

RICOH



D196/D214/D219/D220/D236 **SERVICE MANUAL**

LANIER RICOH SAVIN

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Ricoh Americas Corporation

LEGEND

PRODUCT CODE	COMPANY		
	LANIER	RICOH	SAVIN
D196	MP C406ZSPF	MP C406ZSPF	MP C406ZSPF
D214	MP C406ZSP	MP C406ZSP	----
D219	MP C306ZSP	MP C306ZSP	----
D220	MP C306ZSPF	MP C306ZSPF	MP C306ZSPF
D236	----	MP C406ZSPF	----

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READ THIS FIRST

Important Safety Notices

Responsibilities of the Customer Engineer

Customer Engineer

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

Reference Material for Maintenance

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

Before Installation, Maintenance

Shipping and Moving the Machine

CAUTION

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

The Aim of Anti-tip Components and Precautions

CAUTION

- The anti-tip components are necessary for meeting the requirements of IEC60950-1, the international standard for safety.
- The aim of these components is to prevent the products, which are heavy in weight, from toppling as a result of people running into or leaning onto the products, which can lead to serious accidents such as persons becoming trapped under the product. (U.S.: UL60950-1, Europe: EN60950-1) Therefore, removal of such components must always be with the consent of the customer. Do not remove them at your own judgment.

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 prevent contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use "My Ace" Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin "Silicone Oil Removal" (A024-50).

Lithium Batteries

WARNING

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

Power Plug and Power Cord

WARNING

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

After Installation, Servicing

Disposal of Used Items

WARNING

- Never incinerate used toner or toner cartridges.
- Toner or toner cartridges thrown into a fire can ignite or explode and cause serious injury. At the work site always carefully wrap used toner and toner cartridges with plastic bags to avoid spillage before disposal or removal.

CAUTION

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

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.

WARNING

- Do not use a vacuum cleaner to remove spilled toner (including used toner). Vacuumed toner may cause a fire or explosion due to sparks or electrical contact inside the cleaner. However, it is possible to use a cleaner designed to be dust explosion-proof. If toner is spilled over the floor, sweep up spilled toner slowly and clean up any remaining toner with a wet cloth.

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.
8. When a thick book or three-dimensional original is placed on the exposure glass and the ARDF cover is lowered, the back side of the ARDF rises up to accommodate the original. Therefore, when closing the ARDF, please be sure to keep your hands away from the hinges at the back of the ARDF.
9. When using a vacuum cleaner around the machine, keep others away from the cleaner, especially small children.

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 NVRAMs must be handled in accordance with local regulations.

Safety and Ecological Notes for Disposal

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

CAUTION

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

Laser Safety

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

WARNING

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

WARNING

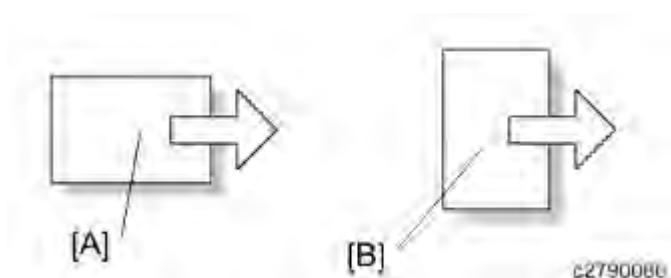
- **WARNING:** Turn off the main switch before attempting any of the procedures in the Laser Optics Housing Unit section. Laser beams can seriously damage your eyes.
- **CAUTION MARKING:**



Symbols, Abbreviations and Trademarks

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

	Clip ring
	Screw
	Connector
	Clamp
	E-ring
	Flat Flexible Cable
	Timing Belt
SEF	Short Edge Feed [A]
LEF	Long Edge Feed [B]
K	Black
C	Cyan
M	Magenta
Y	Yellow
B/W, BW	Black and White
FC	Full color



Trademarks

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PostScript[®] is a registered trademark of Adobe Systems, Incorporated.

PCL[®] is a registered trademark of Hewlett-Packard Company.

Ethernet[®] is a registered trademark of Xerox Corporation.

PowerPC[®] is a registered trademark of International Business Machines Corporation.

Other product names used herein are for identification purposes only and may be trademarks of their respective companies. We disclaim any and all rights involved with those marks.

PRODUCT INFORMATION

REVISION HISTORY		
Page	Date	Added/Updated/New
		None

1. PRODUCT INFORMATION

1.1 SPECIFICATIONS

See "[Appendices](#)" for the following information:

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

1.2 DIFFERENCES BETWEEN MP C306 AND C305

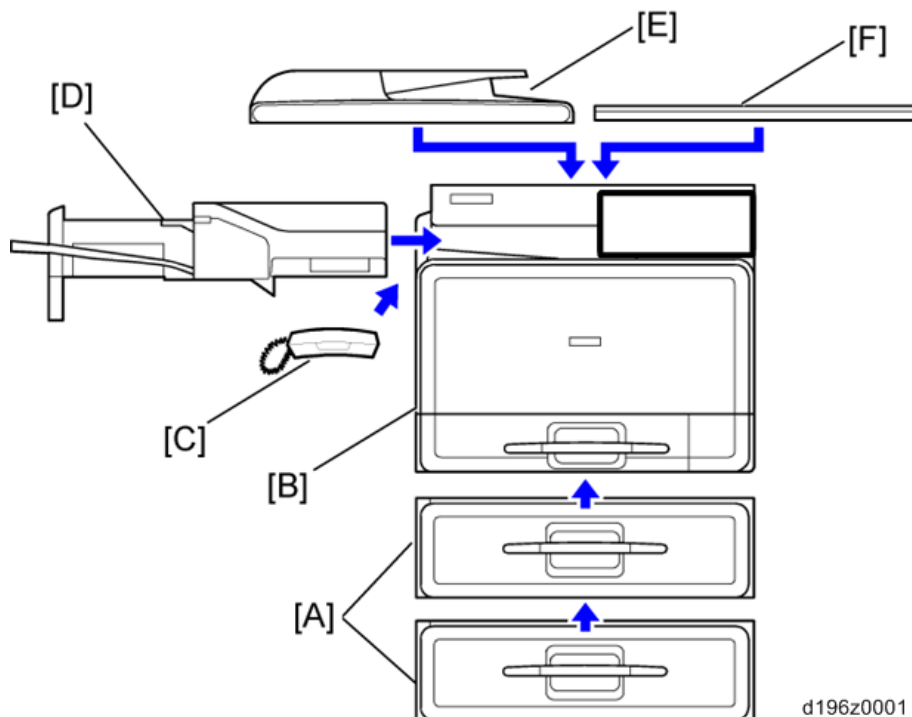
The following table describes the differences between MP C306 and C305 series:

	C306/C406	C305
Operation panel	10.1 inch smart operation panel	4.3 inch conventional operation panel
Log-storing function	Supported	Not supported
SFU (Smart Firmware Update)	Supported	Not supported
Laser Unit	1 laser beam (C306), 2 laser beams (C406)	1 laser beam
Yield of PCDU CMY (Target Color Ratio)	36k prints (30%)	24k prints (20%)
Image Transfer	Indirect transfer	Direct transfer
Paper Transfer	Attraction transfer (Paper transfer bias is applied to the paper transfer roller.)	Repulsion transfer (Paper transfer bias is applied to the ITB drive roller.)
	Constant contact (No release mechanism)	Contact/release mechanism
Main Power Switch	Push switch (DC switch)	Rocker switch
NFC (Near Field Communication) Reader	Option	N/A
HDD and VM	Standard	Option
Anti-condensation heater for mainframe	Service part	N/A

1.3 MACHINE CONFIGURATION

1.3.1 MACHINE CONFIGURATION

Main Unit



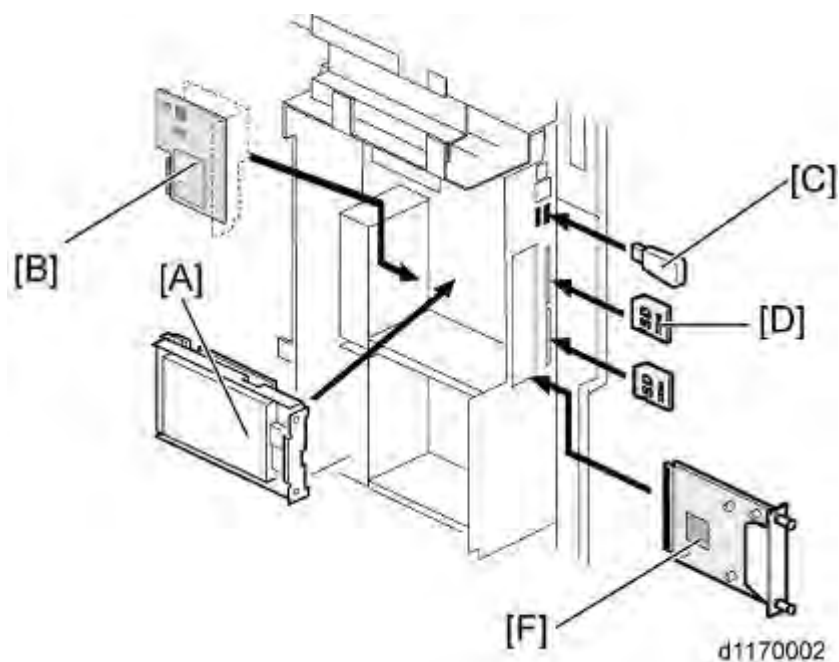
Note

- NA = North America, EU = Europe, AA = Asia-Pacific, CHN = China, TWN = Taiwan, KOR = Korea

Item	Machine Code	Remarks
Main machine [B]	D219	MP C306ZSP for EU/AA
	D220	MP C306ZSPF for NA/EU/AA/TWN
	D214	MP C406SP for AA /CHN/KOR
	D196	MP C406ZSPF for NA/EU/ AA
	D236	MP C406ZSPF for TWN
Paper Feed Unit PB1080 [A]	D573	Up to 2 can be stacked
1 Bin Tray BN1020 [D]	D574	-

ARDF DF1040 [E]	D3BE	Standard other than EU (SP)
Platen Cover PN1010 [F]	D607	Standard other than EU (SP)
Handset Type C5502 (Only for NA) [C]	D645(NA)	Requires the Fax Option.

Controller Options

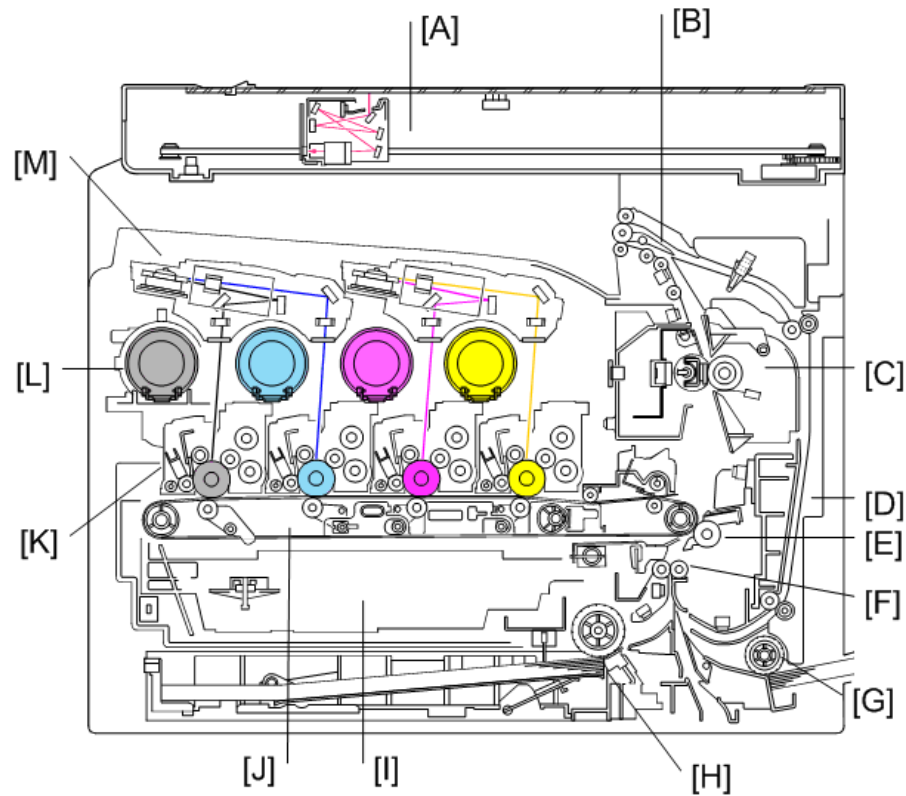


Item	Machine Code	Remarks
Fax Option Type M13 [B]	D3A9-01 (EU, AA) D3A9-04 (CHN)	Standard: NA, TWN Option: EU, AA, CHN, KOR
Fax Connection Unit Type M13	D3AA-00 (NA) D3AA-01 (EU) D3AA-02 (Other)	Only for machines equipped with a fax unit.
Enhanced Security HDD Option Type M10 [A]	D792-09	NA, EU only
Bluetooth Interface Unit Type D [C]	D566-01	- NA, EU, AA only - One of two USB slots. - It cannot be used with IEEE 802.11a/g/n Interface Unit Type M2 simultaneously.

IEEE1284 Interface Board Type A [F]	B679-17	▪ NA, EU, AA only ▪ One from these cards can be installed at the same time.
IEEE 802.11a/g/n Interface Unit Type M2 [F]	D164-01	
File Format Converter Type E [F]	D377-04	
USB Device Server Option Type M12 [F]	D3A7-28 (NA) D3A7-29 (Other)	
Copy Data Security Unit Type G	D640-41	-
Camera Direct Print Card Type M13 [D]	D3AC-00	If multiple applications are required, merge all applications in one SD card with the SP mode (page 2-1 "SD Card Appli Move")
XPS Direct Print Option Type M13	D3AC-02	
Data Overwrite Security Unit Type I	D362-12	
OCR Unit Type M13	D3AC-23 (NA) D3AC-24 (EU) D3AC-25 (Other)	
NFC Card Reader Type M13	D3AC-21	-

1.4 MACHINE OVERVIEW

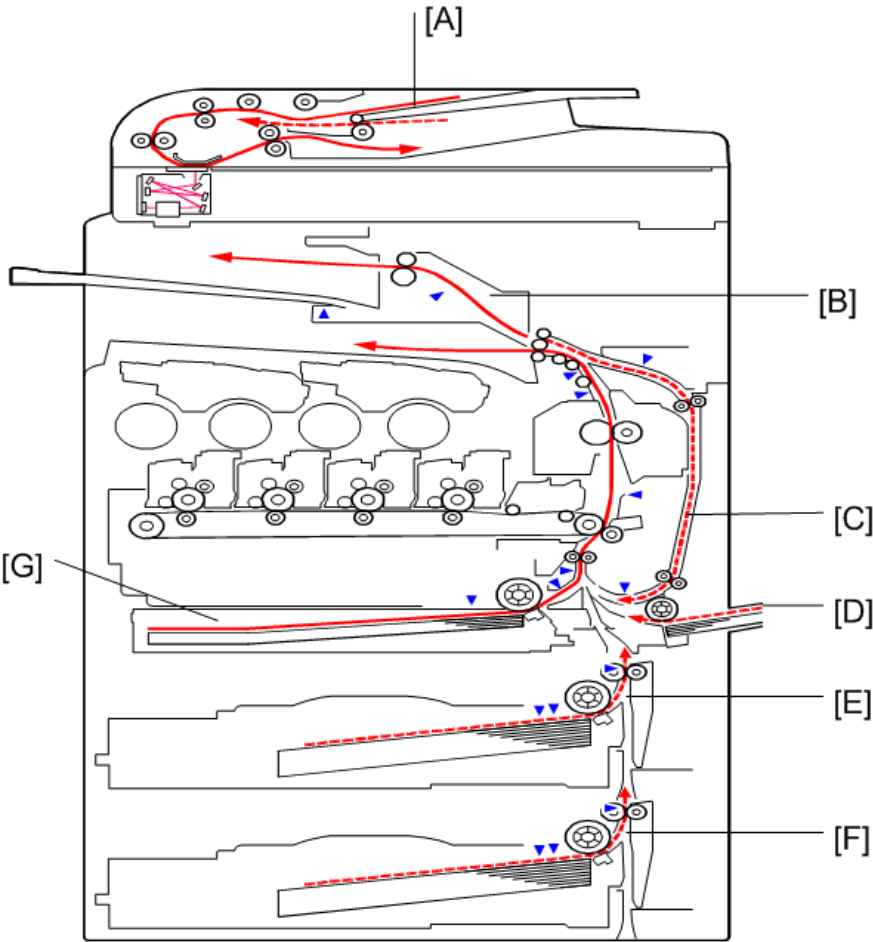
1.4.1 OVERVIEW



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Callout	Item	Callout	Item
[A]	Scanner Unit	[H]	Paper Feed Tray
[B]	Paper Exit	[I]	Waste Toner Bottle
[C]	Fusing Unit	[J]	ITB Unit
[D]	Duplex Unit	[K]	PCDU
[E]	Paper Transfer Roller	[L]	Toner Bottle
[F]	Registration Roller	[M]	Laser Unit
[G]	Bypass Feed Tray		

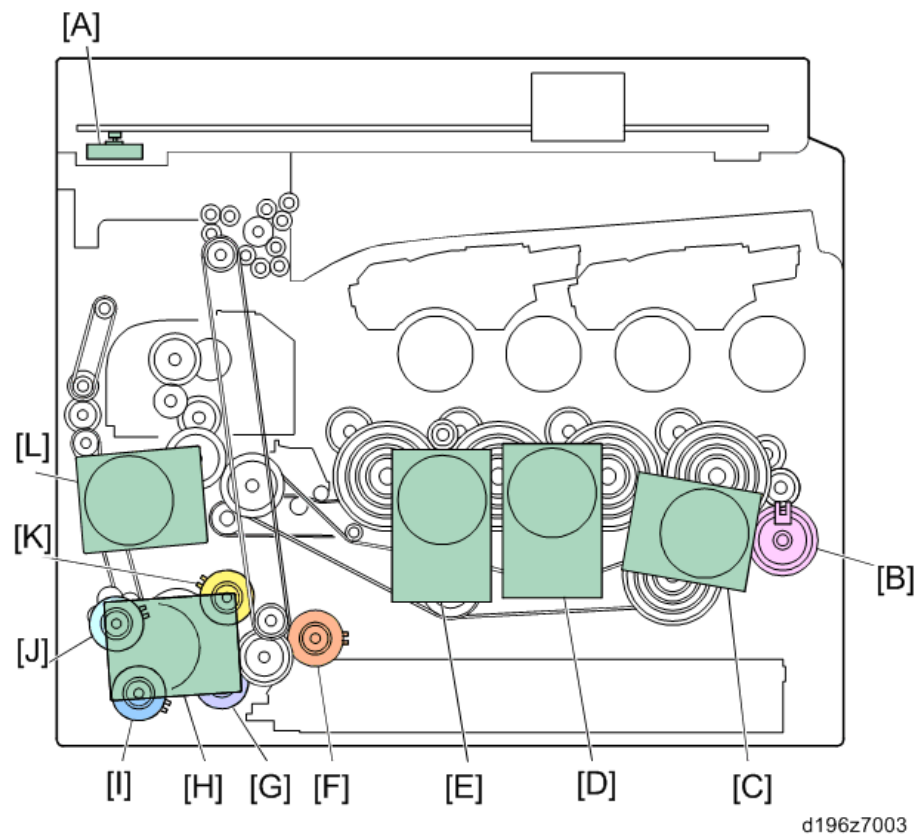
1.4.2 PAPER PATH



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Callout	Item	Callout	Item
[A]	ARDF Transport Path	[E]	Optional Paper Feed Unit Path (1st)
[B]	1-Bin Tray Path	[F]	Optional Paper Feed Unit Path (2nd)
[C]	Duplex Paper Transport Path	[G]	Standard Paper Tray Path
[D]	Bypass Paper Feed Path		

1.4.3 DRIVE LAYOUT



Callout	Item	Callout	Item
[A]	Scanner Motor	[G]	Bypass Lift Clutch
[B]	Development Clutch (K)	[H]	Transport Motor
[C]	Drum Motor (K)	[I]	Bypass Feed Clutch
[D]	Drum Motor (CMY)	[J]	Duplex Clutch
[E]	Development Motor (CMY)	[K]	Registration Clutch
[F]	Paper Feed Clutch	[L]	Fusing Motor

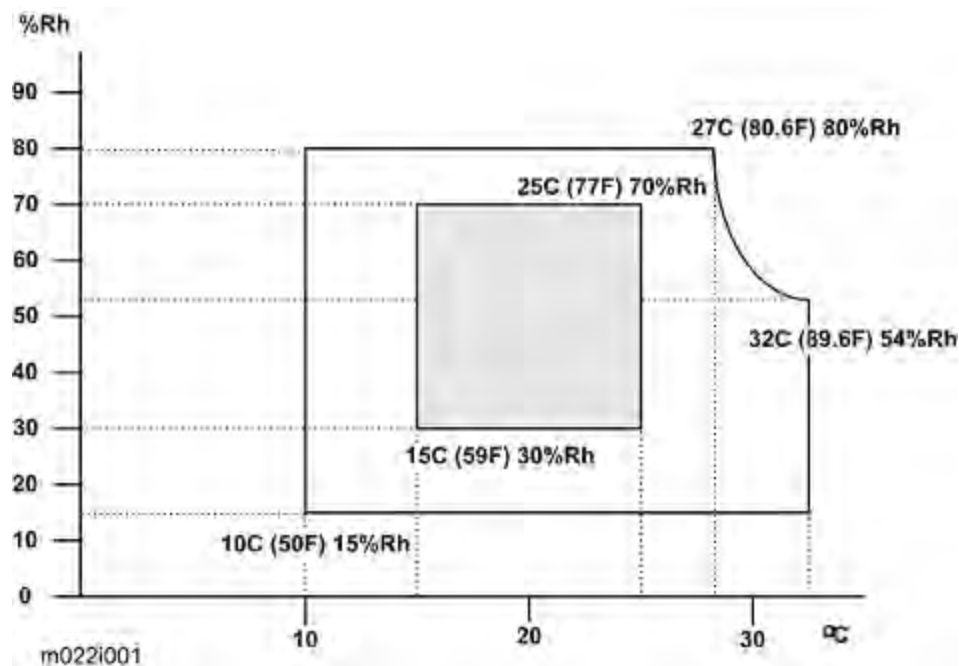
INSTALLATION

REVISION HISTORY		
Page	Date	Added/Updated/New
		None

2. INSTALLATION

2.1 INSTALLATION REQUIREMENTS

2.1.1 ENVIRONMENT



1. Temperature Range: 10°C to 32°C (50°F to 89.6°F)
2. Humidity Range: 15% to 80% RH
3. Ambient Illumination: Less than 1500 lux (do not expose to direct sunlight)
4. Ventilation: 3 times/hr/person or more
5. Do not let the machine get exposed to the following:
 - 1) Cool air from an air conditioner
 - 2) Heat from a heater
6. Do not install the machine in areas that are exposed to corrosive gas.
7. Do not install the machine at any location over 2,000 m (6,500 ft.) above sea level. [NA: Can be installed up to 2,500m (8,202 ft.)]
8. Install the machine on a strong, level base. (Inclination on any side must be no more than 5 mm.)
9. Do not install the machine in areas that get strong vibrations.

2.1.2 MACHINE LEVEL

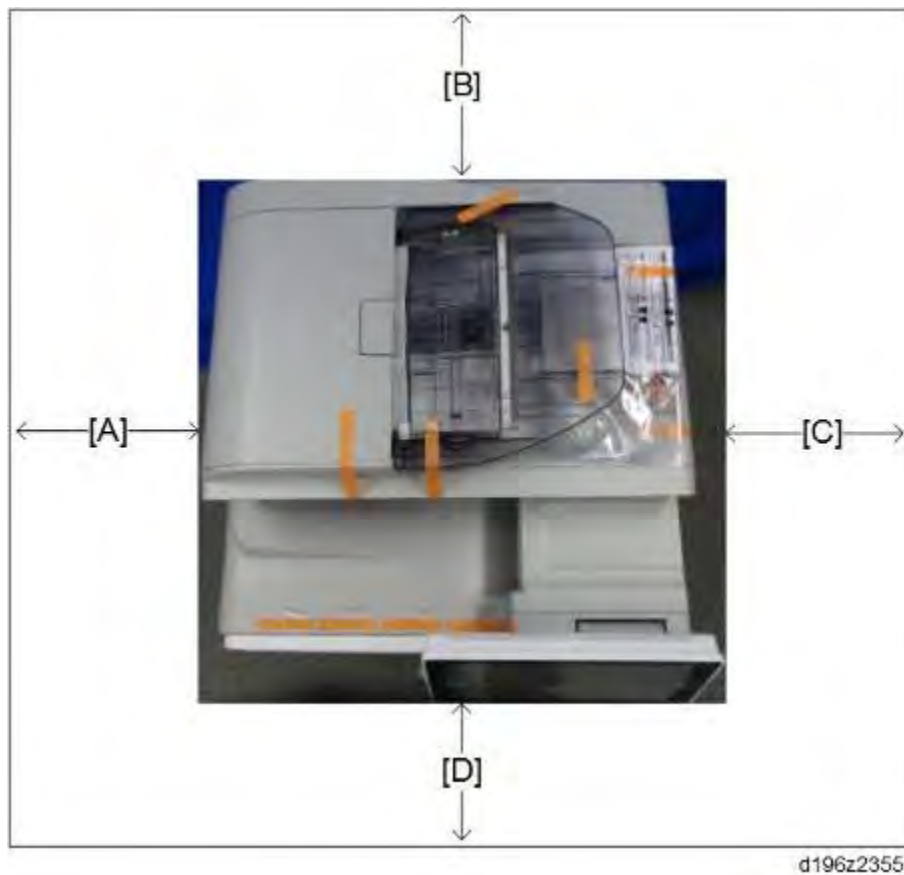
Front to back: Within 5 mm (0.2")

Right to left: Within 5 mm (0.2")

2.1.3 MACHINE SPACE REQUIREMENTS

⚠ CAUTION

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



A: Over 70 mm (2.8") (Base machine) / 120 mm (4.7") (with 1-Bin tray unit)

B: Over 100 mm (3.9")

C: Over 402 mm (15.8")

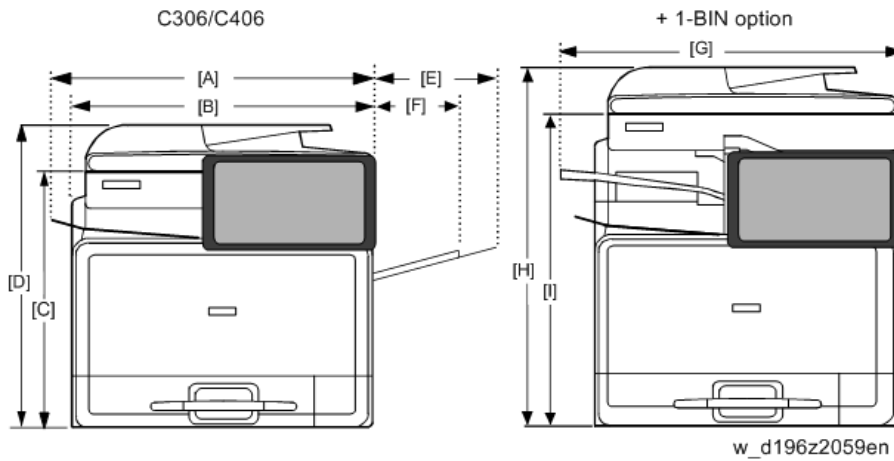
D: Over 420 mm (16.5")

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

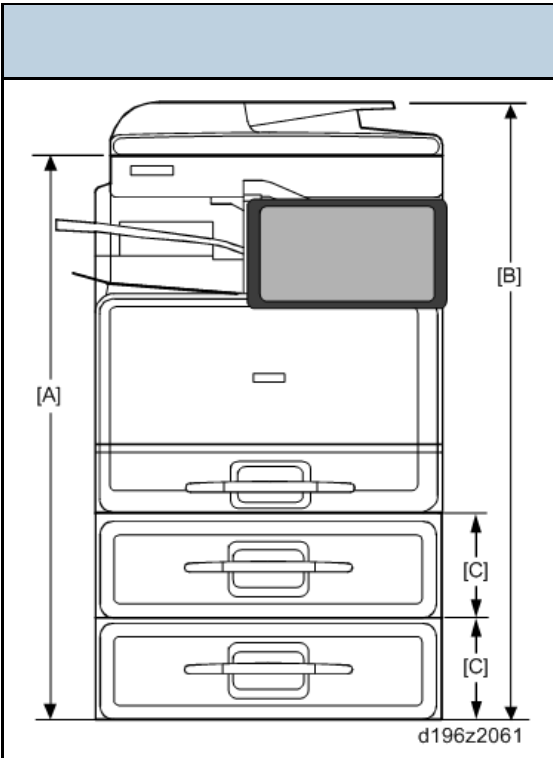
2.1.4 MACHINE DIMENSIONS

W×D×H (including ARDF and operation panel):

510 × 588 × 505 mm (20.1" × 23.1" × 19.9")



Callout	mm (inch)	Callout	mm (inch)
[A]	558.2 mm (approx. 21.9")	[F]	203.7 mm (approx. 8.02")
[B]	510 mm (approx. 20.1")	[G]	566 mm (approx. 22.3")
[C]	425 mm (approx. 16.7")	[H]	590 mm (approx. 23.2")
[D]	505 mm (approx. 19.9")	[I]	510 mm (approx. 20.1")
[E]	256.2 mm (approx. 10.1")		

	Callout	Note
	[A]	808 mm (approx. 31.8") With 1-Bin Tray Unit
	[B]	888 mm (approx. 35.0") [A] + ARDF
	[C]	149 mm (approx. 5.9") Paper Feed Unit PB1080

2.1.5 POWER REQUIREMENTS

⚠ CAUTION

- Insert the plug firmly into the outlet.
 - Do not use an outlet extension plug or cord.
 - Ground the machine.
1. Input voltage level:
 - 110 V, 60 Hz More than 11 A
 - 120 to 127 V, 60 Hz: More than 11 A
 - 220 V to 240 V, 50 Hz/60 Hz: More than 5.5 A
 2. Permissible voltage fluctuation:

NA: 108 V (120 V-10%) – 138 V (127 V+8.66 %)

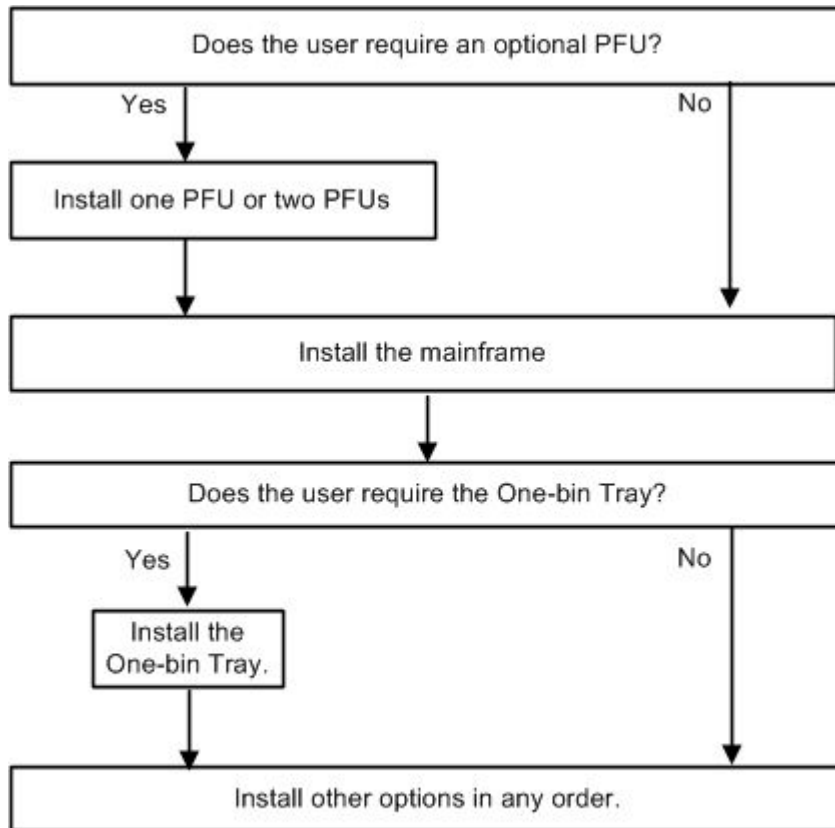
EU/AA: 198 V (220 V-10%) – 264 V (240 V+10 %)

Taiwan: 99 V (110 V -10%) – 121 V (110 V + 10%)
 3. Do not put things on the power cord.

2.2 MAINFRAME INSTALLATION

2.2.1 INSTALLATION FLOWCHART

This flowchart shows the best procedure for installation.



d1180001

2.2.2 ACCESSORY CHECK

For D196/D220/D236

Check the quantity and condition of these accessories.



Component List

No.	Description	Remark	Q'ty			
			NA	EU	AA	TWN
1	NFC Tag	*To be attached to the device.	1	1	1	1
2	Decal – Emblem	For the front cover and operation panel	2	2	2	-
3	Decal – Paper Tray		1	1	1	1
4	EMC Marking Traceability Information	Only for EU	-	1	-	-
5	Power Supply Cord		1	1	1	1
6	Modular Cord with Ferrite Core		1	-	-	-
7	Ferrite Core		-	1	1	1
-	NFC Tag Leaflet	*Regarding the installation of the NFC tag.	1	1	1	1

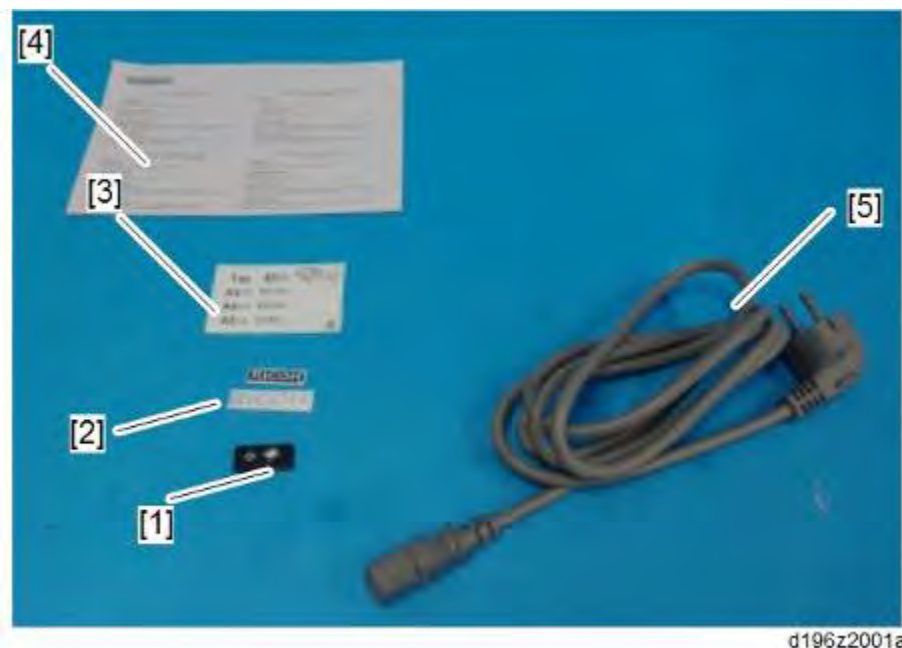
No.	Description	Remark	Q'ty			
			NA	EU	AA	TWN
-	Software License Agreement		1	1	1	1
-	CD-ROM (Printer and Scanner Drivers)		1	1	1	-
-	CD-ROM (Operating Instructions)		-	-	1	-
-	CD-ROM (Printer and Scanner Drivers/ Operating Instructions)		-	-	-	1
-	Safety Information	Only for EU	-	1	-	-
-	Notes to Users		1	1	1	1
-	Note to Using This Machine Safety		1	1	1	1
-	Note to Users in EU Countries		-	1	-	-
-	Note to Users in USA/Canada		1	-	-	-
-	For Users of This Product		1	1	1	-
-	Manual: Read This First		1	-	1	1
-	Manual: Start Guide		1	1	1	1

 Note

- An NFC tag is required for connecting this machine to an Android smart device that has the Ricoh Smart Device Connector application installed. Give this NFC tag to the customer so that they can attach it to the machine. Where the tag should be attached and how to set it up for using the smart-device application are described in the help guide within the application. The setup procedure should be performed by the customer.

For D214/D219

Check the quantity and condition of these accessories.

**Component List**

No.	Description	Remark	Q'ty		
			EU	AA	CHN
1	NFC Tag	*To be attached to the device.	1	1	1
2	Decal – Emblem	For the front cover and operation panel	2	2	-
3	Decal – Paper Tray		1	1	1
4	EMC Marking Traceability Information	For EU only	1	-	-
5	Power Supply Cord		1	1	1
-	NFC Tag Leaflet	*Regarding the installation of the NFC tag.	1	1	1
-	Software License Agreement		1	1	1
-	CD-ROM (Printer and Scanner Drivers)		1	1	-

No.	Description	Remark	Q'ty		
			EU	AA	CHN
-	CD-ROM (Operating Instructions)		-	1	-
	CD-ROM (Printer and Scanner Drivers/ Operating Instructions)		-	-	1
-	Safety Information	For EU only	1	-	-
-	Notes to Users		1	1	1
-	Notes for Using This Machine Safely		1	1	1
-	Note to Users in EU Countries		1	-	-
-	For Users of This Product		1	1	-
-	Manual: Read This First		-	1	1
-	Manual: Start Guide		1	1	1

 Note

- An NFC tag is required for connecting this machine to an Android smart device that has the Ricoh Smart Device Connector application installed. Give this NFC tag to the customer so that they can attach it to the machine. Where the tag should be attached and how to set it up for using the smart-device application are described in the help guide within the application. The setup procedure should be performed by the customer.

2.2.3 INSTALLATION PROCEDURE

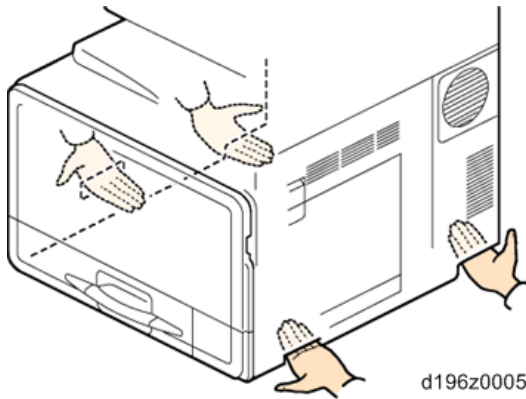
Put the machine on the optional paper tray unit first if you install an optional paper feed unit at the same time. Then install the machine and other options.

 Note

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

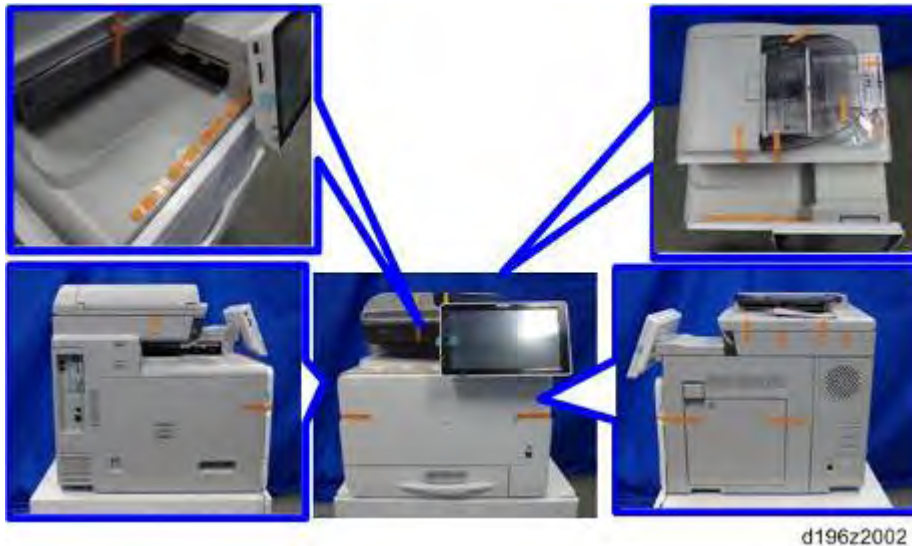
CAUTION

- Hold the specified positions as shown below when lifting the machine up or down.



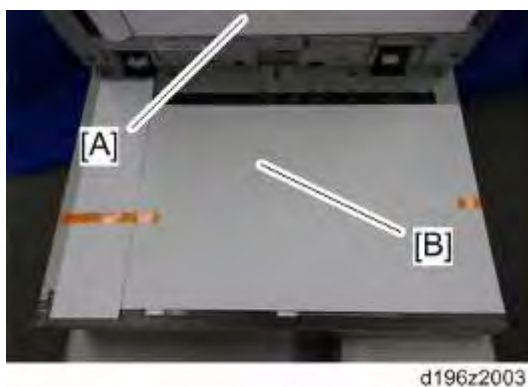
Tapes, Retainers and Toner Bottles

1. Remove the tapes and the retainers from the machine.

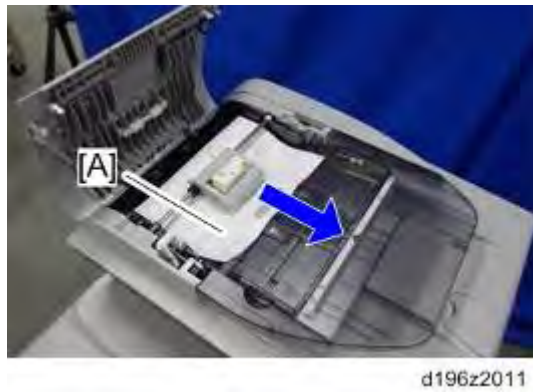


2. Do the following steps:

- Open the ARDF cover [A] or platen cover.
- Remove all the tapes and the retainer (protective paper) [B] on the exposure glass.



3. Remove the sheet [A] inside the ARDF.



4. Remove the following items:

- Paper tray [A]
- Retainer [B]



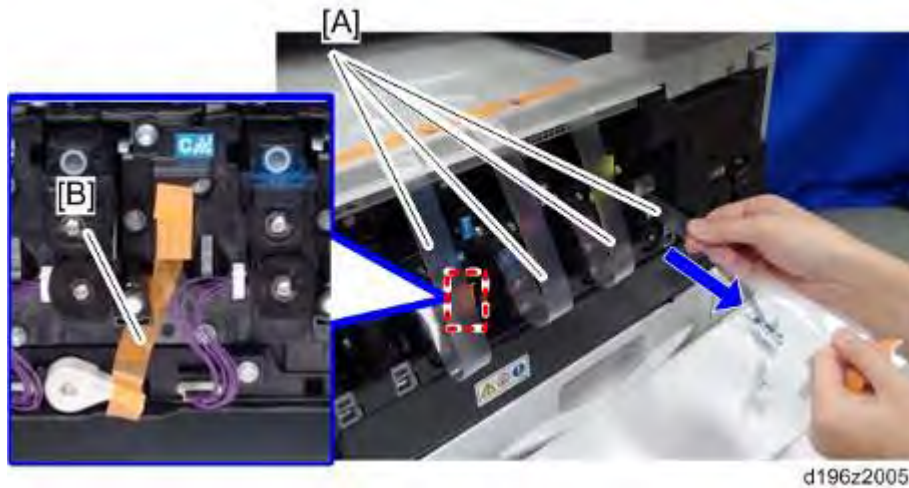
5. Open the front door [A].



6. Pull out all protection seals [A] on the drums straight out towards the front.

Note

- Do not remove the orange tape [B] at this time.



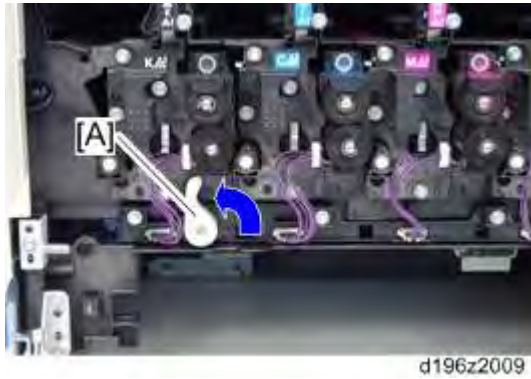
7. Remove the waste toner bottle [A].



8. Remove the orange tape [A] attached to the lever.



9. Set the lever [A] to the upright position.



10. Attach the waste toner bottle.
11. Shake each toner bottle [A] from eight to ten times.



12. Install each toner bottle [A] in the machine.



13. Close the front door.
14. Connect the power cord to the machine.
15. Attach the paper tray.
16. Connect the network cable, if the client IP addresses are automatically provided through a system such as DHCP in the network settings. If a static IP address is provided to the client machines, contact the customer (network administrator) to determine the appropriate timing for connecting the network cable.
17. Turn ON the main power.
18. The machine starts the initial settings automatically.

Note

- A message “Turn the main power switch off then on” may appear during the initial

settings. However, **DO NOT** switch off the main power until the machine finishes the initial settings and emits a beep sound. It takes about five minutes to finish the initial settings.

Important Notice on Security Issues

In order to increase the security of the MFP, and to ensure that the customer sets the administrator password, an administrator set/change prompt display appears at the first power-up.

Overview

The following Program/Change Administrator screen appears at the first power-up.



When the customers set the administrator/supervisor login password, the screen disappears and the home display appears. The customers, however, can erase this screen with the following procedure if they think there is no need to set the password.

1. **On the Program/Change Administrator screen, press [Change] next to Supervisor and then touch [OK] without entering any password.**
2. **Touch [OK] again when the Confirm password display appears.**
3. **For Administrator 1, do the same procedure as steps 1 and 2.**
4. **Press [OK], then the home display appears.**
5. **Cycle the machine OFF/ON.**

SP5-755-002 allows you to skip this screen temporarily and continue the installation procedure without setting an administrator password. However, the Program/Change Administrator screen appears every time you turn the power OFF/ON, if the password is not set.

Password Setting Procedure

Note

- For more details about this security issue, see “Notes on Using Multi-Function Printers Safely” supplied with the MFP.

CAUTION

- When Supervisor / Administrator 1-4 passwords are configured via network, the “Change Supervisor login password” window will not display.
- The passwords for Supervisor or Administrator 1 to 4 can be set via “System Settings”.

Mainframe Installation

But the Program/Change Administrator screen appears every time the power switch is turned ON if the passwords are input this way. So we recommend the customers to set the passwords via network or the Program/Change Administrator screen.

1. **Install the MFP.**
2. **Turn the main power switch ON.**
3. **Change the Supervisor login password.**



d176f2101

4. **Enter a password.**



d176f2102

5. **Press [OK].**



d176f2103

6. **Confirm the Password.**



d176f2104

7. Press [OK].



d176f2105

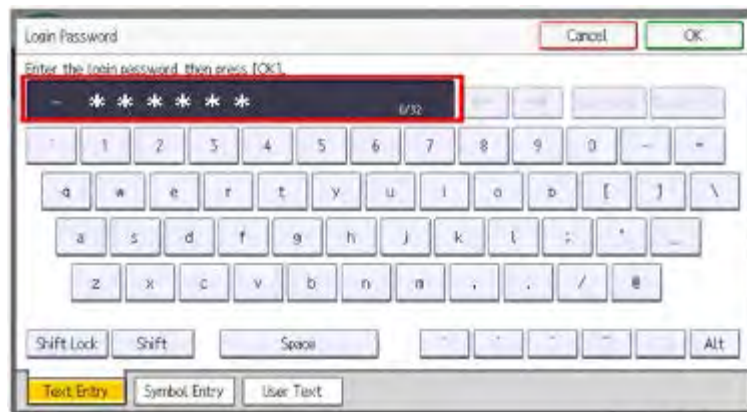
8. Change the Administrator 1 login password.



d176f2106

9. Enter the password.

Mainframe Installation



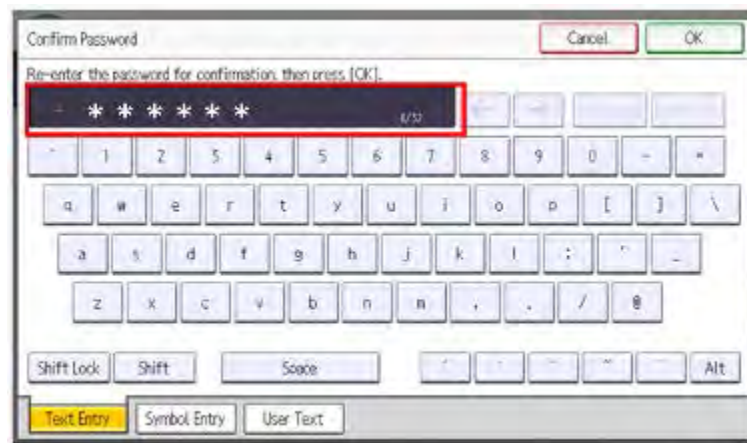
d176f2102

10. Press [OK].



d176f2103

11. Confirm the password.



d176f2104

12. Press [OK].



13. Turn the main power OFF and ON.

Checking the Image Quality

Checking Paper Setting

Do the following procedure after installing all the options.

1. Check that all tapes are removed. Then connect the power plug into the wall socket.
2. Pull out the paper feed tray [A] until it stops.



3. Release the side fence.
4. Load paper into the paper feed tray.
5. Set the side fence according to the paper size while pressing the unlock lever.

↓ Note

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

6. Set SP5-131 to set paper size for the main paper tray.
7. Adjust the registration setting for paper trays.

SP1-002-001 (Side-to-Side Registration By-pass Table)

SP1-002-002 (Side-to-Side Registration Paper Tray 1)

SP1-002-005 (Side-to-Side Registration Duplex)

Note

- Refer to the "Image Adjustment" section in this manual for how to adjust the SP setting.
- If one or more optional paper trays is installed, do the following SPs as well:
SP1-002-003 (Side-to-Side Registration Paper Tray 2)
SP1-002-004 (Side-to-Side Registration Paper Tray 3)

Executing the Automatic Color Calibration (ACC)**Note**

- Be sure to do this procedure when installing the mainframe.

Note

- Do not open the ADF while ACC is running.

1. **Login as Administrator.**
2. **Press [User Tools] icon on the operation panel.**
3. **Press [Machine Features].**
4. **Press [Maintenance].**
5. **Press [Auto Color Calibration]**
6. **Press [Start] for the Copier function.**
7. **Press [Start Printing].**
8. **Take the sheet that was just printed, and put it on the exposure glass. Press [Start Scanning].**
9. **Do the same procedure for the Printer function.**

Note

- Be sure to check the four resolution-based items for the printer function.

Checking the Copy Image with Test chart

Check the copy image quality with a test chart.

For SP models, check that the printer can print out in the customer's environment. For SPF models, check that the fax can output a received image as well.

Color Skew Adjustment

The skew adjustment of this machine should be performed manually.

The adjustment flow is as follows:

1. Execute 'MUSIC' (SP2-111-002) and check the result for each color with the following SPs.
 - SP2-117-004 (K)
 - SP2-117-002 (C)
 - SP2-117-001 (M)
 - SP2-117-003 (Y)
2. The color skew adjustment (page 4-1 "Color Skew Adjustment") should be executed if one or more of the above SP values is not within ± 5 . No skew adjustment is required if all SP values are within ± 5 .

2.2.4 LANGUAGE SELECTION

1. Press [User Tools] on the operation panel.
2. Press [Screen Features].
3. Press [Language & Input].
4. Press [Change Language].

The machine shows the preset language list.

- If the language you want is listed, press the language, and then go to Step 9.
 - If there is no language you want in the list, go to the next step.
5. Press [Select Switchable Language] and select the language you want.
 6. Press [Language & Input], and then press [Change Language].
 7. Select the language you set in Step 6.
 8. Make sure that the language is changed successfully.
 9. Exit [User Tools].

2.2.5 BRAND PLATE

1. Attach the brand plates to the front door and the operation panel, if the brand plates are not attached.



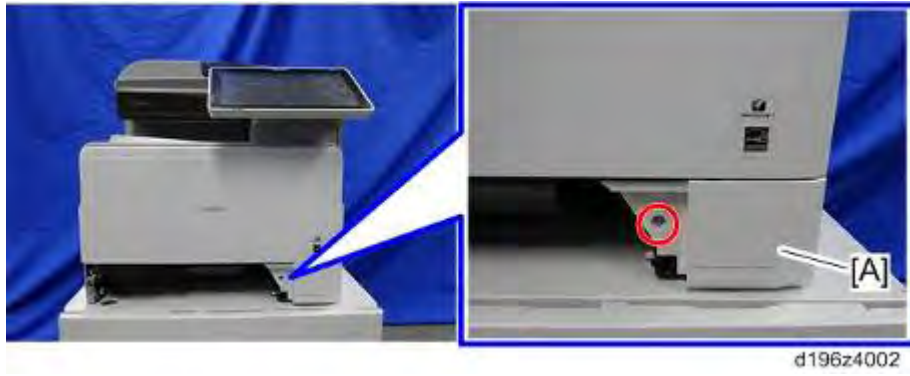
2. Attach the correct paper tray number and size decals to the paper trays.

ⓘ Note

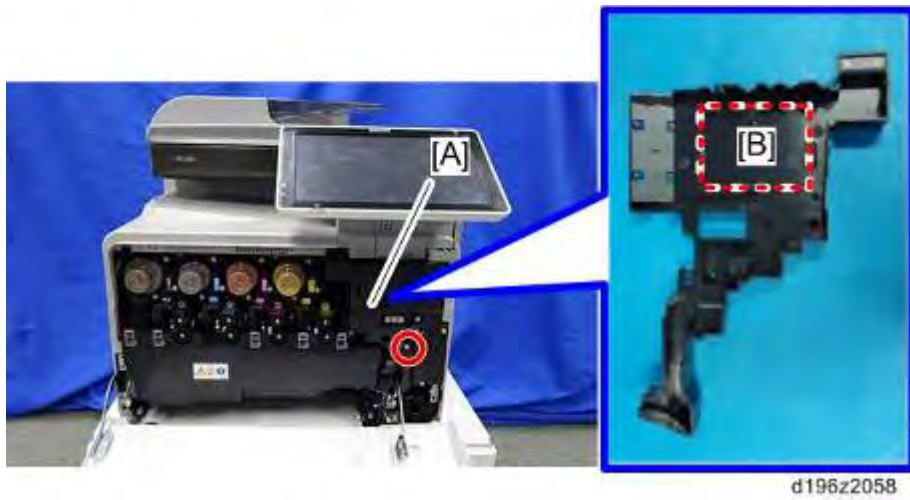
- **Storing Unnecessary Decals**

If the IC card reader option or NFC reader option are not to be installed immediately, store the decals for these options in the specified area as shown below:

1. Pull out the paper feed tray.
2. Remove the front lower cover [A]. (🔑 × 1)



3. Open the front cover.
4. Remove the inner cover [A]. (⚙ × 1)
Store the decal in the area [B].



2.2.6 SETTINGS RELEVANT TO THE SERVICE CONTRACT

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

Note

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

Counting method		
SP No.	Function	Default
SP5-045-001	Specifies if the counting method used in meter charge mode is based on developments or prints. NOTE: You can set this one time only. You cannot change the setting after you have set it for the first time.	"1": Prints
Service Tel. No. Setting		
SP No.	Function	Default
SP5-812-001 through 004	5812-002 programs the service station fax number. The number is printed on the counter list when the meter charge mode is selected. This lets the user fax the counter data to the service station.	

Settings for @Remote Service

Note

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

Check points before making @Remote settings

- The setting of SP5816-201 in the mainframe must be "0".
- Print the SMC with SP5990-002 and then check if a device ID2 (SP5811-003) must be correctly programmed.
 - 6 spaces must be put between the 3-digit prefix and the following 8-digit number (e.g. xxx____xxxxxxxx).
 - ID2 (SP5811-003) and the serial number on the machine serial decal pasted at the rear must be the same (e.g. ID2: A01____23456789 = serial No. A0123456789)
- The following settings must be correctly programmed.
 - Proxy server IP address (SP5816-063)
 - Proxy server Port number (SP5816-064)
 - Proxy User ID (SP5816-065)
 - Proxy Password (SP5816-066)
- Get a Request Number.

Execute the @Remote Settings

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

Value	Meaning	Solution/ Workaround
0	Succeeded	-
1	Request number error	Check the request number again.
3	Communication error (proxy enabled)	Check the network condition.
4	Communication error (proxy disabled)	Check the network condition.
5	Proxy error (Illegal user name or password)	Check Proxy user name and password.
6	Communication error	Check the network condition.

Value	Meaning	Solution/ Workaround
8	Other error	See "SP5816-208 Error Codes" below this.
9	Request number confirmation executing	Processing... Please wait.

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

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

8. Exit the SP mode.

SP5816-208 Error Codes

Cause	Code	Meaning	Solution/ Workaround
Operation Error, Incorrect Setting	-12002	Inquiry, registration attempted without acquiring Request No.	Obtain a Request Number before attempting the Inquiry or Registration.
	-12003	Attempted registration without execution of a confirmation and no previous registration.	Perform Confirmation before attempting the Registration.
	-12004	Attempted setting with illegal entries for certification and ID2.	Check ID2 of the mainframe.
	-12005	@Remote communication is prohibited. The device has an Embedded RC gate-related problem.	Make sure that "Remote Service" in User Tools is set to "Do not prohibit".
	-12006	A confirmation request was made after the confirmation had been already completed.	Execute registration.
	-12007	The request number used at registration was different from the one used at confirmation.	Check Request No.
	-12008	Update certification failed because mainframe was in use.	Check the mainframe condition. If the mainframe is in use, try again later.
	-12009	The ID2 in the NVRAM does not match the ID2 in the individual certification.	Check ID2 of the mainframe.
	-12010	The certification area is not initialized.	Initialize the certification area.
Error Caused by Response from GW URL	-2385	Other error	
	-2387	Not supported at the Service Center	
	-2389	Database out of service	
	-2390	Program out of service	

Cause	Code	Meaning	Solution/ Workaround
	-2391	Two registrations for the same mainframe	Check the registration condition of the mainframe
	-2392	Parameter error	
	-2393	External RCG not managed	
	-2394	Mainframe not managed	
	-2395	Box ID for external RCG is illegal.	
	-2396	Mainframe ID for external RCG is illegal.	
	-2397	Incorrect ID2 format	Check the ID2 of the mainframe.
	-2398	Incorrect request number format	Check the Request No.

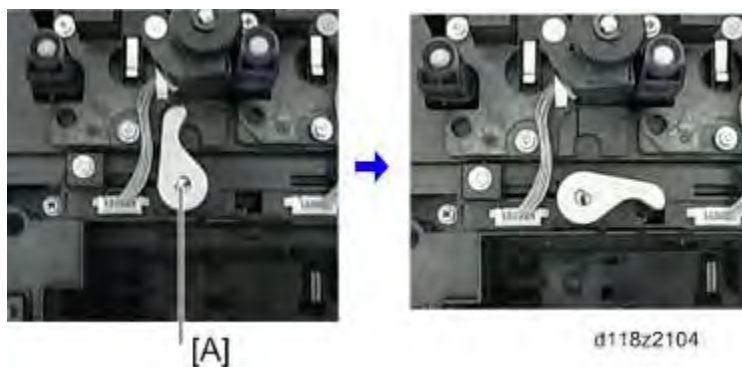
2.2.7 TRANSPORTING THE MACHINE

⚠ CAUTION

- **Do not lift the machine together with one or more paper feed unit(s):**
If there is already a machine with one or more optional paper feed unit(s), be sure to disconnect the machine and paper feed unit(s), and lift them up separately when moving/transporting. Otherwise, the handle of the paper feed unit will break due to the mainframe's weight, and it can cause an injury.

The following should be done before transporting the machine.

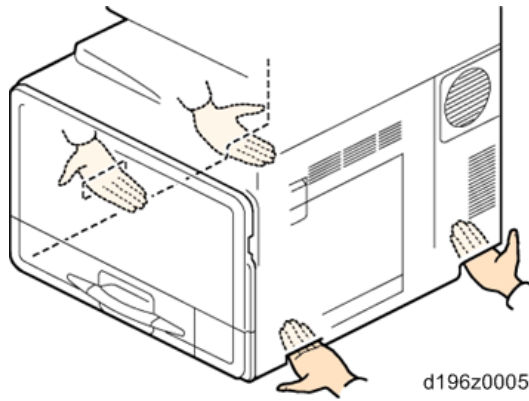
1. **Move the ITB lock lever [A] down to the shipping position. This moves the ITB away from the K PCDU.**



2. **Do SP 4806-001 to move the scanner carriage from the home position. This prevents dust from falling into the machine during transportation.**
3. **Remove the toner bottles. This prevents toner flow into the toner supply tube, which is caused by vibration during transport. This can also cause the tube to be clogged with toner.**
4. **Make sure that there is no paper left in the paper trays. Then fix down the bottom plates with a sheet of paper and tape.**
5. **Attach securing tape to stop the waste toner bottle from coming out.**
6. **Do one of the following:**
 - Attach shipping tape to the covers and doors.
 - Shrink-wrap the machine tightly.

⚠ CAUTION

- Hold the specified positions as shown below when lifting the machine up or down.



2.2.8 INSTRUCTIONS FOR THE CUSTOMERS

The following items should be advised when the machine is installed. These items are explained in more detail in the operating instructions.

- How to add paper to the paper feed unit and the by-pass feed unit.
- How to install a toner bottle
- How to handle paper jams

2.3 SECURITY SETTING

2.3.1 SECURITY FUNCTION INSTALLATION

★ Important

- If the “Enhanced Security HDD Option Type M10” is installed at the same time of the main machine’s installation, do not execute these settings described below. When the “Enhanced Security HDD Option Type M10” and security functions (Data Overwrite Security and HDD Encryption Unit) are activated in the same machine, the function of the “Enhanced Security HDD Option” is not guaranteed.

The machine contains the Security functions (Data Overwrite Security and HDD Encryption unit) in the controller board.

If you are installing a new machine, it is recommended to activate the Data Overwrite Security and HDD Encryption by selecting "Format All Data" from “System Settings” on the operation panel.

↓ Note

- This method is recommended because there is no user data on the hard drive yet (Address Book data, image data, etc.).

If the customer wishes to activate the Data Overwrite Security and HDD Encryption unit on a machine that is already running, it is recommended to activate the unit by selecting "All Data" from “System Settings” on the operation panel.

★ Important

- Selecting "All Data" will preserve the data that has already been saved to the HDD. (If "Format All Data" is selected, all user data saved to the HDD up to that point will be erased).

Immediately after encryption is enabled, the encryption setting process will take several minutes to complete before you can begin using the machine.

↓ Note

- If encryption is enabled after data has been stored on the HDD, or if the encryption key is changed, this process can take up to three and a half hours or more.

The machine cannot be operated while data is being encrypted.

Once the encryption process begins, it cannot be stopped.

Make sure that the machine's main power is not turned OFF while the encryption process is in progress.

If the machine's main power is turned off while the encryption process is in progress, the HDD will be damaged and all data on it will be unusable.

Print the encryption key and keep the encryption key (which is printed as a paper sheet).

Keep the encryption key in a safe place. If the encryption key is lost and is needed, the controller board, HDD and NVRAM must all be replaced at the same time.

 Note

- "NVRAM" mentioned in here means the NVRAM on the Controller Board.
- "NVRAM" or EEPROM on the BCU has nothing to do with this.

Please use the following procedures when the Data Overwrite Security and HDD Encryption must be reinstalled.

2.3.2 DATA OVERWRITE SECURITY

Before You Begin the Procedure

1. Make sure that the following settings (1) to (3) are not at their factory default values.

- (1) Supervisor login password
- (2) Administrator login name
- (3) Administrator login password

If any of these settings is at a factory default value, tell the customer these settings must be changed before you do the installation procedure.

2. Make sure that "Admin. Authentication" is on.

[User Tools] -> [Machine Features] -> [System Settings] -> [Administrator Tools] ->
[Administrator Authentication Management] -> [Admin. Authentication]

If this setting is off, tell the customer this setting must be on before you do the installation procedure.

3. Make sure that "Administrator Tools" is enabled (selected).

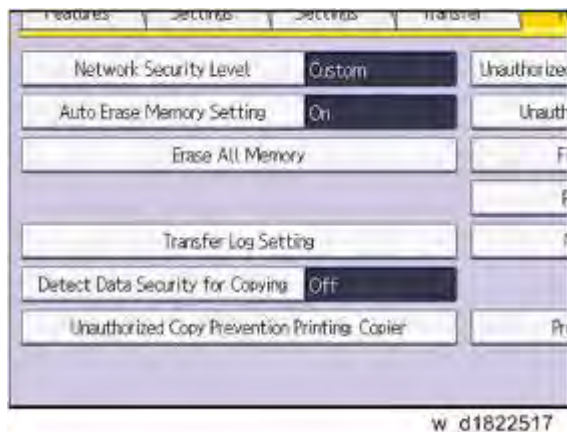
[User Tools] -> [Machine Features] -> [System Settings] -> [Administrator Tools] ->
[Administrator Authentication Management] -> [Available Settings]

If this setting is disabled (not selected), tell the customer this setting must be enabled (selected) before you do the installation procedure.

Using Auto Erase Memory

The Auto Erase Memory function can be enabled by the following procedure.

1. Log in as the machine administrator from the control panel.
2. Press [User Tools].
3. Press [Machine Features].
4. Press [System Settings].
5. Press [Administrator Tools].
6. Press [Next] three times.
7. Press [Auto Erase Memory Setting].



8. Press [On].
9. Select the method of overwriting.
 - If you select [NSA] or [DoD], proceed to step 10.
 - If you select [Random Numbers], proceed to step 12.
10. Press [Change].
11. Enter the number of times that you want to overwrite using the number keys, and then press [#].
12. Press [OK]. Auto Erase Memory is set.
13. Log out.
14. Check the display and make sure that the overwrite erase icon appears.
15. Check the overwrite erase icon.

The icon [1] is lit when there is temporary data to be overwritten, and blinks during overwriting.

The icon [2] is lit when there is no temporary data to be overwritten.



	Icon [1]	This icon is lit when there is temporary data to be overwritten, and blinks during overwriting.
	Icon [2]	This icon is lit when there is no temporary data to be overwritten.

2.3.3 HDD ENCRYPTION

Before You Begin the Procedure:

1. **Make sure that the following settings (1) to (3) are not at the factory default settings.**

- (1) Supervisor login password
- (2) Administrator login name
- (3) Administrator login password

If any of these settings is at a factory default value, tell the customer these settings must be changed before you do the installation procedure.

2. **Confirm that "Admin. Authentication" is on: [User Tools] -> [Machine Features] - [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] -> [Machine Features] - [System Settings] - [Administrator Tools] - [Administrator Authentication Management] - [Available Settings]

"Available Settings" is not displayed until step 2 is done.

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

Enable Encryption Setting

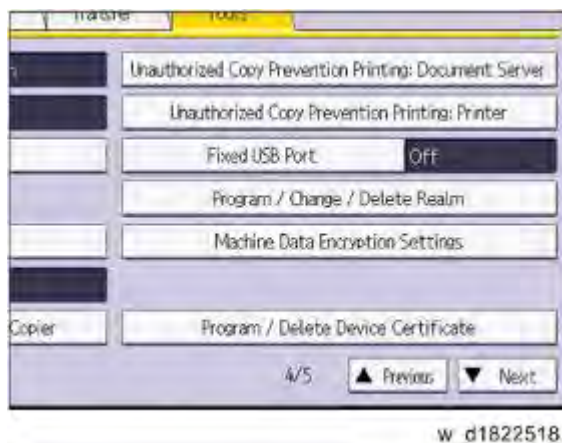
Machine Data Encryption Settings can be enabled by the following procedure.

Setting Up Encryption

★ Important

- When setting up encryption, specify whether to start encryption after deleting data (initialize) or encrypt and retain existing data. If data is retained, it may take some time to encrypt it.

1. Turn ON the main power.
2. Log in as the machine administrator from the control panel.
3. Press [User Tools].
4. Press [Machine Features].
5. Press [System Settings].
6. Press [Administrator Tools].
7. Press [Next] three times.
8. Press [Machine Data Encryption Settings].



9. Press [Encrypt].



10. Select the data to be carried over to the HDD and not be reset.

To carry all of the data over to the HDD, select [All Data].

To carry over only the machine settings data, select [File System Data Only].

To reset all of the data, select [Format All Data].

11. Select the backup method.

If you have selected [Save to SD Card], load an SD card into the media slot on the side of the control panel and press [OK] to back up the machine's data encryption key.

If you have selected [Print on Paper], press the [Start] key. Print out the machine's data encryption key.

12. Press [OK].

13. Press [Exit].

14. Press [Exit].

15. Log out.

16. Turn OFF the main power, and then turn the main power back ON.

The machine will start to convert the data on the memory after you turn on the machine. Wait until the message "Memory conversion complete. Turn the main power switch off." appears, and then turn the main power OFF again.

Check the Encryption Settings

1. Press [User Tools].

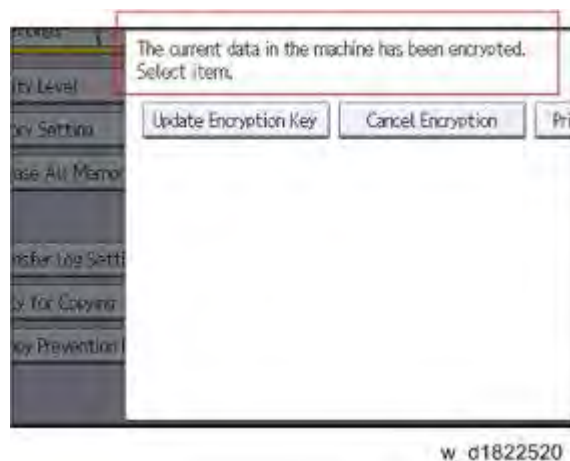
2. Press [Machine Features].

3. Press [System Settings].

4. Press [Administrator Tools].

5. Press [Machine Data Encryption Settings].

6. Confirm whether the encryption has been completed or not on this display.



Backing Up the Encryption Key

The encryption key can be backed up. Select whether to save it to an SD card or to print it.

★ Important

- The encryption key is required for data recovery if the machine malfunctions. Be sure to store the encryption key safely for retrieving backup data.

1. Log in as the machine administrator from the control panel.
2. Press [User Tools].
3. Press [Machine Features].
4. Press [System Settings].
5. Press [Administrator Tools].
6. Press [Next] three times.
7. Press [Machine Data Encryption Settings].
8. Press [Print Encryption Key].



9. Select the backup method.

If you have selected [Save to SD Card], load an SD card into the media slot on the side of the control panel and press [OK]. After the machine's data encryption key is backed up, press [Exit].

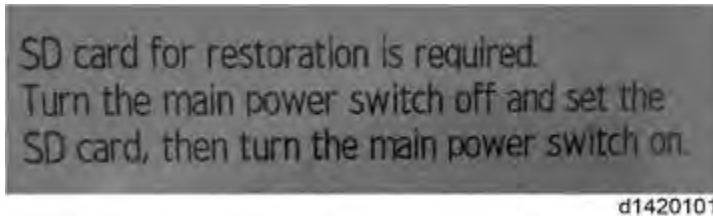
If you have selected [Print on Paper], press the [Start] key. Print out the machine's data encryption key.

10. Press [Exit].
11. Log out.

Encryption Key Restoration

How to restore the old encryption key to the machine

The following message appears after the controller board is replaced. In such a case, it is necessary to restore the encryption key to the new controller board.



To do this, follow the procedure below.

1. Prepare an SD card that has been initialized in FAT16 format.
2. Using a PC, create a folder in the SD card and name it "restore_key".
3. Create a folder in the "restore_key" folder and name it the same as machine's serial number, "xxxxxxxxxxx" (11 digits).
4. Create a text file called "key_xxxxxxxxxxxx.txt" and save it in the "xxxxxxxxxxx" folder. Write the encryption key in the text file.

/restore_key/xxxxxxxxxxx/key_xxxxxxxxxxxx.txt

↓ Note

- Ask an Administrator to enter the encryption key. The key has already been printed out by the user and may have been saved in the "key_xxxxxxxxxxxx.txt" file.

5. Turn ON the machine's main power.
6. Confirm that a message is displayed on the LCD telling to insert the SD card that contains the encryption key.
7. Turn OFF the main power.
8. Insert the SD card that contains the encryption key into SD card slot 2 (the lower slot).
9. Turn ON the main power.

↓ Note

- The machine will automatically restore the encryption key to the flash memory on the controller board.

10. Turn OFF the main power when the machine has returned to normal status.
11. Remove the SD card from SD card slot 2.

How to do a forced start up with no encryption key

If the encryption key back-up has been lost, follow the procedure below to do a forced start-up.

★ Important

- The HDD will be formatted after the forced start-up.
- Encrypted data will be deleted.
- User settings will be cleared.

1. Prepare an SD card.
2. Create a directory named "restore_key" inside the root directory of the SD card. Then, save the "nvram_key.txt" file using the following name:
/restore_key/nvram_key.txt
3. Create a text file and write "nvclear".

★ Important

- Write this string at the head of the file.
 - Use all lower-case letters.
 - Do not use quotation marks or blank spaces.
 - It is judged that a forced start has been selected when the content of "nvclear" is executed and the machine shifts to the alternate system (forced start).
4. Confirm that a message is displayed on the LCD telling to insert the SD card that contains the encryption key.
 5. Turn OFF the main power.
 6. Insert the SD card that contains the encryption key into SD card slot 2 (the lower slot).
 7. Turn ON the main power and the machine automatically clears the HDD encryption.
 8. Turn OFF the main power when the machine has returned to normal status.
 9. Remove the SD card from SD card Slot 2.
 10. Turn ON the main power.
 11. Memory clear SP5-801-xx (Exclude SP-5-801-001: All Clear and SP-5-801-002: Engine), and clear SP5-846-046: address book.
 12. Set necessary user settings with the User Tools key.

2.4 PAPER FEED UNIT PB1080 (D573)

2.4.1 ACCESSORY CHECK

Confirm that you have the accessory indicated below.

No.	Description	Q'ty
1	EMC Address	1
2	Name Plate	1
3	Decal Size Indication	1
4	Decal CHN 10mm	1
5	Decal CHN Date 40mm	1

2.4.2 INSTALLATION PROCEDURE

CAUTION

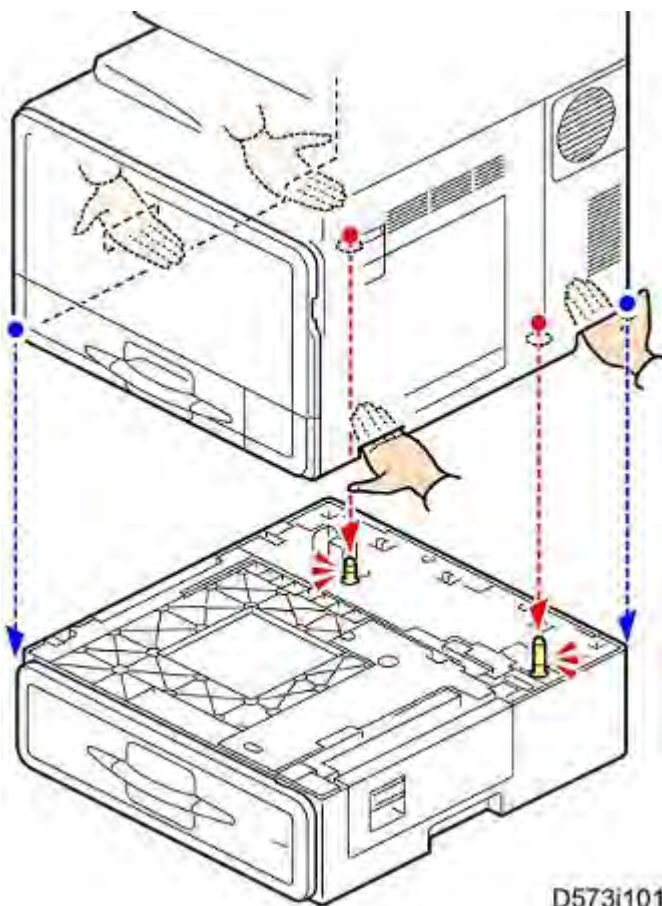
- Unplug the copier power cord before starting the following procedure.

CAUTION

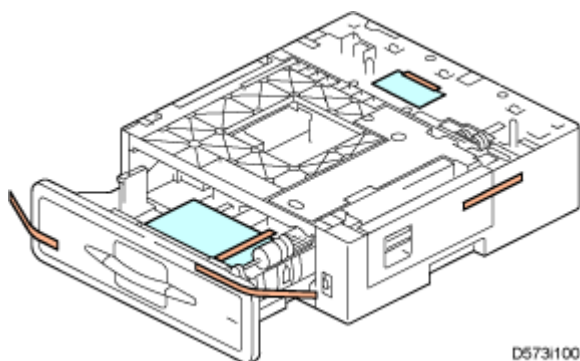
- **Do not lift the machine together with one or more paper feed unit(s):**
If there is already a machine with one or more optional paper feed unit(s), be sure to disconnect the machine and paper feed unit(s), and lift them up separately when moving/transporting. Otherwise, the handle of the paper feed unit will break due to the mainframe's weight, and it can cause an injury.

CAUTION

- Turn off the main switch of the copier and unplug the power cord before you start the installation procedure.
- You need two or more persons to lift the mainframe. The mainframe is highly unstable when lifted by one person, and may cause injury or property damage.
- Do not lift the mainframe that has an optional paper feed unit connected to it. The handle and grips may be damaged.
- Be sure to hold the following positions when lifting the mainframe.



1. Remove the tapes and the paper (EMC address) on the paper feed unit.

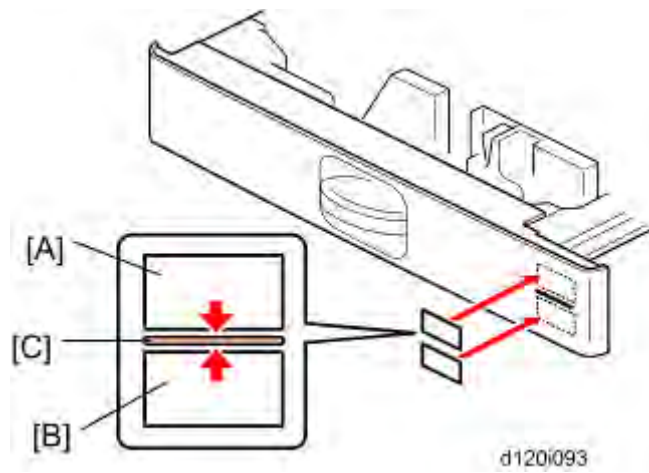


2. Set the copier on the paper feed unit.

Note

- When installing a second paper feed unit, place it on the first paper feed unit. Then place the copier on the pair of paper feed units.

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



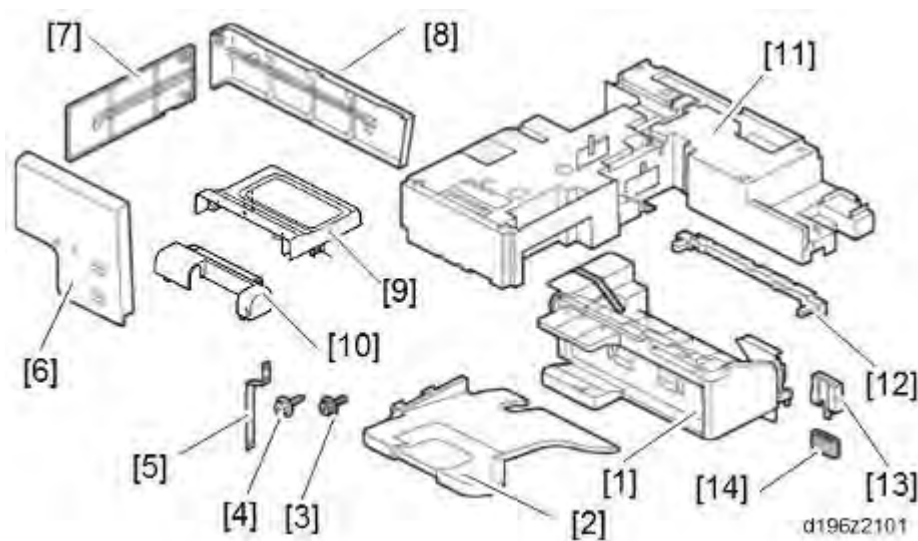
4. Load paper into the paper tray(s) and set the side fences and end fence(s).
5. Adjust the registration for each tray (page 4-3 "Image Adjustment").
 - For tray 2, use SP1002-003
 - For tray 3, use SP1002-004
6. Check the paper feed unit operation and copy quality.

2.5 1-BIN TRAY BN1020 (D574)

2.5.1 ACCESSORY CHECK

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

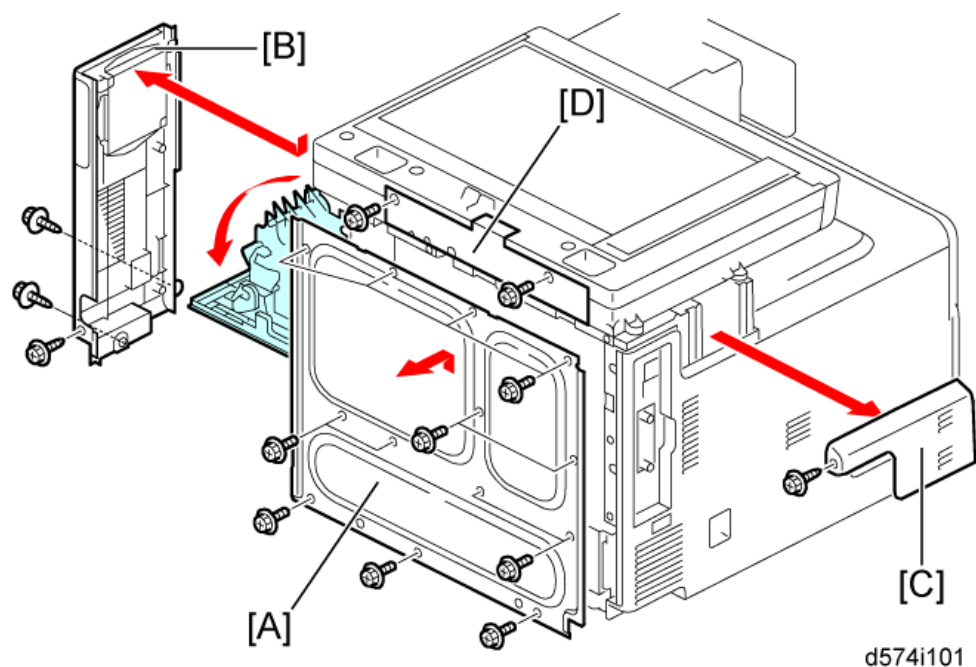
No.	Description	Q'ty
1	1-Bin Tray Unit	1
2	Tray	1
3	Binding Screw (M3×6)	2
4	Screw (M3×10)	18
5	Grounding plate	1
6	Left Cover	1
7	Rear Upper Cover	1
8	Rear Upper Right Cover	1
9	Front Right Cover	1
10	Small Cover	1
11	Mounting Frame	1
12	Mounting Frame Junction	1
13	Ferrite Core Cover	1
14	Ferrite Core	1
-	Ground Wire	1
-	Name Plate	1
-	Decal	1
-	Label	1



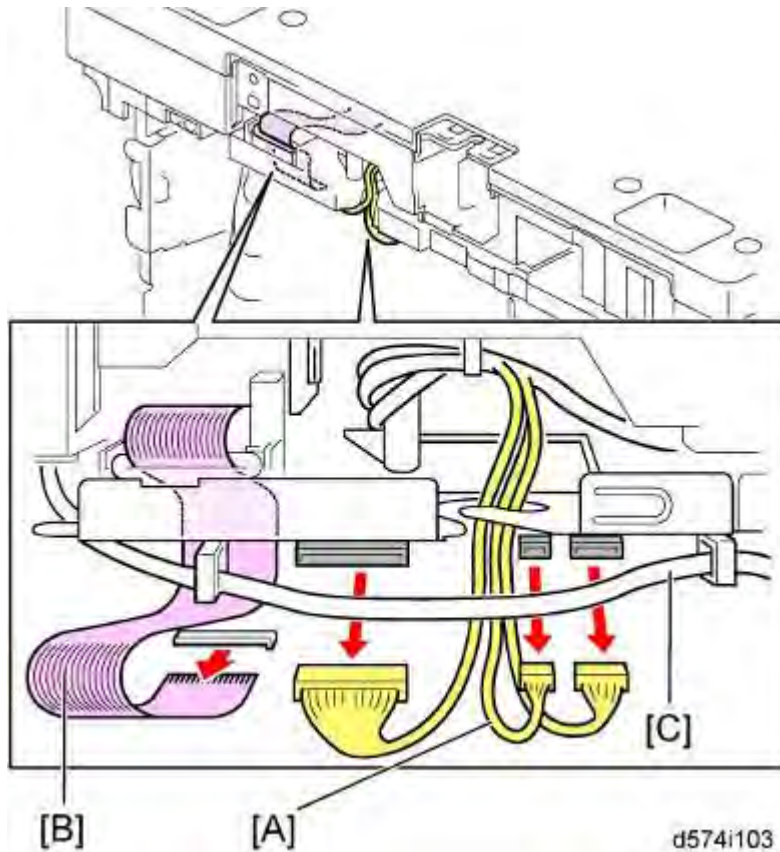
2.5.2 INSTALLATION PROCEDURE

⚠ CAUTION

- Unplug the copier power cord before starting the following procedure.
1. If it is installed, remove the ARDF. (page 4-2 "ARDF Unit")
 2. Remove all tapes.
 3. Remove the rear cover [A] (⚙ × 13), rear right cover [B] (⚙ × 3), left cover [C] (⚙ × 1) and scanner rear cover [D]. (⚙ × 2)



4. Disconnect the three harnesses [A] and a flat cable [B]. (⚙ × 4)

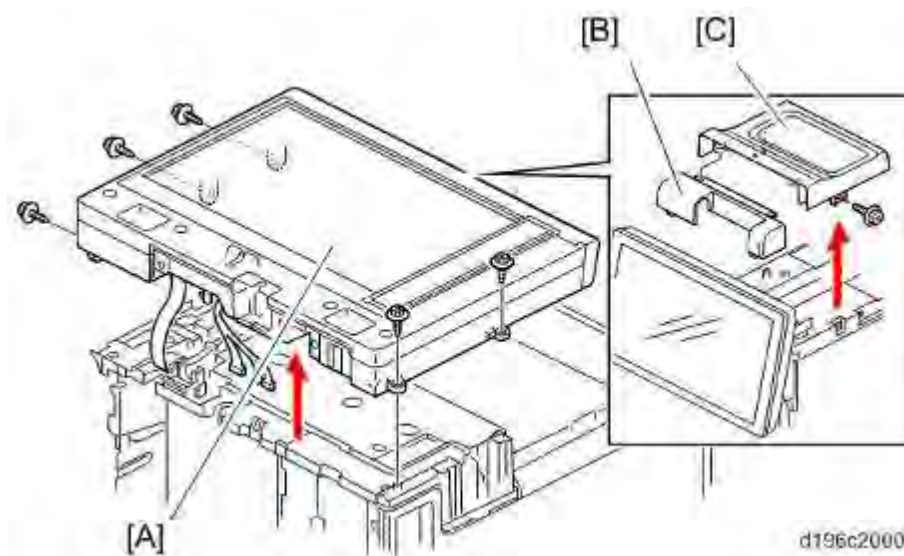


↓ Note

- The harnesses [A] and the flat cable [B] should be routed under the harness [C] when these are reconnected.
- To release the lock of the flat cable connector, lift up the small white tab of the connector, and to lock the flat cable, push down the small white tab.

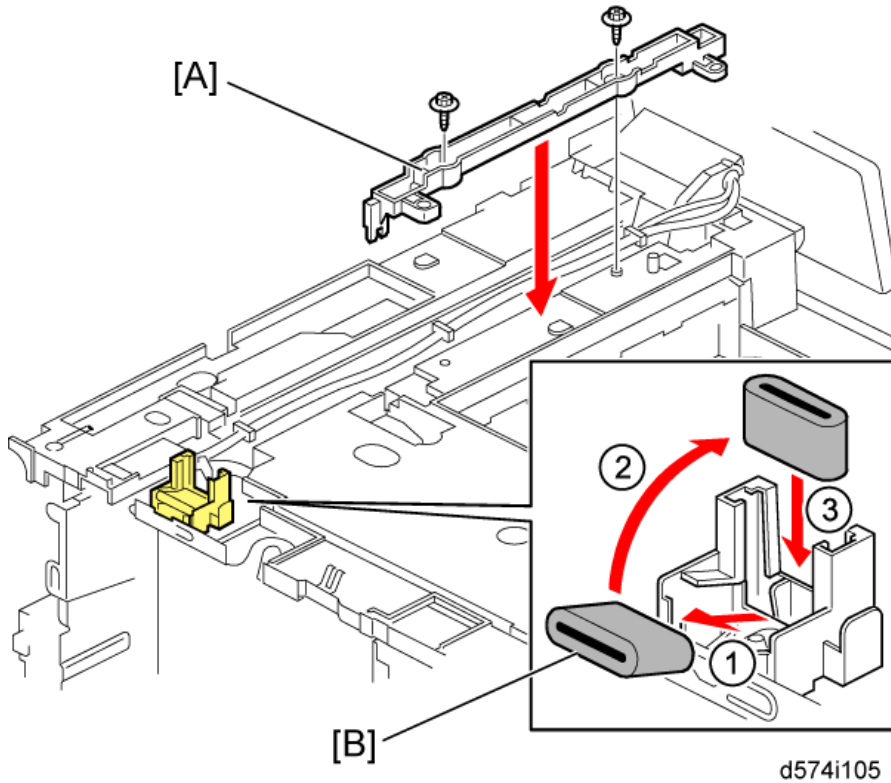
5. Remove the following items:

- Scanner unit [A] (⚙ × 5)
- Small cover [B] (⚙ × 1)
- Front right cover [C] (⚙ × 1)

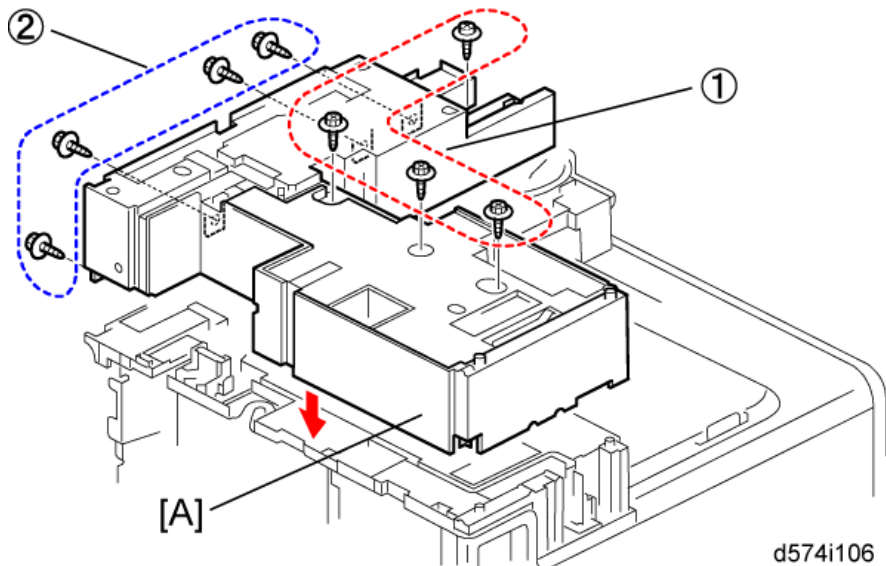


6. Do the following steps:

- Pull out the ferrite core from the mainframe.
- Attach the mounting frame junction [A]. (M3×10:  × 2)
- Reinstall the ferrite core [B] at position ③.



7. Attach the mounting frame [A]. (M3×10: × 8)



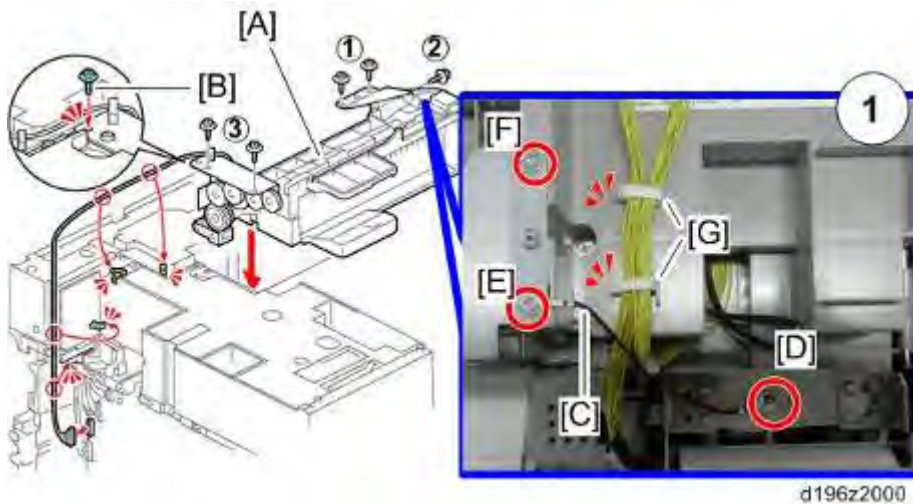
Note

- Install the screws in this order: ① → ②.

8. Do the following steps:

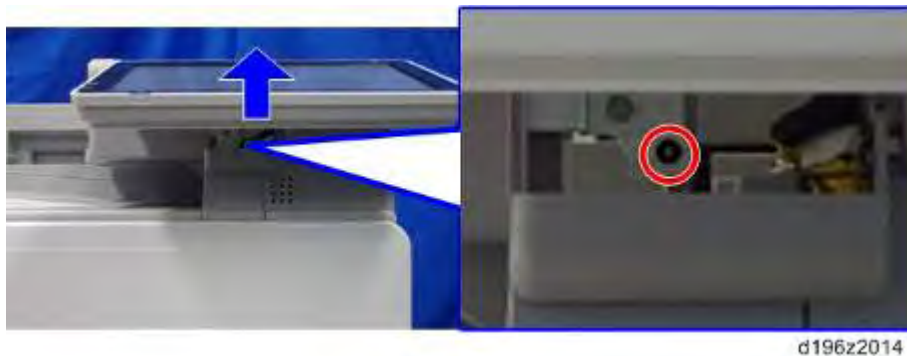
- Make sure that the operation panel's harnesses [G] are clamped. ( × 1)
- Attach the 1-bin tray unit [A]. Note that there are four tapping screws and one blue screw.

- Connect the connector of the 1-bin tray unit to CN527 and then clamp the harness. (🔧 × 1, 🧰 × 3)
- Secure the screw [B]. (🔩 (blue) × 1)
- Secure the screws (①): To do this, secure the screw [E] (M3×10: 🧰 x1) and screw [D] together with the ground wire [C]. Then secure the screw [F]. (M3×10: 🧰 × 1)
- Route the yellow harnesses coming from the operation panel with clamps [G]. (🧰 × 2)
- Secure the screws (② and ③). (M3×10: 🧰 × 3)

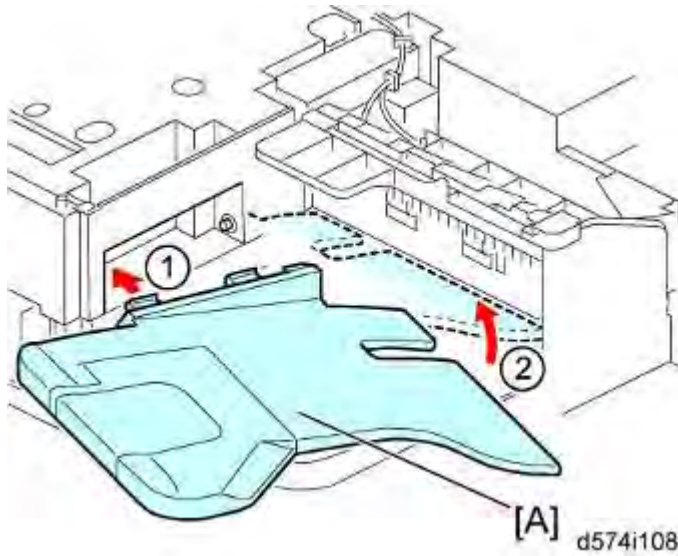


⬇ Note

- To secure the screw ②, make the operation panel flat, set the screw at the lower hole, and tighten the screw with a long driver.
- There are two tapped holes. Use the hole as shown below.

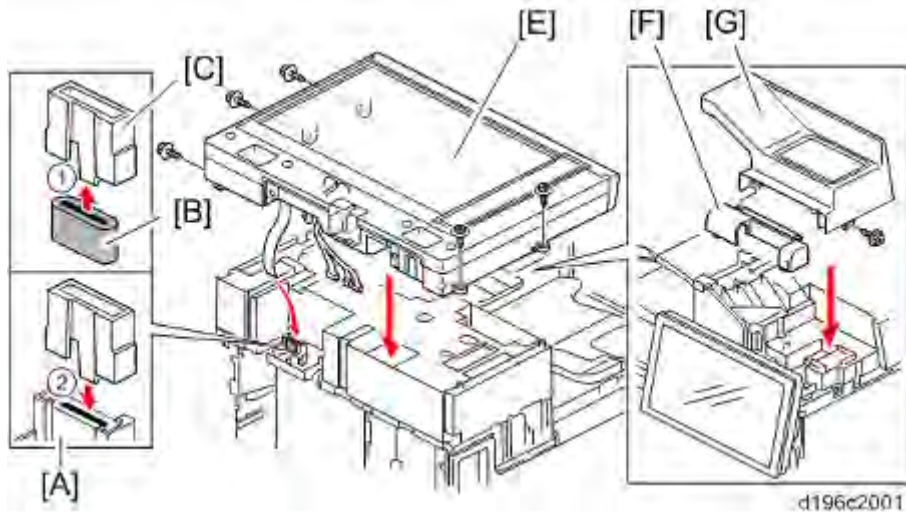


9. Install the 1-bin tray [A].



10. Do the following steps:

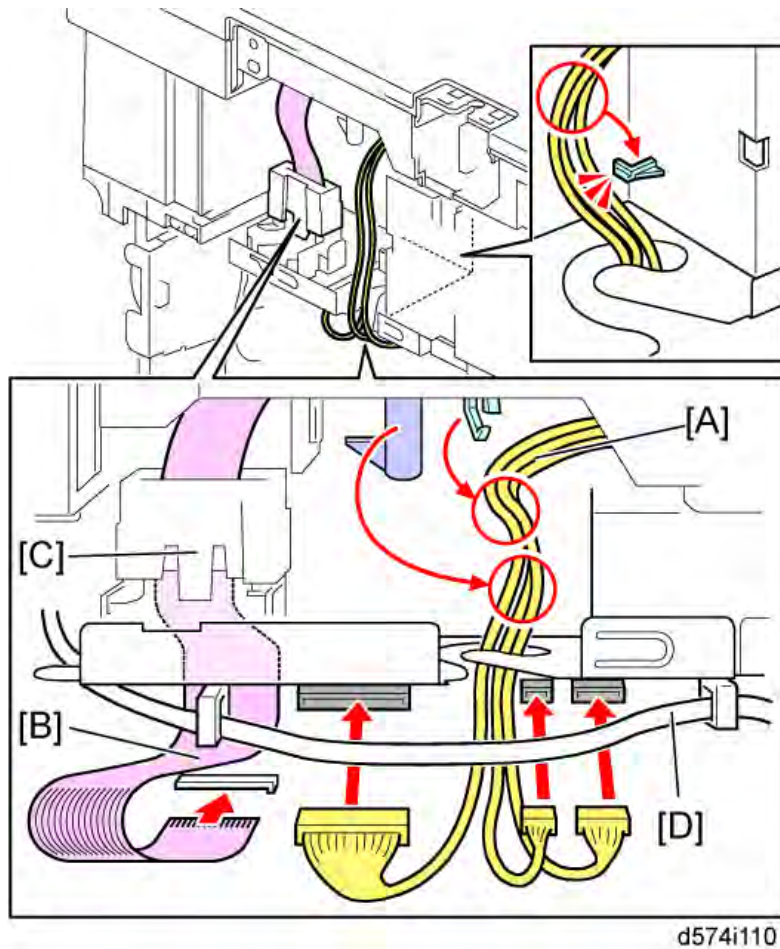
- Attach the small cover [F] and front right cover [G] (from the accessories, not the original cover). (M3×10:  × 1)
- Install the scanner unit [E]. ( × 5)
- Insert the ferrite core [B] into the cover [C] (①).
- Attach the ferrite core cover with the ferrite core to the existing ferrite core [A] (②).



Note

- The ferrite core [B] and the ferrite core cover [C] are included in this kit.

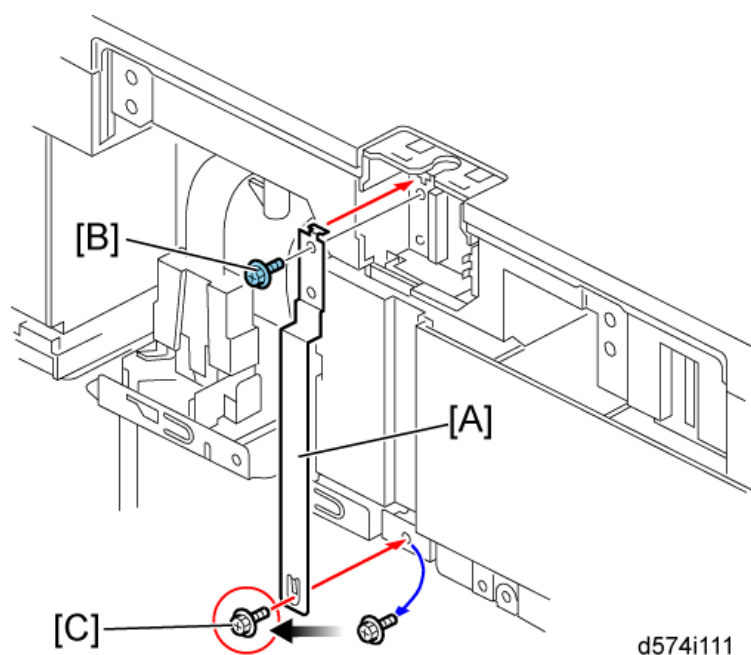
11. Connect the connectors of the harnesses [A]. Then route the harnesses [A] and the flat cable [B]. Finally, connect the connector of the flat cable [B]. (× 1, × 4)



⬇ Note

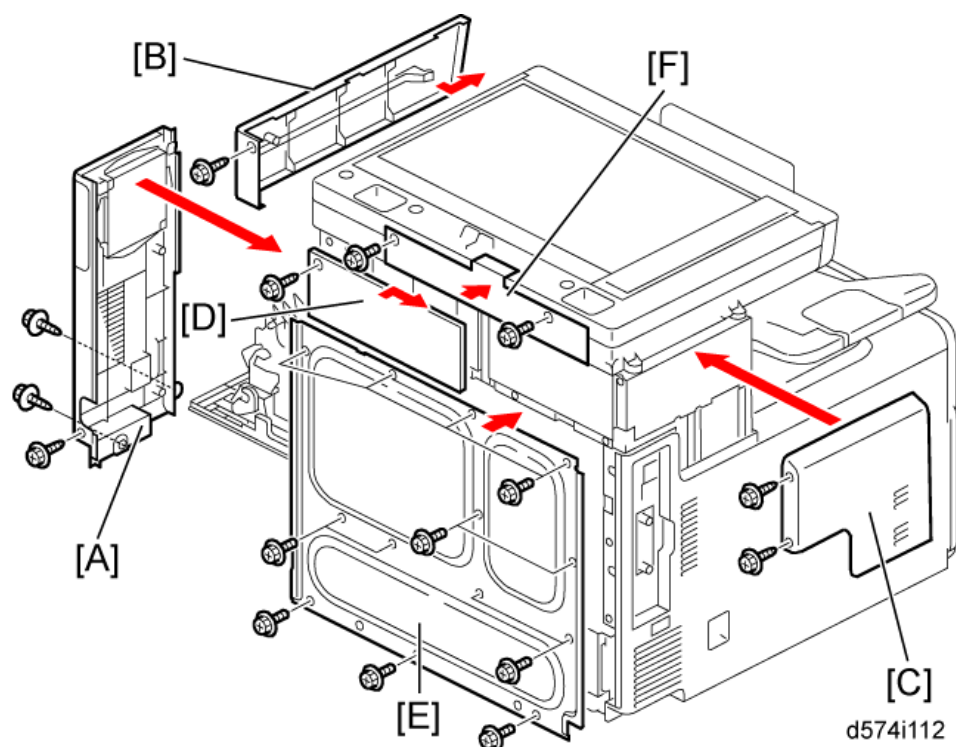
- The flat cable [B] should go through the ferrite cores [C].
- The harnesses [A] and the flat cable [B] should be routed under the harness [D] when these are reconnected.
- Never connect the flat cable [B] at an angle. Otherwise, the scanner unit may be damaged.

12. Attach the grounding plate [A]. (Upper: 🌀(blue) [B] × 1, Lower: 🌀 × 1 (existing) [C])



13. Attach the following items:

- Rear right cover [A] (🔩 × 3)
- Rear upper right cover [B] (M3×10: 🔩 × 1)
- Left cover [C] (from the accessories, not the original cover) (M3×10: 🔩 × 2).
- Rear upper cover [D] (M3×10: 🔩 × 1)
- Rear cover [E] (🔩 × 13)
- Scanner rear cover [F] (🔩 × 2)



 Important

- Pay extra attention when reattaching the rear cover [E] to avoid catching the harnesses.

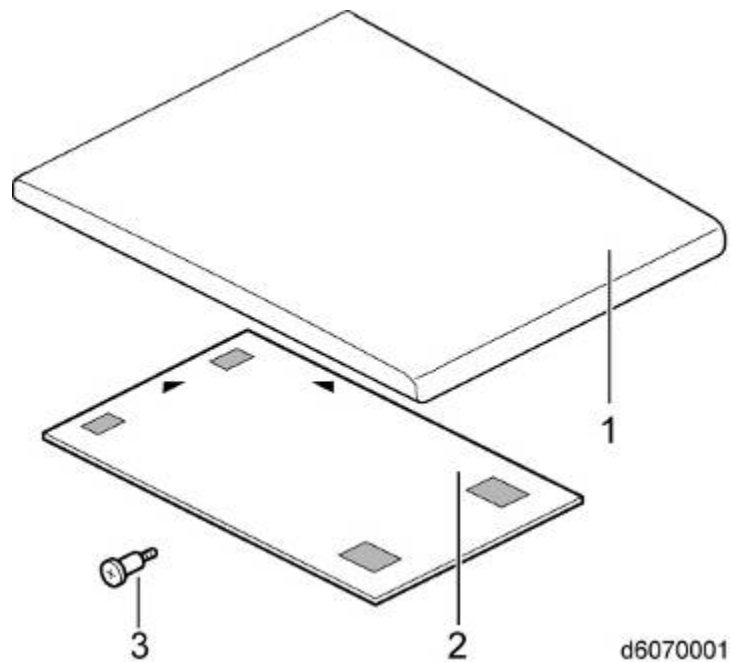
14. Reassemble the machine.

15. Turn ON the main power switch and check the 1-bin tray unit operation.

2.6 PLATEN COVER (D607)

2.6.1 ACCESSORY CHECK

Installation of this unit requires the following components. Other components included in this kit are not used for installation on this machine.

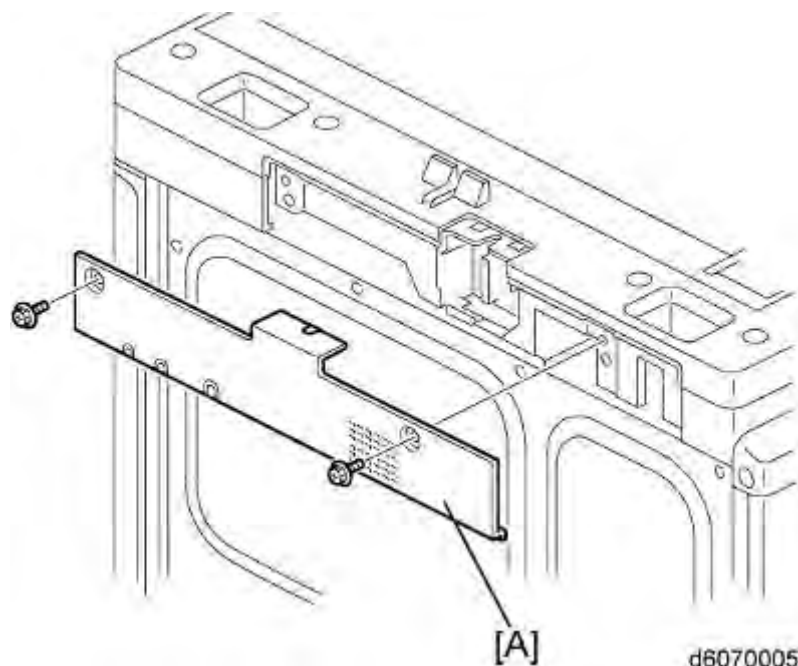


No.	Description	Q'ty
1.	Platen Cover	1
2.	Platen Sheet	1
3.	Stud Screw	1

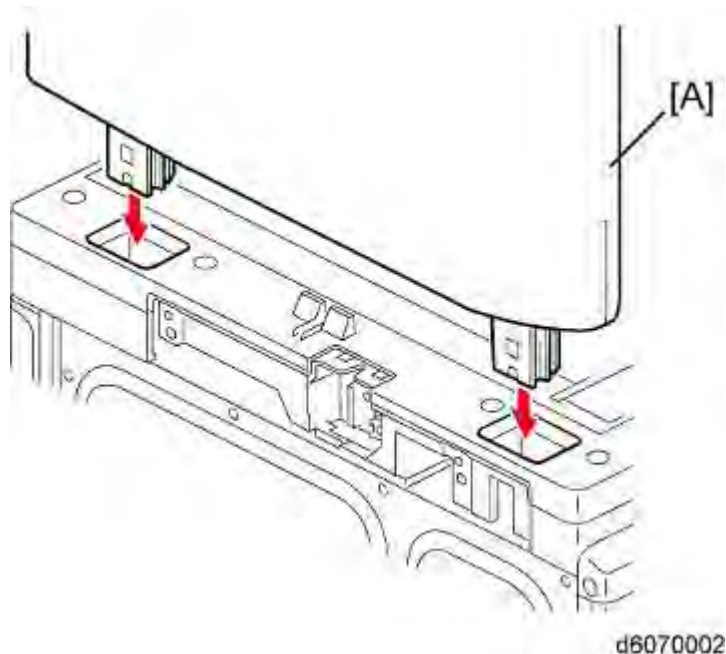
2.6.2 INSTALLATION PROCEDURE

⚠ CAUTION

- Unplug the copier power cord before starting the following procedure.
1. Remove the strips of tape on the platen cover.
 2. Remove the scanner rear cover [A]. (⚙ × 2)

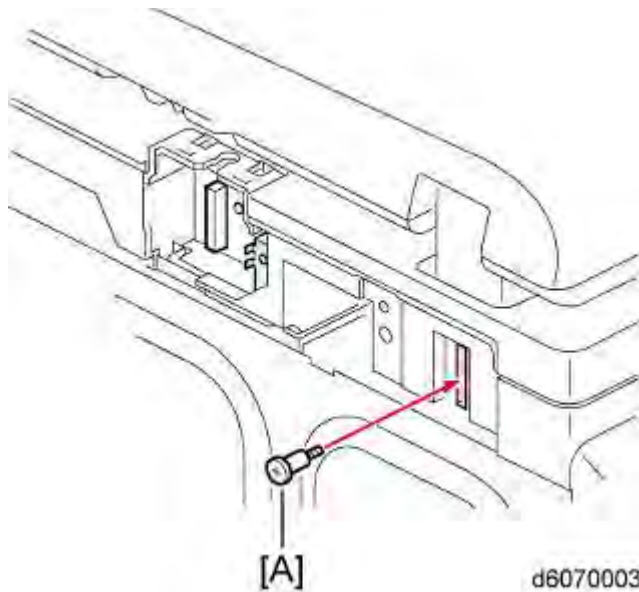


3. Mount the platen cover [A] on the copier as shown.

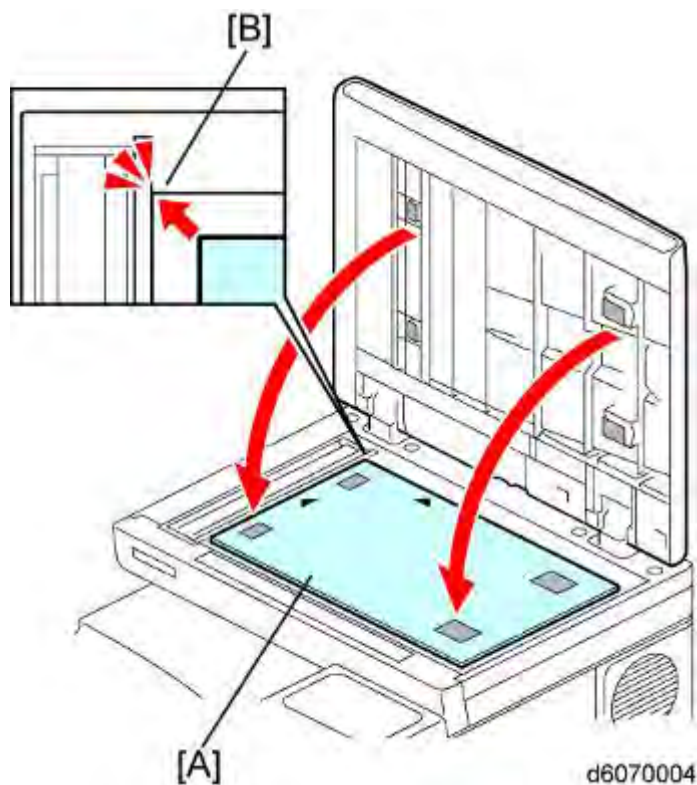


4. Secure the stud screw [A].

Platen Cover (D607)



5. Reinstall the scanner rear cover removed in step 2.
6. Open the platen cover.
7. Do the following steps:
 - Place the platen sheet [A] on the exposure glass.
 - Line up the rear left corner of the platen sheet flush against corner [B] on the exposure glass.



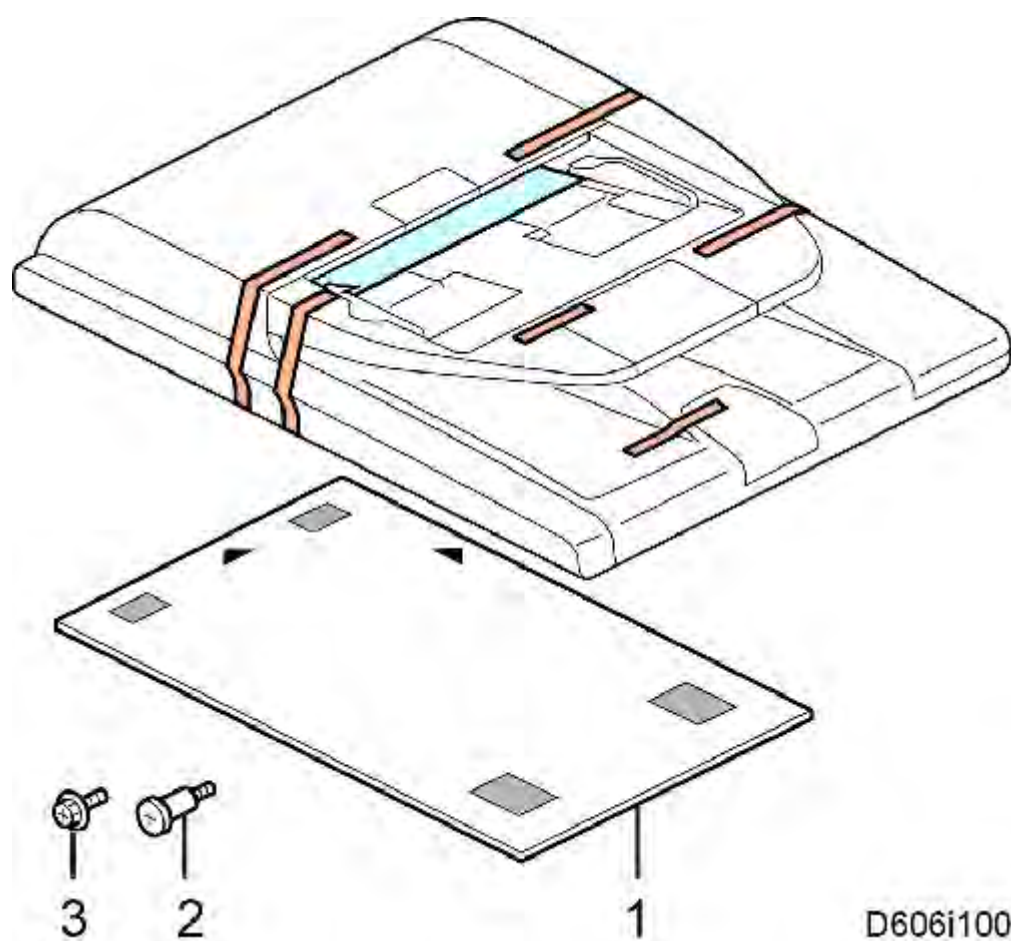
8. Close the platen cover.
9. Reopen the platen cover.
10. Press the surface of the platen sheet gently to attach it securely on the platen cover.

2.7 ARDF (D3BE)

2.7.1 ACCESSORY CHECK

Confirm that you have the accessories indicated below.

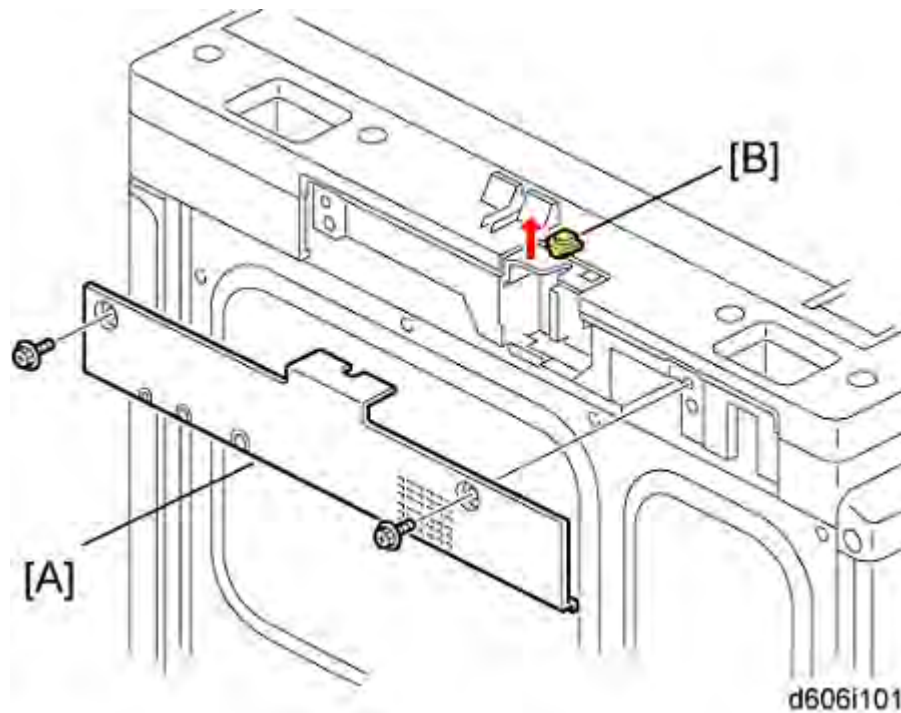
No.	Description	Q'ty
1	Platen sheet	1
2	Stud screw	1
3	Screw (Unused)	1



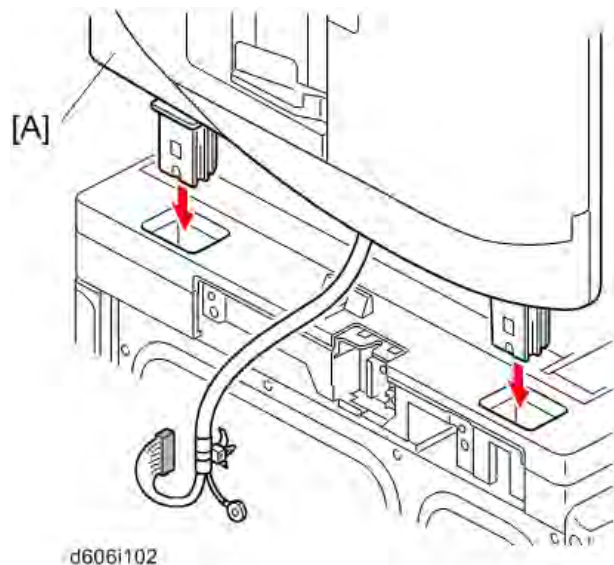
2.7.2 INSTALLATION PROCEDURE

⚠ CAUTION

- Unplug the copier power cord before starting the following procedure.
1. Remove the strips of tape on the ARDF.
 2. Do the following steps:
 - Remove the scanner rear cover [A]. (⌀ × 2)
 - Remove the harness cap [B].

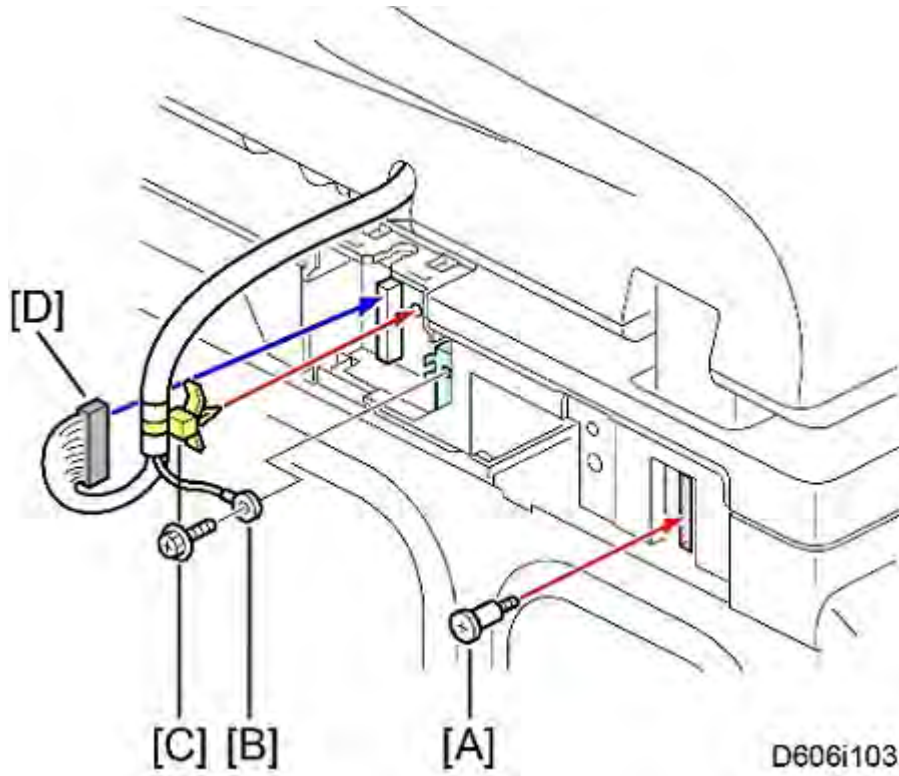


3. Mount the ARDF [A].

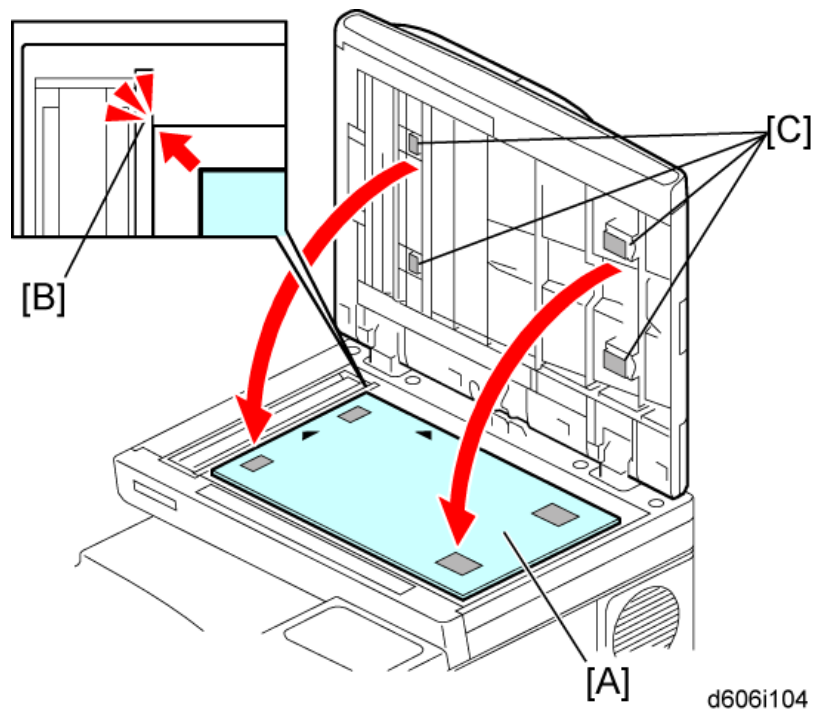


4. Do the following steps:

- Secure the stud screw [A].
- Secure the ground cable [B]. (⚙ × 1)
- Attach the clamp [C].
- Connect the I/F cable [D] to the connector.



5. Push the excess I/F cable into the interior of the ARDF to prevent the I/F cable from sagging.
6. Reinstall the scanner rear cover removed in step 2.
7. Open the ARDF.
8. Do the following steps:
 - Place the platen sheet [A] on the exposure glass.
 - Line up the rear left corner of the platen sheet flush against corner [B] on the exposure glass.
 - Remove the protection seals [C].

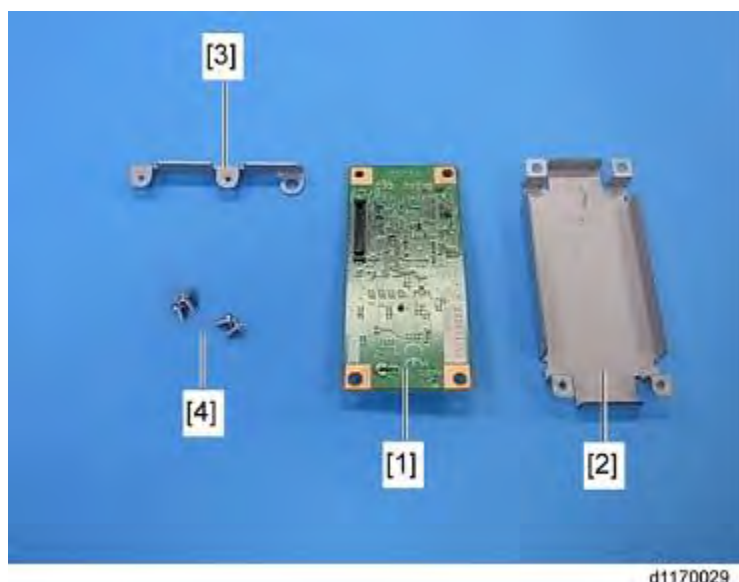


9. Close the ARDF.
10. Reopen the ARDF.
11. Press the surface of the platen sheet gently to attach it securely on the ARDF.
12. Adjust the ARDF registration (front / back) (page 4-4 "ARDF").

2.8 COPY DATA SECURITY UNIT TYPE G (D640)

2.8.1 ACCESSORY CHECK

Installation of this unit requires the following components. Other components included in this kit are not used for installation on this machine.



d1170029

Call-outs	Descriptions	Q'ty
1	Copy data security unit board	1
2	Bracket for the board	1
3	Bracket for the machine attachment	1
4	Screws (M3 x 6)	4
-	Screws (M3 x 4)	2
-	Screws (M3 x 8)	2
-	Spacer	1
-	Decal	1
-	Label	1

2.8.2 INSTALLATION PROCEDURE

⚠ CAUTION

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

1. Attach the copy data security unit board [1] to the bracket [2]. (🔩:[4] × 2)



2. Remove the rear cover. (page 4-1)
3. Attach the bracket [3] to the machine using the existing screw [A].



B: CN111

↓ Note

- The bracket [3] and the controller board are screwed together.

4. Attach the copy data security unit board [A] with bracket to CN111. (🔩 (M3×6) × 2)



5. Reassemble the machine.

User Tool Setting

1. Plug in and turn ON the main power switch.
2. Go into the User Tools mode, and select System Settings > Administrator Tools > Copy Data Security Option > "On".
3. Exit User Tools.
4. Check the operation.

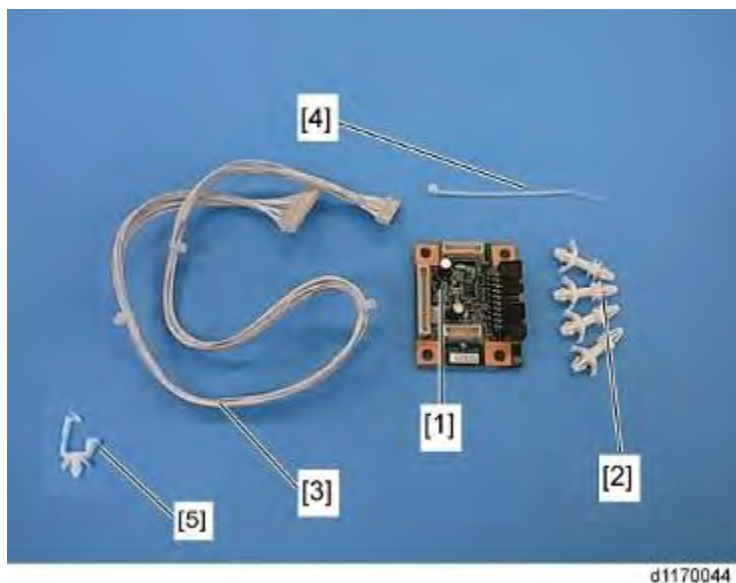
Note

- The machine will issue an SC165 error if the machine is powered on with the ICIB-3 removed and the "Data Security for Copying" feature set to "ON".
 - The machine will issue an uncertain SC165 error if the machine is powered on with the defective ICIB-3 and the "Data Security for Copying" feature set to "OFF".
 - When you remove this option from the machine, first set the setting to "OFF" with the user tool before removing this board. If you forget to do this, "Data Security for Copying" feature cannot appear in the user tool setting. And then SC165 will appear every time the machine is switched on, and the machine cannot be used.
5. Make sure that the machine can recognize the option (see "page 2-9 "Check All Connections"").

2.9 OPTIONAL COUNTER INTERFACE UNIT TYPE M12 (B870)

2.9.1 ACCESSORY CHECK

Installation of this unit requires the following components. Other components included in this kit are not used for installation on this machine.

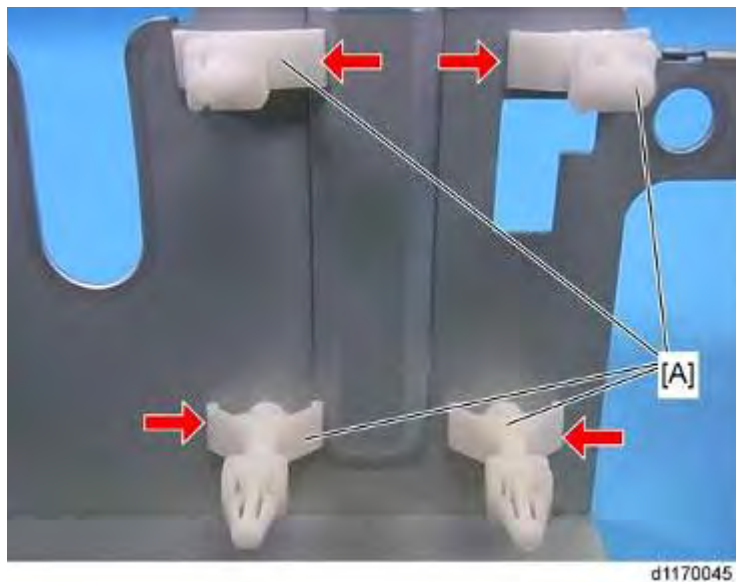


No.	Description	Q'ty
1	Counter interface board	1
2	Stud	4
3	Harness	1
4	Harness band	1
5	Clamp	1
-	Screws	4
-	EMC Address	1
-	Caution Chart	1

2.9.2 INSTALLATION PROCEDURE

⚠ CAUTION

- Unplug the copier power cord before starting the following procedure.
1. Remove the rear cover. (page 4-1)
 2. Remove the controller box cover. (page 4-2)
 3. Install the four studs [A] in the controller box.

