary to reset PM counters.

- Development unit
- PCU/ ITB Toner Collection Bottle (if full or near-full)

After Installing the New PM parts

1. Turn on the main power switch.
2. Output the SMC logging data with SP5-990-004 and check the counter values.
3. Make sure that the PM counters for the replaced units are "0" with SP7-803. If the PM counter for a unit was not reset, then reset that counter with SP 7-804.
4. Make sure that the exchange counter counts up with SP7-853.
5. Make sure that the counters for the previous units (SP7-906) on the new SMC logging data list (from step 2 above) are equal to the counters (SP7-803) for these units on the previous SMC logging data list (the list that was output in the "Before removing the old parts" section).
6. Make sure that the unit replacement date is updated with SP7-950.

Preparation before Operation Check

1. Clean the exposure glasses (for DF and book scanning).
2. Enter the user tools mode.
3. Do the "Automatic Color Calibration "(ACC) for the copier mode & printer mode as follows:
    - Print the ACC test pattern (User Tools > Maintenance > ACC > Start).
    - Put the printout on the exposure glass.
    - Put 10 sheets of white paper on the test chart. This ensures the precise ACC adjustment.
    - Close the ARDF or the platen cover.
    - Press "Start Scanning" on the LCD. Then, the machine starts the ACC.
4. Exit the User Tools mode, and then enter the SP mode.
5. Do the "Forced line position adjustment" as follows.
    - First do SP2-111-3 (Mode c).
    - Then do SP2-111-1 (Mode a).
    - To check if SP 2-111-1 was successful, watch the screen during the process. A message is displayed at the end. Also, you can check the result with SP 2-194-10 to -12.
6. Exit the SP mode.

Operation Check

Check if the sample image has been copied normally.

4. Replacement and Adjustment

Beforehand

⚠CAUTION

- 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 switch and disconnect the power cord, the telephone line, and the network cable.

Special Tools

Part Number	Description	Q'ty
B645 5010	SD Card	1
B645 6820	USB Reader/Writer	1
C401 9503	20X Magnification Scope	1
A257 9300	Grease Barrierta – S552R	1
A092 9503	C4 Color Test Chart (3 pcs/set)	1
A184 9501	Optics Adjustment Tool (2 pcs/set)	2
52039502	Silicon Grease G-501	1

Image Adjustment

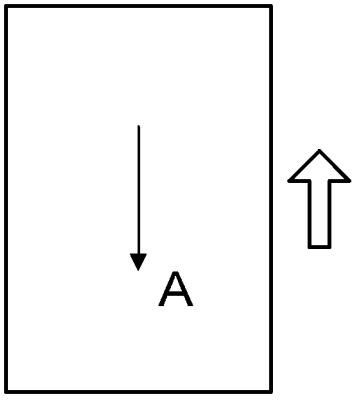
Scanning

Check the printing registration/side-to-side adjustment and the blank margin adjustment before you do the following scanner adjustments.

Note

- Use S-2-1 test chart to do the following adjustments.

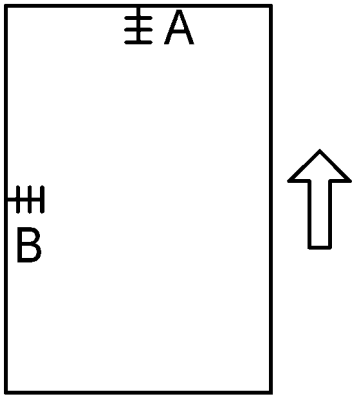
Scanner sub-scan magnification



A: Sub-scan magnification

1. Put the test chart on the exposure glass. Then make a copy from one of the feed stations.
2. Check the magnification ratio. Adjust with SP4-008 if necessary.
   Standard: ±1.0%.

Scanner leading edge and side-to-side registration



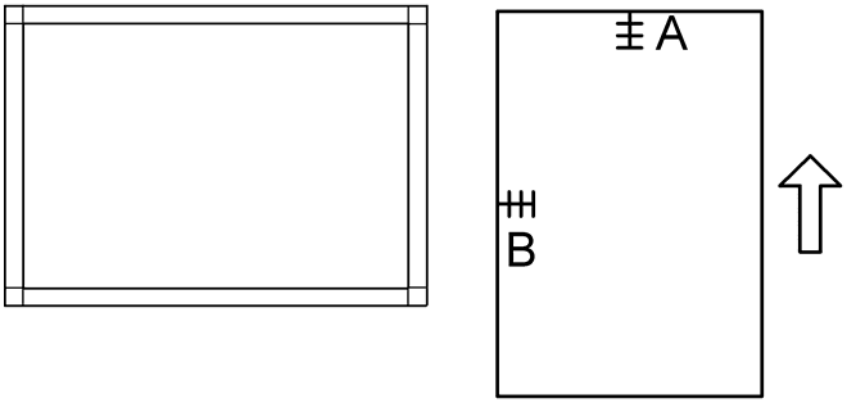
A: Leading Edge Registration

1. Put the test chart on the exposure glass. Then make a copy from one of the feed stations.
2. Check the leading edge and side-to-side registration. Adjust the following SP modes if necessary.
   Standard: 0 ± 2 mm for the leading edge registration, 0 ± 2 mm for the side-to-side registration.

	SP mode
Leading Edge Registration	SP4-010-001
Side-to-Side Registration	SP4-011-001

ARDF

ARDF side-to-side, leading edge registration and trailing edge



A: Leading edge registration, B: Side-to-Side registration

Use A3/DLT paper to make a temporary test chart as shown above.

1. Put the temporary test chart on the ARDF. Then make a copy from one of the feed stations.
2. Check the registration. Check the leading edge and side-to-side registration. Adjust the following SP modes if necessary.

   Standard: 4.2 ± 3.0 mm for the leading edge registration, 2 ± 3.0 mm for the side-to-side registration. Use the following SP modes to adjust if necessary.

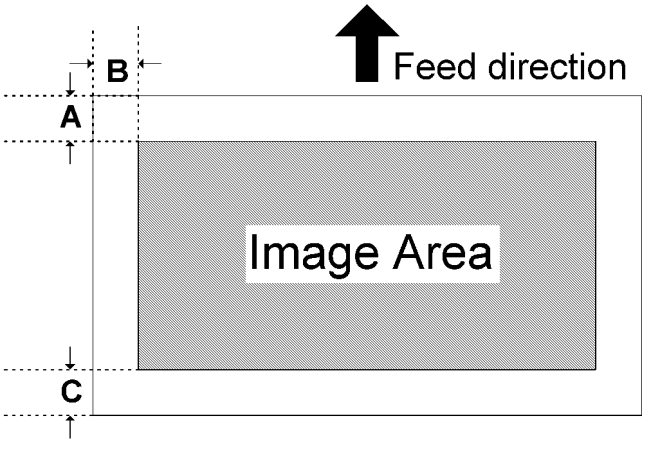
SP Code	What It Does	Adjustment Range
SP6-006-001	Side-to-Side Registration (1st side)	± 3.0 mm
SP6-006-002	Side-to-Side Registration (2nd side)	± 3.0 mm
SP6-006-003	Leading Edge Registration	± 5.0 mm
SP6-006-005	Buckle: Duplex Front	± 5.0 mm
SP6-006-006	Buckle: Duplex Rear	± 5.0 mm
SP6-006-007	Rear Edge Erase (Trailing Edge)	± 5.0 mm

ARDF sub-scan magnification

1. Put the temporary test chart on the ARDF. Then make a copy from one of the feed stations.
1. Check the magnification ratio. Adjust with SP6-017-001 if necessary.
   - Standard: ±5.0%
   - Reduction mode: ±5.0%
   - Enlargement mode: ±5.0%

Registration

Image Area



A = 4.2 mm, B = 2.25 mm, C = 3.25

Make sure that the registration is adjusted within the adjustment standard range as shown below.

Leading Edge

Adjusts the leading edge registration for each paper type and process line speed.

Side to Side

Adjusts the side-to-side registration for each paper feed station. Use SP mode (SP1-002) to adjust the side-to-side registration for the optional paper feed unit, LCT, and duplex unit.

Adjustment Standard

- Leading edge (sub-scan direction): 4.2 ± 1.5 mm
- Side to side (main-scan direction): 2.25 ± 1.75 mm

Paper Registration Standard

The registration in both main- and sub-scan directions can change within the following tolerance.

- Sub-scan direction: 0 ± 9 mm
- Main-scan direction: 0 ± 4 mm

Adjustment Procedure

1. Enter SP2-109-003.
1. Print out the test pattern (14: Trimming Area) with SP2-109-003.

Note

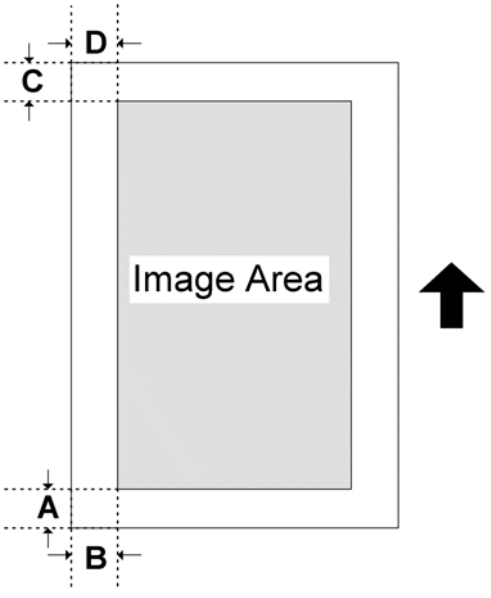
- Registration can change slightly as shown on the previous page. Print some pages of the "Trimming Area" for step 3 and 4. Then average the leading edge and side-to-side registration values, and adjust each SP mode.

2. Do the leading edge registration adjustment.
   1) Check the leading edge registration and adjust it with SP1-001.
   2) Select the adjustment conditions (paper type and process line speed).
   3) Input the value. Then press the # key.
   4) Generate a trim pattern to check the leading edge adjustment.
3. Do the side-to-side registration adjustment.
   1) Check the side-to-side registration and adjust it with SP1-002.
   2) Select the adjustment conditions (paper feed station).
   3) Input the value. Then press the # key.
   4) Generate a trim pattern to check the leading edge adjustment.

Erase Margin Adjustment

Note

- Adjust the erase margin C and D only if the registration (main scan and sub scan) cannot be adjusted within the standard values. Do the registration adjustment after adjusting the erase margin C and D, and then adjust the erase margin A and B.



1. Enter SP2-109-003.
2. Print out the test pattern (14: 1-dot trimming pattern) with SP2-109-003.
3. Check the erase margin A and B. Adjust them with SP2-103-001 to -010 if necessary.
    - Leading edge: 1.5 to 5.0 mm,
    - Side-to-side: 0.5 to 4.0 mm,
    - Trailing edge: 0.5 to 0.6 mm

Color Registration

Line Position Adjustment

The automatic line position adjustment usually is done for a specified condition to get the best color prints.

Do the following if color registration shifts:

- Do "Auto Color Registration" as follows to do the forced line position adjustment.
    1. First do SP2-111-3.
    2. Then do SP2-111-1.

    To check if SP 2-111-1 was successful, watch the screen during the process. A message is displayed at the end. Also, you can check the result with SP 2-194-007 (0: Completed successfully, 1: Failed).
- You should also do the line position adjustment at these times:

1. After you transport or move the machine (you should do the forced line position adjustment if you install the machine at the user location.) if the machine is pre-installed at the workshop and moved to the user location,
2. When you remove the PCDU
3. When you remove or replace the image transfer belt, image transfer belt unit or laser optical housing unit

Printer Gamma Correction

Note

- The ACC is usually sufficient to adjust the color balance to get the best print output. You only need the printer gamma correction to fine-tune to meet user requirements.

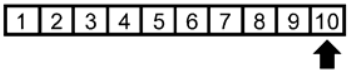
Use SP modes if you want to modify the printer gamma curve created with ACC. You can adjust the gamma data for the following:

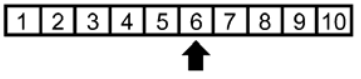
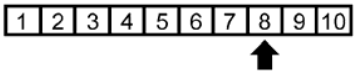
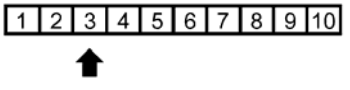
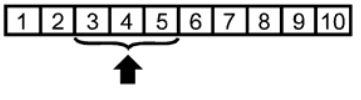
- Highlight
- Middle
- Shadow areas
- IDmax.

The adjustable range is from 0 to 30 (31 steps).

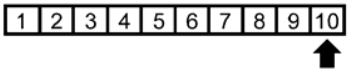
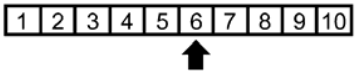
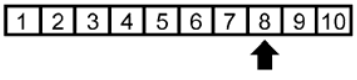
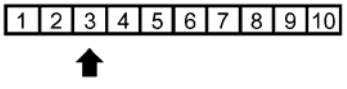
Copy Mode

- Photo Mode, Full Color -

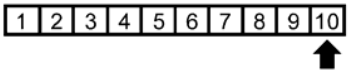
	Item to Adjust	Level on the C-4 chart	Adjustment Standard
1	ID max: (K, C, M, and Y)		Adjust the offset value so that the density of level 10 matches that of level 10 on the C-4 chart.
	For adjusting K ID max: SP4-915-004 For adjusting C ID max: SP4-916-004 For adjusting M ID max: SP4-917-004 For adjusting Y ID max: SP4-918-004		

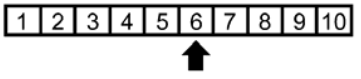
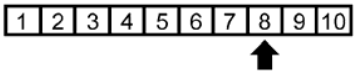
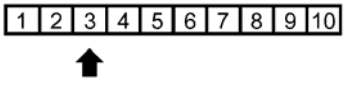
	Item to Adjust	Level on the C-4 chart	Adjustment Standard
2	Middle (Middle ID) (K, C, M, and Y)		Adjust the offset value so that the density of level 6 matches that of level 6 on the C-4 chart.
	For adjusting K Middle: SP4-915-002 For adjusting C Middle: SP4-916-002 For adjusting M Middle: SP4-917-002 For adjusting Y Middle: SP4-918-002		
3	Shadow (High ID) (K, C, M, and Y)		Adjust the offset value so that the density of level 8 matches that of level 8 on the C-4 chart.
	For adjusting K Shadow: SP4-915-003 For adjusting C Shadow: SP4-916-003 For adjusting M Shadow: SP4-917-003 For adjusting Y Shadow: SP4-918-003		
4	Highlight (Low ID) (K, C, M, and Y)		Adjust the offset value so that dirty background does not show on the copy and the density of level 3 is slightly lighter than that of level 3 on the C-4 chart.
	For adjusting K Highlight: SP4-915-005 For adjusting C Highlight: SP4-916-005 For adjusting M Highlight: SP4-917-005 For adjusting Y Highlight: SP4-918-005		
5	K Highlight (Low ID) (C,M, and Y) <on the full color copy>		Adjust the offset value so that the color balance of black scale levels 3 through 5 in the copy is seen as gray (no C, M, or Y should be visible). If the black scale contains C, M, or Y, do steps 1 to 4 again.
	For adjusting K Highlight: SP4-915-005		

- Photo Mode, Single Color -

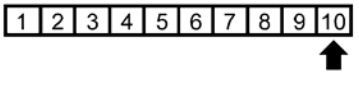
	Item to Adjust	Level on the C-4 chart	Adjustment Standard
1	ID max: (K)		Adjust the offset value so that the density of level 10 matches that of level 10 on the C-4 chart.
	For adjusting K ID max: SP4-909-004		
2	Middle (Middle ID) (K)		Adjust the offset value so that the density of level 6 matches that of level 6 on the C-4 chart.
	For adjusting K Middle: SP4-909-002		
3	Shadow (High ID) (K)		Adjust the offset value so that the density of level 8 matches that of level 8 on the C-4 chart.
	For adjusting K Shadow: SP4-909-003		
4	Highlight (Low ID) (K)		Adjust the offset value so that dirty background does not show on the copy and the density of level 3 is slightly lighter than that of level 3 on the C-4 chart.
	For adjusting K Highlight: SP4-909-001		

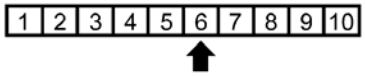
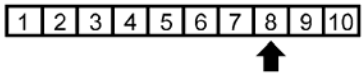
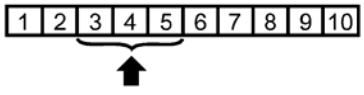
- Text (Letter) Mode, Full Color -

	Item to Adjust	Level on the C-4 chart (K)	Adjustment Standard
1	ID max: (K, C, M, and Y)		Adjust the offset value so that the density of level 10 matches that of level 10 on the C-4 chart.
	For adjusting K ID max: SP4-910-004 For adjusting C ID max: SP4-911-004 For adjusting M ID max: SP4-912-004 For adjusting Y ID max: SP4-913-004		

	Item to Adjust	Level on the C-4 chart (K)	Adjustment Standard
2	Middle (Middle ID) (K, C, M, and Y)		Adjust the offset value so that the density of level 6 matches that of level 6 on the C-4 chart.
	For adjusting K Middle: SP4-910-002 For adjusting C Middle: SP4-911-002 For adjusting M Middle: SP4-912-002 For adjusting Y Middle: SP4-913-002		
3	Shadow (High ID) (K, C, M, and Y)		Adjust the offset value so that the density of level 8 matches that of level 8 on the C-4 chart.
	For adjusting K Shadow: SP4-910-003 For adjusting C Shadow: SP4-911-003 For adjusting M Shadow: SP4-912-003 For adjusting Y Shadow: SP4-913-003		
4	Highlight (Low ID) (K, C, M, and Y)		Adjust the offset value so that dirty background does not show on the copy and the density of level 3 is slightly lighter than that of level 3 on the C-4 chart.
	For adjusting K Highlight: SP4-910-001 For adjusting C Highlight: SP4-911-001 For adjusting M Highlight: SP4-912-001 For adjusting Y Highlight: SP4-913-001		

- Text (Letter) Mode, Single Color -

	Item to Adjust	Level on the C-4 chart (K)	Adjustment Standard
1	ID max: (K)		Adjust the offset value so that the density of level 10 matches that of level 10 on the C-4 chart.
	For adjusting K ID max: SP4-914-004		

	Item to Adjust	Level on the C-4 chart (K)	Adjustment Standard
2	Middle (Middle ID) (K)		Adjust the offset value so that the density of level 6 matches that of level 6 on the C-4 chart.
	For adjusting K Middle: SP4-914-002		
3	Shadow (High ID) (K)		Adjust the offset value so that the density of level 8 matches that of level 8 on the C-4 chart.
	For adjusting K Shadow: SP4-914-003		
4	Highlight (Low ID) (K)		Adjust the offset value so that dirty background does not show on the copy and the density of level 3 is slightly lighter than that of level 3 on the C-4 chart.
	For adjusting K Highlight: SP4-914-001		

Note

- Text parts of the test pattern cannot be printed clearly after you adjust "shadow" as shown above. At this time, check if the 5 line/mm pattern at each corner is printed clearly. If it is not, adjust the offset value of "shadow" again until it is.

Printer Mode

There are six adjustable modes (select these modes with printer SP1-102-001):

- 1200 x 1200 photo mode
- 1200 x 1200 text mode
- 2400 x 600 photo mode
- 2400 x 600 text mode
- 1800 x 600 photo mode
- 1800 x 600 text mode
- 600 x 600 photo mode
- 600 x 600 text mode

	K	C	M	Y

Highlight	SP1-104-1	SP1-104-21	SP1-104-41	SP1-104-61
Shadow	SP1-104-2	SP1-104-22	SP1-104-42	SP1-104-62
Middle	SP1-104-3	SP1-104-23	SP1-104-43	SP1-104-63
IDmax	SP1-104-4	SP1-104-24	SP1-104-44	SP1-104-64

- Adjustment Procedure -

1. Do ACC for the printer mode.
2. Turn the main power off and on.
3. Enter SP mode.
4. Select "Printer SP".
5. Select SP1-102-001. Then select the necessary print mode to adjust.
6. Choose SP1-103-1 to print out a tone control test sheet if you want to examine the image quality for these settings.
7. Adjust the color density with SP1-104. Compare the tone control test sheet with the C4 test chart.

   Note

   - Adjust the density in this order: "ID Max", "Shadow", "Middle", "Highlight".
8. Use SP1-105-001 to keep the adjusted settings.

Exterior Covers

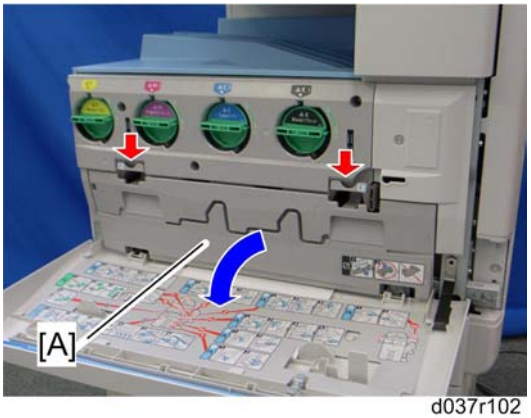
PCDU Toner Collection Bottle

If you replace this toner collection bottle after the machine detects that it is full or near-full, the machine automatically resets the PM counter for the PCDU toner collection bottle after replacement.

But, if you replace a bottle that is not full or near-full, then you must reset the PM counter for this unit. To do this, set SP 3902 019 to 1 before you start to work on the machine.

d112r101

1. Open the front door [A].



d037r102

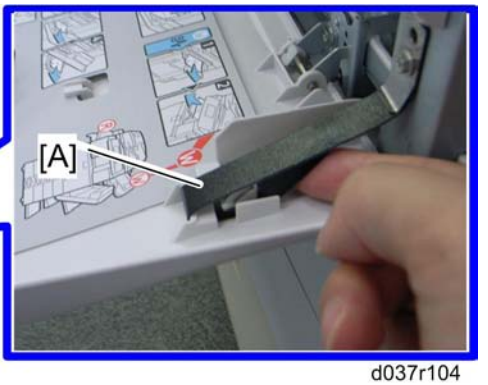
2. PCDU toner collection bottle [A] (lock x 2)

Front Door

1. Open the front door.

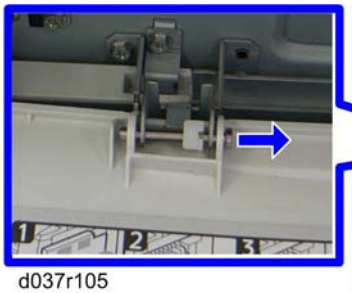
2. PCDU toner collection bottle (☛ p.127 "PCDU (Photo Conductor and Development Unit)")


d037r103



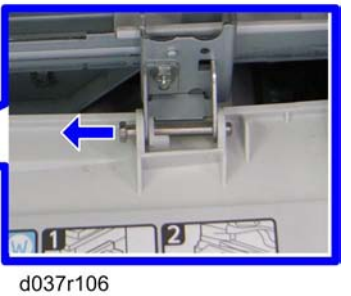
d037r104

3. Release the belt [A].



d037r105

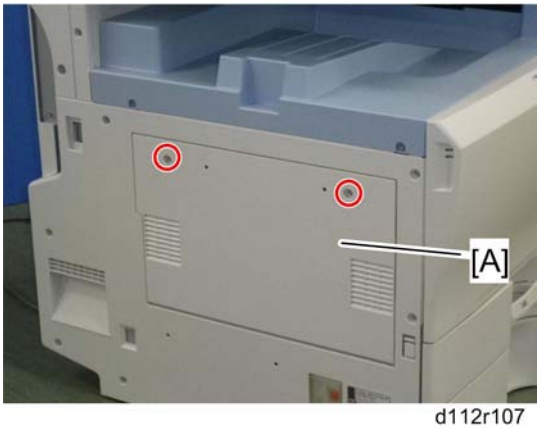
d037r103



d037r106

4. Front door [A] (x 2, pin x 2)

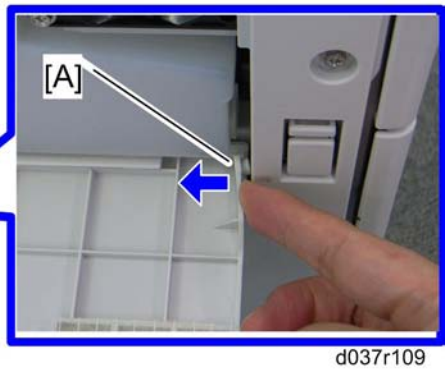
ITB Cleaning Unit Cover



d112r107

1. Open the ITB cleaning unit cover [A] (x 2).

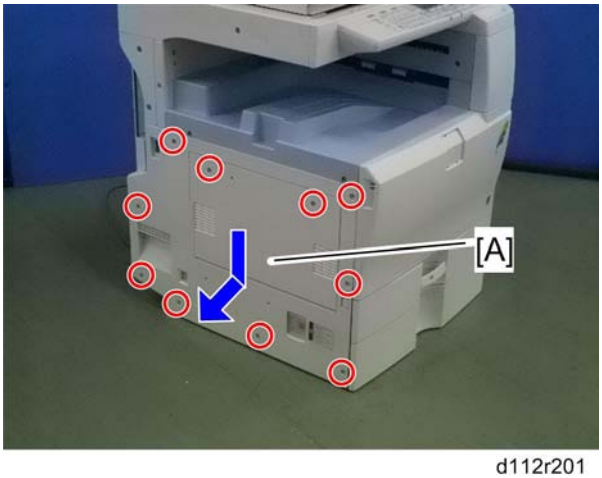
d037r108



d037r109

2. Release the tab [A], and then remove the ITB cleaning unit cover [B].

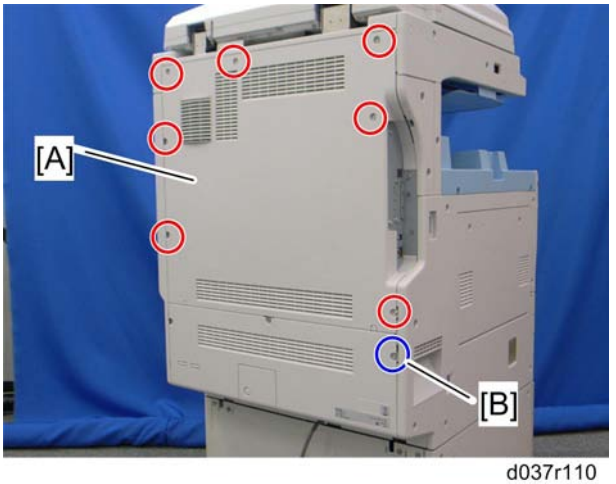
Left Cover



d112r201

1. Left cover [A] (x 10)

Rear Cover

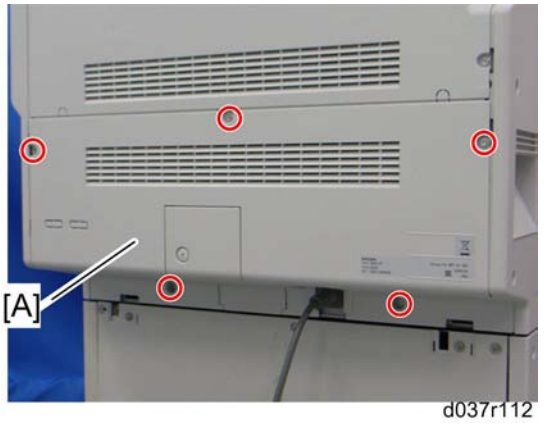


1. Rear cover [A] (x 8)

Note

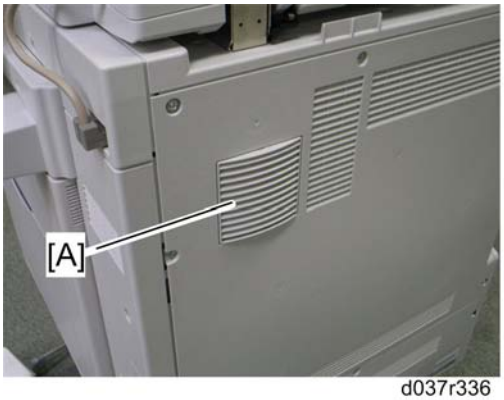
- Remove the screw [B] of the lower cover when reinstalling the rear cover.

Rear Lower Cover

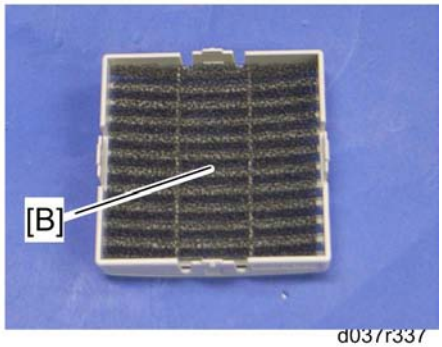


1. Rear lower cover [A] (x 5)

Dust Filter



d037r336

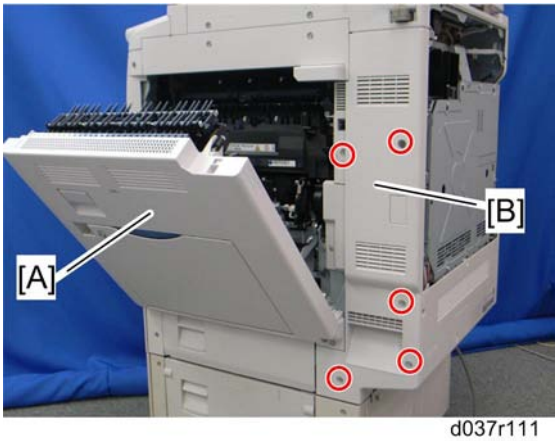


d037r337

1. Dust filter cover [A] (hooks)
2. Dust filter [B]

Right Rear Cover

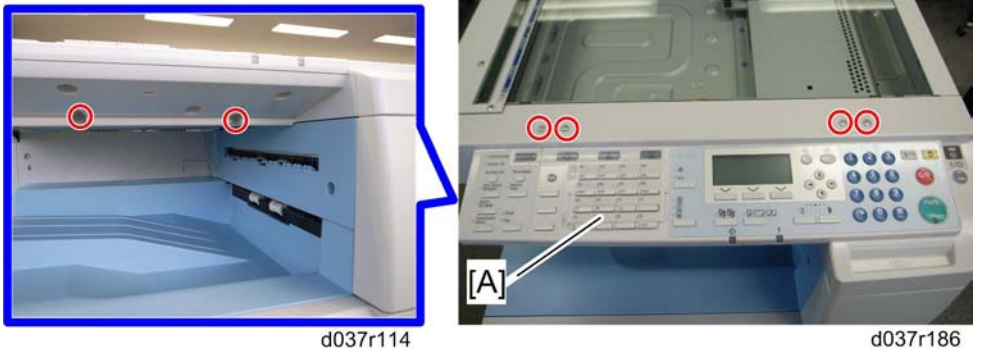
1. Rear cover (☛ p.94)



d037r111

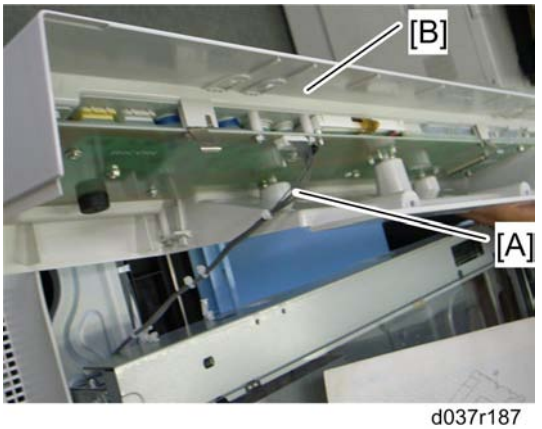
2. Open the duplex unit [A].
3. Right rear cover [B] (x 5)

Operation Panel



d037r114 d037r186

1. Remove six screws on the operation panel [A].
2. Slide the operation panel to the front side.

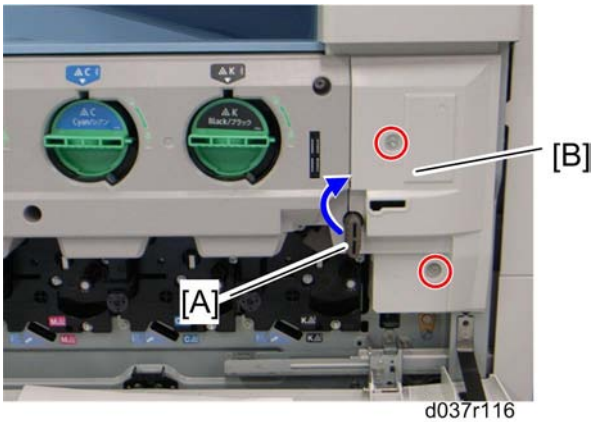


d037r187

3. Remove the connector [A].
4. Operation panel [B]

Inner Right Cover

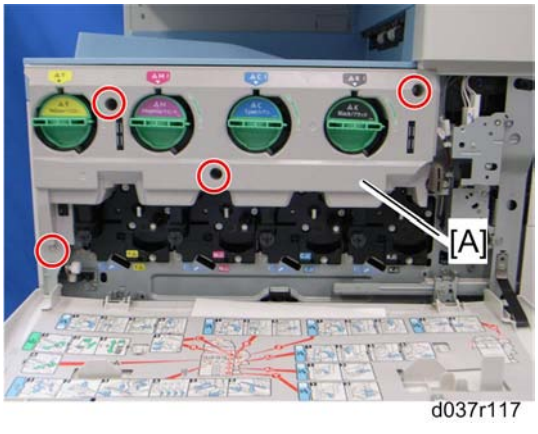
1. PCDU toner collection bottle (☛ p.91)



2. Press the ITB lock lever [A] and turn it up clockwise as shown above.
3. Inner right cover [B] (x 2)

Inner Cover

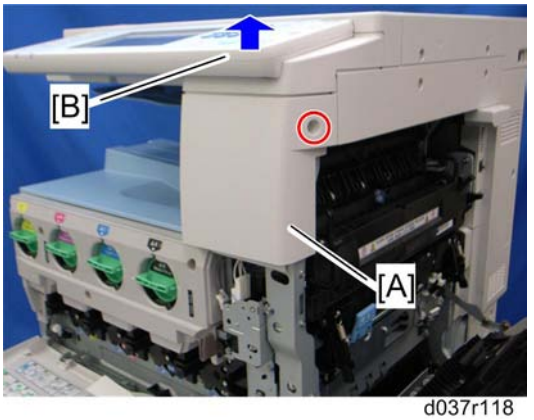
1. PCDU toner collection bottle (☛ p.91)
2. Inner right cover (☛ p.96)



3. Inner cover [A] (x 4)

Front Right Cover

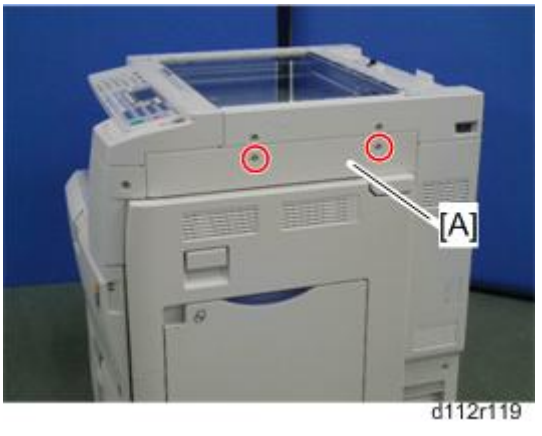
1. Open the duplex unit.
1. PCDU toner collection bottle (☛ p.91)
1. Inner right cover (☛ p.96)



4

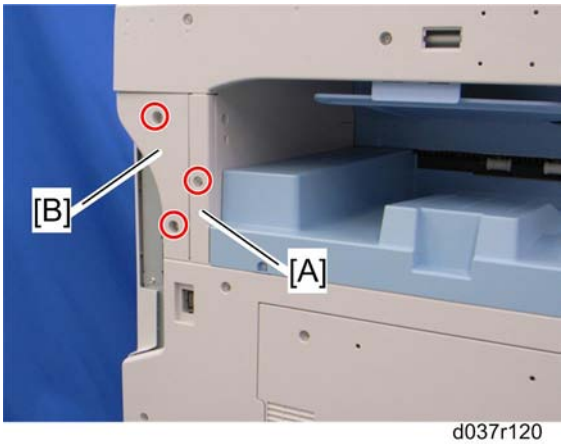
2. Remove the front right cover [A] with the operation panel [B] lifted up (x 1).

Right Upper Cover



1. Right upper cover [A] (x 2)

Left Frame and Left Frame Rear Cover

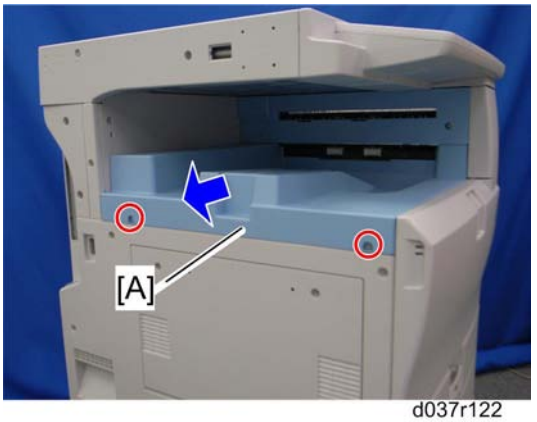


1. Left frame cover [A] (x 1)
2. Left frame rear cover [B] (x 2)

Paper Exit Cover

1. Paper exit cover [A] (x 1)

Inner Tray

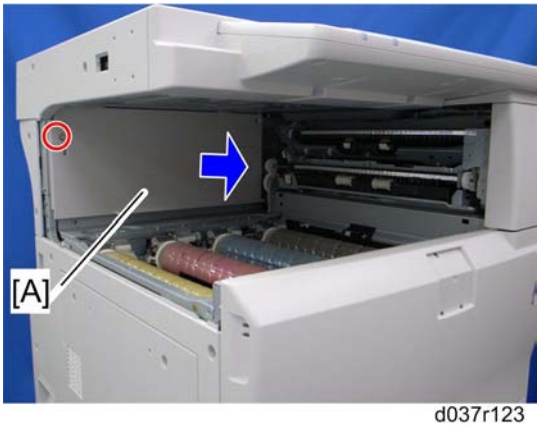


d037r122

1. Inner tray [A] (x 2)

Inner Rear Cover

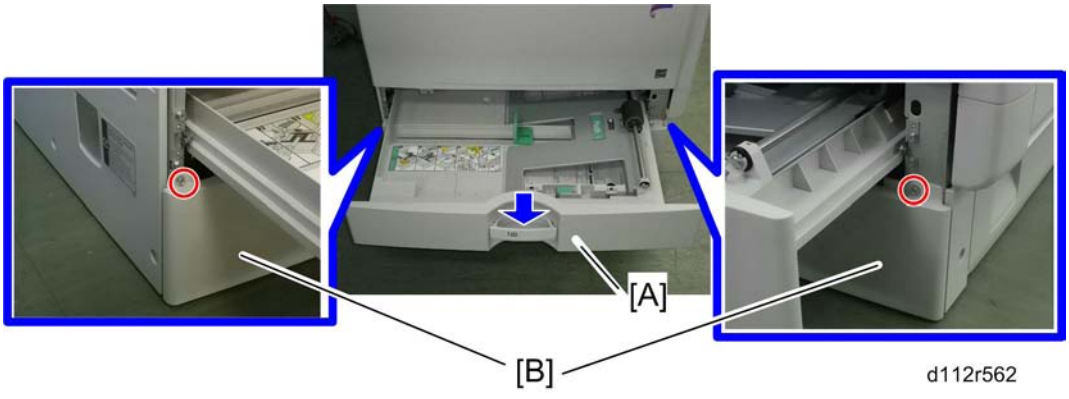
1. Left frame cover (☛ p.99 "Left Frame and Left Frame Rear Cover")
2. Paper exit cover (☛ p.99)
3. Inner tray (☛ p.100)



d037r123

4. Inner rear cover [A] (x 1)

Front Lower Cover

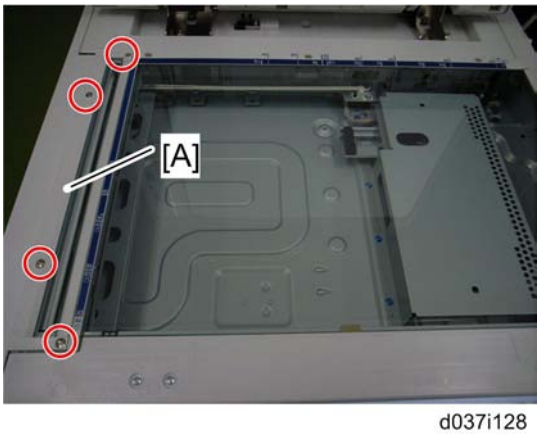


1. Pull the tray 1 [A].
2. Front lower cover (x 2)

Scanner Unit

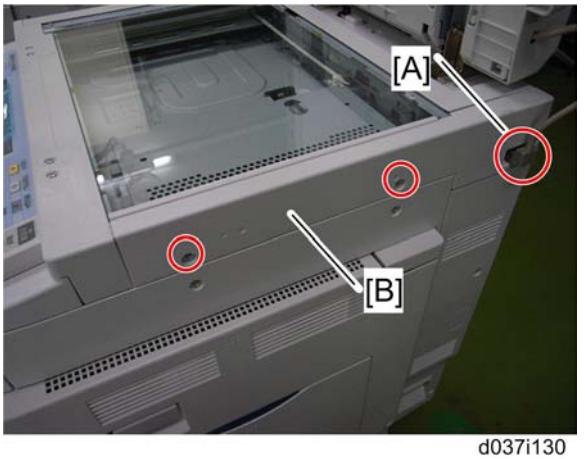
Exposure Glass

1. Rear cover (☛ p.94)
2. Open the ARDF or platen cover.



d037i128

3. Glass cover [A] (x 4)



d037i130

4. Disconnect the DF I/F cable [A]
5. Scanner right cover [B] (x 2)

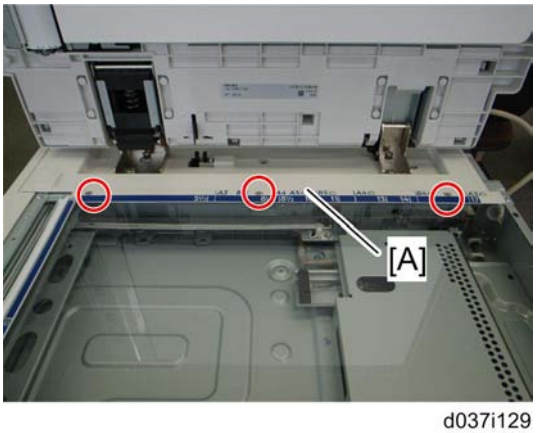
d037r126

d037r125

6. ARDF exposure glass [A]

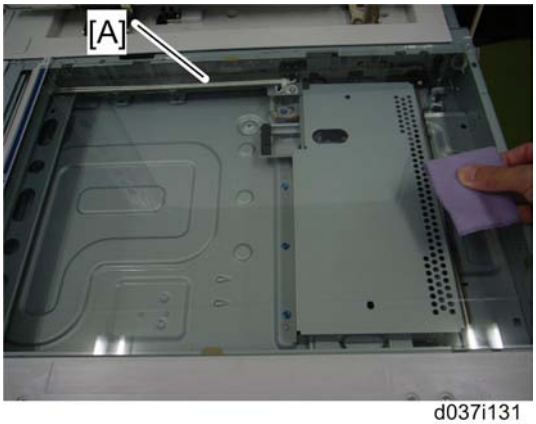
Note

- Position the white marker [B] at the rear-left corner when you reattach the ARDF exposure glass.



d037i129

7. Rear scale [A] (x 3)



d037i131

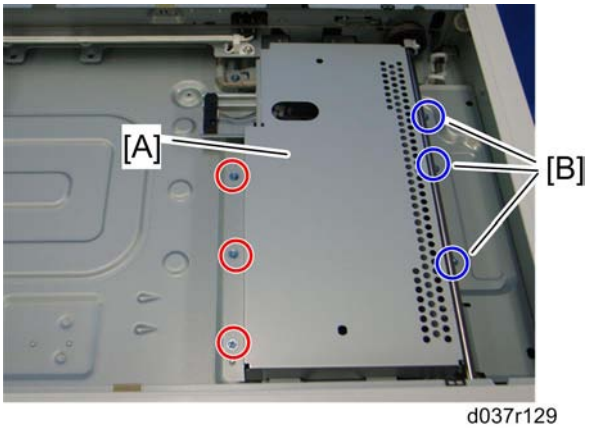
8. Exposure glass [A] with left scale

Note

- Position the marker at the front-left corner when you reattach the exposure glass.

Original Length Sensors

1. Exposure glass with left scale (p.102)

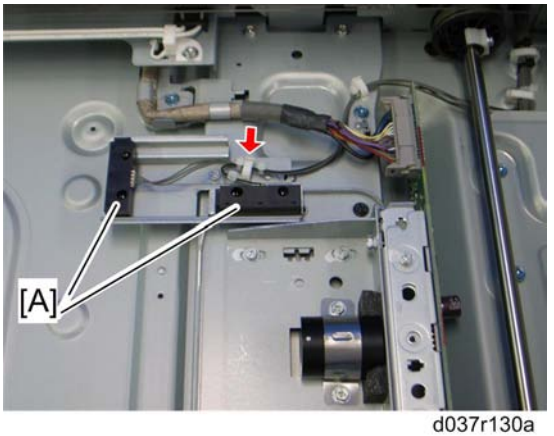


d037r129

2. SBU cover [A] (x 6)

Note

- The three screws [B] do not need to be fully removed. Just loosen them to remove the SBU cover.

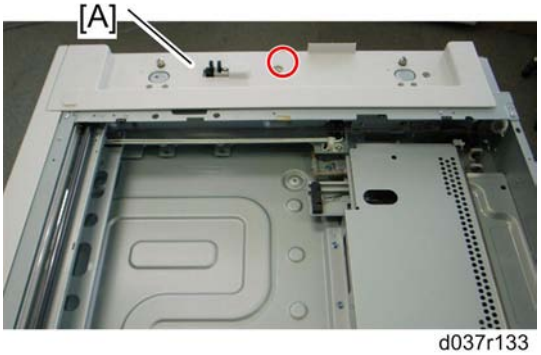


d037r130a

3. Original length sensors [A] (hooks, x1, x 1 each))

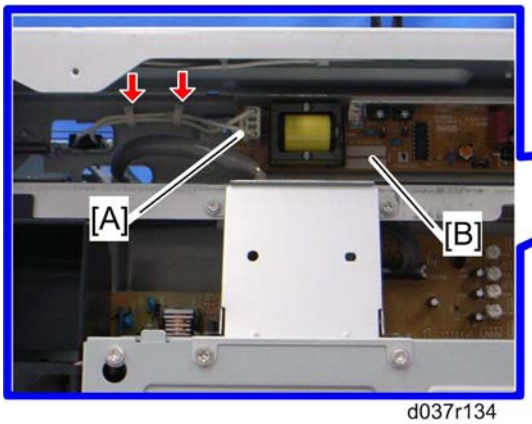
Exposure Lamp

1. Rear cover (☛ p.94)
2. Operation panel (☛ p.96)
3. Exposure glass (☛ p.102)



d037r133

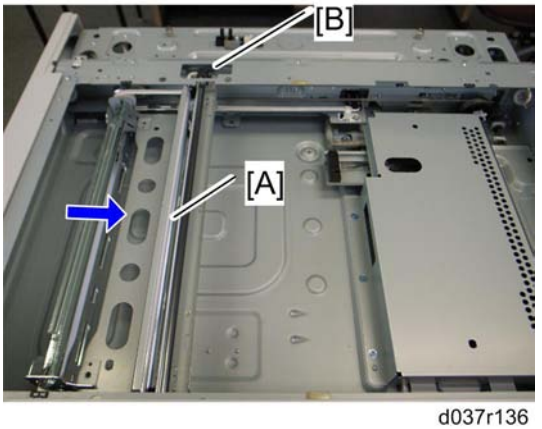
4. Scanner rear cover [A] (x 1)



d037r134

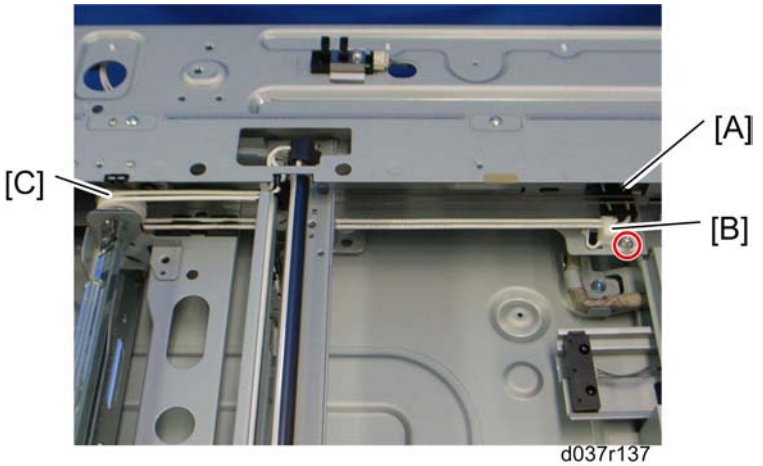

d037r135

5. Disconnect the connector [A] from the lamp stabilizer [B].



d037r136

6. Move the carriage unit [A] to the cutout position [B].



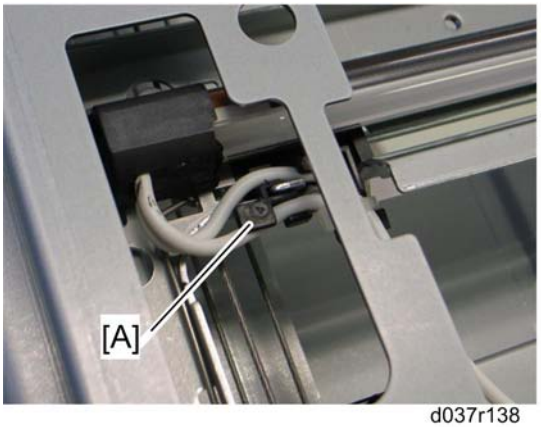
d037r137

7. Cable guide [A] (hooks)

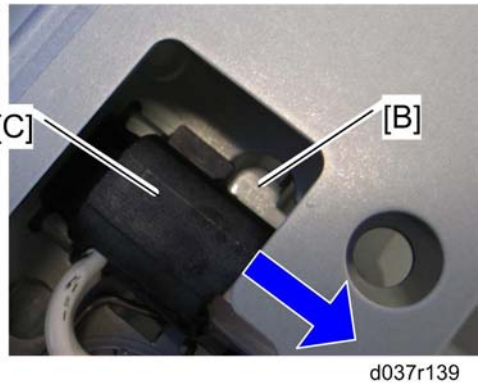
Note

- Keep the cable guide for reassembling.

8. Adjustor clamp [B] (x 1)
9. Pulley [C]

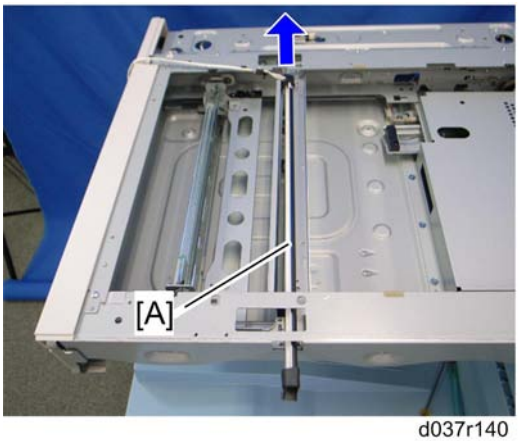


d037r138



d037r139

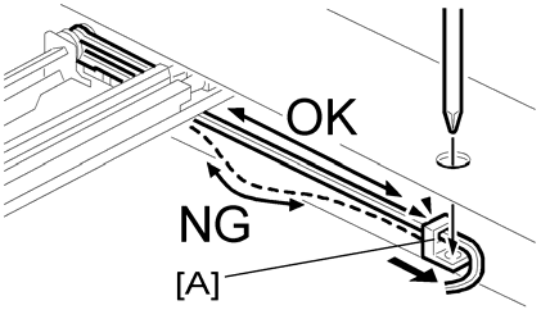
10. Release the cable clamp [A] (one hook under the cable clamp) at the rear edge of the exposure lamp.
11. Hold down the snap [B], and then slide the exposure lamp [C] to the front side.



d037r140

12. Exposure lamp [A]

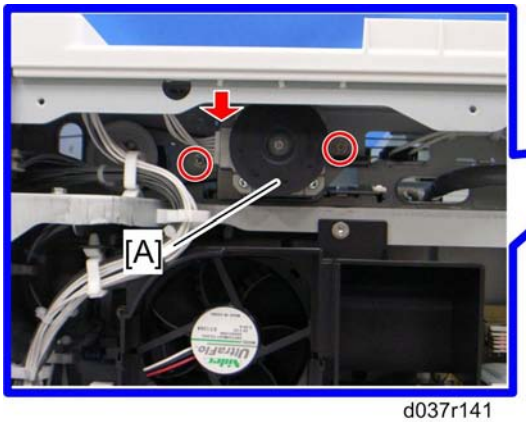
Reassembling



Run the cable so there is no slack. Slide the adjustor clamp [A] to adjust the cable slack.

Scanner Motor

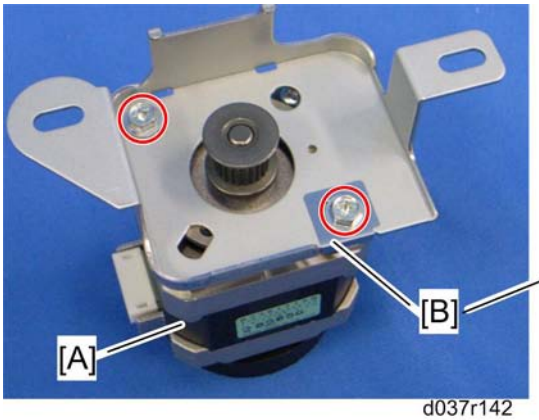
1. Rear cover (☛ p.94)



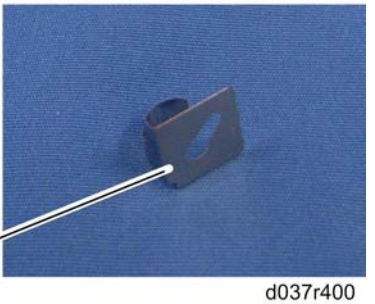
d037r141


d037r135

2. Scanner motor assembly [A] (x 2, spring x 1, x 1, timing belt x 1)



d037r142


d037r400

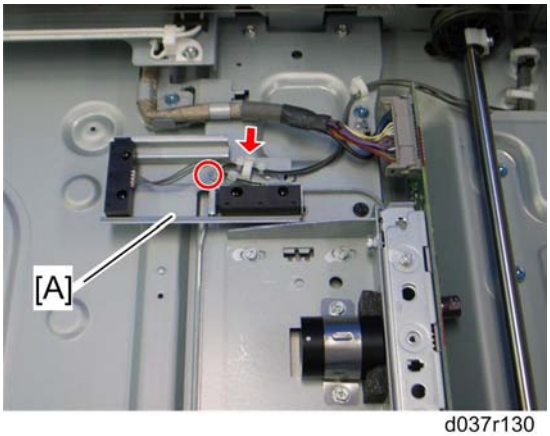
3. Scanner motor [A] (x 2, ground plate [B] x 1)

Note

- Make sure that the ground plate [B] is attached when installing the scanner motor in the scanner motor bracket.
- Do the scanner image adjustment after replacing the scanner motor (☛ p.79 "Image Adjustment").

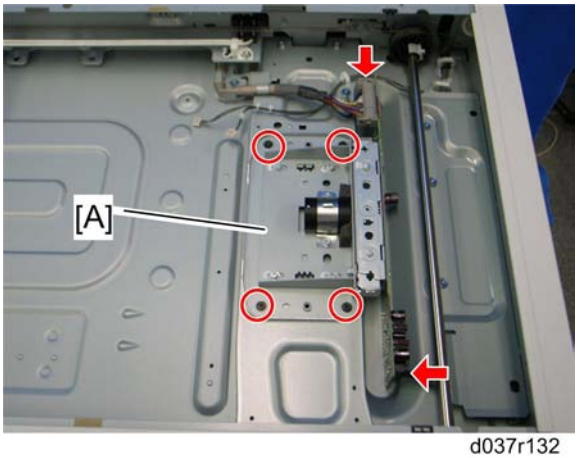
Sensor Board Unit (SBU)

1. Exposure glass (☛ p.102)



d037r130

2. Original length sensor assembly [A] (x 1, x 1, x 1 each)



d037r132

3. Sensor board unit [A] (x 4, ground screw x 1, x 2)

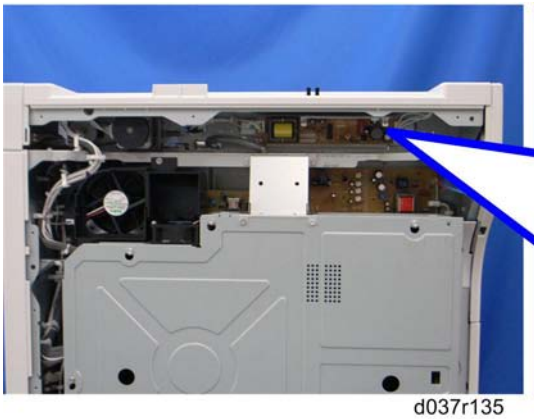
When reassembling

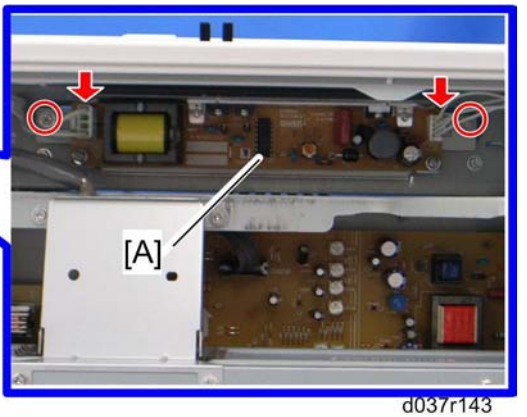
Adjust the following SP modes after you replace the sensor board unit:

- SP4–008 (Sub Scan Mag): See "Image Adjustment: Scanning" (p.79 "Image Adjustment").
- SP4–010 (Sub Mag Reg.): See "Image Adjustment: Scanning" (p.79 "Image Adjustment").
- SP4–011 (Main Scan Reg): See "Image Adjustment: Scanning" (p.79 "Image Adjustment").
- SP4–688 (DF: Density Adjustment): Use this to adjust the density level if the ID of outputs made in the DF and Platen mode is different.

Exposure Lamp Stabilizer

1. Rear cover (☛ p.94)


d037r135

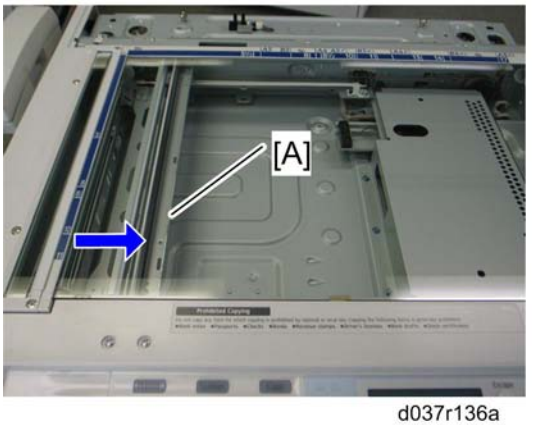


d037r143

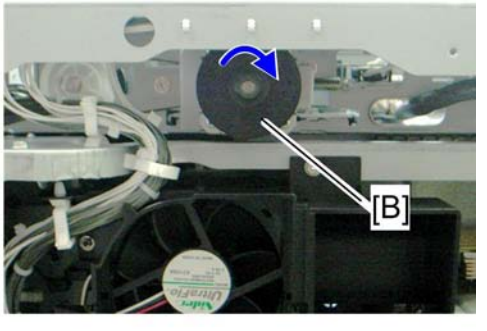
2. Exposure lamp stabilizer assembly [A] (x 2, x 2)

Scanner HP Sensor

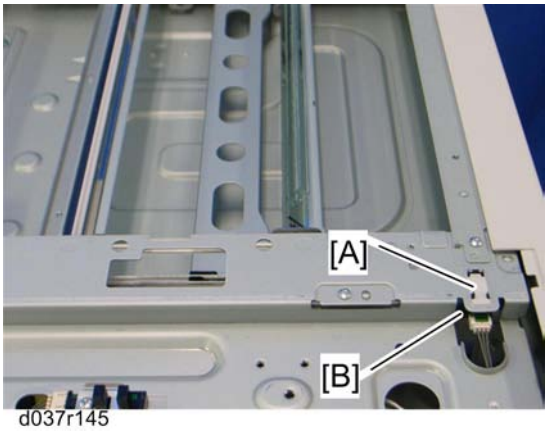
1. Rear Cover (☛ p.94)
2. Scanner rear cover (☛ p.102)



d037r136a



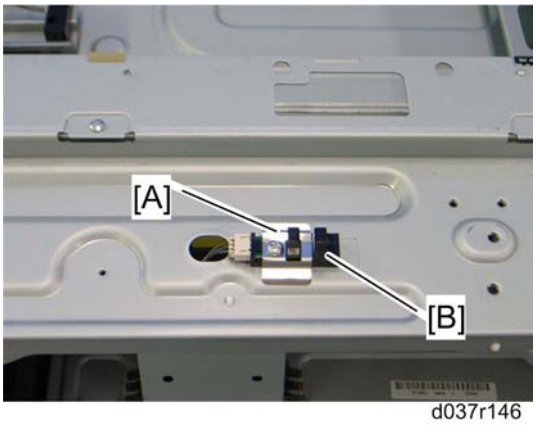
3. Move the 1st scanner carriage [A] to the right side by rotating the scanner motor [B] clockwise.



4. Remove the mylar [A].
5. Remove the scanner HP sensor [B] (x 1, hooks).

Platen Cover Sensor

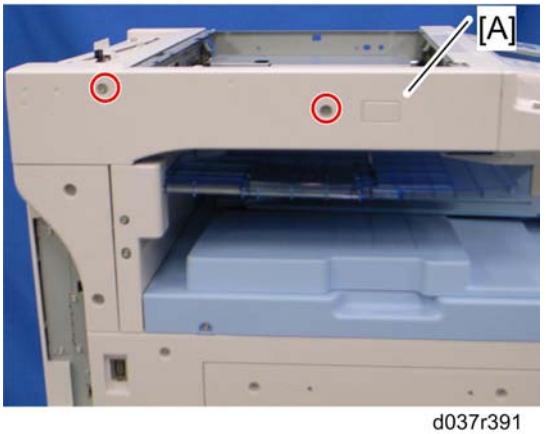
1. Scanner rear cover (p.102)



2. Holder bracket [A] (x 1)
3. Platen cover sensor [B] (x 1)

Front Scanner Wire

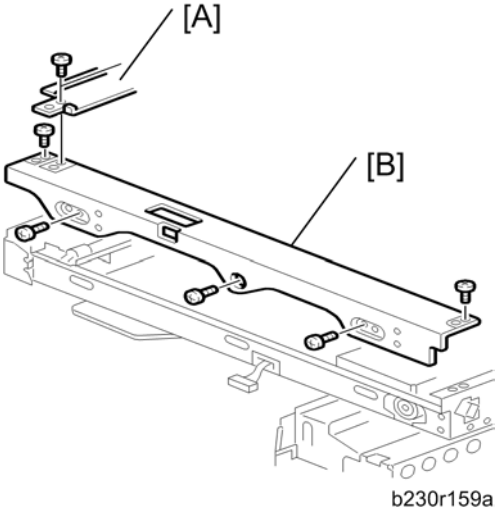
1. Rear Cover (p.94)
2. Operation panel (p.96)
3. Exposure glass (p.102)



d037r391

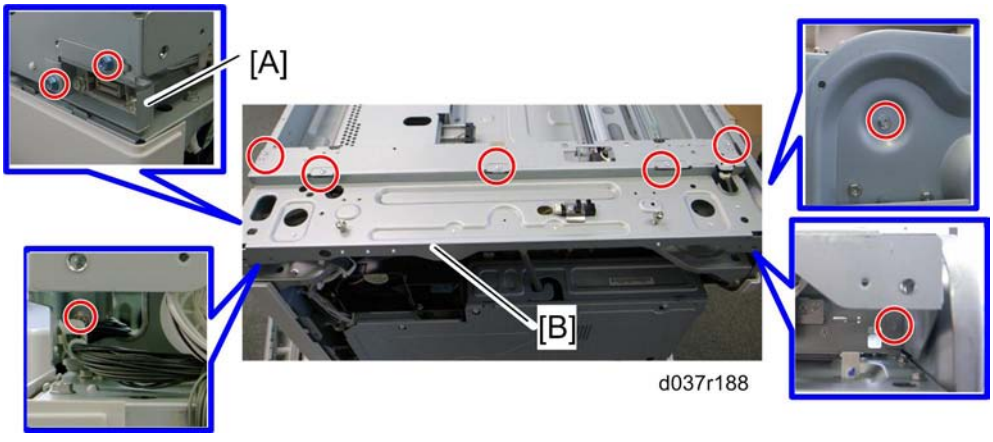
4

4. Scanner left cover [A] (x 2)

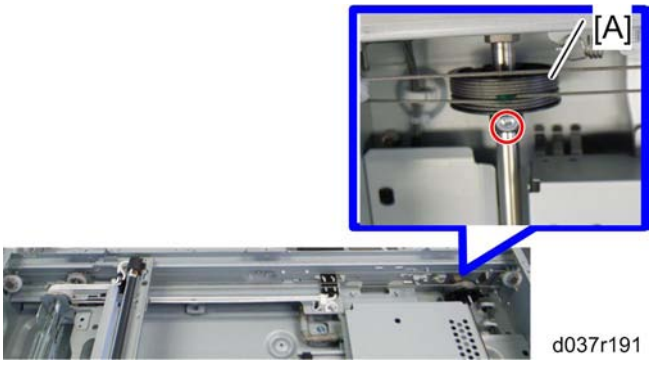


b230r159a

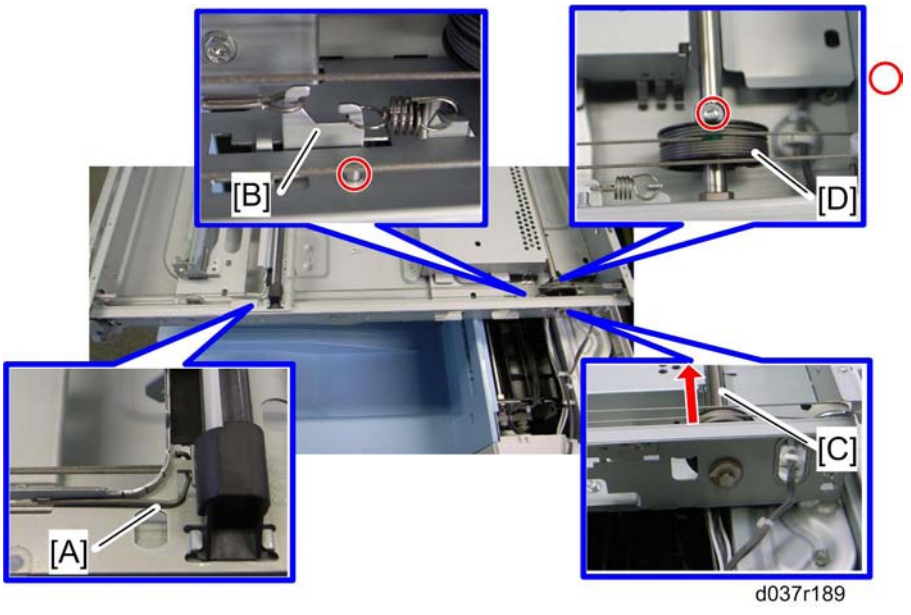
5. Scanner left stay [A] (x 3)
6. Scanner front frame [B] (x 5)



7. Take aside the connector bracket [A] (x 2).
8. Scanner rear frame [B] (x 8, x all, x all)
9. Scanner motor assembly (p.108 "Scanner Motor")

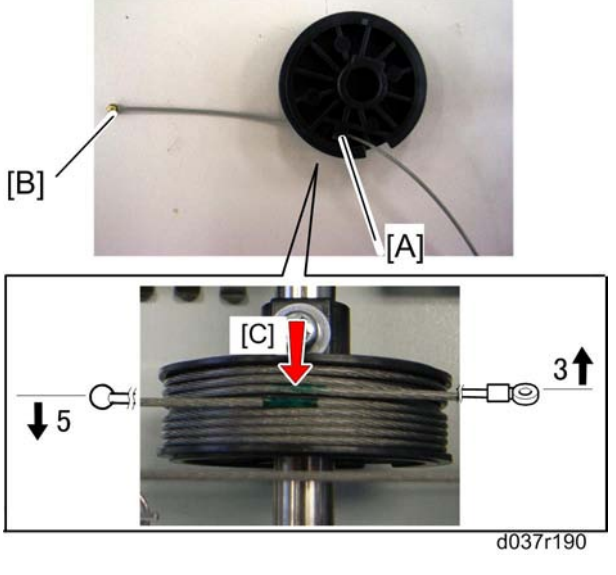


10. Rear scanner drive pulley [A] (x 1)



11. Front scanner wire clamp [A]
12. Loosen the front scanner wire bracket [B] (x 1)
13. Front scanner wire
14. Move the shaft [C] in the red arrow direction (clip x 1: at front), and remove the scanner drive pulley [D] (x 1).

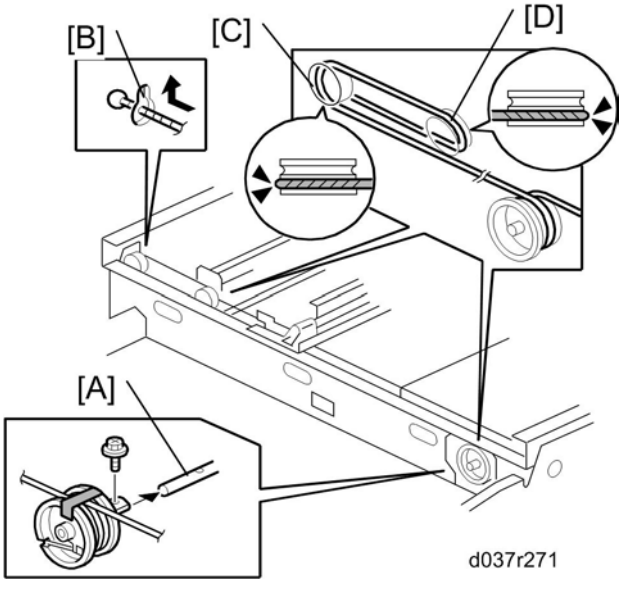
Reinstalling the Front Scanner Wire



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) through the notch.
3. Wind the right end counterclockwise (shown from the machine's front) five times. Wind the left end clockwise three times.

Note

- The two green marks [C] 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.

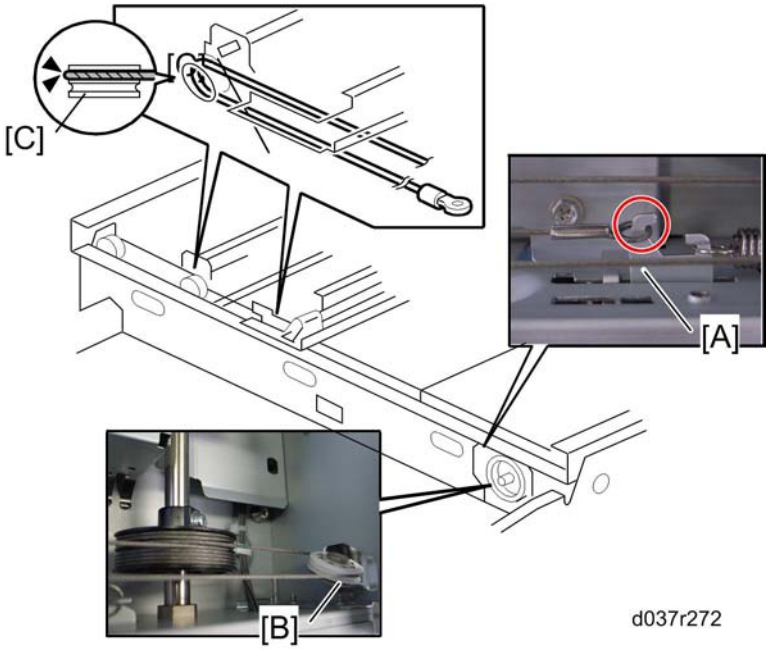


4. Install the drive pulley on the shaft [A] (x 1, clip x 1).

Note

- Do not attach the pulley to the shaft with the screw at this time.

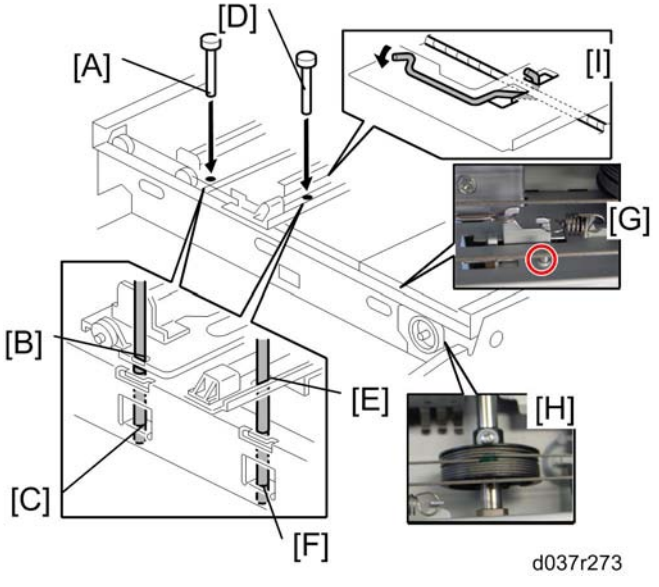
5. Insert the left end into the slit [B]. The end should go via the rear track of the left pulley [C] and the rear track of the movable pulley [D].



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

Note

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



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 [G].
11. Screw the scanner wire bracket to the front rail [H].
12. Install the scanner wire clamp [I].
13. Pull out the positioning pins.

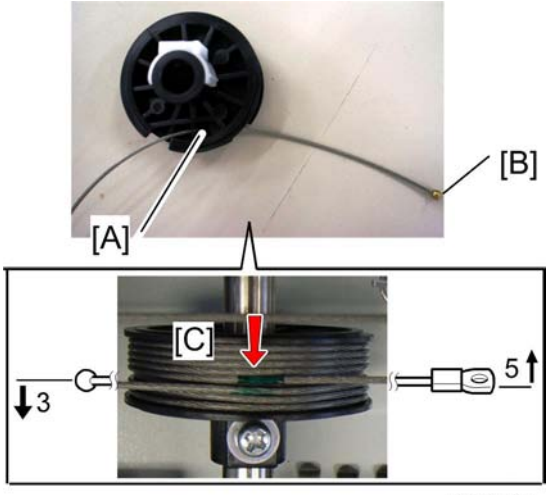
Note

- 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

1. Rear Cover (☛ p.94)
2. Operation panel (☛ p.96)
3. Exposure glass (☛ p.102)
4. Scanner left cover (☛ p.111 "Front Scanner Wire")
5. Scanner front frame (☛ p.111 "Front Scanner Wire")
6. Scanner left stay (☛ p.111 "Front Scanner Wire")
7. Scanner rear frame (☛ p.111 "Front Scanner Wire")
8. Follow steps 10 through 14 in the p.111 "Front Scanner Wire". You can remove the rear scanner wire with the same manner for replacing the front scanner wire.

Reinstalling the Rear Scanner Wire



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. Pass the right end (with the ring) through the drive pulley hole.
3. Wind the left end [B] clockwise (shown from the machine's front) five times. Wind the right end counterclockwise three times.

   Note

   - The two green marks [C] come together when you do this. Attach 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.

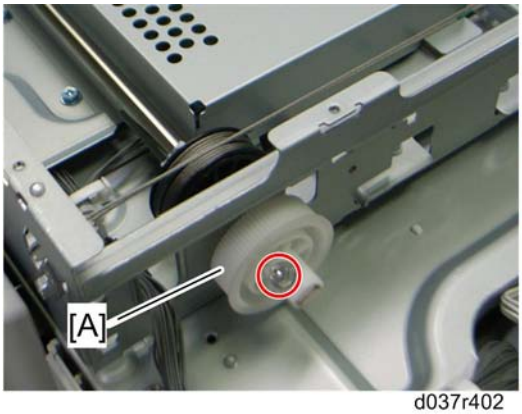
   Note

   - Do not attach the pulley on the shaft with the screw at this time.
5. 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.

   Example: At the front of the machine, the side of the drive pulley with the three windings must face the front of the machine. At the rear of the machine, it must face the rear.
6. Do steps 7 through 13 from the "Reinstalling the Front Scanner Wire" (p.111 "Front Scanner Wire").



d037r402

d037r403

Note

- When removing the rear scanner wire, removing the timing pulley [A] is required before moving the shaft (x 1).

Laser Optics

⚠WARNING

- Turn off the main switch and unplug the machine before beginning any of the procedures in this section. Laser beams can cause serious eye injury.

Caution Decal Location

The caution decal is placed as shown below.

d037r204

⚠WARNING

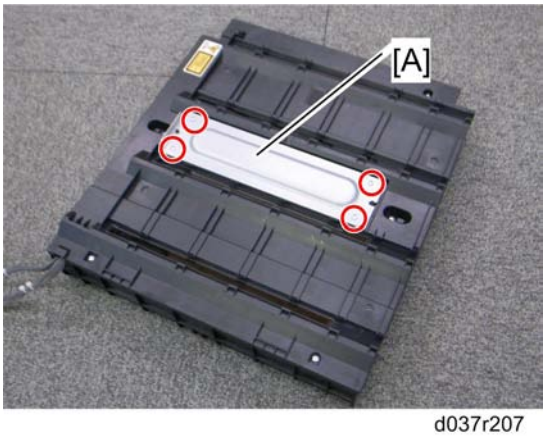
- Be sure to turn off the main switch and disconnect the power plug from the power outlet before beginning any disassembly or adjustment of the laser unit. This copier uses a class IIIb laser beam with a wavelength of 648 - 663 nm and an output of 9 mW. The laser can cause serious eye injury.

Laser Unit

⚠CAUTION

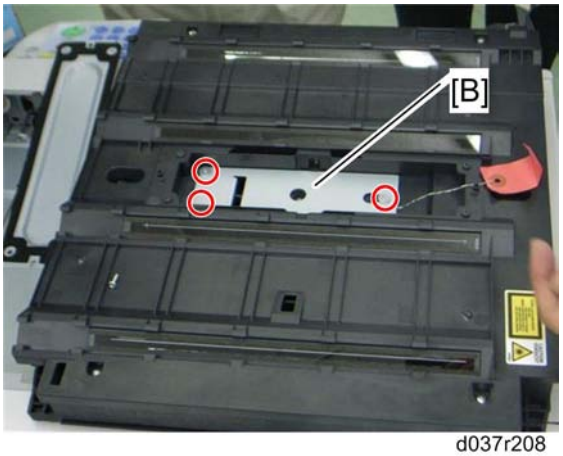
- Before installing a new laser unit, remove the polygon motor holder bracket and the tag from the new unit.

Preparing a new laser unit



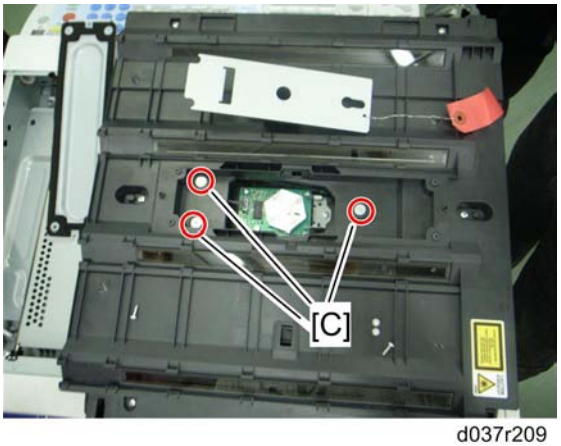
d037r207

1. Polygon mirror motor cover [A] of the laser unit (x 4)



d037r208

2. Polygon motor holder bracket [B] with a red tag (x 3)



d037r209

3. Install the three screws [C] (removed in step 2) in the laser unit.
4. Reinstall the polygon mirror motor cover [A] (x 4).

Before removing the old laser unit

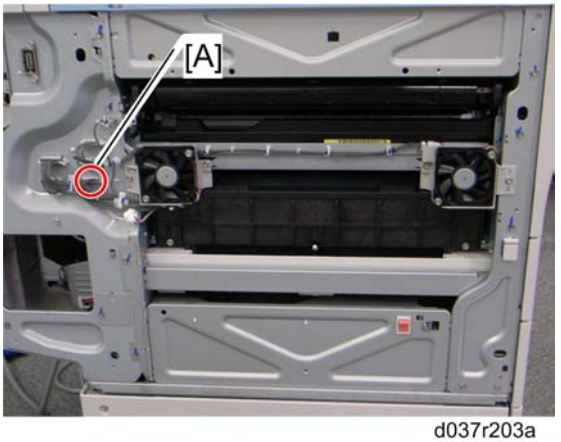
Do the following settings before removing the laser unit. These are adjustments for skew adjustment motors in the laser unit.

1. Plug in and turn on the main power switch of the copier.
2. Enter the SP mode.
3. Execute SP2-220-001 to clear the Mirror-No.2 positioning motor setting for Cyan.
4. Execute SP2-220-002 to clear the Mirror-No.2 positioning motor setting for Magenta.
5. Execute SP2-220-003 to clear the Mirror-No.2 positioning motor setting for Yellow.
6. Exit the SP mode.
7. Turn off the main power switch and disconnect the power cord of the copier.

Recovery procedure for no replacement preparation of laser unit

If you did not do the procedure in 'Before removing the laser unit' before removing the laser unit, you must do the following.

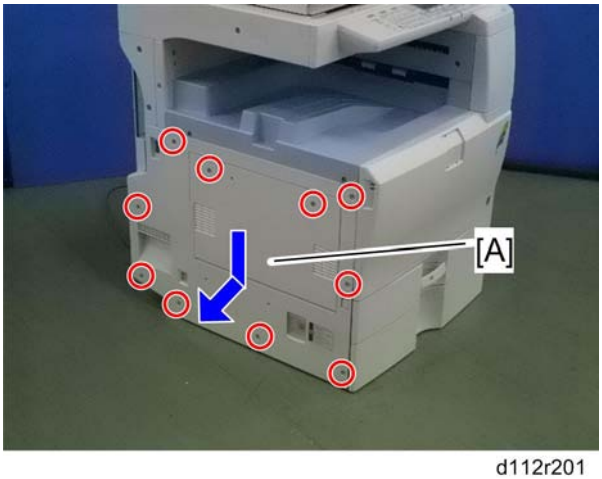
1. Turn off the main power switch and disconnect the power cord of the copier.
2. Remove the left cover (see the following "Removing the laser unit").



d037r203a

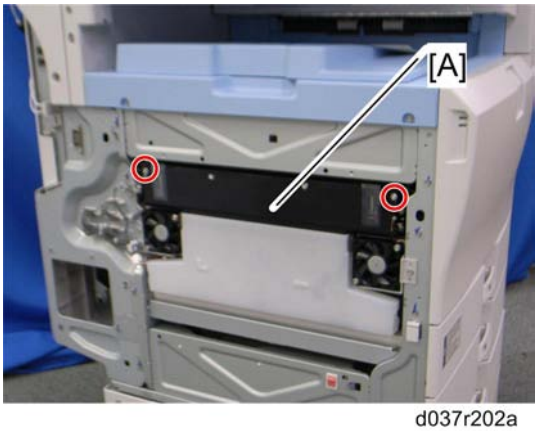
3. Disconnect the harness [A] of the skew correction motor.
4. Do steps 1 to 7 of "Before removing the laser unit".
5. Connect the harness [A] and reinstall the left cover.
6. Plug in and turn on the main power switch.

Removing the laser unit



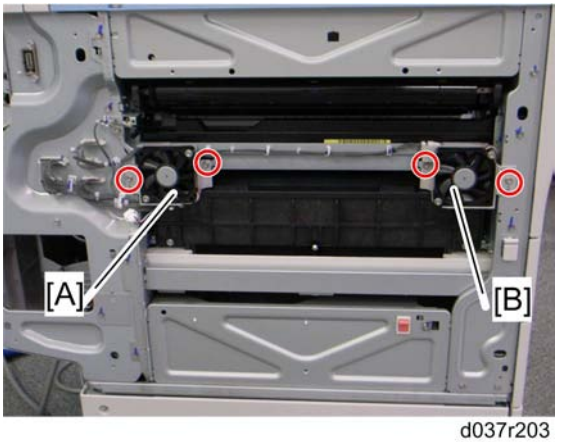
d112r201

1. Left cover [A] (x 10)



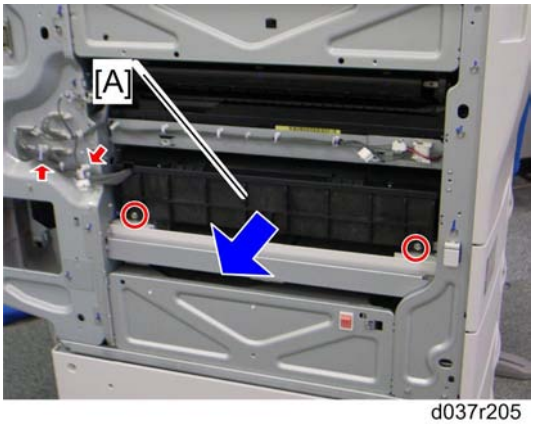
d037r202a

2. ITB cleaning unit [A] (x 2)



d037r203

3. Ventilation rear fan holder [A] (x 2, x 1)
4. Ventilation front fan holder [B] (x 2, x 1, x 1)



d037r205

5. Remove the laser unit [A] (x 2, x 2, x 3)

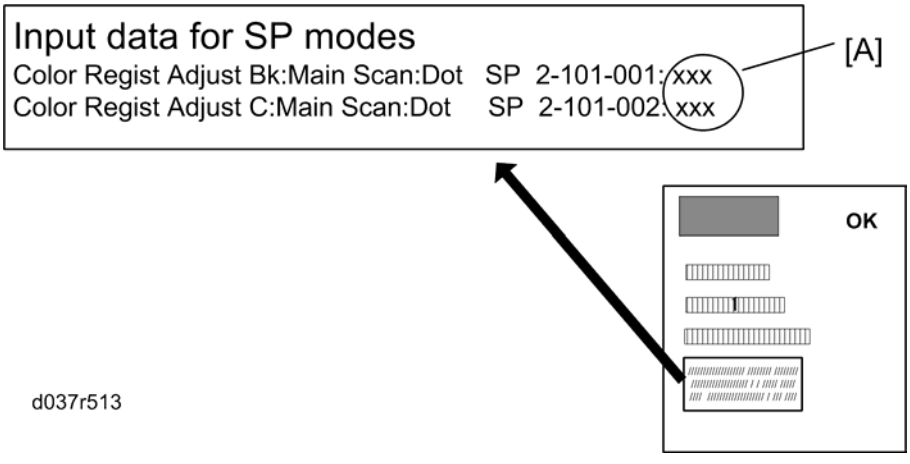
After installing a new laser unit

Do the following adjustment after installing the new laser unit.

1. Open the front door of the machine.
2. Plug in and turn on the main power switch.
3. Check that the settings of SP2-119-001, -002 and -003 are "0". If these settings are not "0", execute "Recovery procedure for no replacement preparation of laser unit" described above.

Important

- **If this step is not correctly done, an image problem may occur on printouts.**



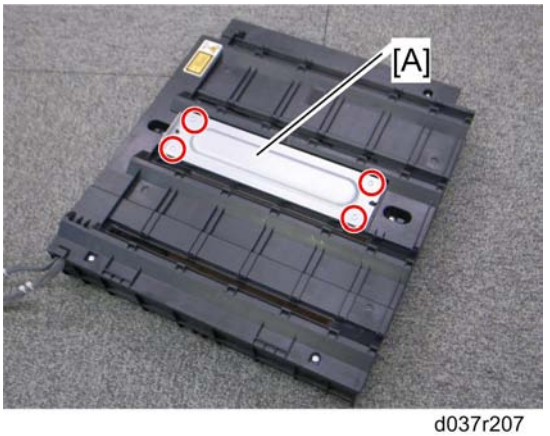
4. Input the SP settings on the sheet provided with a new LD unit.
    - SP2-101-001 to -004: Color Registration: Main Scan for each color
    - SP2-101-013 to -016: Color Registration: Sub Scan for each color
    - SP2-102-001, -003, -004, -006, -007, -009, -010, -012: Main Magnification for each color and line speed
    - SP2-104-001 to -004: :LD Initial Power Adjustment for each color

    Note

    - The printed values [A] are different for each laser unit.
5. Print the test pattern (14: 1-dot trimming pattern in the SP2-109-003).
6. Check that the left and right trim margin is within 4 ± 1 mm. If not, change the standard value for the main scan magnification adjustment.
7. Select "0" with SP2-109-003 after printing the "1-dot trimming pattern.
8. Do the line position adjustment.
    - First do SP2-111-003.
    - Then do SP2-111-001.
    - To check if SP 2-111-001 was successful, watch the screen during the process. A message is displayed at the end. Also, you can check the result with SP 2-194-010 to -012.
9. Exit the SP mode.

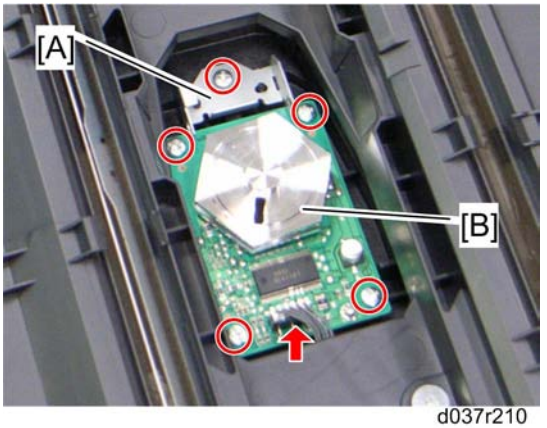
Polygon Mirror Motor

1. Laser unit (☛ p.120)



d037r207

2. Polygon mirror motor cover [A] (x 4)



d037r210

3. Polygon mirror motor holder [A] (x 1)
4. Polygon mirror motor [B] (x 4, x 1)

After installing the laser optics housing unit:

- Do the "Line Pos. Adjust Execute:Mode c" (SP2-111-003).
- Then do the "Line Pos. Adjust Execute:Mode a" (SP2-111-001).

To check if SP 2-111-001 was successful, watch the screen during the process. A message is displayed at the end. Also, you can check the result with SP2-194-010 to -012.

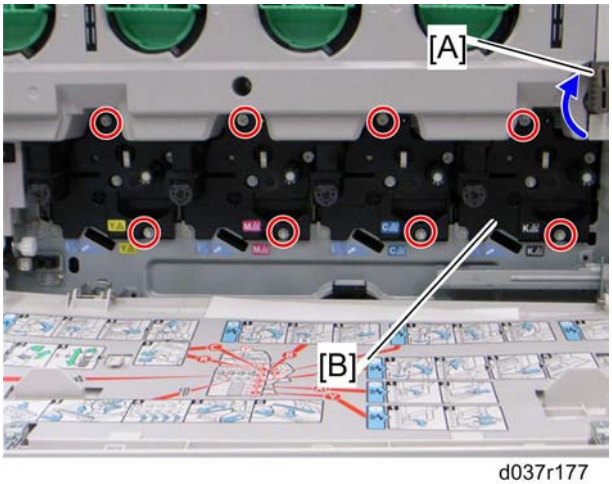
Image Creation

PCDU (Photo Conductor and Development Unit)

Note

- Do not touch the OPC drum. Do not let metal objects touch the development sleeve.

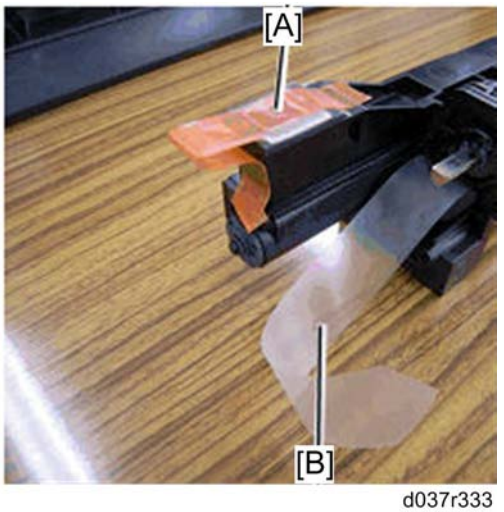
1. Open the front door.
2. PCDU toner collection bottle (p.91)



d037r177

3. Hold down the ITB lock lever [A] and turn it in the arrow direction.
4. PCDU [B] (x 2 each)

When installing a new PCDU



d037r333

Remove the cover [A] on the toner inlet and pull out the tape [B] from the new development unit before installing a new PCDU in the machine.

Drum Unit and Development Unit

The new drum unit has a front cover. When you attach the new drum unit to the development unit, remove the front cover first.

Use it for installing the new drum unit and development unit.

1. If you install a new drum unit only, set SP 3902-xxx to "1".
    - Black: 3902-009
    - Cyan: 3902-010
    - Magenta: 3902-011
    - Yellow: 3902-012

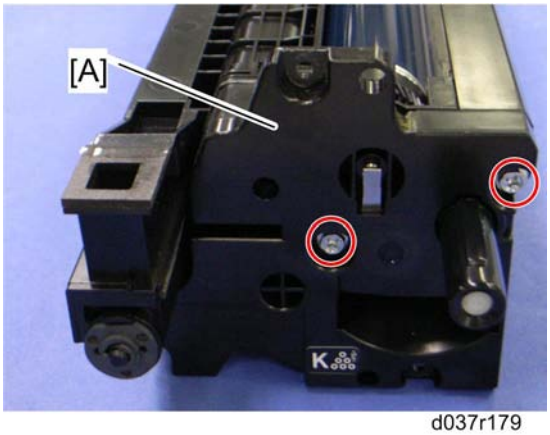
    Note

    - If you do this, then the machine will reset the PM counter for the drum unit automatically, after you turn the power on again.
2. If you install a new development unit only, set SP 3902-xxx to "1".
    - Black: 3902-001
    - Cyan: 3902-002
    - Magenta: 3902-003
    - Yellow: 3902-004

Note

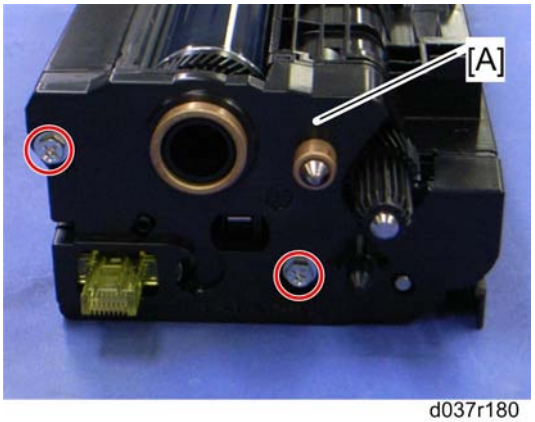
- If you do this, then the machine will reset the PM counter for the development unit automatically, after you turn the power on again.

