Model V-C3
Machine Code: D081/D082

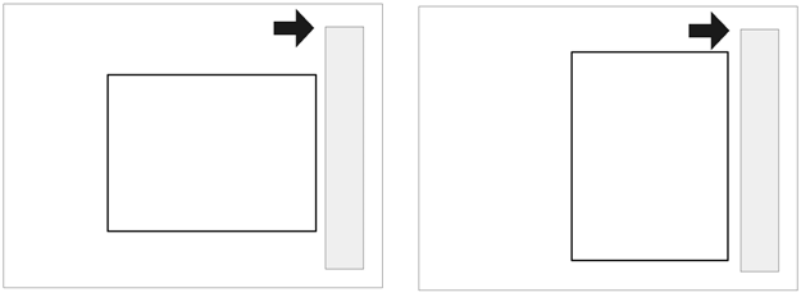
Field Service Manual

30 November, 2009

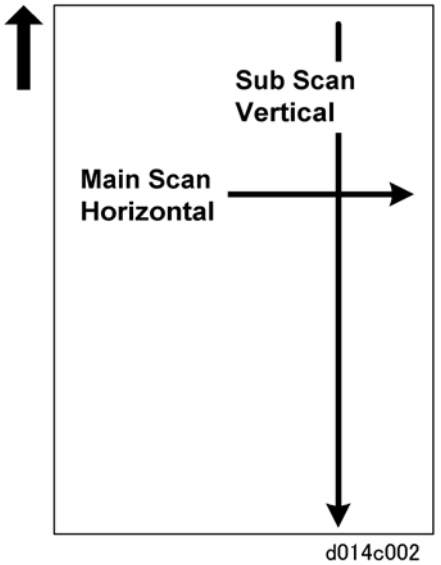
Safety, Conventions, Trademarks

Conventions

Symbol	What it means
CT	Core Tech Manual
	Screw
	Connector
	E-ring
	C-ring
	Harness clamp
FFC	Flexible Film Cable



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



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

Warnings, Cautions, Notes

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

⚠WARNING

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

⚠CAUTION

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

Important

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

Note

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

Commonly Used Terms

In the SP tables, some of the finishers are referred to by number (Fin1, Fin2, etc.), and some SP codes may appear for options that are not supported overseas:

Fin1	2000/3000-Sheet Finisher D373/D374. The D373 supports both corner and booklet folding and stapling. The D374 supports corner stapling only.
Fin2	3000-Sheet Finisher B830
Fin3	**Japan Only**. Please Ignore.
Fin4	Ring Binder D392
Z-Fold	This refers to the Z-Folding unit. The Z-Folding unit is available in Japan only.
ITB	Image Transfer Belt
PTR	Paper Transfer Roller

General Safety Instructions

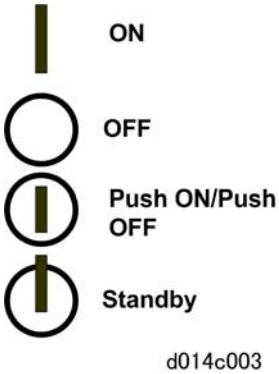
For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

Always obey the following safety precautions when using this product.

Safety During Operation

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



d014c003

Switches and Symbols

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

Responsibilities of the Customer Engineer

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 with 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 machine. Before you move the product, arrange the power cord so it will not fall under the machine.

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.

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

After Installation, Servicing

Disposal of Used Items

⚠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.
- Turn off the main switch before attempting any of the procedures in the Laser Unit section. Laser beams can seriously damage your eyes.

d014c-004

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New Features of D081/D082

Overview

Appearance

A 200V version of this machine will be available in North America (NA) as well as Europe (EU) and will feature an automatic voltage detection function.

Model Voltage Table

Model	Area	Voltage
D081-17	NA	110-127 V, 20 A, 60 Hz
D082-17	NA	208-240 V, 12 A, 60 Hz
D081-19, -27, -29 D082-19, -21, -27, -29	EU/AP/TWN	220-240 V, 12-10A, 50/60 Hz

d081w023

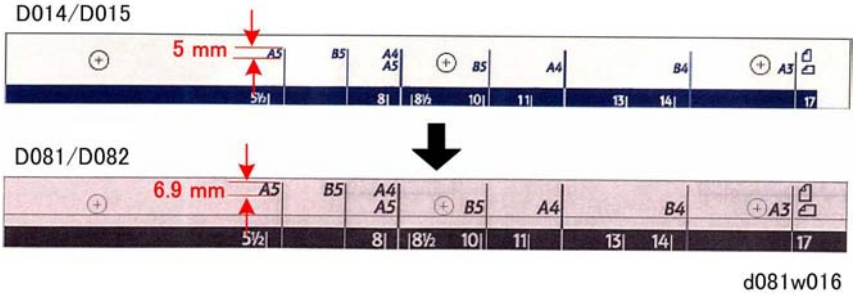
The new ADF also features simultaneous dual side scanning. Both sides of a sheet are scanned during one pass through the ADF.

d081w032

The right end of the operation panel has also been changed. The recess to hold pins and paper clips on the right end of the D014/D015 has been replaced by a dummy panel on the D081/D082 which can be removed for installation of the new USB/SD card slot option (D505).

d081w019

USB 2.0/SD Slot Type C (D505) is a new option that can be installed on the right end of the operation panel. There are still slots on the control board at the back of the machine, but this new option provides easier access to the USB and SD card slots at the front of the machine. This slot option device can be installed for the SD card only, or for both SD cards and USB. Customers can use these slots to scan and save documents to either an SD card or a USB memory device.



d081w016

The sizes of the characters on the rear scale of the exposure glass have been enlarged to make the scale easier to read.

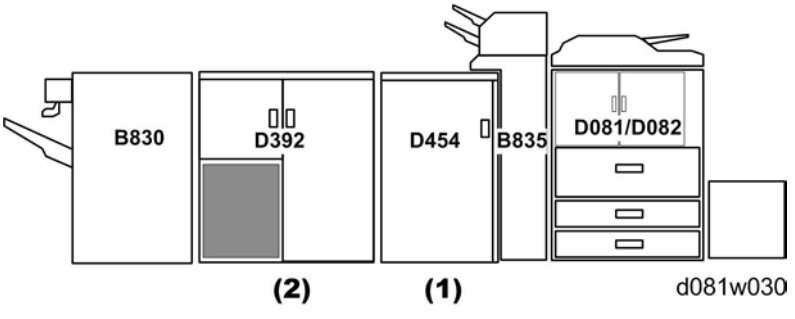
Specifications

Here is a quick summary of the differences between the D014/D015 and D081/D082.

Specification Summary

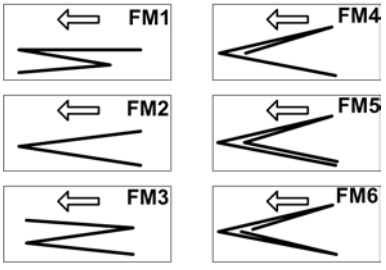
Feature	D014/D015	D081/D082	Comments
cpm (BW/FC)	a: 60/55 b: 75/70	a: 65/60 b: 75/70:	Faster print speed in B&W mode.
Warm-up time	a: 90 s b: 75 s	a: 70 s b: 60 s	Much shorter warm-up time.
First copy time (BW)	a: 5.7 s b: 4.9 s	a: 5.7 s b: 4.9 s	
First copy time (FC)	a: 7.5 s b: 6.4 s	a: 7.5 s b: 6.4 s	

Two New Options



The Multi Fold Unit (D454) (1) and the Ring Binder (D392) (2) are two new options that are available for the D081/D082.

The Multi Folder (D454) replaces the Z-Fold Unit (B660). The Multi Fold Unit (D454) performs five additional types of folding in addition to Z-folding:



FM1	Z-Folding (Same as Z-Fold Unit, B660)
FM2	Half Fold
FM3	Letter Fold-out
FM4	Letter Fold-in
FM5	Double Parallel Fold
FM6	Gate Fold

The Ring Binder (D392) jogs, stacks, punches up to 50 or 100 sheets (depending on the size of the rings) and then binds them with rings. The ring-bound copies are delivered to a tray inside the ring binder.

D014/D015 and D081/D082 Detailed Comparison Tables

General Comparison

Item	D014/D015	D081/D082
ADF	ARDF. 2-side scanning by duplexing.	ADF. Simultaneous 2-side scanning with CIS scanning the rear side without duplex feeding.
Fusing unit	Employs hot roller, pressure roller, heating roller with cleaning unit.	Employs nearly identical hardware and unit layout of the previous machine. However, the following features have been improved: 1) warm-up time, 2) production capacity (cpm), 3) less frequent servicing due to longer service lives of key components
Jam reduction	There were reports from the field about duplexer jams.	Key parts have been replaced in the duplex unit to improve paper feed. Also, a knob has been added to the side of the duplex unit to facilitate the removal of jammed paper.

Item	D014/D015	D081/D082
LD unit.	No LCD deflection elements.	Four new LCD deflection elements have been added to the LD unit to perform beam switching in the sub scan direction. This allows good-quality 1200 dpi resolution in half-speed mode using thick paper.
Rear scale (exposure glass)	5 mm font used for scale notations.	Font enlarged to 6.9 mm to improve readability.
Thick paper handling.	Up to 163 g/m2 (216 g/m2 under some conditions)	Tray 1, 2: 52.3 to 216 g/m^2 Tray 3: 52.3 to 256 g/m^2 The gap at the junction of the tray feed mechanism of Tray 3 where the paper bends into the vertical feed path has been widened to accommodate more rigid paper. This heavier paper can be fed from Tray 3 only.
USB/SD slot access	Controller box at rear of main machine.	A new option installed on right end of operation panel allows slot access at the front of the main machine.
Z-Folding	Z-Fold Unit B660 for Z-folding only.	Multi Fold Unit D454. The B660 is available in Japan only. The D454 replaces the B660 overseas and performs 5 additional folding methods in addition to Z-folding.

Controller Options: D014/D015 and D081/D082 Compared

D014/D015		D081/D082	
Bluetooth Interface Unit Type 3245	D377	Bluetooth Interface Unit Type 3245	**B826-17**
Browser Unit Type D	D497	Browser Unit Type **E**	**D430**
Copy Connector 2105	B328	Copy Connector **3260**	B328-11
Copy Data Security Type F	B829	Copy Data Security Type F	B829-07
Data Overwrite Security Unit Type H	D497	Data Overwrite Security Unit Type H	D377-06
File Format Converter Type E	D377	File Format Converter Type E	D377-04
Gigabit Ethernet Type B	D377	Gigabit Ethernet Type B	D377-21

D014/D015		D081/D082	
IEEE 1284 Interface Board Type A	B679	IEEE 1284 Interface Board Type A	B679
IEEE 802.11 a/g Interface Unit Type J	D377	IEEE 802.11 a/g Interface Unit Type J	D377-01
IEEE 802.11 g Interface Unit Type K	D377	IEEE 802.11 g Interface Unit Type K	D377-19
Java VM Card Type E	D377	VM Card/Calypso. Contains APP2 ME and comes with the machine in Slot 2 (lower slot).	D0815790C
Optional Counter Interface Unit Type A	B879	Optional Counter Interface Unit Type A	**B870-11**
PostScript3 Unit Type C7500	D378	PostScript3 Unit Type **C7501**	**D497**
Not Provided	---	HDD Encryption Unit Type A	D377-16

Other Developments

Lower TEC

The D081/D082 saves energy by shortening the warm-up time and lowering the amount of energy consumed in Sleep Mode. This is referred to as the TEC (Typical Energy Consumption) level.

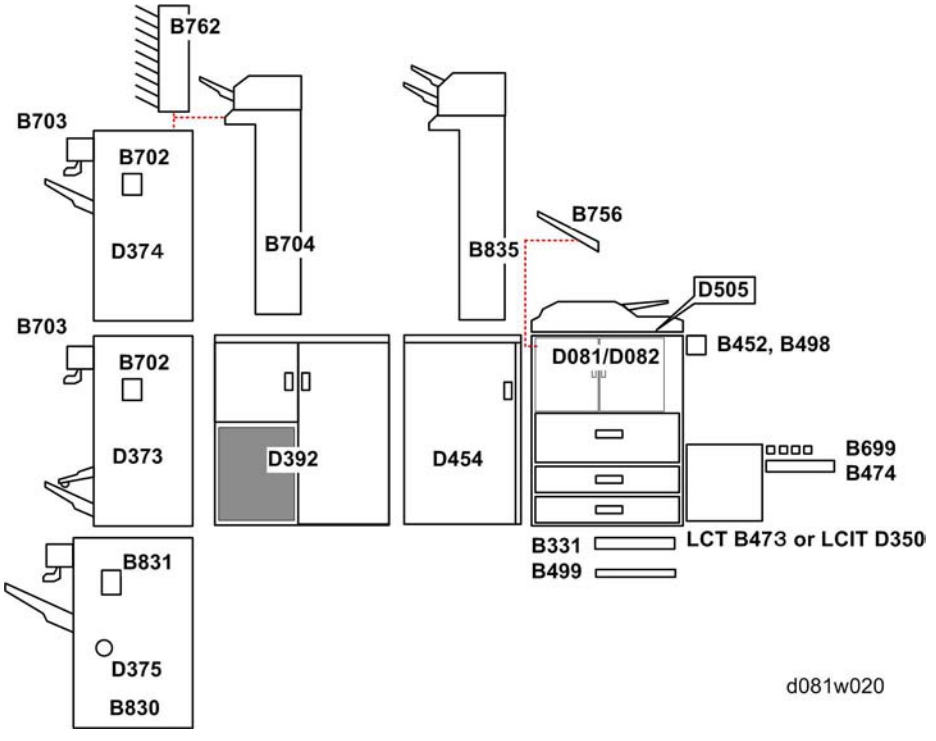
Color Deficiency Management Mode

This new software feature improves visual communication with users who are affected by color deficiency in their eyesight. By enabling this function on the printer driver, the printout results of color letters and graphics become clearer and easier to distinguish for people with color deficiency. This color adjustment is not far from the effect intended by the author. Users with and without color deficiency can communicate smoothly with other software to simulate colors. This feature is available with PCL6 PS3 operating on MS Office 2007.

Summary of Optional Peripherals

This is a summary of all the peripheral devices that can be installed with the D081/D082.

List of Available Peripheral Options



No.	Name	Comments
D081/D082	Main Machine	Copier/printer
B331	A3/11" x 17" Tray 2105	For tandem tray (Tray 1), the top tray of the main machine. Modifies the tray so it can hold the larger paper sizes.
B452	Key Counter Bracket	Counter option for the main machine.
B473	A4/LT LCT	Only one LCT can be installed on the right side of the main machine, the B473 or D350. The LCT Adapter B699 must be installed for the B699 to adjust the height of the LCT.
B474	LG Size Tray Type 1075	Option for LCT B473. Modifies the LCT tray so it can hold legal paper.
B498	Card Reader Bracket Type B	Counter option for the main machine.

No.	Name	Comments
B499	Tab Sheet Holder Type 3260	For tandem tray (Tray 1), the top tray of the main machine.
B699	LCT Adapter	Required for installation of LCT B473.
B702	Punch Unit Type 3260	For either finisher D373 or D374. Three models are available (NA, EU, or SC).
B703	Output Jogger Unit Type 3260	Optional jogger unit attached to the left side of the finisher. It can be attached to either finisher D373 or D374 finisher.
B704	Cover Interposer	Installed on top of either finisher D373 or D374. Mail Box CS391 (B762) is also installed on the top of the finisher, so the cover interposer and mailbox cannot be installed together.
B756	Copy Tray	Holds paper output from the main machine. Must be used if no finishers are installed on the left side of the main machine.
B762	Mail Box CS391	Install on top of either the D373 or D374. Cover Interposer (B704) is also installed on the top on the finisher, so the cover interposer and mailbox cannot be installed together.
B830	Finisher SR5000	3000 sheet capacity, 100 staples. External jogger is provided pre-installed. Finisher Adapter Type C (D375) is required. The output jogger is pre-installed on this finisher (provided as standard).
B831	Punch Unit PU 5000	Designed for the SR5000 (B830). Three types are available (EU, NA, or SC).
B835	Cover Interposer Tray CI5000	Two source trays for feeding covers. Can be installed and used for the SR5000 (B830) only. This cover interposer tray can be installed on the Multi Folder (D454) as well as the B830
D350	LCIT 4000	Only one LCT can be installed on the right side of the machine, the B473 or D350.
D373	Finisher SR4040	2000-sheet tray capacity, corner stapling, saddle-stitch stapling, booklet folding and stapling.

No.	Name	Comments
D374	Finisher SR4030	3000-sheet tray capacity, corner stapling only (no saddle-stitch stapling).
D375	Finisher Adapter Type C	Installed in the SR5000 (B830) to adapt the speed of the finisher. Required for this machine.
D392	Ring Binder	This is a new option for the D081/D082. Requires Finisher SR5000 (B830) and cannot be used with either the SR4040 (D373) or SR4030 (D374).
D454	Multi Fold Unit	This is a new option for the D081/D082. Executes six types of folding. Can be used with either the SR4040 (D373) or SR5000 (B830). Cannot be used with the SR4030 (D374).
D505	USB 2.0/SD Slot Type D	Attached to the right end of the operation panel on the main machine.

Controller Options (Installed on Main Machine)

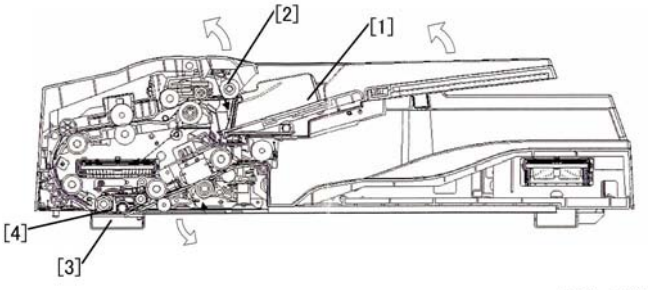
Option	No.	Shape
Bluetooth Interface Unit Type 3245	B826	Board
Browser Unit Type E	D497	SD card
Copy Connector Type 3260	B328	Board
Copy Data Security Type F	B829	Board
Data Overwrite Security Unit Type H	D497	SD card
File Format Converter Type E	D377-04	Board
Gigabit Ethernet Type B*1	D377-21	Board
HDD Encryption Unit Type A	D377-16	SD card
IEEE 1284 Interface Board Type A	B679	Board
IEEE 802.11 a/g Interface Unit Type J	D377-01	Board
Optional Counter Interface Unit Type A	B870-11	Board
PostScript 3 Unit Type C7501	D378	SD card

*1: The EFI (Fiery) Controller is connected through the Gigabit Ethernet Board.

New ADF

ADF Overview

A new ADF unit has replaced the ARDF of the previous machine. One pass duplex scanning in the new ADF improves productivity significantly and also prevents damage to originals as they have to pass through the scanning path only once.

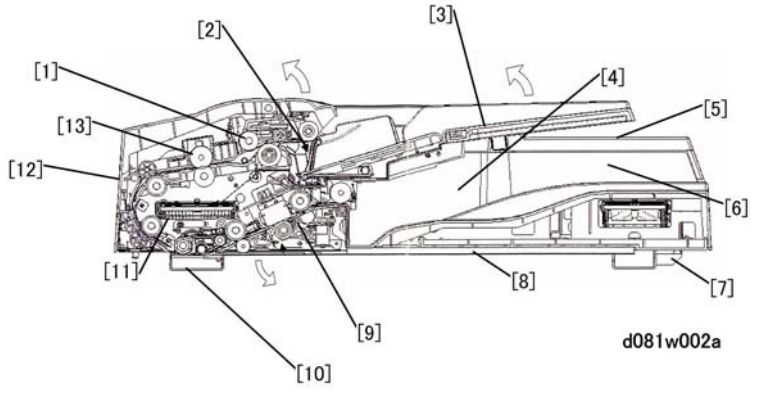


d081w026

Originals are placed face-up on the feed tray [1]. The pickup roller feed roller mechanism [2] and other rollers feed each original through the paper path. The paper makes one pass through the ADF. The scanner unit [3] below the original scans the front side through a slit near the left side of the exposure glass. A CIS unit [4] above the original scans the back side of the original. This mechanism significantly increases the speed of duplex copying.

	Simplex (cpm)		Duplex (cpm)	
	FC	BW	FC	BW
D014/D015	70	82	53	60
D081/D082	70	82	90	130

ADF Details



[1] Separation. A standard FRR mechanism picks up and separates each original from the top of a stack held on a movable bottom plate.

[2] Original set detection. Only one sensor detects originals on the original table.

[3] Original table. A spring that makes it easier to remove original jams from the output exit.

[4] Drive. The drive is comprised of three motors: a feed motor, a scanning motor, and an exit motor. This is identical to the arrangement in ADF of the previous machine.

[5] External covers, output tray. Like the previous machine, there are three covers: a feed cover, a front cover, a rear cover, but the output tray is new. The arrangement of I/F cables at the back of the ADF is different.

[6] Control. A CPU and ICs mounted on a built-in Flash ROM control operation of the ADF.

[7] Lift-up detection. Like the previous machine, one sensor detects when the platen is opened and closed.

[8] Platen. The platen can be raised and lowered for book mode scanning. The white plate is attached to platen with Velcro padding. The white plate can be easily released and attached for cleaning and maintenance.

[9] Back-side scanning. A combination of a color CIS and white roller mounted above the paper path is used to scan the back side of each original as it passes below.

[10] Front-side scanning. A scanning unit mounted below the exposure glass (identical to the mechanism of the previous machine) scans the front side of the original passing above while the CIS above the sheet scans the back side. This allows simultaneous scanning on both sides of the original.

[11] Frame configuration. The front/back plate and left/right stay arrangement is identical to that of the previous machine.

[12] Feed cover. The feed cover employs a play-out drive roller.

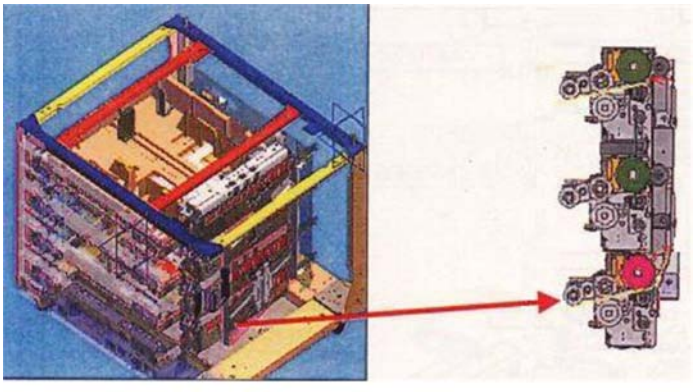
[13] Skew correction. The play-out roller under the feed roller buckles the leading edge of each original to correct skew.

Improved Paper Feed

This section describes some changes that were done to improve paper feed and reduce the occurrence of paper jams.

Thick Paper Handling

Some changes have been made in Tray 3 so the machine can handle thicker paper. All of the trays can handle paper of weight up to 216 g/m^2 but only Tray 3 can handle thicker paper up to 256 g/m^2.

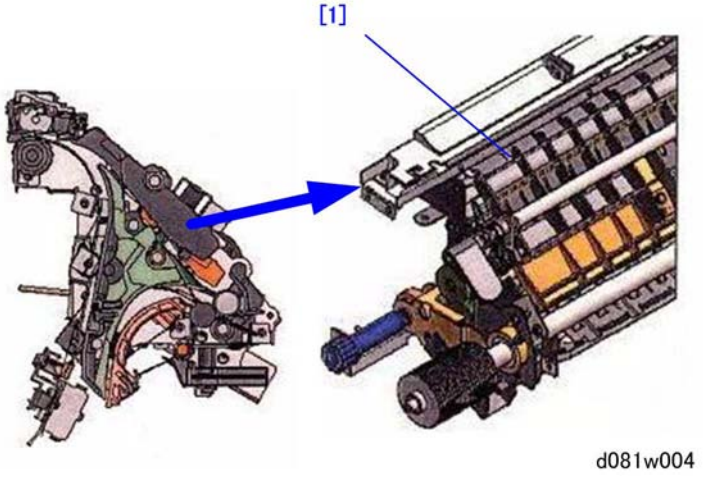


d082w003

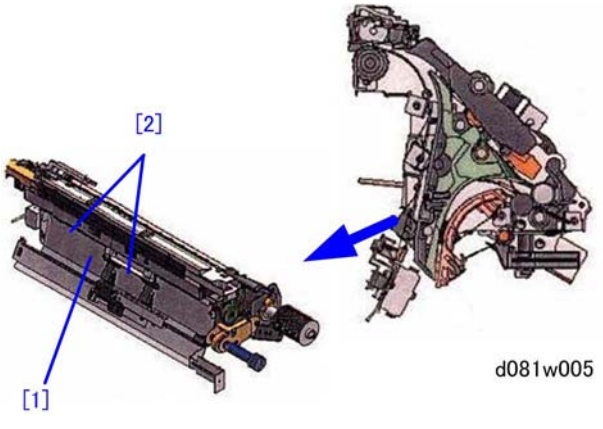
There is a wider gap here where the right edge of Tray 3 opens at the bottom of the vertical paper feed path. This makes it easier for paper up to 256 g/m2 thick to pass through the angle of the junction to the vertical paper feed path. The gap has been widened for Tray 3 only, so thicker paper (from 216 to 256 g/m^2) should be loaded in Tray 3.

This large junction point makes it easier for thick paper to feed into the vertical feed path and reduces the occurrence of paper jams. The large gap also makes it easier to remove jams if they do occur in the vertical feed path.

Noise Reduction

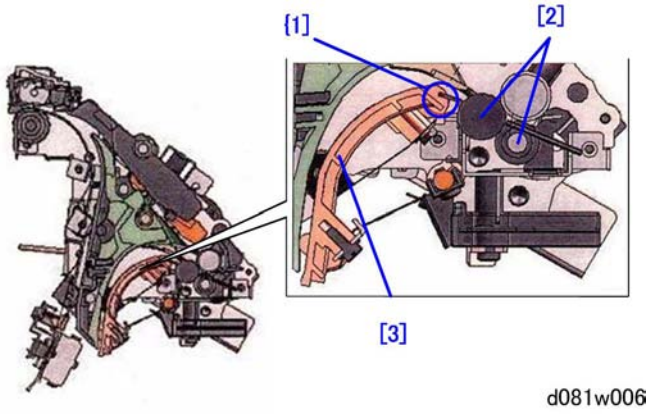


The composite material of the guide plate [1] has been changed. High temperature inside the machine was warping the guide plate material and causing the guide to hit the stay and make noise when it was opening and closing during paper feed. (Original PET KANEKA 5402SE was replaced with PC GE LGK3020.)



Also, the shape of the guide plate [1] has been modified slightly to eliminate noise at [2] when the unit is removed and installed.

Fewer Paper Jams, Easier Jam Removal



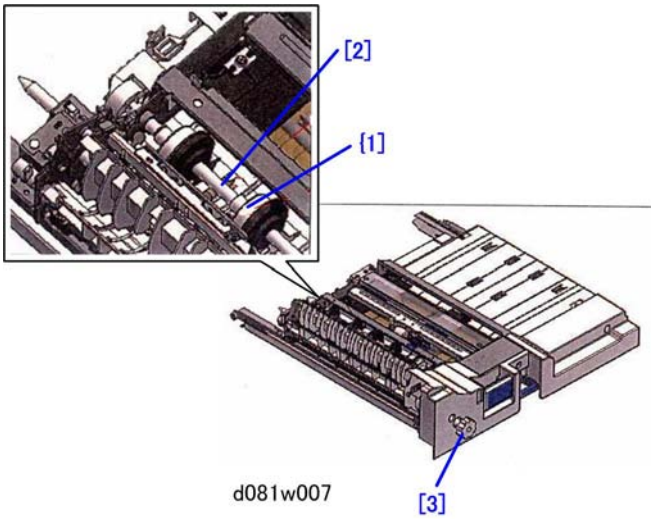
The shape of the inverter guide plate was modified and position of the spring fulcrum point was moved to maintain the gap at [1] and improve operation during paper feed.

De-curl Drive Roller

In order to prevent the de-curl drive roller from swelling due to moisture, the composite material of the drive roller [2] has been replaced with urethane. The composite material of the guide plate [3] has also been changed to prevent warping due to high temperatures inside the machine.

Jam Prevention

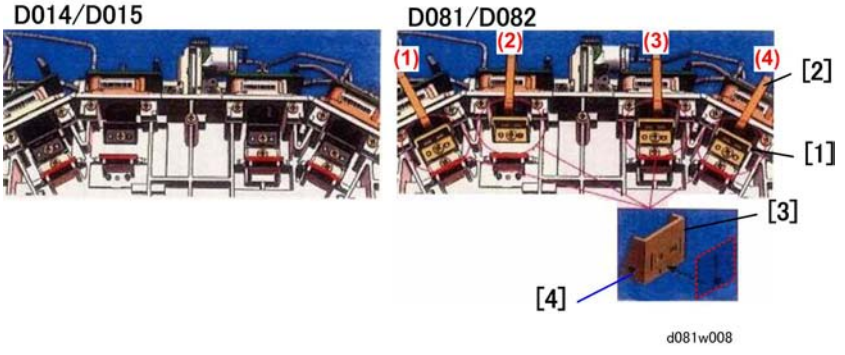
A series of jams were recurring in the duplex unit. After jam errors occurred, the operators could not remove jammed sheets (in some cases they could see the paper and in other cases they could not).



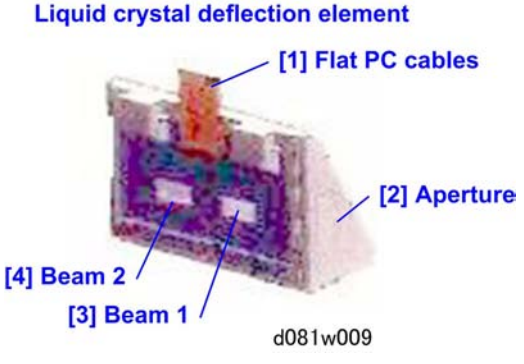
First, to prevent recurring jams the diameter of the inverter roller [1] at the inverter path entrance has been increased slightly and a roller guide [2] has been added to improve the feed of curled paper, and reduce

the amount of curl. Second, a jam removal knob [3] has been added to the side of the duplex unit to make it easier to remove jams from the duplex tray.

New Elements in the LD Unit



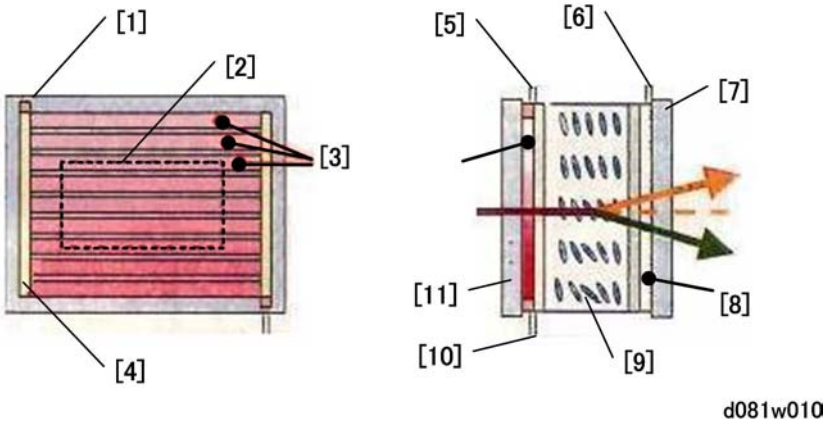
Four LCD deflection elements [1] have been added at the rear side of the laser unit chassis. Each element is connected by a flat PC (printed circuit) cable [1]. The enlargement [3] shows an LCD deflection element and its aperture [4].



The diagram above shows a close-up view of one LCD deflection element.

[1]	Flat PC Cable
[2]	Aperture
[3]	Beam 1
[4]	Beam 2

LCD Deflection Element Cross-Section



The elements split the beam and perform switching for 1200-dpi at half-speed. This improves the accuracy of image writing. The other parts of the image writing system (optical housing, polygon mirror, optics, synchronization detect sensor, etc.) are identical to those of the previous machine.

Front View

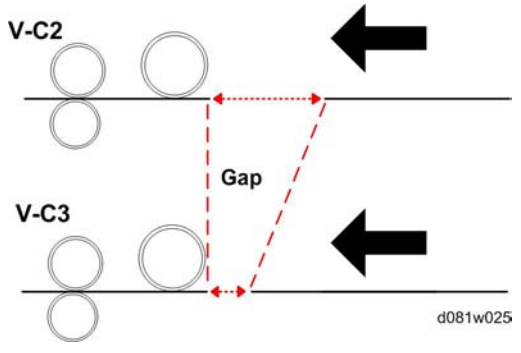
[1]	Terminal 1
[2]	Aperture
[3]	Transparent Electrodes (Striped)
[4]	Resistance Component

Side View

[5]	Terminal 1
[6]	GND
[7]	Glass Plate
[8]	Transparent Electrode
[9]	Liquid Crystal Layer
[10]	Terminal 2
[11]	Glass Plate

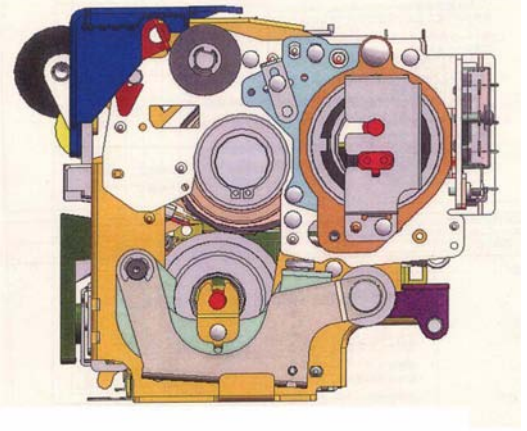
Faster Copy Speed

Model	BW	FC	Faster By:
D014	60 cpm	55 cpm	
D015	75 cpm	70 cpm	
D081	65 cpm	60 cpm	D081 is faster than D014 by 5 cpm
D082	75 cpm	70 cpm	D082 is the same speed as D015



This increase in productivity has been accomplished by adjusting paper feed timing to narrow the gap at between sheets of paper in the paper path. With either the D081 or D082, if production quality cannot be maintained, the machine will drop into the CPM down mode.

Fusing Unit Improvements



d081w011

The parts and configuration of the fusing unit (shown in cross-section above) are the same as those of the previous machine. However, there are some improvements:

- Warm-up time is shorter.
- Longer service lives for some parts.
- Some parts have been discarded, and four parts have been replaced.

Important

- **The following four service parts for the D014/D015 and D081/D082 fusing unit are not the same; they cannot be substituted for one another when servicing these machines: 1) Hot roller, 2) Pressure roller, 3) Pressure roller bearing, 4) Oil supply roller.**
- **For more details, see "Fusing Unit" in the "Replacement and Adjustments" section.**

Shorter Warm-up Time (New WUT)

Model	WUT: Old to New	Faster By:
D081 NA	90 s to 70 s	20 s
D081 EU, D082	75 s to 60 s	15 s

The thickness of the metal core in the hot roller has been reduced from 1.5 mm to 1.0 mm. This allows the core to reach the ready temperature much faster. The rotational speed of the hot roller during warm-up has been increased from 141 mm/s to 282 mm/s. Also, the ready temperature (re-load temperature) has been raised from 20°C to 40°C (68°F to 104°F).

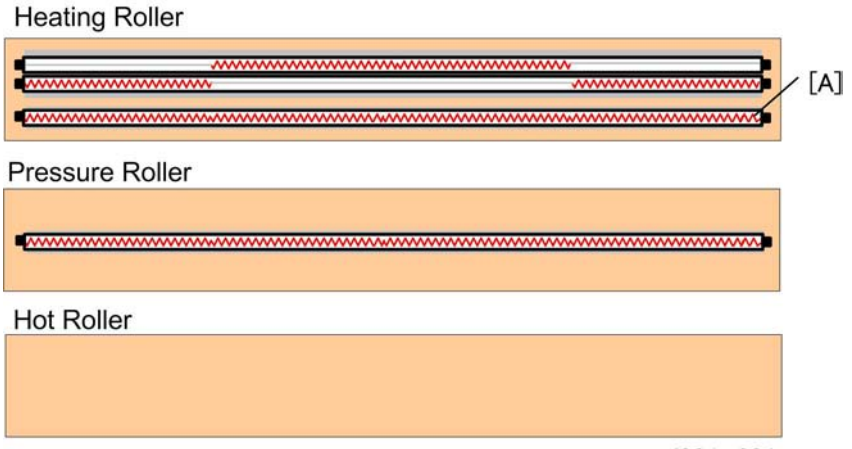
Longer Service Lives

Part	Old Service Life	New Service Life	Extended
Hot roller	300 K	450 K	150 K
Cleaning unit	300 K	450 K	150 K
Pressure bearing	600 K	1200 K	600 K

- The hot roller is composed of new, low cost material of greater durability.
- The new cleaning unit uses more oil, supplies less oil, and has a new oil application roller.
- The curvature of the pressure bearing has been reduced and new rubber seals keep out foreign matter.

Parts Discarded in the Fusing Unit

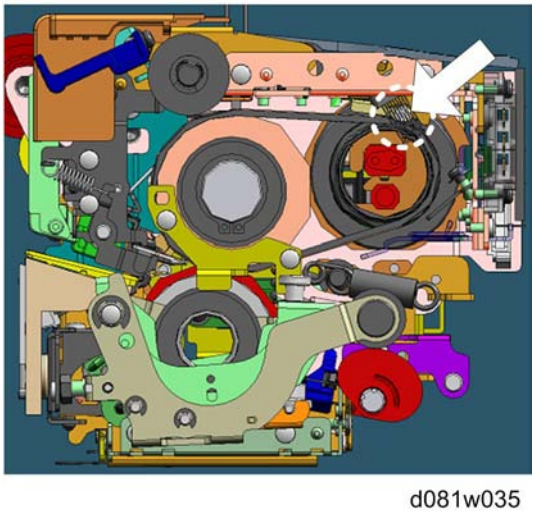
D081/D082



d081w031

- The 100 V auxiliary fusing lamp [A] has been removed from the heating roller of the D081 NA.

D014/D015



d081w035

- The belt ride-up control roller (shown above in the D014/D015) has been removed from the D081/D082 machines.

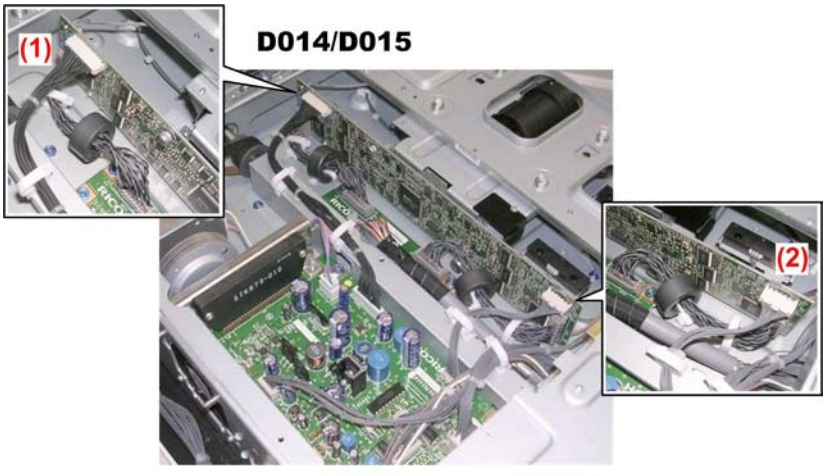
Fusing Specifications Compared

No.	Item	NA		EU	
		a	b	a	b
D014/D015	Max. Power Consumption	1920 W	2400 W	2400 W	2400 W
	FC cpm	55 cpm	70 cpm	55 cpm	70 cpm
	MC cpm	60 cpm	75 cpm	60 cpm	75 cpm
	Warm-up Time	90 s	75 s	75 s	75 s
	Line speed (mm/s)	282 mm/s	352.8 mm/s	282 mm/s	352.8 mm/s
D081/D082	Max. Power Consumption	1920 W	2400 W	2400 W	2400 W
	FC cpm	60 cpm	70 cpm	60 cpm	70 cpm
	MC cpm	65 cpm	75 cpm	65 cpm	75 cpm
	Warm-up Time	70 s	60 s	60 s	60 s
	Line speed (mm/s)	282	352.8	282	352.8

FC: Full Color, MC: Monochrome

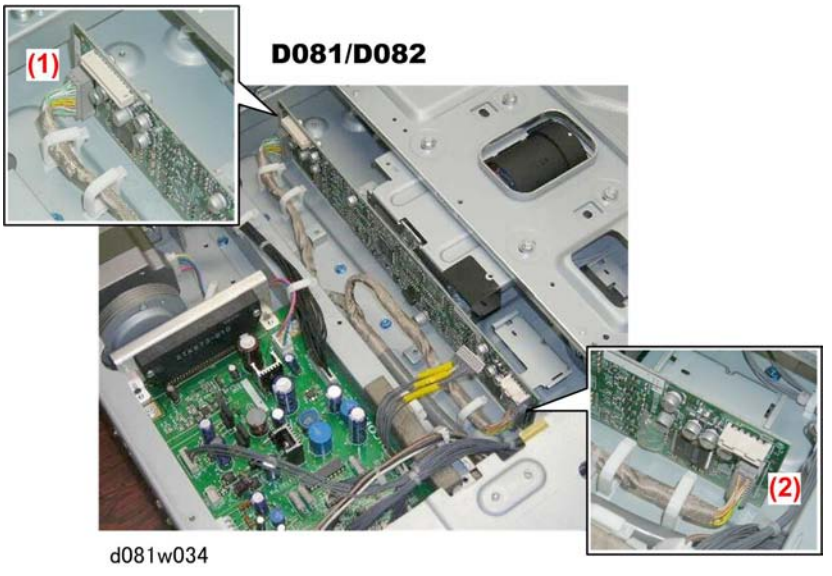
Scanner Unit

The connections of the harnesses at the front and rear sides of the LDB (Laser Drive Board) have changed.



d081w033

In the D014/D015 the lower harnesses at the front (1) and rear (2) of the LDB have ferrite cores.



d081w034

In the D081/D082 the lower harnesses at the front (1) and rear (2) of the LDB are bundled tighter and have no bulky ferrite cores.

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3. Preventive Maintenance

4. Replacement and Adjustments

5. System Maintenance

6. Troubleshooting

7. Energy Saving

1. Product Information

Specifications

See "Appendices" for the following information:

- Specifications

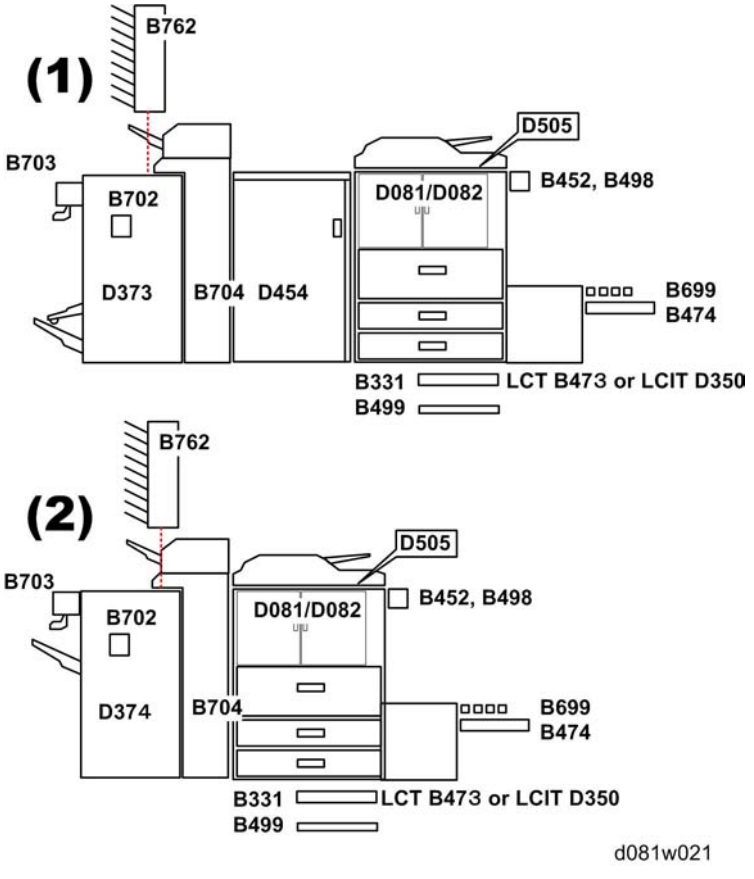
Main Machine and Peripherals

This is a list of the peripheral devices that can be installed with the copier. There are two basic configurations.

1

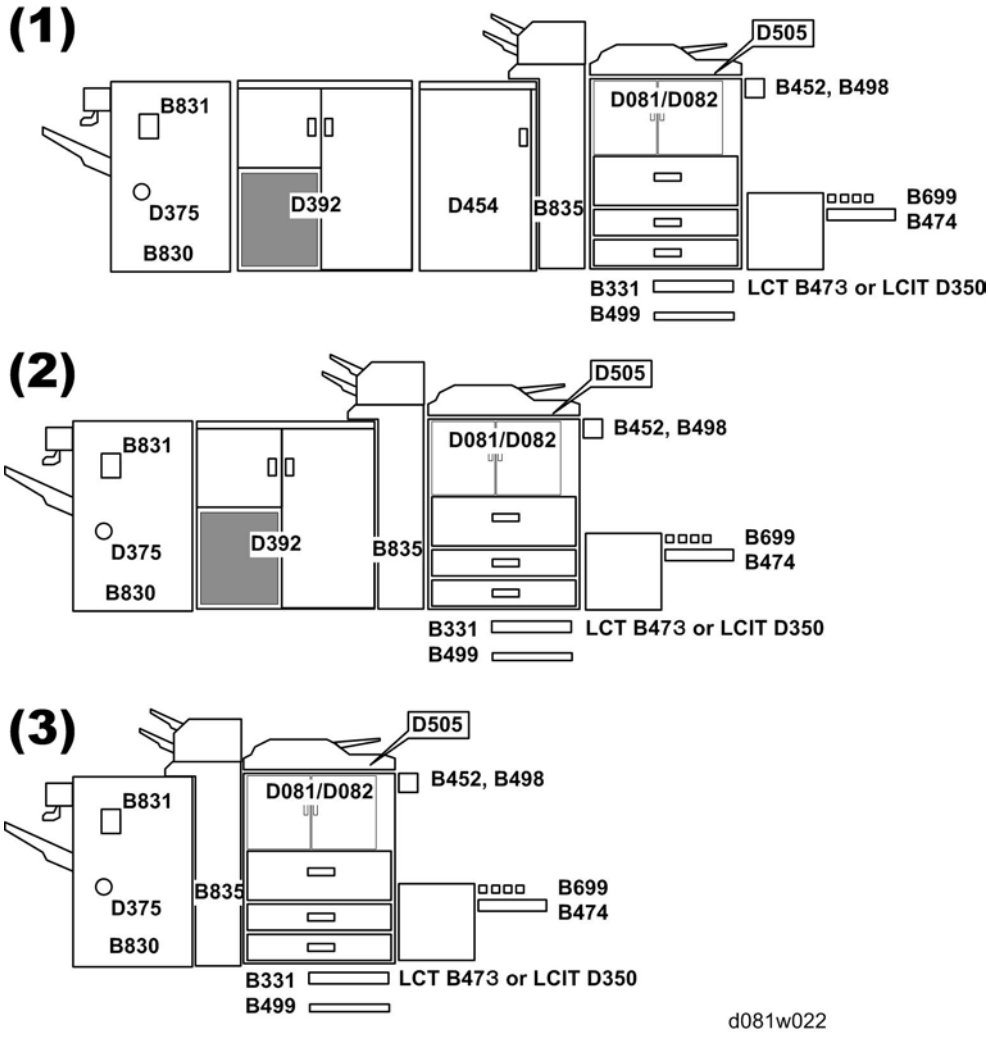
Main System Configurations

Configuration 1: Finisher D373 (SR4040), Finisher D374 (SR4030)



- This configuration features either the Finisher D373 (SR4040 with saddle-stitching) or Finisher D374 (SR4030 no saddle-stitching).
- At (1) above, the Multi Folder D454 can be used with the Finisher D373 but not with Finisher D374 at (2).
- In both configurations, either the Mailbox (B762) or Cover Interposer Tray (B704) can be installed on the Finisher D373/D374, but mailbox and cover interposer cannot be installed together.

Configuration 2: Finisher B830 (SR5000)



- This configuration features the Finisher SR5000.
- The Ring Binder (D392) can be used with or without the Multi Folder (D454).
- The Ring Binder can be installed only with the Finisher B830 (SR5000). It cannot be installed with either the Finisher D473 (SR4040) or Finisher D474 (4030).
- In all three configurations above, the Cover Interposer (B835) must be installed on the left side of the main machine as the first downstream peripheral device.

Controller Options

Here are the common controller options listed alphabetically.

Option	No.	Shape
Bluetooth Interface Unit Type 3245	B826	Board
Browser Unit Type E	D377	SD card
Copy Connector Type 3260	B328	Board
Copy Data Security Type F	B829	Board
Data Overwrite Security Unit Type H	D377-06	SD card
File Format Converter Type E	D377-04	Board
Gigabit Ethernet Type B*1	D377-21	Board
HDD Encryption Unit Type A	D377-16	SD card
IEEE 1284 Interface Board Type A	B679	Board
IEEE 802.11 a/g Interface Unit Type J	D377-01	Board
IEEE 802.11 g Interface Unit Type K	D377-19	Board
Optional Counter Interface Unit Type A	B870-11	Board
PostScript 3 Unit Type C7501	D378	SD card

*1: The EFI (Fiery) Controller is connected through the Gigabit Ethernet Board.

Guidance for Those Who are Familiar with Predecessor Products

The D081/D082 series are successor models to the D014/D015 series. If you have experience with the predecessor products, the following information will be of help when you read this manual.

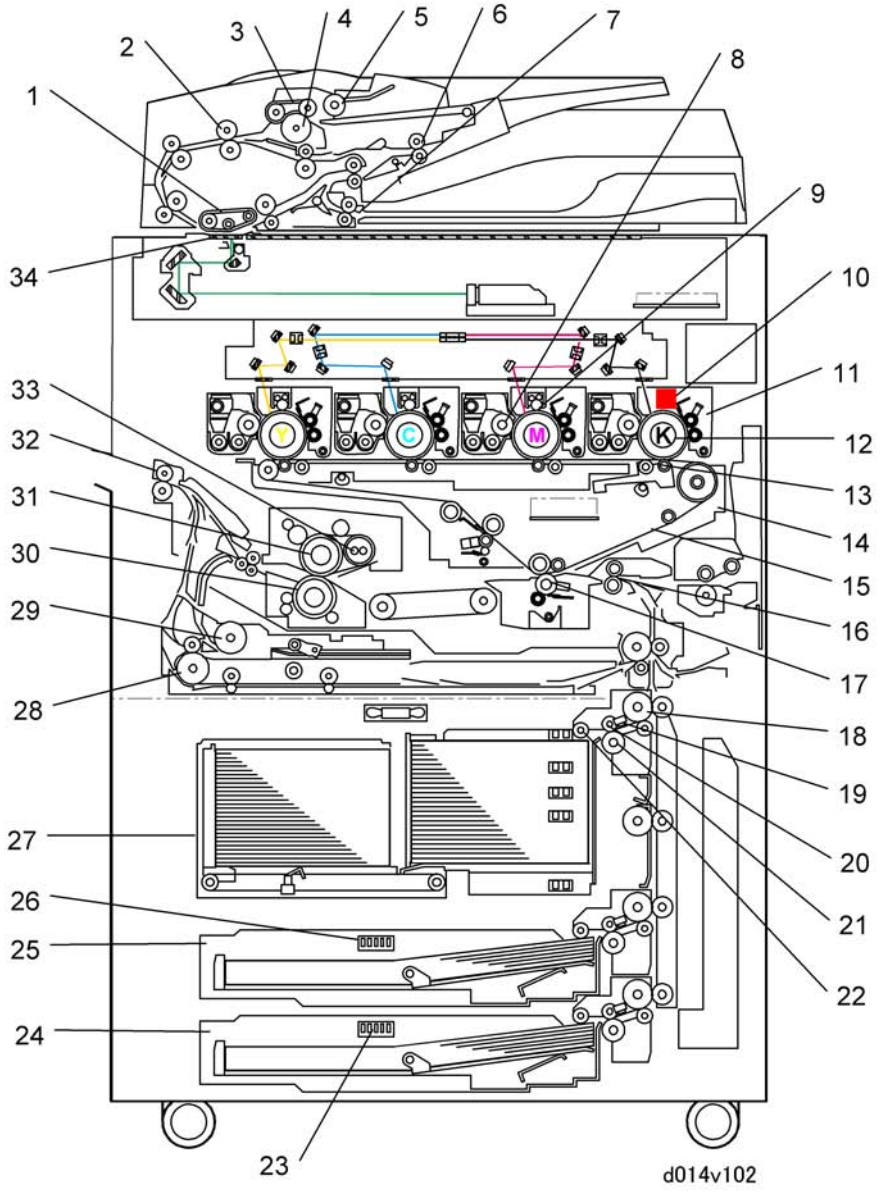
Different Points from Predecessor Products

	D081/D082	D014/D015
Developer	No interchangeability with the predecessor products (D014/D015)	No interchangeability with the new products (D081/D082)
Toner	No interchangeability with the predecessor products (D014/D015)	No interchangeability with the new products (D081/D082)
Java VM card	Factory default SD card in lower slot	Option SD card in lower slot
Printer/Scanner function	Flash ROM on Controller Board	Option SD card in upper slot
Drum charge wire for K-PCU	Replaceable also as individual component parts	Replaceable only as drum charge wire assembly
PM interval for fusing unit component parts	• Hot Roller: 450K copies • Pressure Roller Cleaning Roller: 450K copies • Oil Supply Roller: 450K copies • Pressure Roller Bearing: 1200K copies	• Hot Roller: 300K copies • Pressure Roller Cleaning Roller: 300K copies • Oil Supply Roller: 300K copies • Pressure Roller Bearing: 600K copies

Overview

1

Main Machine



1. Transport Belt (ARDF)

18. Grip Roller

2. Grip Roller (ARDF)
3. Feed Belt (ARDF)
4. Separation Roller (ARDF)
5. Pick-up Roller (ARDF)
6. Upper Inverter Roller (ARDF)
7. Lower Inverter Roller (ARDF)
8. Development Roller
9. Charge Roller
10. Charge Corona Unit
11. PCU
12. OPC Drum
13. Image Transfer Roller
14. ITB Unit
15. Transfer Belt
16. Registration Roller
17. PTR Roller
19. Feed Sensor (Paper Tray)
20. Feed Roller (Paper Tray)
21. Separation Roller (Paper Tray)
22. Pick-up Roller (Paper Tray)
23. Paper Size Switch (Tray 3)
24. Universal Tray (Tray 3)
25. Universal Tray (Tray 2)
26. Paper Size Switch (Tray 2)
27. Tandem Tray (Tray 1)
28. Inverter Exit Roller
29. Inverter Entrance Roller
30. Pressure Roller
31. Hot Roller
32. Exit Roller
33. Heating Roller
34. Exposure Glass (ARDF)

The color PCU units (Y,M,C) use a charge roller to charge the surface of the OPC drum. The K PCU uses a charge corona unit (Scorotron type) to charge the surface of the drum.

2. Installation

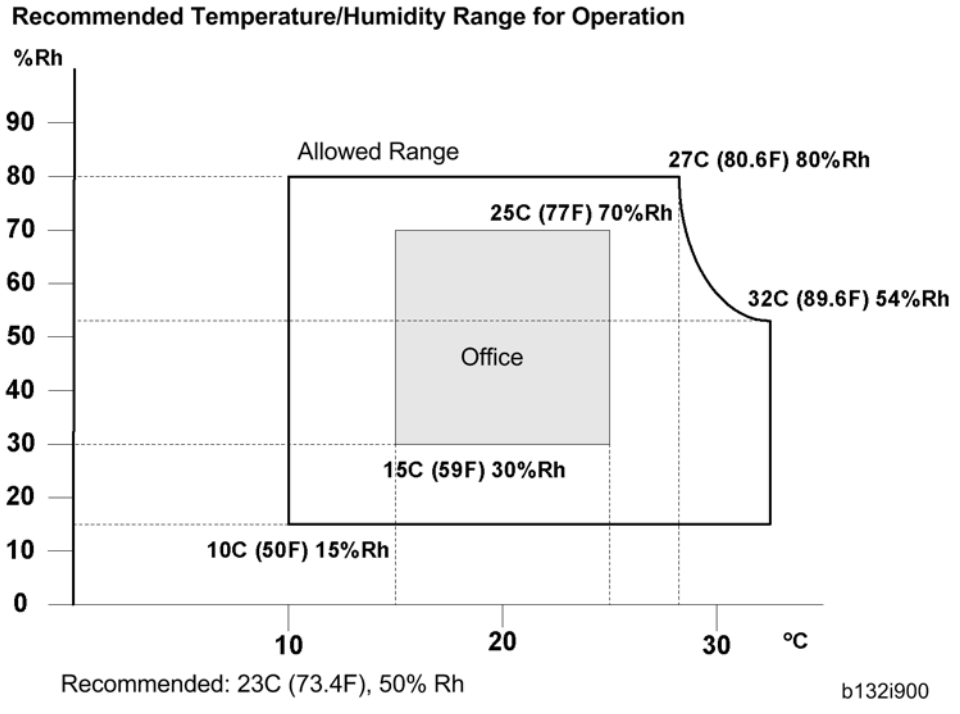
Installation Requirements

Operating Environment

1. Temperature Range
    - Recommended Temp.: 23°C (73.4°F)
    - Allowed Temp.: 10°C to 32°C (50°F to 90°F) – See the Note below
2. Humidity Range: 15% to 80% Rh
3. Ambient Illumination: Less than 1,500 lux (do not expose to direct sunlight or strong light.)
4. Ventilation: Air must be replaced a minimum of 3 times per hour
5. Ambient Dust: Less than 0.10 mg/m^3

Note

- If the machine is installed in a location where the ambient temperature is more than 30°C (86°F).
- Do not run full color copying longer than 2 hours, and never turn the main power switch off immediately after a long copy job.
- Leave the machine on so the fans can expel the hot air from the machine and cool the electronic components.



6. If the installation area has air-conditioners or heaters, put the machine in a location that agrees with these conditions:
    - Where there are no sudden temperature changes from low to high, or high to low.
    - Where it will not be directly exposed to cool air from an air conditioner in the summer.
    - Where it will not be directly exposed to reflected heat from a heater in the winter
7. Do not put the machine where it will be exposed to gases that can cause corrosion.
8. Put the machine on a strong and level surface. The front and rear of the machine must be less than 5 mm (0.2") away from level.
9. Do not put the machine where there could be strong vibrations.
10. Do not connect the machine to the same power source as other electrical devices.
11. The machine can make an electromagnetic field, and this can cause interference with radio or television reception.

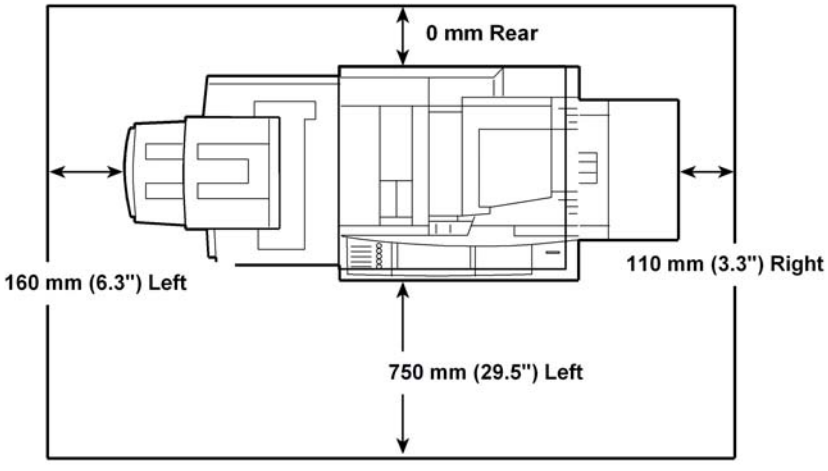
Machine Level

1. Front to rear: Less than 5 mm (0.2") away from level
2. Right to left: Less than 5 mm (0.2") away from level

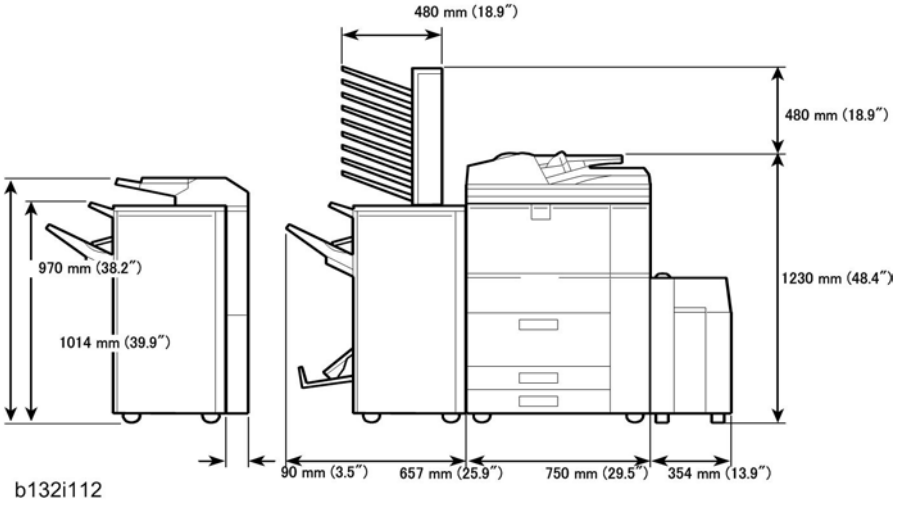
The machine legs can be turned to adjust them up or down, to make the machine level. Put a carpenter's level on the exposure glass.

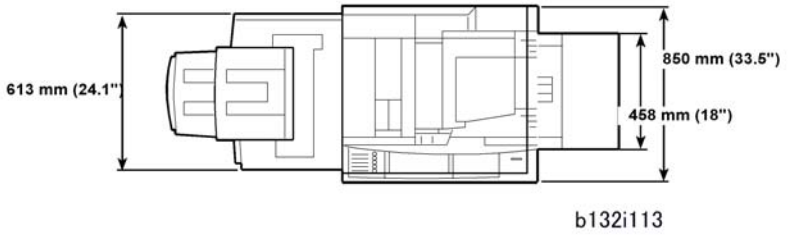
Minimum Space Requirements

Put the machine near the power source. Minimum clearance must be as shown below. The same amount of clearance is necessary when optional peripheral devices are installed.



Dimensions





2

Power Requirements

⚠WARNING

- Make sure that the wall outlet is near the main machine and that you can get access to it easily. Make sure the plug is tightly connected to the outlet.
- Do not connect more than one electrical device to the same power outlet.
- Be sure to ground the machine.
- Do not put objects on the power cord.

Input voltage level

- North America

D081-17	110V to 127V 60 Hz, more than 20A
D082-17	208 to 240V 60 Hz, more than 12A

- Europe/Asia/China

D081-19, -27, -29 D082-19, -21, -27, -29	220 to 240V 50/60 Hz, more than 10A to 12A

Permissible voltage fluctuation: ±10%

Important

- **Some electrical components are different, depending on the power supply used.**

The following components are different, depending on the power supply.

1. Power supply cord
2. AC drive board
3. Fusing unit
4. Anti-condensation heaters:
    - Paper trays
    - Paper transfer section

- Scanner heater (option)
- LCT (B473) heater (option)
- LCIT (D350) heater (option)

⚠CAUTION

- Do not turn off the main power switch when the power LED is lit or flashing. To prevent damage to the hard disk or memory, push the operation switch to turn the power off, then do nothing until the power LED goes off, and then turn the main power switch off.

There are two power switches on the machine:

Main Power Switch

This is located on the front left corner of the machine and has a plastic cover. This switch must always be on unless a technician does work on the machine.

Operation Switch

This is located on the right side of the operation panel. This is the switch that the customer uses to turn the machine on and off.

Main Machine D081/D082

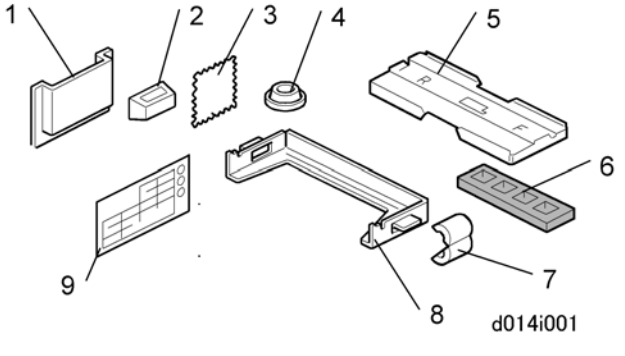
Accessories

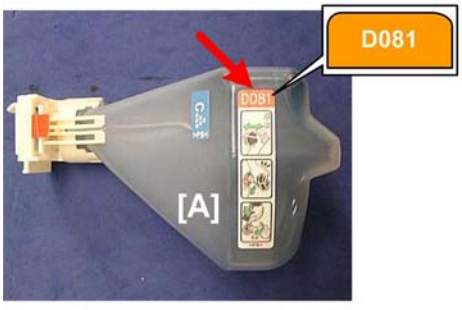
2

Check the accessories and their quantities against this list.

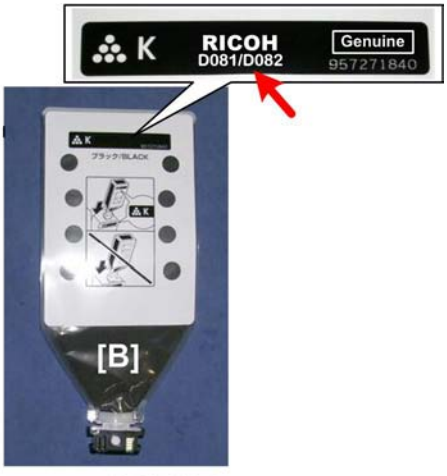
No.	Description	Q'ty
1.	Instructions Pocket	1
2.	Exposure glass cloth holder	1
3.	Exposure glass cloth	1
4.	Leveling Shoes*1	2
5.	PCU stand	1
6.	PCU Cap Set (not used)	1
7.	Ferrite Core	1
8.	PCU Stand Holder	1
9.	Decals	
	Decal: Paper Size	1
	Decal: Paper Loading	1
	Decal: InkJet Caution	3

*1: Only two leveling shoes are provided as accessories. However, more can be ordered (Part No. B1321226)





d081i810



d081i811

Important

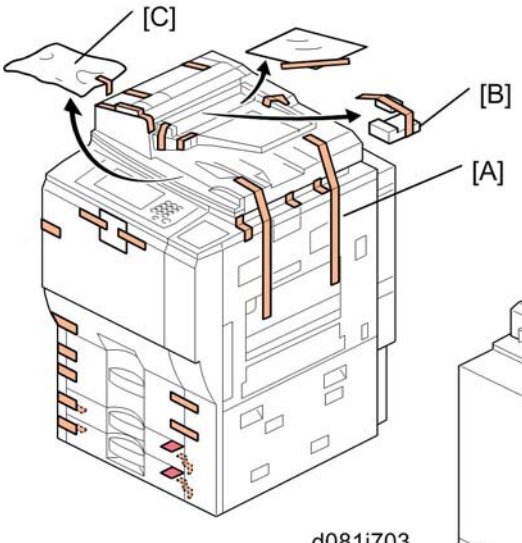
- The developer bottles [A] and toner cartridges [B] provided with this machine are clearly marked for this machine: "D018" for the developer bottles and "D081/D021" for the toner cartridges.
- These are the developer bottles and toner cartridges that must be used with this machine.
- Never attempt to use a developer bottle or toner cartridge intended for use with any other machine.
- Please instruct the customer to use only toner cartridges that are produced for this machine.

Installation

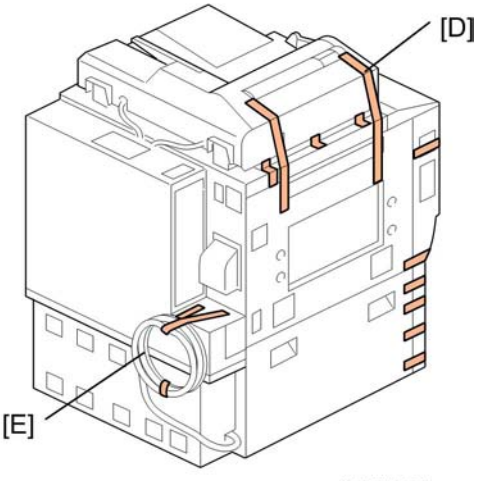
External Tapes and Packing Material

⚠WARNING

- Always turn the machine off and disconnect the machine power cord before you do these procedures.



d081i703



d081i004

Remove all tapes and packing material from the main machine:

1. Remove:

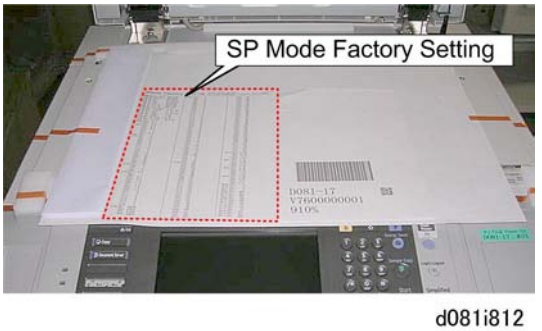
   [A]: ADF, right side

   [B]: Packing block inside ADF

   [C]: Accessories bag. Remove other accessory bags from Tray 2, Tray 3.

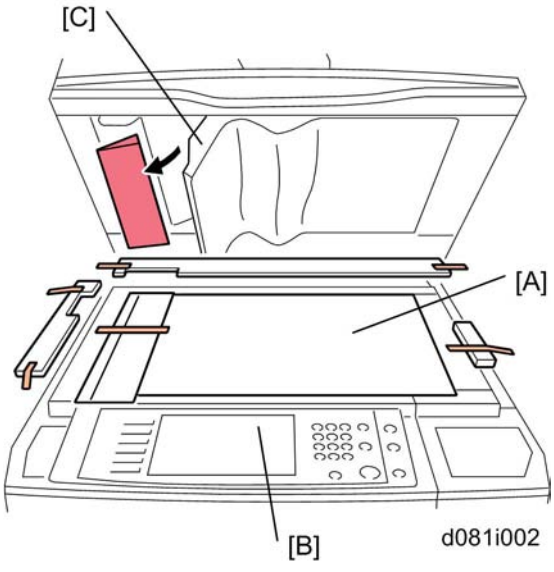
   [D]: ADF, left side

   [E]: Power cord



d081i812

2. Raise the ADF and remove the "SP Mode Factory Setting" sheet. Keep this sheet for future reference.



3. Remove:

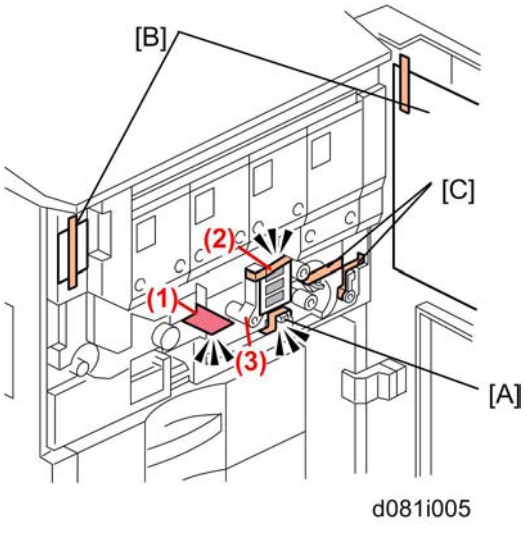
   [A]: All tapes, packing material around the exposure glass.

   [B]: Operation panel film

4. Pull away the white plate [C] and remove the red paper.

Internal Tapes and Packing Material

Main Machine



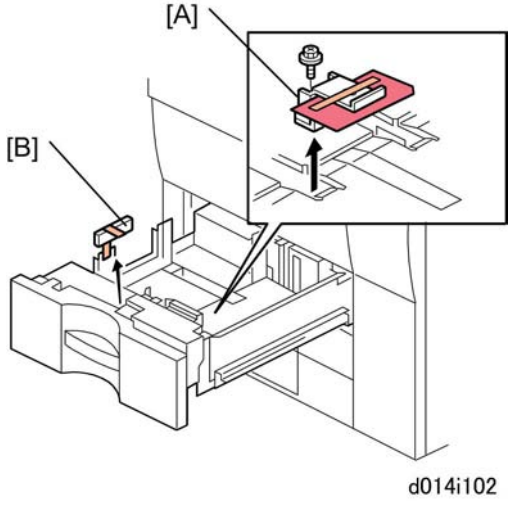
1. Open the front door.

2. Remove the transfer belt release lever [A] (1 tape). **We will install this in the correct location later.**
3. Remove the paper and tape [B] and [C] only.

Important

- **Do not touch (1), (2), or (3) at this time. These items are removed after you remove the faceplate.**
- **To prevent damage to the ITB, never turn down lever (3) to pull out the drawer unit until after you have removed the rod with the red tag and wire (2). Do not remove them yet.**
- **The drawer must remain inside the machine until after the developer is installed in the developer cartridges of the PCUs. The tag and rod (1) are removed after the faceplate has been removed.**

Tray 1

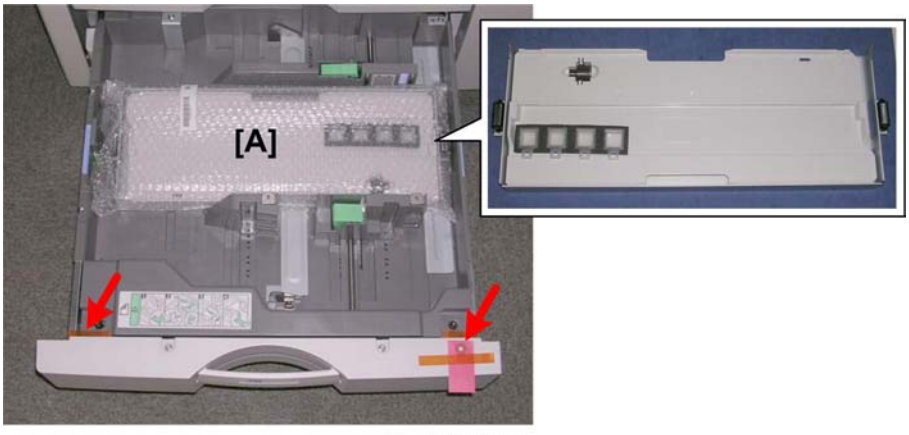


1. From Tray 1 remove:

   [A]: Retainer, tag, wire (x 1)

   [B]: Block, tape

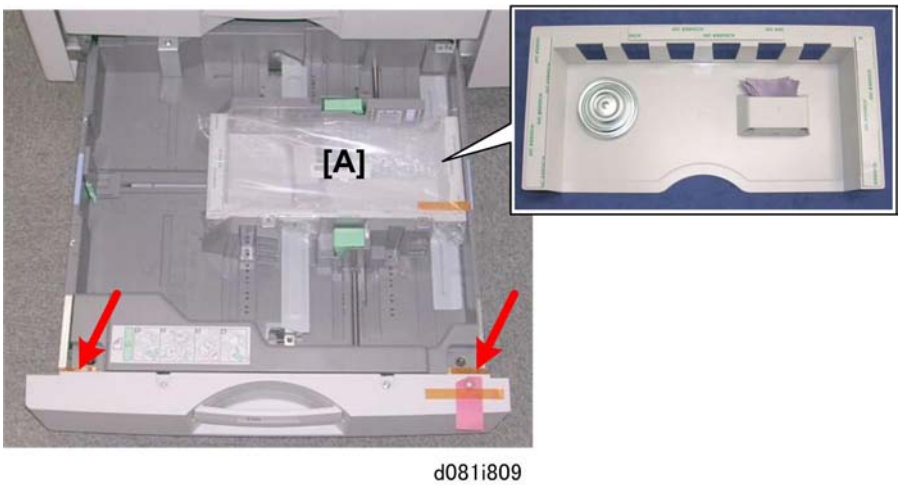
Tray 2



d081i808

1. Remove the PCU stand [A] and all retainers and accessories from Tray 2.

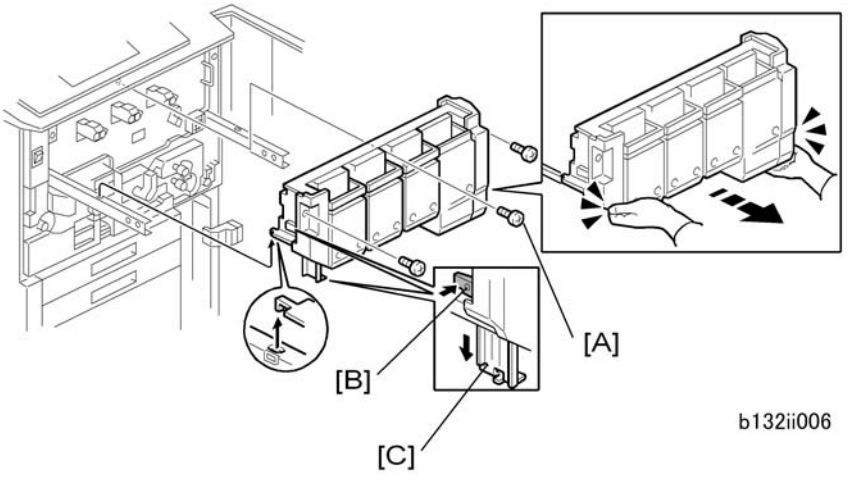
Tray 3



d081i809

1. Remove the package [A] with the instructions pocket, exposure glass cloth holder, exposure glass cloth, and leveling shoes from Tray 3.
2. Remove all other retainers and accessories from Tray 3.

Shipping Retainer Removal



1. Prepare an open space on the floor for the hopper.
2. Remove the screws of the toner hopper cover [A] (x 3).
3. Put your hands under the left and right corners of the toner hopper, and slowly pull it out on its rails until it stops.
4. Push the lock [B] then pull down the support leg [C].
5. Make sure that the support leg is down and locked before you remove the hopper.

⚠CAUTION

- Always make sure that the support leg is down and locked before you remove the hopper.

6. Hold the toner hopper using the handles at the top left and right sides. Then lift the toner hopper off its rails and set it on the floor.

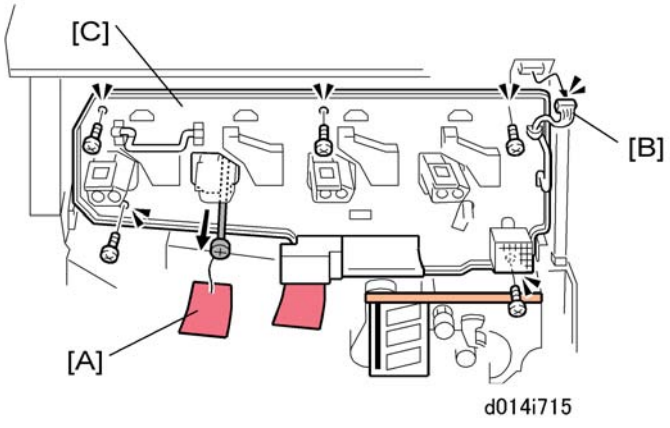
⚠CAUTION

- The hopper is heavy! Lift it carefully. Make sure that it disengages fully from the rails on the left and right, and then set it on the floor.

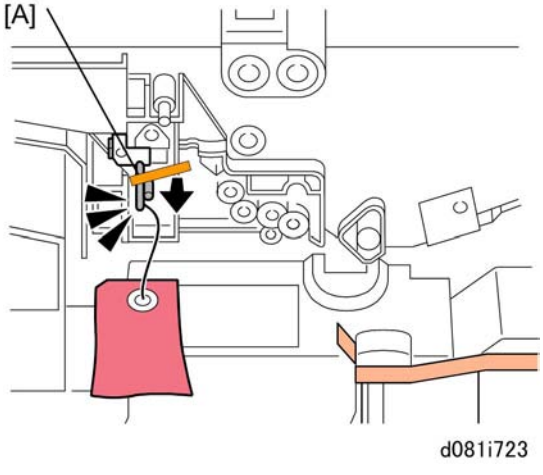
7. Push the hopper rails into the machine.

Note

- Push in the rails until approximately an inch is out of the machine. If you push the rails in fully, you must use a pair of needle-nose (radio) pliers to pull them out again.



8. Remove the tag and rod [A] (x 1).
9. Disconnect the fan connector [B].
10. Remove the faceplate [C] (x 5).

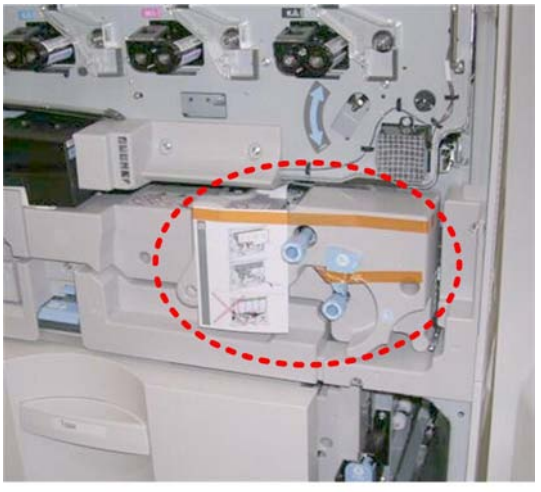


11. Remove the orange tape and slowly pull out the stabilizing rod [A] with the attached red tag.

Important

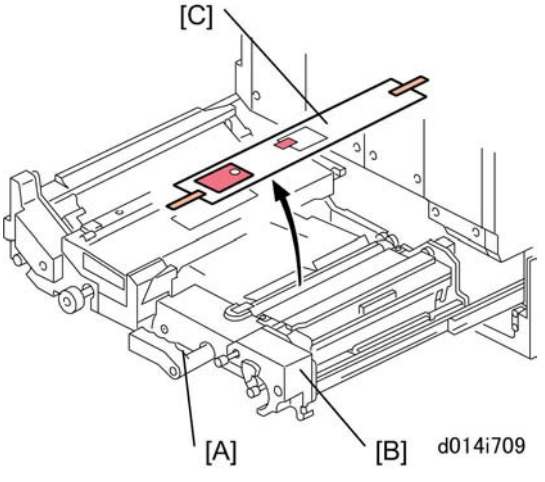
- **Never pull out the drawer unit until the stabilizing rod and tag have been removed.**
- **This stabilizing rod protects the ITB and PTR during shipping.**

Remove Drawer Retainers and Packing Material

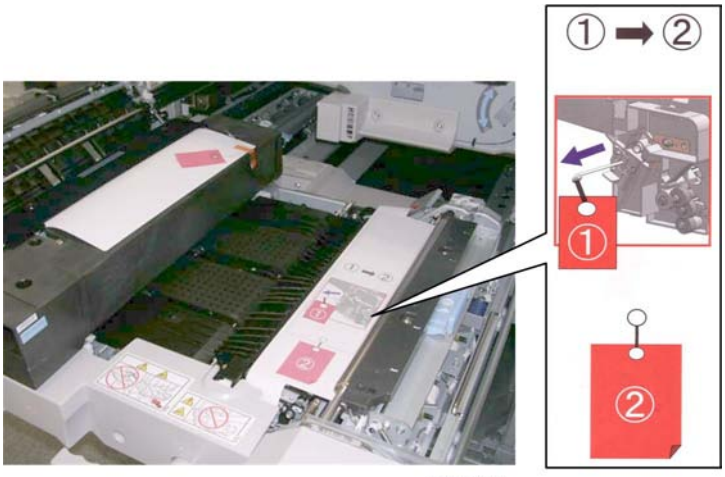


d081i807

1. Remove the tapes and decals attached to the right side of the drawer.



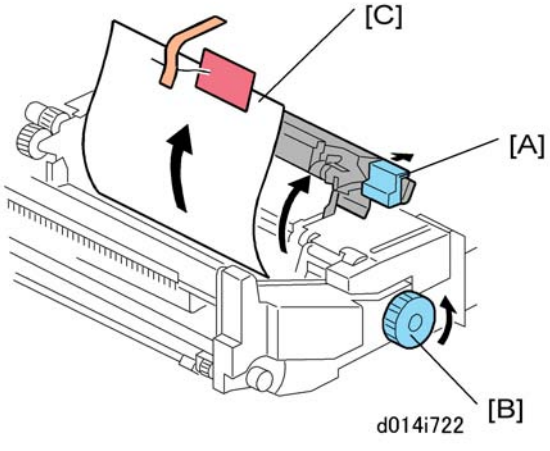
2. Turn the lever [A] down to the left, and pull the drawer unit [B] out of the machine until it stops.
3. Remove the instruction sheets [C].



d081i813

Important

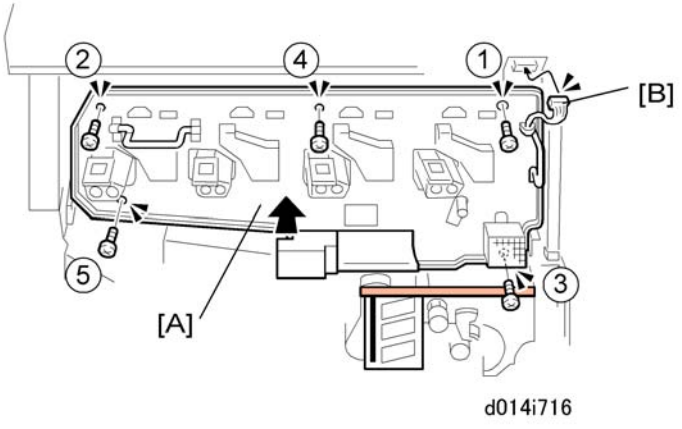
- The instruction sheet protects the PTR during shipping and is also an important reminder that the stabilizing rod must be already removed before this sheet is removed.
- If the stabilizing rod has not been removed, do this now. See Step 11 of the previous section.
- Never push the drawer into the machine until the stabilizing rod has been removed. Pushing the drawer into the machine with the stabilizing rod in the machine will damage the ITB and PTR.



d014i722

4. Raise lever **D2** [A] of the fusing unit.
5. Turn knob **D1** [B] in the direction shown by the arrow.
6. Remove protective sheet [C] with tape and red tag.
7. Lower lever **D2** [A].
8. Push the drawer into the machine until it stops.
9. Rotate handle **B2** up and to the right until it stops.

Reattach the Faceplate



1. Attach the faceplate [A] with the screws in the sequence shown by the numbers above (x 5).

Important

- **Do not tighten these screws too much.**

2. Reattach the fan connector [B].

Important

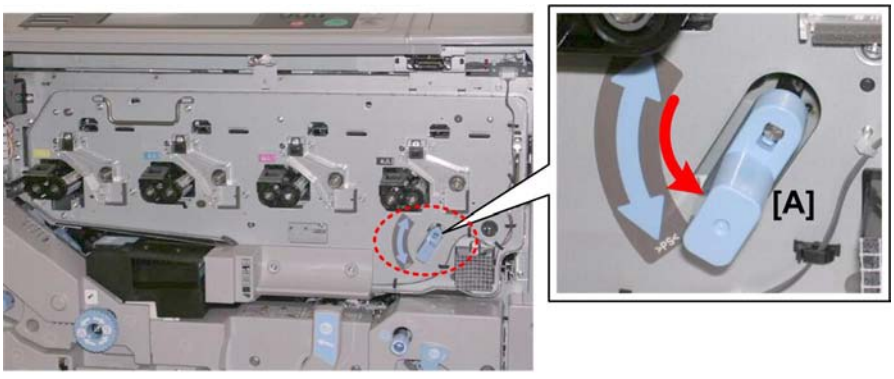
- **Make sure the fan connector is not pinched behind the faceplate.**

Filling the PCU Units with Developer

Before You Begin...

- Follow this procedure in the order described below.
- Do not turn the machine on or off or open the front door until you are instructed to do so.
- The toner hopper unit must be off the machine (removal described above).

Setting the Developer Bottles

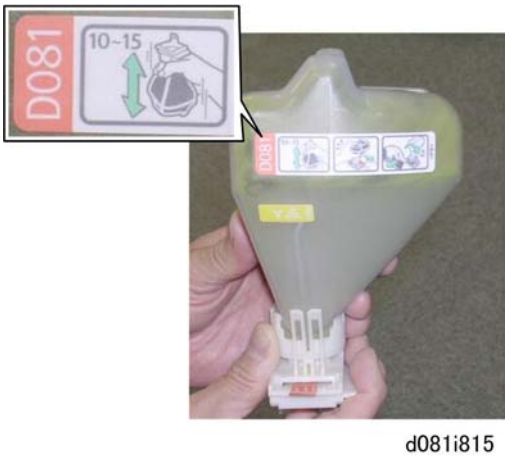


d081i814

1. Attach the transfer belt release lever [A].
2. Make sure the lever is down.

Important

- **The lever must be down to keep the transfer belt separated from the surfaces of the PCU drums.**

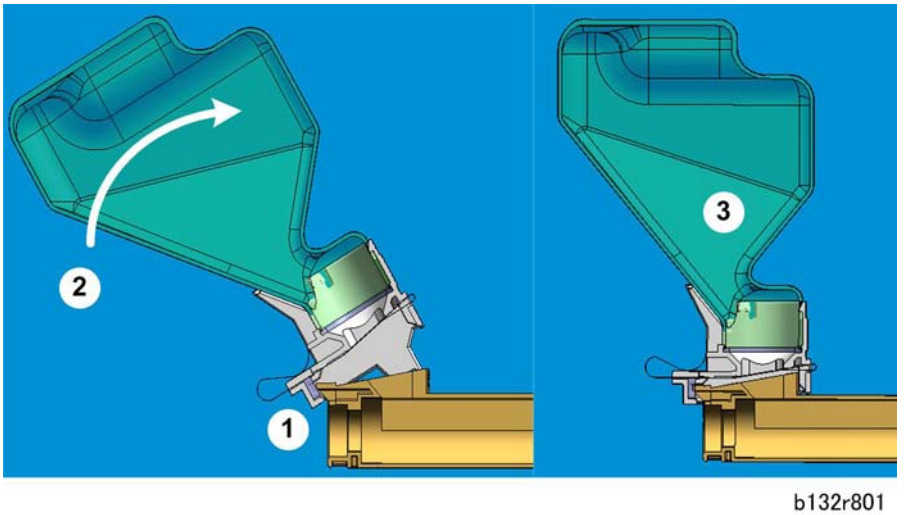


d081i815

3. Pick up the Y (Yellow) bottle.
4. Make sure that the bottle is clearly marked "D081" for this machine.

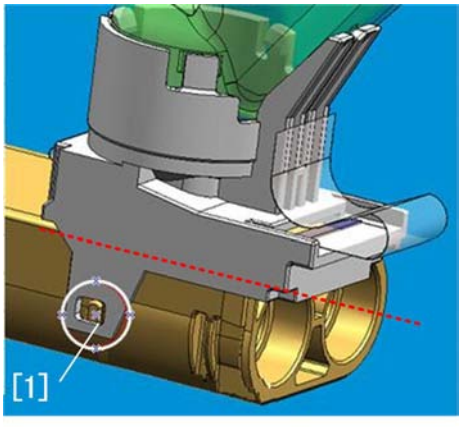
d081i830

5. Before attaching the bottle, loosen the developer to ensure that it will drain completely.
   - Hold the bottle upside down (neck up).
   - Vigorously shake the bottle up and down 10 to 15 times.



b132r801

6. Rest the neck [1] of the developer bottle on the edge of the PCU.
7. While keeping contact and pressure on the neck and PCU at [1], rotate the bottle [2] up until it locks in place at [3].



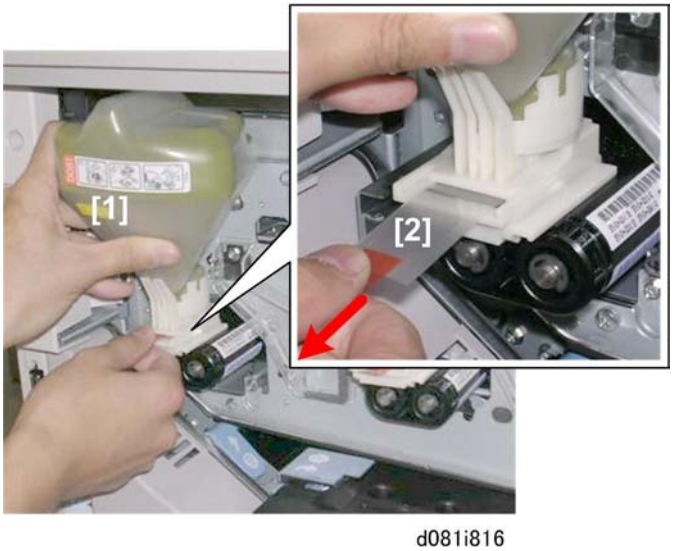
b132r802

8. Check the tab on the side of the neck [1] to make sure that the bottle is locked. The neck of the bottle should be perfectly flat on top of the PCU.

Important

- **There should be no gap between the developer bottle and the PCU.**
- **If the bottle is not locked in place, developer will spill from the bottle.**

9. Repeat Steps 3 to 8 to install and lock the other bottles (M, C, K).



d081i816

10. Remove the heat seal from each bottle.
    - Hold the bottle [1] with one hand, slowly pull the heat seal [2] out of the developer bottle and remove it.
    - Do this for each bottle.

- Make sure that you have removed all the seal strips (you should have four strips, one for each bottle).

11. Gently tap the sides of each bottle with a finger to make sure that the developer flows freely.

d081i835

12. Check once again to make sure that the lever is down.

Important

- **The lever must be down. If you attempt to drain the developer bottles with SP3814 with the lever up, the machine will return "Failed".**

13. **Close the front door.**

Important

- **The door must be closed before you switch the machine on.**

14. Turn the machine power on and wait for the machine to beep twice.

Important

- **The beeps indicate that the fusing unit is ready. Do not proceed until after you hear the two beeps. If you attempt to drain the developer bottles with SP3814 before you hear the two beeps, the machine will return "Failed".**

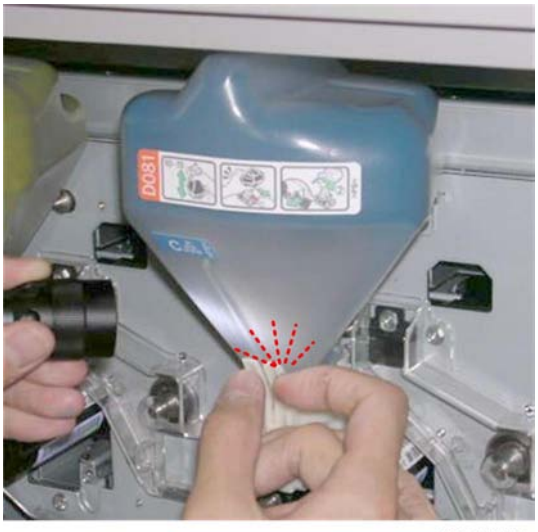
15. Enter the SP mode and do the following SPs:

- **SP3814-1**. Fills all of the PCU units with developer from the attached bottles. It takes about 3 minutes. Touch [Exit] when "Completed" appears on the display.
- **SP3815**. Confirms that **SP3814-1** executed correctly. If **SP3814-1** executed correctly, you will see "**1111**" (K M C Y).

Display	What It Means
1	Succeeded
4	Factory default value (SP3814 has not been used yet)

Display	What It Means
7	Developer filled before doing SP3814-1
9	Failed

16. Touch [Exit] twice, open the front door and confirm that each developer bottle is completely empty.
    - Each developer bottle must be completely empty.
    - Even if SP3815 returned a "1" for each bottle to indicate successful completion of the operation, there may be some toner remaining in a bottle.
    - It is very important that you check each bottle visually for remaining developer.



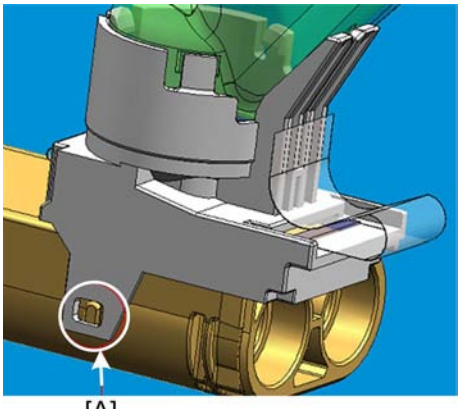
d081i817

17. Shine a flashlight on each bottle and confirm that each bottle is empty.

Note

- If you see any remaining toner, gently tap the neck of the bottle to loosen the toner then execute SP3814 again to drain all the developer.

18. After all the developer has drained from each bottle, switch the machine off.



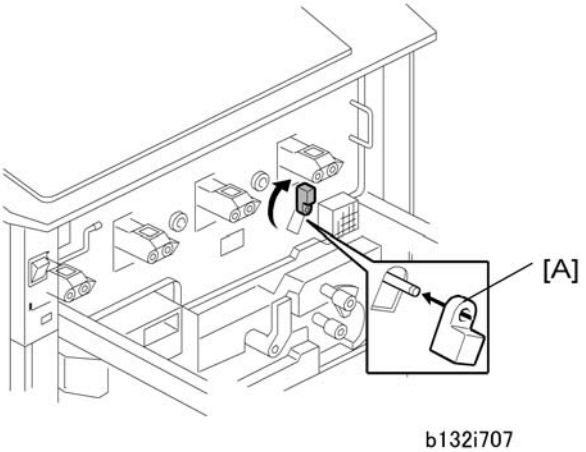
b132r803

19. Use the tip of a small screwdriver to release each locked bottle latch at [A], and remove the bottle.
20. Discard the four empty bottles.

Important

- **Obey local laws and regulations concerning the disposal of items such as the empty bottles.**

Reinstall the Toner Hopper

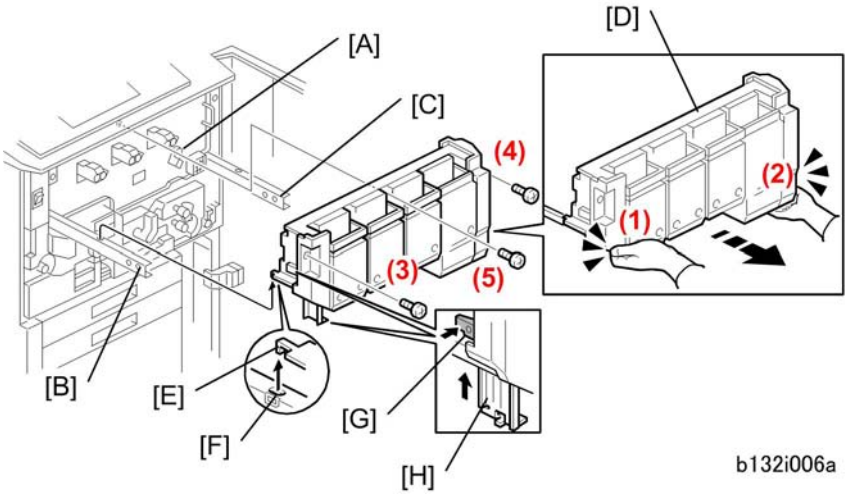


b132i707

1. Turn the lever [A] to the vertical position and make sure that it locks.

Important

- **This lever must be up. The toner hopper cannot be re-installed if this lever is down.**



2. Make sure the transfer release lever [A] up and locked.

Important

- **The transfer belt release lever must be turned up and locked before you install the toner hopper.**
- **If the transfer belt release lever is down, the toner hopper cannot be closed completely against the faceplate.**
- **If the transfer belt release lever [A] is not attached, this will cause an image transfer roller position error (SC447).**

3. Pull out the toner hopper left rail [B] and right rail [C] until they are fully extended. If the rails were pushed in fully, use a pair of needle-nose pliers to pull them out of the machine.
4. Set the toner hopper [D] on the rails.
5. Make sure the steel tabs [E] of the hopper are inserted fully into the left rail hole and the right rail hole [F].
6. Push the lock [G] and push the support leg [H].
7. Make sure that the support leg is up and locked before you push the toner hopper into the machine.
8. Put your hands at the bottom of the toner hopper at (1) and (2) then push the hopper into the machine against the faceplate.

Important

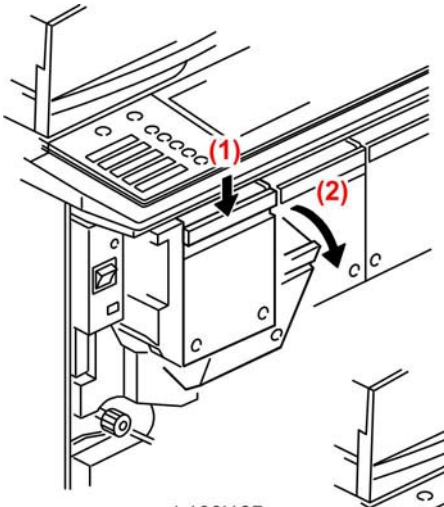
- **To prevent damage to the hopper, never push the top of the toner hopper.**

9. Make sure that the hopper is flat against the faceplate on the right side.
10. If the toner hopper [D] is not flat against the faceplate on the right side, pull it out a short distance and make sure that the transfer belt release lever is turned up fully.
11. Attach the toner hopper (x 3). Attach the screws in this sequence: (3), (4), (5).

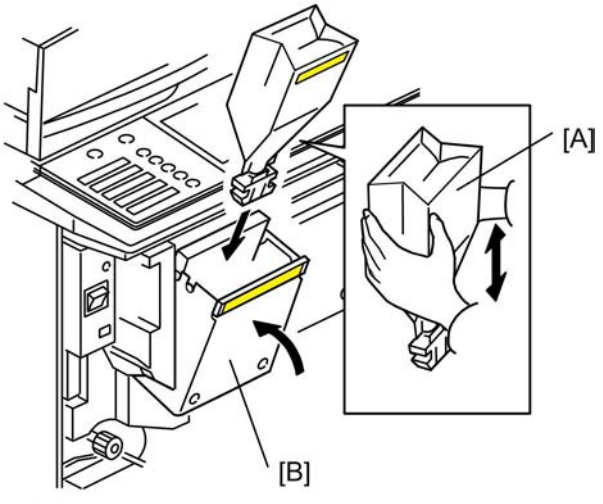
Toner Installation

Important

- **These toner cartridges contain 90% toner and 10% carrier. You must use the toner cartridges provided with this machine.**
- Make sure that you install each toner cartridge in the correct bin.
- The label on the toner cartridge must face the front of the machine.
- From left to right, the bins are for Y, C, M, K.
- The name of the color for each bin is on the decals that are attached to the bin release levers.



b132i107



b132i108

1. Push down the lock lever (1) on the top edge of the Yellow bin (the bin at the far left) to release it. Then pull the bin (2) in the direction of the front to open it.

   Important

   - **To prevent damage to the bin door, do not try to pull a bin directly out. Push down on its top edge first to release it, then pull it to open it.**

2. Remove the Yellow toner cartridge from its box.

d081i818

3. Make sure that the toner cartridge is marked "D081/D082" for this machine.
4. Shake the toner cartridge [A] up and down about 10 times. Never squeeze or knead the toner cartridge (this will make clumps in the toner).
5. Make sure the flat bottom of the cartridge is up.
6. Set the Yellow toner cartridge in the bin [B].
7. Push the Yellow toner cartridge bin to close and lock it.
8. Repeat this procedure for the other three toner cartridge (C, M, K)

Important

- **Make sure that the color of each toner cartridge matches the color of the label on the bin door before you install it.**

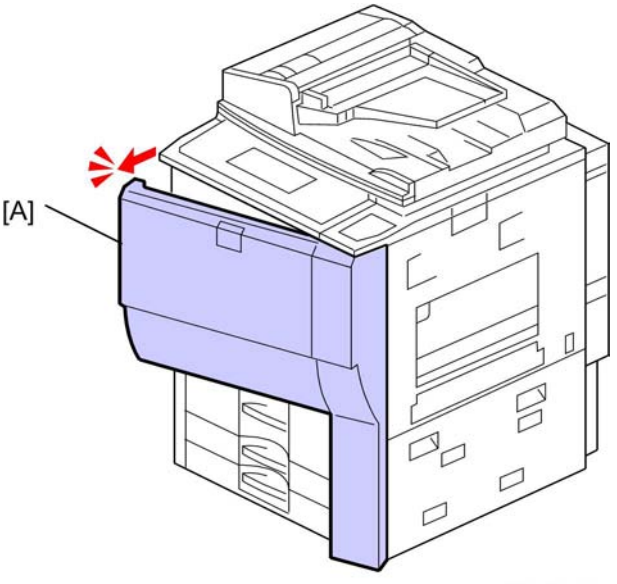
Initializing Developer and Toner

Before You Begin...

- Follow this procedure in the correct order as described below.
- Do not turn on the machine until you are instructed to do so.
- To prevent damage to the drums during this procedure, **make sure that the front door is open before you switch on the machine**.

⚠CAUTION

- If the machine is switched on during this procedure with the front door closed, processing control executes. This causes the bare drums to rotate against the counter blades before a light coat of toner has been applied to the surfaces of the drums. This could damage the drum.



d081i721

1. **Open the front door [A].**

   Important

   - **The front door must be open.**
   - **Turning on the machine with the front door open prevents the machine from performing the initial process control self-check.**
   - **If the front door is closed, the drums will start rotating with no toner in the PCUs.**
   - **If the drums rotate with no toner in the PCUs, this can cause the cleaning blades to catch on a dry drum and damage the drum surface.**

2. With the front door open, turn on the main power switch.
3. **Close the front door after "Open Cover" appears on the display.**

   Important

   - **You must close the front door.**

4. Wait for the machine to warm up and enter standby mode.
5. Enter the SP mode and do **3811-1** to send toner to the PCUs and initialize the TD sensor. This requires about 4.5 min.

Important

- **If 'Failed' appears immediately after you start SP3811-1, the machine has not warmed up. Wait 2 minutes, and then do SP3811-1 again.**
- **Do SP3811-1 only once. Executing SP3811-1 more than once can cause toner spill inside the machine. SP3811-1 initializes not only the TD sensor but initializes the developer as well.**
- **SP3811 does a number of things, including initialization of the TD sensor. You must not initialize the TD sensor again. Do SP3811-1 only once. SP 3801 also initializes the TD sensor.**
- **Never do SP3801-1 (Init TD Sensor) after doing SP3811. If the TD sensor is initialized twice this will cause a fatal error in toner supply control.**

6. When the message tells you that the initialization is completed, touch [Close].
7. Do **SP3812-1** to confirm that **SP3811-1** executed correctly.
   - If you see "**1111**" (K M C Y), this means **SP3811-1** executed correctly.
   - If you see any number other than "**1111**", this means an error. (See **SP3812** Errors.)

   Important

   - **For a complete list of errors and how to solve problems related these SP codes and light images, please see "Special Procedures" in the Troubleshooting section..**
8. Do SP **3821-1** to check that process control was completed successfully.
   - For each color, there is a two-digit code, in the order K,M,C,Y. '10' means that process control was completed successfully. '10101010' means that all 4 colors completed process control successfully.

Load the Paper Trays

For each paper cassette tray:

1. Move the side fence and bottom fence to the correct positions for the paper.
2. Add paper to the trays.
3. Attach the paper size decals to the front of the three trays.

Note

- It is not necessary to input the paper size setting for trays 2 and 3. This is detected automatically.

Make a Test Color Print

1. Make sure that A3 or DLT paper is in one of the trays.

   Note

   - Use the same type of paper that the customer normally uses for color outputs.
2. Put a "Color Chart C-4" on the exposure glass.

3. Select full color mode and print one copy of the chart. You will use this in the ACC procedure, if ACC is necessary.
4. Check the results of the copy with the customer.
5. With a pencil or pen, mark this copy "Before ACC".
    - If the quality of the color is satisfactory, ACC adjustment is not necessary.
    - If the quality of the color is not satisfactory, do the ACC adjustment described below.

ACC (Automatic Color Calibration) Adjustment

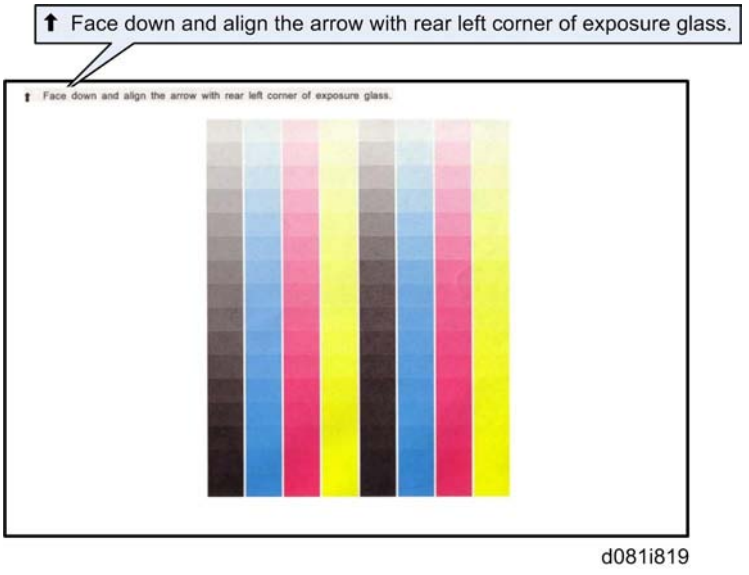
Automatic color calibration is done at the factory with the procedure given below. Do this procedure only if the color quality is not satisfactory for the customer.

1. Push [User Tools].
2. To print a color pattern, select Maintenance> Auto Color Calibration
3. Touch [Start] for "Copier Function"

```
Machine will start self-check before
printing Test Pattern
Press [Start Printing].
```

4. Touch [Start Printing].

```
Now self-checking.
Test pattern will be printed.
Please wait.
```



d081i819

The machine does process control for a few seconds and it prints the test pattern.

5. Read the message:

   ```
   Place Test Pattern on the exposure glass
   correctly, then press [Start Scanning]
   ```

6. Remove the C-4 test chart from the exposure glass.
7. Place the color test pattern face-down with the arrow aligned the rear left corner of the exposure glass.
8. Touch [Start Scanning] on the display. The machine scans the pattern one time.

   ```
   Scanning…
   Please wait.
   ```

   - If you see the "Scanning failed" error, this means the Test Pattern is not set correctly.
   - Make sure that the arrow on the test pattern is in the upper left corner of the exposure glass.

9. Remove the pattern from the exposure glass and replace it with the C-4 Color Chart.
10. Touch [Exit] three times to return to the Copy mode screen.
11. Make a full-color copy of the test chart.
12. Mark this copy of the C-4 chart "After ACC".

d081i820

13. Compare the two copies, "Before ACC" and "After ACC".

Note

- Normally, the quality of the 2nd copy is better than the 1st copy ("Before ACC").

14. If the results of the 2nd copy are better than the results of the 1st copy, you are finished.

    -or-

    If the customer prefers the result of the 1st copy:

    - Push the [User Tools] key
    - Touch Maintenance> Auto Color Calibration> Previous Setting.

15. Remove the color chart from the exposure glass.
16. If the customer is not satisfied with the 1st copy or the 2nd copy, do the printer gamma adjustment (☛ p.514 "Printer Gamma Correction").

Do the Color Registration Procedure for MUSIC

1. Push [User Tools].
2. Touch [Maintenance]> [Color Registration].
3. Touch [OK].

   This completes color registration.

Counter Display Setting

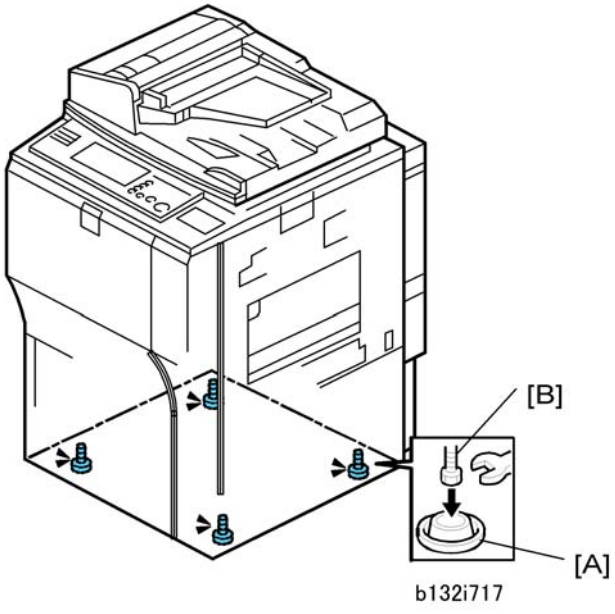
The default setting for the counter is "0" (development). Do the SP setting below to set the counter for copy/print (paper count).

1. Enter the SP mode.
2. Do **SP5045-1**.
3. Select the counter to use:
   - 0: Development counter (Default)
   - 1: Page counter

Important

- **This setting can be switched for the D081/D082 at any time as necessary. (This setting could be done only once with the D014/D015 machines.)**

Make the Machine Level

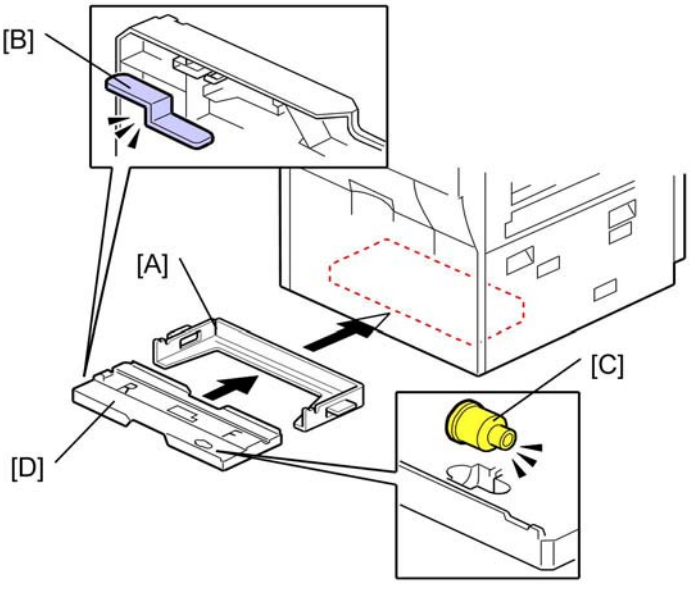


Important

- **Only two leveling shoes are provided as accessories. However, more can be ordered (Part No. B1321226). The illustration above shows the machine being leveled with four shoes.**

1. Place a shoe [A] under one corner of the machine.
2. Place the other shoe under the opposite corner of the machine.
3. Place a level on the exposure glass.
4. Use a wrench to raise or lower the nuts [B] on the leveling shoes until the machine is less than 5 mm from level (measure from front-to-rear and left-to-right).

Attach the PCU Stand Rack and Store the PCU Stand



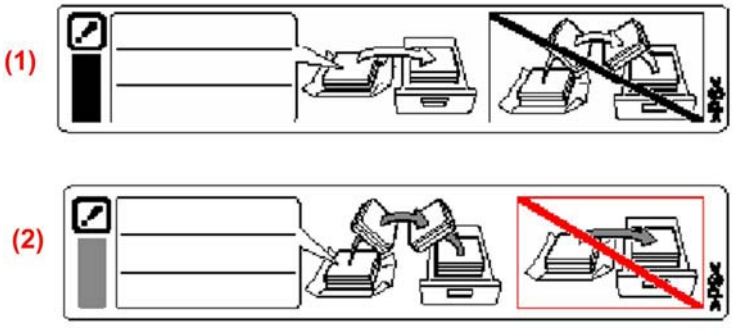
d081i718

1. Hold the PCU stand rack [A] as shown, then attach it to the bottom of the machine (magnets hold it in place).
2. Make sure long lock plate [B] and jig [C] are inserted into the bottom of the PCU stand.
3. Slide the PCU stand [D] into the rack below the main machine.

Important

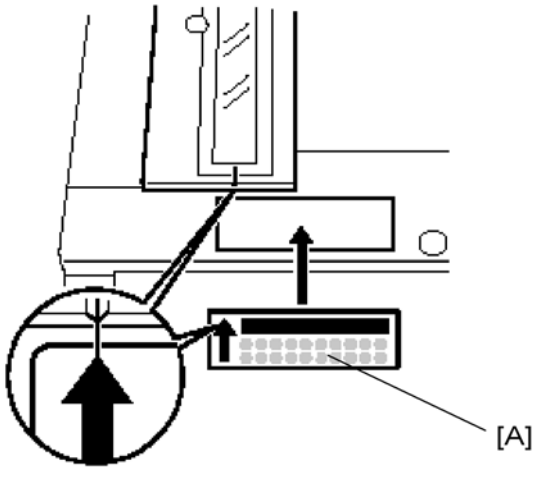
- **The PCU stand provided with the machine must remain with the machine in the field because the stand is required for servicing the PCU and OPC drum. After the PCU is removed from the machine, it should always be placed on the PCU stand.**
- **The PCU stand protects the OPC drum while the PCU is out of the machine, and keeps the PCU properly aligned so the development unit can be reattached easily after the OPC and PCU have been separated.**
- **To prevent damage to the exposed OPC drum on the bottom of the PCU, always set the PCU on the PCU stand designed for this machine. Do not use the PCU stand of any other machine.**

Attach Decals



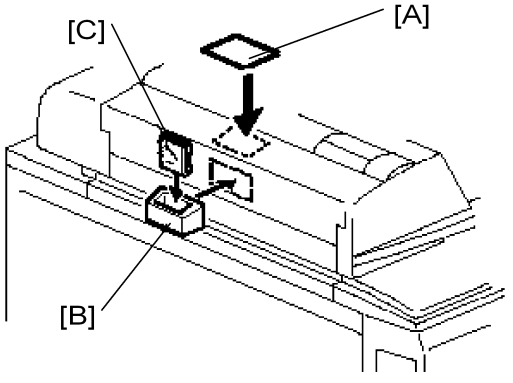
b132i911

1. Attach the paper-installation decals to the trays. These tell you how to add new paper.
    - **Front set decal (1) for LCT**: Attach this decal to the LCT if one is installed. 'Front set' means that the paper should be **face up** in the tray.
    - **Back set decal (2) for main machine**: Attach these decals to the trays of the main machine. 'Back set' means that the paper should be **face down** in the tray.



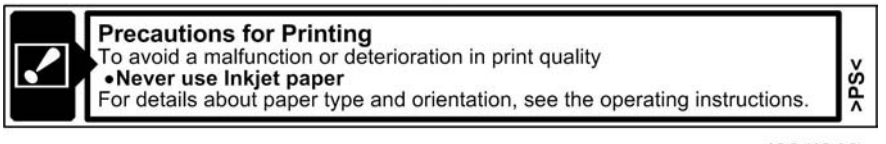
b132i912

2. Attach exposure-glass-cleaning decal [A] at the front edge of the ADF exposure glass.



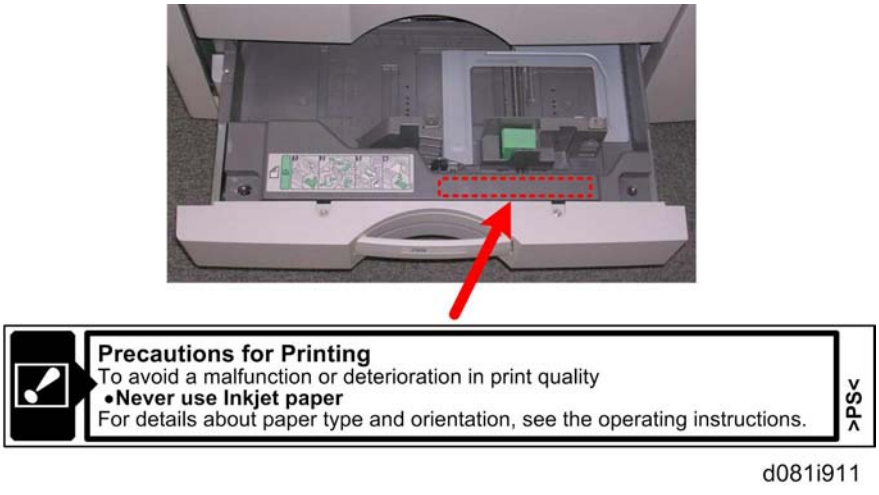
b132i913

3. Attach the original-caution decal [A], and the silicone cloth holder [B].
4. Put the silicone cloth [C] in the holder.



d081i910

5. Open the first tray (tandem tray) and attach an inkjet paper caution decal for your language to the right side of the tray as shown.
    - An English decal is already attached to the tray. If you wish to attach a decal for another language, just put the new decal on top of it.
    - Do not try to remove the English decal.



d081i911

6. Open the second tray (universal tray) and attach an inkjet paper caution decal for your language to the right side of the tray as shown.
7. Open the third tray and attach an identical decal at the same location.
    - An English decal is already attached to the tray. If you wish to attach a decal for another language, just put the new decal on top of it.
    - Do not try to remove the English decal.

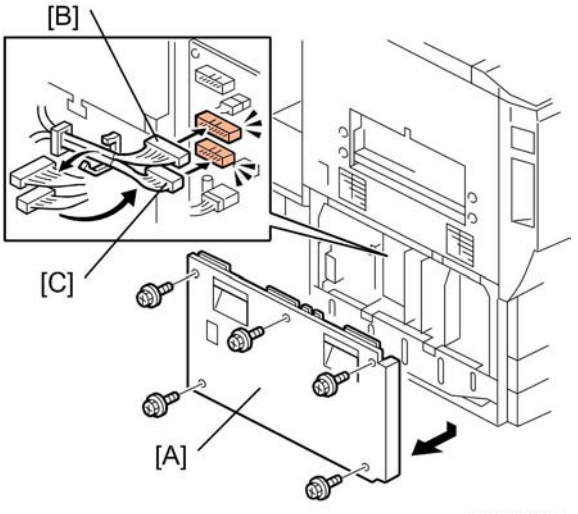
Enable USB

1. Do SP5985 to enable USB.

Print an SMC Report

1. Go into the SP mode.
2. Do **SP5990-1** to print a full SMC report. Keep it in a safe location, with the Factory Setting Sheet removed from under the ADF in a previous step.

Connect the Upper and Lower Tray Heaters



The machine comes from the factory with the tray heaters disconnected.

Note

- Heater connection is optional. Connect the heaters if the location is extremely humid. Speak with the customer before you connect the tray heaters.

1. Remove the left lower cover [A] (x 5).
2. If the paper tray unit heater (HTS) or image transfer/scanner heater are required, attach connectors HT5 [B] and HT6 [C] (x 1, x 2)

Enabling App2 Me on VM/Calypso SD Card (D0815790C)

The machine is shipped from the factory with the VM/Calypso SD Card already in installed in Slot 2 (the lower slot), but the App2 Me application must be enabled before it can be used.

Do the following procedure if a customer wants to use "App 2 Me".

1. Press the [User Tools] key on the operation panel.
2. Touch the "Extended Feature Settings" button twice.
3. Touch the "App 2 Me" line under the Startup Setting tab.
4. Touch the "Extended Feature Info" tab on the LCD.
5. Touch the "App 2 Me" line.
6. Set "Auto Start" to "On".
7. Touch the "Exit" button.
8. Exit the "User Tools" settings.

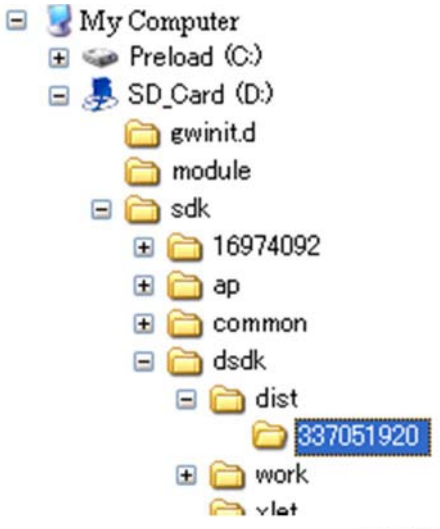
Important

- **Do not remove the VM card from Slot 2 (lower slot). The VM card must remain in the machine.**

Update Procedure for App 2 Me Provider

Follow this procedure to update AP2 Me if a new version is available.

1. Push the [User/Tools] key on the operation panel.
2. If an administrator setting is registered for the machine, Step 3 and Step 4 are required. Otherwise, skip to step 5.
3. Push [Login/Logout] on the operation panel.
4. Login with the administrator user name and password.
5. Touch "Extended Feature Settings" twice on the LCD.
6. Touch each of the applications until the status changes to "Stop".
7. Turn the machine off, and then remove the VM Card.



d377i501

8. Prepare the newer App 2 Me Provider zip file from the Firmware Download Center, and then unzip the zip file. (The folder name is "337051920".)
9. Copy the App 2 Me Provider folder into the specified path for the VM card. The path is:

"SD_Card Drive\ sdk\dsdk\dist\337051920"

1. Turn the SD card label face to the rear of the machine, and then push it slowly into Slot 2 (lower slot) until you hear a click.
2. Turn the main power switch on.
3. Press [User Tools] on the operation panel.
4. Touch the "Extended Feature Settings" button twice.

5. Touch the "Extended Feature Info" tab on the LCD.
6. Touch the "App2Me" line.
7. Set the setting of the "Auto Start" to "On".
8. Touch the "Exit" button.
9. Exit the [User Tools/Counter] settings.

Important

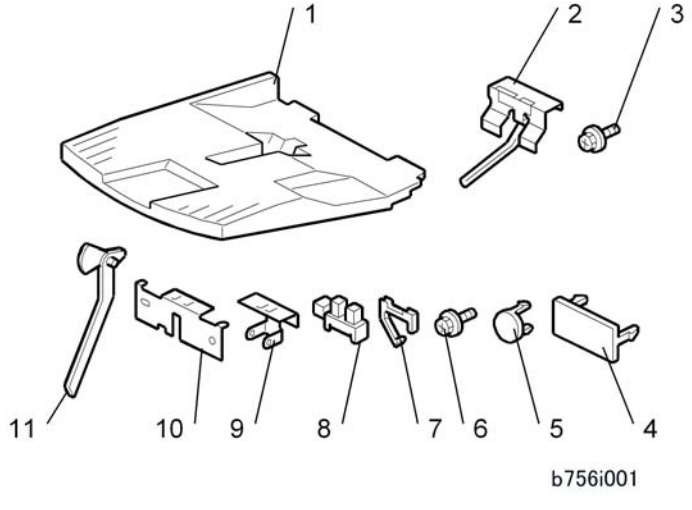
- App2 Me and all other running applications on the VM card must be shut down before the removing the VM card in order to update the main machine software, backing up NVRAM, or executing application move or undo with SP58973.
- After the VM card is re-inserted, App2 Me (and any other VM card applications used by the customer) must be switched on after the machine is switched on.
- For more about shutting down and re-starting App2 Me and other VM card applications, see "Before Removing and Re-installing the VM Card".

Copy Tray (B756-01)

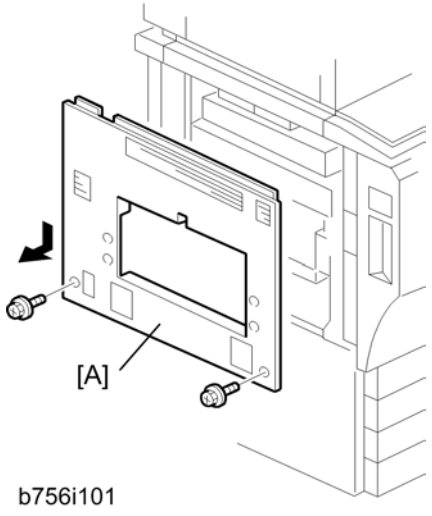
Accessories

Check the accessories and their quantities against this list.

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

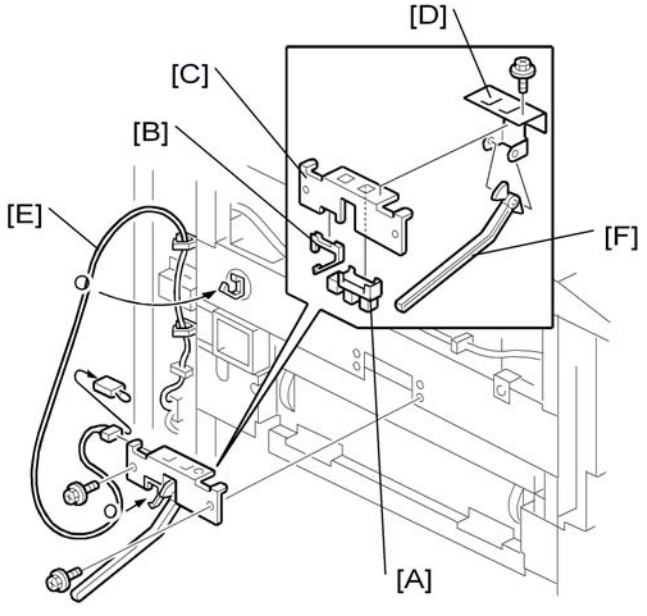


Installation



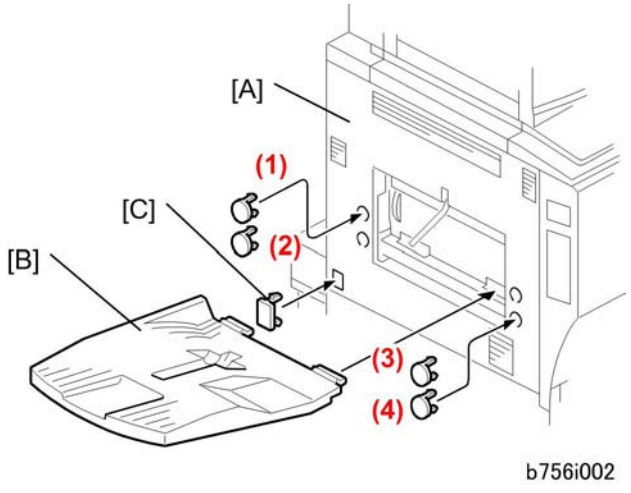
b756i101

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



b756i003

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



6. Reattach the left upper cover [A] (x2).
7. Attach the tray [B].
8. Attach the small caps to the holes (1), (2), (3), (4).
9. Install the large cap [C] in the finisher power connection point.

A3/11" X 17" Paper Size Tray Type 2105 (B331-01)

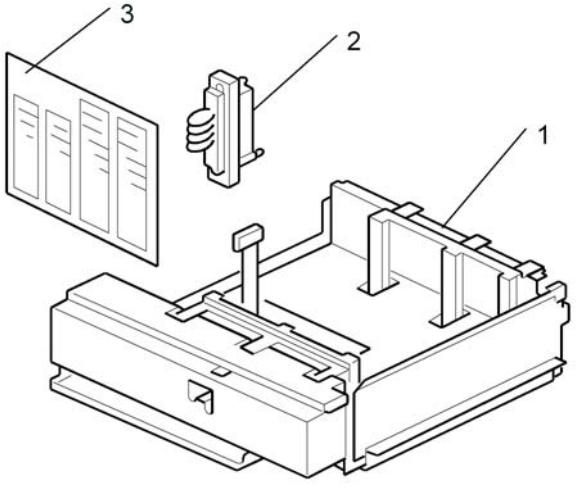
The A3/11" x 17" Paper Size Tray is installed in tray 1 of the main machine.

2

Accessories

Check the accessories and their quantities against this list.

Description	Qty
1. A3/DLT Tray	1
2. Short Connector	1
3. Paper Size Decal	1

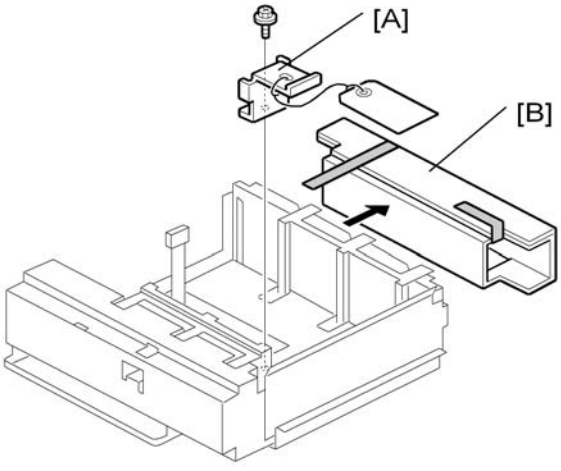


b331i001

Installation

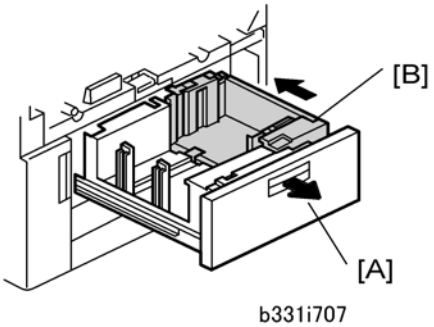
⚠WARNING

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

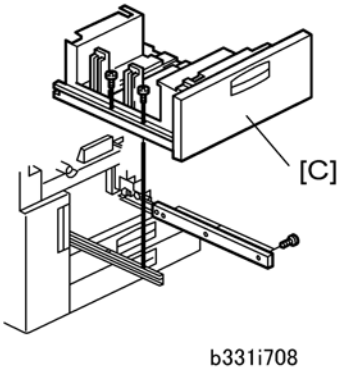


b331i011

1. Remove the metal retainer [A] and packing material [B] (x 1).
2. Check the position of the front and rear fences, and make sure that they are set for DLT or A3.

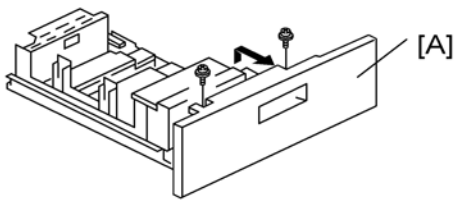


b331i707

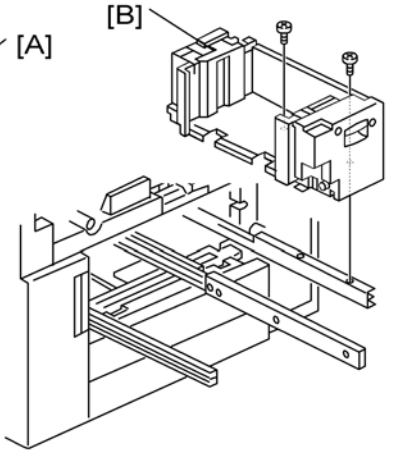


b331i708

3. Open the front doors.
4. Pull out the tandem feed tray [A] fully.
5. Push the right tandem tray [B] into the machine.
6. Remove the left tandem tray [C] (x 2 left, x 3 right).

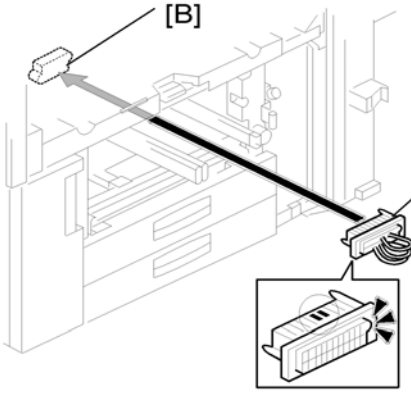


b331i102

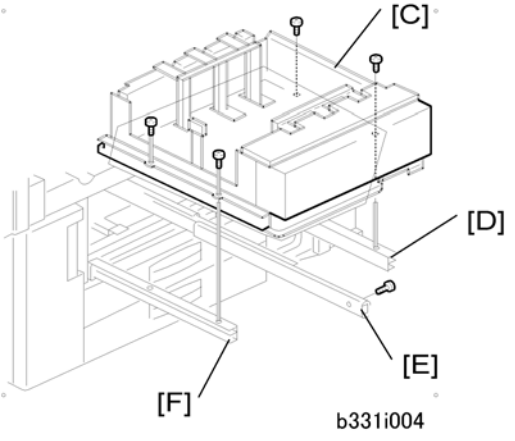


b331i709

7. From the left tandem tray, remove the front cover [A] (x 2).
8. Pull out the right tandem tray [B], then remove it (x 2).



b331i003



b331i004

9. Put the short connector [A] into the socket in the machine [B].

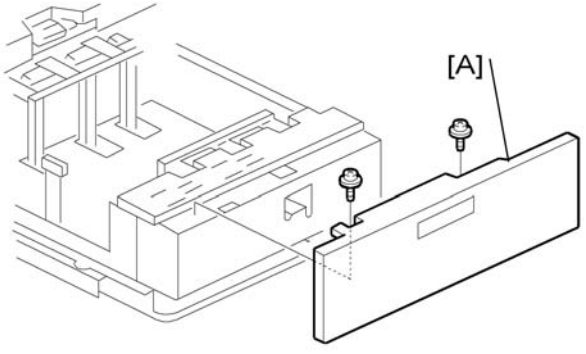
Note

- Hold the connector as shown in the illustration.

10. Install the A3/DLT tray [C] on the right rail [D], center rail [E], and left rail [F]. Use the screws that you removed in Steps 6 and 8.

Note

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



b331i105

11. Install the front cover [A] (x 2) that was removed from the left tandem tray.
12. Use SP5959 001 to select the paper size for Tray 1 (A3 or DLT).
13. After you select the paper size, turn the machine off and on to change the indicator on the operation panel.

Counters

This section describes installation of three items:

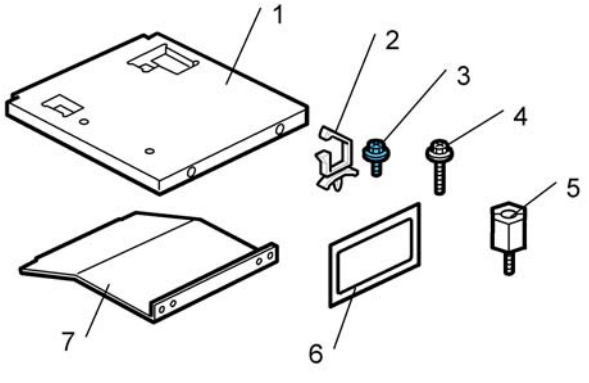
- Key Card Bracket (B498-03)
- Key Counter Bracket Type 1027 (B452)
- Optional Counter Interface Unit Type A (B870-11)

Accessories

Key Card Bracket B498

Check the accessories and their quantities against this list.

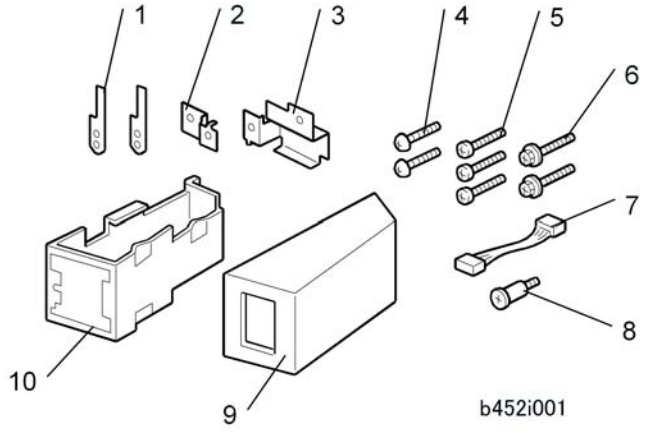
Description	Qty
1. Key Card Table	1
2. Harness Clamp	1
3. Tapping Screws (M3 x 8)	4
4. Tapping Screws (M4 x 14)	2
5. Stud	1
6. Decal	1
7. Key Card Table Support	1



Key Counter Bracket B452 Accessories

Check the accessories and their quantities against this list.

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



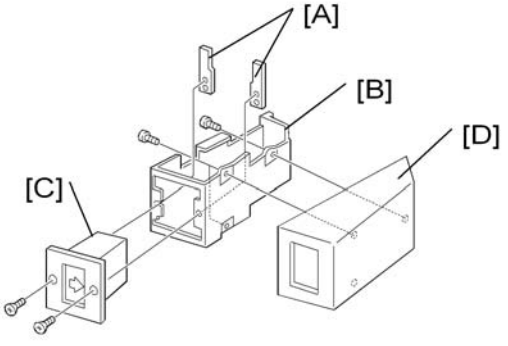
Optional Counter Interface Unit Type A B870 Accessories

Check the accessories and their quantities against this list.

Description	Qty
1. Interface Board (PCB)	1
2. Tapping Screws (M3x6)	4
3. Harness Clamp	1
4. PCB Support	4
5. Harness: VBCU (White)	1
6. Harness: MB (Gray) **Not Used**	1
7. Harness Clamp	1

Installation

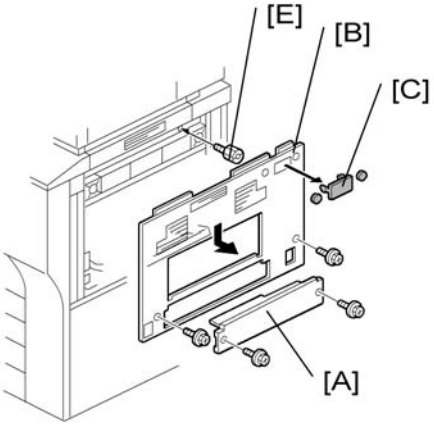
Assemble the Key Counter Bracket



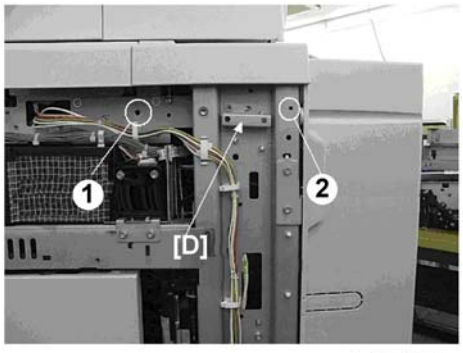
b452i002

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

Install the Key Card Bracket and Assembled Key Counter



b498i002

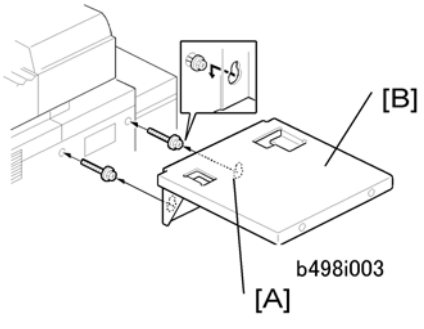


b498i010

⚠WARNING

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

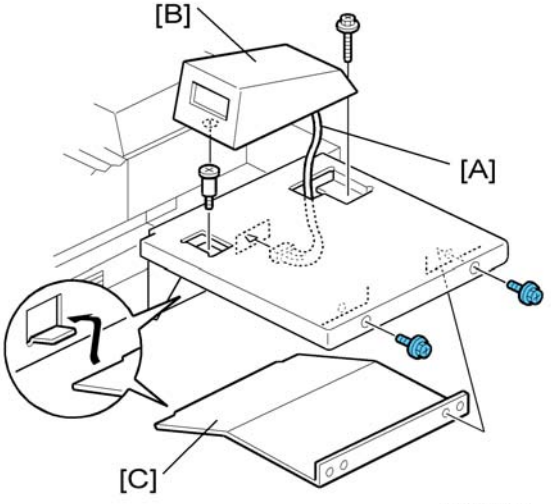
1. Remove the cover [A] (x 2).
2. Remove the right upper cover [B] (x 2).
3. Remove the three caps [C].
4. If you are installing the key counter bracket, remove connector cover [D] (x 2).
5. Attach stud [E].



b498i003

6. Put the keyholes [A] of the key card table [B] over the heads of the shoulder screws, as shown above.
7. Tighten the screws to attach the table (M4 x 14, x 2).
8. Attach the key counter bracket or key card. (See below.)

If you are installing the key counter bracket ...

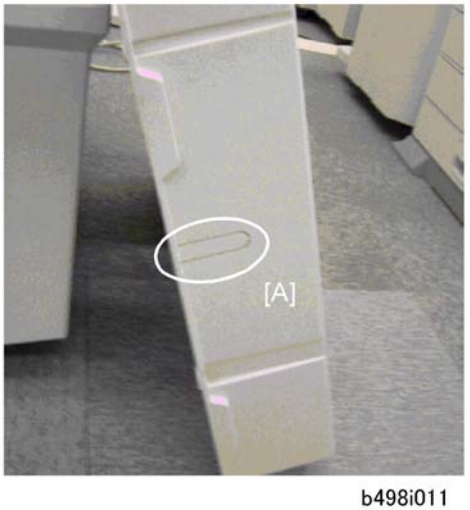


b498i004a

1. Connect one end of the harness [A] to the key counter bracket [B] (x1).
2. Connect the other end to the 4-pin connector on the right side of the copier.
3. Attach bracket support [C] to the side of the copier (x 2).

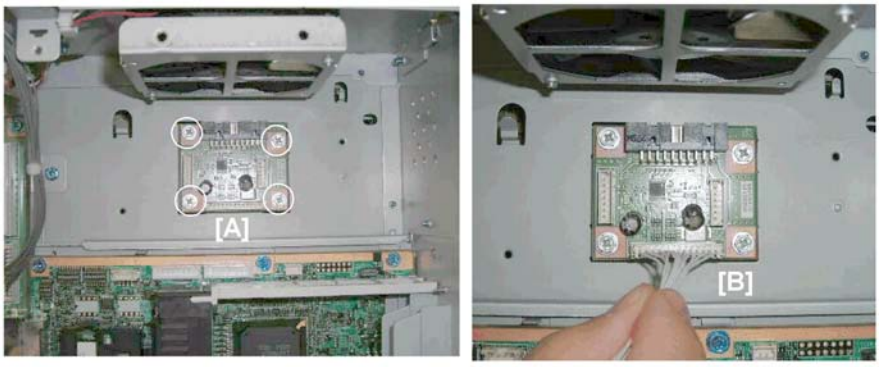
If you are installing the key card ...

1. Remove the rear cover.
2. Remove the control box cover.



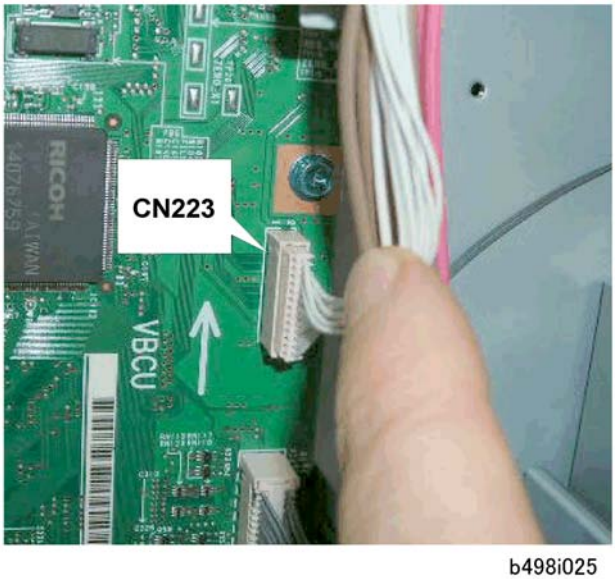
b498i011

3. Remove the cutout [A] in the rear cover.



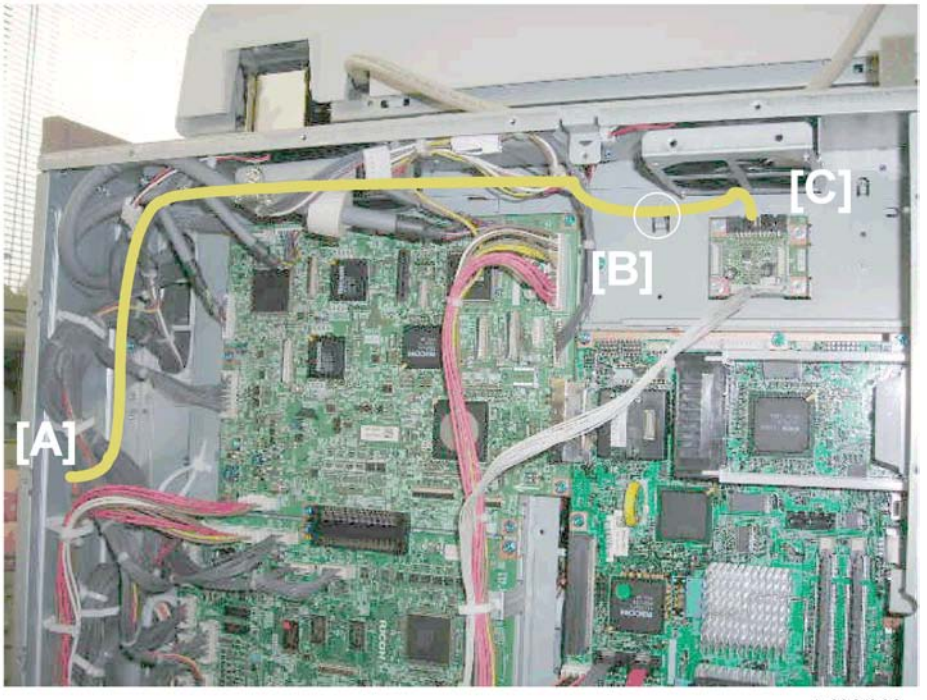
b498i020

4. Attach the circuit board [A] above the controller board (x4).
5. Connect the small cable [B] to the circuit board (x1).



b498i025

6. Route the other end of the short cable to the VBCU below (x2).
7. Connect the short cable to CN223 on the VBCU (x1).

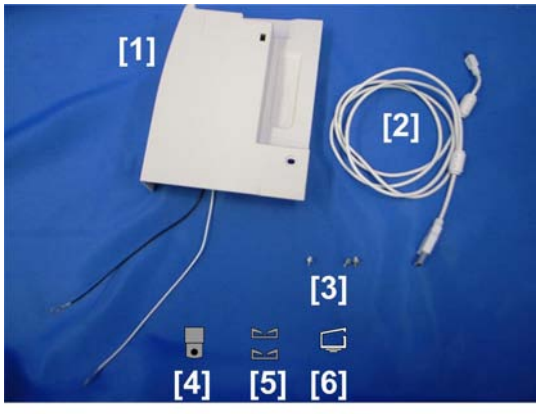


b498i030

8. Route the harness of the key card through the hole [A] in the controller box as shown above.
9. Clamp the harness at [B] then connect to the top of the circuit board [C] (x1, x1).
10. Reattach the controller box cover and rear cover.

USB2.0/SD Slot Type D (D505-01)

Accessories



d505i000

No.	Description	Q"ty
[1]	USB2.0/SD Slot Type C	1
[2]	USB Cable	1
[3]	Screws	3
[4]	Flat Harness Clamp	1
[5]	V-Harness Clamps	2
[6]	Harness Clamp (Standoff)	1

Installation

Preparation

The machine must stand alone for this installation.

- Disconnect the machine from the downstream unit on the left if installed.
- Disconnect the machine from the upstream LCT on the right if installed.

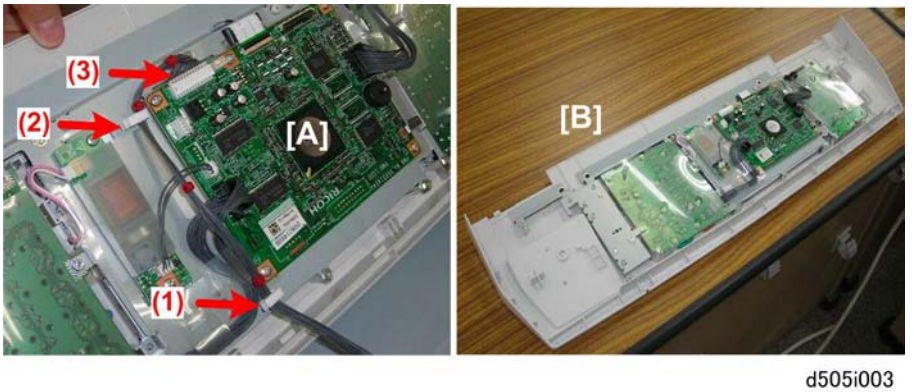
Removing the Operation Panel and Dummy Cover

d505i001

1. Remove the operation panel screws (x3).

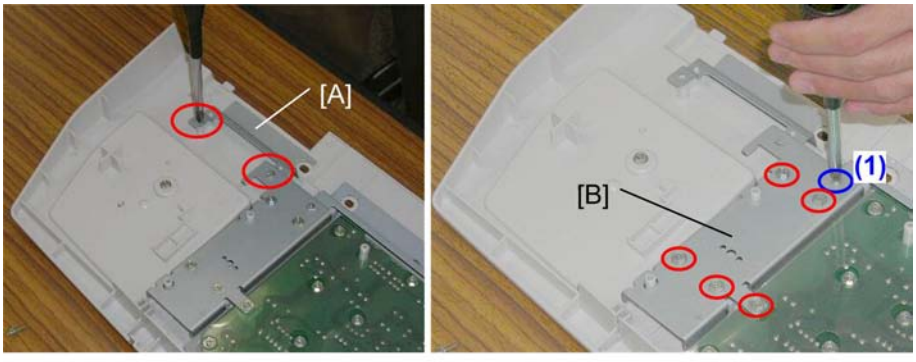
d505i002

2. Raise the operation panel and hold it in the vertical position.



d505i003

3. Disconnect the harness at (1) and (2) (x2).
4. Disconnect the harness from the board [A] at (3) (x1).
5. Remove the operation panel [B] from the machine and place it on a flat clean surface.

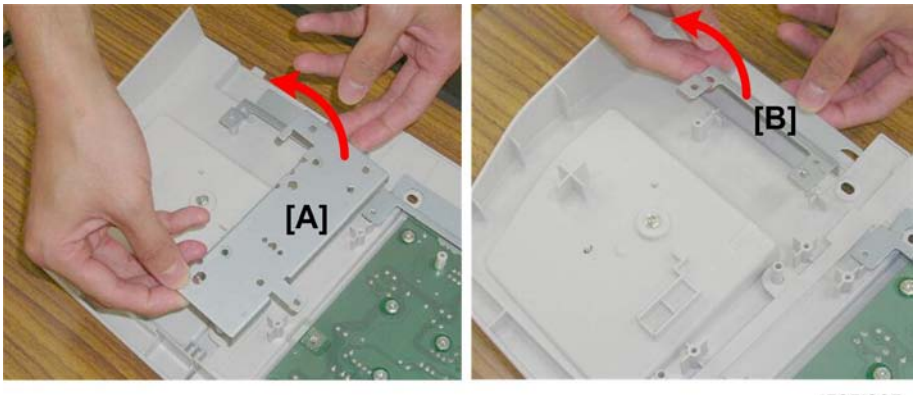


d505i004

6. Remove the screws of small bracket [A] (x2).
7. Remove the screws of large bracket [B] (x6).

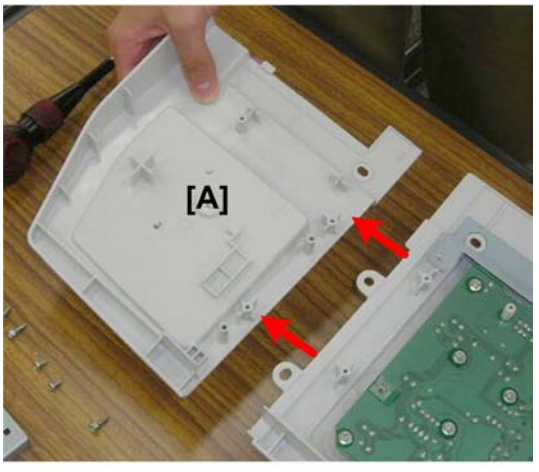
Note

- Screw (1) is a flat-head screw. Be sure to re-install this screw at this position.



d505i005

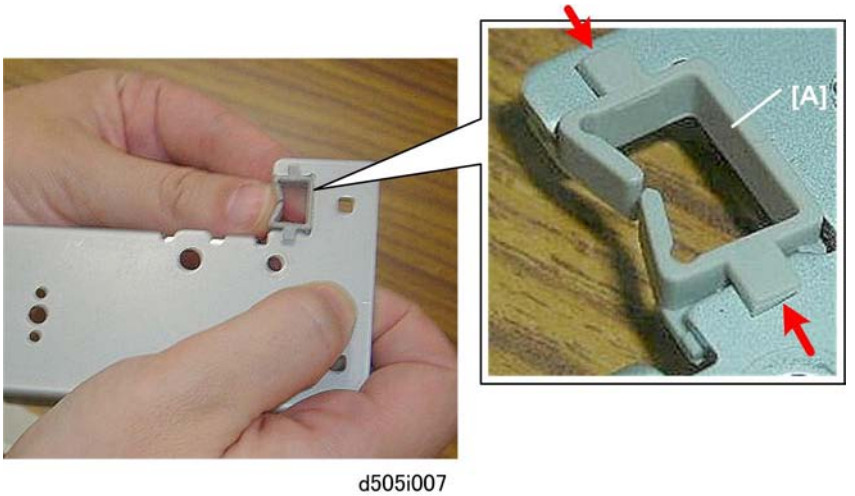
8. Remove large bracket [A] and small bracket [B].



d505i006

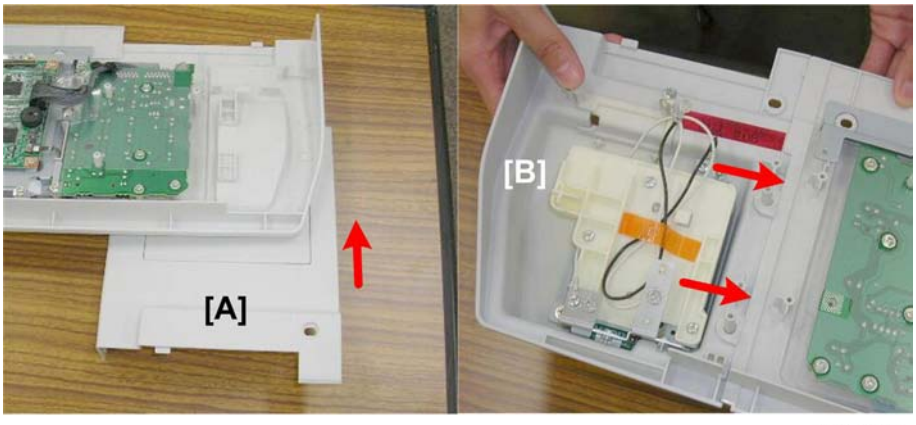
9. Remove dummy cover [A] from the operation panel.

Slot Unit Installation



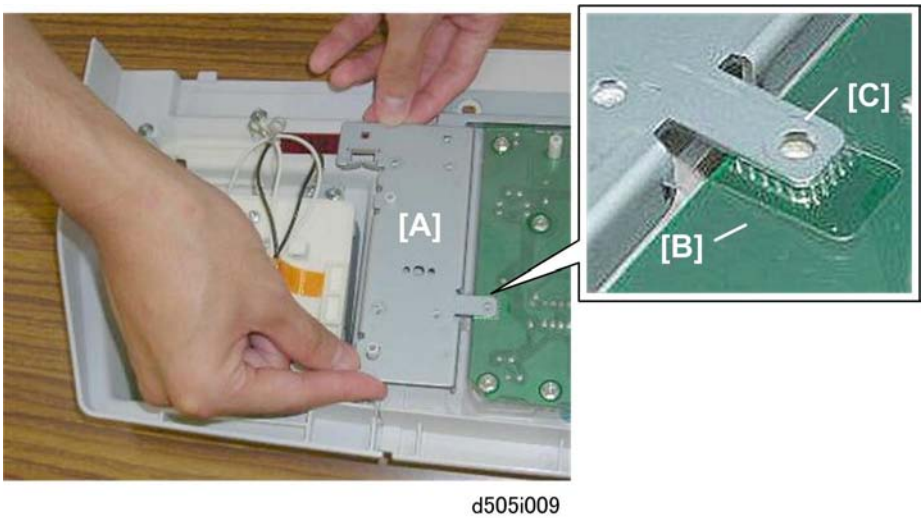
d505i007

1. Attach one accessory V-harness clamp [A]. Make sure that the tabs are on the side of the plate that will be facing down when the large bracket is re-installed.



d505i008

2. Lay the dummy cover [A] under the end of the operation panel.
3. Set the slot unit [B] on the other end of the operation panel.

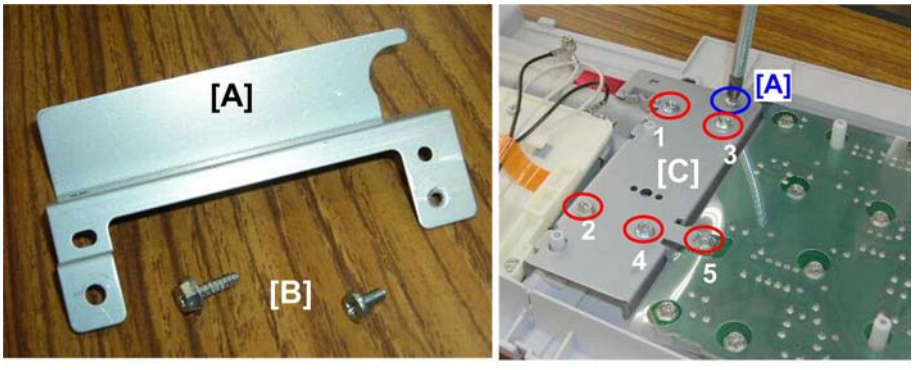


d505i009

4. Lay the large bracket [A] over the joint of the slot unit and operation panel.

Important

- **Make sure that the plastic cover [B] is below the metal tab [C].**

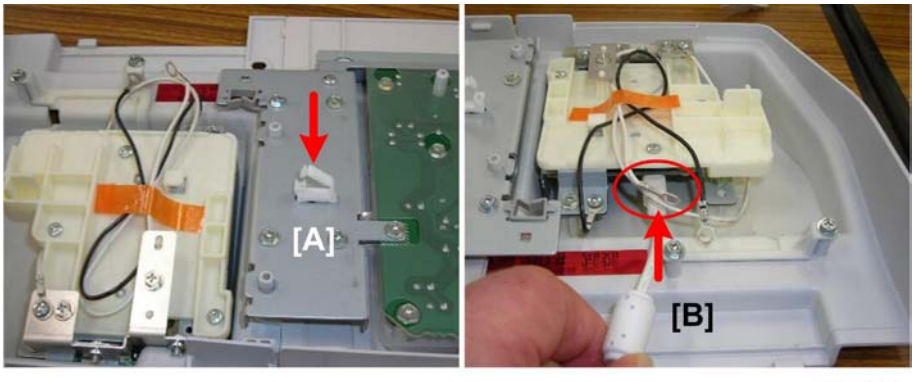


d505i010

5. Discard the short bracket [A] and screws [B] (x2).
6. Re-install large bracket [C] (x6).

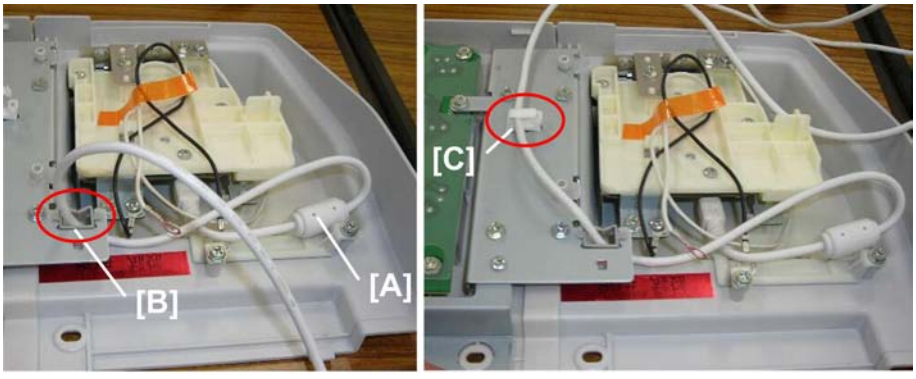
Important

- **You must fasten the flat-head screw at [A].**
- **Tighten the screws in the order above marked by the numbers 1 to 5. This ensures precise alignment of the bracket.**



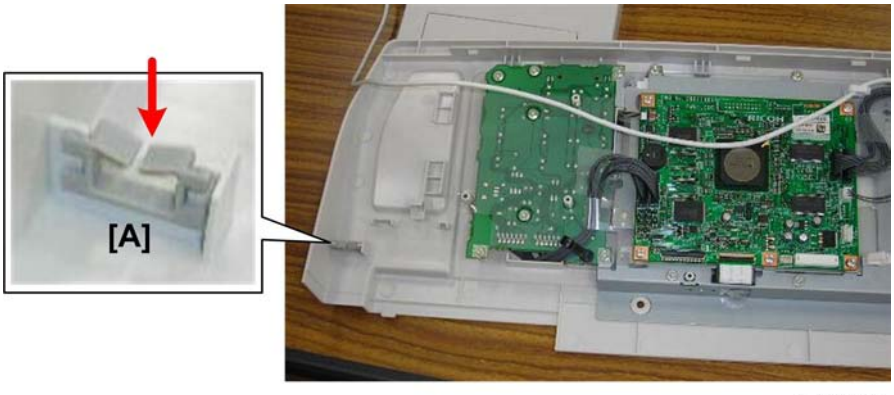
d505i011

7. Set the harness clamp (standoff) [A] on the large bracket.
8. Connect the small end of the accessory USB cable [B] to the slot unit (x1).



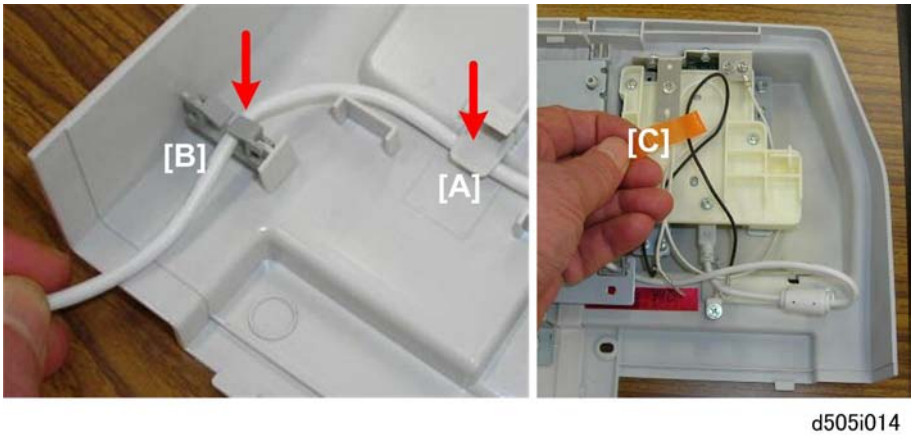
d505i012

9. Coil the USB cable and position the ferrite core [A] as shown.
10. Set the cable in the V-harness clamp [B] and close the clamp (x).
11. Set the cable in harness clamp [C] and close it (x).



d505i013

12. Set one accessory V-harness clamp [A] at the corner of the operation panel.



d505i014

13. Set the cable under tab [A].

14. Clamp the cable at [B] (x1).
15. Remove tape [C] to free the two ground wires.

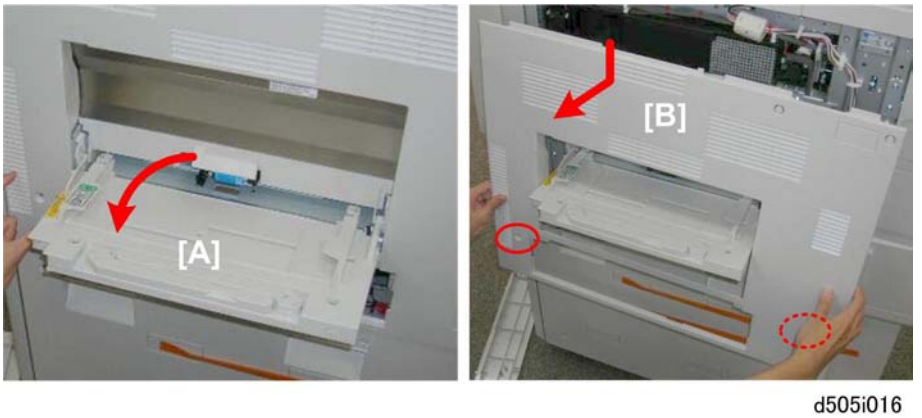
Knockout, Upper Right Cover

d505i015

1. Remove knockout [A] (x2).

Note

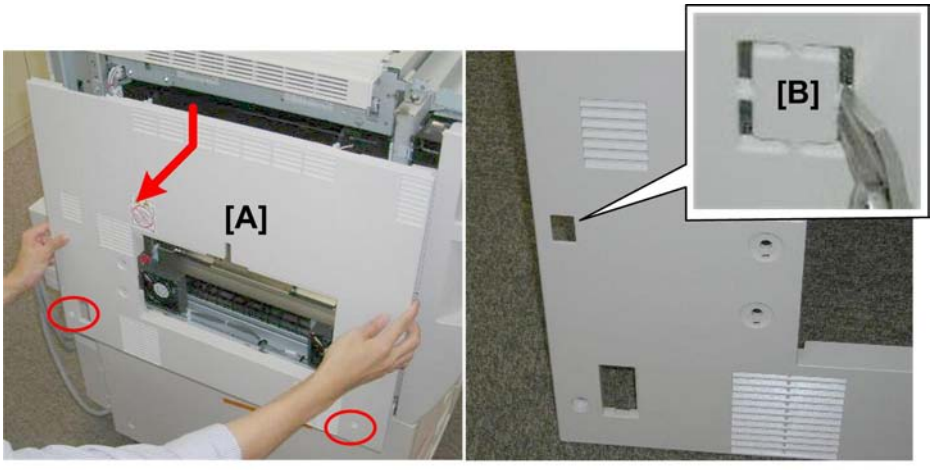
- This step is not required if the LCT has been installed.



d505i016

2. Open and lower bypass tray [A].
3. Remove upper right cover [B] (x2).

Upper Left Cover

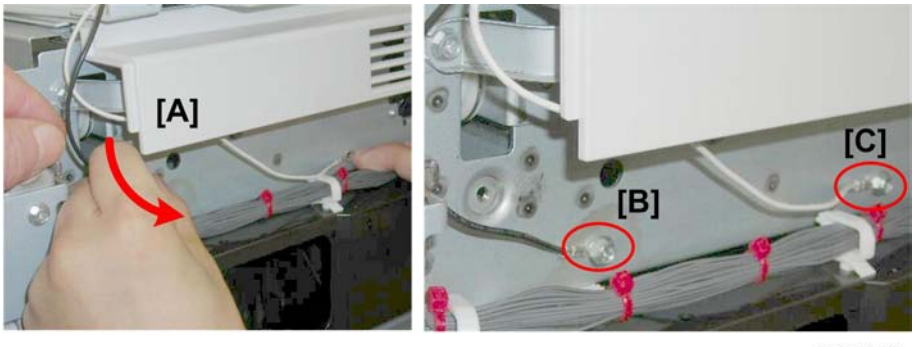


d505i017

1. Remove upper left cover [A] (x 2).
2. Use a pair of nippers to remove knockout [B].

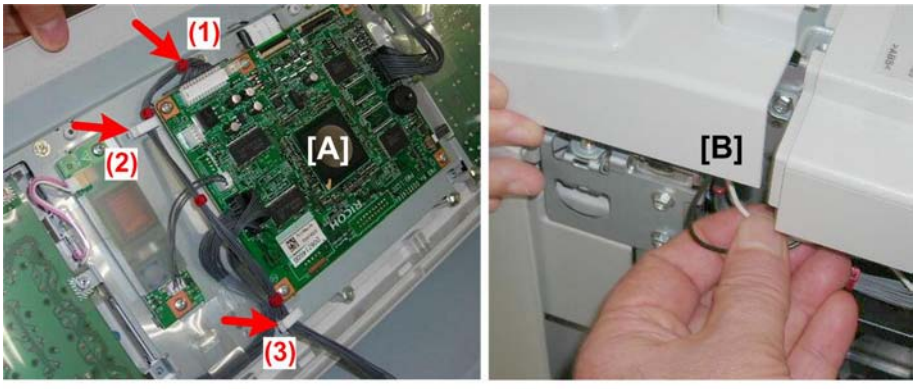
Slot Unit Connection

1. Lay the operation panel on the machine where it will be re-installed.



d505i018

2. At the top right corner of the machine, route the ground wires under the cover [A].
3. Fasten the short ground wire [B] (x1).
4. Fasten the long ground wire [C] (x1).



d505i019

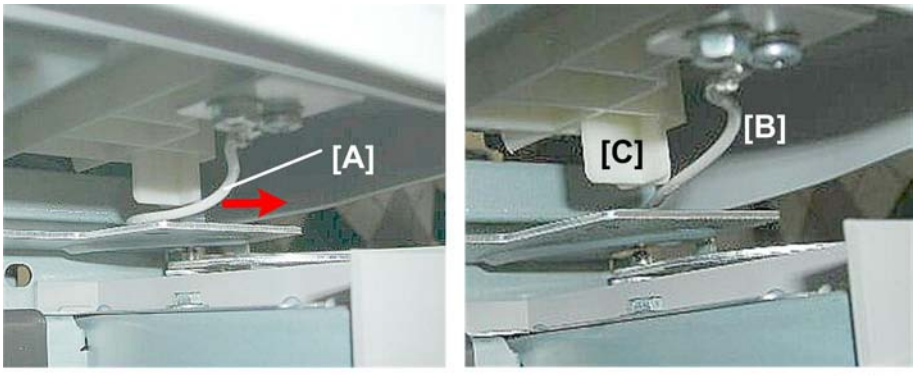
5. Raise the operation panel on the machine to the vertical position, and then connect the board [A] (x1, x2).
6. At the right side of the operation panel, make sure that the ground wires [B] are not pinched between the main machine and operation panel.

d505i020

7. At the left side of the operation panel, make sure that the USB cable [A] is below the edge of the operation panel as shown.

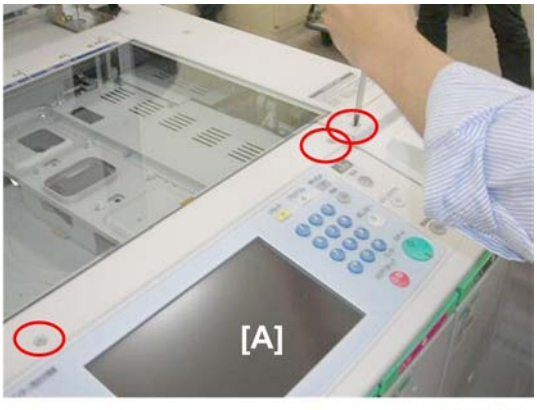
Important

- **Make sure that the cable is not pinched as shown at [B].**



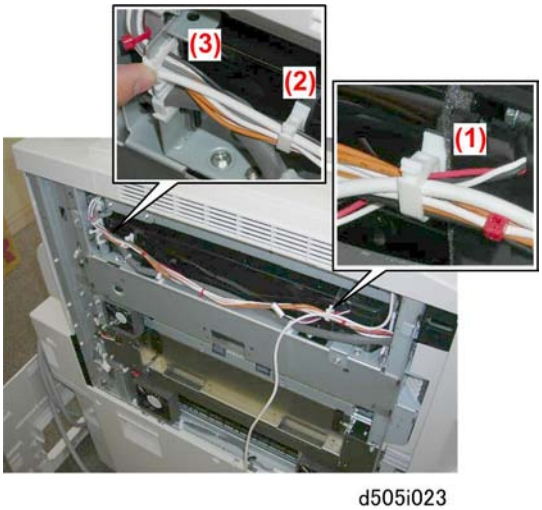
d505i021

8. Under the right corner of the operation panel, push the USB cable from [A] to [B] so that the cable is to the right of support [C] and not below it.



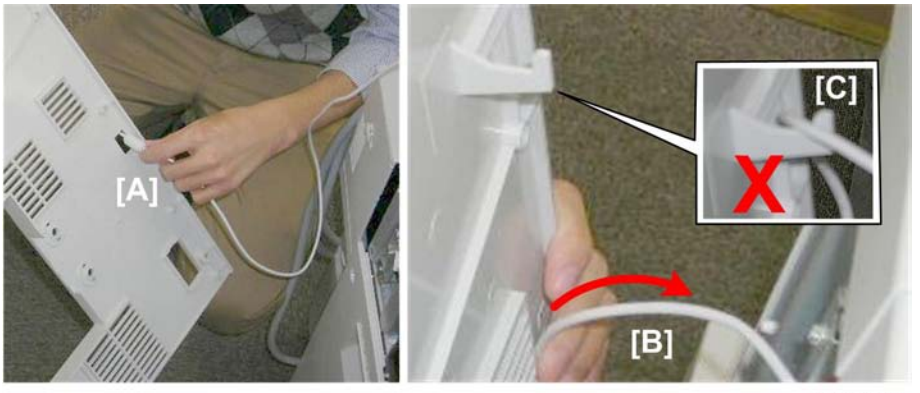
d505i022

9. Re-set and fasten the operation panel [A] (x3).



d505i023

10. On the left side of the machine, route the USB cable through the clamps (1), (2), and (3) then close the clamps (x3).

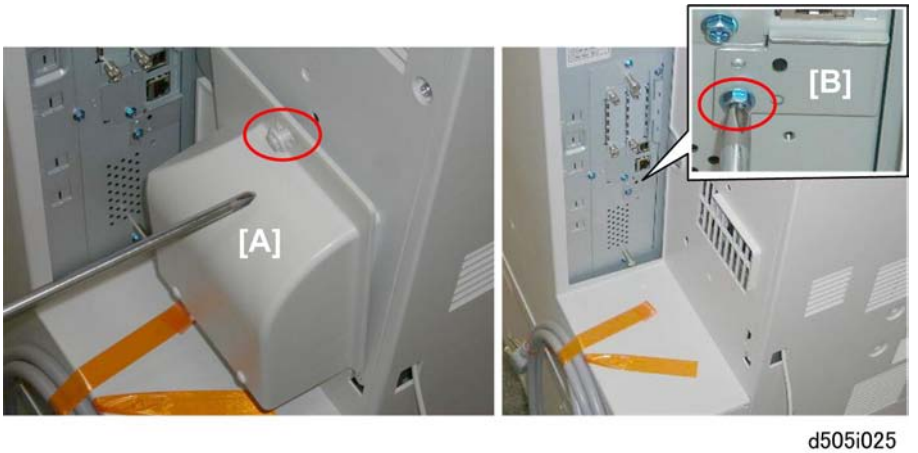


d505i024

11. Insert the USB cable [A] through the hole (where the knockout was removed).
12. Make sure that the cable [B] is free.

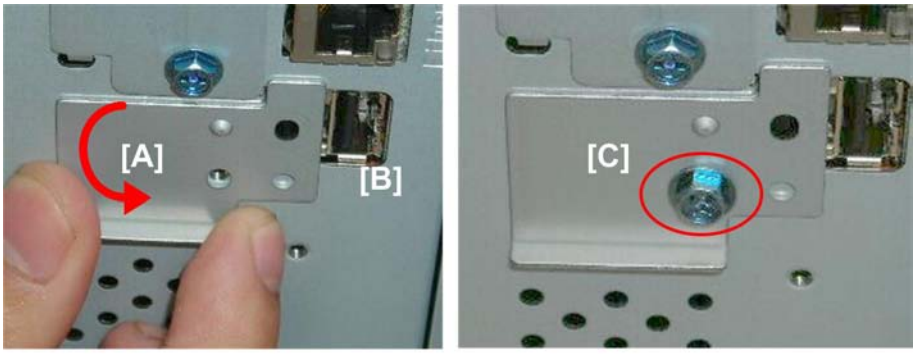
Important

- **Make sure that the cable is not looped over the hook [C] on the back of the left upper cover.**



d505i025

13. Remove the air filter cover [A] (x1).
14. Remove cover [B] from the USB connection points (x1).

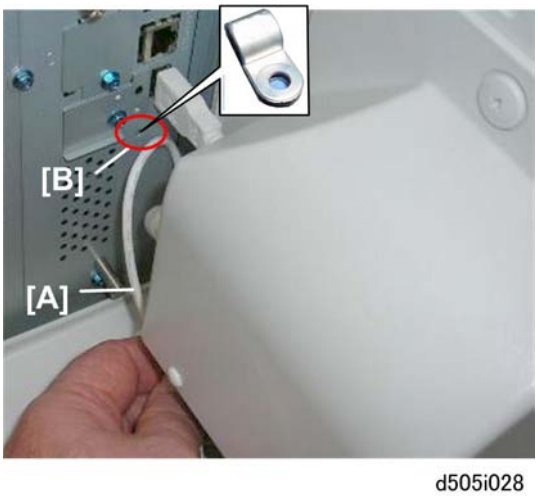


d505i026

15. Rotate the cover [A] so that only one USB connection point [B] is visible.
16. Fasten the cover [C] (x1).

d505i027

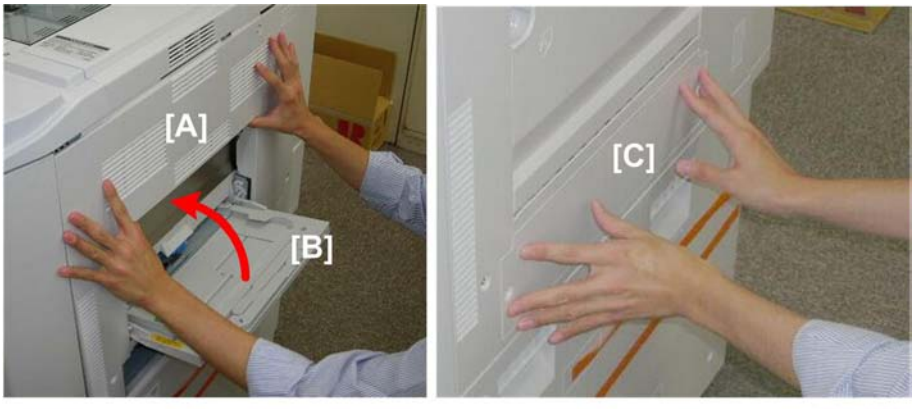
17. Re-attach the air filter cover [A] (x1).
18. Connect the flat end of the USB cable [B] to the machine.



d505i028

19. Coil the USB cable [A] to take up slack.
20. Fasten the cable to the machine at [B] with the flat harness clamp (x1)

Right Upper Cover, Knockout



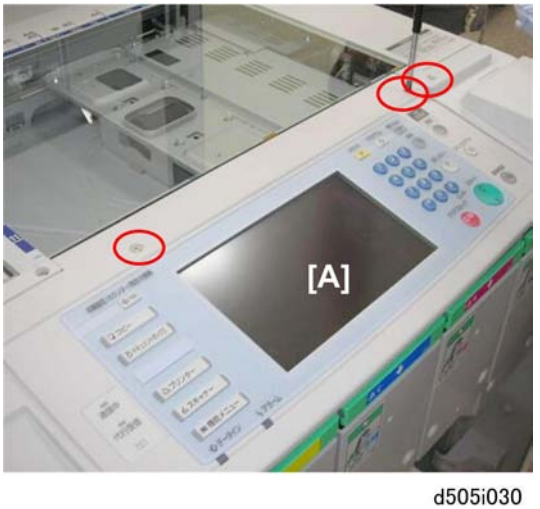
d505i029

1. Re-attach the upper right cover [A] (x2).
2. Close the bypass tray [B].
3. Re-attach the knockout [C].

Note

- Do not re-attach the knockout [C] if an LCT will be installed or re-connected.

Harness and Cable Check



d505i030

1. Remove the operation panel screws (x3).
2. Lift the operation panel slightly to confirm that the operation panel harness and USB cable are not hung up.
3. Plug in the machine and turn it on.
4. Enter the **Scanner SP mode** and change the setting of SP1013 from "0" to "1".
5. Exit the SP mode and check the operation of the installed unit.

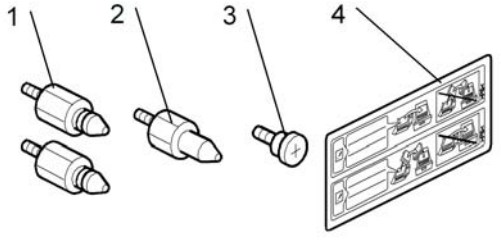
LCT (B473), LCT Adapter Type B (B699)

Accessories

Check the accessories and their quantities against this list.

LCT (B473)

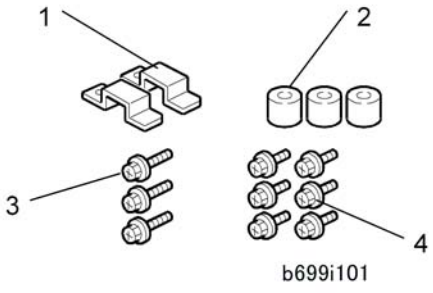
Description	Qty
1. Upper docking pins (grooved)	2
2. Lower docking pin (not grooved, not for B132/B181/B200)	1
3. Flat-head shoulder screw - M4x6	1
4. Paper Set Decal	1
5. InkJet Caution Decal	1



b474i101

LCT Adapter Type B (B699)

Description	Qty
1. Brackets	2
2. Supports	3
3. Machine Screws (M3x8)	3
4. Machine Screws (M4x8)	6

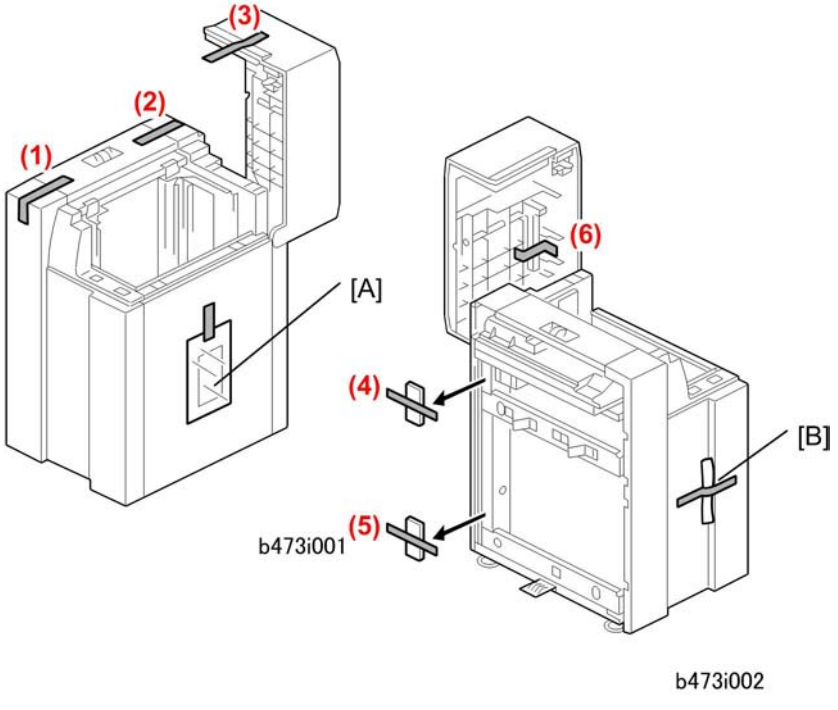


Installation

Removing Tape and Accessories

⚠WARNING

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



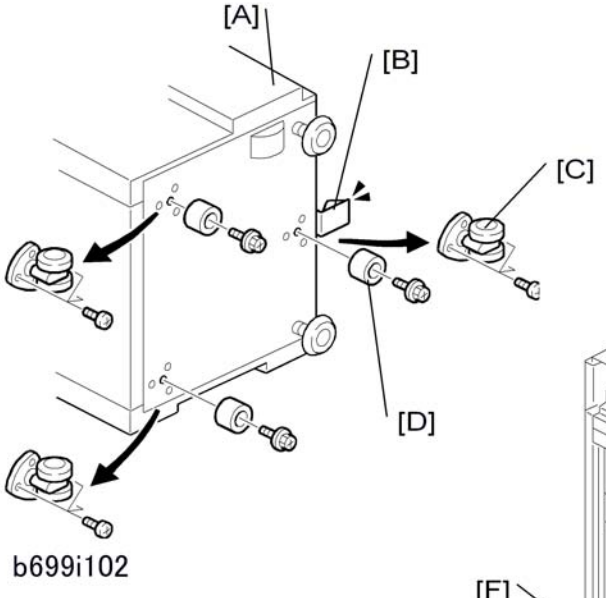
1. Remove all filament tape (1) to (6).
2. Remove:

   [A] Decals

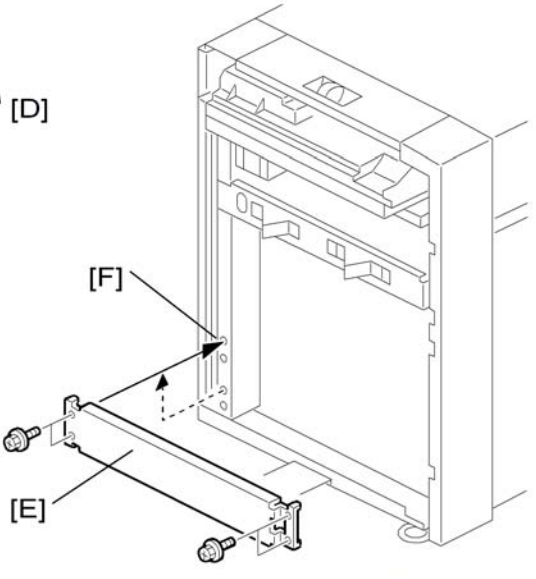
[B] Docking pins

LCT Adapter (B699) Installation

The LCT Adapter Kit B699 must be installed before you install the LCT.



b699i102



b699i103

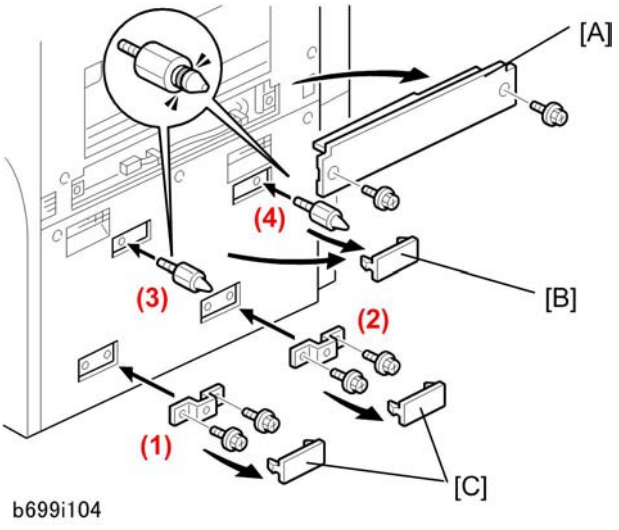
1. Put the LCT [A] on its front side.