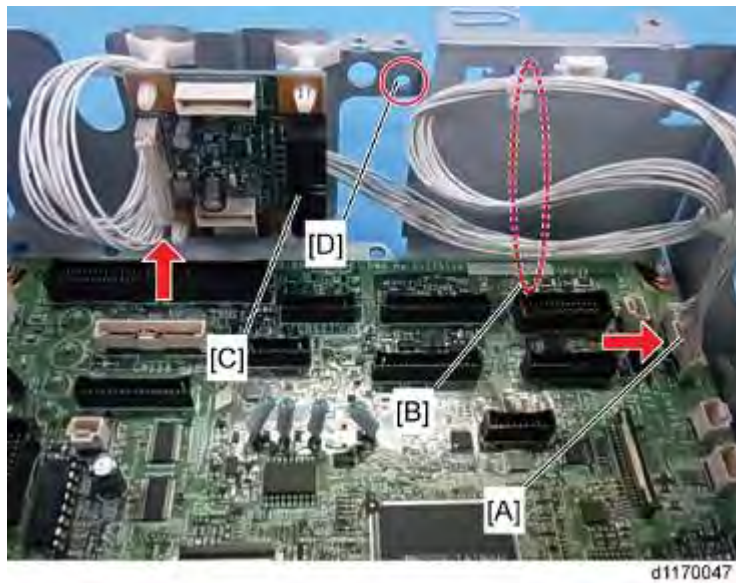


4. Install the key counter interface board [A] shown below on the four studs.
5. Connect the harness included in this kit to the connector [B] on the interface board.



6. Do the following steps:

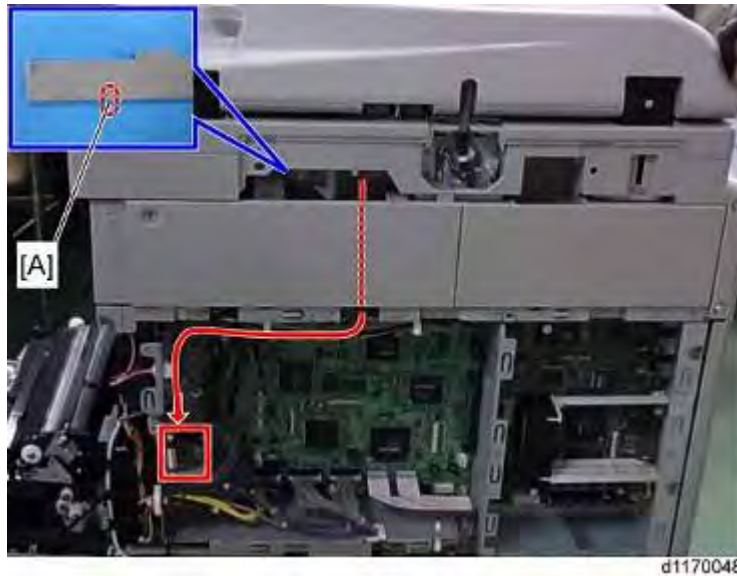
- Route the harness through the rear of the interface board, and then connect it to CN570 [A]. (🔗 × 2)
- Bind the harness at the point [B] with the harness band included in this kit to prevent interference with other harnesses.
- Insert the clamp included in this kit at [D], and clamp the harness with the clamp to prevent interference with other harnesses.
- Connect the harness from the counter device to CN4 [C] on the key counter interface board.



7. Route the harness.

↓ Note

- Remove the cutout from the scanner rear cover [A], and route the harness as shown below.



8. Reassemble the machine.

↓ Note

- Remove the optional counter interface unit before removing the controller box.

2.9.3 MECHANICAL COUNTER INSTALLATION (ONLY FOR NA)

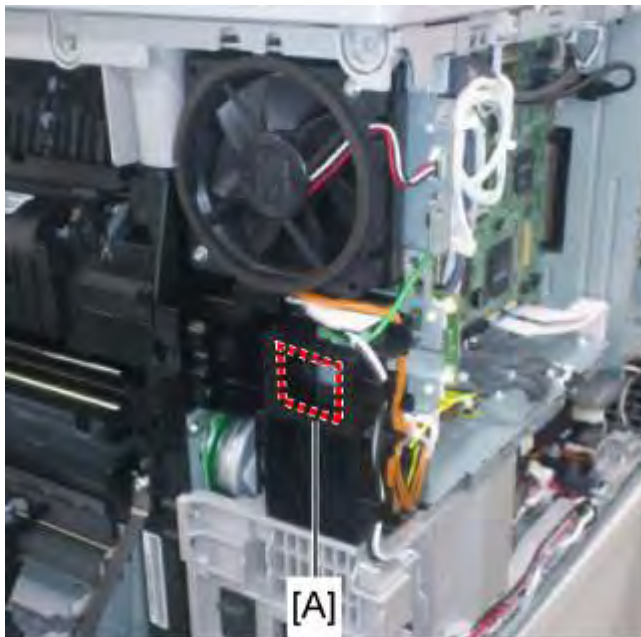
Installation of this unit requires the following components. Other components included in this kit are not used for installation on this machine.

No.	Description	Q'ty
1	Mechanical Counter	1
2	Harness	1

Installation Procedure

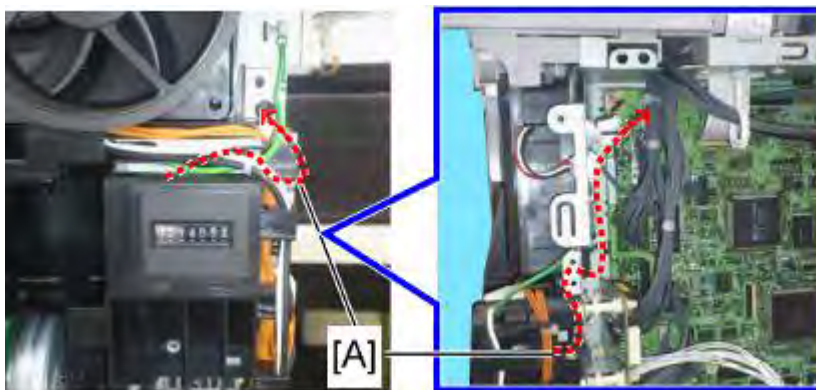
⚠ CAUTION

- Unplug the copier power cord before starting the following procedure.
1. Remove the rear right cover. (page 4-1)
 2. Remove the rear cover. (page 4-1)
 3. Connect the harness to the mechanical counter.
 4. Insert the mechanical counter into the place [A] at the rear right of the machine. (Hooks x 2)



d1170725

5. Route the harness [A] from the mechanical counter as shown below.



d1170726

6. Connect the connector of the harness to the connector CN570.
7. Reassemble the machine.

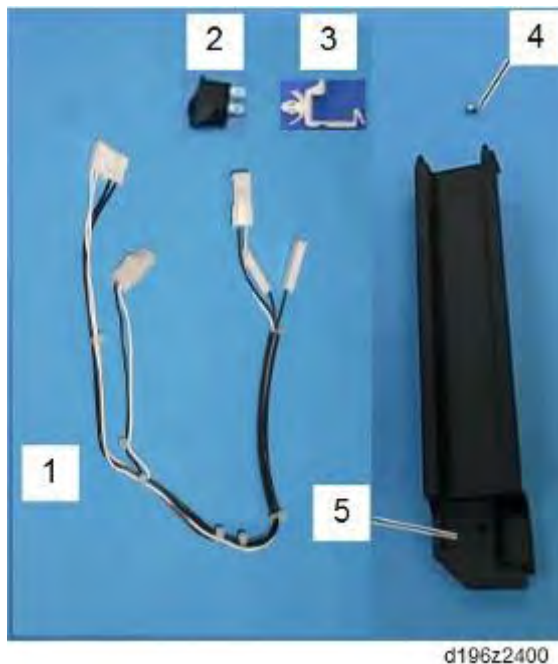
2.10 ANTI-CONDENSATION HEATER (MAINFRAME)

2.10.1 ACCESSORY CHECK

All the accessories required to install the anti-condensation heater for mainframe are available as the following parts. Order these separately from the heater.

Note

- These part numbers are correct as of July, 2015. Refer to the “Option” section in the mainframe’s parts catalog to check the latest part numbers.
- The shape of actual parts may differ from the photo.



No.	Description	Q'ty	Part Number
1	Junction Harness	1	D1965265* ¹
2	Heater Power Switch	1	12042570
3	Clamp	1	11050511
4	Screw	1	08010231
5	Heater kit	1	D1175097: EU/AA/KOR/CHN D1175091: NA/TWN

Note

- *1 This harness (P/N: D1955265) is also used as a harness for Anti-condensation Heater for optional paper feed unit, and Anti-condensation Heater for mainframe paper feed tray. If you have already ordered this harness for these heaters, it is not necessary to order this harness again at this time.

2.10.2 INSTALLATION PROCEDURE

⚠ CAUTION

- Do not lift the machine together with one or more paper feed unit(s):**
If there is already a machine with one or more optional paper feed unit(s), be sure to disconnect the machine and paper feed unit(s), and lift them up separately when moving/transporting. Otherwise, the handle of the paper feed unit will break due to the mainframe's weight, and it can cause an injury.

⚠ CAUTION

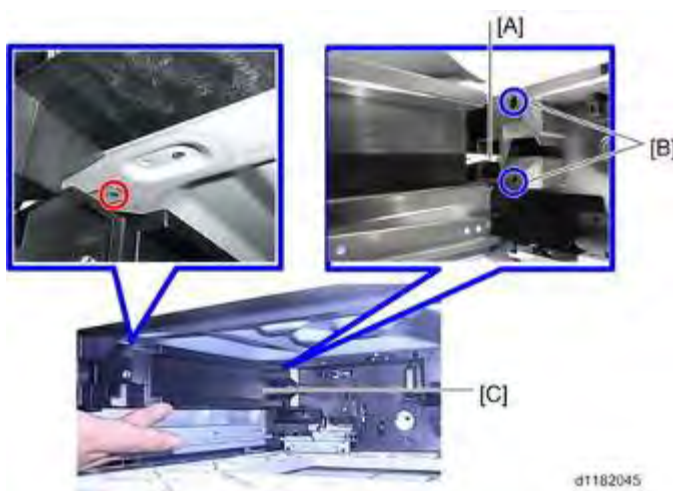
- Unplug the copier power cord before starting the following procedure.

1. Remove the following items.

- Paper Tray
- Waste toner bottle (page 4-3)
- Left cover (page 4-4)
- Rear cover (page 4-1)
- PSU fan (page 4-1)

2. Do the following steps:

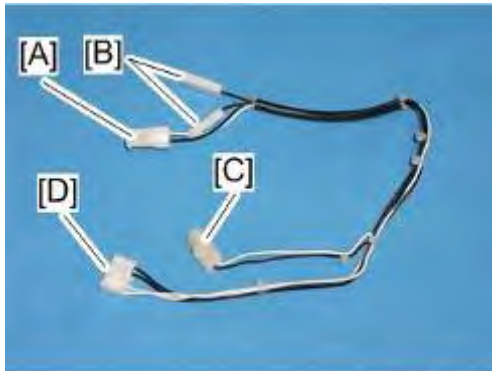
- Insert the heater harness into the hole [A].
- Fit the boss of the heater into the holes [B] to install the heater [C] (⌀ (M3×6) × 1)



↓ **Note**

- Use a short screwdriver to secure the screw.

Junction harness connections:



d196z2022

A: To the heater

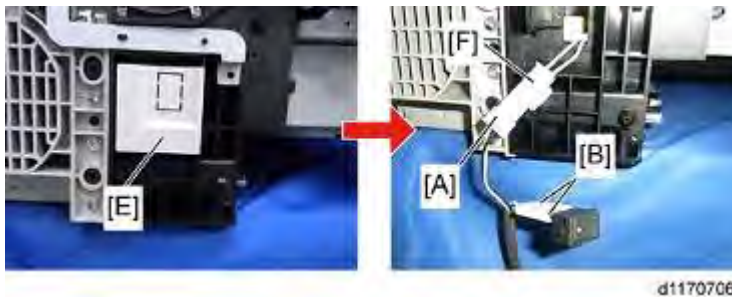
B: To the power switch

C: To the optional PFU heater (if installed)

D: To the PSU

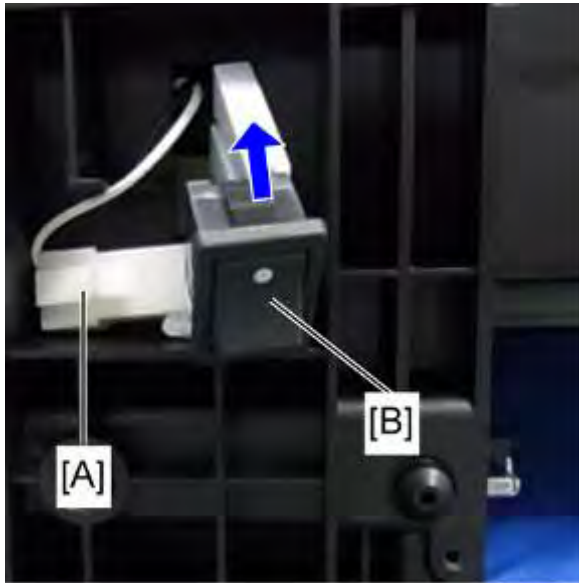
3. Do the following steps:

- Remove the cover [E], and then pull out the heater harness [F].
- Connect the heater harness to the connector of the junction harness [A]. (🔌 × 1)
- Connect the heater power switch to the connectors of the junction harness [B]. (🔌 × 2)



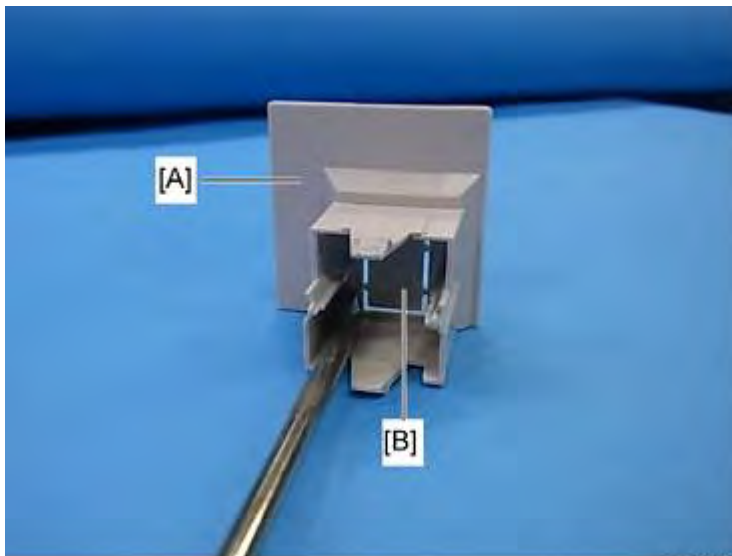
d1170706

- 4. Store the connector [A] in the connector holder, then push the power switch [B] into the switch hole until you feel it click into place.**



d1170707

5. Cut out the switch hole [B] in the switch cover, and then attach the cover [A]. (Hooks × 2)



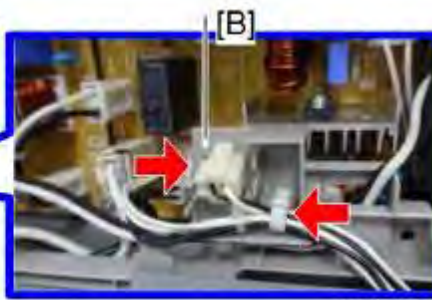
d1170710

6. Route the junction harness as shown below.
 - Connect the connector [A] to CN600.



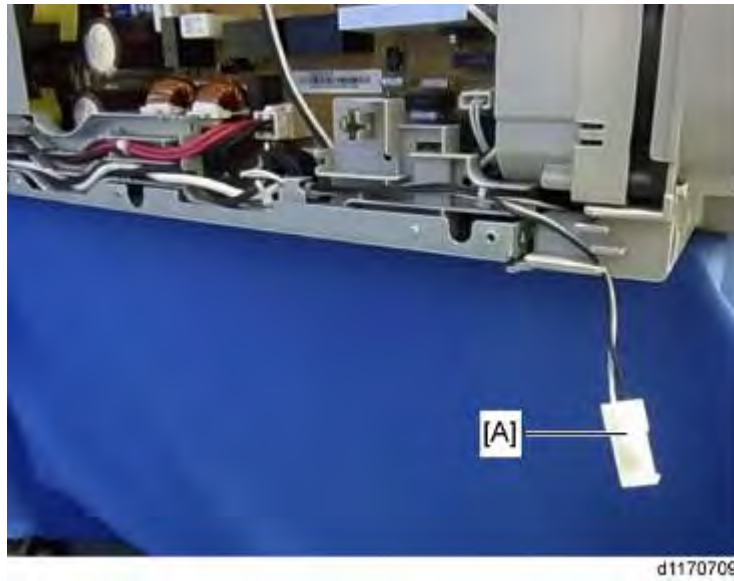
d196z2021

- Attach the clamp and route the harness. (1 × 1)
- Only when the heater for optional paper feed tray will not be installed, store the connector [B] in the holder.



d196z2017

7. When the optional PFU tray heater will be installed: Pull out the connector [A] and its harness to the lower part of the machine. Then uncap the connector isolation cap in the optional PFU and connect the connector [A] to the uncapped connector. (page 2-5 "Anti-condensation Heater (Optional Paper Feed Unit)")



8. Reassemble the machine.

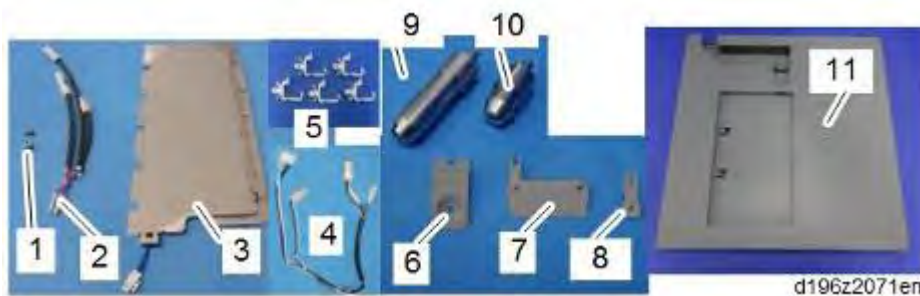
Note

- The mainframe and the optional paper feed unit should join each other if the anti-condensation heater of the optional paper feed unit is installed. See page 2-5 "Anti-condensation Heater (Optional Paper Feed Unit)" for details.

2.11 ANTI-CONDENSATION HEATER (FOR MAINFRAME PAPER TRAY)

2.11.1 ACCESSORY CHECK

No.	Items	Q'ty	Remarks	See Note *2
1	Screw M4 x 6	2		A: Heater Kit
2	Harness	1		
3	Heater	1		
4	Harness	1	*1	B: Harness
5	Clamps	5		A: Heater Kit
6	Bracket	1		C: Bracket Set
7	Bracket	1		
8	Bracket	1		
9	Locating pin (Long)	1		E: Pin Set
10	Locating pin (Short)	1		
11	Base	1		D: Base Set



 Note

- *1 This harness (P/N: D1955265) is also used as a harness for Anti-condensation Heater for optional paper feed unit, and Anti-condensation Heater for mainframe. If you have already ordered this harness for these heaters, it is not necessary to order this harness again at this time.
- *2 All the accessories required to install the anti-condensation heater for mainframe paper tray are available as the following kits or components. Order these separately from the heater:
 A: Heater Kit (D5730400 for NA/TWN, D5730401 for EU/AA/CHN)
 B: Harness (D1965265)
 C: Bracket Set (D7728431)
 D: Base Set (D3AT0010)
 E: Pin Set (D7728411)
- These part numbers are correct as of July, 2015. Refer to the “Option” section in the mainframe’s parts catalog to check the latest part numbers.

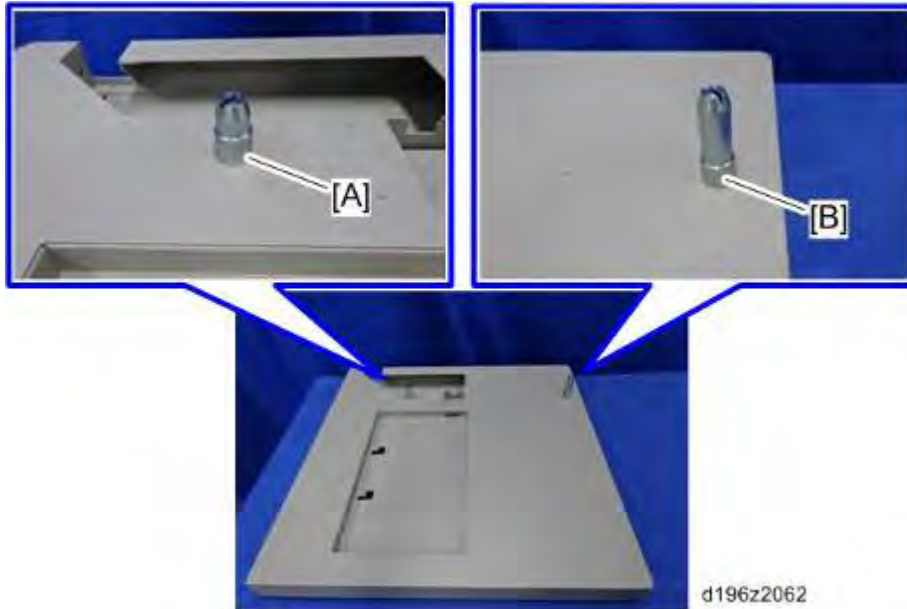
2.11.2 INSTALLATION PROCEDURE

 CAUTION

- **Do not lift the machine together with one or more paper feed unit(s):**
 If there is already a machine with one or more optional paper feed unit(s), be sure to disconnect the machine and paper feed unit(s), and lift them up separately when moving/transporting. Otherwise, the handle of the paper feed unit will break due to the mainframe’s weight, and it can cause an injury.

⚠ CAUTION

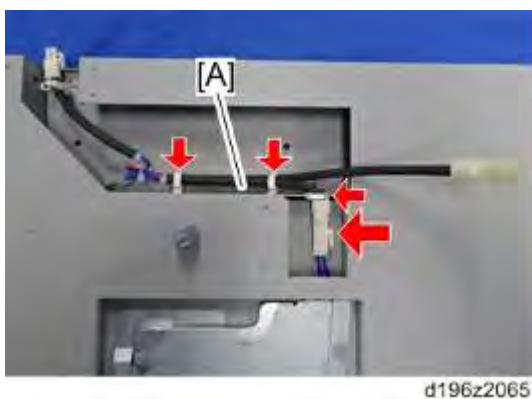
- Unplug the machine power cord before starting the following procedure.
- Do the following procedure to prevent the harnesses from being damaged.
- Check that harnesses are not damaged or pinched after installation.

1. Attach the two locating pins [A] [B] on the table.**2. Attach the heater bracket [A]. (⚙ × 2)****↓ Note**

- Pass the connector through the hole in the table.

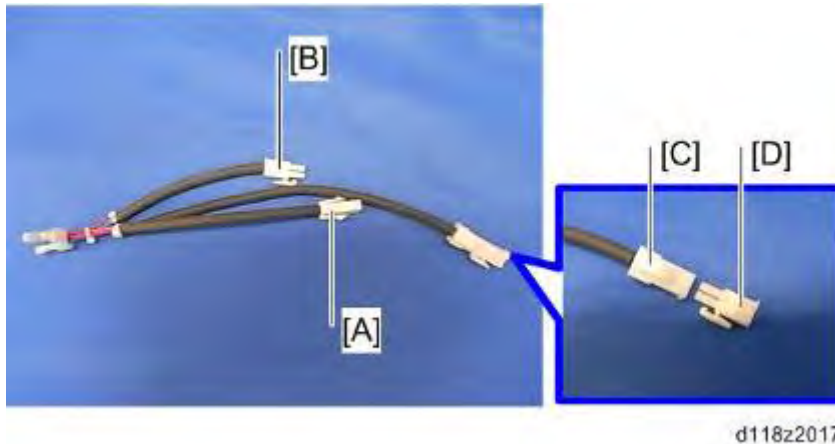
3. Connect the heater harness [A] to the anti-condensation heater and route it as below.

(🔌 × 1, 🧰 × 3)

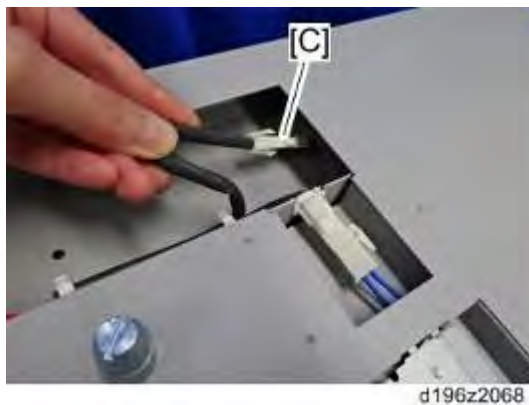


Note

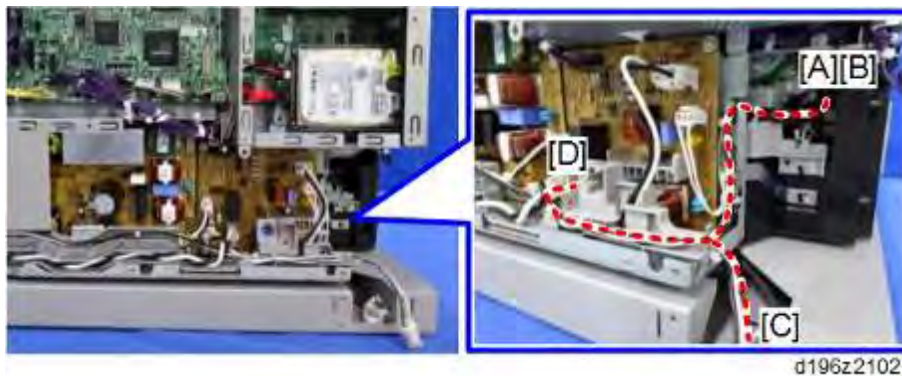
- A: For the anti-condensation heater
- B: For the junction harness
- C: For the isolation cap (Not used)
- D: Isolation cap



- The connector [C] is not used. Put the connector into the opening.

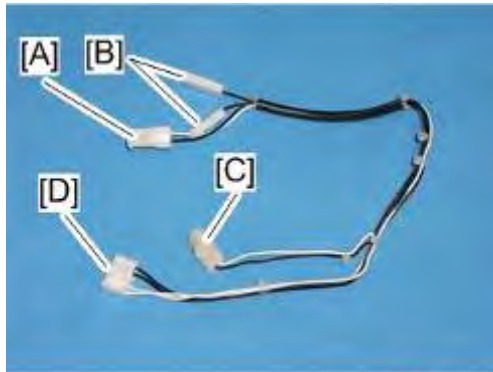


4. Put the mainframe on the table.
5. Remove the rear cover. (page 4-1)
6. Remove the left cover. (page 4-4)
7. Remove the PSU fan. (page 4-1)
8. Connect the connector to CN600 on the PSU and route the junction harness along the red dotted line in the photo. (🔌 × 1)



Note

- A: Not used (For the drum heater: If installing the anti-condensation heater for the mainframe)
- B: Not used
- C: For the heater harness
- D: For the PSU (CN600)



d196z2022

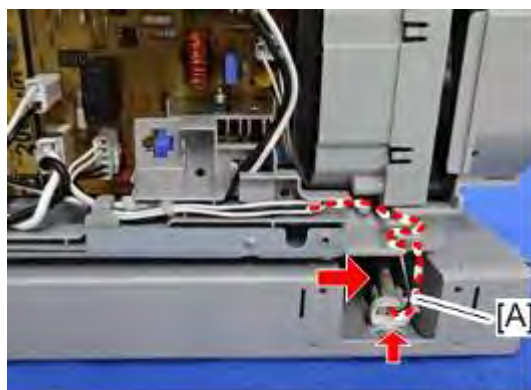
- If the anti-condensation heater for mainframe is not going to be installed, put the connector [A] and the connector [B] into the area as shown below.



d196z2103

9. Install the PSU fan.

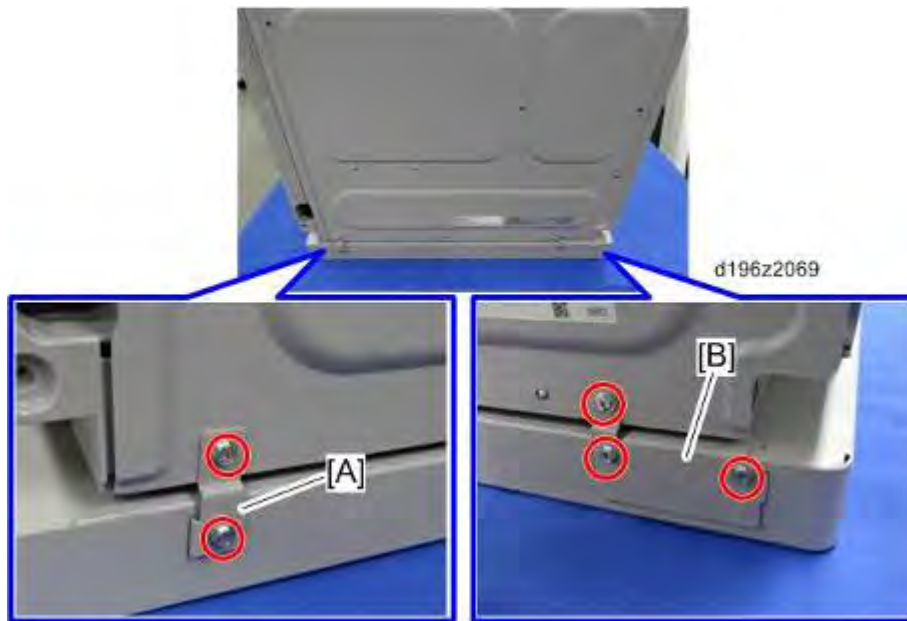
10. Connect the junction harness [A] to the heater harness and route the junction harness along the red dotted line in the photo.



d196z2067

11. Reattach the rear cover.

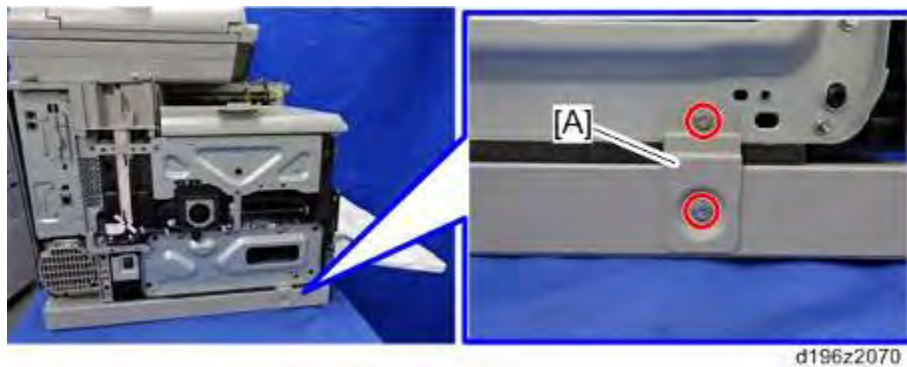
12. Attach the two securing brackets [A] [B] at the rear of the machine. (🔩 × 5)



↓ Note

- Use the screws which are holding the rear cover.

13. Attach the securing bracket [A] at the left of the machine. (🔩 × 2)



14. Reattach the left cover.

2.12 ANTI-CONDENSATION HEATER (OPTIONAL PAPER FEED UNIT)

2.12.1 ACCESSORY CHECK

Check the quantity and condition of the accessories against the following list. Other components included in this kit are not used for installation on this machine.

★ Important

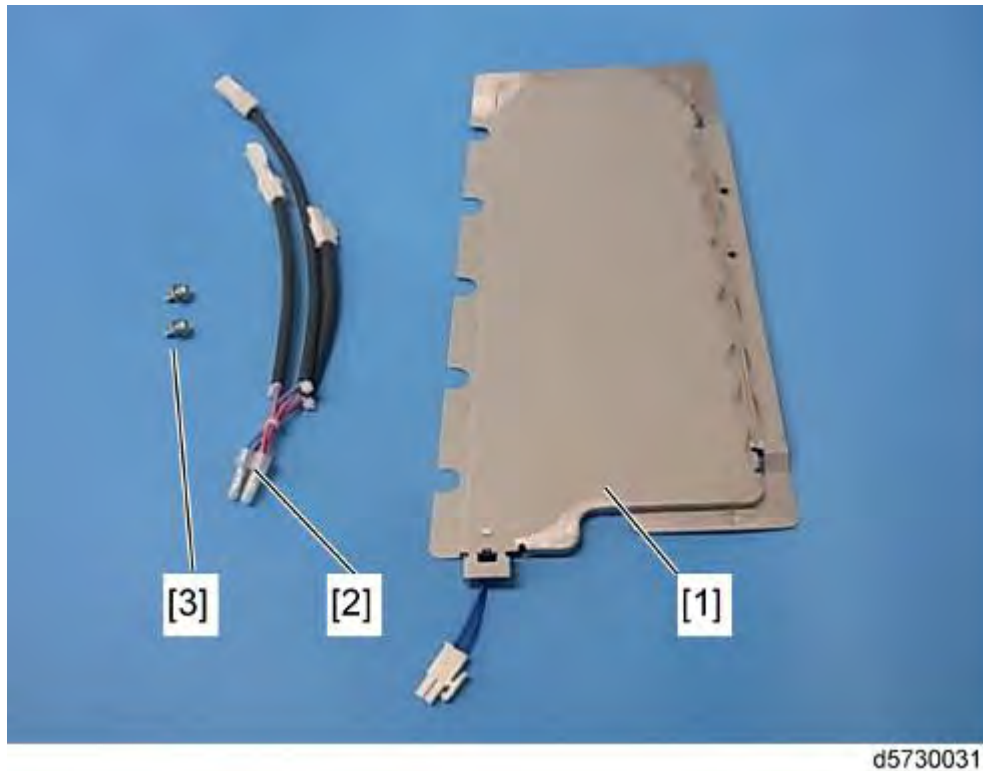
- The following junction harness (P/N: D1965265) is required to install the anti-condensation heater for optional paper feed unit. If you have already ordered this harness for installing the other anti-condensation heaters for mainframe or mainframe paper tray, it is not necessary to order this junction harness again at this time.



For Installing the Heater:

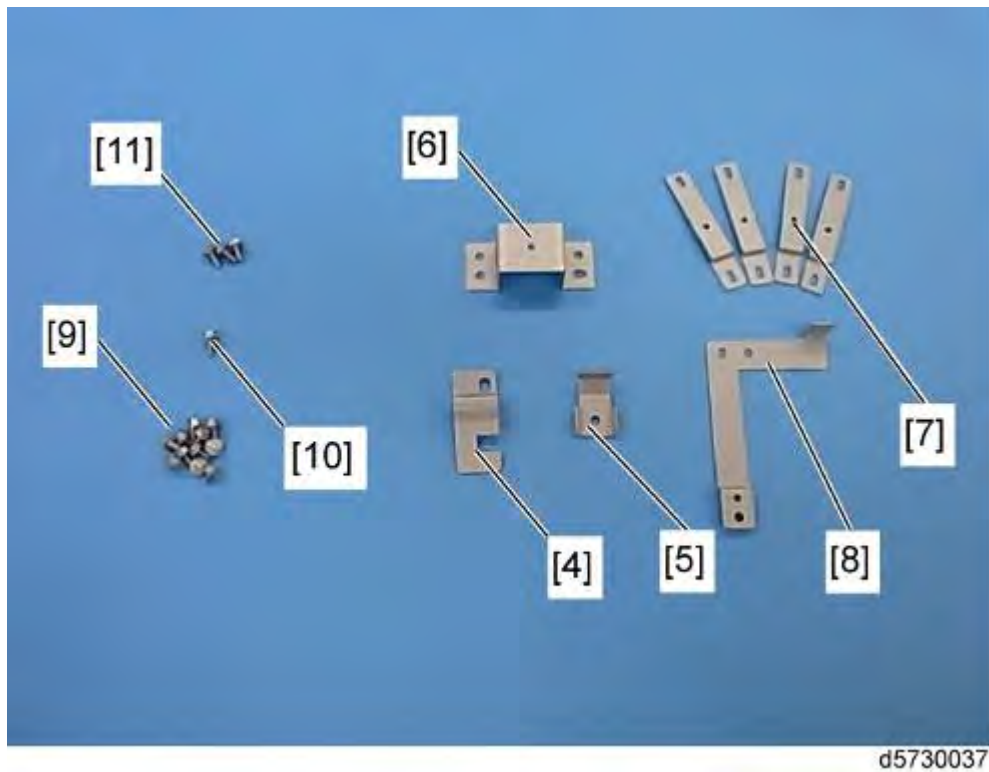
No.	Description	Q'ty	Remark
1	Anti-condensation heater	1	
2	Harness with the isolation cap	1	
3	M4 × 10: Screw	2	

Anti-condensation Heater (Optional Paper Feed Unit)



For Joining the Mainframe and Another Paper Feed Unit:

No.	Description	Q'ty
4	Joint bracket (Front left)	1
5	Joint bracket (Front right)	1
6	Joint bracket (Front center) (only for the optional paper feed unit)	1
7	Joint bracket (Rear)	4
8	Joint bracket (Frame) (only for optional paper feed unit)	1
9	M3 x 6: Screw	11
10	M3 x 12: Screw	1
11	Tapping screw	3



2.12.2 INSTALLATION PROCEDURE

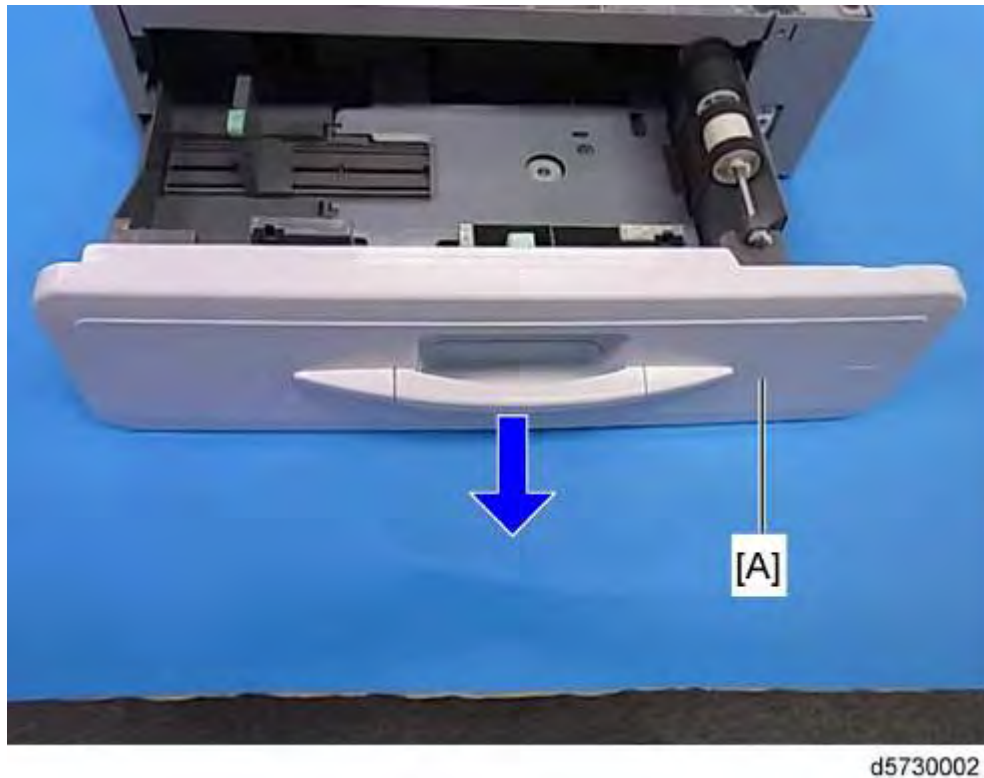
⚠ CAUTION

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

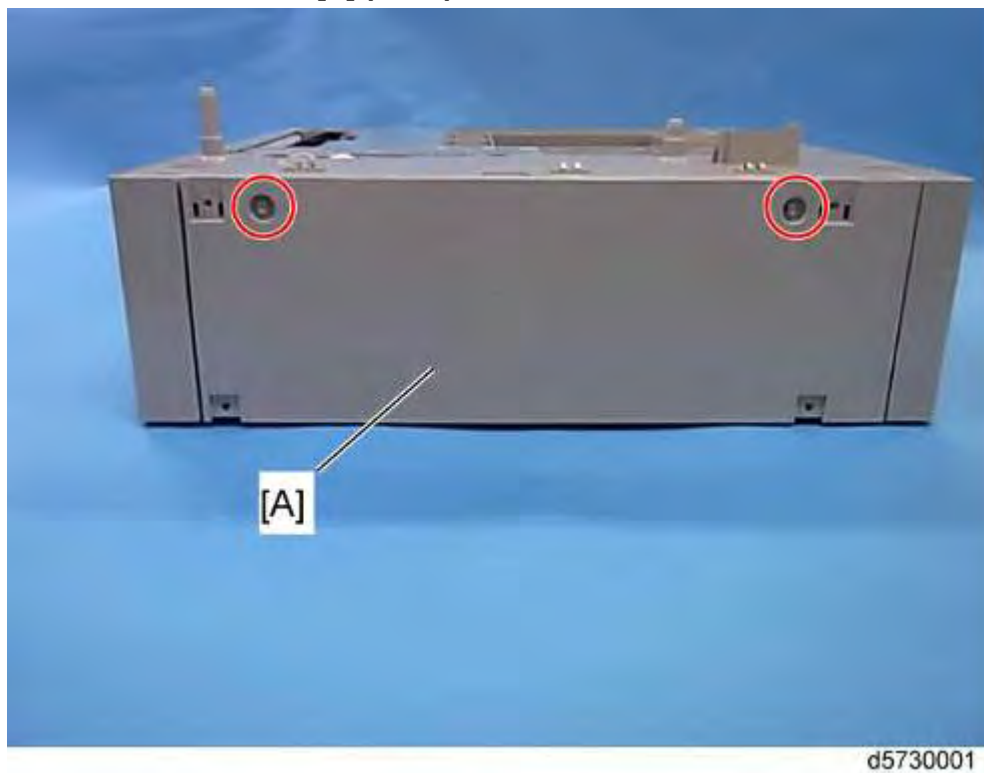
For Installing the Tray Heater on the 1st Paper Feed Unit

1. Pull out the tray [A] in the optional paper tray.

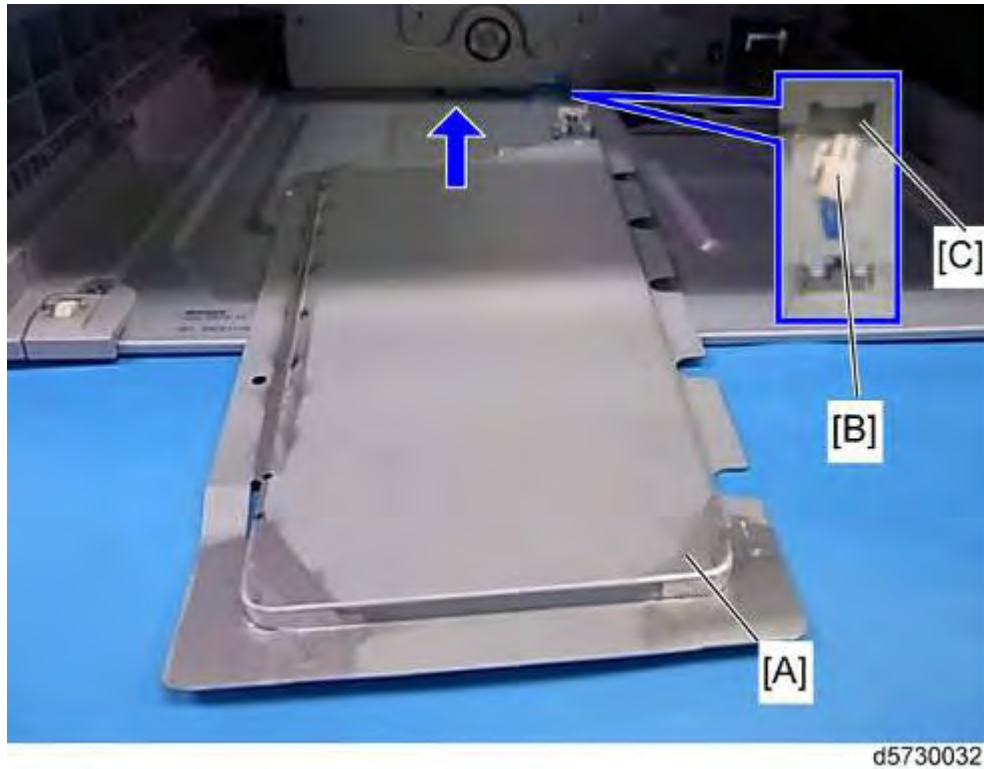
Anti-condensation Heater (Optional Paper Feed Unit)



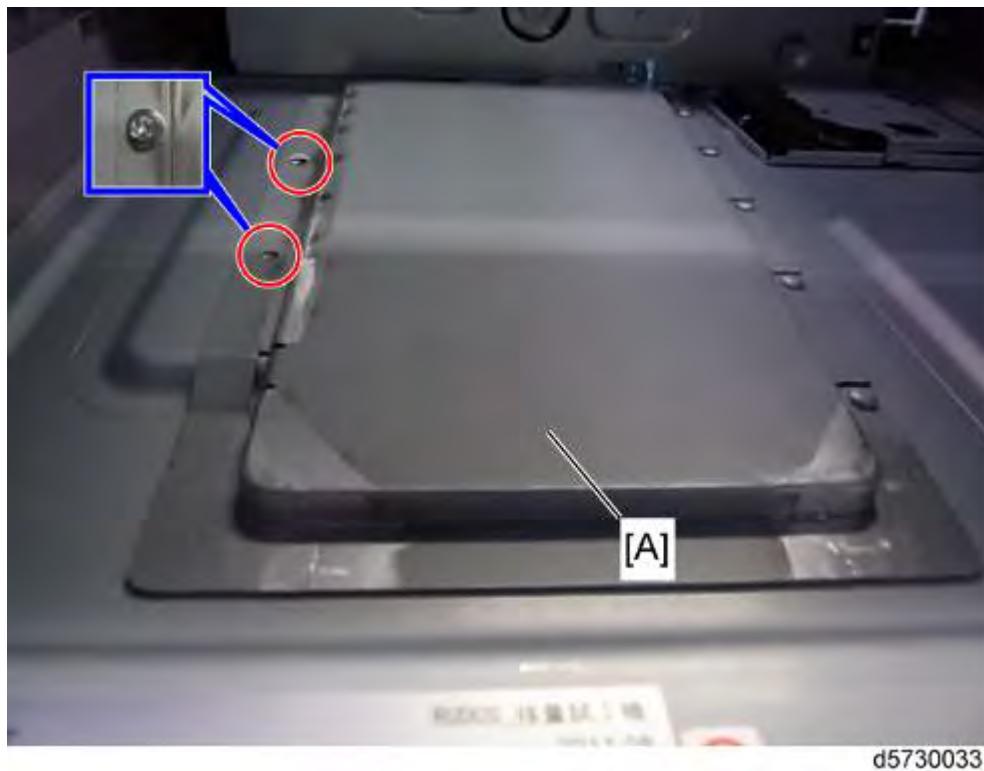
2. Remove the rear cover [A] (⚙️ x 2)



3. Remove the left cover. (page 4-4)
4. Slide in the tray heater [A], and pass the heater harness [B] through the square hole [C].



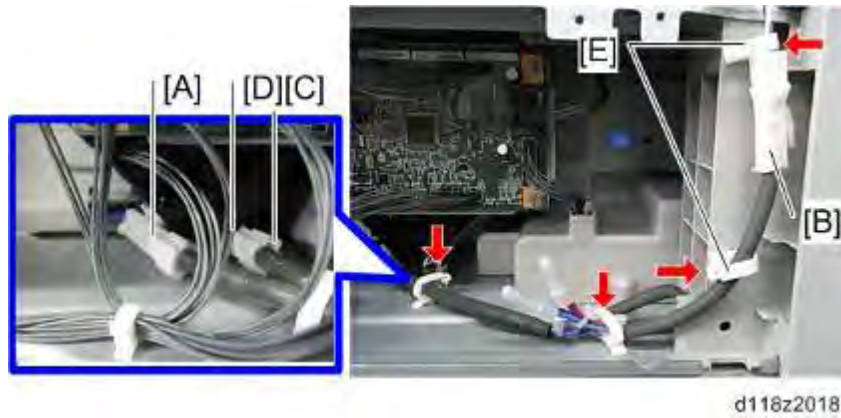
5. Install the tray heater [A] in the paper feed unit. (🔧 × 2)



6. Do the following steps:

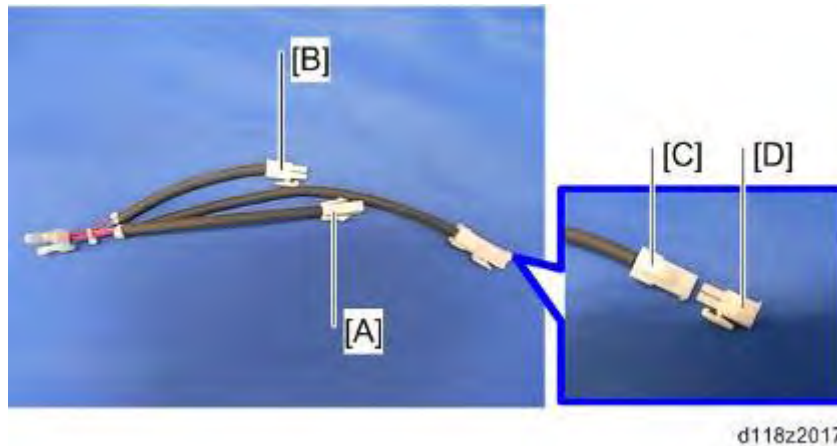
- Connect the connector [A] to the tray heater connector (attached in step 4). (🔧 × 1)
- Connect the harness [B] to the junction harness (mainframe).
- Attach two clamps [E] and route the harness through them. (🔧 × 4)

Anti-condensation Heater (Optional Paper Feed Unit)



Note

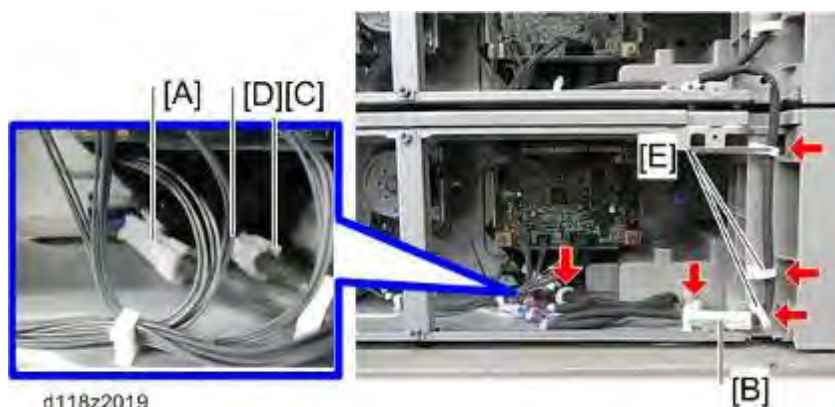
- A: For this tray heater
- B: For the mainframe
- C: For another optional tray heater
- D: Isolation cap (uncap if installing the heater for 2nd paper tray)



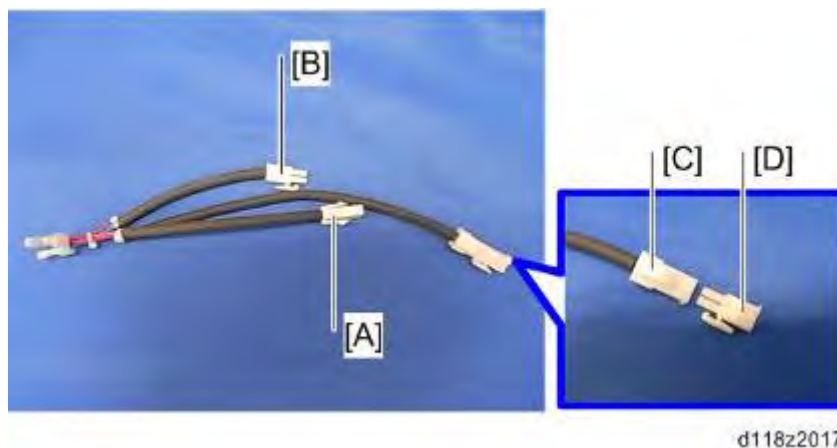
7. Reattach all the covers removed.

For Installing the Tray Heater on the 2nd Optional Paper Feed Unit

1. Do the same procedure for the 1st optional paper feed unit from step 1 to step 12.
2. Do the following steps:
 - Connect the harness [A] and heater connector for the 2nd tray.
 - Remove the cap on the 1st tray harness.
 - Connect the 2nd tray harness [B].
 - Attach three clamps [E] and route the harness through them. (🔗 × 5)

**Note**

- A: To the 2nd tray heater
- B: To the 1st tray heater harness
- C: Not used
- D: Cap

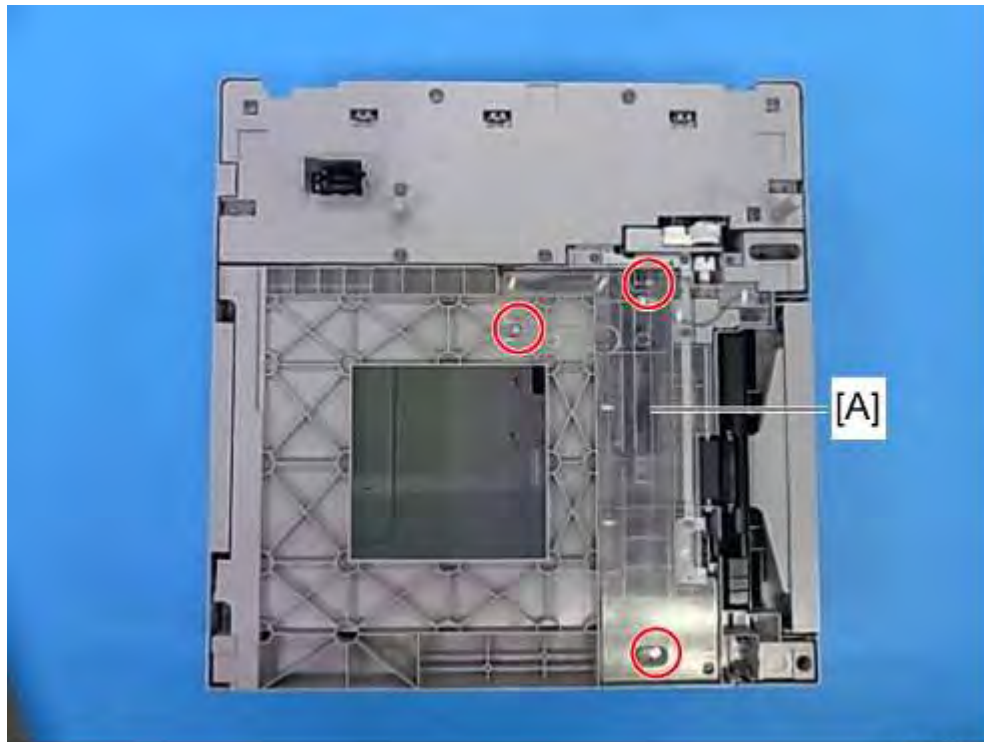


3. Reattach all the covers removed.

For Joining the Mainframe with the Optional Paper Feed Unit

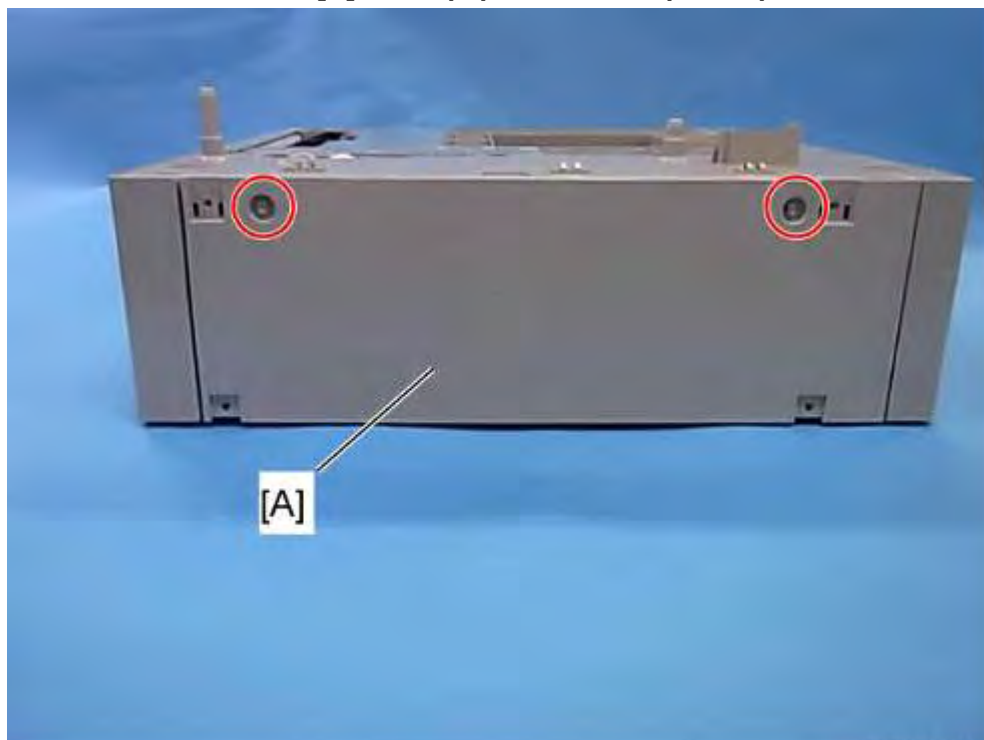
The mainframe and the optional paper feed unit should be joined with joint brackets after the anti-condensation heater installation, because the heater harness may be damaged when the mainframe is removed accidentally.

1. Remove the upper cover [A] of the paper feed unit. (🔧 × 3)



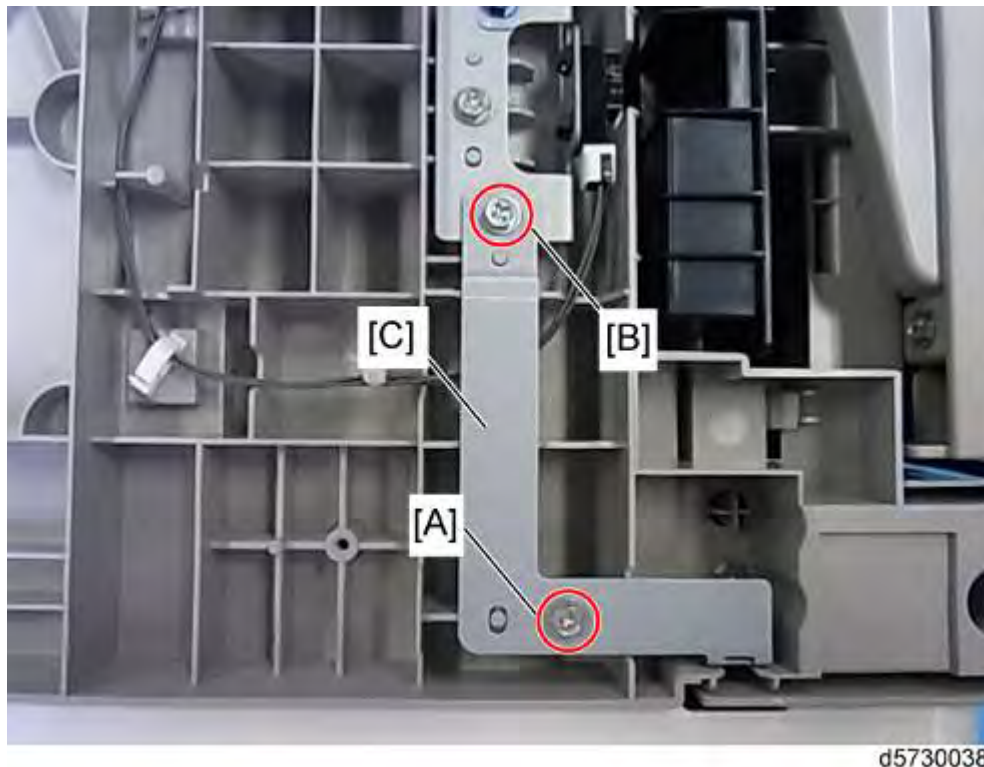
d5730007

2. Remove the rear cover [A] of the paper feed unit. (🔧 × 2)

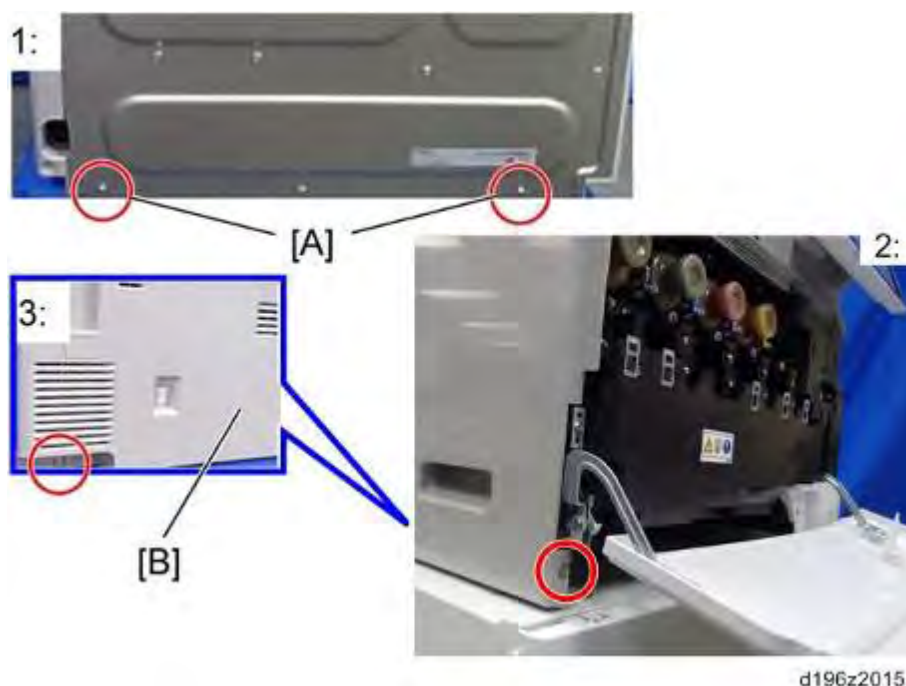


d5730001

3. Attach the jointing bracket (frame) [C] (🔩:Tapping × 1 [A], M3×6: 🔩 × 1 [B]) and the upper cover of the paper feed unit. (🔩 × 3)

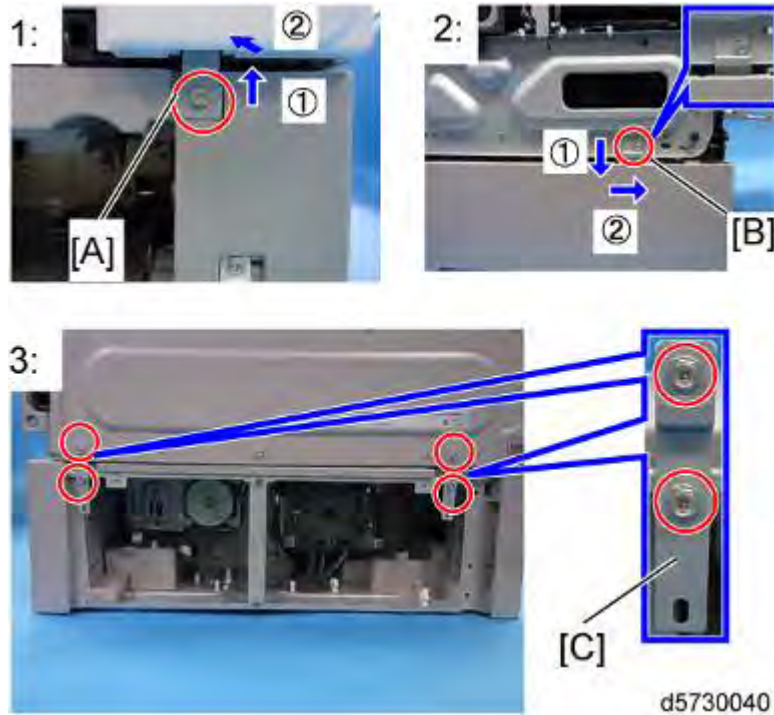


4. Put the mainframe on the paper feed unit.
5. Do the following steps.
- Remove the paper trays from the mainframe and the optional paper feed unit.
 - Remove two screws [A] on the rear panel of the mainframe. Keep these screws until the joint brackets (rear) are installed.
 - Remove the left cover [B] of the mainframe. (🔩 × 2)



- 1: Rear
- 2: Front
- 3: Left

6. Join the mainframe with the optional paper feed unit with four joint brackets [A] (front right), [B] (front left) and [C] (rear) (×2). These brackets are secured with the following screws.



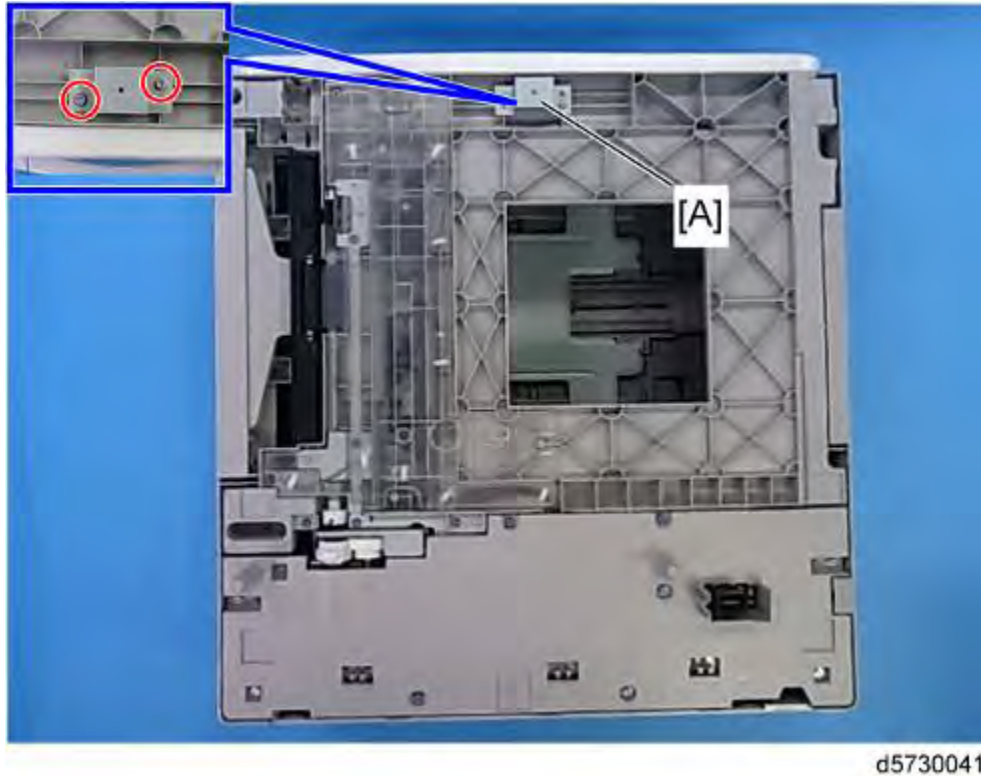
- 1: Front right
- 2: Left
- 3: Rear

- [A]: M3×12 (included in this kit)
- [B]: M3×6 (included in this kit)
- [C] (Upper): Existing screws (×2)
- [C] (Lower): M3×6 (included in this kit)

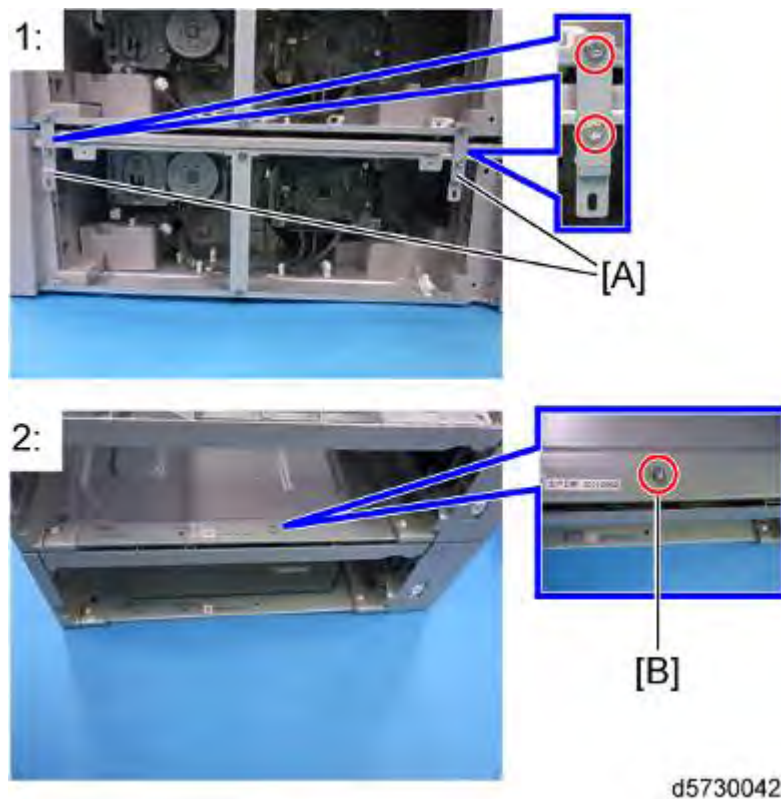
7. Reassemble the mainframe and the paper feed unit.

Joining Two Optional Paper Feed Units

1. Attach the joint bracket (front center) [A] to the paper feed unit that will be installed at the lowest position. (🔧: Tapping × 2 (included in this kit))



2. Put the optional paper feed unit on the paper feed unit that was fitted with the bracket [A] in step 1.
3. Remove the paper trays.
4. Join the two paper feed units with two joint brackets (rear) [A] and one screw [B]. (M3×6: 🔧 × 3 (included in this kit))



- 1: Rear
- 2: Front center
5. Reassemble the mainframe and the paper feed units.

⚠ CAUTION

- **Do not lift the machine together with one or more paper feed unit(s):**
If there is already a machine with one or more optional paper feed unit(s), be sure to disconnect the machine and paper feed unit(s), and lift them up separately when moving/transporting. Otherwise, the handle of the paper feed unit will break due to the mainframe's weight, and it can cause an injury.

⬇ Note

- When installing the mainframe with two paper feed units, join the two paper feed units first, and then join the mainframe with the paper feed units.

2.13 ENHANCED SECURITY HDD OPTION TYPE M10 (D792-09)

2.13.1 ACCESSORY CHECK

No.	Description	Q'ty
1	Enhanced Security HDD	1
-	EMC Address	1



d191b0076

2.13.2 INSTALLATION PROCEDURE

1. Remove the standard HDD installed. (page 4-1)
2. Separate the standard HDD from the bracket.



d196z2120

3. Disconnect the cables from the standard HDD. (🔧 × 2)



d191b0077

4. Remove the enhanced security HDD from its protective pack.



d191b0078

5. Connect the two cables to the enhanced security HDD. (🔧 × 2)



d191b0079

6. Fasten the HDD to the bracket. (🔩 × 4)

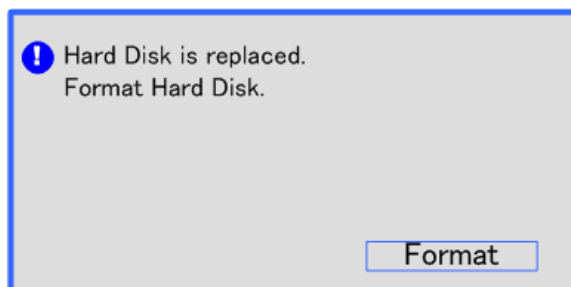


d196z2121

7. Install the HDD bracket in the mainframe. (🔩 × 3, 📏 × 2)
8. Reassemble the machine.

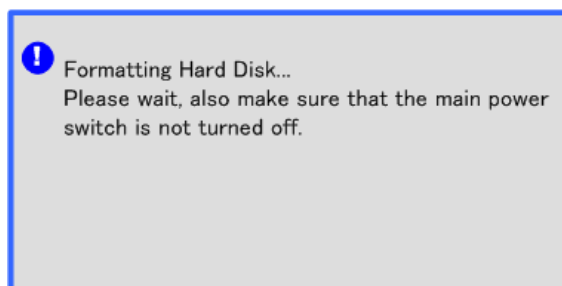
After Installing the HDD

1. Connect the power cord and turn the machine on. A message prompts you to format the hard disk.



d191b0081

2. Touch [Format].

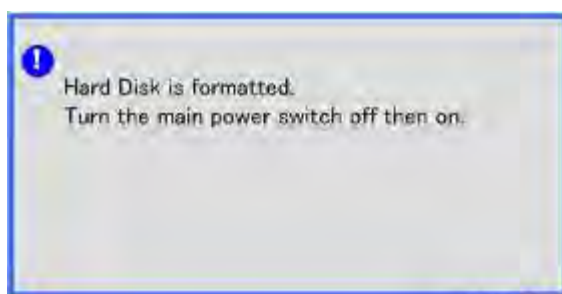


d191b0082

3. Wait for the machine to finish formatting the hard disk.

★ Important

- Do not touch the power switch while the hard disk format is in progress. Wait for the machine to tell you that the formatting is finished.



d191b0083

4. Cycle the machine off/on after the message tells you formatting is finished.
5. Enter the SP mode.
6. Do **SP5-846-040** to copy the address book to the hard disk from the controller board.
7. Do **SP5-846-041** to let the user get access to the address book.
8. Cycle the machine off/on.
9. Ask an administrator to register an HDD authentication code in the machine.

★ Important

- If the HDD Authentication Code is not registered, the function of the enhanced security HDD is not activated.

2.14 RICOH E-SHARING BOX (D668)

Refer to “RICOH e-Sharing Box Field Service Manual”.

2.15 IC CARD READER (EXTERNAL OPTION)

2.15.1 ACCESSORY CHECK

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



No.	Description	Q'ty
1	IC Card Reader	1
2	Bracket*	1
3	Screw	1

*The IC card reader attaching bracket has two types. One is for the base machine. The other is for machines that have the 1-Bin tray unit. This bracket [2] is for the base machine.

⚡ Note

- Consult your supervisor to obtain the bracket for machines that have the 1-Bin tray unit.

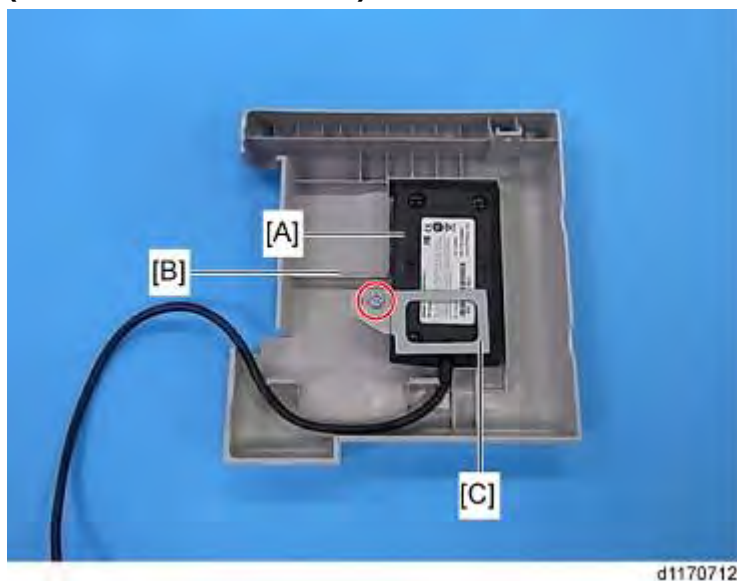
2.15.2 INSTALLATION PROCEDURE

⚠ CAUTION

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

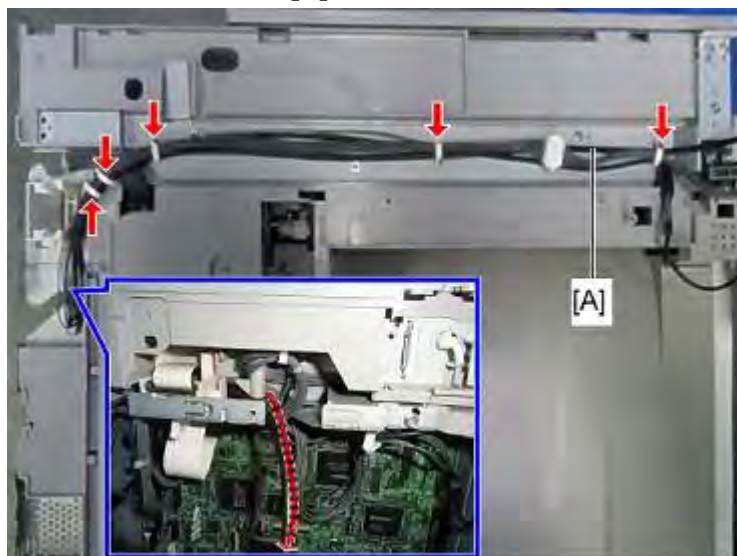
When Installing in a Machine That Does Not Have the 1-Bin Tray Unit

- Remove the following items.
 - Scanner unit (page 4-2)
 - Rear cover (page 4-1)
- Attach the IC card reader [A] to the rear of the upper right cover [B] with the bracket [C].
(🔩 × 1 included in this kit)



d1170712

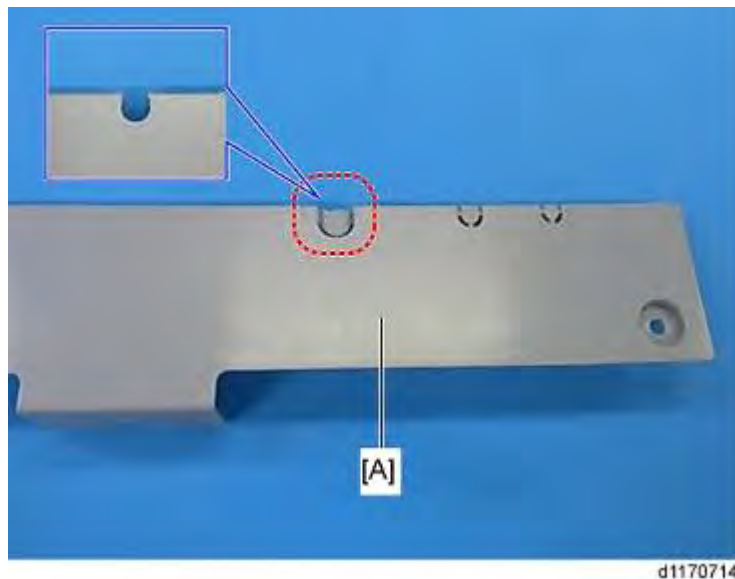
- Route the USB cable [A] from the IC card reader as shown below. (🔧 × 5)



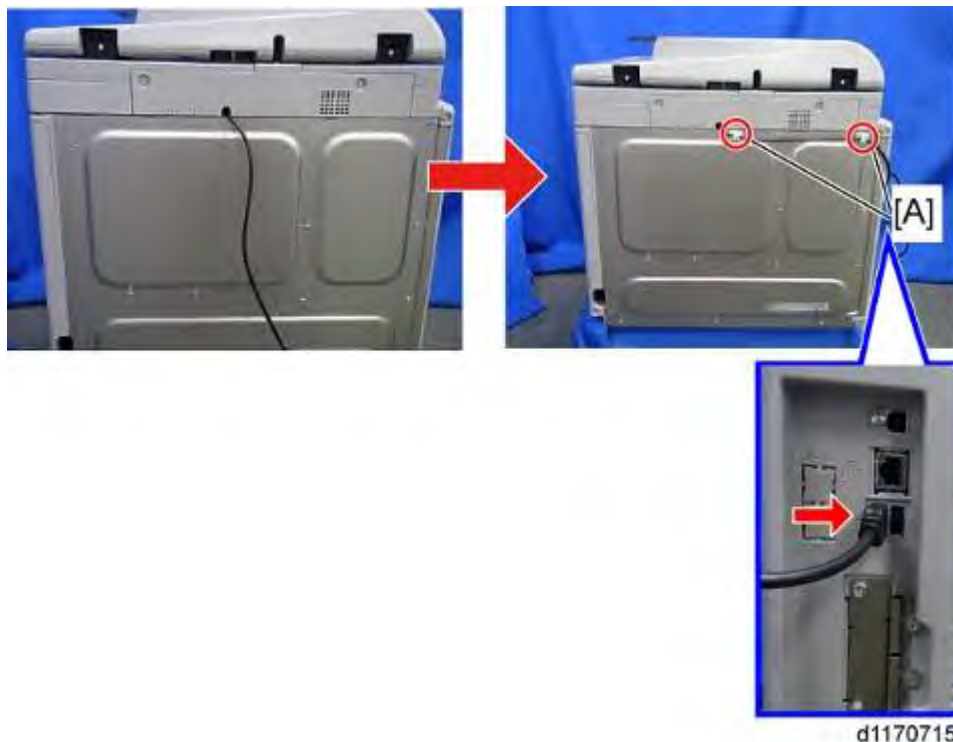
d1170713

- Pull out the USB cable from the rear of the machine.
- Cut out the hole for the USB cable to pass through the rear upper cover [A].

IC Card Reader (External Option)



6. Pass the USB cable from the IC card reader through the hole in the upper rear cover, and then reassemble the machine.
7. Do the following steps:
 - Attach the clamps [A] to prevent the cable from sagging.
 - Connect the USB cable to the USB connector at the left of the mainframe as shown below. Either connector can be used.

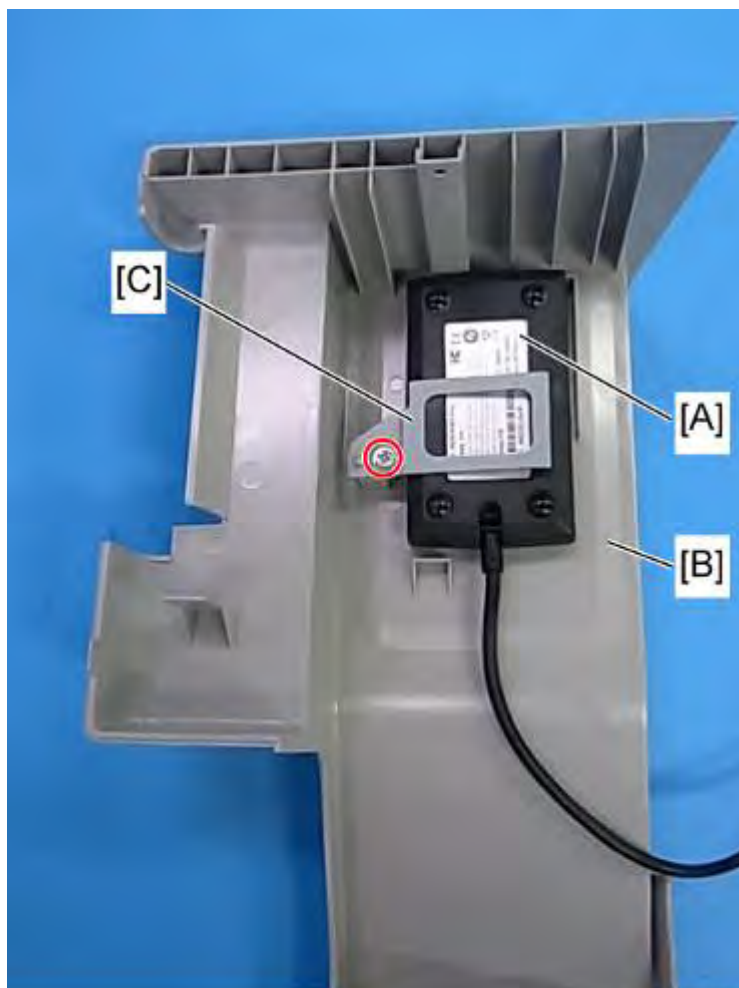


ⓘ Note

- Obtain these clamps [A] in advance, because they are not included in this kit.

When Installing in a Machine That Has a 1-Bin Tray Unit

1. Remove the following items.
 - Scanner unit (page 4-2)
 - Rear cover (page 4-1)
 - 1-bin tray unit (page 2-5)
2. Attach the IC card reader [A] to the rear of the upper right cover [B] with the bracket [C].
 (🔩 × 1 included in this kit)

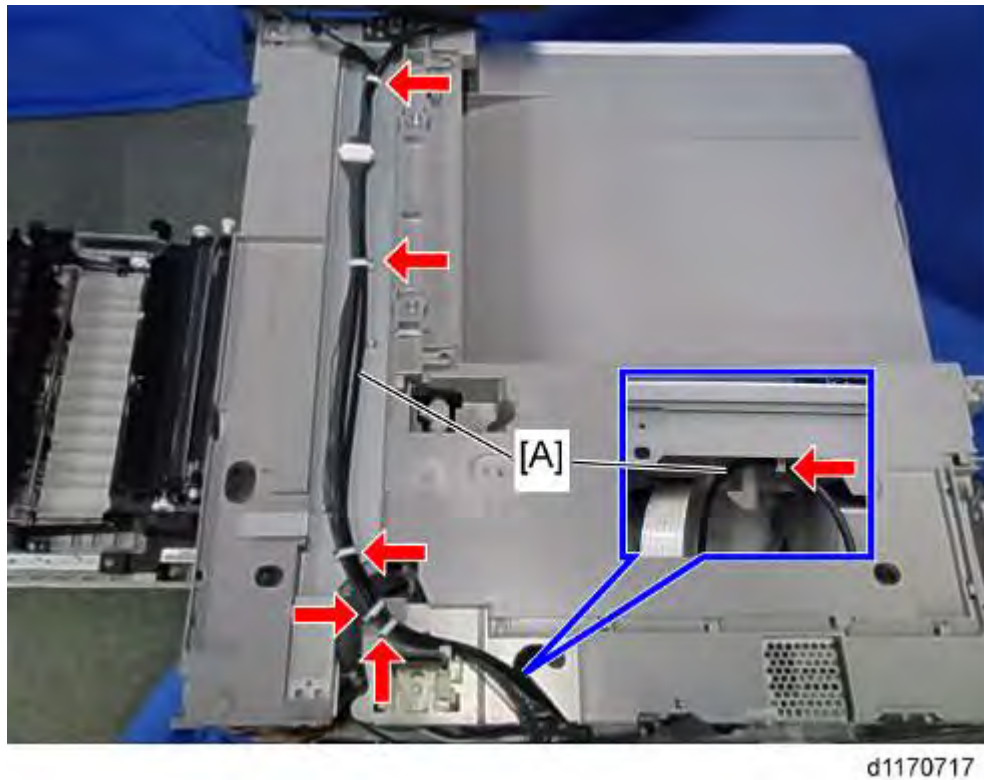


d1170716

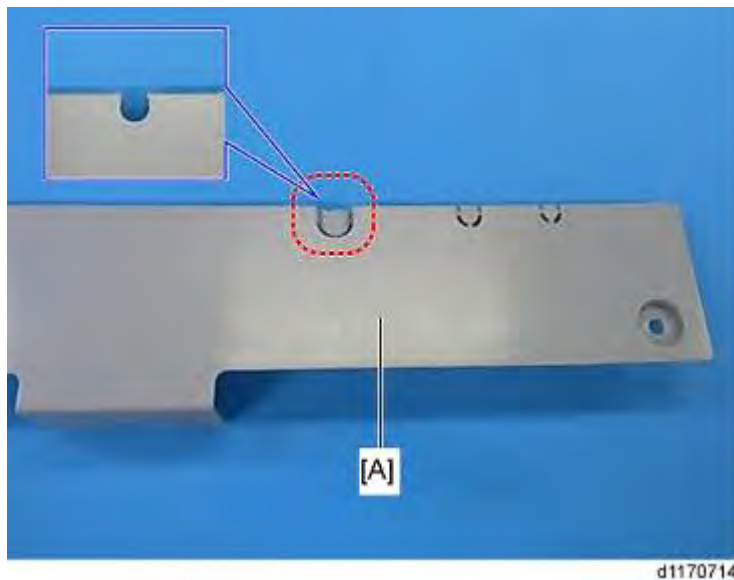
Note

- The bracket [C] is different from that of the base machine. The bracket for the base machine cannot be used. Consult your supervisor to obtain the correct bracket.

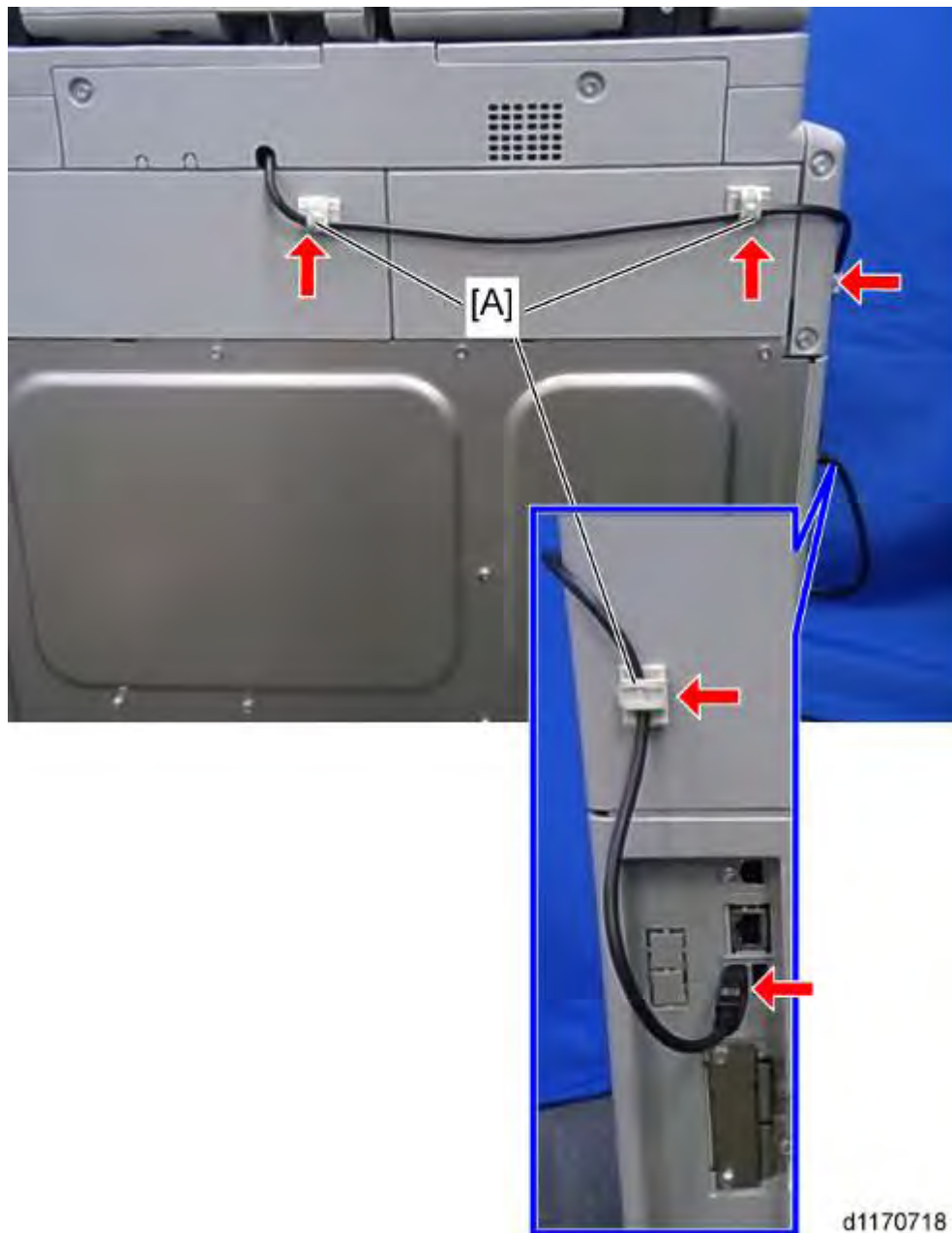
3. Route the USB cable [A] from the IC card reader as shown below. (🔧 × 6)



4. Pull out the USB cable from the rear of the machine in the same way as the installation on the base machine.
5. Cut out the hole for the USB cable to pass through the upper rear cover [A].



6. Pass the USB cable from the IC card reader through the hole in the upper rear cover, and then reassemble the machine.
7. Attach the clamps [A] to prevent the cable from sagging.



8. Connect the USB cable to the USB connector at the left of the mainframe as shown above. Either connector can be used.

Note

- Obtain these clamps [A] in advance, because they are not included in this kit.

2.16 NFC READER TYPE M13

2.16.1 ACCESSORY CHECK



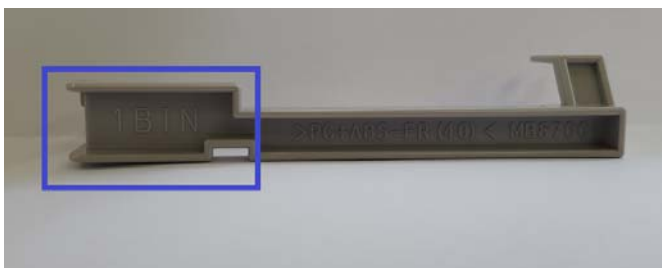
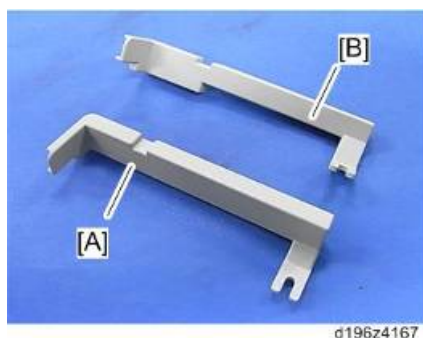
d196z4168

No.	Description	Q'ty
1	Cable Cover	2
2	USB Cable	1
3	NFC Reader	1
4	Ferrite Core	1
-	Caution Chart	1
-	EMC Address	1
-	Fastener	2
-	Decal	2
-	Label	1

↓ Note

- Two types of cable cover are included:
[A]: For a machine that has a 1-Bin tray unit installed the cable cover is inscribed "1 BIN."

[B]: For a machine that has no 1-Bin tray unit.



2.16.2 INSTALLATION PROCEDURE

This section includes the procedure for a machine that has no 1-Bin tray unit option. However, this procedure can be used for a machine that has a 1-Bin Tray Unit installed.

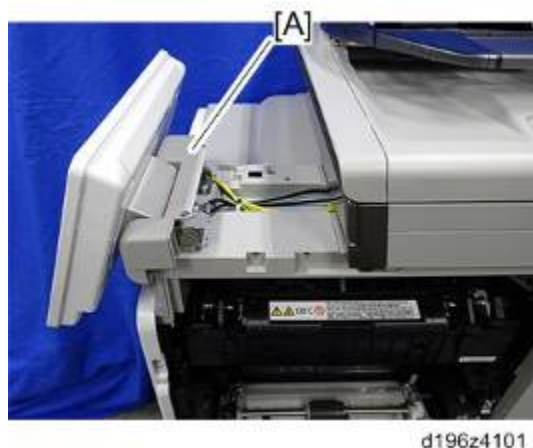
⚠ CAUTION

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

- Open the duplex unit.
- Remove the front right cover [A]. (🔑 × 1)



- Remove the front right small cover [A].



- Remove the connector cover [A] on the operation panel.



5. Make a loop with the USB cable of the NFC reader, and then attach the ferrite core [A].



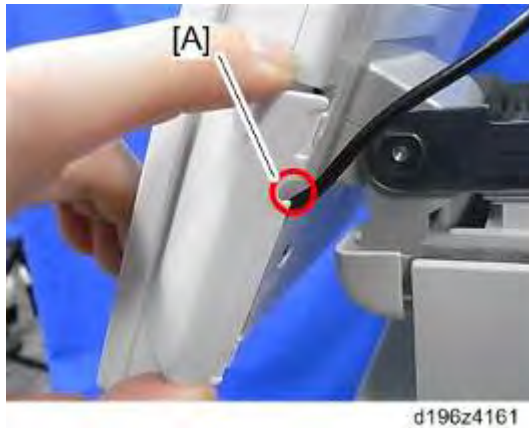
6. Connect the USB cable to the operation panel.



7. Attach the cover removed in step 4.

Note

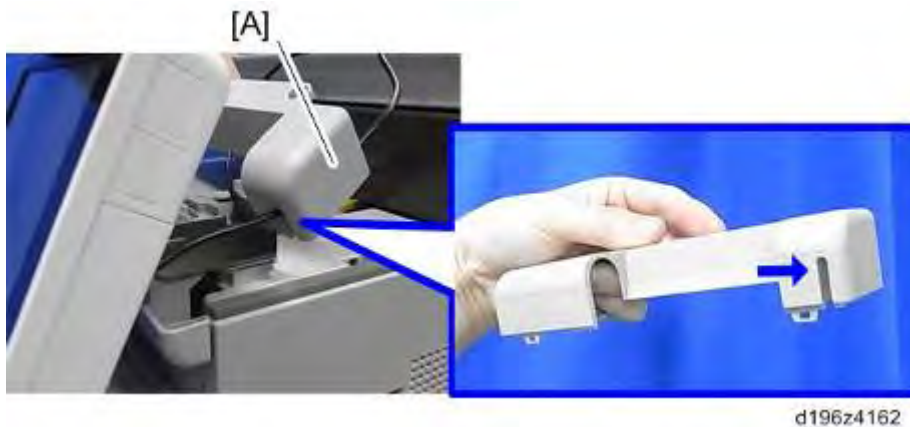
- Fit the cable into the slit [A] in the cover.



8. Attach the front right small cover [A].

⬇ Note

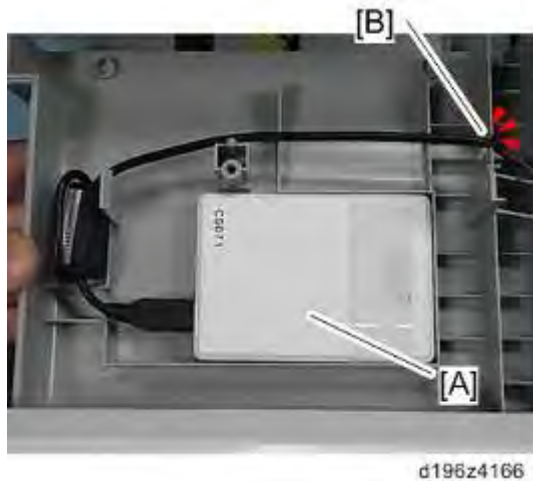
- Fit the cable into the slit.



9. Attach the fasteners to the front side of the NFC reader [A].



10. Attach the NFC reader [A] to the back side of the front right cover with adhesive tape.



Note

- Make sure that the cable fits in the slit [B].

11. Install the front right cover with the NFC reader.

12. Push the USB cable into the covers.



Note

- Again, make sure that the cable fits in the slit.

13. Slide the cable cover [A] into the front right small cover as shown below.



14. Secure the cable cover together with the front right cover. (🔩 × 1)
15. Attach the decal to the area [A] as shown below.



2.17 CONTROLLER OPTIONS

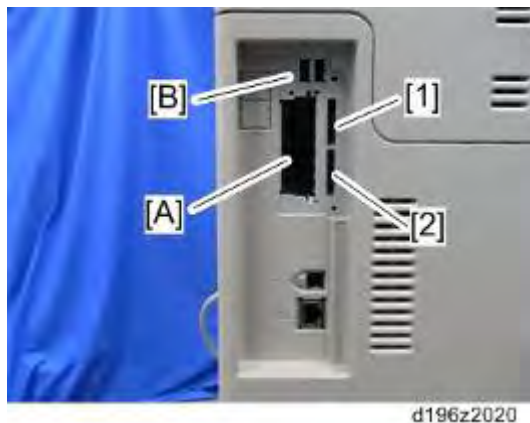
2.17.1 OVERVIEW

★ Important

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

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

After you install an option, check that the machine can recognize it (see page 2-9 "Check All Connections" at the end of this section).



I/F Card Slots

- Slot [A] is used for one of the optional I/F connections (only one can be installed): File Format Converter Type E, IEEE 1284, IEEE 802.11a/g/n Interface Unit, USB Device Server Option

SD Card Slots

- Slot 1 (upper) is used for optional applications (Camera Direct Print Card, XPS Direct Print Option, Data Overwrite Security Unit, OCR Unit).
- Slot 2 (lower) is used for service only (for example, updating the firmware).

USB Port

- These ports (right and left) [B] are used for the Bluetooth Interface Unit, or IC Card Reader.

2.17.2 SD CARD APPLI MOVE

Overview

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

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

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

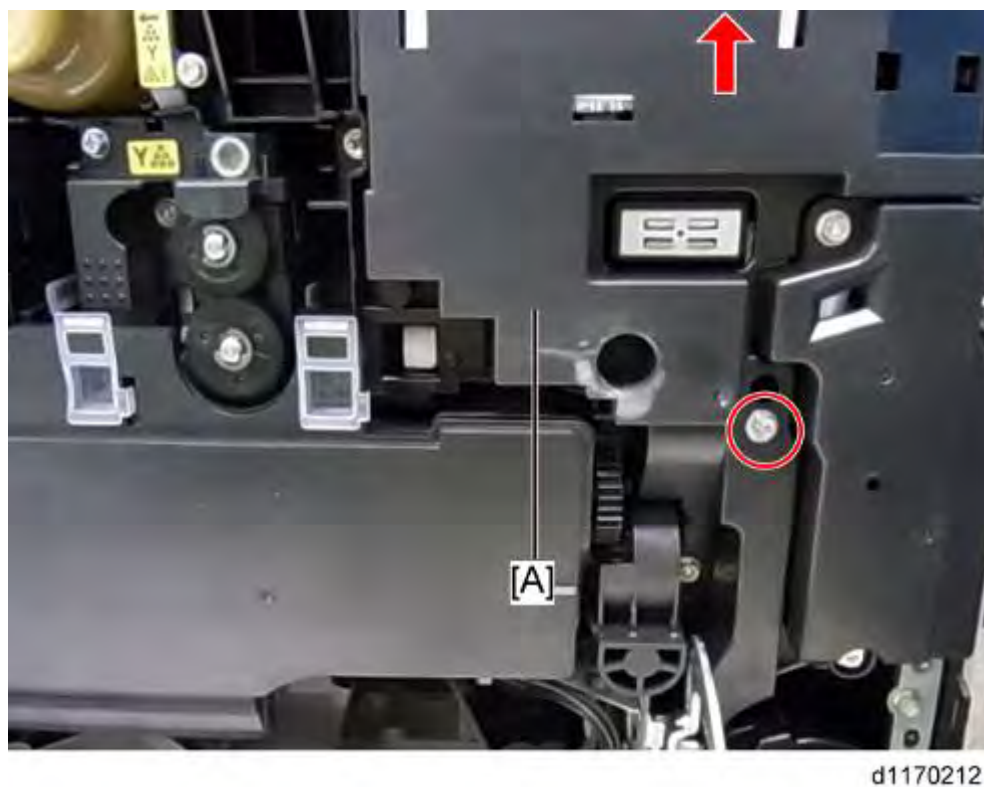
- The data necessary for authentication is transferred with the application program from an SD card to another SD card. Authentication fails if you try to use the SD card after you move the application program from one card to another card.
- Do not use the SD card if it has been used before for other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

1. Remove the paper tray.
2. Remove the cover [A]. (🔧 × 1)

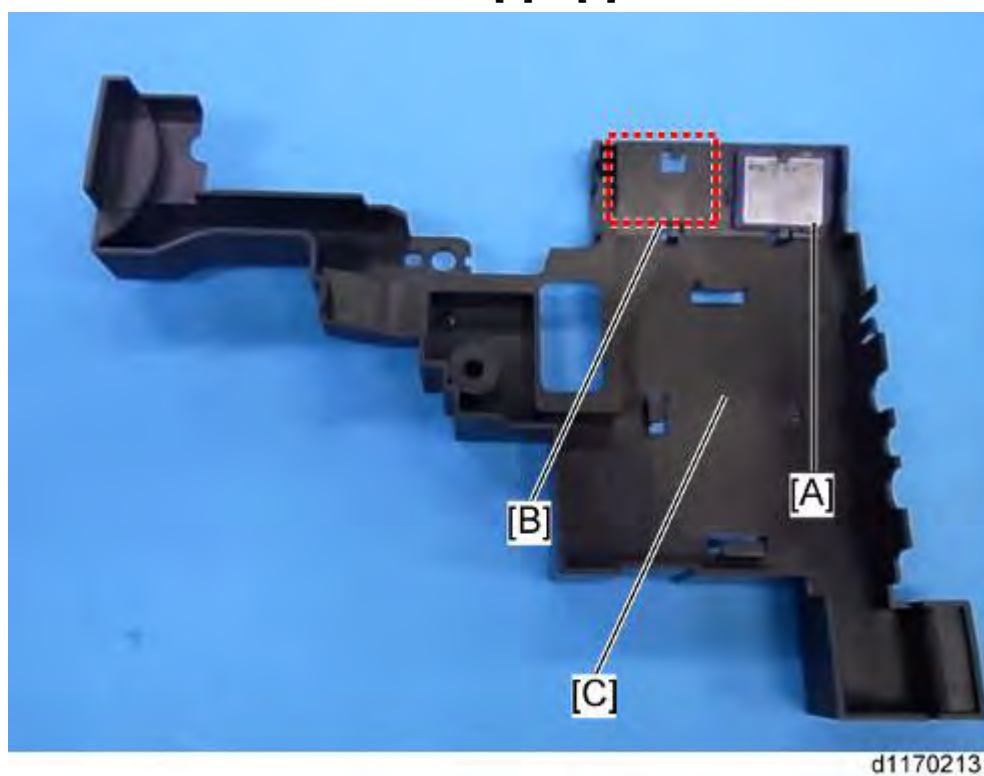


d1170210

3. Open the front door.
4. Remove the cover [A]. (🔧 × 1, hook × 1)



5. Insert the SD card into either socket [A] or [B].



Note

- The place [C] on the cover is for storing the SMC list.

6. Reassemble the machine.

- The original application SD card should be kept in a safe place, for the following reasons:
 - The SD card can be the only proof that the user is licensed to use the application program.
 - You may need to check the SD card and its data to solve a problem in the future.

Move Exec

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

★ Important

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

1. Turn OFF the main power.
2. Remove the SD card slot cover [A]. (🔧 × 1)



3. Make sure that a target SD card is in SD Card Slot 1 (upper). The application program is moved to this SD card.
4. Insert the source SD card with the application program in SD Card Slot 2 (lower). The application program is copied from this source SD card.
5. Turn the main switch ON.
6. Enter the SP mode.
7. Select SP5-873-001 "Move Exec".
8. Follow the messages shown on the operation panel.
9. Turn the main switch OFF.
10. Remove the source SD card from SD Card Slot 2 (lower).
11. Attach the slot cover.
12. Turn the main switch ON.
13. Check that the application programs run properly.

Undo Exec

"Undo Exec" (SP5-873-002) lets you move back application programs from an SD card in SD Card Slot 1 (upper) to the original SD card in SD Card Slot 2 (lower). You can use this program when, for example, you have mistakenly copied some programs by using Move Exec (SP5-873-001).

Important

- Do not turn ON the write protect switch of the system SD card or application SD card on the machine. If the write protect switch is ON, a download error (e.g. Error Code 44) occurs during a firmware upgrade or application merge.
1. Turn the main switch OFF.
 2. Insert the original SD card in SD Card Slot 2 (lower). The application program is copied back into this card.
 3. Insert the SD card with the application program in SD Card Slot 1 (upper). The application program is copied back from this SD card.
 4. Turn the main switch ON.
 5. Start the SP mode.
 6. Select SP5-873-002 "Undo Exec."
 7. Follow the messages shown on the operation panel.
 8. Turn the main switch OFF.
 9. Remove the SD card from SD Card Slot 2 (lower).
 10. Turn the main switch.
 11. Check that the application programs run normally.
 12. Make sure that the machine can recognize the option (see page 2-9 "Check All Connections" at the end of this section).

2.17.3 FILE FORMAT CONVERTER TYPE E

CAUTION

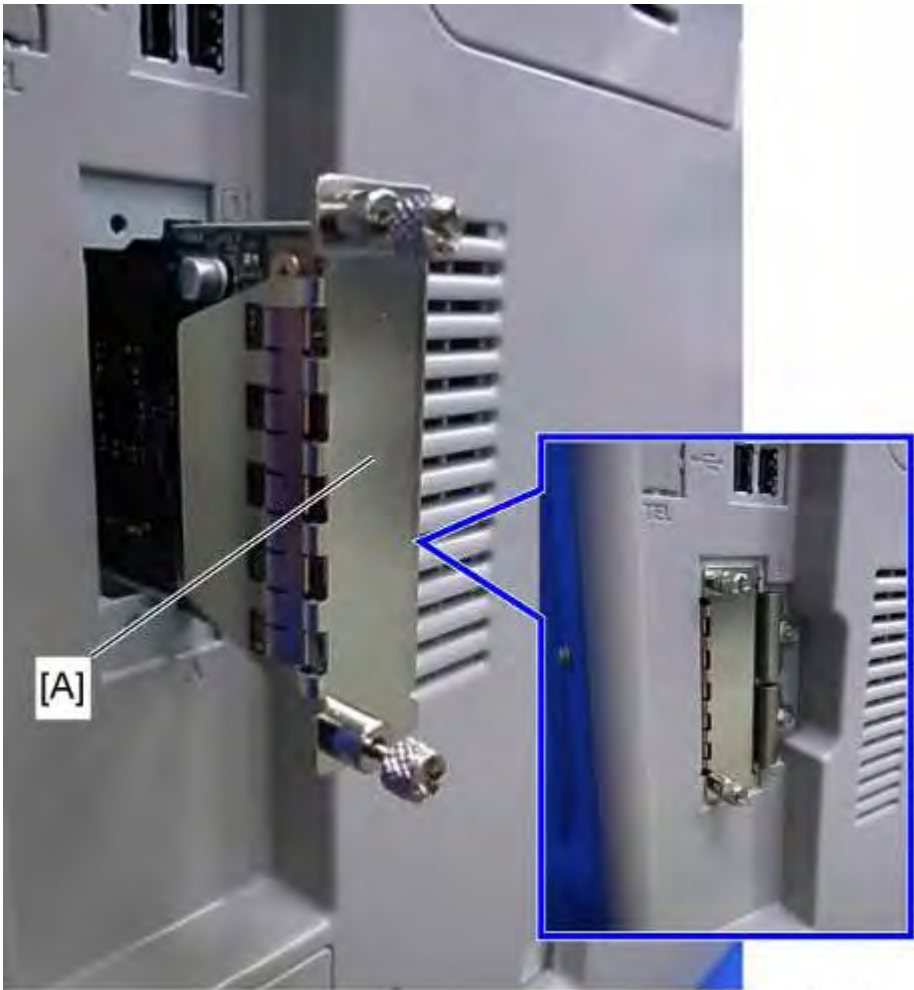
- Unplug the main machine power cord before you do the following procedure.
- You can only install one of the following interfaces at one time: (File format converter, IEEE 802.11a/g/n Interface Unit, IEEE1284, Bluetooth).

1. Remove the slot cover [A]. ( × 2)



d196z2026

2. Install the file format converter [A] into the slot and then fasten it with screws.



d1170021

3. Plug in and turn on the main power switch.
4. Check or set the following SP codes with the values shown below.

SP No.	Title	Setting
SP5-836-001	Capture Function (0:Off 1:On)	"1"
SP5-836-002	Panel Setting	"0"

5. Make sure that the machine can recognize the option (see page 2-9 at the end of this section).

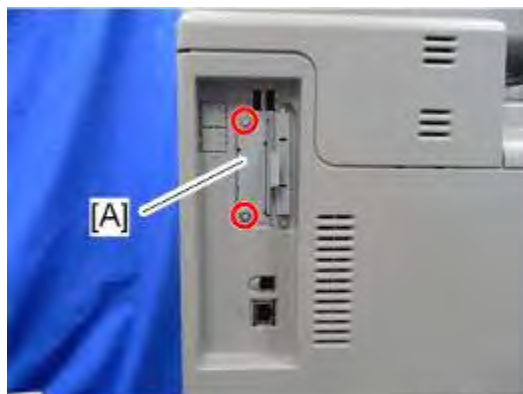
2.17.4 IEEE 1284 INTERFACE BOARD TYPE A

CAUTION

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

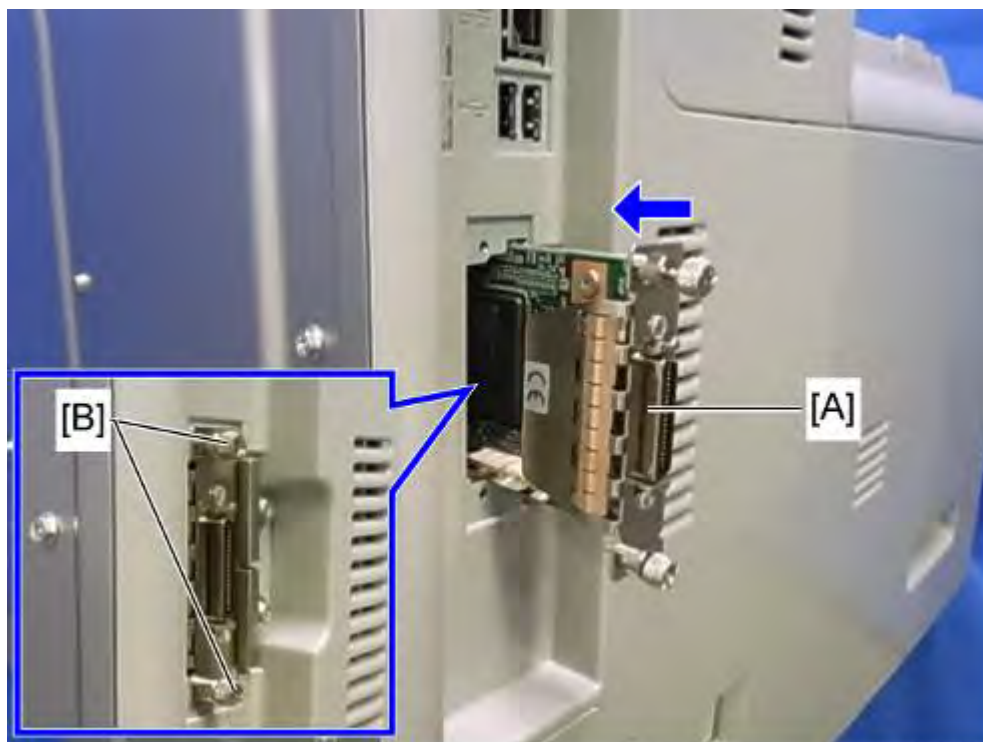
You can only install one of the following network interfaces at a time: (IEEE 802.11a/g/n Interface Unit, IEEE1284, File format converter).

1. Remove the slot cover [A]. (🔩 x 2)



d196z2026

2. Install the interface board [A] into the slot. (Knob-screw x 2 [B])



d1170019a

3. Make sure that the machine can recognize the option (see page 2-9 "Check All Connections" at the end of this section).

2.17.5 IEEE 802.11A/G/N INTERFACE UNIT TYPE M2

⚠ CAUTION

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

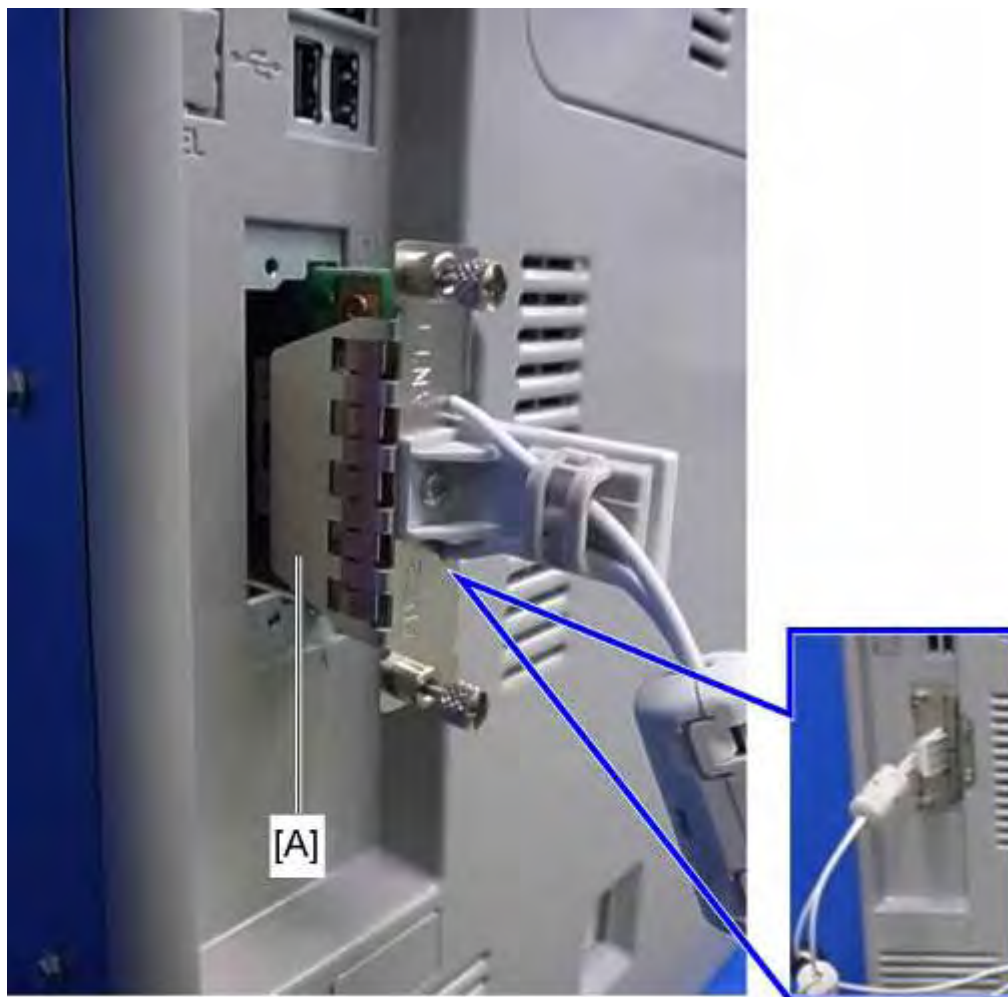
You can only install one of the following network interfaces at one time: (IEEE 802.11a/g/n Interface Unit, IEEE1284, Bluetooth, File format converter).

1. Remove the slot cover [A] from the board slot. (Knob  × 2)



d196z2026

2. Install the wireless LAN board [A] (Knob  × 2) into the board slot.



d1170022

3. Make sure that the machine can recognize the option (see page 2-9 "Check All

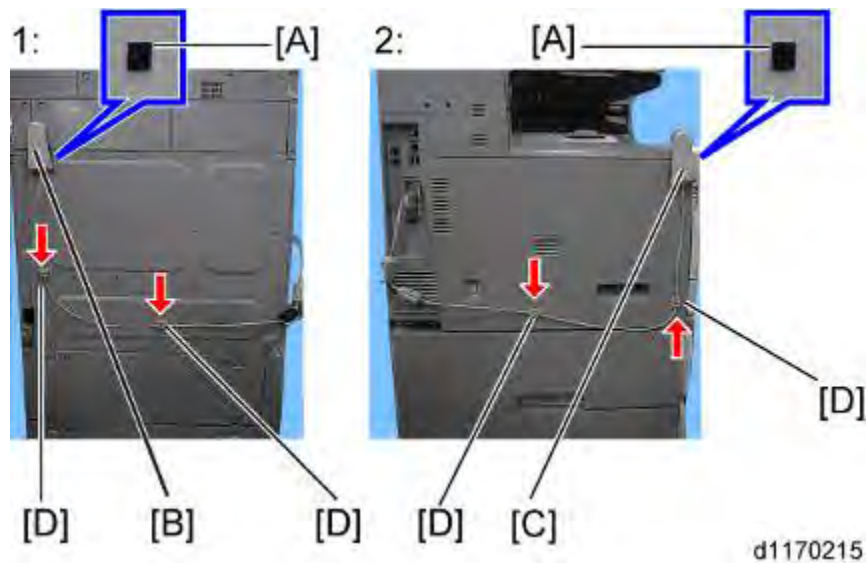
Connections" at the end of this section).

4. Do the following steps.

- Peel off the double-sided tapes on the Velcro fasteners [A], and then attach them [A] at the front left and rear of the machine.
- Attach "ANT1" (having a black ferrite core) [B] to the rear of the machine.
- Attach "ANT2" (having a white ferrite core) [C] to the front left (forward) of the machine.

Note

- "ANT1" is a transmission/reception antenna and "ANT2" is a reception antenna. Do not attach them at the wrong places.
- Attach the clamps [D] as shown below.



1: Rear

2: Left

5. Wire the cables and clamp them. (× 4)

Note

- Make sure that the cables are not slack. Keep them wired tightly along the covers.

You may have to move the machine if the reception is not clear.

- Make sure that the machine is not located near an appliance or any type of equipment that generates strong magnetic fields.
- Put the machine as close as possible to the access point.

UP Mode Settings for Wireless LAN

Enter the UP mode. Then do the procedure below to perform the initial interface settings for IEEE 802.11a/g/n. These settings take effect every time the machine is powered on.

↓ Note

- You cannot use the wireless LAN if you use Ethernet.
- The Bluetooth interface unit and the Wireless LAN interface unit cannot be used simultaneously.

1. Press the "User Tools/Counter" key.
2. On the touch panel, press "System Settings".

↓ Note

- The Network I/F (default: Ethernet) must be set for either Ethernet or wireless LAN.

3. Select "Interface Settings" > "Wireless LAN". Only the wireless LAN options show.
4. Set the "Communication Mode".
5. Enter the SSID setting. (The setting is case sensitive.)
6. Set the "Ad-hoc Channel". You need this setting when Ad Hoc Mode is selected.

Region A (mainly Europe and Asia)

Range: 1-13, 36, 40, 44 and 48 channels (default: 11)

In some countries, only the following channels are available:

Range: 1-11 channels (default: 11)

Region B (mainly North America)

Range: 1-11, 36, 40, 44 and 48 channels (default: 11)

↓ Note

- The allowed range for the channel settings may vary for different countries.

7. Set the "Security Method" to specify the encryption of the Wireless LAN.

- The WEP (Wired Equivalent Privacy) setting is designed to protect wireless data transmission. The same WEP key is required on the receiving side to unlock encoded data. There are 64 bit and 128 bit WEP keys.

Range of Allowed Settings:

64 bit: 10 characters

128 bit: 26 characters

- Specify "WPA2" when "Communication Mode" is set to "Infrastructure Mode". Set the "WPA2 Encryption Method" and "WPA2 Authent. Method".

WPA2 Encryption Method: CCMP (AES) is fixed.

WPA2 Authent. Method: Select either "WPA2-PSK" or "WPA2".

If you select "WPA2-PSK", enter the pre-shared key (PSK) of 8 -63 characters in ASCII code. When "WPA2" are selected, authentication settings and certificate installation settings are required.

8. Press "Wireless LAN Signal" to check the machine's radio wave status using the operation panel.

9. Press "Restore Factory Defaults" to initialize the following settings:

- Transmission mode
- Channel
- WEP
- SSID
- WEP Key

SP Mode and UP Mode Settings for IEEE 802.11a/g/n

The following SP commands and UP modes can be set for IEEE 802.11a/g/n:

SP No.	Name	Function
5840-011	WEP Key Select	Used to select the WEP key (Default: 00).
UP mode	Name	Function
	SSID	Used to confirm the current SSID setting.
	WEP Key	Used to confirm the current WEP key setting.
	WEP Mode	Used to show the maximum length of the string that can be used for the WEP Key entry.

2.17.6 BLUETOOTH INTERFACE UNIT TYPE D** CAUTION**

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

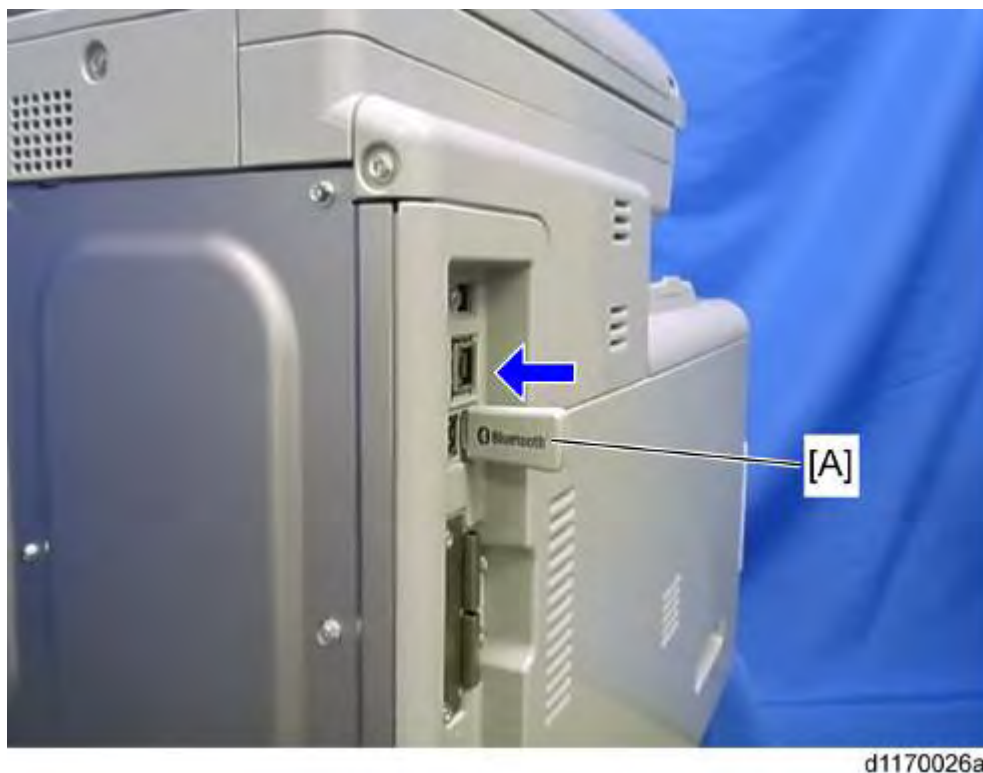
** CAUTION**

- Do not remove the Bluetooth unit while the power of the machine is on.

** Note**

- You cannot install this option together with IEEE 802.11a/g/n.

1. Turn OFF the power of the machine, and then unplug the power cable from the wall outlet.
2. Insert the Bluetooth Interface adapter [A] into the USB connector (Either USB connector can be used).



3. Plug the power cable and turn ON the power of the machine.
4. Make sure that the machine can recognize the option (see page 2-9 "Check All Connections" at the end of this section).

2.17.7 CAMERA DIRECT PRINT CARD TYPE M13

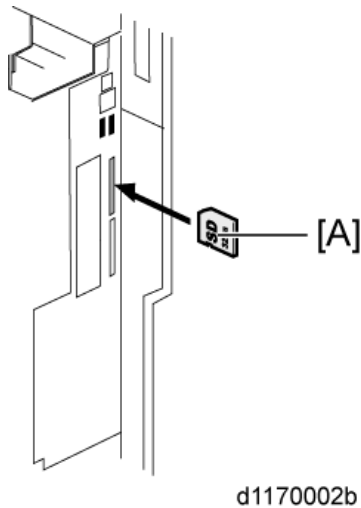
⚠ CAUTION

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

1. Remove the SD-card slot cover [A] from the SD card slots. (🔑 × 1)



2. Insert the SD card (PictBridge) in SD slot 1 (upper) with its label face [A] to the rear of the machine.



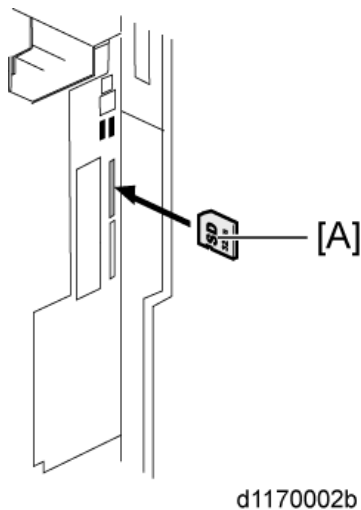
3. Attach the SD-card slot cover, and then turn on the machine (🔑 × 2).
4. Make sure that the machine can recognize the option. (see page 2-9 "Check All Connections" at the end of this section)

2.17.8 OCR UNIT TYPE M13

1. Turn OFF the main power.
2. Remove the SD card slot cover. (🔑 × 1)



3. Insert the SD card in SD slot 1 (upper) with its label face [A] to the rear of the machine.



4. Turn ON the main power.

5. Press "Enter" in SP5-878-004 (Option Setup: OCR Dictionary).

The SD card ID is saved in the NVRAM, and the ID of the MFP is saved on the SD card. The MFP and SD card are thereby linked.

6. When "operation complete" is displayed, press "Close".

↓ Note

- If installation fails, "Failed" is displayed.
- If installation fails, perform the following steps.

1. Check whether it is a used SD card.

2. Turn the main power OFF, and repeat steps 1-5.

7. Turn the main power OFF/ON.

8. Press "Enter" in SP5-878-004 (Option Setup: OCR Dictionary).

Dictionary data is copied to the HDD.

↓ Note

- On the first run, SP5-878-004 links the SD card, and on the second run, copies dictionary data.

9. Turn the main power OFF, and remove the SD card from the SD card slot.

↓ Note

- Keep the SD card in the SD card storage location of the MFP. The original SD card is needed in the event of a HDD malfunction.

10. Return the SD card slot cover to the original position.

11. Turn the main power ON.

12. Press [Send File Type / Name] on the [Scanner] screen.



13. Check if [OCR Settings] is displayed on the [Send File Type / Name] screen.



Note

- After installation, the OCR setting can be changed on the "OCR setting" screen.
- When setting OCR, set [OCR setting] to [Yes]. (Default setting: [No])

Recovery Procedure

When this option is installed, a function is saved on the HDD, and ID information on the SD card is saved in the NVRAM. Therefore, when replacing the HDD and/or NVRAM, this option must be reinstalled.

When storing the original SD card and;

- When only the HDD is replaced;
Reinstall using the original SD card.
- When only the NVRAM is replaced;
When performing upload/download of NVRAM data, reinstall using the original SD card.
When not performing upload/download of NVRAM data, order and reinstall a new SD card (service part).
- When the HDD and NVRAM are replaced simultaneously;
Reinstall using the original SD card.

If the original SD card is lost;

Order and reinstall a new SD card (service part).

Note

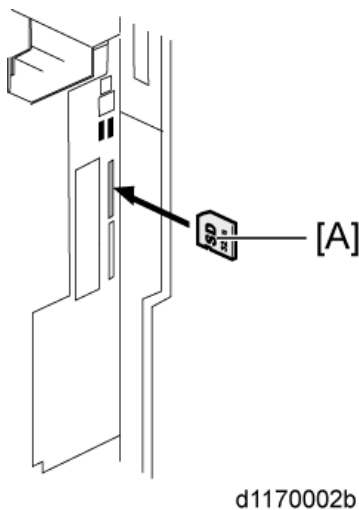
- Perform reinstallation in the same way as installation.