3. Turn the machine power off.
4. PCDU (p.127)



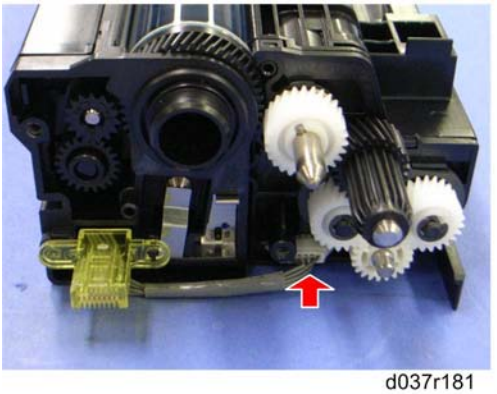
d037r179

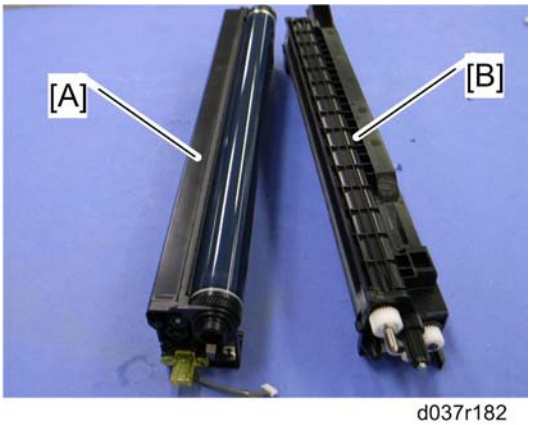
5. Front cover [A] (x 2)



d037r180

6. Rear cover [A] (x 2)

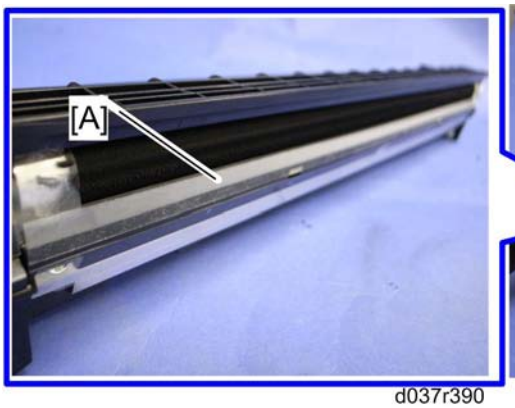

d037r181



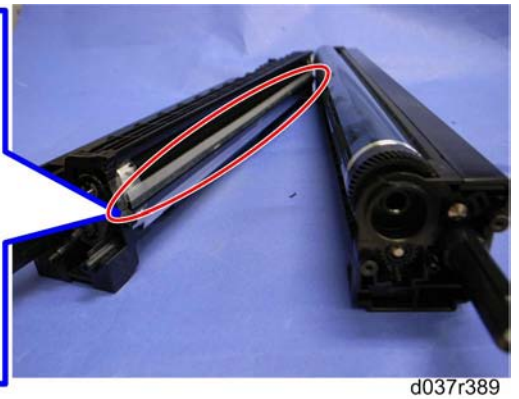
d037r182

4

7. Drum unit [A] and development unit [B] (x 1)

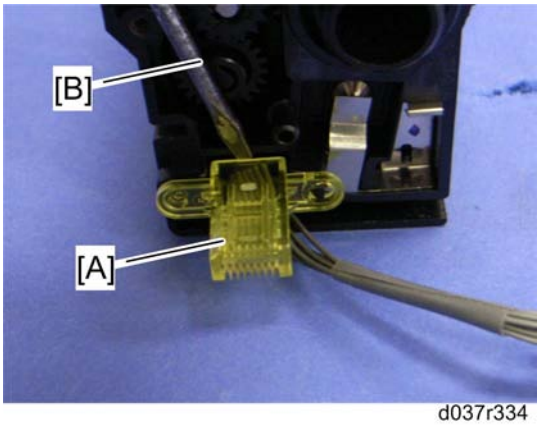


d037r390


d037r389

Note

- When the development unit is removed from the drum unit, clean the entrance mylar [A] with a vacuum cleaner.



d037r334

8. Remove the connector [A] with a small flat tool [B].

Note

- Keep this connector [A] for the new drum unit.

9. If you change the development unit, do the ACC procedure.
10. Execute the drum phase adjustment with SP1902-001 twice.

New unit detection for the development unit

When a new development unit is installed in the machine, the machine will automatically reset the PM counters for the development unit and drum unit, even if the drum unit was not changed. To avoid resetting both counters after you install a new development unit only, make sure that step 2 in the procedure above is done before installing.

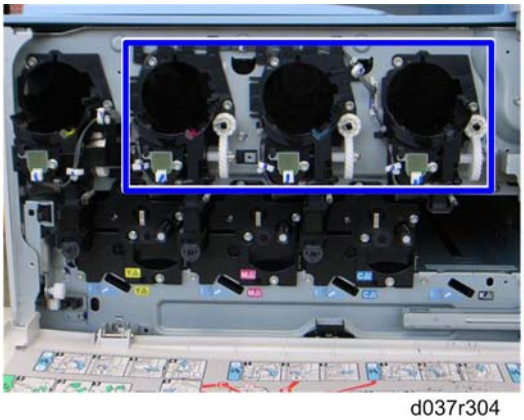
Toner Hopper Unit

Toner hopper unit: K, C, M

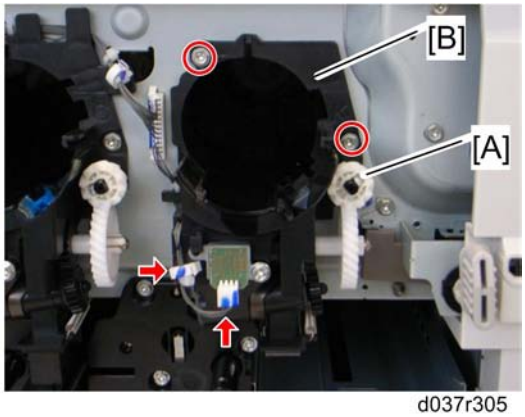
1. Open the front door.
2. PCDU toner collection bottle (☛ p.91)
3. Inner cover (☛ p.97)
4. PCDU (☛ p.127)

Note

- Remove the corresponding color PCDU. For example, if you remove the toner hopper unit: K, remove the black PCDU.

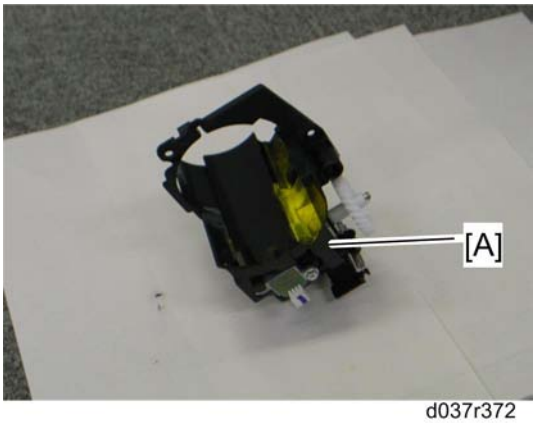


d037r304



d037r305

5. Toner supply drive gear [A] (hook x 1)
6. Toner hopper unit: K, C, M [B] (x 2, x 1 for K and M; 2 for C , x 1 each)

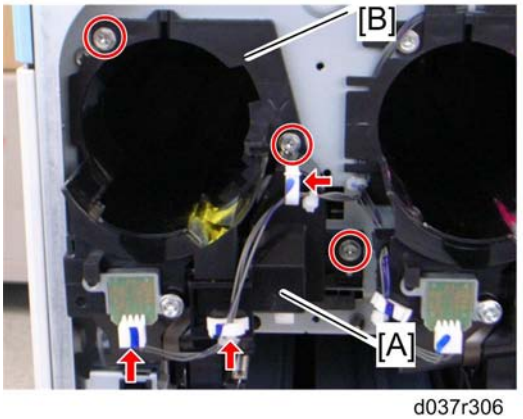


d037r372

7. Place the toner hopper unit [A] on sheets of paper.

Toner hopper unit: Y

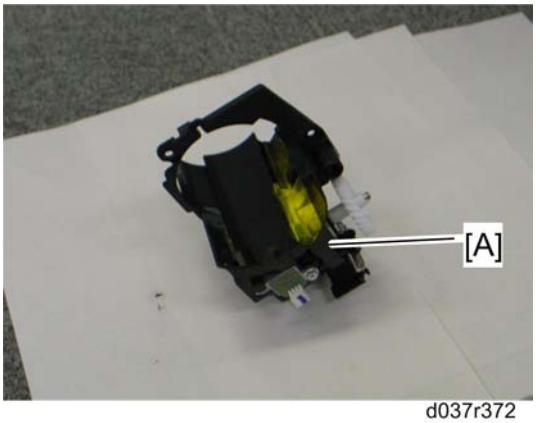
1. Open the front door.
2. PCDU toner collection bottle (☛ p.91)
3. Inner cover (☛ p.97)
4. PCDU (☛ p.127)



d037r306


d037r304

5. Gear cover [A] (x 2, x 2)
6. Toner supply drive gear (hook x 1)
7. Toner hopper unit: Y [B] (x 2, x 1 each)

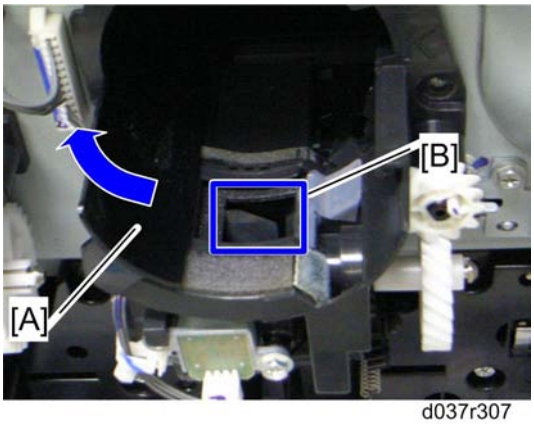


d037r372

8. Place the toner hopper unit [A] on sheets of paper.

When installing a new toner hopper unit

Developer must be added to the new toner hopper. Some developer (8 g) is provided with each new toner hopper unit. Pour this into the toner hopper unit before reattaching the inner cover.



d037r307

1. Slowly open the toner hopper shutter [A].

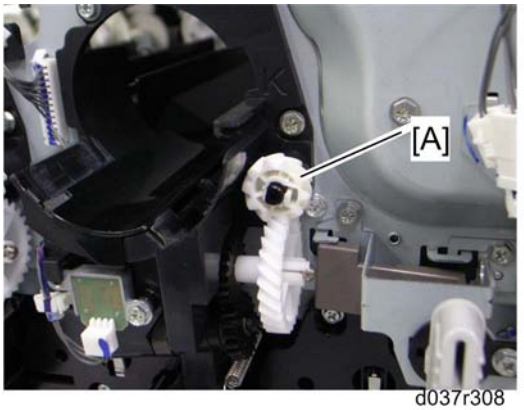
Note

- Do not try to open the toner hopper shutter fully at one try. This shutter comes off easily without the inner cover. If the toner hopper shutter has come off, reattach it.

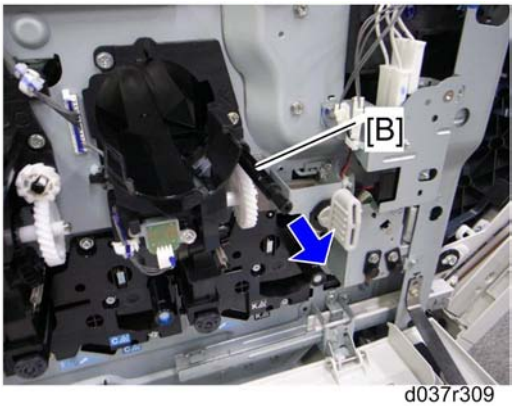
2. Pour the developer (8 g) into the inlet [B] of the toner hopper unit.
3. Close the toner hopper shutter.
4. Reassemble the machine.

Toner Supply Motor

1. Open the front door.
2. PCDU toner collection bottle (☛ p.91)
3. Inner cover (☛ p.97)
4. Inner tray (☛ p.100)

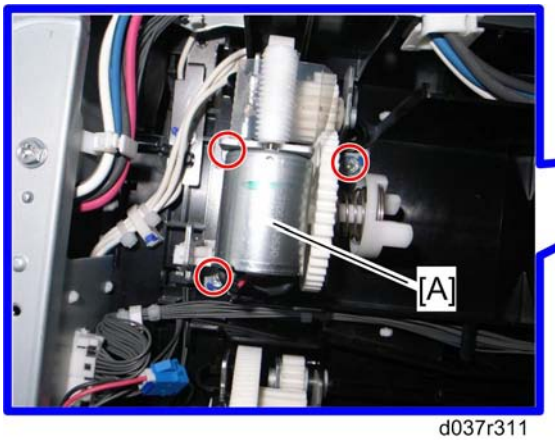


d037r308

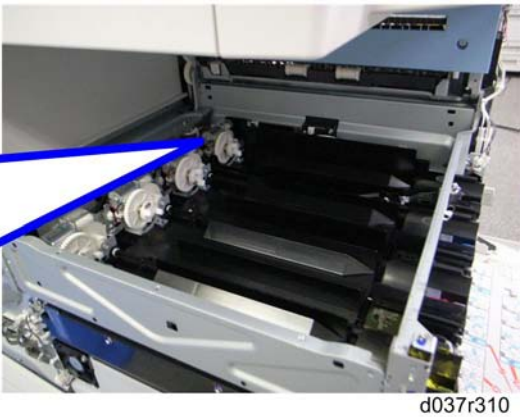


d037r309

5. Toner supply drive gear [A] (hook x 1)
6. Pull the toner supply drive shaft [B].



d037r311

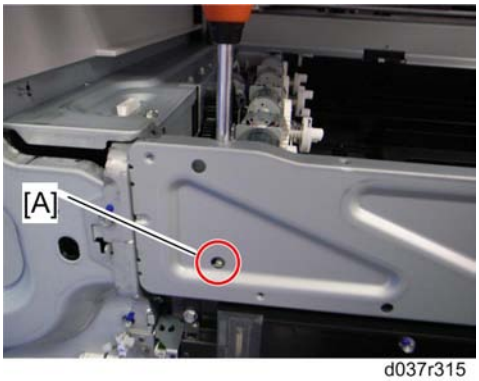

d037r310

7. Take aside the toner supply gear unit [A] (x 3).

NOTE

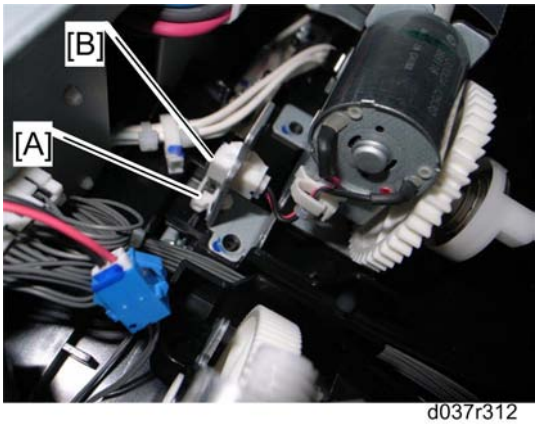
When removing the toner supply gear unit for **Yellow**, one of screws on the toner supply gear unit is difficult to see.

1) Remove the left cover (☛ p.93).



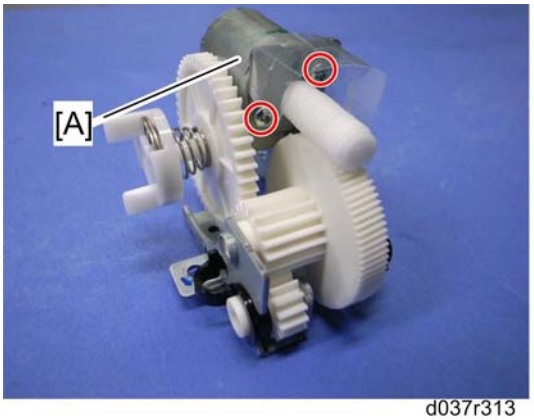
d037r315

2) Check the screw position [A] as shown above.

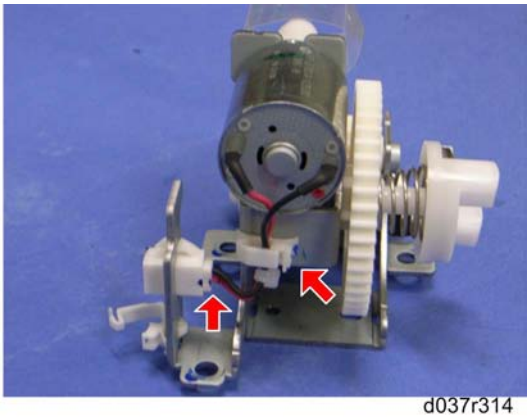


d037r312

8. Release the clamp [A], and then disconnect the harness [B].

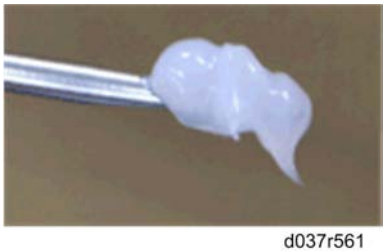


d037r313



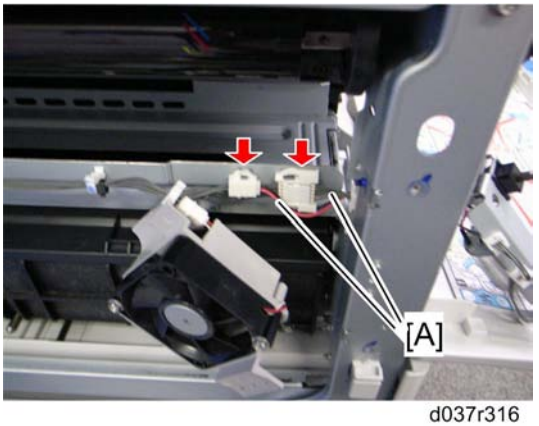
d037r314

9. Toner supply motor [A] (x 1, x 1, x 2)

NOTE
Apply "Silicon Grease G501" to the gear of the motor. The appropriate amount of grease is as shown below.  d037r561 • The flat screwdriver in the photo is a small size.

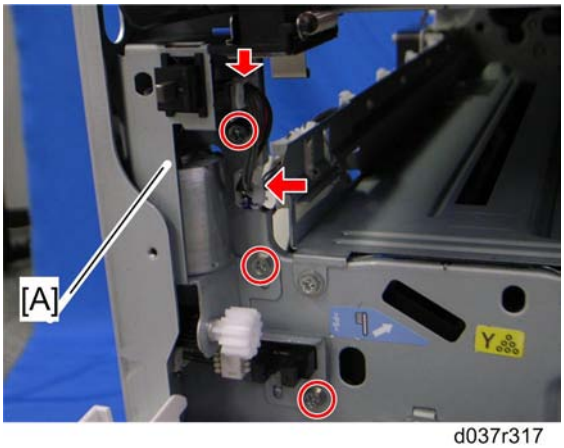
Toner Collection Motor

1. Open the front door.
2. PCDU toner collection bottle (☛ p.91)
3. PCDU: Yellow (☛ p.127)
4. Ventilation Fan: Front (☛ Ventilation Fan)



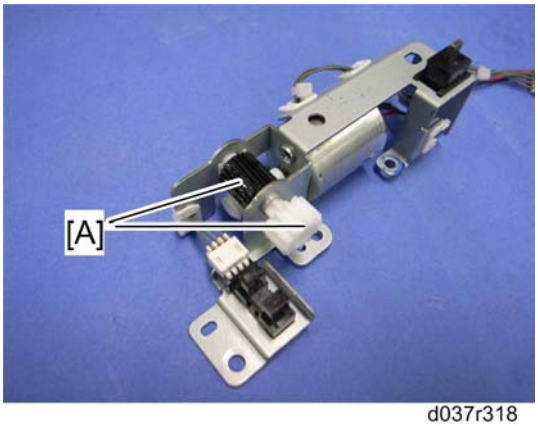
d037r316

5. Disconnect two harnesses [A].



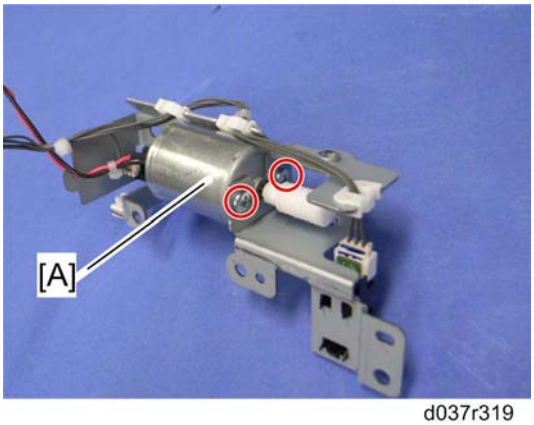
d037r317

6. Toner collection motor assembly [A] (x 2, x 3)



d037r318

7. Gears [A] (x 1)

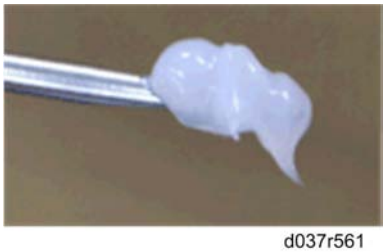


d037r319

8. Toner collection motor [A] (x 2)

NOTE

Apply "Silicon Grease G501" to the gear of the motor. The appropriate amount of grease is as shown below.

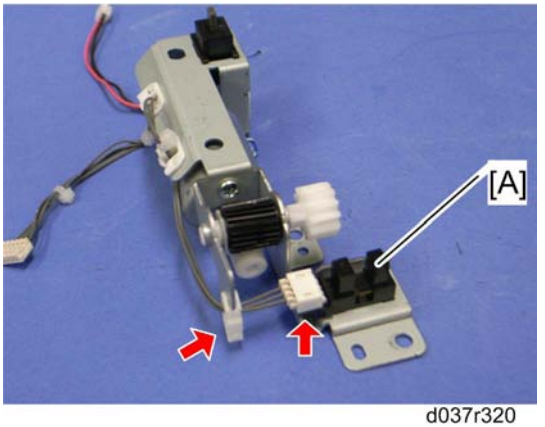


d037r561

- The flat screwdriver in the photo is a small size.

PCDU Toner Collection Bottle Full Sensor

1. Toner collection motor assembly (☛ p.136)

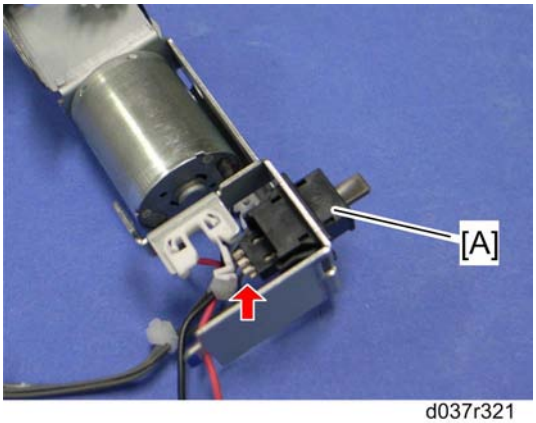


d037r320

2. PCDU toner collection bottle full sensor [A] (x 1, x 1, hooks)

PCDU Toner Collection Bottle Set Switch

1. Toner collection motor assembly (☛ p.136)

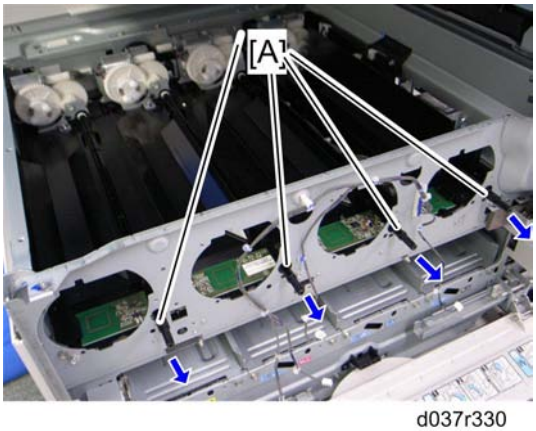


d037r321

2. PCDU toner collection bottle set switch [A] (hooks, x 1)

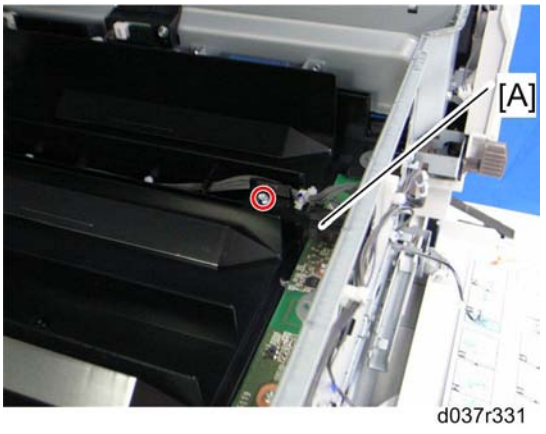
RFID Board

1. All toner hopper units (p.131)
2. Inner tray (p.100)



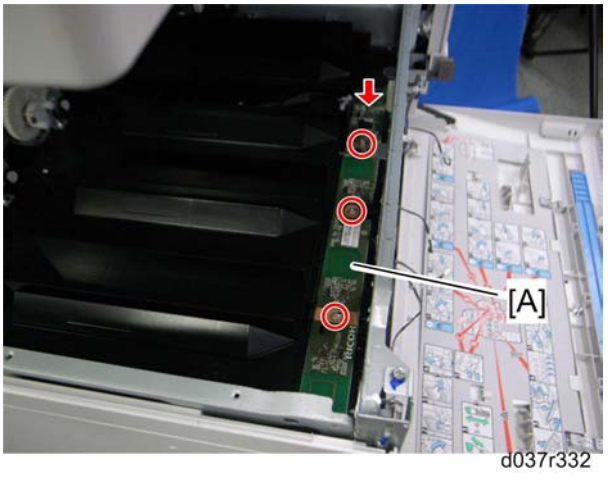
d037r330

3. Toner supply drive shafts [A]



4

4. Harness cover [A] (x 1)



5. RFID board [A] (x 3, x 1)

Image Transfer

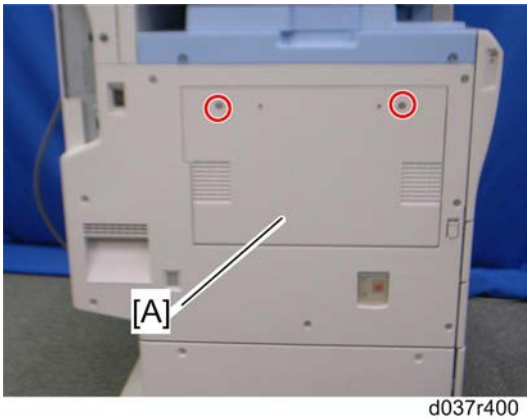
ITB Cleaning Unit

If you replace the cleaning unit or toner collection bottle after the machine detects that it is full or near-full, the machine automatically resets the PM counter for the bottle after replacement.

But, if you replace a bottle that is not full or near-full, then you must reset the PM counter for this unit. To do this, set SPs 3902-017 and -020 to 1 before you turn off the power switch.

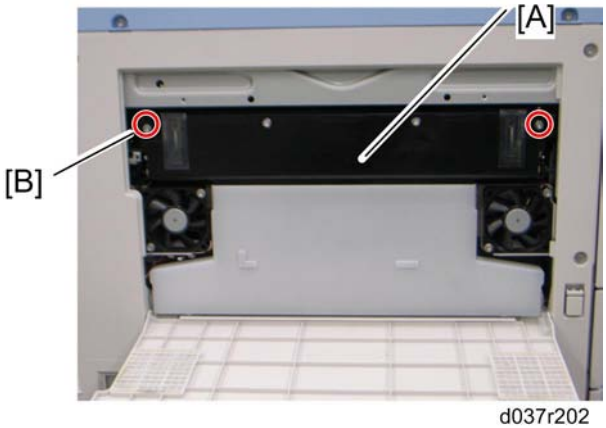
If you do this, then the machine will reset the PM counter for the units automatically, after you turn the power on again.

SP 3902-017 is for the ITB cleaning unit and SP 3902-020 is for the ITB toner collection bottle.



d037r400

1. Open the ITB cleaning unit cover [A] (x 2).



d037r202

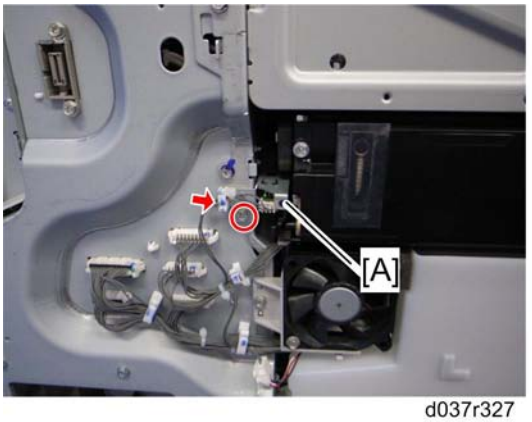
2. ITB cleaning unit [A] (x 2)

When installing the ITB cleaning unit

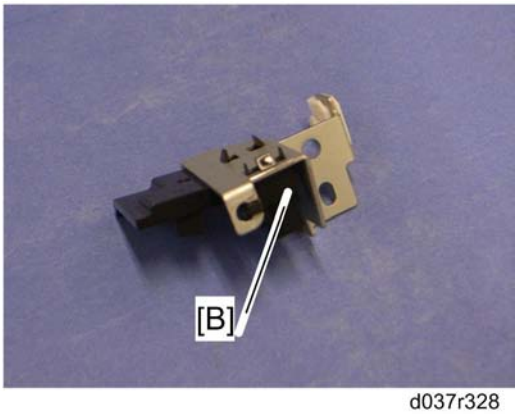
Secure the front side [B] first with a screw. This [B] is the positioning screw.

ITB Toner Collection Bottle Full Sensor

1. Left cover (☛ p.93)



d037r327

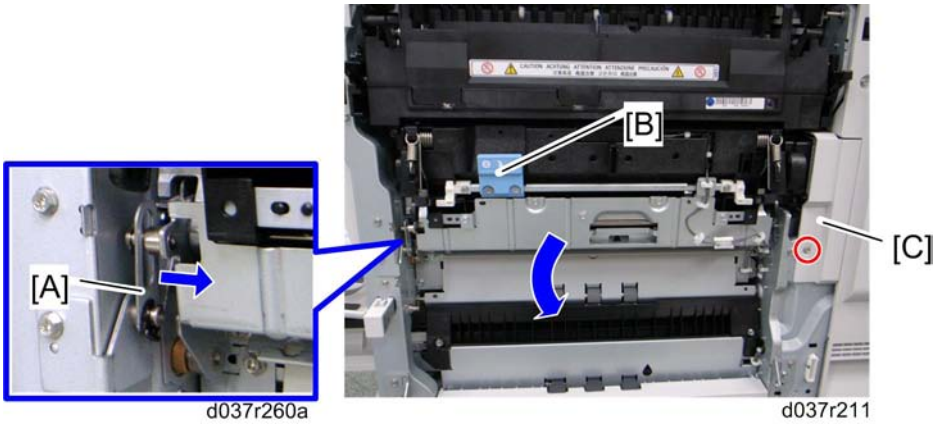


d037r328

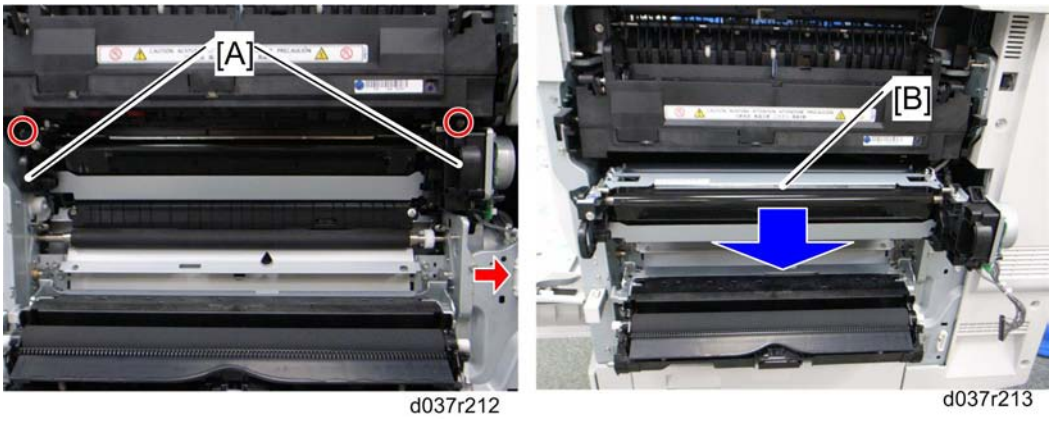
2. Bottle full sensor assembly [A] (x 1, x 1, x 1)
3. ITB toner collection bottle full sensor [B] (hooks)

ITB (Image Transfer Belt) Unit

1. ITB cleaning unit (☛ p.141)
2. PCU toner collection bottle (☛ p.91)
3. Unlock the ITB lock lever (☛ p.96 "Inner Right Cover").
4. Right door unit (☛ p.203)



5. Release the arm [A] (x 1).
6. Pull the lever [B] to open the paper transfer unit.
7. Harness cover [C] (x 1)



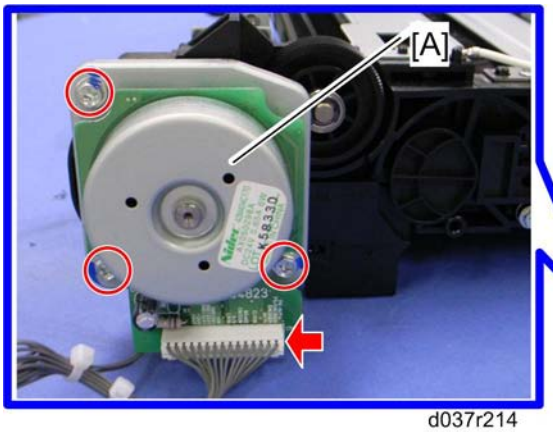
8. Grasp the handles [A], and then pull out the ITB unit fully [B] (x 2, x 1).
9. Remove the ITB unit motor after pulling out the ITB unit from the machine. ("Next procedure")

Important

- **If it takes much time to reinstall the ITB unit after removing it from the machine, close the paper transfer unit to prevent the drum units from being exposed to light.**

ITB Unit Motor

1. ITB cleaning unit (p.141)
2. ITB unit (p.142)



d037r214

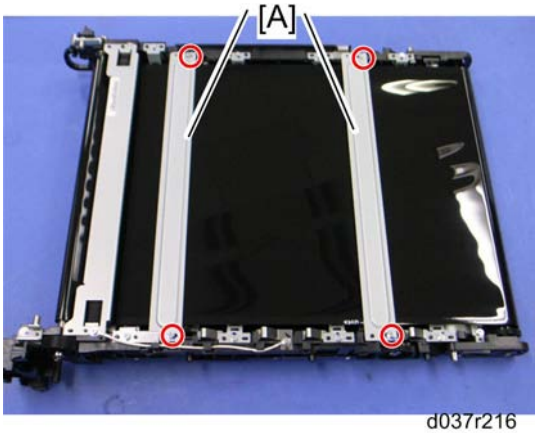

d037r215

4

3. ITB unit motor [A] (x 3, x 1)

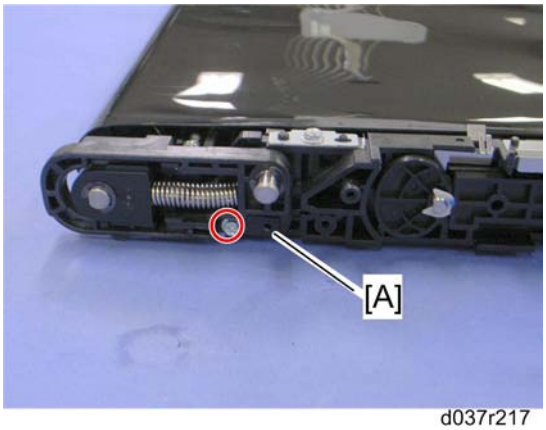
Image Transfer Belt

1. ITB cleaning unit (p.141)
2. ITB unit (p.142)
3. ITB unit motor (p.143)



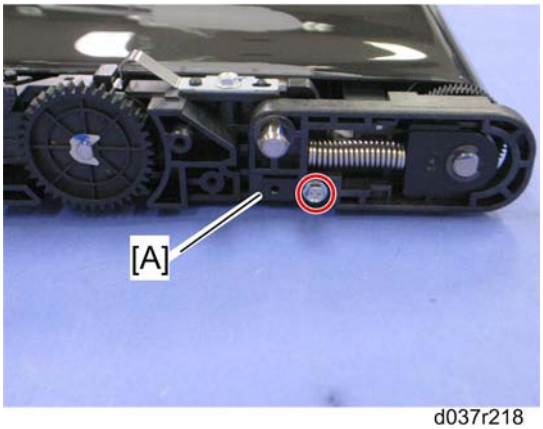
d037r216

4. Two stays [A] (x 2 each)



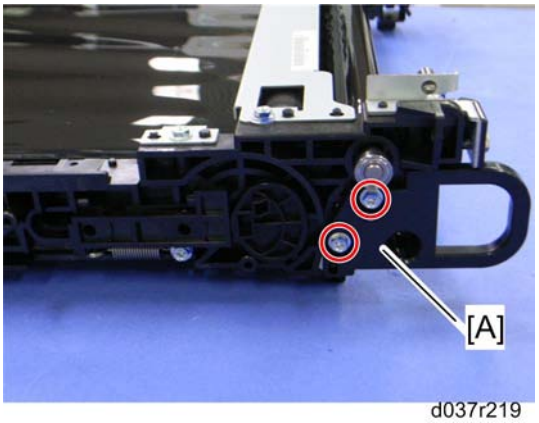
d037r217

5. Front holder bracket [A] (as seen from the front) (x 1: M3x10)



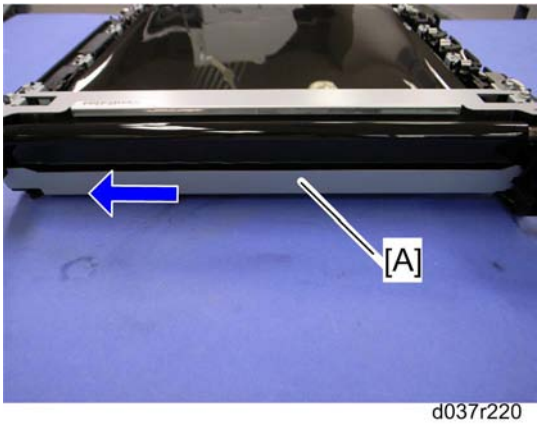
d037r218

6. Rear holder bracket [A] (as seen from the rear) (x 1: M3x10)



d037r219

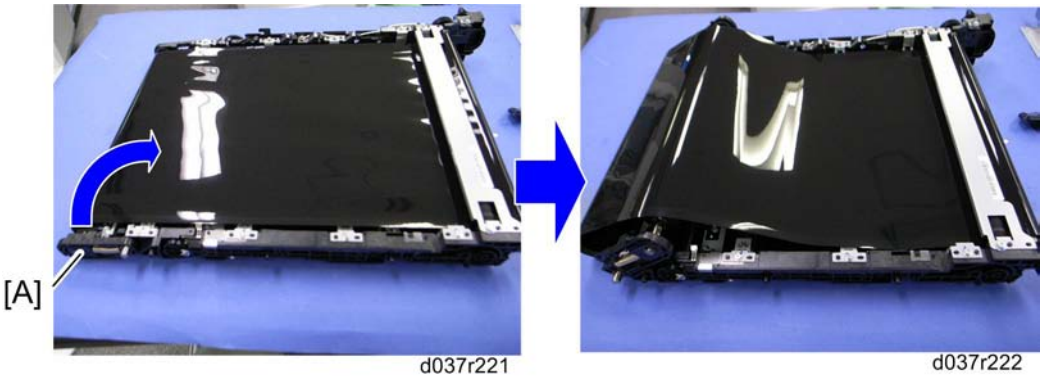
7. Handle [A] (x 2: M3x10)



d037r220

4

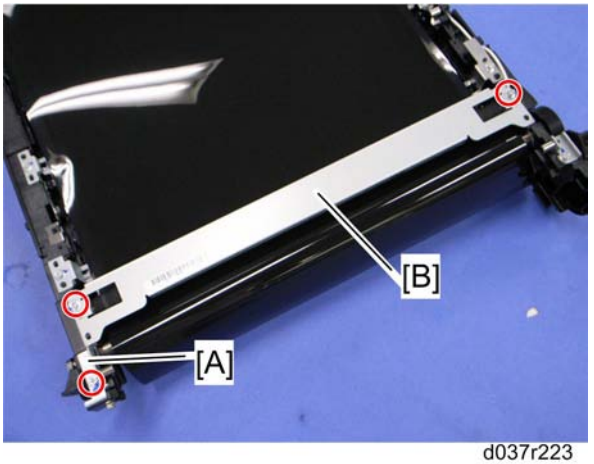
8. Guide bracket [A]



d037r221

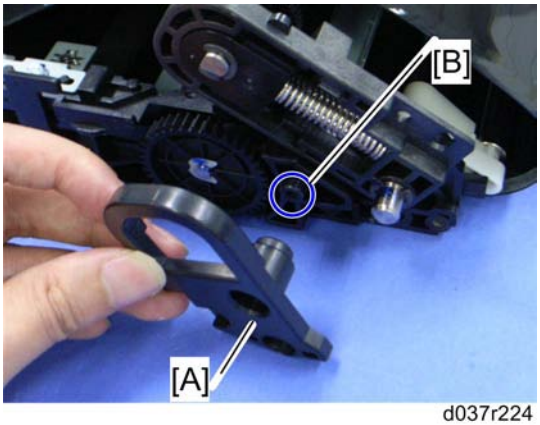
d037r222

9. Pull the tension roller [A] as shown.



d037r223

10. Front guide pin bracket [A] (x 1)
11. Press roller bracket [B] (x 2)

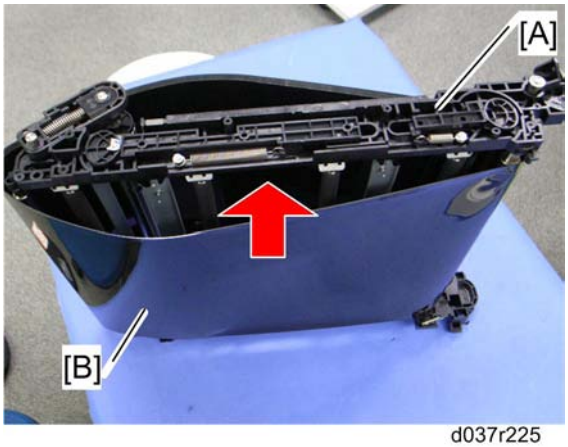


d037r224

12. Attach the handle [A], which was removed in step 7, to the projection [B] on the rear left side (x 1).

Note

- This handle will be used as a stand in later steps.

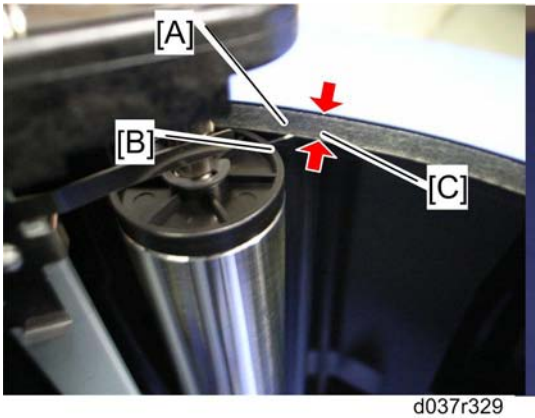


d037r225

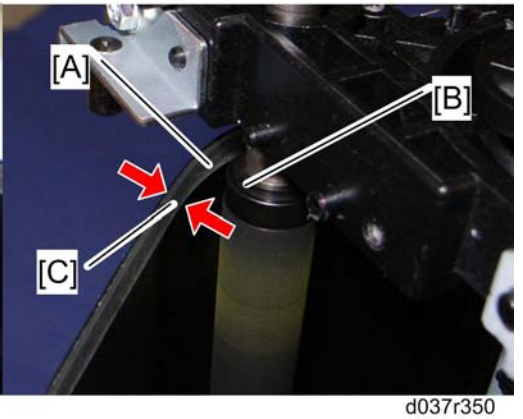
13. Stand the ITB unit [A] as shown above.
14. Image transfer belt [B]

When reinstalling a new image transfer belt

- Reset the PM counter



d037r329



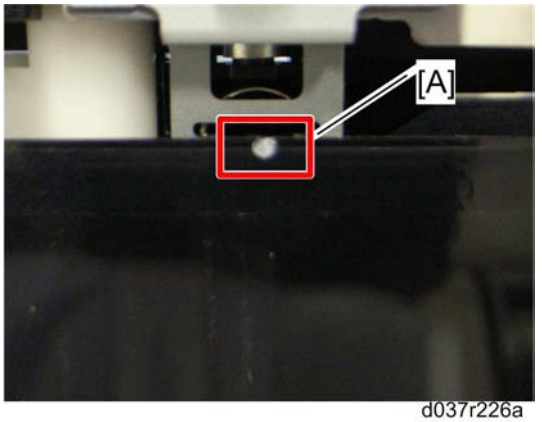
d037r350

4

- There is a rim [A] at each edge of the transfer belt. The ends of all the rollers ([B] for example) in the transfer belt unit must be between the two rims.

Note

- There are two rims (width [C]: about 5 mm) at the front and rear edges inside the image transfer belt.

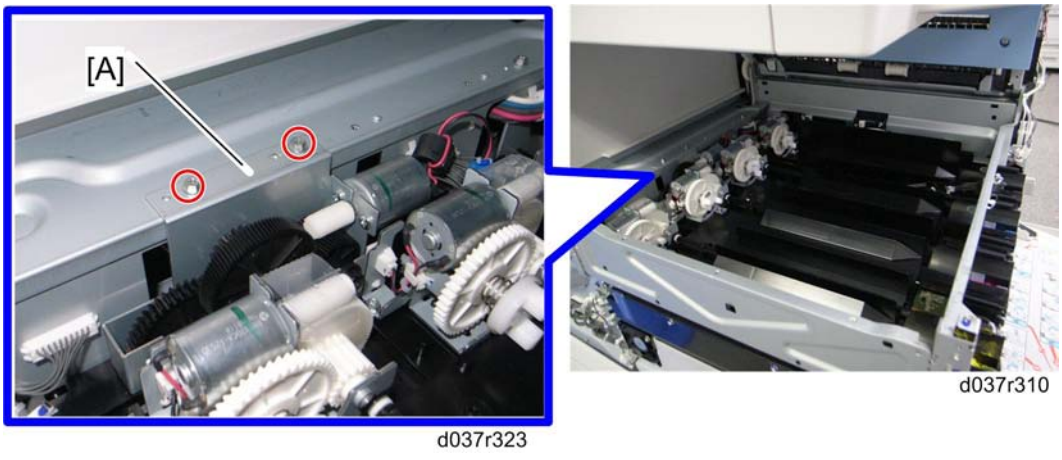


d037r226a

- This belt must be installed the correct way around. When you reinstall the image transfer belt unit, install it with the white mark [A] on the belt at the rear side of the unit.

ITB Contact Motor

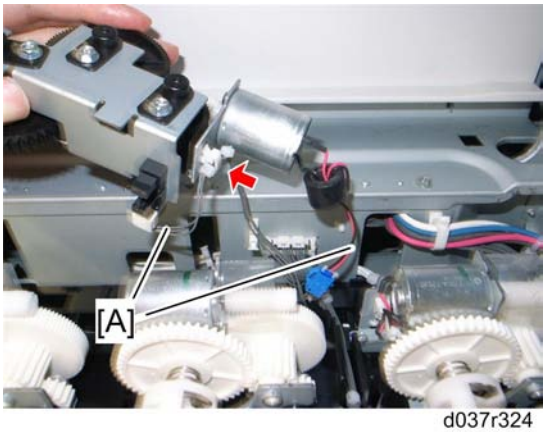
1. Pull out all the toner bottles.
2. Inner tray (☛ p.100)



d037r323

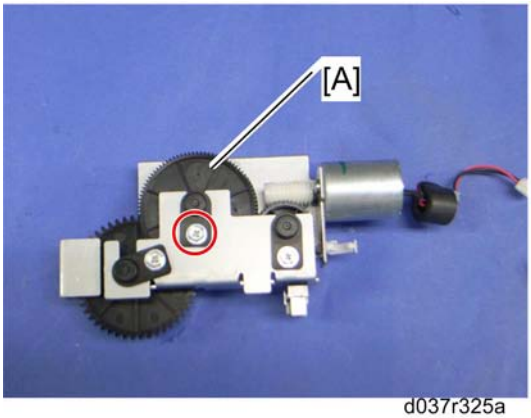
d037r310

3. Take aside the ITB contact motor unit [A] (x 2)

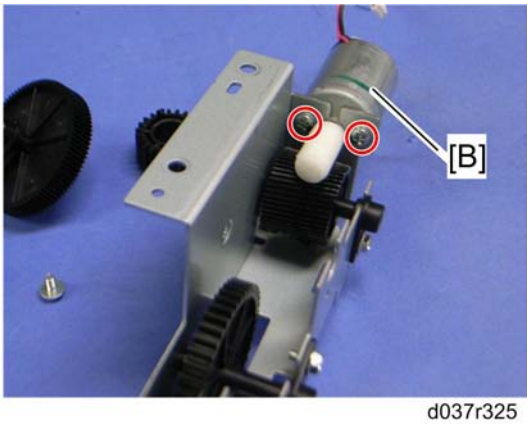


d037r324

4. Disconnect two harnesses [A], and then remove the ITB contact motor unit (x 1)



d037r325a

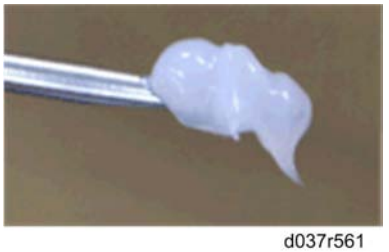


d037r325

5. Gears [A] (x 1)
6. ITB contact motor [B] (x 2)

NOTE

Apply "Silicon Grease G501" to the gear of the motor. The appropriate amount of grease is as shown below.

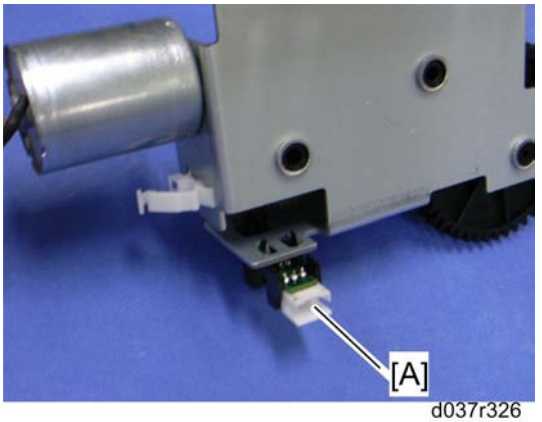


d037r561

- The flat screwdriver in the photo is a small size.

ITB Contact Sensor

1. ITB contact motor unit (p.148)



d037r326

2. ITB contact sensor [A] (hooks)

Paper Transfer

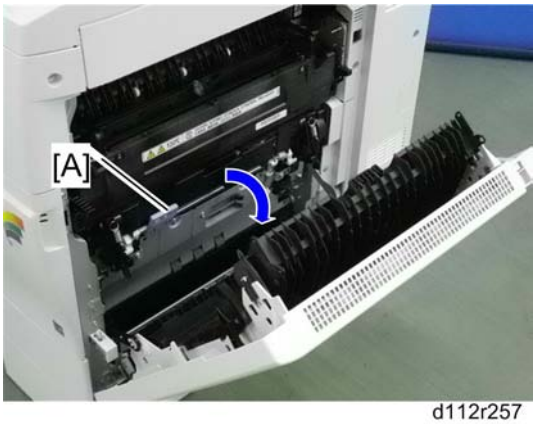
PTR (Paper Transfer Roller) Unit

- If you install a new PTR unit, then set SP 3902-018 to "1" before you start this procedure.

Note

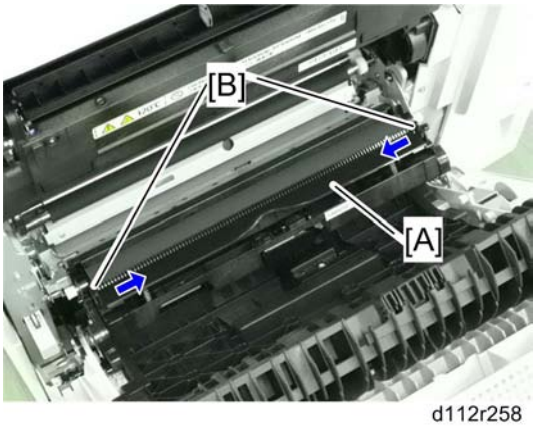
- If you do this, then the machine will reset the PM counter for the paper transfer unit automatically, after you turn the power on again.

1. Open the right door.



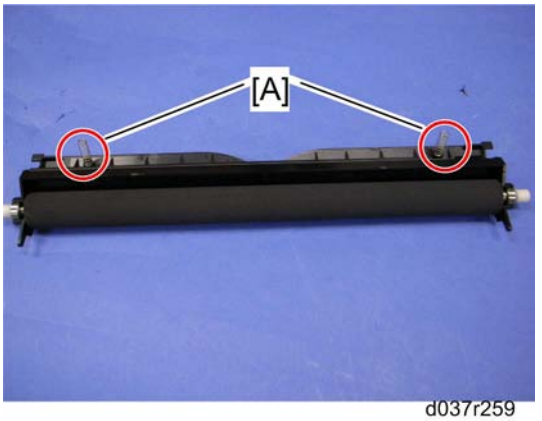
d112r257

2. Open the paper transfer unit [A].



d112r258

3. Remove the PTR unit [A], releasing the two locks [B].



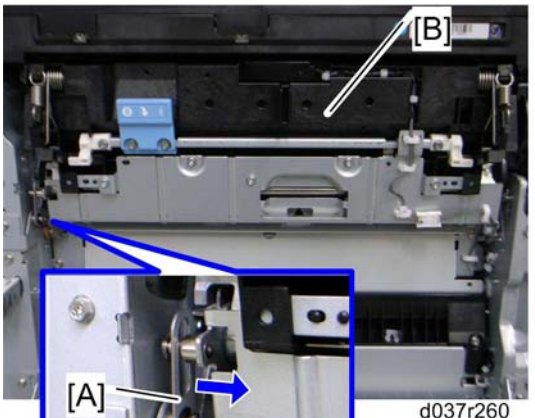
d037r259

4

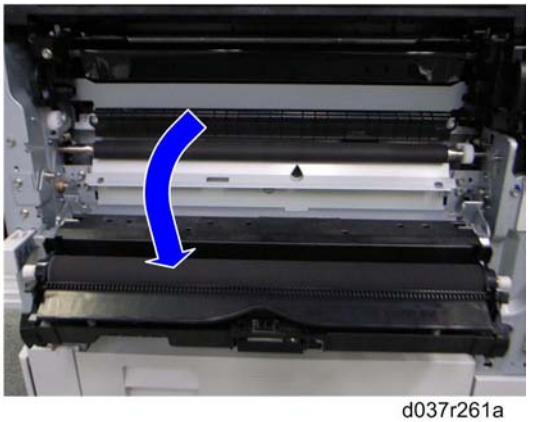
4. Remove the two springs [A].
    - Keep these two springs from the old PTR unit and install them in the new PTR unit.

Opening the Paper Transfer Unit

1. Right door unit (☛ p.203)



d037r260

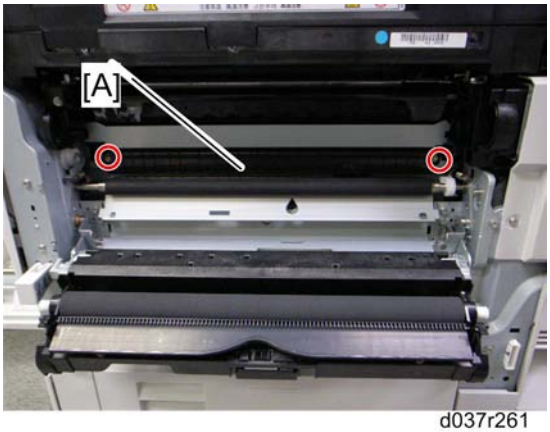

d037r261a

d037r260a

2. Release the arm [A] (x 1).
3. Open the paper transfer unit [B].

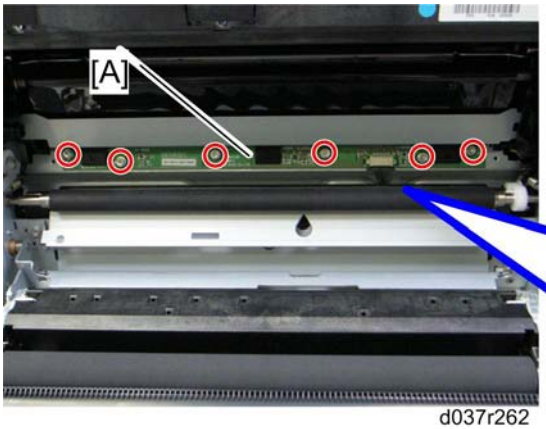
ID Sensor Board

1. Right door unit (☛ p.203)
2. Open the paper transfer unit (☛ p.152).

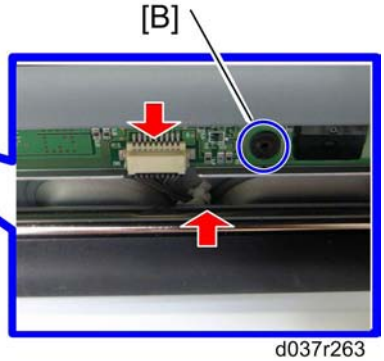


d037r261

3. ID sensor cover [A] (x 2)



d037r262



d037r263

4. ID sensor board [A] (x 6, x 1, x 1)

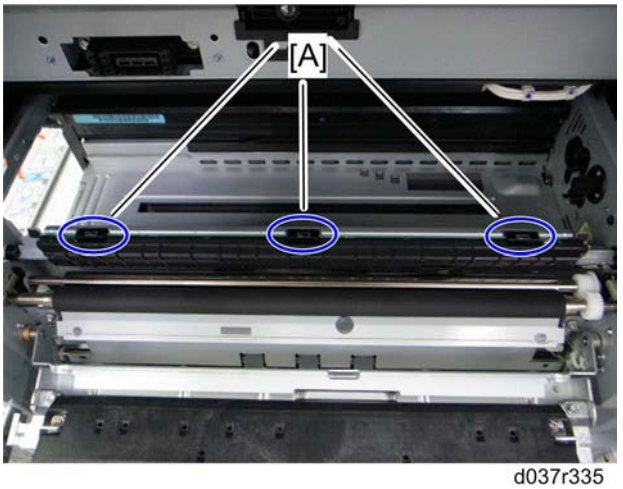
Note

- If the black spacer [B] is stuck to the sensor board as shown above, remove all black spacers. These black spacers should be used when a new ID sensor board is installed.

Cleaning for ID sensors

ID sensors require cleaning maintenance every EM. Do the following steps for ID sensor cleaning.

1. PCDU: K (p.127)
2. ITB unit (p.142)



d037r335

3. Clean the ID sensors [A].
   - Use a cloth moistened with alcohol to clean the ID sensors.

Note

- Do not use a dry cloth. Otherwise, the ID sensors may get more dirty due to static electricity.

After installing a new ID sensor unit/board

Do the following adjustment after installing a new ID sensor unit/board.

1. Plug in and turn on the main power switch of the copier.
2. Enter the SP mode.

d037r264

3. Input all correction coefficients [A] for the ID sensor with the SP modes referring to the barcode sheet provided with the new ID sensor unit/board.

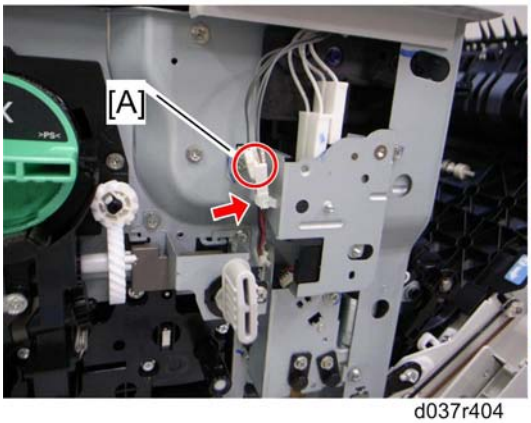
Note

- For example, input "**0.98**" with SP3-362-013.

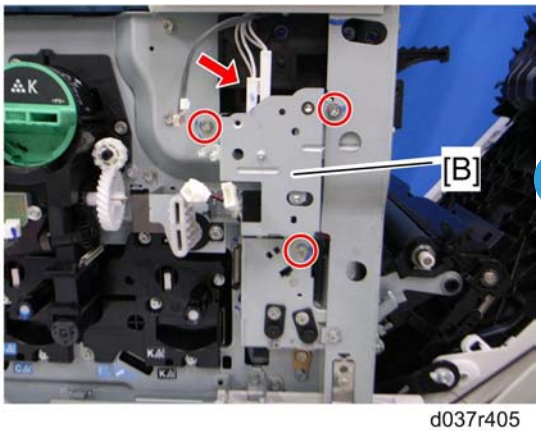
4. Exit the SP mode.

PTR Contact Motor

1. Open the right door.
2. Open the paper transfer unit (☛ p.152).
3. Inner right cover (☛ p.96)
4. Inner cover (☛ p.97)

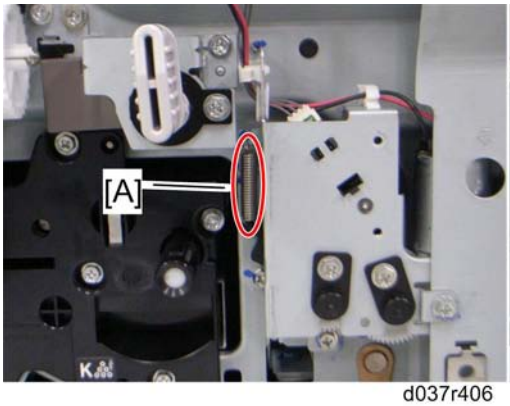


d037r404

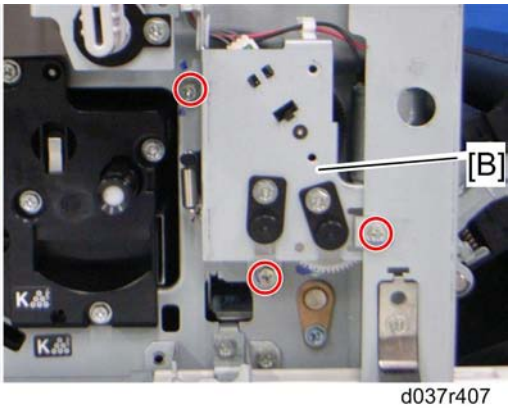


d037r405

5. Disconnect the two harnesses [A] (x 1).
6. Interlock switch bracket [B] (x 3, x all)



d037r406



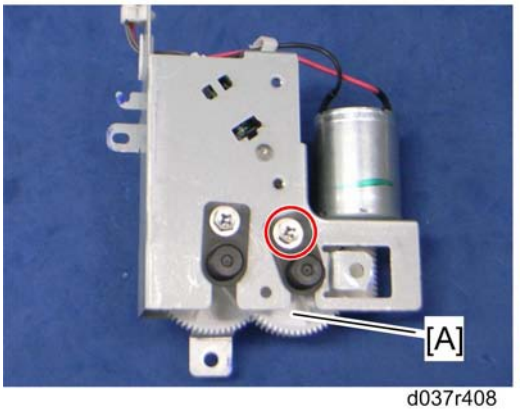
d037r407

7. Spring [A]

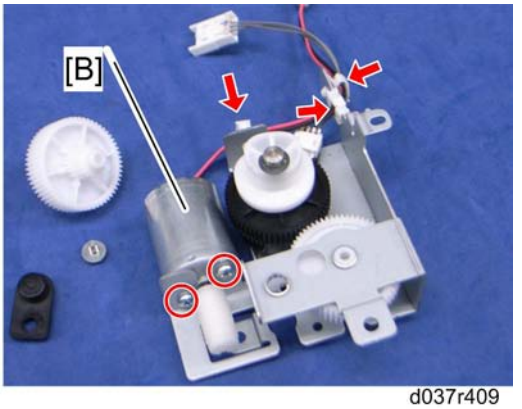
Note

- Do not forget to reinstall the spring [A] when reassembling. Otherwise, SC400 may occur.

8. PTR contact motor bracket [B] (x 3)



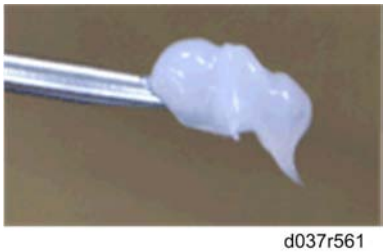
d037r408



d037r409

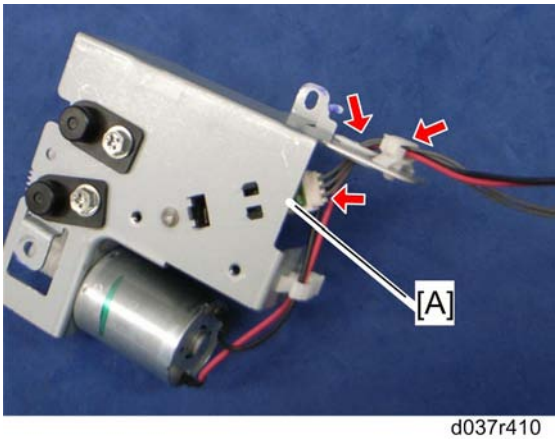
4

9. Gear [A] (x 1, bearing x 1)
10. PTR contact motor [B] (x 2, x 3)

NOTE
Apply "Silicon Grease G501" to the gear of the motor. The appropriate amount of grease is as shown below.  d037r561 • The flat screwdriver in the photo is a small size.

PTR Contact Sensor

1. PTR contact motor bracket ("PTR Contact Motor" described above)

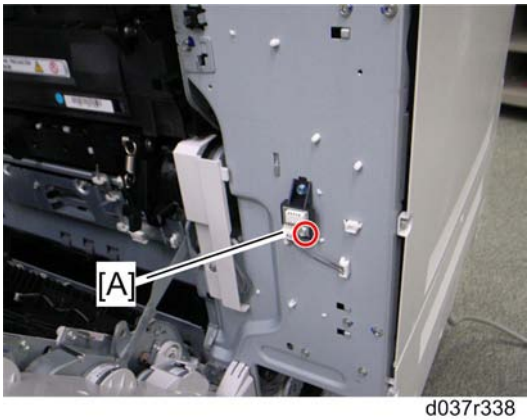


d037r410

2. PTR contact sensor [A] (hooks, x 2, x 1)

Temperature and Humidity Sensor

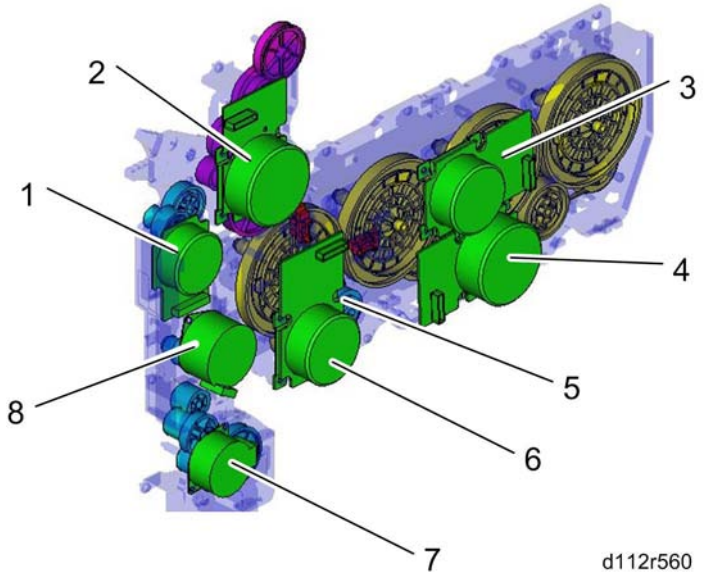
1. Right rear cover (p.95)



d037r338

2. Temperature and humidity sensor [A] (x 1, x 1, x 1)

Drive Unit



The drawing above shows the drive unit layout.

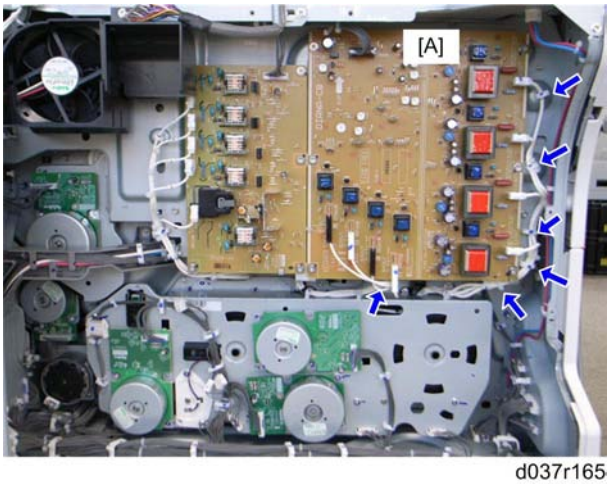
1. ITB unit motor	
2. Fusing/paper exit motor	6. Drum/Development motor: K
3. Drum motor: CMY	7. Paper feed motor: T1
4. Development motor: CMY	8. Registration motor
5. Development clutch: K	

There are some motors and clutches that are not shown in the above drawing:

- By-pass Motor

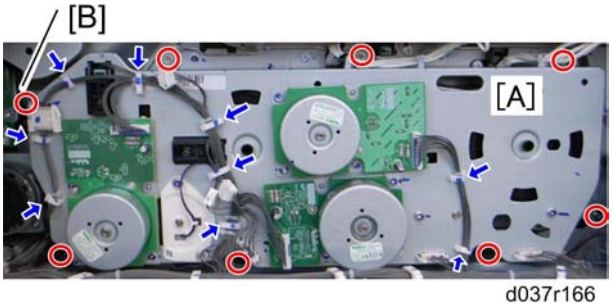
Gear Unit

1. Rear cover (☛ p.94)
2. Rear lower cover (☛ p.94)
3. Open the controller box (☛ p.213 "Controller Box").



d037r165

4. Remove all connectors and clamps (blue arrows) on the HVPS: CB board [A].
5. Pull all the PCDUs to the front side. (p.127)



d037r166

6. Gear unit [A] (x all, x all: blue arrows, x 8)

Note

- The picture below shows how to remove the screw [B] of the gear unit.

d037r167

Adjustment after reinstalling the gear unit

Do the following procedures after reinstalling the gear unit.

1. Turn on the main power switch.
2. Enter "System SP" in the SP mode.
3. Do "Drum Phase Adj." with SP1902-001.
4. Check the result of the Drum Phase Adjustment with SP1902-002.

   0: Success, 2: Failure due to no sampling data,

   3: Failure due to insufficient number of pattern detections

   When the result of this adjustment is "2" or "3":

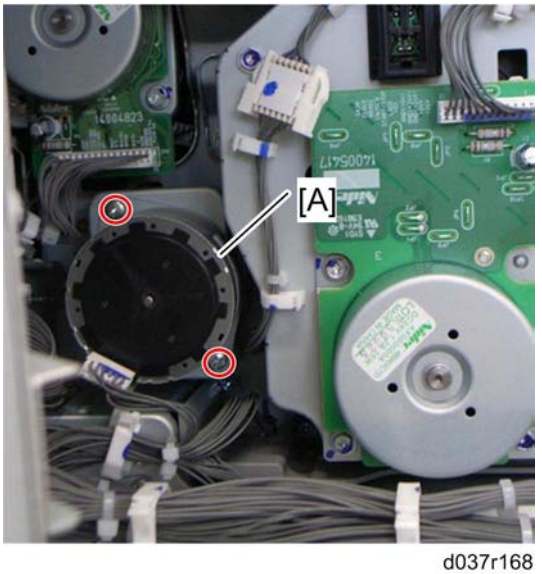
   - Check that the all PCDUs are correctly set and that the ITB unit is correctly set.
   - Do "Drum Phase Adj." again after checking the PCDUs and ITB unit.

   When the result is still "2" or "3" after checking the PCDUs and image transfer belt unit:

   - Check that the gear unit is installed correctly.
5. Exit the SP mode.

Registration Motor

1. Rear cover (☛ p.94)
2. Rear lower cover (☛ p.94)
3. Open the controller box (☛ p.213 "Controller Box").

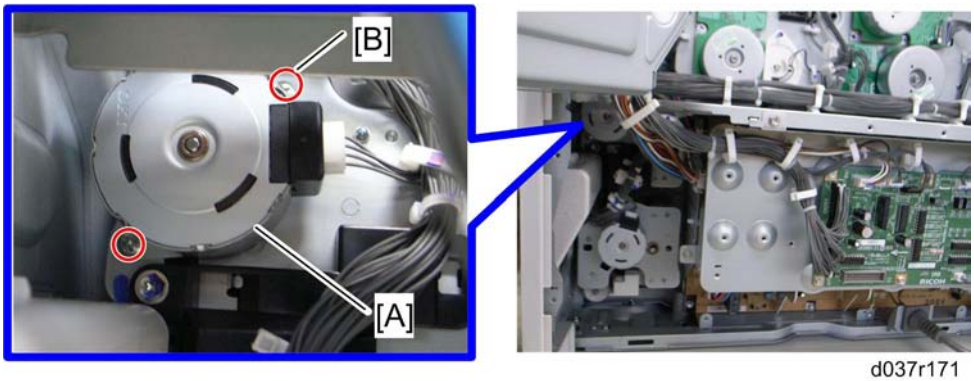


d037r168

4. Registration motor [A] (x 2, x 1)

Paper Feed Motor: T1

1. Rear cover (p.94)
2. Rear lower cover (p.94)
3. Open the controller box (p.213 "Controller Box").



d037r171

4. Paper feed motor: T1 [A] (x 1, x 2)

Note

- The picture below shows how to remove the screw [B] of the paper feed motor T1.

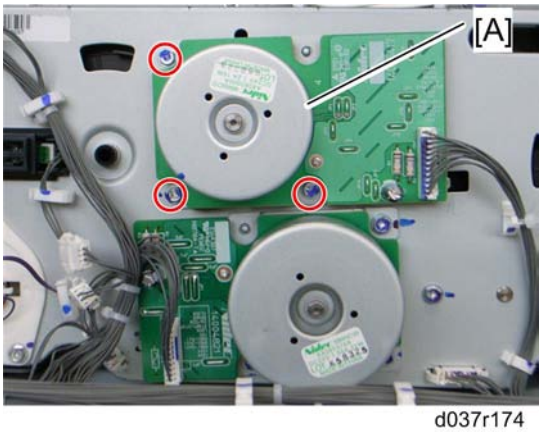

d037r173

Drum Motor: CMY

Important

- **Do not remove the PCDUs when you replace the drum motor-CMY.**

1. Rear cover (☛ p.94)
2. Rear lower cover (☛ p.94)
3. Open the controller box (☛ p.213 "Controller Box").



d037r174

4. Drum motor: CMY [A] (x 3, x 1)

Development Motor: CMY

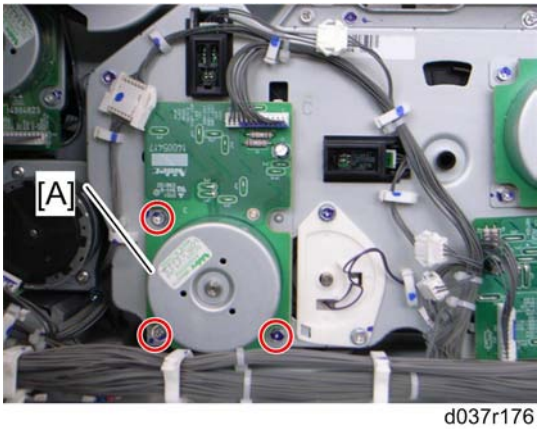
1. Rear cover (☛ p.94)
2. Rear lower cover (☛ p.94)
3. Open the controller box (☛ p.213 "Controller Box").

d037r175

4. Development motor: CMY [A] (x 3, x 1)

Drum/Development Motor: K

1. Rear cover (☛ p.94)
2. Rear lower cover (☛ p.94)
3. Open the controller box (☛ p.213 "Controller Box").

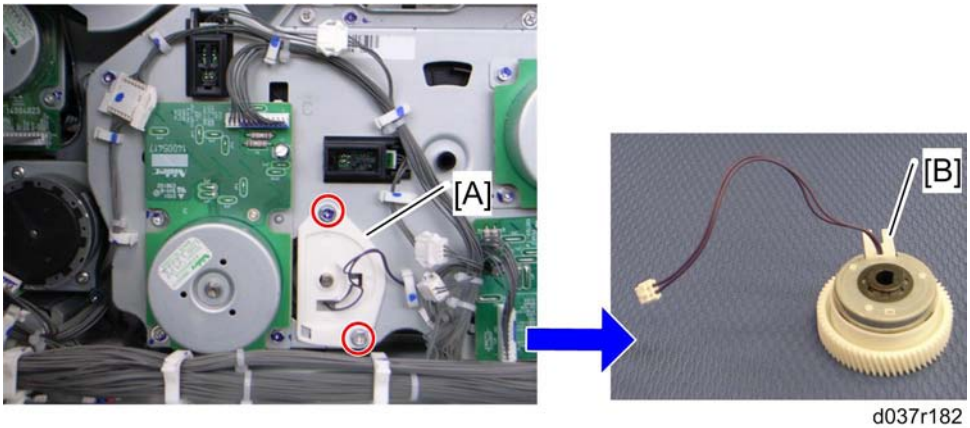


d037r176

4. Drum/Development motor: K [A] (x 3, x 1)

Development Clutch: K

1. Rear cover (☛ p.94)
2. Rear lower cover (☛ p.94)
3. Open the controller box (☛ p.213 "Controller Box").
4. Drum/Development Motor: K (☛ p.163)



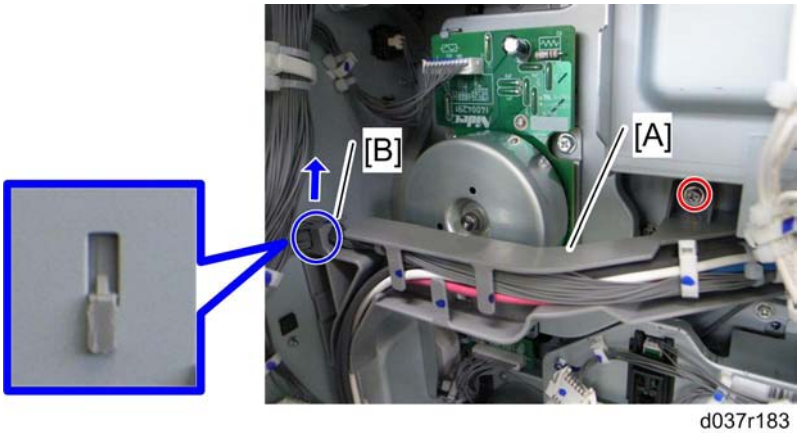
d037r182

5. Remove the bracket with the development clutch: K [A] (x 2, x 1, x 1).

6. Remove the development clutch: K [B] from the bracket.

Fusing/Paper Exit Motor

1. Rear cover (☛ p.94)
2. Rear lower cover (☛ p.94)
3. Open the controller box (☛ p.213 "Controller Box").

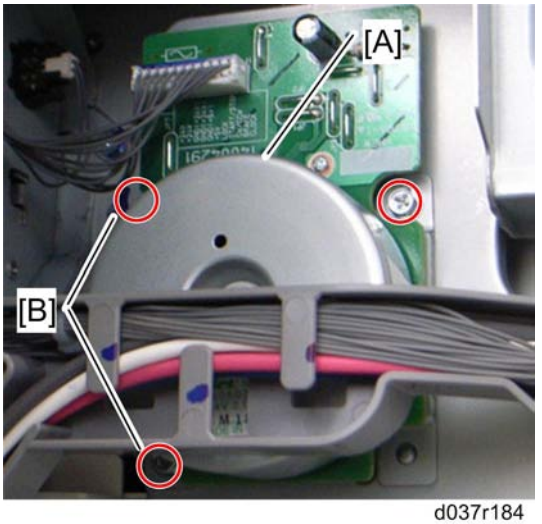


d037r183

4. Loosen the stay [A] (x 1, hook [B] x 1)

Note

- The hook [B] is installed as shown above. Do not pull the stay by force, or the hook might be broken.



d037r184

5. Fusing/paper exit motor [A] (x 3, x 1)

Note

- The picture below shows how to remove the screw [B] of the fusing/paper exit motor.

d037r185

Fusing

PM Parts

PM Parts	Replacement Procedure
Fusing Roller	☛ p.178 "Heating, Fusing and Tension Roller"
Fusing Belt	☛ p.174
Thermistor	☛ p.182 and p.183
Entrance Guide Plate	☛ p.167
Exit Guide Plate	☛ p.170
Stripper Plate	☛ p.168
Thermopile	☛ p.185

Fusing Unit

⚠CAUTION

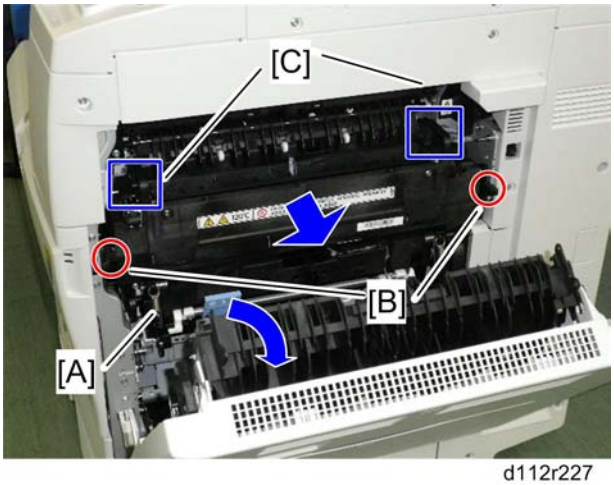
- Turn off the main switch and wait until the fusing unit cools down before beginning any of the procedures in this section. The fusing unit can cause serious burns.

1. If you install a new fusing unit (at PM for example), then set SP 3902-014 to "1" before you start this procedure.

Note

- If you do this, then the machine will reset the PM counter for the fusing unit automatically, after you turn the power on again.

2. Turn off the main power switch.
3. Open the duplex unit.



d112r227

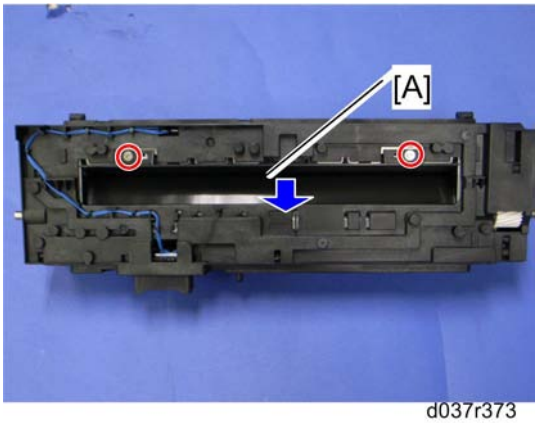
4. Open the paper transfer unit [A]
5. Release the lock levers [B].
6. Hold the fusing unit handles [C], and then pull out the fusing unit.

When installing the fusing unit

Make sure that the both lock levers [B] are locked before closing the duplex unit. Otherwise, these lock levers [B] can be broken.

Entrance Guide Plate

1. Fusing unit (☛ p.166)

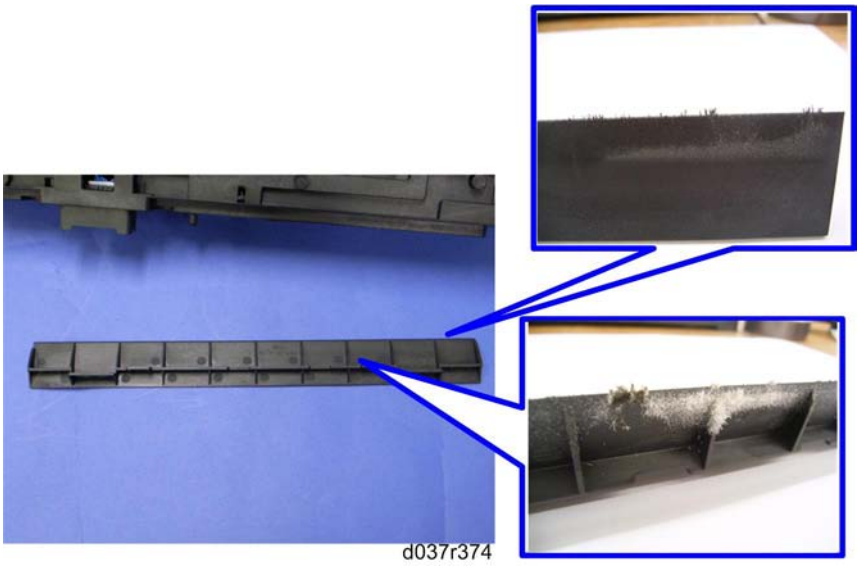


d037r373

2. Entrance Guide Plate [A] (x 2)

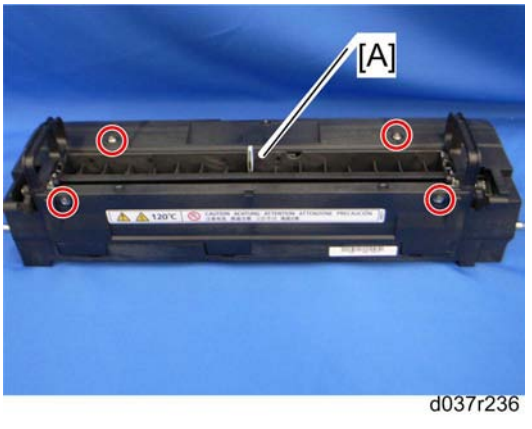
Cleaning Requirement

The entrance guide plate requires cleaning maintenance at every 60 K interval. Clean the entrance guide plate with a cloth moistened with alcohol at the following points.

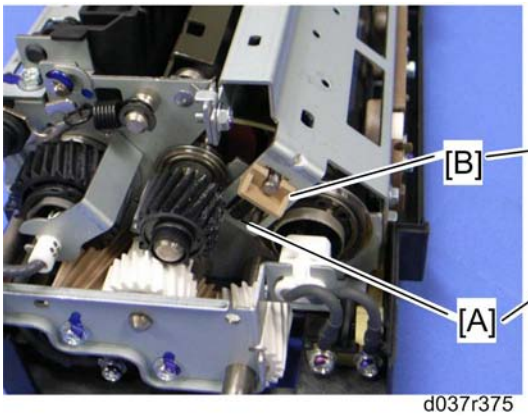


Stripper Plate

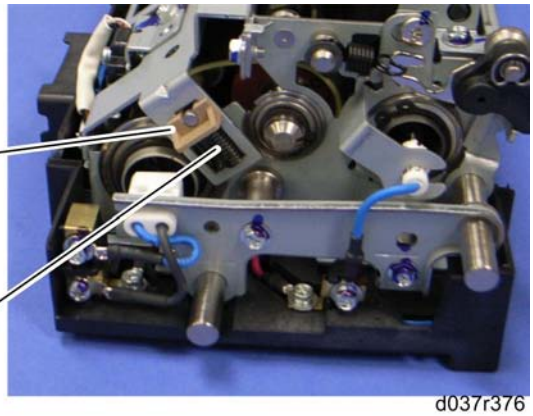
1. Fusing unit (p.166)



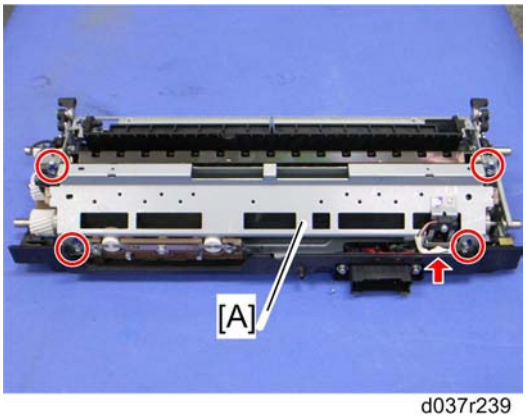
2. Fusing upper cover [A] (x 4)



d037r375

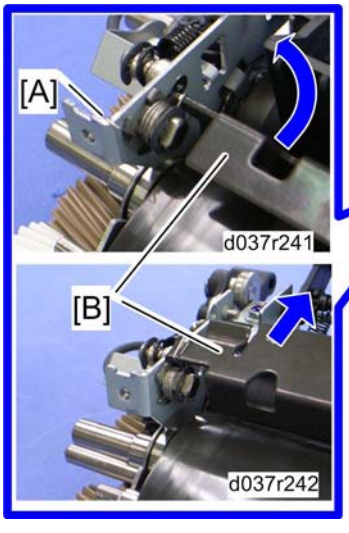

d037r376

3. Spring [A] and bearing [B] at front and rear side



d037r239

4. Top frame [A] (x 4, x 1)



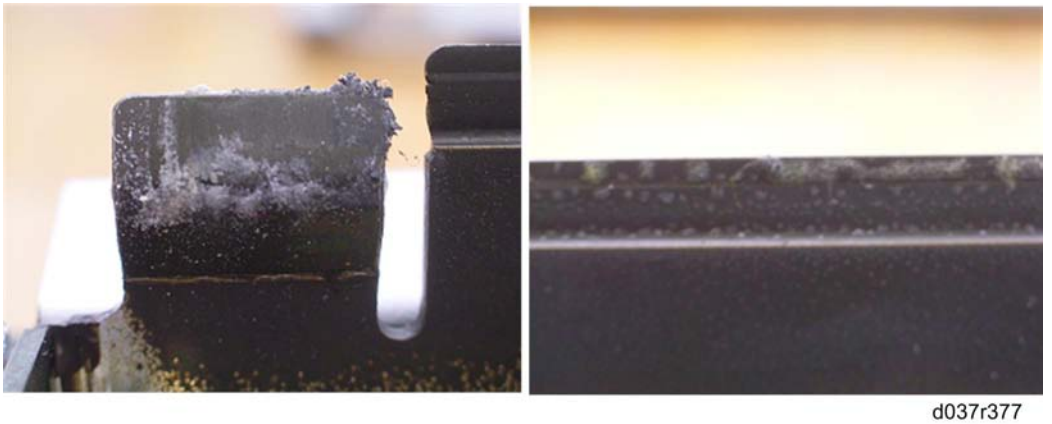

d037r240

5. Release the springs [A] at the front and rear side.

6. Stripper plate [B]

Cleaning Requirement

The stripper plate requires cleaning maintenance at every 60 K interval. Clean the stripper plate with a cloth moistened with alcohol at the following points.

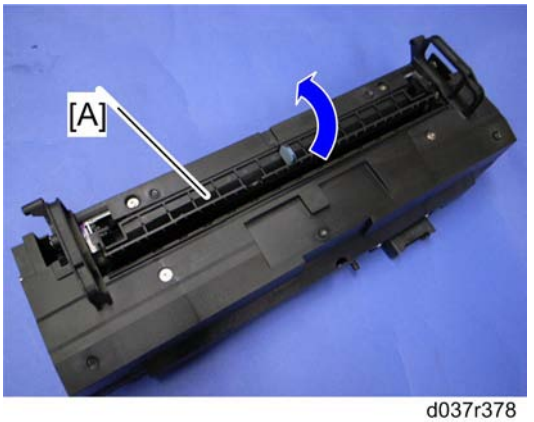


d037r377

Exit Guide Plate Cleaning Procedure

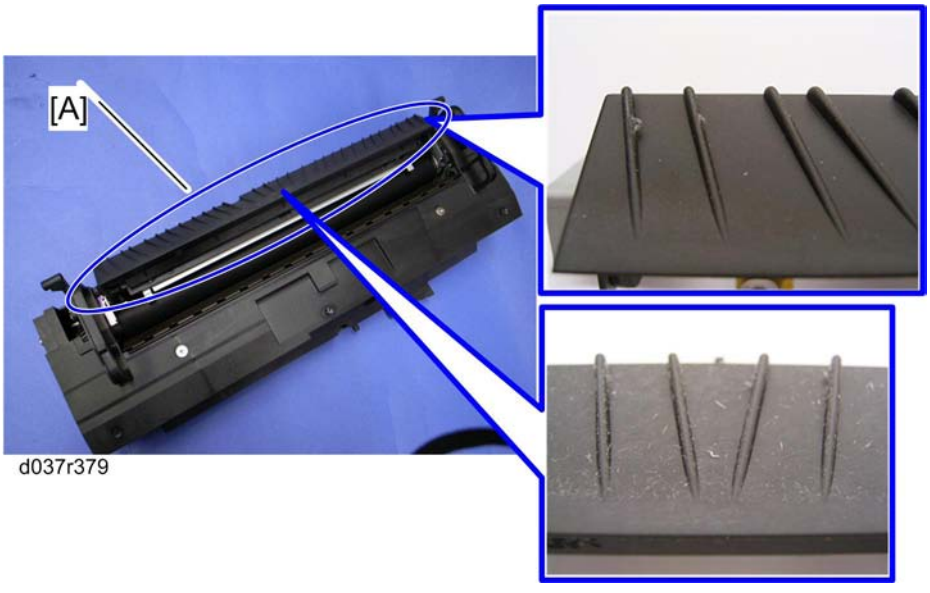
The exit guide plate requires cleaning maintenance at every 60 K interval.

1. Fusing unit (☛ p.166)



d037r378

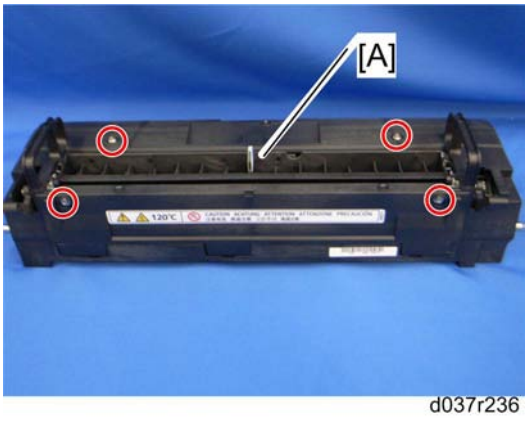
2. Open the exit guide plate [A].



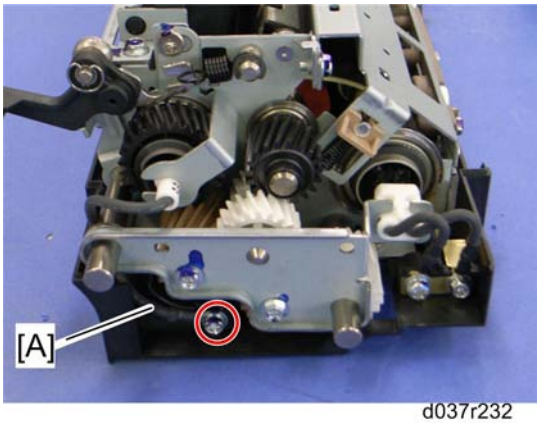
3. Clean the exit guide plate [A] with a cloth moistened with alcohol.

Pressure Roller Fusing Lamp

1. Fusing unit (☛ p.166)

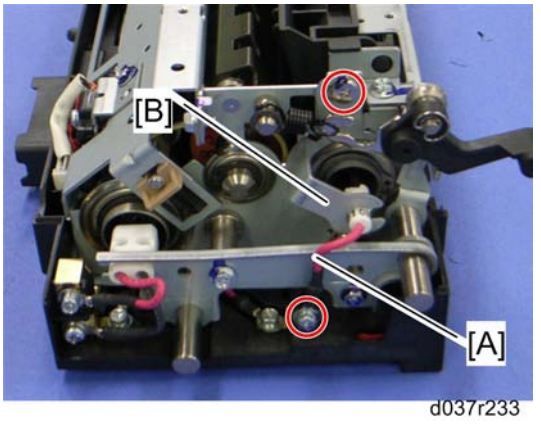


2. Fusing upper cover [A] (x 4)



4

3. Remove the cable [A] from the rear stay (x 1).

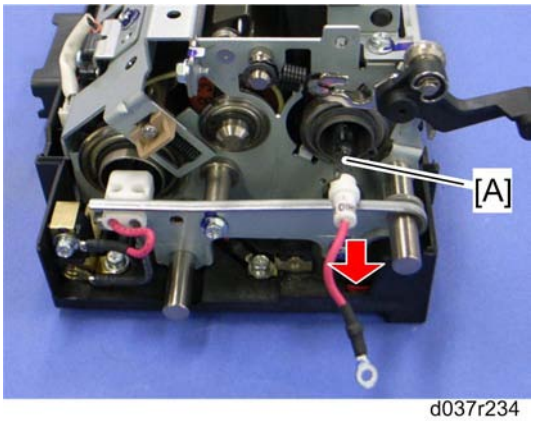


4. Remove the cable [A] from the front stay (x 1).

Note

- The color of the pressure roller fusing lamp cord differs depending on the destination.
- **Red**: 220 - 240 V, **Blue**: 120 V

5. Front pressure roller lamp stay [B] (x 1)

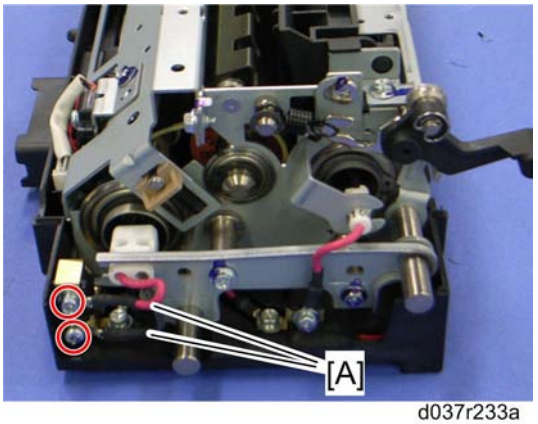


d037r234

6. Pressure roller fusing lamp [A]

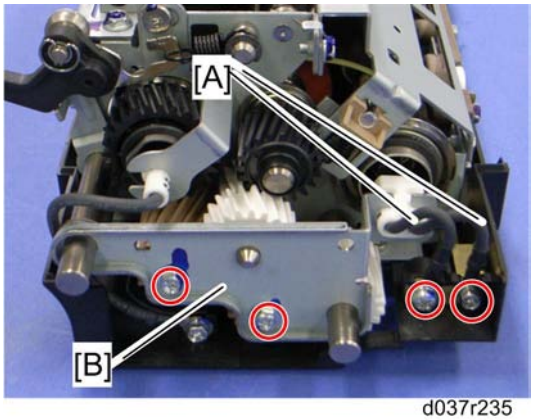
Heating Roller Fusing Lamp

1. Fusing unit (p.166)



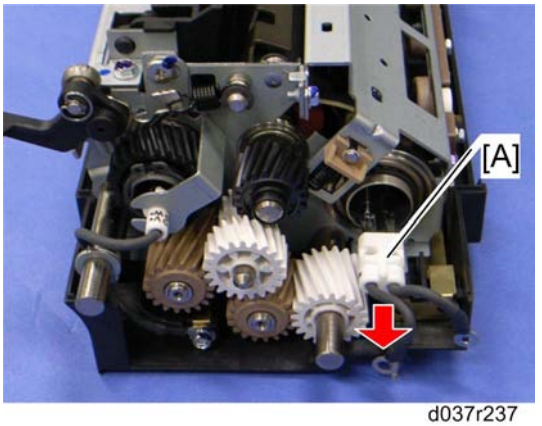
d037r233a

2. Remove the cords [A] from the front stay (x 2)



d037r235

3. Remove the cords [A] from the rear stay (x 2)
4. Rear stay [B] (x 2)



d037r237

5. Heating roller fusing lamp [A]

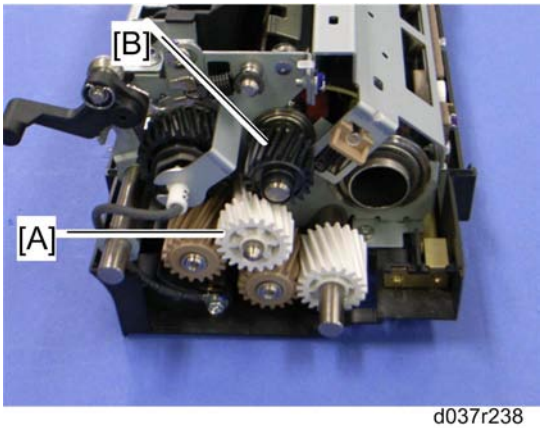
Fusing Belt

If you install a new fusing belt, set SP 3902-016 to "1" before you start this procedure.