Important

- **Do not put the LCT on its right side (the open side), or you will bend the ground plate [B].**

2. Remove the 3 casters [C] (x 3 each).
3. Attach the 3 supports [D] (x 1 each – M3x8 thin screws).
4. Set the LCT in a vertical position.
5. Remove the stay [E] (x 4).
6. Attach the stay at [F] (x 4).

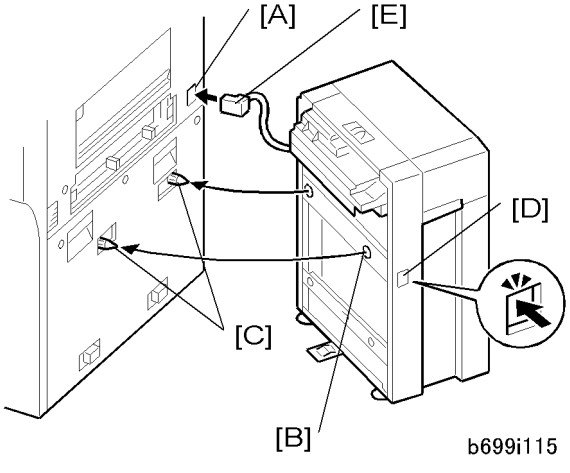
LCT Installation



1. Remove the LCT installation cover [A] from the right side of the machine (x 2).
2. Remove the upper covers [B].
3. Remove the lower covers [C].
4. Attach the brackets (1), (2) that are supplied with the LCT Adapter (B699) (x 2 each – M4 x 8).
5. Attach the two grooved docking pins (3), (4).

Note

- The docking pin without a groove is not necessary for this installation.



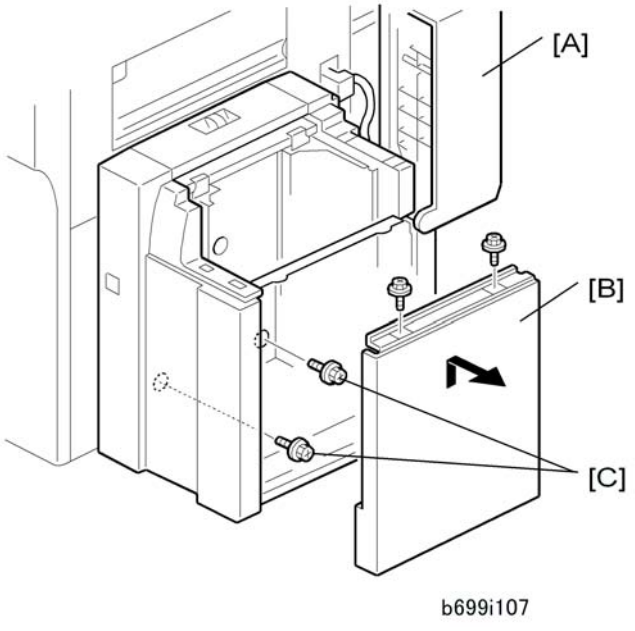
6. Remove the connector cover [A].
7. Align the holes on the side of the LCT [B] with the docking pins [C] on the side of the machine.

8. Slowly push the LCT onto the pins.

Note

- The release button [D] is used to unlock the LCT.

9. Connect the plug [E] of the LCT power connector to the side of the machine.



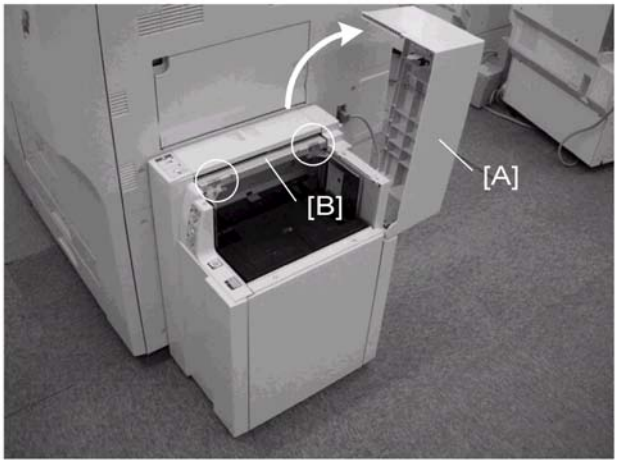
10. Open the upper cover [A].
11. Remove the cover [B] (x 2).
12. Attach screws [C] to the brackets on the side of the machine.
13. Attach the cover [B] with the screw that you removed in Step 11.

Adjusting Side Fences for Paper Size

Before You Begin...

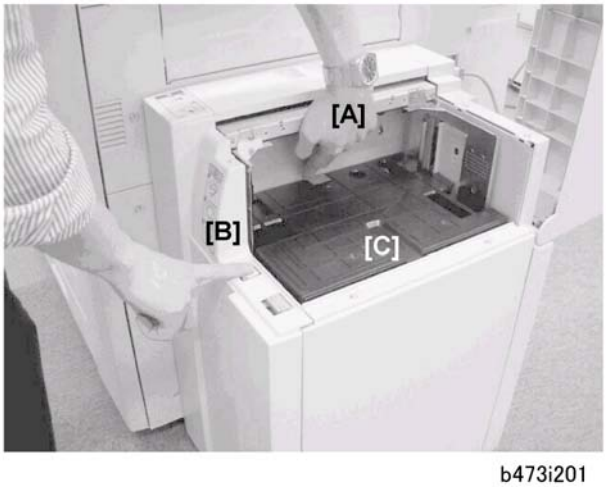
- The side fences must be adjusted manually for either A4 or LT. The procedure below is not required if the side fences are already set for A4.
- Before doing this procedure, the LCT must be installed and connected to the copier and the copier must be switched on.
- The procedure below shows how to move the side fences from the A4 to the LT positions.

1. Turn ON the copier main power switch.



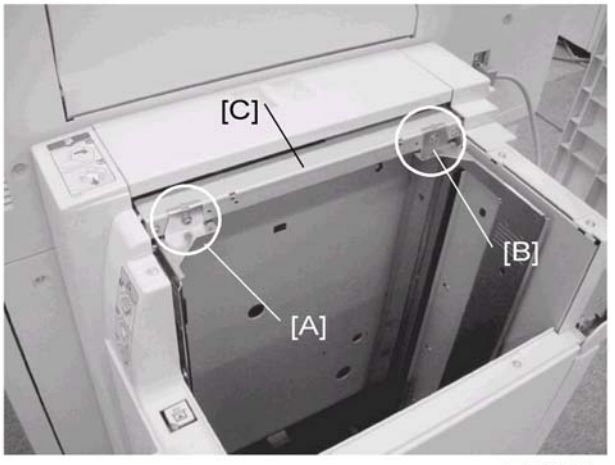
b473i200

2. Open the LCT top cover [A].
3. Check the position markers on plate [B].
    - If the fences are set for A4 and you intend to load A4, the LCT is ready and you do not need to do the following steps.
    - If the fences are set for A4 and you intend to load LT, do the steps below.



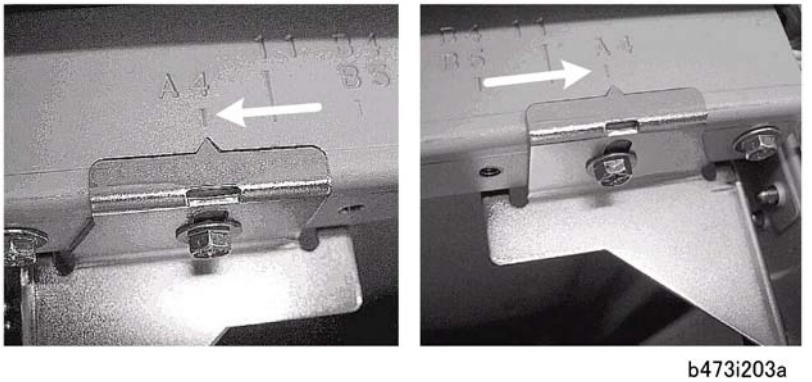
b473i201

4. Cover the photosensor [A] with your left hand.
5. Press the bottom plate operation button [B] until the bottom plate [C] is completely down, then release the button [B].



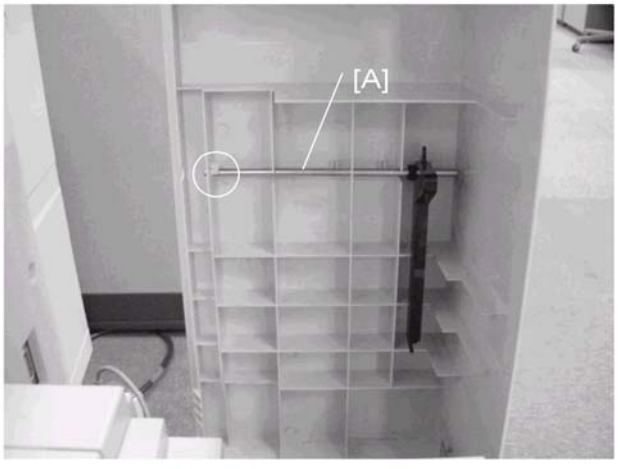
b473i203

6. Use a screw driver to remove the screws fastened to fences [A] and [B] so that the fences slide easily on plate [C].



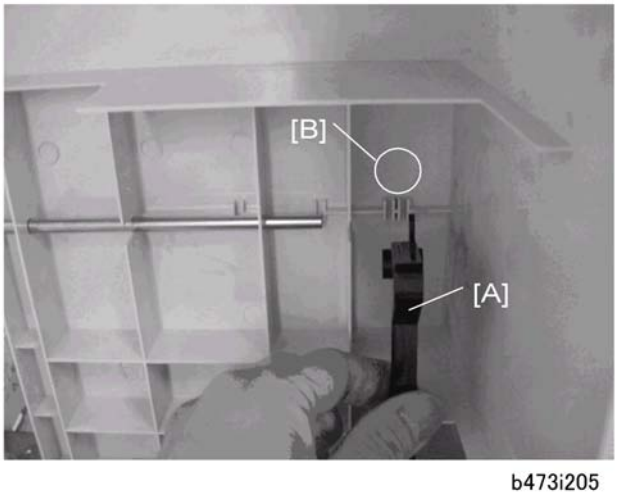
b473i203a

7. Move each side fence bracket from the A4 to the LT position, then reattach the screws.



b473i204

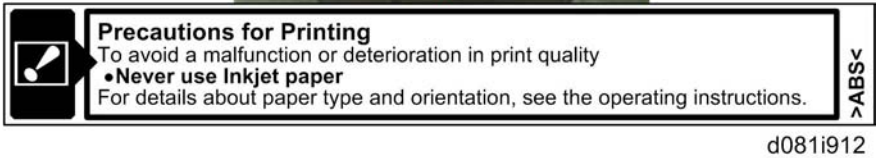
8. Remove the shaft [A] from under the LCT top cover (x1).



b473i205

9. Move the LCT end fence [A] from the A4 to the LT position (the position guide is written on the LCT top cover at [B]).
10. Insert the shaft [C] (x1).
11. Close the LCT top cover.
12. Do SP5959-2 and set the value to "1" (for "LT").

Decals



d081i912

1. Attach the InkJet caution decal for your language to the top of the LCT.

LG Size Tray Type 1075 (B474)

The option can be installed in the LCT (B473).

Accessories

Check the accessories and their quantities against this list.

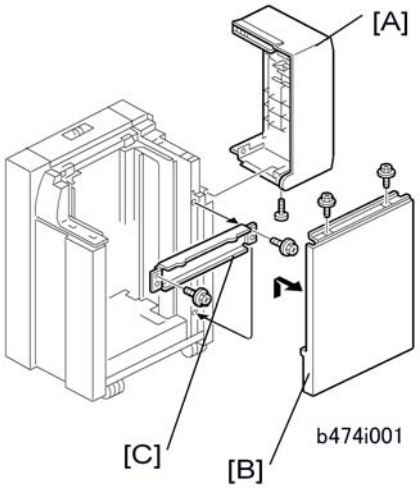
Description	Q'ty
1. Tapping screws - M4x8	4
2. Tapping hex screws - M4x8	6
3. Harness clamp	1
4. B4/LG frame	1
5. Front bracket	1
6. Rear bracket	1
7. Bottom plate extension	1
8. Cover	1

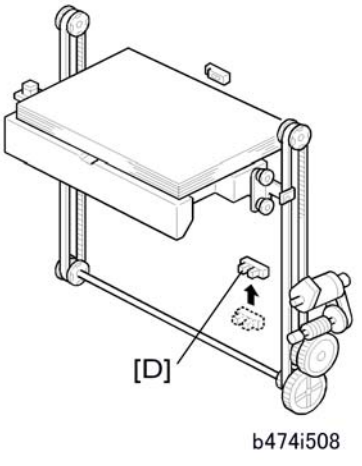
Installation

LCT Connected to the Machine

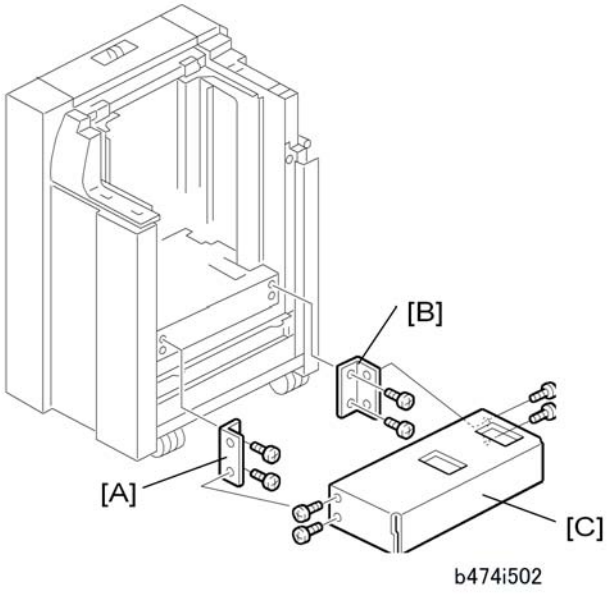
⚠WARNING

- Turn the machine off and disconnect the machine power cord before you start this procedure.





1. If the LCT is connected to the copier:
   - Open the cover and remove the paper.
   - Close the cover.
   - Turn the main power switch off.
   - Disconnect the LCT from the copier.
2. Remove the LCT cover [A] (x 1).
3. Remove the right cover [B] (x 2).
4. Remove the right stay [C] and attach it below (x 2).
5. Change the position of the lower limit sensor [D] (x 1).
6. Attach the harness clamp (not shown) to the rear of the plate. Use this clamp to hold the sensor connector wire.

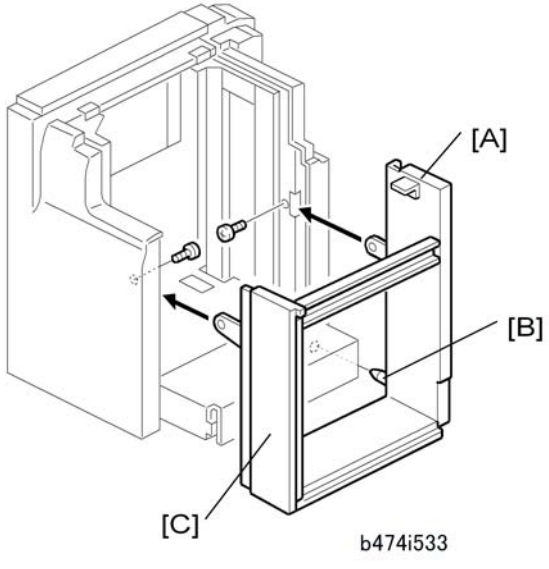


7. Attach the front bracket [A] with the beveled corner down (x 2).

Note

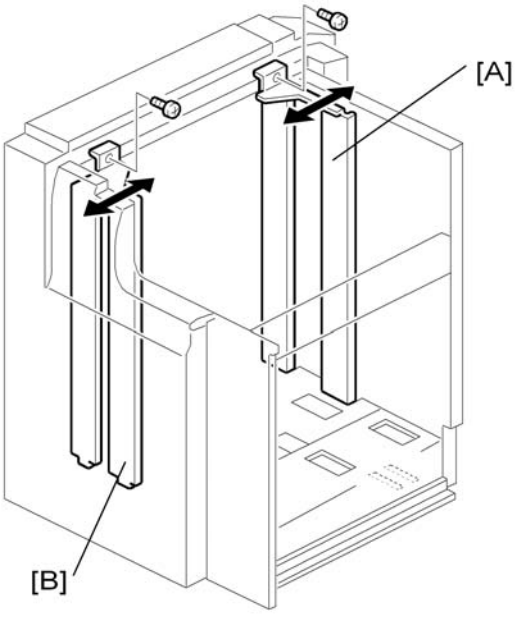
- If the brackets are not easy to install, lift the bottom plate with your hand.

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



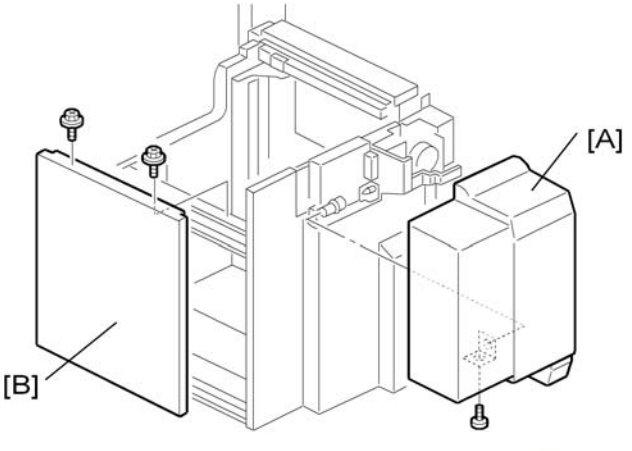
10. Remove the casters from the bottom of the B4/LG frame [A]
11. Align the positioning pin [B].

12. Attach the B4/LG frame [C] with the hex screws (x 2).



b474i555

13. Move the front side fence [A] and rear side fence [B] to the B4 or 8.5" position and attach it (x 1).



b474i506

14. Attach the cover [A] (8.5" x 14"/B4) (x 1).
15. Attach the right cover [B] (x 2).
16. Connect the LCT to the machine.
17. Turn the machine on.
18. Go into the SP mode and do **SP5959-2.**

19. Input "5" for B4 SEF or "6" for 8.5" x 14" SEF.

LCIT RT4000 (D350)

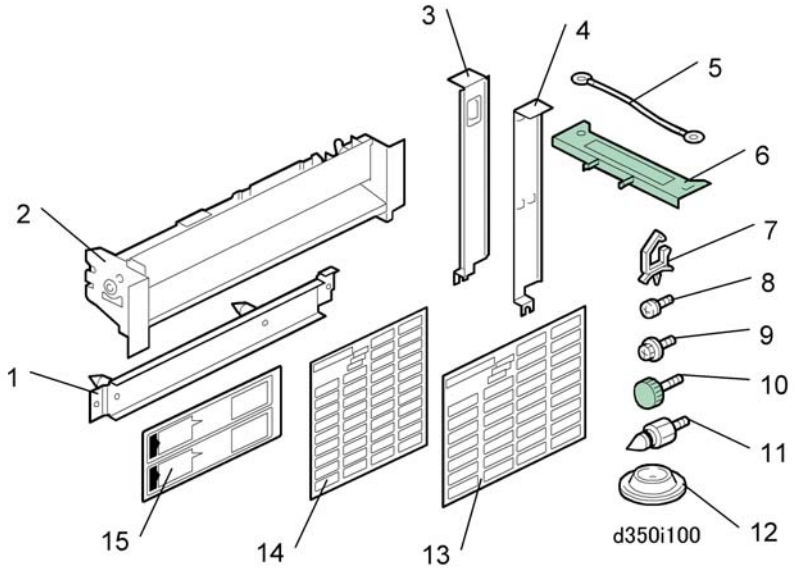
Accessories

Check the accessories and their quantities against this list.

Note

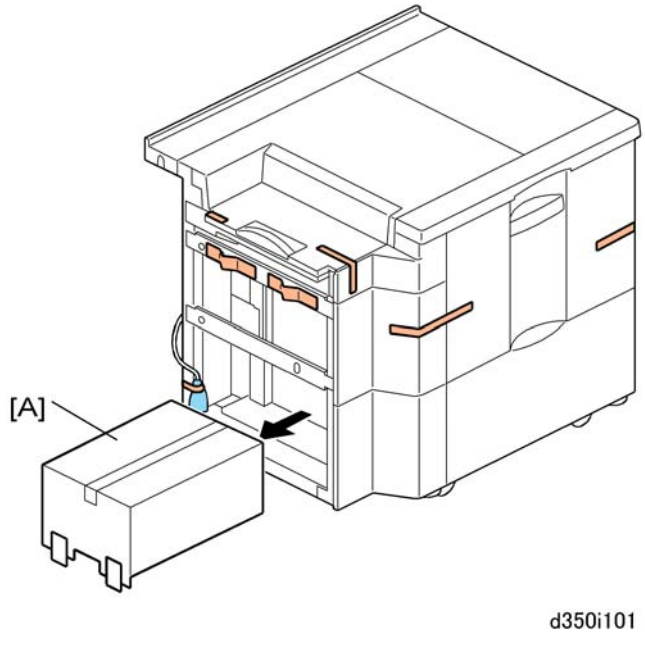
- The accessory box is inside the LCIT (see the next page).

	Description	Qty
1.	Stay	1
2.	Relay Unit	1
3	Left Side Fence	1
4.	Right Side Fence	1
5.	Ground Wire	1
6.	Tab Sheet Holder	1
7.	Clamp	1
8.	Screws (M4x8)	2
9.	Screws (M4x8)	3
10.	Screws (Plastic Head)	1
11.	Joint Brackets	2
12.	Shoes	4
13.	Paper Size Decals (A3...)	1
14.	Paper Size Decals (A5...)	1
15.	Paper Loading Decals	1
16.	InkJet Caution Decal	1



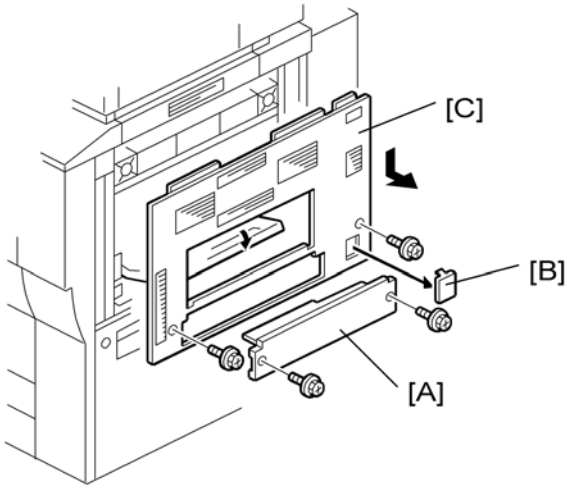
LCT Installation

Grounding and Preparing the LCT for Docking



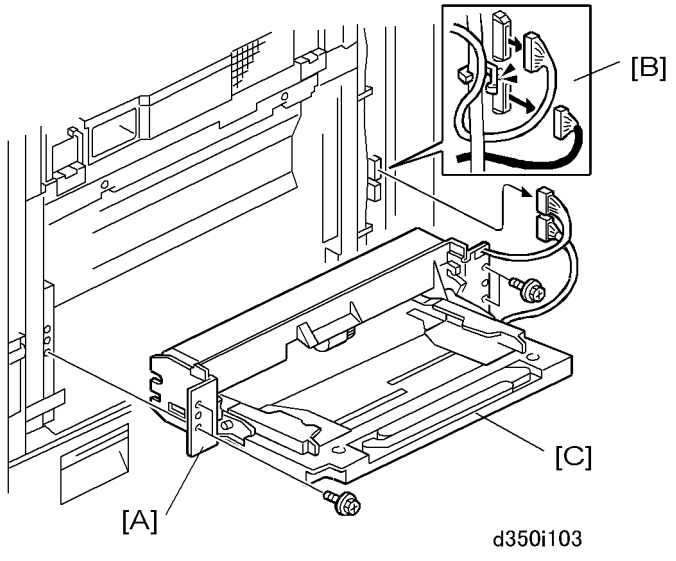
1. Remove the accessory box [A] from inside the LCIT.

2. Remove all tapes.



d350i102

3. Remove the paper entrance cover [A] (x2).
4. Remove the connector cover [B].
5. Remove the right upper cover [C] (x2).

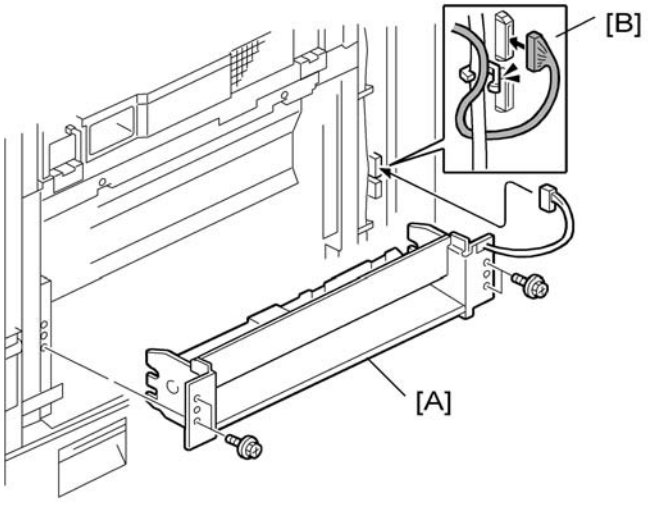


d350i103

6. Remove the plate [A] (x2).
7. Disconnect the bypass unit connectors [B] (x2).
8. Remove the bypass unit [C] (keep the screws) (x4).

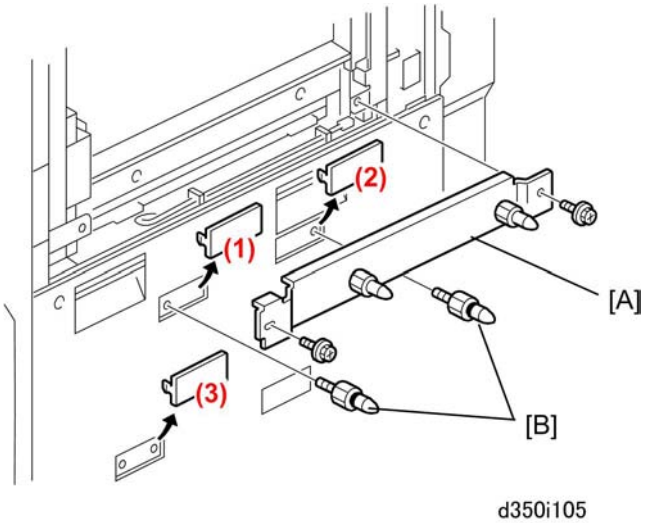
Note

- Do not throw away the bypass tray. The customer may need it again later.



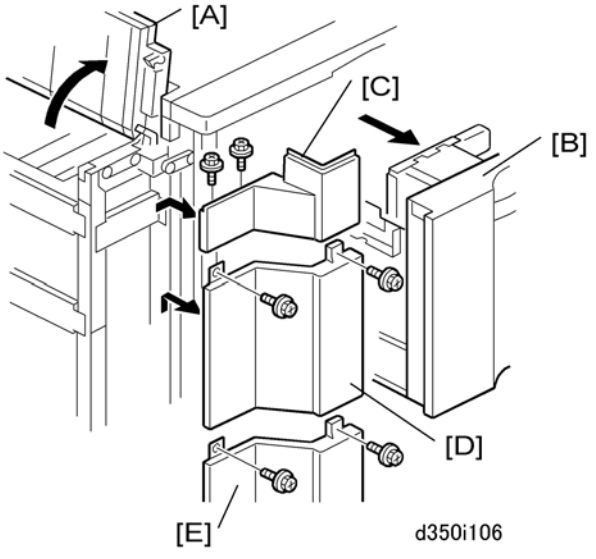
d350i104

9. Use the screws removed with the bypass tray to attach the relay unit [A] (x4).
10. Connect the relay harness [B] (x1).



d350i105

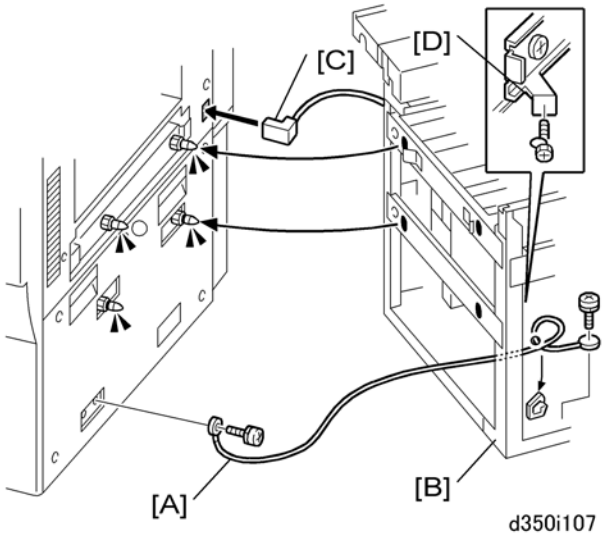
11. Remove knockouts: (1), (2), (3).
12. Attached the stay [A] with the provided screws (x2).
13. Attach the joint connection pins [B] (x2).
14. Re-attach the right upper cover.



15. On the LCT, raise the paper exit cover [A].
16. Pull the paper tray [B] about halfway out of the unit.
17. Remove the left corner cover (upper) [C] (x2).
18. Remove the left corner cover (middle) [D] (x2).
19. Remove the left corner cover (lower) [E] (x2).
20. Push the paper tray [B] into the LCIT.

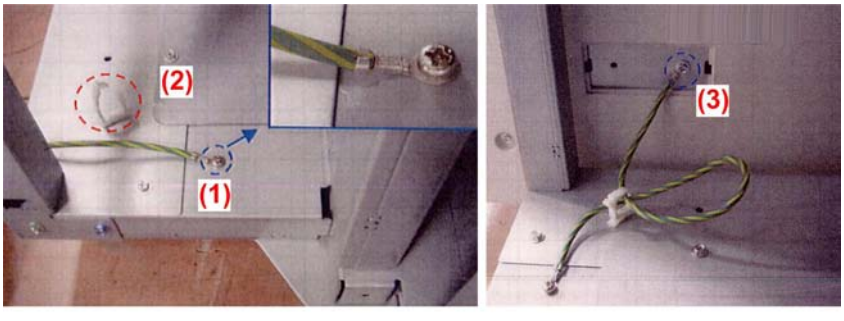
Important

- **The paper tray [B] must be pushed in now. If the paper tray remains out, the LCIT is unstable and difficult to move.**



d350i107

21. Attach the ground wire [A] to the main machine and LCIT (x2).



d350i107a

- On the LCIT, attach the ground wire (1) and clamp it at (2) (x1, x1).
- Attach the other end of the ground wire to the main machine at (3) (x1).

22. Push the LCIT [B] against the side of the main machine.
23. Connect the LCIT I/F cable [C] to the main machine (x1).
24. Fasten the screw to the lock plate [D] (x1).
25. Reattach the left corner plates (x2 each), push the paper tray into the LCIT, and close the paper exit cover.
26. If you are going to install the heaters, do this now. See the next section.

    -or-

    If you will not install the heaters, skip the next section.

After Installation

d350i120

The paper tray is large and heavy, especially when it is loaded to full capacity. Direct the customer to the warning sticker on the left side of the tray. The label is a reminder that two persons are needed to lift and handle the paper tray safely.

Anti-Condensation Heater Type B: 120V

Accessory Check

No.	Description	Qty
1	PTC Heater 100V to 240V 13W	2

⚠CAUTION

- Unplug the machine power cord before starting the following procedure.
- Do the following procedure in order to prevent damage to the harnesses.
- Check that the harnesses are not damaged or pinched after installation.

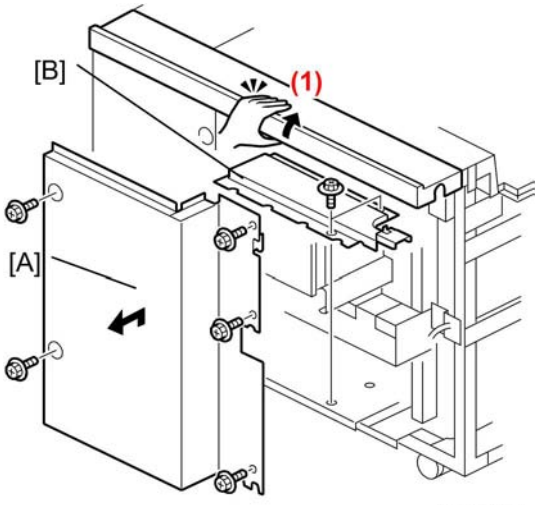
The correct wire heaters must be installed for the machine.

Main Machine	PTC Heater	Harness Color
D081-17 only (120V)	100V to 240V 13W (D3500900)	WHITE

Installation Procedure for 120V

1. Confirm that the heater unit is the correct type for the machine:

- 120V Model: Both connector harnesses are WHITE. (Use for this installation.)



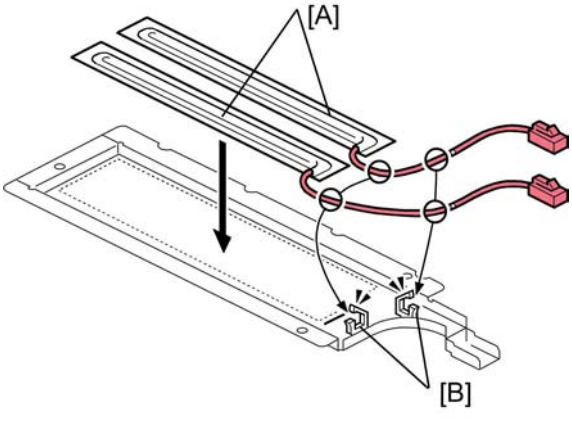
d350i151

- 208 - 240V Model: Both connector harnesses are RED. (Do not use for this installation.)

2. At the back of the LCIT, remove:

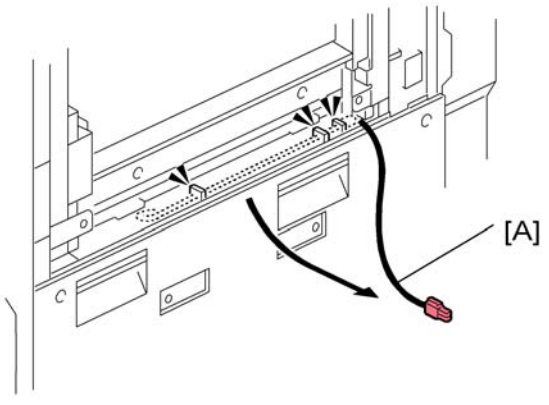
   [A] Rear cover (x5). Lift cover (1) to remove rear cover.

   [B] Heater cover (x2)



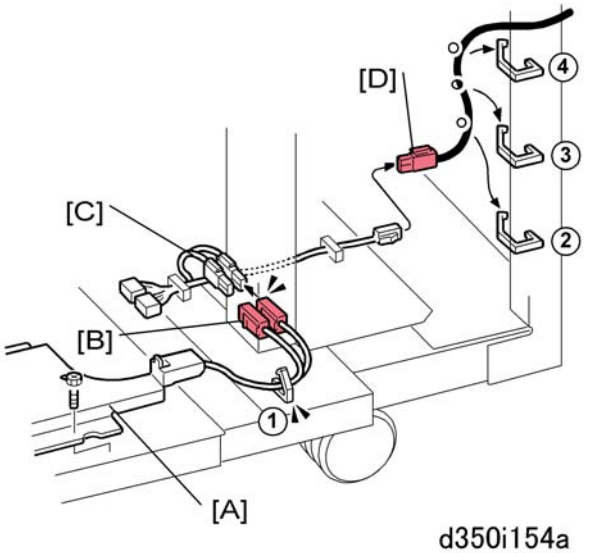
d350i152

3. Remove the seals from the bottom of the heater units [A] and attach the heaters to the heater cover.
4. Confirm that the heaters are not touching or overlapping.
5. Route both harnesses through the clamps [B] and fasten the clamps.



d350i153

6. Pull the heater connection harness [A] away from the right side of the main machine.



d350i154a

7. Fasten the heater cover [A] to the base plate (x2).
8. Connect the heater harnesses [B] to the relay harness [C] (x2).
9. Connect the harness from the main machine [D] to the relay harness [C] (x1).
10. Clamp the harnesses (1) to (4) (x4).

Anti-Condensation Heater Type B: 240V

Accessory Check

No.	Description	Qty
1	Nichrome Wire Heater 230V 18W	2

⚠CAUTION

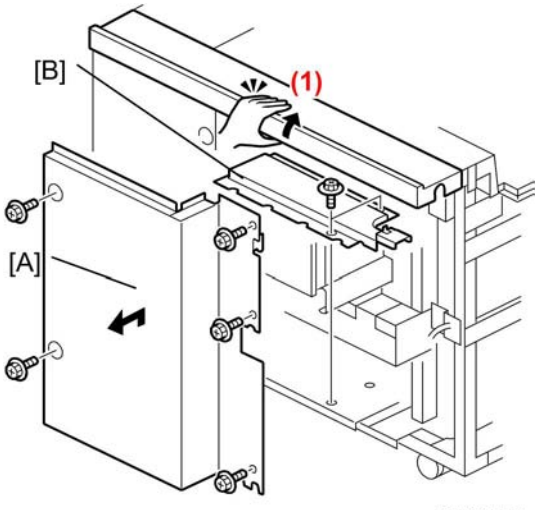
- Unplug the machine power cord before starting the following procedure.
- Do the following procedure in order to prevent damage to the harnesses.
- Check that the harnesses are not damaged or pinched after installation.

The correct wire heaters must be installed for the machine.

Machine	Nichrome Wire Heater	Harness Color
D082-17 (208V-240V) D081-19, -27, -29 (220V-240V) D082-19, -21, -27, -29 (220V-240V)	230V 18W (D3500901)	RED

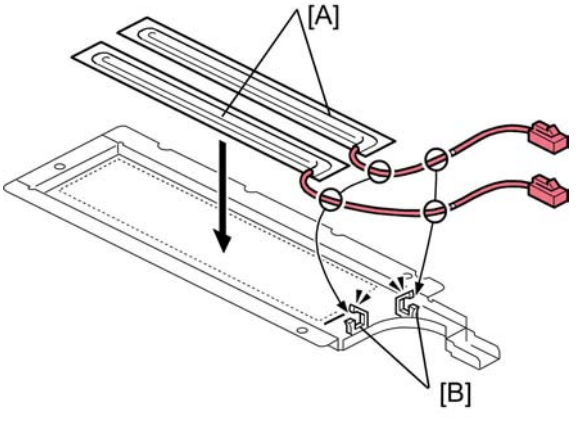
Installation Procedure for 240V

1. Confirm that the heater unit is the correct type for the machine:
    - 120V Model: Both connector harnesses are WHITE. (Do not use for this installation.)
    - 208V-240V Model: Both connector harnesses are RED. (Use for this installation.)



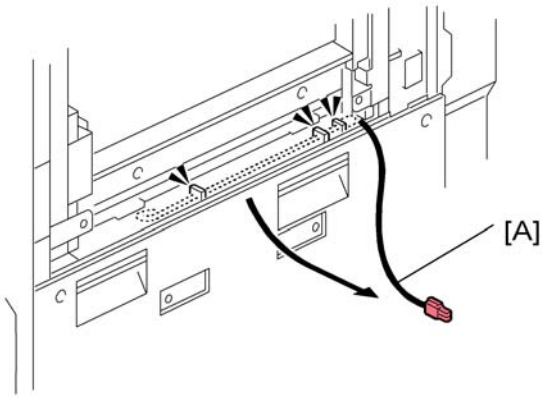
d350i151

2. At the back of the LCIT, remove:
   [A] Rear cover (x5). Lift (1) to remove the rear cover.
   [B] Heater cover (x2)



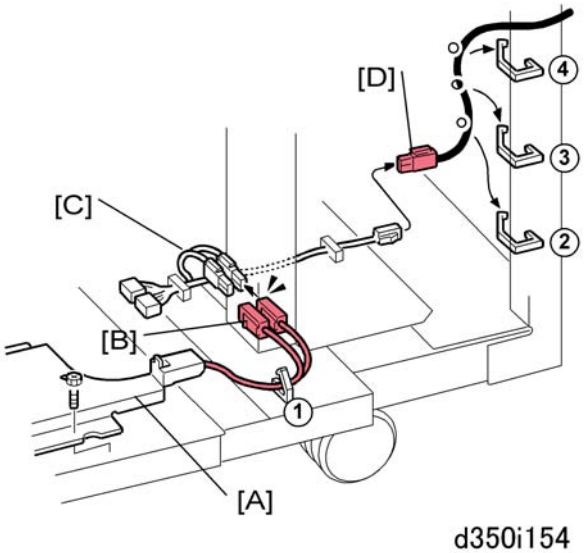
d350i152

3. Remove the seals from the bottom of the heater units [A] and attach the heaters to the heater cover.
4. Confirm that the heaters are not touching or overlapping.
5. Route both harnesses through the clamps [B] and fasten the clamps.



d350i153

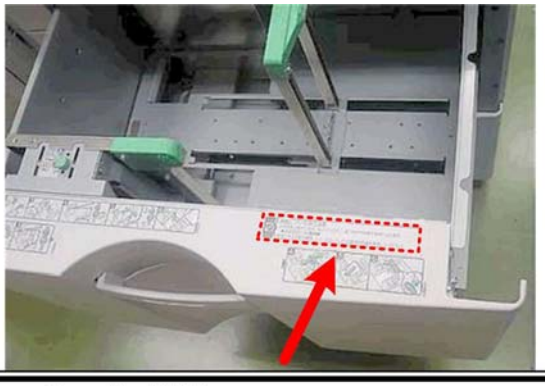
6. Pull the heater connection harness [A] away from the right side of the main machine.

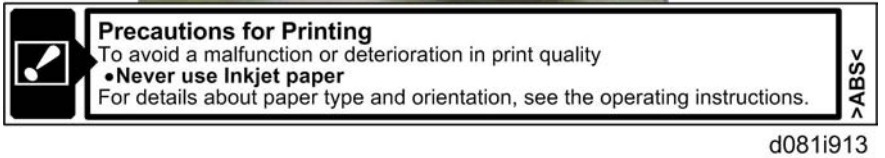


d350i154

7. Fasten the heater cover [A] to the base plate (x2).
8. Connect the heater harnesses [B] to the relay harness [C] (x2).
9. Connect the harness from the main machine [D] to the relay harness [C] (x1).
10. Clamp the harnesses as shown (x4).

Decals





d081i913

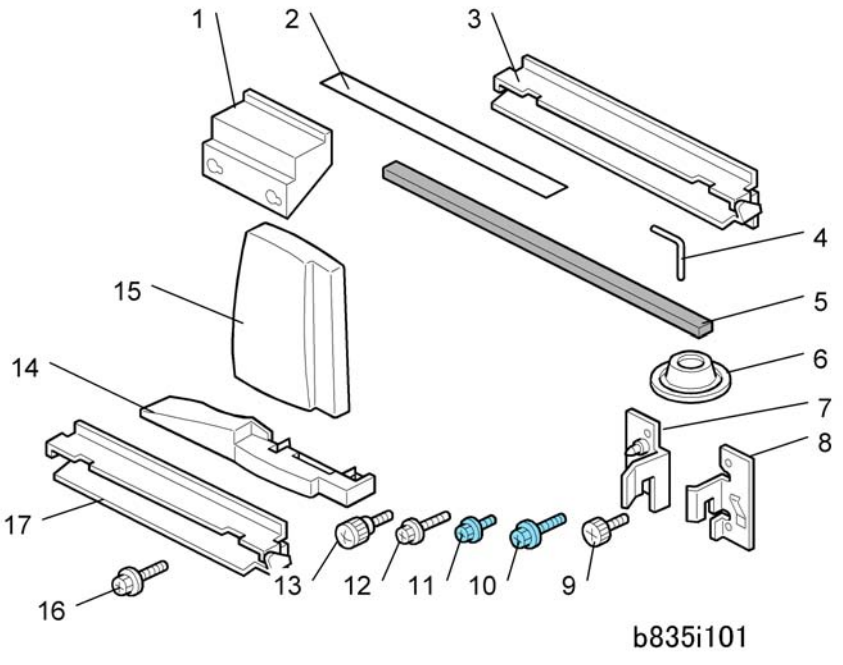
1. Open the paper tray and attach the InkJet caution decal for your language to the right side.

Cover Interposer Tray CI5000 (B835-57)

Accessories

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

	Description	Q'ty
1.	Spacer	1
2.	Black Mylar	1
3.	Relay Guide Plate – Long (for B234/B235/B236)	1
4.	"L" Hinge Pins (Tray Unit Front Cover)	2
5.	Sponge Strip	1
6.	Leveling Shoes	4
7.	Rear Docking Bracket	1
8.	Front Docking Bracket	1
9.	Flat Knob Screw	1
10.	Screw (M4 x 8)	4
11.	Screw (M3 x 6)	2
12.	Screw (M4 x 12)	2
13.	Knob Screw	3
14.	Base Cover (Tray Unit)	1
15.	Rear Cover	1
16.	Screws (M4 x 14)	4
17.	Relay Guide Plate – Short (for D014/D015/D081/D082)	

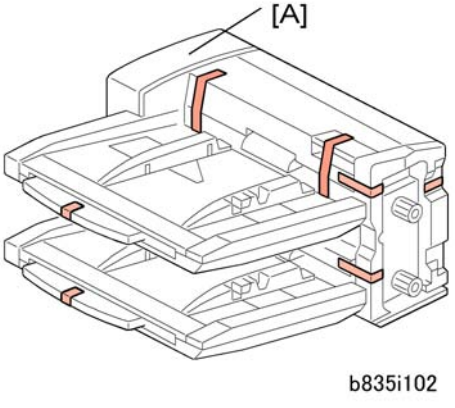


Installation

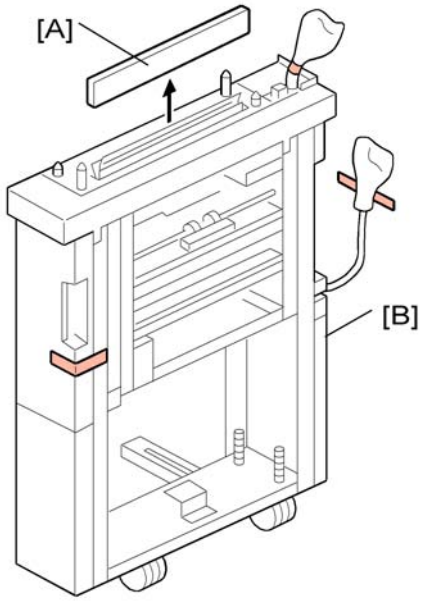
Setting up the Unit and Docking to the Copier

⚠CAUTION

- Unplug the power cord before starting the following procedure.

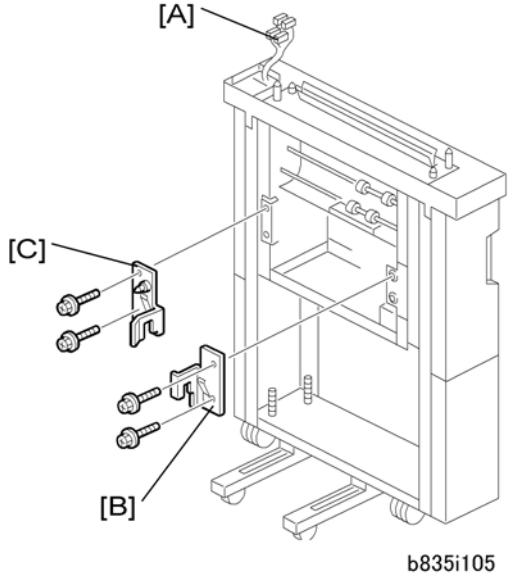


1. Remove all the tape and shipping materials from the tray unit [A].



b835i103

2. Remove cover [A].
3. Remove all tape and shipping materials from the transport unit [B].



b835i105

4. Confirm that the connectors [A] are free.
5. Attach the front docking plate [B] (x2).

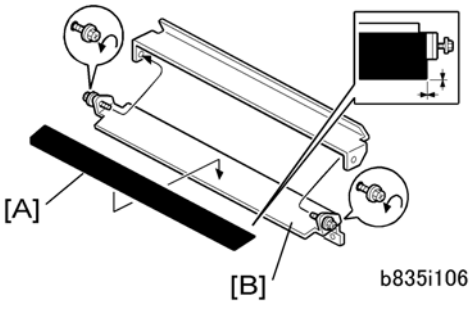
Important

- You must use the M4 x 14 screws.

6. Attach the rear docking plate [C] (x2). These are the docking plates for the next device to be installed in the paper feed line.

Important

- You must use the M4 x 14 screws.



7. Attach the black mylar [A] to the relay guide plate [B] of the next finishing device to be installed to the left of the cover interposer tray.

Important

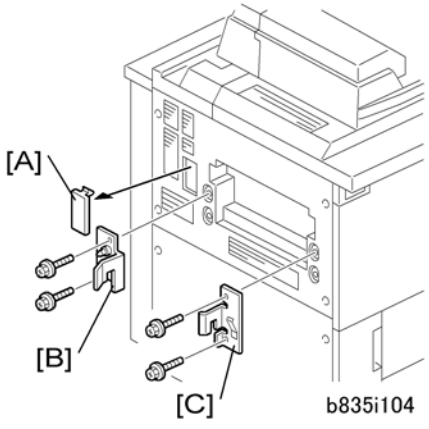
- Do not attach this mylar to either the long or short guide plates provided with the cover interposer tray accessories.

8. Peel the tape from the back of the sponge strip [A] and attach it as shown.
9. Attach the relay guide plate [B] (x2).

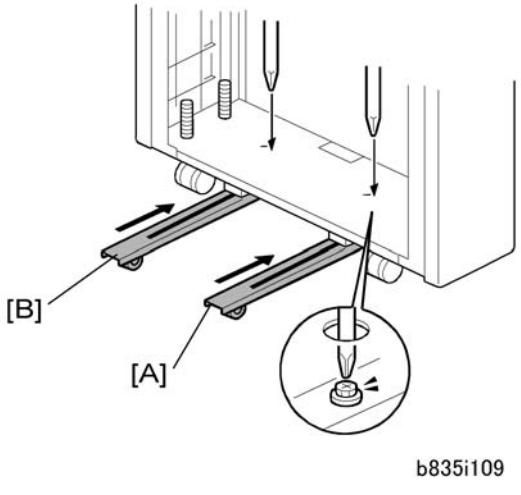
Important

- You must use the Relay Guide Plate – Short (12-in.)

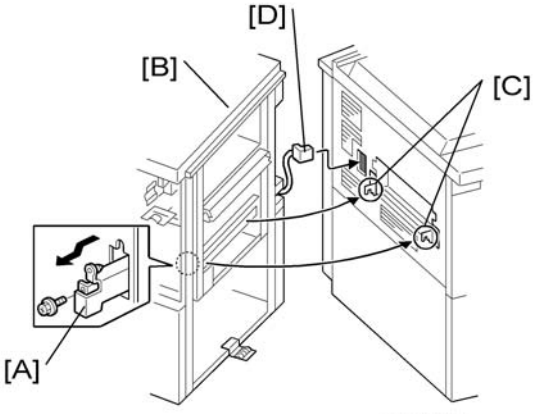
10. Remove the ground plate [C] from the bottom cross-piece (x2).
11. Turn the ground plate over.
12. Reattach the ground plate with the same screws as shown (x2).



13. Remove the interface connector cover [A].
14. Attach the rear docking bracket [B] (x2).
15. Attach the front docking bracket [C] (x2).



16. Push the runners [A] and [B] in and re-fasten them again with the screws.



17. Open the front door of the cover interposer tray.
18. Pull out the locking lever [A].
19. Align the finisher [B] with the joint brackets [C], then slowly push the finisher onto the brackets.
20. Connect the finisher cable [D] to the copier
21. Push in the locking lever.
22. Check that the top edges of the finisher are parallel with edges of the finisher (or copier) to the right.
23. Fasten the locking lever [A] (x 1)
24. Close the front door.

Docking the Next Peripheral Device

The next peripheral device to the left of the cover interposer tray must be installed before you can mount the tray unit on top of the transport unit of the cover interposer tray.

- The tray unit of the cover interposer tray is supported by the top of the next peripheral device in line to the left, as well as the transport unit of the cover interposer.
- The next peripheral device to the left of the cover interposer must be set up and docked to the cover interposer before the transport unit of the cover interposer can be mounted.

Connect the next peripheral unit now.

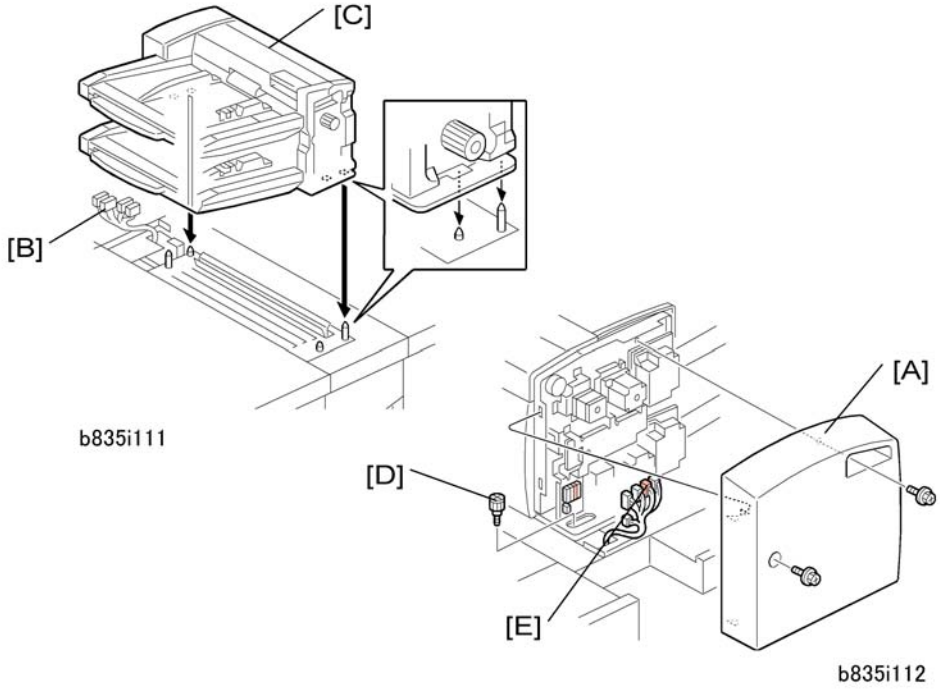
- 3000-Sheet Finisher B830 (See "3000-Sheet Finisher B830" in this section)

⚠CAUTION

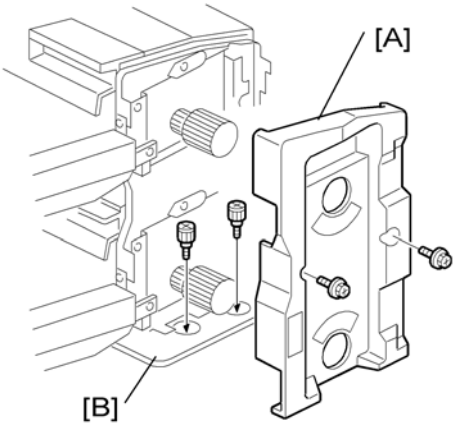
- Never attempt to mount the cover interposer tray unit until the next device in line has been docked to the transport unit (base) of the cover interposer tray.
- To prevent bending the frame of the tray unit and damaging its alignment, always remove the tray unit from the cover interposer tray transport unit: (1) Before disconnecting either the cover interposer

tray or the next peripheral device to the left, or (2) Before doing any maintenance on either the cover interposer tray or the next peripheral device to the left.

Mounting the Tray Unit

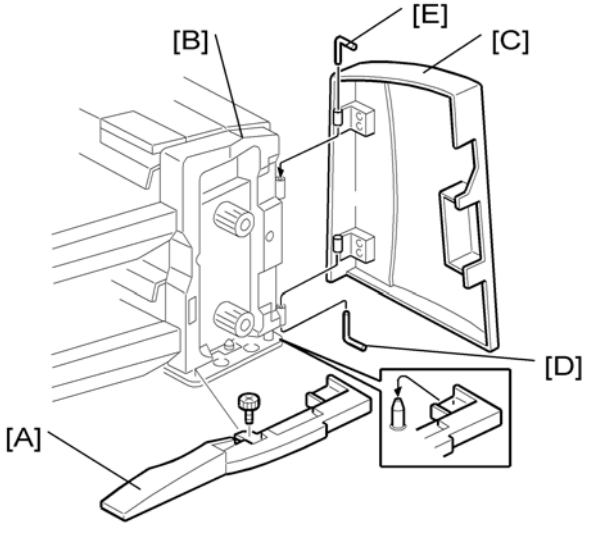


1. Remove the rear cover [A] (x2).
2. Confirm that the connectors [B] are free.
3. Place the tray unit [C] on top of the cover interposer transport unit.
4. Attach the knob screw [D] (x1).
5. Connect the harness connectors [E] (x5)
6. Reattach the rear cover.



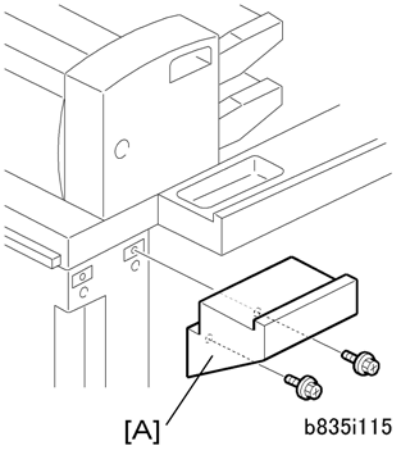
b835i111a

7. Remove the front inner cover [A] from the dual-tray unit (x2).
8. Fasten the tray unit to the top of the transport unit with the knob screws [B] (x2).

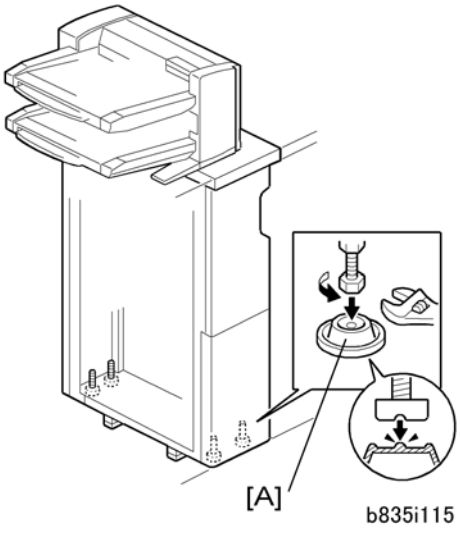


b835i113

9. Attach the base cover [A] (x1).
10. Confirm that the holes in the cover match the positions of the reference pins.
11. Re-attach the front inner cover [B] (removed at step 7 above).
12. Position the tray unit front door [C] so that its hinges match the posts on the frame of the tray unit.
13. Hold the lower L-pin [D] as shown, insert it halfway, push it up, then rotate it into its groove.
14. Hold the upper L-pin [E] as shown, insert it halfway, push it down, then rotate it into its groove.

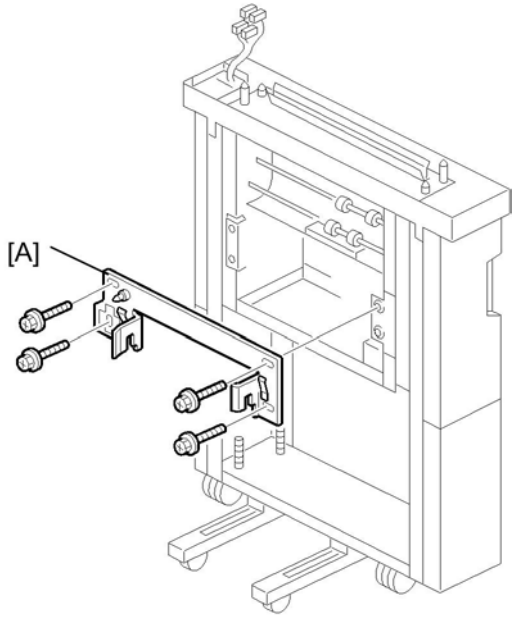


15. Attach the spacer [A] to the rear of the transport unit (x2).



16. Set the leveling shoes [A] (x4) under the feet.
17. Turn the nuts to adjust the height of the cover interposer until it is level.

Docking the Cover Interposer Tray B835



b830i203

1. Fasten the joint bracket [A] to the cover interposer tray (x4).
2. Dock the finisher.

Firmware Update

Install the latest version of the firmware for the cover interposer tray.

The cover interposer may not operate correctly with the D081/D082 unless the most recent version of the firmware is installed.

North America Only

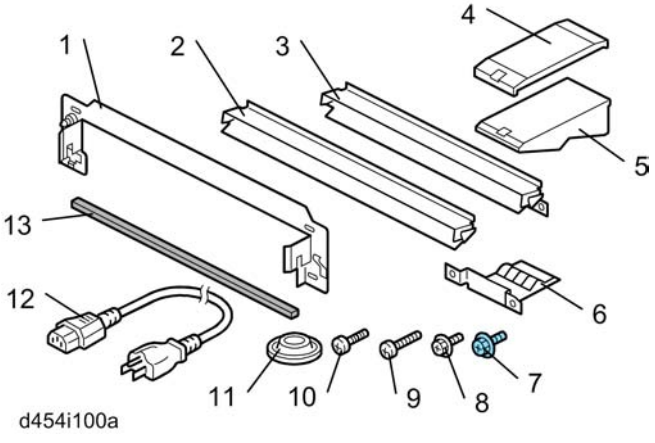
When the Cover Interposer Tray (B835) is installed, be sure to check the FCC Class-A decal is attached to the copier below its serial number decal.

- This decal is included with the Finisher Adapter (D375) because the Cover Interposer Tray CI5000 (B835) is always installed with Finisher Adapter (D375) and the 3000-Sheet Finisher (B830).
- For more details see "3000-Sheet Finisher (B830), Finisher Adapter (D375)" in this installation section.

Multi Folding Unit (D454)

Accessories

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



No.	Description	Q'ty
1.	Joint Bracket	1
2.	Paper Guide – Long (for D059, D060, D061, M002/M003/M004)	1
3.	Paper Guide – Short (for D062/D063/D065/D066/D081/D082)	1
4.	Proof Tray Auxiliary Plate - Top	1
5.	Proof Tray Auxiliary Plate – Bottom	1
6.	Ground Plate	1
7.	Screws M3x6	2
8.	Screws M3x6	2
9.	Screws M4x20	4
10.	Screws M4x14 (Not Used)	4
11.	Leveling Shoes	5
12.	Power Cord*1	1
13.	Sponge Strip	1

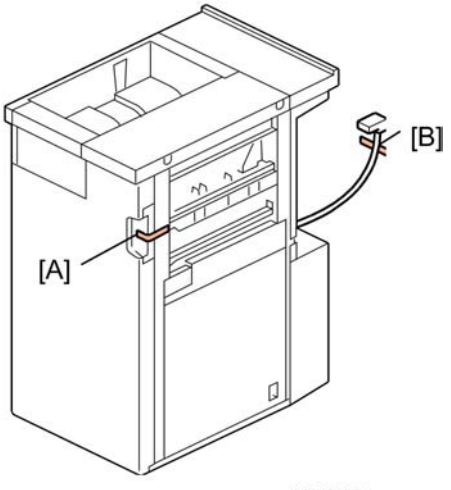
*1: If this unit is used in China, do not use the power cord provided. Contact a supervisor and obtain the correct type of power cord for use in China.

Installation

⚠CAUTION

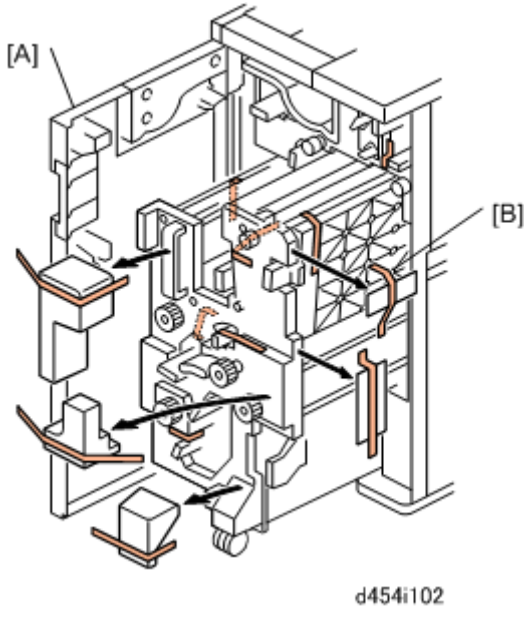
- The unit must be connected to a power source that is close to the unit and easily accessible.
- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

Tapes



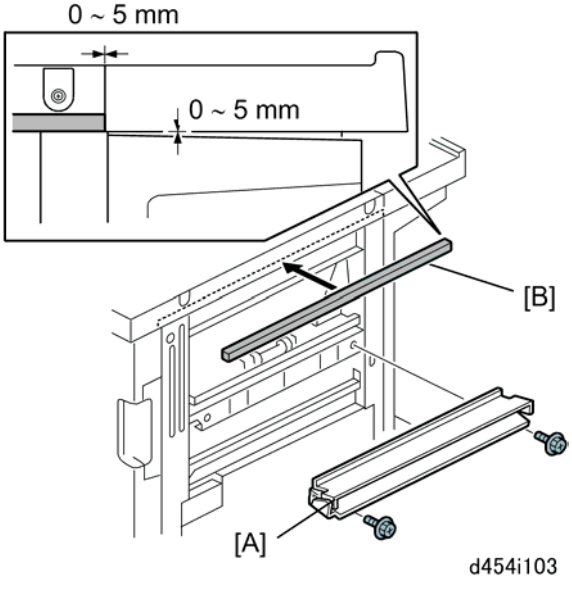
d454i101

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



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

Paper Guide, Sponge Strip



1. Select the **short guide** for this installation.
    - Two paper guides are provided.

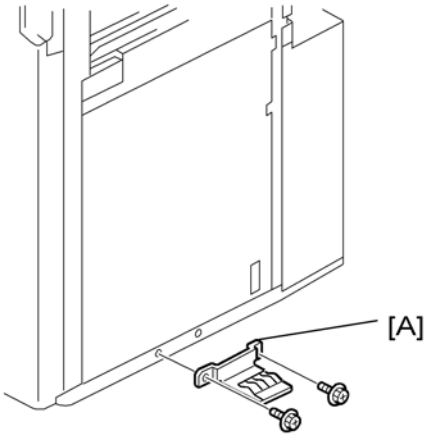
- The long paper guide is for another machine

Important

- **If the upstream peripheral device is the Cover Interposer Tray (B835), attach the black mylar provided with the cover interposer tray to this paper guide.**

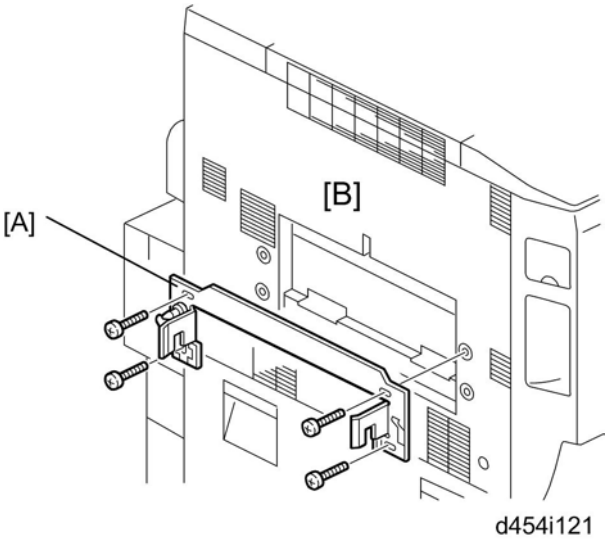
2. Attach the long paper guide [A] (x2 M3x6).
3. Peel the tape from the sponge strip [B] and attach the strip to the top right edge of the unit.

Ground Plate

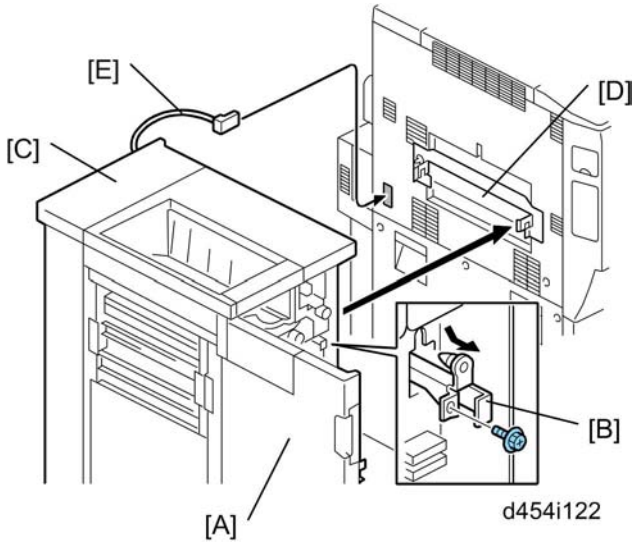


1. Attach the ground plate [A] to the lower right edge of the unit (x2 M3x6).

Docking



1. Fasten the joint bracket [A] to the left side of the main machine [B] (x4 M4x20).

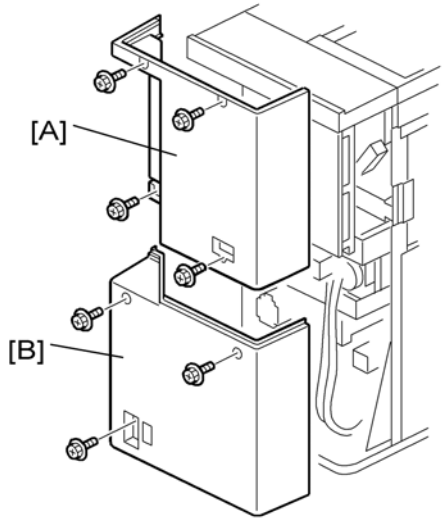


2. Open the front door [A].
3. At the front right corner, remove the screw of the lock bar [B] (x1 M3x6). **Keep this screw.**
4. Push in the lock bar.
5. Slowly push the unit [C] against the left side of the main machine so that the lock bar is directly and squarely under the arms of the joint bracket.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

8. Connect the I/F cable [E] to the upstream unit.

Note

- Do the following steps only if the upstream unit is the Cover Interposer Tray.

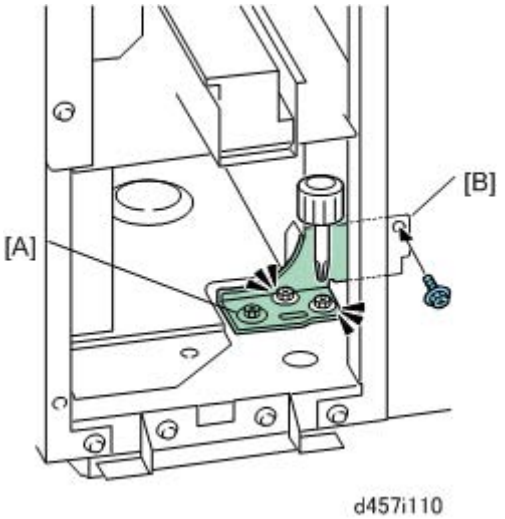


d454i106

9. Remove:

   [A] Rear upper cover (x4)

   [B] Rear lower cover (x3)



d457i110

10. Remove the rear cover of the upstream unit.
11. Use a short screwdriver to loosen bracket [A] (x2).
12. Fasten the bracket to the upstream unit at [B] (x1).

13. Tighten the screws (x3).
14. Re-attach the rear covers.

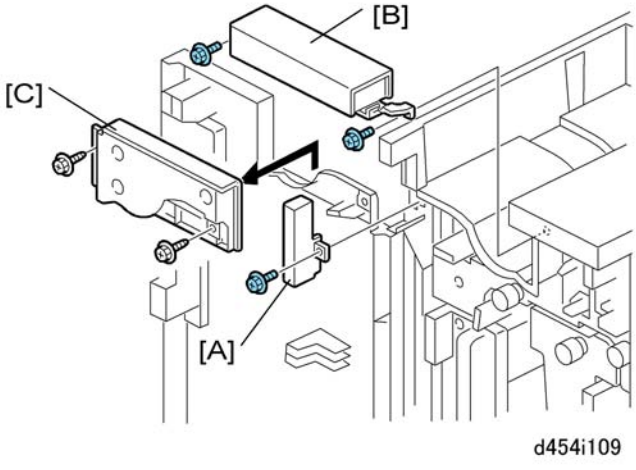
Removing Parts for the Cover Interposer Tray (B835)

Three parts must be removed before the tray unit of the cover interposer tray can be mounted on top of the Multi Folding Unit.

1. Open the front door.

Important

- **The following parts require removal only if the upstream unit is the Cover Interposer Tray (B835).**
- **These parts must be removed so that the tray unit of the Cover Interposer Tray will fit on top of the Multi Folding Unit.**



2. Remove:

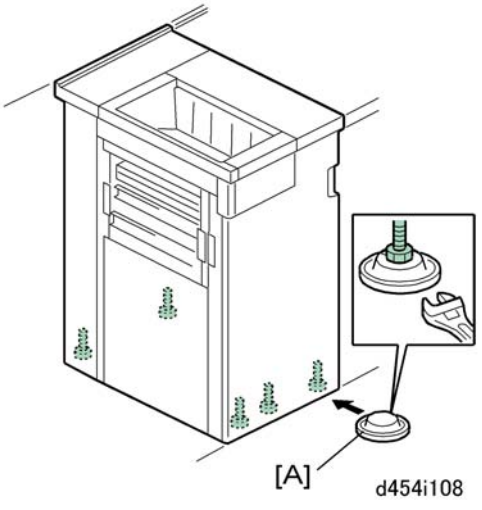
   [A] Bracket (x1)

   [B] Cross-piece (x2)

   [C] Metal plate from the door (x2)

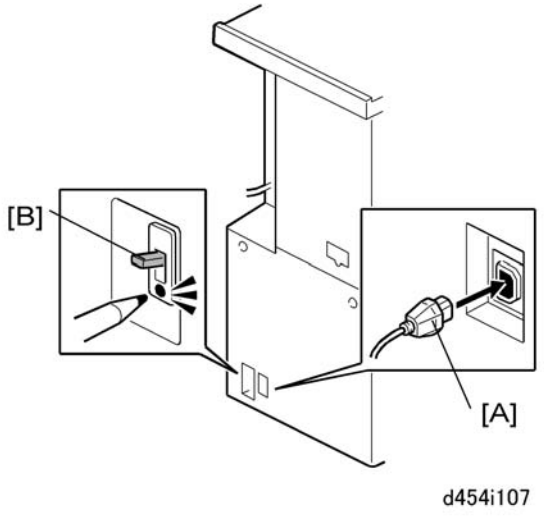
3. After removing [B] and [C], reattach [A].

Height Adjustment



1. Set the leveling shoes [A] (☛ p.234 "Common Adjustments").
2. Adjust the height of the unit and make sure that it is level.

Power Cord, Breaker Switch Test



1. Insert the power cord socket [A] into the power connection point.

Important

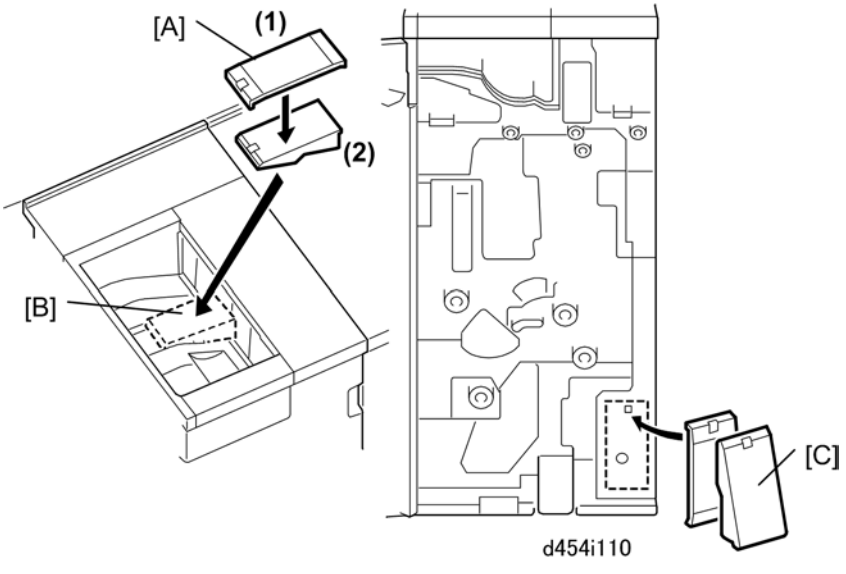
- In case of using this unit in China, do not use the power cord in the accessories of the Multi Folding Unit (D454). Ask your supervisor and use a power cord specified for China's usage.

2. Connect the power supply cord plug into a power outlet.
3. Test the breaker switch [B] (☛ p.234 "Common Adjustments").

Check for Skew and Correct Side-to-Side Registration

1. Load some B4 paper in Tray 2 of the main machine.
2. Make several prints that will exit to the upper tray.
3. Watch each sheet as it exits the machine to check for the presence of skew, and check that the side-to-side registration is correct (☛ p.234 "Common Adjustments").

Proof Tray Auxiliary Plate



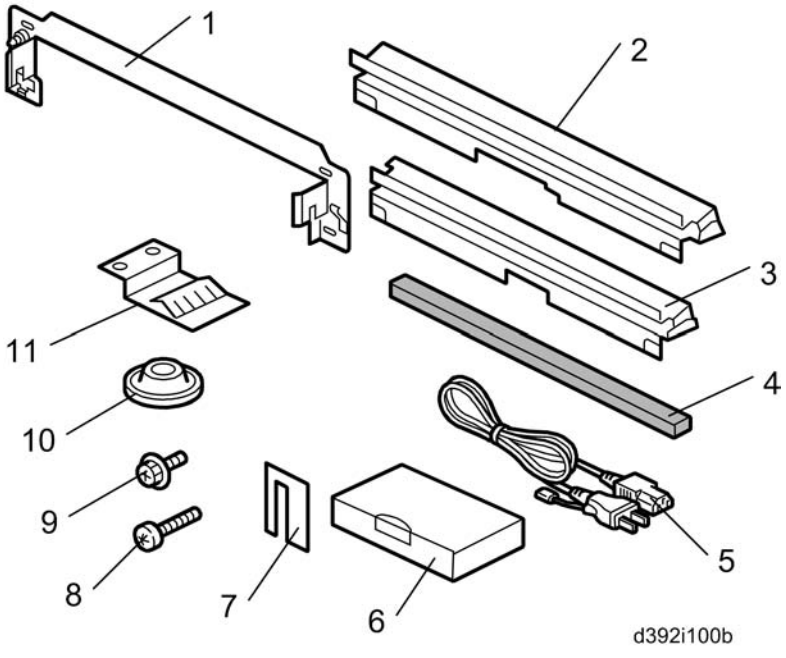
1. Install the proof tray auxiliary plate.
   - Assemble the top (1) and bottom (2) of the plate [A].
   - Set the assembled plate in the center aligned with the diagonal groove at [B].
   - The back should be flat against the end fence.
2. When the plate is not being used, open the front door and store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

Ring Binder (D392) Installation

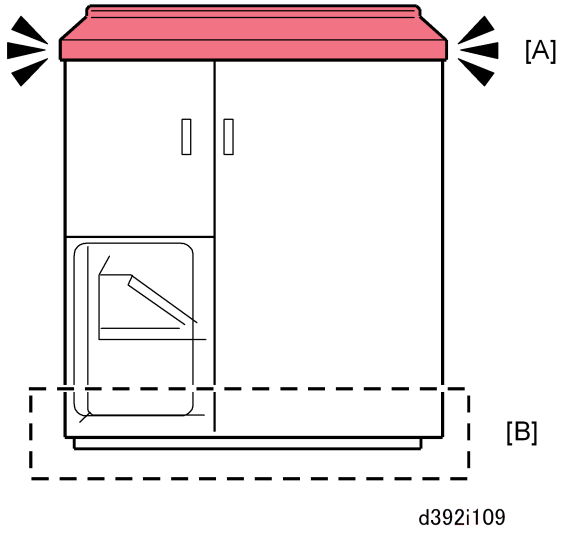
Accessories

Check each accessory against the list below to make sure that you have everything.

No.	Item	Q'ty
1.	Docking Bracket	1
2.	Entrance Guide Plate: Long 13" (**Not Used for D081/D082**)	1
3.	Entrance Guide Plate: Short 12" (**Use for D081/D082**)	1
4.	Sponge Strip	1
5.	Power Cord	1
6.	Ring Opener	1
7.	Ring Supply Level Indicator	1
8.	Tapping Screws (M4 x 14)	4
9.	Tapping Screws (M4 x 6)	4
10	Leveling Shoes	4
11	Ground (Earth) Plate	1



Before You Begin



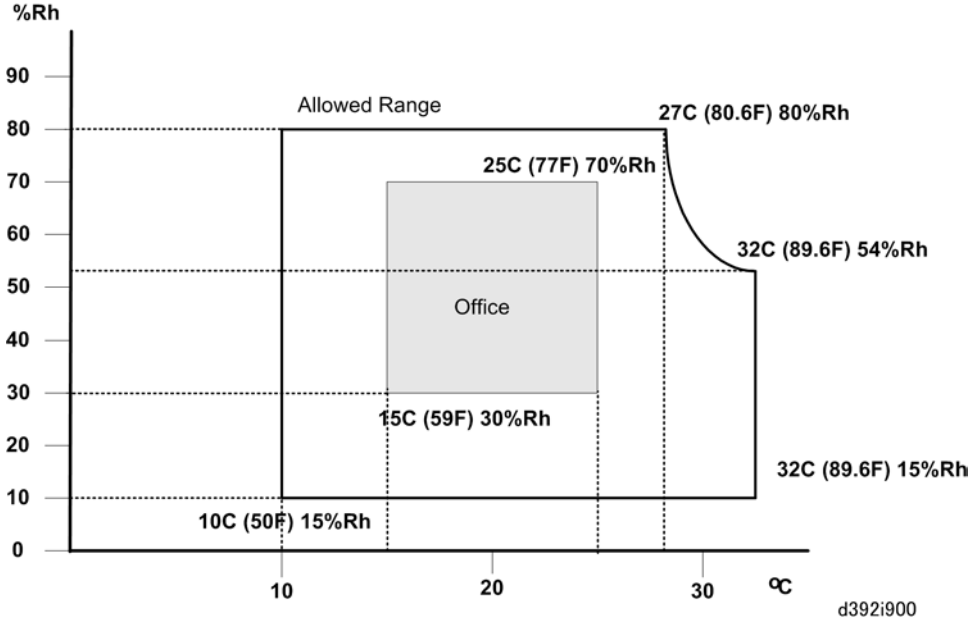
The finisher weighs 140 kg (308 lb.).

IMPORTANT: To prevent bending or breaking the top cover, never lift the finisher by its top cover [A]. Always raise the finisher from the base [B].

Installation Requirements

Operating Environment

1. Temperature Range
   - Allowed: 10°C to 32°C (50°F to 90°F)
   - Recommended: 15°C to 25°C (59°F to 77°F) Rh 50%
2. Humidity Range:
   - Allowed: 15% to 80% Rh
   - Recommended: 30% to 70%
3. Ambient Illumination: Less than 1,500 lux (do not expose to direct sunlight or strong light.)
4. Ventilation: Air must be replaced a minimum of 3 times per hour
5. Ambient Dust: Less than 0.10 mg/m^3



6. If the installation area has air-conditioners or heaters, put the finisher in a location that agrees with these conditions:
   - Where there are no sudden temperature changes from low to high, or high to low.
   - Where it will not be directly exposed to cool air from an air conditioner in the summer.
   - Where it will not be directly exposed to reflected heat from a heater in the winter
7. Do not put the finisher where it will be exposed to corrosive gases.

8. Put the finisher on a strong and level surface. The front and rear of the machine must be less than 5 mm (0.2") away from level.
9. Do not put the finisher where there could be strong vibrations.
10. Do not connect the finisher to a power supply shared with other electrical devices.
11. The machine generates a strong electromagnetic field. This can cause interference with radio or television reception.

Machine Level

1. Front to rear: Less than 5 mm (0.2") away from level
2. Right to left: Less than 5 mm (0.2") away from level

   The finisher legs can be turned to adjust them up or down to make the machine level.

Minimum Space Requirements

The minimum clearances at the front and back are the same as the host machine.

Power Supply

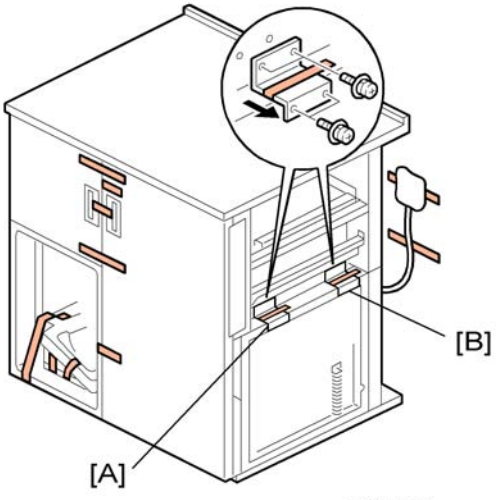
Input voltage level	100 to 240V 50/60 Hz NA: 120V 50/60 Hz 5A EU: 220 to 240V 50/60 Hz 3A

Important

- **The finisher must have an independent power source. Avoid multi-wiring.**
- **The finisher must be properly grounded at the power source.**

Installation Procedure

Remove All Shipping Materials

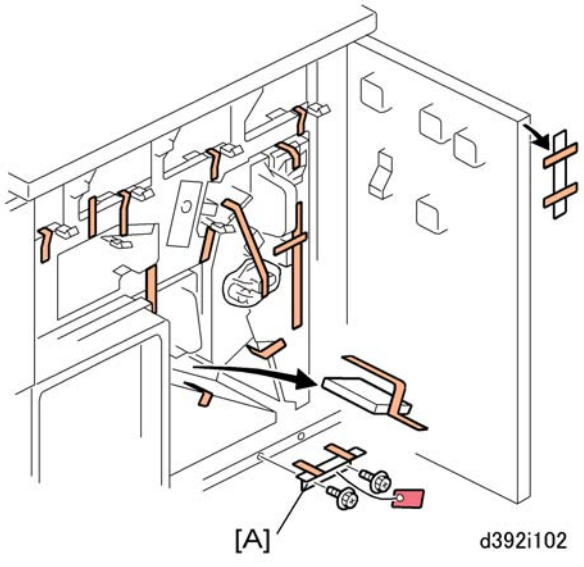


1. Remove all visible tapes, wrapping material, and cushions attached to the outside of the finisher and the power cord.
2. Remove:

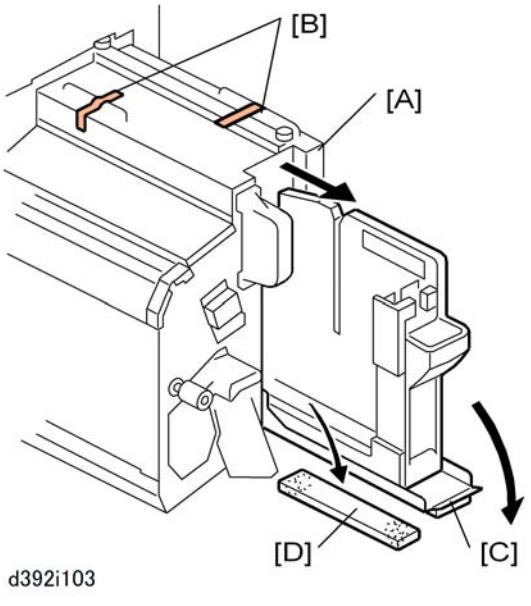
   [A] Brace x1 (x2)

   [B] Brace x2 (x2)

   IMPORTANT: Do not discard these braces. They must be reattached to the finisher before it is moved or shipped to another location.



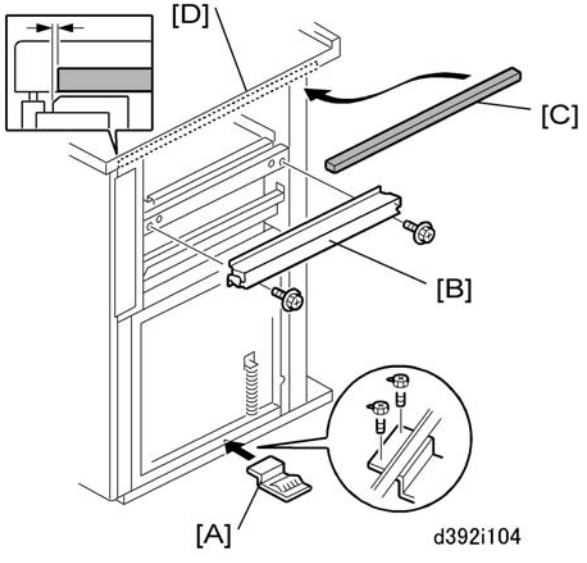
3. Open the right door and left door.
4. Remove all tapes and packing material.
5. Remove the brace and red tag [A] (x2).



6. Pull the binder unit [A] out of the finisher until it stops.
7. Remove the tape [B] on top of the finisher.
8. Pull down the ring cartridge handle and cover [C].
9. Pull the ring cartridge out and remove the cushion [D].

10. Push the ring cartridge in and close its cover.
11. Push the binder unit into the finisher.
12. Close the left front door and right front door.

Prepare the Finisher for Docking

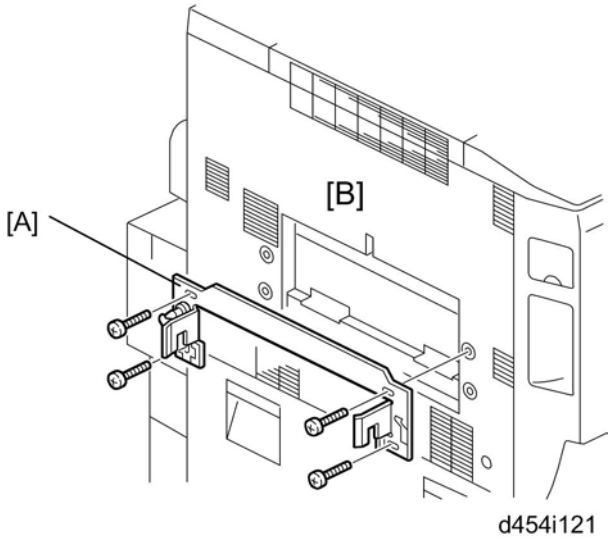


1. Attach the ground plate [A] (x2).
2. Attach the **short entrance guide plate** [B] (x2).
3. Remove the tape from the back of the sponge strip [C].
4. Attach the sponge strip to the top edge [D] of the finisher as shown above.

Prepare the Upstream Unit for Docking

The Ring Binder can be docked to one of the following:

- Main machine
- Multi Folder (D454)
- Cover Interposer (B835)

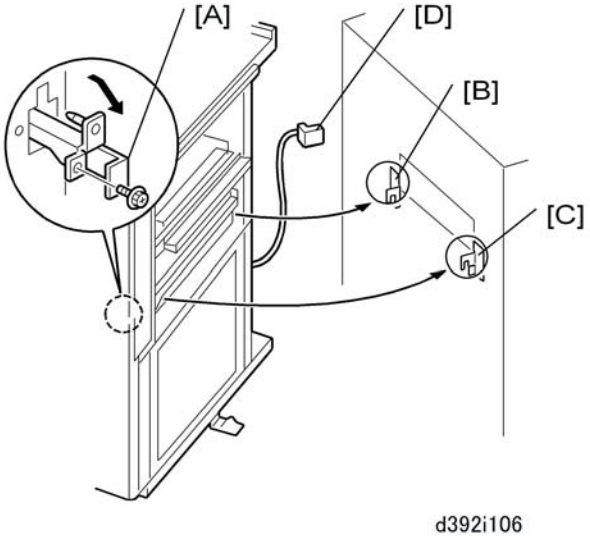


1. Attach the docking bracket [A] to the upstream unit [B] (M4x14 x4).

Note

- The illustration shows the left side of the main machine, but the procedure is the same for others.

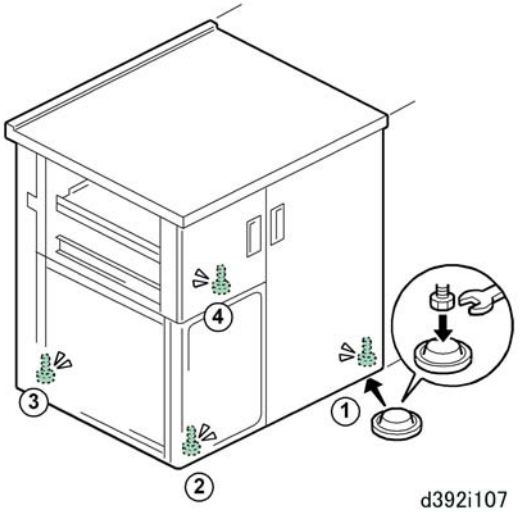
Dock the Finisher



1. Open the right door of the finisher.
2. Pull out the locking lever [A] (x1).

3. Align the right side of the finisher with the docking brackets [B] and [C] on the left side of the main machine, and then slowly push the finisher onto the brackets.
4. Connect the finisher I/F cable [D] to the main machine.
5. Push in the locking lever and check that it slides into the slots of the docking brackets.
6. Check that the top edge of the finisher is parallel with the left edge of the main machine.
7. Refasten the locking lever [A] (x1) and close the right front door.

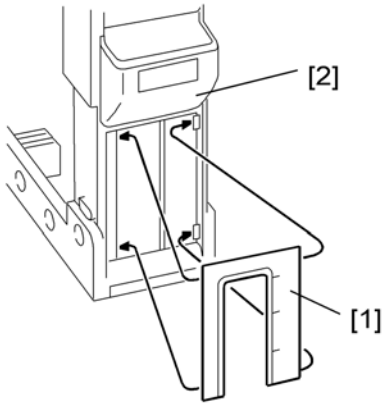
Install the Shoes and Level the Finisher



1. Set the leveling shoes (x4) under the feet of the finisher.
2. Open the right front door and left front door.
3. Place a level on the frame
4. Use a wrench to turn the nut at each foot until the machine is level.

Attach Ring Supply Level Indicator

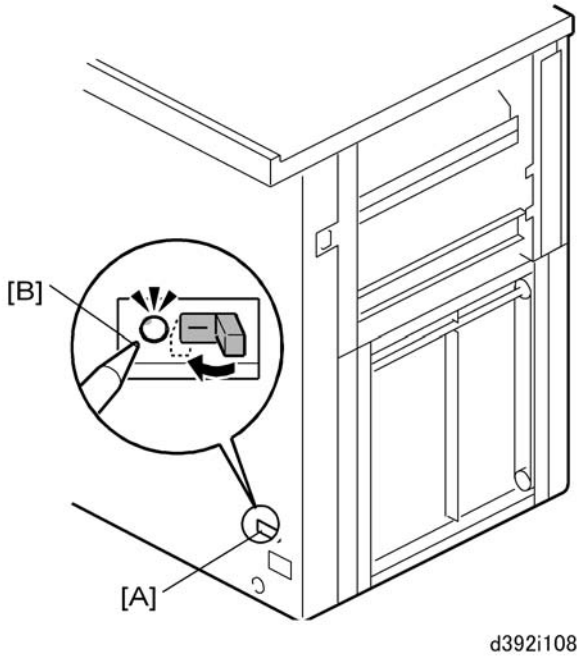
1. Open the front door.
2. Pull out the ring binder.
3. Lift the ring supply cartridge out of the top of the binder unit.



d392i110

4. Set the ring supply level indicator [1] behind the tabs on the side of the ring supply cartridge [2].

Test the Breaker Switch



d392i108

1. If the main machine is on, turn it off.
2. Confirm that the breaker switch [A] is set to the right.

   NOTE: The breaker switch is at the bottom of the left rear corner near the power cord. When it is set to the right, you should see a straight line (-).
3. Connect the power cord to the finisher, then connect the other end to a power supply outlet.

4. Use the sharp point of a pen [B] or similar tool to push in the breaker switch until it snaps to the off position. (You should see "O".)
5. If the breaker does not snap to the off position:
   - Check that the power cord is correctly connected to the finisher and power supply.
   - Push the breaker switch again to see if it snaps to the off position.
   - If the breaker switch does not snap to the off position, it must be replaced.
6. Be sure to reset the breaker switch to the on (-) position.

Centering Paper in the Paper Path

At installation you must confirm that the paper is exiting the ring binder correctly and do the necessary correction if required. There are two checks:

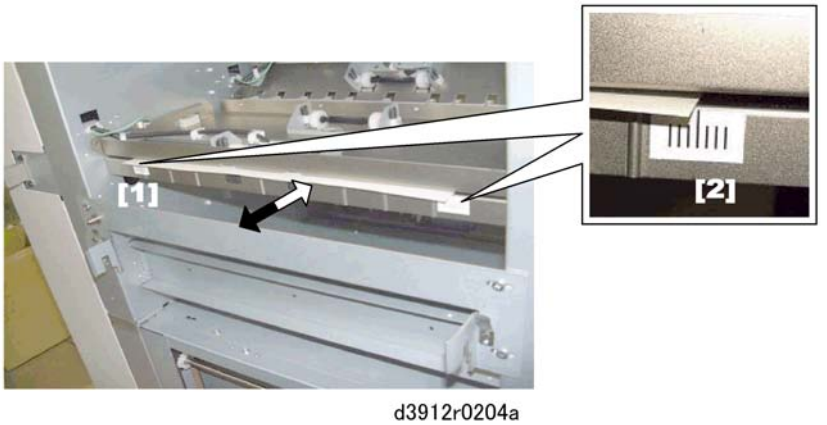
- Side-to-side registration check. The paper should be centered in the paper path.
- Skew check. The paper should feed straight out of the ring binder.

Checking and Correcting Side-to-Side Registration

Checking Side-to-Side Registration

Do this check to confirm that the paper is centered in the paper path.

1. Make sure that the I/F cable of the ring binder unit is connected.
2. If the finisher is connected to the left side of the ring binder, disconnect it and pull it away from the left side of the ring binder.
3. Execute a run by feeding paper (A4 or LT) from Tray 2 of the host machine (punching only, no ring binding).

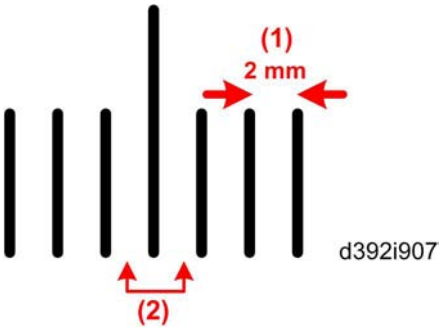


d3912r0204a

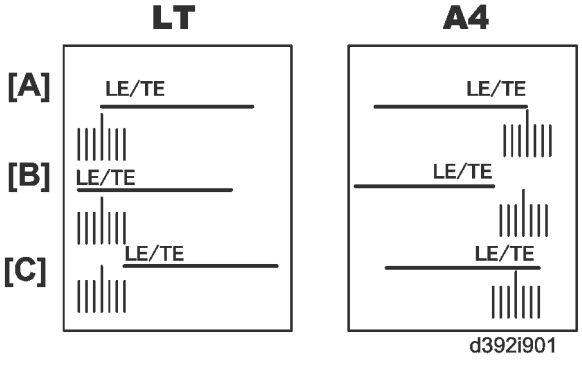
4. During the run, each sheet of paper briefly protrudes about 5 to 10 mm before it switches back into the ring binder and feeds to the punch unit, as shown above.

- There are two scales on the left side of the ring binder below the paper exit.
- The rear scale [1] is for LT-size paper and the front scale [2] is for A4-size paper. Be sure to read the correct scale for the paper size in use.

5. Check the position of the paper on the scale to determine if the paper is centered.



- Read the rear scale for LT-size paper and the front scale for A4-size paper.
- The lines on the scale (1) are spaced 2 mm apart.
- The paper should be at the center line or not deviate more than ±2 mm as shown at (2).



[A]	Leading/trailing edges centered. No adjustment necessary.
[B]	Leading/trailing edges offset to the rear more than 2 mm. Adjustment required.
[C]	Leading/trailing edges offset to the front more than 2 mm. Adjustment required.

6. If the edge of the paper is on the scale at the center [A], no adjustment is required.

   -or-

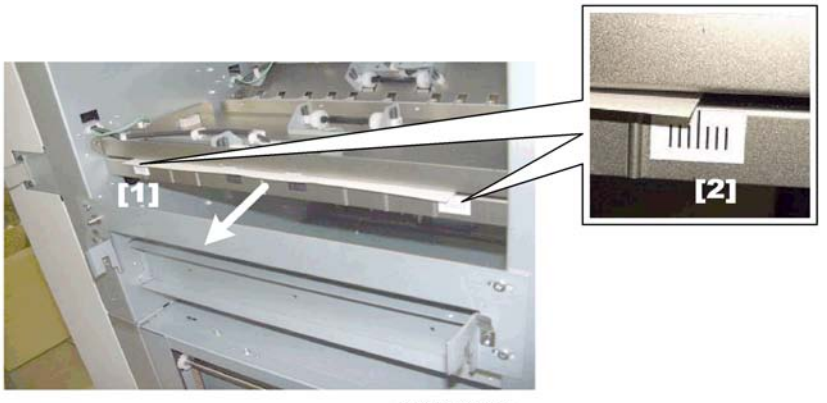
   If the edge of the paper is ±2 mm off the center line on the scale, adjustment is required. Do the procedure in the next section.

Checking and Correcting Skew

Checking for Paper Skew

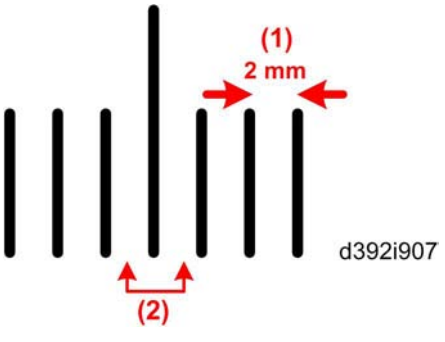
Do this check to confirm that the paper is not skewed in the paper path.

1. Make sure that the I/F cable of the ring binder unit is connected.
2. If the finisher is connected to the left side of the ring binder, disconnect it and pull it away from the left side of the ring binder.
3. Execute a straight-through run (no ring binding, no punching) with A3 or DLT from Tray 2 of the host machine.



d3912r0204b

4. During the run, each sheet of paper exits the side of the ring binder, as shown above.



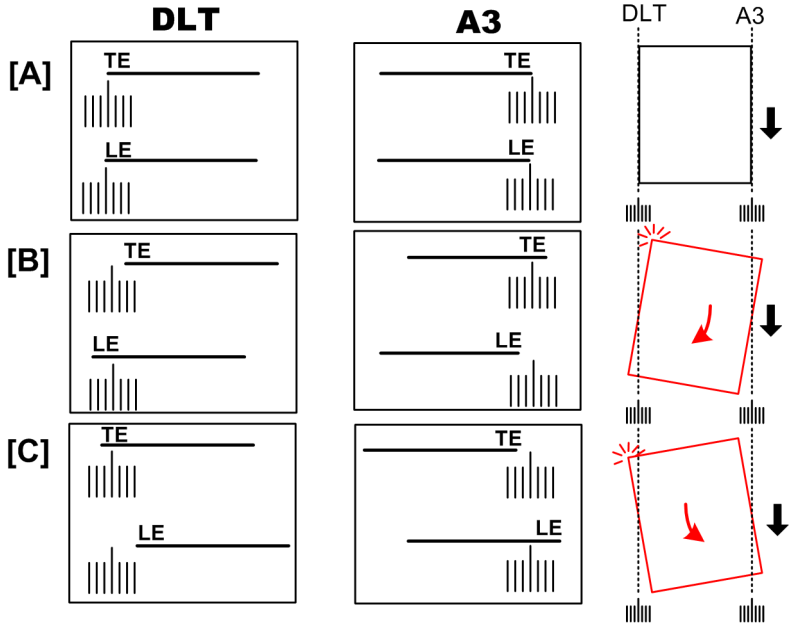
d392i907

- There are two scales on the left side of the ring binder below the paper exit.
- The rear scale [1] is for DLT-size paper and the front scale [2] is for A3-size paper. Be sure to read the correct scale for the paper size in use.
- The lines on the scale (1) are spaced 2 mm apart.
- The paper should be at the center line or not deviate more than ±2 mm as shown at (2).

5. Check the position of the paper on the scale to determine if the paper skews as it exits.

Important

- Read the rear scale for DLT-size paper and front scale for A3-size paper.
- The scale lines are spaced 1 mm apart.
- The paper must not deviate more than ±2 mm on the scale.

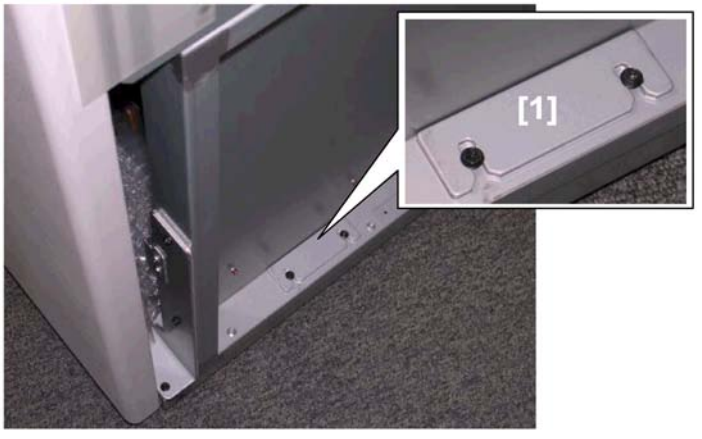


d392i904

[A]	Centered. No adjustment necessary.
[B]	Trailing edge skew to the front, total skew more than ±2 mm. Adjustment required.
[C]	Trailing edge skew to the rear, total skew more than ±2 mm. Adjustment required.

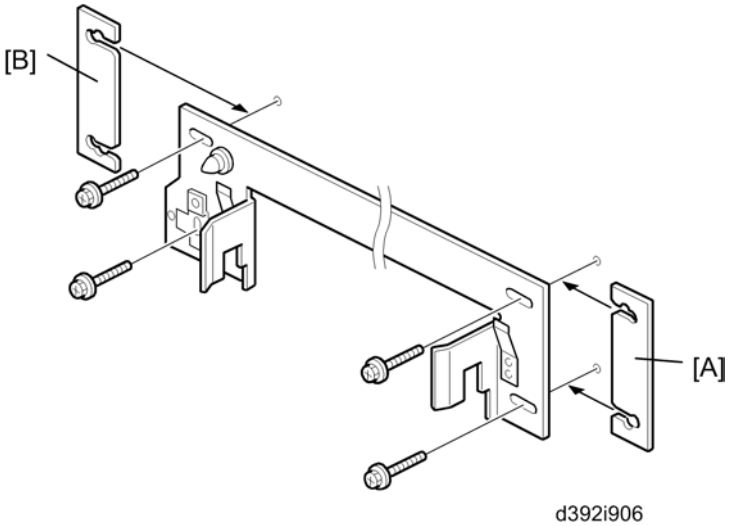
Correcting Skew

1. Disconnect the ring binder from the upstream unit.



d392i905

2. Remove the spacers from the right side of the ring binder at the base (x2).



d392i906

3. On the docking bracket attached to the upstream unit, loosen the screws.
4. Insert a spacer and tighten the screws.

   If the trailing edge is skewing toward the **front** of the machine, insert a spacer [A] under the **rear** end of the bracket and tighten the screws.

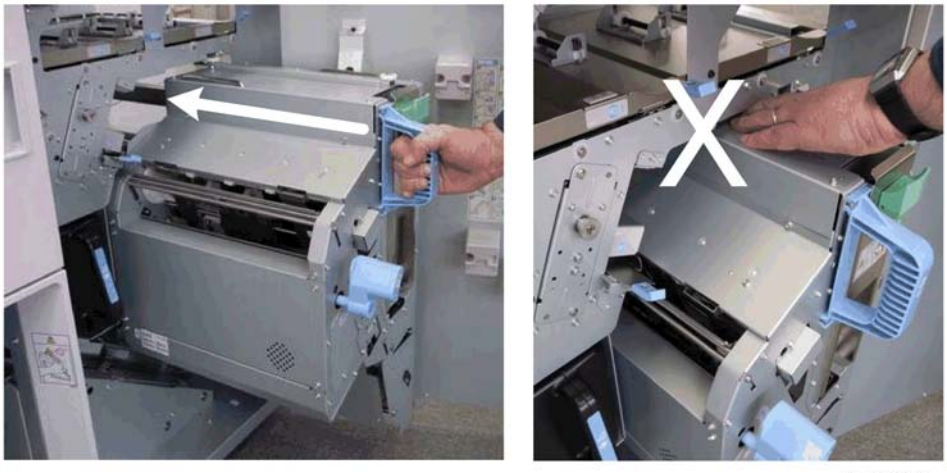
   -or-

   If the trailing edge is skewing toward the **rear** of the machine, insert a spacer [B] under the **front** end of the bracket and tighten the screws.
5. To another run to check the adjustment. If skew is still present, insert another spacer.

After Installation

Confirm that the operators understand the following important points:

- Decals attached to the machine that provide guidance for removing paper jams. Point out the decal locations.
- Detailed instructions on removing ring jams are provided in the operating instructions under "Removing Jammed Ring Combs".
- When pulling out and pushing in the binder unit on its rails, always grip the binder unit by its handle (Mc8).

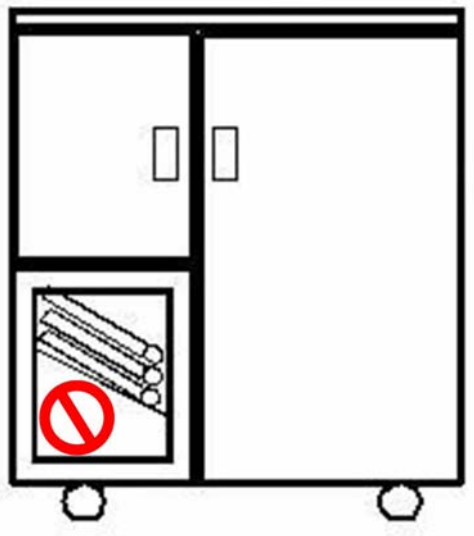


d392r902

⚠CAUTION

- Always grip handle Mc8 when pulling out or pushing in the binder unit.
- Never touch any other surface of the binder unit when it is moving on its rails.
- To avoid injury the fingers, never push on the top of the binder unit to slide it back into the finisher as shown above.

- Never store paper, extra rings, manuals or any other material below the output tray. Obstacles in this area (circled in the illustration below) will interfere with the raising and lowering of the tray and cause an error.



d392d910

Selecting the Supply Name

Enter the SP mode and do SP5841.

5841	Supply Name Setting
	These names show when the user prints the "Inquiry List". To print this list: Push the [Counter] key Push "Print Inquiry List". Push the [Inquiry] button on the User Tools screen.
	Select the SP code for the color and number of holes for the ring binders.
31	Ring Name (50/Black)
32	Ring Name (50/White)
33	Ring Name (100/Black)
34	Ring Name (100/White)

Cover Interposer Tray Type 3260 (B704-17)

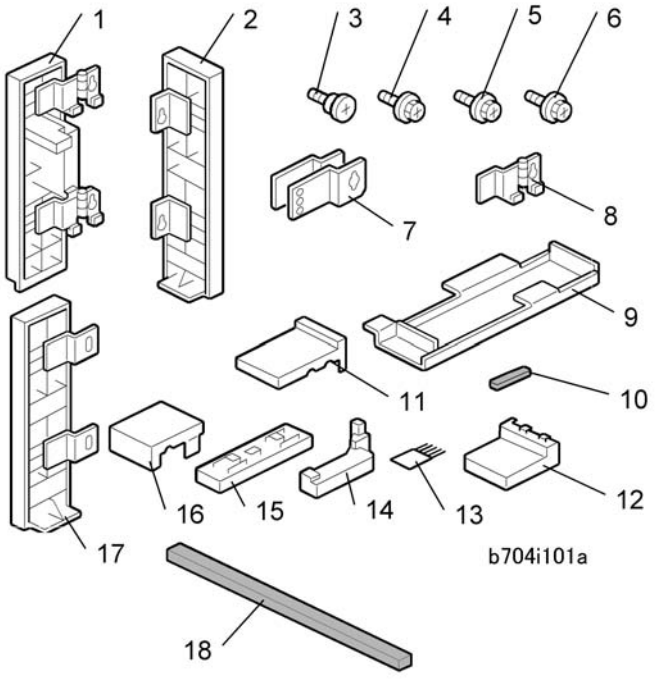
Accessories

Check the accessories and their quantities against this list. These accessories are provided for installation for several different machines. Many of the accessory items listed below are not used for this installation. For this machine:

- Cover Interposer Tray B704 is for installation on the 2000/3000-Sheet Finishers D373/D374 only and not on 3000-Sheet Finisher D830
- Cover Interposer Tray B835 is for installation on the 3000-Sheet Finisher D830 only and not on the 2000/3000-Sheet Finishers D373/D374.

	Description	Q'ty
1.	Front door extension (top)	1
2.	Rear cover extension (bottom)	1
3.	Shoulder screws	3
4.	Tapping screws – M4 x 8	9
5.	Tapping screws – M3 x 8	2
6.	Tapping screws – M3 x 6	5
7.	Adjuster plates	2
8.	Hinge Bracket	1
9.	Plate Extension (bottom)	1
10.	Gasket Seals	2
11.	Right Rear Cover Plate (B706 only)	1
12.	Spacer	1
13.	Anti-Static Brush	1
14.	Spacer (B706 only)	1
15.	Spacer (Not used)	1
16.	Right front corner plate (for B706 only)	2

	Description	Q'ty
17.	Front door extension (bottom)	1
18,	Sponge Strip	1



Installation

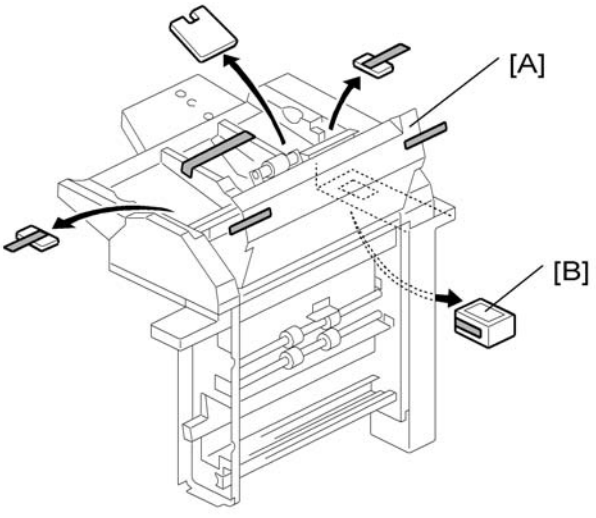
You can install the Cover Interposer Tray B704 on these finishers only:

- 2000-Sheet Booklet Finisher D373 (SR4040)
- 3000-Sheet Finisher D374 (SR4030)

Removing Tapes and Packing Materials

⚠WARNING

- Make sure that the finisher is disconnected from the main machine, and that the copier is turned off and the power cord is disconnected, before you start this procedure.



b704i102

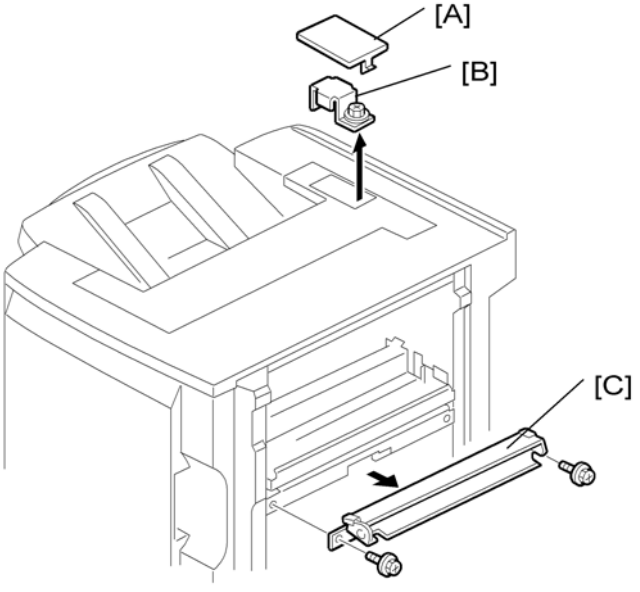
1. If the finisher is connected to the machine, disconnect it.

⚠CAUTION

- After disconnecting the finisher, for safety remove the front and rear finisher connectors from the copier. Reattach them just before docking the finisher to the copier.

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

Preparing the Finisher



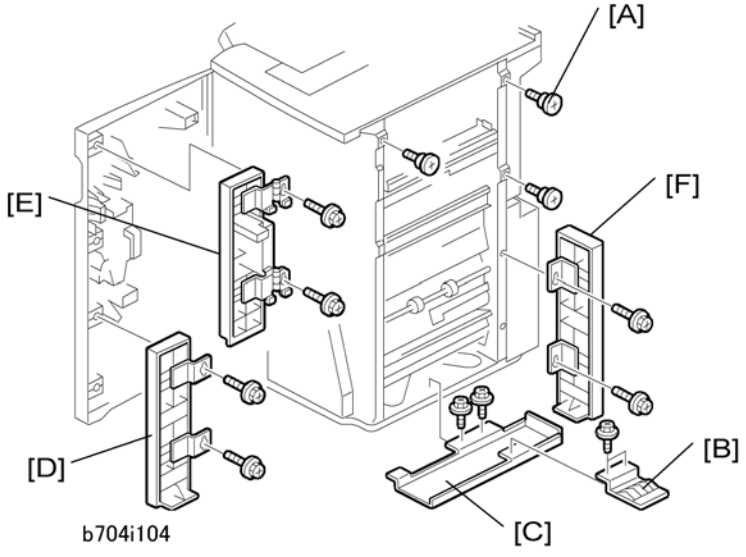
b704i103

1. Remove the cover [A] of the relay connector.
2. Loosen the screw of the bracket [B] (x 1) then remove the bracket.
3. Remove the guide plate [C]. (You will attach this guide plate to the cover interposer. Do not discard it.)

Important

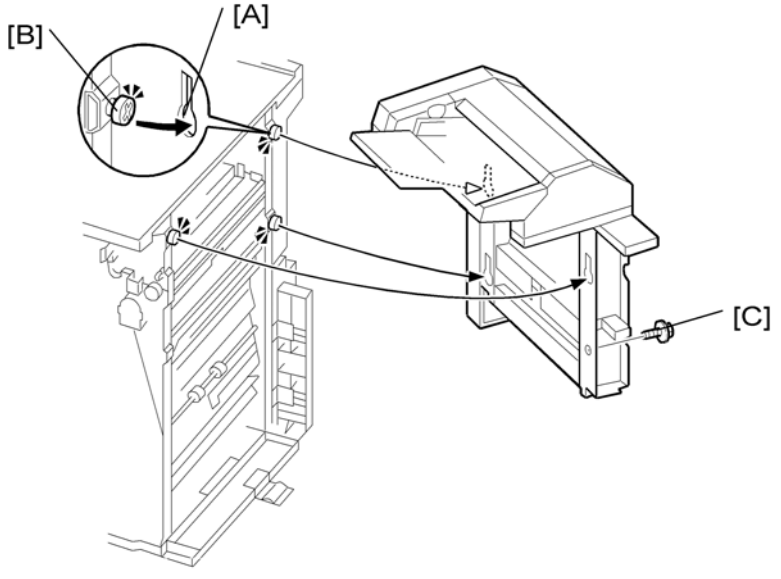
- **If you will install the cover interposer tray on a D373/D374 finisher that was installed on the machine before this time, remove the sponge strip from the finisher. Keep this strip because you must attach it later to the interposer tray.**

Attaching the Extensions



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

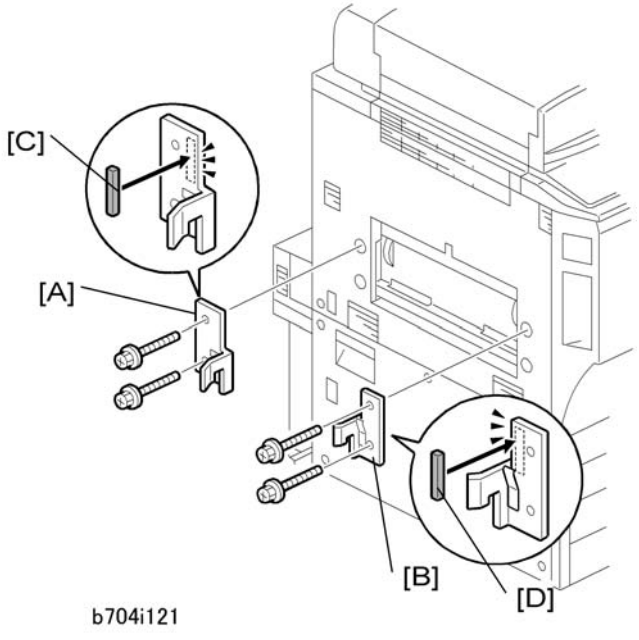
Attaching the Interposer Tray



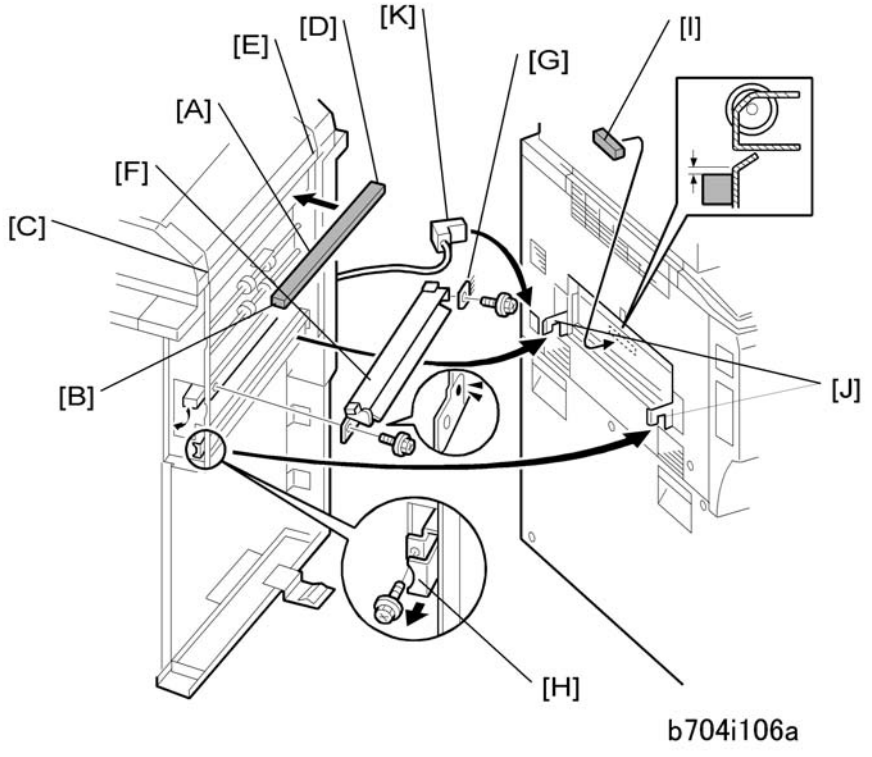
b704i105

1. Lift the cover interposer tray.
2. Align the keyholes [A] with the shoulder screws [B], and move the cover interposer down onto the screws.
3. Attach the cover interposer with the screw [C] (x 1, M3 x 6).

Docking the Finisher/Interposer



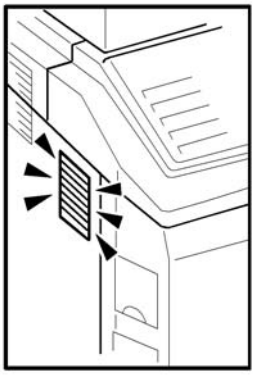
1. Attach the rear bracket [A] (x 2, M4 x14).
2. Attach the front bracket [B] (x 2, M4 x14).
3. Attach the gasket seals [C] and [D].



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

   Important
   - **Use the two small tapping screws that are supplied, and not the machine screws removed from the finisher guide plate.**
6. Release the lock lever [H] (x 1).
7. Attach the pad [I]. This pad is provided with the finisher.
8. Slowly push the finisher against the side of the machine until the brackets [J] go into the slots.

   WARNING
   - Move the finisher carefully to avoid bending the entrance guide plates.
9. Attach the lock lever [H] (x 1).
10. Connect the connector [K] to the copier.



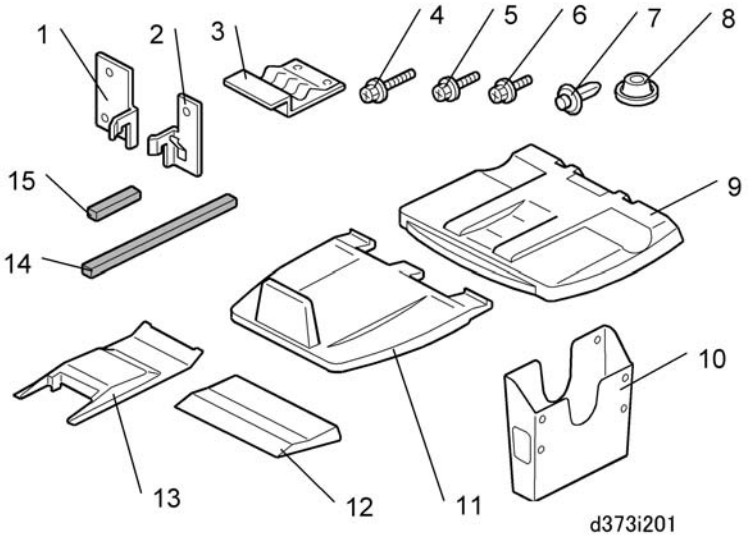
d373r734

11. Check the right side of the machine and make sure that the sponge strip does not block the air flow through the duct.

2000/3000 Sheet Finishers (D373/D374)

Accessories

	Description	Q'ty
1.	Front joint bracket	1
2.	Rear joint bracket	1
3.	Ground (earth) plate	1
4.	Screws (M4 x 14)	4
5.	Screws (M3 x 8)	1
6.	Screws (M3 x 6)	3
7.	Screw (Plastic)	2
8.	Leveling Shoes	3
9.	Upper output tray	1
10.	Tray Holder	1
11.	Lower output tray (D373 Only)	1
12.	Support Plate for Proof Tray	1
13.	Support Plate for Shift Tray	1
14	Cushion (with double-sided tape)	1
15.	Gasket Seal	1



Installation

This section shows the installation instructions for two finishers:

- **D373 Booklet Finisher**: This finisher can do punching, shifting, stapling, and saddle-stitching with staples. This booklet finisher can be used with the D081 or D082.
- **D374 Finisher.** This finisher is capable of punching, shifting, and stapling but with no saddle-stitching unit. This finisher can be used with the D081 or D082.

Note

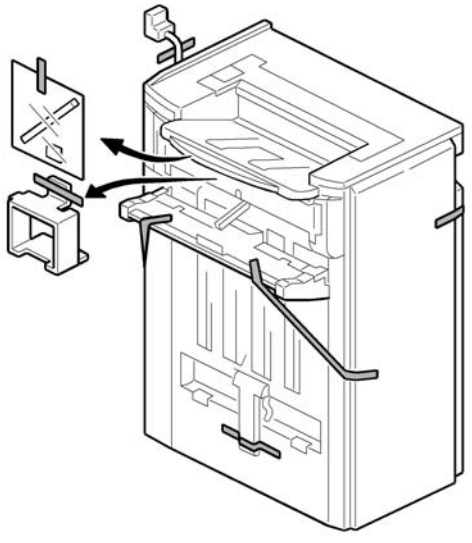
- Differences in the installation procedures are shown as "D373" or "D374"

Removing Tapes and Packing Materials

⚠CAUTION

- Always turn the machine off and disconnect the machine power cord before you do these procedures.

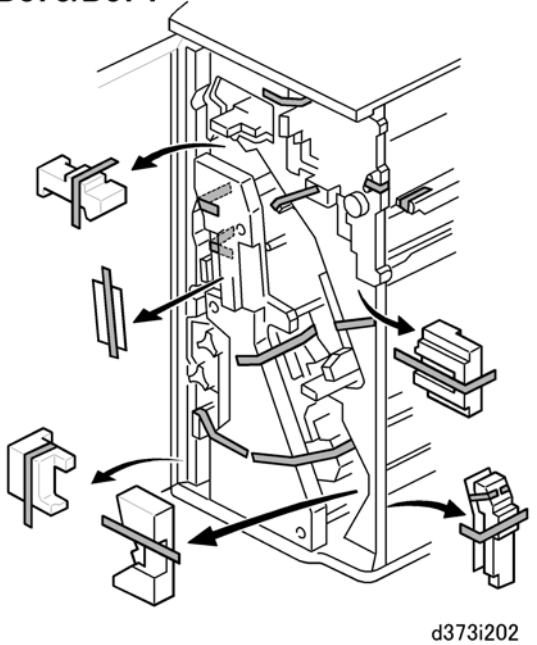
D373/D374



d373i102

1. Remove the machine from its box, and remove all the wrapping.
2. Remove all filament tape and packing material from the finisher.

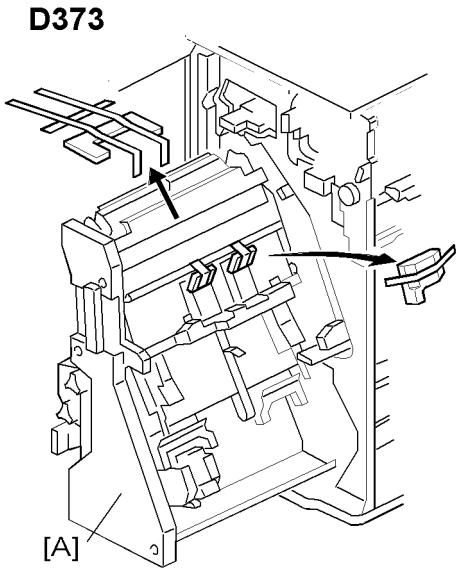
D373/D374



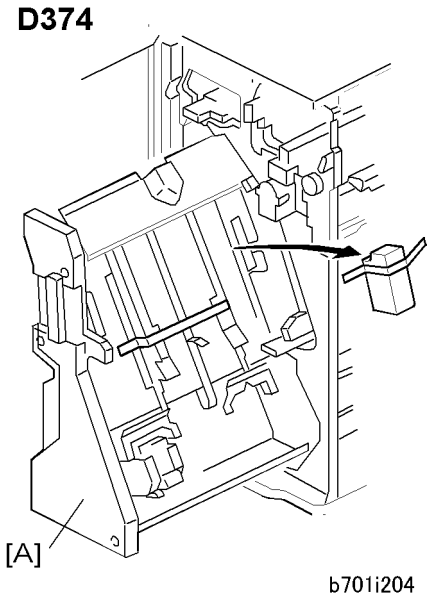
d373i202

3. Open the front door.

4. Remove all tapes and packing materials inside the finisher.



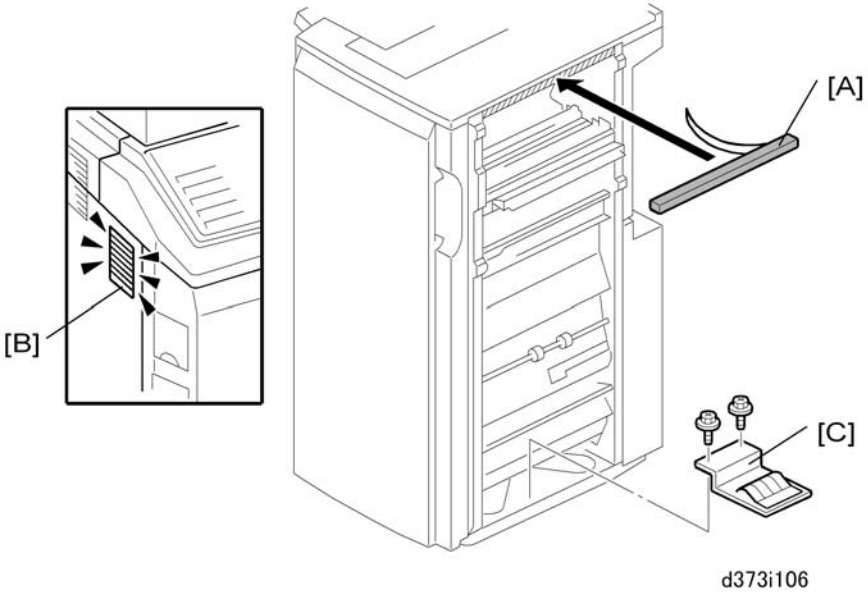
d373i204



b701i204

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

Docking the Finisher to the Copier

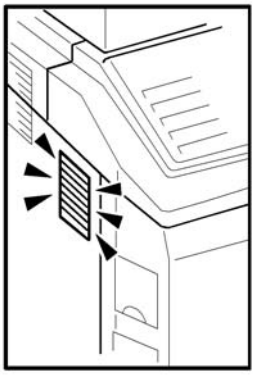


d373i106

1. The first step depends on whether you will install the Cover Interposer B704.

If you will not install the Cover Interposer B704:

- Remove the strip from the sponge cushion [A] and attach it to the finisher, then go to Step 2.

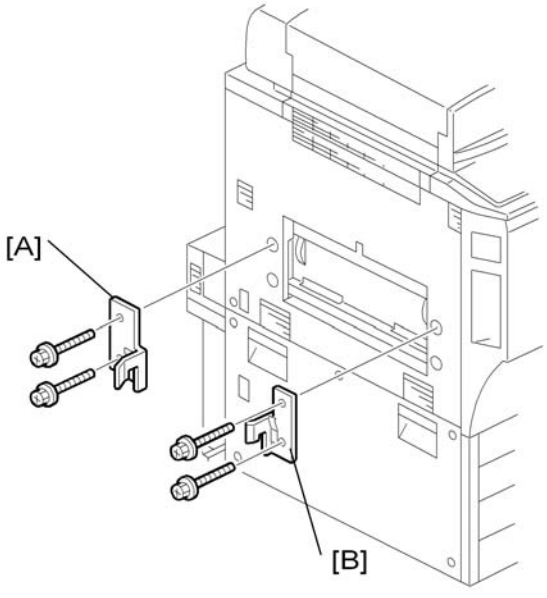


d373r734

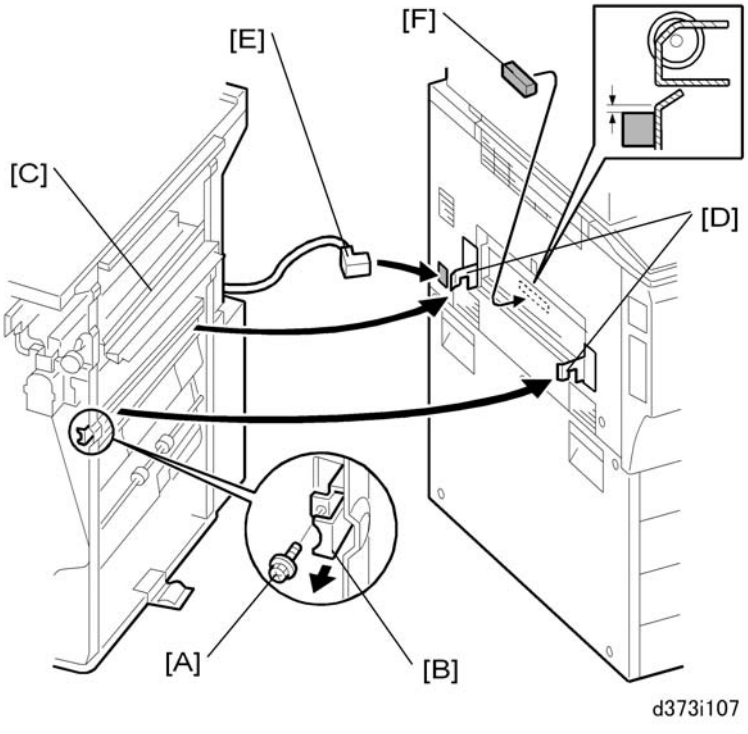
- Do not put the sponge in a position that will prevent air flow through the air duct [B] on the copier shown above after the finisher is connected to the copier.
- Use a short screwdriver to attach the grounding plate [C] (x 2, M3 x 6).

If you will install the Cover Interposer B704:

- Do not attach the sponge cushion to the finisher. It must be attached to the cover interposer.
- Do not attach the grounding plate [C] to the finisher. It must be attached to the cover interposer.
- Install the interposer on the finisher before you dock the finisher to the copier. (☛ p.183).
- After installing the interposer, continue from 'Attaching the Trays' below.

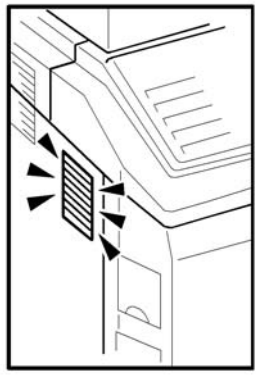


2. Attach the rear bracket [A] (x 2, M4 x 14).
3. Attach the front bracket [B] (x 2, M4 x 14).



4. Remove the screw [A] to release the lock lever [B] (x 1).

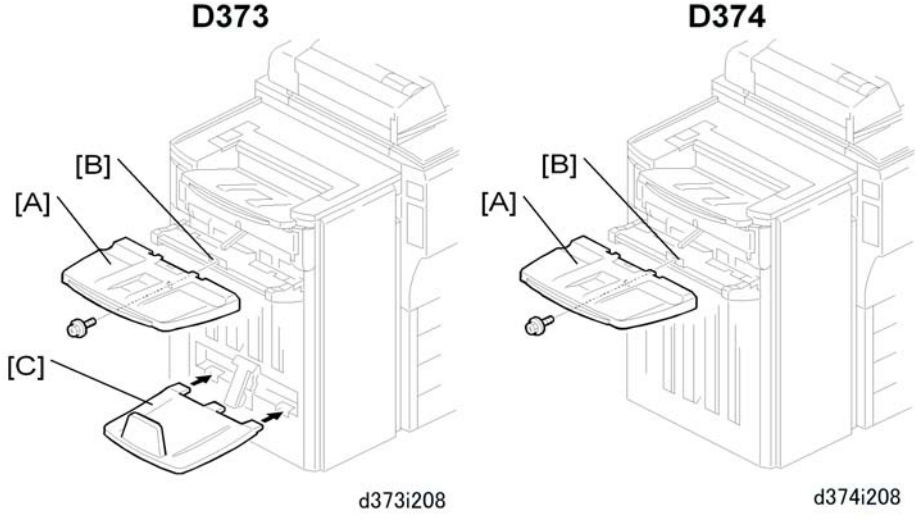
5. Slowly push the finisher against the side of the machine until the brackets [D] go into their slots. If you do this too quickly, you will bend and cause damage to the paper-entrance guide plates [C].
6. Attach and tighten the screw removed in Step 4.
7. Connect finisher connector [E] to the main frame.
8. Attach the gasket seal [F] as shown.



d373r734

9. Check the duct on the left side of the machine shown above. Make sure that the sponge does not block this duct.

Attaching the Trays



d373i208 d374i208

D373

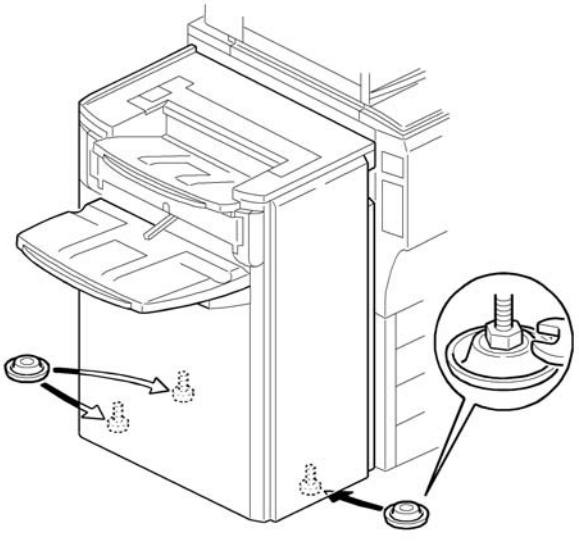
1. Attach the upper output tray [A] (x 1, M3 x 6).
2. Make sure that the metal plate [B] is on the top of the tray.

3. Attach the lower output tray [C].

D374

1. Attach the output tray [A].
2. Make sure that the metal plate [B] is on the top of the tray.

Leveling the Finisher

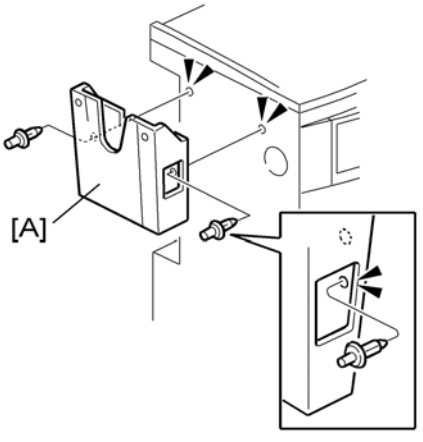


d373i109

1. Put the leveling shoes (x 3) below the feet.
2. Use a wrench to adjust the height of the screws to make the machine level.

Support Trays

Tray Holder



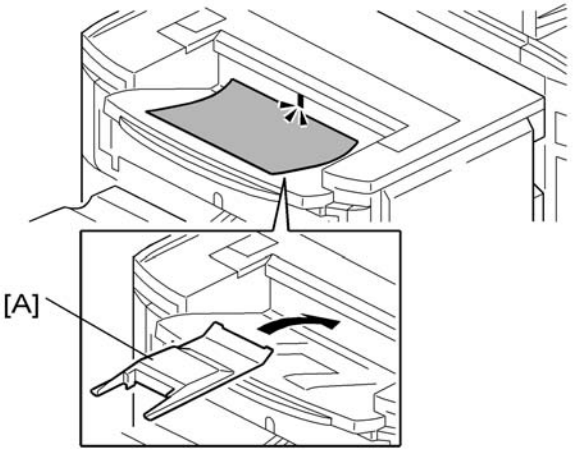
d373i303

1. Attach the tray holder [A] to the side of the finisher as shown.
2. Store the support plates for this upper tray and shift tray in this holder while they are not being used.

Support Plate for Upper Tray

Two support trays, one for the upper proof tray and one for the shift tray are provided. These support trays prevent excessively curled paper from activating the "Tray Full" message before the proof tray or shift tray is actually full.

1. Remove the paper from the paper feed tray, turn it upside down, then print.

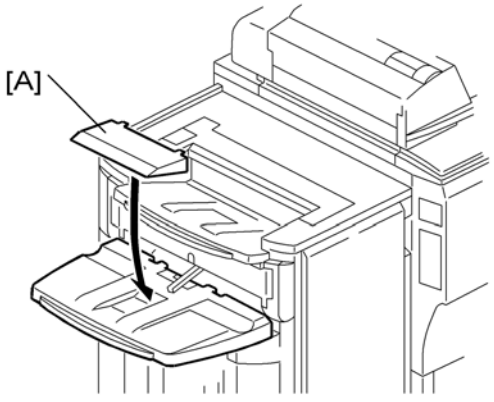


d373i301

2. If step 1 does not solve the problem, place the support tray [A] in the upper tray as shown.

Support Plate for Shift Tray

1. Remove the paper from the paper feed tray, turn it upside down, then print.



d373i302

2. If step 1 does not solve the problem, place the support tray [A] on the shift tray as shown.

Selecting the Staple Supply Name

Enter the SP mode and do SP5841.

5841	Supply Name Setting
	These names show when the user prints the "Inquiry List". To print this list: Push the [Counter] key Push "Print Inquiry List". Push the [Inquiry] button on the User Tools screen.
13-14	Staple Std3 **D373/D374**
	Input the name of the staples that are used for corner (standard) stapling (not booklet stapling). This setting should be done for the D373 and D374.
21-23	Staple Bind2 **D373 Only**
	Input the name of the staples that are used for booklet stapling (saddle-stitching).

Enabling Booklet Binding (D373 Only)

To use booklet stapling, you must make sure that the center-position stapling option is displayed. If it is not, select the center-position stapling mode with a user tool.

1. Push the User Tools key.
2. Touch "Copier/Document Server Features".
3. Touch the "Input/Output" tab.

4. Select "Staple Position".
5. Touch a "Staple Position" button and touch the center (saddle-stitch) stapling symbol.
6. Go out from the User Tools mode. Set the number of copies, touch the center stapling symbol on the operation panel, then start the print job.

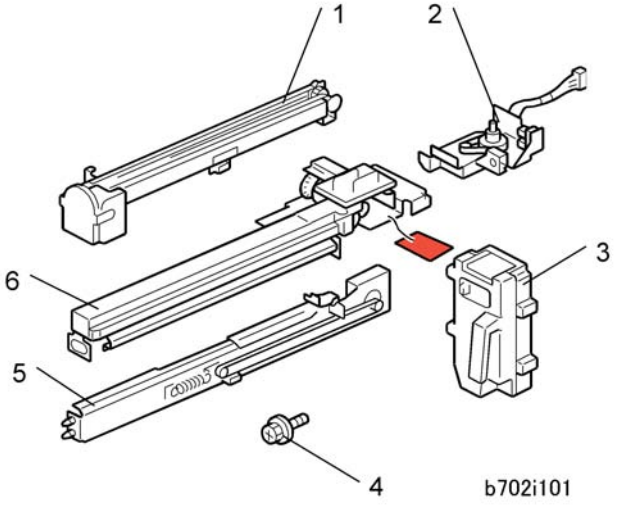
Punch Unit (B702-17, -27, -28)

The Punch Unit B702 is installed in the 2000/3000 Sheet Finisher D373/D374 (SR4040/SR4030).

Accessories

Check the accessories and their quantities against this list.

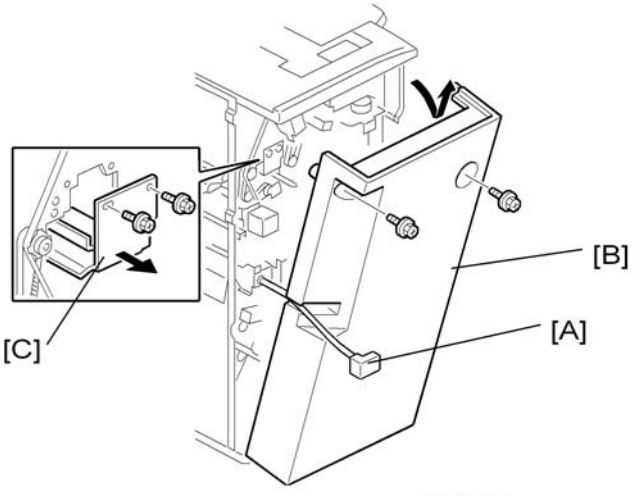
Description	Qty
1. Punchout Waste Unit	1
2. Slide Drive Unit	1
3. Punch Waste Hopper	1
4. Screws (M3 x 6)	5
5. Side-to-Side Detection Unit	1
6. Punching Unit	1



Installation

⚠WARNING

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



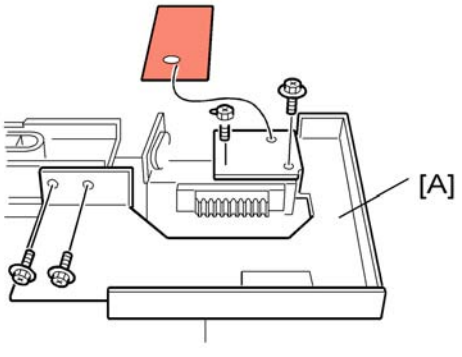
b702i102

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

Note

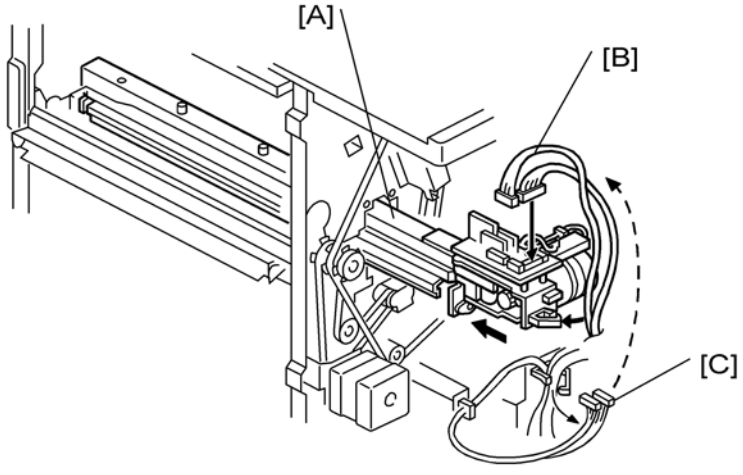
- At the bottom of the rear cover, make sure to disconnect the tabs that attach the cover to the frame.

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



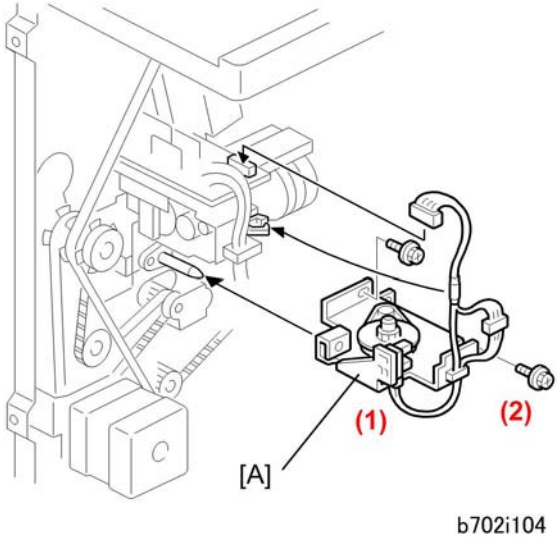
b702i201

4. Remove the shipping retainer [A] (x 4).



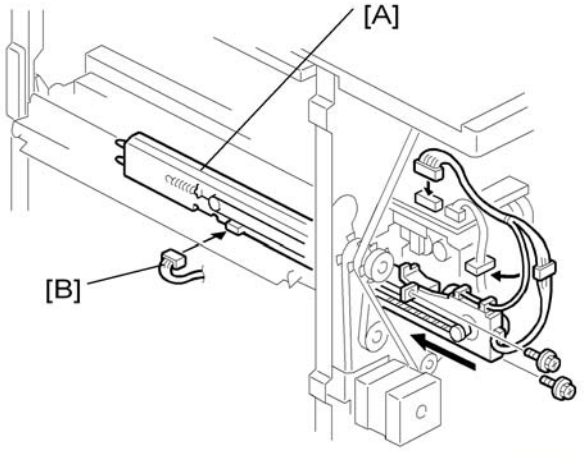
b702i103

5. Slide the punch unit [A] on its rails into the finisher. Make sure that the pins engage correctly at the front and rear.
6. Connect and attach the punch unit [B] (x 2, x 1).
   - The cables [C] are coiled and attached to the PCB.
   - Attach connectors to CN601 and CN602.



b702i104

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

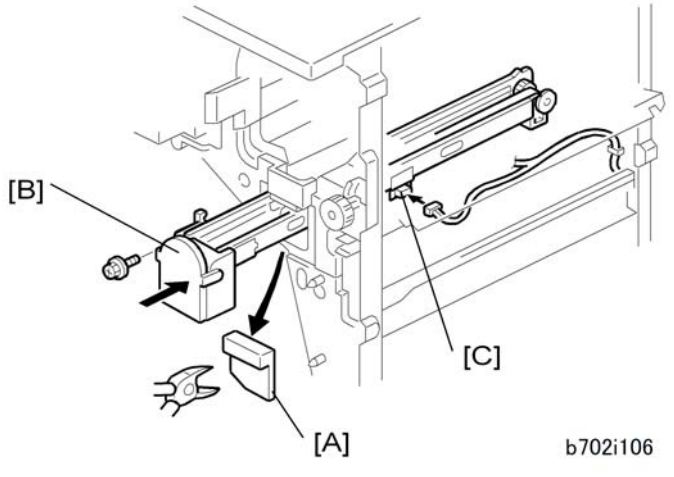


b702i105

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

Note

- This is the 3-pin connector.



b702i106

13. At the front, use a pair of wire cutters to remove the part [A] of the cover.
14. Install the punch-waste transport unit [B] in the finisher.

Note

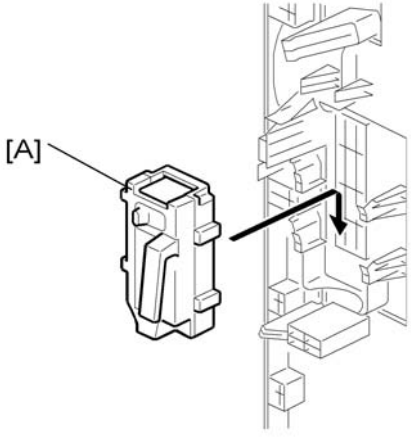
- Make sure that the punch-waste transport unit moves smoothly on its rails. If it does not, make sure that the rails are aligned with the grooves.

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

Note

- This is the 4-pin connector.

16. Connect the cable and attach the punch-waste transport unit (x 1, x 1, x 1).



b702i107

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

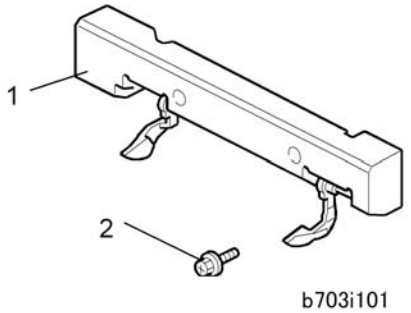
Output Jogger Unit Type 3260 (B703)

Accessories

This option is for the 2000/3000-Sheet Finishers (D373/D374) only.

Check the accessories and their quantities against this list.

Description	Qty
1. Jogger Unit	1
2. Tapping Screws M3x6	2



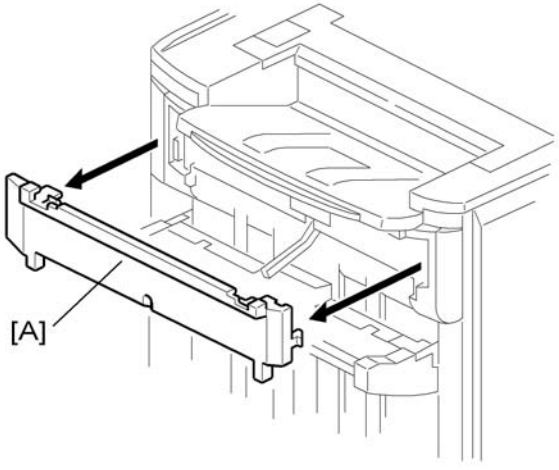
b703i101

Installation

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

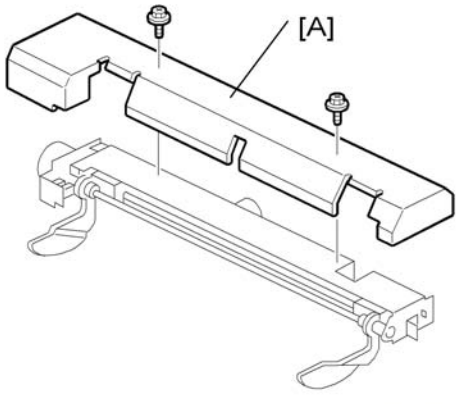
⚠WARNING

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



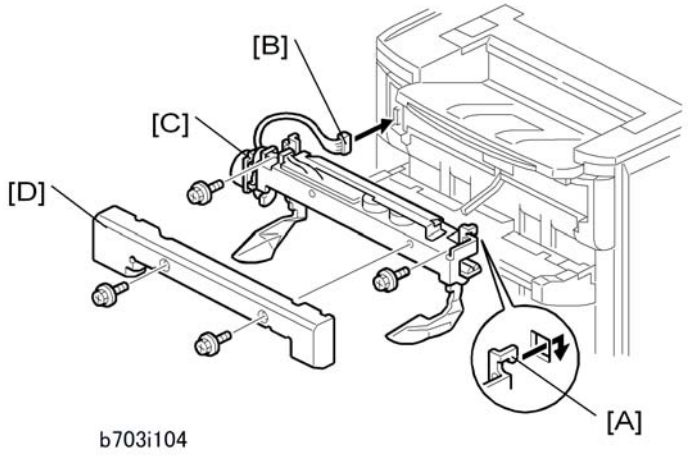
b703i103

1. Turn the main machine switch off.
2. Disconnect the finisher from the main frame.
3. Use the flat head of a screwdriver to remove the left upper cover [A].



b703i102

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



5. While holding the jogger unit with the connector on the left, put the hooks on the frame of the jogger unit [A] into the holes in the left and right side of the finisher frame.
6. Connect connector [B] to the socket (x 1).
7. Attach the jogger unit [C] to the finisher (x 2).
8. Reattach the jogger unit cover [D] to the jogger unit (x 2).

Mail Box (B762)

The Mail Box B762 is installed on the 2000/3000 Sheet Finisher D373/D374. It cannot be installed with the Cover Interposer Tray B704. (Either the mailbox or cover interposer tray can be installed on top of the finisher, but not both.)

Accessories

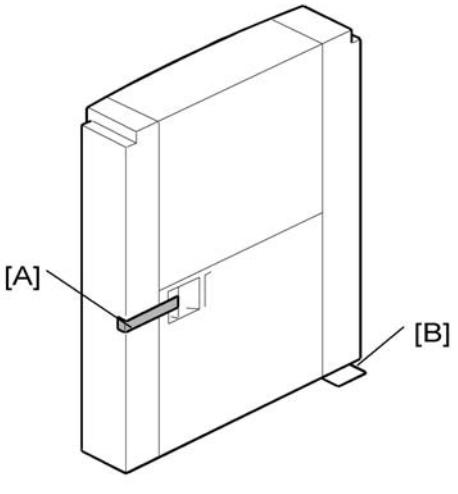
Check the accessories and their quantities against this list.

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

Installation

⚠WARNING

- Turn the machine off and disconnect the machine power cord before you start this procedure.

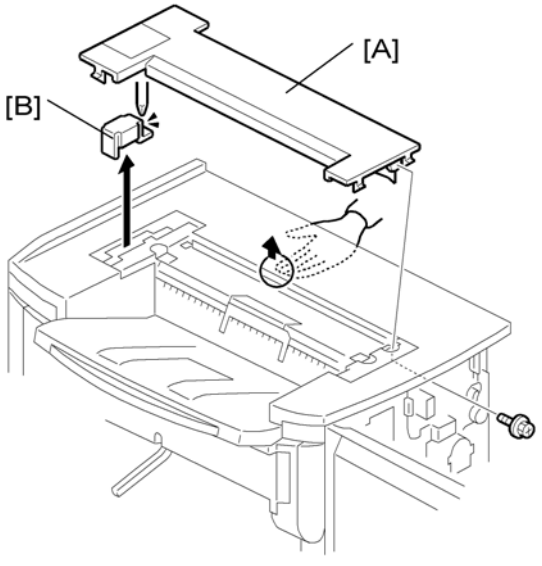


b762i101

1. Remove the filament tape [A].

Important

- **Move the mailbox carefully. It is easy to cause damage to the corner leaf plate [B].**



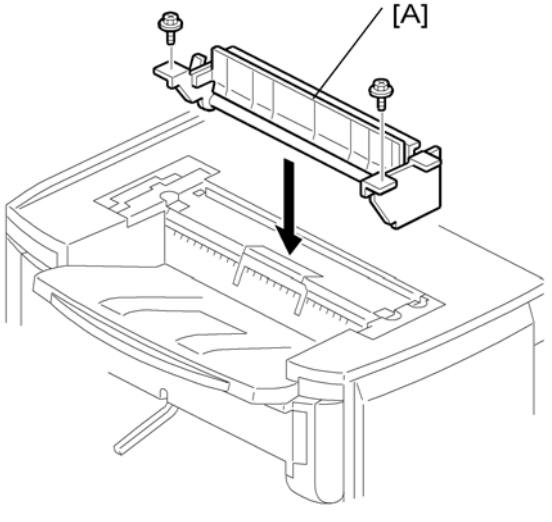
b762i102

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

Note

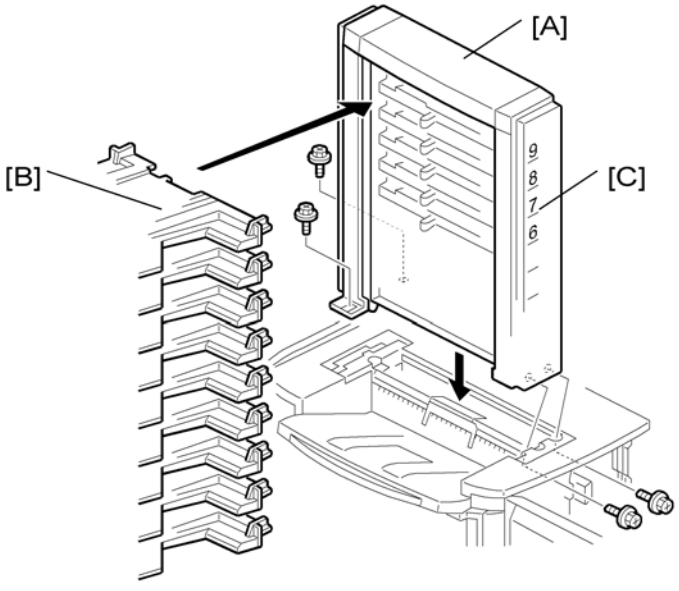
- The cover interposer tray and mailbox cannot be installed on the finisher at the same time.

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



b762i103

5. Attach the guide plate [A] to the top of the finisher (x 2, M3 x 8).



6. Attach the mailbox [A] to the top of the finisher (x 4, M3 x 8).
7. Attach the 9 trays [B] to the mailbox.
8. Give the decals [C] to the customer. The customer will write on these and attach them at the correct location.

3000-Sheet Finisher (B830-17), Finisher Adapter Type C (D375)

Accessories

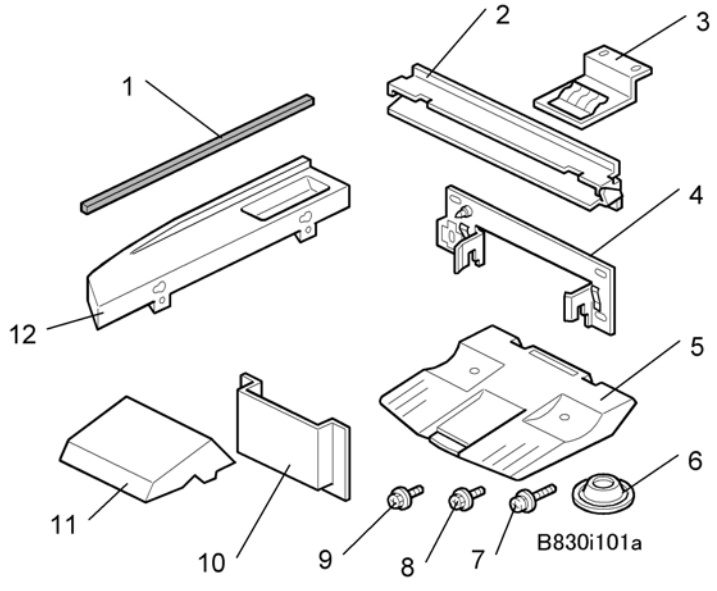
3000-Sheet Finisher B830 Accessories

Check the accessories and their quantities against this list.

	Description	Q'ty
1.	Sponge Strip	1
2.	Entrance Guide Plate	1
3.	Ground Plate	1
4.	Joint Bracket	1
5.	Shift Tray	1
6.	Leveling Shoes	4
7.	Tapping Screws – M4 x 12	4
8.	Tapping Screws – M3 x 6	8
9.	Tapping Screws – M4 x 8	2
10.	Support Plate Pocket	1
11.	Support Plate	1
12.	Side Tray	1

Important

- **The output jogger unit is pre-installed on this finisher, so it is not an option.**



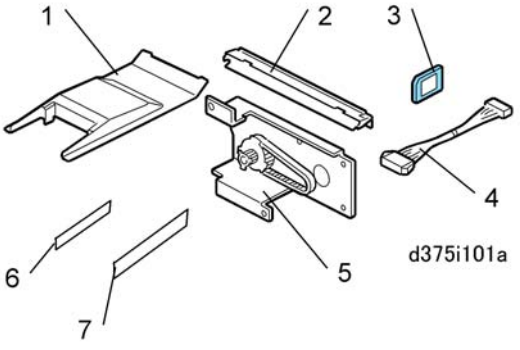
Finisher Adapter Type C Accessories

Check the accessories and their quantities against this list.

Important

- **This finisher adapter kit must be installed when installing this finisher on this machine.**

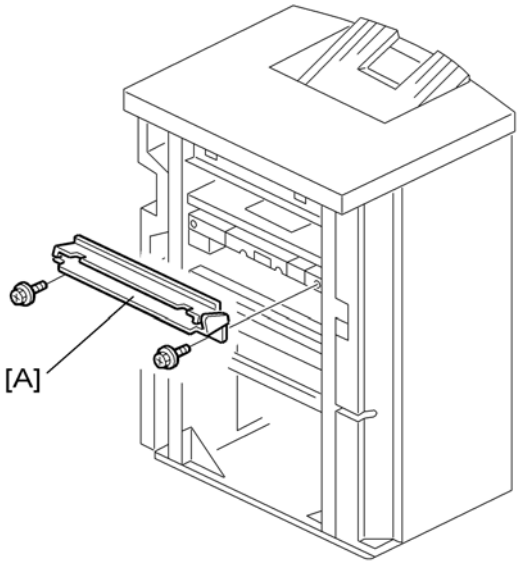
	Description	Qty
1.	Proof Auxiliary Tray	1
2.	Entrance Guide	1
3.	SD Card (for firmware update)	1
4.	Motor Harnesses	2
5.	Motor Brackets	2
6.	Serial Number Decal	1
7.	FCC: Class-A Decal	1



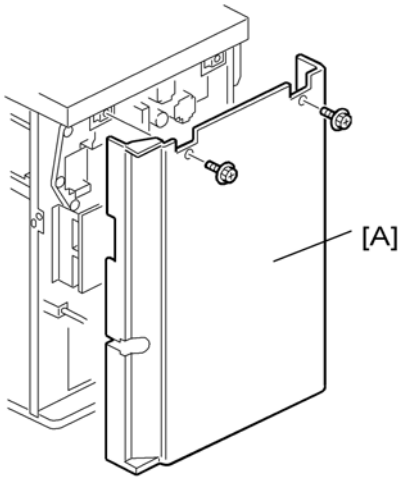
Finisher Adapter Kit D375 Installation

Important

- **The finisher adapter kit must be installed before the finisher and punch unit are installed.**

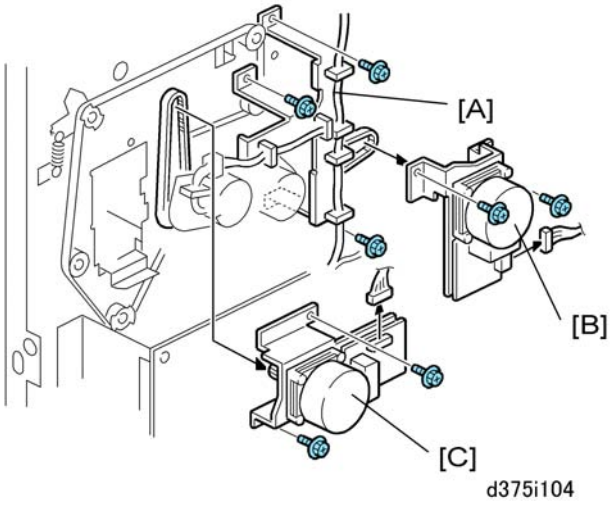


1. Attach the entrance guide [A] (x 2).
    - Attach the entrance guide only if the finisher will be connected directly to the main machine.
    - Do not install the entrance guide if you intend to install the Cover Interposer Tray (B835).



d375i103

2. Remove the finisher rear cover [A] (x 2).



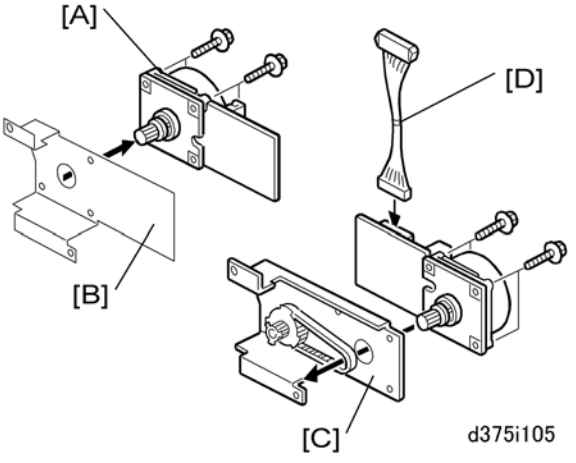
d375i104

3. Remove:

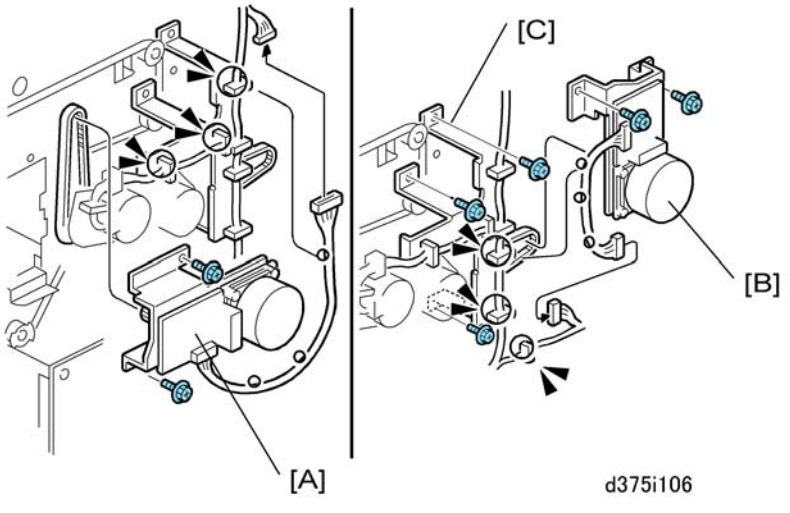
   [A] Harness T-bracket screws (x3). Remove the only the screws, not the bracket.

   [B] Lower transport motor assembly (x 2, x1)

   [C] Upper transport motor assembly (x 2, x1)

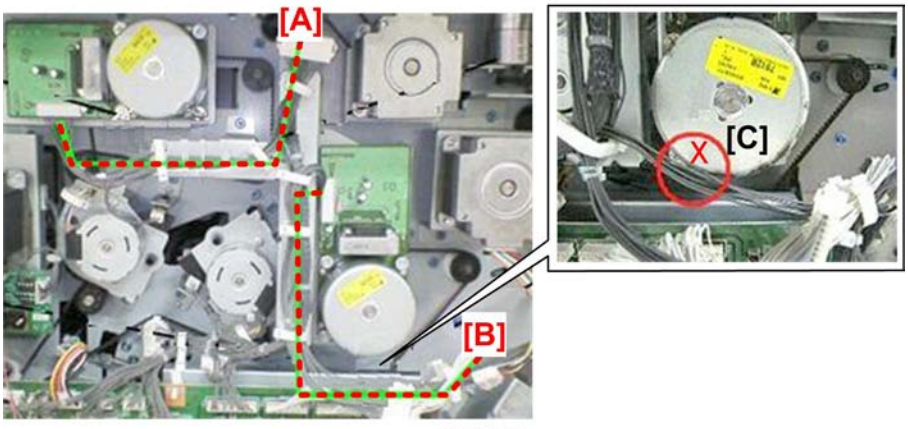


4. For both the upper and lower transport motors:
   - Remove the motor [A] from its original bracket [B] (x 2)
   - Attach the motor to the new bracket [C] (x 2).
   - Attach the new harness [D] (x 1).
5. Discard the original brackets.
   - The new brackets and harnesses are provided in the finisher adapter accessory kit. The brackets are identical.



6. Attach the upper transport motor [A] assembly as shown, with the motor pointing to the right (x2, x1, x3).
7. Attach the lower transport motor assembly as shown, with the motor pointing down [B] (x2, x1, x3).

8. Reattach the harness T-bracket screws [C] (x3) that were removed earlier.



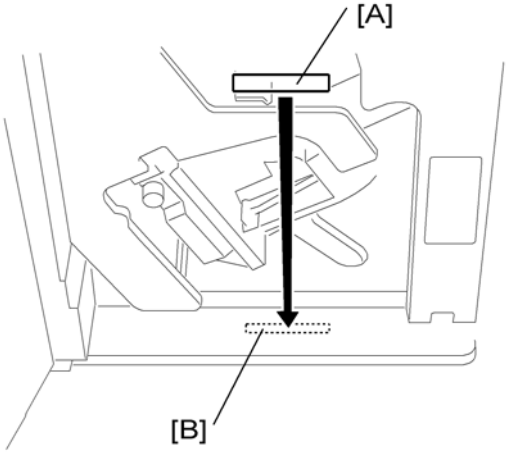
d375i002

9. Route the harnesses as shown by the dotted lines [A] and [B].

Important

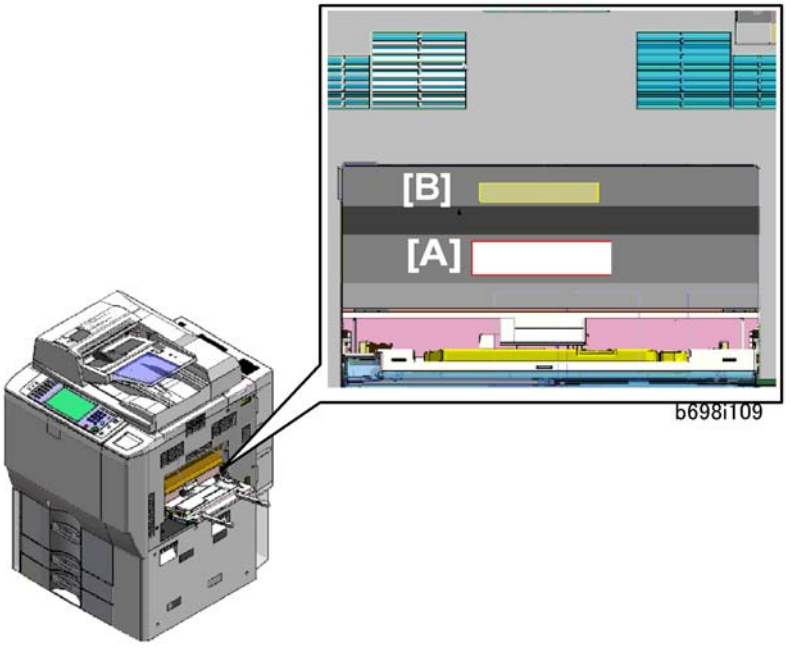
- **Never allow the harnesses to rest against either motor as shown at [C]. Heat from the motors could damage the harnesses.**

10. Open the front door.



b698i107

11. Attach the serial number decal [A] below the finisher serial number decal [B] attached to the front bottom support of the frame.



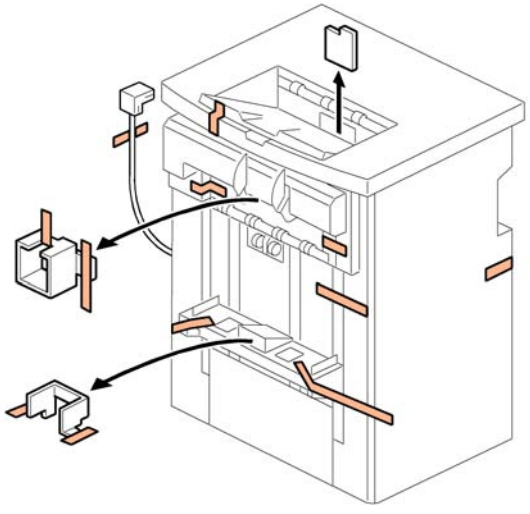
12. On the right side of the machine, attach the FCC Class A decal [A] below the copier serial number decal [B]. (**North America Only**)

Finisher Installation

⚠WARNING

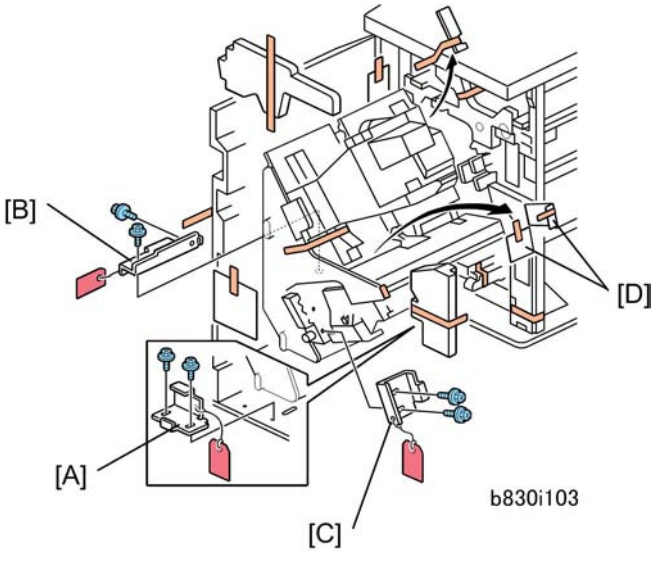
- Turn the machine off and disconnect the machine power cord before you do this procedure.

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



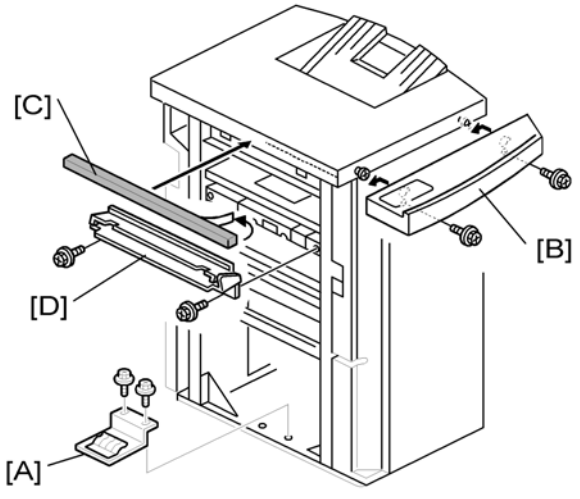
b830i102

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



b830i103

3. Open the front door and remove the shipping retainers.
4. Remove the brackets, tags, and wires in this order: [A]> [B]> [C] (x 2 each).
5. Be sure to remove the two sheets of paper [D].



b830i105

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

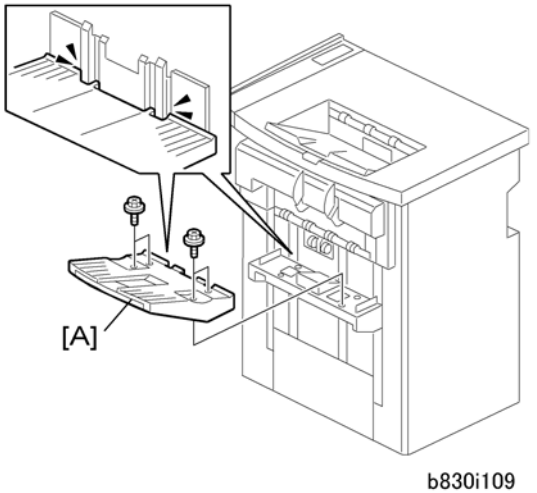
   Set the ground plate so that there is no gap between the plate and the bottom frame of the finisher (as shown).

7. Install the table extension [B] (x 2) (M4 x 8).

   The edge of the table extension should be aligned with the edge of the finisher.

8. Attach the cushion [C] to the right side of the upper cover.

9. Install the entrance guide plate [D] (x 2) (M3 x 6).



b830i109

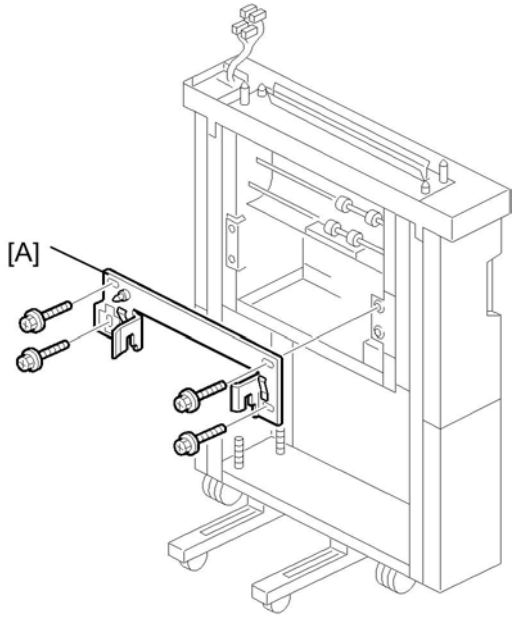
10. Insert the shift tray [A] into the grooves and fasten it (x 4) (M3 x 6).

Docking the Finisher B830

The Finisher (B830) is docked to one of the following:

- Ring Binder (D392)
- Multi-Fold Unit (D454)
- Cover Interposer Tray (B835)
- Main Machine

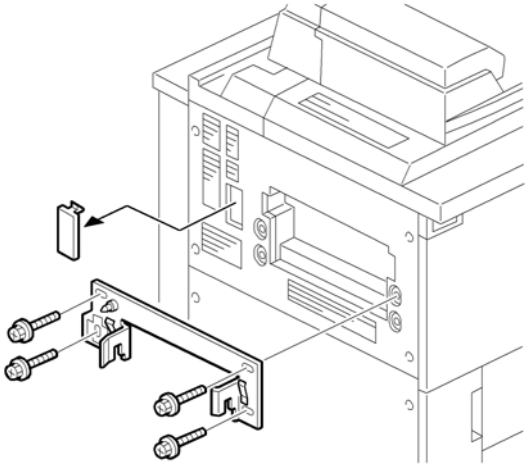
Finisher B830 to Cover Interposer Tray B835



b830i203

1. Fasten the joint bracket to the Cover Interposer Tray B835.
2. Dock the finisher. (Go to 'Connecting the Finisher B830'.)

Finisher B830 to Main Machine or Other Upstream Unit

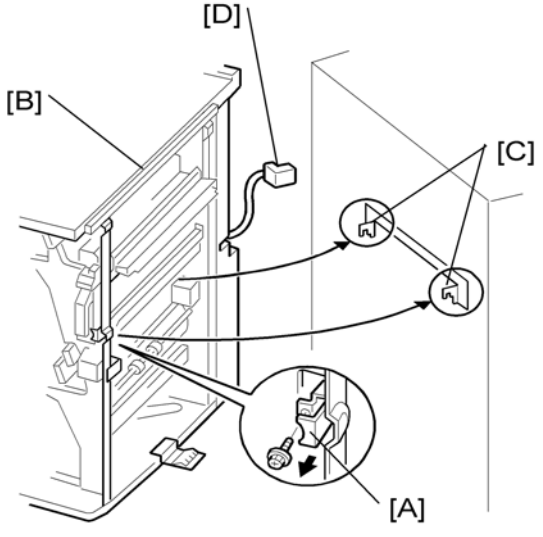


b830i201

1. Remove the connector cover
2. Fasten the joint bracket to the Copier.
3. Dock the finisher. (Go to 'Connecting the Finisher B830'.)

Connecting the Finisher B830

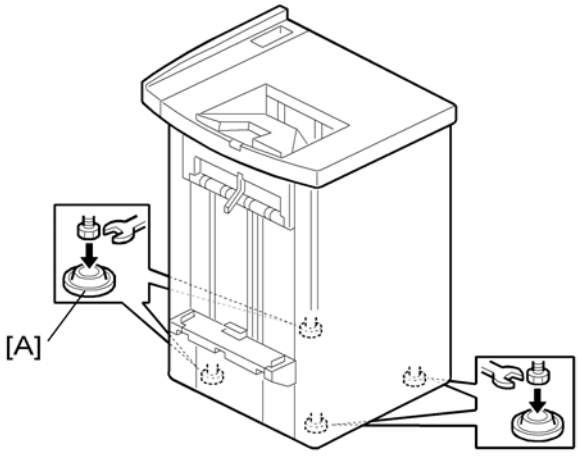
1. Open the front door of the finisher.



b830i202

2. Pull out the locking lever [A] (x 1).
3. Align the finisher [B] with the joint brackets [C], then slowly push the finisher onto the brackets.

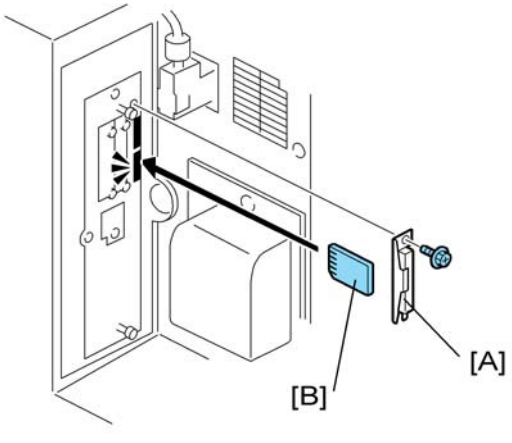
4. Connect the finisher cable [D] to the copier
5. Push in the locking lever [A].
6. Check that the top edges of the finisher are parallel with edges of the device (or copier) to the right.
7. Fasten the locking lever [A] (x 1)
8. Close the front door.



b830i206

9. Set the leveling shoes [A] (x4) under the feet.
10. Turn the nuts to adjust the height of the finisher until it is level.

Updating the Firmware



d375i108

1. If the machine is on, switch it off.

2. Remove the SD card slot cover [A] from the main machine (x 1).
3. Insert an SD card [B] that contains the latest firmware for this finisher, downloaded from the web site. Insert this SD card into the service slot (lower slot).

Note

- If you do not have the latest firmware, use the SD card that is provided with the finisher adapter kit. However, the firmware on this card may be old.

4. Open the front door of the main machine.
5. Switch on the machine. A message prompts you to wait for the update procedure to begin, then the initial screen appears.
6. Write down the NEW version numbers. (You will need these later to confirm the success of the firmware update.)
7. Touch "Finisher" then touch "Update".
8. Wait for the update procedure to begin.
   - The update may not start for 2 or 3 minutes.
   - When the first asterisk (*) appears in the progress bar this means the update has started.
   - The update procedure is very slow. Wait for all the hyphens (-) to be replaced by asterisks (*) in the progress bar.

Important

- **Never switch off the machine while the update is in progress.**

9. After asterisks have replaced all the hyphens in the progress bar, switch off the machine.
10. Remove the SD card from the SD card slot and reattach the SD card slot cover.
11. Close the front door.
12. Switch on the machine.
13. Enter the SP mode and do SP5990-5 to print the self-diagnostic report.
14. Confirm that the finisher firmware updated successfully.
    - For "Finisher 1", you should see the numbers that you saw for the NEW column in the initial screen at Step 6.
    - If you see these numbers, the update has executed successfully.
    - If the update fails, turn the machine off and try the procedure again.
15. Switch the machine off and remove the SD card.
16. Switch the machine on.

    This completes the firmware update procedure.

SP Setting

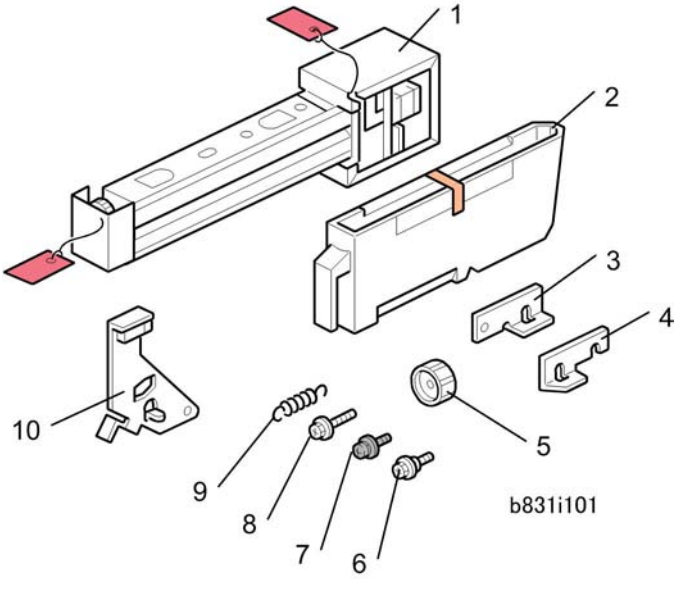
1. Enter the SP mode.
2. Do **SP5841-12** and enter the name of the staples used for corner stapling.
    - This is the name that shows when the user prints the Inquiry List.
    - To print this list push User Tools> [Inquiry]> [Print Inquiry List]> [Start].

Punch Unit PU5000 (B831)

Accessories

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

	Description	Q'ty
1.	Punch Unit	1
2.	Punch Waste Collection Hopper	1
3.	Spacer (1 mm)	2
4.	Spacer (2 mm)	1
5.	Knob	1
6.	Step Screw	1
7.	Screw (M4 x 6) Black	1
8.	Screw (M3 x 10)	2
9.	Spring	1
10.	Sensor Arm and Sensor	1

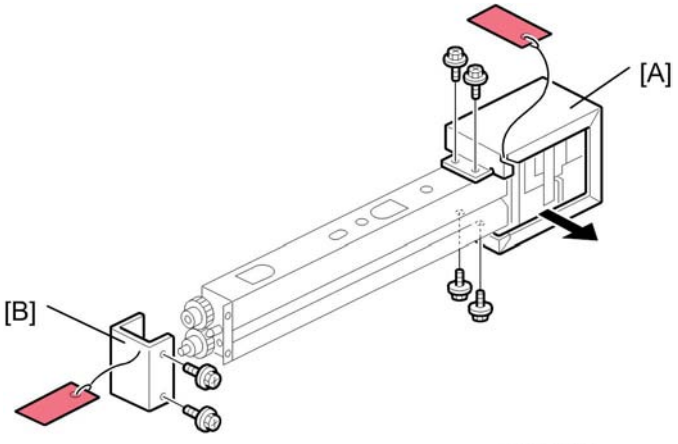


Installation

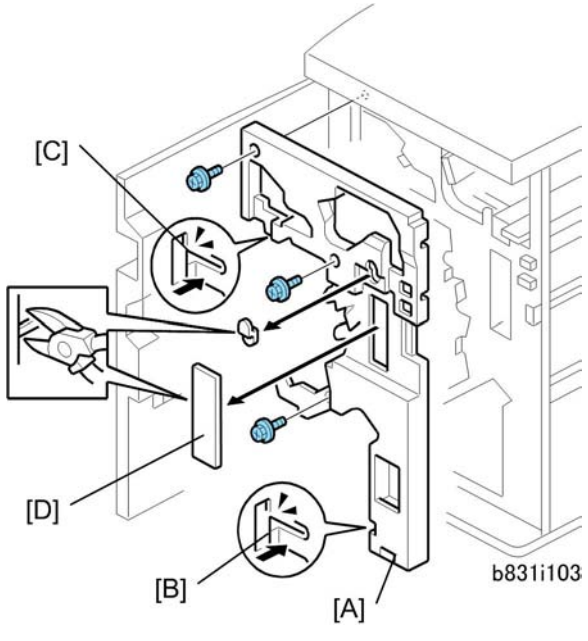
This punch unit is for the B830 finisher only.