2.17.9 XPS DIRECT PRINT OPTION TYPE M13

1. Turn OFF the main power.
2. Remove the SD card slot cover [A]. (🔧 × 1)



3. Insert the SD card (XPS) in SD slot 1 (upper) with its label face [A] to the rear of the machine.



4. Merge the SD card contents if necessary. (page 2-1)
5. Attach the SD card slot cover. (🔧 × 1)
6. Turn ON the machine.
7. Print out the “Configuration Page”, and then check if this option is correctly recognized.

User Tools > Machine Features > Printer Features > List/Test Page > Configuration Page

2.17.10 DATA OVERWRITE SECURITY UNIT TYPE I

Overview

This option should be installed only for the customer who requires the **CC certified Data Overwrite Security function**.

The function of this option is completely the same as the Data Overwrite Security in Security Functions, which is standard on this machine.

Before You Begin the Procedure

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

Important

- If you install any version other than **"Type I"**, you have to replace the NVRAM and do this installation procedure again.

2. Make sure that the following settings are not at their factory default values:

- Supervisor login password
- Administrator login name
- Administrator login password

If any of these settings is at a factory default value, tell the customer these settings must be changed before you do the installation procedure.

3. Make sure that "Admin. Authentication" is ON.

[System Settings] – [Administrator Tools] – [Administrator Authentication Management] - [Admin. Authentication]

If this setting is OFF, tell the customer this setting must be ON before you do the installation procedure.

4. Make sure that "Administrator Tools" is enabled (selected).

[System Settings] – [Administrator Tools] – [Administrator Authentication Management] - [Available Settings]

If this setting is disabled (not selected), tell the customer this setting must be enabled (selected) before you do the installation procedure.

Seal Check and Removal

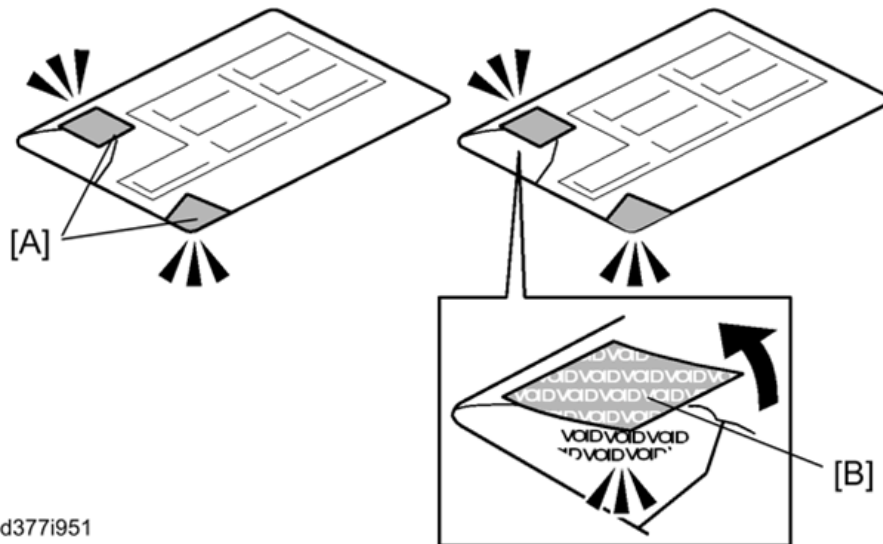
CAUTION

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

1. Check the box seals [A] on each corner of the box.

- Make sure that a tape is attached to each corner.
- The surfaces of the tapes must be blank. If you see "VOID" on the tapes, do not install the components in the box.

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

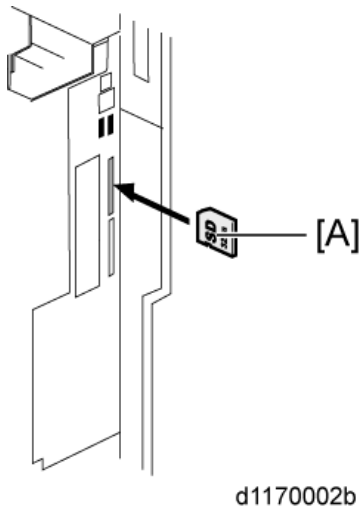


Installation Procedure

1. Turn the main power OFF.
2. Remove the SD card slot cover. (🔧 × 1)



3. Insert the SD card (DataOverwriteSecurity Unit) in SD slot 1 (upper) [A] with its label face towards the front of the machine. Then push it slowly into SD slot 1 (upper) until you hear a click.



4. Install the application using SP5-878-001.

2.17.11 USB DEVICE SERVER OPTION TYPE M12

⚠ CAUTION

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

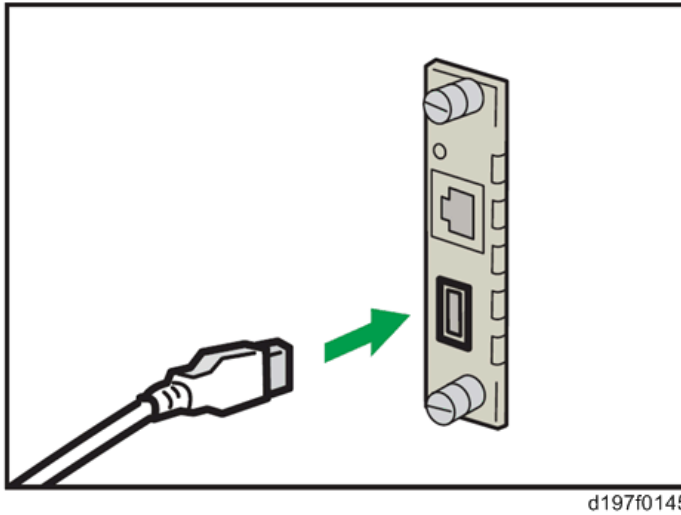
★ Important

- When you install this option on the main machine for the first time, the interface board must be connected directly to your PC to set up the IP address and other network settings.

1. Turn OFF the main power of the machine, and unplug the power cord from the wall socket.
2. Remove the interface slot cover [A] (🔩 x 2).



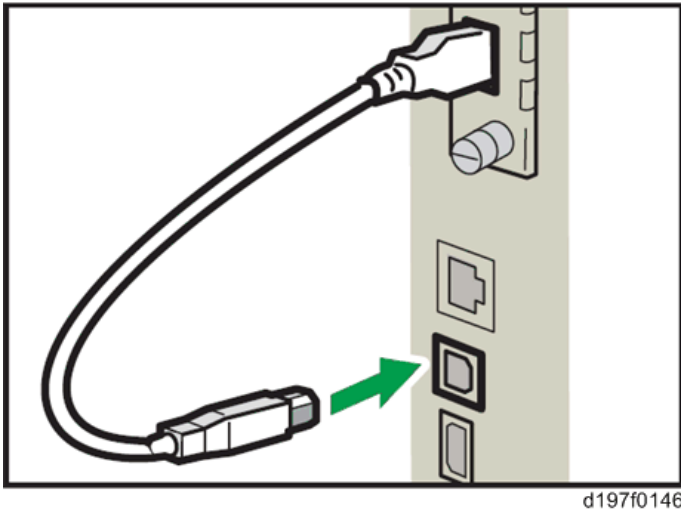
3. Install the interface board in the interface slot (🔩 x 2).
4. Insert the USB cable into the USB port on this option.



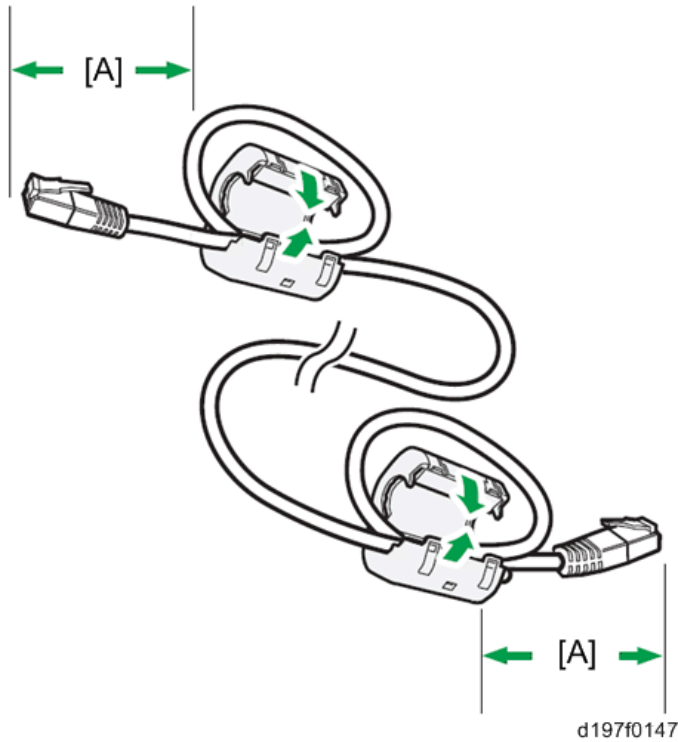
5. Insert the other side of the USB cable into the USB port B on the main machine.

Note

- The machine shape and/or USB port location differs depending on the machine.



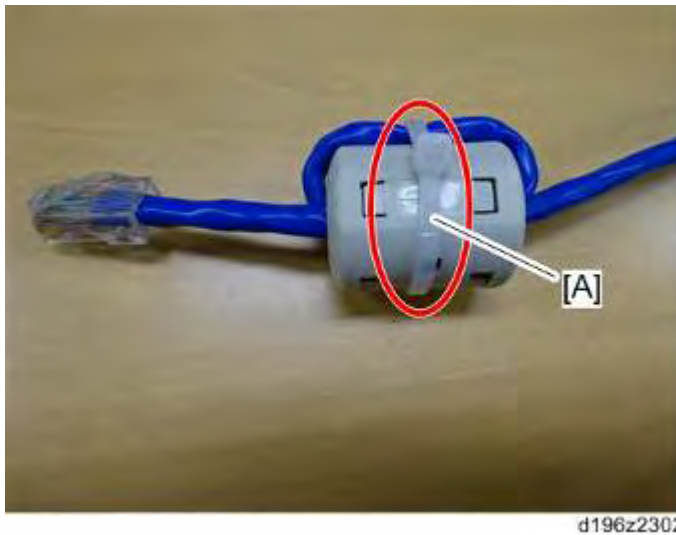
6. Attach the ferrite cores to the Ethernet cable, while looping the cable at 3 cm (approx. 1.2 inch) [A] from the each end of the cable.



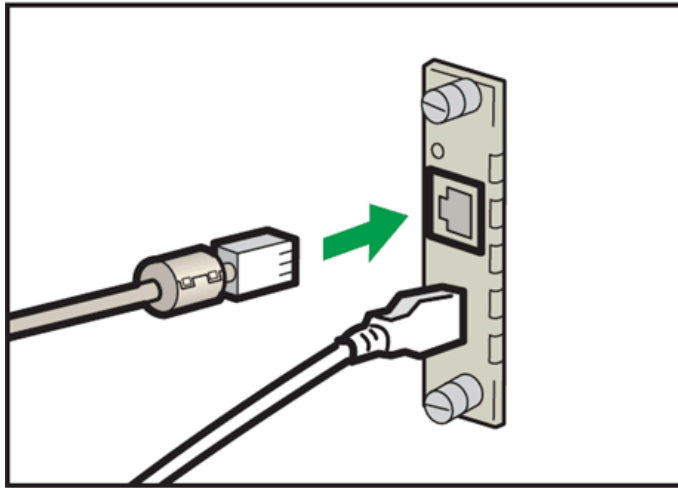
7. Only for installing this option in North America, bind both cores with cable ties [A] as shown below.

Note

- The two binds are not included in options produced before March, 2015. To bind the cores, use the binds (P/N: 11050047) registered as service parts or similar ones.



8. Insert the Ethernet cable into the Ethernet port on this option.



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9. Insert the other end of the Ethernet cable to a PC for network setting.
10. Plug the power cord into the wall socket and turn ON the main power of the machine.

Note

- Do not unplug the USB cable while the machine is recognizing this option. It may take between 30 seconds to 1 minute to finish recognizing it (the LEDs on the Ethernet port of this option light up after recognizing this option; see below). If unplugged, connect the cable again.

11. Make sure that the machine recognizes this option correctly by doing one of the following:

1. Access the option's IP address from a web browser.
2. Ping the option's IP address from a command prompt on a Windows PC in the same network as the mainframe.

If the IP address cannot be found (DHCP server), use the MAC address. This is the number printed on the seal attached to the printed circuit board for the USB server.

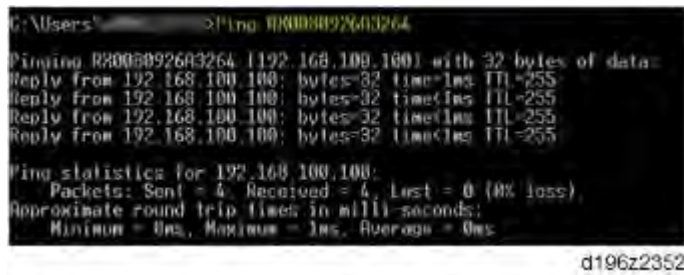


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3. Use "RX" + the option's MAC address and access a web browser.
Example: <http://RX0080926A3264>



4. Ping the "RX" + "MAC address" from the command prompt, on a windows PC which is on the same network as the mainframe.

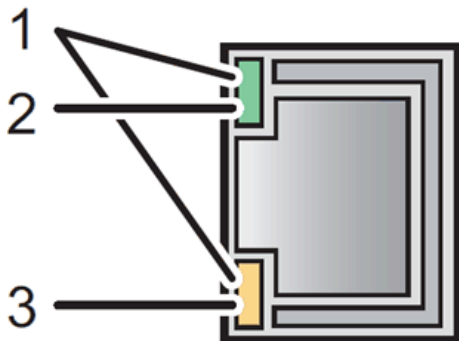


Note

- When installing the USB Device Server Option Type M12, the installation status is not shown on the Configuration Page.

What Do the LED Indications Mean?

When this option is properly installed and recognized by the main machine, the LED indicators light up under the following conditions.



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No.	Light Color	Lights Up When:
1	Green and Yellow	1000BASE-T operates
2	Green	10BASE-T operates
3	Yellow	100BASE-TX operates

Notes for Energy Save Mode Setting

If the machine which has this option enters into the energy save mode, you cannot print because there will be a communication error. Follow the instructions below to disable the machine's entering the energy save mode.

1. Press [Features Settings] on the operation panel.
2. Press [Administrator Tools] in [System Settings].
3. Press [Energy Saver Mode to Disable Print Server].
4. Press [Disable Mode].
5. Press [OK].
6. Press [Features Settings].

IP Address Setting

This section describes how to set an IP address on this option manually. Note that you can set an IP address which is not only on the same network segment but also on a different network segment to share a single printer with devices in multiple networks.

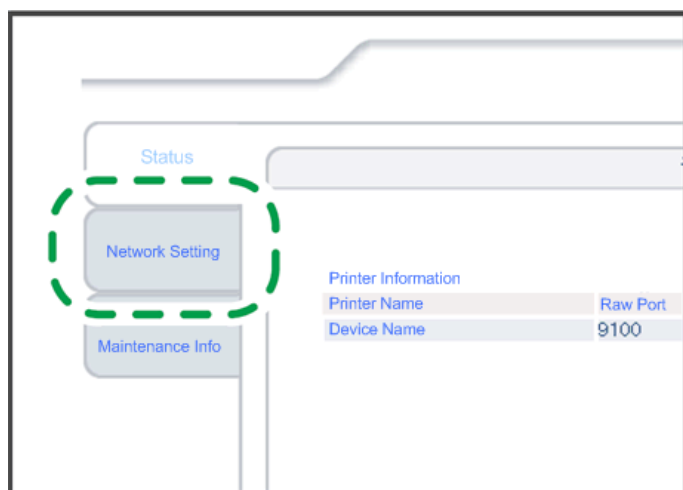
★ Important

- You cannot change the IP address for this option from the operation panel of the main machine. The setting must be done from a web browser on your PC.
- The network setting of this option is initially assigned as follows:
IP address: 192.168.100.100 / Subnet mask: 255.255.255.0
- The network setting of your PC must be in the same network segment to change the network setting of this option.

1. Make a note of the current network settings of your PC.
2. Change the IP address on your PC to [192.168.100.xxx (*0 - 255)].
3. Change the subnet mask on your PC to [255.255.255.0].
4. Open a web browser.
5. Type [http://192.168.100.100/] in the address bar.
6. Press the "Enter" key.

↓ Note

- The setting screen for this option appears.
7. Click [Network Setting].



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8. Enter "root" in the user name textbox and click [OK].
9. Input [IP Address], [Subnet Mask] and [Default Gateway].

Item	Value
IPv4	ENABLE ▾
DHCPv4	DISABLE ▾
IPv4 address	192.168.100.100
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0

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10. Set other items if necessary.
11. Press [Set].
12. Close the web browser.
13. Disconnect the Ethernet cable from the PC.
14. Connect the Ethernet cable to a network device (e.g. switching hub).
15. Set the IP address of this option in the printer driver which you use.

2.17.12 CHECK ALL CONNECTIONS

1. Plug in the power cord. Then turn ON the main switch.
2. Enter the printer user mode. Then print the configuration page.

User Tools → Machine Features → Printer Features → List Test Print → Configuration Page

All installed options are shown in the "System Reference" column.

PREVENTIVE MAINTENANCE

REVISION HISTORY		
Page	Date	Added/Updated/New
		None

3. PREVENTIVE MAINTENANCE

3.1 MAINTENANCE TABLES

See "[Appendices](#)" for the following information:

- Maintenance Tables

3.2 PM/YIELD PARTS SETTINGS

3.2.1 SET-UP PROCEDURE FOR REPLACING THE PM/YIELD PARTS

1. Enter the SP mode.
2. Get the SMC log data using one of the following ways:
 - a) Execute SP5-990-001 to print SMC log data.
 - b) Execute SP5-992-001 (page 5-6) to save SMC log data to an SD card.
3. In the SMC data, look at the values of the counters in SP 7-621-002 to 208, to determine what parts should be replaced. (Refer to the SP table and PM tables in the appendix.)
4. The following parts require the manual new unit detection setting by a predetermined SP. See the table below:

Item	SP
Fusing Sleeve Belt	SP3-701-116
Pressure Roller	SP3-701-118
ITB Unit	SP3-701-093
Paper Transfer Roller Unit	SP3-701-109
Waste Toner Bottle	SP3-701-142
ARDF	Friction Pad: SP3-701-206
	Pickup Roller: SP3-701-207
	Feed Roller: SP3-701-208

Note

- The PCDU and fusing unit detect a new unit automatically. Other parts require the manual new unit detection setting with the above SPs.

5. Turn OFF the main power.
6. Perform the parts replacement.
7. Turn ON the main power.
8. On the operation panel, look at the PM counters of the parts that you replaced, to make sure that these counters were reset to 0. (The PM counter values are in SP 7-621-002 to 208.) If the PM counter for a unit is not reset, repeat steps 4, 5, and 7.
9. Exit the SP mode.

3.2.2 PREPARATION BEFORE OPERATION CHECK

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

3.2.3 OPERATION CHECK

Check if the sample image has been copied correctly.

REPLACEMENT AND ADJUSTMENT

REVISION HISTORY		
Page	Date	Added/Updated/New
		None

4. REPLACEMENT AND ADJUSTMENT

4.1 NOTES ON THE MAIN POWER SWITCH

4.1.1 PUSH SWITCH

The main power button of this machine has been changed to a push-button switch (push button) from the conventional rocker switch. The push switch has characteristics and specifications different from the rocker switch. Care must be taken when replacing and adjusting parts.

Characteristics of the Push Switch (DC Switch)

Power is supplied to the machine even when the main power switch is turned OFF.

The push switch in this machine uses DC (direct current). Therefore, if the AC power cord is connected to an electrical outlet, power is supplied to the controller board, the operation unit and other modules even when the main power is turned OFF. When replacing the controller board and the operation unit in this state, not only these boards, it will damage other electrical components.

So, when performing maintenance work such as replacing parts, in addition to turning off the main power with the push switch, always unplug the AC power cord after the LED on the operation panel is turned off.

Note

- If you unplug the power cord before turning off the LED, some icons on the operation panel will not appear at the next start-up. Restarting the machine again will solve this issue.

When you disconnect the power cord from the AC wall outlet, inside the machine there is still residual charge.

When you disconnect the power cord from the AC wall outlet, there is still residual charge inside the machine for a while. Therefore, if you remove boards in this state, it can cause a blown fuse or memory failure.

- How to remove the residual charge inside the machine
After you unplug the power cord from the AC wall outlet, in order to remove the residual charge from inside the machine, press the main power switch. The charge remaining in the machine is released, and it is possible to remove boards.

When you reconnect the AC power cord into an AC wall outlet, the machine will start automatically.

In order to remove the residual charge, push the main power switch after you disconnect the AC power cord. At that time, the power ON flag inside the machine is set. Therefore, after you finish work on the machine and reconnect the power cord to the AC, even if you do not press the main power switch, the machine will start automatically and the moving parts will begin to move. When working on moving parts, be careful that fingers or clothes do not get caught.

Note

- Automatic restart deals with cases when you accidentally unplugged the AC power cord or unexpected power outages. By keeping the power flag ON, after the resumption of power, the machine will start up automatically.

In rare cases, when you reconnect the AC power cord to a power outlet, the machine does not start automatically. In this case, the machine has not failed. The cause is due to the timing of releasing the residual charge. If you press the main power switch when the residual charge was already released, the power ON flag will not be set. At this time, start the machine manually by pressing the main power switch.

Shutdown Method

1. Press the main power switch [A] on the machine.
2. The shutdown message appears. After the shutdown process, the main power is turned off automatically. The LED on the operation panel is turned off when the machine completes the shutdown.



CAUTION

- Before removing and adjusting electrical boards, do the following procedure. Otherwise, the board can be damaged by the residual charge inside the machine and must be replaced.
1. Take out the power cord after shutdown.
 2. Press the power switch for a second to remove the residual charge inside the machine.

Forced Shutdown

In case normal shutdown does not complete for some reason, the machine has a forced shutdown function.

To make a forced shutdown, press and hold the main power switch for 6 seconds.

In general, do not use the forced shutdown.

★ Important

- Forced shutdown may damage the hard disk and memory, and can cause damage to the machine. Use a forced shutdown only if it is unavoidable.

4.2 BEFOREHAND

⚠ CAUTION

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

★ Important

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

↓ Note

- Before you start to remove components from the machine, do the following:
 1. Turn OFF the main power switch.
 2. Make sure that the shutdown process has finished and that the LED on the operation panel has turned OFF.
 3. Unplug the power cord.
- After the main power switch of the machine has been turned off, the power relay board (SDB) keeps the power supply to the controller until the HDD unit has been shut down safely.

4.3 SPECIAL TOOLS

Part Number	Description	Q'ty
B645 5010	SD Card	1
G021 9350	Loop-back Connector – Parallel ^{*NOTE}	1
C401 9503	20X Magnification Scope	1
A257 9300	Grease Barrierta – S552R	1
5203 9502	Silicone Grease G-501	1
A092 9503	C4 Color Test Chart (3 pcs/set)	1
B679 5100	Plug - IEEE1284 Type C	1
B132 9700	Lubricant Powder	1

Note

- The "Loop-back Connector–Parallel" requires the "Plug-IEEE1284 Type A", and the optional IEEE1284 interface option must also be installed.

4.4 IMAGE ADJUSTMENT

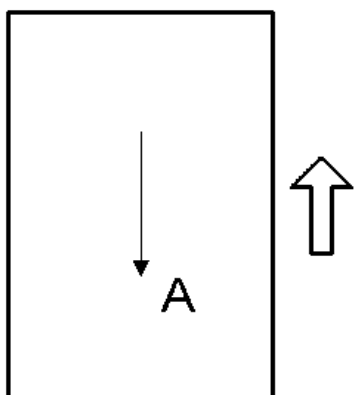
4.4.1 SCANNING

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

Note

- Use C-4 test chart to do the following adjustments.

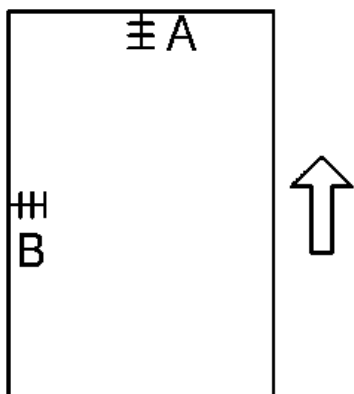
Scanner Sub-Scan Magnification



A: Sub-scan magnification

- Put the test chart on the exposure glass. Then make a copy from one of the feed stations.
- Check the magnification ratio. Adjust with SP4-008-001 if necessary.
Standard: $\pm 1.0\%$.

Scanner Leading Edge and Side-to-Side Registration



A: Leading Edge Registration

- Put the test chart on the exposure glass. Then make a copy from one of the feed stations.

2. Check the leading edge and side-to-side registration. Adjust the following SP modes if necessary.

Standard: $0 \pm 2\text{mm}$ for the leading edge registration, $0 \pm 2.5\text{mm}$ for the side-to-side registration.

What It Does	SP Code
Leading Edge Registration	SP4-010-001
Side-to-Side Registration	SP4-011-001

4.4.2 ARDF

ARDF Side-to-Side, Leading Edge Registration and Trailing Edge

Use A4/LT paper to make a temporary test chart as shown above.

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

Standard: $4.2 \pm 2\text{ mm}$ for the leading edge registration, $2 \pm 1\text{ mm}$ for the side-to-side registration. Use the following SP modes to adjust if necessary.

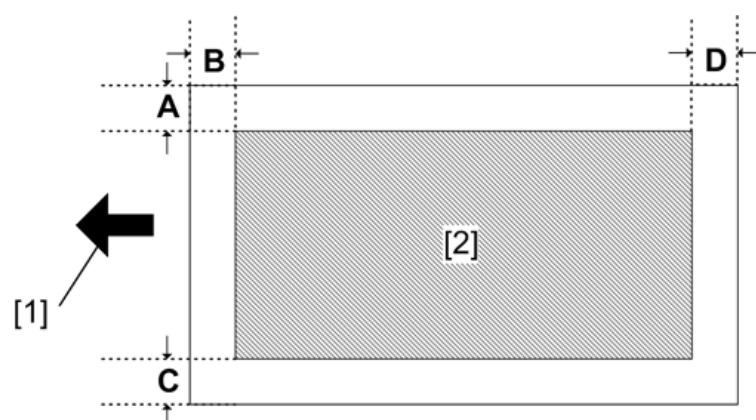
SP Code	What It Does	Adjustment Range
SP6-006-001	Side-to-Side Regist: 1st	$\pm 2.0\text{ mm}$
SP6-006-003	Leading Edge Registration	$\pm 5.0\text{ mm}$
SP6-006-007	Rear Edge Erase (Trailing Edge)	$\pm 5.0\text{ mm}$

ARDF sub-scan magnification

1. Put the temporary test chart on the ARDF. Then make a copy from one of the feed stations.
2. Check the magnification ratio. Adjust with SP6-017-001 if necessary.
 - Standard: $\pm 5.0\%$
 - Reduction mode: $\pm 1.0\%$
 - Enlargement mode: $\pm 1.0\%$

4.4.3 REGISTRATION

Image Area



- [1]: Feed direction, [2]: Image area

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

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

Leading Edge

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

Side to Side

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

Adjustment Standard

- Leading edge (sub-scan direction): 3.25 ± 2.75 mm
- Trailing edge (sub-scan direction): 3.25 ± 2.75 mm
- Side to side (main-scan direction): 2.25 ± 1.75 mm

Paper Registration Standard

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

- Sub-scan direction: 0 ± 2 mm
- Main-scan direction: 0 ± 2 mm

Adjustment Procedure

1. Enter SP2-109-003.
2. Print out the test pattern (14: 1-dot trimming pattern) with SP2-109-003.

 Note

- Registration can change slightly as shown on the previous page. Print some pages of the 1-dot trimming pattern for step 3 and 4. Then average the leading edge and side-to-side registration values, and adjust each SP mode.

3. **Do the leading edge registration adjustment.**

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

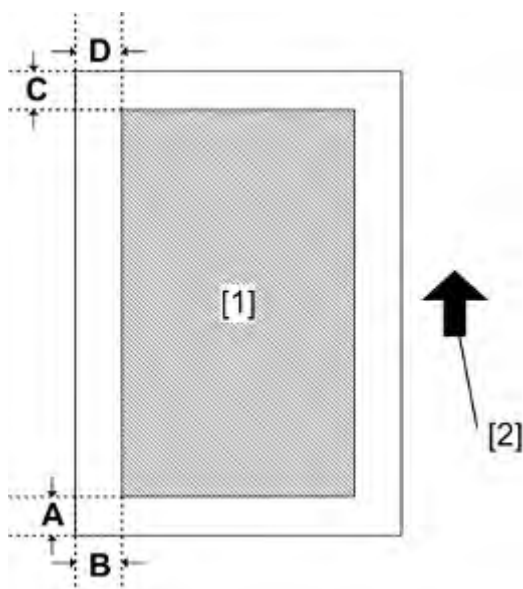
4. **Do the side-to-side registration adjustment.**

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

4.4.4 ERASE MARGIN ADJUSTMENT

↓ Note

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



- [1]: Image area, [2]: Feed direction
- Enter SP2-109-003.
 - Print out the test pattern (14: 1-dot trimming pattern) with SP2-109-003.
 - Check the erase margin A and B. Adjust them with SP2-103-001 to -004 if necessary.
 - Leading edge: 0.0 to 9.9 mm (default: 4.2 mm)
 - Side-to-side: 0.0 to 9.9 mm (default: 2.0 mm)
 - Trailing edge: 0.0 to 9.9 mm (default: 4.2 mm)

4.4.5 COLOR REGISTRATION

Line Position Adjustment

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

Do the following if color registration shifts:

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

To check if SP 2-111-1 was successful, watch the screen during the process. A message is displayed at the end. Also, you can check the result with SP 2-194-10 to -12.

- You should also do the line position adjustment at these times:
 - After you transport or move the machine (you should do the forced line position

adjustment if you install the machine at the user location) if the machine is pre-installed at the workshop and moved to the user location,

- When you remove or replace the motors, clutches, and/or gears related to the drum/development/transfer sections
- When you remove or replace the image transfer belt, image transfer belt unit or laser optical housing unit

4.4.6 PRINTER GAMMA CORRECTION

↓ Note

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

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

- Highlight
- Middle
- Shadow areas
- IDmax.

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

Copy Mode

- KCMY Color Balance Adjustment -

The adjustment uses only "Offset" values.

↓ Note

- 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 (can be adjusted with SP4-918-009):

- Copy Photo mode
- Copy Letter mode
- Copy Letter (Single Color) mode

- Copy Photo (Single Color) mode

Manual Gamma Adj
Copy:Photo

Offset: H M S IDmax
Option: H M S IDmax

	H	M	S	IDmax	H	M	S	IDmax
K	15	15	15	15	0	0	0	0
C	15	15	15	15	0	0	0	0
M	15	15	15	15	0	0	0	0
Y	15	15	15	15	0	0	0	0

COPY Window 1/3 Previous Next Exit

- Adjustment Procedure -

1. Copy the C-4 chart in the mode that you want to adjust.
2. Enter the SP mode.
3. Select "System SP."
4. Select SP4-918-009.
5. Adjust the offset values until the copy quality conforms to the standard (see the table below).

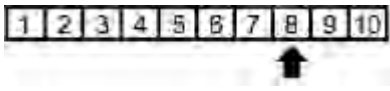
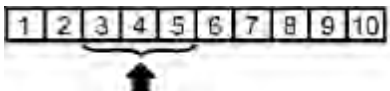
↓ Note

- 1. Never change "Option" value (default value is "0").
- 2. Adjust the density in this order: "ID Max", "Middle", "Shadow", "Highlight".

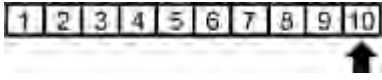
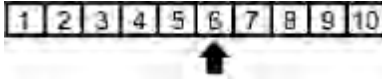
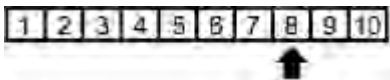
- Photo Mode, Full Color -

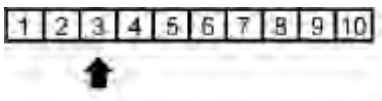
	Item to Adjust	Level on the C-4 chart	Adjustment Standard
1	ID max: (K, C, M, and Y)		Adjust the offset value so that the density of level 10 matches that of level 10 on the C-4 chart.
2	Middle (Middle ID) (K, C, M, and Y)		Adjust the offset value so that the density of level 6 matches that of level 6 on the C-4 chart.

Image Adjustment

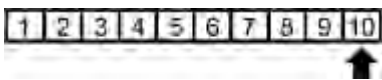
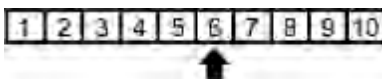
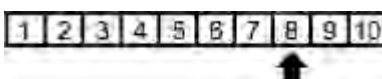
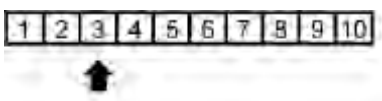
3	Shadow (High ID) (K, C, M, and Y)		Adjust the offset value so that the density of level 8 matches that of level 8 on the C-4 chart.
4	Highlight (Low ID) (K, C, M, and Y)		Adjust the offset value so that dirty background does not show on the copy and the density of level 3 is slightly lighter than that of level 3 on the C-4 chart.
5	K Highlight (Low ID) (C,M, and Y) <on the full color copy>		Adjust the offset value so that the color balance of black scale levels 3 through 5 in the copy is seen as gray (no C, M, or Y should be visible). If the black scale contains C, M, or Y, do steps 1 to 4 again.

- Photo Mode, Single Color -

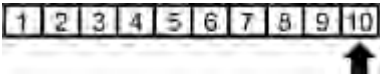
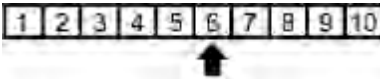
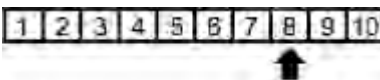
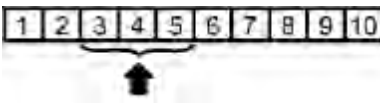
	Item to Adjust	Level on the C-4 chart	Adjustment Standard
1	ID max: (K)		Adjust the offset value so that the density of level 10 matches that of level 10 on the C-4 chart.
2	Middle (Middle ID) (K)		Adjust the offset value so that the density of level 6 matches that of level 6 on the C-4 chart.
3	Shadow (High ID) (K)		Adjust the offset value so that the density of level 8 matches that of level 8 on the C-4 chart.

4	Highlight (Low ID) (K)		Adjust the offset value so that dirty background does not show on the copy and the density of level 3 is slightly lighter than that of level 3 on the C-4 chart.

- Text (Letter) Mode, Full Color -

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

- Text (Letter) Mode, Single Color -

	Item to Adjust	Level on the C-4 chart (K)	Adjustment Standard
1	ID max: (K)	 A horizontal row of 10 boxes numbered 1 to 10. An upward-pointing arrow is positioned below box 10.	Adjust the offset value so that the density of level 10 matches that of level 10 on the C-4 chart.
2	Middle (Middle ID) (K)	 A horizontal row of 10 boxes numbered 1 to 10. An upward-pointing arrow is positioned below box 6.	Adjust the offset value so that the density of level 6 matches that of level 6 on the C-4 chart.
3	Shadow (High ID) (K)	 A horizontal row of 10 boxes numbered 1 to 10. An upward-pointing arrow is positioned below box 8.	Adjust the offset value so that the density of level 8 matches that of level 8 on the C-4 chart.
4	Highlight (Low ID) (K)	 A horizontal row of 10 boxes numbered 1 to 10. A bracket is drawn under boxes 3, 4, and 5. An upward-pointing arrow is positioned below the bracket.	Adjust the offset value so that dirty background does not show on the copy and the density of level 3 is slightly lighter than that of level 3 on the C-4 chart.

Note

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

Printer Mode

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

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

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

- Adjustment Procedure -

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

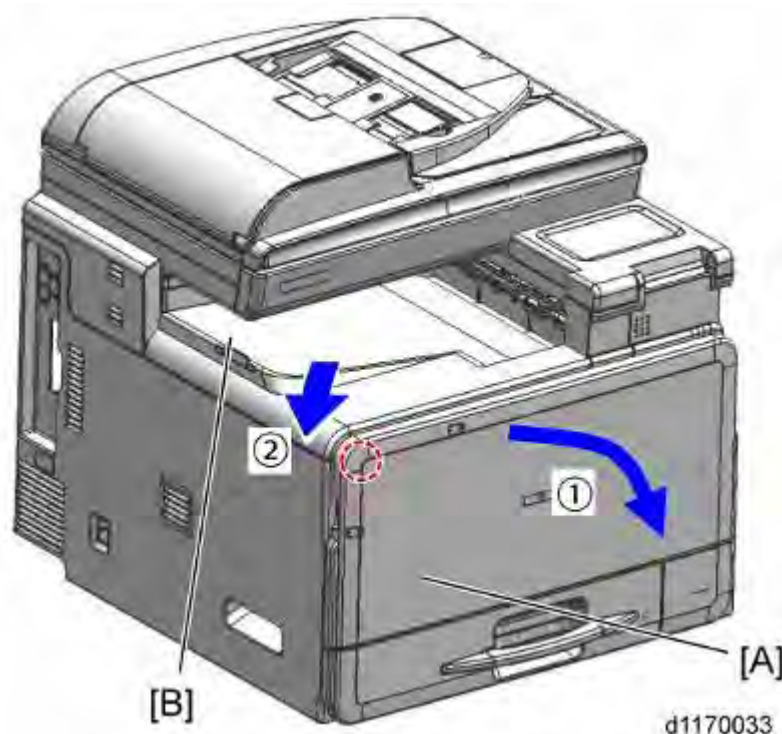
Note

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

4.4.7 COLOR SKEW ADJUSTMENT

The skew adjustment of this machine should be performed manually. The adjustment procedure is as follows:

1. Open the front door [A] and then remove the paper exit tray [B]. (🔑 x 1)



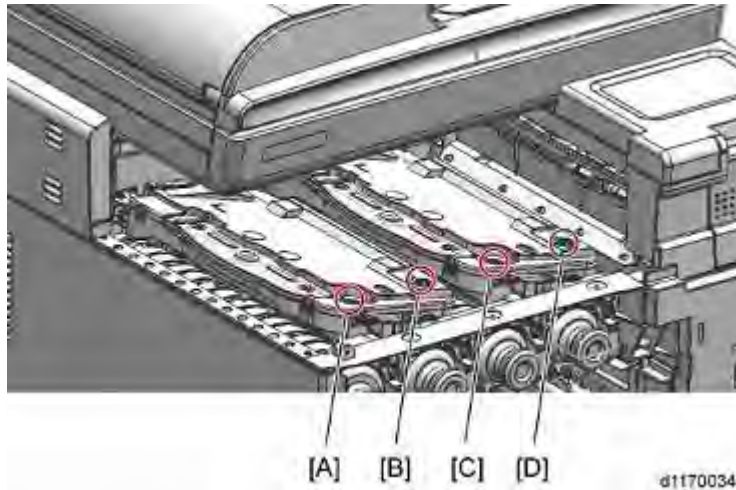
2. Close the front door and execute MUSIC (SP2-111-004).

3. Check the result for each color with the following SPs.

- SP2-117-004 (K)
- SP2-117-002 (C)
- SP2-117-001 (M)
- SP2-117-003 (Y)

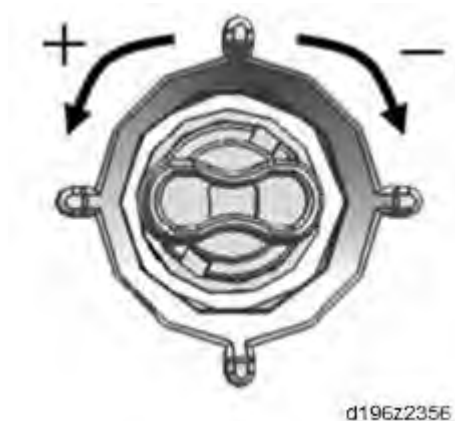
Note

- If all of the SP values are within ± 5 , go to Step 5.
 - If any of the SP values are not within ± 5 , go to Step 4.
4. Rotate the knob(s) shown in the diagram [A] to [D] at 90 degree intervals until the SP value for the affected color(s) is within ± 5 (target: 0).



Note

- There are two knobs on each of the two LD units. A click is felt every 90 degree rotation.
- Turning the knob **clockwise** by 90 degrees changes the SP value by -1.
- Turning the knob **counter-clockwise** by 90 degrees changes the SP value by +1.



- Example:
SP value for magenta in Step 4 was "+6" → Turn knob [C] 6 clicks (1 1/2 rotations) clockwise.
- SP value for yellow in Step 4 was "-7" → Turn knob [D] 7 clicks (1 3/4 rotations) counter-clockwise.

5. Reattach all parts that you removed in the above steps.

Note

- Do not touch the LD units while installing the Paper Exit Tray. Otherwise, the LD unit may move, and you may have to adjust the color skew again.

4.5 EXTERIOR COVERS

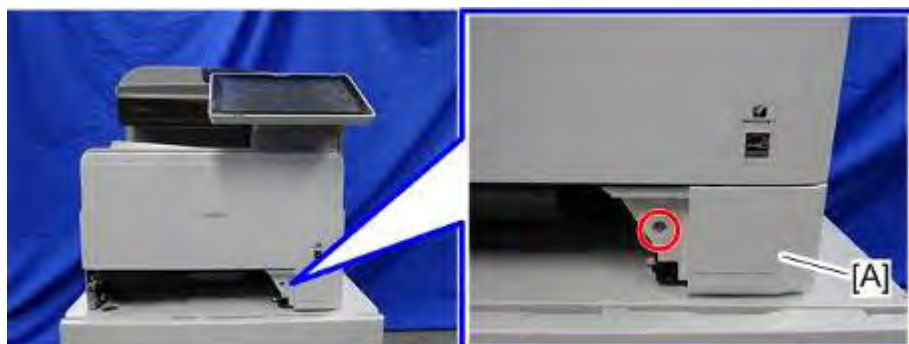
4.5.1 FRONT COVER

1. Pull out the paper tray.



d196z4001

2. Front lower cover [A] (🔧 × 1)



d196z4002

3. Open the front cover.
4. Front cover [A] (🔧 × 2, pins × 2)



d196z4003

4.5.2 UPPER LEFT COVER

1. Upper left cover [A] (🔑 × 1)



d196z4004

4.5.3 LEFT COVER

1. Upper left cover (page 4-4)
2. Pull out the paper tray.
3. Open the front cover and remove the left cover [A]. (🔑 × 2)



d196z4005

4.5.4 REAR COVER

1. Rear cover [A] (🔧 × 13)



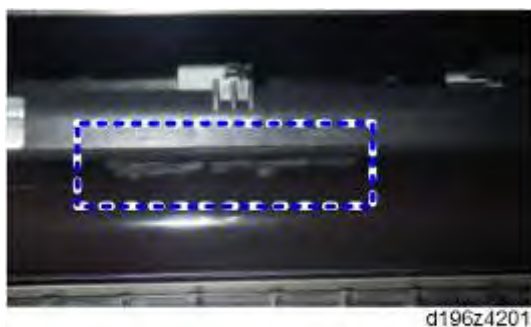
4.5.5 REAR RIGHT COVER

1. Open the duplex unit.

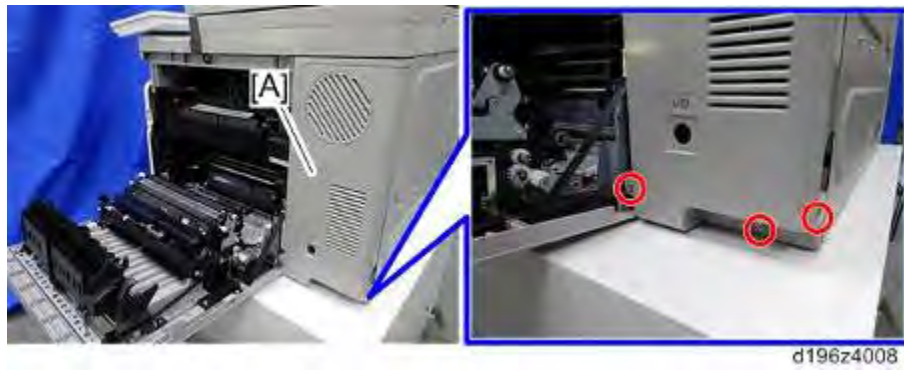


Note

- If you find paper dusts on the registration section when you open the duplex unit, remove the dusts. Otherwise, the dusts cause to develop lines on the image.



2. Rear right cover [A] (🔧 × 3)



↓ Note

- Remove the rear right cover while pushing it downward.

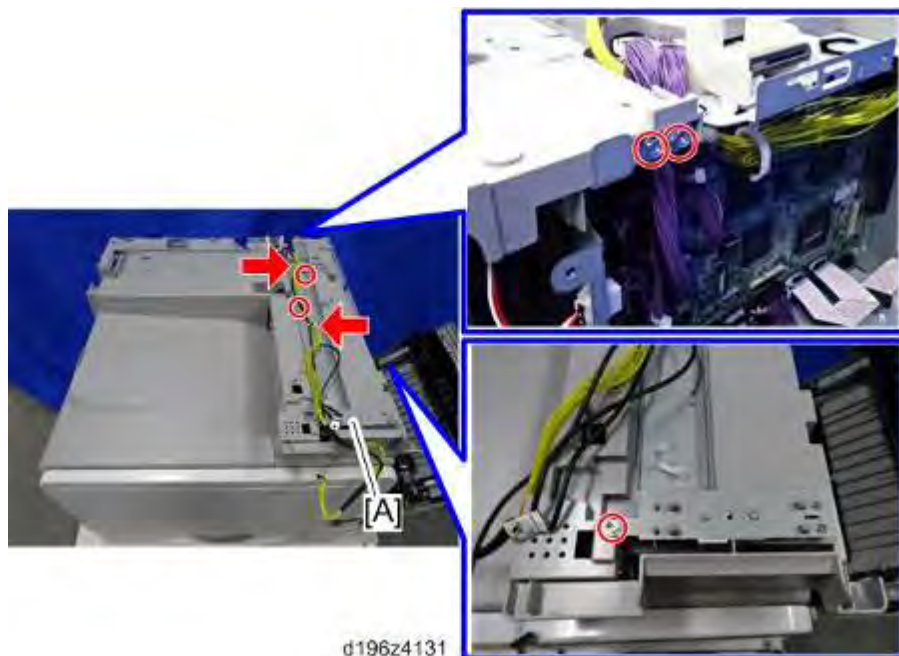
4.5.6 PAPER EXIT TRAY

1. Open the front cover.
2. Paper exit tray [A] (🔑 × 1)



4.5.7 INNER COVER

1. Scanner unit (page 4-2)
2. Operation panel (page 4-2)
3. Bracket [A] (🔩 × 5, 🛠 × 2)



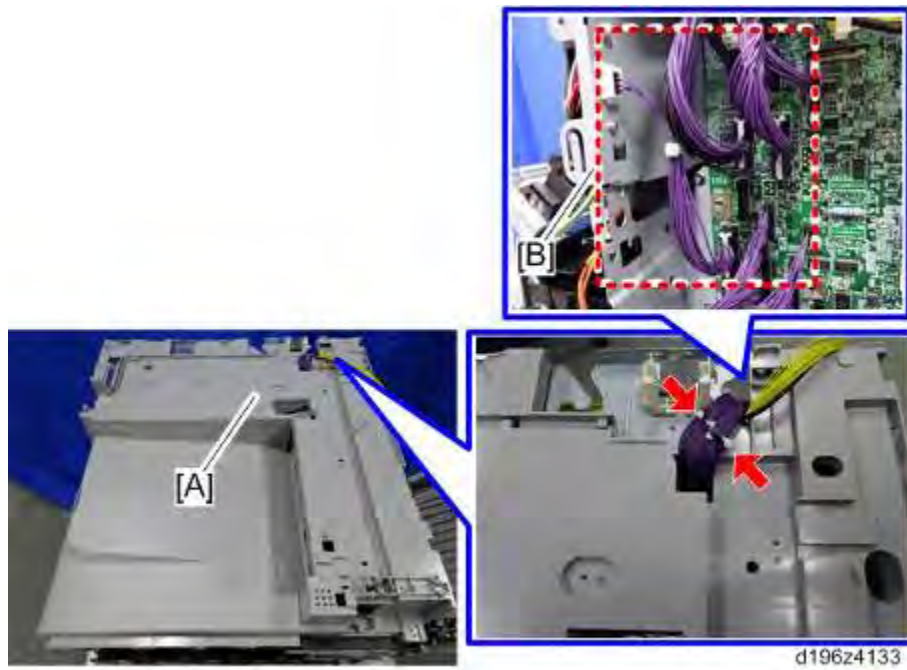
4. The cover under the operation panel [A] (🔩 × 1)



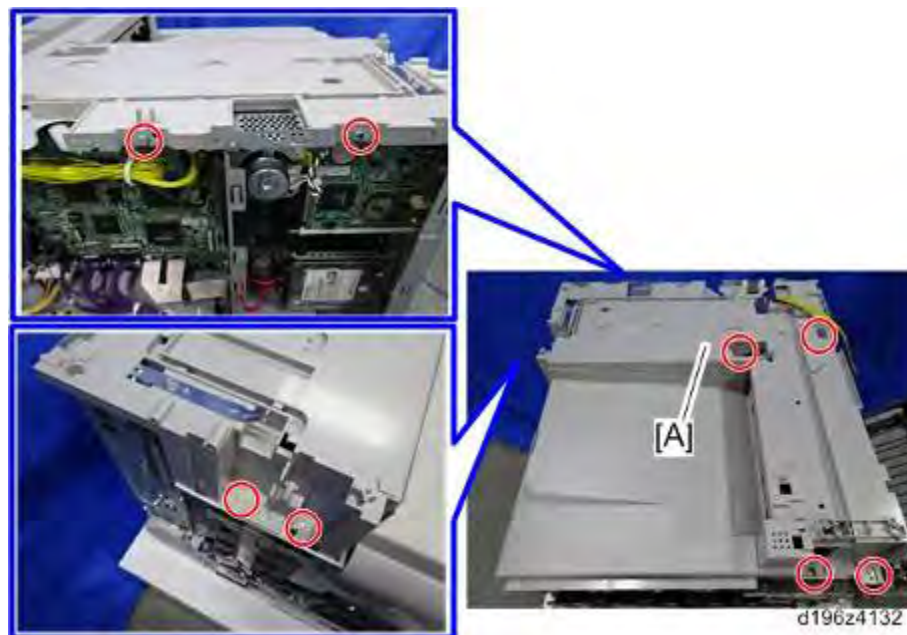
5. Bracket [A] (🔩 × 1)



6. Disconnect the harness [B] to remove the inner cover [A]. (🔩 × 2, 🛠 × 7)



7. Inner cover [A] (🔩 × 8)

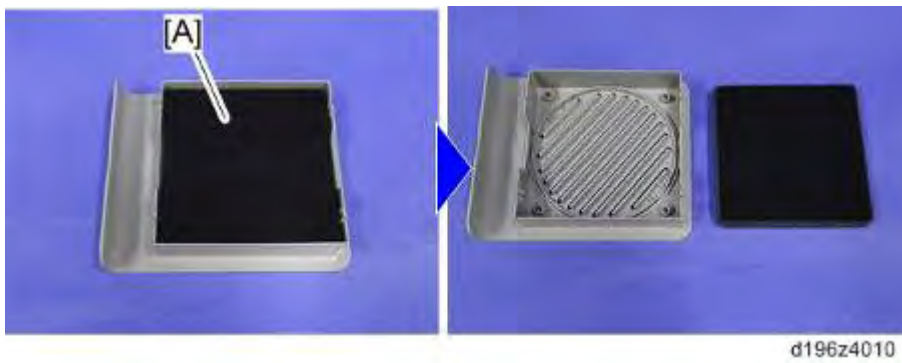


4.5.8 OZONE FILTER

1. Filter cover [A]



2. Ozone filter [A] from the filter cover.



4.6 OPERATION PANEL

This section includes only the replacement procedure which is unique for the MP C306/C406 series. The replacement procedures for the other parts are included in the FSM for the Smart Operation Panel, because these parts are also used with other models.

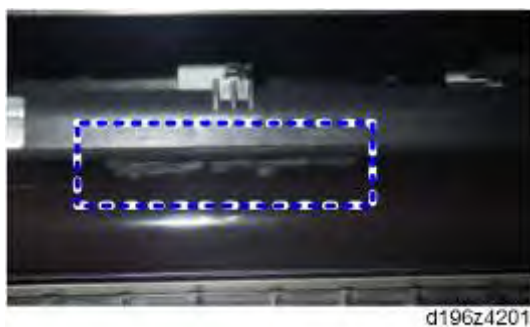
4.6.1 OPERATION PANEL

1. Open the duplex unit.



↓ Note

- If you find paper dusts on the registration section when you open the duplex unit, remove the dusts. Otherwise, the dusts cause to develop lines on the image.



2. Front right cover [A] (🔑 × 1)



3. Front right small cover [A]



d196z4101

↓ Note

- Release the tab inside, and then pull the cover out.

4. Operation panel (🔧 × 5, 🛠 × 1)



d196z4102

★ Important

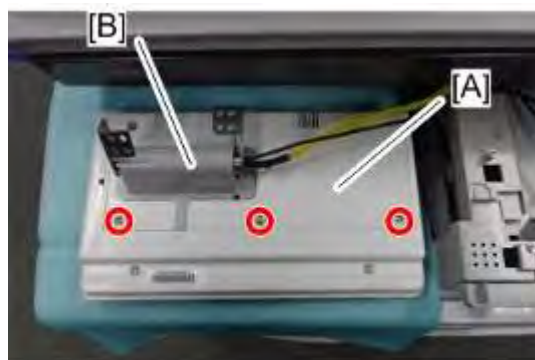
- Spread a cloth or service mat [A] on the paper exit tray to protect the display. Place the operation panel on the paper exit tray so that the display faces down.



d196z4103

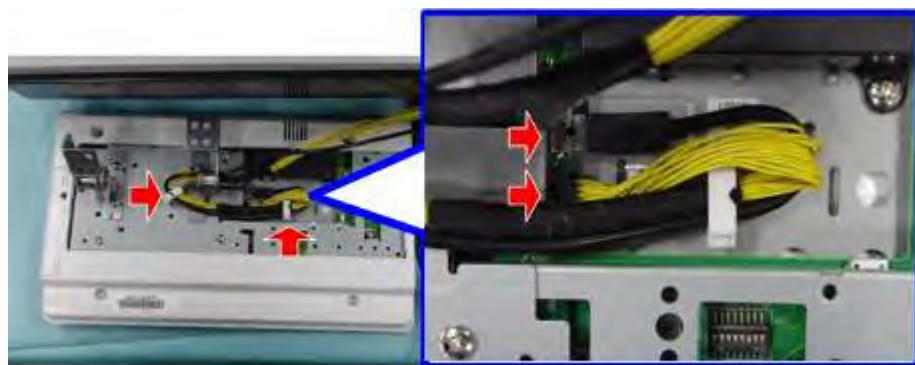
5. Rear cover [A] and hinge cover [B] (🔧 × 3)

Operation Panel



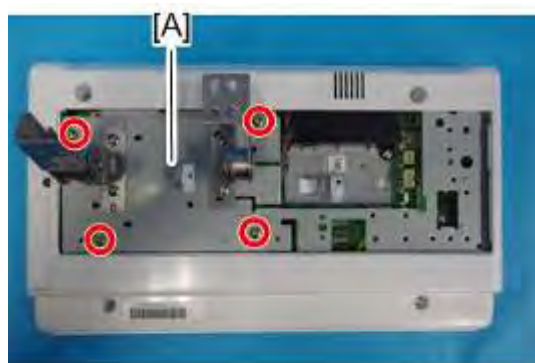
d196z4104

6. Connector (🔌 × 2, 📡 × 2)



d196z4105

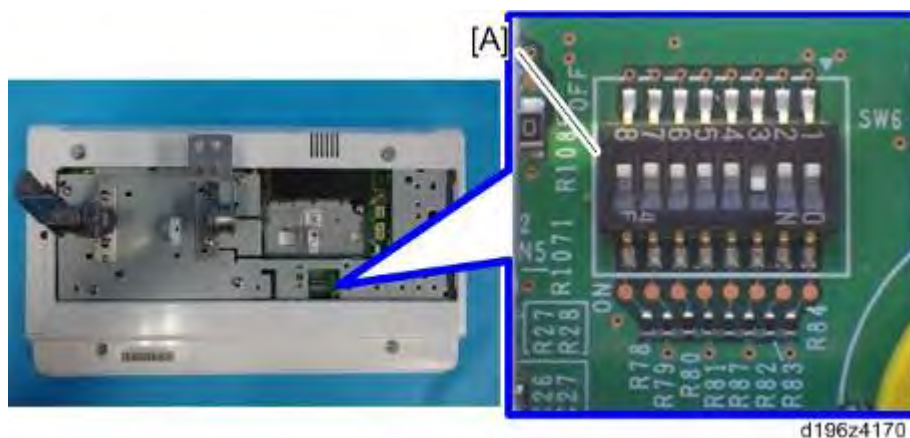
7. Hinge base [A] (🔩 × 4)



d196z4106

Check before Installing the new Operation Panel

There is a DIP switch [A] on the sub board in the operation panel unit.



The switch setting to use depends on the model.

For the C306/406 series, make sure that switch 7 is OFF, and make sure that only switch number 3 is ON. Otherwise, SC672-11 occurs when starting the machine.

4.6.2 INTERNAL PARTS

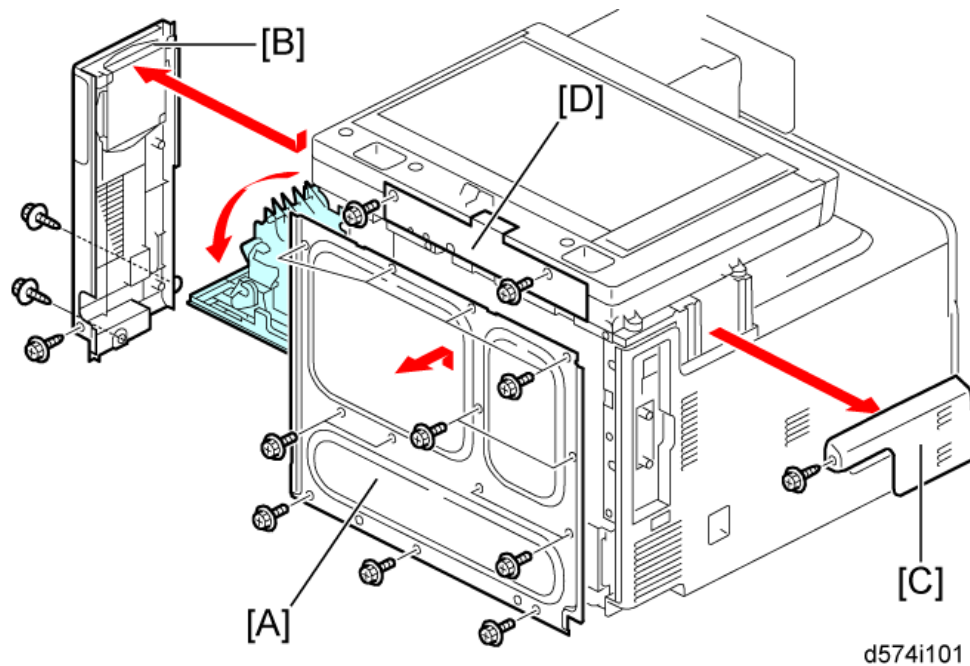
Refer to the FSM for the Smart Operation Panel.

4.7 SCANNER

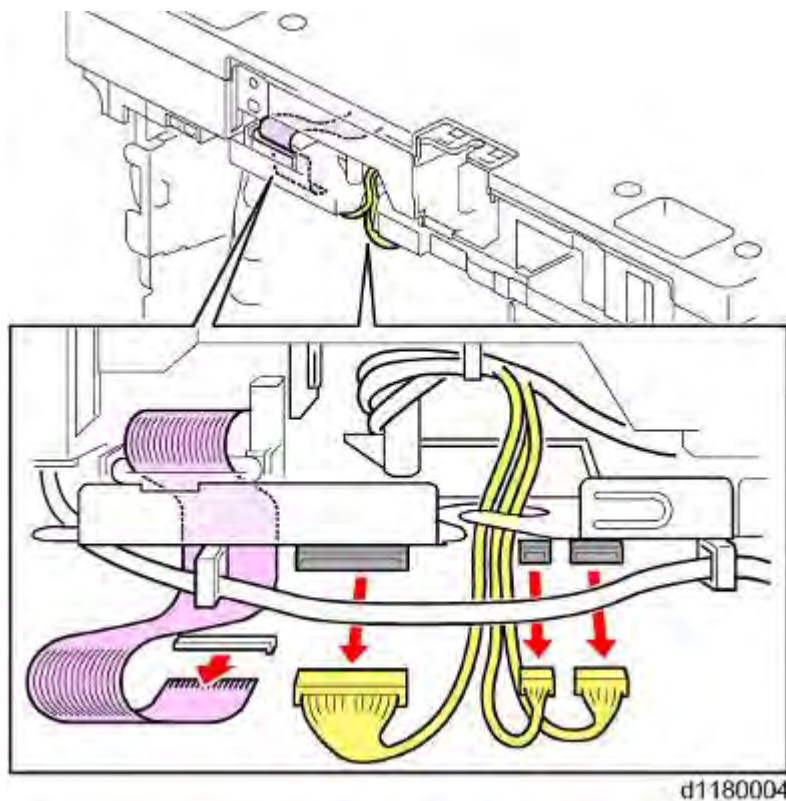
4.7.1 SCANNER UNIT

1. Remove the following items:

- ARDF Unit (page 4-2)
- Rear cover [A] (🔩 × 13)
- Open the duplex unit to remove rear right cover [B] (🔩 × 3)
- Upper left cover [C] (🔩 × 1)
- Scanner rear cover [D] (🔩 × 2)

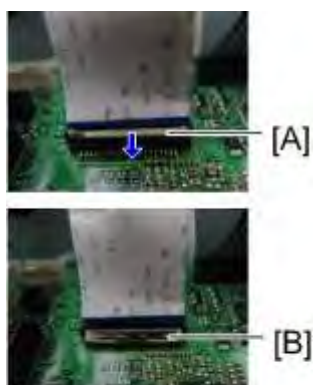


2. Disconnect four connectors. (🔌 × 4)



Note

- When connecting the FFC, lower the lever [A] to lock it as shown [B].



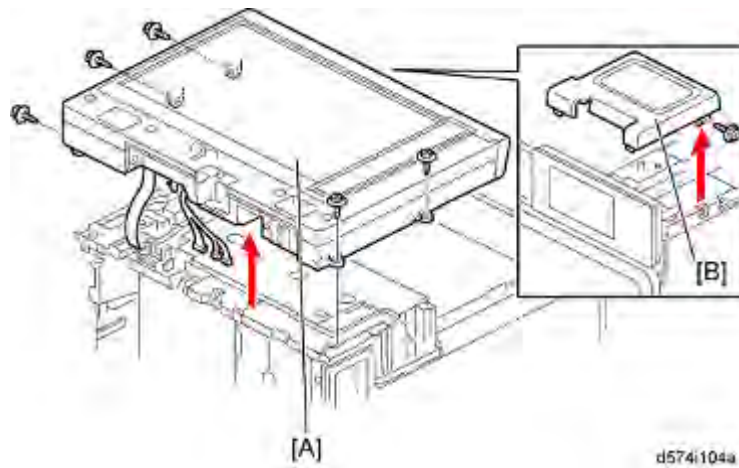
d1182086

Important

- If the FFC is not locked correctly, SC101 may occur.

3. Remove the following items:

- Front right cover [B] (⌘ × 1)
- Scanner unit [A] (⌘ × 5)



4.7.2 ARDF/PLATEN COVER SENSOR

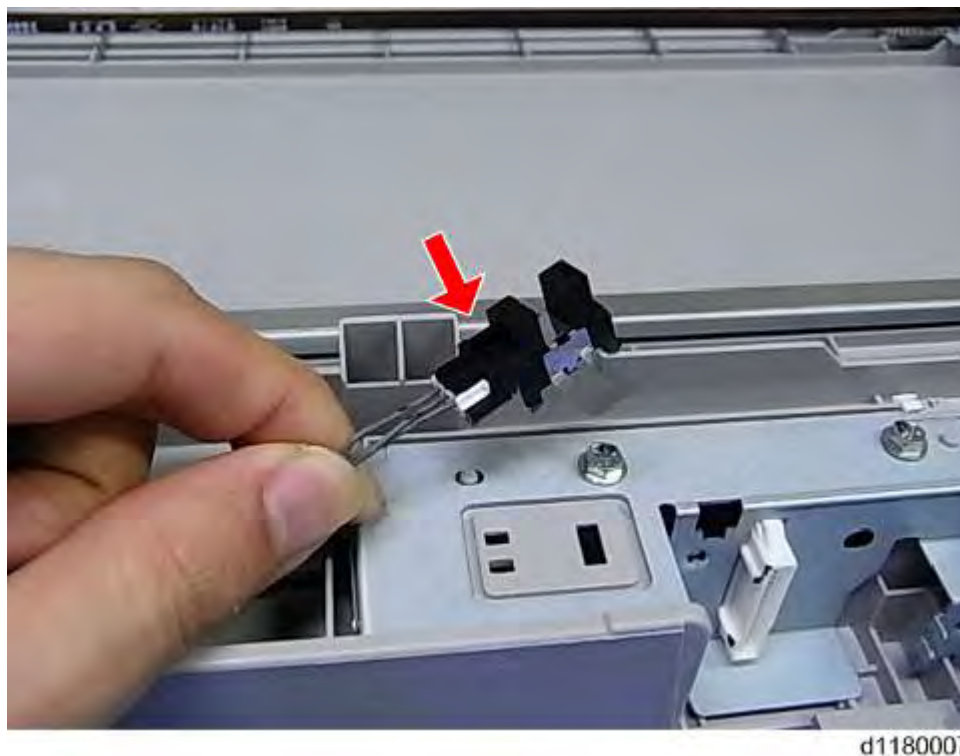
1. ARDF Unit (page 4-2)
2. Scanner front cover [A]



3. Scanner upper cover (⌀ × 7, Hook × 2)



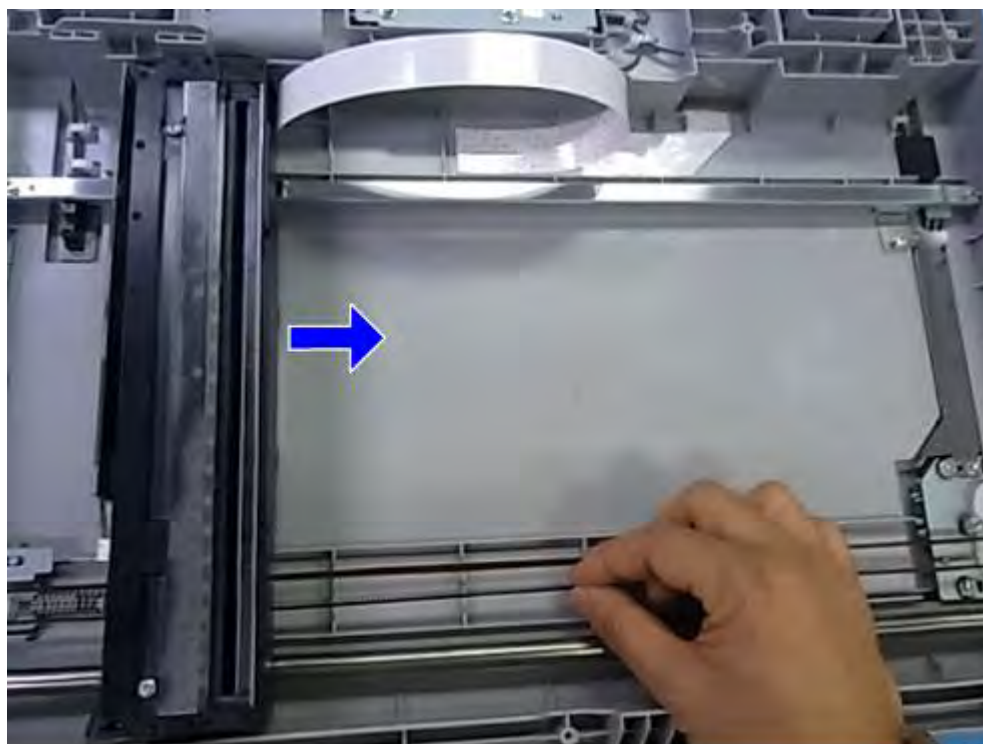
4. Platen cover sensor (⌘ × 1)



d1180007

4.7.3 SCANNER HP SENSOR

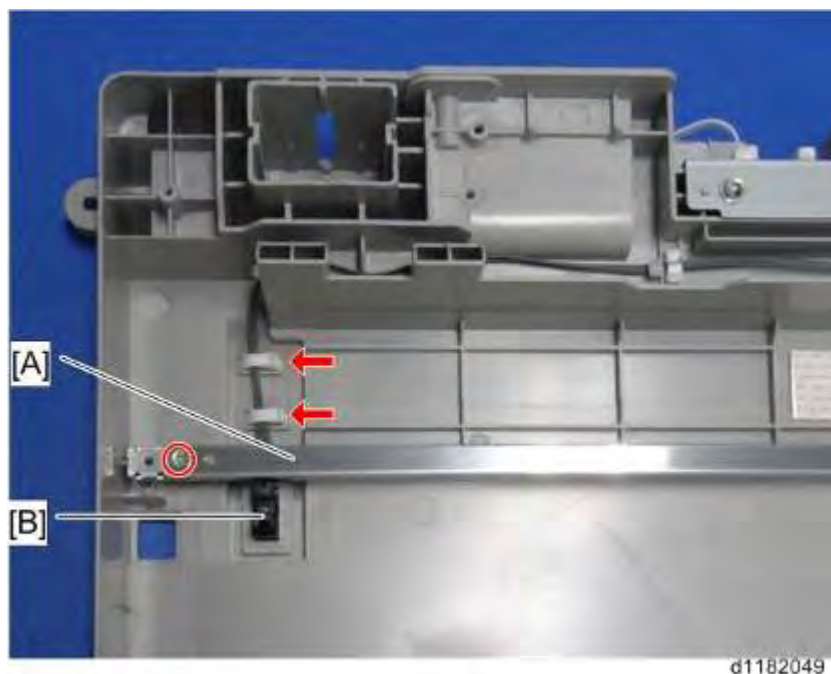
1. Scanner upper cover (page 4-4)
2. Move the carriage to the right.



d1180008

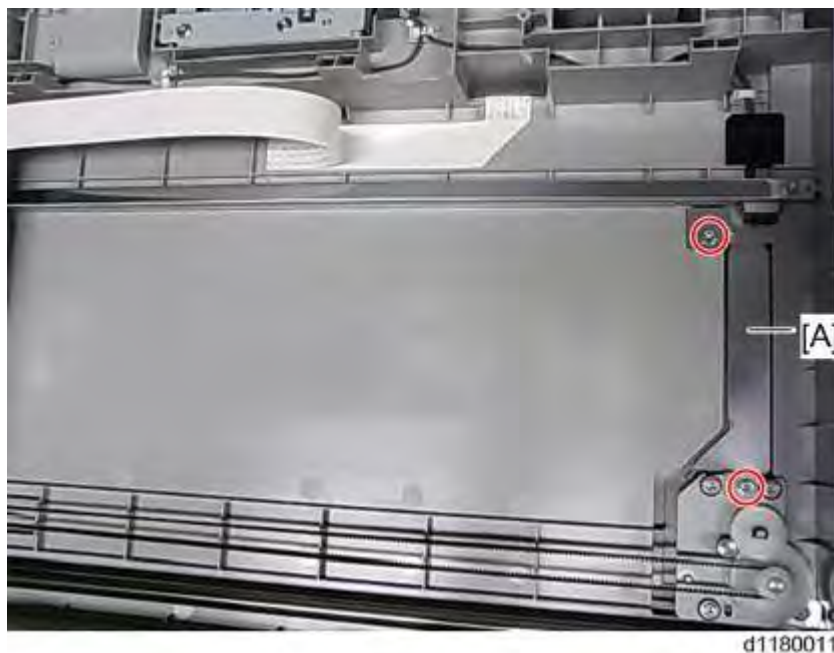
★ Important

- To move the carriage, hold the carriage belt and move it carefully.
- Never hold the carriage itself.

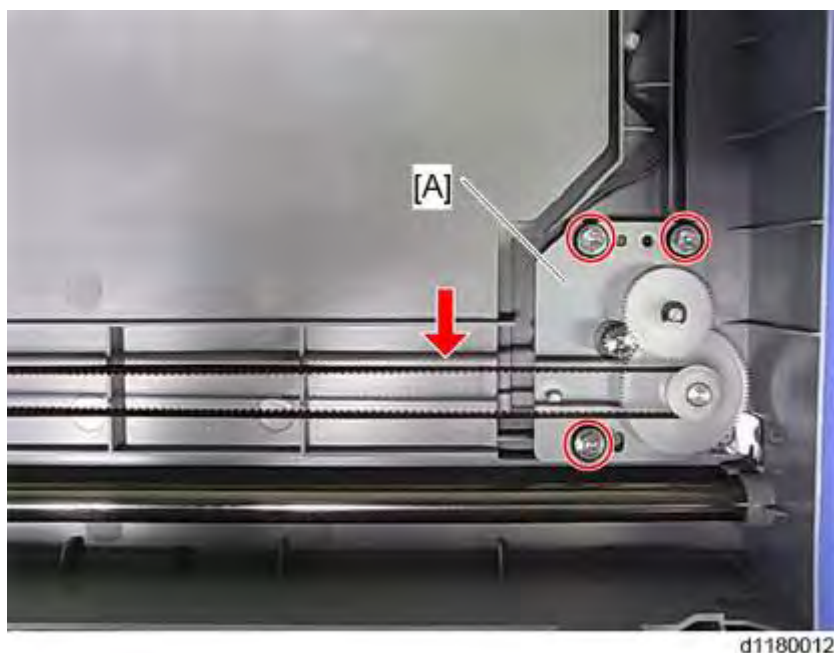
3. Bracket [A] (🔧 × 2)**4. Remove the Scanner HP sensor [B] while lifting up the bracket [A] slightly. (🔧 × 1, 🛠️ × 2)**

4.7.4 SCANNER MOTOR

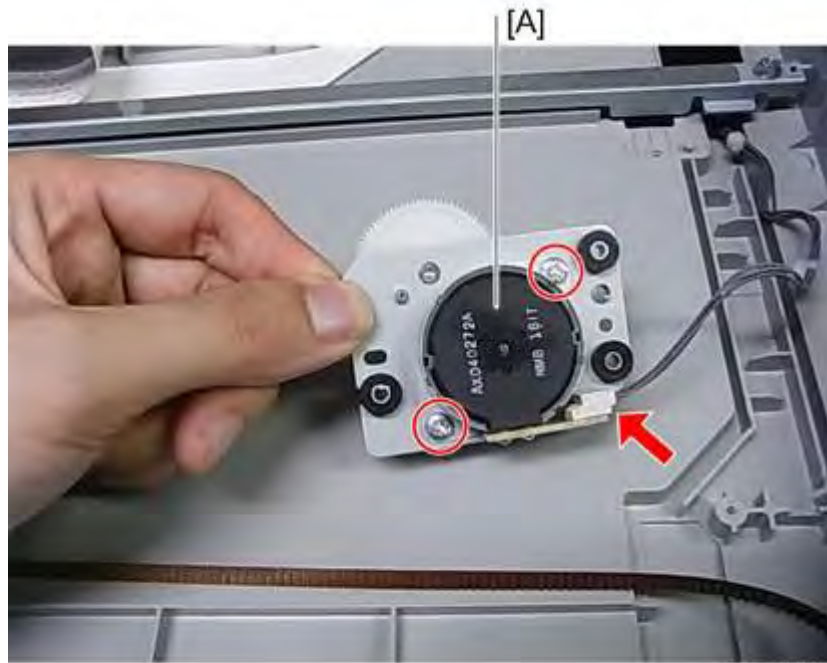
1. Scanner upper cover (page 4-4)
2. Shield plate [A] (🔩 × 2)



3. Scanner motor with the bracket [A] (🔩 × 3, belt × 1)



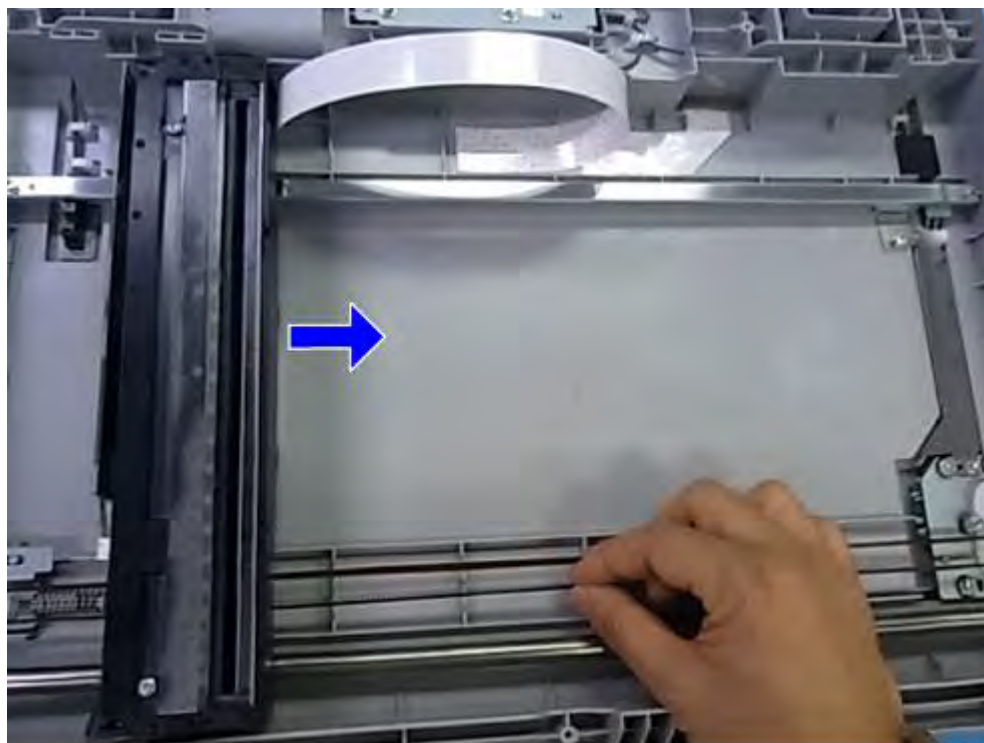
4. Scanner motor [A] (🔧 × 1, 🔩 × 2)



d1180013

4.7.5 SCANNER CARRIAGE

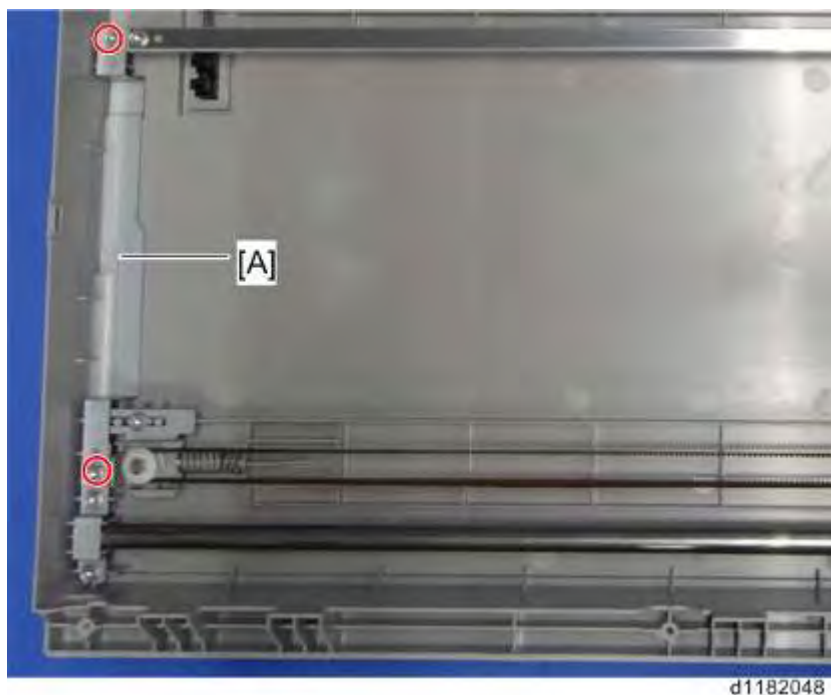
1. Scanner upper cover (page 4-4)
2. Move the carriage to the right.



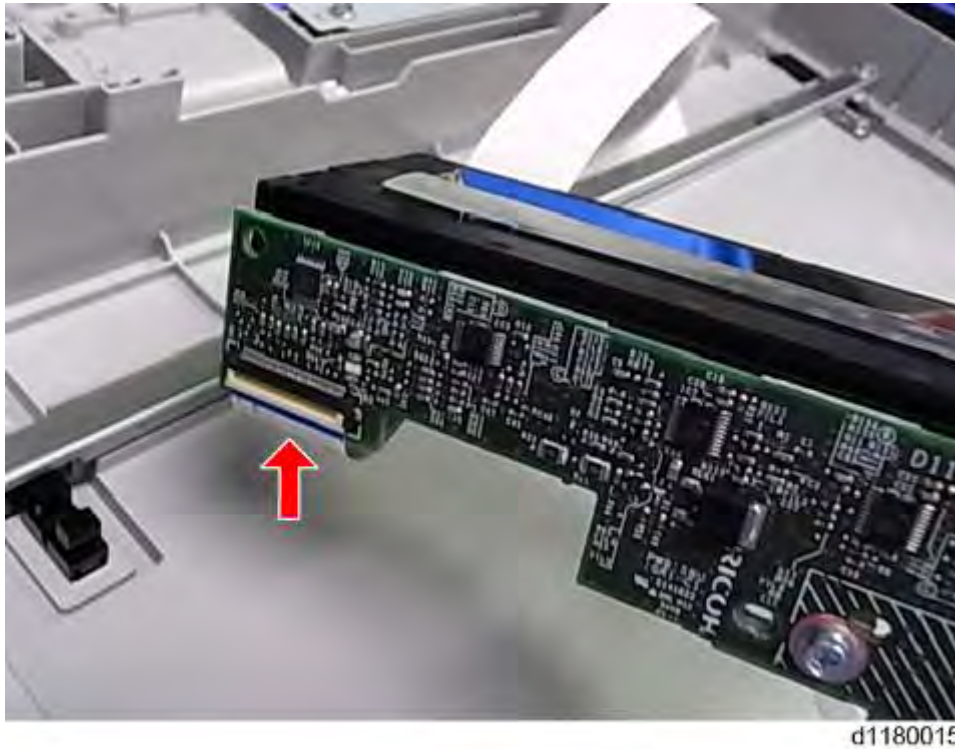
d1180008

★ Important

- To move the carriage, hold the carriage belt and move it carefully.
- Never hold the carriage itself.

3. Bracket [A] (🔩 × 2)**4. Bracket [A] (🔩 × 2)****5. Disconnect the flat cable while lifting up the carriage shaft. (🔧 × 1)****↓ Note**

- The FFC is attached with double-coated adhesive tape. When reassembling, be sure to align the tape position where originally attached.



6. Remove the scanner carriage.



Note

- Wipe off oil adhered disproportionately to the carriage after the carriage is replaced.
- Never wipe off the oil on the shaft of the carriage.

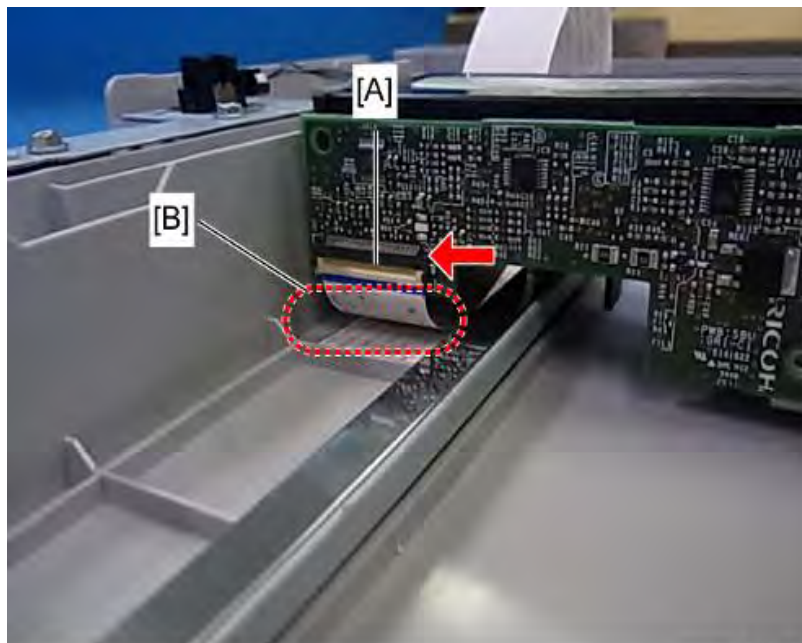
Reinstalling the Carriage

Make sure that the flat cable of the carriage is correctly connected and routed referring to the following points.

- The flat cable [A] must be connected straight, and not at an angle.

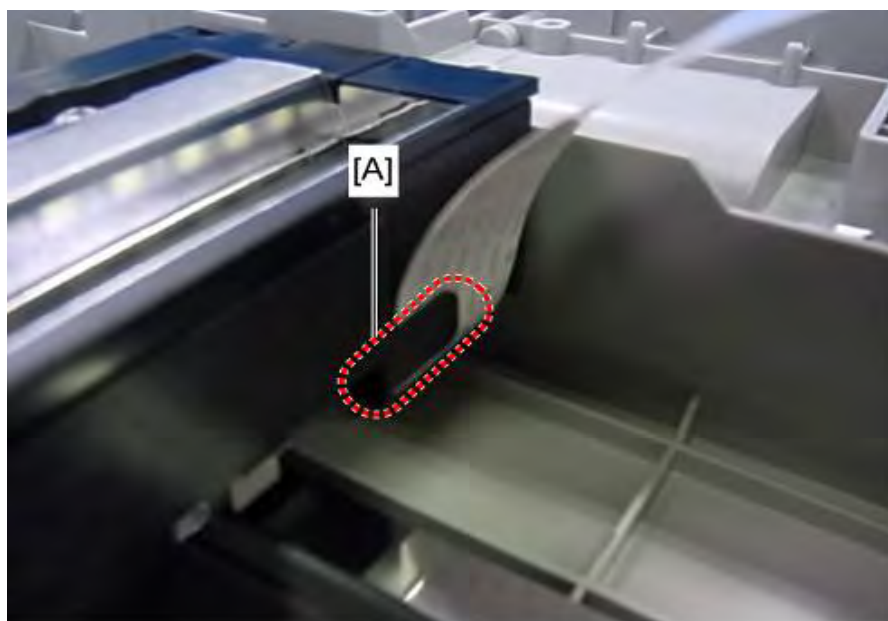
★ Important

- **Never connect the flat cable to the carriage connector at an angle. Otherwise, the BiCU or the SBU may be damaged.**
- The flat cable must not be sagging and must not drag on the bottom of the scanner unit [B].



d1170737

- The flat cable must be hooked at part [A] of the carriage.



d1170738

4.8 LASER OPTICS

⚠ WARNING

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

4.8.1 CAUTION DECAL LOCATION

The caution decal is attached as shown below.

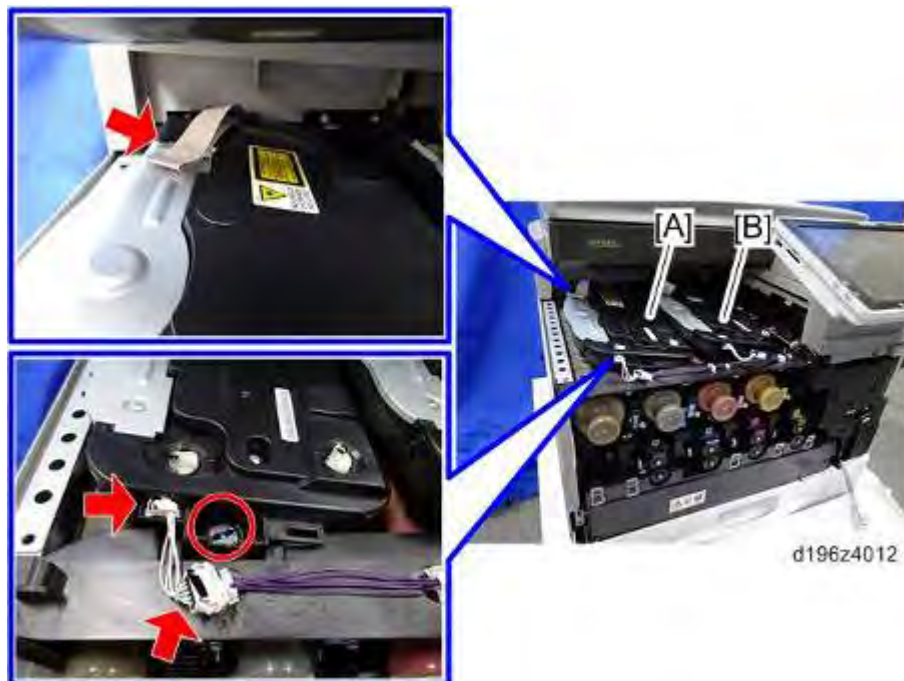


4.8.2 LASER UNITS

↓ Note

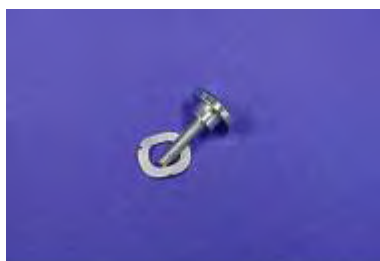
- The machine has two laser units. This procedure describes replacement of laser unit 1. Replacement of laser unit 2 can be done in the same way.

- Paper exit tray (page 4-2)**
- Remove the screw and connector. Disconnect the stopper of the flat cable of the laser unit 1 [A].** (⚙ × 1, 🔌 × 1, 🛑 × 2)
Repeat this procedure with the laser unit 2 [B].



↓ Note

- Be sure to install the washer under the screw when assembling.

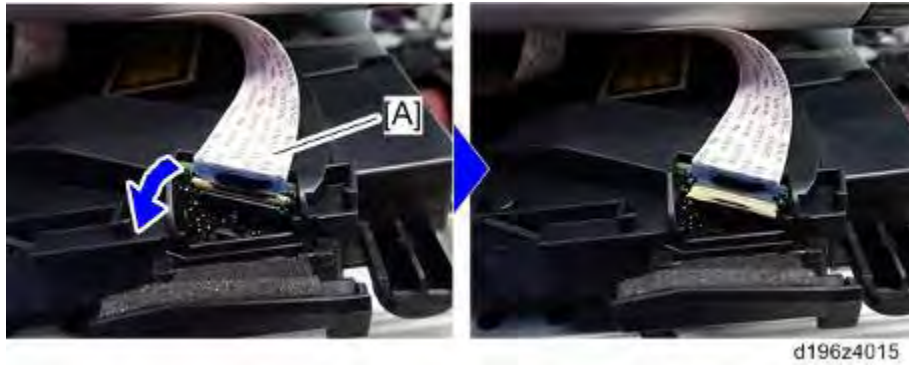


- Pull the laser unit [A] out slightly, open the connector cover, and then disconnect the FFC [B]. (🔧 × 1)



↓ Note

- Unlock the FFC [A] by lowering the white tab.



- Never touch the shield glass under the laser units when replacing them.

Adjustment after Laser Unit Replacement

Do the following settings after replacing the laser unit.

Initializing the D-Phase data and shading data

1. Plug in and turn on the main power switch of the machine.
2. Enter the SP mode.
3. Execute the SPs of the replaced laser unit.

K/C:

SP2-180-004 (Line Pos. Adj. Clear Area Magnification Correction: unit1)

SP2-180-006 (Shade. Adj. Clear Shading Correction: Unit1)

M/Y:

SP2-180-005 (Line Pos. Adj. Clear Area Magnification Correction: unit2)

SP2-180-007 (Shade. Adj. Clear Shading Correction: Unit2)

4. Execute SP3-011-001 (Manual ProCon: Exe, Normal ProCon).
5. Exit SP mode.
6. Cycle the main power off/on.

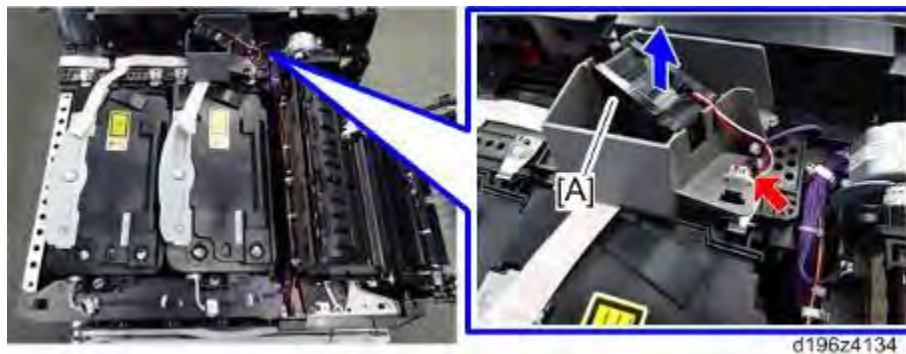
Executing Skew Adjustment

Do the skew adjustment manually.

Refer to "page 4-1 "Color Skew Adjustment""

4.8.3 LD UNIT COOLING FAN

1. Scanner Unit (page 4-2)
2. Paper Exit Tray (page 4-2)
3. LD unit cooling fan [A] (🔧 × 1)



4.9 PCDU, TONER SUPPLY

4.9.1 PCDU (PHOTO CONDUCTOR AND DEVELOPMENT UNIT)

★ Important

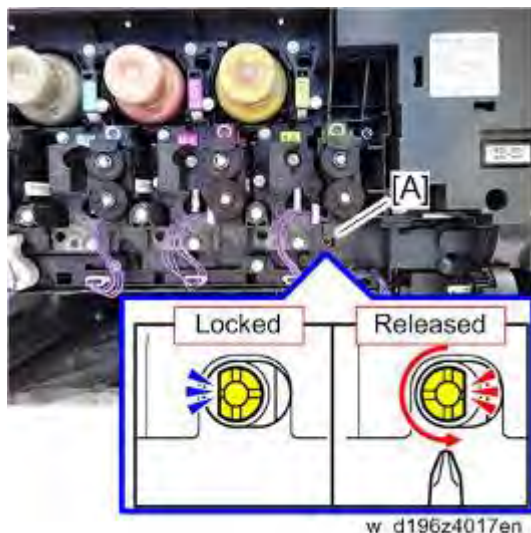
- The PCDU (K) for MP C306 is different from the one for MP C406. Make sure that you use the correct part number when ordering a PCDU (K).

1. Waste toner bottle (page 4-3)
2. Only when removing the PCDU (K): Release the lock lever [A].



↓ Note

- This step is not required for removing the PCDU (CMY).
3. Check that the ITB has no tension before removing the PCDU. Otherwise, the ITB may be damaged. To release the tension of the ITB, turn the pressure release screw [A] counterclockwise, until the flat part of the half moon on the screw points to the right.



4. PCDU [A] (⚙️ × 2, 🛠️ × 1, 🔑 × 1)



⚠ CAUTION

- Before putting the PCDU back in the machine, check that the ITB has no tension. See step 3 for how to do this.

5. Put the removed PCDU on a flat surface with a sheet of paper under it.

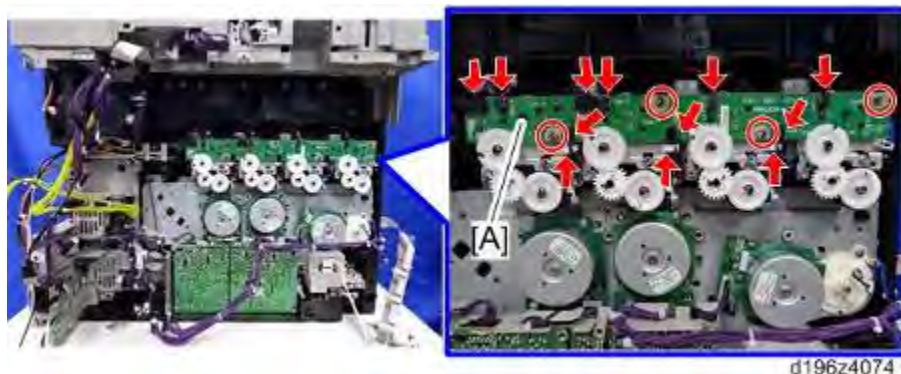


↓ Note

- After replacing the PCDU, set the lock lever released in step 2.
- A new unit detection mechanism for the PCDU clears the PM counters automatically.
- After replacing the PCDU, do the skew adjustment manually. See “page 4-1 “Color Skew Adjustment””.

4.9.2 TONER BOTTLE DETECTION BOARD

1. Power Pack (Development) (page 4-1)
2. Toner Bottle Detection Board [A] (⚙️ × 4, ⚙️ × 3, 📡 × 9)

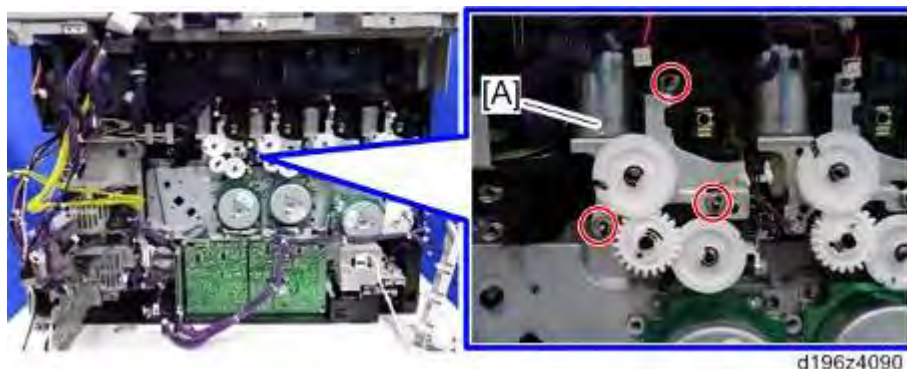


4.9.3 TONER SUPPLY MOTORS

↓ Note

- The following is the replacement procedure for Y. The motors for the other three colors can be replaced with the same procedure as Y.

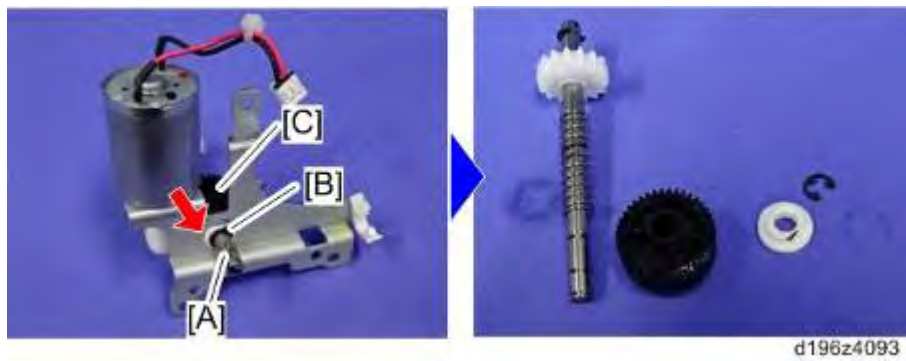
1. Toner Bottle Detection Board (page 4-1)
2. Toner supply motor unit [A] (⚙️ × 3)



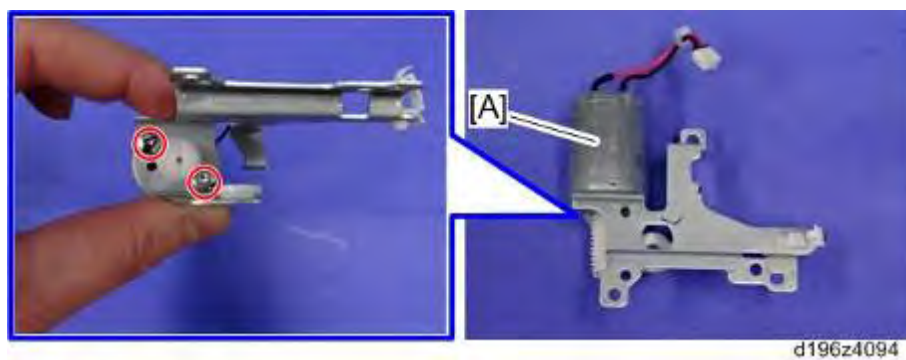
3. Remove the gear [A]. (⚙️ × 1 each)



4. Shaft [A], bearing [B], gear [C] (⚙️ × 1 each)



5. Toner supply motor [A] (🔧 × 2)

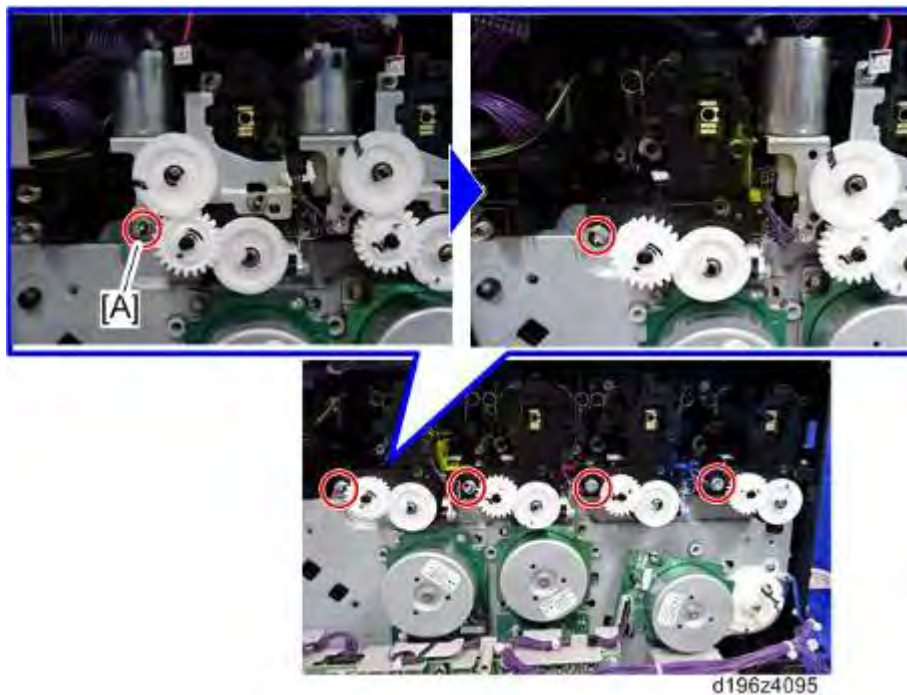


4.9.4 TONER TRANSPORT SECTION

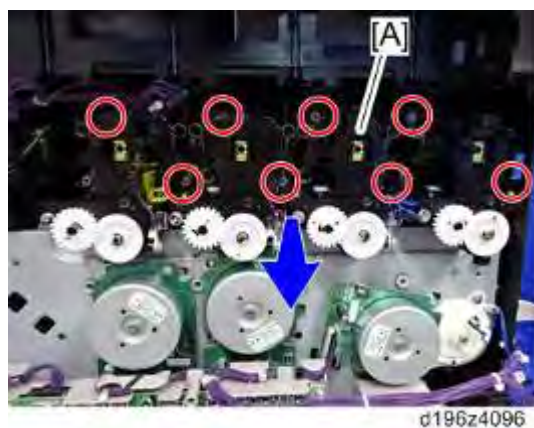
1. Toner supply motors (All colors) (page 4-1)

↓ Note

- After removing the toner supply motor, secure four screws [A] on the toner transport section to prevent toner from flying off.



- Toner bottles (all colors)
- PCDU (all colors) (page 4-2)
- Toner supply unit (🔧 × 8)



↓ Note

- Pull out the toner supply unit upward at an angle.

5. Toner transport section [A] (🔧 × 1)



SP Setting after Replacing the Toner Transport Section

The following SP settings are required after a toner transport section (the toner sub-hopper) is replaced.

- 1. Plug in and turn the main power on.**
- 2. Enter the SP mode.**
- 3. Set the following SPs (Toner supply flag) to “1” depending upon the color of the replaced unit.**
 - SP3-510-031 (Image Quality Adj.: Exec Flag Init Toner Replenishment: Bk)
 - SP3-510-032 (Image Quality Adj.: Exec Flag Init Toner Replenishment: C)
 - SP3-510-033 (Image Quality Adj.: Exec Flag Init Toner Replenishment: M)
 - SP3-510-034 (Image Quality Adj.: Exec Flag Init Toner Replenishment: Y)
- 4. Exit from the SP mode.**
- 5. Turn the main power off and on.**

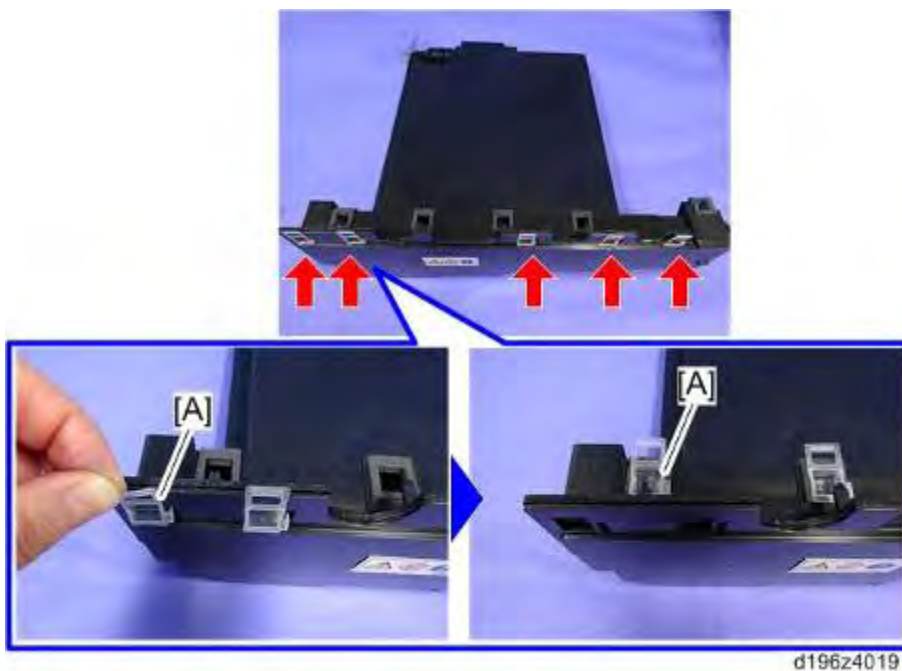
4.10 WASTE TONER

4.10.1 WASTE TONER BOTTLE

1. Pull out the paper tray.
2. Open the front cover.
3. Waste toner bottle [A]



4. Install the five waste toner bottle caps on the waste toner inlets. The examples [A] in the photo are for black.



Adjustment after Replacement

- When you replace the waste toner bottle AFTER a waste toner full or near-full message appears on the operation panel, the PM counters are automatically cleared after turning the main power ON.
- When you replace the waste toner bottle BEFORE a waste toner full or near-full message appears on the operation panel, do SP3-701-142 (Manual New Unit Set Waste Toner Bottle) to set it to “1”, and turn the main power off and on.

4.10.2 WASTE TONER FULL SENSOR

1. Waste toner bottle (page 4-3)
2. Waste toner full sensor [A] (🔑 × 1, hook × 2)



4.10.3 WASTE TONER BOTTLE SET SENSOR

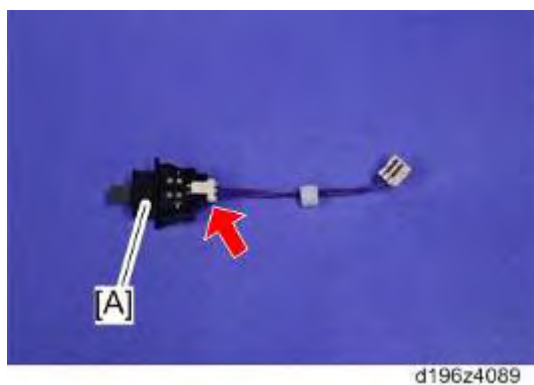
1. Waste toner bottle (page 4-3)
2. Waste toner bottle set sensor [A] (🔧 × 1)



↓ Note

- Release the tab with a jeweler's screwdriver to remove the sensor.

3. Remove the harness from the waste toner bottle set sensor [A]. (🔧 × 1)



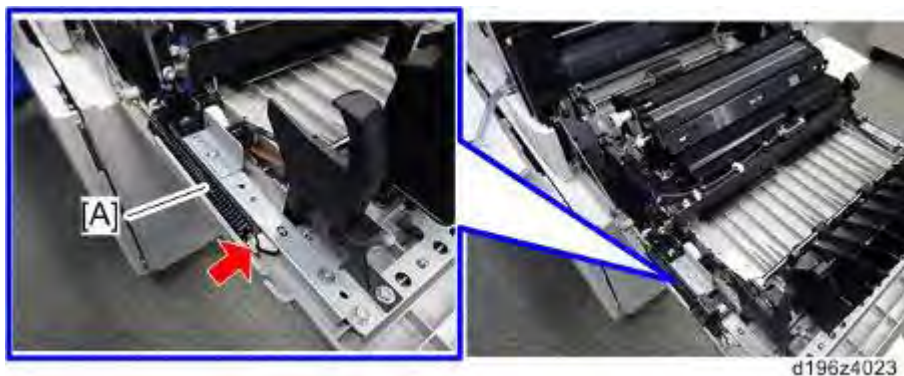
4.11 IMAGE/PAPER TRANSFER

4.11.1 ITB (IMAGE TRANSFER BELT) UNIT

1. All PCDUs (page 4-2)
2. Fusing Unit (page 4-5)
3. Tension spring cover [A] (🔧 × 1)



4. Tension spring [A] (🔧 × 1)



5. Tension belt [A] (🔧 × 1)



6. Put a sheet of paper [A] on the duplex unit with the short edge of the paper pointing towards the ITB unit.



↓ Note

- This is to protect the paper transfer unit from toner when removing the ITB unit.

7. ITB unit securing bracket [A] (🔩 × 1)



8. Pull out the ITB unit [A].



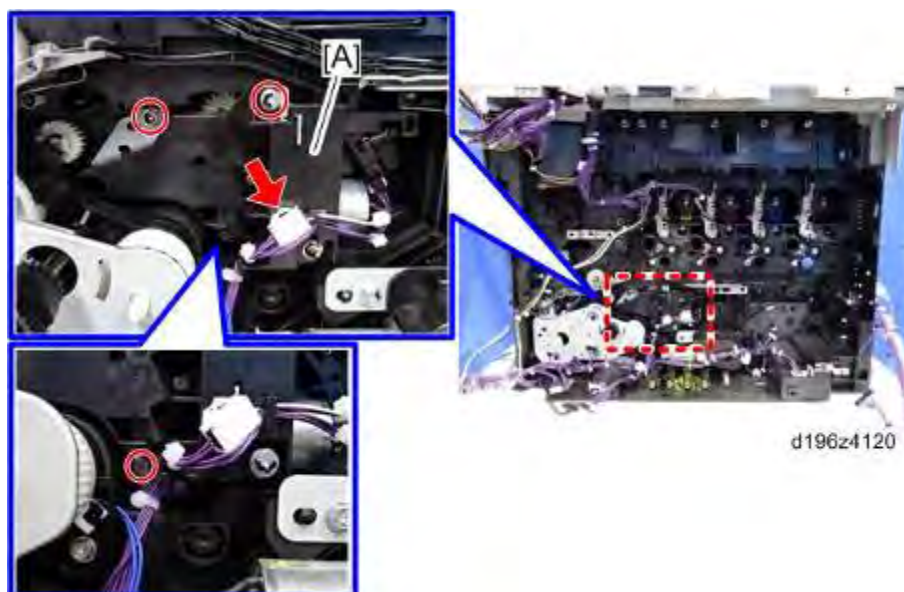
After Replacing the Image Transfer Belt Unit

Do the following after replacing the ITB unit.

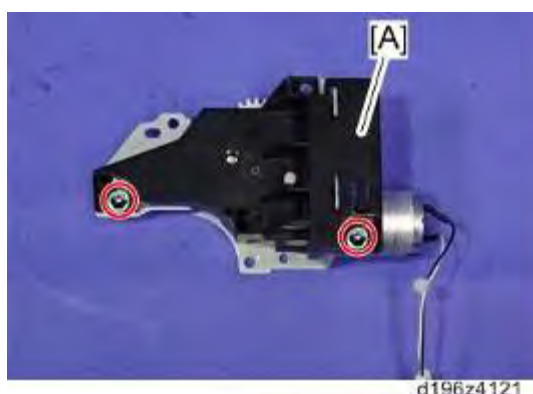
1. Enter the SP mode.
2. Set SP3-701-093 to "1" (This is the manual setting for the new unit detection).
3. Set SP1-001-031 (Leading Edge Registration Std. Measure: On/Off) to "1".
4. Execute SP2-111-004 (Forced Line Position Adj. Mode d).
5. SP values from SP1-001-033 to 040 (Leading Edge Registration Offset Standard: 1 to 8) are updated by the above steps.
6. Reset SP1-001-031 to "0".
7. Exit from the SP mode.
8. Turn the main power off and on.

4.11.2 ITB CONTACT MOTOR

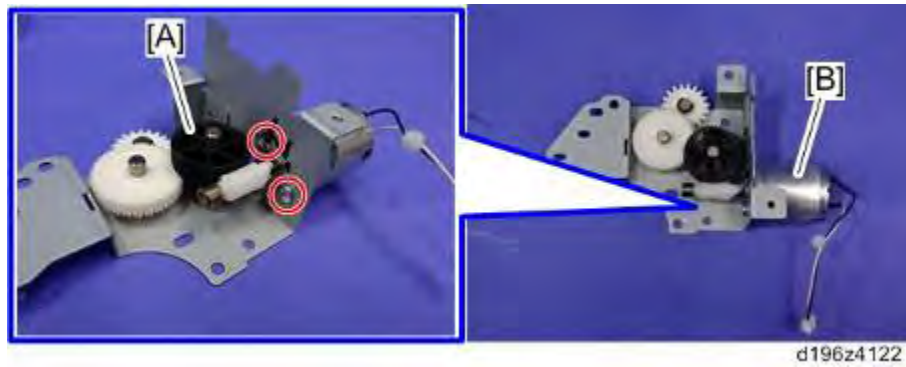
1. Drive unit (page 4-1)
2. ITB contact unit [A] (🔩 × 3, 🧰 × 1)



3. Cover [A] (🔩 × 2)

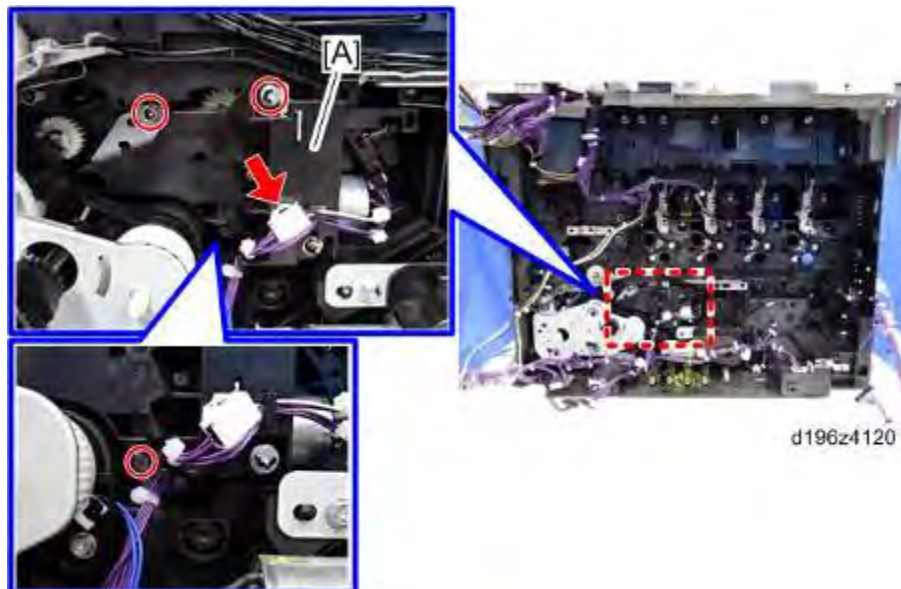


4. Gear [A] and ITB contact motor [B] (🔩 × 2)



4.11.3 ITB CONTACT HP SENSOR

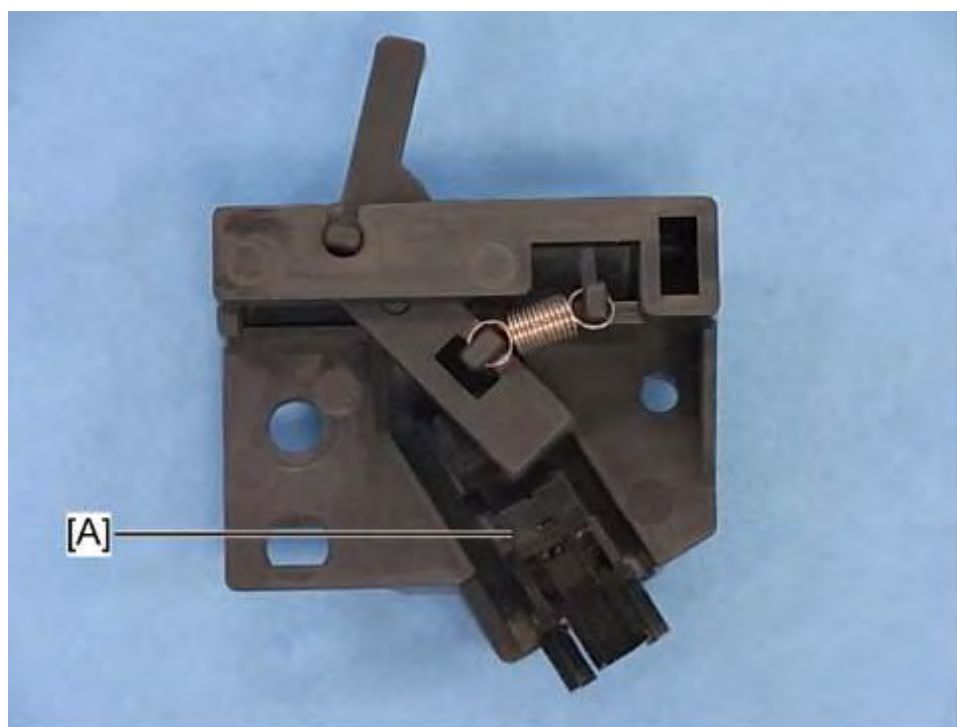
1. Drive unit (page 4-1)
2. ITB contact unit [A] (🔩 × 3, 📦 × 1)



3. Sensor bracket [A] (🔩 × 1, 📦 × 1)



4. ITB contact HP sensor [A] (Hook × 2)



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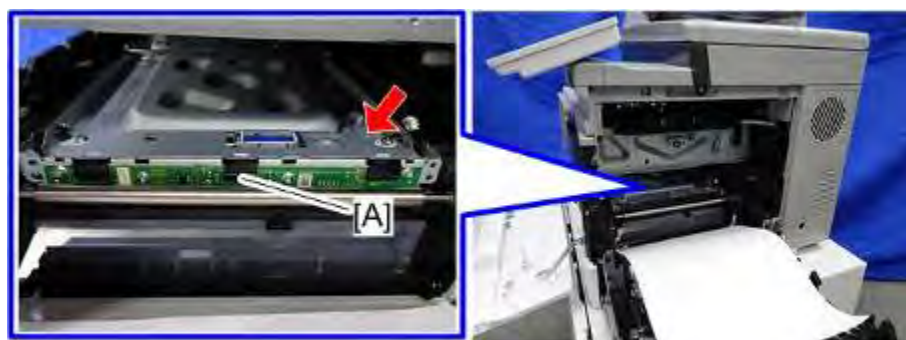
4.11.4 ID SENSOR

1. ITB unit (page 4-2)
2. Guide plate [A] (🔩 × 2)



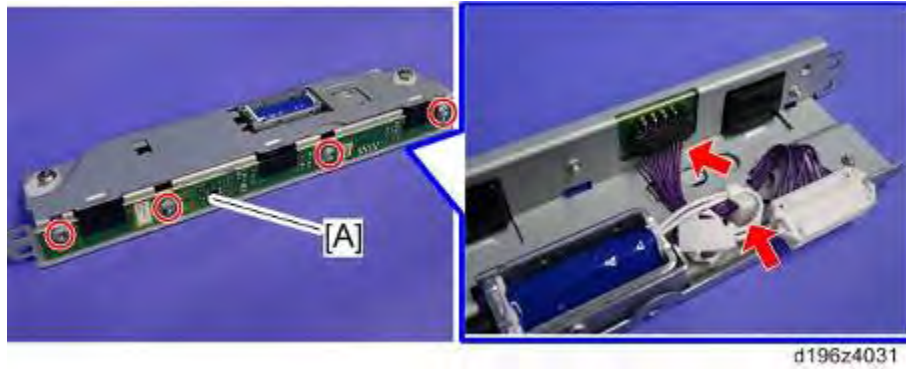
d196z4029

3. ID sensor [A] with the bracket (🔩 × 1)



d196z4030

4. ID sensor [A] (🔩 × 4, 📏 × 1, 📏 × 1)



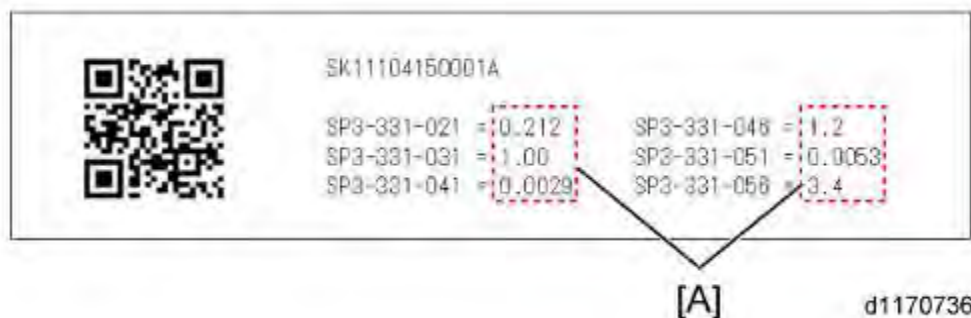
Note

- When cleaning the ID sensor, wipe the part [A] with a damp cloth.
- Do not wipe it with a dry cloth, or the ID sensor may attract dirt because of static electricity. Let it dry naturally if necessary.

After Installing a New ID Sensor Board

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

1. Plug in and turn on the main power.
2. Enter the SP mode.
3. Enter all correction coefficients [A] for ID sensor with the SP modes referring to the barcode sheet provided with the new ID sensor board.



Note

- For example, enter “1.2” with SP3-331-046.
4. Exit the SP mode.

4.11.5 ID SENSOR SHUTTER SOLENOID

1. ITB unit (page 4-2)
2. Guide plate [A] (🔩 × 2)



3. ID sensor with the bracket (🔩 × 1)



4. ID sensor shutter solenoid (🔩 × 2, 📡 × 1, 📡 × 1, 📡 × 1)



4.11.6 PAPER TRANSFER ROLLER

1. Open the duplex unit.

Note

- If you find paper dusts on the registration section when you open the duplex unit, remove the dusts. Otherwise, the dusts cause to develop lines on the image.



2. Remove the paper transfer unit [A] while holding the knob on both ends of the paper transfer roller with your fingers.



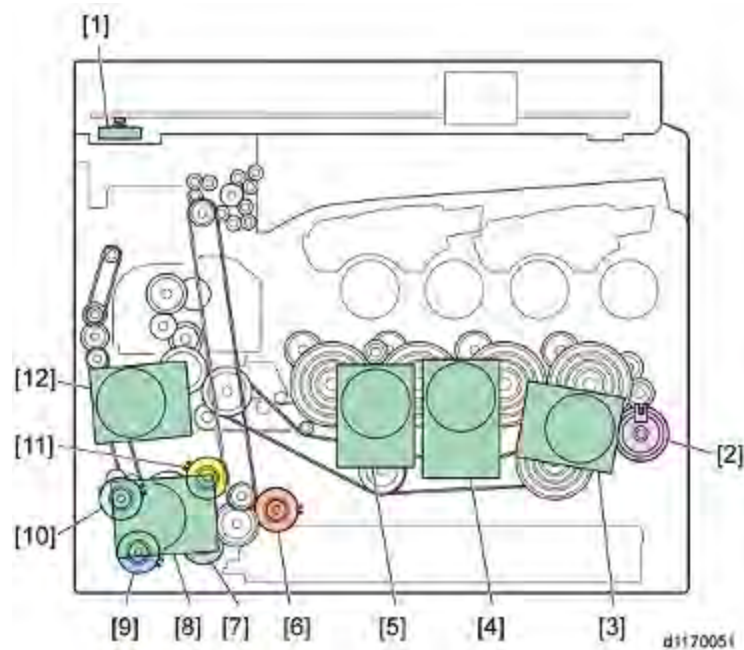
Adjustment after Replacement

Do the following SP:

1. Turn on the main power.
2. Enter the SP mode.
3. Set SP3-701-109 (Manual New Unit set # PTR Unit) to "1".
4. Exit the SP mode.
5. Turn off the main power.