Note

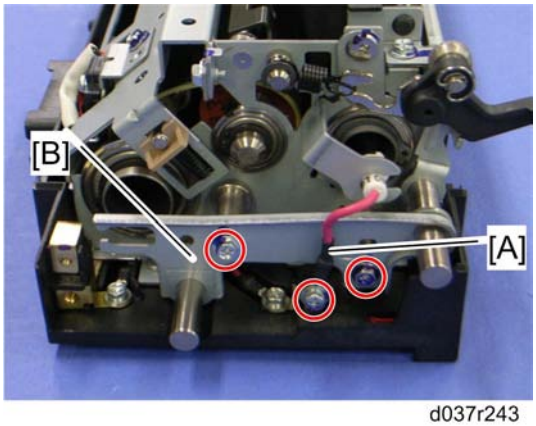
- If you do this, then the machine will reset the PM counter for the fusing belt automatically, after you turn the power on again.

1. Fusing unit (☛ p.166)
2. Fusing upper cover (☛ p.171 "Pressure Roller Fusing Lamp")
3. Heating roller fusing lamp (☛ p.173)



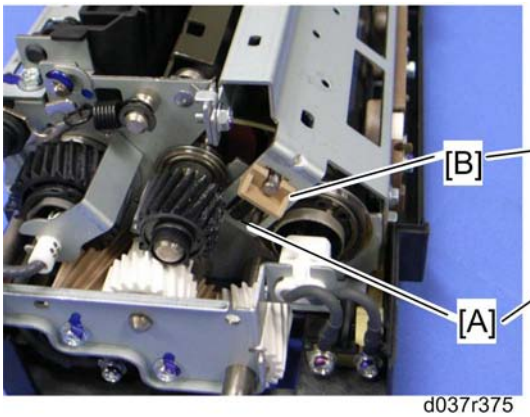
d037r238

4. Idle gear [A] and fusing roller gear [B]

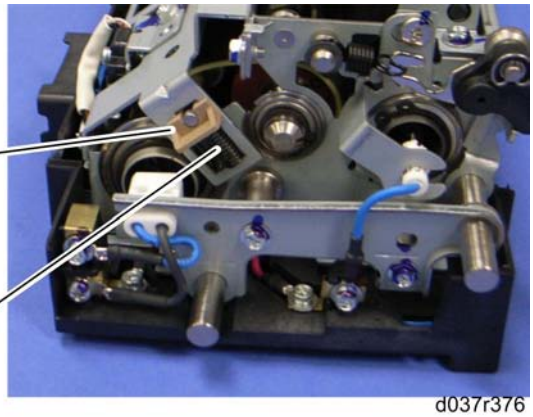


d037r243

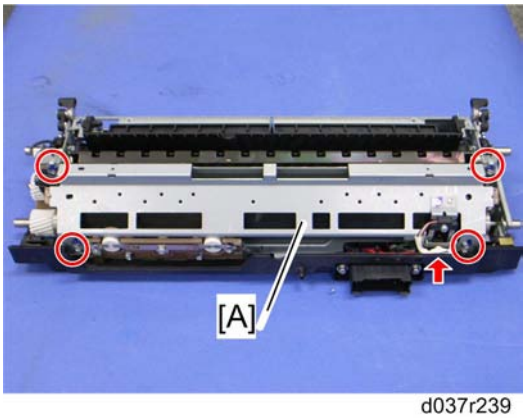
5. Remove the front cord [A] of the pressure roller fusing lamp (x 1).
6. Front stay [B] (x 2)



d037r375

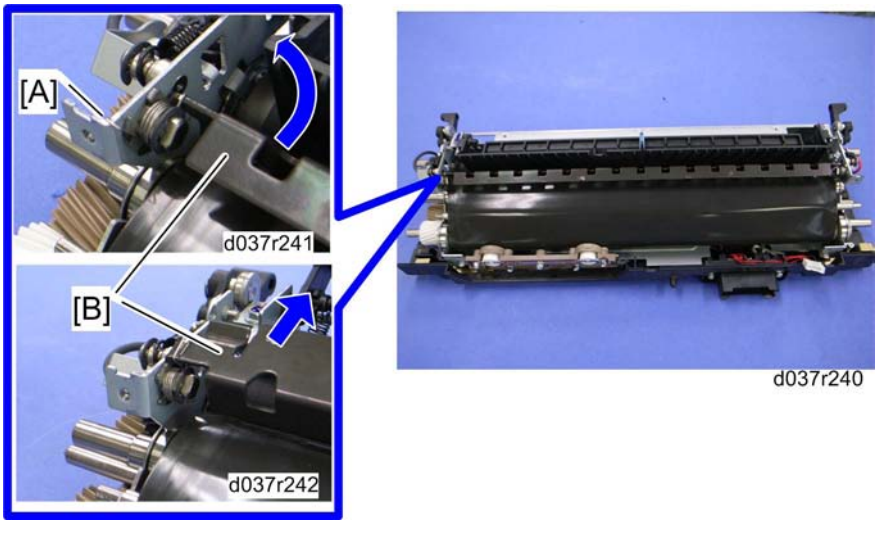

d037r376

7. Spring [A] and bearing [B] at front and rear side

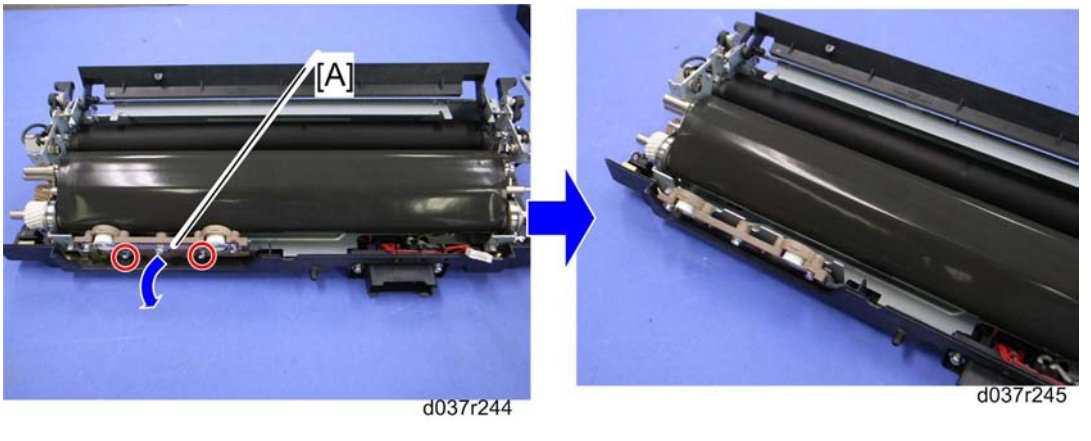


4

8. Top frame [A] (x 4, x 1)



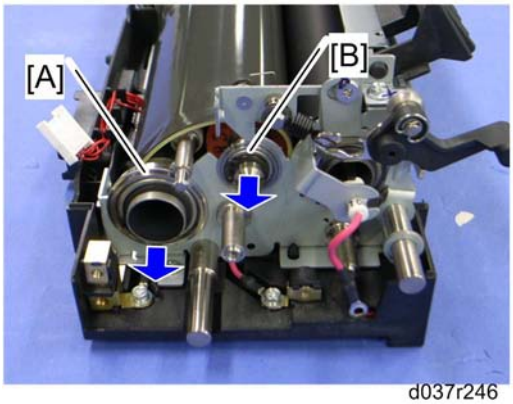
9. Release the springs [A] at the front and rear side.
10. Stripper plate [B]



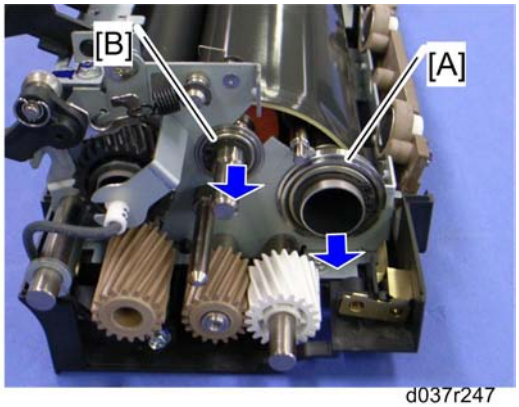
11. Take the thermostat base [A] aside (x 2).

Note

- This prevents the fusing belt from being torn or scratched when the fusing belt is removed from the fusing unit.

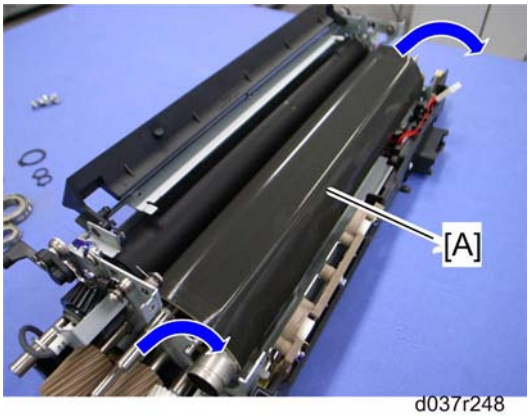


d037r246



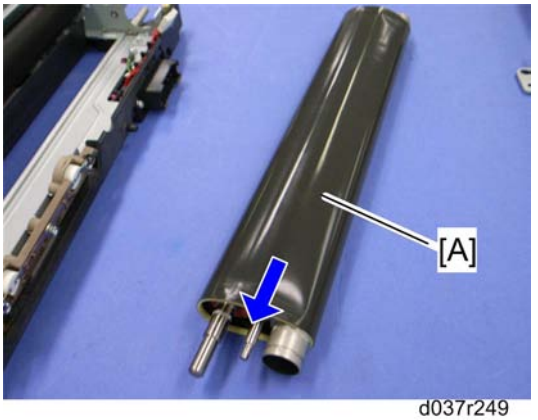
d037r247

12. Bearings [A] of the heating roller (C-ring x 1 each)
13. Bearings [B] of the fusing roller (x 1 each)



d037r248

14. Fusing belt [A] with rollers



15. Fusing belt [A]

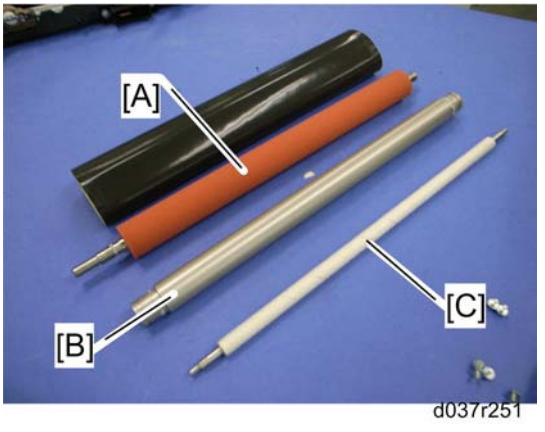
Heating, Fusing and Tension Roller

If you install a new fusing roller, set SP 3902-015 to "1" before you start this procedure.

Note

- If you do this, then the machine will reset the PM counter for the fusing unit automatically, after you turn the power on again.

1. Fusing belt with rollers (p.174 "Fusing Belt")

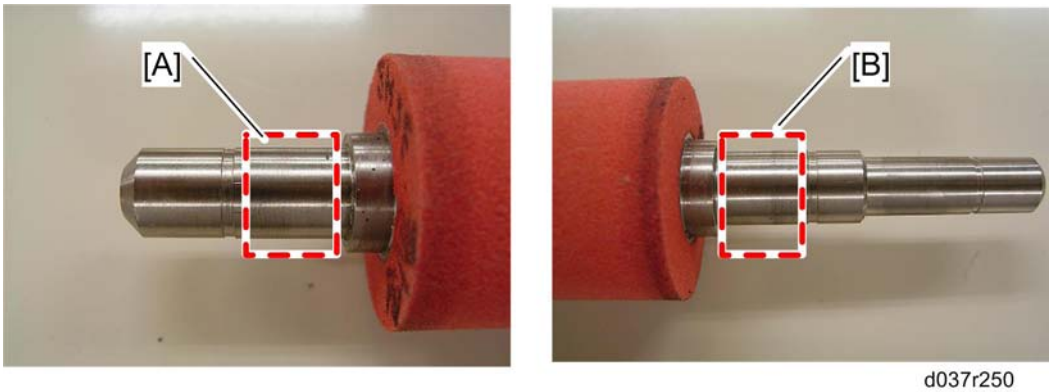


2. Fusing roller [A]
3. Heating roller [B]
4. Tension roller [C]

When reinstalling the fusing roller

When replacing the fusing roller, you have to apply lubricant to the following places.

Fusing Roller



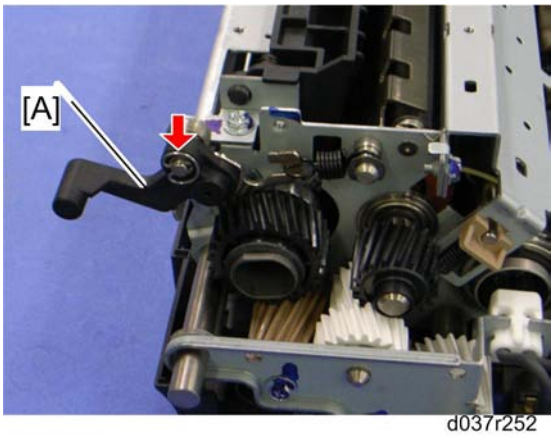
- Apply "Barrierta S552R" to the area [A] at the front side of the fusing roller.
- Apply "Barrierta S552R" to the area [B] at the rear side of the fusing roller.

Note

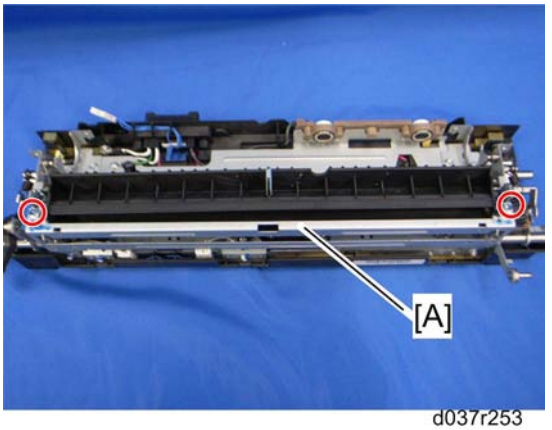
- Do not apply lubricant to areas other than the areas [A] and [B] as shown above.

Pressure Roller

1. Fusing belt with rollers (☛ p.174)
2. Pressure roller fusing lamp (☛ p.171)



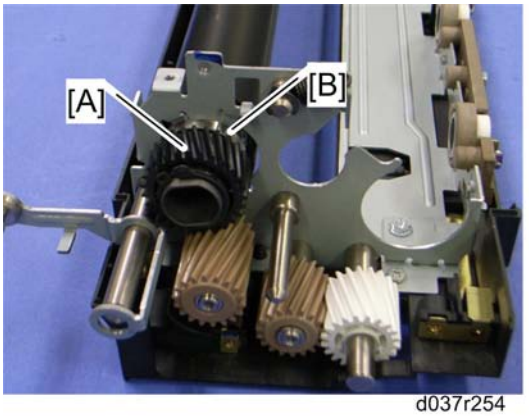
3. Pressure levers [A] at the rear side (snap ring x 1, spring x 1)



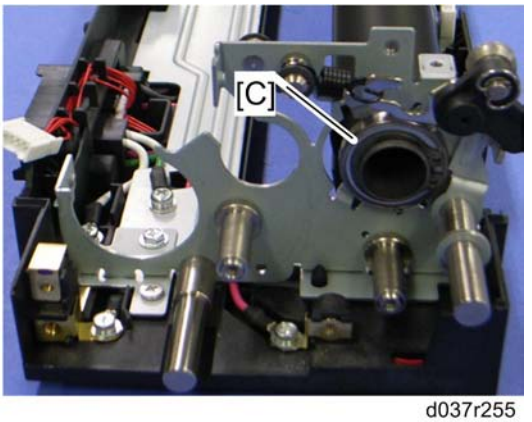
d037r253

4

4. Top right frame [A] (x 2)

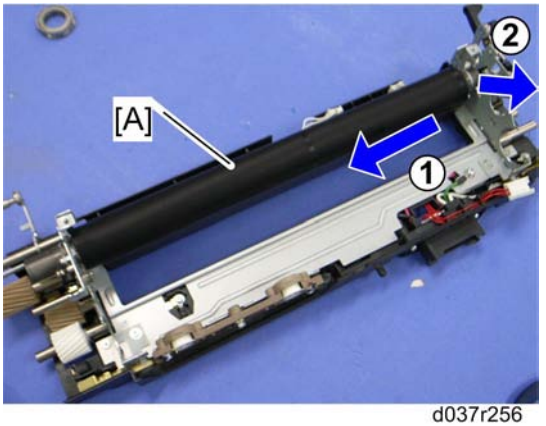


d037r254



d037r255

5. Pressure roller gear [A] and bearing [B] at the rear side (C-ring x 1)
6. Bearing [C] (C-ring x 1)



d037r256

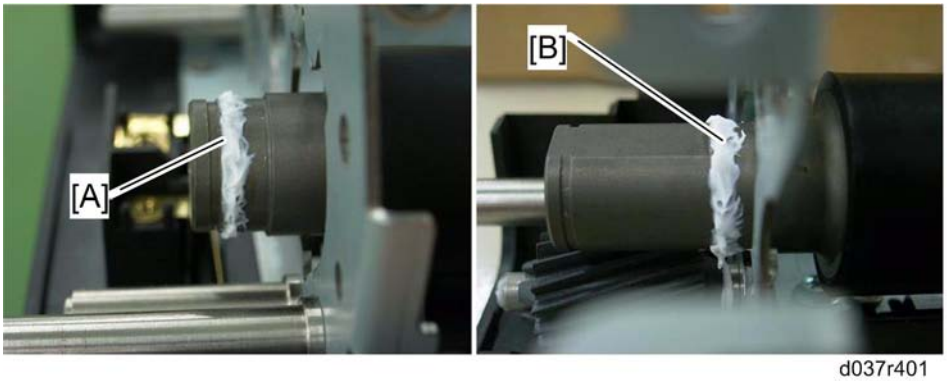
7. Pressure roller [A]

Cleaning Requirement

The pressure roller requires cleaning maintenance (if it is dirty) at every 60 K interval. Clean the pressure roller with a cloth moistened with alcohol.

When reassembling the pressure roller

When replacing the pressure roller, you have to apply lubricant to the following places.

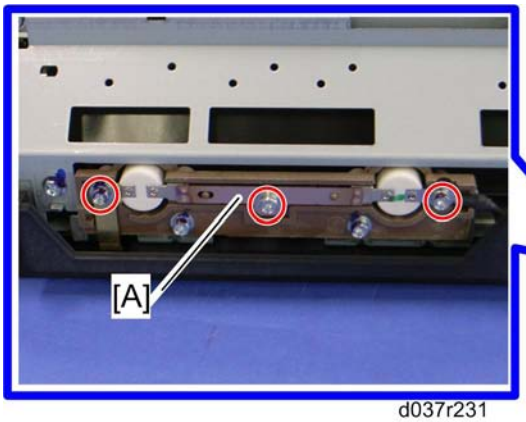


d037r401

- Apply "Barrierta S552R" to the front edge [A] and rear edge [B] of the pressure roller as shown above.

Heating Roller Thermostats

1. Fusing upper cover (☛ p.171 "Pressure Roller Fusing Lamp")



d037r231


d037r228

2. Heating roller thermostats [A] (x 3)

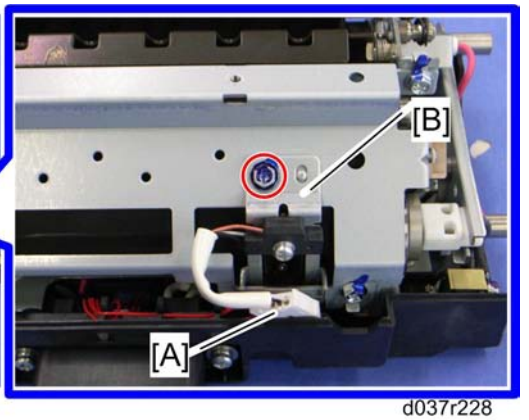
Note

- Do not re-use a thermostat that is already opened. Safety is not guaranteed if you do this.

Heating Roller Thermistor

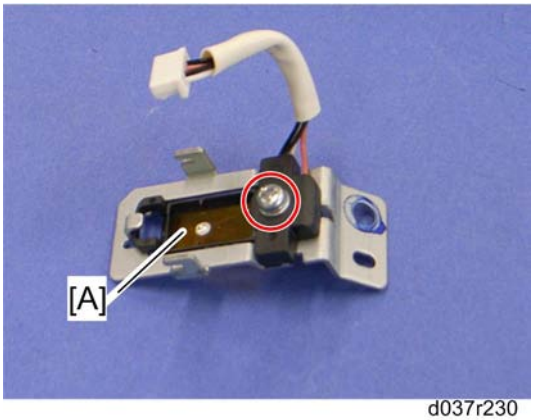
1. Fusing upper cover (☛ p.171 "Pressure Roller Fusing Lamp")


d037r229



d037r228

2. Disconnect the connector [A].
3. Heating roller thermistor assembly [B] (x 1)



d037r230

4. Heating roller thermistor [A] (x 1)

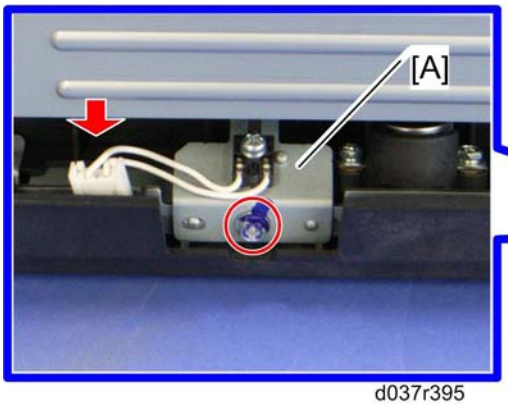
Cleaning Requirement

The heating roller thermistor requires cleaning maintenance at every 60 K interval. Clean the heating roller thermistor with a dry cloth.

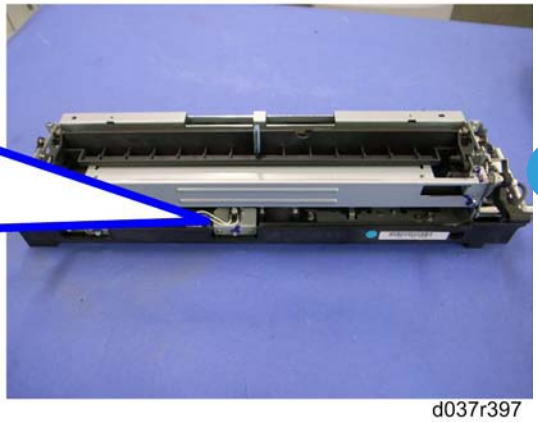
Pressure Roller Thermistor

Pressure Roller Thermistor: Center

1. Fusing unit (☛ p.166)
2. Fusing upper cover (☛ p.171 "Pressure Roller Fusing Lamp")

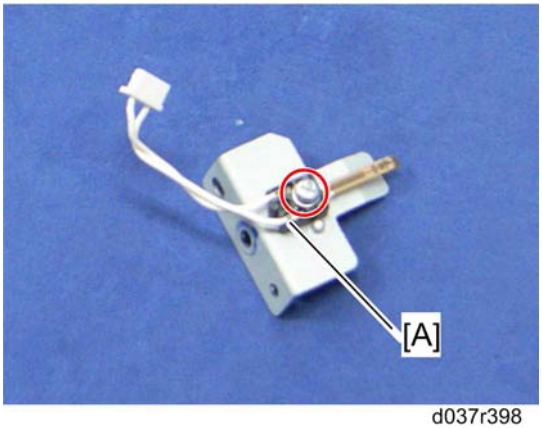


d037r395



d037r397

3. Thermistor center assembly [A] (x 1, x 1)

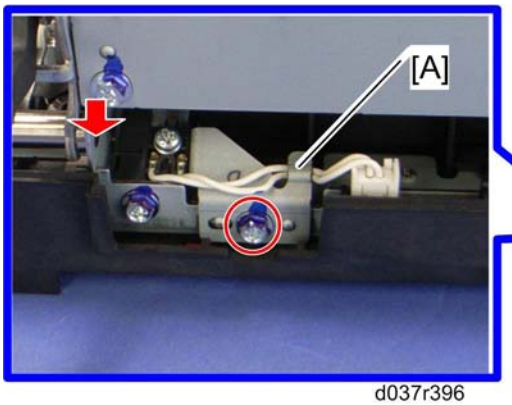


d037r398

4. Pressure roller thermistor: Center [A] (x 1)

Pressure Roller Thermistor: End

1. Fusing unit (☛ p.166)
2. Fusing upper cover (☛ p.171 "Pressure Roller Fusing Lamp")

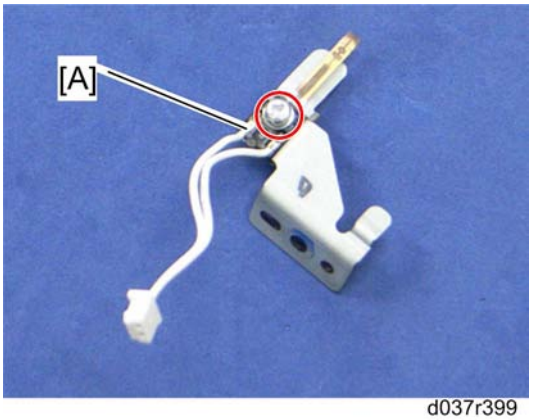


d037r396

d037r397

4

3. Thermistor end assembly [A] (x 1, x 1)



d037r399

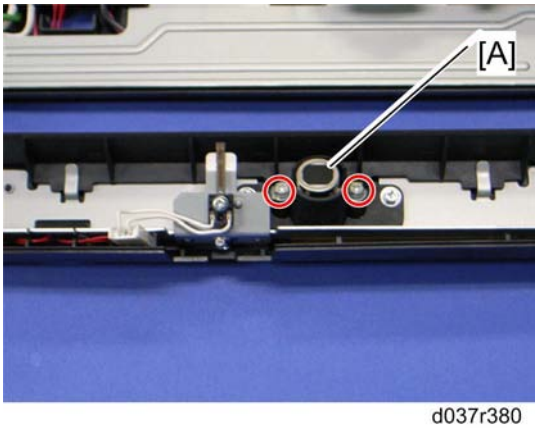
4. Pressure roller thermistor: End [A] (x 1)

Cleaning Requirement

The pressure roller thermistors (center and end) require cleaning maintenance at every 60 K interval. Clean the pressure roller thermistors (center and end) with a dry cloth.

Pressure Roller Thermostat

1. Fusing unit (☛ p.166)
1. Fusing belt with rollers (☛ p.174)
2. Pressure roller (☛ p.179)

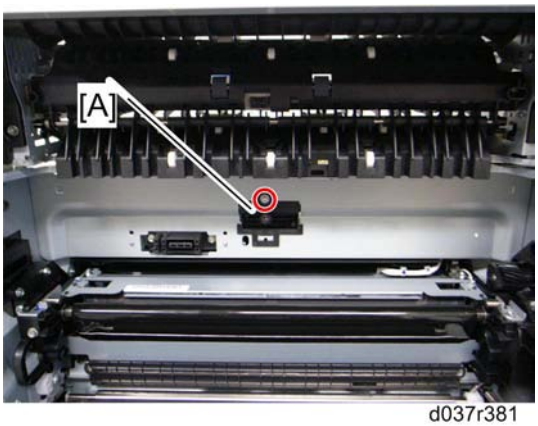


d037r380

3. Pressure roller thermostats [A] (x 2)

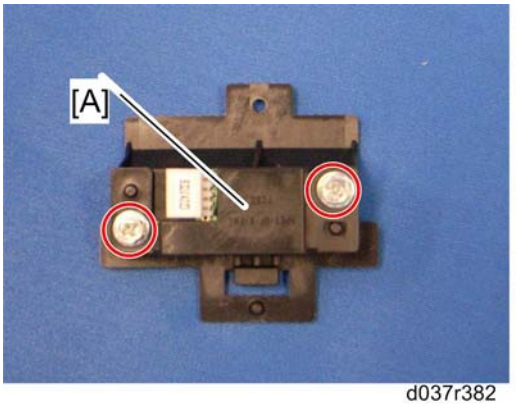
Thermopile

1. Fusing unit (p.166)

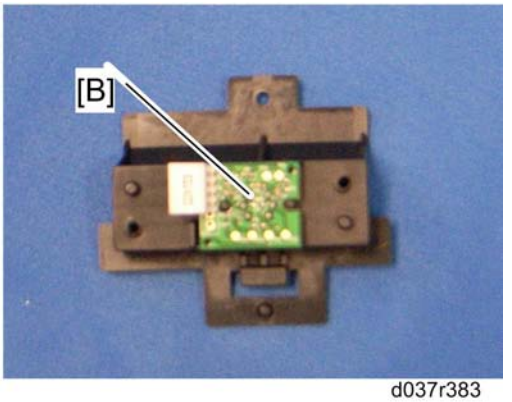


d037r381

2. Thermopile base [A] (x 1, x 1)



d037r382



d037r383

4

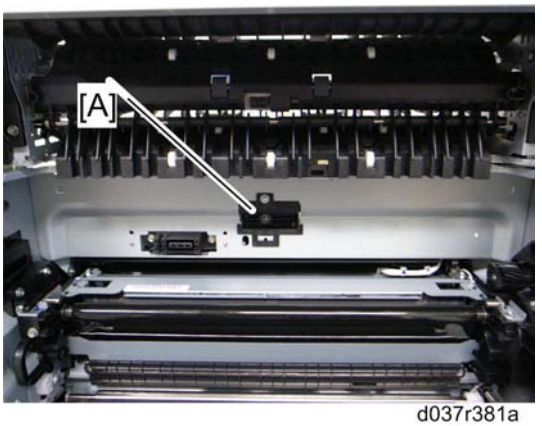
3. Thermopile cover [A] (x 2)
4. Thermopile [B]

When cleaning the lens of the thermopile

⚠CAUTION

- Do this cleaning procedure after the fusing unit has completely cooled down. Otherwise, you may get a serious burn.

1. Fusing unit (☛ p.166)

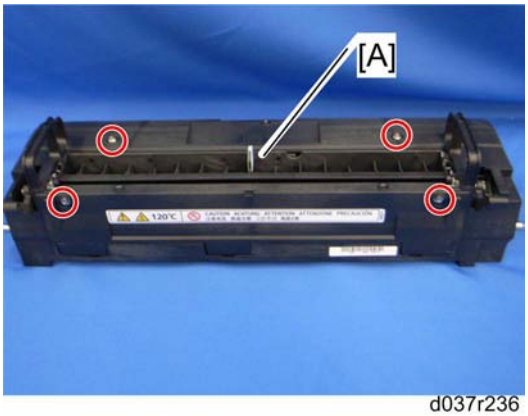


d037r381a

2. Clean the thermopile lens [A] with a dry cloth.

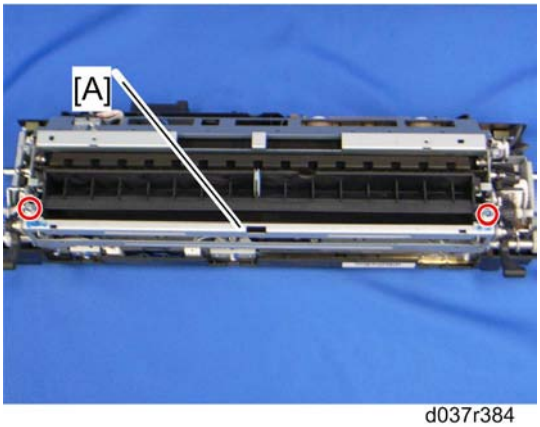
Cleaning Unit (Option) Installation Procedure

1. Fusing unit (☛ p.166)



d037r236

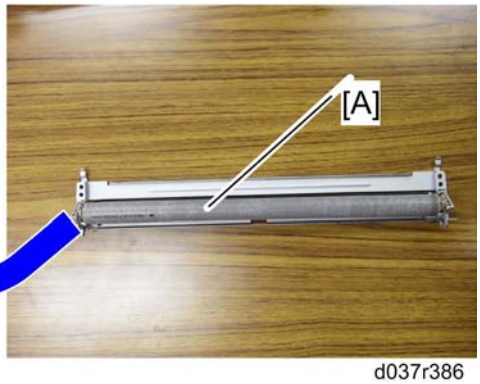
2. Fusing upper cover [A] (x 4)



d037r384

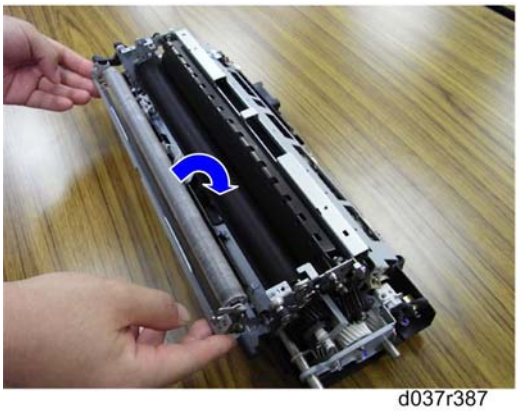
3. Top right frame [A] (x 2)

d037r385

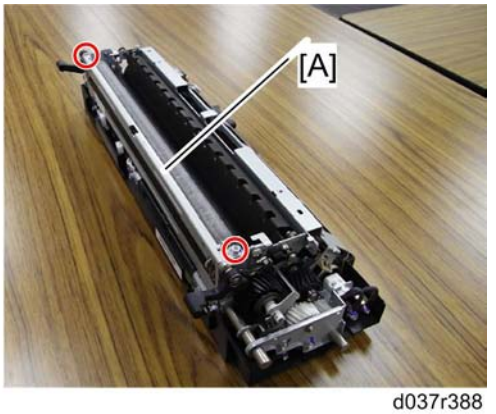


d037r386

4. Install the cleaning unit [A] in the fusing unit.



d037r387



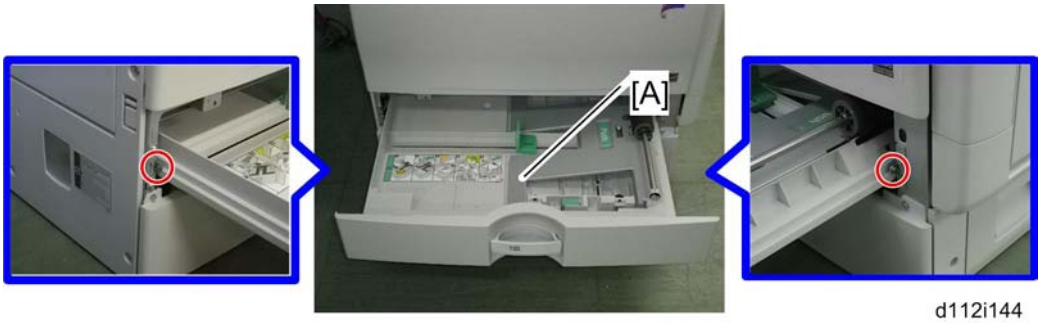
d037r388

4

5. Secure the cleaning unit [A] (x 2)
6. Reassemble the fusing unit.

Paper Feed

Paper Tray

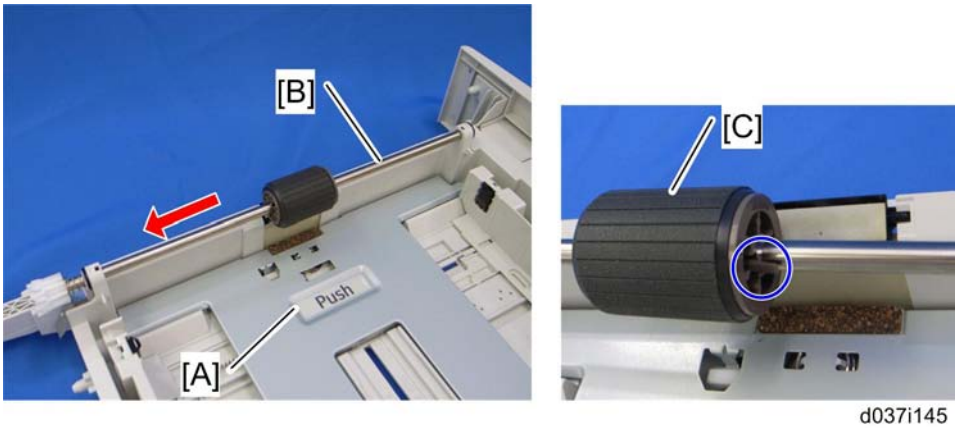


d112i144

1. Pull paper tray 1 [A] part of the way out.
2. Remove the screw from the tray guide.
3. Pull out paper tray 1 [A].

Feed Roller

1. Paper tray 1 (☛ p.189)



d037i145

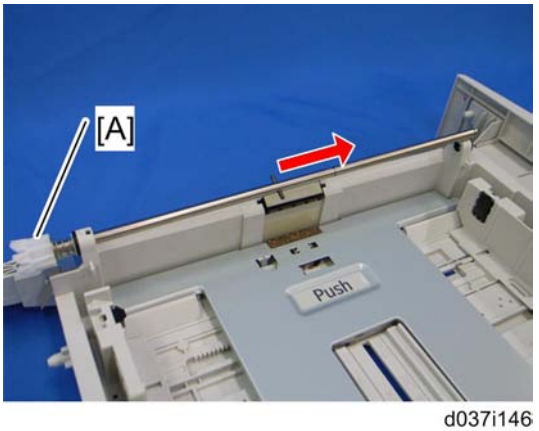
2. Press down the bottom plate [A].
3. Slide the feed roller shaft [B] to the rear side (x 1).
4. Feed roller [C] (hook x 1)

When reinstalling the feed roller

Do not touch the feed roller with your bare hands when replacing it. If you do, clean the feed roller with a damp cloth or alcohol.

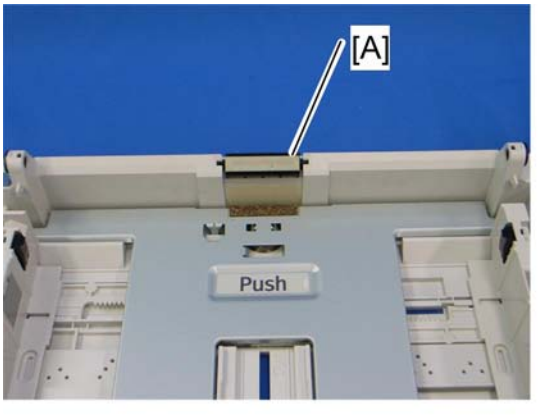
Friction Pad

1. Paper tray 1 (☛ p.189)
2. Feed roller (☛ p.189)



d037i146

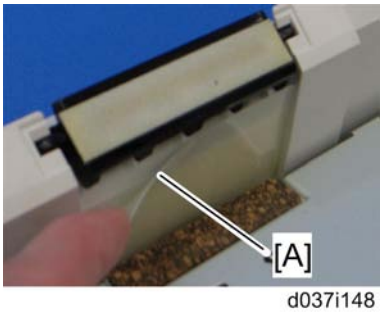
3. Remove the coupling gear [A] (pin x 1, spring x 1, ⟲ x 1).
4. Slide the feed roller shaft to the front side, and then remove it.



d037i147

5. Friction pad [A] (hooks, spring x 1)

When reinstalling the friction pad



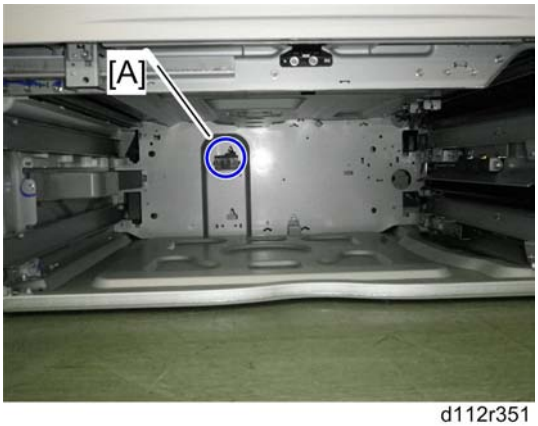
d037i148

Make sure that the mylar [A] does not go under the friction pad when reinstalling the friction pad.

Do not touch the friction pad with your bare hands, when replacing it. If you do, clean the friction pad with a damp cloth or alcohol.

Paper Size Switch

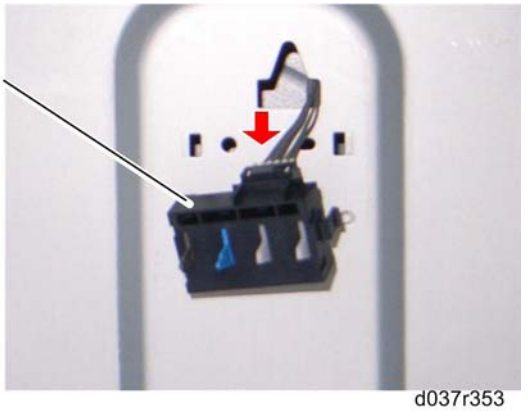
1. Paper tray 1 (☛ p.189)



d112r351

2. Paper size switch [A]

d037r352


d037r353

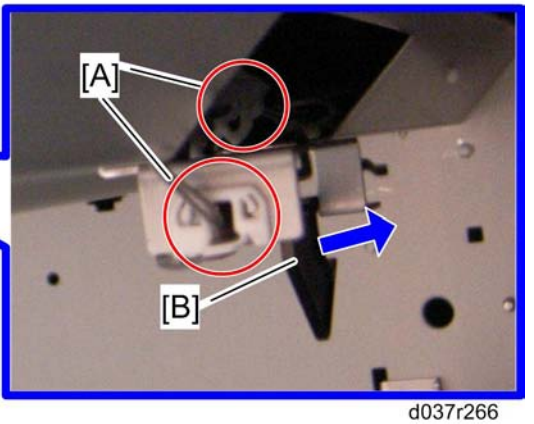
4

3. Paper size switch [A] (hooks, x 1)

Paper End Sensor

1. Paper tray 1 (p.189)


d112r265

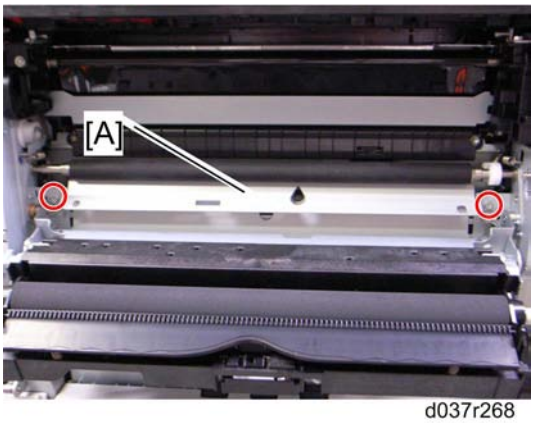


d037r266

2. Release the two clamps [A].
3. Paper end sensor: T1 [B] (hooks, x 1)

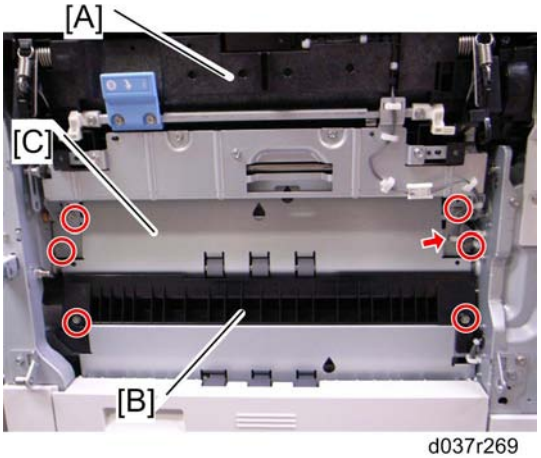
Registration Sensor

1. Right door unit (p.203)
2. Open the paper transfer unit to the fully-open position (p.152).



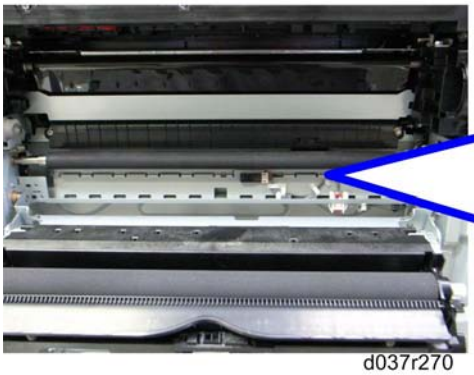
d037r268

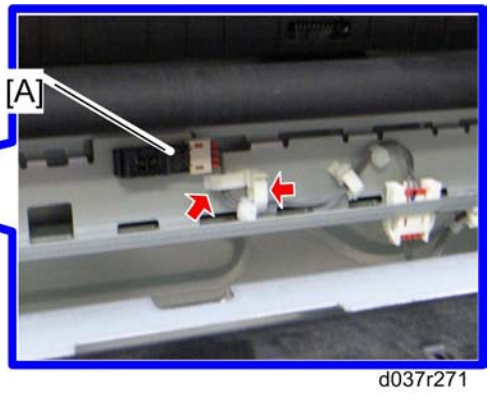
3. Registration roller guide [A] (x 2)



d037r269

4. Close the paper transfer unit [A].
5. Relay guide plate [B] (x 2)
6. Upper vertical transport guide [C] (x 1, x 4)

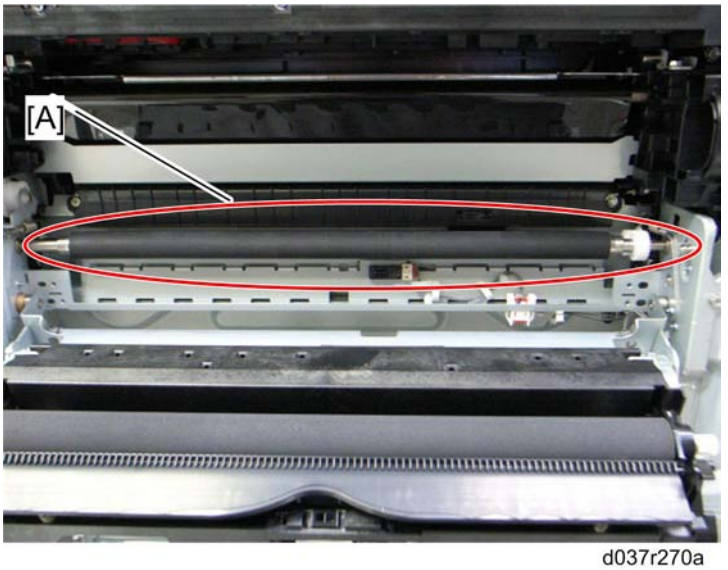

d037r270



d037r271

7. Registration sensor [A] (x 2, hooks, x 1)

Cleaning the registration roller



d037r270a

Clean the registration roller and registration idle roller [A] with a damp cloth every 60 K (total count).

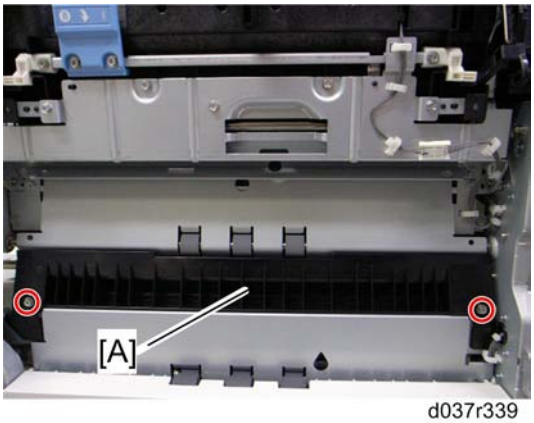
Note

- Never use alcohol to clean the registration roller.

Vertical Transport Sensor

Vertical Transport Sensor 1

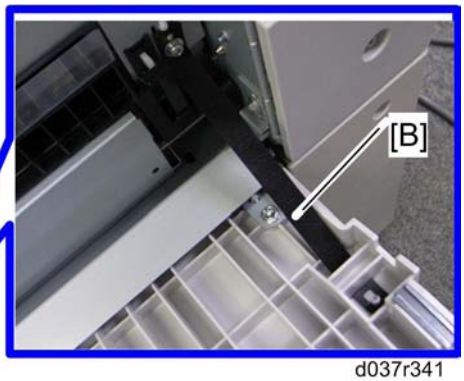
1. Right door unit (p.203)



d037r339

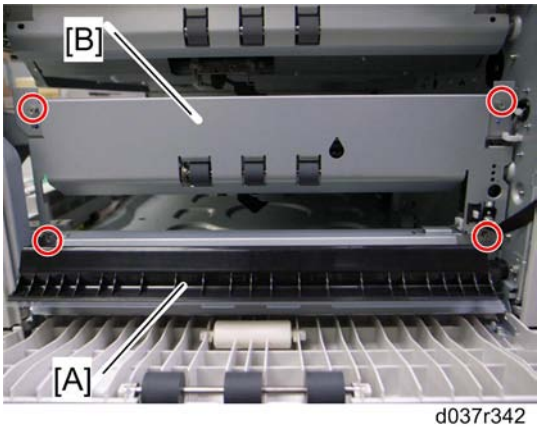
2. Middle guide plate [A] (x 2)

d037r340



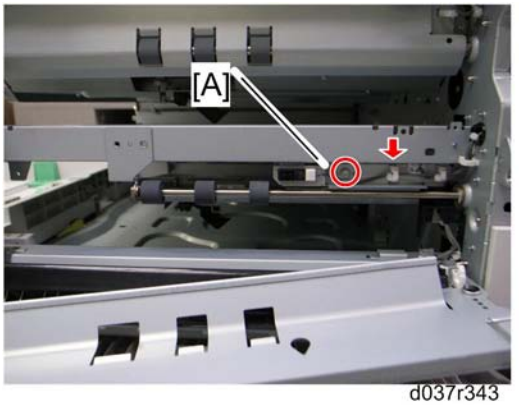
d037r341

3. Open the lower right door [A].
4. Release the belt [B].

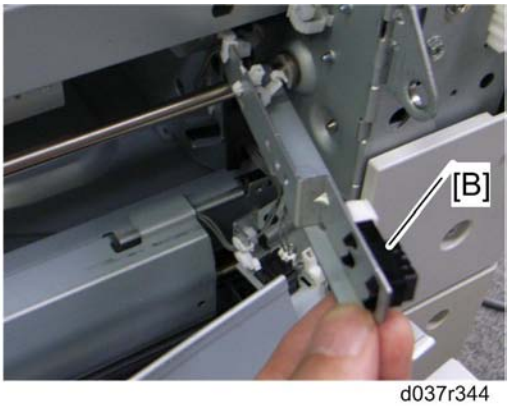


d037r342

5. Open the lower guide plate [A].
6. Middle guide bracket [B] (x 4, x 2, x 1)



d037r343



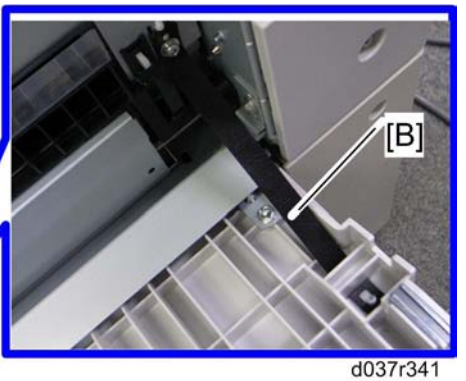
d037r344

7. Sensor bracket [A] (x 1, x 1)
8. Vertical transport sensor 1 [B] (x 1, hooks)

Vertical Transport Sensor 2

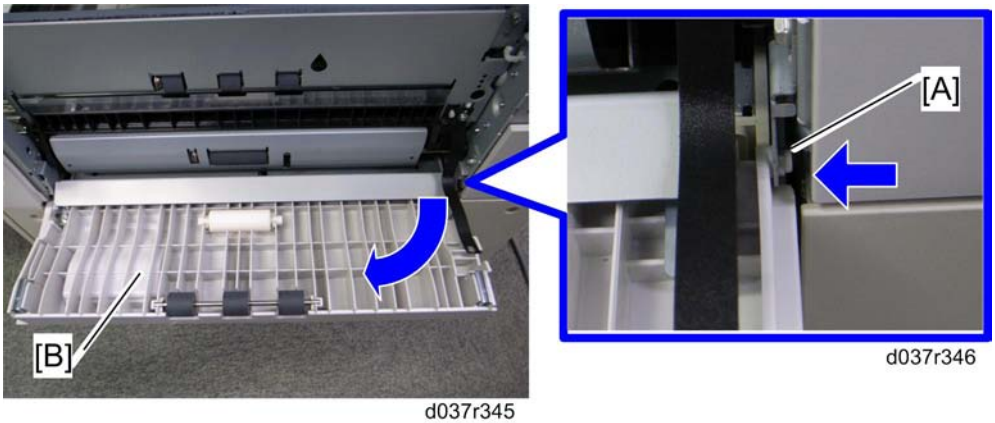
1. Right door unit (p.203)

d037r340



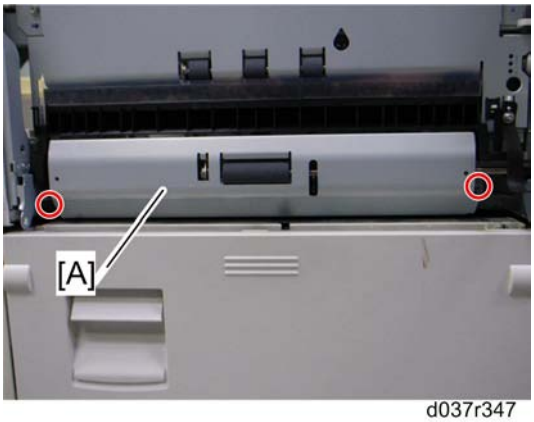
d037r341

2. Open the lower right door [A].
3. Release the belt [B].



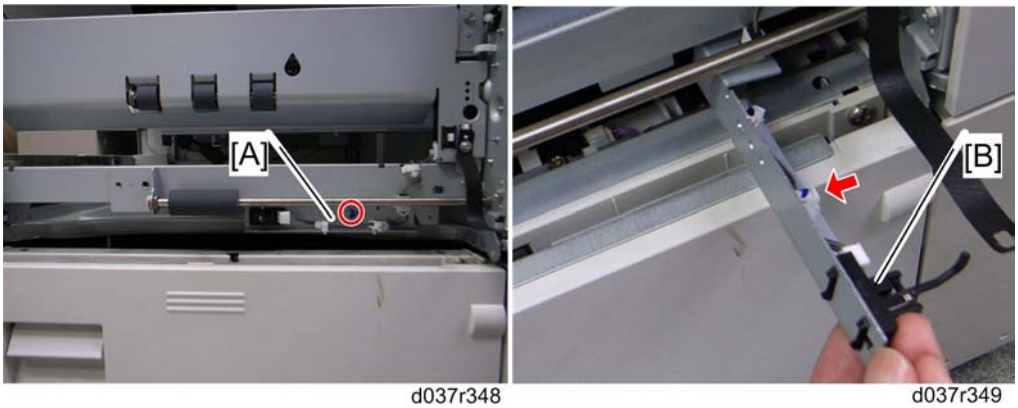
d037r345 d037r346

4. Release the rear pivot [A], and then remove the lower right door [B].



d037r347

5. Lower guide bracket [A] (x 2)



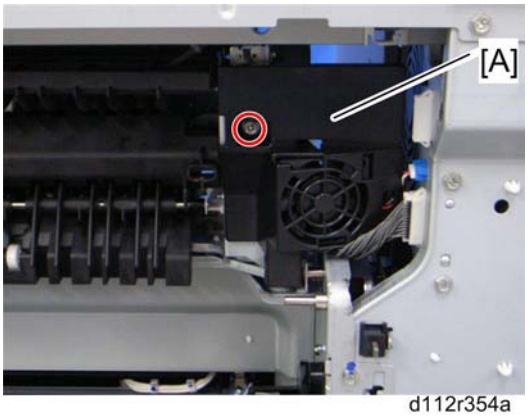
d037r348 d037r349

6. Sensor bracket [A] (x 1)
7. Vertical transport sensor 2 [B] (hooks, x 1)

Paper Exit

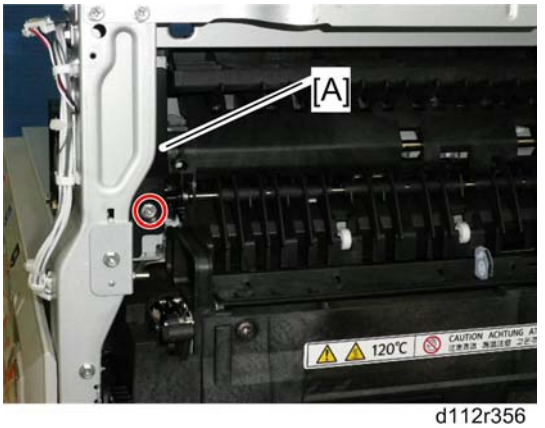
Paper Exit Unit

1. Fusing Unit (☛ p.166)
2. Front right cover (☛ p.97)
3. Paper exit cover (☛ p.99)
4. Inner Tray (☛ p.100)



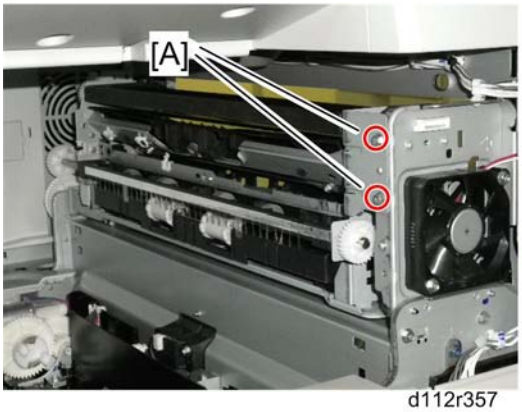
d112r354a

5. Fan base [A] (x 1)



d112r356

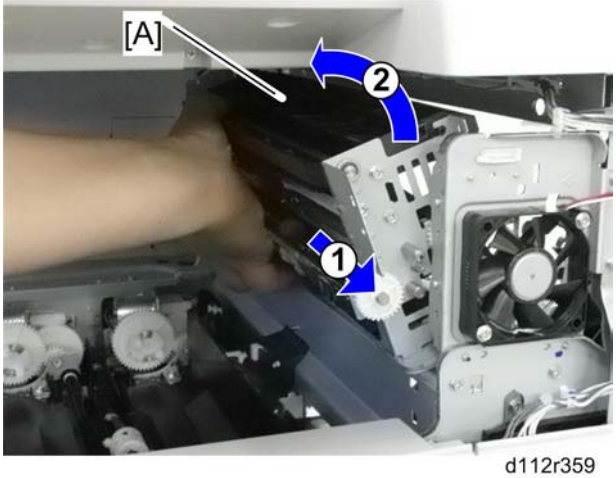
6. Front harness cover [A] (x 1)



d112r357

d112r358

7. Remove or disconnect the following:
   - Two screws [A] at the front side
   - Rear harness [B]

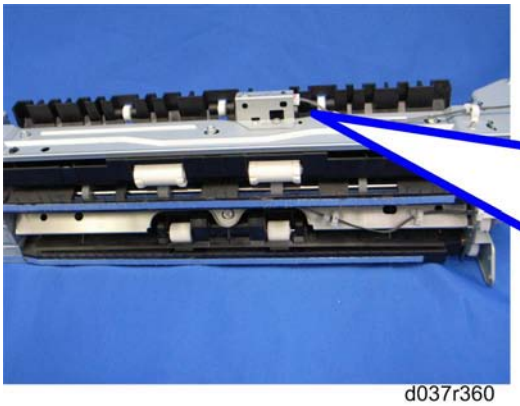


d112r359

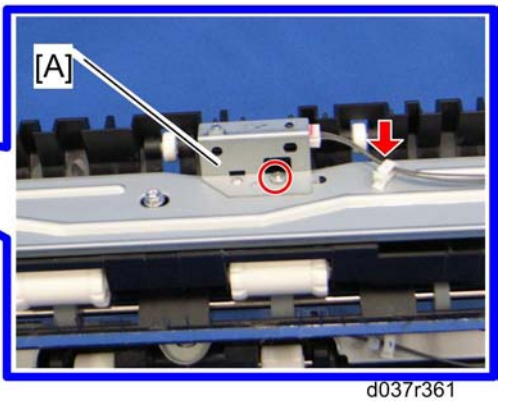
8. Paper exit unit [A]

Fusing Exit Sensor

1. Paper exit unit (☛ p.198)

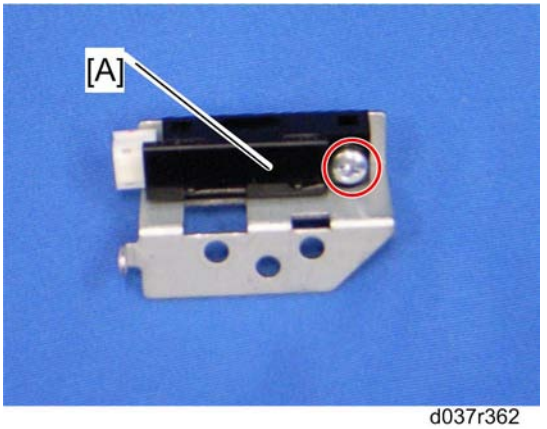


d037r360



d037r361

2. Sensor assembly [A] (x 1, x 1, x 1)



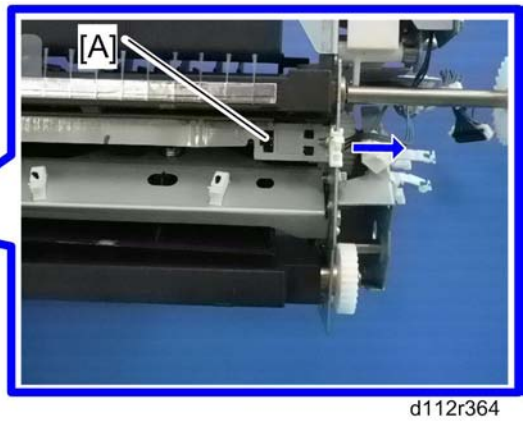
d037r362

3. Fusing exit sensor [A] (x 1)

Paper Exit Sensor

1. Paper exit unit (p.198)

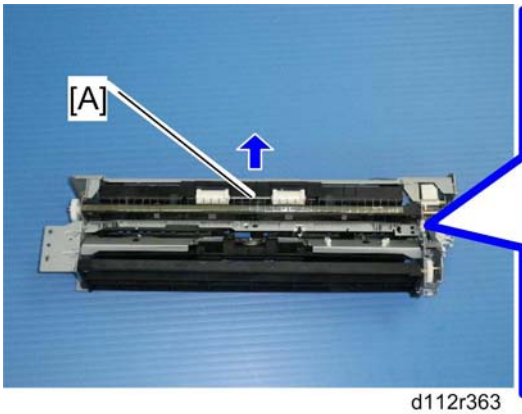

d112r363



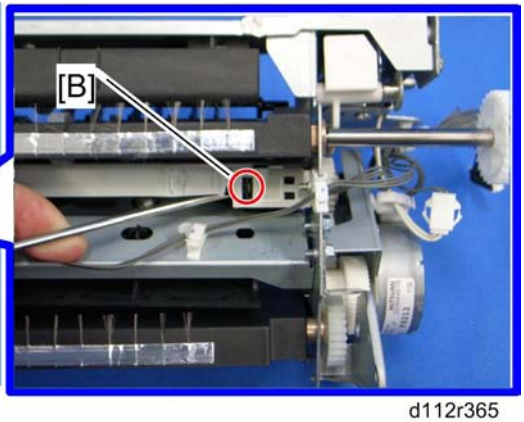
d112r364

2. Paper exit sensor [A] (hooks, x 1)

When installing the paper exit sensor



d112r363

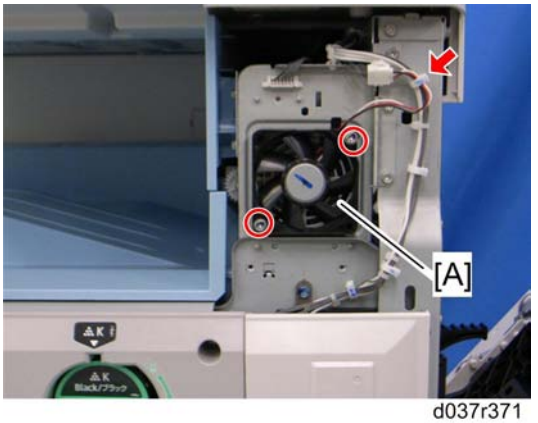


d112r365

- Stand the paper exit unit so that [A] is facing up. Otherwise, the paper exit sensor feeler interrupts the installation of the paper exit sensor.
- Insert the hook [B] first.

Fusing Front Fan

1. Front right cover (p.97)



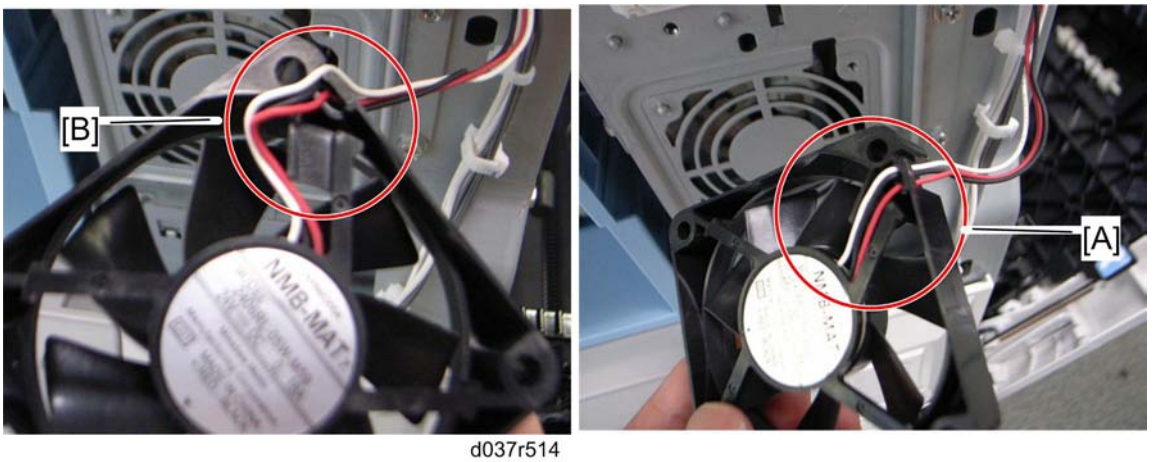
d037r371

4

2. Fusing front fan [A] (x 2, x 1, x 1)

When installing the fusing front fan

Make sure that the fusing front fan is installed with its decal facing to the rear side.

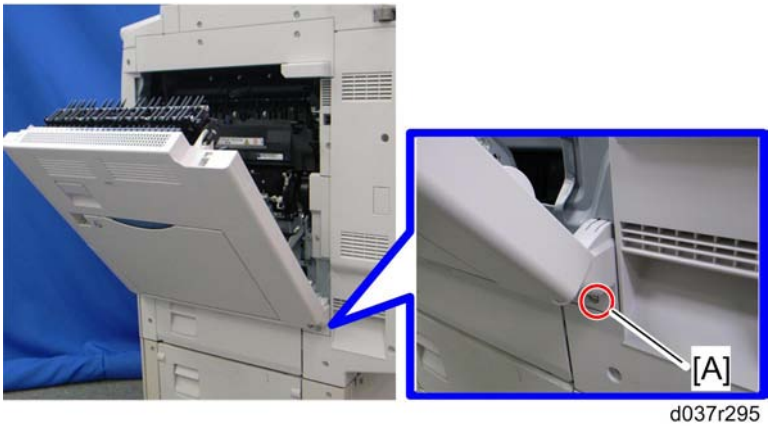


d037r514

Make sure that harnesses are correctly set [A] along the guide on the fan frame without slack [B]. Otherwise, the some of the wires could be pinched and damaged or cut between the fan frame and the frame of the main machine. SC533 can be issued if the harnesses are broken.

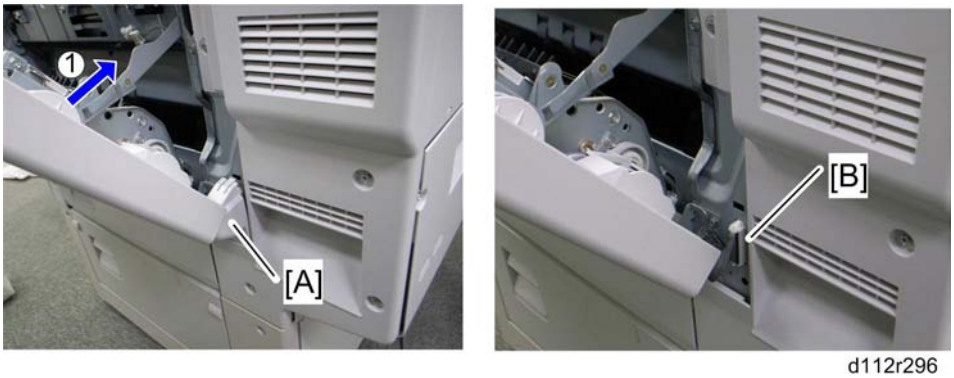
Right Door Unit

Right Door Unit



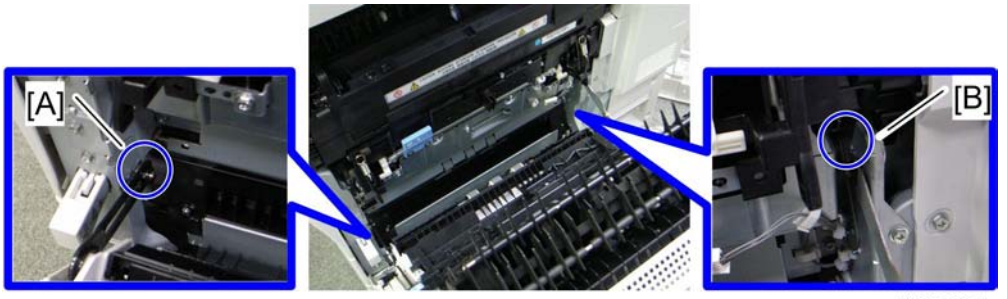
d037r295

1. Remove the screw [A].
2. Open the right door.



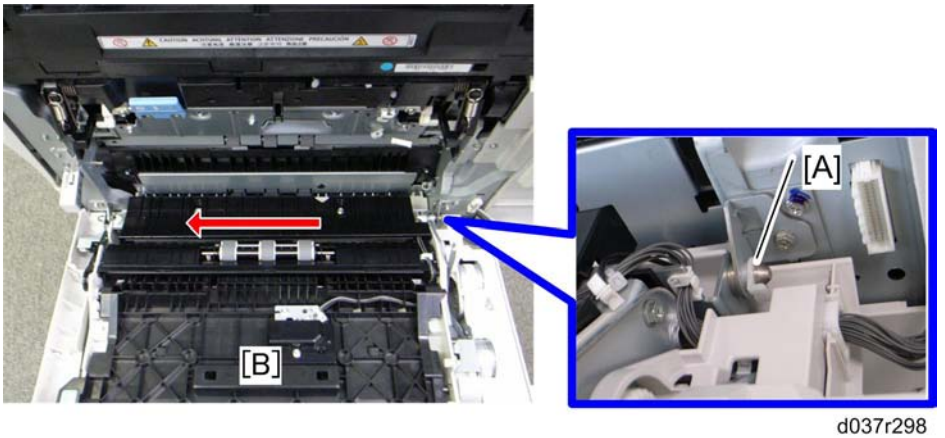
d112r296

3. Move the right door unit in the direction shown by ①, and remove the hook [A].
4. Disconnect the harness [B].



d037r297

5. Release the front and rear arms [A], [B] (x 1 each).

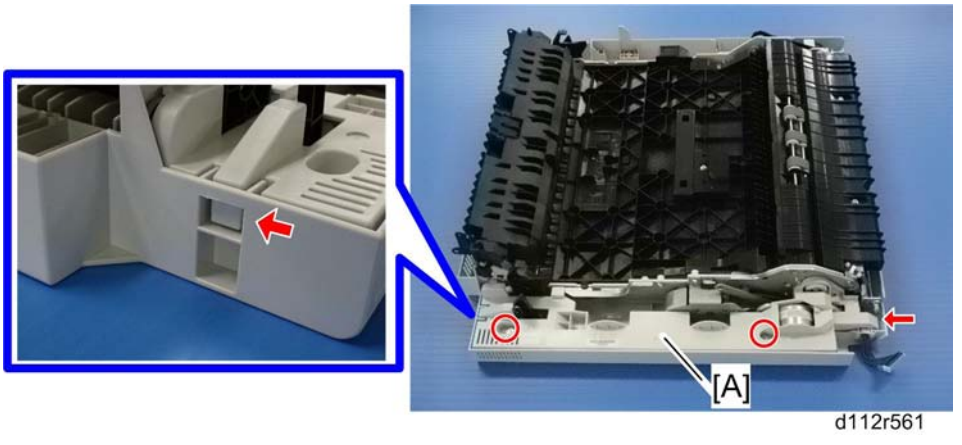


d037r298

6. Remove the clip [A].
7. Slide the right door unit [B] to the front side, and then remove it.

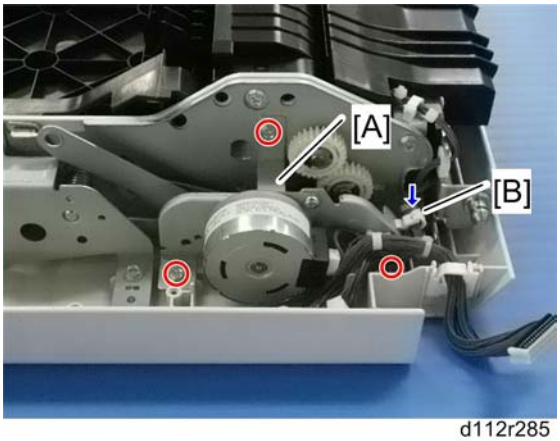
By-pass Motor

1. Right door unit (p.203)



d112r561

2. Right door inner cover [A] (x 2, hooks)

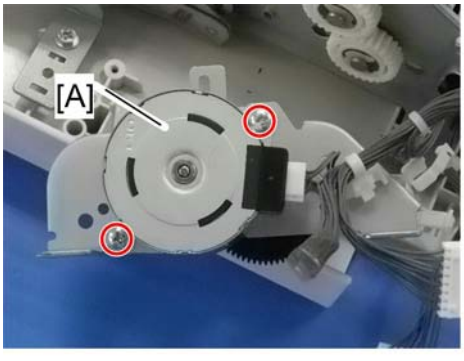


d112r285

3. By-pass motor with the bracket [A] (x 3, x 2, x 1)

Note

- Remove the clamp [B] from the bracket to disconnect the harness.

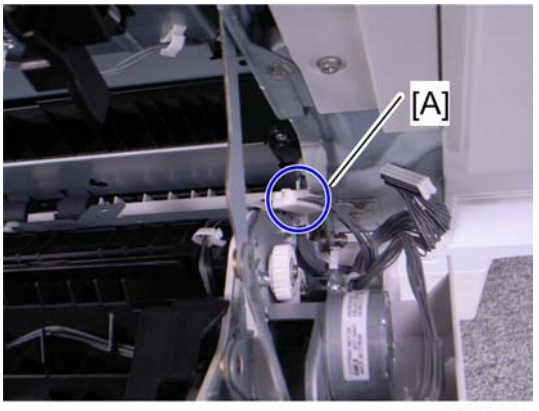



d112r286

4. By-pass motor [A] (x 2)

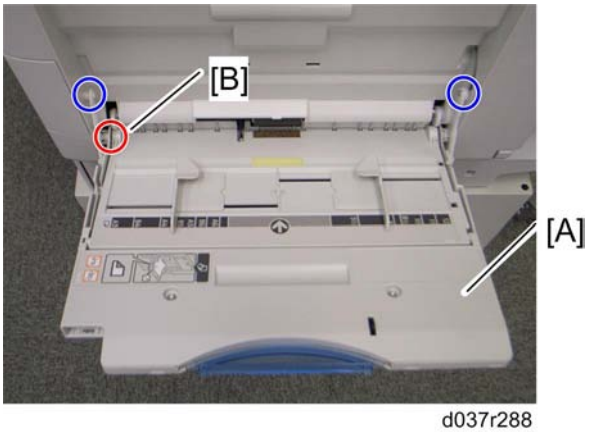
By-pass Tray Unit

1. Right door unit (p.203)
2. Right door inner cover (p.204 "By-pass Motor")
3. Reinstall the right door unit once, and open it.



d037r289

4. Disconnect the harness [A].
5. Close the right door unit.



d037r288

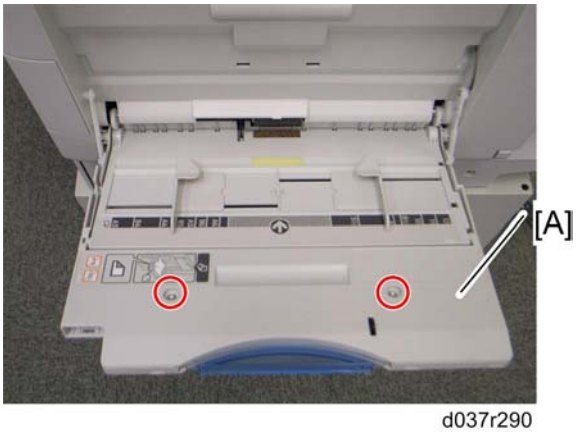
6. Open the by-pass tray unit [A]
7. By-pass tray unit (x 2, hook [B]).

Note

- Use a flat-head screw driver or similar tool to push the hook [B] down.

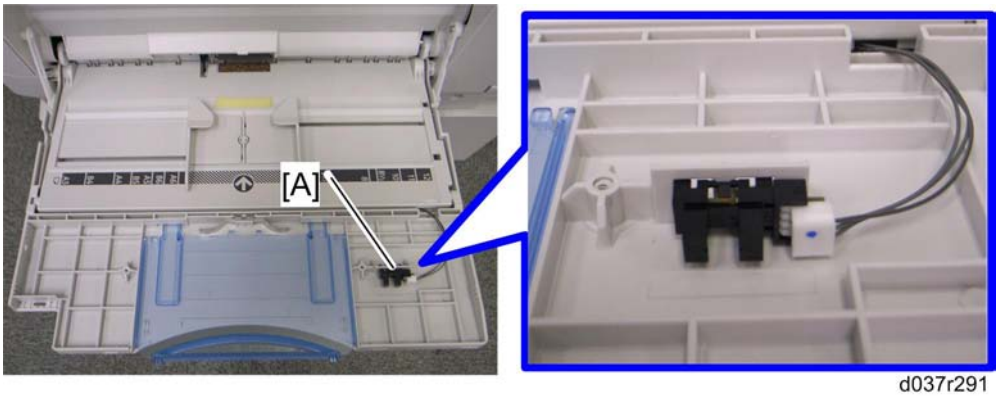
By-pass Paper Length Sensor

1. Open the by-pass tray unit.



d037r290

2. By-pass tray right cover [A] (x 2)

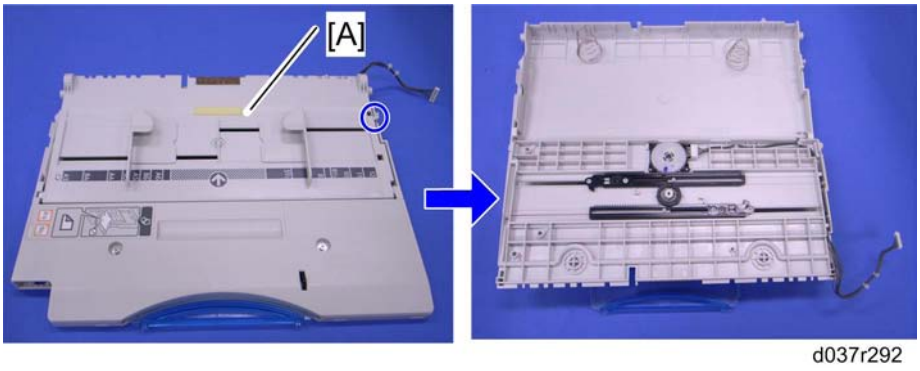


d037r291

3. By-pass paper length sensor [A] (x 1)

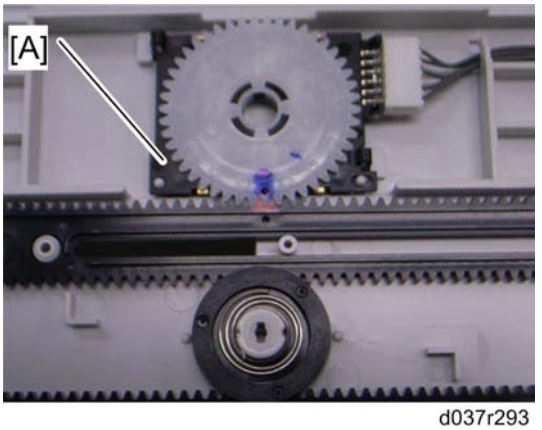
By-Pass Paper Size Sensor

1. By-pass tray unit (p.205)



d037r292

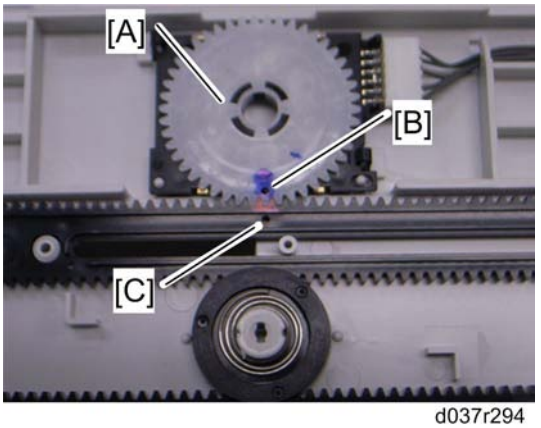
2. By-pass tray cover [A] (hook x 1)



d037r293

3. 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 SP5803-046 (By-Pass Size Detection SW < Input Check).

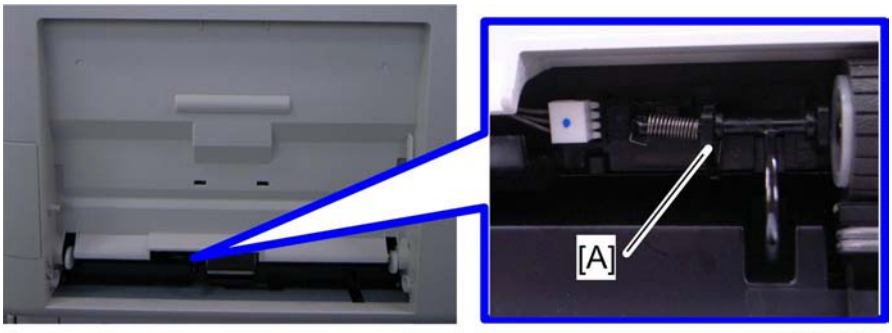
- Display on the LCD -

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. By-pass tray unit (☛ p.205)



d037r300

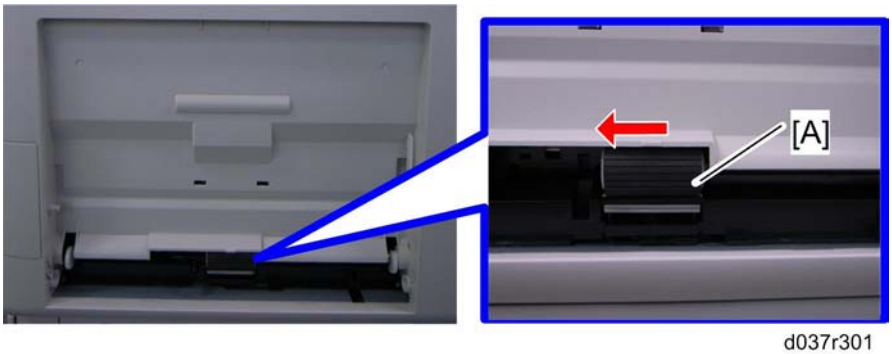
2. By-pass paper end sensor [A] (☞ x 1, hook)

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. By-pass tray unit (☛ p.205)

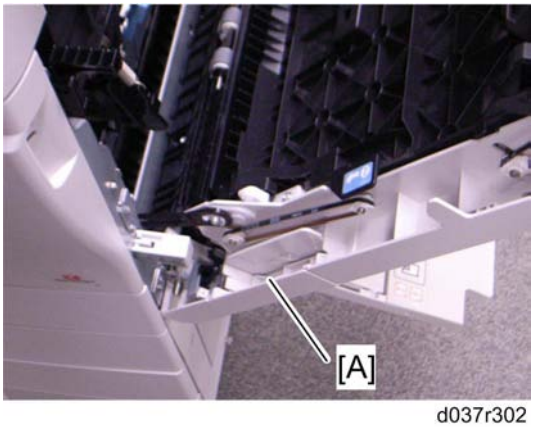


d037r301

2. By-pass feed roller [A] (hook)

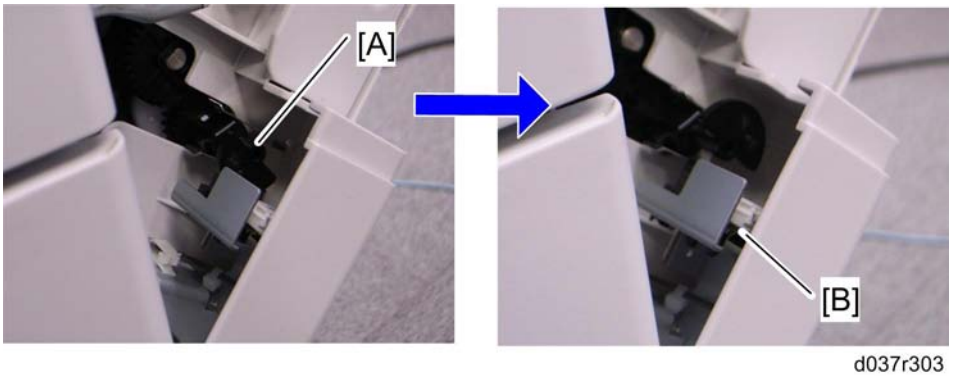
By-pass Tray HP Sensor

1. Open the by-pass tray unit.
2. Open the right door unit.



d037r302

3. Remove the hand holder [A].



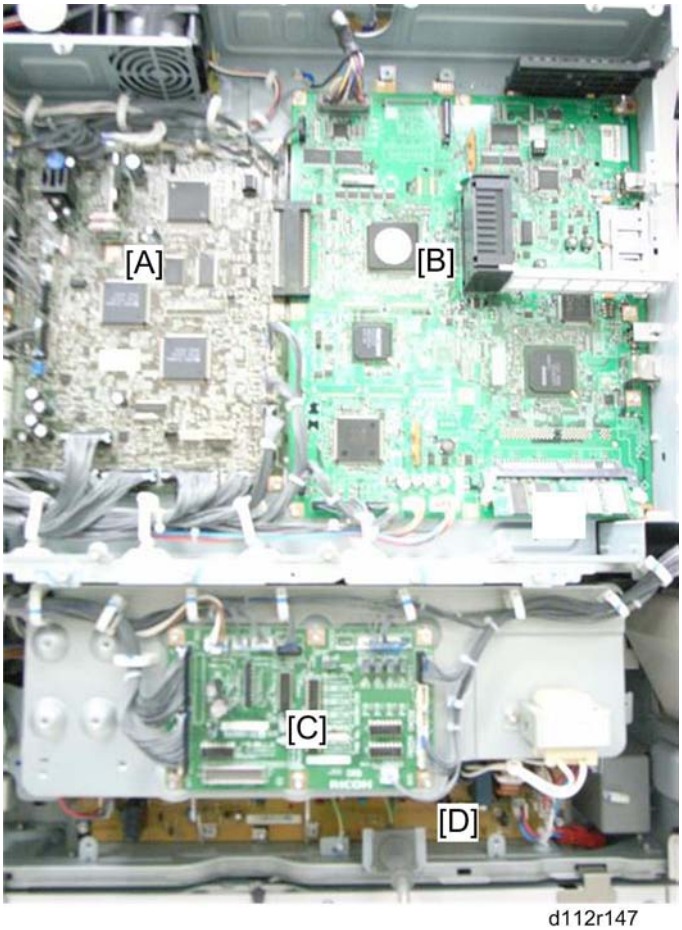
d037r303

4. Rotate the actuator [A] counter clockwise as shown above.
5. By-pass tray HP sensor [B] (hook).

Electrical Components

Boards

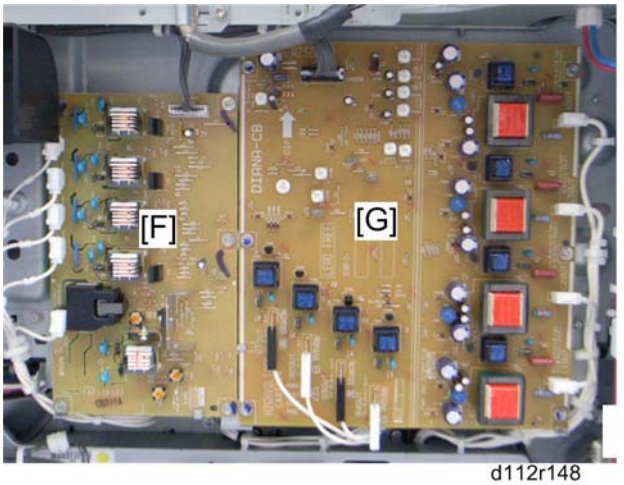
Controller Box Closed



d112r147

[A]	BCU
[B]	i-Controller Board
[C]	DRB
[D]	PSU

Controller Box Open

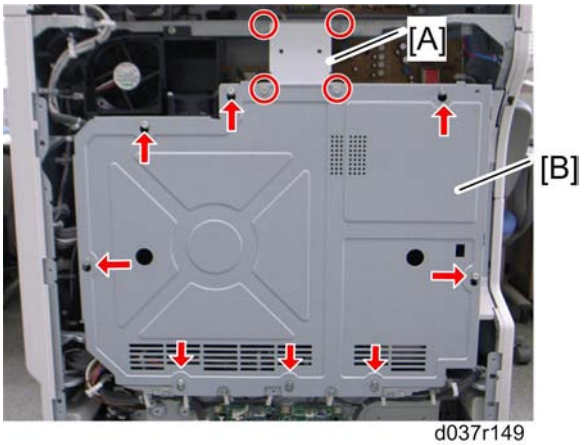


d112r148

[E]	HVPS: TTS Board
[F]	HVPS: CB Board

Controller Box Cover

1. Rear cover (☛ p.94)



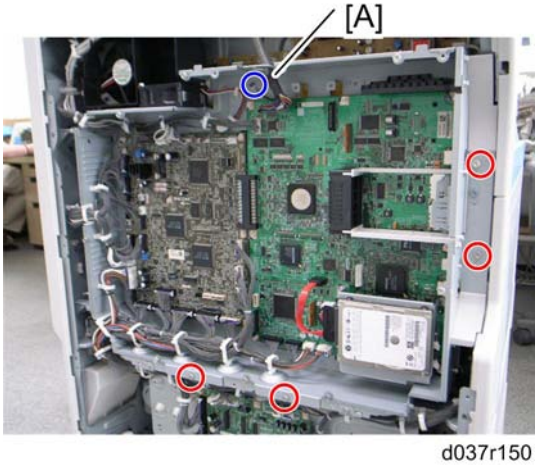
d037r149

2. Scanner cable bracket [A] (x 4)
3. Loosen the eight screws.
4. Slide up the controller box cover [B], and then remove it.

Controller Box

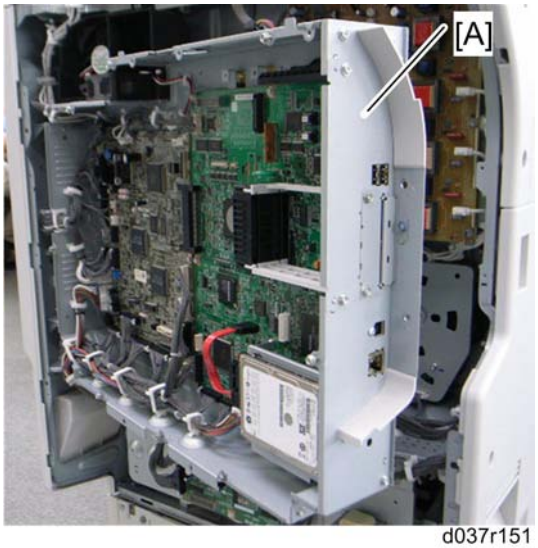
Opening the controller box

1. Rear cover (☛ p.94)
2. Controller box cover (☛ p.212)



d037r150

3. Remove the four screws and disconnect the scanner cable [A] (x 1, ground screw x 1)

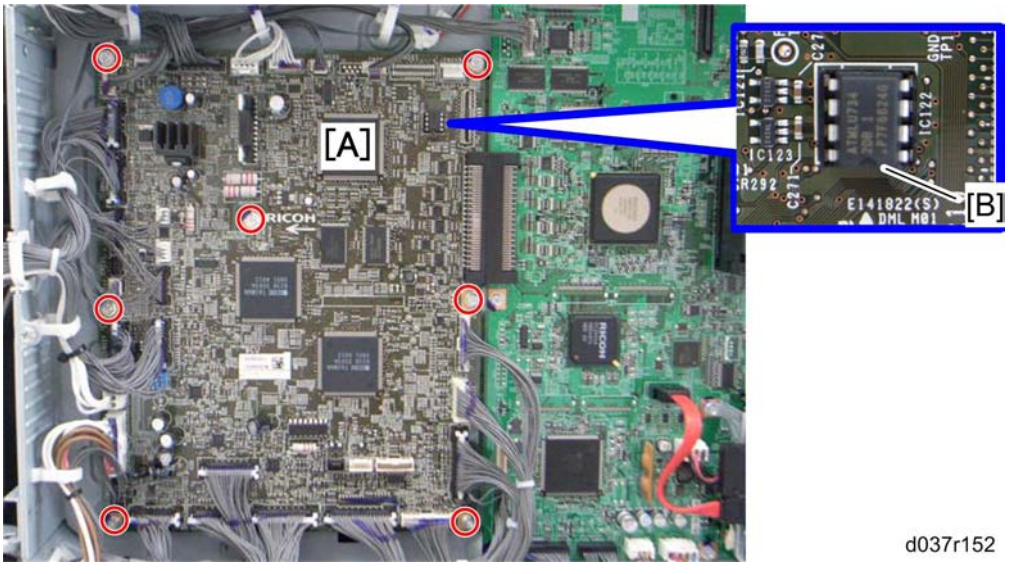


d037r151

4. Open the controller box [A].

BCU

1. Rear cover (☛ p.94)
2. Controller box cover (☛ p.212)



3. BCU [A] (x 7, x All)

Note

- Make sure the NVRAM is correctly installed on the BCU. Insert the NVRAM in the NVRAM slot with the "half-moon" pointing [B] to the downward 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 of the machine.
5. "SC995-01" occurs.
6. Enter the serial number with SP5811-004.
7. Turn the main power of the machine off and on.