⚠CAUTION

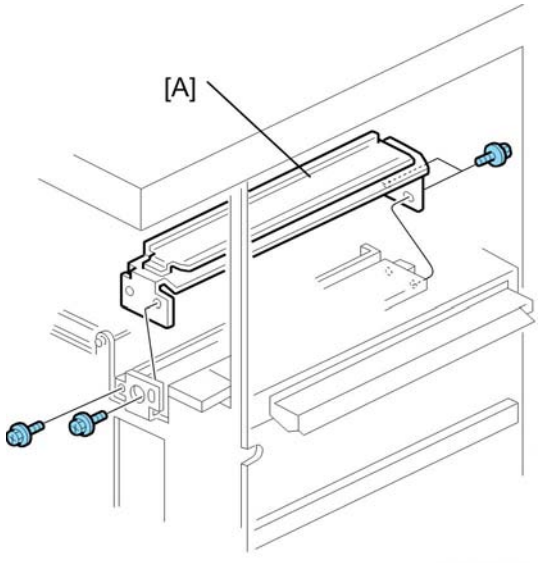
- Switch the machine off and unplug the machine before starting the following procedure.



1. If the finisher is connected to the main machine, disconnect it.
2. Open the front door and remove the rear cover (x 2).
3. Unpack the punch unit and remove the motor protector plate [A] (x 4, Step screw x1).
4. Remove the cam lock plate [B] (x 1).

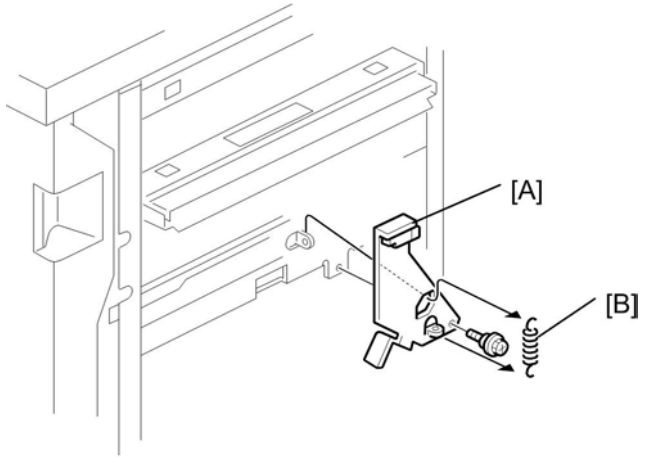


5. Remove the inner cover [A] (x 3).
6. Behind the inner cover at [B] and [C], press the lock tab to the right to release the inner cover from the frame.
7. Remove the plastic knockouts [D].



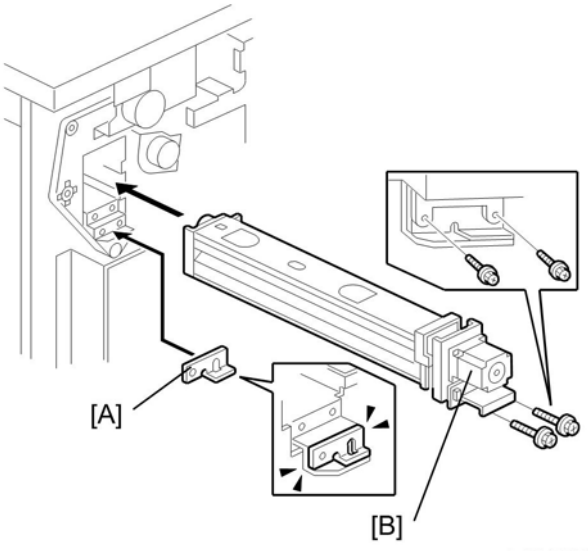
b831i104

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



b831i106

9. Install the sensor arm [A] (x 1, small step screw (M3 x 4). Make sure that the sensor arm swings freely on the step screw.
10. Attach the spring [B].

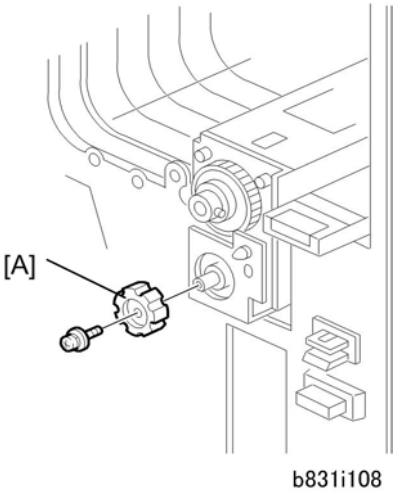


b831i105

11. Position the 2 mm spacer [A] and attach the punch unit [B] (x 2, M3 x 10).
12. Use one of the screws removed from the motor protector plate to fasten the remaining two spacers to the frame as shown.

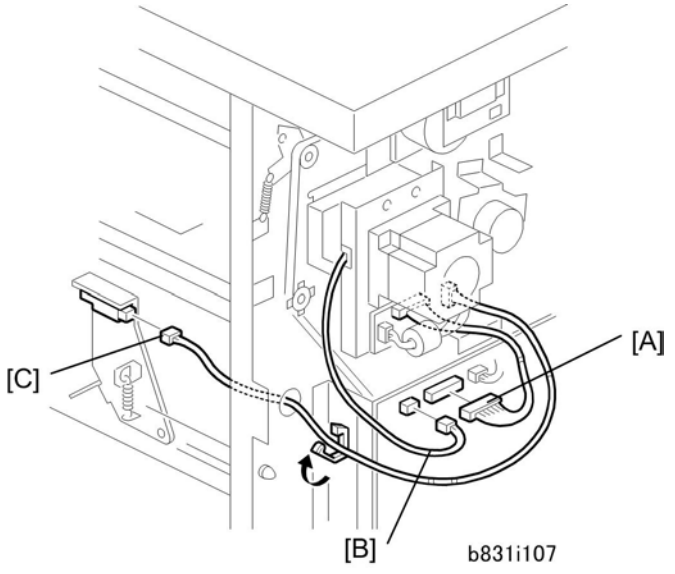
Note

- These extra spacers can be used to adjust the position of the punch holes (front to rear, across the page).



b831i108

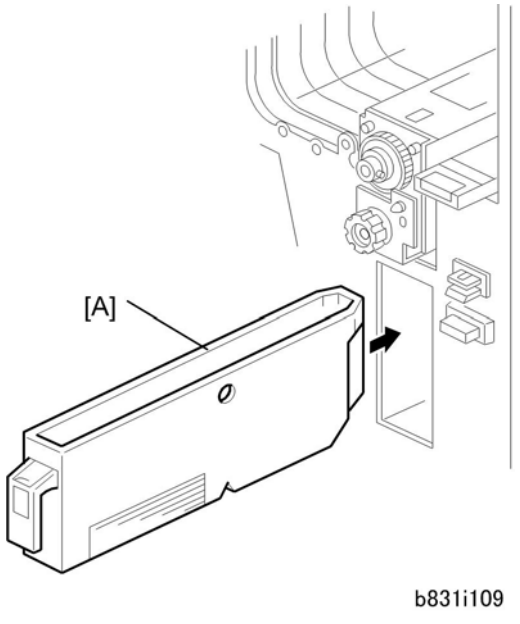
13. At the front, fasten the punch unit knob [A] (x 1).



14. Connect the PCB harness connector [A] to **CN135** of the finisher PCB and to **CN600** of the punch unit PCB.
15. Connect the harness [B] to **CN136** of the finisher PCB.
16. Connect the single end of the hopper full sensor connector cable [C] to the hopper full sensor on the arm (x 1, x 2).

Note

- No special DIP switch settings are required for this punch unit. A signal from the punch identifies itself by sending a signal to the copier.



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

Common Adjustments

Height and Level Adjustment

2

Before you begin:

- The main machine should be installed first and adjusted to level within less than 5 mm front-to-back, and side-to-side.
- Due to the length of the paper path with all optional peripheral units installed, it is extremely important that every unit be level.
- The height and level of each peripheral unit must be adjusted at installation.
- The height and level of each unit must be adjusted before testing for the presence of skew and checking that side-to-side registration is correct.

Setting the Leveling Shoes

Important

- **Do this procedure near each caster where an adjustable bolt is provided.**
- **The number of leveling shoes will differ, depending on the unit that you are leveling.**

d059i821

1. Turn the **lower** nut to lower the bolt.

   Note

   - The upper bold is spot-welded to the frame and does not move.
2. Set a leveling shoe below the bolt.

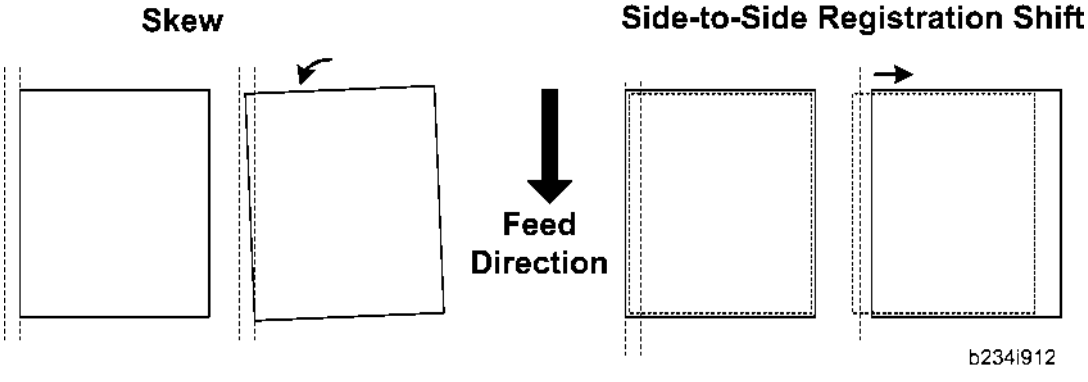
d059i822

3. Continue to turn the lower nut until it stops against the shoe.
4. Set a level on the front, rear, and side edges to determine if the unit is level.
5. Adjust the height at each corner until the unit is level.

Skew and Side-to-Side Registration

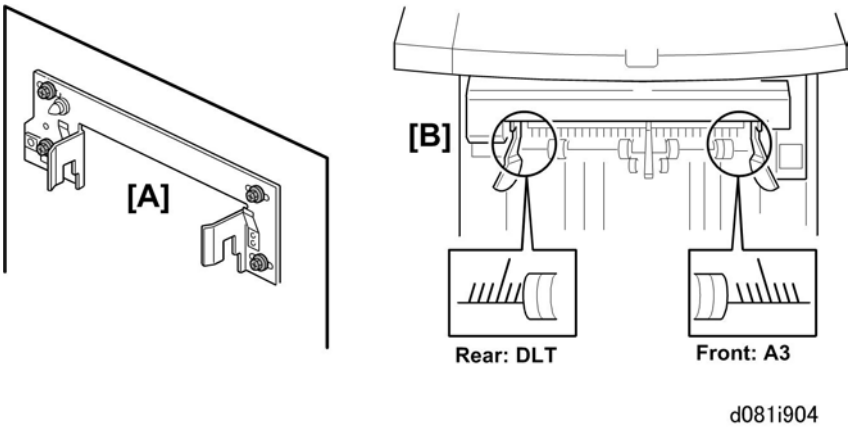
Overview

The paper feed path is extremely long when many peripheral units are installed. In such a long path, the cumulative effect of paper skew or deviation in side-to-side registration may require adjustment.



b234i912

- Skew occurs when the trailing edge of the paper rotates away from the direction of paper feed.
- If side-to-side registration occurs, the sheet remains straight but shifts left or right away from center.

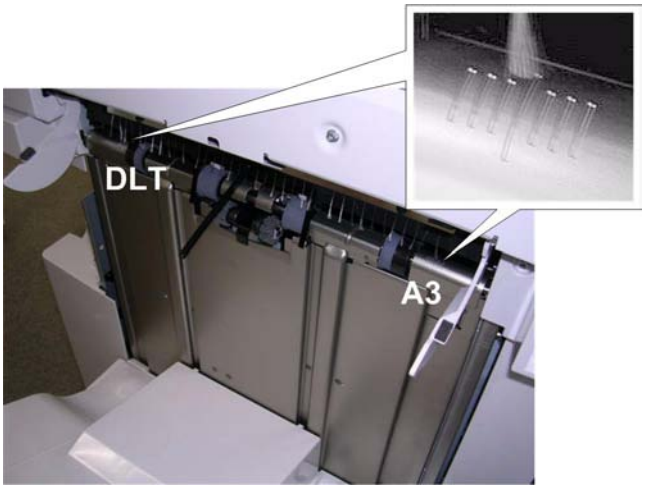


To correct skew and side-to-side registration, the bar joint bracket [A] (provided as an accessory and attached to the upstream unit) and graduated scales [B] at the paper exit are required. These items are not provided with all the finishers.

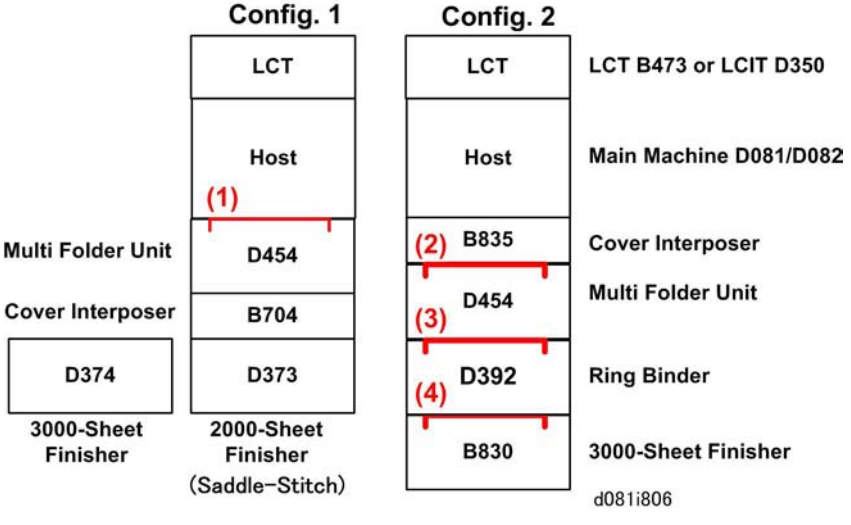
The table below shows which adjustments are possible.

Name	Skew	S-to-S
LCT (D473)	No	No
LCIT (D350)	No	No
Ring Binder (D392)	Yes	Yes
Multi Folding Unit (D454)	Yes	Yes
Finisher (B830)	No	Yes

- Neither skew nor side-to-side registration can be corrected for either LCT unit.
- Side-to-side registration correction can be done for the 3000-Sheet Finisher (B830). No spacers are provided for this finisher so skew cannot be adjusted.
- Use either the rear scale (for DLT) or front scale (for A3), depending on the type of paper used.



The illustration above shows the actual scale on the left side of the unit Multi Folding Unit (D454). In the illustration below, the red lines indicate the joint bracket where adjustments are done to eliminate skew and to correct side-to-side registration (this illustration shows the machine and peripherals as viewed from above the machine).



Here are some general rules for testing and adjusting for paper skew or a shift in side-to-side registration.

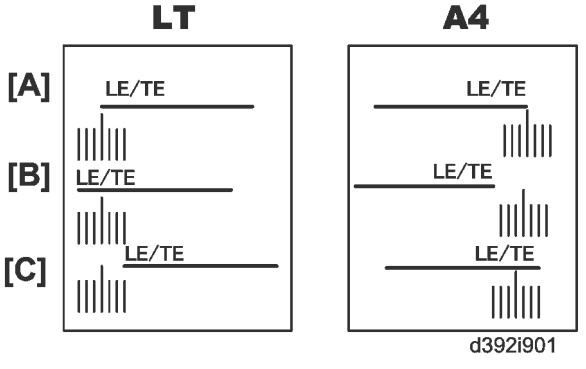
1. Skew and side-to-side correction can be done only where the unit is docked to the upstream unit with the bar joint connector (see above).
2. After installation of each peripheral device, do some test prints and check for the presence of skew, and check that side-to-side registration is correct.
3. If you detect a problem with skew or side-to-side registration, do the adjustment on the bar joint bracket attached to the peripheral unit **upstream of the unit where the problem occurred**.
4. Side-to-side registration is corrected by shifting the upstream joint bracket left or right.

5. Skew is eliminated by inserting spacers (shims) under the rear or front end of the joint bracket. These spacers are provided with the peripheral units, attached by screws to the units at the factory.

Checking Side-to-Side Registration

Do this procedure to confirm that the paper is centered in the paper path.

1. Make sure the I/F cable of the unit is connected to the upstream unit.
2. Disconnect the unit to the left of the unit to be tested.
3. Execute a run by feeding paper from Tray 2 of the host machine.
4. When each sheet exits, check the position of the paper on the scale to see if the paper is centered.
   - Read the rear scale for DLT-size paper
   - Read the front scale for A3-size paper.
   - The scale lines are spaced 2 mm apart.
5. The paper must not deviate more than ±2 mm on the scale.



[A]	Leading/trailing edges centered. No adjustment necessary.
[B]	Leading/trailing edges offset to the rear by more than 2 mm. Adjustment required.
[C]	Leading/trailing edges offset to the front by more than 2 mm. Adjustment required.

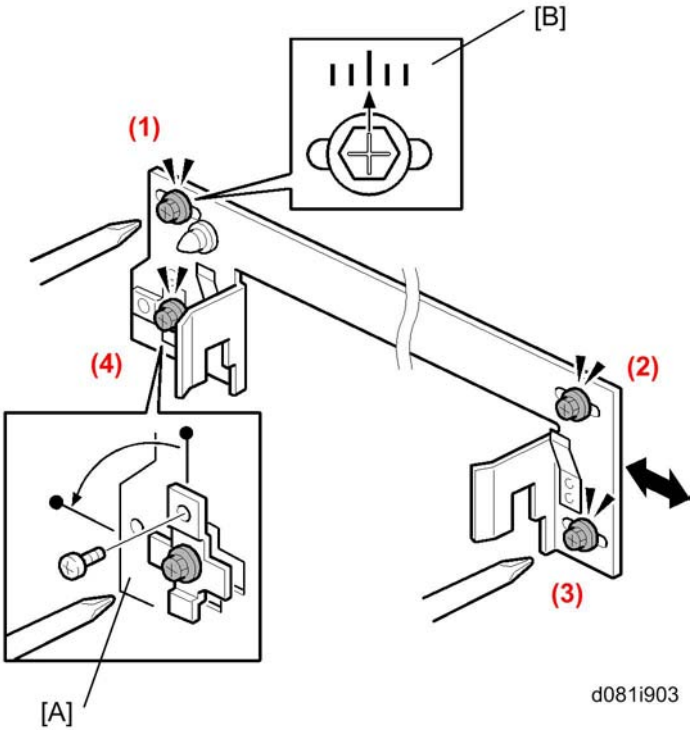
If the edge of the paper is on the scale at the center [A], no adjustment is required.

-or-

If the edge of the paper is ±2 mm off the center line on the scale, adjustment is required. Do the procedure in the next section.

Correcting Side-to-Side Registration

1. Disconnect the peripheral unit from the upstream unit.



2. On the joint bracket attached to the upstream unit, loosen screws (1), (2), (3), and (4).
3. Remove bracket [A] (x1), rotate it 90 degrees, and re-fasten the screw. Changing the position of this bracket aligns the oval cut-out horizontally and frees the joint bracket so it can slide from side to side.
4. Look at the scale [B].
5. Slide the bracket to the left or right and tighten the screw.
6. If the deviation from center was toward the front, slide the bracket to the rear and tighten the screw (1).

   -or-

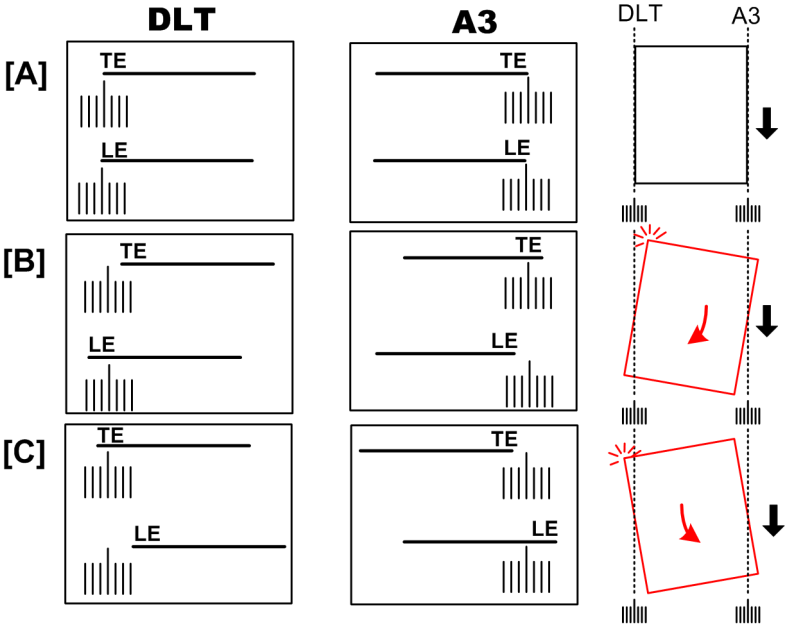
   If the deviation from center was toward the rear, side the bracket to the front and tighten the screw (1).
7. Tighten screws (2), (3), (4).
8. Do another test run, so that you can check the results of the adjustment.

Detecting Paper Skew

Do this check to detect the presence of skew in the paper path.

1. Make sure that the I/F cable of the unit is connected to the upstream unit.
2. If a peripheral unit is connected on the left side, disconnect it and pull it away.

3. Execute a straight-through run.
4. Check the scale where each sheet exits.
    - The rear scale is for DLT-size paper.
    - The front scale [2] is for A3-size paper.
    - Be sure to read the correct scale for the paper size in use.



d392i904

[A]	Centered. No adjustment necessary.
[B]	Trailing edge skew to the front, total skew more than ±2 mm. Adjustment required.
[C]	Trailing edge skew to the rear, total skew more than ±2 mm. Adjustment required.

Correcting Skew

1. Disconnect the peripheral unit from the upstream unit.
2. Locate and remove the spacers from the peripheral unit where the problem occurred.

Locating and Removing Spacers

The photos below show where you can find the spacers for each unit.

Multi Folding Unit (D454)

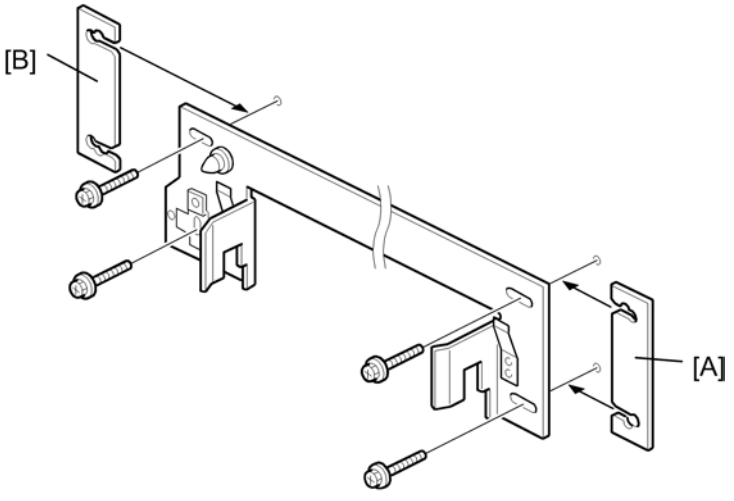
d454i111

Finisher SR5000 (B830)

d059i819

1. Look at the right side (x1).
2. Remove the spacers (x1).

Inserting Spacers



1. Loosen the screws (x4) of the joint bracket attached to the peripheral upstream of the unit where the problem occurred.
2. Insert a spacer and tighten the screws.

   If the trailing edge of the paper is **skewing toward the front** of the machine, insert a spacer [A] under the **rear end of the bracket** and tighten the screws.

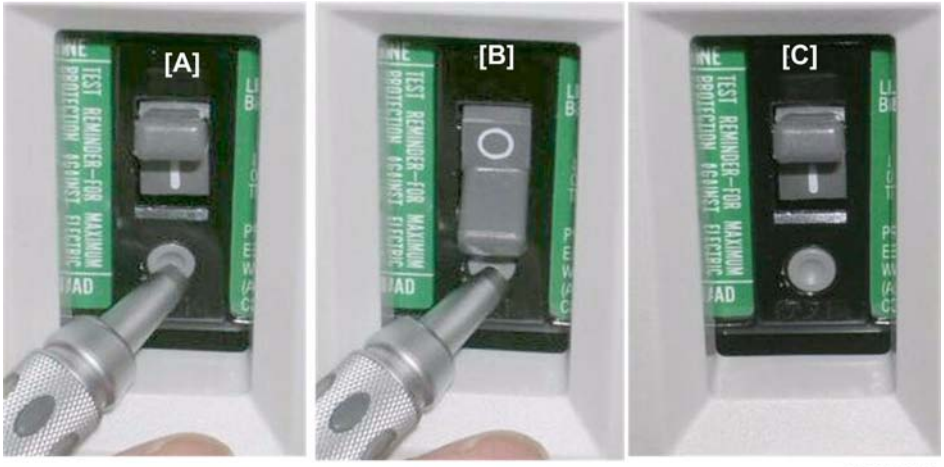
   -or-

   If the trailing edge is **skewing toward the rear** of the machine, insert a spacer [B] under the **front end of the bracket** and tighten the screws.
3. Do another run to check the adjustment. If skew is still present, insert another spacer.
   - Each spacer is 2 mm thick.
   - Only two spacers are provided, so the maximum adjustment is 4 mm (using two spacers).

Breaker Switch Testing

1. Plug the power cord of the main machine or peripheral unit to be tested into its power source.

   Important
   - **Do not turn on the main machine or the peripheral to be tested.**
   - **The main machine and the peripheral to be tested must be off.**



d059i820

2. Use the tip of a small screwdriver or pen to push the breaker test button [A].
   - The breaker switch should flip to the "O" position [B]. This indicates that the breaker switch is operating normally.
   - If the breaker switch does not flip to the "O" position, the switch must be replaced.
3. Return the switch to the "|" position [C] for normal operation.

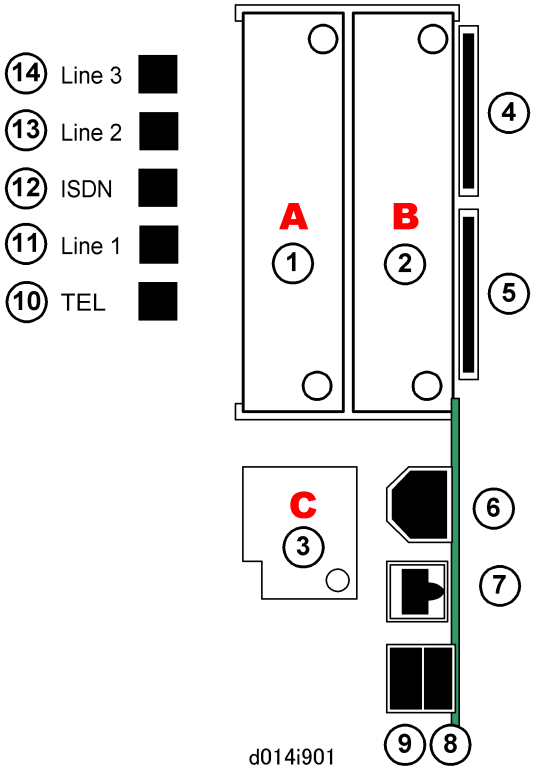
Important

- **The main machine will not turn on if the breaker switch is not returned to the "|" position.**
- **All breaker switches must be checked at installation, and once a year.**

MFP Controller Options

Overview

The machine controller box has three board slots and two SD card slots. Make sure that each board and SD card is put in the correct slot.



Board Slots

No.	Name	Description
①	Slot A	Copy Connector (B328) only
②	Slot B	• IEEE1284 (B679) • File Format Converter (D377) • IEEE802.11a/g (D377-01 NA, -02 EU/Asia) • Bluetooth (B826)

No.	Name	Description
③	Slot C	Gigabit Ethernet (D377-21). The EFI (Fiery) controller is connected through Gigabit Ethernet.
④	Upper Slot	• Data Overwrite Security (D497) • PostScript3 (D497) • Browser Unit (D497) • HDD Encryption Unit (D377-16)
⑤	Lower Slot	Contains the VM card when the machine leaves the factory. When used for firmware updates, and moving applications to another SD card with SP5873 (Apli Move), the VM card must be removed and then re-installed after the update procedure is completed.
⑥	USB 2.0	Built-in for connection of USB devices.
⑦	100BaseT LAN	Standard LAN connection point.
⑧	USB Ch1	For future use (PictaBridge, other application devices). **Note**: These connection points are covered with a plate. Remove the screw, rotate the plate and reattach it with the screw so that the slots are exposed, then attach the connector.
⑨	USB Ch2	
⑩	TEL	Jack for telephone connection
⑪	Line 1	Jack for main telephone line from the outside for connection to Fax Option (D356).
⑫	ISDN	Jack for ISDN connection **Japan Only**
⑬	Line 2	Jack for a 2nd line connection to G3 Interface Unit Type C7500 (D357) when this option is installed.
⑭	Line 3	Jack for a 3rd line connection to G3 Interface Unit Type C7500 (D357) when this option is installed.

Important Notes

- Only two SD Card slots are available for applications.
- The VM card is already inserted in the lower slot when the machine leaves the factory.
- Other applications must be inserted in the upper slot.
- If more than one application is required in the upper slot, the applications must be moved to the same SD card with SP5873-1.

- The PostScript3 application cannot be moved to another card. However, other applications can be moved to the PostScript3 SD card.

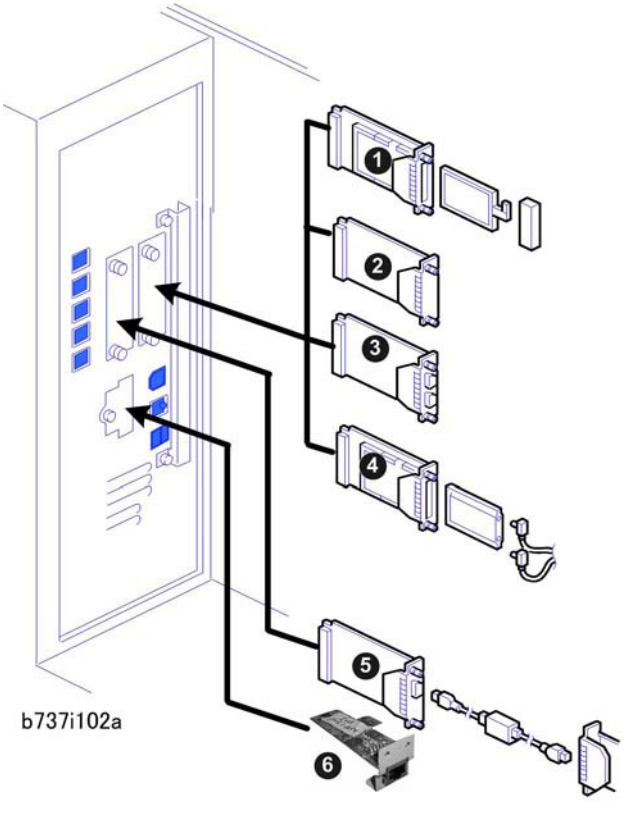
Enabling USB

Do SP5985 to enable USB.

Important

- **USB is built-in but it must be enabled.**

Accessory Cards



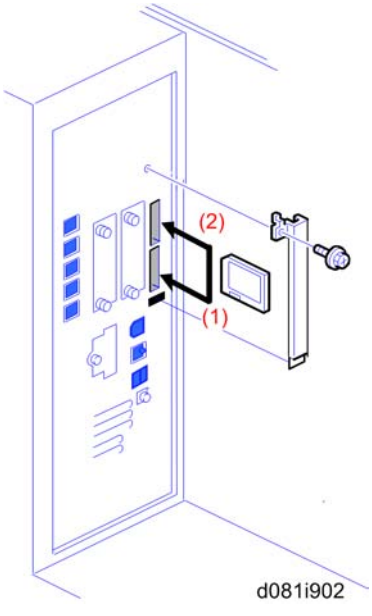
No.	Slot	Code	Option
(1)	Slot B	B826-17	Bluetooth
(2)	Slot B	D377-04	File Format Converter
(3)	Slot B	B679-17	IEEE1284
(4)	Slot B	D377-01, -02	IEEE802.11a/g
(5)	Slot A	B328-11	Copy Connector
(6)	Slot C	D377	Gigabit Ethernet*1
		B829-07	Copy Data Security Unit Type F (not shown, is attached to the IPU inside the controller box.)

*1: The EFI (Fiery) controller is connected through Gigabit Ethernet.

Note

- Items (1) to (4) must be in the same slot. Only one of these cards can be installed at the same time.

SD Card Applications



The following applications are available on SD cards.

No.	Name	SD Card Slot.
D497	Browser Unit Type E	2 (upper slot)
D497	Data Overwrite Security Unit Type H	2 (upper slot)
D377	HDD Encryption Unit Type A	2 (upper slot)
D378	PostScript 3	2 (upper slot)

Note:

- If the customer needs more than one application in the upper slot, the applications must be moved to one SD card.

Handling DIMMs and SD Cards

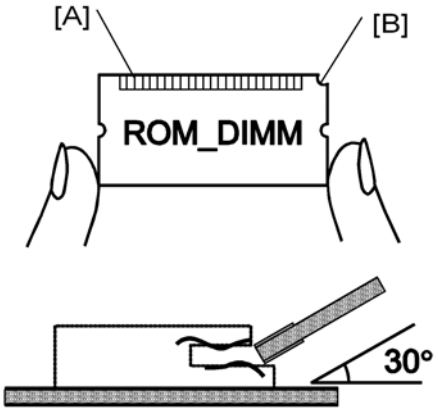
⚠WARNING

- Always turn the machine off and disconnect the machine power cord before you install a controller option.

⚠CAUTION

- To prevent damage to the controller box, always work carefully. Never put your hand or a tool into the box when you remove the controller box or install an option.
- To prevent damage to the circuits on the boards, always touch a metal surface to remove static charge from your hands before you handle a board..

DIMMs



g338i901

1. Hold the ROM DIMM as shown above. The edge connector [A] points toward the slot and the notch [B] is in the top right corner.
2. Insert the edge connector [C] in the slot at a 30-degree angle from the surface of the board. If the angle is too low, the upper contact could bend.
3. Carefully move the outer edge of the ROM DIMM up and down slightly until it goes into the connector then carefully push it down unit it is level with the controller board.

Important

- **If the upper contact is pushed in with force and bends, the connection will be defective and the machine will not operate.**

SD cards

SD cards are held in position by a small spring-lock mechanism.

1. To install an SD card, push it into the slot until it stops, then release it.
2. To remove an SD card, push the SD card in carefully to release it, and then remove it from the slot.

Moving Applications to One SD Card

Overview

There are only two SD card slots:

- Slot 2 (upper slot). Insert the application card in this slot.

- If more than one application is required, the applications must be moved to one SD card with SP5873-1.

Here are some important points you should keep in mind about SD cards and their applications:

- The SD card in the **upper slot** (target) must be another application SD card for this machine. The SD card in the upper slot cannot be a blank SD.
- The data necessary for authentication is transferred with the application program to the target SD card.
- Do not use an SD card if it has previously been used with a computer. Correct operation is not guaranteed if such an SD card is used.
- The SD card is the only evidence that the customer is licensed to use the application program. The service technician may occasionally need to check the SD card and its contents to solve problems. Although copied SD cards are disabled for use, they must be stored in the machine door for future use and reference. (See "Storing SD Application Cards on Site" in this section)
- A licensing agreement prohibits copying of a PostScript3 SD card. However, you can move other applications to the PS3 SD card.
- Once an SD card has been used to hold several applications, it should not be used for any other purpose.

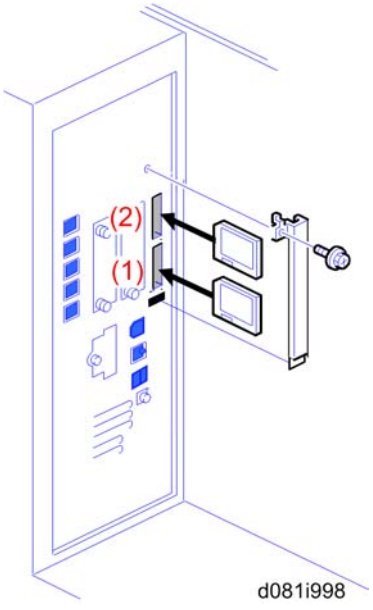
Moving Applications

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

1. Remove the SD card slot cover ( x 2).
2. Remove the VM card from Slot 1 (lower slot).

   Important

   - **Before removing the VM card from Slot 1 (lower slot) you must shut down the App2 Me application (and any other VM card applications) if it is running. See "Before Removing and Re-installing the VM Card...".**
3. Turn off the main machine.



4. Remove the VM card from Slot 1 (lower slot).

Important

- **Before removing the VM card from Slot 1 (lower slot) you must shut down the App2 Me application (and any other VM card applications) if it is running. See p.305 "Before Removing and Re-installing the VM Card".**

5. Insert the Source SD card in the Slot 1 (lower slot). This card contains the application that you want to move to the other SD card.

Note

- The PostScript3 SD card cannot be the source card because it cannot be copied.

6. Put the Target SD card in Slot 2 (upper slot).

Important

- **This must be another application SD card for this machine. You cannot use a blank SD card.**

7. Open the front door.
8. Turn the main machine on.
9. Go into the SP mode and do SP5873-1.
10. Follow the instructions on the display and touch "Execute" to start copying.
11. When the display tells you copying is completed, touch "Exit".
12. Turn the main machine off.
13. Remove the Source SD card from Slot 1 (lower slot), and leave the target SD card in Slot 2 (upper slot).

14. Turn the main machine on.
15. Go into the User Tools mode and confirm that all the applications on the SD card in Slot 2 (upper slot) are enabled.

    User Tools> System Settings> Administrator Tools> Firmware Version> Next...
16. Turn the main machine off.
17. Remove the cover from the front door, and store the SD card that was copied. (See "Storing SD Application Cards on Site"). The SD card must be stored with the machine for these reasons:
    - Once an SD card has been copied, it can no longer be used. But it must be stored in the front door to serve as proof of purchase by the customer.
    - Also, at a later time the stored SD cards can be restored to full use with SP5873-2 (described in the next section).
    - Before you put the card in the front cover, label it so that it can be easily identified.
18. If the client is using App2 Me or any other applications on the VM card, do the procedure to re-start these applications. (☛ p.305 "Before Removing and Re-installing the VM Card")

Undo Exec

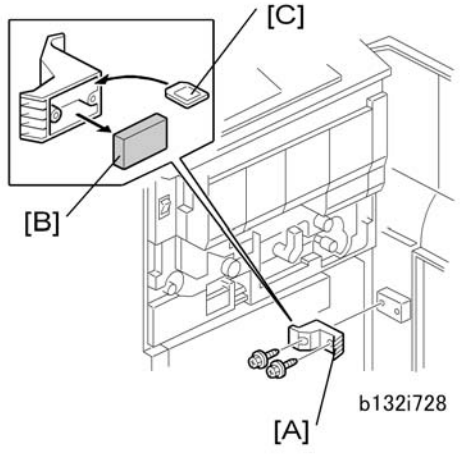
1. Remove the SD card slot cover (x 2).

   Important
   - **Before removing the VM card from Slot 1 (lower slot) you must shut down the App2 Me application (and any other VM card applications) if it is running. See p.305 "Before Removing and Re-installing the VM Card".**
2. Turn the main switch off.
3. Put the SD card with the applications in Slot 2 (upper slot).
4. Put the original destination SD card (the one stored in the front door) in Slot 1 (lower slot).

   Important
   - **The SD card in the lower slot must be the original (empty) SD card of the application that you want to move from the upper slot to the lower slot.**
   - **You cannot use any blank SD card in the lower slot. The application can be moved only to an original SD card.**
5. Turn the main switch on.
6. Go into the SP mode and do SP5873-2 (Undo Exec)
7. Follow the messages on the operation panel to complete the procedure.
8. Turn the main switch off.
9. Remove the SD cards from the slots.
10. Insert the VM card in Slot 1 (lower slot).

11. Turn the main switch on.
12. If the client is using App2 Me or any other applications on the VM card, do the procedure to re-start the App2 Me application. (☛ p.305 "Before Removing and Re-installing the VM Card")

Storing SD Application Cards on Site



1. Open the front door.
2. Remove the cover [A] on the door (x 2).
3. Remove the block [B].
4. Store the SD cards [C] inside the cover.
5. Attach the cover to the machine.

IEEE 1284 Interface Board (B679) (Centronics)

Accessories

Check the accessories and their quantities against this list.

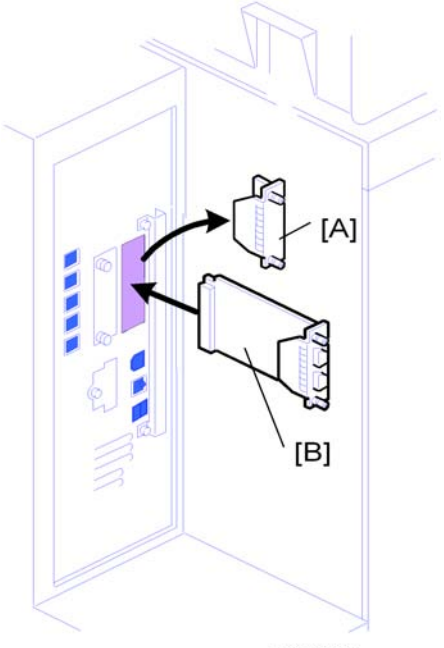
	Description	Qty
1.	IEEE 1284	1

Only one interface slot is available for one of the following options, so only one can be installed:

- Bluetooth (B826-17)
- File Format Converter (D377-04)

- IEEE1284 (B679-17)
- IEEE802.11a/g (D377-01)

Installation



b737i902

1. Remove the cover of Slot B [A] (x 2).
2. Touch a metal surface to discharge any static electricity from your hands.
3. Install the interface board [B] in Slot B (x 2).
4. Cycle the machine power off and on.
5. Do SP5990 to print an SMC Report.
6. Read the report and confirm that the interface board is installed correctly.

Bluetooth Interface Unit Type 3245 (B826-17)

Accessories

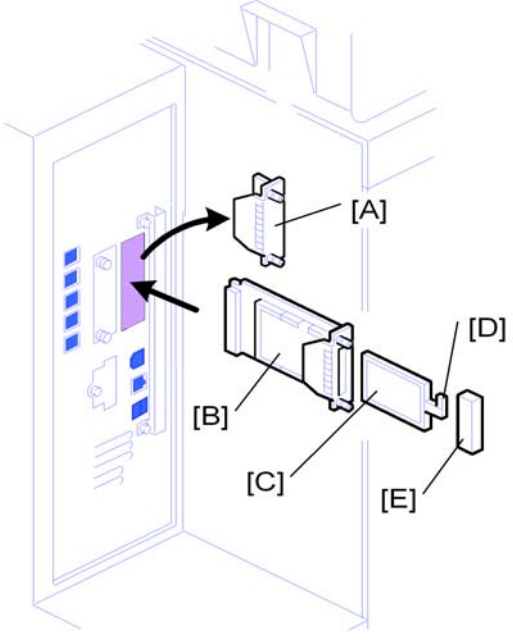
Check the quantity and condition of the accessories.

	Description	Q'ty
1	Bluetooth card	1
2	Bluetooth card cover	1
3	Bluetooth board	1

Only one interface slot is available for the following options, so only one can be installed:

- Bluetooth (B826-17)
- File Format Converter (D377-04)
- IEEE1284 (B679-17)
- IEEE802.11a/g (D377-01)

Installation Procedure



1. Remove the cover of Slot B [A] (x 2).
2. Touch a metal surface to any static electricity from your hands.
3. Put the interface board [B] in Slot B.
4. Confirm that the board is inserted completely, then fasten it (x 2).
5. Put the Bluetooth card [C] in the slot of the interface board.

6. Push the antenna cap [D] to extend it.
7. Attach the card cover [E] (used to prevent static electricity).
8. Turn the machine off and on.
9. Enter the SP mode and do SP5990 to print an SMC.
10. Read the report and confirm that the interface board is installed correctly.

IEEE 802.11a/g Interface Unit Type J (D377-01)

Accessories

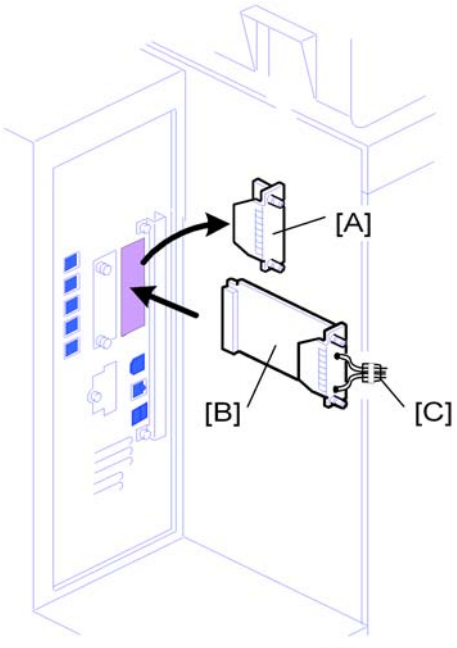
Check the accessories and their quantities against this list.

	Description	Qty
1.	Wireless LAN PCB (GW-WLAN)	1
2.	Card (GW-WLAN)	1
3.	Wireless LAN Instructions	1

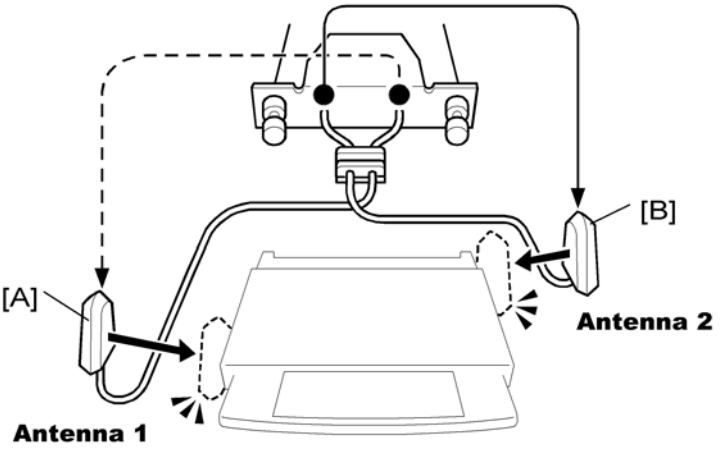
Only one interface slot is available for the following options, so only one can be installed:

- Bluetooth (B826-17)
- File Format Converter (D377-04)
- IEEE1284 (B679-17)
- IEEE802.11a/g (D377-01)

Installation



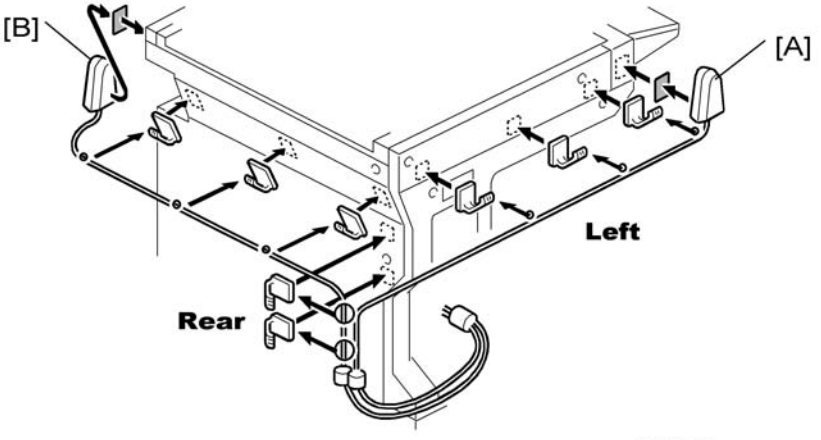
1. Remove the cover of Slot B [A] (x 2).
2. Touch a metal surface to discharge any static electricity from your hands.
3. Put the interface board in Slot B [B].
4. Confirm that the board is inserted completely, then fasten it (x 2).
5. Pull the antennas [C] away from machine and make sure that they are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



d017i508

Important

- **To assure reliable data sending and receiving, Antenna 1 must be installed on the front left corner of the machine.**



d017i509

7. Remove the seals from of the cable clamps and attach them to the left side of the machine as shown above.
8. Attach Antenna 1 [A] to the left front corner of the machine. (The core on the Antenna 1 cable is black.)
9. Set the cable of Antenna 1 in the clamps and close them.
10. Remove the seals from the cable clamps and attach them to the rear of the machine as shown above.
11. Attach Antenna 2 [B] to the right rear corner of the machine.
12. Set the cable of Antenna 2 in the clamps and close them.

SP Mode Settings for 802.11a/g Wireless LAN

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

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

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

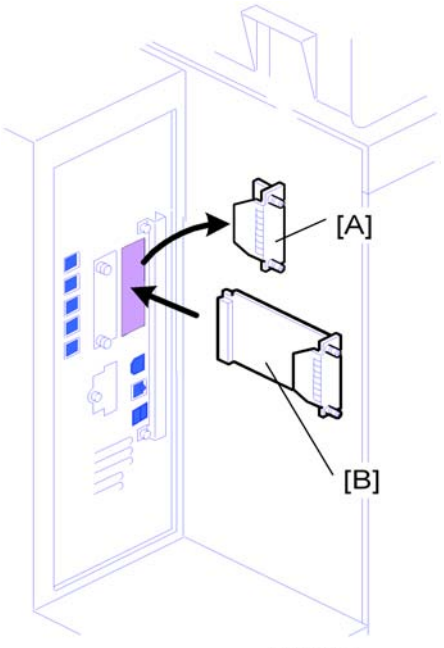
File Format Converter Type E (D377-04)

Accessory Check

Check the accessories and their quantities against this list:

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

Installation



1. Remove the cover of Slot A [A] (x2).
2. Touch a metal surface to discharge any static electricity from your hands.
3. Put the interface board [B] in Slot B.
4. Confirm that the board is inserted completely, then fasten it (x 2).
5. Turn the machine off and on.
6. Enter the SP mode and do SP5990 to print an SMC Report.
7. Read the report and confirm that the interface board is installed correctly.

HDD Encryption Unit Type A (D377-16)

Before You Begin the Procedure

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

Important

- **These settings must be set up by the customer before the encryption option can be installed.**

2. Confirm that "Admin. Authentication" is on:

   [User Tools]> "System Settings"> "Administrator Tools"> "Administrator Authentication Management"> "Admin. Authentication"> "On"

   If this setting is "Off" tell the customer that this setting must be "On" before you can do the installation procedure.

3. Confirm that "Administrator Tools" is selected and enabled:

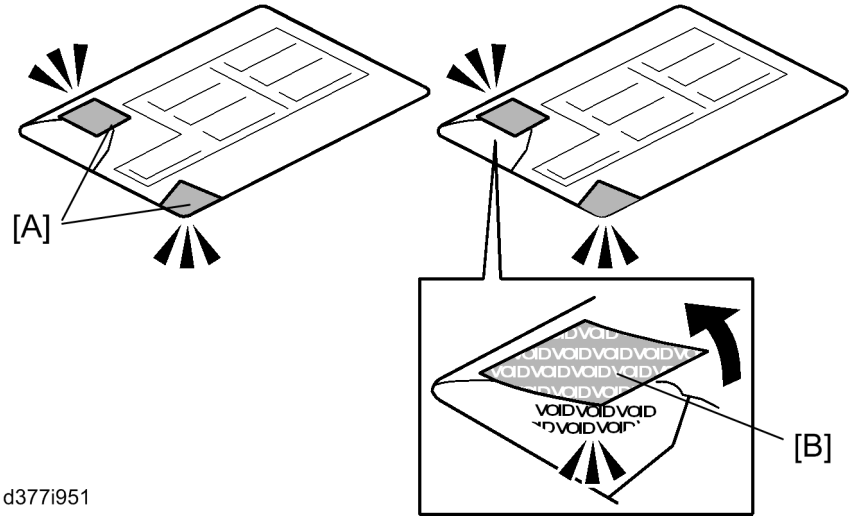
   [User Tools]> "System Settings"> "Administrator Tools"> "Administrator Authentication Management"> "Available Settings

   Note

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

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

Seal Check and Removal



d377i951

⚠CAUTION

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

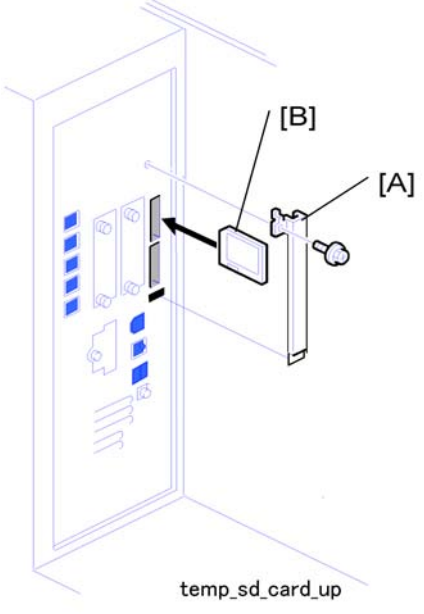
1. Check the box seals [1] on each corner of the box.
   - Make sure that a tape is attached to each corner.

- The surfaces of the tapes must be blank. If you see "VOID" on the tapes, do not install the components in the box.

2. If the surfaces of the tapes do not show "VOID", remove them from the corners of the box.
3. You can see the "VOID" marks [2] when you remove each seal. In this condition, they cannot be attached to the box again.

2

Installation Procedure

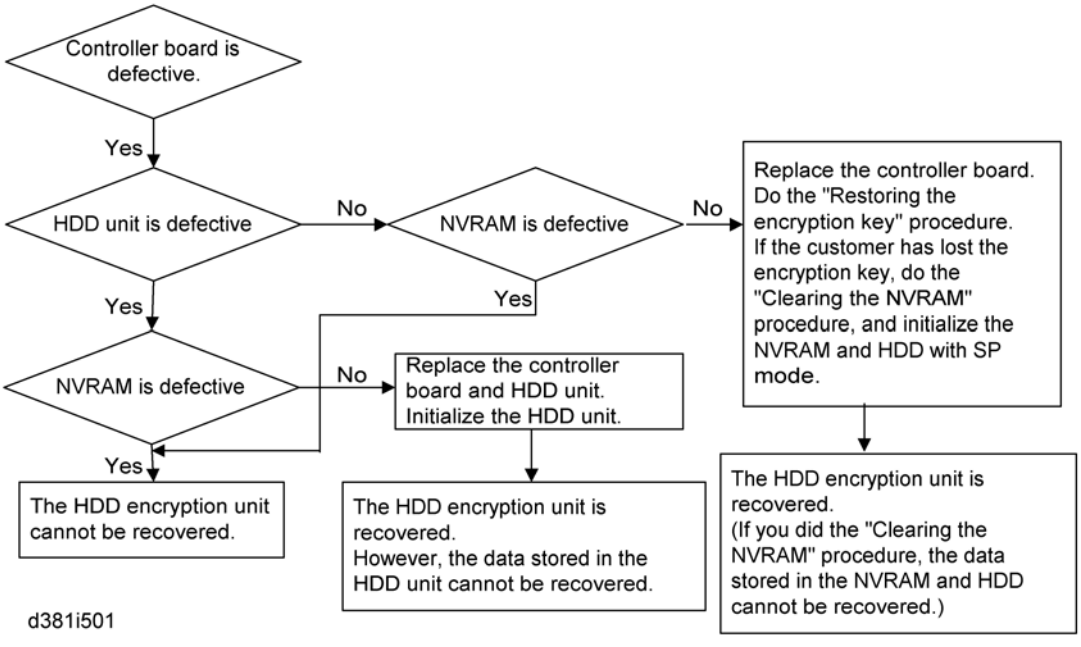


1. Remove the slot cover [A] (x 1).
2. Insert the SD card [B] into the upper slot.
3. Turn on the main power switch.
4. Enter the SP mode.
5. Select SP5878-002 (Option Setup> Encryption Option), and then touch [Execute].
6. Turn off the main power switch.
7. Remove the SD card.
8. Attach the slot cover [A] (x 1).
9. Switch the machine on.

Important

- **Tell the customer that it takes about 6 hours 30 minutes to perform the HDD encryption function. (The D014/D015 required only about 3 hours.)**

Recovery from a Device Problem



Restoring the encryption key

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

Important

- **Before removing the VM card from Slot 1 (lower slot) you must shut down the App2 Me application (and any other VM card applications) if it is running. See "Before Removing the VM Card..."**

1. Prepare an SD card which is initialized.
2. Make the "restore_key" folder in the SD card.
3. Make an "nvram_key.txt" file in the "restore_key" folder in the SD card.
4. Ask an administrator to input the encryption key (this has been printed out earlier by the user) into the "nvram_key.txt" file.
5. Remove only the HDD unit.
6. Turn on the main power switch.
7. Confirm that the prompt on the LCD tells you to install the SD card (storing the encryption key) in the machine.
8. Turn off the main power switch.
9. Insert the SD card that contains the encryption key into Slot 1 (lower slot).

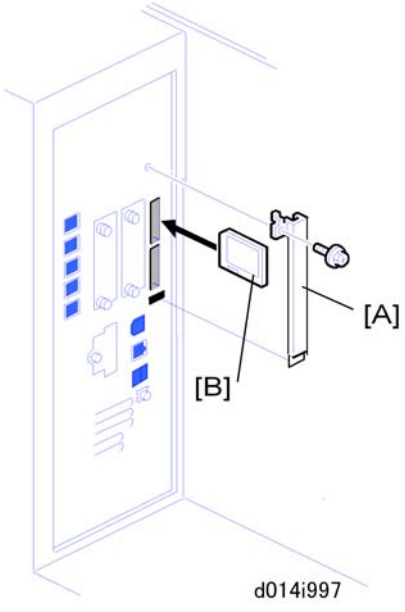
10. Turn on the main power switch, and the machine automatically restores the encryption key in the flash memory on the controller board.
11. Turn off the main power switch after the machine has returned to normal status.
12. Remove the SD card from Slot 1 (lower slot).
13. Reinstall the HDD unit.

Clearing the NVRAM

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

1. Prepare an SD card which is initialized.
2. Make the "restore_key" folder in the SD card.
3. Make an "nvram_key.txt" file in the "restore_key" folder in the SD card.
4. Input "nvclear" into the "nvram_key.txt" file.
5. Turn on the main power switch.
6. Confirm that the prompt on the LCD tells you to install the SD card (storing the encryption key) in the machine.
7. Turn off the main power switch.
8. Insert the SD card that contains "nvclear" into Slot 1 (lower slot).
9. Turn on the main power switch, and the machine automatically restores the encryption key in the flash memory on the controller board.
10. Turn off the main power switch after the machine has returned to normal status.
11. Remove the SD card from Slot 1 (lower slot).
12. Turn on the main power switch.
13. Initialize the NVRAM (SP5801-001) and HDD unit (SP5832-001) with SP mode.
14. The user must enable the HDD encryption unit with a user tool.

Postscript3 Unit Type 7501 (D497-01, -03, -04)



1. Remove the slot cover [A] (x1).
2. Put the PostScript3 SD card [B] in SD card the upper slot.
    - Only one SD card slot is available for applications provided on SD cards.
    - If the customer wants to use two or more applications from SD cards, the applications must be moved to a single SD card. (See "Moving Applications to One SD Card" in this section.)
    - The PostScript3 application and fonts cannot be moved to another SD card. However, other applications can be moved onto the PostScript3 SD card.

Data Overwrite Security Unit Type H (D497)

Accessory Check

Check the accessories and their quantities against the table below.

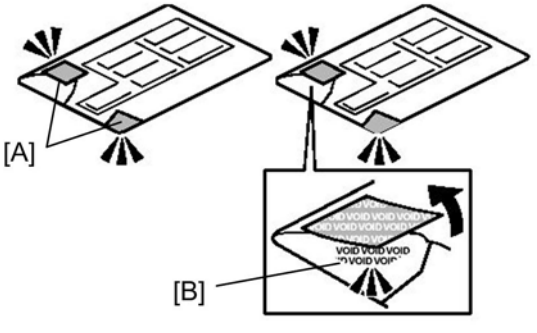
Description	Q'ty
1. Data Overwrite Security SD Card	1
2. Operating Instructions CD-ROM	1
3 Comments Sheet (17 languages)	2

Before You Begin...

1. Make sure that the Data Overwrite Security unit SD card is the correct type for this machine. **The correct type for this machine is type "H".**
2. Make sure that the following settings are not at the factory default settings:
   - Supervisor login password
   - Administrator login name
   - Administrator login password

   These settings must be set up by the customer before the Data Overwrite Security unit can be installed.
3. Confirm that "Admin. Authentication" is on:
   - [User Tools]> "System Settings"> "Administrator Tools"> "Administrator Authentication Management"> "Admin. Authentication"> "On"
   - If this setting is "Off" tell the customer that this setting must be "On" before you can do the installation procedure.
4. Confirm that "Administrator Tools" is selected and enabled:
   - [User Tools]> "System Settings"> "Administrator Tools"> "Administrator Authentication Management"> "Available Settings
   - "Available Settings" is not displayed until Step 2 above is done.
   - If this setting is not selected tell the customer that this setting must be selected before you can do the installation procedure.

Seal Check and Removal



d377i900

1. Check the two seals [A] on the corners of the packet and confirm that they are firmly attached.

Important

- **If you see "VOID" on the tapes or on the corners of the packet this means that the seals have been removed. Do not use the SD card for this installation. Contact your sales division**

2. Remove the seals from both corners of the packet. The silver "VOID" notations [B] become visible only after you have removed the seals. This is normal.

Installation Procedure

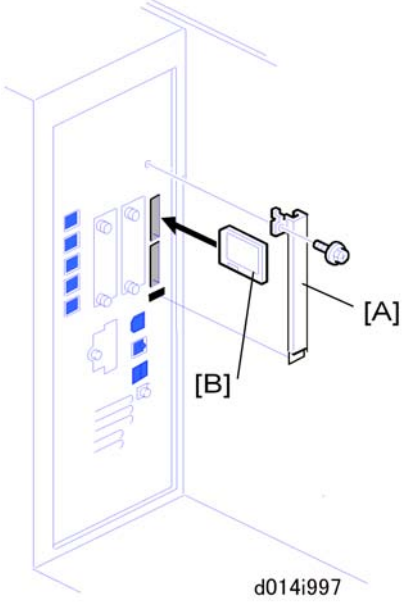
Preparation

- Before doing the procedure, turn off the main power switch and unplug the machine from its power source.

1. Make sure that the machine is switched off and disconnected from its power source.
2. Disconnect the network cable.
3. Turn the main power switch on.
4. Turn the operation switch and main power switch off.

Important

- **Make sure that the number and "Type" are correct (Type H, D377). If you install the incorrect version of this application, the NVRAM must be replaced.**



5. Remove the SD card slot cover [A] (x1).
6. Remove the security tape from the SD card wrapping.

Important

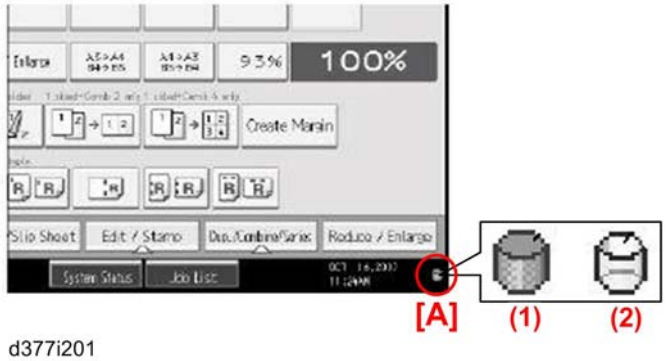
- **If you see "VOID" on the security tape this means that the tape has been removed.**
- **If the "VOID" notations are visible, do not use the SD card for this installation. Contact your sales division**

7. Insert the DOS SD card [B] into the upper slot.
8. Reconnect the network cable.
9. Turn the main power switch on.
10. Do SP5878-1 and push [Execute] to enable the DOS option.
11. Go out of the SP mode.
12. Cycle the machine off/on.
13. Do SP5990-5 to print the Self Diagnosis Test.
14. Make sure the ROM number and firmware version in the diagnostic report are the same.
    - "ROM Number/Firmware Version" – "HDD Format OptionW
    - "Loading Program" – "GW4a_zoffyx"

Diagnostic Report	"ROM No./Firmware Version"	"Loading Program"
Data Overwrite Security Unit	HDD Format Option: D3775902A/1.01x	GW4a_zoffyx: D3775902A/1.01x

Check Operation of the DOS Application

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



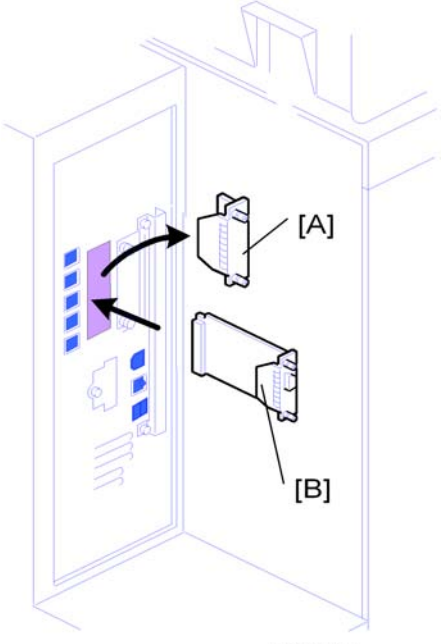
d377i201

3. Check the display and make sure that the overwrite erase icon [A] is displayed.
4. Make a sample copy and check the operation of the overwrite/erase icon.
    - The icon lights (1) when there is temporary data to be overwritten and blinks during overwriting.
    - The icon (2) lights when there is no temporary data to be overwritten.

Copy Connector Type 3260 (B328-11)

Check the accessories and their quantities against the table below.

Description	Qt'y
1. Connection PCB	1
2. Power Repeater Cable	1
3. Repeater Hubs	2

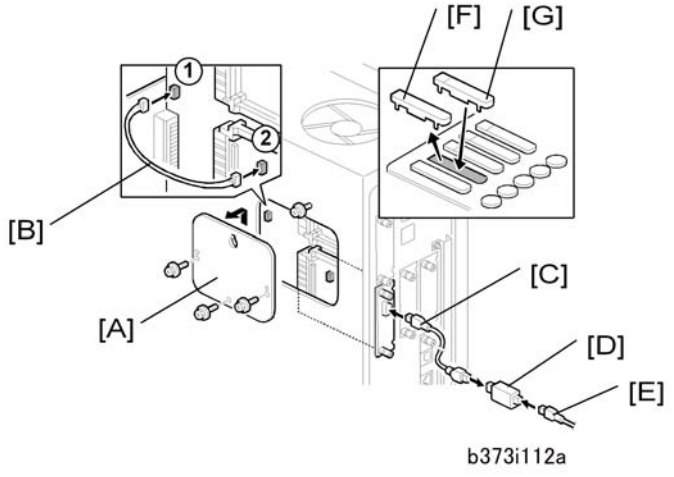


b737i904

⚠CAUTION

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

1. Remove the cover [A] of Slot A (x 2).
2. Install the Main machine Connection Kit Board B328 [B] in Slot A and fasten it (x 2).
3. Remove the rear upper cover.



4. Remove the controller box cover [A] (x 3).
5. Connect the power repeater cable [B] to:
   ① CN594
   ② CN4
6. Reattach the controller box cover and rear upper cover.
7. Repeat Steps 1 to 6 to install the connection kit on the second machine.
8. Connect the end of the interface cable [C] to the connection PCB.
9. If additional cable is required, connect the cables [E] with repeater hubs [D].
10. On the operation panel of each machine, remove the second cover [F] from the bottom ("Printer").
11. Install the appropriate key on each machine.

    Attach the "Printer/Other Function" key [G] (or its equivalent symbol for EU) if the printer/scanner option is installed.

    -or-

    Attach the "Other Function" key [G] (or its equivalent symbol for EU) if the printer/scanner option is not installed.
12. Attach the other end of the connection cable to the connection PCB installed in the other machine.

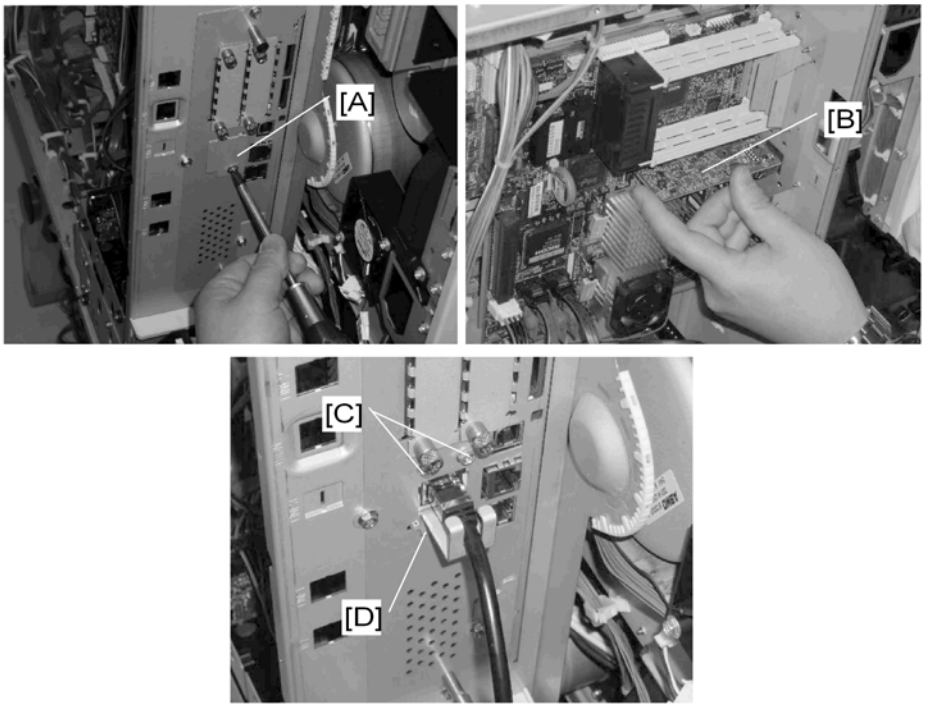
Gigabit Ethernet Type B (D377-21)

Accessories

Check the accessories and their quantities against the table below.

Description	Qt'y
1. Gigabit Ethernet PCB	1
2. Protector Plate	1
3. Screws	3

Installation



d377i200

1. Remove:
    - Rear upper cover.
    - Controller box cover
    - Cover [A] of Slot C (x1)
2. Insert the edge connector of the gigabit Ethernet PCB [B] into its slot on the controller board.
3. On the other side of the faceplate, fasten the PCB (x2).
4. Attach the cable.
5. With the prongs of the protector plate [D] on both sides of the attached cable, fasten the protector plate to the controller box face plate (x1).

Browser Unit Type E (D497)

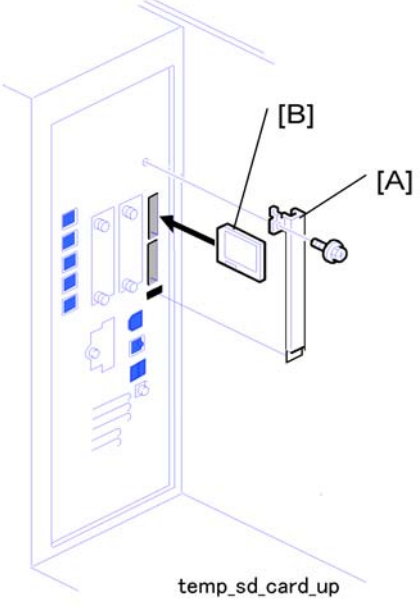
Accessories

Check the accessories and their quantities against the table below.

Description	Qt'y
1. Browser Unit SD Card	1
2. Keytops	2

Installation

1. Switch the machine off.



2. Remove the SD card slot cover [A].
3. Insert the browser SD card into the upper slot [B].
4. Turn the machine on.
5. Push [User Tools]> [Login/Logout].
6. Login with the administrator user name and password.
7. Touch "Extended Feature Settings" twice.
8. Touch "SD Card" then touch the "Browser" line.

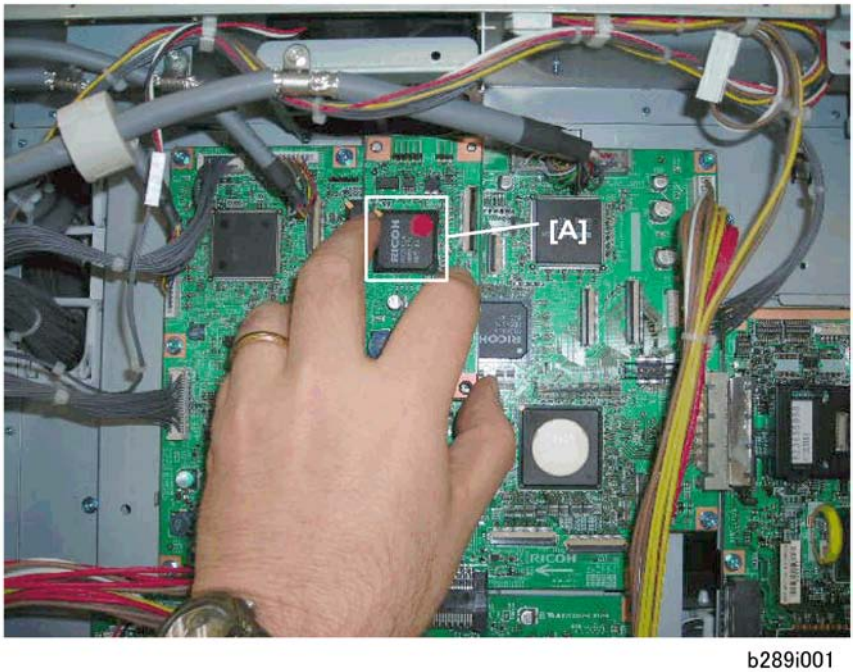
9. Under "Install to:" touch "Machine HDD"> "Next".
10. When you see "Ready to Install" check the information on the screen to confirm your previous selection.
11. Touch "OK". You will see "Installing..." then "Completed".
12. Touch "Exit" twice to return to the copy screen.
13. Remove the SD card from the SD card slot.
14. On the operation panel, remove the blank keytop at the bottom and replace it with the keytop provided ("Other").

Copy Data Security Unit Type F (B829-07)

Accessories

Check the accessories and their quantities against the table below.

Description	Qt'y
1. Copy Data Security Type F PCB	1



b289i001

⚠CAUTION

- Turn the machine off and disconnect its power cord from the power source.

1. Remove
   - Rear upper cover
   - Controller box cover
2. Touch a metal surface to discharge any static electricity from your hands.
3. Push the connector on the underside of the Copy Data Security PCB [A] into its slot on the IPU.
4. Carefully fasten the Copy Data Security PCB to the IPU (x2).

   Important

   - **Do not touch the surface of any other board with the tip of the screwdriver.**

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 > Data Security for Copying > "On".
3. Exit the User Tools.
4. Check the operation.

   Note

   - The machine will issue an SC165 error if the machine is powered on with the ICIB-1 removed and the "Data Security for Copying" feature is set to "ON".
   - 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 settings. And then SC165 will appear every time the machine is switched on, and the machine cannot be used.
5. Make sure that the machine can recognize the option (☛ "Check All Connections" at the end of this section).

3. Preventive Maintenance

Overview

The amounts mentioned (K=1,000) as the PM interval indicate the number of prints or copies unless stated otherwise. These numbers are based on the PM counter.

Required Materials

You must use these materials to service the machine:

- Optical Cloth (A0129111)
- Alcohol
- Exposure Glass Cleaner (A1939310)
- Barrierta S552R
- Grease KS660B (D0149800)
- G104 Yellow Toner (D0159500)
- Zinc Stearate (D0159501)

Notes:

- The G104 Yellow Toner and Zinc Stearate are specially designed for this machine.
- Grease KS660B is a new conductive grease specially designed for servicing this machine. Previous grease compounds (Grease KS660, Silicone Grease 501, Grease Barierta S552R) are non-conductive.
- Always use G104 Yellow Toner and Zinc Stearate to lubricate the ITB and drum. These compounds are specially designed for this purpose.

Important

- **Never use the yellow toner of the D014/D015/D081/D082 to lubricate the ITB or drum. The yellow toner contains developer which could damage the ITB or drum and cause problems with image printing.**
- **Never use the previous Setting Powder (54429101) used for previous machines in any service procedure for the D081/D082. The composition of this powder is completely different. If you use Setting Powder (5442910) to service this machine, you will damage the drum charge roller and cause problems with image quality.**

⚠WARNING

- Turn off the main power switch and unplug the machine before performing any procedure in this section. Laser beams can seriously damage the eyes.

Important

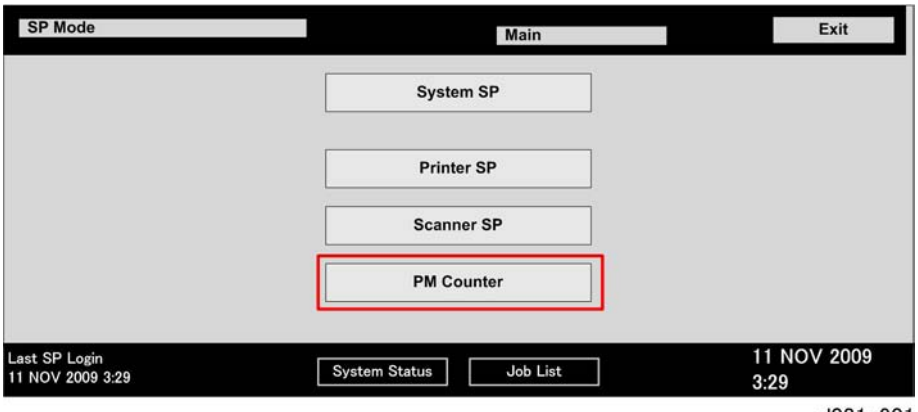
- After you do the PM, do the forced music adjustment with SP 2111 001.

PM Counter

The PM Counter main menu and submenu allows you to review the PM counts for both units and individual components.

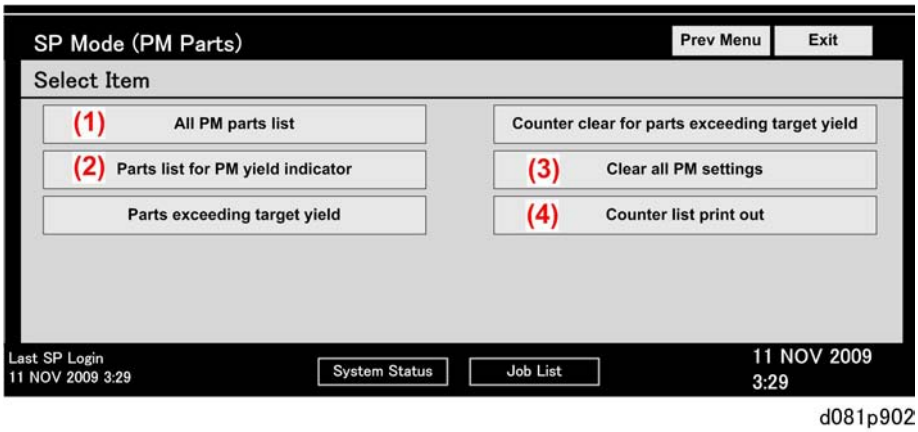
Displaying the PM Counter

1. Enter the SP mode.



d081p901

2. Touch [PM Counter].



d081p902

(1): All PM Parts List. Displays all PM items (all PM items, not only PM units). Lists all PM items regardless of PM yield indicator settings.

(2): Parts list for PM yield indicator. Displays the items that have their PM yield indicator settings set to "Yes".

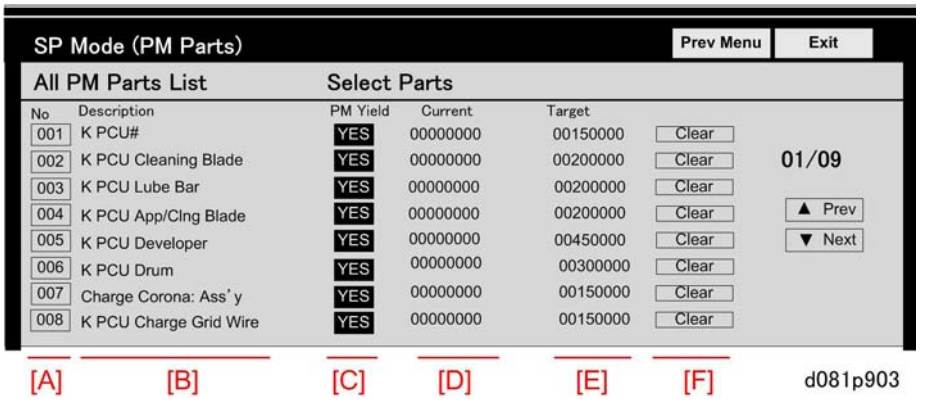
(3): Clear all PM settings. Resets all PM counter settings to "0" at the same time. PM items can be reset one by one with the [Clear] button.

(4): Counter list print out. Prints the PM counter on paper.

PM Parts Screen Details

All PM Parts list: Main Menu

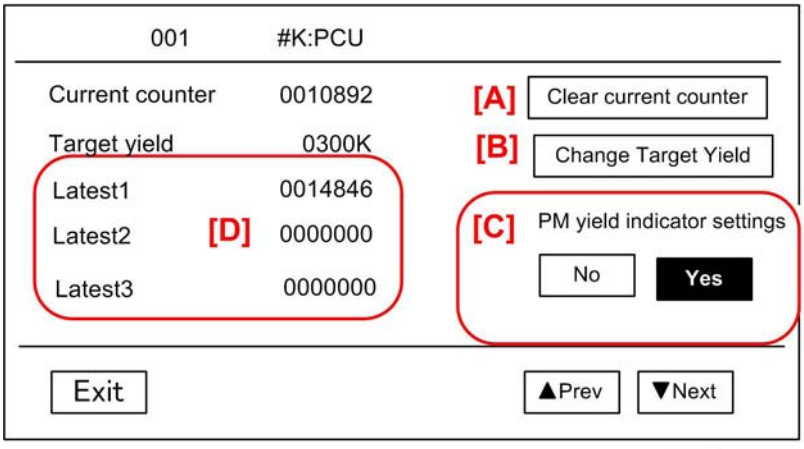
The "All PM Parts list" displays all PM units and individual items. This list shows all PM items, regardless of their "PM yield indicator settings".



[A]	Number buttons. Pressing a number button opens the Number Button submenu (See the next section below.)
[B]	Descriptions. The # mark denotes a "unit" (not individual item).
[C]	PM yield buttons. Function is the same as the "PM yield indicator settings" button.
[D]	Current PM counter value.
[E]	Target PM interval. This can be changed by pressing a number button [A].
[F]	PM counter clear button. Function is the same as the [Clear current counter] button.

Number button submenu

Press any number button to open the submenu for a part. In the example below, the number button [001] #K:PCU was pressed.



d081p904

[A]: **Clear current counter.** Press to reset the selected PM counter (in this example 001 #K:PCU) to "0". You can also clear the settings by pressing the [Clear] button on the right side of the PM Counter Main Menu ([F] in the previous section).

[B]: **Change target yield.** Press the change the target PM yield. To change the setting:

- Press [Change target yield]
- Enter the number for the new target with the 10-key pad.
- Press [#] on the operation panel.

[C]: **PM yield indicator settings**. [Yes] is the default. Press [No] to remove the current item from the "Parts list for PM yield indicator".

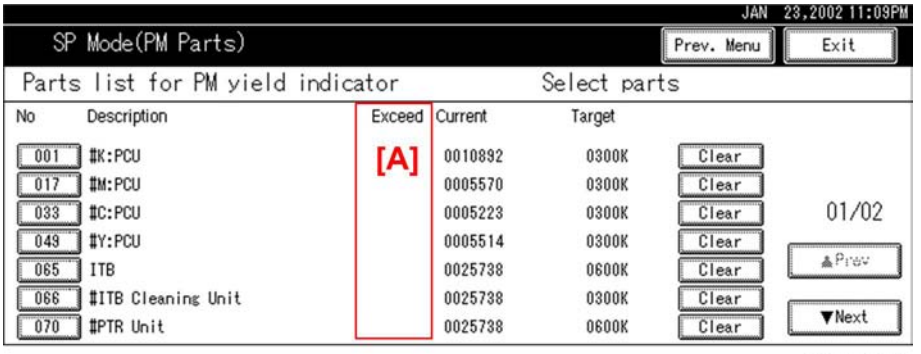
- When set to "Yes", items marked with the # mark (# = a unit) will not have their individual items
- When set to "No", items marked with the # mark (# = a unit) only the individual components will appear in the list (the units will not appear).

[D]: **PM counter history**. This is a summary of the most recent counts

- Latest 1. The latest PM count since the unit (or part) was replaced.
- Latest 2. The previous PM count since the unit (or part) was replaced.
- Latest 3. The previous but one PM count since the unit (or part) was replaced.

Parts list for PM yield indicator

This list shows the PM Parts Main Menu with only items set to "Yes" displayed.



d081p905

Note:

- The # mark denotes a unit.
- Items without the # (065 ITB, for example) denote individual components.
- An asterisk (*) will appear in the Exceed column [A] to show items that that have exceeded their target PM yields.

PM Tables

See "Appendices" for the following information:

- PM Tables

4. Replacement and Adjustments

General Cautions

Important

- **Never switch off either power switch while any of the electrical components are operating. Doing so might cause damage to units such as the transfer belt, drum, and development unit when they are pulled out of or put back into the main machine.**

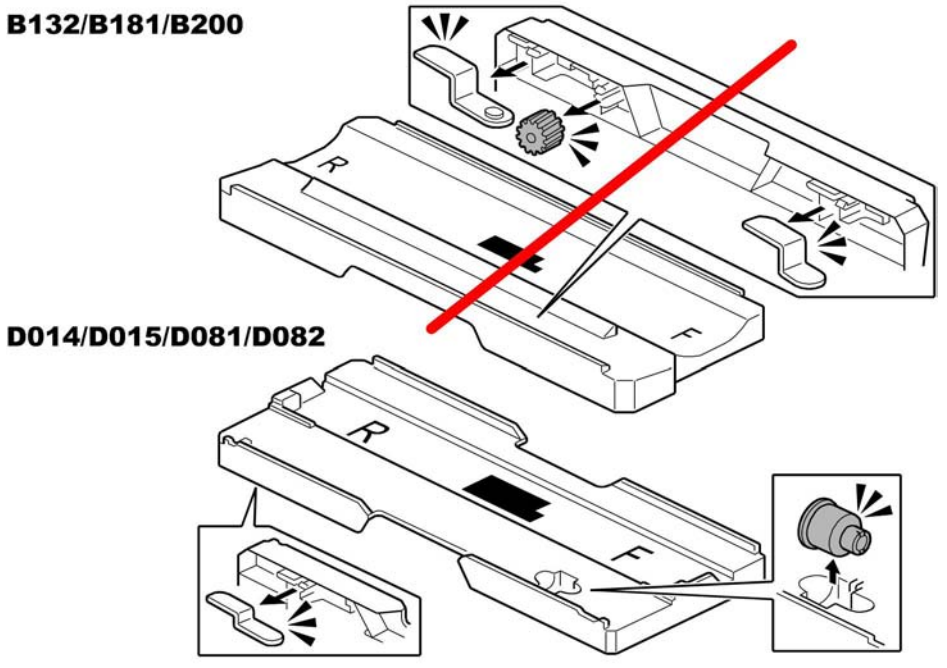
Drum

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

1. When a PCU unit is removed from the machine, always place it on the PCU stand provided with the machine.
2. Never expose a drum to direct sunlight.
3. Never expose a drum to direct light of more than 1,000 Lux for more than a minute.
4. Never touch a drum surface with bare hands. If the drum surface is touched with a finger or becomes dirty, wipe it with a dry cloth or clean it with wet cotton. Wipe with a dry cloth after cleaning with wet cotton.
5. Never use alcohol to clean the drum (alcohol dissolves the drum surface).
6. Store drums in a cool, dry place away from heat.
7. Take care not to scratch the drum as the drum layer is thin and is easily damaged.
8. Never expose a drum to corrosive gases such as ammonia gas.
9. Dispose of used drums in accordance with local regulations.

PCU

1. The PCU stand is stored in a rack attached to the bottom of the machine with strong magnets.
2. Before pulling a PCU unit out of the machine, spread some clean paper to catch spilt toner, remove the PCU stand from the bottom of the machine, clean it with a clean cloth, and then set the PCU stand on the paper to hold the PCU as soon as it is removed from the machine.
3. To prevent drum scratches, always set the PCU on the stand and leave it there as long as it is out of the machine.
4. Remove only one PCU at a time for servicing. Only one PCU stand is provided with the machine.



d081r420a

- The D014/D015, D081/D082 PCU stand is not the same as the PCU stand of the B132/B181/B200.
- As shown above, the B132/B181/B200 PCU stand holds two jigs and one gear. The D014/D015, D081/D082 PCU stand holds only one jig and a coupler. Also, the shapes of these two stands are not the same.
- Please note that the D081/D082 PCU stand is the same as the D014/D015 PCU stand. You can use a D014/D015 PCU stand if the D081/D082 stand is not available.

Important

- **Never use a B132/B181/B200 PCU stand to service a D081/D082 PCU.**
- **The B132/B181/B200 PCU stand can damage the exposed drum on the bottom of a D081/D082 PCU.**

1. The Y, M, and C charge rollers should always be replaced together as a set.

Transfer Belt Unit

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

Scanner Unit

1. When installing a new exposure glass, make sure that the white paint mark is at the rear left corner.
2. Clean the exposure glass with alcohol or glass cleaner to reduce the amount of static electricity on the glass surface.
3. Use a cotton pad with water or a blower brush to clean the mirrors and lenses.
4. Never bend or crease the exposure lamp cables.
5. Never disassemble the lens unit. Doing so will throw the lens and the copy image out of focus.
6. Never adjust any CCD positioning screw. Doing so will throw the CCD out of position.

Laser Unit

1. Never loosen the screws that secure the LD drive board to the laser diode casing. Doing so would throw the LD unit out of adjustment.
2. Never adjust the variable resistors on the LD unit, as they are adjusted in the factory.
3. Never open the optical housing unit. The polygon mirror and lenses are sensitive to dust.
4. Never touch the glass surface of the polygon mirror motor unit with bare hands.

Development

1. Avoid nicking or scratching the development roller.
2. Place a development unit on a sheet of paper after removing it from a PCU.
3. Always clean the drive gears after removing used developer.
4. Always dispose of used developer in accordance with local regulations.
5. Never load types of developer and toner into the development unit other than specified for this model. Doing so will cause poor copy quality and toner scattering.
6. Immediately after installing new developer or toner during the machine installation procedure, do the SPs as described in the installation procedure.
7. Immediately after replacing the developer, do the SPs as described in the "SP Codes after Replacement" section of PCU replacement.
8. Never do **SP3801** or **SP3811** with used developer.
9. When using a vacuum cleaner to clean the development unit casing, always ground the casing with your fingers to avoid damaging the toner density sensor with static electricity.
10. The TD sensor must be initialized:
    - At installation, exactly as described in the installation procedure

- After replacing developer. (Initialize the TD sensor only for the PCU where the developer was replaced.)

Important

- **Never initialize the TD sensor more than once. Initializing the TD sensor more than once can cause toner scatter inside the machine.**

Cleaning

1. When servicing cleaning components, avoid nicking the edges of the cleaning blades.
2. Never handle a cleaning blade with bare hands.
3. Before disassembling a cleaning section, place a sheet of paper under it to catch any toner falling.

Fusing Unit

1. Never handle fusing lamps and rollers with bare hands.
2. Make sure that the fusing lamps are positioned correctly and do not touch the inner surface of the rollers.

Paper Feed

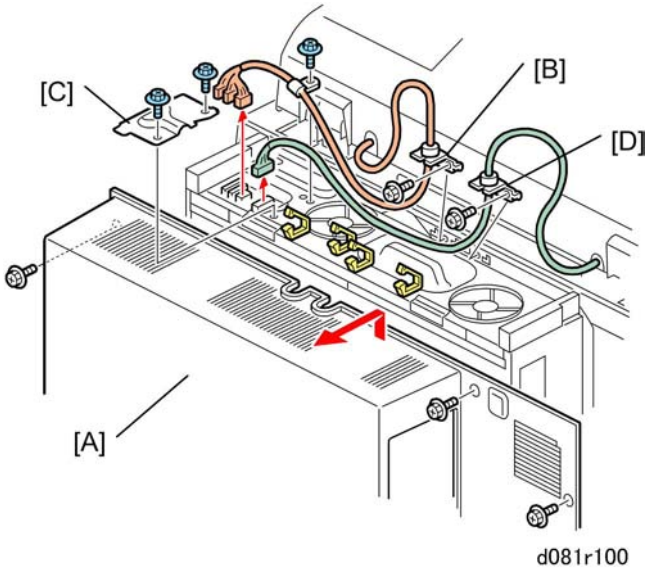
1. Do not touch the surfaces of the pick-up, feed, and separation rollers.
2. To avoid paper misfeeds, the side fences and end fence of the paper trays must be positioned correctly to align with the actual paper size.

Used Toner

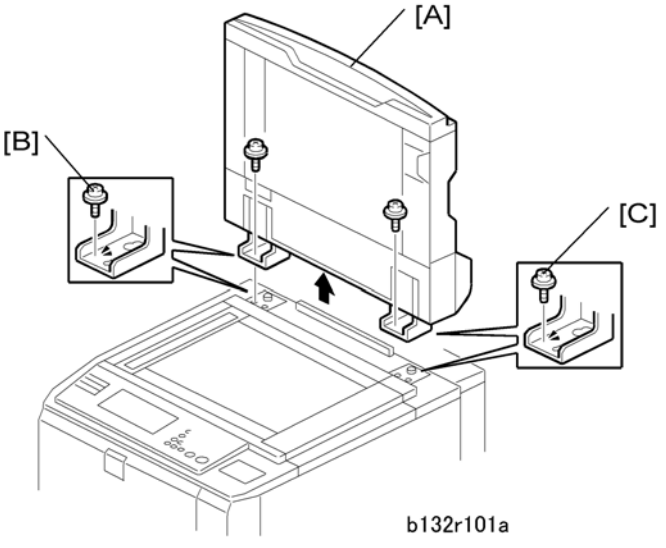
1. Check the amount of used toner at every service visit.
2. Always dispose of used toner in accordance with local regulations.
3. Never throw toner into an open flame.

Common Procedures

ADF



1. Remove rear cover [A] (x3).
2. Disconnect harness [B] (x2, x2, x3).
3. Remove plate [C] (x2).
4. Disconnect harness [D] (x1, x2, x1).

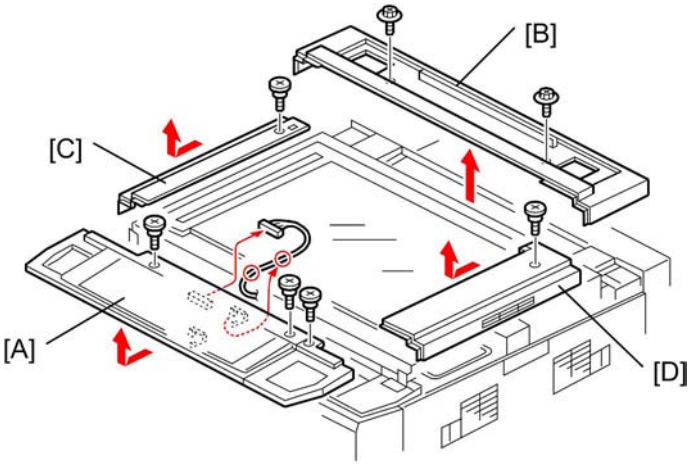


⚠CAUTION

- The ADF is very heavy.

5. Raise the ADF [A] to the vertical position.
6. At the rear left corner of the machine, disconnect the ADF cable.
7. Remove the left screw [B] and right screw [C].
8. Slide the ADF back until the heads of the screws are in the large end of the keyholes, and then lift the ADF off the machine.

Operation Panel, Top Covers



1. Remove the ADF (☛ p.287).
2. Open the front door.
3. Remove:

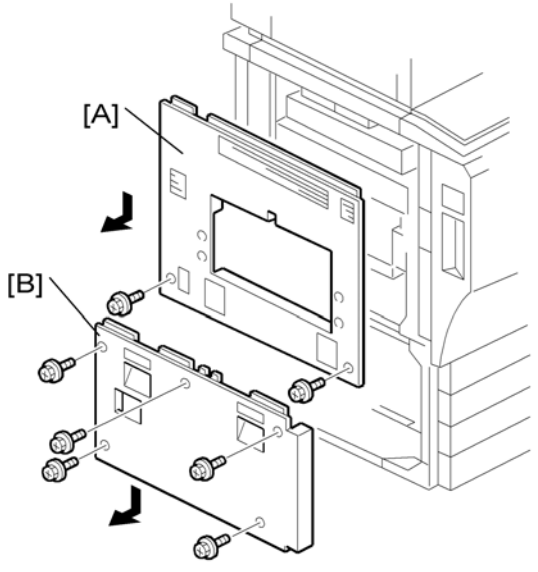
   [A]: Operation panel (x3, x1, x1)

   [B]: Top rear cover (x2)

   [C]: Left top cover (x1)

   [D]: Right top cover (x1)

Left Covers



b132r702

1. If a finisher is connected:
    - Disconnect the finisher.
    - Remove the front and back finisher connection brackets.
2. Remove:

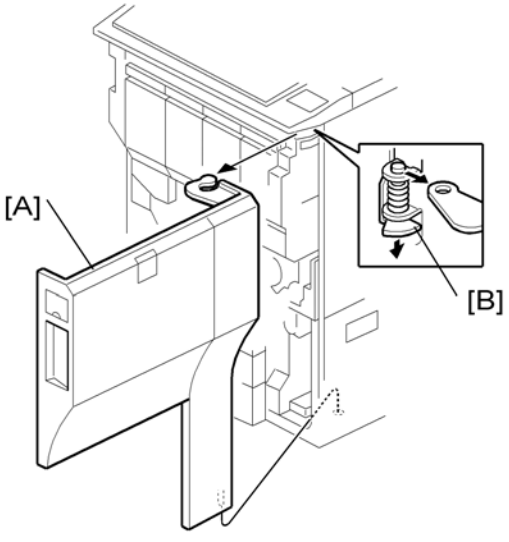
    [A]: Left upper cover (x2)

    [B]: Left lower cover (x5)

Reinstallation

- Make sure all cover tabs are inserted correctly before you fasten the screws.

Front Door



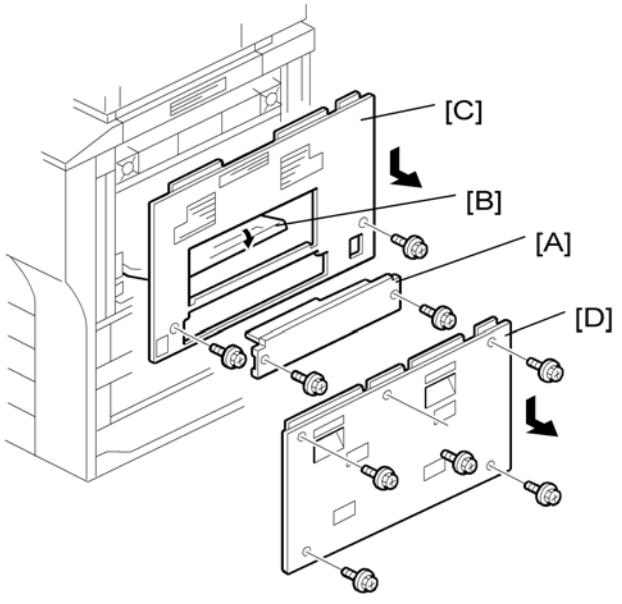
b132r703

1. Grip the front door [A] with one hand.
2. Press down the hinge bracket [B].
3. Lift the front door slightly to remove it.

Important

- **If you must replace the front door, make sure that you put the SD cards from the storage location in the old front door into the storage location in the new front door.**

Right Covers



1. Disconnect and separate the LCT if it is installed.
2. Remove:

   [A]: Knockout (x2).
   This has been removed already if the LCT has been installed.

   [B]: Open the bypass tray.

   [C]: Right upper cover (x2).

   Pull the bottom of the cover down and toward you as you remove it.

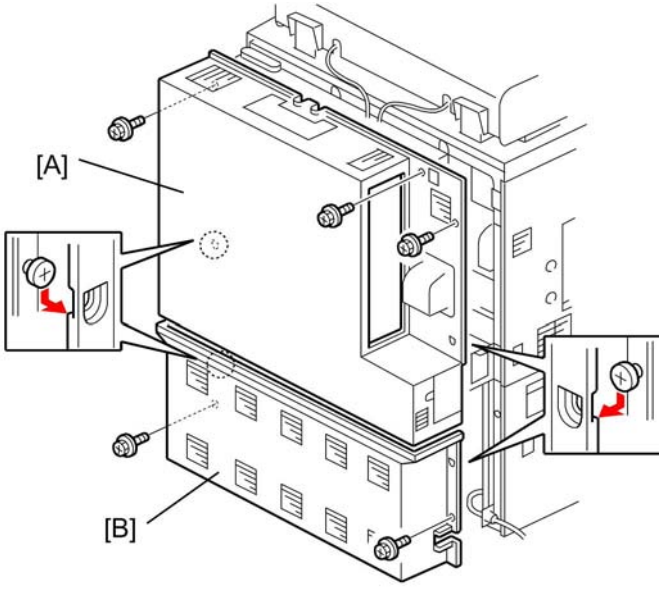
   [D]: Right lower cover (x5).

   Pull the bottom of the cover down and toward you as you remove it.

Reinstallation

- Make sure all the cover tabs are inserted correctly before you fasten the screws.

Rear Covers



1. Remove:

   [A]: Rear upper cover (x3)

   [B]: Rear lower cover (x2)

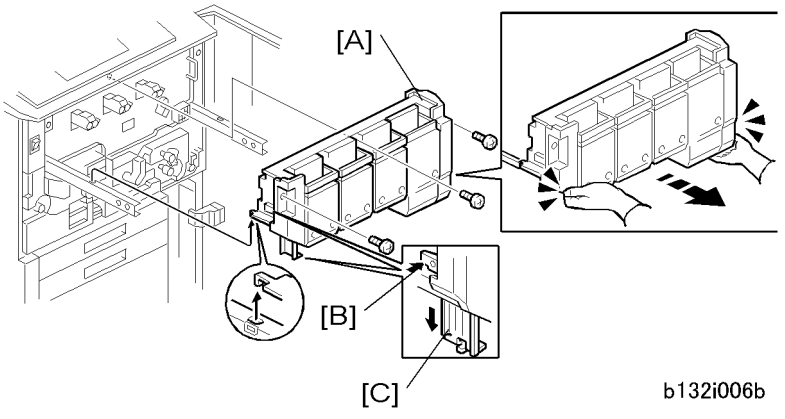
   - Remove the bottom screws
   - Do not remove the shoulder screws.

Toner Hopper, Faceplate, PCU

Removing Hopper, Faceplate, PCU

Important

- **To avoid damaging the toner end sensor, make sure that the main power switch is turned off and that the power cord is disconnected from the power source before you remove the hopper.**



4

To remove the hopper:

1. Prepare an open space on the floor for the hopper.
2. Remove the screws of the toner hopper [A] (x3).
3. Place your hands under the left and right corners of the toner hopper and slowly pull it out on its rails until it stops.

   Important

   - **The hopper can easily slip off its rails!**
4. Press the release [B] to drop the support leg [C].
5. Confirm that the support leg is down and locked.

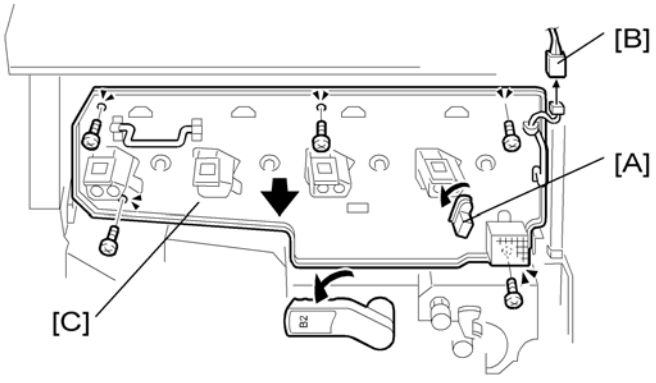
   Important

   - **Always make sure that the support leg is down and locked before you remove the hopper.**
6. Lift the toner hopper off its rails and set it on the floor.

   CAUTION

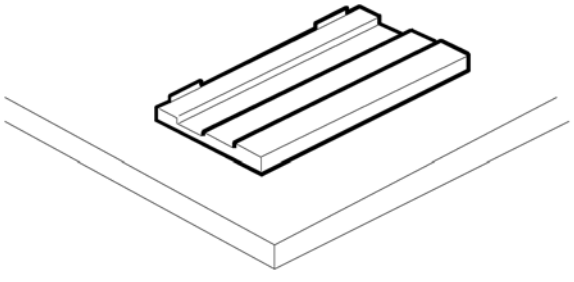
   - The hopper is heavy, so lift it carefully. Make sure the hopper unit tabs have disengaged completely from the rails before you try to set the unit on the floor.
7. Push the hopper rails into the machine.

To remove the faceplate



b132r201

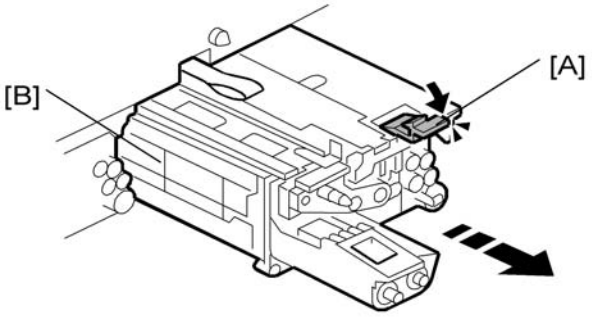
1. Rotate the transfer belt release lever [A] counter-clockwise until it stops
2. Disconnect the fan connector [B].
3. Remove the faceplate [C] (x5).
4. Remove the PCU stand from its storage rack under the machine.



b132i902

5. Place the PCU stand on a flat surface.
6. Wipe the surface of the stand with a clean cloth to remove dust.

To remove a PCU



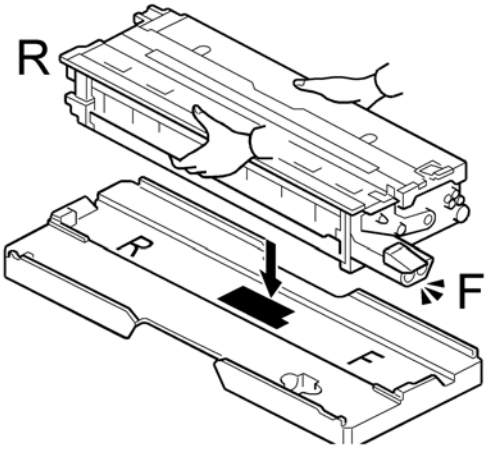
b132r202a

1. Confirm that the machine is switched off and disconnected from its power source.

Important

- **To prevent damage to the drum potential sensor and its relay board, always make sure that the machine is turned off and that the power cord is disconnected from the power source before you remove a PCU.**

2. While pressing down the release tab [A] above the PCU, pull the PCU [B] out of the machine.



d014r214

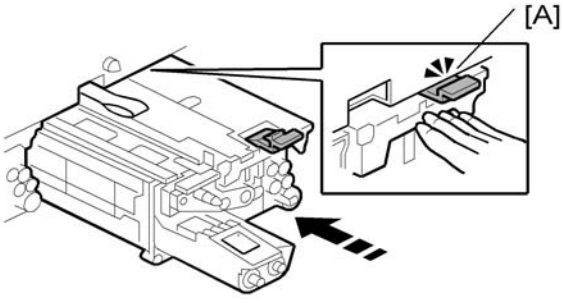
3. With both hands on either side of the PCU [A], remove it from the machine and set it on the PCU stand [B].

Important

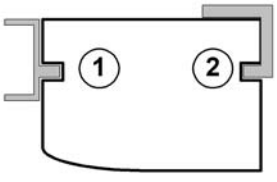
- **This PCU stand was specially designed for the D014/D015/D081/D082. Do not use the PCU stand that was made for the B132/B181/B200 series machines.**
- **The OPC drum is exposed on the bottom of the PCU, so never place your hand under the PCU.**
- **Never place the PCU on any surface other than the PCU stand.**

Reinstalling PCU, Faceplate, Toner Hopper

To reinstall a PCU



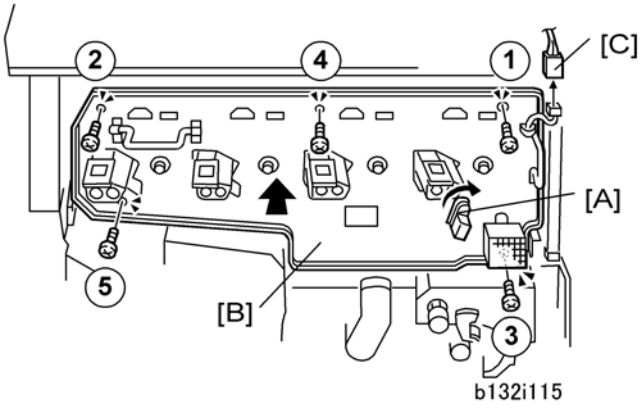
b132i114



b132i905

1. Hold the PCU [A] in front of the slot where you removed it
2. Engage the slots ① and ② in the sides of the PCU with the rails. The PCU will not slide smoothly into the machine until the slots and rails are engaged properly.
3. Slowly push the PCU into the slot.
4. Make sure the release tab [A] above the PCU is locked.

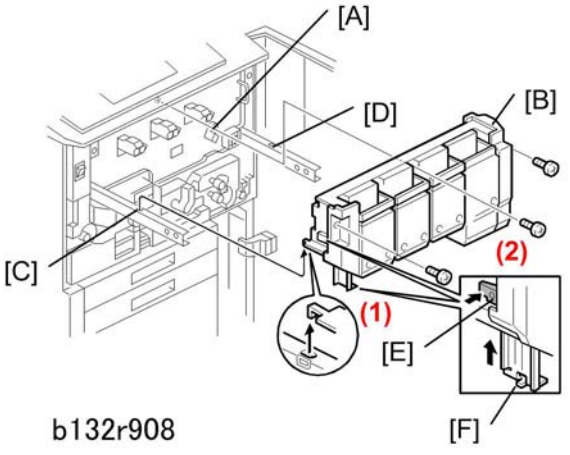
To reinstall the faceplate



b132i115

1. Rotate the transfer belt release lever [A] clockwise to lock it.
2. Attach the faceplate [B] with the screws in order as shown above (x5).
3. Reconnect the fan connector [C] (x1).

To reinstall the hopper



1. Confirm that the transfer belt release lever [A] is up and locked before you reattach the hopper.
2. Make sure the hopper rails are fully extended, then set the toner hopper [B] on the rails,
3. Make sure the steel tabs of the hopper are inserted into the holes in the left rail [C] and right rail [D].
4. Push up the release [E] and support leg [F].

   Important

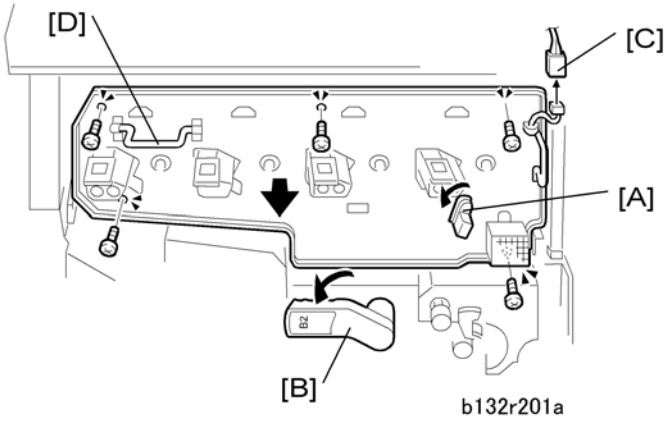
   - **Make sure that the support leg is up and locked before you push the toner hopper into the machine.**
5. Place your hands at the bottom of the toner hopper at (1) and (2) then push the hopper against the face plate.

   Important

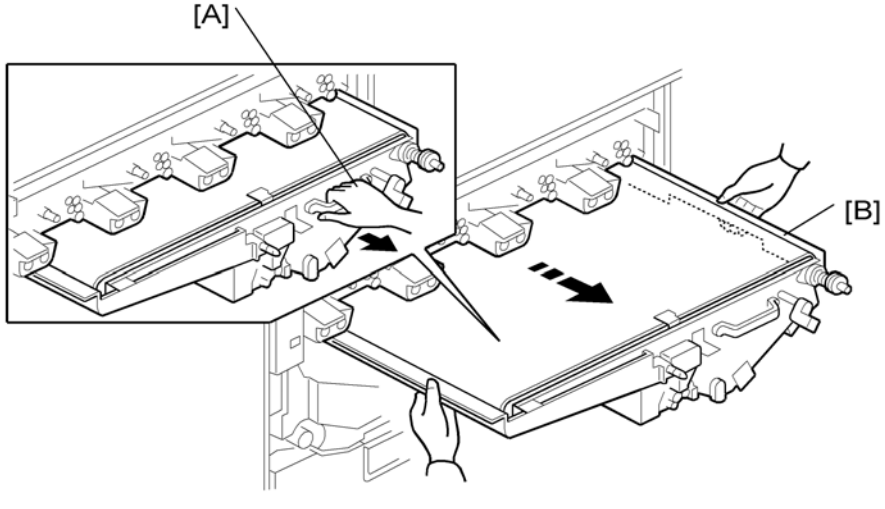
   - **To avoid damaging the hopper, never press on the top of the toner hopper.**
6. Check the right side and confirm that the hopper unit is flat against the faceplate.

   If the toner hopper [B] is not flat against the face plate on the right side, pull it out slightly and make sure that the transfer belt release lever is rotated up completely and locked.
7. Fasten the toner hopper to the face plate (x3).

Image Transfer Unit



1. Cover the floor or a table with paper to prepare a place to put the image transfer unit.
2. Open the front door.
3. Remove the toner hopper, then push the hopper rails into the machine.
4. Rotate the transfer belt release lever [A] down to the left until it stops.
5. Rotate the lever **B2** [B] on the drawer unit counter-clockwise to separate the transfer roller from the ITB.
6. Disconnect [C].
7. Remove the faceplate [D] (x1, x5).

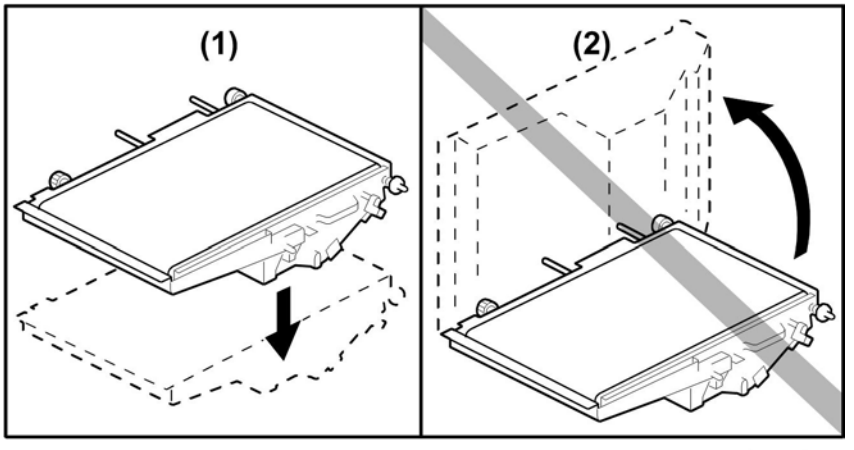


8. Use the handle [A] on the front of the transfer unit to pull the unit [B] partially out of the machine.

9. Grip both sides of the image transfer unit and pull it slowly out of the machine.

Handling Precautions

- Remove the image transfer unit carefully. The unit is heavy and not attached to the rails with screws.



b132r309b

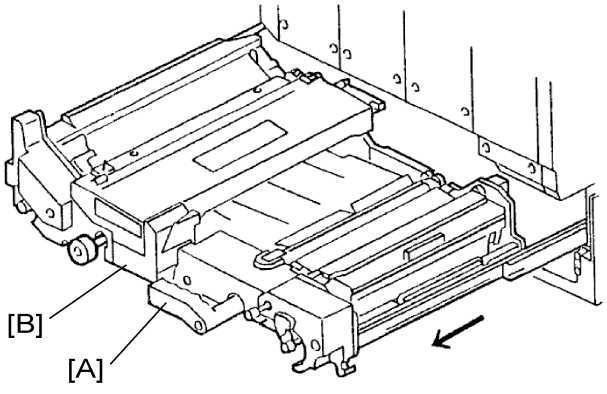
- To prevent toner scattering inside and outside the unit, keep the unit (1) flat when you remove it, lift it, carry it, and put it down.
- Never stand the ITB unit (2) on its edge before you remove the cleaning unit from the ITB.
  - Never place the ITB unit on a carpet where toner can scatter or where the unit will collect dust.

Reinstallation

- Re-insert the image transfer unit slowly and carefully to avoid snagging the belt on the frame of the machine.
- Make sure that the image transfer unit does not snag on the toner cap of the yellow PCU on the far left.

Drawer Unit

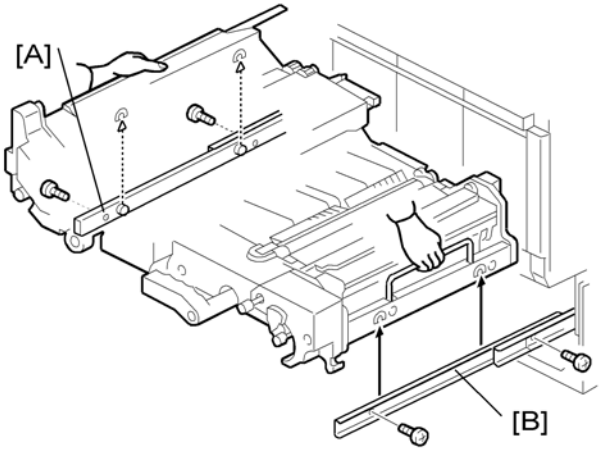
To pull out the drawer unit:



b132r900

1. Remove the front door.
2. Rotate the lever [A] down to left until it stops.
3. Grip the lever to pull the unit [B] out of the machine until it stops.

To remove the drawer unit:



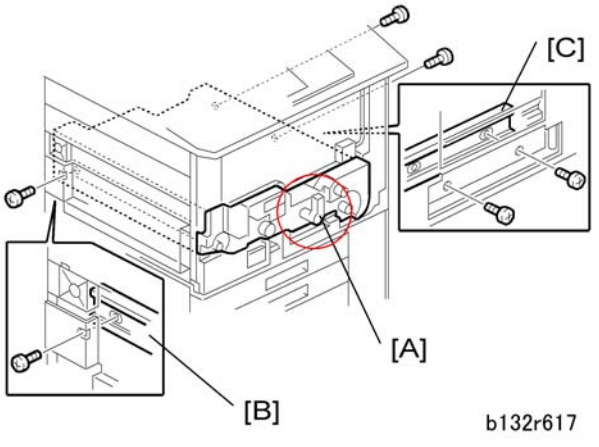
b132r301

⚠CAUTION

- The drawer unit is very heavy (30 kg/66lb.).

1. Disconnect the left rail [A] (x2).
2. Disconnect the right rail [B] (x2).
3. Lift the unit off the rails.
4. Push the rails into the machine.

To re-install the drawer unit



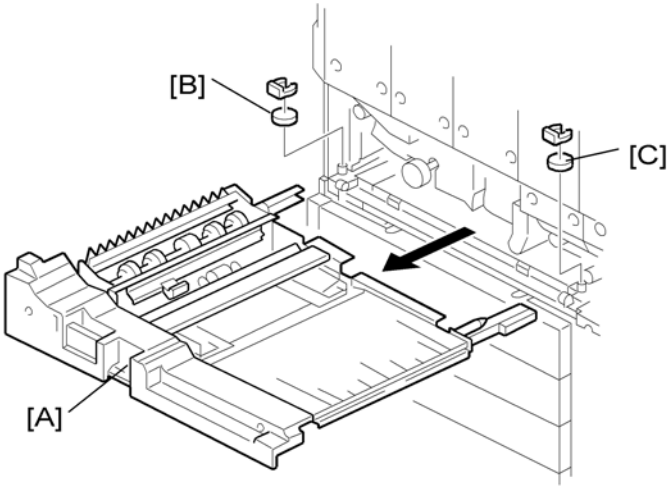
1. Remove the right upper cover and the left upper cover.
2. Open the front door.
3. Pull out the left rail and right rail.
4. Set the unit on the rails.

⚠CAUTION

- The drawer unit is very heavy (30 kg/66 lb). Make sure that hooks are engaged with the holes in the rails.

5. Slowly push the unit into the machine until it stops.
6. Rotate the lever [A] to the vertical position.
7. Fasten the screws to the left rail [B] (x2).
8. Fasten the screws to the right rail [C] (x2).
9. To ensure that the unit is positioned correctly, check each screw and confirm that it is fastened tightly.

Duplex Unit



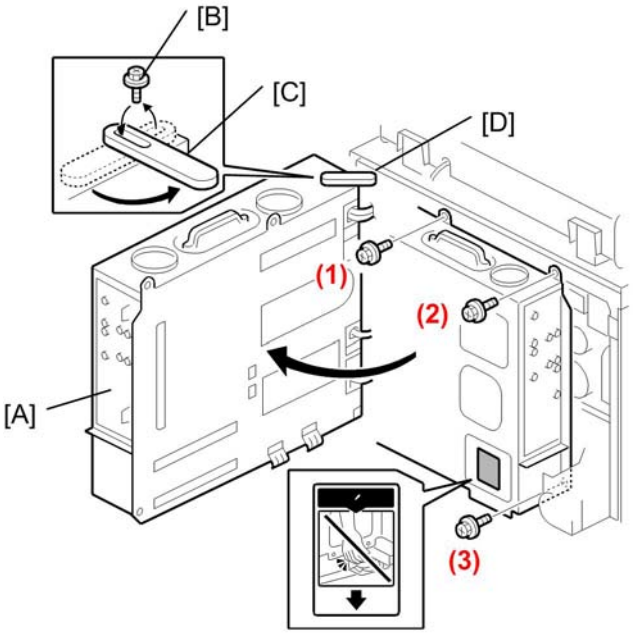
b132r501

1. Open the front door.
2. Pull the duplex unit [A] out until it stops.
3. Remove the Teflon ring [B] from the left rear corner (x1).
4. Remove the Teflon ring [C] from the right rear corner (x1).
5. Lift the duplex unit from the rails and place it on a flat, level surface.

Opening, Locking the Controller Box Cover

⚠CAUTION

- To prevent personal injury and damage to the controller box, when the controller box is open, it should always be locked as described below. Before doing the procedure, always switch the machine off and disconnect the power cord.



1. Turn off the main power switch and disconnect the power cord.
2. Remove the rear covers.
3. Remove controller box screws (1), (2), and (3).
4. Open the controller box [A] to the left until it stops.

   Important

   - **Obey the warning on the decal to avoid touching the fan blades when you open and close the controller box.**
5. Remove the left screw [B].
6. Rotate the plastic stopper [C] counter-clockwise until it is aligned with the hole below and its tip [D] is touching the machine frame.
7. Reattach the screw removed in Step 5 to lock the arm in position.

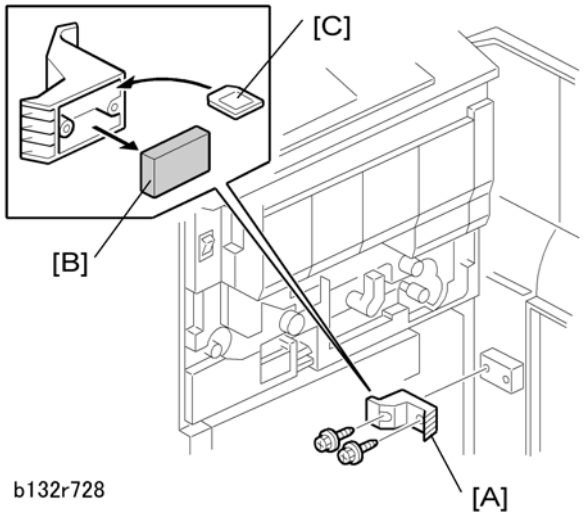
Reinstallation

- Before closing the controller box, reattach the stopper arm at its original position.

SD Card Storage

After an application has been moved from its original SD card to another SD card with SP5873-1, the empty SD card should be stored on site inside the front door of the machine.

- The original SD card is proof that the customer has purchased that application and must remain with the machine.
- If the front door is replaced, the stored SD cards must be removed and stored inside the new door.



1. Open the front door.
2. Remove the cover [A] on the door (x2).
3. Remove the block [B].
4. Store extra SD cards [C] inside the cover.
5. Reattach the cover to the door.

Before Removing and Re-installing the VM Card

This machine is shipped with the VM card installed in Slot 1 (lower slot). The VM card holds the App2 Me application, and other VM applications may also be included. If App 2 Me (or any other application) has been enabled, it must be halted if you need to remove the VM card for any reason.

This needs to be done before:

- Updating the App 2 Me application firmware .
- Updating the main machine firmware
- Backing up the NVRAM
- Executing application move or undo with SP5873.

Before Removing the VM Card from the Machine

1. Push the "User/Tools" key.

If an administrator setting is registered for the machine, Step 2 and 3 are required. Otherwise, skip to Step 4.

2. Push [Login/Logout] on the operation panel.
3. Login with the administrator user name and password.
4. Touch "Extended Feature Settings" twice on the LCD.
5. Touch the icon for each application until the status changes to "Stop".

Important

- **All applications must be stopped before the machine is switched off.**

6. Turn the machine off, and then remove the VM Card from Slot 1 (lower slot).
7. Do the procedure:
   - Updating the App 2 Me application firmware.
   - Updating the main machine firmware
   - Backing up the NVRAM
   - Executing application move or undo with SP5873.

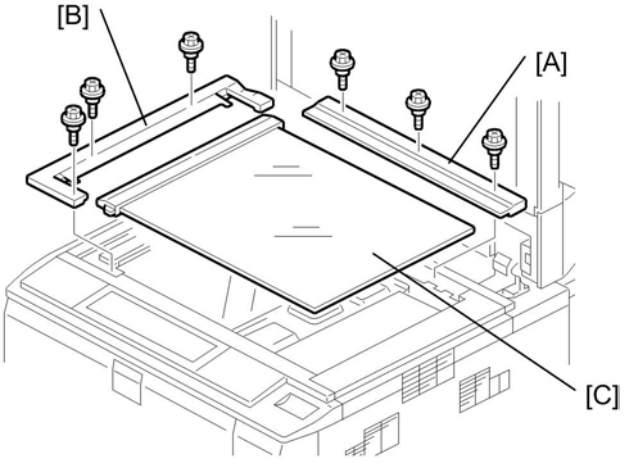
Starting Up After the VM Card Has Been Removed

1. Insert the VM card in Slot 1 (lower slot).

   If an administrator setting is registered for the machine, Step 2 and 3 are required. Otherwise, skip to Step 4.
2. Push [Login/Logout] on the operation panel.
3. Login with the administrator user name and password.
4. Touch "Extended Feature Settings" twice on the LCD.
5. Touch the icon for each application that you want to start. You will see the "Starting up" status message for each application that you start.
6. Touch "Exit" on the screen.
7. Exit the "User Tools/Counter" settings.

Scanner Unit

Exposure Glass



b081r128

1. Remove:

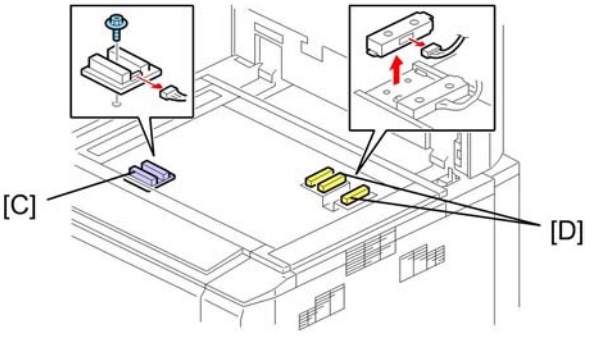
   [A] Rear scale (x3)

   [B] Left glass cover (x3)

   [C] Exposure glass

Lens Block, Paper Size Sensors

d081r130



d018r141

1. Before you remove the lens block, note the settings of the following SP codes that are used for ADF density adjustments for R, G, B.
   - SP4609-2
   - SP4610-2
   - SP4611-2
2. Remove the exposure glass.

   [A] Lens cover (x9)

   [B] Lens block (x4, x4)
3. Remove the lens block carefully to avoid damaging the attached PCB. Do not touch the paint-locked screws on the lens block.

   [C] Original width sensor (x1, x1)

   [D] Original length sensors x2 (No screws, x1 each)

   After replacing the lens block, do the following SP codes.

SP4008 001	Sub Scan Mag	Sub Scan Magnification Adjustment

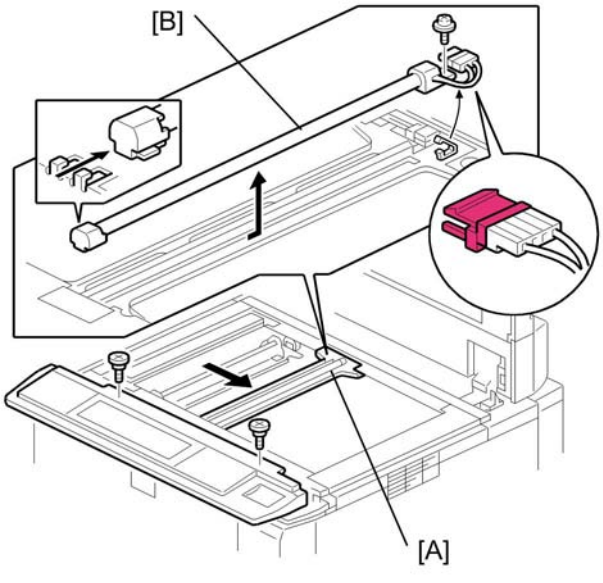
SP4010 001	Sub Scan Reg	Sub Scan Registration Adjustment
SP4011 001	Main Scan Reg	Main Scan Registration Adjustment

4. After lens block replacement, do some copy samples with the ADF. Check these points:
   - Do the copies have background?
   - Is the copy output of the ADF and platen mode different?

   If these problems occur, restore the following SP codes to their previous settings (noted in Step 1):
   - SP4609-2
   - SP4610-2
   - SP4611-2

   Or, adjust these SPs until the background is acceptable.

Exposure Lamp



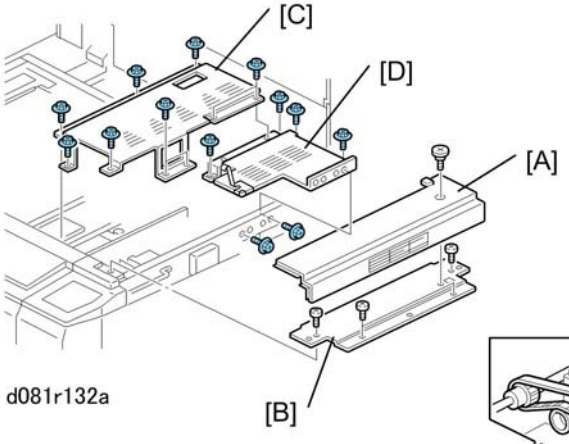
d132r129

1. Remove:
   - Exposure glass (p.307)
   - Operation panel (p.289 "Operation Panel, Top Covers")
2. Slide the 1st scanner [A] to the cutout in the frame.
3. Remove the exposure lamp [B] (x1, x1, x1)

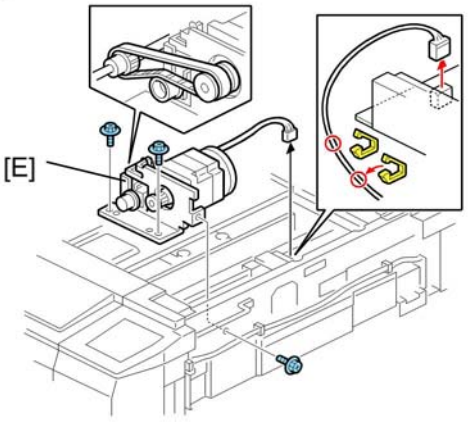
Important

- Never touch the surface of the exposure lamp with bare fingers.
- Work carefully to avoid damaging the relay plugs attached to the rear ends of the lamp.

Scanner Motor



d081r132a



d081r133

1. Remove:
   - Exposure glass (☛ p.307)
2. Remove:

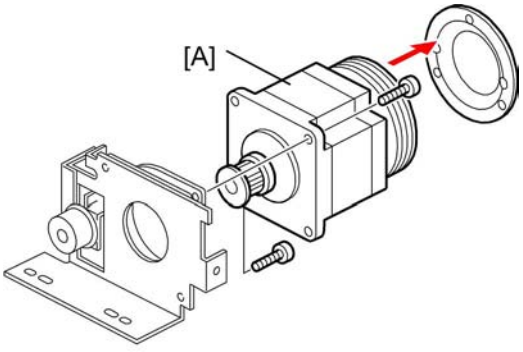
   [A] Top right cover (x1)

   [B] Bracket (x3)

   [C] Lens cover (x9)

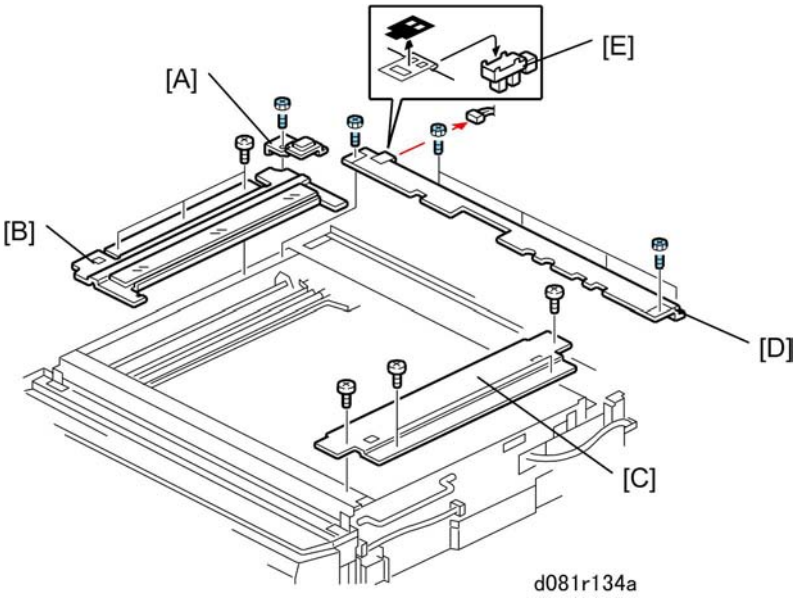
   [D] Right lens cover (x5)

   [E] Scanner motor bracket (Timing belt x1, x2, x1, x3)



3. Remove scanner motor [A] (Cover x1, x2).

Scanner HP Sensor



1. Remove:
   - ADF (☛ p.287)
   - Exposure glass (☛ p.307)
   - Top rear, left, right covers (☛ p.289 "Operation Panel, Top Covers")
2. Remove:

   [A] Ground plate (x1)

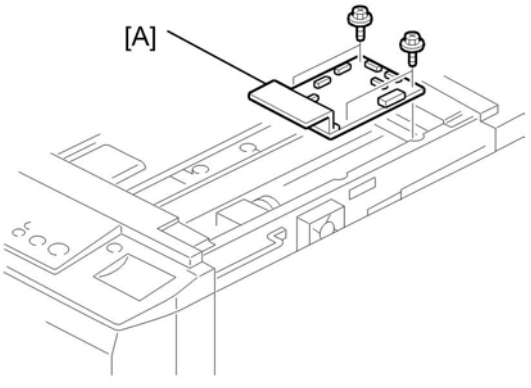
   [B] Left stay (x3)

   [C] Right stay (x4)

[D] Rear stay (x6)

[E] Scanner HP sensor (x1)

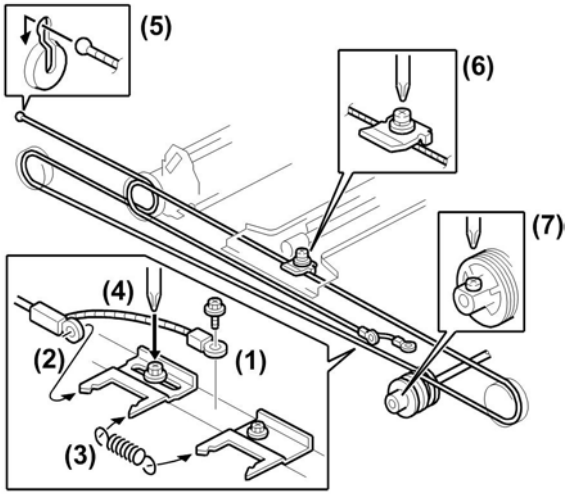
Scanner Interface Board (SIOB)



d081r133a

1. Remove:
   - ADF (p.287)
   - Exposure glass(p.307)
   - Top, rear, left, right covers (p.289 "Operation Panel, Top Covers")
   - Right stay, rear stay (p.311 "Scanner HP Sensor")
   - Lens cover (p.308 "Lens Block, Paper Size Sensors")
2. Remove scanner interface board [A] (x8, x4).

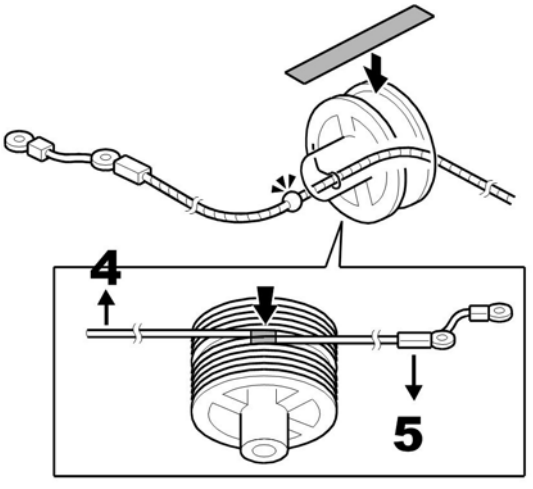
Scanner Wire



d081r137

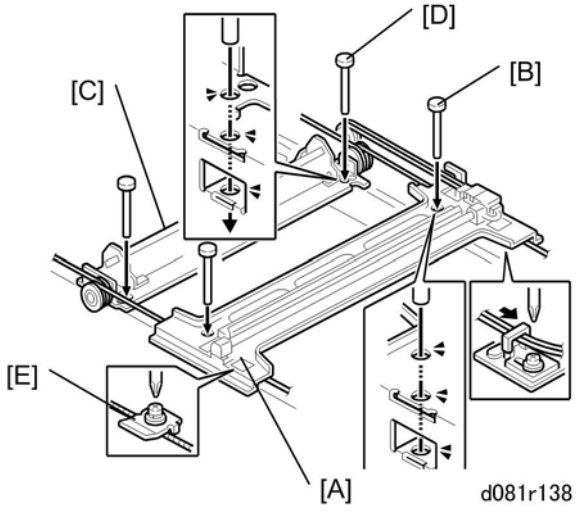
1. Remove wire ground (1) (x1).
2. Disconnect the head of wire (2) from tension bracket 1.
3. Remove spring (3).
4. Loosen the screw (4) of tension bracket 1.
5. Disconnect the end of wire at (5).
6. Remove lock bracket (6) of the 1st scanner (x1).
7. Disconnect the wire from the pulley (7) (x1).
8.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

Scanner Wire Reinstallation and Scanner Position Adjustment



d081r136

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



d081r138

5. Position the 1st scanner [A] so the holes are aligned and insert the positioning pins [B] (x4).
6. Position the 2nd scanner [C] so its holes are aligned and insert the positioning pins [D].
7. Attach the lock bracket [E] to fasten the wire to the 1st scanner.
8. Tighten the screw of tension bracket (☛ (4) p.313 "Scanner Wire").
9. Attach the pulley and tighten it lock screw (☛ (7) p.313 "Scanner Wire").

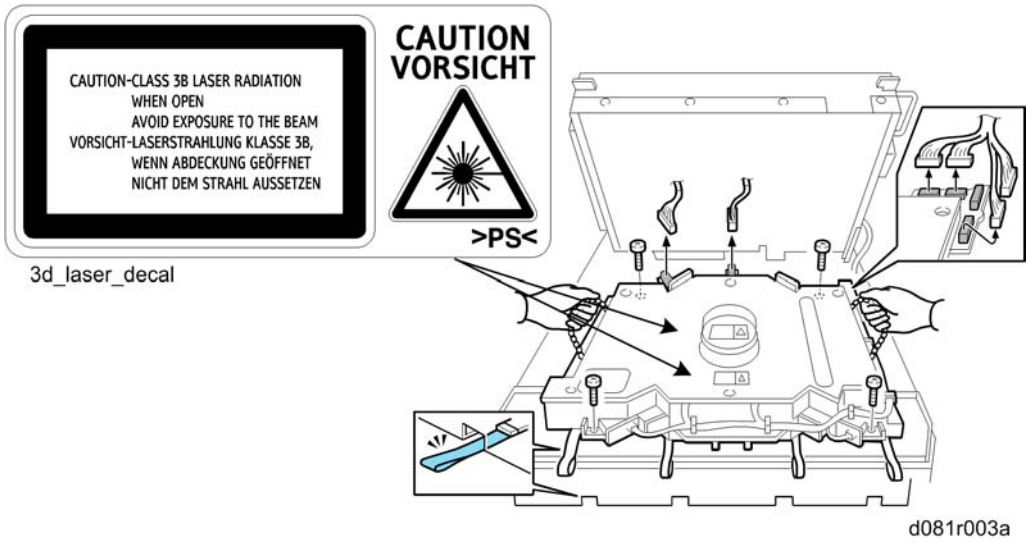
10. Remove the positioning pins (x4).
11. Remove the tape from the pulley.
12. Slowly push the scanner left and right to confirm that the wires are engaged correctly. The 1st and 2nd scanners should move smoothly.

Laser Unit

⚠WARNING

- This laser unit employs two laser beams produced by a Class III LD with a wavelength of 640 to 670 nm and intensity of 9 mW. Direct exposure to the eyes could cause permanent blindness.
- Before adjusting or replacing the laser unit, push the main power switch to power the machine off then unplug the machine from the power source. Allow the machine to cool for a few minutes. The polygon motor continues to rotate for approximately one to three minutes after the machine is switched off.
- Never power on the machine with any of these components removed: 1) LD unit, 2) polygon motor cover, 3) synchronization detector.

Caution Decals



Polygon Motor

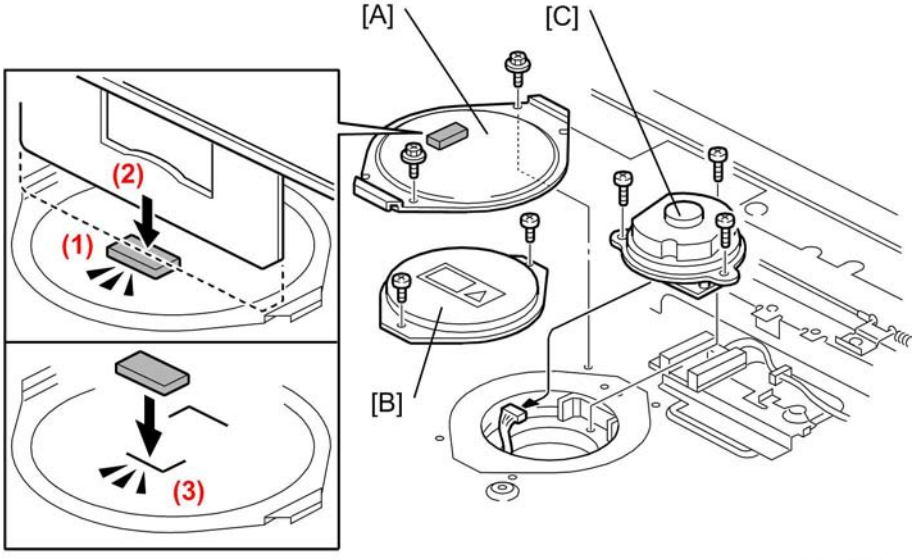
⚠WARNING

- Turn off the main power switch and unplug the machine before performing any procedure in this section. Laser beams can seriously damage the eyes and cause permanent blindness.

Important

- **An accidental static discharge could damage the laser diode board attached to the lens block unit.**
- **Touch a metal surface to discharge any static electricity from your hands.**

- The polygon motor rotates at extremely high speed and continues to rotate after you switch the machine off. To avoid damaging the motor, never remove the polygon motor within three minutes of switching off the main power and disconnecting the power plug.



1. Remove:
   - Exposure glass (☛ p.307)
   - Lens block (☛ p.308)
2. Remove:

   [A] Top cover (x2)

   [B] Middle cover (x2)

   [C] Polygon motor (x3, x1, x1)

   Important
   - Never remove the paint-lock screws on top of the lens block unit.
   - Never touch the glass covers of the laser ports on the sides of the polygon motor [C].

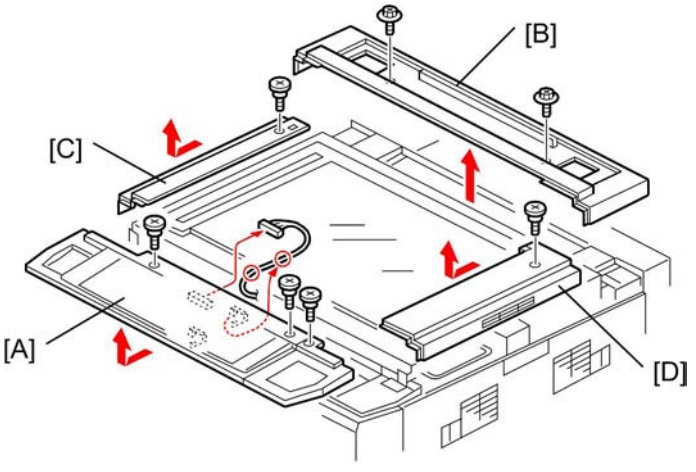
Re-installation

- The top cover [A] must be positioned correctly for reinstallation.
- When you reinstall the top cover [A], set the top cover so that gasket (1) touches lens bracket (2).

  Important
  - If the top cover is not positioned this way, the unit could generate electrical noise.

- If the gasket has peeled off during removal, install a new gasket aligned with the line (3) on the top cover. (A replacement gasket is available as a service part.)

Laser Unit



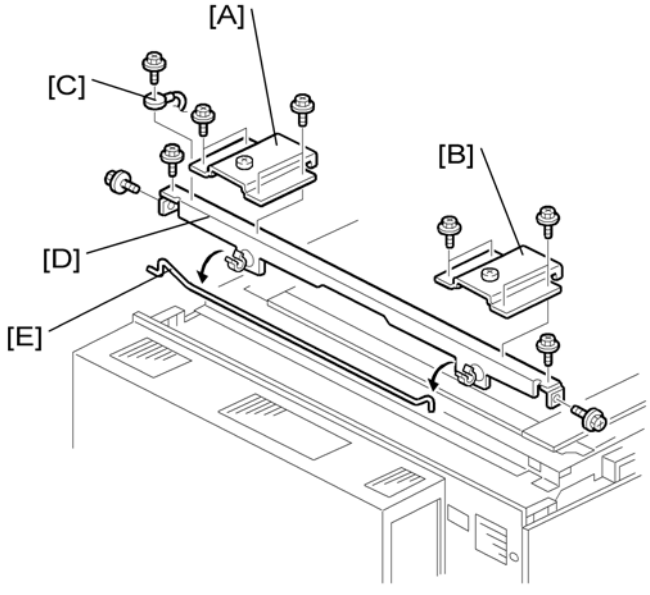
1. Remove ADF (☛ p.287).
2. Remove:

   [A]: Operation panel (x3, x1, x1)

   [B]: Top rear cover (x2)

   [C]: Left top cover (x1)

   [D]: Right top cover (x1)



b132r001

3. Remove:

   [A] Left plate (x4)

   [B] Right plate (x4)

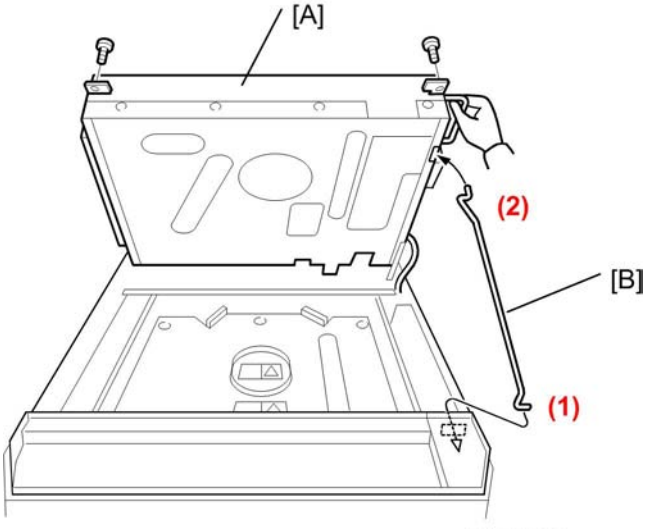
   [C] Ground wire (x1)

   Important

   - **Be sure to re-connect this ground wire when you re-assemble the machine.**

   [D] Cross piece (x4)

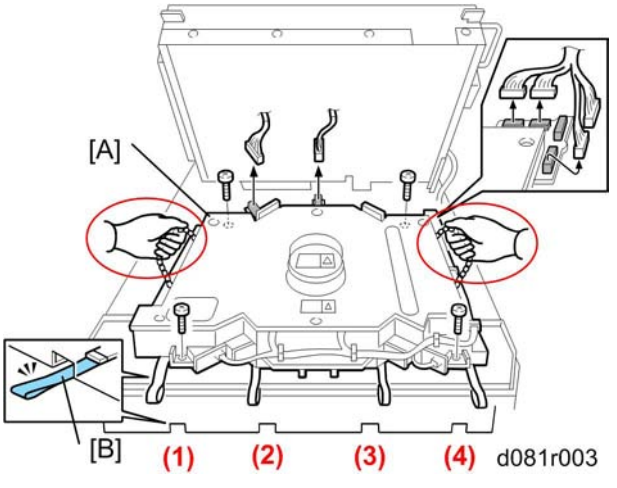
   [E] Detach the support rod from the clamps.



4. Raise the scanner unit [A] (x 2).
5. Set the support rod [B] at the base (1) then under the front, right corner (2) of the scanner unit.

⚠CAUTION

- The scanner unit is very heavy. Never remove the support rod during servicing.

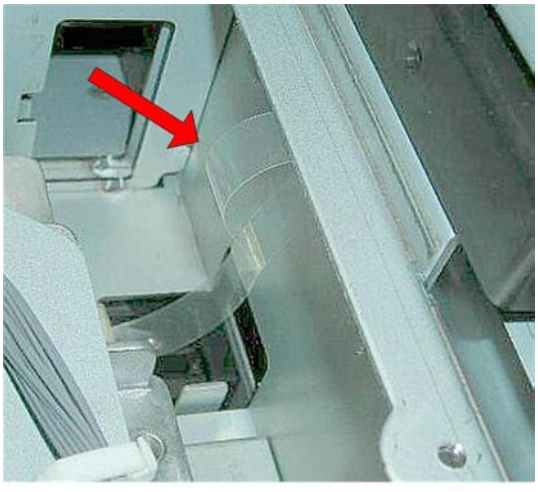


6. Disconnect the laser unit [A] (x4, x6)
7. Use the chains on both sides of the laser unit to lift it out of the machine.

Note

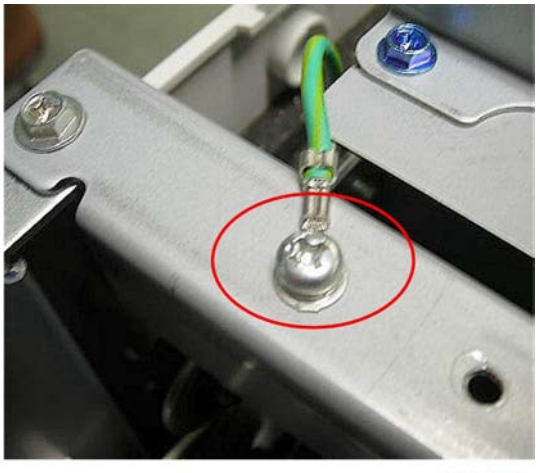
- The laser unit includes four LD sub units. However, the LD sub units cannot be replaced separately because factory adjustment is required.

Reinstallation



d081r975

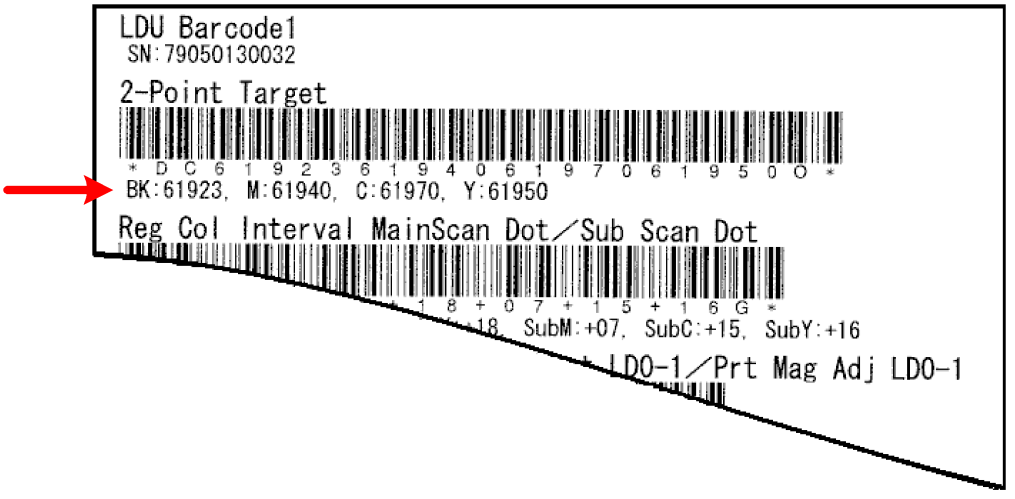
- Make sure that the four tapes [B] at (1), (2), (3), and (4) are set correctly. All four tapes should be visible and not tucked under the laser unit.



d081r976

- Be sure to reconnect the ground wire at the right rear corner of the machine when you re-assemble the machine.

SP Adjustments After Laser Unit Replacement



b132r904

SP codes are written on an A5-size sheet of paper provided with the laser unit.

Note

- Only the settings shown with the first barcode (2-Point Target) are required. The other information on the sheet can be ignored.

1. Enter the values under the first bar code for the following SP codes. These "2-Point Target" must be entered after the LD unit has been replaced.
    - 2156-1 (K)
    - 2156-2 (M)
    - 2156-3 (C)
    - 2156-4 (Y)
2. Set the following SP codes to "0":
    - 2102-10
    - 2102-11
    - 2102-12
    - 2102-13
3. Next, do these SP codes and enter the values for LD0-1.
    - 2102-5
    - 2102-6
    - 2102-7
    - 2102-8

4. Do SP2109-014, select Pattern 14, and print a test pattern. (☛ >Printing Test Patterns)

Color Registration Errors

- In addition to the SP adjustments printed on the seal attached to the LD unit, if color registration errors occur immediately after you change the laser unit, an additional adjustment is required.
- This additional adjustment is normally not required in the field. Do it only if you see color registration errors in test prints.
- See "Color Registration Test and Error Adjustment" in p.511 "Color Registration" for instructions on how to do this adjustment.

Skew

- If skew occurs immediately after you change the laser unit, do the skew adjustment. (See p.512 "Skew Adjustment After Laser Unit Replacement").

LD Unit

There is an LD unit for each color, and each LD unit uses a two-beam system. A photo diode (PD) in each LD unit detects the light emitted from the LD unit. The output of the PD is fed back to the LD control board. The LD control board uses this information to control the amount of light to make sure that it remains at the correct level.

Dual Beam Writing

In each LD unit, two beams move across the drum in the main scan direction.

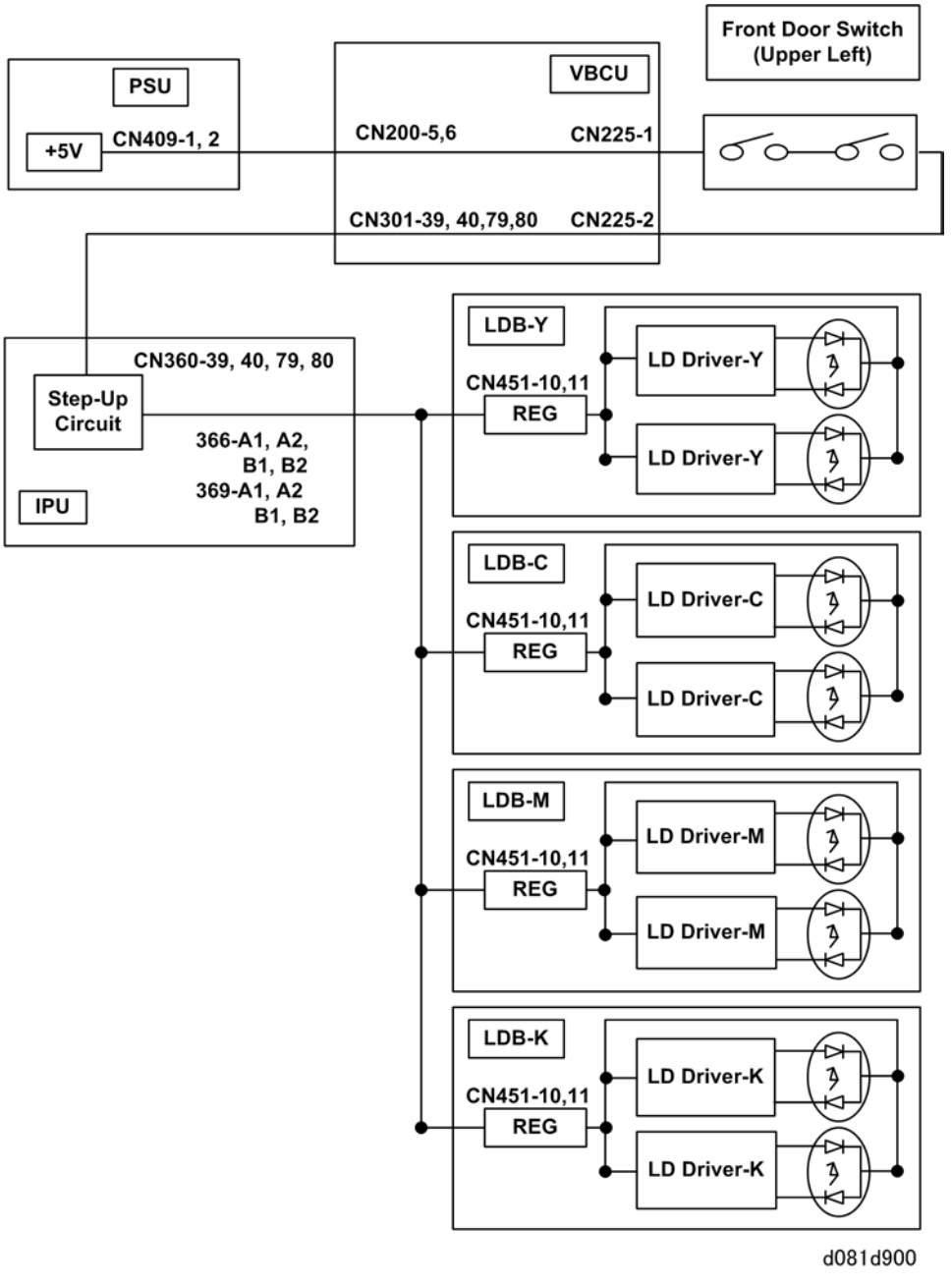
The use of two beams:

- Makes the machine print faster.
- Reduces the number of turns of the polygon mirror for a page to prolong the service life of the motor.
- Reduces the amount motor noise.

The beam pitch is fixed at 600 dpi and is not adjustable.

LD Safety Switches

To ensure the safety of customers and customer engineers, two switches inside the cover prevent the laser beams from switching on accidentally. When the front cover is open, the +5V line connecting each LD driver on the LD control board is disconnected.


PSU
+5V
CN409-1, 2
VBCU
CN200-5,6
CN225-1
CN301-39, 40,79,80
CN225-2
Front Door Switch
(Upper Left)
CN360-39, 40, 79, 80
Step-Up
Circuit
366-A1, A2,
B1, B2
369-A1, A2
B1, B2
IPU
LDB-Y
CN451-10,11
REG
LD Driver-Y
LD Driver-Y
LDB-C
CN451-10,11
REG
LD Driver-C
LD Driver-C
LDB-M
CN451-10,11
REG
LD Driver-M
LD Driver-M
LDB-K
CN451-10,11
REG
LD Driver-K
LD Driver-K
d081d900

PCU

Before You Begin

The items that are replaced determine which SP codes must be done after the machine is re-assembled and turned on. Here are some important rules that you should follow.

1. Initialize the TD sensor only once with SP3801-1 to -6.

   ⚠CAUTION

   - Never initialize the TD sensor more than once. Initializing the TD sensor more than once can cause toner scatter inside the machine.

2. If you replace the developer for one or more colors, do the developer set up for each color as described in this section.
3. Initialize the TD sensor only at the following times:
   - At installation, exactly as explained in the installation procedure.
   - After you replace developer (only initialize the TD sensor for the color that you replaced) as instructed below.

   Here is a summary of the important differences between SP3801 001-006 (Init TD sensor) and SP3811 001-006 (Dev Setup Exe):

   - SP3801 001-006 (Init TD sensor) only initializes the TD sensor.
   - SP3811 001-006 (Dev Setup Exe) initializes the TD sensor and sends toner to the sub hopper of each PCU. This covers the PCU drum with a layer of toner. Covering the drum with toner prevents the cleaning blades from scratching or bending the drums.

   Important

   - **SP3811 is necessary only at installation or in a replacement procedure when both the developer and cleaning blade are replaced together. If you use SP3811 for any other procedure, the toner sent to the PCU is wasted.**

Charge Units

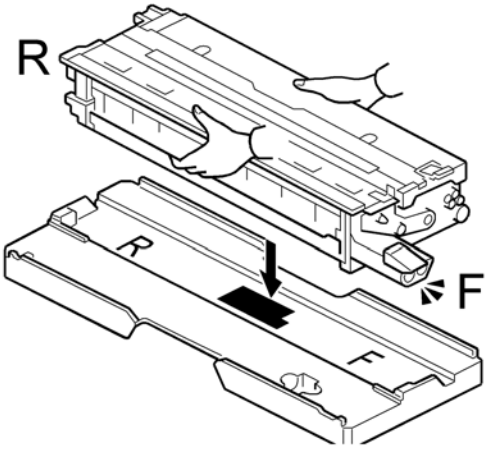
The procedure for removing the drum charge components in the K PCU and YMC PCUs is different.

- The YMC PCUs use a charge roller to charge the OPC drum.
- The K PCU uses a charge wire unit to charge the OPC drum.

Preparation

1. Remove the PCU stand from the bottom of the machine.

2. Remove the PCU from the machine.



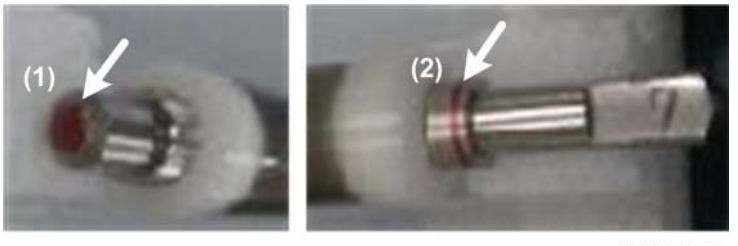
d014r214

3. Set the PCU on the PCU stand.

Important

- Use the PCU stand provided with the machine.
- Never use a PCU stand for a B132/B181/B200 because this can damage the exposed drum on the bottom of the PCU.
- If the D081/D082 PCU stand is not available, you can use a D014/D015 PCU stand (these stands are identical.)

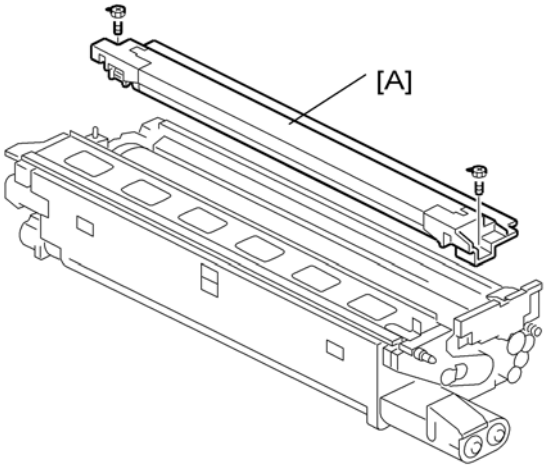
Charge Roller Unit: YMC PCUs



d081r977

Important

- The charge roller of each YMC PCU unit is marked on the tip of one end with a red stamp (1) and with a red ring (2) around the sleeve on the other end. Only the red ring (2) is visible on the PCU unit.
- The red ring (2) distinguishes the D081/D082 YMC PCU units from PCU units of previous machines. Always replace a PCU unit with a unit that has this red ring (2). Never install a PCU unit for a previous machine.



d014r452

1. Remove the charge roller unit [A] (x2).

   This unit contains the charge roller and charge roller cleaning roller.

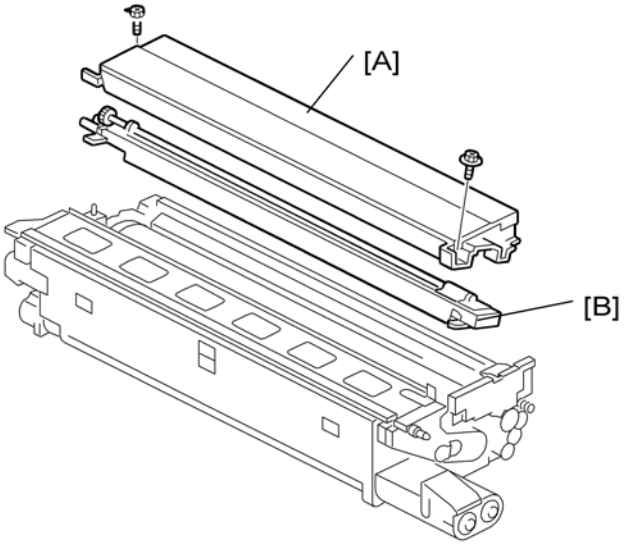
Important

- **If you need to replace a charge roller unit, be sure to replace the C, M, Y charge roller units together.**

Re-installation

After re-assembling the machine, go into the SP mode and do SP2111. This SP should be done after replacing any component of the PCU.

K_PCU Replacement



1. Remove:

   [A] Cover (x2)

   [B] Charge wire unit

   The charge corona wire and charge corona wire cleaning mechanism comprise the charge wire unit. The unit can be replaced as you see it above and no further disassembly is required.

   -or-

   The charge grid wire can be replaced (see next section)

Re-installation

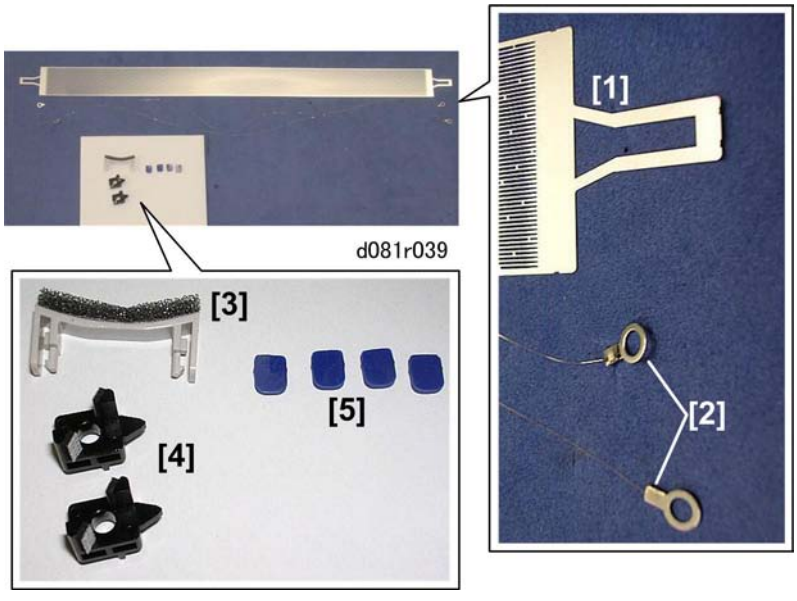
After re-assembling the machine, go into the SP mode and do SP2111. This SP should be done after replacing any component of the PCU.

K_PCU Charge Unit Components

The charge wires and grid of the K_PCU can be replaced.

Important

- **Only the K_PCU uses charge wires and a grid. The other three PCU units use charge rollers.**



Before you begin, make sure that you have all the replacement parts for the K_PCU charge unit.

No.	Item	Qty	Part No.
[1]	Grid	1	
[2]	Corona Wires	2	
[3]	Cleaner Assembly	1	
[4]	Cleaning Pads	2	
[5]	Cushions	4	

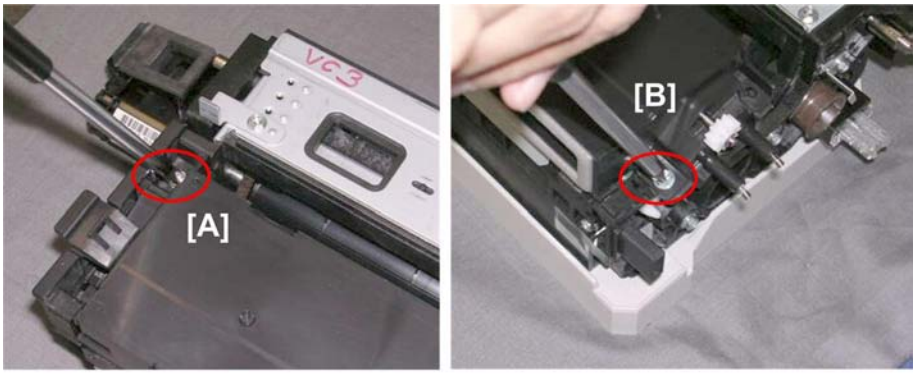
Note

- You will need pincettes, tweezers, or a pair of very thin needle-nose pliers for this procedure.

Charge Unit Removal

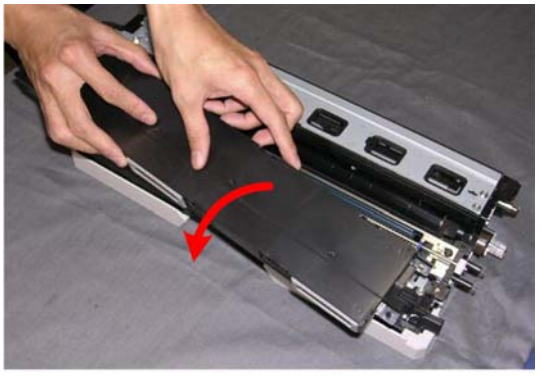
d081i840

1. Remove the K_PCU from the machine and place it on the PCU stand. (☛ p.293 "Toner Hopper, Faceplate, PCU")



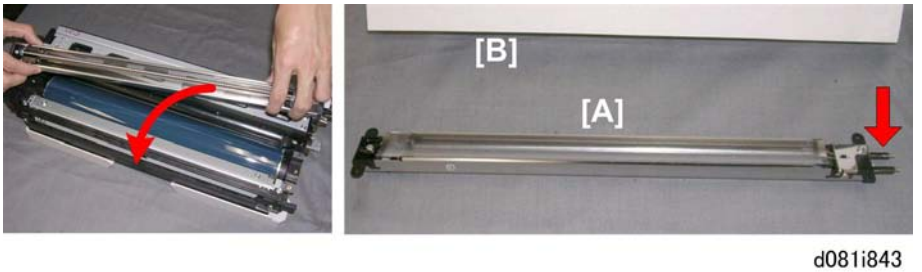
d081i841

2. Remove the front screw [A] and rear screw [B].



d081i842

3. Remove the K_PCU cover.



d081i843

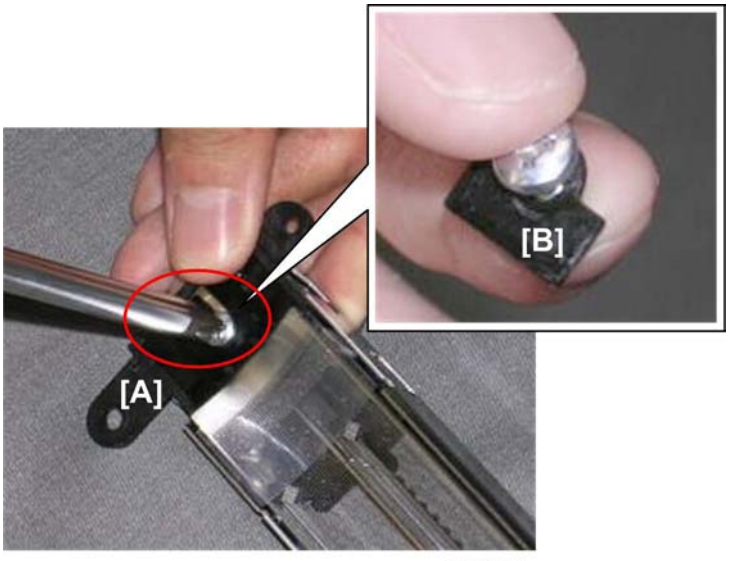
4. Remove the charge unit [A], turn it upside down and place it on a flat, clean surface.

Note

- The red arrow is pointing to the rear of the charge unit. This is the end with the two terminal connectors.

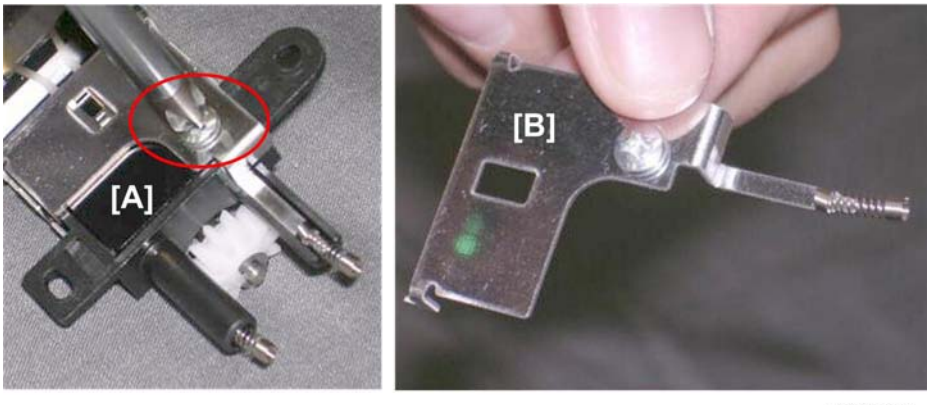
5. Cover the exposed drum with a sheet of clean paper [B].

Grid Removal



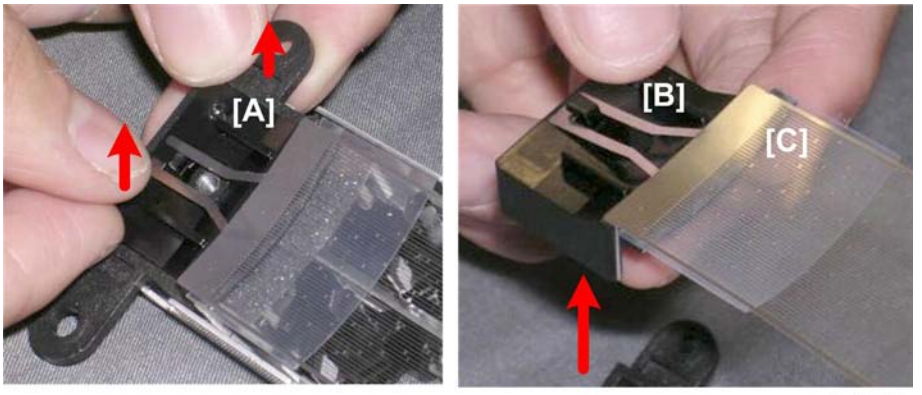
d081i844

1. At the front end [A], remove the screw and collar [B] together (x1).
2. Keep this screw and collar.



d081i845

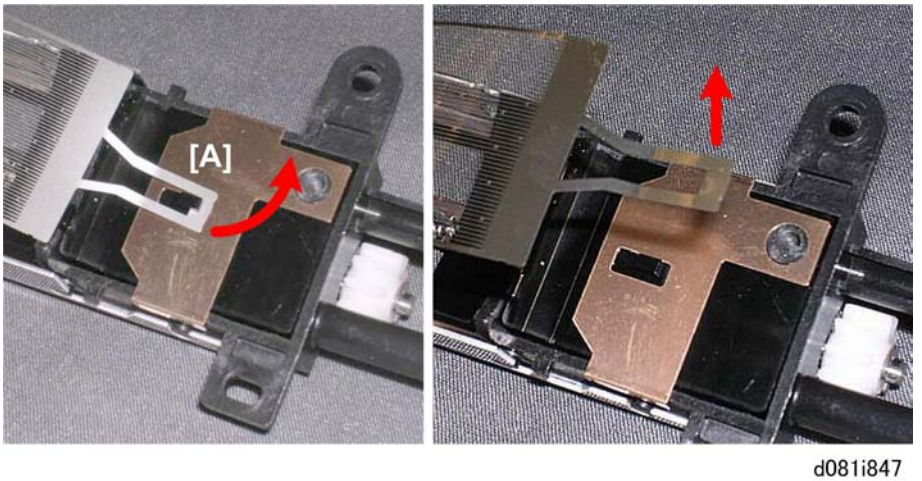
3. At the rear [A], remove the contact plate [B] together with the screw (x1).



d081i846

4

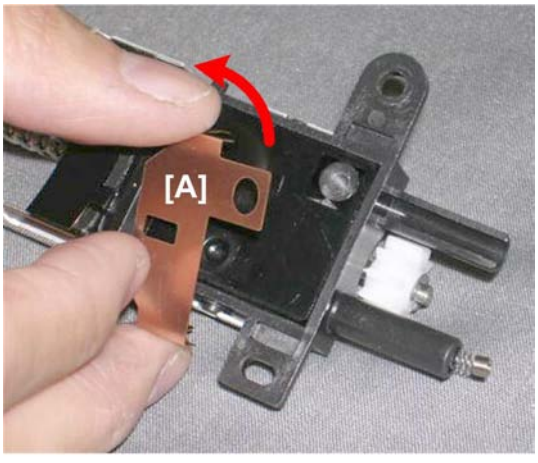
4. At the front [A], lift out the holder [B] and grid [C] together.



d081i847

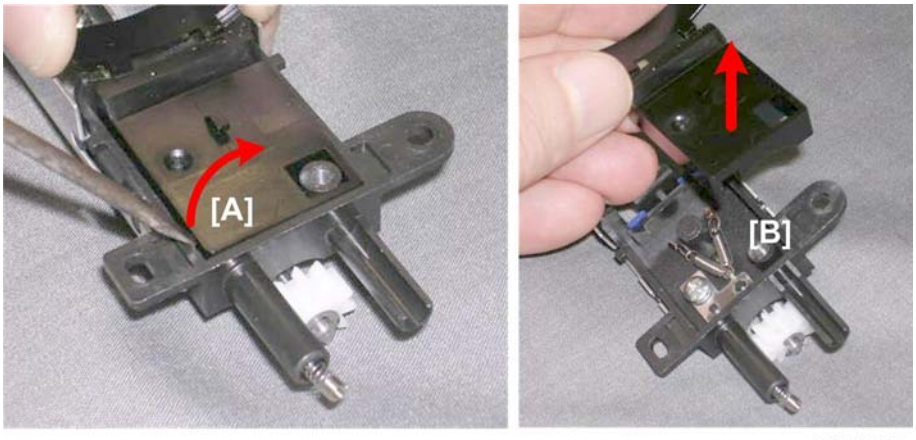
5. At the rear, carefully disconnect the end of the grid [A] from the peg and remove the grid. Discard the grid.

Corona Wire Removal



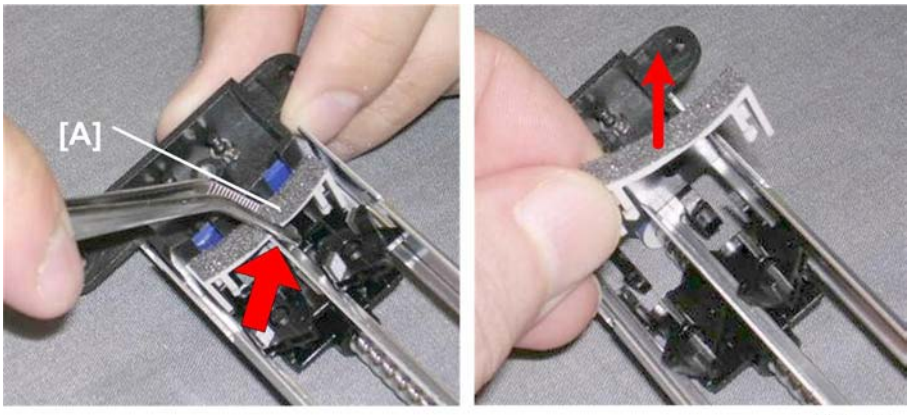
d081i848

1. Remove the contact plate [A].



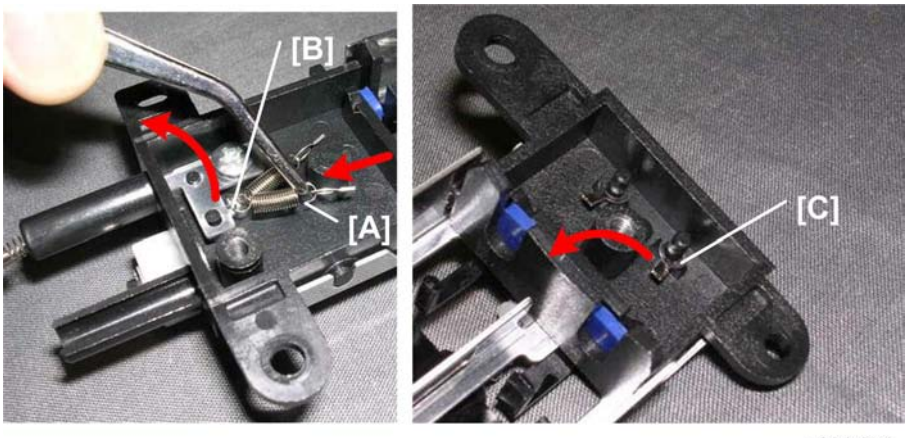
d081i849

2. Use the tip of a small screwdriver to pry loose the rear cover [A] and remove it to expose the two springs [B].



d081i850

3. At the front, use pincettes, tweezers, or thin needle-nosed pliers to remove the cleaner assembly [A].

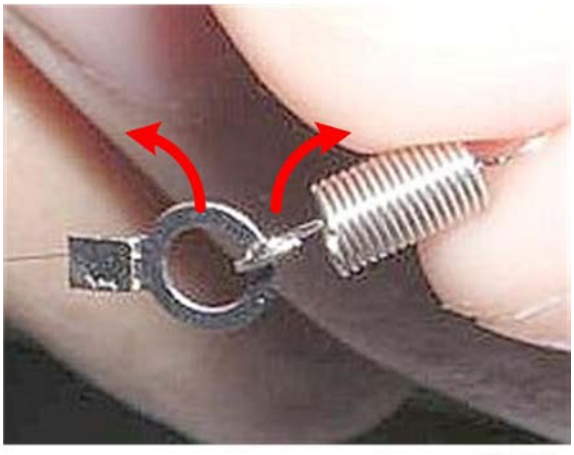


d081i851

4. At the rear, use the pincettes to pull the spring [A] gently toward the rear and lift it off its peg [B].
5. At the front, remove the other end of the corona wire from its peg [C].

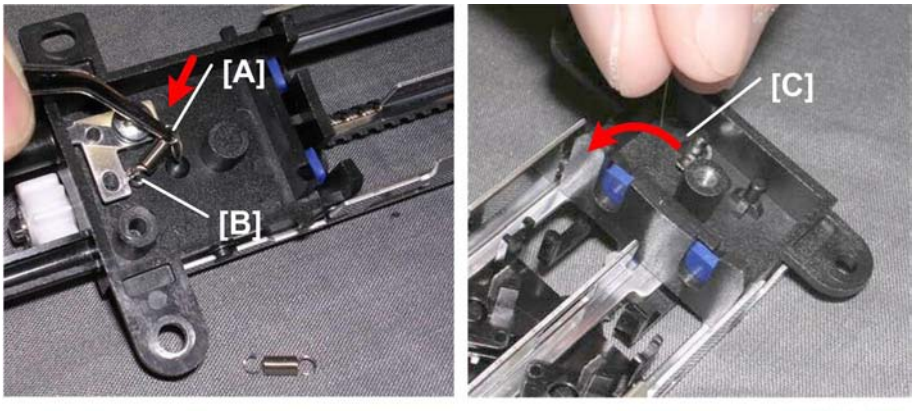
Important

- **The corona wires are extremely thin and fragile, and they break easily.**
- **If a wire breaks, make sure that you remove all the broken pieces from the charge unit before you discard the removed wires.**



d081i852

6. Disconnect the spring from the O-ring. Keep the spring because you will need it to attach the new wire.



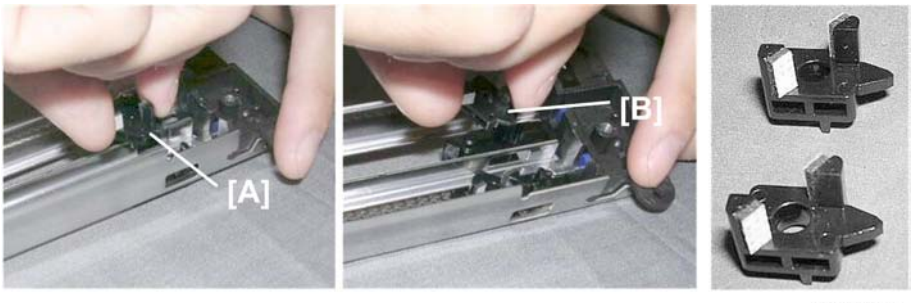
d081r853

7. At the rear, use the pincettes to pull the spring [A] of the other wire gently toward the rear and lift it off its peg [B].
8. At the front, remove the other end of the corona wire from its peg [C].

d081i854

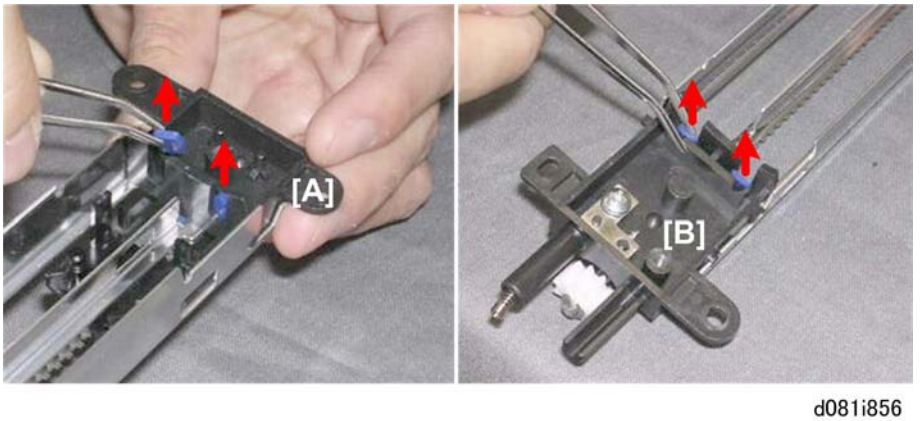
9. Disconnect the spring from the O-ring. Keep the spring because you will need both springs to attach the new wires.

Pad and Cushion Removal



d081i855

1. At the front, disconnect and remove the first cleaning pad [A] and second cleaning pad [B].
2. Discard both pads.

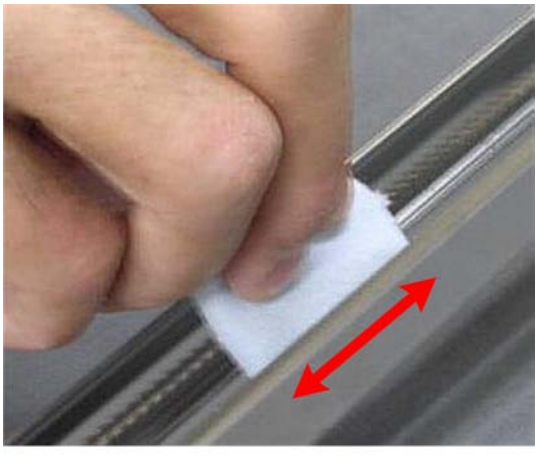


d081i856

3. At the front, remove the two cushions [A] and discard them.
4. At the rear, remove the two cushions [B] and discard them.