4.12 DRIVE

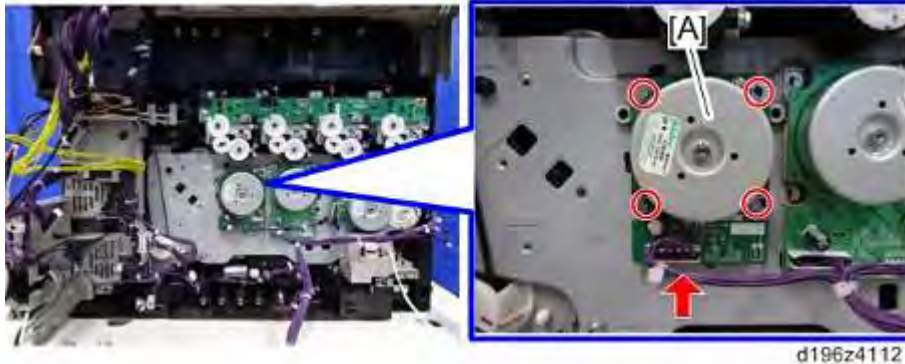
4.12.1 OVERVIEW



1. Scanner Motor
2. Development Clutch (K)
3. Drum Motor (K)
4. Drum Motor (CMY)
5. Development Motor (CMY)
6. Paper Feed Clutch
7. Bypass Lift Clutch
8. Paper Transport Motor
9. Bypass Feed Clutch
10. Duplex Clutch
11. Registration Clutch
12. Fusing Motor

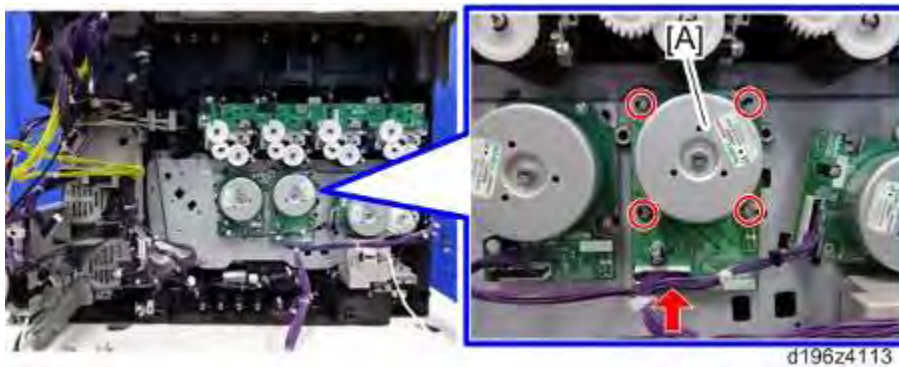
4.12.2 DEVELOPMENT MOTOR (CMY)

1. Power Pack (Transfer) with the bracket (page 4-2)
2. Remove the development motor (CMY) [A]. (⚙️ × 4, 🗑️ × 1)



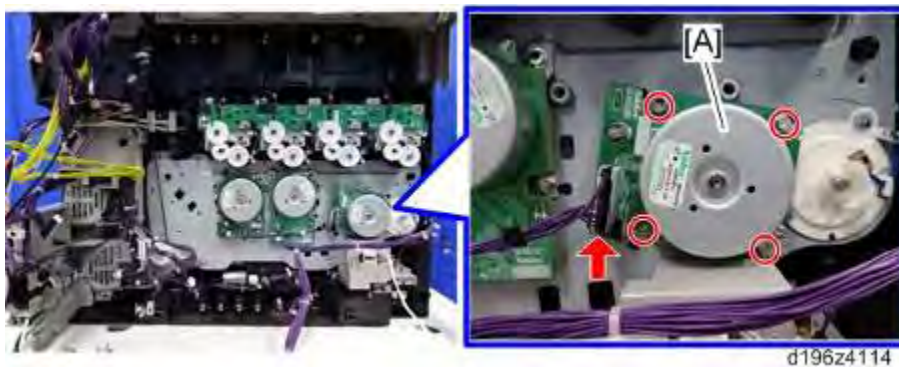
4.12.3 DRUM MOTOR (CMY)

1. Power Pack (Transfer) with the bracket (page 4-2)
2. Remove the drum motor (CMY) [A]. (⚙️ × 4, 🗑️ × 1)



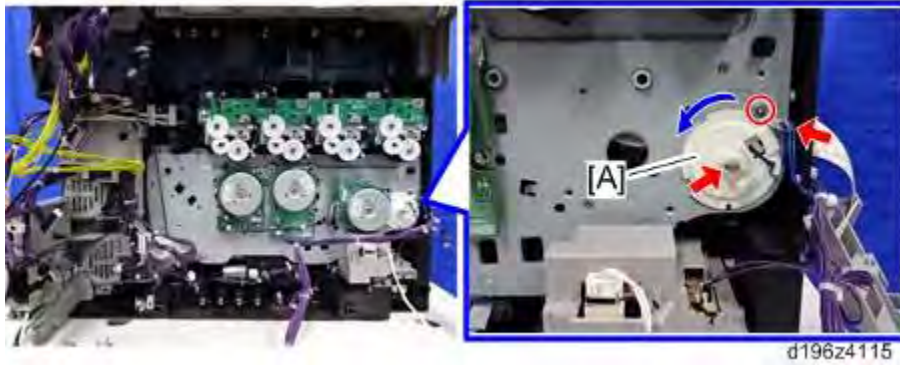
4.12.4 DRUM MOTOR (K)

1. Power Pack (Transfer) with the bracket (page 4-2)
2. Remove the drum motor (K) [A]. (⚙️ × 4, 🗑️ × 1)

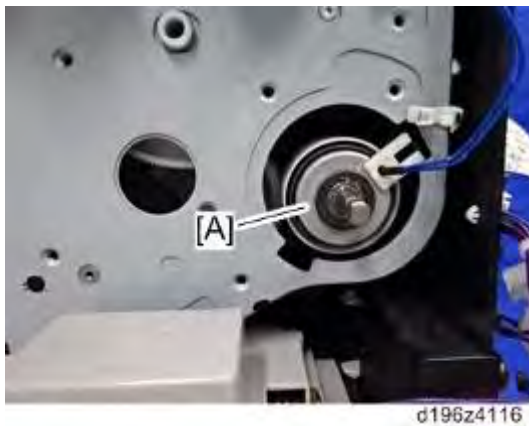


4.12.5 DEVELOPMENT CLUTCH (K)

1. Drum motor (K) (page 4-1)
2. Remove the development clutch cover [A] by rotating counterclockwise. (⚙️ × 1, ⚙️ × 1, ⚙️ × 1)

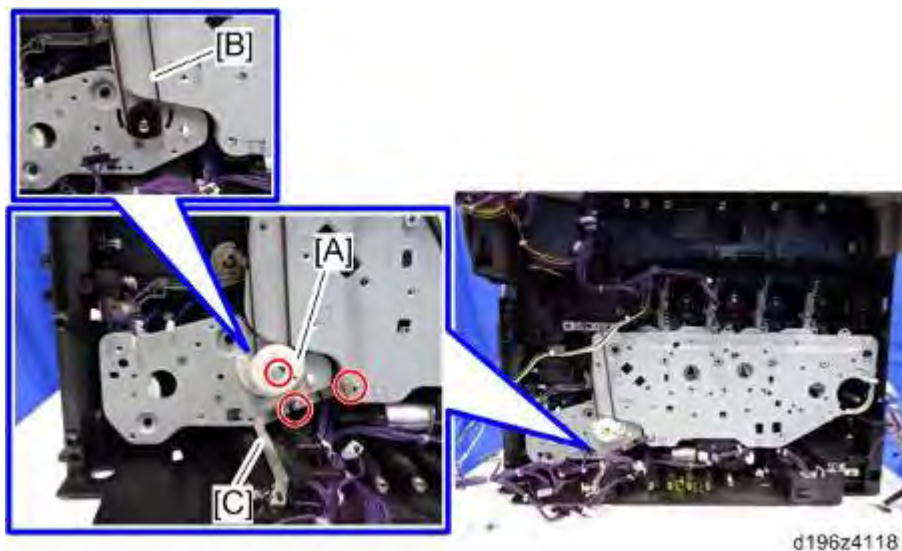


3. Development Clutch [A]

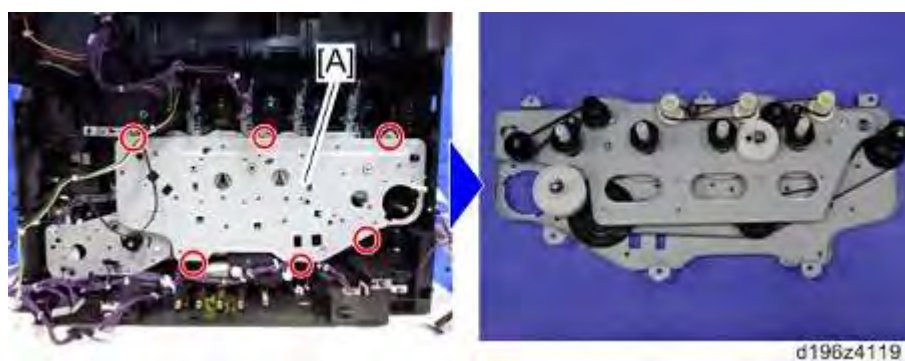


4.12.6 DRIVE UNIT

1. Toner transport section (page 4-1)
2. Development Motor (CMY) (page 4-1)
3. Drum Motor (CMY) (page 4-1)
4. Drum Motor (K) (Link)
5. Development Clutch (K) (page 4-1)
6. Gear cover [A], Belt [B], Grounding plate [C] (⚙️ × 3, 🌀 × 1)

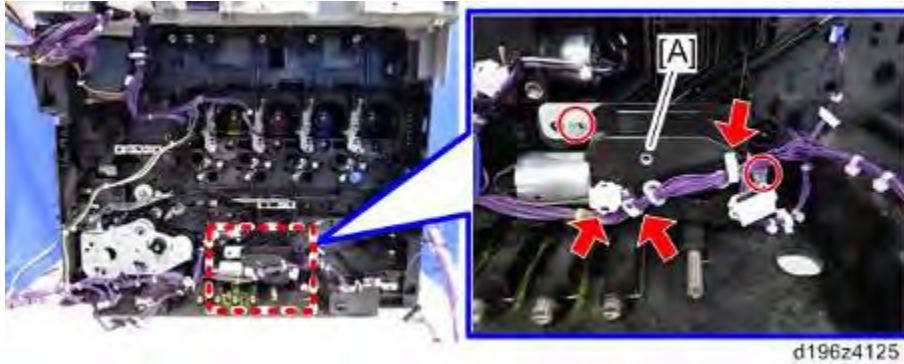


7. Drive Unit [A] (⚙️ × 6)

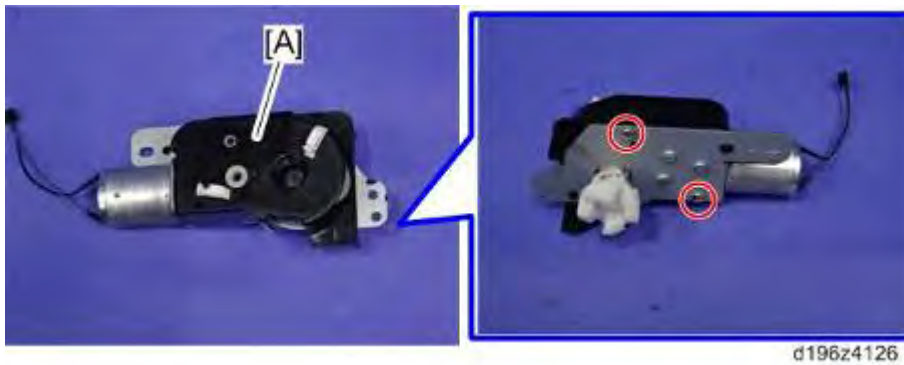


4.12.7 TRAY LIFT MOTOR

1. Drive unit (page 4-1)
2. Tray lift motor unit [A] (🔩 × 2, 🛠 × 2, 📦 × 1)



3. Motor cover [A] (🔩 × 2)

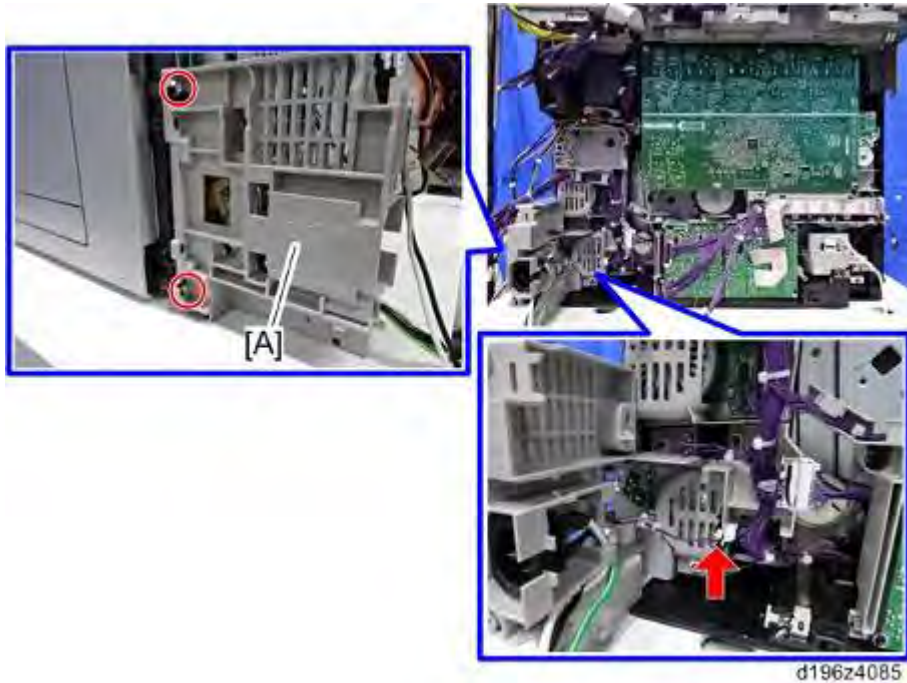


4. Tray lift motor [A] (🔩 × 2)

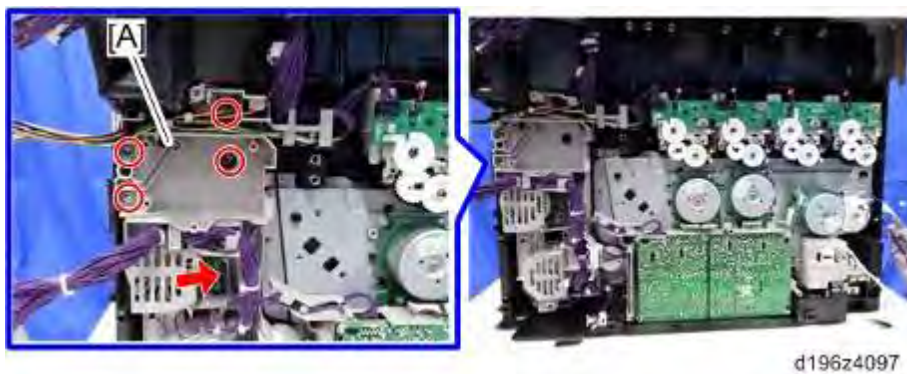


4.12.8 FUSING MOTOR

1. PSUs with the bracket (page 4-4)
2. DC Switch cover [A] (🔩 × 2, 📦 × 1)



3. Power Pack (Development) (page 4-1)
4. Release the harness and remove the harness guide [A]. (🔩 × 4, 📦 × 1)

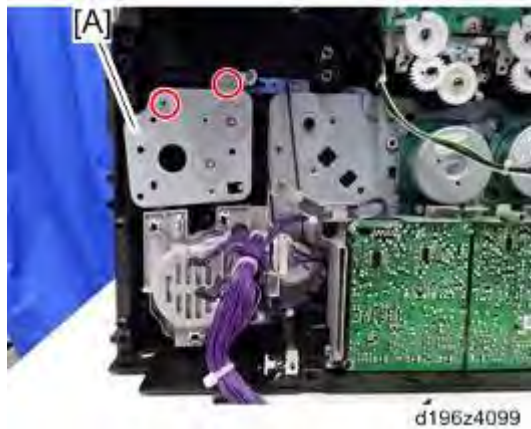


5. Fusing motor [A] (🔩 × 4)



4.12.9 PAPER TRANSPORT MOTOR

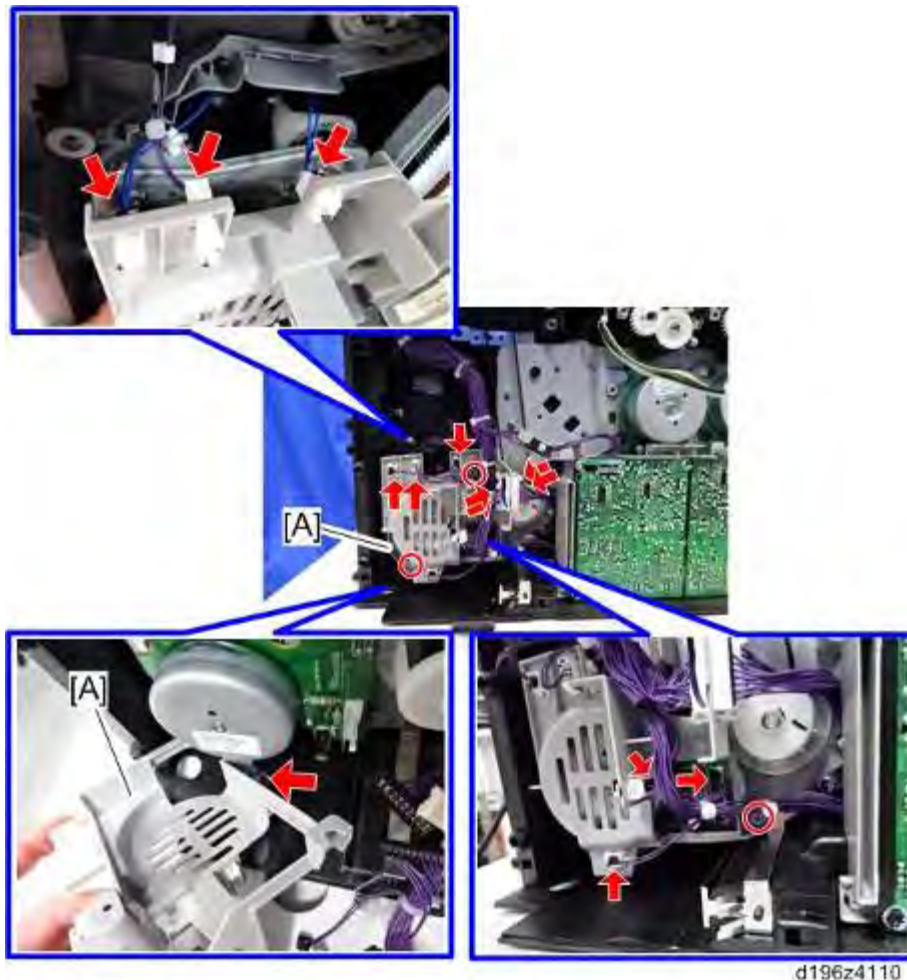
1. Fusing motor (page 4-1)
2. Fusing drive motor bracket [A] (🔧 × 2)



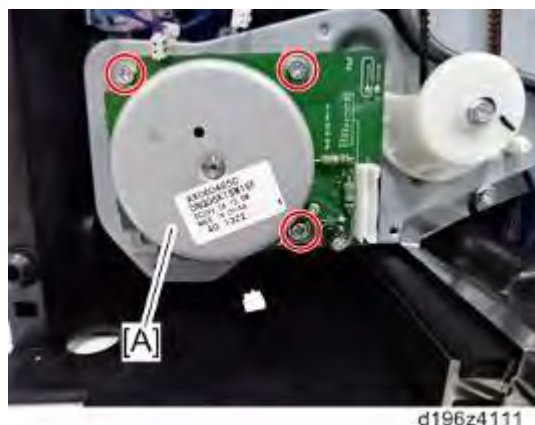
3. Harness guide [A] (🔧 × 3, 📏 × 14)

Note

- There are connectors behind the harness guide. Remove the guide carefully.

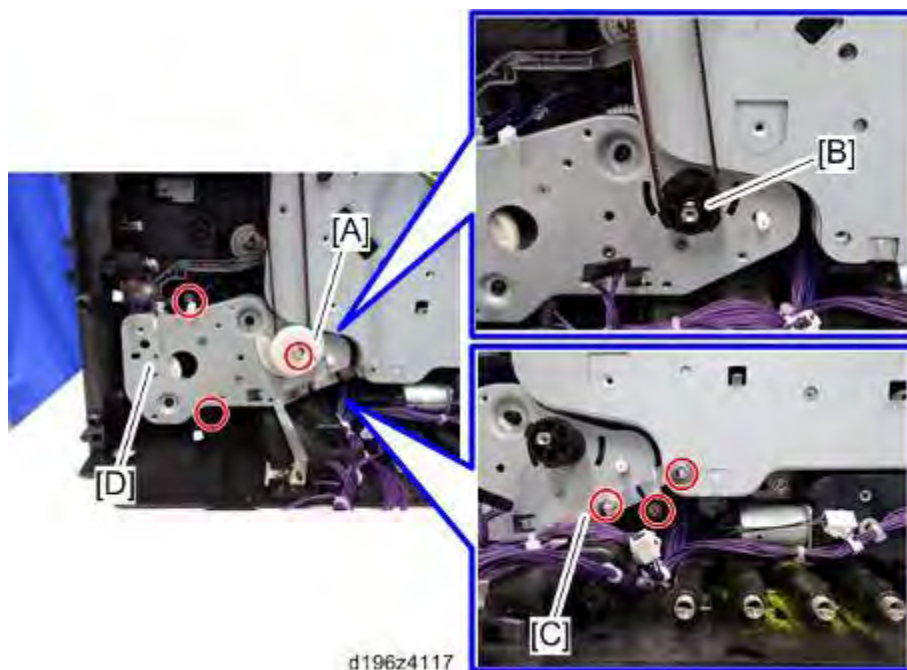


4. Paper transport motor [A] (🔧 × 3)

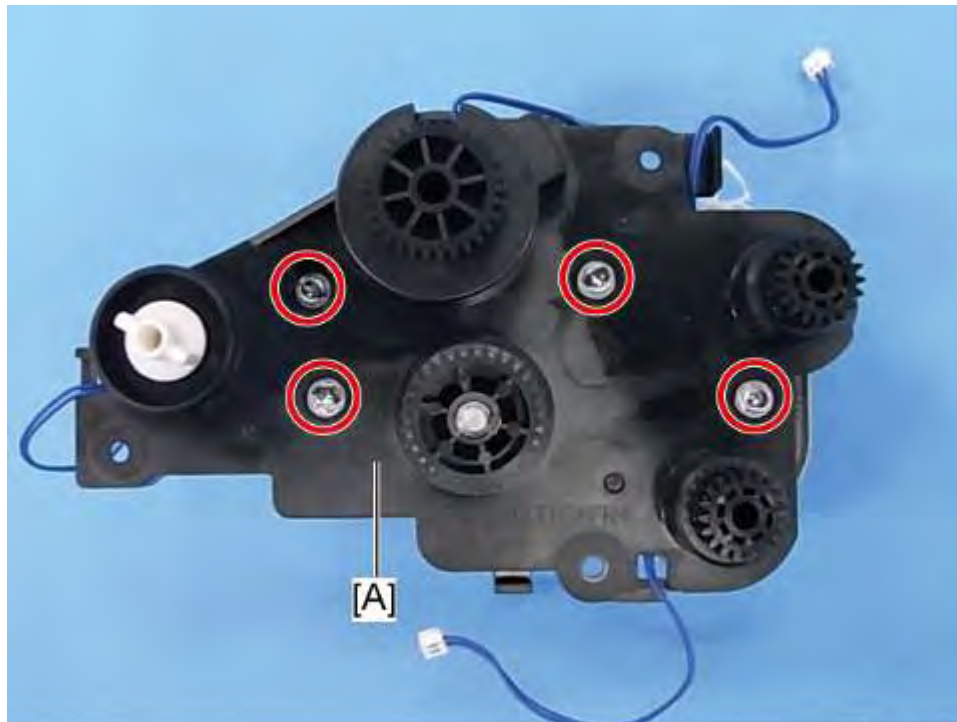


4.12.10 DUPLEX CLUTCH, BY-PASS FEED CLUTCH, REGISTRATION CLUTCH, PAPER FEED CLUTCH

1. Paper transport motor (page 4-2)
2. Power pack (Transfer) with the bracket (page 4-2)
3. Gear cover [A], gear [B] (⚙️ × 1, ⚙️ × 1)
4. Grounding plate [C] (⚙️ × 2)
5. Paper transport unit [D] (⚙️ × 3)

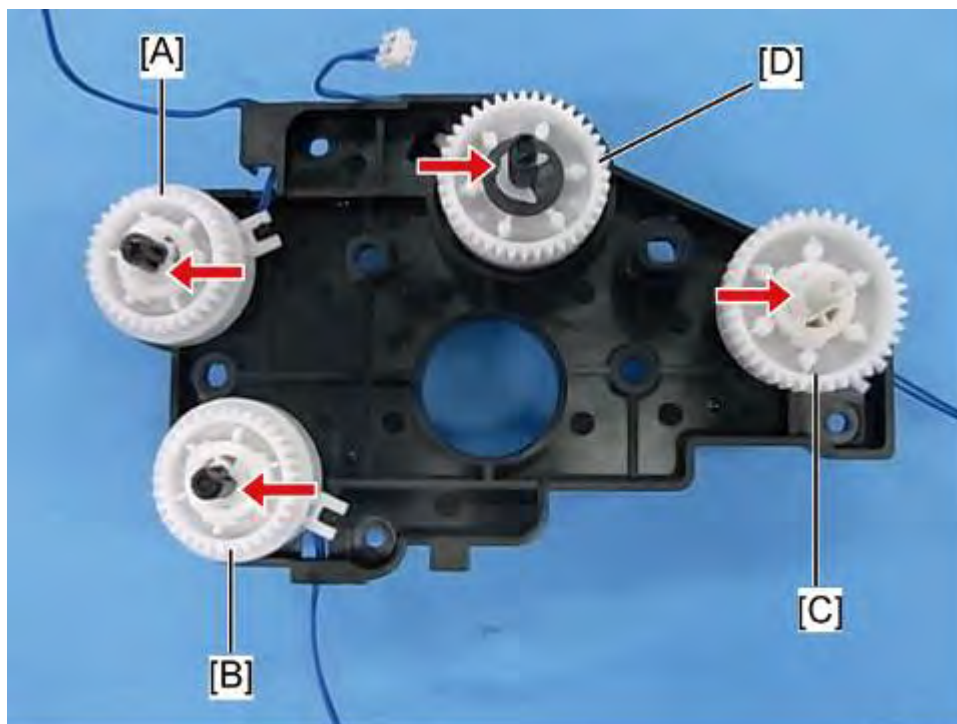


6. Paper transport unit cover [A] (⚙️ × 4)



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7. Each clutch (× 1 each)



d1170176

- [A]: Duplex clutch
- [B]: By-pass feed clutch
- [C]: Paper feed clutch
- [D]: Registration clutch

4.13 FUSING

4.13.1 FUSING UNIT

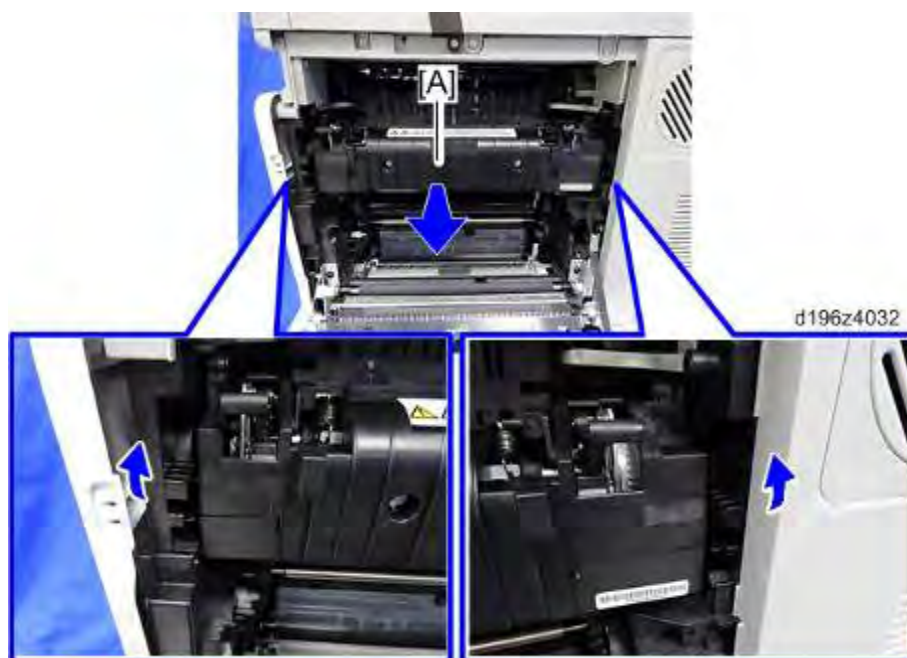
⚠ CAUTION

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

★ Important

- Basically, the entire fusing unit must be replaced when SC554-00 occurs.
- In some cases, the fusing unit need not be replaced if SC554-00 occurs. See “page 4-1 “Actions When SC554-00 Occurs”” for these cases.

- Release the left and right lock levers, then remove the fusing unit [A].



SP Setting after Fusing Unit Replacement

- Plug in and turn the main power on.
- Enter the SP mode.
- Set SP3-701-115 (Manual New Unit set # Fusing Unit) to “1”.
- Exit the SP mode.
- Turn the main power off and on.

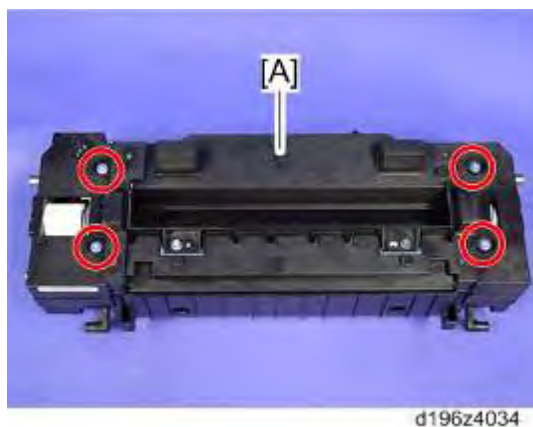
4.13.2 FUSING UPPER COVER

1. Fusing upper cover [A] (🔩 × 4)



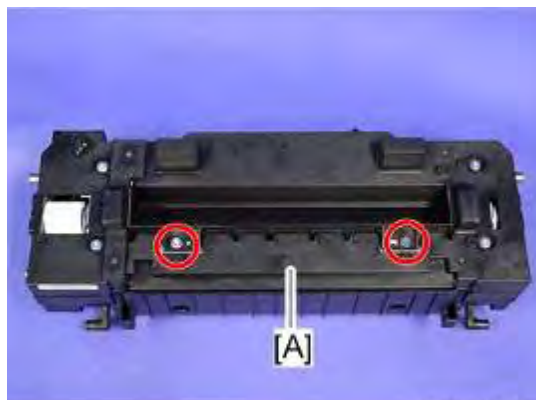
4.13.3 FUSING LOWER COVER

1. Fusing lower cover [A] (🔩 × 4)



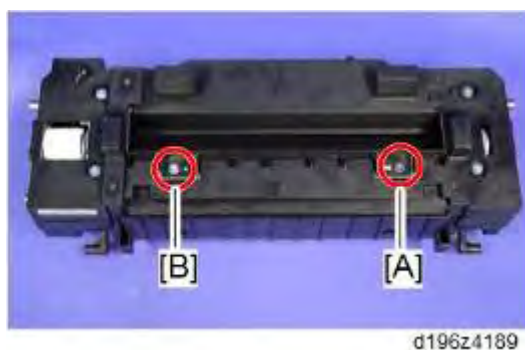
4.13.4 FUSING ENTRANCE GUIDE PLATE

1. Fusing entrance guide plate [A] (🔑 × 2)



↓ Note

- There are two screw holes for each screw on the entrance guide plate. Use the outer holes when tightening the entrance guide plate.
- Different types of screws are used for [A] and [B]:
- [A]: Shoulder screw
- [B]: Double sems screw (a screw with a washer)



4.13.5 FUSING THERMOSTAT

1. Fusing upper cover (page 4-1)
2. Fusing Thermostat [A] (🔧 × 2)



⬇ Note

- Never re-use a thermostat that has activated. Use a new thermostat for replacement.

4.13.6 FUSING THERMISTOR

★ Important

- If the hook of the fusing thermistor is broken, the fusing thermistor cannot be attached.
Replace the entire fusing unit in that case.

1. Fusing upper cover (page 4-1)
2. Push the hooks and remove the fusing thermistor [A] (🔧 × 1).



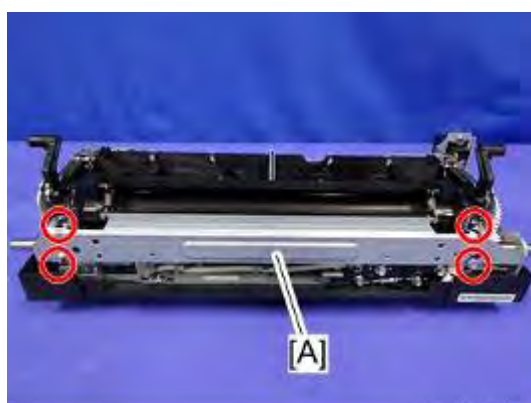
4.13.7 FUSING PRESSURE ROLLER THERMISTORS

1. Fusing upper cover (page 4-1)
2. Raise the fusing lever.



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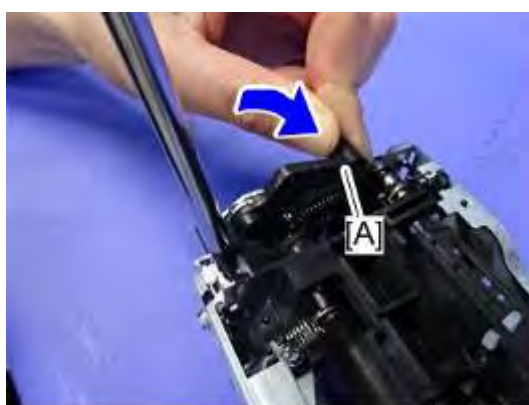
3. Remove the bracket [A]. (🔩 × 4)



d196z4039

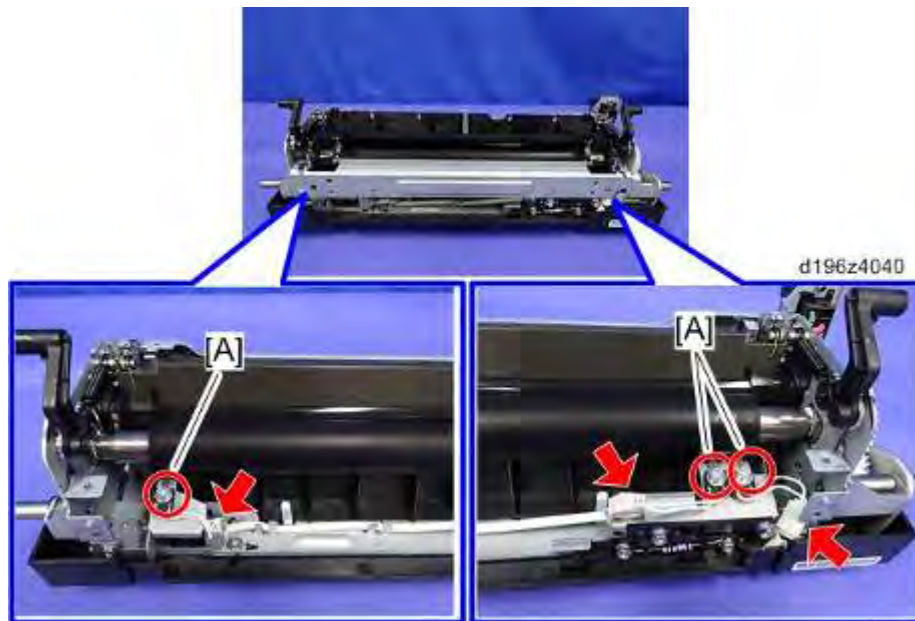
⬇ Note

- Lift the fusing lever while removing the upper screws



d196z4049

4. Pressure Roller Thermistors [A]. (🔧 × 1 each, 🔩 × 1 each)



4.13.8 PRESSURE ROLLER

1. Fusing Sleeve Belt Assembly (page 4-1)
2. Pressure roller [A]



4.13.9 FUSING SLEEVE BELT ASSEMBLY

1. Fusing lower cover (page 4-1)

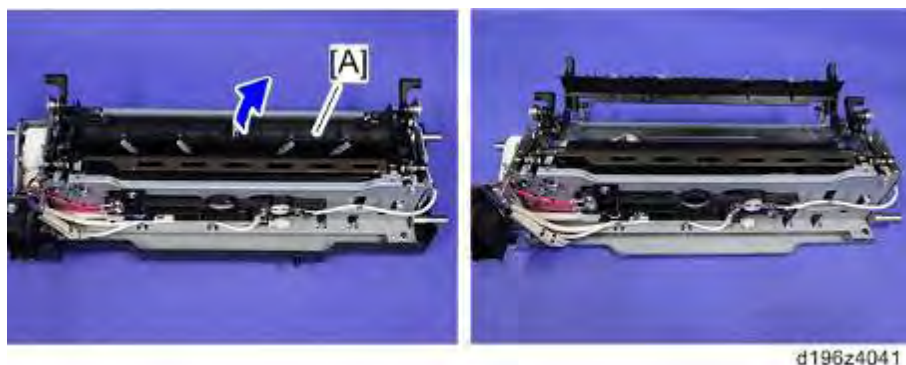
⚠ CAUTION

- Place a cloth or sheet of paper under the fusing unit when removing the fusing lower cover. Otherwise, the screw(s) and gear(s) exposed after removing the cover will scratch or transfer grease to the work surface.

2. Fusing entrance guide plate (page 4-1)

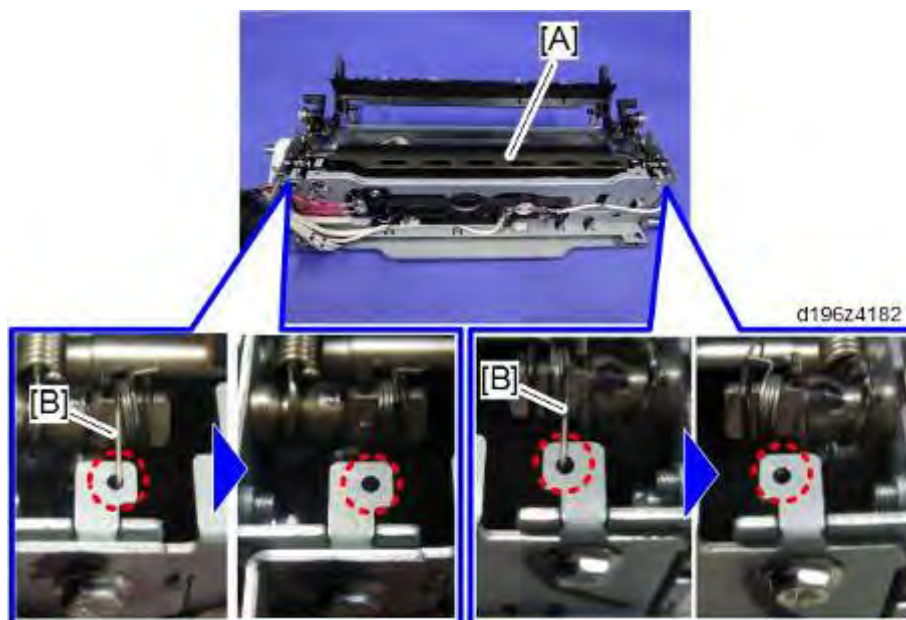
3. Fusing upper cover (page 4-1)

4. Raise the fusing exit guide plate [A].



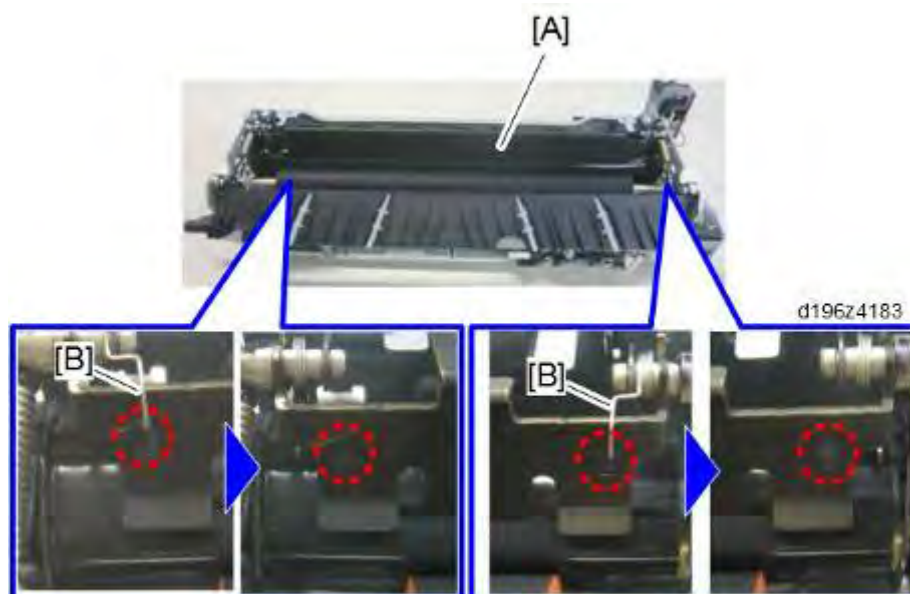
d196z4041

5. Remove the springs [B], which are on both ends of the separation plate [A], from the holes in the frame (🔧 × 2).

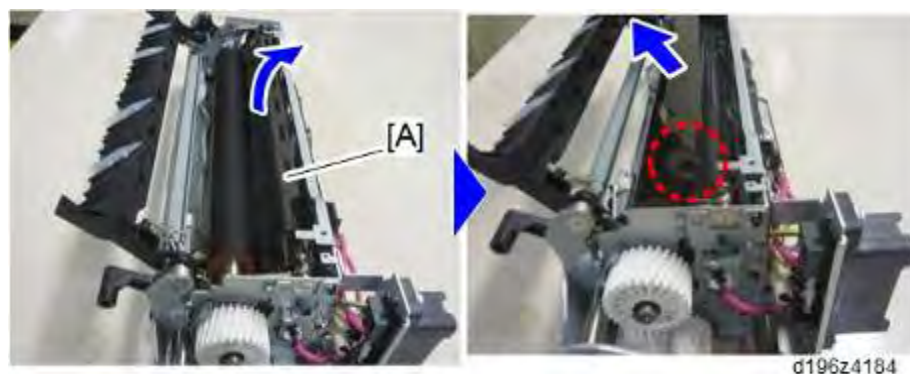


d196z4182

6. Remove the springs [B], which are on both ends of the separation plate [A], from the holes in the separation plate (🔧 × 2).



7. Rotate the separation plate [A], and remove it from the frame.



⚠ CAUTION

- Do not apply excess force to the separation plate when removing it, to prevent the separation plate from deforming.
- When reattaching the separation plate, make sure that the plate is firmly attached to the frame hole.

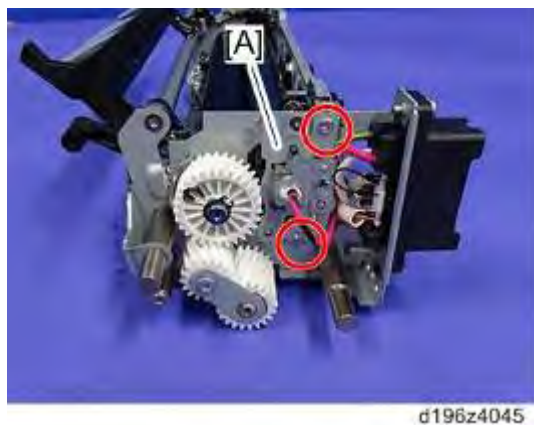
8. Fusing lamp harness (🔌 × 2)

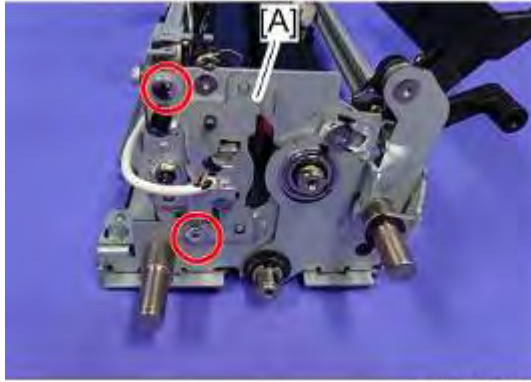
9. Screws on the rear frame [A] (🔩 × 6)



Note

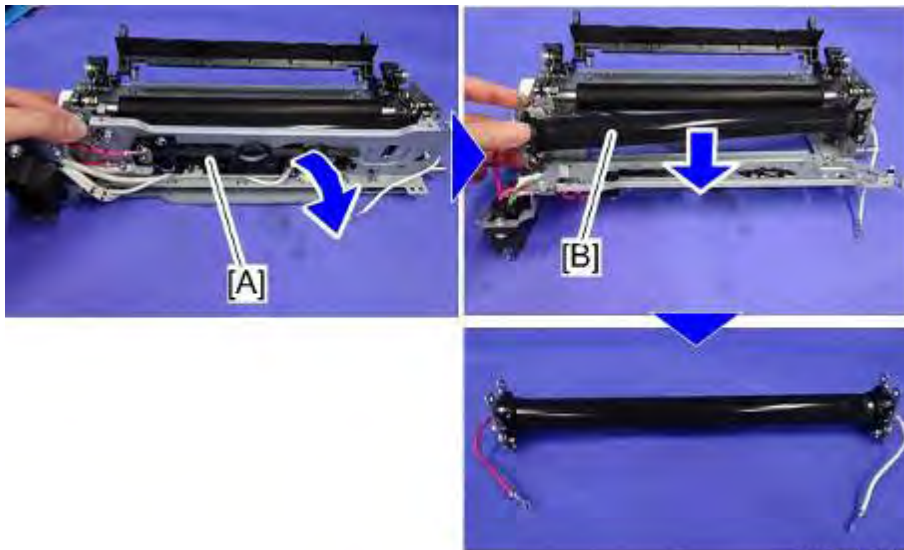
- When reattaching the harness, route the harness exactly the same way as before removal.

**10. Right stay [A] (🔧 × 2)****11. Screws at the right (🔧 × 2)****12. Screws at the left (🔧 × 2)**



d196z4046

13. Pull out the rear frame [A], and take out the fusing sleeve belt assembly [B].



d196z4047

⚠ CAUTION

- Do not touch the surface of the fusing sleeve belt assembly.
- When reattaching the rear frame, do not let the fusing sleeve belt hit the projection of the thermostat and the frame.



d196z4187

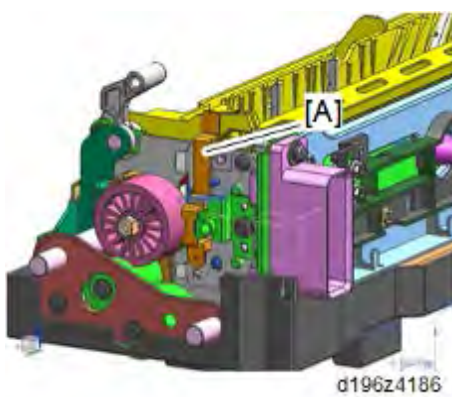
- When reattaching the fusing sleeve belt assembly, do not let the fusing sleeve belt assembly hit the projection of the sensor or the screws on the stay.

↓ Note

- Make sure that both side plates fit right into the locating bosses of the frame before securing the screws.



- The fusing sleeve belt assembly for replacement has a jig [A], which must be removed. Set the fusing sleeve belt assembly first, tighten the screws, then remove the jig.



4.13.10 FUSING ENTRANCE SENSOR

1. Open the duplex unit.

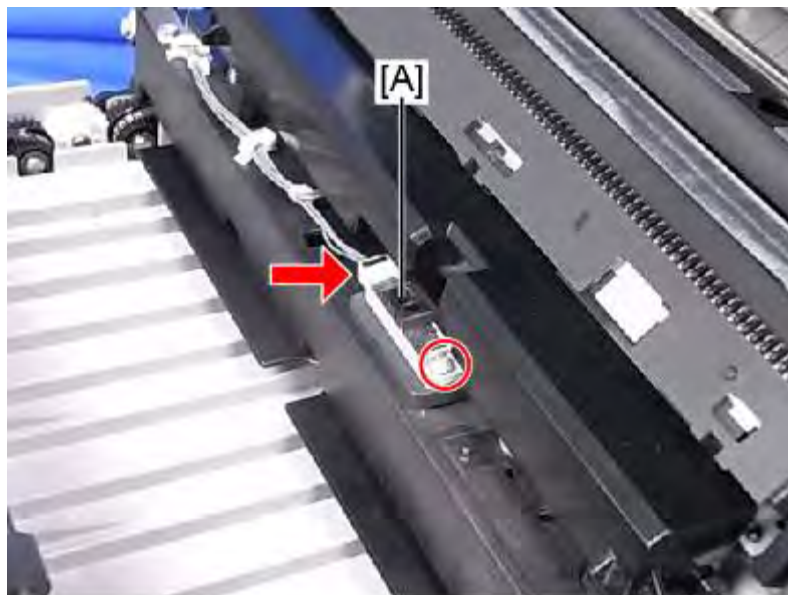
Note

- If you find paper dusts on the registration section when you open the duplex unit, remove the dusts. Otherwise, the dusts cause to develop lines on the image.



d196z4201

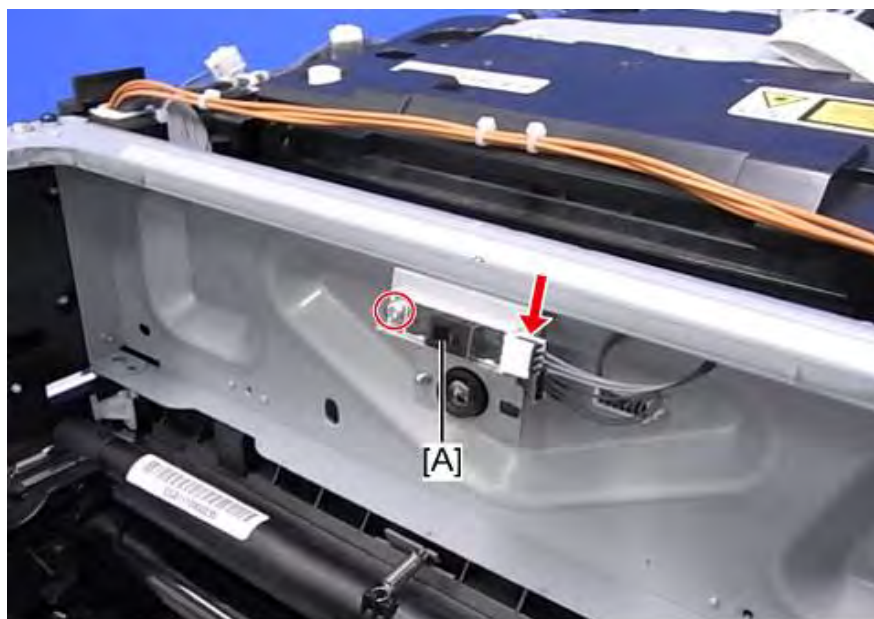
2. Fusing entrance sensor [A] (🔧 × 1, 🔑 × 1)



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4.13.11 FUSING EXIT SENSOR

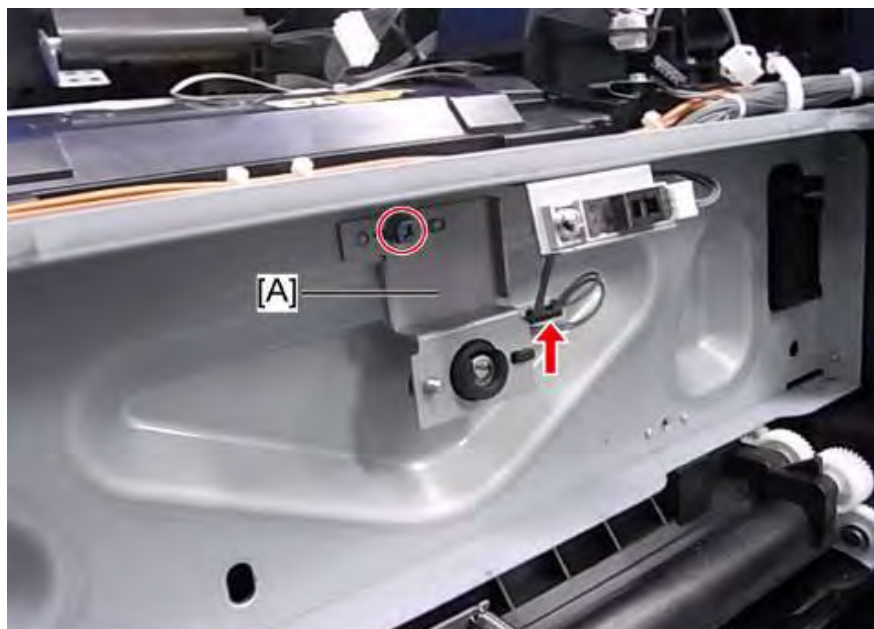
1. Paper exit unit (page 4-3)
2. Fusing exit sensor [A] (🔩 × 1, 📡 × 1)



d1170127

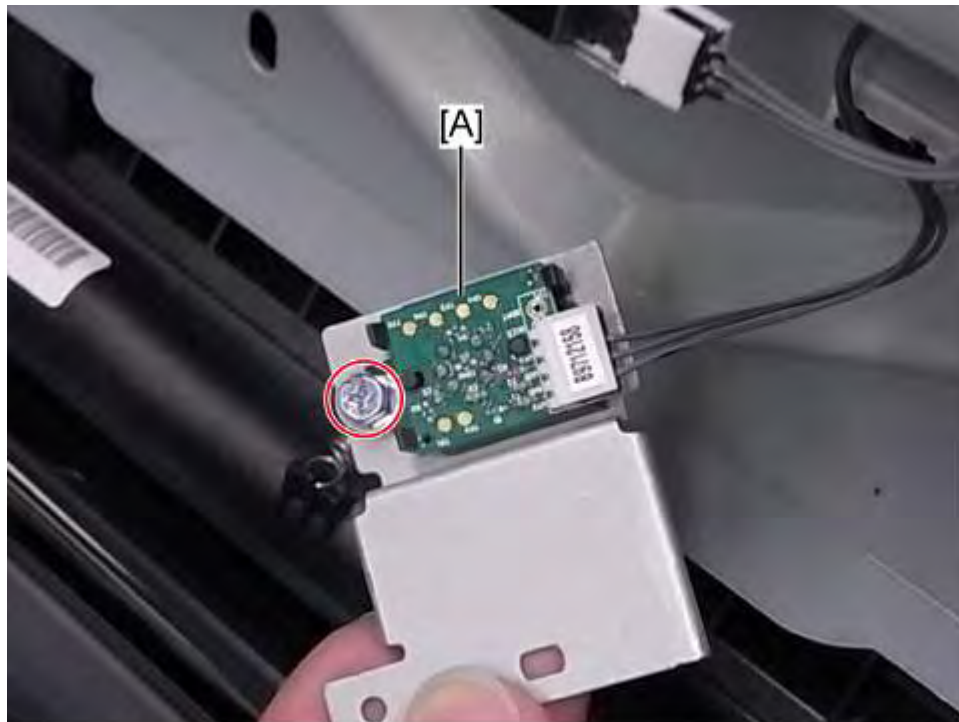
4.13.12 FUSING THERMOPILE

1. Paper exit unit (page 4-3)
2. Bracket [A] (🔩 × 1, 📡 × 1)



d1170128

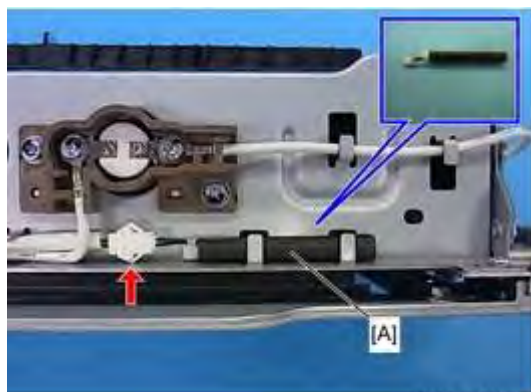
3. Fusing Thermopile [A] (🔩 × 1)



d1170129

4.13.13 NEW FUSING UNIT DETECTION FUSE

1. Fusing upper cover (page 4-1)
2. Remove the new fusing unit detection fuse [A] if the old blown fuse is attached. (🔧 x 1)



d196z4108

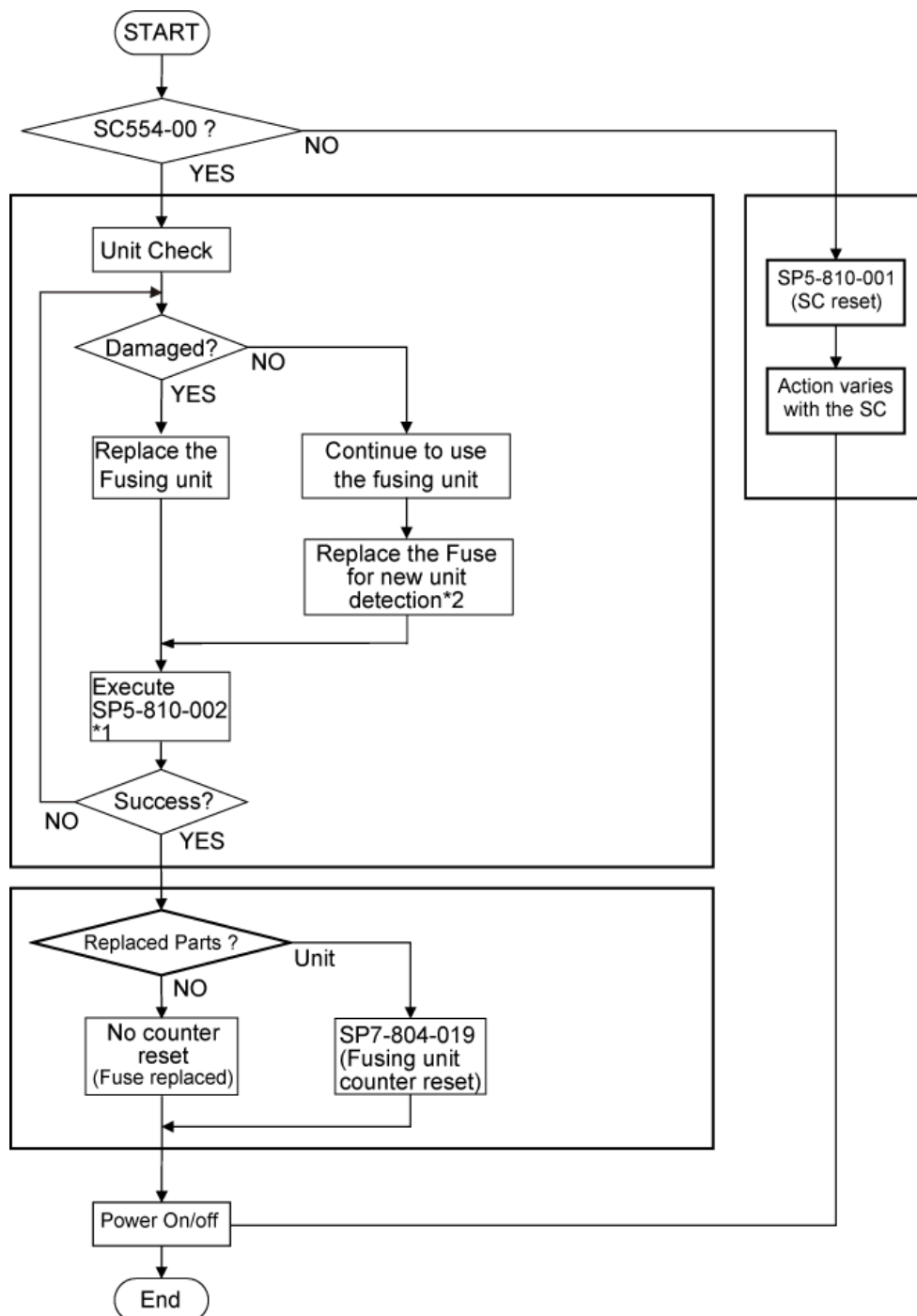
3. Connect the fuse connector, and insert the fuse into place from the upper side.

⬇ Note

- Refer to the flow chart below when SC554 occurs. (page 4-1 "Actions When SC554-00 Occurs")

4.13.14 ACTIONS WHEN SC554-00 OCCURS

Basically, the entire fusing unit must be replaced when SC554-00 occurs. However, it is possible to continue to use the old fusing unit when there is no damage found when you inspect the fusing unit in accordance with the flow chart shown below.



d1170729

*1: a) Do not use SP 3-701-014 to reset the fusing unit counter manually when doing the above reset procedure for SC554-00. b) Do not open the door when doing the procedure in this flow chart ("SC reset failure" will be shown.). The SC reset will be successful if the fuse for new fusing unit detection is blown if the machine door is open during the SC reset, and it will not be successful if it is not blown. The SC reset should be performed again if it fails.

Fusing

“SC reset failure” will be shown when this SP (SP5-810-002) is executed if an SC other than SC554-00 occurred.

*2: If there is no fuse for new unit detection (such as in the fusing unit that comes with the machine from the factory), install a fuse.

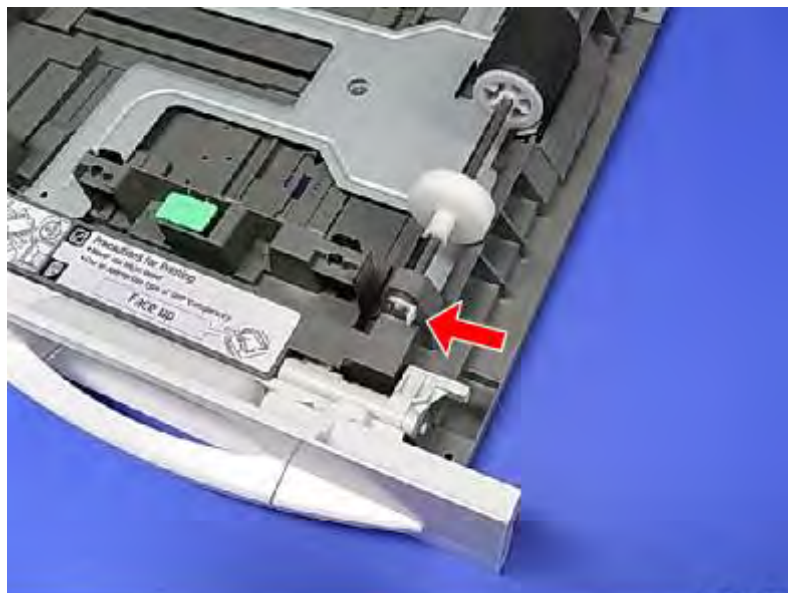
Important

- Never use a damaged fusing unit.
- Inspect the entire fusing unit carefully if you will continue to use this unit.

4.14 PAPER FEED

4.14.1 PAPER FEED ROLLER (STANDARD TRAY)

1. Pull out the paper tray.
2. Bearing (⌀ × 1)



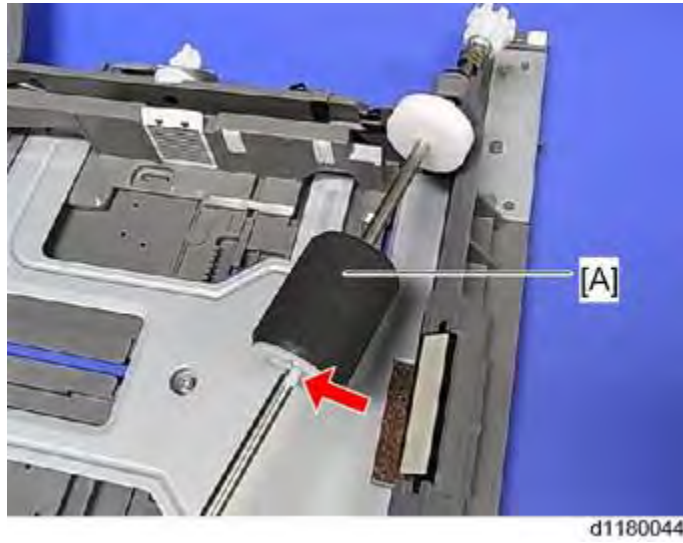
d1180042

3. Sub paper feed roller [A] (⌀ × 2)



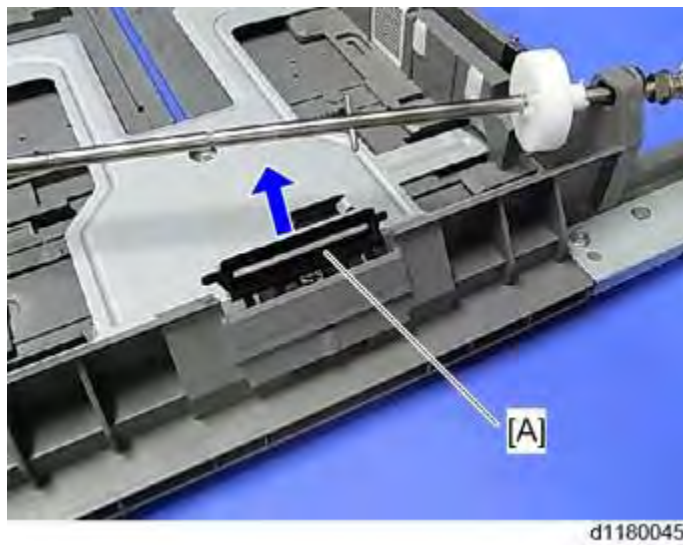
d1180043

4. Paper feed roller (Hook × 1)



4.14.2 FRICTION PAD

1. Paper feed roller (page 4-3)
2. Friction pad [A] (Hooks × 2)



4.14.3 REGISTRATION SENSOR / PAPER FEED SENSOR

1. Open the duplex unit.

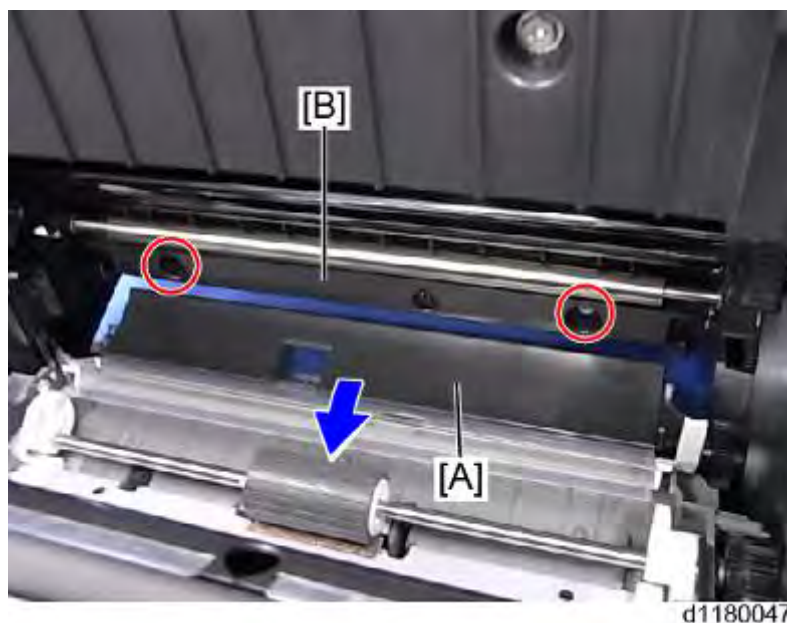
Note

- If you find paper dusts on the registration section when you open the duplex unit, remove the dusts. Otherwise, the dusts cause to develop lines on the image.

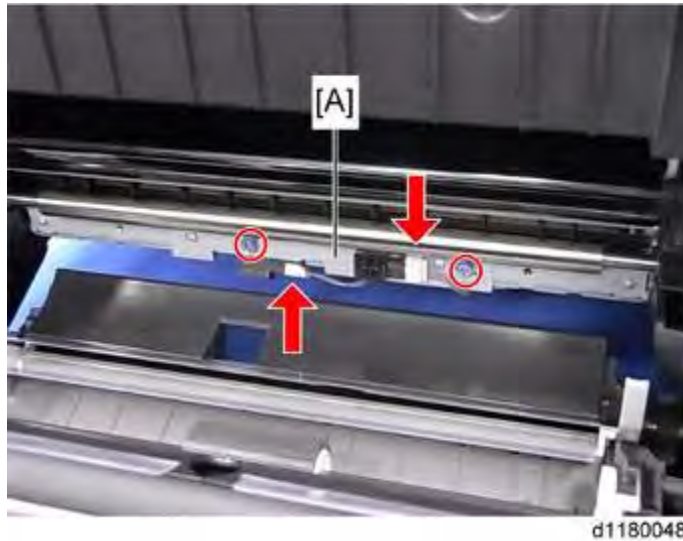


2. Pull down the guide plate [A].

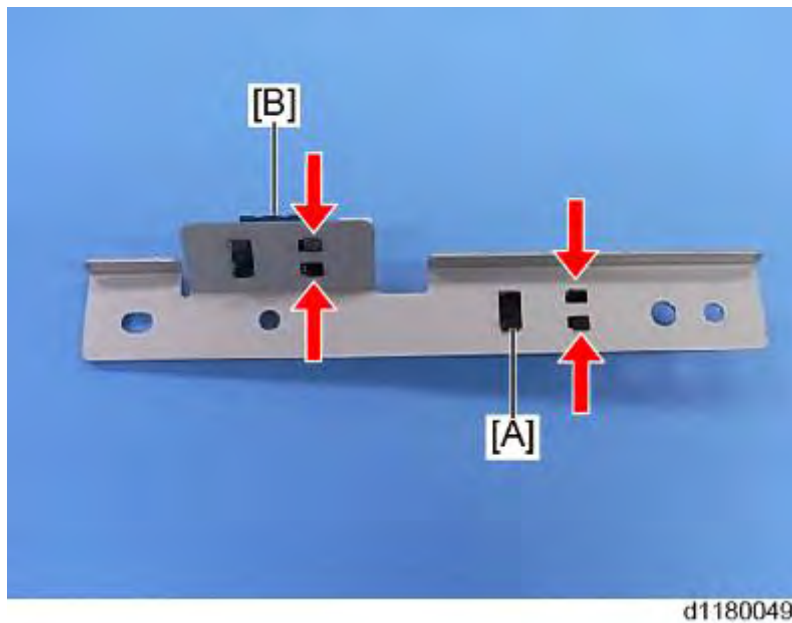
3. Sensor cover [B] (🔩 × 2)



4. Sensor bracket [A] (🔩 × 2, 📏 × 2)

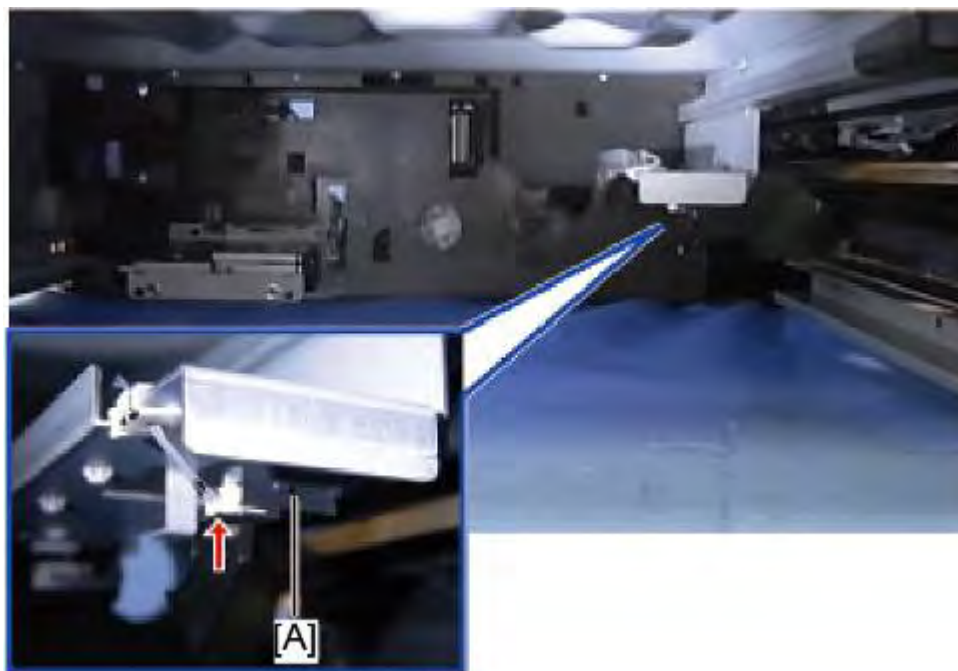


5. Registration sensor [A] (Hook × 2)
6. Paper feed sensor [B] (Hook × 2)



4.14.4 TRAY PAPER END SENSOR

1. Waste Toner Bottle (page 4-3)
2. Tray paper end sensor [A] (🔑 × 1, hook × 2)



d1170205a

4.14.5 TRAY LIFT SENSOR

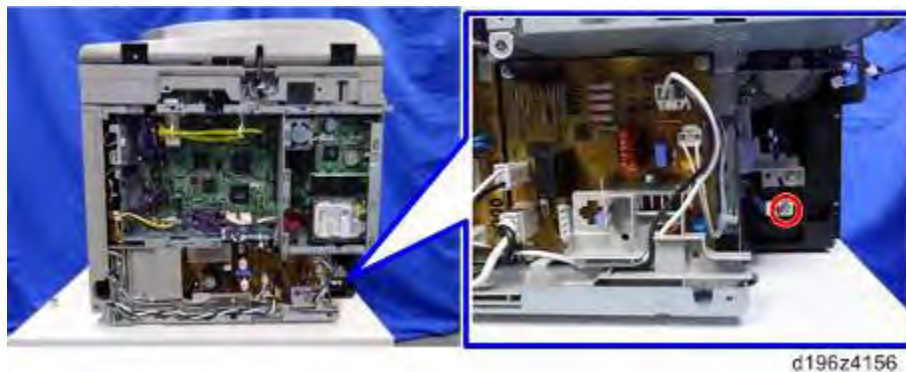
1. Waste Toner Bottle (page 4-3)
2. Tray Lift Sensor [A] (🔑 × 1, hook × 2)



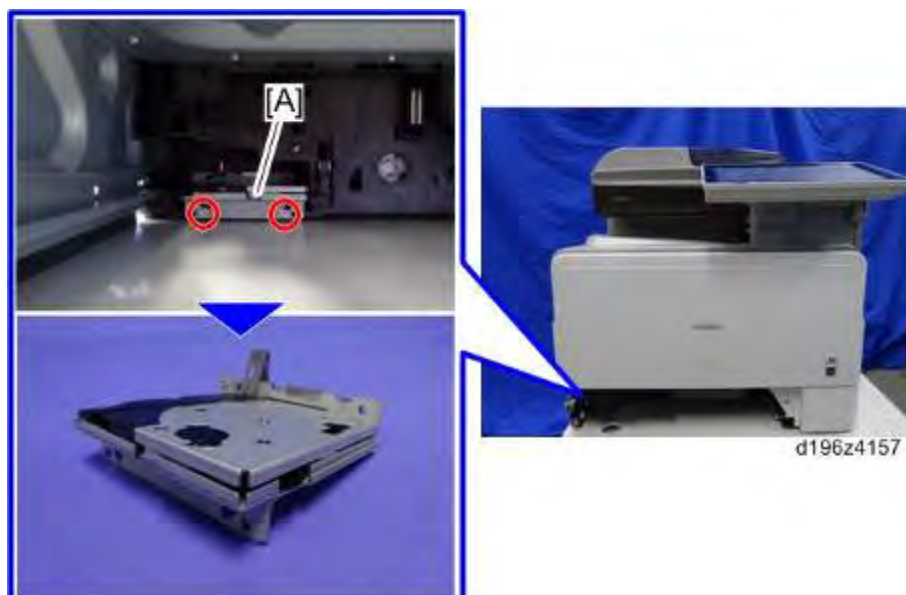
d196z4021

4.14.6 DRAW-IN UNIT

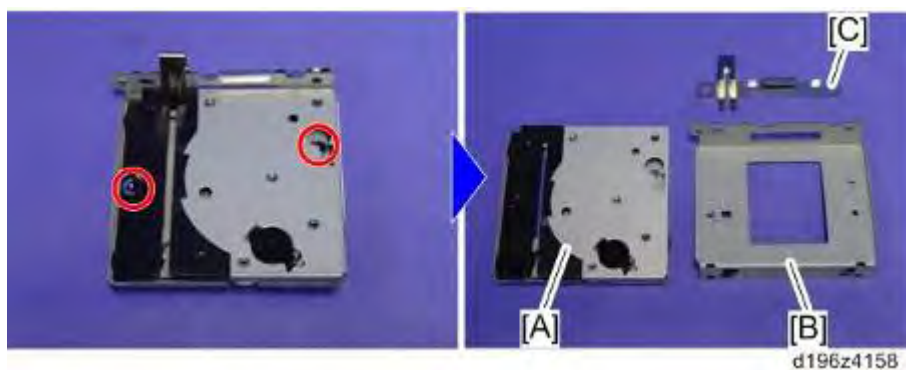
1. PSU fan (page 4-1)
2. Rear cover (page 4-1)
3. Screw (🔩 × 1)



4. Draw-in unit [A] with bracket (🔩 × 2)



5. Remove the bracket [B] and ground plate [C] from the draw-in unit [A].



Note

- When installing the draw-in unit, fit the bracket's holes onto the bosses on the mainframe. (🔩 × 4)



d196z4159

4.15 BYPASS

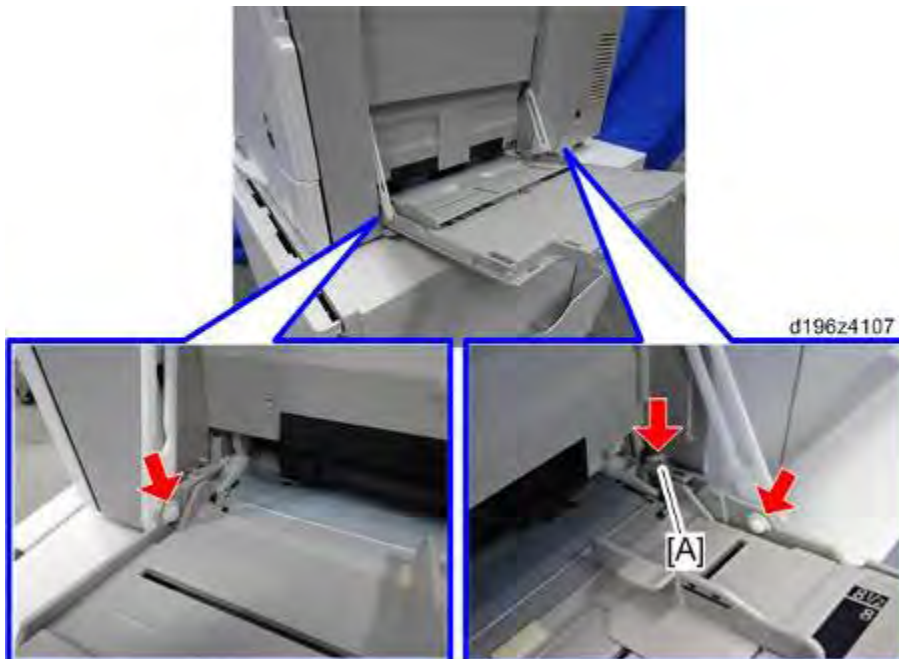
4.15.1 BYPASS TRAY

1. Open the bypass tray [A].



d1170089

2. Stopper [A], and E-rings (C × 2, Stopper × 1)



d196z4107

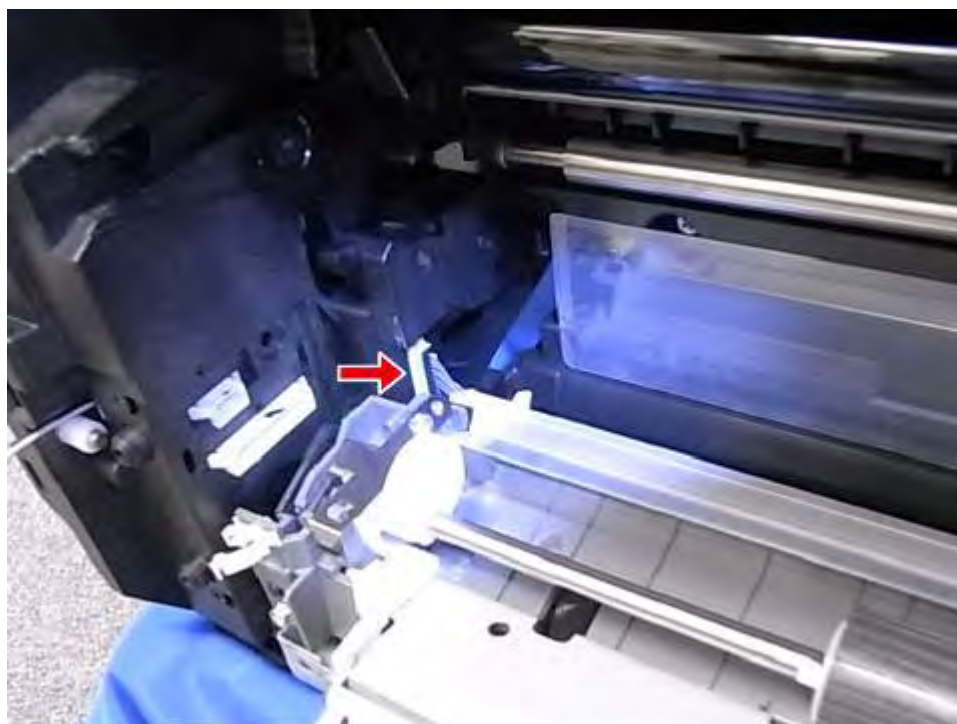
3. Close the Bypass tray [A] slightly and pull it out upwards.



d1170091

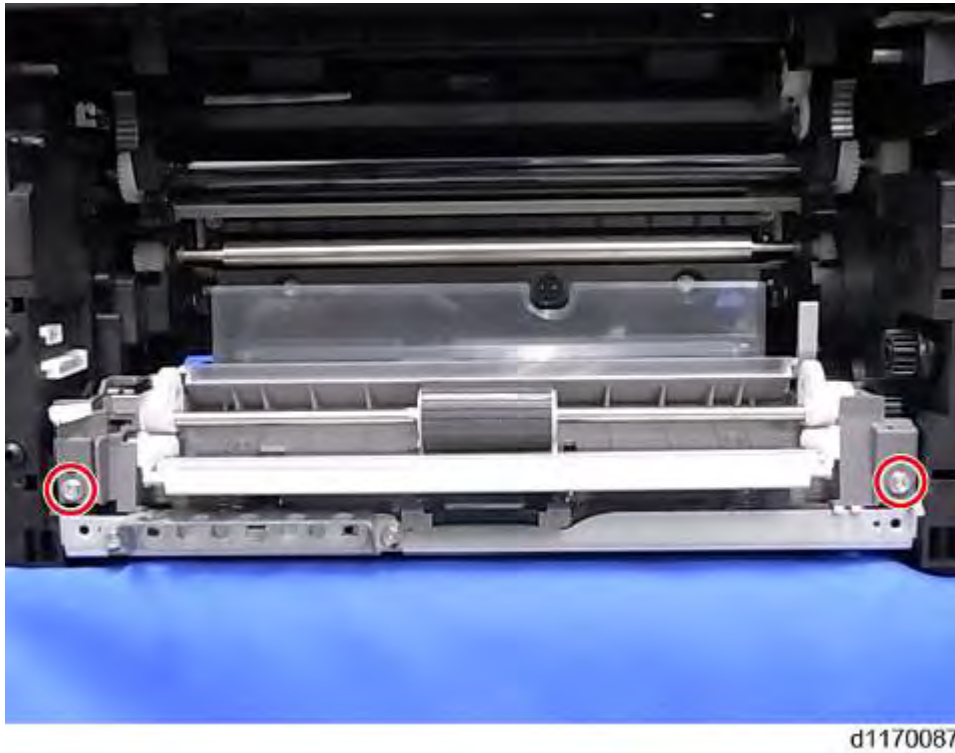
4.15.2 BYPASS FEED UNIT

1. Duplex unit (page 4-2)
2. Disconnect the connector. (🔌 × 1)

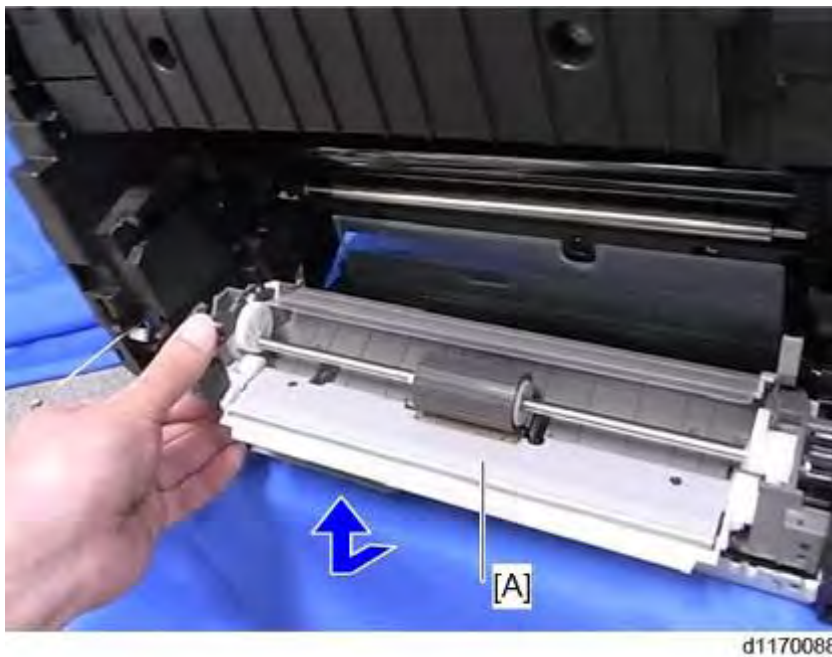


d1170086

3. Two screws (🔩 × 2)



4. Bypass feed unit [A]

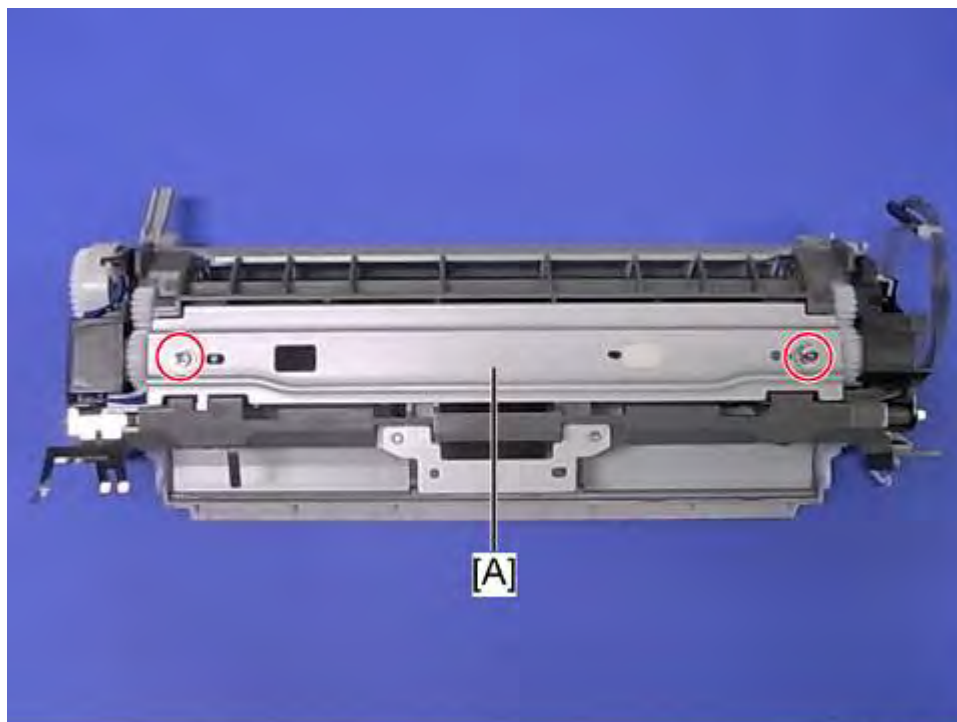


Note

- Lift up the left side of the unit and remove it while pulling it out forward.

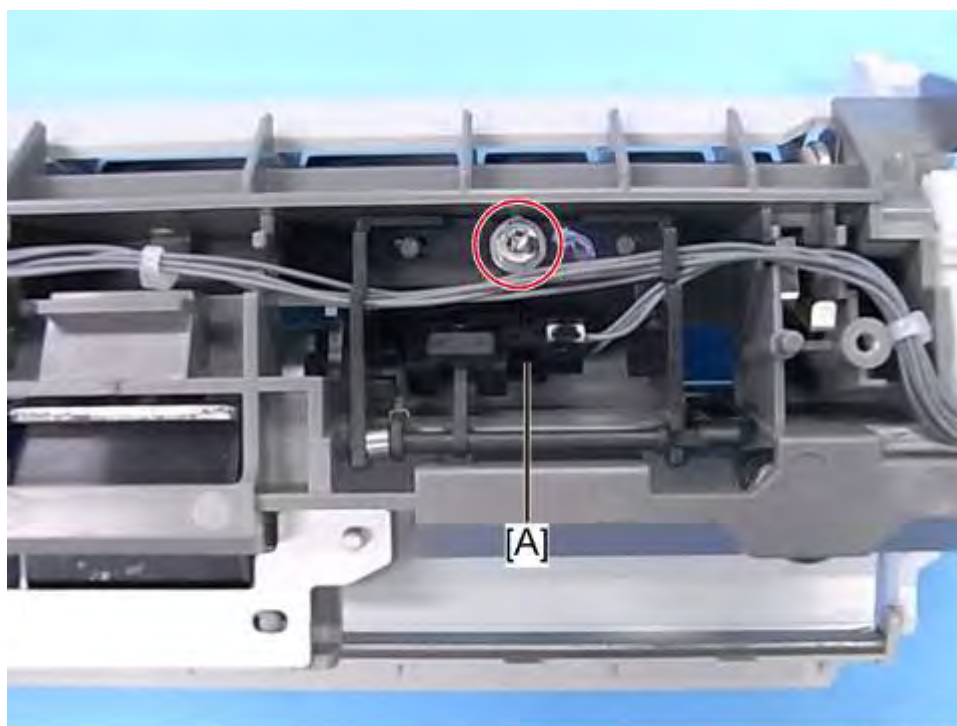
4.15.3 BYPASS PAPER END SENSOR

1. Bypass feed unit (page 4-3)
2. Bracket [A] (🔩 × 2)



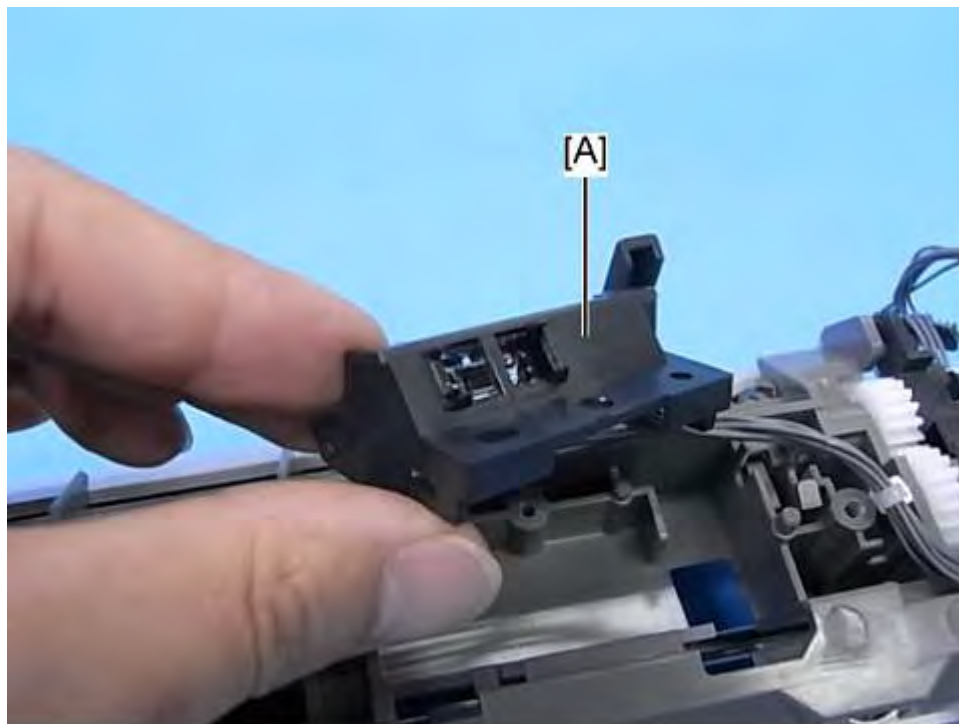
d1170116

3. Bypass paper end sensor with the holder [A] (🔩 × 1)



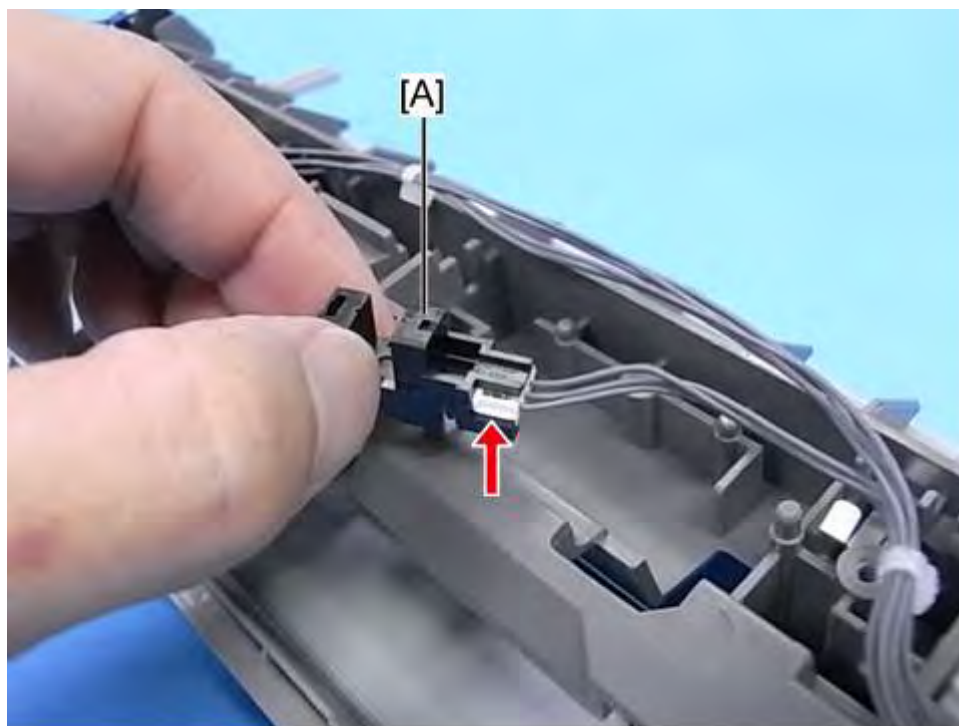
d1170117

4. Sensor holder [A] (Hook × 2)



d1170118

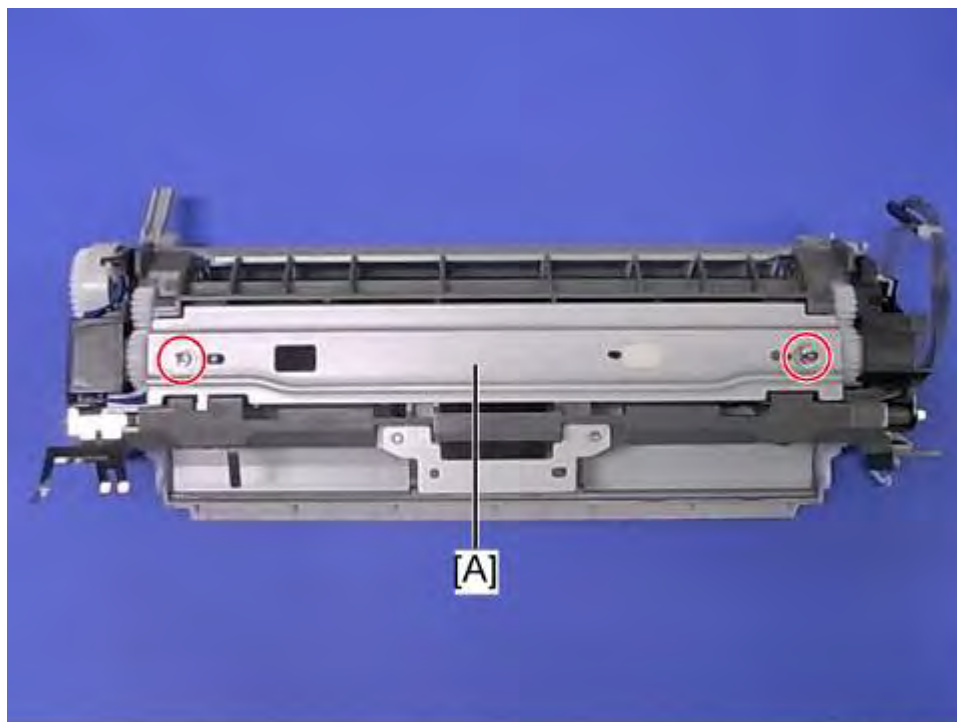
5. Bypass paper end sensor [A] (× 1)



d1170119

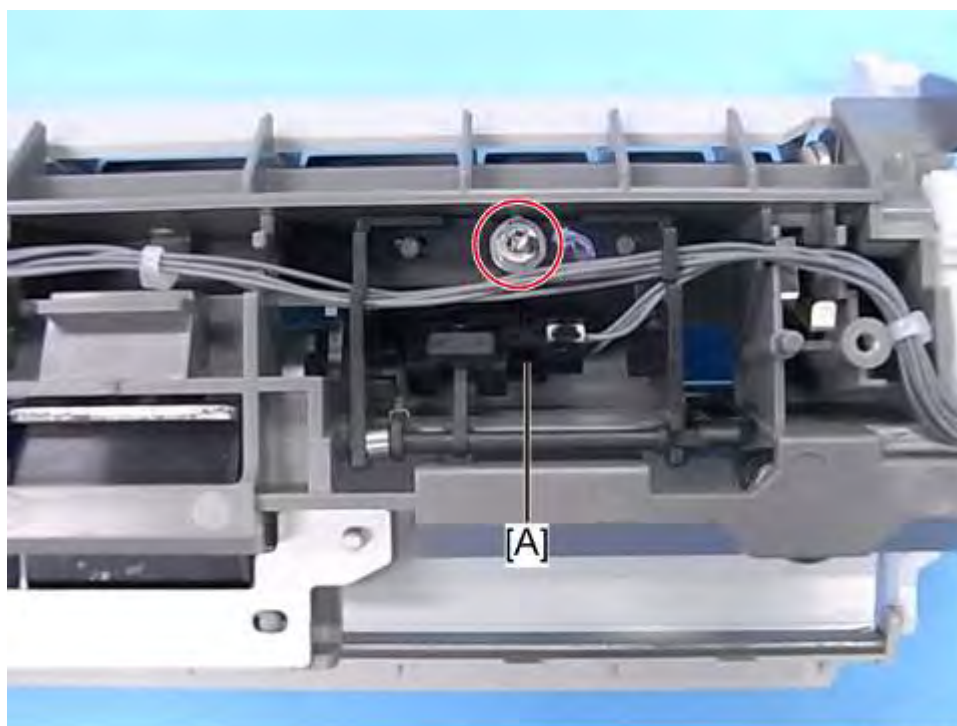
4.15.4 BYPASS PAPER WIDTH SENSOR

1. Bypass feed unit (page 4-3)
2. Bracket [A] (🔧 × 2)



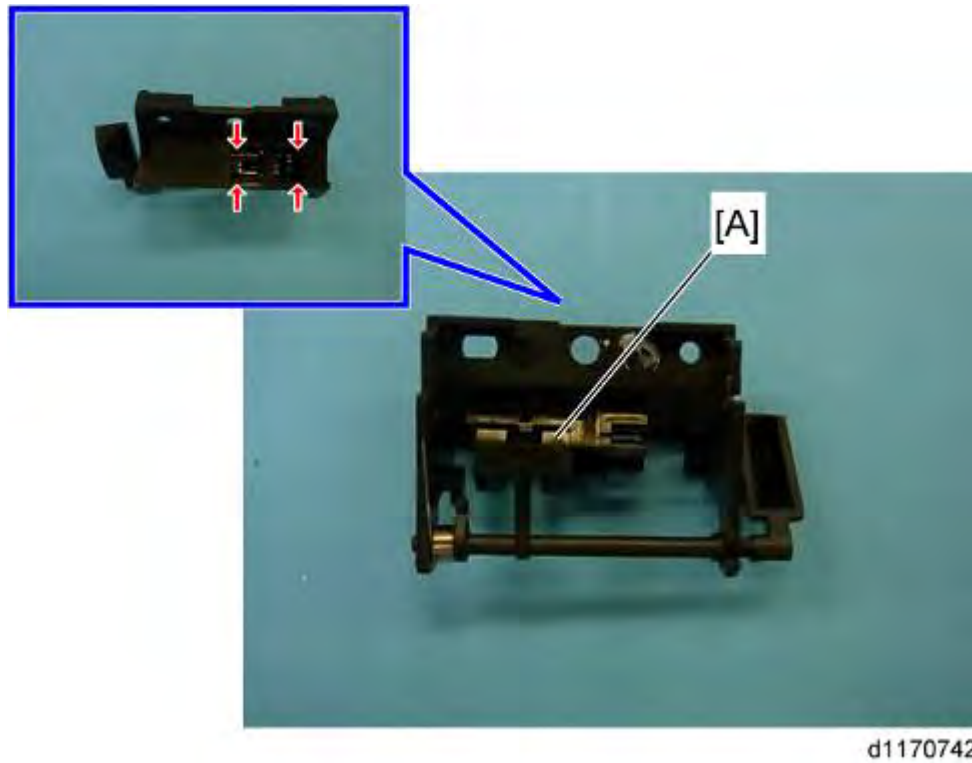
d1170122

3. Bypass paper width sensor with the holder [A] (🔧 × 1)



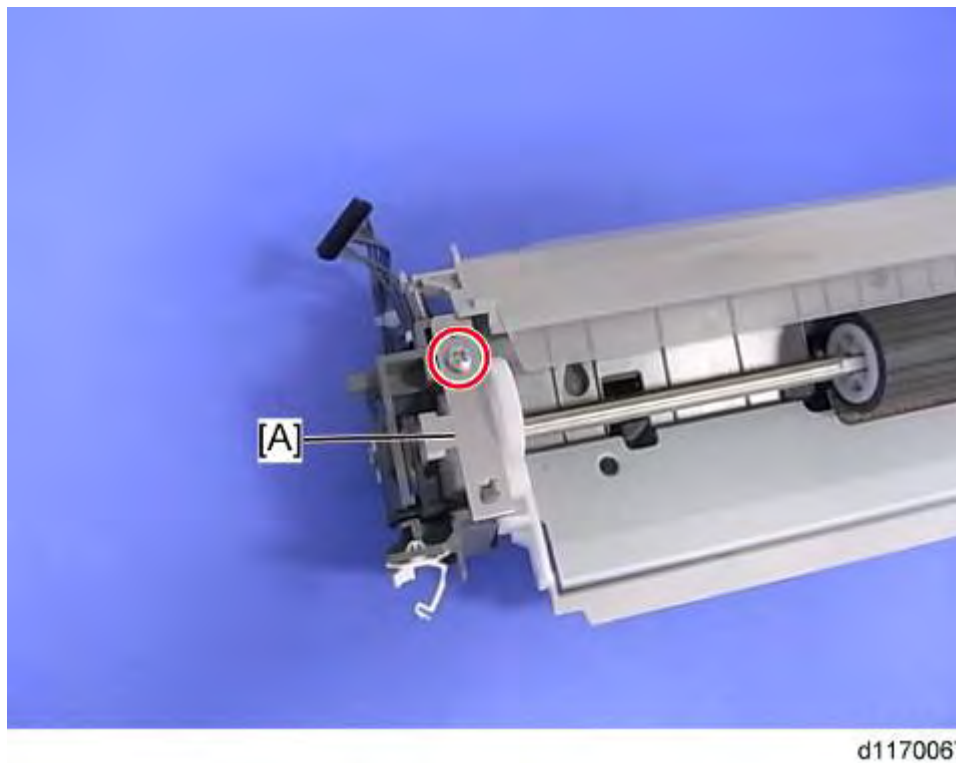
d1170117

4. Bypass paper width sensor [A] (Hooks × 4)

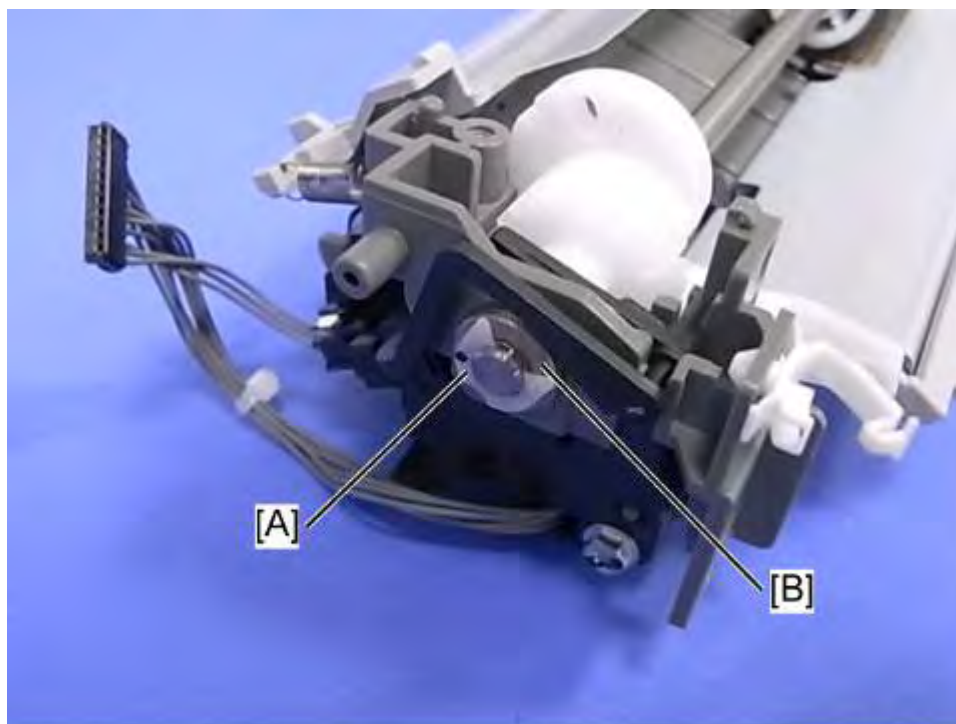


4.15.5 BYPASS FEED ROLLER

1. Bypass feed unit (page 4-3)
2. Bracket [A] (🔑 × 1)

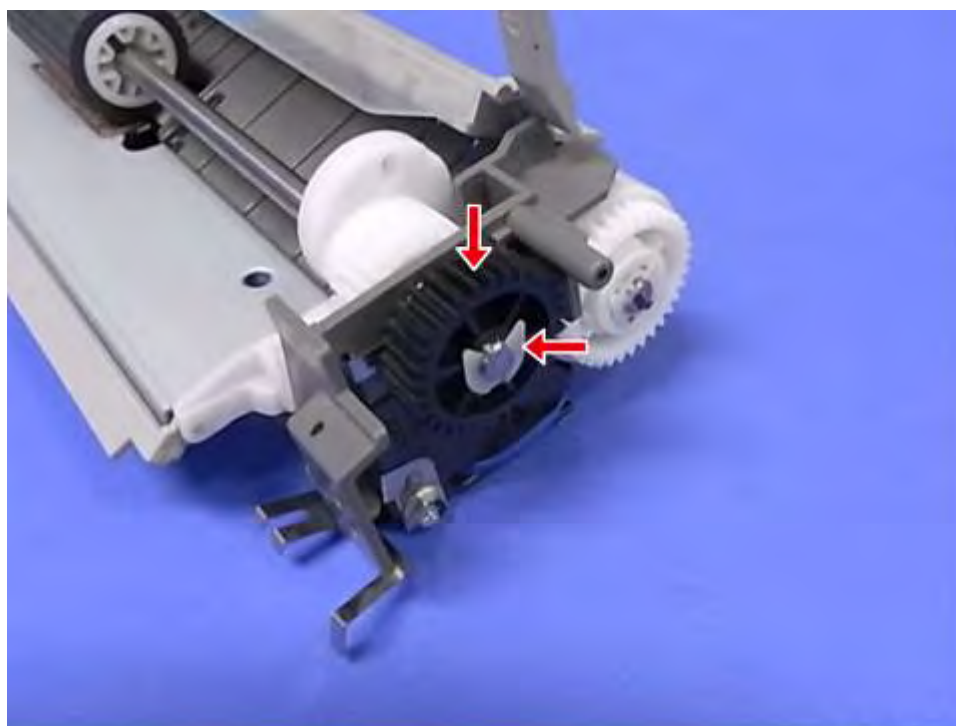


3. E-ring [A] and bearing [B] at the front of the bypass feed unit (🔑 × 1, bearing × 1)



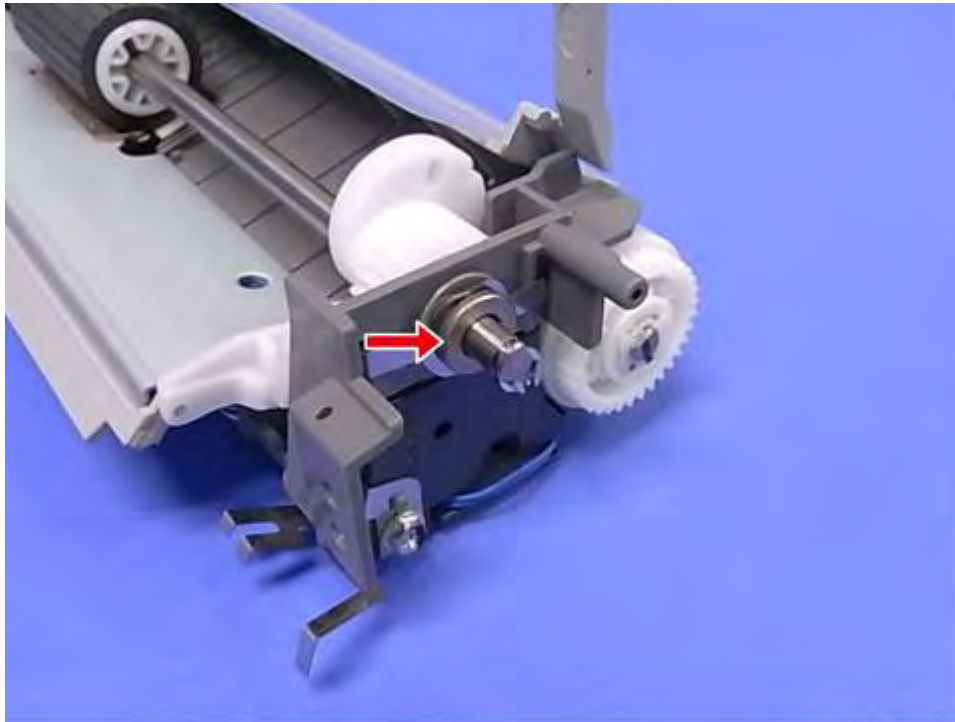
d1170068

4. E-ring and the gear at the rear of the bypass feed unit (E-ring × 1, gear × 1)



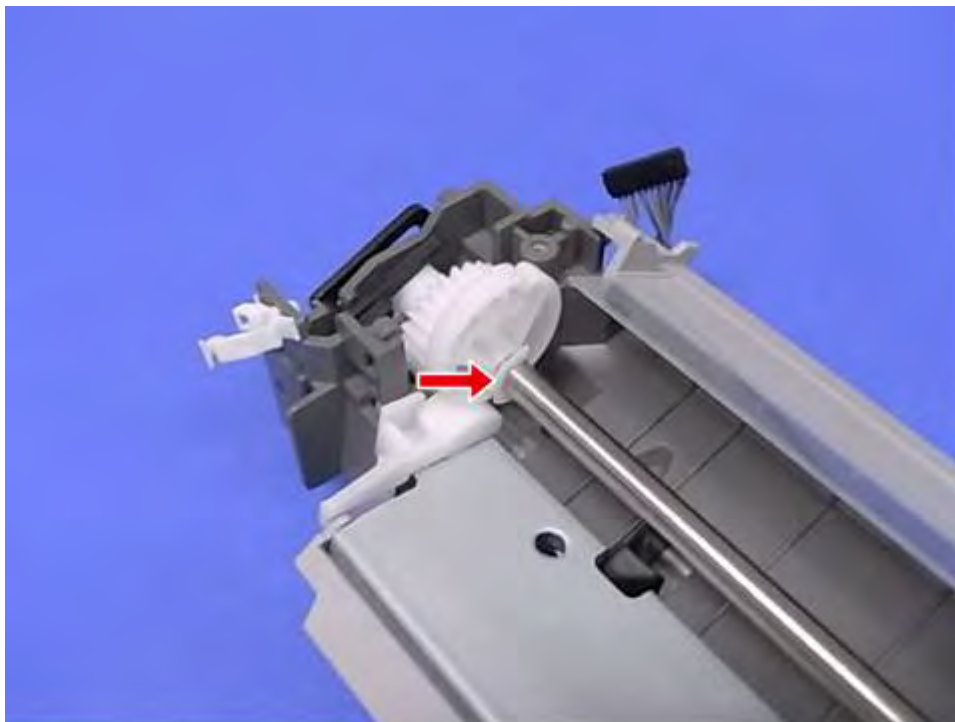
d1170069

5. Bearing (bearing × 1)



d1170070

6. E-ring at the front of the bypass feed unit (C × 1)



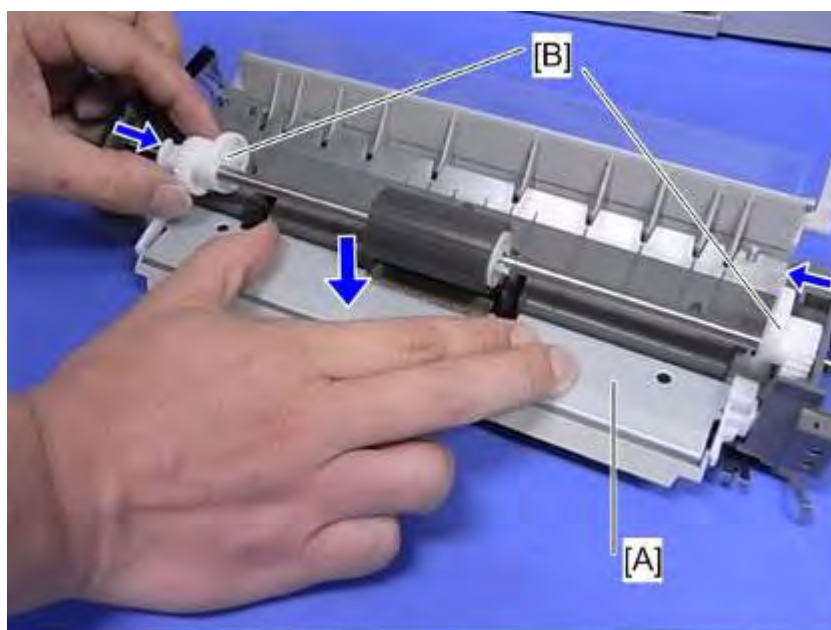
d1170071

7. E-ring at the rear of the bypass feed unit (C × 1)



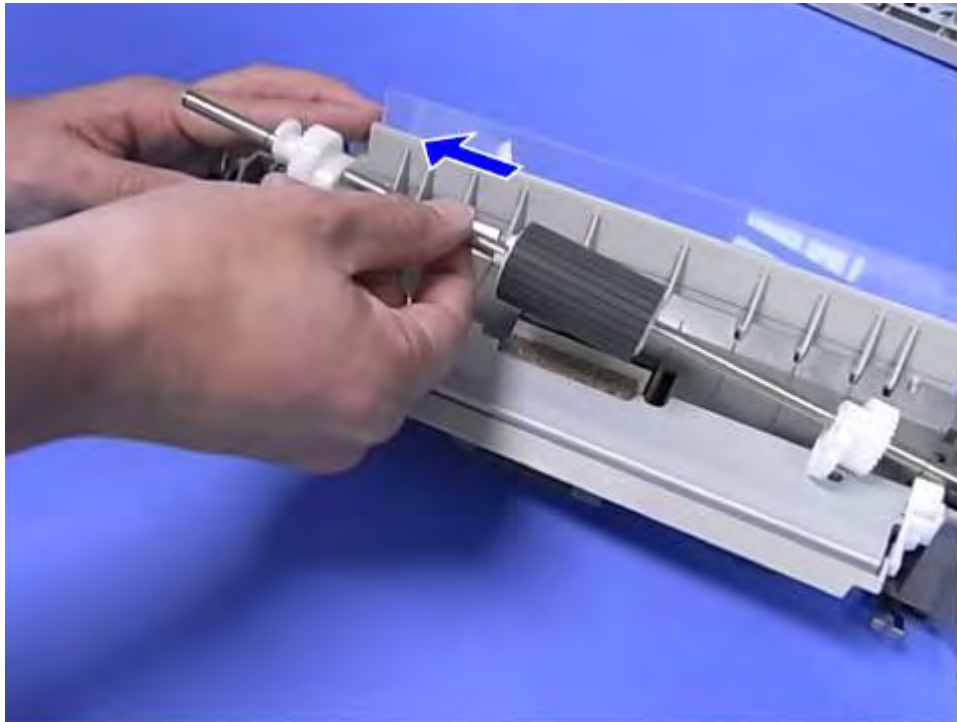
d1170072

8. Move the front cam and rear cam [B] inward while pushing down the bottom plate [A].



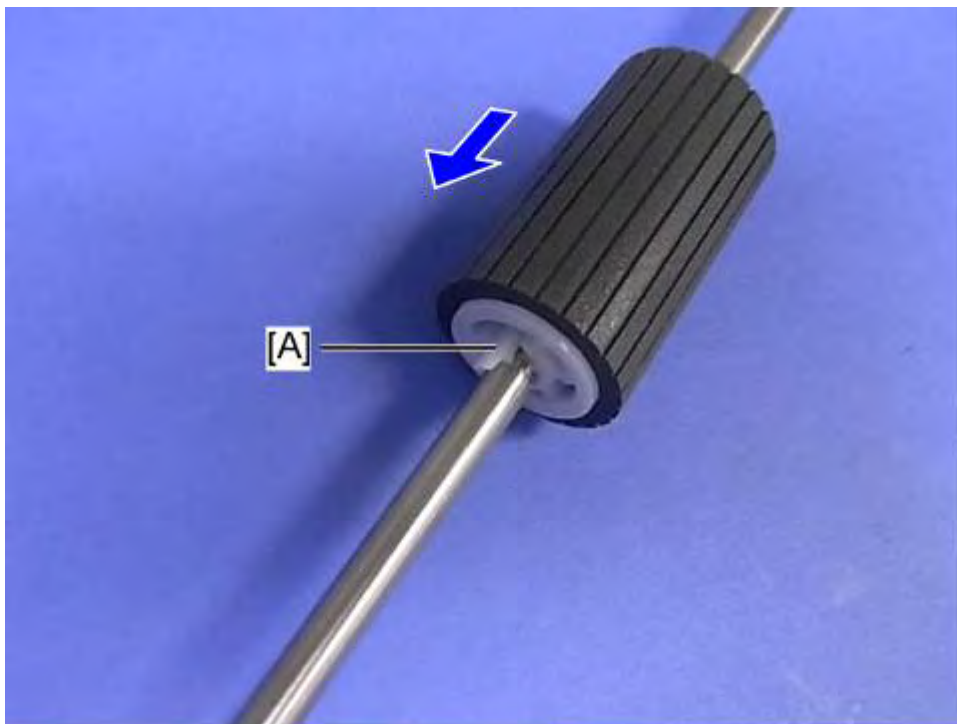
d1170073

9. Bypass feed roller with the shaft from the front side.



d1170074

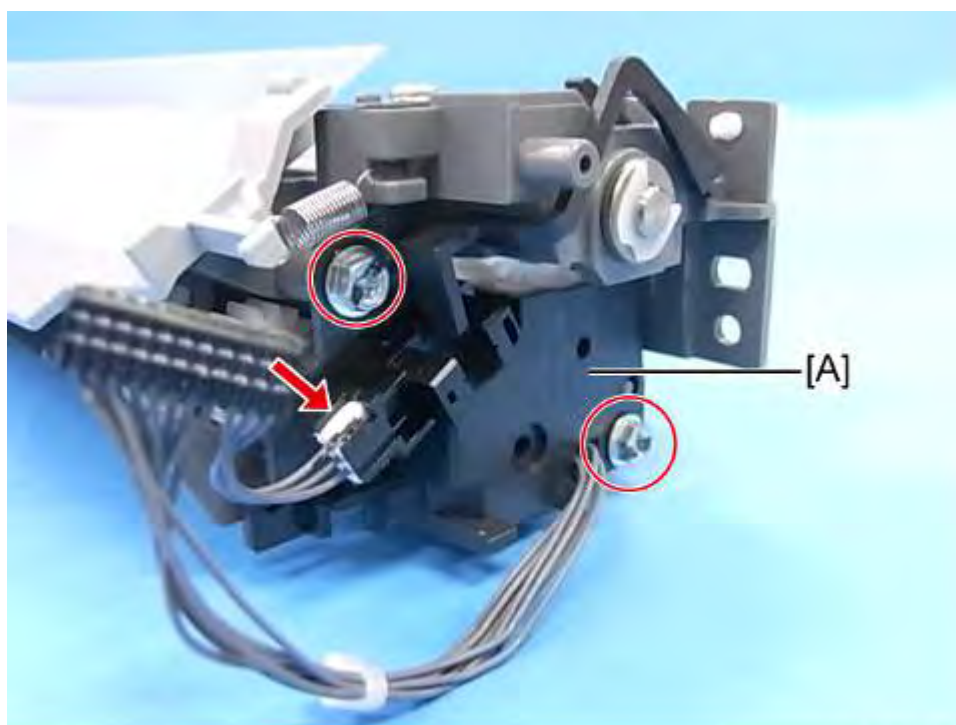
10. Bypass feed roller [A] (Hook × 1)



d1170075

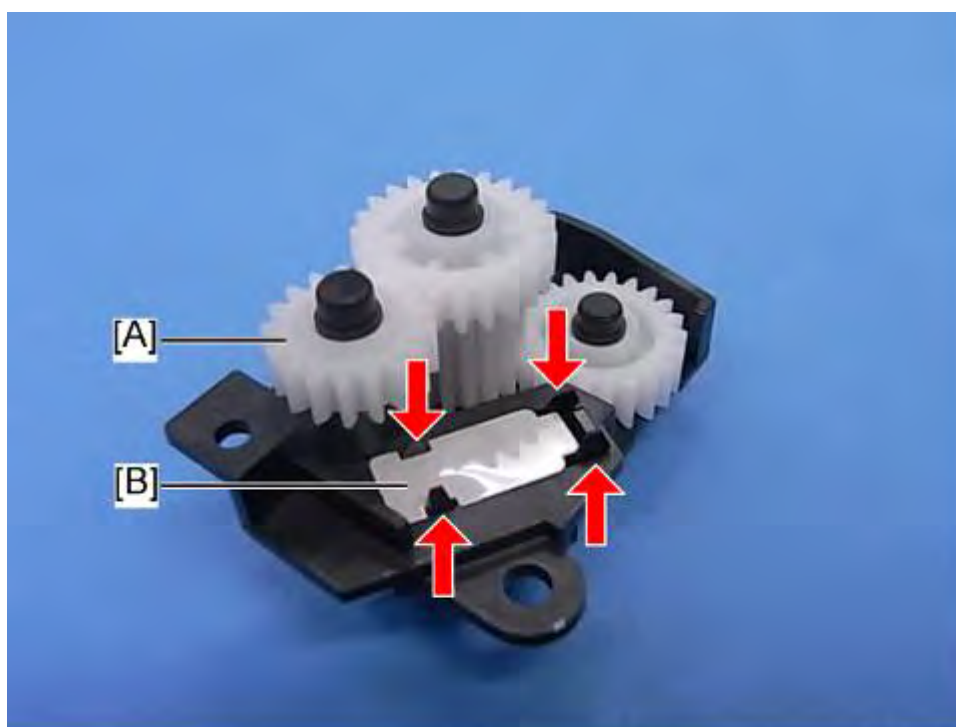
4.15.6 BYPASS LIFT SENSOR

1. Bypass feed unit (page 4-3)
2. Sensor holder [A] (🔩 × 2, 🛠 × 1)



d1170120

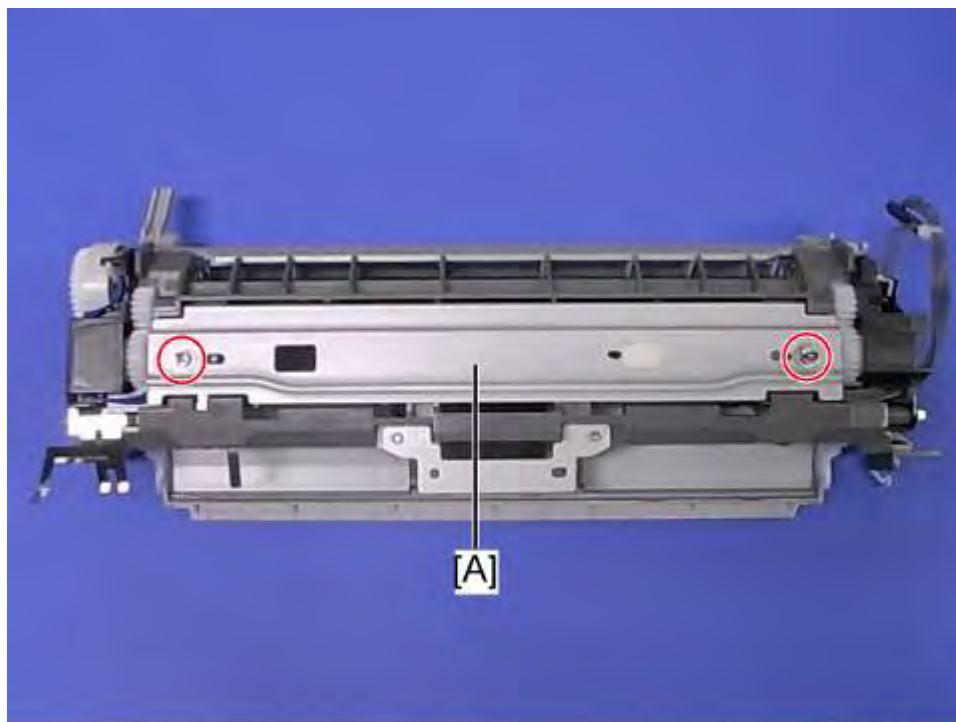
3. Gear [A] and Bypass lift sensor [B] (Hooks × 4)



d1170121

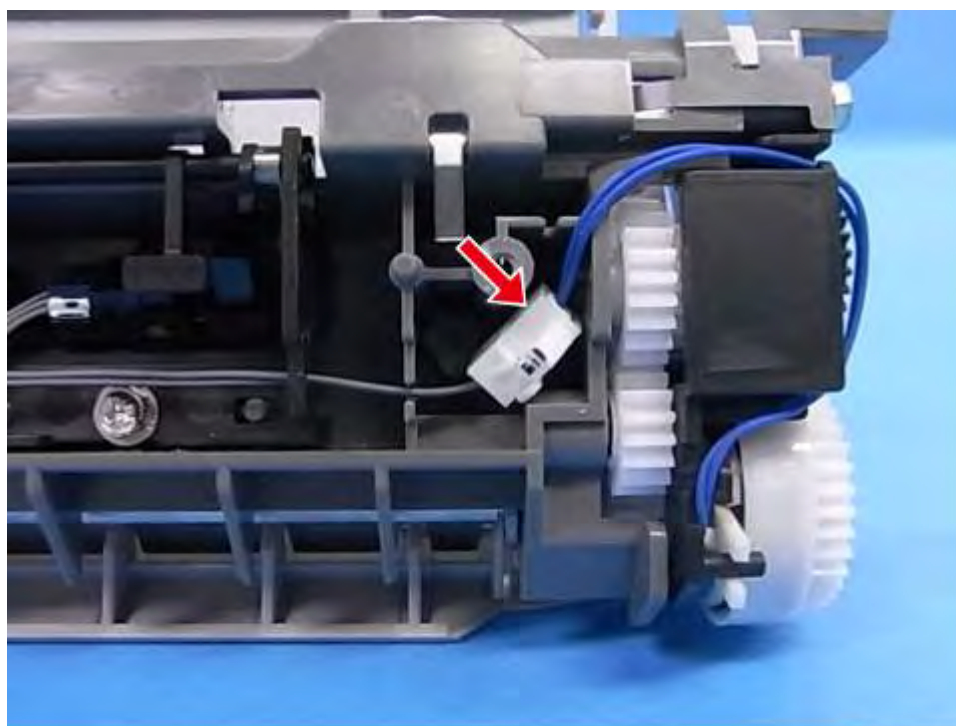
4.15.7 BYPASS LIFT CLUTCH

1. Bypass feed unit (page 4-3)
2. Bracket [A] (🔩 × 2)



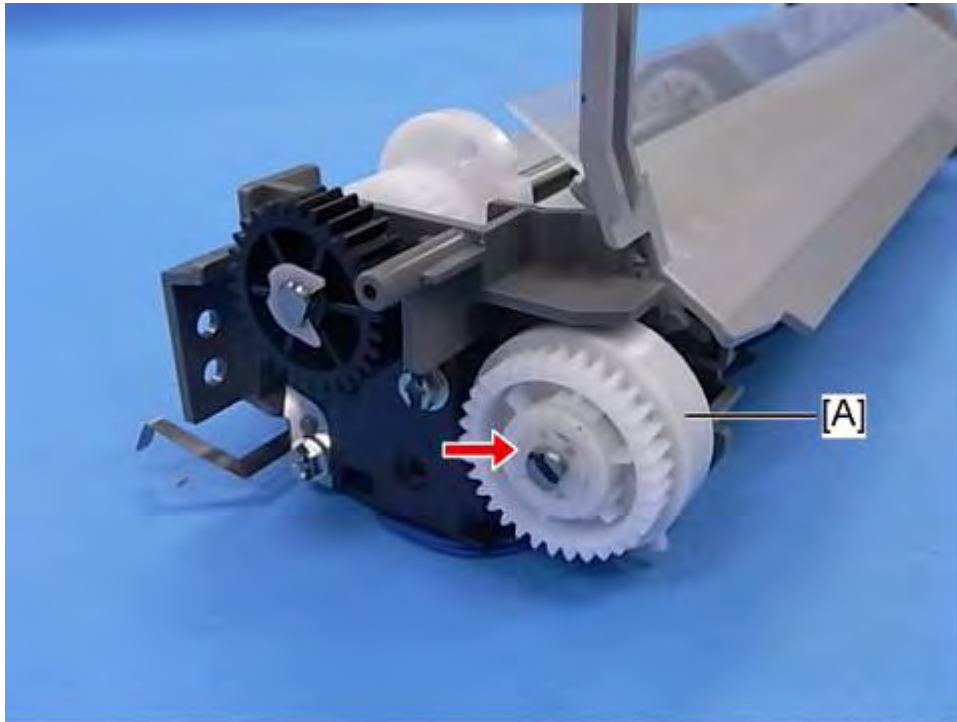
d1170122

3. Disconnect the connector of the clutch. (🔌 × 1)



d1170123

4. Bypass lift clutch [A] (🔩 × 1)

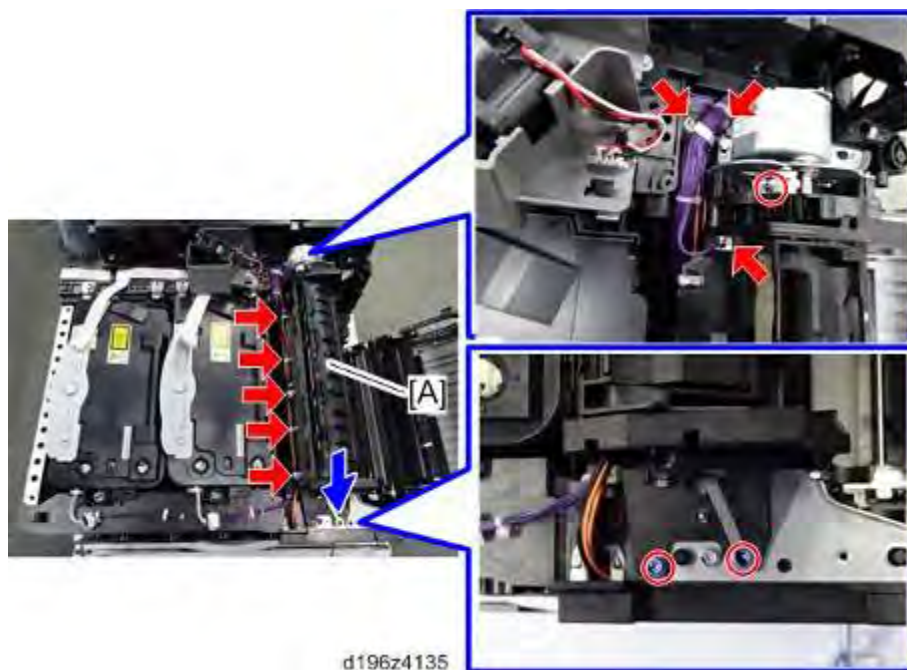


d1170124

4.16 PAPER EXIT

4.16.1 PAPER EXIT UNIT

1. Scanner Inner cover (page 4-1)
2. Paper exit unit [A] (⚙ × 3, ⚙ × 2, ⚙ × 6)



Note

- Make sure that you do not release the exit roller drive belt [A] by mistake when removing the paper exit unit.



4.16.2 PAPER EXIT SENSOR

1. Paper exit unit (page 4-3)
2. Sensor bracket [A] ( × 1,  × 1)

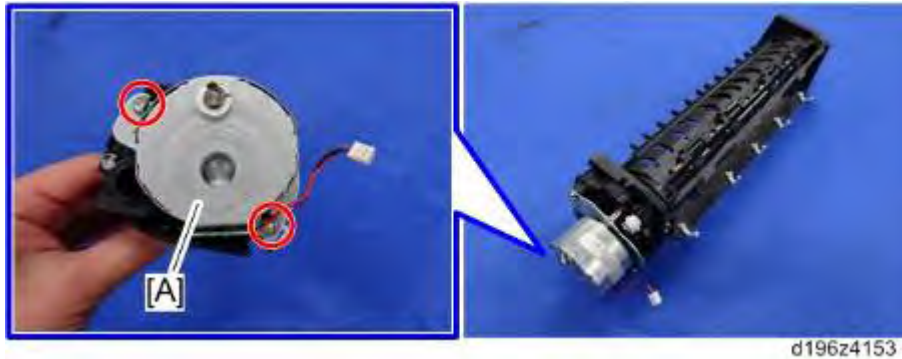


3. Paper exit sensor [A] ( × 1)

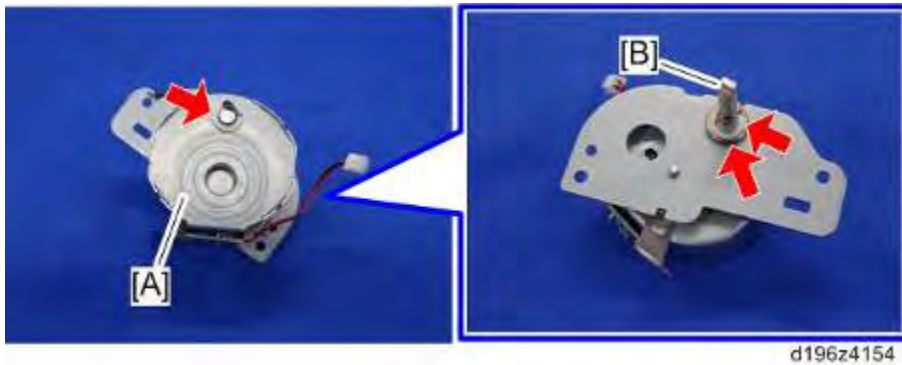


4.16.3 PAPER EXIT ROTARY SOLENOID

1. Paper exit unit (page 4-3)
2. Paper exit rotary solenoid [A] with the bracket (🔩 × 2)



3. Remove the pulley and two clips, and then remove the shaft [B] from the paper exit rotary solenoid [A]. (🔩 × 2)



4. Pull out the bracket [B] and grounding plate [C] from the paper exit rotary solenoid [A].



4.17 DUPLEX

4.17.1 DUPLEX UNIT

1. Open the duplex unit.

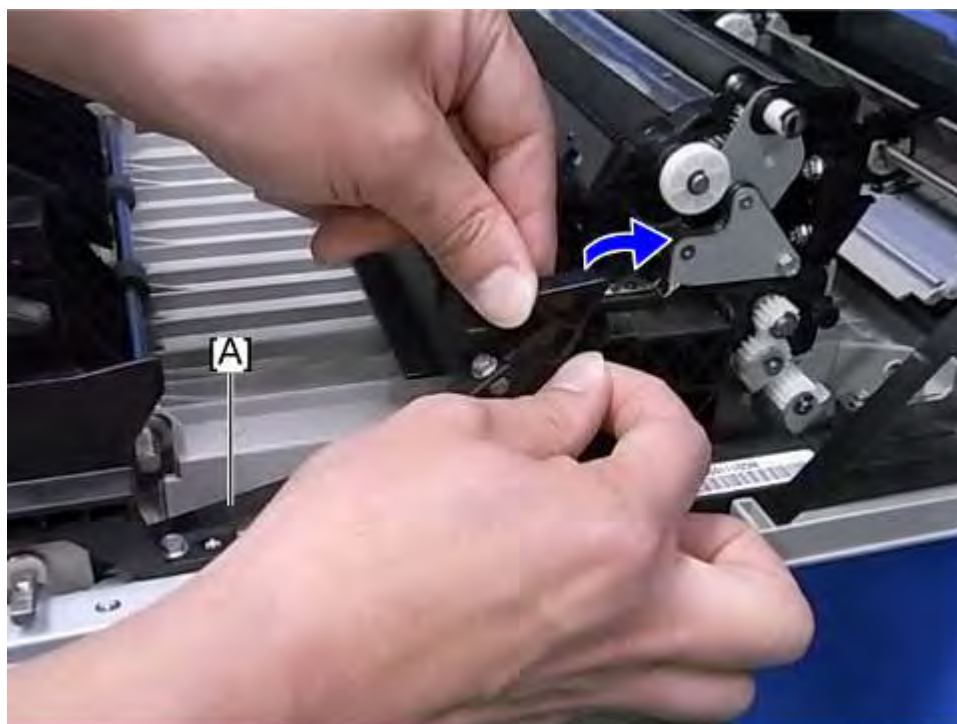


Note

- If you find paper dusts on the registration section when you open the duplex unit, remove the dusts. Otherwise, the dusts cause to develop lines on the image.