Note

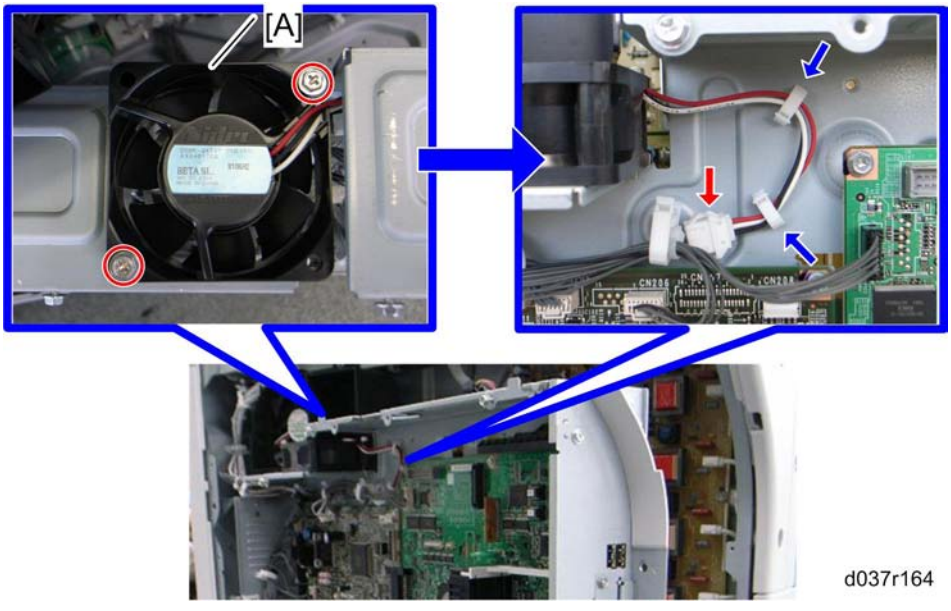
- Make sure you print out the SMC reports ("SP Mode Data" and "Logging Data") before you replace the NVRAM.

⚠CAUTION

- Keep NVRAM away from any objects that can cause static electricity. Static electricity can damage NVRAM data.

Controller Box Fan

1. Rear cover (☛ p.94)
2. Controller box cover (☛ p.212)



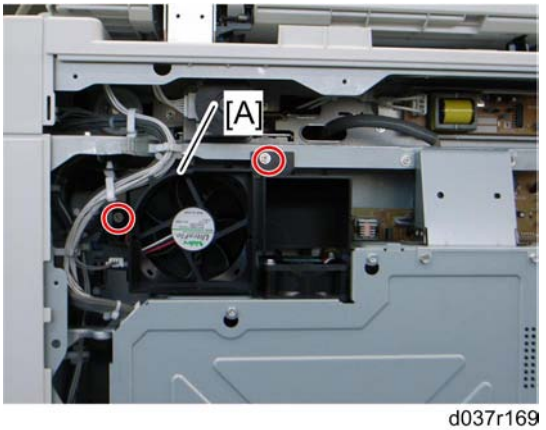
3. Controller box fan [A] (x 2, x 2, x 1)

When installing the controller box fan

Make sure that the controller box fan is installed with its decal facing upward.

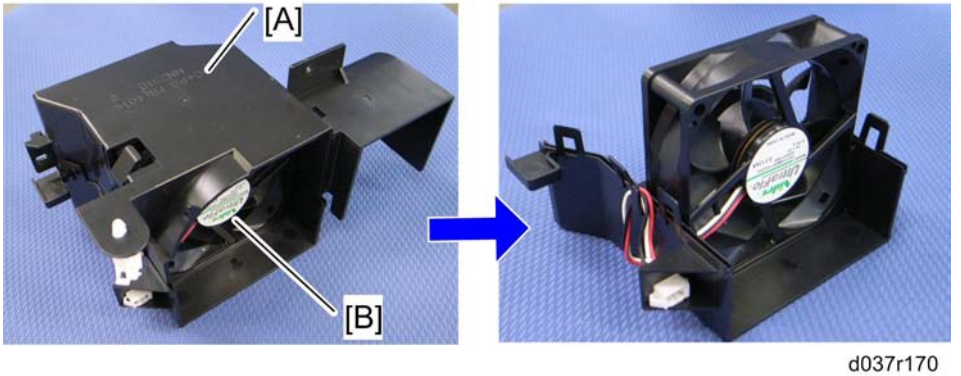
Fusing Rear Fan

1. Rear cover (☛ p.94)



d037r169

2. Fusing rear fan with the bracket [A] (x 2, x 1, x 1)



d037r170

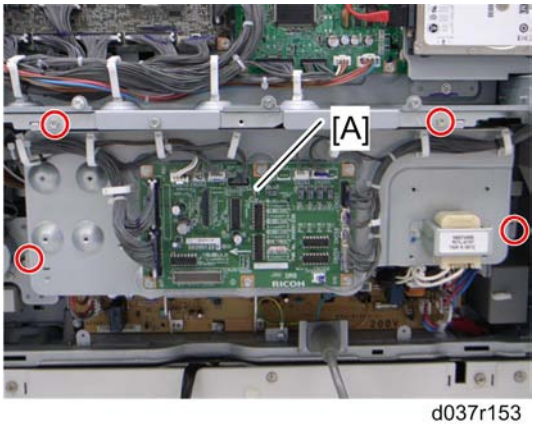
3. Remove the bracket [A] from the fusing rear fan [B] (hook x 6).

When installing the fusing rear fan

Make sure that the fusing rear fan is installed with its decal facing to the rear side.

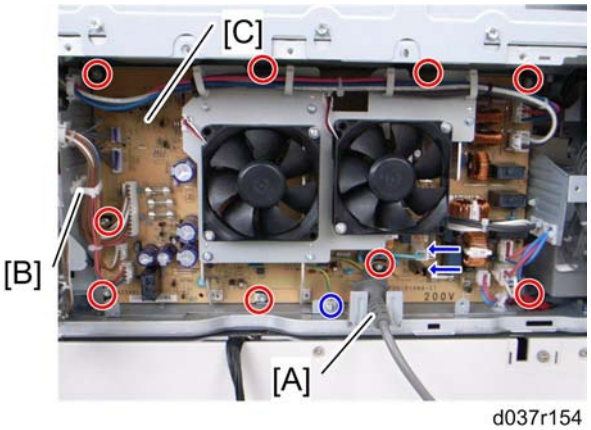
PSU

1. Rear cover (p.94)



d037r153

2. DRB with the bracket [A] (x 4, x all, x all)

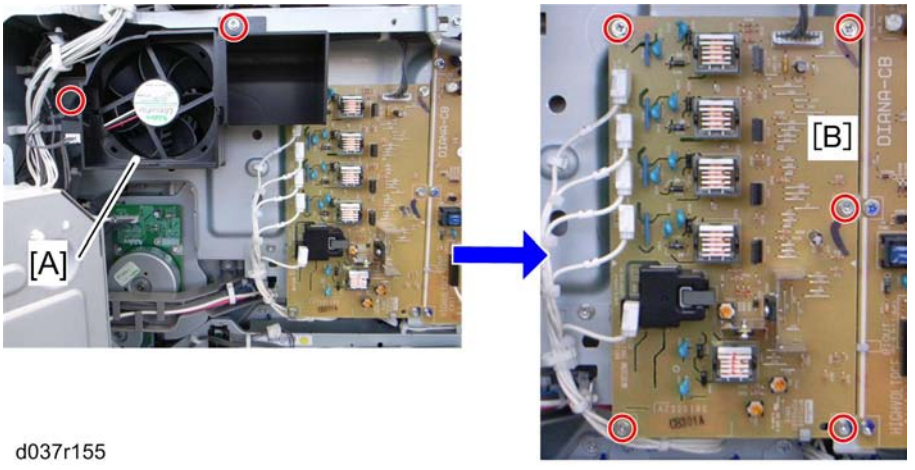


d037r154

3. Power cord [A] (Blue: ground screw x 1, x 2)
4. Remove the clamp [B] from the bracket.
5. PSU board [C] (x 9, x All, x All)

HVPS: TTS Board

1. Rear cover (p.94)
2. Controller box cover (p.212)

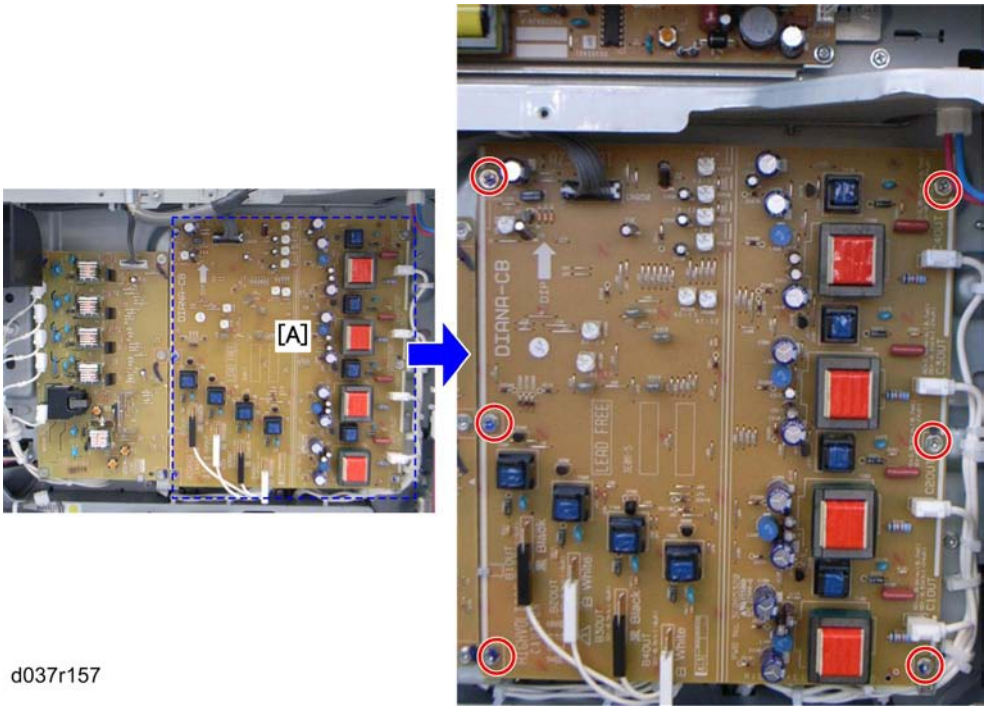


d037r155

3. Fusing rear fan [A] (x 2, x 1, x 1)
4. HVPS: TTS board [B] (x 5, x all)

HVPS: CB Board

1. Rear cover (p.94)
2. Controller box cover (p.212)



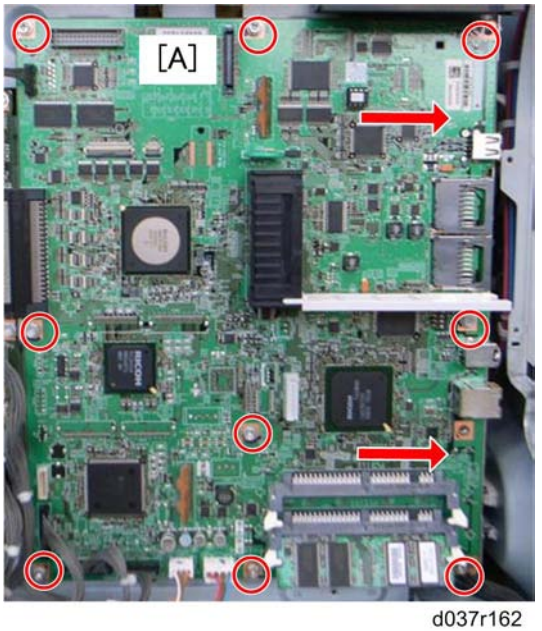
d037r157

3. HVPS: CB board [A] (x 6, All s)

i-Controller Board

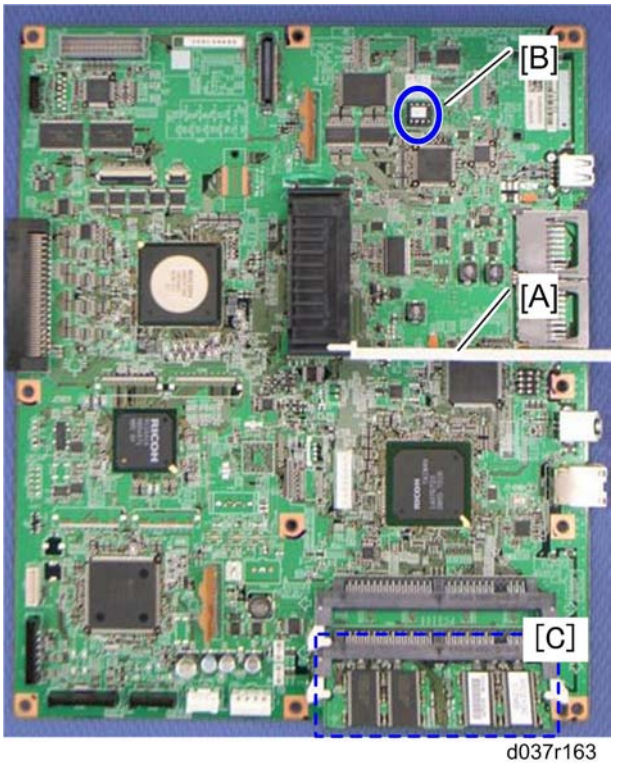
1. Rear cover (☛ p.94)
2. Controller box cover (☛ p.212)

3. Controller box left bracket [A] (x 5)



d037r162

4. i-controller board [A] (x 9, x all)



d037r163

5. Remove the Interface rails [A], NVRAM [B] and RAM-DIMM [C].

When installing the new controller board

1. Remove the NVRAM from the old controller board.
2. Install the NVRAM on the new controller board after you replace the controller board.
3. Reassemble the machine.
4. Turn on the main power of the machine

Note

- Make sure you print out the SMC reports ("SP Mode Data" and "Logging Data") before you replace the NVRAM.

⚠CAUTION

- Keep NVRAMs away from any objects that can cause static electricity. Static electricity can damage NVRAM data.
- Make sure the NVRAM is correctly installed on the controller board.

NVRAM Replacement Procedure

NVRAM on the BCU

1. Make sure that you have the SMC report (factory settings). This report comes with the machine.
2. Output the SMC data (☛ SP5-990-001) if possible.
3. Turn the main switch off.
4. Install an SD card into SD card slot 2. Then turn the main power on.
5. Copy the NVRAM data to an SD card (☛ SP5-824-001) if possible.
6. Turn off the main switch. Then unplug the power cord.
7. Replace the NVRAM on the BCU and reassemble the machine.
8. Plug in the power cord. Then turn the main switch on.
9. SC195 occurs.
10. Copy the data from the SD card to the NVRAM (☛ SP5-825-001) if you have successfully copied them to the SD card.
11. Turn the main switch off. Then remove the SD card from SD card slot 2.
12. Turn the main switch on.
13. Specify the SP and UP mode settings.
14. Do the process control self-check.
15. Do ACC for the copier application program.
16. Do ACC for the printer application program.

NVRAM on the Controller

1. Make sure that you have the SMC report (factory settings). This report comes with the machine.
2. Output the SMC data (☛ SP5-990-001) if possible.
3. Turn the main switch off. Then unplug the power cord.
4. Install a New NVRAM on the controller. Then reassemble the machine.
5. Turn the main switch on.
6. SC995-02 occurs.
7. Turn the machine off and on.
8. Do the process control self-check.
9. Do ACC for the copier application program.
10. Do ACC for the printer application program.

Machine Boot-Up

This machine boots up the modules in the following order.

	Module Name
1	System application
2	Copy application
3	Printer application
4	Web System application
5	Scanner application

Note

- It takes approximately 90 seconds to boot up all modules.

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

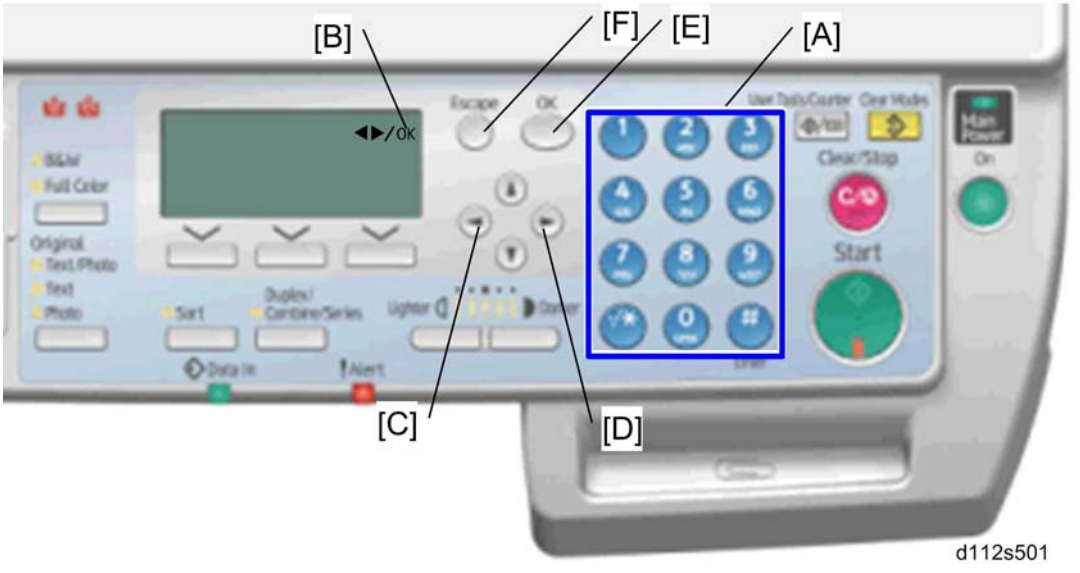
See "Appendices" for the following information:

- System SP Tables
- Printer SP Tables
- Scanner SP Tables

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

Select one of the Service Program modes (System, Printer or Scanner) from the operation 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.



Selecting Programs

- When a blinking underscore (or several blinking underscores) is displayed, you can type a number from the numeric keypad [A].
- When the sign "◀ ▶/OK" [B] is displayed upper right corner, you can scroll through the menu by pressing the left-arrow key [C] or the right-arrow key [D]. To select a program, press the "OK" key [E].

Specifying Values

1. After locating a program, press the "OK" key. A blinking underscore (or several blinking underscores) indicates which value you can change. The value in parentheses is the default value of the menu.
2. Type a necessary value from the numeric keypad. To switch between positive (plus) and negative (minus) values, press the [./*] (period/asterisk) key.
3. To validate the value, press the "OK" key. To cancel the value, press the cancel key [F].

Activating Copy Mode

You can activate the copy mode while the SP mode is running. When you do so, the copier outputs images or patterns that help you adjust the SP-mode program.

1. Press the ⓘ key. The copy mode is activated.
2. Specify copy settings and press the "OK" key.
3. To return to the SP mode, press the ⓒ key.

Note

- You cannot end the SP mode while the copy mode is activated.

Quitting Programs/Ending SP Mode

Press the key or the "Cancel" key to quit the program. You can end the SP mode by pressing one of these keys several times.

Remarks

Display on the Control Panel Screen

The maximum number of characters which can show on the control panel screen is limited to 17 characters. For this reason, some of the SP modes shown on the screen need to be abbreviated. The following are abbreviations used for the SP modes for which the full description is over 17 characters.

<table>
<tr><td colspan="2">Paper Weight
Thin paper: 52-59.9 g/m^2
Plain Paper1: 60-74 g/m^2, 16-20lb.
Plain Paper2: 74.1-90 g/m^2, 20-24lb.
Middle Thick: 90.1-105 g/m^2, 24-28lb.
Thick Paper 1: 105.1-169 g/m^2, 28.5-44.9lb.
Thick Paper 2: 169.1-210 g/m^2, 45-56lb.
Thick Paper 3: 210.1-256 g/m^2, 56lb-68lb</td></tr>
<tr><td>Paper Type
N: Normal paper
MTH: Middle thick paper
TH: Thick paper</td><td>Paper Feed Station
P: Paper tray
B: By-pass table</td></tr>
<tr><td colspan="2">Color Mode [Color]
[K]: Black in B&W mode
[Y], [M], or [C]: Yellow, Magenta, or Cyan in Full Color mode
[YMC]: Only for Yellow, Magenta, and Cyan
[FC]: Full Color mode
[FC, K], [FC, Y], [FC, M], or [FC, C]: Black, Yellow, Magenta, or Cyan in full color mode</td></tr>
</table>

Print Mode	Process Speed
S: Simplex	L: Low speed (60 mm/s)
D: Duplex	M: Middle speed (120 mm/s)

Others

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 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
NIB	Network Interface	Flash ROM on the controller board	Network Support
WebDocBox	Document server application	Flash ROM on the controller board	Web Uapl
WebSys	Web Service application	Flash ROM on the controller board	Web Support
ARDF	ARDF control	ARDF	ADF

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 0 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, copy the entire "romdata" folder onto the SD card.
- If the card already contains the "romdata" folder, copy the "D112" folder onto the card.

If the card already contains folders up to "D112", copy the necessary firmware files (e.g. D112xxxx.fwu) into this folder.

Note

- Do not put multiple machine firmware programs on the same SD card. Copy the only model firmware you want.

Updating Procedure

1. Turn the main power switch off.
2. Remove the slot cover (x 1).
3. Insert the SD card into SD Card Slot 2. Make sure the label on the SD card faces the rear 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 3 s 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. (☛ "Handling Firmware Update Error")

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.

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.

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.
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.
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.
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.

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 ⏲ # 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.
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.
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.

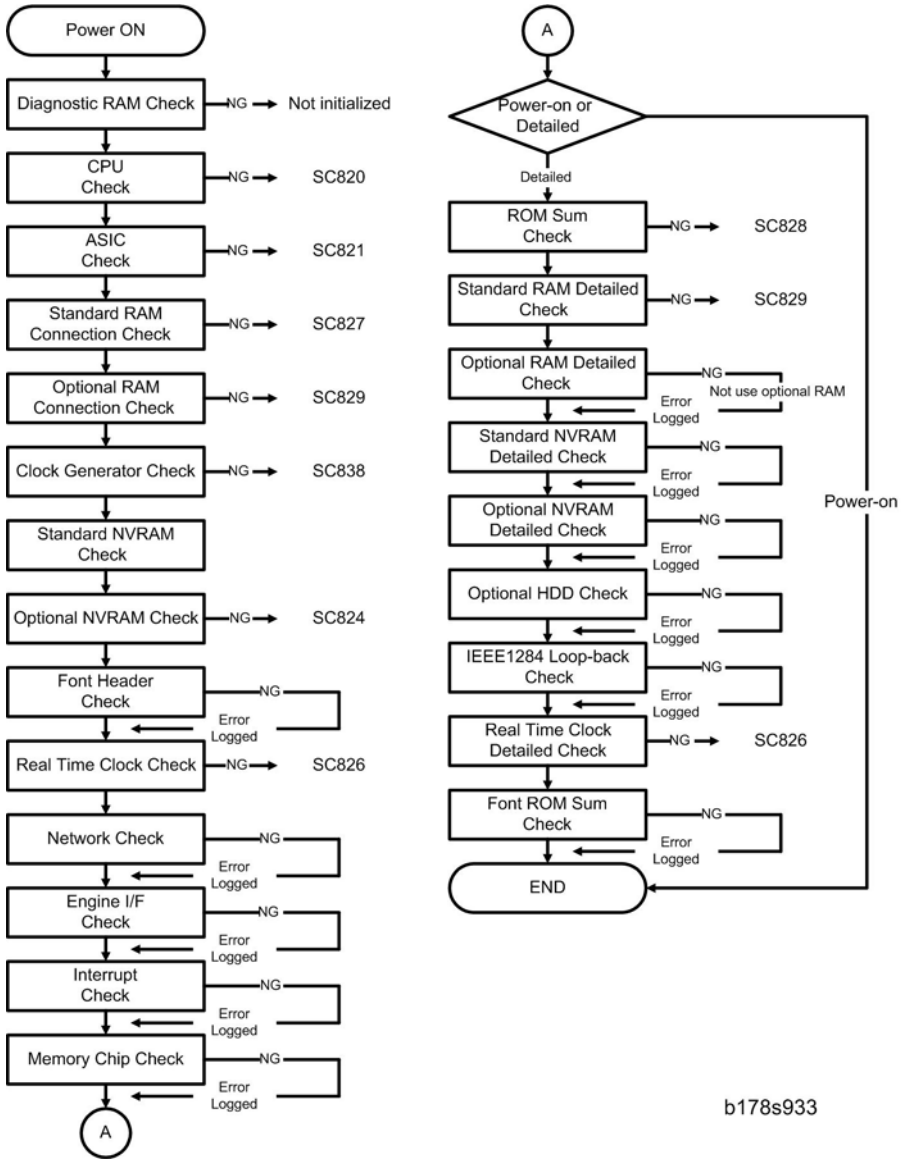
Controller Self-Diagnostics

Overview

There are three types of self-diagnostics for the controller.

1. Power-on self-diagnostics: The machine automatically starts the self-diagnostics just after the power has been turned on.
2. SC detection: The machine automatically detects SC conditions at power-on or during operation.

The following shows the workflow of the power-on and detailed self-diagnostics.


Power ON
Diagnostic RAM Check
NG
Not initialized
CPU Check
SC820
ASIC Check
SC821
Standard RAM Connection Check
SC827
Optional RAM Connection Check
SC829
Clock Generator Check
SC838
Standard NVRAM Check
Optional NVRAM Check
SC824
Font Header Check
Error Logged
Real Time Clock Check
SC826
Network Check
Engine I/F Check
Interrupt Check
Memory Chip Check
A
A
Power-on or Detailed
Power-on
Detailed
ROM Sum Check
SC828
Standard RAM Detailed Check
SC829
Optional RAM Detailed Check
Not use optional RAM
Standard NVRAM Detailed Check
Optional NVRAM Detailed Check
Optional HDD Check
IEEE1284 Loop-back Check
Real Time Clock Detailed Check
SC826
Font ROM Sum Check
END
b178s933

SD Card Appli Move

Overview

The service program "SD Card Appli Move" (SP5-873) lets you to copy application programs from one SD card to another SD card.

Slot 1 and Slot 2 are used to store application programs. However, more than two optional applications are supplied for this machine. In that case, you can move application programs from Slot 2 to Slot 1 with the following procedure.

Consider the following limitations when you try to merge SD cards.

- The destination SD card should have the largest memory size of all the application SD cards. Refer to the following table for the memory size of each SD card.

Outline of SD Card Appli Move:

1. Choose a SD card with enough space.

   Note

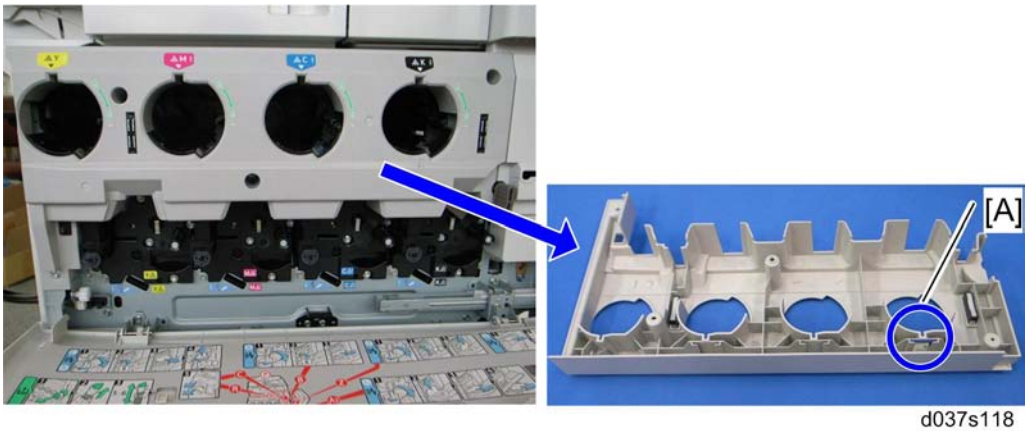
   - Do not use an SD card if it has been used on a computer. Normal operation is not guaranteed when such an SD card is used.

2. Enter SP5873 "SD Card Appli Move". Then move the application from the SD Card in Slot 2 to the card in slot 1.
3. Exit the SP mode

   Use caution when you do the SD Card Appli Move procedure:

   Note

   - The data necessary for authentication is transferred with the application program from an SD card to another SD card. Authentication fails if you try to use the SD card after you copy the application program from one card to another card.



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4. Remove the inner cover (☛ p.97 "Inner Cover").
5. Keep the SD card in the place [A] inside the inner cover after you have copied the application program from one card to another card. This is done for the following reasons:
    - 1) The SD card can be the only proof that the user is licensed to use the application program.
    - 2) You may need to check the SD card and its data to solve a problem in the future.

Move Exec

The menu "Move Exec" (SP5-873-001) lets you copy application programs from the original SD card to another SD card.

Important

- **Do not turn ON the write protect switch of an application SD card on the machine. If the write protect switch is ON, a download error (e.g. Error Code 44) occurs during a firmware upgrade or application merge.**

1. Turn the main switch off.
2. Make sure that an SD card is in SD Card Slot 1. The application program is copied into this SD card.
3. Insert the SD card (having stored the application program) to SD Card Slot 2. The application program is copied from this SD card.
4. Turn the main switch on.
5. Start the SP mode.
6. Select SP5-873-001 "Move Exec".
7. Follow the messages shown on the operation panel.
8. Turn the main switch off.
9. Remove the SD card from SD Card Slot 2.
10. Turn the main switch on.
11. Check that the application programs run normally.

Undo Exec

The menu "Undo Exec" (SP5-873-002) lets you copy back application programs from an SD card to the original SD card. You can use this program when, for example, you have mistakenly copied some programs by using Move Exec (SP5-873-001).

Important

- **Do not turn ON the write protect switch of an application SD card on the machine. If the write protect switch is ON, a download error (e.g. Error Code 44) occurs during a firmware upgrade or application merge.**

1. Turn the main switch off.
2. Insert the original SD card in SD Card Slot 2. The application program is copied back into this card.
3. Insert the SD card (having stored the application program) to SD Card Slot 1. The application program is copied back from this SD card.
4. Turn the main switch on.
5. Start the SP mode.
6. Select SP5-873-002 "Undo Exec".
7. Follow the messages shown on the operation panel.
8. Turn the main switch off.
9. Remove the SD card from SD Card Slot 2.

   Note

   - This step assumes that the application programs in the SD card are used by the machine.
10. Turn the main switch on.
11. Check that the application programs run normally.

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 SP5990-001 (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.
3. Remove the SD slot cover (x 1).
4. Insert the SD card into SD card slot 2. Then switch the copier on.
5. Execute SP5824-001 (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 download 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 SD slot cover (x 1).
3. Insert the SD card with the NVRAM data into SD Card Slot 2.
4. Switch the copier main power switch on.
5. Do SP5825-001 (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 • Protection Code • 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 of the main machine.
4. Remove the SD slot cover at the left rear side of the machine (x 1).
5. Install the SD card 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 form the SD card slot 2.
11. Install the SD slot 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 of the main machine.
2. Remove the SD slot cover at the left rear side of the machine (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 SD slot 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.

Card Save Function

Overview

Card Save:

- The Card Save function is used to save print jobs received by the printer on an SD card with no print output. Card Save mode is toggled using printer Bit Switch #1 bit number 4. Card Save will remain enabled until the SD card becomes full, or until all file names have been used.
- Captures are stored on the SD card in the folder /prt/cardsave. File names are assigned sequentially from PRT00000.prn to PRT99999.prn. An additional file PRT.CTL will be created. This file contains a list of all files created on the card by the card save function.
- Previously stored files on the SD card can be overwritten or left intact. Card Save SD has "Add" and "New" menu items.
  - **Card Save (Add):** Appends files to the SD Card. Does not overwrite existing files. If the card becomes full or if all file names are used, an error will be displayed on the operation panel. Subsequent jobs will not be stored.
  - **Card Save (New):** Overwrites files in the card's /prt/cardsave directory.

Limitation:

- Card Save cannot be used with PJL Status Readback commands. PJL Status Readbacks will not work. In addition they will cause the Card Save to fail.

Procedure

1. Turn the main power switch OFF.

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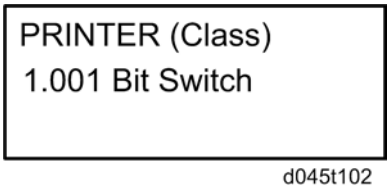
2. Insert the SD card into the service slot of the controller board. Then turn the power ON.

Note

- To determine which slot is the service slot, please see the service manual.

3. Enter SP mode.
4. Select "Printer SP".
5. Select "Service Mode" and press "OK" button.
6. Select "1.001 Bit Switch"and press "OK" button.



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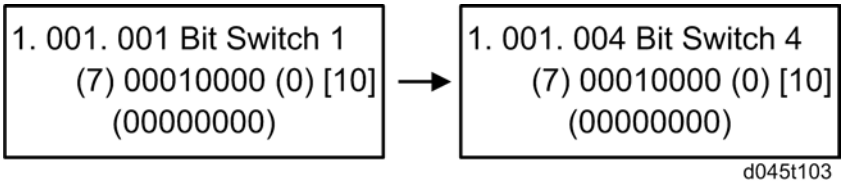
7. Use the arrow key to turn "Bit Switch 4" and use the numeric key "4" to turn bit 4 ON. The result should look like: 00010000. By doing this Card Save option will appear in "List/Test Print".



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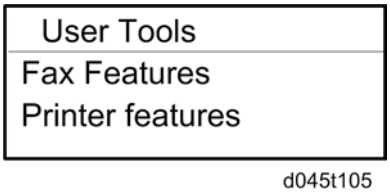
8. Press the "Escape" button several times to exit SP Mode.
9. Press the "User Tools/Counter" button.
10. Use the arrow key and select "Printer Features".



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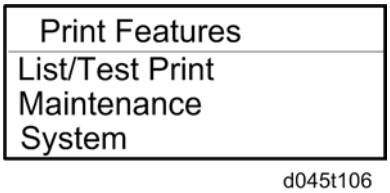
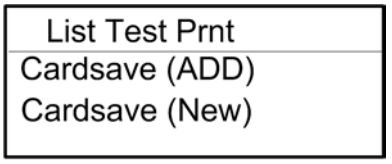
11. Use the arrow key and select "List/Test Print".



d045t106

12. Use the arrow key and select "Cardsave (ADD) or Cardsave (New).



d045t107

13. To enable the newly configured settings, select "switch" button and then press the "Escape" button to exit the "List/Test Print" menu.
14. Send a job to the printer.
15. As soon as the printer receives the data, it will be stored on the SD card automatically with no print output. Nothing is displayed on the screen indicating that a Card Save operation was successful.
16. Press the "Online" button and then the "Escape" button to exit Card Save mode.
17. Change the Bit Switch Settings back to the default **00000000**.
18. Remove the SD card after main power switch is turned off.

Error Messages

Card Save error messages:

- **Init error:** A card save process (i.e. card detection, change to kernel mode) failed to initialize.
- **Card not found:** Card cannot be detected in the slot.
- **No memory:** Insufficient working memory to process the job.
- **Write error:** Failed to write to the card.
- **Other error:** An unknown error occurred.

If an error occurs, pressing "OK" will cause the device to discard the job and return to the ready state.

Error Messages

Card Save error messages:

- **Init error:** A card save process (e.g. card detection, change to kernel mode) failed to initialize.
- **Card not found:** Card cannot be detected in the slot.
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- **Write error:** Failed to write to the card.
- **Other error:** An unknown error occurred.

If an error occurs, pressing "OK" will cause the device to discard the job and return to the ready state.

6. Troubleshooting

Service Call Conditions

For "SC Table" information, see "Appendices".

Process Control Error Conditions

See "Appendices" for the following information:

- Developer Initialization Result
- Process Control Self-Check Result
- Line Position Adjustment Result

Troubleshooting Guide

See "Appendices" for the following information:

- Image Quality
- Line Position Adjustment
- Image Problems at Periodical Intervals

Sub-scan Magnification Error

If a sub-scan magnification error of an image occurs on an output, follow the procedure below to adjust the sub-scan magnification.

Sub-scan Magnification Adjustment Procedure

1. Adjust the sub-scan magnification for each paper type and print mode with the following SPs.

   Important

   - **Input the same value in these SP settings. Otherwise, color registration errors occur on outputs and this cannot be recovered by the line position adjustment.**
   - SP1-803-001: Plain paper/ 600 dpi Input
   - SP1-803-002: Plain paper/ 1200 dpi Input
   - SP1-803-003: Thick paper Input
2. Turn the main power of the machine off and on.
3. Check if all settings of the following SPs are "0" (success).
   - SP1-803-004: Plain paper/ 600 dpi Result
   - SP1-803-005: Plain paper/ 1200 dpi Result
   - SP1-803-006: Thick paper Result

   Important

   - **If one of the settings of SP1-803-004 to 006 is "1" (error), return to step 1 and then input a value which is closer to "0" compared with the previously input value.**
   - **For example, if "+0.9" is input in the settings of SP1-803-001 to 003 and an error occurs, input "+0.8" or less with SP1-803-001 to 003.**
   - **For example, if "-0.9" is input in the settings of SP1-803-001 to 003 and an error occurs, input "-0.8" or more with SP1-803-001 to 003.**
   - If an error still remains, refer to "Motor Speed Adjustment".
4. Execute the line position adjustment (rough) with SP2-111-003.

5. Execute the line position adjustment (fine) with SP2-111-001.
6. Make sample copies and check if the outputs are satisfactory.

Motor Speed Adjustment

If "Sub-scan Magnification Adjustment Procedure" does not solve the sub-scan magnification error, the setting of the motor speed adjustment may be out of adjustable range. Check the following three points.

1. An error ("1") occurs in SP1-803-**004**.

   [Setting values of the following SPs + input value with SP1-803-001] > motor speed adjustable range

   e.g.) 3.5 (SP1-801-002) + 1 (SP1-803-001 to -003) = 4.5

   In this case, "4.5" is over the maximum adjustable value ("4") of the SP1-801-002. As a result, the result of the motor speed adjustment issues "1" (error).

   - Adjust the settings of the SP1-830-001 to -003 so that the total value (motor speed setting value + input value) is within the adjustable range for each motor described below.

SP No.	Max.	Min.	Title
SP1-801-002	4	-4	Regist Mot:120 (0.3 default)
SP1-801-003	4	-4	Bk OpcDevMot:120 (-0.1 default)
SP1-801-007	6	-6	Fusing Mot:120 (-0.4 default)
SP1-801-009	4	-4	Transfer Mot:120 (0 default)
SP1-801-012	2	-2	Feed1:CW120 (0.3 default)
SP1-801-014	2	-2	Feed1:CCW120 (0.3 default)
SP1-801-020	2	-2	By-pass:120 (0.3 default)

2. An error ("1") occurs in SP1-803-**005**.

   [Setting values of the following SPs + input value with SP1-803-001] > motor speed adjustable range

   e.g.) 1.5 (SP1-801-025) + 1 (SP1-803-001 to -003) = 2.5

   In this case, "2.5" is over the maximum adjustable value ("2") of the SP1-801-025. As a result, the result of the motor speed adjustment issues "1" (error).

   - Adjust the settings of SP1-830-001 to -003 so that the total value (motor speed setting value + input value) is within the adjustable range for each motor described below.

SP No.	Max.	Min.	Title
SP1-801-033	4	-4	Regist Mot:60:1200dpi

SP No.	Max.	Min.	Title
SP1-801-034	2	-2	Feed1:CW60:1200dpi
SP1-801-035	2	-2	Feed1:CCW60:1200dpi
SP1-801-038	2	-2	By-pass:60:1200dpi
SP1-801-041	6	-6	FusingMot:60:1200dpi
SP1-801-042	4	-4	BkOpcDevMot:60:1200dpi
SP1-801-043	4	-4	TransferMot:60:1200dpi

3. An error ("1") occurs in the SP1-803-**006**.

   [Setting values of the following SPs + input value with SP1-803-001] > motor speed adjustable range

   e.g.) 3.5 (SP1-801-001) + 1 (SP1-803-001 to -003) = 4.5

   In this case, "4.5" is over the maximum adjustable value ("4") of the SP1-801-025. As a result, the result of the motor speed adjustment issues "1" (error).

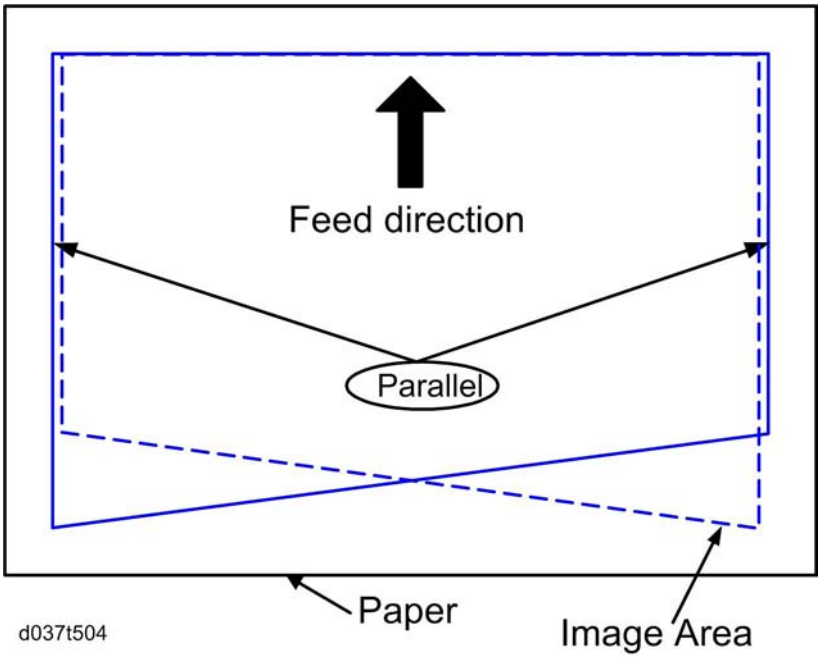
   - Adjust the settings of SP1-830-001 to -003 so that the total value (motor speed setting value + input value) is within the adjustable range for each motor described below.

SP No.	Max.	Min.	Title
SP1-801-001	4	-4	Regist Mot:60:Thick
SP1-801-004	4	-4	Bk OpcDevMot:60:Thick
SP1-801-008	6	-6	Fusing Mot:60:Thick
SP1-801-010	4	-4	TransferMot:60:Thick
SP1-801-011	2	-2	Feed1:CW60:Thick
SP1-801-013	2	-2	Feed1:CCW60:Thick
SP1-801-019	2	-2	By-pass:60:Thick

Trapezoid Image Adjustment

Before Adjusting the Trapezoid Image

1. Enter SP2-109 and print out the test pattern 14 (Trimming Area).



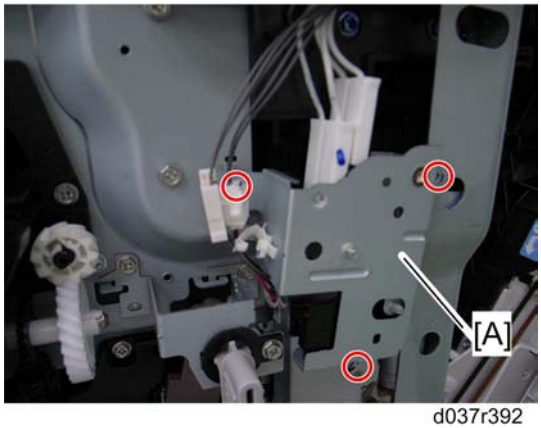
2. Make sure the horizontal lines are parallel.

   "Parallel": The gap between horizontal lines is 1.8 mm or less.

3. If the lines are not parallel, check the following and apply corrections as necessary:
   - Make sure that the side fences of the tray are set neatly against the sides of the paper.
   - Make sure that the PTR unit is connected to the bracket correctly.
   - Make sure that the shafts of the duplex unit are not bent nor damaged.

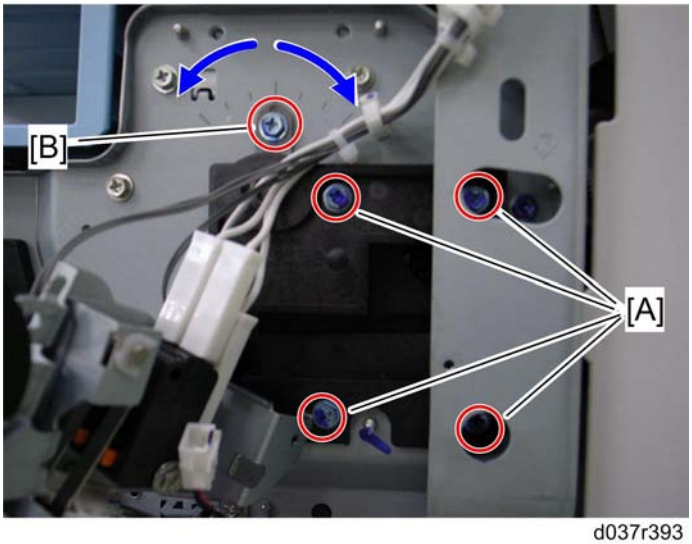
Adjusting the Trapezoid Image

1. Remove the following items:
   - Fusing unit (☛ p.166)
   - Front right cover (☛ p.97)
   - PCDU toner collection bottle (☛ p.91)
   - Inner cover (☛ p.97)
   - Inner right cover (☛ p.96)



d037r392

2. Remove the interlock switch bracket [A] (x 3, x 1, x 2).

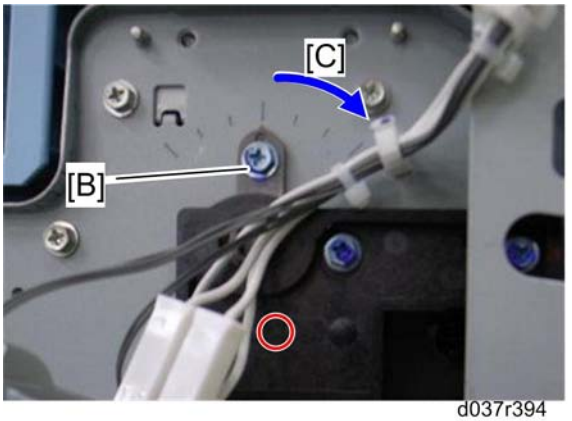


d037r393

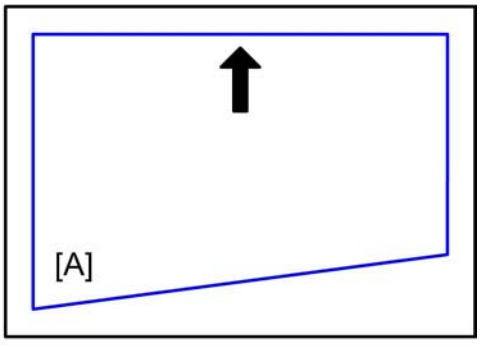
3. Loosen the four screws [A] on the front fusing guide.
4. Remove the screw [B] on the adjustor lever.

Note

- This screw is not necessary after tightening the front fusing guide.



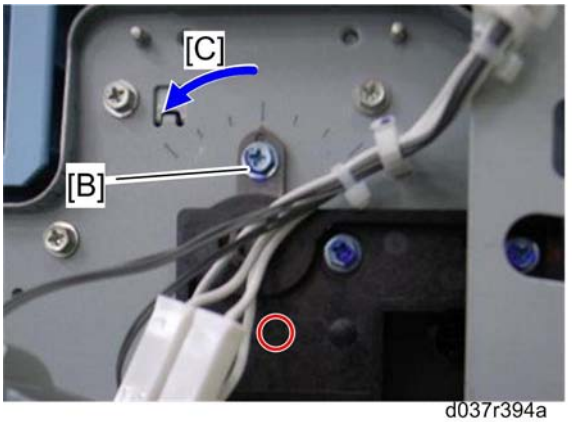
d037r394



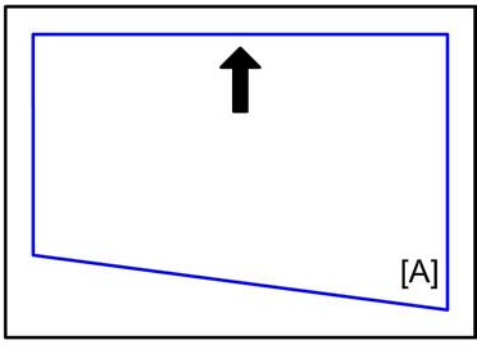
5. If the horizontal lines slope down to the left [A], move the front fusing guide upward. To do this, turn the adjustor lever [B] of the fusing front guide clockwise [C].

Note

- One step of the adjustor lever moves the front fusing guide by 1 mm.



d037r394a



6. If the horizontal lines slope down to the right [A], move the fusing front guide downward. To do this, turn the adjustor lever [B] of the front fusing guide counterclockwise [C].

Note

- One step of the adjustor lever moves the front fusing guide by 1 mm.

7. Retighten the four screws for the front fusing guide.
8. Print out the test pattern and check the image quality.
9. If the symptom still occurs, repeat the above steps.

Jam Detection

See "Appendices" for the following information:

- Paper Jam Display
- Jam Codes and Display Codes

Electrical Component Defects

See "Appendices" for the following information:

- Sensors
- Blown Fuse Conditions

  (Power Supply Unit)

Scanner Test Mode

SBU Test Mode

Output the SBU test pattern with SP4-807-001 to make sure the scanner SBU control operates correctly. The SBU test pattern prints out after you have set the SP mode settings and pressed the start key.

- The CCD on the SBU board may be defective if the copy is abnormal and the SBU test pattern is normal.
- The followings can be the cause if the copy is normal and the SBU test pattern is abnormal:
  - The harness may not be correctly connected between the SBU and the i-controller.
  - The i-controller or SBU board may be defective.

IPU Test Mode

You can check the BICU board with the SP mode menu, SP4-904-1.

If no error is detected, the test ends. Then the completion code shows in the operation panel display. If an error is detected, the test is interrupted. Then an error code shows. The table below lists the completion and error codes.

SP4-904-1 Register Access

There are 16 bits switches in this SP. Each bit indicates a different CPU. The error result is displayed on the operation panel as a decimal number.

0: Normal, 1: Error

SP4-904-2 Image Path

There are 16 bits switches in this SP. Each bit indicates a different CPU path. The error result is displayed on the operation panel as a decimal number.

0: Normal, 1: Error

Errors may be caused by the following problems:

1. Short circuit on the signal lines
   - When the i-controller board is installed, a pin or two on the ASIC is damaged.
   - Some conductive matter or object is trapped among the pins.
   - Condensation
2. Destruction of circuit elements

- Over current or a defective element breaks the circuit.

3. Abnormal power supply
    - The required voltage is not supplied to the devices.
4. Overheat/overcooling
    - The environment is inappropriate for the board (the scanner unit).
5. Static electricity
    - Static electricity of a high voltage occurs during the test.
6. Others
    - The scanner and i-controller are incorrectly connected.

When you have completed a check, turn the main switch off and on before you do another check. When you have completed all necessary checks, turn the main switch off and on.

Model DI-C1LL
Machine Code: D112

Appendices

6 August, 2010

TABLE OF CONTENTS

5. Appendix: Process Control Error Conditions

6. Appendix: Troubleshooting Guide

7. Appendix: Jam Detection

8. Appendix: Electrical Component Defects

9. Appendix: SP Mode Tables

1. Appendix: Specifications

Copier

Configuration:	Desktop
Print Process:	Laser beam scanning & Dry electrostatic transfer system 4 drums tandem method
Resolution:	Scan: 600 dpi Print: 600 dpi
Gradation:	Scan: 8 bits/pixel each for RGB/ 600 dpi 1 bit/pixel (B/W C1L) Print: 600dpi / 4 bits/pixel
Original type:	Sheets, book, objects
Maximum original size:	A3/11" x 17"
Copy speed:	ADF 1 to 1, LT/ A4 LEF **Thin (60 g/m^2 or less)** 20 cpm (color/black & white) **Plain 1 (74 g/m^2 or less)/ 2 (90 g/m^2 or less)** 20 cpm (color/black & white) **Middle Thick (105 g/m^2 or less)** 20 cpm (color/black & white) **Thick 1 (169 g/m^2 or less)** 12.5 cpm (color/black & white) **Thick 2 (220 g/m^2 or less)** 12.5 cpm (color/black & white) **Thick 3 (256 g/m^2 or less)** 12.5 cpm (color/black & white) **OHP, Glossy (1200 dpi)** 12.5 cpm (color/black & white)
First copy (normal mode):	Color: 9.5 seconds or less (A4/LT LEF) Black & white: 6.5 seconds or less (A4/LT LEF)

<table>
<tr><td>Warm-up time:</td><td colspan="3">Less than 30 seconds (20°C)</td></tr>
<tr><td>Print Paper Capacity:
(80 g/m^2, 20 lb)</td><td colspan="3">Standard tray: 250 sheets x 2 + 100
By-pass tray: 100 sheets (Plain), 40 sheets (Thick 1: 106 - 169g/m^2), 20 sheets (Thick 2/3: 170 - 256 g/m^2), 35 sheets (Postcard)
Optional paper feed tray: 500 sheets x 2</td></tr>
<tr><td rowspan="5">Print Paper Size:</td><td colspan="3">(Refer to “Supported Paper Sizes”.)</td></tr>
<tr><td>-</td><td>Minimum</td><td>Maximum</td></tr>
<tr><td>Tray 1</td><td>A5 (LEF)/
8.5" x 11"</td><td>A3/11" x 17"</td></tr>
<tr><td>By-pass</td><td>90 x 148 mm</td><td>305 x 600 mm</td></tr>
<tr><td>Optional Tray</td><td>A5 (LEF)/
8.5" x 11"</td><td>A3/11" x 17"</td></tr>
<tr><td>Printing Paper Weight:</td><td colspan="3">Standard tray 1: 60 to 256 g/m^2 (16 to 68 lb.)
Optional paper tray: 60 to 105 g/m^2 (16 to 28 lb.)
By-pass tray: 52 to 256 g/m^2 (14 to 68 lb.)</td></tr>
<tr><td>Output Paper Capacity:</td><td colspan="3">Standard exit tray: 500 sheets or more (face down)*1
*1: T6200, A4 LEF</td></tr>
<tr><td>Continuous copy:</td><td colspan="3">Up to 999 sheets</td></tr>
<tr><td rowspan="2">Zoom:</td><td colspan="3">Arbitrary: From 25 to 400% (1% step)</td></tr>
<tr><td colspan="3">25%, 50%, 71%, 82%, 93%,
100%, 122%, 141%, 200%, 400%</td></tr>
<tr><td>Memory:</td><td colspan="3">512 MB</td></tr>
<tr><td>Power Source:</td><td colspan="3">220 V - 240 V, 50/60 Hz: 8A or more</td></tr>
<tr><td rowspan="3">Power Consumption:</td><td>-</td><td colspan="2">220 - 240V</td></tr>
<tr><td>Maximum</td><td colspan="2">1680 W or less</td></tr>
<tr><td>Sleep Mode</td><td colspan="2">4.7W or less</td></tr>
<tr><td colspan="4">(*1) The complete system consists of mainframe, ARDF and PFU.
The above measurements were made in accordance with Ricoh standard methodology.</td></tr>
</table>

Dimensions (W x D x H): Copier: 587 x 655 x 725 mm (23.1" x 25.8" x 28.5") Copier + PFU: 587 x 655 x 1117 mm (23.1" x 25.8" x 44.0")	
Weight:	Less than 85 kg (187 lb.) [without ARDF excluding toner] Less than 100 kg (220 lb.) [with ARDF excluding toner]

1

Printer

Printer Languages:	PCL 5c/6 RPCS (Refined Printing Command Stream) PictBridge (optional)
Resolution and Gradation:	PCL 5c/6: 300 x 300 dpi : Available only in B/W mode 600 x 600 dpi : Fast (1 bit), Standard (2 bits) RPCS: 600 x 600 dpi, 1,800 x 600 dpi*, 1200 dpi x 1200 dpi *1,800 x 600 dpi = 600 x 600 dpi (2 bits)
Printing speed:	20 ppm in Plain/Middle Thick mode 12.5 ppm in Thick/OHP mode (depending on paper type)
Resident Fonts:	PCL 5c/6 (Standard): 45 Compatible fonts 13 International fonts
Host Interfaces:	USB2.0: Standard Ethernet (100 Base-TX/10 Base-T): Standard
Network Protocols:	TCP/IP (IPv4, IPv6), IPX/SPX, AppleTalk (Auto Switching)

Scanner

Standard Scanner Resolution:	Main scan/Sub scan 600 dpi
Available scanning Resolution Range:	Twain Mode: 100 to1200 dpi
Grayscales:	1 bit or 8 bits/pixel
Interface:	Ethernet (100 Base-TX/10 Base-T/1000 Base-T for TCP/IP), USB2.0/SD Slot
Compression Method:	B&W: TIFF (MH, MR, MMR) Gray Scale, Full Color: JPEG

Supported Paper Sizes

1

Paper Feed

BT: By-pass Tray, T1: Tray 1 (standard), T2/3: Tray 2/3 (option)

Paper	Size (W x L)	BT	T1	T2/3
A3 W	12" x 18"	M	-	-
A3 SEF	297 x 420mm	A	A[1]	S[1]
A4 SEF	210 x 297mm	A	A	A
A4 LEF	297 x 210mm	A	A[3]	A[3]
A5 SEF	148 x 210mm	A	-	A
A5 LEF	210 x 148mm	A	A	A
A6 SEF	105 x 148mm	M	-	-
B4 SEF	257 x 364mm	M	A[2]	A[2]
B5 SEF	182 x 257mm	M	A	A
B5 LEF	257 x 182mm	M	A[4]	A[4]
B6 SEF	128 x 182mm	M	-	-
Ledger	11" x 17"	M	S[1]	S[1]
Letter SEF	8.5" x 11"	M	A	A
Letter LEF	11" x 8.5"	M	S[3]	S[3]
Legal SEF	8.5" x 14"	M	S[2]	S[2]
Government Legal SEF	8.25" x 14"	M	M	M
Half Letter SEF	5.5" x 8.5"	M	-	-
Executive SEF	7.25" x 10.5"	M	M	M
Executive LEF	10.5" x 7.25"	M	S[4]	S[4]

Paper	Size (W x L)	BT	T1	T2/3
F SEF	8" x 13"	M	M	M
Foolscap SEF	8.5" x 13"	M	M	M
Folio SEF	8.25" x 13"	M	M	M
	11" x 15"	M	M	M
	10" x 14"	M	M	M
	8" x 10"	M	M	M
8K	267 x 390mm	M	M	M
16K SEF	195 x 267mm	M	M	M
16K LEF	267 x 195mm	M	M	M
Custom		M	M	M
Com10 Env.	4.125" x 9.5"	M	-	-
Monarch Env.	3.875" x 7.5"	M	-	-
C6 Env.	114 x 162mm	M	-	-
C5 Env.	162 x 229mm	M	-	-
DL Env.	110 x 220mm	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 Paper size which has same superscript number can be changeable with SP setting. (eg. Ledger: S^1 <=> A3 SEF: A^1)
-	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*1	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	-	-	-*1	Y
A5 (210 x 148) S	-	-	Y	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)	-*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.

Software Accessories

The printer drivers and utility software are provided as following two CD-ROMs

1: Printer Drivers and Utilities CD-ROM

2: Scanner Drivers and Utilities CD-ROM.

An auto-run installer lets you to select the components you want to install.

Printer Drivers

Printer Language	Windows 2000, XP, Server 2003, Vista, Server 2008	MacOS8.6 to 9.x, MacOSX10.1 or later
PCL5c / PCL6	Yes	No
RPCS	Yes	No

Note

- The PCL5c/6 and RPCS drivers are provided on the printer drivers CD-ROM
- The PPD installer for Macintosh supports Mac OS X 10.1 or later versions.

Scanner Driver

Printer Language	Windows 2000, XP, Server 2003/Vista	MacOS8.6 to 9.x, MacOSX10.1 or later
Network TWAIN	Yes	No

Note

- The Network TWAIN driver is provided on the scanner drivers CD-ROM.

Utility Software

Software	Description

Font Manager (2000/XP/Server 2003)	A font management utility with screen fonts for the printer This is provided on the printer drivers CD-ROM
Smart Device Monitor for Admin (2000/XP/Server 2003/Vista)	A printer management utility for network administrators. NIB setup utilities are also available. This is provided on the printer drivers CD-ROM
DeskTopBinder – SmartDeviceMonitor for Client (2000/XP/Server 2003/ Vista)	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 printer drivers CD-ROM
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 scanner drivers CD-ROM
DeskTopBinder Lite (2000/XP/Server 2003)	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 scanner drivers CD-ROM

Optional Equipment

ARDF (D366)

Paper Size/Weight:	Simplex	Size	A3 to A5, DLT to HLT
		Weight	40 to 128 g/m^2 (10 to 34 lb.)
	Duplex	Size	A3 to A5, DLT to HLT
		Weight	52 to 105 g/m^2 (14 to 28 lb.)
Table Capacity:	50 sheets (80 g/m^2, 20 lb)		
Original Standard Position:	Rear left corner		
Separation:	Feed belt and separation roller		
Original Transport:	Roller transport		
Original Feed Order:	From the top original		
Supported Magnification Ratios:	Copy	32 to 200 %	
Power Source:	DC 24V, 5V from the scanner unit		
Power Consumption:	50 W or less		
Dimensions (W × D × H):	550 mm x 491 mm x 120 mm (21.7" x 19.3" x 4.7")		
Weight:	10 kg (22 lb.)		

Paper Feed Unit (D331)

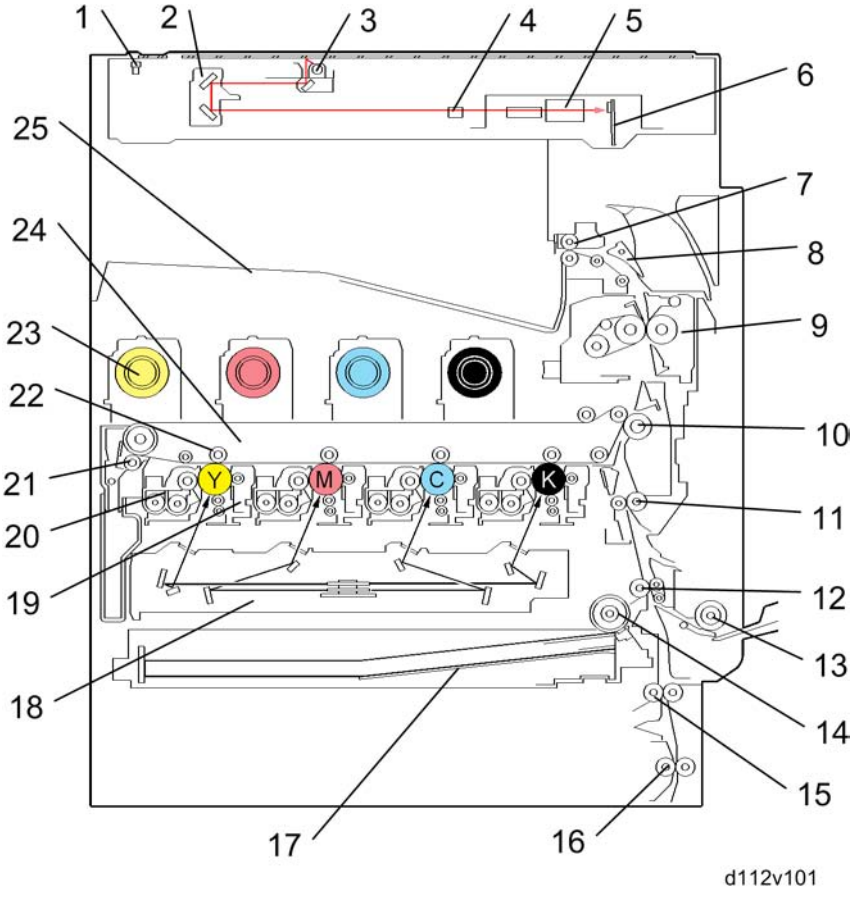
Paper Size:	A5 to A3, 5 1/2" x 8 1/2" SEF to 11" x 17"
Paper Weight:	60 - 105 g/m^2, 16 - 28 lb
Tray Capacity:	500 sheets (80 g/m^2, 20 lb) x 2 trays
Paper Feed System:	Feed roller and friction pad
Paper Height Detection:	4 steps (100%, 70%, 30%, Near end)

Power Source:	• 24 Vdc and 5Vdc (from the copier/printer) • 220 – 240 Vac (230 V version) from the copier/printer when the optional tray heater is installed
Power Consumption:	35 W (Copying/printing)
Weight:	25 kg (55 lb)
Size (W x D x H):	550 mm x 520 mm x 271 mm

2. Appendix: Overview

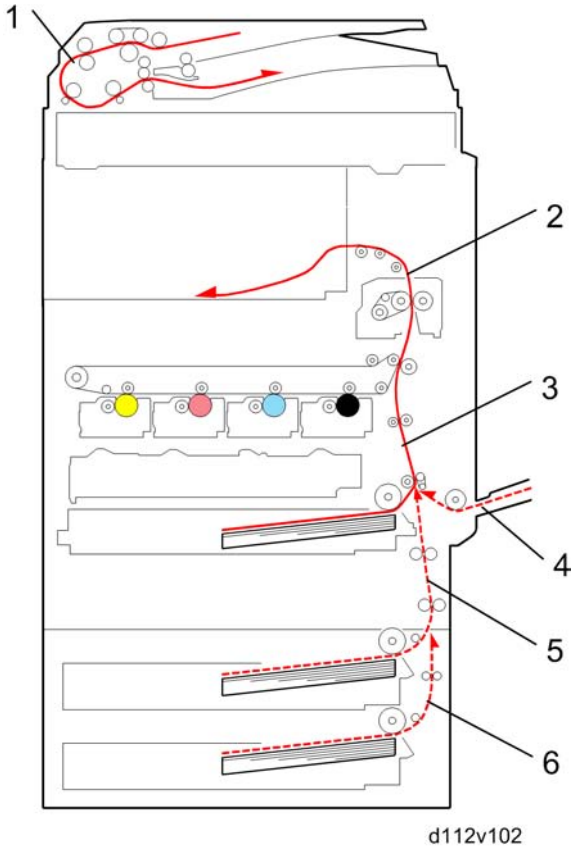
Overview

Mechanical Component Layout



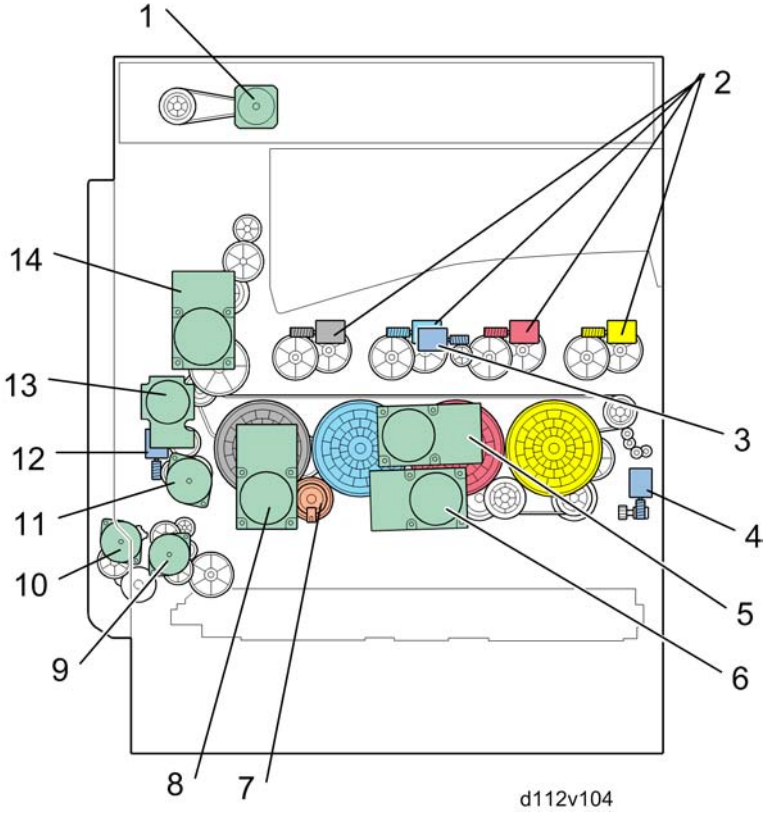
1. Scanner HP sensor 2. 2nd carriage 3. 1st carriage 4. Original length sensor 5. Lens 6. SBU 7. Paper exit roller 8. Junction gate 9. Fusing unit 10. PTR (Paper transfer roller) unit 11. Registration roller 12. Vertical transport roller 1 13. By-pass feed roller	14. Feed roller: T1 15. Vertical transport roller 2 16. Vertical transport roller 3 17. Tray 1 18. Laser unit 19. Drum unit 20. Development unit 21. ITB cleaning unit 22. ITB roller 23. Toner bottle 24. ITB (Image Transfer Belt) unit 25. Inner Tray

Paper Path



1. DF path	4. Vertical transport path: Tray 1
2. Exit path: Straight feed out	5. Vertical transport path: Tray 2 (option)
3. By-pass tray path	6. Vertical transport path: Tray 3 (option)

Drive Layout



1. Scanner motor	8. Drum/Development motor: K
2. Toner supply motors	9. Paper feed motor: T1
3. ITB contact motor	10. By-pass motor
4. Used toner collection motor	11. Registration motor
5. Drum motor: CMY	12. PTR contact motor
6. Development motor: CMY	13. ITB unit motor
7. Development clutch: K	14. Fusing/Paper exit motor

3. Appendix: Preventive Maintenance Tables

Maintenance Tables

Preventive Maintenance Items

A4 (LT) long-edge feed

5% image coverage ratio

Color ratio: 25%

2 print/job

Environment: Normal temperature and humidity

Yield may change depending on circumstances and print conditions.

Note

- Symbol keys: C: Clean, R: Replace, L: Lubricant, I: Inspect

Mainframe

Item	60K	150K	240K	EM	Remarks
Scanner					
Reflector	C				Optics cloth
1st/2nd/3rd Mirrors	C				Optics cloth
Front and Rear Rails	C				Dry cloth
Exposure Glass	C			C	Dry cloth
ADF Exposure Glass	C			C	Dry cloth
APS Sensor	C				Dry cloth
PCDU					
Drum Unit-K, C, M, Y	R				
PCDU Toner Collection Bottle	R				

Item	60K	150K	240K	EM	Remarks
ITB and PTR unit					
ITB Cleaning Unit	R				
ID Sensors				C	Alcohol
Fusing					
Fusing Roller		R			S552R
Fusing Belt		R			
Pressure Roller	C*			C	Alcohol *: Clean it if dirty.
Heating Roller Thermistor	C			C	Dry cloth
Pressure Roller Thermistor	C			C	Dry cloth
Entrance Guide Plate	C			C	Alcohol
Exit Guide Plate	C			C	Alcohol
Stripper Plate	C			C	Alcohol
Thermopile		C		C	Dry cloth
Cleaning Unit (Option)*NOTE	C	R			Dry cloth
Others					
Dust Filter		R			

Note

- The cleaning unit prevents the pressure roller from getting dirty due to paper dust.

Item	60K	120K	240K	EM	Remarks
Paper Feed					
Feed Roller: Tray 1		R		C	Damp cloth
Friction Pad: Tray 1		R		C	Dry cloth
Registration Roller	C*1			C	Damp cloth **Never use alcohol.**

Item	60K	120K	240K	EM	Remarks
Registration Sensor				C	Dry cloth
Vertical Transport Roller				C	Damp cloth
Vertical Transport Sensor				C	Dry cloth
By-pass Feed Roller				C	Damp cloth
By-pass Friction Pad				C	Dry cloth
By-pass HP Sensor				C	Dry cloth
Paper Dust Container				C	Vacuum
Paper Exit					
Paper Exit Roller				C	Damp cloth
Fusing Exit Sensor				C	Dry cloth

*1: The registration roller requires a cleaning maintenance every 60 K (total count).

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).

Mainframe

Item	240K	EM	Remarks
PCDU			
Development Unit-K, C, M, Y	R		
ITB and PTR unit			
Image Transfer Belt	R		
PTR unit	R		
Fusing			

Fusing Roller Bushing	R		S552R
Heating Roller	R		
Heating Roller Bushing	R		
Pressure Roller	R		S552R
Pressure Roller Bushing	R		S552R
Tension Roller	R		
Tension Roller Bushing	R		
All Gears (6 gears)	R		

ARDF (D366)

Item	80K	EM	Remarks
Pick-up Roller	R		Number of originals
Feed Belt	R		Number of originals
Separation Roller	R		Number of originals
Sensors		C	Blower brush
Platen Sheet Cover		C	Damp cloth; alcohol (Replace if required.)
White Plate		C	Dry or damp cloth
Drive Gear		L	Grease G501
Transport Roller		C	Damp cloth; alcohol
Exit Roller		C	Damp cloth; alcohol
Inverter Roller		C	Damp cloth; alcohol
Idle Rollers		C	Damp cloth; alcohol

Two-tray Paper Feed Unit (D331)

Item	60K	120K	EM	Remarks

Paper Feed Roller		R	C	Dry cloth
Friction Pad		R	C	Dry cloth
Paper Feed Guides		C	C	Dry cloth
Relay Rollers		C	C	Dry cloth
Bottom Plate Pad		C	C	Dry cloth
Relay Clutch		I		Replace if necessary
Paper Feed Clutch		I		Replace if necessary

4. Appendix: Service Call Conditions

SC Tables

Service Call Conditions

Summary

The 'SC Table' section shows the SC codes for controller errors and other errors. The latter (not controller errors) are put into four types. The type is determined by their reset procedures. The table shows the classification of the SC codes.

	Key	Definition	Reset Procedure
Controller errors	CTL	The error has occurred in the controller.	See "Troubleshooting Procedure" in the table.
Other errors	A	The error involves the fusing unit. The machine operation is disabled. The user cannot reset the error.	Turn the main switch off and on. Reset the SC (set SP5-810-1). Turn the main switch off and on.
	B	The error involves one or some specific units. The machine operates as usual, excluding the related units.	Turn the operation switch off and on.
	C	The error is logged. The SC-code history is updated. The machine operates as usual.	The SC will not show. Only the SC history is updated.
	D	The machine operation is disabled. You can reset the machine by turning the operation switch or main switch off and on. If the error occurs again, the same SC code is displayed.	Turn the operation switch or main power switch off and on.

After you turn the main power switch off, wait for one second or more before you turn the main power switch on (☛ SC 672). All SCs are logged. The print log data (SP5-990-004) in SP mode can check the latest 10 SC codes detected and total counters when the SC code is detected.

Note

- If the problem concerns electrical circuit boards, first disconnect then reconnect the connectors before you replace the PCBs.

- If the problem concerns a motor lock, first check the mechanical load before you replace motors or sensors.

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
3XX	Image development 1	300 -	Charge
		330 -	Drum potential
		350 -	Development
		380 -	Unique for a specific model
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

Class 1	Section	SC Code	Detailed section
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
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 peak white level is less than 64/255 digits (8 bits) when scanning the shading plate.
		• Exposure lamp defective • Lamp stabilizer defective • Exposure lamp connector defective • Standard white plate dirty • Scanner mirror or scanner lens out of position or dirty
		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 lamp stabilizer. 5. Replace the scanner mirror(s) or scanner lens.

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.
		• Scanner motor driver defective • Scanner motor defective • Harness between BCU and scanner motor disconnected • Scanner HP sensor defective • Harness between BCU and HP sensor disconnected
		1. Check the cable connection between the BCU and scanner motor. 2. Check the cable connection between the BCU and HP sensor. 3. Replace the scanner motor. 4. Replace the scanner HP sensor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
121	D	Scanner home position error 2
		The scanner home position sensor does not detect the “ON” condition during operation.
		• Scanner motor driver defective • Scanner motor defective • Harness between BCU and scanner motor disconnected • Scanner HP sensor defective • Harness between BCU and HP sensor disconnected
		1. Check the cable connection between the BCU board and scanner motor. 2. Check the cable connection between the BCU and HP sensor. 3. Replace the scanner motor. 4. Replace the scanner HP sensor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
141	D	Black level detection error
		The black level cannot be adjusted within the target value during the zero clamp.
		• Harness disconnected • Defective SBU
		1. Check the cable connection 2. Replace the SBU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
142	D	White level detection error
		The white level cannot be adjusted within the target during auto gain control.
		• Dirty exposure glass or optics section • SBU board defective • Exposure lamp defective • Lamp stabilizer defective • Scanner motor 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 and BCU. 4. Replace the exposure lamp. 5. Replace the scanner motor. 6. Replace the SBU board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
144	D	SBU communication error
		The SBU connection cannot be detected at power on or recovery from the energy save mode.
		• Defective SBU • Defective harness • Defective detection port on the BCU
		1. Replace the harness. 2. Replace the SBU. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
161	D	IPU error

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-001	D	The error result of self-diagnostic by the ASIC on the i-controller is detected.
		• Defective i-controller or BCU • Defective connection between i-controller (or BCU)and SBU
		1. Check the connection between i-controller and SBU. 2. Replace the i-controller. 3. Replace the BCU.
-002	D	An error is detected during an access to the i-controller.
		• Defective i-controller board or BCU
		1. Replace the i-controller board. 2. Replace the BCU.

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. Reinstall the original NVRAM in the replaced BCU. 2. Turn off and on the main power switch of the copier if a new NVRAM is installed in the BCU.

SC 2xx: Exposure

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
202	D	Polygon motor error 1: ON timeout
		The polygon mirror motor does not reach the targeted operating speed within the specified time after turning on or changing speed
		• Defective or disconnected harness to polygon motor driver board • Defective polygon motor driver board • Defective polygon motor.
		1. Replace the polygon motor. 2. Replace the laser unit. 3. Replace the harness. 4. Replace the i-controller. 5. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
203	D	Polygon motor error 2: OFF timeout
		The polygon mirror motor does leave the READY status within 3 seconds after the polygon motor switches off.
		• Disconnected or defective harness to polygon motor driver board • Defective polygon motor driver board • Defective polygon motor
		1. Check or replace the harness. 2. Replace the polygon motor. 3. Replace the i-controller. 4. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
204	D	Polygon motor error 3: XSCRDY signal error
		The polygon ready (SCRDY_N) signal goes HIGH (inactive) while the laser diode is firing.
		• Disconnected or defective harness to polygon motor driver board • Defective polygon motor • Defective polygon motor driver board
		1. Check or replace the harness. 2. Replace the polygon motor. 3. Replace the i-controller. 4. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
220	D	Laser synchronizing detection error: start position [K]: LD0
222	D	Laser synchronizing detection error: start position [Y]: LD0

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	The laser synchronizing detection signal for the start position of the LDB [K], [Y], is not output for two seconds after LDB unit turns on while the polygon motor is rotating normally.
		• Disconnected cable from the laser synchronizing detection unit or defective connection • Defective laser synchronizing detector • Defective LDB • Defective BCU
		1. Check the connectors. 2. Replace the laser unit. 3. Replace the i-controller. 4. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
230	D	FGATE ON error: K
		The PFGATE ON signal does not assert within 5 seconds after processing the image in normal job or MUSIC for start position [K].
		• Defective ASIC • Poor connection between i-controller and BCU. • Defective BCU
		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)
231	D	FGATE OFF error: K
		• The PFGATE ON signal still asserts within 5 seconds after processing the image in normal job or MUSIC (line position adjustment) for end position [K]. • The PFGATE ON signal still asserts when the next job starts.
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
232	D	FGATE ON error: Y
		The PFGATE ON signal does not assert within 5 seconds after processing the image in normal job or MUSIC (line position adjustment) for start position [Y].
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
233	D	FGATE OFF error: Y
		• The PFGATE ON signal still asserts within 5 seconds after processing the image in normal job or MUSIC (line position adjustment) for end position [Y]. • The PFGATE ON signal still asserts when the next job starts.
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
234	D	FGATE ON error: M
		The PFGATE ON signal does not assert within 5 seconds after processing the image in normal job or MUSIC (line position adjustment) for start position [M].
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
235	D	FGATE OFF error: M
		• The PFGATE ON signal still asserts within 5 seconds after processing the image in normal job or MUSIC (line position adjustment) for end position [M]. • The PFGATE ON signal still asserts when the next job starts.
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
236	D	FGATE ON error: C
		The PFGATE ON signal does not assert within 5 seconds after processing the image in normal job or MUSIC (line position adjustment) for start position [C].
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
237	D	FGATE OFF error: C
		• The PFGATE ON signal still asserts within 5 seconds after processing the image in normal job or MUSIC (line position adjustment) for end position [C]. • The PFGATE ON signal still asserts when the next job starts.
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
240	C	LD error: K
241	C	LD error: Y
-	-	The BCU detects LDB error a few times consecutively when LDB unit turns on after LDB initialization.
		• Worn-out LD • Disconnected or broken harness of the LD
		1. Replace the harness of the LD. 2. Replace the laser unit. 3. Replace the i-controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
285	D	Line position adjustment (MUSIC) error
		Line position adjustment fails four consecutive times.
		• Pattern sampling error (insufficient image density) • Defective ID sensors for the line position adjustment • Defective image transfer belt unit • Defective PCDU(s) • Defective laser unit
		1. Check and reinstall the image transfer belt unit and PCDU(s). 2. Check if each toner bottle has enough toner. 3. Replace the ID sensor. 4. Replace the image transfer belt unit. 5. Replace the PCDU(s). 6. Replace the laser unit.

SC3xx: Image Processing – 1

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
300	D	AC charge output error [K]
301	D	AC charge output error [M]
302	D	AC charge output error [C]
303	D	AC charge output error [Y]
-	-	The measured voltage is not proper when BCU measures the charge output for each color.
		• Disconnected or broken high voltage cable • Defective or not installed PCDU • Defective HVPS-CB board
		1. Check or replace the connectors. 2. Replace the PCDU for the affected color. 3. Replace the HVPS-CB board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
325	D	Color development motor error
		The motor LOCK signal is not detected for more than two seconds while the motor START signal is on.
		• Color development motor slip due to an increase in the torque caused by connected components. • Defective motor.
		1. Adjust the torque properly by replacing or cleaning the development unit. 2. Replace the development unit. 3. Replace the development motor: CMY if load torque is normal.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
360	D	TD sensor (Vt high) error 1: K
361	D	TD sensor (Vt high) error 1: M
362	D	TD sensor (Vt high) error 1: C
363	D	TD sensor (Vt high) error 1: Y
-	-	• The Vt value of the black, magenta, cyan, or yellow TD sensor exceeds the specified value (default: 4.7V) with SP3020-002 twenty counts. • The [Vt - Vtref] value of the black, magenta, cyan, or yellow TD sensor exceeds the specified value (default: 5.0V) with SP3020-001.
		• Black, magenta, cyan, or yellow TD sensor disconnected • Harness between TD sensor and development unit defective • Defective TD sensor.
		1. Check the black, magenta, cyan, or yellow TD sensor connector and harness between the TD sensor and development unit for damage. 2. Check the drawer connector of the PCDU. 3. Replace the development unit. 4. Replace the PCDU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
364	D	TD sensor (Vt low) error 2: K

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
365	D	TD sensor (Vt low) error 2: M
366	D	TD sensor (Vt low) error 2: C
367	D	TD sensor (Vt low) error 2: Y
-	-	The Vt value of the black, magenta, cyan, or yellow TD sensor is below the specified value with SP3020-004 (default: 0.5V) ten counts. • TD sensor harness disconnected, loose, defective • A drawer connector disconnected, loose, defective • TD sensor defective 1. Check the black, magenta, cyan, or yellow TD sensor connector and harness between the TD sensor and development unit for damage. 2. Check the drawer connector of the PCDU. 3. Replace the development unit. 4. Replace the PCDU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
372	D	TD sensor adjustment error: K
373	D	TD sensor adjustment error: M
374	D	TD sensor adjustment error: C
375	D	TD sensor adjustment error: Y

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	SC is issued only if one of followings is satisfied. • During TD sensor initialization, the output value of the black, magenta, cyan, or yellow TD sensor is not within the range of the specified value with SP3238-001 to -004 (default: 2.5V) ± 0.2V. • The TD sensor output is 0.7 V or more when the Vcnt is 4.3 v. • The adjusted Vcnt is 4.7 V or less.
		• Heat seal not removed from a new developer pack • TD harness sensor disconnected, loose or defective • TD sensor defective • Harness between TD sensor and drawer disconnected, defective • Different developer density from initial developer density
		1. Remove the heat seal from each PCDU. 2. Replace the development unit. 3. Replace the PCDU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
380	C	Drum gear position sensor error: K
381	C	Drum gear position sensor error: M, C, Y
-	-	The machine does not detect a change signal (H → L or L → H) for 2.4 seconds at the drum phase adjustment.
		• Dirty or defective drum gear position sensor
		1. Check the harnesses. 2. Clean or replace the drum gear position sensor. 3. Replace the PCDU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
396	D	Drum/Development motor error: K

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	The machine detects a High signal from the drum/development motor: K for 2 seconds after the drum/development motor: K turned on.
		• Overload on the drum/development motor: K • Defective drum/development motor: K • Defective harness • Shorted 24 V fuse on the PSU • Defective interlock system
		1. Check or replace the harness. 2. Check if torque output value for drum/development motor is proper if not replace the unit. 3. Replace the drum/development motor: K. 4. Replace the 24V fuse on the PSU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
397	D	Drum motor error: CMY
-	-	The machine detects a High signal from the drum motor: CMY for 2 seconds after the drum motor: CMY turned on.
		• Overload on the drum motor: CMY • Defective drum motor: CMY • Defective harness • Shorted 24 V fuse on the PSU • Defective interlock system
		1. Check or replace the harness. 2. Check if torque output value for drum motor is proper if not replace the unit. 3. Replace the drum motor: CMY. 4. Replace the 24V fuse on the PSU.

SC4xx: Image Processing - 2

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
400	D	ID sensor adjustment error
		When the Vsg error counter reaches "3", the machine detects "SC400". The Vsg error counter counts "1" when the Vsg detected by ID sensor is more than the value (default: 4.5V) specified with SP3324-005 or less than the value (default: 3.5V) specified with SP3324-006.
		• Dirty or defective ID sensor • ID sensor detection surface dirty
		1. Check the harness of the ID sensor. 2. Clean or replace the ID sensor. **Note** • After replacing the ID sensor, input the ID sensor correction coefficient with SP3362-013 and -016. For details, refer to "ID sensor board" in the Replacement and Adjustment section. 3. Check the spring at the PTR unit contact lever. (See “PTR Unit Contact Motor” in the chapter “Replacement and Adjustment”.) 4. Replace the BCU. 5. Replace the ITB unit.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
441	D	ITB unit motor error
		The motor LOCK signal is not detected for more than two seconds while the motor START signal is on.
		• Motor overload • Defective ITB unit motor • Defective or disconnected connector
		Check the operation of the ITB unit motor with SP5804-051. No operation: 1. Check the harness of the ITB unit motor. 2. Check if the cleaning blade of the ITB cleaning unit is rolled up. 3. Replace the ITB unit motor. 4. Replace the ITB unit.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
442	D	ITB contact motor error
		The ITB contact sensor does not detect the movement of actuator at the sensor while the polygon motor rotates.
		• Dirty ITB contact sensor • ITB contact motor overload. • Defective ITB contact motor • Disconnected connector of ITB contact sensor or motor • Shorted 24 V fuse on the PSU. • Disconnected cable
		Check the operation of the ITB unit motor with SP5804-077. No operation: 1. Check the harness connection of the ITB contact motor. 2. Replace the ITB contact motor. Operation: 1. Check the harness connection of the ITB contact sensor. 2. Replace the ITB contact sensor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
443	C	ITB unit error
		The machine detects the encoder sensor error.
		• Disconnect or defective harness • Defective ITB rotation sensor • ITB unit installation error • Defective ITB unit motor • ITB unit motor overload
		1. Check the harness connection of the ITB rotation sensor. 2. Check the trash or scratch on the encoder disc surface of the ITB rotation sensor. 3. Check if the ITB unit is correctly set. 4. Replace the ITB unit motor. 5. Replace the ITB unit.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
452	D	PTR (Paper Transfer Roller) contact error
		The PTR contact sensor does not detect the movement of actuator at the sensor while the polygon motor rotates.
		• Defective PTR contact sensor • Defective PTR contact motor • PTR contact motor overload • Broken +24V fuse on PSU • Defective or disconnected harness. • Defective BCU
		Check the operation of the PTR contact motor with SP5804-076. No operation: 1. Check the harness connection of the PTR contact motor. 2. Replace the PTR contact motor. Operation: 1. Replace the PTR contact sensor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
491	D	High voltage power: Drum/ development bias output error
		An error signal is detected for 0.2 seconds when charging the drum or development.
		• High voltage leak • Broken harness • Defective drum unit or development unit • Defective HVPS-CB board
		1. Check or replace the harness. 2. Replace the drum unit or paper transfer unit. 3. Replace the HVPS-CB board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
492	C	High voltage power: Image transfer/ paper transfer bias output error
		An error signal is detected for 0.2 seconds when charging the separation, image transfer belt or paper transfer roller.
		• High voltage leak • Broken harness • Defective image transfer belt unit or paper transfer unit • Defective HVPS-TTS board
		1. Input "0V" in the following SP settings: • SP2-326-001 • SP2-326-003 • SP2-407-001 2. Execute the "Process Control" with SP3011-001. 3. Replace the ITB unit if an SC occurs after the Process Control. 4. Replace the PTR unit if an SC does not occur after the Process Control. 5. Replace the HVPS-TTS board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
495	D	PCDU toner collection motor error
		The machine detects that the PCDU toner collection bottle is not set for one second when the PCDU toner collection motor is turned off.
		• PCDU toner collection bottle motor damaged • Disconnect or defective harness • Defective DRB board • Defective BCU
		1. Check or replace the harness. 2. Replace the PCDU toner collection bottle motor. 3. Replace the DRB board 4. Replace the BCU 5. Check and retry the connecting procedure.

SC5xx: Paper Feed and Fusing

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
503	B	2nd paper tray lift motor malfunction (optional Paper Tray Unit)
504	B	3rd paper tray lift motor malfunction (optional Paper Tray Unit)
-	-	The paper lift sensor did not activate within 18 sec. (for PTU) or 8 sec. (for LCT) after the tray lift motor switched on.
		• An obstruction (jammed paper, paper scraps, etc.) has blocked the motor drive and caused an overload. • Paper lift sensor connection loose, disconnected, or damaged • Paper lift sensor defective • Tray lift motor connection loose, disconnected, or damaged • Tray lift motor defective
		1. Check or replace the harness. 2. Replace the tray lift motor. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
506	B	Paper tray feed motor lock (optional Paper Tray Unit)
		A motor lock signal is not detected for more than 1.5 s at power-on or the lock signal is not detected for more than 1.0 s during rotation.
		• An obstruction (jammed paper, paper scraps, etc.) has blocked the feed motor drive and caused an overload. • Paper tray feed motor connection loose, disconnected, or damaged • Paper tray feed motor defective
		1. Check or replace the harness. 2. Replace the feed motor. 3. Replace the BCU

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

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. Check or replace the harness. 2. Replace the laser unit fan. Replace the laser unit fan motor. 1. Replace the DRB. 2. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
533	D	Fusing front fan error
		The motor lock signal error is detected for 10 seconds after the motor lock signal was first detected.
		• Defective fusing front fan • Disconnected or defective harness • Defective DRB • Defective BCU
		1. Check or replace the harness. 2. Replace the fusing front fan. 3. Replace the DRB. 4. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
534	D	Fusing rear fan error
		The motor lock signal error is detected for 10 seconds after the motor lock signal was first detected.
		• Defective fusing rear fan • Disconnected or defective harness • Defective DRB • Defective BCU
		1. Check or replace the harness. 2. Replace the fusing rear fan. 3. Replace the DRB. 4. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
535	D	Controller box fan error
		The motor lock signal error is detected for 10 seconds after the motor lock signal was first detected.
		• Defective controller box fan • Disconnected or defective harness • Defective BCU
		1. Check or replace the harness. 2. Replace the controller box fan. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
540	D	Fusing/Paper exit motor error
		The BCU receives the lock signal 2.0 seconds after turning on the fusing/paper exit motor.
		• Motor overload • Defective fusing/paper exit motor • Defective or disconnected connection for the fusing/paper exit motor
		1. Replace the fusing/paper exit motor. 2. Check or replace connector and harness for the fusing/paper exit motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
541	A	Heating roller error 1
		The temperature detected by the thermopile does not reach 0°C for 6 seconds.
		• Loose connection of the thermopile • Defective thermopile
		1. Check that the thermopile is firmly connected. 2. Replace the thermopile.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
542	A	Heating roller warm-up error 1
		• After the main switch is turned on or the cover is closed, the increment of the heating roller temperature per 10 seconds is 30°C or less. If this condition is detected five times consecutively, SC 542 is defined. • The heating roller temperature does not reach 100°C for 15 seconds after the heating lamp on. • The heating roller temperature does not reach the ready temperature while 60 seconds after the heating lamp on. • The center temperature of the heating roller does not reach the ready temperature for 30 seconds after the edge temperature of the heating roller has reached the ready temperature.
		• Dirty or defective thermopile • Defective thermopile. • Trash on the surface of the thermopile lens. • Defected thermistor. • Input voltage is over guaranteed value • Defective heating roller lamp
		1. Check if the thermopile is firmly connected. 2. Clean the surface of the thermopile lens. 3. Test the conductance for the thermopile and the heating roller 4. Replace the thermopile. 5. Replace the heating roller lamp.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
543	A	Heating roller fusing lamp overheat 1 (software error)
		The detected fusing temperature stays at 230°C for 1 second.
		• Defective PSU • Defective BCU
		1. Replace the PSU. 2. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
544	A	Heating roller fusing lamp overheat 1 (hardware error)
		During stand-by mode or a print job, the detected heating roller temperature reaches 250 °C.
		• Defective PSU • Defective BCU • Defective heating roller thermistor (end) • Defective fusing control system
		1. Replace the PSU. 2. Replace the BCU. 3. Replace the heating roller thermistor (end).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
545	A	Heating roller fusing lamp consecutive full power 1
		When the fusing unit is not running in the ready condition, the heating roller fusing lamp keeps on full power for 8 seconds.
		• Broken heating roller thermostat • Broken heating roller fusing lamp
		1. Replace the heating roller thermistor. 2. Replace the heating roller fusing lamp.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
547	D	Zero cross error
		• 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 3 seconds even though the heater relay is on after turning on the main power or closing the front door. • The detection error occurs twice or more in the 11 zero cross signal detections. This error is defined when the detected zero cross signal is less than 45.
		• Defective fusing lamp relay • Defective fusing lamp relay circuit • Unstable power supply
		1. Check the power supply source. 2. Replace the shorted 24V fuse on the PSU. 3. Replace the PSU

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
551	A	Heating roller thermistor (end) error 2
		• The temperature measured by the heating roller thermistor (end) does not reach 0°C for 6 seconds.
		• Loose connection of heating roller thermistor (end) • Defective heating roller thermistor (end)
		1. Check that the heating roller thermistor (end) is firmly connected. 2. Replace the heating roller thermistor (end).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
552	A	Heating roller warm-up error 2
		The heating roller temperature does not reach the ready temperature while 70 seconds after the heating lamp on.
		• Dirty or defective thermistor (end) • Heating roller fusing lamp broken • Defected thermostat • Defective heating roller fusing lamp
		1. Check if the heating roller thermistor (end) is firmly connected. 2. Replace the heating roller thermistor (end). 3. Replace the heating roller fusing lamp.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
553	A	Heating roller fusing lamp overheat 2 (software error)
		The detected pressure roller temperature stays at 230°C or more for 1 second.
		• Defective PSU • Defective BCU
		1. Replace the heating roller thermistor (end). 2. Replace the PSU. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
554	A	Heating roller fusing lamp overheat 2 (hardware error)
		The heating roller thermistor (end) detects 250°C or more.
		• Defective heating roller thermistor (end) • Defective PSU • Defective BCU • Defective fusing control system
		1. Replace the heating roller thermistor (end). 2. Replace the PSU. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
555	A	Heating roller lamp consecutive full power 2
		When the fusing unit is not running in the ready condition, the pressure roller-fusing lamp keeps ON full power for 8 seconds or more.
		• Broken heating roller thermostat • Broken heating roller fusing lamp
		1. Replace the heating roller thermostat. 2. Replace the heating roller fusing lamp.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
557	C	Zero cross frequency error
		When the zero cross signal is 66 or more and it is detected 10 times or more in 11 detections, the machine determines that input 60 Hz and SC557 occurs.
		• Noise (High frequency)
		Check the power supply source.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
559	A	Consecutive fusing jam
		The paper jam counter for the fusing unit reaches 3 times. The paper jam counter is cleared if the paper is fed correctly. This SC is activated only when SP1159-001 is set to "1" (default "0").
		• Paper jam in the fusing unit.
		Remove the paper that is jammed in the fusing unit. Then make sure that the fusing unit is clean and has no obstacles in the paper feed path.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
561	A	Pressure roller thermister error 3
		The temperature measured by the pressure roller thermistor (center) does not reach 0 °C for 20 seconds.
		• Loose connection of pressure roller thermistor (center) • Defective pressure roller thermistor (center)
		1. Check that the pressure roller thermistor (center)is firmly connected. 2. Replace the pressure roller thermistor (center).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
563	A	Pressure roller overheat 3 (software error)
		The detected fusing roller temperature stays at 230°C or more for 1 second.
		• Defective PSU • Defective BCU
		1. Replace the pressure roller thermistor (center). 2. Replace the PSU. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
564	A	Pressure roller overheat 3 (hardware error)
		The pressure roller thermistor (center) detects 250°C or more.
		• Defective PSU • Defective BCU • Defective pressure roller thermistor (center) • Defective fusing control system
		1. Replace the pressure roller thermistor (center). 2. Replace the PSU. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
565	A	Pressure roller fusing lamp consecutive full power 3
		When the fusing unit is not running in the ready condition, the pressure roller fusing lamp keeps ON full power for 250 seconds or more.
		• Broken pressure roller thermostat • Broken pressure roller fusing lamp
		1. Replace the pressure roller fusing lamp. 2. Replace the pressure roller thermostat. 3. Replace the PSU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
571	A	Pressure roller thermister error 4
		The temperature measured by the pressure roller thermistor (end) does not reach 0 °C for 20 seconds.
		• Loose connection of pressure roller thermistor (end) • Defective pressure roller thermistor (end)
		1. Check that the pressure roller thermistor (end) is firmly connected. 2. Replace the pressure roller thermistor (end).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
573	A	Pressure roller overheat 4 (software error)
		The detected pressure roller temperature stays at 230°C or more for 1 second.
		• Defective pressure roller thermistor (end) • Defective PSU • Defective BCU
		1. Replace the pressure roller thermistor (end). 2. Replace the PSU. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
574	A	Pressure roller overheat 4 (hardware error)
		The pressure roller thermistor (end) detects 250°C or more.
		• Defective pressure roller thermistor (end) • Defective PSU • Defective BCU • Defective fusing control system
		1. Replace the pressure roller thermistor (end). 2. Replace the PSU. 3. Replace the BCU.