This completes the removal procedures.

Cleaning Before Installing New Parts



d081i857

1. Use a clean cloth moistened with water to clean the surfaces of the charge unit.

Important

- **Use a cloth moistened with water. Do not use alcohol.**

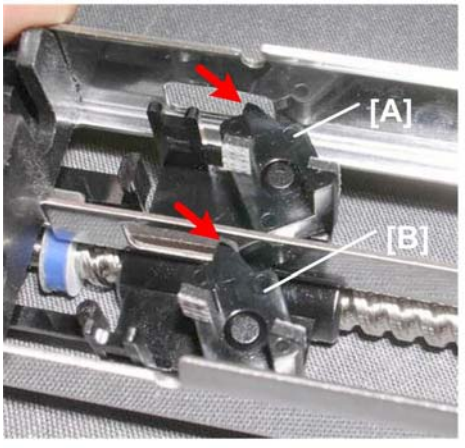
2. Use a clean dry cloth to dry the surfaces of the charge unit.

Re-Installation: K_PCU Charge Components

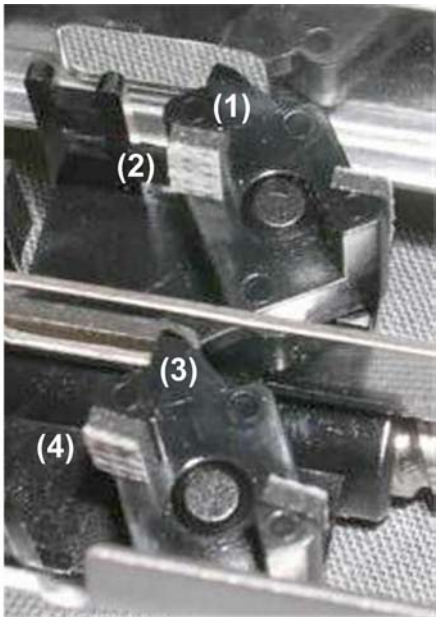
To avoid problems, follow the order of installation of new parts described below.

Important

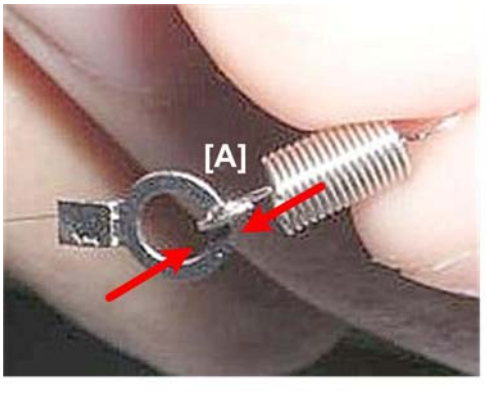
- **Handle the corona wires carefully. They are extremely fragile and break easily.**
- **Never touch any part of the surface of the new grid.**

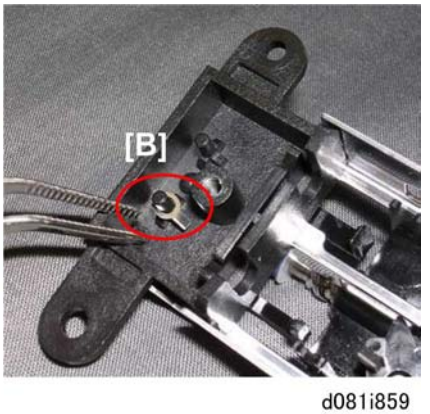


d081i858



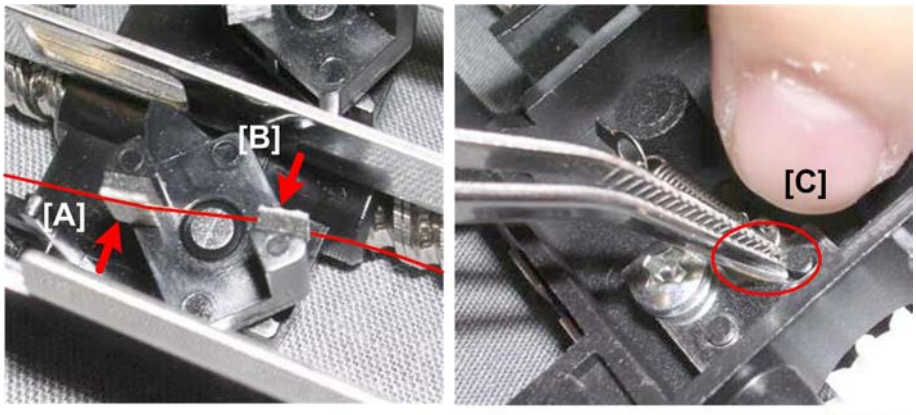
1. Set the new pads [A] and [B] as shown above.
2. Check the first pad. Make sure that the point (1) is set in the cutout and that the pad on the left (2) is facing toward you.
3. Check the second pad. Make sure that the point (3) is set in the cutout and that the pad on the left (4) is facing toward you.





d081i859

4. At the rear, hook a spring [A] onto the O-ring of the first corona wire.
5. Hook the other end of the corona wire (without the spring) onto its front peg [B].

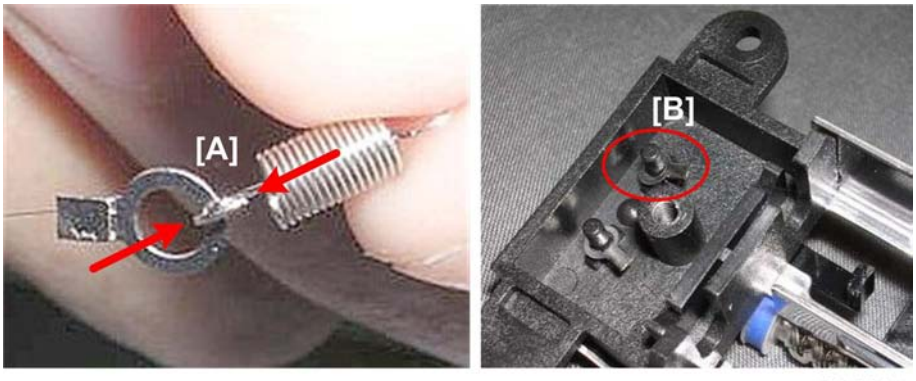


d081i860

6. At the front, thread the corona wire across the surface of pad [A] and pad [B].
7. At the rear, use pincettes to gently pull the end of the spring and hook it over the peg.

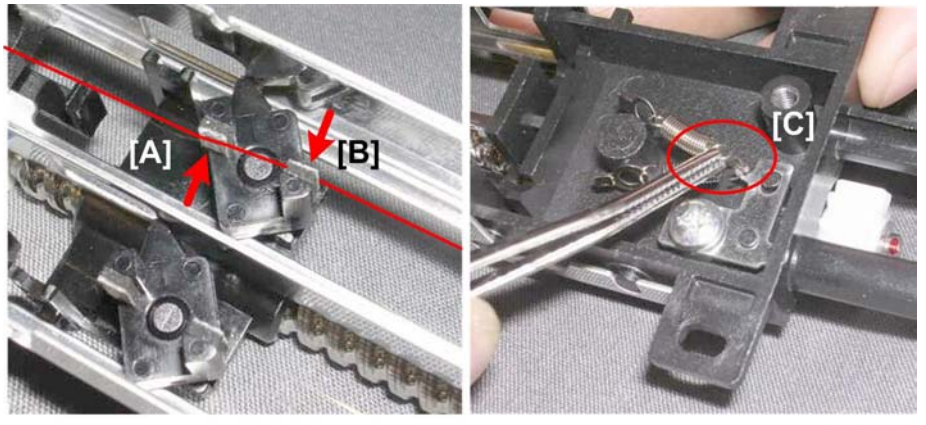
Important

- **The wire is fragile. Do not use too much force when pulling.**



d081i861

8. At the rear, hook a spring [A] onto the O-ring of the second corona wire.
9. Hook the other end of the corona wire (without the spring) onto its front peg [B].

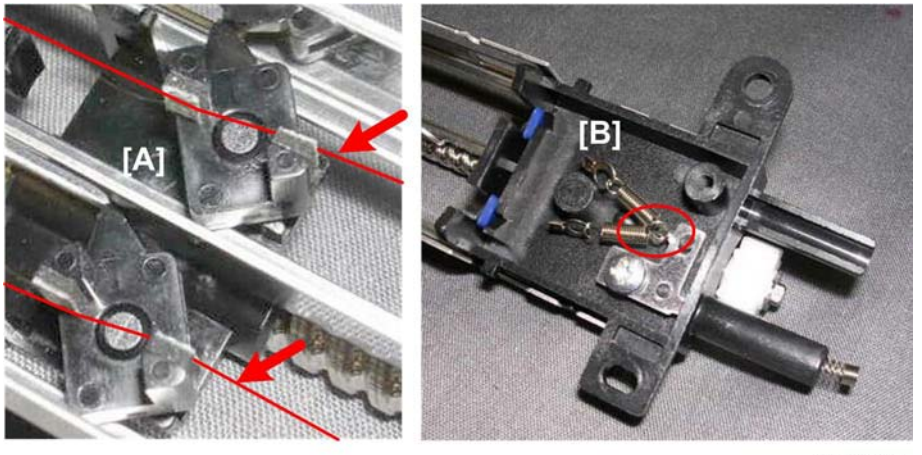


d081i862

10. At the front, thread the corona wire across the surface of pad [A] and pad [B].
11. At the rear, use pincettes to gently pull the end of the spring and hook it over the peg.

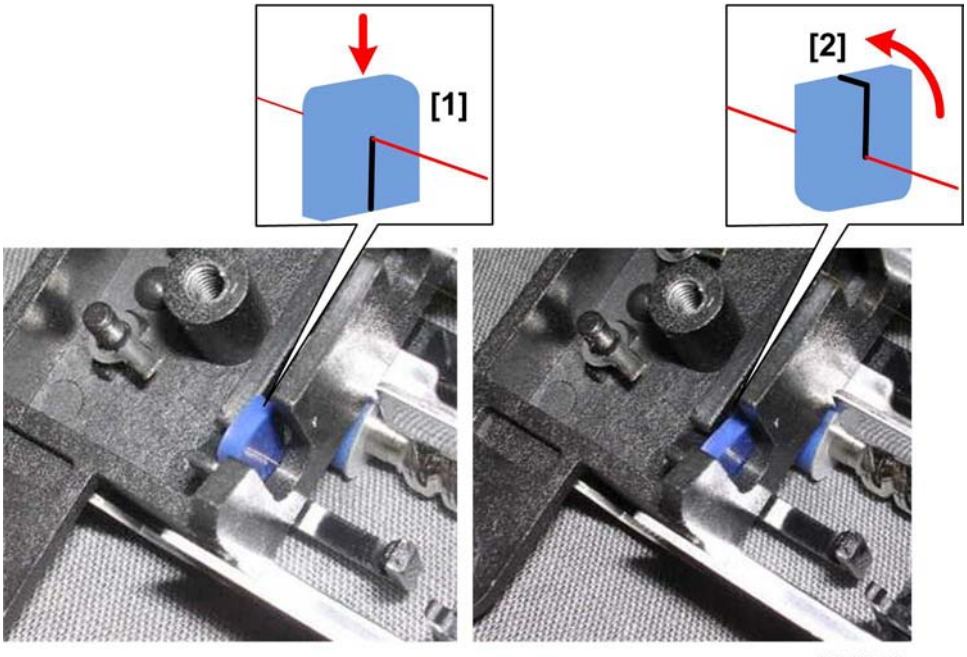
Important

- **The wire is fragile. Do not use too much force when pulling.**



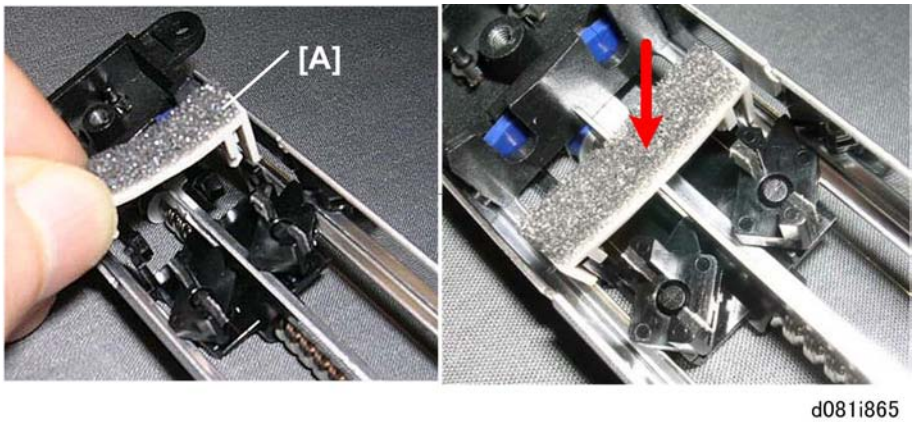
d081i863

12. Double-check both pads [A] and confirm that both wires are arranged correctly as shown above.
13. Make sure both springs [B] are securely attached at the rear.



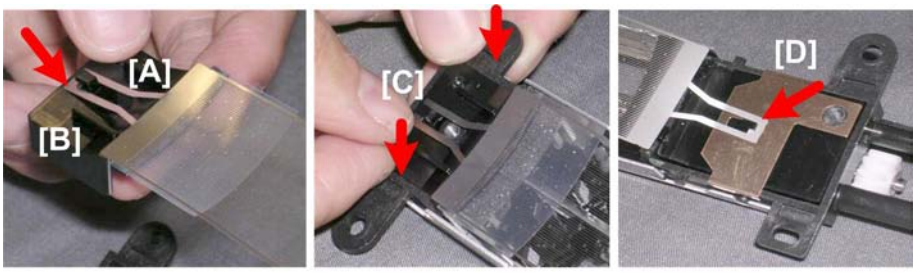
d081i864

14. Attach the four new cushions. To attach a cushion:
    - Each cushion has a slit.
    - Use the pincettes to set the flat side [1] of a cushion on the taut wire.
    - Slowly rotate the cushion [2] until the flat side is up and the rounded side is down.



d081i865

15. Re-attach the cleaner assembly.



d081r866

16. Attach the new grid.

Important

- **Never touch any part of the surface of the grid mesh.**
- At the rear, set the end of the grid [A] onto the hook of the block holder [B].
- Press down both ends of the holder [C] to lock it in place.
- At the front, hook the other end of the grid [A] onto the peg.

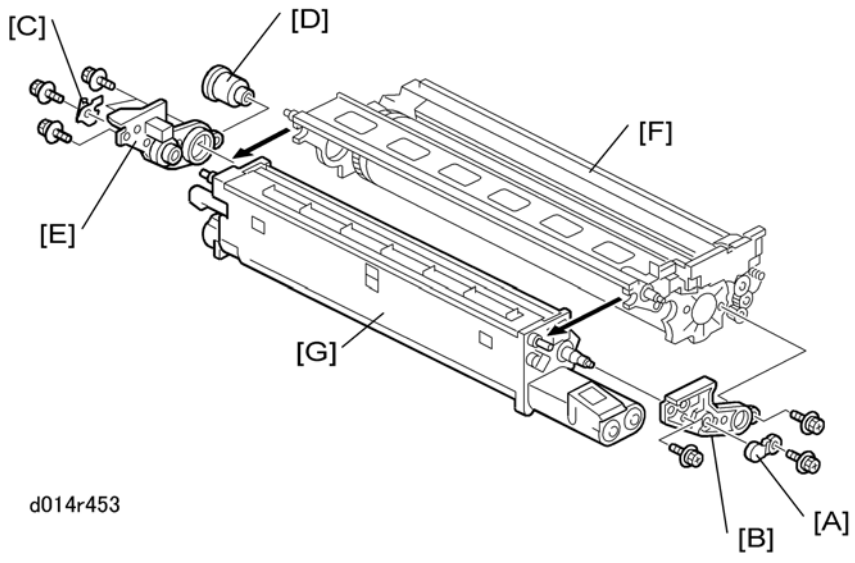
17. Re-assemble the charge corona unit.
18. After re-assembling the machine, go into the SP mode and do SP2111.

Separating Drum/Cleaning Unit, Removing the OPC Drum

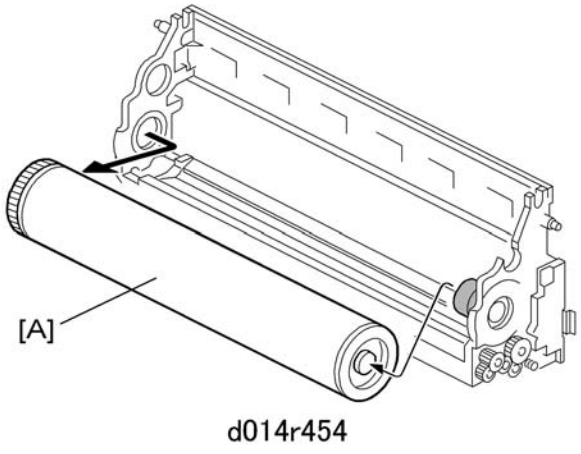
Before doing maintenance on a PCU:

- Separate the development unit and cleaning unit.
- Remove the drum and cover it with a sheet of clean paper to protect it from light.

1. Remove:
   - PCU
   - Charge roller unit (or charge wire unit for K PCU)



2. At the front, remove:
   [A] Small lock plate (x1)
   [B] Large lock plate (x2)
3. At the rear, remove:
   [C] Small lock plate (x1)
   [D] Brown coupling
   [E] Large lock plate (x3)
4. Separate the drum unit [F] from the development unit [G].



5. Remove the drum [A] from the development unit.
6. Wrap the drum in a sheet of clean white paper to protect it from light.

Re-installation of the Drum

This procedure is the same for the YMC PCUs and the K PCU.

- Always dust the surface of a new drum before you install it.
- If you have removed the drum and intend to re-install the same drum, the surface of this drum should be dusted as well.

Before you begin...

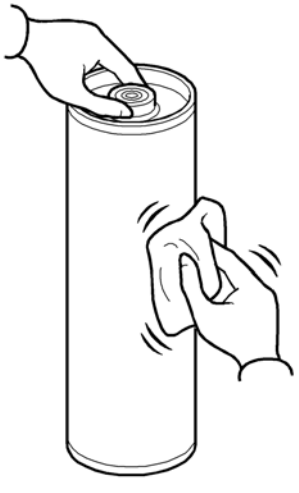
- Make sure that you have the correct type of dusting powder for the drum. Use only Lubricant Powder B1329700 (specially designed for this machine).

  Important

  - **Never use Setting Powder 54429101 because it could damage the drum and charge roller.**
  - **Never use the yellow toner of the D081/D082 or D014/D015 copiers because it contains developer that could damage the drum and ITB.**

To dust the drum:

1. Spread a small amount of lubricant powder on a clean sheet of paper.
2. Dip a clean, dry cloth into the lubricant powder.



d014r960

3. Dust the surface of the drum with the cloth until the entire surface is covered.
4. When you reinstall the drum:
   - Reinstall the front end of the drum first.
   - Never rotate the drum manually after reinstalling it.

Reinstallation: Drum

1. After re-installation, turn the machine on and do the appropriate SP settings, based on what was replaced.

Items Replaced	Required SPs and What They Do
• Drum only	Do 3820-2 to execute potential control and toner density adjustment. **Note**: Never initialize the TD sensor with SP3801-1 to 6, or SP3811-1 to 5 after this replacement.
• Drum and Developer only	Do 3801-1 to 6 to execute potential control and toner density adjustment only for the developer(s) that were replaced. Do 3802 to confirm that SP3801 executed successfully.
• Drum, Developer, and Drum cleaning blade	Do 3811-1 to 6 only for the developers that were replaced. This SP sends toner to the PCU and initializes the TD sensor. Do 3812 to confirm that SP3811 executed correctly.
• Drum and Drum cleaning blade only	Do 3820-2 to execute potential control and adjust toner density. **Note**: Never initialize the TD sensor with SP3801-1 to 6, or SP3811-1 to 5 after this replacement.

2. Do SP2111-1: Force Toner Position Alignment to do the MUSIC adjustment.

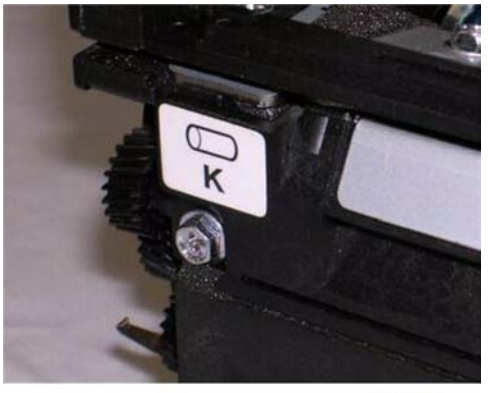
PCU Blades and Rollers

This section describes how to replace these parts of the drum cleaning unit:

- Drum lubricant bar
- Drum lubricant blade
- Drum lubricant brush roller
- Drum cleaning blade
- Collection coil

The procedures described below apply to both a YMC PCU and K PCU.

- However, the drum lubricant bar unit is not the same for both units. The drum lubricant bar unit is marked "K" for the black PCU.



b132r801a

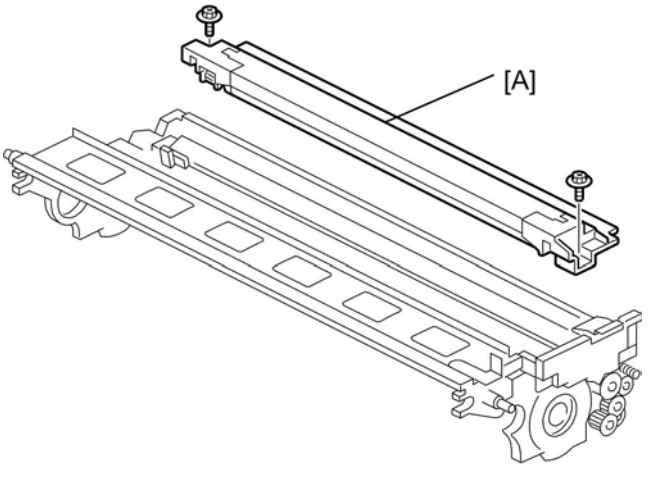
4

- If you replace a cleaning blade, apply lubricant powder to the cleaning blade and to the drum.

Drum Lubricant Bar and Drum Lubricant Blade

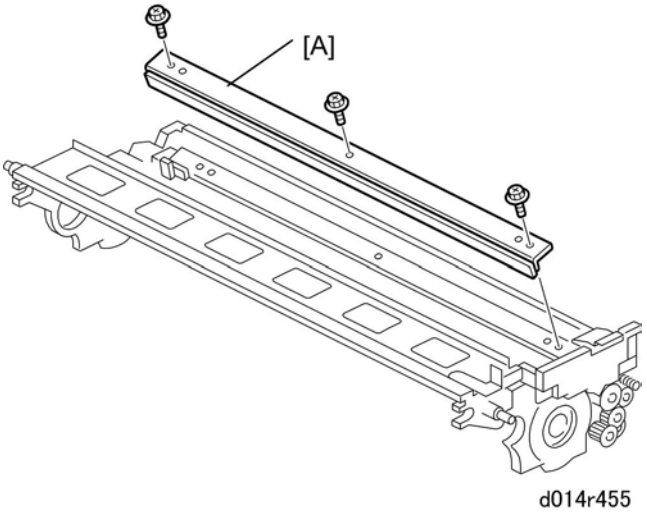
Preparation

- Remove the PCU from the machine.
- Separate the development unit and drum unit.
- Remove the drum, cover it with a piece of clean paper, and set it aside.

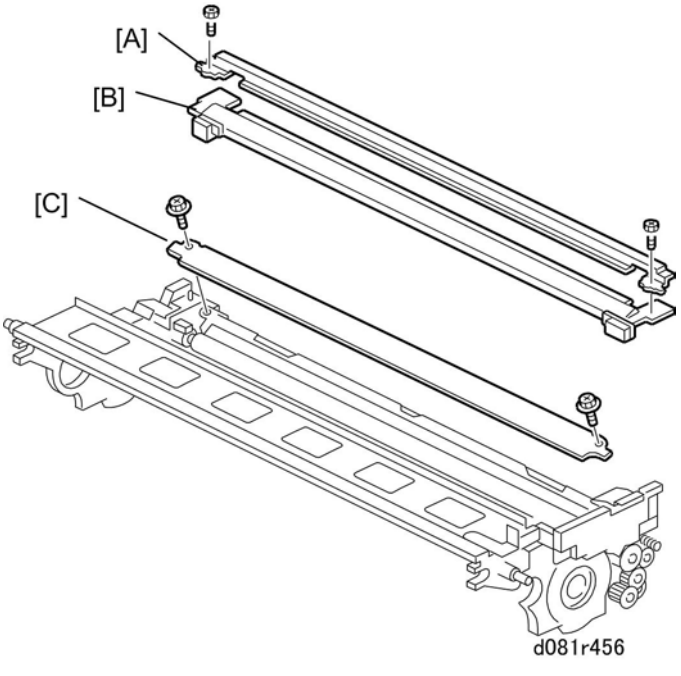


d081r452

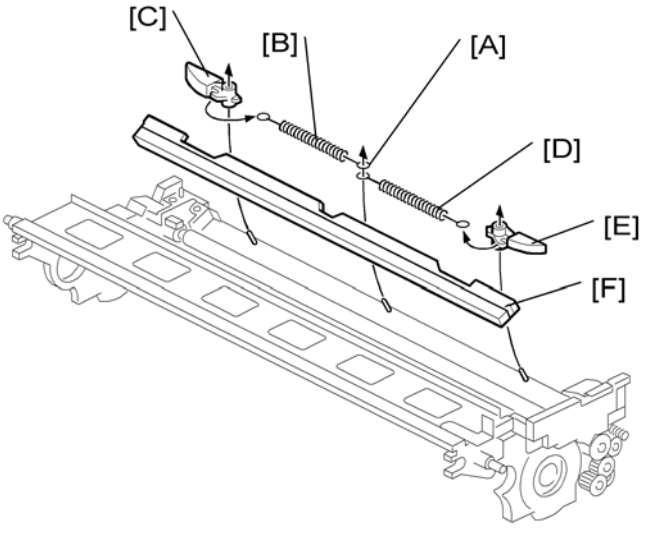
1. Remove the charge unit [A] (x2).



2. Remove the drum lubricant blade [A] (x3).



3. Remove plastic cover [A] and metal stay [B] (x2).
4. Remove the drum lubricant bar unit cover [C] (x2).



5. At the center [A], disconnect springs from the post.
6. Disconnect the rear spring [B] from the rear bar support, then remove the support [C] from its post.
7. Disconnect the front spring [D] from the front bar supports, then remove the support [E] from its post.
8. Remove the drum lubricant bar [F] and replace it with a new one.

Note

- The drum lubricant bars of the K PCU and YMC PCUs are identical. The same type of drum lubricant bar can be installed in either type of PCU.

Important

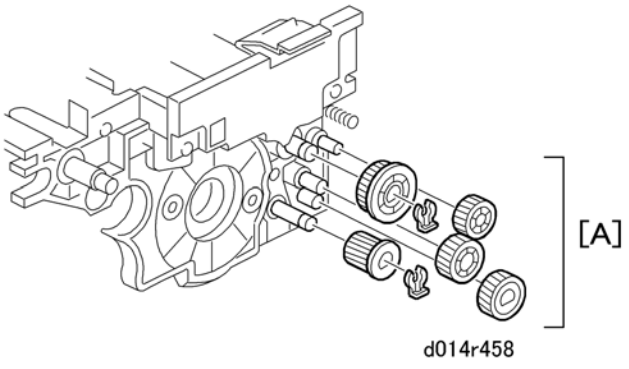
- **The springs of the drum lubricant bar units are not interchangeable. The springs of the CMY drum lubricant bar unit are brown and stronger than the springs of the K drum lubricant bar unit (the K drum lubricant bar springs are black).**

Re-installation: Drum Lubricant Bar, Drum Lubricant Blade

1. Enter the SP mode.
2. If you have replaced the drum lubricant bar, drum lubricant blade, or both bar and blade, do SP2111-1 to do the MUSIC adjustment.

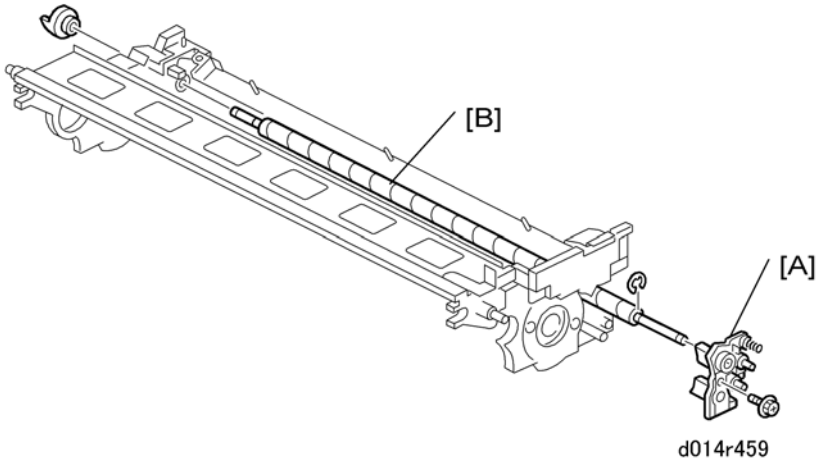
Drum Lubricant Brush Roller

1. Remove (see the previous section):
   - Drum charge unit
   - Drum lubricant bar
   - Drum lubricant blade



2. Remove:

   [A] Gears (x2, Gears x5).



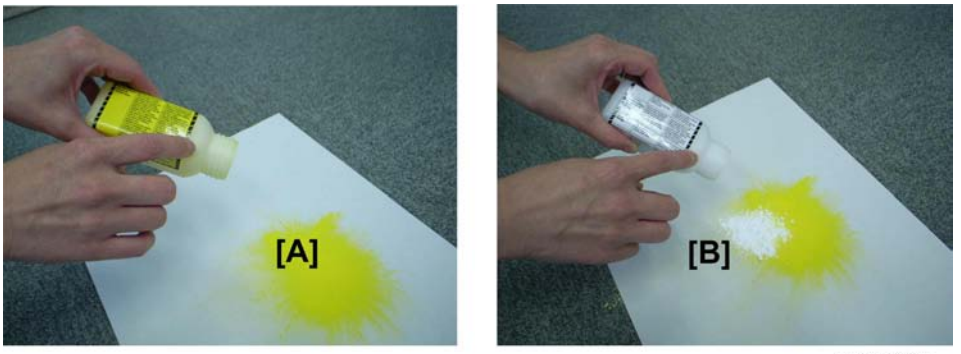
3. Remove:

   [A] Shaft lock plate (x1)

   [B] Drum lubricant brush roller (Coupling x1, x1)

Re-installation: Drum Lubricant Brush Roller

Do the procedure below after replacing the drum lubricant brush roller.

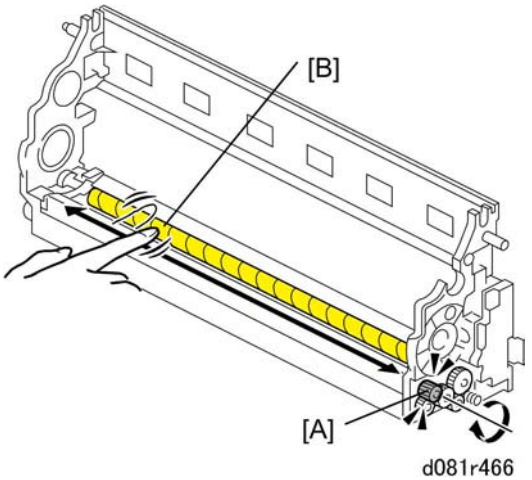


d081r465

1. Place a sheet of clean paper on a flat surface.
2. Pour a small amount of G104 Yellow Toner (D0159500) [A] onto the paper.
3. Pour an equal amount of Zinc Stearate (D0159501) [B] into the yellow toner.
4. Mix the G104 Yellow Toner and Zinc Stearate together with your finger on the paper.

Important

- **Always use the G014 Yellow Toner, not the yellow toner of the D081/D082 or D014/D015.**
- **The D081/D082/D014/D015 yellow toner contains developer that could damage the surface of the drum and ITB.**



d081r466

5. While rotating gear [A] in the direction of the arrow, use your finger to apply the mixture of yellow toner and zinc stearate from the paper across the surface of the PCU drum lubricant brush roller [B].

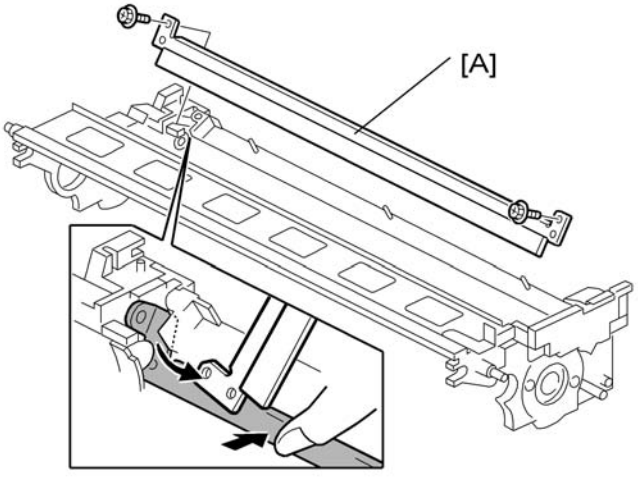
Important

- **You must rotate gear [A] in the direction shown above.**
- **Use a brush to apply the mixture if one is available.**

- **Use this mixture only for the PCU drum lubricant brush roller of this machine. Never apply this mixture to any other part of this machine, or any part of another machine.**

6. Reassemble and turn the machine on.
7. Enter the SP mode.
8. Do SP2111-1: Force Toner Position Alignment to do the MUSIC adjustment.

Drum Cleaning Blade



d014r460

1. Remove:

   [A] Drum cleaning blade (x2).

Re-installation: Drum Cleaning Blade

1. Re-assemble the machine and turn the machine on.
2. Do the appropriate SP settings, based on what was replaced.

Items Replaced	Required SP Codes What They Do
• Drum cleaning blade, Drum, and Developer	Do 3811-1 to 6 to initialize the TD sensor and send developer to the PCUs. Do 3812 to confirm that SP3811 executed successfully. **Note**: SP3811 is required only after the developer and drum cleaning blade have both been replaced.

Items Replaced	Required SP Codes What They Do
• Drum cleaning blade and Drum only	Do 3820-2 to execute potential control and toner density adjustment. **Note**: Never initialize the TD sensor with SP3801-1 to 6, or SP3811-1 to 5 after this replacement.
• Drum cleaning blade and/or drum cleaning roller (without changing the drum or developer)	Do SP 3810.

3. Do SP2111-1: Force Toner Position Alignment to do the MUSIC adjustment.

Developer Replacement

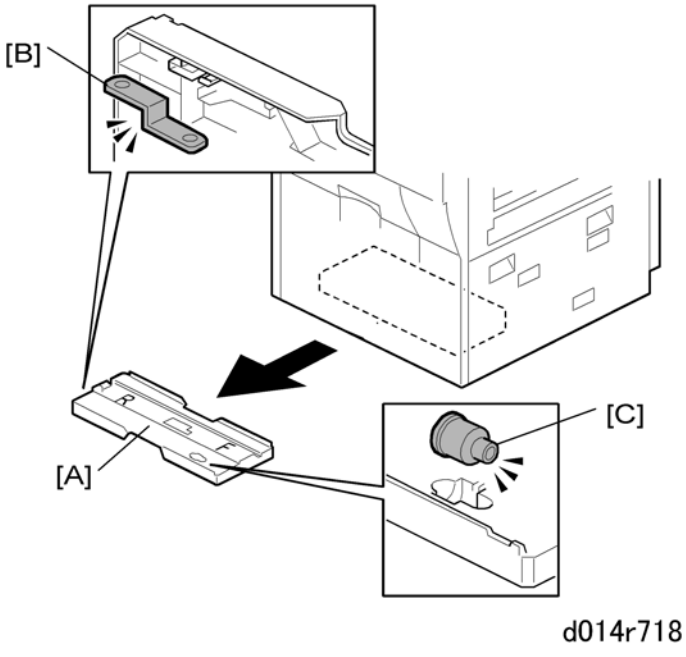
The developer replacement procedure is the same for the YMC PCUs and the K PCU.

Important

- **Developer must be replaced for each PCU every 450K.**
- **However, developer can be replaced for only one PCU if a problem occurs. For example, the C_PCU can be replaced if Cyan is too light.**

Preparation

1. Spread some paper on a flat surface to hold developer that will be dumped from the development unit.



2. Remove:

   [A] PCU stand from bottom of the machine

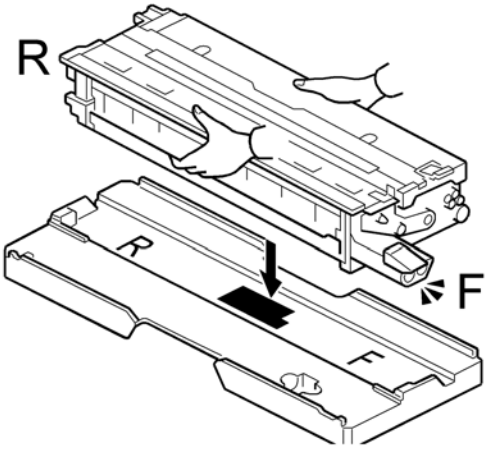
   [B] Jig

   [C] Brown coupling

   Important

   - **Use the PCU stand provided with the machine.**
   - **Never use a PCU stand for a B132/B181/B200 because this can damage the exposed drum on the bottom of the PCU.**
   - **If the D081/D082 PCU stand is not available, you can use a D014/D015 PCU stand (these stands are identical.)**

3. Remove the metal jig [B] and brown coupling [C] from the bottom of the PCU stand.
4. Set the PCU stand on a flat surface.
5. Remove:
   - Toner hopper
   - Faceplate
   - PCU



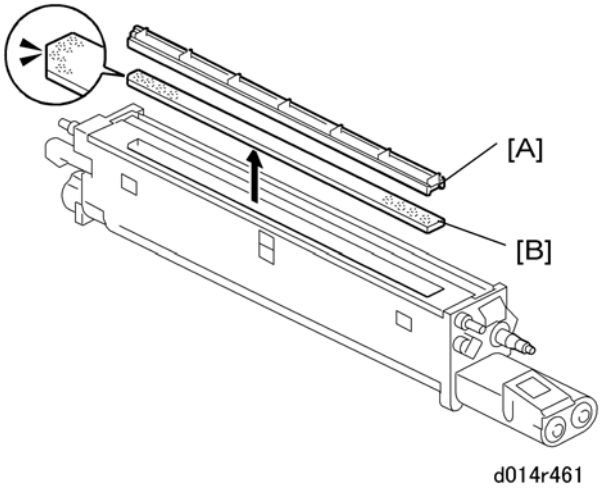
d014r214

6. Position the front and rear of the PCU so that it matches the F (front) and R (rear) markings on the PCU stand.
7. Set the PCU on the stand.
    - The front-rear alignment aligns the shape of the stand with the contours of the PCU bottom.
    - This also protects the exposed drum on the bottom of the PCU during servicing.

Removing Old Developer

Preparation

- Separate the drum unit and development unit.
- Cover the drum with a sheet of clean paper and set it aside.



d014r461

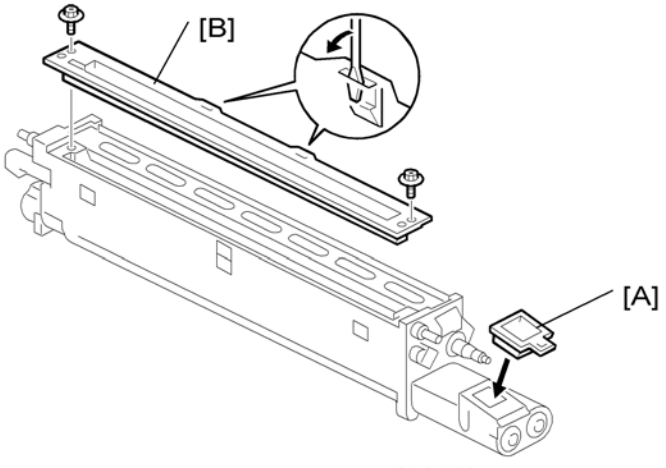
1. Remove:

[A] Filter frame

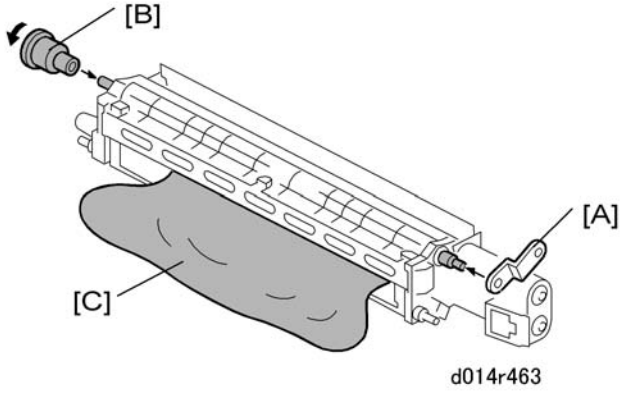
[B] Filter

Important

- **This filter must be replaced every time the developer is replaced.**



2. Insert the plug [A] into the toner port.
3. Remove the plastic cover [B] (x2). Use the tip of a small screwdriver to dislodge the cover.



4. Attach the metal jig [A] to the end of the development roller. The jig must be set as shown.

Note

- The D-shaped hole of the metal jig must fit over the D-shaped shaft tip. If the hole of the metal jig is not aligned with the shaft, rotate the D-shaped shaft tip to position the shaft so the metal jig can be attached.

5. Attach the brown coupling [B] (removed from the PCU stand) to the other end of the development roller.

Important

- **Use the brown coupling provided with the PCU stand. Using the coupling of the PCU could break it or wear it out.**

6. Rotate the brown coupling in the direction shown above so the developer [C] starts to come out of the development unit.

Note

- Turning the brown coupling in the opposite direction will not damage anything but developer will fail to come out of the development unit.

b132r802a

7. Tip the development unit on its end to dump any remaining developer.

b132r803a

8. Rotate the brown coupling again to push out more developer.

b132r804

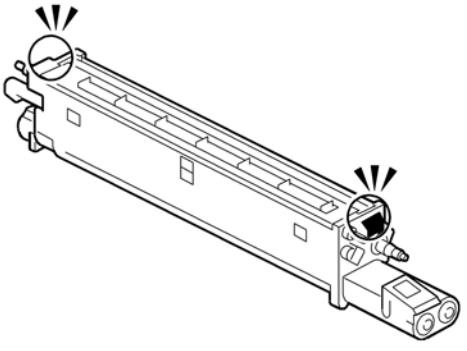
9. After the filter unit has been removed, dump the last bit of developer.

Important

- **Never touch or attempt to remove the doctor blade. The doctor blade is set at the factory and requires no cleaning or adjustment.**

b132r805

10. Vacuum clean the unit, and then clean it with a dry cloth.

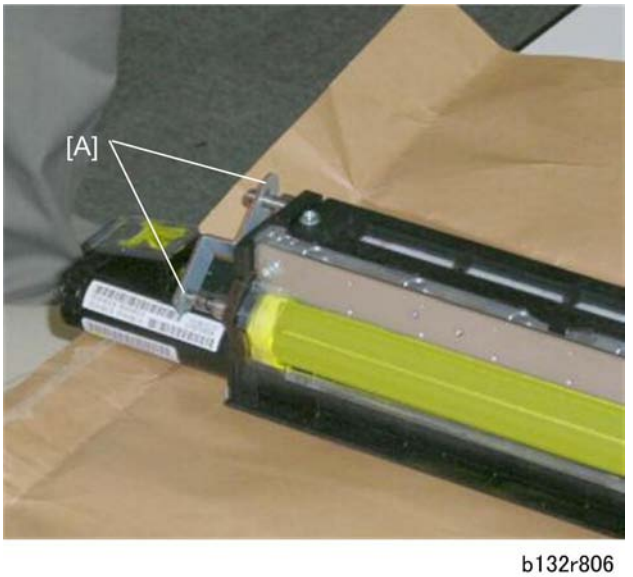


d014r464

11. Clean both ends of the unit. The ends must be clean and completely free of old developer.

Reinstallation: Re-assembly

- Always replace the filter before reinstalling the cleaned PCU. The filter must be replaced every time the developer is replaced.)



b132r806

- Attach the metal jig [A] (provided with the PCU stand) to the ends of the shafts shown above. This aligns the shafts correctly for reinstallation of the PCU.
- Reinstall the PCU and faceplate.
- Do not reinstall the toner hopper yet.

Adding New Developer

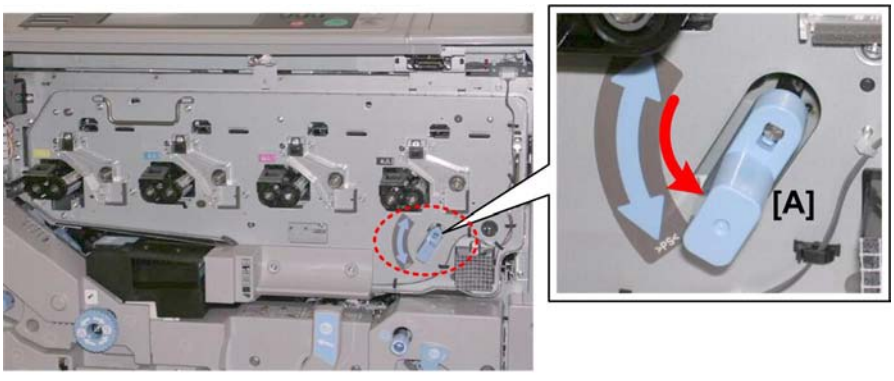
Before You Begin...

- Follow this procedure in the order described below.

- Do not turn on the machine or open the front door until you are instructed to do so.

PCU Filling Procedure

1. If you have not already done so, remove the toner hopper unit (described above).

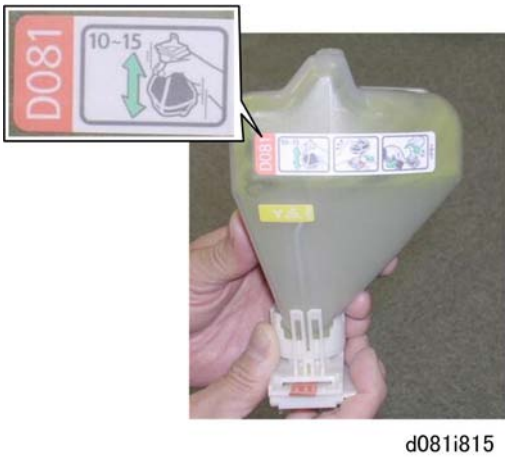


d081i814

1. Attach the transfer belt release lever [A].
2. Make sure the lever is down.

Important

- **The lever must be down to keep the transfer belt separated from the surfaces of the PCU drums.**

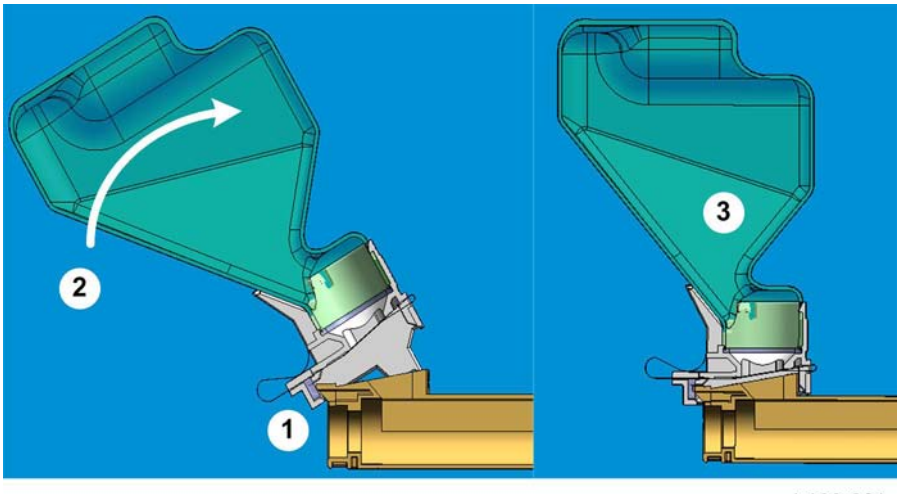


d081i815

3. Pick up the developer bottle.
4. Make sure that the bottle is clearly marked "D081" for this machine.

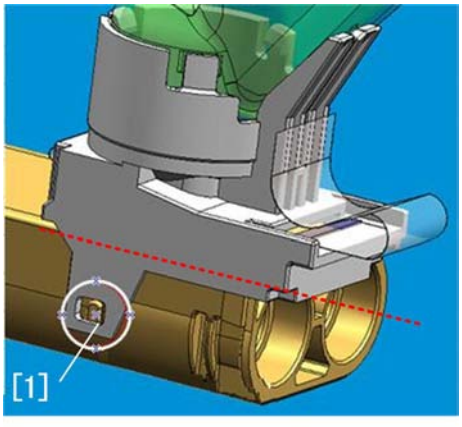
d081i830

5. Before a bottle, loosen the developer to ensure that it will drain completely. Vigorously shake the bottle up and down 10 to 15 times.



b132r801

6. Rest the neck [1] of the developer bottle on the edge of the PCU.
7. While keeping contact and pressure on the neck and PCU at [1], rotate the bottle [2] up until it locks in place at [3].

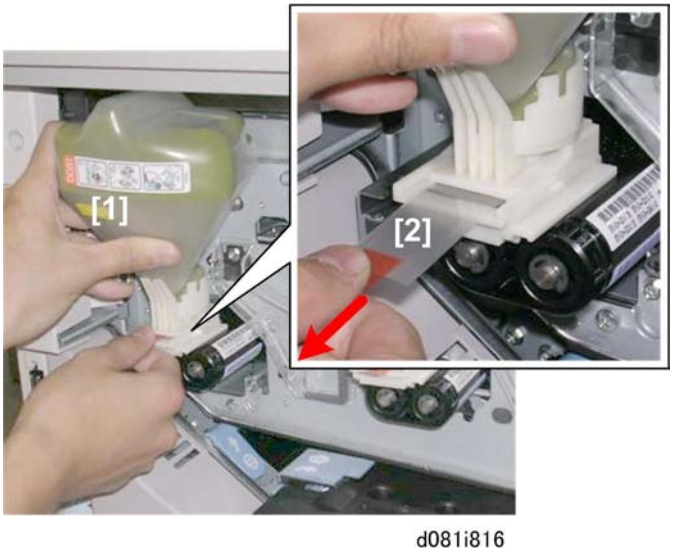


b132r802

8. Check the tab on the side of the neck [1] to make sure that the bottle is locked. The neck of the bottle should be perfectly flat on top of the PCU.

Important

- **There should be no gap between the developer bottle and the PCU.**
- **If the bottle is not locked in place, developer will spill from the bottle**



d081i816

9. Remove the heat seal from each bottle.
   - Hold the bottle [1] with one hand, slowly pull the heat seal [2] out of the developer bottle and remove it.
   - Do this for each bottle.
   - Make sure that you have removed all the seal strips (you should have four strips, one for each bottle).

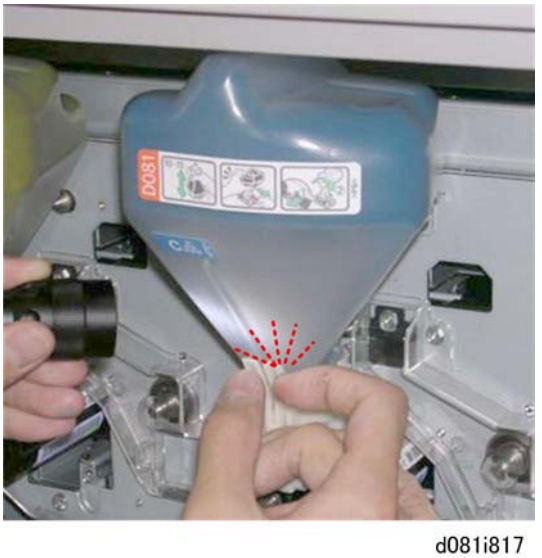
10. Gently tap the sides of each bottle with a finger to make sure that the developer flows freely.
11. Close the front door.

Important

- **The door must be closed before you switch the machine on.**

12. Turn the machine on.
13. Enter the SP mode and do the appropriate SP codes:

SP	Function
3814-1	All (KMCY)
3814-2	MCY Only
3814-3 to 6	K, M, C, Y separately as required.
3815	Confirms that SP3814 executed correctly by displaying "**1111**" (KMCY). A "9" indicates an error



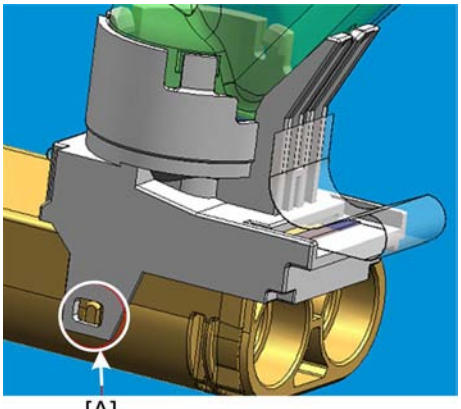
d081i817

14. Shine a flashlight on the side of the bottle and confirm that it is empty.

Note

- If you see any remaining toner, gently tap the neck of the bottle to loosen the toner then execute SP3814 again to drain all the developer.

15. After all the developer has drained from the bottle, switch the machine off.



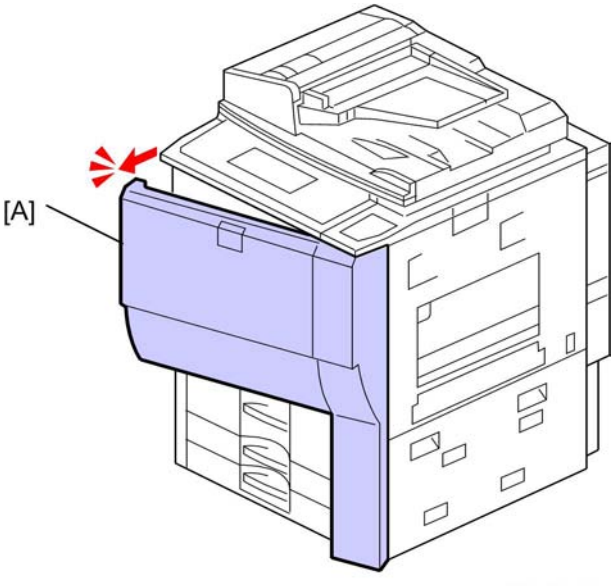
b132r803

16. Use the tip of a small screwdriver to release each locked bottle latch at [A], and remove the bottle.
17. Discard the four empty bottles.

Important

- **Obey local laws and regulations concerning the disposal of items such as the empty bottles.**

18. Rotate the transfer belt release lever back up (rotated down at Step 3).
19. Reattach the toner hopper.



d081i721

20. Open the front door [A].

Important

- **You must open the front door.**

- **Turning on the machine with the front door open prevents the machine from performing the initial process control self-check.**
- **If the front door is closed, the drums will start rotating with no toner in the PCUs.**
- **If the drums rotate with no toner in the PCUs, this can cause the cleaning blades to catch on a dry drum and damage the drum surface.**

21. With the front door open, turn on the main power switch.
22. Close the front door after "Open Cover" appears on the display.

Re-installation

1. Re-assemble the machine.
2. Do the appropriate SP settings, based on what was replaced.

Items Replaced	Required SP Codes and What They Do
• Developer	Do 3801-1 to 6 to initialize the TD sensor for the developer(s) that were replaced. Do 3802 to confirm that SP3801 executed successfully.
• Developer and Drum cleaning blade -or- • Developer, Drum, and Drum cleaning blade	Do 3811-1 to 6 to initialize the TD sensor and send developer to the PCUs. Do 3812 to confirm that SP3811 executed successfully. **Note**: SP3811 is required only after the developer and drum cleaning blade have both been replaced.
• Developer and Drum	Do 3801-1 to 6 to execute potential control and toner density adjustment for the developer(s) that were replaced. Do 3802 to confirm that SP3801 executed successfully.

3. Do SP2111-1: Force Toner Position Alignment to do the MUSIC adjustment.

Handling Problems with Developer Filling

Important

- **If image density is too light, or if the machine fails to release the "Toner End" alert, please refer to "Special Procedures" in the Troubleshooting section.**

Procedure 1

Do this procedure first. The most common cause of an SP3815 error is failure to remove the tape from one of the bottles. If you see any number other than "**1**" after doing SP3815:

1. Note the position of the digit where the number is displayed. For example, If the displays reads "**1191**" the problem occurred at the C PCU.

2. Check the attachment of the bottle at the affected PCU and make sure that the tape was removed.
3. If the tape has been removed, do Procedure 2

Procedure 2

Do this procedure only after you have done Procedure 1 immediately above.

If all tapes have been removed but developer remains in one or more bottles, do the procedure below.

1. Do SP3814-1 to 6 for the color of whichever PCU is to be filled with developer..
2. Hold the bottle to prevent it from coming off, then tap the bottle gently a few times.
3. Open the front door then switch on the main power switch.

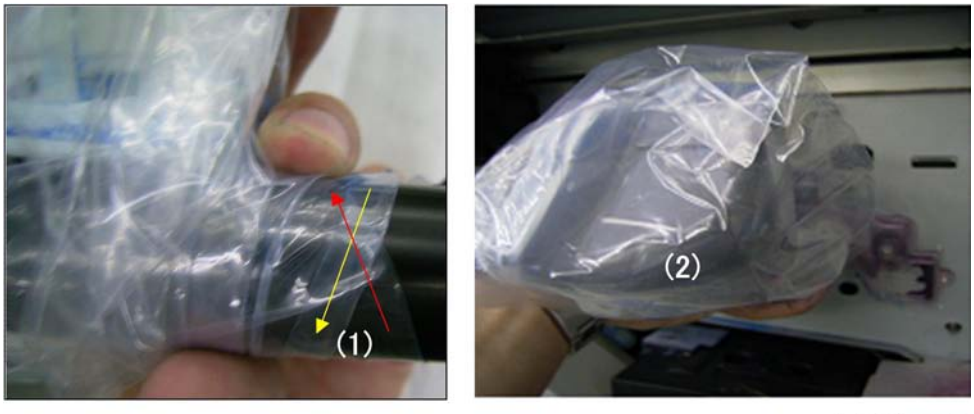
Important

- **The door must be open.**

4. When you see the door open message on the screen, close the door.
5. Wait about 40. sec. until the SC code appears on the screen, then turn off the power switch.
6. Repeat this procedure until the bottle becomes empty.
7. After 10 attempts if the bottle is still not empty, do procedure 3 below.

Procedure 3

The developer has probably clogged inside the bottle, so you must remove the developer bottle and the PCU. Do this procedure only after you have done Procedures 1 and 2 immediately above.



b132r810

Note

- The initial process control self-check (process control after the prescribed idle time and MUSIC) is disabled after SP3814 (Developer Fill) is executed and will remain disabled until after SP3801 (TD Sensor Initialization) or SP3811 (Developer Setup) are executed.

1. Cover the toner bottle with a plastic bag, and seal the mouth of the bag (1) with your hand.
2. Remove the bottle (2).

3. Remove the faceplate (x5).
4. Remove the PCU from the machine.
5. Open the top of the development unit (x2).
6. Pour remaining developer from the bottle into the development unit.

New PCU

There are two types of PCU. Before replacing a PCU, make sure that you have the correct type:

- The K PCU contains a charge wire unit, used only for black.
- The YMC PCUs use a charge roller. This PCU type can be used to replace Y, M, or C PCU.

b132r811

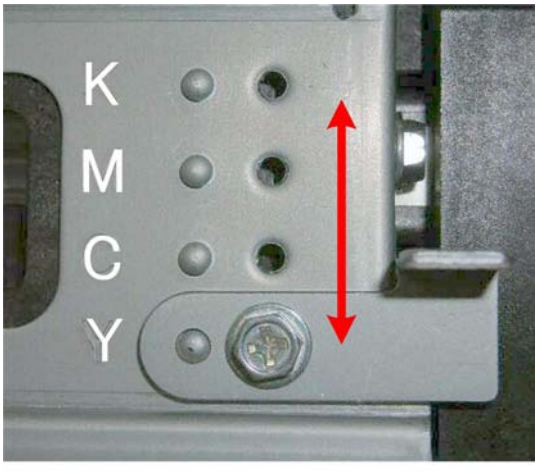
1. Remove the seal [A] loosely attached to the end of the PCU unit.

Note

- The SP values written on the seal are also on the sticker attached to the PCU unit [B].

b132r812

2. Attach the seal to the guide sheet provided. This reminds you which SP codes must be set for the PCU later.



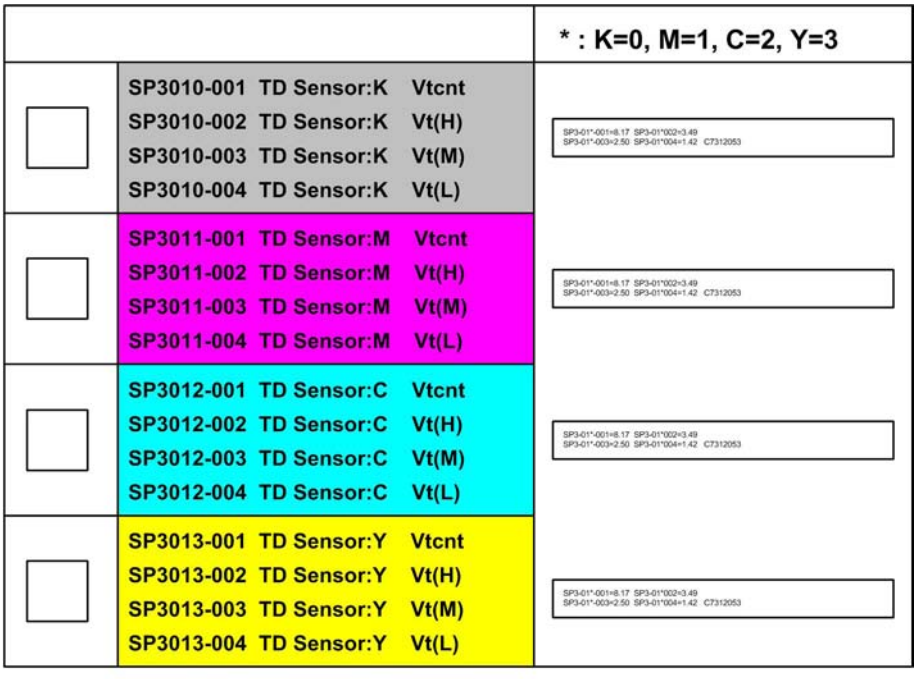
b132r813

3. Remove the screw and attach the plate to the correct position for the PCU to be replaced. This adjustment prevents the PCU from being installed in the wrong position.
4. Install the new PCU in the machine.
5. Execute the SP codes listed on the guide sheet.

Important

- **Enter the values for the SP codes before you add developer.**

6. Enter the values written on the seal for each SP code



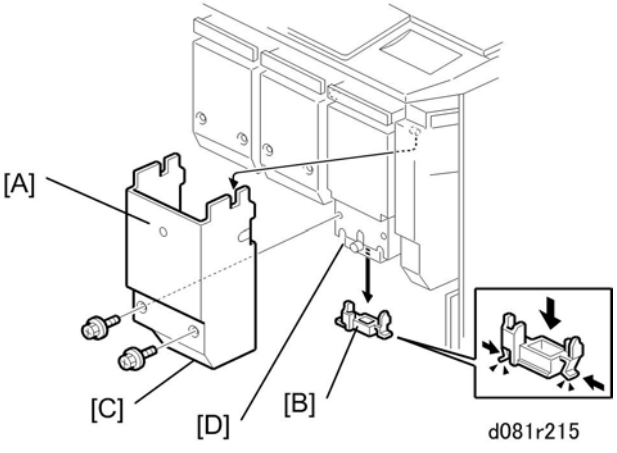
d014s901

- The four settings on each sticker must be entered for each new PCU.
- Execute only the SP codes on the sticker removed from the PCU and attached to the guide sheet. (The sheet above shows four stickers attached, one for each PCU.)
- Do the SP codes only for the PCUs being replaced.
- If you replace only the development unit, you must also do these SP modes.

7. Follow the procedure in the main machine installation procedure to fill the PCU with developer and initialize the developer. (☛ "Filling the PCU Units with Developer" in the "Main Machine D081/ D082" under the "Installation" chapter)

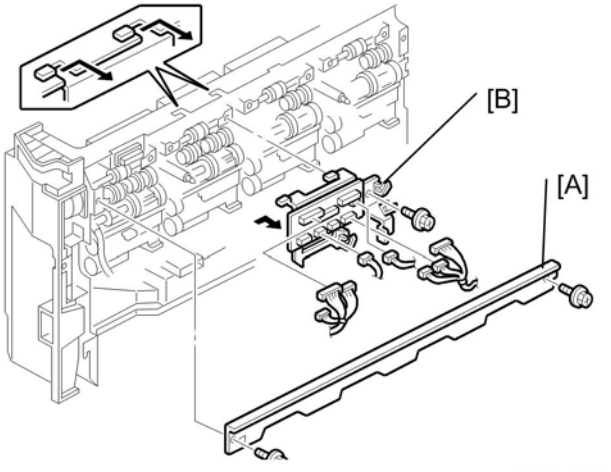
Toner Supply

STC Port Cleaning



1. Open the front door.
2. Remove the STC holder front cover [A] (x2)
3. Remove the STC bottom cover [B] (Pawls x2)
4. Wrap a clean cloth around the tip of a small screwdriver then scrape away any toner that has collected inside the bottom cover.
5. Use a clean cloth to clean the bottom of the holder cover [C] and the bottom of the holder [D].

Connector Board (CNB)



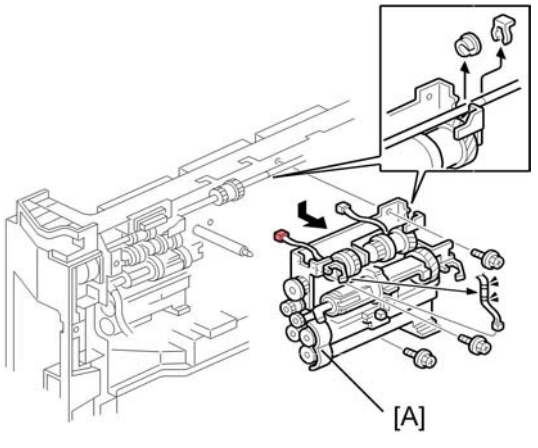
d081r216

1. Open the front door.
2. Remove the toner hopper (☛ p.293).
3. Remove:

   [A] Support bracket (x2)

   [B] CNB (x9, x1). Slide the PCB assembly to the right and remove it.

Toner Pump

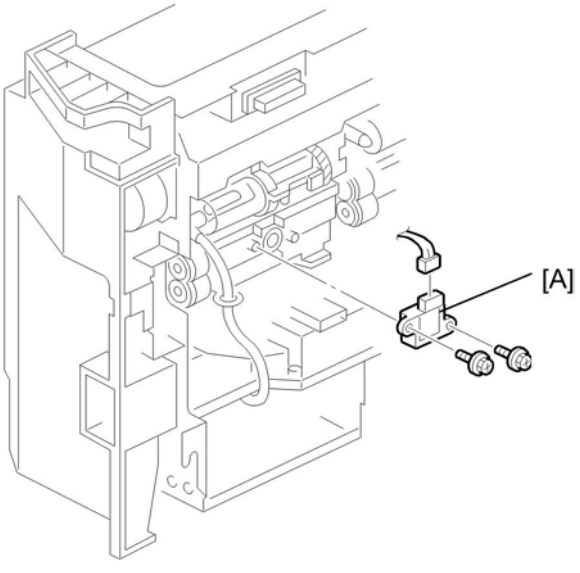


d081r217

1. Open the front door.

2. Remove:
    - Toner hopper (☛ p.293)
    - Support bracket (☛ p.370 "Connector Board (CNB)")
    - Connector Board (☛ p.370 "Connector Board (CNB)")
3. Remove toner pump assembly [A] (x3, x3, Bushing x1, x1).
4. Pull the assembly straight down and remove it.

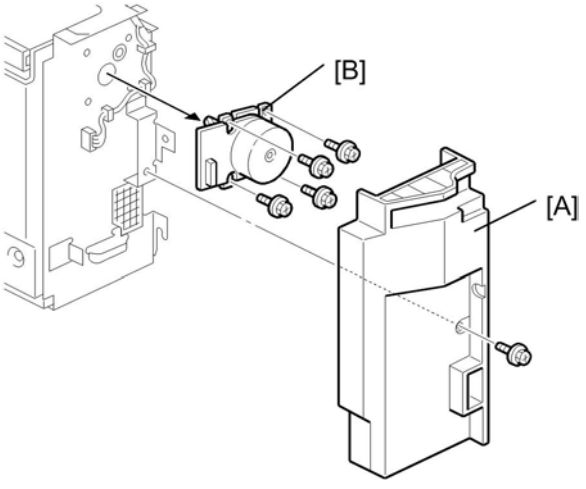
Toner End Sensor



d081r213

1. Open the front door.
2. Remove:
    - Toner hopper (☛ p.293)
    - [A] Toner end sensor (x1, x2)

Toner Supply Motor



d081r211

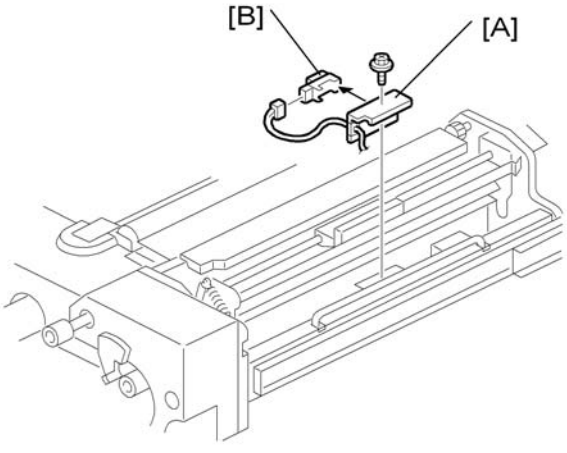
1. Remove:
   - Toner hopper (☛ p.293)
2. Remove:

   [A] Motor cover (x1)

   [B] Toner supply motor (x4, x1)

PTR Unit

Relay Sensor



d014r615

1. Pull out the drawer unit.
2. Remove:

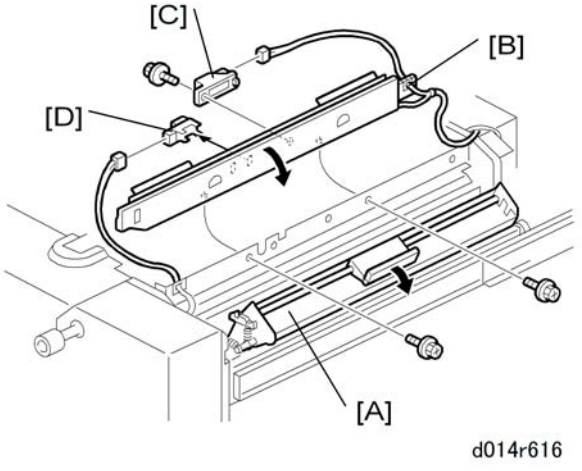
   [A] Sensor bracket (x1)

   [B] Relay sensor (x1)

Reinstallation

- Do the forced MUSIC adjustment with SP 2111 001.

Double-Feed Detection Photo-sensor, Registration Sensor



1. Pull out the drawer unit.
2. Open the guide plate [A].
3. Remove:

   [B] Sensor support plate (x2)

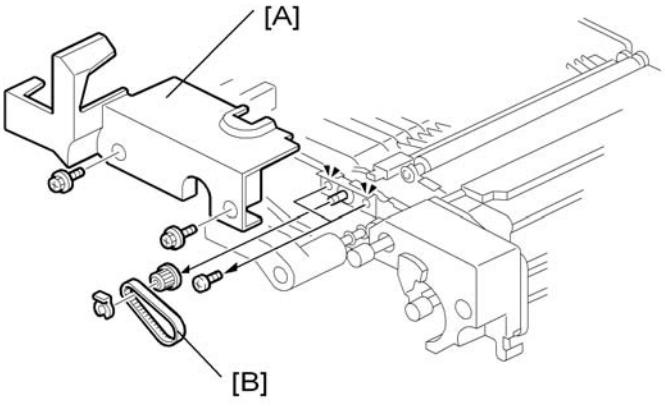
   [C] Double-feed detection photosensor (x1, x1)

   [D] Registration sensor (x1)

Reinstallation

- Do the forced MUSIC adjustment with SP 2111 001

PTR Unit



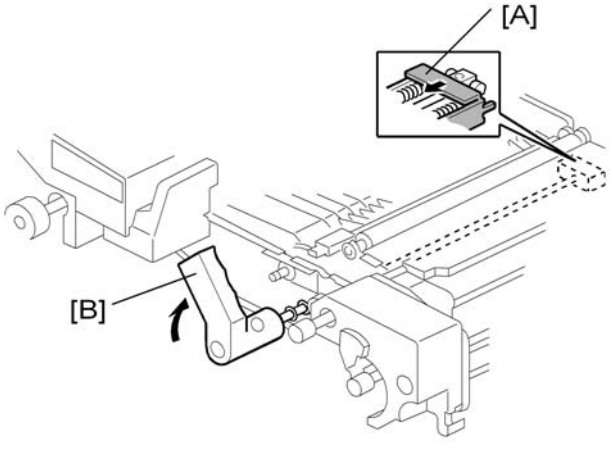
d014r302

1. Pull out the drawer unit.
2. Remove:

   [A] Paper transport unit cover (x2)

   [B] Timing belt, gear (x1)

   - Do not loosen or remove the paint-locked screws.

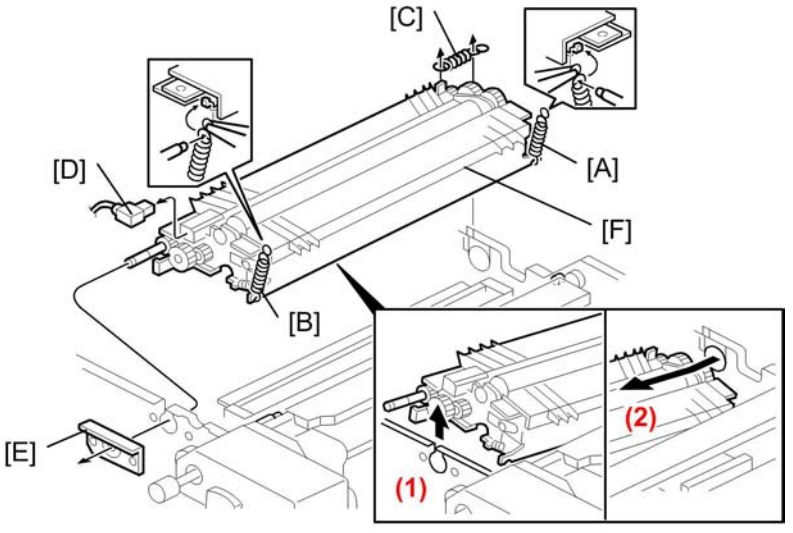


d014r302a

3. Remove:

   [A] Press the release forward

   [B] Raise the handle to the vertical position.



d081r303

4. Change the position of:

   [A] Spring

   [B] Spring

5. Remove:

   [C] Spring

   [D] Connector (x1) (use a pair of small pliers to remove the connector)

   [E] Bracket (x2)

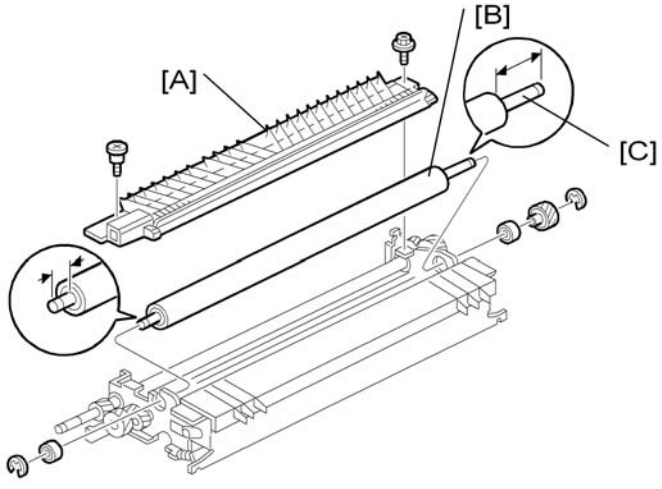
   [F] PTR Unit

   - The handle should be up.
   - Raise the front (1).
   - Pull the rear (2).

Reinstallation

- Be sure to set springs [A], [B], and [C] in their original positions before you re-install the PTR Unit.
- Do the forced MUSIC adjustment with SP 2111 001.

Paper Transfer Roller, Discharge Plate



1. Remove:
    - PTR Unit

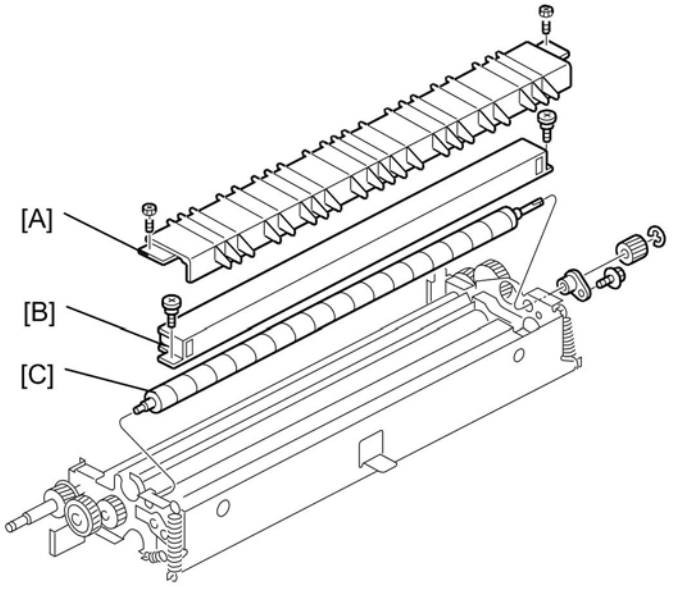
    [A] Paper transfer discharge plate (x2)

    [B] Paper transfer roller (x2, Gear x1, Shaft bearings x2)

Reinstallation

- When you install the roller, the long end [C] is at the rear.
- Do the forced MUSIC adjustment with SP 2111 001.

Lubricant Bar, Brush Roller



d081r305

Important

- **Work carefully to avoid scratching the paper transfer roller.**

1. Remove PTR Unit (☛ p.375)

   [A] Entrance guide plate (🔩 x2)

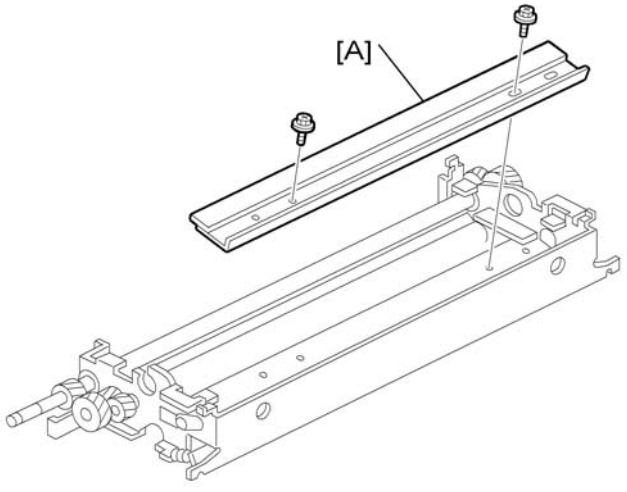
   [B] Lubricant bar (🔩 x2)

   [C] Brush roller

Reinstallation

- Do the forced MUSIC adjustment with SP 2111 001

Cleaning Blade



1. Remove:
    - PTR Unit
    - Lubrication bar

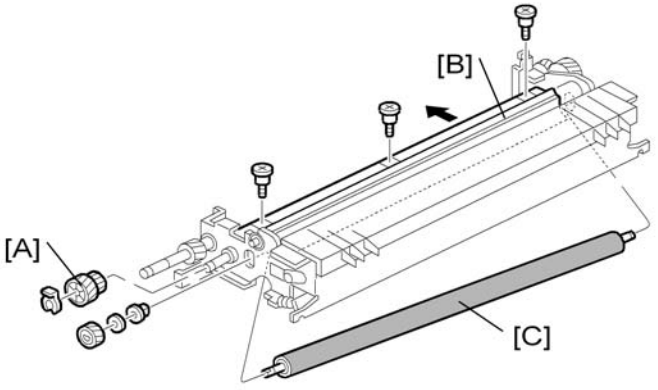
    [A] Cleaning blade (x2)

Reinstallation

- Do the forced MUSIC adjustment with SP 2111 001.

Cleaning Brush Roller

Replacement



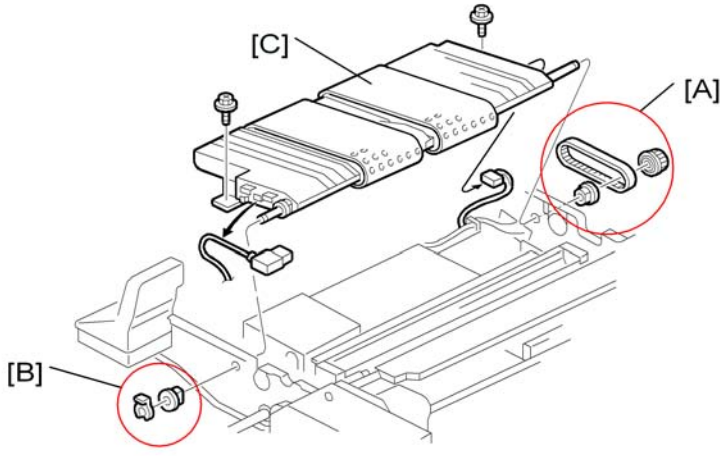
1. Remove:
    - PTR Unit
    - Transfer exit guide, paper transfer roller

[A] Gear (x1, Gear x1)

[B] Brush roller cover (x3)

[C] Cleaning brush roller (Gear x1, Washer x1, Shaft bearing x1)

Paper Transport Belt, Paper Separation Power Pack

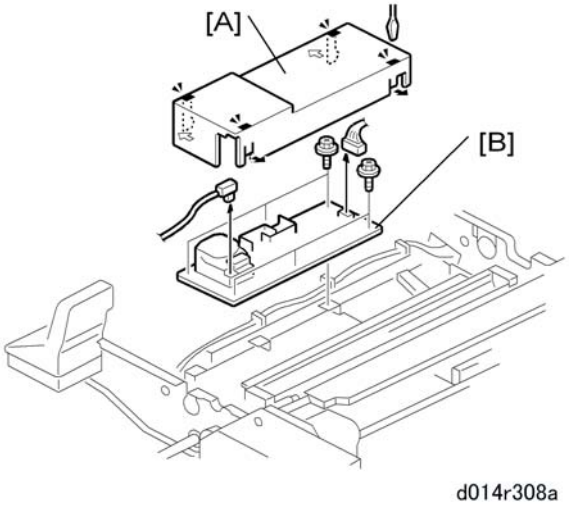


1. Pull out the drawer unit
2. Remove:
    - Paper transport unit lever and cover
    - Fusing unit

    [A] Timing belt x1, Gear x1, Shaft bearing x1

    [B] Snap ring x1, Shaft bearing

    [C] Paper transport belt (x2, x2)



3. Remove:

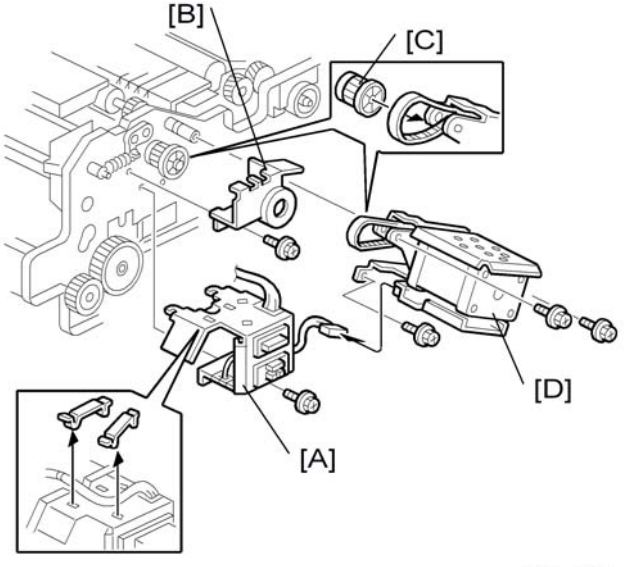
[A] Cover

[B] Separation power pack (x6, x2)

Reinstallation

- Do the forced MUSIC adjustment with SP 2111 001.

Registration Motor



1. Remove:
    - Drawer unit

    [A] Drawer unit connector bracket (x1, x3, x2)

    [B] Gear cover (x1)

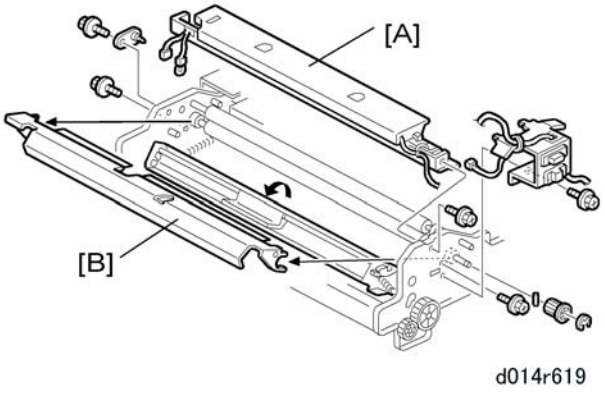
    [C] Registration gear (x1, Spring pin x1)

    [D] Registration motor assembly (x3, x1)

Reinstallation

- Do the forced MUSIC adjustment with SP 2111 001

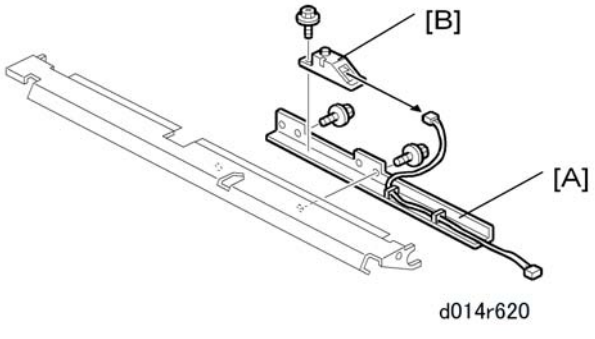
Double-Feed Detection LED



1. Remove:
    - Drawer unit
    - Drawer unit connector bracket
    - Registration motor
    - Sensor support plate
    - Registration motor inner cover (x4)

    [A] Upper stay (x2)

    [B] Lower stay (x2, x1)



2. Remove:

    [A] Sensor bracket (x2)

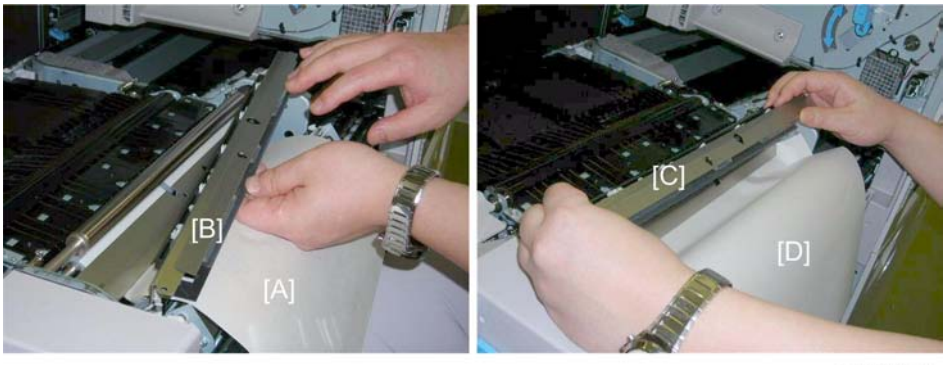
    [B] Double-feed detection LED (x1, x1)

Reinstallation

- Do the forced MUSIC adjustment with SP 2111 001.

Image Transfer Unit

Emptying the Dust Collection Unit



b132r814

1. Open the front door.
2. Pull out the drawer unit.
3. Insert a sheet of A3 paper [A] under the dust collection unit.
4. Disconnect the dust collection unit [B].
5. Dump the paper dust from the dust collection unit [C] onto the paper [D].
6. Carefully remove the paper and discard.

Separating the Belt Unit and Belt Cleaning Unit

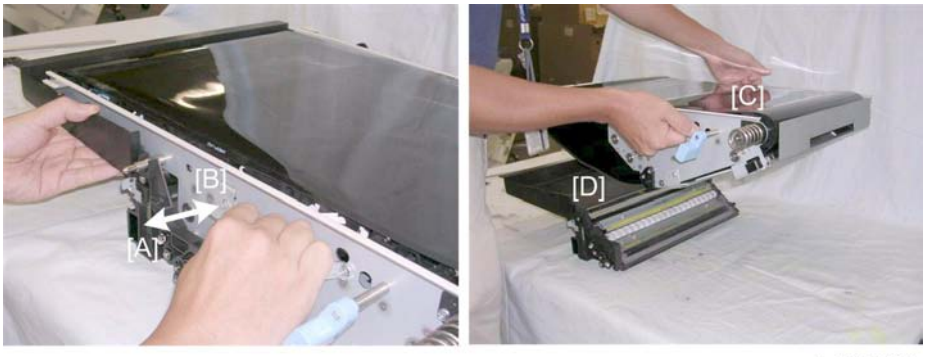
Disassembly and ITB Replacement

1. Put a clean sheet of paper on a flat surface.
2. Remove the ITB from the machine.
3. Place the ITB unit on the sheet of paper.

   To prevent spilling used toner, always hold the unit level when you remove it, lift it, carry it, or set it down.

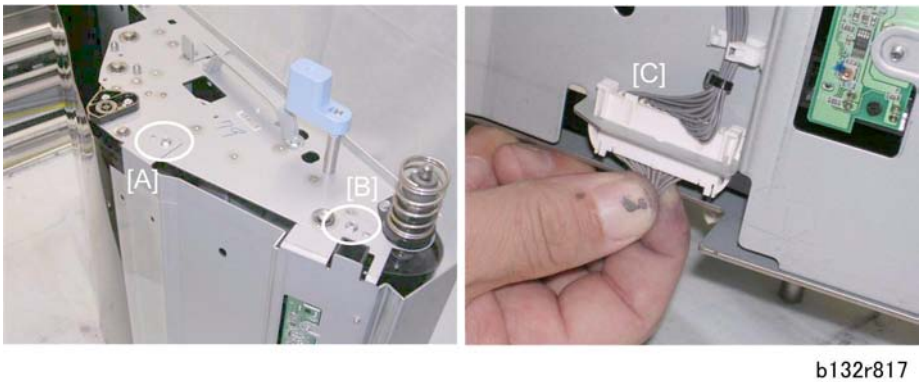
b132r815

4. Remove screws [A] and [B] (x2).



b132r816

5. Pull the ITB cleaning unit [A] forward while pushing the ITB belt unit backward to separate the cleaning unit from the belt unit.
6. Lift the belt unit [C] off the cleaning unit [D].



b132r817

7. Remove:

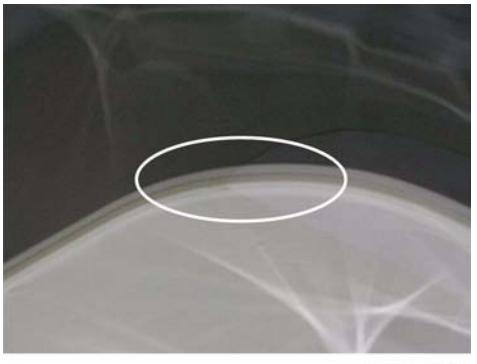
   [A] Screw (x1)

   [B] Screw (x1)
8. Disconnect [C] (x1)

Reassembling the Belt Unit and Belt Cleaning Unit

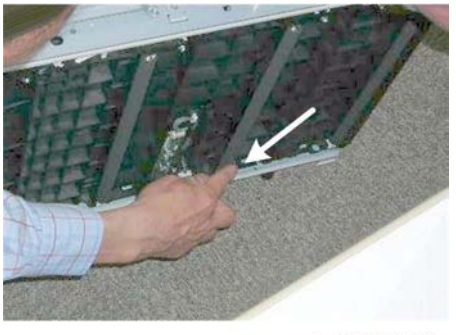
Before You Begin...

Here are some important precautions you should obey when reassembling the ITB Unit.



b132r818

- When you install the new belt, the edge of the belt with the encoder film strip must be at the back of the unit with the image position sensor. The encoder edge of the ITB is silver.



b132r819

- Never touch the ITB rollers when removing/installing the belt. If a roller (or the surface of the belt) is touched accidentally, moisten a clean cloth and clean the affected area.

b132r820

- Make sure that the belt is even with the edge of the roller as shown above.

b132r821

- When reinstalling the ITB cleaning brush roller, confirm that the seal [A] is on top and visible.
- Always dust the ITB with lubricant powder before reinstalling the ITB unit in the machine.

Reassembling the Belt Unit and Cleaning Unit

b132r822

1. Insert one sheet of A4/LT paper under the ITB lubricant blade as shown to protect the corner seals of the belt cleaning unit.

Important

- **The paper should be under the under the blade as shown above, not over the blade.**

2. Lower the belt unit [A] onto the cleaning unit [B].

b132r823

3. Reassemble the belt unit and belt cleaning unit.

b132r824

4. Set the reassembled ITB unit on end as shown.
5. Pull the paper out slowly.
6. Check the paper.

   If the paper is unmarked, go to the next step.

   -or-

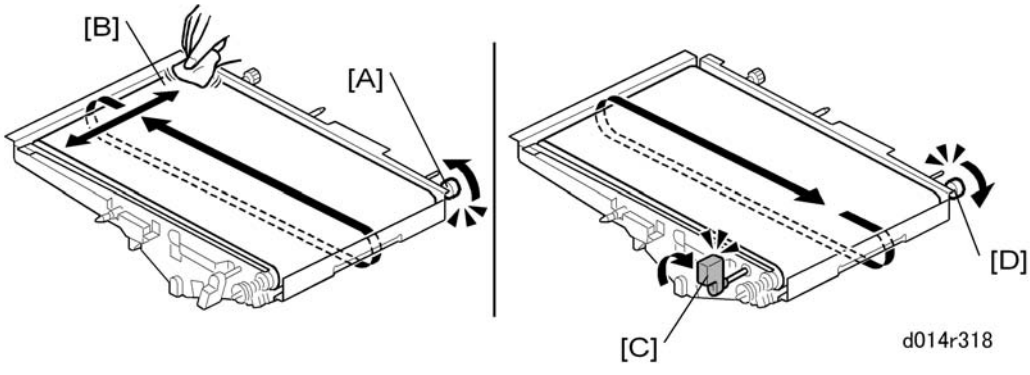
If the paper is creased or torn, separate the image transfer belt and cleaning unit. Inspect the seal. If the seal is damaged, replace it.

Dusting the ITB with Lubricant Powder

1. Get a pack of Lubricant Powder B1329700.
   - The ITB must be coated with lubricant powder B1329700 before installing a new ITB.
   - The lubricant powder (B1329700) (composed of ZnSt) is specially designed for this machine.
   - Never use setting powder (54429101) for this machine. Using this setting power will damage the drum charge roller and cause problems with image quality.

   Important

   - **Do not use the yellow toner from this machine, because it contains developer, and this will damage the drum and ITB.**



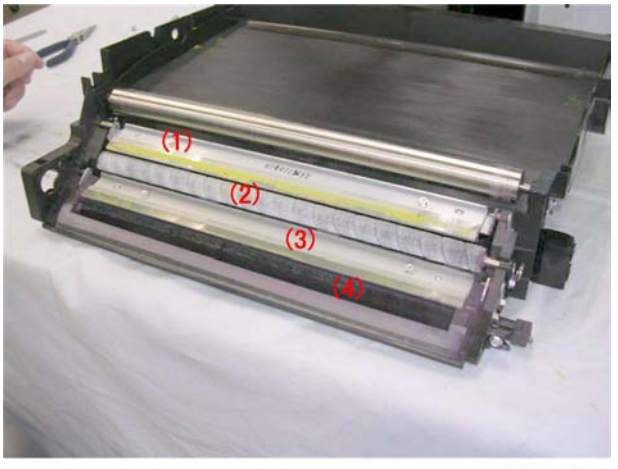
2. While rotating the knob [A] in the direction indicated by the arrow, apply powder at [B] with a soft dry cloth.
3. Keep rotating the ITB at [A] while continuing to apply the powder at [B] through one full rotation until the ITB is completely covered with powder.
4. After the ITB has been completely covered with the lubricating powder, turn lever [C] to the up position.
5. After the ITB is completely covered with powder, rotate the knob [D] in the direction indicated by the arrow.
6. Keep rotating the knob at [D] until the ITB has made one full rotation. This reverse rotation covers the edge of the belt cleaning blade with lubrication powder.

Reinstallation

- Do the forced MUSIC adjustment with SP2111-1.

ITB Cleaning Unit

This is the ITB cleaning unit with the belt unit removed.



b132r825

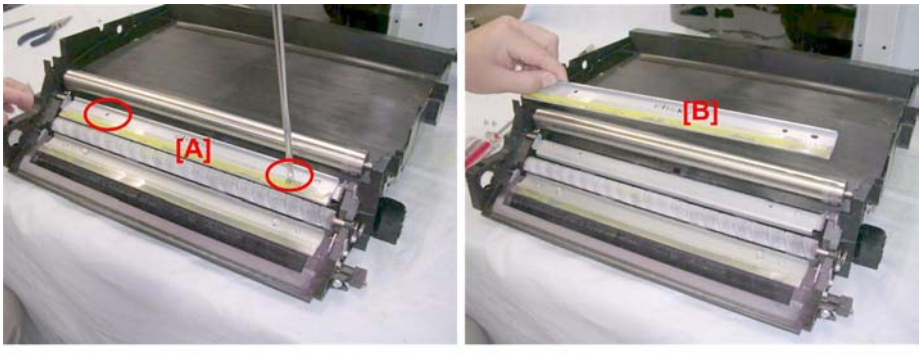
[1]	ITB Lubricant Blade
[2]	ITB Lubricant Brush Roller*1
[3]	ITB Cleaning Blade
[4]	ITB Brush Cleaning Roller

*1 A lubricant bar is under the ITB lubricant brush roller.

Before servicing the cleaning unit, please note:

- The ITB lubricant blade (1) and ITB cleaning blade [3] appear to be similar but they are not the same so they are not interchangeable.
- The PM interval of the ITB lubricant blade [1], ITB lubricant brush roller [2], and ITB cleaning blade [3], and the lubricant bar (under the ITB lubricant brush roller) is the same (300K). These four items are always replaced together. Item [4] is not a PM part, but it must be removed in order to remove the other parts.

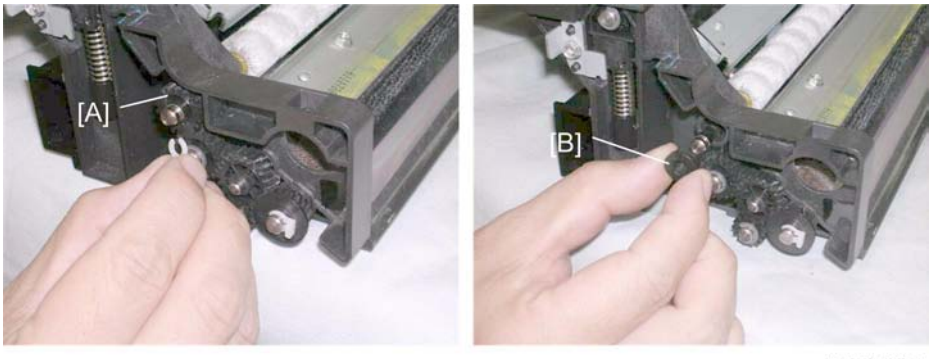
ITB Lubricant Blade



b132r826

1. Remove the screws of the ITB lubricant blade [A] (x2).
2. Remove the ITB lubricant blade [B].

ITB Lubricant Brush Roller, ITB Lubricant Bar

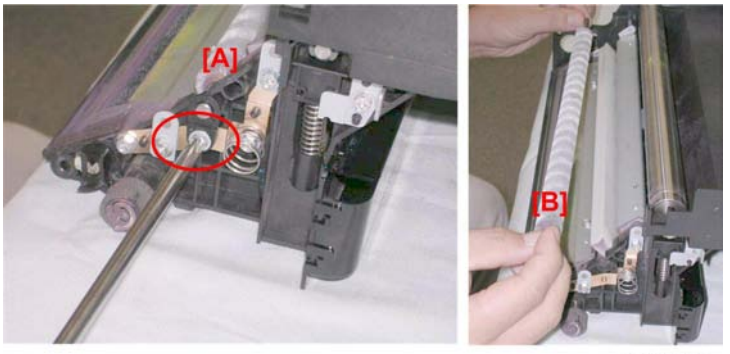


b132r827

1. At the back, remove:

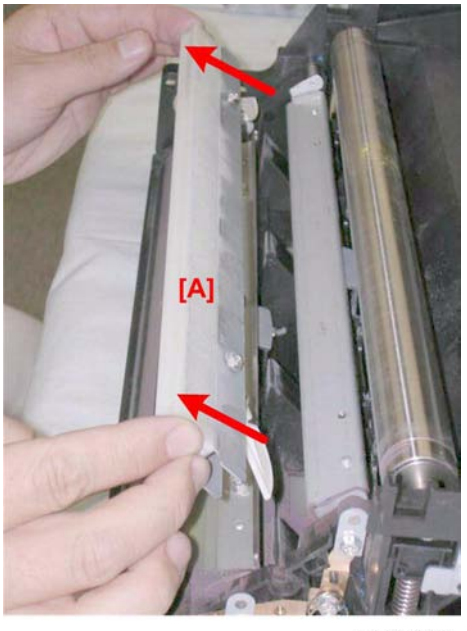
   [A] Gear (x1)

   [B] Coupling



b132r828

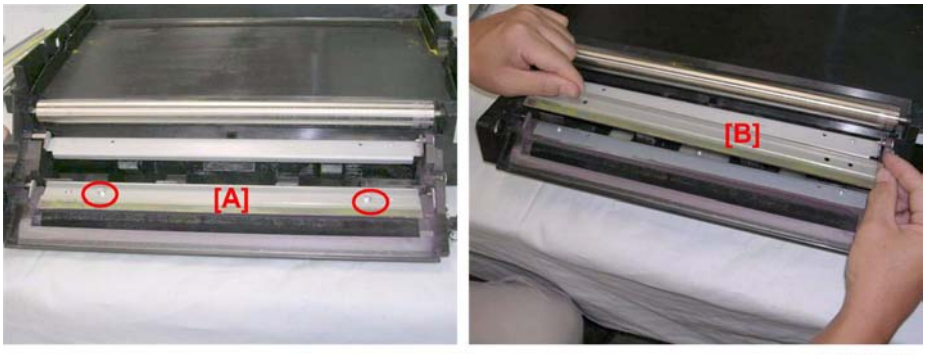
2. At the front, remove screw [A] (x1).
3. Remove the ITB lubricant brush roller [B].



b132r829

4. Remove the lubricant bar [A]

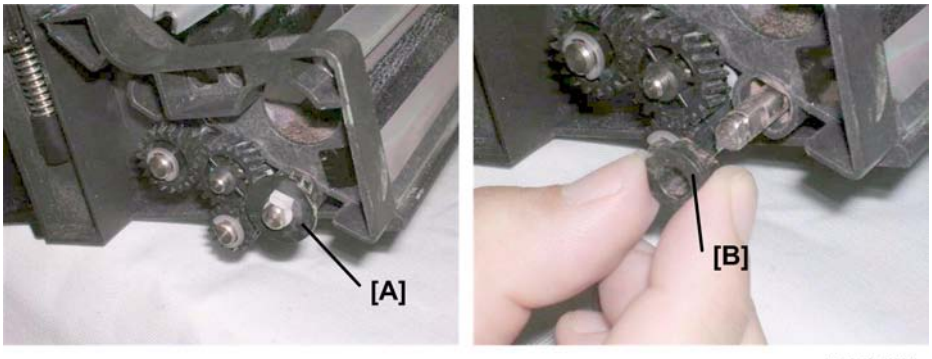
ITB Cleaning Blade



b132r830

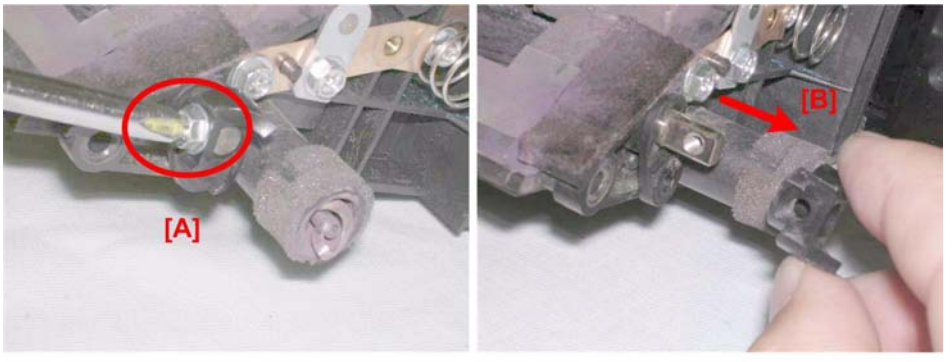
1. Remove the screws of the ITB cleaning blade [A] (x2).
2. Remove the ITB cleaning blade [B].

ITB Brush Cleaning Roller



b132r831

1. Remove the ITB cleaning blade (x2).
2. At the rear:
   - Remove gear [A] (x1).
   - Remove coupling [B].



b132r832

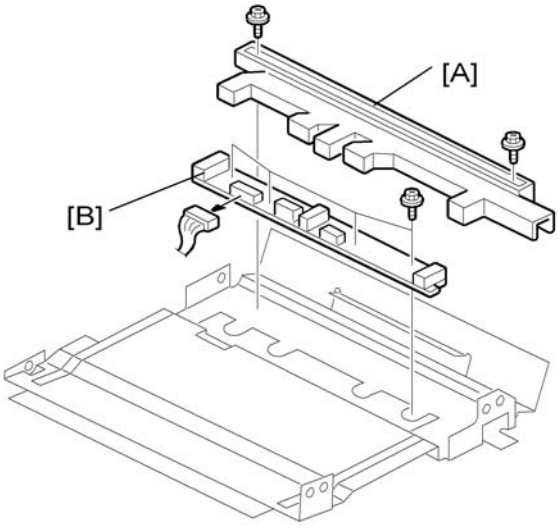
4

3. At the front:
   - Remove screw [A] (x1)
   - Remove coupling [B].

b132r833

4. Remove sponge and seal casing [A].
5. Remove the ITB brush cleaning roller [B].

MUSIC and ID Sensors



1. Remove
    - ID sensor/MUSIC sensor plate

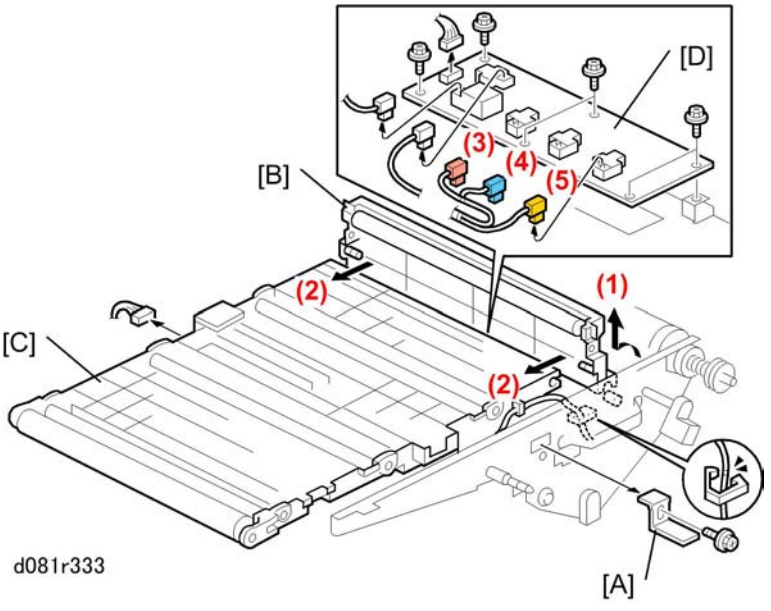
    [A] Cover (x2)

    [B] MUSIC and ID sensors (x4, x1)

Reinstallation

- Do the forced MUSIC adjustment with SP2111-1.

Image Transfer Power Pack



1. Remove the ITB
2. Remove:

   [A] Support bracket (x1)

   [B] Small idle roller plate. Move (1) to (2) to remove.

   [C] Large idle roller plate

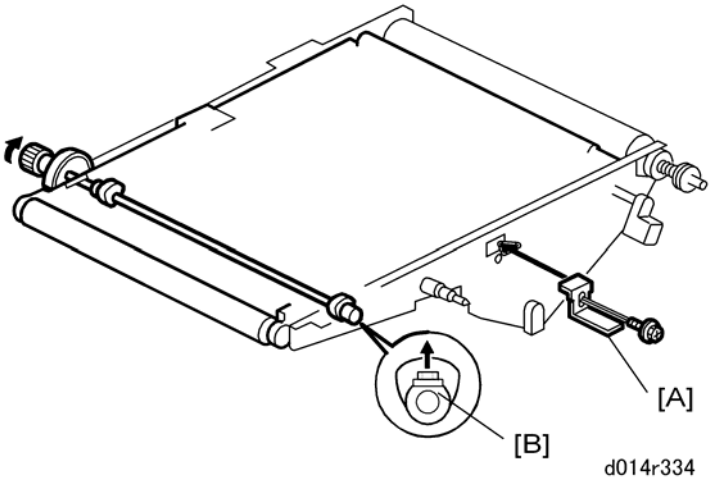
   [D] Image transfer power pack (x6, x6)
3. Note the correct positions of the color coded connectors when you disconnect them, so that you can reconnect them correctly:

   (3) Red

   (4) Blue

   (5) Yellow

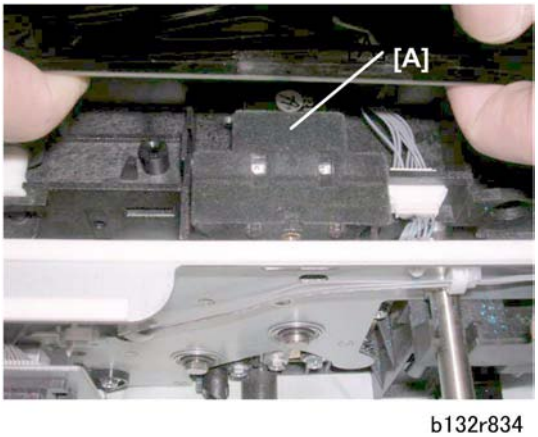
Reinstallation



d014r334

- When you reattach the support bracket [A], rotate the screw [B] up as shown, then tighten it.
- Do the forced MUSIC adjustment with SP2111-1.

Belt Position Sensor



b132r834

1. Remove:

- ITB

[A] Belt position sensor assembly (x2, x1)

Reinstallation

After the reinstallation of the new sensor, do the following SP codes:

- SP2912-1 (Encoder Sn: Adj Light)
- SP2914-1 (Encoder Sn Get 1st Phase)
- SP2111-1 (Forced MUSIC Adjustment)

Fusing Unit

Before Servicing the Fusing Unit...

The following four service parts for the D014/D015 and D081/D082 fusing unit are not the same; they cannot be substituted for one another when servicing these machines.

- Hot roller
- Pressure roller
- Pressure roller bearing
- Oil supply roller

Comparison Table for D014/D015, D081/D082 Fusing Unit PM Parts

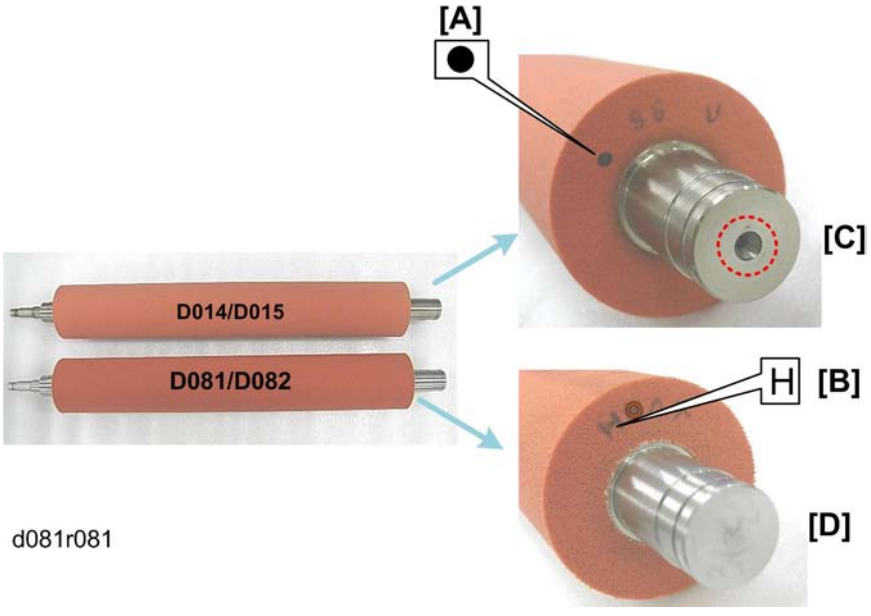
Important

- **Please refer to the Parts Catalog for the actual PM Part Numbers.**

Part Name	Reason for Change
Hot Roller (ϕ52)	To extend service life by 150K (300K to 450K)
Pressure Roller (ϕ50)	Lighter roller core to shorten warm-up time to first copy/print.
Pressure Roller Bearing ϕ20x ϕ32x7	To double service life (600K to 1200K)
Oil Supply Roller (ϕ16)	To extend service life 150 K (300K to 450K)

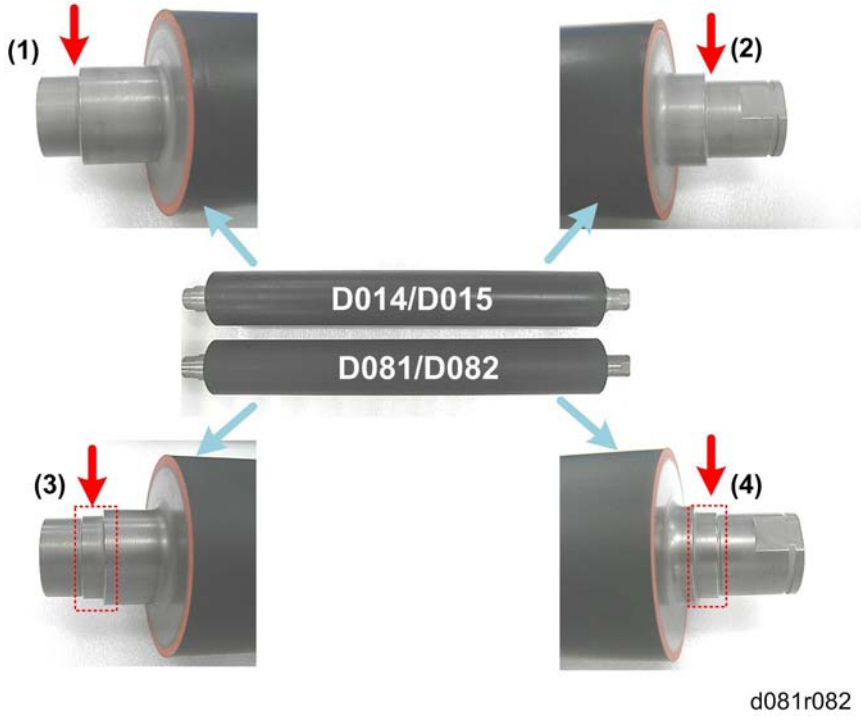
It is important that you be able to distinguish these parts by a quick visual check.

Distinguishing Characteristics: Hot Roller



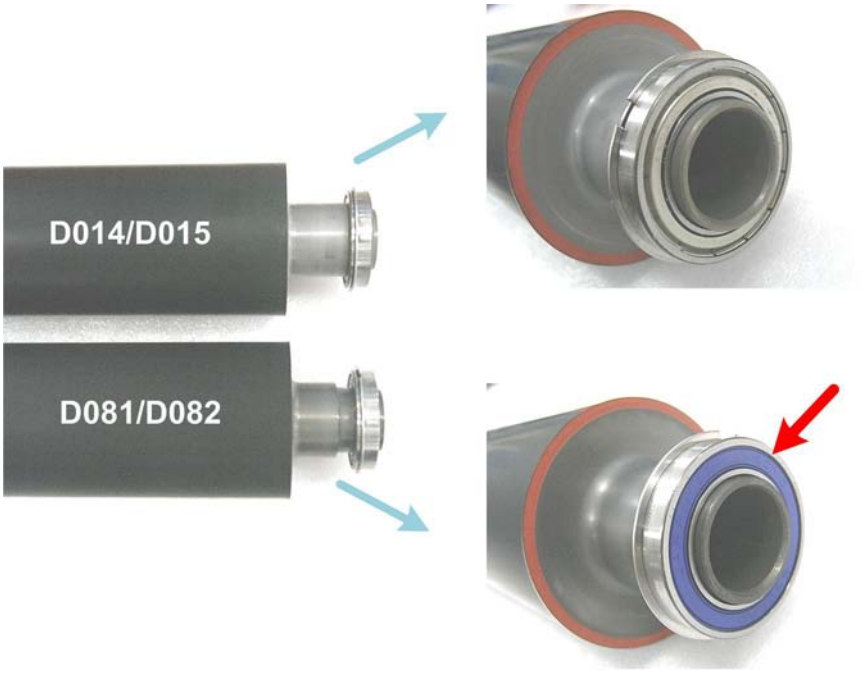
The identification marks (black dot and "H") on the ends of the D014/D015 hot roller [A] D081/D082 hot roller [B] are different. Also, there is a hole on the end of the roller of the D014/D015 hot roller [C] and no hole on the end of the D081/D082 hot roller.

Distinguishing Characteristics: Pressure Roller



There are two cuts on both ends of the shaft of the D014/D015 pressure roller at (1) and (2) (2 steps). But on the ends of the D081/D082 pressure roller shaft at (3) and (4), there are three cuts (3 steps).

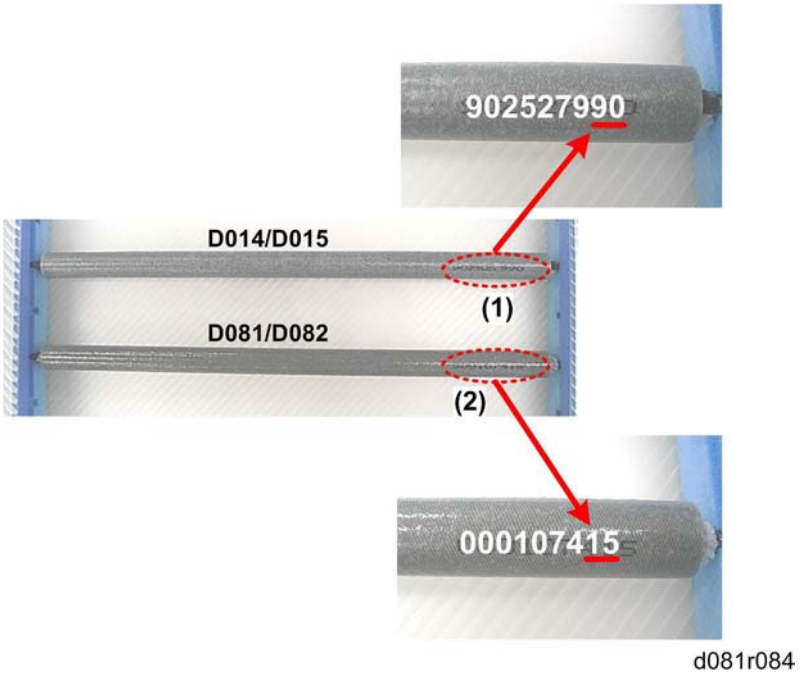
Distinguishing Characteristics: Pressure Roller Bearing



d081r083

The bearing on the end of the D081/D082 pressure roller is a distinctive blue color.

Distinguishing Characteristics: Oil Supply Roller

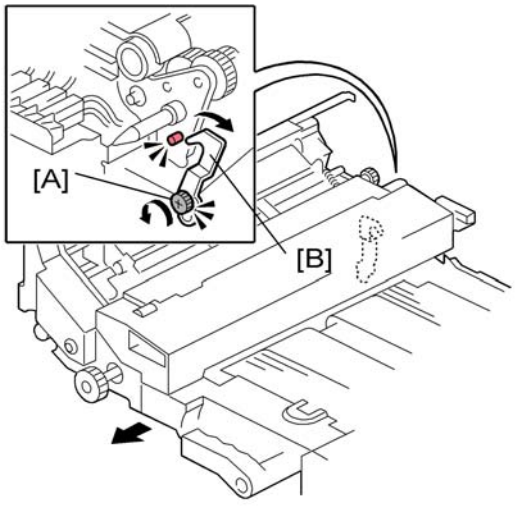


d081r084

The numbers of the D014/D015 and D081/D082 are different. The last two digits on the oil supply roller number (1) of the D014/D015 are "42" or "90". The last two digits on the oil supply roller number (2) of the D081/D082 are "15".

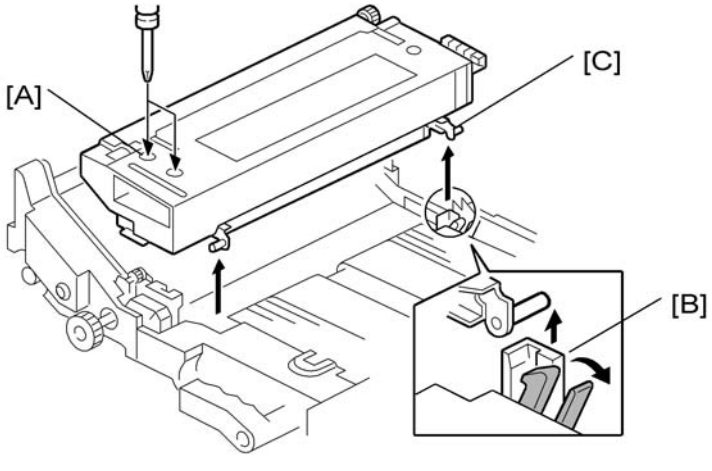
Removing the Fusing Unit

1. Turn off the copier and disconnect the power cord at the power source.
2. Open the front door.
3. Pull out the drawer unit.
4. Allow the machine to cool for at least 10 minutes.



d014r401

5. At the back of the fusing unit, loosen the screw of the lock/release lever [A]. (Do not remove the screw.)
6. Rotate the lever [B] away from the pin, then tighten the screw with the lever in the open position. (Tightening the screw keeps the lever at the open position so that the fusing unit can be reinstalled easily.)



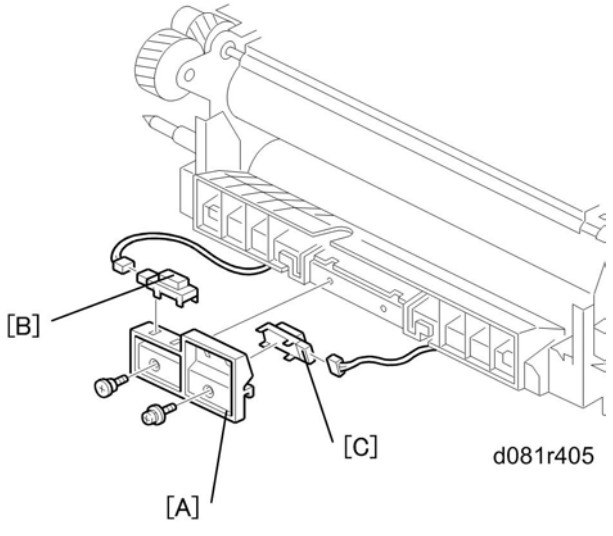
d014r402

7. Loosen both screws [A] (x2). (These screws cannot be removed.)
8. Press down both levers [B] (front and back) to unlock (to release the pins [C] at front and back).
9. Lift the fusing unit out of the drawer.
10. Set the fusing unit on a clean surface.

Reinstallation

- Before setting the fusing unit in the drawer, make sure that the lock/release lever is in the open position.
- After reinstalling the fusing unit, make sure that the lock/release lever is in the locked position and finger tight before you close the drawer unit.
- If the lock/release lever is not locked, this could cause a problem if power is turned off accidentally during copying. If this occurs, the drawer unit can be pulled out, but the user may not be able to push it back in because the fusing unit is still pressed up by the cam. Do the following to reset the cam.
  1. Remove the fusing unit from the drawer unit.
  2. Close the drawer, then close the front door.
  3. Turn the main power on. The cam moves down.
  4. Open the drawer and put the fusing unit back in the machine.
  5. Confirm that the lock/release lever is in the locked position.
  6. Close the drawer unit and front door.

Fusing Exit Sensor, Accordion Jam Sensor



1. Remove:
   - Fusing unit (p.402)
2. Remove:

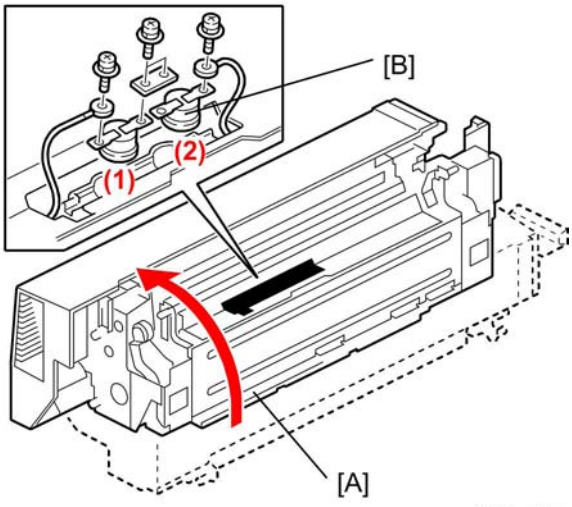
   [A] Sensor bracket (x2)

   [B] Fusing exit sensor (x1)

   [C] Accordion jam sensor (x1)

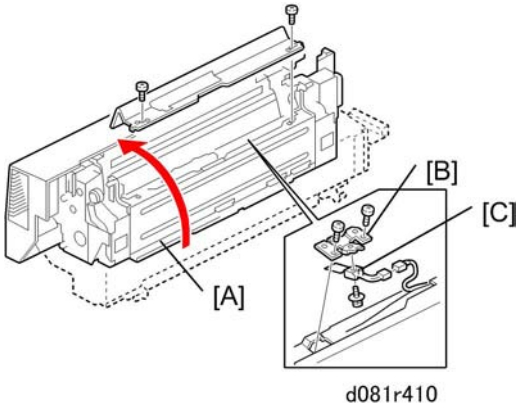
Pressure Roller Thermostats, Thermistor

Thermostats



1. Remove the fusing unit (☛ p.402).
2. Raise the unit [A].
3. Remove two pressure roller thermostats [B] (x4)

Thermistor



1. Remove the fusing unit (☛ p.402).
2. Raise the unit [A].
3. Remove:

[B] Thermistor bracket (x2)

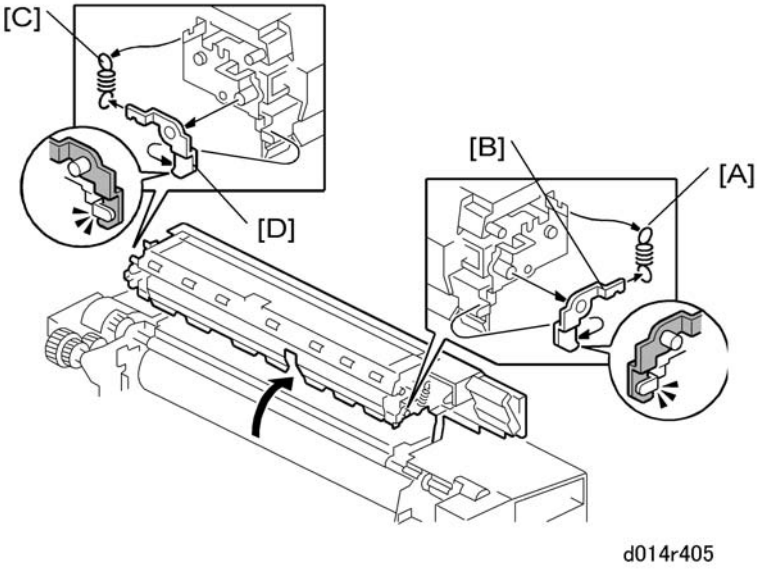
[C] Pressure roller thermistor (x1, x1)

Fusing Cleaning Unit

Fusing Belt Strippers

Preparation

- Remove the fusing unit from the machine.
- Allow the unit to cool for at least 10 minutes.
- Raise **D2** to a 45° slant.



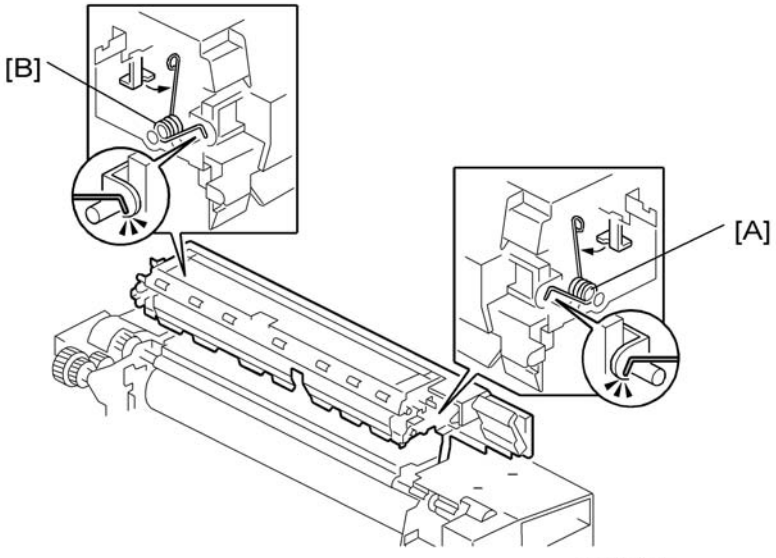
1. Remove:

   [A] Spring

   [B] Plate

   [C] Spring

   [D] Plate

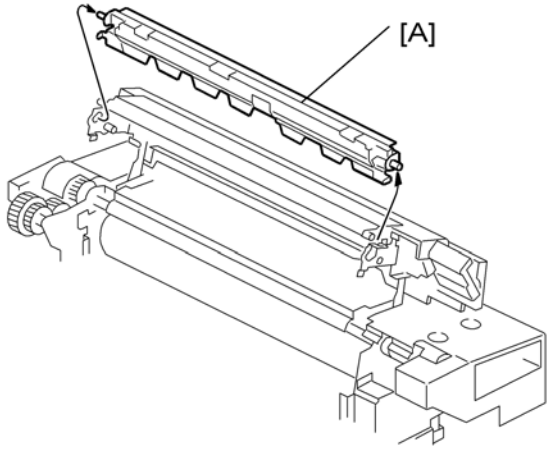


d014r406

2. Remove:

   [A] Spring

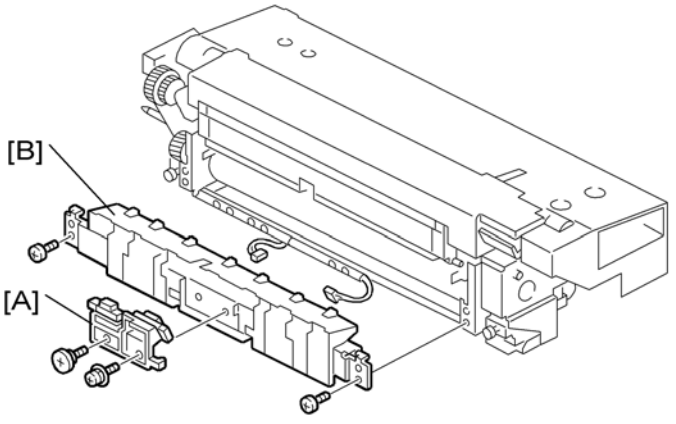
   [B] Spring



d014r407

3. Remove fusing belt stripper plate [A] with strippers attached.

Oil Supply Roller Cleaning Roller, Oil Supply Roller

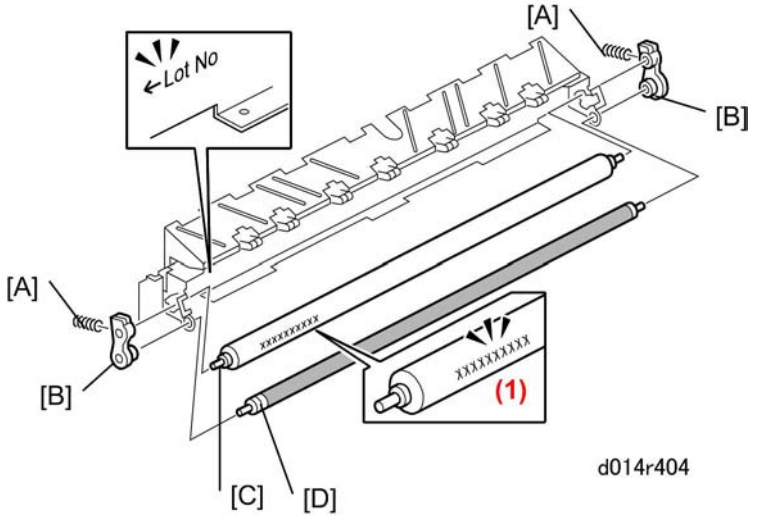


d014r403

1. Remove:

   [A] Paper exit sensor bracket (x2, x2)

   [B] Paper exit guide (x2)



d014r404

2. Remove:

   [A] Spring (Front x1, Back x1)

   [B] Lock plate (Front x1, Back x1)

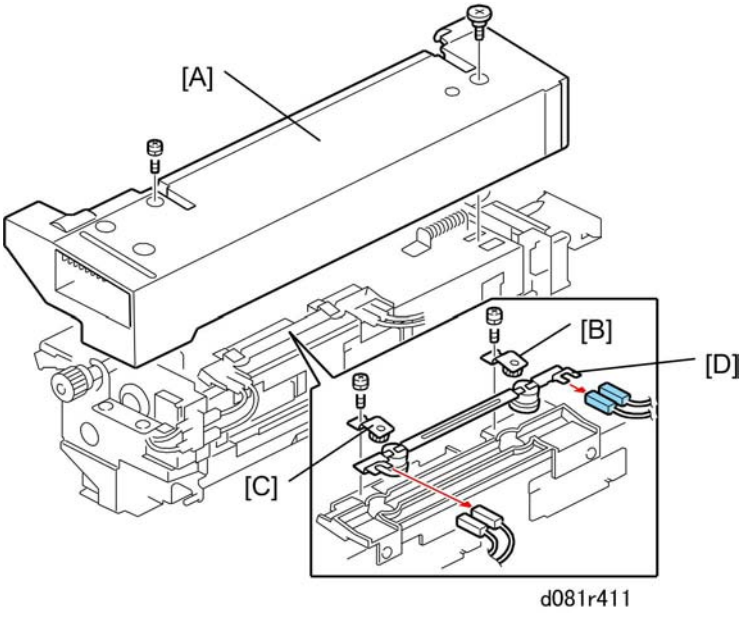
   [C] Oil supply roller

   [D] Oil supply roller cleaning roller

Reinstallation

- The end of the oil supply roller with the number (1) above must be installed at the front of the fusing cleaning belt unit.

Fusing Belt Thermostats



1. Remove the fusing unit (☛ p.402).
2. Remove:

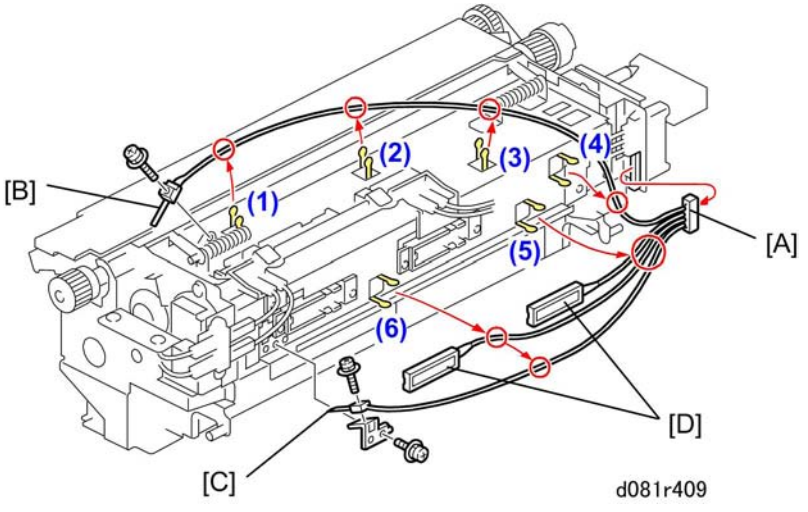
   [A] Top cover (🔩 x2)

   [B] Rear bracket (🔩 x2)

   [C] Front bracket (🔩 x2)

   [D] Thermostats (🔌 x4).

Fusing Thermistors, Heating Roller Temperature Sensors

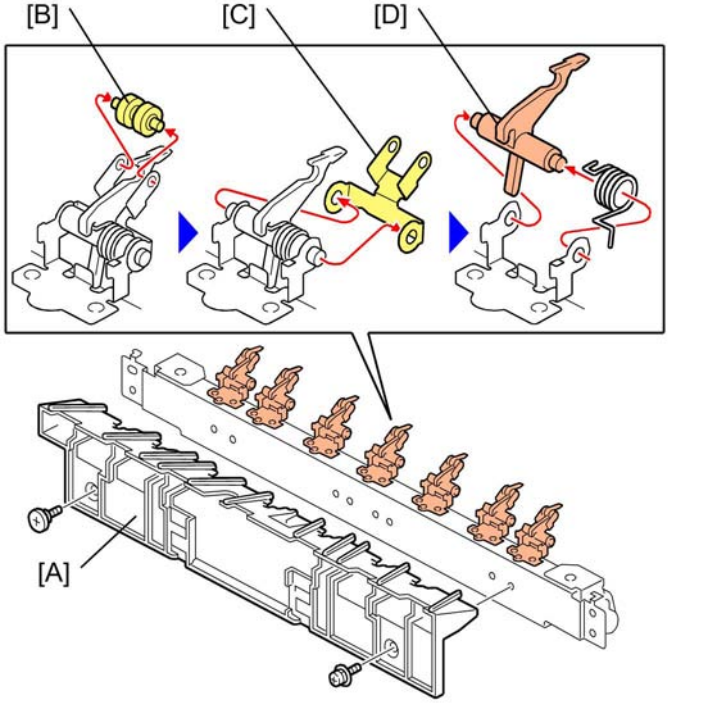


1. Remove:
   - Fusing unit (☛ p.402)
   - Fusing unit cover (☛ p.412 "Fusing Lamps, Dividing the Fusing Unit")
   - Fusing cleaning unit (☛ p.406)
2. Open all the clamps (1) to (6) (x6)
3. Disconnect harness [A] (x1)
4. Disconnect:

   [B] Hot roller thermistor (x1)

   [C] Heating roller thermistor bracket and thermistor (x2)
5. Remove two heating roller temperature sensors [D] (no screws).

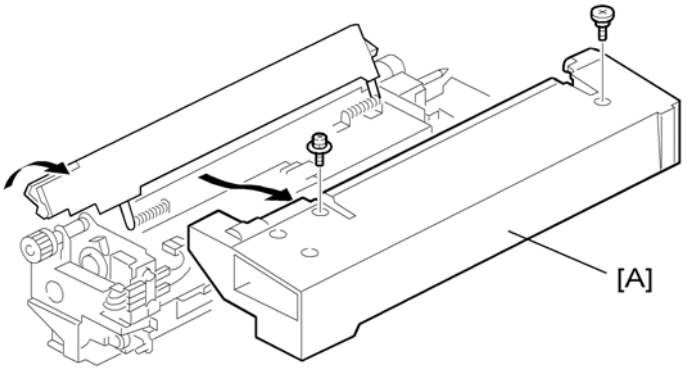
Pressure Roller Separation Pawls



d081r418

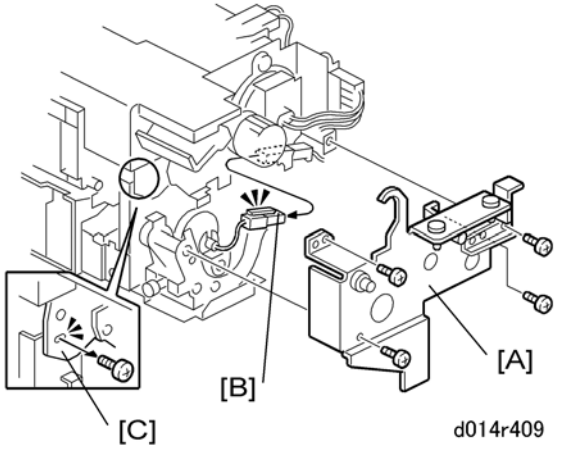
1. Remove the fusing unit (☛ p.402).
2. Remove cover [A] (🔩 x2).
3. Spread the tips of the bracket arms and remove sprocket [B].
4. Spread the base of the bracket [C] and remove it.
5. Remove stripper [D] (Spring x1).
6. Repeat Steps 3 to 5 for each stripper.

Fusing Lamps, Dividing the Fusing Unit



1. Remove:

   [A] Fusing unit cover (x2)

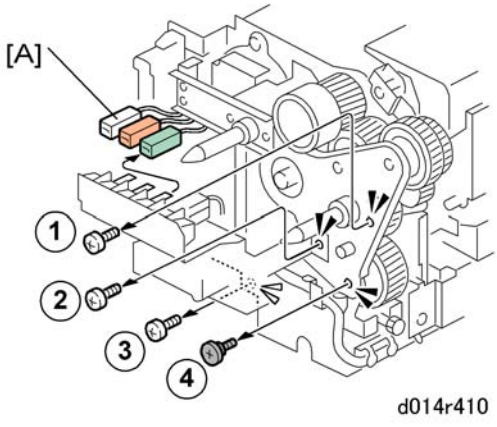


2. Remove:

   [A] Bracket (x4)

   [B] Connector (x1)

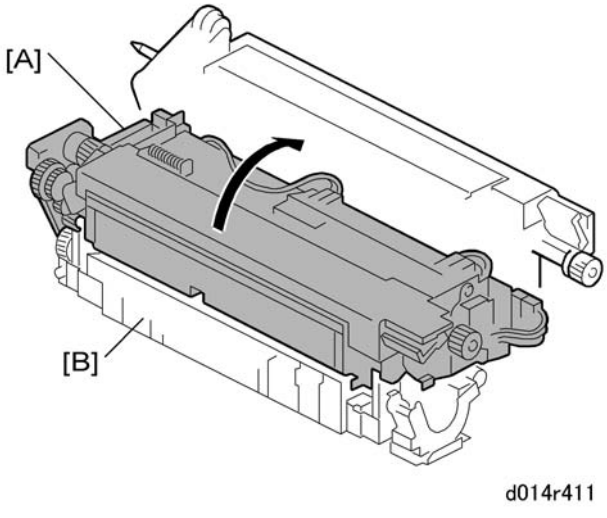
   [C] Screw (x1)



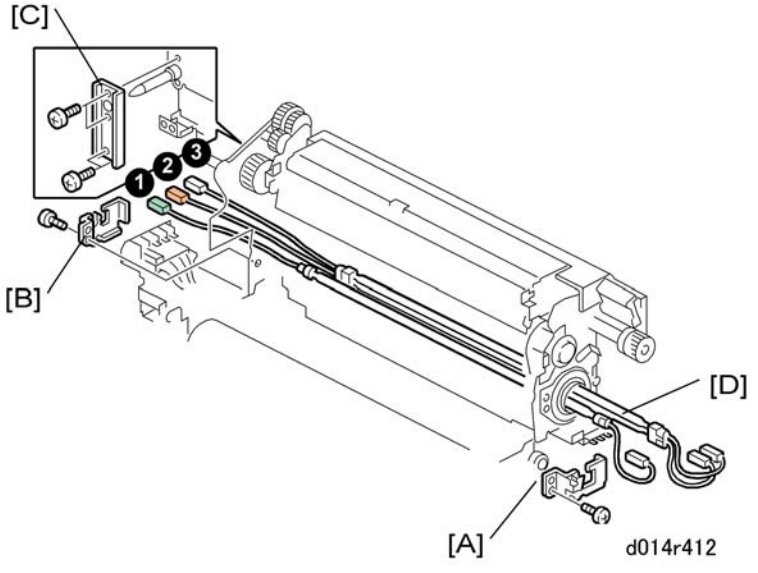
3. Disconnect

   [A] Fusing lamps (x3)

4. Remove screws (1) to (3) (normal screws) and (4) (step screw) (x3)



5. Separate the two halves of the fusing unit [A] and [B].



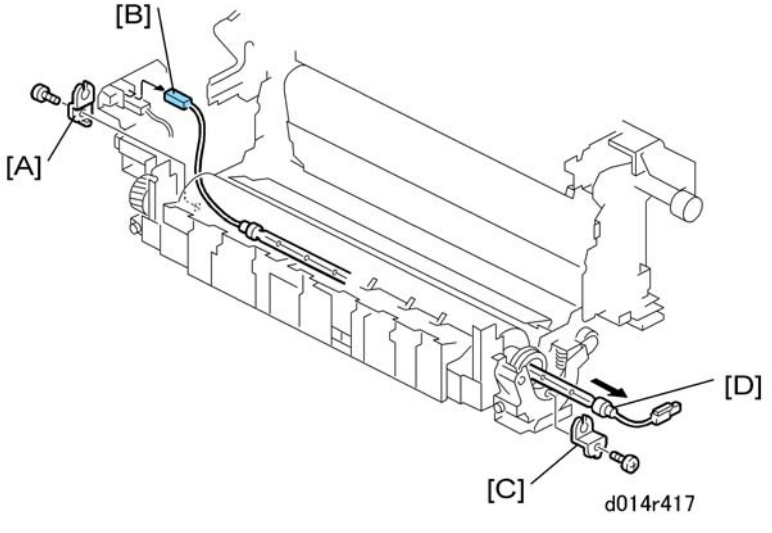
6. Remove:

   [A] Lock plate (x1)

   [B] Lock plate (x1)

   [C] Bracket (x4)

   [D] Heating roller fusing lamps (x3)



7. Remove:

   [A] Lock plate (x1)

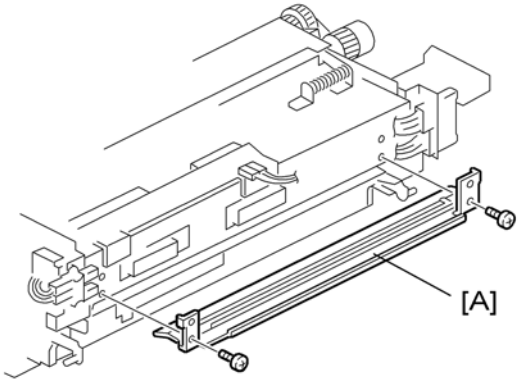
   [B] Connector (x1)

[C] Lock plate (x1)

[D] Pressure roller fusing lamp (x1)

Fusing Unit Rollers, Fusing Belt

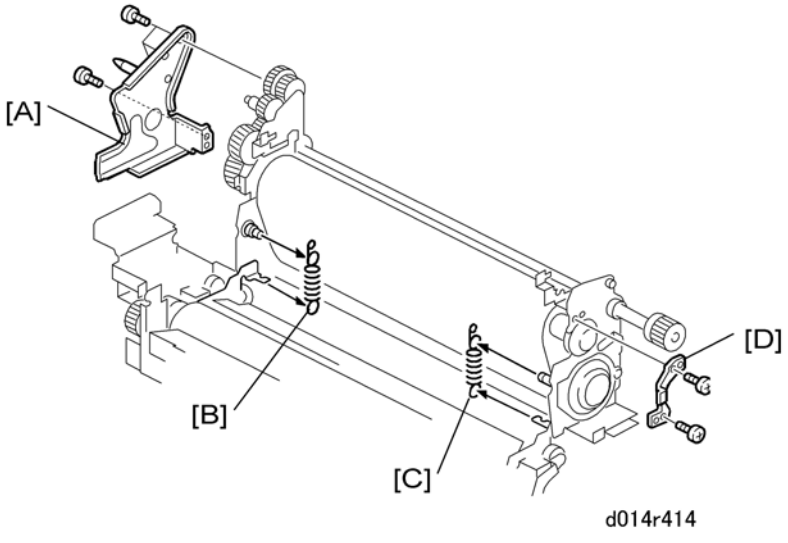
Removing the Fusing Belt, Hot Roller, Heating Roller, Pressure Roller



d014r413

1. Remove:

   [A] Upper entrance guide plate (x2)



d014r414

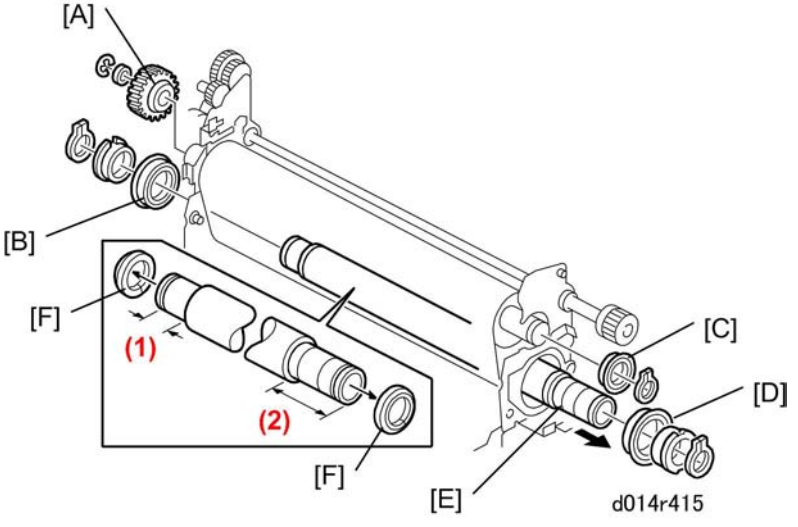
2. Remove:

   [A] Plate (x4)

[B] Spring x1

[C] Spring x1

[D] Bracket (x2)



3. Remove:

[A] Gear, bushing (x1)

[B] Bearing, bushing (C-ring x1)

Note: The flanges of the bearing and the bushing face out for reinstallation.

[C] Bearing (C-ring x1)

Note: The bearing flange faces out for reinstallation.

[D] Bearing, bushing (C-ring x1)

Note: The flanges of bearing and the bushing face out for reinstallation.

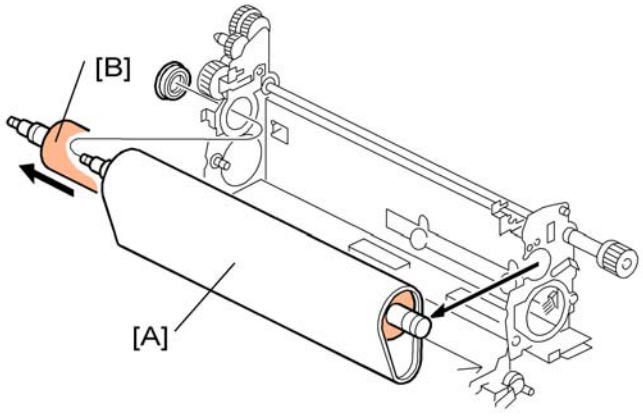
[E] Heating roller

Note:

- Flanges [F] should be separated from the heating roller.
- Flanges [F] should be reused with the new roller if the heating roller is replaced.

Reinstallation

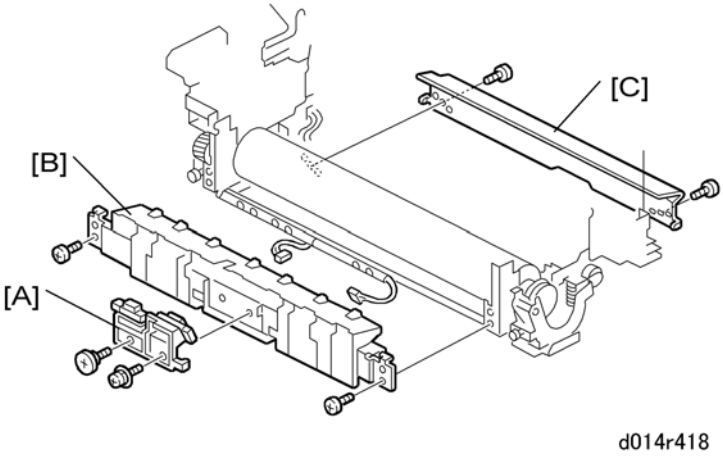
- Make sure that the ends of the heating roller are arranged as shown by (1) and (2) in the illustration above. (1) is shorter than (2).



4. Remove:

   [A] Fusing belt

   [B] Hot roller

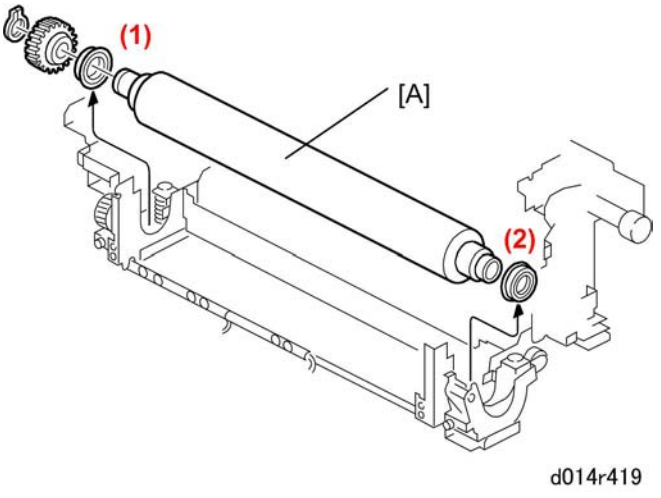


5. Remove:

   [A] Paper exit sensor bracket (x2, x2)

   [B] Paper exit guide (x2)

   [C] Lower entrance guide plate (x2)



6. Remove:

   [A] Pressure roller (C-ring x1, gear x1, bearings x2)

   Note: The flanges of bearings (1) and (2) face in for reinstallation.

Lubrication after Replacement

Lubricate all bearings after replacement of the hot roller, pressure roller, and/or heating roller. For details on the lubrication points, please refer to 'Lubrication Points' in "Preventive Maintenance".

Adjusting the Gap Between Fusing Belt Strippers and Fusing Belt

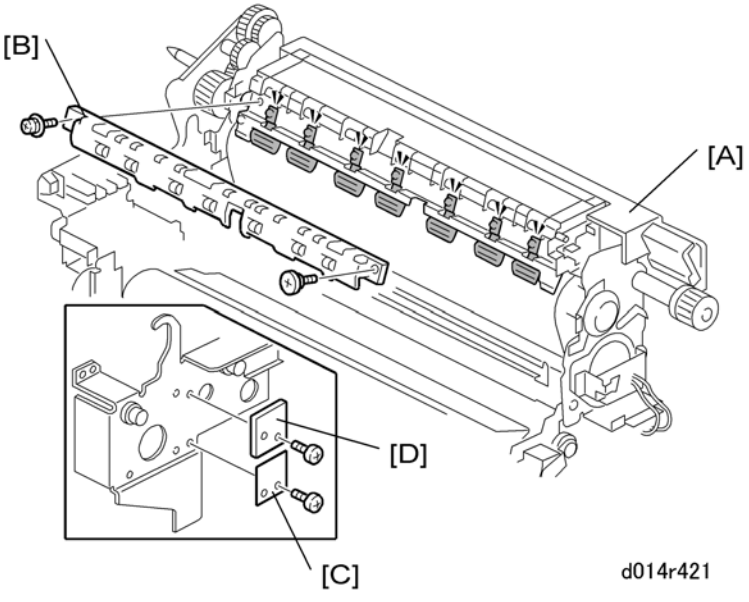
After replacement of the hot roller, the gap between the fusing belt strippers and the fusing belt may need to be adjusted. Normally this procedure is not required. Do this procedure only when:

- Paper has been frequently sticking to the fusing belt and jamming the fusing unit.
- Streaking caused by fusing belt stripper pawls has been occurring frequently in solid image areas.

Important

- **Do this procedure to adjust the gaps only after the fusing unit has been allowed to cool. If the fusing unit is still warm when the adjustments are done, the gap adjustment may not be within specification.**

1. Reinstall the fusing belt and hot roller.

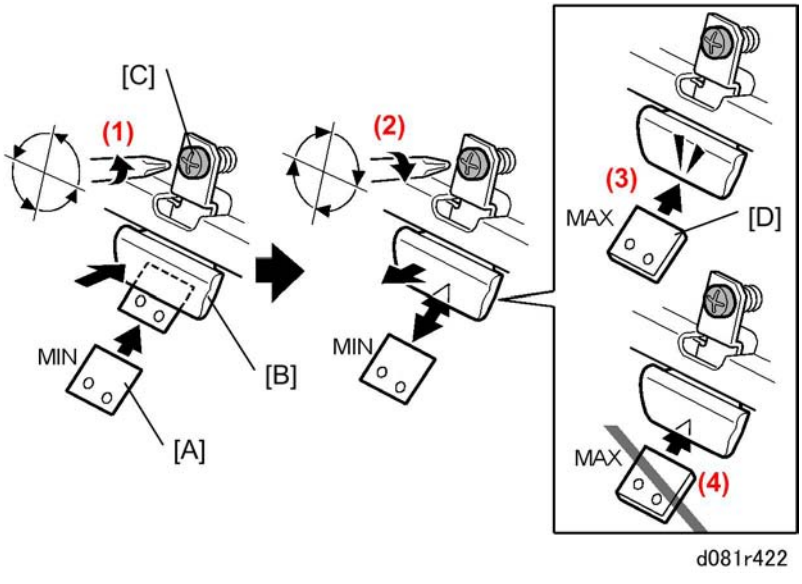


2. Separate the two halves of the fusing unit [A].
3. Remove:

   [B] Fusing belt separation pawl guide plate (x2)

   [C] MIN thickness plate (x1)

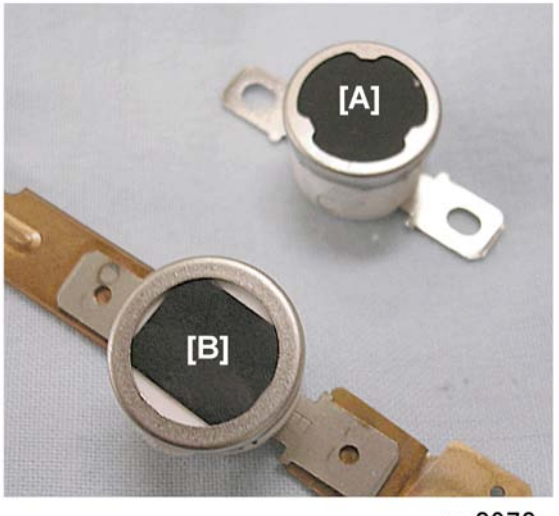
   [D] MAX thickness plate (x1)



4. Insert MIN thickness plate [A] between the separation pawl [B] and fusing belt.

5. Turn screw [C] in 90 degree steps to adjust the gap to the thickness of the MIN thickness plate inserted between the pawl and belt.
    - Turning the screw 90 degrees counter-clockwise (1) reduces the gap.
    - Turning the screw 90 degrees clockwise (2) increases the gap.
6. Remove the MIN thickness plate.
7. Confirm that the MAX thickness plate [D] cannot slip between the separation pawl and the fusing belt.
    - If the MAX thickness plate cannot slip between the separation pawl and fusing belt (3), no further adjustment is necessary.
    - If the MAX thickness plate can slip between the separation pawl and fusing belt (4), repeat from Step 5 to reduce the gap.
8. Repeat this procedure from Step 4 for every separation pawl.
9. After the gaps have been adjusted for every pawl, reinstall the MIN and MAX thickness plates.

Important Warning about Thermostats



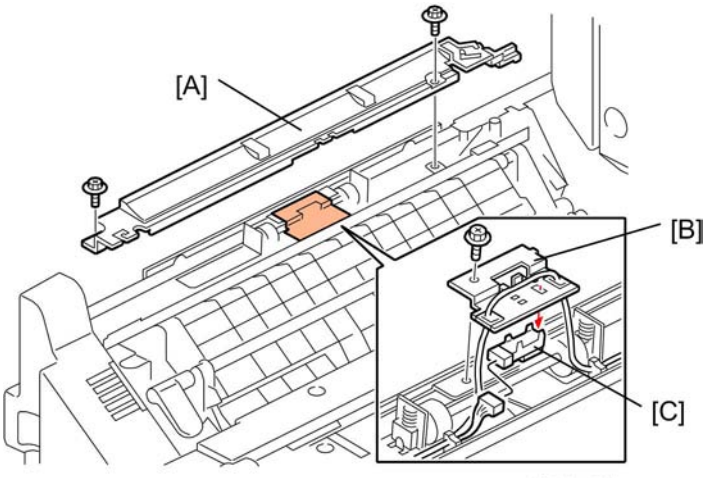
ra_0978

The old type of thermostat [A] has been replaced with a new type of thermostat [B]. The new type has a rectangular cover with exposed edges.

⚠WARNING

- Never attempt to reset a blown thermostat by manipulating the edges of the black cover with a screw driver. Resetting a thermostat manually could cause a failure to detect overheating in the fusing unit and cause a fire hazard.

Feed-out Exit Sensor



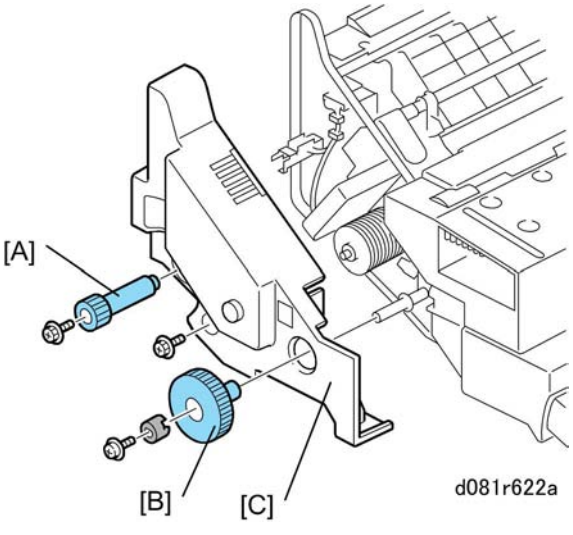
1. Pull out the fusing unit.
2. Remove:

   [A] Cover (x2).

   [B] Bracket [B] (x1)

   [C] Exit sensor (x1, Pawls x4)

Feed-out Unit



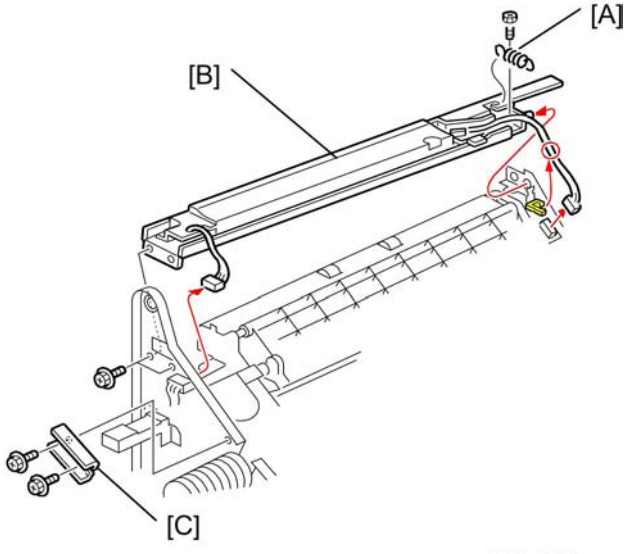
1. Pull out the fusing unit.

2. Remove the fusing unit (☛ p.402).
3. Remove:

   [A] Knob **E1** (x1)

   [B] Knob **D1** (x1, Collar x1)

   [C] Feed-out unit cover (x1)



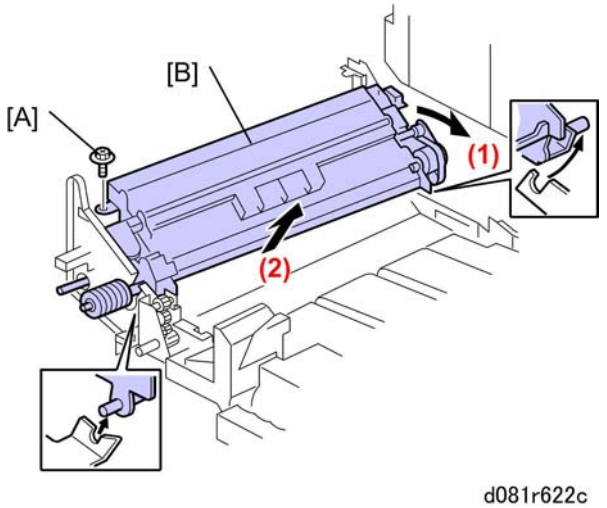
d081r622b

4. Remove:

   [A] Screw and spring [A] (x1, Spring x1)

   [B] Cover [B] (Rear: x1, Front: x2, x1)

   [C] Bracket (x1)



d081r622c

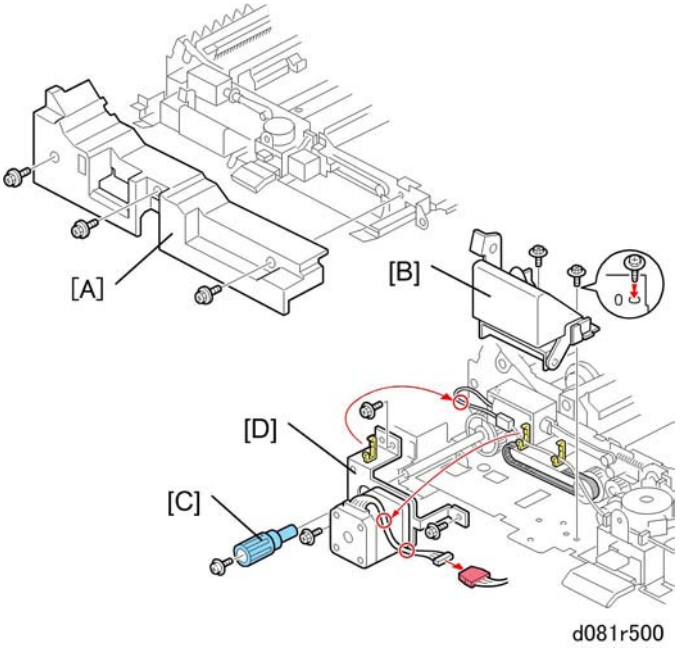
5. Remove:

   [A] Front screw (x1)

   [B] Feed-out Unit. Rotate the unit to the right (1) then lift it out (2).

Duplex Unit

Duplex Inverter Motor



1. Pull out the duplex unit.
2. Remove:

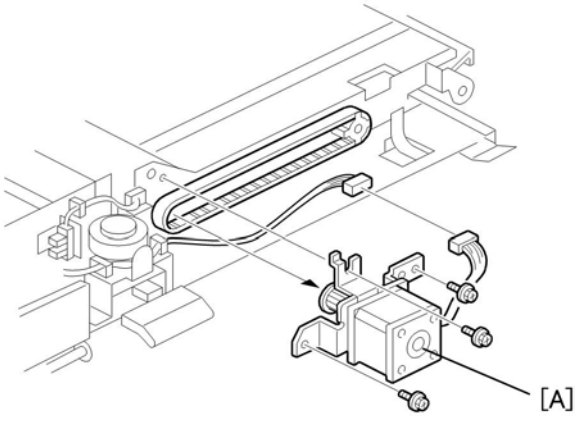
   [A] Duplex unit front cover (x3)

   [B] Lever **E3** (x2)

   [C] Knob **E2** (x1)

   [D] Duplex inverter motor (x3, x3, x1)

Duplex Transport Motor

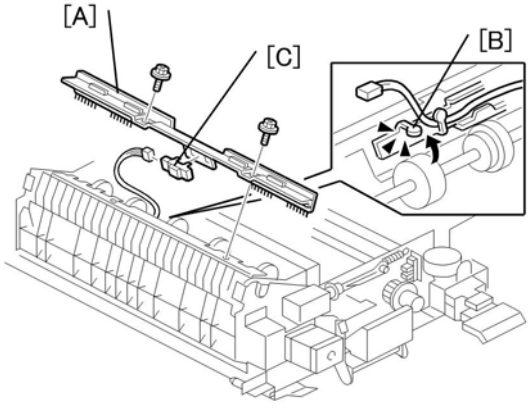


d081r506

1. Pull out the duplex unit.
2. Release the lower guide plate with knob F.
3. Remove:
   - Duplex unit front cover (☛ p.424 "Duplex Inverter Motor")
   - [A] Duplex transport motor (x3, x1, x2, Timing belt x 1)

Duplex Unit Sensors

Duplex Entrance Sensor



d081r502

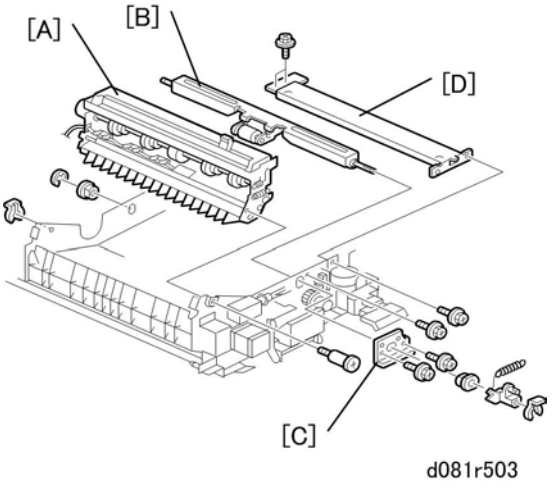
1. Pull out the duplex unit.

2. Remove:
    - [A] Bracket (x 2)
    - [B] Release harness clamp
    - [C] Duplex entrance sensor (x 1)

Reinstallation

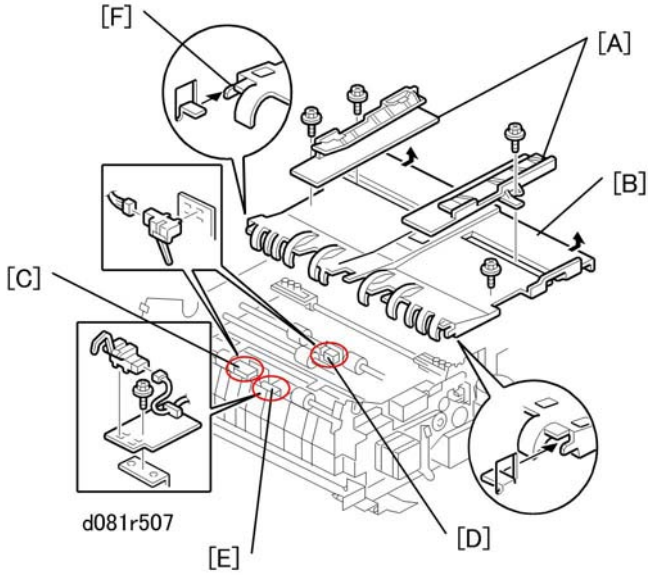
- Insert the anti-static brushes into the roller holes.

Transport Sensors 1, 2



1. Remove the duplex unit (p.303)

1. Remove:
    - [A] Inverter unit (x1 front, x1 rear, x1)
    - [B] Reverse trigger roller assembly (Rear: x1, Shaft bushing x1) (Front: x1, Link gear x1, Spring x1, Shaft bushing x1)
    - [C] Plate (x2)
    - [D] Cross-stay (x 4)



2. Remove:

   [A] Jogger fences (x 1 ea.)

   [B] Left transport cover (x 2)

   Important

   - **The front screw is a shoulder screw. Insert the screws in the correct holes when re-attaching.**
   - **To avoid breaking the tabs under the left edge of the table, pull the table to the right to disengage the tabs and then remove.**

3. Remove:

   [C] Transport sensor 1 (x 1, x 1)

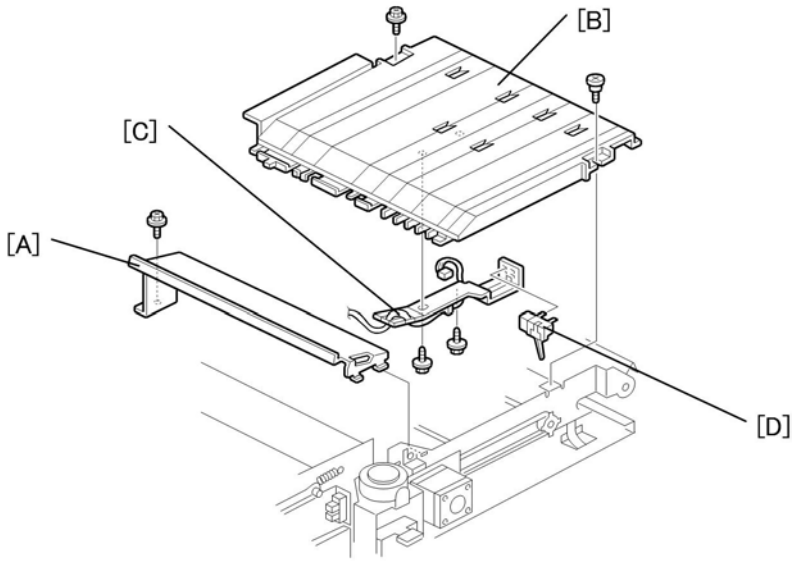
   [D] Transport sensor 2 (x 1, x 1)

   [E] Inverter exit sensor (x 1, x 1, x 1)

Reinstallation

- Make sure the end tabs [F] of the left transport cover are engaged correctly.

Transport Sensor 3



d081r508

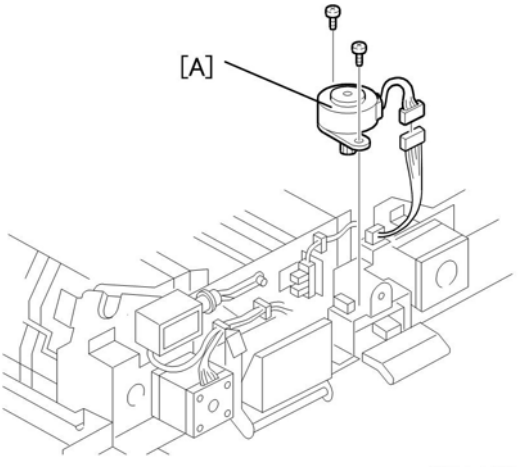
1. Remove:
   - Duplex unit (☛ p.303)
   - Duplex unit front cover (☛ p.424 "Duplex Inverter Motor")
2. Remove:
   - [A] Cross stay (x 1)
   - [B] Right transport cover (x 2, x 1)

   Important
   - **The front screw is a shoulder screw. Insert the screws in the correct holes when re-attaching.**
3. Remove:

   [C] Transport sensor bracket (x 2)

   [D] Transport sensor 3 (x 1)

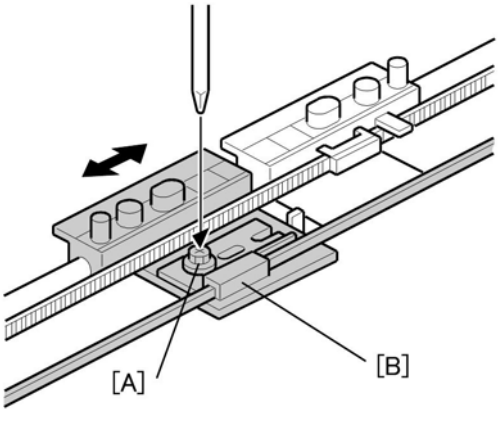
Duplex Jogger Motor



d081r505

1. Remove:
    - Duplex unit (☛ p.303).
    - Duplex unit front cover (☛ p.424 "Duplex Inverter Motor")
2. Remove jogger motor [A] (x2, x1)

Duplex Jogger Belt



d081r819

1. Remove:
    - Inverter unit (☛ p.425 "Duplex Unit Sensors")
    - Cross stay (☛ p.425 "Duplex Unit Sensors")

- Reverse trigger roller assembly (☛ p.425 "Duplex Unit Sensors")
- Jogger fences (☛ p.425 "Duplex Unit Sensors")
- Left transport cover (☛ p.425 "Duplex Unit Sensors")
- Jogger motor assembly (☛ p.429 "Duplex Jogger Motor")

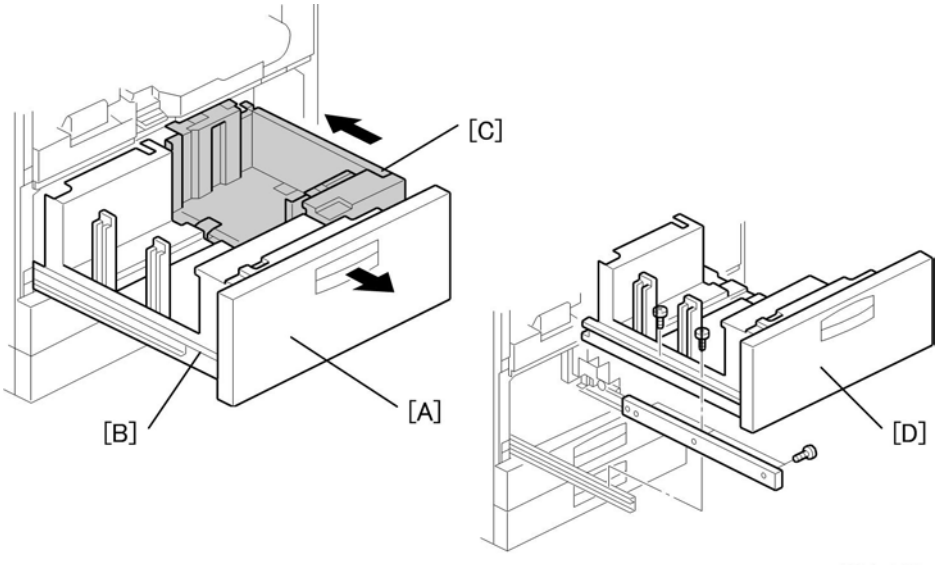
2. If you are replacing the belt, set both jogger fence brackets at the center of the belt and tighten the screw [A].

   -or-

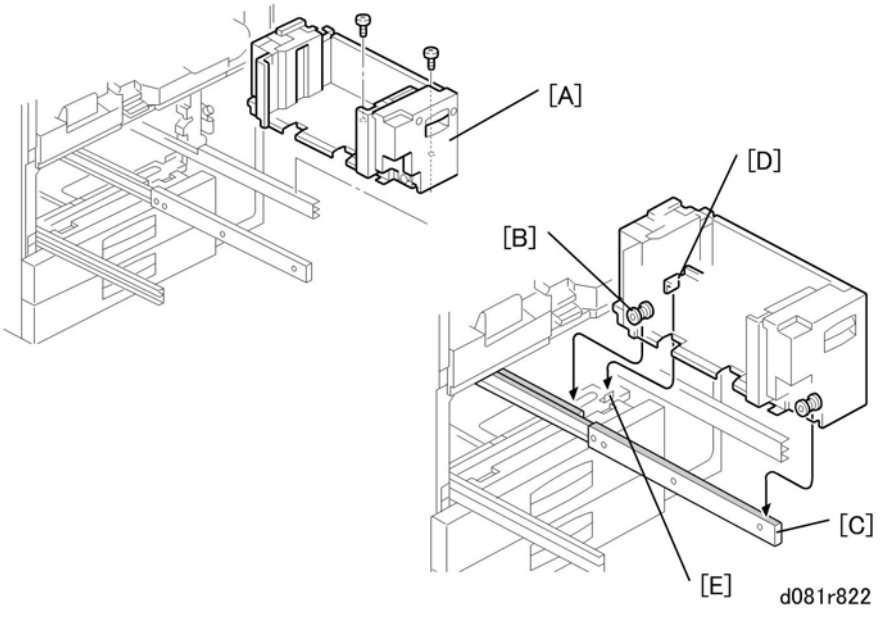
   If you are adjusting the belt, loosen the screw and slide the plastic piece [B] on the belt to the left or right to adjust the position of the front fence, then tighten the screw.

Tandem Tray (Tray 1)

Tandem Tray

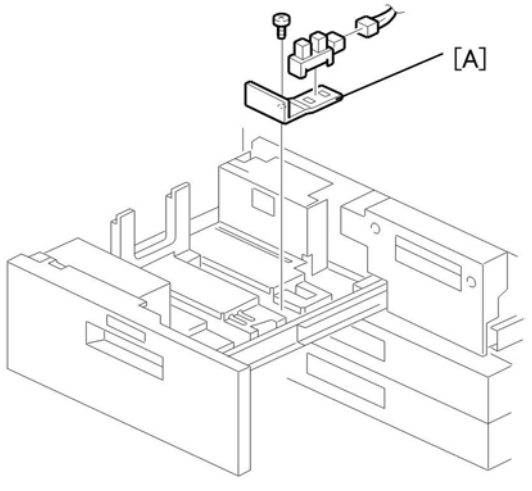


1. Open the front door.
2. Pull out the tandem tray drawer [A] completely to separate the left [B] and right [C] sides of the tandem tray.
3. Remove the left tandem tray [D] (x 5).



4. Remove right tandem tray [A] (x 2).
    - When re-installing the right tandem tray, make sure that the wheels [B] ride on the slide rail [C].
    - When re-installing the right tandem tray, make sure that the tandem tray stopper [D] is set behind the stopper [E] on the frame.

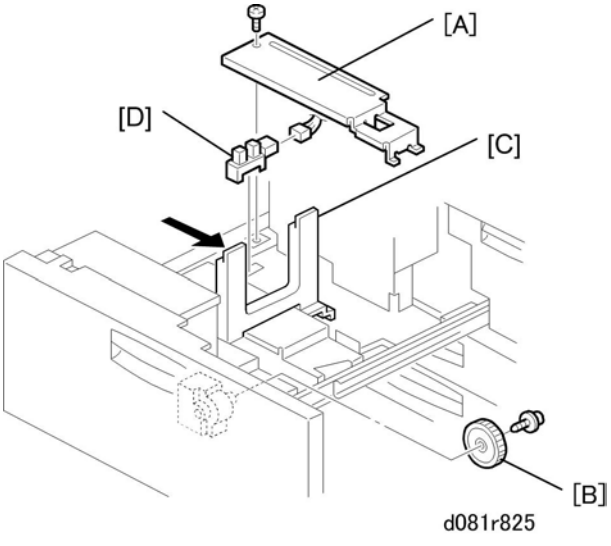
Rear Fence Return Sensor Replacement



1. Pull out the tandem feed tray.

2. Remove return sensor assembly [A] (x 1, x1).

Rear Fence HP Sensor Replacement



1. Pull out the tandem feed tray.
2. Remove:

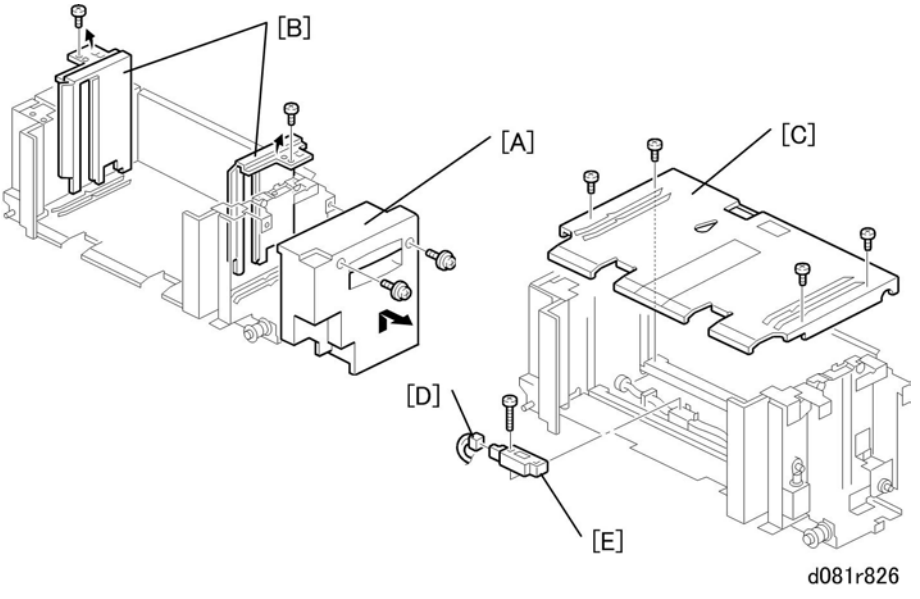
   [A] Rear bottom plate (x 1).

   [B] Back fence transport gear (x 1)

   [C] Move the back fence to the right.

   [D] Rear HP sensor (x 1)

Tandem Right Tray Paper Sensor Replacement



1. Remove the right tandem tray (☛ p.431 "Tandem Tray").
2. Remove:

   [A] Inner cover (x 2)

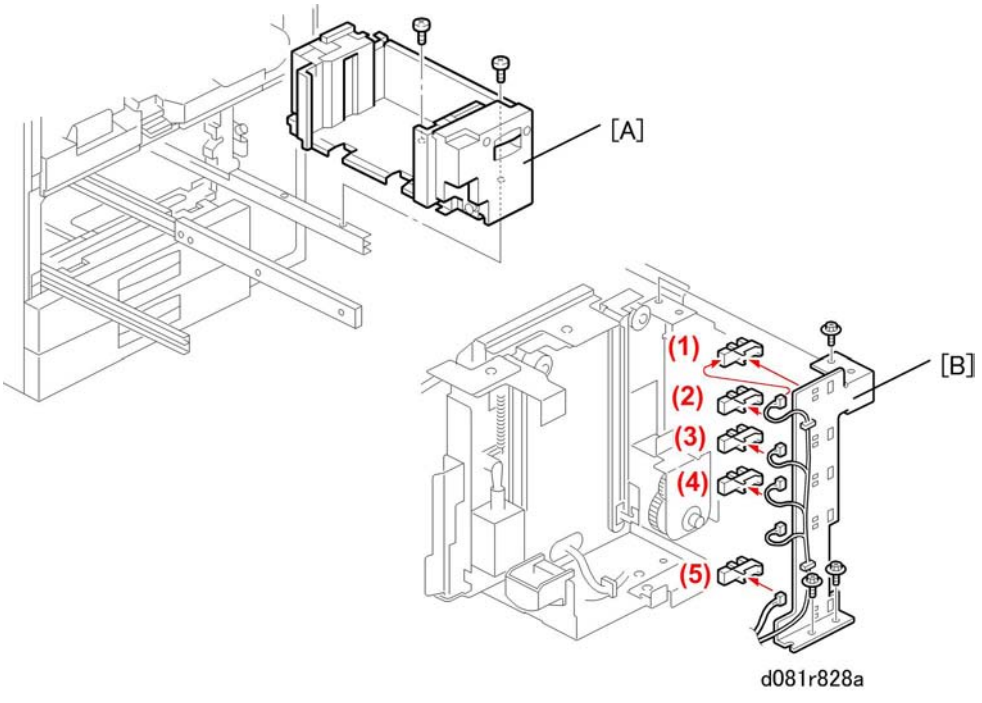
   [B] Side fences (x 1 each)

   [C] Bottom plate (x 4)

   [D] Connector (x 1)

   [E] Sensor (x 1)

Paper Height Sensors



1. Pull out the tandem tray (Tray 1).
2. Remove:

   [A] Right tandem tray (x2)

   [B] Sensor bracket (x3)

   [C] Paper height sensors (x5)

Bottom Plate Lift Wire Replacement

Before replacing the rear bottom plate lift wire, remove the front bottom plate lift wire. It is necessary to remove the shaft for replacing the rear bottom plate lift wire.

Front Wire

1. Remove the right tandem tray (p.431 "Tandem Tray").
2. Remove the paper height sensor bracket (p.435 "Paper Height Sensors").
3. Remove:

   [A] Remove the inner cover (x 2)

[B] Remove the left stay.