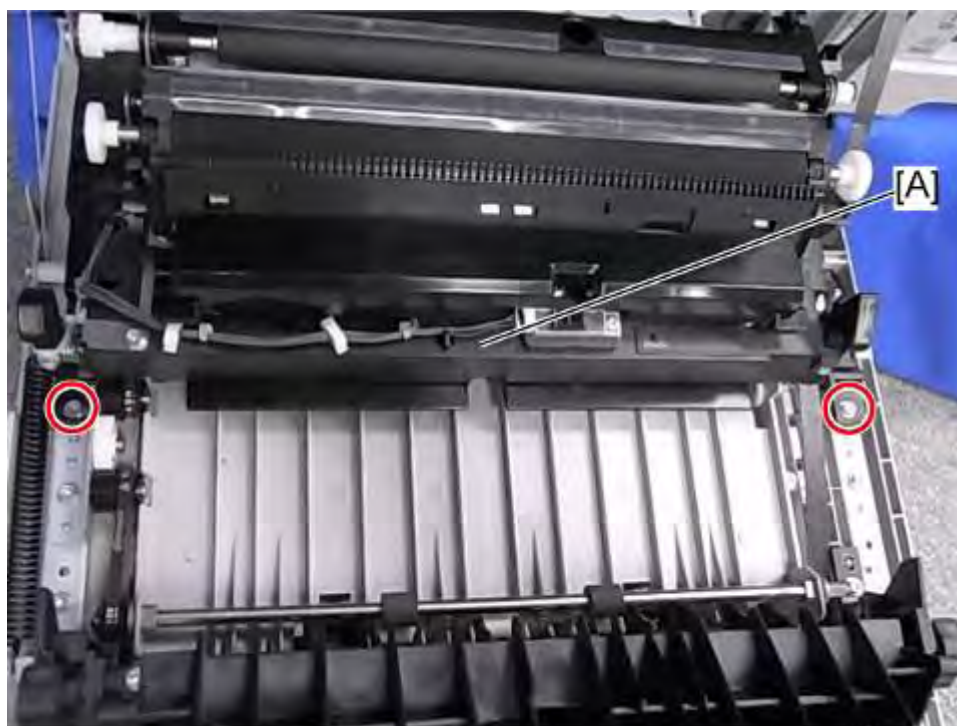


2. Push the lever and reduce the tension of the belt [A], then remove the belt.



d1170077

3. Two screws on the paper transport unit [A] (🔩 × 2)

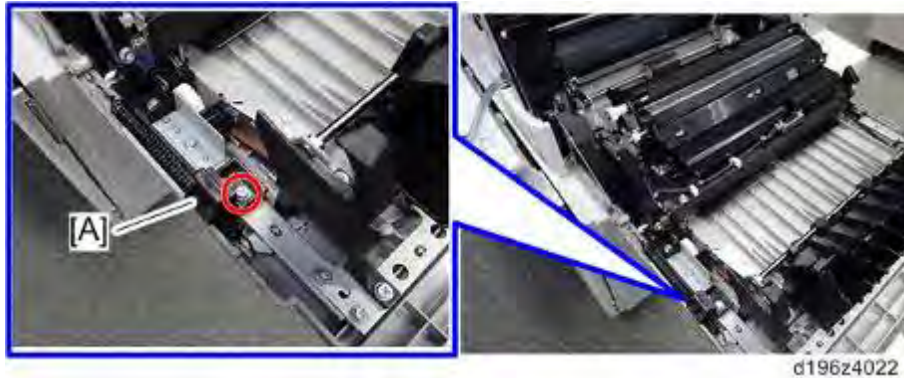


d1170078

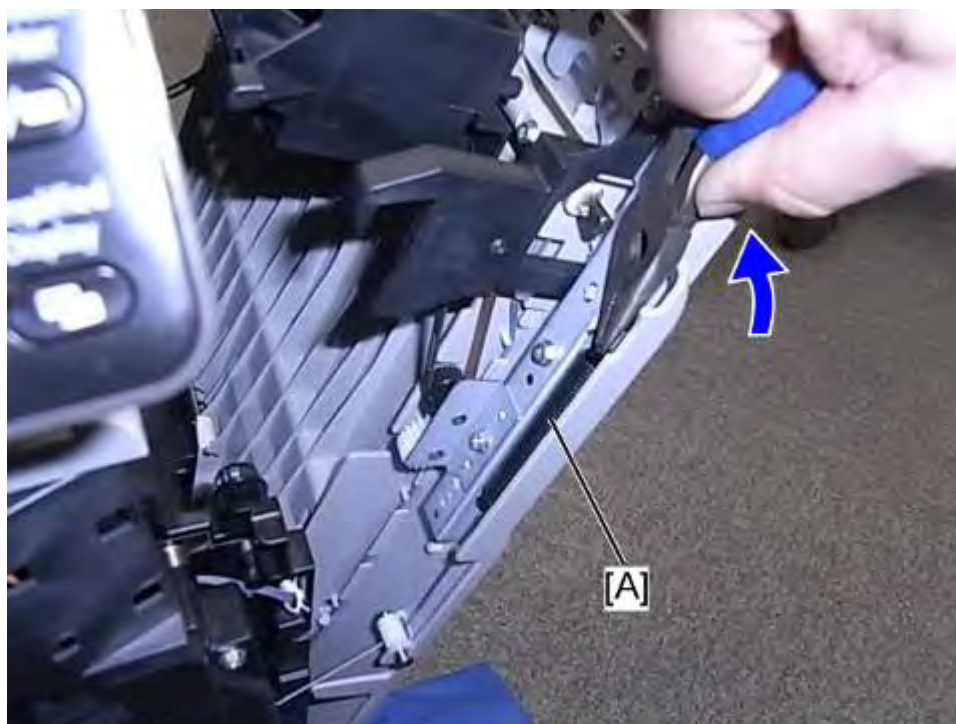
4. Lift the paper transport unit [A].



5. Tension spring cover [A] (🔑 × 1)

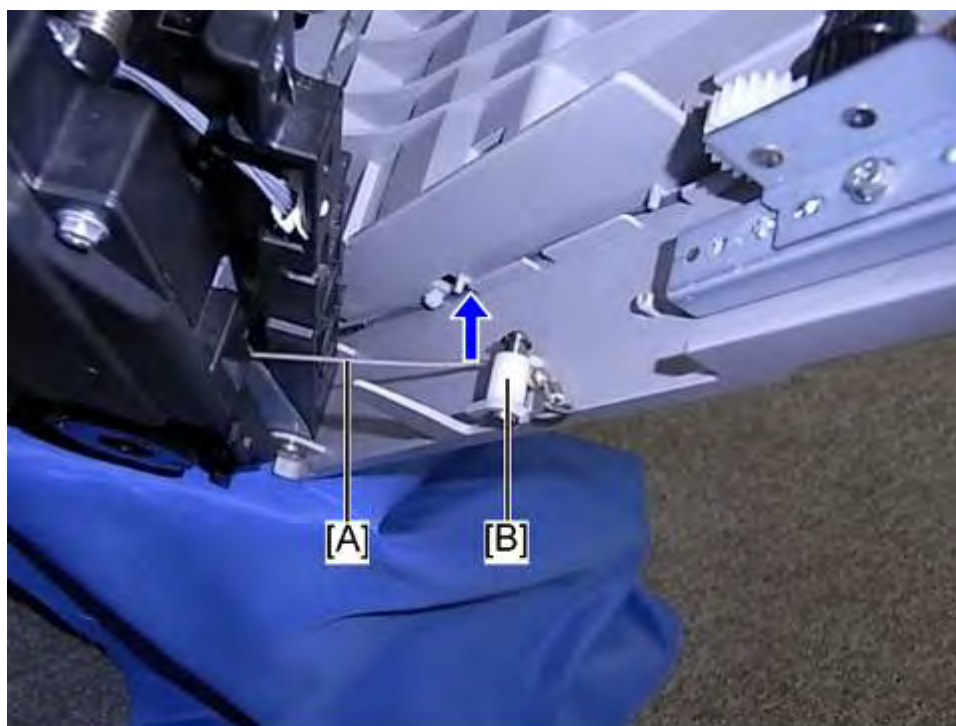


6. Lift the duplex unit, then remove the tension spring [A].



d1170080

7. Release the tension wire [A] from the roller [B].

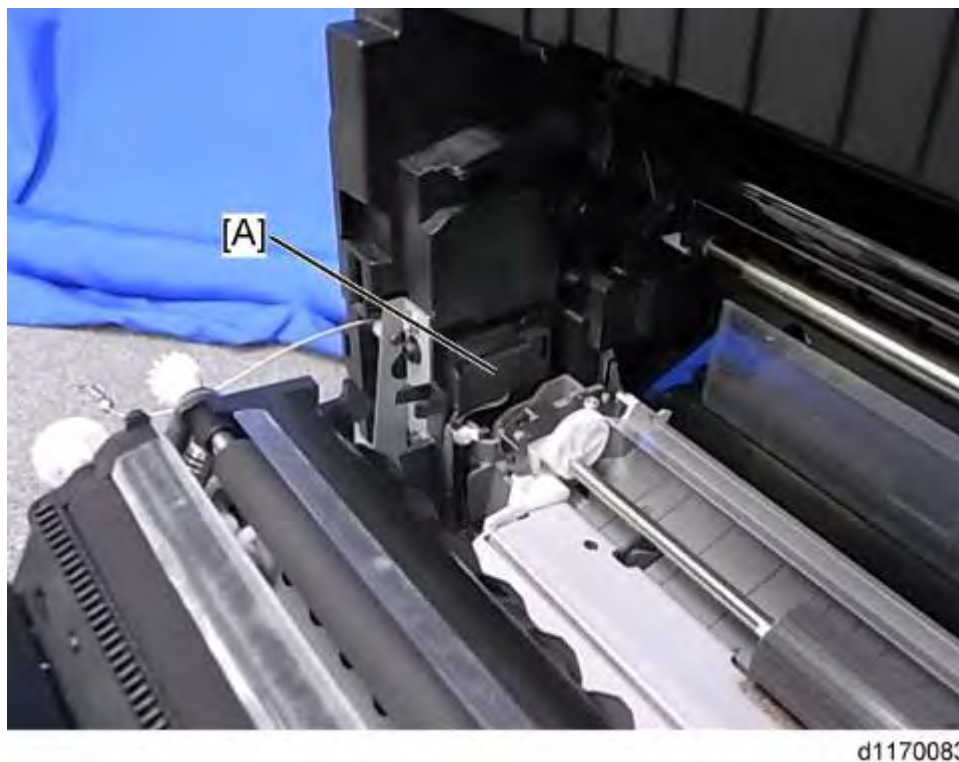


d1170081

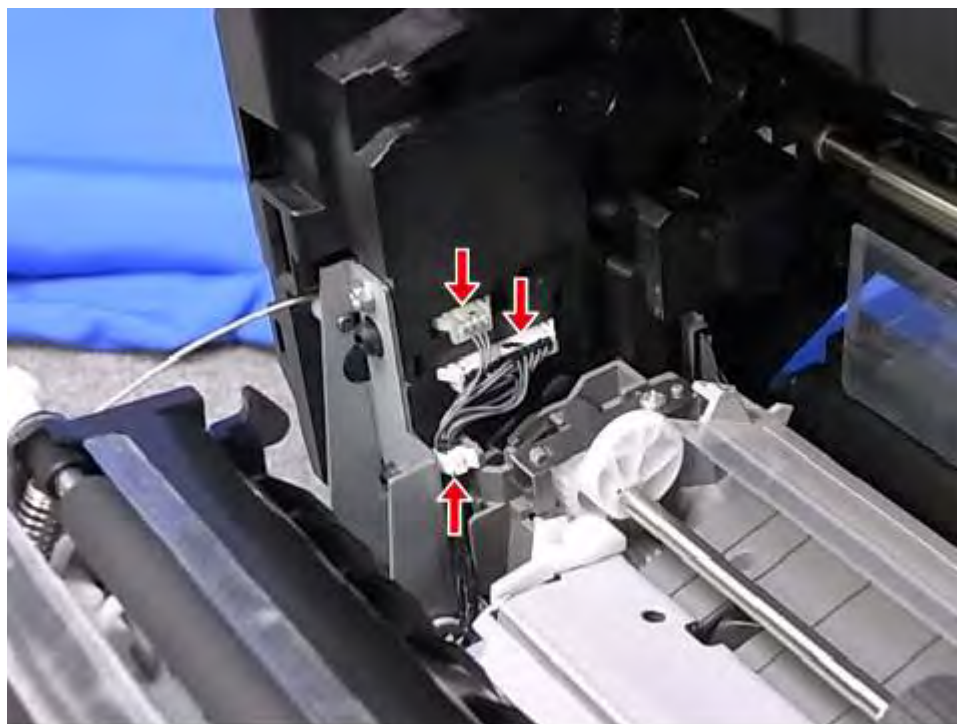
8. Restore the paper transport unit [A].



9. Connector cover [A]



10. Disconnect the connectors. (🔌 × 2, 🖨️ × 1)



d1170084

11. Remove the following items:

- Belt [A] (🔧 × 1)
- Duplex unit [B] (🔧 × 4)



d196z4147

4.17.2 DUPLEX ENTRANCE SENSOR

1. Open the duplex unit.

↓ Note

- If you find paper dusts on the registration section when you open the duplex unit, remove the dusts. Otherwise, the dusts cause to develop lines on the image.



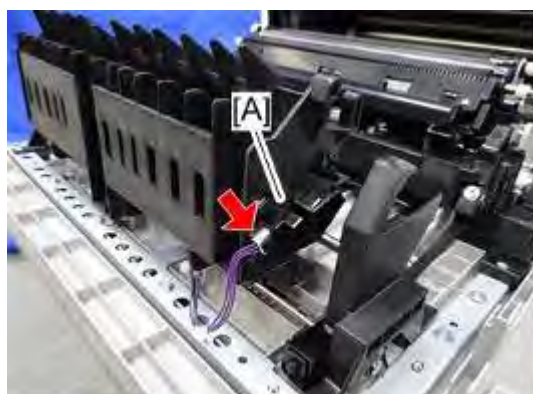
d196z4201

2. Sensor cover [A] (Hooks × 3)



d196z4140

3. Duplex entrance sensor [A] (🔑 × 1)



d196z4141

4.17.3 DUPLEX EXIT SENSOR

1. Paper transfer roller (page 4-1)
2. Cover [A] (Hook × 1)



3. Bracket [A] (🔧 × 1)

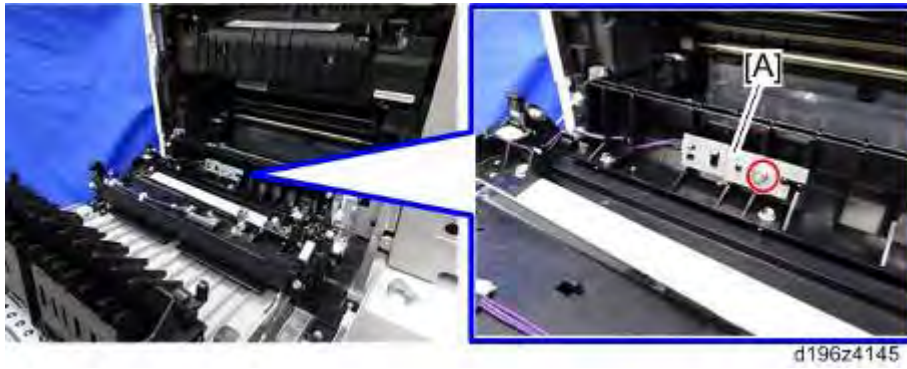


4. Registration roller unit [A]



5. Sensor bracket [A] (🔧 × 1)

Duplex



6. Duplex exit sensor [A] (× 1)



4.17.4 RIGHT COVER SENSOR

1. Open the duplex unit.

Note

- If you find paper dusts on the registration section when you open the duplex unit, remove the dusts. Otherwise, the dusts cause to develop lines on the image.



d196z4201

2. Release the tab [A] of the right cover sensor [A] with a jeweler's screwdriver.



d196z4139

3. Right Cover Sensor [A] (🔧 × 1)

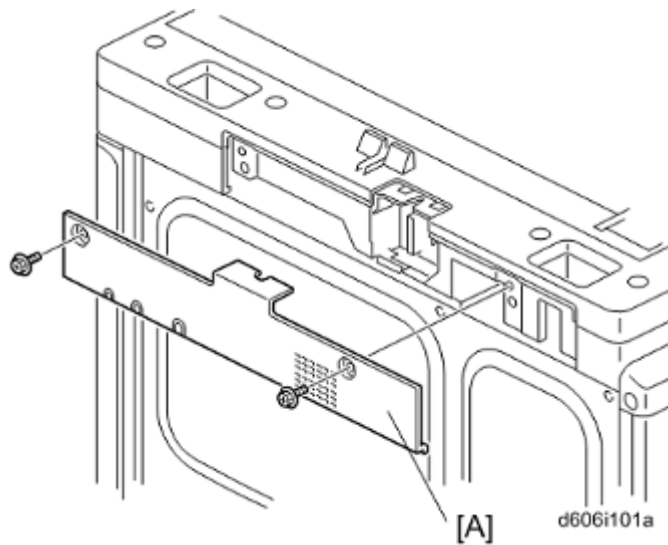


d1182511

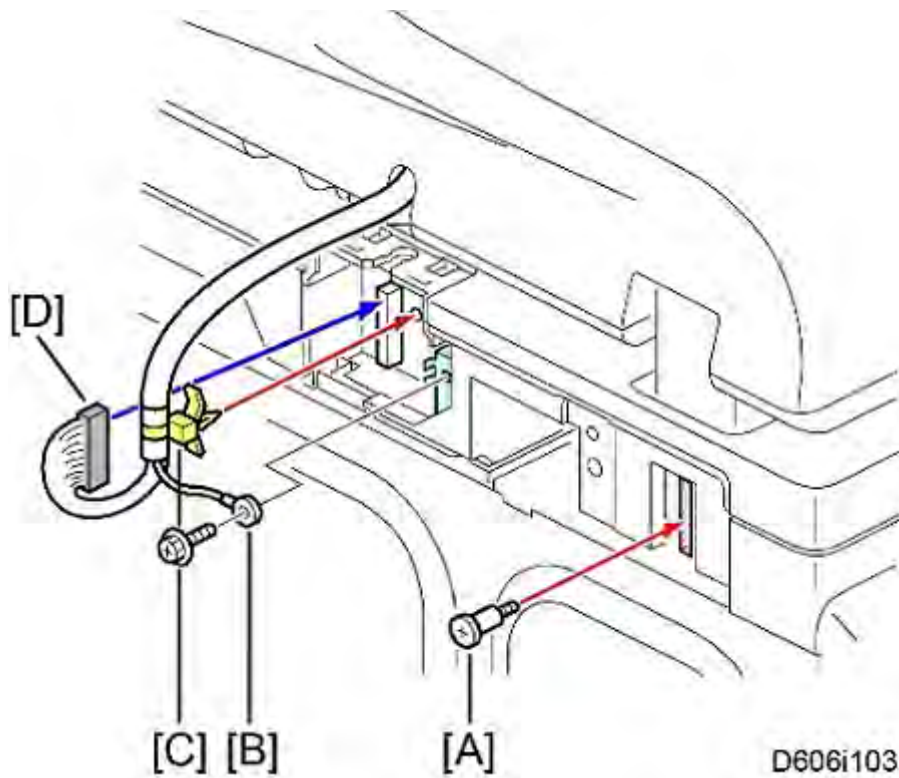
4.18 ARDF

4.18.1 ARDF UNIT

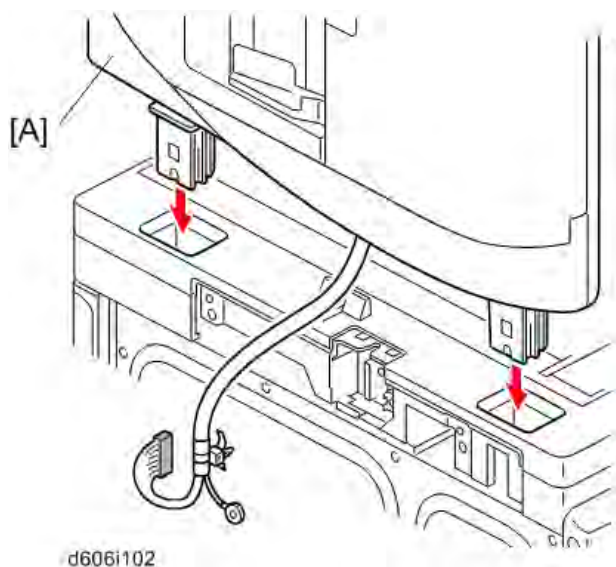
1. Scanner rear cover [A] (🔩 × 2)



2. Stud screw [A], ground cable [B] (🔩 × 1), clamp [C], and I/F cable [D]

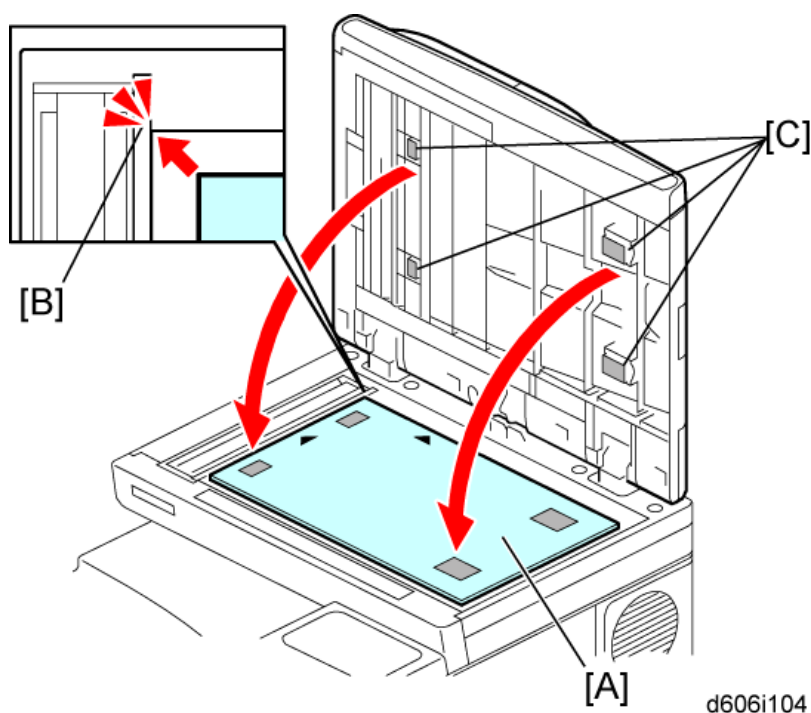


3. ARDF [A] from the copier



When Installing the ARDF

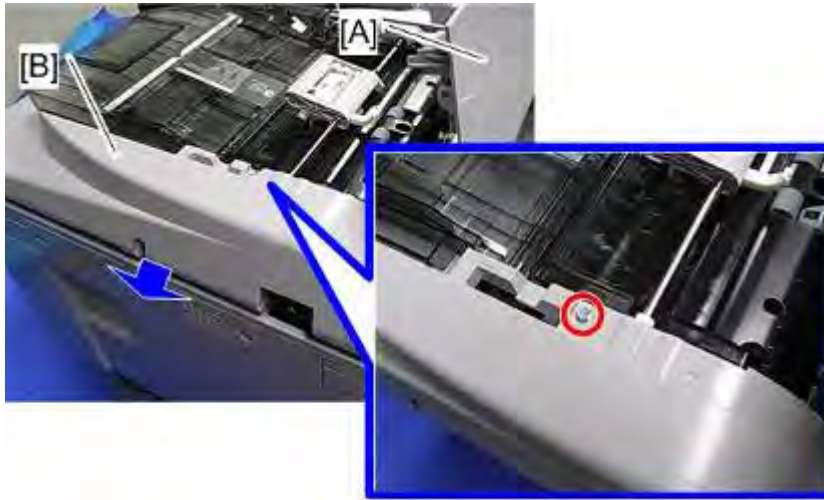
1. Open the ARDF.
2. Do the following steps:
 - Place the platen sheet [A] on the exposure glass.
 - With Velcro tape [C], line up the rear left corner of the platen sheet flush against corner [B] on the exposure glass.



3. Close the ARDF.
4. Reopen the ARDF.
5. Press the surface of the platen sheet gently to fix it on the ARDF firmly.

4.18.2 ARDF REAR COVER

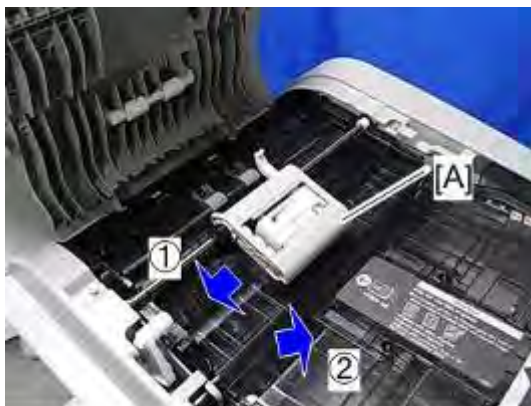
1. Open the ARDF left cover [A].
2. ARDF rear cover [B] (🔩 × 1)



d117r826

4.18.3 ORIGINAL FEED UNIT

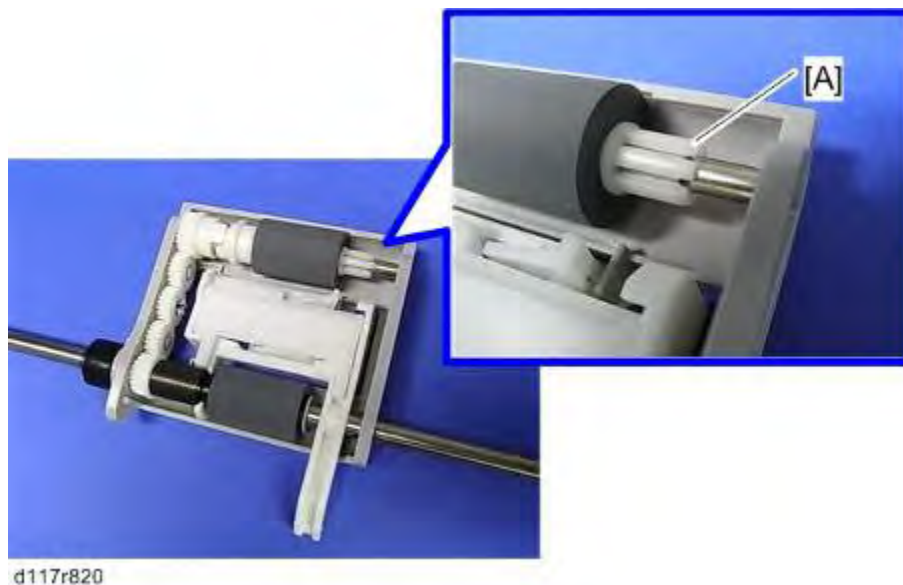
1. Open the ARDF left cover.
2. Original feed unit [A]



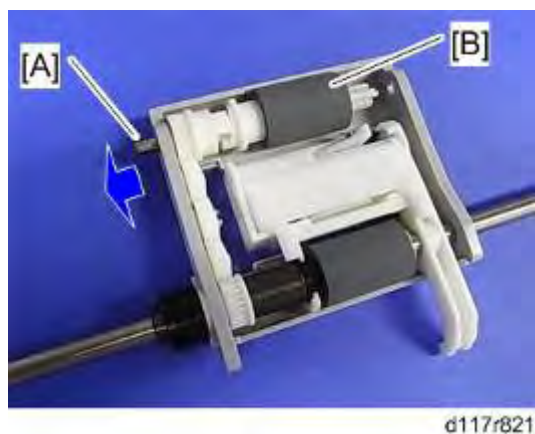
d117r837

4.18.4 PICKUP ROLLER

1. Original feed unit (page 4-4)
2. Release the hook [A].

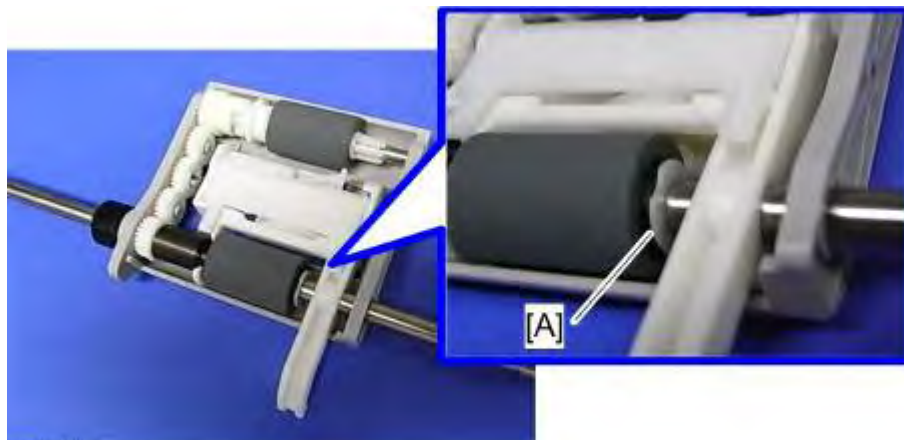


3. Slide the shaft [A], and then remove the pickup roller [B].



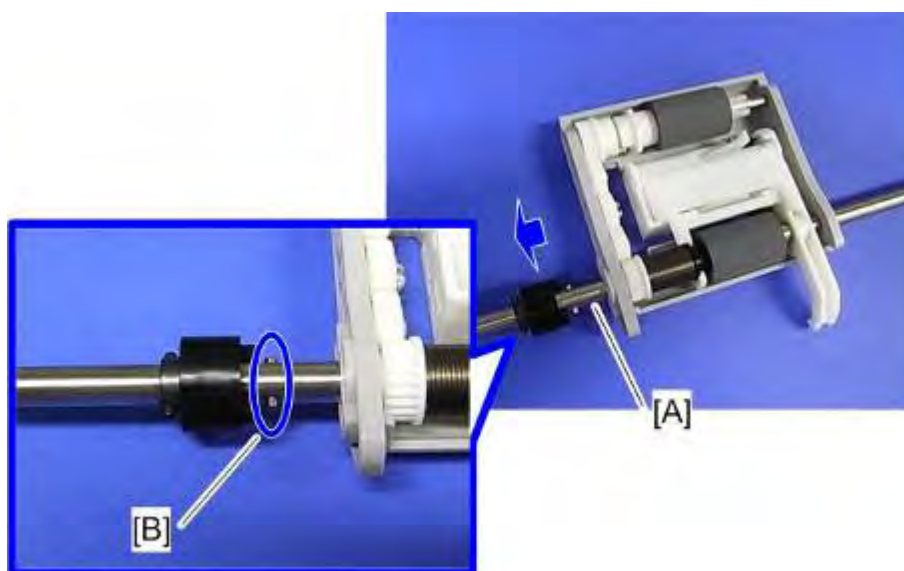
4.18.5 FEED ROLLER

1. Original feed unit (page 4-4)
2. Clip [A].



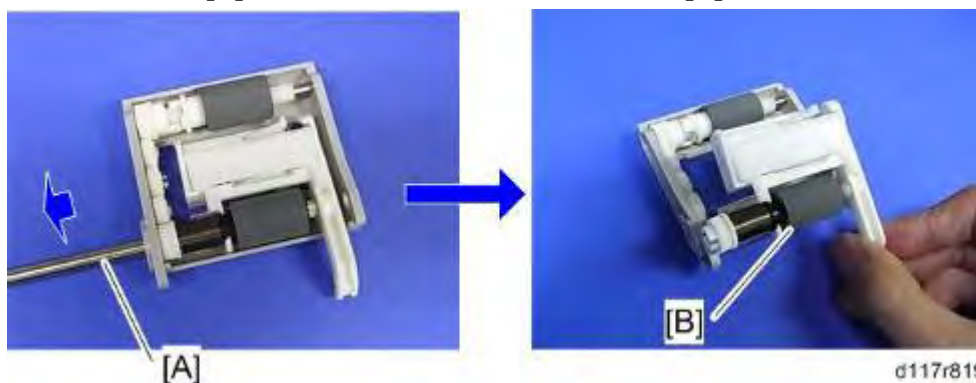
d117r817

3. Slide the shaft [A], and then remove the pin [B].



d117r818

4. Slide the shaft [A], and then remove the feed roller [B].



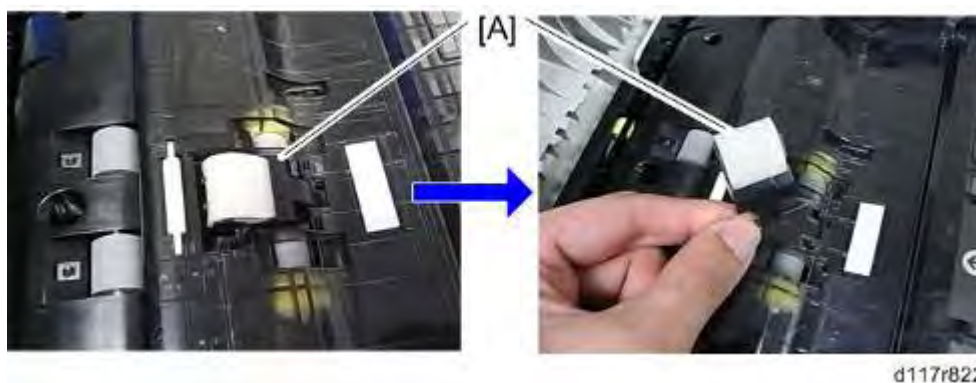
d117r819

4.18.6 FRICTION PAD

1. Original feed unit (page 4-4)
2. Turn the lock lever [A] clockwise.

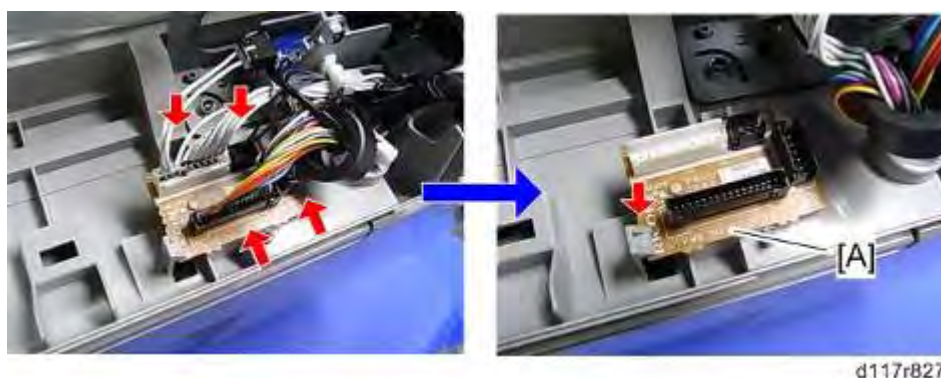


3. Friction pad [A] (hook × 3)



4.18.7 DFRB

1. ARDF rear cover (page 4-4)
2. DFRB [A] (hook × 4, hook × 1)



4.18.8 ARDF TOP COVER SENSOR, ORIGINAL SET SENSOR

1. ARDF rear cover (page 4-4)
2. Remove the ARDF top cover sensor [A] (🔧 × 1, hooks), and original set sensor [B] (🔧 × 1, hooks).



4.18.9 ARDF DRIVE MOTOR

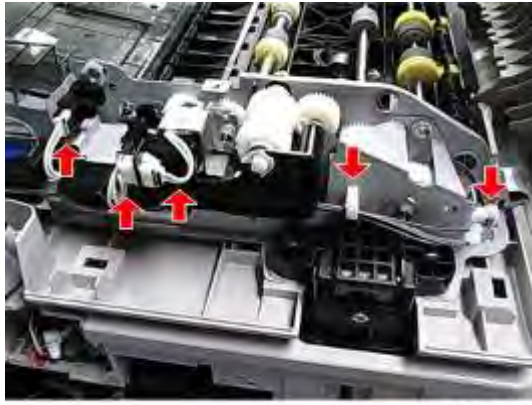
1. Original feed unit (page 4-4)
2. ARDF rear cover (page 4-4)
3. Guide plate [A] (hook × 2)



4. Guide plate [A] (🔧 × 5)



5. Release the clamps and disconnect the connectors. (🔧 × 3, 🔧 × 2)



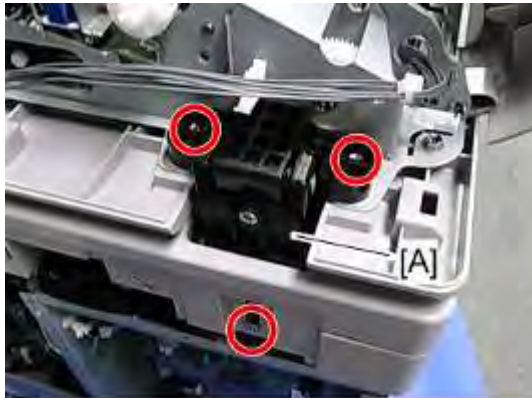
d117r831

6. Holder [A] (🔩 × 1)



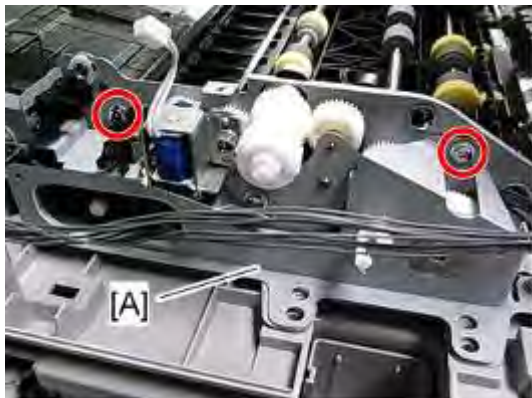
d117r832

7. Hinge [A] (🔩 × 3)



d117r833

8. Bracket [A] (🔩 × 2)



d117r834

9. ARDF drive motor [A] (⚙️ × 2, 🔑 × 1)

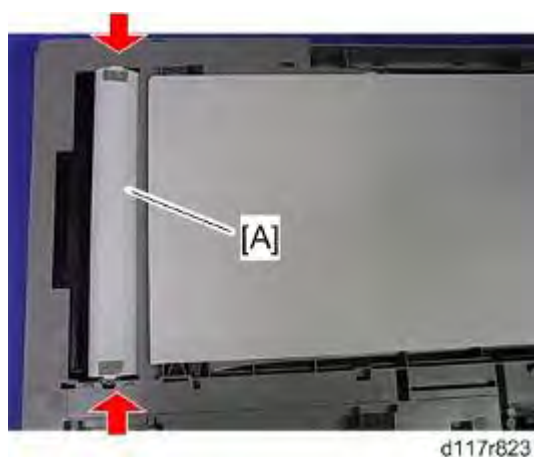
↓ Note

- Do not touch the encoder [B] when holding the motor.



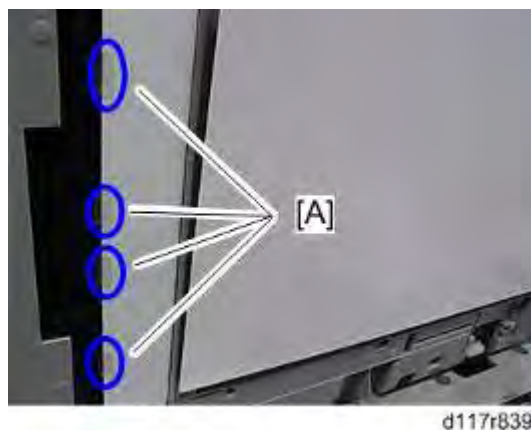
4.18.10 WHITE PLATE

- Open the ARDF.
- White plate [A] (hook × 2)



↓ Note

- When installing the white plate, make sure that the mylars [A] are outside the white plate.



4.18.11 REGISTRATION SENSOR

1. White plate (page 4-3)
2. Registration sensor holder [A] (🔑 × 1)

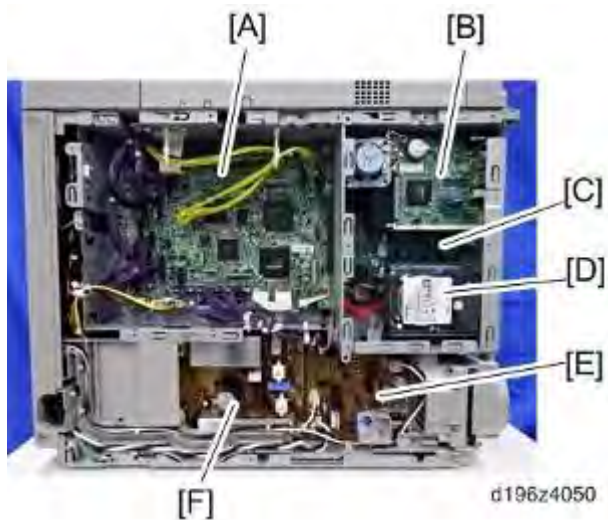


3. Registration sensor [A] (🔑 × 1)

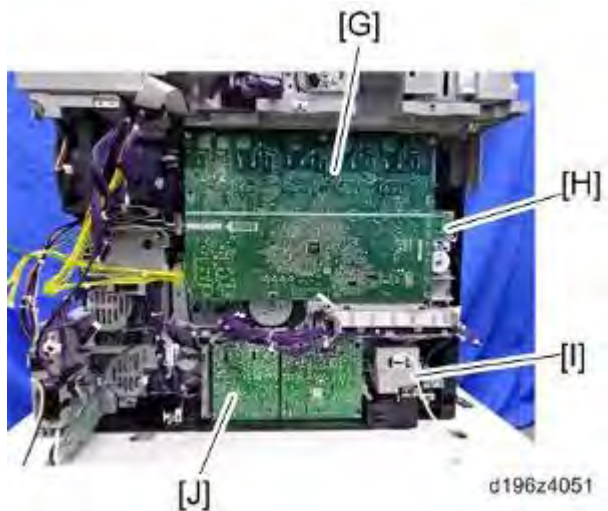


4.19 ELECTRICAL COMPONENTS

4.19.1 OVERVIEW



- [A] BiCU
- [B] FCU (if the machine has the fax unit)
- [C] Controller Board
- [D] HDD
- [E] PSU (AC)
- [F] PSU (DC)



- [G] Power Pack (Development)
- [H] Toner Bottle Detection Board
- [I] AC Detection Board
- [J] Power Pack (Transfer)

4.19.2 HDD

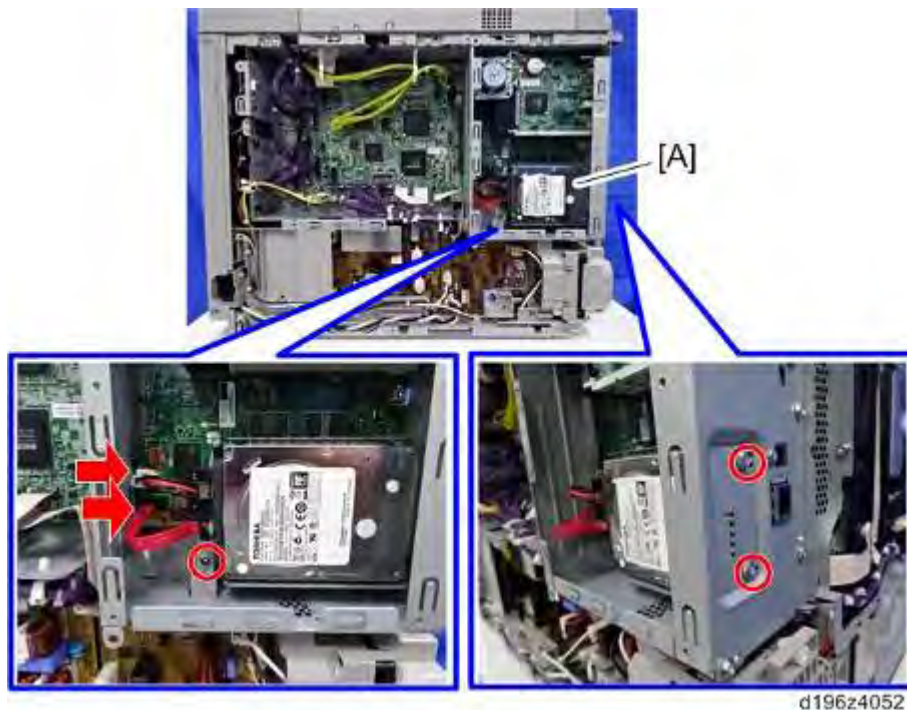
ⓘ Note

- Before replacing the HDD, copy the address book data to an SD card with SP5-846-051 if possible.

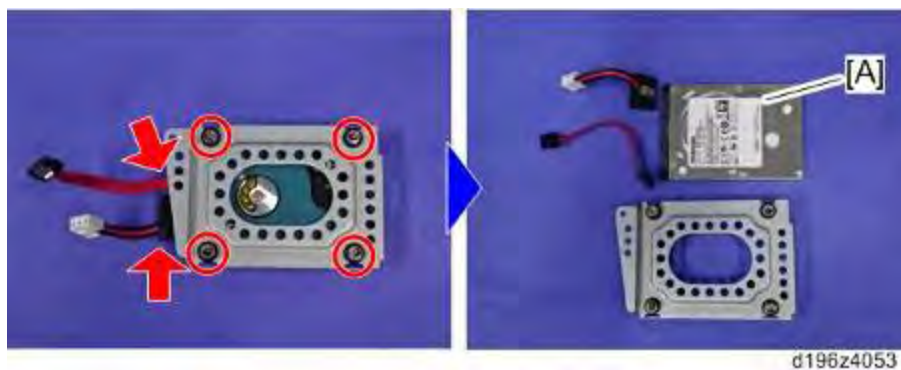
ⓘ Note

- If the customer uses the Data Overwrite Security, IC card reader, or OCR unit, these applications must be installed again.

1. Rear cover (page 4-1)
2. Left cover (page 4-4)
3. HDD with the bracket [A] (🔩 × 3, 📌 × 2)



4. Bracket and connectors from the HDD [A] (🔩 × 4, 📌 × 2)



Adjustment after Replacement

1. Do SP5-832-001 to initialize the HDD.

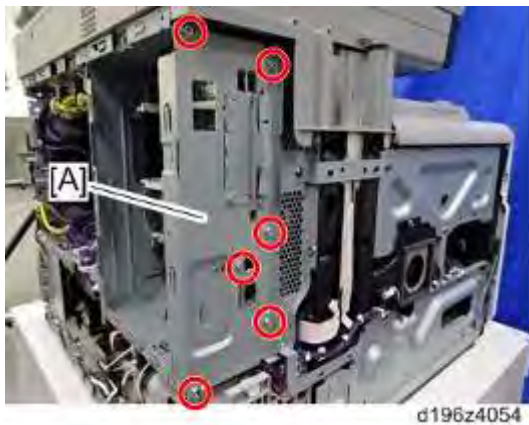
Initialization should be performed for the HDD which already formatted before.

2. If applicable, do SP5-846-052 to restore the address data from SD card to the HDD.
3. Cycle the power Off/On.

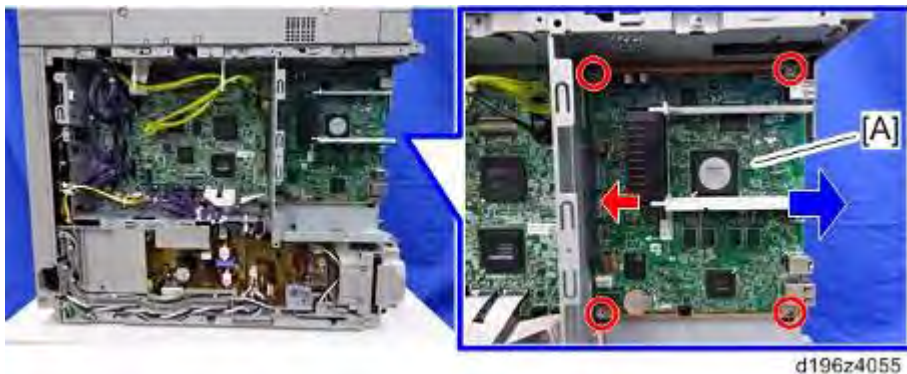
4.19.3 CONTROLLER BOARD**Note**

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

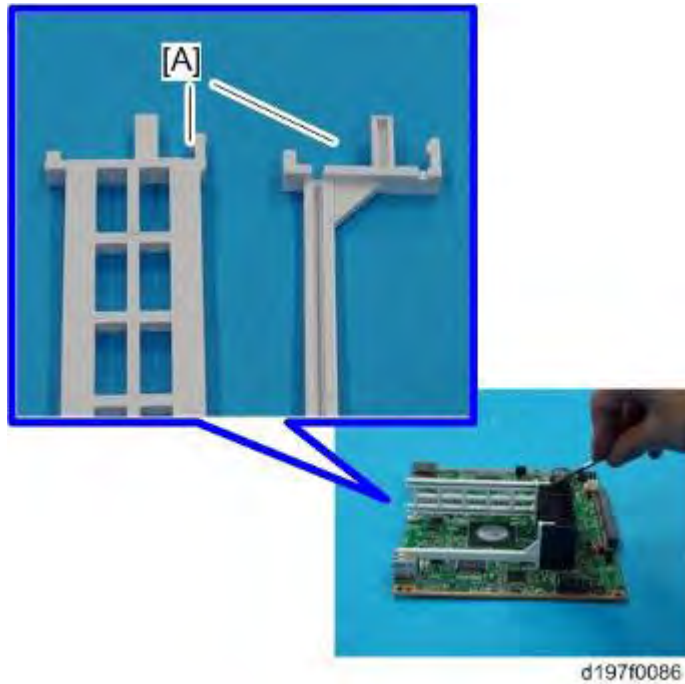
1. HDD (page 4-1)
2. Controller box cover [A] (🔩 × 6)



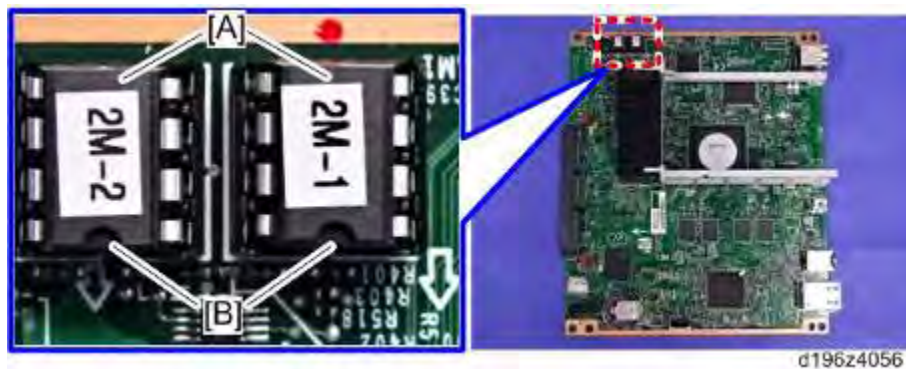
3. Pull out the controller board [A]. (🔩 × 4, 📏 × 1)



4. Remove the guide rail [A] from the controller board.



5. Remove the two used NVRAMs from the old controller board and install them on the new controller board.



Note

- Make sure the NVRAM [A] is installed at the correct mounting location and orientation). Install the NVRAM so that the indentation on the NVRAM corresponds with the mark [B] on the controller board.
- Incorrect installation of the NVRAM will damage both the controller board and NVRAM.

NVRAM on the controller board**⚠ CAUTION**

- SC195 (Machine serial number error) will be displayed if you forget to attach the NVRAM.
 - If you mounted the NVRAM in the wrong direction, each component needs to be replaced because a short circuit was caused in the controller board and the NVRAM.
 - Installing a new NVRAM initializes SPs and issues an SC. Reset the SC with the procedure below.
1. **Make sure that you have the SMC report (factory settings). This report comes with the machine.**
 2. **Output the SMC log using one of the following methods:**
 To print SMC log data, execute SP5-990-001.
 To save SMC log data to an SD card, execute SP5-992-001 (page 5-6).
 3. **Turn off the main power switch.**
 4. **Insert a blank SD card in the SD slot 2, and then turn on the main power switch.**
 5. **Use SP5-824-001 to upload the NVRAM data from the controller board.**
 6. **Make sure the customer has a backup of their address book data. If not, obtain the backup by referring to SP5-846-051.**

★ Important

- The address data stored in the machine will be discarded later during this procedure. So be sure to obtain a backup of the customer's address book data.
 - Note that the counters for the user will be reset when doing the backup/restore of the address book data.
 - If they have a backup of the address book data, use their own backup data for restoring. This is because there is a risk that the data cannot be backed up properly depending on the NVRAM condition.
7. **Do the following steps if the machine has the fax unit. If not, skip this step:**
 1. Print the Box List with the User Tools/Counter.
 - [User Tools/Counter] - [Facsimile Features] - [General Settings] - [Box Setting: Print List]
 2. Print the Special Sender List by pressing these buttons in the following order.
 - [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Program Special Sender: Print List]
 3. Write down the following fax settings.
 - [Receiver] in [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Reception File Settings] - [Forwarding].
 - [Notify Destination] in [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Reception File Settings] - [Store].
 - [Specify User] in [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Stored Reception File User Setting].

- [Notify Destination] in [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Folder Transfer Result Report].
- Specified folder in [User Tools/Counter] - [Facsimile Features] - [Send Settings] - [Backup File TX Setting].
- [Receiver] in [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Reception File Settings] - [Output Mode Switch Timer].
- [Store: Notify Destination] in [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Output Mode Switch Timer].
- All the destination information shown on the display.

 Note

- In the fax settings, address book data is stored with entry IDs, which the system internally assigns to each data. The entry IDs may be changed due to re-assigning in backup/restore operations.
4. Make sure that there is no transmission standby file. If any standby file exists, ask the customer to delete it or complete the transmission.

8. Turn the main power OFF and unplug the power supply cord.

9. Push the main power switch ON again to discharge the residual charge.

10. Replace the NV-RAM with a new one.

11. Turn the power ON.

 Important

- SC673 appears at start-up, but this is normal behavior. This is because the controller and the smart operation panel cannot communicate with each other due to changing the SP settings for the operation panel.
1. Change the SP settings for the operation panel.
- SP5-748-101: (OpePanel Setting: Op Type Action Setting): Change bit 0 from “0” to “1”.
 - SP5-748-201: (OpePanel Setting: Cheetah Panel Connect Setting): Change the value from “0” to “1”.
- 12. Cycle the main power OFF/ON with the SD card where the NV-RAM data has been uploaded in SD slot 2.**

 Important

- SC992 appears at start-up, but this is normal behavior. This is because information written to the NV-RAM and on the hard disk do not match due to replacement of the NV-RAM. Go to Step 13.
- 13. Download the NV-RAM data stored in the SD card to the brand-new NV-RAM using SP5-825-001 (NV-RAM Data Download).**

 Note

- The download will take a couple of minutes.

14. Turn the main power OFF and remove the SD card from SD slot 2.
15. Turn the main power ON.
16. Restore the original settings of the following SPs, referring to the SMC data obtained in step 2.

 Note

- SP5-825-001 does not download the following SP data to the new NV-RAM. So you must set them manually.
 - a. SP5-985-001(Device Setting: On Board NIC)
 - b. SP5-985-002(Device Setting: On Board USB)
- 17. If the security functions (HDD Encryption and HDD Data Overwrite Security) were applied, set the functions again.
- 18. Ask the customer to restore their address book. Or restore the address book data using SP5-846-052 (UCS Setting: Restore All Addr Book), and ask the customer to ensure the address book data has been restored properly.

 Important

- If you have obtained the backup of the customer's address book data, delete the backup immediately after the NV-RAM replacement to avoid accidentally taking out the customer's data.
19. Output the SMC log using one of the following methods:
 To print SMC log data, execute SP5-990-001.
 To save SMC log data to an SD card, execute SP5-992-001 (page 5-6).

 Note

- Check that the counters are reset.
20. Make sure that the list output in step 7-1 through step 7-3 matches the destination information in step 7-4. If not, set it to the setting before replacement.
 21. Execute the process control (SP3-011-001).

 Important

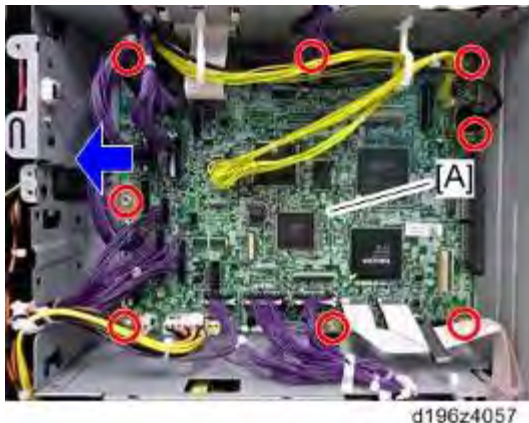
- Try all the items below if NVRAM upload (SP5-824-001) or download (SP5-825-001) cannot be done.
 - Check the SP values that changed on the SMC you printed out in step 2. Adjust the values manually. Make sure that the values of SP5-045-001 and SP5-302-002 are the same as before replacing.
 - Replace all PM parts because all PM counters will be reset.

↓ Note

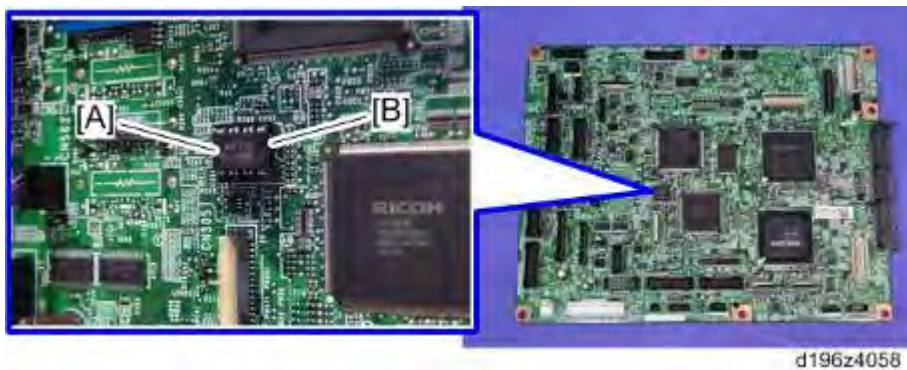
- *If a message tells you need an SD card to restore displays after the NVRAM replacement, create a “SD card for restoration” and restore with the SD card. Refer to “page 2-1 “Encryption Key Restoration””*

4.19.4 BiCU

1. Rear cover (page 4-1)
2. BiCU [A] (🔌 × 8, 📀 × 3, USB connector ×1, all 🔌 s).



3. Remove the NVRAM from the old BiCU and attach it to the new BiCU.



↓ Note

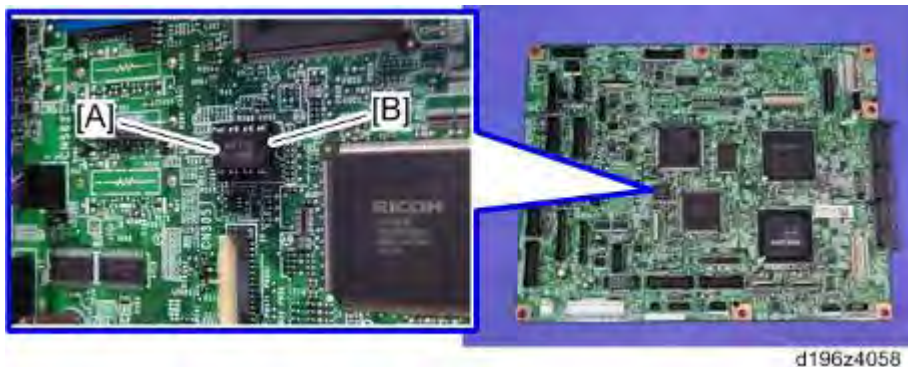
- Attaching the used NVRAM to the new BiCU allows users to use old data such as SP settings.
- Install a new NVRAM [A] so that the indentation [B] on the NVRAM corresponds with the mark on the BiCU. Incorrect installation of the NVRAM will damage both the BiCU and NVRAM.

Replacing the NVRAM (EEPROM) on the BiCU**Note**

- The following shows the procedure for replacing the NVRAM on the BiCU with a new NVRAM.
1. Make sure that you have the SMC report (factory settings). This report comes with the machine.
 2. Output the SMC data ("ALL") using SP5-990-001/SP5-992-001.
 3. Turn off the main switch.
 4. Insert a blank SD card in the SD slot #2, and then turn on the main switch.
 5. Use SP5-824-001 to upload the NVRAM data from the BiCU
 6. Turn off the main power switch and unplug the power cord.
 7. Replace the NVRAM on the BCU with a new one.

Note

- Install a new NVRAM [A] so that the indentation [B] on the NVRAM corresponds with the mark on the BiCU. Incorrect installation of the NVRAM will damage both the BiCU and NVRAM.



8. Plug in, and then turn on the main switch.
9. Select the destination setting (SP5-131-001 - JPN: 0, NA: 1, EU/AA/TWN/CHN: 2).

★ Important

- After changing the EEPROM, some SPs do not have the correct values.
 - Because of this, steps 10 to 12 must be done.
10. Set the machine serial number SP5-811-001, Area selection SP5-807-001, CPM set SP5-882-001.

Note

- For information on how to configure the above SPs, contact the supervisor in your branch office.
11. Cycle the power off/on.
 12. Use SP5-801-002 "Memory Clear Engine".
 13. Turn off the machine, and then turn it back on.
 14. From the SD card where you saved the NV-RAM data in step 5, download the NV-RAM data with SP5-825-001.

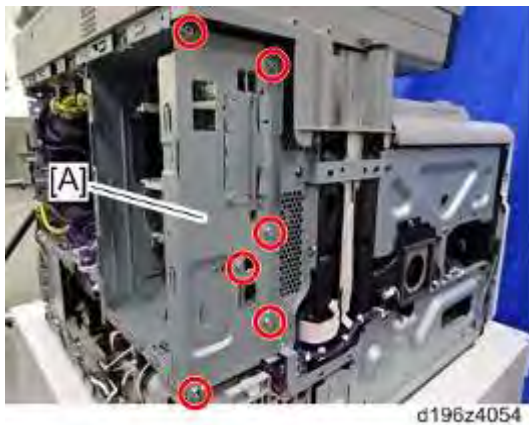
15. Turn off the machine, and then remove the SD card from SD slot 2.
16. Turn on the main power switch.
17. Check the factory setting sheet and the SMC data printout from step 2, and set the user tool and SP settings so they are the same as before.
18. Execute ACC (Copy and Printer).

4.19.5 CONTROLLER BOX

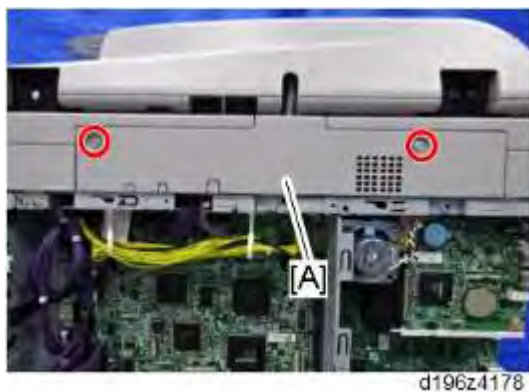
↓ Note

- If the optional counter interface unit is installed, remove the optional counter interface unit before removing the controller box.

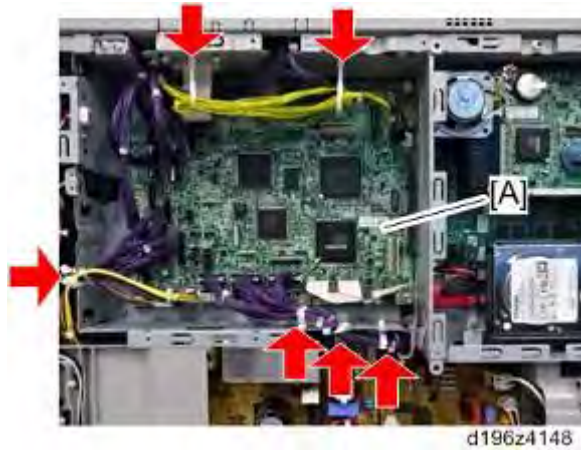
1. HDD (page 4-1)
2. Rear right cover (page 4-1)
3. Controller box cover [A] (🔑 × 6)



4. Scanner rear cover [A] (🔑 × 2)

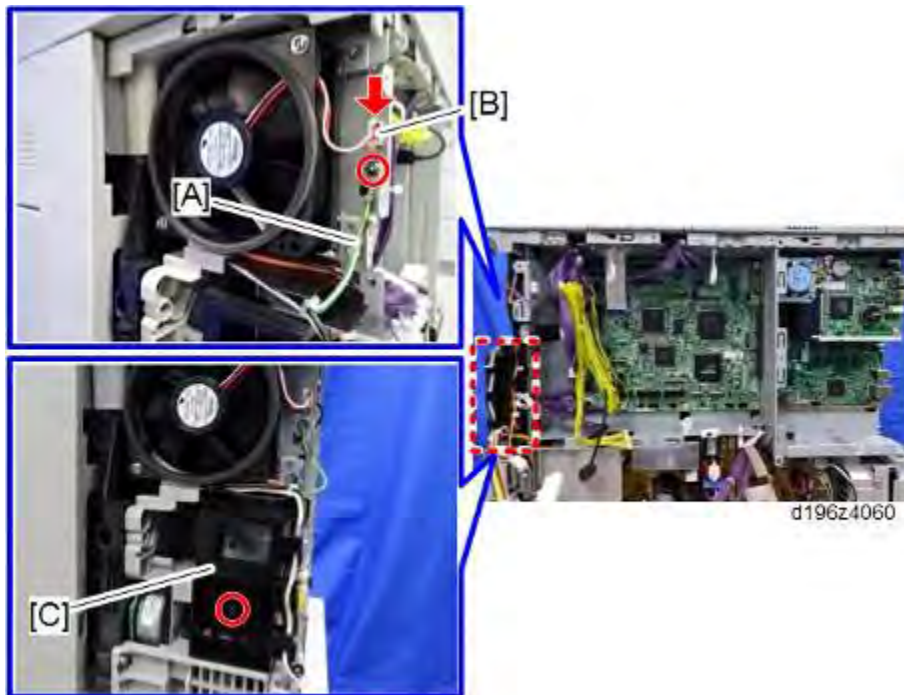


5. All connectors on the BiCU [A] (🔌 × 3, USB connector × 1, all 🔌 s)
6. Remove the clamps to make room for removal of the BiCU [A]. (🔌 × 6)



7. Do the following steps:

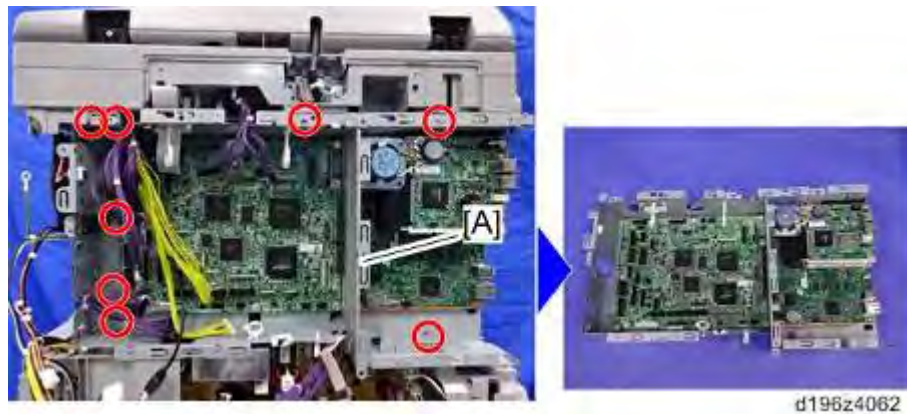
- Remove the ground wire [A] and connector [B] from the left side of the controller box.
- Disconnect the harness and remove the harness guide [C]. (🔧 × 1)



8. Remove the brackets ([A] and [B]), and two screws from the right side of the controller box. (🔧 × 6)



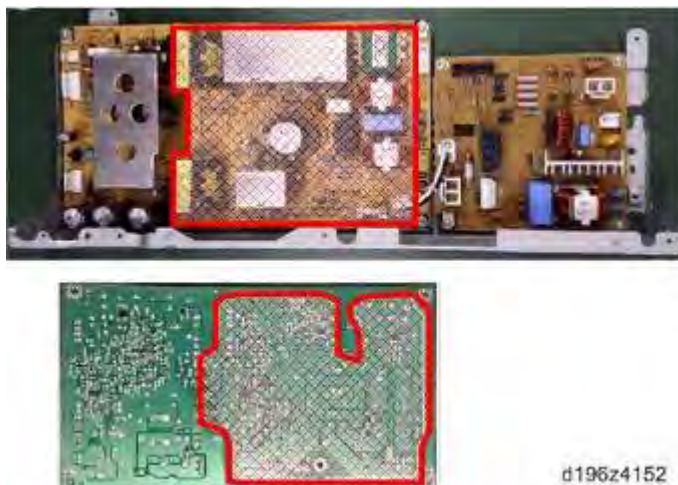
9. Controller box [A]. (🔧 × 8)



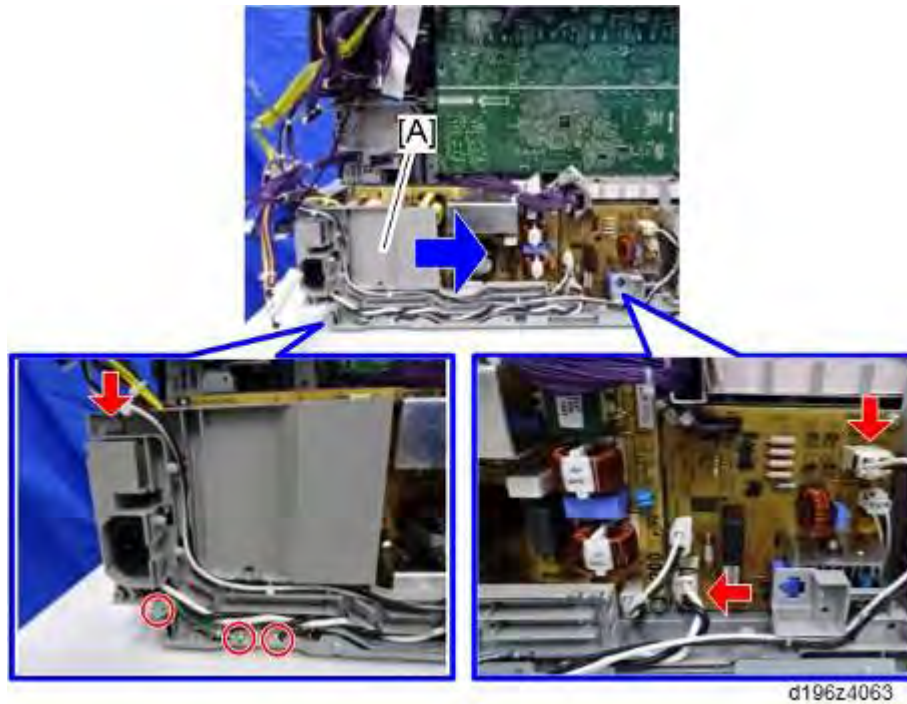
4.19.6 PSU (AC), PSU (DC)

⚠ CAUTION

- Do not touch the areas outlined in red in the following diagrams when replacing the PSU. Residual charge on the board may cause electric shock.

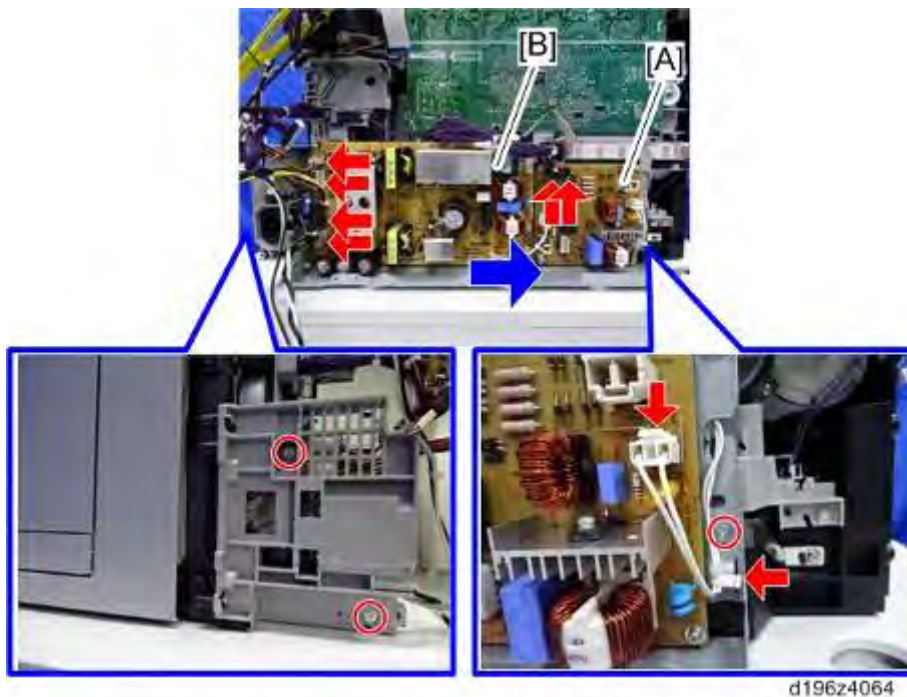


1. Controller box (page 4-2)
2. PSU fan (page 4-1)
3. Disconnect the harness and remove the harness guide [A]. (🔧 × 3, 📏 × 2, Hook × 1)



4. The next step varies according to the parts that you want to remove.

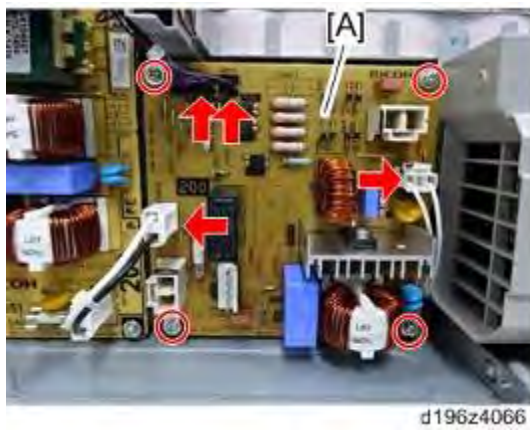
- For removing the PSUs with the bracket, disconnect the connectors on the PSU (AC) [A] and PSU (DC) [B]. (🔌 × 7, 🛠 × 1, 🌀 × 3)



- For removing the PSU (DC) alone, remove the PSU (DC) [A]. (🌀 × 4, 🔌 × 5, 🛠 × 1: Locking wire saddle)



- For removing the PSU (AC) alone, remove the PSU (AC) [A]. (🔧 × 4, 📡 × 4)

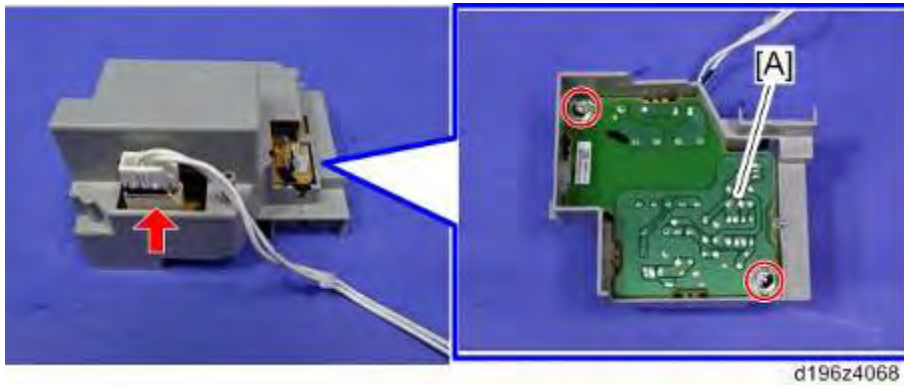


4.19.7 AC DETECTION BOARD

1. PSU with the bracket (page 4-4)
2. AC detection board with the bracket [A] (🔩 × 1, 🧰 × 1)

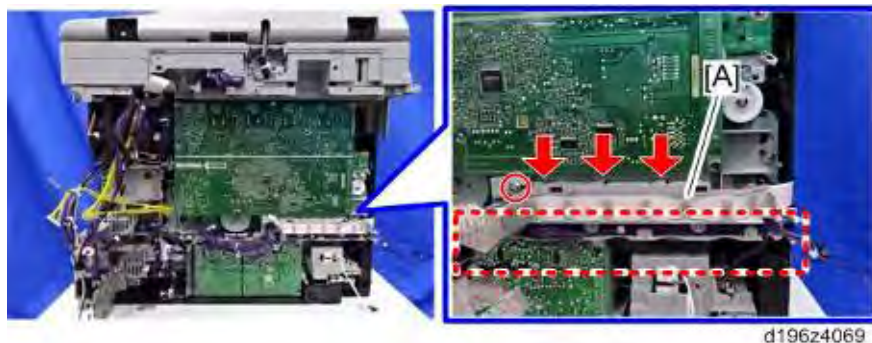


3. AC detection board [A] (🔩 × 2, 🧰 × 1)



4.19.8 POWER PACK (DEVELOPMENT)

1. PSU with the bracket (page 4-4)
2. Disconnect the harness and remove the harness guide [A]. (🔧 × 1, hook × 3)



↓ Note

- Release the harness guide [A] as shown below.



3. Power Pack (Development) [A] with the bracket (🔧 × 5, hook × 1)

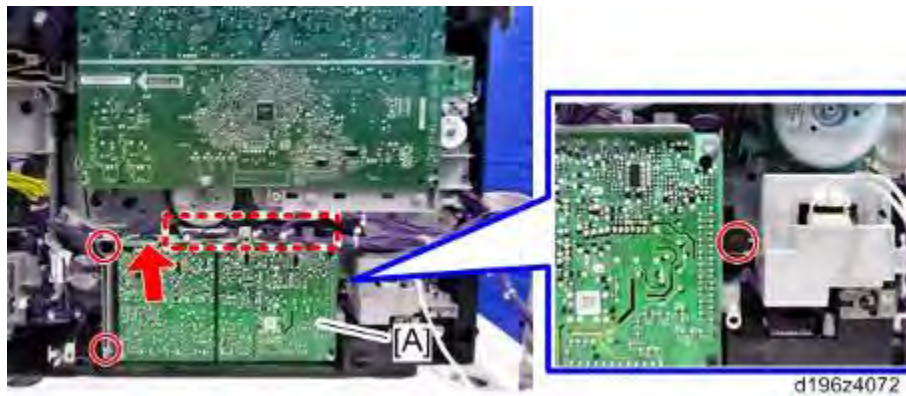


4. Power Pack (Development) [A] (🔧 × 5, 📦 × 1)



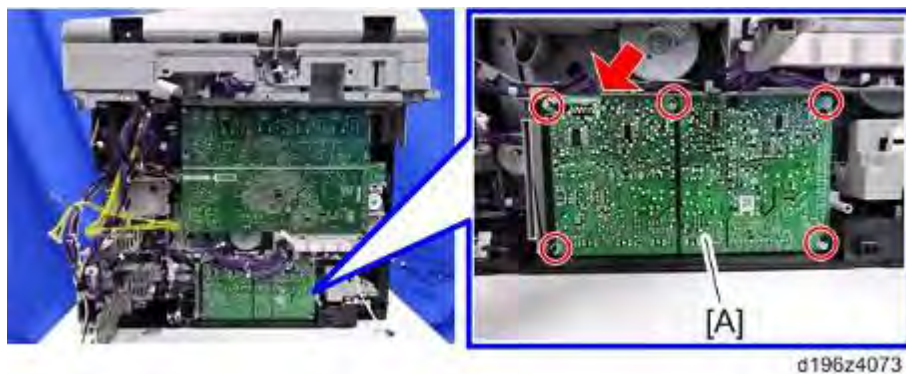
4.19.9 POWER PACK (TRANSFER)

1. PSU with the bracket (page 4-4)
2. Disconnect the harness [A] attached to the power pack's bracket, and then remove the power pack with the bracket. (🔩 × 3, 🗑 × 1)



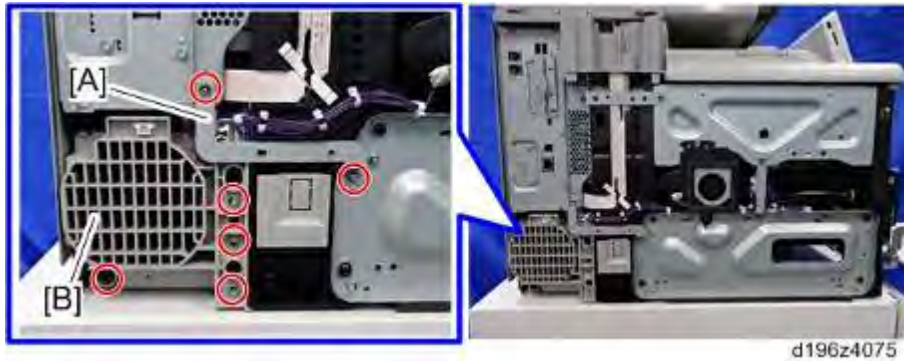
Removing the Power Pack (Transfer) Alone

1. PSU with the bracket (page 4-4)
2. Power Pack (Transfer) [A] (🔩 × 5, 🗑 × 1)



4.19.10 PSU FAN

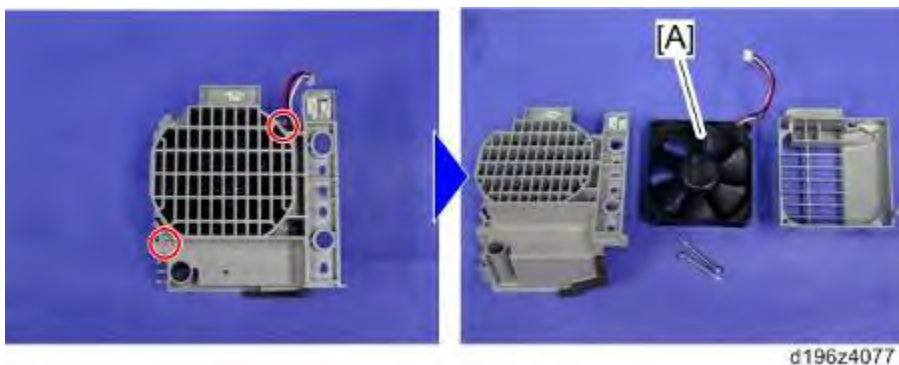
1. Left cover (page 4-4)
2. Bracket [A] (🔧 × 2)
3. Screws of the fan cover [B] (🔧 × 4)



4. Disconnect the connectors and pull out the PSU fan [A] with the cover. (🔧 × 5)



5. Remove the cover from the PSU fan [A]. (🔧 × 2)

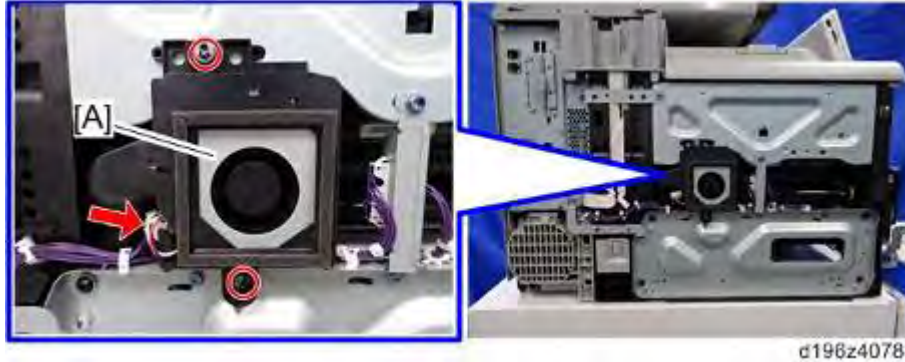


⬇ Note

- Install the PSU fan with its label facing the inside of the machine.

4.19.11 PCDU COOLING DUCT FAN

1. Left cover (page 4-4)
2. Duct [A] (🔩 × 2, 🛠 × 1)



3. PCDU Cooling Duct Fan [A] (🔩 × 2, hook × 4)

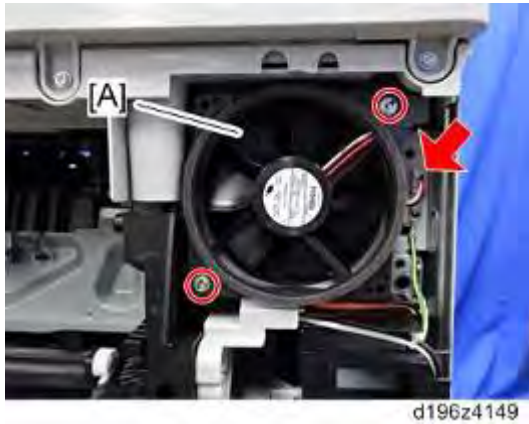


⬇ Note

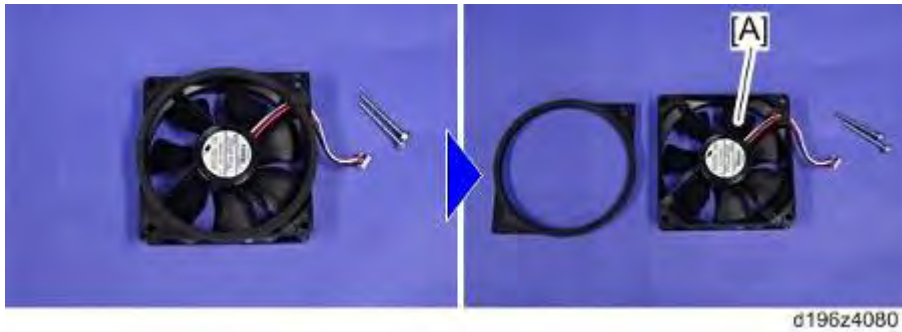
- Install the PCDU cooling duct fan with its label facing the inside of the machine.

4.19.12 FUSING FAN

1. Rear right cover (page 4-1)
2. Fusing fan [A] (🔩 × 2, 🛠 × 1)



3. Remove the cover from the fusing fan [A].

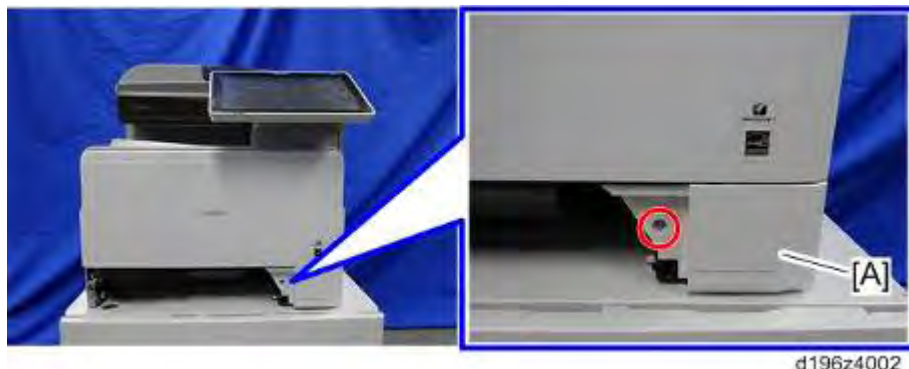


⚠ CAUTION

- Install the fusing fan with its label facing the outside of the machine.

4.19.13 TEMPERATURE/HUMIDITY SENSOR

1. Pull out the paper tray.
2. Front Lower Cover [A] (🔧 × 1)

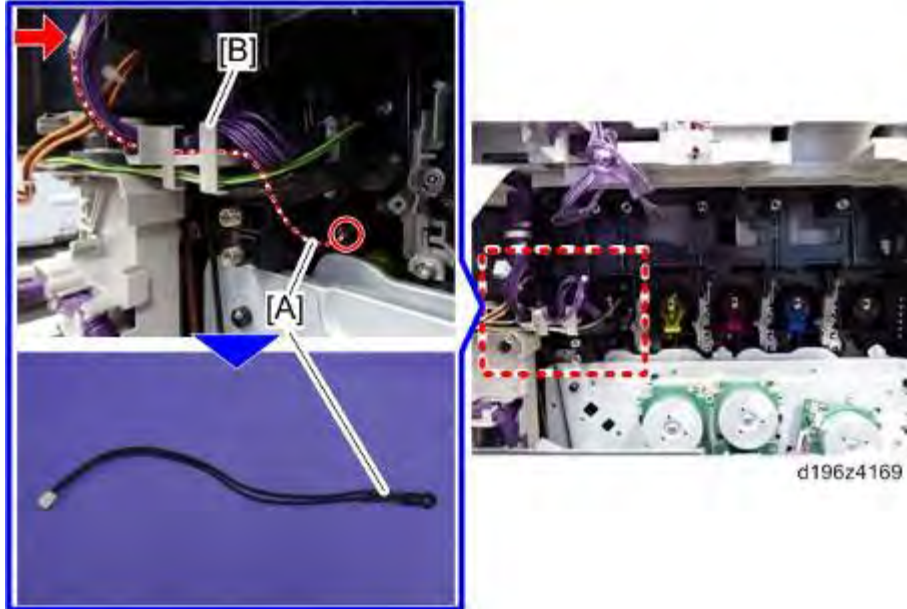


3. Temperature/humidity sensor [A] (🔧 × 1, 📡 × 1)



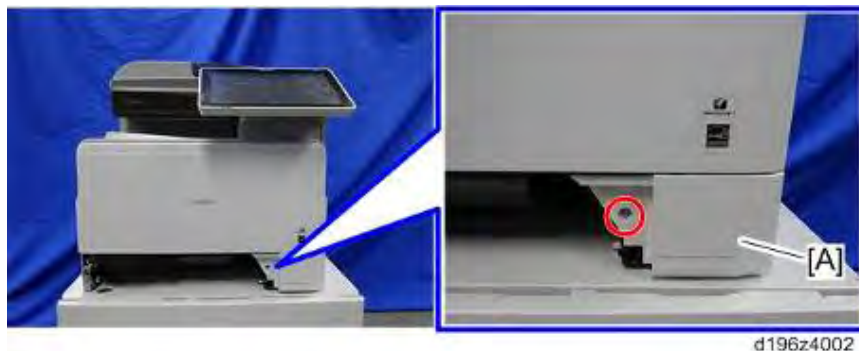
4.19.14 IMAGE CREATION TEMPERATURE SENSOR

1. Toner Transport Section (page 4-1)
2. Remove the image creation temperature sensor [A] while releasing the harness of the image creation temperature sensor from the harness guide [B]. (🔧 × 1, 🗑️ × 1)



4.19.15 INTERLOCK SWITCHES

1. Pull out the paper tray.
2. Front lower cover [A] (🔩 × 1)



3. Cover [A] (🔩 × 1)



4. Cover [A] (🔩 × 3)

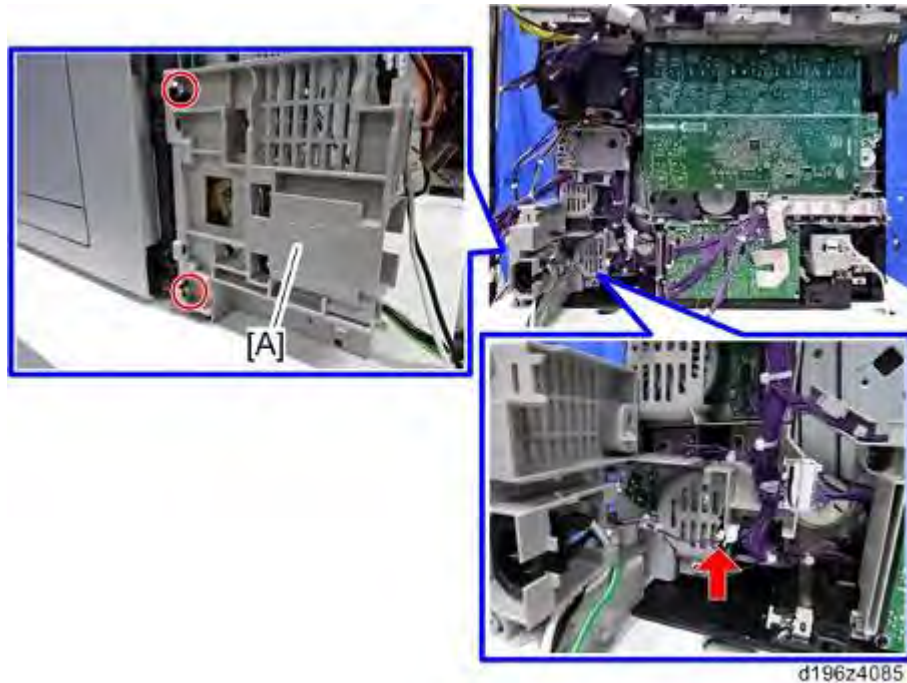


5. Interlock switches [A] (🔩 × each 2)

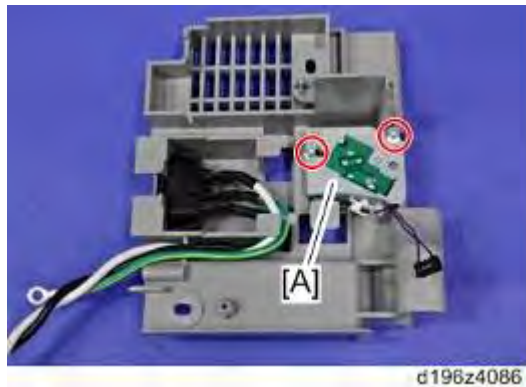


4.19.16 DC SWITCH

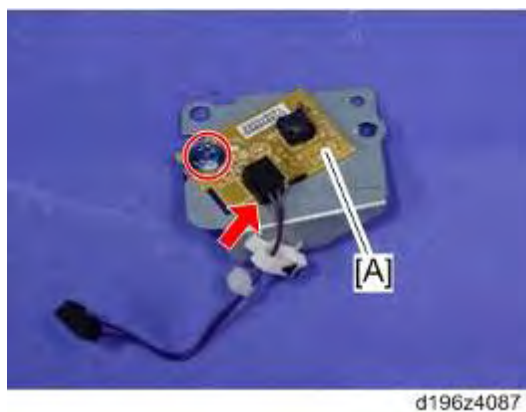
1. PSU with the bracket (page 4-4)
2. DC switch cover [A] (🔩 × 2, 🛡️ × 1)



3. DC switch [A] with the bracket (🔩 × 2)



4. DC switch [A] (🔩 × 1, 🛡️ × 1)



SYSTEM MAINTENANCE

REVISION HISTORY		
Page	Date	Added/Updated/New
		None

5. SYSTEM MAINTENANCE

5.1 SERVICE PROGRAM MODE

5.1.1 SP TABLES

See "[Appendices](#)" for the following information:

- SP Mode - SP1000
- SP Mode - SP2000
- SP Mode - SP3000
- SP Mode - SP4000
- SP Mode - SP5000
- SP Mode - SP6000
- SP Mode - SP7000
- Printer SP Mode
- Scanner SP Mode
- Input Check
- Output Check

5.2 FIRMWARE UPDATE

5.2.1 OVERVIEW

In order to update the firmware of this machine, it is necessary to download the latest version of firmware on a SD card.

Insert the SD card in SD card slot 2 beside the left rear of the controller box.

5.2.2 FIRMWARE TYPE

Firmware type	Firmware position	Message display
FONT2	Controller Board	GW1 e_prt_psfmt8
HDD Format option	Controller Board	GW1 a_zoffym0ond
FONT1	Controller Board	GW9a_pcl_fntM
FONT	Controller Board	GW7e_prt_SAMf
CSPF	Smart Operation Panel – CPU board	M2a_cspf
PictBridge	Controller Board	GW11 a_prt_Pict
XPS	Controller Board	GRIC2a_prt_XPS
PCL	Smart Operation Panel – CPU board	GRIC2e_prt_PCL
PS	Controller Board	GRC2e_prt_PDF
RPCS	Smart Operation Panel – CPU board	GRC2e_prt_RPCS
Firmware	Smart Operation Panel – CPU board	M2a_System
Eco-friendly Widget	Smart Operation Panel – CPU board	M2a_WEcolInfo
Engine	BiCU	GRIC2a_eplot
Fax	Controller Board	GRIC2a_fax

Firmware type	Firmware position	Message display
Fax RX File Widget	Smart Operation Panel – CPU board	M2a_WFaxInfo
FCU	BiCU	GW1 a_efax_fcu1 U
ID Card Copy	Smart Operation Panel – CPU board	M2a_IDCardCopy
iWnn IME	Smart Operation Panel – CPU board	M2a_iWnn
Change Languages Widget	Smart Operation Panel – CPU board	M2a_WEcolInfo
LegacyUI type-1	Smart Operation Panel – CPU board	M2a_LegacyUI
Network Support	Smart Operation Panel – CPU board	GRIC2a_net
NetworkDocBox	Smart Operation Panel – CPU board	GRIC2a_netfile
ProgramInfoService	BiCU	M2a_ProgramInfo
Standard IC Card Plugin	Smart Operation Panel – CPU board	M2a_QuickCdAuth
RFax	Smart Operation Panel – CPU board	GRIC2a_fax2
Scan to Me	Smart Operation Panel – CPU board	M2a_ScanToMe
Scanner	Smart Operation Panel – CPU board	GRIC2a_scn
Quick Copy	Smart Operation Panel – CPU board	M2a_SimpleCopy
Quick Fax	Smart Operation Panel – CPU board	M2a_SimpleFax

Firmware type	Firmware position	Message display
Quick Scanner	Smart Operation Panel – CPU board	M2a_SimpleScan
Stop Widget	Smart Operation Panel – CPU board	M2a_WStopKey

 Note

- Even when not using a RPCS driver, the XPS driver requires RPCS firmware.

5.2.3 PROCEDURE

 Important

- A SD card is a precision device, so when you handle an SD card, respect the following.
- When the power is switched ON, do not insert or remove a card.
- During installation, do not switch the power OFF.
- Since the card is manufactured to high precision, do not store it in a hot or humid location, or in direct sunlight.
- Do not bend the card, scratch it, or give it a strong shock.
- Before downloading firmware on an SD card, check whether write-protection of the SD card is canceled. If write-protection is enabled, an error code (error code 44, etc.) will be displayed during download, and the download will fail.
- Before updating firmware, remove the network cable from this machine.
- If SC818 is generated during software update, switch the power OFF -> ON, and complete the update which was interrupted.
- During software update, network cables, remove interface cables, wireless boards, etc., (so that they are not accessed during update).

Update procedure

1. First download the software to be updated to the SD card.
2. Switch the power OFF.
3. Remove the SD card slot cover [A]. (🔧×1)



d196z2028

4. Insert the SD card [A] straight in slot 2.

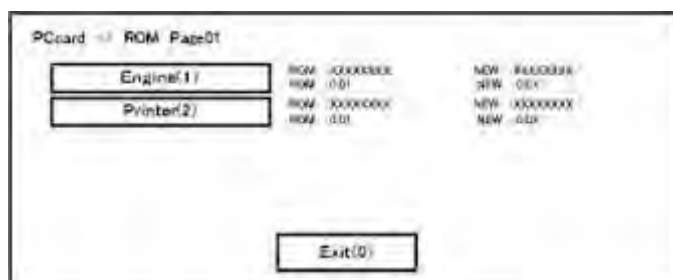


d196z2057

Note

- Check whether the card is properly in the SD card slot. When a SD card is inserted, a click is heard, and it is locked.
- To remove the card, release by pressing once in the set state.

5. Switch the power ON.
6. Wait until the update screen starts (about 45 seconds).
When it appears, "Please Wait" is displayed.
7. Check whether a program installation screen is displayed. (English display) When two or more software modules are contained in the SD card, they are displayed as follows.

**When two or more software names are displayed**

1. Press the module selection button or 10 keypad [1] - [5].
2. Choose the appropriate module. (If already selected, cancel the selection)

Operation of keys or buttons

Keys or buttons to press	Contents
[Exit] or 10 key [0]	Returns to normal screen.
[Start] Key	Select all modules.
[Clear/Stop] key	Cancel all selection states.

Display contents

On the above screen, two programs, i.e., engine firmware and printer application are displayed. (The screen may change depending on the firmware or application).

The display contents are as follows:

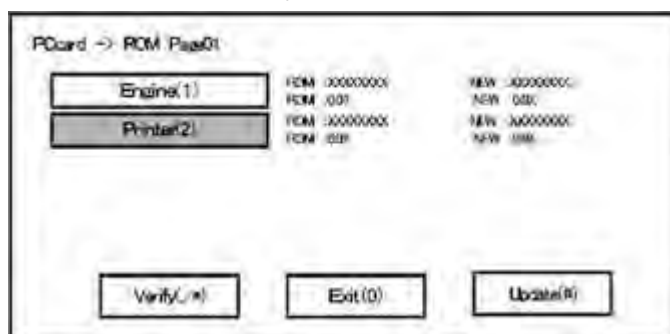
Display	Contents
ROM:	Display installed module number / version information.
NEW:	Display module number / version information in the card.

* The upper row corresponds to the module number, the lower row corresponds to the version name.

8. Select the module with the module selection button or 10 key operation. The selected module is highlighted, and [Verify] and [Update] are displayed.

↓ Note

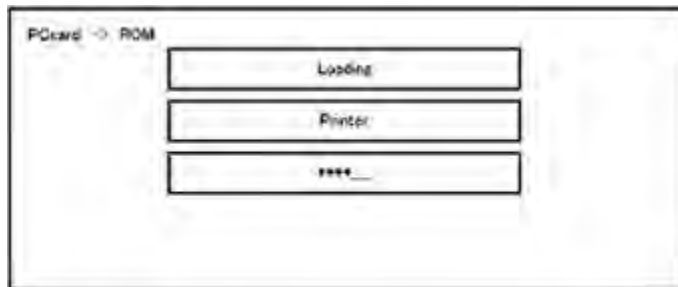
- Depending on the combination of update software, it may not be possible to select simultaneously.



Key or button operations

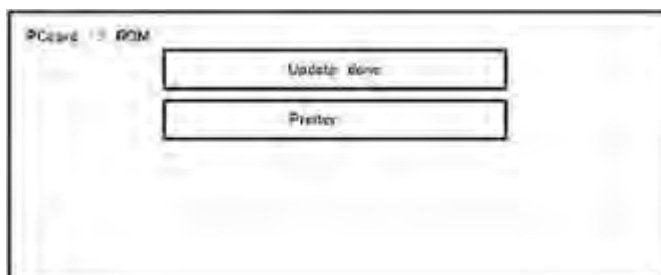
Keys or buttons to press	Contents
[Update] or [#] key	Update the ROM of the selected module.
[Verify] button or [./*] key	Perform verification of the selected module.

9. Press the [Update] or [#] key, and perform software update.
10. During firmware update, a "firmware update/ verification progress screen" is displayed. When firmware update is complete, a "firmware update end screen" is displayed.



- In the middle row, the name of the module currently being updated is displayed. (in this case, the printer is being updated)
- In the lower row, a progress bar is displayed in ten steps. (The more *, the more the progress.)
- When updating the control unit program, since progress cannot be displayed on the screen, the ROM update process is determined when the LED of the [Start] key changes from red to green.

Firmware update end screen

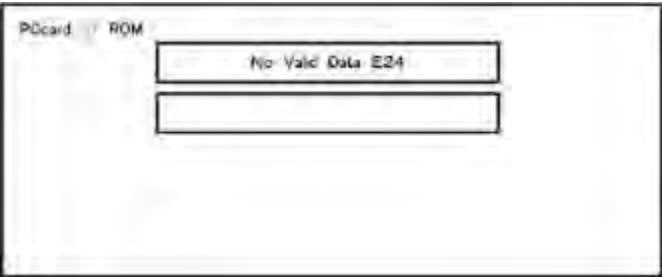


- This screen is displayed when all selected firmware modules are to be updated. "printer" in the second row shows that the module updated last is the printer. (When more than one are updated simultaneously, only what was updated last is displayed.)
 - When Verify has completed normally, the Update done display of the above screen is "Verify done." If "Verify Error" is displayed, reinstall the software of the application displayed in the lower row.
11. After switching power OFF, remove the SD card.
 12. Again, switch the power ON, and check whether the machine is operating normally.
 13. Return the SD card slot cover to the original position.

Note

- When the power supply is switched OFF during firmware update, update is interrupted, and the power is switched ON again, normal operation cannot be guaranteed.
- To guarantee operation, an update error continues to be displayed until update is successful.
- In this case, insert the SD card again, switch the power ON, and continue download of firmware from the SD card automatically.
- Web access card software: EXJS (EXtended Java Script) is a Type-C ESA application, and like a conventional Web access card, update using an sdk folder is required.
- The PS3 firmware program is included in the preinstalled PDF firmware.
- In the default state, although the PS3 firmware program is hidden in the disabled state, the function is enabled by installing the PS3 card.
- (The program installed in the PS3 card is a dongle (key) for enabling PS3 function).
- Due to the above specification, the self-diagnosis result report shows the ROM module number / software version of the PDF firmware at the PS location.

5.2.4 ERROR SCREENS DURING UPDATING



EXX shows an error code.
(This error is generated if update was performed when a printer application startup card is removed after system startup. An error indicating failure of card access is displayed on the screen.)

For error codes, refer to the following table:

Error Code List

Code	Contents	Solutions
20	Physical address mapping cannot be performed.	- Switch the main power supply off and on to try again. - Re-insert the SD card to reboot it. - Replace the controller board if the above solutions do not solve the problem.
21	Insufficient memory for the download	- Switch the main power supply off and on to try again. - Replace the controller board if the updating cannot be done by switching the power off and on.
22	Decompression of compressed data failed.	- Switch the main power supply off and on to try again. - Replace the SD card used for the update. - Replace the controller board if the above solutions do not solve the problem.
24	SD card access error	- Re-insert the SD card. - Switch the main power supply off and on to try again. - Replace the SD card used for the update. - Replace the controller board if the above solutions do not solve the problem.

Code	Contents	Solutions
32	The SD card used after download suspension is incorrect. SD cards are different between the one which was inserted before power interruption and the one which was inserted after power interruption.	- Insert the SD card containing the same program as when the firmware update was suspended, and then switch the main power supply off and on to try again. - There is a possibility that the SD card is damaged if the update cannot be done after the correct SD card has been inserted. In this case, try again with a different SD card. - Replace the controller board if the above solutions do not solve the problem. Replace all relevant boards if the update is done for the BCU and FCU. Replace the operation panel unit if the update is done for the operation panel.
33	Card version error. The wrong card version is downloaded.	Install the correct ROM update data for each version in the SD card.
34	Destination error. A card for the wrong destination is inserted.	Install the correct ROM update data for each destination (JPN/ EXP/ OEM) in the SD card.
35	Model error. A card for the wrong model is inserted.	Install the correct ROM update data for each model in the SD card.

Code	Contents	Solutions
36	Module error. The program to be downloaded does not exist on the main unit. The download destination specified by the card does not match up to the destination for the main unit's program.	- Install the program to be updated in advance. - There is a possibility that the SD card containing the program to be updated has not been mounted. Check to confirm that the SD card has been correctly mounted. - The SD card is incorrect if the program to be updated has been correctly installed. In this case, insert the correct SC card.
38	The version of the downloaded program has not been authorized for the update.	Make sure that the program to be overwritten is the specified version.
40	Engine download fails.	- Switch the main power supply off and on to try again. - If the download fails again, replace the controller board and the BCU.
41	Fax download fails.	- Switch the main power supply off and on to try again. - If the download fails again, replace the controller board and the FCU board.
42	Control panel / language download fails.	- Switch the main power supply off and on to try again. - If the download fails again, replace the controller board and the operation panel unit.
43	Printing download fails.	- Switch the main power supply off and on to try again. - The SD card media is damaged if the update fails again. Replace the SD card media.

Code	Contents	Solutions
44	The data to be overwritten cannot be accessed when controller-related programs are downloaded.	- Switch the main power supply off and on to try again. - Install the correct ROM update data in the SD card. - Replace the controller board if the data to be overwritten is contained on the controller board.
49	Firmware updates are currently prohibited.	The setting of Update Firmware in the Administrator Tools has been set to [Prohibit] by an administrator. Amend the setting to [Do not Prohibit] and try again.
50	The results of the electronic authorization check have rejected the update data.	Install the correct ROM update data in the SD card.
57	@Remote is not connected at the date/time reserved for receiving the package firmware update from the network.	Check the @Remote connection.
58	Update cannot be done due to a reception route problem.	Check the @Remote connection.
59	HDD is not mounted.	Check the HDD connection.
60	HDD could not be used during the package firmware update.	- Try again. - Replace the HDD if the download fails again.
61	The module ID for the package firmware update is incorrect.	Prepare the correct package files.
62	The configuration of the package firmware update files is incorrect.	Prepare the correct package files.

Code	Contents	Solutions
63	Reception fails due to the power off at the reserved date/time of the remote firmware update from the network.	Update is to be done automatically when the next reception time has elapsed.
64	Reception fails due to the power off at the reserved date/time of the package firmware update from the network.	Reset the reservation date/time for the remote update.
65	Reception fails due to the status error of the machine at the reserved date/time of the remote firmware update from the network.	Update is to be done automatically when the next reception time has elapsed.
66	Reception failed due to the status error of the machine at the reserved date/time of the package firmware update from the network.	Reset the reservation date/time for the remote update.
67	Acquisition of the latest version information from the Gateway fails at the reserved date/time of the remote firmware update from the network.	Check that the network is connected correctly.
68	Acquisition of the latest version information from the Gateway fails.	Check that the network is connected correctly.
69	Download fails at the reserved date/time of the remote firmware update from the network.	Check that the network is connected correctly.

Code	Contents	Solutions
70	Package firmware download from the network fails.	Check that the network is connected correctly.
71	Network communication error occurs at the reserved date/time of the package firmware update from the network.	Check that the network is connected correctly.
72	The setting of @Remote is invalid at the reserved date/time of the package firmware update from the network.	Set the setting of @Remote Service in the Administrator Tools to [Do not Prohibit].
57	@Remote is not connected at the date/time reserved for receiving the package firmware update from the network.	Check the @Remote connection.
58	Update cannot be done due to a reception route problem.	Check the @Remote connection.
59	HDD is not mounted.	Check the HDD connection.
60	HDD could not be used during the package firmware update.	- Try again. - Replace the HDD if the download fails again.
61	The module ID for the package firmware update is incorrect.	Prepare the correct package files.
62	The configuration of the package firmware update files is incorrect.	Prepare the correct package files.

Code	Contents	Solutions
63	Reception fails due to the power off at the reserved date/time of the remote firmware update from the network.	Update is to be done automatically when the next reception time has elapsed.
64	Reception fails due to the power off at the reserved date/time of the package firmware update from the network.	Reset the reservation date/time for the remote update.
65	Reception fails due to the status error of the machine at the reserved date/time of the remote firmware update from the network.	Update is to be done automatically when the next reception time has elapsed.
66	Reception failed due to the status error of the machine at the reserved date/time of the package firmware update from the network.	Reset the reservation date/time for the remote update.
67	Acquisition of the latest version information from the Gateway fails at the reserved date/time of the remote firmware update from the network.	Check that the network is connected correctly.
68	Acquisition of the latest version information from the Gateway fails.	Check that the network is connected correctly.
69	Download fails at the reserved date/time of the remote firmware update from the network.	Check that the network is connected correctly.

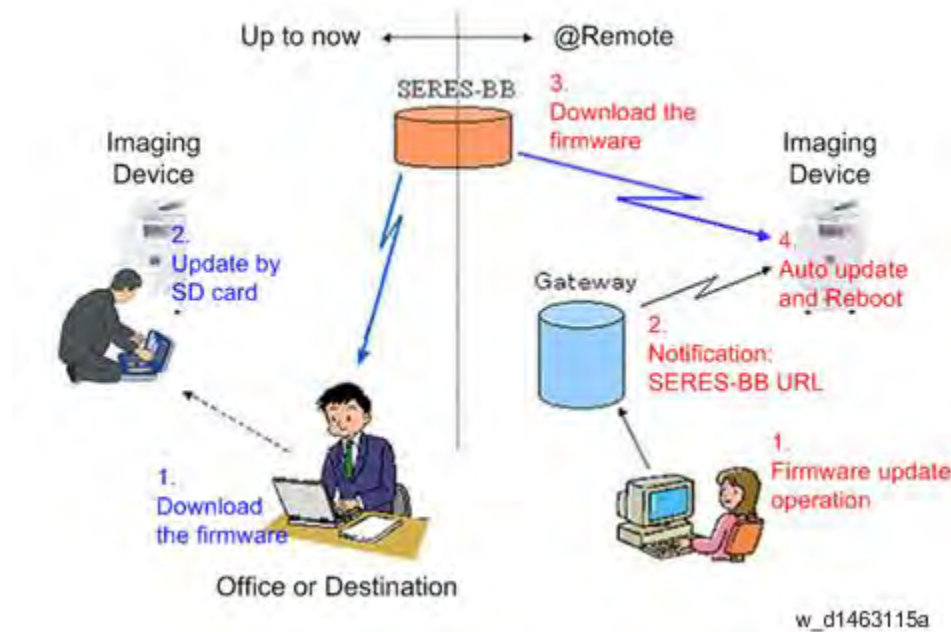
Code	Contents	Solutions
70	Package firmware download from the network fails.	Check that the network is connected correctly.
71	Network communication error occurs at the reserved date/time of the package firmware update from the network.	Check that the network is connected correctly.
72	The setting of @Remote is invalid at the reserved date/time of the package firmware update from the network.	Set the setting of @Remote Service in the Administrator Tools to [Do not Prohibit].

 Note

- The PDF firmware installed as standard contains a program required to print PS3 data as default. However, this PS3 program is normally disabled.
- The PS3 firmware is a dongle (key) which enables PS3 data printing functions. When the PS3 firmware is installed, the PS3 program in the PDF firmware is enabled. Due to this specification, the self-diagnosis result report shows the ROM part number/software version of the PDF firmware contained in the PS3 program.

5.3 RFU UPDATING THE FIRMWARE

In this machine, software can be updated by remote control using @Remote.



5.3.1 RFU PERFORMABLE CONDITION

RFU is performable for a device which meets the following conditions.

1. The customer consents to the use of RFU.
2. The device is connected to a network via TCP/IP for @Remote.

5.4 PACKAGE FIRMWARE UPDATE

⚠ CAUTION

- The HDD unit must be installed on the machine to enable the SFU or the package firmware update via SD card.

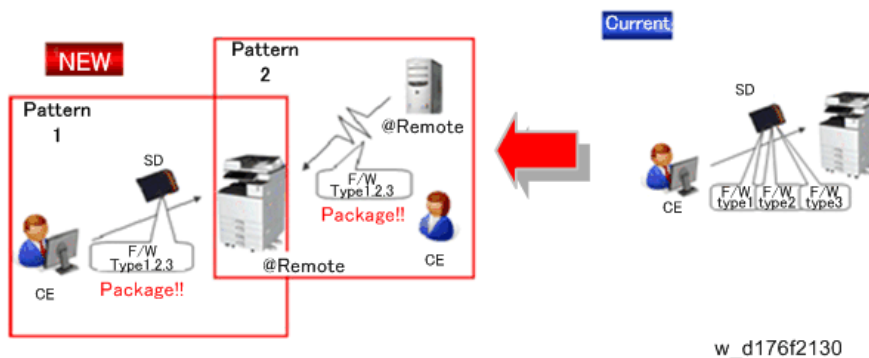
5.4.1 OVERVIEW

Each firmware module (such as System/Copy, Engine, etc) used to be updated individually.

However, an all-inclusive firmware package (package_ALL) is now available.

There are two ways to update using the firmware package.

- Package Firmware Update via a network: SFU (Smart Firmware Update)
- Package Firmware Update with an SD card



Package Firmware Update via a network: SFU (Smart Firmware Update)

- There are two methods for SFU.
 - Immediate Update: To update the firmware when visiting
 - Update at the next visit: To set the date and time for downloading. The firmware will be automatically downloaded beforehand and updated at the following visit.
- "Update at the next visit" is recommended since firmware download may take some minutes due to the network condition.

⬇ Note

- SFU requires the connection to @Remote via a device which has the embedded @Remote communicating function. When a machine is connected to @Remote via an intermediate device (RC Gate), the SFU function is disabled.

Package Firmware Update via an SD Card

Package firmware update can also be performed using the conventional SD card method by writing the package firmware directly to the SD card.

Types of firmware update files, supported update methods:

	SFU	SD	RFU
Individual firmware	N/A	Available	Available
Package firmware	Available	Available	N/A

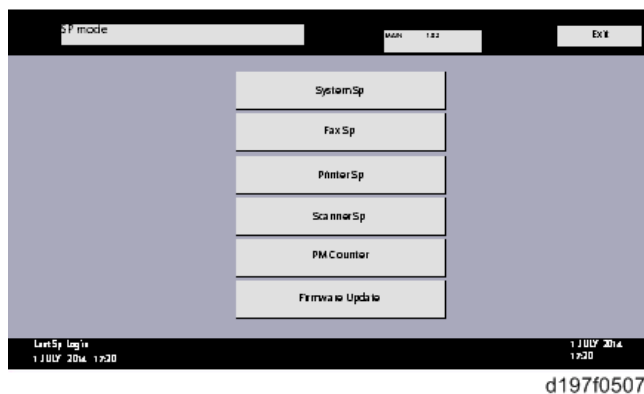
5.4.2 IMMEDIATE UPDATE

Enter the [Firmware Update] menu in the SP mode and update the package firmware.

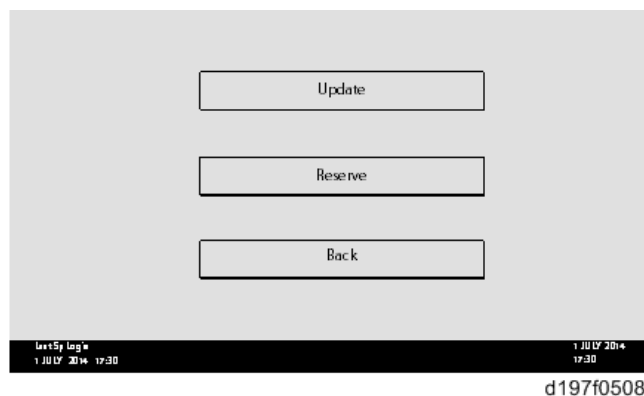
Note

- The [Firmware Update] button will appear even when a machine is connected to @Remote with a device which does not have an embedded @Remote communicating function.
- If an error code is displayed, refer to Error Screens During Updating (page 5-1).

1. Enter the SP mode.
2. Touch [Firmware Update].

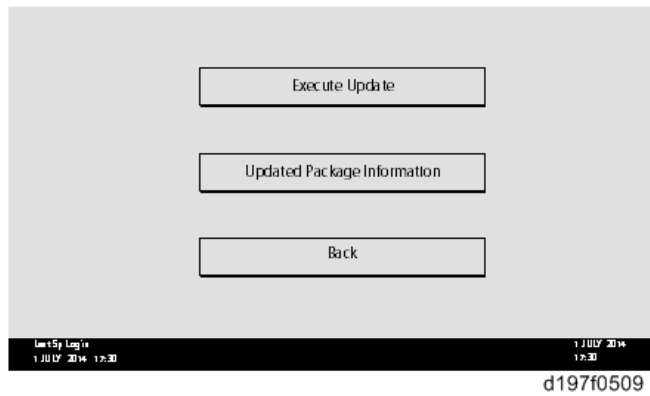


3. Touch [Update].

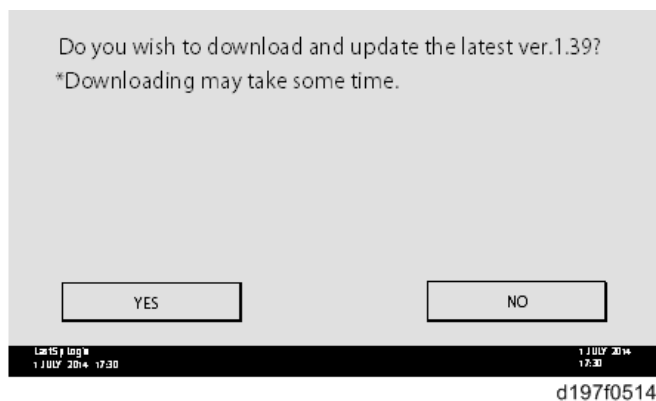


4. Touch [Execute Update].

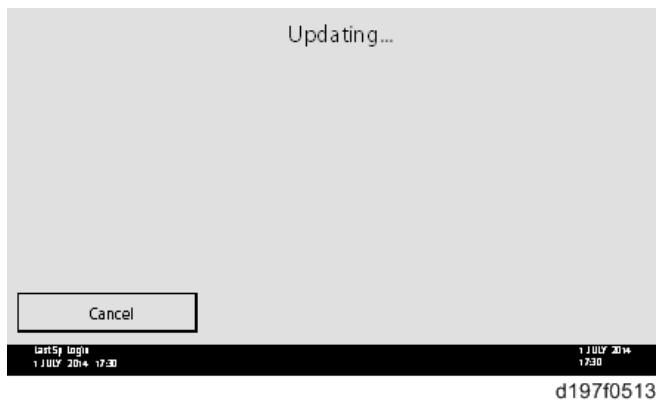
Package Firmware Update



5. Touch [YES].

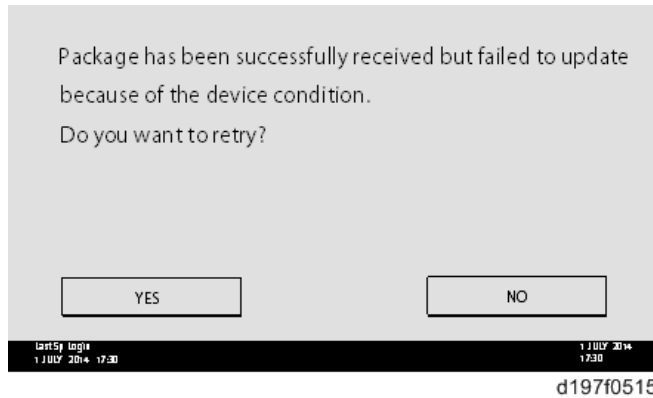


6. The following display will be displayed.



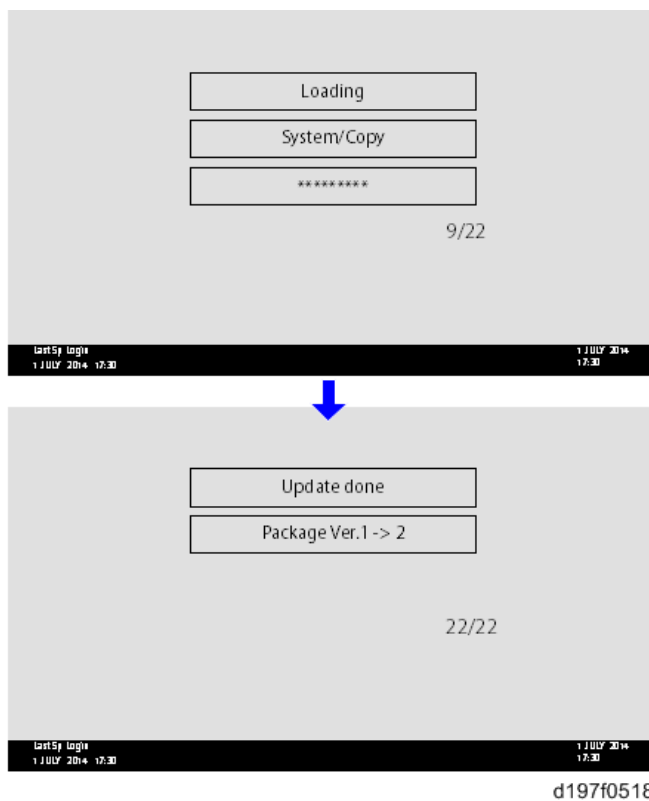
↓ Note

- If the error code E66, which indicates that the download of the firmware has failed, is displayed, implement this procedure from step 1.
- Update will be started automatically after the download is finished.
- When the machine is in the update mode, the automatic update is suspended if a print job is implemented. After the print job is finished, touch [YES] on the display shown with the following picture to restart updating.



7. [Update done] is displayed.

- The machine will automatically reboot itself.



↓ Note

- The figures at the lower right of the display indicate “Number of updated items/ All items to be updated”.

5.4.3 UPDATE AT THE NEXT VISIT (RESERVE)

It is possible to set the machine to download the package firmware which is necessary for SFU in advance, and then perform the actual installation at the next service visit. This saves waiting time for the firmware to download at the service visit.

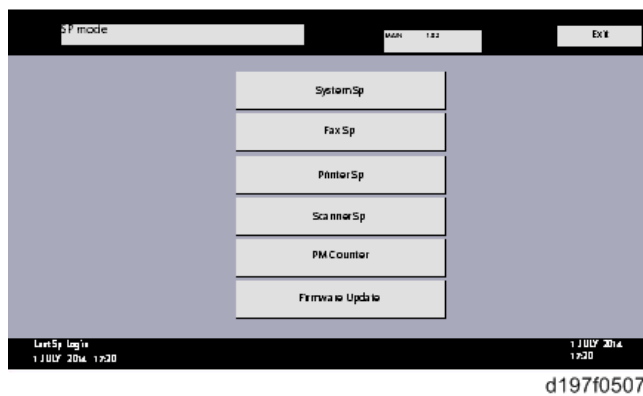
How to Set the Machine to Download Firmware Later (RESERVE)

Enter the [Firmware Update] menu in the SP mode and update the package firmware.

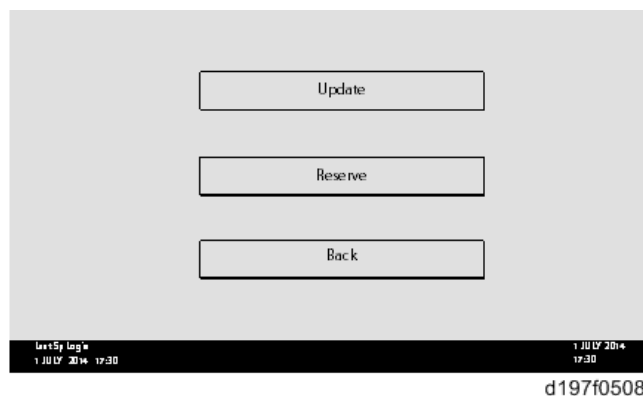
Note

- The [Firmware Update] button will appear even when a machine is connected to @Remote with a device which does not have an embedded @Remote communicating function. If an error code is displayed, refer to Error Screens During Updating (page 5-1).

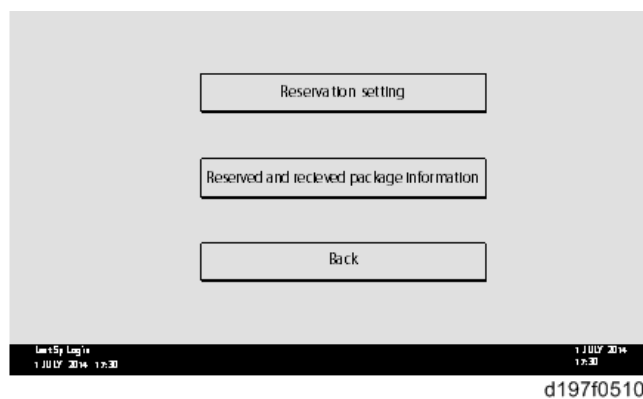
1. Enter the SP mode.
2. Touch [Firmware Update].



3. Touch [Reserve].



4. Touch [Reservation setting].



5. Enter the dates and times of next visit and start of receiving data.

- "Next time to visit this customer": The package firmware will be automatically downloaded by this time/date.
- "When to receive? (1-7)": The download of the package firmware will begin this number of days before the next visit.

Next time to visit this customer

2013 / 05 / 22 15 : 00
year month day hour minute

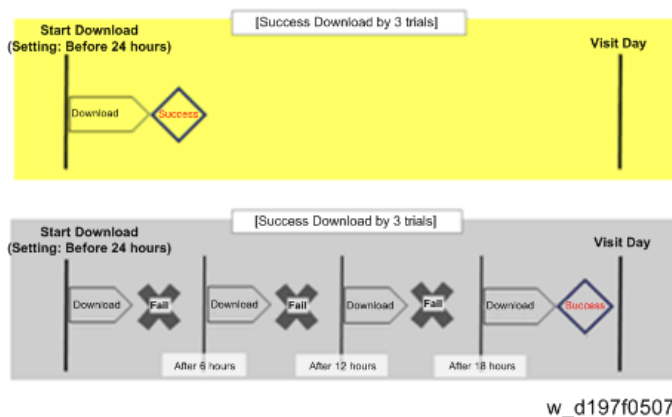
When to receive? (1-7) 1 day(s) before visit

Set Clear Cancel

1 JULY 2014 17:30 d197f0512

Successful Download

In the two diagrams below, the firmware is set to be downloaded by the day before the next scheduled visit. In the first diagram, the download is successful on the first try. In the second diagram, the download fails three times and is successful on the fourth try.



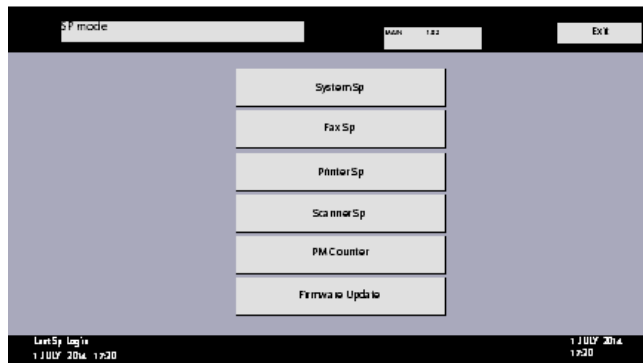
- If the firmware download fails or cannot be completed due to the network settings/condition, no power to the machine, or other reason, the machine will continue retrying every six hours until the scheduled deadline (up to a maximum of four tries). For example, if the download is set for the day before the next visit, the machine will attempt the download at 24 hours before the visit, and then continue trying every six hours (max. four tries total).
- The retry is only performed in cases when the firmware download has failed.
- If the machine is in Energy Saver mode when the download is scheduled to begin, the download will be performed in the background and the machine/panel will stay in Energy Saver mode.
- The download will continue uninterrupted even if the customer initiates a print job, copy job, fax receiving or other operation while the download is in progress.

Package Firmware Update

- The download will be terminated if the customer turns the power off while the download is in progress.
- If the download cannot be completed successfully by the time of the next scheduled visit, the machine will stop trying to download the firmware.

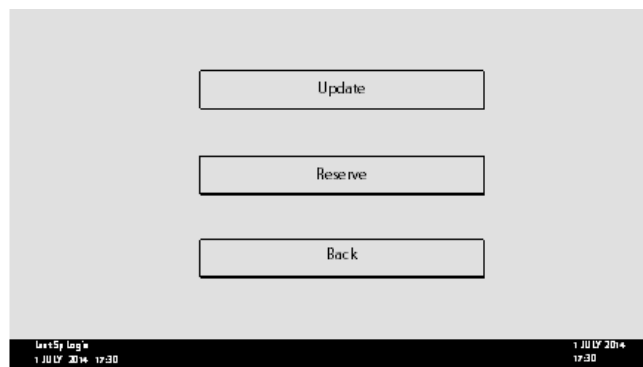
How to Check if the Firmware Downloaded with RESERVE

1. Enter the SP mode.
2. Touch [Firmware Update].



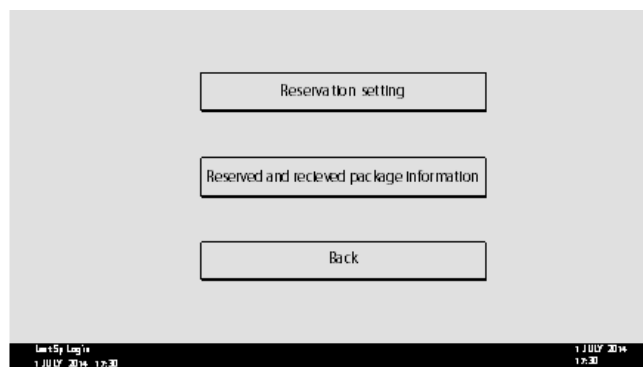
d197f0507

3. Touch [Reserve].



d197f0508

4. Touch [Reserve and received package information].



d197f0510

5. Check the information displayed.

When the package firmware is downloaded successfully, the details of the download result

are displayed as the following picture shows.