SC6xx: Device Communication

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
610	D	Mechanical counter error: K
611	D	Mechanical counter error: FC

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	This SC is only for NA models. The machine detects the mechanical counter error when SP5987-001 is set to "1".
		• Disconnected mechanical counter • Defective mechanical counter • Defective BCU
		1. Check or replace the mechanical counter. 2. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
620	D	ARDF communication error
		After the ARDF is detected, the break signal occurs or communication timeout occurs.
		• Incorrect installation of ARDF • ARDF defective • BCU 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)
632	CTL 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.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
633	CTL B	Counter device error 2
		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.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
634	CTL B	Counter device error 3
		A backup RAM error was returned by the counter device.
		• Counter device control board defective • Backup battery of counter device defective

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
635	CTL B	Counter device error 4
		A backup battery error was returned by the counter device.
		• Counter device control board defective • Backup battery of counter device defective

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
641	CTL D	BCU control data transfer abnormal
		A sampling of the control data sent from the BCU reveals an abnormality.
		• Controller board defective • External noise • BCU board defective
		1. Check the connection between the controller board and BCU. 2. Replace the controller board. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
650	CTL B	Communication error of the remote service modem (RCG-M)
-001	-	Authentication error
		The authentication for the RCG-M fails at a dial up connection.
		• Incorrect SP settings • Disconnected telephone line • Disconnected modem board Disconnected Local Area Network card
		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).
-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.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
651	CTL C	Incorrect dial up connection
		-001: Program parameter error
		-002: Program execution error
		An unexpected error occurs when the modem (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)
669	D	NVRAM error
		Retry of NVRAM communication fails three times after the machine has detected the NVRAM error.
		• Caused by noise
		Turn the main power switch off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
670	CTL D	Engine start up error
		The ready signal from the engine board is not detected.
		• Defective engine board.
		Replace the engine board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
671	CTL 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	CTL 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 stall • Controller board installed incorrectly • Controller board defective • Operation panel connector loose or defective
		1. Check the harness connection. 2. Replace the controller board.

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No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
681	D	RFID: Communication error
001-005		Communication error occurs when the RFID starts to communicate with the RFID receptor.
		• Noise • No memory chip on the toner cartridge • Defective RFID reader and writer • Disconnected RFID controller board I/F
		1. Turn the main power off and on. 2. Replace the toner cartridge. 3. Replace the RFID controller board.
061-164		Retry of RFID communication fails three times after the machine has detected the RFID communication error.
		• Defective RFID reader and writer • No memory chip on the toner cartridge • Noise
		1. Replace the toner cartridge. 2. Turn the main power off and on. 3. Replace the RFID-R/W controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
682	D	Memory chip at TD sensor: Communication error
		Retry of memory chip communication fails three times after the machine has detected the memory chip communication error.
		• Damaged memory chip data • Disconnected inter face • No memory chip on the development unit • Noise
		1. Replace the development unit. 2. Replace the PCDU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
683	C	RFID: Unit check error
		The machine gets RFID communication error even the toner cartridges have not been installed in the machine.
		• Caused by noise
		Turn the main power switch off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
687	D	Memory address command error
		The BCU does not receive a memory address command from the controller for the prescribed time after the paper has reached the registration sensor.
		• Harness disconnection at BCU • Controller board loose or broken • Defective BCU • Defective i-controller
		1. Check if the controller is firmly connected to the BCU. 2. Update the firmware of the i-controller. 3. Update the firmware of the BCU. 4. Replace the BCU. 5. Replace the i-controller.

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 unit. 4. Replace the BCU board.

SC7xx: Peripherals

No SC7xx category exists in this model.

SC8xx: Overall System

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
816	CTL 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	CTL 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)	
819	CTL 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.	
[0x5032]		HAIC-P2 error	• System program defective • Controller board defective • Optional board defective 1. Replace controller firmware
[0x696e]		init died	
[0x766d]		vm_pageout: VM is full	
[554C]		USB error	

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820	CTL D	Self-diagnostics error: CPU [XXXX]: Detailed error code

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
[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
[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	CTL D	Self-diagnostics error: ASIC [XXXX]: Detailed error code

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
[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.
[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 i-controller
		Replace the i-controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
[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 i-controller
		Replace the i-controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
823	CTL 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	CTL D	[1401] Self-diagnosis error: Standard NVRAM The controller cannot recognize the standard NVRAM installed or detects that the NVRAM is defective.
		• 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

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
826	CTL D	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 i-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	CTL D	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)
[0202]		Resident memory error
		The SPD values in all RAM DIMM are incorrect or unreadable.
		• Defective RAM DIMM • Defective SPD ROM on RAM DIMM • Defective 12C bus
		1. Replace the RAM DIMM.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
828	CTL D	Self-diagnostic error: ROM [XXXX]: Detailed error code
[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	CTL B	Self-diagnosis error: optional RAM [XXXX]: Detailed error code
[0401]		Verification error (Slot 1) The data stored in the optional RAM in Slot 1 does not match the data when reading.
		• Not specified RAM DIMM installed • Defective RAM DIMM
		1. Replace the RAM DIMM. 2. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
833	CTL C	Self-diagnostic error 8: Engine I/F ASIC

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
[0F30] [0F31]		• ASIC (Mandolin) for system control could not be detected. After the PCI configuration, the device ID for the ASIC could not be checked.
		Replace the VBCU
[0F41]		• ASIC (Mandolin) for system control could not be detected. After the PCI configuration, the device ID for the ASIC could not be checked.
		Replace the VBCU
[50B1]		Could not initialize or read the bus connection.
		• Check for loose connections at the mother board.
		Replace the mother board
[50B2]		Value of the SSCG register is incorrect.
		• Check for loose connections at the mother board.
		Replace the mother board

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
839	CTL C	USB NAND Flash ROM error
[9101]		The ID of the USB NAND Flash ROM cannot be read.
		• Defective i-controller board
		Replace the i-controller board.
[9110]		The USB NAND Flash ROM is disconnected.
		• Defective i-controller board
		Replace the i-controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
851	CTL B	IEEE1394 interface error
		The 1394 interface is unusable.
		• Defective IEEE1394 • Defective controller.
		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)
857	CTL B	USB interface error
		The USB interface cannot be used due to a driver error.
		• Defective USB driver • Loose connection
		1. Check the connection. 2. Replace the USB board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
866	CTL B	SD card authentication error
		A correct license is not found in the SD card.
		• SD-card data is corrupted.
		Store correct data in the SD card.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
867	CTL D	SD card error
		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	CTL D	SD card access error • -13 to -3: File system error • Other number: Device error
		An error report is sent from the SD card reader. • An error is detected in the SD card.
		1. For a file system error, format the SD card on your PC. 2. For a device error, turn the mains switch off and on. 3. Replace the SD card. 4. Replace the controller.

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.
	-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.
	-099	Log Data Error 99
		• Other than the above causes
		Ask your supervisor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
878	CTL D	TPM system authentication error
		The system firmware is not authenticated by TPM (security chip).
		• Incorrect updating for the system firmware • Defective flash ROM on the controller board
		Replace the controller board.

SC9xx: Miscellaneous

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
900	CTL D	Electric counter error
		Abnormal data in the counters.
		• Defective NVRAM • Defective controller
		1. Check the connection between the NVRAM and controller. 2. Replace the NVRAM. 3. Replace the controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
920	CTL D	Printer application error
		An error is detected in the printer application program.
		• Defective software • 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	CTL D	Printer font error
		A necessary font is not found in 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)
990	CTL D	Software performance error
		The software makes an unexpected operation.
		• Defective software • Defective controller • Software error
		1. Turn the main switch off and on. 2. Reinstall the controller and/or engine main firmware.
		Note • See Note 1 at the end of the SC table.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
991	CTL C	Software continuity error
		The software has attempted to perform an unexpected operation. However, unlike SC 990, 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	CTL D	Undefined error
		Defective software program
		• 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.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
995	D	CPM setting error
	-001	• Defective BCU
		1. Input the serial number with SP5811-004, and turn the main power switch off/on.
	-002	• Defective NVRAM on the controller • Defective controller
		1. Install a new NVRAM, and turn off and on the main power switch after SC995-002 has occurred. 2. Reinstall the previous NVRAM or download the information with SP5825-001, after that turn the main power off and on.
	-003	• Incorrect type controller installed • Defective controller
		Replace the i-controller with the correct type.
	-004	• Incorrect model controller installed.
		Replace the i-controller with the correct model.

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
		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. 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 in a specific condition (for example. printer driver setting, image file), the problem may be caused by a software error. In this case, the following data and information needs 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

5. Appendix: Process Control Error Conditions

Process Control Error Conditions

Developer Initialization Result

Displayed number shows results of each developer initialization result.

0000 = YMCK

SP-3-014-001 (Developer Initialization Result)

No.	Result	Description	Possible Causes/Action
1	Successfully completed	Developer initialization is successfully completed.	-
2	Forced termination	Developer initialization was forcibly terminated.	• A cover was opened or the main switch was turned off during the initialization. 1. Do the developer initialization again when done in SP mode. Reinstall the engine main firmware if the result is the same. 2. Turn the main switch off and on when done at unit replacement.
6	Vt error	Vt is more less 0.7V when Vcnt is 4.3V.	1. Defective TD sensor
7	Vcnt error 1	Vcnt is more than 4.7V when Vcnt is Vt target ±0.2V.	1. Defective TD sensor 2. Vt target settings are not correct. 3. Toner density error
8	Vcnt error 2	Vt is less than 0.7V when Vcnt is 4.3V and Vcnt is more than 4.7V when Vcnt is Vt target ±0.2V.	1. Defective TD sensor
9	Vcnt error 3	Vcnt is Vt target ± over 0.2V.	1. Defective TD sensor 2. Vt target settings are not correct. 3. Toner density error

Note

- The machine starts developer initialization after you set "**1**" in SP3-902-005, 006, 007, or 008. Developer initialization automatically resumes when you open and close the front door or turn the main switch off and on if an error other than Error 8 occurs.

Process Control Self-Check Result

Displayed number shows results of each Process Control Self-Check.

00000000 = YYMMCCKK

SP3-012-001 to -010 (Process Control Self-check Result)

No.	Result	Description	Possible Causes/Action
11	Successfully completed	Process control self-check successfully completed.	-
41	Vt error	Vt maximum or minimum error is detected.	• Defective development unit Vt maximum error and an image is faint: 1. Replace the toner hopper unit. Vt maximum error and an image is O.K: 1. Replace the development unit. 2. Replace the BCU board. Vt minimum error: 1. Replace the development unit. 2. Replace the BCU board.
53	ID sensor coefficient (K5) detection error	Not enough data can be sampled.	• Solid image is not sufficient density: 1. Retry the process control. 2. Replace the ID sensors. 3. Replace the BCU board. • Solid image is O.K. 1. Replace the ID sensors. 2. Replace the BCU board. • ID sensor is dirty: 1. Clean the ID sensors. 2. Retry the process control.

No.	Result	Description	Possible Causes/Action
54	ID sensor coefficient (K5) maximum/ minimum error	When the K5 is more than the value of SP3-362-003 or less than the value of SP3-362-004, the error 54 is displayed.	• ID sensor pattern density is too high or low.
55	Gamma error: Maximum	Gamma is out of range. 5.0 < Gamma	• ID sensor pattern density is too high. • Hardware defective. Same as 53
56	Gamma error: Minimum	Gamma is out of range. Gamma < 0.15	• ID sensor pattern density is too low. • Hardware defective. 1. Same as 53 2. Replace the toner hopper unit.
57	Vk error: Maximum	Vk is out of range. 300 < Vk	• ID sensor pattern density is too low. • Hardware defective. Same as 53
58	Vk error: Minimum	Vk is out of range. Vk < –300	• ID sensor pattern density is too high. • Background dirty • Hardware defective Same as 53
59	Sampling data error during gamma correction	Not enough data can be sampled during the gamma correction.	• ID sensor pattern density is too high or low. • Hardware defective Same as 53
99	Unexpected error	Process control fails.	• Power Failure Check the power source.

Vsg Adjustment Result

Displayed number shows results of each sensor check.

000 = FCR

SP3-325-001 to -010 (Vsg Adjustment Result)

No.	Result	Description	Possible Causes/Action
1	O.K	Vsg adjustment is correctly done.	-
2	ID sensor adjustment error	Vsg cannot be adjusted within 4.0 ±0.5V.	• Dirty ID sensors (toner, dust, or foreign material) • Dirty image transfer belt • Scratched image transfer belt • Defective ID sensors • Poor connection • Defective BCU 1. Clean the ID sensors. 2. Check the ITB cleaning unit. Clean or replace the image transfer belt. 3. Replace the image transfer belt. 4. Replace the ID sensors. 5. Check the connection. 6. Replace the BCU board.
3	ID sensor output error	ID sensor output is more than "Voffset Threshold" (SP3-324-004)	• Defective ID sensors • Poor connection • Defective BCU 1. Replace the ID sensors. 2. Check the connection. 3. Replace the BCU board.
9	Vsg Adjustment error	Vsg adjustment has not been completed.	• Other cases Retry SP3-321-010.

Line Position Adjustment Result

SP2-194-010 to -012 (Line Position Adjustment Result: M, C, Y)

This SP shows the number as a line position adjustment result on the LCD. It shows which color has an error (M, Y or C).

No.	Result	Description	Note
0	Not done	Line position adjustment has not been done.	-
1	Completed successfully	Line position adjustment has correctly been done,	-
2	Cannot detect patterns	ID sensors have not detected the patterns for line position adjustment.	See Note
3	Fewer lines on the pattern than the target	The patterns, which ID sensors have detected, are not enough for line position adjustment.	See Note
4	More lines on the pattern than the target	Not used in this machine.	-
5-9	Not used	-	-

Note

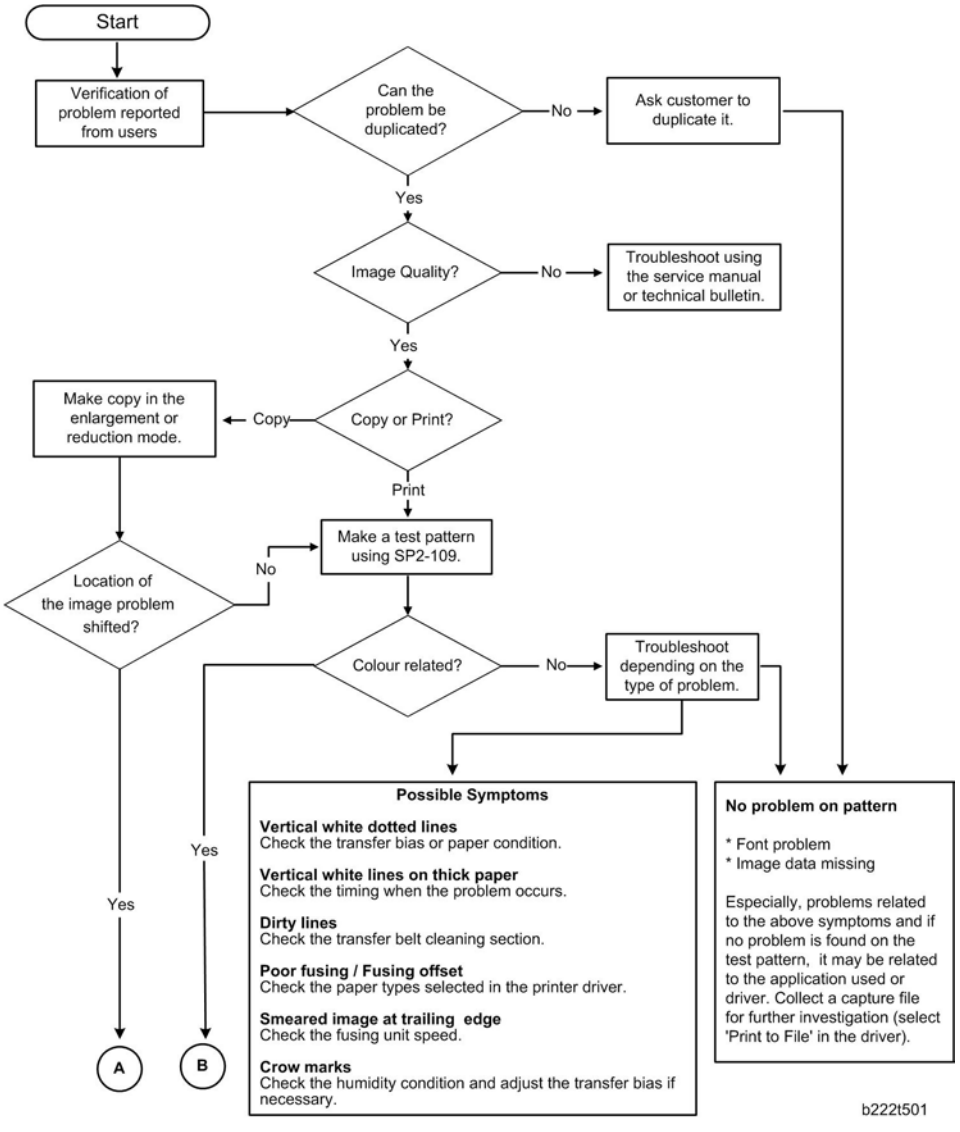
- For details, see the "Troubleshooting Guide - Line Position Adjustment" section.

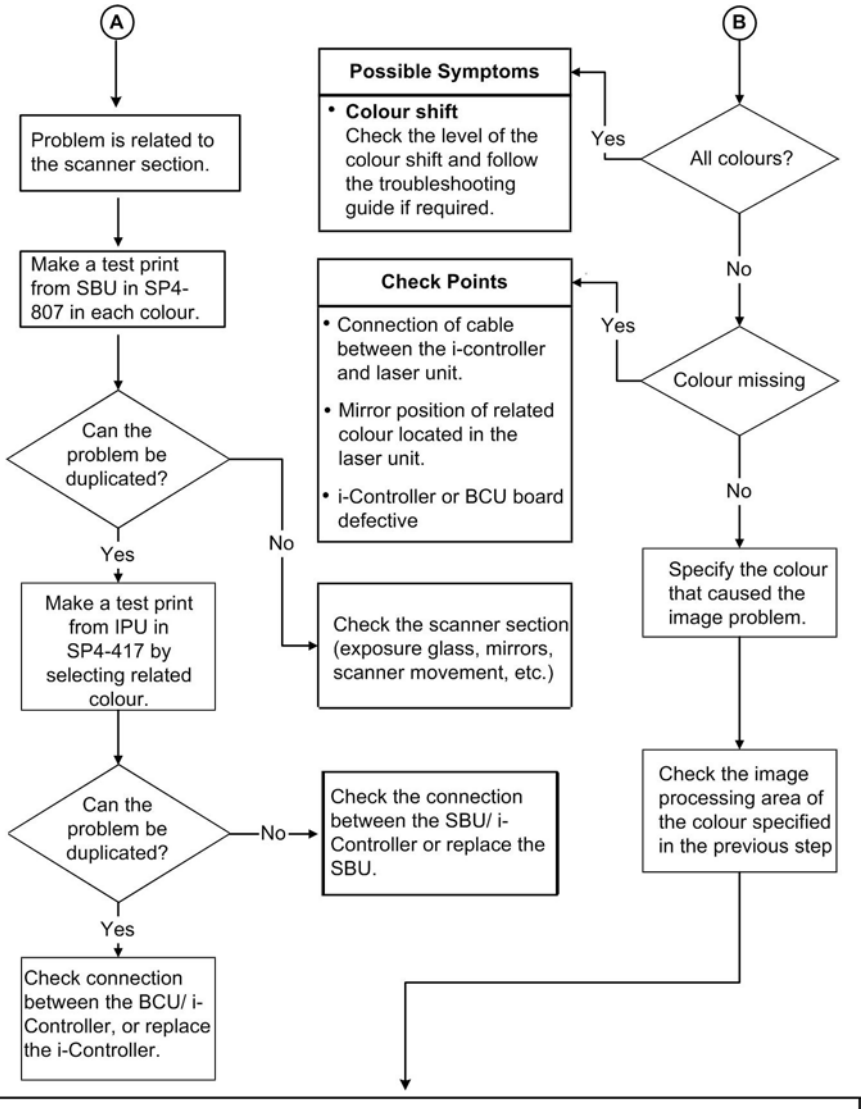
6. Appendix: Troubleshooting Guide

Troubleshooting Guide

Image Quality

The following work-flow shows the basic troubleshooting steps for the image quality problems on this product.





Considerable Symptoms

- **Toner blasting**
  Check which colour is blasting and adjust the toner limit or transfer bias.
- **Image density change**
  Check when the problem is reported and follow the necessary steps.
- **Dirty Background**
  Check in which condition the problem is reported, and follow the required procedure.
- **Colour vertical bands/lines/dirty background**
  Check the OPC drum and/or development unit.
- **Colour shift**
  Check the level of the colour shift and follow the troubleshooting guide if required.
- **Colour lines/bands/dirty background**
  When the PCDU is close to its life end, the developer or the cleaning blade of the drum unit wears out, causing vertical colour lines, bands, or dirty background. Check the related colour unit and replace it if necessary.

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Line Position Adjustment

When there are color registration errors on the output, do the line position adjustment as follows.

Note

- Use A3/DLT size paper for this adjustment.

Test

1. Do SP2-111-003 (Mode c: rough adjustment).
2. Use SP2-194-007 to check if the result of the line position adjustment is correct (0: Completed successfully, 1: Not completed). If the result is "1", refer to 'Countermeasure list for color registration errors'.
3. Do SP2-111-001 (Mode a: fine adjustment twice).
4. Use SP2-194-007 to check if the result of the line position adjustment is correct (0: Completed successfully, 1: Not completed). If the result is "1", refer to 'Countermeasure list for color registration errors'.
5. Put some A3/DLT paper on the by-pass tray.

   Note

   - When you print a test pattern, use the by-pass tray to feed the paper.
6. Print out test pattern "7" with SP2-109-003.
7. Check the printed output with a loupe.
8. If there are no color registration errors on the output, the line position adjustment is correctly done. If not, refer to the countermeasure list for color registration errors.

Countermeasure list for color registration errors

After Executing SP2-111-003

- Result: "1" in SP2-194-007
- Result: "2" or "3" (Line pattern detection failure) in SP2-194-010, -011, -012

Test pattern check	Possible cause/Countermeasure
White image, Abnormal image, Low density	• Defective image processing unit • Low density of test pattern • Defective i-controller 1. Replace the high voltage power supply unit. 2. Do the forced process control (SP3-011-001) or supply some toner (SP3-015-xxx). 3. Replace the BCU.
Normal image, but with color registration errors	• Defective ID sensors • Defective BCU 1. Replace the ID sensor. 2. Replace the BCU.

After Executing SP2-111-003

- Result: "1" in SP2-194-007
- One of results: "4" (Out of adjustable range) in SP2-194-010, -011, -012.

Test pattern check	Possible cause/Countermeasure
The main scan registrations of M, C, Y are shifted by more than ±15 mm from the main scan registration of K.	• Defective laser unit • Defective BCU 1. Replace the laser unit. 2. Replace the BCU.
The sub scan registrations of M, C, Y are shifted by more than ±20 mm from the sub scan registration of K.	• Defective image transfer belt • Defective drive units • Defective BCU 1. Replace the image transfer belt. 2. Replace the drum motor. 3. Replace the BCU.

Test pattern check	Possible cause/Countermeasure
The main scan registration is shifted by more than ±0.66 mm, but only at the central area of the image on the output.	• Defective ID sensor at center • Deformed center area on the image transfer belt • Defective BCU 1. Replace the ID sensor. 2. Replace the image transfer belt. 3. Replace the BCU.
The skew for M, C, Y is more than ±0.75 mm from the main scan registration of K	• Defective PCU • Defective laser unit • Defective BCU 1. Reinstall or replace the BCU. 2. Replace the laser unit. 3. Replace the BCU.
Others	• Skew correction upper limit error • Defective BCU • Defective laser unit 1. Replace the BCU. 2. Replace the laser unit.

After Executing SP2-111-003

- Result: "1" in SP2-194-007
- Result: "0" in SP2-194-010, -011, -012.

Test pattern check	Possible cause/Countermeasure
	Do SP2-111-001 or -002.

After Executing SP2-111-001

- Result: "1" in SP2-194-007
- Result: "2" or "3" (Line pattern detection failure) in SP2-194-010, -011, -012

Test pattern check	Possible cause/Countermeasure
White image, Abnormal image, Low density	• Defective image processing unit • Low density of test pattern • Defective BCU 1. Replace the high voltage power supply unit. 2. Do the forced process control (SP3-011-001) or supply some toner (SP3-015-xxx). 3. Replace the BCU.
Normal image, but with color registration errors	• Defective ID sensor • Defective BCU 1. Replace the ID sensor. 2. Replace the BCU.

After Executing SP2-111-001

- Result: "1" in SP2-194-007
- Result: "4" (Out of adjustable range) in SP2-194-010, -011, -012

Test pattern check	Possible cause/Countermeasure
Low image density on the output	• Low pattern density Do the forced process control (SP3-011-001) or supply some toner (SP3-015-xxx).
The main scan registrations of M, C, Y are shifted by more than ±1.4 mm from the main scan registration of K.	• No defective component • Defective laser optics housing unit • Defective BCU 1. Do SP2-111-003 again. 2. Replace the laser unit. 3. Replace the BCU.

Test pattern check	Possible cause/Countermeasure
The sub scan registrations of M, C, Y are shifted by more than ±1.4mm from the sub scan registration of K.	• No defective component • Defective image transfer belt • Defective drive units • Defective BCU 1. Do SP2-111-003 again. 2. Replace the image transfer belt. 3. Replace the drum motor. 4. Replace the BCU.
The main scan registration is shifted by more than ±0.66 mm, but only at the central area of the image on the output.	• Defective ID sensor at center • Deformed center area on the image transfer belt • Defective BCU 1. Replace the ID sensor. 2. Replace the image transfer belt. 3. Replace the BCU.
The skew for M, C, Y is more than ± 0.75 mm from the main scan registration of K. – at the end of the scan line?	• Defective PCDU • Defective laser unit • Defective BCU 1. Reinstall or replace the PCDU. 2. Replace the laser unit. 3. Replace the BCU.
Others	• Skew correction upper limit error • Defective BCU • Defective laser unit 1. Replace the BCU. 2. Replace the laser unit.

After Executing SP2-111-001

- Result: "0" in SP2-194-007
- Result: No color registration errors in SP2-194-010, -011, -012

Test pattern check	Possible cause/Countermeasure
The main scan registration of K is shifted.	• Abnormal SP setting value of main scan: K Adjust the value with SP2-101-001.
The main scan length of K is shifted.	• Abnormal SP setting value of main scan length detection: K Adjust the value with SP2-102-001 and -003. **Note:** The setting value of these SPs should be same.

After Executing SP2-111-001

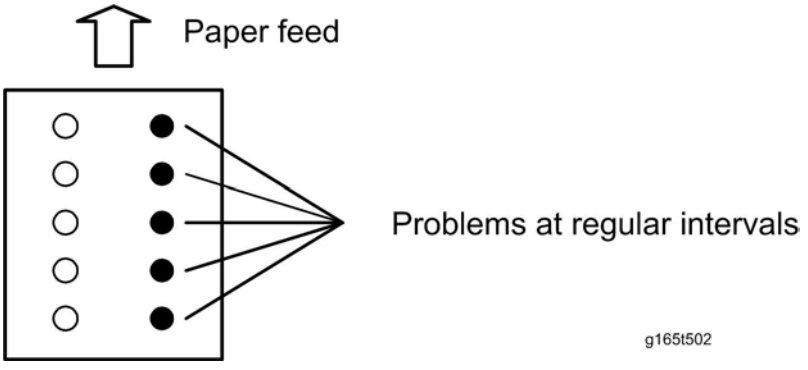
- Result: "0" in SP2-194-007
- Result: Color registration errors in SP2-194-010, -011, -012

Test pattern check	Possible cause/Countermeasure
Low image density on the output	• Low pattern density Do the forced process control (SP3-011-001) or supply some toner (SP3-015-xxx).
The main scan registration is shifted, but only at the central area of the image on the output.	• Defective ID sensor at center • Deformed center area on the image transfer belt • Defective BCU 1. Replace the ID sensor. 2. Replace the image transfer belt. 3. Replace the BCU.
The main scan registrations of M, C, Y are shifted.	• Defective laser optics housing unit • Defective ID sensor • Defective BCU • Incorrect SP value 1. Replace the laser optics housing unit. 2. Replace the ID sensor. 3. Replace the BCU. 4. Adjust the value with SP2-182-004 to -021.

Test pattern check	Possible cause/Countermeasure
The sub scan registrations of M, C, Y are shifted.	• Defective image transfer belt • Defective drive units • Defective ID sensor • Defective BCU • Incorrect SP value 1. Replace the image transfer belt. 2. Replace the ID sensor. 3. Replace the drum motor. 4. Replace the BCU. 5. Adjust the value with SP2-182-022 to -039.
The skew of M, C, Y is different.	• Defective PCDU • Defective laser optics housing unit • Defective BCU 1. Reinstall or replace the PCDU. 2. Replace the laser optics housing unit. 3. Replace the BCU.
The sub scan lines are shifted. Shifted lines appear cyclically.	• Defective PCDU • Defective drive unit • Drum phase adjustment error 1. Do SP1-902-001 (Drum phase adjustment); see Replacement and Adjustment – Drive Unit – Gear Unit for details. 2. Reinstall or replace the PCDU. 1. Check or replace the drive unit.

Image Problems at Regular Intervals

If a defect occurs in the image at one of these intervals, the related component may be defective.



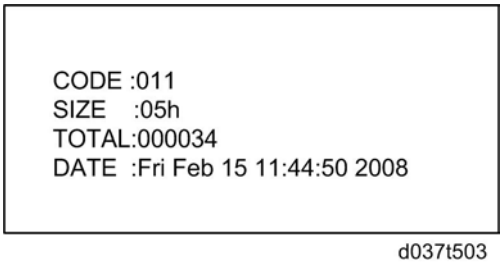
- Development roller: 32 mm
- PTR (Paper Transfer Roller): 75.0 mm
- Drum: 94.2 mm
- Fusing belt: 157.1 mm

7. Appendix: Jam Detection

Jam Detection

Paper Jam Display

SP7-507 shows the paper jam history.



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- **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.

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	-	-

Jam Codes and Display Codes

Mainframe

SP7-504 shows how many jams occurred at each location.

Jam Code SP	Display	Description	LCD Display
7504 1	At Power On	Paper is stack at power-on.	☛ Note
7504 3	Tray 1: ON	Paper is not fed from tray 1.	A2
7504 5	Tray 2: ON	Paper is not fed from tray 2	Y
7504 6	Tray 3: ON	Paper is not fed from tray 3.	Y
7504 8	Bypass: ON	Paper is not fed from the by-pass tray.	A2
7504 11	Vertical Transport 1: ON	Vertical transport sensor 1 does not detect paper from tray 1.	A1
7504 12	Vertical Transport 2: ON	Vertical transport sensor 2 does not detect paper from tray 2.	Y
7504 17	Registration: ON	Registration sensor does not detect paper.	A2
7504 18	Fusing Entrance: ON	Fusing entrance sensor does not detect paper.	B
7504 19	Fusing Exit: ON	Fusing exit sensor does not detect paper.	C
7504 20	Paper Exit: ON	Paper exit sensor does not detect paper.	C
7504 21	Relay Exit: ON	Tray exit sensor (bridge unit) does not detect paper.	D
7504 51	Vertical Transport Sensor1	Vertical transport sensor 1 does not turn off.	A1, A2
7504 52	Vertical Transport Sensor2	Vertical transport sensor 2 does not turn off.	Y
7504 53	Vertical Transport Sensor3	Vertical transport sensor 3 does not turn off.	Y
7504 57	Registration Sensor	Registration sensor does not turn off.	B

Jam Code SP	Display	Description	LCD Display
7504 58	Fusing Entrance Sensor	Fusing entrance sensor does not turn off.	C
7504 59	Fusing Exit Sensor	Fusing exit sensor does not turn off.	C
7504 60	Exit Sensor	Paper exit sensor does not turn off.	C

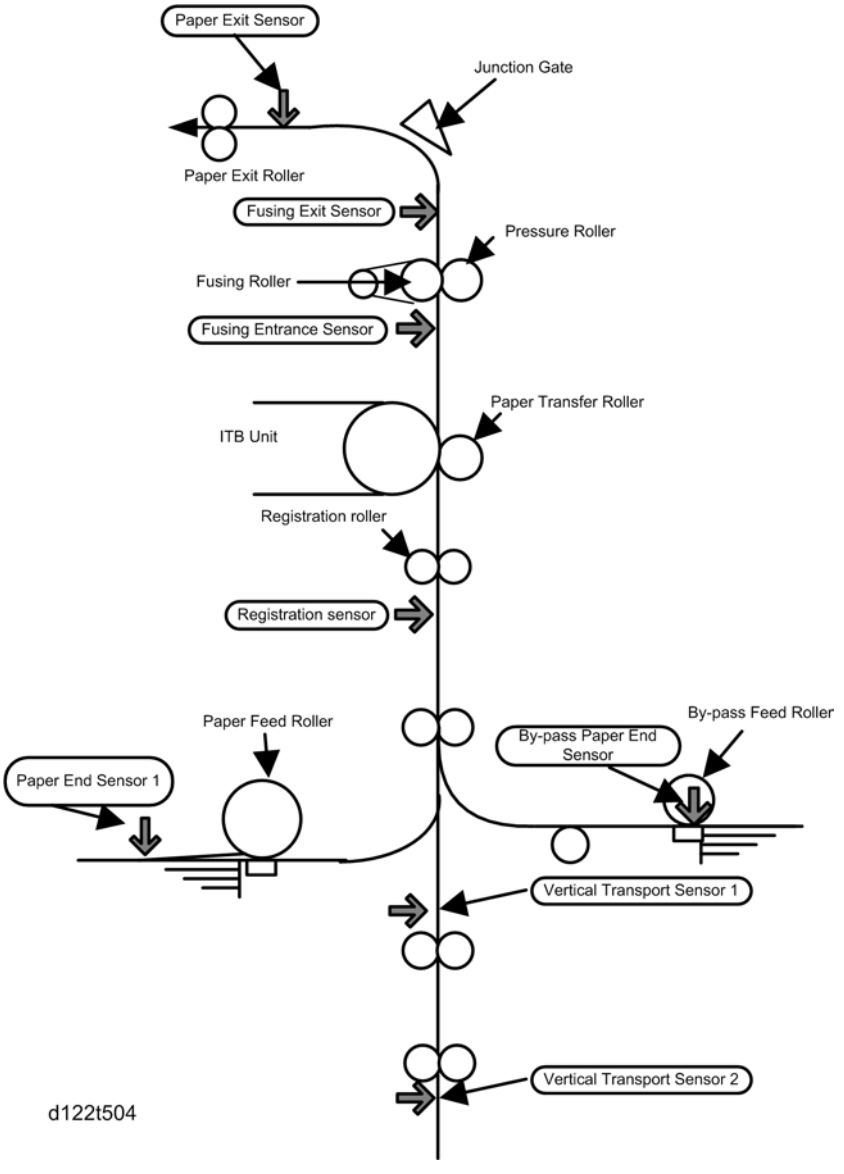
Note

- The jam location display depends on where a paper jam is detected at power-on.

ARDF (Original Jam)

Jam Code SP	Display	Description	LCD Display
7505 1	At Power On	Original is stack at power-on.	P
7505 3	Skew Correction: ON	Skew correction sensor does not detect paper.	P
7505 4	Registration: ON	Registration sensor does not detect paper.	P
7505 5	Paper Exit: ON	Exit Sensor does not detect paper.	P
7505 53	Skew Correction: OFF	Skew correction sensor does not turn off.	P
7505 54	Registration: OFF	Registration sensor does not turn off.	P
7505 55	Paper Exit: OFF	Exit Sensor does not turn off.	P

Sensor Locations



8. Appendix: Electrical Component Defects

Electrical Component Defects

Sensors

Note

- The CN numbers in the following table are the connector numbers on the BCU.

No.	Sensor Name/ Sensor Board Name	Active	CN	Condition	Symptom
SW4	Duplex Unit Open Switch	L	CN232/2	Open	"Open Cover" is displayed.
				Shorted	"Open cover" cannot be detected.
S5	ID Sensor: Front	A	CN214/8, 9	Open/ Shorted	SC400
	ID Sensor: Center	A	CN214/6, 7	Open/ Shorted	SC400
	ID Sensor: Rear	A	CN214/2, 3	Open/ Shorted	SC400
S19	PTR Contact Sensor	H	CN232/4	Open/ Shorted	SC452
S6	Registration Sensor	L	CN214/11	Open	Jam A2 (Jam17)
				Shorted	Jam B (Jam57)
S35	Drum Phase Sensor: K	H	CN220/2	Open/ Shorted	SC380/SC396
S36	Drum Phase Sensor: CMY	H	CN220/17	Open/ Shorted	SC381/SC397

No.	Sensor Name/ Sensor Board Name	Active	CN	Condition	Symptom
S21 S22 S23 S24	Toner End Sensor - Y Toner End Sensor - M Toner End Sensor - C Toner End Sensor - K	L	CN234/14, 17, 20, 23	Open	Toner end cannot be detected.
				Shorted	Toner end is detected when there is enough toner.
S12	ITB Rotation Sensor	H/L	CN219/20	Open/ Shorted	SC443
S10	Vertical Transport Sensor 1	L	CN219/10	Open	Jam A1 (Jam11)
				Shorted	Jam A1, A2 (Jam51)
S8 S9	Paper End Sensor 1, 2	L	CN214/17, 19	Open	Paper end is not detected when there is no paper in the paper tray.
				Shorted	Paper end is detected when there is paper in the paper tray.
S11	Vertical Transport Sensor 2	L	CN219/15	Open	Jam Y (Jam12)
				Shorted	Jam Y (Jam52)
SW6	Tray 1 Paper Size Switch	L	CN211/11, 12, 13, 15	Open/ Shorted	Paper size error
				Shorted	Tray 1 is detected when tray 1 is not set.
S13	By-pass Paper Size Sensor	L	CN221/9, 10, 12, 13	Open/ Shorted	Paper size error
S15	By-pass Paper End Sensor	L	CN221/18	Open	Paper on the by-pass tray is not detected when paper is set.
				Shorted	Paper on the by-pass tray is detected when paper is not set.

No.	Sensor Name/ Sensor Board Name	Active	CN	Condition	Symptom
S14	By-pass Paper Length Sensor	L	CN221/15	Open	Paper size error
				Shorted	
S16	By-pass HP Sensor	H	CN221/21	Open/ Shorted	SC508
S7	Fusing Entrance Sensor	L	CN214/14	Open	Jam B (Jam18)
				Shorted	Jam C (Jam58)
S34	TD Sensor - K	A	CN212/B9, B11	Open/ Shorted	SC372
S32	TD Sensor - M	A	CN212/A9, A11	Open/ Shorted	SC373
S33	TD Sensor - C	A	CN212/B3, B5	Open/ Shorted	SC374
S31	TD Sensor - Y	A	CN212/A3, A5	Open/ Shorted	SC375
S26	Fusing Exit Sensor	L	CN227/18	Open	Jam C (Jam19)
				Shorted	Jam C (Jam59)
S30	PCDU Toner Collection Bottle Full Sensor	H	CN211/9	Open	Used toner near full indicated when it is not near full.
				Shorted	Used toner near full cannot be detected when the waste toner bottle is nearly full.
SW5	PCDU Toner Collection Bottle Set Switch	L	CN211/7	Open	Toner collection bottle is not detected when the waste toner bottle is set.
				Shorted	Toner collection bottle is detected when the waste toner bottle is not set.

No.	Sensor Name/ Sensor Board Name	Active	CN	Condition	Symptom
S29	ITB Toner Collection Bottle Full Sensor	H	CN211/4	Open	Used toner near full indicated when it is not near full.
				Shorted	Used toner near full cannot be detected when the waste toner bottle is nearly full.
S37	Temperature/ Humidity Sensor	A	CN222/15, 17	Open/ Shorted	Printed image has some problems such as rough image, dirty background, weak image or poor fusing.
S28	Thermopile	A	CN237/14	Open/ Shorted	SC541
TH1	Heating Roller Thermistor	A	CN233/4	Open/ Shorted	SC551
TH2	Pressure Roller Thermistor 1 (Center)	A	CN233/11	Open/ Shorted	SC561
TH3	Pressure Roller Thermistor 2 (Ends)	A	CN233/9	Open/ Shorted	SC571
S27	Paper Exit Sensor	L	CN227/21	Open	Jam C (Jam20)
				Shorted	Jam C (Jam60)
S1	Original Length Sensor 1	A	CN206/2	Open/ Shorted	Original paper size cannot be detected.
S2	Original Length Sensor 2	A	CN206/5	Open/ Shorted	Original paper size cannot be detected.
S3	Scanner HP Sensor	H	CN205/2	Open	SC120
				Shorted	SC121
S4	Platen Cover Sensor	L	CN205/5	Open/ Shorted	Platen cover open cannot be detected.

No.	Sensor Name/ Sensor Board Name	Active	CN	Condition	Symptom
S20	ITB Contact Sensor	L	CN234/5	Open/ Shorted	SC442
SW2	Right Lower Door Open Switch	L	CN219/13	Open	"Open Cover" is displayed.
				Shorted	"Open cover" cannot be detected.

Blown Fuse Conditions

Power Supply Unit

Fuse	Rating		Symptom when turning on the main switch
	120V	220V - 240V	
FU101	15A/125V	8A/250V	The i-controller works, but SC547 is issued. (5V power to the fusing unit is not supplied.)
FU102	10A/125V	5A/250V	No response. (5V power to the PSU is not supplied.)
FU103	2A/250V	2A/250V	AC power to the scanner heater and tray heater is not supplied.
FU4	5A/250V	5A/250V	5V power to the i-controller and BCU is not supplied.
FU5	5A/250V	5A/250V	5V power to the BCU is not supplied.
FU6	5A/250V	5A/250V	5VS power to the i-controller is not supplied.
FU7	10A/125V	10A/250V	24VS power to the BCU is not supplied.
FU8	10A/125V	10A/250V	24VS power to the BCU is not supplied.
FU9	10A/125V	10A/250V	24V power to the DRB and i-controller is not supplied.

⚠CAUTION

- For continued protection against risk of fire, replace only with same type and rating of fuse.

9. Appendix: SP Mode Tables

System SP1-xxx

SP1-XXX (Feed)

1001	**[Leading Edge Registration]** Leading Edge Registration Adjustment (Tray Location, Paper Type, Color Mode), Paper Type -> Plain, Thick 1, Thick 2 or Thick3		
	Adjusts the leading edge registration by changing the registration motor operation timing for each mode. Increasing a value: an image is moved to the trailing edge of paper. Decreasing a value: an image is moved to the leading edge of paper.		
001	Tray:Plain:600dpi	*ENG	[–9 to 9 / **0.0** / 0.1 mm/step]
002	Tray:Thick1:600dpi	*ENG	
003	Tray:M-Thick:600dpi	*ENG	
004	By-pass:Plain:600dpi	*ENG	
005	By-pass:Thick1:600dpi	*ENG	
006	By-pass:Thick2:600dpi	*ENG	
007	By-pass:Thick3:600dpi	*ENG	
008	By-pass: M-Thick:600dpi	*ENG	
009	**Not used**	*ENG	
010	**Not used**	*ENG	

011	Tray:Thick1:1200dpi	*ENG	[–9 to 9 / **0.0** / 0.1 mm/step]
012	Tray:M-Thick:1200dpi	*ENG	
013	By-pass:Plain:1200dpi	*ENG	
014	By-pass:Plain:1200dpi	*ENG	
015	By-pass:Thick1:1200dpi	*ENG	
016	By-pass:Thick2:1200dpi	*ENG	
017	By-pass:Thick3:1200dpi	*ENG	
018	By-pass:M-Thick:1200dpi	*ENG	
019	**Not used**	*ENG	
020	**Not used**	*ENG	

1002	**[Side-to-Side Registration]**		
	Adjusts the side-to-side registration by changing the laser main scan start position for each mode and tray. Increasing a value: an image is moved to the rear edge of paper. Decreasing a value: an image is moved to the front edge of paper.		
001	By-pass	*ENG	[–4 to 4 / **0.0** / 0.1 mm/step]
002	Paper Tray 1	*ENG	
003	**Not used**	*ENG	
004	Paper Tray 2	*ENG	
005	Paper Tray 3	*ENG	
006	**Not used**	*ENG	

1003	**[Paper Buckle]** Paper Buckle Adjustment (Tray Location, Paper Type), Paper Type: N: Normal, TH: Thick
	Adjusts the amount of paper buckle at the registration roller by changing the paper feed timing.

001	Tray1:Plain:600dpi	*ENG	
002	Tray1:Thick1:600dpi	*ENG	
003	Tray1:M-Thick:600dpi	*ENG	
004	Tray23:Plain:600dpi	*ENG	
005	Tray23:Thick1:600dpi	*ENG	
006	Tray23:M-Thick:600dpi	*ENG	
007	By-pass:Plain:600dpi	*ENG	[–5 to 5 / **0** / 1 mm/step]
008	By-pass:Thick1:600dpi	*ENG	
009	By-pass:Thick2:600dpi	*ENG	
010	By-pass:Thick3:600dpi	*ENG	
011	By-pass:M-Thick:600dpi	*ENG	
012	**Not used**	*ENG	
013	**Not used**	*ENG	
014	Tray1:Plain:1200dpi	*ENG	
015	Tray1:Thick1:1200dpi	*ENG	
016	Tray1:M-Thick:1200dpi	*ENG	
017	Tray23:Plain:1200dpi	*ENG	
018	Tray23:Thick1:1200dpi	*ENG	
019	Tray23:M-Thick:1200dpi	*ENG	
020	By-pass:Plain:1200dpi	*ENG	[–5 to 5 / **0** / 1 mm/step]
021	By-pass:Thick1:1200dpi	*ENG	
022	By-pass:Thick2:1200dpi	*ENG	
023	By-pass:Thick3:1200dpi	*ENG	
024	By-pass:M-Thick:1200dpi	*ENG	
025	**Not used**	*ENG	
026	**Not used**	*ENG	

1007	**[By-Pass Size Detection]** By-Pass Size Detection Display		
001	0:LT SEF/ 1:LG	*ENG	-
	Enables or disables the automatic paper size detection function of the by-pass tray. This SP determines what paper size the machine detects if the detected size is less than 8.5". 0: OFF (Letter/SEF), 1: ON (Legal/SEF)		

1101	**[Flicker Control]**		
001	Flicker Control	*ENG	[0 or 1 / **0** / 1 /step] 0: Flicker Control: OFF 1: Flicker Control: ON

1103	**[Fusing Idling]** Fusing Idling Adjustment		
011	Idling Start Temp.	*ENG	[0 to 75 / **75** / 1 deg/step]
012	Forced Idling Stop	*ENG	[0 to 1 / **0** / 1 /step]
013	Forced Idling Stop Temp.	*ENG	[100 to 180 / **100** / 1 deg/step]
014	Minimum Idling Time	*ENG	[0 to 10 / **2** / 1 sec/step]
016	Extra Idling Time (L)	*ENG	Specifies how long the extra idling operation is executed for each environment. [0 to 60 / **0** / 1 sec/step] Each environment is determined with SP1112-001 and 002.
017	Extra Idling Time (H)	*ENG	
018	Extra Idling Time (M)	*ENG	
019	Ex Idling Temp:P-Roll	*ENG	[0 to 160 / **100** / 1 deg/step]
020	Control Switch Temp	*ENG	[0 to 15 / **15** / 1 deg/step]

1104	**[Fusing Idling Before Job]**		
001	Environment Thresh	*ENG	[0 to 2 / **2** / 1 /step]
002	Idling Temp:P-Roll	*ENG	[0 to 160 / **150** / 1 °C/step]
	Specifies the threshold temperature for the pressure roller idling before a job.		

003	Idling Time: BW	*ENG	Specifies the fusing idling time for each printe mode before a job. [0 to 10 / **0** / 1 sec/step]
004	Idling Time: FC	*ENG	
005	Idling Time: M-Thick: BW	*ENG	Specifies the fusing idling time for each printe mode before a job. [0 to 10 / **2** / 1 sec/step]
006	Idling Time: M-Thick: FC	*ENG	
007	Paper Feed Temp:P-Roller	*ENG	Specifies the thereshold temperature of the paper feed before a job. [0 to 130 / **50**/ 1 deg/step]
008	P.Feed Temp:MThick:P-Roll:BW	*ENG	
009	P.Feed Temp:MThick:P-Roll:FC	*ENG	
010	Fusing Upper Limit Temp	*ENG	[0 to 100 / **15**/ 1 deg/step]
011	Offset: Feed Start	*ENG	[0 to 100 / **25**/ 1 deg/step]
012	Offset: Feed Start: M-Thick	*ENG	[0 to 100 / **10**/ 1 deg/step]
031	Offset:Feed Start:1200dpi	*ENG	[0 to 100 / **30** / 1 deg/step]
033	Offset: Feed Start: Glossy	*ENG	[0 to 100 / **15**/ 1 deg/step]

1105	**[Fusing Temperature]** Fusing Temperature Adjustment		
	(Printing Mode, Roller Type, [Color], Simplex/Duplex) Roller Type –> Center and Ends: Heating roller, P-Roller –> Pressure roller Paper Type -> Plain, Thin, Thick, OHP, Middle Thick, Special		
001	Fusing Ready Temp.	*ENG	[145 to 155 / **150** / 1 deg/step]
	Specifies the heating roller target temperature for the ready condition.		
006	P-Roll Ready Target Temp.	*ENG	[140 to 160 / **140** / 1 deg/step]
007	P-Roll Ready Temp.	*ENG	[0 to 150 / **20** / 1 deg/step]
	Sets the heating roller offset temperature at the end of the heating roller. This value is one of the thresholds to determine if the machine is at the heating roller target temperature during warm-up.		
010	Stand-By: Center	* ENG	[140 to 170 / **160** / 1 deg/step]
011	Stand-By: Ends	* ENG	[140 to 170 / **165** / 1 deg/step]

012	Stand-By:P-Roller	* ENG	[135 to 165 / **155** / 1 deg/step]
	Sets the pressure roller offset temperature. This value is one of the thresholds to determine if the machine is at the heating roller target temperature during warm-up.		
013	Panel Off Mode: Center	* ENG	[100 to 150 / **130** / 1 deg /step]
	Specifies the heating roller temperature (center) in the panel off mode.		
014	Panel Off Mode: Ends	* ENG	[100 to 150 / **130** / 1 deg /step]
	Specifies the heating roller temperature (both ends) in the panel off mode.		
015	Panel Off Mode: P-Roller	*ENG	[135 to 165 / **150** / 1 deg /step]
	Specifies the presure roller temperature in the panel off mode.		
016	Low Power: Center	*ENG	Specifies the heating roller temperature (center or ends) in the low power mode. [30 to 100 / **40** / 1 deg /step]
017	Low Power: Ends	*ENG	
018	Low Power: P-Roller	*ENG	[30 to 155 / **100** / 1 deg /step]
	Specifies the pressure roller temperature in the low power mode.		
019	Off Mode: Center	*ENG	Specifies the heating roller temperature (center or ends) in the sleep mode. [0 to 180 / **0** / 1 deg /step]
020	Off Mode: Ends	*ENG	
021	Off Mode:P-Roller	*ENG	[0 to 170 / **0** / 1 deg /step]
	Specifies the pressure roller temperature in the sleep mode.		
030 to 183	The target fusing temperature for each paper type and mode can be adjusted by the following SPs.		

030	Plain:FC:Simplex:Center	*ENG	[125 to 175 / **145** / 1 deg /step]
031	Plain: FC: Simplex: Ends	*ENG	
032	Plain:FC:Duplex:Center	*ENG	
033	Plain: FC: Duplex: Ends	*ENG	
034	Plain: BW: Simplex:Center	*ENG	
035	Plain: BW: Simplex: Ends	*ENG	
036	Plain: BW: Duplex:Center	*ENG	
037	Plain: BW: Duplex: Ends	*ENG	
038	Thin: FC: Simplex:Center	*ENG	[125 to 175 / **140** / 1 deg /step]
039	Thin: FC: Simplex: Ends	*ENG	
040	Thin:FC:Duplex:Center		
041	Thin:FC:Duplex:Ends		
042	Thin: BW: Simplex:Center	*ENG	
043	Thin: BW: Simplex: Ends	*ENG	
044	Thin: BW: Duplex:Center	*ENG	
045	Thin:BW:Duplex:Ends		
046	Thick 1: FC: Simplex:Center	*ENG	[135 to 180 / **150** / 1 deg /step]
047	Thick 1: FC: Simplex: Ends	*ENG	
048	Thick 1: FC: Duplex:Center	*ENG	
049	Thick 1: FC: Duplex:Ends	*ENG	
050	Thick 1: BW: Simplex:Center	*ENG	
051	Thick 1: BW: Simplex: Ends	*ENG	
052	Thick 1: BW: Duplex:Center	*ENG	
053	Thick 1:BW:Duplex:Ends		
054	Thick 2: FC: Simplex:Center	*ENG	[135 to 180 / **160** / 1 deg /step]
055	Thick 2: BW: Simplex:Center	*ENG	

056	OHP: FC	*ENG	[125 to 175 / **160** / 1 deg /step]
057	OHP: BW	*ENG	[125 to 175 / **150** / 1 deg /step]
058	SP 1:FC:Simplex:Center	*ENG	[125 to 175 / **155** / 1 deg/step]
059	SP 1:FC:Simplex:Ends	*ENG	
060	SP 1:FC:Duplex:Center	*ENG	
061	SP 1:FC:Duplex:Ends	*ENG	
062	SP 1:BW:Simplex:Center	*ENG	
063	SP 1:BW:Simplex:Ends	*ENG	
064	SP 1:BW:Duplex:Center	*ENG	
065	SP 1: BW: Duplex: Ends	*ENG	
066	SP 2:FC:Simplex:Center	*ENG	[125 to 175 / **160** / 1 deg/step]
067	SP 2: FC: Simplex: Ends	*ENG	
068	SP 2:FC:Duplex:Center	*ENG	
069	SP 2:FC:Duplex:Ends	*ENG	
070	SP 2:BW:Simplex:Center	*ENG	
071	SP 2:BW:Simplex:Ends	*ENG	
072	SP 2:BW:Duplex:Center	*ENG	
073	SP 2:BW:Duplex:Ends	*ENG	
074	SP 3:FC:Simplex:Center	*ENG	[125 to 175 / **150** / 1 deg/step]
075	SP 3:FC:Simplex:Ends	*ENG	
076	SP 3:FC:Duplex:Center	*ENG	
077	SP 3:FC:Duplex:Ends	*ENG	
078	SP 3:BW:Simplex:Center	*ENG	
079	SP 3:BW:Simplex:Ends	*ENG	
080	SP 3:BW:Duplex:Center	*ENG	
081	SP 3:BW:Duplex:Ends	*ENG	

082	Target Temp. After Ready	*ENG	[140 to 165 / **160** / 1 deg/step]
	Specifies the target temperature for the maintain mode after the machine has reached the target temperature in warm-up mode.		
083	Recovery Target Temp.	*ENG	[140 to 160 / **155** / 1 deg /step]
	Specifies the target temperature for the print mode without printing/copying job after the machine's recovery.		
087	Thick 2: FC: Simplex: Ends	*ENG	[135 to 180 / **160** / 1 deg/step]
088	Thick 2: BW: Simplex: Ends	*ENG	
089	Thick 3: FC: Simplex: Center	*ENG	[135 to 180 / **165** / 1 deg/step]
090	Thick 3: FC: Simplex: Ends	*ENG	
091	Thick 3: BW: Simplex: Center	*ENG	
092	Thick 3: BW: Simplex: Ends	*ENG	
109	M-Thick:FC:Simplex:Center	*ENG	[125 to 175 / **155** / 1 deg/step]
110	M-Thick:FC:Duplex:Center	*ENG	
111	M-Thick: BW: Simplex:Center	*ENG	
112	M-Thick: BW: Duplex:Center	*ENG	
113	M-Thick: FC: Simplex: Ends	*ENG	
114	M-Thick: FC: Duplex: Ends	*ENG	
115	M-Thick: BW: Simplex: Ends	*ENG	
116	M-Thick: BW: Duplex: Ends	*ENG	

120	Plain2: FC: Simplex:Center	*ENG	[125 to 175 / **150** / 1 deg/step]
121	Plain2: FC: Simplex:Ends	*ENG	
122	Plain2: FC: Duplex:Center	*ENG	
123	Plain2: FC: Duplex:Ends	*ENG	
124	Plain2: BW: Simplex:Center	*ENG	
125	Plain2: BW: Simplex: Ends	*ENG	
126	Plain2: BW: Duplex:Center	*ENG	
127	Plain2: BW: Duplex: Ends	*ENG	
128	F: Plain1: FC : Simplex:Center	*ENG	[110 to 160 / **120** / 1 deg/step]
129	F: Plain1: FC : Simplex: Ends	*ENG	
130	F: Plain1: BW : Simplex:Center	*ENG	
131	F: Plain1: BW : Simplex: Ends	*ENG	
132	F: Plain2: FC: Simplex:Center	*ENG	[110 to 160 / **125** / 1 deg /step]
133	F: Plain2: FC: Simplex: Ends	*ENG	
134	F: Plain2: BW: Simplex:Center	*ENG	
135	F: Plain2: BW: Simplex: Ends	*ENG	
136	F: MThick: FC: Simplex:Center	*ENG	[110 to 160 / **130** / 1 deg /step]
137	F: MThick: FC: Simplex: Ends	*ENG	
138	F: MThick: BW: Simplex:Center	*ENG	
139	F: MThick: BW: Simplex: Ends	*ENG	
142	Glossy: Plain1:Center	*ENG	[110 to 160 / **125** / 1 deg/step]
143	Glossy: Plain1: Ends	*ENG	
144	Glossy: Plain2:Center	*ENG	[110 to 160 / **130** / 1 deg/step]
145	Glossy: Plain2: Ends	*ENG	
146	Glossy: MThick:Center	*ENG	[110 to 160 / **135** / 1 deg/step]
147	Glossy: MThick: Ends	*ENG	

148	SP 4:FC:Simplex:Center	*ENG	[135 to 180 / **150** / 1 deg/step]
149	SP 4:FC:Simplex:Ends	*ENG	
150	SP 4:FC:Duplex:Center	*ENG	
151	SP 4:FC:Duplex:Ends	*ENG	
152	SP 4:BW:Simplex:Center	*ENG	[135 to 180 / **150** / 1 deg/step]
153	SP 4:BW:Simplex:Ends	*ENG	
154	SP 4:BW:Duplex:Center	*ENG	
155	SP 4:BW:Duplex:Ends	*ENG	
156	SP 5:FC:Simplex:Center	*ENG	[135 to 180 / **160** / 1 deg/step]
157	SP 5:FC:Simplex:Ends	*ENG	
158	SP 5:FC:Duplex:Center	*ENG	
159	SP 5:FC:Duplex:Ends	*ENG	
160	SP 5:BW:Simplex:Center	*ENG	
161	SP 5:BW:Simplex:Ends	*ENG	
162	SP 5:BW:Duplex:Center	*ENG	
163	SP 5:BW:Duplex:Ends	*ENG	
164	SP 6:FC:Simplex:Center	*ENG	[135 to 180 / **145** / 1 deg/step]
165	SP 6:FC:Simplex:Ends	*ENG	
166	SP 6:FC:Duplex:Center	*ENG	
167	SP 6:FC:Duplex:Ends	*ENG	
168	SP 6:BW:Simplex:Center	*ENG	
169	SP 6:BW:Simplex:Ends	*ENG	
170	SP 6:BW:Duplex:Center	*ENG	
171	SP 6:BW:Duplex:Ends	*ENG	

172	F:SP 1:FC:Simplex:Center	*ENG	[110 to 160 / **130** / 1 deg/step]
173	F:SP 1:FC:Simplex:Ends	*ENG	
174	F:SP 1:BW:Simplex:Center	*ENG	
175	F:SP 1:BW:Simplex:Ends	*ENG	
176	F:SP 2:FC:Simplex:Center	*ENG	[110 to 160 / **135** / 1 deg/step]
177	F:SP 2:FC:Simplex:Ends	*ENG	
178	F:SP 2:BW:Simplex:Center	*ENG	
179	F:SP 2:BW:Simplex:Ends	*ENG	
180	F:SP 3:FC:Simplex:Center	*ENG	[110 to 160 / **125** / 1 deg/step]
181	F:SP 3:FC:Simplex:Ends	*ENG	
182	F:SP 3:BW:Simplex:Center	*ENG	
183	F:SP 3:BW:Simplex:Ends	*ENG	

1106	**[Fusing Temperature Display]** Fusing Temperature Display (Heating or Pressure)		
	Displays the current temperature of the heating and pressure rollers.		
001	Fusing Roller: Center	-	[–20 to 250 / 0 / 1 deg/step]
002	Fusing Roller: Ends	-	[–10 to 250 / 0 / 1 deg/step]
	The heating roller has two lamps. One heats the center of the heating roller and the other heats both ends of the heating roller.		
003	Pressure Roller: Center	-	[–10 to 250 / 0 / 1 deg/step]
004	Pressure Roller:Ends	-	[–10 to 250 / 0 / 1 deg/step]
	The pressure roller has two lamps. One heats the center of the heating roller and the other heats both ends of the heating roller.		

1108	**[Ready Temp Setting]**		
	Japan use only		
007	Ready Temp Time	*ENG	[22 to 60 / **22** / 0.1 sec/step]

1109	[Fusing Nip Band Check]		
001	Execute	-	[0 or 1 / **0** / 1] Executes the nip band measurement between fusing belt and pressure roller. If the nip band width is not 8 mm, and fusing is not good, replace the pressure roller or install a new fusing unit.
002	Pre-Idling Time	*ENG	[0 to 120 / **0** / 1 sec/step]
	Specifies the fusing rotation time before executing SP1109-001.		
003	Stop Time	* ENG	[5 to 30 / **20** / 1 sec/step]
	Specifies the time for measuring the nip.		

1112	[Envir. Correct: Fusing]		
001	Temp.: Threshold: Low	*ENG	[10 to 23 / **17** / 1 deg/step]
	Specifies the threshold temperature for low temperature condition.		
002	Temp.: Threshold: High	*ENG	[24 to 40 / **30** / 1 deg/step]
	Specifies the threshold temperature for high temperature condition.		
003	Low Temp. Correction	*ENG	[0 to 15 / **5** / 1 deg/step]
	Specifies the temperature correction for the heating roller. When the low temperature condition (specified with SP1112-001) is detected, the value of this SP is added to the heating roller temperature.		
004	High Temp. Correction	*ENG	[0 to 15 / **5** / 1 deg/step]
	Specifies the temperature correction for the heating roller. When the high temperature condition (specified with SP1112-002) is detected, the value of this SP is subtracted from the heating roller temperature.		
005	Offset Temp:Low	*ENG	[0 to 15 / **6.5** / 0.1 deg/step]
006	Offset Temp:High	*ENG	[0 to 15 / **5** / 0.1 deg/step]

1113	[Stand-by Mode Setting]		
001	Wait Time AF Ready	*ENG	[0 to 60 / **20** / 1 sec/step]

003	Wait Time AF Recovery	*ENG	[0 to 60 / **10** / 1 sec/step]
	Specifies the time for keeping the target temperature without any jobs after recovery (SP1105-083).		
004	Wait Time AF Job	*ENG	[0 to 60 / **10** / 1 sec/step]
	Specifies the time for keeping the target temperature without any jobs after a last job.		
005	P-Roll Thresh AF Ready	*ENG	[0 to 160 / **100** / 1 deg/step]
	Specifies the threshold temperature of the pressure roller for entering the wait time mode (SP1-113-001).		
006	P-Roll Thresh AF Job	*ENG	[0 to 160 / **100** / 1 deg/step]
	Specifies the threshold temperature of the pressure roller for entering the wait time mode (SP1-113-004).		
008	On/Off SW Timer	*ENG	[0 to 999 / **300** / 1 sec/step]
	Specifies the interval for entering the PID control from the On/Off control.		

1115	**[Stand-by Idling]**		
001	Interval	*ENG	[0 to 240 / **60** / 1 min/step]
	Specifies the interval between idling during stand-by mode. This idling during the stand-by mode prevents the roller deformation.		
002	Idling Time	*ENG	[0 to 60 / **2** / 0.1 sec/step]
	Specifies the length of each idling operation during stand-by mode.		
003	Idling Speed	*ENG	[0 to 1 / **0** / 1 mm/sec/step]

1116	**[Fusing Temp Change]** Paper Type –> MThick: Middle Thick		
010	Center Temp. 1: 226–	ENG	[-10 / 10 / **0** / 1 deg/step]
	Specifies the temperature correction for the heating roller (center) when the paper width is 226 mm or more. The start time of this SP can be adjusted with SP1116-018.		

011	Ends Temp. 1: 226–	ENG	[-10 to 10 / **0** / 1 deg/step]
	Specifies the temperature correction for the heating roller (ends) when the paper width is 226 mm or more. The start time of this SP can be adjusted with SP1116-018.		
012	Center Temp. 2: 226–	ENG	[-10 to 10 / **0** / 1 deg/step]
	Specifies the temperature correction for the heating roller (center) when the paper width is 226 mm or more. The start time of this SP can be adjusted with SP1116-019.		
013	Ends Temp. 2: 226–	ENG	[-10 to 10 / **0** / 1 deg/step]
	Specifies the temperature correction for the heating roller (ends) when the paper width is 226 mm or more. The start time of this SP can be adjusted with SP1116-019.		
014	Center Temp. 3: –226	ENG	[-10 to 10 / **0** / 1 deg/step]
	Specifies the temperature correction for the heating roller (center) when the paper width is less than 226 mm. The start time of this SP can be adjusted with SP1116-020.		
015	Ends Temp. 3: –226	ENG	[-10 to 10 / **-5** / 1 deg/step]
	Specifies the temperature correction for the heating roller (ends) when the paper width is less than 226 mm. The start time of this SP can be adjusted with SP1116-020.		
016	Center Temp. 4: –226	ENG	[-10 to 10 / **0** / 1 deg/step]
	Specifies the temperature correction for the heating roller (center) when the paper width is less than 226 mm. The start time of this SP can be adjusted with SP1116-021.		
017	Ends Temp. 4: –226	ENG	[-10 to 10 / **-10** / 1 deg/step]
	Specifies the temperature correction for the heating roller (ends) when the paper width is less than 226 mm. The start time of this SP can be adjusted with SP1116-021.		

018	Control Time 1: 226–	ENG	[0 to 250 / **0** / 1 sec/step]
	Specifies the start time of the temperature correction that is set with SP1116-010 and -011. The temperature correction is added when the time specified with this SP has passed after feeding the paper.		
019	Control Time 2: 226–	ENG	[0 to 250 / **0** / 1 sec/step]
	Specifies the start time of the temperature correction that is set with SP1116-012 and -013. The temperature correction is added when the time specified with this SP has passed after feeding the paper.		
020	Control Time 3: –226	ENG	[0 to 250 / **30** / 1 sec/step]
	Specifies the start time of the temperature correction that is set with SP1116-014 and -015. The temperature correction is added when the time specified with this SP has passed after feeding the paper.		
021	Control Time 4: –226	ENG	[0 to 250 / **60** / 1 sec/step]
	Specifies the start time of the temperature correction that is set with SP1116-016 and -017. The temperature correction is added when the time specified with this SP has passed after feeding the paper.		
022	Center Temp.1:MThick:226-	ENG	[-10 to 10 / **0** / 1 deg/step]
023	Ends Temp.1:MThick:226-	ENG	
024	Center Temp.2:MThick:226-	ENG	
025	Ends Temp.2:MThick:226-	ENG	
026	Center Temp.3:MThick:-226	ENG	[-10 to 10 / **0** / 1 deg/step]
027	Ends Temp.3:MThick:-226	ENG	[-10 to 10 / **-5** / 1 deg/step]

028	Center Temp.4:MThick:-226	ENG	[-10 to 10 / **0** / 1 deg/step]
029	Ends Temp.4:MThick:-226	ENG	
030	Center Temp.1:Other:226-	ENG	
031	Ends Temp.1:Other:226-	ENG	
032	Center Temp.2:Other:226-	ENG	
033	Ends Temp.2:Other:226-	ENG	
034	Center Temp.3:Other:-226	ENG	
035	Ends Temp.3:Other:-226	ENG	[-10 to 10 / **-5** / 1 deg/step]
036	Center Temp.4:Other:-226	ENG	[-10 to 10 / **0** / 1 deg/step]
037	Ends Temp.4:Other:-226	ENG	

1117	**[Idling Time AF Heater OFF]**		
001	After Ready	ENG	[0 to 4 / **4** / 1 sec/step] **DFU**
	Specifies the idling time without the lamp on after reaching the ready temperature.		
002	After Job End	ENG	[0 to 4 / **0** / 1 sec/step]
	Specifies the idling time without the lamp on after job end. This idling prevents the heating roller overheating after job end.		

1118	**[Curl Temp Correction]**		
001	Operation Pattern	*ENG	[0 to 3 / **0** / 1]
	Selects the curl correction mode. 0: No curl correction mode 1: Plain in 600 dpi mode 2: Plain in 1200 dpi mode 3: Curl coefficient correction		
002	Humidity Thresh 1	*ENG	[0 to 100 / **65** / 1 %]
	Specifies the first threshold humidity for executing the curl correction.		

003	Humidity Thresh 2	*ENG	[0 to 100 / **80** / 1 %]
	Specifies the second threshold humidity for executing the curl correction.		
004	Pattern 1: MM: H-Roll	*ENG	[-15 to 0 / **-5** / 1 deg]
005	Pattern 1: MM: P-Roll	*ENG	[0 to 60 / **0** / 1 deg]
006	Pattern 1: HM: H-Roll	*ENG	[-15 to 0 / **-5** / 1 deg]
007	Pattern 1: HM: P-Roll	*ENG	[0 to 60 / **0** / 1 deg]
008	Pattern 2: MM: H-Roll	*ENG	[-15 to 0 / **-5** / 1 deg]
009	Pattern 2: MM: P-Roll	*ENG	[0 to 60 / **0** / 1 deg]
010	Pattern 2: HM: H-Roll	*ENG	[-15 to 0 / **-5** / 1 deg]
011	Pattern 2: HM: P-Roll	*ENG	[0 to 60 / **0** / 1 deg]

1119	**[Fusing FF Control] DFU**		
001 to 020	Specifies the additional duty to the heating roller fusing lamp for each paper type. These values are added to the duty decided by the PID control.		
001	Plain: Center	*ENG	[0 to 100 / **60** / 1 %]
002	Plain: Ends	*ENG	
003	Thin: Center	*ENG	[0 to 100 / **50** / 1 %]
004	Thin: Ends	*ENG	
005	M-Thick: Center	*ENG	[0 to 100 / **70** / 1 %]
006	M-Thick: Ends	*ENG	
007	Thick1: Center	*ENG	
008	Thick1: Ends	*ENG	
009	Thick2: Center	*ENG	
010	Thick2: Ends	*ENG	
011	Thick3: Center	*ENG	
012	Thick3: Ends	*ENG	

013	OHP: Center	*ENG	[0 to 100 / **40** / 1 %]
014	OHP: Ends	*ENG	
015	SP 1: Center	*ENG	[0 to 100 / **70** / 1 %]
016	SP 1: Ends	*ENG	
017	SP 2: Center	*ENG	
018	SP 2: Ends	*ENG	
019	SP 3:: Center	*ENG	[0 to 100 / **60** / 1 %]
020	SP 3: Ends	*ENG	
021	Envir. Correct:Low	*ENG	[-100 to 100 / **10** / 1 %]
022	Envir. Correct:High	*ENG	[-100 to 100 / **0** / 1 %]
023	FF. Correct: Center	*ENG	
024	FF Correct:Ends	*ENG	
[FF Correct Time]			
025	FF Correct Time	*ENG	[0 to 60 / **0** / 1 sec]
	Specifies the FF duty correction time after the fusing/ paper exit motor has started to rotate in each print or copy mode.		
[FF Control thresh] Specifies the offset temperature for turning off the FF duty correction.			
026	Offset:Center	*ENG	[0 to 50 / **25** / 1 deg]
027	Offset:Ends	*ENG	
[FF Start Time] Specifies the start time of the FF duty correction after FGATE has been "ON".			
028	Fgate Timer:FC:Full	*ENG	[0 to 10000 / **1900** / 1msec]
029	Fgate Timer:FC:Half	*ENG	[0 to 10000 / **5300** / 100msec]
030	Fgate Timer:BW:Full	*ENG	[0 to 10000 / **0** / 100msec]
031	Fgate Timer:BW:Half	*ENG	[0 to 10000 / **400** / 100msec]

[FF Correct Time] Specifies the additional time to the FF duty correction time for each lien speed. Full: Full speed, Half: Half speed			
032	Time Set:Full	*ENG	[-5000 to 5000 / **0** / 100msec]
033	Time Set:Half	*ENG	
[Fusing FF Correct] Specifies the additional duty to the heating roller fusing lamp for each paper type. These values are added to the duty decided by the PID control.			
034	SP 4:Center	*ENG	[100 to 0 / **70** / 1 %]
035	SP 4:Ends	*ENG	
036	SP 5:Center	*ENG	
037	SP 5:Ends	*ENG	
038	SP 6:Center	*ENG	[100 to 0 / **60** / 1 %]
039	SP 6:Ends	*ENG	

1120	**[Multi-Print Mode]**		
001	Feed Condition	*ENG	[0 or 2 / **0** / 1]
	Selects the paper feed timing. 0: Productivity priority, 1: Fusing quality priory		

1159	**[Fusing Jam Detection]**		
001	SC Display	*ENG	[0 or 1 / **0** / 1]
	Enables or disables the fusing consecutive jam (three times) SC detection. 0: No detection, 1: Detection		

1801	**[Motor Speed Adjust] DFU**		
001	Regist Mot:60:Thick	*ENG	[–4 to 4 / **0.3** / 0.05 %/step]
002	Regist Mot:120	*ENG	

003	Bk OpcDevMot:120	*ENG	[–4 to 4 / **–0.1** / 0.01 %/step]
004	Bk OpcDevMot:60:Thick	*ENG	[–4 to 4 / **–0.4** / 0.01 %/step]
005	Color OpcMot:120	*ENG	[–15 to 15 / **0** / 1 %/step]
006	Color OpcMot:60	*ENG	
007	Fusing Mot:120	*ENG	[–6 to 6 / **-0.4** / 0.01 %/step]
008	Fusing Mot:60:Thick	*ENG	[–6 to 6 / **-0.05** / 0.01 %/step]
009	Transfer Mot:120	*ENG	[–4 to 4 / **0** / 0.01 %/step]
010	TransferMot:60:Thick	*ENG	[–4 to 4 / **0** / 0.01 %/step]
011	Feed1:CW60:Thick	*ENG	[–2 to 2 / **0.3** / 0.05 %/step]
012	Feed1:CW120	*ENG	
013	Feed1:CCW60:Thick	*ENG	
014	Feed1:CCW120	*ENG	
015	**Not used**	*ENG	
016		*ENG	
017		*ENG	
018		*ENG	
019	By-pass:60:Thick	*ENG	
020	By-pass:120	*ENG	

021	Not used	*ENG	-
022		*ENG	
023		*ENG	
024		*ENG	
025		*ENG	
026		*ENG	
027		*ENG	
028		*ENG	
029		*ENG	
030	Fine Adj. Control	*ENG	[0 to 1 / **1** /1]
031	Offset:120:Color	*ENG	[-7 to 7 / **0** /1step]
032	Offset:60:Color	*ENG	
033	Regist Mot:60:1200dpi	*ENG	[–4 to 4 / **0.3** / 0.05 %/step]
034	Feed1:CW60:1200dpi	*ENG	[–2 to 2 / **0.3** / 0.05 %/step]
035	Feed1:CCW60:1200dpi	*ENG	
036	**Not used**	*ENG	
037	**Not used**	*ENG	
038	By-pass:60:1200dpi	*ENG	
039	**Not used**	*ENG	[–2 to 2 / **0** / 0.05 %/step]
040		*ENG	
041	FusingMot:60:1200dpi	*ENG	[–6 to 6 / **-0.05** / 0.01 %/step]
042	BkOpcDevMot:60:1200dpi	*ENG	[–4 to 4 / **-0.4** / 0.01 %/step]
043	TransferMot:60:1200dpi	*ENG	[–4 to 4 / **0** / 0.01 %/step]

1803	[Sub Mag ADJ]		
	These SPs can adjust the sub-scan magnification error. However, first read the "Sub-scan Magnification Error" in the "Troubleshooting Guide" (Main Chapters) to execute these SPs. **NEVER EXECUTE** these SPs before reading the "Sub-scan Magnification Error". Otherwise, color registration errors occur on outputs and this cannot be recovered by the line position adjustment.		
001	Plain:600dpi:input	*ENG	[-1 to 1 / **0** / 0.1 %/step]
002	Plain:1200dpi:input	*ENG	
003	Thick:input	*ENG	
004	Plain:600dpi:result	*ENG	[0 to 1 / **0** / 1 /step] 0: Success, 1: Failure
005	Plain:1200dpi:result	*ENG	
006	Thick:result	*ENG	

1902	[Drum Phase Adj.] DFU		
001	Execute	-	[0 or 1 / **0** / 1] Execute drum phase adjustment.
002	Result	*ENG	[0 to 3 / **0** / 1] Displays the result of drum phase adjustment. 0: Successfully done 2: Sampling failure 3: Insufficient detection number
003	Auto Execution	*ENG	[0 or 1 / **1** / 1] Turns the automatic drum phase adjustment on or off. 0: Off, 1: On

1907	Not used		
001	-	*ENG	-
002	-	*ENG	
003	-	*ENG	

1950	[Fan Cooling Time Set] DFU		
001	Development Fan1	*ENG	[0 to 600 / **0** / 1sec/step]
002	Development Fan2	*ENG	
003	LD Unit Fan	*ENG	
004	Fusing Exit Sn Fan	*ENG	
005	Fusing Exit Fan	*ENG	
006	Electrical Fan	*ENG	
007	PSU Fan	*ENG	
008	Junction Gate SOL Fan	*ENG	

System SP2-xxx

SP2-XXX (Drum)

2005	**[Charge DC V:Fixed] DFU** (Paper Type, Process Speed, Color) Paper Type –> Plain, Thick 1, Thick 2		
	Adjusts the DC component of the charge roller bias in the various print modes. Charge bias (DC component) is automatically adjusted during process control; therefore, adjusting these settings does not effect while process control mode (SP3-041-1 Default: ON) is activated. When deactivating process control mode with SP3-041-1, the values in these SP modes are used for printing.		
001	Plain: Bk	*ENG	[0 to 1000 / **600** / 10 –V/step]
002	Plain: C	*ENG	
003	Plain: M	*ENG	
004	Plain: Y	*ENG	
005	Thick 2&FINE: Bk	*ENG	
006	Thick 2&FINE: C	*ENG	
007	Thick 2&FINE: M	*ENG	
008	Thick 2&FINE: Y	*ENG	

2006	**[Charge DC V:Fixed] DFU** (Paper Type, Process Speed, Color) Paper Type –> Plain, Thick 1, Thick 2
	Adjusts the AC component of the charge roller bias in the various print modes. Charge bias (AC component) is adjusted by environment correction (SP2-007-xxx to SP2-011-xxx). These SPs are activated only when SP2-012-1 is set to "1: manual control".

001	Plain: Bk	*ENG	[0 to 3000 / **2100** / 10V/step]
002	Plain: C	*ENG	
003	Plain: M	*ENG	
004	Plain: Y	*ENG	
009	Thick 2&FINE: Bk	*ENG	
010	Thick 2&FINE: C	*ENG	
011	Thick 2&FINE: M	*ENG	
012	Thick 2&FINE: Y	*ENG	

2007	**[Charge AC A: LL] DFU** Charge Roller AC Current Adjustment for LL (Color)		
	Displays/sets the AC current target of the charge roller for LL environment (Low temperature and Low humidity).		
001	Environmental Target: Bk	*ENG	[0 to 3000 / **710** / 10 µA/step]
002	Environmental Target: C	*ENG	
003	Environmental Target: M	*ENG	[0 to 3000 / **760** / 10 µA/step]
004	Environmental Target: Y	*ENG	[0 to 3000 / **750** / 10 µA/step]

2008	**[Charge AC A: ML] DFU** Charge Roller AC Current Adjustment for MM (Color)		
	Displays/sets the AC current target of the charge roller for ML environment (Meddle temperature and Low humidity).		
001	Environmental Target: Bk	*ENG	[0 to 3000 / **740** / 10 µA/step]
002	Environmental Target: C	*ENG	
003	Environmental Target: M	*ENG	[0 to 3000 / **760** / 10 µA/step]
004	Environmental Target: Y	*ENG	[0 to 3000 / **750** / 10 µA/step]

2009	**[Charge AC A: MM] DFU** Charge Roller AC Current Adjustment for MM (Color)		
	Displays/sets the AC current target of the charge roller for MM environment (Middle temperature and Middle humidity).		
001	Environmental Target: Bk	*ENG	[0 to 3000 / **790** / 10 µA/step]
002	Environmental Target: C	*ENG	
003	Environmental Target: M	*ENG	
004	Environmental Target: Y	*ENG	[0 to 3000 / **850** / 10 µA/step]

2010	**[Charge AC A: MH] DFU** Charge Roller AC Current Adjustment for MH (Color)		
	Displays/sets the AC current target of the charge roller for MH environment (Middle temperature and High humidity).		
001	Environmental Target: Bk	*ENG	[0 to 3000 / **820** / 10 µA/step]
002	Environmental Target: C	*ENG	
003	Environmental Target: M	*ENG	[0 to 3000 / **840** / 10 µA/step]
004	Environmental Target: Y	*ENG	[0 to 3000 / **880** / 10 µA/step]

2011	**[Charge AC A: HH] DFU** Charge Roller AC Current Adjustment for HH (Color)		
	Displays/sets the AC current target of the charge roller for HH environment (High temperature and High humidity).		
001	Environmental Target: Bk	*ENG	[0 to 3000 / **860** / 10 µA/step]
002	Environmental Target: C	*ENG	
003	Environmental Target: M	*ENG	[0 to 3000 / **840** / 10 µA/step]
004	Environmental Target: Y	*ENG	[0 to 3000 / **940** / 10 µA/step]

2012	**[Charge Output Control] DFU**

001	AC Voltage	*ENG	Selects the AC voltage control type. [0 or 1 / **0** / 1 /step] 0: Process control 1: Manual control (AC voltages are decided with SP2006.)

2013	**[Envir. Correct:PCU]**		
001	Envir. Range:FC:Display	*ENG	Displays the environmental condition, which is measured in absolute humidity. [1 to 5 / – / 1 /step] 1: LL (LL <= 4.3 g/m^3) 2: ML (4.3 < ML <= 11.3 g/m^3) 3: MM (11.3 < MM <= 18.0 g/m^3) 4: MH (18.0 < MH <= 24.0 g/m^3) 5: HH (24.0 g/m^3 < HH)
002	Forced Setting	*ENG	Selects the environmental condition manually. **DFU** [0 to 5 / **0** / 1 /step] 0: The environmental condition is determined automatically. 1: LL, 2: ML, 3: MM, 4: MH, 5: HH
003	Absolute Humidity: Thresh 1	*ENG	Changes the humidity threshold between LL and ML. **DFU** [0 to 100 / **4.3** / 0.01 g/m^3/step]
004	Absolute Humidity: Thresh 2	*ENG	Changes the humidity threshold between ML and MM. **DFU** [0 to 100 / **11.3** / 0.01 g/m^3/step]
005	Absolute Humidity: Thresh 3	*ENG	Changes the humidity threshold between MM and MH. **DFU** [0 to 100 / **18.0** / 0.01 g/m^3/step]
006	Absolute Humidity: Thresh 4	*ENG	Changes the humidity threshold between MH and HH. **DFU** [0 to 100 / **24.0** / 0.01 g/m^3/step]

007	Current Temp.: Display	*ENG	Displays the current temperature. [0 to 100 / **0** / 1 deg/step]
008	Relative Humidity: Display	*ENG	Displays the current relative humidity. [0 to 100 / **0** / 1%RH/step]
009	Absolute Humidity: Display	*ENG	Displays the absolute humidity. [0 to 100 / **0** / 0.01 g/m^3/step]
010	Envir. Range:Bk:Display	*ENG	Displays the previous environmental condition, which is measured in absolute humidity. [1 to 5 / – / 1 /step] 1: LL, 2: ML, 3: MM, 4: MH, 5: HH
011	Previous Temp.: Display	*ENG	Displays the previous temperature. [0 to 100 / **0** / 1 deg/step]
012	Relative Humidity: Display	*ENG	Displays the previous relative humidity. [0 to 100 / **0** / 1%RH/step]
013	Absolute Humidity: Display	*ENG	Displays the previous absolute humidity. [0 to 100 / **0** / 0.01 g/m^3/step]

2014	[Charge AC Control: Setting] DFU		
001	Main Interval: Power ON	*ENG	[0 to 2000 / **500** / 1 page/step]
002	Main Interval: Print	*ENG	
003	Sub: Interval	*ENG	[0 to 500 / **10** / 1 page/step]
004	Sub:Thresh Temp	*ENG	[0 to 99 / **25** / 1 deg/step]
005	Sub:R-Humid Thresh	*ENG	[0 to 99 / **50** / 1 %RH/step]
006	Sub:A-Humid Thresh	*ENG	[0 to 99 / **12** / 1 g/m^3/step]
007	Main:Temp Change Thresh	*ENG	[0 to 99 / **10** / 1 deg/step]
008	Main:RH Change Thresh	*ENG	[0 to 99 / **50** / 1 %RH/step]
009	Main:AH Change Thresh	*ENG	[0 to 99 / **6** / 1 g/m^3/step]
010	Sub:Temp Change Thresh	*ENG	[0 to 20 / **1** / 0.1 deg/step]

011	Sub:RH Change Thresh	*ENG	[0 to 50 / **5** / 1 %RH/step]
012	Sub:AH Change Thresh	*ENG	[0 to 20 / **1** / 0.1 g/m^3/step]
013	Non-use Time	*ENG	[0 to 1440 / **360** / 10 min/step]
014	Correction Coeff.	*ENG	[0 to 2 / **1** / 0.01 kV/mA/step]

2015	[Charge AC Adj: Result]		
001	Bk	*ENG	[0 to 9 / **0** / 1 /step]
002	C	*ENG	
003	M	*ENG	
004	Y	*ENG	

2101	[Color Regist Adjust]		
	These values are the parameters for the automatic line position adjustment and are adjusted at the factory. However, you must input a value for SP2101-001 after replacing the laser optics housing unit. For details, see "Laser Optics Housing Unit" in the "Replacement and Adjustment" section. The value should be provided with the new laser optics housing unit.		
001	Bk: Main Scan: Dot	*ENG	[–512 to 511 / **0** / 1 dot/step]
002	C Main Scan: Dot	*ENG	
003	M Main Scan: Dot	*ENG	
004	Y Main Scan: Dot	*ENG	
013	Bk: Sub Scan: Line	*ENG	[–16384 to 16383 / **0** / 1 line/step]
014	C: Sub Scan: Line	*ENG	
015	M: Sub Scan: Line	*ENG	
016	Y: Sub Scan: Line	*ENG	

2102	[Magnification Adjust] DFU
	These values are the parameters for the automatic line position adjustment and are adjusted at the factory. These SPs must be input only when a new laser unit is installed.

001	Main Mag.: Bk:High Spd	*ENG	[0 to 560 / **280** / 1 /step]
003	Main Mag.: Bk:Low Spd	*ENG	
004	Main Mag.: C:High Spd	*ENG	
006	Main Mag.: C:Low Spd	*ENG	
007	Main Mag.: M:High Spd	*ENG	
009	Main Mag.: M:Low Spd	*ENG	
010	Main Mag.: Y:High Spd	*ENG	
012	Main Mag.: Y:Low Spd	*ENG	

2103	**[Erase Margin Adjust]** (Area, Paper Size)		
	Adjusts the erase margin by deleting image data at the margins.		
001	Lead Edge	*ENG	[0 to 9.9 / **4.2** / 0.1 mm/step]
002	Trailing Edge	*ENG	
003	Left	*ENG	[0 to 9.9 / **2** / 0.1 mm/step]
004	Right	*ENG	

2104	**[LD Initial Power Adjust]**		
	Adjusts the LD initial power. These SPs must be input only when a new laser unit is installed.		
001	Bk	*ENG	[80 to 120 / **100** / 1 %/step]
002	C	*ENG	
003	M	*ENG	
004	Y	*ENG	

2105	**[LD Power Adjust] DFU** (Process Speed, Color)
	Adjusts the LD power of each color for each process speed. Each LD power setting is decided by process control. High Speed: 120 mm/sec,Low Speed: 60 mm/sec

001	Bk: High Speed	*ENG	[50 to 120 / **100** / 1%/step] Decreasing a value makes lines thinner on the output. Increasing a value makes lines thicker on the output.
002	C: High Speed	*ENG	
003	M: High Speed	*ENG	
004	Y: High Speed	*ENG	
009	Bk: Low Speed	*ENG	
010	C: Low Speed	*ENG	
011	M: Low Speed	*ENG	
012	Y: Low Speed	*ENG	

2106	**[Polygon Rotation Time] DFU**		
	Adjusts the time of the polygon motor rotation.		
001	Warming-Up	*ENG	[0 to 60 / **10** / 1 sec/step]
002	Job End	*ENG	

2107	**[Image Parameter]**		
	DFU		
001	Image Gamma Flag	*ENG	[0 or 1 / **1** / 1 /step]
002	Shading Correction Flag	*ENG	

2109	**[Test Pattern]**
	Generates the test pattern using "COPY Window" tab in the LCD.

003	Pattern Selection	-	[0 to 23 / **0** / 1/step]
	0 None 1: Vertical Line (1dot) 2: Vertical Line (2dot) 3: Horizontal (1dot) 4: Horizontal (2dot) 5: Grid Vertical Line 6: Grid Horizontal Line 7: Grid pattern Small 8: Grid pattern Large 9: Argyle Pattern Small 10: Argyle Pattern Large 11. Independent Pattern (1dot) 12. Independent Pattern (2dot) 13. Independent Pattern (4dot) 14. Trimming Area 16: Hound's Tooth Check (Horizontal) 17: Band (Horizontal) 18: Band (Vertical) 19: Checker Flag Pattern 20: Grayscale Vertical Margin 21: Grayscale Horizontal Margin 23: Full Dot Pattern		
005	Color Selection	-	Specifies the color for the test pattern. [1 to 4 / **1** / 1/step] 1: All colors, 2: Magenta, 3: Yellow, 4: Cyan
006	Density: Bk	-	Specifies the color density for the test pattern. [0 to 15 / **15** / 1 /step] 0: Lightest density 15: Darkest density
007	Density: C	-	
008	Density: M	-	
009	Density: Y	-	

2111	**[Line Pos. Ajust]**		
001	Execute: Mode a	-	Executes the fine line position adjustment twice. If this SP is not completed (NG is displayed), do SP2111-003 first and then try this SP again.
002	Execute:Mode b	-	Executes the fine line position adjustment once. If this SP is not completed, do SP2111-003 first and then try this SP again.

003	Execute:Mode c	-	Executes the rough line position adjustment once. After doing this SP, make sure to execute SP2111-001 or -002. Otherwise, the line position adjustment is not perfectly done.

2112	**[TM/P Sensor Test]** ID Sensor Check **FA**		
001	Execute		This SP is used to check the ID sensors at the factory. The results of this SP are displayed in SP2140 to SP2145.

2117	**[Skew Adjustment]**		
	Specifies a skew adjustment value for the skew motor M, C or Y. These SPs must be used when a new laser optics housing unit is installed, see “Laser Optics Housing Unit” in the "Replacement and Adjustment" section.		
001	Pulse: C	*ENG	[–75 to 75 / **0** / 1 pulse/step]
002	Pulse: M	*ENG	
003	Pulse: Y	*ENG	

2118	**[Skew Adjustment]**		
001	Execute: C	*ENG	Changes the current skew adjustment values to the values specified with SP2117. These SPs must be used when a new laser optics housing unit is installed. For details, see “Laser Optics Housing Unit” in the "Replacement and Adjustment" section.
002	Execute: M	*ENG	
003	Execute: Y	*ENG	

2119	**[Skew Adjustment Display]**		
	Displays the current skew adjustment value for each skew motor.		
001	C	*ENG	[–75 to 75 / **0** / 1 pulse/step]
002	M	*ENG	
003	Y	*ENG	

2140	**[P-Sensor Test]**		
	Displays the maximum result values of the ID sensor check. Front, Center, Rear: ID sensors for the automatic line position adjustment and the process control		
001	PWM	*ENG	[0 to 1024 / **0** / 1/step]
[TM-Sensor Test]			
005	PWM: Front	*ENG	
006	PWM: Center	*ENG	
007	PWM: Rear	*ENG	

2141	**[P-Sensor Test]**		
	Displays the maximum result values of the ID sensor check. Front, Center, Rear: ID sensors for the automatic line position adjustment and the process control		
001	Average	*ENG	[0 to 5.5 / **0** / 0.01V/step]
[TM-Sensor Test]			
005	Average: Front	*ENG	
006	Average: Center	*ENG	
007	Average: Rear	*ENG	

2142	**[P-Sensor Test]**
	Displays the maximum result values of the ID sensor check. Front, Center, Rear: ID sensors for the automatic line position adjustment and the process control

001	Maximum	*ENG	[0 to 5.5 / **0** / 0.01V/step]
[TM-Sensor Test]			
005	Maximum: Front	*ENG	
006	Maximum: Center	*ENG	
007	Maximum: Rear	*ENG	

2143	**[P-Sensor Test]**		
	Displays the minimum result values of the ID sensor check. Front, Center, Rear: ID sensors for the automatic line position adjustment and the process control		
001	Minimum	*ENG	[0 to 5.5 / **0** / 0.01V/step]
[TM-Sensor Test]			
005	Minimum: Front	*ENG	
006	Minimum: Center	*ENG	
007	Minimum: Rear	*ENG	

2144	**[P-Sensor Test]**		
	Displays the maximum result 2 values of the ID sensor check. Front, Center, Rear: ID sensors for the automatic line position adjustment and the process control		
001	Maximum 2:	*ENG	[0 to 5.5 / **0** / 0.01V/step]
[TM-Sensor Test]			
005	Maximum 2: Front	*ENG	
006	Maximum 2: Center	*ENG	
007	Maximum 2: Rear	*ENG	

2145	**[P-Sensor Test]**		
	Displays the minimum result 2 values of the ID sensor check. Front, Center, Rear: ID sensors for the automatic line position adjustment and the process control		
001	Minimum 2	*ENG	[0 to 5.5 / **0** / 0.01V/step]
[TM-Sensor Test]			
005	Minimum 2: Front	*ENG	
006	Minimum 2: Center	*ENG	
007	Minimum 2: Rear	*ENG	

2150	**[Area Mag. Correction]** LD Pulse Area Correction (Color, Area) **FA**		
	Adjusts the magnification for each area. The main scan (297 mm) is divided into 8 areas. Area 1 is at the front side of the machine (left side of the image) and area 8 is at the rear side of the machine (right side of the image). Decreasing a value makes the image shift to the left side on the print. Increasing a value makes the image shift to the right side on the print. 1 pulse = 1/16 dot		
027	Bk: Area0	*ENG	[-256 to 255 / **0** / 1sub-dot/step]
028	Bk: Area1	*ENG	Adjusts the area magnification for LD 0. [–256 to 255 / **0** / 1 sub-dot/step]
029	Bk: Area2	*ENG	
030	Bk: Area3	*ENG	
031	Bk: Area4	*ENG	
032	Bk: Area5	*ENG	
033	Bk: Area6	*ENG	
034	Bk: Area7	*ENG	
035	Bk: Area8	*ENG	
079	C: Area0	*ENG	[-256 to 255 / **0** / 1sub-dot/step]

080	C: Area1	*ENG	Adjusts the area magnification for LD 0. [–255 to 255 / **0** / 1 sub-dot/step]
081	C: Area2	*ENG	
082	C: Area3	*ENG	
083	C: Area4	*ENG	
084	C: Area5	*ENG	
085	C: Area6	*ENG	
086	C: Area7	*ENG	
087	C: Area8	*ENG	
131	M: Area0	*ENG	[-256 to 255 / **0** / 1sub-dot/step]
132	M: Area1	*ENG	Adjusts the area magnification for LD 0. [–256 to 255 / **0** / 1 sub-dot/step]
133	M: Area2	*ENG	
134	M: Area3	*ENG	
135	M: Area4	*ENG	
136	M: Area5	*ENG	
137	M: Area6	*ENG	
138	M: Area7	*ENG	
139	M: Area8	*ENG	
183	Y: Area0	*ENG	[–256 to 255 / **0** / 1 sub-dot/step]
184	Y: Area1	*ENG	Adjusts the area magnification for LD 0. [–256 to 255 / **0** / 1 sub-dot/step]
185	Y: Area2	*ENG	
186	Y: Area3	*ENG	
187	Y: Area4	*ENG	
188	Y: Area5	*ENG	
189	Y: Area6	*ENG	
190	Y: Area7	*ENG	
191	Y: Area8	*ENG	

2152	**[Shading Correct Setting] FA** Adjusts the area correction value for each LD power. The main scan is divided into 16 areas. However, the image areas are limited from area 1 to area 14. For BK and Magenta, area 1 is at the rear side of the machine (left side of the image) and area 14 is at the front side of the machine (right side of the image). For Cyan and Yellow, area 1 is at the front side of the machine (right side of the image) and area 14 is at the rear side of the machine (left side of the image).		
001	Bk: Area 0	*ENG	This is for the synchronizing detection board. [50 to 150 / **100** / 1 %/step]
002	Bk: Area 1	*ENG	
003	Bk: Area 2	*ENG	
004	Bk: Area 3	*ENG	
005	Bk: Area 4	*ENG	
006	Bk: Area 5	*ENG	
007	Bk: Area 6	*ENG	
008	Bk: Area 7	*ENG	
009	Bk: Area 8	*ENG	
010	Bk: Area 9	*ENG	
011	Bk: Area 10	*ENG	
012	Bk: Area 11	*ENG	
013	Bk: Area 12	*ENG	
014	Bk: Area 13	*ENG	
015	Bk: Area 14	*ENG	
016	Bk: Area 15	*ENG	This is out of the image area. [50 to 150 / **100** / 1 %/step]

033	C: Area 0	*ENG	This is for the synchronizing detection board. [50 to 150 / **100** / 1 %/step]
034	C: Area 1	*ENG	
035	C: Area 2	*ENG	
036	C: Area 3	*ENG	
037	C: Area 4	*ENG	
038	C: Area 5	*ENG	
039	C: Area 6	*ENG	
040	C: Area 7	*ENG	
041	C: Area 8	*ENG	
042	C: Area 9	*ENG	
043	C: Area 10	*ENG	
044	C: Area 11	*ENG	
045	C: Area 12	*ENG	
046	C: Area 13	*ENG	
047	C: Area 14	*ENG	
048	C: Area 15	*ENG	This is out of the image area. [50 to 150 / **100** / 1 %/step]
065	M: Area 0	*ENG	This is for the synchronizing detection board. [50 to 150 / **100** / 1 %/step]

066	M: Area 1	*ENG	[50 to 150 / **100** / 1 %/step]
067	M: Area 2	*ENG	
068	M: Area 3	*ENG	
069	M: Area 4	*ENG	
070	M: Area 5	*ENG	
071	M: Area 6	*ENG	
072	M: Area 7	*ENG	
073	M: Area 8	*ENG	
074	M: Area 9	*ENG	
075	M: Area 10	*ENG	
076	M: Area 11	*ENG	
077	M: Area 12	*ENG	
078	M: Area 13	*ENG	
079	M: Area 14	*ENG	
080	M: Area 15	*ENG	This is out of the image area. [50 to 150 / **100** / 1 %/step]
097	Y: Area 0	*ENG	This is for the synchronizing detection board. [50 to 150 / **100** / 1 %/step]

098	Y: Area 1	*ENG	[50 to 150 / **100** / 1 %/step]
099	Y: Area 2	*ENG	
100	Y: Area 3	*ENG	
101	Y: Area 4	*ENG	
102	Y: Area 5	*ENG	
103	Y: Area 6	*ENG	
104	Y: Area 7	*ENG	
105	Y: Area 8	*ENG	
106	Y: Area 9	*ENG	
107	Y: Area 10	*ENG	
108	Y: Area 11	*ENG	
109	Y: Area 12	*ENG	
110	Y: Area 13	*ENG	
111	Y: Area 14	*ENG	
112	Y: Area 15	*ENG	This is out of the image area.