[C] Wire stoppers

4. Lift the front bottom plate slightly and unhook it.
5. Remove:

[D] Wire covers (C x 1 each)

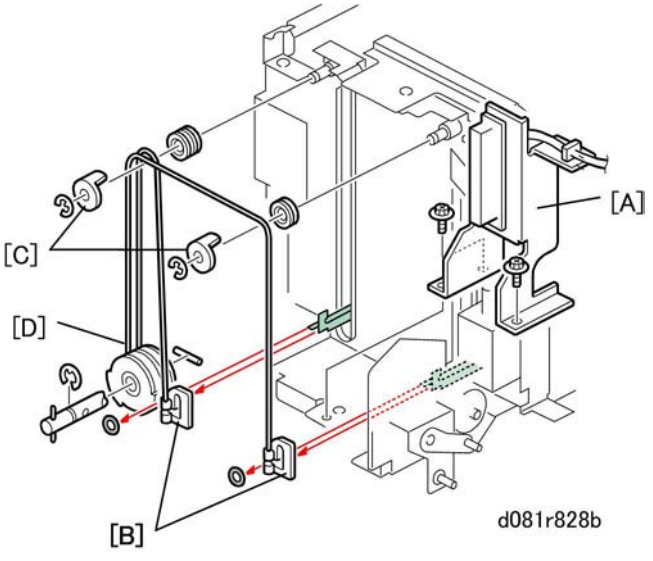
[E] Bracket (screw x 1, C x 1, bushing x 1)

[F] Gear

[G] Bottom plate lift wire

4

Rear Wire



1. Remove:

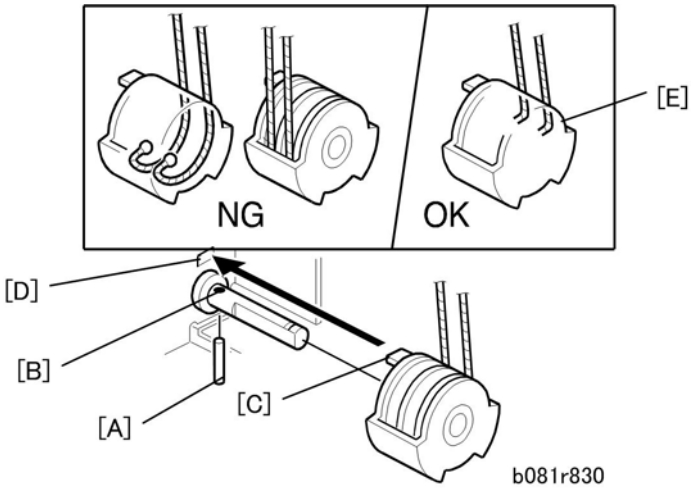
[A] Support (screw x2)

[B] Wire stoppers

[C] Wire covers (C x2)

[D] Bottom plate lift wire

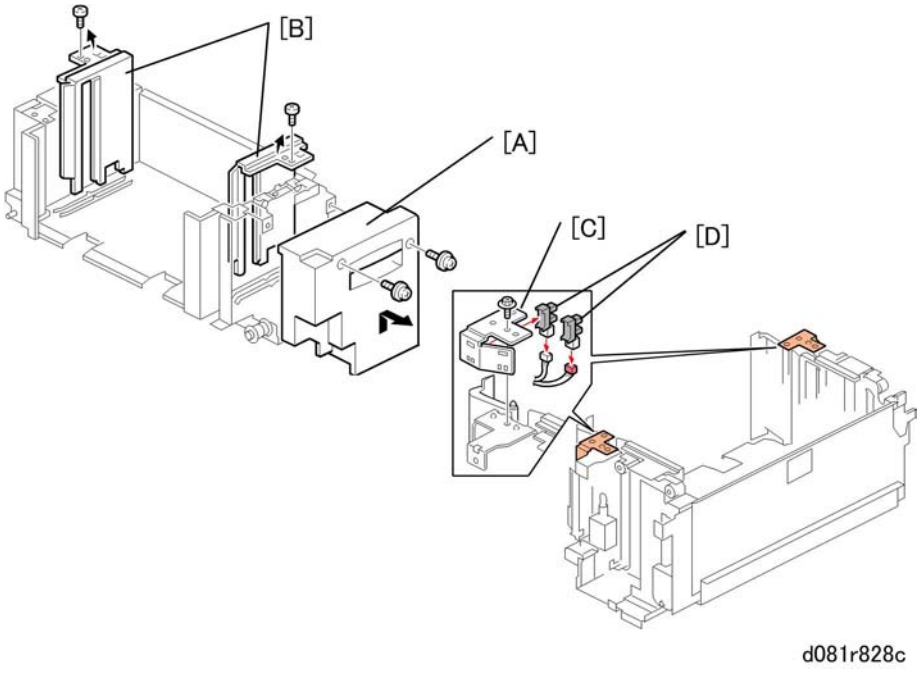
Re-installation



When re-installing the bottom plate lift wire:

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

Side Fence Sensors



1. Remove:

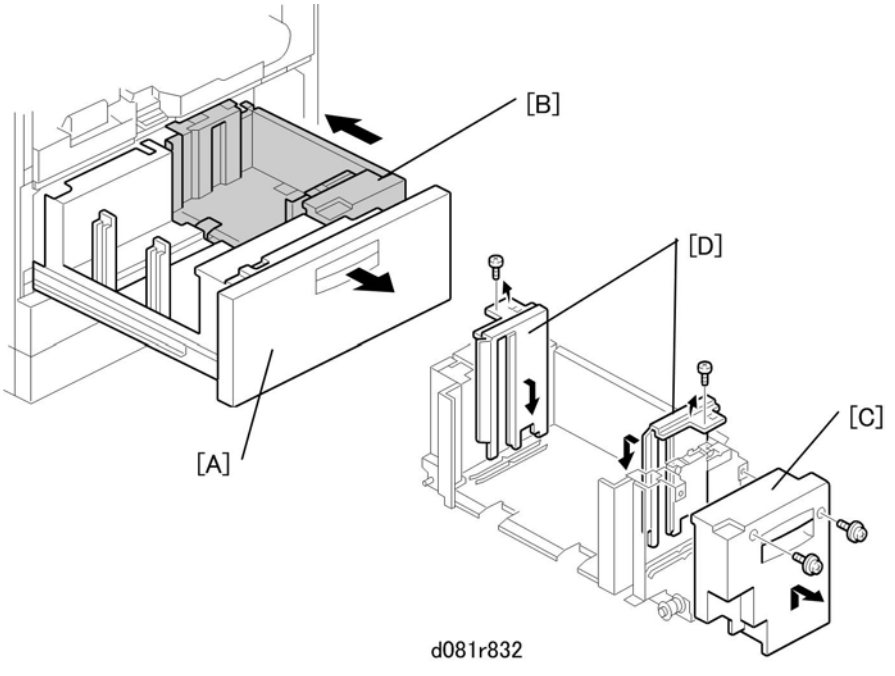
   [A] Inner cover (x2)

   [B] Two side fences (x1 each)

   [C] Sensor bracket (x1)

   [D] Two sensors (x1 each, Pawls x4 each)

Tandem Tray Paper Size Change

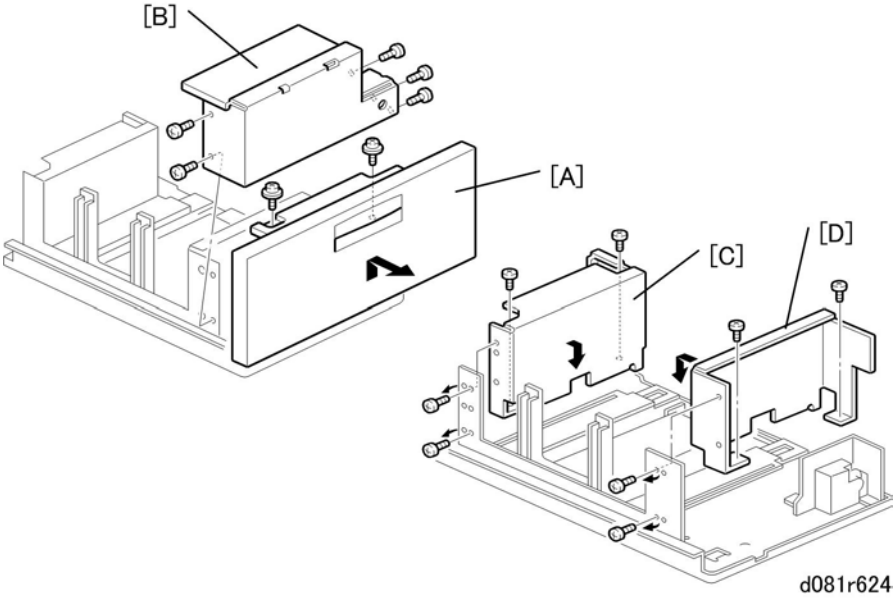


At the factory, this tray is set for A4 or LT LEF so only A4 or LT LEF paper can be used for tandem feed at this setting.

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

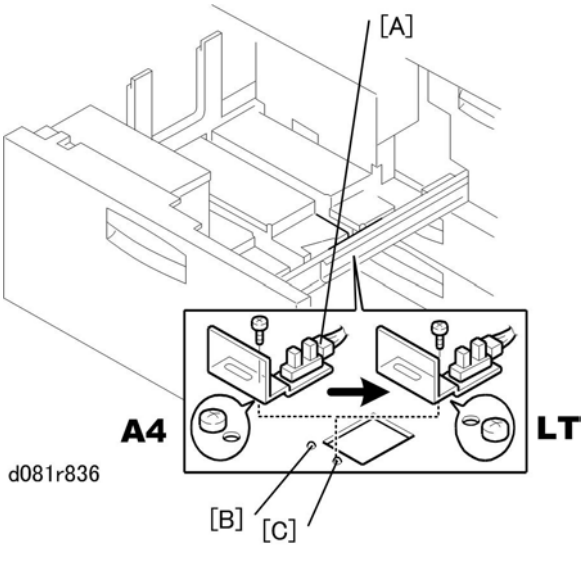
Right Tray

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



Left Tray

1. Remove the tray cover [A] (x 2).
2. Remove the DC motor cover [B] (x 5).
3. Remove the rear side fence [C] and front side fence [D] (x 4 ea.)
4. Re-position the side fences (x 4 ea.).
    - A4: Outer slot position
    - LT: Inner slot position
5. Re-install the DC motor cover and the tray cover.



1. Re-position the return position sensor bracket [A] (x 1).
2. For A4 set the screw in the left hole [B].

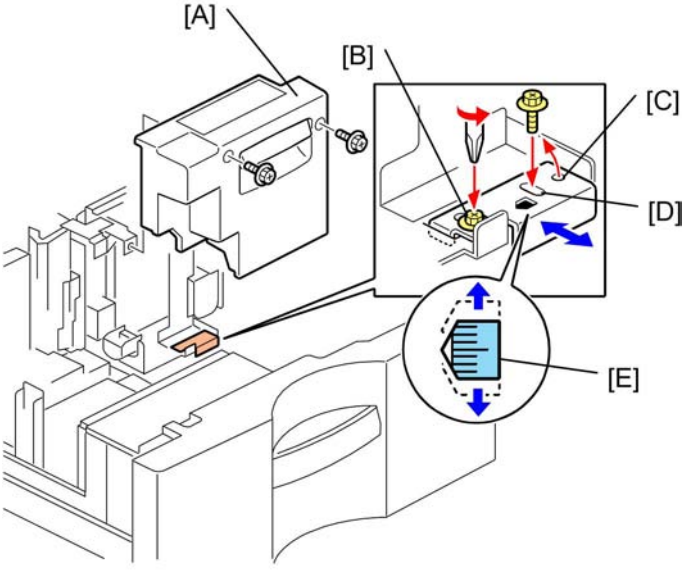
   -or-

   For LT set the screw in the right hole [C].
3. Input the new paper size into SP5959 001.

Reinstallation

- Do the scanner and registration adjustments (p.507 "Image Adjustments").

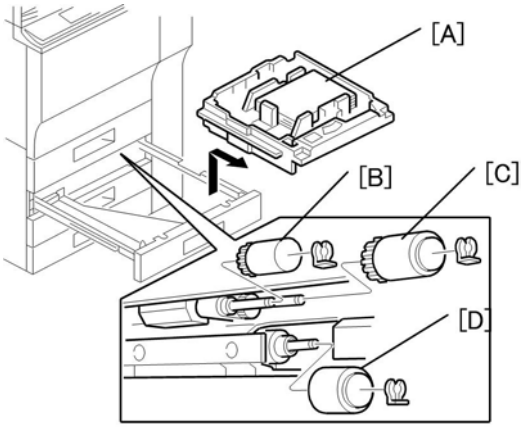
Side-to-Side Registration Correction



1. Open the tandem tray.
2. Remove front cover [A] of the right tray (x2).
3. Loosen screw [B].
4. Remove the screw from round hole [C] and move it to oval hole [D].
5. Look at the scale [E] through the cut-out.
6. Shift the plate forward or back, check the position on the scale, and then tighten both screws to set the plate at the new position.

Paper Feed (Trays 2, 3)

Pickup, Feed, Reverse Rollers



d081d601

1. Remove:

   [A] Tray.

   [B] Feed roller (x 1)

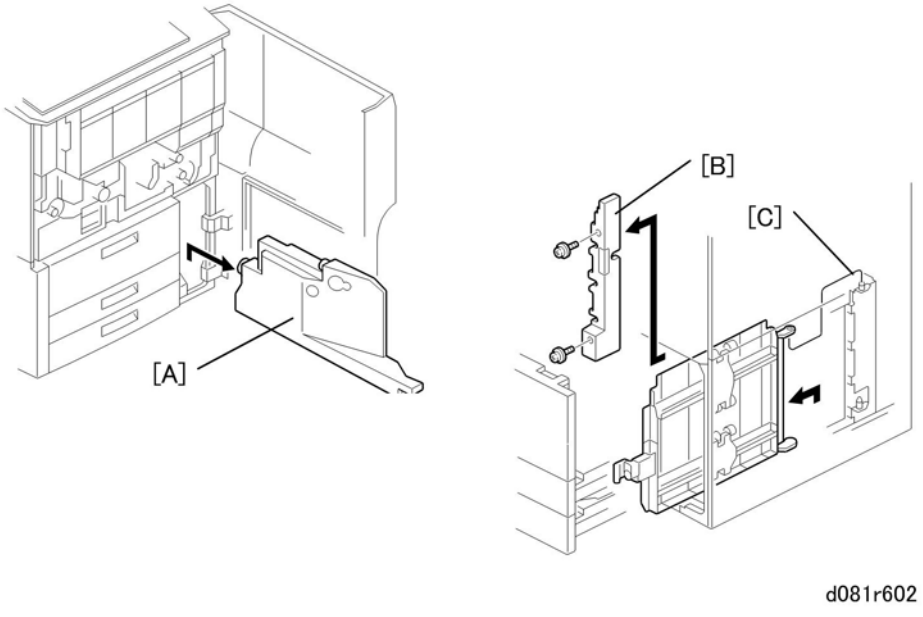
   [C] Pick-up roller (x 1)

   [D] Separation roller (x 1)

   Important

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

Paper Feed Unit



1. Remove the front door (☛ p.291)
2. If the LCT is connected, disconnect it and pull it away from the machine, then remove the LCT entrance guide cover and right lower cover
3. Pull out all three trays (do not remove).
4. Remove:

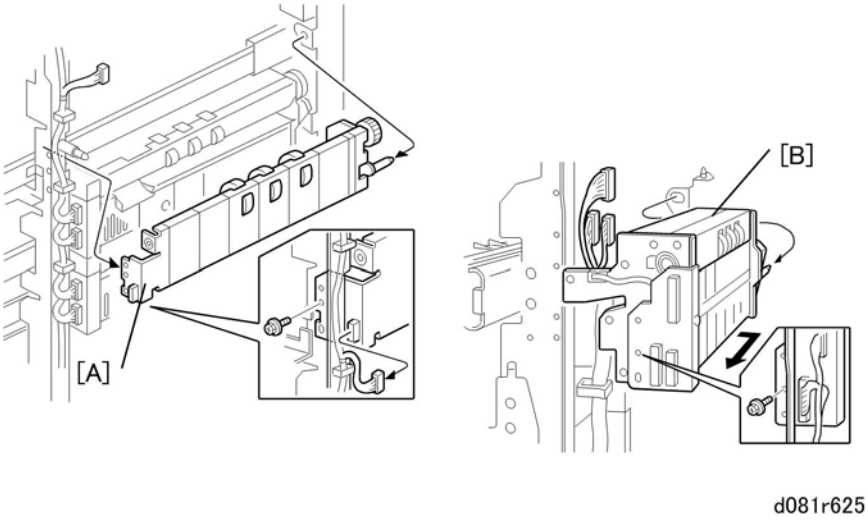
   [A] Toner collection bottle

   [B] Vertical transport guide

   [C] Inner cover (🔩 x 2)

Re-installation

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



[A] Guide plate (x 1)

1st feed unit only.

[B] Feed unit (x 1, x 3)

Insert your hand from the right and pull the feed unit forward.

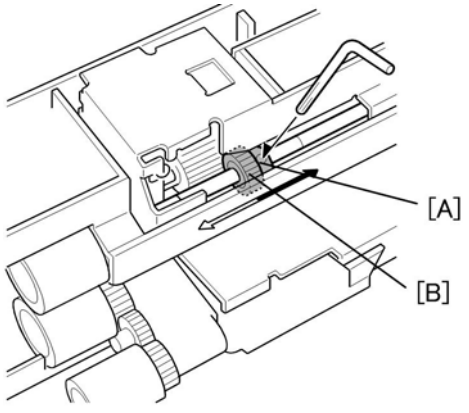
To avoid hitting the unit on the sides of the machine, remove it carefully and slowly.

If the paper feed motor must be replaced, replace the paper feed unit.

Separation Roller Pressure Adjustment

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

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



d081r605

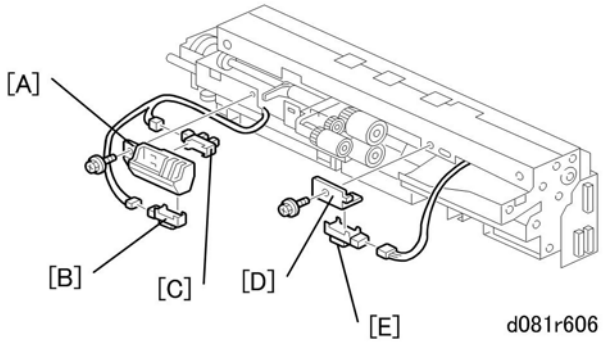
1. Remove the feed unit
2. Loosen the hex screw [A].
3. The separation roller gear [B] is positioned at the groove before shipping.

   To adjust for thick paper, move the separation roller gear to the left to decrease the pressure.

   -or-

   To correct misfeeds, move the separation roller gear to the right to increase the pressure.

Paper End, Tray Lift, Paper Feed Sensors



d081r606

1. Remove paper feed unit (p.442).
2. Remove:

   [A] Sensor bracket (x1)

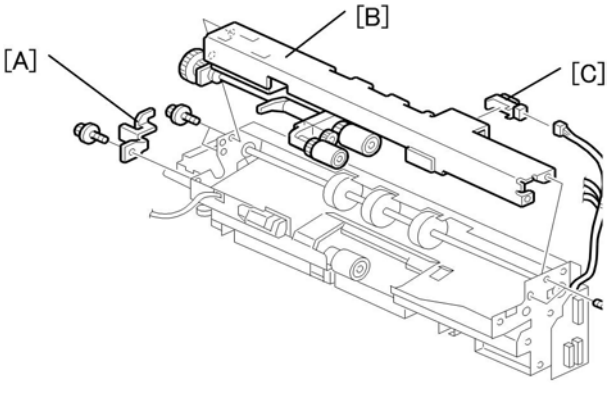
   [B] Paper end sensor (x1)

   [C] Tray lift sensor (x1)

   [D] Sensor bracket (x1)

[E] Paper feed sensor (x1)

Vertical Transport Sensor



d081r607

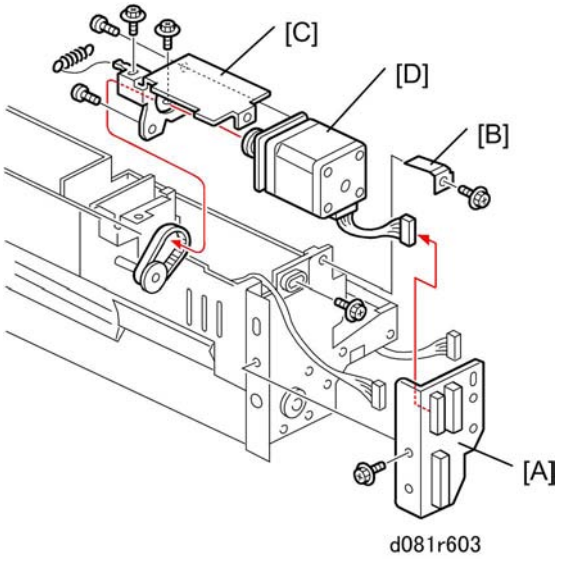
1. Remove paper feed unit (p.442).

   [A] Bracket (x1)

   [B] Upper unit (x4)

   [C] Vertical transport sensor (x1)

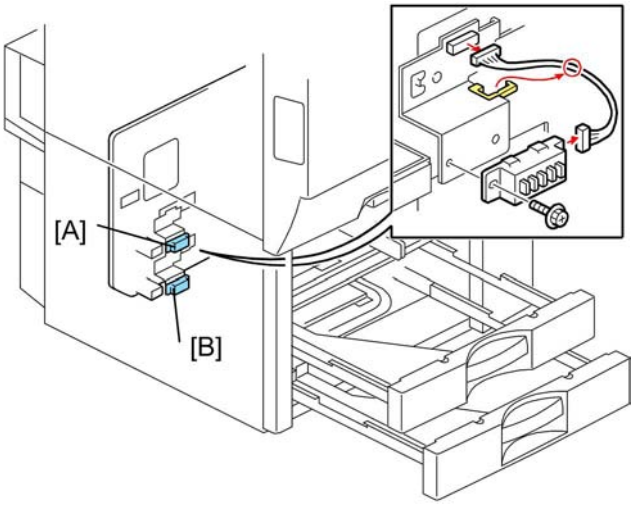
Feed Motor



d081r603

1. Remove the paper feed unit (☛ p.442).
2. Remove:
   [A] Connector cover (x1)
   [B] Ground plate (x1)
   [C] Bracket (x3, Spring x1)
   [D] Feed motor (x2)

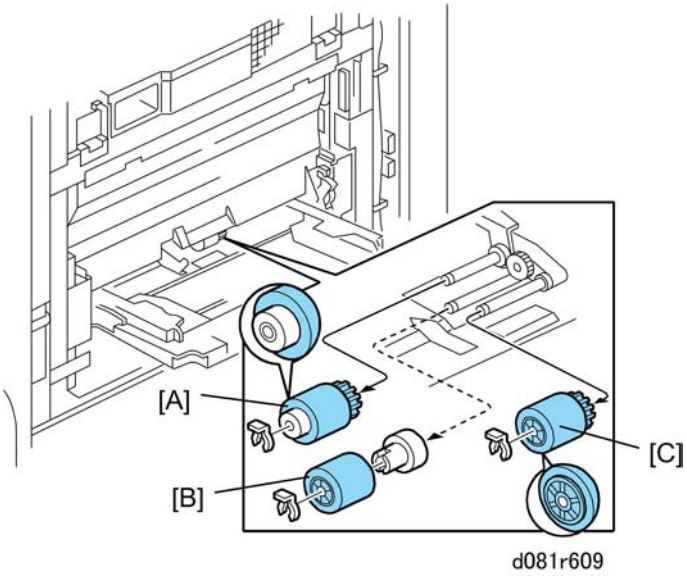
Paper Size Switches



1. Remove Tray 1 (tandem tray), Tray 2 and Tray 3.
2. Remove:
   [A] Paper size switch (Tray 2) and harness (x1, x1, 2)
   [B] Paper size switch (Tray 3) and harness (x1, x1, 2)

Bypass Unit

Bypass Pickup, Feed, Reverse Rollers



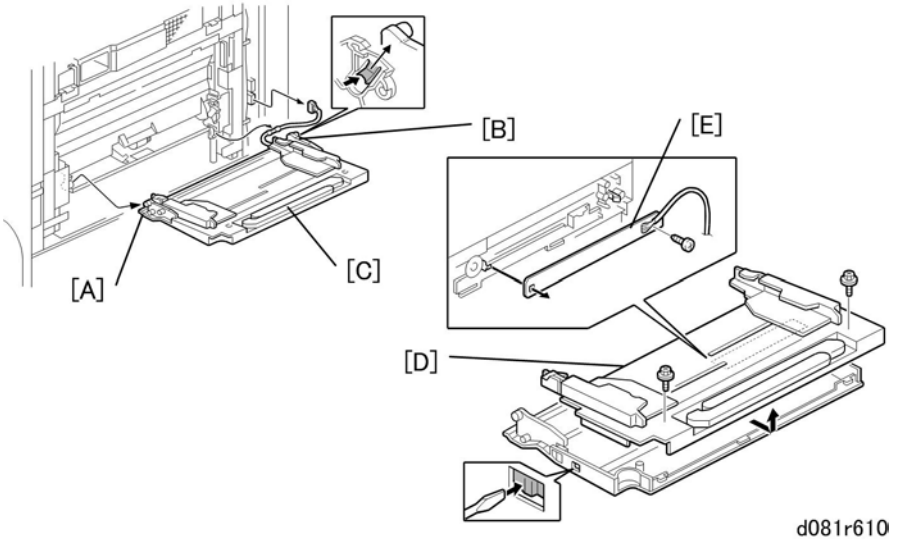
1. Remove right covers (☛ p.292).
2. Open the bypass tray.
3. Remove:
   - Bypass unit (☛ p.449)
   - Unit upper cover (☛ p.449 "Bypass Paper End Sensor, Feed Sensor")
4. Remove:

   [A] Feed roller (x1)

   [B] Reverse roller (x1)

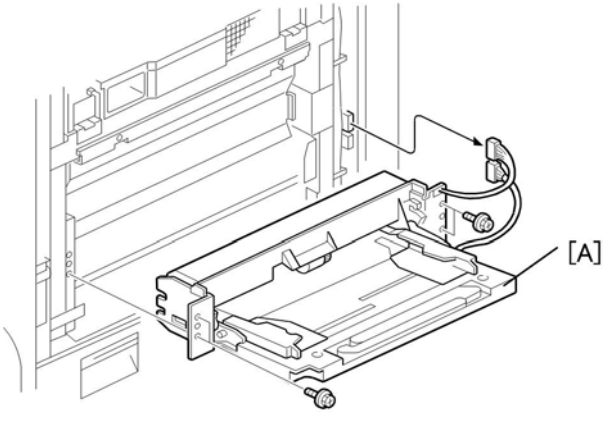
   [C] Pickup roller (x1)

Bypass Auto Paper Size Detection Switches



1. Remove right covers
2. Open the bypass tray
3. Disconnect:
   [A] Front hinge
   [B] Rear hinge
4. Remove:
   [C] Bypass tray (x1)
   [D] Bypass table (x2, Pawls x2)
   [E] Paper size detection board (Pawl x1, x1)

Bypass Unit

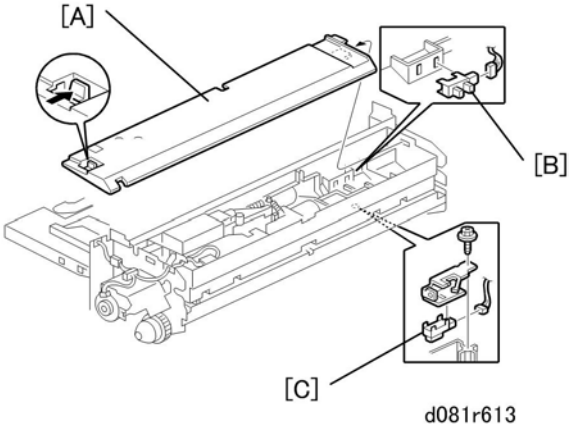


b081r626

1. Remove right covers (☛ p.292).
2. Open the bypass tray
3. Remove:

   [A] Bypass unit (x4, x2)

Bypass Paper End Sensor, Feed Sensor



d081r613

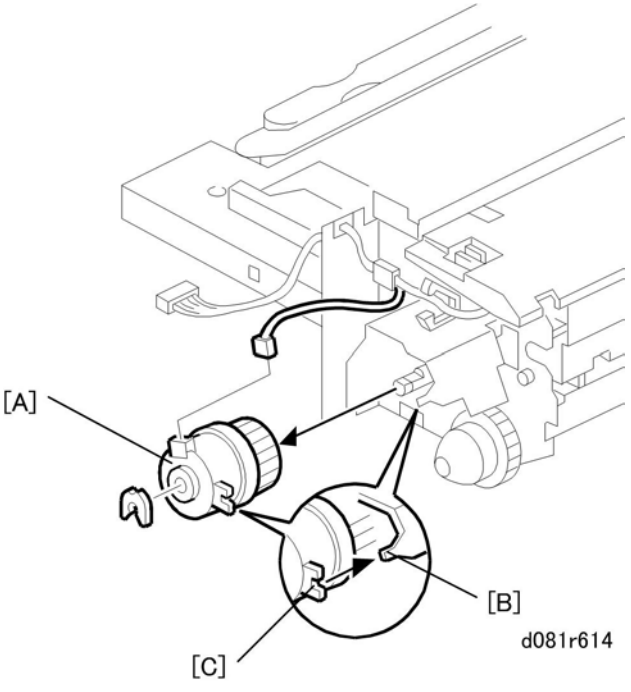
1. Remove the bypass unit (☛ p.449).

   [A] Unit upper cover (Release x1)

   [B] Paper end sensor (x1)

   [C] Feed sensor (x1, x1)

Bypass Feed Clutch



1. Remove the bypass unit (☛ p.449).
2. Remove bypass feed clutch [A] (x1, x1)

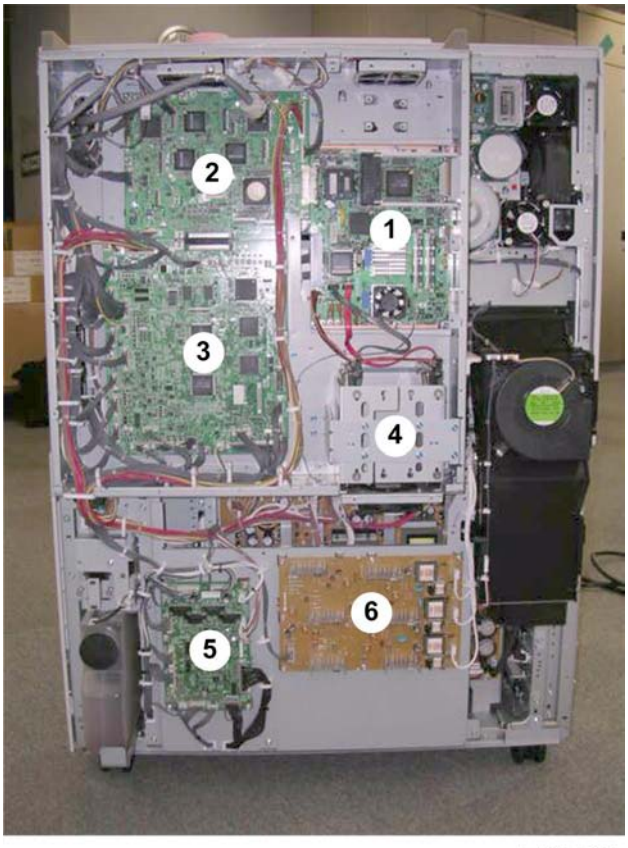
Reinstallation

- Make sure the arm [B] fits correctly into the notch bracket [C] of the clutch.

Boards

PCB Layout

Controller Box Closed

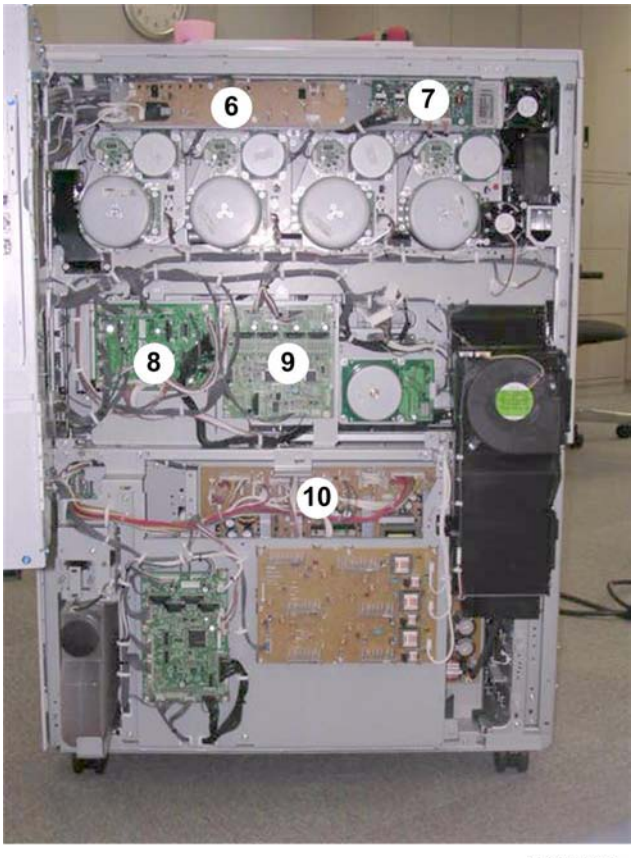


b132r835

①	Controller Board
②	IPU Board
③	VBCU Board
④	HDD Unit
⑤	PFB (Paper Feed Board)

⑥	HVPS (High Voltage Power Supply)

Controller Box Open



b132r836

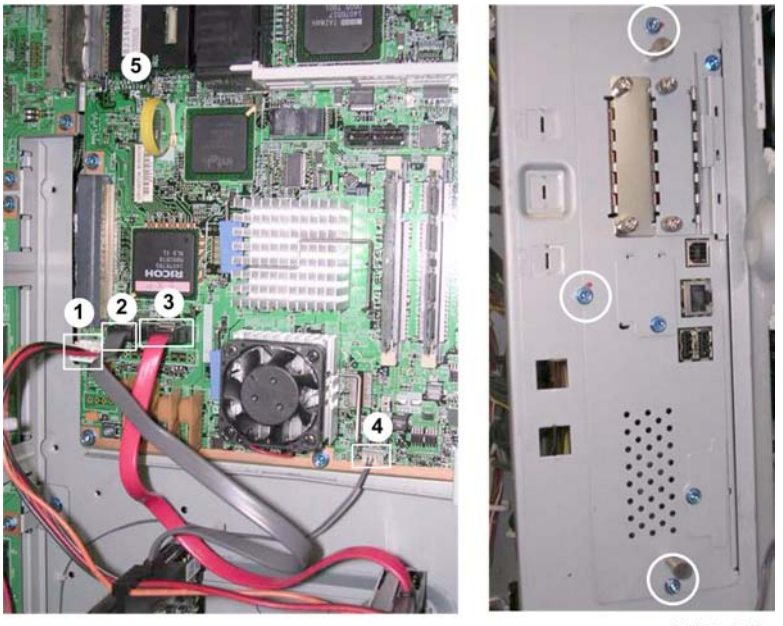
⑥	Charge Roller Power Pack
⑦	Potential Sensor Power Pack
⑧	DRB (Motor Drive Board)
⑨	DTMB (Drum Transfer Motor Board)
⑩	PSU

Left Lower Cover Removed

b132r837

⑪	AC Drive Board

Controller



b132r838

Important

- **The controller box cover should always be removed so that the controller board can be disconnected before removal of the controller board.**
- **Never attempt to pull the controller unit out of the machine until you have removed the box cover and disconnected the controller board.**
- **If you attempt to pull the controller unit out of the machine without first disconnecting the board, you will break or damage the connectors.**

1. Remove the controller box cover (x16)
2. Disconnect connectors ①, ②, ③, ④ (x4).
3. Remove the screws (x3).
4. Remove the controller board.

When installing the new controller board

Important

- **The machine will issue SC195 (Machine Serial Number Error) if you fail to do the procedure below.**

1. Remove the NVRAMs ⑤ from the old controller board. (See previous illustration.)
2. Install them on the new controller board after you replace the controller board.

3. Replace the NVRAMs if the NVRAM on the old controller board is defective.

Note

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

Important

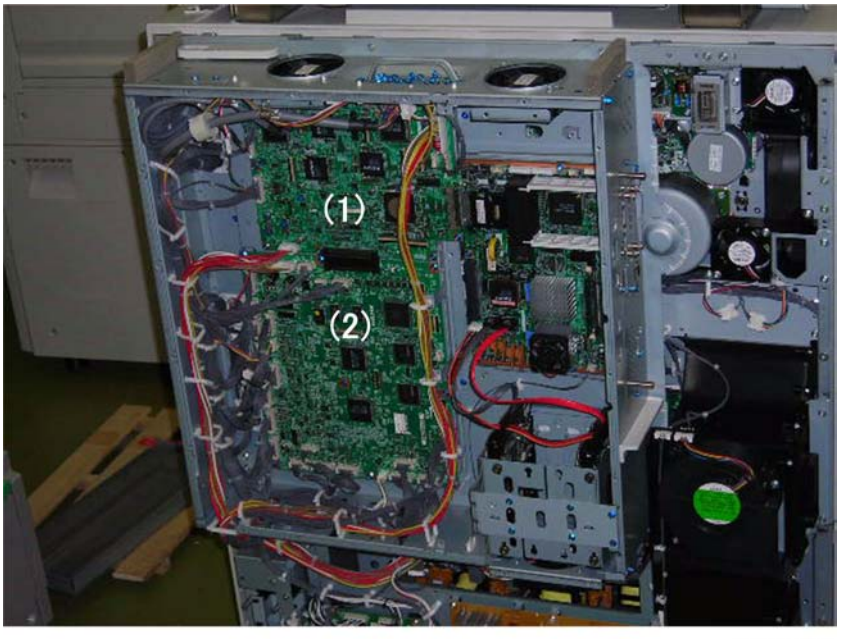
- **Keep NVRAMs away from any objects that can cause static electricity. Static electricity can damage NVRAM data.**
- **Make sure the NVRAMs are correctly installed on the controller board.**
- **Make sure that the DIP-switch settings on the old controller board are the same for the new controller board. Do not change the DIP switches on the controller board in the field.**

After installing the controller board

1. For a model in which the HDD encryption unit has been installed, restoring the encryption key is required. Refer to "Recovery from a Device Problem" in the installation procedure for the HDD Encryption Unit.
2. Turn the main power switch off/on.

IPU/VBCU

IPU/VBCU Removal



b132r839

Before You Begin...

- The IPU (1) and VBCU (2) are connected and mounted on same plate. They must be removed together.
- The controller board must be removed before the IPU/VBCU can be removed.

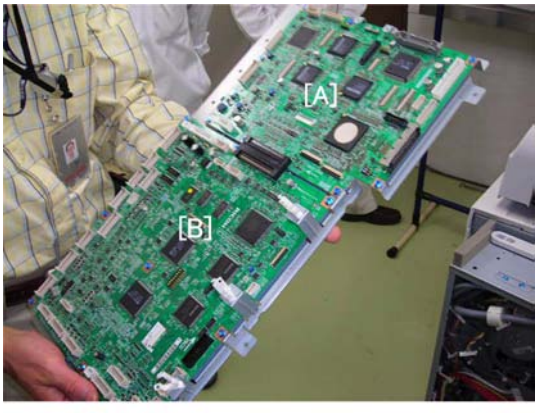
b132r840

1. Remove the controller board.
2. Disconnect the boards.

[A] IPU (x8)

[B] VBCU (x26)

3. Slide the plate with the boards attached to the right.



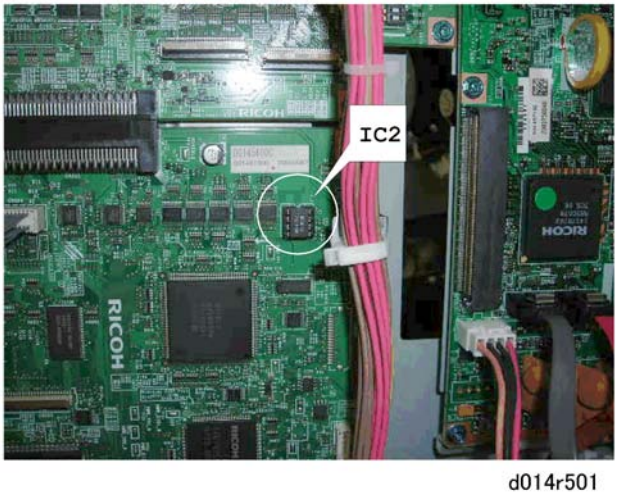
b132r841

4. Remove the boards from the frame.

[A] IPU (x8)

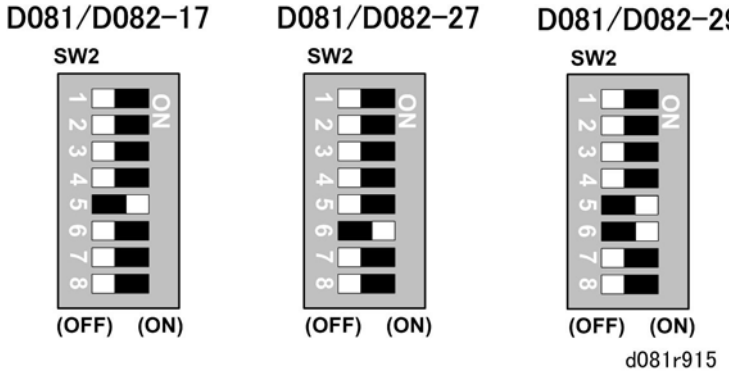
[B] VBCU (x9)

VBCU Replacement



d014r501

1. Remove the EEPROM from the old VBCU. (The EEPROM shown above is marked "IC2" with a notation on the board.)
2. Install the EEPROM on the new VBCU.
3. Set the DIP SW (SW2) for the machine as shown below.

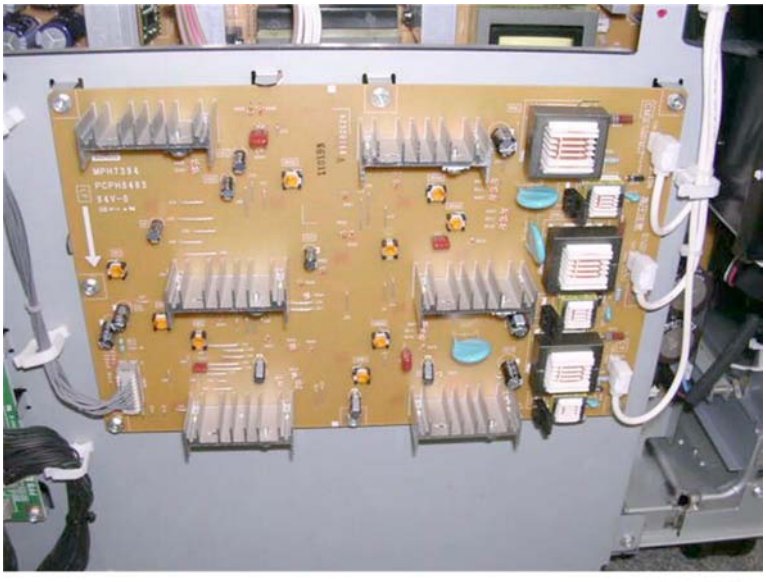


4

PFB

1. Remove the PFB [A] (x14, x6).

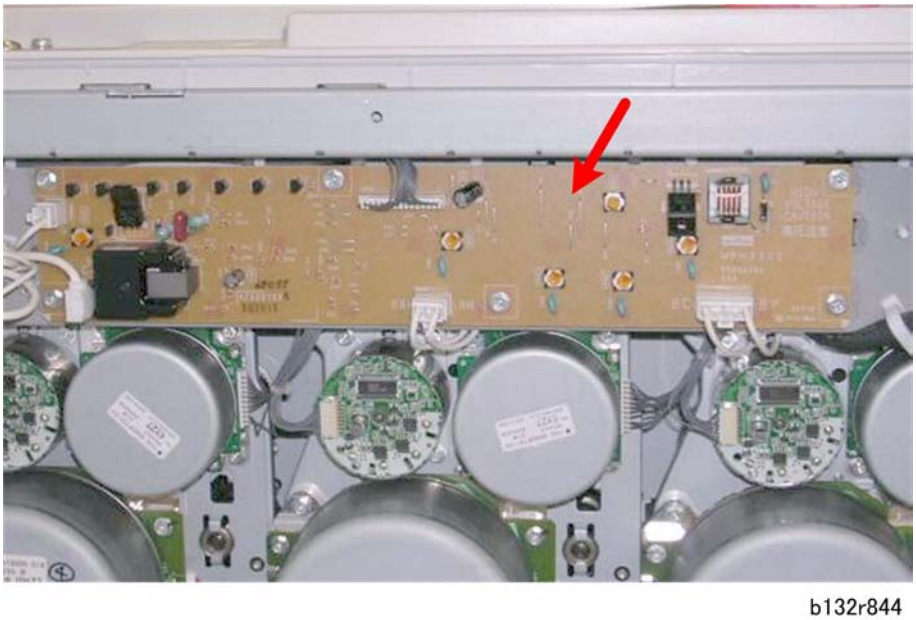
HVPS



b132r843

1. Remove the HVPS (x4, x8).

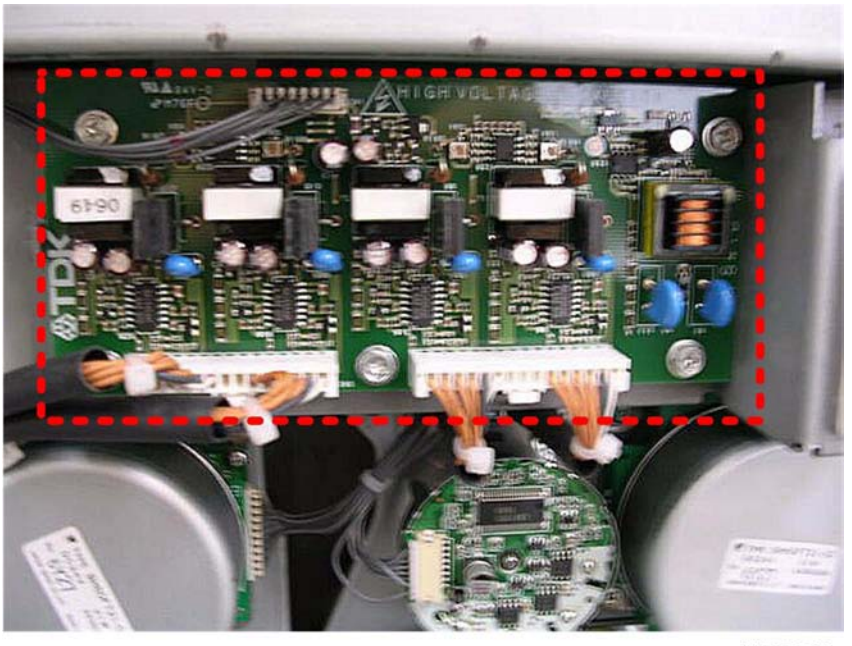
Charge Roller Power Pack



b132r844

1. Remove the charge roller power pack (x5, x6).

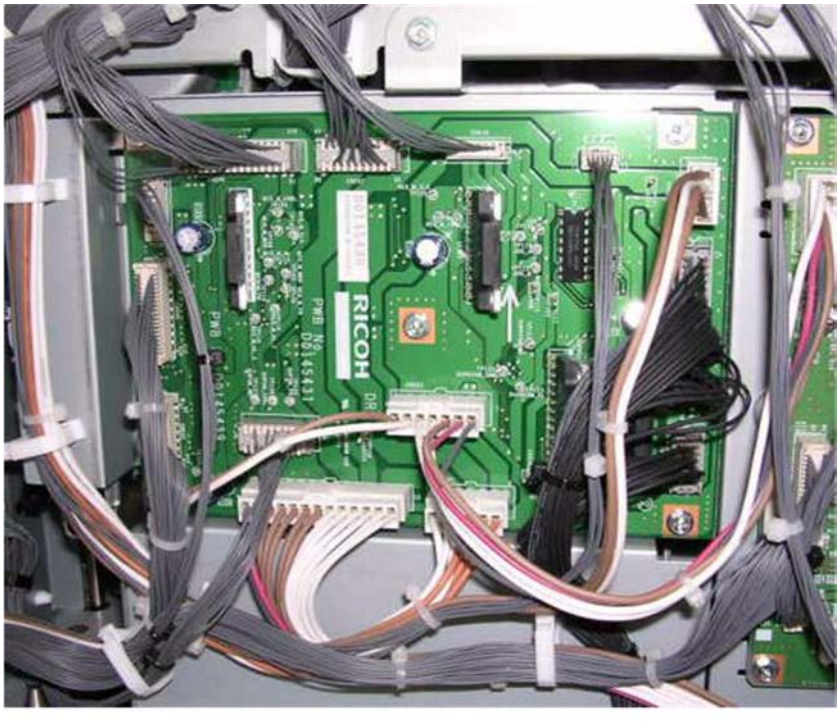
Potential Sensor Power Pack



b132r845

1. Remove the potential sensor power pack (x3, x5).

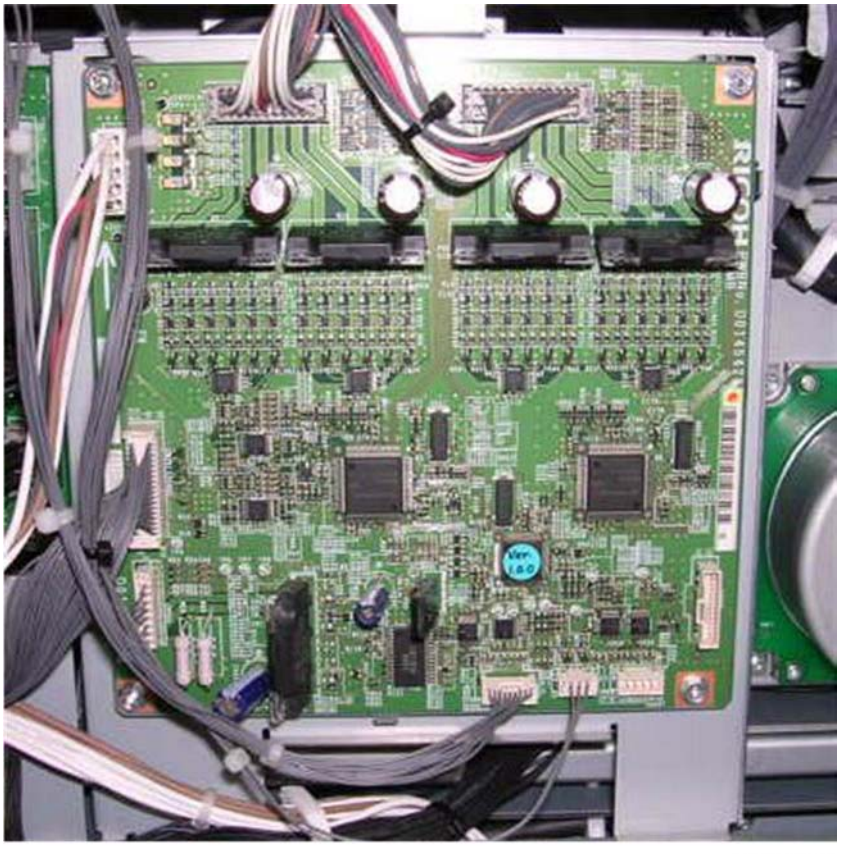
DRB



b132r846

1. Remove the DRB (x14, x5).

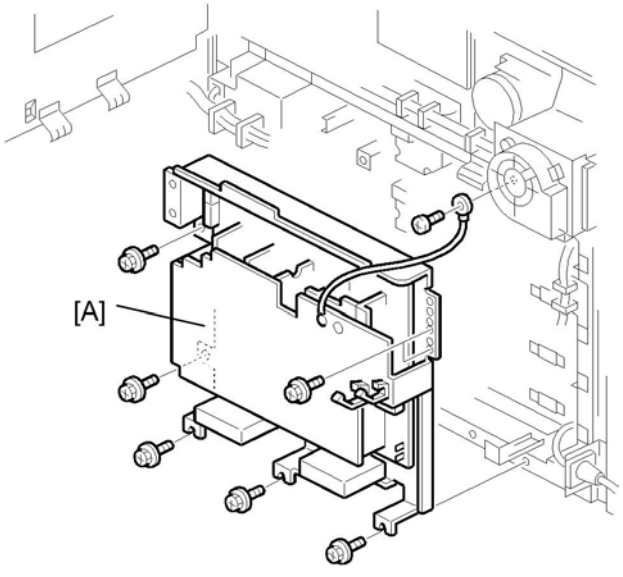
DTMB



b132r847

1. Remove the DTMB (x7, x4).

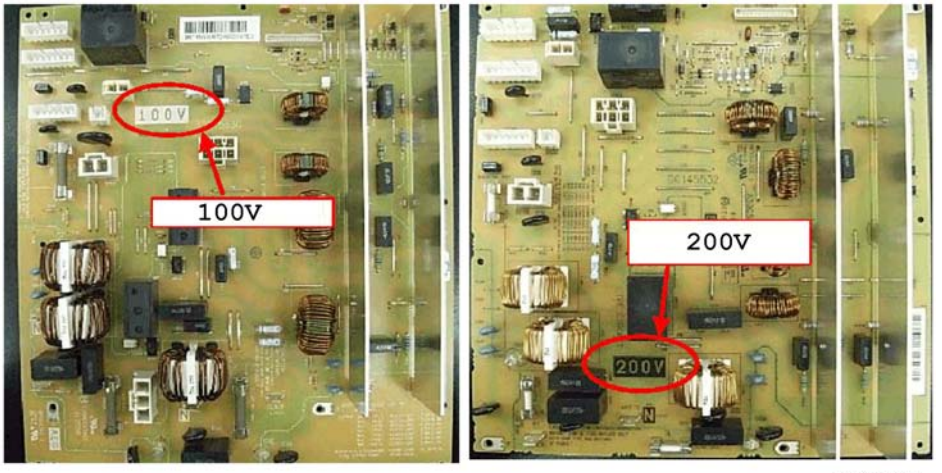
PSU



1. Remove the rear covers.
2. Open the controller box door.
3. Remove the PFB/HVPS board frame.
4. Remove:

   [A] PSU (x9, x8).

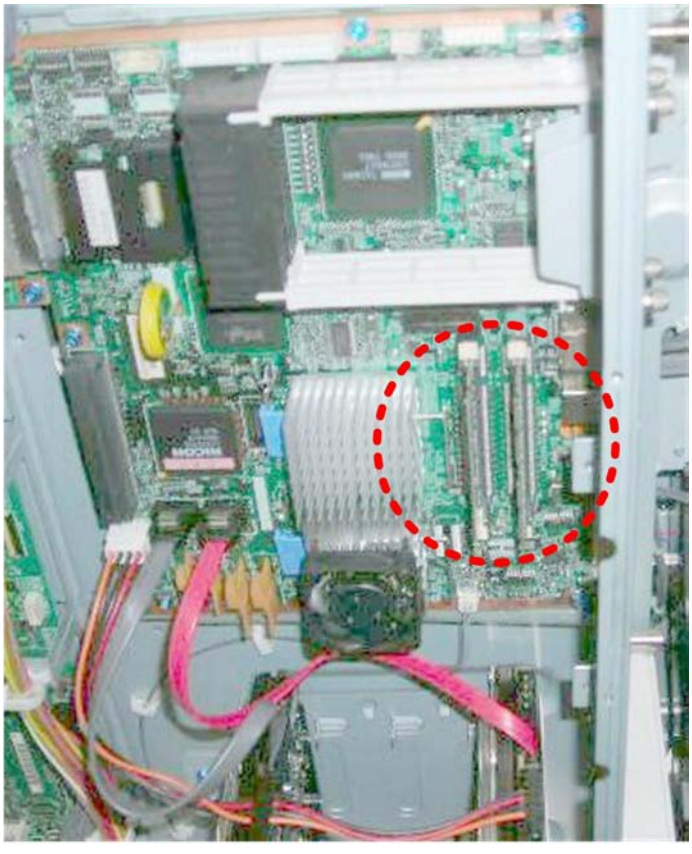
AC Drive Board



d014r505

1. Make sure that you have to correct type of board for the machine.
    - There are two types of AC drive boards: 100V and 200V.
    - The boards are clearly marked at the locations shown above.
    - Confirm the marking before installing the AC drive board.
2. Remove the AC drive board (x7, x8).

Memory



b132r850

1. Install memory chips.

NVRAM

Before You Begin...

- Never remove the NVRAM until you have uploaded its contents.
- Always touch a metal surface to discharge any static on your hands before you touch the controller board.
- Work carefully when removing the NVRAM to avoid damaging other components on the controller board or short circuiting the pins of other chips.

Upload NVRAM Data to SD Card

1. Do SP5990 001 to print the SMC report.

   Important

   - **Before removing the VM card from Slot 1 (lower slot) you must shut down the App2 Me application if it is running (all running VM applications must be shut down at this time). See p.305 "Before Removing and Re-installing the VM Card".**

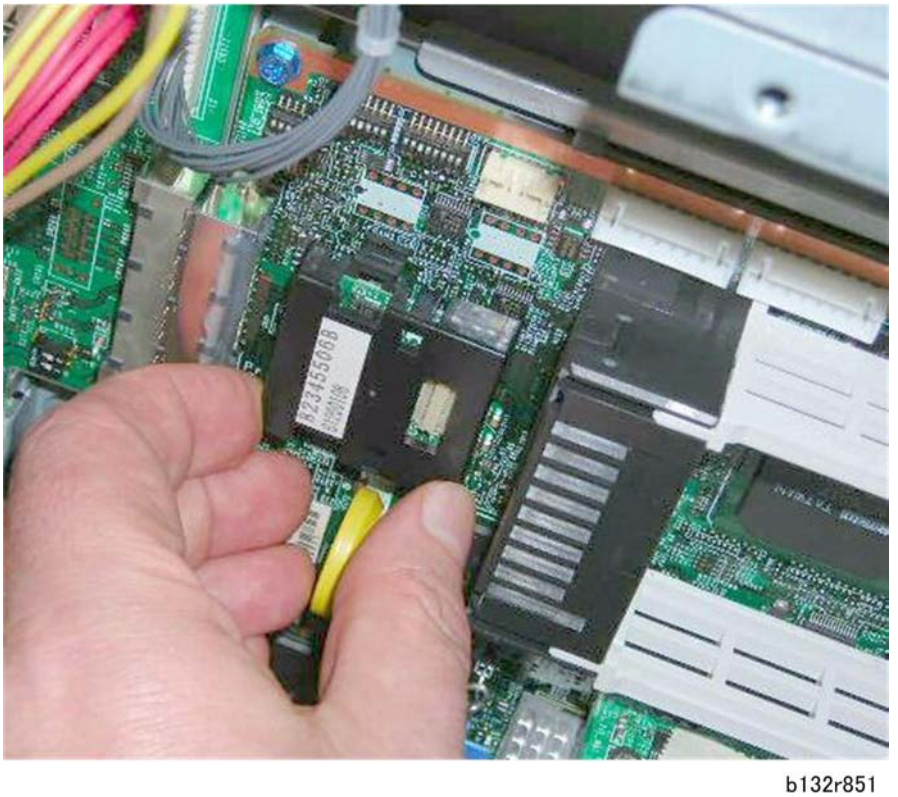
2. Turn the copier main power switch off.
3. Insert an SD card in Slot 1 (lower slot).
4. Execute SP5824 to upload the data to the SD card.

   Important

   - **The following items cannot be uploaded from NVRAM to the SD card: Total counter values, the C/O, P/O counter values, the Duplexing, A3/DLT/Over 420 mm counter values, stapler counter values, scanner counter values, and Engine SP settings.**

5. Switch the machine off and disconnect the power cord.

Replace NVRAM



b132r851

1. Remove the old NVRAM.
2. Attach the new NVRAM.

Download NVRAM Data from SD Card

1. Turn the copier main power switch off.
2. Put the SD card with the NVRAM data into Slot 1 (lower slot).
3. Open the front door of the copier.
4. Turn the copier main power switch on.

   If the NVRAM is new, SC195 (Machine Serial Number Error) may appear. If this occurs:

   - Enter the SP mode and do SP5801 001 to reset the memory to the defaults (All).
   - Switch the machine off/on and start from Step 1.

   Important

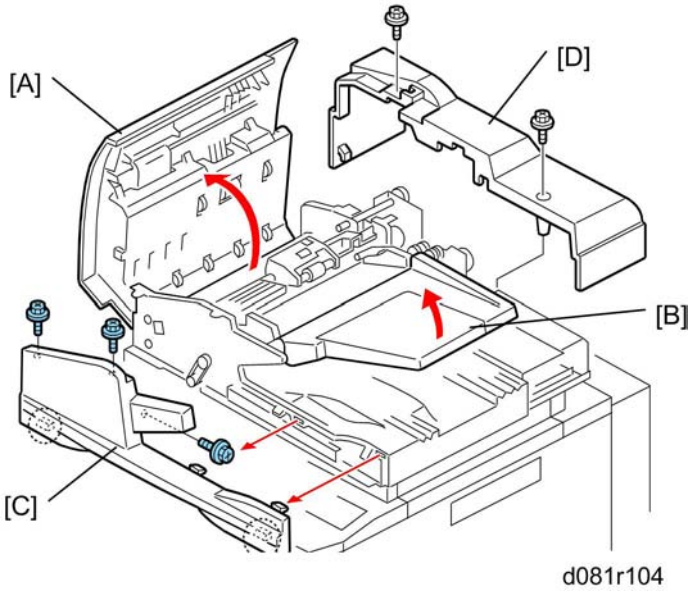
   - **If SC195 occurs, the serial number must be input. You must contact your technical supervisor.**
5. Execute SP5825 to download the data uploaded from the old NVRAM.
6. Switch the machine off and remove the SD card.
7. Switch the machine on, then do SP5990-1 to print another SMC report.
8. Compare this new SMC report with the report you printed in Step 1. If any of the SP settings are different, enter the SP settings of the first report.
9. Execute SP5907 and enter the brand and model name of the machine for Windows Plug & Play capability.

   Important

   - **If the client is using any VM card applications, such as App2 Me, you must do the procedure to re-start these VM applications. (☛ p.305 "Before Removing and Re-installing the VM Card")**

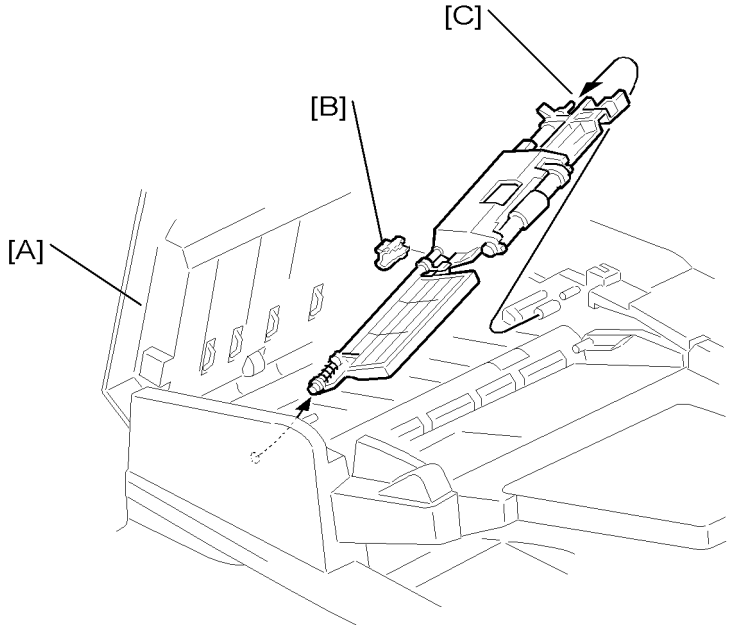
ADF

ADF Covers



1. Raise:
   [A] Feed cover
   [B] Original tray
2. Remove:
   [C] Front cover (x 3)
   [D] Rear cover (x 2)

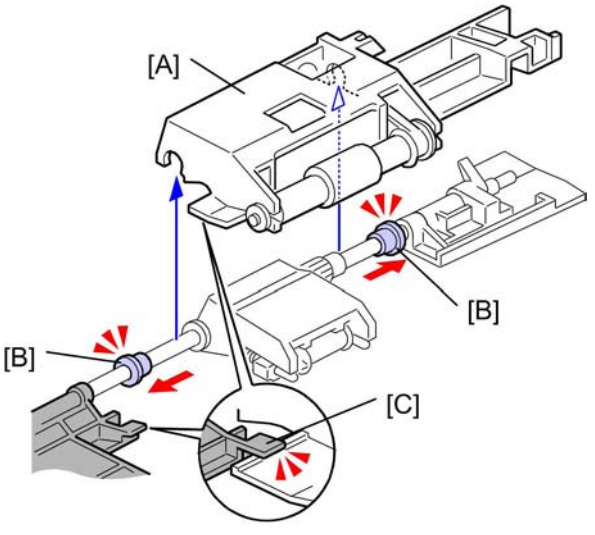
Feed Unit



b246r867

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

Pick-Up Roller and Feed Belt



d081r106

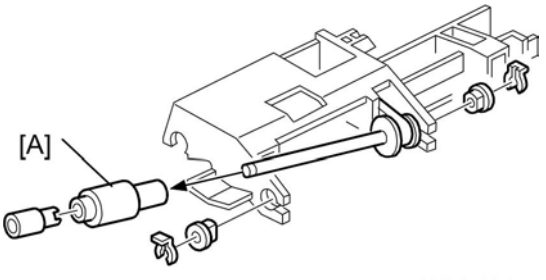
1. Remove the feed unit (☛ p.469).
2. Remove:

   [A] Pick-up roller unit

   [B] Bushings (x2)

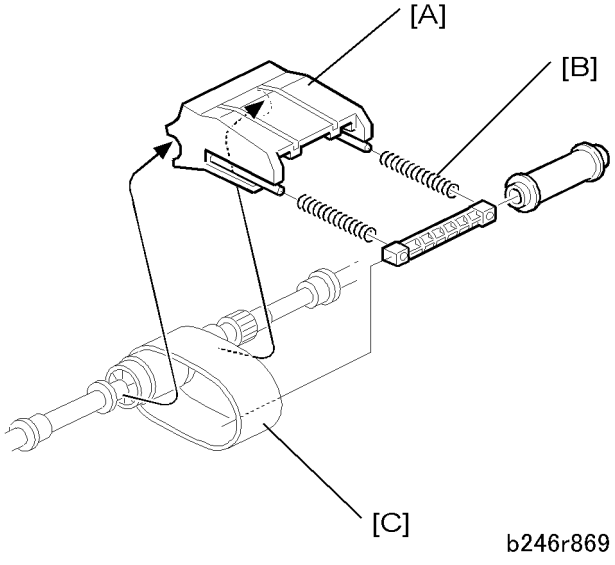
   Note

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



d081r106a

3. Remove pick-up roller [A]. (x2, Bushing x2)

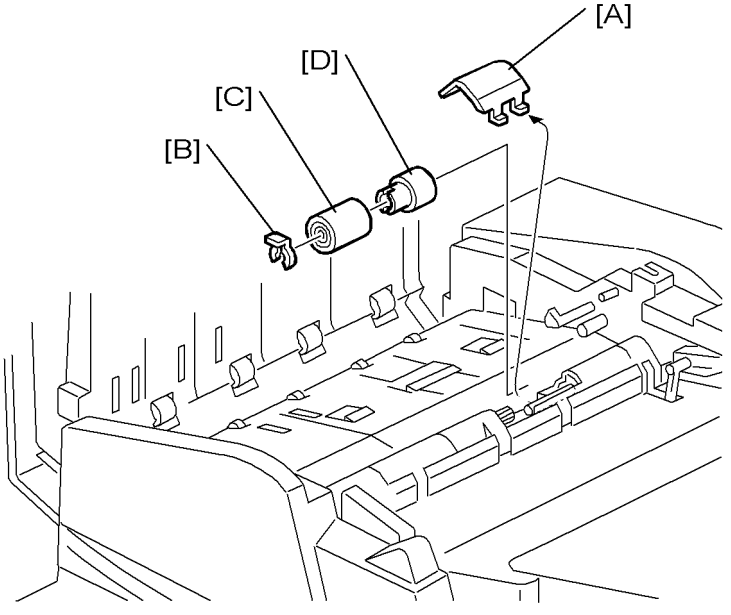


4. Grip the holding feed belt holder [A] on both sides, and then carefully pull it off the bushing. Do not let the springs [B] fall.
5. Remove the feed belt [C].

Note

- When re-assembling, set the pick-up roller springs first.

Separation Roller



b246r870

1. Open the feed cover.
2. Remove the feed unit (☛ p.469).
3. Remove:

   [A] Separation roller cover. Use the tip of a screwdriver to push up the cover.

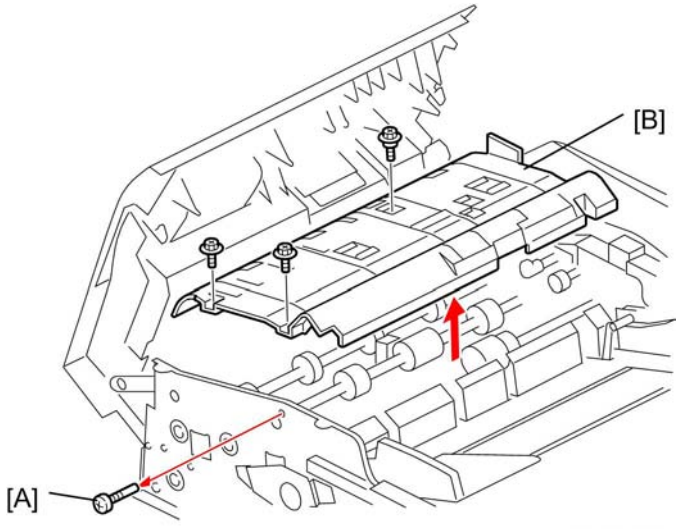
   [B] Clip (x 1)

   [C] Separation roller

   [D] Torque limiter clutch

Registration Sensor

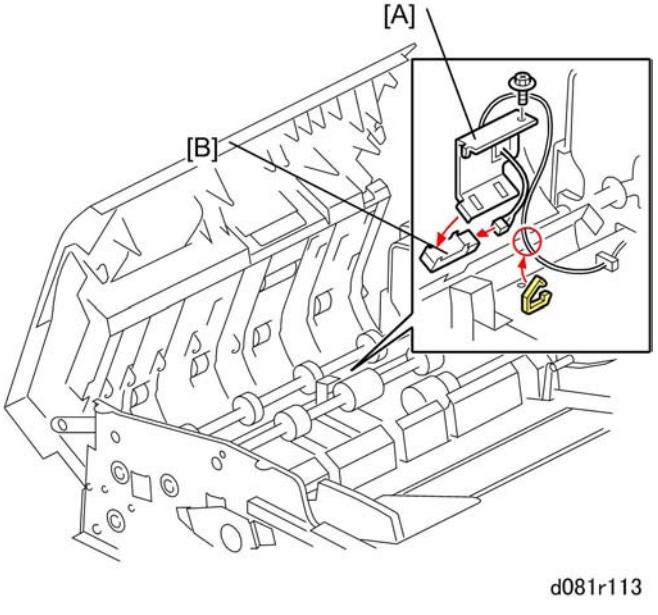
1. Open the feed cover.
2. Remove the feed unit (☛ p.469).



3. Remove:

   [A] Pivot screw (x1)

   [B] Guide plate [A] (x 3)

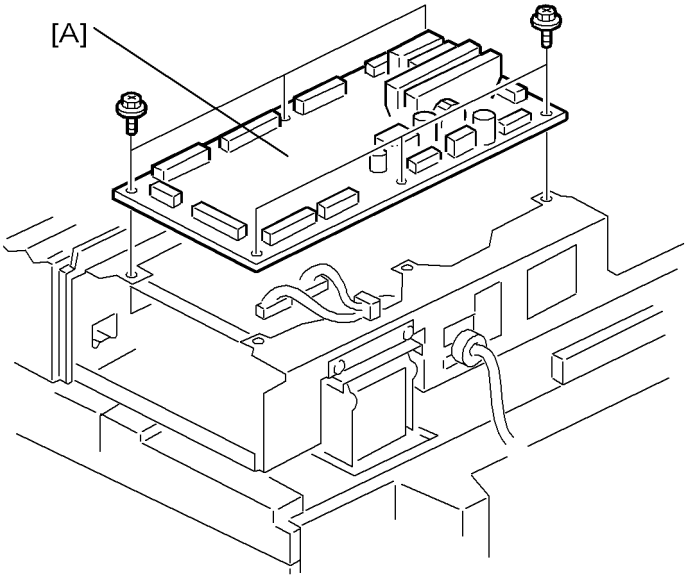


4. Remove:

   [A] Registration sensor bracket (x 1, x1)

   [B] Registration sensor (x 1)

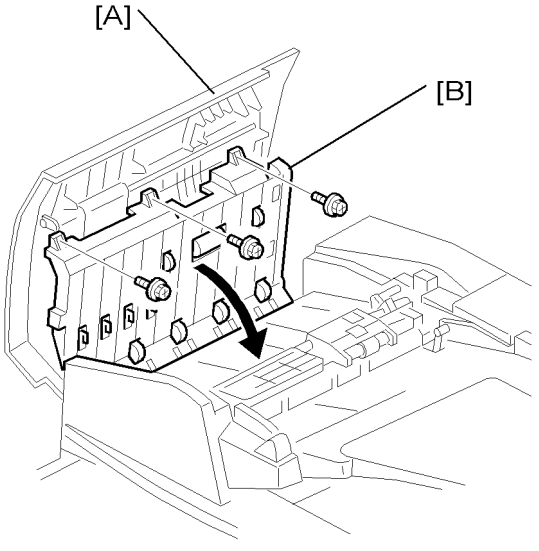
ADF Control Board



b246r873

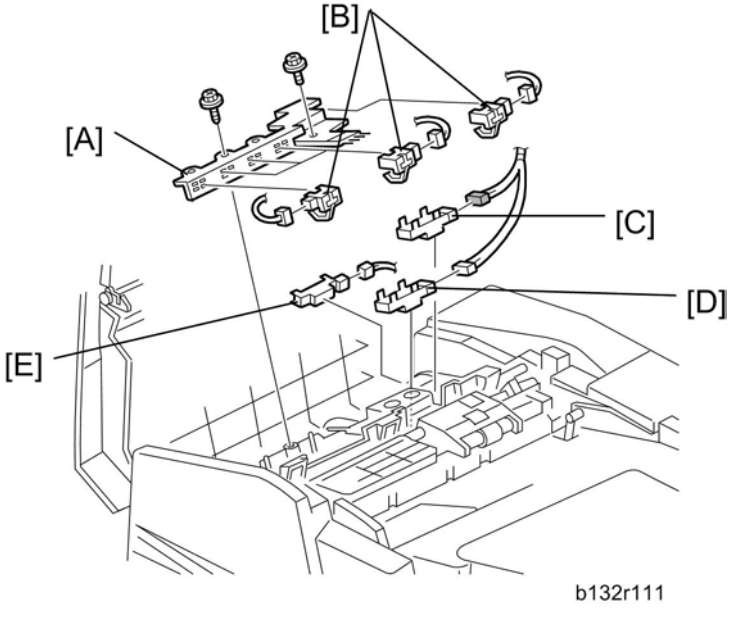
1. Remove ADF rear cover (☛ p.468 "ADF Covers").
2. Remove: ADF board [A] (x 4, x all)

Original Width, Interval, Separation, Skew Correction Sensors



b246r874

1. Open the feed cover [A].
2. Remove guide plate [B] (x 3)



b132r111

3. Remove:

   [A] Width sensor guide plate (x 2)

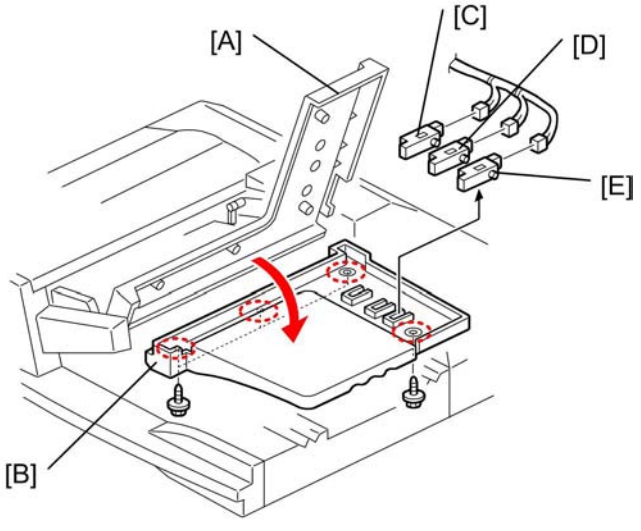
[B] Original width sensors (x 5, x 5)

[C] Separation sensor (x 1)

[D] Skew correction sensor (x 1)

[E] Interval sensor (x 1)

Original Length Sensors



d081r109

1. Open the original tray [A].
1. Remove:

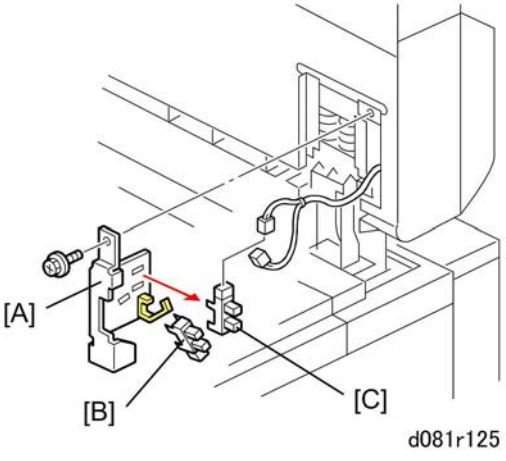
   [B] Lower cover (x 4)

   [C] Original length sensor 1 – B5 (x 1)

   [D] Original length sensor 2 – A4 (x 1)

   [E] Original length sensor 3 – LG (x 1)

ADF Position and APS Sensors



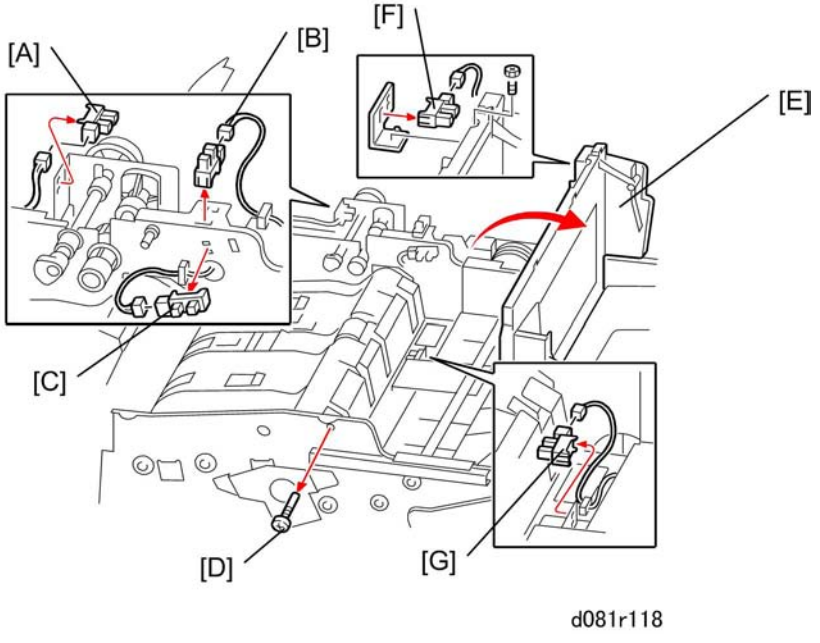
1. Open the ADF.
1. Remove ADF rear cover (☛ p.468 "ADF Covers").
2. Remove:

   [A] Bracket (x 1)

   [B] ADF position sensor (x 1, x2)

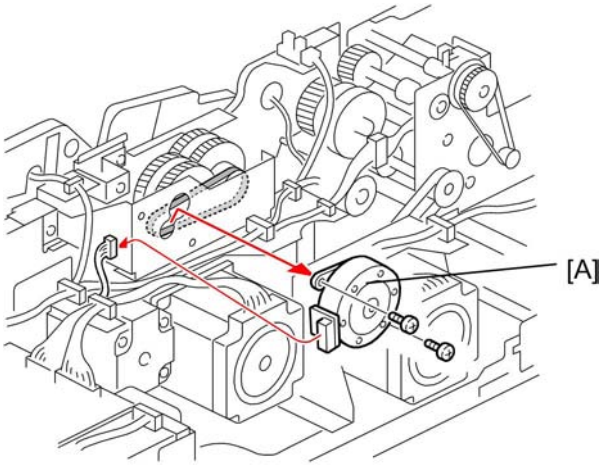
   [C] APS sensor (x 1)

Other ADF Sensors



1. Open the feed cover.
1. Remove rear cover (☛ p.468 "ADF Covers").
   [A] Original set sensor (x 1)
   [B] Pick-up roller HP sensor (x 1)
   [C] Feed cover sensor (x 1)
2. Remove front cover (☛ p.468 "ADF Covers").
3. Remove pivot screw [D] (x 1)
4. Raise original tray [E].
5. Remove:
   [F] Bottom plate HP sensor (x1, x1)
   [G] Bottom plate position sensor (x1)

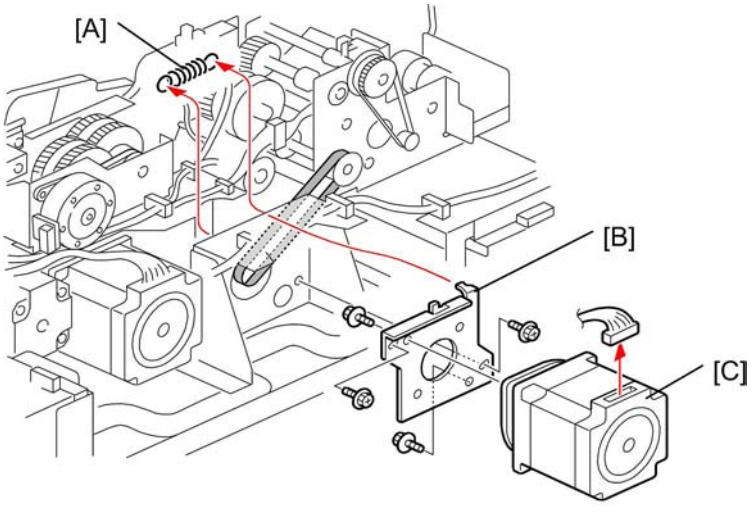
Bottom Plate Lift Motor



d081r121

1. Open the feed cover.
2. Remove rear cover (☛ p.468 "ADF Covers").
3. Remove bottom plate lift motor [A] (x 2, x 1, timing belt x 1)

Feed Motor



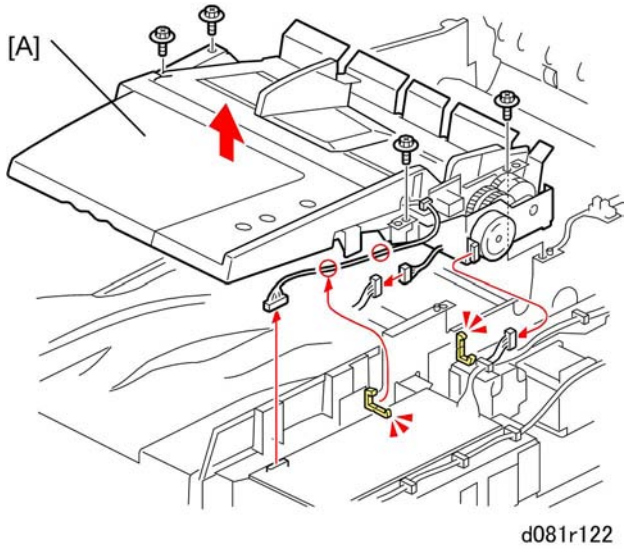
d081r119

1. Rear cover (☛ p.468 "ADF Covers").
1. Remove spring [A].

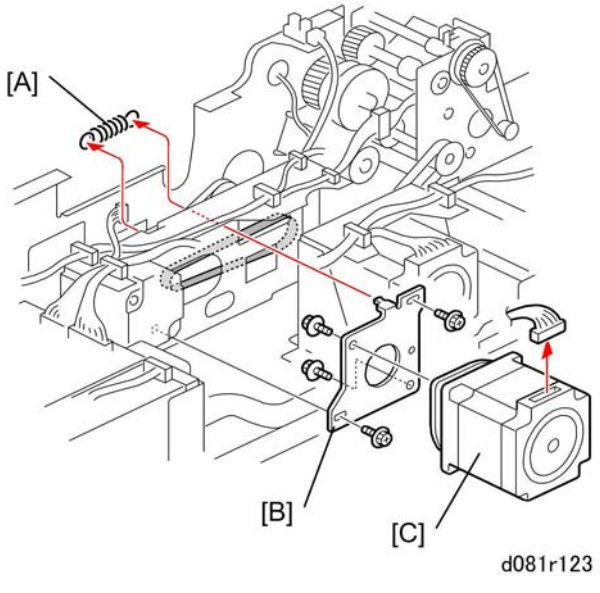
2. Remove feed motor bracket [B] (x 2, x 1, belt x 1)
3. Remove feed motor [C] (x 2)

Transport Motor

1. Open the feed cover.
1. Remove the front and rear covers (☛ p.468 "ADF Covers").



2. Remove tray unit [A] (x4, x2, x 3).



3. Remove:

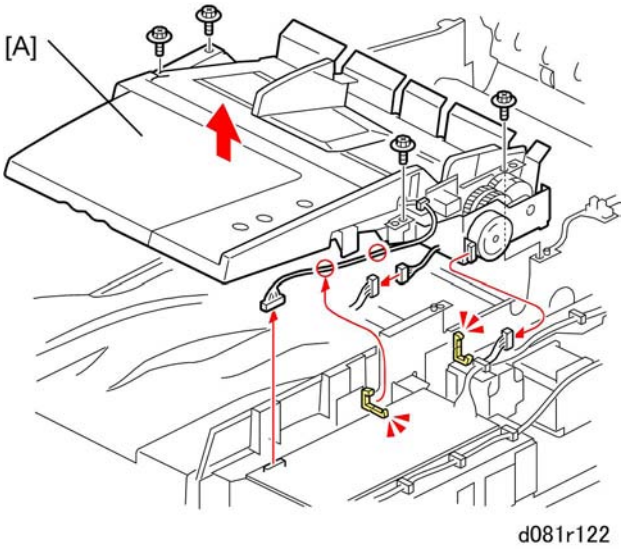
   [A] Spring [A]

   [B] Transport motor bracket [B] (x 2, x 1, Timing belt x1)

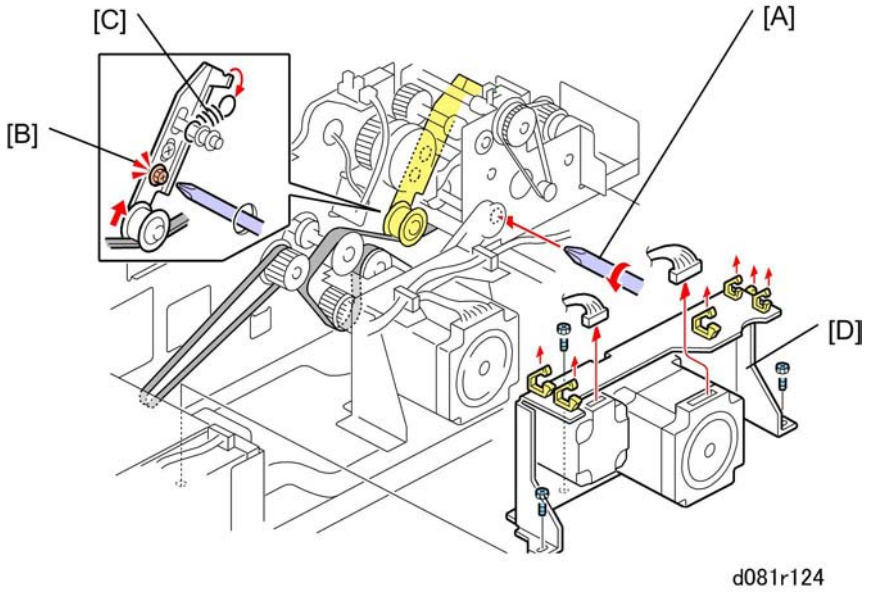
   [C] Transport motor [C] (x 2)

Exit Motor

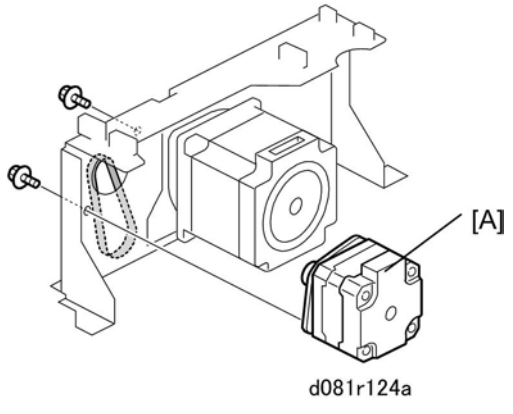
1. Open the feed cover.
1. Remove the front and rear covers (p.468 "ADF Covers").



2. Remove tray unit [A] (x4, x2, x 3).

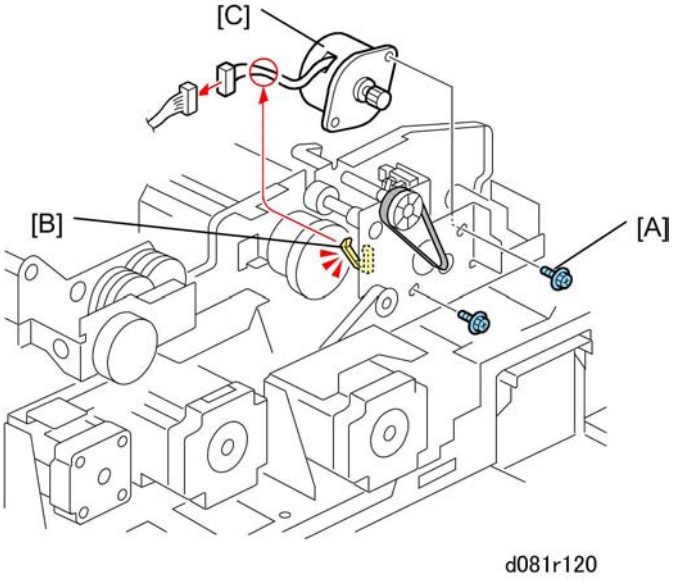


3. Insert a screw driver through the cutout [A].
4. Loosen screw [B] (do not remove) to release tension on the belt.
5. Remove spring [C].
6. Remove motor bracket [D] (x5, x2, x3).



7. Remove exit motor [A] (x2, Timing belt x1).

Pick-Up Roller Motor



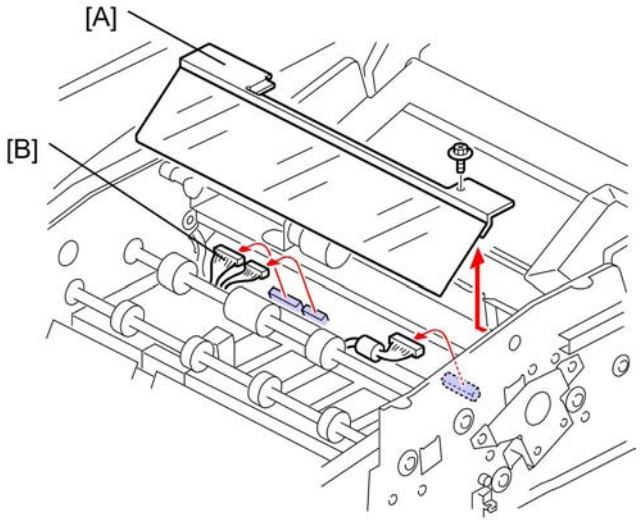
1. Open the feed cover.
2. Remove screws [A] (x2).
3. Open clamp [B] (x1).
4. Remove pick-up roller [C] (x1).

CIS Unit

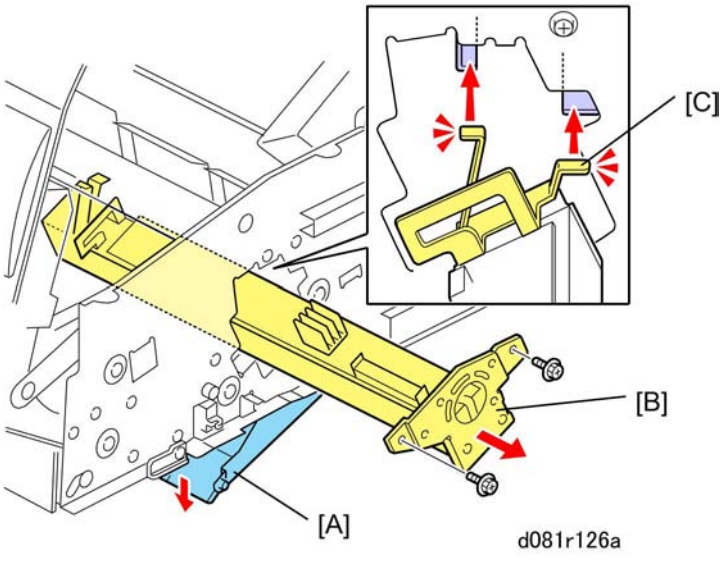
⚠WARNING

- Turn off the main power switch and unplug the machine before performing this procedure.

1. Open the feed cover.
1. Remove:
    - Rear and front covers (☛ p.468 "ADF Covers")
    - Feed unit (☛ p.469)
    - Guide plate (☛ p.472 "Registration Sensor")



2. Remove guide plate mylar [A] (x 1)
3. Disconnect the CIS unit connectors [B] (x 3)



4. Release plate [A].
5. Remove CIS [B].

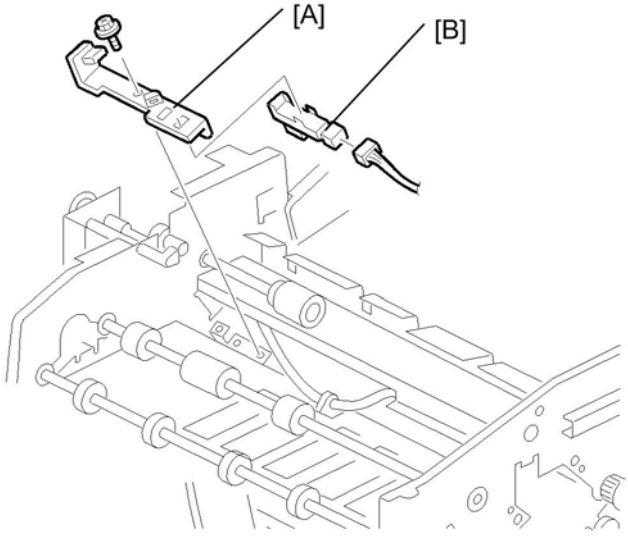
Important

- **Pull out the CIS unit slowly to avoid scratching the glass.**

Re-installation

Set the arms [C] of the CIS on the rails and insert it slowly.

ADF Exit Sensor



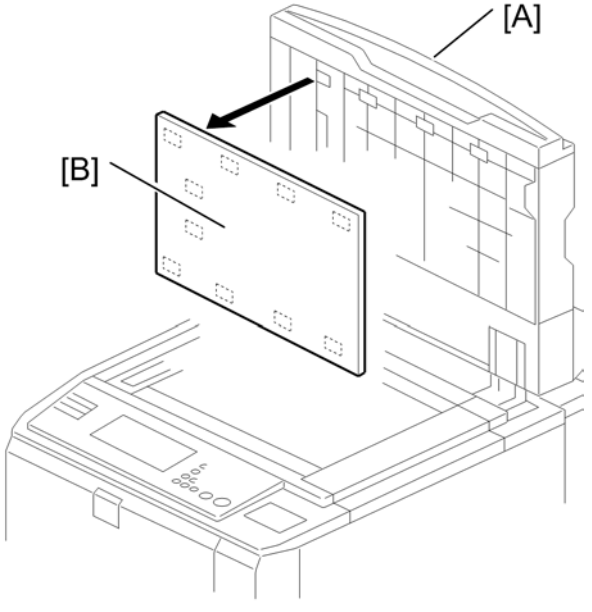
b246r886

1. Remove the CIS unit (☛ p.483).
2. Remove:

   [A] Exit sensor bracket (x 1)

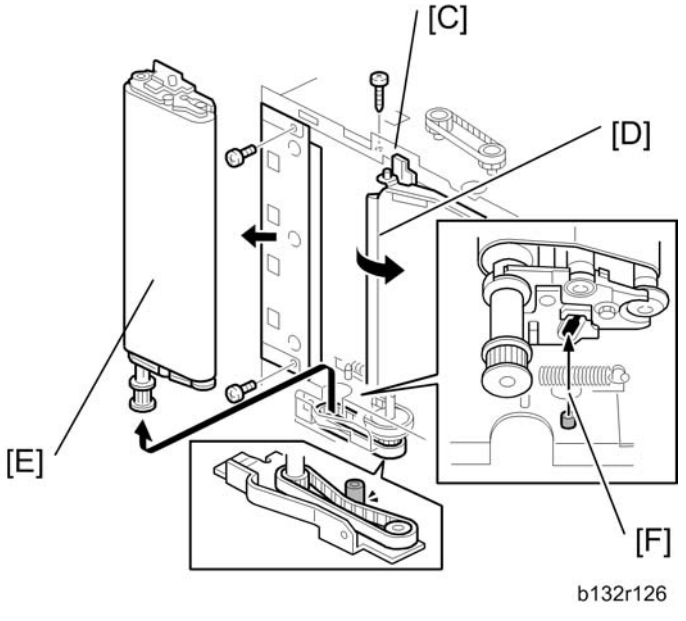
   [B] Exit sensor (x 1)

ADF Transport Belt Assembly



B132R102

1. Raise the ADF [A] to the vertical position.
2. Pull off the white cover [B] (Velcro fasteners)



b132r126

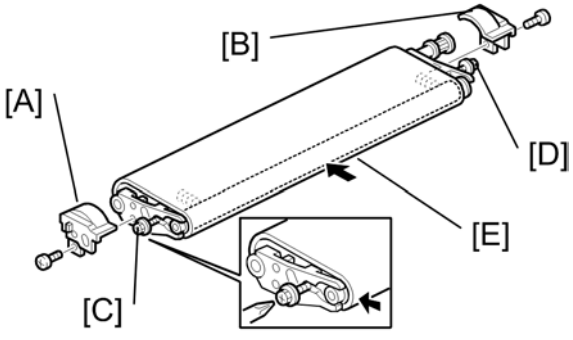
3. Release the stopper pin [C] of the transport guide [D].

4. Remove the transport belt unit [E] (Pin screw x1, Timing belt x1)

Reinstallation

- Attach the timing belt as shown, then insert the pin screw [F] as shown.

Removing the Belt

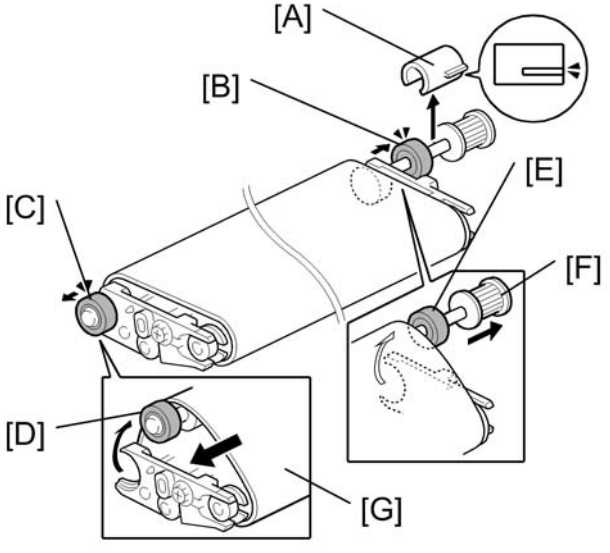


b132r127

1. Remove the front plastic cover [A] (x1)
2. Remove the rear plastic cover [B] (x1)
3. Loosen front lock screw [C]. Do not remove.
4. Loosen rear lock screw [D]. Do not remove. This releases the spring-loaded tension on the belt.
5. Grip the roller in the center [E], then squeeze the belt to bring the rollers together.
6. While squeezing the belt and rollers together in the center, tighten screws [C] and [D]. This compresses the spring and releases tension on the belt.

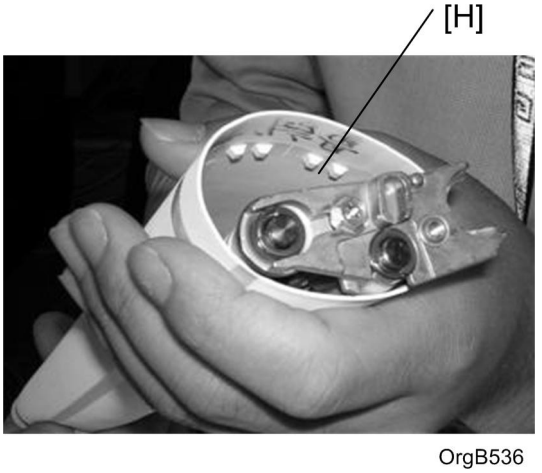
   Important

   - **To avoid stripping the threads of the screws, do not apply excessive torque to these screws!**
7. Release the belt and make sure that the belt is loose and that the rollers do not move.
8. Repeat Steps 5 and 6 if the rollers expand then tighten the belt.



b132r139

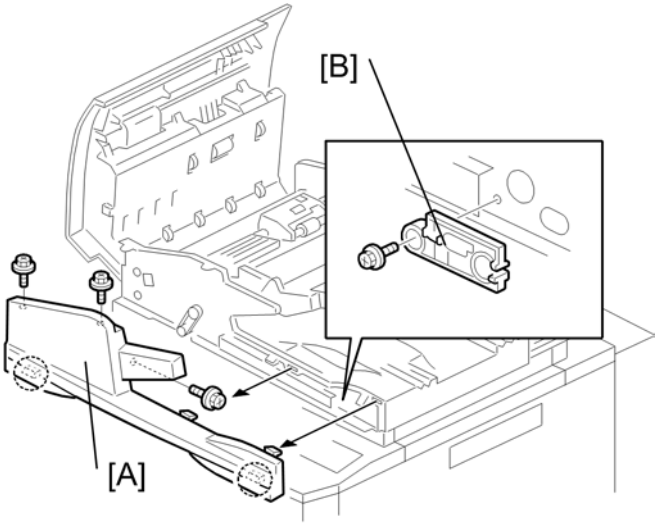
9. Remove the Teflon sleeve [A].
10. Push the rear shaft bearing [B] out of its bracket.
11. Push the front shaft bearing [C] out of its bracket.
12. Push the front end of the shaft [D] over the top of the bracket.
13. Push the rear end of the shaft [E] over the top of the bracket.
14. Pull the shaft [F] out of the belt.
15. Pull the belt [G] toward the front to remove it.
16. Slide the new belt over the assembly.
17. Insert the shaft [F] into the new belt, snap the shaft into its brackets, and push in the shaft bearings.



OrgB536

18. Make sure that studs on the underside of the belt [H] are aligned with the grooves in the Teflon rollers on each end of the shaft below.

Reinstalling the Belt

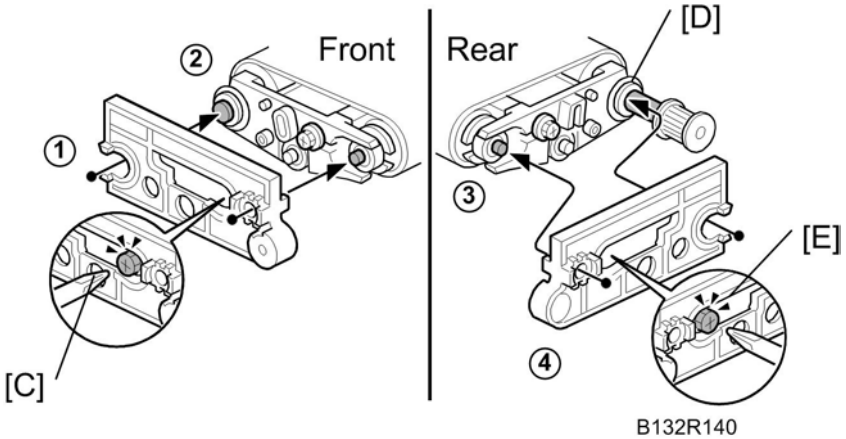


B132R104A

1. Remove the ADF front cover [A]
2. Take out the special tool [B].

Note

- The special tool [B] is attached to the front side plate. It is used to adjust the tension on the belt on both ends of the shaft.



B132R140

3. At the front (see above) fit the special tool onto the front.

4. Slowly loosen the front lock screw [C] until you see the tip of the shaft **(1)** aligned with the hole **(2)**, then tighten the screw.

Important

- **To avoid stripping the threads of the screws, do not apply excessive force.**

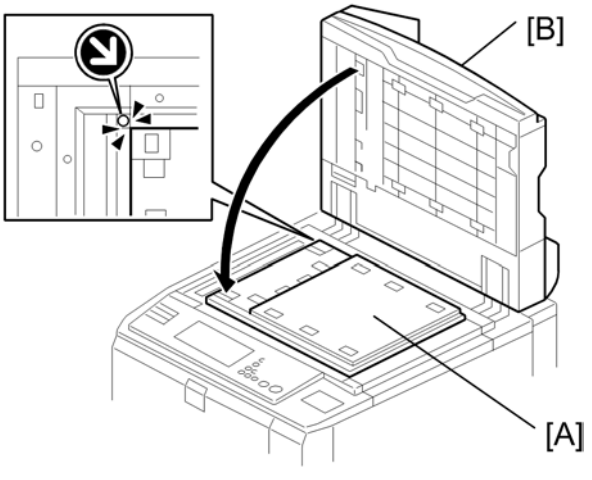
5. Remove the special tool and fit it onto the rear (see above).

Note

- If the Teflon sleeve has been reattached at [D], remove it. Do not reattach the sleeve until after adjusting the belt tension. (The special tool does not fit over the rear end with the Teflon sleeve attached.)

6. Slowly loosen the rear lock screw [E] until you see the tip of the shaft **(3)** aligned with the hole **(4)**, then tighten the screw.
7. Re-attach the Teflon sleeve.
8. Re-attach the front and rear plastic cover.
9. Re-attach the transport belt assembly in the ADF.

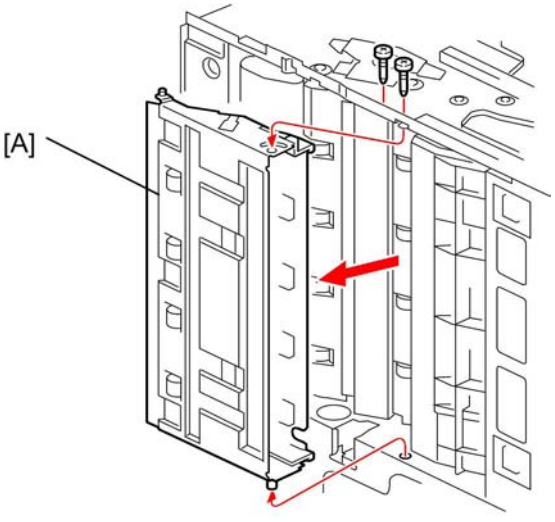
Reattaching the White Cover



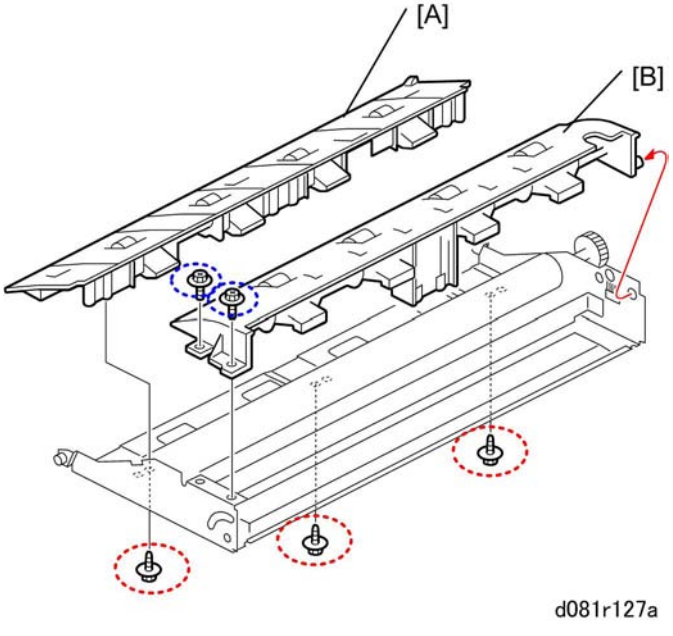
b132r103

1. With its white side down, set the cover [A] on the exposure glass.
2. Make sure the upper left corner is aligned with the arrow at the corner of the exposure glass.
3. Close the ADF [B].

White Roller



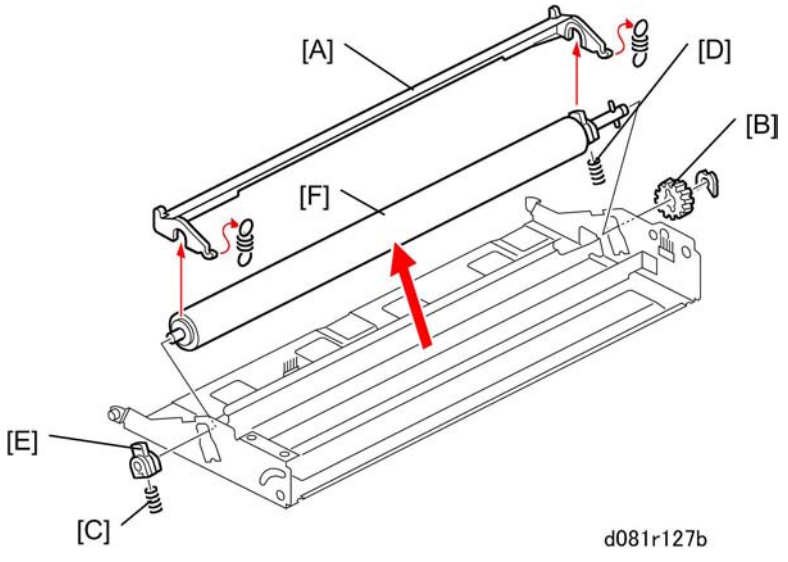
1. Raise the ADF to the vertical position.
2. Remove the white cover (Velcro fasteners).
3. Remove white roller assembly [A] (x2).
4. Lay the white roller assembly on a flat surface with the white roller facing up.



5. Remove:

[A] Left plate (x3)

[B] Right plate (x2)



6. Remove:

[A] Roller bracket [A] (Springs x2)

[B] Rear (x1, Gear x1)

[C] Front (Spring x1)

[D] Rear (Spring x1)

[E] Lock piece

[F] White roller

HDD

The HDD contains two separate hard disks (160 Gigabytes each x2 = 320 Gigabytes).

Important

- **The two disks are always replaced together as a unit. Never attempt to replace a single disk.**

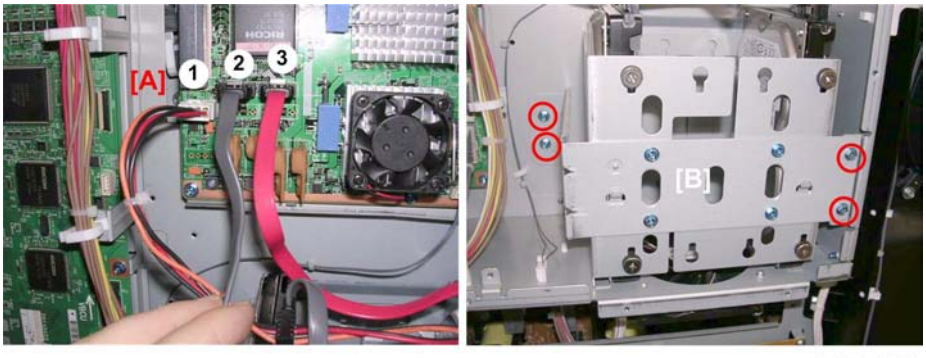
Before Replacing The HDD Unit

Copy the address book data to an SD card from the HDD with **SP5846-051** if possible.

Replacement Procedure

1. Remove:
   - Rear covers
   - Controller box cover
2. Mark the harness connectors before you disconnect them:
   - Gray: Left
   - Red: Right

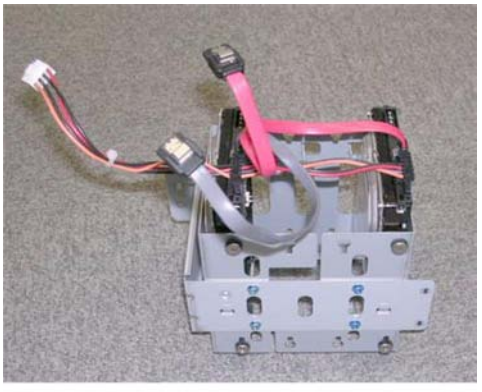
   Important
   - **The connectors fit either socket but they must be connected in the correct order as shown above: Gray: Left, Red: Right**
   - **If the connections are reversed, the machine will issue an error at startup.**
   - **If this occurs just reconnect the HDD correctly and start again. The HDD will not be damaged by such an incorrect startup.**



b132r852

3. Disconnect the HDD unit from the controller board [A] (x3).

4. Remove the HDD unit [B] (x4).



b132r853

5. Install the new HDD unit.
6. Reassemble the machine.
7. Enter the SP mode and do SP5832-1 to format the hard disks.

Note

- Formatting the hard disks is recommended, even if they have already been formatted.

8. Do SP5853-1 to download the fixed stamps from the ROM to the HDD.
9. Cycle the machine power off/on to enable the fixed stamps for use.

After Installing The New HDD Unit

1. Do **SP5832-001** to format the hard disk.
2. Do **SP5853-001** to copy the preset stamp data from the firmware to the hard disk.
3. Do **SP5846-052** to copy back the address book to the hard disk from the SD card to which you have already copied the address book data if possible.
4. Turn the main power switch off/on.

Disposal of HDD Units

- Never remove an HDD unit from the work site without the consent of the client.
- If the customer has any concerns about the security of any information on the HDD, the HDD must remain with the customer for disposal or safe keeping.
- The HDD may contain proprietary or classified (Confidential, Secret) information. Specifically, the HDD contains document server documents and data stored in temporary files created automatically during copy job sorting and jam recovery. Such data is stored on the HDD in a special format so it cannot normally be read but can be recovered with illegal methods.

Reinstallation

- Explain to the customer that the following information stored on the HDD is lost when the HDD is replaced: document server documents, fixed stamps, document server address book
- The address book and document server documents (if needed) must be input again.
- If the customer is using the Data Overwrite Security or the Data Encryption feature, these applications must be installed again. For more, see Section "1. Installation".
- If the customer is using the HDD Encryption Unit, the encryption key must be restored after replacing the HDD unit. For details, see the installation procedure for the HDD Encryption Unit.

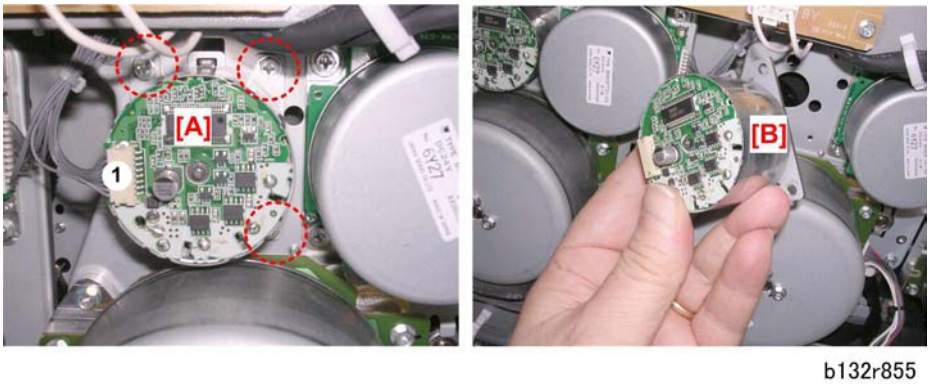
Motors

b132r854

①	Development Motor
②	Drum Cleaning Motor
③	Drum Motor
④	Fusing/Exit Motor

1. Remove the rear covers.
2. Open and lock the controller box.

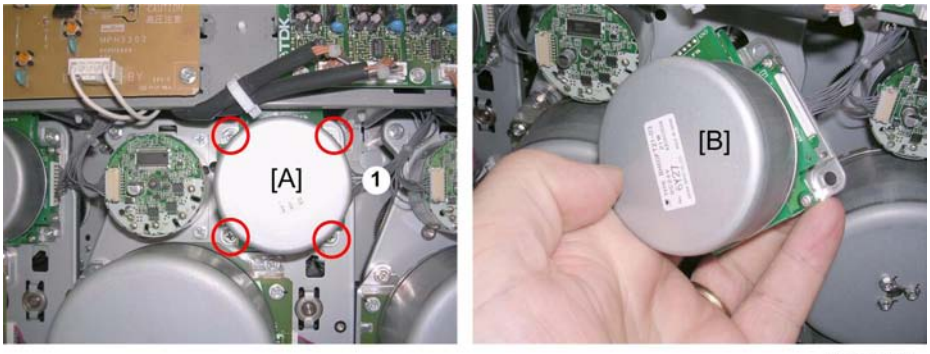
Drum Cleaning Motors



b132r855

1. Disconnect the drum cleaning motor [A] (x1, x3).
2. Remove the drum cleaning motor [B].

Development Motors

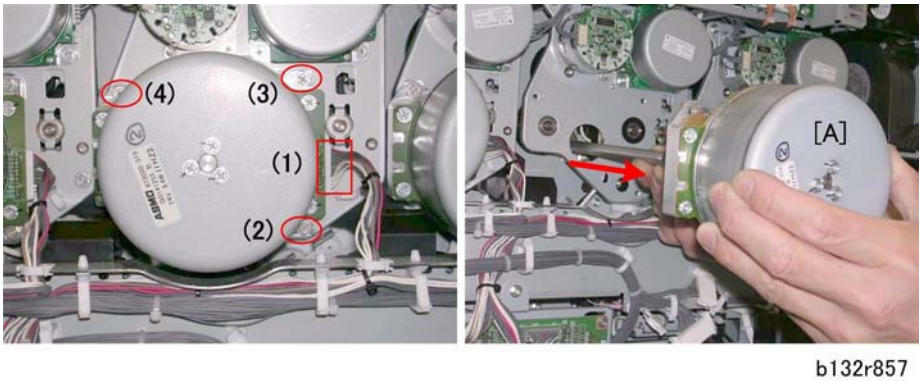


b132r856

1. Disconnect the development motor [A] (x1, x4).
2. Remove the development motor [B].

Drum Motor

Drum Motor Removal



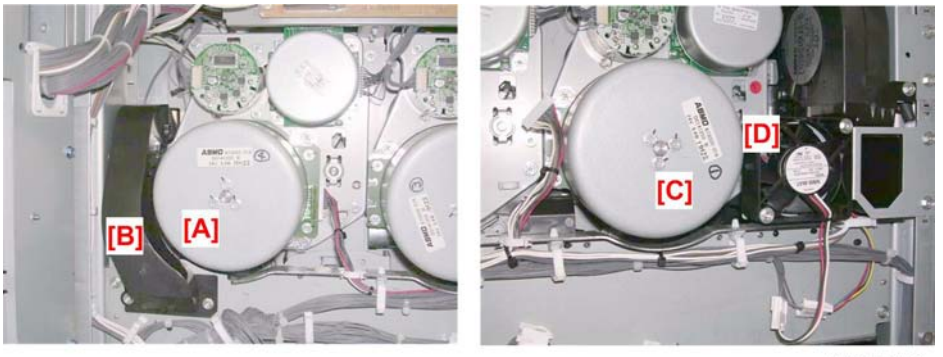
b132r857

1. Remove the Toner Hopper, Faceplate, PCU.
2. Disconnect the connector (1) (x1).
3. Remove screws (2), (3), (4) (x3).
4. Remove the ITB unit.

Note

- Removing the ITB unit is recommended to prevent the tip of the drum motor shaft from scratching the surface of the ITB when the motor is removed or reinstalled.

5. Pull out the motor [A] with its drive shaft.

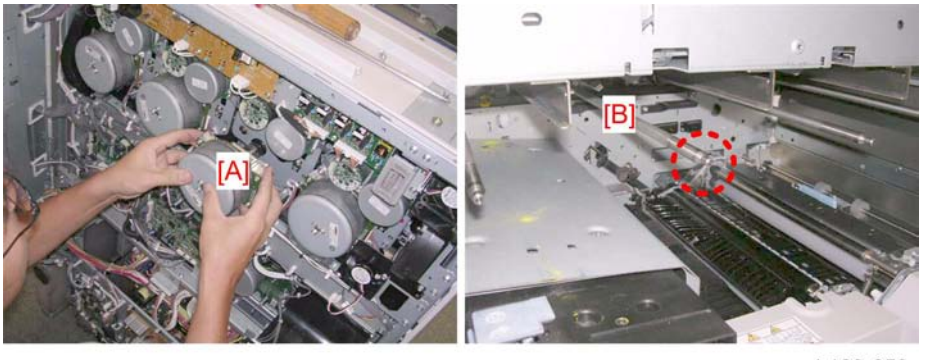


b132r858

Important

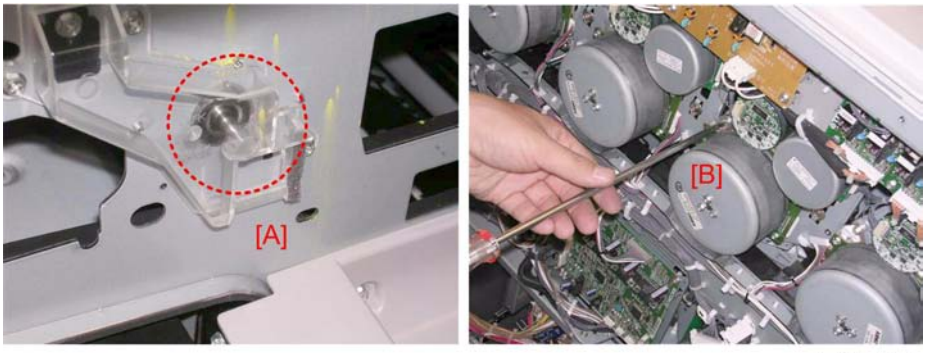
- **In order to remove the K PCU motor [A], you must first loosen the duct [B].**
- **Before removing the Y PCU motor [C], you must first loosen the fan [D].**

Drum Motor Reinstallation



b132r859

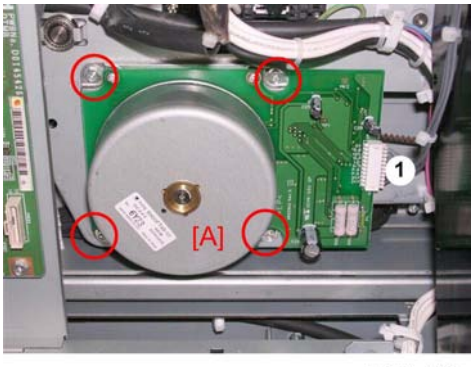
1. Push the shaft into the machine and set the motor [A], so that it is straight.
2. Attach the screws and tighten them only halfway. This leaves the motor shaft loose so it can float slightly.
3. Check the front of the machine and confirm that the shaft [B] is straight.



b132r860

4. At the front, set the faceplate set the shaft [A] as shown above.
5. Fasten the faceplate with its screws (x3).
6. At the back, tighten the screws (x3) of the drum motor [B] and attach its connector (x1).

Fusing/Exit Motor

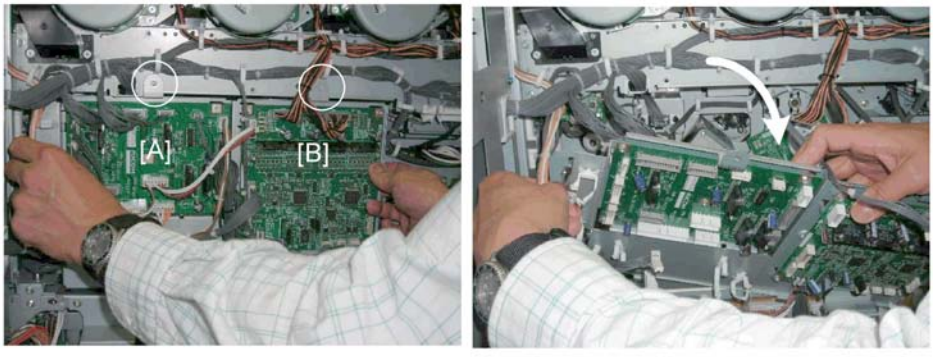


b132r861

1. Remove the fusing/exit motor [A] (x1, x4).

PTR Motor

- Remove the rear covers.
- Open the controller box door.



d014r510

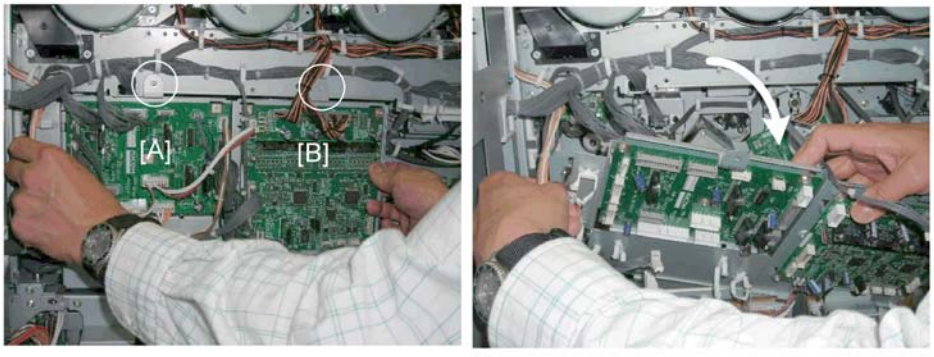
1. Remove the plate that holds the DRB [A] and DTMB [B] (x2, x all)

d014r511

2. Remove the PTR motor [A] (x4, x1).

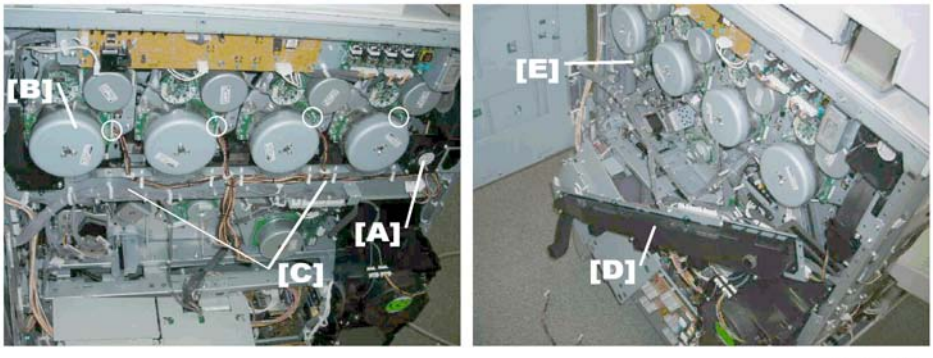
ITB Drive Motor

- Remove the rear covers.
- Open the controller box door.



d014r510

1. Remove the plate that holds the DRB [A] and DTMB [B] (x2, x All)

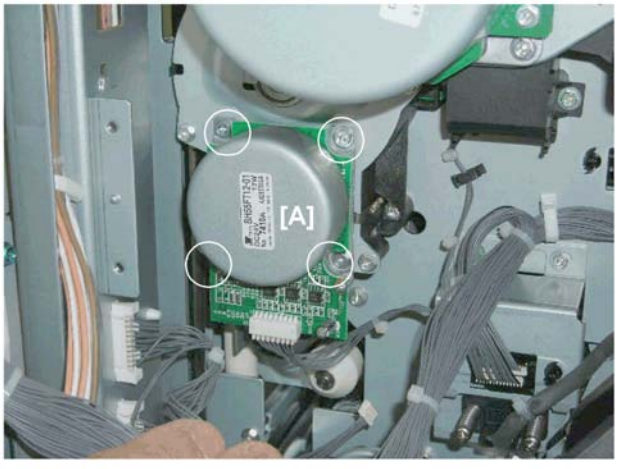


d014r520

1. Remove the fan plate with fan [A] attached (x2).
2. Disconnect the drum motors [B] (x4).
3. Disconnect the cross-brace [C]. (There are two screws on each end of the cross-brace.)

Important

- **Do not release the harnesses that are permanently locked. Release only enough harnesses so you can pull the cross-brace [D] away from the machine so that you can see the ITB motor [E].**



d014r521

4. Remove the ITB drive motor [A] (x4, x1).

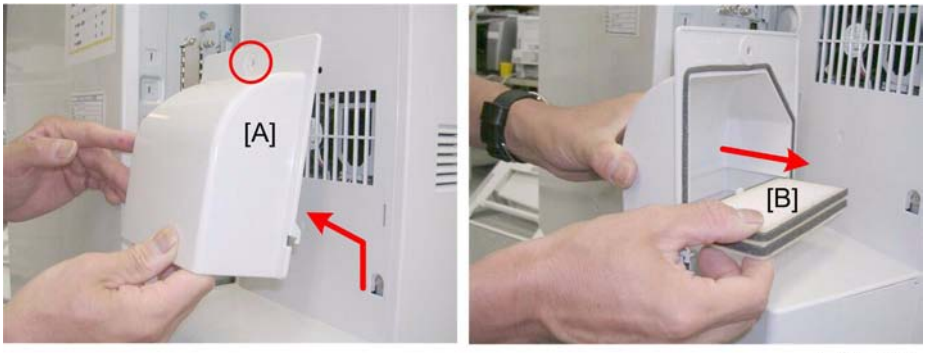
Air Filters and Ozone Filters

b132r862

①	Upper Filter Box
②	Middle Filter Box
③	Lower Filter Box

This machine has three filter boxes on the left rear corner. These boxes contain air filters and one ozone filter each.

Upper Filter Box



b132r863

1. Remove:

   [A] Upper filter box cover (x1)

   [B] Air filters

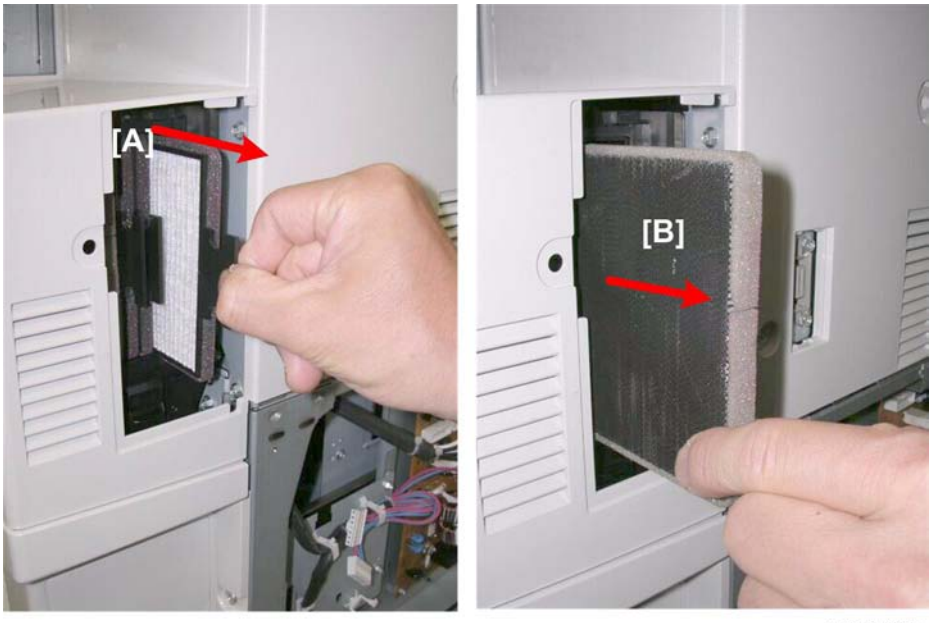
Middle Filter Box

b132r864

1. Remove:

   [A] Middle filter box cover (x1)

   [B] Inner cover. Depress at (1) then pull out (2).



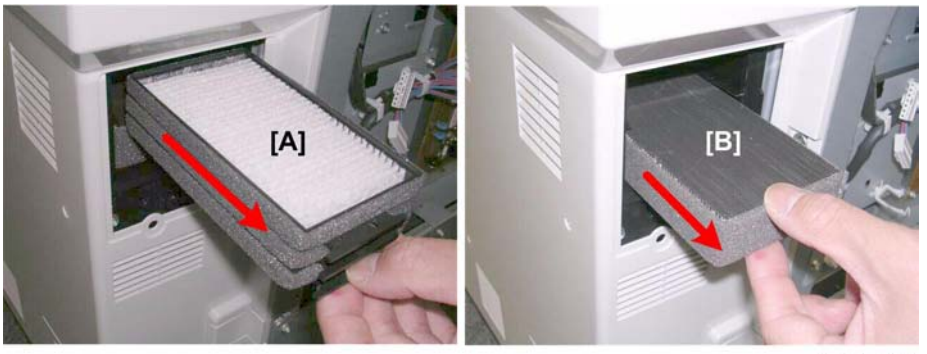
b132r865

2. Remove:
   [A] Air filters
   [B] Ozone filter

Lower Filter Box

b132r866

1. Remove:
   [A] Lower filter box cover (x1)
   [B] Inner cover. Depress at (1) then remove.



b132r867

2. Remove:

   [A] Air filters

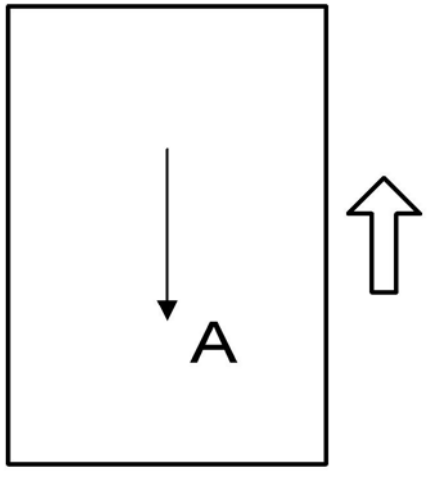
   [B] Ozone filter

Image Adjustments

Scanning

Before doing the following scanner adjustments check the printing registration/side-to-side adjustment and the blank margin adjustment. Use a C4 Test Chart to perform the following adjustments.

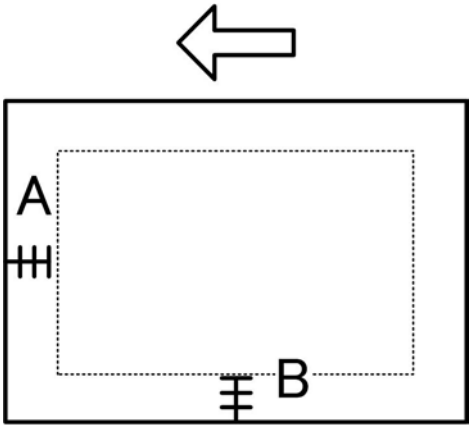
Scanner sub-scan magnification



d081962

1. Place the test chart on the exposure glass and make a copy.
2. Check the magnification ratio. Use SP4008 (Sub Scan Mag) to adjust if necessary. Standard: ±1.0%.

Scanner leading edge and side-to-side registration



d081r965

1. Place the C4 Test Chart on the exposure glass and make a copy.
2. Check the leading edge and side-to-side registration.
3. Adjust with the following SP modes if necessary. Standard: 0 ±2mm.

	SP mode
Sub Scan Reg	SP4010 001
Main Scan Reg	SP4011 001

Main scan dot position correction

Adjust the printer registration before adjusting the scanner.

1. Enter the SP mode.
2. Open SP4010 and SP4011.
3. Make sure that each value is equal to the factory default.
4. Touch [COPY Window] and copy the C-4 Test Chart in the full-color photo mode.

   Important

   - **Be sure to copy in the photo mode. Color displacement cannot be checked correctly in text mode.**
5. Use a loupe to check the color vertical lines.

   If they exactly overwrite the black line at the edges of the copy, exit the SP mode. No adjustment is necessary

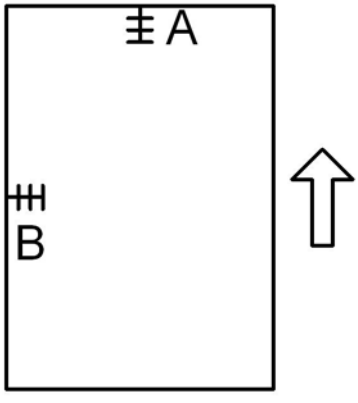
   -or-

If the color lines significantly extend beyond the black lines, go to the next step.

6. Touch [SP Mode] to return to the SP mode.
7. Do SP4932. (Main Scan Dot Adj) Compare the current values against the table.

SP4932 001	R:Left
SP4932 002	R:Right
SP4932 003	B:Left
SP4932 004	B:Right

ADF



d081r965

ADF side-to-side and leading edge registration

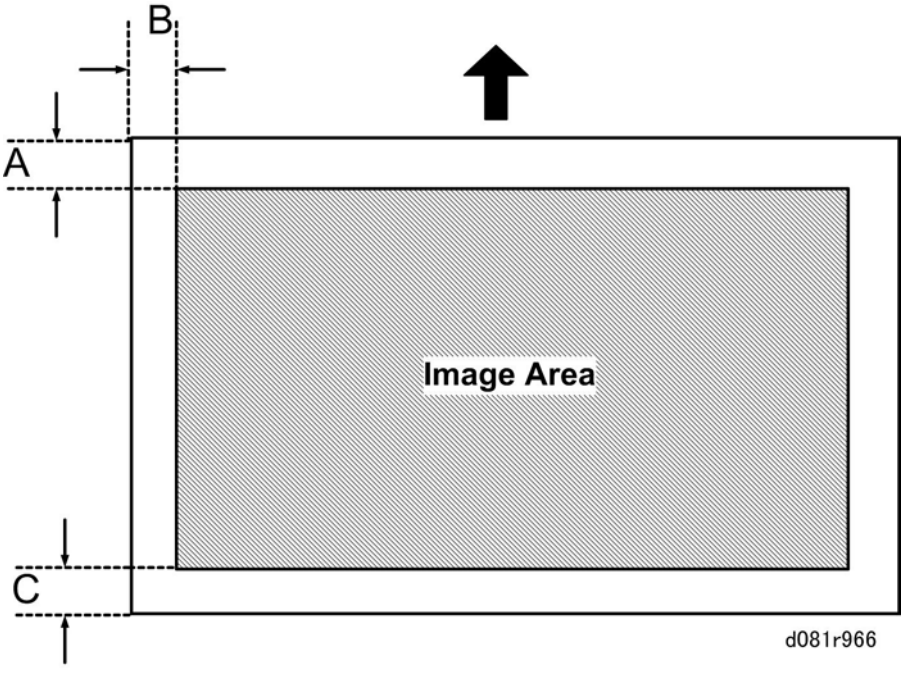
1. Make a copy of the C4 Test Chart on A3/DLT paper.
2. Check the registration, and adjust using the following SP modes if necessary.

SP Code	What It Does	Adjustment Range
6006 001	ADF Main Reg Adj: Front	± 3.0 mm
6006-002	ADF Main Reg Adj: Rear	± 3.0 mm
6006 003	ADF Sub Reg Adj: Front	± 5 mm
6006-004	ADF Sub Reg Adj: Rear	± 5 mm

SP Code	What It Does	Adjustment Range
6006 005	ADF Buckle Adj: Amount 1	± 3 mm
6006 006	ADF Buckle Adj: Amount 2	± 5 mm
6006-007	ADF TEdge Erase Margin: Front	+3 to -2 mm
6006 008	ADF TEdge Erase Margin: Rear	± 5 mm

Registration

Image Area



A = B = C = 4.2 mm (1.6″)

The image area must be configured correctly. Adjust the registration within the adjustment standard range as described 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. The side-to-side registration for the LCT can be adjusted with SP1003 007.

Adjustment Standards

- Leading edge (sub-scan direction): 3 ±0 mm
- Side to side (main-scan direction): 2 ±0 mm

Paper Registration Standard

The registration in both main- and sub-scan directions may fluctuate within the following tolerance.

1st side

- Sub-scan direction:0 ±1.5 mm
- Main-scan direction:0 ±2 mm

2nd side in duplex

- Sub-scan direction:0 ±3 mm
- Main-scan direction:0 ±4 mm

Adjustment Procedure

1. Enter SP mode and open SP2109-2.
2. Select Pattern #10 (Trim Area), and touch [OK].
3. Print several printing patterns and average the measured values of the leading edge and side-to-side registration values.
4. Do the leading edge registration adjustment.
    - Check the leading edge registration and adjust it with SP1001.
    - Select the adjustment conditions (paper type and process line speed).
    - Input the value and press the [#] key.
    - Check the leading edge adjustment by printing Pattern 10 with SP2109.
5. Do the side to side registration adjustment.
    - Check the side-to-side registration and adjust it with SP1003.
    - Select the adjustment conditions for the paper feed station.
    - Input the value and press the [#] key.
    - Check the side-to-side adjustment by printing Pattern 10 with SP2109-2.

Color Registration

Forced MUSIC Adjustment

The line position adjustment optimizes the quality of color prints. You can do forced MUSIC adjustment with SP 2111 001 (Force Tnr Pos):

We recommend that you do the forced MUSIC adjustment at the customer location immediately after installation, or after servicing or adjusting any parts or components of the following units:

- Around the drum
- ITB unit (especially after belt replacement)
- Paper Transfer Roller
- Laser unit

Adjustment of Line Speed for Thick Paper

Adjust the line speed of the fusing unit (the speed of the K development motor) when:

- Color shift corrected with the line position adjustment.
- Color registration shifts more at the trailing edge than at the leading edge.

Color Registration Test and Error Adjustment

Before you start this procedure, make sure that the exposure glass is clean. Also, make sure that the ITB is installed correctly, especially at the edge.

1. Load A3/DLT paper and select full-color (FC) mode.
2. Start SP2109 002 and select Pattern #1 (1: Grid pattern), and then touch "OK".
3. Push the "Copy Window" button. Then select A3/DLT paper, and push the "Start" button to print the pattern. Make sure that "Full Color Mode" is selected before you push the Start button.
4. Look at the printout. The horizontal and vertical lines must show no color (must be black). In that condition, the K, C, M, and Y images are deposited exactly on top of each other.
5. If there is color on the printout, there is a color registration error, and we must correct the problem. To correct the problem, do the MUSIC process with SP2111 001. This takes about 50 seconds.
6. Do step 2 again.
7. If there are color registration errors, then do the procedure described in the Troubleshooting section "Color Registration Error Adjustments"

Skew Adjustment After Laser Unit Replacement

To Print the Trim Pattern:

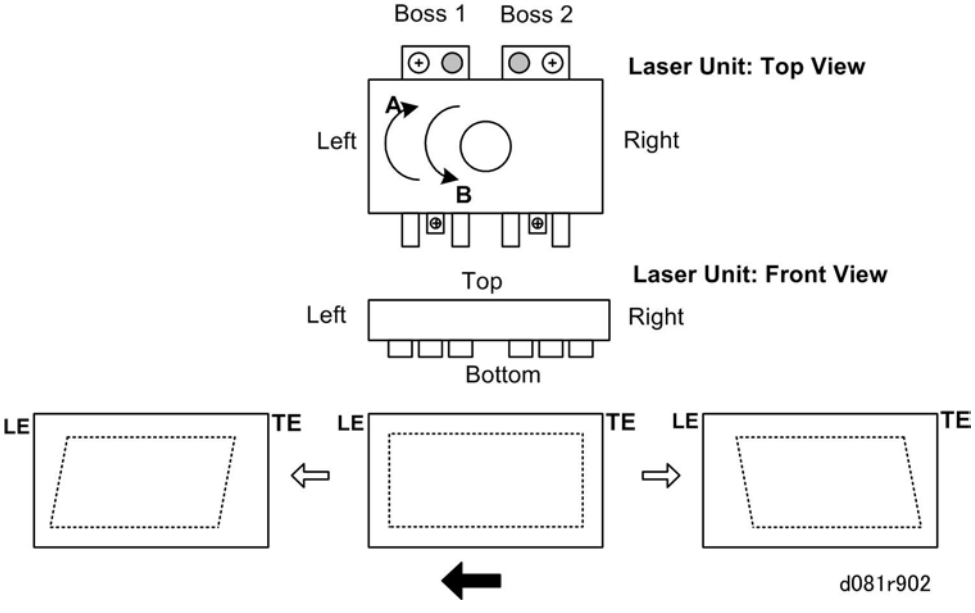
1. Do SP2109 002 (Test Pattern - Select Pattern) and select pattern 10.
2. Touch [Execute] on the display.
3. Touch [Copy Screen] on the display to switch to the normal copier screen.
4. Select the paper size and color then press the [Start] key to print the pattern.

5. Touch [SP Screen].
6. Do SP2109 002 and select pattern 0 and touch the [Execute] button.
7. Check the test pattern to determine whether the image is perpendicular at the corners.

   If the image pattern is correct, no further adjustment is necessary.

   -or-

   If the pattern is not correct (a skewed parallelogram), go to the next step.



To Adjust the Pattern Output:

1. Remove the exposure glass (☛ p.307).
2. Remove the lens cover and lens block (☛ p.308 "Lens Block, Paper Size Sensors").
3. Loosen the screws of the laser unit (1), (2), (3), (4) (x4).
4. Determine the direction of skew in the printed pattern.
5. Refer to the illustration, then shift the LD unit toward the rear (A) or toward the front (B) to adjust the skew.
   - If the skew resembles the left pattern [1], turn the LD unit slightly counter- clockwise in the B direction.
   - If the skew resembles the right pattern [2], turn the LD unit slightly clockwise in the A direction.
   - Boss 1, and Boss 2 provide the reference points for correct alignment.
6. Reassemble the copier and print another trim pattern to confirm that the skew has been corrected.

Printer Gamma Correction

ACC adjustment done at installation is usually sufficient to adjust the color balance for optimum performance.

- Printer gamma correction is required for fine adjustment to meet a customer requirement.
- The printer gamma curve created during ACC can be modified with SP modes.
- The gamma data for highlight, middle, shadow areas, and IDmax can be adjusted. The adjustable range is from 0 to 30 (31 steps).

Copy Mode

KCMY Color Balance Adjustment

The adjustment uses only "Offset" values.

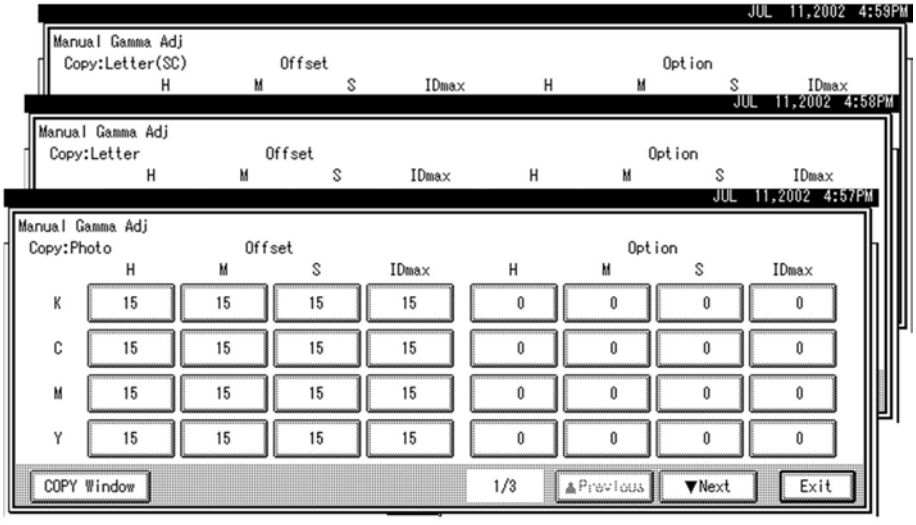
Important

- **Never change "Option" values (default value is 0).**

Highlight (Low ID)	Levels 2 through 5 in the C4 chart 10-level scale
Middle (Middle ID)	Levels 3 through 7 in the C4 chart 10-level scale
Shadow (High ID)	Levels 6 through 9 in the C4 chart 10-level scale
ID max	Level 10 in the C4 chart 10-level scale (affects the entire image density.)
Offset	The higher the number in the range associated with the low ID, middle ID, high ID, and ID max, the greater the density.

There are four adjustable modes. You can access these with SP4918 (Man Gamma Adj:

- Copy: Photo (Photo Mode)
- Copy: Letter (Text Mode Full Color)
- Copy: Letter (SC) (Text Single Color Mode)
- Copy: Photo (SC) (Photo Mode Single Color)



d081r967

Adjustment Procedure

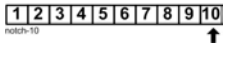
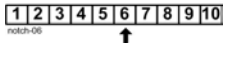
Copy the C-4 chart in mode that you want to adjust.

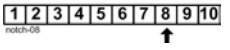
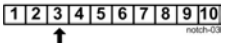
1. Enter the SP mode.
2. Touch"Copy SP."
3. Open SP4918.
4. Adjust the offset values until the copy quality conforms to the standard. (Refer the tables below.)

Important

- **Never change "Option" value (default value is 0).**
- **Always adjust the density in order: ID Max> Middle> Shadow> Highlight.**

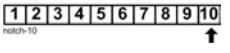
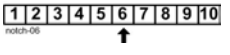
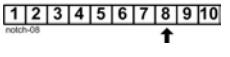
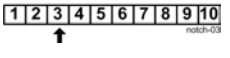
Copy: Photo (Photo Mode Full Color)

Step	Item to Adjust	Level on the C-4 chart
IDMax	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.	
M	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.	

Step	Item to Adjust	Level on the C-4 chart
S	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.	
H	Highlight (Low ID) (K, C, M, and Y) Adjust the offset value so that dirty background is not visible on the copy and the density of level 3 is slightly lighter that of level 3 on the C-4 chart.	

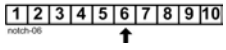
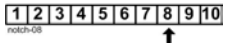
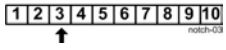
4

Copy: Photo (SC) (Photo Mode Single Color)

Step	Item to Adjust	Level on the C-4 chart
IDMax	ID max: (K) Adjust the offset value so that the density of level 10 matches that of level 10 on the C-4 chart.	
M	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.	
S	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.	
H	Highlight (Low ID) (K) Adjust the offset value so that dirty background is not visible on the copy and the density of level 3 is slightly lighter that of level 3 on the C-4 chart.	

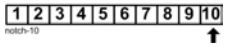
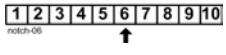
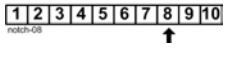
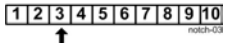
Copy: Letter (SC) (Text Mode Single Color)

Step	Item to Adjust	Level on the C-4 chart (K)
IDMax	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.	

Step	Item to Adjust	Level on the C-4 chart (K)
M	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.	
S	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.	
H	Highlight (Low ID) (K, C, M, and Y) Adjust the offset value so that dirty background is not visible on the copy and the density of level 3 is slightly lighter that of level 3 on the C-4 chart.	

4

Copy: Letter (SC) (Text Single Color Mode)

Step	Item to Adjust	Level on the C-4 chart (K)
IDMax	ID max: (K) Adjust the offset value so that the density of level 10 matches that of level 10 on the C-4 chart.	
M	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.	
S	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.	
H	Highlight (Low ID) (K) Adjust the offset value so that dirty background is not visible on the copy and the density of level 3 is slightly lighter that of level 3 on the C-4 chart.	

After "Shadow" adjustment, if text in the test pattern does not print clearly:

- Check to determine whether the 5 line/mm pattern at each corner is printed clearly.
- If it is not, adjust the offset value of 'shadow' again until the pattern prints clearly.
- Printer Mode

There are eight adjustable modes. Select these modes with in the **Printer SP mode** with SP1102:

*1200 x 1200 Photo (Default)	2400 x 600 Photo
1800 x 600 Photo	600 x 600 Photo
1200 x 1200 Text	2400 x 600 Text
1800 x 600 Text	600 x 600 Text

Printer SP Mode: SP1104

Note: These are Printer SP Mode settings, not System SP Mode Settings.

	K	C	M	Y
Highlight	SP1104 001	SP1104 021	SP1104 041	SP1104 061
Middle	SP1104 002	SP1104 022	SP1104 042	SP1104 062
Shadow	SP1104 003	SP1104 023	SP1104 043	SP1104 063
IDmax	SP1104 004	SP1104 024	SP1104 044	SP1104 064

Adjustment Procedure

1. Do the ACC adjustment for the printer mode.
2. Turn the main power off and on.
3. Enter SP mode.
4. Touch "Printer SP"
5. Select SP1102 (Resolution Settings) and select the print mode that you want to adjust.
6. To review the image quality for these settings, do SP1103 002 (Color Pattern) to print out a color tone control test sheet.
7. Adjust the color density with SP1104 as shown below while comparing the tone control test sheet with the C4 test chart.

Important

- **Always adjust the density in order: ID Max> Middle> Shadow> Highlight.**

Adjustment Reference for Gamma Correction

The following tables show the adjustment reference for gamma correction. The tables show the level of the color scale on the C4 test chart and on the tone control test sheet printed in the printer SP mode. For example, for K at text mode, grade 12 on the tone control test sheet should be the same as grade 7 on the C4 chart.

Normally, it is not necessary to adjust the gamma data as shown in the table since ACC adjusts the gamma curve automatically. The fine-tuning of color balance by gamma data adjustment is necessary only when the results of ACC and Color Calibration do not meet customer requirements.

	C4 test chart			1	2	3	4	5	6	7	8	9	10
K	Test sheet	Photo	600 x 600	-	1	3	5	6	9	10	11	16	-
			1800 x 600	-	1	3	5	6	8	10	11	16	-
			1200 x 1200	-	1	3	4	6	8	10	12	15	16
		Text	600 x 600	-	1	3	5	6	9	10	11	16	-
			1800 x 600	-	1	3	5	6	9	10	12	16	-
			1200 x 1200	-	1	3	5	6	9	11	12	15	16

d081r971

	C4 test chart			1	2	3	4	5	6	7	8	9	10
C	Test sheet	Photo	600 x 600	-	1	3	5	6	9	10	12	13	14
			1800 x 600	-	1	3	5	6	8	10	11	12	13
			1200 x 1200	-	1	3	4	5	8	10	11	12	13
		Text	600 x 600	-	1	3	4	5	8	10	11	12	13
			1800 x 600	-	1	3	5	6	9	10	11	12	14
			1200 x 1200	-	1	3	4	5	9	10	11	12	13

d081r972

	C4 test chart			1	2	3	4	5	6	7	8	9	10
M	Test sheet	Photo	600 x 600	-	1	4	6	8	11	12	14	16	-
			1800 x 600	-	1	4	6	8	11	12	15	16	-
			1200 x 1200	-	1	4	6	7	10	12	14	16	-
		Text	600 x 600	-	1	4	6	7	10	12	14	16	-
			1800 x 600	-	1	4	6	8	11	13	14	16	-
			1200 x 1200	-	1	4	6	7	10	12	13	16	-

d081r973

	C4 test chart			1	2	3	4	5	6	7	8	9	10
Y	Test sheet	Photo	600 x 600	1	3	4	9	11	12	14	15	16	-
			1800 x 600	1	3	5	8	10	11	14	15	16	-
			1200 x 1200	1	3	5	8	10	11	14	15	16	-
		Text	600 x 600	1	2	5	8	10	11	14	14	15	16
			1800 x 600	1	3	6	9	10	12	14	15	16	-
			1200 x 1200	1	2	4	7	9	10	13	15	16	-

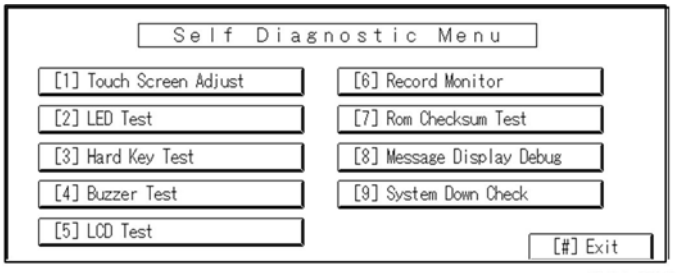
d081r974

Touch Screen Calibration

After clearing memory, or if the touch screen detection function is not working correctly, calibrate the touch screen.

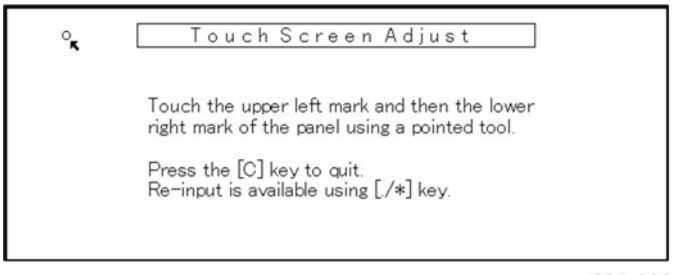
Important

- **Do not attempt to use items [2] to [9] on the Self-Diagnostic Menu. These items are for design use only.**
- **To avoid causing an error, do not touch the Reset key while doing this procedure.**
- **Push [Clear], push 1993, and then press [Clear/Stop] 5 times.**



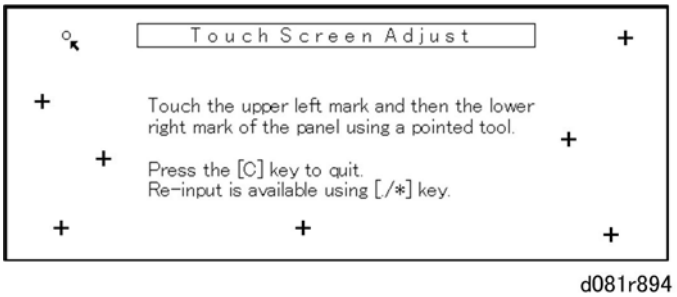
d081r892

1. Push "Touch Screen Adjust" (or push "1").



d081r893

2. Use a soft point (not sharp!) to press the upper left mark ( ).
3. Press the lower right mark ( ) after it appears.



d081r894

4. Touch a few random spots on the touch screen to confirm that the marker (+) appears exactly where the screen is touched.
5. If the (mark does not appear where the screen is touched, push [Cancel] and repeat from Step 2.
6. When you are finished, touch [#] OK on the screen (or push [#] on the operation panel).
7. Touch [#] Exit on the screen to close the Self-Diagnostic menu and save the settings.

Firmware Update

Before You Begin...

Always obey these rules when handling and using SD cards:

- Never connect or remove an SD card with the machine on.
- Never turn the power off while the machine is downloading data from an SD card.
- The SD card is a precision item. Use it carefully. Do not keep the card in a location where there is high temperature, high humidity, or light from the sun.
- Handle SD cards carefully to avoid bending, scratching, or dropping them.
- If a power failure occurs during the firmware update, turn the machine power off/on without removing the SD card. The firmware update procedure should start again.

Firmware Update Procedure

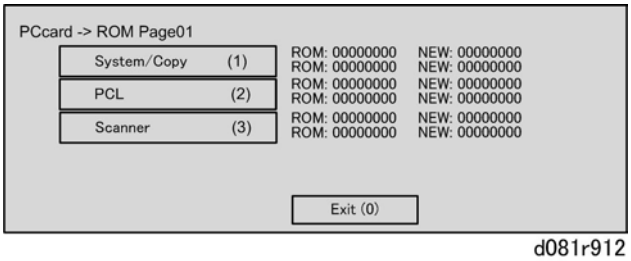
1. Obtain the System SD card.
2. Disconnect the network cable and other interface cables. This prevents outside interference caused by data transfers to the machine while the software is being uploaded.
3. Turn the main switch off.
4. Remove the SD card slot cover (x1).
5. Remove the VM card from the lower slot.

   Important

   - **Before removing the VM card from Slot 1 (lower slot) you must shut down the App2 Me application (and all other VM card applications) if it is running. See p.305 "Before Removing and Re-installing the VM Card".**
6. Insert the SD card into Slot 1 (lower slot).
7. Open the front door of the machine. This prevents generation of electrical noise from motors during the update procedure.
8. Switch the machine on.

   You will see "Please Wait" then "Preparing to start firmware update."

   The first screen appears after about 60 to 90 sec.



d081r912

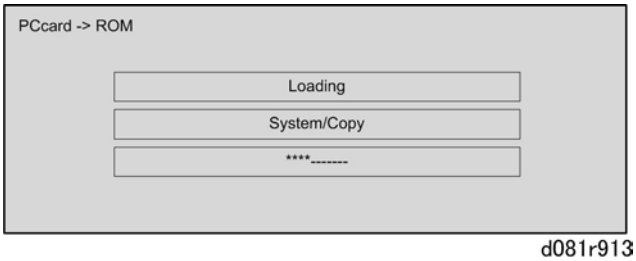
9. Check the notations to the right.
    - "ROM" shows the module number and version of the currently installed software.
    - "NEW" shows the module number and version of software on the SD card in Slot 1 (lower slot).
10. Touch item that you want to update. The selected item appears in reverse black and white, and you can select more than one
11. Touch [Update] or push [#] on the 10-key pad to start the update.

    While the Update Is in Progress

    - Remain with the machine. Do not leave it unattended.
    - Never close the front door during firmware update.
    - You will see a progress bar on the screen while the update is in progress.
    - For some updates the [Start] key LED may flash RED slowly, while the update is in progress. When it starts to flash RED rapidly, this means the update is nearly finished. When the LED flashes GREEN this means the update is completed.
    - Never switch the machine off while the [Start] key is flashing RED.
    - If the machine is switched off or accidentally unplugged before the update is finished, do not remove the SD card. Just switch the machine on again. The firmware update should restart automatically. If the firmware update does not recover, obtain a new System SD card.

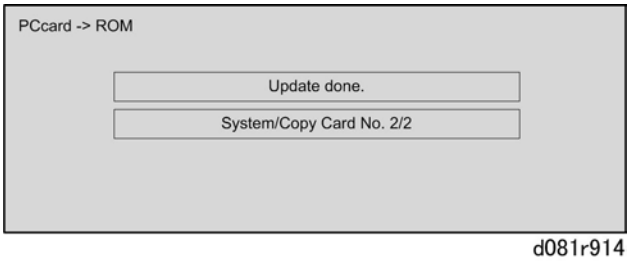
    The following screen sequence appears after selecting one "OpePanel" selected for update.

    Example: System/Copy Update



d081r913

- The middle bar tells you the name of the item that you are updating.
- The bottom bar shows the progress of the update procedure.



d081r914

- The update is complete when you see the "Update done" message.
- The update requires about 2.5 minutes.

12. When you see the update completed message, turn the machine off.
13. Remove the SD card from the SD card slot.
14. Re-insert the VM card in the lower slot.
15. Switch the machine on.

Important

- **If the client is using App2 Me (or any other VM card applications) on the VM card, you must do the procedure to re-start the App2 Me applications. (☛ p.305 "Before Removing and Re-installing the VM Card")**

5. System Maintenance

Service Program Mode

See "Appendices" for "Service Program Mode" information,

6. Troubleshooting

Handling Errors

Program Download

Overview

Here are some important points to keep in mind when downloading software:

- If an error interrupts download processing, the machine cannot operate normally with the program software only partially downloaded.
- When download processing execution starts, "Downloading..." is displayed and when downloading has completed successfully, the message is cleared.
- If the download is interrupted when the "Downloading ..." message is displayed, the machine does not attempt a re-try.
- The program that downloads firmware from an SD card is part of the GW controller software. If downloading this software is interrupted, the program stored in the machine may be corrupted. Because of this, it may not be possible to restart the downloading program. (In addition, if the GW controller software cannot be downloaded, other software on other SD cards cannot be downloaded.) However, it may be possible to restart the program without replacing the board by setting DIP SW 1 on the controller to ON, and re-starting.

Recovery Methods

When an error occurs during downloading, an error code is displayed on the operation panel.

- If the download procedure can be re-started, re-start the download procedure.
- If the download procedure cannot be downloaded for other than the GW controller, replace the board where the downloaded program is stored.
- If the download procedure cannot be downloaded for the GW controller, set DIP SW 1 to ON. Power the machine off and on to start the downloading program. After downloading has completed, set the DIP SW to OFF then power the machine off and on again.

Download Error Codes

No.	Display	Error Description/Recovery
01	Reboot after card insert E01 Module ID Card No. xx/xx	**Controller ROM update error 1** When the update break data was stored in NVRAM, the break module information and the decompression module capable of writing did not match. **Recovery** • Use the correct card
02	Download Error E02 Power off/on	**Controller ROM update error 2.** Error occurred during ROM update program initialization. **Recovery** • Cycle the machine off/on to rewrite
03	Download Error E03 Power off/on	Controller ROM update error 3 The ROM for the write operation does not exist. **Recovery** • Cycle the machine off/on • Install the missing ROM DIMM
04	Download Error E04 Power off/on	**Controller ROM update error 4** GZIP data confirmation failed. (CRC value check) **Recovery** • Cycle the machine off/on • Set DIP SW 1 to ON and retry • Replace RAM DIMM • Replace controller board
05	Download Error E05 Power off/on	**Controller ROM update error 5** Error occurred when writing to the device. **Recovery** • Cycle the machine off/on • Set DIP SW 1 to ON and retry • Replace RAM DIMM • Replace controller board

No.	Display	Error Description/Recovery
06	Download Error E06 Power off/on	**Controller ROM update error 6** CPU clock error occurred. **Recovery** • Turn the machine power off/on. • Set controller DIPSW-1 to ON to force the machine to write to ROM. • If you cannot force the machine to write, replace the controller board.
19	Download Error E19 Power off/on	**Controller ROM update error 7** Schedule data is unclear. **Recovery** • Software defective
20	Down Error E20 Power Off/On	**System error 1 (+SC991)** The physical address could not be mapped due to defective software or hardware. **Recovery** • Cycle the machine off/on and re-try • Replace controller board
21	Download Error E21 Power Off/On	**System error 2 (+SC991)** There was not sufficient memory to download. **Recovery** • Cycle the machine off/on and re-try. • Replace RAM • Replace the controller board
22	Download Error E22 Module ID Card No xx/xx	**System error 3 (+SC991)** Data failed to decompress due to defective card. **Recovery** • Cycle the machine off/on and re-try. • Replace card • Replace controller board

No.	Display	Error Description/Recovery
---	SC991	**System error 4** "Selfupdate" did not execute due to defective software. **Recovery** • Cycle the machine off/on and re-try • Set DIP SW 1 to ON and re-try • Replace the controller board
23	Download Error E24 Power Off/On	**System error 5** Card read/write error occurred or software or card defective. **Recovery** • Cycle the machine off/on and re-try • Replace the card • Replace the controller board
30	No Valid Data E30	**Download dysfunction 1** Could not download to HDD because HDD is not not installed or HDD is defective. **Recovery** • HDD defective • HDD harness disconnected, defective
31	Reboot After Card Insert E31 Module ID Card No. xx/xx	**Download dysfunction 2** Download continuity error occurred with more than one card. The second or later card was not compatible. **Recovery** • Set the correct cards in the correct order
32	Reboot After Card Insert E32 Module ID Card No. xx/xx	**Download dysfunction 3** Download interrupted because card wrong card was used, or a power failure interrupted the download operation. **Recovery** • Use the correct card • If power failure caused the failure, remove the card and insert another.

No.	Display	Error Description/Recovery
33	No Valid Data E33	**Download** dysfunction 4 Card version error. Attempted to download program using a card with the wrong version number. **Recovery** • Use the correct card
34	No Valid Data E34	**Download dysfunction 5** Specification error. DOM card was set in EXP machine, or vice versa. **Recovery** • Use the correct card
35	No Valid Data E35	**Download dysfunction 6** Wrong model. The inserted card is for another model. **Recovery** • Use the correct card
36	No Valid Data E36	**Download dysfunction 7** Module error. The program that you are attempted to download does not exist on the machine, or the contact points at the card and the machine slot are not connected. **Recovery** • Use the correct card, inserted correctly • Install a ROM DIMM if none is installed
37	No Valid Data E37	**Download dysfunction 8** Edit option card error. You attempted to employ a used card. **Recovery** • Use an unused card
40	Download Error E40 Module ID Card No. xx/xx	**Download result failure 1** Engine download failure. **Recovery** • Cycle the machine off/on and re-try

No.	Display	Error Description/Recovery
41	Download Error E41 Module ID Card No. xx/xx	**Download result failure 2** Fax download failure. **Recovery** • Cycle the machine off/on and re-try
42	Download Error E42 Module ID Card No. xx/xx	**Download result failure 3** Operation panel or language download failed. For this error, sometimes the message may not be displayed. **Recovery** • Cycle the machine off/on and re-try
43	Download Error E43 Module ID Card No. xx/xx	**Download result failure 4** Print download failed. **Recovery** • Cycle the machine off/on and re-try
44	Download Error E44 Module ID Card No.	**Download result failure 5** The data targeted for the write operation could not be accessed. **Recovery** • Turn the machine power off/on. • Replace the SD card with the start-up SD card that has the source data • Set controller DIPSW-1 to ON to force the machine to write • If you cannot force the machine to write, replace the controller board.
50	No Valid Data E50	**Download invalid** The source data for the update could not be authenticated. **Recovery** • Use the correct SD card.
51	(no display)	Remote ROM update failure 1 The source data for the ROM update is corrupted because the machine is operating and an SC code has been issued. **Recovery** • Cycle the machine power off/on and try again.

No.	Display	Error Description/Recovery
52	(no display)	**Remote ROM update failure 2** The source data received for the ROM update is corrupted; it failed a SUM check due to its abnormal length. **Recovery** • Try again with the correct data.
53	(no display)	**Download result failure 6** The previous download in progress was cancelled. **Recovery** • Do the download procedure again.

Important SP Codes

Here is a list of important SP codes that you may need during troubleshooting. For more information about these and other SP codes, refer to the Service Tables.

SP5802	Free Run Mode	Execute this SP to force base engine to run in the free run mode for testing.
SP5803	Input Check	Displays the signals received from sensors and switches.
SP5804	Output Check	Switches electrical components one by one for testing.
SP5810	Cancel Fusing SC Code	Use this to cancel a fusing unit SC code to return the machine to normal operation after you repair the machine.
SP5990	SMC Printout	Prints the SMC Report. Some SC codes (logged SPs) are listed only in the SMC Report and do not appear on the operation panel display.
SP7401	SC Codes	Displays the total number of SC codes logged.
SP7403	SC History	Displays information about the 10 most recent service calls (Code, Total, Date, and Details).
SP7801	ROM Ver	Displays the ROM version numbers of the main machine and connected peripheral devices.
SP7832	Self-Diagnostic Report Details	Push [#] to display a list of error codes. Nothing is displayed if no errors have occurred.

Special Procedures

Correcting the Halo Effect

Images printed with the GW controller may show a "halo" effect when printing in 2-bit mode (1800x600dpi) and in 4-bit mode (9600x600dpi).

Problem

- This problem is most visible when text is overlaid onto halftone areas in 2-bit mode or 4-bit mode. The greater the difference in image density between text and halftone areas, the more noticeable the halo effect.
- This problem is also evident when the mode is changed to 2-bit mode. (The default dithering pattern for 2-bit mode is designed to improve gradation, but this can also make the halo effect more visible.)
- This problem is a product limitation for this model, as announced in the SLG (User/Sales/Service Remarks #12).

Solution

The following solution is only effective when using the GW controller. There are two ways to reduce the halo effect:

1. Print out the image using 1-bit mode (600x600dpi) instead, or
2. Change the dither pattern used in 2-bit mode (1800x600dpi).

   As mentioned above, the default dither pattern for 2-bit mode is provided to improve gradation. However, there is one more dither pattern ("Low halo effect dither") that can be selected to reduce the halo effect.

Procedure: To Change the Dither Pattern for 2-Bit Mode

Do the following procedure manually to change the dither pattern used in 2-bit mode to "Low halo effect dither".

1. Confirm that the Printer/Scanner firmware is Ver1.00.1 (D3765902A) or newer.
2. Execute SP5801-008 (Memory Clear Printer Application).

   When you execute this SP, the following will be reset to factory settings:

   - The gamma curve adjusted at the last Printer ACC execution.
   - All Group SP1000 settings in Printer SP mode, which includes SP1104 (Gamma Adjustment) and SP1106 (Toner Limit).
3. When you see the "Completed. You have to reboot." message, turn the machine on.
4. Open Printer SP1001-002 (Bit Switch – Bit Switch 2 Settings).
5. Touch the "6" key, and then the [#] key on the operation panel.

   The LCD display will change:

Before (default):	00000000 (0) [00H]
After (Low Halo Effect Dither):	01000000 (0) [40H]

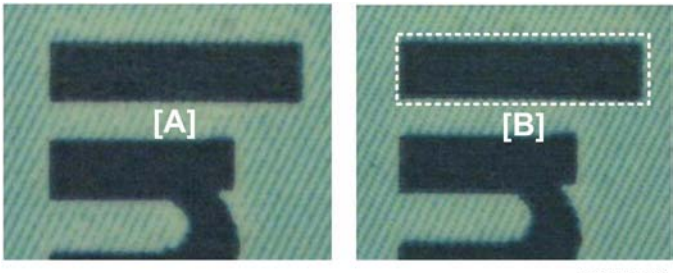
6. Exit Printer SP mode, and then turn the main power switch OFF and ON.
7. Execute Printer ACC using Test Pattern 2 (1800X600dpi).

   Now, when the user selects 2-bit mode (1800x600dpi) in the printer driver, the Low Halo Effect Dither function will be applied automatically.

Procedure: To Restore the Default

To change the dither pattern for 2-bit mode back to the default pattern, do this procedure.

1. Execute SP5801-008 (Memory Clear Printer Application).
2. Cycle the machine off/on.



d081t016

[A] Factory default dither pattern

[B] Low halo effect type dither pattern

Image Density Light, Failure to Release from Toner End Alert

If the image density is too light, or if the machine fails to release the "Toner End" alert, this can be caused by one of the following problems:

- Developer Filling (SP3814) was not successful.
- Developer Setup (SP3811) or TD sensor initialization (SP3801) was not done or was not done correctly after Developer Filling (SP3814).
- Developer Setup (SP3811) or TD sensor initialization (SP3801) was done more than once.

1. First, do the following SP value checks.

Check 1-1. SP3815-001 (Developer Fill Disp Result) displays "1111"?

"1111" should be displayed for all colors, K, M, C, Y reading from left to right.

Result	Comment
1	Success

Result	Comment
4	Factory default (Nothing has been done)
7	Developer Filling (SP3814) has been performed more than once for the color, whose developer has already completely filled the development unit.
9	Failed. No developer inside the development unit, or the amount of developer inside the development unit is insufficient.

Check 1-2. SP3817-001 to 004 (Developer Filling Admission) are all "0"?

"0000" should be displayed for all colors, K, M, C, Y

"0" = Developer filling has completed successfully.

"1" = Developer Filling has not completed successfully yet.

Check 1-3. SP3812-001 (Developer Setup Execute): displays 1111?

"1111" should display for all colors, K, M, C, Y, reading left to right.

Result	Comment
1	Succeeded.
2	Interrupted abnormally
3	Vt lower limit error
4	Default (nothing done yet)
8	Toner supply error
9	Vtcnt error

2. Next, do the following procedures according to the results of SP value checking.

Case 1	If one of Check 1-1, Check 1-2, or Check 1-3 failed do **Procedure 1**.
Case 2	If all of Check 1-1, Check 1-2 and Check 1-3 all succeeded, the toner supply mechanism may be broken. First do **Procedure 2**, and then do **Procedure 1**.
Case 3	If only Check 1-2 did not succeed (returned "1"), do **Procedure 3** as a temporary solution. However, for a permanent solution be sure to do **Procedure 1** after performing **Procedure 3**. Otherwise, the image density will be abnormal.

Procedure 1

1.Replace the toner cartridge causing the problem (density too light or no "Toner End" release) with a new toner cartridge.

Note

- After the "Toner End" alert appears for a color, this "Toner End" information is written into the ID chip on the toner cartridge, even though a lot of toner may remain inside the cartridge. This means that machine will detect that the toner cartridge is empty.

2. Follow the procedure in the service manual to replace the developer for all colors.

3.After the TD sensor initialization (SP3801-001 to 006) has been completed, check these SP values:

- SP3812-001 = 1111 (Display Result of Developer Setup Execution)
- SP3821-001 = 10101010 (Display Result of Process Control)

Procedure 2

1.Replace the toner cartridge causing the problem (density too light or no "Toner End" release) with a new toner cartridge.

Note

- After the "Toner End" alert appears for a color, this "Toner End" information is written into the ID chip on the toner cartridge, even though a lot of toner may remain inside the cartridge. This means that machine will detect that the toner cartridge is empty.

2.Do SP2251-001 to 004 "Forced Toner Supply for the color (K, M, C, or Y) for the color whose image density is too light.

Note

- To avoid damage to the toner supply mechanism, never perform "Forced Toner Supply for K, M, C, or Y more than three times.

3.Check the image density to see if it is darker.

4.Do SP3820-002 (Manual ProCon).

5.Do SP3821-001 (ProCon OK?) to confirm that SP3820-002 succeeded. YOu should see "10101010" displayed if SP3820-002 executed successfully.

Note

- If SP3820-002 displays any values other than "10101010" (successful execution), the toner supply mechanism may be broken. Replace the toner supply mechanism.

6.If SP3820-002 shows "10101010" (successful execution), perform Steps 2 and 3 of **Procedure 1** for the color causing the problem (light image or failure to release from "Toner End" alert).

Procedure 3

Important

- **For this procedure there must be developer in the development unit.**

1.Replace the toner cartridge causing the problem (density too light or no "Toner End" release) with a new toner cartridge.

Note

- After the "Toner End" alert appears for a color, this "Toner End" information is written into the ID chip on the toner cartridge, even though a lot of toner may remain inside the cartridge. This means that machine will detect that the toner cartridge is empty.

2.Do SP3817-005 (Developer Filling Admission: Clear). This SP forces the settings of SP3817-001 to 004 to change from "1" to "0" and forces toner supply from toner cartridges to toner sub hoppers.

3.Do SP2251-001 to 004 (Forced Toner Supply K, M, C, or Y) for the color whose image density is too light.

Note

- To prevent damaging the toner supply mechanism, never perform "Forced Toner Supply K, M, C, Y" more than three times.

4.Check the image density to see if it is darker.

5.Do SP3820-002 "Manual ProCon".

6.Do SP3821-001 "ProCon OK?" to confirm if SP3820-002 succeeded. You should see "10101010" displayed if SP3820-002 executed successfully.

7.If SP3820-002 shows "10101010" (successful execution), perform the Steps 2 and 3 of **Procedure 1** for the color causing the problem (light image or failure to release from "Toner End" alert).

SP2181 030 (Alignment Result) Errors

After SP2181 030 executes normally, you should see a "1" replace the "0" (default display). If you see any number other than a "1", this indicates an error.

Code.	Error, Problem, Solution
2	**Failure**
	Problem 1 • Large amount of skew. • Large amount of K skew. • Large amount of skew in every color. **Solution** Print a trim pattern with SP2109 002 Pattern #10 (Trim Area).

Code.	Error, Problem, Solution
	Problem 2 • Density too light. **Solution** • Print a coverage pattern with SP2109 002 Pattern #1 (1: Grid pattern). • Check the images.
	Problem 3 • ITB scratched. **Solution** Replace the ITB.
12	**Abnormal detection pattern**
	Problem 1 • ITB misaligned. **Solution** • Reinstall ITB
	Problem 2 • SP2153 023 set to 1 (OFF). **Solution** • Set SP2153 023 to 0 (ON).
	Problem 3 • Image density too light. **Solution** • Output a coverage pattern with SP2109 002 Pattern 1. • Check the images.
	Problem 4 • Dirty, abnormal images. **Solution** • Output Pattern 1, 18, or 20 with SP2109 002 and check the images.
21-23	**Auto density out of range (over or lower)**

Code.	Error, Problem, Solution
	Problem 1 • ITB misaligned **Solution** • Reinstall ITB
	Problem 2 • Image density too light, uneven. **Solution** • Output a coverage pattern with SP2109 002 Pattern #1 (1: Grid pattern). • Check the images.
	Problem 3 • Connector loose. • Connector dirty. • Harness defective. **Solution** • Check the ID sensor and its connection.
31-33	**Amount of skew calculated in the coverage pattern abnormal.**
	Problem 1 • ITB misaligned **Solution** • Reinstall ITB.
	Problem 2 • SP2153 023 set to 1 (OFF). **Solution** • Set SP2153 023 to 0 (ON).
	Problem 3 • Large amount of K skew. **Solution** • Print a trim pattern with SP2109 002 Patten #10 (10: Trim Area).

Code.	Error, Problem, Solution
	Problem 4 • Image density too light, uneven. **Solution** • Output a coverage pattern with SP2109 002 Pattern #1 (1: Grid pattern). • Check the images.
41-43	**Intersecting lines of the grid pattern.**
	Problem 1 • ITB misaligned **Solution** • Reinstall ITB.
	Problem • Image density too light. **Solution** • Output a coverage pattern with SP2109 002 Pattern 1. • Check the images.
	Problem • Dirty, abnormal images. **Solution** • Output Pattern 1, 18, or 20 with SP2109 002 and check the images.
51-53	
	Problem • ITB misaligned **Solution** • Reinstall ITB.
	Problem • SP2153 001 set to 1 (OFF). **Solution** • Set SP2153 001 to 0 (ON).

Code.	Error, Problem, Solution
	Problem • Dirty, abnormal images. **Solution** • Output Pattern 1, 18, or 20 with SP2109 002 and check the images.
	Problem • Connector loose. • Connector dirty. • Harness defective. **Solution** • Check the ID sensor and its connection.

Image Position Adjustment

A MUSIC error occurs when a large amount of skew occurs beyond the acceptable range, or when the K sensor is out of position. Such errors can be corrected manually to correct skew. However, these adjustments cannot correct problems caused by physical damage to the ITB, filming, density degradation, or a dirty sensor.

1. Load some A3 paper in Tray 1. Make sure that the side and bottom fences are set properly.
2. Do SP1003 001 (Side-to-Side Reg – Tray 1) and set it to "0".
3. Do SP2109 002 (Test Pattern) then select and print Pattern #10: Trim Area.
4. Do SP2101 001 so the left and right margins are 1.5 mm.
5. If any color is separated from black more than 1 mm, do SP2101 002 to 004 to bring each color closer to K.

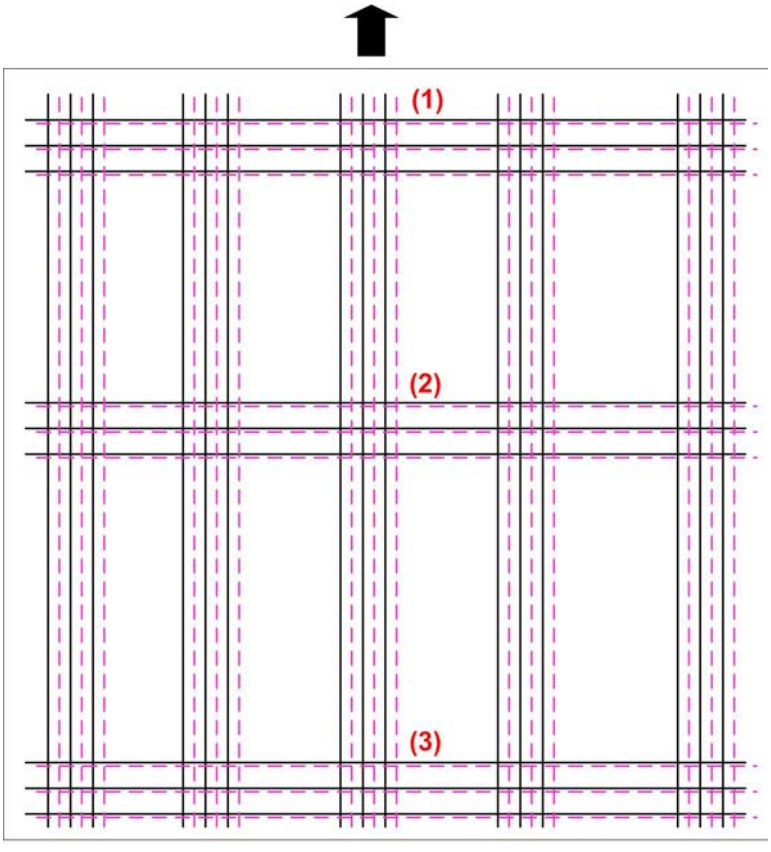
Important

- Black skew can cause part of the image to shift off the paper.
- Normally, the settings of SP2102-1, -5, -6, -7 should be reset to the values in the SMC report or the values printed on the A5 sheet provided with a new laser unit.
- Normally, these values do not change unless the NVRAM becomes corrupted.
- Most machines can be adjusted with these values: K: -40, M:-20, C:-10, Y: -5. Use these values if other information is not available.

Color Registration Error Adjustment

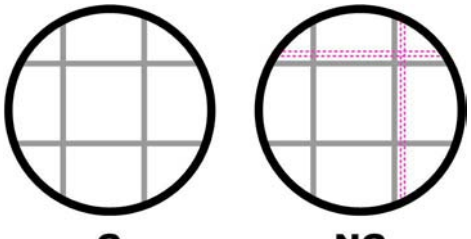
Color Registration Error Correction

1. Start SP 2109 002 and select Pattern #1 (1: Grid pattern), then push the “OK” button.
2. Push the “Copy Window” button.
3. Make sure "Full Color Mode" is selected.
4. Select A3/DLT paper, and push the [Start] button to print the pattern.



d081t001

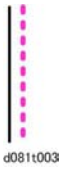
5. Lay the test pattern flat, and use a loupe to examine the grid patterns at the top (1), middle (2) and bottom (3). In the example above, the solid lines are black, and the dotted lines are magenta (as shown), cyan, or yellow.



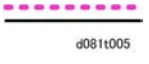
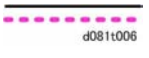
d081t002

6. Correct the errors in the vertical lines (this corrects errors in the main scan direction). See the following table for how to do this.

   In the table, a dotted line indicates a colored line (C, M, or Y). For example, the first row of the table shows you how to adjust the machine if a colored line is to the right of the black line on the test pattern.

SP Codes to Adjust	Unit of adjustment: 43.2 um	
2101 002 (M) -or- 2101 003 (C) -or- 2101 004 (Y)		Decrease the value
		Increase the value

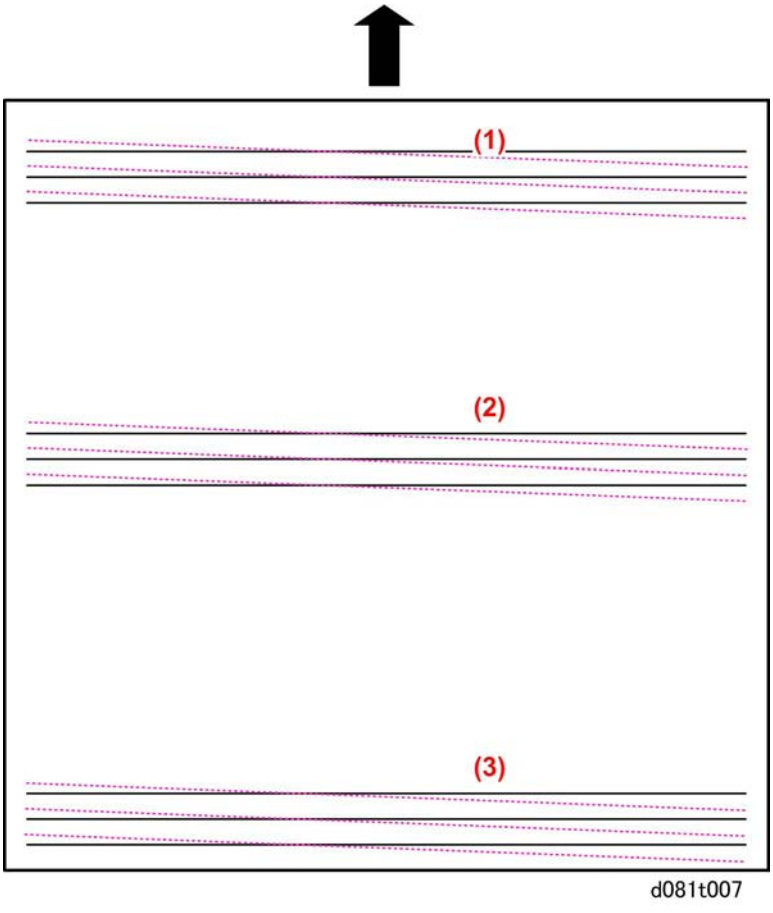
7. Correct the errors in the horizontal lines (this corrects errors in the sub scan direction). See the following table for how to do this.

SP Codes to Adjust	Unit of adjustment: 84.6 um	
2101 020 (M) -or- 2101 021 (C) -or- 2101 022 (Y)		Increase the value
		Decrease the value

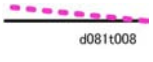
8. Do steps 1 and 2 again.
9. If there are color registration errors, then do steps 1 through 6 again.

Color Skew Error Correction

1. Start SP2109 002 and select Pattern #1 (1: Grid pattern), then push the "OK" button.
2. Make sure that "Full Color Mode" is selected before you push the [Start] button.
3. Push the "Copy Window" button. Then select A3/DLT paper, and push the "Start" button to print the pattern.



4. Inspect the lines with a loupe at the top (1), middle (2), and bottom (3). In the example above, the dotted lines are magenta, cyan, or yellow, and the solid lines are black.
5. Correct the skew.
6. See the following table for how to do this

SP Codes to Adjust	Unit of adjustment: 43.2 um	
2104 001 (M) -or- 2104 002 (C) -or- 2104 003 (Y)		Increase the value
		Decrease the value

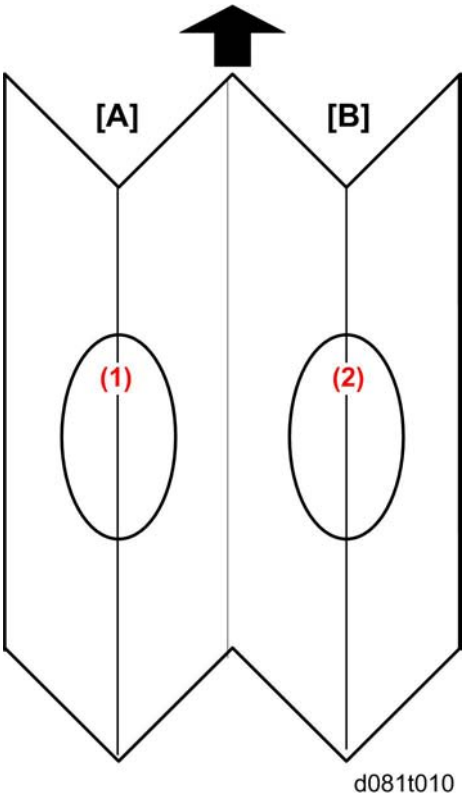
Overall Check

1. After you do the color registration error and color skew corrections, do a forced MUSIC again, with SP2111 001.
2. Do SP2109 002 and print Pattern #1 (1: Grid pattern) on A3/DLT paper again. Check the skew and color registration. If they are still not acceptable, do the forced MUSIC again.
3. Do SP2181-001 (Alignment Result – General) to make sure that the forced MUSIC was done correctly.
    - If the result is '1', then each color was aligned correctly.
    - If "1" is not shown, then please see "SP2181 030 (Alignment Result) Errors" in this section under "Special Procedures"..

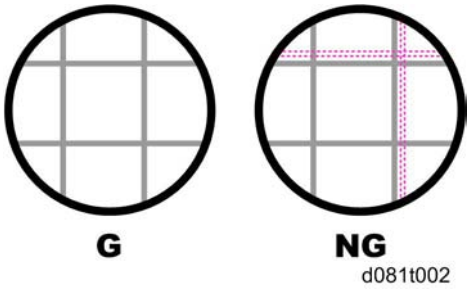
Color Registration at the Left and Right Folds of the Test Pattern

Do this procedure after you complete "Color Registration Error Correction" and "Color Skew Error Correction".