Reservation reception result: Success

Part number of reserved and received package: D1234567

Version of reserved and received package: 1.35

Package received date: 2014/05/22

Reservation reception has succeeded.
You may start the update.

Back

User login 1 JULY 2014 17:30 d197f0511

Note

- This information will only be displayed if the reserved firmware has already been downloaded. If not, all the data items are indicated with “-”.

How to Install Firmware Downloaded with RESERVE

1. Enter the SP mode.
2. Touch [Firmware Update].

SP mode

System Sp

Fax Sp

Printer Sp

Scanner Sp

PM Counter

Firmware Update

User login 1 JULY 2014 17:30 d197f0507

3. Touch [Update].

Update

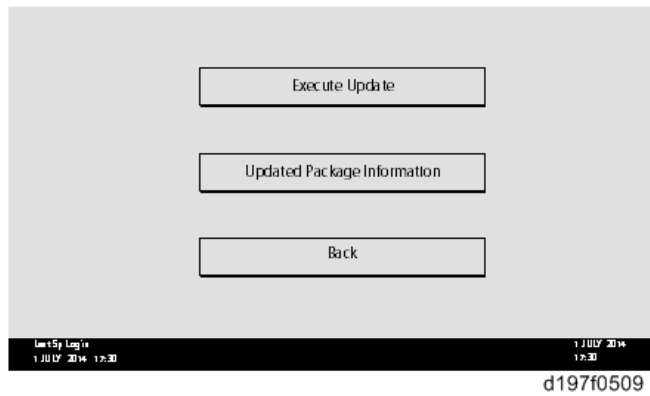
Reserve

Back

User login 1 JULY 2014 17:30 d197f0508

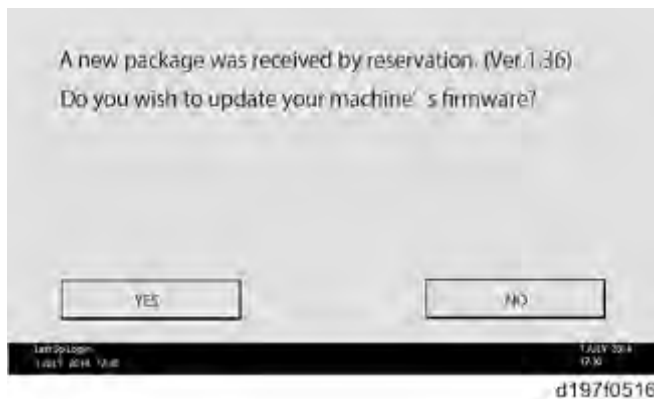
4. Touch [Execute Update].

Package Firmware Update



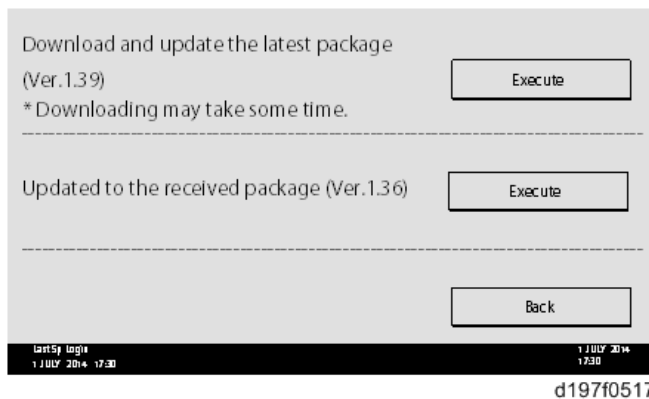
5. Check the version of the received package firmware, and then touch [YES].

- Update is started.



Note

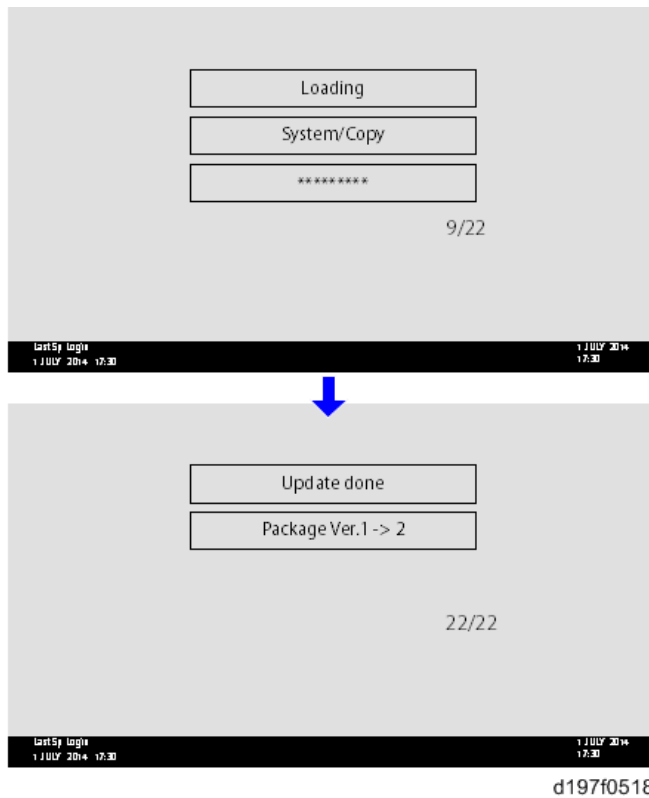
- If the version of the reserved package in the HDD is older than the latest version, the messages shown in the following picture are displayed.



- If you wish to download the latest version, touch [Execute] beside the message "Download and update the latest package." Then update of the package firmware will be started.
- If you wish to update using the firmware in the HDD (old version), touch [Execute] beside the message "Update to the received package."

6. [Update done] message is displayed.

- The machine will automatically reboot itself.



Note

- The figures at the lower right of the display indicate “Number of updated items/ All items to be updated”.

5.4.4 UPDATE VIA SD CARD

Update with an SD card, which is the conventional method, is available if you write the package firmware to the SD card.

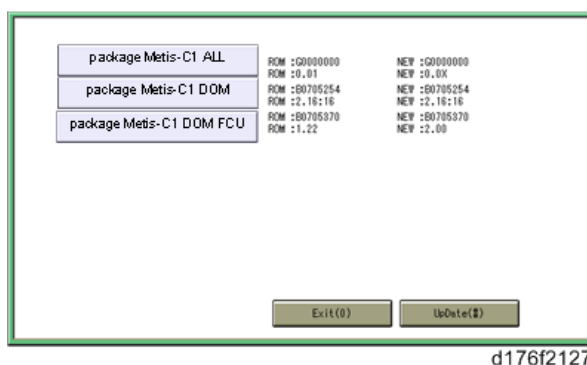
Note

- If an error code is displayed, refer to Error Screens During Updating (page 5-1).
1. Create a new folder in the SD card, and then name it “package”.
 2. Copy the package firmware (xxxxxxx.pkg) to this folder.



Important

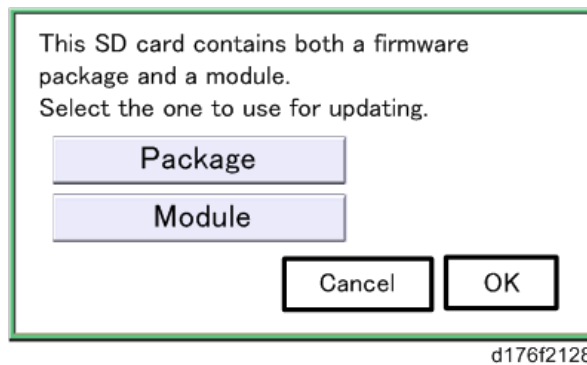
- If you copy the package firmware into the conventional “romdata” folder, the update will not work.
 - Only one version of the package firmware should be copied into the folder. If you copy multiple versions of package firmware to the SD card, the machine will select only one version of the firmware randomly.
3. Turn the power OFF.
 4. Insert the SD card which contains the package into SD card slot 2 (for service).
 5. Turn the power ON and touch [Update].



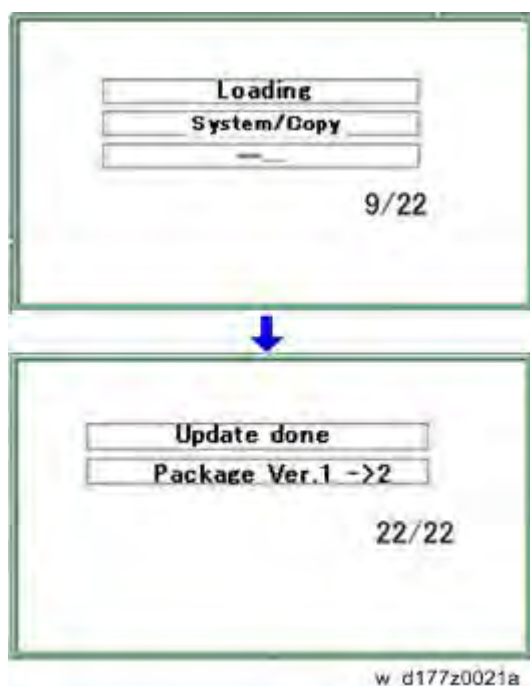
Note

- When the SD card contains both a firmware package and one or more modules, the following display may show up. Select [Package] and touch [OK] to move to step 4 above.

Package Firmware Update



6. Update is started automatically after the package firmware download to the HDD has been completed.
7. When update is completed, "Update done" is displayed.



⬇ Note

- The figures at the lower right of the display indicate "Number of updated items/ All items to be updated".
8. Turn the main power switch OFF, and then pull out the SD card from SD card slot 2.
 9. Turn the power ON.

5.5 UPDATING JAVA VM

5.5.1 CREATING AN SD CARD FOR UPDATING

1. Download the update modules from Firmware Download Center. As one of the model modules, "Java VM v11 UpdateTool" is available for download. (The version differs depending on the model.)
2. Unzip the downloaded file. Copy the whole "sdk" folder to the root of the SD card directly below.

 Note

- When unzipping the downloaded file, two subfolders ("update" and "sdk") exist in the "sdk" folder. Rather than just copying the subfolder "sdk", copy the whole folder "sdk".

Updating Procedure

CAUTION

- SD card can be inserted with the machine power off.
 - During the updating process, do not turn off the power.
 - If you turn off the power during the updating, the machine performance is not guaranteed. (There is a possibility that an SC and boot failure occurs.)
 - If you accidentally turn off the power during the updating, retry the updating procedure from the beginning. (If the update fails again, you will need to replace the controller board.)
1. If the boot priority application is set to the ESA application, switch to the copy application. ([System Settings]-[General Features]-[Function Priority])
 2. Insert the SD card you created into the service slot, and then turn ON the main power switch.
 3. Take a note of the current Heap size. ([Extended Feature Settings] – [Administrator Tools] – [Heap/Stack Size Settings])
The Heap size setting is changed to the initial setting when updating.
 4. Turn OFF the main power.
 5. Insert the SD card for update into the service slot.
 6. Turn ON the main power.
 7. After booting Java VM, update of the application is started. "Updating SDK/J" appears in the banner message of the touch panel display. (Estimated time: about 2 minutes)



8. After completing the update and starting the Java VM, "Update SDK / J done **SUCCESS**" appear in the banner message of the touch panel display. After turning off the power, remove the SD card from the slot.

When you fail to update, "Update SDK/J done FAIL" is displayed. You can confirm the cause of the error message below.

9. Turn ON the main power.
10. Reconfigure the Heap size. ([Extended Feature Settings]-[Administrator Tools]-[Heap/Stack Size Settings]).

See the manual for the ESA application to know what value to set for the heap size.

11. Return to the previous setting for the boot priority application.

List of Error Messages

Update results are output as a text file on the SD card called "sdkjversionup.log" in the "¥sdk ¥update" folder.

Result	File contents	Description of the output
Success	script file = /mnt/sd0/sdk/update/bootscript 2012/08/22 17:57:47 start 2012/08/22 17:59:47 end SUCCESS	Boot script path Boot scripts processing start time End time boot script processing, the results
Failure	script file = /mnt/sd0/sdk/update/bootscript 2012/08/22 17:57:47 start XXXX Error 2012/08/22 17:57:57 end FAIL	Boot script path Boot scripts processing start time Error message (Possibly multiple) End time boot script processing, the results

Error Message	Cause	Remedy
PIECEMARK Error,machine=XXXXXX	Applied the wrong updating tool (Using the updating tool of a different model)	Use the correct updating tool for this model.
pasePut() - error : The file of the copy origin is not found Put Error!	Inadequacy with the SD card for updating (Files are missing in the updating tool)	Re-create the SD card for updating.
paseCopy() - error : The file of the copy origin is not found. Copy Error!	Inadequacy SD card for updating (Files in the updating tool are missing)	Inadequacy SD card for updating (Files in the updating tool are missing)
[file name: XX] error,No space left on device pasePut() - error : The destination directory cannot be made. pasePut() - error : fileCopy Error. Put Error!	Writing destination is full. (The NAND flash memory on the controller board is full.)	Uninstall the unnecessary SDK applications. If you can not uninstall it, implement escalation, stating the "model name, application configuration, SMC sheet (SP5-990-006/024/025), and error file."
[file name: XX] error,No space left on device paseCopy() - error : The destination directory cannot be made. paseCopy() - error : fileCopy Error. Copy Error!	Writing destination is full. (The NAND flash memory on the controller board is full.)	Uninstall the unnecessary SDK applications. If you can not uninstall it, implement escalation stating the "model name, application configuration, SMC sheet (SP5-990-006/024/025), and error file."
Put Error! *1	Error, not normally expected to occur	If you cannot uninstall it, implement escalation
Copy Error! *1		

Error Message	Cause	Remedy
Delete Error!		stating the "model name, application configuration, SMC sheet (SP5-990-006/024/025), and error file." *1 Without the foregoing error message, only "Put Error / Copy Error" will be displayed
[XXXXXX] is an unsupported command.		
Version Error		

5.6 CAPTURING THE DEBUG LOGS

5.6.1 OVERVIEW

With this feature, you can save debug logs that are stored in the machine (HDD or operation panel) on an SD card. It allows the Customer Engineer to save and retrieve error information for analysis.

The Capturing Log feature saves debug logs for the following four.

- Controller debug log including operation log
- Engine debug log
- FCU debug log
- Operation panel log

★ Important

- In older models, a technician enabled the logging tool after a problem occurred. After that, when the problem had been reproduced, the technician was able to retrieve the debug log.
- However, this new feature saves the debug logs at the time that problems occur. Then you can copy the logs to an SD card.
- You can retrieve the debug logs using a SD card without a network.
- Analysis of the debug log is effective for problems caused by the software. Analysis of the debug log is not valid for the selection of defective parts or problems caused by hardware.

Types of debug logs that can be saved

Type	Storage Timing	Destination (maximum storage capacity)
Controller debug log including operation log	▪ Saved at all times	HDD (4 GB) or SD card connected to the service slot. When the data gets over 4.0 GB, the older data is deleted.

Type	Storage Timing	Destination (maximum storage capacity)
Engine debug log	- When an engine SC occurs - When paper feeding/output stop by jams - When the machine doors are opened during normal operation	HDD or SD card connected to the service slot (Up to 300 times)
FCU debug log	When a specified amount of FCU debug log is stored in the FCU. If fax application is unavailable (e.g. not installed), the machine does not transfer the log.	HDD or SD card connected to the service slot
Operation panel log	When an error related to the operation panel occurs.	Memory in the operation panel.

↓ Note

- Debug logs are not saved in the following conditions:**
 - While erasing all memory
 - While data encryption equipment is installed
 - While changing the firmware configuration
 - Forced power OFF (accidentally disconnecting the outlet)
 - Engine debug log in shutdown
 - When the power supply to the HDD is off because of energy saving (engine OFF mode /STR mode)
 - When one of the following SC occurs: SC672, SC816, SC819, SC878, SC899, SC859, SC860, SC861, SC863, or SC864

↓ Note

- Following logs are not saved:**
 - Log related to the energy saver mode (Engine-off, suspend-mode, or other cases)
 - Network communication log
 - Logs related to NRS
 - IP-FAX log

Access log for unauthorized user (guest)

- HTTP session timeout log
- Auto log-out log
- IC card related log
- Authorization for Fax

Security of the Operation Log

The following operation logs related to security are not saved.

- User ID
- Password
- IP address
- Telephone number
- Encryption key
- Transition to SP mode

5.6.2 RETRIEVING THE DEBUG LOGS

★ Important

- Retrieve debug logs to identify the date of occurrence of the problems and to find details of the problems
- e.g.: At around 8:00 am on March 10, an engine stall occurred. The operation panel does not respond. Turn the main power supply off / on.
- Analysis of the debug log is effective for problems caused by the software. Analysis of the debug log is not valid for the selection of defective parts or problems caused by hardware.

Procedure for Retrieving the Debug Log with SD Card

1. Insert the SD card into the slot on the side of the operation panel or the service slot.

★ Important

- It is recommended to use the SD card provided as a service part. This is because the log data can be acquired much faster than when using commercially available SD cards.
2. Enter SP mode.
 3. Execute SP5-858-141 (Get a debug log of all) to write the debug log to the SD card.
- If the transfer is finished successfully, 'completed' is displayed on the touch panel display.

Note

- The approximate time it takes to transfer the debug log is as follows. Transfer time may be affected by the type or format of the SD card. (It is recommended that you format the SD card using the Panasonic SD Formatter (freeware)).
- Controller debug log (GW debug log): 2 - 20 minutes
- Engine debug log: 2 minutes
- Operation panel debug log: 2 - 20 minutes

4. Make sure that the SD card access LED is off, then remove the SD card.

Note

- If 'failed' appears on the touch panel display, turn the power off, and then recover from step 1 again.

The debug logs are saved with the following file names.

Controller debug log (GW debug log)	/LogTrace/[Machine Serial]/watching/[yyyymmdd_hhmmss]_[UniqueID].gz
Engine debug log	/LogTrace/[Machine Serial]/engine/[yyyymmdd_hhmmss].gz
FCU debug log	/LogTrace/[Machine Serial]/fcu/[yyyymmdd_hhmmss].gz

5.7 REBOOT/SYSTEM SETTING RESET

5.7.1 SOFTWARE RESET

You can reboot the software with one of the following two procedures:

1. Turn the main power switch off and on.
2. Press and hold down  and  together for over 10 seconds. When the machine beeps once, release both buttons. After "Now loading. Please wait" shows for a few seconds, the copy window will open. The machine is ready for normal operation.

5.7.2 SYSTEM SETTINGS AND COPY SETTING RESET

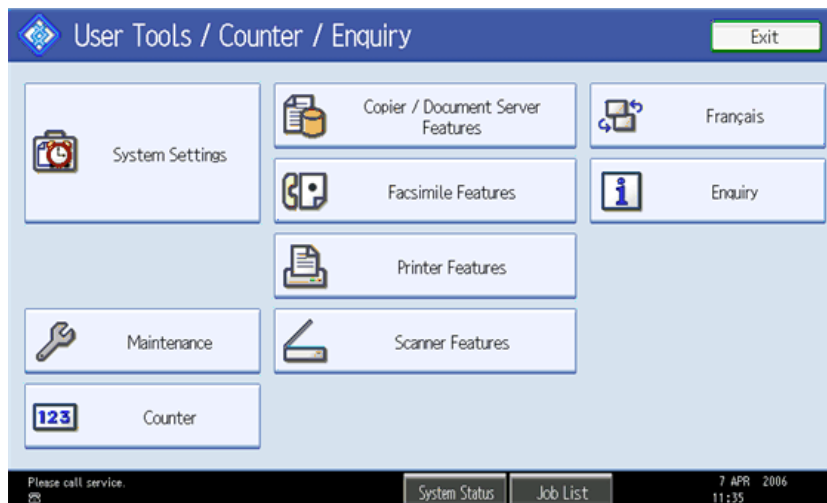
System Setting Reset

The system settings in the UP mode can be reset to their defaults. Use the following procedure.

1. Press User Tools/Counter .
2. Hold down  and then press System Settings.

Note

- Press  first.



3. Press yes when the message prompts you to confirm that you want to reset the system settings.
4. Press exit when the message tells you that the settings have been reset.

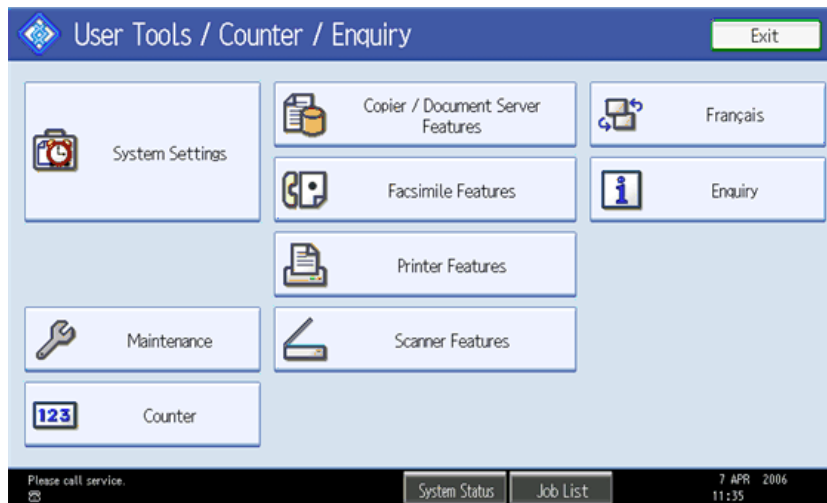
Copier Setting Reset

Use the following procedure to reset the copy settings in the UP mode to their defaults.

1. Press User Tools/Counter .
2. Hold down  and then press Copier/Document Server Settings.

Note

- Press  first.



3. Press "Yes" when the message prompts you to confirm that you want to reset the Copier Document Server settings.
4. Press exit when the message tells you that the settings have been reset.

5.8 NVRAM DATA UPLOAD/DOWNLOAD

5.8.1 UPLOADING CONTENT OF NVRAM TO AN SD CARD

Do the following procedure to upload SP code settings from NVRAM to an SD card.

Note

- This data should always be uploaded to an SD card before the NVRAM is replaced.
- Make sure that the write protection of an SD card is unlocked.

1. **Do SP5-990-001 (SP Print Mode: All(Data List)) before you switch the machine off. You will need a record of the NVRAM settings if the upload fails.**
2. **Switch the copier main power switch off.**
3. **Remove the SD slot cover [A]. (🔑 × 1)**



4. **Insert the SD card into SD card slot 2 (lower) [A].**



5. **Switch the copier on.**
6. **Execute SP5-824-001 (NVRAM Data Upload) and then press the "Execute" key.**
7. **The following files are copied to an NVRAM folder on the SD card when the upload procedure is finished. The file is saved to the path and the following filename:**

NVRAM¥<serial number>.NV

Here is an example with Serial Number "K5000017114":

NVRAM¥K5000017114.NV

8. In order to prevent an error during the download, be sure to mark the SD card that holds the uploaded data with the number of the machine from which the data was uploaded.

 Note

- You can upload NVRAM data from more than one machine to the same SD card.

5.8.2 DOWNLOADING AN SD CARD TO NVRAM

Do the following procedure to download SP data from an SD card to the NVRAM in the machine.

- The NVRAM data download may fail if the SD card with the NVRAM data is damaged, or if the connection between the controller and BCU is defective.
 - Do the download procedure again if the download fails.
 - Do the following procedure if the second attempt fails:
 - Enter the NVRAM data manually using the SMC print you created before uploading the NVRAM data.
1. Switch the copier main power switch off.
 2. Remove the SD slot cover. (🔧 × 1)
 3. Insert the SD card with the NVRAM data into SD Card Slot 2 (lower).
 4. Switch the copier main power switch on.
 5. Do SP5-825-001 (NVRAM Data Download) and press the "Execute" key.

 Note

- The serial number of the file on the SD card must match the serial number of the machine for the NVRAM data to download successfully. The download fails if the serial numbers do not match.

This procedure does not download the following data to the NVRAM:

- Total Count
- C/O, P/O Count

5.9 ADDRESS BOOK UPLOAD/DOWNLOAD

5.9.1 INFORMATION LIST

The following information is possible to be uploaded and downloaded.

Information	
▪ Registration No. ▪ User Code ▪ E-mail ▪ Protection Code ▪ Fax Destination ▪ Fax Option ▪ Group Name ▪ Key Display	▪ Select Title ▪ Folder ▪ Local Authentication ▪ Folder Authentication ▪ Account ACL ▪ New Document Initial ACL ▪ LDAP Authentication

5.9.2 DOWNLOAD

1. Prepare a formatted SD card.
2. Make sure that the write-protection on the SD card is off.
3. Turn off the main power switch of the main machine.
4. Remove the SD slot cover [A] at the left rear side of the machine (🔧 × 1).



d196z2028

5. Install the SD card into the SD card slot 2 (lower) [A] (for service use).



6. Turn on the main power switch.
7. Enter the SP mode.
8. Do SP5-846-051 (Backup All Addr Book).
9. Exit the SP mode, and then turn off the main power switch.
10. Remove the SD card from the SD card slot 2 (lower).
11. Install the SD slot cover.

Note

- If the capacity of SD card is not enough to store the local user information, an error message is displayed.
- Carefully handle the SD card, which contains user information. Do not take it back to your location.

5.9.3 UPLOAD

1. Turn off the main power switch of the main machine.
2. Remove the SD slot cover at the left rear side of the machine (🔧 × 1).
3. Install the SD card, which has already been uploaded, into the SD card slot 2 (lower).
4. Turn on the main power switch.
5. Enter the SP mode.
6. Do SP5-846-052 (Restore All Addr Book).
7. Exit the SP mode, and then turn off the main power switch.
8. Remove the SD card from the SD card slot 2 (lower).
9. Install the SD slot cover.

Note

- The counter in the user code information is initialized after uploading.
- The information of an administrator and supervisor cannot be downloaded nor uploaded.
- If there is no data of address book information in the SD card, an error message is displayed.

5.10 SMC LIST CARD SAVE FUNCTION

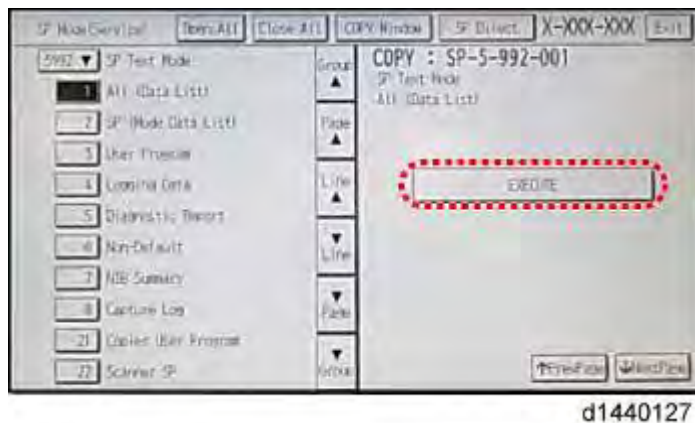
5.10.1 OVERVIEW

SMC List Card Save

- The SMC List Card Save (SP Text Mode) function is used to save the SMC list as CSV files to the SD-card inserted into the operation panel SD-card slot.

5.10.2 PROCEDURE

1. Turn the main power switch OFF.
2. Insert the SD card into the operation panel SD-card slot. Then turn the power ON.
3. Enter SP mode.
4. Select "Copy SP".



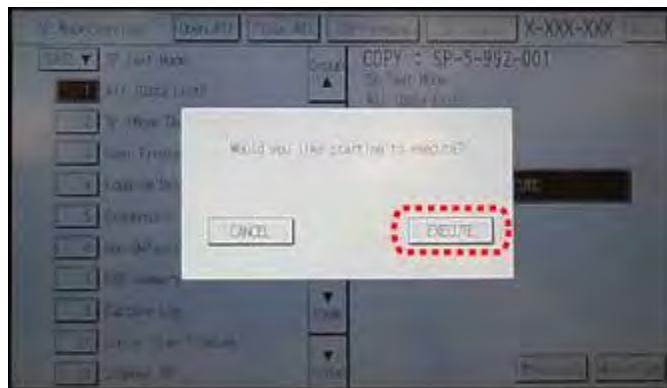
d1440127

5. Select SP-5992 "SP Text Mode".
6. Select a detail SP number shown below to save data on the SD card.
SP-5992-xxx (SP Text Mode)

Detail No.	SMC Categories to Save
001	All (Data List)
002	SP (Mode Data List)
003	User Program
004	Logging Data
005	Diagnostic Report
006	Non-Default
007	NIB Summary

Detail No.	SMC Categories to Save
008	Capture Log
021	Copier User Program
022	Scanner SP
023	Scanner User Program
024	SDK/J Summary
025	SDK/J Application Info
026	Printer SP

- 7. Press [EXECUTE].**



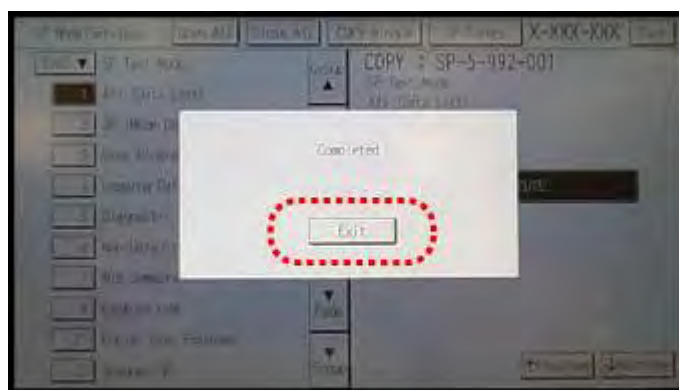
d1440128

8. Press [EXECUTE] again to start. Press [CANCEL] to cancel the saving.



d1440130

9. "It is executing it" is shown on the screen while executing.



d1440129

10. Wait for 2 to 3 minutes until “Completed” is shown.

Note

- The SMC list saving may take from 2 to 3 minutes to complete.
- Press [CANCEL] to abort executing.

11. Press [Exit] to exit from SP mode.

5.10.3 FILE NAMES OF THE SAVED SMC LISTS

The SMC list data saved on the SD-card will be named automatically. The file naming rules are as follows.

Example:

W801P999017_59921_20111011_53954.csv

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

d1440131a

A:

Machine serial number (fixed for each machine)

B:

SP number saved in this file.

First four digits (5992) in this part are fixed. The other one or two digits are the detail SP number(s). In this case, it is one digit. Therefore, this file is of SP5-992-001 (All data list). See the upper SP table for the correspondence between SP detail numbers and the contents.

C:

File creation date

Year/Month/Day (“Zero” will be omitted if each is one digit.)

D:

File creation time

Hour/Minute/Second ("Zero" will be omitted if each is one digit.)

E:

File Extension CSV (Comma Separated Value)

This part is fixed.

 Note

- A folder named by the machine serial number will be created on the SD card when this function is executed.
- This function can save the SMC list data only to an SD card inserted into the operation panel SD card slot.

5.10.4 ERROR MESSAGES

SMC List Card Save error message:

- **Failed:**

FACTOR: Read-only file system, No space left on device.

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

5.11 UP/SP DATA IMPORT/EXPORT

5.11.1 OVERVIEW

Import/export conditions

Import/export is possible between devices only if their model type, region of use, and the following device configurations match.

- Input Tray
- Output Tray
- ARDF
- Whether or not equipped with a hard disk
- Whether or not equipped with a finisher and the type of finisher

5.11.2 UP DATA IMPORT/EXPORT

Data that can be imported and exported

- Copier / Document Server Features
- Printer Features
- Scanner Features
- Facsimile Features
- Browser Features
- Extended Feature Settings
- Program (Document Server)
- Program (Copier)
- Program (Scanner)
- Web Image Monitor Setting
- Web Service Settings
- System Settings

Data that cannot be imported or exported

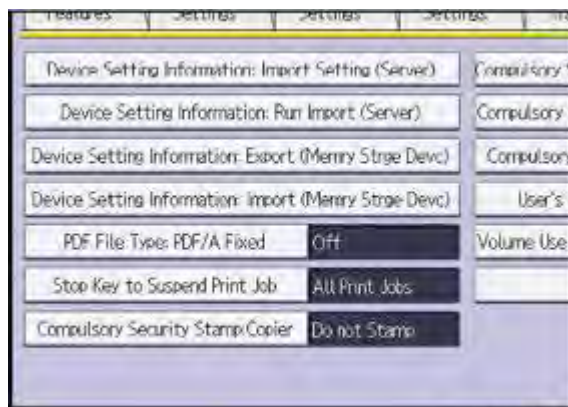
- Some System Settings *1 *2
 - *1 The setting for the date, settings that require the device certificate, and settings that need to be adjusted for each machine (for example, image adjustment settings) cannot be imported or exported.
 - *2 Settings only for executing functions and settings only for viewing cannot be imported or exported.
- Extended Feature Settings
- Address book
- Programs (fax function)
- Programs (printer function)
- User stamp in Copier / Document Server Features
- Settings that can be specified via telnet
- @Remote-related data
- Counters
- EFI printer unit settings
- Settings that can only be specified via Web Image Monitor or Web Service (for example, Bonjour, SSDP setting)

Exporting Device Information

This can be exported / imported by an administrator with all privileges.

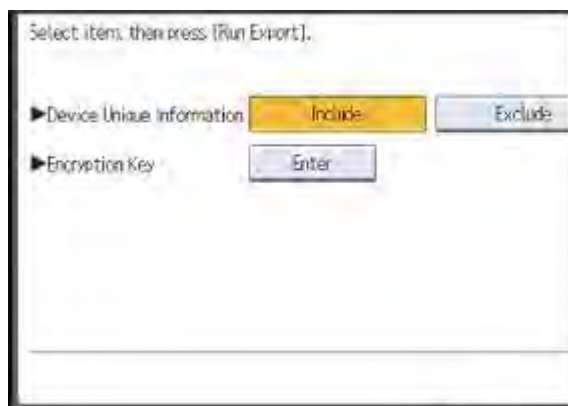
When exporting SP device information from the control panel, the data is saved on an SD card.

1. Insert an SD card into the media slot on the side of the control panel.
2. Log in from the control panel as an administrator with all privileges.
3. Press [System Settings].
4. Press [Administrator Tools].
5. Press [Next] four times.
6. Press [Device Setting Information: Export (Memory Storage Device)].



w_d1825501

7. Set the export conditions.



w_d1825502

- Specify whether to [Include] or [Exclude] the "Device Unique Information". "Device Unique Information" includes the IP address, host name, fax number, etc.
 - Specify an encryption key.
8. Press [Run Export].
 9. Press [OK].
 10. Press [Exit].
 11. Log out.

↓ **Note**

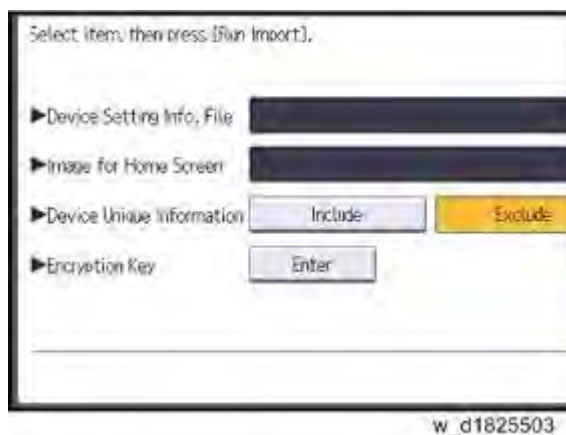
- If data export fails, the details of the error can be viewed in the log.
- When device Information is periodically imported, it is necessary to create the device setting information file with special software and store it on the web server.

Importing Device Information

This can be exported / imported by an administrator with all privileges.

Import device information saved on an SD card.

1. Insert an SD card into the media slot on the side of the control panel.
2. Log in from the control panel as an administrator with all privileges.
3. Press [System Settings].
4. Press [Administrator Tools].
5. Press [Next] four times.
6. Press [Device Setting Information: Import (Memory Storage Device)].
7. Configure the import conditions.



- Press [Select] of the "Device Setting Info. File" to select the file(s) to import.
 - When inserting a file into a home screen, press [Select] for the Image for Home screen and select the file. You cannot use this setting when using the Smart Operation Panel.
 - Specify whether to [Include] or [Exclude] the "Device Unique Information". "Device Unique Information" includes the IP address, host name, fax number, etc.
 - Enter the encryption key that was specified when the file was exported.
8. Press [Run Import].
 9. Press [OK].
 10. Press [Exit].

The machine restarts.

↓ **Note**

- If data export fails, the details of the error can be viewed in the log.

5.11.3 SP DATA IMPORT/EXPORT

Data that can be imported and exported

- System SP
- Printer SP
- Fax SP
- Scanner SP

Exporting Device Information

When exporting SP device information from the control panel, the data is saved on an SD card.

1. Insert an SD card into the media slot on the side of the control panel.
2. Enter SP mode.
3. Press SP5-749-001 (Import/Export: Export)
4. Select "Target" SP settings (System/Printer/Fax/Scanner) to be exported.
5. Select "Option" settings (Unique/Secret).

Item	Specification	Note
Unique	Unique information of the machine is included in the exported file if you select "Unique" setting.	Unique information that can be updated #1. Items that are to be used to identify the machine. Example: Network Information/ Host name / Information related to fax number /Mail address assigned to the machine #2. Items for specifying the options equipped on the machine. Example: Lot number for developer Unique information that cannot be updated #1. Items that may cause a problem if imported Example: Serial number / Information related to @Remote #2. Items for managing the history of the machine Example: Time and date / Counter information / Installation date #3. Setting values for the Engine

Item	Specification	Note
Secret	Secret information is exported if you select "Secret" setting.	Secret information #1. Data that cannot be exported without being encrypted. (Exported data is encrypted.) Example: Password / Encryption key / PIN code #2. Confidential information for the customer Example: User name / User ID / Department code / Mail address / Phone number #3. Personal information Example: Document name / Image data #4. Sensitive information for the customer Example: MAC address / Network parameters

* The IP address is exported when both 'Unique' and 'Secret' are selected.

6. Select "Crpt config" setting (Encryption).

Encryption	Select whether to encrypt or not when exporting. If you push the "Encryption" key, you can export secret information.	If the encryption function is used, setting of an encryption key is required by direct input. - Type the arbitrary password using the soft keyboard - Can enter up to 32 characters

7. Press [Execute].

8. Press [OK].

Note

- If data export fails, the details of the error can be viewed in the log.

Importing Device Information

Import device information saved on an SD card.

1. Insert an SD card into the media slot on the side of the control panel.
2. Enter SP mode.
3. Press SP5-749-101(Import/Export: Import)
4. Select a unique setting.
5. Press [Encryption Key], if the encryption key was created when the file was exported.
6. Select an encryption setting.

Unique	If you want to apply the unique information to the target machine, select the "Unique" key.	Refer to the above information.
Encryption	If an encrypted file is selected as the import file, this setting is required.	

7. Press [Execute].
8. Press [OK].

 Note

- If data export fails, the details of the error can be viewed in the log.

5.11.4 POSSIBLE SOLUTIONS FOR IMPORT/EXPORT PROBLEMS

The access log file is created when export/import is executed. The file is stored in the same location as the exported device setting information file.

If an error occurs, check the log's result code in the access log file first. Values other than 0 indicate that an error occurred.

The result code will appear in the circled area illustrated below.

- Example of a log file



If you cannot solve the problem or do not know how to solve it after checking the code, note down the error log entry, then contact your supervisor.

Result Code	Cause	Solutions
2 (INVALID REQUEST)	A file import was attempted between different models or machines with different device configurations.	Import files exported from the same model with the same device configurations.
4 (INVALID OUTPUT DIR)	Failed to write the device information to the destination device.	Check whether the destination device is operating normally.
7(MODULE ERROR)	An unexpected error occurred during import or export.	Switch the power off and then back on, and then try the operation again. If the error persists, contact your supervisor.

Result Code	Cause	Solutions
8 (DISK FULL)	The available storage space on the external medium is insufficient.	Execute the operation again after making sure there is enough storage space.
9 (DEVICE ERROR)	Failed to write or read the log file.	Check whether the path to the folder for storing the file or the folder in which the file is stored is missing.
10 (LOG ERROR)	The hard disk is faulty.	Contact your supervisor.
20 (PART FAILED)	Failed to import some settings.	The reason for the failure is logged in "NgCode". Check the code. Reason for the Error (Ng-Name) 2. INVALID VALUE The specified value exceeds the allowable range. 3. PERMISSION ERROR The permission to edit the setting is missing. 4. NOT EXIST The setting does not exist in the system. 5. INTERLOCK ERROR The setting cannot be changed because of the system status or interlocking with other specified settings. 6. OTHER ERROR The setting cannot be changed for some other reason.
21 (INVALID FILE)	Failed to import the file because it is in the wrong format in the external medium.	Check whether the file format is correct. The import file should be a CSV file.
22 (INVALID KEY)	The encryption key is not valid.	Use the correct encryption key.

Note

- When exporting device information from the control panel, the data can be saved only on an SD card.
- The file format for exports is CSV.

5.12 TEST PATTERN PRINTING

Printing Test pattern: SP2-109

Some of these test patterns are used for copy image adjustments but most are used primarily for design testing.

Note

- Do not operate the machine until the test pattern is printed out completely. Otherwise, an SC occurs.
1. Enter the SP mode and select **SP2-109-003**.
 2. Enter the number for the test pattern that you want to print and press [#].
 3. When you want to select the single color of Magenta, Yellow or Cyan for printing a test pattern, select the color with SP2-109-005 (2: Magenta, 3: Yellow, 4: Cyan).
 4. When you want to change the density of printing a test pattern, select the density with SP2-109-006 to -009 for each color.

Note

- If you select "0" with SP2-109-006 to -009, the color to be adjusted to "0" does not come up on a test pattern.
5. When you are prompted to confirm your selection, touch "Yes" to select the test pattern for printing.
 6. Touch "Copy Window" to open the copy window, then select the settings for the test print (paper size etc.).

Note

- If you want to use black and white printing, touch "Black & White" on the LCD. If you want to use color printing, touch "Full Colour" on the LCD.
7. Press the "Start" key to start the test print.
 8. After checking the test pattern, touch "SP Mode" on the LCD to return to the SP mode display.
 9. Reset all settings to the default values.
 10. Touch "Exit" twice to exit SP mode.

No.	Pattern	No.	Pattern
0	None	12	Independent Pattern (2-dot)
1	Vertical Line (1dot)	13	Independent Pattern (4-dot)
2	Vertical Line (2dot)	14	Trimming Area
3	Horizontal Line (1dot)	15	Hound's Tooth Check (Vertical)
4	Horizontal Line (2dot)	16	Hound's Tooth Check (Horizontal)
5	Grid Vertical Line	17	Band (Horizontal)
6	Grid Horizontal Line	18	Band (Vertical)
7	Grid Pattern Small	19	Checker Flag Pattern
8	Grid Pattern Large	20	Grayscale (Vertical Margin)
9	Argyle Pattern Small	21	Grayscale (Horizontal Margin)
10	Argyle Pattern Large	22	Two Beam Density Pattern
11	Independent Pattern (1-dot)	23	Full Dot Pattern

5.13 CARD SAVE FUNCTION

5.13.1 OVERVIEW

Card Save:

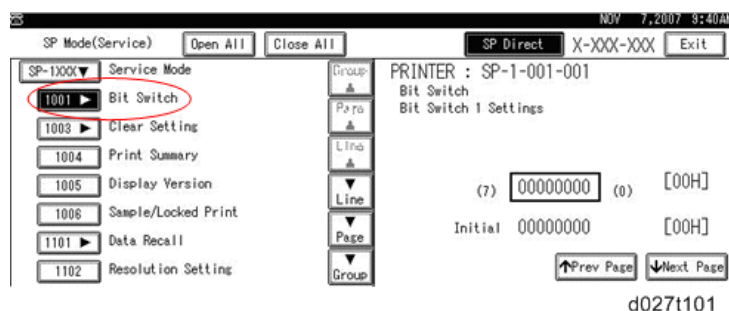
- The Card Save function is used to save print jobs received by the printer on an SD card with no print output. Card Save mode is toggled using printer Bit Switch #1 bit number 4. Card Save will remain enabled until the SD card becomes full, or until all file names have been used.
- Captures are stored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

Limitation:

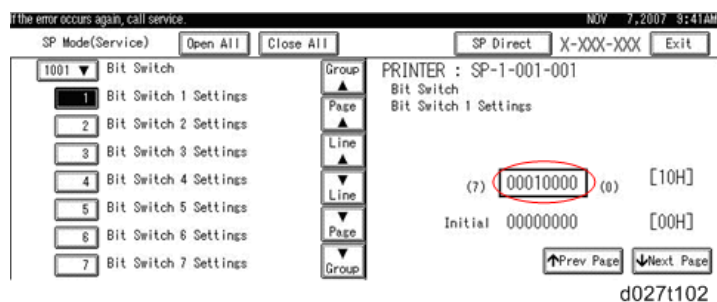
- Card Save cannot be used with PJJ Status Readback commands. PJJ Status Readbacks will not work. In addition they will cause the Card Save to fail.

5.13.2 PROCEDURE

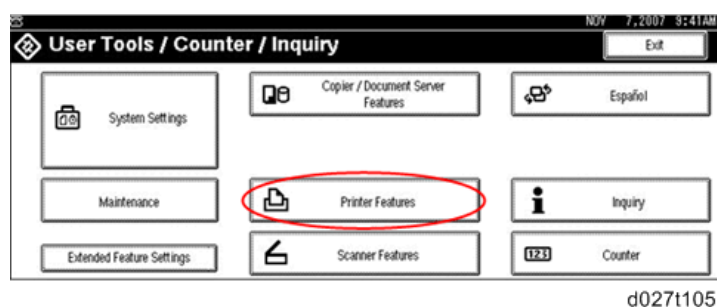
1. Turn the main power switch OFF.
2. Insert the SD card into slot 2 (lower). Then turn the power ON.
3. Enter SP mode.
4. Select the "Printer SP".
5. Select SP-1001 "Bit Switch".



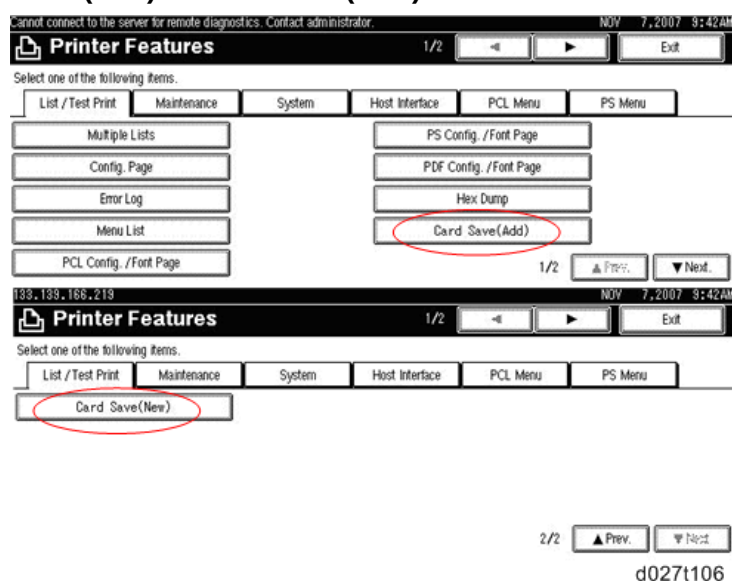
6. Select "Bit Switch 1 Settings" and use the numeric keypad to turn bit 4 ON and then press the "#" button to register the change. The result should look like: 00010000. By doing this, Card Save option will appear in the "List/Test Print" menu.



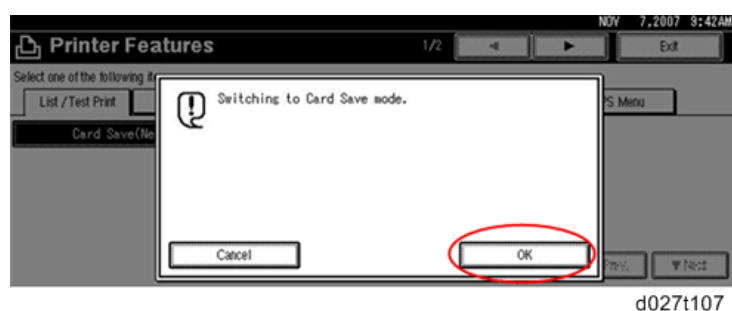
7. Press "Exit" to exit SP Mode.
8. Press the "User Tools/Counter" button.
9. Select "Printer Features".



10. Card Save (Add) and Card Save (New) should be displayed on the screen. Select Card Save (Add) or Card Save (New).

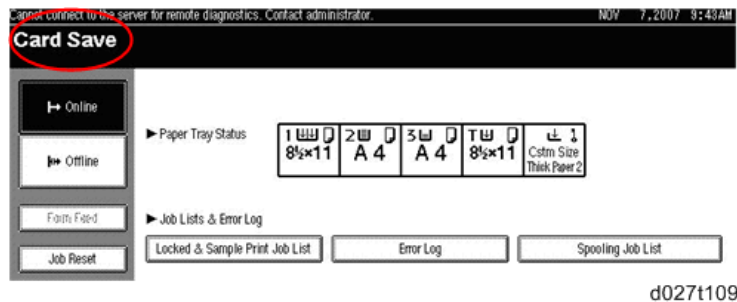


11. Press "OK" and then exit the "User Tools/Counter" menu.



12. Press the "Printer" button.

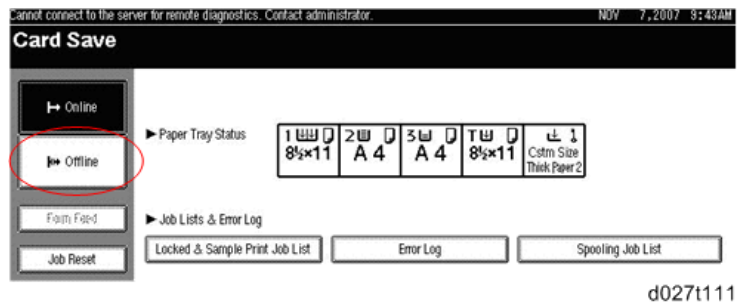
13. Card Save should be displayed in the top left of the display panel.



14. Send a job to the printer. The Communicating light should start blinking.

15. As soon as the printer receives the data, it will be stored on the SD card automatically with no print output. Nothing is displayed on the screen, indicating that a Card Save operation was successful.

16. Press "Offline" and then the "Clear/Stop" button to exit Card Save mode.



17. Change the Bit Switch Settings back to the default 00000000. Press the "#" button in the numeric keypad to register the changes.

18. Remove the SD card after the main power switch is turned off.

5.13.3 ERROR MESSAGES

Card Save error messages:

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

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

TROUBLESHOOTING

REVISION HISTORY		
Page	Date	Added/Updated/New
		None

6. TROUBLESHOOTING

6.1 SELF-DIAGNOSTIC MODE

6.1.1 SERVICE CALL CODES

Service Call Conditions

Pattern	Display	How to reset	SC call or SC alarm in customer support system
A	The SC is displayed on the operation panel, and the machine cannot be used (safety-related SC).	Execute CE reset SP mode, and switch main power from OFF to ON. ⚠ CAUTION ▪ When canceling a fusing unit SC, (SC544-00/SC554-00/SC564-00/SC574-00), perform part replacement in accordance with the above procedure.	Occurrence & alarm count ↓ Immediate alarm
B	When a function is selected, the SC is displayed on the operation panel, and the machine cannot be used (down-time mitigation).	Switch main power from OFF to ON.	Occurrence & alarm count ↓ Power OFF → ON ↓ Alarm count and alarm only if recurrence
C	No display on the operation panel, and use is permitted.	Count only logging.	Occurrence ↓ Logging count & alarm count

Pattern	Display	How to reset	SC call or SC alarm in customer support system
D	The SC is displayed on the operation panel, and the machine cannot be used (machine-error SC).	Switch main power from OFF to ON.	Occurrence & alarm count ↓ Power OFF → ON ↓ Alarm count and alarm only if recurrence

Note

- When an ordinary SC (type D) is generated, an automatic reboot is performed. When an event is reported by the customer support system, even in the event of an ordinary SC, reboot is not performed. During automatic reboot, a confirmation screen is displayed after the reboot.
- When automatic reboot occurs twice continuously, an SC is displayed without rebooting, and logging count is performed. Also, when an SMC print is output, an * mark is added alongside the SC number for clarity.
- Automatic reboot can be enabled or disabled with SP5-875-001 (SC automatic reboot setting) (default value: ON).

6.1.2 SC LOGGING

When an SC is generated, the "total count value when the SC is generated" and the "SC code" are logged. However, if the total count value during the SC is the same as last time, logging is not performed.

Logged data can be checked by outputting an administrative report (SMC print). The SC history is logged up to the last 10 entries, and if there are more than 10 entries, data are progressively deleted starting from the oldest.

6.1.3 SC AUTOMATIC REBOOT

When an ordinary SC (pattern D) is generated, automatically reboot is performed. Automatic reboot or reboot by user operation can be set by SP5-875-001 (SC automatic reboot setting out) (default value: 0 "Automatic reboot").

When a type D occurs, automatic reboot is done or the machine display asks the customer if it can reboot. However, when the SC occurs twice in a short time, the machine sends a report to the @Remote server without rebooting. This is because just rebooting may not be a good solution if an SC occurs twice.

When an automatic reboot is performed, a confirmation screen is displayed after reboot. The confirmation screen can be cancelled by pressing the [OK] key (display is not cancelled only when the main power switch is switched OFF to ON).

Screen display during reboot

- Status display on the current screen
 - Post-processing Post-processing during printing, etc.
 - Automatic reboot After operation end
- Post-processing
- ■ □ □ □ □ □ □ □ □
- Until automatic reboot
- □ □ □ □ □ □ □ □ □
- Reset key (Reboot key)
- Key to perform reboot
- # Cancel key is not displayed.
- Turn on spanner LED (same as when an SC is generated).

Operation during SC reboot

- Timing of SC reboot

When @Remote is enabled, and when a NRS alarm*1 is not generated, the corresponding SC is the object of an automatic reboot.

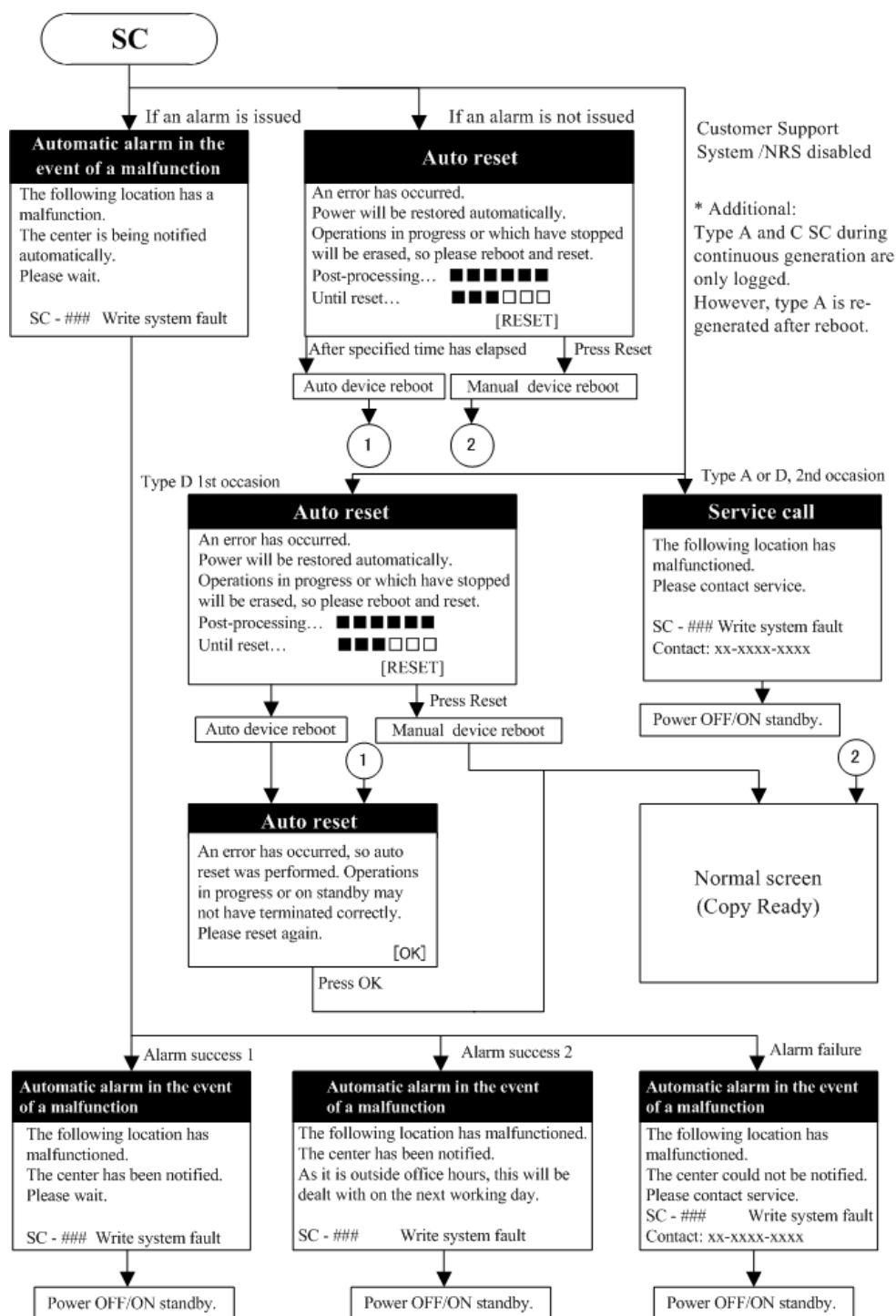
*1 NRS alarm: Issued when an ordinary SC (type D) is generated twice while the total counter counts 10 times.
- Time to automatic reboot

Reboot is performed 30 seconds after an engine reboot is possible, after the end of post-processing during printing, etc.

At that time, a reboot is performed even if the MFP is operating. The engine does not start process control when a reboot is possible.
- Automatic reboot

See the flowchart below.

Self-Diagnostic Mode



w_d1462643

6.2 SC TABLES

6.2.1 SERVICE CALL CONDITIONS

Summary

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

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

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

 Note

- If the problem concerns electrical circuit boards, first disconnect then reconnect the connectors before you replace the PCBs.
- If the problem concerns a motor lock, first check the mechanical load before you replace motors or sensors.

SC Code Classification

The table shows the classification of the SC codes:

Class	Section
SC1xx	Scanning
SC2xx	Exposure
SC3xx	Image Processing 1
SC4xx	Image Processing 2
SC5xx	Paper feed and Fusing
SC6xx	Communication
SC7xx	Peripherals
SC8xx	Overall System
SC9xx	Others

6.2.2 SC1XX: SCANNING

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
101 -00	D	LED error
		The peak white level is less than the prescribed value. This SC is detected when: ▪ The scanner power is on or returning from energy saver mode ▪ ARDF/Book scanning ▪ White plate scan finishes ▪ Shading
		▪ Condensation in the scanner unit ▪ Connector failure ▪ Defective scanner carriage ▪ BiCU failure ▪ Harness failure ▪ Dirty or defective white plate
		1. Check if the SC occurs by turning the power off then on. If the SC occurs again, do the following steps. Check if the SC reoccurs by cycling the power after each step. 2. Reconnect the following connectors. SBU-BiCU harness (FFC) connector SBU-LEDB harness (FFC) connector (SBU) 3. Check the white plate (Exposure glass). Replace the scanner upper cover if the plate is dirty or damaged. 4. Replace the scanner carriage 5. Replace the BiCU. 6. Replace the harness (FFC).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
102 -00	D	LED intensity adjustment error
		The peak white level cannot be in the prescribed value even though adjusting several times. This SC is detected when the machine adjusts the LED's light intensity.
		▪ Connection failure ▪ Scanner carriage failure ▪ BiCU failure ▪ Harness failure
		1. Check if the SC occurs by turning the power off then on. If the SC occurs again, do the following steps. Check if the SC reoccurs by cycling the power after each step. 2. Reconnect the following connectors. SBU-BiCU harness (FFC) connector SBU-LEDB harness (FFC) connector (SBU) 3. Check the white plate (Exposure glass). Replace the exposure glass, if dirty or damaged. 4. Replace the scanner carriage. 5. Replace the BiCU. 6. Replace the harness (FFC).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
120 -00	D	Scanner home position (HP) error 1
		- Scanner HP sensor cannot be off when the carriage is homing, auto-adjustment and/or DF/Book scanning are being performed. - Scanner HP sensor cannot be off even though the scanner carriage moves 30 mm or more during homing. - Scanner HP sensor is ON when FGATE is asserted or when shading around the white plate. - Scanner HP sensor is ON even when the carriage is returning.
		- Defective motor driver - Defective motor - Defective HP Sensor - Harness failure - Timing belt, pulley, wires or carriage failure
		Cycle the power off/on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
121 -00	D	Scanner home position (HP) error 2
		- Scanner HP sensor cannot be off when the carriage is homing, auto-adjustment and/or DF/Book scanning are being performed. - Scanner HP sensor cannot be off even though the scanner carriage moves 30 mm or more during homing. - Scanner HP sensor is ON when FGATE is asserted or when shading around the white plate. - Scanner HP sensor is ON even when the carriage is returning.
		- Defective motor driver - Defective motor - Defective HP Sensor - Harness failure - Timing belt, pulley, wires or carriage failure
		Cycle the power off/on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
141 -00	D	Black level detection error
		Black level is not less than the prescribed value. This SC is detected when: the scanner power is turned on and the machine returns from the energy saver mode.
		▪ Connection failure ▪ Scanner Carriage failure ▪ BiCU failure ▪ Harness failure
		1. Check if the SC occurs by turning the power off then on. If the SC occurs again, do the following steps. Check if the SC reoccurs by cycling the power after each step. 2. Reconnect the SBU-BiCU harness (FFC) connector 3. Replace the scanner carriage. 4. Replace the BiCU. 5. Replace the harness (FFC)

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
142 -00	D	White level detection error
		The white peak level cannot be in the prescribed value when adjusting the scanner gain. This SC is detected when the scanner power is turned on and the machine returns from the energy saver mode.
		▪ Dirty exposure glass or optics section ▪ SBU defective ▪ Exposure lamp defective ▪ Lamp stabilizer defective ▪ Scanner motor defective

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		1. Check if the SC occurs by turning the power off then on. If the SC occurs again, do the following steps. Check if the SC reoccurs by cycling the power after each step. 2. Reconnect the following connector. SBU-BiCU harness (FFC) connector SBU-LEDB harness (FFC) connector (SBU) 3. Check the white plate (Exposure glass) Replace the exposure glass, if dirty or damaged. 4. Replace the scanner carriage. 5. Replace the BiCU. 6. Replace the harness (FFC).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
144 -01	D	SBU communication error (SBU)
		The machine cannot detect that the SBU is connected. This SC is detected when the scanner power is turned on and the machine returns from the energy saver mode.
		▪ Scanner carriage failure ▪ BiCU failure ▪ Harness failure
		1. Check if the SC occurs by turning the power off then on. If the SC occurs again, do the following steps. Check if the SC reoccurs by cycling the power after each step. 2. Reconnect the SBU-BiCU harness (FFC) connector 3. Replace the scanner carriage. 4. Replace the BiCU. 5. Replace the harness (FFC).
-02	D	SBU communication error (AFE)
		Cannot communicate with AFE on the BiCU, or the communication data is incorrect. This SC is detected when the scanner power is turned on and the machine returns from the energy saver mode.
		▪ BiCU failure

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		1. Cycle the main power off and on. 2. Replace the BiCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
165 -00	D	Copy Data Security Unit error
		The copy data security board is not detected or a device check error occurs when the copy data security function is set "ON" with the initial setting.
		▪ Incorrect installation of the copy data security board ▪ Defective copy data security board
		1. Reinstall the copy data security board. 2. Replace the copy data security board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
195 -00	D	Serial Number Mismatch
		Serial number stored in the memory does not have the correct code.
		▪ EEPROM defective ▪ BiCU replaced without original EEPROM
		1. Check the serial number with SP5-811-002. 2. If the stored serial number is incorrect, contact your supervisor.

6.2.3 SC 2XX: EXPOSURE

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
202 -01	D	Polygon motor error 1: ON timeout: Bk, Cy
-03	D	Polygon motor error 1: ON timeout: Ma, Ye
		Polygon mirror motor cannot rotate correctly. This SC is detected when the polygon mirror motor starts rotating, or its rotating speed is changed. ▪ Polygon mirror motor failure ▪ Defective motor driver ▪ Polygon mirror motor harness is defective, disconnected, or short-circuited ▪ BiCU failure (Incorrect polygon motor control signal, damaged Laser ASIC) ▪ Defective PSU or power supply part for polygon motor ▪ Fuse blown out ▪ Incorrect AC voltage 1. Cycle the power OFF/ON. 2. Check the harness between LD unit and BiCU. 3. Check CN300 (a connector with five pins) for the polygon mirror motor from the PSU. There is no problem if your multimeter indicates $24\pm 2V$. 4. Replace the LD unit (Polygon mirror motor). 5. Replace the harness between the LD unit and BiCU. 6. Replace the BiCU. 7. Replace the fuse. 8. Replace the PSU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
203 -01	D	Polygon motor error 2: OFF timeout: Bk, Cy
-03	D	Polygon motor error 2: OFF timeout: Ma, Ye
		Polygon mirror motor cannot stop correctly. This SC is detected when the polygon mirror motor is deactivated. ▪ Polygon mirror motor failure ▪ Defective motor driver ▪ Polygon mirror motor harness is defective, disconnected, or short-circuited ▪ BiCU failure (Incorrect polygon motor control signal, damaged Laser ASIC) ▪ Defective PSU or power supply part for polygon motor ▪ Fuse blown out ▪ Incorrect AC voltage 1. Cycle the power OFF/ON. 2. Check the harness between LD unit and BiCU. 3. Check CN300 (a connector with five pins) for the polygon mirror motor from the PSU. *There is no problem if your multimeter indicates $24\pm 2V$. 4. Replace the LD unit (Polygon mirror motor). 5. Replace the harness between the LD unit and BiCU. 6. Replace the BiCU. 7. Replace the fuse. 8. Replace the PSU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
204 -01	D	Polygon motor error 0: XSCRDY signal error: Bk, Cy
-03	D	Polygon motor error 1: XSCRDY signal error: Ma, Ye
		Polygon mirror motor cannot rotate correctly. This SC is detected when the polygon mirror motor is deactivated. ▪ Polygon mirror motor failure ▪ Defective motor driver ▪ Polygon mirror motor harness is defective, disconnected, or short-circuited ▪ BiCU failure (Incorrect polygon motor control signal, damaged Laser ASIC) ▪ Defective PSU or power supply part for polygon motor ▪ Fuse blown out 1. Cycle the power OFF/ON. 2. Check the harness between LD unit and BiCU. 3. Check CN300 (a connector with five pins) for the polygon mirror motor from the PSU. *There is no problem if your multi meter indicates $24\pm 2V$. 4. Replace the LD unit (Polygon mirror motor). 5. Replace the harness between the LD unit and BiCU. 6. Replace the BiCU. 7. Replace the fuse. 8. Replace the PSU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
220 -01	D	Laser synchronizing detection error: start position LD1: Bk/C
-03	D	Laser synchronizing detection error: start position LD1: M/Y
		Synchronizing detection signal cannot be received. This SC is detected when: ▪ The machine starts up. ▪ The machine is copying.
		▪ Defective LD unit (Synchronizing mechanism or LDB failure) ▪ BiCU failure (Damaged laser ASIC) ▪ Disconnected LDB harness
		▪ Cycle the power off/on. ▪ Check for condensation on the LDB. ▪ Check the harness between LDB (Synchronizing mechanism) and BiCU. ▪ Replace the LD unit. ▪ Replace the BiCU. ▪ Replace the harness between LDB and BiCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
230 -01	D	FGATE ON error: Bk
-02	D	FGATE ON error: Cy
-03	D	FGATE ON error: Ma
-04	D	FGATE ON error: Ye
		FGATE signal cannot be received even when the laser is ready to emit. This SC is detected when the machine is copying. ▪ Connection error between BiCU and Controller ▪ BiCU failure (Damaged laser ASIC) ▪ Cycle the power off/on. ▪ Check the connection between BiCU and Controller. ▪ Replace the BiCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
231 -01	D	FGATE OFF error: Bk
-02	D	FGATE OFF error: Cy
-03	D	FGATE OFF error: Ma
-04	D	FGATE OFF error: Ye
		FGATE signal is not OFF even when the laser is ready to end. This SC is detected when the machine is copying. ▪ Connection error between BiCU and Controller ▪ BiCU failure (Damaged laser ASIC) 1. Cycle the power off/on. 2. Check the connection between IPU and Controller. 3. Replace the BiCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
240 -01	D	LD error: Bk or Cy
-03	D	LD error: Ma or Ye
		▪ The LD current is more than the prescribed current during emitting light. ▪ LD driver cannot be initialized correctly. ▪ Disconnected LDB harness. This SC is detected when: ▪ The machine starts up. ▪ The machine is copying.
		▪ LDB harness connection error ▪ Deteriorated LD (LD broken) ▪ LDB (LD driver) failure ▪ LDB harness failure
		1. Cycle the power off/on. 2. Check the harness between LDB and IPU. 3. Replace the LD unit. 4. Replace the harness between LDB and BiCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
272 -10	D	LD driver communication error
		Power source for LD driver is incorrect. This SC is detected when: ▪ The machine starts up. ▪ The machine returns from energy saver mode. ▪ Covers are closed.
		▪ BiCU failure (LD5V Power error) ▪ LDB failure (LD drive error) ▪ LDB harness failure ▪ Interlock switch failure
		1. Cycle the power off/on. 2. Check the harness between LDB and BiCU. 3. Replace the BiCU. 4. Replace the LD unit. 5. Replace the harness between LDB and BiCU. 6. Replace the interlock switch.

6.2.4 SC3XX: IMAGE PROCESSING – 1

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
312-01	D	Charge roller feed back voltage error: Bk
-02	D	Charge roller feed back voltage error: Cy
-03	D	Charge roller feed back voltage error: Ma
-04	D	Charge roller feed back voltage error: Ye
		The feedback voltage of the charge AC for each color is 0.3V or less for consecutive 200ms after the charge AC is activated in the standard or half line speed. ▪ Disconnected/incorrect harness for the power pack ▪ Damaged/incorrect PCU ▪ Power pack failure ▪ Disconnected harness/connector Troubleshooting procedure: 1. Check the drum condition: Check the terminal to see if there is dust, damage, or deformation. Check the continuity as well. If not good, replace the PCDU. If the SC reoccurs, go to the next step. 2. Check all the related connectors are firmly connected: If not good, reconnect the connector. Check if the SC reoccurs by cycling the power off/on. If the SC reoccurs, go to the next step. 3. Check the mainframe condition: Check if there is dust on the terminal for charging, or any damage/deformation. Check the continuity between the power packs and charging terminal. If the SC reoccurs, go to the next step. 4. Check the Power pack: Try installing a new power pack to determine whether the power pack is the cause. If the SC does not occur with the new one, the old power pack was defective. 5. Replace the BiCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
325 -00	D	Color development motor error
		The motor LOCK signal is not detected for more than 2 seconds while the motor START signal is on.
		▪ PCDU overload ▪ Defective development motor
		▪ Replace the PCDU ▪ Replace the development motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
396 -00	D	Bk drum motor error
397 -00	D	Color drum motor error
		The motor LOCK signal is not detected for more than 2 seconds while the motor START signal is on.
		▪ PCDU overload ▪ Drum motor (K) failure (SC396) ▪ Drum motor (CMY) failure (SC397)
		▪ Replace the PCDU. ▪ Replace the drum motor (K) (SC396) ▪ Replace the drum motor (CMY) (SC397)

6.2.5 SC3XX: IMAGE PROCESSING – 2

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
360 -01	D	TD sensor (Vt high) error 1: Bk
-02	D	TD sensor (Vt high) error 1: Cy
-03	D	TD sensor (Vt high) error 1: Ma
-04	D	TD sensor (Vt high) error 1: Ye
		▪ μ count is higher than the threshold which detects no developer ▪ μ count is lower than the upper/lower target thresholds three consecutive times.
		▪ TD sensor (mu sensor, μ sensor) failure ▪ Harness loose or disconnected ▪ An old PCDU may be installed
		Troubleshooting procedure: Check all the related connectors are connected. If not good, reconnect the connectors. Check if the SC reoccurs by cycling the power off/on. If the SC reoccurs, go to next step. Check the development unit (e.g. Gear/harness disconnected? Heat protection seal removed? Using an old PCDU?). If not good, replace the development unit. If the SC reoccurs, go to the next step. Check whether the TD sensor is deformed, scratched, damaged or has dust sticking to it. If not good, replace the PCDU. If the SC reoccurs, go to the next step. Check the TD sensor harnesses, and the harness between the mainframe and PCDU. If not good, replace the harness. If the SC reoccurs, go to the next step. Replace the BiCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
361 -01	D	TD sensor (Vt) upper limit error: Bk
-02	D	TD sensor (Vt) upper limit error 1: Cy
-03	D	TD sensor (Vt) upper limit error 1: Ma
-04	D	TD sensor (Vt) upper limit error 1: Ye
		The machine detects that Vt (TD sensor output, SP3-210-001) is higher than the upper limit threshold (specified in SP3-211-002) for the specified consecutive times in SP3-211-003. TD sensor connector is disconnected

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		To check if the issue is resolved: 1. Cycle the power off/on. 2. Feed one sheet of paper. 3. Check Vt with SP3-210-001 through -004. 4. Check if Vt is higher than the upper threshold (specified in SP3-211-002). Incorrect: Vt is higher than the upper threshold Correct: Vt is equal to or lower than the upper threshold Troubleshooting procedure: 1. Check all the connectors are firmly connected. If not, reconnect the connectors. Check if the SC reoccurs by cycling the power off/on. If the SC reoccurs, go to the next step. 2. Check the development unit (e.g. Gear/harness disconnected? Heat protection seal removed? Using an old PCPU?). If not good, replace the PCPU. If the SC reoccurs, go to the next step. 3. Check the TD sensor. If not good, replace the TD sensor. If the SC reoccurs, go to the next step. 4. Check the parameters (e.g. SP3-030-061 through -064 should be changed from its initial value, but could be not changed due to possible NVRAM clearing). If not good, replace the PCPU and initialize the developer. This corrects the TD sensor settings. 5. Check the toner supply unit, especially if the image density is too low. If the toner bottle is empty, the toner supply route is clogged, and/or the toner supply motor operates incorrectly, then correct the problem. If the SC reoccurs, go to the next step. 6. Check the harness connection. If not good, replace the harness between BiCU and PCPU. 7. Replace the BiCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
362 -01	D	TD sensor (Vt) lower limit error: Bk
-02	D	TD sensor (Vt) lower limit error 1: Cy
-03	D	TD sensor (Vt) lower limit error 1: Ma
-04	D	TD sensor (Vt) lower limit error 1: Ye
		The value of Vt (SP3-210-003) is lower than the threshold (SP3-211-004) for times specified in SP3-211-005.
		TD sensor connector is disconnected.
		- Check the connection of the TD sensor connector. - Check if the TD sensor harness is connected firmly. - Replace the TD sensor if any abnormality is found.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
370 -00	D	ID sensor calibration error
		The reflection light output voltage of the ID sensor (Vsg_reg) is not adjusted within the target range. Upper limit: SP3320-013 (default: 4.5 V) Lower limit: SP3320-014 (default: 3.5 V)
		▪ Disconnected ID sensor connectors ▪ Dirty or defective ID sensor ▪ Defective image transfer belt
		To check if the issue is resolved: ▪ Do Vsg adjustment (SP3-320). ▪ Check the result in SP3-323-001. Correct: The result is "1" Incorrect: The result is not "1" Troubleshooting procedure: 1. Check all the connectors are firmly connected. If not, reconnect the connectors. Check if the SC reoccurs by cycling the power off/on. If the SC reoccurs, go to the next step. 2. Clean the detecting part of the ID sensor  Note ▪ Do not wipe with a dry cloth. (page 3-1 "Maintenance Tables") If the SC reoccurs, go to the next step. 3. Check the ID sensor shutter. If the shutter does not move correctly, replace the shutter solenoid. If the SC reoccurs, go to the next step. 4. Replace the drum and/or ITB if the following is found: Scratches, toner filming, wavy belt, or insufficient cleaning 5. Replace the ID sensor. If the SC reoccurs, go to the next step. 6. Check and connect the related harness if it is disconnected. 7. Replace the BiCU.

6.2.6 SC4XX: IMAGE PROCESSING - 2

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
442 -00	D	Image transfer belt contact motor error
		ITB contact HP sensor cannot detect the sensor feeler condition within a specified time even when the ITB contact motor rotates. ▪ Contact/Release: 5000 msec ▪ Homing: 10000 msec ▪ Sampling interval: 10 msec
		▪ Broken harness or defective connectors ▪ Disconnected connector of image transfer belt contact sensor or motor ▪ Defective image transfer belt contact motor ▪ Image transfer belt unit not installed
		1. Set the ITB unit firmly. 2. Replace the ITB unit. 3. Clean the ITB contact HP sensor. 4. Check the harnesses. 5. Replace the ITB contact HP sensor. 6. Replace the ITB contact motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
491 -00	C	High voltage power: Charge/Development bias output error
		Incorrect PWM signal is detected 10 times for consecutive 20 seconds.
		Hardware related causes: ▪ Contact failure ▪ Loose connector (Controller side) ▪ Grounding, open-circuit in the high voltage route ▪ Arc discharge due to lack of space ▪ Shorted harness (Controller side) ▪ BiCU malfunction (Signal error) ▪ Power pack (Development/Transfer) failure Load related causes: ▪ Short-circuit ▪ Arc discharge due to lack of space ▪ Deteriorated drum (overcurrent) ▪ Condensated drum (overcurrent) ▪ Incorrect gap between drum and charge roller (incorrect PCDU) ▪ PCDU not installed firmly

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		First, cycle the main power off/on to check if this SC occurs again. If this SC reoccurs, do the following: 1. Remove and install the PCDU again to make sure that the PCDU is firmly set. Cycle the main power off/on to check if this SC occurs again. If the SC occurs again, go to the next step. 2. Check if there are scratches on the drum surface. If you can see the internal element of the drum (plain pipe) on the surface, go to the next step, because too much electricity can flow at this point, which caused the SC. 3. Replace the PCDU and cycle the main power off/on to check if this SC occurs again. 4. Reconnect the connector (CN561) on the BiCU and cycle the main power off/on. Be careful not to bend the connector pins when reconnecting. If the SC occurs again, go to the next step. 5. Reconnect the connector (CN801) on the power pack (charge/development) and cycle the main power off/on. If the SC occurs again, go to the next step. 6. Remove and install the power pack (charge/development) again and cycle the main power off/on. Check if the spring near the power pack terminal bends and comes in contact with other contacts. Cycle the main power off/on to check if this SC occurs again. 7. Replace the power pack (charge/development) and cycle the main power off/on to check if the SC occurs again. 8. Replace the BiCU and cycle the main power off/on to check if the SC occurs again. 9. Make sure that the harnesses on the power pack (charge/development) are not shorted. If not good, replace the harness and cycle the main power off/on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
492 -00	C	High voltage power: Transfer bias output error
		Incorrect PWM signal is detected for 200ms.
		Hardware related causes: ▪ Contact failure ▪ Loose connector (Controller side) ▪ Grounding, open-circuit in the high voltage route ▪ Shorted harness (Controller side) ▪ BiCU malfunction (Signal error) ▪ Power pack (Transfer) failure Load related causes: ▪ Increased impedance in the paper transfer roller ▪ Increased impedance in the ITB ▪ Open-circuit ▪ Transfer unit not installed firmly
		▪ This is a logging SC (No action required).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
497 -00	C	Image creation temperature sensor error 1
		The thermistor output of the temperature sensor is not within the prescribed range (more than 0.5 V to less than 3.0 V).
		-
		Cycle the main power off/on to check if this SC occurs again. If this SC reoccurs, do the following: 1. Reconnect all the related connectors, and cycle the main power off/on to check if the SC reoccurs. 2. Replace the image creation temperature sensor, and cycle the main power off/on to check if the SC reoccurs.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
498 -00	C	Temperature/humidity sensor error
		▪ The thermistor output of the temperature sensor is not within the prescribed range (more than 3.0V to less than 0.5V). ▪ The thermistor output of the humidity sensor is not within the prescribed range (2.4V or more).
		▪ Damaged or loose connector ▪ Defective temperature/humidity sensor
		Cycle the main power off/on to check if this SC occurs again. If this SC reoccurs, do the following: 1. Reconnect all the related connectors, and cycle the main power off/on to check if the SC reoccurs. 2. Replace the temperature/humidity sensor, and cycle the main power off/on to check if the SC reoccurs.

6.2.7 SC5XX: PAPER FEED AND FUSING

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
501 -00	B	1st paper tray lift motor malfunction
		This SC occurs if no paper is detected within the prescribed time when the tray is set correctly, and the tray lift motor starts rotating CW or CCW.
		▪ Incorrect/disconnected tray lift motor connector ▪ Loose, disconnected or damaged tray lift sensor connector ▪ An obstruction such as jammed paper scraps blocks the motor operation
		1. Replace the transport motor. 2. Reconnect the connector. 3. Replace the harness. 4. Replace the BiCU (IOB).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
502 -00	B	2nd paper tray lift motor malfunction (optional paper feed unit)
503 -00	B	3rd paper tray lift motor malfunction (optional paper feed unit)
		When the tray is lifted up, the tray lift motor error, or sensor error is detected.
		▪ Tray Lift Motor disconnection or loose harness ▪ Tray Bottom Plate Pressure Sensor disconnection or loose harness ▪ Tray Bottom Plate HP Sensor disconnection or loose harness ▪ Other defective mechanical parts

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		Do the following steps. Cycle the power off/on after doing each step to check if the SC occurs. 1. Reconnect the connector of the Tray Bottom Plate HP Sensor. 2. Reconnect the connector of the Tray Bottom Plate Pressure Sensor. 3. Replace the Lift Lever Encoder, gear encoder for tray lift unit ('rising unit' in the parts catalog), and the tension spring for paper feed. 4. Replace the tray lift motor. 5. Replace the harness. 6. Replace the board in the tray.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
508 -00	B	Bypass bottom plate error
		The signal from the bypass tray HP sensor does not change for 2 seconds after the bypass bottom plate clutch was activated. If this condition occurs three consecutive times, this SC is generated.
		▪ Disconnected or defective connectors of the bypass bottom plate clutch ▪ Disconnected or defective bypass HP sensor ▪ Defective bypass bottom plate detection filler
		1. Check or replace the connectors of the bypass bottom plate clutch. 2. Check or replace the bypass HP sensor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
524 -00	D	Transport motor error
		The machine detects a LOCK signal from Transport motor for 2 seconds when the motor is activated.
		▪ Paper exit unit overload ▪ Defective transport motor
		▪ Replace the paper exit unit. ▪ Replace the transport motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
525 -00	B	Transport motor error: bank 1
		The machine detects a Lock signal from a bank 1 transport motor after the motor turned on.
526 -00	B	Transport motor error: bank 2
		The machine detects a Lock signal from a bank 2 transport motor after the motor turned on.
		▪ Motor overload ▪ Defective motor ▪ Disconnected connectors ▪ Damaged harness
		Do the following steps. Check if the SC reoccurs by cycling the power after each step. 1. Reconnect the connector. 2. Replace the harness. 3. Replace the transport motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
530 -00	D	Fusing heater exhaust fan motor error
531 -00	D	Development cooling fan motor error
532 -00	D	Writing cooling fan motor error
533 -00	D	PSU fan motor error
		The motor lock signal error is detected 50 consecutive times (5 seconds) after the motor lock signal was first detected.
		▪ Defective fan motor ▪ Disconnected or defective harness ▪ Defective BiCU

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		1. Check or replace the harness. 2. Replace the fan motor. 3. Replace the BiCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
540 -00	D	Fusing motor error
		The machine detects a High signal from the fusing motor 20 consecutive times after the motor turned on.
		▪ Motor overload ▪ Defective fusing motor ▪ Shorted +24 fuse on the PSU
		1. Check or replace the harness. 2. Replace the fusing motor. 3. Replace the +24 fuse on the PSU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
541 -01	A	Fusing thermopile error
-11	D	Fusing thermopile error (Low power)
		This SC occurs when the machine detects the value of AD is the prescribed value for 0.2 consecutive seconds after the fusing lamp is activated.
		▪ Broken thermopile ▪ Connector contact failure
		▪ Reconnect the connector between the fusing unit and the BiCU. ▪ Replace the fusing thermopile ▪ Replace the harness between the fusing unit and the BiCU. ▪ Replace the BiCU. ▪ Replace the AC controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
542 -02 -03	A	Fusing thermopile reload error
		- The heating roller temperature does not reach a temperature of 80 degrees C within the prescribed time. - The center temperature of the heating roller does not reach the target reload permit temperature within the prescribed time. - The center temperature of the heating roller does not reach the target temperature after starting the heater control in warm up with low temperature.
		- Dirty or defective thermopile lenses - Defective thermistor - Input voltage out of specification (out of warranty)
		- Check and clean the thermopile lenses. - Check that the fusing thermopile is firmly connected. - Replace the thermopile.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
542 -12	D	Fusing thermopile cannot reload (low power)
		This SC is detected if the temperature does not reach a temperature of 80 degrees C after passing seven seconds when: - The machine starts warming up. - The machine returns from energy saver mode. - The fusing lamp is activated.
-13	D	Fusing thermopile cannot reload (low power)
		This SC is detected if the temperature does not reach the reload permit temperature (center) after passing eight seconds when: - The machine starts warming up. - The machine returns from energy saver mode. - The fusing lamp is activated.
		- Dirty or defective thermopile lenses - Input voltage out of specification (out of warranty) - Fuse blown out.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		1. Check the power supply voltage (change the power cord). 2. Replace the fusing thermostat. 3. Replace the fusing lamp. 4. Replace the fusing thermopile. 5. Replace the BiCU. 6. Replace the AC controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
543 -00	A	Fusing thermopile overheat (software error)
		Fusing thermopile detects a temperature of 240 degrees C or more for 10 seconds after the relay is activated.
		▪ Triac short ▪ IOB failure ▪ BiCU failure
		1. Reconnect the connector between the fusing unit and BiCU. 2. Replace the fusing thermopile. 3. Replace the harness between the fusing unit and BiCU. 4. Replace the BiCU. 5. Replace the AC controller board. 6. Replace the fusing unit (if the problem cannot be resolved).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
544 -00	A	Fusing thermopile overheat (hardware error)
		The fusing thermopile detects a temperature of 250 degrees C.
		▪ Defective BiCU ▪ Defective fusing control system
		Related SC code: SC 543
		1. Replace the BiCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
545 -01	A	Fusing lamp consecutive full power
		The fusing lamp runs at full power for consecutive four seconds after reloading the machine
		▪ Defective thermistor ▪ Broken heater ▪ Thermostat blown out
		1. Check there is paper remaining in the fusing unit. 2. Replace the power cord. 3. Replace the fusing thermostat. 4. Replace the fusing lamp. 5. Replace the fusing thermopile. 6. Replace the AC controller board, or the BiCU.
-11	D	Fusing lamp consecutive full power (low power)
		The fusing lamp runs at full power for consecutive four seconds after reloading the machine
		▪ Defective thermistor ▪ Broken heater ▪ Thermostat blown out.
		1. Check there is paper remaining in the fusing unit. 2. Replace the power cord. 3. Replace the fusing thermostat. 4. Replace the fusing lamp. 5. Replace the fusing thermopile. 6. Replace the AC controller board, or the BiCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
547 -01	D	Zero cross error: fusing lamp relay contact welding
		Zero cross signal is detected when the fusing relay is deactivated. This SC is detected when: ▪ The main power is turned on. ▪ The machine returns from the engine-off mode. ▪ The interlock switch is deactivated.
		▪ Damaged fusing relay ▪ Fusing relay drive circuit failure
		1. Make sure that the harness between the AC controller board and BiCU is firmly connected. 2. Replace the AC controller board. 3. Replace the BiCU.
-02	D	Zero cross error: fusing lamp relay contact defective
		Zero cross signal cannot be detected if the fusing relay is activated. This SC is detected when: ▪ The main power is turned on. ▪ The machine returns from the engine-off mode. ▪ The interlock switch is turned off or on.
		▪ Broken fusing relay (open circuit) ▪ Fusing relay circuit failure ▪ PSU fuse (24VS) worn out
		1. Make sure that the harness between the AC controller board and BiCU is firmly connected. 2. Replace the AC controller board. 3. Replace the BiCU.
-03	D	Zero cross error: low frequencies error
		The frequency of the power source is lower than 44Hz. This SC is detected when the main power is ON.
		▪ Unstable frequency

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		1. Check the frequency is 45Hz or more. If not, the power supply from the wall socket may be the cause. Ask for your supervisor or the electrician in charge at the site. 2. Replace the AC controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
549 -00	D	Fusing Center Low Temperature
		After passing 60 seconds when FGATE is On, thermopile 1 (thermistor 1) detects a temperature of -100 degrees C from the compensated target temperature for consecutive 60 seconds.
		▪ Fusing lamp disconnection during paper passing ▪ Loose connector
		▪ Check the input voltage and replace the power plug. ▪ Replace the fusing thermostat ▪ Replace the fusing lamp. ▪ Replace the fusing thermopile ▪ Replace the AC controller board or BiCU,.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
554 -00	A	Fusing thermistor (NC sensor) detects high temperature (Hard)
		Fusing thermistor (NC sensor) detects the prescribed temperature.
		▪ Shorted triac ▪ IOB failure ▪ BiCU failure ▪ Fusing unit: out of control
		Do the following steps: 1. Reconnect the connector between the fusing unit and the BiCU. 2. Replace the thermistor. 3. Replace the harness between the fusing unit and the BiCU. 4. Replace the BiCU. 5. Replace the AC controller board. ▪ Replace the fusing unit if all the above steps cannot solve the issue.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
557 -00	C	Zero cross frequency error
		The frequency of the power source is 66Hz or more. This SC is detected just after the main power is turned ON.
		▪ Noise (High frequency) ▪ Defective PSU
		1. Check the power supply source. 2. Replace the PSU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
559 -00	A	Consecutive fusing jam
		The paper jam counter for the fusing unit reaches three consecutive times (the fusing exit sensor does not detect the paper).
		Paper jam in the fusing unit.
		- Replace the separation plate. - Replace the gear (fusing unit). - Replace the fusing unit. - Replace the fusing motor. - Replace the gear (mainframe), if damaged.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
561 -01	A	Pressure roller thermistor (center) disconnection
		Pressure roller thermistor (center) detects a temperature of -11 degrees C for 20 consecutive seconds after the fusing lamp is activated when the main power is turned on or during feeding paper or low power.
		- Thermopile disconnection - Loose connector
		- Reconnect the connectors between the fusing drawer connector, the BiCU, and the pressure roller thermistor. - Replace the thermistor. - Replace the fusing unit. - Replace the harnesses between the BiCU and the pressure roller thermistor. - Replace the BiCU. - Replace the AC controller board.
-11	A	Pressure roller thermistor (center) disconnection (low power)
		Pressure roller thermistor (center) detects a temperature of -11 degrees C for 20 consecutive seconds after the fusing lamp is activated when the machine starts, or during feeding paper or in low power.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Thermistor disconnection ▪ Loose connector
		▪ Reconnect the connectors between the fusing drawer connector, the BiCU, and the pressure roller thermistor. ▪ Replace the thermistor. ▪ Replace the fusing unit. ▪ Replace the harnesses between the BiCU and the pressure roller thermistor. ▪ Replace the BiCU. ▪ Replace the AC controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
562 -02	A	Heating roller warm-up error (sensor 3)
		Pressure roller thermistor (Center) detects that the temperature does not reach a temperature of 40 degrees C for 25 consecutive seconds when the main power is turned on.
		▪ Dirty or deformed thermistor ▪ Input voltage out of specification (out of warranty) ▪ Fuse blown out
		▪ Check the input voltage and replace the power plug. ▪ Replace the fusing thermostat. ▪ Replace the fusing lamp. ▪ Replace the thermistor. ▪ Replace the BiCU. ▪ Replace the AC controller board.
-12	A	Pressure roller thermistor (center) cannot be reloaded (low power)
		Pressure roller thermistor (center) detects that the temperature does not reach a temperature of 40 degrees C for 25 consecutive seconds when the main power is turned on.
		▪ Dirty or deformed thermistor ▪ Input voltage out of specification (out of warranty) ▪ Fuse blown out

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Check the input voltage and replace the power plug. ▪ Replace the fusing thermostat. ▪ Replace the fusing lamp. ▪ Replace the thermistor. ▪ Replace the BiCU. ▪ Replace the AC controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
563 -00	A	Pressure roller overheat (software error): Center
		Pressure roller thermistor (center) detects a temperature of 230 degrees C 10 times after the fusing relay is ON.
		▪ Shorted triac ▪ IOB error ▪ BiCU error
		1. Reconnect the connectors between the fusing drawer connector, BiCU, and the pressure roller thermistor. 2. Replace the thermistor. 3. Replace the harnesses between the BiCU and pressure roller thermistor. 4. Replace the BiCU. 5. Replace the fusing unit if all the above steps cannot resolve the issue.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
564 -00	A	Pressure roller overheat (hardware error): Center
		Pressure roller thermistor (center) detects the prescribed temperature.
		▪ Shorted triac ▪ IOB error ▪ BiCU error ▪ Fusing unit: out of control
		1. Reconnect the connectors between the fusing drawer connector, BiCU, and the pressure roller thermistor. 2. Replace the thermistor. 3. Replace the harnesses between the BiCU and pressure roller thermistor. 4. Replace the BiCU. 5. Replace the fusing unit if all the above steps cannot resolve the issue.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
571 -01	A	Pressure roller thermistor (rear) disconnection
		Pressure roller thermistor (Rear) detects a temperature of -11 degrees C or less for 20 consecutive seconds after the fusing lamp is activated in a specified condition.
		▪ Thermistor disconnection ▪ Loose connector
		▪ Reconnect the connectors between the fusing drawer connector, the BiCU, and the pressure roller thermistor. ▪ Replace the thermistor. ▪ Replace the fusing unit. ▪ Replace the harnesses between the BiCU and the pressure roller thermistor. ▪ Replace the BiCU or the AC controller board.

-11	A	Pressure roller thermistor (rear) disconnection (low power)
		Pressure roller thermistor (rear) detects a temperature of -11 degrees C or less for 20 consecutive seconds after the fusing lamp is activated in a specified condition.
		▪ Thermistor disconnection ▪ Loose connector
		▪ Check the input voltage and replace the power plug. ▪ Reconnect the connectors between the fusing drawer connector, the BiCU, and the pressure roller thermistor. ▪ Replace the thermistor. ▪ Replace the fusing unit. ▪ Replace the harnesses between the BiCU and the pressure roller thermistor. ▪ Replace the BiCU or the AC controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
572 -02	A	Pressure roller thermistor (rear) cannot be reloaded
		The machine temperature does not reach a temperature of 50 degrees C when 100 seconds passes after starting a job where the paper width is wider than 206 mm AND is equal to or smaller than 216 mm.
		▪ Dirty or deformed thermistor ▪ Input voltage out of specification (out of warranty) ▪ Fuse blown out
		▪ Check the input voltage and replace the power plug. ▪ Replace the fusing thermostat. ▪ Replace the fusing lamp. ▪ Replace the thermistor. ▪ Replace the BiCU. ▪ Replace the AC controller board.

-12	D	Pressure roller thermistor (rear) cannot be reloaded (low power)
		The machine temperature does not reach a temperature of 50 degrees C when 100 seconds passes after starting a job where the paper width is wider than 206 mm AND is equal or smaller than 216 mm.
		▪ Dirty or deformed thermistor ▪ Input voltage out of specification (out of warranty) ▪ Fuse blown out
		▪ Check the input voltage and replace the power plug. ▪ Replace the fusing thermostat. ▪ Replace the fusing lamp. ▪ Replace the thermistor. ▪ Replace the BiCU. ▪ Replace the AC controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
573 -00	A	Pressure roller overheat (software error): End
		Pressure roller thermistor (rear) detects a temperature of 230 degrees C for 10 consecutive times in a specific machine condition.
		▪ Shorted triac ▪ IOB error ▪ BiCU error
		1. Reconnect the connectors between the fusing drawer connector, the BiCU, and the pressure roller thermistor. 2. Replace the thermistor. 3. Replace the harnesses between the BiCU and the pressure roller thermistor. 4. Replace the BiCU. ▪ Replace the fusing unit if all the above steps cannot resolve the issue.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
574 -00	A	Pressure roller overheat (hardware error): End
		Pressure roller thermistor detects the prescribed temperature.
		▪ Shorted triac ▪ IOB error ▪ BiCU error ▪ Fusing unit: out of control
		1. Reconnect the connectors between the fusing drawer connector, the BiCU, and the pressure roller thermistor. 2. Replace the thermistor. 3. Replace the harnesses between the BiCU and the pressure roller thermistor. 4. Replace the BiCU. ▪ Replace the fusing unit if all the above steps cannot resolve the issue.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
581 -01	A	Fusing thermistor disconnection
-02	A	Shorted fusing thermistor
-11	D	Fusing thermistor disconnection (low power)
-12	D	Shorted fusing thermistor (low power)
		These SCs are detected if the machine detects the prescribed timing when: ▪ The machine starts up. ▪ The machine returns from the energy saver mode. ▪ The machine stays in low power mode.
		▪ Thermopile disconnection (SC581-01) ▪ Shorted fusing thermistor (SC581-02) ▪ Loose connector

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		1. Check the input voltage and replace the power plug (SC581-11/-12). 2. Reconnect the connectors between the fusing unit, fusing drawer connector, and BiCU. 3. Replace the fusing thermistor. 4. Replace the fusing unit. 5. Replace the harnesses between the BiCU and the fusing drawer connector. 6. Replace the BiCU. 7. Replace the AC controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
591 -01	A	Pressure roller thermistor (front) disconnection
-11	D	Pressure roller thermistor (front) disconnection (low power)
		▪ Pressure roller thermistor (front) detects a temperature of -11 degrees C or less for 20 consecutive seconds when the fusing lamp is activated.
		▪ Thermistor disconnection ▪ Loose connector
		▪ Reconnect the connectors between the fusing unit, fusing drawer connector, and BiCU. ▪ Replace the thermistor. ▪ Replace the fusing unit. ▪ Replace the harnesses between the BiCU and the fusing drawer connector. ▪ Replace the BiCU. ▪ Replace the AC controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
592 -02	A	Pressure roller thermistor (front) cannot be reloaded
-12	D	The machine temperature does not reach a temperature of 50 degrees C when 100 seconds passes after starting a job where the paper width is wider than 206 mm AND is equal or smaller than 216 mm.
		▪ Dirty or deformed thermistor ▪ Input voltage out of specification (out of warranty) ▪ Fuse blown out
		▪ Check the input voltage and replace the power plug. ▪ Replace the fusing thermostat ▪ Replace the fusing lamp. ▪ Replace the thermistor. ▪ Replace the BiCU. ▪ Replace the AC controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
593 -00	A	Pressure roller thermistor (front) high temperature (soft)
		Pressure roller thermistor (front) detects a temperature of 230 degrees C for consecutive 10 times when the fusing lamp is activated.
		▪ Shorted triac ▪ IOB error ▪ BCU error
		▪ Reconnect the connectors between the fusing unit, fusing drawer connector, and BiCU. ▪ Replace the thermistor. ▪ Replace the harnesses between the BiCU and the fusing drawer connector. ▪ Replace the BiCU. Replace the fusing unit if all the above steps cannot resolve the issue.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
594 -00	A	Pressure roller thermistor (front) High temperature (hard)
		Pressure roller thermistor (front) detects the prescribed temperature.
		▪ Shorted triac ▪ IOB error ▪ BCU error ▪ Fusing unit: out of control
		▪ Reconnect the connectors between the fusing unit, fusing drawer connector, and BiCU. ▪ Replace the thermistor. ▪ Replace the harnesses between the BiCU and the fusing drawer connector. ▪ Replace the BiCU. Replace the fusing unit if all the above steps cannot resolve the issue.

6.2.8 SC6XX: COMMUNICATION

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
622 -00	D	Paper tray unit communication error
		While the BiCU communicates with an optional unit, an SC code is displayed if one of following conditions occurs. ▪ The IPU receives the break signal which is generated by the peripherals only just after the main switch is turned on. ▪ When the BCU does not receive an OK signal from a peripheral 100ms after sending a command to it. The IPU resends the command. The IPU does not receive an OK signal after sending the command 3 times.
		▪ Cable problems ▪ BiCU problems ▪ PSU problems in the machine ▪ Main board problems in the peripherals
		▪ Replace the controller board for the 1st paper feed tray. ▪ Replace the BiCU. ▪ Replace the IOB. ▪ Set the harness between the mainframe and 1st paper feed tray again.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
623 -00	D	2nd Paper Bank communication error
		This SC is not issued for this machine. When a communication error signal between the 1st paper bank and 2nd paper bank is received.
		▪ Loose or disconnected connector
		▪ Replace the controller board for the 2nd paper feed tray. ▪ Incorrect controller board for 1st paper feed tray: Reconnect the connection harness for 1st and 2nd feed tray.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
632 -00	B	Counter Device Error 1
		After 3 attempts to send a data frame to the optional counter device via the serial communication line, no ACK signal was received within 100 ms.
		Serial line between the optional counter device, the relay board and copier control board is disconnected or damaged.
		▪ Cycle the main power off and on. ▪ Check the serial communication line.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
633 -00	B	Counter Device Error 2
		After communication was established, the controller received the brake signal from the accounting device.
		Serial line between the optional counter device, the relay board and copier control board is disconnected or damaged.
		▪ Cycle the main power off and on. ▪ Check the serial communication line.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
634 -00	B	Counter Device Error 3
		A backup RAM error was returned by the counter device.
		Counter device control board or the backup battery of counter device defective
		▪ Replace the counter device control board. ▪ Replace the backup battery.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
635 -00	B	Counter Device Error 4
		A backup battery error was returned by the counter device.
		Counter device control board or the backup battery of counter device defective
		▪ Replace the counter device control board. ▪ Replace the backup battery.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
636 -02	D	IC Card Error (Version error)
		The version of the expanded authentication module is not correct.
		Incorrect module version
		Install the correct file of the expanded authentication module.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
637 -01	D	Tracking Information notification Error (Tracking application error)
		Tracking information was lost.
		▪ Tracking SDK application error ▪ Internal notification error
		Cycle the main power off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
637 -02	D	Tracking Information notification Error (Management server error)
		Tracking information was lost.
		Communication with tracking management server failed. ▪ Network error ▪ tracking management server error ▪ Tracking SDK application error
		Cycle the main power off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
641 -00	D	Communication Error between Engine and Controller
		Although frame is sent from controller, engine does not reply to it.
		▪ Controller Board soft error ▪ BCU soft error ▪ BCU and controller board connection error
		▪ Cycle the main power off and on. ▪ Check the connection between the BiCU and the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
650 -01	C	Remote Service Modem Communication Error (Dialup authentication failure)
		- An error related to communication (dialup connection, modem board etc.) using the RC Gate Type M was detected or an error that prevents RC Gate operation was detected at power on. - Displayed only when an error is detected while RC Gate is operating. - SC is not issued if an error occurs during RC Gate installation (because it can be referenced using SP).
		- SP settings invalid - Modem connector disconnected - Modem board disconnected - Wireless LAN card disconnected
		Check the following SPs. - SP5-816-156 (Remote Service: Dial Up User Name) - SP5-816-157 (Remote Service: Dial Up Password)

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
650 -04	C	Remote Service Modem Communication Error (dialup failing because of incorrect modem configuration)
		- An error related to communication (dialup connection, modem board etc.) using the RC Gate Type M was detected or an error that prevents RC Gate operation was detected at power on. - Displayed only when an error is detected while RC Gate is operating. - SC is not issued if an error occurs during RC Gate installation (because it can be referenced using SP).
		- SP settings invalid - Modem connector disconnected - Modem board disconnected - Wireless LAN card disconnected
		Software bug.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
650 -05	C	Remote Service Modem Communication Error (insufficient current or connection fault)
		▪ An error related to communication (dialup connection, modem board etc.) using the RC Gate Type M was detected or an error that prevents RC Gate operation was detected at power on. ▪ Displayed only when an error is detected while RC Gate is operating. ▪ SC is not issued if an error occurs during RC Gate installation (because it can be referenced using SP).
		▪ SP settings invalid ▪ Modem connector disconnected ▪ Modem board disconnected ▪ Wireless LAN card disconnected
		The line is not supported and nothing can be done.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
650 -13	C	Remote Service Modem Communication Error (RC Gate Type M was installed but modem is not present (detected during operation))
		▪ An error related to communication (dialup connection, modem board etc.) using the RC Gate Type M was detected or an error that prevents RC Gate operation was detected at power on. ▪ Displayed only when an error is detected while RC Gate is operating. ▪ SC is not issued if an error occurs during RC Gate installation (because this error can be referred by using SP).
		▪ SP settings invalid ▪ Modem connector disconnected ▪ Modem board disconnected ▪ Wireless LAN card disconnected
		▪ If a modem board is not installed, install it. ▪ Check again if the modem driver configurations (SP5-816-160, SP5-816-165 to 171, and SP5-816-165 to 171) are correct. ▪ If the problem is not solved, replace the modem.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
650 -14	C	Remote Service Modem Communication Error (RC Gate Type N was installed but modem is present or wired/wireless LAN is not working correctly)
		▪ An error related to communication (dialup connection, modem board etc.) using the RC Gate was detected or an error that prevents RC Gate operation was detected at power on. ▪ Displayed only when an error is detected while RC Gate is operating. ▪ SC is not issued if an error occurs during RC Gate installation (because this error can be referred by using SP).
		▪ SP settings invalid ▪ Modem connector disconnected ▪ Modem board disconnected ▪ Wireless LAN card disconnected
		▪ If a modem board is attached, remove it. ▪ Check if wired/wireless LAN works.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
651 -01	C	Illegal Remote Service Dial-up (Chat program parameter error)
		An unexpected error occurred when RC Gate Type M dialed up the NRS Center.
		Software bug
		Logging only.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
651-02	C	Illegal Remote Service Dial-up (Chat program execution error)
		An unexpected error occurred when RC Gate dialed up the NRS Center.
		Software bug
		Logging only.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
652-00	A	Remote service ID2 mismatching
		There was an authentication mismatch between ID2 for @Remote, the controller board, and NVRAM.
		▪ Used controller board installed ▪ Used NVRAM installed (such action is not allowed.)
		▪ If this occurs during RC Gate installation: Check the validity of the certificate and the NVRAM, check the machine serial number, write the common certificate, and then begin installation again. ▪ If this occurs after RC Gate installation: Clear the RC Gate install status, check the validity of the certificate and the NVRAM, check the machine serial number, write the common certificate, and then begin installation again.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
653 -00	A	Incorrect remote service ID2
		ID2 stored in the NVRAM has either of the following problems. ▪ Number of characters is not 17. ▪ Includes a character that cannot be printed. ▪ All spaces ▪ NULL
		Replace the NVRAM.
		Clear the RC Gate install status, write the common certificate, and then begin installation again.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
664 -01	-	ASIC – SRAM Communication error
		▪ When the machine starts or returns from the energy saver mode, a connection error signal between ASIC and SRAM device is detected.
		▪ Defective BiCU
		▪ Cycle the power off/on. ▪ Replace the BiCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
665 -05	-	Master control signal connection error
-06	-	IPU/IOB control signal connection error
-07	-	IPU control signal connection error
-11	D	ASIC connection error
-21	D	ASIC connection error
-31	D	ASIC connection error
		When the machine starts or returns from the energy saver mode, a connection error signal between CPU and slave device is detected, or the machine cannot access all I/O IPU-ASICs correctly. SC665-11 through -031: When the machine starts or returns from the energy saver mode, a connection error between CPU and ASIC is detected. 1. Incorrect FFC connection 2. Damaged FFC (disconnection or dust) 3. BiCU failure (Deteriorated board, sticking dust, or damaged parts) ▪ Cycle the power off/on. ▪ Replace the BiCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
667 -01	D	Master device mode setting error When the machine starts or returns from the energy saver mode, a CPU mode setting error is detected. ▪ BiCU failure ▪ Cycle the power off/on. ▪ Replace the BiCU.
-10	D	Slave device 1 mode setting error

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		When the machine starts or returns from the energy saver mode, an error in the slave device 1 is detected.
		▪ BiCU failure
		▪ Cycle the power off/on. ▪ Replace the BiCU.
-20	D	ASIC operation mode setting error
		-
		▪ BiCU failure
		▪ Cycle the power off/on. ▪ Replace the BiCU.

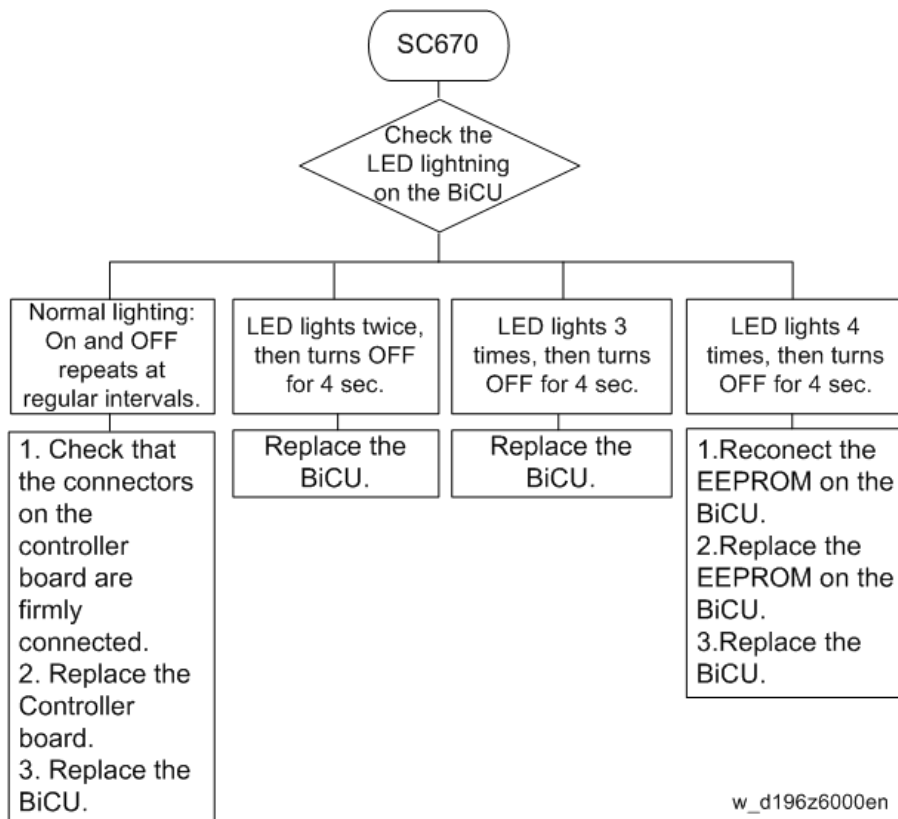
No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
669 -00	D	EEPROM error
		The TD sensor cannot be recovered after retrying three times for EEPROM communication error.
		▪ Corrupted data due to noise ▪ Incorrect EEPROM installation ▪ Defective EEPROM ▪ Defective BiCU
		1. Cycle the main power off/on. 2. Turn the main power off and re-insert the EEPROM, then turn the main power on. 3. Turn the main power off and replace the EEPROM, then turn the main power on. 4. Turn the main power off and replace the BiCU, then turn the main power on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
670 -00	D	Engine start up error (* Refer to “When SC670 Is Displayed” below)
		Case 1 ▪ /ENGRDY signal was not asserted when the machine was turned on or returned from energy saver mode. ▪ /IPURDY signal was not asserted when the machine was turned on or returned from energy saver mode. ▪ EC response was not received within specified time from power on. ▪ PC response was not received within specified time from power on. ▪ SC response was not received within specified time from power on. ▪ Writing to Rapi driver failed (the other party not found through PCI). Case 2 ▪ Unexpected down status was detected after /ENGRDY assertion.
		Case 1 ▪ Engine board does not start up. Case 2 ▪ Engine board reset unexpectedly.
		Check the connection between the engine board and the controller board. ▪ If it is always reproduced, replace the engine board. If the problem persists, consider replacing the controller board or other boards between them. ▪ If reproducibility is low, multiple causes are to be considered, such as software, engine board, controller board, and PSU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
670 -01	D	Engine start up error when main power switch on (* Refer to “When SC670 Is Displayed” below)
		▪ /ENGRDY signal was not asserted when the machine was turned on or returned from energy saver mode. ▪ EC response was not received within specified time from power on. ▪ PC response was not received within specified time from power on. ▪ SC response was not received within specified time from power on. ▪ Writing to Rapi driver failed (the other party not found through PCI).
		▪ Engine board does not start up.
		Check the connection between the engine board and the controller board. ▪ If it is always reproduced, replace the engine board. If the problem persists, consider replacing the controller board or other boards between them. ▪ If reproducibility is low, multiple causes are to be considered, such as software, engine board, controller board, and PSU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
670 -02	D	Engine is down when machine starts up (SC reboot can not be performed) (* See “When SC670 Is Displayed” below)
		Machine-down was detected after the /ENGRDY signal was not asserted.
		The engine board was reset at an unexpected time
		Check the connection between the engine board and the controller board. ▪ If it is always reproduced, replace the engine board. If the problem persists, consider replacing the controller board or other boards between them. ▪ If reproducibility is low, multiple causes are to be considered, such as software, engine board, controller board, and PSU.

When SC670 is Displayed



No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
672 -00	D	Controller start up error
		After the machine was powered on, communication between the controller and the operation panel was not established.
		▪ Controller stalled ▪ Board installed incorrectly ▪ Controller board defective ▪ Operation panel connector loose, broken or defective ▪ Controller late
		▪ Cycle the main power off and on. ▪ Check the connection of the controller board. ▪ Replace the controller board. ▪ Check the control panel harness.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
672 -10	D	Controller start up error
		After the machine was powered on, communication between the controller and the operation panel was not established.
		▪ Controller stalled ▪ Board installed incorrectly ▪ Controller board defective ▪ Operation panel connector loose, broken or defective ▪ Controller late
		▪ Cycle the main power off and on. ▪ Check the connection of the controller board. ▪ Replace the controller board. ▪ Check the control panel harness.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
672 -11	D	Controller start up error
		After the machine was powered on, communication between the controller and the operation panel was not established, or communication with controller was interrupted after a normal startup.
		▪ Controller stalled ▪ Board installed incorrectly ▪ Controller board defective ▪ Operation panel connector loose, broken or defective ▪ Controller late ▪ Incorrect Dip Switch Setting on Smart Operation Panel
		▪ Cycle the main power off and on. ▪ Check the connection of the controller board. ▪ Replace the controller board. ▪ Check the control panel harness. ▪ Make sure that only DIP switch number 3 is ON.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
672 -12	D	Controller start up error
		Communication with controller was interrupted after a normal startup.
		▪ Controller stalled ▪ Board installed incorrectly ▪ Controller board defective ▪ Operation panel connector loose, broken or defective ▪ Controller late
		▪ Cycle the main power off and on. ▪ Check the connection of the controller board. ▪ Replace the controller board. ▪ Check the control panel harness.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
672 -13	D	Controller start up error
		The operation panel detects that the controller is down due to other reason shown in SC672-10, SC672-11, and SC672-12.
		▪ Controller stalled ▪ Board installed incorrectly ▪ Controller board defective ▪ Operation panel connector loose, broken or defective ▪ Controller late
		▪ Cycle the main power off and on. ▪ Check the connection of the controller board. ▪ Replace the controller board. ▪ Check the control panel harness.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
672 -99	D	Controller start up error
		The operation panel software ended abnormally.
		▪ Controller stalled ▪ Board installed incorrectly ▪ Controller board defective ▪ Operation panel connector loose, broken or defective ▪ Controller late
		▪ Cycle the main power off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
673 -10	D	Operation panel Flair communication error (Smart Operation Panel)
		This SC is issued only for the machine that has the Smart Operation Panel installed. ▪ Communication between Smart Operation Panel and main machine (this is called "Flair communication") is not sent to Smart Operation Panel. ▪ SP setting (SP5-748-201) for Smart Operation Panel is not activated.
		The CATS module (controller) did not see the response to notification of monitoring service module (operation panel)
		▪ Cycle the main power off and on. ▪ Set SP5-748-201 to "1: Connect" if the value is "0: Not connect"

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
681 _**	D	Toner bottle: IDChip Communication error
		▪ Corrupted ID data ▪ Disconnected ID chip ▪ No ID chip ▪ Noise
		▪ Clean the ID chip. ▪ Replace the communication board on the toner bottle. ▪ Replace the toner bottle. ▪ Cycle the power off/on. ▪ Replace the BiCU.

SC681 Details

No.	Detail	Causes
681	01 - 04	Invalid device ID
	06 - 09	Channel error
	11 - 14	Device Error
	16 - 19	Communication error (interrupted)
	21 - 24	Communication timeout
	26 - 29	Device stops (logically)
	31 - 34	Full of buffer (request)
	36 - 39	Verification error

 Note

- **If the last digit of the SC's branch number (-**) is:**

1 or 6, then do the above steps for K

2 or 7, then do the above steps for M

3 or 8, then do the above steps for C

4 or 9, then do the above steps for Y

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
682 _**	D	TD sensor communication error
		TD sensor cannot be recovered after retrying three times for an ID chip communication error.
		▪ Corrupted ID data ▪ Disconnected ID chip ▪ No ID chip ▪ Noise
		Turn the main power off, and then do the following. 1. Remove the PCU and check the connector condition. 2. Re-insert the harness (BiCU side) between the BiCU and the TD sensor. 3. Replace the PCDU (if the TD sensor works incorrectly) 4. Replace the harness between the BiCU and the TD sensor. 5. Replace the BiCU. Check the SC's branch number (-** part) and do the above steps for the corresponding color.  Note ▪ If the last digit of the SC's branch number (-**) is: 1 or 6, then do the above steps for K 2 or 7, then do the above steps for M 3 or 8, then do the above steps for C 4 or 9, then do the above steps for Y

SC682 Details

No.		Description	Cause
682	01 - 04	Invalid device ID	Noise, Incorrect connection, Malfunction
	06 - 09	Channel error	Noise, Incorrect connection, Malfunction
	11 - 14	Device Error	Noise, Incorrect connection
	16 - 19	Communication error (interrupted)	Noise, Incorrect connection
	21 - 24	Communication timeout	Noise, Incorrect connection, Malfunction
	26 - 29	Device stops (logically)	Noise, Incorrect connection, Malfunction
	31 - 34	Full of buffer (request)	Noise, Incorrect connection, Malfunction
	36 - 39	Verification error	Noise, Incorrect connection
	51	Verification error (during storing to EEPROM)	Noise
	52	Verification error (SRAM)	Noise

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
687 -00	D	Memory address (PER) command error
		The BiCU does not receive a memory address command from the controller 120 seconds after paper is in the position for registration.
		▪ Loose connection ▪ Defective controller ▪ Defective BiCU
		1. Check if the controller is firmly connected to the BiCU. 2. Replace the controller 3. Replace the BiCU

6.2.9 SC7XX: PERIPHERALS

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
790 -00	D	Too many paper tray units
		An attachment identification code is other than "01H" or "02H".
		▪ Number of paper tray units is more than the machine specification.
		1. Reduce the number of paper tray units within the machine specification.