2160	**[Vertical Line Width] DFU**		
001	600dpi:Bk	*ENG	[10 to 15 / **15** / 1 /step]
002	600dpi:C	*ENG	
003	600dpi:M	*ENG	
004	600dpi:Y	*ENG	
005	1200dpi:Bk	*ENG	
006	1200dpi:C	*ENG	
007	1200dpi:M	*ENG	
008	1200dpi:Y	*ENG	

2180	**[Line Pos. Adj. Clear] DFU**

001	Color Regist.	-	
003	MUSIC Result	-	
004	Area Mag. Correction	-	

2181	[Line Pos. Adj. Result] DFU		
	Displays the values for each correction. • "Paper Int. Mag: Subdot" indicates the magnification correction value between two sheets of paper. • "Mag.Cor. Subdot" indicates the magnification correction value. • "M. Scan Erro." indicates the shift correction value in the main scan direction. • "S. Scan Erro." Indicates the shift correction value in the sub scan direction. • "M. Cor.: Dot" indicates the dot correction value in the main scan direction. • "M. Cor.: Subdot" indicates the sub dot correction value in the main scan direction. • Bk: Black, M: Magenta, C: Cyan, Y: Yellow		
001	Paper Int. Mag: Subdot: Bk	*ENG	[–32768 to 32767 / **0** / 1 pulse/step]
002	Mag.Cor. Subdot: Bk	*ENG	[–32768 to 32767 / **0** / 1 pulse/step]
003	Skew: C	*ENG	[–5000 to 5000 / **0** / 0.001 um/step]
004	Bent: C	*ENG	
005	M. Scan Shift: Left: C	*ENG	
006	M. Scan Shift: Center: C	*ENG	
007	M. Scan Shift: RIght: C	*ENG	
008	S. Scan Shift: Left: C	*ENG	
009	S. Scan Shift: Center: C	*ENG	
010	S. Scan Shift: RIght: C	*ENG	
011	M. Cor.: Dot: C	*ENG	[–512 to 511 / **0** / 1 dot/step]
012	M. Cor.: Subdot: C	*ENG	[–15 to 15 / **0** / 1 pulse/step]

013	Paper Int. Mag: Subdot: C	*ENG	[–32768 to 32767 / 0 / 1 pulse/step]
014	Mag.Cor. Subdot: C	*ENG	
015	M. Left Mag.: Subdot: C	*ENG	
016	M. Right Mag.: Subdot: C	*ENG	
017	S. Cor.: 600 Line: C	*ENG	[–16384 to 16383 / **0** / 1 line/step]
018	S. Cor.: 600 Subdot: C	*ENG	[–1 to 1 / **0** / 0.001 line/step]
019	S. Cor.: 1200 Line: C	*ENG	[–16384 to 16383 / **0** / 1 line/step]
020	S. Cor.: 1200 Subdot: C	*ENG	[–1 to 1 / **0** / 0.001 line/step]
021	Skew: M	*ENG	[–5000 to 5000 / **0** / 0.001 um/step]
022	Bent: M	*ENG	
023	M. Scan Shift: Left: M	*ENG	
024	M. Scan Shift: Center: M	*ENG	
025	M. Scan Shift: Right: M	*ENG	
026	S. Scan Shift: Left: M	*ENG	
027	S. Scan Shift: Center: M	*ENG	
028	S. Scan Shift: Right: M	*ENG	
029	M. Cor.: Dot: M	*ENG	[–512 to 511 / **0** / 1 dot/step]
030	M. Cor.: Subdot: M	*ENG	[–15 to 15 / **0** / 1 pulse/step]
031	Paper Int. Mag: Subdot: M	*ENG	[–32768 to 32767 / **0** / 1 pulse/step]
032	Mag.Cor. Subdot: M	*ENG	
033	M. Left Mag.: Subdot: M	*ENG	
034	M. Right Mag.: Subdot: M	*ENG	
035	S. Cor.: 600 Line: M	*ENG	[–16384 to 16383 / **0** / 1 line/step]
036	S. Cor.: 600 Subdot: M	*ENG	[–1 to 1 / **0** / 0.001 line/step]
037	S. Cor.: 1200 Line: M	*ENG	[–16384 to 16383 / **0** / 1 line/step]
038	S. Cor.: 1200 Subdot: M	*ENG	[–1 to 1 / **0** / 0.001 line/step]

039	Skew: Y	*ENG	[–5000 to 5000 / **0** / 0.001 um/step]
040	Bent: Y	*ENG	
041	M. Scan Shift: Left: Y	*ENG	
042	M. Scan Shift: Center: Y	*ENG	
043	M. Scan Shift: Right: Y	*ENG	
044	S. Scan Shift: Left: Y	*ENG	
045	S. Scan Shift: Center: Y	*ENG	
046	S. Scan Shift: Right: Y	*ENG	
047	M. Cor.: Dot: Y	*ENG	[–512 to 511 / **0** / 1 dot/step]
048	M. Cor.: Subdot: Y	*ENG	[–15 to 15 / **0** / 1 pulse/step]
049	Paper Int. Mag: Subdot: Y	*ENG	[–32768 to 32767 / **0** / 1 pulse/step]
050	Mag.Cor. Subdot: Y	*ENG	
051	M. Left Mag.: Subdot: Y	*ENG	
052	M. Right Mag.: Subdot: Y	*ENG	
053	S. Cor.: 600 Line: Y	*ENG	[–16384 to 16383 / **0** / 1 line/step]
054	S. Cor.: 600 Subdot: Y	*ENG	[–1 to 1 / **0** / 0.001 line/step]
055	S. Cor.: 1200 Line: Y	*ENG	[–16384 to 16383 / **0** / 1 line/step]
056	S. Cor.: 1200 Subdot: Y	*ENG	[–1 to 1 / **0** / 0.001 line/step]
057	S. Cor.: 600 Subdot	*ENG	[–1 to 1 / **0** / 0.001 line/step]
058	Drum Cor.:600:Subdot	*ENG	[–7 to 7 / **0** / 1 /step]
059	S. Cor.:1200 Subdot	*ENG	[–1 to 1 / **0** / 0.001 line/step]
060	Drum Cor.:1200:Subdot	*ENG	[–7 to 7 / **0** / 1 /step]

2182	**[Line Pos. Adj. Offset] DFU** (Color) M. Scan: Main scan, S. Scan: Sub-scan High / Medium: 120 mm/sec, Low: 60 mm/sec

001	C Magnification	*ENG	Adjusts the line position manually. [-1 to 1 / **0** / 0.001%/step] When line shifts are not corrected by the automatic line position adjustment, do this SP. Increasing a value reduces the image in the main scan direction. Decreasing a value enlarges the image in the main scan direction.
002	M Magnification	*ENG	
003	Y Magnification	*ENG	
004	M. Scan: High: Dot: C	*ENG	[-512 to 511 / **0** / 1 dot/step]
005	M. Scan: High: Subdot: C	*ENG	[-15 to 15 / **0** / 1 pulse/step]
008	M. Scan: Low: Dot: C	*ENG	[-512 to 511 / **0** / 1 dot/step]
009	M. Scan: Low: Subdot: C	*ENG	[-15 to 15 / **0** / 1 pulse/step]
010	M. Scan: High: Dot: M	*ENG	[-512 to 511 / **0** / 1 dot/step]
011	M. Scan: High: Subdot: M	*ENG	[-15 to 15 / **0** / 1 pulse/step]
014	M. Scan: Low: Dot: M	*ENG	[-512 to 511 / **0** / 1 dot/step]
015	M. Scan: Low: Subdot: M	*ENG	[-15 to 15 / **0** / 1 pulse/step]
016	M. Scan: High: Dot: Y	*ENG	[-512 to 511 / **0** / 1 dot/step]
017	M. Scan: High: Subdot: Y	*ENG	[-15 to 15 / **0** / 1 pulse/step]
020	M. Scan: Low: Dot: Y	*ENG	[-512 to 511 / **0** / 1 dot/step]
021	M. Scan: Low: Subdot: Y	*ENG	[-15 to 15 / **0** / 1 pulse/step]
022	S. Scan: High: Dot: C	*ENG	[-16384 to 16383 / **0** / 1 line]
023	S. Scan: High: Subdot: C	*ENG	[–1 to 1 / **0** / 0.001 /line]
026	S. Scan: Low: Dot: C	*ENG	[-16384 to 16383 / **0** / 1 line]
027	S. Scan: Low: Subdot: C	*ENG	[–1 to 1 / **0** / 0.001 /line]
028	S. Scan: High: Dot: M	*ENG	[-16384 to 16383 / **0** / 1 line]
029	S. Scan: High: Subdot: M	*ENG	[–1 to 1 / **0** / 0.001 /line]
032	S. Scan: Low: Dot: M	*ENG	[-16384 to 16383 / **0** / 1 line]

033	S. Scan: Low: Subdot: M	*ENG	[–1 to 1 / **0** / 0.001 /line]
034	S. Scan: High: Dot: Y	*ENG	[-16384 to 16383 / **0** / 1 line]
035	S. Scan: High: Subdot: Y	*ENG	[–1 to 1 / **0** / 0.001 /line]
038	S. Scan: Low: Dot: Y	*ENG	[-16384 to 16383 / **0** / 1 line]
039	S. Scan: Low: Subdot: Y	*ENG	[–1 to 1 / **0** / 0.001 /line]
040	C:Skew	*ENG	[-50 to 50 / **0** / 1um]
041	M:Skew	*ENG	
042	Y:Skew	*ENG	

2190	**[Line Pos. Adj. Mode] DFU**		
001	Paper Int. Mag.: Subdot: Bk	*ENG	[0 or 1 / **1** / 1 boolean/step]
002	Paper Int. Mag.: Subdot: C	*ENG	
003	Paper Int. Mag.: Subdot: M	*ENG	
004	Paper Int. Mag.: Subdot: Y	*ENG	
005	M. Scan Mag.: Subdot: C	*ENG	[0 or 1 / **1** / 1 boolean /step] 0: Disable correction 1: Enable correction
006	M. Scan Mag.: Subdot: M	*ENG	
007	M. Scan Mag.: Subdot: Y	*ENG	
008	Area Mag.: Subdot: C	*ENG	[0 or 1 / **1** / 1 boolean /step]
009	Area Mag.: Subdot: M	*ENG	
010	Area Mag.: Subdot: Y	*ENG	
011	S. Scan Cor. Setting	*ENG	[0 or 1 / **0** / 1 boolean /step] 0: Adjusted with Bk 1: Adjusted in minimum shift among four colors

2191	**[MUSIC Coeff Setting] DFU** Position Adjustment: Coefficient Setting ch 0: ID sensor at rear, ch 1: ID sensor at center, ch 2: ID sensor at front

001	ch 0: Filter: Front: a1	*ENG	[–131071 to 131071 / **125869** / 1 bit/step]
002	ch 0: Filter: Front: a2	*ENG	[–131071 to 131071 / **–60488** / 1 bit/step]
003	ch 0: Filter: Front: b0	*ENG	[–131071 to 131071 / **39** / 1 bit/step]
004	ch 0: Filter: Front: b1	*ENG	[–131071 to 131071 / **77** / 1 bit/step]
005	ch 0: Filter: Front: b2	*ENG	[–131071 to 131071 / **39** / 1 bit/step]
006	ch 0: Filter: Rear: a1	*ENG	[–131071 to 131071 / **128596** / 1 bit/step]
007	ch 0: Filter: Rear: a2	*ENG	[–131071 to 131071 / **–63398** / 1 bit/step]
008	ch 0: Filter: Rear: b0	*ENG	[–131071 to 131071 / **84** / 1 bit/step]
009	ch 0: Filter: Rear: b1	*ENG	[–131071 to 131071 / **168** / 1 bit/step]
010	ch 0: Filter: Rear: b2	*ENG	[–131071 to 131071 / **84** / 1 bit/step]
011	ch 1: Filter: Front: a1	*ENG	[–131071 to 131071 / **125869** / 1 bit/step]
012	ch 1: Filter: Front: a2	*ENG	[–131071 to 131071 / **–60488** / 1 bit/step]
013	ch 1: Filter: Front: b0	*ENG	[–131071 to 131071 / **39** / 1 bit/step]
014	ch 1: Filter: Front: b1	*ENG	[–131071 to 131071 / **77** / 1 bit/step]
015	ch 1: Filter: Front: b2	*ENG	[–131071 to 131071 / **39** / 1 bit/step]
016	ch 1: Filter: Rear: a1	*ENG	[–131071 to 131071 / **128596** / 1 bit/step]
017	ch 1: Filter: Rear: a2	*ENG	[–131071 to 131071 / **–63398** / 1 bit/step]
018	ch 1: Filter: Rear: b0	*ENG	[–131071 to 131071 / **84** / 1 bit/step]
019	ch 1: Filter: Rear: b1	*ENG	[–131071 to 131071 / **168** / 1 bit/step]
020	ch 1: Filter: Rear: b2	*ENG	[–131071 to 131071 / **84** / 1 bit/step]
021	ch 2: Filter: Front: a1	*ENG	[–131071 to 131071 / **125869** / 1 bit/step]
022	ch 2: Filter: Front: a2	*ENG	[–131071 to 131071 / **–60488** / 1 bit/step]
023	ch 2: Filter: Front: b0	*ENG	[–131071 to 131071 / **39** / 1 bit/step]
024	ch 2: Filter: Front: b1	*ENG	[–131071 to 131071 / **77** / 1 bit/step]
025	ch 2: Filter: Front: b2	*ENG	[–131071 to 131071 / **39** / 1 bit/step]
026	ch 2: Filter: Rear: a1	*ENG	[–131071 to 131071 / **128596** / 1 bit/step]

027	ch 2: Filter: Rear: a2	*ENG	[–131071 to 131071 / **–63398** / 1 bit/step]
028	ch 2: Filter: Rear: b0	*ENG	[–131071 to 131071 / **84** / 1 bit/step]
029	ch 2: Filter: Rear: b1	*ENG	[–131071 to 131071 / **168** / 1 bit/step]
030	ch 2: Filter: Rear: b2	*ENG	[–131071 to 131071 / **84** / 1 bit/step]
031	Q Format Selection	*ENG	[0 to 3 / **3** / 1/step]

2192	**[MUSIC Coeff Setting] DFU** Line Position Adjustment: Threshold Setting ch 0: ID sensor at rear, ch 1: ID sensor at center, ch 2: ID sensor at front		
001	ch 0: 1st	*ENG	[0.5 to 3 / **1.4** / 0.1 V/step]
002	ch 0: 2nd	*ENG	
003	ch 0: 3rd	*ENG	
004	ch 0: 4th	*ENG	
005	ch 1: 1st	*ENG	
006	ch 1: 2nd	*ENG	
007	ch 1: 3rd	*ENG	
008	ch 1: 4th	*ENG	
009	ch 2: 1st	*ENG	
010	ch 2: 2nd	*ENG	
011	ch 2: 3rd	*ENG	
012	ch 2: 4th	*ENG	

2193	**[MUSIC Condition] DFU** Line Position Adjustment: Condition Setting		
001	Auto Execution	*ENG	[0 or 1 / **1** / 1] 0: OFF, 1: ON
	Enables/disables the automatic line position adjustment.		

002	Page: Job End: BW+FC	*ENG	[0 to 999 / **500** / 1 page/step]
	Adjusts the threshold of the line position adjustment for BW and color printing mode after job end.		
003	Page: Job End: FC	*ENG	[0 to 999 / **200** / 1 page/step]
	Adjusts the threshold of the line position adjustment for color printing mode after job end.		
004	Page: Interrupt: BW+FC	*ENG	[0 to 999 / **200** / 1 page/step]
	Adjusts the threshold of the line position adjustment for BW and color printing mode during job.		
005	Page: Interrupt: FC	*ENG	[0 to 999 / **200** / 1 page/step]
	Adjusts the threshold of the line position adjustment for color printing mode during jobs.		
006	Page: Standby: BW + FC	*ENG	[0 to 999 / **100** / 1 page/step]
	Adjusts the threshold of the line position adjustment for BW printing mode in stand-by mode. The line position adjustment is done when the number of outputs in BW printing mode reaches the value specified with this SP and the condition of SP2-193-008 or SP2-193-009 is satisfied.		
007	Page: Standby: FC	*ENG	[0 to 999 / **100** / 1 page/step]
	Adjusts the threshold of the line position adjustment for BW printing mode in stand-by mode. The line position adjustment is done when the number of outputs in color printing mode reaches the value specified with this SP and the condition of SP2-193-008 or SP2-193-009 is satisfied.		
008	Temp Change	*ENG	[0 to 100 / **5** / 1deg/step]
	Adjust the temperature change threshold for the line position adjustment (Mode b: adjustment once). The timing for line position adjustment depends on the combinations of several conditions. Section Descriptions" section.		
009	Elapse Time	*ENG	[1 to 1440 / **300** / 1 minute/step]
	Adjust the time threshold for the line position adjustment (Mode b: adjustment once). The timing for line position adjustment depends on the combinations of several conditions.		
011	Temp Change 2	*ENG	[0 to 100 / **10** / 1deg/step]
	Adjust the temperature change threshold for the line position adjustment (Mode a: adjustment twice). The timing for line position adjustment depends on the combinations of several conditions.		

016	Page: Power ON:BW+FC	*ENG	[0 to 999 / **200** / 1 page/step]

2194	**[MUSIC Exe Result]** Line Position Adjustment: Execution Result		
001	Year	*ENG	[0 to 99 / **0** / 1 year/step]
002	Month	*ENG	[1 to 12 / **1** / 1 month/step]
003	Date	*ENG	[1 to 31 / **1** / 1 day/step]
004	Hour	*ENG	[0 to 23 / **0** / 1 hour/step]
005	Minute	*ENG	[0 to 59 / **0** / 1 minute/step]
006	Temperature	*ENG	[0 to 100 / **0** / 1 deg/step]
007	Execution Result	*ENG	[0 or 1 / **0** / 1 /step] 0: Completed successfully, 1: Failed
008	Number of Execution	*ENG	[0 to 999999 / **0** / 1 times/step]
009	Number of Failure	*ENG	[0 to 999999 / **0** / 1 times/step]
010	Error Counter: C	*ENG	[0 to 9 / **0** / 1 /step] 0: Not done 1: Completed successfully 2: Cannot detect patterns 3: Fewer lines on the pattern than the target 4: Out of the adjustment range 5 to 9: Not used
011	Error Counter: M	*ENG	
012	Error Counter: Y	*ENG	

2197	**[MUSIC Exe Time]**		
	DFU		
001	Execution Time	*ENG	[10 to 40 / **20** / 10ms/step]
002	TM Sensor Position	*ENG	[48.2 to 500 / **48.2** / 0.1mm/step]

2198	**[Music A/D Interval] DFU**		
001	ADC Trigger	*ENG	[7.5 to 20 / **10** / 0.1 µs/step]

2199	[Music Time Setting] DFU		
001	Error Time Set	*ENG	[0.1 to 9.9 / **4** / 0.1 sec /step]

2220	[Skew Origin Set]		
	Resets the value of the skew adjustment motor for each color. These SPs must be executed when a new laser optics housing unit is installed. For details, see "Laser Unit" in the "Replacement and Adjustment" section.		
001	C:Skew Motor	*ENG	-
002	M:Skew Motor	*ENG	
003	Y:Skew Motor	*ENG	

2221	[LD Power: Fixed] DFU		
	Adjusts the fixed LD power for each line speed and color. These SPs are activated only when SP3-041-002 is set to "0". Normal: 120 mm/sec, Low: 60 mm/sec		
001	Bk:Normal Spd	*ENG	[0 to 200 / **100** / 1%/step] Increasing this value makes the image density darker.
002	C:Normal Spd	*ENG	
003	M:Normal Spd	*ENG	
004	Y:Normal Spd	*ENG	
009	Bk:Low Spd	*ENG	
010	C:Low Spd	*ENG	
011	M:Low Spd	*ENG	
012	Y:Low Spd	*ENG	

2229	**[Dev. DC Bias:Fixed] DFU** Development DC Bias Adjustment		
	Adjusts the development bias. Development bias is automatically adjusted during process control; therefore, adjusting these settings has no effect while Process Control (SP3-041-001 Default: ON) is activated. After deactivating Process Control with SP3-041-001, the values in these SP modes are used for printing. Normal: 120 mm/sec, Low: 60 mm/sec		
001	Plain: Bk	*ENG	[0 to 800 / **450** / 10 –V/step]
002	Plain: M	*ENG	
003	Plain: C	*ENG	
004	Plain: Y	*ENG	
009	Thick 2: Bk	*ENG	
010	Thick 2: M	*ENG	
011	Thick 2: C	*ENG	
012	Thick 2: Y	*ENG	

2241	**[Ambient Temp/Hum:Display]**		
	Displays the environment temperature and humidity.		
001	Temperature	-	[–1280 to 1270 / - / 0.1deg/step]
002	Relative Humidity	-	[0 to 1000 / - / 0.1 %RH/step]
003	Absolute Humidity	-	[0 to 100 / - / 0.1 g/m^3/step]

2302	**[Env. Correct:Transfer] DFU** Environmental Correction: Image Transfer Belt Unit

002	Forced Setting	*ENG	[0 to 6 / **0** / 1 /step]
	Sets the environment condition manually. 0: Automatic environment control 1: LL (Low temperature/ Low humidity) 2: ML (Middle temperature/ Low humidity) 3: MM (Middle temperature/ Middle humidity) 4: MH (Middle temperature/ High humidity) 5: HH (High temperature/ High humidity) 6: SLL (Super low temperature/ low humidity)		
003	Absolute Humidity: Threshold 1	*ENG	[0 to 100 / **4** / 0.01 g/m^3/step]
	Adjusts the threshold value between LL and ML.		
004	Absolute Humidity: Threshold 2	*ENG	[0 to 100 / **8** / 0.01 g/m^3/step]
	Adjusts the threshold value between ML and MM.		
005	Absolute Humidity: Threshold 3	*ENG	[0 to 100 / **16** / 0.01 g/m^3/step]
	Adjusts the threshold value between MM and MH.		
006	Absolute Humidity: Threshold 4	*ENG	[0 to 100 / **24** / 0.01 g/m^3/step]
	Adjusts the threshold value between MH and HH.		
007	Temperature:Threshold	*ENG	[–5 to 30 / **5** / 1 deg/step]
	Adjusts the threshold temperature for SLL. If detected temperature is less than a value specified by this SP, SLL condition is determined regardless of humidity.		

2308	**[Paper Size Correction] DFU**		
	Adjusts the threshold value for the paper size correction.		
001	Threshold 1	*ENG	[0 to 350 / **290** / 1 mm/step] Threshold 1 ≤ paper: Paper is detected as "S1" size.
002	Threshold 2	*ENG	[0 to 350 / **250** / 1 mm/step] Threshold 2 ≤ paper ≤ Threshold 1: Paper is detected as "S2" size.

003	Threshold 3	*ENG	[0 to 350 / **194** / 1 mm/step] Threshold 3 ≤ paper ≤ Threshold 2: Paper is detected as "S3" size.
004	Threshold 4	*ENG	[0 to 350 / **150** / 1 mm/step] Threshold 4 ≤ paper ≤ Threshold 3: Paper is detected as "S4" size. Paper ≤ Threshold 4: Paper is detected as "S5" size.

2311	[Non Image Area: Bias] DFU		
001	Image Transfer	*ENG	Adjusts the bias of the image transfer belt between images. This value is added to the value of the image transfer belt bias. [10 to 250 / **100** / 5 %/step]
002	Paper Transfer	*ENG	Adjusts the bias of the paper transfer roller between images. [0 to 130 / **5** / 1 µA/step]

2316	[Power ON:Bias] DFU		
001	Image Transfer	*ENG	[0 to 60 / **5** / 1 µA /step]
	Adjusts the bias of the image transfer roller at power-on or a closed cover.		

2326	[Transfer Roller CL: Bias] DFU Transfer Roller Cleaning: Bias Adjustment		
001	Positive:befor and after JOB	*ENG	[0 to 2100 / **250** / 10 V /step]
	Adjusts the positive voltage of the paper transfer roller for cleaning the paper transfer roller.		
002	Negative:befor and after JOB	*ENG	[10 to 400 / **100** / 10 %/step]
	Adjusts the negative current of the paper transfer roller for cleaning the paper transfer roller.		

003	Positive:after JAM	*ENG	[0 to 2100 / **2000** / 10 V/step]
	Adjusts the negative current limit of the paper transfer roller for cleaning the paper transfer roller.		
004	Negative:after JAM	*ENG	[10 to 400 / **100** / 10 %/step]

2351	**[Common: BW: Bias]** Image Transfer Belt: B/W: Bias Adjustment Normal: 120 mm/sec, Low: 60 mm/sec		
001	Image Transfer:Normal Speed	*ENG	[0 to 60 / **25** / 1 µA]
	Adjusts the current for the image transfer belt in B/W mode for plain paper.		
003	Image Transfer:Low Speed	*ENG	[0 to 60 / **13** / 1 µA]
	Adjusts the current for the image transfer belt in B/W mode for thick 1 paper.		

2357	**[Common: FC: Bias] DFU** Image Transfer Belt: Full Color: Bias Adjustment Normal: 120 mm/sec, Low: 60 mm/sec		
001	Image Transfer: Normal Spd:Bk	*ENG	[0 to 60 / **23** / 1 µA]
	Adjusts the current for the image transfer belt for Black in full color mode for plain paper.		
002	Image Transfer:: Normal Spd:C	*ENG	[0 to 60 / **22** / 1 µA]
	Adjusts the current for the image transfer belt for Magenta in full color mode for plain paper.		
003	Image Transfer: Normal Spd:M	*ENG	[0 to 60 / **25** / 1 µA]
	Adjusts the current for the image transfer belt for Cyan in full color mode for plain paper.		
004	Image Transfer: Normal Spd:Y	*ENG	[0 to 60 / **29** / 1 µA]
	Adjusts the current for the image transfer belt for Yellow in full color mode for plain paper.		
009	Image Transfer: Low Speed:Bk	*ENG	[0 to 60 / **13** / 1 µA]
	Adjusts the current for the image transfer belt for Black in full color mode for thick 1 paper.		
010	Image Transfer: Low Speed:C	*ENG	[0 to 60 / **12** / 1 µA]
	Adjusts the current for the image transfer belt for Magenta in full color mode for thick 1 paper.		

011	Image Transfer: Low Speed:M	*ENG	[0 to 60 / **13** / 1 μA]
	Adjusts the current for the image transfer belt for Cyan in full color mode for thick 1 paper.		
012	Image Transfer: Low Speed:Y	*ENG	[0 to 60 / **14** / 1 μμA]
	Adjusts the current for the image transfer belt for Yellow in full color mode for thick 1 paper.		

2360	**[Common: BW Env. Correction Table] DFU**		
001	Image Transfer: Normal	*ENG	[1 to 50 / **42** / 1 /step]
003	Image Transfer: Low	*ENG	[1 to 50 / **38** / 1 /step]
[Common: FC Env. Correction Table] DFU			
004	Image Transfer: Normal Spd:BK	*ENG	[1 to 50 / **25** / 1 /step]
005	Image Transfer: Normal Spd: C	*ENG	[1 to 50 / **46** / 1 /step]
006	Image Transfer: Normal Spd:M	*ENG	[1 to 50 / **43** / 1 /step]
007	Image Transfer:: Normal Spd:Y	*ENG	[1 to 50 / **45** / 1 /step]
012	Image Transfer: Low Speed:Bk	*ENG	[1 to 50 / **26** / 1 /step]
013	Image Transfer: Low Speed:C	*ENG	[1 to 50 / **38** / 1 /step]
014	Image Transfer: Low Speed:M	*ENG	
015	Image Transfer: Low Speed:Y	*ENG	[1 to 50 / **45** / 1 /step]

2403	**Not used**		
001	-		-
002	-		
003	-		
004	-		

2407	**[Plain: Bias: FC]**
	Adjusts the current for the paper transfer roller for plain paper in full color mode. Normal: 120 mm/sec, Low: 60mm/sec

001	Paper Transfer: Normal: 1st	*ENG	[0 to 200 / **25** / 1 –μA /step]
002	Not used		-
003			
004			

2411	Not used
	-

2412	Not used
	-

2413	Not used
	-

2414	Not used
	-

2421	Not used
	-

2422	Not used
	-

2423	Not used
	-

2424	Not used
	-

2430	Not used

	-

2453	Not used
	-

2457	Not used
	-

2471	Not used
	-

2472	Not used
	-

2473	Not used
	-

2474	Not used
	-

2480	Not used
	-

2482	Not used
	-

2483	Not used
	-

2485	Not used

	-

2486	Not used
	-

2487	Not used
	-

2488	Not used
	-

2489	Not used
	-

2502	Not used
	-

2507	Not used
	-

2511	Not used
	-

2512	Not used
	-

2513	Not used
	-

2514	Not used
	-

2521	Not used
	-

2522	Not used
	-

2523	Not used
	-

2524	Not used
	-

2530	Not used
	-

2553	Not used
	-

2558	Not used
	-

2571	Not used
	-

2572	Not used
	-

2573	**Not used**
	-

2574	**Not used**
	-

2580	**Not used**
	-

2603	**[OHP: Bias: BW]**		
	Adjusts the current for the paper transfer roller for OHP in black-and-white mode.		
001	Paper Transfer	*ENG	[0 to 200 / NA: **15**, EU/AA: **13** / 1 –µA /step]

2608	**[OHP: Bias: FC]**		
	Adjusts the current for the paper transfer roller for OHP in full color mode.		
001	Paper Transfer	*ENG	[0 to 200 / NA: **24**, EU/AA: **20** / 1 –µA /step]

2621	**[OHP: L-Edge Correct] DFU** OHP: Leading Edge Correction		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2603 and SP2608 are multiplied by these SP values. **Note** • The paper leading edge area can be adjusted with SP2622.		
001	Paper Transfer	*ENG	[0 to 400 / **100** / 5%/step]

2622	**[OHP: Switch Timing: L-Edge] DFU**		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
001	Paper Transfer	*ENG	[0 to 30 / **0** / 2 mm/step]

2623	**[OHP: T-Edge Correct] DFU** OHP: Trailing Edge Correction		
	Adjusts the correction to the paper transfer roller current for the paper trailing edge in each mode. SP2603 and SP2608 are multiplied by these SP values. **Note** • The paper trailing edge area can be adjusted with SP2624.		
001	Paper Transfer	*ENG	[0 to 400 / **100** / 5%/step]

2624	**[OHP: T-Edge Correction] DFU**		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area.		
001	Paper Transfer	*ENG	[–100 to 0 / **0** / 2 mm/step]

2630	**[OHP: Env. Correct Table] DFU**		
002	Paper Transfer: BW: 1st	*ENG	[1 to 50 / **NA: 39, EU/AA: 26** / 1 /step]
003	Paper Transfer: FC: 1st	*ENG	[1 to 50 / **NA: 7, EU/AA: 47** / 1 /step]

2651	**Not used**
	-

2652	**Not used**
	-

2654	**Not used**
	-

2655	**Not used**
	-

2656	[Not used
	-

2657	Not used
	-

2660	Not used
	-

2703	Not used
	-

2707	Not used
	-

2721	Not used
	-

2722	Not used
	-

2723	Not used
	-

2724	Not used
	-

2730	Not used
	-

2753	Not used
	-

2757	Not used
	-

2761	Not used
	-

2762	Not used
	-

2763	Not used
	-

2764	Not used
	-

2771	Not used
	-

2772	Not used
	-

2773	Not used
	-

2774	Not used
	-

2780	Not used
	-

2783	[SP 4: Bias: BW]		
	Adjusts the current for the paper transfer roller for special paper 1 in black-and-white mode. Normal: 120 mm/sec, Low: 60 mm/sec		
001	Paper Transfer: Normal: 1st	*ENG	[0 to 200 / **15** / 1 –μA /step]

2787	[SP 4: Bias: FC]		
	Adjusts the current for the paper transfer roller for special paper 1 in full color mode. Normal: 120 mm/sec, Low: 60 mm/sec		
001	Paper Transfer	*ENG	[0 to 200 / **15** / 1 –μA /step]

2791	[SP4,5,6-T:Size Correct:BW] DFU		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2783 and SP2787 are multiplied by these SP values. Normal: 120 mm/sec, Low: 60 mm/sec		
001	Paper Transfer: S1	*ENG	[100 to 4000 / **100** / 5%/step] S1 size ≥ 290 mm (Paper width)
005	Paper Transfer: S2	*ENG	[100 to 4000 / **125** / 5%/step] 290 mm ≥ S2 size ≥ 250 mm (Paper width)
009	Paper Transfer: S3	*ENG	[100 to 4000 / **150** / 5%/step] 250 mm ≥ S2 size ≥ 194 mm (Paper width)
013	Paper Transfer: S4	*ENG	[100 to 4000 / **275** / 5%/step] 194 mm ≥ S4 size ≥ 150 mm (Paper width)
017	Paper Transfer: S5	*ENG	[100 to 4000 / **400** / 5%/step] 150 mm ≥ S5 size (Paper width)

2792	[SP4,5,6-T:Size Correct:FC] DFU		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2783 and SP2787 are multiplied by these SP values. Normal: 120 mm/sec, Low: 60 mm/sec		
001	Paper Transfer: S1	*ENG	[100 to 4000 / **100** / 5%/step] S1 size ≥ 290 mm (Paper width)
005	Paper Transfer: S2	*ENG	[100 to 4000 / **110** / 5%/step] 290 mm ≥ S2 size ≥ 250 mm (Paper width)
009	Paper Transfer: S3	*ENG	[100 to 4000 / **115** / 5%/step] 250 mm ≥ S2 size ≥ 194 mm (Paper width)
013	Paper Transfer: S4	*ENG	[100 to 4000 / **405** / 5%/step] 194 mm ≥ S4 size ≥ 150 mm (Paper width)
017	Paper Transfer: S5	*ENG	[100 to 4000 / **690** / 5%/step] 150 mm ≥ S5 size (Paper width)

2793	[SP4,5,6-T:Size Env.Correct:BW] DFU		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size. SP2783 and SP2787 are multiplied by these SP values. Normal: 120 mm/sec, Low: 60 mm/sec		
001	Paper Transfer: S1	*ENG	[1 to 50 / **30** / 1%/step] S1 size ≥ 290 mm (Paper width)
005	Paper Transfer: S2	*ENG	[1 to 50 / **36** / 1%/step] 290 mm ≥ S2 size ≥ 250 mm (Paper width)
009	Paper Transfer: S3	*ENG	[1 to 50 / **40** / 1%/step] 250 mm ≥ S2 size ≥ 194 mm (Paper width)

013	Paper Transfer: S4	*ENG	[1 to 50 / **27** / 1%/step] 194 mm ≥ S4 size ≥ 150 mm (Paper width)
017	Paper Transfer: S5	*ENG	[1 to 50 / **20** / 1%/step] 150 mm ≥ S5 size (Paper width)

2794	**[SP4,5,6-T:Size Env.Correct:FC] DFU**		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size. SP2783 and SP2787 are multiplied by these SP values. Normal: 120 mm/sec, Low: 60 mm/sec		
001	Paper Transfer: S1	*ENG	[1 to 50 / **30** / 1%/step] S1 size ≥ 290 mm (Paper width)
005	Paper Transfer: S2	*ENG	[1 to 50 / **49** / 1%/step] 290 mm ≥ S2 size ≥ 250 mm (Paper width)
009	Paper Transfer: S3	*ENG	[1 to 50 / **50** / 1%/step] 250 mm ≥ S2 size ≥ 194 mm (Paper width)
013	Paper Transfer: S4	*ENG	[1 to 50 / **35** / 1%/step] 194 mm ≥ S4 size ≥ 150 mm (Paper width)
017	Paper Transfer: S5	*ENG	[1 to 50 / **6** / 1%/step] 150 mm ≥ S5 size (Paper width)

2795	**[SP4: L-Edge Correct] DFU** Special 4 Paper: Leading Edge Correction	
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2783 and SP2787 are multiplied by these SP values. Normal: 120 mm/sec, Low: 60 mm/sec **Note** • The paper leading edge area can be adjusted with SP2796.	

001	Paper Transfer	*ENG	[0 to 400 / **100** / 5%/step]

2796	**[SP 4: Switch Timing: L-Edge] DFU**		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area. Normal: 120 mm/sec, Low: 60 mm/sec		
001	Paper Transfer	*ENG	[0 to 30 / **0** / 2 mm/step]

2797	**[SP4: T-Edge Correct] DFU** Special 1 Paper: Trailing Edge Correction		
	Adjusts the correction to the paper transfer roller current for the paper trailing edge in each mode. SP2783 and SP2787 are multiplied by these SP values. Normal: 120 mm/sec, Low: 60 mm/sec **Note** • The paper trailing edge area can be adjusted with SP2798.		
001	Paper Transfer	*ENG	[0 to 400 / **100** / 5%/step]

2798	**[SP 4: Sw Timing: T-Edge] DFU**		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area. Normal: 120 mm/sec, Low: 60 mm/sec		
001	Paper Transfer	*ENG	[0 to -100 / **0** / 2 mm/step]

2799	**[SP 4: Env. Correct Table] DFU**		
003	Paper Transfer:BW: 1st	*ENG	[1 to 50 / **17** / 1-uA /step]
005	Paper Transfer:FC: 1st	*ENG	[1 to 50 / **29** / 1-uA /step]

2803	**Not used**
	-

2807	Not used
	-

2821	Not used
	-

2822	Not used
	-

2823	Not used
	-

2824	Not used
	-

2830	Not used
	-

2833	Not used
	-

2837	[SP 5: Bias: FC]
	Adjusts the current for the paper transfer roller for special paper 5 in full color mode. Normal: 120 mm/sec, Low: 60 mm/sec

2845	Not used
	-

2846	[SP 5: SwTiming: L-Edge] DFU		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area. Normal: 120 mm/sec, Low: 60 mm/sec		
001	Paper Transfer	*ENG	[0 to 30 / **0** / 2 mm/step]

2847	[SP5: T-Edge Correct] DFU Special 5 Paper: Trailing Edge Correction		
	Adjusts the correction to the paper transfer roller current for the paper trailing edge in each mode. SP2833 and SP2837 are multiplied by these SP values. Normal: 120 mm/sec, Low: 60 mm/sec **Note** • The paper trailing edge area can be adjusted with SP2848.		
001	Paper Transfer	*ENG	[0 to 400 / **100** / 5%/step]

2848	[SP 5: Sw Timing: T-Edge] DFU		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area. Normal: 120 mm/sec, Low: 60 mm/sec		
001	Paper Transfer	*ENG	[0 to -100 / **0** / 2 mm/step]

2849	[SP 5: Env. Correct Table] DFU		
003	Paper Transfer:BW: 1st	*ENG	[1 to 50 / **17** / 1-uA /step]
005	Paper Transfer:FC: 1st	*ENG	[1 to 50 / **29** / 1-uA /step]

2852	Not used
	-

2857	Not used
	-

2871	**Not used**
	-

2872	**Not used**
	-

2873	**Not used**
	-

2874	**Not used**
	-

2880	**Not used**
	-

2883	**[SP 6: Bias: BW]**		
	Adjusts the current for the paper transfer roller for special paper 6 in black-and-white mode. Normal: 120mm/sec, Low: 60mm/sec		
001	Paper Transfer	*ENG	[0 to 200 / **15** / 1 –µA /step]

2887	**[SP 6: Bias: FC]**		
	Adjusts the current for the paper transfer roller for special paper 6 in full color mode. Normal: 120mm/sec, Low: 60mm/sec		
001	Paper Transfer	*ENG	[0 to 200 / **15** / 1 –µA /step]

2895	**[SP6: L-Edge Correct] DFU** Special 5Paper: Leading Edge Correction		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2883 and SP2887 are multiplied by these SP values. Normal: 120 mm/sec, Low: 60 mm/sec **Note** • The paper leading edge area can be adjusted with SP2896.		
001	Paper Transfer	*ENG	[0 to 400 / **100** / 5%/step]

2896	**[SP 6: Sw Timing: L-Edge] DFU**		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area. Normal: 120 mm/sec, Low: 60 mm/sec		
001	Paper Transfer	*ENG	[0 to 30 / **0** / 2 mm/step]

2897	**[SP6: T-Edge Correct] DFU** Special 5 Paper: Trailing Edge Correction		
	Adjusts the correction to the paper transfer roller current for the paper trailing edge in each mode. SP2883 and SP2887 are multiplied by these SP values. Normal: 120 mm/sec, Low: 60 mm/sec **Note** • The paper trailing edge area can be adjusted with SP2898.		
001	Paper Transfer	*ENG	[0 to 400 / **100** / 5%/step]

2898	**[SP 6: Sw Timing: T-Edge] DFU**		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area. Normal: 120 mm/sec, Low: 60 mm/sec		
001	Paper Transfer	*ENG	[0 to -100 / **0** / 2 mm/step]

2899	**[SP 5: Env. Correct Table] DFU**

003	Paper Transfer:BW: 1st	*ENG	[1 to 50 / **17** / 1-uA /step]
005	Paper Transfer:FC: 1st	*ENG	[1 to 50 / **29** / 1-uA /step]

2900	**[Drum Idling Time]**		
	Specifies the drum idling time at job end for each line speed.		
001	Normal Speed	*ENG	[0 to 60 / **5** / 1sec /step]
002	Low Speed	*ENG	[0 to 120 / **5** / 1sec /step]

2901	**[Fus.Reload:DrumIdleTimeOffset] DFU**		
	Adjusts the drum idling time for each coverage at the re-load temperature in the half speed mode.		
001	Coverage:0-6%	*ENG	[-60 to 300 / **0** / 1 sec/step]
002	Coverage:6-10%	*ENG	[-60 to 300 / **0** / 1 sec/step]
003	Coverage:10-20%	*ENG	[-60 to 300 / **0** / 1 sec/step]
004	Coverage:20-40%	*ENG	[-60 to 300 / **0** / 1 sec/step]
005	Coverage:40%over	*ENG	[-60 to 300 / **0** / 1 sec/step]

2902	**[OPC Drum Rev Time] DFU**		
	Adjusts the time for how long the drum motor reverses after job end.		
001	All: BW	*ENG	[0 to 200 / **60** / 10 msec/step]
002	All: FC	*ENG	[0 to 200 / **50** / 10 msec/step]
003	DevRev: FC	*ENG	[0 to 200 / **70** / 10 msec/step]
004	DevRev: Bk	*ENG	[0 to 200 / **200** / 10 msec/step]

2904	**[ImageTrunsferRevTime] DFU**		
	Adjusts the time for how long the image transfer belt motor reverses after job end.		
003	All	*ENG	[0 to 200 / **50** / 10 msec/step]

2906	[Drum Stop Angle] DFU		
001	Color	*ENG	[0 to 359 / **0** / 1 deg/step]
002	Bk	*ENG	

2908	[GainAdj:TransferM] DFU Gain Adjustment of Image Transfer Belt Motor		
001	120 mm/sec	*ENG	[0 or 1 / **0** / 1/step] 0: GAIN: High speed 1: GAIN: Low speed
002	60 mm/sec	*ENG	[0 or 1 / **1** / 1/step] 0: GAIN: High speed 1: GAIN: Low speed

2915	[GainAdj:BkOpcDevM] DFU		
001	120 mm/sec	*ENG	[0 or 1 / **0** / 1/step] 0: GAIN: High speed 1: GAIN: Low speed
002	60 mm/sec	*ENG	[0 or 1 / **1** / 1/step] 0: GAIN: High speed 1: GAIN: Low speed

2916	[GainAdj:ColorOpcM] DFU		
001	120 mm/sec	*ENG	[0 or 1 / **0** / 1/step] 0: GAIN: High speed 1: GAIN: Low speed
002	60 mm/sec	*ENG	[0 or 1 / **1** / 1/step] 0: GAIN: High speed 1: GAIN: Low speed

2920	[Transfer Motor Ctrl]

001	TransferMotorCtrl	*ENG	**DFU** [0 or 1 / **1** / 1 /step] 0: FG Control 1: ENC Control
002	SC443 Count	*ENG	[0 to 10 / **0** / 1 /step]
	Displays the detection times of SC443.		

2921	**[ITB Speed Control] DFU**		
001	On/Off	*ENG	[0 or 1 / **0** / 1] 0: Disavailable 1: Available
002	Execute	*ENG	-
003	Execution Interval	*ENG	[1 or 6000 / **600** / 1 min /step]
004	Correct Delay Time	*ENG	[2 or 20 / **2** / 0.01 sec /step]
020	Amp. Correct 1	*ENG	[0 or 65535 / **0** / 1 /step]
021	Amp. Correct 2	*ENG	[0 or 65535 / **0** / 1 /step]
022	Amp. Correct 3	*ENG	[0 or 65535 / **0** / 1 /step]
030	Pha. Correct 1	*ENG	[0 or 359 / **0** / 1 /step]
031	Pha. Correct 2	*ENG	[0 or 359 / **0** / 1 /step]
032	Pha. Correct 3	*ENG	[0 or 359 / **0** / 1 /step]
040	Amp. Error Thresh	*ENG	[0 or 65535 / **65535** / 1 /step]
041	Amp. Error Counter	*ENG	[0 or 1000 / **0** / 1 /step]
050	Amp. Coeff 1:120	*ENG	[0 or 65535 / **18681** / 1 /step]
051	Amp. Coeff 2:120	*ENG	[0 or 65535 / **26048** / 1 /step]
052	Amp. Coeff 3:120	*ENG	[0 or 65535 / **31468** / 1 /step]
053	Amp. Coeff 1:60	*ENG	[0 or 65535 / **9341** / 1 /step]
054	Amp. Coeff 2:60	*ENG	[0 or 65535 / **13024** / 1 /step]

055	Amp. Coeff 3:60	*ENG	[0 or 65535 / **15734** / 1 /step]
056	Pha. Coeff 1	*ENG	[0 or 65535 / **35987** / 1 /step]
057	Pha. Coeff 2	*ENG	[0 or 65535 / **27263** / 1 /step]
058	Pha. Coeff 3	*ENG	[0 or 65535 / **21464** / 1 /step]
059	Pha. Coeff 1 LPF	*ENG	[0 or 65535 / **5280** / 1 /step]
060	Pha. Coeff 2 LPF	*ENG	[0 or 65535 / **10560** / 1 /step]
061	Pha. Coeff 3 LPF	*ENG	[0 or 65535 / **15840** / 1 /step]

2922	**[ITB SP Ctrl Counter] DFU**		
001	Counter	*ENG	[0 to 100 / **5** / 1 /step]

2930	**[P-Transfer:Bias Limit] DFU** Paper Transfer Roller Feed-back: Threshold Adjustment		
	Adjusts the threshold between high resistance (division 1) and low resistance (division 2) at the paper transfer roller. This SP affects SP2931 to SP2939.		
001	Bias	*ENG	[0 to 7000 / **6000** / 10 –V/step]

2940	**[Charge Bias On Timing] DFU**		
001	T1:Standard Speed	*ENG	[-500 to 1000 / **0** / 10 msec /step]
002	T1:Low Speed	*ENG	[-500 to 1000 / **-80** / -80 msec /step]

2941	**[Dev. Bias Down Mode] DFU**		
001	T5:Bk:Normal	*ENG	[-140 to 140 / **0** / 10 msec /step]
002	T7:FC:Normal	*ENG	[-140 to 140 / **0** / 10 msec /step]
003	T5:Bk:Low	*ENG	[-210 to 210 / **0** / 10 msec /step]
004	T7: FC: Low	*ENG	[-210 to 210 / **0** / 10 msec /step]

2960	**[Process Interval] DFU**		
001	Additional Time	*ENG	[0 to 10 / **0** / 1 sec/step]

2971	[BW Non-Image:Bias ON] DFU		
001	T1 BW:Bias On:Normal	*ENG	[-360 to 180 / **0** / 10 msec/step]
003	T1 BW:Bias On:Low	*ENG	

System SP3-xxx

SP3-XXX (Process)

3011	[Process Cont. Manual Execution]		
001	Normal Procon	-	[0 or 1 / **0** / 1 /step] Executes the normal process control manually (potential control). Check the result with SP3-325-001 after executing this SP.
002	Toner Density Adjst	-	[0 or 1 / **0** / 1 /step] Executes the toner density adjustment manually. Check the result with SP3-325-001 after executing this SP.
003	Procon BF-ACC	-	[0 or 1 / **0** / 1 /step] Executes the process control that is normally done before ACC. The type of process control is selected with SP3-041-004.
004	With Full MUSIC	-	[0 or 1 / **0** / 1 /step] Executes the process control that is normally done at the same time as MUSIC. This SP does the MUSIC (line position adjustment) twice.
005	With Normal MUSIC	-	[0 or 1 / **0** / 1 /step] Executes the process control that is normally done at the same time as MUSIC. This SP does the MUSIC (line position adjustment) once.

3012	**[Process Cont. Check Result]** Process Control Self-check Result		
	Displays the result of the latest process control self-check. All colors are displayed. The results are displayed in the order "Y C M K" e.g., 11 (Y) 99 (C) 11 (M) 11 (K): The self-check for Cyan failed but the others were successful. See the "Error Condition Tables" in the Process Control Error section for details.		
001	History: Latest	*ENG	[1111 to 99999999 / - / 1/step]
002	Result: Latest 1	*ENG	
003	Result: Latest 2	*ENG	
004	Result: Latest 3	*ENG	
005	Result: Latest 4	*ENG	
006	Result: Latest 5	*ENG	
007	Result: Latest 6	*ENG	
008	Result: Latest 7	*ENG	
009	Result: Latest 8	*ENG	
010	Result: Latest 9	*ENG	

3013	**[TD Sen Initial Setting]** Developer Initialization Setting		
001	Execution: ALL	-	[0 or 1 / **0** / 1/step]
002	Execution: COL	-	
003	Execution: Bk	-	
004	Execution: C	-	
005	Execution: M	-	
006	Execution: Y	-	

3014	**[TD Sen Initial Set Result]** Developer Initialization Result: Display

001	Display: YMCK	*ENG	[0 to 9999 / **-** / 1 /step] 1: Success 2 to 9: Failure
	Displays the developer initialization result. See the "Error Condition Tables" in the Process Control Error section for details on the meaning of each code. All colors are displayed. Values are displayed in the order Y M C Bk. e.g., 1 (Y) 1 (M) 2 (C) 1 (Bk): Initialization of Cyan failed but the others succeeded.		

3015	**[Forced Toner Supply]** Forced Toner Supply ([Color])		
001	Execution: ALL	-	[0 or 1 / **0** / 1 /step] Executes the manual toner supply to the development unit.
002	Execution: COL (MCY)	-	
003	Execution: Bk	-	
004	Execution: C	-	
005	Execution: M	-	
006	Execution: Y	-	

3016	**[Forced Toner Supply Cntl]** Forced Toner Supply Setting ([Color])		
	Specifies the manual toner supply time for each color.		
001	Supply Time: Bk	*ENG	[0 to 30 / **4** / 1 sec/step]
002	Supply Time: C	*ENG	
003	Supply Time: M	*ENG	
004	Supply Time: Y	*ENG	

3020	**[Vt Limit Error]**		
	DFU		
001	Delta Vt Threshold	*ENG	[0 to 5 / **5** / 0.01 V/step]
002	Upper Threshold	*ENG	[0 to 5 / **4.7** / 0.01 V/step]
003	Upper Error Thresh	*ENG	[0 to 99 / **20** / 1 time/step]

004	Lower Threshold	*ENG	[0 to 5 / **0.5** / 0.01 V/step]
005	Lower Error Thresh	*ENG	[0 to 99 / **10** / 1 times/step]
006	Upper Counter: Bk	*ENG	Displays the total times of the Vt upper or lower limit error. [0 to 99 / **0** / 1 times/step]
007	Upper Counter: C	*ENG	
008	Upper Counter: M	*ENG	
009	Upper Counter: Y	*ENG	
010	Lower Counter: Bk	*ENG	
011	Lower Counter: C	*ENG	
012	Lower Counter: M	*ENG	
013	Lower Counter: Y	*ENG	

3021	**[TD Sensor Initial Set]** Developer Initialization Setting		
	Specifies the developer agitation time for each color at the developer initialization.		
001	Agitation Time: Bk	*ENG	[0 to 200 / **30** / 1 sec/step]
002	Agitation Time: C	*ENG	
003	Agitation Time: M	*ENG	
004	Agitation Time: Y	*ENG	
005-008	Sets the execution flag of the developer initialization for each color.		
005	Execution Flag: Bk	*ENG	[0 or 1 / **0** / 1/step] 0: Flag OFF, 1: Flag ON This flag is cleared after executing TD sensor initialization.
006	Execution Flag: C	*ENG	
007	Execution Flag: M	*ENG	
008	Execution Flag: Y	*ENG	
009	Initial Setting Off	*ENG	Enables or disables developer initialization. **DFU** [0 or 1 / **0** / 1/step] 0: Enable, 1: Disable

3022	[Toner Replenishment Mode]		
	Sets the toner supply flag of each color.		
005	Execution Flag: Bk	*ENG	[0 or 1 / **0** / 1/step] 0: Flag OFF, 1: Flag ON This flag is cleared after executing TD sensor initialization.
006	Execution Flag: C	*ENG	
007	Execution Flag: M	*ENG	
008	Execution Flag: Y	*ENG	

3041	[Process Control Type]		
001	Bias Control	*ENG	[0 or 1 / **1** / 1/step] Alphanumeric 0: FIXED (Use the fixed values for the charge DC bias and development DC bias set with SP2-005 and SP2-229.) 1: CONTROL
	Enables or disables the process control.		
002	LD Power Control	*ENG	[0 or 1 / **1** / 1/step] Alphanumeric 0: FIXED (at the value in SP2221-xxx) 1: CONTROL (adjusted by process control)
	Selects the LD power control mode.		
004	Pre-ACC Process Control	*ENG	[0 to 2 / **2** / 1/step] 0: Not Execute 1: Process Control 2: TC Control
	Selects the process control mode that is done before ACC.		
005	P-Pattern Selection	*ENG	[0 to 2 / **2** / 1/step] 0: FIXED 1: INITIALIZED 2: CALCULATED

3043	[TD Adjustment Mode]

001	Repeat Number: Power ON	*ENG	[0 to 9 / **4** / 1 time/step]
	Specifies the maximum number of repeats of the toner density adjustment at power on. 0: Disabled, 1 to 3: Repeat number, 4: Repeat three times (No consumption mode) 5: Repeat three times (Toner is supplied only when the toner density is too low, and toner is consumed only when the toner density is too dark.) 6 to 9: Disabled		
002	Repeat Number: Initial	*ENG	[0 to 9 / **3** / 1 time/step]
	Specifies the maximum number of repeats of the toner density adjustment at the developer initialization. 0: Disabled, 1 to 3: Repeat number, 4: Repeat three times (No consumption mode) 5: Repeat three times (Toner is supplied only when the toner density is too low, and toner is consumed only when the toner density is too dark.) 6 to 9: Disabled		
003	Repeat Number: Non-use	*ENG	[0 to 9 / **0** / 1 time/step]
	Specifies the maximum number of repeats of the toner density adjustment in stand by mode. 0: Disabled, 1 to 3: Repeat number, 4: Repeat three times (No consumption mode) 5: Repeat three times (Toner is supplied only when the toner density is too low, and toner is consumed only when the toner density is too dark.) 6 to 9: Disabled		
004	Repeat Number: ACC	*ENG	[0 to 9 / **3** / 1 time/step]
	Specifies the maximum number of repeats of the toner density adjustment at ACC. 0: Disabled, 1 to 3: Repeat number, 4: Repeat three times (No consumption mode) 5: Repeat three times (Toner is supplied only when the toner density is too low, and toner is consumed only when the toner density is too dark.) 6 to 9: Disabled		
005	Repeat Number: Recovery	*ENG	[0 to 9 / **3** / 1 time/step]
	Not used		

006	Repeat Number: Job End	*ENG	[0 to 9 / **4** / 1 time/step]
	Specifies the maximum number of repeats of the toner density adjustment at job end. 0: Disabled, 1 to 3: Repeat number, 4: Repeat three times (No consumption mode) 5: Repeat three times (Toner is supplied only when the toner density is too low, and toner is consumed only when the toner density is too dark.) 6 to 9: Disabled		
007	Repeat Number:Interrupt	*ENG	[0 to 9 / **0** / 1 time/step]
	Specifies the maximum number of repeats of the toner density adjustment during printing. **DFU**		
008	Toner Supply Coeff.	*ENG	[0 to 25.5 / **10** / 0.1 sec/step]
	Adjusts the time for the toner supply mode when a toner density is detected to be low.		
009	C-pattern: Bk	*ENG	[0 to 255 / **5** / 1 time/step]
	Specifies the belt mark generating time for checking the black toner density when toner density is detected to be low at the toner density adjustment.		
010	C-pattern: C	*ENG	[0 to 255 / **5** / 1 time/step]
	Specifies the belt mark generating time for checking the magenta toner density when toner density is detected to be low at the toner density adjustment.		
011	C-pattern: M	*ENG	[0 to 255 / **5** / 1 time/step]
	Specifies the belt mark generating time for checking the cyan toner density when toner density is detected to be low at the toner density adjustment.		
012	C-pattern: Y	*ENG	[0 to 255 / **5** / 1 time/step]
	Specifies the belt mark generating time for checking the yellow toner density when toner density is detected to be low at the toner density adjustment.		
013	T1 Bias: Bk	*ENG	[0 to 80 / **10** / 1 µA/step]
	Adjusts the image transfer belt bias for Black.		
014	T1 Bias: C	*ENG	[0 to 80 / **10** / 1 µA/step]
	Adjusts the image transfer belt bias for Magenta.		

015	T1 Bias: M	*ENG	[0 to 80 / **10** / 1 µA/step]
	Adjusts the image transfer belt bias for Cyan.		
016	T1 Bias: Y	*ENG	[0 to 80 / **10** / 1 µA/step]
	Adjusts the image transfer belt bias for Yellow.		
017	Developer Agitation Time	*ENG	[0 to 250 / **10** / 1 sec/step]
	Specifies the developer mixing time at the toner density adjustment.		
018	C-Pattern: LD: DUTY: Bk	*ENG	[0 to 15 / **15** / 1 /step]
	Adjusts the LD duty for the toner consumption mode at the toner density adjustment. In toner consumption mode, toner is discharged when the detected development gamma values (SP3611-001) exceed the target values (SP3611-005) by more than the specified thresholds (SP3239-009).		
019	C-Pattern: LD: DUTY: C	*ENG	[0 to 15 / **15** / 1 /step]
	Adjusts the LD duty for the toner consumption mode at the toner density adjustment. In toner consumption mode, toner is discharged when the detected development gamma values (SP3611-002) exceed the target values (SP3611-006) by more than the specified thresholds (SP3239-009).		
020	C-Pattern: LD: DUTY: M	*ENG	[0 to 15 / **15** / 1 /step]
	Adjusts the LD duty for the toner consumption mode at the toner density adjustment. In toner consumption mode, toner is discharged when the detected development gamma values (SP3611-003) exceed the target values (SP3611-007) by more than the specified thresholds (SP3239-009).		
021	C-Pattern: LD: DUTY: Y	*ENG	[0 to 15 / **15** / 1 /step]
	Adjusts the LD duty for the toner consumption mode at the toner density adjustment. In toner consumption mode, toner is discharged when the detected development gamma values (SP3611-004) exceed the target values (SP3611-008) by more than the specified thresholds (SP3239-009).		

3044	**[Toner Supply Type]** Toner Supply Type ([Color])
	Selects the toner supply method type.

001	Bk	*ENG	[0 to 4 / **4** / 1/step] Alphanumeric 0: FIXED (with the supply rates stored with SP 3401) 1: PID (Vtref_Fixed) 2: PID (Vtref_Control) 3: MBD (Vtref_Fixed) 4: MBD (Vtref_Control)
002	C	*ENG	
003	M	*ENG	
004	Y	*ENG	

3045	**[Toner End Detection: Set]**		
	Enables/disables the toner alert display on the LCD.		
001	ON/OFF	*ENG	**DFU** [0 or 1 / **0** / 1/step] 0: Detect, 1: Not Detect
002	NE Detection	*ENG	[0 or 1 / **0** / 1/step] 0: ALL (Calculation and TE sensor) 1: TE Sensor

3101	**[Toner End/Near End]**		
	Displays the amount of each color toner. **DFU**		
001	Toner Replenishment: Bk	*ENG	[1 to 600 / **235** / 1 g/step]
002	Toner Replenishment: C	*ENG	
003	Toner Replenishment: M	*ENG	
004	Toner Replenishment: Y	*ENG	
005-008	Displays the consumed amount of each color toner.		
005	Toner Consumption: Bk	*ENG	[0 to 3000 / **0** / 0.001 g/step]
006	Toner Consumption: C	*ENG	
007	Toner Consumption: M	*ENG	
008	Toner Consumption: Y	*ENG	
009-012	Displays the remaining amount of each color toner. These are calculated by the operating times of the toner supply pumps.		

009	Toner Remaining: Bk	*ENG	[–50000 to 600 / **0** / 0.001 g/step]
010	Toner Remaining: C	*ENG	
011	Toner Remaining: M	*ENG	
012	Toner Remaining: Y	*ENG	
013-016	Adjusts the threshold of toner near end for each color. The toner near end message appears on the LCD when the remaining toner amount reaches this threshold. When one of these SPs (SP3-101-009 to 012 or -032 to -035) reaches this threshold, toner near end is detected.		
013	Near End Thresh: Bk	*ENG	[0 to 600 / **13** / 1 g/step]
014	Near End Thresh: C	*ENG	[0 to 600 / **3** / 1 g/step]
015	Near End Thresh: M	*ENG	
016	Near End Thresh: Y	*ENG	
021	Delta Vt Threshold	*ENG	[0 to 5 / **0.5** / 0.01 V/step]
	This SP is the threshold for toner end. Delta Vt: Vt-Vtref When both this SP and SP3-101-026 occur at same time, toner end is determined.		
022-025	Displays the total delta Vt (Vt-Vtref) value for each color.These are calculated by pixel counting.		
022	Delta Vt Sum: Bk	*ENG	[0 to 655 / **0** / 0.01 V/step]
023	Delta Vt Sum: C	*ENG	
024	Delta Vt Sum: M	*ENG	
025	Delta Vt Sum: Y	*ENG	
026	Delta Vt Sum Threshold	*ENG	[0 to 255 / 10 / 1 V/step]
028-031	Displays the consumed toner amount calculated with the pixel count for each color.		
028	Pixel: Consumption: Bk	*ENG	[0 to 3000 / **0** / 0.001 g/step]
029	Pixel: Consumption: C	*ENG	
030	Pixel: Consumption: M	*ENG	
031	Pixel: Consumption: Y	*ENG	

032-035	Displays the remaining toner amount for each color, using pixel count.		
032	Pixel: Remaining : Bk	*ENG	[-50000 to 600 / **0** / 0.001 g/step]
033	Pixel: Remaining : C	*ENG	
034	Pixel: Remaining : M	*ENG	
035	Pixel: Remaining : Y	*ENG	
040-043	Displays the pixel M/A for each color.		
040	Pixel M/A: Bk	*ENG	[0 to 1 / **0.05** / 0.001 mg/cm^2/step]
041	Pixel M/A: C	*ENG	
042	Pixel M/A: M	*ENG	
043	Pixel M/A: Y	*ENG	[0 to 1 / **0.6** / 0.001 mg/cm^2/step]
044	Delta Vt Thresh BF NE	*ENG	Adjusts the delta Vt (Vt – Vtref) of toner end before toner near end is detected. [0 to 5 / **0.5** / 0.01 V/step]
045	Delta Vt Sum Thresh BF NE	*ENG	Adjusts the total delta Vt (Vt – Vtref) of toner end before toner near end is detected. [0 to 255 / **10** / 1 V/step]
046-049	Displays the latest mohno off time.		
046	Mohno Off Time: Bk	*ENG	[0 to 0 x FFFFFFFF / **0** / 1 sec/step]
047	Mohno Off Time: C	*ENG	
048	Mohno Off Time: M	*ENG	
049	Mohno Off Time: Y	*ENG	
050-053	Adjusts the threshold of the remaining toner for the toner near-end detection. **DFU**		
050	TE Sn Detect Thresh:Bk	*ENG	[1 to 600 / **33** / 1 g/step]
051	TE Sn Detect Thresh:C	*ENG	
052	TE Sn Detect Thresh:M	*ENG	
053	TE Sn Detect Thresh:Y	*ENG	

3102	**[Toner End Recovery] Not used**		
	Adjusts the number of times toner supply is attempted for each color when the TD sensor continues to detect toner end during toner recovery.		
001	Repeat: Bk	*ENG	[1 to 20 / **5** / 1 time/step]
002	Repeat: C	*ENG	
003	Repeat: M	*ENG	
004	Repeat: Y	*ENG	

3131	**[TE Count: Display]**		
	Display the number of toner end detections for each color.		
001	Bk	*ENG	[0 to 99 / **0** / 1 time/step]
002	C	*ENG	
003	M	*ENG	
004	Y	*ENG	

3201	**[TD Sensor: Vt Display]**		
	Display the current voltage of the TD sensor for each color.		
001	Current: Bk	*ENG	[0 to 5.5 / **0.01** / 0.01 V/step]
002	Current: C	*ENG	
003	Current: M	*ENG	
004	Current: Y	*ENG	

3211	**[Vt Shift: Display/Set]**
	Adjusts the Vt correction value for each line speed. Normal: 120 mm/sec, Low: 60 mm/sec

001	Med Speed Shift:Bk	*ENG	[0 to 5 / **0.29** / 0.01 V/step]
002	Med Speed Shift:C	*ENG	
003	Med Speed Shift:M	*ENG	
004	Med Speed Shift:Y	*ENG	
005	Low Speed Shift:Bk	*ENG	
006	Low Speed Shift:C	*ENG	
007	Low Speed Shift:M	*ENG	
008	Low Speed Shift:Y	*ENG	

3221	**[Vtcnt: Display/Set]**		
	Displays or adjusts the current Vtcnt value for each color.		
001	Current: Bk	*ENG	[2 to 5 / **4** / 0.01 V/step]
002	Current: C	*ENG	
003	Current: M	*ENG	
004	Current: Y	*ENG	
005-008	Displays or adjusts the Vtcnt value for each color at developer initialization. **DFU**		
005	Initial: Bk	*ENG	[2 to 5 / **4** / 0.01 V/step]
006	Initial: C	*ENG	
007	Initial: M	*ENG	
008	Initial: Y	*ENG	

3222	**[Vtcnt: Display/Set]**
	Displays or adjusts the current Vtref value for each color.

001	Current: Bk	*ENG	[0 to 5.5 / **3** / 0.01 V/step]
002	Current: C	*ENG	
003	Current: M	*ENG	
004	Current: Y	*ENG	
005-008	Displays or adjusts the Vtref value for each color at developer initialization. **DFU**		
005	Initial: Bk	*ENG	[0 to 5.5 / **3** / 0.01 V/step]
006	Initial: C	*ENG	
007	Initial: M	*ENG	
008	Initial: Y	*ENG	
009-012	Displays or adjusts Vtref correction by pixel coverage for each color. **DFU**		
009	Pixel Correction: Bk	*ENG	[-5 to 5.5 / **0** / 0.01 V/step]
010	Pixel Correction: C	*ENG	
011	Pixel Correction: M	*ENG	[-5 to 5 / **0** / 0.01 V/step]
012	Pixel Correction: Y	*ENG	

3223	**[Vtref U/L-Limit Set] DFU**		
	Adjusts the lower or upper limit value of Vtref for each color.		
001	Lower: Bk	*ENG	[0 to 5 / **2** / 0.01 V/step]
002	Lower: C	*ENG	
003	Lower: M	*ENG	
004	Lower: Y	*ENG	

005	Upper: Bk	*ENG	[0 to 5 / **4** / 0.01 V/step]
006	Upper: C	*ENG	
007	Upper: M	*ENG	
008	Upper: Y	*ENG	
009	Initial TC	*ENG	Adjusts the initial toner concentration. [1 to 15 / **7** / 0.1 wt%/step]
010	Upper: TC	*ENG	Adjusts the upper limit of the toner concentration. [1 to 15 / **9.5** / 0.1 wt%/step]
011	Lower: TC	*ENG	Adjusts the lower limit of the toner concentration. [1 to 15 / **4** / 0.1 wt%/step]
012	Upper Sensitivity	*ENG	Adjusts the upper limit of the TD sensor sensitivity. [0.2 to 0.5 / **0.44** / 0.001 V/wt% /step]
013	Lower Sensitivity	*ENG	Adjusts the lower limit of the TD sensor sensitivity. [0.2 to 0.5 / **0.209** / 0.001 V/wt% /step]
014	TD Thresh H/M	*ENG	[1 to 10 / **3.5** / 0.1 wt%/step]
015	TD Thresh M/L	*ENG	[1 to 10 / **3.5** / 0.1 wt%/step]

3224	**[Vtref Correct: Pixel] DFU**		
	Adjusts the coefficient of Vtref correction for each coverage and color.		
001	Low Coverage Coeff. Bk	*ENG	[0 to 5 / **0.2** / 0.1 /step]
002	Low Coverage Coeff.C	*ENG	
003	Low Coverage Coeffi.M	*ENG	
004	Low Coverage Coeff. Y	*ENG	
005	High Coverage Coeff, Bk	*ENG	[0 to 5 / **0.3** / 0.01 V/step]
006	High Coverage Coeff, C	*ENG	
007	High Coverage Coeff, M	*ENG	
008	High Coverage Coeff, Y	*ENG	

009	Low Coverage: Thresh	*ENG	Adjusts the threshold of the low coverage. [0 to 20 / **3** / 0.1 %/step]
010	High Coverage: Thresh:M	*ENG	Adjusts the threshold of the high coverage. [0 to 100 / **60** / 1 %/step]
011	TC Upper Limit Correction	*ENG	[0 to 5 / **0.5** / 0.1 wt%/step]
012	TC Upper Limit:Display:Bk	*ENG	[1 to 15 / **9.5** / 0.1 wt% /step]
013	TC Upper Limit:Display: C	*ENG	
014	TC Upper Limit:Display: M	*ENG	
015	TC Upper Limit:Display: Y	*ENG	
016	Process Control Threshold:M	*ENG	[0 to 255 / **50** / 1 time/step]
017	High Coverage: Threshold:H	*ENG	Adjusts the threshold of the high coverage. [0 to 100 / **20** / 1 %/step]
018	High Coverage: Threshold:L	*ENG	
019	Process Control Thresh:H	*ENG	[0 to 255 / **14** / 1 time/step]
020	Process Control Thresh:L	*ENG	
021	Initial ProCon Thresh	*ENG	[0 to 255 / **6** / 1 time/step]
022	High Coverage Thresh:LS	*ENG	[0 to 100 / **10** / 1 %/step]
023	Process Control Thresh:LS	*ENG	[0 to 255 / **4** / 1 time/step]

3230	**[Toner Supply MBD] DFU**		
002	ADD:K	*ENG	[0.01 to 2 / **1** / 0.01 /step]
003	ADD:C	*ENG	
004	ADD:M	*ENG	
005	ADD:Y	*ENG	
006	ADD:LowSpd	*ENG	[0.01 to 5 / **1** / 0.01 /step]

011	PID:I:K	*ENG	[0 to 100 / **0.5** / 0.01 /step]
012	PID:I:C	*ENG	
013	PID:I:M	*ENG	
014	PID:I:Y	*ENG	
015	PID:P:K	*ENG	[0 to 100 / **8** / 0.01 /step]
016	PID:P:C	*ENG	
017	PID:P:M	*ENG	
018	PID:P:Y	*ENG	
019	PID:I:LowSpd	*ENG	[0 to 5 / **0.5** / 0.01 /step]
020	PID:P:LowSpd	*ENG	
021	AWILOW:K	*ENG	[-1 to 1 / **0.125** / 0.0001 /step]
022	AWILOW:C	*ENG	
023	AWILOW:M	*ENG	
024	AWILOW:Y	*ENG	
025	AWPUP:K	*ENG	[-1 to 1 / **0.125** / 0.0001 /step]
026	AWPUP:C	*ENG	
027	AWPUP:M	*ENG	
028	AWPUP:Y	*ENG	
029	AWILOW:LowSpd	*ENG	[0 to 100 / **2** / 0.01 /step]
030	AWPUP:LowSpd	*ENG	
031	SMITH:K	*ENG	[0 to 2 / **0.8** / 0.01 /step]
032	SMITH:C	*ENG	
033	SMITH:M	*ENG	
034	SMITH:Y	*ENG	
035	SMITH:LowSpd	*ENG	[0 to 5 / **1** / 0.01 /step]

041	ANC:Hori.:K	*ENG	[0 to 10 / **2.8** / 0.01 /step]
042	ANC:Hori.:C	*ENG	
043	ANC:Hori.:M	*ENG	
044	ANC:Hori.:Y	*ENG	
045	ANC:Ver.:K	*ENG	[0 to 10 / **1.9** / 0.01 /step]
046	ANC:Ver.:C	*ENG	
047	ANC:Ver.:M	*ENG	
048	ANC:Ver.:Y	*ENG	
049	ANC:Hori.:LowSpd	*ENG	[0 to 5 / **0.6** / 0.01 /step]
050	ANC:Ver.:LowSpd	*ENG	
051	ANCG:Long:A:K	*ENG	[0 to 10 / **0.66** / 0.01 /step]
052	ANCG:Long:A:C	*ENG	
053	ANCG:Long:A:M	*ENG	
054	ANCG:Long:A:Y	*ENG	
055	ANCG:Long:B:K	*ENG	[0 to 10 / **0.4** / 0.01 /step]
056	ANCG:Long:B:C	*ENG	
057	ANCG:Long:B:M	*ENG	
058	ANCG:Long:B:Y	*ENG	
059	ANCG:Long:A:LowSpd	*ENG	[0 to 5 / **0.5** / 0.01 /step]
060	ANCG:Long:B:LowSpd	*ENG	[0 to 5 / **0.35** / 0.01 /step]
061	AWPNI:K	*ENG	[-10 to 10 / **0.1** / 0.001 /step]
062	AWPNI:C	*ENG	
063	AWPNI:M	*ENG	
064	AWPNI:Y	*ENG	

071	PID	*ENG	[0 to 5 / **1** / 0.01 /step]
080	PIX:TBL:1	*ENG	
081	PIX:TBL:2	*ENG	
082	PIX:TBL:3	*ENG	
083	PIX:TBL:4	*ENG	
084	PIX:TBL:5	*ENG	[0 to 5 / **0.96** / 0.01 /step]
085	PIX:TBL:6	*ENG	[0 to 5 / **0.9** / 0.01 /step]
086	PIX:TBL:7	*ENG	[0 to 5 / **0.86** / 0.01 /step]
087	PIX:TBL:8	*ENG	[0 to 5 / **0.85** / 0.01 /step]
088	PIX:TBL:9	*ENG	
089	PIX:TBL:10	*ENG	
090	PIX:TBL:11	*ENG	
091	PIX:TBL:12	*ENG	
092	PIX:COR:K	*ENG	[0 to 5 / **0.75** / 0.01 /step]
093	PIX:COR:C	*ENG	
094	PIX:COR:M	*ENG	
095	PIX:COR:Y	*ENG	
096	PIX:AVE:Select	*ENG	[1 to 5 / **2** / 1 /step]
101	PID:I:LIM:Normal	*ENG	[0 to 1 / **0.125** / 0.001 /step]
102	PID:I:LIM:LowSpd	*ENG	[0 to 1 / **0.063** / 0.001 /step]
103	PID:I:Nrml to Low	*ENG	[0 to 5 / **1** / 0.01 /step]
104	PID:I:Low to Nrml	*ENG	

3231	**[Toner Supply: Setting] DFU**
	Adjusts the coefficient of the toner supply time for each color.

001	Conversion Coeff.:Bk	*ENG	[0.5 to 9.99 / **3.33** / 0.01 /step]
002	Conversion Coeff.:C	*ENG	
003	Conversion Coeff.:M	*ENG	
004	Conversion Coeff.:K	*ENG	

3232	[T - Supply Coeff.: Setting] DFU		
001	Vt Proportion: Bk	*ENG	[0 to 2550 / **50** / 1 /step]
002	Vt Proportion: C	*ENG	
003	Vt Proportion: M	*ENG	
004	Vt Proportion: Y	*ENG	
005	Pixel Proportion: Bk	*ENG	[0 to 2.55 / **0.47** / 0.01 /step]
006	Pixel Proportion: C	*ENG	
007	Pixel Proportion: M	*ENG	
008	Pixel Proportion: Y	*ENG	
009	Vt Integral Control: Bk	*ENG	[0 to 2550 / **500** / 1 /step]
010	Vt Integral Control: C	*ENG	
011	Vt Integral Control: M	*ENG	
012	Vt Integral Control: Y	*ENG	
013	Vt Sum Times: Bk	*ENG	[1 to 255 / **20** / 1 time/step]
014	Vt Sum Times: C	*ENG	
015	Vt Sum Times: M	*ENG	
016	Vt Sum Times: Y	*ENG	

3233	[Pixel-Prop. Coeff.2:Set] DFU		
001	Correction Coeff.:1	*ENG	[0 to 2.55 / **1** / 0.01 /step]
002	Correction Coeff.:2	*ENG	[0 to 2.55 / **0.5** / 0.01 /step]
003	Correction Coeff.:3	*ENG	[0 to 2.55 / **0** / 0.01 /step]

004	Correction Coeff.:4	*ENG	[0 to 2.55 / **0.25** / 0.01 /step]
005	Correction Coeff.:5	*ENG	[0 to 2.55 / **0.5** / 0.01 /step]

3234	[Pixel-Prop. Coeff.3:Set] DFU		
001	Correction Value 1	*ENG	[-0.1 to 0 / **-0.01** / 0.01 /step]
002	Correction Value 2	*ENG	[0 to 0.1 / **0.01** / 0.01 /step]

3235	[Toner Supply Coeff.: Display] DFU		
001	Pixel Proportion 2: Bk	*ENG	[0 to 2.55 / **1** / 0.01 /step]
002	Pixel Proportion 2: C	*ENG	
003	Pixel Proportion 2: M	*ENG	
004	Pixel Proportion 2: Y	*ENG	
005	Pixel Proportion 3: Bk	*ENG	[0.7 to 1.3 / **1** / 0.01 /step]
006	Pixel Proportion 3: C	*ENG	
007	Pixel Proportion 3: M	*ENG	
008	Pixel Proportion 3: Y	*ENG	
009	Vt Integral Value: Bk	*ENG	[-255 to 255 / **0** / 0.01 /step]
010	Vt Integral Value: C	*ENG	
011	Vt Integral Value: M	*ENG	
012	Vt Integral Value: Y	*ENG	

3236	[Toner Supply Consum.: Display] DFU		
	Displays the toner amount of the latest toner supply for each color.		
001	Latest: Bk	*ENG	[0 to 40000 / **0** / 0.1 mg/step]
002	Latest: C	*ENG	
003	Latest: M	*ENG	
004	Latest: Y	*ENG	

3237	[Developer Agitation Setting]		
	Displays the toner amount of the latest toner supply for each color. **DFU**		
001	Agitation Time	*ENG	[0 to 200 / **5** / 1 sec/step]

3238	[Vt Target: Setting]		
	Displays the Vt target value at developer initialization. **DFU**		
001	Bk	*ENG	[0 to 5 / **2.7** / 0.01 V/step]
002	C	*ENG	
003	M	*ENG	
004	Y	*ENG	

3239	[Vtref Correction: Setting]		
	Adjusts the parameter for Vtref correction at the process control.		
001	(+)Consumption: Bk	*ENG	[0 to 1 / **0.05** / 0.01 V/step]
002	(+)Consumption: C	*ENG	
003	(+)Consumption: M	*ENG	
004	(+)Consumption: Y	*ENG	
005	(-)Consumption: Bk	*ENG	
006	(-)Consumption: C	*ENG	
007	(-)Consumption: M	*ENG	
008	(-)Consumption: Y	*ENG	
009-012	Threshold for development gamma rank.		
009	P Rank 1 Threshold	*ENG	[0 to 2 / **0.15** / 0.01 /step]
010	P Rank 2 Threshold	*ENG	[0 to 2 / **0.1** / 0.1 /step]
011	P Rank 3 Threshold	*ENG	[-2 to 0 / **-0.1** / 0.1 /step]
012	P Rank 4 Threshold	*ENG	[-2 to 0 / **-0.15** / 0.01 /step]
013-014	Threshold for image density rank on the image transfer belt.		

013	T Rank 1 Threshold	*ENG	[-1 to 0 / **-0.2** / 0.01 V/step]
014	T Rank 2 Threshold	*ENG	[0 to 1 / **0.2** / 0.01 V/step]

3241	[Background Potential Setting]		
001	Coefficient: Bk	*ENG	These are parameters for calculating the charge bias referring to the development bias at process control. [-1000 to 1000 / **0** / 1 /step] DC charge bias = Development bias x (1 + 0.001 x these vales) + SP3-241-005 to -008
002	Coefficient: C	*ENG	
003	Coefficient: M	*ENG	
004	Coefficient: Y	*ENG	
005	Offset: Bk	*ENG	These are additional values for calculating the charge bias referring to the development bias at process control. [0 to 255 / **140** / 1 V/step] DC charge bias = Development bias x (1 + 0.001 x SP3-241-001 to -004) + these values
006	Offset: C	*ENG	
007	Offset: M	*ENG	
008	Offset: Y	*ENG	

3242	[LD Power Setting]		
	Adjusts the coefficient for LD power control value at the process control.		
001	Coefficient: Bk	*ENG	[-1000 to 1000 / **128** / 1 /step]
002	Coefficient: C	*ENG	
003	Coefficient: M	*ENG	
004	Coefficient: Y	*ENG	
005	Offset: Bk	*ENG	[-1000 to 1000 / **27** / 1 /step]
006	Offset: C	*ENG	
007	Offset: M	*ENG	
008	Offset: Y	*ENG	

017	Low Speed Coeff.:Bk	*ENG	[-1000 to 1000 / **128** / 1 /step]
018	Low Speed Coeff.:C	*ENG	
019	Low Speed Coeff.:M	*ENG	
020	Low Speed Coeff.:Y	*ENG	
021	Low Speed Offset:Bk	*ENG	[-1000 to 1000 / **58** / 1 /step]
022	Low Speed Offset:C	*ENG	
023	Low Speed Offset:M	*ENG	
024	Low Speed Offset:Y	*ENG	

3251	**[Coverage]**		
	These (-001 to -016) are coefficients for SP3-222-009 to -012.		
001	Latest: Pixcel Bk	*ENG	Displays the latest coverage for each color. [0 to 9999 / **0** / 1 cm^2/step]
002	Latest: Pixcel C	*ENG	
003	Latest: Pixcel M	*ENG	
004	Latest: Pixcel Y	*ENG	
005-008	Displays the average coverage of each color for the Vtref correction. "Average S" is defined when the number of developed pages does not reach the number specified with SP3251-017.		
005	Average S: Bk	*ENG	[0 to 100 / **5** / 0.01 %/step]
006	Average S: C	*ENG	
007	Average S: M	*ENG	
008	Average S: Y	*ENG	
009-012	Displays the average coverage of each color for the Vtref correction. "Average M" is defined when the number of developed pages does not reach the number specified with SP3251-018.		

009	Average M: Bk	*ENG	[0 to 100 / **5** / 0.01 %/step]
010	Average M: C	*ENG	
011	Average M: M	*ENG	
012	Average M: Y	*ENG	
013-016	Displays the average coverage of each color for the Vtref correction. "Average L" is defined when the number of developed pages does not reach the number specified with SP3-251-019.		
013	Average L: Bk	*ENG	[0 to 100 / **5** / 0.01 %/step]
014	Average L: C	*ENG	
015	Average L: M	*ENG	
016	Average L: Y	*ENG	
017-019	Adjusts the threshold for SP3-251-005 to -016.		
017	Total Page Setting: S	*ENG	[1 to 100 / **10** / 1 sheet/step]
018	Total Page Setting: M	*ENG	[1 to 500 / **10** / 1 sheet/step]
019	Total Page Setting: L	*ENG	[1 to 999 / **50** / 1 sheet/step]
020-022	Adjusts the threshold for SP3-251-024 to -027.		
020	Total Page Setting: S2	*ENG	[1 to 100 / **20** / 1 sheet/step]
021	Total Page Setting: M2	*ENG	[1 to 500 / **10** / 1 sheet/step]
022	Total Page Setting: L2	*ENG	[1 to 999 / **50** / 1 sheet/step]
024-027	Displays the latest coverage ratio for each color.		
024	Latest Coverage: Bk	*ENG	[0 to 100 / - / 0.01 %/step]
025	Latest Coverage: C	*ENG	
026	Latest Coverage: M	*ENG	
027	Latest Coverage: Y	*ENG	
028	Displays the threshold of whether to perform developer churning or not.		
	DevAgi. Theresh BF ProCon	*ENG	[0 to 100 / **20** / 1 %/step]

3311	[ID Sn Detection Value]		
	Displays the ID sensor (regular) offset voltage for Vsg adjustments.		
001	Voffset reg: Bk	*ENG	[0 to 5 / **0** / 0.01 V/step]
002	Voffset reg: C	*ENG	[0 to 5.5 / **0** / 0.01 V/step]
003	Voffset reg: M	*ENG	
004	Voffset reg: Y	*ENG	
005-007	Displays the ID sensor (diffusion) offset voltage for Vsg adjustments.		
005	Voffset dif: C	*ENG	[0 to 5.5 / **0** / 0.01 V/step]
006	Voffset dif: M	*ENG	
007	Voffset dif: Y	*ENG	
008-010	Displays the ID sensor offset voltage for Vsg adjustments.		
008	Voffset TM (Front)	*ENG	[0 to 5.5 / **0** / 0.01 V/step]
009	Voffset TM (Center)	*ENG	
010	Voffset TM (Rear)	*ENG	

3321	[ID/TM Sensor All]		
010	P/TM Sensor All	-	Execute the ID sensor initialization setting for all sensors

3322	[Vsg Adjust. Result: Vsg]
	Displays the result value of the Vsg adjustment for each sensor.

001	Vsg reg: Bk	*ENG	[0 to 5.5 / **0** / 0.01 V/step]
002	Vsg reg: C	*ENG	
003	Vsg reg: M	*ENG	
004	Vsg reg: Y	*ENG	
005	Vsg dif: C	*ENG	
006	Vsg dif: M	*ENG	
007	Vsg dif: Y	*ENG	
008	Vsg TM (Front)	*ENG	
009	Vsg TM (Center)	*ENG	
010	Vsg TM (Rear)	*ENG	

3323	**[Vsg Adjust. Result: Ifsg] DFU**		
001	Ifsg: Bk	*ENG	[0 to 50 / **0** / 0.1 mA/step]
002	Ifsg: C	*ENG	
003	Ifsg: M	*ENG	
004	Ifsg: Y	*ENG	
005	Ifsg TM (Front)	*ENG	[0 to 50 / **0** / 0.1 mA/step]
006	Ifsg TM (Center)	*ENG	
007	Ifsg TM (Rear)	*ENG	

3324	**[Vsg Adjustment: Set] DFU**		
003	Vsg Error Counter	*ENG	[0 to 99 / **0** / 0.1 time/step]
004	Vofset Threshold	*ENG	[0 to 5 / **1** / 0.01 V/step]
005	Vsg Upper Threshold	*ENG	[0 to 5 / **4.5** / 0.01 V/step]
006	Vsg Lower Threshold	*ENG	[0 to 5 / **3.5** / 0.01 V/step]

3325	[Vsg Adjustment Result]		
	Displays the result of the Vsg adjustment. The displayed numbers mean the result of each sensor (sensor for Front, sensor for Bk, sensor for Cyan, sensor for Center, sensor for Magenta, sensor for Yellow and sensor for Rear).		
001	Latest	*ENG	[111 to 999 / **999** / 1 /step] 9: Unexpected error 3: Offset voltage error 2: Vsg adjustment value error 1: O.K
002	Latest 1	*ENG	
003	Latest 2	*ENG	
004	Latest 3	*ENG	
005	Latest 4	*ENG	
006	Latest 5	*ENG	
007	Latest 6	*ENG	
008	Latest 7	*ENG	
009	Latest 8	*ENG	
010	Latest 9	*ENG	

3361	[ID Sn Sensitivity: Display] DFU		
003	K2C (Latest)	*ENG	[0 to 10 / **0** / 0.01 /step]
004	K5C (Latest)	*ENG	[0 to 10 / **5** / 0.01 /step]

3362	[ID Sn Sensitivity: Display] DFU		
003	K5: Upper	*ENG	[0 to 10 / **5** / 0.01 /step]
004	K5: Lower	*ENG	[0 to 1 / **0.5** / 0.01 /step]
005	Kn: Upper	*ENG	[0 to 1 / **0.1** / 0.01 /step]
006	Kn: Lower	*ENG	[0 to 1 / **1** / 0.01 /step]
007	K5 Edit Point	*ENG	[0 to 1 / **0.15** / 0.01 /step]
008	K5 Target Voltage	*ENG	[0 to 5 / **1.63** / 0.01 V/step]

009	K5 Approximate Method	*ENG	[0 to 1 / **1** / 1 /step] 0:Linear, 1: Curve
010	K2: U/L Limit Coeff. 1	*ENG	[0 to 1 / **0** / 0.01 /step]
011	K2: Upper Limit Correction	*ENG	[–0.2 to 0.4 / **0.07** / 0.01 /step]
012	K2: Lower Limit Correction	*ENG	[–0.2 to 0.4 / **–0.07** / 0.01 /step]
013	Diffusion Correction	*ENG	[0.75 to 1.35 / **1** / 0.01 /step]
016	K2: Check	*ENG	[0 to 1 / **0.25** / 0.001 /step]

3363	[ID Pattern Timing Setting] DFU		
001	Scan YCMBk	*ENG	Adjusts the detection timing for the process control pattern. [-500 to 500 / **0** / 1 mm/step]
002	Detection Delay Time	*ENG	Adjusts the timing when the paper transfer unit is kept away from the image transfer belt. [0 to 2500 / **400** / 1 msec/step]
003	Delay Time	*ENG	Adjusts the processing timing for the process control pattern. [0 to 2500 / **1335** / 1 msec/step]
004	MUSIC Delay Time	*ENG	Adjusts the processing timing for the pattern that is used for the line position adjustment. [-2500 to 2500 / **300** / 1 msec/step]

3371	[M/A Calculation] DFU		
001	Correction Coeff.: Bk	*ENG	[0.5 to 2.0 / **0.99** / 0.01 /step]
002	Correction Coeff.: C	*ENG	[0.5 to 2.0 / **1** / 0.01 /step]
003	Correction Coeff.: M	*ENG	[0.5 to 2.0 / **1** / 0.01 /step]
004	Correction Coeff.: Y	*ENG	[0.5 to 2.0 / **1** / 0.01 /step]

005	Color Correct Coeff.:Bk		[0.5 to 2.0 / **1** / 0.01 /step]
006	Color Correct Coeff.:C		
007	Color Correct Coeff.:M		
008	Color Correct Coeff.:Y		[0.5 to 2.0 / **1.03** / 0.01 /step]

3401	**[Fixed Toner Supply Mode]**		
	Adjusts the toner supply rate in the fixed toner supply mode.		
001	Fixed Rate: Bk	*ENG	[0 to 100 / **5** / 1 %/step] These SPs are used only when SP3-044 is set to "1".
002	Fixed Rate: C	*ENG	
003	Fixed Rate: M	*ENG	
004	Fixed Rate: Y	*ENG	

3411	**[Toner Supply Rate: Display]**		
	Displays the current toner supply rate.		
001	Latest: Bk	*ENG	[0 to 100 / - / 1 %/step]
002	Latest: C	*ENG	
003	Latest: M	*ENG	
004	Latest: Y	*ENG	

3421	**[Toner Supply Range]**		
001	Upper Limit: Bk	*ENG	Adjusts the toner supply rate during printing. [0 to 100 / **100** / 1%/step]
002	Upper Limit: C	*ENG	
003	Upper Limit: M	*ENG	
004	Upper Limit: Y	*ENG	

005	Minimum Supply Time: Bk	*ENG	Adjusts the minimum toner supply time. [0 to 1000 / **0** / 1 msec/step]
006	Minimum Supply Time: C	*ENG	
007	Minimum Supply Time: M	*ENG	
008	Minimum Supply Time: Y	*ENG	

3451	[T-Supply Carry Over: Display]		
001	Bk	*ENG	Displays the toner supply time carried over from a previous toner supply mode for each color. [0 to 10000 / **0** / 1 msec/step]
002	C	*ENG	
003	M	*ENG	
004	Y	*ENG	

3452	[T-Supply Carry Over: Display] DFU		
001	Maximum: Bk	*ENG	Adjusts the maximum time carried over from a previous toner supply mode. [0 to 10000 / **1000** / 1 msec/step]
002	Maximum: C	*ENG	
003	Maximum: M	*ENG	
004	Maximum: Y	*ENG	

3501	[Process Control Target M/A]		
	Adjusts the target M/A of the full coverage in single color printer mode.		
001	Maximum M/A: Bk	*ENG	[0 to 1 / **0.45** / 0.001 mg/cm^2/step]
002	Maximum M/A: C	*ENG	[0 to 1 / **0.445** / 0.001 mg/cm^2/step]
003	Maximum M/A: M	*ENG	
004	Maximum M/A: Y	*ENG	

3510	[Image Adj. Counter:Display]
	Displays the total page counter for each adjustment mode.