1. Do SP2109 002 and print Pattern #1 (1: Grid pattern) on A3/DLT paper.
2. Make sure that "Full Color Mode" is selected.
3. Push the [Start] button.

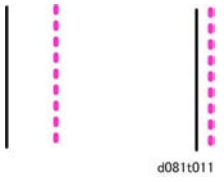
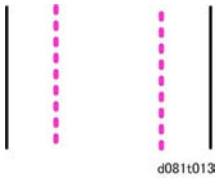


4. Fold the test pattern lengthways in half, then fold it in half again as shown above.
5. Lay the test pattern flat, and use a loupe to examine the grid patterns at the first crease [A] and third crease [B].



When viewed through the loupe, the grid lines on the left and right side should be perfectly aligned (G) and not misaligned (NG).

6. If the lines are misaligned (NG), use a loupe to measure distance between the black vertical lines and each of the colored vertical lines (C, M, Y). Measure this on the left and right folds:
7. If there is a gap between the black lines and a colored line, measure it and correct it with SPs as shown in the tables below.

SP Codes to Adjust	Unit of adjustment: 50 um	
2112 001 (M) Left (Fold) -or- 2112 002 (M) Right (Fold) -or- 2112 003 (C) Left (Fold) -or- 2112 004 (C) Right (Fold) -or- 2112 005 (Y) Left (Fold) -or- 2112 006 (Y) Right (Fold)		Gap on the left is different from the gap on the right
		
		Gaps are the same.
		

- To move a color toward the left edge, decrease the SP value.
- To move a color toward the right edge, increase the SP value.

SP3812 001 (DevSetup Execute) Errors

After SP3812 001 executes normally, you should see four 1s: "1111"

Reading from left to right, each "1" indicates the status of the PCUs: K, M, C, Y.

If you see any number other than a "1", this indicates an error.

SP3812 001 Error Codes

Code	Error, Problem, Recovery
2	Execution Interrupted

Code	Error, Problem, Recovery
	Problem • Door was opened, or another color returned an error. • Execution halts at the first error encountered or if the front door is opened during execution. **Recovery** • Check the preceding error codes. • Never open the front door during execution.
3	**Vt Abnormal**
	Problem • The reading of Vt (TD sensor output) is less than 5 V. **Recovery** • Check the operation panel for a developer set error (SC336 to SC339). • Check the PCUs and confirm that all the film seals have been removed to release the developer from the developer cartridge.
4	**Did Not Execute**
	Problem • SP Default **Recovery** • Displayed when you open this SP code. No action is necessary.
8	Toner Supply Abnormal
	Problem • At the end of the toner filling cycle, the toner end sensor detected no toner. **Recovery** • Check the toner supply unit.
9	**Vtcnt Abnormal**

Code	Error, Problem, Recovery
	Problem • Vtref (control reference voltage) could not be adjusted to within 0.2 V of Vt (TD sensor output). **Recovery** • This is a TD sensor adjustment error (SC372 to SC375). Execute SP3801 again for the PCU that returned the error. If this does not recover operation, check the next four points. • Film 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

Process Control Troubleshooting

Summary of Process Control SC Codes

This is a list of SC codes that may occur during process control. For more, please refer to the process control tables on the following pages.

Pre-Processing Check

SC316 to SC319	Vpp is not within the normal range (Vpp: the AC current applied to the charge roller to compensate for changes in the ambient temperature and humidity). Insufficient charge causes white spotting and too much charge causes toner to film on the surface of the drum. Vpp must be > 2.8 kV.
SC400	ID sensor could not be calibrated. An abnormal ID sensor condition is detected when before calibration begins, Vsg < 0.5V or after calibration, Vsg cannot be adjusted to 4.0±0.2V.
SC418	Correct current could not be supplied to the ID sensor.
SC436 to SC439	A problem is detected with a potential sensor during calibration.

Potential Control

SC410 to SC413	The development gamma is out of range (not between 0.3 and 6.0) for a color.
SC414 to SC417	Vk is out of range (not within ±150V) for a color. If the development potential is less than Vk, toner is not applied to the drum.

SC420 to SC423	Vd cannot be adjusted to the target voltage for a drum.
SC424 to SC427	The potential sensor detects that Vpl is not ±10V of the target Vpl after exposure of the ID sensor patterns.
SC432 to SC435	The residual voltage on a drum is greater than -200V.

TD Sensor Output Calibration

SC360 to SC367	An abnormal condition is detected when output of one of the TD sensors fails to fall within the range of 0.5V to 4.5V.

Process Control Gamma Correction

SC410 to SC413	The development gamma for black, magenta, cyan, or yellow is not within range (0.3 to 6.0).
SC414 to SC417	The development start voltage (Vk) for black, magenta, cyan, or yellow PCU is not within range (±150V)

Process Control Self-Check: SP3821

After the process control self-check is executed manually with SP3820, you can execute SP3821 to check the results of the self-check. The possible error codes are listed in the "Displayed Code" column in the table below.

When you do SP3821, the normal display (no errors) will look like this:

```
10101010
```

Reading from left to right each "10" represents a color: K, M, C, Y.

If a problem occurs, the code will appear in the column for the color PCU where the error has occurred. For example, If a Vdhome error (Code 15) (see table below) occurs in the M PCU, the display will look like this:

```
10151010
```

Or if an ID sensor error (Code 21) (see table below) occurs in the Y PCU:

```
10101021
```

"99" displays while SP3821 executes.

Important

- **Noise and static electricity can damage the many sensors that are used during the process control self-check. Because of this, always turn the machine off before doing any procedure described below that requires disassembly.**

Potential Sensors

Code	Error, Problem, Solution
15	**VdHome Error 1**
	Problem • V0 (SP3571) above –700V, or VdHome (SP3572) above –700V. • The window of the potential sensor probe fouled with toner • Potential sensor damaged **Solution** • Do SP2260 001 to check the function of the potential sensor. • Do SP2261 to check the Vd, Voffset readings. Development has recovered if the Vd is 700V and offset is 10V. • Remove the PCU. Use a blower brush to clean the window of the potential sensor probe, and then check the sensor again with SP2260-001. • If normal operation cannot be restored, replace the potential sensor probe.
16	**VdHome Error 2**

Code	Error, Problem, Solution
	Problem • V0 (SP3571) below –700V, or VdHome (SP3772) below –500V. • Potential sensor relay board damaged • Drum abnormal • Charge roller damaged • Drum motor not operating **Solution** • Do SP2260 001 to check the function of the potential sensor. • Do SP2261 to check the Vd reading. Development has recovered if the Vd is -700V. • Remove the malfunctioning PCU with a functioning PCU, turn the machine off then on, then do the potential sensor check again. • If the replaced PCU does not function normally, then the problem is on the machine side, or the potential sensor relay board is malfunctioning. • If the replaced PCU functions normally, then there may be a problem with the drum or the charge unit. Replace the PCU.
17	**VdHome Calculation Error**
	Problem • VdHome could not be calculated. This is a software calculation error (not a hardware problem). **Problem** • Switch the machine off/on then execute SP3820 001.

ID Sensors

Code	Error, Problem, Solution
21	**ID Sensor Vsg Adjust Error**

Code	Error, Problem, Solution
	Problem • Vsg_reg (SP3121) is out of range (not within 4.0±0.2V). • ID sensor fouled with dust, toner • ITB undulating or out of position **Solution** • Remove the ITB unit. • Make sure the belt is mounted correctly. • Clean the windows of the ID sensors with alcohol and a clean cloth. • Be sure to wipe the sensor apertures with a wet cloth. A dry cloth may generate static which can attract dust.
22	**ID Sensor LED Current Error**
	Problem • LED PWM (SP3131) greater than 3000. • ID sensor fouled with dust, toner • ID sensor deteriorated **Solution** • Remove the ITB unit and check the ID sensors. • Clean the windows of the ID sensors with alcohol and a clean cloth. • Be sure to wipe the sensor apertures with a wet cloth. A dry cloth may generate static which can attract dust. • If the apertures are clean, then the LED of an ID sensor may have deteriorated. Replace the ID sensor plate.
23	**ID Sensor Output Error**

Code	Error, Problem, Solution
	Problem • Vsg_reg (SP3121-001) less than 0.5V. • ID sensor harness loose, disconnected, damaged • ID sensor damaged **Note**: Vsg_reg refers to the reading of the drum surface done with the direct reflection sensors in both the color and black ID sensors. **Solution** • Remove the ITB unit. • Check the ID sensor harness connections and make sure that they are tight. • Check the harnesses for breaks. • If the harnesses are undamaged and tightening the connections does not solve the problem, replace the ID sensor plate.

AC Charge

Code	Error, Problem, Solution
31	**AC Charge Adjust Error 1**
	Problem • Vpp could not be adjusted after 20 attempts. • Bias path defective • Charge gap abnormal (too large) • Charge roller dirty • Drum coated with film **Solution** • Make sure that the bias path and drum are grounded correctly. • Check the drum and both ends of the charger roller for any foreign matter. • Check the gap between the charge roller and the drum to confirm that it is not too large. • If the grounds and gap is normal, clean the charger roller or replace it.
32	**AC Charge Adjust Error 2**

Code	Error, Problem, Solution
	Problem • Vpp greater than 2.80 kV. • Bias path defective • Charge gap abnormal • Charge roller dirty, defective **Solution** • Make sure that the bias path and drum are grounded correctly. • Check the drum and both ends of the charger roller for any foreign matter. • Check the gap between the charge roller and the drum to confirm that it is not too large. • If the grounds and gap is normal, clean the charger roller or replace it.

ID Sensor Pattern Detection

Code	Error, Problem, Solution
55	**Development Gamma Error 1**

Code	Error, Problem, Solution

	Problem
	• Development gamma (SP3561) greater than 6.0 (mg/cm^2/-kV).
	Solution
	• Switch the machine off and on then do SP3820 002.
	• Do SP3561 005 to 008 to confirm that development gamma is within the target range (-0.15 to +0.25)
	• If not within the target range, do the procedure again.
	If the machine returns SC410 to SC413 and process control does not end normally, do this procedure:
	1. Change the settings for SP3301 001 to 004 from "1" (PID) to "0" (Prescribed Amount).
	2. Do SP2109 002 and select Pattern 12.
	3. Change the settings of SP2109 005 to 008 from 63 to 0, except for the color which showed a development gamma error.
	4. Return to the copy window and do the test print at least 10 patterns.
	5. Do SP3820 002.
	  • If the patterns are normal, do Steps 2 and 3.
	  • If the patterns are not normal, repeat Steps 2 to 5.
	6. Do SP3301 001 to restore PID toner supply.

56	Development Gamma Error 2

Code	Error, Problem, Solution
	Problem • Development gamma (SP3561) less than 0.3 (mg/cm^2/-kV) • Toner supply abnormal • Image transfer power pack defective • Toner shield glass dirty **Solution** 1. Do SP2109 002 and select Pattern 12. 2. Do SP2109 005 to 008 and change the settings of these SP codes from 63 (default) to 0. 3. Return to the copy window and do the test print 1 pattern. 4. Check the pattern to determine whether the image density is extremely light. 5. Turn the machine off. 6. Open the front door, remove the toner supply unit and check the toner shield glass for dirt. 7. Remove the face plate, replace the malfunctioning PCU with a functioning PCU, then turn the machine on and repeat Steps 1 to 3 to print the coverage test pattern. 8. If normal operation cannot be recovered: • Replace the image transfer power pack. • Open the development unit to see if there is too much or too little developer. • If the developer supply is normal, remove the toner end sensor to see if there is toner in the sub hopper. • If the sub hopper is empty, the powder pump is defective. Replace the toner supply unit. • If the sub hopper is full, the toner end sensor is defective. Replace the toner supply unit. • If the level of developer is either too high or too low, replace the developer.
57	Vk Error 1
	Problem • Vk (development start voltage) greater than 150V. **Solution** • Replace the developer.
58	Vk Error 2

Code	Error, Problem, Solution
	Problem • Vk (development start voltage) less than –150V. **Solution** • Replace the developer.
59	**Insufficient Active Data**
	Problem • Not enough active data to calculate development gamma (only "0" or "1"). **Solution** • Do the procedure for no. "55" described above.

Potential Adjustment

Code	Error, Problem, Solution
61	**LD Failure**
	Problem • A laser diode failed to fire and write the ID sensor pattern. • Toner shield glass dirty • PCU set incorrectly • Laser diode defective **Solution** 1. Copy the color test pattern to determine which color is abnormal. 2. Turn the machine off. 3. Open the front door, remove the toner supply unit and check the toner shield glass for dirt. 4. Reassemble the machine, switch the machine on, then do SP3820 001. **Notes** • The probes of the potential sensors of each PCU are located at different positions. This failure can be caused by installing a potential sensor at the incorrect position. However, you can eliminate this as a cause if a new PCU is installed. (A guide ensures prevents a PCU from being installed at the wrong location.) • If the machine fails to return SC240 to SC243, you can eliminate a defective LD as the cause of the problem.

Code	Error, Problem, Solution
62	Vr Error
	Problem • Vr (residual voltage) greater than –200V. • Drum deteriorated • Toner shield glass dirty **Solution** • Open the front door, remove the toner supply unit, and check the toner shield glass for dirt. • Clean the glass then do SP3820 001. • If this does not solve the problem, replace the drum.
63	Vd Adjust Error
	Problem • Vd could not be adjusted within ±10V. • Charge roller dirty • Drum defective **Solution** • Replace the charge roller • Replace the drum.
64	Vpl Adjust Error
	Problem • Vpl could not be adjusted within ±5V. • Drum deteriorated due to filming • Charge roller dirty **Solution** • Replace the charge roller • Replace the drum.

Abnormal End

Code	Error, Problem, Solution
90	Potential Adjust Error

Code	Error, Problem, Solution
	Problem • SP3501-001 (potential control method) is set to 1 (Fixed). **Solution** • Do SP3501 001 and select "0" (Auto).
99	**Forced Termination**
	Problem • Door open, power off, or other problem interfering with process control self-check. **Solution** • Make sure the machine is turned on. • Make sure the front door is closed completely.

Color Adjustment for Connected Copiers

This procedure may be required for copiers after they are connected with the Copy Connector Type 3260 B328-11. Do this procedure only if you or the customer notices that the color quality between the two copiers is different.

The scanner gamma curve and printer gamma curve are adjusted at the factory for each machine. However, small differences between machines may arise due to fluctuations in the tolerances of scanner or image processing components.

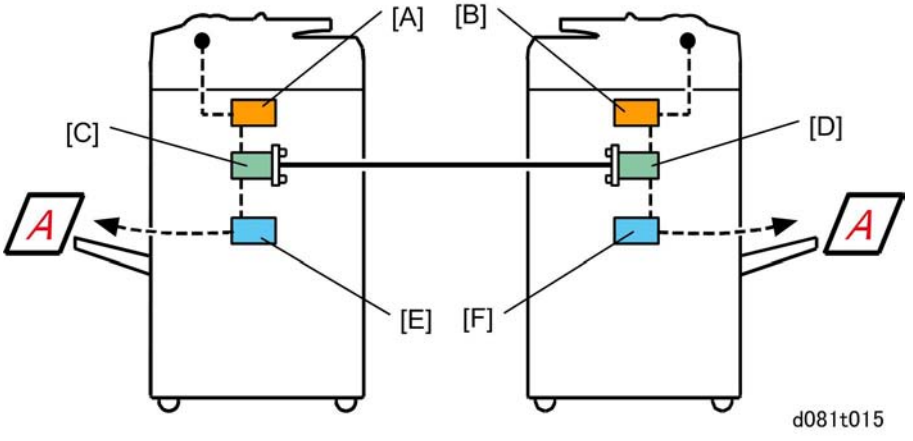
The following two adjustments calibrate these differences to within acceptable standards.

1. Color Adjustment with Connection Kit Color Test Chart (P/N VSST9501)

This adjusts the scanner gamma curve of each machine [A], [B] connected with the Copier Connection Kit B328. The scanner gamma curve is adjusted to equalize the scanner input with the scanner output.

2. ACC (Auto Color Calibration)

This adjusts the printer gamma curves [E], [F] of each machine connected with the Copy Connector Type 3260 B328-11.



[A] Scanner gamma curve – Machine 1

[B] Scanner gamma curve – Machine 2

[C] HDD – Machine 1

[D] HDD – Machine 2

[E] Printer gamma curve – Machine 1

[F] Printer gamma curve – Machine 2

To adjust the main machine:

1. Place the test charge Connection Kit Color Test Chart (P/N VSST9501) on the exposure glass, with the arrow mark on the chart aligned with the left rear corner.
2. Do SP4954 001 (Read New Chart) and touch [Execute].

   After about 10 seconds, the "Completed" message appears. If "Completed" appears immediately after touching [Execute], the adjustment may have failed. Do the procedure again.
3. After doing SP4954 001, do the ACC procedure described in the "Installation" section for the main machine.

To adjust the sub machine:

1. Do Steps 1 to 3 for the sub machine.

Compare the results

1. Set the two machines for full color, and do some sample color copies.
2. Compare the results from the two copiers. If the results are not good, do the procedure again from step 1.

Service Call Conditions

Service Mode Lock/Unlock

At locations where the machine contains sensitive data, the customer engineer cannot operate the machine until the Administrator turns the service mode lock off. This function makes sure that work on the machine is always done with the permission of the Administrator.

1. If you cannot go into the SP mode, ask the Administrator to log in with the Operator Tool and then set "Service Mode Lock" to OFF. After he or she logs in:
2. Operator Tools > System Settings > Administrator Tools > Service Mode Lock > OFF
    - This unlocks the machine and lets you get access to all the SP codes.
    - The CE can do servicing on the machine and turn the machine off and on. It is not necessary to ask the Administrator to log in again each time the machine is turned on.
3. If you must use the printer bit switches, go into the SP mode and set SP 5169 to "1".
4. After machine servicing is completed:
    - Change SP 5169 from "1" to "0".
    - Turn the machine off and on. Tell the administrator that you completed servicing the machine.
    - The Administrator will then set the "Service Mode Lock" to ON.

Service Call Conditions Table

There are 4 levels of service call conditions.

Level	Definition	Reset Procedure
A	Fusing unit SCs are displayed on the operation panel. The machine is disabled, and operator cannot reset the SC.	Enter SP mode and do SP5810 to release the machine for servicing.
B	SCs that disable only the features that use the defective item. These SCs are not shown to the operator under normal conditions. They are displayed on the operation panel only when the defective feature is selected.	Turn the main power switch off and on.
C	SCs that are not shown on the operation panel. They are internally logged.	Logging only

Level	Definition	Reset Procedure
D	Turning the operation switch (or main power switch) off then on resets these SCs. These SCs are displayed on the operation panel and displayed again if the error reoccurs.	Turn the operation switch (or main power switch) off and on, or the machine reboots automatically. (See below.)

When a Level "D" SC code occurs

When a Level D SC occurs, a screen opens on the operation panel to tell the operator:

- An error occurred
- The job in progress will be erased
- The machine will reboot automatically after approximately 30 seconds.

The operator can wait until the machine reboots automatically or touch "Reset" on the screen to reset the machine immediately and go back to the copy screen.

If the operator does not touch "Reset"

The next message tells the operator that the machine will reset automatically and that the previous job was lost and must be started again. After reading the message, the operator touches "Confirm" on the screen. The next screen shows the number and title of the SC code, and stops until the operator turns the machine off and on.

If the operator touches "Reset"

If the operator touches "Reset" to bypass the 30-second interval for the machine to reboot, the machine reboots immediately and the operation panel displays the copy screen.

Important

- **Do not try to use the operation panel during an automatic reboot. If the @Remote Service System is in use, the SC code is sent immediately to the Service Center**

SC Code Descriptions

Before You Begin...

- If a problem concerns a circuit board, disconnect and reconnect the connectors and then test the machine. Often a loose or disconnected harness is the cause of the problem. Always do this before you decide to replace the PCB.
- If a motor lock error occurs, check the mechanical load before you decide to replace the motor or sensors.
- When a Level "A" or "B" SC occurs while in an SP mode, the machine cannot display the SC number. If this occurs, check the SC number after leaving the SP mode.

- The machine reboots automatically when the machine issues a Level "D" SC code. This is done for Level "D" SC codes only.

⚠CAUTION

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

The main power LED (⏻) lights or flashes while the platen cover or ARDF is open, while the main machine is communicating with a facsimile or the network server, or while the machine is accessing the hard disk or memory for reading or writing data.

Service Call Tables

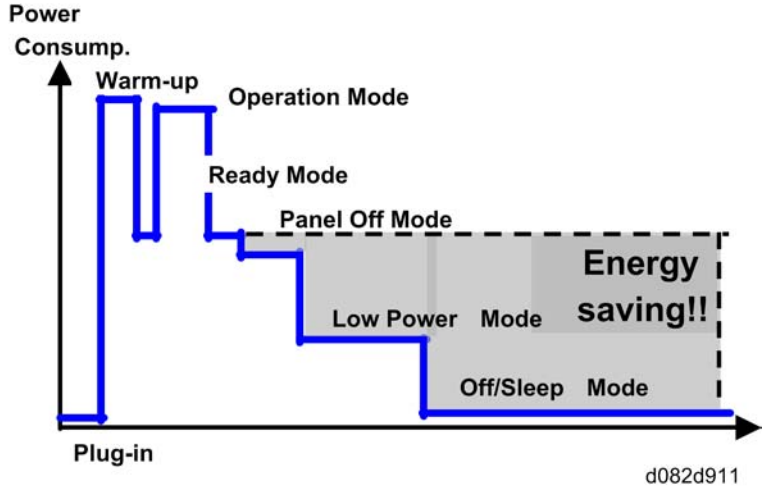
See "Appendices" for "Service Call Tables" information,

7. Energy Saving

Energy Save

Energy Saver Modes

Customers should use energy saver modes properly, to save energy and protect the environment.



The area shaded grey in this diagram represents the amount of energy that is saved when the timers are at the default settings. If the timers are changed, then the energy saved will be different. For example, if the timers are all set to 240 min., the grey area will disappear, and no energy is saved before 240 min. expires.

Timer Settings

The user can set these timers with User Tools (System settings > Timer setting)

- Panel off timer (10 sec – 240 min): Panel Off Mode. Default setting: 60 sec.
- Energy saver timer (1 – 240 min): Low Power Mode. Default setting: 15 min.
- Auto off timer (1 – 240 min): Off/Sleep Mode. Default setting: 30 min.

Normally, Panel Off timer < Energy Saver timer < Auto Off timer. But, for example, if Auto Off timer < or = Panel Off timer and Energy Saver timer, the machine goes immediately to Off mode when the Auto Off timer expires. It skips the Panel Off and Energy Saver modes.

Example

- Panel off: 1 min.

- Low power: 15 min.
- Auto Off: 1 min.
- The machine goes to Off mode after 1 minute. Panel Off and Low Power modes are not used.

Return to Stand-by Mode

Low Power Mode

The recovery time depends on the model and the region.

- 45 sec.

Off/Sleep Mode

Recovery time.

- V-C3a: 90 sec.
- V-C3b: 75 sec.

Recommendation

We recommend that the default settings should be kept.

- If the customer requests that these settings should be changed, please explain that their energy costs could increase, and that they should consider the effects on the environment of extra energy use.
- If it is necessary to change the settings, please try to make sure that the Auto Off timer is not too long. Try with a shorter setting first, such as 30 min., then go to a longer one (such as 60 min.) if the customer is not satisfied.
- If the timers are all set to the maximum value, the machine will not begin saving energy until 240 minutes has expired after the last job. This means that after the customer has finished using the machine for the day, energy will be consumed that could otherwise be saved.
- If you change the settings, the energy consumed can be measured using SP8941, as explained below.

Energy Save Effectiveness

SP 8941 (Machine Status) keeps a record of the amount of time that the machine spends in each mode.

- 8941-001: Operating mode
- 8941-002: Standby mode
- 8941-003: Panel off mode
- 8941-004: Low power mode
- 8941-005: Off/sleep mode

With this data, and the power consumption values from the specifications, we can estimate the amount of energy that is used by the machine.

This should only be used as a reference value, because the power consumption specifications are measured in a controlled environment with a constant power supply.

To get an exact measurement at the customers site, a watt meter must be used to measure the actual energy consumed.

To use SP8941 to calculate the energy consumed:

- At the start of the measurement period, read the values of SP8941 001 to 005.
- At the end of the measurement period, read the values of SP8941 001 to 005 again.
- Find the amount of time spent in each mode (subtract the earlier measurement from the later measurement).
- Multiply this by the power consumption spec for each mode.
- Convert the result to kWh (kilowatt hours)

Here is an example calculation.

Machine Condition	SP8941: Machine Status	Time at Start (min.) ①	Time at End (min.) ②	Running time (hour) (②-①)/60 = ③	Power consumption Spec. (W) ④	Power consumption (KWH) (③x④)/1000 = ⑤
Operating	001: Operating Time	21089.0	21386.0	5.0	1081.8	5.35
② Stand by (Ready)	002: Standby Time	306163.0	308046.0	31.4	214.0	6.72
③ Energy save (Panel off)	003: Energy Save Time	71386.0	75111.0	62.1	214.0	13.29
④ Low power	004: Low Power Time	154084.0	156340.0	37.6	146.0	5.49
⑤ Off/Sleep	005: Off Mode Time	508776.0	520377.0	193.4	7.0	1.35

Total ⑥	32.20

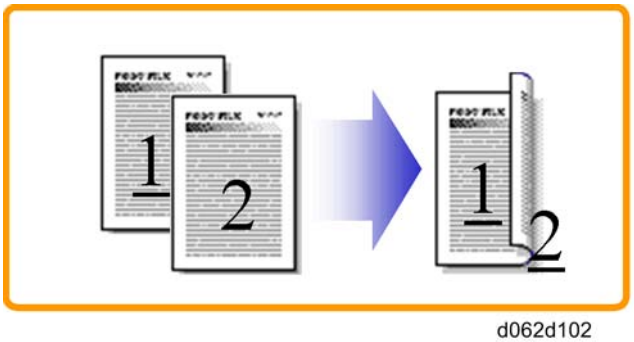
Paper Save

Effectiveness of Duplex/Combine Function

Duplexing and the combine functions reduce the amount of paper used. This means that less energy overall is used for paper production, which improves the environment.

1. Duplex:

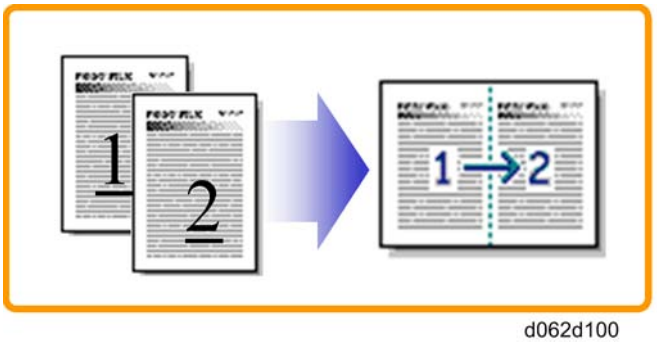
Reduce paper volume in half!



d062d102

2. Combine mode:

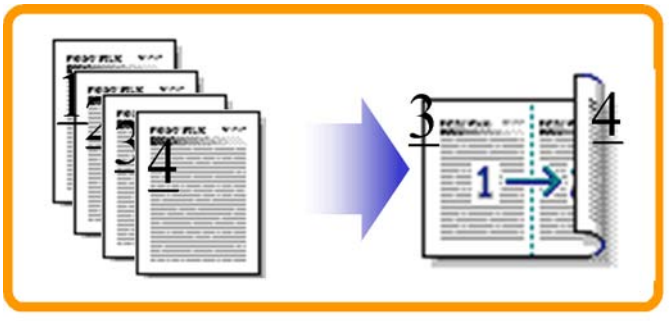
Reduce paper volume in half!



d062d100

3. Duplex + Combine:

Using both features together can further reduce paper volume by 3/4!



d062d101

To check the paper consumption, look at the total counter and the duplex counter.

The total counter counts all pages printed.

- For one duplex page, the total counter goes up by 2.
- For a duplex job of a three-page original, the total counter goes up by 3.

The duplex counter counts pages that have images on both sides.

- For one duplex page, the duplex counter goes up by 1.
- For a duplex job of a three-page original, the duplex counter will only increase by 1, even though two sheets are used.

7

How to calculate the paper reduction ratio

How to calculate the paper reduction ratio, when compared with Single-sided copying, with no 2-in-1 combine mode

Paper reduction ratio (%) = Number of sheets reduced: A/Number of printed original images: B x 100

- Number of sheets reduced: A

  = Output pages in duplex mode/2 + Number of pages in Single-sided with combine mode + Number of pages in Duplex with combine mode x 3/2
  A = ((2) + (3) + (4))/2 + (5) + (6) x 3/2

- Number of printed original images: B

  = Total counter6 + Number of pages in Single-sided with combine mode + Number of pages in Duplex with combine mode
  B = (1) + (5) + (6)

- (1) Total counter: SP 8581 001 (pages)
- (2) Single-sided with duplex mode: SP 8421 001 (pages)
- (3) Double-sided with duplex mode: SP 8421 002 (pages)
- (4) Book with duplex mode: SP 8421 003 (pages)
- (5) Single-sided with combine mode: SP 8421 004 (pages)

- (6) Duplex with combine mode: SP 8421 005 (pages)

Model V-C3
Machine Code: D081/082

Appendices

25 December, 2009

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1. Appendix: Specifications

2. Appendix: PM Tables

3. Appendix: Service Call Conditions

4. Appendix: Service Program Mode Tables

1. Appendix: Specifications

Specifications

Main Frame D081/D082

General and Copying

Configuration	Console	
Dimensions (w x d x h)		
No ADF	750 x 850 x 1050 mm (29.5 x 33.5 x 41.3 in.)	
With ADF	750 x 850 x 1230 mm (29.5 x 33.5 x 48.4 in.)	
Memory	On board	2 GB
	HDD	320 GB
Weight (with ADF)	Less than 298 kg (655.6 lb)	
Interfaces		
Network	Ethernet (standard), Gigabit Ethernet (option), Wireless LAN (option)	
Counter I/F	Parallel (20-pin), Parallel (4-pin), Serial	
USB 2.0 Type A (2- Board)	Standard	
USB 2.0 Type B (1-Board)	Standard	
IEEE 1284 ECP	Option	
Bluetooth	Option	
Peripheral Connection	Standard	
SD Card I/F Slots	2 slots, Slot 1 (lower for service), Slot 2 (upper for applications)	
SD Card D505	Option	
Original Scanning	Flatbed with moving 3-line CCD array, image scanning	

Copy Process	4-drum dry electrostatic transfer system with internal transfer belt	
ADF	Simultaneous dual scan, front and back	
Development	Dry dual-component magnetic brush development	
Fusing	Oil-less belt fusing system	
Engine speed	D081	BW 65 cpm, FC 60 cpm,
	D082	BW 75 cpm, FC 70 cpm,
Warm-up time	D081	70 sec.
	D082	60 sec.
First copy time	D081	BW: 5.0 sec. FC: 5.8 sec.
	D082	BW: 4.2 sec. FC: 5.4 sec.
Original types	Book mode, Single-sheet feed with ADF	
Max. original size	Book Mode: 297 x 432 mm (11.7 x 17 in.) ADF: A3/DLT SEF	
Resolution	Copy	600 dpi
	Print	200/300/400/600/1200 dpi
	Scan (Send)	600
	Gradation	200, 300, 400 dpi (1-bit) 600 dpi (1-, 2-, 4-bit) 1200 dpi (1-bit)
Image Size	Default	297 (+4) x 457 mm (Note 1)
	Max.	297 (+4) x 600 mm (Note 2)

Note 1: Size depends on the D081/ D082 application "+4" not guaranteed.

Note 2:

- Size depends on the D081/ D082 application "+4" not guaranteed.
- Setting with SP mode is required.
- The max. setting cannot be selected if the SR5000 is installed.

Magnification	NA	7 Reduction, 5 Enlargement: 93%, 85%, 78%, 73%, 65%, 50%, 25%,121%, 129%, 155%, 200%, 400%	
	EU/AP	7 Reduction, 5 Enlargement: 93%, 82%, 75%, 71%, 65%, 50%, 25%, 115%, 122%, 141%, 200%, 400%	
Zoom	25% to 400% (1% Steps)		
Paper capacity (Number of sheets calculated with 80 g/m^2 20 lb bond paper)	Tray 1	1,100 x2	2,200
	Tray 2	550	550
	Tray 3	550	550
	Bypass	100	100
	Main Total		3,400
	With LCT B473	4,000	7,400
	With LCIT D350	2,000	5,400
Original size detection: exposure glass	NA	11"x17", 8½"x14" SEF, 8½"x11" LEF/SEF	
	EU/AP	A3/A4 SEF, B4 SEF, A4/B5 LEF/SEF, 8½ "x13" SEF (8K, 16K available with SP mode)	
Original size detection (ADF)	NA	11"x17", 10"x14", 8½ x 14" SEF 8½"x11", 5½"x8½" SEF/LEF 7¼"x10½", A3 SEF A4 SEF/LEF	
	EU, Asia	A3, B4 SEF A4, B5, A5, B6 SEF/LEF 8½"x13", 8K SEF 16K SEF	
Paper Size			
Standard Copying	A3, B4, A4, B5, A5, 12" x 18", DLT, LG, LT, HLT, F/F4		

Duplex Copying	A3/DLT to A5/HLT LEF, 12" x 18" LEF	
Width Range	139.7 to 305 mm (5.5 to 12 in.)	
Length Range	139.7 to 457.2 mm (5.5 to 18 in.)	
Paper weight	Tray 1	52.3 – 216 g/m^2 14 Bond – 80 lb Cover
	Tray 2	
	Tray 3	52.3 – 256 g/m^2 14 Bond – 90 lb Cover
	Bypass	52.3 – 300 g/m^2 14 lb Bond– 110 lb Cover
	Duplex mode	60 – 216 g/m^2 17 lb Bond – 90 lb Index
Output capacity	500 sheet (A4, 8½"x11") (with copy tray)	
Power	D081	110 to 127 V 20A 60Hz (NA)
	D082	208 to 240 V 12 A 60Hz (NA
	D081/D082	220 to 240 V 12 to 10A 50 to 60 Hz (EU/AP/TWN)
Max. power consumption	NA	D081: Less than 1920 W D082: Less than 2400 W
	EU/AP	Less than 2400 W (full system)
TEC (Typical Energy Consumption)		
	NA	D081: 8.72 kWh/w D082: 9.66 kWh/w
	EU	D081: 8.07 kWh/w D082: 9.66 kWh/w
Sleep Mode	3 W	
Energy Star	Compliant	

Counter	NA	Electric counter, mechanical counter x2
	EU/AP	Electric counter, mechanical counter x1
Counterfeit prevention	Bill recognition, invisible marking function	

Printing

CPU	Intel Celeron LV 733 MHz	
RAM	1384 MB (shared with copying, scanning)	
HDD	320 GB (80 GB x 4)	
Printer Languages	Standard	RPCS, PCL6, PCL5e, PCL5c, RTIFF
	Option	PS3, R55, PDF Direct
Print Resolution (max.)	600 x 600 dpi (4-bit)	
Fonts	Standard	45 PCL fonts, 13 International
	Option	PS3, 136 Adobe PostScript Type 1 fonts
Connectivity		
Host interface	Standard	Ethernet RJ-45, 10-BaseT, 100BaseTX, USB 2.0
	Options*1	IEEE1284 ECP, IEEE1394 (FireWire), IEEE802.11b (Wireless LAN), Bluetooth
Network Protocol	TCP IP, IPX/SPX, Apple Talk	
MIB support	Private MIB	Ricoh original
	Standard MIB	MIB-II (RFC1213), HostResource (RFC1514), PrinterMib (RFC1759)
Network, operating systems	Windows 2000, Windows XP, Windows Vista, Windows 2003 Server, MetaFrame, CPS, XenApp Mac OS 8.6 and higher, Mac OSX 10.1 to 10.6 and later	

Scanning

Optical resolution	100, 150, 200 (default), 300, 400, 600 dpi

Scanning speed	TBA		
Max. scan area	297 x 432 mm (11.7"x17")		
Auto scan size detection	Exposure glass	Supported (conforms with main machine specifications)	
	ADF	Supported (conforms with main machine specifications)	
Original size	Standard	A3, A4 SEF, A4 LEF, A5 SEF/LEF, B4, B5 SEF, B5 LEF, 11"x17" SEF, 8½"x14" SEF, 8½"x13" SEF, 8½"x11" SEF/LEF, 5½ "x8½" SEF/LEF	
	Customized	Min.	10 x 10 mm (0.04"x0.04")
		Max.	297 x 432 mm (11.7"x17")
Compression Method	BW Binary: TIFF MH, MR, MMR Grayscale/Full Color: JPEG		
Interface support	10/100BaseTX, IEEE802.11b (Wireless LAN), IEEE1394 (FireWire)		
Scan mod	Default	BW Text	
	Supported	BW OCR, BW Text-Photo, BW Photo, Grayscale, FC Photo, FC Text Photo	
	Options*1	Auto Color Selection, sRGB Photo, sRGB Text Photo	
Image Density	Auto Density Selection, Manual Setting (7 levels)		
Image Rotation	TBA		
SADF/Batch mode	Supported		
Mixed size originals	Supported		

*1: File Format Converter D377 is necessary.

ADF

Original Size	Simplex: A3/11" x 17" – B6/5.5" x 8.5" Duplex: A3/11" x 17" – B5/5.5" x 8.5"

Original Weight	Simplex: 40 to 128 g/m^2 (11 to 34 lb.) Duplex: 52 to 128 g/m^2 (14 to 34 lb.)
Table Capacity (A4 SEF, LT SEF)	250 sheets: 69g/m^2 (150 sheets: 80g/m^2, 20 lb. Bond)
Original Standard Position	Rear left corner
Separation	Feed belt and separation roller
Original Transport	Roller transport
Original Feed Order	From top original
Reproduction Range	100%
Power Source	DC 24 V from the main machine
Power Consumption	Less than 110 W
Rated Voltage of Output Connector	Max. DC 24 V
Permissible voltage fluctuation	±10%
Dimensions (W x D x H)	680 x 560 x 180 mm (26.8" x 22.0" x 7.1")
Weight	18 kg (39.6 lb.)

Optional Peripherals

LCT B473

Installation of the LCT Adapter B699 is required to adjust the height of LCT B473.

Dimensions (w x d x h)	Stand-alone	314 x 458 x 659 mm (12.4 x 18 x 25.9 in.)
	With LG/B4 Option	462 x 458 x 659 mm (18.2 x 18 x 25.9 in.)
Weight	Standalone	Less than 20 kg (44 lb)
	With LG/B4 Option	Less than 27 kg (59.4 lb)
Power Consumption		Less than 50 W
Noise		Less than 74dB

Paper Size	A4, B5, 11"x 8½" LEF
Paper Weight	52 - 128g/m^2 14 lb – 34 lb Bond
Paper Capacity (80 g/m^2 or 20 lb bond)	4,000 sheets** 2,500 sheets*

LCT 4000 D350

Expected Service Life	5 Years or 9,000K
Paper Feed System:	FRR-CF
Paper Capacity	2,000 sheets (Paper thickness: 0.11 mm)
Remaining Paper Detection (Accuracy: ±30 sheets)	5-Step including Near-End
Paper Weight	52 to 300 g/m^2
Paper Size	A5 to A3, HLT to 12 x 19.2 in. Postcards (100 mm wide) Custom Size: Length: 139.7 to 487.6 mm Custom Size: Width: 100 mm to 305.0 mm (Small Size: 100 to 139.2 mm)
Paper Size Switching	Side fence, end fence adjustment.
Paper Size Detection	Automatic
Anti-Condensation Heater	Available as option
Dimensions (w x d h)	865 x 730 x 746 mm (34 x 28.7 x 29.4 in.)
Weight	Less than 86 kg (190 lb)
Power Source	DC 24 V ±10% (from main machine)
Power Consumption:	Less than 120 W
I/F	Serial

Tab Sheet:	Requires installation of tab sheet fence. **Note**: Only A4 LEF, 8½"x11" LEF tab sheets can be fed.

8½ x 14" Paper Size Tray B474

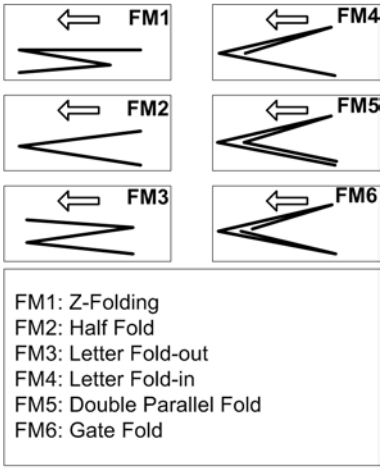
This option converts LCT B473 so it can hold and feed LG size paper.

Paper Size	8½"x14", 8½"x11", A4, B4 SEF
Paper Weight	52 - 128g/m^2 14 lb - 34 lb Bond

Multi-Folding Unit FD5000 (D454)

General

Operating Environment	Temperature and humidity ranges: Same as main machine.		
Service Life	Expected: 5 years or 60,000 K (A4 LEF)		
Paper Weight	40 to 300 g/m^2		
Folding Methods	6 (see below)		
Speed	Straight-Through	100 to 700 mm/s	
	Folding	270 to 700 mm/s	
Straight-Through Feed	Size	Postcard to 13x19.2"	
	Type	Used paper: A3, A4, B4, B5 OHP: A4, B5 Tap paper: A4 LEF, LT LEF	
Folding Methods	6 (FM1 to FM6)		



Paper Sizes (Folding)	FM1	A3, B4, DLT, LG, A4, LT, 12x18", 8-kai
	FM2	A3, B4, DLT, LG, A4, B5, LT 12x18", 12.6x18.5", 12.6x19.2", 13x18", 13x19", 13x19.2", 226x310 mm, 310x432 mm, SRA3, SRA4, 8-kai
	FM3	A3, B4, DLT, LG, A4, LT, B5, 12x18", 8-kai
	FM4	
	FM5	
	FM6	
Paper Weights (Folding)	FM1	64 to 105 g/m^2
	FM2	
	FM3	
	FM4	
	FM5	
	FM6	

Multiple Folding	FM1	Not allowed
	FM2	Max. 3 (64 to 80 g/m^2 only)
	FM3	Max. 3 (64 to 80 g/m^2 only)
	FM4	Max. 3 (64 to 80 g/m^2 , B4, A4, LT, B5 only)
	FM5	Not allowed
	FM6	
Line Speed (Only FM1 Z-Folded paper can exit downstream)		
No Fold	350 mm/sec. to top tray To downstream: Same as main machine.	
FM1	700 mm/sec. to top tray (paper ≤ 355.6 mm long) 450 mm/sec. to top tray (paper < 355.6 mm long) To downstream: Same as main machine.	
FM2	1 Sheet: Same as main machine 2-3 Sheets: 454 mm/sec. 700 mm/sec. to top tray (paper ≤ 355.6 mm long) 350 mm/sec. to top tray (paper ≤ 279.4 <355.6 mm long) 250 mm/sec. to top tray (paper < 279.4 mm long)	
FM3 FM4	1 Sheet: Same as main machine 2-3 Sheets: 454 mm/sec. to top tray 350 mm/sec. to top tray (paper ≤ 420 mm long) 250 mm/sec. to top tray (paper < 420 mm long)	
FM5	1 Sheet: Same as main machine 350 mm/sec. to top tray (paper ≤ 420 mm long) 250 mm/sec. to top tray (paper < 420 mm long)	
FM6	1 Sheet: Same as main machine as far as 3rd Stopper. At 3rd stopper feeds 50 mm at 100 mm/sec. 350 mm/sec. to top tray (paper ≤ 420 mm long) 250 mm/sec. to top tray (paper < 420 mm long)	
Power Supply	NA	AC 120V 60 Hz, 15A

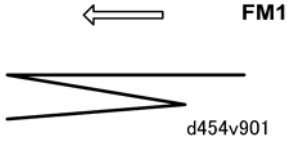
	EU	AC 220 to 240V, 50/60 Hz 10A	
Power Consumption	270 W		
Dimensions (w x d x h)	470 x 980 x 730 mm (18.5 x 38.6 x 28.7 in.)		
Level	Less than 5 mm deviation at front/back, left/right		
Weight	92 kg (203 lb)		
Noise Level (dB A)	Mode	Alone	System
	No Folding	≤ 76 dB	---
	Folding	≤ 78 dB	≤ 83 dB

Tray Capacity

The capacity of the tray on top of the unit for folded paper is determined by these variables:

- Folding Methods (FM1 to FM6)
- Paper size
- Paper weight

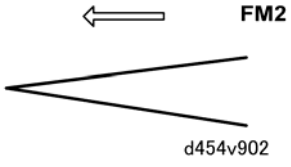
Folding Mode FM1



Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	35	20
12x18"	35	20
A3 SEF	35	20
DLT	35	20
B4 SEF	35	20
LG SEF	35	20
A4 SEF	30	20

Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
LT SEF	30	20

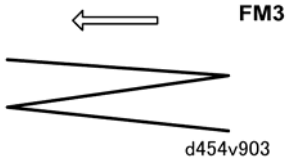
Folding Mode FM2



Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
13x19.2"	40	25
13x19"	40	25
12.6x19.2"	40	25
12.6x18.5"	40	25
13x18"	40	25
SRA3 (320x450 mm)	40	25
SRA4 (225x320 mm)	40	25
226x310 mm	40	25
310x432 mm	40	25
8-kai	40	25
12x18"	40	25
A3 SEF	40	25
DLT	40	25
B4 SEF	40	25
LG SEF	40	25
A4 SEF	50	50

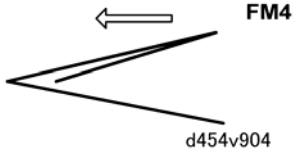
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
LT SEF	50	50
B5 SEF	50	50

Folding Mode FM3



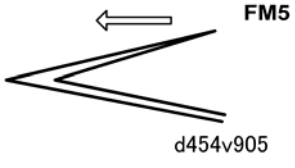
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	30	20
12x18"	30	20
A3 SEF	30	20
DLT	30	20
B4 SEF	30	20
LG SEF	30	20
A4 SEF	40	30
LT SEF	40	30
B5 SEF	40	30

Folding Mode FM4



Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	40	20
12x18"	40	20
A3 SEF	40	20
DLT	40	20
B4 SEF	40	20
LG SEF	40	20
A4 SEF	50	40
LT SEF	50	40
B5 SEF	50	40

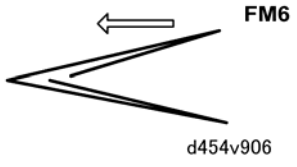
Folding Mode FM5



Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	30	20
12x18"	30	20
A3 SEF	30	20
DLT	30	20
B4 SEF	30	20
LG SEF	30	20
A4 SEF	30	30
LT SEF	30	30

Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
B5 SEF	30	30

Folding Mode FM6



Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	50	20
12x18"	50	20
A3 SEF	50	20
DLT	50	20
B4 SEF	50	20
LG SEF	50	20
A4 SEF	30	30
LT SEF	30	30
B5 SEF	30	30

Ring Binder RB5000 (D392)

Configuration	Console
Paper Transport	Centered in paper path
Operation Modes	Punching + ring binding Punching only Straight-through (downstream delivery)

Signature Thickness	2 to 100 sheets		
Paper Size	Punching, binding	A4 LEF, LT LEF	
	Straight-through (no punching)		
	Unfolded	A6 to A3 SEF, DLT, HLT, 12"x18", 13"x19", 12.6"x19.2", 13"x19.2", Tab sheets (A4, LT, LG)	
	Z-Folded	A3, B4, A4 SEF, DLT, LG, LT SEF 12"x18" (from upstream Z-Folder unit).	
Paper Weight	64 to 216 g/m2		
Ring Sizes	2 (50-sheet, 100-sheet)		
Punching	A4 LEF: 23 holes LT LEF: 21 holes		
Ring Supply	Cartridge feed: capacity: 80 rings max.		
Output Tray Capacity	11 documents (100-ring bound, A4 SEF)		
	Thickness	Ring	On Tray
	2 to 10	50	25
	11 to 50	50, 100	20
	51 to 100	100	11
Punching Only	Up to 50 sheets		
Dimensions	870 x 730 x 980 mm (34.3 x 28.7 x 38.6 in.)		
Weight	140 kg (308 lb.)		
Power Consumption	Less than 400 W		

9-Bin Mailbox B762

- The mailbox can be installed on top of the 2000-Sheet Finisher D373 or the 3000-Sheet Finisher D374 (not 3000-Sheet Finisher B830).
- The mail box must be removed to install Cover Interposer Tray B704. The mail box and cover interposer tray cannot be installed at the same time.

Dimensions (w x d x h)	540 x 600 x 660 mm (21.3 x 23.6 x 26 in.)
Weight	Less than 15 kg (33 lb)
Power Consumption	Less than 48 W
Noise	Less than 74 dB
Number of Bins	9 bins
Stack Capacity of each Bin	100 sheets*
Paper Size	A5. A4, A3 5½"x8½", 8½" x11", 8½" x14", 11"x17"
Paper Weight	60 to 128g/m^2, 16 lb – 34 lb Bond

Cover Interposer Tray B704

- Cover Interposer Tray B704 can be used with the 2000-Sheet Finisher D373 or 3000-Sheet Finisher D374 between the mainframe and finisher. The interposer tray and the Mailbox B762 cannot be installed together.
- This tray cannot be installed on the 3000-Sheet Finisher B830.

Dimensions (w x d x h)		500 x 600 x 600 mm (19.7 x 23.6 x 23.6 in.)
Weight		Less than 12 Kg (26.4 lb)
Power Consumption		Less than 43 W
Noise		Less than 65 db
Stack Capability*		200 Sheets
Paper Size		A5-A3, 5½"x8½" - 11"x17"
Paper Weight		64 g/m^2-216 g/m^2 17 lb Bond- 58 lb Index, 80 lb Cover
Original Set Position		Center
Original Set	Normal Feed	Face-up
	Booklet Feed	Face-down

Cover Interposer Tray B835

Cover Interposer Tray B835 can be used only with the 3000-Sheet Finisher B830. It cannot be installed on the 2000/3000-Sheet Finishers D373/D374.

Speed	B234 (90 cpm)	432 mm/s
	B235 (110 cpm)	515 mm/s
	B236 (135 cpm)	649 mm/s
Paper Separation	FRR System with Feed Belt	
Paper Sizes	Width: A5 SEF/5½"x8½" SEF - 13" Length: A5 LEF/5½"x8½" LEF - 19"	
Paper Weight	64 - 216 g/m^2	
Capacity	400 sheets (80 g/m^2) (2 trays 200 sheets each)	
Paper Size Detection	Yes	
Paper Size Switching	Operator adjustable side fences	
Side Registration	Yes	
Power Supply	24 V ± 5% (from mainframe)	
Power Consumption	Less than 50 W	
Dimensions (w x d x h)	Less than 540 x 730 x 1200 mm 21.2" x 28.7" x 47.2"	
Weight	Less than 45 kg (99 lb)	

3000-Sheet Finisher B830

This machine requires installation of the Finisher Adapter D375 in this finisher.

Finisher	
Dimensions (w x d x h)	800 x 730 x 980 mm (31.5 x 28.7 x 38.6 in.)
Weight	Less than 75 kg (165 lb)
Power Consumption	Less than 120W
Noise	Less than 75 dB

Configuration		Console type attached base-unit with Finisher Adapter		
Power Source		From base-unit		
Proof Tray	Stack Capacity*	500 sheets	A4, 8½"x11" or smaller	
		250 sheets	B4, 8½"x14" or larger	
	Paper Size	A6 SEF-A3 SEF 5½ " x8½ " - 11"x17"		
	Paper Weight	52 g/m²-216 g/m² 14 lb Bond- 68 lb Bond / 140 lb Index / 90 lb Cover		
Shift Tray	Stack Capacity*	3000 sheets	A4 LEF, B5 LEF, 8½"x11" LEF	
		1500 sheets	A3, A4, B4, B5 SEF 11"x17", 8½"x14", 8½"x11" SEF	
		500 sheets	A5 LEF, 5½"x8½" LEF	
		100 sheets	A5 SEF, 5½"x8½" SEF	
	Paper Size	A5 - A3 SEF 5½"x8½", 11"x17", 12"x18", 13"x19"		
	Paper Weight	52 g/m²-300 g/m² 14 lb Bond- 68 lb Bond / 140 lb Index / 90 lb Cover		
Staples				
Paper Size		B5-A3, 8½"x11"-11"x17"		
Paper Weight		64 g/m²-84 g/m², 17 lb Bond-20 lb Bond		
Staple Position		Top, Bottom, 2 Staple, Top-slant		
Staple Replenishment		Cartridge exchange / 5000 pins per cartridge		
Stack Capacity with Stapler				
		Paper Size	Pages/Set	Sets
		A4, B5 8½"x11"	10-100 pages	200-30 sets
			2-9 pages	150 sets

	A3, B4, 11"x17", 8½"x14"	10-50 pages	150-30 sets
		2-9 pages	150 sets

Punch Unit B831

This punch unit is for the 3000-Sheet Finisher B830.

Punch Unit Types		NA	2/3 holes
		EU	2/4 holes
		Scandinavia	4 holes
Punch Waste Hopper Capacity		NA 2/3 hole	10,000 sheets
		EU 2/4 hole	15,000 sheets
Paper Weight		52 g/m²-127.9 g/m² 14 lb Bond –34 lb Bond	
Paper Size	NA 2-holes	SEF	A6 - A3, 5½"x8½" - 8½"x11"
		LEF	A5 - A4, 5½"x8½", 8½"x11"
	NA 3-holes	SEF	A3, B4, 11"x17"
		LEF	A4, B5, 8½"x 11"
	EU 2-holes	SEF	A6 - A3, 5½"x8½" - 11"x17"
		LEF	A5 - A4, 5½"x8½", 8½"x11"
	EU 4-holes	SEF	A3, B4, 11"x17"
		LEF	A4, B5, 8½"x11"
	Scandinavia 4-holes	SEF	B6 - A3, 5½"x8½" - 11"x17"
		LEF	A5 - A4, 5½"x8½", 8½"x11"

2000-Sheet Finisher D373

This finisher provides booklet as well as corner stapling. Equipped with two trays, the upper tray holds stapled and shifted copies, and the lower tray holds booklet stapled and folded copies.

Dimensions w x d x h		657 x 613 x 960 mm (25.9 x 24.1 x 37.8")	
Weight		Less than 63 kg (138.6 lb) (no punch unit) Less than 65 kg (143 lb) (with punch unit)	
Power Consumption		Less than 96 W	
Noise		Less than 75 db	
Configuration		Console type attached base-unit	
Power Source		From base-unit	
Proof Tray	Stack Capacity*	250 sheets A4, 8½"x11" or smaller 50 sheets B4, 8½"x14 or larger	
	Paper Size	A5-A3 SEF, A6 SEF, A6 LEF 5½" x8½" to11"x17" SEF, 12"x18" SEF	
	Paper Weight	52 g/m²-163 g/m² 14 lb Bond- 43 lb Bond / 90 lb Index / 60 lb Cover	
Shift Tray	Stack Capacity*	2,000 sheets	A4 LEF, 8½"x11" LEF
		1,000 sheets	A3 SEF, A4 SEF, B4 SEF, B5 11"x17" SEF, 8½" x14" SEF, 8½"x11" SEF, 12"x18" SEF
		500 sheets	A5 LEF
		100 sheets	A5 SEF, B6 SEF, A6 SEF, 5½" x8½" SEF
	Paper Size	A5 - A3 SEF, A6 SEF, B6 SEF 5½" x8½" to 11"x17" SEF, 12"x18" SEF	
	Paper Weight	52 g/m²-256 g/m² 14 lb Bond- 68 lb Bond / 140 lb Index / 90 lb Cover	
Staple			
Paper Size		B5-A3, 8½"x11"-11"x17", 12"x18"	
Paper Weight		64 g/m²-90 g/m², 17 lb Bond-28 lb Bond	
Staple Position		Top, Bottom, 2 Staple, Top-slant	

Staples Capacity*	Same Paper Size	50 sheets	A4, 8½"x11" or smaller
		30 sheets	B4, 8½"x14" or larger
	Mixed Paper Size	30 sheets	A4 LEF & A3 SEF, B5 LEF & B4 SEF, 8½"x11" LEF & 11" x17" SEF
	Booklet Stapling	15 sheets	A4 SEF, A3 SEF, B5 SEF, B4 SEF, 8½"x11" SEF, 8½"x14" SEF, 11"x17" SEF, 12"x18" SEF

Staple Replenishment		Corner staple	5,000 staples per cartridge
		Booklet staple	2,000 staples per cartridge
Corner Staple Capacity	Same Size	A4 LEF, 8½"x11" LEF	13-50 pages
			2-12 pages
		A4 SEF, B5, 8½"x11" SEF	10-50 pages
			2-9 pages
		Others	10-30 pages
			2-9 pages
	Mixed Size	A4 LEF + A3 SEF B5 LEF + B4 SEF 8½"x11" LEF + 11" x17" SEF	2-30 pages

	Paper Size	Sheets per Booklet	Booklets per Stack (Lower Tray)
Booklet Staple Capacity	A4 SEF, A3 SEF, B5 SEF, B4 SEF, 8½"x11" SEF, 8½"x14" SEF, 11"x17" SEF, 12"x18" SEF	2-5 pages	30
		6-10 pages	15
		11-15 pages	10

D373/D374 Paper Specifications

Paper Size	Plain Paper			Paper Type	
	Main machine PPC	Used Paper	Recycled Paper	Colored Paper	Translucent Blueprint
A3 SEF	BSFS	—	BSFS	BSFS	SN
B4 SEF	BSFS	SN	BSFS	BSFS	SN
A4 SEF	BSFS	SN	BSFS	BSFS	SN
A4 LEF	CSS	SN	CSS	CSS	SN
B5 SEF	BSFS	SN	BSFS	BSFS	SN
B5 LEF	CSS	SN	CSS	CSS	SN
A5 SEF	SO	—	—	—	—
A5 LEF	SO	—	—	—	—
B6 SEF	SN	—	—	—	—
B6 LEF	SN	—	—	—	—
12"x18" SEF	BSFS	—	BSFS	BSFS	—
11"x17" SEF	BSFS	—	BSFS	BSFS	SN
8½"x14"	BSFS	—	BSFS	BSFS	SN
8½"x11" SEF	BSFS	—	BSFS	BSFS	SN
8½"x11" LEF	CSS	—	CSS	CSS	SN
5½"x8½"	SO	—	—	SO	—
5½"x8½"	SO	—	—	SO	—

Table Key

CSS	Corner stapling, Shift, YES
BSFS	Booklet stapling/folding, Shift, YES
SO	Shift ONLY
SN	Shift NO

—	Not available

3000-Sheet Finisher D374

This finisher provides corner stapling only.

Finisher		
Dimensions (w x d x h)		657 x 613 x 960 mm
Weight		Less than 54 kg Less than 56 kg with Punch Unit
Power Consumption		Less than 96 W
Noise		Less than 75 db
Configuration		Console type attached base-unit
Power Source		From base-unit
Proof Tray	Stack Capacity*	250 sheets: A4, 8½"x11" or smaller 50 sheets: B4, 8½"x14 or larger
	Paper Size	A5-A3 SEF, A6 SEF, A6 SEF 5½""x8½"-11"x17"SEF, 12"x18" SEF
	Paper Weight	52 g/m²-163 g/m² 14 lb Bond- 43 lb Bond / 90 lb Index / 60 lb Cover

Shift Tray	Stack Capacity*	3,000 sheets	A4 LEF, 8½"x11" LEF "
		1,500 sheets	A3 SEF, A4 SEF, B4 SEF, B5, 11"x17" SEF, 8½"x14" SEF, 8½"x11" SEF, 12"x18" SEF
		500 sheets	A5 LEF**
		100 sheets	A5 SEF, B6 SEF, A6 SEF, 5½"x8½",SEF
	Paper Size	A5 - A3 SEF, A6 SEF, B6 SEF, 5½"x8½"- 11"x17" SEF, 12"x18" SEF	
	Paper Weight	52 g/m² - 256 g/m² 14 lb Bond - 68 lb Bond / 140 lb Index / 90 lb Cover	
Staples			
Paper Size		B5-A3 8½"x11"-11"x17", 12"x18"	
Paper Weight		64 g/m² - 90 g/m² 17 lb Bond - 28 lb Bond	
Staple Position		Top, Bottom, 2 Staple, Top-slant	
Stapling Capacity	Same Paper Size	50 sheets	A4, 8½"x11" or smaller
		30 sheets	B4, 8½"x14" or larger
	Mixed Paper Size	30 sheets	A4 LEF + A3 SEF, B5 LEF + B4 SEF, 8½"x11" LEF + 11"x17" SEF
Staple Replenishment		Cartridge exchange / 5000 pins per cartridge	

Stapled Stack Capacity (same size)	Paper Size	Pages/Set	Sets
	A4 LEF, 8½""x11" LEF	20-50 pages	150-60 sets
		2-19 pages	150 sets
	A4 SEF, B5, 8½"x11" SEF	15-50 pages	100-30 sets
		2-14 pages	100 sets
	Others	15-30 pages	100-33 sets
		2-14 pages	100 sets
Stapled Stack Capacity (mixed sizes)	A4 LEF & A3 SEF, B5 LEF & B4 SEF, 8½"x11" LEF & 11" x17" SEF	2-30 pages	50 set

Punch Unit B702

This punch unit is designed for use with the 2000-Sheet Stapler D373 (both corner and booklet stapling) and 3000-Sheet Stapler D374 (corner stapling only).

Available Punch Units	NA	2/3 hole switchable
	EU	2/4 holes switchable
	Scandinavia	4 holes
Punch Waste Replenishment	NA 2-hole	Up to 5,000 sheets
	NA 3-hole	Up to 5,000 sheets
	EU 2-hole	Up to 14,000 sheets
	EU 4-hole	Up to 7,000 sheets
	Scandinavia 4-hole	Up to 7,000 sheets
Paper Weight	52 g/m² - 163 g/m², 14 lb Bond - 43 lb Bond / 90 lb Index / 60 lb Cover	

Paper Sizes	NA 2-hole	SEF	A5 to A3, 5½"x8½" to 11"x17"
		LEF	A5 - A4, 5½"x8½", 8½"x11"
	NA 3-hole	SEF	A3, B4, 11"x17"
		LEF	A4, B5, 8½"x11"
	EU 2-hole	SEF	A5 - A3, 5½"x8½" to 11"x17"
		LEF	A5 - A4, 5½"x8½", 8½"x11"
	EU 4-hole	SEF	A3, B4, 11"x17"
		LEF	A4, B5, 8½"x11"
	Scandinavia 4-hole	SEF	A5 to A3, 5½"x8½" to 11"x17"
		LEF	A5 - A4, 5½"x8½", 8½"x11"

Z-Folding Unit ZF4000 B660

Paper Size		
No Folding (52-300 g/m^2)	A3, A4, A5, A6 SEF, B4, B5, B6 SEF 11"x17", 8½"x14", 8½"x11" SEF, 5½"x8½", 12"x18"	
Folding (64-80 g/m^2)	A3, B4, A4 SEF 11"x17", 8½""x14", 8½"x11" SEF, 12"x18"	
Dimensions (w x d x h)	177 x 620 x 960 mm 7 x 24.5 x 37.8 in.	
Weight	Less than 55 kg (121 lb)	
Power Consumption	100 W max.	
Power Supply	North America	120 V, 60 Hz, 1A
	Europe/Asia	220-240 V, 50/60 Hz, 0.5A

A3/11"x17" Tray B331

This option is installed in Tray 1 (tandem tray) of the main machine so that Tray 1 can feed larger paper. Tray 1 normally feeds LT or A4 only.

Dimensions (w x d x h)	495 x 215 x 535 mm (19.5 x 8.5 x 21.1 in.)
Weight	11 kg (24.2 lb)
Paper Size	A3 SEF, B4 SEF, A4 11"x17" SEF, 8½"x14" SEF, 8½"x11"
Paper Capacity	1,000 Sheets

Copy Tray B476

The copy tray is installed receive copies when the main machine is used without a finisher.

Dimensions (w x d x h)	400 x 335 x 70 mm (15.8 x 13.2 x 2.8 in.)	
Weight	640 g (1.4 lb)	
Paper Capacity	500 Sheets	A4, 8½"x11"
	250 Sheets	A3, 11"x 17"

Electrical Components

Main machine

COUNTERS

No.	Component	Function
TC1	Total Counter: FC	The mechanical counter for full color printing.
TC2	Total Counter: K	The mechanical counter for black-and-white printing.

HEATERS

No.	Component	Function
H1	Lower Tray Heater	Keeps paper dry. Provided with machine, connection is optional.
H2	Anti-condensation Heater – Scanner (Option)	Prevents the formation of condensation in the scanner unit.

HARD DISKS

No.	Component	Function
HDD1	Hard Disk Drives	The HDDs hold temporary files spooled for processing and also store permanent files for the document server application.
HDD2		2nd HDD in a set of 4.
HDD3		3rd HDD in a set of 4.
HDD4		4th HDD in a set of 4.

LAMPS

No.	Component	Function
L1	Exposure Lamp	Projects high intensity light on the original for exposure.
L2	Heating Roller Fusing Lamp 3 (Center)	Heats only center of heating roller.
L3	Heating Roller Fusing Lamp 2 (Ends)	Heats only the ends of heating roller.
L4	Hot Roller Fusing Lamp 1 (Main)	Heats entire length of heating roller.
L5	Pressure Roller Fusing Lamp	Heats pressure roller. NA, EU: 400W

MOTORS

No.	Component	Function
M1	Scanner Motor	Drives the scanner unit
M2	Lower Relay Motor	Drives the lower relay roller of the relay unit at the vertical transport section.
M3	Paper Feed Motor: Tray 1	Drives the paper feed roller and grip roller of tray 1 (tandem tray).
M4	Paper Feed Motor: Tray 3	Drives the paper feed roller and grip roller of tray 3 (bottom tray).

No.	Component	Function
M5	Paper Feed Motor: Tray 2	Drives the paper feed roller and grip roller of tray 2 (middle tray).
M6	Waste Toner Distribution Motor	Drives the coil that spans the top of the waste toner bottle.
M7	Lift Motor - Tray 2	Switches on and drives a shaft and coupling that raises a lift arm against the bottom plate under the paper stack in tray 2
M8	Lift Motor: Tray 3	Drives a shaft and coupling that raises a lift arm against the bottom plate under the paper stack in tray 3.
M9	Lift Motor: Tray 1	Drives pulleys and cables that lift the bottom plate of tray 1 (tandem tray) until the top of the paper stack reaches the correct height for feeding.
M10	Rear Fence Motor - Tray 1	Switches on when the right paper tray sensor of the tandem paper tray unit detects paper out and the left paper tray sensor detects paper present.
M11	ITB Lift Motor	Rotates the cam that raises and lowers the ITB belt.
M12	Ozone Fan Motor	Draws air from around the drums and through the ozone filter.
M13	Fusing Fan Motor	Cools the fusing unit.
M14	Fusing Cooling Fan Motor: Lower	Cools the fusing unit.
M15	Fusing Exhaust Fan Motor	Draws the hot air away from the heat sink mounted above the fusing unit and expels the hot air through a vent
M16	Fusing/Exit Motor	Drives the fusing unit and paper exit.
M17	PTR Motor	Drives the paper transfer roller (PTR).
M18	Bypass Feed Motor	Drives the upper relay roller that feeds each sheet to the registration roller.
M19	Duplex Jogger Motor	Moves the jogger fences in the duplex unit.
M20	Duplex Unit Fan Motor	Cools the duplex unit.
M21	Duplex Transport Motor	Drives transport rollers 3, 4 in the duplex unit.

No.	Component	Function
M22	Duplex Inverter Motor	Feeds paper to the jogger section.
M23	Registration Motor	Rotates the registration roller.
M24	Belt Cleaning Fan	Cools the upper area of the transfer unit where the PCUs contact the ITB.
M25	Pipe Cooling Fan Motor	Pulls in air draws it over the fins attached to the front end of the heat pipe roller.
M26	Paper Transport Fan Motor - Rear	1 of 2 vacuum fans that produce suction to kepp paper on the transport belt.
M27	Paper Transport Fan Motor - Front	1 of 2 vacuum fans that produce suction to kepp paper on the transport belt.
M28	Paper Exit Fan Motor	Draws hot air from around the paper exit area and expels it from the left side of the machine.
M29	Front Duplex Fan Motor	Draws hot air out of the duplex unit.
M30	Rear Duplex Fan Motor	Draws hot air out of the duplex unit.
M31	Potential Sensor Fan	Circulates air around the potential sensors.
M32	Cooling Fan Motor	Draws air and sends it through a duct to the four PCU cooling fans.
M33	Circulation Fan Motor	Circulates air.
M34	Laser Unit Cooling Fan Motor - Front	Draws cool air into the machine.
M35	Laser Unit Cooing Fan Motor - Rear	Expels hot air from the machine on the left side.
M36	Development Motor: Y	Drives the Y development unit.
M37	Development Motor: C	Drives the C development unit.
M38	Development Motor: M	Drives the M development unit.
M39	Development Motor: K	Drives the K development unit.
M40	Controller Box Exhaust Fan Motor 2	1 of 2 fans that cool the printed circuit boards at the back of the machine.

No.	Component	Function
M41	Controller Box Exhaust Fan Motor 1	1 of 2 fans that cool the printed circuit boards at the back of the machine.
M42	Drum Motor: Y	Drives the drum in the Yellow PCU.
M43	Drum Motor: C	Drives the drum in the Cyan PCU.
M44	Drum Motor: M	Drives the drum in the Magenta PCU.
M45	Drum Motor: K	Drives the drum in the Black PCU.
M46	ITB Drive Motor	Rotates the image transfer roller that drives the ITB.
M47	3rd Mirror Motor - M	Fine adjusts the position of the 3rd mirror of the optics for M (magenta) during MUSIC adjustment.
M48	Polygon Mirror Motor	Rotates the polygon mirror in the laser optics unit
M49	3rd Mirror Motor - Y	Fine adjusts the position of the 3rd mirror of the optics for Y (Yellow) during MUSIC adjustment.
M50	3rd Mirror Motor - C	Fine adjusts the position of the 3rd mirror of the optics for C (Cyan) during MUSIC adjustment.
M51	Toner Hopper Motor	Drives the toner pump clutch and sub hopper clutch of each PCU.
M52	PCU Fan Motor: Y	Cools the Yellow PCU.
M53	PCU Fan Motor: C	Cools the Cyan PCU.
M54	PCU Fan Motor: M	Cools the Magenta PCU
M55	Scanner Unit Fan Motor - Rear Left	Cools the left, rear corner of the SIOB.
M56	Scanner Unit Fan Motor - Rear Center	Cools the rear, center area of the SIOB.
M57	Scanner Unit Fan Motor - Right	Exhausts warm air from the SIOB area.
M58	Waste Toner Collection Bottle Motor	Drives the waste toner bottle transport coil that moves the toner from the central collection point into the waste toner bottle.
M59	Development Intake Fan: K	Cools K development Unit
M60	Development Intake Fan: M	Cools M development Unit

No.	Component	Function
M61	Development Intake Fan: C	Cools C development Unit
M62	Development Intake Fan: Y	Cools Y development Unit
M63	Drum Cleaning Motor: Y	Drives the Y drum cleaning rollers.
M64	Drum Cleaning Motor: C	Drives the C drum cleaning rollers.
M65	Drum Cleaning Motor: M	Drives the M drum cleaning rollers.
M66	Drum Cleaning Motor: K	Drives the K drum cleaning rollers.
M67	Charge Wire Cleaning Motor	Drives the corona wire cleaning pad front and back to clean the charge corona wire of the K_PCU. Switches on at power on and at the end of every job.
M68	Ozone Fan	Draws in air containing ozone.
M69	Drive Ventilation Fan	Cools drive area around fusing unit.
M70	Ozone Exhaust Fan	Draws air from around the drums and blows it through the ozone filter.
M71	PTR Lift Motor	Raises the PTR and presses it against the bias roller above during transfer and separation, then lowers the PTR when the machine is not operating.
M72	Fusing Pressure Release Motor	Pulls and pushes the pressure roller to separate and press it against the hot roller. The pressure roller is a soft sponge roller that would warp out of shape if it were allowed to press against the hot roller while the machine is idle.
M73	HDD Cooling Fan Motor	Cools the HDDs.
M74	CPU Fan	Cools the CPU on the controller board.

MECHANICAL CLUTCHES

No.	Component	Function
MC1	Bypass Feed Clutch	Engages and operates the pick-up roller at the bypass feed tray.

No.	Component	Function
MC2	Toner Pump Clutch: M	Engages the and drives the Magenta toner pump to pull toner from the Magenta STC.
MC3	Toner Supply Clutch: M	Engages the toner supply coils in the sub hopper of the Magenta PCU to send toner to the development unit below.
MC4	Toner Pump Clutch : K	Engages the and drives the Black toner pump to pull toner from the Black STC.
MC5	Toner Supply Clutch : K	Engages the toner supply coils in the sub hopper of the Black PCU to send toner to the development unit below.
MC6	Toner Pump Clutch: Y	Engages the drive shaft and rotor of the Yellow toner pump to pull toner from the Yellow STC when more toner is needed.
MC7	Toner Supply Clutch: Y	Engages the toner supply coils in the sub hopper of the Yellow PCU to send toner to the development unit below.
MC8	Toner Pump Clutch: C	Engages the and drives the Cyan toner pump to pull toner from the Cyan STC.
MC9	Toner Supply Clutch: C	Engages the toner supply coils in the sub hopper of the Cyan PCU to send toner to the development unit below.

PCBs

No.	Component	Function
PCB1	PFB (Paper Feed Board)	Controls paper trays and paper feed.
PCB2	AC Drive Board	Controls the power supply to the fusing lamps, heaters, and PSU.
PCB3	PSU (Power Supply Unit)	Supplies DC current to the machine and contains the AC drive that controls the fusing lamp power supply.
PCB4	DRB (Drive Board)	Contains the circuits for the stepping motors that drive the printer engine, and distributes electrical power to all other PCBs.
PCB5	Power Pack: Development Bias	Supplies the voltage for the bias applied to the developer in the PCUs by the development rollers.
PCB6	Power Pack: Charge	Supplies the voltage for the charge applied to the OPC drums by the charge roller.

No.	Component	Function
PCB7	Power Pack: Transfer	Supplies charge to 1) the four image transfer rollers that pull the toner images from the four from the four drums (Y, M, C, K), and 2) to the paper transfer roller that pulls the image off the ITB onto paper.
PCB8	Power Pack - Separation	Supplies the dc/ac charges for paper separation.
PCB9	DTMB (Drum/Transfer Motor Board)	Controls the motors that drive the OPC drums and ITB.
PCB10	IPU	Performs: 1) Image processing control, 2) GW controller interface, 3) peripheral timing control.
PCB11	Potential Sensor Board	Processes data from the Y, M, C, K, potential sensors.
PCB12	CNB (Connector Board)	Sorts and routes signals to electrical components.
PCB13	IDCB: C1	One of two ID control boards at the base of the Cyan STC. The CPU reads the board to confirm that the correct STC is inserted into the correct bin.
PCB14	IDCB: M1	One of two ID control boards at the base of the Magenta STC. The CPU reads the board to confirm that the correct STC is inserted into the correct bin.
PCB15	IDCB: K1	One of two ID control boards at the base of the Black STC. The CPU reads the board to confirm that the correct STC is inserted into the correct bin.
PCB16	IDCB: Y1	One of two ID control boards at the base of the Yellow STC. The CPU reads the board to confirm that the correct STC is inserted into the correct bin.
PCB17	SBU (Sensor Board Unit)	Contains the CCD. Converts CCD analog signals to digital signals.
PCB18	SIOB (Scanner Interface Board)	Controls all the sensors in the scanner unit and controls the carriage drive stepping motors.
PCB19	Lamp Regulator	Converts the dc power input to a stable, high frequency ac output to the exposure lamp.

No.	Component	Function
PCB20	VBCU	VBCU: 1) Engine sequence control (all sensors, motors, fusing temperature monitoring circuits), 2) Scanning control, 3) Exposure control, 3) Image processing control, 4) GW controller I/F, 5) Peripheral timing control. The I/O control board controls 1) Input/output ports for all sensors, motor, solenoids, 2) drivers, 3) high voltage power supply for PWM, and 4) analog input signals.
PCB21	LDB (K) with LCD Deflection Element (K)	Contains and controls the laser diodes that fire a laser beam at the rotating polygon mirror. Splits the laser beam in the sub-scan direction to improve 1200-dpi resolution of Black, Yellow, Cyan and Magenta.
PCB22	LDB (M) with LCD Deflection Element (Y)	
PCB23	LDB (C) with LCD Deflection Element (C)	
PCB24	LDB (Y) with LCD Deflection Element (Y)	
PCB25	LSDB: K Front	Front Laser Synchronization Detector Board for Laser Diode 4.
PCB26	LSDB: M Front	Front Laser Synchronization Detector Board for Laser Diode 3.
PCB27	LSDB: C Front	Front Laser Synchronization Detector Board for Laser Diode 2.
PCB28	LSDB: Y Front	Front Laser Synchronization Detector Board for Laser Diode 1.
PCB29	LSDB: Y Rear	Rear Laser Synchronization Detector Board for Laser Diode 1.
PCB30	LSDB: C Rear	Rear Laser Synchronization Detector Board for Laser Diode 2.
PCB31	LSDB: M Rear	Rear Laser Synchronization Detector Board for Laser Diode 3.
PCB32	LSDB: K Rear	Rear Laser Synchronization Detector Board for Laser Diode 4.

No.	Component	Function
PCB33	Controller Board	Incorporates the GW architecture, and connects to the BICU and PCI I/F. All the options for the printer are controlled by this board.
PCB34	SCNB	Scanner Connector Board. Harnesses from the SBU run through the SCNB to reduce the number of harness from 2 to 1.
PCB35	OPU	Controls operation of the operation panel.

QUENCHING LAMPS

No.	Component	Function
QL1	Quenching Lamp : K	Eliminates electrical charge and neutralizes the surface of the drum in the Black PCU.
QL2	Quenching Lamp: C	Eliminates electrical charge and neutralizes the surface of the drum in the Cyan PCU.
QL3	Quenching Lamp: M	Eliminates electrical charge and neutralizes the surface of the drum in the Magenta PCU.
QL4	Quenching Lamp: Y	Eliminates electrical charge and neutralizes the surface of the drum in the Yellow PCU.

SENSORS

No.	Component	Function
S1	ID Sensor: Black	Reads 1) light reflected from the bare surface of the ITB, and 2) reads light reflected from the black ID sensor patterns on the ITB.
S2	ID Sensor: Color	Reads 1) light reflected from the bare surface of the ITB, and 2) reads light reflected from the color ID sensor patterns on the ITB. This sensor has one additional receptor to collect diffuse light reflected from color toner to improve calculation of the toner density.
S3	ITB Lift Sensor (FC)	This sensor switches the ITB lift motor off when the ITB comes into contact the drums of the four PCUs.

No.	Component	Function
S4	MUSIC Sensor: Center	Reads the center MUSIC pattern. This feedback is used to control the MUSIC process to correct color registration errors.
S5	MUSIC Sensor: Front	Reads the front MUSIC pattern. This feedback is used to control the MUSIC process to correct color registration errors.
S6	MUSIC Sensor: Rear	Reads the Rear MUSIC pattern. This feedback is used to control the MUSIC process to correct color registration errors.
S7	Paper Feed Sensor: Tray 2	Detects the leading edge of each sheet of paper from the pick–up roller of tray (middle tray) and switches off the pick–up roller solenoid so the pick–up roller lifts.
S8	Vertical Transport Sensor: Tray 2	Detects the leading edge and trailing edge of each sheet fed from tray 2 and signals a jam if the edges do not pass at the prescribed time.
S9	Paper End Sensor: Tray 2	Receives light reflected from the paper until the last sheet is fed from tray 2 (middle tray), then signals paper end.
S10	Lift Sensor: Tray 2	Detects when the pick–up roller (pushed up by the top of the paper stack in the right side of the tandem tray) has reached the correct height for paper feed and then switches off the tray 2 (middle tray) lift motor.
S11	Paper Feed Sensor: Tray 3	Detects the leading edge of each sheet of paper from the pick–up roller of tray 3 (bottom tray) and switches off the pick–up roller solenoid so the pick–up roller lifts.
S12	Vertical Transport Sensor: Tray 3	Detects the leading edge and trailing edge of each sheet fed from tray 3 and signals a jam if the edges do not pass at the prescribed time.
S13	Paper End Sensor: Tray 3	Receives light reflected from the paper until the last sheet is fed from tray 3 (bottom tray), then signals paper end.
S14	Lift Sensor: Tray 3	Detects when the pick–up roller (pushed up by the top of the paper stack in the right side of the tandem tray) has reached the correct height for paper feed and then switches off the tray 3 (bottom tray) lift motor.

No.	Component	Function
S15	Bottom Temperature/ Humidity Sensor	Near the waste toner bottle. Detects ambient temperature and humidity and then this output is used to control the amount of current applied to the paper transfer roller and ITB when the image is transferred to paper. Also used to correct the fusing temperature, and to extend the fusing unit idle time at low room temperatures.
S16	Waste Toner Bottle Set Sensor	Detects the position of the waste toner bottle and confirms whether it is set correctly.
S17	Waste Toner Bottle Near-Full Sensor	When the level of the waste toner rises high enough to move the actuator of this sensor out of its normal position, the sensor signals the machine that the waste toner bottle is nearly full.
S18	Waste Toner Bottle Full Sensor	Signals an alert when the waste toner bottle is full.
S19	Paper Feed Sensor - Tray 1	Detects the leading edge of each sheet of paper from the pick–up roller of tray 1 (tandem tray) and switches off the pick–up roller solenoid so the pick–up roller lifts.
S20	Vertical Transport Sensor - Tray 1	Detects the leading edge and trailing edge of each sheet fed from tray 1, 2, and 3 and signals a jam if the edges do not pass at the prescribed time.
S21	Paper End Sensor - Tray 1	Detects when the last sheet is fed from tray 1.
S22	Lift Sensor - Tray 1	Detects when the pick–up roller (pushed up by the top of the paper stack in the right side of the tandem tray) has reached the correct height for paper feed and then switches off the tray 1 (tandem tray) lift motor.
S23	Paper Near End Sensor - Tray 2	Detects the near end condition for tray 2 (middle tray, a universal cassette).
S24	Paper Near End Sensor: Tray 3	Detects the near end condition for tray 3 (middle tray, a universal cassette).
S25	Front Side Fence Open Sensor	Detects the actuator on the front side fence after it has reached the open position in the tandem tray.
S26	Front Side Fence Closed Sensor	Detects the actuator on the front side fence after it has reached the closed position in the tandem tray.

No.	Component	Function
S27	Rear Side Fence Open Sensor	Detects the actuator on the rear side fence after it has reached the open position in the tandem tray.
S28	Rear Side Fence Closed Sensor	Detects the actuator on the rear side fence after it has reached the closed position in the tandem tray.
S29	Right Tray Down Sensor	Detects the bottom plate of the right tray and switches off the tray 1 lift motor and stops the bottom plate.
S30	Paper Near End Sensor - Tray 1	Signals 10% paper remaining when the actuator on the right rail of the right tray in the tandem tray passes.
S31	Paper Height Sensor	Signals 100% paper remaining until activated. Signals 50% paper remaining when the actuator on the left rail of the right tray in the tandem tray passes.
S32	Paper Height Sensor	Signals 30% paper remaining when the actuator on the left rail of the right tray in the tandem tray passes.
S33	Paper Height Sensor	When near end sensor 1 on right rail of the right tray of the tandem tray is actuated, and paper height sensor 3 has detected the passing of the actuator on the left rail, then the near end sensor signals 10% paper remaining.
S34	Right Tray Paper Sensor	Detects paper in the right side of the tandem paper tray.
S35	Rear Fence HP Sensor	Detects the actuator on the rear fence in the tandem tray and switches off the rear fence motor.
S36	Rear Fence Return Sensor	Detects the actuator on the rear fence in the tandem tray and reverses the rear fence motor.
S37	Left Tray Paper Sensor	Detects the presence of paper in the left tray of the tandem tray.
S38	Internal Temperature Sensor	Located near the Y_PCU, this thermistor monitors the internal temperature of the machine.
S39	Waste Toner Lock Sensor	Signals an alert if the waste toner collection coil locks and stops rotating.
S40	Duplex Transport Sensor 1	The feeler of this sensor detects the leading edge and trailing edge of each sheet as it passes from the jogger unit above and into the horizontal feed path of the duplex unit below. Signals a jam if the paper does not arrive at or reach the sensor location at the prescribed time.

No.	Component	Function
S41	Duplex Inverter Sensor	Detects the leading edge of the paper at the inverter exit roller and signals to switch off the reverse trigger roller solenoid to signal a jam if the paper does not arrive at the prescribed time.
S42	Duplex Entrance Sensor	Detects paper jams at the entrance of the duplex unit.
S43	Duplex Transport Sensor 3	Detects the leading edge and trailing edge of each sheet as it passes from the jogger unit above through the horizontal feed path of the duplex unit below. Signals a jam if the paper does not arrive at or reach the sensor location at the prescribed time.
S44	Duplex Transport Sensor 2	Detects the leading edge and trailing edge of each sheet as it passes from the jogger unit above and into the horizontal feed path of the duplex unit below. Signals a jam if the paper does not arrive at or reach the sensor location at the prescribed time.
S45	Duplex Jogger HP Sensor	At power on, detects the actuators on the jogger fences of the duplex unit, switches off the jogger motor and stops the fences at their home positions.
S46	Double-Feed Detection Sensor	Receives the light emitted from the double–feed detection LED and reflected from the surface of each sheet in the paper path. Signals an error if the thickness of the paper is not the same as the previous sheet.
S47	Guide Plate Position Sensor	Monitors the opened/closed status of the guide plate.
S48	Relay Sensor	Detects jams at the top of the vertical paper path.
S49	Registration Sensor	Detects the leading edge of the paper and switches off the registration motor and stops the registration roller briefly but long enough to correct buckle the paper.
S50	Paper Exit Sensor	Detects the leading and trailing edge of each sheet at the paper exit slot to check timing and detect jams.
S51	Bypass Paper Sensor	Detects the presence of paper in the bypass tray.
S52	Bypass Paper End Sensor	Signals paper out when the last sheet feeds from the bypass tray.
S53	Bypass Paper Size Sensor	Reads the positions of the side fences (manually adjusted) to detect the width of the paper in the bypass tray. (Paper length is read with pulse counts from the registration sensor.)

No.	Component	Function
S54	Paper Exit Relay Sensor	Detects paper jams at the paper exit if the paper does not arrive or leave the machine at the prescribed time.
S55	Copy Tray Full Sensor (Option)	Detects when the Copy Paper Tray B75 is full and temporarily pauses printing so the operator can remove the stack from the tray and continue.
S56	TD Sensor: M	Monitors the amount of toner in the developer/toner mixture in the development unit of the Magenta PCU.
S57	TD Sensor : K	Monitors the amount of toner in the developer/toner mixture in the development unit of the Black PCU.
S58	Temperature/Humidity Sensor : PCU K	The temperature and humidity readings of this sensor are referenced to a lookup table stored in the ROM to 1) Correct the charge roller voltage , and 2) Set the length of time the agitators in the development unit rotate to mix the toner and developer.
S59	TD Sensor: Y	Monitors the amount of toner in the developer/toner mixture in the development unit of the Yellow PCU.
S60	TD Sensor: C	Monitors the amount of toner in the developer/toner mixture in the development unit of the Cyan PCU.
S61	ITB Lift Sensor (BW)	Switches the ITB lift motor off when the ITB contacts the drum of the K_PCU
S62	Fusing Pressure Release Sensor	Pulls and pushes the pressure roller to separate it from and push it against the hot roller. The pressure roller is a soft sponge roller that would warp out of shape if it were allowed to press against the hot roller while the machine is idle.
S63	Potential Sensor : K	Reads the potential sensor pattern from the surface of the drum in the black PCU.
S64	Potential Sensor: M	Reads the potential sensor pattern from the surface of the drum in the magenta PCU.
S65	Potential Sensor: C	Reads the potential sensor pattern from the surface of the drum in the cyan PCU.
S66	Potential Sensor: Y	Reads the potential sensor pattern from the surface of the drum in the yellow PCU.

No.	Component	Function
S67/S68	Laser Unit Temperature Sensor	A sensor pair that reads the temperature in the optics unit. The readings are used in MUSIC processing.
S69	Toner End Sensor: M	Detects toner end for magenta toner.
S70	Toner End Sensor : K	Detects toner end for black toner.
S71	Toner End Sensor: Y	Detects toner end for yellow toner.
S72	Toner End Sensor: C	Detects toner end for cyan toner.
S73	Scanner HP Sensor	Detects the home position of the scanner.
S74	Original Width Sensors	APS1 (a board) holds two original width sensors under the exposure glass. The detection combinations of these sensors determine the width of the original on the exposure glass positioned for LEF.
S75	Original Length Sensors - 1	APS2 (a board) holds two original length sensors under the exposure glass. The detection combinations of these sensors determine the length of the original on the exposure glass positioned for SEF.
S76	Original Length Sensor -2	APS3 (a board) holds one original length sensor under the exposure glass. The detection combination of this sensor and other sensors determine the length of the original on the exposure glass positioned for SEF.
S77	Accordion Jam Sensor	Detects jams at the fusing exit by confirming that paper arrives at the prescribed time.
S78	Fusing Exit Sensor	Detects jams at the fusing exit by confirming that paper leaves at the prescribed time.
S79	LCT Relay Sensor	Confirms whether the LCT is set correctly.
S80	Original Length Sensor 3	APS4 holds one original length sensor under the exposure glass. The detection combination of this sensor with other sensors determines the length of the original on the exposure glass positioned for SEF.
S81	Encoder	Monitors the rotation of the encoder wheel in the ITB drive motor unit.
S82	PTR Contact Sensor	Detects when the PTR is lifted and lowered.

No.	Component	Function
S83	ITB Position Sensor	Monitors the speed of the ITB.

LEDs

No.	Component	Function
LED1	Double-Feed Detection LED	Emits light which is reflected from the paper to the double–feed detection sensor to test the translucence of each sheet for double-feed detection.
LED2	Accordion Jam Sensor (LED)	Flashes to show the user which lever to release to remove a paper jam from the fusing rollers.
LED3	Fusing Exit Sensor (LED)	Flashes to show the user which lever to release to remove a paper jam from the fusing unit.

SOLENOIDS

No.	Component	Function
SOL1	Pick–up Solenoid: Tray 2	Switches on when the tray 2 (middle tray) lift motor switches on. This solenoid lowers the pick–up roller of tray 3.
SOL2	Separation Roller Solenoid: Tray 2	When tray 2 (middle tray) is selected as the paper source, this solenoid energizes and brings the separation roller in contact with the feed roller until the leading edge of the sheet feeds to the paper feed sensor.
SOL3	Pick–up Solenoid: Tray 3	Switches on when the tray 3 (bottom tray) lift motor switches on. This solenoid lowers the pick–up roller of tray 3.
SOL4	Separation Roller Solenoid: Tray 3	When tray 3 (bottom tray) is selected as the paper source, this solenoid energizes and brings the separation roller in contact with the feed roller until the leading edge of the sheet feeds to the paper feed sensor.
SOL5	Pick–up Solenoid – Tray 1	Switches on when the tray 1 (tandem tray) lift motor switches on. This solenoid lowers the pick–up roller of tray 1.
SOL6	Separation Roller Solenoid – Tray 1	When tray 1 (tandem tray) is selected as the paper source, this solenoid energizes and brings the separation roller in contact with the feed roller until the leading edge of the sheet feeds to the paper feed sensor.

No.	Component	Function
SOL7	Front Side Fence Solenoid –Tray 1	When the right tray paper sensor in the tandem tray signals paper out, and the left tray paper sensor signals paper present, this energizes this solenoid which pulls open the front side fence until the front side fence open sensor detects the actuator of the front side fence and switches off the solenoid, leaving it locked in the open position, to allow the rear fence to push the paper stack from the left tray into the right tray.
SOL8	Rear Side Fence Solenoid – Tray 1	When the right tray paper sensor in the tandem tray signals paper out, and the left tray paper sensor signals paper present, this energizes this solenoid which pulls open the rear side fence until the rear side fence open sensor detects the actuator of the rear side fence and switches off the solenoid, leaving it locked in the open position, to allow rear fence to push the paper stack from the left tray into the right tray.
SOL9	Right Tray Lock Solenoid – Tray 1	Releases the lock lever when the left tray paper sensor in the tandem tray signals that there is no paper in the left tray.
SOL10	Left Tray Lock Solenoid – Tray 1	When the rear fence motor in the tandem tray switches on, this energizes the left tray lock solenoid. This locks the left tray so it does not move while the rear fence pushes the stack from the left tray to the right tray.
SOL11	Duplex Junction Gate Solenoid	Controls the opening and closing of the duplex junction gate at the mouth of the inverter unit.
SOL12	Reverse Trigger Roller Solenoid	After a sheet is detected by the duplex entrance sensor, this solenoid energizes and pushes down the reverse trigger roller.
SOL13	Guide Plate Solenoid	Energizes when a jam occurs between the vertical transport rollers and registration roller to force the guide plate open and divert paper fed from below into the duplex tray.
SOL14	Inverter Junction Gate Solenoid	Operates the inverter junction gate. The inverter injunction gate turns paper into the path to the inverter unit below where it is 1) inverted for face–down output or 2) inverted for 2nd side printing.
SOL15	Bypass Pick–up Solenoid	Switches on and lowers the pick–up roller to the top of the stack in the bypass tray
SOL16	Charge Cleaning Solenoid: Y	Raises and lowers the Y charge roller cleaning roller.

No.	Component	Function
SOL 17	Charge Cleaning Solenoid: C	Raises and lowers the C charge roller cleaning roller.
SOL 18	Charge Cleaning Solenoid: M	Raises and lowers the M charge roller cleaning roller.
SOL 19	Duplex Inverter Solenoid	Operates the duplex inverter junction gate.

SWITCHES

No.	Component	Function
SW1	Lower Front Door Switch	Detects whether the front door is open or closed.
SW2	Main Power Switch	Switches the machine off and on.
SW3	Upper Front Door Switches (x5)	Detect whether the front door is open or closed.
SW4	Paper Size Switch: Tray 2	The switch detects the position of the dial (set manually), and signals the paper size with a simple 5–digit binary code.
SW5	Paper Size Switch: Tray 3	The switch detects the position of the dial (set manually), and signals the paper size with a simple 5–digit binary code.
SW6	Interlock Switches	Mounted at the upper left corner of the front door, detect when the door is opened and closed.

THERMISTORS

No.	Component	Function
TH1	Heating Roller Thermistor	Monitors the end of the heating roller and breaks the circuit to the heating lamps if a lamp overheats.
TH2	Hot Roller Thermistor	Detects and monitors the temperature of the hot roller for fusing temperature control.
TH3	Pressure Roller Thermistor	Detects the temperature of the hot roller for fusing temperature control.
TH4	Heating Roller Center Thermistor	A non-contact thermistor that monitors the surface temperature of the heating roller center and breaks the circuits to the fusing lamps if the heating roller overheats.

No.	Component	Function
TH5	Heating Roller End Thermistor	A non-contact thermistor that monitors the surface temperature of the heating roller end and breaks the circuits to the fusing lamps if the heating roller overheats.

THERMOSTATS

No.	Component	Function
TS1/S2	Thermostats (Pressure Roller)	Monitors the temperature of the pressure roller and cuts the circuit if the pressure roller fusing lamp overheats.
TS3/4	Thermostats (Fusing Belt)	Monitors the temperature of the fusing belt and cuts the circuit if the heating roller fusing lamp overheats.

ADF

MOTORS

No.	Component	Function
M1	Feed Motor	Drives the feed belt, and the separation, pick-up, and transport as far as the 1st transport roller.
M2	Transport Motor	Controls the original scanning speed.
M3	Exit Motor	Feeds paper out of the ADF and onto the original exit table.
M4	Pick-up Motor	Raises and lowers the pick-up roller.
M5	Bottom Plate Lift Motor	Raises and lowers the bottom under the original stack.

PCB

No.	Component	Function
PCB1	ADF Main Board	Controls the ADF and communicates with the main main machine boards.

SENSORS

No.	Component	Function
S1	Entrance Sensor	Detects the leading edge of the original when it enters the ADF
S2	Original Width Sensor 2	Detects paper wider than 191.5 mm (7.5 in.) measured from the reference point.
S3	Original Width Sensor 3	Detects paper wider than 230 mm (9.1 in.) measured from the reference point.
S4	Original Width Sensor 4	Detects paper wider than 263.5 mm (10.4 in.) measured from the reference point.
S5	Original Width Sensor 5	Detects paper wider than 288 mm (11.3 in.) measured from the reference point.
S6	Original Width Sensor 1	Detects paper wider than 138 mm (5.4 in.) measured from the reference point.
S7	Original Set Sensor	Detects whether an original is on the table.
S8	Bottom Plate HP Sensor	Detects whether the bottom plate is in the down position or not.
S9	Feed Cover Sensor	Detects whether the feed cover is open or not.
S10	Bottom Plate Position Sensor	Detects when the original is at the correct position for feeding.
S11	Original LG Detection Sensor	Detects paper longer than 318 mm (12.5 in.) on the original table.
S12	Original A4 Detection Sensor	Detects paper longer than 291 mm (11.5 in.) on the original table.
S13	Original B5 Detection Sensor	Detects paper longer than 240 mm (9.5 in.) on the original table.
S14	Skew Correction Sensor	After pick-up and separation, the skew correction sensor detects the leading edge of the original. This signal slows the rotation of the entrance roller for a prescribed number of pulses to buckle the original and correct skew.
S15	Separation Sensor	Detects the separation of the original.

No.	Component	Function
S16	Exit Sensor	Detects the leading and trailing edges of paper feed out to the original table and detects misfeeds. Also signals when to stop the scanning belt.
S17	Registration Sensor	Detects the leading edge and trailing edges of the original to detects jams and stops the original at the ADF exposure glass to correct buckle.
S18	Pick-up Roller HP Sensor	Detects whether the pick-up roller is up or not.
S19	ADF Position Sensor	Detects whether the ADF unit is up or down for scanning on the main exposure glass (book mode).
S20	APS Start Sensor	Signals the CPU when the DF is opened and closed (for platen mode) so that the original size sensors in the main machine can check the original size.

2. Appendix: PM Tables

PM Tables

Main Machine

Symbol Key for PM Tables

I	Inspect. Clean, replace, or lubricate as needed.
C	Cleaning required.
R	Replacement required.
L	Lubrication required with: • Grease KS660B (D0149800) • Heat Resisting Grease MT-78 • Launa Oil 40 • Lubricant Powder B1329700 • G104 Yellow Toner (D0159500) • Zinc Stearate (D0159501)

Main Machine PM Parts

OPTICS

	150K	200K	300K	450K	600K	Note
Reflector			C			Optical cloth
1st Mirror			C			Optical cloth
2nd Mirror			C			Optical cloth
3rd Mirror			C			Optical cloth
Scanner Rails			C			Alcohol then dry cloth
Exposure Glass			C			Exposure glass cleaner
Toner Shield Glass			C			Optical cloth

	150K	200K	300K	450K	600K	Note
APS Sensor			C			Dry cloth
ADF Exposure Glass			C			Exposure glass cleaner
Dust Filters			C			Blower brush

PCU

	150K	200K	300K	400K	450K	600K	Note
Development Unit	L						Sleeve shaft, Grease KS660B
OPC Drums					R		KYMC:450K
Charge Roller Units*1	R						Replace YMC together
Cushion Wire T1.5*1		R					
Cleaner Grid Assy*1		R					
Cleaner Corona Wire Assy*1		R					
Drum Charge Corona Wire*1		R					
Grid Drum Charge Wire*1		R					
Drum Cleaning Blade	R	R					YMC:150K K:200K
Drum Lubricant Blade	R	R					YMC:150K K:200K
Drum Lubricant Bar (x2)*2	R	R					

	150K	200K	300K	400K	450K	600K	Note
Drum Lubricant Brush Roller			R (Y,C,M)	R (K)			Apply G104 Yellow Toner and Zinc Stearate after replacement
PCU Joint			R	R			YMC: 300K K: 400K
Drum Lubricant Brush Gear			R	R			
Idle Gear 1			R	R			
Idle Gear 2			R	R			
Used Toner Collection Gear			R	R			
Drum Cleaning Brush Gear			R	R			
Developer K					R		
Developer Y, M, C					R		
Quenching LED	C		C			C	

*1: These items comprise the K_PCU which uses a charge corona system, and can be replaced individually. (The YMC_PCUs use a charge roller system.)

*2 The lubricant bar is the same for both K and YMC PCUs when replaced as an individual part. However, the drum lubricant bar assembly which contains the springs is not the same. The K assembly is clearly marked "K" to prevent installation of the wrong type in a PCU.

TRANSFER UNITS

	150K	300K	450K	600K	Note
ITB Unit					
ITB (Image Transfer Belt)				R	
ITB Unit Rollers		I		C	Wipe with dry cloth
ITB Encoder Sensor		C			Wipe with damp cloth (alcohol)
ID and MUSIC Sensors		C			

	150K	300K	450K	600K	Note
ITB Cleaning Blade		R			These items are always replaced as a set.
ITB Lubricant Bar		R			
ITB Lubricant Blade		R			
ITB Lubricant Brush Roller		R			
PTR Unit					
PTR (Paper Transfer Roller)				R	
PTR Cleaning Blade		R			
PTR Lubrication Bar		R			
Paper Transfer Discharge Plate		R			

FUSING UNIT

	150K	300K	450K	600K	Note
Fusing Belt				R	
Hot Roller			R		
Pressure Roller				R	
Pressure Roller Cleaning Roller			R		
Oil Supply Roller			R		
Heating Roller				C	
Heating Roller Shaft Bearings				C, L*1	
Hot Roller Shaft Bearings				C, L*1	
Pressure Roller Shaft Bearings				L*1	Replace at 1200k
Pressure Roller Stripper Pawls		I, C			Dry cloth
Fusing Belt Stripper Plate		I, C			
Thermistors		I, C			Dry cloth

	150K	300K	450K	600K	Note
Upper Entrance Guide Plate	I	C			Damp cloth (alcohol)
Lower Entrance Guide Plate	I	C			
Gears	L*1				

*1: The lubrication points for the fusing unit are described in the "Lubrication Points" section.

PAPER FEED: COPIER

	150K	300K	450K	600K	Note
Registration Rollers		C			Alcohol, dry cloth
Paper Dust Removal Unit		C			Dry cloth
Registration Sensor		C			Blower brush
Vertical Transport Roller Sensors		C			Blower brush
LCT Relay Sensor		C			Blower brush
Bypass Feed Sensor		C			Blower brush
Bypass Paper End Sensor		C			Blower brush

PAPER FEED: Trays

	150K	300K	450K	600K	Note
Feed Guide Plate		C			Dry cloth
Grip Rollers (Drive & Idle)		C			Alcohol, dry cloth
Pick-up Rollers (Tray 1 to Tray 3)					Service Life: 1000K Replace if jams, double-feeds occur with increasing frequency.
Paper Feed Rollers (Tray 1 to Tray 3)					
Separation Rollers (Tray 1 to Tray 3)					
Grip Roller (Drive Roller)		C			Dry cloth

	150K	300K	450K	600K	Note
Paper Feed Sensor		C			Blower brush
Vertical Feed Sensors		C			Blower brush
Paper-End Sensor		C			Blower brush

DUPLEX UNIT

	150K	300K	450K	600K	Note
Duplex Entrance Sensor		C			Blower brush
Reverse Rollers (Drive & Idle)		C			Alcohol, dry cloth
Inverter Exit Roller		C			Dry cloth
Transport Rollers (x4)		C			Dry cloth
Duplex Entrance Anti-Static Brush		C			Dry cloth
Inverter Junction Gate		C			Dry cloth
Inverter Entrance Roller		C			Dry cloth

PAPER EXIT

	150K	300K	450K	600K	Note
Heat Dissipation Roller		C			Alcohol, dry cloth
Exit Anti-Static Brush		C			Inspect, replace if deformed.
Paper Exit Rollers (Upper, Lower)		C			Alcohol, dry cloth
Paper Exit Sensor		C			Blower brush
Transport Rollers		C			Blower brush

OTHER

	150K	300K	450K	600K	Note
Upper Dust Filter		R			

	150K	300K	450K	600K	Note
Lower Dust Filters	I,C		R		
Ozone Filters					Service Life: 1200K
Development Filters			R		
Used toner bottle*1	I,R	I,R	I,R	I,R	Empty and clean every inspection

*1: We recommend that the customers be provided with a spare used toner bottle so they can replace the bottle when it becomes full. The service technician can collect the full bottle at the next scheduled service call. This arrangement eliminates EM visits in response to SC484 (Used Toner Bottle Full) errors.

ADF PM Parts

The "K" number in the table below is the number of originals that have been fed.

AN: As necessary

	300K	400K	600K	AN	Exp.	Note
Pick-up Roller						Alcohol, belt cleaner for paper feed belt. Replace these items together.
Separation Roller						
Paper Feed Belt						
ADF Transport Belt						
CIS Glass	C	C	C			Dry cloth
White Guide Plate		R		C		Alcohol, or dry cloth
Sensors	C	C	C			Blower brush
Platen Cover Sheet	C	C	C			Water or alcohol
Drive Gears	L	L	L			Grease G501

	300K	400K	600K	AN	Exp.	Note
Transport Belt	C	C	C			Water or alcohol
Entrance Roller	C	C	C			
White Platen Roller	C	C	C			
Pre-Scanning Roller	C	C	C			
Scanning Roller	C	C	C			
Exit Roller	C	C	C			

LCT B473

	1000K	2000K	3000K	Expected	Note
Paper feed roller	R	R	R		
Pick-up roller	R	R	R		
Separation roller	R	R	R		
Transport guide plate	Inspect and clean every 350K.				
Grip roller	Inspect and clean every 350K.				

LCT D350

	500K	1000K	Note
Paper feed roller x3		R	
Pick-up rollers x3		R	
Separation rollers x3		R	
Transport guide plate	I		
Grip rollers (drive, idle rollers)	I		

Multi-Folding Unit FD5000 (D454)

Part	PM Visit	Notes
Rollers (drive, idle rollers)	IC	Alcohol, clean cloth
Anti-static brush	IC	
Shafts	IC	Lubricate with silicone oil if noisy.
Sensors	IC	Blower brush
Positioning roller	IC	Inspect for scratches or nicks
Fold rollers (1st, 2nd, 3rd)	IC	Alcohol, clean cloth
Crease rollers (drive, idle roller)	IC	

Ring Binder (D392)

Part	PM Visit	Notes
Horizontal Transport Path		
Anti-static brushes	IC	Blower brush
Horizontal transport path sensors	IC	Blower brush
Driver rollers, idle rollers	IC	Damp cloth
Switchback Unit		
Anti-static brushes	IC	Blower brush
Switchback area sensors	IC	Blower brush
Drive rollers, idle rollers	IC	Damp cloth
Binder Unit		
Paddle roller	IC	Blower brush
Transport path sensors	IC	Blower brush
Driver rollers, idle rollers	IC	Damp cloth

2000/3000-Sheet Finishers D373/D374

	300K	2400K	3000K	4000K	EM	Note
Covers					I,C	Alcohol or water, dry cloth
Drive Rollers					C	Damp cloth, dry cloth
Idle Rollers					C	Damp cloth, dry cloth
Anti-Static Brush					C	Dry cloth
Sensors					C	Blower brush
Corner Stapler				R		Print an SMC report with SP5990. Replace the unit if the staple count is 500K.
Booklet Stapler				R		Print an SMC report with SP5990. Replace the unit if the staple count is 200K.

Punch B702

	300K	2400K	3000K	4000K	EM	
Punch Waste Hopper	I	I	I	I	I	Remove and empty
Punch Unit						Replace after 1000k punches.

Cover Interposer Tray B704

The PM interval is for the number of sheets that have been fed.

	60K	120K	180K	EM	Note
Feed Belt	R	R	R		Replace as a set.
Pick-up Roller	R	R	R		Replace as a set.
Separation Roller	R	R	R		Replace as a set.

	60K	120K	180K	EM	Note
Driver Rollers	C	C	C		Damp clean cloth.
Idle Rollers	C	C	C		Damp clean cloth.
Discharge Brush	C	C	C		Damp clean cloth.
Sensors	C	C	C		Blower brush.

3000-Sheet Finisher B830

	350K	700K	1050K	Note
FINISHER				
Driver rollers	I	I	I	Alcohol
Idle rollers	I	I	I	Alcohol
Discharge brush	I	I	I	Alcohol
Shaft Bearings	I	I	I	Lubricate with silicone oil if noisy.
Sensors	I	I	I	Blower brush.
Jogger fences	I	I	I	Make sure that the screws are tight.
Staple waste hopper	C	C	C	Empty staple waste.

Punch B831

	300K	450K	600K	EM	Note
Punch Waste Hopper	I	I	I		Remove and empty

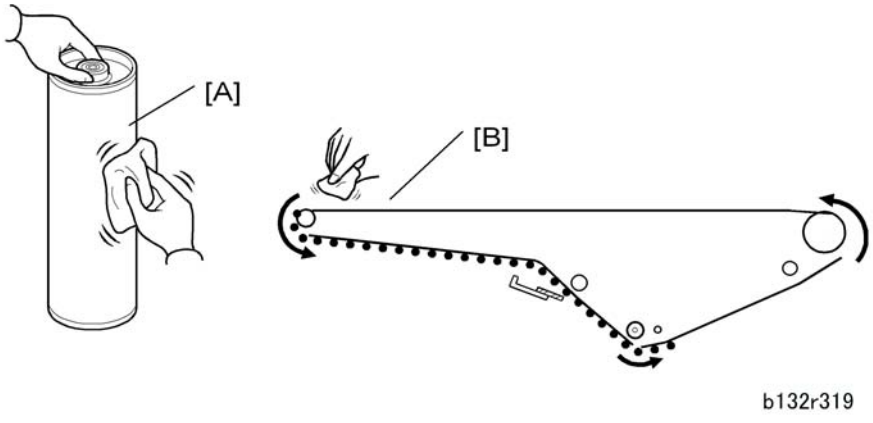
Cover Interposer Tray B835

The PM interval is for the number of sheets that have been fed.

	60 K	As Needed	Note
Drive rollers		C	Dry cloth
Idle rollers		C	Dry cloth
Feed belt	R		
Separation roller	R		
Pick-up roller	R		
Sensors		C	Blower brush.
Drive gears		I	Lubricate with a very small amount of G501.

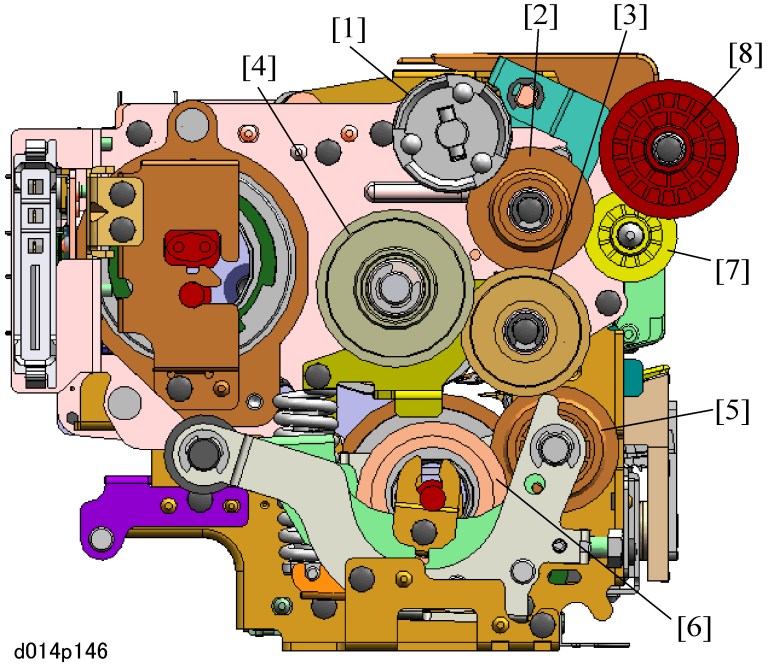
Lubrication Points

OPC, ITB Replacement



Be sure to apply Lubricant Powder B1329700 before re-installing the drum [A] or ITB [B]. For more, please refer to "Replacement and Adjustment".

Fusing Unit

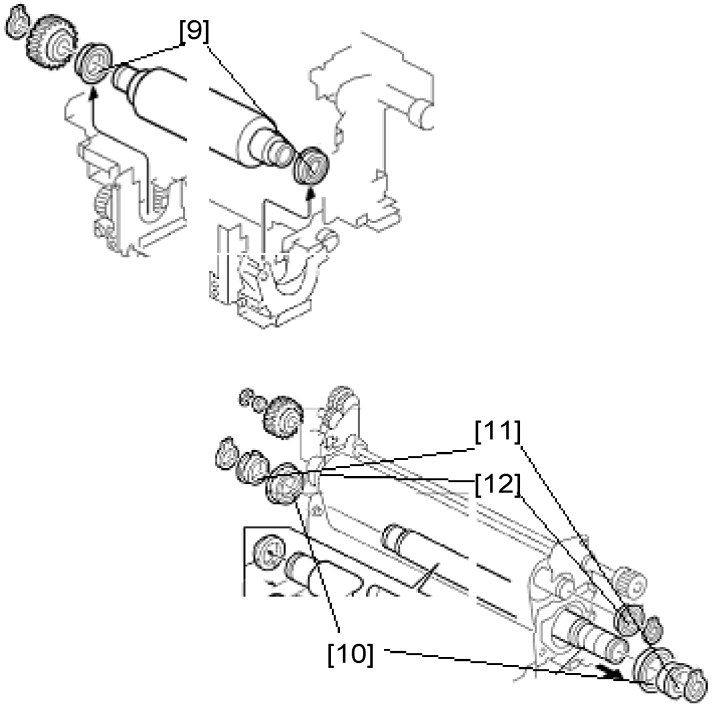


d014p146

	Part Name	Lubricant	Comment
[1]	Drive Gear	Barrierta S552R	Brush all gear teeth
[2]	Idle Gear	Barrierta S552R	Brush all gear teeth
[3]	Hot roller Idle Gear	Barrierta S552R	Brush all gear teeth
[4]	Hot roller Drive Gear	Barrierta S552R	Brush all gear teeth
[5]	Pressure roller Idle Gear	Barrierta S552R	Brush all gear teeth
[6]	Pressure roller Drive Gear	Barrierta S552R	Brush all gear teeth
[7]	Exit Idle Gear	Barrierta S552R	Brush all gear teeth
[8]	Exit Drive Gear	Barrierta S552R	Brush all gear teeth

d081p146a

Lubricate gears [2] and [5] at every 150K. Lubrication applied to these gears will lubricate the other gears during fusing unit operation.



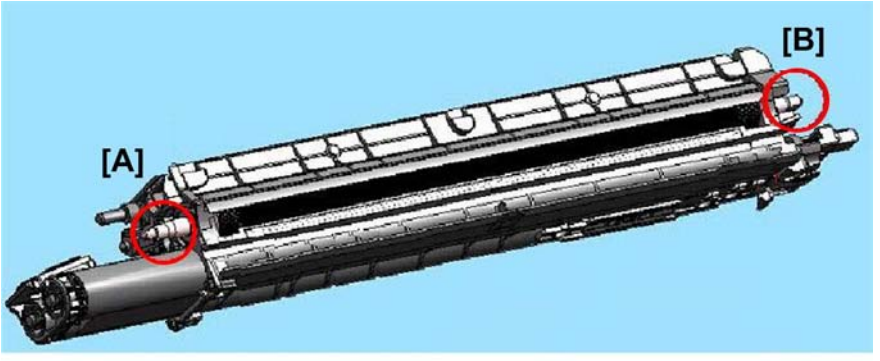
d014p145

	Part Name	Lubricant	Comment
[9]	Bearing Race ϕ20 × ϕ32 × 7	Barrierta S552R	Brush both ends
[10]	Bearing Race ϕ35 × ϕ47 × 7	Barrierta S552R	Brush both ends
[11]	Bushing Race	Barrierta S552R	Brush both ends
[12]	Bearing Race ϕ20 × ϕ32 × 7	Barrierta S552R	Brush both ends

d014p145a

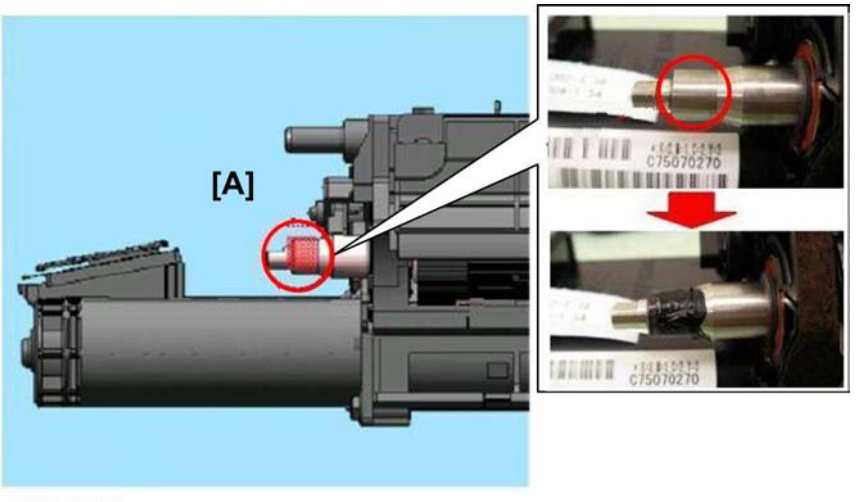
Lubricate all bearings after replacement of the hot roller, pressure roller, and/or heating roller.

Development Unit



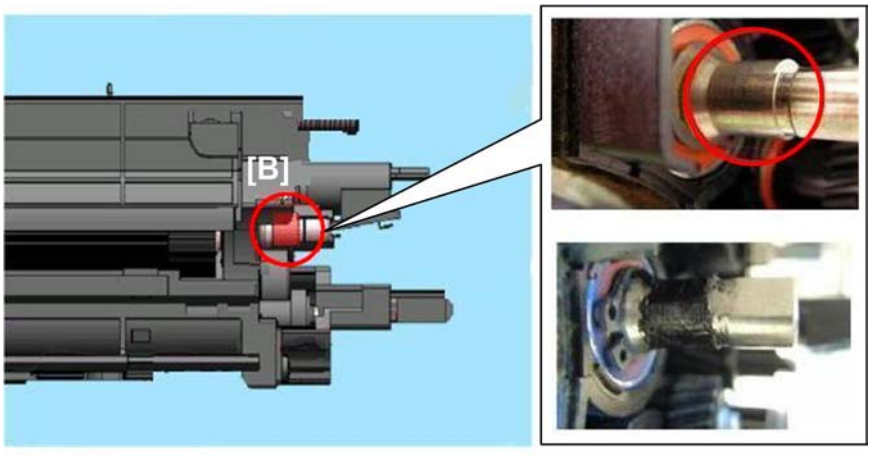
d081p001

1. Points [A] and [B] are the lubrication points on the development unit.



d081p002

2. Apply a thin layer of Grease KS660B around the surface at [A] as shown.



d018p003

3. Apply a thin layer of Grease KS660B around the surface at [B] as shown.

3. Appendix: Service Call Conditions

Service Call Tables

SC Codes Group 1: Scanning

SC101	D	Exposure lamp error
		The white level peak did not reach the prescribed threshold when the white plate was scanned.
		• Dirty optics • Dirty white plate • Exposure lamp defective • Exposure lamp does not turn on • Lamp stabilizer defective • High voltage line leak • SIOB defective • SBU defective

SC120	D	Scanner home position error 1
		The scanner home position sensor did not detect the home position (did not go OFF) after the scanner moved forward 20 mm..
		• Scanner motor defective • Scanner HP sensor defective • Harness between scanner motor and SIOB disconnected or broken. • SIOB defective

SC121	D	Scanner home position error 2
		The scanner home position sensor did not go ON after the scanner moved forward 6 mm and the feeler entered the HP sensor.

		• Scanner motor harness loose, broken, defective • Scanner motor defective • Scanner HP sensor disconnected, defective • SIOB defective

SC141	D	Black level detection error
		During AGC the value for black level was not within ±3 of the prescribed value.
		• SBU defective • Harness defective • Check harnesses between SBU and IPU • IPU defective • VBCU defective

SC142	D	White level detection error
		During AGC the value for white level was not within -7 of the prescribed value.
		• Exposure lamp defective • Harness disconnected, damaged • Dirty exposure glass, optics • Scanner motor, drive assembly defective • SBU board defective

SC144	D	SBU communication error
		When the machine is switched on, or when the machine returns to full operation from the energy save mode, the machine can not access the SBU register, or the SBU register values are abnormal. **Note**: The ASIC IDs read during automatic adjustment of the SBU can be displayed with SP4600.
		• SBU harness loose, disconnected, defective • SBU board defective • VBCU defective

SC161	D	IPU error

SC161-1	D	An error occurred when the ASIC executed a self-diagnostic report on the BICU.
		• Defective BICU • Defective connection between BICU and SBU
SC161-2	D	The machine detects an error during an access to the Ri.
		• Defective BICU board
SC161-3	D	The IPU fails to configure or initialize the DRAM.
		• Defective BICU board

SC165	D	Illegal Copy Prevention Error
		An abnormality was detected with the ICIB board at power on.
		• ICIB connected incorrectly • ICIB defective

SC180	D	Scanner fan lock (left fan)
		The fan motor next to the SIOB did not switch on within 10 sec. after the CPU issued the ON signal.
		• Fan defective • Foreign object interfering with operation of fan • Motor harness loose, disconnected, or broken • SIOB defective

SC181	D	Scanner fan lock: lamp stabilizer
		The exposure lamp regulator fan is not rotating.
		• Check the fan connections • Fan defective • Check SBU connection • Check SIOB connection • SBU defective • SIOB defective

SC182	D	Scanner fan lock: right fan
		The fan located on the right side of the exposure unit is not rotating.
		• Check the fan connections • Fan defective • Check SBU connection • Check SIOB connection • SBU defective • SIOB defective

SC185	D	CIS communication error
		Error caused during ASIC register's automatic initialization on the CIS, or during transmission between the CIS – DF.
		• Harness between the CIS – DF is disconnected • CIS defective

SC186	D	CIS LED error
		LED on the CIS caused an error • During initializing, the ratio of the average between leading-edge area and rear-edge is out of range (0.7 to 1.43). • During scanning, the shading data peak is under 32 (8 bit).
		• Harness CN210 and CN220 on ADF are disconnected. • Replace CIS.

SC187	D	CIS black level error
		The black level scanned by CIS is abnormal. The black level average of R, G or B is not within range (2 to 62). 0 < Calibrated Black data level < 255(10bit).
		• Turn off the machine. • Make sure CN210 and CN220 are connected securely. • Turn on the machine.

SC188	D	CIS white level error
		The shading data peak detected from the CIS is abnormal.
		• CIS defective
		• Make sure CN210 and CN220 are connected firmly. • Replace the CIS.

SC189	D	CIS gray balance adjustment error
		The adjustment error occurs during the test after adjusting the gray balance.
		• CIS defective

		1. Retry the gray balance adjustment.
		2. If the machine does not recover, do the following steps.
		  • Turn off the machine.
		  • Make sure CN210 and CN220 are connected firmly.
		  • Turn on the machine.
		3. If the machine does not recover, replace the CIS.

SC195	D	Machine serial number error
		The number registered for the machine serial number does not match.
		• Confirm the correct serial number of the machine in the specifications • Re-input the serial number. **Important**: When SC195 occurs, the serial number must be input. Please contact your technical supervisor.

SC Codes Group 2: Exposure

SC202	D	Polygon motor error: ON timeout
		The polygon mirror motor does not reach the targeted operating speed within the prescribed time.

		• Harness to polygon motor drive board disconnected, defective • Polygon motor defective • Polygon motor drive board defective • Polygon motor defective.

SC203	D	Polygon motor error: OFF timeout
		The polygon mirror motor does leave the READY status within 3 seconds after the polygon motor switches off.
		• Harness to polygon motor driver board disconnected, defective • Polygon motor defective • Polygon motor driver board defective • Polygon motor defective.

SC204	D	Polygon motor error: XSCRDY signal error
		The polygon motor stopped operating while the LD unit was firing.
		• Harness to polygon motor driver board disconnected, defective • Polygon motor defective • Polygon motor driver board defective

SC210	B	Laser beam detection error: K (Black)
SC211	B	Laser beam detection error: Y (Yellow)
SC212	B	Laser beam detection error: M (Magenta)
SC213	B	Laser beam detection error: C (Cyan)
		The laser synchronization sensor failed to detect the beginning and end of the laser beam flash for the designated color onto the polygon mirror while the mirror is rotating at the prescribed number of revolutions.
		• Laser synchronization detector sensor connection loose, not connected • Laser synchronization detector sensor defective • LD unit defective • IPU defective • VBCU defective

SC220	D	Laser synchronization detector error: K leading edge: LD0
		While the polygon motor is rotating normally, no synchronizing detection signal is output for LD0 black, or leading edge, even after the laser diode has been firing for 2 sec.
		• Harness between the laser synchronizing detector and I/F unit is disconnected, defective • Check all connections between LD unit, LDB, IPU • LD unit • LDB defective • IPU defective

SC221	D	Laser synchronization detector error: K leading edge (not LD0)
		While the polygon motor is rotating normally, no synchronizing detection signal is output for black, leading edge for any LD other than LD0.
		• Harness between the laser synchronizing detector and I/F unit is disconnected, defective • Check all connections between LD unit, LDB, IPU • LD unit • LDB defective • IPU defective

SC222	D	Laser synchronization detector error: Y leading edge: LD0
		While the polygon motor is rotating normally, no synchronizing detection signal is output for LD0 yellow, leading edge.
		• Harness between the laser synchronizing detector and I/F unit is disconnected, defective • Check all connections between LD unit, LDB, IPU • LD unit • LDB defective • IPU defective

SC223	D	Laser synchronization detector error: Y leading edge (not LD0)
		While the polygon motor is rotating normally, no synchronizing detection signal is output for yellow, leading edge for any LD other than LD0.
		• Harness between the laser synchronizing detector and I/F unit is disconnected, defective • Check all connections between LD unit, LDB, IPU • LD unit • LDB defective • IPU defective

SC224	D	Laser synchronization detector error: M leading edge: LD0
		While the polygon motor is rotating normally, no synchronizing detection signal is output for LD0 magenta, leading edge.
		• Harness between the laser synchronizing detector and I/F unit is disconnected, defective • Check all connections between LD unit, LDB, IPU • LD unit • LDB defective • IPU defective

SC225	D	Laser synchronization detector error: M leading edge (not LD0)
		While the polygon motor is rotating normally, no synchronizing detection signal is output for magenta, leading edge for any LD other than LD0.
		• Harness between the laser synchronizing detector and I/F unit is disconnected, defective • Check all connections between LD unit, LDB, IPU • LD unit • LDB defective • IPU defective

SC226	D	Laser synchronization detector error: C leading edge: LD0
		While the polygon motor is rotating normally, no synchronizing detection signal is output for LD0 cyan, leading edge.
		• Harness between the laser synchronizing detector and I/F unit is disconnected, defective • Check all connections between LD unit, LDB, IPU • LD unit • LDB defective • IPU defective

SC227	D	Laser synchronization detector error: C leading edge (not LD0)
		While the polygon motor is rotating normally, no synchronizing detection signal is output for cyan, leading edge for any LD other than LD0.
		• Harness between the laser synchronizing detector and I/F unit is disconnected, defective • Check all connections between LD unit, LDB, IPU • LD unit • LDB defective • IPU defective

SC230	D	FGATE error: Feedback remains HIGH for K write
		After the start of timing to create the black image, the PFGATE register of the GAVD did not assert.
		• Harness between the VBCU and LDB unit disconnected, loose, or defective. • LD unit defective • IPU defective • Controller board disconnected, defective • HDD defective

SC231	D	FGATE error: Feedback remains LOW for K write
		After the start of timing to create the black image, the PFGATE register of the GAVD did not assert.

		• Harness between the VBCU and LDB unit disconnected, loose, or defective. • LD unit defective • IPU defective • Controller board disconnected, defective • HDD defective

SC232	D	FGATE error: Feedback remains HIGH for Y write
		After the start of timing to create the yellow image, the PFGATE register of the GAVD did not assert.
		• Harness between the VBCU and LDB unit disconnected, loose, or defective. • LD unit defective • IPU defective • Controller board disconnected, defective • HDD defective

SC233	D	FGATE error: Feedback remains LOW for Y write
		After the start of timing to create the yellow image, the PFGATE register of the GAVD did not assert.
		• Harness between the VBCU and LDB unit disconnected, loose, or defective. • LD unit defective • IPU defective • Controller board disconnected, defective • HDD defective

SC234	D	FGATE error 1: Feedback remains HIGH for M write
		After the start of timing to create the magenta image, the PFGATE register of the GAVD did not assert.
		• Harness between the VBCU and LDB unit disconnected, loose, or defective. • LD unit defective • IPU defective • Controller board disconnected, defective • HDD defective

SC235	D	FGATE error: Feedback remains LOW for M write
		After the start of timing to create the magenta image, the PFGATE register of the GAVD does not assert.
		• Harness between the VBCU and LDB unit disconnected, loose, or defective. • LD unit defective • IPU defective • Controller board disconnected, defective • HDD defective

SC236	D	FGATE error 1: Feedback remains HIGH for C write
		After the start of timing to create the cyan image, the PFGATE register of the GAVD did not assert.
		• Harness between the VBCU and LDB unit disconnected, loose, or defective. • LD unit defective • IPU defective • Controller board disconnected, defective • HDD defective

SC237	D	FGATE error: Feedback remains LOW for C write
		After the start of timing to create the cyan image, the PFGATE register of the GAVD does not assert.
		• Harness between the VBCU and LDB unit disconnected, loose, or defective. • LD unit defective • IPU defective • Controller board disconnected, defective • HDD defective

SC240	C	LD error: K
SC241	C	LD error: Y
SC242	C	LD error: M
SC243	C	LD error: C

		An error occurred at the LD error terminal of the K, Y, M, or C LD driver after initialization of the LD because the power to the LD was higher or lower than the prescribed limit.
		• LD defective due to wear, damage, short circuit • LDB harness disconnected, loose or defective

SC268	C	Optical unit thermistor error
		At power on, one of the two temperature sensors in the optics unit detected a temperature lower than -10°C. -or- It detected a temperature higher than 80°C.
		• Thermistor disconnected (causes extremely low temperature reading) • Thermistor damaged and short circuited (causes extremely high temperature reading) • VBCU defective

SC270	C	Skew control upper lower limit: Y
		The pulse total for Yellow skew control is not within the prescribed range.
		• ITB not installed correctly. • ITB defective • Optical unit installed incorrectly • Optical unit defective

SC271	C	Skew control upper lower limit: M
		The pulse total for Magenta skew control is not within the prescribed range.
		• ITB not installed correctly. • ITB defective • Optical unit installed incorrectly • Optical unit defective

SC272	C	Skew control upper lower limit: C
		The pulse total for Cyan skew control is not within the prescribed range.
		• ITB not installed correctly. • ITB defective • Optical unit installed incorrectly • Optical unit defective

SC285	D	MUSIC Continuous Failure
		The MUSIC adjustment failed after four attempts.
		• Fusing belt installed incorrectly • Fusing belt surface scoured, scratched • MUSIC sensors dirty, defective

SC Codes Group 3: Image Development – 1

SC300	D	Drum charge corona wire error: K
		The output of the charge corona wire of the black PCU is abnormal.
		• CGB power pack connection loose, broken defective • Check CGB power pack connection to BCU • CGB power pack defective • BCU defective • Replace OPC drum

SC301	D	AC charge output error: M
SC302	D	AC charge output error: C
SC303	D	AC charge output error: Y
		An interrupt checks the status of the power pack every 10 ms. This SC is issued if the VBCU detects a short in the AC charge for M, C, Y.

		• Disconnect the high voltage cable from Terminal C of the multiple high-voltage supply board. • Attach a voltmeter to the terminal. • If there is no output from the terminal, replace the high voltage power supply. -or- • If there is output from the terminal, test the resistance between the high voltage cable and the ground. If resistance is nearly "0", check the high-voltage harness for defects and replace it if necessary. • Test the conductivity between the OPC unit and the ground. If there is no conductivity between the OPC unit and ground, replace the OPC unit. • If there is no charge PWM signal, replace the harness and/or VBCU.

SC304	D	Charge corona error: charge leak (K PCU)
		A abnormal detection signal (H) was detected for longer than 250 ms.
		• Turn the machine power off/on • CGB power pack harness connectors loose, broken, defective • Corona wire caps loose, missing • CGB power pack defective Charge corona unit connectors loose, broken, defective

SC308	D	Charge corona error: wire cleaner error (K PCU)
		The charge corona wire cleaner motor remained locked after the motor was switched on, or failed to switch off within the prescribed time after cleaning started.
		• Turn the machine power off/on • Motor overloaded due to a physical obstruction • Motor defective

SC313	D	Charge, development error: M
SC314	D	Charge, development error: C
SC315	D	Charge, development error: Y
		After the M, C, or Y drum started to rotate, the feedback for the charge unit of the color dropped below 0.3V.

		• Make sure that the settings of SP2202 are at the defaults. • Check harness connections between charge roller and transfer power pack. • Defective charge roller • Defective power pack

SC316	D	Drum charge error: K
SC317	D	Drum charge error: M
SC318	D	Drum charge error: C
SC319	D	Drum charge error: Y
		Drum charge output voltage (Vpp) exceeded 2.8 kV.
		• Check the connections of the charge unit of the PCU where the problem occurred. • Replace the charge unit of the PCU (CBG power pack for the K PCU, charge roller unit for YMC PCUs)

SC320	D	Development power pack error: K
SC321	D	Development power pack error: M
SC322	D	Development power pack error: C
SC323	D	Development power pack error: Y
		This SC is issued if the VBCU detects a short in the development DC charge for K, M, C, Y.
		• Development power pack defective • High voltage power supply defective • High voltage power supply harness defective • Development unit defective • IOB harness disconnected or defective • IOB defective

		1. Disconnect the high voltage cable from Terminal B of the high-voltage supply board. 2. Attach a voltmeter to the terminal. 3. If there is no output from the terminal, replace the high voltage power supply. -or- 1. If there is output from the terminal, test the resistance between the high voltage cable and the ground. 2. If resistance is "0" or nearly "0", check the high-voltage harness for defects and replace it if necessary. 3. If replacing the harness does not solve the problem, 4. Test the resistance between the development unit terminal and the ground. If there is no resistance (0Ω) between the development unit and the ground, replace the development unit. 5. If there is no development PWM signal, replace the harness and/or IOB.

SC324	D	Development motor error: K
SC325	D	Development motor error: M
SC326	D	Development motor error: C
SC327	D	Development motor error: Y
		The PLL lock signal remained HIGH or LOW for longer than the prescribed time for the K, M, C, or Y, development motor.
		• Development motor shaft locked, blocked by obstruction • Development motor defective • DRB defective

SC336	D	Developer set error: K
SC337	D	Developer set error: M
SC338	D	Developer set error: C
SC339	D	Developer set error: Y
		The value of Vcnt is set at the maximum or minimum setting when the TD sensor is initialized.

		1. Open the front door. 2. Pull out the film seal from the black, magenta, cyan, or yellow developer bottle. 3. Do the correct SP for the affected color: • SP3801 003 to initialize the TD sensor for K. • SP3801 004 to initialize the TD sensor for M. • SP3801 005 to initialize the TD sensor for C. • SP3801 006 to initialize the TD sensor for Y

SC348	D	Toner supply motor error
		2 sec. after the motor START signal is output, a LOCK signal cannot be detected.
		• Motor harness disconnected, loose, or defective • Toner pump overload • Sub hopper overload • Toner hopper motor defective

SC350	D	Developer Fill Error: K
SC351	D	Developer Fill Error: M
SC352	D	Developer Fill Error: C
SC353	D	Developer Fill Error: Y
		The PCU failed to fill with developer from the developer bottle when SP3814-1 was executed.
		• Developer bottle not set correctly • Developer in the bottle is clogged and not flowing **Note**: For detailed information about how to handle problems developer filling, see "Handling Problems with Developer Filling" under "PCU" in Section 3.

SC356	D	Toner Supply Error 1: K
		The machine detected 10 times that the amount of toner applied to create the black ID sensor pattern on the drum between sheets (SP3101-1 ID Pattern Display - Applied K) was less than the minimum threshold setting (0.0 mg/cm^2). Also, the total time for the operation of the sub hopper clutch (SP3251-1 Tnr Supply Time - Sub Hopper CL: K) exceeded the threshold of 65K ms.

		• Toner end sensor cleaning spring broken, mechanism defective • Toner end sensor loose, broken, or defective • Replace toner supply unit

SC357	D	Toner Supply Error 2: M
		The machine detected 10 times that the amount of toner applied to create the magenta ID sensor pattern on the drum between sheets (SP3101-2 ID Pattern Display - Applied M) was less than the minimum threshold setting (0.0 mg/cm^2). Also, the total time for the operation of the sub hopper clutch (SP3251-2 Tnr Supply Time - Sub Hopper CL: M) exceeded the threshold of 65K ms.
		• Toner end sensor cleaning spring broken, mechanism defective • Toner end sensor loose, broken, or defective • Replace toner supply unit

SC358	D	Toner Supply Error 3: C
		The machine detected 10 times that the amount of toner applied to create the cyan ID sensor pattern on the drum between sheets (SP3101-3 ID Pattern Display - Applied C) was less than the minimum threshold setting (0.0 mg/cm^2). Also, the total time for the operation of the sub hopper clutch (SP3251-3 Tnr Supply Time - Sub Hopper CL: C) exceeded the threshold of 65K ms.
		• Toner end sensor cleaning spring broken, mechanism defective • Toner end sensor loose, broken, or defective • Replace toner supply unit

SC359	D	Toner Supply Error 4: Y
		The machine detected 10 times that the amount of toner applied to create the yellow ID sensor pattern on the drum between sheets (SP3101-4 ID Pattern Display - Applied Y) was less than the minimum threshold setting (0.0 mg/cm^2). Also, the total time for the operation of the sub hopper clutch (SP3251-4 Tnr Supply Time - Sub Hopper CL: Y) exceeded the threshold of 65K ms.
		• Toner end sensor cleaning spring broken, mechanism defective • Toner end sensor loose, broken, or defective • Replace toner supply unit

SC360	D	TD sensor (Vt high) error: K
SC361	D	TD sensor (Vt high) error: M
SC362	D	TD sensor (Vt high) error: C
SC363	D	TD sensor (Vt high) error: Y
		The Vt value of the black, magenta, cyan, or yellow TD sensor exceeds 0.5V for 10 counts.
		• Black, magenta, cyan, or yellow TD sensor disconnected • Harness between TD sensor and PCU defective • Defective TD sensor, replace the PCU **Note**: The TD sensor cannot be replaced independently. The PCU must be replaced if the TD sensor is defective.

SC364	D	TD sensor (Vt low) error: K
SC365	D	TD sensor (Vt low) error: M
SC366	D	TD sensor (Vt low) error: C
SC367	D	TD sensor (Vt low) error: Y
		The Vt value of the black, magenta, cyan, or yellow TD sensor is below 0.5V for 10 counts.
		• TD sensor harness disconnected, loose, defective • A drawer connector (located on the rear of a development unit) disconnected, loose, defective • TD sensor defective, replace the PCU **Note**: The TD sensor cannot be replaced independently. The PCU must be replaced if the TD sensor is defective.

SC372	D	TD sensor adjustment error: K
SC373	D	TD sensor adjustment error: M
SC374	D	TD sensor adjustment error: C
SC375	D	TD sensor adjustment error: Y

		During TD sensor initialization with SP3801, the output value of the black, magenta, cyan, or yellow TD sensor is not within the range of 2.5±0.2V
		TD harness sensor disconnected, loose or defective Harness between TD sensor and drawer disconnected, defective • TD sensor defective, replace the PCU **Note**: The TD sensor cannot be replaced independently. The PCU must be replaced if the TD sensor is defective.

SC396	D	Drum motor error: K
SC397	D	Drum motor error: M
SC398	D	Drum motor error: C
SC399	D	Drum motor error: Y
		The motor is trying to rotate at power on or during normal operation but there is an excessive load on the drum shaft. The motor has no traction (due to a bent cleaning blade, for example).
		• Drum motor harness loose, broken, defective • Drum motor defective • DTMB defective

SC Codes Group 4: Image Development - 2

SC400	D	ID sensor error: Calibration
		Before adjustment Vsg_reg<0.5 but Vsg_reg could not be adjusted to the target Vsg_reg = 4.0±0.2V during process control.
		• ID sensor harness disconnected, loose, defective • ID sensor dirty • ID sensor defective • ITB unit drawer connector dirty
		Note: Vsg_reg is the voltage reading of the light reflected directly from the bare surface of the ITB. The additional receptor on the color sensor is not used to read the bare surface of the belt. For more, see Section "6. Details".

SC402	D	ID Sensor Pattern Maximum Coverage Error 1: K
		The amount of toner applied to create the black ID sensor pattern between sheets (SP3101-1 ID Pattern Display - Applied: K) exceeded the maximum threshold of 0.3 mg/cm^2 due to an over supply of black toner.
		• Yellow toner supply unit defective

SC403	D	ID Sensor Pattern Maximum Coverage Error 2: M
		The amount of toner applied to create the magenta ID sensor pattern between sheets (SP3101-2 ID Pattern Display - Applied: M) exceeded the maximum threshold of 0.7 mg/cm^2 due to an over supply of magenta toner.
		• Magenta toner supply unit defective

SC404	D	ID Sensor Pattern Maximum Coverage Error 3: C
		The amount of toner applied to create the cyan ID sensor pattern between sheets (SP3101-3 ID Pattern Display - Applied: C) exceeded the maximum threshold of 0.7 mg/cm^2 due to an over supply of cyan toner.
		• Cyan toner supply unit defective

SC405	D	ID Sensor Pattern Maximum Coverage Error 4: Y
		The amount of toner applied to create the yellow ID sensor pattern between sheets (SP3101-4 ID Pattern Display - Applied: Y) exceeded the maximum threshold of 0.7 mg/cm^2 due to an over supply of yellow toner.
		• Yellow toner supply unit defective

SC406	D	ID Sensor Pattern Minimum Coverage Error 1: K
		The machine detected 10 times that the amount of toner applied to create the black ID sensor pattern on the drum between sheets (SP3101-1 ID Pattern Display - Applied K) was less than the minimum threshold setting (0.0 mg/cm^2). Also, the total time for the operation of the sub hopper clutch (SP3251-1 Tnr Supply Time - Sub Hopper CL: K) was less than or equal to the threshold of 65K ms.
		• Toner shield glass dirty • Development unit defective • Image transfer unit defective

SC407	D	ID Sensor Pattern Minimum Coverage Error 2: M
		The machine detected 10 times that the amount of toner applied to create the magenta ID sensor pattern on the drum between sheets (SP3101-2 ID Pattern Display - Applied M) was less than the minimum threshold setting (0.2 mg/cm^2). Also, the total time for the operation of the sub hopper clutch (SP3251-2 Tnr Supply Time - Sub Hopper CL: M) was less than or equal to the threshold of 65K ms.
		• Toner shield glass dirty • Development unit defective • Image transfer unit defective

SC408	D	ID Sensor Pattern Minimum Coverage Error 3: C
		The machine detected 10 times that the amount of toner applied to create the cyan ID sensor pattern on the drum between sheets (SP3101-3 ID Pattern Display - Applied C) was less than the minimum threshold setting (0.2 mg/cm^2). Also, the total time for the operation of the sub hopper clutch (SP3251-3 Tnr Supply Time - Sub Hopper CL: C) was less than or equal to the threshold of 65K ms.
		• Toner shield glass dirty • Development unit defective • Image transfer unit defective

SC409	D	ID Sensor Pattern Minimum Coverage Error 4: Y
		The machine detected 10 times that the amount of toner applied to create the yellow ID sensor pattern on the drum between sheets (SP3101-4 ID Pattern Display - Applied Y) was less than the minimum threshold setting (0.2 mg/cm^2). Also, the total time for the operation of the sub hopper clutch (SP3251-4 Tnr Supply Time - Sub Hopper CL: Y) was less than or equal to the threshold of 65K ms.
		• Toner shield glass dirty • Development unit defective • Image transfer unit defective

SC410	D	ID sensor error: Development γ K
SC411	D	ID sensor error: Development γ M
SC412	D	ID sensor error: Development γ C

SC413	D	ID sensor error: Development γ Y
		Development gamma for black, magenta, cyan, or yellow is not within range (0.3 to 6.0). Process control halts when this SC is issued.
		• Toner density abnormal. Refer to the image troubleshooting section in Section 4 of the Venus-C1 B132 Service Manual (Self-Check Error Codes 55 to 59, 61). • LD sensor harness loose, broken, defective • Potential sensor defective • LD unit not firing • ITB separation for CMY abnormal • Transfer power pack defective

SC414	D	ID sensor error: Development start voltage K
SC415	D	ID sensor error: Development start voltage M
SC416	D	ID sensor error: Development start voltage C
SC417	D	ID sensor error: Development start voltage Y
		The development start voltage in the development of the black, magenta, cyan, or yellow PCU is not within the correct range (±150V)
		• Toner density abnormal. Refer to the image troubleshooting section in Section 4 of the Venus-C1 B132 Service Manual (Self-Check Error Codes 55 to 59, 61). • Potential sensor defective • LD unit not firing • ITB separation for CMY abnormal • Transfer power pack defective

SC418	C	LED error during Vsg adjustment
		PWM value: Ifsg>3000 This means one or more of the following sensors is not functioning correctly: • ITB encoder sensor • ID sensor • MUSIC sensors
		• ID sensor dirty • ID sensor defective
		Note: • This error can occur as a result of cleaning the sensors with a dry cloth, which can cause a static charge to build up on the sensor and attract particles of paper dust. • Always clean these with a clean cloth moistened with alcohol as described in the PM table.

SC420	C	Potential sensor error: Vd Adjustment K
SC421	C	Potential sensor error: Vd Adjustment M
SC422	C	Potential sensor error: Vd Adjustment C
SC423	C	Potential sensor error: Vd Adjustment Y
		The development potential of the drum before exposure (Vd) cannot be adjusted to within ±8 V of the target voltage (-900V).
		• Drum potential sensor harness, connector is loose, broken, defective • Drum potential sensor dirty • Drum potential sensor defective • Drum connector, harness loose, broken, defective • Development power pack defective • VBCU defective

SC424	C	Potential sensor error 5: Vl adjustment K
SC425	C	Potential sensor error 6: Vl adjustment M
SC426	C	Potential sensor error 7: Vl adjustment C

SC427	C	Potential sensor error 8: Vl adjustment Y
		Vpl could not be adjusted to within ±5V of the target Vpl after exposure of the ID sensor patterns.
		• Drum worn • LD unit dirty • Poor drum ground connection

SC432	C	Potential sensor error 1: Vr K
SC433	C	Potential sensor error 2: Vr M
SC434	C	Potential sensor error 3: Vr C
SC435	C	Potential sensor error 4: Vr Y
		Vr > 200V. The residual voltage (Vr), the amount of voltage that remains on the surface of the drum after the QL fires is greater than 200V.
		• Potential sensor dirty • Potential sensor defective • Charge roller defective • Charge power pack defective • OPC defective

SC436	D	Potential sensor error: Vd K
SC437	D	Potential sensor error: Vd M
SC438	D	Potential sensor error: Vd C
SC439	D	Potential sensor error: Vd Y

		The VdHome reading, the first step of the process control self-check, detected that the development potential of the unexposed areas of the drum are not within the prescribed range (-500 to -800)
		• Potential sensor dirty • Potential sensor defective • Charge roller defective • Charge power pack defective • OPC defective

SC440	D	Image transfer power pack error: K
SC441	D	Image transfer power pack error: M
SC442	D	Image transfer power pack error: C
SC443	D	Image transfer power pack error: Y
		An interrupt checks the status of the power pack every 10 ms. This SC is issued if the VBCU detects a short in the power pack for K, M, C, or Y.
		• Transfer belt damaged, insulation damaged • Insulation on high voltage cable damaged • Another hot point inside the machine has damaged insulation • Insulation around high-voltage power supply damaged

SC445	D	Image transfer motor error
		The control board of the ITB motor belt generated signals that indicate there is problem with the image transfer belt motor.
		• ITB motor defective • ITB control board defective • ITB overloaded • Encoder strip on the edge of the ITB damaged.

SC446	D	ITB lift motor error
		The state of the ITB lift sensor does not change its state (switching from off to on or vice versa), even after the ITB lift motor starts rotating.
		• ITB lift sensor dirty, disconnected, defective • ITB lift motor disconnected, defective • ITB sensor defective • ITB lift motor defective

SC447	D	Image transfer roller position error
		The machine checks for the presence of the K STC and the checks the status of the K image transfer roller lift sensor after the door is closed.
		• Transfer belt release lever down • Lift sensor connector loose, broken, dirty • Lift sensor defective

SC450	D	Transfer power pack output error
		An interrupt checks the status of the power pack every 2 ms. This SC is issued if the VBCU detects a short in the power pack 250 times at T2 within 500 ms.
		• Damaged insulation on the high-voltage supply cable • Damaged insulation around the high-voltage power supply. • Check SIOB harness connections • SIOB defective

SC452	D	PTR lift mechanism error
		The PTR was not detected at the home position within 2 sec. after the PTR lift motor turned on.
		• PTR HP sensor dirty, disconnected, defective • PTR lift motor disconnected, defective

SC455	D	PTR motor error
		The lock signal from the paper transfer motor was not detected within 1 sec. after the motor switched on.
		• Motor disconnected • PTR shaft locked, needs cleaning, blocked by obstruction • Drive shaft of the ITB locked and overloaded, needs cleaning, or blocked by obstruction • DRB disconnected, defective

SC460	D	Separation power pack output error
		This SC is issued if the VBCU detects a short in the transfer power pack.
		• Damaged insulation on the high-voltage supply cable (replace cable) • Damaged insulation around the transfer power pack

SC465	C	Image Transfer Roller End: K
SC466	C	Image Transfer Roller End: M
SC467	C	Image Transfer Roller End: C
SC468	C	Image Transfer Roller End: Y
		The machine detected an abnormal reading of the resistance of the transfer roller because it is near the end of its service life.
		• Check the connections between the transfer roller power pack the roller • Replace image transfer roller • Image transfer power pack defective

SC472	C	ITB Bias Roller End
		The machine detected an abnormal reading of the resistance of the ITB bias roller because it is near the end of its service life.
		• Check the connections between the transfer power pack • Replace image transfer roller • Transfer power pack defective

SC480	B	Drum cleaning motor error: K
SC481	B	Drum cleaning motor error: M
SC482	B	Drum cleaning motor error: C
SC483	B	Drum cleaning motor error: Y
		The drum cleaning motor failed to switch on (motor lock), or failed to reach the required speed within the prescribed time.
		• Motor block by physical obstruction • Motor harness loose, broken, defective • Motor defective

SC484	D	Used toner bottle full
		The toner full sensor has detected that the used toner bottle is full.
		• Remove the used toner bottle • Empty the used toner bottle and reinstall it

SC485	D	Used toner bottle motor error
		The lock signal of the used toner bottle motor remains HIGH for more than 600 ms.
		• Used toner bottle harness loose, broken, defective • Used toner bottle motor defective

SC487	D	Used toner bottle set error
		The set sensor of the used toner bottle remains LOW for more than 500 ms. (The sensor goes HIGH when the bottle is installed correctly.)
		• Used toner bottle not installed • Remove used toner bottle and reinstall correctly

SC488	D	Used toner transport lock
		Used toner cannot be transported to the used toner bottle.
		• Blockage in the line to the used toner bottle

SC490	C	MUSIC sensor error
		One or more of the MUSIC sensors is not functioning normally.
		• MUSIC sensor harness loose, broken, defective • Sensor defective

SC495	D	ITB encoder sensor error
		The ITB encoder sensor that reads the encoded strip on the ITB is not functioning properly.
		• Sensor dirty • Sensor harness loose, broken, defective • Sensor out of position because installed incorrectly • ITB installed incorrectly

SC496	C	MUSIC sensor error
		The MUSIC sensor detected an abnormal pattern on the ITB because: • ADC exceeded upper or lower limit. • The pattern used to calculate the amount of skew is abnormal. • The reading of the pattern exceeded the length of time the LED projected light. • LED light could not be adjusted correctly.
		• ITB installed incorrectly • Inspect ITB belt for damage, replace • MUSIC pattern abnormal; do a forced process control (SP3821) and check the result. • MUSIC sensor defective or disconnected

SC497	C	Temperature and humidity sensor error: M PCU
		The thermistor output of the temperature and humidity sensor above the M PCU was not within the prescribed range (0.5V to 4.2V)
		• Temperature and humidity sensor harness disconnected, loose, defective • Temperature and humidity sensor defective

SC498	C	Temperature and humidity sensor error: Toner Bottle
		The thermistor output of the temperature and humidity sensor below the used toner bottle was not within the prescribed range (0.5V to 4.2V)
		• Temperature and humidity sensor harness disconnected, loose, defective • Temperature and humidity sensor defective

SC499	C	ITB encoder sensor error
		The ITB sensor that reads the encoded film strip on the edge of the image transfer belt is operating correctly.
		• ITB encoder sensor dirty • Sensor harness disconnected or damaged • Encoded scale on the edge of the ITB is damaged or dirty • ITB installed incorrectly

SC Codes Group 5: Paper Feed

SC501	B	Tray 1 (tandem tray) feed error (**Japan Only**)
		The tray 1 lift sensor does not switch on 10 s after the tray lift motor switches on and starts lifting the bottom plate. When the tray lowers, the tray lift sensor does not go off within 1.5 sec. The lower limit sensor of the tandem tray does not detect the lower limit within 10 sec.
		• Tray lift motor harness disconnected, loose, defective • Paper or other obstacle trapped between tray and motor • Tray lift sensor disconnected, damaged • Lower limit sensor disconnected, damaged • Pick-up solenoid disconnected, blocked by an obstacle

SC502	B	Tray 2 (paper cassette) feed error (**Japan Only**)
		The lift sensor is not activated within 10 seconds after the tray lift motor starts lifting the bottom plate. When the tray lowers, the tray lift sensor does not go off within 1.5 sec. The lower limit sensor of the tandem tray does not detect the lower limit within 10 sec.
		• Tray lift motor defective or disconnected • Paper or other obstacle trapped between tray and motor • Pick-up solenoid disconnected or blocked by an obstacle

SC503	B	Tray 1 feed error
		The lift sensor is not activated within 10 seconds after the tray lift motor starts lifting the bottom plate. When the tray lowers, the tray lift sensor does not go off within 1.5 sec.
		• Tray lift motor defective or disconnected • Paper or other obstacle trapped between tray and motor • Pick-up solenoid disconnected or blocked by an obstacle

SC504	B	Tray 2 feed error
		The lift sensor is not activated within 10 seconds after the tray lift motor starts lifting the bottom plate. When the tray lowers, the tray lift sensor does not go off within 1.5 sec.
		• Tray lift motor defective or disconnected • Paper or other obstacle trapped between tray and motor • Pick-up solenoid disconnected or blocked by an obstacle

SC505	C	Tandem tray rear fence motor error
		The return sensor does not switch on within 10 sec. after the rear fence motor switches on. The HP sensor does not switch on 10 sec. after the rear fence motor switches on. The HP sensor and return sensor switch on at the same time.
		• Rear fence motor defective or poor connection • Paper or other obstacle interfering with operation of the sensors • Paper or other obstacle trapped between tray and motor • Motor mechanical overload due to obstruction • Return sensor or HP sensor defective or dirty

SC510	B	LCT tray error: B473/D350
		When the bottom plate is lifted, the upper limit sensor does not come on for 30 sec. When the bottom plate is lowered, the lower limit sensor does not come on for 30 sec. After lift begins, the upper limit sensor does not switch on before the pick-up solenoid switches on. The paper end sensor switches on during lift and the upper limit sensor does not switch on for 2.5 s, and a message prompts user to reset paper.
		• Tray lift motor harness, disconnected, loose, or defective • Tray lift motor defective • Lift sensor defective or disconnected • Pick-up solenoid defective or disconnected • Paper end sensor defective

SC515	C	Duplex jogger motor error 1
		When the jogger fence moves to the home position, the jogger fence HP sensor does not switch on even after the jogger motor has moved the jogger fence 153.5 mm.
		• Jogger fence motor defective or poor connection • Paper or other obstacle interfering with operation of the sensors or motor • Return sensor or HP sensor defective, dirty, or disconnected • Paper or other obstacle has jammed mechanism • HP sensor connector disconnected or defective • HP sensor defective

SC516	C	Duplex jogger motor error 2
		When the jogger fence moves from the home position, the jogger fence HP sensor does not turn off even if the jogger motor has moved the jogger fence 153.5 mm.
		• Jogger fence motor defective or poor connection • Paper or other obstacle interfering with operation of the sensors or motor • Return sensor or HP sensor defective, dirty, or disconnected • Paper or other obstacle has jammed mechanism • HP sensor connector disconnected or defective • HP sensor defective

SC517	D	LCIT air assist front fan error
		The front air assist fan is not functioning properly.
		• Fan harness disconnected or damaged • Fan blocked by an obstruction • Fan damaged, defective

SC518	D	LCIT air assist rear fan error
		The rear air assist fan is not functioning properly.
		• Fan harness disconnected or damaged • Fan blocked by an obstruction • Fan damaged, defective

SC530	D	Fusing unit exit fan error
		The VBCU did not receive the lock signal 5 seconds after the fusing unit fan switches on.
		• Fan harness disconnected or damaged • Fan blocked by an obstruction • Fan damaged

SC531	C	Fusing fan error: Front
		The lock signal remained HIGH for 5 sec. while the fan at the front of the fusing unit near the heat dissipation fins was operating.
		• Fan harness disconnected or damaged • Fan blocked by an obstruction • Fan damaged

SC532	D	Controller box fan error
		The lock signal remained HIGH for 5 sec. while the fan that cools the printed circuit boards was operating.
		• Fan harness disconnected or damaged • Fan blocked by an obstruction • Fan damaged

SC533	B	Fusing unit intake fan error
		The lock signal remained HIGH for 5 sec. while the fan that draws air out of the fusing unit was operating.
		• Fan harness disconnected, damaged • Fan blocked by an obstruction • Fan damaged

SC533-1	B	Fusing exit fan error
		The machine detected a fan lock signal 5 times at 1 sec. intervals. This indicates that the fan is not operating and the machine stops.
		• Fan connection loose, broken, defective • Fan is blocked by an obstruction • Fan motor is defective

SC534	D	Duplex unit fan error
		A lock signal remained HIGH for 5 sec. while the front duplex fan motor or rear duplex fan motor was operating.
		• Fan harness disconnected or damaged • Fan blocked by an obstruction • Fan damaged

SC535	D	Development intake fan error
		The lock signal remained HIGH for 5 sec. while the fan in the Y development unit was operating.
		• Fan harness disconnected or damaged • Fan blocked by an obstruction • Fan damaged

SC536	D	Development Intake Fan Error: Y
SC537	D	Development Intake Fan Error: C
SC538	D	Development Intake Fan Error: M
SC539	D	Development Intake Fan Error: K
		The lock signal remained HIGH for 5 sec. while the fan in the development unit was operating.
		• Fan harness disconnected or damaged • Fan blocked by an obstruction • Fan damaged

SC540	D	Fusing/exit motor error
		Motor operation was detected abnormal at power on.
		• Check inside the fusing unit for any obstructions • Motor harness loose, broken, defective • Motor or its driver board defective

SC541	A	Heating roller thermistor (center) error 1
		The "floating" (non-contact) thermistor at the center of the heating roller is not operating correction.
		• Thermistor harness connection loose, disconnected, defective • Thermistor installed incorrectly • Thermistor defective

SC543	A	Heating roller thermistor (center) error 2
		The thermistor at the center of the heating roller detected an abnormally high temperature (over 250°C)
		• Do SP5810 to cancel the SC fusing code. • TRIAC short, AC drive board defective • VBCU defective

SC544	A	Heating roller thermistor (center) error 3
		The thermistor detected a temperature over 260°C.
		• Do SP5810 to cancel the SC fusing code. • TRIAC short, AC drive board defective • VBCU defective

SC545	A	Lamp remains on
		After hot roller reaches warm-up temperature, the center fusing lamps in the heating roller remained on at full capacity after reaching the warm-up temperature while the hot roller was not rotating.
		• Do SP5810 to cancel the SC fusing code. • Heating roller thermistor damaged, or out of position • Fusing lamp disconnected, broken

SC546	A	Heating roller thermistor error (side)
		The temperature measured by the heating roller thermistor does not reach 0°C after 50 sec. and remains over this temperature for 10 readings.
		• Loose connection of the heating roller thermistor • Defective heating roller thermistor

SC547	A	Zero cross error
		When the main switch is turned on, the machine checks how many zero-cross signals are generated within 500 ms. This SC code is issued if the number of zero-cross signals detected is not within specification. **Note**: Zero cross signals, generated from an ac power supply, are used to generate a trigger pulses to control the applied power accurately.
		• Do SP5810 to cancel the SC fusing code. • Electrical noise on the power supply line • Fusing relay damaged, replace the AC drive board.

SC549	A	Heating roller thermistor (center): software error
		The thermistor detected a temperature over 250°C 10 times within 1 sec.
		• Do SP5810 to cancel the SC fusing code. • TRIAC short, AC drive board defective • VBCU defective

SC550	A	Heating roller thermistor 3 (side): hardware error
		The thermistor detected a temperature over 260°C.
		• Do SP5810 to cancel the SC fusing code. • TRIAC short, AC drive board defective • VBCU defective

SC551	A	Pressure roller thermistor error 1
		The temperature measured by the pressure roller thermistor did not reach 0°C after 10 attempts.
		• Do SP5810 to cancel the SC fusing code. • Loose connection of the pressure roller thermistor • Thermistor positioned incorrectly • Defective pressure roller thermistor

SC552	A	Pressure roller thermistor error 2
		After the main switch is turned on or the cover is closed, the heating roller temperature did not reach the ready temperature (45°C) within 80 sec. after the fusing lamp switches on. -or- If the fusing unit did not reach the reload temperature after 350 sec.
		• Pressure roller thermistor harness loose, disconnected, defective • Pressure roller thermistor defective

SC553	A	Pressure roller thermistor (software) error
		The thermistor detected a temperature over 220°C 12 times within 1 sec.
		• Do SP5810 to cancel the SC fusing code. • TRIAC short, AC drive board defective • VBCU defective

SC554	A	Pressure roller thermistor (hardware) error
		The thermistor detected a temperature over 230°C.
		• Do SP5810 to cancel the SC fusing code • TRIAC short, AC drive board defective • VBCU defective

SC555	A	Pressure roller fusing lamp remains on
		After hot roller reaches warm-up temperature, the pressure roller fusing lamp remained for 300 sec. while the hot roller is not rotating.
		• Do SP5810 to cancel the SC fusing code. • Thermistor damaged, or out of position • Fusing lamp disconnected, broken

SC556	A	Heating roller fusing lamp error
		After hot roller reaches warmup temperature, the heating roller fusing lamp (ends) remains for 10 sec. while the hot roller is not rotating.
		• Thermistor damaged, or out of position • Fusing lamp disconnected, broken

SC557	A	Zero cross over error
		At power on the fusing relay was detected as defective.
		• Replace the AC drive board.

SC559	A	Three successive paper jams in fusing unit
		This SC only occurs if SP1159 is on, and a jam occurred in the fusing unit for three consecutive sheets of paper. With SP1159 set to "1" the machine operation can be restored only by the service technician.
		The paper cooling job time sensor detected paper late for 3 counts.
		• Remove the paper that is jammed in the fusing unit. • Make sure that the fusing unit is clean and has no obstacles in the paper feed path.

SC561	A	Heating roller non-contact thermistor error 1
		The temperature measured by the heating roller thermistor (non-contact) on the end of the heating roller did not reach the prescribed warm-up temperature within 1 sec.
		• Loose, broken, damaged connector • Defective thermistor

SC562	A	Heating roller non-contact thermistor error 2
		After the main switch is turned on or the cover is closed, the heating roller temperature does not reach the ready temperature within 100 sec. after the heater switches on. -or- The heating roller did not reach the ready temperature within 150 sec. • Note: Thermistor 2 stops monitoring the temperature when Thermistor 1 detects the ready temperature.
		• Do SP5810 to cancel the SC fusing code • Defective hot roller thermistor • Heating roller disconnected, defective

SC563	A	Heating roller non-contact thermistor error 3
		The thermistor 2 (of the heating roller) detected a temperature over 250°C 10 times within 1 sec.
		• Do SP5810 to cancel the SC fusing code. • TRIAC short, AC drive board defective • VBCU defective

SC564	A	Heating roller non-contact thermistor error 3
		The thermistor detected a temperature over 260°C.
		• Do SP5810 to cancel the SC fusing code. • TRIAC short, AC drive board defective • VBCU defective

SC565	A	Heating roller fusing lamp on error
		After fusing belt reached warm-up temperature, the heating roller fusing lamp remained on for 20 sec. while the hot roller was not rotating.
		• Do SP5810 to cancel the SC fusing code. • Thermistor damaged, or out of position • Fusing lamp disconnected, broken

SC566	A	Heating roller non-contact thermistor 3
		Thermistor detected a temperature less than 0 degrees more than three times.
		• Do SP5810 to cancel the error. • Hot roller thermistor connector disconnected, loose, broken, or defective.

SC569	D	Pressure roller lift error 2
		Pressure roller lift motor not operating correctly. (No signal to indicate completion of operation.)
		• Pressure roller lift sensor connection loose, broken, damaged • Clean the pressure roller lift sensor • Pressure roller lift harness loose, broken, damage • Pressure roller lift motor blocked by an obstruction • Pressure roller lift motor defective

SC570	D	Development intake fan error
		Fan motor not operating correctly.
		• Fan harness loose, broken, defective • Fan overload due to physical obstruction • Fan motor defective

SC571	B	Ozone exhaust fan (FC) error
		The fan of the middle ozone filter box not operating correctly.
		• Fan harness loose, broken, defective • Fan overload due to physical obstruction • Fan motor defective

SC572	D	Ozone exhaust fan (K) error
		The fan of the lower ozone filter box not operating correctly.
		• Fan harness loose, broken, defective • Fan overload due to physical obstruction • Fan motor defective

SC573	D	Ozone intake fan error
		The ozone filter intake fan not operating correctly.
		• Fan harness loose, broken, defective • Fan overload due to physical obstruction • Fan motor defective

SC574	C	Y thermistor error
		The thermistor near the Y PCU has short circuited or otherwise not operating correctly.
		• Harness loose, broken, defective • Thermistor defective

SC585	C	Double-feed detection sensor error
		The ADC output value of the double-feed sensor LED was not within range (2 to 250).
		• Sensors are covered with paper dust or other matter and require cleaning • Sensor harness connection loose, broken, defective • There is an obstruction between the emitter/receptor sensor pair. • Sensors defective

SC599	B	Tray 1 lift motor error
		An error was detected in the operation of the lift motor for Tray 1 (tandem tray).
		• Motor harness loose, broken, defective • Motor overload due to an obstruction • Motor defective

3

SC Codes Group 6: Device Communication

SC620	D	ADF communication error
		A BREAK signal occurs after the machine detects the ADF, or a communication timeout occurs.
		• ADF board harness loose, broken, defective • CNB board harness loose, broken, defective • BCU board harness loose, broken, defective • ADF defective • CNB defective • BCU defective

SC621	D	Mailbox-to-Finisher communication error
		Communication between the mailbox and finisher is interrupted. An ACK/NCK signal was not received within 100 ms after a data frame is sent and 3 retries failed.
		• Connection cable between mailbox and finisher disconnected, defective • Finisher main board defective • VBCU defective • PSU defective

SC622	D	PFB communication error
		Communication between the VBCU and PFB was interrupted. (Communication status is monitored at 30 ms intervals.)
		• Connection cable between the VBCU and PFB is disconnected, defective • VBCU defective • PFB defective

SC624	D	Mailbox-to-copier communication error
		Communication between the mailbox and copier is interrupted. An ACK/NCK signal was not received within 100 ms after a data frame is sent and 3 retries failed.
		• Mailbox cable disconnected, defective • Mailbox main board defective • VBCU defective • PSU defective

SC625	D	VBCU-DTMB (DMC1) communication error
		Communication between the VBCU and DMC (main) was interrupted. An ACK/NAK signal was not received within 100 ms after a data frame was sent and three retries failed.
		• Check the DTMB harness connections at the DTMB and VBCU • DTMB defective • PSU defective • VBCU defective • 5V power supply defective

SC626	D	VBCU-DTMB (DMC2) communication error
		Communication between the VBCU and DMC (sub) was interrupted. An ACK/NAK signal was not received within 100 ms after a data frame was sent and three retries failed.
		• Check the DTMB harness connections at the DTMB and VBCU • DTMB defective • VBCU defective • PSU defective

SC627	D	VBCU-DTMB (TMB) communication error
		Communication between the VBCU and TMC was interrupted. An ACK/NAK signal was not received within 100 ms after a data frame was sent and three retries failed.
		• DTMB harness loose, broken, defective • DTMB defective • VBCU defective • PSU defectiv

SC636-001	B	SD card error
		Expanded authentication module error
		One or more of the following conditions exits: • There is no expanded authentication module in the machine. • The SD card is damaged or the authentication module is corrupted. • There is no DESS module in the machine.
		• Install the correct SD card with the expanded module file. • Install the DESS module.
SC636-002	B	Expanded authentication module version error
		The version of the expanded authentication module is incorrect.
		Install correct version of the expanded authentication module.

SC641	D	Engine-Controller Communication Error: No Response	GW

		There was no response to a frame sent from the controller board to the engine.
		• Cycle the machine off/on.

SC670	D	Engine start failure	GW
		The engine did not respond within 30s after power on, or the engine went down suddenly at power on or during warm up because a communication reset occurred between the VBCU and the controller.	
		• VBCU installed incorrectly • VBCU defective	

SC671	D	Incorrect board detected	GW
		An illegal engine board was detected at power on.	
		• Replace BICU	

SC687	D	PER (memory address) command error
		The VBCU does not receive a memory address command from the controller 120 seconds after paper is in the position for registration.
		• Turn the machine power off/on • Check the controller board connections • Controller defective

SC Codes Group 7: Peripherals

SC701	D	ADF original pickup operation error
		Even though the pickup motor is rotating clock-wise, the pickup roller home position sensor cannot detect the position of the pickup roller.
		• Pickup roller HP sensor harness loose, disconnected, defective • Pickup roller HP sensor defective • Pickup motor harness loose, disconnected, defective • Pickup motor defective • ADF control board defective

SC705	D	ADF bottom plate lift motor
		The bottom plate HP sensor did not detect the home position of the bottom plate after the bottom plate lift motor switches on and lowers the bottom plate. The bottom plate position sensor does not detect the position of the plate after the lift motor switches on and raises the bottom plate.
		• ADF feed motor disconnected, defective • Bottom plate HP sensor disconnected, defective • ADF main board defective

SC720	C	Finisher lower transport motor error (D373/D374/B830)
		No encoder pulse signal was detected for the transport motor within the prescribed time, or the motor did not attain the required speed within the prescribed time. The 1st failure causes a jam message, and the 2nd failure causes this SC code.
		• Lower transport motor harness, loose, broken • Motor overload due to an obstruction

SC721	B	Finisher jogger motor error (D373/D374/B830)
		The jogger fences move out of the home position but the HP sensor output does not change within the specified number of pulses. The 1st failure causes an original jam message, and the 2nd failure causes this SC code.
		• Jogger HP sensor disconnected, defective • Jogger motor disconnected, defective • Jogger motor overloaded due to obstruction • Finisher main board and jogger motor connection loose, defective • Finisher main board defective

SC723	B	Finisher feed-out motor (B830)
		The stack feed-out belt HP sensor does not activate within the specified time after the stack feed-out belt motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Stack feed-out HP sensor disconnected, defective • Feed-out motor disconnected, defective • Finisher main board connection to feed out motor disconnected, defective • Motor overload due to obstruction

SC724	B	Finisher stapler hammer motor error (B830)
		Stapling does not finish within the prescribed time after the staple hammer motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Stapler hammer motor overloaded due to obstruction, jammed staple, number of sheets exceeds limit for stapling • Stapler hammer motor disconnected, defective • Staple hammer motor HP sensor disconnected, defective

SC725	B	Finisher exit guide plate motor error (D373/D374, B830)
		After moving away from the guide plate position sensor, the exit guide is not detected at the home position within the prescribed time. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Guide plate motor disconnected, defective • Guide plate motor overloaded due to obstruction • Guide plate position sensor disconnected, defective

SC726	B	Shift jogger motor 1 error (D373/D374, B830)
		The side fences do not retract within the prescribed time after the shift jogger motor switches on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Shift jogger motor disconnected, defective • Shift jogger motor overloaded due to obstruction • Shift jogger HP sensor disconnected, defective

SC727	B	Shift jogger motor 2 error (D373/D374)
		The side fences do not retract within the prescribed time after the shift jogger motor switches on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Motor harness disconnected, loose, defective • Motor defective • Motor overload • HP defective

SC728	B	Shift jogger retraction motor error (D373/D374)
		The side fences do not retract within the prescribed time after the retraction motor switches on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Motor harness disconnected, loose, defective • Motor defective • Motor overload • HP defective

SC730	B	Transport motor error (B830)
		No pulse signal was detected for the transport motor within the prescribed time, or the shift roller HP sensor of the upper tray did not activate within the prescribed time after the shift tray starts to move toward or away from the home position. The 1st failure causes a jam error, and the 2nd failure causes this SC code.
		• Motor harness loose, broken, defective • Motor overload due to an obstruction • Shift tray HP sensor of the upper tray disconnected, defective • Motor defective • Sensor defective

SC731	B	Upper Transport Motor Error (Proof Tray): B830
		No encoder pulse signal is detected for the upper transport motor within 600 ms. The 1st failure causes this SC code.
		• Upper transport motor disconnected, defective • Finisher connection to upper transport motor loose, defective • Upper transport motor blocked by an obstruction • Upper transport motor defective • Finisher main board defective

SC732	B	Shift Tray Exit Motor: 3K Finisher B830
		The shift tray exit motor is not operating.
		• Motor harness loose, broken, defective • Motor is blocked by an obstruction • Motor defective • Finisher main control board defective

SC733	B	Stapler Exit Motor: B830
		The stapler exit motor is not operating.
		• Motor harness loose, broken, defective • Motor is blocked by an obstruction • Motor defective • Finisher main control board defective

SC734	B	Upper Tray Junction Gate Motor: 3K Finisher B830
		The upper tray junction gate HP sensor did not detect the gate at the home position within 200 ms after two attempts. -or- The HP sensor twice detected the gate at the home position for more than 200 ms after it was supposed to open.
		• Junction gate did not arrive at the home position within the specified time • Junction gate did not leave the home position within the specified time

SC735	D	Staple Junction Gate Motor Error: B830
		The staple tray junction gate HP sensor did not detect the gate at the home position within 200 ms after two attempts. -or- The HP sensor twice detected the gate at the home position for more than 200 ms after it was supposed to open.
		• Junction gate did not arrive at the home position within the specified time • Junction gate did not leave the home position within the specified time

SC736	B	Pre-Stack Junction Gate Motor Error: 3K Finisher B830
		The pre-stack junction gate HP sensor did not detect the gate at the home position for within 200 ms after two attempts. -or- The HP sensor twice detected the gate at the home position for more than 200 ms after it was supposed to open.
		• Junction gate did not arrive at the home position within the specified time • Junction gate did not leave the home position within the specified time

SC737	B	Pre-Stack Transport Motor Error: B830
		The pre-stack transport motor is not operating.
		• Motor harness loose, broken, defective • Motor is blocked by an obstruction • Motor defective • Finisher main control board defective

SC738	B	Pre-Stack Junction Gate Release Motor Error: B830
		The pre-stack junction gate release HP sensor did not detect the gate at the home position within 200 ms after two attempts. -or- The HP sensor twice detected the gate at the home position for more than 200 ms after it was supposed to open.
		• Junction gate did not arrive at the home position within the specified time • Junction gate did not leave the home position within the specified time

SC740	B	Finisher corner stapler motor error (D373/D374, B830)
		The stapler motor does not switch off within the prescribed time after operating. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Staple jam • Number of sheets in the stack exceeds the limit for stapling • Stapler motor disconnected, defective

SC741	B	Finisher corner stapler rotation motor error (D373/D374)
		The stapler does not return to its home position within the specified time after stapling. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Stapler rotation motor disconnected, defective • Stapler rotation motor overloaded due to obstruction • Stapler rotation HP sensor disconnected, defective

SC742	B	Finisher stapler movement motor error (D373/D374)
		The stapler HP sensor is not activated within the specified time after the stapler motor turned on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Stapler movement motor disconnected, defective • Stapler movement motor overloaded due to obstruction • Stapler HP sensor disconnected, defective

SC743	B	Booklet stapler motor error 1 (D373)
		The front stapler unit saddle-stitch motor does not start operation within the specified time. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Front motor disconnected, defective • Front motor overloaded due to obstruction

SC744	B	Booklet stapler motor error 2 (D373)
		The rear stapler unit saddle-stitch motor does not start operation within the specified time. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Rear motor disconnected, defective • Rear motor overloaded due to obstruction

SC745	B	Feed-Out Belt Motor Error (D373/D374, B830)
		The stack feed-out belt HP sensor does not activate within the specified time after the stack feed-out belt motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		If the motor is operating • Stack feed-out HP sensor harness loose, broken, defective • Stack feed-out HP sensor defective If the motor is not operating: • Feed-out motor blocked by an obstruction • Feed-out motor harness loose, broken, defective • Feed-out motor defective • Booklet finisher main board defective

SC746	B	Stack Plate Motor Error 1: Front Motor (B830)
		The stack plate HP sensor (front) does not activate within 500 ms after the motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.

		If the motor is operating • Front stack plate HP sensor harness loose, broken, defective • Front stack plate HP sensor defective If the motor is not operating: • Motor blocked by an obstruction • Motor harness loose, broken, defective • Motor defective • Booklet finisher main board defective

SC747	B	Stack Plate Motor Error 2: Center Motor (B830)
		The stack plate HP sensor (center) does not activate within 500 ms after the motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		If the motor is operating • Center stack plate HP sensor harness loose, broken, defective • Center stack plate HP sensor defective If the motor is not operating: • Motor blocked by an obstruction • Motor harness loose, broken, defective • Motor defective • Booklet finisher main board defective

SC748	B	Stack Plate Motor Error 3: Rear Motor (B830)
		The stack plate HP sensor (rear) does not activate within 500 ms after the motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.

		If the motor is operating • Rear stack plate HP sensor harness loose, broken, defective • Rear stack plate HP sensor defective If the motor is not operating: • Motor blocked by an obstruction • Motor harness loose, broken, defective • Motor defective • Booklet finisher main board defective

SC750	B	Finisher tray 1 (upper tray lift) motor error (D373/D374)
		The upper tray paper height sensor does not change its status with the specified time after the tray raises or lowers. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Tray lift motor disconnected, defective • Upper tray paper height sensor disconnected, defective • Finisher main board connection to motor loose • Finisher main board defective

SC753	B	Stacking Roller Motor Error (D373/D374, B830)
		The return drive HP sensor did not detect the stacking roller at the HP sensor within 1 sec. -or- The stacking roller did not leave the home position at the specified time.
		If the motor is operating • Return drive HP sensor harness loose, broken, defective • Return drive HP sensor defective If the motor is not operating: • Motor blocked by an obstruction • Motor harness loose, broken, defective • Motor defective • Finisher main board defective

SC754	B	Stacking Roller Drag Motor Error (D373/D374, B830)
		The stacking roller drag motor did not turn on.
		• Motor harness loose, broken, defective • Motor defective • Finisher control board defective

SC755	B	Shift Motor Error: 3K Finisher (D373/D374, B830)
		The shift tray half-turn sensors: Failed twice to detect the shift tray at the home position at the specified time. -or- Failed twice to detect that the shift tray had left the home position.
		If the motor is operating • Half-turn sensor 1, 2 harnesses loose, broken, defective • One of the half-turn sensors defective If the motor is not operating: • Motor blocked by an obstruction • Motor harness loose, broken, defective • Motor defective • Finisher main board defective

SC760	D	Finisher punch motor error (D373/D374, B830)
		The punch HP sensor is not activated within the specified time after the punch motor turned on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Punch HP sensor disconnected, defective • Punch motor disconnected, defective • Punch motor overload due to obstruction

SC761	B	Finisher folder plate motor error (D373)
		The folder plate moves but is not detected at the home position within the specified time. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Folder plate HP sensor disconnected, defective • Folder plate motor disconnected, defective • Folder plate motor overloaded due to obstruction.

SC763	D	Punch movement motor error (D373/D374)
		Occurs during operation of the punch unit. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Motor harness disconnected, loose, defective • Motor defective

SC764	D	Paper position sensor slide motor error (D373/D374)
		Occurs during operation of the punch unit. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Motor harness disconnected, loose, defective • Motor defective

SC765	B	Fold Unit Bottom Fence Lift Motor Error (D373)
		The fold unit bottom fence did not return to the home position within the specified time.
		• Fold bottom fence mechanism overloaded due to an obstruction • Fold bottom fence HP sensor connector loose, broken, defective • Fold bottom fence HP sensor defective • Fold bottom fence lift motor connector loose, broken, defective • Fold bottom fence lift motor defective • Main control board defective

SC766	B	Clamp Roller Retraction Motor (D373)
		The clamp roller did not return to the home position within the specified time.
		• Clamp roller mechanism overloaded due to an obstruction • Clamp roller HP sensor connector loose, broken, defective • Clamp roller HP sensor defective • Clamp roller retraction motor connector loose, broken, defective • Clamp roller retraction motor defective • Main control board defective

SC767	B	Stack Junction Gate Motor (D373)
		The stack junction gate did not return to the home position within the specified time.
		• Stack junction mechanism overloaded due to an obstruction • Stack junction gate HP sensor connector loose, broken, defective • Stack junction gate HP sensor defective • Stack junction gate motor connector loose, broken, defective • Stack junction gate motor defective • Main control board defective

SC770	B	Cover Interposer Lift Motor 1 Error
		In the first tray: • The upper limit sensor did not detect the bottom plate within the specified time after the lift motor switched on to lift the bottom plate. • The lower limit sensor did not direct the bottom plate within the specified time after the lift motor switched on to lower the bottom plate. **Note**: In both cases, 1 error count indicates a jam, 2 error counts cause this SC code.
		• Lift motor, upper limit sensor, lower limit sensor harnesses, connectors loose, broken, defective • Lift motor defective • Upper limit sensor defective • Lower limit sensor defective

SC771	B	Cover Interposer Lift Motor 2 Error
		In the second tray: • The upper limit sensor did not detect the bottom plate within the specified time after the lift motor switched on to lift the bottom plate. • The lower limit sensor did not direct the bottom plate within the specified time after the lift motor switched on to lower the bottom plate. **Note**: In both cases, 1 error count indicates a jam, 2 error counts cause this SC code.
		• Lift motor, upper limit sensor, lower limit sensor harnesses, connectors loose, broken, defective • Lift motor defective • Upper limit sensor defective • Lower limit sensor defective

SC772	B	Cover Interposer Pickup Motor 1 Error
		In the first tray: • While the pick-up roller motor was on, the pick-up roller HP sensor did not detect the pick-up roller at the home position within the specified number of pulses. • While the pick-up roller motor was on, the pick-up roller HP sensor did not detect the pick-up roller at the home position above the specified number of pulses. **Note**: In both cases, 1 error count indicates a jam, 2 error counts cause this SC code.
		• The pick-up motor, pick-up roller HP sensor harnesses, connectors were loose, broken, defective • Pick-up motor overload due to an obstruction • Pick-up motor defective • Pick-up roller HP sensor defective

SC773	B	Cover Interposer Pickup Motor 2 Error
		In the second tray: • While the pick-up roller motor was on, the pick-up roller HP sensor did not detect the pick-up roller at the home position within the specified number of pulses. • While the pick-up roller motor was on, the pick-up roller HP sensor did not detect the pick-up roller at the home position above the specified number of pulses. **Note**: In both cases, 1 error count indicates a jam, 2 error counts cause this SC code.

		• The pick-up motor, pick-up roller HP sensor harnesses, connectors were loose, broken, defective • Pick-up motor overload due to an obstruction • Pick-up motor defective • Pick-up roller HP sensor defective

SC775	B	Jogger Top Fence Motor: 3K Finisher B830
		The top fence HP sensor detected that: The top fence did not arrive at the home position within the specified number of pulses. -or- The top fence failed to leave the home position within the specified number of pulses.
		If the jogger top fence motor is operating: • Top fence HP sensor harness loose, broken, defective • Top fence HP sensor defective If the jogger top fence motor is not operating: • Motor blocked by an obstruction • Motor harness loose, broken, defective • Motor defective • Finisher main board defective

SC776	B	Jogger Bottom Fence Motor (B830)
		The bottom fence HP sensor detected that: The bottom fence did not arrive at the home position at the specified time. -or- The bottom fence failed to leave the home position at the specified time.

		If the jogger bottom fence motor is operating: • Bottom fence HP sensor harness loose, broken, defective • Bottom fence HP sensor defective If the jogger bottom fence motor is not operating: • Motor blocked by an obstruction • Motor harness loose, broken, defective • Motor defective • Finisher main board defective

SC778-1	D	Horizontal Transport Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC778-2	D	Top Tray Exit Motor	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC778-3	D	Top Tray JG Motor	Multi Folder (D454)
		The top tray JG HP sensor did not detect the top tray junction gate at (or out of) its home position. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Top tray JG HP sensor dirty • Sensor harness or connector loose, broken, defective • Top tray JG motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC778-4	D	Entrance JG Motor	Multi Folder (D454)
		The entrance junction gate HP sensor did not detect the entrance junction gate at (or out of) its home position. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Entrance JG HP sensor dirty • Sensor harness or connector loose, broken, defective • Entrance JG motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC779	B	1st Stopper Motor Error	Multi Folder (D454)
		The 1st stopper HP sensor did not detect the 1st stopper in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• 1st stopper HP sensor dirty • Sensor harness or connector loose, broken, defective • 1st stopper motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC780	B	Z-Fold Feed Motor Error **Japan Only**
		The feed motor that drives the feed rollers and exit rollers in the Z-fold unit is not operating. The 1st alert signals a jam, the 2nd alert triggers this SC.
		• Motor harness loose, broken, defective • Motor blocked by an obstruction • Motor defective

SC781	B	Z-Fold Lower Stopper Motor Error **Japan Only**
		The lower stopper failed to leave the home position with the specified number of motor pulses. **Note**: The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Lower stopper motor disconnected, defective • Lower stopper motor overloaded due to obstruction • Lower stopper HP sensor disconnected, defective

SC782	B	Z-fold Upper Stopper Motor **Japan Only**
		The upper stopper failed to leave the home position with the specified number of motor pulses. **Note**: The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		• Upper stopper motor disconnected, defective • Upper stopper motor overloaded due to obstruction • Upper stopper HP sensor disconnected, defective

SC783-1	B	2nd Stopper Motor Error	Multi Folder (D454)
		The 2nd stopper HP sensor did not detect the 2nd stopper in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• 2nd stopper HP sensor dirty • Sensor harness or connector loose, broken, defective • 2nd stopper motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-2	B	3rd Stopper Motor Error	Multi Folder (D454)
		The 3rd stopper HP sensor did not detect the 3rd stopper in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• 3rd stopper HP sensor dirty • Sensor harness or connector loose, broken, defective • 3rd stopper motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-3	B	1st Fold Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC783-4	B	2nd Fold Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC783-5	B	Crease Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC783-6	B	Dynamic Roller Transport Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC783-7	B	Reg. Roller Transport Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC783-8	B	Dynamic Roller Lift Motor Error	Multi Folder (D454)
		The dynamic roller HP sensor did not detect the dynamic roller in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Dynamic roller HP sensor dirty • Sensor harness or connector loose, broken, defective • Dynamic roller lift motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-9	B	Registration Roller Release Motor Error	Multi Folder (D454)
		The registration roller HP sensor did not detect the registration roller in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Registration roller HP sensor dirty • Sensor harness or connector loose, broken, defective • Registration roller release motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-10	B	Fold Plate Motor Error	Multi Folder (D454)
		The fold plate HP sensor did not detect the fold plate in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Fold plate HP sensor dirty • Sensor harness or connector loose, broken, defective • Fold plate motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-11	B	Jogger Fence Motor	Multi Folder (D454)
		The jogger fence HP sensor did not detect the jogger fence in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Jogger fence HP sensor dirty • Sensor harness or connector loose, broken, defective • Jogger fence motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-12	B	Positioning Roller Motor Error	Multi Folder (D454)
		The positioning roller HP sensor did not detect the positioning roller in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Positioning roller HP sensor dirty • Sensor harness or connector loose, broken, defective • Positioning roller motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-13	B	FM2 Direct-Send JG Motor	Multi Folder (D454)
		The direct-send JG HP sensor did not detect the direct-send JG in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• FM2 direct-send JG HP sensor dirty • Sensor harness or connector loose, broken, defective • FM2 direct-send JG motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-14	B	FM6 Pawl Motor	Multi Folder (D454)
		The FM6 pawl HP sensor did not detect the FM6 pawl in (or out of) its home position. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• FM6 pawl HP sensor dirty • Sensor harness or connector loose, broken, defective • FM6 pawl motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC784	B	Z-Fold Timing Sensor Adjustment Error 1 **Japan Only**
		The output voltage light emitted from the sensor changed, but the return input was not sufficient to attain V0.
		• Sensor, mirror dirty from paper dust, other particles • Harness loose, broken, defective • Mirror out of position

SC785	B	Z-Fold Timing Sensor Adjustment Error 2 **Japan Only**
		The output voltage light emitted from the sensor changed, but the return input was not sufficient to attain V0.
		• Sensor, mirror dirty from paper dust, other particles • Harness loose, broken, defective • Mirror out of position

SC786	B	Z-Fold Memory Error **Japan Only**
		Several attempts to write to the Z-fold memory failed.
		• Turn the machine power off/on • EEPROM on Z-Folder main board defective

SC789	B	Proof Tray Exit Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor due to overload, overheating. Paper cannot exit at proof tray.	
		• Motor, motor drive board defective	

Important: The S792-** SC Codes apply to the Ring Binder D392.