6.2.10 SC8XX: OVERALL SYSTEM

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
816 _**	[0x0000]	Energy save I/O subsystem error
-01	D	Subsystem error
-02	D	Sysarch (LPUX_GET_PORT_INFO) error
-03	D	Transition to STR was denied.
-04	D	Interrupt in kernel communication driver
-05	D	Preparation for transition to STR failed.
-07	D	Sysarch (LPUX_GET_PORT_INFO) error
-08	D	Sysarch (LPUX_ENGINE_TIMERCTRL) error
-09	D	Sysarch (LPUX_RETURN_FACTOR_STR) error
-10 to 12	D	Sysarch (LPUX_GET_PORT_INFO) error
-13	D	open() error
-14	D	Memory address error
-15 to 18	D	open() error
-19	D	Double open() error
-20	D	open() error
-22	D	Parameter error
-23, 24	D	read() error
-25	D	write () error
-26 to 28	D	write() communication retry error

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-29, 30	D	read() communication retry error
-35	D	read() error
-36 to 94	D	Subsystem error
		Energy save I/O subsystem detected some abnormality.
		▪ Energy save I/O subsystem defective ▪ Energy save I/O subsystem detected a controller board error (non-response). ▪ Error was detected during preparation for transition to STR.
		▪ Cycle the main power off and on. ▪ Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
817 -00	B	Monitor error: File detection / Digital signature error
		▪ Bootloader cannot read any of diagnostic module, kernel, or root filesystem. ▪ In a bootloader SD card, the digital signature checking for any of diagnostic module, kernel, or root filesystem is failed.
		▪ Any of the following items does not exist or is broken OS Flash ROM, Diagnostic module in SD card, Kernel, Root filesystem ▪ Any of the following items is revised fraudulently: Diagnostic module in SD card, Kernel, Root filesystem
		▪ ROM update for controller system ▪ Use another booting SD card having a valid digital signature

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
818 -00	D	Watchdog timer error
		The system program fell into a bus-hold state or an endless loop of the program interruption occurred, causing other process to stop.
		▪ System program defective ▪ Controller board defective ▪ Optional board defective
		▪ Cycle the main power off and on. ▪ Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
819 -00	D	Kernel halt error [xxxx]: Detailed error code
		Due to a control error, a RAM overflow occurred during system processing. One of the following messages was displayed on the operation panel.
	[0x5032]	HAIC-P2 error
		HAIC-P2 decompression error (An error occurred in the ASIC compression/decompression module.)
		▪ The code data saved in the HDD was broken for an unexpected reason. (HDD device defective) ▪ The code data saved to memory was broken for an unexpected reason. (Memory device defective) ▪ ASIC defective ▪ Data other than code data was unzipped due to a software malfunction.
		▪ Cycle the main power off and on. ▪ Replace the HDD. ▪ Replace the memory ▪ Replace the controller board. ▪ Fix the software

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
	[0x6261]	HDD defective
		Received file system data was broken even if the initialization succeeds and there was no error reply from the HDD.
		Power supply disconnection during data writing to the HDD.
		Replace the HDD. This SC may occur when turning on the machine for the first time with a new HDD. In this case, turn the main power off/on.
	[0x696e]	gwinit processing end
		If the SCS process is ended for some reason
		If an unexpected error occurs at SCS processing end, gwint processing also halts (this result is judged a kernel stop error, by gwinit specification) "0x69742064" -> "init died"
		Cycle the main power off and on.
	[0x766d]	VM full error
		Occurs when too much RAM is used during system processing
		"vm_pageout: VM is full"
		Cycle the main power off and on.
	Console string	Other error (characters on operation panel)
		System detected internal mismatch error
		- Software defective - Insufficient memory - Hardware driver defective (RAM, flash memory)
		- Replace with a larger capacity RAM, or flash memory. - Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	C	Self-diagnostics error: CPU [XXXX]: Detailed error code
	[0001]	TLB change (store) exception error
	[0002]	TLB miss (load) exception error
	[0003]	TLB miss (store) exception error
	[0004]	Read address exception error
	[0005]	Write address exception error
	[0006]	Instruction bus exception error
	[0007]	Data bus exception error
	[0008]	System call exception error
	[0009]	Break exception error
	[000A]	Invalid instruction exception error
	[000B]	Co-processor exception error
	[000C]	Overflow exception error
	[000D]	UTLB miss exception error
	[0010]	Interrupt line 0 error
	[0011]	Interrupt line 1 error
	[0012]	Interrupt line 2 error
	[0013]	Interrupt line 3 error
	[0014]	Interrupt line 4 error
	[0015]	Interrupt line 5 error
		Unexpected exception or interrupt occurred
		▪ CPU device error ▪ The boot monitor program or self-diagnostic program is broken.
		▪ Replace the controller board ▪ Reinstall the controller system software.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	C	Self-diagnostics error: CPU [XXXX]: Detailed error code
	[00FF]	Uninitialized interrupt error
		Cache error (such as a parity error) occurred.
		▪ CPU device error ▪ Local bus defective
		▪ Cycle the main power off and on. ▪ Reinstall the controller system software. ▪ Replace the controller board ▪ Replace the peripherals.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	C	Self-diagnostics error: CPU [XXXX]: Detailed error code
	[0601]	Read address exception error
	[0602]	Write address exception error
	[0605]	System call exception error
	[0606]	Break exception error
	[0607]	Invalid instruction exception error
	[0609]	Overflow exception error
		Exception does not occur though executing exception by intention.
		CPU device error
		Replace the controller board

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	C	Self-diagnostics error: CPU [XXXX]: Detailed error code
	[060A]	Interrupt line 0 mask exception error
	[060B]	Interrupt line 1 mask exception error
	[060C]	Interrupt line 2 mask exception error
	[060D]	Interrupt line 3 mask exception error
	[060E]	Interrupt line 4 mask exception error
		Interrupt does not occur though setting interrupt by timer.
		▪ CPU device error ▪ ASIC device error
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	C	Self-diagnostics error: CPU [XXXX]: Detailed error code
	[0610]	CPU interrupt timer 2 set error
		Interrupt does not occur though setting interrupt by CPU interrupt timer.
		CPU device error
		Replace the controller board

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	C	Self-diagnostics error: CPU [XXXX]: Detailed error code
		[0612] ASIC interrupt error
		Interrupt occurs in an ASIC.
		- ASIC device error - Peripherals device error
		- Replace the controller board - Replace the peripherals

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	C	Self-diagnostics error: CPU [XXXX]: Detailed error code
		[06FF] CPU master clock error
		Pipeline clock frequency ratio of CPU is different from specified value.
		- CPU device error - Module bit that initializes the CPU is defective
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	D	Self-diagnostics error: CPU [XXXX]: Detailed error code
		[0701] Instruction cache capacity error
		The CPU cannot read the instruction cache stored in the primary cache.
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No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	D	Self-diagnostics error: CPU [XXXX]: Detailed error code
		[0702] Instruction cache error
		The program executed in the instruction cache result was different from expected.
		▪ CPU cache defective ▪ Memory too slow
		▪ Replace the controller board ▪ Replace the memory device.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	D	Self-diagnostics error: CPU [XXXX]: Detailed error code
		[0703] Instruction uncache error
		[0704] Instruction cache hit error
		[0705] Instruction cache clear error
		Data in the instruction cache which is set in the primary instruction cache of the CPU is different from the contents of the pre-set
		-
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No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	D	Self-diagnostics error: CPU [XXXX]: Detailed error code
		[0706] Data cache capacity error
		[0707] Data cache error
		[0708] Data uncache error
		Data in the data cache which is set in the primary data cache of the CPU is different from the contents of the pre-set
		-
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No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	D	Self-diagnostics error: CPU [XXXX]: Detailed error code
		[0709] Data cache hit error
		[070A] Data cache clear error
		In spite of writing data only in the cache area, data is updated in the non-cache area
		CPU device error
		- Replace the controller board - Replace the memory device.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	D	Self-diagnostics error: CPU [XXXX]: Detailed error code
		[0801] TLB virtual address error
		[0804] TLB global error
		[0807] UTLB miss error
		[0808] TLB read miss error
		[0809] TLB write miss error
		[080A] TLB modify error
		Error occurred during TLB checking.
		CPU device error
		Replace the controller board

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820 -00	D	Self-diagnostics error: CPU [XXXX]: Detailed error code
		[4002] Single precision arithmetic error
		[4003] Double precision arithmetic error
		[4004] Exception error
		[4005] Exception mask error
		Error occurred during a calculation with the co-processor in the CPU.
		CPU device error
		Replace the controller board

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
821 -00	D	Self-diagnostics error: ASIC [xxxx]: Detailed error code
	[0B00]	ASIC register check error
		The write-&-verify check has occurred in the ASIC.
		Defective ASIC device
		Replace the controller board.
	[0B06]	ASIC detection error
		Error in the I/O ASIC for system control detection
		- Defective ASIC - Defective North Bridge and PCII/F
		Replace the controller board.
	[0D05]	Comparison error of CPU and ASIC timer
		The CPU checks if the ASIC timer works correctly compared with the CPU timer. If the ASIC timer does not function in the specified range, this SC code is displayed.
		- Defective ASIC timer device - Defective CPU device
		Replace the controller board.
	[50A1]	Video bridge device detection error
		Video bridge device is not detected.
		- Video bridge device ASIC (HARP or KLAVIER) defective. - Connection error between PCI I / F of the controller ASIC and video bridge device ASIC.
		Replace the controller board
	[50A2]	Video bridge device (ASIC) register error
		The CPU detects the video bridge device, but detects error data from the video bridge device.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		Defective I/F between the video bridge device and the controller
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
822 -00	D	Self-diagnostic error: HDD [xxxx]: Detailed error code
		[3003] HDD timeout
	[3003]	Check performed only when HDD is installed:
		▪ HDD device busy for over 31sec. ▪ After a diagnostic command is set for the HDD, but the device remains busy for over 6sec.
		▪ HDD defective ▪ HDD harness disconnected, defective ▪ Controller board defective
		▪ Replace the HDD. ▪ Replace the HDD connector. ▪ Replace the controller board.
	[3004]	Diagnostic command error
		No response to the self-diagnostic command from the ASIC to the HDD.
		HDD defective
		Replace the HDD.
	[3013]	HDD timeout (first machine)
		HDD device busy for over 31 seconds. A diagnostic command is set for the HDD, but the device remains busy for over 6 seconds.
		▪ Defective HDD device ▪ Defective HDD connector ▪ Defective ASIC device

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
	[3014]	- Replace or remove the HDD device. - Replace the HDD connector - Replace the controller board
		Diagnostics command error (First machine)
		Result of the issuance of diagnostic command is error.
		Defective HDD device
		Replace the HDD device.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
823 -00	B	Self-diagnostics error: NIC [XXXX]: Detailed error code
		[6101] MAC address check sum error
		The result of the MAC address check sum does not match the check sum stored in ROM.
		- Defective SEEP ROM - Defective I2C bus (connection)
		Replace the controller board.
		[6104] PHY IC error
		The PHY IC on the controller cannot be correctly recognized.
		- Defective PHY chip - Defective ASIC MII I/F
		Replace the controller board.
		[6105] PHY IC loop-back error
		An error occurred during the loop-back test for the PHY IC on the controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		- PHY chip - Defective MAC of ASIC (SIMAC/COMIC/CELLO) - Defective I/F with the PHY board - Defective solder on the PHY board
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
824 -00	C	Self-diagnostics error: NVRAM (resident) [XXXX]: Detailed error code
	[1401]	NVRAM verify error
		NVRAM device is missing or NVRAM device is damaged.
		- The NVRAM device is missing. - The NVRAM device is damaged. - NVRAM backup battery exhausted - NVRAM socket damaged
		Replace the NVRAM device.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
827 -00	D	Self-diagnostic error: RAM [XXXX]: Detailed error code
	[0201]	Resident memory verification error
		Error detected during a write/verify check for the standard RAM*1 on controller board. *1 Standard RAM on controller (2GB) in this machine is divided into the resident RAM (1GB) and the optional RAM (1GB).
		Defective memory device (on the controller board).
		Replace the controller board.
	[0202]	Resident memory structure error
		The SPD values in all RAM DIMM are incorrect or unreadable.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		- Defective RAM DIMM - Defective SPD ROM on RAM DIMM - Defective 12C bus
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
828 -00	D	Self-diagnostic error: ROM [xxxx]: Detailed error code
	[0101]	Check sum error 1
		The boot monitor and OS program stored in the ROM DIMM is checked. If the check sum of the program is incorrect, this SC code is displayed.
		- Defective flash ROM device - Defective CPU device
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
829 -00	D	Self-diagnostic error: Optional RAM [XXXX]: Detailed error code
	[0401]	Optional RAM1: verify error
		In this machine, the standard RAM on the controller (2GB) is divided into the resident RAM (1GB) and the optional RAM (1GB).
		Defective memory device (on the controller board).
		Replace the controller board.
	[0402]	Optional RAM1: structure error
		Every time the main power turns on, structures of the optional RAM are checked. If an error is detected at this time, the self-diagnostic module will not check the optional RAM.
		-

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
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No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
833 -00	D	Self-diagnostic error: Engine I/F ASIC [XXXX]: Detailed error code
	[0F30]	Engine I/F ASIC detection error
		ASIC (Mandolin) for engine control could not be detected.
		ASIC (Mandolin) error
		Replace the Engine I/F board (mother board).
	[50B1]	Video device: clock generator detection error
		Could not initialize or read the bus connection.
		▪ Defective connection bus ▪ Defective SSCG
		Replace the Engine I/F board (mother board).
	[50B2]	Video device: clock generator verify error
		Value of the SSCG register is incorrect.
		▪ Defective connection bus ▪ Defective SSCG
		Replace the Engine I/F board (mother board).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
834 -00	D	Self-diagnostic error: Optional memory
	[5101]	Engine I/F optional memory verify error
		An error occurs after write/verify check for optional RAM on the engine I/F board (mother board).
		Defective memory device
		Replace the Engine I/F board (mother board).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
835 -00	B	Self-diagnostic error: Centronic device [xxxx]: Detailed error code
		[1102] Verify error
		The loopback connector is connected but check results is an error.
		▪ IEEE1284 connector error ▪ Centronic loopback connector defective
		Replace the controller board.
		[110C] DMA verify error
		The loopback connector is connected but check results is an error.
		▪ ASIC device error ▪ IEEE1284 connector error ▪ Centronic loopback connector is defective
		Replace the controller board.
		[1120] Loopback connector not detected
		Centronic loopback connector is not connected for detailed self-diagnostic test.
		▪ Centronic loopback connector not connected correctly ▪ Centronic loopback connector is defective ▪ ASIC device is defective
		▪ Connect the centronic loopback connector ▪ Replace the centronic loopback connector ▪ Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
838 -00	C	Self-diagnostic Error: Clock Generator [xxxx]: Detailed error code
		[2701] Verify error
		A verify error occurred when setting data was read from the clock generator via the I2C bus.
		▪ Defective clock generator ▪ Defective I2C bus ▪ Defective I2C port on the CPU
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
839 -00	D	Self-diagnostic Error: Serial Flash [xxxx]: Detailed error code
		[9001] Serial Flash access error
		USB NAND Flash ROM cannot be read.
		Defective controller board
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
840 -00	D	EEPROM access error
		▪ During the I/O processing, a reading error occurred. The 3rd reading failure causes this SC code. ▪ During the I/O processing, a writing error occurred.
		▪ Defective EEPROM
		-

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
841 -00	D	EEPROM read data error
		Mirrored data of the EEPROM is different from the original data in EEPROM.
		Data in the EEPROM is overwritten for some reason.
		-

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
842 -01	D	Insufficient Nand-Flash blocks (threshold exceeded)
		At startup, or when machine returned from low power mode, the Nand-Flash status was read and judged that the number of unusable blocks had exceeded threshold, and then SCS generated the SC code.
		Number of unusable blocks exceeded threshold for Nand-Flash
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
842 -02	D	Number of Nand-Flash block deletions exceeded
		At startup, or when the machined returned from low power mode, the Nand-Flash was read and judged that the number of deleted blocks had exceeded threshold, and then SCS generated this SC code.
		Number of blocks deleted exceeded threshold for Nand-Flash
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
853 -00	B	Bluetooth device connection error
		The Bluetooth hardware (USB type) was connected after the machine was turned on.
		The Bluetooth hardware (USB type) was connected after the machine was turned on.
		Always connect the Bluetooth device (USB type) before the machine is turned on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
854 -00	B	Bluetooth device disconnected
		The Bluetooth hardware (USB type) was disconnected after the machine was turned on.
		The Bluetooth hardware (USB type) was disconnected after the machine was turned on.
		Never remove Bluetooth (USB type) after machine starts

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
855 -01	B	Wireless LAN board error (driver attachment failure)
		Wireless LAN board error (wireless LAN card: 802.11 is covered)
		▪ Defective wireless LAN board ▪ Loose connection
		▪ Cycle the main power off and on. ▪ Replace wireless LAN board

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
855 -02	B	Wireless LAN board error (driver initialization failure)
		Wireless LAN board error (wireless LAN card: 802.11 is covered)
		▪ Defective wireless LAN board ▪ Loose connection
		▪ Cycle the main power off and on. ▪ Replace wireless LAN board

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
857 -00	B	USB I/F Error
		The USB interface is unusable because of a driver error.
		USB driver error (There are three causes of USB error: RX error/CRC error/STALL. SC is issued only in the case of STALL.)
		▪ Check USB connection. ▪ Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
858 -00	A	Data encryption conversion error (Key Setting Error)
		A serious error occurred during an attempt to update the encryption key.
		▪ USB Flash, other data, corrupted ▪ Communication error caused by electrostatic noise ▪ Controller board defective
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
858 -01	A	Data encryption conversion error (HDD Key Setting Error)
		A serious error occurred during an attempt to update the encryption key.
		▪ USB Flash, other data, corrupted ▪ Communication error caused by electrostatic noise ▪ Controller board defective
		▪ Cycle the main power off and on ▪ If the error persists, replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
858 -02	A	Data encryption conversion error (NVRAM Read/Write Error)
		A serious error occurred after data conversion during an attempt to update the encryption key.
		NVRAM defective
		▪ Replace the NVRAM. ▪ Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
858 -30	A	Data encryption conversion error (NVRAM Before Replace Error)
		A serious error occurred after data conversion during an attempt to update the encryption key.
		Software error such as conversion parameters being invalid.
		▪ Cycle the main power off and on. ▪ If the error persists, replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
858 -31	A	Data encryption conversion error (Other Error)
		A serious error occurred after data conversion during an attempt to update the encryption key.
		Controller board defective
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
859 -00	B	Data encryption conversion HDD conversion error
		When the data encryption key was updated, HDD data was converted, but not correctly. Image displayed at conversion only (this SC is not displayed), but SC is displayed after machine is cycled off/on.
		▪ HDD conversion was set with the data encryption key update function, but the HDD was removed. ▪ Machine lost power during data encryption key update ▪ Electrostatic noise, or an HDD error occurred, during data encryption key update, and data was not encrypted.
		▪ Check HDD connection. ▪ Format the HDD. ▪ If there is a problem with the HDD, it has to be replaced.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
859 -01	B	Data encryption conversion HDD conversion error (HDD check error)
		When the data encryption key was updated, HDD data was converted, but not correctly. Image displayed at conversion only (this SC is not displayed), but SC is displayed after machine is cycled off/on.
		▪ HDD conversion was set with the data encryption key update function, but the HDD was removed. ▪ Machine lost power during data encryption key update ▪ Electrostatic noise, or an HDD error occurred, during data encryption key update, and data was not encrypted.
		▪ Check HDD connection. ▪ Format the HDD. ▪ If there is a problem with the HDD, it has to be replaced.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
859 -02	B	Data encryption conversion HDD conversion error (Power failure during conversion)
		When the data encryption key was updated, HDD data was converted, but not correctly. Image displayed at conversion only (this SC is not displayed), but SC is displayed after machine is cycled off/on. Details: NVRAM/HDD conversion is incomplete.
		Power failure occurred during encryption key update.
		None The display after restart instructs the user to format the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
859 -10	B	Data encryption conversion HDD conversion error (Data read/write command error)
		When the data encryption key was updated, HDD data was converted, but not correctly. Image displayed at conversion only (this SC is not displayed), but SC is displayed after machine is cycled off/on. Details: Abnormal DMAC return value has been received two or more times (DMAC timeout, serial communication error etc.)
		HDD was not successfully converted during encryption key update due to HDD errors or cable noises.
		▪ Check HDD connection. ▪ Format the HDD. ▪ If there is a problem with the HDD, it has to be replaced.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
860 -00	B	HDD startup error at main power on (HDD error)
		▪ The HDD is connected but the driver detected the following errors. ▪ SS_NO.T_READY:/* (-2)HDD does not become READY*/ ▪ SS_BAD_LABEL:/* (-4)Wrong partition type*/ ▪ SS_READ_ERROR:/* (-5)Error occurred while reading or checking the label*/ ▪ SS_WRITE_ERROR:/* (-6)Error occurred while writing or checking the label*/ ▪ SS_FS_ERROR:/* (-7)Failed to repair the filesystem*/ ▪ SS_MOUNT_ERROR:/* (-8)Failed to mount the filesystem*/ ▪ SS_COMMAND_ERROR:/* (-9)Drive not responding to command*/ ▪ SS_KERNEL_ERROR:/* (-10)Internal kernel error*/ ▪ SS_SIZE_ERROR:/* (-11)Drive size too small*/ ▪ SS_NO._PARTITION:/* (-12)The specified partition does not exist*/ ▪ SS_NO._FILE:/* (-13)Device file does not exist*/ ▪ Attempted to acquire HDD status through the driver but there has been no response for 30 seconds or more.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Unformatted HDD ▪ Label data corrupted ▪ HDD defective
		Format the HDD through SP mode.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
863 -01	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in an area that does not belong to a partition, such as the disk label area.)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more ▪ The interval is short. ▪ Repeatedly occurs in the same situation (At power-on, etc.). ▪ Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
863 -02 to 23	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "a" (SC863-02) to partition "v" (SC863-23)).
		Guide for when to replace the HDD - When SC863 has occurred ten times or more - The interval is short. - Repeatedly occurs in the same situation (At power-on, etc.). - Startup takes a long time when the main power is turned on. - It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
864 -00	D	HD data CRC error
		During HD operation, the HD cannot respond to a CRC error query. Data transfer did not execute normally while data was being written to the HD.
		HD defective
		-

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
864 -01	D	HDD data CRC error
		During HDD operation, the HDD cannot respond to a CRC error query. Data transfer did not execute normally while data was being written to the HDD.
		Bad sectors were generated during operation. (An error occurred in an area that does not belong to a partition, such as the disk label area.)
		- Format the HDD. - Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
864 -02 to 23	D	HDD data CRC error
		During HDD operation, the HDD cannot respond to a CRC error query. Data transfer did not execute normally while data was being written to the HDD.
		Bad sectors were generated during operation. (An error occurred in partition "a" (SC864-02) to partition "v" (SC864-23)).
		- Format the HDD. - Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
865 -00	D	HD access error
		During HDD operation, the HDD returned an error.
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error).
		Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
865-01	D	HDD access error
		During HDD operation, the HDD returned an error.
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in an area that does not belong to a partition, such as the disk label area.)
		Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
865-02 to 23	D	HDD access error
		During HDD operation, the HDD returned an error.
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "a" (SC865-02) to partition "v" (SC865-23)).
		Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
865-50 to 73	D	HDD time-out error
		The machine does not detect a reply from the HDD during the HDD operation.
		The HDD does not respond to the read/ write command from the machine.
		▪ Check the harness connections between the controller board and HDD. ▪ Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
866 -00	B	SD card authentication error
		A license error of an application that is started from the SD card was detected.
		Invalid program data is stored on the SD card.
		Store a valid program data on the SD card.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
867 -00	D	SD card removed
		The SD card was removed while the machine is on.
		An application SD card has been removed from the slot (mount point of /mnt/sd0).
		Cycle the main power off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
867 -01	D	SD card removed
		The SD card was removed while the machine is on.
		An application SD card has been removed from the slot (mount point of /mnt/sd1).
		Cycle the main power off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
867 -02	D	SD card removed
		The SD card was removed while the machine is on.
		An application SD card has been removed from the slot (mount point of /mnt/sd2).
		Cycle the main power off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
868 -**		SD card access error
868 -00	D	The SD controller returned an error during operation. (An error occurred at the mount point of /mnt/sd0)
868 -01	D	The SD controller returned an error during operation. (An error occurred at the mount point of /mnt/sd1)
		▪ SD card defective ▪ SD controller defective Slot number is displayed on the sub code. Detail code is described in SMC print can confirm the details of the error. ▪ -13 to -3: File system check error ▪ Otherwise (no code, -2) : Device access error SD card that starts an application 1. Turn the main power off and check the SD card insertion status. 2. If no problem is found, insert the SD card and turn the main power on. 3. If an error occurs, replace the SD card. 4. If the error persists even after replacing the SD card, replace the controller board. SD card for users 1. In case of a file system error, reformat the SD card (using the "SD Formatter" made by Panasonic).* In case of a device access error 1. Turn the main power off and check the SD card insertion status. 2. If no problem is found, insert the SD card and turn the main power on. 3. If an error occurs, use another SD card. 4. If the error persists even after replacing the SD card, replace the controller board.

* Do not format an SD card supplied with the main machine or sold as an option. You may only format SD cards used for Firmware Update by a Customer Engineer.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
870 -00	B	Address Book data error (Anytime: Address Book Error.)
-01	B	Address Book data error (On startup: Media required for storing the Address Book is missing.)
-02	B	Address Book data error (On startup: encryption is configured but the module required for encryption (DESS) is missing.)
-03	B	Address Book data error (Initialization: Failed to generate a file to store internal Address Book.)
-04	B	Address Book data error (Initialization: Failed to generate a file to store delivery sender.)
-05	B	Address Book data error (Initialization: Failed to generate a file to store delivery destination.)
-06	B	Address Book data error (Initialization: Failed to generate a file to store information required for LDAP search.)
-07	B	Address Book data error (Initialization: Failed to initialize entries required for machine operation.)
-08	B	Address Book data error (Machine configuration: HDD is present but the space for storing the Address Book is unusable.)
-09	B	Address Book data error (Machine configuration: Inconsistency in the NVRAM area used for storing settings required for Address Book configuration.)
-10	B	Address Book data error (Machine configuration: Cannot make a directory for storing the Address Book in the SD/USB FlashROM.)
-11	B	Address Book data error (On startup: Inconsistency in Address Book entry number.)
-20	B	Address Book data error (File I/O: Failed to initialize file.)
-21	B	Address Book data error (File I/O: Failed to generate file.)
-22	B	Address Book data error (File I/O: Failed to open file.)

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-23	B	Address Book data error (File I/O: Failed to write to file.)
-24	B	Address Book data error (File I/O: Failed to read file.)
-25	B	Address Book data error (File I/O: Failed to check file size.)
-26	B	Address Book data error (File I/O: Failed to delete data.)
-27	B	Address Book data error (File I/O: Failed to add data.)
-30	B	Address Book data error (Search: Failed to obtain data from cache when searching in the machine Address Book. delivery destination/sender.)
-31	B	Address Book data error (Search: Failed to obtain data from cache during LDAP search.)
-32	B	Address Book data error (Search: Failed to obtain data from cache while searching the WS-Scanner Address Book.)
-41	B	Address Book data error (Cache: failed to obtain data from cache.)
-50	B	Address Book data error (On startup: Detected abnormality of the Address Book encryption status.)
-51	B	Address Book data error (Encryption settings: Failed to create directory required for conversion between plaintext and encrypted text.)
-52	B	Address Book data error (Encryption settings: Failed to convert from plaintext to encrypted text.)
-53	B	Address Book data error (Encryption settings: Failed to convert from encrypted text to plaintext.)
-54	B	Address Book data error (Encryption settings: Detected data inconsistency when reading the encrypted Address Book.)
-55	B	Address Book data error (Encryption settings: Failed to delete file when changing encryption setting.)
-56	B	Address Book data error (Encryption settings: Failed to erase the file that records the encryption key during an attempt to change the encryption setting.)

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-57	B	Address Book data error (Encryption settings: Failed to move a file during an attempt to change the encryption setting.)
-58	B	Address Book data error (Encryption settings: Failed to delete a directory during an attempt to change the encryption setting.)
-59	B	Address Book data error (Encryption settings: Detected a resource shortage during an attempt to change the encryption setting.)
-60	B	Address Book data error (Unable to obtain the on/off setting for administrator authentication (06A and later).)
		When an error related to the Address Book is detected during startup or operation. ▪ Software bug ▪ Inconsistency of Address Book source location (machine/delivery server/LDAP server) ▪ Inconsistency of Address Book encryption setting or encryption key (NVRAM or HDD was replaced individually without formatting the Address Book) ▪ Address Book storage device (SD/HDD) was temporarily removed or hardware configuration does not match the application configuration. ▪ Address Book data corruption was detected. Install the device that contains address book information properly, and turn the main power off/on. If SC occurs again, do the following steps. 1. After installing the HDD, or SD/USB ROM, execute SP5-846-046. 2. Wait more than 3 seconds, then execute SP5-832. 3. Cycle the main power off and on. Procedure after SC870 is cleared 1. If there is backup data in SD card or Web Image Monitor, restore the address book data. (To restore from SD card, enter the encryption password which is the same as when you enter to backup.)

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
871 -00	D	FCU error
		An error occurred when FCS detects FCU defective.
		▪ Time-out error ▪ Abnormal Parameter
		▪ Cycle the main power off and on. ▪ Update the firmware if more recent firmware was released.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
872 -00	B	HDD mail reception error
		An error was detected on the HDD immediately after the machine was turned on.
		▪ HDD defective ▪ Power was turned off while the machine used the HDD.
		▪ Format the HDD (SP5-832-007). ▪ Replace the HDD. When you do the above, the following information will be initialized. ▪ Partly received partial mail messages. ▪ Already-read statuses of POP3-received messages (All messages on the mail server are handled as new messages).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
873 -00	B	HDD mail reception error
		An error was detected on the HDD immediately after the machine was turned on.
		▪ HDD defective ▪ Power was turned off while the machine used the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		- Format the HDD (SP5-832-007). - Replace the HDD. When you do the above, the following information will be initialized. - Sender's mail text - Default sender name/password (SMB/FTP/NCP) - Administrator mail address - Scanner delivery history

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
874 -05	D	Delete all error (Delete data area) : Read error
-06	D	Delete all error (Delete data area) : Write error
-09	D	Delete all error (Delete data area) : No response from HDD
-10	D	Delete all error (Delete data area) : Error in Kernel
-12	D	Delete all error (Delete data area) : No designated partition
-13	D	Delete all error (Delete data area) : No device file
-14	D	Delete all error (Delete data area) : Start option error
-15	D	Delete all error (Delete data area) : No designated sector number
-16	D	Delete all error (Delete data area) : failure in performing hdderase
-41	D	Delete all error (Delete data area) : Other fatal errors
-42	D	Delete all error (Delete data area) : End by cancellation
-61 to -65	D	Delete all error (Delete data area) : library error
-66	D	Delete all error (Delete data area) : Unavailable
-67	D	Delete all error (Delete data area) : Erasing not finished
-68	D	Delete all error (Delete data area) : HDD format failure (Normal)
-69	D	Delete all error (Delete data area) : HDD format failure (Abnormal)
-70	D	Delete all error (Delete data area) : Unauthorized library

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-99	D	Delete all error (Delete data area) : other errors
		An error occurred while data was being erased on HDD or NVRAM.
		- Error detected in HDD data delete program - Error detected in NVRAM data delete program - The "Delete All" option was not set
		- Turn the main power switch off and back on, and then execute "Erase All Memory" under UP mode again. (However, if there is a defective sector or other problem with the hard disk, the error will persist even after trying the above.) - If the "Delete All" option is not installed when this error occurs, install the option.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
875 -01	D	Delete all error (HDD erasure) (hddchack -i error)
02	D	Delete all error (HDD erasure) (Data deletion failure)
		An error was detected before HDD/data erasure starts. (Failed to erase data/failed to logically format HDD)
		- HDD logical formatting failed. - The modules failed to erase data.
		Cycle the main power off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
876 -00	D	Log Data Error
		An error was detected in the handling of the log data at power on or during machine operation.
		- Damaged log data file. - Log encryption is enabled but encryption module is not installed. - Inconsistency of encryption key between NV-RAM and HDD. - Software bug.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		Try the SC876-01 to -99 solutions listed below. If it is not solved, do the following steps (for when only an HDD is replaced): 1. Disconnect the HDD and turn on the main power. 2. Execute SP5-801-019. 3. Turn off the main power. 4. Connect the HDD and turn on the main power. 5. Execute SP5-832-004. 6. Turn off the main power. * The following step is to configure the logging/encryption setting again. 7. Turn on the main power. 8. Set SP9-730-002 through -004 to 1. 9. Cycle the main power off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
876 -01	D	Log Data Error 1
		An error was detected in the handling of the log data at power on or during machine operation.
		Damaged log data file
		Initialize the HDD (SP5-832-004).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
876 -02	D	Log Data Error 2
		An error was detected in the handling of the log data at power on or during machine operation.
		Log encryption is enabled but encryption module is not installed.
		▪ Replace or set again the encryption module. ▪ Disable the log encryption setting.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
876 -03	D	Log Data Error 3
		An error was detected in the handling of the log data at power on or during machine operation.
		Inconsistency of encryption key between NV-RAM and HDD.
		▪ Disable the log encryption setting. ▪ Initialize LCS memory (SP5801-019). ▪ Initialize the HDD (SP5-832-004).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
876 -04	D	Log Data Error 4
		An error was detected in the handling of the log data at power on or during machine operation.
		▪ Log encryption key is disabled but the log data file is encrypted. (NVRAM data corruption) ▪ Log encryption key is enabled but the log data file is not encrypted. (NVRAM data corruption)
		Initialize the HDD (SP5-832-004).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
876 -05	D	Log Data Error 5
		An error was detected in the handling of the log data at power on or during machine operation.
		▪ Only the NV-RAM has been replaced with one previously used in another machine. ▪ Only the HDD has been replaced with one previously used in another machine.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Attach the original NV-RAM. ▪ Attach the original HDD. ▪ With the configuration that caused the SC, initialize the HDD (SP5-832-004).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
876 -99	D	Log Data Error 99
		An error was detected in the handling of the log data at power on or during machine operation.
		Other causes
		-

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
878 -00	D	TPM authentication error
		TPM electronic recognition failure
		▪ Update of system module attempted without correct update path ▪ USB flash memory not operating correctly
		Replace the controller board.

Trusted Platform Module

- In computing, Trusted Platform Module (TPM) is both the name of a published specification detailing a secure crypto processor that can store cryptographic keys that protect information, as well as the general name of implementations of that specification often called the "TPM chip" or "TPM Security Device" (as designated in certain Dell BIOS settings).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
878 -01	D	USB flash error
		There is a problem in the file system of the USB flash memory.
		USB Flash system files corrupted
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
878 -02	D	TPM error
		An error occurred in either TPM or the TPM driver
		TPM not operating correctly
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
878 -03	D	TCSD error
		An error occurred in the TPM software stack.
		▪ TPM, TPM software cannot start ▪ A file required by TPM is missing
		Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
880 -00	D	MLB error
		Reply to MLB access was not returned within a specified time.
		MLB defective
		▪ Replace the MLB. ▪ Remove the MLB.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
881 -01	D	Management area error
		▪ A problem was detected in the software ▪ This error may even occur is an IC card option is not installed.
		▪ This is caused by accumulation of abnormal authentication information in the software. (User operation will not directly cause it.) ▪ At login Example: When a job is sent to the printer/when logged on from the operation panel/when logged on from a Web browser
		Cycle the main power off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
899 -00	D	Software performance error (signal reception end)
		Unknown software error occurred.
		Occurs when an internal program behaves abnormally.
		In the case of a hardware defect
		▪ Replace the hardware. In the case of a software error ▪ Cycle the main power off and on. ▪ Try updating the firmware.

6.2.11 SC9XX: OTHERS

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
900 -00	D	Electrical total counter error
		The total counter contains data that is not a number.
		▪ NVRAM incorrect type ▪ NVRAM defective or corrupted ▪ Unexpected error from external source ▪ When PRT received signals at SRM, the requested count did not complete.
		Replace the NVRAM.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
920 -00	B	Printer application error (no response within determined time in Printing)
-01	B	Printer application error (Timeout during Printing)
-02	B	Printer Error 1 (WORK memory not acquired)
-03	B	Printer application error (Filter process not started)
-04	B	Printer Error 1 (Filter processing ended abnormally)
		When an error is detected in the application, which makes continued operation impossible.
		▪ Software bug ▪ Unexpected hardware configuration (such as insufficient memory)
		▪ Cycle the main power off and on. ▪ Increase the memory storage capacity.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
921 -00	B	Printer application error (Resident font not found)
		Resident font was not found at printer startup.
		Preinstalled font files not found.
		Cycle the main power off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
925 -00	B	NetFile function error
-01	B	NetFile function error
		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:
		▪ HDD defective ▪ Power loss while data was writing to HDD ▪ Software bug
		See the table and the procedure below.

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

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 SP5-832-11 (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
- Desk Top Binder/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 SP5-832-11, do these steps:
 4. In the User Tools mode, do Document Management> Batch Delete Transfer Documents.
Do SP5-832-11, and turn the machine off and on.

Procedure 3

1. If "Procedure 2" is not the solution for the problem, do SP5-832-1 (HDD Formatting - All)
2. Cycle the machine off/on.

Note

- SP5-832-001 erases all document and address book data on the hard disks. Consult with the customer before you do this SP code.

Procedure 4

1. If "Procedure 3" does not solve the problem, replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
994 -00	C	Application Item Error
		The numbers of executed application items on the operation panel reach the maximum limit for the operation panel structure.
		Too many executed application items
		Logging only

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
997 -00	D	Application function selection error
		▪ The application has not responded to the set command created by SCS within a certain period of time. ▪ The application selected ended abnormally.
		Software bug
		▪ Check whether an option required by the application (RAM, DIMM, board) is installed properly. ▪ Check whether downloaded applications are correctly configured. (Take necessary countermeasures specific to the application in which the error occurs. In some applications, the logs can be taken from the monitor. If this option is available, analyze the logs.)

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
998 -00	D	Application start error
		▪ After power on, no application program is registered to the system within a predetermined period of time. (no application starts or ends normally.) ▪ Even if they are started, all applications have become unable to be rendered due to an unknown defect.
		▪ Software bug ▪ An option required by the application (RAM, DIMM, board) is not installed properly
		▪ Turn the main power switch off and on. ▪ Check whether an option required by the application (RAM, DIMM, board) is installed properly. ▪ Check whether downloaded applications are correctly configured. ▪ Replace the Controller Board.

6.3 PROCESS CONTROL ERROR CONDITIONS

6.3.1 DEVELOPER INITIALIZATION RESULT

SP-3-014-001 (Developer Initialization Result)

No.	Result	Description	Possible Causes/Action
1	Successfully completed	Developer initialization is successfully completed.	-
2	Forced termination	Developer initialization was forcibly terminated.	▪ A cover was opened or the main switch was turned off during the initialization. 1. Do the developer initialization again when done in SP mode. Reinstall the engine main firmware if the result is the same. 2. Cycle the main power off and on when done at unit replacement.
6	Vt error	Vt is more than 0.7V when Vcnt is 4.3V.	1. Make sure that the heat seal on the development unit is not removed. 2. Defective TD sensor
7	Vcnt error 1	Vcnt is less than 4.7V when Vcnt is Vt target $\pm 0.2V$.	1. Defective TD sensor 2. Vt target settings are not correct. 3. Toner density error
8	Vcnt error 2	Vt is more than 0.7V when Vcnt is 4.3V and Vcnt is less than 4.7V when Vcnt is Vt target $\pm 0.2V$.	1. Make sure that the heat seal on the development unit is not removed. 2. Defective TD sensor

No.	Result	Description	Possible Causes/Action
9	Vcnt error 3	Vcnt is less than 4.7V.	1. Make sure that the heat seal on the development unit is not removed. 2. Defective TD sensor 3. Vt target settings are not correct. 4. Toner density error

⬇ Note

- The machine starts developer initialization after you set "Enable" in SP3-902-005, 006, 007, or 008. Developer initialization automatically resumes when you open and close the front door or turn the main switch off and on if an error other than Error 8 occurs.

6.3.2 PROCESS CONTROL SELF-CHECK RESULT

Displayed number shows results of each color sensor check.

00000000 = YYCCMMKK

SP3-012-001 to -010 (Process Control Execute Result)

No.	Result	Description	Possible Causes/Action
11	Successfully completed	Process control self-check successfully completed.	Check the Vsg adjustment. See the "Vsg Adjustment Result" following this table.
41	Vt error	Vt maximum or minimum error is detected.	▪ Defective development unit Vt maximum error and an image is faint: 1. Replace the toner supply pump unit. Vt maximum error and an image is O.K: 1. Replace the development unit. 2. Replace the BICU board. Vt minimum error: 1. Replace the development unit. 2. Replace the BICU board.

No.	Result	Description	Possible Causes/Action
53	ID sensor coefficient (K5) detection error	Not enough data can be sampled.	▪ Solid image is not sufficient density: 1. Retry the process control. 2. Replace the ID sensors. 3. Replace the BICU board. ▪ Solid image is O.K. 1. Replace the ID sensors. 2. Replace the BICU board. ▪ ID sensor is dirty: 1. Clean the ID sensors. 2. Retry the process control.
54	ID sensor coefficient (K5) maximum/minimum error	When the K5 is more than the value of SP3-362-003 or less than the value of SP3-362-004, the error 54 is displayed.	▪ ID sensor pattern density is too high or low. ▪ ID sensor or shutter is defective. Same as 53
55	Gamma error: Maximum	Gamma is out of range. $5.0 < \text{Gamma}$	▪ ID sensor pattern density is too high. ▪ Hardware defective. Same as 53
56	Gamma error: Minimum	Gamma is out of range. $\text{Gamma} < 0.15$	▪ ID sensor pattern density is too low. ▪ Hardware defective. 1. Same as 53 2. Replace the toner supply pump unit.
57	Vk error: Maximum	Vk is out of range. $150 < \text{Vk}$	▪ ID sensor pattern density is too low. ▪ Hardware defective. Same as 53
58	Vk error: Minimum	Vk is out of range. $\text{Vk} < -150$	▪ ID sensor pattern density is too high. ▪ Background dirty ▪ Hardware defective Same as 53
59	Sampling data error during gamma correction	Not enough data can be sampled during the gamma correction.	▪ ID sensor pattern density is too high or low. ▪ Hardware defective Same as 53

No.	Result	Description	Possible Causes/Action
99	Unexpected error	Process control fails.	Power Failure Check the power source.

Vsg Adjustment Result

SP3-323-001 to -010 (Vsg Adjustment Result)

No.	Result	Description	Possible Causes/Action
1	O.K	Vsg adjustment is correctly done.	-
2	ID sensor adjustment error	Vsg cannot be adjusted within $4.0 \pm 0.5V$.	- Dirty ID sensor (toner, dust, or foreign material) - Dirty transfer belt - Scratched image transfer belt - Defective ID sensor - Poor connection - Defective BICU - Clean the ID sensor. - Check the belt cleaning. Clean or replace the transfer belt. - Replace the image transfer belt. - Replace the ID sensor. - Check the connection. - Replace the BICU board.
3	ID sensor output error	ID sensor output is more than "Voffset Threshold" (SP3-324-004)	- Defective ID sensor - Poor connection - Defective BICU - Replace the ID sensor. - Check the connection. - Replace the BICU board.
9	Vsg Adjustment error	Vsg adjustment has not been completed.	Other cases Retry SP3-321-010.

6.3.3 LINE POSITION ADJUSTMENT RESULT

SP2-194-010 to -012 (Line Position Adjustment Result: M, C, Y)

This SP shows the number as a line position adjustment result on the LCD. It shows which color has an error (M, Y or C).

No.	Result	Description	Note
0	Not done	Line position adjustment has not been done.	-
1	Completed successfully	Line position adjustment has correctly been done,	-
2	Cannot detect patterns	ID sensors have not detected the patterns for line position adjustment.	See Note
3	Fewer lines on the pattern than the target	The patterns, which ID sensors have detected, are not enough for line position adjustment.	See Note
4	More lines on the pattern than the target	Not used in this machine.	-
5	Out of the adjustment range	ID sensors have correctly detected the patterns for line position adjustment, but a shift of patterns is out of adjustable range.	See Note
6-9	Not used	-	-

Note

- For details, see the "Troubleshooting Guide - Line Position Adjustment" section.

6.4 TROUBLESHOOTING GUIDE

6.4.1 LINE POSITION ADJUSTMENT

When there are color registration errors on the output, do the line position adjustment as follows.

Test

1. Do SP2-111-003 (Mode c: rough adjustment).
 2. Use SP2-194-007 to check if the result of the line position adjustment is correct (0: Completed successfully, 1: Not completed). If the result is "1", refer to 'Countermeasure list for color registration errors'.
 3. Do SP2-111-001 (Mode a: fine adjustment twice).
 4. Use SP2-194-007 to check if the result of the line position adjustment is correct (0: Completed successfully, 1: Not completed). If the result is "1", refer to 'Countermeasure list for color registration errors'.
 5. Put some A4/LT paper on the bypass tray.
-  **Note**
- When you print a test pattern, use the bypass tray to feed the paper.
6. Print out test pattern "7" with SP2-109-003.
 7. Check the printed output with a loupe.
 8. If there are no color registration errors on the output, the line position adjustment is correctly done. If not, refer to the countermeasure list for color registration errors.

Countermeasure List for Color Registration Errors

After Executing SP2-111-003

- Result: "1" in SP2-194-007
- Result: "2" or "3" (Line pattern detection failure) in SP2-194-010, -011, -012

Test pattern check	Possible cause/Countermeasure
White image, Abnormal image, Low density	▪ Defective image processing unit ▪ Low density of test pattern ▪ Defective BiCU
	1. Replace the high voltage power supply unit. 2. Do the forced process control (SP3-011-001) or supply some toner (SP3-030-xxx). 3. Replace the BiCU.

Test pattern check	Possible cause/Countermeasure
Normal image, but with color registration errors	▪ Defective ID sensor shutter ▪ Defective ID sensor ▪ Defective BiCU
	1. Replace the ID sensor shutter solenoid. 2. Replace the ID sensor. 3. Replace the BiCU.

After Executing SP2-111-003

- Result: "1" in SP2-194-007
- One of results: "5" (Out of adjustable range) in SP2-194-010, -011, -012, -013

Test pattern check	Possible cause/Countermeasure
The main scan registrations of M, C, Y, K are shifted by more than ± 15 .	▪ Defective laser unit ▪ Defective BiCU
	1. Perform the color skew adjustment (Image Adjustment). 2. Replace the laser unit. 3. Replace the BiCU.
The sub scan registrations of M, C, Y, K are shifted by more than ± 20 .	▪ Defective image transfer belt ▪ Defective drive units ▪ Defective BiCU
	1. Replace the image transfer belt. 2. Replace the drum motor. 3. Replace the BiCU.
The main scan registration is shifted by more than ± 0.66 mm, but only at the central area of the image on the output.	▪ Defective ID sensor at center ▪ Deformed center area on the image transfer belt ▪ Defective BiCU
	1. Replace the ID sensor. 2. Replace the image transfer belt. 3. Replace the BiCU.

Test pattern check	Possible cause/Countermeasure
The skew for M, C, Y, K is more than ± 0.75 mm.	- Defective PCDU - Defective laser optics housing unit - Defective BiCU
	- Perform the color skew adjustment (Image Adjustment). - Reinstall or replace the PCDU. - Replace the laser optics housing unit. - Replace the BiCU.
Others	- Skew correction upper limit error - Defective BiCU - Defective laser optics housing unit
	- Perform the color skew adjustment (Image Adjustment). - Replace the BiCU. - Replace the laser optics housing unit.

After Executing SP2-111-003

- Result: "1" in SP2-194-007
- Result: "0" in SP2-194-010, -011, -012, -013

Test pattern check	Possible cause/Countermeasure
	Do SP2-111-001 or -002.

After Executing SP2-111-001

- Result: "1" in SP2-194-007
- Result: "2" or "3" (Line pattern detection failure) in SP2-194-010, -011, -012, -013

Test pattern check	Possible cause/Countermeasure
White image, Abnormal image, Low density	- Defective laser optics housing unit shutter - Defective image processing unit - Low density of test pattern - Defective BiCU

Test pattern check	Possible cause/Countermeasure
	1. Replace the shutter motor. 2. Replace the high voltage power supply unit. 3. Do the forced process control (SP3-011-001) or supply some toner (SP3-030-xxx). 4. Replace the BiCU.
Normal image, but with color registration errors	▪ Defective ID sensor shutter ▪ Defective ID sensor ▪ Defective BiCU
	1. Replace the ID sensor shutter solenoid. 2. Replace the ID sensor. 3. Replace the BiCU.

After Executing SP2-111-001

- Result: "1" in SP2-194-007
- Result: "5" (Out of adjustable range) in SP2-194-010, -011, -012

Test pattern check	Possible cause/Countermeasure
Low image density on the output	▪ Low pattern density
	Do the forced process control (SP3-011-001) or supply some toner (SP3-030-xxx).
The main scan registrations of M, C, Y, K are shifted by more than ± 1.4 .	▪ No defective component ▪ Defective laser optics housing unit ▪ Defective BiCU
	1. Do SP2-111-003 again. 2. Replace the laser optics housing unit. 3. Replace the BiCU.
The sub scan registrations of M, C, Y are shifted by more than ± 1.4 mm from the sub scan registration of K.	▪ No defective component ▪ Defective image transfer belt ▪ Defective drive units ▪ Defective BiCU

Test pattern check	Possible cause/Countermeasure
	1. Do SP2-111-003 again. 2. Replace the image transfer belt. 3. Replace the drum motor. 4. Replace the BiCU.
The main scan registration is shifted by more than ± 0.66 mm, but only at the central area of the image on the output.	▪ Defective ID sensor at center ▪ Deformed center area on the image transfer belt ▪ Defective BiCU
	1. Replace the ID sensor. 2. Replace the image transfer belt. 3. Replace the BiCU.
The skew for M, C, Y, K is more than ± 0.75 mm at the end of the scan line?	▪ Defective PCDU ▪ Defective laser optics housing unit ▪ Defective BiCU
	1. Perform the color skew adjustment (Image Adjustment). 2. Reinstall or replace the PCDU. 3. Replace the laser optics housing unit. 4. Replace the BiCU.
Others	▪ Skew correction upper limit error ▪ Defective BiCU ▪ Defective laser optics housing unit
	1. Replace the BiCU. 2. Perform the color skew adjustment (Image Adjustment). 3. Replace the laser optics housing unit.

After Executing SP2-111-001

- Result: "0" in SP2-194-007
- Result: Color registration errors in SP2-194-010, -011, -012, -013

Test pattern check	Possible cause/Countermeasure
Low image density on the output	▪ Low pattern density

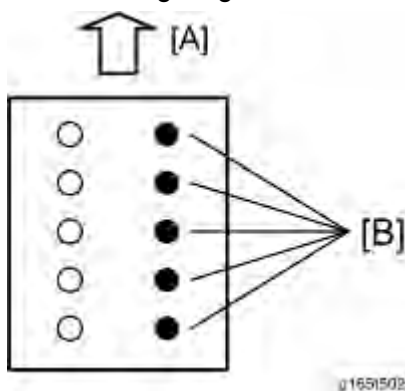
Test pattern check	Possible cause/Countermeasure
	Do the forced process control (SP3-011-001) or supply some toner (SP3-030-xxx).
The main scan registration is shifted, but only at the central area of the image on the output.	▪ Defective ID sensor at center ▪ Deformed center area on the image transfer belt ▪ Defective BiCU
	1. Replace the ID sensor. 2. Replace the image transfer belt. 3. Replace the BiCU.
The main scan registrations of M, C, Y, K are shifted.	▪ Defective laser optics housing unit ▪ Defective ID sensor ▪ Defective BiCU ▪ Incorrect SP value
	1. Perform the color skew adjustment (Image Adjustment). 2. Replace the laser optics housing unit. 3. Replace the ID sensor. 4. Replace the BiCU. 5. Adjust the value with SP2-182-004 to -021.
The sub scan registrations of M, C, Y, K are shifted.	▪ Defective image transfer belt ▪ Defective drive units ▪ Defective ID sensor ▪ Defective BiCU ▪ Incorrect SP value
	1. Replace the image transfer belt. 2. Replace the ID sensor. 3. Replace the drum motor. 4. Replace the BiCU. 5. Adjust the value with SP2-182-022 to -039.
The skew of M, C, Y, K is different.	▪ Defective PCDU ▪ Defective laser optics housing unit ▪ Defective BiCU

Test pattern check	Possible cause/Countermeasure
	1. Reinstall or replace the PCDU. 2. Perform the color skew adjustment (Image Adjustment). 3. Replace the laser optics housing unit. 4. Replace the BiCU.
The sub scan lines are shifted. Shifted lines appear cyclically.	▪ Defective PCDU ▪ Defective drive unit ▪ Drum phase adjustment error
	1. Reinstall or replace the PCDU. 2. Check or replace the drive unit.

6.4.2 PROBLEM AT REGULAR INTERVALS

Image problems may appear at regular intervals that depend on the circumference of certain components.

The following diagram shows the possible symptoms (black or white dots at regular intervals).



[A]: Paper feed direction

[B]: Problems at regular intervals

- Abnormal image at 33.6-mm intervals: Charge roller
- Colored spots at 40.82-mm intervals: Image transfer roller
- Colored spots at 20.9-mm intervals: Development roller
- Abnormal image at 55.4 (center) or 55.0 (end)-mm intervals: Paper transfer roller
- Colored spots at 75.4-mm intervals: OPC drum
- Spots at 78.5-mm intervals: Pressure roller
- Spots at 78.5-mm intervals: Fusing belt

6.4.3 BLANK PRINT

Symptom	Possible cause	Necessary actions
No image is printed.	Defective laser unit	Replace the laser unit.
	Defective PCDU	Replace the PCDU.
	Defective image transfer belt unit	Replace the image transfer belt unit.
	Incorrect action of paper transfer roller	Check the guide and the paper transfer roller.
	Defective HVPS	Replace HVPS.
	Defective BiCU	Replace the BiCU.

6.4.4 ALL-BLACK PRINT

Symptom	Possible cause	Necessary actions
All the paper is black.	Incorrectly installed PCDU	Install the PCDU correctly.
	Defective PCDU	Replace the PCDU.
	Defective HVPS	Replace HVPS.
	Defective laser unit	Replace the laser unit.
	Defective BiCU	Replace the BiCU.
	Defective main board	Replace the main board.

6.4.5 MISSING CMY COLOR

Symptom	Possible cause	Necessary actions
C, M, or Y is missing.	Defective PCDU	Replace the PCDU.
	Loose connection between printer cartridge and BiCU	Replace the drum positioning cover.
	Image transfer belt not contacting PCDU	Check the belt tension unit.
	Defective the drum motor: CMY	Replace the drum motor: CMY.
	Defective BiCU	Replace the BiCU.

6.4.6 LIGHT PRINT

Symptom	Possible cause	Necessary actions
Printed images are too weak.	Loose connection between paper transfer roller and HVPS	Check the connection between the paper transfer roller and the HVPS.
	Dust in the laser beam path	Clean the laser beam path.
	Image transfer belt not contacting PCDU	Check the image transfer belt unit.
	Defective PCDU	Replace the PCDU.
	Defective paper transfer roller	Repair the paper transfer roller.
	Defective fusing unit	Replace the fusing unit.
	Defective BiCU	Replace the BiCU.

6.4.7 REPEATED SPOTS OR LINES ON PRINTS

The same spots or lines appear at regular intervals.

Interval	Possible cause	Necessary actions
At intervals of 33.6 mm (1.32 inches)	Defective charge roller	Replace the PCDU.
At intervals of 20.9 mm (0.82 inches)	Defective development roller	Replace the PCDU.
At intervals from 55.0 (end) to 55.4 (center) mm (from 2.16 to 2.18 inches)	Defective paper transfer roller	Replace the paper transfer roller unit.
At intervals of 75.4 mm (2.96 inches)	Defective OPC drum	Replace the PCDU.
At intervals of 78.5 mm (3.09 inches)	Defective pressure roller	Replace the pressure roller or fusing unit.
At intervals of 78.5 mm (3.09 inches)	Defective fusing belt	Replace the fusing unit.
At intervals of 40.82 mm (1.60 inches)	Defective image transfer roller	Replace the image transfer roller.

6.4.8 DARK VERTICAL LINE ON PRINTS

Symptom	Possible cause	Necessary actions
A dark line appears. The line is parallel to the paper feed direction of one CMY color.	Defective PCDU	Replace the PCDU.
A dark line appears. The line is parallel to the paper feed direction of any color (not C, M, or Y).	Dust in the laser beam path	Clean the laser beam path.
	Defective image transfer belt unit	Replace the image transfer belt unit.
	Defective fusing unit	Replace the fusing unit.

6.4.9 WHITE HORIZONTAL LINES OR BANDS

Symptom	Possible cause	Necessary actions
White lines or bands appear in images of all toner colors.	Defective PCDU	Replace the PCDU.
	Defective image transfer belt unit	Replace the image transfer belt unit.
	Defective paper transfer roller	Replace the paper transfer roller.

6.4.10 MISSING PARTS OF IMAGES

Symptom	Possible cause	Necessary actions
Some parts of images are missing.	Defective PCDU	Replace the PCDU.
	Defective image transfer belt unit	Replace the image transfer belt unit.
	Defective paper transfer roller	Replace the paper transfer roller.
	Defective fusing unit	Replace the fusing unit.

6.4.11 DIRTY BACKGROUND

Symptom	Possible cause	Necessary actions
Backgrounds of one CMYK color are too dense.	Defective PCDU	Replace the PCDU.
Backgrounds of more than one CMYK are too dense.	Defective HVPS	Replace the HVPS.

6.4.12 PARTIAL CMY COLOR DOTS

Symptom	Possible cause	Necessary actions
Unexpected dots of the same color appear at irregular intervals.	Defective PCDU	Replace the PCDU.
	Defective image transfer belt unit	Replace the image transfer belt unit.
	Defective fusing unit	Replace the fusing unit.

6.4.13 DARK IRREGULAR STREAKS ON PRINTS

Symptom	Possible cause	Necessary actions
Unexpected streaks appear at irregular intervals.	Defective image transfer belt	Replace the image transfer belt unit.

6.4.14 CMY COLOR IRREGULAR STREAKS

Symptom	Possible cause	Necessary actions
Unexpected streaks of the same color appear at irregular intervals.	Defective PCDU	Replace the PCDU.
	Defective image transfer belt unit	Replace the image transfer belt unit.

6.4.15 GHOSTING

Symptom	Possible cause	Necessary actions
The same or similar image appears two or more times. They get weaker and weaker.	Defective PCDU	Replace the PCDU.
	Defective transfer unit	Replace the transfer unit.

6.4.16 UNFUSED OR PARTIALLY FUSED PRINTS

Symptom	Possible cause	Necessary actions
Some parts of images are not fused very well.	Non-standard paper in use	Use recommended paper.
	Incorrect media type mode	Select an appropriate media mode.
	Defective fusing unit	Replace the fusing unit.

6.4.17 IMAGE SKEW

Symptom	Possible cause	Necessary actions
Images are skewed	Incorrect installation of paper	Install the paper correctly.
	Incorrect paper guide position	Adjust the paper guide correctly.  Note When adjusting the paper width, use the right side guide only, with the green clip. Do not hold the left side guide at this time, or skew will occur.
	Defective registration roller	Repair the paper feed unit.
	Incorrect action of paper transfer roller	Check the paper transfer roller.
	Defective BiCU	Replace the BiCU.
	Incorrect installation of paper tray	Uninstall the paper tray units and re-install them.

6.4.18 BACKGROUND STAIN

Symptom	Possible cause	Necessary actions
The reverse side of the paper is not clean.	Unclean paper transfer roller	Clean the paper transfer roller.
	Unclean paper path	Clean the paper path.
	Unclean registration roller	Clean the registration roller.
	Defective fusing unit	Replace the fusing unit.

6.4.19 NO PRINTING ON PAPER EDGE

Symptom	Possible cause	Necessary actions
Images are not printed in the areas around the paper edges.	Defective PCDU	Replace the PCDU.
	Defective toner cartridge	Replace the toner cartridge.
	Defective image transfer belt unit	Replace the image transfer belt unit.
	Image transfer belt not contacting PCDU	Check the image transfer belt unit.

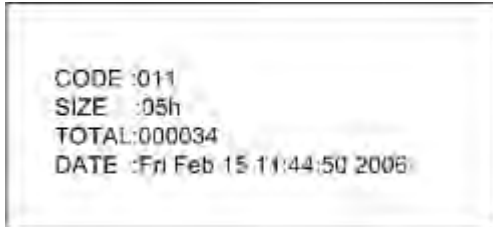
6.4.20 IMAGE NOT CENTERED WHEN IT SHOULD BE

Symptom	Possible cause	Necessary actions
Images do not come to the center.	Incorrect installation of paper	Install the paper correctly.
	Incorrect paper guide position	Adjust the paper guide correctly.
	Incorrect margin setting	Adjust the margin setting.
	Defective BiCU	Replace the BiCU.
	Incorrect installation of paper tray	Uninstall the paper tray units and re-install them.

6.5 JAM DETECTION

6.5.1 PAPER JAM DISPLAY

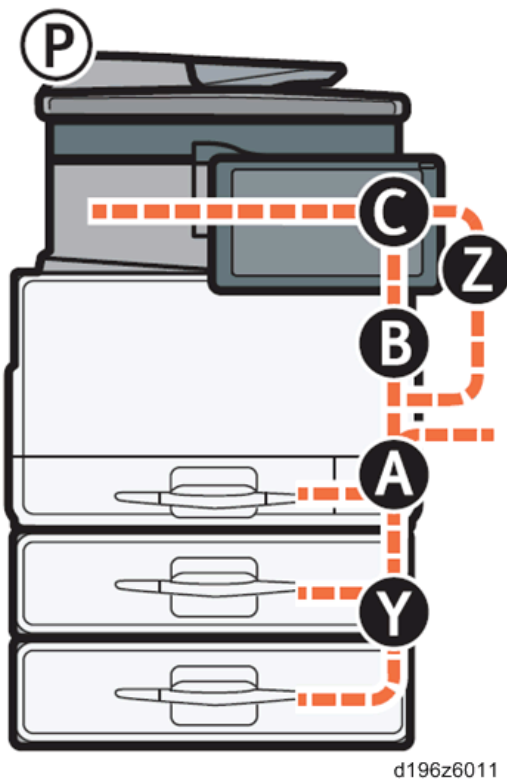
SP7-507 shows the paper jam history.



- **CODE:** Indicates the jam code.
- **SIZE:** Indicates the paper Size Code.
- **TOTAL:** Indicates the total counter (SP7-502-001).
- **DATE:** indicates the date when the jam occurred.

6.5.2 JAM CODES AND DISPLAY CODES

If a paper jam occurs, the machine displays the location where the jam occurs on the operation panel.

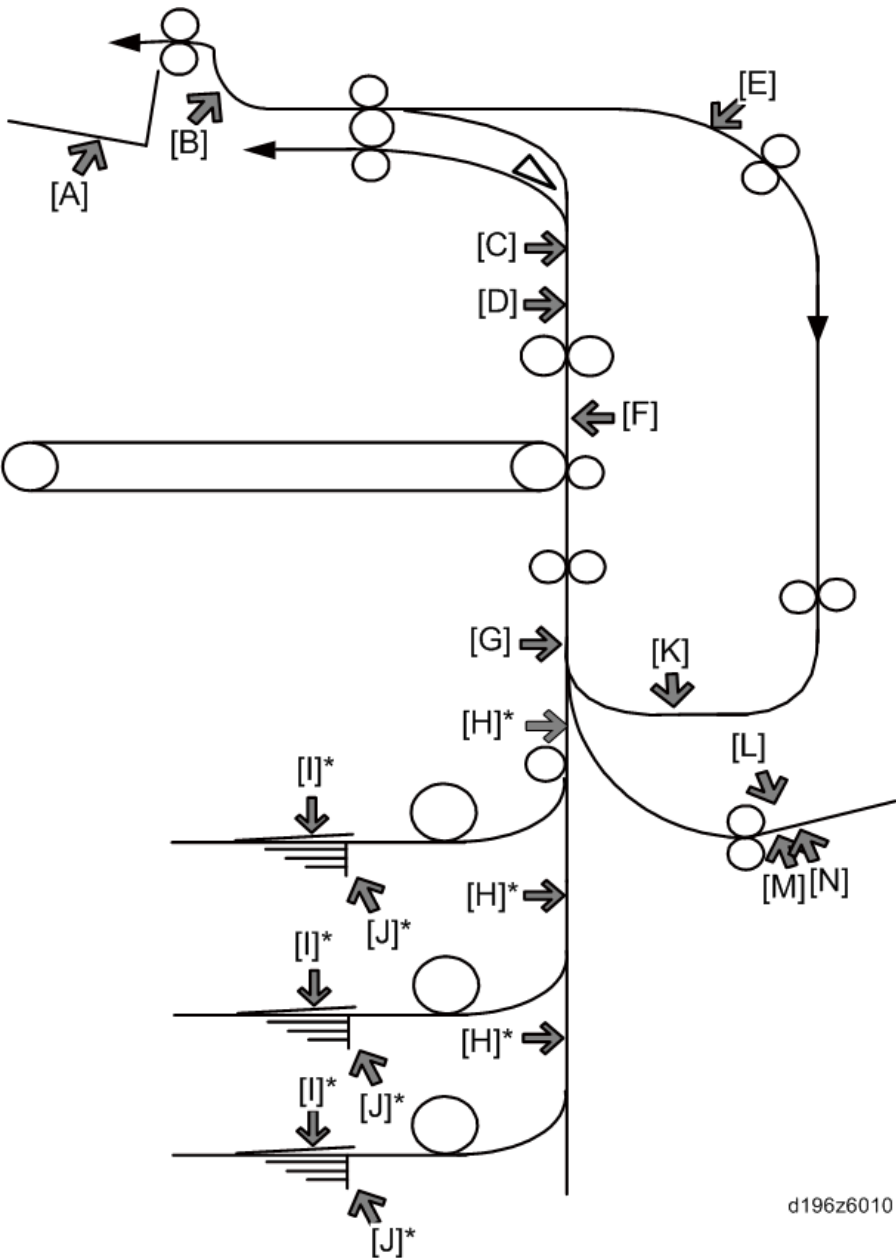


SP7-504 and SP7-505 (for ARDF) show how many jams occurred at each location.

Jam Code	Description	Indication on the operation panel
7504 003	Paper is not fed from 1st tray.	A
7504 004	Paper is not fed from 2nd tray.	Y1
7504 005	Paper is not fed from 3rd tray.	Y2
7504 008	Paper is not fed from the bypass tray.	A
7504 009	Paper is jammed at the duplex unit.	Z
7504 012	Paper is not fed from the paper feed sensor	Y1
7504 017	Registration sensor does not detect paper, and paper exit sensor turns on.	A
7504 018	Fusing entrance sensor does not detect paper.	B
7504 019	Fusing exit sensor does not detect paper.	C
7504 020	Paper exit sensor does not detect paper.	C
7504 021	Paper exit sensor (1-Bin tray unit) does not detect paper.	C
7504 025	Duplex exit sensor does not detect paper.	Z
7504 026	Duplex entrance sensor does not detect paper.	Z
7504 052	Paper feed sensor for 1st tray does not turn off.	Y1
7504 053	Paper feed sensor for 2nd tray does not turn off.	Y2
7504 057	Registration sensor does not turn off.	B
7504 060	Paper exit sensor does not turn off.	C
7504 061	Paper exit sensor (1-Bin tray unit) does not turn off.	C
7504 065	Duplex exit sensor does not turn off.	Z
7505 001	ARDF registration sensor does not turn off.	P
7505 004	ARDF registration sensor does not detect paper (Single/Duplex).	P
7505 054	ARDF registration sensor does not turn off.	P

Jam Code	Description	Indication on the operation panel
7505 100	ARDF transport motor is defective.	P

Sensor Layout



Callout	Sensor	Callout	Sensor
[A]	Paper Sensor (1-Bin)	[H]*	Paper Feed Sensor (for standard/optional tray)

Callout	Sensor	Callout	Sensor
[B]	Paper Exit Sensor (1-Bin)	[I]*	Paper End Sensor (for standard/optional tray)
[C]	Paper Exit Sensor	[J]*	Tray Lift Sensor (for standard/optional tray)
[D]	Fusing Exit Sensor	[K]	Duplex Exit Sensor
[E]	Duplex Entrance Sensor	[L]	Bypass Lift Sensor
[F]	Fusing Entrance Sensor	[M]	Bypass Paper End Sensor
[G]	Registration Sensor	[N]	Bypass Paper Width Sensor

Paper Size Code

Size Code	Paper Size	Size Code	Paper Size
05	A4 LEF	141	B4 SEF
06	A5 LEF	142	B5 SEF
14	B5 LEF	160	DLT SEF
38	LT LEF	164	LG SEF
44	HLT LEF	166	LT SEF
133	A4 SEF	172	HLT SEF
134	A5 SEF	255	Others

6.6 ELECTRICAL COMPONENT DEFECTS

6.6.1 SENSORS

No.	Sensor Name/ Sensor Board Name	Active	CN No./ Pin No.	Condition	Symptom
S1	Bypass Lift Sensor	H	CN523/11	Open	▪ SC508
				Shorted	
S2	By-pass Paper End Sensor	L	CN523/5	Open	- Paper is detected on the by-pass tray when no paper is set. - Paper is not detected on the by-pass tray when paper is set.
				Shorted	
S3	By-pass Paper Size Sensor	L	CN523/2	Open	- A4/LT size is detected. - A4/LT size is not detected.
				Shorted	
S4	Duplex Entrance Sensor	L	CN523/14	Open	- Jam Z (Jam 65) - Jam B (Jam18)
				Shorted	
S5	Fusing Entrance Sensor	L	CN523/20	Open	- Jam B (Jam 18) - Jam C
				Shorted	
S6	Duplex Exit Sensor	L	CN523/23	Open	- Jam Z (Jam 25) - Jam Z
				Shorted	
S7	Fusing Exit Sensor	L	CN525/8	Open	- Jam C (Jam 19) - Jam C
				Shorted	
S8	Fusing Thermopile	A	CN525/6	Open	▪ SC541

No.	Sensor Name/ Sensor Board Name	Active	CN No./ Pin No.	Condition	Symptom
				Shorted	▪ PCU setting Error occurs.
S9	TD Sensor (μ Sensor) (K)	A	CN539/8	Open	
				Shorted	
S10	TD Sensor (μ Sensor) (C)	A	CN540/8	Open	
				Shorted	
S11	TD Sensor (μ Sensor) (M)	A	CN540/16	Open	
				Shorted	
S12	TD Sensor (μ Sensor) (Y)	A	CN540/22	Open	
				Shorted	
S13	ID Sensor	A	CN555/6,7,10,11	Open	▪ SC370
				Shorted	
S14	ITB Contact HP Sensor	L	CN543/12	Open	▪ SC442
				Shorted	
S15	Tray Paper End Sensor	L	CN559/12	Open	▪ Paper end is detected when there is paper in the paper tray. ▪ Paper end is not detected when there is no paper in the paper tray.
				Shorted	
S16	Paper Feed Sensor	L	CN559/14	Open	▪ Jam A. ▪ Normal operation
				Shorted	
S17	Platen Cover Sensor	L	CN404/2	Open	▪ Platen cover open cannot be detected.
				Shorted	

Electrical Component Defects

No.	Sensor Name/ Sensor Board Name	Active	CN No./ Pin No.	Condition	Symptom
S19	Registration Sensor	L	CN559/17	Open	- Jam A (Jam 17) - Jam B
				Shorted	
S20	Scanner HP Sensor	H	CN404/5	Open	SC120, SC121
				Shorted	
S21	Temperature/Humidity Sensor	A	CN526/6,8	Open	- Printed image is wrong, such as rough image, dirty background or weak image. - SC498
				Shorted	
S22	Toner End Sensor (C)	A	CN539/16	Open	SC374
				Shorted	
S23	Toner End Sensor (M)	A	CN539/15	Open	SC373
				Shorted	
S24	Toner End Sensor (Y)	A	CN539/14	Open	SC375
				Shorted	
S25	Waste Toner Full Sensor	H	CN543/4	Open	- Waste toner full is detected when it is not near full. - Waste toner full cannot be detected when the waste toner bottle is nearly full.
				Shorted	
S26	Tray Lift Sensor	H	CN543/7	Open	SC501
S27	Paper Exit Sensor	L	CN525/11	Open	Jam C (Jam 20)

No.	Sensor Name/ Sensor Board Name	Active	CN No./ Pin No.	Condition	Symptom	
				Shorted	▪ Jam C (Jam 60)	
TH1	Pressure Roller Thermistor (Rear)	A	CN525/19	Open	▪ SC571	
				Shorted		
TH2	Pressure Roller Thermistor (Center)	A	CN525/17	Open	▪ SC561	
				Shorted		
TH3	Pressure Roller Thermistor (Front)	A	CN525/21	Open	▪ SC591	
				Shorted		
TH4	Image Creation Temperature Sensor	A	CN526/4	Open	▪ SC497	
				Shorted		
TH5	Image Creation Temperature Sensor	A	CN525/23	Open	▪ SC581	
				Shorted		
SW4	Right Cover Sensor	L	CN559/19	Open	▪ “Cover closed” cannot be detected. ▪ “Open Cover” cannot be detected.	
				Shorted		
SW5	Tray Set Sensor	L	CN543/15	Open	▪ Paper tray cannot be detected. ▪ Paper tray is detected when the paper tray is not set.	
				Shorted		
SW6	Waste Toner Bottle	L	CN535/1	Open	▪ Waste toner	

Electrical Component Defects

No.	Sensor Name/ Sensor Board Name	Active	CN No./ Pin No.	Condition	Symptom
	Set Sensor			Shorted	bottle cannot be detected. Waste toner bottle is detected when the waste toner bottle is not set.
S27	Paper Exit Sensor	L	CN525/11	Open	- Jam C (Jam 20) - Jam C (Jam 60)
				Shorted	
TH1	Pressure Roller Thermistor (Rear)	A	CN525/19	Open	SC571
				Shorted	
TH2	Pressure Roller Thermistor (Center)	A	CN525/17	Open	SC561
				Shorted	
TH3	Pressure Roller Thermistor (Front)	A	CN525/21	Open	SC591
				Shorted	
TH4	Image Creation Temperature Sensor	A	CN526/4	Open	SC497
				Shorted	
TH5	Image Creation Temperature Sensor	A	CN525/23	Open	SC581
				Shorted	
SW4	Right Cover Sensor	L	CN559/19	Open	“Cover closed” cannot be detected. “Open Cover” cannot be detected.
				Shorted	
SW5	Tray Set Sensor	L	CN543/15	Open	Paper tray

No.	Sensor Name/ Sensor Board Name	Active	CN No./ Pin No.	Condition	Symptom
				Shorted	cannot be detected. ▪ Paper tray is detected when the paper tray is not set.
SW6	Waste Toner Bottle Set Sensor	L	CN535/1	Open	▪ Waste toner bottle cannot be detected. ▪ Waste toner bottle is detected when the waste toner bottle is not set.
				Shorted	
				Shorted	

6.6.2 FUSE LOCATION

100V (Mainly NA)

Fuse Name	Connector (Out)	Capacity	Voltage	Part No.	Part Name	Replaceable
FU1	CN611-1 (24V)	10A	250V	11071363	51MS-100H	Yes
FU2	CN610-1 (24VL)	10A	250V	11071363	51MS-100H	Yes
FU3	CN610-2 (24VL_LPS)	4A	250V	11071360	SCT4A	No
FU4	CN611-3 (24V_LPS)	4A	250V	11071360	SCT4A	No
FU5	CN613-5 (5V)	5A	250V	11071351	SCT5A	No

Electrical Component Defects

Fuse Name	Connector (Out)	Capacity	Voltage	Part No.	Part Name	Replaceable
FU102	N/A (Protecting the fusing circuit in the PSU)	10A	250V	11071347	FIH 250V 10A (EM/CR)	Yes
FU101	N/A (Protecting the fusing circuit in the PSU)	15A	250V	11071241	TLC-15A-N4	Yes
FU103	CN600-4,5 (Anti-condensation Heater)	2A	250V	11071362	SCT2A	No
FU104	N/A (Protecting the fusing circuit in the PSU)	2A	250V	11071362	SCT2A	No

200V (Mainly EU)

Fuse Name	Connector (Out)	Capacity	Voltage	Part No.	Part Name	Replaceable
FU1	CN611-1 (24V)	10A	250V	11071363	51MS-100H	Yes
FU2	CN610-1 (24VL)	10A	250V	11071363	51MS-100H	Yes
FU3	CN610-2 (24VL_LPS)	4A	250V	11071360	SCT4A	No
FU4	CN611-3 (24V_LPS)	4A	250V	11071360	SCT4A	No
FU5	CN613-5 (5V)	5A	250V	11071351	SCT5A	No

Fuse Name	Connector (Out)	Capacity	Voltage	Part No.	Part Name	Replaceable
FU102	N/A (Protecting the fusing circuit in the PSU)	8A	250V	11071346	FIH 250V 8A(EM/CR)	Yes
FU101	N/A (Protecting the fusing circuit in the PSU)	8A	250V	11071366	FIH 250V 8A(EM)8A03	No
FU103	CN600-4,5 (Anti-condensation Heater)	1A	250V	11071367	SCT1A	No
FU104	N/A (Protecting the fusing circuit in the PSU)	2A	250V	11071362	SCT2A	No

6.7 SCANNER TEST MODE

6.7.1 SBU TEST MODE

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

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

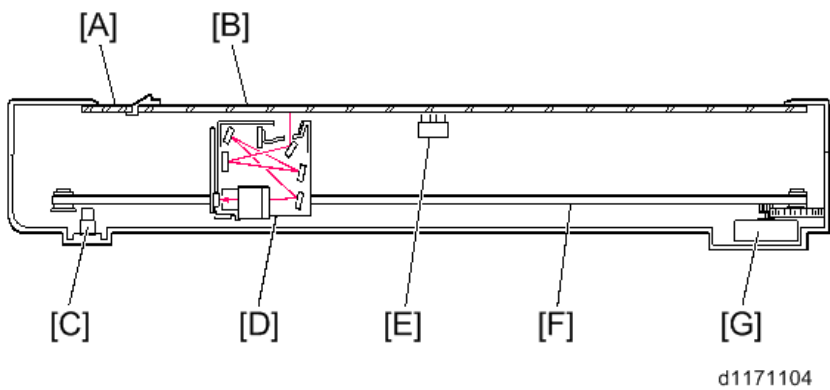
DETAILED DESCRIPTIONS

REVISION HISTORY		
Page	Date	Added/Updated/New
		None

7. DETAILED DESCRIPTIONS

7.1 SCANNER UNIT

7.1.1 OVERVIEW

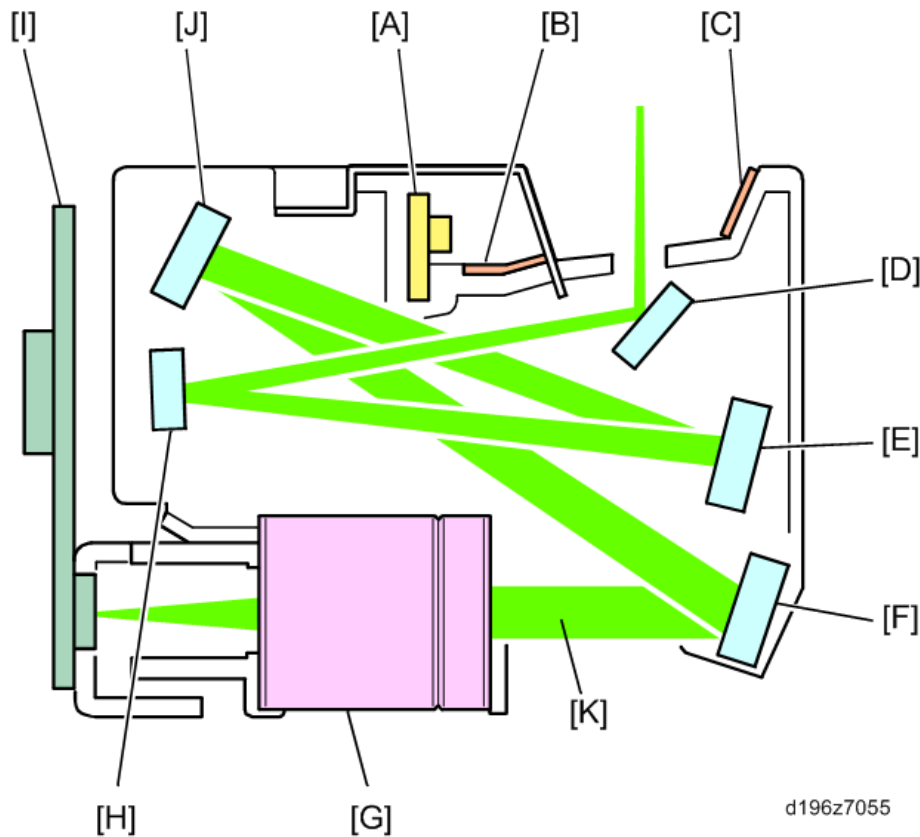


Callout	Item	Callout	Item
[A]	Exposure Glass (for ARDF)	[E]	ARDF/Platen Cover Sensor
[B]	Exposure Glass (for platen mode)	[F]	Scanner Carriage Drive Belt
[C]	Scanner HP Sensor	[G]	Scanner Motor
[D]	Scanner Carriage		

Note

- Automatic paper size detection is not available because this model has no APS (sensor that detects original's paper size) in the scanner.

7.1.2 LIGHT SOURCE AND EXPOSURE



Callout	Item	Callout	Item
[A]	LED Array Board	[G]	Lens
[B]	Reflector	[H]	2nd Mirror
[C]	Reflector	[I]	CCD
[D]	1st Mirror	[J]	4th Mirror
[E]	3rd Mirror	[K]	Light Path
[F]	5th Mirror		

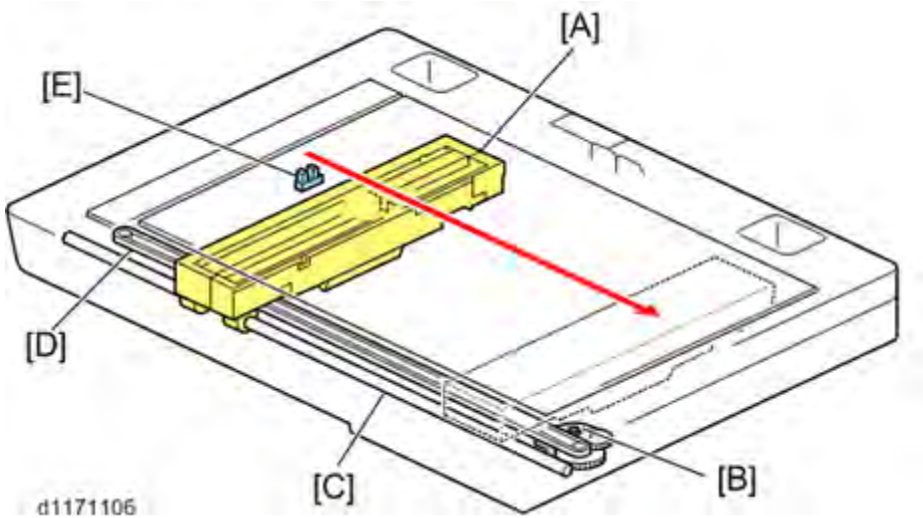
This model uses an LED for the light source. Light from the LED board goes to the original via the two reflectors. From the original, the light then follows the light path to the CCD.

To ensure that enough light reaches the left and right edges of the original, the elements in the array are more densely spaced at the ends than at the center.

The light reflected from the original travels as follows:

LED exposure -> 1st mirror -> 2nd mirror -> 3rd mirror -> 4th mirror -> 5th mirror -> Lens -> CCD

7.1.3 SCANNER CARRIAGE DRIVE



Callout		Callout	Item
[A]	Scanner Carriage	[D]	Scanner Drive Belt
[B]	Scanner Drive Motor	[E]	Scanner HP Sensor
[C]	Carriage Guide Shaft		

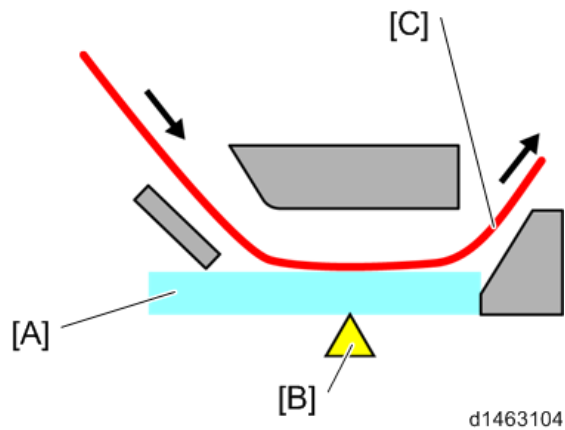
The scanner drive belt [D] drives the scanner carriage [A]. The scanner carriage moves along the carriage guide shaft [C]. Image scanning starts from the position of the scanner carriage HP sensor [E]. The carriage returns to its home position after scanning an image. The scanner HP sensor is located under the carriage.

7.1.4 IMPROVED TOLERANCE TO BLACK LINES WHEN PAPER PASSES THROUGH ADF

This model uses a conventional mechanism in which paper comes in contact with the exposure glass during feeding. This is useful for dealing with adhesion of free dirt particles (paper scraps, etc.). (Self-cleaning mechanism using paper)

On the other hand, sticky dirt adhering to the document sticks to the exposure glass, and may cause black lines in scanned images.

ADF cross-section diagram



[A]: Exposure glass

[B]: Reading position

[C]: Original feed path

Note

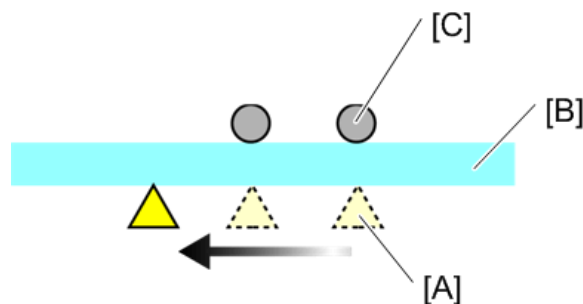
- If black lines due to free dirt particles appear for a short time, such as when users have documents with large amounts of paper dust, you can return to the original configuration.

- Reference (read position correction)

By changing SP4-020-001 (Dust Check > Dust Detect:On/Off), when dirt is detected at the reading position, the reading position may be changed to avoid the dirt.

(If it cannot be avoided, an alert is displayed on the operation panel advising the user to clean the exposure glass).

Image diagram



[A]: Reading position

[B]: Exposure glass

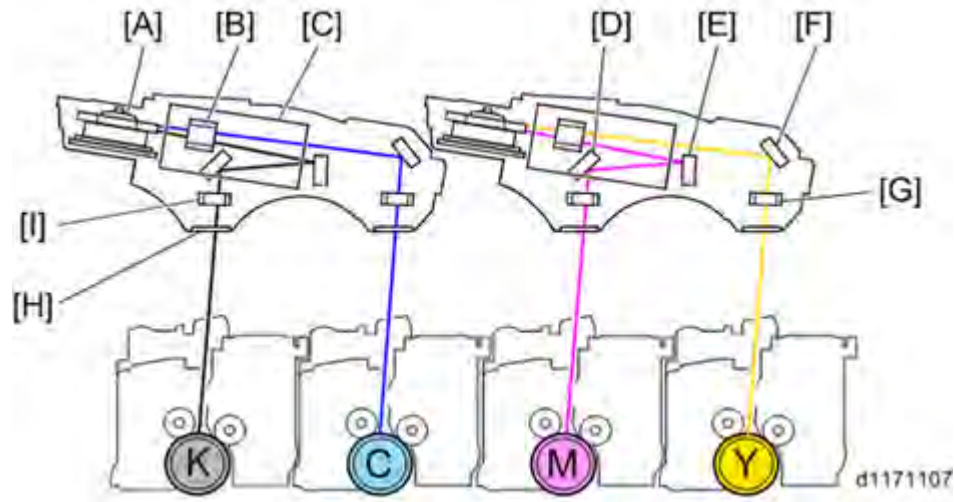
[C]: Dirt

Note

- Dirt is detected when a document passes through, so the alert will not disappear until reading of the next document begins, even after exposure glass cleaning is performed.
- If dirt is detected not on the exposure glass but on the background guide plate, the alert will not disappear even if the glass is wiped.
- The time required for the first copy is slightly (almost imperceptibly) longer.
- The detection threshold can be changed using SP4-020-002 (Dust Check > Dust Detect:Lvl). (The larger the value is, the smaller the dirt particles that can be detected.)
- Do not change the setting of SP4-020-003 (Dust Check > Dust Reject:Lvl).

7.2 LASER UNIT

7.2.1 OVERVIEW



Callout	Item	Callout	Item
[A]	Polygon Motor	[F]	Mirror 3
[B]	Lens (L1)	[G]	Lens (L2)
[C]	LD Unit	[H]	Shield Glass
[D]	Mirror 2	[I]	Lens (L2)
[E]	Mirror 1		

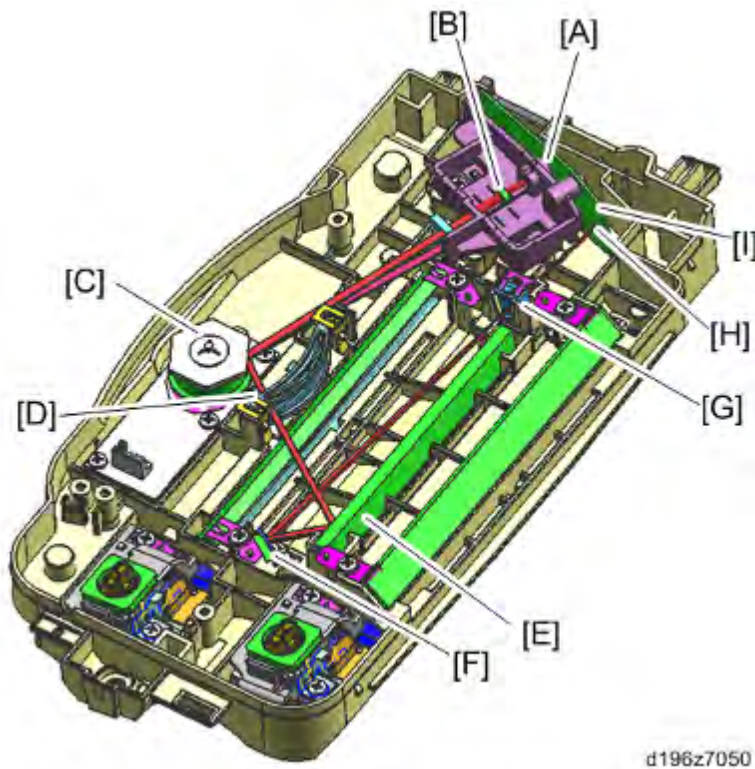
This machine has two LD units. One is for yellow and magenta. Another is for cyan and black.

Each LD unit produces laser beams for two colors.

Based on each model's line speed, this product uses two different types of LD unit:

D196/D214/D236 uses two beams per color to achieve higher line speed, while D219/D220 uses one beam per color, which is the same as the previous model.

7.2.2 LASER SYNCHRONIZING SYSTEM

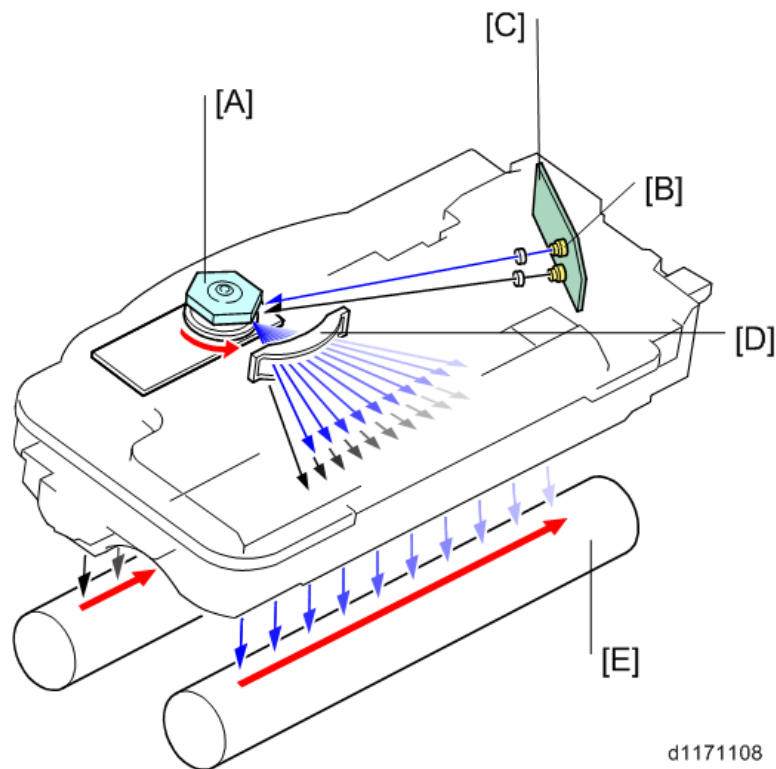


Callout	Item	Callout	Item
[A]	LD	[F]	Synchronization Mirror
[B]	Collimating Lens	[G]	Synchronization Lens
[C]	Polygon Motor	[H]	Synchronization Detector
[D]	Lens (L1)	[I]	LD Unit
[E]	Mirror 1		

The LD unit has a synchronization detector at the left side of each unit (for the optical paths for the K and M drums only). A laser beam coming from the LD [A] travels to the collimating lens [B] → polygon motor [C] → lens (L1) [D] → Mirror 1 [E] → Mirror 2 → Mirror 3 → Drum.

When the beam is at the beginning of the line, the synchronization mirror [F] reflects it to the synchronization lens. The synchronization detector [H] detects the beam reflected.

7.2.3 LINE SCANNING MECHANISM

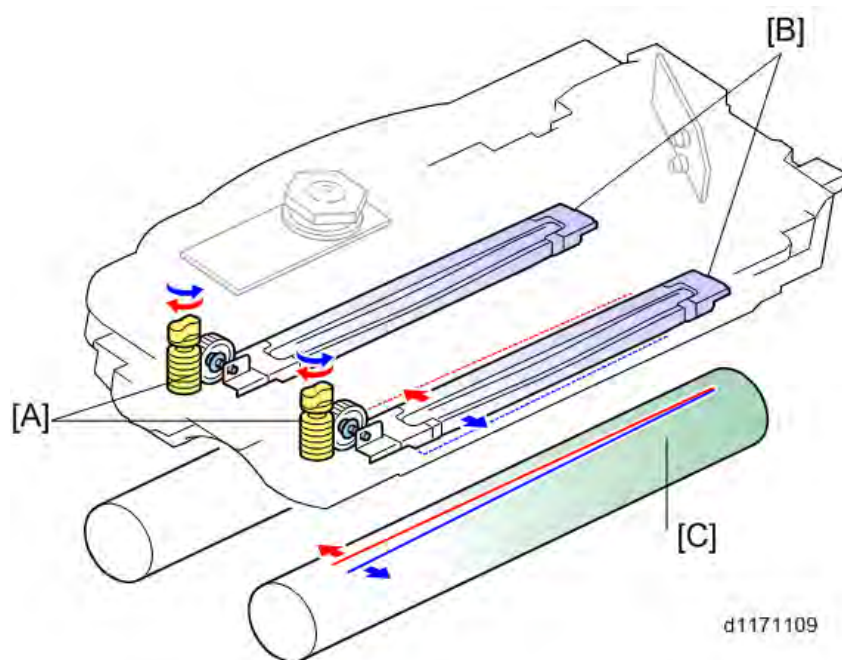


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Callout	Item	Callout	Item
[A]	Polygon Motor (With Polygon Mirror)	[D]	Lens (L1)
[B]	Collimating Lens	[E]	OPC Drum
[C]	LD Unit		

The image read by the scanner is written on the OPC drum [E] with the laser beams. The direction of main scanning is from the front to the rear of the machine. The polygon motor [A] rotates counterclockwise.

7.2.4 IMAGE SKEW ADJUSTMENT



Callout	Item	Callout	Item
[A]	Adjustor	[C]	OPC Drum
[B]	Lens (L2)		

In this machine, you can adjust the image skew correction manually. When turning the adjuster [A] clockwise or counterclockwise, the front of the lens moves to the left or right, and this adjusts the image skew.

7.2.5 DUST SHIELD GLASS

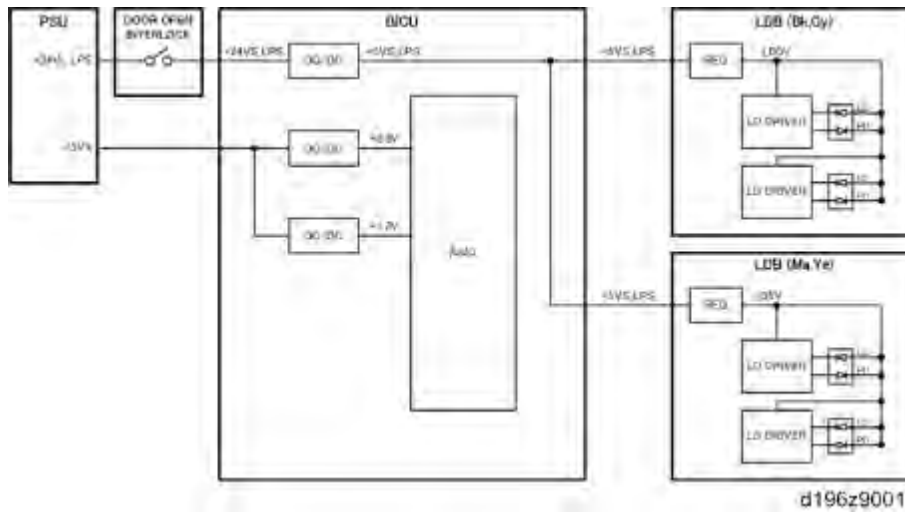
The laser unit is located between the upper side of toner bottle and PCDU. The LD unit emits a laser beam to above the OPC drum. This mechanism keeps the shield glass free from toner dropping and thus requires no cleaning tool.

7.2.6 LD SAFETY SWITCH

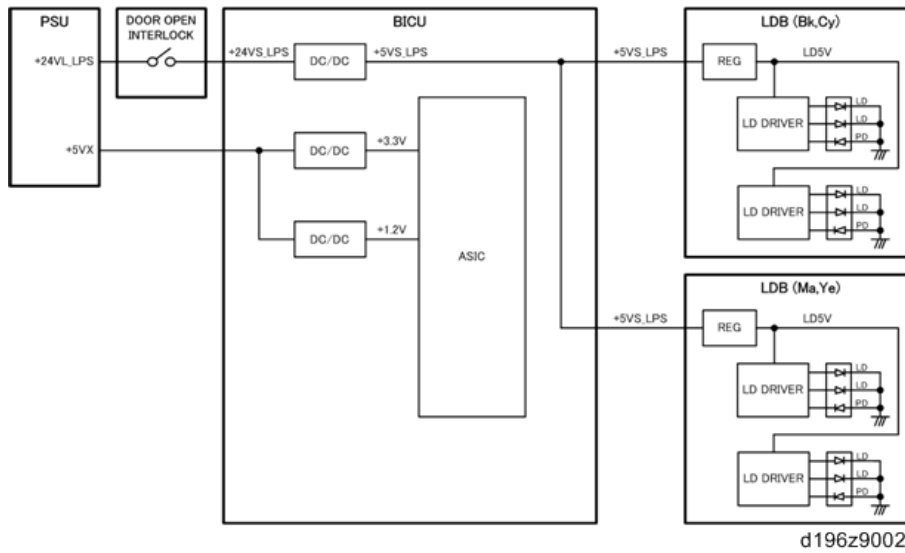
An interlock switch turns off when the front cover or the right door is opened. As a result, this relay cuts off the power supply (+5V) to the two LD boards (the electric circuits go through the BiCU). This system prevents unexpected laser emission, and ensures users and technicians safety.

MP C306 series

Laser Unit

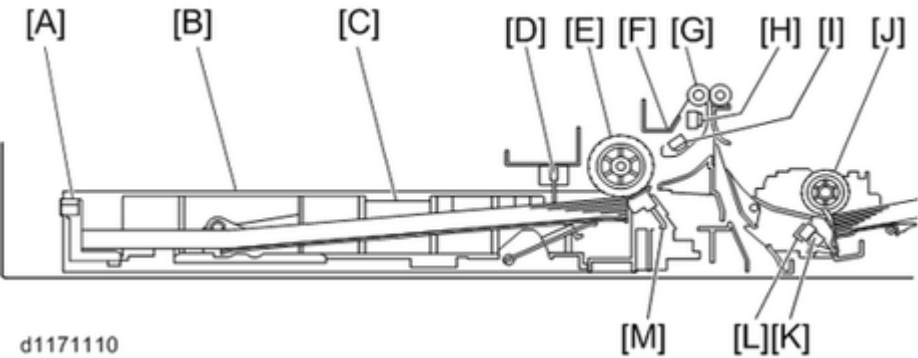


MP C406 series



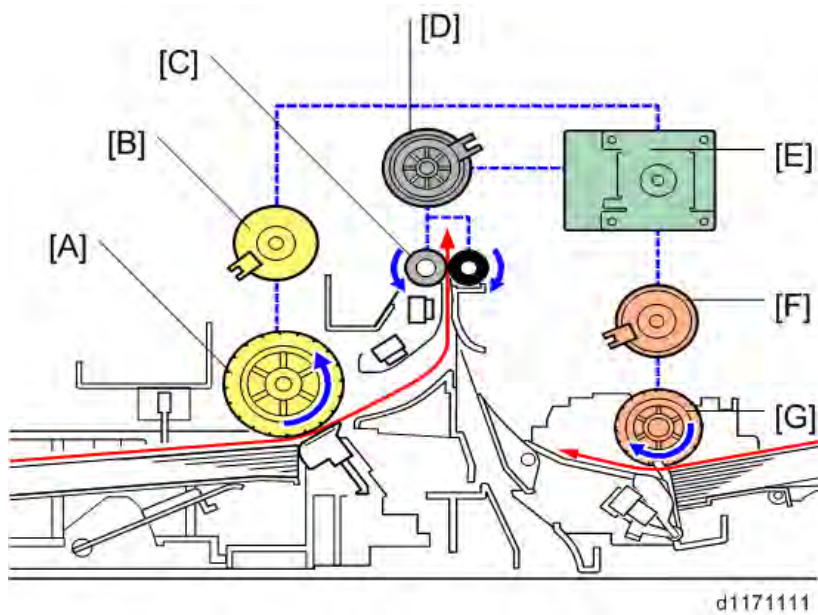
7.3 PAPER FEED AND REGISTRATION

7.3.1 OVERVIEW



Callout	Item	Callout	Item
[A]	End Fence	[H]	Registration Sensor
[B]	Paper Feed Tray	[I]	Paper Feed Sensor
[C]	Side Fence	[J]	Bypass Feed Roller
[D]	Paper End Sensor	[K]	Bypass Feed Paper Size Sensor
[E]	Paper Feed Roller	[L]	Bypass Paper End Sensor
[F]	Dust Collection Tray	[M]	Friction Pad
[G]	Registration Rollers (Right: Driven, Left: Drive)		

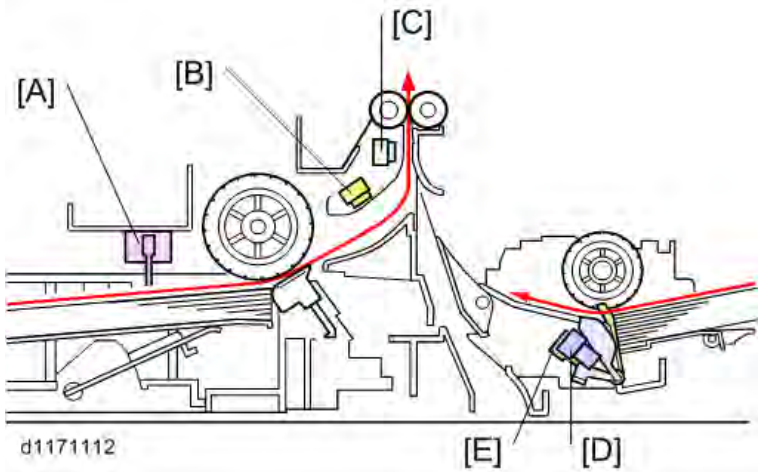
7.3.2 PAPER FEED, REGISTRATION, AND BYPASS FEED DRIVE



Callout	Item	Callout	Item
[A]	Paper Feed Roller	[E]	Paper Transport Motor
[B]	Paper Feed Clutch	[F]	Bypass Feed Clutch
[C]	Registration Roller	[G]	Bypass Feed Roller
[D]	Registration Clutch		

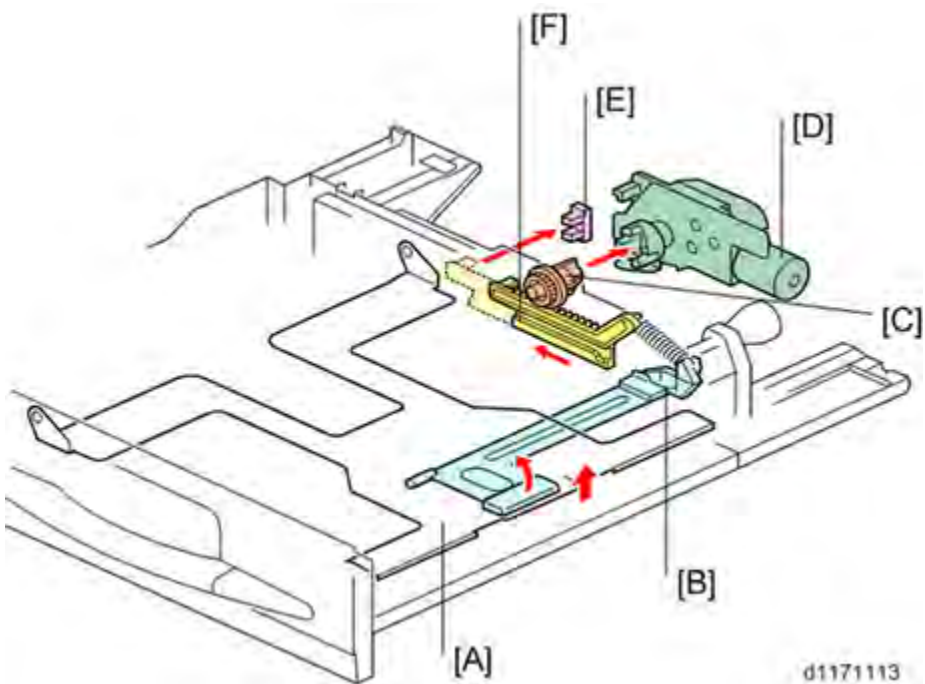
The drive from the paper transport motor is transmitted to each clutch through gears. The paper transport motor controls paper feed/exit, duplex, registration, waste toner transport coil and bypass tray lift.

Sensor Locations in the Paper Feed Path



Callout	Item	Callout	Item
[A]	Paper End Sensor	[D]	Bypass Paper Width Sensor
[B]	Paper Feed Sensor	[E]	Bypass Paper End Sensor
[C]	Registration Sensor		

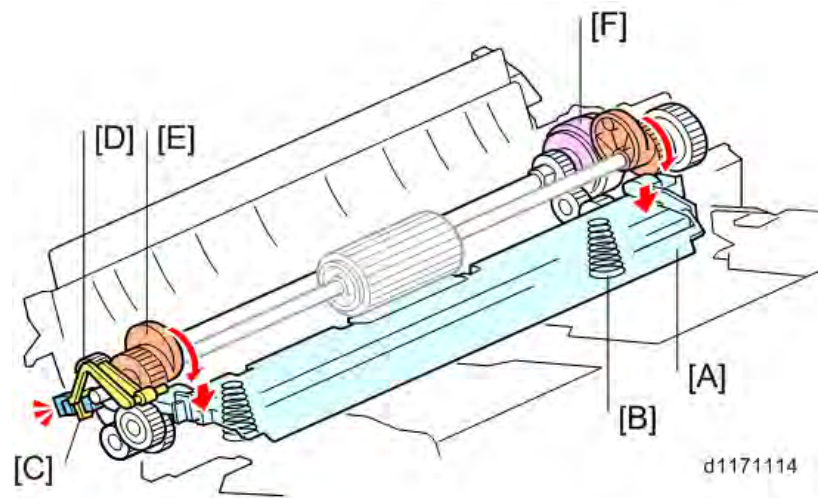
7.3.3 TRAY LIFT MECHANISM



Callout	Item	Callout	Item
[A]	Bottom Plate	[D]	Tray Lift Motor
[B]	Bottom Plate Lift Arm	[E]	Tray Lift Sensor
[C]	Bottom Plate Lift Gear	[F]	Rack and Pinion Mechanism

The tray lift motor rotates the gear [C] and the gear makes the rack [F] move.
The movement of the rack pulls the spring and this moves the bottom plate lift arm [B].
The arm lifts the bottom plate [A].
The position of the bottom plate is detected by the Tray Lift Sensor [E]. This machine does not use motor control to detect the bottom plate position.

7.3.4 BYPASS TRAY BOTTOM PLATE LIFT MECHANISM

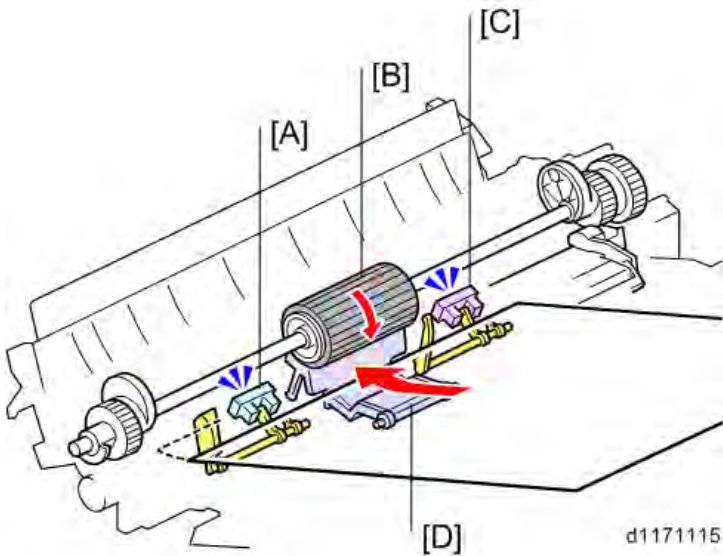


Callout	Item	Callout	Item
[A]	Bypass Tray Bottom Plate	[D]	Actuator
[B]	Pressure Spring	[E]	Bypass Tray Bottom Plate Lifting-up Cam (Front and Rear)
[C]	Bypass Tray Bottom Plate Lift Cam HP Sensor	[F]	Bypass Tray Bottom Plate Lifting-up Cam Clutch

The paper transport motor rotates the bypass tray bottom plate lift cam clutch [F], and this moves the bypass tray bottom plate [A] up and down.

The position of the bypass tray bottom plate lift cams (and because of this, the bypass tray bottom plate) is detected by the bypass tray bottom plate lift cam HP sensor [C].

7.3.5 PAPER SIZE DETECTION AND PAPER END DETECTION



Callout	Item	Callout	Item
[A]	Bypass Paper Size Sensor	[C]	Bypass Feed Paper End Sensor
[B]	Bypass Feed Roller	[D]	Bypass Feed Friction Pad

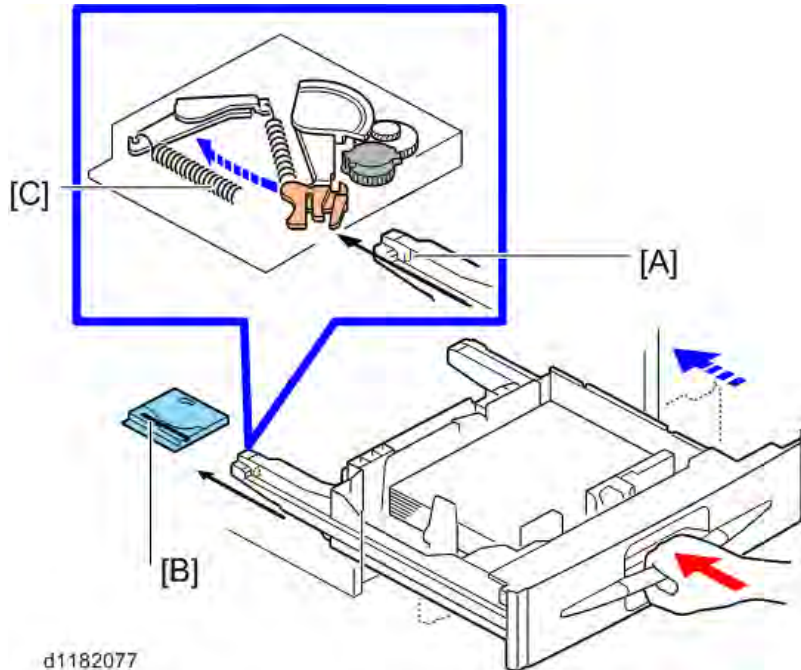
The bypass paper size sensor [A] is not at the side of the tray but at the side of the bypass paper feed unit.

The bypass paper size sensor is a photointerrupter, which detects when B5 paper or wider is placed in the tray.

The bypass feed paper end sensor is activated if there is no paper on the tray.

7.3.6 TRAY AUTO-CLOSE MECHANISM

The tray has a pin [A] on its bottom. When the tray is set, the spring [C] in the draw-in unit [B] slowly pulls the tray in. When the tray is pulled out, the pin stretches the spring.



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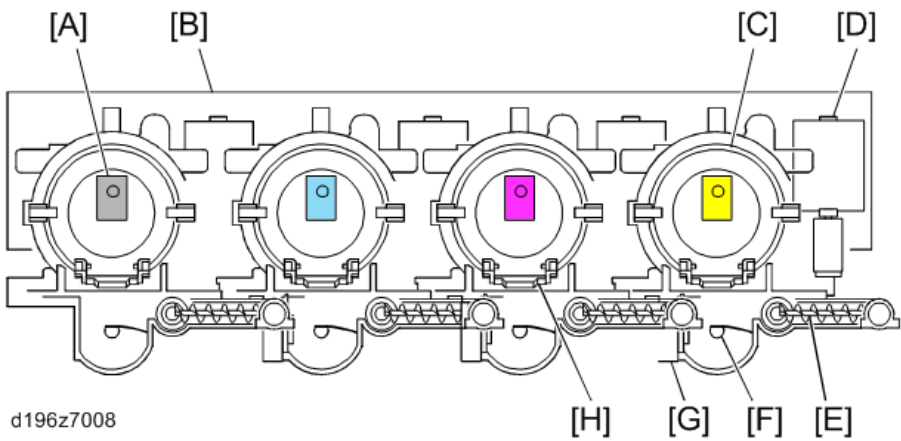
[A]: Pin

[B]: Draw-in Unit

[C]: Spring

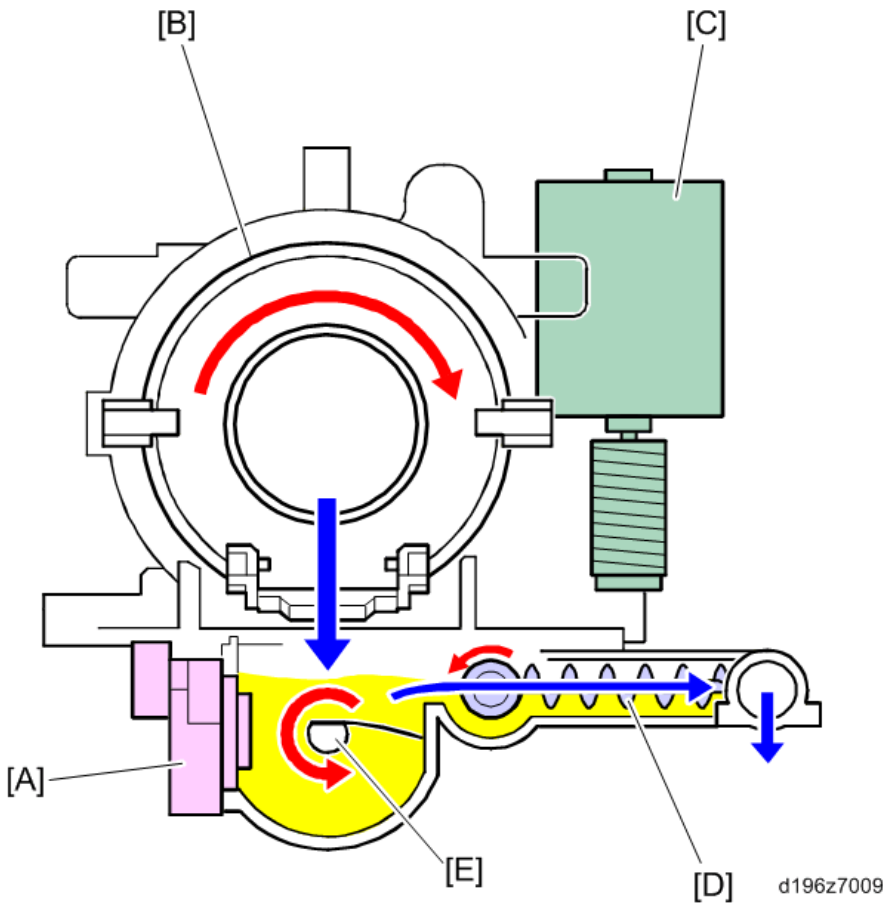
7.4 TONER SUPPLY SECTION

7.4.1 OVERVIEW



Callout	Item	Callout	Item
[A]	ID Chip	[E]	Toner Transport Coil
[B]	Bottle ID Chip Contact Board	[F]	Agitator
[C]	Toner Bottle	[G]	Toner End Sensor
[D]	Toner Supply Motor	[H]	Shutter

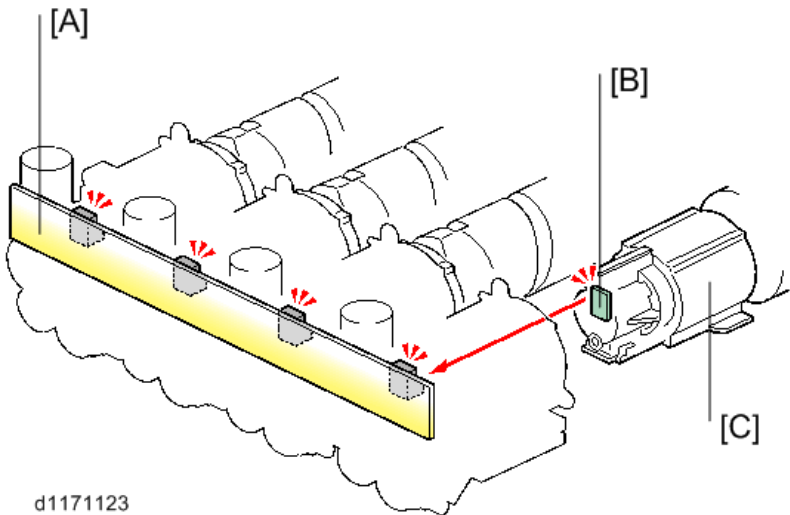
7.4.2 TONER SUPPLY AND TRANSPORT MECHANISM



Callout	Item	Callout	Item
[A]	Toner End Sensor (Only for CMY)	[D]	Toner Transport Coil
[B]	Toner Bottle	[E]	Agitator
[C]	Toner Supply Motor		

Rotating the toner bottle [B] transports the toner towards the rear of the machine. Each toner bottle has an ID chip that stores information for each toner bottle. The toner from the toner bottles goes into the hopper and is agitated by the agitator [E]. Then, rotating the toner transport coil [D] transports the toner to the development unit. Only color hoppers have the toner end sensor [A]. The ID chip manages the remaining amount of black toner.

7.4.3 TONER BOTTLE SET SENSOR MECHANISM



Callout	Item	Callout	Item
[A]	Bottle ID Chip Contact Board	[C]	Toner Bottle
[B]	ID Chip (One for Each Color)		

Each toner bottle [C] has an ID chip [B]. When the toner bottle [C] comes in contact with the bottle ID chip contact board [A], the machine detects that the toner bottle is set.

7.4.4 TONER NEAR END AND TONER END

Toner Near-End

First, the amount of remaining toner is detected with the pixel count and the driving time of the toner supply motor. Then, when the amount of remaining toner is less than the threshold for toner near-end (K = 23 g, CMY = 10 g), the machine determines a toner near-end.

For CMY, when the amount of remaining toner is less than 50 g, or when the toner end sensor, which is a piezoelectric sensor, detects toner near-end twice, the machine also determines a toner near-end.

Toner End

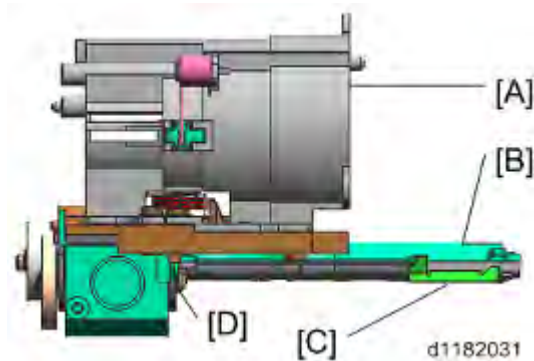
A toner end is detected when the toner end sensor detects the end threshold six times in the toner near-end condition.

The machine also detects a toner end when the difference of V_t and V_{tref} , and their total difference are as in the following matrix:

	Condition	V_t/V_{tref} : Diff	V_t/V_{tref} : Diff: Total
K	Before Near-End	0.7 V or more	Over 10 V
	After Near-End	0.3 V or more	Over 3 V
CMY	-	0.5 V or more	Over 10 V

7.4.5 TONER SUPPLY UNIT

The agitator [G] transports the toner supplied into the sub-hopper by raising it to the toner transport path. The transport path is level to make the machine's height lower.

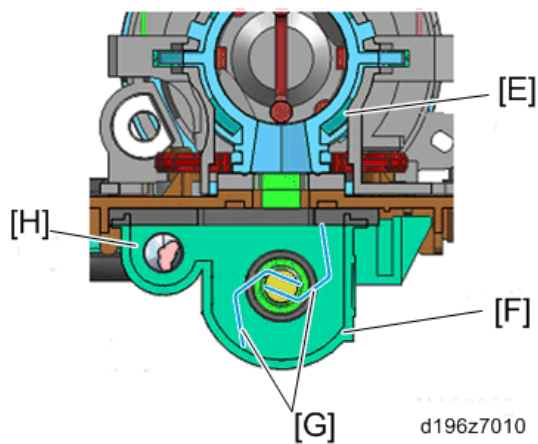


[A] Supply Housing

[B] Toner Transport Path

[C] Shutter

[D] Sub-hopper



[E] Toner Bottle Cap

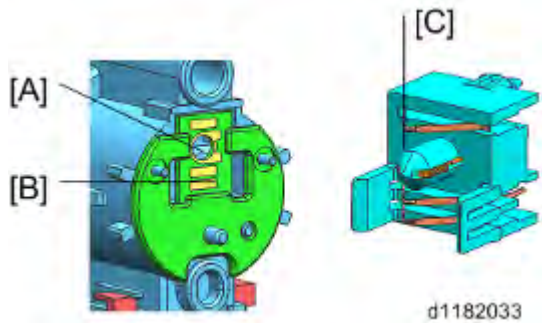
[F] Sub-hopper

[G] Agitator

[H] Toner Transport Path

7.4.6 ID CHIP

The ID chip [B] of the toner bottle is set correctly by inserting the positioning hole [A] of the toner bottle over the tapered boss [C] of the mainframe.



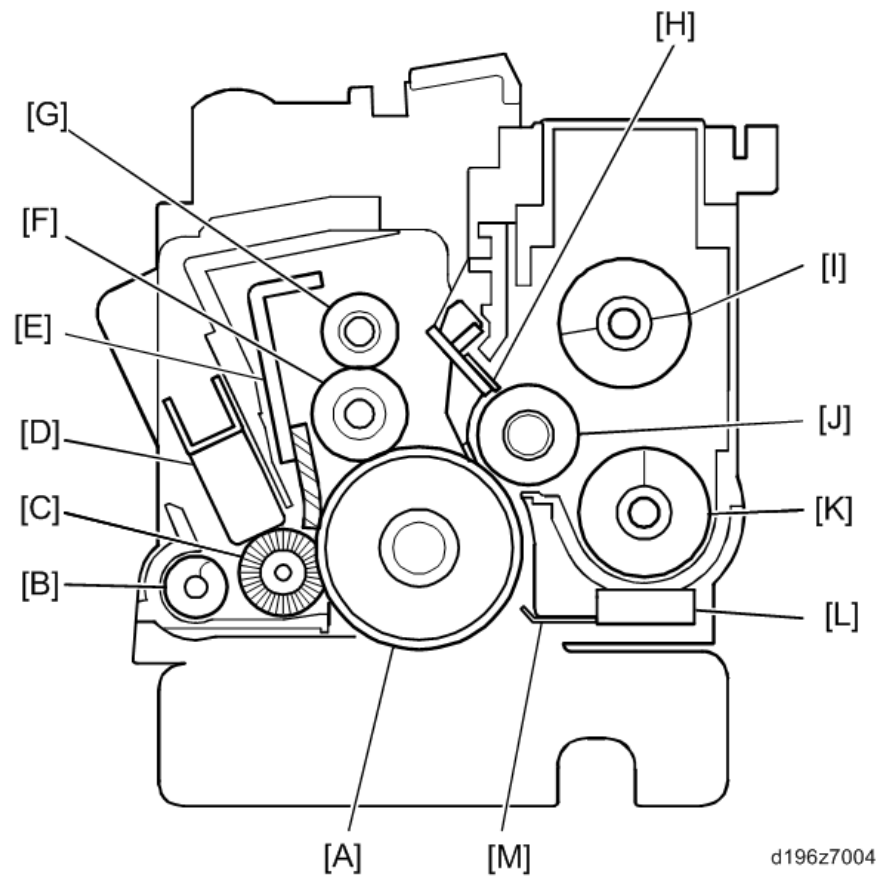
[A] Positioning Hole

[B] ID Chip

[C] Tapered Boss (for Chip Positioning)

7.5 PCDU

7.5.1 OVERVIEW



Drum Section

Callout	Item	Callout	Item
[A]	OPC Drum	[E]	Cleaning Blade
[B]	Waste Toner Transport Coil	[F]	Charge Roller
[C]	Lubricant Brush Roller	[G]	Charge Roller Cleaning Roller
[D]	Lubricant		

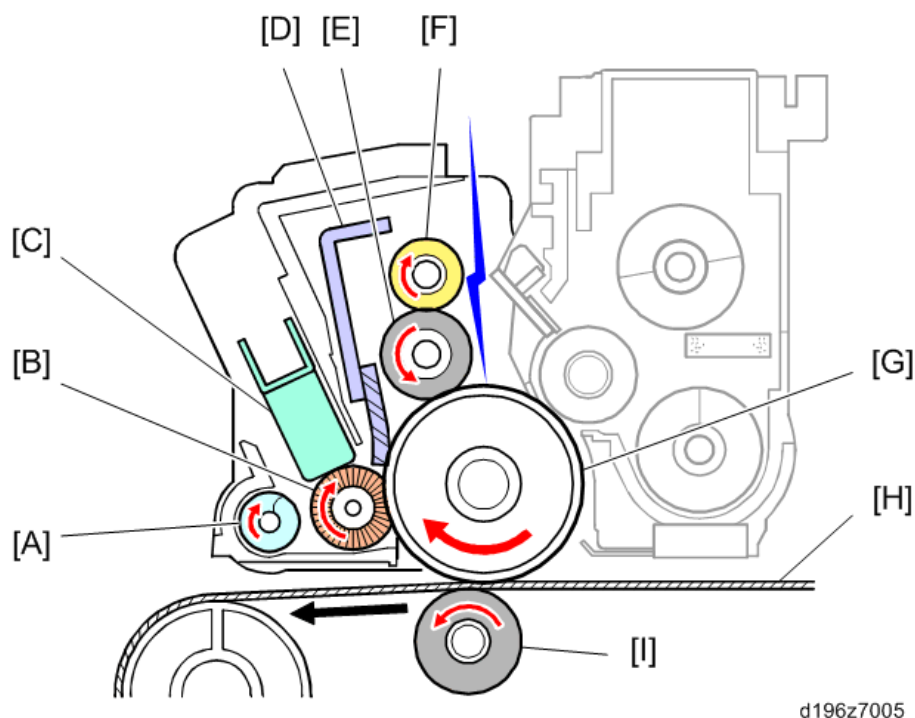
Development Section

Callout	Item	Callout	Item
[H]	Doctor Blade	[K]	Toner Transport Coil (Lower)
[I]	Toner Transport Coil (Upper)	[L]	Toner Density Sensor (μ sensor)
[J]	Development Roller	[M]	Toner Catching Mylar

Detailed
Descriptions

The OPC drum section and the development section are joined by plates at the front and rear of the unit.

7.5.2 OPC DRUM



Callout	Item	Callout	Item
[A]	Waste Toner Transport Coil	[F]	Charge Roller Cleaning Roller
[B]	Lubricant Brush roller	[G]	OPC Drum
[C]	Lubricant	[H]	Image Transfer Belt (ITB)
[D]	Drum Cleaning Blade (Counter Rotation)	[I]	Image Transfer Roller (1st Transfer Roller)
[E]	Charge Roller		

Charge Mechanism

A charge roller [E] charges the surface of the OPC drum [G] and drives the charge roller cleaning roller [F].

OPC Drum

This machine uses an organic photo conductor drum (OPC drum) [G] for image creation. The laser exposes the drum from the machine's front to the rear, and the image developed transfers to the ITB (Image Transfer Belt). Then the ITB transports the created image.

Drum Cleaning Mechanism

The drum cleaning blade [D] cleans the drum (counter rotation method).

Drum cleaning and lubricant application are done at the same time.

The lubricant is applied with the lubricant brush roller [B].

The lubricant brush roller rotates in the opposite direction to the OPC drum.

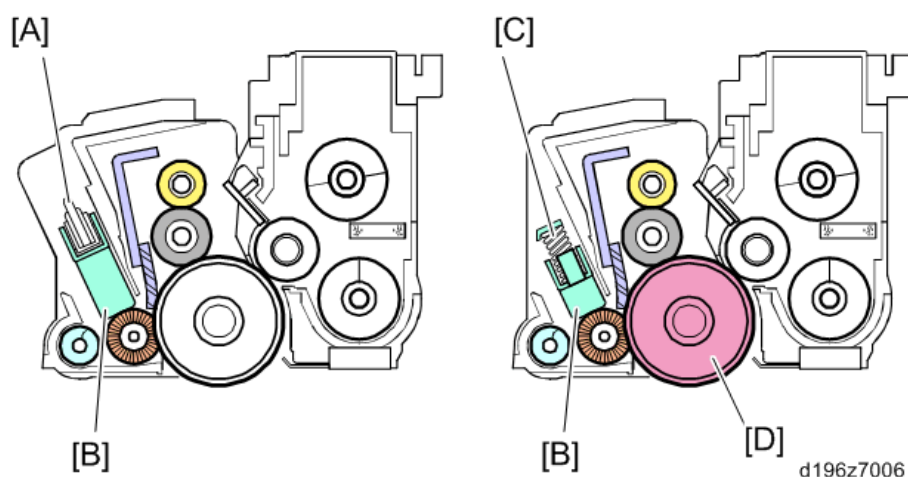
Toner and foreign objects are removed from the edges of the blade by rotating the drum counterclockwise when a copy job is done.

The waste Toner Transport Coil [A] transports the waste toner collected with the drum cleaning blade to the waste toner bottle via the front of the unit.

Discharge Mechanism

This machine uses spontaneous discharge to remove remaining charge from the drum. A quenching lamp is not used.

Differences between K and CMY



Left: K

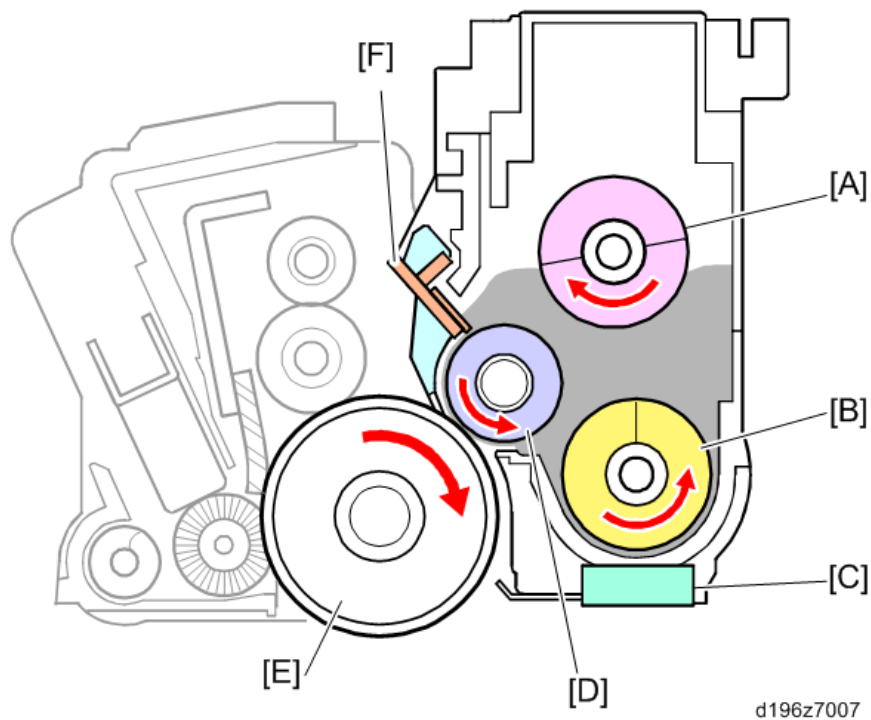
Right: CMY

The following points are the differences between K and CMY.

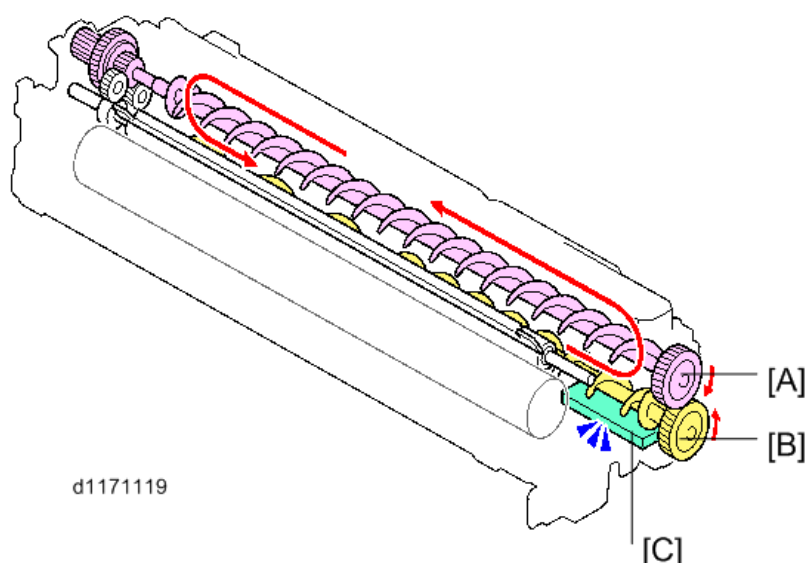
	K	CMY
Lubricant [B] quantity	K > CMY	
Lubricating method	Arm [A]	Pressure spring [C]
Silencer [D]	Available	Available

The silencer [D] is an internal layer of the drum, added to reduce sound during rotation.

7.5.3 DEVELOPMENT UNIT



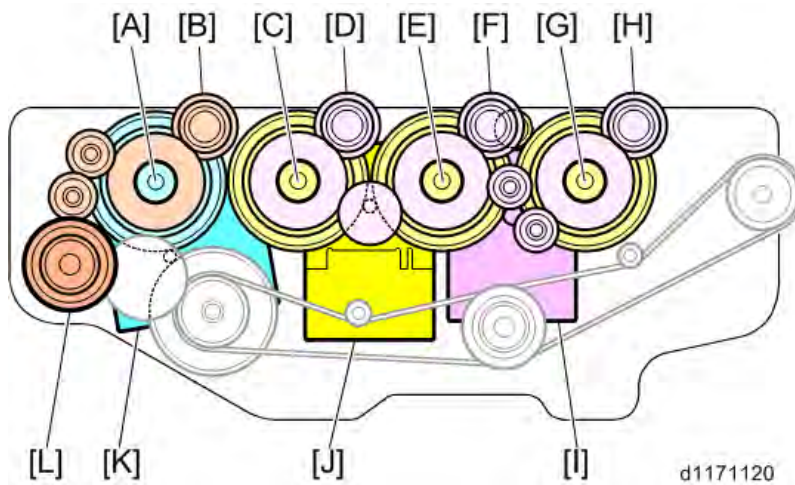
Callout	Item	Callout	Item
[A]	Toner Transport Coil (Upper)	[D]	Development Roller (Sleeve Architecture)
[B]	Toner Transport Coil (Lower)	[E]	OPC Drum
[C]	Toner Density Sensor (Sensor)	[F]	Doctor Blade



Callout	Item	Callout	Item
[A]	Toner Transport Coil (Upper)	[C]	Toner Density Sensor (μ Sensor)
[B]	Toner Transport Coil (Lower)		

- **Developer Agitation Mechanism**
The developer is agitated by the upper [A] and lower [B] transport coils. Toner and developer are regulated by the doctor blade, and applied to the development roller.
- **Toner Density Detection Mechanism**
Toner density sensor [C] detects the toner density. Toner is supplied when the toner density is not sufficient.
- **Toner Density Control**
The ID sensor at the lower right of the ITB detects the amount of light reflected from the drum and detects the toner density. Toner is supplied based on the information which the ID sensor detects.

7.5.4 DRUM/DEVELOPMENT DRIVE



Callout	Item	Callout	Item
[A]	Drum Gear (K)	[G]	Drum Drive Gear (Y)
[B]	Development Drive Gear (K)	[H]	Development Drive Gear (Y)
[C]	Drum Drive Gear (C)	[I]	Development Motor (CMY)
[D]	Development Drive Gear (C)	[J]	Drum Motor (CMY)
[E]	Drum Drive Gear (M)	[K]	Drum Motor (K)
[F]	Development Drive Gear (M)	[L]	Development Clutch (K)

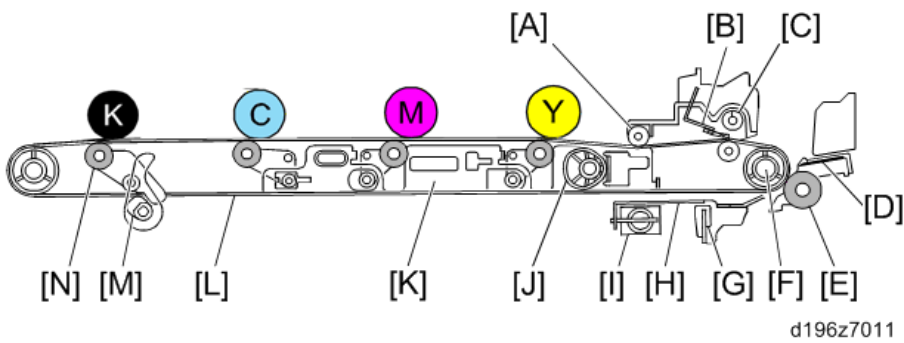
The Drum motor (Bk) [K] drives the drum (K). The Development Clutch [L] drives the Development Unit for K.

The Drum motor (CMY) [J] drives the other three drums and the development motor (CMY) [I] drives the Development Units for C/M/Y.

Do not disassemble the three drive gears ([C], [E], and [G]) in the field. These are precisely assembled in the factory.

7.6 ITB/ PAPER TRANSFER

7.6.1 OVERVIEW



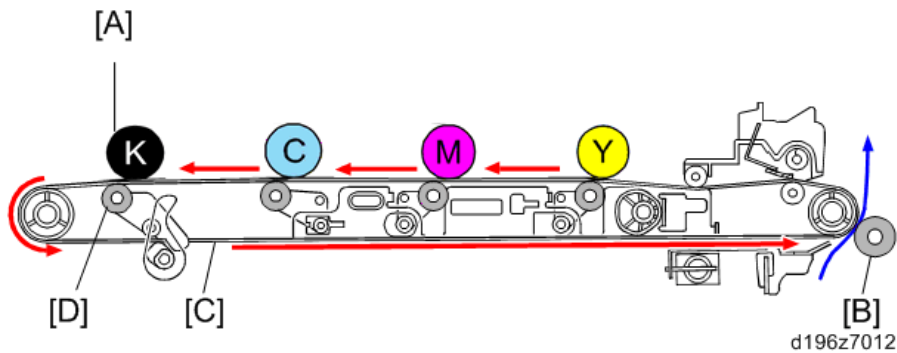
Callout	Item	Callout	Item
[A]	Belt Tension Roller	[H]	ID Sensor Shutter
[B]	ITB Cleaning Blade	[I]	Shutter Solenoid
[C]	Waste Toner Transport Coil	[J]	ITB Contact Cam (CMY)
[D]	Discharge Plate	[K]	ITB Contact Slider
[E]	Paper Transfer Roller	[L]	ITB (Image Transfer Belt)
[F]	ITB Drive Roller	[M]	ITB Contact Cam (K)
[G]	ID Sensor	[N]	Image Transfer Roller

7.6.2 MECHANISMS

Differences from the predecessor models

	C305 (Predecessor model)	C306/C406 (This model)
Image Transfer	Direct Transfer	Indirect transfer
Paper Transfer	Repulsion transfer (Paper transfer bias is applied to the ITB drive roller.)	Attraction transfer (Paper transfer bias is applied to the paper transfer roller.)
	Contact/release mechanism	Constant contact (No release mechanism)
Cleaning Mechanism	Cleaning Blade + Lubricant brush roller	Cleaning Blade

Transfer Movement and Image Transport



Callout	Item	Callout	Item
[A]	OPC Drum	[C]	ITB
[B]	Paper Transfer Roller	[D]	Image Transfer Roller (First Transfer Roller)

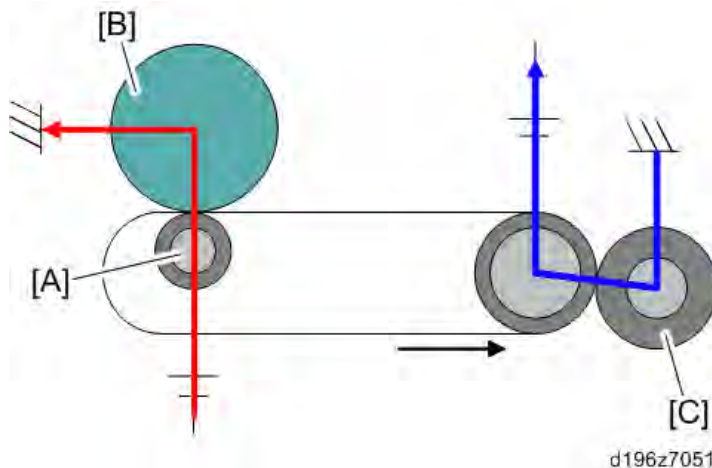
Images of each color are created and transferred to the ITB (image transfer belt) [C].
The paper transfer roller [B] transfers the toner image from the ITB to the paper.
This model uses the indirect transfer method to enhance the quality of transfer.
The indirect transfer method uses the resistance of the ITB to apply the bias to the drum.

So, in this model, the position of the image transfer roller is changed and so is its material. As the image transfer method is changed, the paper transfer method is changed from the repulsion method to the attraction method (the reason is explained below).