001	Process Control: BW	*ENG	[0 to 2000 / **0** / 1 page/step]
002	Process Control: FC	*ENG	
003	Power ON: BW	*ENG	
004	Power ON: FC	*ENG	
005	MUSIC: BW	*ENG	
006	MUSIC: FC	*ENG	
007	Vsg Adj.	*ENG	
008	Charge AC Control	*ENG	
009	MUSIC: Power ON: BW	*ENG	
010	MUSIC: Power ON: FC	*ENG	

3511	**[Execution Interval: Setting]**		
	Adjusts the threshold for each adjustment mode.		
001	Job End: Process Control: BW	*ENG	[0 to 2000 / **250** / 1 page/step]
002	Job End: Process Control: FC	*ENG	[0 to 2000 / **100** / 1 page/step]
003	Interrupt: Process Control: BW	*ENG	[0 to 2000 / **500** / 1 page/step]
004	Interrupt: Process Control: FC	*ENG	[0 to 2000 / **200** / 1 page/step]
005	Initial: Potential Control: BW	*ENG	[0 to 2000 / **250** / 1 page/step]
006	Initial: Potential Control: FC	*ENG	[0 to 2000 / **100** / 1 page/step]
007	Vsg Adj. Counter	*ENG	[0 to 2000 / **0** / 1 page/step]
008	Charge AC Control Counter	*ENG	[0 to 2000 / **500** / 1 page/step]
019	Envir.Correction:ON/OFF	*ENG	[0 or 1 / **1** / 1 /step] 0: Not Correct (OFF), 1: Correct (ON)
020	Gamma Correction: ON/OFF	*ENG	
021	Non-use Time Correct:ON/OFF	*ENG	
022	Correction Coeff. 1: JE: BW	*ENG	[0 to 1 / **0.2** / 0.01 /step]
023	Correction Coeff. 2: JE: BW	*ENG	[0 to 1 / **1** / 0.01/step]

024	Correction Coeff. 1: JE: FC	*ENG	[0 to 1 / **0.5** / 0.01/step]
025	Correction Coeff. 2: JE: FC	*ENG	[0 to 1 / **1** / 0.01/step]
026	Correction Coeff. 1: Interrupt: BW	*ENG	[0 to 1 / **0.1** / 0.01/step]
027	Correction Coeff. 2: Interrupt: BW	*ENG	[0 to 1 / **1** / 0.01/step]
028	Correction Coeff. 1: Interrupt: FC	*ENG	[0 to 1 / **0.25** / 0.01/step]
029	Correction Coeff. 2: Interrupt: FC	*ENG	[0 to 1 / **1** / 0.01/step]
030	Max. Number Correction Threshold	*ENG	[0 to 99 / **2** / 1/step]
031	Max. Number Correction Counter	*ENG	[0 to 255 / **0** / 1/step]

3512	**[Image Adj.: Interval]** Adjusts the timing for execution of process control and line position adjustment during printing or copying.		
001	During Job	*ENG	[0 to 100 / **5** / 1 page/step]
002	During Stand-by	*ENG	[0 to 100 / **10** / 1 minute/step]

3513	**[PCU Motor Stop Time: Bk]** Displays the last time that the PCU motors stopped. These are used for process control execution timing.		
001	Year	*ENG	[0 to 99 / **0** / 1/step]
002	Month	*ENG	[1 to 12 / **1** / 1/step]
003	Date	*ENG	[1 to 31 / **1** / 1/step]
004	Hour	*ENG	[0 to 23 / **0** / 1/step]
005	Minute	*ENG	[0 to 59 / **0** / 1/step]

3514	**[Environmental Displ: Job End]** Displays the environmental conditions at the last job. These are used for process control execution timing.		
001	Temperature	*ENG	[-1280 to 1270 / **0** / 0.1°C/step]

002	Relative Humidity	*ENG	[0 to 1000 / - / 0.1%RH/step]
003	Absolute Humidity	*ENG	[0 to 1000 / - / 0.1 g/cm^3/step]

3515	**[Execution Interval: Display]**		
	Displays the current interval for process control execution. When the machine calculates the timing for process control, it uses a number of conditions. These are the results after considering all the conditions.		
001	Job End: Process Control: BW	*ENG	[0 to 2000 / **250** / 1 page/step]
002	Job End: Process Control: FC	*ENG	[0 to 2000 / **100** / 1 page/step]
003	Interrupt: Process Control: BW	*ENG	[0 to 2000 / **500** / 1 page/step]
004	Interrupt: Process Control: FC	*ENG	[0 to 2000 / **200** / 1 page/step]

3516	**[Refresh Mode] DFU**		
	While making prints with low coverage, the developer is agitated with less toner consumption and the toner carrier attraction tends to increase. This may cause low image density or poor transfer (white dots). To prevent this, the coagulated toner or overcharged toner has to be consumed by performing the refresh mode.		
001	Dev. Motor Rotation: Display: Bk	*ENG	[0 to 1000 / **0** / 0.1 m/step]
002	Dev. Motor Rotation: Display: C	*ENG	
003	Dev. Motor Rotation: Display: M	*ENG	
004	Dev. Motor Rotation: Display: Y	*ENG	
005	Rotation Threshold	*ENG	[0 to 1000 / **0.1** / 1 m/step]

006	Pixel Coverage Sum: Bk	*ENG	[0 to 65535 / **0** / 1 cm^2/step]
007	Pixel Coverage Sum: C	*ENG	
008	Pixel Coverage Sum: M	*ENG	
009	Pixel Coverage Sum: Y	*ENG	
010	Required Area: Bk	*ENG	
011	Required Area: C	*ENG	
012	Required Area: M	*ENG	
013	Required Area: Y	*ENG	
014	Refresh Threshold: Bk	*ENG	[0 to 255 / **49** / 1 cm^2/m/step]
015	Refresh Threshold: C	*ENG	[0 to 255 / **25** / 1 cm^2/m/step]
016	Refresh Threshold: M	*ENG	
017	Refresh Threshold: Y	*ENG	
018	Pattern Number: Bk	*ENG	[0 to 255 / **0** / 1 time/step]
019	Pattern Number: C	*ENG	
020	Pattern Number: M	*ENG	
021	Pattern Number: Y	*ENG	
022	Pattern Number: Upper limit	*ENG	
023	Toner Consumption Pattern Area	*ENG	[10 to 2550 / **280** / 10 cm^2/ step]
024	Supply Coefficient	*ENG	[0 to 2.55 / **1** / 0.01/step]
025	Job End Area Coefficient	*ENG	[0.1 to 25.5 / **1** / 0.1/step]
026	Job End Vb Coefficient	*ENG	[0 to 100 / **30** / 1%/step]
027	Job End Length	*ENG	[0 to 100 / **19** / 1mm/step]
028	Job End Supply Amt	*ENG	[0 to 1 / **0.45** / 0.001 mg/cm^2/ step]

029	Refresh:Page Thresh	*ENG	[0 to 1000 / **0** / 1 page/step]
030	Mode Counter:Bk	*ENG	
031	Mode Counter:FC	*ENG	

3517	**[Blade Damage Prevention]**		
	Adjusts the threshold temperature for preventing the cleaning blade in the transfer belt cleaning unit from being damaged. If the temperature is above this value, toner is applied to the transfer belt at set intervals during the job to prevent the blade from flipping over.		
001	Execution Temp. Thresh	*ENG	[0 to 50 / **40** / 1°C/step]

3518	**[Image Adj. Execution Flag] DFU**		
001	Toner End Recovery: Bk	*ENG	[0 or 1 / **0** / 1/step] 0: OFF. 1: ON
002	Toner End Recovery: C	*ENG	
003	Toner End Recovery: M	*ENG	
004	Toner End Recovery: Y	*ENG	
005	Vsg Adjustment	*ENG	
006	Developer Agitation	*ENG	
007	Process Control	*ENG	[0 to 2 / **0** / 1/step] 0: OFF. 1: ON (once), 2: ON (twice)
008	MUSIC	*ENG	[0 to 2 / **0** / 1/step] 0: OFF. 1: ON (once), 2: ON (twice)
009	Drum Phase Adj.	*ENG	[0 or 1 / **0** / 1/step] 0: OFF. 1: ON
010	Charge AC Control	*ENG	
011	Blade Damage Prevention	*ENG	
012	Vsg Average Error	*ENG	[0 or 1 / **0** / 1/step] Sets "1", when the following values shows. Vsg_reg_ave: 3.5 ◁ Vsg_reg_ave ◁ 4.5 or Vsg_dif_ave: 0.0 ◁ Vsg_dif_ave ◁ 0.5

3519	[Toner End Prohibition Setting]		
	Enables or disables each adjustment at toner end.		
001	Process Control	*ENG	[0 or 1 / **1** / 1/step] 0: Permit (adjustment is done even toner end condition) 1: Forbid (adjustment is not done at toner end condition)
002	MUSIC	*ENG	
003	TC Adjustment	*ENG	

3520	[ITB Idle Rotation] DFU		
001	Temperature: High	*ENG	Specifies the idle rotation times of the ITB after the process control. [0 or 3 / **0** / 1 revolution/step]
002	Temperature: Medium	*ENG	
003	Temperature: Low	*ENG	
004	Temp.: L: Power ON	*ENG	
005 to 011	Adjusts the threshold temperature for entering the ITB idle rotation after the process control.		
005	Temp. Range Thresh:T2	*ENG	[20 or 30 / **30** / 1 deg/step]
006	Temp. Range Thresh:T1	*ENG	[0 or 15 / **15** / 1 deg/step]
010	Temp. Thresh:High	*ENG	[0 or 50 / **30** / 1 deg/step]
011	Temp. Thresh:Low	*ENG	[0 or 50 / **15** / 1 deg/step]

3522	[Initial Process Control Setting]		
	Adjusts the threshold for the process control at power on. When the current condition has changed by more than the values of these SPs when compared with the conditions at the previous operation, the process control at power on is executed.		
002	Non-use Time Setting	*ENG	[0 to 1440 / **360** / 1 minute/step]
003	Temp. Change Thresh	*ENG	[0 to 99 / **10** / 1°C/step]
004	Relative Humidity Range	*ENG	[0 to 99 / **50** / 1 %RH/step]
005	Absolute Humidity Range	*ENG	[0 to 99 / **6** / 1 g/m^3/step]

100	**[Rapi Timer]**		
	Time Setting	*ENG	[0 to 255 / **30** / 1 sec/step]
	Adjusts the time-out time to get the Rapi timer.		

3531	**[Non-use Time Process Control Setting]**		
	Adjusts the threshold for the process control at stand-by. When the current condition has changed by more than the values of these SPs when compared with the conditions at the previous operation, the process control at stand-by is executed.		
001	Non-use Time Setting	*ENG	[0 to 1440 / **360** / 1 minute/step]
002	Temp. Change Thresh	*ENG	[0 to 99 / **10** / 1°C/step]
003	Relative Humidity Change	*ENG	[0 to 99 / **50** / 1 %RH/step]
004	Absolute Humidity Change	*ENG	[0 to 99 / **6** / 1 g/m^3/step]
005	Maximum Execution Number	*ENG	Adjusts the maximum execution time for the process control at stand-by. [0 to 99 / **10** / 1 time/step]

3611	**[Dev. Gamma: Display/Set]**		
001	Bk (Current)	*ENG	Displays the current development gamma for Bk [0 to 5 / 0.9 / 0.01 mg/cm^2/kV /step]
002	C (Current)	*ENG	Displays the current development gamma for C/M/Y. [0 to 5 / 0.8 / 0.01 mg/cm^2/kV /step]
003	M (Current)	*ENG	
004	Y (Current)	*ENG	
005	Bk (Target Display)	*ENG	Displays the target development gamma for Bk. [0 to 5 / **0.9** / 0.01 mg/cm^2/kV /step]
006	C (Target Display)	*ENG	Displays the target development gamma for C/M/Y. [0 to 5 / **0.8** / 0.01 mg/cm^2/kV /step]
007	M (Target Display)	*ENG	[0 to 5 / **0.8** / 0.01 mg/cm^2/kV /step]

008	Y (Target Display)	*ENG	[0 to 5 / **0.77** / 0.01 mg/cm^2/kV /step]
009	Bk (Standard Target Set)	*ENG	Displays the standard target development gamma for each color. [0 to 5 / **0.9** / 0.01 mg/cm^2/kV /step]
010	C (Standard Target Set)	*ENG	[0 to 5 / **0.8** / 0.01 mg/cm^2/kV /step]
011	M (Standard Target Set)	*ENG	
012	Y (Standard Target Set)	*ENG	
013	Environmental Correction	*ENG	Turns on or off the environmental correction for target development gamma. [0 or 1 / **1** / -] 0: Not Correct, 1: Correct
014	K (Max Correction)	*ENG	[0 to 5 / **0.1** / 0.01 mg/cm2/kv/step]
015	C (Max Correction)	*ENG	
016	M (Max Correction)	*ENG	
017	Y (Max Correction)	*ENG	
018	K (Max Abs Hum)	*ENG	[1 to 99 / **15** / 1 g/m3/step]
019	C (Max Abs Hum)	*ENG	
020	M (Max Abs Hum)	*ENG	
021	Y (Max Abs Hum)	*ENG	

3612	**[Vk Display]**		
	Displays Vk for each color.		
001	Bk	*ENG	[-300 to 300 / - / 1 V/step]
002	C	*ENG	
003	M	*ENG	
004	Y	*ENG	

3621	**[Dev. DC Control:Display]** Normal: 120 mm/sec, Low: 70 mm/sec		
	Displays the development DC bias adjusted with the process control for each line speed and color.		
001	Normal Speed:Bk	*ENG	[0 to 700 / **550** / 1 -V/step]
002	Normal Speed:C	*ENG	
003	Normal Speed:M	*ENG	
004	Normal Speed:Y	*ENG	
009	Low Speed:Bk	*ENG	
010	Low Speed:C	*ENG	
011	Low Speed:M	*ENG	
012	Low Speed:Y	*ENG	

3631	**[Charge DC Control: Display]** Normal: 120 mm/sec, Low: 60 mm/sec		
	Displays the charge DC voltage adjusted with the process control for each line speed and color.		
001	Normal Speed:Bk	*ENG	[0 to 2000 / **690** / 1 -V/step]
002	Normal Speed:C	*ENG	
003	Normal Speed:M	*ENG	
004	Normal Speed:Y	*ENG	
009	Low Speed:Bk	*ENG	
010	Low Speed:C	*ENG	
011	Low Speed:M	*ENG	
012	Low Speed:Y	*ENG	

3641	**[Charge DC Control: Display]** Normal: 120 mm/sec		
	Displays the charge AC voltage adjusted with the process control for each color.		
001	Normal Speed:Bk	*ENG	[0 to 3 / **1.75** / 0.01 kV/step]
002	Normal Speed:C	*ENG	
003	Normal Speed:M	*ENG	
004	Normal Speed:Y	*ENG	

3651	**[LD Power Control: Display]** Normal: 120 mm/sec, Low: 60 mm/sec		
	Displays the LD power adjusted for each environment.		
001	Normal Speed:Bk	*ENG	[0 to 200 / **100** / 1 %/step]
002	Normal Speed:C	*ENG	
003	Normal Speed:M	*ENG	
004	Normal Speed:Y	*ENG	
009	Low Speed:Bk	*ENG	
010	Low Speed:C	*ENG	
011	Low Speed:M	*ENG	
012	Low Speed:Y	*ENG	

3710	**[HST Controll Setting]** TD Sensor: Toner Concentration Control Setting		
	Selects the toner concentration control method by HST memory, which is in the TD sensor.		
001	Control Selection	*ENG	[0 or 1 / **1** / -] 0: Not Use, 1: Use

3711	**[HST Control: Bk]**		
	Displays the factory settings of the black PCU.		

001	Vcnt	*ENG	[0 to 5 / **4** / 0.1 V/step]
002	Vt	*ENG	[0 to 5 / **2.5** / 0.1 V/step]
003	Sensitivity: HL	*ENG	[1.22 to 3.77 / **2.5** / 0.01 V/step]
004	Sensitivity: HM	*ENG	[0 to 2.55 / **1.3** / 0.01 V/step]
005	Sensitivity: ML	*ENG	[0 to 2.55 / **1.2** / 0.01 V/step]
006	Set Detection	*ENG	[0 to 5 / **1** / 0.1 V/step]
007	Without Developer	*ENG	[0 to 5 / **1.2** / 0.1 V/step]
008	With Developer	*ENG	[0 to 5 / **1.3** / 0.1 V/step]
009	Serial Number 1	*ENG	[0 to 255 / - / 1 V/step]
010	Serial Number 2	*ENG	
011	Adjustment: Vt	*ENG	[0 to 5 / **3** / 0.1 V/step]
012	Adjustment: Vtref	*ENG	
013	Adjustment: Vtcnt	*ENG	[0 to 5 / **4** / 0.01 V/step]
014	Adjustment: Gamma	*ENG	[0 to 2.55 / **0** / 0.01 mg/cm^2/kV /step]
015	Adjustment: Vcnt Result	*ENG	[0 to 9 / **9** / 1 /step]

3712	**[HST Control: C]**		
	Displays the factory settings of the magenta PCU.		
001	Vcnt	*ENG	[0 to 5 / **4** / 0.1 V/step]
002	Vt	*ENG	[0 to 5 / **2.5** / 0.1 V/step]
003	Sensitivity: HL	*ENG	[1.22 to 3.77 / **2.5** / 0.01 V/step]
004	Sensitivity: HM	*ENG	[0 to 2.55 / **1.3** / 0.01 V/step]
005	Sensitivity: ML	*ENG	[0 to 2.55 / **1.2** / 0.01 V/step]
006	Set Detection	*ENG	[0 to 5 / **1** / 0.1 V/step]
007	Without Developer	*ENG	[0 to 5 / **1.2** / 0.1 V/step]
008	With Developer	*ENG	[0 to 5 / **1.3** / 0.1 V/step]

009	Serial Number 1	*ENG	[0 to 255 / - / 1 V/step]
010	Serial Number 2	*ENG	
011	Adjustment: Vt	*ENG	[0 to 5 / **3** / 0.1 V/step]
012	Adjustment: Vtref	*ENG	
013	Adjustment: Vtcnt	*ENG	[0 to 5 / **4** / 0.01 V/step]
014	Adjustment: Gamma	*ENG	[0 to 2.55 / **0** / 0.01 mg/cm^2/kV /step]
015	Adjustment: Vcnt Result	*ENG	[0 to 9 / **9** / 1 /step]

3713	**[HST Control: M]**		
	Displays the factory settings of the cyan PCU.		
001	Vcnt	*ENG	[0 to 5 / **4** / 0.1 V/step]
002	Vt	*ENG	[0 to 5 / **2.5** / 0.1 V/step]
003	Sensitivity: HL	*ENG	[1.22 to 3.77 / **2.1** / 0.01 V/step]
004	Sensitivity: HM	*ENG	[0 to 2.55 / **1.3** / 0.01 V/step]
005	Sensitivity: ML	*ENG	[0 to 2.55 / **1.2** / 0.01 V/step]
006	Set Detection	*ENG	[0 to 5 / **1** / 0.1 V/step]
007	Without Developer	*ENG	[0 to 5 / **1.2** / 0.1 V/step]
008	With Developer	*ENG	[0 to 5 / **1.3** / 0.1 V/step]
009	Serial Number 1	*ENG	[0 to 255 / - / 1 V/step]
010	Serial Number 2	*ENG	
011	Adjustment: Vt	*ENG	[0 to 5 / **3** / 0.1 V/step]
012	Adjustment: Vtref	*ENG	
013	Adjustment: Vtcnt	*ENG	[0 to 5 / **4** / 0.01 V/step]
014	Adjustment: Gamma	*ENG	[0 to 2.55 / **0** / 0.01 mg/cm^2/kV /step]
015	Adjustment: Vcnt Result	*ENG	[0 to 9 / **9** / 1 /step]

3714	[HST Control:Y]		
	Displays the factory settings of the yellow PCU.		
001	Vcnt	*ENG	[0 to 5 / **4** / 0.1 V/step]
002	Vt	*ENG	[0 to 5 / **2.5** / 0.1 V/step]
003	Sensitivity: HL	*ENG	[1.22 to 3.77 / **2.5** / 0.01 V/step]
004	Sensitivity: HM	*ENG	[0 to 2.55 / **1.3** / 0.01 V/step]
005	Sensitivity: ML	*ENG	[0 to 2.55 / **1.2** / 0.01 V/step]
006	Set Detection	*ENG	[0 to 5 / **1** / 0.1 V/step]
007	Without Developer	*ENG	[0 to 5 / **1.2** / 0.1 V/step]
008	With Developer	*ENG	[0 to 5 / **1.3** / 0.1 V/step]
009	Serial Number 1	*ENG	[0 to 255 / **-** / 1 V/step]
010	Serial Number 2	*ENG	
011	Adjustment: Vt	*ENG	[0 to 5 / **3** / 0.1 V/step]
012	Adjustment: Vtref	*ENG	
013	Adjustment: Vtcnt	*ENG	[0 to 5 / **4** / 0.01 V/step]
014	Adjustment: Gamma	*ENG	[0 to 2.55 / **0** / 0.01 mg/cm^2/kV /step]
015	Adjustment: Vcnt Result	*ENG	[0 to 9 / **9** / 1 /step]

3800	[Toner Collection Bttl Full]		
	Displays/ adjusts the PCDU toner collection bottle detection settings.		
001	Condition	*CTL	[0 to 4 / **0** / 1 /step]
	Displays the current condition of the PCDU toner collection bottle. 0: Factory default, 1: Before near full, 2; Near full, 3: Full, 4: Reserved		
002	Detection Times	*CTL	Not used [0 to 50 / **-** / 1 /step]
003	Print Page AF Near Full	*CTL	Not used [0 to 2000 / **0** / 1 sheet/step]

004	Pixel Count AF Near Full	*CTL	Not used [0 to 200000 / **-** / 1 cm^2/step]
005	Pixel Count AF Replacement	*CTL	Not used Displays the pixel counter after replacement of toner collection bottle. [0 to 200000 / **-** / 1 cm^2/step]
008	Coefficient	*ENG	[0.1 to 1 / **1** / 0.1 /step]
	Adjusts the toner amount between near full and full. (0.1 indicates 10%.)		
011	Alarm Setting	*ENG	Enables or disables the calling for @Remote. [0 or 1 / **1** / -] 0: Enable @Remote calling 1: Disable @Remote calling
	NOTE: If the PCDU toner collection bottle has been replaced before the machine detects used toner near full when this setting is set to "0", the machine cannot detect toner collection bottle near full. In that case, set SP3-902-017 to "1".		
012	Day Thresh:NF	*ENG	[1 to 30 / **10** / 1 day/step]
	Sets the threshold days for the near-full display. The near-full of the PCDU toner collection bottle is displayed after the toner collection full sensor has detected the actuator in the PCDU toner collection bottle.		
013	Total Collected Toner	*ENG	Displays the total amount from the near full detection. [0 to 999999999 / **1** / 1]
014	Full Detection Date	*ENG	Displays the date of the near full detection for the PCDU toner collection bottle.

3810	**[ITB T-Collection Bttl Full]**		
001	Condition	*CTL	[0 to 4 / **0** / 1 /step]
	Displays the current condition of the ITB toner collection bottle. 0: Factory default, 1: Before near full, 2; Near full, 3: Full, 4: Reserved		

002	Detection Times	*CTL	Not used [0 to 50 / - / 1 /step]
003	Print Page AF Near Full	*CTL	Not used [0 to 2000 / **0** / 1 sheet/step]
004	Pixel Count AF Near Full	*CTL	Not used [0 to 200000 / - / 1 cm^2/step]
005	Pixel Count AF Replacement	*CTL	Not used Displays the pixel counter after replacement of toner collection bottle. [0 to 200000 / - / 1 cm^2/step]
008	Coefficient	*ENG	[0.1 to 1 / **1** / 0.1 /step]
	Adjusts the toner amount between near full and full. (0.1 indicates 10%.)		
011	Alarm Setting	*ENG	Enables or disables the calling for @Remote. [0 or 1 / **1** / -] 0: Enable @Remote calling 1: Disable @Remote calling
	NOTE: If the toner collection bottle has been replaced before the machine detects used toner near full when this setting is set to "0", the machine cannot detect toner collection bottle near full. In that case, set SP3-902-017 to "1".		
012	Day Thresh:NF	*ENG	[1 to 30 / **10** / 1 day/step]
	Sets the threshold days for the near-full display. The near-full of the IT toner collection bottle is displayed after the toner collection full sensor has detected the actuator in the ITB toner collection bottle.		
013	Total Collected Toner	*ENG	Displays the total amount from the near full detection. [0 to 999999999 / **1** / 1]
014	Full Detection Date	*ENG	Displays the date of the near full detection fot the ITB toner collection bottle.

3901	[New Unit Detection]		
	Turns new PCU detection on or off.		
001	ON/OFF Setting	*ENG	[0 or 1 / **1** / -] 0: OFF, 1: ON

3902	[Manual New Unit Set]		
	Turns the new unit detection flag for each PM unit on or off. The use of these counters is explained in the PM section and in the relevant parts of section 3 (Replacement and Adjustment).		
001	Development Unit: Bk	*ENG	[0 or 1 / **0** / -] 0: OFF, 1: ON
002	Development Unit: C	*ENG	
003	Development Unit: M	*ENG	
004	Development Unit: Y	*ENG	
005	Developer: Bk	*ENG	Not used [0 or 1 / **0** / -] 0: OFF, 1: ON
006	Developer: C	*ENG	
007	Developer: M	*ENG	
008	Developer: Y	*ENG	
009	PCU: Bk	*ENG	[0 or 1 / **0** / -] 0: OFF, 1: ON
010	PCU: C	*ENG	
011	PCU: M	*ENG	
012	PCU: Y	*ENG	
013	ITB Unit	*ENG	[0 or 1 / **0** / -] 0: OFF, 1: ON Do not use 3902-013 if you only change the cleaning unit. 3902-015: This is for the image transfer belt cleaning unit.
014	Fusing Unit	*ENG	
015	Fusing Roller	*ENG	
016	Fusing Belt	*ENG	
017	ITB Cleaning Unit	*ENG	

018	PTR Unit	*ENG	[0 or 1 / **0** / -] 0: OFF, 1: ON
019	PCU Toner Collection Bottle	*ENG	
020	ITB Toner Collection Bottle	*ENG	

System SP4-xxx

SP4-XXX (Scanner)

4008	**[Sub Scan Mag. Adjustment]**		
	Adjusts the sub-scan magnification by changing the scanner motor speed.		
001	SScan Mag.Adjust	*ENG	[-1.0 to 1.0 / **0** / 0.1%/step] **FA**

4010	**[L-Edge Regist Adjustment]**		
	Adjusts the leading edge registration by changing the scanning start timing in the sub-scan direction.		
001	LE Regist Adjust	*ENG	[-2.0 to 2.0 / **0** / 0.1 mm/step] **FA**

4011	**[S-to-S Regist Adjustment]**		
	Adjusts the side-to-side registration by changing the scanning start timing in the main scan direction.		
001	StoS Rgst Adjust	*ENG	[-2.5 to 2.5 / **0** / 0.1 mm/step] **FA**

4012	**[Scanner Erase Margin: Scale]** Scanner: Erase Margin: Scale		
	Sets the blank margin at each side for erasing the original shadow caused by the gap between the original and the scale.		
001	Book: Leading Edge	*ENG	[0 to 3.0 / **0** / 0.1 mm/step] **FA**
002	Book: Trailing Edge		
003	Book: Left		
004	Book: Right		
005	ADF: Leading Edge	*ENG	[0 to 3.0 / **0** / 0.1 mm/step] **FA**
007	ADF: Left		
008	ADF: Right		

4013	[Scanner Free Run]		
	Performs the scanner free run with the exposure lamp on or off in the following mode. Full color mode / Full Size / A3 or DLT		
001	Lamp: OFF	*ENG	[0 or 1 / **0** / -] 0: OFF, 1: ON
002	Lamp: ON		

4014	[Scan]		
	Execute the scanner free fun with each mode.		
001	HP Detection Enable	-	Scanner free run with HP sensor check.
002	HP Detection Disable	-	Scanner free run without HP sensor check.

4020	[Dust Check]		
001	Detection: ON/OFF	*ENG	Turns the ADF scan glass dust check on/ off. [0 or 1 / **0** / 1 /step] 0: OFF, 1: ON
002	Dust Detection: Level	*ENG	Selects the detect level. [0 to 8 / **4** / 1 /step] 0: lowest detection level 8: highest detection level
003	Correction Level	*ENG	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 a code that represents the original size detected by the original sensors. (See "Input Check Table".)		
001	APS Operation Check	-	-

4303	[APS Min Size]		
	Specifies the result of the detection when the outputs from the original sensors are all OFF.		
001	APS Min. Size	*ENG	[0 to 1 / **0** / 1 /step] 0: No Original 1: A5-Lengthwise (16K SEF if 4305 is set to 3)

4305	[8K/16K Detection]	*ENG	[0 to 3 / **0** / 1 /step] 0: Normal Detection (the machine detects A4/LT size as A4 or LT, depending on the paper size setting) 1: A4-Sideways LT-Lengthwise 2: LT-Sideways A4-Lengthwise 3: 8K 16K
001	This program enables the machine to automatically recognize the 8K/16K size.		

4308	[Scan Size Detection]		
001	Detect: ON/OFF	*ENG	[0 or 1 / **0** / 1 /step] 0: ON, 1: OFF

4309	[Scan Size Detect Setting] DFU		
001	Original Density Thresh	*ENG	[0 to 255 / **32** / 1 digit /step]
002	Detection Time	*ENG	[20 to 100 / **60** / 20 msec /step]
003	Lamp ON:Delay Time	*ENG	[0 to 200 / **40** / 20 msec /step]

4310	[Scan Size Detect Value]
	Displays the scanned data for the original width detection.

001	S1:R	-	[0 to 255 / **0** / 1 digit /step]
002	S1:G	-	
003	S1:B	-	
004	S2:R	-	[0 to 255 / **0** / 1 digit /step]
005	S2:G	-	
006	S2:B	-	
007	S3:R	-	[0 to 255 / **0** / 1 digit /step]
008	S3:G	-	
009	S3:B	-	

4400	**[Scanner Erase Margin]**	*ENG	
	Set the Mask for Original. These SPs set the area to be masked during platen (book) mode scanning.		
001	Book: Leading Edge	[0 to 3.0 / **0** / 0.1 mm/step]	
002	Book: Trailing Edge		
003	Book: Left		
004	Book: Right		
005	ADF: Leading Edge		
007	ADF: Left		
008	ADF: Right		

4417	**[IPU Test Pattern]**	
	Selects the IPU test pattern.	
001	Test Pattern Selection	[0 to 24 / **0** / 1/step]

	0: Scanned image 1: Gradation main scan A 2: Gradation main scan B 3: Gradation main scan C 4: Gradation main scan D 5: Gradation sub scan (1) 6: Grid pattern 7: Slant grid pattern 8: Gradation RGBCMYK 9: UCR pattern 10: Color patch 16 (1) 11: Color patch 16 (2) 12: Color patch 64	13: Grid pattern CMYK 14: Color patch CMYK 15: Gray pattern (1) 16: Gray pattern (2) 17: Gray Pattern (3) 18: Shading pattern 19: Thin line pattern 20: Scanned + Grid pattern 21: Scanned + Gray scale 22: Scanned + Color patch 23: Scanned + Slant Grid C 24: Scanned + Slant Grid D

4429	[Illegal Copy Output]		
001	Copy	*ENG	[0 to 3 / **3** / 1 /step]
002	Scanner		
003	Fax		

4440	[Saturation Adjustment]		
	Adjusts the level of saturation for copying.		
001	-	*ENG	[0 to 5 / **3** / 1 /step] 0: High 1: Lowest 2: Lower 3: Default 4: Higher 5: Highest

4450	[Scan Image Path Selection]

001	Black Subtraction ON/OFF	[0 or 1 / **1** / -] 0: OFF, 1: ON
	Uses or does not use the black reduction image path.	
002	SH ON/OFF	[0 or 1 / **0** / 1 /step] 0: ON, 1: OFF
	Uses or does not use the shading image path.	

4460	**[Digital AE Set] DFU**		
	Specifies the level of deleting the background in the ADS mode. You can adjust its level for each scanning method (platen, ADF).		
001	Lower Limit	*ENG	[0 to 1023 / **364** / 4 digit/step]
002	Background Level	*ENG	[512 to 1532 / **932** / 1 digit/step]

4501	**[ACC Target Density]**		
	Selects the ACC target.		
001	Copy: Bk: Text	*ENG	[0 to 10 / **5** / 1 /step] 10: Darkest density
002	Copy: C: Text	*ENG	
003	Copy: M: Text	*ENG	
004	Copy: Y: Text	*ENG	
005	Copy: Bk: Photo	*ENG	
006	Copy: C: Photo	*ENG	
007	Copy: M: Photo	*ENG	
008	Copy: Y: Photo	*ENG	

4505	**[ACC Correction:Bright]**
	Adjusts the offset correction for light areas of the ACC pattern.

001	Master:K	*ENG	[-128 to 127 / **0** / 1 /step]
002	Master:C	*ENG	
003	Master:M	*ENG	
004	Master:Y	*ENG	
005	Slave:K	*ENG	Reserved
006	Slave:C	*ENG	
007	Slave:M	*ENG	
008	Slave:Y	*ENG	

4506	**[ACC Correction: Dark]**		
	Adjusts the offset correction for dark areas of the ACC pattern.		
001	Master:K	*ENG	[-128 to 127 / **0** / 1 /step]
002	Master:C	*ENG	
003	Master:M	*ENG	
004	Master:Y	*ENG	
005	Slave:K	*ENG	Reserved
006	Slave:C	*ENG	
007	Slave:M	*ENG	
008	Slave:Y	*ENG	

4540	**[Printer Vector Correction]**
	This SP corrects the printer coverage of 12 hues (RY, YR, YG, etc. x 4 Colors [R, G, B, Option]) for a total of 48 parameters.

001-004	RY Phase: Option/R/G/B	*ENG	Specifies the printer vector correction value. [0 to 255 / **0** / 1 /step]
005-008	YR Phase: Option/R/G/B		
009-012	YG Phase: Option/R/G/B		
013-016	GY Phase: Option/R/G/B		
017-020	GC Phase: Option/R/G/B		
021-024	CG Phase: Option/R/G/B		
025-028	CB Phase: Option/R/G/B		
029-032	BC Phase: Option/R/G/B		
033-036	BM Phase: Option/R/G/B		
037-040	MB Phase: Option/R/G/B		
041-044	MR Phase: Option/R/G/B		
045-048	RM Phase: Option/R/G/B		

4550	**[Scanner Appl.:Text/Chart] DFU**		
4551	**[Scanner Appl.: Text] DFU**		
4552	**[Scanner Appl.:Txt Dropout] DFU**		
4553	**[Scanner Appl.:Text/Photo] DFU**		
4554	**[Scanner Appl.: Photo] DFU**		
4565	**[Scanner Appl.: GrayScale] DFU**		
4570	**[Scan Appl.: Color: Text-Photo] DFU**		
4571	**[Scan Appl.: Color: Glossy Photo] DFU**		
4572	**[Scan Appl.: Color: AutoColor] DFU**		
-005	MTF: 0 (Off), 1-15 (Strong)	*ENG	[0 to 15 / **8** / 1 /step] 0: MTF Off
	Sets the MTF level (Modulation Transfer Function) designed to improve image contrast. Set higher for stronger effect, lower for weaker effect.		

-006	Smoothing: 0 (x1), 1-7 (Strong)	*ENG	[0 to 7 / **4** / 1 /step]
	Use to remove "jaggies" if they appear. Set higher for smoother images.		
-007	Brightness: 1–255	*ENG	[1 to 255 / **128** / 1 /step]
	Set higher for darker, set lower for lighter.		
-008	Contrast: 1–255	*ENG	[1 to 255 / **128** / 1 /step]
	Set higher for more contrast, set lower for less contrast.		
-009	I-Dot Erase :0 (x1) 1-7 (Strong)	*ENG	[0 to 7 / **0** / 1 /step]
	Sets the erasure level of Irregular Dots. Set higher for stronger effect, lower for weaker effect. 0: Not activated		

4580	**[FAX Appl.: Text/Chart] DFU**		
4582	**[FAX Appl.: Text/Photo] DFU**		
4583	**[FAX Appl.: Photo] DFU**		
-005	MTF: 0 (Off), 1-15 (Strong)	*ENG	[0 to 15 / **8** / 1 /step] 0: MTF Off
	Sets the MTF level (Modulation Transfer Function) designed to improve image contrast. Set higher for stronger effect, lower for weaker effect.		
-006	Smoothing: 0 (x1), 1-7 (Strong)	*ENG	[0 to 7 / **4** / 1 /step]
	Use to remove "jaggies" if they appear. Set higher for smoother images.		
-007	Brightness: 1–255	*ENG	[1 to 255 / **128** / 1 /step]
	Set higher for darker, set lower for lighter.		
-008	Contrast: 1–255	*ENG	[1 to 255 / **128** / 1 /step]
	Set higher for more contrast, set lower for less contrast.		
-009	I-Dot Erase:0 (x1), 1-7 (Strong)	*ENG	[0 to 7 / **0** / 1 /step]
	Selects the contrast level for B/W the Text mode. Sets the erasure level of Irregular Dots. Set higher for stronger effect, lower for weaker effect. 0: Not activated		

-010	Texture Erase:0 (Fix), 1-2	*ENG	[0 to 2 / **0** / 1 /step]
	Sets the erasure level of textures. Set higher for stronger effect, lower for weaker effect. This SP (suffix "-010") only exists in SP4580, 4582 and 4583. 0: Not activated		

4581	**[FAX Appl.: Text] DFU**		
4584	**[FAX Appl.: Original 1] DFU**		
4585	**[FAX Appl.: Original 2] DFU**		
-005	MTF: 0 (Off), 1-15 (Strong)	*ENG	[0 to 15 / **8** / 1 /step] 0: MTF Off
	Sets the MTF level (Modulation Transfer Function) designed to improve image contrast. Set higher for stronger effect, lower for weaker effect.		
-006	Smoothing: 0 (x1), 1-7 (Strong)	*ENG	[0 to 7 / **4** / 1 /step]
	Use to remove "jaggies" if they appear. Set higher for smoother images.		
-007	Brightness: 1–255	*ENG	[1 to 255 / **128** / 1 /step]
	Set higher for darker, set lower for lighter.		
-008	Contrast: 1–255	*ENG	[1 to 255 / **128** / 1 /step]
	Set higher for more contrast, set lower for less contrast.		
-009	I-Dot Erase:0 (x1), 1-7 (Strong)	*ENG	[0 to 7 / **0** / 1 /step]
	Selects the contrast level for B/W the Text mode. Sets the erasure level of Irregular Dots. Set higher for stronger effect, lower for weaker effect. 0: Not activated		

4600	**[SBU Version Display]**		
001	SBU ID	-	[0 to 0xFF / **0** / 1 /step] Displays the ID of the SBU.
002	GASBU-N ID	-	[0 to 0xFF / **0** / 1 /step]
003	VSP5100 ID	-	[0 to 0xFF / **0** / 1 /step]

4602	[Scanner Memory Access]		
001	Scanner Memory Access	-	Enables the read and write check for the SBU registers.

4603	[AGC Execution]		
001	HP Detection Enable	-	[0 or 1 / **0** / 1/step] Executes the AGC.
002	HP Detection Disable	-	[0 or 1 / **0** / 1/step] **DFU**

4604	[FGATE Open/Close] DFU		
001	-	-	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

4609	[Gray Balance Set: R] DFU		
001	Book Scan	*ENG	[-512 to 511 / **-46** / 1 digit/step]
002	DF Scan	*ENG	[-512 to 511 / **-46** / 1 digit/step]

4610	[Gray Balance Set: G] DFU		
001	Book Scan	*ENG	[-512 to 511 / **-20** / 1 digit/step]
002	DF Scan	*ENG	[-512 to 511 / **-20**/ 1 digit/step]

4611	[Gray Balance Set: B] DFU		
001	Book Scan	*ENG	[-512 to 511 / **-28** / 1 digit/step]
002	DF Scan	*ENG	[-512 to 511 / **-28** / 1 digit/step]

4623	[Black Level Adj. Display] DFU RE: Red Even signal, RO: Red Odd signal

001	Latest: RE Color	-	Displays the black offset value (rough adjustment) for the even red signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Latest: RO Color	-	Displays the black offset value (rough adjustment) for the odd red signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4624	**[Black Level Adj. Display] DFU** GE: Green Even signal, GO: Green Odd signal		
001	Latest: GE Color	-	Displays the black offset value (rough adjustment) for the even green signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Latest: GO Color	-	Displays the black offset value (rough adjustment) for the odd green signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4625	**[Black Level Adj. Display] DFU** BE: Blue Even signal, BO: Blue Odd signal		
001	Latest: BE Color	-	Displays the black offset value (rough adjustment) for the even blue signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Latest: BO Color	-	Displays the black offset value (rough adjustment) for the odd blue signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4628	**[Analog Gain Adjust] DFU**		
	Displays the gain value of the amplifiers on the controller for Red.		
001	Latest: R Color	-	[0 to 7 / **0** / 1 digit/step]

4629	[Analog Gain Adjust] DFU		
	Displays the gain value of the amplifiers on the controller for Green.		
001	Latest: G Color	-	[0 to 7 / **0** / 1 digit/step]

4630	[Analog Gain Adjust] DFU		
	Displays the gain value of the amplifiers on the controller for Blue.		
001	Latest: B Color	-	[0 to 7 / **0** / 1 digit/step]

4631	[Digital Gain Adjust] DFU		
	Displays the gain value of the amplifiers on the controller for Red.		
001	Latest: RE Color	-	[0 to 1023 / **0** / 1 digit/step]
002	Latest: RO Color	-	

4632	[Digital Gain Adjust] DFU		
	Displays the gain value of the amplifiers on the controller for Green.		
001	Latest: GE Color	-	[0 to 1023 / **0** / 1 digit/step]
002	Latest: GO Color	-	

4633	[Digital Gain Adjust] DFU		
	Displays the gain value of the amplifiers on the controller for Blue.		
001	Latest: BE Color	-	[0 to 1023 / **0** / 1 digit/step]
002	Latest: BO Color	-	

4645	[Scan Adjust Error] DFU		
	Displays the gain value of the amplifiers on the controller for Blue.		
001	White Level	-	[0 to 65535 / **0** / 1 digit/step]
002	Black Level	-	

4647	[Scanner Hard Error] DFU		
	Displays the result of the SBU connection check.		
001	Power-ON	-	[0 to 65535 / **0** / 1 /step] 0: OK, Other: SBU connection check failure If the SBU connection check fails, SC144 occurs.

4654	[Black Level Adj. Display] DFU RE: Red Even signal, RO: Red Odd signal		
001	Last Correct Value: RE Color	*ENG	Displays the black offset value (rough adjustment) for the even red signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Last Correct Value: RO Color	*ENG	Displays the black offset value (rough adjustment) for the odd red signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4655	[Black Level Adj. Display] DFU GE: Green Even signal, GO: Green Odd signal		
001	Last Correct Value: GE Color	*ENG	Displays the black offset value (rough adjustment) for the even green signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Last Correct Value: GO Color	*ENG	Displays the black offset value (rough adjustment) for the odd green signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4656	[Black Level Adj. Display] DFU BE: Blue Even signal, BO: Blue Odd signal

001	Last Correct Value: BE Color	*ENG	Displays the black offset value (rough adjustment) for the even blue signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Last Correct Value: BO Color	*ENG	Displays the black offset value (rough adjustment) for the odd blue signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4658	**[Analog Gain Adjust] DFU**		
	Displays the previous gain value of the amplifiers on the controller for Red.		
001	Last Correct Value: RE Color	*ENG	[0 to 7 / **0** / 1 digit/step]

4659	**[Analog Gain Adjust] DFU**		
	Displays the previous gain value of the amplifiers on the controller for Green.		
001	Last Correct Value: GE Color	*ENG	[0 to 7 / **0** / 1 digit/step]

4660	**[Analog Gain Adjust] DFU**		
	Displays the previous gain value of the amplifiers on the controller for Blue.		
001	Last Correct Value: BE Color	*ENG	[0 to 7 / **0** / 1 digit/step]

4661	**[Digital Gain Adjust] DFU** RE: Red Even signal, RO: Red Odd signal		
001	Last Correct Value: RE Color	*ENG	[0 to 1023 / **0** / 1 digit/step]
002	Last Correct Value: RO Color	*ENG	

4662	**[Digital Gain Adjust] DFU** GE: Green Even signal, GO: Green Odd signal		
001	Last Correct Value: GE Color	*ENG	[0 to 1023 / **0** / 1 digit/step]
002	Last Correct Value: GO Color	*ENG	

4663	**[Digital Gain Adjust] DFU** BE: Blue Even signal, BO: Blue Odd signal		
001	Last Correct Value: BE Color	*ENG	[0 to 1023 / **0** / 1 digit/step]
002	Last Correct Value: BO Color	*ENG	

4673	**[Black Level Adj. Display] DFU** RE: Red Even signal, RO: Red Odd signal		
001	Factory Setting: RE Color	*ENG	Displays the factory setting values of the black level adjustment for the even red signal in the CCD circuit board (color printing speed).. [0 to 16383 / **0** / 1 digit/step]
002	Factory Setting: RO Color	*ENG	Displays the factory setting values of the black level adjustment (rough adjustment) for the odd red signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4674	**[Black Level Adj. Display] DFU** GE: Green Even signal, GO: Green Odd signal		
001	Factory Setting: GE Color	*ENG	Displays the factory setting values of the black level adjustment (rough adjustment) for the even green signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Factory Setting: GO Color	*ENG	Displays the factory setting values of the black level adjustment (rough adjustment) for the odd green signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4675	**[Black Level Adj. Display] DFU** BE: Blue Even signal, BO: Blue Odd signal

001	Factory Setting: BE Color	*ENG	Displays the factory setting values of the black level adjustment (rough adjustment) for the even blue signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]
002	Factory Setting: BO Color	*ENG	Displays the factory setting values of the black level adjustment (rough adjustment) for the odd blue signal in the CCD circuit board (color printing speed). [0 to 16383 / **0** / 1 digit/step]

4677	**[Analog Gain Adjust] DFU**		
	Displays the factory setting values of the gain adjustment for Red.		
001	Factory Setting: RE Color	*ENG	[0 to 7 / **0** / 1 digit/step]

4678	**[Analog Gain Adjust] DFU**		
	Displays the factory setting values of the gain adjustment for Green.		
001	Factory Setting: GE Color	*ENG	[0 to 7 / **0** / 1 digit/step]

4679	**[Analog Gain Adjust] DFU**		
	Displays the factory setting values of the gain adjustment for Blue.		
001	Factory Setting: BE Color	*ENG	[0 to 7 / **0** / 1 digit/step]

4680	**[Digital Gain Adjust] DFU**		
	Displays the gain value of the amplifiers on the controller for Red.		
001	Factory Setting: RE Color	*ENG	[0 to 1023 / **0** / 1 digit/step]
002	Factory Setting: RO Color	*ENG	

4681	**[Digital Gain Adjust] DFU**
	Displays the gain value of the amplifiers on the controller for Green.

001	Factory Setting: GE Color	*ENG	[0 to 1023 / **0** / 1 digit/step]
002	Factory Setting: GO Color	*ENG	

4682	**[Digital Gain Adjust] DFU**		
	Displays the gain value of the amplifiers on the controller for Blue.		
001	Factory Setting: BE Color	*ENG	[0 to 1023 / **0** / 1 digit/step]
002	Factory Setting: BO Color	*ENG	

4688	**[DF: Density Adjustment]**		
	Adjusts the white shading parameter when scanning an image with the ARDF. Adjusts the density level if the ID of outputs made in the DF and Platen mode is different.		
001	-	*ENG	[50 to 150 / **100** / 1%/ step]

4690	**[White Level Peak Read] DFU**		
	Displays the peak level of the white level scanning.		
001	RE	-	[0 to 1023 / **0** / 1 digit/step]
002	RO	-	

4691	**[White Level Peak Read] DFU**		
	Displays the peak level of the white level scanning.		
001	GE	-	[0 to 1023 / **0** / 1 digit/step]
002	GO	-	

4692	**[White Level Peak Read] DFU**		
	Displays the peak level of the white level scanning.		
001	BE	-	[0 to 1023 / **0** / 1 digit/step]
002	BO	-	

4693	[Black Level Peak Read] DFU		
	Displays the peak level of the black level scanning.		
001	RE	-	[0 to 1023 / **0** / 1 digit/step]
002	RO	-	

4694	[Black Level Peak Read] DFU		
	Displays the peak level of the black level scanning.		
001	GE	-	[0 to 1023 / **0** / 1 digit/step]
002	GO	-	

4695	[Black Level Peak Read] DFU		
	Displays the peak level of the black level scanning.		
001	BE	-	[0 to 1023 / **0** / 1 digit/step]
002	BO	-	

4802	[DF Shading FreeRun]		
001	Lamp OFF	-	Executes the scanner free run of shading movement with exposure lamp on or off. Press "OFF" to stop this free run. Otherwise, the free run lasts.
002	Lamp ON		

4804	[Home Position Opetation]		
001	-	-	Executes the scanner HP detection.

4806	[Carriage Move]		
001	-	-	Moves the carriage from the scanner home position. Dust may fall through the DF exposure glass. Therefore, do this SP when you transport the machine a long distance.

4807	[SBU Test Pattern Change]		
001	-	-	[0 to 255 / **0** / 1 /step]
	Selects the SBU test pattern. 0: Normal output 1: Fixed value output 2: Main scan gradation 3: Sub scan gradation 4: Grid pattern		

4808	[Factory Setting Input] DFU		
002	Execution Flag	*ENG	[0 or 1 / **0** / 1 /step]

4902	[ACC Data Display]		
	This SP outputs the final data read at the end of ACC execution. A zero is returned if there was an error reading the data. [0 to 255 / **0** / 1 /step]		
001	R DATA1	*ENG	Photo C Patch Level 1 (8-bit)
002	G DATA1	*ENG	Photo M Patch Level 1 (8-bit)
003	B DATA1	*ENG	Photo Y Patch Level 1 (8-bit)
004	R DATA2	*ENG	Photo C Patch Level 17 (8-bit)
005	G DATA2	*ENG	Photo M Patch Level 17(8-bit)
006	B DATA2	*ENG	Photo Y Patch Level 17 (8-bit)

4904	[IPU Board Test]

001	Test1	-	Bit0: TAURUS register Bit1: ORION register Bit2: LUPUS register Bit3 to 11: Not used Bit12: Ri20 Bit13 to 15: Not used 0: OK, 1: Error
	Performs a write and read check of the ASICs on the BCU board and displays the result.		
002	Test2	-	Bit0: Image path from SBU to TAURUS Bit1: Image path from TAURUS to ORION Bit2: Image path from ORION to TAURUS Bit3: Image path from TAURUS to LUPUS Bit4 to 11: Not used Bit12: Image path from LUPUS to Ri20 Bit13: Image path from Ri20 to GAVD Bit14 and 15: Not used 0: OK, 1: Error
	Performs an image path check on the BCU board and displays the result.		

4905	**[Dither Selection] DFU**		
	Changes the parameters for error diffusion.		
001	-	*ENG	[0 to 255 / **0** / 1 /step]

4909	**[Man Gamma:Photo:Mono Bk] DFU**
4910	**[Man Gamma:Text:Bk]**
4911	**[Man Gamma:Text:C]**
4912	**[Man Gamma:Text:M]**
4913	**[Man Gamma:Text:Y]**

001	Offset:Highlight	*ENG	[0 to 30 / **15** / 1 /step]
002	Offset:Middle	*ENG	
003	Offset:Shadow	*ENG	
004	Offset:Idmax	*ENG	
005	Option:Highlight	*ENG	[0 to 255 / **0** / 1 /step]
006	Option:Middle	*ENG	
007	Option:Shadow	*ENG	
008	Option:Idmax	*ENG	
4914	**[Man Gamma: Text:Mono Bk] DFU**		
4915	**[Man Gamma:Photo:Bk]**		
4916	**[Man Gamma:Photo:C]**		
4917	**[Man Gamma:Photo:M]**		
4918	**[Man Gamma:Photo:Y]**		
001	Offset:Highlight	*ENG	[0 to 30 / **15** / 1 /step]
002	Offset:Middle	*ENG	
003	Offset:Shadow	*ENG	
004	Offset:Idmax	*ENG	
005	Option:Highlight	*ENG	[0 to 255 / **0** / 1 /step]
006	Option:Middle	*ENG	
007	Option:Shadow	*ENG	
008	Option:Idmax	*ENG	

4954	**[Read/Restore Standard]**		
001	Scan New Chart	-	Executes new chart scanning.
002	Recall Previous Chart	-	Recalls the previous scanned chart.
004	Set Standard Chart	-	Restores a new chart data as a standard chart data.

4991	[IPU Image Path Selection]		
	Selects the image path. Enter the number to be selected using the 10-key pad.		
001	RGB Frame Memory	-	[0 to 11 / **2** / 1 /step]
	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	[High Light Correction]		
001	Sensitivity Selection	*ENG	Selects the Highlight correction level. [0 to 9 / **4** / 1 /step] 0: weakest sensitivity 9: strongest sensitivity
002	Range Selection	*ENG	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.]
	Selects the definition level between Text and Photo for high compression PDF.

001	High Compression PDF	*ENG	[0 to 2 / **1** / 1 /step] 0: Text priority 1: Normal 2: Photo priority

System SP5-xxx

SP5-XXX (Mode)

5024	**[mm/inch Display Selection]**		
	Display units (mm or inch) for custom paper sizes.		
001	0:mm 1:inch	*CTL	0: mm (Europe/Asia) 1: inch (USA)

5045	**[Accounting Counter]**		
	Selects the counting method. **NOTE:** The counting method can be changed only once, regardless of whether the counter value is negative or positive.		
001	Counter Method	*CTL	[0 or 1 / **0** / -] 0: Developments 1: Prints

5047	**[Paper Display]**		
	Turns on or off the printed paper display on the LCD.		
001	Backing Paper	*CTL	[0 or 1 / **0** / -] 0: OFF, 1: ON

5051	**[Toner Refill Detection Display]**		
	Enables or disables the toner refill detection display.		
5051 1	-	*CTL	[0 or 1 / **0** / -] Alphanumeric 0: ON 1: OFF

5055	**[Display IP Address]**		
	Display or does not display the IP address on the LCD.		

001	-	*CTL	[0 or 1 / **0** / -] 0: OFF 1: ON

5056	**[Coverage Counter Display]**		
	Display or does not display the coverage counter on the LCD.		
001	-	*CTL	[0 or 1 / **0** / -] 0: Not display, 1: Display

5061	**[Toner Remaining Icon Display Change]**		
	Display or does not display the remaining toner display icon on the LCD.		
001	-	*CTL	[0 or 1 / **0** / -] 0: Not display, 1: Display

5062	**[Parts PM System Setting]**		
	Display or does not display the PM part yield on the LCD.		
001	PCU:Bk	*CTL	[0 or 1 / **0** / -] **0:** Not display, 1: Display
002	PCU:M	*CTL	
003	PCU:C	*CTL	
004	PCU:Y	*CTL	
005	Dev Unit:Bk	*CTL	
006	Dev Unit:M	*CTL	
007	Dev Unit:C	*CTL	
008	Dev Unit:Y	*CTL	
009	Fusing Unit	*CTL	
010	Fusing Roller	*CTL	
011	Fusing Belt	*CTL	
012	PCU Toner Collection Bottle	*CTL	

5066	[Parts PM Menu Display Setting] Not used		
001	-	*CTL	[0 or 1 / **0** / -] **0:** Not display, 1: Display

5067	[Parts PM System Setting]		
	Selects the service maintenance or user maintenance for each PM parts. If the user service is selected, PM alart is displayed on the LCD.		
001	PCU:Bk	*CTL	**[0: Service]** or [1: User]
002	PCU:M	*CTL	
003	PCU:C	*CTL	
004	PCU:Y	*CTL	
005	Dev Unit:Bk	*CTL	**[0: Service]** or [1: User]
006	Dev Unit:M	*CTL	
007	Dev Unit:C	*CTL	
008	Dev Unit:Y	*CTL	
009	Fusing Unit	*CTL	**[0: Service]** or [1: User]
010	Fusing Roller	*CTL	
011	Fusing Belt	*CTL	
012	PCU Toner Collection Bottle	*CTL	

5104	[A3/DLT Double Count] SSP		
001	PCU:Bk	*CTL	[0 to 2 / **0** / 1/step] 0: No 1: Yes 2: Yes except By-pass
	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]		
001	Default Optional Counter Type	*CTL	This program specifies the counter type. **0: None**, 1: Key card (RK 3, 4) 2: Key card (down), 3: Prepaid card 4: Coin rack, 5: MF key card 8: Key counter + Vendor 9: Bar-code Printer
002	External Optional Counter Type	*CTL	This program specifies the external counter type. **0: None** 1: Expansion Device 1 2: Expansion Device 2 3: Expansion Device 3

5114	[Optional Counter I/F]		
001	MF Key Card Extension	*CTL	[**0: Not installed**/ 1: Installed (scanning accounting)]

5118	[Disable Copying]	*CTL	[0: Not disabled/ 1: Disabled]
001	This program disables copying.		

5120	[Mode Clear Opt. Counter Removal]	*CTL	[0: **Yes (removed)**/ 1: Standby (installed but not used)/ 2: No (not removed)]
001	This program updates the information on the optional counter. When you install or remove an optional counter, check the settings.		

5121	[Counter Up Timing]	*CTL	[**0: Feed**/ 1: Exit]
001	This program specifies when the counter goes up. The settings refer to “paper feed” and “paper exit” respectively.		

5126	[F Size Original Setting]	*ENG	[0 to 2 / **0** / 1 /step] 0: 8 1/2" x 13" (Foolscap) 1: 8 1/4" x 13" (Folio) 2: 8" x 13" (F)
001	Selects F size original setting.		

5127	[APS Mode]	*CTL	[**0**: Not disabled/ 1: Disabled]
001	This program disables the APS.		

5128	[Code Mode With Key/Card Option]	*CTL	-
001	DFU		

5131	[Paper Size Type Selection]	*ENG	DFU [0: JP (Japan)/ 1: NA / 2: EU]
001	The program selects a paper size system from the following alternatives: the AB system (0), the LT system (1), and the AF system (2).		

5150	[By-Pass Length Setting]	*CTL	[**0**: OFF/ 1: ON]
001	Determines whether the transfer sheet from the by-pass tray is used or not. Normally the paper length for sub scanning paper from the by-pass tray is limited to 600 mm, but this can be extended with this SP to 1260 mm.		

5162	[App. Switch Method]	*CTL	[**0**: Soft Key Set/ 1: Hard Key Set]
001	This program specifies the switch that selects an application program.		

5167	Not used		
001			

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.

001	-	*CTL	[0 or 1 / **0** / -] 0: Disabled 1: Enabled

5181	**[Size Adjust]**		
	Adjusts the paper size for each tray.		
001	Tray 1:1	*ENG	[0 to 1 / **0 (EU/ASIA), 1 (NA)** / 1 /step] 0: A4 LEF, 1: LT LEF
002	Tray 1: 2	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A3, 1: DLT
003	Tray 1: 3	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B4, 1: LG
004	Tray 1: 4	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B5 LEF, 1: Exe LEF
005	**Not used**	*ENG	-
006		*ENG	
007		*ENG	
008		*ENG	
009	Tray 2: 1	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A4 LEF, 1: LT LEF
010	Tray 2: 2	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A3, 1: DLT
011	Tray 2: 3	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B4, 1: LG
012	Tray 2: 4	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B5 LEF, 1: Exe LEF
013	Tray 3: 1	*ENG	[0 to 2 / **0 (EU/ASIA), 1 (NA)** / -] 0: A4LEF, 1: LTLEF

014	Tray 3: 2	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A3, 1: DLT
015	Tray 3: 3	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B4, 1: LG
016	Tray 3: 4	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B5 LEF, 1: Exe LEF

5186	**[RK 4 Disconnect Operation]**		
	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.		
001	-	*ENG	[0 or 1 / **0** / 1/step] 0: Disable 1: Enable

5188	**[Copy NV Version]**		
	Displays the version number of the NVRAM on the controller board.		
001	-	*CTL	-

5195	**[Limitless SW] DFU**		
001	-	*CTL	[0 or 1 / **1** / -] 0: Productivity priority 1: Tray priority
	Selects the paper feed mode. **Productivity priority:** This changes the feeding tray as soon as the machine detects the priority tray even the paper still remains in the feeding tray. **Tray priority:** This changes the feeding tray after the paper in the tray where the machine has been feeding paper has been run out of. This SP is activated only when a customer selects the "Auto Paper Selsct".		

5196	[90 degree rotation (copy)]		
001	-		Not used

5212	[Page Numbering]	*CTL	
	This program adjusts the position of the second side page numbers. A "– value" moves the page number positions to the left edge. A "+ value" moves the page number positions to the right edge.		
003	Duplex Printout Right/Left Position		[–10 to 10 / **0** / 1 mm/step]
004	Duplex Printout High/Low Position		

5302	[Set Time]		
	Adjusts the RTC (real time clock) time setting for the local time zone. Examples: For Japan (+9 GMT), enter 540 (9 hours x 60 min.) DOM: +540 (Tokyo) NA: -300 (New York) EU: + 60 (Paris) CH: +480 (Peking) TW: +480 (Taipei) AS: +480 (Hong Kong)		
002	Time Difference	*CTL#	[-1440 to 1440 / **Area** / 1 min./step]

5307	[Summer Time]		
001	Setting	-	[0 to 1 / **NA, EU, ASIA** / 1 /step] 0: Disabled 1: Enabled NA and EUR: 1, ASIA: 0
	Enables or disables the summer time mode. **Note** • Make sure that both SP5-307-3 and -4 are correctly set. Otherwise, this SP is not activated even if this SP is set to "1".		

003	Rule Set (Start)	-	
	Specifies the start setting for the summer time mode. There are 8 digits in this SP. For months 1 to 9, the "0" cannot be input in the first digit, so the eight-digit setting for -2 or -3 becomes a seven-digit setting. 1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [1 to 5] 4th digit: The day of the week. [0 to 6 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] 7th digit: The length of the advanced time. [0 to 9 / 1 hour /step] 8th digit: The length of the advanced time. [0 to 5 / 10 minutes /step] For example: 3500010 (EU default) The timer is advanced by 1 hour at am 0:00 on the 5th Sunday in March • The digits are counted from the left. • Make sure that SP5-307-1 is set to "1".		
004	Rule Set (End)	-	-
	Specifies the end setting for the summer time mode. There are 8 digits in this SP. 1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [0 to 5] 4th digit: The day of the week. [0 to 7 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] The 7th and 8 digits must be set to "00". • The digits are counted from the left. • Make sure that SP5-307-1 is set to "1".		

5401	[Access Control] DFU
	When installing the SDK application, SAS (VAS) adjusts the following settings.

103	Default Document ACL	*CTL	Whenever a new login user is added to the address book in external certification mode (for Windows, LDAP, RDH), the default document ACL is updated according to this SP setting. [0 to 3 / **0** / 1] 0: View 1: Edit 2: Edit/Delete 3: Full control Note: This SP setting is ignored on a machine that is not using document server.
162	Extend Certification Detail	*CTL	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	*CTL	"SDK" is the "Software Development Kit". This data can be converted from SAS (VAS) when installed or uninstalled. **(DFU)**
201	SDK1 Certification Method	*CTL	
210	SDK2 Unique ID	*CTL	
211	SDK2 Certification Method	*CTL	
220	SDK3 Unique ID	*CTL	
221	SDK3 Certification Method	*CTL	
230	SDK certification device	*CTL	-
	• Bit 0: SDK authentication 0: Off (Default), 1: On (SDK authentication enabled) Selects the SDK authentication setting. • Bit 2: Administrator log in setting 0: Off (Default), 1: On		

240	Detail Option	*CTL	-
	Enalbes 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 Counter Clear]		
001	-	*CTL	Clears all counters for users.

5411	[LDAP Certification]		
004	Easy Certification	*CTL	Determines whether easy LDAP certification is done. [0 to 1 / **1** / 1] 1: On, 0: Off
005	Password Null Not Permit	*CTL	This SP is referenced only when SP5411-4 is set to "1" (On). [0 to 1 / **0** / 1] 0: Password NULL not permitted. 1: Password NULL permitted.

5413	[Lockout Setting]		
001	Lockout On/Off	*CTL	Switches on/off the lock on the local address book account. [0 to 1 / **0** / 1] 0: Off, 1: On
002	Lockout Threshold	*CTL	Sets a limit on the frequency of lockouts for account lockouts. [1 to 10 / **5** / 1]

003	Cancellation On/Off	*CTL	Determines whether the system waits the prescribed time for input of a correct user ID and password after an account lockout has occurred. [0 to 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.
004	Cancellation Time	*CTL	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 999 / **60** / 1 min.]
005	Counter Clear Time	*CTL	**Not Used**

5414	**[Access Mitigation]**		
001	Mitigation On/Off	*CTL	Switches on/off masking of continuously used IDs and passwords that are identical. [0 to 1 / **0** /1] 0: Off 1: On
002	Mitigation Time	*CTL	Sets the length of time for excluding continuous access for identical user IDs and passwords. [0 to 60 / **15** / 1 min.]

5415	**[Password Attack]**		
001	Permissible Number	*CTL	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]
002	Detect Time	*CTL	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]**

001	Access User Max Num	*CTL	Limits the number of users used by the access exclusion and password attack detection functions. [50 to 200 / **200** / 1 users]
002	Access Password Max Num	*CTL	Limits the number of passwords used by the access exclusion and password attack detection functions. [50 to 200 / **200** / 1 passwords]
003	Monitor Interval	*CTL	Sets the processing time interval for referencing user ID and password information. [1 to 10 / **3** / 1 sec.]

5417	**[Access Attack]**		
001	Access Permissible Number	*CTL	Sets a limit on access attempts when an excessive number of attempts are detected for MFP features. [0 to 500 / **100** / 1]
002	Attack Detect Time	*CTL	Sets the length of time for monitoring the frequency of access to MFP features. [10 to 30 / **10** / 1 sec.]
003	Productivity Fall Wait	*CTL	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.]
004	Attack Max Num	*CTL	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]

5420	**[User Authentication]**
	These settings should be done with the System Administrator. **Note**: These functions are enabled only after the user access feature has been enabled.

001	Copy	*CTL	Determines whether certification is required before a user can use the copy applications. [0 to 1 / **0** /1] 0: On, 1: Off
002	Color Security Setting	*CTL	-
	Enables or disables the color copy limitation for each copy mode when the user authentication is "ON". 0: Enable (default), 1: Disable Bit0: B/W mode Bit1: Mono color mode Bit2: Two colors mode Bit3: Full color mode Bit4: Automatic color mode Bit5 to 7: Reserved		
011	Document Server	*CTL	Determines whether certification is required before a user can use the document server. [0 to 1 / **0** /1] 0: On, 1: Off
021	Fax	*CTL	Determines whether certification is required before a user can use the fax application. [0 to 1 / **0** /1] 0: On, 1: Off
031	Scanner	*CTL	Determines whether certification is required before a user can use the scan applications. [0 to 1 / **0** /1] 0: On, 1: Off
041	Printer	*CTL	Determines whether certification is required before a user can use the printer applications. [0 to 1 / **0** / 1] 0: On, 1: Off

051	SDK1	*CTL	[0 or 1 / **0** / 1] 0: ON. 1: OFF Determines whether certification is required before a user can use the SDK application.
061	SDK2		
071	SDK3		

5481	**[Authentication Error Code]**		
	These SP codes determine how the authentication failures are displayed.		
001	System Log Disp	*CTL	Determines whether an error code appears in the system log after a user authentication failure occurs. [0 to 1 / **0** / 1] 0: Off, 1: On
002	Panel Disp	*CTL	Determines whether an error code appears on the operation panel after a user authentication failure occurs. [0 to 1 / **1** / 1] 1: On, 0: Off

5490	**[MF Key Card (Japan only)]**		
001	Job Permit Setting	*CTL	Sets up operation of the machine with a keycard. [0 to 1 / **0** / 1] 0: Disabled. Cancels operation without a user code. 1: Enabled. Allows operation without a user code.
002	Count Mode Setting	*CTL	-

5501	**[PM Alarm]**		
001	PM Alarm Level	*CTL	[0 to 9999 / **0** / 1 / step] 0: Alarm off 1 to 9999: Alarm goes off when **Value (1 to 9999) x 1000 ≥ PM counter**

002	Original Count Alarm	*CTL	[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]**	*CTL	-
001	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. The error alarm counter counts "1" when any SC is detected. However, the error alarm counter decreases by "1" when an SC is not detected during a set number of copied sheets (for example, default 1500 sheets). The error alarm occurs when the SC error alarm counter reaches "5".		
001	-	*CTL	[0 to 255 / **20** / 100 copies /step]

5507	**[Supply Alarm]**	*CTL	-
	Enables or disables the notifying a supply call via the @Remote.		
001	Paper Supply Alarm	**0**: Off, 1: On	
002	Staple Supply Alarm	0: Off, **1**: On	
003	Toner Supply Alarm	0: Off, **1**: On	
080	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	[250 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	

5508*	**[CC Call]**	*CTL	-
001*	Jam Remains	0: Disable, **1**: Enable	
	Enables/disables initiating a call for an unattended paper jam.		
002*	Continuous Jams	0: Disable, **1**: Enable	
	Enables/disables initiating a call for consecutive paper jams.		
003*	Continuous Door Open	0: Disable, **1**: Enable	
	Enables/disables initiating a call when the front door remains open.		
011*	Jam Detection: Time Length	[3 to 30 / **10** / 1 minute /step]	
	Sets the time a jam must remain before it becomes an “unattended paper jam”.		
012*	Jam Detection: Continuous Count	[2 to 10 / **5** / 1 /step]	
	Sets the number of consecutive paper jams required to initiate a call.		
013*	Door Open: Time Length	[3 to 30 / **10** / 1 /step]	
	Sets the length of time the door remains open before the machine initiates a call.		

5515	[SC/Alarm Setting]	
	With @Remote in use, these SP codes can be set to issue an SC call when an SC error occurs. If this SP is switched off, the SC call is not issued when an SC error occurs.	
001	SC Call	[0 or 1 / **1** / -] 0: Off 1: On
002	Service Parts Near End Call	
003	Service Parts End Call	
004	User Call	
006	Communication Test Call	[0 or 1 / **1** / -] 0: Off 1: On
007	Machine Information Notice	
008	Alarm Notice	
009	Non Genuin Tonner Alarm	
010	Supply Automatic Ordering Call	
011	Supply Manegement Report Call	
012	Jam/Door Open Call	

5610	[Base Gamma Cntl P: Command]	
004	Recall Factory Setting	-
	Recalls the factory settings of the base gamma control points.	
005	Restore Factory Setting	-
	Overwrites the current values onto the factory settings of the base gamma control points.	
006	Restore Prev. Setting	-
	Recalls the previous settings of the base gamma control points.	

5611	[Toner Color in 2C]		
001	B-C	*ENG	[0 to 128 / **100** / 1 /step] 128: Darkest density
	Adjusts the Cyan correction value of the blue signal in two-color mode.		

002	B-M	*ENG	[0 to 128 / **100** / 1 /step] 128: Darkest density
	Adjusts the Magenta correction value of the blue signal in two-color mode.		
003	G-C	*ENG	[0 to 128 / **100** / 1 /step] 128: Darkest density
	Adjusts the Cyan correction value of the blue signal in two-color mode.		
004	G-Y	*ENG	[0 to 128 / **100** / 1 /step] 128: Darkest density
	Adjusts the Yellow correction value of the blue signal in two-color mode.		
005	R-M	*ENG	[0 to 128 / **100** / 1 /step] 128: Darkest density
	Adjusts the Magenta correction value of the blue signal in two-color mode.		
006	R-Y	*ENG	[0 to 128 / **100** / 1 /step] 128: Darkest density
	Adjusts the Yellow correction value of the blue signal in two-color mode.		

5618	**[Color Mode Display Selection]**		
001	-	*CTL	[0 or 1 / **1** / -] 0: ACS, Colour, Black & White, Two Colour, Single colour 1: ACD, Full Colour, Black & White
	Selects the color selection display on the LCD.		

Note

- Memory Clear (SP5-801)
- The following tables list the items that are cleared. The serial number information, meter charge setting and meter charge counters (SP8-581, 582, 583, 584, and 586) are not cleared.

5801	**[Memory Clear]**

001	All Clear	Resets all correction data for process control and all software counters, and returns all modes and adjustments to their default values.
002	Engine [ENG]	Clears the engine settings.
003	SCS	Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information.
004	IMH Memory Clr	Initializes the IMH settings.
005	MCS	Initializes the Mcs settings.
006	Copier application	Initializes all copier application settings.
007	**Not used**	
008	Printer application	The following service settings: • Bit switches • Gamma settings (User & Service) • Toner Limit The following user settings: • Tray Priority • Menu Protect • System Setting except for setting of Energy Saver • I/F Setup (I/O Buffer and I/O Timeout) • PCL Menu
009	Scanner application	Initializes the scanner defaults for the scanner and all the scanner SP modes.
010	Web Service	Deletes the network file application management files and thumbnails, and initializes the job login ID.
011	NCS	All setting of Network Setup (User Menu) (NCS: Network Control Service)
012	**Not used**	
014	Clear DCS Setting	Initializes the DCS (Delivery Control Service) settings.
015	Clear UCS Setting	Initializes the UCS (User Information Control Service) settings.

016	MIRS Setting	Initializes the MIRS (Machine Information Report Service) settings.
017	CCS	Initializes the CCS (Certification and Charge-control Service) settings.
018	SRM Memory Clr	Initializes the SRM (System Resource Manager) settings.
019	LCS	Initializes the LCS settings.
020	Web Uapli	Initializes the web user application settings.
021	ECS	Initializes the ECS settings.

5803	**[Input Check]**	See p.393 "Input Check Table".
5804	**[Output Check]**	See p.401 "Output Check Table".

5810	**[SC Reset]**		
	Resets a type A service call condition. **Note** • Turn the main switch off and on after resetting the SC code.		
001	Fusing SC Reset	-	-

5811	**[Machine Serial]** Machine Serial Number Display		
002	Display	*ENG	Displays the machine serial number.
004	-	-	Inputs the serial number.

5812	**[Service Tel. No. Setting]**		
001	Service	*CTL	-
	Sets the telephone number for a service representative. This number is printed on the Counter List, which can be printed with the user's "Counter" menu. This can be up to 20 characters (both numbers and alphabetic characters can be input).		

002	Facsimile	*CTL	-
	Sets the fax or telephone number for a service representative. This number is printed on the Counter List. This can be up to 20 characters (both numbers and alphabetic characters can be input).		
003	Supply	*CTL	-
	Use this to input the telephone number of your supplier for consumables. Enter the number and press #.		
004	Operation	*CTL	-
	Use this to input the telephone number of your sales agency. Enter the number and press #.		

5816	**[Remote Service]**	*CTL	**-**
001	I/F Setting		
	Selects the remote service setting. [0 to 2 / **2** / 1 /step] 0: Remote service off 1: CSS remote service on 2: @Remote service on		
002	CE Call		
	Performs the CE Call at the start or end of the service. [0 or 1 / **0** / 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 "2".		
003	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 registor has been completed.		

007	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
008	RCG Connect Timeout
	Specifies the connect timeout interval when calling the RCG. [1 to 90 / **10** / 1 second /step]
009	RCG Write Timeout
	Specifies the write timeout interval when calling the RCG. [1 to 100 / **60** / 1 second /step]
010	RCG Read Timeout
	Specifies the read timeout interval when calling the RCG. [1 to 100 / **60** / 1 second /step]
011	Port 80 Enable
	Enables/disables access via port 80 to the SOAP method. [0 or 1 / **0** / –] 0: Disabled, 1: Enabled
013	RFU (Remote Frimware 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.
021	RCG – C Registed
	This SP displays the Embedded RC Gate installation end flag. 0: Installation not completed 1: Installation completed

022	RCG – C Regist Detail
	This SP displays the Embedded RC Gate installation status. 0: RCG device not registered 1: RCG device registered 2: Device registered
023	Connect Type (N/M)
	This SP displays and selects the Embedded RC Gate connection method. [0 or 1 / **0** / 1 /step 0: Internet connection 1: Dial-up connection
061	Cert. Expire Timing **DFU**
	Proximity of the expiration of the certification.
062	Use Proxy
	This SP setting determines if the proxy server is used when the machine communicates with the service center.
063	Proxy Host
	This SP sets the address of the proxy server used for communication between Embedded RC Gate-N and the gateway. Use this SP to set up or display the customer proxy server address. The address is necessary to set up Embedded RC Gate-N. **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.
064	Proxy Port Number
	This SP sets the port number of the proxy server used for communication between Embedded RC Gate-N and the gateway. This setting is necessary to set up Embedded RC Gate-N. **Note** • This port number is customer information and is not printed in the SMC report.

065	Proxy User Name	
	This SP sets the HTTP proxy certification user name. 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.	
066	Proxy Password	
	This SP sets the HTTP proxy certification password. Note • The length of the password 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.	
067	CERT: Up State	
	Displays the status of the certification update.	
	0	The certification used by Embedded RC Gate is set correctly.
	1	The certification request (setAuthKey) for update has been received from the GW URL and certification is presently being updated.
	2	The certification update is completed and the GW URL is being notified of the successful update.
	3	The certification update failed, and the GW URL is being notified of the failed update.
	4	The period of the certification has expired and new request for an update is being sent to the GW URL.
	11	A rescue update for certification has been issued and a rescue certification setting is in progress for the rescue GW connection.
	12	The rescue certification setting is completed and the GW URL is being notified of the certification update request.
	13	The notification of the request for certification update has completed successfully, and the system is waiting for the certification update request from the rescue GW URL.
	14	The notification of the certification request has been received from the rescue GW controller, and the certification is being stored.

	15	The certification has been stored, and the GW URL is being notified of the successful completion of this event.
	16	The storing of the certification has failed, and the GW URL is being notified of the failure of this event.
	17	The certification update request has been received from the GW URL, the GW URL was notified of the results of the update after it was completed, but a certification error has been received, and the rescue certification is being recorded.
	18	The rescue certification of No. 17 has been recorded, and the GW URL is being notified of the failure of the certification update.
068	CERT: Error	
	Displays a number code that describes the reason for the request for update of the certification.	
	0	Normal. There is no request for certification update in progress.
	1	Request for certification update in progress. The current certification has expired.
	2	An SSL error notification has been issued. Issued after the certification has expired.
	3	Notification of shift from a common authentication to an individual certification.
	4	Notification of a common certification without ID2.
	5	Notification that no certification was issued.
	6	Notification that GW URL does not exist.
069	CERT: Up ID	The ID of the request for certification.
083	Firmware Up Status	Displays the status of the firmware update.
084	Non-HDD Firm Up	This setting determines if the firmware can be updated, even without the HDD installed. 0: Not allowed update 1: Allowed update
085	Firm Up User Check	This SP setting determines if the operator can confirm the previous version of the firmware before the firmware update execution. If the option to confirm the previous version is selected, a notification is sent to the system manager and the firmware update is done with the firmware files from the URL.

086	Firmware Size	Allows the service technician to confirm the size of the firmware data files during the firmware update execution.
087	CERT: Macro Ver.	Displays the macro version of the @Remote certification.
088	CERT: PAC Ver.	Displays the PAC version of the @Remote certification.
089	CERT: ID2 Code	Displays ID2 for the @Remote certification. Spaces are displayed as underscores (_). Asteriskes (*) indicate that no @Remote certification exists. "000000_____" indicates "Common certification".
090	CERT: Subject	Displays the common name of the @Remote certification subject. CN = the following 17 bytes. Spaces are displayed as underscores (_). Asterisks (*) indicate that no @Remote certification exists. "000000_____" indicates "Common certification".
091	CERT: Serial No.	Displays serial number for the @Remote certification. Asterisks (*) indicate that no @Remote certification exists.
092	CERT: Issuer	Displays the common name of the issuer of the @Remote certification. CN = the following 30 bytes. Asteriskes () indicate that no @Remote certification exists.
093	CERT: Valid Start	Displays the start time of the period for which the current @Remote certification is enabled.
094	CERT: Valid End	Displays the end time of the period for which the current @Remote certification is enabled.
150	Selection Country	
	Not used	
151	Line Type Automatic Judgment	
	Not used	
152	Line Type Judgment Result	
	Not used	
153	Selection Dial/Push	
	Not used	

154	Outside Line/Outgoing Number		
	• **Not used**		
156	Dial Up User Name		
	• **Not used**		
157	Dial Up Password		
	• **Not used**		
161	Local Phone Number		
	Not used		
162	Connection Timing Adjustment: Incoming		
	Not used		
163	Access Point		
	Not used		
164	Line Connecting		
	Not used		
173	Modem Serial Number	**Not used**	
174	Retransmission Limit		
	Not used		
187	FAX TX Priority	-	
	Not used		
200	Manual Polling	-	**Not used**

201	Regist: Status	
	Displays a number that indicates the status of the @Remote service device. 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 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 7: Certification update 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 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 7: Certification update error 8: Other error 9: Registration executing		
208	Error Code		
	Displays a number that describes the error code that was issued when either SP5816-204 or SP5816-207 was executed.		
	Cause	**Code**	**Meaning**
	Illegal Modem Parameter	-11001	Chat parameter error
		-11002	Chat execution error
		-11003	Unexpected error
	Operation Error, Incorrect Setting	-12002	Inquiry, registration attempted without acquiring device status.
		-12003	Attempted registration without execution of an inquiry and no previous registration.
		-12004	Attempted setting with illegal entries for certification and ID2.

		-12005	@Remote communication is prohibited. The device has an Embedded RC gate-related problem.
		-12006	A confirmation request was made after the confirmation had been already completed.
		-12007	The request number used at registration was different from the one used at confirmation.
		-12008	Update certification failed because mainframe was in use.
	Error Caused by Response from GW URL	-2385	Attempted dial up overseas without the correct international prefix for the telephone number.
		-2387	Not supported at the Service Center
		-2389	Database out of service
		-2390	Program out of service
		-2391	Two registrations for same device
		-2392	Parameter error
		-2393	RCG device not managed
		-2394	Device not managed
		-2395	Box ID for RCG device is illegal
		-2396	Device ID for RCG device is illegal
		-2397	Incorrect ID2 format
		-2398	Incorrect request number format
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]**

002	RCG IP Address	*CTL	Sets the IP address of the RCG (Remote Communication Gate) destination for call processing at the remote service center.

5824	**[NV-RAM Data Upload]**		
	Uploads the UP and SP mode data (except for counters and the serial number) from the NVRAM to an SD card. For details, see the "NVRAM Data Upload/Download" in the “System Maintenance Reference” of the Field Service Manual.		
001	-	#	-

5825	**[NV-RAM Data Download]**		
	Downloads the UP and SP mode data from an SD card to the NVRAM. For details, see the "NVRAM Data Upload/Download" in the “System Maintenance Reference” of the Field Service Manual.		
001	-	#	-

5828	**[Network Setting]**	*CTL	**-**
050	1284 Compatibility (Centro)	Enables or disables 1284 Compatibility. [0 or 1 / **1** / 1 / step] 0: Disabled, 1: Enabled	
052	ECP (Centro)	Enables or disables ECP Compatibility. [0 or 1 / **1** / 1 / step] 0: Disabled, 1: Enabled **Note** • This SP is activated only when SP5-828-50 is set to "1".	
065	Job Spooling	Enables/disables Job Spooling. [0 or 1 / **0** / 1 / step] 0: Disabled, 1: Enabled	

066	Job Spooling Clear: Start Time	Treatment of the job when a spooled job exists at power on. 0: ON (Data is cleared) **1**: OFF (Automatically printed)
069	Job Spooling (Protocol)	Validates or invalidates the job spooling function for each protocol. **0**: Validates 1: Invalidates bit0: LPR bit1: FTP bit2: IPP bit3: SMB bit4: BMLinkS bit5: DIPRINT bit6: sftp bit7: (Reserved)
090	TELNET (0: OFF 1: ON)	Enables or disables the Telnet protocol. [0 or 1 / **1** / –] 0: Disable, 1: Enable
091	Web (0: OFF 1: ON)	Enables or disables the Web operation. [0 or 1 / **1** / –] 0: Disable, 1: Enable
145	Active IPv6 Link Local Address	This is the IPv6 local address link referenced on the Ethernet or wireless LAN (802.11b) in the format: "Link Local Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.

147	Active IPv6 Stateless Address 1	These SPs are the IPv6 status addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11b) in the format: "Status Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
149	Active IPv6 Stateless Address 2	
151	Active IPv6 Stateless Address 3	
153	Active IPv6 Stateless Address 4	
155	Active IPv6 Stateless Address 5	
156	IPv6 Manual Address	This SP is the IPv6 manually set address referenced on the Ethernet or wireless LAN (802.11b) in the format: "Manual Set Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
158	IPv6 Gateway Address	This SP is the IPv6 gateway address referenced on the Ethernet or wireless LAN (802.11b). The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
161	IPv6 Stateless Auto Setting	Enables or disables the automatic setting for IPv6 stateless. [0 or 1 / **1** / 1 /step] 0: Disable, 1: Enable
236	Web Item visible	Displays or does not display the Web system items. [0 x 0000 to 0 x ffff / **0 x ffff**] 0: Not displayed, 1: Displayed bit0: Net RICOH bit1: Consumable Supplier bit2-15: Reserved (all)
237	Web shopping link visible	Displays or does not display the link to Net RICOH on the top page and link page of the web system. [0 to 1 / **1** / 1] 0: Not display, 1:Display

238	Web supplies Link visible	Displays or does not display the link to Consumable Supplier on the top page and link page of the web system. [0 to 1 / **1** / 1] 0: Not display, 1:Display
239	Web Link1 Name	This SP confirms or changes the URL1 name on the link page of the web system. The maximum characters for the URL name are 31 characters.
240	Web Link1 URL	This SP confirms or changes the link to URL1 on the link page of the web system. The maximum characters for the URL are 127 characters.
241	Web Link1 visible	Displays or does not display the link to URL1 on the top page of the web system. [0 to 1 / **1** / 1] 0: Not display, 1:Display
242	Web Link2 Name	Same as "-239"
243	Web Link2 URL	Same as "-240"
244	Web Link2 visible	Same as "-241"

5832	**Not used**	*CTL
	-	

5836	**Not used**	*CTL
-		

5840	**Not used**		
-			

5841	**[Supply Name Setting]**

001	Toner Name Setting: Black	*CTL	Specifies supply names. These appear on the screen when the user presses the Inquiry button in the user tools screen.
002	Toner Name Setting: Cyan		
003	Toner Name Setting: Yellow		
004	Toner Name Setting: Magenta		
007	OrgStamp		
011	Staple Std1		
012	Staple Std2		
013	Staple Std3		
014	Staple Std4		

5842	**[GWWS Analysis] DFU**		
001	Setting 1	*CTL	Default: **00000000** – do not change Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software
002	Setting 2	*CTL	Adjusts the debug program modesetting. Bit7: 5682 mmseg-log setting 0: Date/Hour/Minute/Second 1: Minute/Second/Msec. 0 to 6: Not used

5844	**[USB]**		
001	Transfer Rate	*CTL	0x01: Full speed **0x04: Auto Change**
	Adjusts the USB transfer rate.		
002	Vendor ID	*CTL	Displays the vendor ID. **DFU**
003	Product ID	*CTL	Displays the product ID. **DFU**
004	Device Release Number	*CTL	Displays the development release version number. **DFU**

100	Notify Unsupport	*CTL	Displays a message of the unspported USB device for the USB host slot. [0 or 1 / **1** / -] 0: Not displayed, 1: Displayed

5845	**[Delivery Server Setting]**	*CTL	-
	Provides items for delivery server settings.		
001	FTP Port No.	[0 to 65535 / **3670** / 1 /step]	
	Sets the FTP port number used when image files to the Scan Router Server.		
002	IP Address (Primary)	Range: **000.000.000.000** to 255.255.255.255	
	Use this SP to set the Scan Router Server address. The IP address under the transfer tab can be referenced by the initial system setting.		
006	Delivery Error Display Time	[0 to 999 / **300** / 1 second /step]	
	Use this setting to determine the length of time the prompt message is displayed when a test error occurs during document transfer with the NetFile application and an external device.		
008	IP Address (Secondary)	Range: **000.000.000.000** to 255.255.255.255	
	Specifies the IP address assigned to the computer designated to function as the secondary delivery server of Scan Router. This SP allows only the setting of the IP address without reference to the DNS setting.		
009	Delivery Server Model	[0 to 4/ **0** / 1 /step]	
	Allows changing the model of the delivery server registered by the I/O device. 0: Unknown 1: SG1 Provided 2: SG1 Package 3: SG2 Provided 4: SG2 Package		

010	Delivery Svr Capability	[0 to 255 / **0** / 1 /step]
	Changes the capability of the registered that the I/O device registered.	
	Bit7 = 1 Comment information exits	
	Bit6 = 1 Direct specification of mail address possible	
	Bit5 = 1 Mail RX confirmation setting possible	
	Bit4 = 1 Address book automatic update function exists	
	Bit3 = 1 Fax RX delivery function exists	
	Bit2 = 1 Sender password function exists	
	Bit1 = 1 Function to link MK-1 user and Sender exists	
	Bit0 = 1 Sender specification required (if set to 1, Bit6 is set to "0")	
011	Delivery Svr Capability (Ext)	[0 to 255 / **0** / 1 /step]
	Changes the capability of the registered that the I/O device registered.	
	Bit7 = 1 Address book usage limitation (Limitation for each authorized user) Bit6 = 1 RDH authorization link Bit5 to 0: Not used	
013	Server Scheme (Primary) **DFU**	
	This is used for the scan router program.	
014	Server Port Number (Primary) **DFU**	
	This is used for the scan router program.	
015	Server URL Path (Primary) **DFU**	
	This is used for the scan router program.	
016	Server Scheme (Secondary) **DFU**	
	This is used for the scan router program.	
017	Server Port Number (Secondary) **DFU**	
	This is used for the scan router program.	

018	Server URL Path (Secondary) **DFU**
	This is used for the scan router program.
022	Rapid Sending Control
	Enables or disables the prevention function for the continuous data sending error. [0 to 1 / **0** / -] 0: Disable, 1: Enable

5846	**[UCS Settings]**	*CTL	-
001	Machine ID (For Delivery Server)		Displays ID
	Displays the unique device ID in use by the delivery server directory. The value is only displayed and cannot be changed. This ID is created from the NIC MAC or IEEE 1394 EUI. The ID is displayed as either 6-byle or 8-byte binary.		
002	Machine ID Clear (For Delivery Server)		Clears ID
	Clears the unique ID of the device used as the name in the file transfer directory. Execute this SP if the connection of the device to the delivery server is unstable. After clearing the ID, the ID will be established again automatically by cycling the machine off and on.		
003	Maximum Entries		[2000 to 20000/ **2000** /1 /step]
	Changes the maximum number of entries that UCS can handle. If a value smaller than the present value is set, the UCS managed data is cleared, and the data (excluding user code information) is displayed.		
006	Delivery Server Retry Timer		[0 to 255 / **0** / 1 /step]
	Sets the interval for retry attempts when the delivery server fails to acquire the delivery server address book.		
007	Delivery Server Retry Times		[0 to 255 / **0** / 1 /step]
	Sets the number of retry attempts when the delivery server fails to acquire the delivery server address book.		
008	Delivery Server Maximum Entries		[2000 to 50000 / **2000** / 1/step]
	Sets the maximum number account entries of the delivery server user information managed by UCS.		

010	LDAP Search Timeout	[1 to 255 / **60** / 1 /step]
	Sets the length of the timeout for the search of the LDAP server.	
020	WSD Maximum Entries	
040	Addr Book Migration (SD => HDD)	
	Not used in this machine.	
041	**Not used**	
043	Addr Book Media	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
047	Initialize Local Addr Book	Clears the local address book information, including the user code.
048	Initialize Delivery Addr Book	Clears the distribution address book information, except the user code.
049	Initialize LDAP Addr Book	Clears the LDAP address book information, except the user code.
050	Initialize All Addr Book	Clears all directory information managed by UCS, including all user codes.
051	Backup All Addr Book	Uploads all directory information to the SD card.
052	Restore All Addr Book	Downloads all directory information from the SD card.

053	Clear Backup Info	Deletes the address book data from the SD card in the service slot. Deletes only the files that were uploaded from this machine. This feature does not work if the card is write-protected. **Note** • After you do this SP, go out of the SP mode, and then turn the power off. • Do not remove the SD card until the Power LED stops flashing.
060	Search Option	
	This SP uses bit switches to set up the fuzzy search options for the UCS local address book. Bit: Meaning 0: Checks both upper/lower case characters 1: Japan Only 2: Japan Only 3: Japan Only 4 to 7: Not Used	
062	Complexity Option 1	
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to **upper case** and sets the length of the password. [0 to 32 / **0** / 1 /step] **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.	
063	Complexity Option 2 **DFU**	
064	Complexity Option 3 **DFU**	
065	Complexity Option 4 **DFU**	

091	FTP Auth Port Setting	Specifies the FTP port for getting a distribution server address book that is used in the identification mode. [0 to 65535 / **3671** / 1 /step]
094	Encryption Stat	Shows the status of the encryption function for the address book data.

5847	**[Rep Resolution Reduction]**	*CTL	-
	SP5847-1 through SP5847-8 changes the default settings of image data transferred externally by the Net File page reference function. [0 to 5 / **2** / 1 /step] SP5847-21 sets the default for JPEG image quality of image files handled by NetFile. "Net files" are jobs to be printed from the document server using a PC and the DeskTopBinder software.		
001	Rate for Copy Color		0: 1x 1: 1/2x **2: 1/3x** 3: 1/4x 4: 1/6x 5: 1/8x
002	Rate for Copy B&W Text		
003	Rate for Copy B&W Other		
004	Rate for Printer Color		
005	Rate for Printer B&W		
021	Network Quality Default for JPEG		
	Sets the default value for the quality of JPEG images sent as NetFile pages. This function is available only with the MLB (Media Link Board) option installed. [5 to 95 / **50** / 1 /step]		

5848	**[Web Service]**	*CTL	-
	SP5848-2 sets the 4-bit switch assignment for the access control setting. Setting of 0001 has no effect on access and delivery from Scan Router. 5848 100 sets the maximum size allowed for downloaded images. The default is equal to 1 gigabyte.		
002	Access Ctrl: Repository (only Lower 4 bits)		0000: No access control 0001: Denies access to DeskTop Binder. **0010**: No writing control

003	Access Ctrl: Doc. Svr. Print (Lower 4 bits)	Switches access control on and off. **0000**: No access control 0001: Denies access to DeskTop Binder.
004	Access Ctrl: user Directory (only Lower 4 bits)	
007	Access Ctrl: Comm. Log Fax (Lower 4 bits)	
009	Access Ctrl: Job Ctrl (Lower 4 bits)	
011	Access Ctrl: Device management (Lower 4 bits)	
021	Access Ctrl: Delivery (Lower 4 bits)	
022	Access Ctrl: uadministration (Lower 4bits)	
099	Repository: Download Image Setting	**DFU**
100	Repository: Download Image Max. Size	Specifies the max size of the image data that the machine can download. [1 to 1024 / **1024** / 1 MB /step]
210	Setting: LogType: Job1	**DFU**
211	Setting: LogType: Job2	
212	Setting: LogType: Access	
213	Setting: Primary Srv	
214	Setting: Secondary Srv	
215	Setting: Start Time	
216	Setting: Interval Time	
217	Setting: Timing	

5849	**[Installation Date]**	*CTL	-
5849 1	Display	The “Counter Clear Day” has been changed to “Installation Date” or “Inst. Date”.	

5849 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)
003	Total Counter	-

5851	**Not used**

5853	**Not used**

5856	**[Remote ROM Update]**		
	Allows the technician to upgrade the firmware using a local port (IEEE1284) when updating the remote ROM.		
002	Local Port	*CTL	[0 to 1 / **0** / 1/step] 0: Disable 1: Enable

5857	**[Save Debug Log]**	*CTL	-
001	On/Off (1:ON 0:OFF)	**0**: OFF, 1: ON	
	Switches the debug log feature on and off. The debug log cannot be captured until this feature is switched on.		
002	**Not used**		
005	**Not used**		
006	Save to SD Card		
	Saves the debug log of the input SC number in memory to the SD card.		
009	**Not used**		
010			
011	**Not used**		

012	Erase SD Card Debug Data
013	Free Space on SD Card
014	Copy SD to SD (Latest 4 MB)
015	Copy SD to SD (Latest 4 MB Any Key)
016	**Not used**
017	Make SD Debug

5858	**[Debug Save When]**	*CTL	-
	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. Refer to Section 4 for a list of SC error codes.		
001	Engine SC Error	Turns on/off the debug save for SC codes generated by copier engine errors. [0 or 1 / **0** / 1/ step] 0: OFF, 1: ON	
002	Controller SC Error	Turns on/off the debug save for SC codes generated by GW controller errors. [0 or 1 / **0** / 1/ step] 0: OFF, 1: ON	
003	Any SC Error	[0 to 65535 / **0** / 1 /step]	
004	Jam	Turns on/off the debug save for jam errors. [0 or 1 / **0** / 1/ step] 0: OFF, 1: ON	

5859	**[Debug Save Key No.]**	*CTL	-

001	Key 1	These SPs allow you to set up to 10 keys for log files for functions that use common memory on the controller board. [–9999999 to 9999999 / **0** / –]
002	Key 2	
003	Key 3	
004	Key 4	
005	Key 5	
006	Key 6	
007	Key 7	
008	Key 8	
009	Key 9	
010	Key 10	

5860	**Not used**	*CTL	**-**
-			

5866	**Not Used**		
-			

5870	**[Common Key Info Writing]**		
001	Writing	*CTL	Rewrites the common certification used for the @Remote.
003	Initialize	*CTL	-
	Initializes the set certification. When the GW controller board is replaced with a new one for repair, you must execute the "Initiralize (-003)" and "Writing (-001)" just after the new board replacement. **NOTE:** Turn off and on the main power switch after the "Initiralize (-003)" and "Writing (-001)" have been done.		