SC792-1	B	Junction gate error
		Detected at HP after the time prescribed to leave the HP had elapsed (more than 36 pulses) (1 detection, jam, twice detected, SC error) -or- Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 22 pulses) (1 detection, jam, twice detected, SC error)
		• Path JG motor (M201) defective • Motor connector loose, broken, defective • Motor overload • Path JG sensor (S203) connector loose, broken, defective • Sensor (S203) defective

SC 792-2	B	Pre-punch side fence HP error
		Detected at HP after the time prescribed to leave the HP had elapsed (more than 400 pulses) (1st detection, jam, 2nd detection, SC error) -or- Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 600 pulses) (1st detection, jam, 2nd detection, SC error)
		• Side jogger motor (M302) connector loose, broken, defective • Motor overload • Motor defective • Pre-punch jogger HP sensor (S301) connector loose, broken, defective • Sensor (S301) defective

SC792-3	B	Pre-punch jogger roller HP error
		Detected at HP after the time prescribed to leave the HP had elapsed (more than 36 pulses) (1st detection, jam, 2nd detection, SC error) -or- Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 22 pulses) (1st detection, jam, 2nd detection, SC error)
		• Jog roller lift motor (M305) connector loose, broken, defective • Motor overload • Motor defective • Jog roller lift HP sensor (S309) connector loose, broken, defective • Sensor defective

SC792-4	B	Punch defective
		One or more of the following occurred: • Punch unit not detected at initialization. • No motor rotation detected at HP at 30 ms after the DC motor turned on • No encoder pulse detected at HP at 5 ms after the DC motor turned on • Not detected at HP at 400 ms after the DC motor turned on
		• Punch motor (M304) connector loose, broken, defective • Motor overload • Motor defective • Punch HP sensor (S302) connector loose, broken, defective, or sensor defective • Punch encoder sensor (S303) connector loose, broken, defective, or sensor defective

SC792-5	B	Paddle roller HP error
		Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error) -or- Detected at HP after the time prescribed to leave the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error)
		• Paddle roller lift motor (M603) connector loose, broken, defective • Motor overload • Motor defective • Paddle roller HP sensor (S602) connector loose, broken, defective • Sensor defective

SC792-6	B	Jogger fence 1 error
		Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error) -or- Detected at HP after the time prescribed to leave the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error)
		• Jog fence 1 motor (M604) connector, loose, broken, defective • Motor defective • Motor overload • Side fence 1 HP sensor (S601) connector, loose, broken, defective • Sensor defective

SC792-7	B	Jogger fence 2 error
		Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error) -or- Detected at HP after the time prescribed to leave the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error)
		• Jog fence 2 motor (M606) connector, loose, broken, defective • Motor defective • Motor overload • Side fence HP sensor 1 (S611) connector loose, broken, defective • Sensor defective

SC792-8	B	Stack tamper HP error
		Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error) -or- Detected at HP after the time prescribed to leave the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error)
		• Stack tamper motor (M607) connector, loose, broken, defective • Motor defective • Motor overload • Stack tamper HP sensor (S612) connector loose, broken, defective • Sensor defective

SC792-9	B	Pre-bind jogger clamp HP error
		Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error) -or- Detected at HP after the time prescribed to leave the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error)
		• Spine clamp motor (M605) connector loose, broken, defective • Motor defective • Motor overload • Clamp HP sensor (S603) connector loose, broken, defective • Sensor defective

SC792-10	B	Binder unit runout error
		Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error) -or- Detected at HP after the time prescribed to leave the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error)
		• Runout press roller motor (M610) connector loose, broken, defective • Motor defective • Motor overload • Runout roller HP sensor (S614) connector loose, broken, defective • Sensor defective

SC792-11	B	Clamp thickness error
		50-sheet detection sensor (S606) went OFF during pre-bind jogging when a 100-sheet thickness was detected. (1st detection jam, 2nd detection SC error) -or- 50-sheet detection sensor went OFF at initialization when the clamp moved to the open position.
		• 50-sheet detection sensor (S606) connector loose, broken, defective • Sensor defective

SC792-12	B	Alignment pin error
		Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error) -or- Detected at HP after the time prescribed to leave the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error)
		• Alignment pin motor (M602) connector loose, broken, defective • Motor overload • Motor defective • Alignment pin HP sensor (S604) connector loose, broken, defective • Sensor defective

SC792-13	B	Pre-bind jogger shutter error
		Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error) -or- Detected at HP after the time prescribed to leave the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error)
		• Shutter motor (M608) connector loose, broken, defective • Motor overload • Motor defective • Shutter HP sensor (S605) connector loose, broken, defective • Sensor defective

792-14	B	50/100 clamp adjustment error
		Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error) -or- Detected at HP after the time prescribed to leave the HP had elapsed (more than 400 ms) (1st detection, jam, 2nd detection, SC error)
		• 50/100 adjustment motor (M702) connector loose, broken, defective • Motor overload • Motor defective • Ring switch HP sensor (S706) connector loose, broken, defective, or sensor defective • Ring switch timing sensor (S707) connector loose, broken, defective, or sensor defective

SC792-15	B	Timing sensor interval error
		The bind timing sensor (S702) remained ON or OFF longer than the prescribed time (1500 ms) during initialization or ring binding (1st detection: jam, 2nd detection: SC error)
		• Clamp unit motor (M701) connector loose, broken, defective • Motor overload • Motor defective • Bind timing sensor (S702) connector loose, broken, defective • Sensor defective

SC792-16	B	Clamp unit HP error
		At initialization or during ring binding, did not arrive at the home position within the prescribed time (1500 ms) (1st detection: jam, 2nd detection: SC error) -or- Detected at HP after the time prescribed to leave the HP had elapsed (more than 1500 ms) (1st detection, jam, 2nd detection, SC error)
		• Clamp unit motor (M701) connector loose, broken, defective • Motor overload • Motor defective • Clamp unit HP sensor (S701) connector loose, broken, defective • Sensor defective

SC792-17	B	Spine alignment error
		During pin alignment operation, the pin did not reach the up position or return to the home position with the prescribed time (400 ms), and one retry failed within the same time limit.
		• Alignment pin motor (M602) connector loose, broken, defective • Motor overload • Motor defective • Alignment pin HP sensor (S604) connector loose, broken, defective, or sensor defective • Alignment pin up sensor (S610) connector loose, broken, defective, or sensor defective • Stack not jogged correctly, or not punched correctly

SC792-18	B	Binder unit not detected
		The binder unit could not be detected at initialization.
		• Drawer connector loose, broken, defective • Drawer connector defective

792-19	B	Output belt unit rotation error
		Detected at HP after the time prescribed to leave the HP had elapsed (more than 800 pulses) (1st detection, jam, 2nd detection, SC error) -or- Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 2300 pulses) (1st detection, jam, 2nd detection, SC error)
		• Output belt rotation motor (M403) connector loose, broken, defective • Motor overload • Motor defective • Output belt rotation HP sensor (S403) connector loose, broken, defective • Sensor defective

SC792-20	B	Output belt 1 HP error
		Detected at HP after the time prescribed to leave the HP had elapsed (more than 200 pulses) (1st detection, jam, 2nd detection, SC error) -or- Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 2125 pulses) (1st detection, jam, 2nd detection, SC error)
		• Output belt 1 motor (M401) connector loose, broken, defective • Motor overload • Motor defective • Output belt 1 HP sensor (S401) connector loose, broken, defective • Sensor defective

SC792-21	B	Output belt 2 HP error
		Detected at HP after the time prescribed to leave the HP had elapsed (more than 200 pulses) (1st detection, jam, 2nd detection, SC error) -or- Not detected at HP after the time prescribed to arrive at the HP had elapsed (more than 3130 pulses) (1st detection, jam, 2nd detection, SC error)
		• Output belt 2 motor (M402) connector loose, broken, defective • Motor overload • Motor defective • Output belt 2 HP sensor (S402) connector loose, broken, defective • Sensor defective

SC792-22	B	Stack height error
		Stack height sensor remained ON while moving toward the top. -or- The sensor did not go ON within 6 sec. after the motor turned on.
		• Stacker motor (M501) connector loose, broken, defective • Motor overload • Stack height sensor (S502) connector loose, broken, defective • Sensor defective

SC792-23	B	Stacker error
		Although the stacker was full at the start and end of stacker operation with the stacker full (stacker sensors ON together), no documents were detected (also when documents were leaning) -or- Although the stacker was detected full with the stacker stopped, no documents were detected within 2 sec. (1st detection jam, 2nd detection SC error)
		• Stacker HP sensor (S501) connector loose, broken, defective, or sensor defective • Stacker height HP sensor (S502) connector loose, broken, defective, or sensor defective • Stacker detect sensor (S504) loose, broken, defective, or sensor defective

SC Codes Group 8: Overall System

<table>
<tr><td rowspan="14">SC816</td><td rowspan="14">D</td><td colspan="2">Energy save I/O subsystem error</td><td>GW</td></tr>
<tr><td colspan="3">An error was detected in the signal from the ASIC (controller board) which controls the STR (Suspend to RAM) function.
Note: STR is a feature of this machine that minimizes energy consumption while the machine is in the energy saver mode.</td></tr>
<tr><td colspan="3">• Reboot the machine.
• Replace the controller board.</td></tr>
<tr><td rowspan="2">SC816-5</td><td colspan="2">SCS</td></tr>
<tr><td colspan="2">Machine attempted to enter STR mode before engine was OFF.</td></tr>
<tr><td rowspan="2">SC816-39</td><td colspan="2">Sub System</td></tr>
<tr><td colspan="2">Error occurred during system start up.</td></tr>
<tr><td rowspan="2">SC816-50</td><td colspan="2">Hardware</td></tr>
<tr><td colspan="2">Printer version only. Not used for this machine.</td></tr>
<tr><td rowspan="2">SC816-67</td><td colspan="2">NCS (Network Control Service)</td></tr>
<tr><td colspan="2">An error occurred in the access control port list:
• Number of registrations exceeded 125
• Data notifications exceeded 12
• Data extension incorrect</td></tr>
<tr><td rowspan="2">SC816-79</td><td colspan="2">Sub System</td></tr>
<tr><td colspan="2">Message mismatch.</td></tr>
<tr><td rowspan="2">SC816-90</td><td colspan="2">Hardware/System</td></tr>
<tr><td colspan="2">A forced system reset (WDOG) occurred.</td></tr>
</table>

<table>
<tr><td rowspan="8">SC819</td><td rowspan="8">D</td><td colspan="2">Fatal kernel error</td><td>GW</td></tr>
<tr><td colspan="3">Due to a control error, a RAM overflow occurred during system processing. One of the following messages was displayed on the operation panel.</td></tr>
<tr><td colspan="3">• System program defective
• Controller board defective
• Optional board defective
• Replace controller firmware</td></tr>
<tr><td rowspan="2">0x5032</td><td colspan="2">HAIC-P2 decompression error</td></tr>
<tr><td colspan="2">Error occurred in the compression/decompression module of ASIC Veena in HAIC-P2.
If EFI (Fiery Controller) is connected, refer to the EFI manual. If EFI is not connected:
• HDD defective
• System memory defective</td></tr>
<tr><td rowspan="2">0x6261</td><td colspan="2">HDD Defective</td></tr>
<tr><td colspan="2">There was no response from HDD. The power supply to the HDD may have been interrupted suddenly.
• Re-format HDD.
• Replace HDD</td></tr>
<tr><td rowspan="2">554C</td><td colspan="2">USB loader defect</td></tr>
<tr><td colspan="2">USB loader was detected as defective.</td></tr>
</table>

Note: For more details about this SC code error, execute SP5990 to print an SMC report so you can read the error code list. The error code is not displayed on the operation panel.

SC 820	D	0008	Self-diagnostic Error: CPU: System Call Exception	GW
		0612	Self-diagnostic Error: CPU: ASIC Interrupt Error	GW
		• System program defective • Controller board defective • Optional board defective • Replace controller firmware **Note**: For more details about this SC code error, execute SP5990 to print an SMC report so you can read the error code. The error code is not displayed on the operation panel.		

SC833	D	Self-diagnostic error 8: Engine I/F ASIC *GW	GW
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		The read/write check done for resident RAM on the mother board could not be done correctly.	
		• Replace the VBCU.	
50B1		Could not initialize or read the bus connection.	
		• Check for loose connections at VBCU. • Replace VBCU	
50B2		Value of the SSCG register is incorrect.	
		• Check for loose connections at VBCU. • Replace VBCU	

SC853	B	Wireless LAN Error 1	GW
		During machine start-up, the machine can access the board that holds the wireless LAN (Bluetooth), but not access the wireless LAN card.	
		• Wireless LAN card missing (was removed)	

SC854	B	Wireless LAN Error 2	GW
		The board that holds the wireless LAN card (Bluetooth) could be accessed, but the wireless LAN card could not be accessed while the machine was operating.	
		• Wireless LAN card has been removed.	

SC855	B	Wireless LAN Error 3	GW
		An error was detected for the wireless LAN card (802.11b or Bluetooth).	
		• Wireless card not installed correctly. • Wireless LAN card defective	

SC856	B	Wireless LAN Error 4	GW
		An error was detected for the wireless LAN board (Bluetooth).	
		• Wireless LAN card board defective. • PCI connector loose, broken, defective.	

SC857	B	USB I/F Error	GW
		The USB driver is unstable and generated an error.	
		• USB board defective • Controller board defective	

SC858	A	Data Encryption Error 1	GW
		These are errors of the HDD Data Encryption Option D377.	
	0	Key Acquistion	
		Key could be acquired. • Replace the controller board	
	1	HDD Key Setting Error	
		The key was acquired but the HDD could not be set. • Turn the machine power off/on several times. • Replace the controller board.	

	2	NVRAM Read Error
		NVRAM data conversion failed (mismatch with nvram.conf) • Replace the NVRAM
	30	NVRAM Before Replace Error
		DFU. May occur during development. • Turn the machine power off/on several times. • Replace the controller board.
	31	Other Error
		An unexpected error occurred while data was being converted. This error is the same as SC991. See SC991 below.

SC859	B	Data Encryption Error 2	GW
		These are errors of the HDD Data Encryption Option D377.	
	8	HDD Check Error	
		Data conversion was attempted with no HDD unit present. • Confirm that HDD unit installed correctly • Initialize HDD with SP5832-1 **Note**: After installation, a new HDD should be formatted with SP5832-1	
	9	Power Loss During Data Conversion	
		Data conversion stopped before NVRAM/HDD data was converted. Format HDD with SP5832-1	
	10	Data Read Command Error	
		More than two illegal DMAC communications were returned. • HDD defective • Format HDD with SP5832-1 Replace HDD	

SC860	B	HDD startup error at power on	GW
		HDD is connected but a driver error is detected, or the driver did not respond with the status of the HDD within 30 s.	
		• HDD is not initialized • Level data is corrupted • HDD is defective (attempt to initialize the HDD with SP5832-001)	

SC861	D	HDD re-try failure	GW
		At power on with the HDD detected, power supply to the HDD is interrupted, after the HDD is awakened from the sleep mode, the HDD is not ready within 30 s.	
		• Harness between HDD and board disconnected, defective • HDD power connector disconnected • HDD defective • Controller board defective	

SC863	D	HDD data read failure	GW
		The data written to the HDD cannot be read normally, due to bad sectors generated during operation.	
		• HDD defective **Note**: If the bad sectors are generated at the image partition, the bad sector information is written to NVRAM, and the next time the HDD is accessed, these bad sectors will not be accessed for read/write operation.	

SC864	D	HDD data CRC error	GW
		During HDD operation, the HDD cannot respond to an CRC error query. Data transfer did not execute normally while data was being written to the HDD.	
		• HDD defective	

SC865	D	HDD access error	GW
		HDD responded to an error during operation for a condition other than those for SC863, 864.	
		• HDD defective.	

SC866	B	SD card error 1: Confirmation	GW
		The machine detected an electronic license error in the application on the SD card in the controller slot immediately after the machine was turned on. Note: • The program on the SD card contains electronic confirmation license data. • If the program does not contain this license data, or if the result of the check shows that the license data in the program on the SD card is incorrect, then the checked program cannot execute and this SC code is displayed.	
		• Program missing from the SD card • Download the correct program for the machine to the SD card	

SC867	D	SD card error 2: SD card removed	GW
		The SD card was removed while the machine is on.	
		• Insert the SD card. • Turn the machine off and on.	

SC868	D	SD card error 3: SD card access	GW
		An error occurred while an SD card was in use.	
		• SD card not inserted correctly • SD card defective • Controller board defective **Note**: You can try to reformat the SD with the SD Formatter Ver. 1.1	

SC870	B	Address book data error	GW
		The address book data cannot be read from the HDD or SD card where it is stored, or the data read from the media is defective.	
		• Cycle the machine off/on. • Software defective. • Replace controller firmware. • HDD defective.	
		More Details • Do SP5846-50 to reset all address book data. • Reset the user information with SP5832-6. • Replace the HDDs.	

SC872	B	HDD mail receive data error	GW
		An HDD error was detected immediately after power on, or the machine detected that the HDD was not operating correctly (data read or write) while receiving mail. The HDD may be defective or the machine was accidentally powered off while the HDD was being accessed.	
		• Reformat the mail RX data on the HDD with SP5832-7 • Replace the HDD	

SC873	B	HDD mail send data error	GW
		An error was detected on the HDD immediately after the machine was turned on, or power was turned of while the machine was using the HDD.	
		• Do SP5832-007 (Format HDD – Mail TX Data) to initialize the HDD. • Replace the HDD.	

SC874	D	Delete All error 1: HDD	GW
		A data error was detected for the HDD/NVRAM after the Delete All option was used. **Note**: The source of this error is the Data Overwrite Security Unit running from an SD card.	
		• Turn the main switch off/on and try the operation again. • Install the Data Overwrite Security Unit again.. • HDD defective	

SC875	D	Delete All error 2: Data area	GW
		An error occurred while the machine deleted data from the HDD. **Note**: The source of this error is the Data Overwrite Security Unit D377 running from an SD card.	
		• Cycle the machine off/on. • Try the operation again.	

SC876	D	Log data errors		GW
		876-1	Log data error 1	
			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.	
			• Initialize the HDD with SP5832-4	
		876-2	Log data error 2	
			HDD encryption unit not installed.	
			• Install the HDD encryption unit.	
		876-3	Log data error 3	
			Invalid log encryption key due to defective NVRAM data.	
			• Initialize the HDD with SP5832-4 • Request customer's system administrator to disable HDD encryption with the User Tool.	
		876-4	Log data error 4	
			Erratic HDD encryption due to defective NVRAM data.	
			• Initialize HDD with SP5832-4	
		876-5	Log data error 5	
			• Re-install the previous NVRAM or HDD. • Initialize the HDD with SP5832-4.	
		876-99	Log data error 6	
			An error other than Log Data Errors 1 to 5 occurre.	
			• Request assistance from your supervisor.	

SC877	B	Data Overwrite Security SD card error	GW
		An error occurred, preventing successful execution of the Data Overwrite Security function, even though it has been set up and enabled.	
		• DOS card is not inserted completely into the SD card slot • DOS card has been removed from the SD card slot. • DOS card is damaged. **Note**: • If the SD card has been removed (or was not installed correctly), switch the machine off, insert the SD card, then switch on the machine again. • If the SD card has been damaged, procure a new SD card, replace the NVRAM, then do the DOS option installation.	

SC878	D	TPM authentication error	GW
		The system firmware could not be authenticated by the TMP security chip.	
		• System firmware updated incorrectly. • Flash ROM on controller board defective. • Replace controller board.	

SC880		File format converter (MLB) error	GW
		No response within the prescribed time to a request to access the MLB.	
		• MLB defective • Replace MLB	

SC881	D	Management area error	GW
		This is a software error than can occur: • At login • When a print job was received • When WEB browser was opened	
		• Cycle the machine off/on.	

SC899	D	Software error	GW
		A software error occurred in the GW controller.	
		• Cycle the machine off/on • Update controller firmware • Controller board defective	

SC Codes Group 9: Miscellaneous

SC900	D	Electrical total counter error	GW
		The total counter contains data that is not a number.	
		• NVRAM incorrect type • NVRAM defective or corrupted • Unexpected error from external source	

SC901	D	Mechanical Counter 1 error
		Mechanical Counter 1 was not set correctly at power on, or the operator disconnected the counter while machine was operating.
		• Mechanical Counter 1 connection loose or defective • Mechanical Counter 1 defective

SC902	D	Mechanical Counter 2 error
		Mechanical Counter 2 was not set correctly at power on, or the operator disconnected the counter while machine was operating.
		• Mechanical Counter 2 connection loose or defective • Mechanical Counter 2 defective

SC920	B	Printer Error 1	GW
		An internal application error was detected and operation cannot continue.	
		• Software defective, switch off/on, or change the controller firmware • Insufficient memory	

SC921	D	Printer Error 2: Font error	GW
		When the printer application started, the specified font could not be found on the SD card.	
		• The specified font is not on the SD card • SD card data corrupted	

SC925	B	Net File function error *GW
		The NetFile file management on the HDD cannot be used, or a NetFile management file is corrupted and operation cannot continue. The HDDs are defective and they cannot be debugged or partitioned, so the Scan Router functions (delivery of received faxes, document capture, etc.), Web services, and other network functions cannot be used. HDD status codes are displayed below the SC code:
		• Refer to the four procedures below (Recovery from SC 925).

Here is a list of HDD status codes:

Display	Meaning
(-1)	HDD not connected
(-2)	HDD not ready
(-3)	No label
(-4)	Partition type incorrect
(-5)	Error returned during label read or check
(-6)	Error returned during label read or check
(-7)	"filesystem" repair failed
(-8)	"filesystem" mount failed
(-9)	Drive does not answer command
(-10)	Internal kernel error
(-11)	Size of drive is too small
(-12)	Specified partition does not exist

(-13)	Device file does not exist

Recovery from SC 925

Procedure 1

If the machine shows SC codes for HDD errors (SC860 to SC865) with SC 925, do the recovery procedures for SC860 to SC865.

Procedure 2

1. If the machine does not show one of the five HDD errors (SC860 to SC865), turn the machine power off and on.
2. If this is not the solution for the problem, then initialize the NetFile partition on the HDD with SP5832-11 (HDD Formatting – Ridoc I/F).

   NetFiles: These are jobs printed from the document server using a PC and DeskTopBinder. Before you initialize the NetFile partition on the HDD, tell the customer:

   - Received faxes on the delivery server will be erased
   - All captured documents will be erased
   - DeskTopBinder/Print Job Manager/Desk Top Editor job history will be erased
   - Documents on the document server, and scanned documents, will not be erased.
   - The first time that the network gets access to the machine, the management information must be configured again (this will use a lot of time).
3. Before you initialize the Netfile partition with SP5832-11, do these steps:
4. Go into the User Tools mode and do "Delivery Settings" to print all received fax documents that are scheduled for delivery. Then erase them.
5. In the User Tools mode, do Document Management> Batch Delete Transfer Documents.
6. Do SP5832-11, then turn the machine power off and on.

Procedure 3

1. If "Procedure 2" is not the solution for the problem, do SP5832-1 (HDD Formatting – All)
2. Cycle the machine off/on.

   Important

   - **SP5832-001 erases all document and address book data on the hard disks. Consult with the customer before you do this SP code.**

Procedure 4

If "Procedure 3" does not solve the problem, replace the HDD.

SC990	D	Software error 1	GW
		An unexpected operation was encountered by the software.	
		• Software crash, reboot the machine • If the HDDs have just been replaced, be sure to download the stamp data (SP 5853). • With SP5990 004(SMC Report – Logging Data), print the most recent information for SC990. • The SC990 information displays the file name, line number, and value. Report this information to your technical supervisor. For example: **Funciton.c LINE: 123 VAL: 0**	

SC991	C	Software Error 2	GW
		The software peformed an unexpected function and the program cannot continue. Recovery processing allows the program to continue.	
		• Software defective, re-boot	

In order to get more details about SC991:

1. Execute SP7403 or print an SMC Report (SP5990) to read the history of the 10 most recent logged errors.
2. If you press the zero key on the operation panel with the SP selection menu displayed, you will see detailed information about the recently logged SC991, including the software file name, line number, and so on. Of these two methods, 1) is the recommended method, because another SC could write over the information for the previous SC.

SC992	D	Undefined Error (No SC Code)	GW
		An error not controlled by the system occurred (the error does not come under any other SC code).	
		• Software defective • Turn the machine power off and on. The machine cannot be used until this error is corrected. • Re-install firmware	

SC997	B	Application selection error 1	GW
		An application did not start after pressing the appropriate key on the operation panel.	
		• Software bug (change the firmware for the application that failed) • A RAM or DIMM option required by the application is not installed or not installed correctly.	

SC998	D	Application selection error 2	GW
		Register processing did not execute for an application within 60 s after the machine was switched on. No applications start correctly, and all end abnormally.	
		• Software bug (change the firmware for the application that failed) • A RAM or DIMM option required by the application is not installed or not installed correctly.	

Additional SC Codes Printed in SMC Reports

These codes are also used in the SMC report. Codes that have the same number in this series are identified by an additional 4-digit hexadecimal number.

SC No.	Symptom	Possible Cause
SC853	D	IEEE802 11b card startup error
		Not used.
SC854	D	IEEE802 11b card access error
		Not used.
SC855	D	IEEE802 11b card error
		Not used.
SC856	D	IEEE802 11b card connection board error
		Not used.
SC870	B	Address book data error

		The address book in the hard disk is accessed. → An error is detected in the address book data; address book data is not read; or data is not written into the address book.	• Data corruption • Defective hard disk • Defective software
		To recover from the error, do any of the following countermeasures: • Format the address book by using SP5-832-8. All data in the address book (including the user codes and counters) is initialized) • Initialize the user data by using SP5-832-6 and -7 (the user codes and counters are recovered when the main switch is turned on). Replace the hard disk (the user codes and counters are recovered when the main switch is turned on).	

SC920	D	Printer error	
		The printer program cannot be continued.	• Defective hardware • Data corruption • Defective software
SC925	D	Net file error	
		The management file for net files is corrupted; net files are not normally read. **Netfiles**: Jobs to be printed from the document server using a PC and the DeskTopBinder software	• Defective hardware • Data corruption • Defective software
SC992	C	Other system SCs	
		The controller received an unknown SC code from the engine.	• Contact your product specialist.
SC993	D	Network error	
		The ASIC program of GW controller cannot be continued.	• Defective GW controller

4. Appendix: Service Program Mode Tables

Service Program Mode

Notation	What it means
[range/step]	Example: [–9 to +9/0.1 mm] The default setting can be adjusted in 0.1mm steps in the range ±9. **Note**: The default setting for each SP mode is shown on the screen in the "Initial" box immediately below the entry box.
DFU	Denotes "Design or Factory Use". Do not change this value.
Japan Only	The feature or item is for Japan only. Do not change this value.
LEF	Long Edge Feed
SEF	Short Edge Feed
Fin1	2000/3000-Sheet Finisher D373/D374
Fin2	3000-Sheet Finisher B830
Fin3	Japan Only. Please ignore.
Fin4	Ring Binder D392

Group 1000

1001	Lead Edge Reg
	Adjusts the printing leading edge registration using the trimming area pattern (SP2109-2, Pattern No. 10). [–9 to +9/ 0.1 mm] Specification: 3 ±2mm

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1002	Fine Adj LEdge (Thick)	
	Fine adjusts leading edge registration for thick paper (Thick 2, Thick 3). [–9 to +9/ 0.1 mm]	
1	Thick 2	Thick 2: 164 to 249.9 g/m^2
2	Thick 3	Thick 3: 250 to 300 g/m^2

1003	Side-to-Side Reg	
	Side-to-Side Registration Adjustment. Adjusts printing side-to-side registration for each feed station, using the test pattern (SP2109-2, Pattern No. 10). These SP's should be adjusted after replacing the laser synchronization detector or the laser optical unit.	
1	Tray 1	[–9 to +9/ 0.1 mm]
2	Tray 2	
3	Tray 3	
4	Tray 4	**Japan Only**
5	Bypass Tray	
6	Dupx Tray	
7	LCT	LCT1: B473
8	WIDE LCT	LCT2: D350

1004	Reg Buckle Adj	
	Registration Buckle Adjustment. Adjusts the registration motor timing. This timing determines the amount of paper buckle at registration. (A higher setting causes more buckling.)	
1	Trays & LCT	[–9 to +9/1 mm]
2	Dupx Tray	
3	Bypass Tray	

1005	Reg Buckle Adj (Thick)	
	Registration Buckle Adjustment (Thick Paper) Adjusts the registration motor timing for thick paper only. This timing determines the amount of paper buckle at registration. (A higher setting causes more buckling.)	
1	Thick 2	Thick 2: 164 to 249.9 g/m^2
2	Thick 3	Thick 3: 250 to 300 g/m^2

1006	Bypass Size Disp
	Bypass Paper Size Detection Display. Use this SP to display and confirm the size of the paper detected in the by-pass tray if paper is skewing during feeding. [0 to 255/1 mm]

1007	Duplex Fence Adj
	Duplex Side Fence Position Adjustment. Allows fine adjustment of the distance between the edges of the sheet and the jogger fences when the fences come together to position the sheet in the duplex unit. [-3 to +3/0.1 mm]

1008	Reg Roller Adj

	Sets the length of time the paper is force pre-fed and stopped at the registration roller for normal speed and half-speed.	
1	Half Speed 2	[-3 to +3/ 0 /0.1
2	Half Speed 1	[-3 to +3/ -0.6 /0.1

1009	PreFeed Time Adj	
	Sets the length of time the paper is force pre-fed and stopped at the registration roller for each paper feed source.. [0 to 3/ 0 / 1]	
1	Tray 1	
2	Tray 2	
3	Tray 3	
4	Tray 4	
5	LCT 1	
6	LCT 2	
7	Bypass Tray	

1010	Fine Adj Mtr Speed **DFU**	
	These SP codes are used to fine adjust the speed of the motors. [-3 to 3/-0.3/0.1	
1	Drum Motor:K	
2	Drum Motor:M	
3	Drum Motor:C	
4	Drum Motor:Y	
5	K Dev Motor: Norm2	
6	M Dev Motor: Norm2	
7	C Dev Motor: Norm2	

8	Y Dev Motor: Norm2	
9	K Drum CL Mtr: Norm2	
10	M Drum CL Mtr: Norm2	
11	C Drum CL Mtr: Norm2	
12	Y Drum CL Mtr: Norm2	
13	ITB Motor: Norm2	
14	PTR Motor: Norm2	
15	Fusing Motor: Norm2	

1011	Motor Adj.: Norm 1 **DFU**	
	These SP codes are used to adjust the speed of the motors for Normal speed 1.. [-3 to 3/0/0.1	
5	K Dev Motor	
6	M Dev Motor	
7	C Dev Motor	
8	Y Dev Motor	
9	K Drum CL Mtr	
10	M Drum CL Mtr	
11	C Drum CL Mtr	
12	Y Drum CL Mtr	
13	ITB Motor	
14	PTR Motor	
15	Fusing Motor	

1012	Mtr Adj.: Half 2 **DFU**
	These SP codes are used to adjust the speed of the motors for Half speed 2. [-3 to 3/0/0.1

5	K Dev Motor	
6	M Dev Motor	
7	C Dev Motor	
8	Y Dev Motor	
9	K Drum CL Mtr	
10	M Drum CL Mtr	
11	C Drum CL Mtr	
12	Y Drum CL Mtr	
13	ITB Motor	
14	PTR Motor	
15	Fusing Motor	

1013	Motor Adj.: Half 1 **DFU**	
	These SP codes are used to adjust the speed of the motors for Half speed 1. [-3 to 3/0/0.1	
5	K Dev Motor	
6	M Dev Motor	
7	C Dev Motor	
8	Y Dev Motor	
9	K Drum CL Mtr	
10	M Drum CL Mtr	
11	C Drum CL Mtr	
12	Y Drum CL Mtr	
13	ITB Motor	
14	PTR Motor	
15	Fusing Motor	

1105	Hot Htg Press Roll Temp **DFU**	
	[140 to 200/ 170 / 1 deg.]	
1	Htg Roll Ctr:Reload	
2	Htg Roll Ctr:Idle:Reload	
3	Htg Roll Ctr:Wait:Norm	
4	Htg Roll Ctr:Wait:Low	
5	Htg Roll Ctr:Wait:High	
6	Htg Roll Ctr:1-S:Norm1:Normal	
7	Htg Roll Ctr:1-S:Norm1:high adhesion	
8	Htg Roll Ctr:1-S:Norm2:Normal	
9	Htg Roll Ctr:1-S:Norm2:high adhesion	
10	Htg Roll Ctr:1-S:Trace:Normal	
11	Htg Roll Ctr:1-S:Trace:high adhesion	
12	Htg Roll Ctr:1-S:Mid Thk:Normal	
13	Htg Roll Ctr:1-S:Mid Thk:high adhesion	
14	Htg Roll Ctr:1-S:Thk1:Normal	
15	Htg Roll Ctr:1-S:Thk1:high adhesion	
16	Htg Roll Ctr:Thk2:Normal	
17	Htg Roll Ctr:Thk2:high adhesion	
18	Htg Roll Ctr:Thk3:Normal	
19	Htg Roll Ctr:Thk3:high adhesion	
20	Htg Roll Ctr:OHP:Normal	
21	Htg Roll Ctr:OHP:high adhesion	
32	Htg Roll End:Reload: Adj	
33	Htg Roll End:Idle:Reload:Adj	
34	Htg Roll End:Wait:Norm:Adj	

35	Htg Roll End:Wait:Low:Adj	
36	Htg Roll End:Wait:High:Adj	
37	Htg Roll End:Feed:Adj	
38	Press Roll:Reload	
39	Press Roll:Idle:Reload	
40	Press Roll:Wait:Norm	
41	Press Roll:Wait:Low	
42	Press Roll:Wait:High	
43	Press Roll:1-S:Norm1	
44	Press Roll:1-S:Norm2	
45	Press Roll:1-S:Trace	
46	Press Roll:1-S:Mid Thk	
47	Press Roll:1-S:Thk1	
48	Press Roll:Thk2	
49	Press Roll:Thk3	
50	Press Roll:OHP	
56	Hot Roll:Wait:Norm	
57	Hot Roll:Wait:Low	
58	Hot Roll:Wait:High	
59	Hot Roll L3:Ctr Corr Temp	
60	Hot Roll L3:End correction Temp	
61	Hot Roll:High Rot Temp	

1106	Fusing Temp Disp

	These SP codes control the temperature control of the hot roller and display the temperatures of the hot roller, pressure roller, heating roller, and heating roller lamps.	
2	Htg Roll Ctr Temp	Displays the temperature in centigrade of the fusing lamp (center) in the heating roller. Range: 0 to 230
3	Htg Roll End Temp	Displays the temperature in centigrade of the fusing lamp (ends) in the heating roller. Range: 0 to 230
4	Press Roll Temp	Displays the temperature in centigrade of the pressure roller. Range: 0 to 230
5	Hot Roll Temp	Displays the temperature in centigrade of the hot roller. Range: 0 to 230

1107	Mode Shift **DFU**	
1	Low Temp On/Off	
2	High Temp On/Off	
3	Low Temp:Reload	
4	High Temp:Reload	
5	Low Temp:Feed	
6	High Temp:Feed	
7	L-Limit:Htg Roll:Reload	
8	L-Limit:Press Roll:Reload	
9	H-Limit:Htg Roll:Reload	
11	L-Limit:Htg Roll:Feed	
12	L-Limit:Press Roll:Feed	
13	H-Limit:Htg Roll:Feed	
15	Press Temp:Norm1	
16	Press Temp:Norm2	
17	Press Temp:Trace	
18	Press Temp:Mid Thk	

19	Press Temp:Thk1	
20	Press Temp:Thk2	
21	Press Temp:Thk3	
22	Press Temp:OHP	
25	Idle:Reload:Time	
26	Idle:Wait/Time,Low	
27	Ready:Feed:Time	
28	Press:Time	
29	Idle:End:Time	
35	Idle:Wait:Time,High	
36	Low Temp Reload Time Extend	
37	Extend Start Time Allowed: Line Feed	

1109	High Adhesion Mode
1	[*0:Normal] [1: High Adhesion]

1110	Change Temp		
1	Norm1	13	Large Size:2-S: 1st
2	Norm2	14	Large Size:2-S: 2nd
3	Trace	15	Small Size:1-S: 1st
4	Mid Thk	16	Small Size:1-S: 2nd
5	Thk1	17	Small Size:2-S: 1st
6	Thk2	18	Small Size:2-S: 2nd
7	Thk3	21	Large Size: Ctrl Time 1
8	OHP	22	Large Size: Ctrl Time 2
11	Large Size:1-S: 1st	23	Small Size: Ctrl Time 1

12	Large Size:1-S: 2nd	24	Small Size: Ctrl Time 2

1111	Measure Mode	
	Nip Width Measurement Setting Mode	
1	Nip Width:Execute	Determines whether the nip at the hot roller and pressure roller is calibrated. Touch [Execute].
2	Nip Width:Stop Time	Determines the down time of the fusing/exit motor in the fusing nip band calibration mode. [1 to 100/1 sec.]
3	Nip Width:Stop Interval	Determines the intervals between the down times of the fusing/exit motor in the nip band calibration mode. [0 to 2000/100 msec.]
4	Nip Width:Htg Roll Temp:Ctr	
5	Nip Width:Htg Roll Temp:End	
6	Nip Width:Press Roll Temp	
11	Belt:0:off 1:on	
12	Belt:Rotation Time	
13	Belt:Htg Roll Temp:Ctr	
14	Belt:Htg Roll Temp:End	
15	Belt:Press Roll Temp	

1112	Fuser Unit In/Out **DFU**
	Fusing Unit: In/Out: Start Fusing Unit Determines whether the fusing unit operates during the copy cycle for image creation and paper feed. **[*1: In]** [0: Out]

1113	Fusing SC Issue Time Info **DFU**

1159	Fusing SC Settings	
	These SP codes determine whether the fusing unit SC codes are displayed.	
1	SC On:1/Off:0 for 3 Jams	This SP determines whether the machine stops and displays an SC if three consecutive jams occur in the fusing unit. [0 to 1/0/1] 0: Disable. SC code is not displayed. 1: Enable. SC code is displayed.
2	SC On:0/Off:1 for No Fusing Pressure	This SP determines whether an SC is displayed if the fusing pressure mechanism is not operating. 0: Enable. SC code is displayed. 1: Disable. SC code is not displayed. **Note**: A jam does not necessarily occur in the fusing unit if the pressure roller lift mechanism is not operating.

1201	CPM Down **DFU**	
	Adjusts the CPM down.	
1	L Temp:Judge Down Temp	Down Judgment Temp
2	L Temp:Judge Up _Temp	Up Judgment Temp
3	L Temp:1st CPM Down	CPM
4	L Temp:2nd CPM Down	
5	L Temp:3rd CPM Down	
6	Unit Low Temp:Judge Temp	Judgment Temp
7	H Temp:1st CPM Down	CPM
8	H Temp:2nd CPM Down	
9	H Temp:3rd CPM Down	

10	Down Temp: HiTemp 1: 1st CPM	Down Judgment Temp
11	Down Temp: HiTemp 1: 2nd CPM	
12	Down Temp: HiTemp 1: 3rd CPM	
13	Down Temp: HiTemp 2: 1st CPM	
14	Down Temp: HiTemp 2: 2nd CPM	
15	Down Temp: HiTemp 2: 3rd CPM	
16	Determine CPM Interval	

1202	Htg Press Roll:Panel Off/Low Power **DFU**	
1	Htg Roll Ctr:Panel off mode	
2	Htg Roll Ctr:Low Power Mode	
3	Htg Roll End:Panel off mode	
4	Htg Roll End:Low Power Mode	
5	Press Roll:Panel off mode	
6	Press Roll:Low Power Mode	

1203	Power Control **DFU**
	[-4 to +4/ 0 / 1]

1301	Paper Type Detect	
	These SP settings switch the on/off the paper type detection function. Two sensors, one mounted above and one below the paper at the registration rollers, detect the opacity of the first sheet and compares this reading for every subsequent sheet. If the reading is higher (thicker paper) or lower (thinner paper), the sensor triggers an error. [0 to 1/1] 0: Enable, 1: Disable	
1	Tray 1	
2	Tray 2	

3	Tray 3	
4	Tray 4	**Japan Only**
5	Bypass Tray	
6	LCT	B473
7	Wide LCT	D359

1302	Double-Feed Detect	
	These SP settings switch the on/off the double-feed detect function. [0 to 1/1] 0: Enable, 1: Disable Two sensors, one mounted above and one below the paper at the registration rollers, detect the opacity of the first sheet and compares this reading for every subsequent sheet. If the reading is higher (thicker paper) or lower (thinner paper), the sensor triggers an error.	
1	Tray 1	
2	Tray 2	
3	Tray 3	
4	Tray 4	**Japan Only**
5	Bypass Tray	
6	LCT	
7	Wide LCT	

1801	Reg Rol Speed Fine Adj	
	SPs 001 to 008 adjust the speed of the registration roller for different paper thicknesses.	
001	Thin	[-3 to +3/ 0 / 0.1%]
002	Norm1	
003	Norm2	
004	Mid Thk	

005	Thk1	[-3 to +3/ -0.2 / 0.1%]
006	Thk2	[-3 to +3/ -0.6 / 0.1%]
007	Thk3	
008	OHP	
	PTR Speed Adj	
	SPs 011 to 016 adjust the speed of the PTR for different paper thicknesses.	
011	Thin	[-3 to +3/ 0 / 0.1%]
012	Norm1	
013	Norm2	
014	Mid Thk	
015	Thk1	[-3 to +3/ -0.2 / 0.1%]
016	Thk2	[-3 to +3/ -0.4 / 0.1%]
017	Thk3	
018	OHP	
	PTR Speed Ambient Adj	
	SPs 021 to 026 adjust the speed of the PTR for ambient temperature and humidity.	
021	LLL (very low)	[-3 to +3/ 0.2 / 0.1%]
022	LL (low)	[-3 to +3/ 0.1 / 0.1%]
023	ML (medium low)	[-3 to +3/ 0 / 0.1%]
024	MM (medium)	
025	MH (medium high)	[-3 to +3/ -0.2 / 0.1%]
026	HH (very high)	[-3 to +3/ -0.3 / 0.1%]

1902	CPM Down Set	
1	Custom (0:Off 1:On)	
2	Pre-Punch (0:Off 1:On)	

1903	Thick Mode (Re-Pickup)	
1	Tray 2 (0:Off 1:On)	
2	Tray 2 (0:Off 1:On)	
3	Tray 3 (0:Off 1:On)	
4	Tray 4 (0:Off 1:On)	
5	Bypass (0:Off 1:On)	

1905	Bypass Feed Restart	
1	0:Timer 1:[Start]	
2	Timer: 0:1s 1:2s 2:3s	

1906	PType Det Light Amt	
1	Norm Paper Light Amt	
2	Trans Paper Light Amt	
3	OHP Light Amt	

1907	Ptype Det Corr Amt	
1	Normal Paper	
2	Translucent Paper	
3	OHP	

1909	Force Jam Feed	
1	0:Off 1:On	

1920	WideLCT Fan Duty	
1	Fan F	
2	Fan R	

1921	WideLCT Fan time – Start Time

1922	WideLCT Fan ON/OFF
1923	Wide LCT Pickup Assist
	[*0: Auto Select] [1: Force On] [2: Force Off]

1924	Adj Start Timing: Paper Type Dbl Feed	
1	Line Speed 1	
2	Line Speed 2	

1925	Adj Value: Paper Type Dbl Feed	
1	Main Tray/LCT	
2	Bypass/Wide LCT	

1950	Set Fan Operation	
1	Fan Op Temp	
2	To Standby Mode Time	
3	Fan Off:LCT T/H Sensor	
4	Fan Off:Y Thermistor	
5	Fan Off Time	
11	To Standby EngA:Sn	
12	To Standby EngB:Ozone	
13	To Standby EngC:Envir	

Group 2000

2101	Reg Col Interval	Color Interval Registration Adjustment.
	Use these SPs to correct problems with color registration. Color registration problems can be detected by checking the results of 2901 002 Pattern 1. Before doing these adjustments, try to solve the problem by doing SP2111. For more, see "4. Troubleshooting" in the B132/B181/B200 Service Manual.	
1	Main Scan Dot:K	
2	Main Scan Dot:M	
3	Main Scan Dot:C	
4	Main Scan Dot:Y	
5	Main/Sub Scan:K	
6	Main/Sub Scan:M	
7	Main/Sub Scan:C	
8	Main/Sub Scan:Y	
9	Main/Sub Scan:K1-2	
10	Main/Sub Scan:M1-2	
11	Main/Sub Scan:C1-2	
12	Main/Sub Scan:Y1-2	
20	SubScan Line:K-M	
21	SubScan Line:K-C	
22	SubScan Line:K-Y	
23	SubScan M Adj:K-M	
34	SubScan M Adj:K-C	
25	SubScan M Adj:K-Y	
30	M Diff:Main	
31	C Diff:Main	

32	Y Diff:Main	
33	M Diff:Main/Sub	
34	C Diff:Main/Sub	
35	Y Diff:Main/Sub	
40	M Diff:Sub	
41	C Diff:Sub	
42	Y Diff:Sub	
43	M Diff:Sub D Motor	
44	C Diff:Sub D Motor	
45	Y Diff:Sub D Motor	
60	Spd Diff Offset:K Main	
61	Spd Diff Offset:M Main	
62	Spd Diff Offset:C Main	
63	Spd Diff Offset:Y Main	

2102	Prt Mag Adj	
	These SP codes adjust the print magnification in the main scan direction.	
1	Main Scan Mag	
5	Mag Rate:K 1-2	
6	Mag Rate:M 1-2	
7	Mag Rate:C 1-2	
8	Mag Rate:Y 1-2	
10	Mag Diff:K1-2	
11	Mag Diff:M1-2	
12	Mag Diff:C1-2	
13	Mag Diff:Y1-2	

2103	Prt Erase Margin	
	Adjusts the white space at the leading edge. This adjustment can be done for each paper source (Tray 1, Tray 2, etc.)	
1	LEdge:Tray 1	
2	Adj TEdge Margin	
3	Adj Left Margin	
4	Adj Right Margin	
5	TEdge Margin:Tray1	
6	TEdge Margin:Tray2	
7	TEdge Margin:Tray3	
8	TEdge Margin:Tray4	Japan Only
9	LEdge Custom:Bypass	
10	LEdge Custom:LCT	
11	LEdge: Tray 2	
12	LEdge: Tray 3	
13	LEdge: Tray 4	
14	LEdge: Bypass	
15	LEdge: LCT	
16	LEdge: Duplex	

2104	Skew Adj	
	Use these SPs to correct skew in color registration. For more, see "4. Troubleshooting" in the B132/B181/B200 Service Manual.	
1	Bk-M	
2	Bk-C	
3	Bk-Y	

11	Skew Corr Total M	
12	Skew Corr Total C	
13	Skew Corr Total Y	

2105	LD Syn PM Adj **DFU**	LD Pulse Modulation Synchronization Adjustment
	Raises the pulse modulation for the LD0 beam of K.	
1	Bk1	
2	M1	
3	C1	
4	Y1	
5	Bk2	
6	M2	
7	C2	
8	Y2	

2106	Poly Mtr OFF - Time Until Stop	Polygon Motor Off Setting
	The polygon mirror motor turns off if the machine receives no print job for the time specified in this SP mode after the previous job was completed. [0 to 180/1 sec]	

2107	Prt Param On/Off	
	Switches gamma correction off/on.	
1	Shade Corr Flag	[0 to 1/ 1 /1] 0: OFF, 1: ON

2108	Col Prt Stop
	This SP determines which color to switch off for printing.

1	Bk	[0 to 1/0] 0: Off. Color prints 1: On. Color does not print
2	M	
3	C	
4	Y	

2109	Test Pattern	
	Write Test Pattern. Some of these test patterns are used for copy image adjustments but most are used primarily for design testing. These test patterns do not use the IPU.	
1	Image Add	Select "1" to have the patterns selected with SP2109 002 print overlapped on one another. [0 to 1/1] 0: Off, 1: On
2	Select Pattern	Allows you to select the pattern to print. [0 to 20/1]
	0	Off
	1	Grid Pattern
	2	Slant Grid Pattern
	3	2-Dot Horizontal Line
	4	2-Dot Vertical Line
	5	1-Dot Horizontal Line
	6	1-Dot Vertical Line
	7	1-Dot Independent
	8	2-Dot Independent
	9	4-Dot Independent
	10	Trim Area
	11	Belt Pattern
	12	100% Coverage
	13	Vertical Cross-Stitch

	14	Horizontal Cross-Stitch
	15	Crop Marks
	16	Vertical Belt
	17	Checkered Flag
	18	20 mm Grid
	19	Horizontal Grayscale
	20	Horizontal Grayscale-White Stripes
4	Col Select:All C M Y	Selects test pattern color: [0 to 4/ 1 / 1] 0: All 1: All Colors 2: Cyan 3: Magenta 4: Yellow
5	Density:K	[0 to 15/1]
6	Density:M	[0 to 15/1]
7	Density:C	[0 to 15/1]
8	Density:Y	[0 to 15/1]
11	Gray Density 1	[0 to 15/1]
12	Gray Density 2	[0 to 15/1]
13	Gray Density 3	[0 to 15/1]
14	Gray Density 4	[0 to 15/1]
15	Gray Density 5	[0 to 15/1]
16	Gray Density 6	[0 to 15/1]
17	Gray Density 7	[0 to 15/1]
18	Gray Density 8	[0 to 15/1]
19	Gray Density 9	[0 to 15/1]

20	Gray Density 10	[0 to 15/1]
21	Gray Density 11	[0 to 15/1]
22	Gray Density 12	[0 to 15/1]
23	Gray Density 13	[0 to 15/1]
24	Gray Density 14	[0 to 15/1]
25	Gray Density 15	[0 to 15/1]

2110	Force Tnr Cycle	
	Force Toner Supply Cycle.	
1	Do Correction	
2	Do With LD Wavelength	

2111	Force Tnr Pos
	Force Toner Position Alignment.Touch [EXECUTE] to execute the MUSIC feature. MUSIC is the "Mirror Unit for Skew and Interval Correction". Three MUSIC sensors mounted above the ITB read three MUSIC sensor patterns developed on the ITB. The sensors read the patterns and the machine uses this feedback to adjust: 1) the positions of the 3rd scanner mirrors to correct skew (main scan), and 2) the speed of the drum motors to correct the intervals (sub scan) between the patterns. If the vertical alignment of the patterns or the intervals are not correct, this causes color offset. This adjustment is done for each color (Y, M, C, K). MUSIC executes automatically: • When the machine is turned on or returns from an energy save mode. • At the interval prescribed by SP2153 015 (Default: 8 min.) • After completion of the process control cycle. • When the machine receives a job after remaining idle for a long period. • After the fusing unit exceeds the prescribed temperature.

2112	Mag Point Adj	
	Magnification Point Adjustment. Corrects the difference in magnification for each color in the left and right direction. [-4 to +4/0/1] Do SP2109 002 and print Pattern 1 on A3 size paper. Examine the pattern with a scaled loupe. For every 50 µm adjust the setting in the left or right direction. A 1 step correction corrects 50 µm. For more, see "4. Troubleshooting" in the B132/B181/B200 Service Manual.	
1	M Left	
2	M Right	
3	C Left	
4	C Right	
5	Y Left	
6	Y Right	

2150	Prt Area Pulse **DFU**	
	Pulse Setting: Print Area Only. These SPs fine adjust magnification in the main scan direction in increments of 1/32 dots.	
1-10	K Area 1 to 10	[-120 to +120/32 sub dot]
11-20	M Area 1 to 10	
21 – 30	C Area 1 to 10	
31 – 40	Y Area 1 to 10	

2152	Shading Coeff **DFU**	
	Shading Correction Coefficient. These SPs set the shading correction coefficient for Areas 01 to 19 for each color. For a list of the ranges and default settings, print the SMC report with SP5990.	
1 – 15	K Area 1 to 15	
21 – 35	M Area 1 to 15	
41 – 55	C Area 1 to 15	

61 – 75	Y Area 1 to 15	

2153	MUSIC Settings **DFU**	
	These SPs determine how MUSIC executes. In the settings below 0: On, 1:Off.	
1	Auto Execute	Sets MUSIC to execute automatically. [0 to 1/1]
2	During ProCon	Sets MUSIC to execute after completion of the process control self-check. [0 to 1/1]
3	Initialization	Sets MUSIC to execute after the machine is switched on. [0 to 1/1]
4	During Data In	Sets MUSIC to execute before image data output. [0 to 1/1]
5	Writing	Sets MUSIC to execute during long print jobs. [0 to 1/1]
6	MUSIC Temp Intervals	
20	MUSIC:Temp Chg	
23	2-Point Page Interval	
24	Assign Page Interval	
29	MUSIC Density Lvl	
30	Clear Main Slip	
31	Clear Sub Slip	
32	Clear Skew Amt	
33	2-Pt Corr:Clr Offset	
39	Get Init 2-Pt Setting	
50	Add M Weight	
51	Add C Weight	

52	Add Y Weight	

2154	Music Settings 2 **DFU**	
	These SP settings switch off feedback during MUSIC for the elements listed below.	
1	Feed Back mode	
2	Sensor Light 1	
3	Sensor Light 2	
4	Sensor Light 3	
5	AutoLight	
6	AdjCoeff:FrontKf	
7	AdjCoeff:CtrKc	
8	AdjCoeff:RearKr	
9	MinPatchDiff:MainFine	
10	MinPatchDiff:SubFine	
11	MinPatchDiff:MainRough	
12	MinPatchDiff:SubRough	
13	ColBaseDiff:Min Value	
14	ColMidDiff:Min Value	
15	ColBaseDiff:Max Value	
16	Patch Min Gap	
17	Laser Target Adj	
18	MY Laser Max	
19	AD Upper Limit	
20	AD Lower Limit	
21	Sense Start:Norm2:Fine	
22	Sense Start:Norm2:Rough	

23	Sense Start:Norm1:Fine	
24	Sense Start:Norm1:Rough	
25	BeforeFilter:a1:Norm2:Fine	
26	BeforeFilter:a2:Norm2:Fine	
27	BeforeFilter:b0:Norm2:Fine	
28	BeforeFilter:b1:Norm2:Fine	
29	BeforeFilter:b2:Norm2:Fine	
30	AfterFilter:a1:Norm2:Fine	
31	AfterFilter:a2:Norm2:Fine	
32	AfterFilter:b0:Norm2:Fine	
33	AfterFilter:b1:Norm2:Fine	
34	AfterFilter:b2:Norm2:Fine	
35	BeforeFilter:a1:Norm2:Rough	
36	BeforeFilter:a2:Norm2:Rough	
37	BeforeFilter:b0:Norm2:Rough	
38	BeforeFilter:b1:Norm2:Rough	
39	BeforeFilter:b2:Norm2:Rough	
40	AfterFilter:a1:Norm2:Rough	
41	AfterFilter:a2:Norm2:Rough	
42	AfterFilter:b0:Norm2:Rough	
43	AfterFilter:b1:Norm2:Rough	
44	AfterFilter:b2:Norm2:Rough	
45	BeforeFilter:a1:Norm:1Fine	
46	BeforeFilter:a2:Norm:1Fine	
47	BeforeFilter:b0:Norm:1Fine	
48	BeforeFilter:b1:Norm:1Fine	

49	BeforeFilter:b2:Norm:1Fine	
50	AfterFilter:a1:Norm:1Fine	
51	AfterFilter:a2:Norm:1Fine	
52	AfterFilter:b0:Norm:1Fine	
53	AfterFilter:b1:Norm:1Fine	
54	AfterFilter:b2:Norm:1Fine	
55	BeforeFilter:a1:Norm:1Rough	
56	BeforeFilter:a2:Norm:1Rough	
57	BeforeFilter:b0:Norm:1Rough	
58	BeforeFilter:b1:Norm:1Rough	
59	BeforeFilter:b2:Norm:1Rough	
60	AfterFilter:a1:Norm:1Rough	
61	AfterFilter:a2:Norm:1Rough	
62	AfterFilter:b0:Norm:1Rough	
63	AfterFilter:b1:Norm:1Rough	
64	AfterFilter:b2:Norm:1Rough	
65	Filter QF:Norm2:Fine	
66	Filter QF:Norm2:Rough	
67	Filter QF:Norm:1Fine	
68	Filter QF:Norm:1Rough	
69	Filter Switch	
70	Adj to Target Light Amt	
71	Auto Adj to Target Light Amt	

2155	MUSIC Settings 3 **DFU**	
1	ADC Cycle:Norm2:Fine	

2	ADC Cycle:Norm2:Rough	
3	ADC Cycle:Norm:1Fine	
4	ADC Cycle:Norm:1Rough	
5	Store Point:Norm2:Fine	
6	Store Point:Norm2:Rough	
7	Store Point:Norm2:Sub	
8	Store Point:Norm:1Fine	
9	Store Point:Norm:1Rough	
10	Store Point:Norm:1Sub	
11	M Main Offset Amt1	
12	M Main Offset Amt2	
13	M Main Offset Amt3	
14	C Main Offset Amt1	
15	C Main Offset Amt2	
16	C Main Offset Amt3	
17	Y Main Offset Amt1	
18	Y Main Offset Amt2	
19	Y Main Offset Amt3	
20	M Sub Offset Amt1	
21	M Sub Offset Amt2	
22	M Sub Offset Amt3	
23	C Sub Offset Amt1	
24	C Sub Offset Amt2	
25	C Sub Offset Amt3	
26	Y Sub Offset Amt1	
27	Y Sub Offset Amt2	

28	Y Sub Offset Amt3	
29	Tigger V:Fine:Sub	
30	Tigger V:Fine:Main	
31	Tigger V:Roug:Sub	
32	Tigger V:Rough:Main	
33	Largest Main Offset Amt1	
34	Largest Main Offset Amt2	

2156	2-Point Measure **DFU**	
	These SP codes set the initial values for 2-point calibration.	
1	Target K	
2	Target M	
3	Target C	
4	Target Y	
21	K Differential	
22	M Differential	
23	C Differential	
24	Y Differential	
41	Focus Value:K	
42	Focus Value:M	
43	Focus Value:C	
44	Focus Value:Y	

2180	MUSIC Monitor	
	Displays the current and previous lens temperature readings.	
1	Lens Temp	
10	Previous Temp	

2181	Alignment Result	
	These SPs display the amount of shift correction for each color, the amount of correction done at each sensor in both the main scan and sub scan direction. [0 to 9 999 999]	
1	General	
2	M Skew Amt	
3	C Skew Amt	
4	Y Skew Amt	
10	M Main Skew 1	
11	M Main Skew 2	
12	M Main Skew 3	
13	C Main Skew 1	
14	C Main Skew 2	
15	C Main Skew 3	
16	Y Main Skew 1	
17	Y Main Skew 2	
18	Y Main Skew 3	
20	M Sub Skew 1	
21	M Sub Skew 2	
22	M Sub Skew 3	
23	C Sub Skew 1	
24	C Sub Skew 2	
25	C Sub Skew 3	
26	Y Sub Skew 1	
27	Y Sub Skew 2	
28	Y Sub Skew 3	

2182	MUSIC Converge Patch:Min **DFU**	
	Sets the minimum value for convergence during MUSIC for the sensors in the main and sub scan directions.	
1	M Main 1	
2	M Main 2	
3	M Main 3	
4	M Sub 1	
5	M Sub 2	
6	M Sub 3	
11	C Main 1	
12	C Main 2	
13	C Main 3	
14	C Sub 1	
15	C Sub 2	
16	C Sub 3	
21	Y Main 1	
22	Y Main 2	
23	Y Main 3	
24	Y Sub 1	
25	Y Sub 2	
26	Y Sub 3	

2184	Write Pulse Result **DFU**	
	Displays the pulse setting rate for main scanning in black areas (Units: 1/16th dot)	
1	K Area 0	
2	K Area 1	

3	K Area 2	
4	K Area 3	
5	K Area 4	
6	K Area 5	
7	K Area 6	
8	K Area 7	
9	K Area 8	
10	K Area 9	
11	K Area 10	
12	K Area 11	
21	M Area 0	
22	M Area 1	
23	M Area 2	
24	M Area 3	
25	M Area 4	
26	M Area 5	
27	M Area 6	
28	M Area 7	
29	M Area 8	
30	M Area 9	
31	M Area 10	
32	M Area 11	
41	C Area 0	
42	C Area 1	
43	C Area 2	
44	C Area 3	

45	C Area 4	
46	C Area 5	
47	C Area 6	
48	C Area 7	
49	C Area 8	
50	C Area 9	
51	C Area 10	
52	C Area 11	
61	Y Area 0	
62	Y Area 1	
63	Y Area 2	
64	Y Area 3	
65	Y Area 4	
66	Y Area 5	
67	Y Area 6	
68	Y Area 7	
69	Y Area 8	
70	Y Area 9	
71	Y Area 10	
72	Y Area 11	

2202	Set AC (Fixed) Charge	
	These SPs set the AC bias for the standard speed mode and low speed mode, but take effect only when SP3501 001 is set to "1" (Fixed). The default ac bias for each color is 2.2 kV (220) The ac bias is normally adjusted by process control self-check, but when automatic process control is switched off (by setting SP3501 001 to "1"), these values are used for the charge potential.	
1	Wire Current:K	

2	AC Bias :M	
3	AC Bias :C	
4	AC Bias :Y	

2203	Set Charge Current	
	Sets and adjusts current for charge applied to the OPC drums.	
1	Norm2:LL	
6	Norm2:ML	
11	Norm2:MM	
16	Norm2:MH	
21	Norm2:HH	
26	Norm1:LL	
31	Norm1:ML	
36	Norm1:MM	
41	Norm1:MH	
46	Norm1:HH	
51	Half-Speed2:LL	
56	Half-Speed2:ML	
61	Half-Speed2:MM	
66	Half-Speed2:MH	
71	Half-Speed2:HH	
76	Half-Speed1:LL	
81	Half-Speed1:ML	
86	Half-Speed1:MM	
91	Half-Speed1:MH	
96	Half-Speed1:HH	

2204	Set AC Environ Corr	
	Sets the target value for adjustment of the charge rollers of the YMC PCUs.	
2	Norm2:LL:Target:M	
3	Norm2:LL:Target:C	
4	Norm2:LL:Target:Y	
7	Norm2:ML:Target:M	
8	Norm2:ML:Target:C	
9	Norm2:ML:Target:Y	
12	Norm2:MM:Target:M	
13	Norm2:MM:Target:C	
14	Norm2:MM:Target:Y	
17	Norm2:MH:Target:M	
18	Norm2:MH:Target:C	
19	Norm2:MH:Target:Y	
22	Norm2:HH:Target:M	
23	Norm2:HH:Target:C	
24	Norm2:HH:Target:Y	
27	Norm1:LL:Target:M	
28	Norm1:LL:Target:C	
29	Norm1:LL:Target:Y	
32	Norm1:ML:Target:M	
33	Norm1:ML:Target:C	
34	Norm1:ML:Target:Y	
37	Norm1:MM:Target:M	
38	Norm1:MM:Target:C	
39	Norm1:MM:Target:Y	

42	Norm1:MH:Target:M	
43	Norm1:MH:Target:C	
44	Norm1:MH:Target:Y	
47	Norm1:HH:Target:M	
48	Norm1:HH:Target:C	
49	Norm1:HH:Target:Y	
52	Half-Speed2:LL:Target:M	
53	Half-Speed2:LL:Target:C	
54	Half-Speed2:LL:Target:Y	
57	Half-Speed2:ML:Target:M	
58	Half-Speed2:ML:Target:C	
59	Half-Speed2:ML:Target:Y	
62	Half-Speed2:MM:Target:M	
63	Half-Speed2:MM:Target:C	
64	Half-Speed2:MM:Target:Y	
67	Half-Speed2:MH:Target:M	
68	Half-Speed2:MH:Target:C	
69	Half-Speed2:MH:Target:Y	
72	Half-Speed2:HH:Target:M	
73	Half-Speed2:HH:Target:C	
74	Half-Speed2:HH:Target:Y	
77	Half-Speed1:LL:Target:M	
78	Half-Speed1:LL:Target:C	
79	Half-Speed1:LL:Target:Y	
82	Half-Speed1:ML:Target:M	
83	Half-Speed1:ML:Target:C	

84	Half-Speed1:ML:Target:Y	
87	Half-Speed1:MM:Target:M	
88	Half-Speed1:MM:Target:C	
89	Half-Speed1:MM:Target:Y	
92	Half-Speed1:MH:Target:M	
93	Half-Speed1:MH:Target:C	
94	Half-Speed1:MH:Target:Y	
97	Half-Speed1:HH:Target:M	
98	Half-Speed1:HH:Target:C	
99	Half-Speed1:HH:Target:Y	

2205	Adj/Display AC Charge	
	Sets the time intervals for the application of ac charge during printing.	
1	Execution Interval	
2	Temp Threshold 1	
3	Temp Threshold 2	
4	Previous Temp	

2207	Chg AC Reduction: Set
	Sets the low voltage of the ac charge to be applied while an image is not being created.

2208	Chg AC Adj:Execute **DFU**
	Touch [EXECUTE] to manually executes an ac charge on the charge rollers of the YMC PCUs.

2209	Chg AC Adj: Result **DFU**
	Displays the results of the ac charge applied manually to the charge rollers of the YMC PCUs with SP2208.

2220	Chg Wire Cleaning Timing	
	Selects when the charge wire of the K PCU and the charge rollers of the YMC PCUs are cleaned.. [0~2 / 2 / 1] 0: OFF 1: With process control and at intervals selected with SP2221 2: At intervals selected with SP2221 only.	
1	Execution Timing: K	
2	Execution Timing: Y,M,C	

2221	Chg Wire Cleaning Int/Dist	
	Selects the interval corona wire (K PCU) and charge roller cleaning (YMC PCUs).	
1	Execution Interval:K	[0 to 9 999 999/ 200 000/ 1 cm]
2	Execution Interval:M	
3	Execution Interval:C	
4	Execution Interval:Y	
5	Distance: K	[0 to 9 999 999/ 0/ 1 cm]
6	Distance: M	
7	Distance: C	
8	Distance: Y	
9	Delay at Power On: K	[0 to 99 999/ 5000 / 100 cm]
10	Delay at Power On: M	
11	Delay at Power On: C	
12	Delay at Power On: Y	

2222	Execute Wire Cleaning	
	These SP codes manually execute wire cleaning (K PCU) and charge roller cleaning (YMC PCUs).	
1	K	[0 to 1 / 0 / 0]

2	Y,M,C	
3	M	
4	C	
5	Y	
	Chg Wire Cleaning Time	
	These SPs display the duration of wire cleaning after the wires were cleaned using SP codes 001 to 005 above.	
6	Result: Forward	[0 to 45/ 0 / 0.1 sec.]
7	Result: Back	

2223	OPC Rev After Idle Time	
	These SP codes allow you to set up how long the OPC will idle at the start of a print job after it has remained inactive.	
1	Execution Setting	Switches this SP code on/off. Default: Off (0) This SP must be set on for the other values (2 to 5 below) to take effect.
2	Execution Timing	Sets the amount of time for the OPC drum to idle before the start of the job. [0 to 360/ */1 sec.] * Default setting: D014: 75 sec. D015: 60 sec.
3	Exec Threshold:Rel Humidity	Sets the threshold of relative humidity to trigger idling of the OPCu. [0 to 99/ 65/ 1 %rH]
4	Exec Threshold:Idle Time	Sets the length of time for the OPC to idle, once the idle time has been triggered by the rH threshold. [0 to 6000/ 360/ 10 min.]
5	Exec Threshold:OPC Usage	Sets the threshold value to trigger OPC idling, depending of the number of pages printing. [0 to 400 000 / 60 000/ 10 000 sheets]

6	Chg Usage	Sets the threshold of the charge for the rotation of the OPC drum by page count after the machine has been moved to a high-humidity environment. [0 to 200,000/60,000/10,000 Sheets]

2225	Cleaning Speed: K **DFU**	
	These settings affect the speed of rotation of the drum cleaning brush roller for monochrome printing.	
1	Norm2	[0.1 to 3/ 0.45/ 0.01]
2	Norm1	
3	Half-Speed2	
4	Half-Speed1	
5	Period of Revs	[100 to 15 000 000/100 000/10 cm]
6	Post Switching Coefficient	[0.5 to 2/ 1 0.1]

2226	Cleaning Speed: Col	
	These settings affect the speed of rotation of the drum cleaning brush roller for color printing.	
1	Norm2	[0.1 to 3/ 0.45/ 0.01]
2	Norm1	
3	Half-Speed2	
4	Half-Speed1	
5	Period of Revs	[100 to 15 000 000/100 000/10 cm]
6	Post Switching Coefficient	[0.5 to 2/ 1 0.1]

2230	QL Power Setting	
	These SPs set the power level of the quenching lamp.	
1	Norm2 Image	[0 to 99 / 21/ 1%]
2	Norm2 Margin	[0 to 99 / 40/ 1%]

3	Norm1 Image	[0 to 99 / 20/ 1%]
4	Norm1 Margin	[0 to 99 / 39/ 1%]
5	Half-Speed2 Image	[0 to 99 / 17 / 1%]
6	Half-Speed2 Margin	[0 to 99 / 25/ 1%]
7	Half-Speed1 Image	[0 to 99 / 16 / 1%]
8	Half-Speed1 Margin	[0 to 99 / 24 / 1%]

2251	Force Tnr Supply	
	Force Toner Supply:Execute. Use SPs to increase manually the supply of toner to the sub hopper of the development unit to determine if toner supply is abnormal or to recover normal operation of a color toner supply when image density becomes light. After you touch "Execute" the toner supply switches on for 0.1 sec. and then off for 0.2 sec. four times for the select color or colors.	
1	Execute:K	Executes forced toner supply to the selected development unit. [0 to 1/1]
2	Execute:M	
3	Execute:C	
4	Execute:Y	
5	Execute:Col	Executes forced toner supply to the Y, M, C development units only. [0 to 1/1]
6	Execute:All Col	Executes forced toner supply to all development units (Y, M, C, K). [0 to 1/1]

2252	Set Tnr Supply	
	Forced Toner Supply: Setting. Use these SPs to adjust the number of rotations done by the toner supply clutch when SP2251 001 to 006 is executed manually. The number of toner supply clutch rotations can be adjusted for each color. A high setting increases the number of rotations and increases the amount of toner supply to the development unit, resulting in a darker image for the selected color.	

1	Supply Times:K	[0 to 30/1]
2	Supply Times:M	[0 to 30/1]
3	Supply Times:C	[0 to 30/1]
4	Supply Times:Y	[0 to 30/1]

2253	Manual Tnr. Fill
	Fill Development Unit Sub Hoppers: Manual. Touch [EXECUTE] to start force filling of all development units with toner/developer from the STC units if toner supply is abnormal or to recover normal operation of a color toner supply when image density becomes light. The toner supply clutch switches on for 2 sec. and then off for 0.4 sec. to fill the sub hopper of the development unit. This on/off sequence is repeated up to 20 times or until the toner end sensor detects that toner is present in the sub hopper.

2260	Pot.Sn Check
	Potential Sensor Check. Touch [EXECUTE] to execute a check of all potential sensors.

2261	Pot.Sn Chk Disp		
	Displays the results of the potential sensor check executed with SP2260.		
1	Vd:K	7	Vr:C
2	Vd:M	8	Vr:Y
3	Vd:C	9	Voffset:K
4	Vd:Y	10	Voffset:M
5	Vr:K	11	Voffset:C
6	Vr:M	12	Voffset:Y

Notes for SP2261

Reading	Definition	Abnormal Reading
Vd	Charge bias (Cdc). This is the output of the potential sensor after –700V is applied to the drum. Range: -500 to –700 V	If the reading is out of range: • Potential sensor damaged • Charge unit malfunction • Charge power pack malfunction
Vr	Residual voltage. This is the output of the potential sensor after the LD fires at full power. Normal: -200 V	If above –200V: • Drum worn • Toner shield glass dirty • Potential sensor out of position
Voffset	This is the reading of the potential sensor with no charge applied to the drum. Normal: 0 ±10V	If reading is out of range: • Potential sensor dirty • Potential sensor out of position

2262	TD Sn Chk
	TD Sensor Check: Execute. Touch [EXECUTE] to execute a check of all TD sensors.

2263	TD Sn Chk Disp	
	Toner Density Check: Display. Displays results of 2262. Vt is the most recent output of the TD sensor.	
1	Vt:K	
2	Vt:M	
3	Vt:C	
4	Vt:Y	

2264	ID Sn Chk
	ID Sensor Check: Touch [EXECUTE] to check the ID sensor.

2265	ID Sn Chk Disp

	Displays the most recent ID sensor Vsg and Voffset readings. **Notes:** • Vsg_reg is the reading of the direct sensors in the black and color ID sensors that detect the reflectivity of the bare surface of ITB. If Vsg_reg is less than 3.8V, the ID sensor may be dirty, damaged, or disconnected • ~~If Voffset_reg is less than 0.15, the ID sensor should be replaced. (The ID sensors are replaced as a unit.)~~	
1	Vsg_reg	
3	~~Voffset_reg~~	

2302	Temp/Humid Disp	
	This SP displays the current temperature and humidity. These readings are output by the temperature humidity display located on the bottom of the machine below the used toner bottle.	
1	Temp Disp	Room temperature (°C). [0 to 100/ 0/1 deg.]
2	Rel Humidity Disp	Relative humidity (saturation point at current temperature). [0 to 100/0 /1 %rh.]
3	Abs Humidity Disp	Absolute humidity. [0 to 63/ 0/ 0.01 g/m^3]
4	Current Env Disp	Displays the current environment control mode. The control modes are divided into 5 levels: LL, ML, MM, MH, HH.

2303	Force Temp Corr **DFU**
	Force Ambient Temperature Correction. The temperature/humidity sensor reading is used to adjust settings during process control when this SP is set to zero (the default). The value of the absolute humidity reading displayed by SP2302 003, as well as the other readings of the conditions around the machine displayed with SP2302, are used in the process control calculations. If you touch any key (1 to 6) below, the value you select is used and the readings of the temperature/humidity sensor are ignored. **Note:** After you press any key (1 to 6), the setting you select remains in effect only while the machine is in the SP mode. Once you leave the SP mode, this SP is reset to zero automatically.

	0: Sensor Detect 1: LLL 2: LL 3: ML	4: MM 5: MH 6: HH

2304	Set Humid Thresh	
	Ambient Humidity Threshold Setting. Sets the threshold values for the absolute humidity of the current LL and ML settings for the main machine in the present environment.	
1	Abs Humid:Thresh1	[0 to 63/ 2.5/ 0.01 g/m^3
2	Abs Humid:Thresh2	[0 to 63/ 5/ 0.01 g/m^3
3	Abs Humid:Thresh3	[0 to 63/ 8.4/0.01 g/m^3
4	Abs Humid:Thresh4	[0 to 63/ 15/ 0.01 g/m^3
5	Abs Humid:Thresh5	[0 to 64/ 24/ 0.01 g/m^3]

2307	Set Ptype Link	
	Paper Type Link Setting. For the copy mode selected, these SPs 1) switch the image transfer bias for each color and 2) switch the paper transfer and separation bias	
1	Norm	[0 to 2/1] 0: Normal Paper 1: Thick Paper 2: OHP
2	Recycled Paper	
3	Special Paper	
4	Color 1	
5	Color 2	
6	Letterhead	
7	Tab Sheet	
8	Labels	
9	Tracing Paper	
10	OHP	

2308	Set Psize Thresh	
	Set Paper Size Thresholds. Sets the correction values (Threshold 1, 2, 3, 4) for paper size.	
1	Psize:Thresh1	[0 to 350-/1 mm]
2	Psize:Thresh2	
3	Psize:Thresh3	
4	Psize:Thresh4	

2309	Eng Spd Coeff	
1	Norm Spd 1:ITB	[10 to 200 / 125 / 1%]
2	Norm Spd 2:ITB	[10 to 200 / 100 / 1%]
3	Half Spd 1: ITB	[10 to 200 / 63 / 1%]
4	Half Spd 2: ITB	[10 to 200 / 50 / 1%]
5	Norm Spd 1:PTR	[10 to 200 / 125 / 1%]
6	Norm Spd 2:PTR	[10 to 200 / 100 / 1%]
7	Half Spd 1: PTR	[10 to 200 / 58 / 1%]
8	Half Spd 2: PTR	[10 to 200 / 42 / 1%]
11	Norm d1: Spec DC	[10 to 200 / 100 / 1%]
12	Norm d2 Spec DC	
13	Half d1: Spec DC	
14	Half d2: Spec DC	
21	Norm d1: Spec AC	[10 to 200 / 100 / 1%]
22	Norm d2: Spec AC	
23	Half d1: Spec AC	[10 to 200 / 93 / 1%]
24	Half d1: Spec AC	[10 to 200 / 90 / 1%]

31	Thin: PTR	Adjusts the strength of the charge applied by the charge roller to the paper transfer belt (It2). [10 to 200 / 58 / 1%]
32	Normal 1: PTR	
33	Normal 2: PTR	
34	Mid Thk: PTR	

2312	Margin K Bias	
1	ITB	Sets the value of image transfer bias for K in the areas of the image where nothing is printed. [0 to 70/0.1]
2	PTR	[0 to 1/0.01 kV]
3	SepDC	[0 to 10/0.1 µa]
4	SepAC	[8 to 12/0.1 kV]

2313	Margin FC Bias	
	This SP sets the image transfer bias for each in areas of the image where nothing is printed in the full-color mode.	
2	ITB:K	[0 to 70/ 0.1 ua]
3	ITB:M	
4	ITB:C	
5	ITB:Y	
7	PTR	
8	SepDC	
9	SepAC	

2321	Manual Vltg Meas	
	Takes a reading of the Vltg value for the ITB and PTR.	
2	ITB	
3	PTR	

2322	Vltg Meas Result	
	Displays the reading of the ITB and PTR voltages.	
1	ITB:K	
2	ITB:M	
3	ITB:C	
4	ITB:Y	
5	PTR	

2323	Vltg Meas Env Disp	
1	ITB	
2	PTR	

2324	R Coeff ON/OFF	
1	ITB	
2	PTR	

2325	Current R Level Disp	
1	ITB: K	
2	ITB: M	
3	ITB: C	
4	ITB: Y	
5	PTR	

2326	Set Voltage Detect Interval	
1	Execution Interval	[0 to 20000 / 200 / 1 sheet]
2	Page Count:FC	[0 to 20000 / 0 / 1 sheet]
3	Page Count:BW	

2330	Set R Thresh:LLL **DFU**	
2331	Set R Thresh:LL **DFU**	
2332	Set R Thresh:ML **DFU**	
2333	Set R Thresh:MM **DFU**	
2334	Set R Thresh:MH **DFU**	
2335	Set R Thresh:HH **DFU**	
1	R Thresh1:ITB	
2	R Thresh2:ITB	
3	R Thresh3:ITB	
4	R Thresh4:ITB	
5	R Thresh5:ITB	
6	R Thresh1:PTR	
7	R Thresh2:PTR	
8	R Thresh3:PTR	
9	R Thresh4:PTR	
10	R Thresh5:PTR	

2360	Resist Coeff **DFU**	
1	R Level:R-2	
2	R Level:R-1	
3	R Level:R0	
4	R Level:R+1	
5	R Level:R+2	
6	R Level:R+3	

2361	Size Coeff:R-2 **DFU**
2362	Size Coeff:R-1 **DFU**

2363	Size Coeff:R0 **DFU**	
2364	Size Coeff:R+1 **DFU**	
2365	Size Coeff:R+2 **DFU**	
2366	Size Coeff:R+3 **DFU**	
1	Side1:Size1	
2	Side2:Size1	
3	Side1:Size2	
4	Side2:Size2	
5	Side1:Size3	
6	Side2:Size3	
7	Side1:Size4	
8	Side2:Size4	
9	Side1:Size5	
10	Side2:Size5	

2380	Margin K:LLL **DFU**
2381	Margin K:LL **DFU**
2382	Margin K:ML **DFU**
2383	Margin K:MM **DFU**
2384	Margin K:MH **DFU**
2385	Margin K:HH **DFU**

2390	Margin FC:LLL **DFU**
2391	Margin FC:LL **DFU**
2392	Margin FC:ML **DFU**
2393	Margin FC:MM **DFU**
2394	Margin FC:MH **DFU**

2395	Margin FC:HH **DFU**

2401	Norm K Bias	
	Sets the standard value of bias voltages at image transfer, and paper separation in areas where black is used on plain paper during black-and-white printing.	
1	ITB	[0 to 70 / 0.1 ua]
7	Side1:PTR	[-100 to 0/ 1 ua]
8	Side1:SepDC	[0 to 10 / 0.1 ua]
9	Side1:SepAC	[8 to 12 / 0.1 ua]
12	Side2:PTR	[-100 to 0/ 0.1 ua]
13	Side2:SepDC	[0 to 10/ 0.1 ua]
14	Side2:SepAC	[8 to 12/ 0.1 ua]

2406	Norm FC Bias	
	Set Bias for Plain Paper: FC. Sets the standard value of bias voltages at image transfer, and paper separation in areas the four colors are used on plain paper during full color printing.	
1	ITB:K	[0 to 70/0.1 µa]
2	ITB:M	[0 to 70/0.1 µa]
3	ITB:C	[0 to 70/0.1 µa]
4	ITM:Y	[-100 to 0/1 µa]
13	Side1:PTR	[-100 to 0/1 µa]
14	Side1:SepDC	[0 to 10/0.1 µa]
15	Side1:SepAC	[8 to 12/0.1 µa]
21	Side1:PTR	[-100 to 0/1 µa]
22	Side1:SepDC	[0 to 10/0.1 µa]
23	Side1:SepAC	[8 to 12/1 µa]

2421	LEdge Cor:Norm K	
	Leading Edge Correction for Plain Paper: K. This SP sets the coefficient used to 1) correct bias at the leading edge for black image transfer (ITB) 2) bias at image to paper transfer, and 3) correct the dc and ac voltages applied at paper separation. **Notes:** These settings apply: • To the distance from the leading edge set with SP2422 • Only to black printing on plain paper at full speed (even when full-color is selected).	
7	Side1:PTR	[0 to 250/ 1%]
8	Side1:SepDC	
9	Side1:SepAC	
12	Side2:PTR	
13	Side2:SepDC	
14	Side2:SepAC	

2422	LEdge SWT:Norm K	
	Leading Edge Switch Timing for Plain Paper: K. Sets the switch off timing SP2421. The value selected is the number of mm from the leading edge of the paper. These settings 1) apply only to black printing on plain paper at full speed (even when full-color is selected), and 2) apply to both sides of a duplex page.	
2	PTR	[0 to 30/1 mm]
3	SepDC	
4	SepAC	

2423	TEdgeCor:Norm K
	Trailing Edge Correction for Plain Paper: K. This SP sets the coefficient used to correct bias at image to paper transfer for each side of the paper. These settings are applied to the trailing edge for black printing on plain paper at full speed and apply to black, even when printing in full color mode.

7	Side1:PTR	[0 to 250/1%]
12	Side2:PTR	

2424	TEdgeSWT:Norm K (PTR)
	Trailing Edge Switch Timing for Plain Paper: K. This setting sets the start timing for application of SP2423 at the trailing edge of each sheet (Side 1, Side 2). This setting is applied to the trailing edge for black printing on plain paper at full speed and apply to black, even when printing in full color mode. [-100 to 0/1 mm] The mm distance is measured away from the trailing edge of the image.

2426	LEdgeCor:Norm FC	
	Leading Edge Correction for Plain Paper: FC. This SP sets the coefficient used to 1) correct bias at the leading edge for full-color image transfer (ITB) bias at image to paper transfer when using plain paper, and 3) correct the dc and ac voltages applied at paper separation. **Notes:** These settings apply: • Only the distance from the leading edge set with SP2427. • Only to full color printing on plain paper at full speed.	
7	Side1:PTR	[0 to 250/1%]
8	Side1:SepDC	
9	Side1:SepAC	
12	Side2:PTR	
13	Side2:SepDC	
14	Side2:SepAC	

2427	LEdgeSWT:Norm FC

	Leading Edge Switch Timing for Plain Paper: FC. This SP sets switch timing that sets the distance from the leading edge where the settings of SP2426 are to apply. The value selected is the number of mm from the leading edge of the paper. These settings 1) apply only full-color printing on plain paper at full speed, and 2) apply to both sides of a duplex page.	
2	PTR	[0 to 30/1 mm]
3	SepDC	[0 to 30/1 mm]
4	SepAC	[0 to 30/1 mm]

2428	TEdgeCor:Norm FC	
	Trailing Edge Correction for Plain Paper: FC. This SP sets the coefficient used to correct bias at image to paper transfer for each side of the paper. These settings are applied to the trailing edge for full-color printing on plain paper at full speed as far as where SP2429 takes effect.	
7	Side1:PTR	[0 to 250/1%]
12	Side2:PTR	

2429	TEdgeSWT:Norm FC – PTR
	Switch Timing for Plain Paper: FC. This setting sets the start timing for application of SP2428 007, 2428 012 at the trailing edge of each sheet (Side 1, Side 2). These settings are applied to the trailing edge for black printing on plain paper at full speed and apply to black, even when printing in full color mode. [-100 to 0/1 mm] The mm distance is measured away from the trailing edge of the image.

2430	Norm:K:LLL	Plain Paper: K Very Low
2431	Norm:K:LL	Plain Paper: K Low
2432	Norm:K:ML	Plain Paper: K Medium Low
2433	Norm:K:MM	Plain Paper: K Medium
2434	Norm:K:MH	Plain Paper: K Medium High
2435	Norm:K:HH	Plain Paper: K High

	These SPs set the paper size correction coefficient for the image to paper transfer bias threshold values calculated based on the reading of the absolute humidity from the temperature/humidity sensor and the thresholds set with SP2304. SP2430 – Up to SP2304 001: Threshold 1 SP2431 – More than SP2304 001 Threshold 1, up to SP23204 002 Threshold 2. SP2432 – More than SP2304 002 Threshold 2, up to SP2304 003 Threshold 3 SP2433 – More than SP2304 003 Threshold 3, up to SP2304 004 Threshold 4 SP2434 – More than SP2304 004 Threshold 4, up to SP2305 005 Threshold 3 SP2435 – More than SP2304 005 Threshold 5 These settings apply 1) only where the image is created in black (in either black-and-white or full-color mode) on plain paper at full speed.	
1	ITB	[10 to200/ 1%]
7	Side1:PTR	
8	Side1:SepDC	
9	Side1:SepAC	
12	Side2:PTR	
13	Side2:SepDC	
14	Side2:SepAC	

2440	Norm:FC:LLL	Plain Paper: FC Very Low
2441	Norm:FC:LL	Plain Paper: FC Low
2442	Norm:FC:ML	Plain Paper: FC Medium Low
2443	Norm:FC:MM	Plain Paper: FC Medium Medium
2444	Norm:FC:MH	Plain Paper: FC Medium High
2445	Norm:FC:HH	Plain Paper: FC High

	These SPs set the paper size correction coefficient for the image to paper transfer bias threshold values calculated based on the reading of the absolute humidity from the temperature/humidity sensor and the thresholds set with SP2304. SP2440 – Up to SP2304 001: Threshold 1 SP2441 – More than SP2304 001 Threshold 1, up to SP23204 002 Threshold 2. SP2442 – More than SP2304 002 Threshold 2, up to SP2304 003 Threshold 3 SP2443 – More than SP2304 003 Threshold 3, up to SP2304 004 Threshold 4 SP2444 – More than SP2304 004 Threshold 4, up to SP2305 005 Threshold 3 SP2445 – More than SP2304 005 Threshold 5 These settings apply 1) only where the image is created in full-color on plain paper at full speed.	
1	ITB	[10 to 200/ 1%]
17	Side1:PTR	
18	Side1:SepDC	
19	Side1:SepAC	
27	Side2:PTR	
28	Side2:SepDC	
29	Side2:SepAC	

2751	Sp1 K Bias	
	Set Bias for Special Paper 1: K. These SPs set the standard values of the electrical charges that are applied to 1) create bias for image transfer from drum to ITB, 2) create bias for image transfer from ITB to paper (PTR), and 3) neutralize the charges on the both sides of the paper to separate the paper from the ITB (SepDC, SepAC). These settings are used when printing on Special Paper 1 in the black-and-white mode and are applied only to the image area.	
1	ITB	[0 to 70/0.1 µa]
7	Side1:PTR	[-100 to 0/1 µa]
8	Side1:SepDC	[0 to 10/0.1 µa]
9	Side1:SepAC	[8 to 12/0.1 kV]
12	Side2:PTR	[-100 to 0/0.1 µa]

13	Side2:SepDC	[0 to 10/0.1 µa]
14	Side2:SepAC	[8 to 12/0.1 kV]

2756	Sp1 FC Bias	
	Set Bias for Special Paper 1: K. These SPs set the standard values of the electrical charges that are applied to 1) create bias for image transfer from drum of each color (Y, M, C, K) to the ITB, 2) create bias for image transfer from ITB to paper (PTR), and 3) neutralize the charges on the both sides of the paper to separate the paper from the ITB (SepDC, SepAC). These settings are used only for Y, M, C, K when printing on Special Paper 1 in the full-color mode and are applied only to the image area.	
1	ITB:K	[0 to 70/0.1 µa]
2	ITB:M	[0 to70/0.1 µa]
3	ITB:C	[0 to 70/0.1 µa]
4	ITB:Y	[0 to 70/0.1 µa]
13	Side1:PTR	[-100 to 0/1 µa]
14	Side1:SepDC	[0 to 10/0.1 µa]
15	Side1:SepAC	[8 to 12/0.1 kV]
21	Side2:PTR	[-100 to 0/1 µa]
22	Side2:SepDC	[0 to 10/0.1 µa]
23	Side1:SepAC	[8 to 12/0.1 kV]

These SPs set the paper size correction coefficients for Special Paper 1 relative to the settings done with SP2308 (Set Psize Thresh). All of hese settings:

- Apply to printing on Special Paper 1 in the black-and-white mode
- Apply only to the image area

The title of each SP tells you the side and size where the setting is applied at ITB-to-paper transfer, for example: "Side1:Size1:PTR" means the setting applies to only the first side of Size 1 when the image is transferred from belt to paper.

2771	LEdge Cor:Sp1:K

	Leading Edge Correction for Special Paper 1: K. Sets the leading edge correction coefficient when bias is applied as far as allowed by the setting of SP2772 for drum to image transfer of the image during black and white copying on Special Paper 1.	
7	Side1:PTR	[0 to 250/ 1%]
8	Side1:SepDC	
9	Side1:SepAC	
12	Side2:PTR	
13	Side2:SepDC	
14	Side2:SepAC	

2772	LEdge SWT:Sp1:K	
	Leading Edge Switch Timing for Special Paper 1: K. Sets the switch off timing of SP2771. The selected value is the number of mm from the leading edge. Applies only to printing in black-and-white mode on Special Paper 1.	
2	PTR	[0 to 30/1 mm]
3	SepDC	
4	SepAC	

2773	TEdge Cor:Sp1 K	
	Trailing Edge Correction for Special Paper 1: K. Sets the bias applied at the trailing edge when the image is transferred from ITB to paper by setting the start timing for SP2774 at the trailing edge. Applied to the trailing edge for black-and-white mode on Special Paper 1 only.	
7	Side1:PTR	[0 to 250/1%]
12	Side2:PTR	

2774	TEdge SWT:Sp1 K

	Trailing Edge Switch Timing for Special Paper 1: K. Sets the switch timing that determines the distance from the leading edge where the settings of SP2773 are applied during image transfer from ITB to paper. Applied only when in black-and-white mode on Special Paper 1. [-100 to 0/ 1 mm]

2776	LEdge Cor:Sp1 FC	
	Leading Edge Correction for Special Paper 1: FC. These SPs do the following settings when printing on Special Paper 1 in the full-color mode: 1) ITB: Sets strength/timing of the correction coefficient for the application of bias when the image is transferred from the drum to the ITB. 2) PTR: Sets the strength/timing of the correction coefficient for the application of bias when the image is transferred from ITB. 3) SepDC, SepAC: Set the strength/timing of the dc and ac charges applied to neutralize the charges on the belt and paper so they will separate more easily. **Note:** SP2776 selects the strength of the bias coefficient, and SP2777 sets the start timing of the bias application.	
7	Side1:PTR	[0 to 250/ 1%]
8	Side1:SepDC	
9	Side1:SepAC	
12	Side2:PTR	
13	Side2:SepDC	
14	Side2:SepAC	

2777	LEdge SWT:Sp1 FC
	Leading Edge Switch Timing for Special Paper 1: FC. Sets the switch off timing of SP2776. The selected value is the number of mm from the leading edge. Applies only to printing in full-color mode on Special Paper 1.

2	PTR	[0 to 30/1 mm]
3	SepDC	
4	SepAC	

2778	TEdge Cor:Sp1 FC	
	Trailing Edge Correction for Special Paper 1: FC. Sets the strength of the bias coefficient for the bias applied at the trailing edge when the image is transferred from ITB to paper. Applied when printing in full-color mode on Special Paper 1.	
7	Side1:PTR	[0 to 250/1%]
12	Side2:PTR	

2779	TEdge SWT:Sp1 FC (PTR)
	Switch Timing for Special Paper 1: FC. Sets the switch timing that determines the distance from the leading edge where the SP2778 settings are applied during image transfer from ITB to paper. Applied only when printing in full-color mode on Special Paper 1. [-100 to 0/1 mm]

2780	Sp1:K:LLL	Special Paper 1: K Very Low
2781	Sp1:K:LL	Special Paper 1: K Low
2782	Sp1:K:ML	Special Paper 1: K Medium Low
2783	Sp1:K:MM	Special Paper 1: K Medium
2784	Sp1:K:MH	Special Paper 1: K Medium High
2785	Sp1:K:HH	Special Paper 1: K High

	These SPs set the paper size correction coefficient for the image to paper transfer bias threshold values calculated based on the reading of the absolute humidity from the temperature/humidity sensor and the thresholds set with SP2304. SP2780 – Up to SP2304 001: Threshold 1 SP2781 – More than SP2304 001 Threshold 1, up to SP23204 002 Threshold 2. SP2782 – More than SP2304 002 Threshold 2, up to SP2304 003 Threshold 3 SP2783 – More than SP2304 003 Threshold 3, up to SP2304 004 Threshold 4 SP2784 – More than SP2304 004 Threshold 4, up to SP2305 005 Threshold 3 SP2785 – More than SP2304 005 Threshold 5 These settings apply only to the image area printed on Special Paper 1 in black-and-white mode.	
1	ITB	[10 to 200/ 1%]
7	Side1:PTR	
8	Side1:SepDC	
9	Side1:SepAC	
12	Side2:PTR	
13	Side2:SepDC	
14	Side2:SepAC	

2790	Sp1:FC:LLL	Special Paper 1: FC Very Low
2791	Sp1:FC:LL	Special Paper 1: FC Low
2792	Sp1:FC:ML	Special Paper 1: FC Medium Low
2793	Sp1:FC:MM	Special Paper 1: FC Medium
2794	Sp1:FC:MH	Special Paper 1: FC Medium High
2795	Sp1:FC:HH	Special Paper 1: FC High

	These SPs set the paper size correction coefficient for the image to paper transfer bias threshold values calculated based on the reading of the absolute humidity from the temperature/humidity sensor and the thresholds set with SP2304. SP2790 – Up to SP2304 001: Threshold 1 SP2791 – More than SP2304 001 Threshold 1, up to SP23204 002 Threshold 2. SP2792 – More than SP2304 002 Threshold 2, up to SP2304 003 Threshold 3 SP2793 – More than SP2304 003 Threshold 3, up to SP2304 004 Threshold 4 SP2794 – More than SP2304 004 Threshold 4, up to SP2305 005 Threshold 3 SP2795 – More than SP2304 005 Threshold 5 These settings apply only to the image area printed on Special Paper 1 in full-color mode.	
1	ITB	[10 to 200/ 1%]
17	Side1:PTR	
18	Side1:SepDC	
19	Side1:SepAC	
27	Side2:PTR	
28	Side2:SepDC	
29	Side2:SepAC	

2801	Sp2 K Bias	Set Bias for Special Paper 2: K
	These SPs set the standard values of the electrical charges that are applied to 1) create bias for image transfer from drum to ITB, 2) create bias for image transfer from ITB to paper (PTR), and 3) neutralize the charges on the both sides of the paper to separate the paper from the ITB (SepDC, SepAC). These settings are used when printing on Special Paper 2 in the black-and-white mode and are applied only to the image area.	
1	ITB	[0 to 70/0.1 µa]
7	Side1:PTR	[-100 to 0/1 µa]
8	Side1:SepDC	[0 to 10/0.1 µa]
9	Side1:SepAC	[8 to 12/0.1 kV]
12	Side2:PTR	[-100 to 0/1 µa]

13	Side2:SepDC	[0 to 10/0.1 µa]
14	Side2:SepAC	[8 to 12/0.1 kV]

2806	Sp2 FC Bias	
	Set Bias for Special Paper 2: K. These SPs set the standard values of the electrical charges that are applied to 1) create bias for image transfer from drum of each color (Y, M, C, K) to the ITB, 2) create bias for image transfer from ITB to paper (PTR), and 3) neutralize the charges on the both sides of the paper to separate the paper from the ITB (SepDC, SepAC). These settings are used only for Y, M, C, K when printing on Special Paper 1 in the full-color mode and are applied only to the image area.	
1	ITB:K	[0 to 70/0.1 µa]
2	ITB:M	[0 to70/0.1 µa]
3	ITB:C	[0 to 70/0.1 µa]
4	ITB:Y	[0 to 70/0.1 µa]
13	Side1:PTR	[-100 to 0/1 µa]
14	Side1:SepDC	[0 to 10/0.1 µa]
15	Side1:SepAC	[8 to 12/0.1 kV]
21	Side2:PTR	[-100 to 0/1 µa]
22	Side2:SepDC	[0 to 10/0.1 µa]
23	Side2:SepAC	[8 to 12/0.1 kV]

These SPs set the paper size correction coefficients for Special Paper 2 relative to the settings done with SP2308 (Set Psize Thresh). All of these settings:

- Apply to printing on Special Paper 2 in the black-and-white mode
- Apply only to the image area

The title of each SP tells you the side and size where the setting is applied at ITB-to-paper transfer, for example: "Side1:Size1:PTR" means the setting applies to only Side 1 of Size 1 when the image is transferred from belt to paper at the PTR.

2821	LEdge Cor:Sp2:K

	Leading Edge Correction for Special Paper 2: K. Sets the leading edge correction coefficient when bias is applied as far as allowed by the seting of SP2822 for drum to image transfer of the image during black and white copying on Special Paper 2.	
7	Side1:PTR	[0 to 250/1%]
8	Side1:SepDC	
9	Side1:SepAC	
12	Side2:PTR	
13	Side2:SepDC	
14	Side2:SepAC	

2822	LEdge SWT:Sp2:K	
	Leading Edge Switch Timing for Special Paper 2: K. Sets the switch off timing. The selected value is the number of mm from the leading edge. Applies only to printing in black-and-white mode on Special Paper 2.	
2	PTR	[0 to 30/ 1mm]
3	SepDC	
4	SepAC	

2823	TEdge Cor:Sp2 K – PTR	
	Trailing Edge Correction for Special Paper 2: K. Sets the bias applied at the trailing edge when the image is transferred from ITB to paper by setting the start timing for SP2824 at the trailing edge. Applied to the trailing edge for black-and-white mode on Special Paper 2 only.	
7	Side1:PTR	[0 to 250/1%]
12	Side2:PTR	

2824	TEdge SWT:Sp2 K (PTR)

	Trailing Edge Switch Timing for Special Paper 2: K. Sets the switch timing that determines the distance from the leading edge where the settings of SP2823 is applied during image transfer from ITB to paper. Applied only when in black-and-white mode on Special Paper 2. [-100 to 0/1 mm]

2826	LEdge Cor:Sp2 FC	
	Leading Edge Correction for Special Paper 2: FC. These SPs do the following settings when printing on Special Paper 2 in the full-color mode: 1) PTR: Sets the strength/timing of the correction coefficient for the application of bias when the image is transferred from ITB. 2) SepDC, SepAC: Set the strength/timing of the dc and ac charges applied to neutralize the charges on the belt and paper so they will separate more easily. **Note:** SP2826 selects the strength of the bias coefficient, and SP2827 sets the start timing of the bias application.	
7	Side1:PTR	[0 to 250 / 1%]
8	Side1:SepDC	
9	Side1:SepAC	
12	Side2:PTR	
13	Side2:SepDC	
14	Side2:SepAC	

2827	LEdge SWT:Sp2 FC	
	Leading Edge Switch Timing for Special Paper 2: FC. Sets the switch off timing of SP2826. The selected value is the number of mm from the leading edge. Applies only to printing in full-color mode on Special Paper 2.	
2	PTR	[0 to 30/ 1 mm]
3	SepDC	
4	SepAC	

2828	TEdge Cor:Sp2 FC	
	Trailing Edge Correction for Special Paper 2: FC. Sets the strength of the bias coefficient for the bias applied at the trailing edge when the image is transferred from ITB to paper. Applied when printing in full-color mode on Special Paper 2.	
7	Side1:PTR	[0 to 250/1%]
12	Side2:PTR	

2829	TEdge SWT:Sp2 FC	
	Switch Timing for Special Paper 2: FC. Sets the switch timing that determines the distance from the leading edge where the SP2828 settings are applied during image transfer from ITB to paper. Applied only when printing in full-color mode on Special Paper 2. [-100 to 0/1 mm]	

2830	Sp2:K:LLL	Special Paper 2: K Very Low
2831	Sp2:K:LL	Special Paper 2: K Low
2832	Sp2:K:ML	Special Paper 2: K Medium Low
2833	Sp2:K:MM	Special Paper 2: K Medium
2834	Sp2:K:MH	Special Paper 2: K Medium High
2835	Sp2:K:HH	Special Paper 2: K High
	These SPs set the paper size correction coefficient for the image to paper transfer bias threshold values calculated based on the reading of the absolute humidity from the temperature/humidity sensor and the thresholds set with SP2304 8. SP2830 – Up to SP2304 001: Threshold 1 SP2831 – More than SP2304 001 Threshold 1, up to SP23204 002 Threshold 2. SP2832 – More than SP2304 002 Threshold 2, up to SP2304 003 Threshold 3 SP2833 – More than SP2304 003 Threshold 3, up to SP2304 004 Threshold 4 SP2834 – More than SP2304 004 Threshold 4, up to SP2305 005 Threshold 3 SP2835 – More than SP2304 005 Threshold 5 These settings apply only to the image area printed on Special Paper 2 in black-and-white mode.	

1	ITB	[10 to 200/ 1%
7	Side1:PTR	
8	Side1:SepDC	
9	Side1:SepAC	
12	Side2:PTR	
13	Side2:SepDC	
14	Side2:SepAC	

2840	Sp2:FC:LLL	Special Paper 2: FC Very Low
2841	Sp2:FC:LL	Special Paper 2: FC Low
2842	Sp2:FC:ML	Special Paper 2: FC Medium Low
2843	Sp2:FC:MM	Special Paper 2: FC Medium
2844	Sp2:FC:MH	Special Paper 2: FC Medium High
2845	Sp2:FC:HH	Special Paper 2: FC High
	These SPs set the standard values of the electrical charges that are applied to 1) create bias for image transfer from drum to ITB, 2) create bias for image transfer from ITB to paper (PTR), and 3) neutralize the charges on the both sides of the paper to separate the paper from the ITB (SepDC, SepAC). These settings are used when printing on Special Paper 2 in the full-color mode and are applied only to the image area.	
1	ITB	[10 to 200/ 1%
17	Side1:PTR	
18	Side1:SepDC	
19	Side1:SepAC	
27	Side2:PTR	
28	Side2:SepDC	
29	Side2:SepAC	

2901	Disp T/H Sn:PCU

	Temperature/Humidity Sensor: PCU. This SP displays the temperature (°C) and humidity (both relative and absolute) readings of the temperature and humidity sensor located above the M PCU on the right side of the machine. These readings are updated every 60 sec. • 001 to 004 display the current readings. • 005 to 008 display the previous readings.	
1	Humid:Recent	[0 to 100/ 1 deg (or %rH)
2	Rel Humid:Recent	
3	Abs Humid:Recent	
4	Environ:Recent	
5	Humid:JobEnd	
6	Rel Humid:JobEnd	
7	Abd Humid:JobEnd	
8	Environ:JobEnd	

2902	Env Set:PCU	
	Use these settings to turn off the temperature/humidity sensor, and raise or lower the level of detection. [0 to 6/1	
	0: Sensor Detect 1: LLL 2: LL 3: ML	4: MM 5: MH 6: HH

2903	Env Thresh: PCU
	This SP sets the threshold value of LL and ML for the current room temperature.

1	Abs Humid: 1	[0 to 100/0.01 g/m^3]
2	Abs Humid: 2	
3	Abs Humid: 3	
4	Abs Humid: 4	
5	Abs Humid: 5	

2904	Prevent Blade Bending	
	A blade-bend prevention pattern is created with K toner on the ITB between every copy image to lubricate the ITB cleaning blade so it will not bend or scour the surface of the ITB. These SPs set 1) pattern creation interval, 2) density of the pattern, 3) whether the pattern is displayed, 4) the temperature at which the operation is done. **Note:** This function is OFF. Changing this setting is normally not required for this machine.	
1	Pattern Create Interval	Sets the number of pages between patterns. [0 to 200/1 pg.]
2	Pattern Light Intensity	Sets the density of the pattern. [0 to 63/1]
3	Op Pg Count Display	Displays the count for the number of blade prevention patterns. [0 to 200/1 pg.]
4	Set Operation Temp	Sets the threshold temperature for this SP code to start operating. [0 to 50/ 1 deg]

2905	Used Toner Mtr 2	Used Toner Motor 2 Control
	The used toner bottle is provided with a near-full sensor and an auger that evenly distributes the used toner inside the bottle. To extend the life of the used toner bottle near-full motor that rotates this auger, the motor and auger do not operate continuously. The motor is turned on only after a prescribed amount of toner has been consumed.	
1	Tnr Consumed	Sets the amount of toner to be consumed before the used toner bottle is switched on. [1 to 10/1 g]

2	Tnr Mtr On Time	Sets the amount of time the motor remains on. [1 to 10/1 sec.]

2906	Stop Time Reverse Ctrl	
	The K drum motor, YMC drum motor, ITB motor, and PTR motor can be set to reverse slightly immediately after they stop. This removes dust from the edges of the cleaning blades. These SP codes: • Switch this feature on/off (Default: OFF) • Set the absolute intervals (distance) for execution of stop/reverse timing • Set the intervals (distance) for execution of stop/reverse timing during long print jobs.	
1	Set Rev Execute:K	These SP codes switch on/off the stop/reverse feature for the K PCU drum motor, YMC PCU drum motor, ITB motor, and PTR motor. Default: Off
2	Set Rev Execute:YCM	
3	Set Rev Execute:ImgTrans	
4	Set Rev Execute:PaperTrans	
5	Set Rev Execute Interval	Sets the distance interval between motor stop/reverse executions. [1 to 500/ 1 m] Default: 30 m
6	Assign Execution	Switches on the time interval that controls motor reverse executions during continuous print jobs.
7	Set Execute Interval	Sets the distance interval between motor reverse executions during continuous print jobs. [1 to 500/ 1 m] Default: 250 m
8	Op Time Setting:Bk	Sets the length of time for the K PCU drum motor to reverse. [2 to 500/30/2 msec]
9	Op Time Setting:YCM	Sets the length of time for the YMC PCU drum motors to reverse. [2 to 500/30/2 msec]

10	Op Time Setting:ImgTrans	Sets the length of time for the ITB motor to reverse. [2 to 500/30/2 msec]
11	Op Time Setting:PaperTrans	Sets the length of time for the PTR motor to reverse. [2 to 500/30/2 msec]
12	Adj Reverse Start Time	Synchronizes the timing for the K PCU drum motor, ITB motor and PTR motor to reverse simultaneously. [2 to 500/0/2 msec]

2907	PTR Lift **DFU**
	This SP switches the operation of the PTR lift motor off and on. The PTR lift motor presses the PTR against the fusing belt above during belt-to-paper image transfer and lowers the PTR when it is idle. This prevents the PTR from warping. **[*0: Lift Operation On]** [1: Lift Operation Off]

2911	Environ Ctrl	
	These SP codes control the operation of the Peltier unit. **Note**: The Peltier unit is not provided as a standard component of this machine. However, it is available as an option.	
1	Environ Ctrl On	Switches Peltier unit control on/off. ***OFF**/ON
4	Op Humidity	Sets the humidity level for the Peltier unit to operate. [0 to 100/60/1%]
5	Stop Humidity	Sets the humidity level for the Peltier unit to switch off. [0 to 100/35/1%]

6	Op On Time	Sets the timer for the humidity level for the Peltier unit to switch on, regardless of the humidity level control settings done with SP2911-4, -5. [1 to 60/10/1 min.]
7	Op Off Time	Sets the timer for the humidity level for the Peltier unit to switch off, regardless of the humidity level done with SP2911-4, -5. [1 to 60/5/1 min.

2912	Encoder Sn:Adj Light	
1	Adj Light Amt	
2	Light Amt Adj:Pass/Fail	
3	Vref_Disp:Main Setting	
4	Vref_Disp:Sub Setting	
5	Analog Out:Main:After F Adj	
6	Analog Out:Sub:After F Adj	
7	Light Amt Change Flag	

2913	Encoder Sn:Output Disp	
1	Analog:Ave:Main	
2	Analog:Max:Main	
3	Analog:Min:Main	
4	Analog:Ave:Sub	
5	Analog:Max:Sub	
6	Analog:Min:Sub	

2914	Encoder Sn:Get 1stPhase	
1	Get Phases:Execut All	
2	352.8 Line Speed:Execute	
3	282.0 Line Speed:Execute	

4	176.4 Line Speed:Execute	
5	141.0 Line Speed:Execute	
6	352.8 Phase Disp/Set	
7	282.0 Phase Disp/Set	
8	176.4 Phase Disp/Set	
9	141.0 Phase Disp/Set	

2915	Encoder Sn Ctrl Condition **DFU**	
1	SC499 Occurrences	
2	SC499 Causes	
3	ITB Encoder Sn Ctrl	
4	No Scale Counts	
5	Scale Abnormal Counts	
6	Ctrl Unstable Counts	

Group 3000

3001	TD Sn:Vt Display	
	Displays the current value of Vt (output voltage of the TD sensor). This is the value that the machine uses to calculate the density of the toner in each development unit. The toner density is checked after every page prints. The TD sensor output voltage is inversely proportional to the toner density: • If toner density is high, the voltage is low. • If toner density is low, the voltage is high. **Note:** These readings are used to control toner supply. When the machine uses PID logic to control the machine (the default method selected with SP3301 001). The difference between Vt and Vtref is calculated and this result is used to control the on time of the sub hopper clutches that control the supply of toner to the PCUs.	
1	Current Val:K	[0 to 5./0.01 V]
2	Current Val:M	
3	Current Val:C	
4	Current Val:Y	

3002	Vtcnt:Disp/Set	
	Display Vtcnt (TD Sensor Control Voltage). Use SP 3002-001 to 004 to display and confirm the present Vtcnt setting. Vtcnt is the TD sensor control voltage. If there is a large difference between this value and the value of SP3002-005 to 008 (Initial Vtcnt), this means that over time Vtcnt will require large adjustments due to environmental conditions. The initial value of Vtcnt is determined when the developer is initialized. This value is used as a reference to adjust Vt during the auto process control self check and when the TD sensor checks the toner density between pages.	
1	Current Val:K	[0 to 12/0.01 V]
2	Current Val:M	
3	Current Val:C	
4	Current Val:Y	

5	Initial Val:K	[0 to 12/0.01 V]
6	Initial Val:M	
7	Initial Val:C	
8	Initial Val:Y	

3003	Vtref:Disp/Set	
	This SP displays the TD sensor target voltage. This target voltage is inversely proportional to the density of the toner: • If the target is high, toner density is lowered. • If the target is low, toner density is raised. The machine uses readings of the ID sensor patterns between pages to determine the amount of toner coverage and compared with the threhold values for the upper and lower limit of coverate. The result of this calculation is used to calculate Vtref. **Note:** Vtref is the TD sensor reference voltage. It is frequently updated to stabilize the toner concentration in the development unit.	
1	Current Val:K	[0 to 5/0.01 V]
2	Current Val:M	
3	Current Val:C	
4	Current Val:Y	
5	Initial Val:K	[0 to 5/0.01 V]
6	Initial Val:M	
7	Initial Val:C	
8	Initial Val:Y	

3004	Vtref: Disp/Set
1	Upper: K
2	Upper: C
3	Upper: M
4	Upper: Y

5	Lower: K
6	Lower: C
7	Lower: M
8	Lower: Y

3010	TD Sn: Factory Data: K	
3011	TD Sn: Factory Data: M	
3012	TD Sn: Factory Data: C	
3013	TD Sn: Factory Data: Y	
	These SP codes display the factory default settings for TD sensor initialization for the K, M, C, and Y PCUs.	
1	Vtcnt	
	Gain value calculated during TD sensor initialization. This is used to adjust the Vt (TD sensor output). A large gain increases Vt, and a small gain decreases it. The result of this calculation is also used to calibrate Vt during TD sensor initialization.	
2	Vt(H)	**"x" is K, M, C, or Y.** The Vt readings are H (High), M (Medium), L (Low).
3	Vt(M)	
4	Vt(L)	

3021	Set Vt Shift	
	Use this SP to correct Vt (TD sensor output voltage) in the low speed mode (128 to 256 g/m^2). The machine then uses this value to calculate Vt for low speed mode.	
1	Shift (Stdd1)	V-C2a [0 to 5/ 0/ 0.01 V] V-C2b [0 to 5/ 0.2/0.01 V]
2	Shift (Half d2)	
3	Shift (Half d1)	

3042	Set Vtref Cor

	Set Vtref Correction. Vtref is frequently updated in the toner supply cycle to stabiize the concentration of toner in the developer. Vtref is corrected between every printed page in the paper path using the correction amounts listed below for each color. This is the default setting (0) for SP3042 001. However, you can use this SP to switch this function off. Vtref (TD sensor reference voltage). It is frequently updated to stabilize the toner concentration in the development unit.	
1	Vtref Corr Mode	[0 to 1/1] 0: On, 1: Off Setting this SP to 1 switches off Vtref correction between pages.
2	Corr Amt(+):K	[0 to 1/0.01 V]
3	Corr Amt(+):M	
4	Corr Amt(+):C	
5	Corr Amt(+):Y	
6	Corr Amt(-):K	
7	Corr Amt(-):M	
8	Corr Amt(-):C	
9	Corr Amt(-):Y	
10	Vtref Corr Target:K	[-0.1 to 0.1/0.001 mg/cm^2]
11	Vtref Corr Target:M	
12	Vtref Corr Target:C	
13	Vtref Corr Target:Y	
14	Corr Thresh:K	[-0.1 to 0.1/0/ mg/cm^2]
15	Corr Thresh:M	
16	Corr Thresh:C	
17	Corr Thresh:Y	

3044	Img Area
	These SP codes display the percentage of coverage on printed pages.

1	Latest:K	[0 to 9999/ 1 cm^2]
2	Latest:M	
3	Latest:C	
4	Latest:Y	
5	Ave.S:K	[0 to 100/ 0.01%]
6	Ave.S:M	
7	Ave.S:C	
8	Ave.S:Y	
9	Ave.M:K	
10	Ave.M:M	
11	Ave.M:C	
12	Ave.M:Y	
13	Ave.L:K	
14	Ave.L:M	
15	Ave.L:C	
16	Ave.L:Y	
17	Set N Pgs Ave.:S	[0 to 100/ 1 sheet]
18	Set N Pgs Ave.:M	
19	Set N Pgs Ave.:L	
24	DotCoverage	[0 to 100/ 0.01%]
25	DotCoverage	
26	DotCoverage	
27	DotCoverage	

3101	ID Pattern:Display

	ID Sensor Pattern Coverage Display. Displays the amount toner to be used (coverage) to create the ID sensor patterns between pages. The ID sensors cannot accurately detect the patterns if there is too much reflectivity from the black toner. This SP changes the solid ID sensor pattern to a hatched pattern. **Note**: SP3101-1 to 4 sets detection and update timing for the creation of the ID sensor patterns.	
1	Applied:K	
2	Applied:M	
3	Applied:C	
4	Applied:Y	
5	Target Apply:K	
6	Target Apply:M	
7	Target Apply:C	
8	Target Apply:Y	

3102	ID Pattern:Int	
	These SP patterns set the time interval for creation of the ID sensor pattern on the drum.	
1	Create Int:K	[0 to 200/10/ 1 page]
2	Create Int:M	
3	Create Int:C	
4	Create Int:Y	
5	K Page Cnt	[0 to 200/0/ 1 page]
6	M Page Cnt	
7	C Page Cnt	
8	Y Page Cnt	

3111	ID Sn:Voffset **DFU**
	Displays the output voltage of the directly reflected light when the LED of the ID sensor is switched off.

1	Voffset_Reg	[0 to 5/0.01 V]
2	Voffset_Dif	

3121	Adjusted Vsg **DFU**	
	This SP displays the 1) results of the most recent Vsg adjustment.	
1	Vsg_Reg:Col	[0 to 5/0.01 V]
2	Vsg_Dif:Col	

3131	Ifsg After Vsg	
	Displays as a PWM value (pulse width modulation) the level of the ID sensor LED after Vsg has been adjusted. Normal Vsg readings of the ITB bare surface reflectivity should be in the range 4.0 ±0.2V.	
1	Ifsg: Ctr	[0 to 4096/1]
3	Ifsg: Ini	

3141	ID Sn:Vmin
	Displays the minimum values read from the graduated patterns read by the ID sensor during process control.

3194	ID Coeff Display	
	Displays the most recent and averaged readings of the sensitivity correction coefficients (K2 and K5).	
1	K2:Last	[0 to 5/0.0001]
2	K5:Last	
5	K2:Ave	
6	K5:Ave	

3251	Tnr Supply Time

	Toner Calibration Time: Display Displays for confirmation the length of time the sub hopper clutch remained on to send toner to the sub hopper after a new toner cartridge was installed.	
1	Sub Hopper CL:K	[0 to 99 999 999/1 ms]
2	Sub Hopper CL:M	
3	Sub Hopper CL:C	
4	Sub Hopper CL:Y	
5	Toner Pump CL:K	Use these SPs to display the accumulated drive time for each powder pump clutch before installing a new one. [0 to 99 999 999/1 ms]
6	Toner Pump CL:M	
7	Toner Pump CL:C	
8	Toner Pump CL:Y	

3301	Tnr Supply	
	Select toner supply method	
1	K	[0 to 1/1] 0: Fixed toner supply 1: PID Toner Supply
2	M	
3	C	
4	Y	

3302	Tnr Supply	
	Sets the toner supply rate for fixed toner supply mode. The rate is set by adjusting the on time of the toner supply clutch. This setting is used only if SP3301 is set to "0".	
1	Supply Rate:K	[0 to 100/ 1%]
2	Supply Rate:M	
3	Supply Rate:C	
4	Supply Rate:Y	

3303	Tnr Supply Rate	
	Displays for confirmation the toner supply rate of toner supply control using the PID method. The toner supply rate is calculated as: Toner Supply Rate = Toner Supply Time/Time Allowed for Toner Supply x 100 where: • Time is measured in msec. • "Time Allowed for Toner Supply (ms)" = Length of the paper (mm) + Width of the gap between sheets (mm)/Drum speed (mm/s) x 1000. **Note:** The toner supply control method is selected with SP3301.	
1	Last Val:K	[0 to 100/1%]
2	Last Val:M	
3	Last Val:C	
4	Last Val:Y	

3304	Tnr SupplyLimits	
	Set Upper/Lower Limits for Toner Supply. Sets the upper and lower limits for toner supply rate with the fuzzy logic (PID) used as the toner supply control method. **Note**: This SP takes effect only if 1 is selected for SP3301 to enable fuzzy logic as the toner supply method. The machine reads 1) the maximum and minimum settings of this SP and 2) the toner consumption of the output image surface (pixel count data). Then it calculates the maximum and minimum amount of toner for that image. After this is done, toner supply amount will not change during the job, even if Vt or any other measurement determines that more toner is necessary.	
1	Max Supply Rate:K	[0 to 150/1%]
2	Max Supply Rate:M	
3	Max Supply Rate:C	
4	Max Supply Rate:Y	

5	Min Supply Time:K	[0 to 255/1 ms]
6	Min Supply Time:M	
7	Min Supply Time:C	
8	Min Supply Time:Y	

3306	Tnr Supply Coeff	
	Set Toner Supply Coefficient These SPs set the toner supply coefficients for the fuzzy logic method of toner supply control. **Note:** These SP codes operate only when 1 is selected for SP3301.	
1 – 4	Ratio Coeff1:K, M, C, Y	[0 to 4300/1]
21 – 24	P_Vt_Coeff:K, M, C, Y	[0 to 150/1%]
25 – 28	I_Vt_Coeff:K, M, C, Y	
29 – 32	Si:K, M, C, Y	[-5 to 5/0.01]
33 –36	P_Px1_Coeff1:K, M, C, Y	[0 to 150/1%]
37 – 40	P_Px1_Coeff3:K, M, C, Y	[0 to 2.55/0.01]
41– 44	P_Px1_Coeff3:K, M, C, Y	

3310	Next Tnr Supply	
	Displays information about the next toner supply: Amount, Image Area (coverage), Wait Time	
1	K Amount	[0 to 65 535 / 1 mg]
2	M Amount	
3	C Amount	
4	Y Amount	

5	K Image Area	[0 to 65 535 / 1 cm^2]
6	M Image Area	
7	C Image Area	
8	Y Image Area	
9	K Wait Time	[0 to 65 535 / 1 mg]
10	M Wait Time	
11	C Wait Time	
12	Y Wait Time	

3401	TE Detect Set **DFU**
	This SP code switches operation of the toner end sensor off/on. [*0:Detect], [1: No Detect]

3410	Toner Remains	
	These SP codes display the estimated amount of toner remaining.	
1	K	These SP codes display the estimated amount of toner remaining. [0 to 10 / 1] 10 to 2: Full to sufficient toner remaining 2: Estimated near end 1: Measured near end 0: Toner end
2	M	
3	C	
4	Y	
5	K Remain	These SP codes display by weight (mg) the amount of toner remaining. [0 to 99 999 999/ 1 mg]
6	M Remain	
7	C Remain	
8	Y Remain	

9	K % Remain	These SP codes display the percent of toner remaining. [0 to 100/ 1%]
10	M % Remain	
11	C % Remain	
12	Y % Remain	

3411	TNE Detect Disp/Set	
	This SP sets the number of pages to print after the toner near-end alert has been issued.	
1	TNE:K Sheets	Sets toner end to be measured by the number of sheets printed (toner end sensor input is ignored). [0 to 30/ 1 Sheet]
2	TNE:YMC Sheets	
3	K Pg Count	Displays the number of continuous sheets detected for toner end while the toner end sensor input is ignored. [0 to 30/ 1 Sheet]
4	M Pg Count	
5	C Pg Count	
6	Y Pg Count	
7	Disp Timing:K	This setting displays the percentage of toner remaining for toner near end. [0 to 100/ 1%]
8	Disp Timing:M	
9	Disp Timing:C	
10	Disp Timing:Y	

3412	TE Detect:Disp/Set	
	These SP codes determine how many pages print before toner supply reaches toner end.	
1	TE:Sheets:Min:K	These SPs set the minimum number of monochrome and color pages guaranteed to print after the machine has determined near end until the toner-end message is displayed. [0 to 50 / 10/ 1 Sheet]
2	TE:Sheets:Min:Col	

3	TE:Sheets:Max:K	These SPs set the maximum number of pages for monochrome and color guaranteed to print after the machine has determined near end until the toner-end message is displayed. [0 to 2000/ 600/ 1 Sheet]
4	TE:Sheets:Max:Col	
5	TE:Pixel:K	These SP codes set the number of pages for monochrome and color pages to be output based on 100% A4 coverage after the machine has determined near end until the toner-end message is displayed. [0 to 100/ 30/ 1 Sheet]
6	TE:Pixel:Col	
7	K Page Cnt	These SP codes determine for each color how many pages will be output after the machine has determined near end. [0 to 2000/ 0/ 1 Sheet]
8	M Page Cnt	
9	C Page Cnt	
10	Y Page Cnt	
11	K Pixel Cnt	These SP codes display the number of pages for monochrome and color pages to output based on the amount of toner consumed (cm^2) after the machine determined near end. [0 to 1 000 000/ 0/ 1 cm^2]
12	M Pixel Cnt	
13	C Pixel Cnt	
14	Y Pixel Cnt	
15	Page Cnt Stop:Coverage	This SP sets the number of pages to print after the machine has determined near end based on percent of A4 coverage until the toner pump is switched off. [0 to 100/ 0/ 1%]

3501	Select ProCon

	Select Process Control Method The settings of these SP codes modify the operation of the automatic process control self-check. Automatic process control is done at these times: • When the machine is turned on • At the end of the job, if the number of pages since the previous process control, exceeds the value of SP 3551 • Before ACC adjustment • When the developer is initialized with SP3811. For more about process control, see "Process Control" in Section 6.	
1	Recover Min: Col [0 to 2/1] **0: Auto**, 1: Fixed When the machine starts (with the front door closed), the process control self-check begins using as reference bias voltages set with the Group 3 SP codes. The referenced voltages are different, depending on whether "Auto" or "Fixed" is set:	
	Referenced SPs with "Auto" Selected	
	SP3575 001 to 016	Dev DC Control
	SP3576 001 to 016	Chrg DC Control
	SP3577 001 to 004	Chrg AC Control
	SP3581 001 to 008	LD Power Control
	SP3551 001, 002	Procon Int
	SP3554 001	Init ProCon Set
	SP3801 001	DevSetup Execute
	SP3811 001 to 006	DevSetup Execute
	Reference SPs with "Fixed" Selected	
	SP2201 001 to 004	Set DC Charge
	SP2202 001 to 004	Set AC Charge
	SP2211 001 to 004	Set LD Power
	SP2212 001 to 004	Set Dev DC

3	Density Adj Mode	Sets the execution timing of toner density adjustment with the automatic process control self-check. [0 to 3/1] 0: Do not execute, 1: 1st Power On, 2: 1st Power On & Job End
4	ACC Before ProCon	Determines whether process control is executed before a gradation test pattern is printed using the operation panel with: [User Tools]> Maintenance> Auto Color Calibration [0 to 3/2/1] 0:Do not execute 1:Execute Potential Control 2:Execute Potential Control and Toner Density Adjustment
5	DnstyAdjTimes	Sets the upper limit of the loop wherein density is adjusted during process control. Default: 5
6	DevGamma(Env Corrct)	Switches correction of the development gamma adjustment with the readings of the temperature/humidity sensor off and on. Touch either the "OFF" or "ON" button to toggle the setting.
7	DevGamma(Time Corrct)	Switches the timing of the development gamma adjustment during process control off and on. Touch either the "OFF" or "ON" button to toggle the setting.

3511	Poten Tbl:Disp

	Display Potential Table Displays the numbers in the Potential Table selected for process control. The Potential Table is the lookup table that contains the potential target values (Vd, Vb, Vl) for adjustment of the development potential. • Vd: Initial charge applied to the drum by the charge roller. • Vb: Development bias • Vl: Value used to correct the strength of the lasers. A 4-grade pattern is first created on the drum and then transferred to the ITB: • On the drum, the potential sensor uses their readings of this pattern to determine development potential. • On the ITB, the ID sensors use their readings of this pattern to determine the amount of toner coverage necessary. For more about process control, see "Process Control" in Section 6.	
1	Value: K	Displays the current numbers in the Potential Table for each color. [1 to 99/1]
2	Value: M	
3	Value: C	
4	Value: Y	
5	Target: K	Displays the target values for Vd, Vb, Vl after measurements of ambient conditions and compensating for residual charge on the drum (Vr). If the actual development gamma is less than the target development gamma, this SP shows a smaller value than the selected pointer table value. If the actual development gamma is greater than the target development gamma, this SP shows a larger value than the selected pointer table value. [1 to 99/1]
6	Target: M	
7	Target: C	
8	Target: Y	
9	Upper Limit	
10	Lower Limit	

3531	ProCon Target

	Set Target Amount for Process Control This SP sets the value for the maximum coverage to be achieved by the process control self-check. Process control then analyzes the readings of the 4-grade pattern, calculates the potentials required for development gamma and Vk (starting voltage), and then determines the drum charge levels, development biases, and LD power levels necessary to achieve the target coverage. **Note** • This SP can be used to darken printed images. After this SP is changed, process control must be executed manually with SP3820.	
1	Max Tnr Amt:K	[0 to 1/ 0.001 mg/cm^2]
2	Max Tnr Amt:M	
3	Max Tnr Amt:C	
4	Max Tnr Amt:Y	

3540	Image Quality Adjust: Interval	
	Adjusts the interval between image quality adjustments.	
1	During Job	Sets the page interval for image quality adjustment. [0 to 100/30/1 Page]
2	During Standby	Sets the time interval for image quality adjustment while the machine is in standby mode. [0 to 100/10/1 Min.]

3551	Set Procon:Job End
	This SP sets timing of the process control self-check for job end. The process control self-check never interrupts a job to execute, even if it is time for the next self-check.
1	B/W Mode
	This SP sets the page interval for execution of process control at job end for monochrome printing. [0 to 5000/250/1]
2	Color Mode

	This SP sets the page interval for execution of process control at job end for color printing. [0 to 5000/250/1]	
3	Pg Cnt:B&W Mode	Displays the current page interval counts for the execution of process control execution for both monochrome and color printing. [0 to 5000/0/1]
4	Pg CntColor Mode	

3552	Set Procon:Interrupt	
	These SP codes settings determine whether a long print job is interrupted temporarily in order to execute process control. (Normally long print jobs are not interrupted for process control unless these settings are changed.)	
1	B/W Mode	
	Sets the page interval to trigger process control during a long monochrome print job. [0 to 2000/0/ 1 sheet]	
2	Color Mode	
	Sets the page interval to trigger process control during a long color print job. [0 to 1000/0/ 1 sheet]	
3	Pg Cnt:B&W Mode	Displays the current page counts that will interrupt long monochrome or color print jobs in order to execute process control. [0 to 5000/ 0/ 1 sheet]
4	Pg Cnt:Color Mode	

3554	Init ProCon Set
	The machine determines the amount of time elapsed since the drum motors stopped (print end, process control end, etc.) and the amount of change in the temperature and humidity since the last cold start. In order to determine if initial processing control self-check executes, the machine compares: • The time the drum stop last stopped (SP3556-1 to 5: Last Print Date/Time) • The temperature and humidity when the drum last stopped (SP2901-5 to 8) If the difference between temperature and humidity is higher than the temperature/humidity threshold for a cold start, then initial process control self-check executes again.
1	Non-use Time Setting

	Sets the amount of time to elapse for the K drum motor to remain idle after power on. [0 to 1440/360/1 min.]
2	Temperature Range
	Sets the temperature for the K drum motor idle time at power on. [0 to 99/ 10/ 1 degC]
3	Relative Humidity Range
	Sets the relative humidity for the K drum motor idle time at power on. [0 to 99/ 50/ 1 % rh]
4	Absolute Humidity Range
	Sets the absolute humidity for the K drum motor idle time at power on. [0 to 99/ 6 1 g/m^3]

3555	Non-use Time Procon Set
	After the time set with SP3540-2 has elapsed the current temperature and humidity are compared with the temperature and humidity the last time the drum stopped. If the difference is greater than the threshold values set with this SP, initial process control executes.
1	Non-use Time Setting
	Sets the amount of time to elapse from the last time the K drum motor stopped. The reading is updated every 10 minutes. [0 to 1440/360/1 min.]
2	Temperature Range
	Sets the temperature to be compared with the temperature from the last time the K drum motor stopped. The reading is updated every 10 minutes. [0 to 99/ 10/ 1 degC]
3	Relative Humidity Range
	Sets the relative humidity to be compared with the relative humidity from the last time the K drum motor stopped. The reading is updated every 10 minutes. [0 to 99/ 50/ 1 % rh]
4	Absolute Humidity Range

	Sets the absolute humidity to be compared with the relative humidity from the last time the K drum motor stopped. The reading is updated every 10 minutes. [0 to 99/ 6 1 g/m^3]
5	Max Times
	Sets the maximum number of times for these SP codes to execute while the machine remains in standby mode. [0 to 99/ 10/ 1 times]

3556	Latest Print Date Time	
	These SP settings display the date of the most recent print job.	
1	Year	[1 to 12/1/1 year]
2	Month	[1 to 31/1/1 month]
3	Day	[1 to 23/1/1 day]
4	Hour	[1 to 23/1/1 hour]
5	Min.	[1 to 59/1/1 min.]

3561	Dev gamma:Disp/Set	
	Displays the value of development gamma, an indicator of development capacity. In order for the machine to determine the development potential to obtain the target coverage. During processing control the graduated patterns are created first on the drums and then on the ITB. The potential sensors read the development potential, and the ID sensors read the amount of coverage on the ITB. Plotting the development potential on the X axis against coverage on the Y-axis results in the development gamma curve. For more, see "Process Control" in Section 6.	
1-4	Actual Val:K,M,C,Y	
5-8	Target Val:K,M,C,Y	
9-12	Initial Val:K,M,C,Y	
13	Environ Corr:Bk	
14	Environ Corr:Col	
15-18	Time Lapse Corr:K,M,C,Y	

19-22	Tnr Density Corr:K,M,C,Y	
23-26	Toner Use Count:K,M,C,Y	
27-30	TnrDensity:K,M,C,Y	
31-38	Environ Corr 1-8:K	
39-46	Environ Corr 1-8:Col	
47-56	Time Lapse Corr 1-10:K	
57-71	Time Lapse Corr 1-15:Col	

3562	Display Vk	
	Display Vk (Development Start Voltage) Displays Vk, the development start voltage. This development start voltage is used to indicate whether the developer has deteriorated. However, this is only a rough measurement due to other factors: • A low threshold setting for the target development gamma. • Operational variations between machines • Precision of the ID sensor measurements Normal range for Vk: -150V to +150V	
1	K	[-300 to +300/1 V]
2	M	
3	C	
4	Y	

3563	Display Vr
	Display Vr (Residual Potential) Vr is the potential that remains on the surface of the drum after full exposure to the laser. The existence of this residual voltage is used as an indicator to determine the level of deterioration of the drum. Vr becomes larger as the drum deteriorates. Normal range for Vr: -200V to 0V

1	K	[-300 to +300/1 V]
2	M	
3	C	
4	Y	

3571	Display V0	
	Display Vd (Value for Control of Charge Potential) Displays the value for V0, the measure of drum potential on dark areas of the drum before laser exposure. Normal range: -700 V to –500 V	
1	K	[-999 to 0/1 V]
2	M	
3	C	
4	Y	

3572	Display Vdhome	
	Display Vd (Value for Control of Charge Potential) Displays the value for Vdhome, the electrical potential of the drum after a fixed dc bias (dc –700V) is applied by the drum charge roller. Normal range: -700V to –500V	
1	K	[-999 to 0/1 V]
2	M	
3	C	
4	Y	

3573	Target Poten:Vd

	Display Target Potential (VdDisplay) Vd (read by the potential sensor) is the potential of dark areas of a drum before full laser exposure. This SP displays the value of Vd used by processing control to determine the target potential (Vd). The machine performs a calculation using development gamma, Vk and the maximum coverage, and then uses the result to lookup and retrieve the correct voltage from the Potential Table. This retrieved value is used to raise the charge of the charge roller that charges the drums.	
1	K	[-999 to 0/1 V]
2	M	
3	C	
4	Y	

3574	Target Poten:Vl	
	Display Target Potential (VlDisplay) Vl (read by the potential sensor) is the potential of the exposed areas after full laser exposure. This SP displays the value of Vl used by processing control to determine the target potential (Vl). The machine performs a calculation using development gamma, Vk and the maximum coverage, and then uses the result to lookup and retrieve the correct voltage from the Potential Table. This retrieved value is used to raise the input current of the laser diode.	
1	K	[-999 to 0/1 V]
2	M	
3	C	
4	Y	

3575	Dev DC Control
	Display Value for Control of Development DC Displays the development bias that was referenced during processing control and used in the previous jobs (Used if process control is set for Auto with SP3501 001.)

1	Std Spd2:K	[-999 to -200/ 1V]
2	Std Spd2:M	
3	Std Spd2:C	
4	Std Spd2:Y	
5	Std Spd1:K	[-999 to -200/ 1V]
6	Std Spd1:M	
7	Std Spd1:C	
8	Std Spd1:Y	
9	Low Spd2:K	[-999 to -200/ 1V]
10	Low Spd2:M	
11	Low Spd2:C	
12	Low Spd2:Y	
13	Low Spd1:K	[-999 to -200/ 1V]
14	Low Spd1:M	
15	Low Spd1:C	
16	Low Spd1:Y	

3576	Chrg DC Control	
	Displays the value for control of development dc. (Used if process control is set for Auto with SP3501 001.)	
1	Std d2:K	
2	Std d2:M	
3	Std d2:C	
4	Std d2:Y	
5	Std d1:K	
6	Std d1:M	

7	Std d1:C	
8	Std d1:Y	
9	Low d2:K	
10	Low d2:M	
11	Low d2:C	
12	Low d2:Y	
13	Low d1:K	
14	Low d1:M	
15	Low d1:C	
16	Low d1:Y	

3577	Chrg AC Control	
	Displays the ac bias that was referenced during processing control and used in the previous jobs. Used if process control is set for Auto with SP3501 001.	
1	K	[0.5 to 1.5/ 1/ 0.01 mA]
2	M	[1.6 to 3/ 2.2/ 0.01 kV]
3	C	
4	Y	

3581	LD Power Control	
	Displays the LD power that was referenced during processing control and used in the previous jobs. Used if process control is set for Auto with SP3501 001.	
1	K	NorM2&Low2:K
2	M	NorM2&Low2:M
3	C	NorM2&Low2:C
4	Y	NorM2&Low2:Y
5	K	Norm1&Low1:K

6	M	Norm1&Low1:M
7	C	Norm1&Low1:C
8	Y	Norm1&Low1:Y

3701	Tnr Refresh Mode	
	These SP settings determine how the toner refresh mode is activated.	
5	Image Area Thresh:K	Sets the threshold (percentage of coverage) to trigger toner refresh mode. [0 to 25.5/5/0.1%]
6	Image Area Thresh:M	
7	Image Area Thresh:C	
8	Image Area Thresh:Y	
9	Max Pattern Length	Sets the threshold (number of sheets) to trigger toner refresh mode. [0 to 25/25/1 mm]
10	Need Ref Length:K	Displays the amount of fresh toner required. [0 to 65 535/ 0/1 mm]
11	Need Ref Length:M	
12	Need Ref Length:C	
13	Need Ref Length:Y	
14	Interrupt Thresh:K	Sets the threshold for the amount of toner consumption to trigger toner refresh mode. [0 to 65 535/ 300/1 mm]
15	Interrupt Thresh:M	
16	Interrupt Thresh:C	
17	Interrupt Thresh:Y	

3702	Set Expel Dev Mode	
1	Set Expel Dev Mode	Switches toner purging off/on. Default: ON

2	Required Expel Time:K	Displays the length of time required to purge K, M, C, Y toner. [0 to 655.35/ 0/0.01 sec.]
3	Required Expel Time:M	
4	Required Expel Time:C	
5	Required Expel Time:Y	
6	Execution Threshold Value	Sets the time threshold for toner purging. [2 to 255/15/ 1 sec.]
7	Calculated Value:Half-Speed	Sets the time needed to calculate filling toner for half-speed (thick paper). [0 to 655.35/ 31/ 0.01 sec.]

3710	Tnr Density Adj **DFU**	
1	K SuppTime Coeff	
2	M SuppTime Coeff	
3	C SuppTime Coeff	
4	Y SuppTime Coeff	
5	K UseTime Coeff	
6	M UseTime Coeff	
7	C UseTime Coeff	
8	Y UseTime Coeff	

3801	Init TD Sensor

	Execute Developer Setup Do this SP after replacing the developer in one or more of the PCUs when servicing the machine. This SP: • Checks for the presence of developer in the development unit. This ensures that the development unit has been filled. • Initializes TD sensor. (Calibrates Vtcnt). • Calibrates development gamma and calibrates toner density. Also does the MUSIC check and correction. **Note:** Do SP3811 after drum and cleaning blade replacement. SP3811 should always be done: • During the machine installation procedure after the developer and toner have been installed, and • During machine maintenance after a drum and cleaning blade have been replaced. In both cases, SP3811 prevents the blade from scouring a dry drum.	
1	All Colors	
2	Col	
3	K	
4	M	
5	C	
6	Y	
7	Dev Auger Time	

3802	TD Sn Init OK?

	This SP displays the results of the TD sensor initialization with SP3801 001 to 006. The machine returns the status of the previous initialization with numbers, 1 digit for each PCU. The numbers are read in order as "K, M, C, Y". Four numbers are used to indicate the status of the execution. 1: OK (success) 2: Cancelled (door opened, etc.) 4: Not executed (not selected for execution; this is not an error) 9: Vtcnt abnormal. Vtcnt (TD sensor control voltage) could not be adjusted to within 2.5 ±0.2V. The machine issued a TD sensor error for the PCU where there is a problem (SC372 to SC375). **Notel**: The "1111" display is read from left to right: KMCY.

3810	ClngInitSetExe	
	These SPs should be executed after replacement of the drum cleaning roller or drum cleaning blade. This SP: 1. Checks and confirms that each PCU is installed and filled with developer. 2. Switches on toner supply and sends toner to the sub hopper of each PCU. 3. Sends toner to the PCU to coat the drum with toner. This prevents the cleaning blades from bending and scouring the drums. **Note**: This SP should be done after replacing the drum cleaning roller or drum cleaning blade.	
1	All Colors	Y, M, C, K
2	Col	Excludes Black (Y, M, C only
3	K	
4	M	
5	C	
6	Y	
7	A3 Page Cover	Sets the number of sheets for A3 coverage to prevent scouring of the OPC drum. [0 to 100/ 3/ 1 sheet]

3811	DevSetup Execute	
	Execute Developer Setup Do this SP during the installation procedure after the developer and toner cartridges have been installed in the machine, or after the drum and cleaning blade have been replaced. This SP: 1. Checks and confirms each PCU is installed and filled with developer. 2. Switches on toner supply and sends toner to the sub hopper of each PCU. 3. Sends toner to the PCU to coat the drum with toner. This prevents the cleaning blades from bending and scouring the drums. 4. Initializes the TD sensors. 5. Starts the process control self-check to set the target for development gamma and adjusts toner density. 6. Starts the MUSIC sequence to check and correct color image offset. **Note:** • After doing SP3811, always do SP3812 to confirm that SP3811 executed correctly. • SP3811 001 is done only at machine installation, or after a drum and cleaning blade has been replaced in the PCU. • SP3801 001 to 006 is done after developer replacement for one or more PCUs.	
1	Devr Setup:All	[0 to 1/1]
2	Devr Setup:Col	
3	K	
4	M	
5	C	
6	Y	

3812	DevSetup Execute
	Display Result of Developer Setup Execution Do this SP to confirm that SP3811 executed correctly. After execution the machine displays a "1" to confirm that SP3811 executed correctly for each PCU. The "1111" display indicates the return value for each PCU: K, M, C, Y **Note!**: The "1111" display is read from left to right: KMCY.

3813	Used Tnr Mode Exe	
	Used Toner Mode Execute When the machine is printing in full-color mode, the waste toner in the PCUs is transported to the waste toner bottle for the amount of time specified with SP3813 003 below.	
1	All Colors	[0 to 1/1] 0:Off, 1: On
2	K Only	
3	Set Op. Time	[10 to 240/1 sec.]

3814	Execute Developer Fill	
	These SP codes fill the PCUs with developer from the developer bottle. After doing one or more of these SP codes, always do SP3815 to confirm that the PCUs filled successfully.	
1	All (KMCY)	
2	MCY Only	
3	K	
4	M	
5	C	
6	Y	

3815	Developer Fill:Disp Result
	Always execute this SP code to confirm successful execution of SP3814. **Note!**: The "1111" display is read from left to right: KMCY.

3816	Developer Fill:Set **DFU**	
1	Belt Form Start Time:A	
2	Developer Fill Time:B	
3	Belt Length:C	

3817	Developer Filling: Admission

	When SP3814 (Execute Developer Fill) is executed, the process control self-check, but the MUSIC adjustment are disabled until after one of the SP codes has been executed after developer filling: • SP3811 (Developer Setup) • SP3801 (TD Sensor Initialization) This is the condition normally in effect. (SP codes 1 to 4 will display "1").	
1	K	Display the permission status of each PCU for developer filling after SP3814 was executed. 1: Developer filling enabled. No process control self-check, no MUSIC adjustment until SP3811 or SP3801 have been execute. 0: Developer filling disabled
2	M	
3	C	
4	Y	
5	Clear	Forcibly resets the status to "0" for all.

3820	Manual ProCon	
	Use these SP codes to execute process control manually. You must do SP3820 to enable any values you change with SP3531 (Procon Target). Use SP3561 to display the results of SP3820 execution. **Note**: • Process control is disabled during machine warm-up. • If you execute this SP code during machine warm-up, "Completed" is displayed immediately. However, the manual process control setting was not actually done.	
1	Normal ProCon	Does potential control only.
2	Exe Density Adj	Does potential control and toner density adjustment.
3	ACC RunTime ProCon	Executes process control again just before ACC executes.

3821	ProCon OK?		
	Use this SP to display the history of process control executions. These SP codes are used to troubleshoot processing control. [0 to 99999999/1]		
1	History:Last	6	History:Last 6
2	History:Last 2	7	History:Last 7

3	History:Last 3	8	History:Last 8
4	History:Last 4	9	History:Last 9
5	History:Last 5	10	History:Last 10

3900	RsetProConSP
	Reset All Process Control SP Codes Press [EXECUTE] to reset all process control related SP codes to their default values.

3910	Forbid LD Write **DFU**

3920	Recovery Operation Request **DFU**

3930	Sheet Threshold Disp
	This setting determines sets the threshold to determine when the machine switches from FC to BW printing during a long print job. [0 to 99/1/1] 0: ITB does not separate from the CMY_PCUs if even one page with B&W images comes during full-color printing. 1: ITB separates from the CMY_PCUs if even one page with B&W images comes during full-color printing. 2 to 99: Releases and separates the ITB from the CMY_PCUs only after the specified number of continuous B&W pages have printed (3 to 99).

Group 4000

4008	Sub Scan Magnification Adj
	Adjusts the sub-scan magnification by changing the scanner motor speed. [-10 to +10/0.1%]

4010	Sub Scan Registration Adj
	Adjusts the leading edge registration by changing the scanning start timing in the sub-scan direction. [-30 to +30/0.1 mm]

4011	Main Scan Reg
	Adjusts the side-to-side registration by changing the scanning start timing in the main scan direction. **Note:** This adjustment is done for the ADF with SP6006 (ADF Reg. Adj.). [-25 to +25/0.1 mm]

4012	Set Scale Mask	
	These settings adjust the margins (erase margins) of the scanned area on the sheet. The leading, trailing, right, and left margins can be set independently.	
1	Book: Sub: LEdge	[0 to 3/0.1 mm]
2	Book: Sub: TEdge	
3	Book: Main: LEdge (Rear)	
4	Book: Main: TEdge (Front)	
5	ADF: Sub: LEdge	
7	ADF: Main: LEdge (Rear)	
8	ADF: Main: Edge (Front)	

4013	Scanner Free Run

	Free Run: Scanner Performs the scanner free run with the exposure lamp on or off for full-color, full size (A3 or DLT).	
1	Book Mode: Lamp Off	[0 to 1/1] 0: Off, 1: On
2	Book Mode: Lamp On	

4014	Scan **DFU**
	Touch [Execute] to execute one scanning operation with the scanner at the home position.

4020	DF Dust Check
	This feature checks the ADF exposure glass for dust that can cause black lines in copies. If dust is detected, a message is displayed, but the process does not stop. [0 to 1/ 0 / 1] 0: OFF, 1: ON
1	Dust Detect: On/Off
	Issues a warning if there is dust on the narrow scanning glass of the ADF when the original size is detected before a job starts. This function can detect dust on the white plate above the scanning glass, as well as dust on the glass. Sensitivity of the level of detection is adjusted with SP4020-002. [0 to 8/ 4 / 1] 0: Off. No dust warning. 0> 4: Lower > Normal sensitivity 4> 8: Normal > High sensitivity **Note:** Always clean the ADF scanning glass and the white plate above the scanning glass before you switch this setting on.

2	Dust Detect: Lvl
	Adjusts the sensitivity for dust detection on the ADF scanning glass. This SP is available only after SP4020-001 is switched on. [0 to 8/1] • If you see black streaks in copies when no warning has been issued, raise the setting to increase the level of sensitivity. • If warnings are issued when you see no black streaks in copies, lower the setting. • Dust that triggers a warning could move be removed from the glass by the originals in the feed path. If the dust is removed by passing originals, this is not detected and the warning remains on.
3	Lvl Dust Reject: Lvl
	Sets the level for vertical line correction (the black vertical lines caused by dust on the ADF exposure glass). [0 to 4/ 0 / 1] 0: No vertical line correction. 1-4: Enables and sets the level for vertical line correction. If you select a higher number, this can decrease unwanted lines caused by dust but can also erase thin vertical lines of the original.
11	Dust Detect Level: Rear
	Adjusts the sensitivity for dust detection on the ADF scanning glass. This SP is available only after SP4020-001 is switched on. [0 to 1/ 0 / 1] • If you see black streaks in copies when no warning has been issued, raise the setting to increase the level of sensitivity. • If warnings are issued when you see no black streaks in copies, lower the setting. Dust that triggers a warning could move be removed from the glass by the originals in the feed path. If the dust is removed by passing originals, this is not detected and the warning remains on.
12	Correction Level: Rear

	Sets the level for vertical line correction (the black vertical lines caused by dust on the ADF exposure glass). [0 to 8/ 4 / 1] 0: No vertical line correction. 1-8: Enables and sets the level for vertical line correction. If you select a higher number, this can decrease the unwanted lines caused by dust but can also erase thin vertical lines of the original.

4301	Operation Check APS Sensor
	This SP confirms that the APS sensors are operating correctly. Place a sheet of paper on the exposure glass, then execute this SP code. For example, and A3 sheets returns the display **1111 1111** to indicate that all sensors are activated and operating normally. **Note**: Only the first 5 bits are used: Bit 0: APS Sensor 1 Bit 1: APS Sensor 2 Bit 2: APS Sensor 3 Bit 3, APS Sensor 4 Bit 4: APS Sensor 5

4303	Min Size for APS
	Sets the minimum size that the will be detected by APS [0 to 2/1] [*0: Unknown Document Size] [1 A5-Lengthwise (HLT Lengthwise] [2 A5 Sideways HLT Sideways]

4305	8K/16K Detection
	This SP enables the machine to recognize 8K/16K size paper automatically. [*0: Normal] [1: A4-Sideways LT-Lengthwise] [2: A4-Lengthwise LT-Sideways] [3: 8KAI, 16 KAI]

4400	Org Edge Mask	
	This SP sets the mask area to remove shadows when scanning originals from the exposure glass in Book mode. **Note:** "LE" denotes "leading edge" and "TE" denotes "trailing edge".	
1	Book:Sub:LEdge	[0 to 3/0/0.1 mm]
2	Book:Sub:TEdge	
3	Book:Main:LEdge	
4	Book:Main:TEdge	
5	ADF: Sub: LEdge	[0 to 3/2/0.1 mm]
7	ADF: Main: LEdge	[0 to 3/0/0.1 mm]
8	ADF: Main: TEdge	

4417	IPU Test Pattern
	Use this SP to select the IPU test pattern to print.

		Test Pattern [0 to 24/1]		
	0	Scanned Image	13	Grid Pattern CMYK
	1	Gradation Main Scan A	14	Color Patch CMYK
	2	Gradation Main Scan B	15	Gray Pattern (1)
	3	Gradation Main Scan C	16	Gray Pattern (2)
	4	Gradation Main Scan D	17	Gray Pattern (3)
	5	Gradation Sub Scan 1	18	Shading Pattern
	6	Grid Pattern	19	Thin Line Pattern
	7	Slant Grid Pattern	20	Scanned + Grid Pattern
	8	Gradation RGBCMYK	21	Scanned + Grayscale
	9	UCR Pattern	22	Scanned + Color Patch
	10	Color Patch 16 (1)	23	Scanned + Slant Grid C
	11	Color Patch 16 (2)	24	Scanned + Slant Grid D
	12	Color Patch 16 64		

4429	Select Copy Data Security	
	[0 to 3/3/1]	
1	Copying	
2	Scanning	
3	Fax Operation	

4450	Scan Image Pass Selection
	These SP codes switch the operation of black reduction and shading correction off/on.
1	Black Subtraction ON/OFF
	Switches the black reduction function in scanner data off/on. [0 to 1 / 1/ 1]
2	Shading Correction ON/OFF

	Switches shading reduction function in scanner data off/on. [0 to 1 / 1/ 1]

4460	Digital AE **DFU**	
	These SP codes set parameters for the AE function.	
1	Low Limit Value	This setting determines the lower limit for level of background to be skipped for the AE function. The higher the setting, the more background will be ignored. [0 to 1023/ 392/ 1]
2	Background Level	This setting determines the level of background to be output for the AE function. [0 to 1023/888/1]

4490	FL Correction ON/OFF
	This SP switches FL correction on/off. 0 (OFF): The linear settings of the gamma correction table are used to correct differences in FL. 1 (ON): Generates a gamma correction table and writes the settings to Ri20 using the values of SP4492 set at the factory.
1	RED
2	GREEN
3	BLUE

4501	ACC Target Den(sity)
	This SP sets the target density for the ACC adjustment for machines connected with the Copier Connection Kit. For more, see "Troubleshooting – Special Procedures – Color Adjustment for Connected Copiers" in the Venus-C1 (B132/B181/B200) Service Manual.

1	Copy:K:Text	[0 to 50/1]
2	Copy:C:Text	
3	Copy:M:Text	
4	Copy:Y:Text	
5	Copy:K:Photo	
6	Copy:C:Photo	
7	Copy:M:Photo	
8	Copy:Y:Photo	

4505	ACC Cor:Bright	
	Sets correction for bright areas for ACC correction.	
1 to 4	Master:K, M, C, Y	[-128 to +128/1]
5 to 8	Slave:K, M, C, Y	

4506	ACC Cor:Dark	
	Sets correction for dark areas for ACC correction.	
1 to 4	Master:K, M, C, Y	[-128 to +128/1]
5 to 8	Slave:K, M, C, Y	

4540	Print Coverage	
	This SP corrects printer coverage of 12 hues (RY, YR, YG, etc. x 4 Colors (K, C, M, Y) for a total of 48 parameters.	
1	RY Phase: Option	[0 to 255 / 0 / 1]
2-4	RY Phase: R, G, B	[-256 to 255 / 0 / 1]
5	YR Phase: Option	[0 to 255 / 0 / 1]
6-8	YR Phase: R, G, B	[-256 to 255 / 0 / 1]
9	YR Phase: G	[0 to 255 / 0 / 1]

10-12	YR Phase: R, G, B	[-256 to 255 / 0 / 1]
13	GY Phase: Option	[0 to 255 / 0 / 1]
14-16	GY Phase: R, G, B	[-256 to 255 / 0 / 1]
17	GC Phase: Option	[0 to 255 / 0 / 1]
18-120	GC Phase: R, G, B	[-256 to 255 / 0 / 1]
21	CG Phase: Option	[0 to 255 / 0 / 1]
22-24	CG Phase: R, G, B	[-256 to 255 / 0 / 1]
25	CB Phase: Option	[0 to 255 / 0 / 1]
26-28	CB Phase: R, G, B	[-256 to 255 / 0 / 1]
29	BC Phase: Option	[0 to 255 / 0 / 1]
30-32	BC Phase: R, G, B	[-256 to 255 / 0 / 1]
33	BM Phase: Option	[0 to 255 / 0 / 1]
34-36	BM Phase: R, G, B	[-256 to 255 / 0 / 1]
37	MB Phase: Option	[0 to 255 / 0 / 1]
38-40	MB Phase: R, G, B	[-256 to 255 / 0 / 1]
41	MR Phase: Option	[0 to 255 / 0 / 1]
42-44	MR Phase: R, G, B	[-256 to 255 / 0 / 1]
45	RM Phase: Option	[0 to 255 / 0 / 1]
46-48	RM Phase: R, G, B	[-256 to 255 / 0 / 1]
49	WHITE: Option	[0 to 255 / 0 / 1]
50-52	WHITE: R, G, B	[-256 to 255 / 0 / 1]
53	BLACK: Option	[0 to 255 / 0 / 1]
54-56	BLACK: R, G, B	[-256 to 255 / 0 / 1]

4550	Scan Apli:Txt/Print
4551	Scan Apli:Txt

4552	Scan Apli:Txt Dropout
4553	Scan Apli:Txt/Photo
4554	Scan Apli:Photo
4565	Scan Apli:GrayScale
4570	Scan Apli:Col Txt/Photo
4571	Scan Apli:Col Gloss Photo
4572	Scan Apli:AutoCol
4580	Fax Apli:Txt/Chart
4581	Fax Apli:Txt
4582	Fax Apli:Txt/Photo
4583	Fax Apli:Photo
4584	Fax Apli:Original 1
4585	Fax Apli:Original 2
5	MTF: 0(Off) 1-15 (Weak-Strong)
	Sets the MTF level (Modulation Transfer Function) designed to improve image contrast. Set higher for stronger effect, lower for weaker effect. [0 to 15/1]
6	Smoothing: 0(x1) 1-7 (Weak-Strong)
	Use to remove "jaggies" if they appear. Set higher for smoother. [0 to 7/1]
7	Brightness: 1-255
	Set higher for darker, set lower for lighter. [1 to 255/1]
8	Contrast: 1-255
	Set higher for more contrast, set lower for less contrast. [1 to 255/1]
9	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)

	Use to remove individual dots in the background if they appear. Set higher for removal of more background. [0 to 7/1]

4600	Get ID
	These SP codes display the readings of four ID codes read during automatic adjustment of the SBU every time the machine is turned on. An incorrect ID reading SC144.
1	SBU
	Displays the ID code (1-byte hexadecimal) read for the SBU . [0 to 255 / 0 / 1]
2	GASBU-N
	Displays the ID code (1-byte hexadecimal) read for the GASBU-N . [0 to 255 / 0 / 1]
3	VSP_F
	Displays the ID code (1-byte hexadecimal) read for the VSP5100_F . [0 to 255 / 0 / 1]
4	VSP_L
	Displays the ID code (1-byte hexadecimal) read for the VSP5100_. [0 to 255 / 0 / 1]

4602	Scanner Memory Access **DFU**

4609	Gray Balance Adj Value R **DFU**
4610	Gray Balance Adj Value G **DFU**
4611	Gray Balance Adj Value B **DFU**
	These SP codes display the reference voltages stored in NVRAM at the factory for Red, Green, and Blue before the machine was shipped. The SBU acquires these settings every time the machine is switched on.
1	B: Book Adj Value [0 to 1023 / 0 / 1 Step]

2	B: DF Adj Value [0 to 255 / 0 / 1 Step]

4623	Black Level Adj Value **DFU**	
1	R:FE	[0 to 163838 / 0 /1]
2	R:FO	
3	R:LE	
4	R:LO	

4624	Black Level Adj Value **DFU**	
1	G:FE	[0 to 163838 / 0 /1]
2	G:FO	
3	G:LE	
4	G:LO	

4625	Black Level Adj Value **DFU**	
1	B:FE	[0 to 163838 / 0 /1]
2	B:FO	
3	B:LE	
4	B:LO	

4628	Gain Rough Adj. Value **DFU**	
1	R:F	[0 to 7 / 0 / 1]
2	R:L	

4629	Gain Rough Adj. Value **DFU**	
1	G:F	[0 to 7 / 0 / 1]
2	G:L	

4630	Gain Rough Adj. Value **DFU**	
1	B:F	[0 to 7 / 0 / 1]
2	B:L	

4631	Gain Fine Adj Value: **DFU**	
	When switched on, this SP displays the current range for the E (EVEN) or O (ODD) in the ASCI on the SBU after white level adjustment every time the machine is switched on. [0 to 1023 / 0 / 1 digit]	
1	R:FE	
2	R:FO	
3	R:LE	
4	R:LO	

4632	Gain Adj Fine Value **DFU**	
	When switched on, this SP displays the current range for E (EVEN) or O (ODD) gain of GREEN or B/W in the ASCI on the SBU after white level adjustment every time the machine is switched on. [0 to 1023 / 0 / 1 digit]	
1	G:FE	
2	G:FO	
3	G:LE	
4	G:LO	

4633	Gain Fine Adj Value:B **DFU**	
	When switched on, this SP displays the current range for E (EVEN) or O (ODD) gain of GREEN or B/W in the ASCI on the SBU after white level adjustment every time the machine is switched on. [0 to 1023 / 0 / 1 digit]	
1	B:FE	

2	B:FO	
3	B:LE	
4	B:LO	

4635	SSCG Noise Cancel **DFU**	
	Switches SSCG noise cancellation on/off. 0: Off 1: On	
1	Correction ON/OFF	[0 to 1 / 1 / 1]
2	Adj ON/OFF	[0 to 1 / 1 / 1]

4636	SSCG Correction **DFU**	
1	Execution	[0 1 / 0 / 0]
2	Error Flag	[0 to 2 / 0 / 1] 0: Normal end 1: End during update 2: Do not apply correction
3	SSCG Result Apply Execution	[0 to 2 / 0 / 1]

4637	SSCG Noise Cancel Correction **DFU**	
1	R:FE	[0 to 255 / 128 / 1 digit]
2	R:FO	
3	G:FE	
4	G:FO	
5	B:FE	
6	B:FO	
7	R:LE	
8	R:LO	

9	G:LE	
10	G:LO	
11	B:LE	
12	B:LO	

4638	Nose Cancel Correction **DFU**	
1	Previous:R:FE	[0 to 255 / 128 / 1 digit]
2	Previous:R:FO	
3	Previous:G:FE	
4	Previous:G:FO	
5	Previous:B:FE	
6	Previous:B:FO	
7	Previous:R:LE	
8	Previous:R:LO	
9	Previous:G:LE	
10	Previous:G:LO	
11	Previous:B:LE	
12	Previous:B:LO	

4639	Nose Cancel Correction **DFU**	
1	Factory :R:FE	[0 to 255 / 128 / 1 digit]
2	Factory :R:FO	
3	Factory :G:FE	
4	Factory :G:FO	
5	Factory :B:FE	
6	Factory :B:FO	
7	Factory :R:LE	

8	Factory :R:LO	
9	Factory :G:LE	
10	Factory :G:LO	
11	Factory :B:LE	
12	Factory :B:LO	

4640	Amplitude at Adj **DFU**	
1	Before Adj:R:FE	[0 to 1023/ 0 / 1]
2	Before Adj:R:FO	
3	Before Adj:G:FE	
4	Before Adj:G:FO	
5	Before Adj:B:FE	
6	Before Adj:B:FO	
7	Before Adj:R:LE	
8	Before Adj:R:LO	
9	Before Adj:G:LE	
10	Before Adj:G:LO	
11	Before Adj:B:LE	
12	Before Adj:B:LO	
13	After Adj:R:FE	
14	After Adj:R:FO	
15	After Adj:G:FE	
16	After Adj:G:FO	
17	After Adj:B:FE	
18	After Adj:B:FO	
19	After Adj:R:LE	

20	After Adj:R:LO	
21	After Adj:G:LE	
22	After Adj:G:LO	
23	After Adj:B:LE	
24	After Adj:B:LO	

4646	Scan Adjust Error Flag **DFU**	
1	White level:F	[0 to 65535 / 0 / 0]
2	White level:L	
3	Black level:F	[0 to 255 / 0 / 0]
4	Black level:L	
5	FL Correction	

4647	Scanner Hardware Error Flag **DFU**
	[0 to 1023 / 0 / 1]

4654	Black Level Adj Value **DFU**	
1	Previous: R: FE	[0 to 16383 / 0 / 1]
2	Previous: R: FO	
3	Previous: R: LE	
4	Previous: R: LO	

4655	Black Level Adj Value **DFU**	
1	Previous:G:FE	[0 to 16383 / 0 / 1]
2	Previous:G:FO	
3	Previous:G:LE	
4	Previous:G:LO	

4656	Black Level Adj Value **DFU**	
1	Previous: B: FE	[0 to 16383 / 0 / 1]
2	Previous: B: FO	
3	Previous: B: LE	
4	Previous: B: LO	

4658	Gain Rough Adj Value **DFU**	
1	Previous: R: F	[0 to 7 / 0 / 1 digit]
2	Previous: R: L	

4659	Gain Rough Adj Value **DFU**	
1	Previous:G:F	[0 to 7 / 0 / 1 digit]
2	Previous:G:L	

4660	Gain Rough Adj Value **DFU**	
1	Previous: B:F	[0 to 7 / 0 / 1 digit]
2	Previous: B:L	

4661	Digital Gain Adj Value **DFU**	
1	Previous: R: FE	[0 to 1023 / 0 / 1 digit]
2	Previous: R: FO	
3	Previous: R: LE	
4	Previous: R: LO	

4662	Digital Gain Adj Value **DFU**	
1	Previous:G:FE	[0 to 1023 / 0 / 1 digit]
2	Previous:G:FO	
3	Previous:G:LE	

4	Previous:G:LO	

4663	Digital Gain Adj Value **DFU**	
1	Previous:B:FE	[0 to 1023 / 0 / 1 digit]
2	Previous:B:FO	
3	Previous:B:LE	
4	Previous:B:LO	

4673	Black Level Adj Value **DFU**	
1	Factory: R: FE	[0 to 16383 / 0 / 1 digit]
2	Factory: R: FO	
3	Factory: R: LE	
4	Factory: R: LO	

4674	Black Level Adj Value **DFU**	
1	Factory:G:FE	[0 to 16383 / 0 / 1 digit]
2	Factory:G:FO	
3	Factory:G:LE	
4	Factory:G:LO	

4675	Black Level Adj Value **DFU**	
1	Factory:B:FE	[0 to 16383 / 0 / 1 digit]
2	Factory:B:FO	
3	Factory:B:LE	
4	Factory:B:LO	

4677	Gain Rough Adj Value: R **DFU**
4678	Gain Rough vAdj Value: G **DFU**

4679	Gain Rough Adj Value: B **DFU**

4680	Gain Fine Adj Value: R **DFU**
4681	Gain Fine Adj Value: G **DFU**
4682	Gain Fine Adj Value: B **DFU**
	When switched on, these SP codes display the settings done at the factory for Red (Green, Blue) O (ODD) and E (EVEN) gain in the ASIC on the SBU after white level adjustment every time the machine is switched on.

4690	White Level Peak Data:R **DFU**
4691	White Level Peak Data:G **DFU**
4692	White Level Peak Data: B **DFU**
	When switched on, these SP codes display E (EVEN) or O (ODD) for the white level peak Red (Green, Blue) data after white level detection (AGC) after the machine is switched on.

4693	Black Level Data:R **DFU**
4694	Black Level Data:G **DFU**
4695	Black Level Data: B **DFU**
	When switched on, these SP codes display E (EVEN) or O (ODD) for the black level check done in the SBU for RED after the machine is switched on.

4699	Test Pattern		
	Selects the scan test pattern.		
1	Select Pattern: SBU F		[0 to 4 / 0 / 1]
	0	Normal Image Output	
	1	Fixed Value Output	
	2	Main Scan Gradation	
	3	Sub Scan Gradation	
	4	Grid Pattern	

2	Output Level: SBU F		[0 to 1023/ 512 / 1]
3	Select Pattern: SBU L		[0 to 4 / 0 / 1]
	0	Normal Image Output	
	1	Fixed Value Output	
	2	Main Scan Gradation	
	3	Sub Scan Gradation	
	4	Grid Pattern	
4	Output Level: SBU L		[0 to 1023/ 512 / 1]

4700	CIS ID Display
	Reads and displays the CIS hexadecimal ID (Marble Register) when a CIS communication error is detected.

4709	GB Chart Level R **DFU**
4710	GB Chart Level G **DFU**
4711	GB Chart Level B **DFU**
4712	GB Adj Value R **DFU**
4713	GB Adj Value G **DFU**
4714	GB Adj Value B **DFU**
4745	Image Level Error Flag **DFU**
4746	GB Adj Error Flag **DFU**

4747	CIS Hard Error Flag
	Reads and displays CIS hard errors. [0 to 7 / 0 / 1] 0: Opal register read error flag 1: Marble register rear error flag 2: Marble boot error flag

4748	Main Scan White Level Ave: R	
1	Leading Edge	[0 to 255 / 0 / 1]
2	Trailing Edge	

4749	Main Scan White Level Ave: G	
1	Leading Edge	[0 to 255 / 0 / 1]
2	Trailing Edge	

4750	Main Scan White Level Ave: B	
1	Leading Edge	[0 to 255 / 0 / 1]
2	Trailing Edge	

4784	White Level Peak Range: R **DFU**
4785	White Level Peak Range: G **DFU**
4786	White Level Peak Range: B **DFU**
4787	White Level Peak Data: R **DFU**
4788	White Level Peak Data: G **DFU**
4789	White Level Peak Data: B **DFU**
4790	White Level Peak Data: R **DFU**
4791	White Level Peak Data: G **DFU**
4792	White Level Peak Data: B **DFU**

4793	Black Level Data R **DFU**	
4794	Black Level Data G **DFU**	
4795	Black Level Data B **DFU**	
1 to 24	Chip1 to Chip 24	[0 to 255 / 0 / 1 digit]

4796	Low Density Color Adj **DFU**

1	Front Side	[0 to 1 / 0 / 1]
2	Rear Side	

4797	Rear Side Digital: AE **DFU**	
1	Low Limit Setting	[0 to 1023/ 364 / 1]
2	Background Erase Level	[512 to 1535/ 972 / 1]

4798	LED Duty **DFU**
	[0 to 65535 / 0 / 1

4799	CIS Test Pattern **DFU**	
1	Select Pattern	[0 to 4 / 0 / 1]
2	Set Output Level	

4802	Scanner Free Run	
	This SP sets the scanner in the free run mode for testing. The free run can be set with the exposure lamp off or on.	
1	DF mode :Lamp Off	Touch [OFF] or [ON]
2	DF mode :Lamp On	

4804	Home Position Operation
	Touch [Execute] to do the home position operation once.

4805	Scanner Carriage Retraction Operation **DFU**
	[0 to 1 / 0 / 1]

4902	Disp ACC Data
	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.

1	R_DATA1	Photo C Patch Level 1 (8-bit)	[0 to 255/1]
2	G_DATA1	Photo M Patch Level 1 (8-bit)	
3	B_DATA1	Photo Y Patch Level 1 (8-bit)	
4	R_DATA2	Photo C Patch Level 17 (8-bit)	
5	G_DATA2	Photo M Patch Level 17 (8-bit)	
6	B_DATA2	Photo Y Patch Level 17 (8-bit)	

4905	Select Gradation Level
	This SP changes the threshold parameters of error diffusion. [0 to 255/1]

4918	Man Gamma Adj **DFU**

4948	ACC Execute Time:Present **DFU**	
4949	ACC Execute Time:Previous **DFU**	
1	yy/mm/dd	
2	hh/mm/ss	

4954	Read/Restore Std	
	Use this SP to calibrate the scanner gamma on each machine connected with the Copier Connection Kit.	
1	Read New Chart	Reads the "Standard Color Test Chart" to calibrate the scanner gamma curve for two machines connected with the Copier Connection Kit. Do this SP with the test chart on each connected machine.
2	Recall Prev Chart	Restores the scanner gamma to the previous value (not the factory setting).
4	Set Std Chart	

4958	Read/Restore Std: Rear **DFU**	
1	Read New Chart	[0 to 1 / 0 / 1]
2	Recall Prev Chart	
4	Set Std Chart	

4991	IPU Image Path Selection	
	Use this SP to use the 10-key pad to enter the number to determine the image path.	
	IPU	[0 to 14/1]
	0	DFID input RGB images (upper 8 bits)
	1	Synchronous RGB images in DFID
	2	Data with shading correction on
	3	Data with shading correction off
	4	Data before black offset correction
	5	Data after black offset correction
	6	Shading data
	7	Test pattern data (grayscale)
	8	RGB image after line interval correction
	9	RGB image after dot correction and pre-gamma
	10	RGB image after vertiial line correction
	11	RGB image after scanner gamma correction
	12	RTB image after filtering with MTF
	13	RTB image after ADS
	14	RGB image after color processing

4993	High Light Correction **DFU**
1	Sensitivity Selection
2	Range Selection

4994	Adj Txt/Photo Recognition Level **DFU**

4996	White Paper Detection Level **DFU**

Group 5000

5024	mm/inch Display Selection
	Selects the unit of measurement. After selection, turn the main power switch off and on. [0 to 1/1] 0: mm 1: inch

5037	Status Lamp Mode **Not Used**

5040	Custom Size: Main Scan
	This SP adjusts the width (main scan direction) for custom size paper used with the LCIT D350. [100 to 330.2/**297**/0.1 mm]

5041	Custom Size: Sub Scan
	This SP adjusts the length (sub scan direction) for custom size paper used with the LCIT D350. [139.7 to 482.6/**210**/0.1 mm]

5045	Accounting Counter
	Selects the counting method if the meter charge mode is enabled. **Note**: You can change the setting only one time. [0 to 1/ 1]
	0: Development counter. Shows the total counts for color (Y,M,C) and black (K). 1: Paper counter. Shows the total page counts for: Color Total, Black Total, Color Copies, Black Copies, Color Prints, Black Prints.

5047	Reverse Paper Display

	Determines whether the tray loaded with paper printed on one side is displayed. [0 to 1/1]
	0: Not displayed 1: Displayed

5051	Toner Refill Detection Display **Japan Only**

5055	Display IP Address
	Switches the IP address display on the operation panel on/off. OFF: IP address not displayed on operation panel ON: IP address displayed on operation panel.

5056	Coverage Counter Display
	Display or does not display the coverage counter on the LCD. [0 to 1 / **0** / 1] 0: Not displayed, 1: Displayed

5061	Toner Remaining Icon Display
	This SP switches the toner remaining icon on/off. Default: Off

5062	Part Replacement Alert Display
	Enables/disables the appearance of the PM parts in the yield list on the operation panel. PM parts can be selected independently for display. [ON] OFF **Note**: SP5066 must be set to "1: Display".
1	#K PCU
2	K PCU Cleaning Blade
3	K PCU Lube Bar
4	K PCU Lube App/Cleaning Blade
5	K PCU Developer

6	K PCU Drum
7	Charge Corona: Ass'y
8	K PCU Charge Grid Wire
9	K PCU Idle Gear
10	K PCU Lube App/Clng Brush
11	K PCU Toner Cleaning Brush
12	K PCU Joint
13	#M PCU
14	M PCU Cleaning Blade
15	M PCU Lube Bar
16	M PCU Lube App/Clng Blade
17	M PCU Developer
18	M PCU Drum
19	M PCU Charge Roller Unit
20	M PCU Idle Gear
21	M PCU Lube App/Clng Brush
22	M PCU Toner Cleaning Brush
23	M PCU Joint
24	#C PCU
25	C PCU Cleaning Blade
26	C PCU Lube Bar
27	C PCU Lube App/Clng Blade
28	C PCU Developer
29	C PCU Drum
30	C PCU Charge Roller Unit
31	C PCU Idle Gear

32	C PCU Lube App/Clng Brush
33	C PCU Toner Cleaning Brush
34	C PCU Joint
35	#Y PCU
36	Y PCU Cleaning Blade
37	Y PCU Lube Bar
38	Y PCU Lube App/Clng Blade
40	Y PCU Developer
41	Y PCU Charge Roller Unit
42	Y PCU Idle Gear
43	Y PCU Lube App/Clng Brush
44	Y PCU Toner Cleaning Brush
45	Y PCU Joint
46	#ITB
47	#ITB Cleaning Unit
48	ITB Cleaning Blade
49	ITB Lube Bar
50	Lube Application Blade
51	#PTR
52	PTR Blade
53	PTR
54	Discharge Roller
55	PTR Lube Bar
56	#Fusing Unit
57	Fusing Belt
58	Hot Roller

59	Pressure Roller
60	Lube Roller: Press Roller
61	Clng Roller: Press Roller
62	Shaft Bearings: Press Roll
63	#Used Toner Botrle
64	#ADF Pickup Roller
65	#ADF Feed Belt
64	#ADF Pickup Roller
65	#ADF Belt
66	#ADF Reverse Roller
67	#ADF Transport Belt
68	#Dust Filter 1
69	#Dust Filter 2
70	#Dust Filter 3

5067	Part Replacement Operation Type
	Configures the PM parts display for either the customer engineer (Service) or user. [***0**: Service] [1: User] **Note**: SP5066 must be set to "1: Display".
1	#K PCU
2	K PCU Cleaning Blade
3	K PCU Lube Bar
4	K PCU Lube App/Cleaning Blade
5	K PCU Developer
6	K PCU Drum
7	Charge Corona: Ass'y

8	K PCU Charge Grid Wire
9	K PCU Idle Gear
10	K PCU Lube App/Clng Brush
11	K PCU Toner Cleaning Brush
12	K PCU Joint
13	#M PCU
14	M PCU Cleaning Blade
15	M PCU Lube Bar
16	M PCU Lube App/Clng Blade
17	M PCU Developer
18	M PCU Drum
19	M PCU Charge Roller Unit
20	M PCU Idle Gear
21	M PCU Lube App/Clng Brush
22	M PCU Toner Cleaning Brush
23	M PCU Joint
24	#C PCU
25	C PCU Cleaning Blade
26	C PCU Lube Bar
27	C PCU Lube App/Clng Blade
28	C PCU Developer
29	C PCU Drum
30	C PCU Charge Roller Unit
31	C PCU Idle Gear
32	C PCU Lube App/Clng Brush
33	C PCU Toner Cleaning Brush

34	C PCU Joint
35	#Y PCU
36	Y PCU Cleaning Blade
37	Y PCU Lube Bar
38	Y PCU Lube App/Clng Blade
40	Y PCU Developer
41	Y PCU Charge Roller Unit
42	Y PCU Idle Gear
43	Y PCU Lube App/Clng Brush
44	Y PCU Toner Cleaning Brush
45	Y PCU Joint
46	#ITB
47	#ITB Cleaning Unit
48	ITB Cleaning Blade
49	ITB Lube Bar
50	Lube Application Blade
51	#PTR
52	PTR Blade
53	PTR
54	Discharge Roller
55	PTR Lube Bar
56	#Fusing Unit
57	Fusing Belt
58	Hot Roller
59	Pressure Roller
60	Lube Roller: Press Roller

61	Clng Roller: Press Roller
62	Shaft Bearings: Press Roll
63	#Used Toner Botrle
64	#ADF Pickup Roller
65	#ADF Feed Belt
66	#ADF Pickup Roller
67	#ADF Belt
68	#ADF Reverse Roller
69	#ADF Transport Belt
70	#Dust Filter 1

5071	Set Bypass Paper Size Display

5112	Non-Std. Paper Sel.
	Determines whether a non-standard paper size can be input for the universal cassette trays (Tray 2, Tray 3) [0 to 1/1] 0: No 1: Yes. If "1" is selected, the customer will be able to input a non-standard paper size using the UP mode.

5113	Optional Counter Type
1	Default Optional Counter Type

	Selects the type of counter: 0: None 1: Key card (RK3, 4) Japan only 2: Key card down 3: Pre-paid card 4: Coin Lock 5: MF key card 11: Exp Key Card (Add) 12: Exp Key Card (Deduct)
2	External Optional Counter Type
	Enables the SDK application. This lets you select a number for the external device for user access control. Note: "SDK" refers to software on an SD card. [0 to 3/1] 0: None 1: Expansion Device 1 2: Expansion Device 2 3: Expansion Device 3

5114	Optional Counter I/F
	This SP sets the machine for use with the optional counter. Default: Off

5118	Disable Copying
	Temporarily denies access to the machine. **Japan Only** [0 to 1/1] 0: Release for normal operation 1: Prohibit access to machine

5120	Mode Clear Opt. Counter Removal

	Do not change. **Japan Only** [0 to 2/1] 0: Yes. Normal reset 1: Standby. Resets before job start/after completion 2: No. Normally no reset

5121	Counter Up Timing
	Determines whether the optional key counter counts up at paper feed-in or at paper exit. **Japan Only** [0 to 1/1] 0: Feed count 1: No feed count

5126	Set F-Size Document
	Set F Original Size Selection Sets the original size that the machine detects for F sizes. [*0: 8½ x 13] [1: Folio 8¼ x 13] [2: F 8 x 13]

5127	APS Mode
	This SP can be used to switch APS (Auto Paper Select) off when a coin lock or pre-paid key card device is connected to the machine. [0 to 1/1] 0: On 1: Off

5128	Code Mode With Key/Card Option **Japan Only**

5131	Paper Size/Type Selection

	Selects the paper size type (for originals and copy paper). (Only needs to be adjusted if the optional printer controller is installed) [0 to 2/1] 0: JP (Japan) 1: NA (North America) 2: EU (Europe) After changing the value, turn the main power switch off and on.

5150	Bypass Length Setting
	Sets up the by-pass tray for long paper. [0 to 1/1] 0: Off 1: On. Sets the tray for feeding paper up to 600 mm long. With this SP selected on, paper jams are not detected in the paper path.

5162	App. Switch Method
	Controls if the application screen is changed with a hardware switch or a software switch. [0 to 1/1] 0: Soft Key Set 1: Hard Key Set

5165	Z-Fold Position **Japan Only**			
	Adjusts the Z-fold position for different paper sizes. Note: In the table below "T" means "SEF"			
	1	A3T	5	LGT
	2	B4T	6	LTT
	3	A4T	7	12x18
	4	DLTT	8	Other

5167	Fax Printing Mode Optional Counter OFF

	Enables or disables automatic print out without an accounting device. This SP is used when the receiving fax is control by an external accounting device. 0: Automatic printing 1: No automatic printing

5169	CE Login
	If you will change the printer bit switches, you must 'log in' to service mode with this SP before you go into the printer SP mode. [0 to 1/1] 0: Off. Printer bit switches cannot be adjusted. 1: On. Printer bit switches can be adjusted.

5188	Copy NV Version
	Displays the version number of the NVRAM on the controller board.

5191	Mode Set **DFU**

5193	External Controller Info. Settings **DFU**

5195	Limitless SW DFU **DFU**

5196	90 Degree Rotation (Copy)

5199	Paper Exit After Staple End

5212	Page Numbering
3	Duplex Printout Left/Right Position
	Horizontally positions the page numbers printed on both sides during duplexing. [–10 to +10/1 mm] 0 is center, minus is left, + is right.
4	Duplex Printout High/Low Position

	Vertically positions the page numbers printed on both sides during duplexing. [–10 to +10/1 mm] 0 is center, minus is down, + is up.

5227	Paper Exit After Staple End
200	Change Page No. Display
201	Allow Page No. Entry
202	Zero Surplus Setting

5302	Set Time **DFU**
	Sets the time clock for the local time. This setting is done at the factory before delivery. The setting is GMT expressed in minutes. [–1440 to 1440/1 min.] JA: +540 (Tokyo) NA: -300 (NY) EU: +6- (Paris) CH: +480 (Peking) TW: +480 (Taipei) AS: +480 (Hong Kong)

5307	Summer Time	
	Lets you set the machine to adjust its date and time automatically with the change to Daylight Savings time in the spring and back to normal time in the fall. This SP lets you set these items: • Day and time to go forward automatically in April. • Day and time to go back automatically in October. • Set the length of time to go forward and back automatically. The settings for 002 and 003 are done with 8-digit numbers:	
	Digits	**Meaning**
	1st, 2nd	Month. 4: April, 10: October (for months 1 to 9, the first digit of 0 cannot be input, so the eight-digit setting for 002 or 003 becomes a seven-digit setting)

	3rd	Day of the week. 0: Sunday, 1: Monday
	4th	The number of the week for the day selected at the 3rd digit. If "0" is selected for "Sunday", for example, and the selected Sunday is the start of the 2nd week, then input a "2" for this digit.
	5th, 6th	The time when the change occurs (24-hour as hex code). Example: 00:00 (Midnight) = 00, 01:00 (1 a.m.) = 01, and so on
	7th	The number of hours to change the time. 1 hour: 1
	8th	If the time change is not a whole number (1.5 hours for example), digit 8 should be 3 (30 minutes).
1	Setting	Enables/disables the settings for 002 and 003. [0 to 1/1] 0: Disable 1: Enable
3	Rule Set (Start)	The start of summer time
4	Rule Set (End)	The end of summer time

5401	Access Control **(DFU)**
	This SP stores the settings that limit uses access to SDK application data.
103	Default Document ACL
	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.
104	Authentication Time
162	Extend Certification Detail

200	SDK1 Unique ID	"SDK" is the "Software Development Kit". This data can be converted from SAS (VAS) when installed or uninstalled. **(DFU)**
201	SDK1 Certification Method	
210	SDK2 Unique ID	
211	SDK2 Certification Method	
220	SDK3 Unique ID	
221	SDK3 Certification Method	
230	SDK certification device	
240	Detail Option	

5404	User Code Count Clear
	Touch [EXECUTE] to clear all user code counters.

5411	LDAP Certification
4	Easy Certification Determines whether easy LDAP certification is done. [0 to 1/1/1] 1: On 0: Off
5	Password Null Not Permit This SP is referenced only when SP5411-4 is set to "1" (On). [0 to 1/0/1] 0: Password NULL not permitted. 1: Password NULL permitted.

5413	Lockout Setting
1	Lockout On/Off Switches on/off the lock on the local address book account. [0 to 1/0/1] 0: Off 1: On

2	Lockout Threshold Sets a limit on the frequency of lockouts for account lockouts. [1 to 10/5/1]
3	Cancellation On/Off Determines whether the system waits the prescribed time for input of a correct user ID and password after an account lockout has occurred. [0 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.
4	Cancellation Time Determines the length of time that the system waits for correct input of the user ID and password after a lockout has occurred. This setting is used only if SP5413-3 is set to "1" (on). [1 to 999/60/1 min.]

5414	Access Mitigation
1	Mitigation On/Off Switches on/off masking of continuously used IDs and passwords that are identical. [0 to 1/0/1] 0: Off 1: On
2	Mitigation Time Sets the length of time for excluding continuous access for identical user IDs and passwords. [0 to 60/15/1 min.]

5415	Password Attack
1	Permissible Number Sets the number of attempts to attack the system with random passwords to gain illegal access to the system. [0 to 100/30/1 attempt]

2	Detect Time Sets the time limit to stop a password attack once such an attack has been detected. [1 to 10/5/1 sec.]

5416	Access Information
1	Access User Max Number Limits the number of users used by the access exclusion and password attack detection functions. [50 to 200/200/1 users]
2	Access Password Max Number Limits the number of passwords used by the access exclusion and password attack detection functions. [50 to 200/200/1 passwords]
3	Monitor Interval Sets the processing time interval for referencing user ID and password information. [1 to 10/3/1 sec.]

5417	Access Attack
1	Access Permissible Number Sets a limit on access attempts when an excessive number of attempts are detected for MFP features. [0 to 500/100/1]
2	Attack Detect Time Sets the length of time for monitoring the frequency of access to MFP features. [10 to 30/10/1 sec.]
3	Productivity Fall Wait Sets the wait time to slow down the speed of certification when an excessive number of access attempts have been detected. [0 to 9/3/1 sec.]

4	Attack Max Number Sets a limit on the number of requests received for certification in order to slow down the certification speed when an excessive number of access attempts have been detected. [50 to 200/200/1 attempt]

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.
1	Copy
	Determines whether certification is required before a user can use the copy applications. [0 to 1/0/1] 0: On 1: Off 2: Color Security Setting
2	Color Security Setting
11	Document Server Determines whether certification is required before a user can use the document server. [0 to 1/0/1] 0: On 1: Off
21	Fax Determines whether certification is required before a user can use the fax application. [0 to 1/0/1] 0: On 1: Off
31	Scanner Determines whether certification is required before a user can use the scan applications. [0 to 1/0/1] 0: On 1: Off

41	Printer Determines whether certification is required before a user can use the printer applications. [0 to 1/0/1] 0: On 1: Off	
51	SDK1	[0 or 1/ **0** / 1] 0: ON. 1: OFF Determines whether certification is required before a user can use the SDK application.
61	SDK2	
71	SDK3	

5430	Auth Dialog Message Change
1	Message Change On/Off
2	Message Text Download
3	Message Text ID

5431	External Auth User Preset
10	Tag
11	Entry
12	Group
20	Mail
31	Fax Sub
32	Folder
33	Protect Code
34	SMTP Auth
35	LDAP Auth
36	SMB FTP Folder Auth
37	Acnt Acl

38	Document Acl
40	Cert Crypt

5481	Authentication Error Code
	These SP codes determine how the authentication failures are displayed.
1	System Log Disp Determines whether an error code appears in the system log after a user authentication failure occurs. [0 to 1/0/1] 0: Off 1: On
2	Panel Disp 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 Keycard **Japan Only**
	Sets up operation of the machine with a keycard. [0 to 1/0/1] 0: Disabled. Cancels operation if no code is input. 1: Enabled. Allows operation if another code is input and decrements the counter once for use of the entered code.
1	Job Permit Setting
2	Count Mode Setting

5501	PM Alarm

	Sets the count level for the PM alarm. [0 to 9999/1] 0: Alarm disabled The PM alarm goes off when the print count reaches this value multiplied by 1,000.

5504	Jam Alarm **Japan Only**
5505	Error Alarm **Japan Only**
5507	Supply Alarm **Japan Only**

5508	CC Call **Japan Only**	
1	Jam Remains	Enables/disables initiating a call. [0 to 1/1] 0: Disable 1: Enable
2	Continuous Jams	
3	Continuous Door Open	
4	Low Call Mode	
	Enables/disables the new call specifications designed to reduce the number of calls. [0 to 1/1] 0: Normal mode 1: Reduced mode	
11	Jam Detection: Time Length	
	Sets the length of time to determine the length of an unattended paper jam. [03 to 30/1] This setting is enabled only when SP5508-004 is enabled (set to 1).	
12	Jam Detection Continuous Count	
	Sets the number of continuous paper jams required to initiate a call. [02 to 10/1] This setting is enabled only when SP5508-004 is enabled (set to 1).	
13	Door Open: Time Length	

	Sets the length of time the remains opens to determine when to initiate a call. [03 to 30/1] This setting is enabled only when SP5508-004 is enabled (set to 1).

5513	Parts Alarm Level Count **Japan Only**	
1	Normal	Sets the parts replacement alarm counter to sound for the number of copies. [1 to 999/1 K]
2	DF	Sets the parts replacement alarm counter to sound for the number of scanned originals. [1 to 999/1 K]

5514	Parts Alarm Level **Japan Only**	
1	Normal	
2	DF	

5610	Base Gamma Ctrl Pt:Execute **DFU**	
4	Get Factory Default	
5	Set Factory Default	
6	Restore Orginal Value	

5611	Toner Color in 2C **DFU**	
	Adjusts the toner ratio between color pairs: Black, Cyan, Magenta, Green, and Yellow.	
1	B-C	
2	B-M	
3	G-C	
4	G-Y	
5	R-M	
6	R-Y	

5618	Color Mode Display Selection
	This SP switches the color display for the operation panel LCD. [0 to 1/1/1] 0: Domestic Japan 1: Overseas (Outside Japan)

5792	MCS Debug SW **DFU**

5793	ECS Debug SW **DFU**

5801	Memory Clear
	Resets NVRAM data to the default settings. Before executing this SP, print an SMC Report.
1	All Clear
	Initializes items 2 to 15 below.
2	Engine
	Initializes all registration settings for the engine and copy process settings.
3	SCS
	Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information.
4	IMH Memory Clear
	Initializes the image file system. (IMH: Image Memory Handler)
5	MCS
	Initializes the automatic delete time setting for stored documents. (MCS: Memory Control Service)
6	Copier application
	Initializes all copier application settings.
7	Fax application

	Not used.
8	Printer application
	Initializes the printer defaults, programs registered, the printer SP bit switches, and the printer CSS counter.
9	Scanner application
	Initializes the defaults for the scanner and all the scanner SP modes.
10	Web Service
	Deletes the Netfile (NFA) management files and thumbnails, and initializes the Job login ID. Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software
11	NCS
	Initializes the system defaults and interface settings (IP addresses also), the SmartNetMonitor for Admin settings, WebStatusMonitor settings, and the TELNET settings. (NCS: Network Control Service)
14	Clear DCS Setting
	Initializes the DCS (Delivery Control Service) settings.
15	Clear UCS Setting
	Initializes the UCS (User Information Control Service) settings.
16	MIRS Setting
	Initializes the MIRS (Machine Information Report Service) settings.
17	CCS
	Initializes the CCS (Certification and Charge-control Service) settings.
18	SRM Memory Check
	Initializes the SRM (System Resource Manager) settings.
19	LCS
	Initializes the LCS (Log Count Service) settings.
20	Web Uapli

	Initializes the web user application settings.
21	ECS
	Initializes the ECS settings.

5803	Input Check
	Use these SPs to do the input check for the electrical components of the main machine.
1	Paper Feed 1
2	Paper Feed 2
3	Paper Feed 3
4	Paper Feed 4
5	Paper Feed 5
6	Paper Feed 6
7	Paper Feed 7
8	Paper Trans 1
9	Paper Trans 2
10	Paper Trans 3
11	Paper Trans 4
12	Paper Trans 5
13	Paper Trans 6
14	Drum Mtr Lock
15	Development Mtr Lock
16	OPC Cleaning Mtr Lock
17	Other Motor Lock
18	Fan System 1
19	Fan System 1
20	Fan System 1

21	Fan System 1
22	Hi Volt SC 1
23	Hi Volt SC 2
24	Paper Transfer
25	Toner Supply
26	Set Detection
27	Fusing Temp Detect
28	Door
29	Used Toner Trans
30	Peltier Unit (**Not Used**)
200	HP Sensor
202	Scan Fan Lock Signal

5804	Output Check
	Use these SPs to do the output check for the electrical components of the main machine.
1	Fuse Fan: Front NS
2	Fuse Fan: Front HS
3	Fuse Fan: Back NS
4	Fuse Fan: Back HS
5	Opt. Fan: Front NS
7	Opt. Fan: Back NS
9	Exit Pipe Fan
10	Sub Fuse Fan: NS
11	Sub Fuse Fan: HS
14	Dupx Fan: NS
15	Dupx Fan: Front: NS

16	Dupx Fan: Front: HS
17	Dupx Fan: Back: NS
18	Dupx Fan: Back: HS
19	Exit Fan: NS
20	Exit Fan: HS
21	PCB Box Fan1:NS
23	PCB Box Fan2:NS
25	PSU Fan 1:NS
26	PSU Fan 1:HS
27	PSU Fan 2:NS
28	PSU Fan 2:HS
29	PT Fan 1:NS
30	PT Fan 2:NS
31	Pelt. Cool Fan:NS
32	Pelt. Cool Fan:HS
33	Potential Sn Fan
34	Ozone Fan
35	PCU Fan:Y
36	PCU Fan:C
37	PCU Fan:M
38	PCU Fan:K
39	PCU Fan:Y:HS
40	Pelt. Cir. Fan
41	Sub Hopper CL:Y
42	Sub Hopper CL:C
43	Sub Hopper CL:M

44	Sub Hopper CL:K
45	Hopper Mtr:Fwd
46	P.Pump Drv CL:Y
47	P.Pump Drv CL:C
48	P.Pump Drv CL:M
49	P.Pump Drv CL:K
50	Used Toner Mtr 1
51	Used Toner Mtr 2
52	Chage dc:Y
53	Chage dc:C
54	Chage dc:M
55	Charge Grid K
56	Chage ac:Y
57	Chage ac:C
58	Chage ac:M
59	Charge Wire Current K
60	Dev dc:Y
61	Dev dc:C
62	Dev dc:M
63	Dev dc:K
64	Image Transfer:Y
65	Image Transfer:C
66	Image Transfer:M
67	Image Transfer:K
68	Paper Transfer:-
69	Paper Transfer:+

70	Paper Separate dc
71	Paper Separate ac
72	ID Sensor
73	Potential Sn LED:Front
74	Potential Sn LED:Center
75	Potential Sn LED:Rear
76	QL:Y
77	QL:C
78	QL:M
79	QL:K
80	LD:Y
81	LD:C
82	LD:M
83	LD:K
84	Polygon Mtr
85	ITB Lift M
86	ITB Lift Motor FC
87	Chg Cleaning Sol (M)
88	Chg Cleaning Sol (C)
89	Chg Cleaning Sol (Y)
95	Bk Drum Motor: High Speed 2
96	M Drum Motor: High Speed 2
97	C Drum Motor: High Speed 2
98	Y Drum Motor: High Speed 2
99	Bk Development Motor: High Speed 2
100	M Development Motor: High Speed 2

101	C Development Motor: High Speed 2
102	Y Development Motor: High Speed 2
103	Bk Cleaning Motor: High Speed 2
104	M Cleaning Motor: High Speed 2
105	C Cleaning Motor: High Speed 2
106	Y Cleaning Motor: High Speed 2
107	ITB Motor: High Speed 2
108	PRT Motor: High Speed 2
109	Fusing/Exit Motor: High Speed 2
110	Feed Mtr 1 Fwd:Rev2
111	Feed Mtr 1 Fwd:Haf2
112	Feed Mtr 1 Fwd:Hi2
113	Feed Mtr 1 Fwd:Hi2:Haf
114	Feed Mtr 1 Rev:Nor2
115	Feed Mtr 1 Rev:Haf2
116	Feed Mtr 2 Fwd:Rev2
117	Feed Mtr 2 Fwd:Haf2
118	Feed Mtr 2 Fwd:Hi2
119	Feed Mtr 2 Fwd:Hi2:Haf
120	Feed Mtr 2 Rev:Nor2
121	Feed Mtr 2 Rev:Haf2
122	Feed Mtr 3 Fwd:Rev2
123	Feed Mtr 3 Fwd:Haf2
124	Feed Mtr 3 Fwd:Hi2
125	Feed Mtr 3 Fwd:Hi2:Haf
126	Feed Mtr 3 Rev:Nor2

127	Feed Mtr 3 Rev:Haf2
128	Feed Mtr 4 Fwd:Rev2
129	Feed Mtr 4 Fwd:Haf2
130	Feed Mtr 4 Fwd:Hi2
131	Feed Mtr 4 Fwd:Hi2:Haf
132	Feed Mtr 4 Rev:Nor2
133	Feed Mtr 4 Rev:Haf2
134	Bypass Feed CL
135	Pickup SOL:Tray 1
136	Pickup SOL:Tray 2
137	Pickup SOL:Tray 3
138	Pickup SOL:Tray 4
139	Bypass Pickup SOL
142	Rev SOL:Tray 1
143	Rev SOL:Tray 2
144	Rev SOL:Tray 3
145	Rev SOL:Tray 4
146	Tan Conn Rel SOL
147	Tan Lock SOL
149	Tandem Back Fence SOL: F
150	Tandem Back Fence SOL: R
151	Relay Mtr:Fwd:Nor2
152	Relay Mtr:Fwd:Haf2
153	Relay Mtr:Fwd:Hi1
154	Relay Mtr:Fwd:Hi1:Haf
155	Relay Mtr:Rev: Nor2

156	Relay Mtr:Rev: Haf2
157	Registration Mtr:Nor2
158	Registration Mtr:Haf2
159	Guide Rel SOL
160	Exit JG SOL
161	Dup/Inv Mtr:Fwd:Nor2
162	Dup/Inv Mtr:Fwd:Haf2
163	Dup/Inv Mtr:Fwd:Hi2
164	Dup/Inv Mtr:Fwd:Hi2:Haf
165	Dup/Inv Mtr:Rev:Nor2: Tab Shts
166	Dup/Inv Mtr:Rev:Haf2: Tab Shts
167	DupTrans Mtr:Fwd:Nor2
168	DupTrans Mtr:Fwd:Haf2
169	DupTrans Mtr:Fwd:Hi2
170	DupTrans Mtr:Fwd:Hi2: Haf
171	Dup JG SOL
172	Inv Pos SOL
174	Dup Jog M:HP Sn
180	Fan K:Nor
181	Ozone Fan K:Nor
182	Ozone Fan K:Haf
183	Main Fan:Nor
184	Main Fan:Haf
185	Dev Fan Y:Nor
186	Dev Fan C:Nor
187	Dev Fan M:Nor

188	Dev Fan K:Nor
189	ITB Clng Fan:Nor
190	ITB Clng Fan:Haf
195	Jam LED:Fusing
196	Jam LED:Exit
200	Scananer fanmotor
202	Scananer Lamp
203	Scanner Motor
205	Bk Drum Motor: High Speed 1
206	M Drum Motor: High Speed 1
207	C Drum Motor: High Speed 1
208	Y Drum Motor: High Speed 1
209	Bk Development Motor: High Speed 1
210	M Development Motor: High Speed 1
211	C Development Motor: High Speed 1
212	Y Development Motor: High Speed 1
213	Bk Cleaning Motor: High Speed 1
214	M Cleaning Motor: High Speed 1
215	C Cleaning Motor: High Speed 1
216	Y Cleaning Motor: High Speed 1
217	ITB Motor: High Speed 1
218	PTR Motor: High Speed 1
219	Fusing/Exit Motor: High Speed 1
220	Bk Drum Motor: Half Speed 2
221	M Drum Motor: Half Speed 2
222	C Drum Motor: Half Speed 2

223	Y Drum Motor: Half Speed 2
224	Bk Development Motor: Half Speed 2
225	M Development Motor: Half Speed 2
226	C Development Motor: Half Speed 2
227	Y Development Motor: Half Speed 2
228	Bk Cleaning Motor: Half Speed 2
229	M Cleaning Motor: Half Speed 2
230	C Cleaning Motor: Half Speed 2
231	Y Cleaning Motor: Half Speed 2
232	ITB Motor: Half Speed 2
233	PTR Motor: Half Speed 2
234	Fusing/Exit Motor: Half Speed 2
235	Bk Drum Motor: Half Speed 2
236	M Drum Motor: Half Speed 1
237	C Drum Motor: Half Speed 1
238	Y Drum Motor: Half Speed 1
239	Bk Development Motor: Half Speed 1
240	M Development Motor: Half Speed 1
241	C Development Motor: Half Speed 1
242	Y Development Motor: Half Speed 1
243	Bk Cleaning Motor: Half Speed 1
244	M Cleaning Motor: Half Speed 1
245	C Cleaning Motor: Half Speed 1
246	Y Cleaning Motor: Half Speed 1
247	ITB Motor: Half Speed 1
248	PTR Motor: Half Speed 1

249	Fusing/Exit Motor: Half Speed 1

5810	Cancel Fusing SC
	When the machine issues one of the "Level A" SC codes shown below, this indicates a serious problem in the fusing unit. The machine is disabled and the operator cannot reset the SC. The machine requires servicing immediately. Touch [EXECUTE] release the machine for servicing. • SC542 – SC545 Heating roller thermistor 1 • SC547 – Zero Cross • SC548 – SC550 Heating roller thermistor 2 • SC551 – Pressure roller thermistor • SC553 – SC555 Pressure roller thermistor • SC662 – SC565 Hot roller thermistor

5811	Machine Serial
	This SP displays the machine serial number.

5812	Service Tel. No. Setting
1	Service
	Inputs the telephone number of the CE (displayed when a service call condition occurs.)
2	Facsimile
	Use this to input the fax number of the CE printed on the Counter Report (UP mode). **Not Used**
3	Supply
	Displayed on the initial SP screen.
4	Operation
	Allows the service center contact telephone number to be displayed on the initial screen.

5816	Remote Service
1	I/F Setting

	Turns the remote diagnostics off and on. [0 to 2/1] 0: Remote diagnostics off. 1: Serial (CSS or NRS) remote diagnostics on. 2: Network remote diagnostics.
2	CE Call
	Lets the customer engineer start or end the remote machine check with CSS or NRS; to do this, push the center report key.
3	Function Flag
	Enables and disables remote diagnosis over the NRS network. [0 to 1/1] 0: Disables remote diagnosis over the network. 1: Enables remote diagnosis over the network.
5	Device Information Call
	Controls if the item for initial setting of the screen for the NRS device-information notification-call is shown. [0 to 1/1] 0: Enabled. Item initial setting not shown. 1: Disable. Item for initial setting shown.
7	SSL Disable
	Controls if RCG (Remote Communication Gate) confirmation is done by SSL during an RCG send for the NRS over a network interface. [0 to 1/1] 0: Yes. SSL not used. 1: No. SSL used.
8	RCG Connect Timeout
	Sets the length of time (seconds) for the time-out when the RCG (Remote Communication Gate) connects during a call via the NRS network. [1 to 90/1 sec.]
9	RCG Write to Timeout

	Sets the length of time (seconds) for the time-out when sent data is written to the RCG during a call over the NRS network. [0 to 100/1 sec.]
10	RCG Read Timeout
	Sets the length of time (seconds) for the timeout when sent data is written from the RCG during a call over the NRS network. [0 to 100/1 sec.]
11	Port 80 Enable
	Controls if permission is given to get access to the SOAP method over Port 80 on the NRS network. [0 to 1/1] 0: No. Access denied 1: Yes. Access granted.
12	@Remote Communication Permission
13	RFU Timing

21	RCG – C Registed
	This SP displays the embedded RCG-N installation end flag. 1: Installation completed 2: Installation not completed
23	Connect Type (N/M)
	This SP displays and selects the embedded RCG-N connection method. 0: Internet connection 1: Dial-up connection
61	Cert. Expire Timing **(DFU)**
	Proximity of the expiration of the certification.
62	Use Proxy
	This SP setting determines if the proxy server is used when the machine communicates with the service center.

63	Proxy Host
	This SP sets the address of the proxy server used for communication between the RCG device and the gateway. Use this SP to set up or display the customer proxy server address. The address is necessary to set up the embedded RCG-N. **Note**: The address display is limited to 128 characters. Characters beyond the 128 character are ignored. This address is customer information and is not printed in the SMC report.
64	proxy Port Number
	This SP sets the port number of the proxy server used for communication between the embedded RCG-N and the gateway. This setting is necessary to set up the embedded RCG-N. **Note**: This port number is customer information and is not printed in the SMC report.
65	Proxy User Name
	This SP sets the HTTP proxy certification user name. **Note**: The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored. This name is customer information and is not printed in the SMC report.
66	Proxy Password
	This SP sets the HTTP proxy certification password. **Note**: The length of the 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.

67	CERT: Up State	
	Displays the status of the certification update.	
	0	The certification used by the embedded RCG-N 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 an 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.

68	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.
69	CERT: Up ID	
	The ID of the request for certification.	
83	Firmware Up Status	
	Displays the status of the firmware update.	
85	Firm Up User Check	
	This SP setting determines if the operator can confirm the previous version of the firmware before the firmware update execution. If the option to confirm the previous version is selected, a notification is sent to the system manager and the firmware update is done with the firmware files from the URL.	
86	Firmware Size	
	Allows the service technician to confirm the size of the firmware data files during the firmware update execution.	
87	CERT: Macro	
	Displays the macro version of the @Remote certification	
88	CERT: PAC Ver.	
	Displays the PAC version of the @Remote certification.	
89	CERT: ID2 Code	
	Displays ID2 for the @Remote certification. Spaces are displayed as underscores (_). Asterisks (****) indicate that no NRS certification exists.	

90	CERT: Subject
	Displays the common name of the @Remote certification subject. CN = the following 17 bytes. Spaces are displayed as underscores (_). Asterisks (****) indicate that no DESS exists.
91	CERT: Serial No.
	Displays serial number for the @Remote certification. Asterisks (****) indicate that no DESS exists.
92	CERT: Issuer
	Displays the common name of the issuer of the @Remote certification. CN = the following 30 bytes. Asterisks (****) indicate that no DESS exists.
93	CERT: Valid Start
	Displays the start time of the period for which the current @Remote certification is enabled.
94	CERT: Valid End
	Displays the end time of the period for which the current @Remote certification is enabled.
95	Server CN Check
96	GW Host
97	GW URL Path
99	Debug Rescue G/WURL Set
150	Selection Country
	Select the country where embedded RCG-M is installed in the machine. After selecting the country, you must also set the following SP codes for embedded RCG-M: • SP5816-153 • SP5816-154 • SP5816-161 0: Japan, 1: USA, 2: Canada, 3: UK, 4: Germany, 5: France 6: Italy, 7: Netherlands, 8: Belgium, 9: Luxembourg, 10: Spain

151	Line type Automatic Judgment
	Press [Execute]. Setting this SP classifies the telephone line where embedded RCG-M is connected as either dial-up (pulse dial) or push (DTMF tone) type, so embedded RCG-M can automatically distinguish the number that connects to the outside line. • The current progress, success, or failure of this execution can be displayed with SP5816-152. • If the execution succeeded, SP5816-153 will display the result for confirmation and SP5816-154 will display the telephone number for the connection to the outside line.
152	Line Type Judgment Result
	Displays a number to show the result of the execution of SP5816-151. Here is a list of what the numbers mean. 0: Success 1: In progress (no result yet). Please wait. 2: Line abnormal 3: Cannot detect dial tone automatically 4: Line is disconnected 5: Insufficient electrical power supply 6: Line classification not supported 7: Error because fax transmission in progress – ioctl() occurred. 8: Other error occurred 9: Line classification still in progress. Please wait.
153	Selection Dial/Push
	This SP displays the classification (tone or pulse) of the telephone line to the access point for embedded RCG-M. The number displayed (0 or 1) is the result of the execution of SP5816-151. However, this setting can also be changed manually. [0 to 1 / **0** / 1 /step] 0: Tone Dialing Phone 1: Pulse Dialing Phone

154	Outside Line Outgoing Number
	The SP sets the number that switches to PSTN for the outside connection for embedded RCG-M in a system that employs a PBX (internal line). • If the execution of SP5816-151 has succeeded and embedded RCG-M has connected to the external line, this SP display is completely blank. • If embedded RCG-M has connected to an internal line, then the number of the • connection to the external line is displayed. • If embedded RCG-M has connected to an external line, a comma is displayed with • the number. The comma is inserted for a 2 sec. pause. • The number setting for the external line can be entered manually (including commas).
156	Dial Up User Name
	Use this SP to set a user name for access to remote dial up. Follow these rules when setting a user name: • Name length: Up to 32 characters • Spaces and # allowed but the entire entry must be enclosed by double quotation marks (").
157	Dial Up Password
	Use this SP to set a password for access to remote dial up. Follow these rules when setting a user name: • Name length: Up to 32 characters • Spaces and # allowed but the entire entry must be enclosed by double quotation marks (").
161	Local Phone Number
	Use this SP to set the telephone number of the line where embedded RCG-M is connected. This number is transmitted to and used by the Call Center to return calls. Limit: 24 numbers (numbers only)

162	Connection Timing Adjustment Incoming
	When the Call Center calls out to an embedded RCG-M modem, it sends a repeating ID tone (*#1#). This SP sets the time the line remains open to send these ID tones after the number of the embedded RCG-M modem is dialed up and connected. [0 to 24 / **1** / 1 /step] The actual amount of time is this setting + 2 sec. For example, if you set "2", the line will remain open for 4 sec.
163	Access Point
	This is the telephone number of the dial-up access point for embedded RCG-M. If no setting is done for this SP code, then a preset value (determined by the country selected) is used. Default: 0 Allowed: Up to 16 numeral characters
164	Line Connecting
	This SP sets the connection conditions for the customer. This setting dedicates the line to embedded RCG-M only, or sets the line for sharing between embedded RCG-M and a fax unit. [0 or 1 / **0** / -] 0: Line shared by embedded RCG-M/Fax 1: Line dedicated to embedded RCG-M only • If this setting is changed, the copier must be cycled off and on. • SP5816-187 determines whether the off-hook button can be used to interrupt an embedded RCG-M transmission in progress to open the line for fax transaction.
173	Modem serial No.
	This SP displays the serial number registered for the embedded RCG-M.
174	Retransmission Limit
	Normally, it is best to allow unlimited time for certification and ID2 update requests, and for the notification that the certification has been completed. However, embedded RCGM generates charges based on transmission time for the customer, so a limit is placed upon the time allowed for these transactions. If these transactions cannot be completed within the allowed time, do this SP to cancel the time restriction.
186	RCG - C M Debug Bit SW

187	FAX TX Priority	
	This SP determines whether pushing the off-hook button will interrupt an embedded RCGM transmission in progress to open the line for fax transaction. This SP can be used only if SP5816-164 is set to "0". [0 or 1/ **0** / -] 0: Disable. Setting the fax unit off-hook does not interrupt a fax transaction in progress. If the off-hook button is pushed during a embedded RCG-M transmission, the button must be pushed again to set the fax unit on-hook after the embedded RCG-M transmission has completed. 1: Enable. When embedded RCG-M shares a line with a fax unit, setting the fax unit off-hook will interrupt a embedded RCG-M transmission in progress and open the line for a fax transaction.	
200	Manual Polling	
	No information is available at this time.	
201	Regist: Status	
	Displays a number that indicates the status of the @Remote service device.	
	0	Neither the registered device by the external nor embedded RCG device is set.
	1	The embedded RCG device is being set. Only Box registration is completed. In this status, this unit cannot answer a polling request from the external RCG.
	2	The embedded RCG device is set. In this status, the external RCG unit cannot answer a polling request.
	3	The registered device by the external RCG is being set. In this status the embedded RCG device cannot be set.
	4	The registered module by the external RCG has not started.
202	Letter Number	
	Allows entry of the number of the request needed for the embedded RCG.	
203	Confirm Execute	
	Executes the inquiry request to the @Remote Gate Way URL.	

204	Confirm Result	
	Displays a number that indicates the result of the inquiry executed with SP5816-203.	
	0	Succeeded
	1	Inquiry 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	Inquiry executing
205	Confirm Place	
	Displays the result of the notification sent to the device from the GW URL in answer to the inquiry request. Displayed only when the result is registered at the GW URL.	
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	@Remove communication prohibited
		-12006	Confirmation requested again after confirmation completed.
		-12007	Different numbers were used for registration and confirmation.
		-12008	Update certification failed because device 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	External RCG not managed
		-2394	Device not managed
		-2395	Box ID for external RCG is illegal
		-2396	Device ID for external RCG is illegal
		-2397	Incorrect ID2 format
		-2398	Incorrect request number format
209	Inst Clear		
	Releases the machine from its embedded RCG setup.		

250	CommLog Print
	Prints the communication log.

5821	Remote Service Address

5824	NVRAM Data Upload
	Set the SD card in the Slot 1 (lower slot) then touch [EXECUTE] to upload the NVRAM data to an SD card. **Note:** When uploading in this SP mode data, the front door must be open.

5825	NVRAM Data Download
	Set the SD card in the Slot 1 (lower slot) then touch [EXECUTE] to download data from the card to the NVRAM in the machine. After downloading is completed, remove the card and turn the machine power off and on.

5828	Network Setting
1	IPv4 Address (Ethernet/IEEE 802.11)
	This SP allows you to confirm and reset the IPv4 address for Ethernet and wireless LAN (802.11): aaa.bbb.ccc.ddd
2	IPv4 Subnet Mask (Ethernet/IEEE 802.11)
	This SP allows you to confirm and reset the IPv4 subnet mask for Ethernet and wireless LAN (802.11): aaa.bbb.ccc.ddd
3	IPv4 default Gateway (Ethernet/IEEE 802.11)
	This SP allows you to confirm and reset the IPv4 default gateway used by the network for Ethernet and wireless LAN (802.11): aaa.bbb.ccc.ddd

6	DHCP (Ethernet/IEEE 802.11)	
	This SP code allows you confirm and change the setting that determines whether the IP address is used with DHCP on an Ethernet or wireless (802.11) LAN network. [0 to 1 / **1** / 1] 0: Not used (manual setting) 1: Used	
21	Active IPv4 Address	
	This SP allows you to confirm the IPv4 address that was used when the machine started up with DHCP.	
22	Active IPv4 Subnet Mask	
	This SP allows you to confirm the IPv4 subnet mask setting that was used when the machine started up with DHCP.	
23	Active IPv4 Gateway Address	
	This SP allows you to confirm the IPv4 default gateway setting that was used when the machine started up with DHCP.	
50	1284 Compatibility (Centro)	Enables and disables bi-directional communication on the parallel connection between the machine and a computer. [0 to 1 / **1** / 1] 0:Off, 1: On
52	ECP (Centro)	Disables and enables the ECP feature (1284 Mode) for data transfer. [0 to 1 / **1** / 1] 0: Disabled, 1: Enabled
65	Job Spooling	Switches the job spooling on and off. [0 to 1 / **0** / 1] 0: No spooling, 1: Spooling enabled

66	Job Spooling Clear: Start Time	This SP determines whether the job interrupted at power off is resumed at the next power on. This SP operates only when SP5828-065 is set to "1". [0 to 1 / **1** / 1] 1: Resumes printing spooled jog. 0: Clears spooled job.		
69	Job Spooling (Protocol)	This SP determines whether job spooling is enabled or disabled for each protocol. This is a 8-bit setting. [0 to 1 / **1** / 1] 0: No spooling, 1: Spooling enabled		
	0	LPR	4	BMLinks (Japan Only)
	1	FTP (Not Used)	5	DIPRINT
	2	IPP	6	Reserved (Not Used)
	3	SMB	7	Reserved (Not Used)
90	TELNET (0:OFF 1:ON)	Disables or enables Telnet operation. If this SP is disabled, the Telnet port is closed. [0 to 1 / **1** / 1] 0: Disable, 1: Enable		
91	Web (0:OFF 1:ON)	Disables or enables the Web operation. [0 to 1 / **1** / 1] 0: Disable, 1: Enable		
145	Active IPv6 Link Local Address	This is the IPv6 local address referenced on the Ethernet or wireless LAN (802.11) in the format: "Link-Local address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. These notations can be abbreviated. See "Note: IPV6 Addresses " below this table.		

147	Active IPv6 Stateless Address 1	These SPs are the IPv6 stateless addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11b) in the format: "Stateless Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
149	Active IPv6 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 (802.11) in the format: "Manual Set Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. These notations can be abbreviated. See "Note: IPV6 Addresses" below this table.	
158	IPv6 Gateway	
	This SP is the IPv6 gateway address referenced on the Ethernet or wireless LAN (802.11). The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. These notations can be abbreviated. See "Note: IPV6 Addresses" below this table.	

Note: IPV6 Addresses

Ethernet and the Wireless LAN (802.11) reference the IPV6 "Link-Local address + Prefix Length". The IPV6 address consists of 128 bits divided into 8 blocks of 16 bits:
aaaa:bbbb:cccc:dddd:eeee:ffff:gggg:hhhh:

The prefix length is inserted at the 17th byte (Prefix Range: 0x0 to 0x80). The initial setting is 0x40 (64).

For example, the data: "2001123456789012abcdef012345678940h" is expressed:

"2001:1234:5678:9012:abcd:ef01:2345:6789": prefixlen 64

However, the actual IPV6 address display is abbreviated according to the following rules.

Rules for Abbreviating IPV6 Addresses

The IPV6 address is expressed in hexadecimal delimited by colons (:) with the following characters:

0123456789abcdefABCDEF

1. A colon is inserted as a delimiter every 4th hexadecimal character.

   fe80:0000:0000:0000:0207:40ff:0000:340e

2. The notations can be abbreviated by eliminating zeros where the MSB and digits following the MSB are zero. The example in "2" above, then, becomes

   fe80:0:0:0207:40ff:0:340e

3. Sections where only zeros exist can be abbreviated with double colons (::). This abbreviation can be done also where succeeding sections contain only zeros (but this can be done only at one point in the address). The example in "2" and "3" above then becomes:

   fe80::207:40ff:0:340e (only the first null sets zero digits are abbreviated as "::")

   -or-

   fe80:0:0:0:207:40ff::340e (only the last null set before "340e" is abbreviated as "::")

161	IPv6 Stateless Auto Setting	Enable or disables the automatic setting for IPv6 stateless.
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 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 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	HDD	HDD Formatting
	Enter the SP number for the partition to initialize, then press #. When the execution ends, cycle the machine off and on.	
1	HDD Formatting (All)	
2	HDD Formatting (IMH)	

3	HDD Formatting (Thumbnail)
4	HDD Formatting (Job Log)
5	HDD Formatting (Printer Fonts)
6	HDD Formatting (User Info.)
7	Mail RX Data
8	Mail TX Data
9	HDD Formatting (Data for Design)
10	HDD Formatting (Log)
11	HDD Formatting (Ridoc I/F DeskTopBinder)

5840	IEEE 802.11	
6	Channel MAX	
	Sets the maximum range of the bandwidth for the wireless LAN. This bandwidth setting varies for different countries. [1 to 14/1]	
7	Channel MIN	
	Sets the minimum range of the bandwidth for operation of the wireless LAN. This bandwidth setting varies for different countries. [1 to 14/1]	
8	Transmission Speed	[0 x 00 to 0 x FF / **0 x FF to Auto** / -]
	0 x FF to Auto [Default] 0 x 11 – 55M Fix 0 x 10 – 48M Fix 0 x 0F – 36M Fix 0 x 0E – 18M Fix 0 x 0D – 12M Fix 0 x 0B – 9M Fix 0 x 0A – 6M Fix	 0 x 07 – 11M Fix 0 x 05 – 5.5M Fix 0 x 08 – 1M Fix 0 x 13 – 0 x FE (reserved) 0 x 12 – 72M (reserved) 0 x 09 – 22M (reserved)

11	WEP Key Select
	Determines how the initiator (SBP-2) handles subsequent login requests. [0 to 1/1] 0: If the initiator receives another login request while logging in, the request is refused. 1: If the initiator receives another login request while logging in, the request is refused and the initiator logs out. **Note:** Displayed only when the wireless LAN card is installed.
42	Fragment Thresh
	Adjusts the fragment threshold for the IEEE802.11 card. [256 to 2346 / **2346** / 1] This SP is displayed only when the IEEE802.11 card is installed.
43	11g CTS to Self
	Determines whether the CTS self function is turned on or off. [0 to 1 / **1** / 1] 0: Off, 1: On This SP is displayed only when the IEEE802.11 card is installed.
44	11g Slot Time
	Selects the slot time for IEEE802.11. [0 to 1 / **0** / 1] 0: 20 µm, 1: 9 µm This SP is displayed only when the IEEE802.11 card is installed.
45	WPA Debug Lvl
	Selects the debug level for WPA authentication application. [1 to 3 / **3** / 1] 1: Info, 2: warning, 3: error This SP is displayed only when the IEEE802.11 card is installed.

5841	Supply Name Setting
	Press the User Tools key. These names appear when the user presses the Inquiry button on the User Tools screen.
1	Toner Name Setting: Black
2	Toner Name Setting: Cyan
3	Toner Name Setting: Yellow

4	Toner Name Setting: Magenta	
7	Org Stamp	
8	Paste Name	
11	StapleStd1	
12	StapleStd2	
13	StapleStd3	Standard Staples for D373/D374
14	StapleStd4	
21	StapleBind1	**Booklet Staples for D374**
22	StapleBind2	
23	StapleBind3	
31	Ring Name (50/Black)	Ring Binders for D392
32	Ring Name (50/White)	
33	Ring Name (100/Black)	
34	Ring Name (100/White)	

5842	GWWS Analysis **DFU**		
1	Settings 1		
2	Settings 2		
	This is a debugging tool. It sets the debugging output mode of each Net File process. Bit SW 0011 1111	Bit	Groups
		0	System & other groups (LSB)
		1	Capture related
		2	Authentication related
		3	Address book related
		4	Machine management related
		5	Output related (printing, delivery)
		6	Repository related

5844	USB
1	Transfer Rate
	Sets the speed for USB data transmission. [Full Speed] [Auto Change]
2	Vendor ID
	Sets the vendor ID: Initial Setting: 0x05A Ricoh Company [0x0000 to 0xFFFF/1] **DFU**
3	Product ID
	Sets the product ID. [0x0000 to 0xFFFF/1] **DFU**
4	Device Release Number
	Sets the device release number of the BCD (binary coded decimal) display. [0000 to 9999/1] **DFU** Enter as a decimal number. NCS converts the number to hexadecimal number recognized as BCD.
5	Fixed USB Port
6	PnP Model Name
7	PnP Serial Number
100	Notify Unsupport

5845	Delivery Server Setting
	These are delivery server settings.
1	FTP Port No.
	[0 to 65535/1]

2	IP Address (Primary)
	Use this SP to set the Scan Router Server address. The IP address under the transfer tab can be used with the initial system setting. [0 to FFFFFFFF/1]
6	Delivery Error Display Time
	Use this setting to set the length of time that the message is shown when a test error occurs during document transfer with the NetFile application and an external device. [0 to 999/1]
8	IP Address (Secondary)
	Sets the IP address that is given to the computer that is the secondary delivery server for Scan Router. This SP lets you set only the IP address, and does not refer to the DNS setting.
9	Delivery Server Model
	Lets you change the model of the delivery server that is registered by the I/O device. [0 to 4/1] 0: Unknown 1: SG1 Provided 2: SG1 Package 3: SG2 Provided 4: SG2 Package
10	Delivery Svr. Capability
	Changes the functions that the registered I/O device can do. [0 to 255/1] Bit7 = 1 Comment information exits Bit6 = 1 Direct specification of mail address possible Bit5 = 1 Mail RX confirmation setting possible Bit4 = 1 Address book automatic update function exists Bit3 = 1 Fax RX delivery function exists Bit2 = 1 Sender password function exists Bit1 = 1 Function to link MK-1 user and Sender exists Bit0 = 1 Sender specification required (if set to 1, Bit6 is set to "0")

11	Delivery Svr.Capability (Ext)
	These settings are for future use. They will let you increase the number of registered devices (in addition to those registered for SP5845 010). There are eight bits (Bit 0 to Bit 7). All are unused at this time.

13	Server Scheme (Primary)	
14	Server port Number (Primary)	[1 to 65535 / **80** / 1]
15	Server URL Path (Primary)	
16	Server Scheme (secondary)	
17	Server Port Number (Secondary)	[1 to 65535 / **80** / 1]
18	Server URL Path (Secondary)	
22	Rapid Sending Control	
	[0 to 1 / **0** / -] 0: Disable, 1: Enable Enables or disables the prevention function for the continuous data sending error.	

5846	UCS Setting
1	Machine ID (for Delivery Server)
	Displays the unique device ID in use by the delivery server directory. • The value is only displayed and cannot be changed. • This ID is created from the NIC MAC or IEEE 1394 EUI. • The ID is displayed as either 6-byle or 8-byte binary.
2	Machine ID Clear (for Delivery Server)
	Clears the unique ID of the device used as the name in the file transfer directory. Execute this SP if the connection of the device to the delivery server is unstable. After clearing the ID, the ID will be established again automatically by cycling the machine off and on.

3	Maximum Entries
	Changes the maximum number of entries that UCS can handle. [2000 to 20000 / **2000** / 1 step] If a value smaller than the present value is set, the UCS managed data is cleared, and the data (excluding user code information) is displayed.
6	Delivery Server Retry Timer
	Sets the interval for retry attempts when the delivery server fails to acquire the delivery server address book. [0 to 255 / **0** / 1 step] 0: No retries
7	Delivery Server Retry Times
	Sets the number of retry attempts when the delivery server fails to acquire the delivery server address book. [0 to 255 / **0** / 1step]
8	Delivery Server Maximum Entries
	Lets you set the maximum number of account entries and information about the users of the delivery server controlled by UCS. [20000 to 20000 / **2000** / 1 step]
20	WSD Maximum Entries
21	Folder Auth Change
10	LDAP Search Timeout
	Sets the length of the time-out for the search of the LDAP server. [1 to 255 / **60** /1 step]

40	Addr Book Migration (USB -> HDD) This SP moves the address book data from the SD card or flash ROM on the controller board to the HDD. You must cycle the machine off and on after executing this SP. 1. Turn the machine off. 2. Install the HDD. 3. Turn the machine on. 4. Do SP5846 040. 5. Turn the machine off/on. **Note**: Executing this SP overwrites any address book data already on the HDD with the data from the flash ROM on the controller board. We recommend that you back up all directory information to an SD card with SP5846-051 before you execute this SP. After the address book data is copied to HDD, all the address book data is deleted from the flash ROM. If the operation fails, the data is not erased from the flash ROM.
41	Fill Addr Acl Info.
	This SP must be executed immediately after installation of an HDD unit in a basic machine that previously had no HDD. The first time the machine is powered on with the new HDD installed, the system automatically takes the address book from the NVRAM and writes it onto the new HDD. However, the new address book on the HDD can be accessed only by the system administrator at this stage. Executing this SP by the service technician immediately after power on grants full address book access to all users. **Procedure** 1. Turn the machine off. 2. Install the new HDD. 3. Turn the machine on. 4. The address book and its initial data are created on the HDD automatically. However, at this point the address book can be accessed by only the system administrator or key operator. 5. Enter the SP mode and do SP5846 041. After this SP executes successfully, any user can access the address book.

43	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
46	Initialize All Settings & Address Book	
47	Initialize Local Address Book	
	Clears all of the address information from the local address book of a machine managed with UCS.	
48	Initialize Delivery Addr Book	
	Push [Execute] to delete all items (this does not include user codes) in the delivery address book that is controlled by UCS.	
49	Initialize LDAP Addr Book	
	Push [Execute] to delete all items (this does not include user codes) in the LDAP address book that is controlled by UCS.	
50	Initialize All Addr Book	
	Clears everything (including users codes) in the directory information managed by UCS. However, the accounts and passwords of the system administrators are not deleted.	
51	Backup All Addr Book	
	Copies all directory information to the SD card. Do this SP before replacing the controller board or HDD. The operation may not succeed if the controller board or HDD is damaged.	
52	Restore All Addr Book	
	Copies back all directory information from the SD card to the flash ROM or HDD. Upload the address book from the old flash ROM or HDD with SP5846-51 before removing it. Do SP5846 52 after installing the new HDD.	

<table>
<tr><td rowspan="2">53</td><td colspan="2">Clear Backup Info.</td></tr>
<tr><td colspan="2">Deletes the address book uploaded from the SD card in the Slot 1 (lower slot). Deletes only the files uploaded for that machine. This feature does not work if the card is write-protected.
Note: After you do this SP, go out of the SP mode, turn the power off. Do not remove the SD card until the Power LED stops flashing.</td></tr>
<tr><td rowspan="10">60</td><td colspan="2">Search Option</td></tr>
<tr><td colspan="2">This SP uses bit switches to set up the fuzzy search options for the UCS local address book.</td></tr>
<tr><td>Bit</td><td>Meaning</td></tr>
<tr><td>0</td><td>Checks both upper/lower case characters</td></tr>
<tr><td>1</td><td rowspan="3">Japan Only</td></tr>
<tr><td>2</td></tr>
<tr><td>3</td></tr>
<tr><td>4</td><td>--- Not Used ---</td></tr>
<tr><td>5</td><td>--- Not Used ---</td></tr>
<tr><td>6</td><td>--- Not Used ---</td></tr>
<tr><td>7</td><td>--- Not Used ---</td></tr>
<tr><td rowspan="2">62</td><td colspan="2">Complexity Option 1</td></tr>
<tr><td colspan="2">Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to upper case and sets the length of the password.
[0 to 32 / 0 / 1step]
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.</td></tr>
</table>

63	Complexity Option 2 Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to lower case and defines the length of the password. [0 to 32 / **0** / 1step] **Note**: • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.
64	Complexity Option 3 Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to numbers and defines the length of the password. [0 to 32 / **0** / 1step] **Note**: • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.
65	Complexity Option 4 Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to symbols and defines the length of the password. [0 to 32 / **0** / 1step] **Note**: • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.
91	FTP Auth Port Setting Sets the FTP port to get the delivery server address book that is used in the individual authorization mode. [0 to 65535 / **3671** / 1step]

94	Encryption Start
	Shows the status of the encryption function of the address book on the LDAP server. [0 to 255 / 1] No default

5847	Rep Resolution Reduction		
	• 5847 1 through 5847 6 changes the default settings of image data sent externally by the Net File page reference function. • [0 to 2/1] • 5847 21 sets the default for JPEG image quality of image files controlled by NetFile. • "NetFile" refers to jobs to be printed from the document server with a PC and the DeskTopBinder software.		
1	Rate After Copy Col	[0 to 5/1]	0: 1x 1: 1/2x 2: 1/3x 3: 1/4x 4: 1/6x 5: 1/8x 6: 2/3x1 1: "6: 2/3x" applies to 003, 005, 006 only.
2	Rate for Copy B&W Text	[0 to 6/1]	
3	Rate for Copy B&W Other	[0 to 6/1]	
4	Rate for Printer Color	[0 to 5/1]	
5	Rate for Printer B&W	[0 to 6/1]	
6	Rate for Printer Color 1200 dpi		
7	Rate for Printer B&W 1200 dpi		
21	Network Quality Default for JPEG		
	Sets the default value for the quality of JPEG images sent as NetFile pages. This function is available only with the MLB (Media Link Board) option installed. [5 to 95/1]		

5848	Web Service	
	5848-2 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 of images that can be downloaded. The default is equal to 1 gigabyte.	
1	Access Control.: NetFile (Lower 4 Bits Only)	
	Bit switch settings. 0000: No access control 0001: Denies access to Desk Top Binder. Access and deliveries from Scan Router have no effect on capture.	
2	Acc. Ctrl.: Repository (only Lower 4 Bits)	0000: No access control 0001: Denies access to DeskTop Binder.
3	Acc. Ctrl.: Doc. Svr. Print (Lower 4 Bits)	Switches access control on and off. 0000: OFF, 0001: ON
4	Acc. Ctrl.: User Directory (Lower 4 Bits)	
7	Acc. Ctrl Comm. Log Fax (Lower 4 Bits)	
9	Acc. Ctrl.: Job Control (Lower 4 Bits)	
11	Acc. Ctrl: Device Management (Lower 4 Bits)	
21	Acc. Ctrl: Delivery (Lower 4 Bits)	
22	Acc. Ctrl: User Administration (Lower 4 Bits)	
99	Repository Download Image Set	
100	Repository: Download Image Max. Size	Specified the max size of the image data that the machine can download/ [1 to 1024 / **1024** / 1 K]
210	Setting: Log Type: Job 1	
	No information is available at this time.	
211	Setting: Log Type: Job 2	
	No information is available at this time.	

212	Setting: Log Type: Access
	No information is available at this time.
213	Setting: Primary Srv
	No information is available at this time.
214	Setting: Secondary Srv
	No information is available at this time.
215	Setting: Start Time
	No information is available at this time.
216	Setting: Interval Time
	No information is available at this time.
217	Setting: Timing
	No information is available at this time.

5849	Installation Date
	Displays or prints the installation date of the machine.
1	Display
	The "Counter Clear Day" has been changed to "Installation Date" or "Inst. Date".
2	Switch to Print
	Determines whether the installation date is printed on the printout for the total counter. [0 to 1/1] 0: No Print 1: Print
3	Total Counter

5850	Address Book Function **Japan Only**
	The machine is sold ready to use with a G3 line. Touch [Replacement] to switch all at once to convert to G4 after you add a G4 line. Conversely, if for some reason the G4 line becomes unusable, you can easily switch back to G3.

5851	Bluetooth
	Sets the operation mode for the Bluetooth Unit. Press either key. **[0: Public]** / [1: Private]

5853	Stamp Data Download
	Touch [EXECUTE] to download the fixed stamp data from the machine ROM onto the hard disk. Then these stamps can be used by the system. If this is not done, the user will not have access to the fixed stamps ("Confidential", "Secret", etc.). You must always execute this SP after replacing the HDD or after formatting the HDD. Always switch the machine off and on after executing this SP.

5856	Remote ROM Update
	When set to "1" allows reception of firmware data via the local port (IEEE 1284) during a remote ROM update. This setting is reset to zero after the machine is cycled off and on. Allows the technician to upgrade the firmware using a parallel cable [0 to 1/1] 0: Not allowed 1: Allowed

5857	Save Debug Log
1	On/Off (1:ON 0:OFF)
	Switches on the debug log feature. The debug log cannot be captured until this feature is switched on. [0 to 1/1] 0: OFF 1: ON
2	Target (2: HDD 3: SD Card)
	Selects the destination where the debugging information generated by the event selected by SP5858 will be stored if an error is generated [2 to 3 /1] 2: HDD 3: SD Card

5	Save to HDD
	Specifies the decimal key number of the log to be written to the hard disk.
6	Save to SD Card
	Specifies the decimal key number of the log to be written to the SD Card.
9	Copy HDD to SD Card (Latest 4 MB)
	Takes the most recent 4 MB of the log written to the hard disk and copies them to the SD Card. A unique file name is generated to avoid overwriting existing file names on the SD Card. Up to 4MB can be copied to an SD Card. 4 MB segments can be copied one by one to each SD Card.
10	Copy HDD to SD Card Latest 4 MB (Any Key)
	Takes the log of the specified key from the log on the hard disk and copies it to the SD Card. A unique file name is generated to avoid overwriting existing file names on the SD Card. Up to 4 MB can be copied to an SD Card. 4 MB segments can be copied one by one to each SD Card. This SP does not execute if there is no log on the HDD with no key specified.
11	Erase HDD Debug Data
	Erases all debug logs on the HDD
12	Erase SD Card Debug Data
	Erases all debug logs on the SD Card. If the card contains only debugging files generated by an event specified by SP5858, the files are erased when SP5857 010 or 011 is executed. To enable this SP, the machine must be cycled off and on.
13	Free Space on SD Card
	Displays the amount of space available on the SD card.
14	Copy SD to SD (Latest 4MB)
	Copies the last 4MB of the log (written directly to the card from shared memory) onto an SD card.
15	Copy SD to SD (Latest 4MB Any Key)
	This SP copies the log on an SD card (the file that contains the information written directly from shared memory) to a log specified by key number.

16	Make HDD Debug
	This SP creates a 32 MB file to store a log on the HDD.
17	Make SD Debug
	This SP creates a 4 MB file to store a log on an SD card.

5858	Debug Save When
	These SPs select the content of the debugging information to be saved to the destination selected by SP5857 002. SP5858 3 stores one SC specified by number. Refer to Section 4 for a list of SC error codes.
1	Engine SC Error (0:OFF 1:ON)
	Stores SC codes generated by copier engine errors. [0 to 1/1] 0: OFF 1: ON
2	Controller SC Error (0:OFF 1:ON)
	Stores SC codes generated by GW controller errors. [0 to 1/1] 0: OFF 1: ON
3	Any SC Error
	[0 to 65535/1]
4	Jam (0:OFF 1:ON)
	Stores jam errors. [0 to 1/1] 0: OFF 1: ON

5859	Debug Save Key No.

1 to 10	Key 1 to Key 10	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 9999999/1]

5860	SMTP/POP3/IMAP4
20	Partial Mail Receive Timeout
	[1 to 168 / **72** /1] Sets the amount of time to wait before saving a mail that breaks up during reception. The received mail is discarded if the remaining portion of the mail is not received during this prescribed time.
21	MDN Response RFC2298 Compliance
	Determines whether RFC2298 compliance is switched on for MDN reply mail. [0 to 1 / **1** / 1] 0: No, 1: Yes
22	SMTP Auth. From Field Replacement
	Determines whether the FROM item of the mail header is switched to the validated account after the SMTP server is validated. [0 to 1 / **0** / 1] 0: No. "From" item not switched. 1: Yes. "From" item switched.
25	SMTP Auth Direct Sending
	Select the authentication method for SMPT. Bit 0: LOGIN Bit 1: PLAIN Bit 2: CRAM_MD5 Bit 3: DIGEST_MD5 Bit 4 to Bit 7: Not Used **Note**: This SP is activated only when SMTP authentication is enabled by UP mode.

26	S/MIVE: MIME Header Setting
	Selects the MIME header type of an E-mail sent by S/MIME. [0 to 2 / **0** / 1] 0: Microsoft Outlook Express standard 1: Internet Draft standard 2: RFC standard

5866	E-Mail Report
1	Report Validity
	Enables or disables the email alert function. [0 or 1 / **0** / –] 0: Enabled, 1: Disabled
5	Add Date Field
	Adds or does not add the date field to the header of the alert mail. [0 or 1 / **0** / –] 0: Not added, 1: Added

5870	Common Key Info Writing	
	Writes to flash ROM the common proof for validating the device for NRS specifications.	
1	Writing	Note: These SPs are for future use and currently are not used.
3	Initialize	

5873	SD Card Apli Move	
	Allows you to move applications from one SD card another. For more, see "Moving Applications to One SD Card" in Section 1.	
1	Move Exec	Executes the move from one SD card to another.
2	Undo Exec	This is an undo function. It cancels the previous execution.

5875	SC Auto Reboot
	This SP determines whether the machine reboots automatically when an SC error occurs. **Note**: The machine does not rebut for Type A (fatal) SC code errors.

1	Reboot Setting
	[0 to 1/ **0** / 1] 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.
2	Reboot Type
	[0 to 1 / **0** / 1] 0: Manual reboot, 1: Automatic reboot

5876	Security Clear
1	All Clear
11	Clear NCS Security
15	Clear UCS Security

5878	Option Setup
	Select the option to enable then touch [EXECUTE].
1	Data Overwrite Security
2	HDD Encryption

5881	Fixed Phase Block Erasing **DFU**
	Detects fixed phase.

5885	Set WIM Function

20	DocSvr Acc Ctrl	Allows or disallows the functions of web image monitor. **0**: OFF, 1: ON Bit: 0: Forbid all document server access 1: Forbid user mode access 2: Forbid print function 3: Forbid Fax 4: Forbid scan sending 5: Forbid download 6: Forbid delete 7: Forbid guest user
50	DocSvr Format	
	Selects the display type for the document box list. [0 to 2 / **0** / 1] 0: Thumbnail, 1: Icon, 2: Details	
51	DocSvr Trans	
	Sets the number of documents to be displayed in the document box list. [5 to 20 / **10** / 1]	
100	Set Signature	
101	Set Encryption	
	Determines whether the scanned documents with the WIM are encrypted when they are transmitted by an e-mail. [0 to 1 / **0** / 1] 0: Not encrypted, 1:Encryption	
200	Detect Mem Leak	
201	DocSvr Timeout	

5887	SD Get Counter

	This SP sends a text file to an SD card inserted in SD card Slot 1 (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 1 (lower slot). 2. Select SP5887 then touch [EXECUTE]. 3. Touch [Execute] in the message when you are prompted.

5888*	Personal Information Protect
	Selects the protection level for logs. [0 to 1 / **0** / 1] 0: No authentication, No protection for logs 1: No authentication, Protected logs (only an administrator can see the logs)

5893	SDK Application Counter
1	SDK-1
2	SDK-2
3	SDK-3
4	SDK-4
5	SDK-5
6	SDK-6

5894	External Charge Unit Setting

5895	Application Invalidation
1	Printer
2	Scanner

5907	Plug & Play Maker/Model Name

	Selects the brand name and the production name for Windows Plug & Play. This information is stored in the NVRAM. If the NVRAM is defective, these names should be registered again. After selecting, press the "Original Type" key and "#" key at the same time. When the setting is completed, the beeper sounds five times.

5913	Switchover Permission Time
2	Print Application Timer
	Sets the length of time to elapse before allowing another application to take control of the display when the application currently controlling the display is not operating because a key has not been pressed. [3 to 30/1 s]
102	Print Application Set
	No information is available at this time. [0 to 1/1/1]

5959	Paper Size	
	Tray 1 (tandem tray) and the LCT do not have automatic paper size detection. Use these SP codes to set the paper size for Tray 1 and the optional LCT when it is installed.	
1	Tray 1	
	The following paper sizes can be set. If the A3 DLT kit is not installed, you can only use settings 0 and 1	
	0: A4	4: A4 SEF
	1: 8 1/2*11	5: 11 * 17
	2: A3 SEF	6: 8 1/2 * 14 SEF
	3: B4 SEF	7: 8 1/2 * 11 SEF

2	LCT	
	The LCT accepts the paper sizes below. Enter the correct number of the size of the paper loaded in the LCT:	
	0: A4	4: 8 1/2 * 11 SEF
	1: 8 1/2*11	5: B4 SEF
	2: B5	6: 8 1/2 * 14 SEF
	3: A4 SEF	

5967	Copy Server: Set Function
	Enables and disables the document server. This is a security measure that prevents image data from being left in the temporary area of the HDD. After changing this setting, you must switch the main switch off and on to enable the new setting. [0 to 1/1] 0: ON 1: OFF

5974	Cherry Server
	Selects which version of the Scan Router application program, "Light" or "Full (Professional)", is installed. [0 to 1 / 0 / 1 /step] 0: Light version (supplied with this machine) 1: Full version (optional)

5985	Device Setting
	The NIC and USB support features are built into the GW controller. Use this SP to enable and disable these features. In order to use the NIC and USB functions built into the controller board, these SP codes must be set to "1".
1	On Board NIC

	[0 to 2 / **1** / 1 /step] 0: Disable, 1: Enable, 2: Function limitation When the "Function limitation" is set, "On board NIC" is limited for use with only NRS or LDAP/NT authentication. Note: • Other network applications than @Remote or LDAP/NT authentication are not available when this SP is set to "2". • Even if you can change the initial settings of those network applications, the settings will not work
2	On Board USB
	[0 or 1 / **0** / 1/step] 0: Disable, 1: Enable

5990	SP Print Mode (SMC Print)
	In the SP mode, press Copy Window to move to the copy screen, select the paper size, then press Start. Select A4/LT (Sideways) or larger to ensure that all the information prints. Press SP Window to return to the SP mode, select the desired print, and press Execute.
1	All (Data List)
2	SP (Mode Data List)
3	User Program
4	Logging Data
5	Diagnostic Report
6	Non-Default (Prints only SPs set to values other than defaults.)
7	NIB Summary
8	Capture Log
21	Copier User Program
22	Scanner SP
23	Scanner User Program
24	SDK/J Summary

25	SDK/J Application Info

Group 6000

6006	Reg Adj
1	ADF Main Reg Adj: Front Adjusts the side-to-side registration for the front in ADF mode. [–3 to +3/**0**/0.1 mm]
2	ADF Main Reg Adj: Rear Adjusts the side-to-side registration for the back in ADF mode. [–3 to +3/**0**/0.1 mm]
3	ADF Sub Reg Adj: Front Adjusts the vertical registration for the front in ADF mode. [–5 to +5/**0**/0.1 mm]
4	ADF Sub Reg Adj: Rear Adjusts the vertical registration for the back in ADF mode. [–5 to +5/**0**/0.1 mm]
5	ADF Buckle Adj: Amount 1 Adjusts the roller timing at the skew correction sensor/entrance roller. A higher setting causes more buckling. [–3 to +3/**0**/0.1 mm]
6	ADF Buckle Adj: Amount 2 Adjusts the roller timing at the interval sensor/scanning roller. A higher setting causes more buckling. [3 to -2/**0**/0.1 mm]
7	ADF TEdge Erase Margin: Front These settings adjust the erase margin for the trailing edges for the front. [–5 to +5/**-1**/0.1 mm]
8	ADF TEdge Erase Margin: Rear These settings adjust the erase margin for the trailing edges for the back. [–5 to +5/**-1**/0.1 mm]

6007	ADF Input Check		
	Open SP mode SP6007. 1. Select the SP number that corresponds to the component you wish to check. (Refer to the table below.) 2. Press On then press Off to test the selected item. You cannot exit and close this display until you click Off to switch off the output check currently executing.		
	Description	Reading	
		0	1
1	Original Tray B5 Detect Sensor	No paper	Paper detected
2	Original Tray A4 Detect Sensor	No paper	Paper detected
3	Original Tray LG Detect Sensor	No paper	Paper detected
4	Original Width Sensor 1	No paper	Paper detected
5	Original Width Sensor 2	No paper	Paper detected
6	Original Width Sensor 3	No paper	Paper detected
7	Original Width Sensor 4	No paper	Paper detected
8	Original Width Sensor 5	No paper	Paper detected
9	Original Set Sensor	No paper	Paper detected
10	Separation Sensor	No paper	Paper detected
11	Skew Correction Sensor	No paper	Paper detected
12	Entrance Sensor	No paper	Paper detected
13	Registration Sensor	No paper	Paper detected
14	Exit Sensor	No paper	Paper detected
15	Cover Sensor	Open	Close
16	ADF Position Sensor	Open	Close
18	Pick-up Roller HP Sensor	Not HP	HP
20	APS Start Sensor	Not Start	Start
21	Bottom Plate HP Sensor	Not HP	HP

22	Bottom Plate Position Sensor	Not Correct Position	Correct Position

6008	ADF Output Check
	Turns on the ADF electrical components individually for testing. 1. Open SP mode SP6008. 2. Select the SP number that corresponds to the component you wish to check. 3. Press [On] then press [Off]to test the selected item. You cannot exit and close this display until you click Off to switch off the output check currently executing.
001	ADF Feed M: Fwd
002	ADF Feed M: Rev
003	ADF Trans M: Fwd
004	ADF Exit M: Fwd
009	ADF Pickup M: Fwd
010	ADF BotPlt M: Fwd/Rev

6009	ADF Free Run	
	This SP does an ADF free run in duplex original mode.	
1	Simplex	
2	Dupx	

6016	ADF OrgSizePrior
	ADF Original Size Detection Priority. Allows selection of alternate settings for automatic original size detection. (7) 0000 0000 (1)

6017	ADF Mag Adj
	ADF Magnification Adjustment

	This changes the magnification by adjusting the speed of scanning. [–50(–5%) to +50(+5%)/0.1%]

6020	ADF Mag Adj – ADF Buckle Op Set	
	This SP switches on stopping the scanning entrance roller for all paper sizes. Normally, the scanning entrance roller stops briefly to correct skew of small paper sizes in the ADF paper path. Setting this SP to "1" sets the ADF to stop the scanning entrance roller for all paper sizes to correct for skew a second time.	
1	ADF Buckle Op Set	[0 to 1/1]

6020	ADF Skew Correction Mode In/Out
	If the original is small (B6, A5, HLT), the delay sensor detects the leading edge of the sheet and delays the original at the entrance roller for the prescribed number of pulses to buckle the leading edge and correct skew. [0 to 1/1] 0: Delay skew correction only for small originals 1: Delay skew correction for all originals, regardless of size. (May reduce the scanning speed of the ADF)

6090	LCT Output Chk	A4/LT LCT (MAUI) B473
	Use these SPs to do the output check for the optional LCT.	
1	LCT Feed M	
2	LCT Pickup SOL	

6091	LCT Input Chk	LCIT RT4000 D350
	Use these SPs to do the input check for the optional LCIT.	
1	Wide LCT Feed Sn	
2	Wide LCT Trans Sn	
3	Wide LCT Exit Sn	
4	Wide LCT Door Switch	

6092	LCT Output Chk	LCIT RT4000 D350
	Use these SPs to do the output check for the optional LCIT.	
1	Wide LCT Feed M Lo1	
2	Wide LCT Feed M Lo2	
3	Wide LCT Feed M Hi1	
4	Wide LCT Feed M Hi2	
5	Wide LCT Trans M Lo1	
6	Wide LCT Trans M Lo2	
7	Wide LCT Trans M Hi1	
8	Wide LCT Trans M Hi2	
9	Wide LCT Exit M Lo1	
10	Wide LCT Exit M Lo2	
11	Wide LCT Exit M Hi1	
12	Wide LCT Exit M Hi2	
13	Wide LCT Pickup SOL	
14	Wide LCT Fan F	
15	Wide LCT Fan R	

6100	Adj Punch Pos 1	
1	2-Hole: DOM	
2	3-Hole: NA	
3	4-Hole: EU	
4	4-Hole: SCAN	
5	2-Hole: NA	
6	2-Hole: DOM FM2	

6101	Adj Punch Pos 2	Punch B702 for Finishers D373/D374

	Punch Position Adjustment Adjusts the punch hole positions in the direction of paper feed. • NA: North America • DOM: Japan • EU: Europe • SCAN: Scandinavia	
1	2-Hole:DOM	[-75 to +75/0.5 mm] + Value: Shifts punch unit in the direction of feed. - Value: Shifts punch unit against direction of feed.
2	3-Hole:NA	
3	4-Hole:EU	
4	4-Hole:SCAN	
5	2-Hole:NA	

6102	Punch Hole Reg 1	Punch B702 for Finishers D373/D374
	This SP corrects punch hole alignment by correcting the skew of each by adjusting the amount of time the finisher entrance roller remains off while the exit roller of the machine remains on. This buckles the leading edge of the sheet slightly against the finisher entrance roller while it remains off.	

1	A3 SEF	[-5~+5/0.25 mm] • + Value:Increases time finisher entrance roller remains off. • - Value: Descreases time finisher entrance roller remains off.
2	B4 SEF	
3	A4 SEF	
4	A4 LEF	
5	B5 SEF	
6	B5 LEF	
7	DLT SEF	
8	LG SEF	
9	LT SEF	
10	LT LEF	
11	12"x18"	
12	Custom	

6103	Punch Hole Reg 2	Punch B702 for Finishers D373/D374
	This SP determines whether the finisher entrance roller stops to correct skew when paper enters the finisher.	

1	A3 SEF	[0 to 1/1/1] 0: Paper stops for skew correction 1: Paper does not stop
2	B4 SEF	
3	A4 SEF	
4	A4 LEF	
5	B5 SEF	
6	B5 LEF	
7	DLT SEF	
8	LG SEF	
9	LT SEF	
10	LT LEF	
11	12"x18"	
12	Custom	

6104	Fine Adj Staple:Fin1	2000/3000-Sheet Finishers D373/D374
	This SP corrects the distance between the jogger fences and the sides of the stack on the finisher stapling tray.	

1	A3 SEF	[-15~+1.5/0.5 mm] • + Value: ncreases distance between jogger fences and the sides of the stack. • - Value: Decreases the distance between the jogger fences and the sides of the stack.
2	B4 SEF	
3	A4 SEF	
4	A4 LEF	
5	B5 SEF	
6	B5 LEF	
7	DLT SEF	
8	LG SEF	
9	LT SEF	
10	LT LEF	
11	12"x18"	
12	Custom	

6105	Adj Staple Pos:Fin1	2000/3000-Sheet Finishers D373/D374
	This SP corrects the stapling position of the corner stapler.	

1	A3 SEF	[-3.5~+3.5/0.5 mm] • - Value: Moves stapling position toward the rear of the machine. • + Value: Shifts the stapling position toward the front of the machine.
2	B4 SEF	
3	A4 SEF	
4	A4 LEF	
5	B5 SEF	
6	B5 LEF	
7	DLT SEF	
8	LG SEF	
9	LT SEF	
10	LT LEF	
11	12"x18"	
12	Custom	

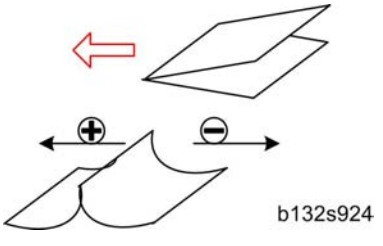
6106	Adj Out Jog Fences		
1	A3 SEF	9	DLT SEF
2	B4 SEF	10	LG SEF
3	A4 SEF	11	LT SEF
4	A4 SEF	12	LT SEF
5	B5 SEF	13	HLT SEF
6	B5 LEF	14	HLT LEF
7	A5 SEF	15	Other
8	A5 LEF		

6107	Fine Adj Jog Fences:Fin1	2000/3000-Sheet Finishers D373/D374
	This SP corrects the distance between the output jogger fences and the sides of the stack when the output jogger unit attached to the side of the machine jogs sheets as they exit the finisher.	

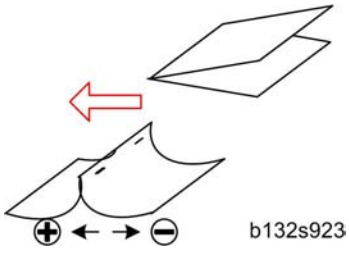
1	A3 SEF	[-15. to +1.5/0/0.5 mm] • + Value: Increases distance between jogger fences and the sides of the stack. • - Value: Decreases the distance between the jogger fences and the sides of the stack.
2	B4 SEF	
3	A4 SEF	
4	A4 LEF	
5	B5 LEF	
6	A5 LEF	
7	DLT SEF	
8	LG SEF	
9	LT SEF	
10	LT LEF	
11	HLT LEF	
12	Other	

6108	Adj Prestack Shts:Fin1	2000/3000-Sheet Finishers D373/D374
	This SP sets the number of sheets sent to the pre-stack tray. With this SP set to the default (3): • 3 sheets are sent to the pre-stack tray. • When the 4th sheet feeds, the 4th sheet and 3 sheets from the pre-stack tray are sent to the stapling tray together. **Note**: You may need to adjust this setting or switch it off when feeding thick or slick paper.	

1	A4 LEF	[0 to 4/3/1 sheet] 0: None 1: 1 sheet 2: 2 sheets 3: 3 sheets 4: 4 sheets
2	LT LEF	
3	B5 LEF	
4	10.5"x7.25" LEF	
5	A4 SEF	
6	LT SEF	
7	B5 SEF	
8	10.5"x7.25" SEF	
9	Other	

6109	Book Fold Adj	
	This SP corrects the folding position when paper is stapled and folded by the 2000-Sheet Finisher (D373)	
1	A3 SEF	[-3 to +3/0.2 mm] + : Shifts staple position toward crease - : Shifts staple position away from crease. 
2	B4 SEF	
3	A4 SEF	
4	B5 SEF	
5	DLT SEF	
6	LG SEF	
7	LT SEF	
8	12x18	
9	Custom	

6110	Book Staple Adj
	This SP corrects the stapling position of the booklet stapler when paper is staple and folded by the 2000-Sheet Finisher (D373).

1	A3 SEF	[-3 to +3/0.2 mm] + : Shifts staple position toward crease - : Shifts staple position away from crease. 
2	B4 SEF	
3	A4 SEF	
4	B5 SEF	
5	DLT SEF	
6	LG SEF	
7	LT SEF	
8	12x18	
9	Custom	

6111	Booklet Fold Repeat	2000-Sheet Finisher D373
	This SP sets the number of times the folding rollers are driven forward and reverse to sharpen the crease of a folded booket before it exits the folding unit. When set at the default (0): • The folding blade pushes the center of the stack into the nip of the folding roller. • The folding rollers rotated ccw to crease the booklet, reverse cw, then rotate ccw again crease the booklet fold twice before feeding to the folding unit exit rollers.	
1	A3 SEF	[0 to 6/0/1] 0: No repeated fold 1: 2 2: 5 3: 10 4: 15 5: 25 6: 30
2	B4 SEF	
3	A4 SEF	
4	B5 SEF	
5	DLT SEF	
6	LG SEF	
7	LT SEF	
8	12x18	
9	Other	

6114	FIN Free Run: Fin2	3000-Sheet Finisher B830

	These SPs set the switch the following free run modes for Finisher 2 (B830). Touch [ON] to switch on, [OFF] to switch off.	
1	Free Run 1	System Free Run
2	Free Run 1	Free Run (Endurance Testing)
3	Free Run 3	Free Run
4	Free Run 4	Shift, Free Run

6115	Input Check:Fin1	2000/3000-Sheet Finishers D373/D374
	Use these SP codes to perform the input checks for either the 2000-Sheet Finisher D373 or 3000-Sheet Finisher D374. The following abbreviations are used below: • Sn: Sensor • HP: Home Position • Stp: Staple • BStapler: Booklet Stapler (D373 only)	
1	Entrance Sn	
2	Proof Exit Sn	
3	Proof Full Sn	
4	Up Tray Exit Sn	
5	Staple Exit Sn	
6	Shift Roll HP Sn	
7	Exit Sn	
8	Exit Guide HP Sn	
9	Low Tray Hgt Sn	
10	Up Tray Hgt Sn	
11	Up Tray Full Sn	
12	Stack Roll HP Sn	
13	Jogger HP Sn	

14	Feed Out HP Sn	
15	Stp Tray Ppr Sn	
16	Stp Tray HP Sn	
17	Stp Rotate HP Sn	
18	Up Tray LimitSW	
19	Door Switch	
20	Corner Stp Oper	
21	Corner Stp In	
22	Corner Staples	
23	Punch HP Sn	
24	Punch Unit Hp Sn	
25	Punch Ppr HP Sn	
26	Punch Full Sn	
27	Punch HP Sn	
28	Punch DIP SW1	
29	Punch DIP SW2	
30	Stack Junc HP Sn	
31	Stack Present Sn	
32	Clamp Roll HP Sn	
33	Fold Entrance Sn	
34	Bot Fence HP Sn	
35	Fold Cam HP Sn	
36	Fold Plate HP Sn	
37	Fold Exit Sn	
38	Book Full Sn 1	
39	Book Full Sn 2	

40	BStapler 1 Op	
41	BStapler 1 In	
42	BStaples 1 In	
43	BStapler 2 Op	
44	BStapler 2 In	
45	BStaples 2 In	
46	Up TrayFull:3000	
47	Out Jog HP Sn 1	
48	Out Jog HP Sn 2	
49	OutJog RetractSn	

6116	Output Check:Fin1	2000/3000-Sheet Finishers D373/D374
	Use these SP codes to perform the output checks for either the 2000-Sheet Finisher D373 or 3000-Sheet Finisher D374. The following abbreviations are used below: • M: Motor • JG: Junction Gate • SOL: Solenoid • Stp: Staple • Bot: Bottom	
1	Entrance M	
2	Up Trans M	
3	Low Trans M	
4	Exit M	
5	Pos Roll M	
6	Shift M	
7	Exit Guide M	
8	Tray Lift M	

9	Stack Roller M	
10	Jogger M	
11	Feed Out M	
12	Stp Shift M	
13	Stp Rot M	
14	Corner Stp M	
15	Up JG SOL	
16	Dn JG SOL	
17	Pos Roll SOL	
18	Stp Edge Plate SOL	
19	Book Press SOL	
20	Stack JG M	
21	Fold Bot Fence M	
22	Book Stp M:Front	
23	Book Stp M:Back	
24	Fold Plate M	
25	Fold Roll M	
26	Clamp Roll M	
27	Punch M	
28	Punch Move M	
29	Punch Reg M	
30	OutJog M:Front	
31	OutJog M:Rear	
32	OutJog Retract M	

6150	Fine Adj Staple:Fin2	3000-Sheet Finisher B830

	This SP corrects the distance between the jogger fences and the sides of the stack on the finisher stapling tray.	
1	A3 SEF	[-15~+1.5/-2/0.5 mm] • + Value: ncreases distance between jogger fences and the sides of the stack. • - Value: Decreases the distance between the jogger fences and the sides of the stack.
2	B4 SEF	
3	A4 SEF	
4	A4 LEF	
5	B5 SEF	
6	B5 LEF	
7	DLT SEF	
8	LG SEF	
9	LT SEF	
10	LT LEF	
11	Custom	

6151	Adj Staple Pos:Fin2	3000-Sheet Finisher B830
	This SP corrects the stapling position of the corner stapler.	

1	A3 SEF	[-2~+2/0/0.5 mm] • - Value: Moves stapling position toward the rear of the machine. • + Value: Shifts the stapling position toward the front of the machine.
2	B4 SEF	
3	A4 SEF	
4	A4 LEF	
5	B5 SEF	
6	B5 LEF	
7	DLT SEF	
8	LG SEF	
9	LT SEF	
10	LT LEF	
11	Other	

6152	Fine Adj Out Jog:Fin2	3000-Sheet Finisher B830
	This SP corrects the distance between the output jogger fences and the sides of the stack when the output jogger unit attached to the side of the machine jogs sheets as they exit the finisher.	

1	A3 SEF	[-3 to +3/0/0.01 mm] • + Value: Increases distance between jogger fences and the sides of the stack. • - Value: Decreases the distance between the jogger fences and the sides of the stack.
2	B4 SEF	
3	A4 SEF	
4	A4 LEF	
5	B5 SEF	
6	B5 LEF	
7	A5 SEF	
8	A5 LEF	
9	DLT SEF	
10	LG SEF	
11	LT SEF	
12	LT LEF	
13	HLT SEF	
14	HLT LEF	
15	Custom	

6153	Adj Prestack Shts:Fin2	3000-Sheet Finisher B830
	This SP sets the number of sheets sent to the pre-stack tray. With this SP set to the default (3): • 3 sheets are sent to the pre-stack tray. • When the 4th sheet feeds, the 4th sheet and 3 sheets from the pre-stack tray are sent to the stapling tray together. **Note**: You may need to adjust this setting or switch it off when feeding thick or slick paper.	
1	A4 LEF	[0 to 2/2/1 sheet] 0: None 1: 1 sheet 2: 2 sheets
2	B5 LEF	
3	LT LEF	
4	Other	

6154	Adj Top Fence Pos	3000-Sheet Finisher B830

	Use this SP to adjust the timing of the top fence motor that positions the top fence. **Note:** After all the pages of a stack have been fed onto the stapling tray, the top fence jogs the stack vertically to align the leading edge of the stack for stapling.	
1	A4 LEF	[-5 to 10/0/0.1 mm]
2	B5 LEF	[-5 to 2/0/0.1 mm]
3	LT LEF	[-5 to 10/0/0.1 mm]
4	Other	

6155	Staple Stack Jogging
	Touch [1:+1 Time] to have the jogger fences press against the sides of the stack on the staple tray one more time to align the stack for corner stapling. [0:Default] [1:+1 Time]

6156	Input Check:Fin2	3000-Sheet Finisher B830
	Use these SP codes to perform the input checks for either the 3000-Sheet Finisher B830. The following abbreviations are used below: • Sn: Sensor • Hgt: Height • HP: Home Position • Stp: Staple • BStapler: Booklet Stapler (D373 only)	
1	Entrance Sn	
2	Proof Exit Sn	
3	Shift Exit Sn 1	
4	Stp Exit Sn	
5	Tray Bot Plt Sn	
6	Tray Near Bot Sn	
7	Release HP Sn	
8	Jogger HP Sn	

9	Shift HP Sn 1	
10	Stapler Side HP Sn	
11	Stapler HP Sn	
12	Stapler Sn	
13	Stapler Tray Sn	
14	Door Open Sn	
15	Punch Sn	
16	Punch HP Sn 1	
17	Punchout Full Sn	
18	Paper Hgt Sn:Stp	
19	Paper Hgt Sn:Shift	
20	Paper Jam Sensor	
21	Proof Full Sn	
22	Stapler Rotation Sn 1	
23	S Hopper Full Sn	
24	Prestack Sn	
25	Stack Plate HP Sn	
26	Exit Guide HP Sn	
27	Stapler Rotation Sn 2	
28	Stapler Ready Sn	
29	StackPlate HP Sn 1	
30	StackPlate HP Sn 2	
31	Stp Hammer HP Sn	
32	Return Drv HP Sn	
33	Paper Hgh Sn	
34	Tray Limit SW	

35	Punch HP Sn 2	
36	Shift Jog Sn	
37	Shift Jog HP Sn	
38	OutJog RetractSn	
39	Emergency Stop SW	
40	Top Fence HP Sensor	
41	Bottom Fence HP Sensor	
42	Shift Tray Full Sn:Z-Fold	
43	Shift Tray Exit Sensor 2	
44	Upper Tray JG HP Sensor	
45	Stapler JG HP Sensor	
46	Prestack JG HP Sensor	
47	Stop Prestack Sensor	
48	Prestack Stopper HP Sensor	
49	Shift Tray HP Sensor 2	
50	Staple Trim Hopper Set Sn	

6157	Output Check:Fin2	3000-Sheet Finisher B830
	Use these SP codes to perform the output checks for either the 3000-Sheet Finisher B830. The following abbreviations are used below: • Mtr: Motor • M: Motor • JG: Junction Gate • SOL: Solenoid • Stp: Staple • Bot: Bottom	
1	Upper Transport Motor	
2	Shift Exit M:Cont	

3	Upper Tray JG Mtr:Cont	
4	Tray Lift M:1 Op	
5	Jogger M:1 Op	
6	Stp M:1 Op Horiz	
7	Stp M:1 Op	
8	Punch M:1 Op	
9	Stapler JG Mtr:Cont	
10	Stp Hammer M:1 Op	
11	Feed Out M:1 Op	
12	Shift M:1 Op	
13	Stapler Rot Mtr:Cont	
14	Stp Exit M:Cont	
15	Open Exit M:1 Op	
16	Fold Plate M:1 Op	
17	Prestack JG Mtr:1 Op	
18	Prestack Stop Mtr:1 Op	
19	Fold M:Front:1 Op	
20	Fold M:Back:1 Op	
21	Return Drv M:1 Op	
22	Return TransM:Cont	
23	Shift Jog M:1 Op	
24	ShiftJogShuntM:1 Op	
25	Top Fence Motor:1 Op	
26	Bottom Fence Motor:1 Op	
27	Lower Transport Mtr:Cont	
28	Upper Tray Exit Mtr:Cont	

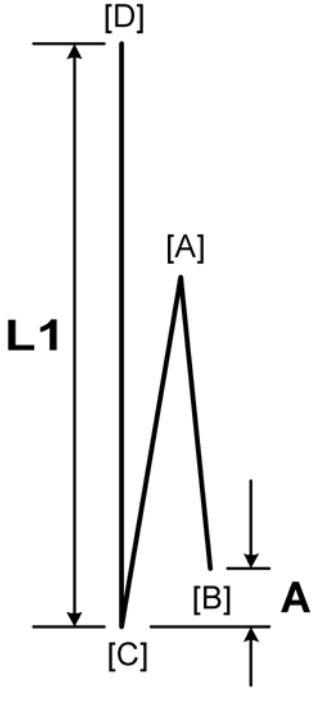
29	Positioning Roller Mtr:Cont	
30	Prestack Trans Mtr:Cont	
31	Staple Trim Chute SOL:1 Op	

6250	Input Check:Fin3 **Japan Only**

6251	Output Check:Fin3 **Japan Only**

6252	Free Run:Fin3 **Japan Only**

6301	Fine Adj 1st, 2nd Z-Fold **Japan Only**
	Use these SP codes to adjust the positions of the Z-folds done with the Z-Fold Unit B660. The 1st and 2nd folds can be adjusted separately.



d014s902

1	1st Fold:A3 SEF	[-4 ~ +4/0/ 0.2 mm] Refer to the illustration above. Adjusts the position of the first fold [A] to decrease or increase the distance A between the leading edge [B] and the crease of the 2nd fold [C].
2	1st Fold:B4 SEF	
3	1st Fold:A4 SEF	
4	1st Fold:DLT SEF	
5	1st Fold:LG SEF	
6	1st Fold:LT SEF	
7	1st Fold:12"x18"	
8	1st Fold:Other	
9	2nd Fold:A3 SEF	[-4 ~ +4/0/ 0.2 mm] Refer to the illustration above. Adjusts the position of the 2nd fold [C] to decrease or increase the length L1 of the sheet between the trailing edge [D] and the 2nd fold.
10	2nd Fold:B4 SEF	
11	2nd Fold:A4 SEF	
12	2nd Fold:DLT SEF	
13	2nd Fold:LG SEF	
14	2nd Fold:LT SEF	
15	2nd Fold:12"x18"	
16	2nd Fold:Other	

6309	Input Check: Folder (D454)	
1	Entrance Sensor	
2	Entrance JG HP Sensor	
4	Registration Sensor	
5	Dynamic Roller HP Sensor	
6	Registration Roller HP Sensor	
7	Fold Plate HP Sensor	
8	Jogger Fence HP Sensor	
9	Positioning Roller HP Sensor	

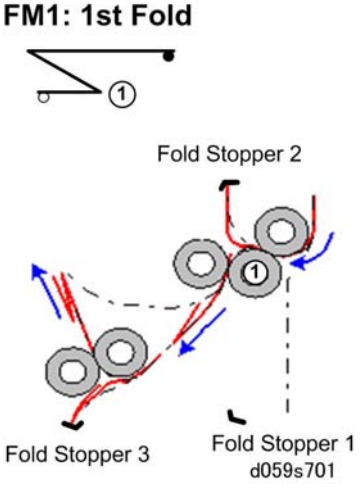
10	1st Stopper Paper Sensor	
11	1st Stopper HP Sensor	
12	2nd Stopper Paper Sensor	
13	2nd Stopper HP Sensor	
14	3rd Stopper Paper Sensor	
15	3rd Stopper HP Sensor	
16	Direct-Send JG HP Sensor	
17	FM6 Pawl HP Sensor	
18	Top Tray Paper Path Sensor	
19	Top Tray Exit Sensor	
20	Horizontal Path Exit Sensor	
21	Top Tray Full Sensor (E)	
23	Front Door Switch (SW1)	
24	Horizontal Path Paper Sensor	
25	Vertical Path Paper Sensor	
26	Bypass Entrance Paper Sensor	
27	Bypass Exit Paper Sensor	

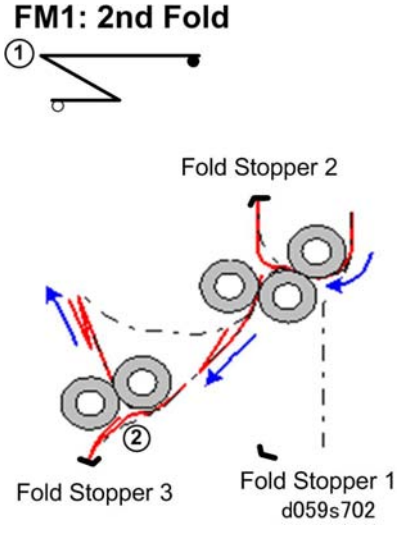
6310	Output Check: Folder (D454)	
1	Horizontal Transport Motor	
2	Top Tray Transport Motor	
3	Top Tray Exit Motor	
4	Dynamic Roller Transport Motor	
5	Registration Roller Transport Motor	
7	Entrance JG Motor	
8	1st Stopper Motor	

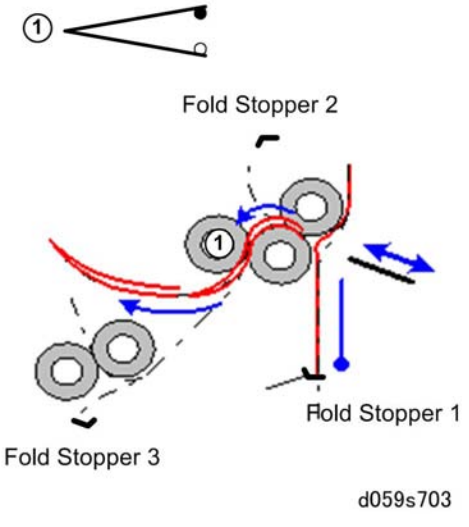
9	2nd Stopper Motor	
10	3rd Stopper Motor	
11	Dynamic Roller Lift Motor	
12	Registration Roller Release Motor	
13	Fold Plate Motor	
14	Jogger Fence Motor	
15	Positioning Roller Motor	
16	Direct-Send JG Motor	
17	FM6 Pawl Motor	
18	1st Fold Motor	
19	2nd Fold Motor	
20	Crease Motor	
21	Bypass JG Solenoid	
22	Exit JG Solenoid	
23	Top Tray JG Solenoid	
24	LE Stop Pawl Solenoid	
25	Reverse JG Solenoid	

6311	Folder Free Run (D454)
1	Free Run 1
	System free run. A4 LEF at 90 ppm, with simulated staple mode.
2	Free Run 2
	Free run for durability testing. All motors and solenoids operate to simulate full staple mode run for durability testing.
3	Free Run 3
	Shipping free run. Simulates standby conditions during shipping.

4	Free Run 4
	Shift free run. A4 LEF at 90 ppm with simulated output jogging with the shift jogger unit mounted on the side of the finisher.

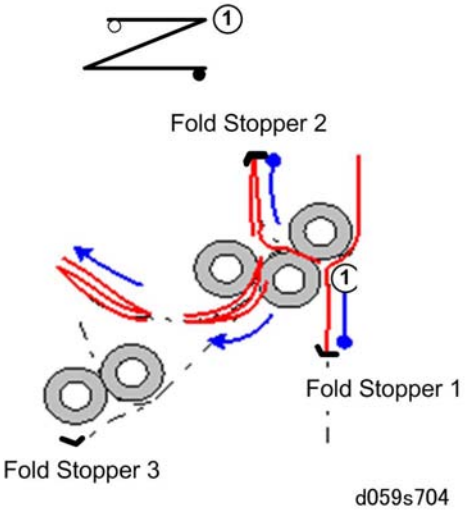
6312	FM1 Z-Fold: Fine Adjust 1st Fold (D454)	
1	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12x18	
8	8-Kai	
19	Other	

6313	FM1 Z-Folding: Fine Adj 2nd fold (D454)	
1	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12x18	
8	8-Kai	
19	Other	

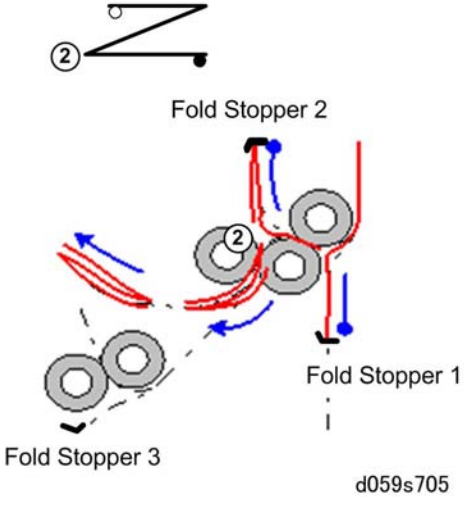
6314	FM2 Half Fold Fine Adj (D454)	
1	A3 SEF	[-4 to +4 / 0 / 0.2 mm] **FM2: 1st Fold** 
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12x18	
8	8-Kai	
9	B5 SEF	
10	13x19.2	
11	13x19	
12	12.6x19.2	
13	12.6x18.5	
14	13x18	
15	SR A3	
16	SR A4	
17	226x310	
18	310x432	
19	Other	

6315	FM3 Letter Fold-out: Find Adj 1st (D454)

1	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
2	B4 SEF	**FM3: 1st fold**
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12x18	
8	8-Kai	
9	B5 SEF	
19	Other	

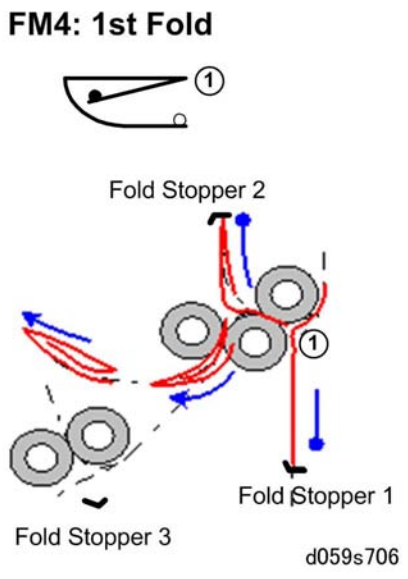


6316	FM3 Letter Fold-out: Find Adj 2nd (D454)	
1	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
2	B4 SEF	**FM3: 2nd fold**
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12x18	
8	8-Kai	
9	B5 SEF	
19	Other	

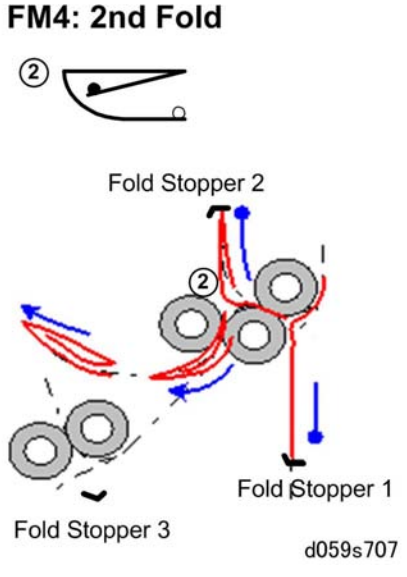


6317	FM4 Letter Fold-in: Fine Adj 1st (D454)

1	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12x18	
8	8-Kai	
9	B5 SEF	
19	Other	

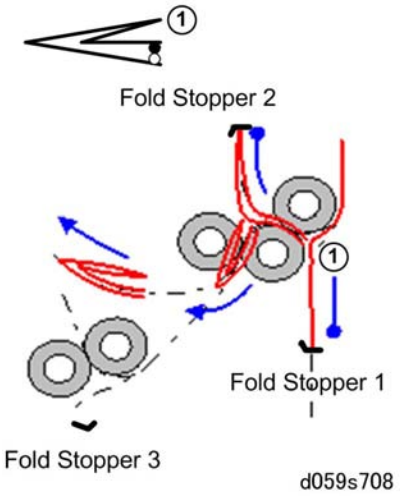


6318	FM4 Letter Fold-in: Fine Adj 2nd (D454)	
1	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12x18	
8	8-Kai	
9	B5 SEF	
19	Other	

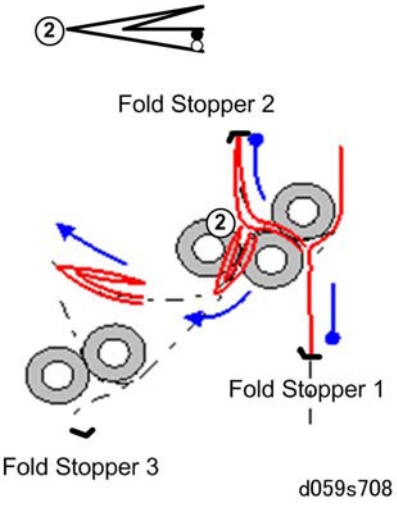


6319	FM5 Double Parallel: Fine Adj 1st (D454)

1	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
2	B4 SEF	**FM5: 1st Fold**
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12x18	
8	8-Kai	
9	B5 SEF	
19	Other	

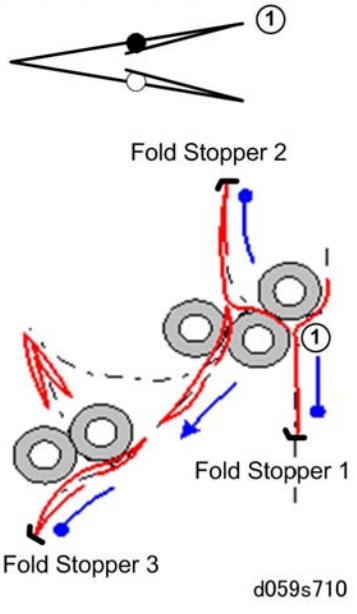


6320	FM5 Double Parallel: Fine Adj 2nd (D454)	
1	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
2	B4 SEF	**FM5: 2nd Folds**
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12x18	
8	8-Kai	
9	B5 SEF	
19	Other	

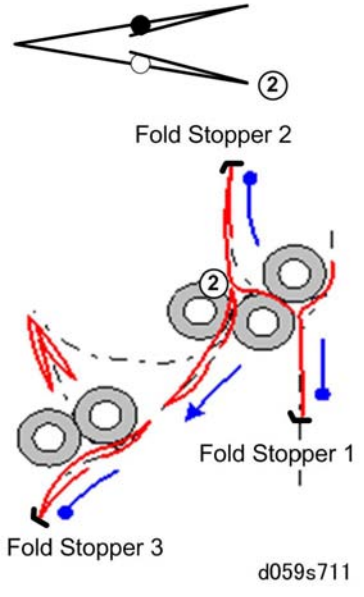


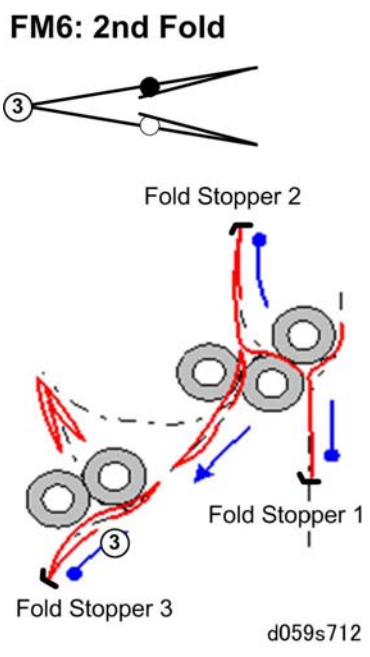
6321	FM6 Gate Fold: Fine Adj 1st (D454)

1	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
2	B4 SEF	**FM6: 1st Fold**
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
8	8-Kai	
9	B5 SEF	
19	Other	



6322	FM6 Gate Fold: Fine Adj 2nd (D454)	
1	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
2	B4 SEF	**FM6: 2nd Fold**
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
8	8-Kai	
9	B5 SEF	
19	Other	



6323	FM6 Gate Fold: Fine Adj 3rd (D454)	
1	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12x18	
8	8-Kai	
9	B5 SEF	
19	Other	

6324	Jogger Fence Position Adjust (D454)	
1	A3 SEF	[+1 to 1 /0/ 0.5 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12x18	
8	8-Kai	
9	B5 SEF	
19	Other	

6325	Registration Buckle Adjust (D454)	
001	A3 SEF	[+1 to 1 /0/ 0.5 mm]
002	B4 SEF	
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
007	12x18	
008	8-Kai	
009	B5 SEF	
019	Other	

6326	Registration Buckle Adjust Select (D454)
	[0: With Buckle Control] [1: Without Buckle Control]

6350	Input Check:Mail Box	9-Bin Mailbox B762
	Use these SP codes to perform the input checks for sensors and switches in the mailbox.	
1	Paper Detect Sn 1	
2	Vert Transport Sn:Bin1	
3	Paper Overflow Sn 1	
4	Paper Detect Sn 2	
5	Vert Transport Sn2:Bin3	
6	Paper Overflow Sn 2	
7	Paper Detect Sn 3	
8	Paper Overflow Sn 3	
9	Paper Detect Sn 4	

10	Vert Transport Sn3:Bin5	
11	Paper Overflow Sn 4	
12	Paper Detect Sn 5	
13	Paper Overflow Sn 5	
14	Paper Detect Sn 6	
15	Vert Transport Sn4:Bin7	
16	Paper Overflow Sn 6	
17	Paper Detect Sn 7	
18	Paper Overflow Sn 7	
19	Paper Detect Sn 8	
20	Vert Transport Sn 5:Bin9	
21	Paper Overflow Sn 8	
22	Paper Detect Sn 9	
23	Paper Overflow Sn 9	
24	Door Open Switch	

6351	Output Check:Mail Box	9-Bin Mailbox B762
	Use these SP codes to perform the output checks of the motor and solenoids in the mailbox.	
1	Vert Transport Motor	
2	Junction Gate SOL1	
3	Turn Gate SOL1	
4	Turn Gate SOL2	
5	Turn Gate SOL3	
6	Turn Gate SOL4	
7	Turn Gate SOL5	
8	Turn Gate SOL6	

9	Turn Gate SOL7	
10	Turn Gate SOL8	

6352	Free Run:Mail Box
	Press [ON] and [OFF] to switch on/off the mailbox for free run testing.

6400	Input Check: 2-Tray CIT	Cover Interposer Tray B835
	Use these SP codes to perform the sensor and switch input checks for the Cover Interposer Tray B835.	
1	Feed Sn1	
2	Feed Sn2	
3	Pullout Sn1	
4	Pullout Sn2	
5	Trans Sn1	
6	Trans Sn2	
7	Trans Exit Sn	
8	Entrance Sn	
9	Exit Sn	
10	Pickup HP Sn1	
11	Pickup HP Sn2	
12	Limit Sn1	
13	Limit Sn2	
14	Bot Sn1	
15	Bot Sn2	
16	Near End Sn1	
17	Near End Sn2	
18	Paper End Sn1	

19	Paper End Sn2	
20	Length Sn1	
21	Length Sn2	
22	Tray1 Size Sn1	
23	Tray1 Size Sn2	
24	Tray1 Size Sn3	
25	Tray1 Size Sn4	
26	Tray1 Size Sn5	
27	Tray2 Size Sn1	
28	Tray2 Size Sn2	
29	Tray2 Size Sn3	
30	Tray2 Size Sn4	
31	Tray2 Size Sn5	
32	Feed Door Sn1	
33	Feed Door Sn2	
34	Trans Door SW	
35	Front Door SW	

6401	Output Check:2-Tray CIT	Cover Interposer Tray B835
	Use these SP codes to perform the output checks for the motors of the Cover Interposer Tray B835.	
1	Stop	
2	Pickup M1	
3	Pickup M2	
4	Feed M1	
5	Feed M2	

6	Pullout M1	
7	Pullout M2	
8	Trans M	
9	Horizontal Trans M	

6450	Interposer Size	CIT B704
	Controls the paper size for the cover interposer tray. Select a paper size and push [Execute]	
1	A3SEF/12"*18"	
	[0~1/1] 0: A3 SEF, 1: 12" x 18"	
2	EU/China	
	[0 to 2/1] 0: 8½" x 13", 1: 8" x 13", 2: 8¼ " x 13"	
3	NA 1	
	[0 to 1/1] 0: 8½" x 14", 1: 8½" x 13"	
4	NA 2	
	[0 to 1/1] 0: LT LEF, 1: 10½" x 7¼"	
5	NA 3	
	[0 to 1/1] 0: LT SEF, 1: 8" x 10"	
6	EU/Taiwan 1	
	[0 to 1/1] 0: 8-Kai, 1: DLT	
7	EU/Taiwan 2	

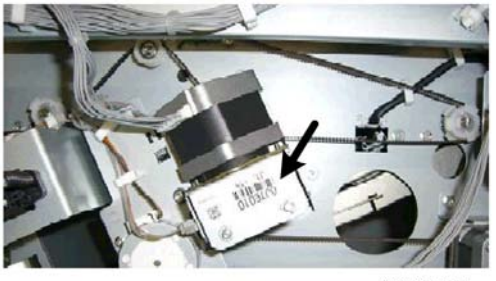
	[0 to 1/1] 0: 16-Kai SEF, 1: LT
8	EU/Taiwan 3
	[0 to 1/1] 0: 16-Kai SEF, 1: LT SEF

6451	Input Check:1-Tray CIT	Cover Interposer B704
	Use these SP codes to perform the input checks for the sensors of the Cover Interposer Tray B704.	
1	Paper Feed Cover Sensor	
2	Bottom Plate HP Sensor	
3	Paper Near End Sensor	
4	Paper Set Sensor	
5	Bottom Plate HP Sensor	
6	Grip Sensor	
7	Guide Plate Set Sensor	
8	Exit Sensor	
9	Paper Set Sensor	
10	Width Sensor 1	
11	Width Sensor 2	
12	Width Sensor 3	
13	Length Sensor 1	
14	Length Sensor 2	
15	Length Sensor 3	

6502	Adj Binding Position 1	Ring Binder D392
1	A4 LEF	

2	LT LEF

6503	Adj Binding Position 2	Ring Binder D392
1	A4 LEF	
2	LT LEF	

6504	Adj Jog: Punching	Ring Binder D392
	Shifts the punch hole position horizontally (front-to-rear, rear-to-front) This SP must be adjusted after replacement of one or more of the following items: • Ring binder main board • Binder unit control board • Pre-punch side jogger assembly • Pre-punch jogger HP sensor (S301) Notes: The correct value for this setting is written on the label attached to the pre-punch jog unit.  d392r0407a The value must be divided by "10". For example, "19" is actually "1.9 mm)	
1	A4 LEF	[-4 to +4/0/0.1 mm]
2	LT LEF	

6505	Adj Jog: Paddle	Ring Binder D392

	Adjusts the height of the paddle roller at initialization. If the correct number is not entered, the stack will not be jogged correctly before binding. [-3 to +3/0/0.1 mm] This SP must be adjusted after replacement of one or more of the following items: • Ring binder main board • Binder unit control board • Pre-bind jogger unit The correct value to be entered for the adjustment is written in the first line of the label. This label is attached to the front cover of the pre-bind jogger unit.  d392s901 Note: The value must be divided by "10". For example, "8" is actually "0.8 mm)

6506	Adj Jog: Binding 1	Ring Binder D392

1	A4 LEF	Adjusts the stop position of the front jog fence. If the correct number is not entered, the stack will not be jogged correctly before binding. [-2 to +2/0/0.1 mm] This SP must be adjusted after replacement of one or more of the following items: • Ring binder main board • Binder unit control board • Pre-bind jogger unit The correct value to be entered for the adjustment is written in the second line of the label. This label is attached to the front cover of the pre-bind jogger unit.  d392s902 Note: The value must be divided by "10". For example, "-7" is actually "-0.7 mm)
2	LT LEF	

6507	Adj Jog: Binding 2	Ring Binder D392

1	A4 LEF	Shifts the operating position of the rear jog fence. If the correct number is not entered, the stack will not be jogged correctly before binding. [-2 to +2/0/0.1 mm] This SP must be adjusted after replacement of one or more of the following items: • Ring binder main board • Binder unit control board • Pre-bind jogger unit The correct value to be entered for the adjustment is written in the third line of the label. This label is attached to the front cover of the pre-bind jogger unit.  d392s903 Note: The value must be divided by "10". For example, "-3" is actually "-0.3 mm")
2	LT LEF	

6508	Input Check: Fin4	Ring Binder D392
1	Entrance Sensor	
2	Transport Sensor	
3	Paper Exit Sensor	
4	Standard Punch Sensor	
5	Standard Sensor	
6	Junction Gate SOL	
7	Paper Jog Sensor	
8	Jog Roller Lift Sensor	
9	Punch HP Sensor	

10	Punch Encoder Sensor
11	Unit Detect Sensor
12	Punch Size Detect: A4/LT
13	Punch Type Detect
14	Overflow Sensor
15	Punchout Box Detect Sn
16	Feedout Belt HP Sn 1
17	Feedout Belt HP Sn 2
18	Feedout Belt Rotation Sn
19	Exit/Entrance Sensor
20	Booklet Pass Sensor
21	Stack HP Sensor
22	Stack Height Sensor 1
24	Stack Detect Sensor
25	Tray Detect Sensor
26	Obstruction Detect Sensor
27	Booklet Position Sensor
28	Bind Detection Unit Sensor
29	Width Adjust HP Sensor 1
30	Paddle Roller HP Sensor
31	Clamp HP Sensor
32	Alignment HP Sensor
33	Shutter HP Sensor
34	50-Sheet Detect Sensor
35	Thick Paper Sensor
37	Paper Detect Sn: LEdge

38	Alignment Pin Tip Sensor
39	Width Adjust HP Sensor
40	Decurl Motor HP Sensor
41	Shutter Motor HP Sensor
42	Roller Lift Mtr HP Sensor
43	Binder HP Sensor
44	Binding Timing Sensor
45	Consumable JG JP Sn
46	Consumable JG Timing Sn
47	Consumable Detect Sn
48	Cutter Detect Sensor
49	Consumable NE Sensor
50	Consumable 50/100 Sn
51	Consumable A4/LT Sn

6509	Output Check: Ring Binder	Ring Binder D392
1	Entrance Motor	
2	Transport Motor	
3	Paper Feedout Motor	
4	Path JG Motor	
5	Jog Roller Motor	
6	Side Fence Motor	
7	After-Punch Feedout Motor	
8	Jog Roller Lift Mtr	
9	Punch Hole Open Mtr	
10	Top Fence SOL	

11	Feedout Belt 1 Mtr
12	Feedout Belt 2 Mtr
13	Feedout Belt Rotation Motor
14	Stacker Motor
15	Decurl Motor
16	Shutter Motor
17	Paddle Roller Motor
18	Alignment Pin Motor
19	Paddle Roller Lift Motor
20	Width Adjust Motor 1
21	Clamp Motor
22	Width Adjust Motor 2
23	Roller Motor
24	Roller Lift Motor
25	Standard Op Lift Motor
26	50/100 Adjust Motor

6800	Sheet Conversion (Thick Paper)
	Permits punching, including tab sheets. Note: Do not change this setting. [1 to 3/3/1 sheet] 1: 1 Sheet 2: 2 Sheets 3: 3 Sheets

6810	Ring Binding Thick Paper	Ring Binder D392

6830	Extra Staples

1	0 to 50 (Initial 0)
2	0 to 50 (Initial 0)

6900	ADF Bottom Lift
	This SP setting determines whether the bottom plate lift motor of the of the ADF switches on: • When the original is set in the ADF original tray -or- • When the [Start] key is pressed. The ADF bottom plate lift motor raises the bottom plate that pushes up the original tray and raises it to the optimum feed position. [0~1/1] 0: Bottom plate lifts immediately after originals are set (Default) 1: Bottom plate does not lift until [Start] key is pushed.

6910	Intermittent Shading	
1	Switch On/Off	[0 to 1 / 1 / 1]
2	Shading Interval 1	[1 to 60 / 5/ 1]
3	Shading Interval 2	[1 to 60 / 10 / 1]
4	Interval 1 Repetitions	[1 to 60 / 7 / 1]

Group 7000

7401	Total SC Counter
	Displays the total number of SCs logged.

7403	SC History	
	Displays the latest 10 SC codes.	
1	Latest	
---	---	
010	Latest 9th	

7502	Total Paper Jam Counter
	Displays the total number of copy jams.

7503	Total Original Jam Counter
	Displays the total number of copy jams.

7504	Paper Jam Loc	D014/D015 Copier
	Displays the list of possible locations where a jam could have occurred in the copier. Press the appropriate key to display the jam count for that location. These jams are caused by the failure of a sensor to activate.	
	Operation Panel	**Actual Component Name**
1	At Power On	
3	Tray 1: No Feed	Jam at Tray 1
4	Tray 2: No Feed	Note used. Always "0"
5	Tray 3: No Feed	Jam at Tray 2.
6	Tray 4: No Feed	Jam at Tray 3.

7	LCT: No Feed	
8	Trans 1 Sn:Late	1st Vertical Transport Sensor
9	Trans 2 Sn:Late	2nd Vertical Transport Sensor
10	Trans 3 Sn:Late	3rd Vertical Transport Sensor
11	Trans 4 Sn:Late	4th Vertical Transport Sensor
12	Relay Sn: Late	Relay Sensor
13	Reg Sn:Late	Registration Sensor
14	Fusing Ex Sn:Late	Fusing Exit Sensor
16	Main Ex Sn:Late	Paper Exit Sensor
19	Dup Ent Sn:Late	Duplex Entrance Sensor
20	Dup Trans Sn1:Late	Duplex Transport Sensor 1
21	Dup Trans Sn2:Late	Duplex Transport Sensor 2
22	Dup Trans Sn3:Late	Duplex Transport Sensor 3
23	Dup Ent Sn:Late	Duplex Entrance Sensor
24	LCT Relay: Late	
25	LCT Exit Sensor	
34	Bypass PE Sn:Off	Bypass Paper End Sensor
53	1st Feed Sn:Lag	1st Paper Feed Sensor:Lag
54	2nd Feed Sn:Lag	2nd Paper Feed Sensor:Lag
55	3rd Feed Sn:Lag	3rd Paper Feed Sensor:Lag
56	4th Feed Sn:Lag	4th Paper Feed Sensor:Lag
57	LCT Feed Sn:Lag	LCT Paper Feed Sensor
58	Trans 1 Sn:Lag	1st Vertical Transport Sensor:Lag
59	Trans 2 Sn:Lag	2nd Vertical Transport Sensor:Lag
60	Trans 3 Sn:Lag	3rd Vertical Transport Sensor:Lag
61	Trans 4 Sn:Lag	4th Vertical Transport Sensor:Lag

62	Relay Sn:Lag	Relay Sensor:Lag
63	Reg Sn:Lag	Registration Sensor
64	Fusing Ex Sn:Lag	Fusing Exit Sensor:Lag
66	Main Ex Sn:Lag	Main Exit Sensor
69	Dup Ent Sn:Lag	Duplex Entrance Sensor
71	Dup Trans Sn2:Lag	Duplex Transport Sensor 1
72	Dup Trans Sn3:Lag	Duplex Transport Sensor 2
74	LCT Relay Sn:Lag	LCT Relay Sensor:Lag
75	LCT Exit Sn	
84	Bypass Feed Sn	Bypass Paper Feed Sensor
98	Paper Type	Paper Type
99	Bypass Paper Feed Sn	Bypass Paper Feed Sensor

7504	Paper Jam Loc (Fin2)	3000-Sheet Feeder B830
	Displays the list of possible locations where a jam could have occurred. Press the appropriate key to display the jam count for that location. These jams are caused by the failure of a sensor to activate.	
	On Operation Panel	**Actual Component Name**
141	Entrance Sn	Entrance Sensor
142	Proof Tray Exit Sn	Proof Tray Exit Sn
143	Shift Exit Sn	Shift Exit Sn
144	Stapler Exit	Stapler Exit Sensor
145	Feed Out	Feed Out
148	Upper Trans M	Upper Transport Motor
149	Shift Tray Motor	Shift Tray Motor
150	Jogger Fence Motor	Jogger Fence Motor

151	Shift Roller Motor	Shift Roller Motor
153	Stapling Motor	Stapling Motor
154	Pre-Stack Jam	
155	Feed Out Belt Motor	Feed Out Belt Motor
156	Paper Punch Motor	Paper Punch Motor
157	Z-Fold Motor Jam	
158	Insufficient Data	
159	Upper Stopper Motor Lock	
160	Stream Punch Jam	

7504	Paper Jam Loc	9-Bin Mailbox B762
	Displays the list of possible locations where a jam could have occurred. Press the appropriate key to display the jam count for that location. These jams are caused by the failure of a sensor to activate.	
	On Operation Panel	**Actual Component Name**
161	Vert Trans Sn 1	Vertical Transport Sensor 1
162	Vert Trans Sn 2	Vertical Transport Sensor 2
163	Vert Trans Sn 3	Vertical Transport Sensor 3
164	Vert Trans Sn 4	Vertical Transport Sensor 4
165	Vert Trans Sn 5	Vertical Transport Sensor 5

7504	Paper Jam Loc	Cover Interposer Tray B704
	Displays the list of possible locations where a jam could have occurred. Press the appropriate key to display the jam count for that location. These jams are caused by the failure of a sensor to activate.	
	On Operation Panel	**Actual Component Name**
166	Paper Feed Sn	Paper Feed Sensor
167	Vert Transport Path	Vertical Transport Path

168	BotPlt Pos Sn	Bottom Plate Position Sensor

7504	Paper Jam Loc	3000-Sheet Finisher D374
	Displays the list of possible locations where a jam could have occurred. Press the appropriate key to display the jam count for that location. These jams are caused by the failure of a sensor to activate.	
	On Operation Panel	**Actual Component Name**
171	Entrance Trans	Entrance Sensor
172	Proof Tray Exit Sn	Proof Tray Exit Sn
173	Shift Exit Sn	Shift Exit Sensor
174	Stapler Exit Sn	Stapler Exit Sensor
175	Belt Feed Out	Belt Feed Out
179	Shift Tray Motor	Shift Tray Motor
180	Jogger Fence Motor	Jogger Fence Motor
181	Shift Roller Motor	Shift Roller Motor
182	Stapler Shift M	Stapler Shift Motor
183	Stapling Motor	Stapling Motor
185	Feed Out Belt Motor	Feed Out Belt Motor
186	Paper Punch Motor	Paper Punch Motor
187	Insufficient Data	

7504	Paper Jam Loc	3000-Sheet Finisher D374
	Displays the list of possible locations where a jam could have occurred. Press the appropriate key to display the jam count for that location. These jams are caused by the failure of a sensor to activate.	
	On Operation Panel	**Actual Component Name**
191	Entrance Sn	Entrance Sensor
192	Stapler Exit	Stapler Exit Sensor

193	Shift Exit Sn	Shift Exit Sensor
194	Stapler Exit	Stapler Exit Sensor
195	Belt Feed Out	Belt Feed Out
198	Paper Folding	Paper Folding
199	Shift Tray Motor	Shift Tray Motor
200	Jogger Fence Motor	Jogger Fence Motor
201	Shift Roller Motor	Shift Roller Motor
202	Stapler Shift M	Stapler Shift Motor
203	Stapling Motor	Stapling Motor
204	Paper Folding	Paper Folding
205	Feed Out Belt Motor	Feed Out Belt Motor
206	Paper Punch Motor	Paper Punch Motor
207	Insufficient Data	

7504	Paper Jam Loc (Z-Folder)	Z-Folding Unit B660 **Japan Only**
	Displays the list of possible locations where a jam could have occurred. Press the appropriate key to display the jam count for that location. These jams are caused by the failure of a sensor to activate.	
	On Operation Panel	**Actual Component Name**
211	Paper Feed:Late	Paper Feed Sensor: Late
212	Paper Feed:Lag	Paper Feed Sensor: Lag
213	Fold Timing Sn:Late	Fold Timing Sensor: Late
214	Fold Timing Sn:Lag	Fold Timing Sensor: Lag
215	Lead Edge Sn:Late	Leading Edge Sensoor:Late
216	Lead Edge Sn:Lag	Leading Edge Sensor:Lag
217	Up Stopper Sn:Late	Upper Stopper Path Sensor:Late
218	Up Stopper Sn:Lag	Upper Stopper Path Sensor:Lag

219	Lower Ex Sn:Late	Lower Exit Sensor:Late
220	Lower Ex Sn1:Lag	Lower Exit Sensor:Lag
223	Up Ex Sn:Late	Upper Exit Sensor:Late
224	Up Ex Sn:Lag	Upper Exit Sensor:Lag
225	Paper Fold M	Paper Fold Motor
226	Lower Stopper M	Lower Stopper Motor Lock
227	Upper Stopper M	Upper Stopper Motor Lock

7504	Paper Jam Loc	Cover Interposer Tray B835
	Displays the list of possible locations where a jam could have occurred. Press the appropriate key to display the jam count for that location. These jams are caused by the failure of a sensor to activate.	
	On Operation Panel	**Actual Component Name**
230	Tray 1: No Feed	
231	Tray 2: No Feed	
232	Tray 1: Grip Sn	
233	Tray 2: Grip Sn	
234	Tray 1: Trans Jam	
235	Tray 2: Trans Jam	
236	Exit Jam	
237	Entrance Sn Jam	
238	Exit Sn Jam	
239	Tray 1: Lift Motor	
240	Tray 2: Lift Motor	
241	Tray 1: Pickup Motor	
242	Tray 2: Pickup Motor	
250	RB Entrance Late Jam	

251	RB Entrance Lag Jam	
252	RB Horiz Path Late Jam	
253	RB Horiz Path Lag Jam	
254	RB Exit Late Jam	
255	RB Exit Lag Jam	

7505	Original Jam Det (ADF)
	Displays the list of possible locations where a jam could have occurred. Press the appropriate key to display the jam count for that location. These jams are caused by the failure of a sensor to activate.
	On Operation Panel
1	At Power On
3	Separation Sensor On
4	Skew Correction Sensor On
5	Interval Sensor On
6	Registration Sensor On
7	Original Exit Sensor On
53	Separation Sensor Off
54	Skew Correction Sensor Off
55	Interval Sensor Off
56	Registration Sensor Off
57	Original Exit Sensor Off

7506	Jam Count by Paper Size
	Displays the total number of jams by paper size.

5	A4 LEF	Displays the total number of jams by paper size.
6	A5 LEF	
14	B5 LEF	
38	LT LEF	
44	HLT LEF	
132	A3	
133	A4 SEF	
134	A5 SEF	
141	B4 SEF	
142	B5 SEF	
160	DLT SEF	
164	LG SEF	
166	LT SEF	
172	HLT SEF	
255	Others	

7507	Plotter Jam History

1	Latest	Displays the following items for the last 10 copy paper jams: 1) Jam code, 2) Paper size, 3) Total count when jam occurred, 4) Date of jam. The "jam codes" are listed in the SMC report under SP7504.
2	Latest 1	
3	Latest 2	
4	Latest 3	
5	Latest 4	
6	Latest 5	
7	Latest 6	
8	Latest 7	
9	Latest 8	
10	Latest 9	

7508	Original Jam History	
1	Original Latest	Displays the following items for the Latest 10 original jams: 1) Jam code, 2) Paper size, 3) Total count when jam occurred, 4) Date of jam. The "jam codes" are listed in the SMC report under SP7504.
2	Latest 1	
3	Latest 2	
4	Latest 3	
5	Latest 4	
6	Latest 5	
7	Latest 6	
8	Latest 7	
9	Latest 8	
10	Latest 9	

7509	Paper Jam Loc	Ring Binder (D392)
	Displays the list of possible locations where a jam could have occurred. Press the appropriate key to display the jam count for that location. These jams are caused by the failure of a sensor to activate.	

1	RB Before-Punch Jam
2	RB After-Punch Jam
3	RB Binder Trailing Edge Jam
4	RB Binder Leading Edge Jam
5	RB Ring Feed Jam
6	RB Binder Unit Not Detected
7	RB Output Belt 1 Jam
8	RB Output Belt 2 Jam
9	RB Stacker Book Jam
10	RB Punch Motor Jam
11	RB Shutter Motor Jam
12	RB Pin Alignment Motor Jam
13	RB Binder Jogger Jam
14	RB Pin Alignment Jam
15	RB Binder Main Motor Jam
16	RB 50/100 Clamp Adjust Motor Jam
17	RB Output Belt Rotation Motor Jam
18	RB Job Data Jam

7509	Paper Jam Loc	Multi Folder (D454)
	Displays the list of possible locations where a jam could have occurred. Press the appropriate key to display the jam count for that location. These jams are caused by the failure of a sensor to activate.	
25	Output Jam	
46	Entrance: Late Jam	
47	Entrance: Lag Jam	
48	Top Tray Exit: Late Jam	

49	Top Tray Exit: Lag Jam
50	Straight-Through Exit: Late Jam
51	Straight-Through Exit: Lag Jam
52	1st Stopper: Late Jam
53	1st Stopper: Lag Jam
54	2nd Stopper: Late Jam
55	2nd Stopper: Lag Jam
56	3rd Stopper: Late Jam
57	3rd Stopper: Lag Jam
58	Skew Correction Jam
59	Top Tray Transport Jam
60	Entrance/Top Tray JG Motor Error
61	Entrance/Fold JG Motor Error
62	1st Stopper Motor Error
63	2nd Stopper Motor Error
64	3rd Stopper Motor Error
65	Dynamic Roller Transport Motor Error
66	Registration Roller Release Motor
67	Fold Plate Motor Error
68	Jogger Fence Motor Jam
69	Positioning Roller Motor Jam
70	FM2 Direct Send Motor Error
71	FM6 Pawl Motor
95	Fin: No Exit End

7617	Parts PM Counter Display

1	Normal	**Japan Only**
2	DF	**Japan Only**

7618	PM Parts Counter Reset (Japan Only)	
1	Normal	Push [Execute] to clear the parts replacement alarm counter for the main machine.
2	DF	Push [Execute] to clear the parts replacement alarm counter for the ADF.

7621	Current Value	
7622	Reset	
7623	Standard Value	
7624	Part Replacement Operation On/Off	
1	K PCU#	
2	K PCU Cleaning Blade	
3	K PCU Lube Bar	
4	K PCU Lube App/Clng Blade	
5	K PCU Developer	
6	K PCU Drum	
7	K PCU Charge Grid Unit	
8	K PCU Charge Grid Wire	
9	K PCU Idle Gear	
10	K PCU Lube App/Clng Brush	
11	K PCU Toner Cleaning Brush	**Not Used**
12	K PCU Joint	
13	M PCU#	
14	M PCU Cleaning Blade	
15	M PCU Lube Bar	
16	M PCU Lube App/Clng Blade	

17	M PCU Developer	
18	M PCU Drum	
19	M PCU Charge Roller Unit	
20	M PCU Idle Gear	
21	M PCU Lube App/Clng Brush	
22	M PCU Toner Cleaning Brush	**Not Used**
23	M PCU Joint	
24	C PCU#	
25	C PCU Cleaning Blade	
26	C PCU Lube Bar	
27	C PCU Lube App/Clng Blade	
28	C PCU Developer	
29	C PCU Drum	
30	C PCU Charge Roller Unit	
31	C PCU Idle Gear	
32	C PCU Lube App/Clng Brush	
33	C PCU Toner Cleaning Brush	**Not Used**
34	C PCU Joint	
35	Y PCU#	
36	Y PCU Cleaning Blade	
37	Y PCU Lube Bar	
38	Y PCU Lube App/Clng Blade	
39	Y PCU Developer	
40	Y PCU Drum	
41	Y PCU Charge Roller Unit	
42	Y PCU Idle Gear	

43	Y PCU Lube App/Clng Brush	
44	Y PCU Toner Cleaning Brush	Not Used
45	Y PCU Joint	
46	ITB #	
47	ITB Cleaning Unit #	
48	ITB Cleaning Blade	
49	ITB Lube Bar	
50	Lube Application Blade	
51	PTR Unit #	
52	PTR Blade	
53	PTR	
54	Discharge Roller	
55	PTR Lube Bar	
56	Fusing Unit #	
57	Fusing Belt	
58	Hot Roller	
59	Pressure Roller	
60	Lube Roller:Press Roller	
61	Clng Roller:Press Roller	
62	Shaft Bearings:Press Roll	
63	#Used Toner Bottle	
64	#ADF Pickup Roller	
65	#ADF Feed Belt	
66	#ADF Reverse Roller	
67	#ADF Transport Belt	
68	#Dust Filter 1	

69	#Dust Filter 2	
70	#Dust Filter 3	

7625	Pg Count History:Latest 1	
7626	Pg Count History:Latest 2	
7627	Pg Count History:Latest 3	
1	K PCU#	
2	K PCU Cleaning Blade	
3	K PCU Lube Bar	
4	K PCU Lube App/Clng Blade	
5	K PCU Developer	
6	K PCU Drum	
7	K PCU Charge Grid Unit	
8	K PCU Charge Grid Wire	
9	K PCU Idle Gear	
10	K PCU Lube App/Clng Brush	
11	K PCU Toner Cleaning Brush	
12	K PCU Joint	
13	M PCU#	
14	M PCU Cleaning Blade	
15	M PCU Lube Bar	
16	M PCU Lube App/Clng Blade	
17	M PCU Developer	
18	M PCU Drum	
19	M PCU Charge Roller Unit	
20	M PCU Idle Gear	

21	M PCU Lube App/Clng Brush	
22	M PCU Toner Cleaning Brush	
23	M PCU Joint	
24	C PCU#	
25	C PCU Cleaning Blade	
26	C PCU Lube Bar	
27	C PCU Lube App/Clng Blade	
28	C PCU Developer	
29	C PCU Drum	
30	C PCU Charge Roller Unit	
31	C PCU Idle Gear	
32	C PCU Lube App/Clng Brush	
33	C PCU Toner Cleaning Brush	
34	C PCU Joint	
35	Y PCU#	
36	Y PCU Cleaning Blade	
37	Y PCU Lube Bar	
38	Y PCU Lube App/Clng Blade	
39	Y PCU Developer	
40	Y PCU Drum	
41	Y PCU Charge Roller Unit	
42	Y PCU Idle Gear	
43	Y PCU Lube App/Clng Brush	
44	Y PCU Toner Cleaning Brush	
45	Y PCU Joint	
46	ITB #	

47	ITB Cleaning Unit #	
48	ITB Cleaning Blade	
49	ITB Lube Bar	
50	Lube Application Blade	
51	PTR Unit #	
52	PTR Blade	
53	PTR	
54	Discharge Roller	
55	PTR Lube Bar	
56	Fusing Unit #	
57	Fusing Belt	
58	Hot Roller	
59	Pressure Roller	
60	Lube Roller:Press Roller	
61	Clng Roller:Press Roller	
62	Shaft Bearings:Press Roll	
63	#Used Toner Bottle	
64	#ADF Pickup Roller	
65	#ADF Feed Belt	
66	#ADF Reverse Roller	
67	#ADF Transport Belt	
68	#Dust Filter 1	
69	#Dust Filter 2	
70	#Dust Filter 3	

7628	Clear PM Counter

1	Clear Exceeded Counts
	Do this SP to clear all PM counts that have exceeded their limits.
2	Reset All Counts
	Do this SP to clear all PM counts, including those that have not exceeded their limits.

7801	Serial No./ROM Version
	Displays the ROM version numbers of the main machine and connected peripheral devices.
	Serial Number
002	Engine
005	ADF
007	Finisher
010	LCT
011	Mail Box
020	Cover Interposer
025	Z-Fold Unit **Japan Only**
029	Ring Binder: PCB 1
030	Ring Binder: PCB 2
	ROM Version
102	Engine
105	ADF
107	Finisher
110	LCT
111	Mail Box
120	Cover Feeder
125	Z-Fold Unit **Japan Only**
129	Ring Binder: PCB 1

130	Ring Binder: PCB 2

7803	PM Counter Display
	Displays the PM count since the last PM.

7804	PM Counter Reset
	Resets the PM count.

7807	SC/Jam Counter Reset
	Push [Start] to reset the SC and jam counters.

7826	MF Error Counter (**Japan Only**)	
	Displays the number of counts requested of the card/key counter.	
1	Error Total	A request for the count total failed at power on. This error will occur if the device is installed but disconnected.
2	Error Staple	The request for a staple count failed at power on. This error will occur if the device is installed but disconnected.

7827	MF Error Counter Clear (**Japan Only**)
	Press Execute to reset to 0 the values of SP7826.

7832	Self-Diagnostic Result Display
	Push [#] to display a list of error codes. Nothing is displayed if no errors have occurred.

7835	ACC Counter
	No information is available at this time.
1	Copy ACC
2	Printer ACC

7836	Total Memory Size
	Displays the contents of the memory on the controller board.

7852	ADF Scan Glass
	Displays the count for the number of times the machine has detected dust over the entire length the ADF scanning glass at the beginning of copy jobs. This SP operates only after SP4020 001 has been turned on. **Note**: Dust or dirt on the scanning glass causes vertical lines in printouts.
1	Dust Counter
	This SP records the counts for dust detection on the ADF scanning glass. A count is recorded only when SP4020-1 is turned ON. This counter counts up once for every three detections of dust on the glass. [0 to 65535 / 0 / 1 count]
2	Clear Counter
	This SP clears the dust count of SP7852-1. [0 too 65535 / 0 / 1 count]
3	Dust Count: Rear
	This SP records the counts for dust detection on the ADF scanning glass during scanning of the reverse side of the originals. A count is recorded only when SP4020-1 is turned ON. [0 too 65535 / 0 / 1 count]
10	Dust Counter Clear **DFU**
	This SP clears the count of SP7852-3.

7855	Coverage Range **DFU**
1	Coverage Range 1
2	Coverage Range 2

7901	Assert Info.**DFU**

1	File Name	Used for debugging.
2	Number of Files	
3	Locations	

7931	Toner Bottle Bk	Toner Information: Black
7932	Toner Bottle M	Toner Information: Magenta
7933	Toner Bottle C	Toner Information: Cyan
7934	Toner Bottle Y	Toner Information: Yellow
	Displays detailed information about the toner used in the machine.	
1	Model ID	
2	Cartridge Ver	
3	Brand ID	
4	Area ID	
5	Production ID	
6	Color ID	
7	Maintenance ID	
8	New	
9	Recycle Count	
10	Product Date	
11	Serial No	
12	EDP Code	
13	Toner Remaining	
14	Toner End	
15	Toner Refill	
16	Total Count Start	
17	Color Count:Start	

18	Total Count End	
19	Color Count:End	
20	Set Date	
21	End Date	

7935	Toner Bottle Log 1: Bk	
7936	Toner Bottle Log 1: M	
7937	Toner Bottle Log 1: C	
7938	Toner Bottle Log 1: Y	
1	Serial No	
2	Set Date	
3	Total Count Start	
4	Toner Refill	
11	Serial No	
12	Set Date	
13	Total Count Start	
14	Toner Refill	
21	Serial No	
22	Set Date	
23	Total Count Start	
24	Toner Refill	
31	Serial No.	
32	Set Date	
33	Total Count Start	
34	Toner Refill	
41	Serial No.	

42	Set Date	
43	Total Count Start	
44	Toner Refill	

7940	PM MotdrvdistanceDisp	
7942	Motdrvdistance%Disp	
7944	Motor Drv Distance	
1	PCU:K	
2	PCU:M	
3	PCU:C	
4	PCU:Y	

7954	Pg Count %Display	
	This SP displays the current usage (listed as percent of usage) of the components listed below: Current Usage/Standard Usage Service Life x 100	
1	K PCU#	
2	K PCU Cleaning Blade	
3	K PCU Lube Bar	
4	K PCU App/Clng Blade	
5	K PCU Developer	
6	K PCU Drum	
7	K PCU Charge Grid Unit	
8	K PCU Charge Grid Wire	
9	K PCU Idle Gear	
10	K PCU Lube App/Clng Brush	
11	K PCU Toner Cleaning Brush	
12	K PCU Joint	

13	M PCU#	
14	M PCU Cleaning Blade	
15	M PCU Lube Bar	
16	M PCU Lube App/Clng Blade	
17	M PCU Developer	
18	M PCU Drum	
19	M PCU Charge Roller Unit	
20	M PCU Idle Gear	
21	M PCU Lube App/Clng Brush	
22	M PCU Toner Cleaning Brush	
23	M PCU Joint	
24	C PCU#	
25	C PCU Cleaning Blade	
26	C PCU Lube Bar	
27	C PCU Lube App/Clng Blade	
28	C PCU Developer	
29	C PCU Drum	
30	C PCU Charge Roller Unit	
31	C PCU Idle Gear	
32	C PCU Lube App/Clng Brush	
33	C PCU Toner Cleaning Brush	
34	C PCU Joint	
35	Y PCU#	
36	Y PCU Cleaning Blade	
37	Y PCU Lube Bar	
38	Y PCU Lube App/Clng Blade	

39	Y PCU Developer	
40	Y PCU Drum	
41	Y PCU Charge Roller Unit	
42	Y PCU Idle Gear	
43	Y PCU Lube App/Clng Brush	
44	Y PCU Toner Cleaning Brush	
45	Y PCU Joint	
46	ITB#	
47	ITB Cleaning Unit	
48	ITB Cleaning Blade	
49	ITB Lube Bar	
50	Lube Application Blade	
51	PTR Unit#	
52	PTR Blade	
53	PTR Roller	
54	Discharge Roller	
55	PTR Lube Bar	
56	Fusing Unit #	
57	Fusing Belt	
58	Hot Roller	
59	Pressure Roller	
60	Lube Roller: Press Roller	
61	Press Roller	
62	Shaft Bearings: Press Roll	
63	Used Toner Bottle#	
64	ADF Pickup Roller#	

65	ADF Feed Belt#	
66	ADF Reverse Roller#	
67	ADF Transport Belt	
68	Dust Filter 1#	
69	Dust Filter 2#	
70	Dust Filter 3#	

7958	Display Mtr Drv Distance	
1	Drum Motor:K	
2	Drum Motor:M	
3	Drum Motor:C	
4	Drum Motor:Y	
5	Cleaning Motor:K	
6	Cleaning Motor:M	
7	Cleaning Motor:C	
8	Cleaning Motor:Y	
9	Development Motor:K	
10	Development Motor:M	
11	Development Motor:C	
12	Development Motor:Y	
13	ITB Drive Motor	
14	PTR Motor	
15	Fusing Motor	

7959	Motor Drv Total
	Displays the total run distance in meters (m).

7960	Motor Drv Distance Reset	
1	Drum Motor: K	
2	Drum Motor: M	
3	Drum Motor: C	
4	Drum Motor: Y	
5	Cleaning Motor: K	
6	Cleaning Motor: M	
7	Cleaning Motor: C	
8	Cleaning Motor: Y	
9	Development Motor: K	
10	Development Motor: M	
11	Development Motor: C	
12	Development Motor: Y	
13	ITB Drive Motor	
14	PTR Motor	
15	Fusing Motor	

Group 8000

These new SP counters are provided for MFP, LP, and Wide Format machines that employ GW Architecture. These SP codes have been created in response to requests by customers, sales personnel and customer engineers, and R&D staff for a standardized set of counters that can be used to log more detailed information about machine operation.

These SPs are absolutely essential to provide more detailed counters and job logs to match similar features that are being developed by competitors.

Current Status of the SP8xxx Counters

Many of these counters are provided for features that are currently not available, such as sending color faxes, and so on. However, here are some Group 8 codes that when used in combination with others, can provide useful information.

SP Numbers	What They Do
SP8211 to SP8216	The number of pages scanned to the document server.
SP8401 to SP8406	The number of pages printed from the document server
SP8691 to SP8696	The number of pages sent from the document server

Specifically, the following questions can be answered:

- How is the document server actually being used?
- What application is using the document server most frequently?
- What data in the document server is being reused?

Group 8 Service Table Keys

Many 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	Meaning	
T:	Total: (Grand Total).	Grand total of items counted for all applications (C, F, P, etc.).
C:	Copy application.	Totals (pages, jobs, etc.) executed for each application when the job was not stored on the document server.
F:	Fax application	
P:	Print application.	
S:	Scan application.	

Prefixes	Meaning	
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.

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 SP5801 1 Memory All Clear, or the Counter Reset SP7808.

8001	T:Total Jobs	These SPs count the number of times each application is used to do a job. [0 to 9999999/ 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.
8002	C:Total Jobs	
8003	F: Total Jobs	
8004	P:Total Jobs	
8005	S:Total Jobs	
8006	L:Total Jobs	

These SPs reveal the number of times an application is used, not the number of pages processed.

- When an application is opened for image input or output, this counts as one job.
- Interrupted jobs (paper jams, etc.) are counted, even though they do not finish.
- Only jobs executed by the customer are counted. Jobs executed by the customer engineer using the SP modes are not counted.
- When using secure printing (when a password is required to start the print job), the job is counted at the time when either "Delete Data" or "Specify Output" is specified.
- 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.

8011	T:Jobs/LS	These SPs count the number of jobs stored to the document server by each application, to reveal how local storage is being used for input. [0to9999999/ 1] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8012	C:Jobs/LS	
8013	F:Jobs/LS	
8014	P:Jobs/LS	
8015	S:Jobs/LS	
8016	L:Jobs/LS	
8017	O:Jobs/LS	

- When a scan job is sent to the document server, the S: counter increments. When you enter document server mode and then scan an original, the L: counter increments.
- When a print job is sent to the document server, the P: counter increments.
- When a network application sends data to the document server, the O: counter increments.
- When an image from Palm 2 is stored on the document server, the O: counter increments.
- When a fax is sent to the document server, the F: counter increments.

8021	T:Pjob/LS	These SPs reveal how files printed from the document server were stored on the document server originally. [0 to 9999999/ 1] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8022	C:Pjob/LS	
8023	F:Pjob/LS	
8024	P:Pjob/LS	
8025	S:Pjob/LS	
8026	L:Pjob/LS	
8027	O:Pjob/LS	

- When a copy job stored on the document server is printed with another application, the C: counter increments.
- When an application like DeskTopBinder merges a copy job that was stored on the document server with a print job that was stored on the document server, the C: and P: counters both increment.
- When a job already on the document server is printed with another application, the L: counter increments.
- When a scanner job stored on the document server is printed with another application, the S: counter increments. If the original was scanned from within document server mode, then the L: counter increments.

- When images stored on the document server by a network application (including Palm 2), are printed with another application, the O: counter increments.
- When a copy job stored on the document server is printed with a network application (Web Image Monitor, for example), the C: counter increments.
- When a fax on the document server is printed, the F: counter increments.

8031	T:Pjob/DesApl	These SPs reveal what applications were used to output documents from the document server. [0 to 9999999/ 1] The L: counter counts the number of jobs printed from within the document server mode screen at the operation panel.
8032	C:Pjob/DesApl	
8033	F:Pjob/DesApl	
8034	P:Pjob/DesApl	
8035	S:Pjob/DesApl	
8036	L:Pjob/DesApl	
8037	O:Pjob/DesApl	

- When documents already stored on the document server are printed, the count for the application that started the print job is incremented.
- When the print job is started from a network application (Desk Top Binder, Web Image Monitor, etc.) the L: counter increments.

8041	T:TX Jobs/LS	These SPs count the applications that stored files on the document server that were later accessed for transmission over the telephone line or over a network (attached to an e-mail, or as a fax image by I-Fax). [0 to 9999999/ 1] Note: Jobs merged for sending are counted separately. The L: counter counts the number of jobs scanned from within the document server mode screen at the operation panel.
8042	C:TX Jobs/LS	
8043	F:TX Jobs/LS	
8044	P:TX Jobs/LS	
8045	S:TX Jobs/LS	
8046	L:TX Jobs/LS	
8047	O:TX Jobs/LS	

- When a stored copy job is sent from the document server, the C: counter increments.
- When images stored on the document server by a network application or Palm2 are sent as an e-mail, the O: counter increments.

8051	T:TX Jobs/DesApl	These SPs count the applications used to send files from the document server over the telephone line or over a network (attached to an e-mail, or as a fax image by I-Fax). Jobs merged for sending are counted separately. [0 to 9999999/ 1] The L: counter counts the number of jobs sent from within the document server mode screen at the operation panel.
8052	C:TX Jobs/DesApl	
8053	F:TX Jobs/DesApl	
8054	P:TX Jobs/DesApl	
8055	S:TX Jobs/DesApl	
8056	L:TX Jobs/DesApl	
8057	O:TX Jobs/DesApl	

- If the send is started from Desk Top Binder or Web Image Monitor, for example, then the O: counter increments.

8061	T:FIN Jobs	[0 to 9999999/ 1]
	These SPs total the finishing methods. The finishing method is specified by the application.	
8062	C:FIN Jobs	[0 to 9999999/ 1]
	These SPs total finishing methods for copy jobs only. The finishing method is specified by the application.	
8063	F:FIN Jobs	[0 to 9999999/ 1]
	These SPs total finishing methods for fax jobs only. The finishing method is specified by the application.	
8064	P:FIN Jobs	[0 to 9999999/ 1]
	These SPs total finishing methods for print jobs only. The finishing method is specified by the application.	
8065	S:FIN Jobs	[0 to 9999999/ 1]
	These SPs total finishing methods for scan jobs only. The finishing method is specified by the application. Note: Finishing features for scan jobs are not available at this time.	
8066	L:FIN Jobs	[0 to 9999999/ 1]
	These SPs total finishing methods for jobs output from within the document server mode screen at the operation panel. The finishing method is specified from the print window within document server mode.	

8067	O:FIN Jobs	[0 to 9999999/ 1]
	These SPs total finishing methods for jobs executed by an external application, over the network. The finishing method is specified by the application.	
806x 1	Sort	Number of jobs started in Sort mode. When a stored copy job is set for Sort and then stored on the document server, the L: counter increments. (See SP8066 1)
806x 2	Stack	Number of jobs started out of Sort mode.
806x 3	Staple	Number of jobs started in Staple mode.
806x 4	Booklet	Number of jobs started in Booklet mode. If the machine is in staple mode, the Staple counter also increments.
806x 5	Z-Fold	Number of jobs started in any mode other than the Booklet mode and set for Z-folding. (Multi Fold Unit D394)
806x 6	Punch	Number of jobs started in Punch mode. When Punch is set for a print job, the P: counter increments. (See SP8064 6.)
806x 7	Other	Reserved. Not used.
806x 8	Inside Fold	Half-Fold (FM2) (Multi Fold Unit D394)
806x 9	Three-IN-Fold	Letter Fold-in (FM4) (Multi Fold Unit D394)
806x 10	Three-OUT-Fold	Letter Fold-out (FM3) (Multi Fold Unit D394)
806x 11	Four Fold	Double Parallel Fold (FM5) (Multi Fold Unit D394)
806x 12	KANNON-Fold	Gate Fold (FM6) (Multi Fold Unit D394)
806x 13	Perfect-Bind	Perfect Binder **D391 Not Used**
806x 14	Ring-Bind	Ring Binder D392

8071	T:Jobs/PGS	[0 to 9999999/ 1]
	These SPs count the number of jobs broken down by the number of pages in the job, regardless of which application was used.	
8072	C:Jobs/PGS	[0 to 9999999/ 1]
	These SPs count and calculate the number of copy jobs by size based on the number of pages in the job.	

8073	F:Jobs/PGS	[0 to 9999999/ 1]		
	These SPs count and calculate the number of copy jobs by size based on the number of pages in the job.			
8074	P:Jobs/PGS	[0 to 9999999/ 1]		
	These SPs count and calculate the number of print jobs by size based on the number of pages in the job.			
8075	S:Jobs/PGS	[0 to 9999999/ 1]		
	These SPs count and calculate the number of scan jobs by size based on the number of pages in the job.			
8076	L:Jobs/PGS	[0 to 9999999/ 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.			
8077	O:Jobs/PGS	[0 to 9999999/ 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.			
807x 1	1 Page		807x 8	21 to 50 Pages
807x 2	2 Pages		807x 9	51 to 100 Pages
807x 3	3 Pages		807x 10	101 to 300 Pages
807x 4	4 Pages		807x 11	301 to 500 Pages
807x 5	5 Pages		807x 12	501 to 700 Pages
807x 6	6 to 10 Pages		807x 13	701 to 1000 Pages
807x 7	11 to 20 Pages		807x 14	1001 to Pages

- For example: When a copy job stored on the document server is printed in document server mode, the appropriate L: counter (SP8076 0xx) increments.
- Printing a fax report counts as a job and increments the F: counter (SP 8073).
- Interrupted jobs (paper jam, etc.) are counted, even though they do not finish.
- If a job is paused and re-started, it counts as one job.
- If the finisher runs out of staples during a print and staple job, then the job is counted at the time the error occurs.

- For copy jobs (SP 8072) and scan jobs (SP 8075), the total is calculated by multiplying the number of sets of copies by the number of pages scanned. (One duplex page counts as 2.)
- The first test print and subsequent test prints to adjust settings are added to the number of pages of the copy job (SP 8072).
- When printing the first page of a job from within the document server screen, the page is counted.

8111	T:FAX TX Jobs	[0 to 9999999/ 0 / 1]
	These SPs count the total number of jobs (color or black-and-white) sent by fax, either directly or using a file stored on the document server, on a telephone line.	
8113	F:FAX TX Jobs	[0 to 9999999/ 0 / 1]
	These SPs count the total number of jobs (color or black-and-white) sent by fax directly on a telephone line.	
1	B/W	
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 (812x) also increments.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8121	T:IFAX TX Jobs	[0 to 9999999/ 0 / 1]
	These SPs count the total number of jobs (color or black-and-white) sent, either directly or using a file stored on the document server, as fax images using I-Fax.	
8123	F:IFAX TX Jobs	[0 to 9999999/ 0 / 1]
	These SPs count the number of jobs (color or black-and-white) sent (not stored on the document server), as fax images using I-Fax.	
1	B/W	
2	Color	

- The counters for color are provided for future use; the color fax feature is not available at this time.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8131	T:S-to-Email Jobs	[0 to 9999999/ 1]
	These SPs count the total number of jobs scanned and attached to an e-mail, regardless of whether the document server was used or not.	
8135	S:S-to-Email Jobs	
	These SPs count the number of jobs scanned and attached to an e-mail, without storing the original on the document server.	
1	B/W	Count for the number of jobs with black-and-white.
2	Color	Count for the number of jobs with color.
3	ACS	Count for the number of jobs using ACS mode.

- These counters count jobs, not pages.
- If the job is stored on the document server, after the job is stored it is determined to be color or black-and-white then counted.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- If several jobs are combined for sending to the Scan Router, Scan-to-Email, or Scan-to-PC, or if one job is sent to more than one destination. each send is counted separately. For example, if the same document is sent by Scan-to-Email as well as Scan-to-PC, then it is counted twice (once for Scan-to-Email and once for Scan-to-PC).

8141	T:Deliv Jobs/Svr	[0 to 9999999/ 1]
	These SPs count the total number of jobs scanned and sent to a Scan Router server.	
1	B/W	Count for the number of jobs with black-and-white.
2	Color	Count for the number of jobs with color.
3	ACS	Count for the number of jobs using ACS mode.
3	ACS	Count for the number of jobs using ACS mode.
8145	S:Deliv Jobs/Svr	
	These SPs count the number of jobs scanned in scanner mode and sent to a Scan Router server.	
1	B/W	Count for the number of jobs with black-and-white.

2	Color	Count for the number of jobs with color.
3	ACS	Count for the number of jobs using ACS mode.

- These counters count jobs, not pages.
- The jobs are counted even though the arrival and reception of the jobs at the Scan Router server cannot be confirmed.
- If even one color image is mixed with black-and-white images, then the job is counted as a "Color" job.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be delivered, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8151	T:Deliv Jobs/PC	[0 to 9999999/ 1]
	These SPs count the total number of jobs scanned and sent to a folder on a PC (Scan-to-PC). Note: At the present time, 8151 and 8155 perform identical counts.	
1	B/W	Count for the number of jobs with black-and-white.
2	Color	Count for the number of jobs with color.
3	ACS	Count for the number of jobs using ACS mode.
8155	S:Deliv Jobs/PC	
	These SPs count the total number of jobs scanned and sent with Scan-to-PC.	
1	B/W	Count for the number of jobs with black-and-white.
2	Color	Count for the number of jobs with color.
3	ACS	Count for the number of jobs using ACS mode.

- These counters count jobs, not pages.
- If the job is cancelled during scanning, it is not counted.
- If the job is cancelled while it is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8161	T: PC FAX TX Jobs	
8163	F: PC FAX TX Jobs	

8171	T: Deliv Jobs/WSD	
8175	S: Deliv Jobs/WSD	
8181	T: Scan to Media Jobs	
8185	S: Scan to Media Jobs	
1	B/W	
2	Color	
3	ACS	

8191	T:Total Scan PGS	These SPs count the pages scanned by each application that uses the scanner to scan images. [0 to 9999999/ 1]
8192	C:Total Scan PGS	
8193	F:Total Scan PGS	
8195	S:Total Scan PGS	
8196	L:Total Scan PGS	

- SP 8191 to 8196 count the number of scanned sides of pages, not the number of physical pages.
- These counters do not count reading user stamp data, or reading color charts to adjust color.
- Previews done with a scanner driver are not counted.
- A count is done only after all images of a job have been scanned.
- Scans made in SP mode are not counted.

Examples

- If 3 B5 pages and 1 A3 page are scanned with the scanner application but not stored, the S: count is 4.
- If both sides of 3 A4 sheets are copied and stored to the document server using the Store File button in the Copy mode window, the C: count is 6 and the L: count is 6.
- If both sides of 3 A4 sheets are copied but not stored, the C: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8201	T:LSize Scan PGS	[0 to 9999999/ 1]
	This SP counts the total number of large pages input with the scanner for scan and copy jobs. Note: These counters are displayed in the SMC Report, and in the User Tools display.	
8203	F:LSize Scan PGS	[0 to 9999999/ 1]
	This SP counts the total number of large pages input with the scanner for fax jobs only. Note: These counters are displayed in the SMC Report, and in the User Tools display.	
8205	S:LSize Scan PGS	[0 to 9999999/ 1]
	This SP counts the total number of large pages input with the scanner for scan jobs only Note: These counters are displayed in the SMC Report, and in the User Tools display..	

8211	T:Scan PGS/LS	These SPs count the number of pages scanned into the document server . [0 to 9999999/ 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen
8212	C:Scan PGS/LS	
8213	F:Scan PGS/LS	
8215	S:Scan PGS/LS	
8216	L:Scan PGS/LS	

- Reading user stamp data is not counted.
- If a job is cancelled, the pages output as far as the cancellation are counted.
- If the scanner application scans and stores 3 B5 sheets and 1 A4 sheet, the S: count is 4.
- If pages are copied but not stored on the document server, these counters do not change.
- If both sides of 3 A4 sheets are copied and stored to the document server, the C: count is 6 and the L: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8221	ADF Org Feeds
	[0 to 9999999/ 0 / 1] These SPs count the number of pages fed through the ADF for front and back side scanning.

1	Front	Number of front sides fed for scanning: With an ADF that can scan both sides simultaneously, the Front side count is the same as the number of pages fed for either simplex or duplex scanning. With an ADF that cannot scan both sides simultaneously, the Front side count is the same as the number of pages fed for duplex front side scanning. (The front side is determined by which side the user loads face up.)
2	Back	Number of rear sides fed for scanning: With an ADF that can scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex scanning. With an ADF that cannot scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex rear-side scanning.

- When 1 sheet is fed for duplex scanning the Front count is 1 and the Back count is 1.
- If a jam occurs during the job, recovery processing is not counted to avoid double counting. Also, the pages are not counted if the jam occurs before the first sheet is output.

8231	Scan PGS/Mode	
	[0 to 9999999/ 0 / 1] These SPs count the number of pages scanned by each ADF mode to determine the work load on the ADF.	
1	Large Volume	Selectable. Large copy jobs that cannot be loaded in the ADF at one time.
2	SADF	Selectable. Feeding pages one by one through the ADF.
3	Mixed Size	Selectable. Select "Mixed Sizes" on the operation panel.
4	Custom Size	Selectable. Originals of non-standard size.
5	Platen	Book mode. Raising the ADF and placing the original directly on the platen.
6	1side/2side	

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.
- If the user selects "Mixed Sizes" for copying in the platen mode, the Mixed Size count is enabled.
- In the SADF mode if the user copies 1 page in platen mode and then copies 2 pages with SADF, the Platen count is 1 and the SADF count is 3.

8241	T:Scan PGS/Org	[0 to 9999999/ 1]
	These SPs count the total number of scanned pages by original type for all jobs, regardless of which application was used.	
8242	C:Scan PGS/Org	[0 to 9999999/ 1]
	These SPs count the number of pages scanned by original type for Copy jobs.	
8243	F:Scan PGS/Org	[0 to 9999999/ 0 / 1]
	These SPs count the number of pages scanned by original type for Fax jobs.	
8245	S:Scan PGS/Org	[0 to 9999999/ 1]
	These SPs count the number of pages scanned by original type for Scan jobs.	
8246	L:Scan PGS/Org	[0 to 9999999/ 1]
	These SPs count the number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen	

	8241	8242	8243	8245	8246
824x 1: Text	Yes	Yes	Yes	Yes	Yes
824x 2: Text/Photo	Yes	Yes	Yes	Yes	Yes
824x 3: Photo	Yes	Yes	Yes	Yes	Yes
824x 4: GenCopy, Pale	Yes	Yes		Yes	Yes
824x 5: Map	Yes	Yes		Yes	Yes
824x 6: Normal/Detail	Yes		Yes		
824x 7: Fine/Super Fine	Yes		Yes		
824x 8: Binary	Yes			Yes	
824x 9: Grayscale	Yes			Yes	
824x 10: Color	Yes			Yes	
824x 11: Other	Yes	Yes	Yes	Yes	Yes

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.

8251	T:Scan PGS/ImgEdt	These SPs show how many times Image Edit features have been selected at the operation panel for each application. Some examples of these editing features are: Erase> Border Erase> Center Image Repeat Centering Positive/Negative [0 to 9999999/ 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.
8252	C:Scan PGS/ImgEdt	
8255	S:Scan PGS/ImgEdt	
8256	L:Scan PGS/ImgEdt	
8257	O:Scan PGS/ImgEdt	

- The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen.

8261	T:Scn PGS/ColCr	[0 to 9999999/ 1]
	These SPs count the total number of scanned pages by the color processing mode used.	
8262	C:Scn PGS/ColCr	[0 to 9999999/ 1]
	These SPs count the number of pages by the color processing mode used for Copy jobs only.	
8265	S: Scn PGS/ColCr	[0 to 9999999/ 1]
8266	L: Scn PGS/TWAIN	[0 to 9999999/ 1]
8261 1	Color Conversion	
8261 2	Color Erase	
8261 3	Background	
8261 4	Other	

- These counters are enabled only for MFP machines that support color. The wide format machines do not support the "Background" or "Other" counters.

8281	T:Scan PGS/TWAIN	These SPs count the number of pages scanned using a TWAIN driver. These counters reveal how the TWAIN driver is used for delivery functions. [0 to 9999999/ 1] Note: At the present time, these counters perform identical counts.
8285	S:Scan PGS/TWAIN	

8291	T:Scan PGS/Stamp	These SPs count the number of pages stamped with the stamp in the ADF unit. [0 to 9999999/ 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
8293	F:Scan PGS/Stamp	
8295	S:Scan PGS/Stamp	

8301	T:Scan PGS/Size	[0 to 9999999/ 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].	
8302	C:Scan PGS/Size	[0 to 9999999/ 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].	
8303	F:Scan PGS/Size	[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].	
8305	S:Scan PGS/Size	[0 to 9999999/ 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].	
8306	L:Scan PGS/Size	[0 to 9999999/ 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].	

830x 1	A3	
830x 2	A4	
830x 3	A5	
830x 4	B4	
830x 5	B5	
830x 6	DLT	
830x 7	LG	
830x 8	LT	
830x 9	HLT	
830x 10	Full Bleed	
830x 254	Other (Standard)	
830x 255	Other (Custom)	

8311	T:Scan PGS/Rez	[0 to 9999999/ 1]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings.	
8315	S:Scan PGS/Rez	[0 to 9999999/ 1]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings. Note: At the present time, 8311 and 8315 perform identical counts.	
831x 1	1200dpi to	
831x 2	600dpi to 1199dpi	
831x 3	400dpi to 599dpi	
831x 4	200dpi to 399dpi	
831x 5	to 199dpi	

- Copy resolution settings are fixed so they are not counted.
- The Fax application does not allow finely-adjusted resolution settings so no count is done for the Fax application.

8381	T:Total PrtPGS	These SPs count the number of pages printed by the customer. The counter for the application used for storing the pages increments. [0 to 9999999/ 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.
8382	C:Total PrtPGS	
8383	F:Total PrtPGS	
8384	P:Total PrtPGS	
8385	S:Total PrtPGS	
8386	L:Total PrtPGS	
8387	O:Total PrtPGS	

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- When the A3/DLT double count function is switched on with SP5104, 1 A3/DLT page is counted as 2.
- When several documents are merged for a print job, the number of pages stored are counted for the application that stored them.
- These counters are used primarily to calculate charges on use of the machine, so the following pages are not counted as printed pages:
- Blank pages in a duplex printing job.
- Blank pages inserted as document covers, chapter title sheets, and slip sheets.
- Reports printed to confirm counts.
- All reports done in the service mode (service summaries, engine maintenance reports, etc.)
- Test prints for machine image adjustment.
- Error notification reports.
- Partially printed pages as the result of a copier jam.

8391	LSize PrtPGS	[0 to 9999999/ 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.	

8401	T:PrtPGS/LS	These SPs count the number of pages printed from the document server. The counter for the application used to print the pages is incremented. The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel. [0 to 9999999/ 1]
8402	C:PrtPGS/LS	
8403	F:PrtPGS/LS	
8404	P:PrtPGS/LS	
8405	S:PrtPGS/LS	
8406	L:PrtPGS/LS	

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the L: count.
- Fax jobs done with Web Image Monitor and Desk Top Binder are added to the F: count.

8411	Prints/Duplex	This SP counts the amount of paper (front/back counted as 1 page) used for duplex printing. Last pages printed only on one side are not counted. [0 to 9999999/ 1]

8421	T:PrtPGS/Dup Comb	[0 to 9999999/ 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing. This is the total for all applications.	
8422	C:PrtPGS/Dup Comb	[0 to 9999999/ 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the copier application.	
8423	F:PrtPGS/Dup Comb	[0 to 9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the fax application.	
8424	P:PrtPGS/Dup Comb	[0 to 9999999/ 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the printer application.	
8425	S:PrtPGS/Dup Comb	[0 to 9999999/ 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the scanner application.	

8426	L:PrtPGS/Dup Comb	[0 to 9999999/ 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing from within the document server mode window at the operation panel.	
8427	O:PrtPGS/Dup Comb	[0 to 9999999/ 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by Other applications	
842x 1	Simplex> Duplex	
842x 2	Duplex> Duplex	
842x 3	Book> Duplex	
842x 4	Simplex Combine	
842x 5	Duplex Combine	
842x 6	2>	2 pages on 1 side (2-Up)
842x 7	4>	4 pages on 1 side (4-Up)
842x 8	6>	6 pages on 1 side (6-Up)
842x 9	8>	8 pages on 1 side (8-Up)
842x 10	9>	9 pages on 1 side (9-Up)
842x 11	16>	16 pages on 1 side (16-Up)
842x 12	Booklet	
842x 13	Magazine	

- These counts (SP8421 to SP8427) are especially useful for customers who need to improve their compliance with ISO standards for the reduction of paper consumption.
- Pages that are only partially printed with the n-Up functions are counted as 1 page.
- Here is a summary of how the counters work for Booklet and Magazine modes:

Booklet			Magazine	
Original Pages	Count		Original Pages	Count
1	1		1	1

Booklet			Magazine	
Original Pages	Count		Original Pages	Count
2	2		2	2
3	2		3	2
4	2		4	2
5	3		5	4
6	4		6	4
7	4		7	4
8	4		8	4

8431	T:PrtPGS/ImgEdt	[0 to 9999999/ 1]
	These SPs count the total number of pages output with the three features below, regardless of which application was used.	
8432	C:PrtPGS/ImgEdt	[0 to 9999999/ 1]
	These SPs count the total number of pages output with the three features below with the copy application.	
8434	P:PrtPGS/ImgEdt	[0 to 9999999/ 1]
	These SPs count the total number of pages output with the three features below with the print application.	
8436	L:PrtPGS/ImgEdt	[0 to 9999999/ 1]
	These SPs count the total number of pages output from within the document server mode window t the operation panel with the three features below.	
8437	O:PrtPGS/ImgEdt	[0 to 9999999/ 1]
	These SPs count the total number of pages output with the three features below with Other applications.	
843x 1	Cover/Slip Sheet	Total number of covers or slip sheets inserted. The count for a cover printed on both sides counts 2.
843x 2	Series/Book	The number of pages printed in series (one side) or printed as a book with booklet right/left pagination.

843x 3	User Stamp	The number of pages printed where stamps were applied, including page numbering and date stamping.

8441	T:PrtPGS/Ppr Size	[0 to 9999999/ 1]
	These SPs count by print paper size the number of pages printed by all applications.	
8442	C:PrtPGS/Ppr Size	[0 to 9999999/ 1]
	These SPs count by print paper size the number of pages printed by the copy application.	
8443	F:PrtPGS/Ppr Size	[0 to 9999999/ 0 / 1]
	These SPs count by print paper size the number of pages printed by the fax application.	
8444	P:PrtPGS/Ppr Size	[0 to 9999999/ 1]
	These SPs count by print paper size the number of pages printed by the printer application.	
8445	S:PrtPGS/Ppr Size	[0 to 9999999/ 1]
	These SPs count by print paper size the number of pages printed by the scanner application.	
8446	L:PrtPGS/Ppr Size	[0 to 9999999/ 1]
	These SPs count by print paper size the number of pages printed from within the document server mode window at the operation panel.	
8447	O:PrtPGS/Ppr Size	[0 to 9999999/ 1]
	These SPs count by print paper size the number of pages printed by Other applications.	

844x 1	A3	
844x 2	A4	
844x 3	A5	
844x 4	B4	
844x 5	B5	
844x 6	DLT	
844x 7	LG	
844x 8	LT	
844x 9	HLT	
844x 10	Full Bleed	
844x 100	A2	Not supported with this printer.
844x 101	B3	Not supported with this printer.
844x 254	Other (Standard)	
844x 255	Other (Custom)	

- These counters do not distinguish between LEF and SEF.

8451	PrtPGS/Ppr Tray	[0 to 9999999/ 1]
	These SPs count the number of sheets fed from each paper feed station.	
1	Bypass	Bypass Tray
2	Tray 1	Copier
3	Tray 2	Copier
4	Tray 3	Paper Tray Unit (Option)
5	Tray 4	Paper Tray Unit (Option)
6	Tray 5	LCT (Option)
7	Tray 6	Currently not used.
8	Tray 7	Currently not used.

9	Tray 8	Currently not used.
10	Tray 9	Currently not used.
11	Tray 10	
12	Tray 11	
13	Tray 12	
14	Tray 13	
15	Tray 14	
16	Tray 15	

8461	T:PrtPGS/Ppr Type	[0 to 9999999/ 1]
	These SPs count by paper type the number pages printed by all applications. These counters are not the same as the PM counter. The PM counter is based on feed timing to accurately measure the service life of the feed rollers. However, these counts are based on output timing. Blank sheets (covers, chapter covers, slip sheets) are also counted. During duplex printing, pages printed on both sides count as 1, and a page printed on one side counts as 1.	
8462	C:PrtPGS/Ppr Type	[0 to 9999999/ 1]
	These SPs count by paper type the number pages printed by the copy application.	
8463	F:PrtPGS/Ppr Type	[0 to 9999999/ 0 / 1]
	These SPs count by paper type the number pages printed by the fax application.	
8464	P:PrtPGS/Ppr Type	[0 to 9999999/ 1]
	These SPs count by paper type the number pages printed by the printer application.	
8466	L:PrtPGS/Ppr Type	[0 to 9999999/ 1]
	These SPs count by paper type the number pages printed from within the document server mode window at the operation panel.	
846x 1	Normal	
846x 2	Recycled	

846x 3	Special
846x 4	Thick
846x 5	Normal (Back)
846x 6	Thick (Back)
846x 7	OHP
846x 8	Other

8471	PrtPGS/Mag	[0 to 9999999/ 1]
	These SPs count by magnification rate the number of pages printed.	
1	to 49%	
2	50% to 99%	
3	100%	
4	101% to 200%	
5	201% to	

- Counts are done for magnification adjusted for pages, not only on the operation panel but performed remotely with an external network application capable of performing magnification adjustment as well.
- Magnification adjustments done with printer drivers with PC applications such as Excel are also counted.
- Magnification adjustments done for adjustments after they have been stored on the document server are not counted.
- Magnification adjustments performed automatically during Auto Reduce/Enlarge copying are counted.
- The magnification rates of blank cover sheets, slip sheets, etc. are automatically assigned a rate of 100%.

8481	T:PrtPGS/TonSave	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/ 1]
8484	P:PrtPGS/TonSave	

8491	T:PrtPGS/Col Mode	[0 to 9999999/ 1]
	These SPs count by color mode the total number of pages output by the Copy, document server, and Fax applications.	
8492	C:PrtPGS/Col Mode	[0 to 9999999/ 1]
	These SPs count by color mode the total output by the Copy application only	
8492	C:PrtPGS/Col Mode	[0 to 9999999/ 1]
	These SPs count by color mode the total output by the Copy application only	
8493	F:PrtPGS/Col Mode	[0 to 9999999/ 1]
	These SPs count by color mode the total output by the Fax application only	
8496	L:PrtPGS/Col Mode	[0 to 9999999/ 1]
	These SPs count by color mode the total output from within the document server mode window at the operation panel.	
8497	O:PrtPGS/Col Mode	[0 to 9999999/ 1]
849x 1	B/W	
849x 2	Single Color	Color MFP/2-color MFP machines only.
849x 3	Two Color	Color MFP/2-color MFP machines only.
849x 4	Full Color	Color MFP machines only

Notes for SP8491 to SP8496

- These SPs apply to the Copy, document server, and Fax applications only. They do not apply to the Print application.
- When the ACS feature is used to select the color settings automatically, the results of the ACS execute is used to increment the appropriate counter.
- If a color stamp is selected for printing on a monochrome document, the count is for B/W.
- If the output is black and white even if color print mode was selected, the pages count as Full Color.
- The color mode selected for a document stored on the document server is counted. (The color selection cannot be changed once the document is stored on the document server.)

8501	T:PrtPGS/Col Mode	[0 to 9999999/ 1]
	These SPs count by color mode the total number of pages printed.	

8504	P:PrtPGS/Col Mode	[0 to 9999999/ 1]
	These SPs count by color mode the number of pages printed with the Print application.	
8507	O:PrtPGS/Col Mode	[0 to 9999999/ 1]
	These SPs count by color mode the number of pages printed with the other applications.	
1	B/W	
2	Mono Color	Color MFP and 2-Color MFP machines only.
3	Full Color	Color MFP and Color LP machines only.
4	Single Color	B081/D082 only
5	Two Color	B081/D082 only

- At the present time, 8501 and 8504 perform identical counts, because they are both limited to the Print application.

8511	T:PrtPGS/Emul	[0 to 9999999/ 1]
	These SPs count by printer emulation mode the total number of pages printed.	
8514	P:PrtPGS/Emul	[0 to 9999999/ 1]
	These SPs count by printer emulation mode the total number of pages printed.	

851x 1	RPCS	
851x 2	RPDL	
851x 3	PS3	
851x 4	R98	
851x 5	R16	
851x 6	GL/GL2	
851x 7	R55	
851x 8	RTIFF	
851x 9	PDF	
851x 10	PCL5e/5c	
851x 11	PCL XL	
851x 12	IPDL-C	
851x 13	BM-Links	Japan Only
851x 14	Other	
851x 15	IPDS	

- SP8511 and SP8514 return the same results as they are both limited to the Print application.
- Print jobs output to the document server are not counted.

8521	T:PrtPGS/FIN	[0 to 9999999/ 1]
	These SPs count by finishing mode the total number of pages printed by all applications.	
8522	C:PrtPGS/FIN	[0 to 9999999/ 1]
	These SPs count by finishing mode the total number of pages printed by the Copy application.	
8523	F:PrtPGS/FIN	[0 to 9999999/ 1]
	These SPs count by finishing mode the total number of pages printed by the Fax application.	

8524	P:PrtPGS/FIN	[0 to 9999999/ 1]
	These SPs count by finishing mode the total number of pages printed by the Print application.	
8525	S:PrtPGS/FIN	[0 to 9999999/ 1]
	These SPs count by finishing mode the total number of pages printed by the Scanner application.	
8526	L:PrtPGS/FIN	[0 to 9999999/ 1]
	These SPs count by finishing mode the total number of pages printed from within the document server mode window at the operation panel.	
852x 1	Sort	
852x 2	Stack	
852x 3	Staple	
852x 4	Booklet	
852x 5	Z-Fold	
852x 6	Punch	
852x 7	Other	
806x 8	Inside Fold	Half-Fold (FM2) (Multi Fold Unit D394)
806x 9	Three-IN-Fold	Letter Fold-in (FM4) (Multi Fold Unit D394)
806x 10	Three-OUT-Fold	Letter Fold-out (FM3) (Multi Fold Unit D394)
806x 11	Four Fold	Double Parallel Fold (FM5) (Multi Fold Unit D394)
806x 12	KANNON-Fold	Gate Fold (FM6) (Multi Fold Unit D394)
806x 13	Perfect-Bind	Perfect Binder **D391 Not Used**
806x 14	Ring-Bind	Ring Binder D392

Note:

- If stapling is selected for finishing and the stack is too large for stapling, the unstapled pages are still counted.
- The counts for staple finishing are based on output to the staple tray, so jam recoveries are counted.

8531	Staples	This SP counts the amount of staples used by the machine. [0 to 9999999/ 1]

8551	T: PrtBooks/FIN	
8552	O: PrtBooks/FIN	
8554	P: PrtBooks/FIN	
8556	L: PrtBooks/FIN	
1	Perfect-Bind	
2	Ring-Bind	

8581	T:Counter	[0 to 9999999/ 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. Note: These SPs are supported by color MFP and LP machines only.	
1	Total	
2	Total: Full Color	
3	B&W/Single Color	
4	Development: CMY	
5	Development: K	
6	Copy: Color	
7	Copy: B/W	
8	Print: Color	
9	Print: B/W	
10	Total: Color	
11	Total: B/W	
12	Full Color: A3	
13	Full Color: B4 JIS or smaller	

14	Full Color Print
15	Mono Color Print
16	Full Color GPC
17	Twin Color Mode Print
18	Full Color Print (Twin)
19	Mono Color Print (Twin)
20	Full Color Total (CV)
21	Mono Color Total (CV)
22	Full Color Print (CV)

8582	C:Counter	[0 to 9999999/ 1]	
	These SPs count the total output broken down by color output for the Copy application only. Note: These SPs are supported by color copy MFP machines only. These counters are displayed in the SMC Report, and in the User Tools display on the copy machine.		
1	B/W		
2	Single Color		
3	Two Color		
4	Full Color		

8583	F:Counter	[0 to 9999999/ 1]
	These SPs count the total output broken down by color output for the Fax application only. These SPs is supported by color copy MFP machines only. These counters are displayed in the SMC Report, and in the User Tools display on the copy machine.	
1	B/W	
2	Single Color	

8584	P:Counter	[0 to 9999999/ 1]
	These SPs count the total output broken down by color output for the Print application only. These counters are displayed in the SMC Report, and in the User Tools display on the copy machine. Note: These SPs are supported by color MFP and LP machines only.	
1	B/W	
2	Mono Color	
3	Full Color	
4	Single Color	
5	Two Color	

8586	L:Counter	[0 to 9999999/ 1]	
	These SPs count the total output broken down by color for output from within the document server mode window at the operation panel.These counters are displayed in the SMC Report, and in the User Tools display on the copy machine. Note: These SPs are supported only by color copy MFP machines only with the fax application installed.		
		MFP Color	**Replaced:**
1	B/W	Yes	---
2	Single Color	Yes	---
3	Two Color	Yes	---
4	Single Color	Yes	---

8591	O:Counter	[0 to 9999999/ 1]
	These SPs count the totals for A3/DLT paper use, number of duplex pages printed, and the number of staples used. These totals are for Other (O:) applications only.	
1	A3/DLT	
2	Duplex	

8601	Coverage Counter

1	B/W	
2	Color	
11	B/W Printing Pages	
12	Color Printing Pages	
21	Coverage Counter 1	
22	Coverage Counter 2	
23	Coverage Counter 3	

8617	SDK Apli Counter	
1	SDK-1	
2	SDK-2	
3	SDK-3	
4	SDK-4	
5	SDK-5	
6	SDK-6	

8621	Func Use Counter **DFU**
1 to 64	Function 001 to Function 064

8631	T:FAX TX PGS	[0 to 9999999/ 0 / 1]
	These SPs count by color mode the number of pages sent by fax to a telephone number.	
8633	F:FAX TX PGS	[0 to 9999999/ 0 / 1]
	These SPs count by color mode the number of pages sent by fax to a telephone number.	
1	BW	
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.

8641	T:FAX TX PGS	[0 to 9999999/ 0 / 1]
	These SPs count by color mode the number of pages sent by fax to as fax images using I-Fax.	
8643	F:FAX TX PGS	[0 to 9999999/ 0 / 1]
	These SPs count by color mode the number of pages sent by Fax as fax images using I-Fax.	
1	BW	
2	Color	

- counted separately as B/W or Color.
- At the present time, this feature is provided for the Fax application only so SP8641 and SP8643 are the same.
- The counts include error pages.
- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.
- Polling transmissions are counted but polling RX are not.
- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8651	T:S-to-Email PGS	[0 to 9999999/ 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.	
1	B/W	
2	Color	Supported by Color MFP machines only.

8655	S:S-to-Email PGS	[0 to 9999999/ 1]
	These SPs count by color mode the total number of pages attached to an e-mail for the Scan application only.	
1	B/W	
2	Color	Supported by Color MFP machines only.

Notes

- The count for B/W and Color pages is done after the document is stored on the HDD. If the job is cancelled before it is stored, the pages are not counted.
- If Scan-to-Email is used to send a 10-page document to 5 addresses, the count is 10 (the pages are sent to the same SMTP server together).
- If Scan-to-PC is used to send a 10-page document to 5 folders, the count is 50 (the document is sent to each destination of the SMB/FTP server).
- Due to restrictions on some devices, if Scan-to-Email is used to send a 10-page document to a large number of destinations, the count may be divided and counted separately. For example, if a 10-page document is sent to 200 addresses, the count is 10 for the first 100 destinations and the count is also 10 for the second 100 destinations, for a total of 20.).

8661	T:Deliv PGS/Svr	[0 to 9999999/ 1]
	These SPs count by color mode the total number of pages sent to a Scan Router server by both Scan and LS applications.	
1	B/W	
2	Color	Supported by Color MFP machines only.
8665	S:Deliv PGS/Svr	[0 to 9999999/ 1]
	These SPs count by color mode the total number of pages sent to a Scan Router server by the Scan application.	
1	B/W	
2	Color	Supported by Color MFP machines only.

Notes

- The B/W and Color counts are done after the document is stored on the HDD of the Scan Router server.
- If the job is canceled before storage on the Scan Router server finishes, the counts are not done.
- The count is executed even if regardless of confirmation of the arrival at the Scan Router server.

8671	T:Deliv PGS/PC	[0 to 9999999/ 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.	
1	B/W	
2	Color	Supported by Color MFP machines only.
8675	S:Deliv PGS/PC	[0 to 9999999/ 1]
	These SPs count by color mode the total number of pages sent with Scan-to-PC with the Scan application.	
1	B/W	
2	Color	Supported by Color MFP machines only.

8681	T:PCFAX TXPGS	These SPs count the number of pages sent by PC Fax. These SPs are provided for the Fax application only, so the counts for SP8681 and SP8683 are the same. [0 to 9999999/ 0 / 1]
8683	F:PCFAX TXPGS	

- This counts pages sent from a PC using a PC fax application, from the PC through the copier to the destination.
- When sending the same message to more than one place using broadcasting, the pages are only counted once. (For example, a 10-page fax is sent to location A and location B. The counter goes up by 10, not 20.)

8691	T:TX PGS/LS	These SPs count the number of pages sent from the document server. The counter for the application that was used to store the pages is incremented. [0 to 9999999/ 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.
8692	C:TX PGS/LS	
8693	F:TX PGS/LS	
8694	P:TX PGS/LS	
8695	S:TX PGS/LS	
8696	L:TX PGS/LS	

Notes

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the count.

- If several documents are merged for sending, the number of pages stored are counted for the application that stored them
- When several documents are sent by a Fax broadcast, the F: count is done for the number of pages sent to each destination.

8701	TX PGS/Port	[0 to 9999999/ 1]
	These SPs count the number of pages sent by the physical port used to send them. For example, if a 3-page original is sent to 4 destinations via ISDN G4, the count for ISDN (G3, G4) is 12.	
1	PSTN-1	
2	PSTN-2	
3	PSTN-3	
4	ISDN (G3,G4)	
5	Network	

8711	T:Scan PGS/Comp	[0 to 9999999/ 1]
	These SPs count the number of compressed pages scanned into the document server, counted by the formats slisted below.	
1	JPEG/JPEG2000	
2	TIFF (Multi/Single)	
3	PDF	
4	Other	
5	PDF/Comp	

8715	S:Scan PGS/Comp	[0 to 9999999/ 1]
	These SPs count the number of compressed pages scanned by the scan application, counted by the formats slisted below.	
1	JPEG/JPEG2000	
2	TIFF (Multi/Single)	
3	PDF	

4	Other	
5	PDF/Comp	

8721	T: Deliv PGS/WSD	
8725	S: Deliv PGS/WSD	
8731	T: Scan PGS/Media	
8735	S: Scan PGS/Media	
1	B/W	
2	Color	

8741	RX PGS/Port	[0 to 9999999/ 1]
	These SPs count the number of pages received by the physical port used to receive them.	
1	PSTN-1	
2	PSTN-2	
3	PSTN-3	
4	ISDN (G3,G4)	
5	Network	

8771	Dev Counter	[0 to 9999999/ 1]
	These SPs count the frequency of use (number of rotations of the development rollers) for black and other color toners. **Note:** For machines that do not support color, the Black toner count is the same as the Total count.	
1	Total	All toners (YMCK)
2	K	Black toner
3	Y	Yellow toner
4	M	Magenta toner
5	C	Cyan toner

6	R	Red toner (Wide Format A2 machines only)

8781	Toner Use Count: Color	[0 to 65 535]
	These SPs count the frequency of use (number of rotations of the development rollers) for black and other color toners.	
1	BK	Black toner
2	Y	Yellow toner
3	M	Magenta toner
4	C	Cyan toner

8791	LS Memory Remain
	This SP displays the percent of space available on the document server for storing documents. [0 to 100/ 1]

8801	Toner Remain		[0 to 100/ 1]
	This SP displays the percent of toner remaining for each color. This SP allows the user to check the toner supply at any time. Note: This precise method of measuring remaining toner supply (1% steps) is better than other machines in the market that can only measure in increments of 10 (10% steps).		
1	K	Black.	Supported by B/W, Color, Wide Format A2, Wide Format Roll machines.
2	Y	Yellow	Color machines only.
3	M	Magenta	
4	C	Cyan	
5	R	R	Wide Format A2 machines only.

8851	Toner Coverage 0-10%	[0 to 65 535]
	These SPs count the percentage of dot coverage for black other color toners.	
11	0-2%: BK	

12	0-2%: Y	
13	0-2%: M	
14	0-2%: C	
21	3-4%: BK	
22	3-4%: Y	
23	3-4%: M	
24	3-4%: C	
31	5-7%: BK	
32	5-7%: Y	
33	5-7%: M	
34	5-7%: C	
41	8-10%: BK	
42	8-10%: Y	
43	8-10%: M	
44	8-10%: C	

8861	Toner Coverage 11-20%	[0 to 65 535]
	These SPs count the percentage of dot coverage for black other color toners.	
8871	Toner Coverage 21-30%	[0 to 65 535]
	These SPs count the percentage of dot coverage for black other color toners.	
8881	Toner Coverage 31 -%	[0 to 65 535]
	These SPs count the percentage of dot coverage for black other color toners.	
8891	Pages: Current Toner	[0 to 65 535]
	These SPs count the number of pages for the current set toner.	
8901	Page/Toner_Prev1 **DFU**	
8911	Page/Toner_Prev2 **DFU**	

1	BK	Black toner
2	Y	Yellow toner
3	M	Magenta toner
4	C	Cyan toner

8921	Cvr Cnt/Total	
1	Coverage (%): BK	
2	Coverage (%): Y	
3	Coverage (%): M	
4	Coverage (%): C	
11	Coverage/P: BK	
12	Coverage/P: Y	
13	Coverage/P: M	
14	Coverage/P: C	

8941	Machine Status	[0 to 9999999/ 1]
	These SPs count the amount of time the machine spends in each operation mode. These SPs are useful for customers who need to investigate machine operation for improvement in their compliance with ISO Standards.	
1	Operation Time	Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).
2	Standby Time	Engine not operating. Includes time while controller saves data to HDD. Does not include time spent in Energy Save, Low Power, or Off modes.
3	Energy Save Time	Includes time while the machine is performing background printing.
4	Low Power Time	Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.

5	Off Mode Time	Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.
6	SC	Total down time due to SC errors.
7	PrtJam	Total down time due to paper jams during printing.
8	OrgJam	Total down time due to original jams during scanning.
9	Supply PM Unit End	Total down time due to toner end.

8951	AddBook Register		
	These SPs count the number of events when the machine manages data registration.		
1	User Code	User code registrations.	[0 to 9999999/ 1]
2	Mail Address	Mail address registrations.	
3	Fax Destination	Fax destination registrations.	
4	Group	Group destination registrations.	
5	Transfer Request	Fax relay destination registrations for relay TX.	
6	F-Code	F-Code box registrations.	
7	Copy Program	Copy application registrations with the Program (job settings) feature.	[0 to 255 / 255]
8	Fax Program	Fax application registrations with the Program (job settings) feature.	
9	Printer Program	Printer application registrations with the Program (job settings) feature.	
10	Scanner Program	Scanner application registrations with the Program (job settings) feature.	

8999	Admin Counter List	
1	Total	
2	Copy: Full Color	

3	Copy: BW	
4	Copy: Single Color	
5	Copy: Two Color	
6	Printer: Full Color	
7	Printer: BW	
8	Printer: Single Color	
9	Printer: Two Color	
10	Fax Print: BW	
11	Fax Print: Single Color	
12	A3/DLT	
13	Duplex	
14	Coverage: Color (%)	
15	Coverage: BW (%)	
16	Coverage: Color Print Page	
17	Coverage: BW Print Page	
20	Full Color: GPC	
101	Transmission Total: Color	
102	Transmission Total: BW	
103	Fax Transmission	
104	Scanner Transmission: Color	
105	Scanner Transmission: BW	

Printer, Scanner SP Tables

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.		
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	Bit Switch			
002	Bit Switch 2		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	**Applying a Collate Type**	0: Shift Collate	1: Normal Collate
		A collate type (shift or normal) will be applied to all jobs that do not explicitely define a collate type. **Note:** If BitSwitch 5-0 is enabled, this BitSwitch has no effect.		

	bit 3	**[PCL5e/c,PS]: PDL Auto Switching**	0: Enable	1: Disable
		Disable: The MFPs ability to change the PDL processor mid-job. Some host systems submit jobs that contain both PS and PCL5e/c. If Auto PDL switching is disabled, these jobs will not be printed properly.		
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	Switch dither	0: Use normal dither	1: Use alternative dither
		Please refer to RTB#RD014018.		

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	**Show "Collate Type", "Staple Type" and "Punch Type" buttons on the operation panel.**	0: Disable	1: Enable
		If enabled, users will be able to configure a Collate Type, Staple Type, and Punch Type from the operation panel. The available Types will depend on the device and configured options. After enabling this BitSw, the settings will appear under: "User Tools > Printer Features > System"		
	bit 1	**Multiple copies if a paper size or type mismatch occurs**	0: Disable (Single copy)	1: Enable (Multiple copy)
		If a paper size or type mismatch occurs during the printing of multiple copies, only a single copy is output by default. Using this BitSw, the device can be configured to print all copies even if a paper mismatch occurs.		
	bit 2	**Prevent SDK applications from altering the contents of a job.**	0: Disable	1: Enable
		If this BitSw is enabled, SDK applications will not be able to alter print data. This is achieved by preventing SDK applications from accessing a module called the "GPS Filter". **Note:** The main purpose of this BitSw is for troubleshooting the effects of SDK applications on data.		
	bit 3	**[PS] PS Criteria**	0: Pattern3	1: Pattern1
		Change the number of PS criterion used by the PS interpreter to determine whether a job is PS data or not. Pattern3: includes most PS commands. Pattern1: A small number of PS tags and headers		
	bit 4	**Increase max number of the stored jobs to 1000 jobs.**	0: Disable (100)	1: Enable (1000)
		Enable: Changes the maximum number of jobs that can be stored on the HDD via Job Type settings to 1000. The default is 100.		

	bit 5	**Face-up output**	0: Disable	1: Enable (Face-up)
		All print jobs will be output face-up in the destination tray.		
	bit 6	**Method for determining the image rotation for the edge to bind on.**	0: Disable	1: Enable
		If enabled, the image rotation will be performed as they were in the specifications of older models for the binding of pages of mixed orientation jobs. The old models are below: - PCL: Pre-04A models - PS/PDF/RPCS:Pre-05S models		
	bit 7	DFU	-	-

1001	**Bit Switch**		
006	Bit Switch 6 **DFU**	-	-

1001	**Bit Switch**			
007	Bit Switch 7		0	1
	bit 0	**Print path**	0: Disable	1: Enable
		If enabled, simplex pages (in mixed simplex/duplex PS/PCL5 jobs only) and the last page of an odd paged duplex job (PS, PCL5, PCL6), are always routed through the duplex unit. Not having to switch paper paths increases the print speed slightly.		
	bit 1 to 7	DFU	-	-

1001	**Bit Switch**			
008	Bit Switch 8		0	1
	bit 0 to 2	DFU	-	-

	bit 3	**[PCL,PS]: Allow BW jobs to print without requiring User Code**	0: Disable	1: Enable (allow BW jobs to print without a user code)
		BW jobs submitted without a user code will be printed even if user code authentication is enabled. **Note:** Color jobs will not be printed without a valid user code.		
	bit 4 to 7	DFU	-	-

4

1001	**Bit Switch**			
009	Bit Switch 9		0	1
	bit 0	PDL Auto Detection timeout of jobs submitted via USB or Parallel Port (IEEE 1284).	0: Disable (Immediately)	1: Enable (10 seconds)
		To be used if PDL auto-detection fails. A failure of PDL auto-detection does not necessarily mean that the job cannot be printed. This bit switch tells the device whether to time-out immediately (default) upon failure or to wait 10 seconds.		
	bit 1	DFU	-	-
	bit 2	Job Cancel	Disable (Not cancelled)	Enable (Cancelled)
		If this bit switch, all jobs will be cancelled after a jam occurs. **Note:** If this bitsw is enabled, printing under the following conditions might result in problems: - Job submission via USB or Parallel Port - Spool printing (WIM >Configuration > Device Settings > System)		
	bit 3 to 7	DFU	-	-

1003	Clear Setting

1	Initialize Printer System
	Initializes settings in the "System" menu of the user mode.
3	Delete Program
	*This SP is for Japan model only.

1004	Print Summary
	Prints the service summary sheet (a summary of all the controller settings).

1005	Display Version
	Displays the version of the printer application.

1006	Sample/Locked Print
	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. 0: Linked, 1: On

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.	
1	Factory	
2	Previous	
3	Current	
4	ACC	

1102	Resolution Setting
	Selects the printing mode (resolution) for the printer gamma adjustment. 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.
1	Color Gray Scale
2	Color Pattern

1104	Gamma Adjustment	
	Adjusts the printer gamma for the mode selected in the “Mode Selection” menu.	
1	Black: Highlight	[0 to 30 / 15 / 1/step]
2	Black: Shadow	
3	Black: Middle	
4	Black: IDmax	
21	Cyan: Highlight	
22	Cyan: Shadow	
23	Cyan: Middle	
24	Cyan: IDmax	
41	Magenta: Highlight	
42	Magenta: Shadow	
43	Magenta: Middle	
44	Magenta: IDmax	
61	Yellow: Highlight	
62	Yellow: Shadow	
63	Yellow: Middle	
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.

1106	Toner Limit DFU
	Adjusts the maximum toner amount for image development. [100 to 400 / 260 / 1 %/step]

Scanner Service Mode

SP1XXX System and Others

1001	Scan Nv Version
	Displays the scanner firmware version stored in NVRAM in a 9-digit format: Func. Name_Model Name_History No.

1004	Compression Type
	Selects the compression type for binary picture processing. [1-3/1/1] 1: MH, 2: MR, 3: MMR

1005	Erase Margin (Remote Scan)
	Creates an erase margin for all edges of the scanned image. If the machine has scanned the edge of the original, create a margin. [0 to 5/0/1 mm]

1009	Remote Scan Disable
	This SP switches the TWAIN scanner function on/off. This is one of the scanner application functions. [0 to 1 / 0 / 1] 0: ON (enabled- 1: OFF (disabled)

1010	Non Display Clear Light PDF
	This SP switches the Clear Light PDF display off/on. [0 to 1 / 0 / 1] 0: Display ON 1: Display OFF

1011	Org Count Display
	This SP codes switches the original count display on/off. [0 to 1 / 0 / 1] 0: OFF (no display) 1: ON (count displays)

1012	User Info Release
	This SP code sets the machine to release or not release the following items at job end] • Destination (E-mail/Folder/CS) • Sender name • Mail Text • Subject line • File name [0 to 1 / 1 / 1] 1: Release 0: Do not release

1013	Multi Media Func
	This SP code enables/disables the multi-media function. [0 to 1 / 0 / 1] 0: Disable 1: Enable

SP2XXX Scanning Image Quality

2021	Compression Level (Gray-scale)	
	Selects the compression ratio for grayscale processing mode (JPEG) for the three settings that can be selected at the operation panel.	
1	Comp1: 5-95	[5 to 95 / **40** / 1 /step]
2	Comp2: 5-95	[5 to 95 / **50** / 1 /step]
3	Comp3: 5-95	[5 to 95 / **30** / 1 /step]
4	Comp4: 5-95	[5 to 95 / **60** / 1 /step]
5	Comp5: 5-95	[5 to 95 / **20** / 1 /step]

2024	Compression ratio of ClearLight PDF	
	Selects the compression ratio for Clear Light PDF for the two settings that can be selected at the operation panel.	
1	Compression Ratio (Normal image)	[5 to 95 / **25** / 1 /step]
2	Compression Ratio (High comp image)	[5 to 95 / **20** / 1 /step]

2025	Compression ratio of Clear Light PDF JPEG2000	
	Selects the compression ratio for Clear Light PDF (JPEG2000) for the two settings that can be selected at the operation panel.	
1	Compression Ratio (Normal image) JPEG2000	[5 to 95 / **25** / 1 /step]
2	Compression Ratio (High comp image) JPEG2000	[5 to 95 / **20** / 1 /step]