5873	**[SD Card Appli Move]**

001	Move Exec	This SP copies the application programs from the original SD card in SD card slot 2 to an SD card in SD card slot 1.
002	Undo Exec	This SP copies back the application programs from an SD card in SD Card Slot 2 to the original SD card in SD card slot 1. Use this menu when you have mistakenly copied some programs by using "Move Exec" (SP5873-1).

5875	[SC Auto Reboot]		
001	Reboot Setting	*CTL	Enables or disables the automatic reboot function when an SC error occurs. [0 or 1/ **0** / –] 0: The machine reboots automatically when the machine issues an SC error and logs the SC error code. If the same SC occurs again, the machine does not reboot. 1: The machine does not reboot when an SC error occurs. The reboot is not executed for Type A or C SC codes.
002	Reboot Type	*CTL	Selects the reboot method for SC. [0 or 1 / **0** / -] 0: Manual reboot, 1: Automatic reboot

5878	Not used
	-

5881	[Fixed Phrase Block Erasing]		
001	-	*ENG	Deletes the fixed phrase.

5884	[Plain 1/2 Setting]

001	By-pass Table	*ENG	[0 or 1 / **1** / -] 0: Plain Paper 1 1: Plain Paper 2
002	Tray 1	*ENG	
003	**Not used**	*ENG	
004	Tray 2	*ENG	
005	Tray 3	*ENG	

5885	**[Set WIM Function]** Web Image Monitor Settings		
	Close or disclose the functions of web image monitor.		
020	Document Server ACC Ctrl	*CTL	0: OFF, 1: ON Bit Meaning 0: Forbid all document server access (1) 1: Forbid user mode access (1) 2: Forbid print function (1) 3: Forbid fax TX (1) 4: Forbid scan sending (1) 5: Forbid downloading (1) 6: Forbid delete (1) 7: Reserved
050	DocSvr Format	*CTL	Selects the display type for the document box list. [0 to 2 / **0** / 1] 0: Thumbnail, 1: Icon, 2: Details
051	DocSvr Trans	*CTL	Sets the number of documents to be displayed in the document box list. [5 to 20 / **10** / 1]
100	Set Signature	*CTL	[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	*CTL	Determines whether the scanned documents with the WIM are encrypted when they are transmitted by an e-mail. [0 or 1 / **0** / 1] 0: Not encrypted, 1:Encryption
200	Detect Mem Leak	*CTL	Not used
201	DocSur Timeout	*CTL	Not used

5887	**[SD Get Counter]**		
	This SP determines whether the ROM can be updated.		
001	-	*CTL	This SP sends a text file to an SD card inserted in SD card Slot 2 (lower slot). The operation stores. The file is stored in a folder created in the root directory of the SD card called SD_COUNTER. The file is saved as a text file (*.txt) prefixed with the number of the machine. 1. Insert the SD card in SD card Slot 2 (lower slot). 2. Select SP5887 then touch [EXECUTE]. 3. Touch [Execute] in the message when you are prompted.

5888	**[Personal Information Protect]**		
001	-	*CTL	Selects the protection level for logs. [0 to 1 / **0** / 1} 0: No authentication, No protection for logs 1: No authentication, Protected logs (only an administrator can see the logs)

5894	**[External Counter Setting]**		
	-		
001	Switch Charge Mode	*ENG	[0 to 2 / **0** / 1/step]

5896	[Copy/PrinterPriority]		
001	-		[0 or 1 / **0** / -]
	Selects the priority memory type. The larger memory is used for the selected mode (copy or printer). 0: Copy priority, 1: Printer priority		

5907	[Plug & Play Maker/Model Name]
001	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.

5913	[Switchover Permission Time]		
002	Print Application Timer	*CTL	[3 to 30 / **3** / 1 second /step]
	Sets the amount of time to elapse while the machine is in standby mode (and the operation panel keys have not been used) before another application can gain control of the display.		

5967	[Copy Server Set Function]	*CTL	**0**: ON, 1: OFF
001	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.		

5974	[Cherry Server]		
	Specifies which version of ScanRouter, “Lite” or “Full”, is installed.		
001	Cherry Server	*CTL	[0 or 1 / **0** / –] 0: Lite, 1: Full

5985	[Device Setting]
	The NIC and USB support features are built into the GW controller. Use this SP to enable and disable these features. In order to use the NIC and USB functions built into the controller board, these SP codes must be set to "1".

001	On Board NIC	[0 to 2 / **0** / 1 /step] 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.
002	On Board USB	[0 or 1 / **0** / 1/step] 0: Disable, 1: Enable

5987	**[Mech. Counter Protection]**	
001	0: OFF / 1: ON	This SP detects that a mechanical counter device is removed. If it is detected, SC610 occurs.

5990	**[SP print mode]**		
	Prints out the SMC sheets.		
001	All (Data List)	-	
002	SP (Mode Data List)	-	
003	User Program	-	
004	Logging Data	-	
005	Diagnostic Report	-	
006	Non-Default	-	-
007	NIB Summary	-	
008	Capture Log	-	
021	Copier User Program	-	
022	Scanner SP	-	
023	Scanner User Program	-	

System SP6-xxx

SP6-XXX (Peripherals)

6006	[ADF Adjustment]		
	Adjusts the side-to-side and leading registration of originals with the ARDF.		
001	S-to-S Registration 1st	*ENG	[-3.0 to 3.0 / **0** / 0.1 mm/step]
002	S-to-S Registration 2nd		
003	Leading Edge Registration		[-5.0 to 5.0 / **0** / 0.1 mm/step]
	Adjusts the amount of paper buckle to correct original skew for the front and rear sides.		
005	Buckle: Duplex: 1st	*ENG	[-5.0 to 5.0 / **0** / 0.1 mm/step]
006	Buckle: Duplex: 2nd		
	Adjusts the erase margin at the original trailing edge.		
007	Trailing Edge Erase	*ENG	[-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 (☛ p.393 "Input Check Table").

6008	[ADF OUTPUT Check]
	Activates the electrical components for functional check. It is not possible to activate more than one component at the same time (☛ p.401 "Output Check Table")

6009	[ADF Free Run]		
	Performs a DF free run in simplex, duplex mode or stamp mode.		
002	Free Run Duplex Mode	-	

6010	Not used

6010 1			

6016	**[Original Size Detection Priority]** Original Size Detection Priority			
	Specifies the original size for a size detected by the original sensor, since original sensors cannot recognize all sizes.			
001	-	*ENG	[0 or 1 / **0** / -] 0: Setting 1 1: Setting 2	
		NA	Setting 1	Setting 2
			DLT SEF	Folio SEF 11" x 15"
			LG SEF	Foolscap SEF
			LT SEF	US EXE 8" x 10"
			LT LEF	US EXE LEF
		EU/ ASIA	DLT SEF	8K 267 x 390 mm
			LT SEF	16K 195 x 267 mm
			LT LEF	16K 267 x 195 mm

6017	**[DF Magnification Adj.]** DF Magnification Adjustment		
	Adjusts the magnification in the sub-scan direction for the ARDF.		
001	-	*CTL	[-5.0 to 5.0 / **0** / 0.1 %/step]

6101	**Not used**
	-

6102	**Not used**
	-

6103	**Not used**
	-

6104	Not used
	-

6120	Not used
	-

6121	Not used
	-

System SP7-xxx

SP7-XXX (Data Log)

7401	[Total SC Counter]		
	Displays the number of SC codes detected.		
001	-	*CTL	[0 to 9999 / **0** / 1/step]

7403	[SC History]		
	Logs the SC codes detected. The 10 most recently detected SC Codes are not displayed on the screen, but can be seen on the SMC (logging) outputs.		
001	Latest	*CTL	-
002	Latest 1		
003	Latest 2		
004	Latest 3		
005	Latest 4		
006	Latest 5		
007	Latest 6		
008	Latest 7		
009	Latest 8		
010	Latest 9		

7502	[Total Paper Jam Counter]		
	Displays the total number of jams detected.		
001	-	* CTL	[0 to 9999 / **0** / 1 sheet/step]

7503	[Total Original Jam Counter]		
	Displays the total number of original jams.		
001	-	*CTL	[0 to 9999 / **0** / 1 original/step]

7504	[Paper Jam Location] 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.		
001	At Power On	*CTL	For details, ☛ the "Jam Detection" in the Appendix Jam Detection.
003	Tray 1: ON	*CTL	
004	Tray 2: ON	*CTL	
005	Tray 3: ON	*CTL	
006	Tray 4: ON	*CTL	
008	Bypass: ON	*CTL	
009	Duplex: ON	*CTL	
011	Vertical Transport 1: ON	*CTL	
012	Vertical Transport 2: ON	*CTL	
017	Registration: ON	*CTL	
018	Fusing Entrance: ON	*CTL	
019	Fusing Exit: ON	*CTL	
020	Paper Exit: ON	*CTL	
025	Duplex Exit: ON	*CTL	
027	Duplex Entrance: ON	*CTL	

028	1-Bin Exit Sensor	*CTL	For details, ☛ the "Jam Detection" in the Appendix Jam Detection.
051	SEF Sensor 1	*CTL	
052	SEF Sensor 2	*CTL	
053	Bank SEF Sensor 1	*CTL	
057	Regist Sensor	*CTL	
059	Fusing Exit Sensor	*CTL	
060	Exit Sensor	*CTL	
065	Duplex Exit Sensor	*CTL	
068	1-Bin Exit: ON	*CTL	
240	Finisher Entrance	*CTL	For details, ☛ the "Jam Detection" in the Appendix Jam Detection.
241	Finisher Shift Tray Exit	*CTL	
242	Finisher Staple	*CTL	
243	Finisher Exit	*CTL	
244	Finisher Drive Motor	*CTL	
245	Finisher Tray Lift Motor	*CTL	
246	Finisher Jogger Motor	*CTL	
247	Finisher Shift Motor	*CTL	
248	Finisher Staple Motor	*CTL	
249	Finisher Exit Motor	*CTL	
250	Finisher Entrance	*CTL	
251	Finisher Proof Exit	*CTL	

7505	**[Original Jam Detection]**
	Displays the total number of original jams by location.

001	At Power On	*CTL	-
003	Skew Correction: ON		
004	Registration: ON		
005	Paper Exit: ON		
053	Skew Correction: OFF		
054	Registration: OFF		
055	Paper Exit: OFF		

7506	[Jam Count by Paper Size]		
	Displays the number of jams according to the paper size.		
005	A4 LEF	*CTL	[0 to 9999 / **0** / 1 sheet/step]
006	A5 LEF		
014	B5 LEF		
038	LT LEF		
044	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]		
	Displays the 10 most recently detected paper jams.		
001	Latest	*CTL	-
002	Latest 1		
003	Latest 2		
004	Latest 3		
005	Latest 4		
006	Latest 5		
007	Latest 6		
008	Latest 7		
009	Latest 8		
010	Latest 9		

7508	[Original Jam History]		
	Displays the 10 most recently detected original jams.		
001	Latest	*CTL	-
002	Latest-1		
003	Latest-2		
004	Latest-3		
005	Latest-4		
006	Latest-5		
007	Latest-6		
008	Latest-7		
009	Latest-8		
010	Latest-9		

7624	[Parts PM Use Setting]

001	PCU:Bk	*CTL	[0 or 1 / 1 / -] 0: Not PM maintenance 1: PM maintenance
002	PCU:M	*CTL	
003	PCU:C	*CTL	
004	PCU:Y	*CTL	
005	Dev Unit:Bk	*CTL	
006	Dev Unit:M	*CTL	
007	Dev Unit:C	*CTL	
008	Dev Unit:Y	*CTL	
009	Fusing Unit	*CTL	
010	Fusing Roller	*CTL	
011	Fusing Belt	*CTL	
012	PCU Toner Collection Bottle	*CTL	

7801	[ROM No./Firmware Version]		
255	-	*CTL	Displays all versions and ROM numbers in the machine.

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7803	[PM Counter Display]
	(Page, Unit, [Color])
-001 to -021	Displays the number of sheets printed for each current maintenance unit. PM counters click up based on the number of A4 (LT) LEF size sheets printed. Therefore, the A3 (DLT) Double Count is activated. The Double Count cannot be deactivated. When a unit is replaced, the machine automatically detects that the new unit is installed. Then, the current PM counter value is automatically moved to the PM Counter - Previous (SP7-906-1 to 21) and is reset to "0". The total number of sheets printed with the last unit replaced can be checked with SP7-906-1 to 21.
001	Paper
002	Page: PCU: Bk

003	Page: PCU: C
004	Page: PCU: M
005	Page: PCU: Y
006	Page: Development Unit: Bk
007	Page: Development Unit: C
008	Page: Development Unit: M
009	Page: Development Unit: Y
010	Page: Developer: Bk
011	Page: Developer: C
012	Page: Developer: M
013	Page: Developer: Y
014	Page: ITB Unit
015	Page: ITB Cleaning Unit
016	Page: Fusing Unit
017	Page: Fusing Roller
018	Page: Fusing Belt
019	Page:PTR Unit
020	Page:ITB T-Collect Bottle
021	Page:PCU T-Collect Bottle
-031 to -048	Displays the number of revolutions of motors or clutches for each current maintenance unit. [0 to 9999999 / **0** / 1 revolution/step] When a unit is replaced, the machine automatically detects that the new unit is installed. Then, the current PM counter value is automatically moved to the PM Counter - Previous (SP7-906-31 to 48) and is reset to "0". The total number of revolutions made with the last unit replaced can be checked with SP7-906-31 to 48.
031	Rotation: PCU: Bk
032	Rotation: PCU: C

033	Rotation: PCU: M
034	Rotation: PCU: Y
035	Rotation: Development Unit: Bk
036	Rotation: Development Unit: C
037	Rotation: Development Unit: M
038	Rotation: Development Unit: Y
039	Rotation: Developer: Bk
040	Rotation: Developer: C
041	Rotation: Developer: M
042	Rotation: Developer: Y
043	Rotation:ITB Unit
044	Rotation: ITB Cleaning Unit
045	Rotation: Fusing Unit
046	Rotation: Fusing Roller
047	Rotation: Fusing Belt
048	Rotation: PTR Unit
-049 to -050	[0 to 999999999 / - / 1 mg/step] Displays the total amount of each toner collection bottle.
049	Amount:ITB T-Collect Bottle
050	Amount:PCU T-Collect Bottle
-061 to -078	[0 to 255 / - / 1 %/step] Displays the value given by the following formula: (Current revolution ÷ Target revolution) × 100. This shows how much of the unit's expected lifetime has been used up. The Rotation% counter is based on rotations, not prints. If the number of rotations reaches the limit, the machine enters the end condition for that unit. If the print count lifetime is reached first, the machine also enters the end condition, even though the R% counter is still less than 100%.

061	Rotation (%): PCU: Bk
062	Rotation (%): PCU: C
063	Rotation (%): PCU: M
064	Rotation (%): PCU: Y
065	Rotation (%): Development Unit: Bk
066	Rotation (%): Development Unit: C
067	Rotation (%): Development Unit:M
068	Rotation (%): Development Unit: Y
069	Rotation (%): Developer: Bk
070	Rotation (%): Developer: C
071	Rotation (%): Developer: M
072	Rotation (%): Developer: Y
073	Rotation (%): ITB Unit
074	Rotation (%): ITB Cleaning Unit
075	Rotation (%): Fusing Unit
076	Rotation (%): Fusing Roller
077	Rotation (%): Fusing Belt
078	Rotation (%):PTR Unit
-079 to -080	[0 to 255 / - / 1 %/step] Displays how much of the unit's expected lifetime has been used up.
079	Amt(%):ITB T-Collect Bottle
080	Amt(%):PCU T-Collect Bottle

-091 to -108	Displays the value given by the following formula: (Current printouts ÷ Target printouts) × 100. This shows how much of the unit's expected lifetime has been used up. The Page% counter is based on printouts, not revolutions. If the number of printouts reaches the limit, the machine enters the end condition for that unit. If the revolution count lifetime is reached first, the machine also enters the end condition, even though the Page% counter is still less than 100%.		
091	Page (%): PCU: Bk	*ENG	[0 to 255 / - / 1 %/step]
092	Page (%): PCU: C		
093	Page (%): PCU: M		
094	Page (%): PCU: Y		
095	Page (%): Development Unit: Bk		
096	Page (%): Development Unit: C		
097	Page (%): Development Unit: M		
098	Page (%): Development Unit: Y		
099	Page (%): Developer: Bk		
100	Page (%): Developer: C	*ENG	[0 to 255 / - / 1 %/step]
101	Page (%): Developer: M		
102	Page (%): Developer: Y		
103	Page (%): ITB Unit		
104	Page (%): ITB Cleaning Unit		
105	Page (%): Fusing Unit		
106	Page (%): Fusing Roller		
107	Page (%): Fusing Belt		
108	Page (%): PTR Unit		

7804	**[PM Counter Reset]** PM Counter Clear
	(Unit, [Color])

	Clears the PM counter. Press the Enter key after the machine asks "Execute?", which will store the PM counter value in SP7-906 (PM Counter - Previous) and reset the value of the current PM counter (SP7-803) to "0".
001	Paper
002	PCU: Bk
003	PCU: C
004	PCU: M
005	PCU: Y
006	PCU: All
007	Development Unit: Bk
008	Development Unit: C
009	Development Unit: M
010	Development Unit: Y
011	Development Unit: All
012	Developer: Bk
013	Developer: C
014	Developer: M
015	Developer: Y
016	Developer: All
017	ITB Unit
018	ITB Cleaning Unit
019	Fusing Unit
020	Fusing Roller
021	Fusing Belt
022	PTR Unit
023	ITB T-Collect Bottle

024	PCU T-Collect Bottle
100	All

7807	**[SC/Jam Counter Reset]**		
	Clears the counters related to SC codes and paper jams.		
001	-	*CTL	-

7826	**[MF Error Counter] Japan Only**		
001	Error Total	*CTL	-
002	Error Staple	*CTL	-

7827	**[MF Error Counter Clear] Japan Only**		
	-	*CTL	-

7832	**[Self-Diagnose Result Display]**		
	Displays the result of the diagnostics.		
001	-	*CTL	-

7835	**[ACC Counter]**		
001	Copy ACC	-	Displays the ACC exectuion times for each mode.
002	Printer ACC	--	

7836	**Total Memory Size** (CTL)		
	Displays the memory capacity of the controller system.		
001	-	*CTL	-

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 or resets the dust detection counter. Counting is done only if SP4-020-1 (ADF Scan Glass Dust Check) is switched on.

001	Dust Detection Counter	*CTL	[0 to 65535 / - / 1 /step]
002	Dust Detection Clear Counter	*CTL	

7853	[Replacement Counter]		
	Displays the PM parts replacement number.		
001	PCU: Bk	*CTL	[0 to 255 / - / 1 /step]
002	PCU: C	*CTL	
003	PCU: M	*CTL	
004	PCU: Y	*CTL	
005	Development Unit: Bk	*CTL	
006	Development Unit: C	*CTL	
007	Development Unit: M	*CTL	
008	Development Unit: Y	*CTL	
009	Developer: Bk	*CTL	
010	Developer: C	*CTL	
011	Developer: M	*CTL	
012	Developer: Y	*CTL	
013	ITB Unit	*CTL	
014	ITB Cleaning Unit	*CTL	
015	Fusing Unit	*CTL	
016	Fusing Roller	*CTL	
017	Fusing Belt	*CTL	
018	PTR Unit	*CTL	[0 to 255 / - / 1 /step]
019	ITB T-Collect Bottle	*CTL	
020	PCU T-Collect Bottle	*CTL	

7855	**[Coverage Range]** Sets the color coverage threshold. Coverage rate = Coverage per page / A4 full coverage (dots) x 100 There are three coverage counters: Color 1, Color 2, and Color 3 • [A] 5% (default) is adjustable with SP7855-001. • [B] 20% (default) is adjustable with SP7855-002.  **Note** • The setting value [B] must be set larger than [A]. The total numbers of printouts (BW printing plus color printing) for each coverage range are displayed with the following SPs. • Color1 counter: SP8601-021 • Color2 counter: SP8601-022 • Color3 counter: SP8601-023		
001	Coverage Range 1	*CTL	[1 to 200 / **5** /1]
002	Coverage Range 2	*CTL	[1 to 200 / **20** /1]

7901	**[Assert Info]** Records the location where a problem is detected in the program. The data stored in this SP is used for problem analysis. **DFU**		
001	File Name	*CTL	-
002	Number of Lines		
003	Location		

7906	**[Prev. Unit PM Counter]**	
	(Page or Rotations, Unit, [Color]), Dev.: Development Unit	*ENG
-001 to -020	Displays the number of sheets printed with the previous maintenance units. [0 to 9999999 / **0** / 1 page/step]	

001	Page: PCU: Bk
002	Page: PCU: C
003	Page: PCU: M
004	Page: PCU: Y
005	Page: Development Unit: Bk
006	Page: Development Unit: C
007	Page: Development Unit: M
008	Page: Development Unit: Y
009	Page: Developer: Bk
010	Page: Developer: C
011	Page: Developer: M
012	Page: Developer: Y
013	Page: ITB Unit
014	Page: ITB Cleaning Unit
015	Page: Fusing Unit
016	Page: Fusing Roller
017	Page: Fusing Belt
018	Page: PTR Unit
019	Page:ITB T-Collect Bottle
020	Page:PCU T-Collect Bottle
-031 to -050	Displays the number of revolutions for motors or clutches in the previous maintenance units. [0 to 9999999 / **0** / 1 mm/step]
031	Rotation: PCU: Bk
032	Rotation: PCU: C
033	Rotation: PCU: M
034	Rotation: PCU: Y

035	Rotation: Development Unit: Bk
036	Rotation: Development Unit: C
037	Rotation: Development Unit: M
038	Rotation: Development Unit: Y
039	Rotation: Developer: Bk
040	Rotation: Developer: C
041	Rotation: Developer: M
042	Rotation: Developer: Y
043	Rotation: ITB Unit
044	Rotation: ITB Cleaning Unit
045	Rotation: Fusing Unit
046	Rotation: Fusing Roller
047	Rotation: Fusing Belt
048	Rotation: PTR Unit
049	Rotation:ITB T-Collect Bottle
050	Rotation:PCU T-Collect Bottle
-061 to -080	Displays the number of sheets printed with the previous maintenance unit or toner cartridge. [0 to 255 / **0** / 1 %/step]
061	Rotation %: PCU: Bk
062	Rotation %: PCU: C
063	Rotation %: PCU: M
064	Rotation %: PCU: Y
065	Rotation %: Development Unit: Bk
066	Rotation %: Development Unit: C
067	Rotation %: Development Unit: M
068	Rotation %: Development Unit: Y

069	Rotation %: Developer: Bk
070	Rotation %: Developer: C
071	Rotation %: Developer: M
072	Rotation %: Developer: Y
073	Rotation %: ITB Unit
074	Rotation %: ITB Cleaning Unit
075	Rotation %: Fusing Unit
076	Rotation %: Fusing Roller
077	Rotation %: Fusing Belt
078	Rotation %: PTR Unit
079	Rotation %:ITB T-Collect Bottle
080	Rotation %:PCU T-Collect Bottle
-091 to -108	Displays the value given by the following formula: (Current count ÷ Yield count) x 100, where "Current count" is the current values in the counter for the part, and "Yield count" is the recommended yield. [0 to 255 / **0** / 1 %/step]
091	Page (%): PCU: Bk
092	Page (%): PCU: C
093	Page (%): PCU: M
094	Page (%): PCU: Y
095	Page (%): Development Unit: Bk
096	Page (%): Development Unit: C
097	Page (%): Development Unit: M
098	Page (%): Development Unit: Y
099	Page (%): Developer: Bk
100	Page (%): Developer: C

101	Page (%): Developer: M
102	Page (%): Developer: Y
103	Page (%): ITB Unit
104	Page (%): ITB Cleaning Unit
105	Page (%): Fusing Unit
106	Page (%): Fusing Roller
107	Page (%): Fusing Belt
108	Page (%): PTR Unit

7931	**[Toner Bottle Bk]**
	Displays the toner bottle information for Bk.

001	Machine Serial ID	*ENG	
002	Cartridge Ver	*EGN	
003	Brand ID	*EGN	
004	Area ID	*EGN	
005	Product ID	*EGN	
006	Color ID	*EGN	
007	Maintenance ID	*EGN	
008	New Product Information	*EGN	
009	Recycle Counter	*EGN	
010	Date	*EGN	
011	Serial No.	*EGN	-
012	Toner Remaining	*EGN	
013	EDP Code	*EGN	
014	End History	*EGN	
015	Refill Information	*EGN	
016	Attachment: Total Counter	*EGN	
017	Attachment: Color Counter	*EGN	
018	End: Total Counter	*EGN	
019	End: Color Counter	*EGN	
020	Attachment Date	*EGN	
021	End Date	*EGN	

7932	**[Toner Bottle M]**
	Displays the toner bottle information for M.

001	Machine Serial ID	*ENG	
002	Cartridge Ver	*EGN	
003	Brand ID	*EGN	
004	Area ID	*EGN	
005	Product ID	*EGN	
006	Color ID	*EGN	
007	Maintenance ID	*EGN	
008	New Product Information	*EGN	
009	Recycle Counter	*EGN	
010	Date	*EGN	
011	Serial No.	*EGN	-
012	Toner Remaining	*EGN	
013	EDP Code	*EGN	
014	End History	*EGN	
015	Refill Information	*EGN	
016	Attachment: Total Counter	*EGN	
017	Attachment: Color Counter	*EGN	
018	End: Total Counter	*EGN	
019	End: Color Counter	*EGN	
020	Attachment Date	*EGN	
021	End Date		

7933	**[Toner Bottle C]**
	Displays the toner bottle information for C.

001	Machine Serial ID	*ENG	
002	Cartridge Ver	*EGN	
003	Brand ID	*EGN	
004	Area ID	*EGN	
005	Product ID	*EGN	
006	Color ID	*EGN	
007	Maintenance ID	*EGN	
008	New Product Information	*EGN	
009	Recycle Counter	*EGN	
010	Date	*EGN	
011	Serial No.	*EGN	-
012	Toner Remaining	*EGN	
013	EDP Code	*EGN	
014	End History	*EGN	
015	Refill Information	*EGN	
016	Attachment: Total Counter	*EGN	
017	Attachment: Color Counter	*EGN	
018	End: Total Counter	*EGN	
019	End: Color Counter	*EGN	
020	Attachment Date	*EGN	
021	End Date	*EGN	

7934	**[Toner Bottle Y]**
	Displays the toner bottle information for Y.

001	Machine Serial ID	*ENG	
002	Cartridge Ver	*EGN	
003	Brand ID	*EGN	
004	Area ID	*EGN	
005	Product ID	*EGN	
006	Color ID	*EGN	
007	Maintenance ID	*EGN	
008	New Product Information	*EGN	
009	Recycle Counter	*EGN	
010	Date	*EGN	
011	Serial No.	*EGN	-
012	Toner Remaining	*EGN	
013	EDP Code	*EGN	
014	End History	*EGN	
015	Refill Information	*EGN	
016	Attachment: Total Counter	*EGN	
017	Attachment: Color Counter	*EGN	
018	End: Total Counter	*EGN	
019	End: Color Counter	*EGN	
020	Attachment Date	*EGN	
021	End Date	*EGN	

7935	**[Toner Bottle Log 1: Bk]**

001	Serial No.	*ENG	Displays the toner bottle information log 1 for Bk.
002	Attachment Date		
003	Attachment: Total Counter		
004	Refill Information		
005	Serial No.	*ENG	Displays the toner bottle information log 2 for Bk.
006	Attachment Date		
007	Attachment: Total Counter		
008	Refill Information		
009	Serial No.	*ENG	Displays the toner bottle information log 3 for Bk.
010	Attachment Date		
011	Attachment: Total Counter		
012	Refill Information		
013	Serial No.	*ENG	Displays the toner bottle information log 4 for Bk.
014	Attachment Date		
015	Attachment: Total Counter		
016	Refill Information		
017	Serial No.	*ENG	Displays the toner bottle information log 5 for Bk.
018	Attachment Date		
019	Attachment: Total Counter		
020	Refill Information		

7936	[Toner Bottle Log 1: M]		
001	Serial No.	*ENG	Displays the toner bottle information log 1 for M.
002	Attachment Date		
003	Attachment: Total Counter		
004	Refill Information		

005	Serial No.	*ENG	Displays the toner bottle information log 2 for M.
006	Attachment Date		
007	Attachment: Total Counter		
008	Refill Information		
009	Serial No.	*ENG	Displays the toner bottle information log 3 for M.
010	Attachment Date		
011	Attachment: Total Counter		
012	Refill Information		
013	Serial No.	*ENG	Displays the toner bottle information log 4 for M.
014	Attachment Date		
015	Attachment: Total Counter		
016	Refill Information		
017	Serial No.	*ENG	Displays the toner bottle information log 5 for M.
018	Attachment Date		
019	Attachment: Total Counter		
020	Refill Information		

7937	[Toner Bottle Log 1: C]		
001	Serial No.	*ENG	Displays the toner bottle information log 1 for C.
002	Attachment Date		
003	Attachment: Total Counter		
004	Refill Information		
005	Serial No.	*ENG	Displays the toner bottle information log 2 for C.
006	Attachment Date		
007	Attachment: Total Counter		
008	Refill Information		

009	Serial No.	*ENG	Displays the toner bottle information log 3 for C.
010	Attachment Date		
011	Attachment: Total Counter		
012	Refill Information		
013	Serial No.	*ENG	Displays the toner bottle information log 4 for C.
014	Attachment Date		
015	Attachment: Total Counter		
016	Refill Information		
017	Serial No.	*ENG	Displays the toner bottle information log 5 for C.
018	Attachment Date		
019	Attachment: Total Counter		
020	Refill Information		

7938	[Toner Bottle Log 1: Y]		
001	Serial No.	*ENG	Displays the toner bottle information log 1 for Y.
002	Attachment Date		
003	Attachment: Total Counter		
004	Refill Information		
005	Serial No.	*ENG	Displays the toner bottle information log 2 for Y.
006	Attachment Date		
007	Attachment: Total Counter		
008	Refill Information		
009	Serial No.	*ENG	Displays the toner bottle information log 3 for Y.
010	Attachment Date		
011	Attachment: Total Counter		
012	Refill Information		

013	Serial No.	*ENG	Displays the toner bottle information log 4 for Y.
014	Attachment Date		
015	Attachment: Total Counter		
016	Refill Information		
017	Serial No.	*ENG	Displays the toner bottle information log 5 for Y.
018	Attachment Date		
019	Attachment: Total Counter		
020	Refill Information		

7950	**[Unit Replacement Date]**
	Displays the replacement date of each PM unit.

001	ITB Unit	*ENG	
002	ITB Cleaning Unit	*EGN	
003	PTR Unit	*EGN	
004	Fusing Unit	*EGN	
005	Fusing Roller	*EGN	
006	Fusing Belt	*EGN	
013	PCU: Bk	*EGN	
014	PCU: C	*EGN	
015	PCU: M	*EGN	
016	PCU: Y	*EGN	
017	Development Unit:Bk	*EGN	
018	Development Unit:C	*EGN	
019	Development Unit:M	*EGN	
020	Development Unit:Y	*EGN	
021	Developer:Bk	*EGN	
022	Developer:C	*EGN	
023	Developer:M	*EGN	
024	Developer:Y	*EGN	

7951	**[Remaining Day Counter]**	*ENG	
	Displays the remaining unit life of each PM unit. [0 to 255 / **255** / 1 day/step]		
001	Page: PCU: Bk		
002	Page: PCU: C		
003	Page: PCU: M		
004	Page: PCU: Y		

005	Page: Development Unit: Bk
006	Page: Development Unit: C
007	Page: Development Unit: M
008	Page: Development Unit: Y
009	Page: Developer: Bk
010	Page: Developer: C
011	Page: Developer: M
012	Page: Developer: Y
013	Page: ITB Unit
014	Page: ITB Cleaning Unit
015	Page: Fusing Unit
016	Page: Fusing Roller
017	Page: Fusing Belt
018	Page: PTR Unit
031	Rotation: PCU: Bk
032	Rotation: PCU: C
033	Rotation: PCU: M
034	Rotation: PCU: Y
035	Rotation: Development Unit: Bk
036	Rotation: Development Unit: C
037	Rotation: Development Unit: M
038	Rotation: Development Unit: Y
039	Rotation: Developer: Bk
040	Rotation: Developer: C
041	Rotation: Developer: M
042	Rotation: Developer: Y

043	Rotation: ITB Unit
044	Rotation: ITB Cleaning Unit
045	Rotation: Fusing Unit
046	Rotation: Fusing Roller
047	Rotation: Fusing Belt
048	Rotation:PTR Unit
049	Rotation:ITB T-Collect Bottle
050	Rotation:PCU T-Collect Bottle

7952	[PM Yield Setting]		
	Adjusts the unit yield of each PM unit.		
001	Rotation: ITB Unit	*EGN	[0 to 999999999 / **172177000** / 1000 mm/step]
002	Rotation: ITB Cleaning Unit	*EGN	[0 to 999999999 / **129133000** / 1 mm/step]
003	Rotation: Fusing Unit	*EGN	[0 to 999999999 / **87264000** / 1000 mm/step]
004	Rotation: Fusing Roller	*EGN	
005	Rotation: Fusing Belt	*EGN	
006	Rotation:PTR Unit	*EGN	[0 to 999999999 / **172177000** / 1000 mm/step]
007	Amount:ITB T-Collect Bottle	*EGN	[0 to 999999999 / **300000** / 1000 mg/step]
008	Amount:PCU T-Collect Bottle		
011	Page: ITB Unit	*EGN	[0 to 999999 / **240000** / 1000 sheet/step]
012	Page: ITB Cleaning Unit	*EGN	[0 to 999999 / **180000** / 1 sheet/step]
013	Page: Fusing Unit	*EGN	[0 to 999999 / **144000** / 1 sheet/step]
014	Page: Fusing Roller	*EGN	
015	Page: Fusing Belt	*EGN	

016	Page: PTR Unit	*EGN	[0 to 999999 / **240000** / 1 sheet/step]
021	Day Threshold: PCU: Bk	*EGN	Adjusts the threshold day of the near end for each PM unit. [1 to 30 / **15** / 1 day/step] These threshold days are used for @Remote alarms.
022	Day Threshold: PCU: C	*EGN	
023	Day Threshold: PCU: M	*EGN	
024	Day Threshold: PCU: Y	*EGN	
025	Day Threshold: Development Unit: Bk	*EGN	
026	Day Threshold: Development Unit: C	*EGN	
027	Day Threshold: Development Unit: M	*EGN	
028	Day Threshold: Development Unit: Y	*EGN	
029	Day Threshold: Developer: Bk	*EGN	
030	Day Threshold: Developer: C	*EGN	
031	Day Threshold: Developer: M	*EGN	
032	Day Threshold: Developer: Y	*EGN	
033	Day Threshold: ITB Unit	*EGN	
034	Day Threshold: ITB Cleaning Unit	*EGN	
035	Day Threshold: Fusing Unit	*EGN	
036	Day Threshold: Fusing Roller	*EGN	
037	Day Threshold: Fusing Belt	*EGN	

038	Rotation: PCU: Bk	*EGN	[0 to 999999999 / **0** / 1 mm/step]
039	Rotation: PCU: C		
040	Rotation: PCU: M		
041	Rotation: PCU: Y		
042	Rotation: Development Unit: Bk	*EGN	[0 to 999999999 / **0** / 1 mm/step]
043	Rotation: Development Unit: C	*EGN	
044	Rotation: Development Unit: M	*EGN	
045	Rotation: Development Unit: Y	*EGN	
046	Rotation: Developer: Bk	*EGN	[0 to 999999999 / **0** / 1 mm/step]
047	Rotation: Developer: C		
048	Rotation: Developer: M		
049	Rotation: Developer: Y		
050	Page: PCU: Bk	*EGN	[0 to 999999 / **0** / 1 sheet/step]
051	Page: PCU: C		
052	Page: PCU: M		
053	Page: PCU: Y		
054	Page: Development Unit: Bk	*EGN	[0 to 999999 / **0** / 1 sheet/step]
055	Page: Development Unit: C		
056	Page: Development Unit: M		
057	Page: Development Unit: Y		

058	Page: Developer: Bk	*EGN	[0 to 999999 / **0** / 1 sheet/step]
059	Page: Developer: C		
060	Page: Developer: M		
061	Page: Developer: Y		
062	Day Threshold:PTR Unit	*EGN	Adjusts the threshold day of the near end for each PM unit. [1 to 30 / **15** / 1 day/step] These threshold days are used for @Remote alarms.
063	Day Thresh:ITB T-Collect Bttl		
064	Day Thresh:PCU T-Collect Bttl		

7953	**[Operation Env. Log: PCU: Bk]**
	Displays the PCU rotation distance in each specified operation environment. T: Temperature (°C), H: Relative Humidity (%)

001	T<=0	*CTL	[0 to 99999999 / - / 1 mm/step]
002	0<T<=5:0<=H<30		
003	0<T<=5:30<=H<70		
004	T<=5: 70<=H<=100		
005	5<T<15: 0<=H<30		
006	5<T<15: 30<=H<55		
007	5<T<15: 55<=H<80		
008	5<T<15: 80<=H<=100		
009	15<=T<25: 0<=H<30		
010	15<=T<25: 30<=H<55		
011	15<=T<25: 55<=H<80		
012	15<=T<25: 80<=H<=100		
013	25<=T<30: 0<=H<30		
014	25<=T<30: 30<=H<55		
015	25<=T<30: 55<=H<80		
016	25<=T<30: 80<=H<=100		
017	30<=T: 0<=H<30		
018	30<=T: 30<=H<55		
019	30<=T: 55<=H<80		
020	30<=T: 80<=H<=100		

7954	[Operation Env. Log Clear]
	Clears the operation environment log.
001	-

System SP8-xxx

SP8-xxx: Data Log2

Many of these counters are provided for features that are currently not available, such as sending color faxes, and so on. However, here are some Group 8 codes that when used in combination with others, can provide useful information.

SP Numbers	What They Do
SP8 211 to SP8 216	The number of pages scanned to the document server.
SP8 401 to SP8 406	The number of pages printed from the document server
SP8 691 to SP8 696	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.	

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
Deliv	Delivery

Abbreviation	What it means
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
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.

Abbreviation	What it means
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.

8 001	T:Total Jobs	*CTL	These SPs count the number of times each application is used to do a job. [0 to 9999999/ **0** / 1] **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.
8 002	C:Total Jobs	*CTL	
8 003	F:Total Jobs	*CTL	
8 004	P:Total Jobs	*CTL	
8 005	S:Total Jobs	*CTL	
8 006	L:Total Jobs	*CTL	

- 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.

8 011	T:Jobs/LS	*CTL	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.
8 012	C:Jobs/LS	*CTL	
8 013	F:Jobs/LS	*CTL	
8 014	P:Jobs/LS	*CTL	
8 015	S:Jobs/LS	*CTL	
8 016	L:Jobs/LS	*CTL	
8 017	O:Jobs/LS	*CTL	

- 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.

8 021	T:Pjob/LS	*CTL	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.
8 022	C:Pjob/LS	*CTL	
8 023	F:Pjob/LS	*CTL	
8 024	P:Pjob/LS	*CTL	
8 025	S:Pjob/LS	*CTL	
8 026	L:Pjob/LS	*CTL	
8 027	O:Pjob/LS	*CTL	

- 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.

8 031	T:Pjob/DesApl	*CTL	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.
8 032	C:Pjob/DesApl	*CTL	
8 033	F:Pjob/DesApl	*CTL	
8 034	P:Pjob/DesApl	*CTL	
8 035	S:Pjob/DesApl	*CTL	
8 036	L:Pjob/DesApl	*CTL	
8 037	O:Pjob/DesApl	*CTL	

- 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.

8 041	T:TX Jobs/LS	*CTL	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.
8 042	C:TX Jobs/LS	*CTL	
8 043	F:TX Jobs/LS	*CTL	
8 044	P:TX Jobs/LS	*CTL	
8 045	S:TX Jobs/LS	*CTL	
8 046	L:TX Jobs/LS	*CTL	
8 047	O:TX Jobs/LS	*CTL	

- 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.

8 051	T:TX Jobs/DesApl	*CTL	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.
8 052	C:TX Jobs/DesApl	*CTL	
8 053	F:TX Jobs/DesApl	*CTL	
8 054	P:TX Jobs/DesApl	*CTL	
8 055	S:TX Jobs/DesApl	*CTL	
8 056	L:TX Jobs/DesApl	*CTL	
8 057	O:TX Jobs/DesApl	*CTL	

- If the send is started from Desk Top Binder or Web Image Monitor, for example, then the O: counter increments.

8 061	T:FIN Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs total the finishing methods. The finishing method is specified by the application.		
8 062	C:FIN Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs total finishing methods for copy jobs only. The finishing method is specified by the application.		
8 063	F:FIN Jobs	*CTL	[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.		
8 064	P:FIN Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs total finishing methods for print jobs only. The finishing method is specified by the application.		
8 065	S:FIN Jobs	*CTL	[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.		

8 066	L:FIN Jobs	*CTL	[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.		
8 067	O:FIN Jobs	*CTL	[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.		
8 06x 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 SP8 066 1)	
8 06x 2	Stack	Number of jobs started out of Sort mode.	
8 06x 3	Staple	Number of jobs started in Staple mode.	
8 06x 4	Booklet	Number of jobs started in Booklet mode. If the machine is in staple mode, the Staple counter also increments.	
8 06x 5	Z-Fold	Number of jobs started In any mode other than the Booklet mode and set for folding (Z-fold).	
8 06x 6	Punch	Number of jobs started in Punch mode. When Punch is set for a print job, the P: counter increments. (See SP8 064 6.)	
8 06x 7	Other	Reserved. Not used.	

8 071	T:Jobs/PGS	*CTL	[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.		
8 072	C:Jobs/PGS	*CTL	[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.		
8 073	F:Jobs/PGS	*CTL	[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.		

8 074	P:Jobs/PGS	*CTL	[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.		
8 075	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.		
8 076	L:Jobs/PGS	*CTL	[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.		
8 077	O:Jobs/PGS	*CTL	[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.		
8 07x 1	1 Page	8 07x 8	21 to 50 Pages
8 07x 2	2 Pages	8 07x 9	51 to 100 Pages
8 07x 3	3 Pages	8 07x 10	101 to 300 Pages
8 07x 4	4 Pages	8 07x 11	301 to 500 Pages
8 07x 5	5 Pages	8 07x 12	501 to 700 Pages
8 07x 6	6 to 10 Pages	8 07x 13	701 to 1000 Pages
8 07x 7	11 to 20 Pages	8 07x 14	1001 to Pages

- For example: When a copy job stored on the document server is printed in document server mode, the appropriate L: counter (SP8076 0xx) increments.
- 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.

8 111	T:FAX TX Jobs	*CTL	[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. **Note**: Color fax sending is not available at this time.		
8 113	F: FAX TX Jobs	*CTL	[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. **Note**: Color fax sending is not available at this time.		
8 11x 1	B/W		
8 11x 2	Color		

- 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 (8 12x) also increments.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8 121	T:IFAX TX Jobs	*CTL	[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. **Note**: Color fax sending is not available at this time.		
8 123	F: IFAX TX Jobs	*CTL	[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. **Note**: Color fax sending is not available at this time.		
8 12x 1	B/W		
8 12x 2	Color		

- 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.

8 131	T:S-to-Email Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) scanned and attached to an e-mail, regardless of whether the document server was used or not.		
8 135	S: S-to-Email Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of jobs (color or black-and-white) scanned and attached to e-mail, without storing the original on the document server.		
8 13x 1	B/W		
8 13x 2	Color		
8 13x 3	ACS		

- 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).

8 141	T:Deliv Jobs/Svr	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent to a Scan Router server.		
8 145	S: Deliv Jobs/Svr	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of jobs (color or black-and-white) scanned in scanner mode and sent to a Scan Router server.		
8 14x 1	B/W		
8 14x 2	Color		

8 14x 3	ACS

- These counters count jobs, not pages.
- The jobs are counted even though the arrival and reception of the jobs at the Scan Router server cannot be confirmed.
- If even one color image is mixed with black-and-white images, then the job is counted as a "Color" job.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be delivered, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8 151	T:Deliv Jobs/PC	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent to a folder on a PC (Scan-to-PC). **Note**: At the present time, 8 151 and 8 155 perform identical counts.		
8 155	S:Deliv Jobs/PC	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent with Scan-to-PC.		
8 15x 1	B/W		
8 15x 2	Color		
8 15x 3	ACS		

- 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.

8 161	T:PCFAX TX Jobs	*CTL	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. [0 to 9999999/ **0** / 1] **Note**: At the present time, these counters perform identical counts.
8 163	F:PCFAX TX Jobs	*CTL	

- 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.

8 161	T:PCFAX TX Jobs	*CTL	
8 163	F:PCFAX TX Jobs	*CTL	

8 171	T: Deliv Jobs/WSD	*CTL	These SPs count the pages scanned by WS. [0 to 9999999/ **0** / 1]
8 175	S: Dvliv Jobs/WSD	*CTL	
x 1	B/W		
x 2	Color		
x 3	ACS		

8 181	T: Scan to Media Jobs	*CTL	These SPs count the scanned pages in a media by the scanner application. [0 to 9999999/ **0** / 1]
8 185	S: Scan to Media Jobs	*CTL	
x 1	B/W		
x 2	Color		
x 3	ACS		

8 191	T: Total Scan PGS	*CTL	These SPs count the pages scanned by each application that uses the scanner to scan images. [0 to 9999999/ **0** / 1]
8 192	C: Total Scan PGS	*CTL	
8 193	F: Total Scan PGS	*CTL	
8 195	S: Total Scan PGS	*CTL	
8 196	L: Total Scan PGS		

- SP 8 191 to 8 196 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.

8 201	T:LSize Scan PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of large pages input with the scanner for scan and copy jobs. 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.		
8 203	F: LSize Scan PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of large pages input with the scanner for fax transmission. **Note**: These counters are displayed in the SMC Report, and in the User Tools display.		
8 205	S:LSize Scan PGS	*CTL	[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.		

8 211	T:Scan PGS/LS	*CTL	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
8 212	C:Scan PGS/LS	*CTL	
8 213	F:Scan PGS/LS	*CTL	
8 215	S:Scan PGS/LS	*CTL	
8 216	L:Scan PGS/LS	*CTL	

- 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.

8 221	ADF Org Feeds	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages fed through the ADF for front and back side scanning.		
8 221 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.)	
8 221 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.

8 231	Scan PGS/Mode	*CTL	[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.		
8 231 1	Large Volume	Selectable. Large copy jobs that cannot be loaded in the ADF at one time.	
8 231 2	SADF	Selectable. Feeding pages one by one through the ADF.	
8 231 3	Mixed Size	Selectable. Select "Mixed Sizes" on the operation panel.	
8 231 4	Custom Size	Selectable. Originals of non-standard size.	

8 231 5	Platen	Book mode. Raising the ADF and placing the original directly on the platen.
8 231 6	Mixed 1side/2side	Simplex and Duplex mode.

- 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.

8 241	T:Scan PGS/Org	*CTL	[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.		
8 242	C:Scan PGS/Org	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages scanned by original type for Copy jobs.		
8 243	F:Scan PGS/Org	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages scanned by original type for Fax jobs.		
8 245	S:Scan PGS/Org	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages scanned by original type for Scan jobs.		
8 246	L:Scan PGS/Org	*CTL	[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		

	8 241	8 242	8 243	8 245	8 246
8 24x 1: Text	Yes	Yes	Yes	Yes	Yes
8 24x 2: Text/Photo	Yes	Yes	Yes	Yes	Yes
8 24x 3: Photo	Yes	Yes	Yes	Yes	Yes
8 24x 4: GenCopy, Pale	Yes	Yes	No	Yes	Yes
8 24x 5: Map	Yes	Yes	No	-	Yes

8 24x 6: Normal/Detail	Yes	No	Yes	No	No
8 24x 7: Fine/Super Fine	Yes	No	Yes	No	No
8 24x 8: Binary	Yes	No	No	Yes	No
8 24x 9: Grayscale	Yes	No	No	Yes	No
8 24x 10: Color	Yes	No	No	Yes	No
8 24x 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.

8 251	T:Scan PGS/ImgEdt	*CTL	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: • 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.
8 252	C:Scan PGS/ImgEdt	*CTL	
8 255	S:Scan PGS/ImgEdt	*CTL	
8 256	L:Scan PGS/ImgEdt	*CTL	
8 257	O:Scan PGS/ImgEdt	*CTL	

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.

8 261	T:Scan PGS/ColCr	*CTL	-
8 262	C:Scan PGS/ ColCr	*CTL	-
8 266	L:Scn PGS/ColCr	*CTL	-

8 26x 1	Color Conversion	These SPs show how many times color creation features have been selected at the operation panel.
8 26x 2	Color Erase	
8 26x 3	Background	
8 26x 4	Other	

8 281	T:Scn PGS/TWAIN	*CTL	These SPs count the number of pages scanned using a TWAIN driver. These counters reveal how the TWAIN driver is used for delivery functions. [0 to 9999999/ **0** / 1] **Note**: At the present time, these counters perform identical counts.
8 285	S:Scn PGS/TWAIN	*CTL	

8 291	T:Scan PGS/Stamp	*CTL	These SPs count the number of pages stamped with the stamp in the ADF unit. [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
8 293	F:Scan PGS/Stamp	*CTL	
8 295	S:Scan PGS/Stamp	*CTL	

8 301	T:Scan PGS/Size	*CTL	[0 to 9999999/ **0** / 1]
	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].		
8 302	C:Scan PGS/Size	*CTL	[0 to 9999999/ **0** / 1]
	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].		
8 303	F:Scan PGS/Size	*CTL	[0 to 9999999/ **0** / 1]
	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].		
8 305	S:Scan PGS/Size	*CTL	[0 to 9999999/ **0** / 1]
	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].		

8 306	L:Scan PGS/Size	*CTL	[0 to 9999999/ **0** / 1]
	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].		
8 30x 1	A3	-	
8 30x 2	A4		
8 30x 3	A5		
8 30x 4	B4		
8 30x 5	B5		
8 30x 6	DLT		
8 30x 7	LG		
8 30x 8	LT		
8 30x 9	HLT		
8 30x 10	Full Bleed		
8 30x 254	Other (Standard)		
8 30x 255	Other (Custom)		

8 311	T:Scan PGS/Rez	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings.		
8 315	S: Scan PGS/Rez	*CTL	[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, SP8-311 and SP8-315 perform identical counts.		

8 31x 1	1200dpi <	
8 31x 2	600dpi to 1199dpi	
8 31x 3	400dpi to 599dpi	
8 31x 4	200dpi to 399dpi	
8 31x 5	< 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.

8 381	T:Total PrtPGS	*CTL	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.
8 382	C:Total PrtPGS	*CTL	
8 383	F:Total PrtPGS	*CTL	
8 384	P:Total PrtPGS	*CTL	
8 385	S:Total PrtPGS	*CTL	
8 386	L:Total PrtPGS	*CTL	
8 387	O:Total PrtPGS	*CTL	

- 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.

8 391	LSize PrtPGS	*CTL	[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 are also displayed in the User Tools display on the copy machine.		

8 401	T:PrtPGS/LS	*CTL	These SPs count the number of pages printed from the document server. The counter for the application used to print the pages is incremented. The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel. [0 to 9999999/ **0** / 1]
8 402	C:PrtPGS/LS	*CTL	
8 403	F:PrtPGS/LS	*CTL	
8 404	P:PrtPGS/LS	*CTL	
8 405	S:PrtPGS/LS	*CTL	
8 406	L:PrtPGS/LS	*CTL	

- 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.

8 411	Prints/Duplex	*CTL	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]

8 421	T:PrtPGS/Dup Comb	*CTL	[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.		
8 422	C:PrtPGS/Dup Comb	*CTL	[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.		
8 423	F:PrtPGS/Dup Comb	*CTL	[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.		

8 424	P:PrtPGS/Dup Comb	*CTL	[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.		
8 425	S:PrtPGS/Dup Comb	*CTL	[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.		
8 426	L:PrtPGS/Dup Comb	*CTL	[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.		
8 427	O:PrtPGS/Dup Comb	*CTL	[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		
8 42x 1	Simplex> Duplex		
8 42x 4	Simplex Combine		
8 42x 5	Duplex Combine		
8 42x 6	2>	2 pages on 1 side (2-Up)	
8 42x 7	4>	4 pages on 1 side (4-Up)	
8 42x 9	8>	8 pages on 1 side (8-Up)	
8 42x 12	Booklet		
8 42x 13	Magazine		

- These counts (SP8 421 to SP8 427) 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

8 431	T:PrtPGS/ImgEdt	*CTL	[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.		
8 432	C:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of pages output with the three features below with the copy application.		
8 434	P:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of pages output with the three features below with the print application.		
8 436	L:PrtPGS/ImgEdt	*CTL	[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.		
8 437	O:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of pages output with the three features below with Other applications.		
8 43x 1	Cover/Slip Sheet	Total number of covers or slip sheets inserted. The count for a cover printed on both sides counts 2.	
8 43x 2	Series/Book	The number of pages printed in series (one side) or printed as a book with booklet right/left pagination.	
8 43x 3	User Stamp	The number of pages printed where stamps were applied, including page numbering and date stamping.	

8 441	T:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by all applications.		
8 442	C:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the copy application.		
8 443	F:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the fax application.		
8 444	P:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the printer application.		
8 445	S:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the scanner application.		
8 446	L:PrtPGS/Ppr Size	*CTL	[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.		
8 447	O:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by Other applications.		

8 44x 1	A3	
8 44x 2	A4	
8 44x 3	A5	
8 44x 4	B4	
8 44x 5	B5	
8 44x 6	DLT	
8 44x 7	LG	
8 44x 8	LT	
8 44x 9	HLT	
8 44x 10	Full Bleed	
8 44x 254	Other (Standard)	
8 44x 255	Other (Custom)	

- These counters do not distinguish between LEF and SEF.

8 451	PrtPGS/Ppr Tray		*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of sheets fed from each paper feed station.			
8 451 1	Bypass	Bypass Tray		
8 451 2	Tray 1	Copier		
8 451 3	Tray 2	Copier		
8 451 4	Tray 3	Paper Tray Unit (Option)		
8 451 5	Tray 4	Paper Tray Unit (Option)		
8 451 6	Tray 5	LCT (Option)		
8 451 7	Tray 6	Currently not used.		
8 451 8	Tray 7	Currently not used.		
8 451 9	Tray 8	Currently not used.		
8 451 10	Tray 9	Currently not used.		

8 451 11	Tray 10	Currently not used.
8 451 12	Tray 11	Currently not used.
8 451 13	Tray 12	Currently not used.
8 451 14	Tray 13	Currently not used.
8 451 15	Tray 14	Currently not used.
8 451 16	Tray 15	Currently not used.

8 461	T:PrtPGS/Ppr Type	*CTL	[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.		
8 462	C:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ 0 / 1]
	These SPs count by paper type the number pages printed by the copy application.		
8 463	F:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by paper type the number pages printed by the fax application.		
8 464	P:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by paper type the number pages printed by the printer application.		
8 466	L:PrtPGS/Ppr Type	*CTL	[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.		
8 46x 1	Normal		
8 46x 2	Recycled		
8 46x 3	Special		
8 46x 4	Thick		

8 46x 5	Normal (Back)
8 46x 6	Thick (Back)
8 46x 7	OHP
8 46x 8	Other

8 471	PrtPGS/Mag	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by magnification rate the number of pages printed.		
8 471 1	< 49%		
8 471 2	50% to 99%		
8 471 3	100%		
8 471 4	101% to 200%		
8 471 5	201% <		

- Counts are done for magnification adjusted for pages, not only on the operation panel but performed remotely with an external network application capable of performing magnification adjustment as well.
- Magnification adjustments done with printer drivers with PC applications such as Excel are also counted.
- Magnification adjustments done for adjustments after they have been stored on the document server are not counted.
- Magnification adjustments performed automatically during Auto Reduce/Enlarge copying are counted.
- The magnification rates of blank cover sheets, slip sheets, etc. are automatically assigned a rate of 100%.

8 481	T:PrtPGS/TonSave	*CTL	
8 484	P:PrtPGS/TonSave	*CTL	
	These SPs count the number of pages printed with the Toner Save feature switched on. **Note**: These SPs return the same results as this SP is limited to the Print application. [0 to 9999999/ **0** / 1]		

8 491	T:PrtPGS/Col Mode	*CTL	These SPs count the number of pages printed in the Color Mode by each application.
8 492	C:PrtPGS/Col Mode	*CTL	
8 493	F:PrtPGS/Col Mode	*CTL	
8 496	L:PrtPGS/Col Mode	*CTL	
8 497	O:PrtPGS/Col Mode	*CTL	
8 49x 1	B/W		
8 49x 2	Single Color		
8 49x 3	Two Color		
8 49x 4	Full Color		

8 501	T:PrtPGS/Col Mode	*CTL	These SPs count the number of pages printed in the Color Mode by the print application.
8 504	P:PrtPGS/Col Mode	*CTL	
8 057	O:PrtPGS/Col Mode	*CTL	
8 50x 1	B/W		
8 50x 2	Mono Color		
8 50x 3	Full Color		
8 50x 4	Single Color		
8 50x 5	Two Color		

8 511	T:PrtPGS/Emul	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by printer emulation mode the total number of pages printed.		
8 514	P:PrtPGS/Emul	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by printer emulation mode the total number of pages printed.		

8 514 1	RPCS	
8 514 2	RPDL	
8 514 3	PS3	
8 514 4	R98	
8 514 5	R16	
8 514 6	GL/GL2	
8 514 7	R55	
8 514 8	RTIFF	
8 514 9	PDF	
8 514 10	PCL5e/5c	
8 514 11	PCL XL	
8 514 12	IPDL-C	
8 514 13	BM-Links	Japan Only
8 514 14	Other	

- SP8 511 and SP8 514 return the same results as they are both limited to the Print application.
- Print jobs output to the document server are not counted.

8 521	T:PrtPGS/FIN	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count by finishing mode the total number of pages printed by all applications.		
8 522	C:PrtPGS/FIN	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Copy application.		
8 523	F:PrtPGS/FIN	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Fax application. **NOTE**: Print finishing options for received faxes are currently not available.		

8 524	P:PrtPGS/FIN	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Print application.		
8 525	S:PrtPGS/FIN	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Scanner application.		
8 526	L:PrtPGS/FIN	*CTL	[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.		
8 52x 1	Sort		
8 52x 2	Stack		
8 52x 3	Staple		
8 52x 4	Booklet		
8 52x 5	Z-Fold		
8 52x 6	Punch		
8 52x 7	Other		

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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.

8 531	Staples	*CTL	This SP counts the amount of staples used by the machine. [0 to 9999999 / **0** / 1]

8 581	T:Counter	*CTL	[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.		
8 581 1	Total		
8 581 2	Total: Full Color		

8 581 3	B&W/Single Color
8 581 4	Development: CMY
8 581 5	Development: K
8 581 6	Copy: Color
8 581 7	Copy: B/W
8 581 8	Print: Color
8 581 9	Print: B/W
8 581 10	Total: Color
8 581 11	Total: B/W
8 581 12	Full Color: A3
8 581 13	Full Color: B4 JIS or Smaller
8 581 14	Full Color Print
8 581 15	Mono Color Print
8 581 16	Full Color GPC
8 581 17	Twin Color Mode Print
8 581 18	Full Color Print (Twin)
8 581 19	Mono Color Print (Twin)
8 581 20	Full Color Total (CV)
8 581 21	Mono Color Total (CV)
8 581 22	Full Color Print (CV)

8 582	C:Counter	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total output of the copy application broken down by color output.		
8 582 1	B/W		
8 582 2	Single Color		
8 582 3	Two Color		

8 582 4	Full Color

8 583	F:Counter	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total output of the fax application broken down by color output.		
8 583 1	B/W		
8 583 2	Single Color		

8 584	P:Counter	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total output of the print application broken down by color output.		
8 584 1	B/W		
8 584 2	Mono Color		
8 584 3	Full Color		
8 584 4	Single Color		
8 584 5	Two Color		

8 586	L:Counter	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total output of the local storage broken down by color output.		
8 582 1	B/W		
8 582 2	Single Color		
8 582 3	Two Color		
8 582 4	Full Color		

8 591	O:Counter	*CTL	[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.		
8 591 1	A3/DLT	-	
8 591 2	Duplex		

8 601	Coverage Counter	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8 601 1	B/W	-	
8 601 2	Color		
8 601 11	B/W Printing Pages		
8 601 12	Color Printing Pages		
8 601 21	Coverage Counter 1		
8 601 22	Coverage Counter 2		
8 601 23	Coverage Counter 3		

8 617	SDK Apli Counter	*CTL	[0 to 9999999/ **0** / 1]
8 617 1	SDK1	These SPs count the total printout pages for each SDK applicaion.	
8 617 2	SDK2		
8 617 3	SDK3		
8 617 4	SDK4		
8 617 5	SDK5		
8 617 6	SDK6		

8 631	T:FAX TX PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the number of pages sent by fax to a telephone number.		
8 633	F:FAX TX PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the number of pages sent by fax to a telephone number.		
8 63x 1	B/W		
8 63x 2	Color		

- 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.

8 641	T:IFAX TX PGS	*CTL	[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.		
8 643	F:IFAX TX PGS	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by color mode the number of pages sent by Fax as fax images using I-Fax.		
8 64x 1	B/W		
8 64x 2	Color		

- 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.

8 651	T:S-to-Email PGS	*CTL	[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.		
8 655	S-to-Email PGS	*CTL	[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.		
8 65x 1	B/W		

8 65x 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.).

8 661	T:Deliv PGS/Svr	*CTL	[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.		
8 665	S:Deliv PGS/Svr	*CTL	[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.		
8 66x 1	B/W		
8 66x 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.

8 671	T:Deliv PGS/PC	*CTL	[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.		

8 675	S:Deliv PGS/PC	*CTL	[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.		
8 67x 1	B/W		
8 67x 2	Color		

8 681	T:PCFAX TXPGS	*CTL	These SPs count the number of pages sent by PC Fax. These SPs are provided for the Fax application only, so the counts for SP8 681 and SP8 683 are the same. [0 to 9999999/ **0** / 1]
8 683	F:PCFAX TXPGS	*CTL	

- 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.)

8 691	T:TX PGS/LS	*CTL	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.
8 692	C:TX PGS/LS	*CTL	
8 693	F:TX PGS/LS	*CTL	
8 694	P:TX PGS/LS	*CTL	
8 695	S:TX PGS/LS	*CTL	
8 696	L:TX PGS/LS	*CTL	

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.

8 701	TX PGS/Port	*CTL	[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.		
8 701 1	PSTN-1		
8 701 2	PSTN-2		
8 701 3	PSTN-3		
8 701 4	ISDN (G3,G4)		
8 701 5	Network		

8 711	T:Scan PGS/Comp	*CTL	[0 to 9999999/ **0** / 1]
8 715	S:Scan PGS/Comp	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages sent by each compression mode.		
8 715 1	JPEG/JPEG2000		
8 715 2	TIFF(Multi/Single)		
8 715 3	PDF		
8 715 4	Other		
8 715 5	PDF/Comp		

8 721	T: Deliv PGS/WSD	*CTL	[0 to 9999999/ **0** / 1]
8 725	S: Deliv PGS/WSD	*CTL	
	These SPs count the number of pages scanned by each scanner mode.		
x 1	B/W		
x 2	Color		

8 731	T: Scan PGS/Media	*CTL	[0 to 9999999/ **0** / 1]
8 735	S: Scan PGS/Media	*CTL	
	These SPs count the number of pages scanned and saved in a meia by each scanner mode.		
x 1	B/W		
x 2	Color		

8 741	RX PGS/Port	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of pages received by the physical port used to receive them.		
8 741 1	PSTN-1		
8 741 2	PSTN-2		
8 741 3	PSTN-3		
8 741 4	ISDN (G3,G4)		
8 741 5	Network		

8 771	Dev Counter	*CTL	[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.		
8 771 1	Total		
8 771 2	K		
8 771 3	Y		
8 771 4	M		
8 771 5	C		

8 781	Toner Bottle Info.	*CTL	[0 to 9999999/ **0** / 1]
	These SPs display the number of already replaced toner bottles. **NOTE:** Currently, the data in SP7-833-011 through 014 and the data in SP8-781-001 through 004 are the same.		

8 781 1	Toner: BK	The number of black-toner bottles
8 781 2	Toner: Y	The number of yellow-toner bottles
8 781 3	Toner: M	The number of magenta-toner bottles
8 781 4	Toner: C	The number of cyan-toner bottles

8 791	LS Memory Remain	*CTL	This SP displays the percent of space available on the document server for storing documents. [0 to 100 / **0** / 1]

8 801	Toner Remain	*CTL	[0 to 100/ **0** / 1]
	These SPs display 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).		
8 801 1	K		
8 801 2	Y		
8 801 3	M		
8 801 4	C		

8 851	Cov Cnt: 0-10%		*CTL	[0 to 9999999/ **0** / 1]
	These SPs display the number of scanned sheets on which the coverage of each color is from 0% to 10%.			
8 851 11	0 to 2%: BK	8 851 31	5 to 7%: BK	
8 851 12	0 to 2%: Y	8 851 32	5 to 7%: Y	
8 851 13	0 to 2%: M	8 851 33	5 to 7%: M	
8 851 14	0 to 2%: C	8 851 34	5 to 7%: C	
8 851 21	3 to 4%: BK	8 851 41	8 to 10%: BK	
8 851 22	3 to 4%: Y	8 851 42	8 to 10%: Y	

8 851 23	3 to 4%: M	8 851 43	8 to 10%: M
8 851 24	3 to 4%: C	8 851 44	8 to 10%: C

8 861	Cov Cnt: 11-20%	*CTL	[0 to 9999999/ **0** / 1]
	These SPs display the number of scanned sheets on which the coverage of each color is from 11% to 20%.		
8 861 1	BK		
8 861 2	Y		
8 861 3	M		
8 861 4	C		

8 871	Cov Cnt: 21-30%	*CTL	[0 to 9999999/ **0** / 1]
	These SPs display the number of scanned sheets on which the coverage of each color is from 21% to 30%.		
8 871 1	BK		
8 871 2	Y		
8 871 3	M		
8 871 4	C		

8 881	Cov Cnt: 31%-	*CTL	[0 to 9999999/ **0** / 1]
	These SPs display the number of scanned sheets on which the coverage of each color is 31% or higher.		
8 881 1	BK		
8 881 2	Y		
8 881 3	M		
8 881 4	C		

8 891	Page/Toner Bottle	*CTL	[0 to 9999999/ **0** / 1]
	These SPs display the amount of the remaining current toner for each color.		

8 891 1	BK
8 891 2	Y
8 891 3	M
8 891 4	C

8 901	Page/Toner – Prev1	*CTL	[0 to 9999999/ **0** / 1]
	These SPs display the amount of the remaining previous toner for each color.		
8 901 1	BK		
8 901 2	Y		
8 901 3	M		
8 901 4	C		

8 911	Page/Toner – Prev2	*CTL	[0 to 9999999/ **0** / 1]
	These SPs display the amount of the remaining 2nd previous toner for each color.		
8 911 1	BK		
8 911 2	Y		
8 911 3	M		
8 911 4	C		

8 921	Cov Cnt: Total	*CTL	[0 to 9999999/ **0** / 1]
	Displays the total coverage and total printout number for each color.		

8 921 1	Coverage (%): BK	
8 921 2	Coverage (%): Y	
8 921 3	Coverage (%): M	
8 921 4	Coverage (%): C	
8 921 14	Coverage/P: BK	
8 921 15	Coverage/P: Y	
8 921 16	Coverage/P: M	
8 921 17	Coverage/P: C	

8 941	Machine Status	*CTL	[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.		
8 941 1	Operation Time	Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).	
8 941 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.	
8 941 3	Energy Save Time	Includes time while the machine is performing background printing.	
8 941 4	Low Power Time	Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.	
8 941 5	Off Mode Time	Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.	
8 941 6	SC	Total time when SC errors have been staying.	
8 941 7	PrtJam	Total time when paper jams have been staying during printing.	
8 941 8	OrgJam	Total time when original jams have been staying during scanning.	

8 941 9	Supply PM Unit End	Total time when toner end has been staying

8 951	AddBook Register	*CTL	
	These SPs count the number of events when the machine manages data registration.		
8 951 1	User Code/User ID	User code registrations.	[0 to 9999999/ **0** / 1]
8 951 2	Mail Address	Mail address registrations.	
8 951 3	Fax Destination	Fax destination registrations.	
8 951 4	Group	Group destination registrations.	
8 951 5	Transfer Request	Fax relay destination registrations for relay TX.	
8 951 6	F-Code	F-Code box registrations.	
8 951 7	Copy Program	Copy application registrations with the Program (job settings) feature.	[0 to 255 / **0** / 255]
8 951 8	Fax Program	Fax application registrations with the Program (job settings) feature.	
8 951 9	Printer Program	Printer application registrations with the Program (job settings) feature.	
8 951 10	Scanner Program	Scanner application registrations with the Program (job settings) feature.	

8 999	Adomin. Counter List	*CTL	[0 to 9999999/ **0** / 1]
	Displays the total coverage and total printout number for each color.		

8 999 1	Total	
8 999 2	Copy: Full Color	
8 999 3	Copy: BW	
8 999 4	Copy: Single Color	
8 999 5	Copy: Two Color	
8 999 6	Printer Full Color	
8 999 7	Printer BW	
8 999 8	Printer Single Color	
8 999 9	Printer Two Color	
8 999 10	Fax Print: BW	
8 999 11	Fax Print: Single Color	
8 999 12	A3/DLT	
8 999 13	Duplex	
8 999 14	Coverage: Color (%)	
8 999 15	Coverage: BW (%)	
8 999 16	Coverage: Color Print Page (%)	
8 999 17	Coverage: BW Print Page (%)	
8 999 101	Transmission Total: Color	
8 999 102	Transmission Total: BW	
8 999 103	FAX Transmission	
8 999 104	Scanner Transmission: Color	
8 999 105	Scanner Transmission: BW	

Input Check Table

When entering the Input Check mode, 8 digits display the result for a section. Each digit corresponds to a different device as shown in the table.

Bit No.	7	6	5	4	3	2	1	0
Result	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1

Copier

5803	Description	Reading	
		0	1
5803 1	C-Dev. Mtr:LOCK	Normal	Lock
5803 2	C-Drum Mtr:LOCK	Normal	Lock
5803 3	Bk-Drum/Dev. Mtr:LOCK	Normal	Lock
5803 4	ITB Mtr:LOCK	Normal	Lock
5803 5	Fusing/P-Exit Mtr:LOCK	Normal	Lock
5803 6	Electrical FAN:LOCK	Normal	Lock
5803 7	Fusing Fan:LOCK	Normal	Lock
5803 8	Dev. Front Fan:LOCK	Normal	Lock
5803 9	Dev. Rear Fan:LOCK	Normal	Lock
5803 10	Fusing Exit Fan:LOCK	Normal	Lock
5803 11	LD Unit FAN:LOCK	Normal	Lock
5803 12	**Not used**	-	-
5803 13	Fusing:New Detection	New	Not new
5803 14	Fusing:Area Detection	-	-
5803 15	Zero Cross	Not detected	Detected
5803 16	Regist Sensor	Paper detected	No paper detected

5803 17	Drum Phase Sn:Bk	Actuator not detected	Actuator detected
5803 18	Drum Phase Sn:Color	Actuator not detected	Actuator detected
5803 19	Inverter Sensor	Inverter gate open	Inverter gate close
5803 20	**Not used**	-	-
5803 21	**Not used**	-	-
5803 22	ID/MUSIC Sn Shutter HP Sn (PTR Contact Sensor)	HP	Not HP
5803 23	HVPS:CB	-	-
5803 24	HVPS:T	-	-
5803 25	Right Door Open SW	Door close	Door open
5803 26	Right Lower Cover OP SW	Cover close	Cover open
5803 27	Mechanical Counter:Bk	Not set	Set
5803 28	Mechanical Counter:FC	Not set	Set
5803 29	Key Counter Set Sensor	Set	Not set
5803 30	Key Card Set Sensor	Set	Not set
5803 31	Toner End Sensor: K	End	Not end
5803 32	Toner End Sensor: C	End	Not end
5803 33	Toner End Sensor: M	End	Not end
5803 34	Toner End Sensor: Y	End	Not end
5803 35	Fusing Entrance Sensor	Paper detected	No paper detected
5803 36	Fusing Exit Sensor	Paper detected	No paper detected
5803 37	Paper Exit Sensor	Paper detected	No paper detected
5803 38	ITB Contact HP Sensor	HP (Contact)	Not HP (not contact)
5803 39	ITB T-Collect Bttl:Set SW	Set	Not set
5803 40	PCU T-Collect Bttl:Set SW	Set	Not set

5803 41	PCU T-Collect Bttl Full Sn	Full	Not full
5803 42	Vertical Transport 1 Sn	Paper detected	No paper detected
5803 43	Vertical Transport 2 Sn	Paper detected	No paper detected
5803 44	Tray1 Size Detection SW	See "Table 1" below.	
5803 45	**Not used**	-	
5803 46	Bypass Size Detection SW	See "Table 2" below.	
5803 47	Bypass Length Detection Sn	Not detect	Detected
5803 48	Bypass HP Sensor	Not HP	HP
5803 49	Tray1 Paper End Sensor	Not end	End
5803 50	**Not used**	-	-
5803 51	Bypass Paper End Sensor	Not end	End
5803 52	Tray1 Set SW	Set	Not set
5803 53	**Not used**	-	-
5803 54	Interlock SW 1	Door close	Door open
5803 55	Interlock SW 2	Door close	Door open
5803 56	DIP SW	-	-
5803 57	BCU Version	-	-
5803 58	PCU T-Collect Motor Set	Not set	Set
5803 59	**Not used**	-	-
5803 70	**Not used**	-	-
5803 71	**Not used**	-	-
5803 72	**Not used**	-	-
5803 73	**Not used**	-	-
5803 74	**Not used**	-	-
5803 75	**Not used**	-	-
5803 76	**Not used**	-	-

5803 77	1T PFU:Size Sensors	See "Table 4".	
5803 78	1T PFU:Paper Lift Sn	Not upper limit	Upper limit
5803 79	1T PFU:Paper Height Sn	-	-
5803 80	1T PFU:Right Cover SW	Open	Close
5803 81	1T PFU:Set Detection	Not set	Set
5803 82	1T PFU:Paper End Sn	Not end	End
5803 83	2T PFU:Upper Size Sns	See "Table 4" below.	
5803 84	2T PFU:Lower Size Sns		
5803 85	2T PFU:Upper Paper Lift Sn	Not upper limit	Upper limit
5803 86	2T PFU:Lower Paper Lift Sn	Not upper limit	Upper limit
5803 87	2T PFU:Upper Paper Height Sn	-	-
5803 88	2T PFU:Lower Paper Height Sn	-	-
5803 89	2T PFU:Right Cover SW	Open	Close
5803 90	2T PFU:Upper PE Sn	Not end	End
5803 91	2T PFU:Lower PE Sn	Not end	End
5803 92	2T PFU:V-Transport Sn	Paper detected	No paper detected
5803 94	LD OFF Check:Factory	-	-
5803 200	Scanner HP Sensor	Not HP	HP
5803 201	Platen Cover Sensor	Open	Close

Table 1: Paper Size Switch (Tray 1)

Switch 1 is used for tray set detection.

0: Pushed, 1: Not pushed

Models		Bit		
North America	Europe/Asia	2	1	0

11" x 17" SEF*1 (A3 SEF)	A3 SEF*1 (11" x 17" SEF)	1	0	0
8.5" x 14" SEF *2 (B4 SEF)	B4 SEF *2 (8.5" x 14" SEF)	0	0	0
A4 SEF	A4 SEF	0	1	1
8.5" x 11" SEF	8.5" x 11" SEF	1	1	1
B5 SEF	B5 SEF	1	1	0
11" x 81/2" LEF*3 (A4 LEF)	A4 LEF*3 (11" x 81/2" LEF)	0	0	1
10.5" x 7.25" LEF*4 (B5 LEF)	B5 LEF*4 (10.5" x 7.25" LEF)	0	1	0
A5 LEF	A5 LEF	1	0	1

*1: The machine detects either 11" x 17" SEF or A3 SEF, depending on the setting of SP 5-181-002 (Tray 1) or SP 5-181-006 (Tray 2).

*2: The machine detects either 8.5" x 14" SEF or B4 SEF, depending on the setting of SP 5-181-003 (Tray 1) or SP 5-181-007 (Tray 2).

*3: The machine detects either 11" x 81/2" LEF or A4 LEF, depending on the setting of SP 5-181-001 (Tray 1) or SP 5-181-005 (Tray 2).

*4: The machine detects either B5 LEF or 10.5" x 7.25" LEF, depending on the setting of SP 5-181-004 (Tray 1) or SP 5-181-008 (Tray 2).

Table 2: Paper Size (By-pass Table)

0: ON, 1: OFF

By-pass Paper Size Sensor				Length Sensor	NA	EU/ASIA
bit3	Bit2	Bit1	Bit0			
1	1	0	0	0	HLT SEF	B6 SEF
1	1	1	1	0	HLT SEF	A5 SEF
1	1	1	0	0	HLT SEF	A5 SEF

By-pass Paper Size Sensor				Length Sensor	NA	EU/ASIA
bit3	Bit2	Bit1	Bit0			
0	0	1	1	1	LT/LG SEF*1	A4 SEF
0	0	1	1	0	LT/LG SEF*1	A5 LEF
1	0	0	1	1	DLT SEF	A3 SEF
1	0	0	1	0	LT LEF	A4 LEF

*1: The paper size (LT or LG) can be selected with SP1-007-001.

Table 3: APS Original Size Detection

Original Size		Width Sensor			Length Sensor		SP4-301 display
Metric version	Inch version	W1	W2	W3	L1	L2	
A3	11" x 17"	O	O	O	O	O	00000011
B4	10" x 14"	O	O	X	O	O	00000011
F4 8.5" x 13", 8.25" x 13", or 8" x 13" SP 5126 controls the size that is detected	8.5" x 14"	O	X	X	O	O	00000011
A4 LEF	8.5" x 11"	O	O	O	X	X	00000000
B5 LEF	-	O	O	X	X	X	00000000
A4 SEF	11" x 8.5"	O	X	X	O	X	00000010
B5 SEF	-	X	X	X	O	X	00000010
A5 LEF/ SEF	5.5" x 8.5", 8.5" x 5.5"	X	X	X	X	X	00000000

Table 4: Paper Size Switch (Tray 2/ 3)

"Bit 0" is used for tray set detection. 0: Set, 1: Not set

0: Not Interrupted, 1: Interrupted

Models		Bit			
North America	Europe/Asia	3	2	1	0
11" x 17" SEF*1 (A3 SEF)	A3 SEF*1 (11" x 17" SEF)	0	1	1	0
8.5" x 14" SEF *2 (B4 SEF)	B4 SEF *2 (8.5" x 14" SEF)	1	1	1	0
A4 SEF	A4 SEF	1	0	0	0
B5 SEF	B5 SEF	0	0	1	1
8.5" x 11" SEF	8.5" x 11" SEF	0	0	0	0
11" x 81/2" LEF*3 (A4 LEF)	A4 LEF*3 (11" x 81/2" LEF)	1	1	0	1
10.5" x 7.25" LEF*4 (B5 LEF)	B5 LEF*4 (10.5" x 7.25" LEF)	1	0	1	0
A5 LEF	A5 LEF	0	1	0	0
A5 SEF	A5 SEF	1	1	0	1

*1: The machine detects either 11" x 17" SEF or A3 SEF, depending on the setting of SP 5-181-010 (Tray 3) or SP 5-181-014 (Tray 4).

*2: The machine detects either 8.5" x 14" SEF or B4 SEF, depending on the setting of SP 5-181-011 (Tray 3) or SP 5-181-015 (Tray 4).

*3: The machine detects either 11" x 81/2" LEF or A4 LEF, depending on the setting of SP 5-181-009 (Tray 3) or SP 5-181-013 (Tray 4).

*4: The machine detects either B5 LEF or 10.5" x 7.25" LEF, depending on the setting of SP 5-181-012 (Tray 3) or SP 5-181-016 (Tray 4).

Table 5: Area Display

The bit 0 of these SPs shows the punch unit type.

2: 2 Holes, 2/3: 2/3 Holes, 4 (EU): 4 Holes Europe,

4 (Scan.): 4 Holes Scandinavia

SP		2	2/3	4 (EU)	4 (Scan.)
6120-013	Punch Unit:Area Detect2	0	0	1	1
6120-014	Punch Unit:Area Detect2	0	1	0	1

ARDF (D366)

6007	Description	Reading	
		0	1
6007 1	Original Length Sn1 (B5 Sn)	Paper not detected	Paper detected
6007 2	Original Length Sn2 (A4 Sn)	Paper not detected	Paper detected
6007 3	Original Length Sn3 (LG Sn)	Paper not detected	Paper detected
6007 4	Original Width Sn:S	Paper not detected	Paper detected
6007 5	Original Width Sn:M	Paper not detected	Paper detected
6007 6	Original Width Sn:L	Paper not detected	Paper detected
6007 7	Original Width Sn:LL	Paper not detected	Paper detected
6007 9	Original Set Sn	Paper not detected	Paper detected
6007 10	Trailing Edge Sn	Paper not detected	Paper detected
6007 11	Skew Correction Sn	Paper not detected	Paper detected
6007 13	Registration Sn	Paper not detected	Paper detected
6007 14	Exit Sn	Paper not detected	Paper detected
6007 15	Feed Cover SW	ADF cover close	ADF cover open
6007 16	Lift Up Sn	ADF cover close	ADF cover open

Output Check Table

Copier

5804	Display	Description
5804 1	Paper Feed M1:CW:190mm/s	-
5804 2	Paper Feed M1:CW:120mm/s	-
5804 3	Paper Feed M1:CW:60mm/s	-
5804 4	P-Feed M1:CW:60mm/s:Thick	-
5804 5	Paper Feed M1:CCW:190mm/s	-
5804 6	Paper Feed M1:CCW:120mm/s	-
5804 7	Paper Feed M1:CCW:60mm/s	-
5804 8	P-Feed M1:CCW:60mm/s:Thick	-
5804 9	Not used	-
5804 10		-
5804 11		-
5804 12		-
5804 13		-
5804 14		-
5804 15		-
5804 16		-
5804 17	Bypass M:CW:190mm/s	-
5804 18	Bypass M:CW:120mm/s	-
5804 19	Bypass M:CW:60mm/s:400mA	-
5804 20	Bypass M:CW:60mm/s:300mA	-
5804 21	Bypass M:CCW:190mm/s	-

5804 22	Bypass M:CCW:120mm/s	-
5804 23	Bypass M:CCW:60mm/s	-
5804 24	Registration M:120mm/s	-
5804 25	Registration M:60mm/s	-
5804 26	Regist M:60mm/s:Thick	-
5804 27	Not used	-
5804 29		-
5804 31	Not used	-
5804 33		-
5804 35		-
5804 37		-
5804 39	Not used	-
5804 40		-
5804 41		-
5804 42	Not used	-
5804 43		-
5804 44		-
5804 45	Color Dev. M:120mm/s	-
5804 46	Color Dev. M:60mm/s	-
5804 47	Color Drum. M:120mm/s	-
5804 48	Color Drum. M:60mm/s	-
5804 49	Bk Drum M:120mm/s	-
5804 50	Bk Drum M:60mm/s	-
5804 51	ITB Motor:120mm/s	-
5804 52	ITB Motor:60mm/s	-
5804 53	Fusing/P-Exit M:120mm/s	-

5804 54	Fusing/P-Exit M:60mm/s	-
5804 55	Electrical FAN:H	-
5804 56	Electrical FAN:L	-
5804 57	Fusing Fan:H	-
5804 58	Fusing Fan:L	-
5804 59	Dev. Front FAN:H	-
5804 60	Dev. Front FAN:L	-
5804 61	Dev. Rear FAN:H	-
5804 62	Dev. Rear FAN:L	-
5804 63	Fusing Exit Fan:H	-
5804 64	Fusing Exit Fan:L	-
5804 65	LD Unit Fan:H	-
5804 67	PSU Fan:H	-
5804 69	Not used	-
5804 70		-
5804 71	Toner Supply M:Bk	-
5804 72	Toner Supply M:C	-
5804 73	Toner Supply M:M	-
5804 74	Toner Supply M:Y	-
5804 75	PCU T-Collect Motor	-
5804 76	ID/MUSIC Sn Shutter Motor	PTR Contact Motor
5804 77	ITB Contact Motor	-
5804 78	Bk Dev. Clutch	-
5804 79	Junction Gate SOL	-
5804 80	PWM:Potential Sn:Bk	-
5804 81	PWM:Potential Sn:C	-

5804 82	PWM:Potential Sn:M	-
5804 83	PWM:Potential Sn:Y	-
5804 84	HVPS:Charge AC:Bk:H	-
5804 85	HVPS:Charge AC:Bk:L	-
5804 86	HVPS:Charge AC:C:H	-
5804 87	HVPS:Charge AC:C:L	-
5804 88	HVPS:Charge AC:M:H	-
5804 89	HVPS:Charge AC:M:L	-
5804 90	HVPS:Charge AC:Y:H	-
5804 91	HVPS:Charge AC:Y:L	-
5804 92	HVPS:Charge DC:Bk	-
5804 93	HVPS:Charge DC:C	-
5804 94	HVPS:Charge DC:M	-
5804 95	HVPS:Charge DC:Y	-
5804 96	HVPS:Dev. Bias:Bk	-
5804 97	HVPS:Dev. Bias:C	-
5804 98	HVPS:Dev. Bias:M	-
5804 99	HVPS:Dev. Bias:Y	-
5804 100	HVPS:PTR Bias:- PWM	-
5804 101	HVPS:PTR Bias:+ PWM	-
5804 102	HVPS:ITR Bias:Bk	-
5804 103	HVPS:ITR Bias:Bk	-
5804 104	HVPS:ITR Bias:Bk	-
5804 105	HVPS:ITR Bias:Bk	-
5804 106	MUSIC Sensor:R:PWM	-
5804 107	MUSIC Sensor:C:PWM	-

5804 108	MUSIC Sensor:F:PWM	-
5804 109	Reserve Fan:H	-
5804 110	Reserve Fan:LOCK	-
5804 111	Toner End Sn Power	-
5804 120	**Not used**	-
5804 121		-
5804 122		-
5804 123	Shift Motor	-
5804 124	1T PFU:Tray Lift M	-
5804 125	1T PFU:Paper Feed M	-
5804 126	1T PFU:Paper Feed CL	-
5804 127	2T PFU:Relay CL	-
5804 128	2T PFU:Upper Feed CL	-
5804 129	2T PFU:Lower Feed CL	-
5804 130	2T PFU:P-Feed M:190mm/s	-
5804 131	2T PFU:P-Feed M:120mm/s	-
5804 132	2T PFU:P-Feed M:60mm/s	-
5804 133	2T PFU:Upper Tray Lift M	-
5804 134	2T PFU:Lower Tray Lift M	-
5804 192	RFID ON/OFF: Bk	-
5804 193	RFID ON/OFF: C	-
5804 194	RFID ON/OFF: M	-
5804 195	RFID ON/OFF: Y	-
5804 196	RFID COM ON: Bk	-
5804 197	RFID COM ON: C	-
5804 198	RFID COM ON: M	-

5804 199	RFID COM ON: Y	-
5804 202	Scanner Lamp	-
5804 210	Polygon Motor	-
5804 216	LD1: Bk	-
5804 220	LD1: C	-
5804 222	LD1: Y	-

ARDF (D366)

6008	Display	Description
6008 3	Feed Motor: Forward	Feed Motor-Forward rotation
6008 4	Feed Motor: Reverse	Feed Motor-Reverse rotation
6008 5	Transport Motor: Forward	Transport Motor- Forward rotation
6008 6	Transport Motor: Forward	Transport Motor- Forward rotation
6008 9	Feed Clutch	-
6008 10	Pick-up Solenoid	-
6008 11	Junction Gate Solenoid	-
6008 12	Stamp Solenoid	Stamp Solenoid

Test Pattern Printing

Printing Test pattern: SP2-109

Some of these test patterns are used for copy image adjustments but most are used primarily for design testing.

Note

- Do not operate the machine until the test pattern is printed out completely. Otherwise, an SC occurs.

1. Enter the SP mode and select **SP2-109-003**.
2. Enter the number for the test pattern that you want to print and press [#].
3. When you want to select the single color of Magenta, Yellow or Cyan for printing a test pattern, select the color with SP2-109-005 (2: Magenta, 3: Yellow, 4: Cyan).
4. When you want to change the density of printing a test pattern, select the density with SP2-109-006 to -009 for each color.

   Note

   - If you select "0" with SP2-109-006 to -009, the color to be adjusted to "0" does not come up on a test pattern.

5. When you are prompted to confirm your selection, touch "Yes" to select the test pattern for printing.
6. Touch "Copy Window" to open the copy window, then select the settings for the test print (paper size etc.).

   Note

   - If you want to use black and white printing, touch "Black & White" on the LCD. If you want to use color printing, touch "Full Colour" on the LCD.

7. Press the "Start" key to start the test print.
8. After checking the test pattern, touch "SP Mode" on the LCD to return to the SP mode display.
9. Reset all settings to the default values.
10. Touch "Exit" twice to exit SP mode.

No.	Pattern	No.	Pattern
0	None	11	Independent Pattern (1dot)
1	Vertical Line (1dot)	12	Independent Pattern (2dot)
2	Vertical Line (2dot)	13	Independent Pattern (4dot)
3	Horizontal Line (1dot)	14	Ttrimming Area
4	Horizontal Line (2dot)	16	Hound's Tooth Check (Horizontal)

5	Grid Vertical Line	17	Band (Horizontal)
6	Grid Horizontal Line	18	Band (Vertical)
7	Grid Pattern Small	19	Checkered Flag Pattern
8	Grid Pattern Large	20	Grayscale (Vertical Margin)
9	Argyle Patter Small	21	Grayscale (Horizontal Margin)
10	Argyle Patter Large	23	Full Dot Pattern

Printer Service Mode

SP1-XXX (Service Mode)

1001	Bit Switch			
001	Bit Switch 1		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	**No I/O Timeout**	0: Disable	1: Enable
		Enable: The MFP I/O Timeout setting will have no effect. I/O Timeouts will never occur.		
	bit 4	**SD Card Save Mode**	0: Disable	1: Enable
		Enable: Print jobs will be saved to an SD Card in the GW SD slot (☛ "Card Save Function" in the System Maintenance Reference of the Field Service Manual).		
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	**[RPCS,PCL]: Printable area frame border**	0: Disable	1: Enable
		Enable: The machine prints all RPCS and PCL jobs with a border on the edges of the printable area.		

1001	Bit Switch

002	Bit Switch 2		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	**Not used**		
	bit 3	**Not used**		
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	**Bit Switch**			
003	Bit Switch 3		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	**[PCL5e/c]: Legacy HP compatibility**	0: Disable	1: Enable
		Enable: Uses the same left margin as older HP models such as HP4000/HP8000. In other words, the left margin defined in the job (usually "<ESC>*r0A") will be changed to "<ESC>*r1A"		
	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	**Bit Switch**		
004	Bit Switch 4 **DFU**	-	-

1001	**Bit Switch**

005	Bit Switch 5		0	1
	bit 0	**Not used**		
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	**Not used**		
	bit 4	**Not used**		
	bit 5	**Not used**		
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	**Bit Switch**		
006	Bit Switch 6 **DFU**	-	-

1001	**Bit Switch**		
007	Bit Switch 7 **DFU**	-	-

1001	**Bit Switch**

008	Bit Switch 8		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	**[PCL,PS]: Allow BW jobs to print without requiring User Code**	Disable	Enable
		Enable: BW jobs submitted without a user code will be printed even if usercode authentication is enabled. **Note** • Color jobs will not be printed without a valid user code.		
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	**Not used**		
	bit 7	**Not used**		

1003	[Clear Setting]
1003 1	Initialize Printer System
	Initializes settings in the "System" menu of the user mode.
1003 3	Delete Program

1004	[Print Summary]
1004 1	Print Summary
	Prints the service summary sheet (a summary of all the controller settings).

1005	[Display Version]
1005 1	Disp. Version
	Displays the version of the controller firmware.

1006	[Sample/Locked Print]	*CTL	**0**: Linked, 1: On

1006 1	Enables and disables the document server. When you select "0," the document server is enabled or disabled in accordance with Copy Service Mode SP5-967. When you select "1," the document server is enabled regardless of Copy Service Mode SP5-967.

1101	[Data Recall]		
	Recalls a set of gamma settings. This can be either a) the factory setting, b) the previous setting, or c) the current setting.		
1101 1	Factory	*CTL	
1101 2	Previous		
1101 3	Current		
1101 4	ACC		

1102	[Resolution Setting]
	Selects the printing mode (resolution) for the printer gamma adjustment.
1102 1	**2400x600 Photo**, 1800x600 Photo, 600 x 600 Photo, 2400x600 Text, 1800x600, Text, 600x600 Text

1103	[Test Page]
	Prints the test page to check the color balance before and after the gamma adjustment.
1103 1	Color Gray Scale
1103 2	Color Pattern

1104	[Gamma Adjustment]
	Adjusts the printer gamma for the mode selected in the "Mode Selection" menu.

1104 1	Black: Highlight	*CTL	[0 to 30 / **15** / 1/step]
1104 2	Black: Shadow		
1104 3	Black: Middle		
1104 4	Black: IDmax		
1104 21	Cyan: Highlight		
1104 22	Cyan: Shadow		
1104 23	Cyan: Middle		
1104 24	Cyan: IDmax		
1104 41	Magenta: Highlight		
1104 42	Magenta: Shadow		
1104 43	Magenta: Middle		
1104 44	Magenta: IDmax		
1104 61	Yellow: Highlight		
1104 62	Yellow: Shadow		
1104 63	Yellow: Middle		
1104 64	Yellow: IDmax		

1105	[Save Tone Control Value]
	Stores the print gamma adjusted with the "Gamma Adj." menu item as the current setting. Before the machine stores the new "current setting", it moves the data currently stored as the "current setting" to the "previous setting" memory storage location.
1105 1	Save Tone Control Value

1106	[Toner Limit]		
	Adjusts the maximum toner amount for image development.		
1106 1	Toner Limit Value	*CTL	[100 to 400 / **260** / 1 %/step]

Scanner SP Mode

SP1-xxx (System and Others)

1001	[Scan Nv Version]		
1001 5	-	*CTL	-

1004	[Compression Type]		
	Selects the compression type for binary picture processing.		
1004 1	Compression Type	*CTL	[1 to 3 / **1** / 1/step] 1: MH, 2: MR, 3: MMR

1005	[Erase margin]		
	Creates an erase margin for all edges of the scanned image. If the machine has scanned the edge of the original, create a margin. This SP is activated only when the machine uses TWAIN scanning.		
1005 1	Range from 0 to 5 mm	*CTL	[0 to 5 / **0** / 1 mm/step]

1009	[Remote scan disable]	*CTL	[0 or 1 / **0** / -] 0: enable, 1: disable
1009 1	Enable or disable remote scan.		

1010	[Non Display Clear Light PDF]	*CTL	[0 or 1 / **0** / -] 0: Display, 1: No display
1010 1	Enable or disable remote scan.		

1011	[Org count Disp]	*CTL	[0 or 1 / **0** / -]
1011 1	Selects the original counter display. 0: Displays remaining memory for the original scanning.. 1: Displays original counter.		

1012	**[UserInfo release]**	*CTL	[0 or 1 / **1** / -] 0: No, 1: Yes
1012 1	Clear the following settings: Address, Sender, Text / Subject, Filename		

1013	**[Multimedia Function Setting]**	*CTL	[0 or 1 / **0** / -] 0: OFF, 1: ON
1013 1	On or off multimedia function		

SP2-XXX (Scanning-image quality)

2021	**[Compression Level (Grayscale)]**		
	Selects the compression ratio for grayscale processing mode (JPEG) for the three settings that can be selected at the operation panel.		
2021 1	Comp 1: 5-95	*CTL	[5 to 95 / **20** / 1 /step]
2021 2	Comp 2: 5-95		[5 to 95 / **40** / 1 /step]
2021 3	Comp 3: 5-95		[5 to 95 / **65** / 1 /step]
2021 4	Comp 4: 5-95		[5 to 95 / **80** / 1 /step]
2021 5	Comp 5: 5-95		[5 to 95 / **95** / 1 /step]

2024	**[Compression ratio of ClearLight PDF]**		
	Selects the compression ratio for clearlight PDF for the two settings that can be selected at the operation panel.		
2024 1	Compression Ratio (Normal)	*CTL	[5 to 95 / **25** / 1 /step]
2024 2	Compression Ratio (High)		[5 to 95 / **20** / 1 /step]