Note

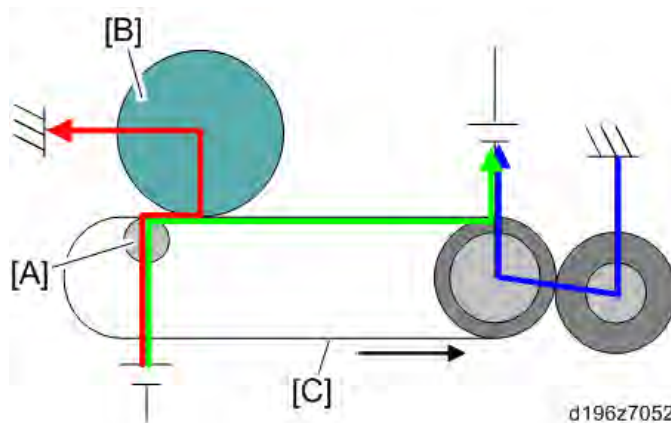
▪ **Direct Image Transfer + Repulsion Transfer Method (C305):**

The image transfer roller [A] transfers the image transfer bias to the drum [B]. The paper transfer bias flows into the paper transfer roller [C].



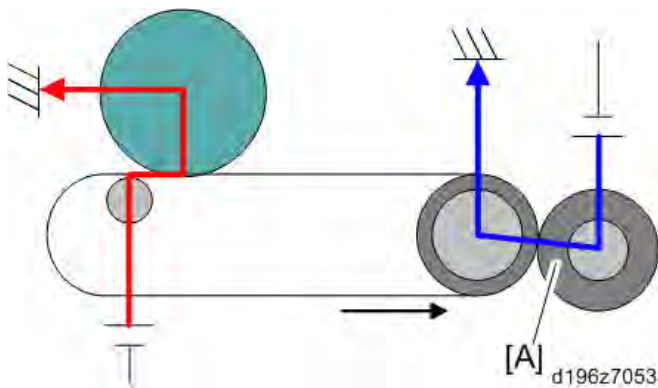
▪ **Indirect Image Transfer + Repulsion Transfer Method:**

The image transfer roller [A] transfers the image transfer bias to the drum [B]. However, some of the bias goes to the image transfer belt [C]. This causes harmful interference between the image transfer current and paper transfer current.

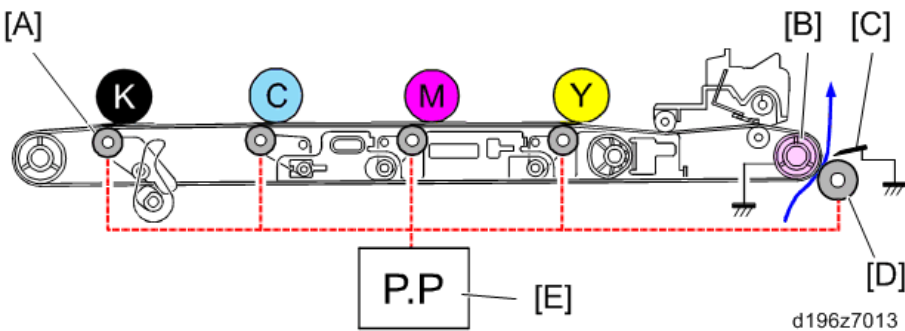


▪ **Indirect Image Transfer + Attraction Transfer Method (C306/C406):**

To eliminate the interference, applying the opposite bias to the paper transfer roller [A] is required. That is why the attraction transfer method is used in this model.



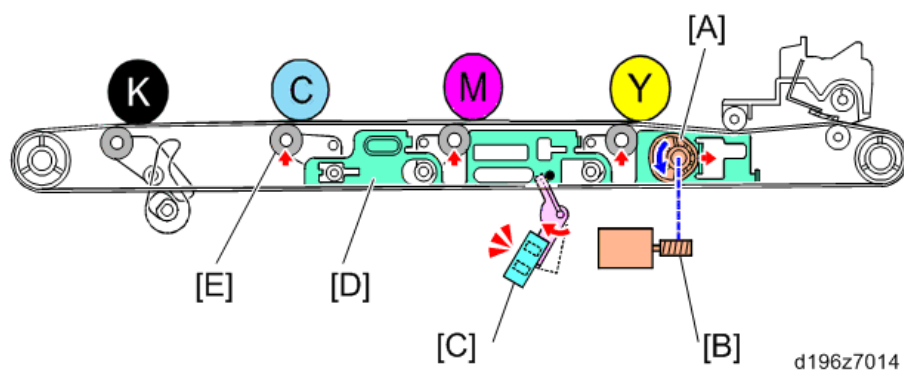
Transfer Bias



Callout	Item	Callout	Item
[A]	Image Transfer Roller (First Transfer Roller)	[D]	Paper Transfer Roller
[B]	ITB Drive Roller	[E]	Power Pack
[C]	Discharge Plate		

The power pack [E] applies a transfer bias to the image transfer roller [A]. The ITB drive roller [B] and discharge plate [C] are grounded through a diode.

There is no contact/release mechanism for the paper transfer system, which the previous model uses, to reduce noise.

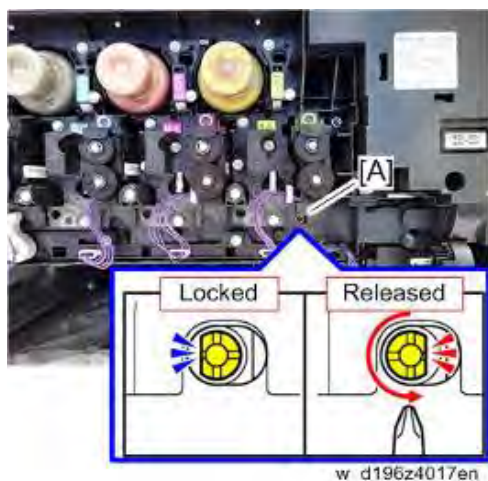
ITB Contact

Callout	Item	Callout	Item
[A]	ITB Contact Cam (CMY)	[D]	Contact Slider
[B]	ITB Contact Motor	[E]	Image Transfer Roller (First Transfer Roller)
[C]	ITB Contact Sensor		

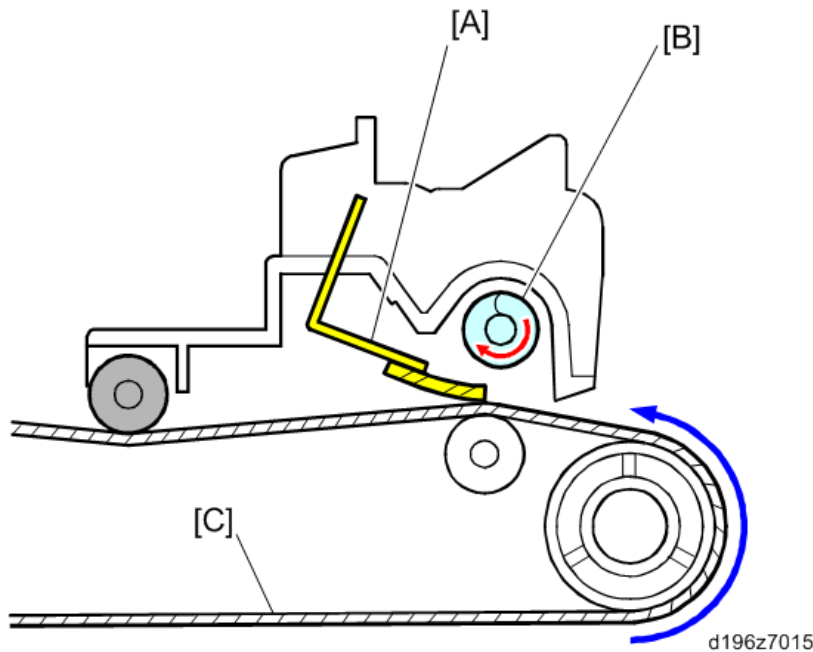
ITB has a contact mechanism to prevent the OPC drum (CMY) from early deterioration. The color drums are not needed for B/W printing, so this mechanism releases the ITB from the OPC drums (CMY).

The ITB contact motor [B] rotates the ITB contact cam [A] through a gear. The contact slider then moves and raises the image transfer roller [E] into contact with the CMY drums.

If the mechanism is defective (e.g.: Paper jams), and is stuck with the CMY rollers up against the ITB, the cam can be turned manually to lower the rollers, in order to remove the ITB unit without damaging the machine, as follows. The ITB will move away from the CMY drums. To do this, turn the pressure release screw to the left until the flat part of the half moon on the screw points to the right



ITB Cleaning

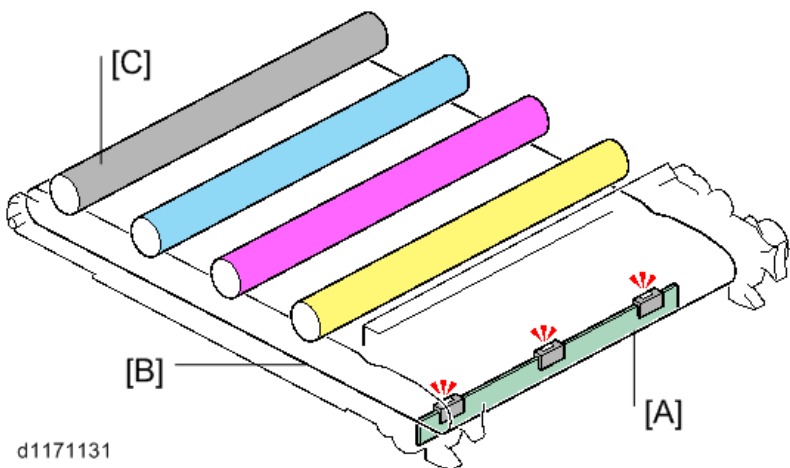


Callout	Item	Callout	Item
[A]	ITB Cleaning Blade	[C]	ITB
[B]	Waste Toner Collection Coil		

The cleaning blade [A] cleans the ITB [C]. The waste toner collection coil [B] transports the waste toner removed by the ITB cleaning blade towards the front of the machine.

This model only uses a cleaning blade for cleaning, whereas the previous model uses a blade and a lubricant brush roller.

Image Position Correction

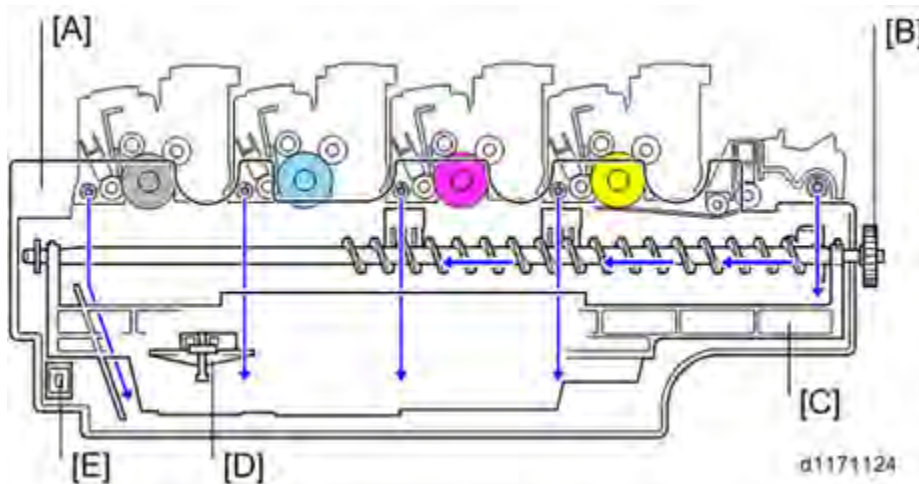


Callout	Item	Callout	Item
[A]	ID Sensor	[C]	OPC Drum
[B]	ITB		

The image position adjustment is done by the three ID sensors [A].

7.7 WASTE TONER COLLECTION

7.7.1 WASTE TONER TRANSPORT MECHANISM



Callout	Item	Callout	Item
[A]	Waste Toner Bottle	[D]	Waste Toner Full Sensor
[B]	Waste Toner Bottle Transport Coil	[E]	Waste Toner Bottle Set Switch
[C]	Waste Toner Agitator		

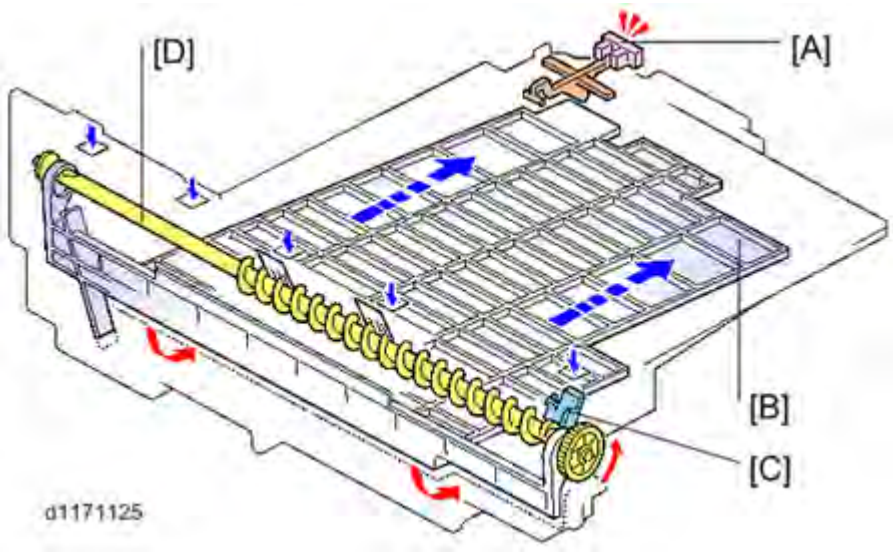
The waste toner collected from the ITB cleaning unit is transported towards the front of the machine and it goes into the waste toner bottle [A].

The waste toner of yellow and magenta coming from the PCDU (Y/M) and the waste toner from the ITB cleaning unit is collected at the center of the waste toner bottle by the waste toner transport coil. The black and cyan waste toner comes from the PCDU to the waste toner bottle directly.

The waste toner agitator [C] carries waste toner piled up at the front of the waste toner bottle to the rear.

The waste toner bottle set switch [E] detects the presence of the waste toner bottle, and there is also a waste toner bottle full sensor [D].

7.7.2 WASTE TONER COLLECTION MECHANISM



Callout	Item	Callout	Item
[A]	Waste Toner Full Sensor	[C]	Waste Toner Agitator (for ITB Cleaning Unit)
[B]	Waste Toner Agitator	[D]	Waste Toner Bottle Transport Coil

The waste toner agitator [B] carries waste toner piled up at the front of the waste toner bottle to the rear. The agitator [C] moves together with the waste toner bottle transport coil [D].

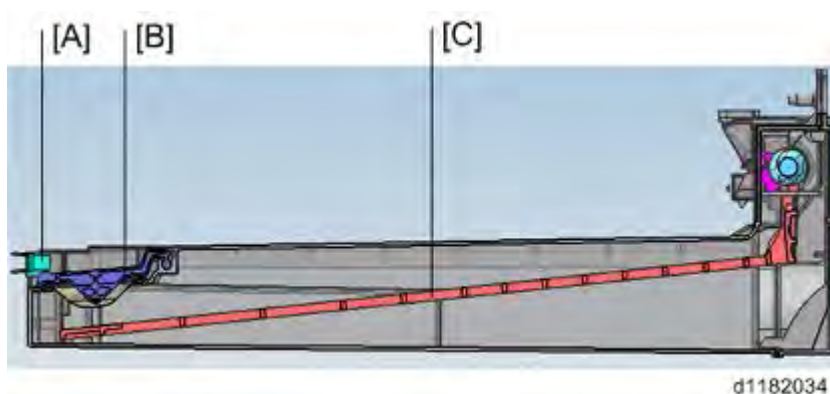
When the waste toner full sensor [A] detects a “waste toner near full”, the machine displays an alert message on the operation panel, which prompts users to replace the waste toner bottle.

7.7.3 WASTE TONER FULL DETECTION

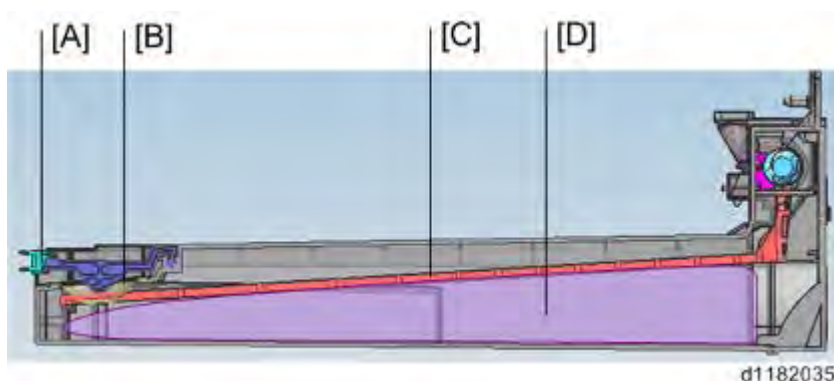
When the waste toner moves the rubber actuator [B] to the highest position, the waste toner full sensor [A] detects that the waste toner bottle is near-full. The machine does not stop at this time. When the quantity of waste toner calculated by the machine reaches 25 g or 3,000 sheets in standard mode, whichever comes first after near-full was detected, the machine detects that the waste toner bottle is full, and stops itself automatically.

↓ Note

- When the waste toner bottle is empty:



- When the waste toner bottle is full:



- [A] Waste Toner Full Sensor
- [B] Rubber Actuator
- [C] Waste toner agitator
- [D] Waste Toner

7.8 PROCESS CONTROL AND MUSIC

7.8.1 PROCESS CONTROL

Outline

Process control adjusts the image creation process to maintain a constant image density. Process control is executed at the following times.

Trigger	Operative Condition	Notes
Power ON	▪ When a certain time passes after the previous job end, AND: 1. More than six hours pass after the last OPC drum operation (SP3-530-001). 2. More than 100 full color copies or more than 250 B/W copies are made between the second latest power-on and the latest power-on. ▪ When a certain time passes after the previous job end, OR, the change of temperature/humidity after the last OPC drum operation exceeds the following condition: 1. The change of temperature is more than or equal to the threshold [deg] (SP3-530-002). 2. The change of relative humidity is more than or equal to the threshold [%RH] (SP3-530-003). 3. The change of absolute humidity is more than or equal to the threshold [g/m³] (SP3-530-004). Default settings: Time: 360 minutes Temperature: 10 deg Relative humidity: 50%RH Absolute humidity: 6 g/m³ Other related SPs: SP3-530-005/006	Except when recovering from an SC or jam

Trigger	Operative Condition	Notes
Job End	When the job end counter becomes more than the threshold. Related SPs: SP3-534-001/011	-
Job Interruption	When the job interrupt counter becomes more than the threshold. Related SPs: SP3-533-001/011	-
Non-use (Idle)	Non-use time becomes more than the value in SP3-531-001.	-
Manual Process Control	When SP3-011-001 is executed.	-
Toner End Recovery	When a Toner End is resolved.	-
Initial Setting	When an initial developer setting is completed.	-

Vc is the charge bias, which is applied to the charge rollers.

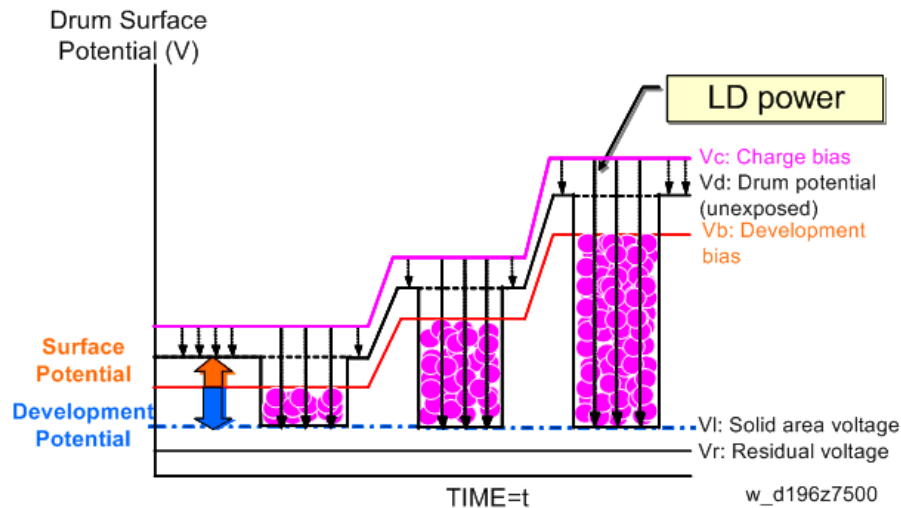
Vd is the potential of the unexposed (charged) drum.

The value of Vc is not equal to Vd.

For example, if applying a Vc of 700 [-V], the actual drum potential (Vd) tends to be about 650 [-V].

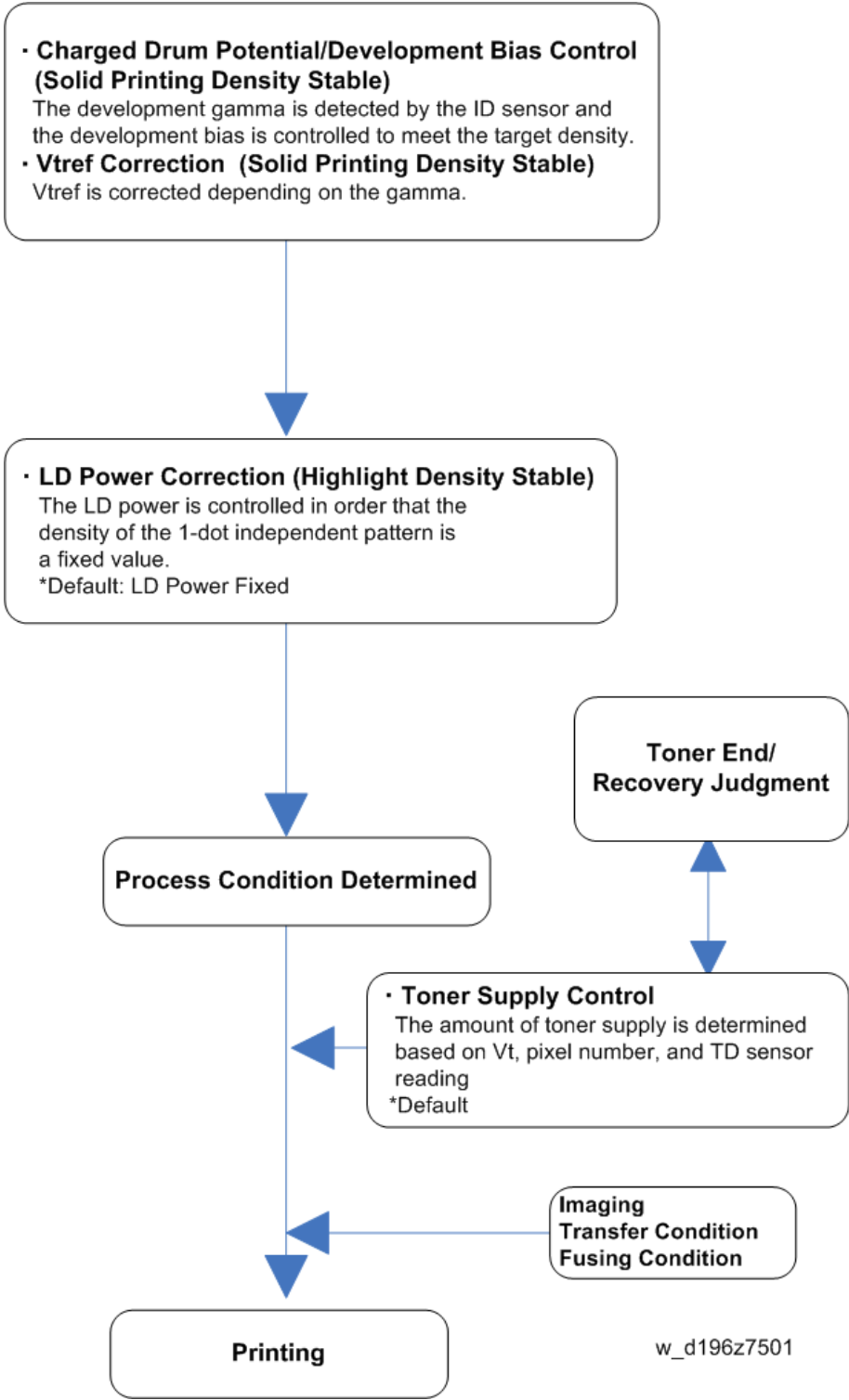
Vb is the potential when toner starts to stick to the drum (Development bias).

When the potential gets to Vb or greater, toner starts to stick to the drum in proportion to the potential. Development gamma is the coefficient showing the relation between the potential and the volume of toner adhesion.



In addition to the development gamma and the potential, the toner density in the developer needs to be controlled. This is done to maintain the proper toner density (the amount of toner adhesion). The target for the toner density in the developer is when the output from the toner density sensor is V_{tref} .

Process Control is done as shown in the following chart, which includes development gamma determination, V_{tref} correction, and LD power control.



Charge/Development Bias Control and V_{tref} Compensation

Charge/Development bias control and V_{tref} Compensation is done using the following procedure. Its operating time varies depending on the machine's line speed.

Adjusting the ID sensor V_{sg}

This step adjusts ID sensor's LED's light intensity so that V_{sg} , which is the ID sensor output when monitoring the bare surface of the ITB, becomes within $4.0 \pm 0.5V$. When V_{sg} does not reach the target value three times, the machine issues SC370 (ID sensor Calibration Error).

- SP3-320-011 (V_{sg} Error Counter)
- SP3-320-013 (V_{sg} Upper Threshold)
- SP3-320-014 (V_{sg} Lower Threshold)
- The above SPs can only be accessed from Special Service mode.

Agitating the Developer

This step agitates the developer, and gets the TD sensor output.

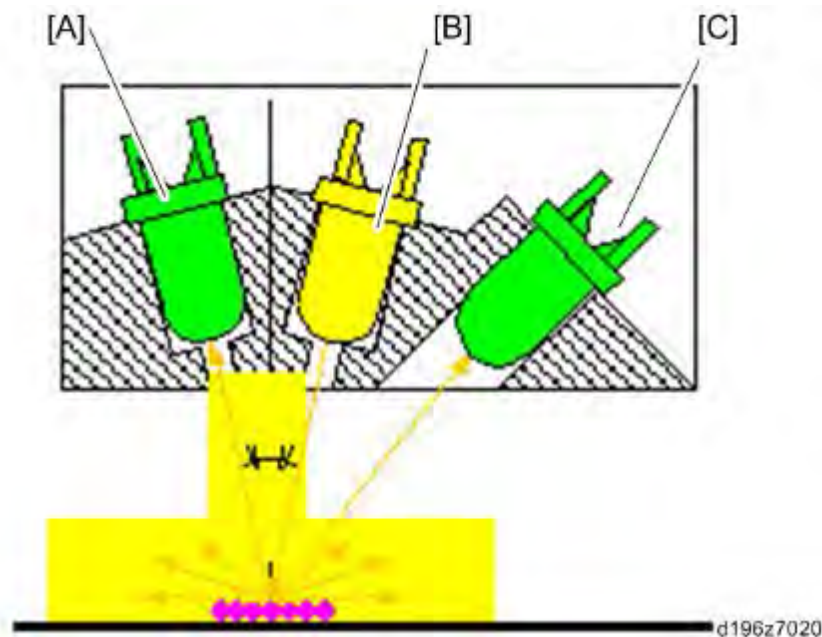
The developer agitation time is determined by the three factors below.

1. The change of absolute humidity
2. Non-use time
3. Coverage

Creating patterns, detecting the density

Five patterns are created by adjusting the charge/development bias on the transfer belt for each color. Then the ID sensor detects the created patterns.

The ID sensor consists of an LED and two types of photo detector. The sensor detects the reflection from the LED [B] with the direct reflection detector (REG) [A] and the diffused reflection detector (DIF) [C].



Determining Vtref from the Development Gamma

Detecting the development gamma value with an ID sensor pattern and measuring Vsp/Vsg determines the charge/development bias for the correct image density.

Also, the reading from the TD sensor and the development gamma determine Vtref, which is the reference value for the TD sensor.

LD Power Control

LD Control is set with SP3-600-001 (Process Control/ Select ProCon: LD Control).

- If SP 3-600-001 is set to LD Power Control by Process Control (Default): The LD strength is adjusted based on a table which is determined by Development Bias Control and Vtref Correction.
- If SP 3-600-001 is set to use a fixed LD power, the LD power that is used depends on the settings of SP2-221-001/002/003/004.

Toner Supply Control

SP3-400-001, -002, -003, -004

0: Fixed supply method

2: PID method

4: DANC method (Default)

- Fixed Supply method

Toner supply time is calculated based on the supply rate of SP3-440-001 through -004 (DrvTime: Setting).

- PID method

PID (Proportion Integral Differential)

The amount of toner supply is calculated based on the pixel information and TD sensor information.

- DANC method

DANC (Divided Active Noise Control): Conventional PID method + active noise control. It controls the timing to supply the developer to minimize uneven developer density in the development unit.

Toner Near End, Toner End

Toner Near-End

First, the amount of remaining toner is detected with the pixel count and the driving time of the toner supply motor. Then, when the amount of remaining toner is less than the threshold for toner near-end (K = 23 g, CMY = 10 g), the machine determines a toner near-end.

For CMY, when the amount of remaining toner is less than 50 g, or when the toner end sensor, which is a piezoelectric sensor, detects toner near-end twice, the machine also determines a toner near-end.

Toner End

A toner end is detected when the toner end sensor detects the end threshold six times in the toner near-end condition.

The machine also detects a toner end when the difference of the V_t and V_{tref} , and their total difference are as in the following matrix:

	Condition	V_t/V_{tref} : Diff	V_t/V_{tref} : Diff: Total
K	Before Near-End	0.7 V or more	Over 10 V
	After Near-End	0.3 V or more	Over 3 V
CMY	-	0.5 V or more	Over 10 V

When you open and close the front door, and turn the main power off and on, the machine detects that a new toner bottle is set. The machine then starts the toner supply to recover from the toner end. After supplying toner, the machine checks the toner end sensor and V_t condition and deactivates the toner end condition.

Developer Initial Setting

When a new PCDU is set in the machine, the machine automatically detects it and enters the developer initial setting mode. The machine then detects the μ count which is an output from the TD sensor. The developer initial setting is done as follows.

1. Starting the developer initial setting mode

The new unit detection mechanism triggers the developer initial setting mode.

2. Agitating the developer

The machine rotates the development roller and transport coil to agitate the developer for 30 seconds.

3. Detecting the μ count (Initial value)

While agitating the developer, the machine detects the output from the TD sensor, and stores this output as the initial μ count.

4. Calculating V_t

The machine calculates V_t using the difference of the current μ count while referring to the initial μ count through SP.

5. Forced toner supply (only when newly installing the machine)

This step is required only when the machine is newly installed because there is no toner in the toner transport route.

When the developer initial setting is successfully completed, the machine stores the calculated V_t as V_{tref} . The V_{tref} is used as a reference the next time the machine performs an initial developer setting.

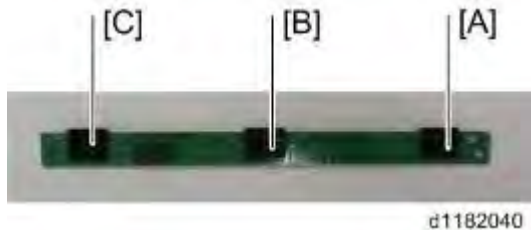
SC360-01 through -04 appears if the results of step 3 are as follows:

The μ count is equal or exceeds the threshold (6480 [counts]).

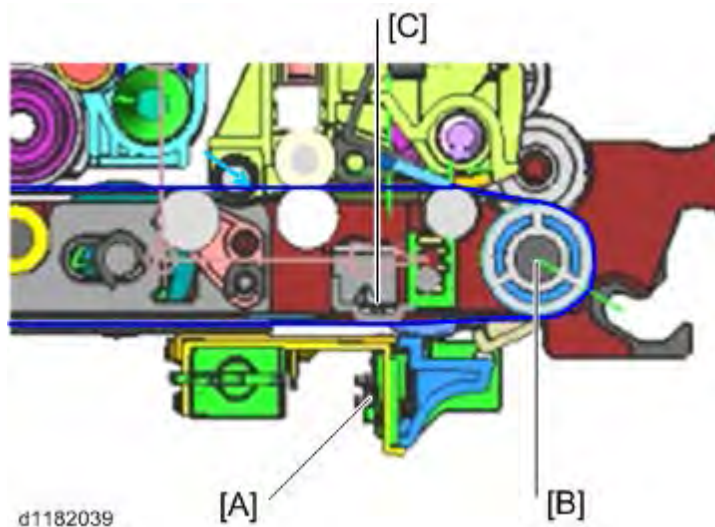
The μ count does not match the target threshold (5800 – 6380 [counts]) three times consecutively.

Process Control and MUSIC are forcibly done after developer initial setting when a PCDU is replaced.

ID Sensor



Three ID sensors are on a single board. The center sensor [B] acts as an ID sensor and a MUSIC sensor. The front [A] and rear [C] sensors are used only for MUSIC.



The ID sensors [A] are installed at the upstream side of the paper transfer roller [B] and detect image density at the plate [C]. This layout allows the machine to detect a pattern faster and to help reduce waiting time.

TD Sensor

In this model, a non-contact toner density (TD) sensor, which we also call a mu (μ) sensor, is used for toner density control.

The TD sensor is attached on the lower side of the development unit. Unlike a HST sensor, the board of the TD sensor is exposed. So there is a cover around the sensor to protect it and to maintain a good contact between the sensor and development unit.

The TD sensor measures the permeability of the developer without contacting it, from the outside of the case, and converts the measured value to the toner density.

According to the toner density measured by this sensor, the proper amount of toner is supplied to the developer.

A counter corresponding to the frequency is used as the unit of TD sensor output. Thus, unlike a HST sensor which directly detects V_t , the TD sensor output is converted into V_t for toner supply control.

In the TD sensor, there is an ID chip storing the machine identification information, the running distance information of Development unit and PCU, and other information used by image density control.

7.8.2 MUSIC

Color Skew Adjustment Timing

This model has a mechanism that adjusts color skew, which we call MUSIC. The machine creates a pattern for correction, measures the image position by the pattern, and adjusts the image position.

No.	MUSIC performs when:	Notes
1	The power switch is just turned on, or the machine recovers from the energy save mode.	Executes [Mode b] (*2) or [Mode a] (*1)
2	The machine does a print job.	Executes [Mode b] (*2)
3	Printing is completed.	Executes [Mode b] (*2)
4	The front cover is closed.	Executes [Mode b] (*2) or [Mode a] (*1)
5	The machine is waiting.	Executes [Mode b] (*2)
6	The machine detects a new PCDU automatically, ITB manually.	Executes [Mode a] (*1)

*1 [Mode a] fine adjusts twice.

*2 [Mode b] fine adjusts once.

To operate modes a/b/c manually, use the following SPs:

- SP2-111-001 (Forced Line Position Adj.: [Mode a])
- SP2-111-002 (Forced Line Position Adj.: [Mode b])
- SP2-111-003 (Forced Line Position Adj.: [Mode c]): Do this SP when you have replaced a laser unit, or when significant color skew occurs.

Important

- Do [Mode a] and [Mode b] after doing [Mode c].

MUSIC Error Determination

MUSIC determines whether an error occurs for each color.

SP2-194-007 shows the results, and SP2-194-010 through -013 show the error details.

SP2-194-007 (MUSIC Execution Result - Execution Result)

SP2-194-010 (MUSIC Execution Result - Error Result: C)

SP2-194-011 (MUSIC Execution Result - Error Result: M)

SP2-194-012 (MUSIC Execution Result - Error Result: Y)

SP2-194-013 (MUSIC Execution Result - Error Result: K)

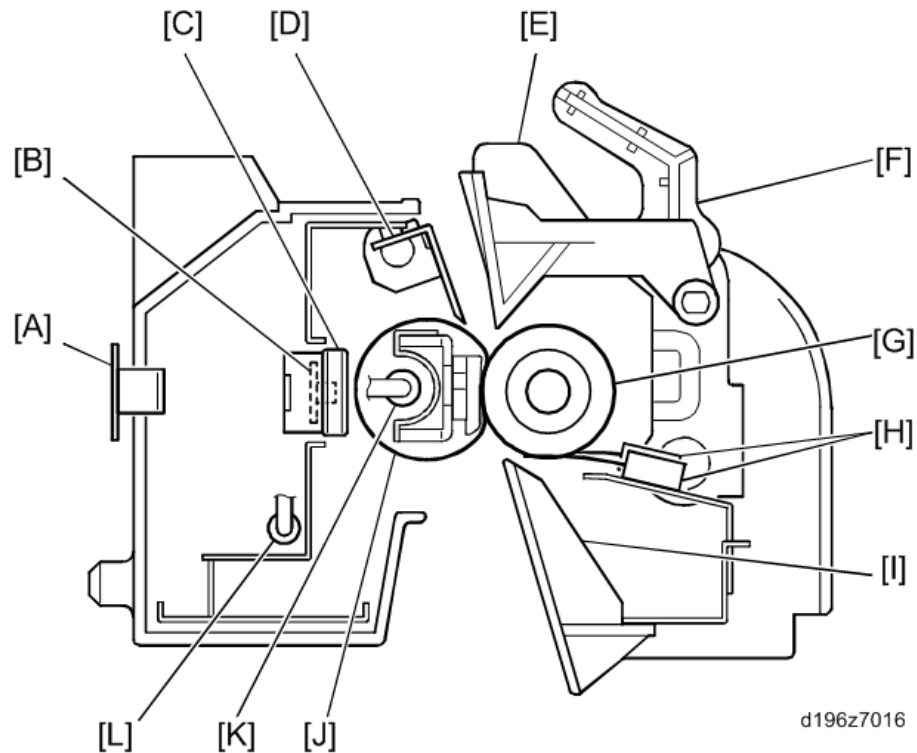
Error Details	Description
0	Not done
1	Completed successfully
2	Cannot detect patterns
3	Insufficient lines for a pattern
4	Out of the adjustment range
5 or 6	TD sensor false detection

Adjustment Overview

1. Performs Vsg adjustment to correct TD sensor output.
2. Creates a MUSIC pattern on the transfer belt with each color toner.
3. Reads the MUSIC pattern on the belt, and measures the positions of the lines on the pattern.
4. Calculates the color skew amount from the position data.
5. Calculates the tolerance/deviation for main scan magnification, and the main/scan registration skew amount. Then determines the amount of color skew adjustment.

7.9 FUSING

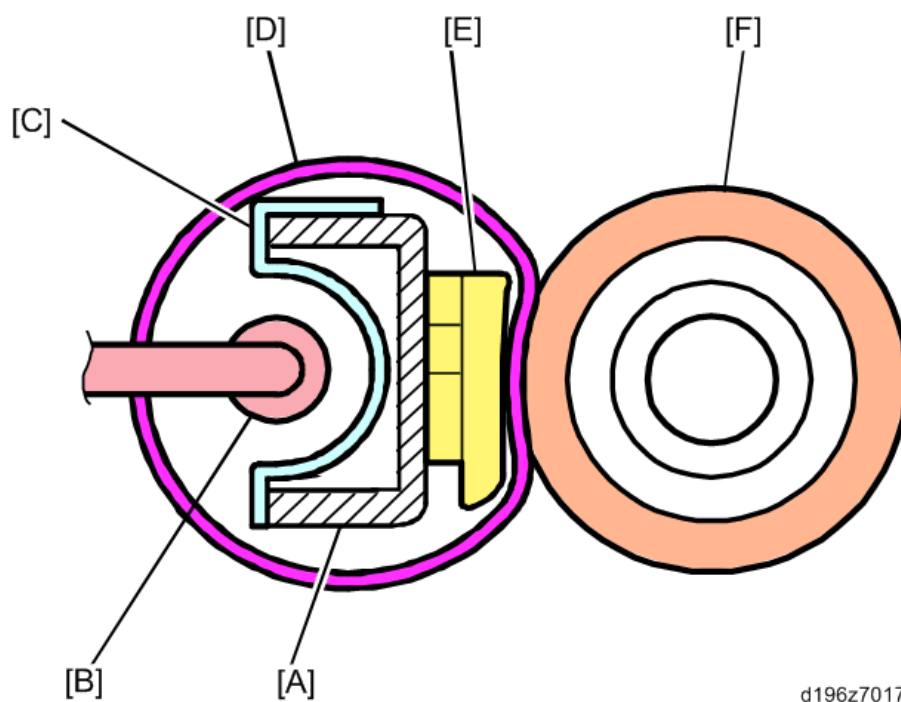
7.9.1 OVERVIEW



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Callout	Item	Callout	Item
[A]	Fusing Thermopile	[G]	Pressure Roller
[B]	Fusing Thermistor (NC Sensor)	[H]	Pressure Roller Thermistors (×3)
[C]	Fusing Thermostat	[I]	Entrance Guide Plate
[D]	Separation Plate	[J]	Fusing Sleeve Belt (QSU Method)
[E]	Exit Guide Plate	[K]	Fusing Lamp
[F]	Pressure Arm	[L]	Fuse for New Unit Detection

7.9.2 FUSING MECHANISM



Callout	Item	Callout	Item
[A]	Stay	[D]	Fusing Sleeve Belt (Diameter: 25)
[B]	Fusing Lamp	[E]	Nip Pad
[C]	Reflector	[F]	Pressure Roller (Diameter: 25)

The fusing unit uses the QSU system. (QSU: Quick Start Up).

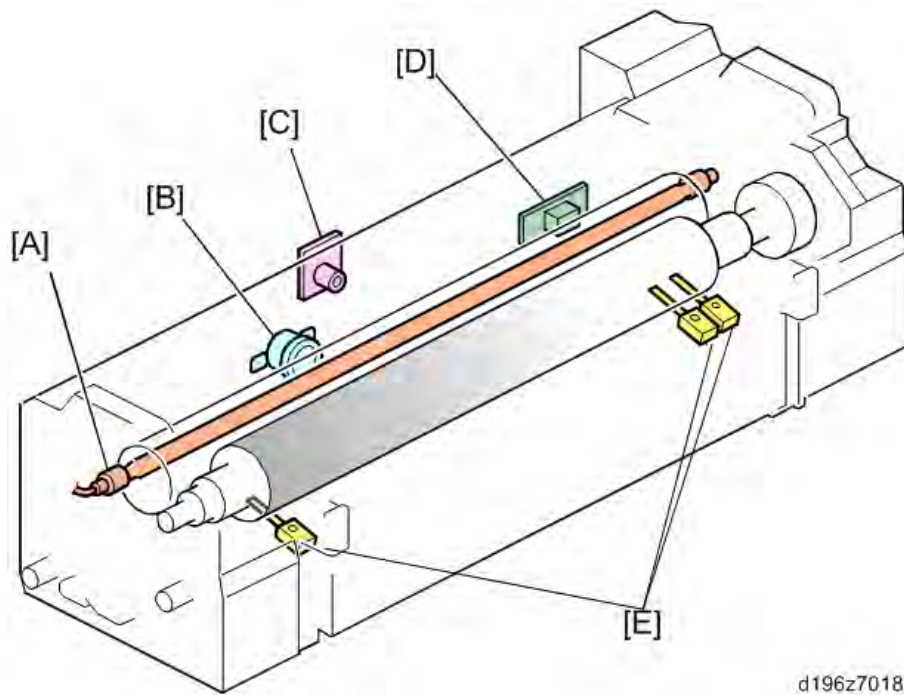
The heat from the fusing lamp [B] is reflected by the reflector [C] and heats the fusing sleeve belt [D] at the left.

The temperature at both ends of the fusing lamp is lower than the middle.

The pressure roller drives the fusing sleeve belt.

The sleeve belt itself has no drive mechanism; the pressure roller drives it. The nip pad [E] at the sleeve belt side is pushed against the pressure roller and keeps the nip width on the sleeve belt.

7.9.3 FUSING TEMPERATURE CONTROL



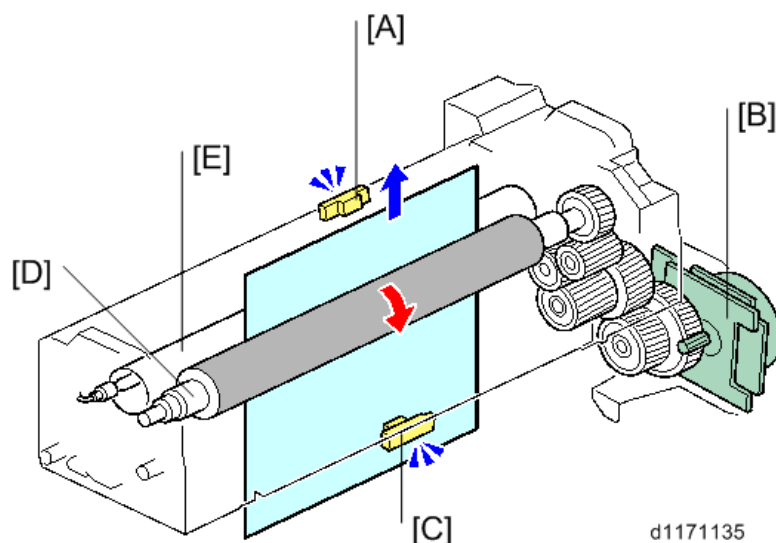
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Callout	Item	Callout	Item
[A]	Fusing Lamp	[D]	Fusing Thermistor (NC Sensor)
[B]	Fusing Thermostat	[E]	Pressure Roller Thermistors (x3)
[C]	Fusing Thermopile		

The fusing temperature is controlled by the fusing thermopile [C].

The thermostat [B] is a safety switch. The fusing unit must be replaced if the thermostat is blown.

7.9.4 FUSING DRIVE



Callout	Item	Callout	Item
[A]	Fusing Exit Sensor	[D]	Pressure Roller
[B]	Fusing Motor	[E]	Fusing Sleeve Belt
[C]	Fusing Entrance Sensor		

The fusing motor [B] drives the pressure roller [D] through gears.

The pressure roller [D] drives the fusing sleeve belt [E].

The fusing entrance sensor [C] and fusing exit sensor [A] detect paper jams around/in the fusing unit.

Fusing Temperature Control

Warm-up mode

When the main power switch is turned ON, the machine starts the fusing warm-up. The machine drives the fusing motor to increase the fusing temperature to the reload target temperature. When the machine completes the fusing warm-up, it keeps the reload target temperature by driving the fusing motor for a certain period of time.

Standby mode

When a certain period of time passes after fusing reload is completed, the machine stops the fusing lamp and fusing motor. Then the machine keeps the fusing temperature to the standby target temperature (SP1107-001) by energizing the fusing lamp.

In standby mode, the machine starts the fusing motor intermittently.

Printing ready mode

After returning to standby mode, the machine lights the fusing lamp to increase the fusing temperature to the printing ready target temperature. If there is no printing job, the machine then moves back to the standby mode.

If there is a printing job, the machine starts the fusing lamp to increase the fusing temperature to the target temperature after reload/feeding, and then starts the print job.

CPM Down Control

This machine automatically lowers the CPM according to usage and machine status to obtain the best image quality and keep the machine in good condition.

If the fusing lamp is always activated during consecutive printing, and/or the paper size is smaller than the lamp's width, then some heat will not be used for fusing and may stay around the front and rear ends of the fusing unit. This will increase the temperature in the fusing unit abnormally.

CPM down control keeps the machine's CPM low until the fusing unit sufficiently cools down.

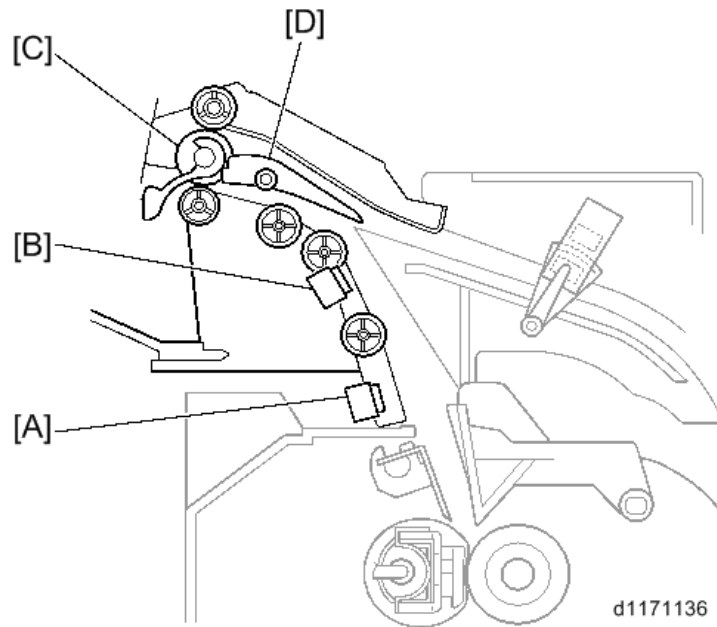
Normally, it takes 10 minutes to recover the original CPM.

CPM Down Level

	A5	Postcard	Envelope	Recovery Time
CPM (Standard)	15	15	15	10 mins.
CPM Down Starting Sheet Count	No CPM control	14th sheet	5th sheet	
CPM (Controlled)		10	6	
Output sheet count after one minute from recovery		14	8	

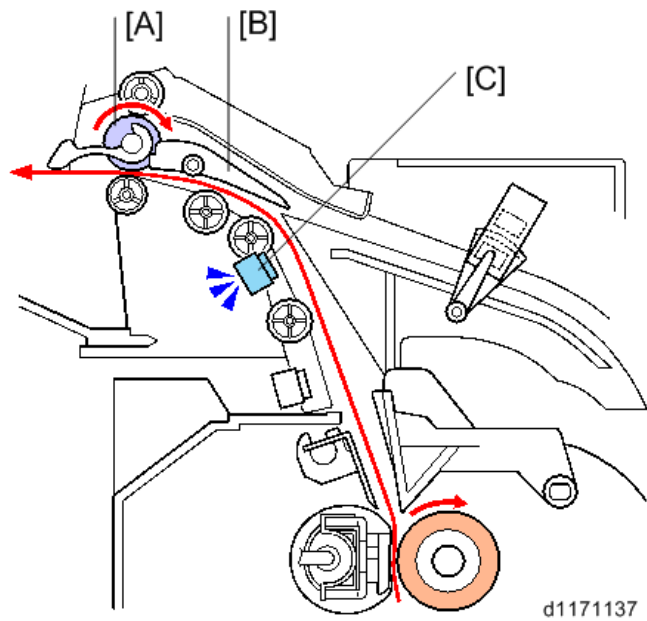
7.10 PAPER EXIT AND INVERTER

7.10.1 OVERVIEW



Callout	Item	Callout	Item
[A]	Fusing Exit Sensor	[C]	Paper Exit Inverter Roller
[B]	Paper Exit Sensor	[D]	Inverter Junction Gate

7.10.2 MECHANISM



Callout	Item	Callout	Item
[A]	Paper Exit Inverter Roller	[C]	Paper Exit Sensor
[B]	Inverter Junction Gate		

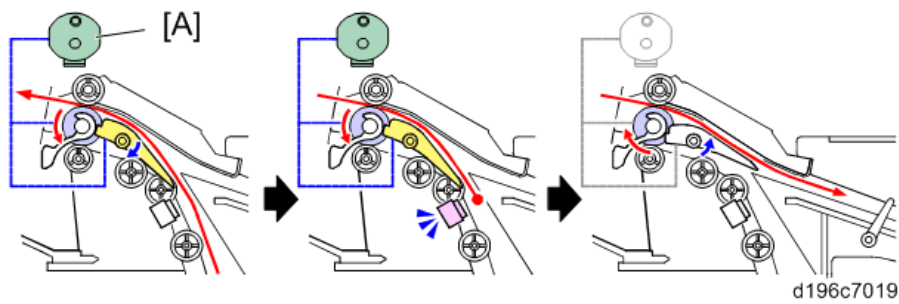
Duplex Operation

The movement of the inverter junction gate [B] switches the paper feed path from the paper exit side to the inverter side, or vice versa. This allows duplex feed.

Paper Exit

The paper transport motor rotates the paper exit inverter roller [A] through a gear. The paper exit sensor [C] detects paper exit jams and the paper inversion timing.

7.10.3 INVERTER OPERATION



Callout	Item
[A]	Paper Exit Rotary Solenoid

The paper exit rotary solenoid [A] controls the inverter junction gate and paper exit inverter roller simultaneously.

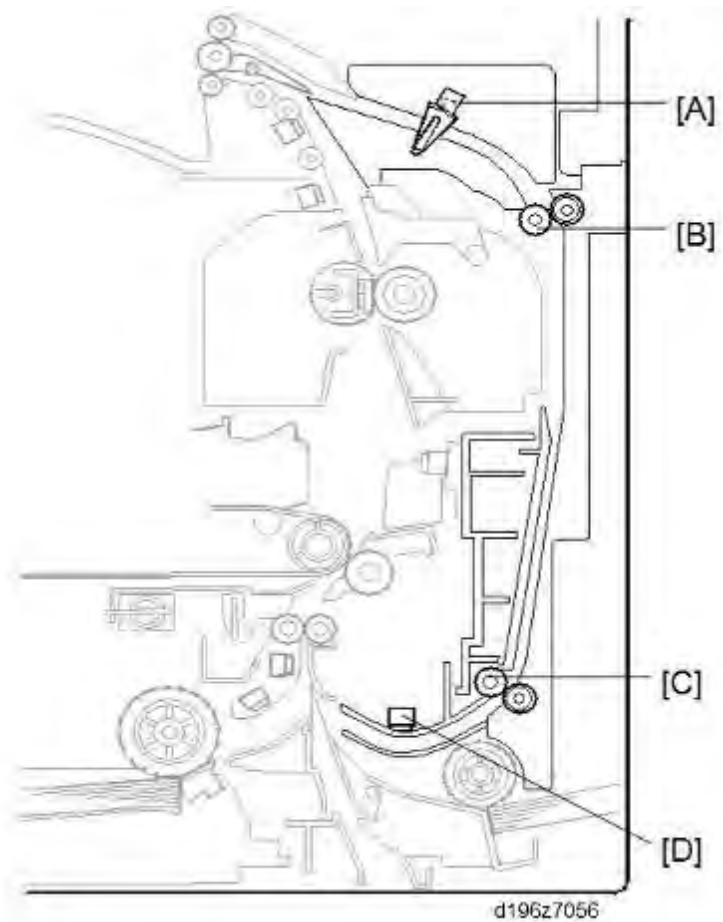
In duplex printing, after the first side of a sheet has been printed, the paper exit rotary solenoid switches the inverter junction gate to direct the paper to the paper exit path, while at the same time rotates the paper exit roller in reverse to feed the paper towards the paper exit (see the left illustration above).

When the trailing edge of the paper passes the paper exit sensor, the machine turns off the paper exit rotary solenoid, switches the inverter junction gate back to the original position before the paper completely goes out of the paper exit, and rotates the paper exit roller forward to feed the paper to the duplex transport path.

After that, the machine starts to print the 2nd side and feeds out the paper that is printed on both sides to the paper exit tray.

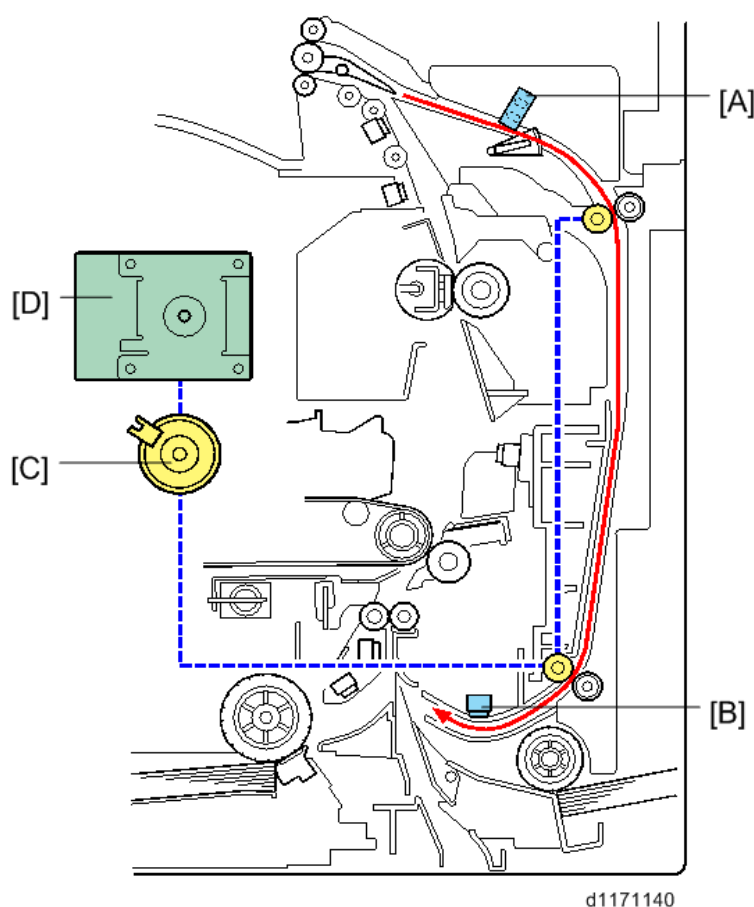
7.11 DUPLEX

7.11.1 OVERVIEW



Callout	Item	Callout	Item
[A]	Duplex Entrance Sensor	[C]	Duplex Paper Transport Roller (Lower)
[B]	Duplex Paper Transport Roller (Upper)	[D]	Duplex Exit Sensor

7.11.2 DUPLEX MECHANISM



Callout	Item	Callout	Item
[A]	Duplex Entrance Sensor	[C]	Duplex Clutch
[B]	Duplex Exit Sensor	[D]	Paper Transport Motor

After the inverter mechanism feeds the paper back into the machine, the paper goes to the duplex feed path.

Duplex feed is not possible when the bypass tray is in use.

Duplex Drive

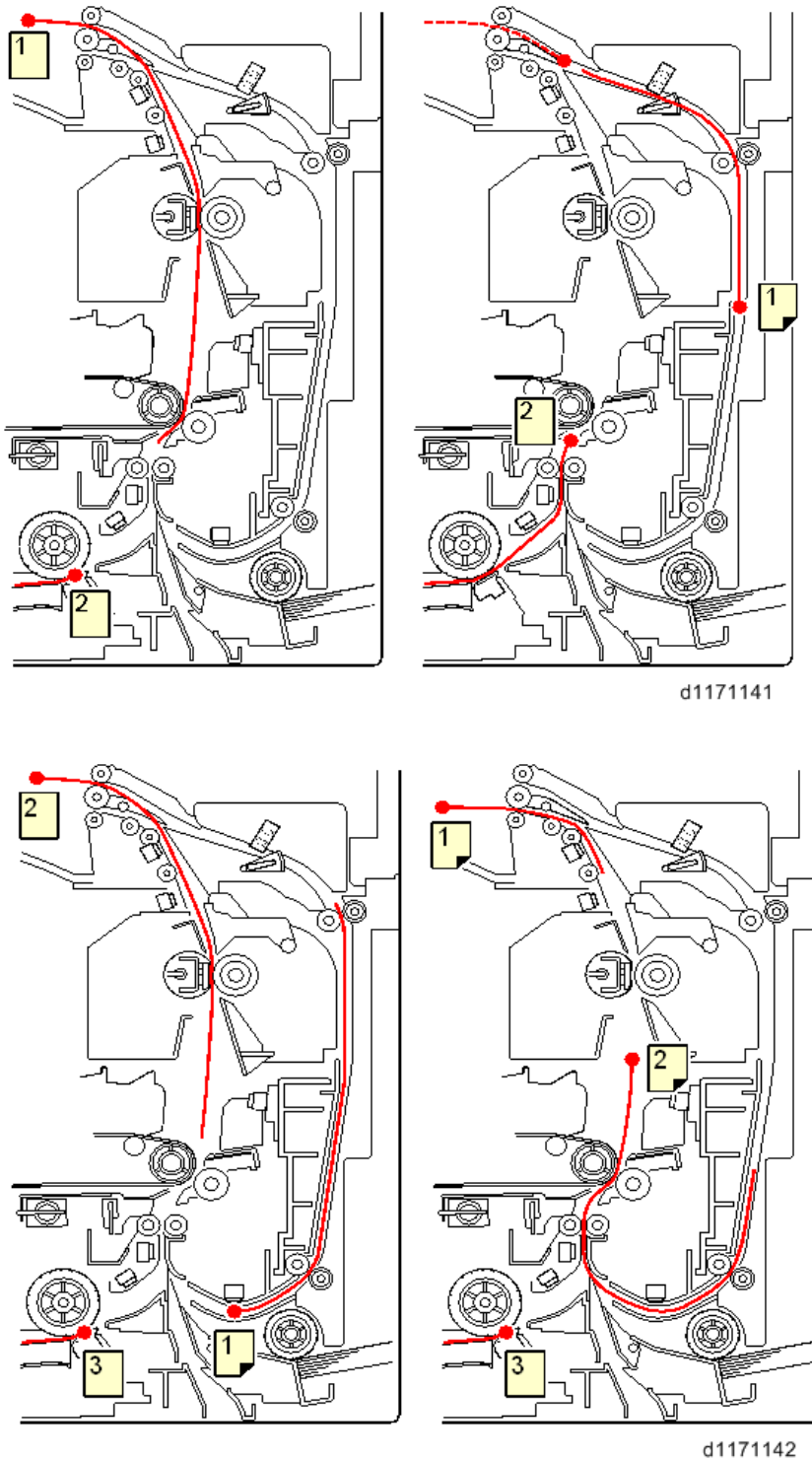
The drive from the paper transport motor [D] is transmitted to the duplex clutch [C] through a gear, and the duplex clutch turns on to drive the duplex rollers.

There are two duplex paper transport rollers (upper and lower). The duplex drive is transmitted from the lower duplex paper transport roller to the upper duplex paper transport roller via a timing belt.

Duplex Transport

There are two paper sensors (upper and lower) in the duplex unit. The upper sensor is the duplex entrance sensor [A]. The lower sensor is the duplex exit sensor [B].

7.11.3 INTERLEAVING



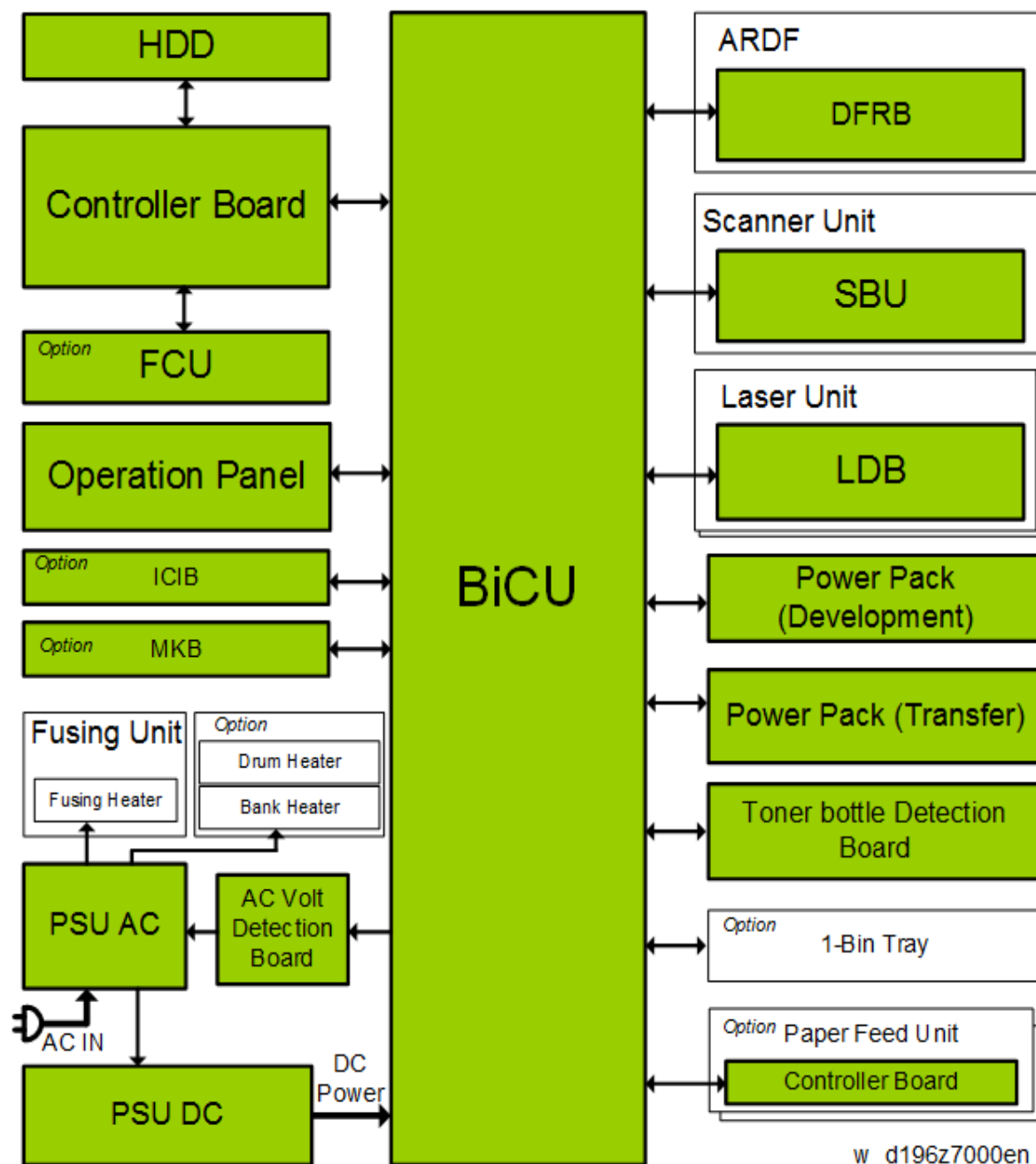
This machine adopts “2 in 1” interleave.

The interleave operation of this machine is as follows:

1st sheet back -> 2nd sheet back -> first sheet front -> 2nd sheet front -> 3rd sheet back -> 4th sheet back.

7.12 ELECTRICAL PARTS

7.12.1 BLOCK DIAGRAM



7.12.2 BOARD OUTLINE

Controller

Controls the MFP system overall. Contains an MIPS CPU, controller ASIC, IO control ASIC, and RAM.

SBU

Scanning control circuit which performs analog signal processing and AD image conversion of the CCD read image.

It also has an interface with the IPU, and controls scanner input and output signals according to CPU commands.

LDB

LD control circuit which drives the laser diode with a universal driver.

BiCU

Controls the engine, as well as MFP engine sensors, motors and solenoids (The BCU has the IOB functions).

FCU

Controls the fax program.

OPU

Controls the control panel.

Power Packs (HVPS)

Generates high-voltage power required for process control. The power pack consists of two units: T1T2 for transfer and CB for charging/developing.

PSU

Generates DC power from the mains AC power supply, and supplies it to each control circuit.

Contains an A/C drive circuit for controlling the fusing lamp.

ACVB

Detects the voltage of the mains AC supply.

DFRB

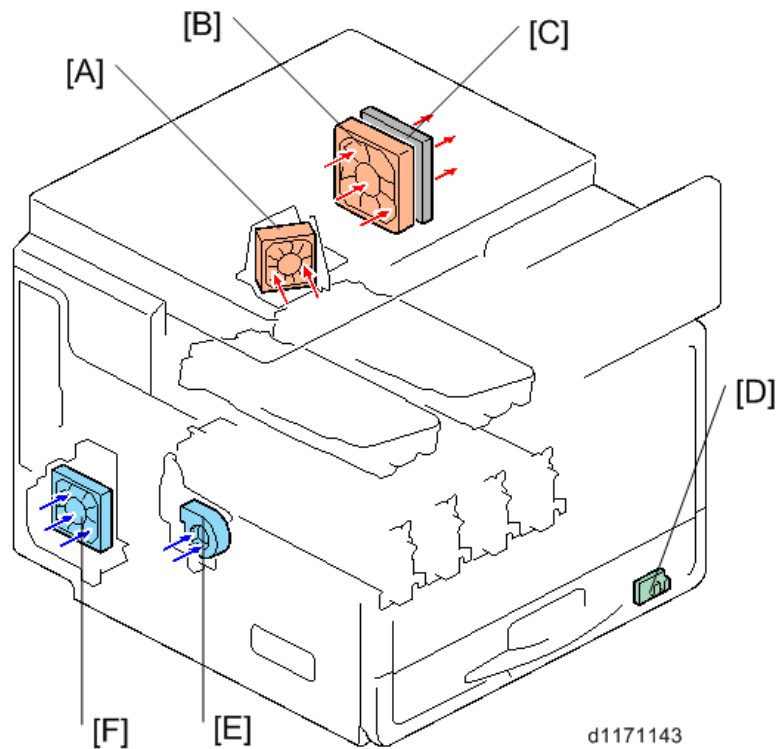
Controls motors, sensors, and solenoids in the ARDF.

Fuse

Refer to Fuse Location (page 6-11 "Fuse Location").

7.13 MACHINE VENTILATION

7.13.1 OVERVIEW



Callout	Item	Callout	Item
[A]	LD Unit Cooling Fan	[D]	Temperature/Humidity Sensor
[B]	Exhaust Fan	[E]	PCDU Cooling Duct Fan
[C]	Ozone Filter	[F]	PSU Fan

The machine has four fans [A] [B] [E] [F] to ventilate the interior of the machine. There is a temperature/humidity sensor [D] at the front (lower right) of the machine. The machine takes in air from the left of the machine and exhausts it from the right of the machine after it cools the machine interior.

The ozone filter [C] is installed at the right of the exhaust fan, which helps make it easier to replace the filter.

7.13.2 MACHINE VENTILATION

The following tables summarize the fan control.

Fan Control Overview

Status	PCDU Cooling Duct Fan	Fusing Fan	PSU Fan	LD Unit Cooling Fan
Engine Off	Off			
Power ON – Warm-up	Stops			
Standby	Stops	Rotates at low speed	Stops	Stops
Standby after printing	*1			
Printing	Rotates at full-speed → Stops*2	Rotates at full-speed → Rotates at low-speed*2	Rotates at full-speed*3	Rotates at full-speed → Stops*2
Lower Power	Stops *4			
Silent				
Abnormal status				

Notes:

- Keeps the printing status for the time specified in SP1-950-001 through -004. Then the fan keeps rotating until it reaches the temperature specified in SP2-241-004.
 001: PCDU Cooling Duct Fan
 002: Fusing Fan
 003: PSU Fan
 004: LD Unit Cooling Fan
- Rotates at full speed when the temperature around the drum exceeds the temperature specified in SP1-955-001 through -004; Stops or rotates at low-speed when the temperature is out of the threshold specified in SP1-955-005.
 001: PCDU Cooling Duct Fan
 002: Fusing Fan
 004: LD Unit Cooling Fan

Machine Ventilation

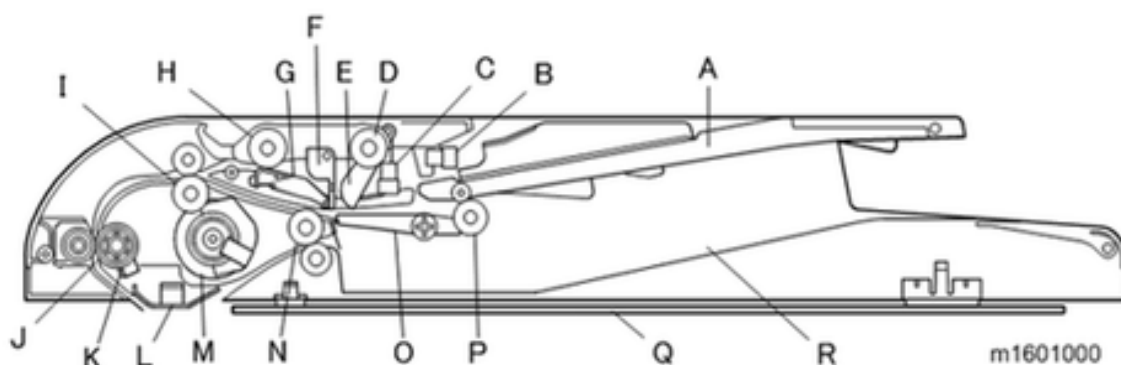
3. If the time interval between the end timing of the last printing status and the start timing of the next printing status exceeds the value in SP1-955-007, the machine stops the fan until the duration specified in SP1-955-006, and then rotates at full speed.
4. If the fan is rotating, the machine keeps rotating it until the time specified in SP1-950-001 through -004.

7.14 OPERATION PANEL

Refer to “Smart Operation Panel” manual for details.

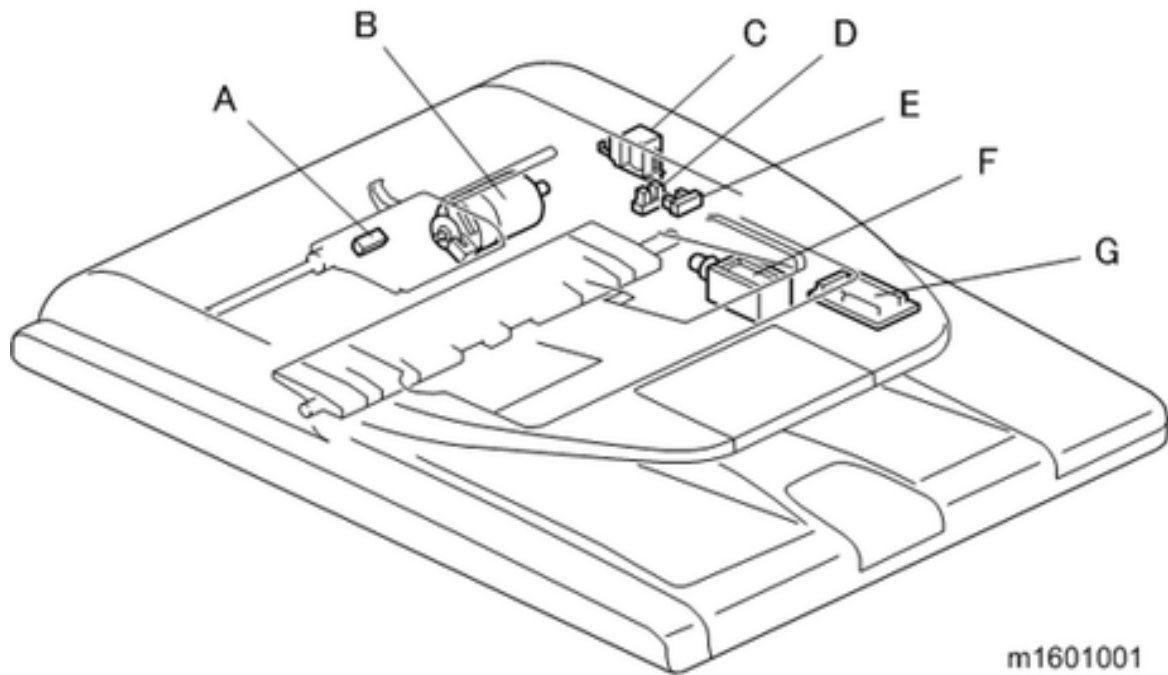
7.15 ARDF (OPTION)

7.15.1 OVERVIEW



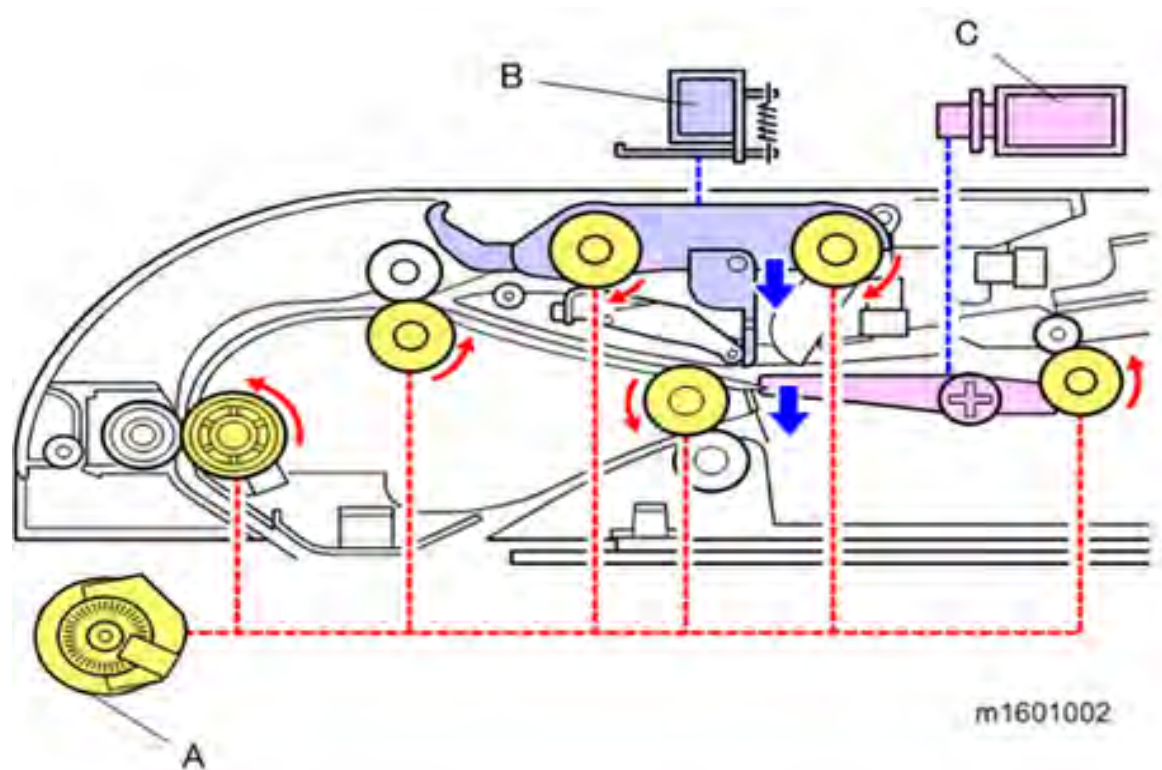
Callout	Item	Callout	Item
[A]	Original Feed Tray	[J]	2nd Paper Transport Roller
[B]	ARDF Feed Cover Sensor	[K]	ARDF Registration Sensor
[C]	ARDF Original Sensor	[L]	White Plate Guide
[D]	Pickup Roller	[M]	ARDF Drive Roller
[E]	Original Set Detection Actuator	[N]	Original Exit Roller
[F]	Original Stopper	[O]	Junction Gate
[G]	Friction Pad	[P]	Reverse Roller
[H]	Paper Feed Roller	[Q]	Platen Cover
[I]	1st Paper Transport Roller	[R]	Original Exit Tray

ARDF (Option)



Callout	Item	Callout	Item
[A]	ARDF Original Transport Sensor	[E]	ARDF Feed Cover Sensor
[B]	ARDF Transport Motor	[F]	ARDF Reverse Solenoid
[C]	ARDF Feed Solenoid	[G]	ARDF Relay Board
[D]	ARDF Original Set Sensor		

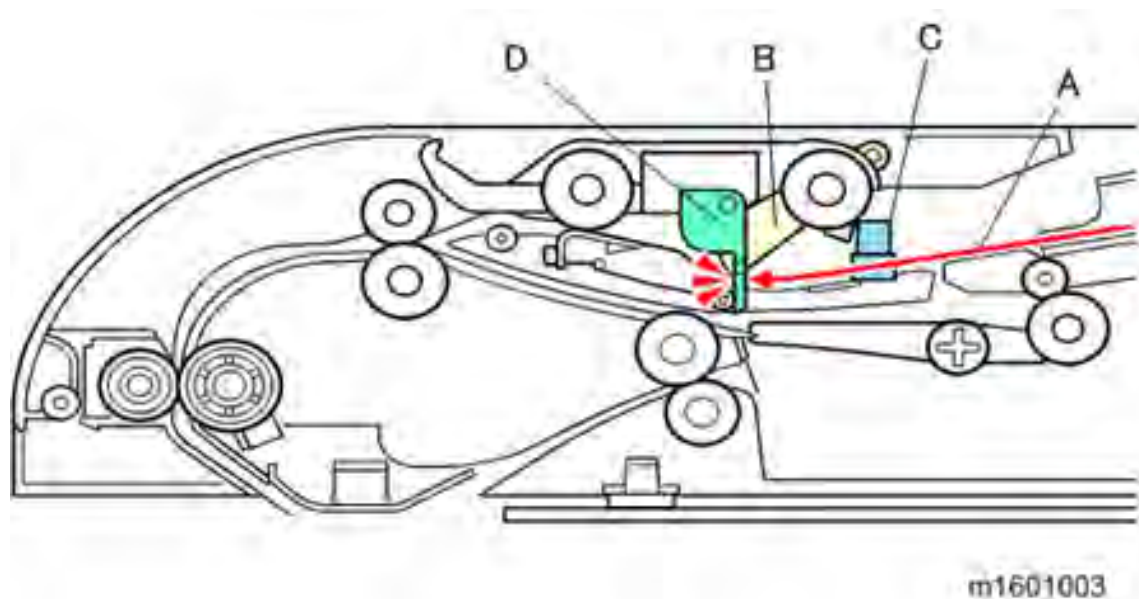
7.15.2 ORIGINAL TRANSPORT DRIVE MECHANISM



Callout	Item	Callout	Item
[A]	ARDF Transport Motor	[C]	ARDF Reverse Solenoid
[B]	ARDF Feed Solenoid		

The ARDF Transport Motor [A] drives each roller through gears. The ARDF Feed Solenoid [B] controls the original pick-up. The ARDF Reverse Solenoid [C] operates the reverse junction gate. Note that this machine does not have an automatic size detection mechanism.

7.15.3 ORIGINAL SET DETECTION MECHANISM

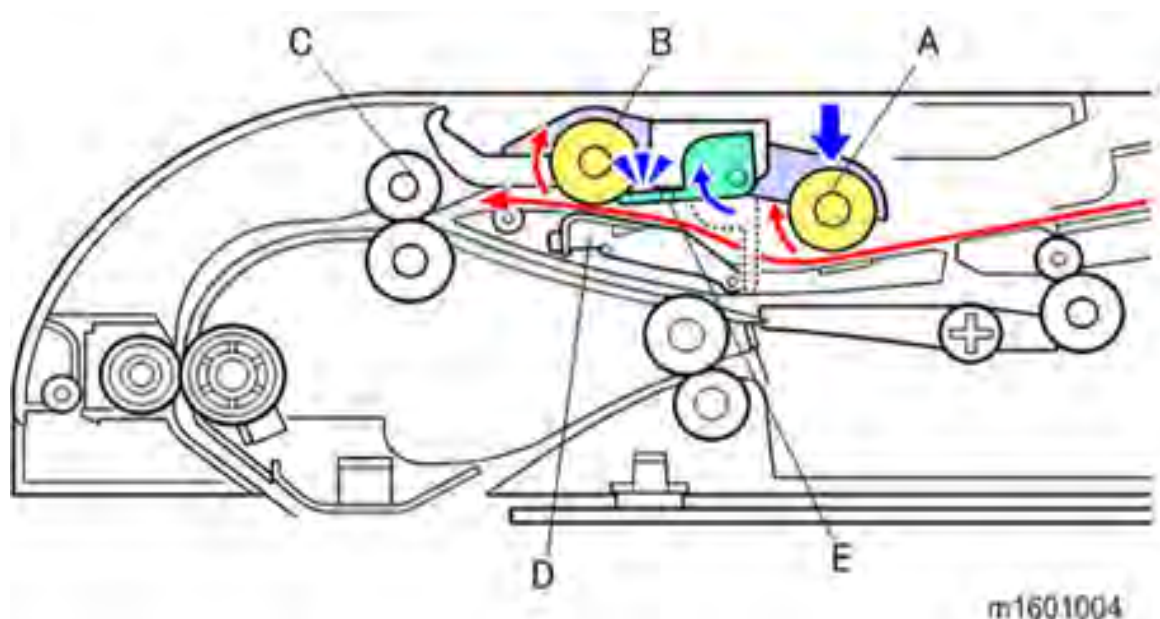


Callout	Item	Callout	Item
[A]	Original	[C]	ARDF Original Sensor
[B]	Original Set Detection Actuator	[D]	Original Stopper

When users put an original [A] on the original feed tray in place, a feeler is pushed by the original set detection actuator [B]. As a result, the ARDF original sensor [C] is covered and the machine detects that an original is set.

The original stopper [D] prevents the user from placing originals too far into the feeder.

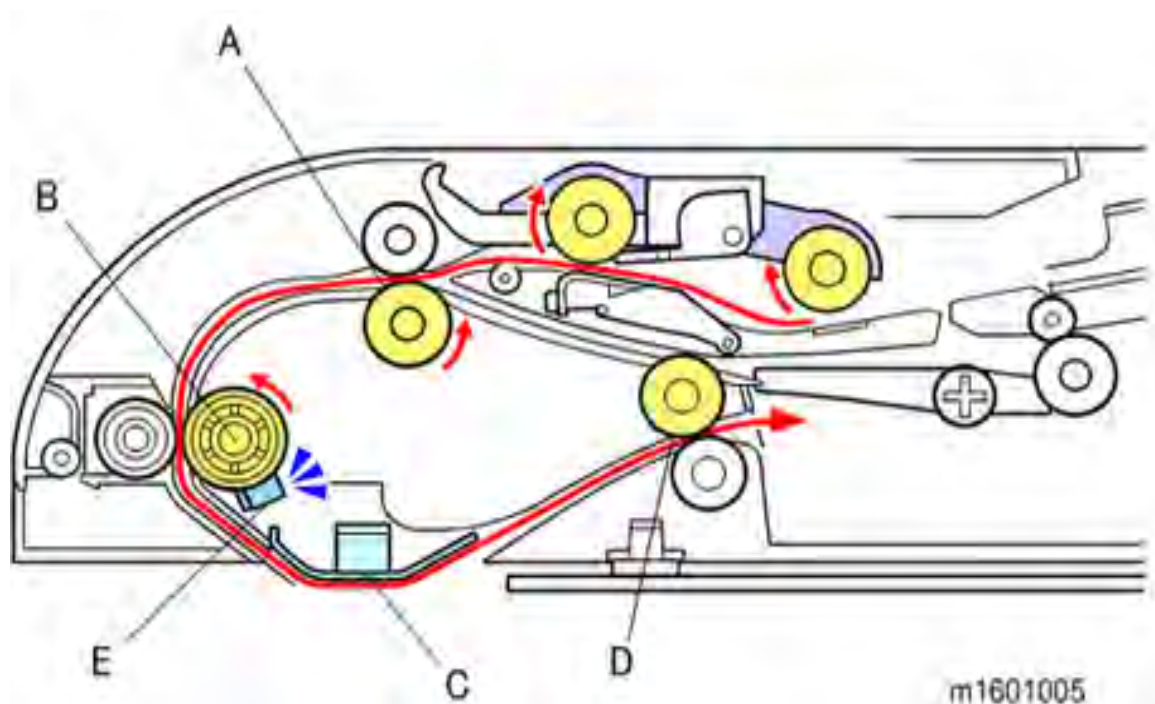
7.15.4 ORIGINAL TRANSPORT MECHANISM (SINGLE-SIDED SCANNING)



Callout	Item	Callout	Item
[A]	Pickup Roller	[C]	1st Paper Transport Roller
[B]	Paper Feed Roller	[D]	Friction Pad

When users start a job, the ARDF feed solenoid lowers the pickup roller [A]. The original is transported to the 1st paper transport roller [C] through the paper feed roller [B].

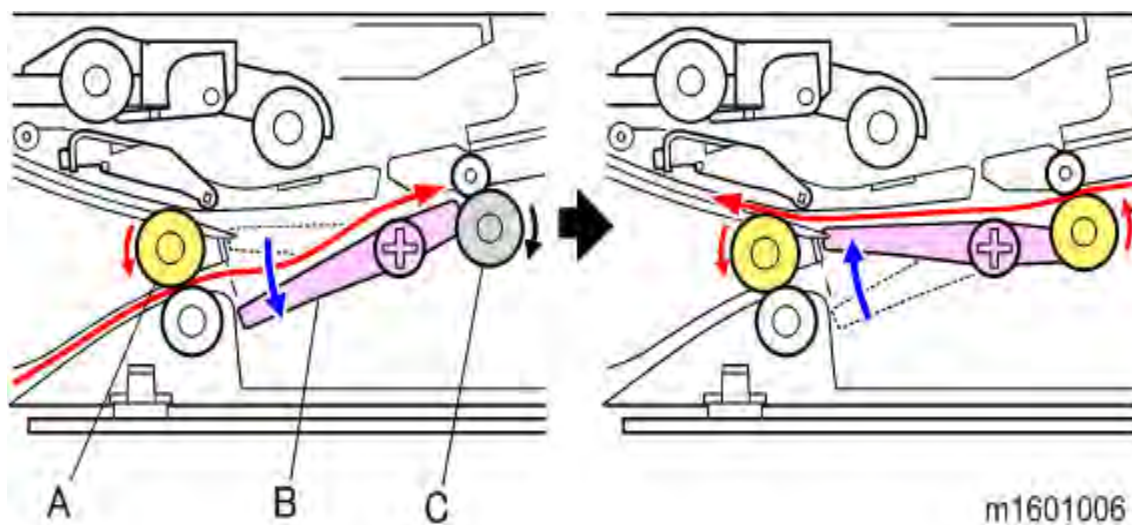
When scanning multiple sheets of original consecutively, the friction pad [D] feeds the topmost sheet of the paper stack on the original feed tray to the 1st paper transport roller without double feeding. The original stopper [E] is free during transporting the original for smooth paper transporting.



Callout	Item	Callout	Item
[A]	1st Paper Transport Roller	[D]	Original Exit Roller
[B]	2nd Paper Transport Roller	[E]	ARDF Original Transport Sensor
[C]	White Plate Guide		

The original is feed through the 1st and 2nd paper transport roller [A][B], is scanned on the exposure glass under the white plate guide [C], and comes out through the original exit roller [D]. The ARDF original transport sensor [E] detects jams related to ARDF.

7.15.5 ORIGINAL TRANSPORT MECHANISM (DUPLEX SCANNING)



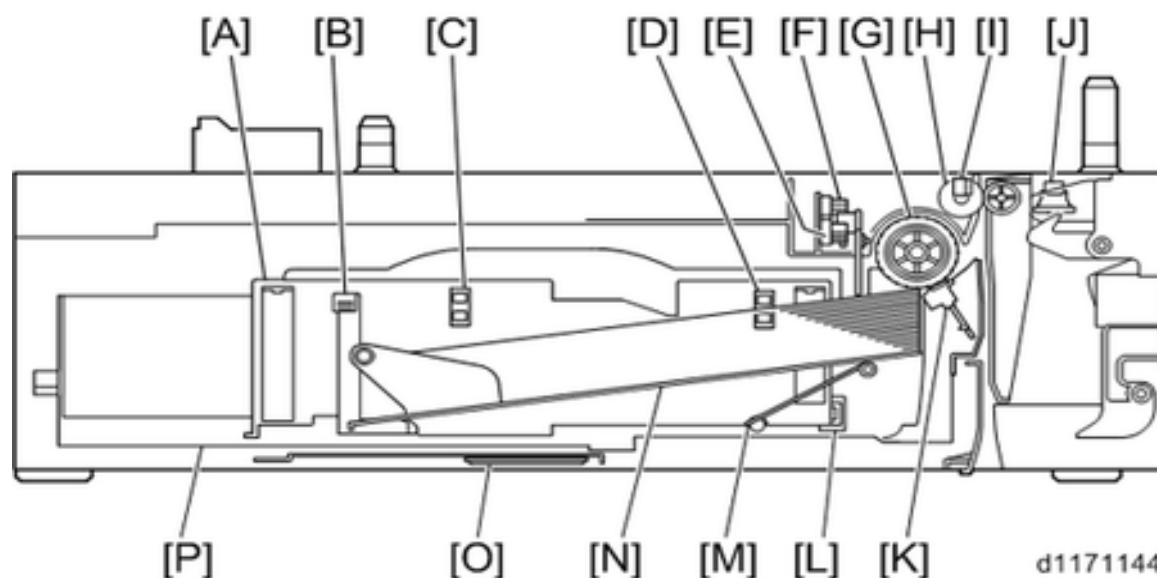
Callout	Item	Callout	Item
[A]	Original Exit Roller	[C]	Reverse Roller
[B]	Junction Gate		

The ARDF Reverse Solenoid lowers the junction gate [B], and the original is transported to the reverse roller [C]. Then, the reverse roller [C] transports the original out of the ARDF by rotating in reverse. After that, the ARDF Reverse Solenoid is turned off after the trailing edge of the original passes the original exit roller [A], and the reverse roller starts normal rotation. The original comes back into the ARDF.

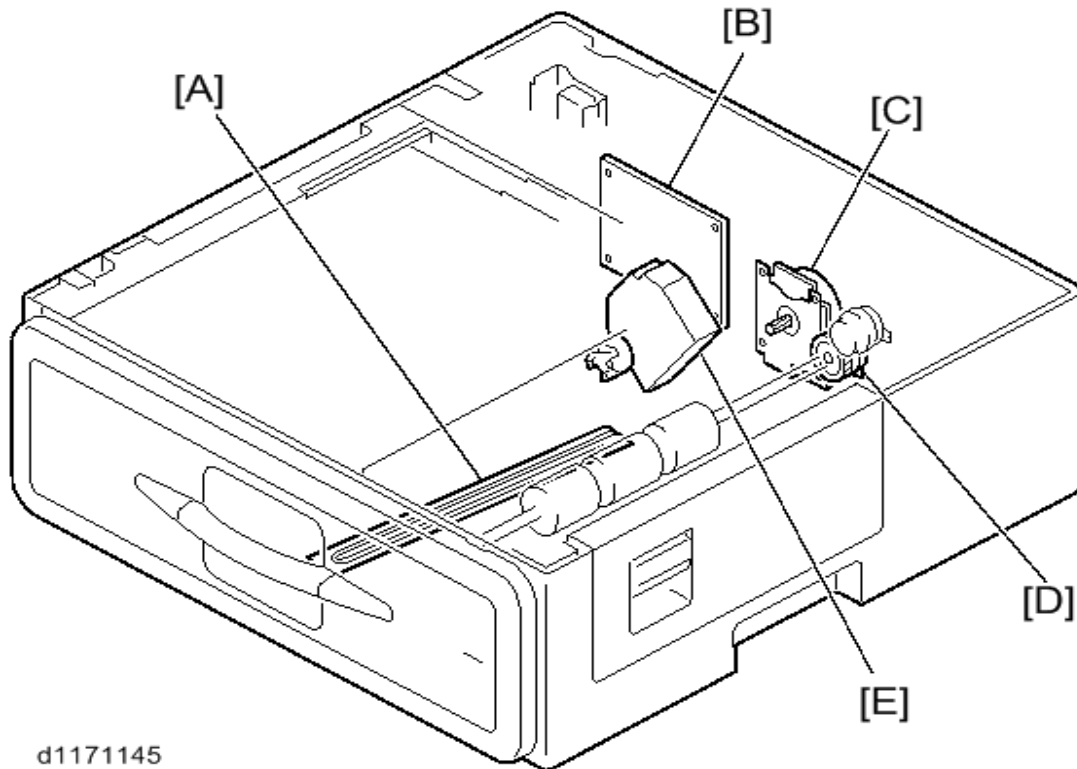
After the second side is scanned, the ARDF reverses the original again and feeds it out face down.

7.16 PAPER FEED UNIT (OPTION)

7.16.1 OVERVIEW

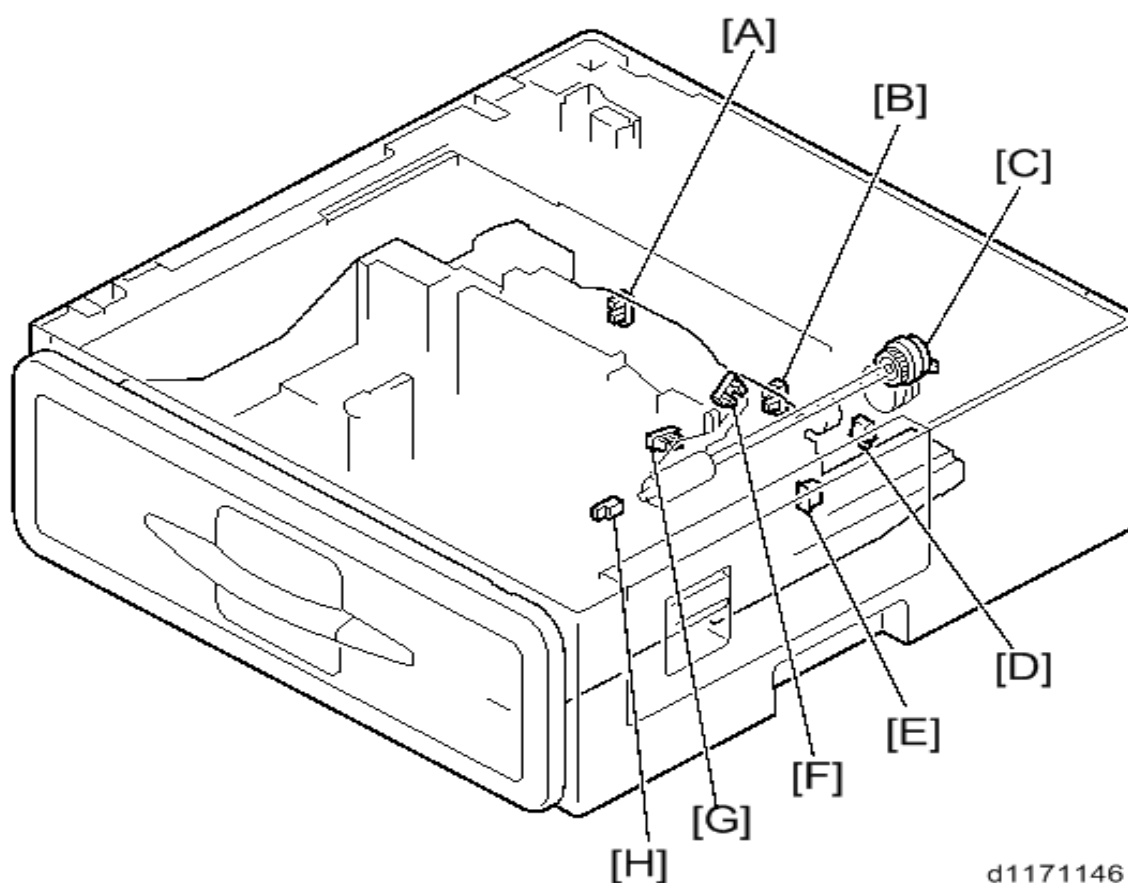


Callout	Item	Callout	Item
[A]	Side Fence	[I]	Paper Transport Sensor
[B]	End Fence	[J]	Vertical Transport Cover Open/Close Switch
[C]	Tray Bottom Plate Lift Sensor	[K]	Friction Pad
[D]	Tray Bottom Plate HP Sensor	[L]	Tray Set Switch
[E]	Paper End Sensor	[M]	Bottom Plate Lift lever
[F]	Remaining Paper Sensor	[N]	Tray Bottom Plate
[G]	Paper Feed Roller	[O]	Anti-condensation Heater (Option)
[H]	Vertical Transport Roller	[P]	Paper Tray



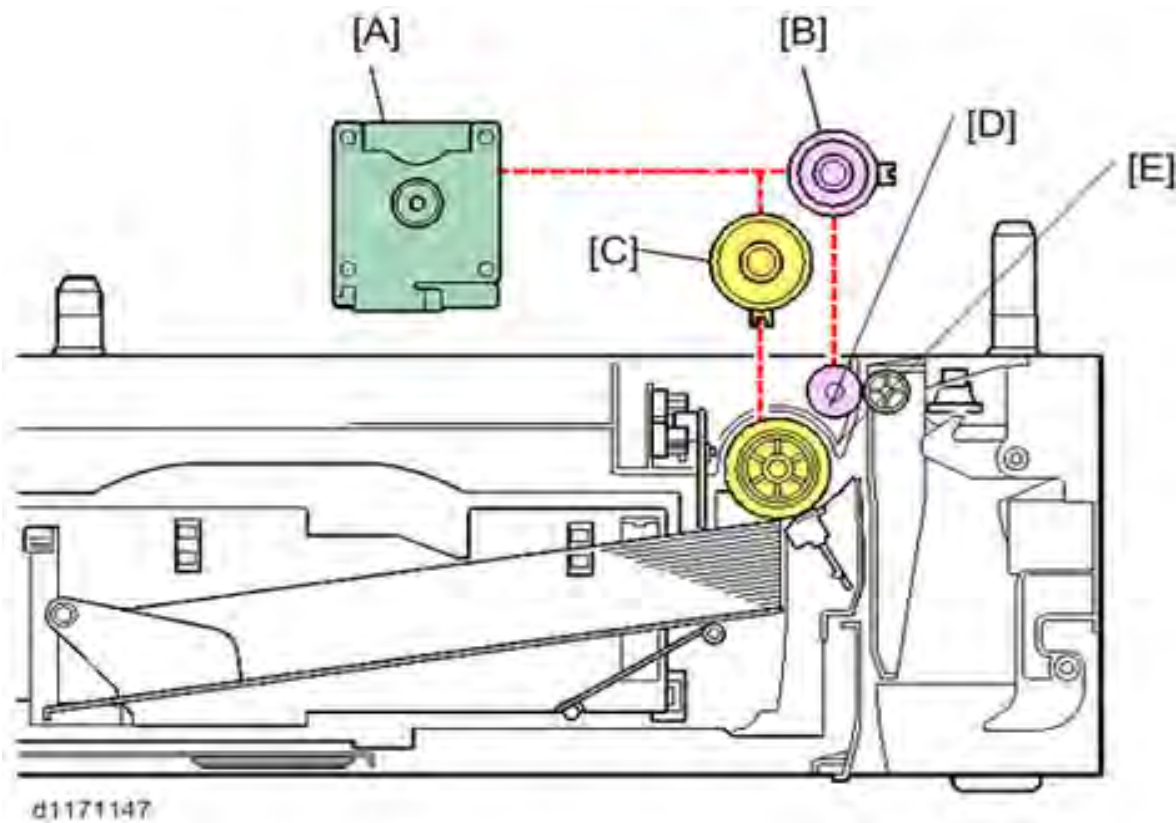
Callout	Item	Callout	Item
[A]	Anti-condensation Heater (Option)	[D]	Paper Feed Clutch
[B]	Controller Board	[E]	Tray Lift Motor
[C]	Paper Feed Motor		

Paper Feed Unit (Option)



Callout	Item	Callout	Item
[A]	Tray Bottom Plate Lift Sensor	[E]	Tray Set Switch
[B]	Tray Bottom Plate HP Sensor	[F]	Paper End Sensor
[C]	Vertical Transport Clutch	[G]	Remaining Paper Sensor
[D]	Vertical Transport Cover Open/Close Switch	[H]	Vertical Transport Sensor

7.16.2 PAPER TRANSPORT DRIVE

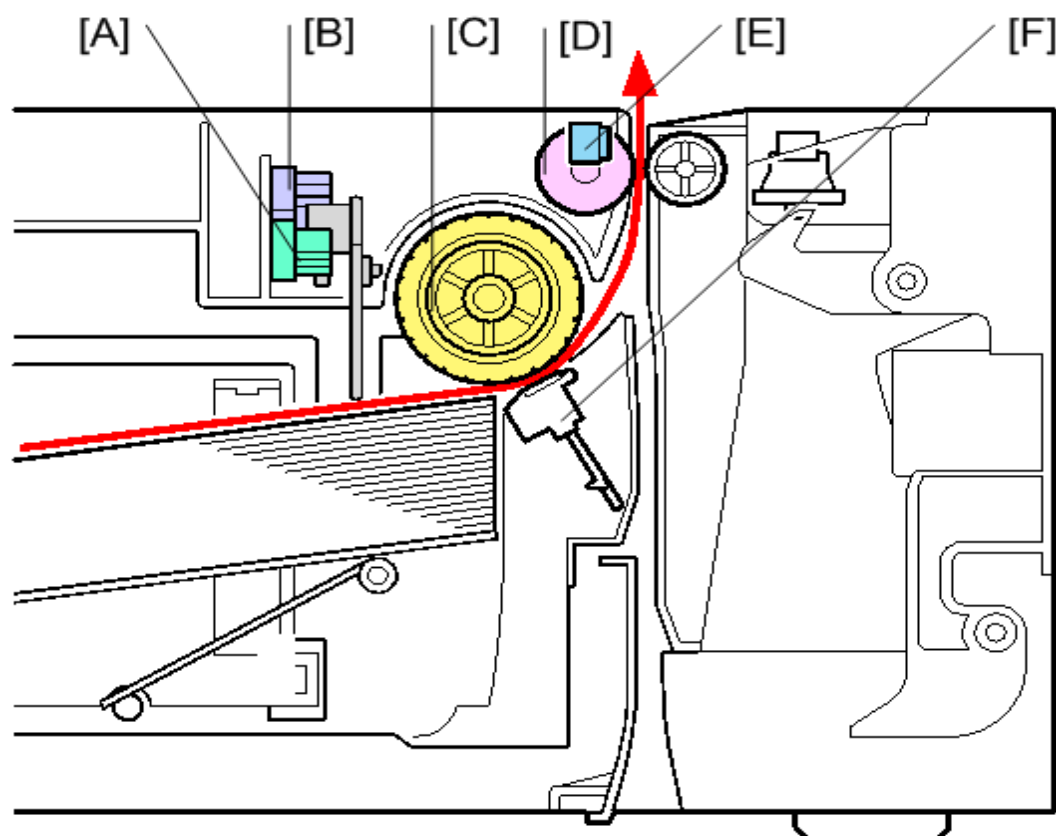


Callout	Item	Callout	Item
[A]	Paper Feed Motor	[D]	Vertical Transport Roller
[B]	Vertical Transport Clutch	[E]	Paper Feed Roller
[C]	Paper Feed Clutch		

The paper feed motor drives the paper feed clutch [C] and the vertical transport clutch [B] through gears. The operation timing of each clutch is as follows.

1. The paper feed clutch [C] is turned on until the vertical transport roller begins to operate.
2. The vertical transport clutch [B] is turned on until the paper reaches the mainframe.

7.16.3 SENSORS AND FRICTION PAD



Callout	Item	Callout	Item
[A]	Paper End Sensor	[D]	Vertical Transport Roller
[B]	Remaining Paper Sensor	[E]	Vertical Transport Sensor
[C]	Paper Feed Roller	[F]	Friction Pad

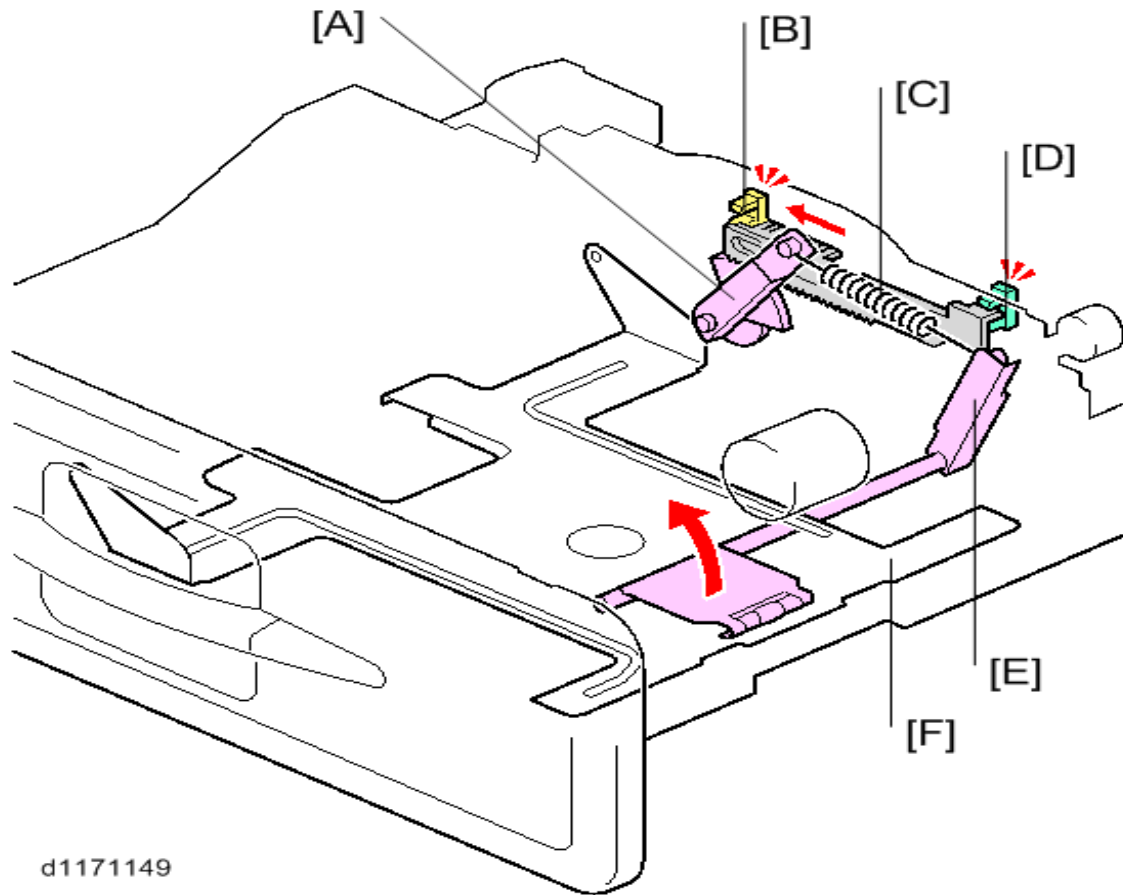
Only one actuator is used for detecting paper end and remaining paper.

The front side of the actuator is for the remaining paper sensor [B], and the rear side of the actuator is for the paper end sensor [A].

The vertical transport sensor [E] acts as a paper feed sensor.

This machine uses the friction pad method (same as the mainframe).

7.16.4 TRAY LIFTING UP MECHANISM



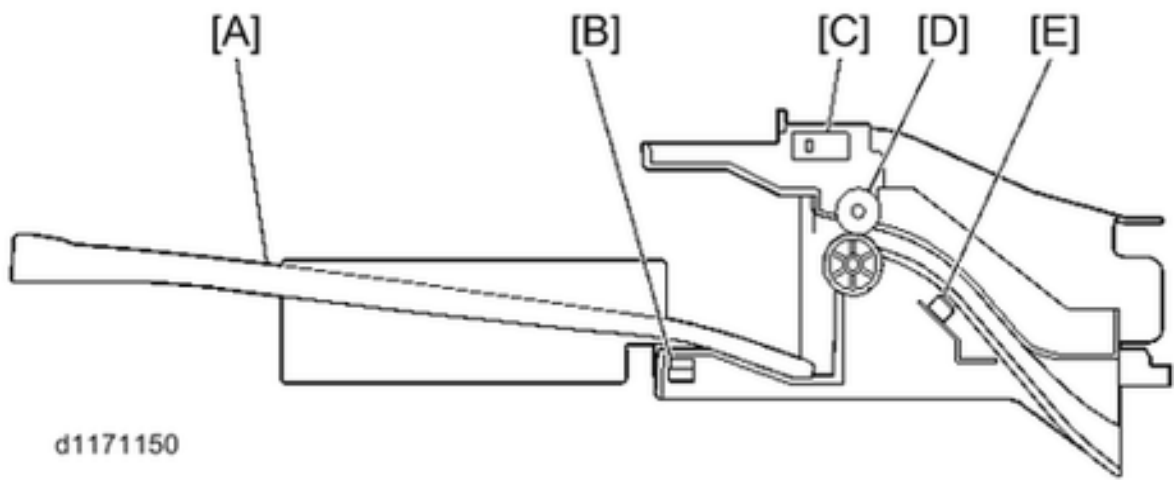
Callout	Item	Callout	Item
[A]	Tray Bottom Plate Pressure Lever	[D]	Tray Bottom Plate HP Sensor
[B]	Tray Bottom Plate Lift Sensor	[E]	Tray Bottom Plate Lift Lever
[C]	Lift Lever Encoder	[F]	Tray Bottom Plate

The pressure of the tray bottom plate [F] can be adjusted depending on the amount of paper remaining.

The pulses from the lift lever encoder [C] are detected by the tray bottom plate lift sensor [B]. The tray lift motor is controlled based on the pulses from the encoder.

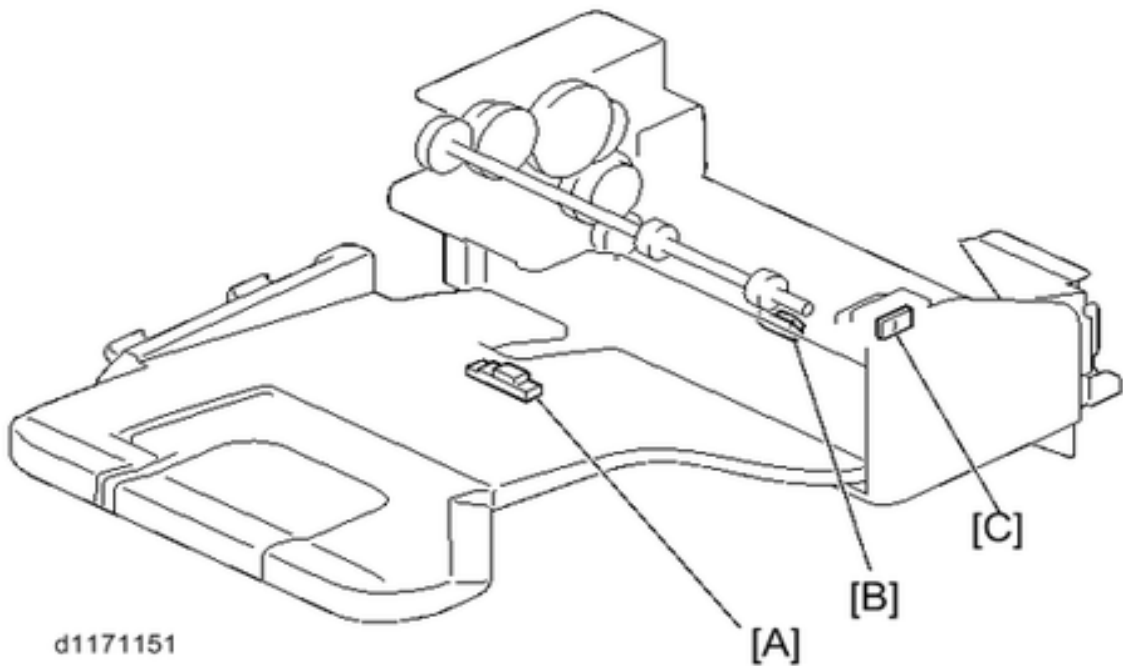
7.17 1-BIN TRAY UNIT (OPTION)

7.17.1 OVERVIEW



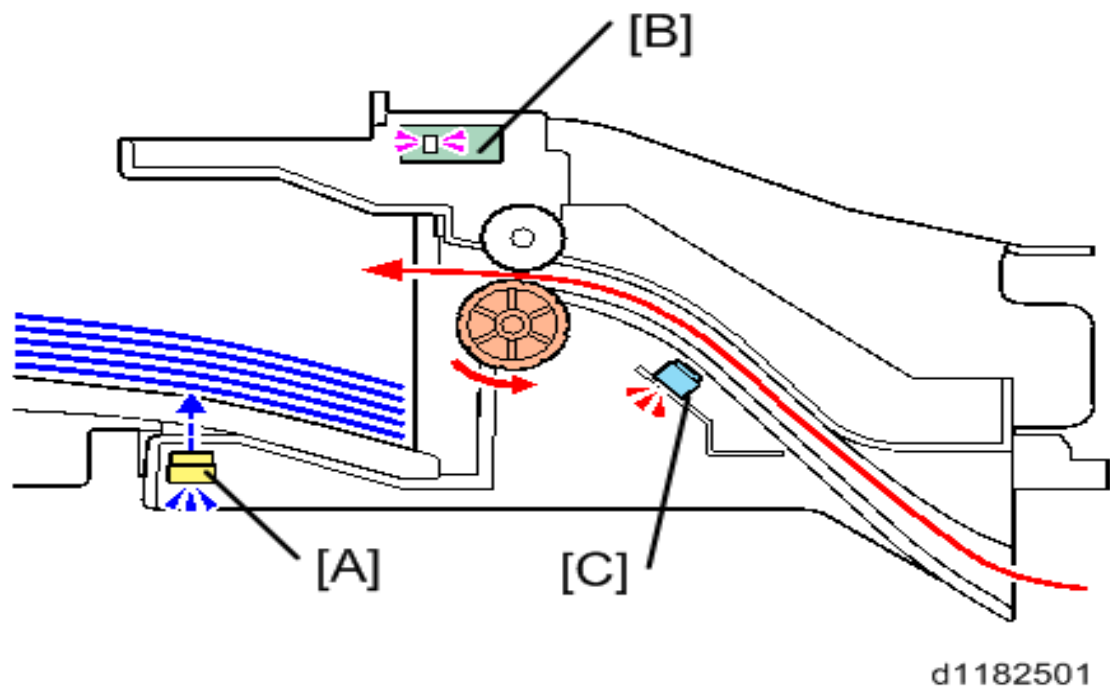
Callout	Item	Callout	Item
[A]	Paper Exit Tray	[D]	Paper Exit Roller
[B]	Paper Sensor	[E]	Paper Exit Sensor
[C]	LED Board		

7.17.2 ELECTRICAL COMPONENTS



Callout	Item	Callout	Item
[A]	Paper Sensor	[C]	LED Board
[B]	Paper Exit Sensor		

7.17.3 PAPER EXIT FROM 1-BIN TRAY UNIT



Callout	Item	Callout	Item
[A]	Paper Sensor	[C]	Paper Exit Sensor
[B]	LED		

The paper from the paper exit section is transported to the 1-Bin unit.

This uses the same transport path as usual even if duplex is used.

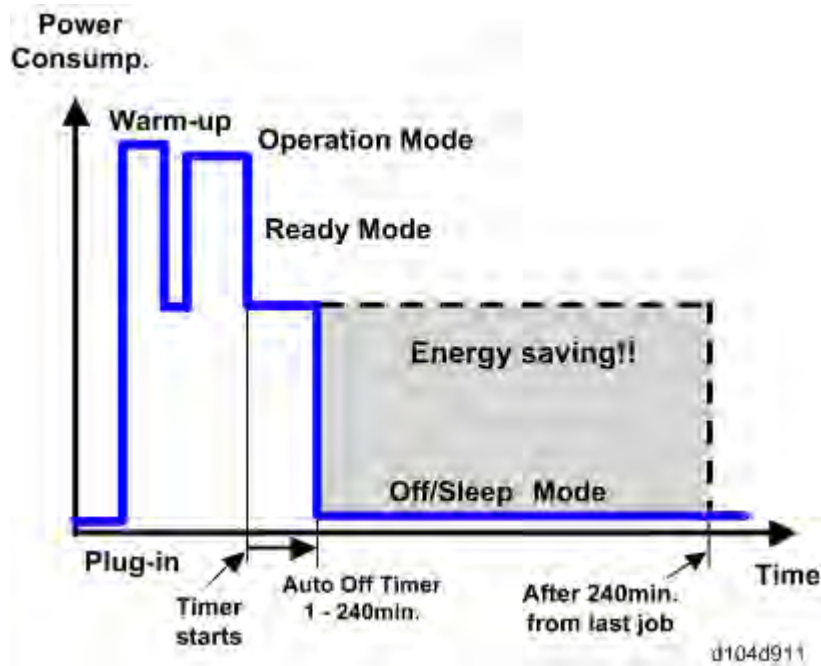
The paper sensor [A] detects the fed out paper, and the LED [B] blinks to inform users that there is paper on the 1-Bin tray after the end of the job.

The paper exit sensor [C] detects paper jams in the 1-Bin tray.

7.18 ENERGY SAVE

7.18.1 ENERGY SAVER MODES

Customers should use energy saver modes properly, to save energy and protect the environment.



The area shaded grey in this diagram represents the amount of energy that is saved when the timers are at the default settings. If the timers are changed, then the energy saved will be different. For example, if the timers are all set to 240 min., the grey area will disappear, and no energy is saved before 240 min. expires.

Timer Settings

The user can set these timers with User Tools (System settings > Timer setting)

- Auto off timer (1 – 240 min): Off/Sleep Mode. Default setting: 1 min.

Return to Stand-by Mode

Off/Sleep Mode

Recovery time.

- 10 sec.

Recommendation

We recommend that the default settings should be kept.

- If the customer requests that these settings should be changed, please explain that their energy costs could increase, and that they should consider the effects on the environment of extra energy use.
- If it is necessary to change the settings, please try to make sure that the Auto Off timer is not too long. Try with a shorter setting first, such as 30 min., then go to a longer one (such as 60 min.) if the customer is not satisfied.
- If the timers are all set to the maximum value, the machine will not begin saving energy until 240 minutes has expired after the last job. This means that after the customer has finished using the machine for the day, energy will be consumed that could otherwise be saved.
- If you change the settings, the energy consumed can be measured using SP8941, as explained below.

7.18.2 ENERGY SAVE EFFECTIVENESS

SP 8941 (Machine Status) keeps a record of the amount of time that the machine spends in each mode.

- 8941-001: Operating mode
- 8941-002: Standby mode
- 8941-003: Panel off mode (Not used in this model)
- 8941-004: Low power mode (Not used in this model)
- 8941-005: 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.

Energy Save

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) $(③ \times ④)/1000$ = ⑤
Operating	001: Operating Time	21089.0	21386.0	4.95	898	4.45
Stand by (Ready)	002: Standby Time	306163.0	308046.0	31.38	179	5.62
Energy save (Panel off)	003: Energy Save Time	74000	75111.0	18.52	148.09	2.74
Low power	004: Low Power Time	148000	150333	38.88	111	4.32
Sleep	005: Off Mode Time	508776.0	520377.0	193.35	1.8	0.35
Total						17.47

D196/D214/D219/D220/D236
SERVICE MANUAL APPENDICES

D196/D214/D219/D220/D236

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APPENDIX:

SPECIFICATIONS

REVISION HISTORY		
Page	Date	Added/Updated/New
		None

1. SPECIFICATIONS

1.1 SPECIFICATIONS

1.1.1 SPECIFICATIONS

Mainframe

Configuration:	Desktop	
Scanning Element:	One-dimensional solid scanning through CCD	
Printing Process:	Dry Electrostatic Transfer System with Dual Component Development; 4-Drum Method	
Development:	Dry two-component magnetic brush development system	
Resolution:	Scan: ▪ Exposure glass: 600 × 600 dpi ▪ ADF: 600 × 300 dpi Print: 600 × 600 dpi	
Fusing:	New Color QSU system (Direct Heating fusing)	
Max Imageable Area:	Standard tray	216 x 356 (8.5" x 14.0")
	Bypass tray	216 x 600 (8.5" x 23.6")
Original Type:	Sheets, book, three-dimensional object	
Maximum original size:	A4 / LG(8.5" x 14")	
Copy Speed:	C306: Color: 30 cpm (A4), 31cpm (LT) B&W: 30 cpm (A4), 31cpm (LT) C406: Color: 35 cpm (A4), 36 cpm (LT) B&W: 40 cpm (A4), 42cpm (LT)	

Specifications

First Copy Time: (LT/A4 LEF, 1st tray)	C306: Color: 11.0 seconds or less B&W: 7.2 seconds or less C406: Color: 10.5 seconds or less B&W: 6.2 seconds or less	
Warm-up Time:	25 seconds (23°C (73.4°F), rated voltage)	
Print Paper Capacity: (80 g/m ² , 20lb)	Standard tray	250 sheets
	Bypass tray	100 sheets
	Optional tray	500 sheets
Print Paper Size:	Standard tray	A4 SEF / LT SEF to A5SEF
	Bypass tray	A4 / LG to A6 SEF / Envelope
	Optional tray	A4 SEF / LG SEF to A5 SEF
	For details, see page 1-8	
Printing Paper Weight:	Standard tray	60-163 g/m ² (16-44 lb)
	Bypass tray	60-220 g/m ² (16-59 lb)
	Optional tray	60-163 g/m ² (16-44 lb)
	Duplex	60-163 g/m ² (16-44 lb)
Output Paper Capacity:	Std: 100 sheets Max: 200 sheets (with 1 bin tray)	
Continuous copy:	Up to 99 sheets	
Memory:	2GB	
Hard disk	320GB	
CPU	RM7035C-533L	
Max Email Address in HDD	2000	
Register Group Address in HDD	Max. 100 Group (Max. 500 addresses in one group address)	

Register client folder address in HDD	Max. 2,000 folders	
Zoom:	Arbitrary: From 25 to 400% (1% step)	
	Fixed:	
	North America	Europe/Asia
	65%	50%
	78%	71%
	93%	93%
	100%	100%
	129%	141%
	155%	200%
Power Source:	110 V, 60 Hz: More than 10 A (for Taiwan) 120V -127 V, 60 Hz: More than 10 A (for North America) 220 V - 240 V, 50/60 Hz: More than 5 A (for Europe/Asia)	
Power Consumption:	North America C306 (with full system): 1300 W or less C406 (with full system): 1300 W or less EU/Asia C306 (with full system): 1,200 W or less C406 (with full system): 1,200 W or less *The full system consists of the main unit, two paper tray units, and internal tray 2.	
Energy Saver:	Reduced electrical consumption: North America C306: 0.71 W or less C406: 0.63 W or less EU/Asia C306: 0.66 W or less C406: 0.75 W or less	

Noise Emission:	Sound power level with full system C306: Stand-by: 31.9 dB (A) Copying: 67.7 dB (A) C406: Stand-by: 31.9 dB (A) Copying: B&W: 68.3 dB (A) Color: 67.8 dB (A) Sound pressure level with full system C306: Stand-by: 19.3 dB (A) Copying: 55.3 dB (A) C406: Stand-by: 19.8 dB (A) Copying: B&W: 56.1 dB (A) Color: 54.2 dB (A) *Sound power level and sound pressure level are actual values measured in accordance with ISO 7779. *Sound pressure level is measured from the position of the bystander. *The full system consists of the main unit, ADF, internal tray 2, and two paper tray units.
Dimensions (W x D x H):	510 x 588 x 505 mm (20.1" x 23.1" x 19.9"): (including ARDF and operation panel)
Weight:	Basic model: 40.5 kg (89.3 lb) ADF model: 45 kg (99.3 lb)

Printer

Printer Languages:	Standard: PCL 5c/6, PDF, RPCS, PostScript 3 Option: XPS, PictBridge
Resolution:	PCL5c: 600 x 600 dpi (1, 2, 4 bit), 300 x 300 dpi Grayscale PCL6: 1200 x 1200 dpi (1 bit), 600 x 600 dpi (1, 2, 4 bit) PS3: 1200 x 1200 dpi (1 bit), 600 x 600 dpi (1, 2, 4 bit) XPS: 600 x 600 dpi (1, 2, 4 bit)
Resident Fonts:	PCL5c/ 6: 45 fonts, 13 International fonts Adobe PostScript 3: 136 fonts
Host Interfaces:	Standard: Ethernet (RJ-45 network port : 10Base-T/100Base-TX/1000Base-T), USB2.0[TypeB], USB2.0 Host I/F[TypeA](2 port), SD slot Option: IEEE1284/ECP, Wireless LAN (IEEE802.11a,b,g,n), Bluetooth Ethernet (RJ-45 network port : 10Base-T/100Base-TX/1000Base-T)
Network Protocols:	Standard: TCP/IP (IPv4, IPv6) Optional: IPX/SPX

Scanner

Scanning Method	Full-color scanner / Flatbed scanning
Available Scanning Resolution Range:	Twain Mode: ▪ Exposure glass: 100 to 1200 dpi ▪ ADF: 100 to 600 dpi WIA Mode: 100 to 1200 dpi Delivery Mode: ▪ 100 / 200 / 300 / 400 / 600 dpi (default: 200 x 200 dpi)
Grayscales:	1 bit or 8 bits/pixel each for RGB
Scanning Throughput	B&W: Over 30ipm (200dpi / 300dpi) (A4, SEF, Mono 1bit, Text/Line Art, MH compression with ADF) Color: Over 30ipm (200dpi), Over 20ipm (300dpi) (A4, SEF, FC Text/Photo / JPEG standard compression with ADF)
Standard Scanner Resolution:	DF: 600 x 300 dpi Flatbed: 600 x 600 dpi
Network Interface:	Standard: 100BASE-TX / 10BASE-T / 1000 Base-T, IEEE802.11a/b/g
Compression Method:	B&W: TIFF (MH, MR, MMR, JBIG2) Gray Scale, Full Color: JPEG

ARDF

Paper Size/Weight:	Simplex	Size	A4 to A6, LG to HLT
		Weight	52 to 128 g/m ² (14 to 34 lb.)
	Duplex	Size	A4 to A6, LG to HLT
		Weight	64 to 105 g/m ² (17 to 28 lb.)
Table Capacity:	50 sheets (80 g/m ² , 20 lb. Bond or less) 20 sheets (more than 80 g/m ² , 20 lb. Bond)		
Separation:	Friction pad		
Original Transport:	Roller transport		
Original Feed Order:	From the top original		
Power Source:	DC 24V, 5V from the scanner unit		
Power Consumption:	20 W or less		
Dimensions (W x D x H):	476 × 360 × 79.8 mm (18.8" × 14.2" × 3.2")		
Weight:	Approx. 4 kg (8.9 lb.)		

1.2 SUPPORTED PAPER SIZES

1.2.1 PAPER FEED

Paper	Size	Main Tray	Paper Feed Unit	Bypass Tray
A4 SEF	210 x 297 mm	✓	✓	✓ ^{*1}
A5 SEF	148 x 210 mm	✓	✓	✓ ^{*1}
A5 LEF	210 x 148 mm	-	-	✓
A6 SEF	105 x 148 mm	-	-	✓
B5 SEF	182 x 257 mm	✓	✓	✓ ^{*1}
B6 SEF	128 x 182 mm	-	-	✓
Legal SEF	8.5 x 14 inch	-	✓	✓ ^{*1}
Foolscap SEF	8.5 x 13 inch	-	✓	✓ ^{*1}
Letter SEF	8.5 x 11 inch	✓	✓	✓ ^{*1}
GovernmentLG SEF	8.25 x 14 inch	-	✓	✓ ^{*1}
Folio SEF	8.25 x 13 inch	-	✓	✓ ^{*1}
F/GL SEF	8 x 13 inch	-	✓	✓ ^{*1}
Eng Quatro SEF	8 x 10 inch	-		✓
Executive SEF	7.25 x 10.5 inch	-	✓	✓ ^{*1}
Half Letter SEF	5.5 x 8.5 inch	✓	✓	✓ ^{*1}
Half Letter LEF	8.5 x 5.5 inch	-	-	✓
Com10 Env. SEF	4.125 x 9.5 inch	-	-	✓
Monarch Env. SEF	3.875 x 7.5 inch	-	-	✓
C5 Env. SEF	162 x 229 mm	-	-	✓
C6 Env. SEF	114 x 162 mm	-	-	✓

Paper	Size	Main Tray	Paper Feed Unit	Bypass Tray
DL Env. SEF	110 x 220 mm	-	-	✓
16K SEF	195 x 267 mm	-	-	✓
8.5 × 12 SEF	8.5 x 12 inch	-	✓	✓*2
8 1/2 × 13 2/5 SEF	8.5 x 13.4 inch	-	✓	✓*1

Custom:

-	Main Tray	Paper Feed Unit	Bypass Tray
Width	139.5 - 216.0 mm 5.50 - 8.50 inch	139.5 - 216.0 mm 5.50 - 8.50 inch	76.2 - 216.0 mm 3.00 - 8.50 inch
Length	210.0 - 297.0 mm 8.27 - 11.69 inch	210.0 - 356.6 mm 8.27 - 14.03 inch	139.0 - 600.0 mm 5.48 - 23.62 inch

Remarks

✓: Supported

*1: Enables duplex printing by setting SP mode for NA, EU, and Asia. (No duplex printing for the default setting) Duplex printing can be selected from printer driver.

*2: Enables duplex printing by setting SP mode for NA and EU. (No duplex printing for the default setting) Duplex printing can be selected from printer driver.

1.2.2 PAPER EXIT

Paper	Size	Main Tray	1 Bin Tray
A4 SEF	210 x 297 mm	✓	✓
A5 SEF	148 x 210 mm	✓	✓
A5 LEF	210 x 148 mm	✓	✓
A6 SEF	105 x 148 mm	✓	✓
B5 SEF	182 x 257 mm	✓	✓
B6 SEF	128 x 182 mm	✓	✓
Legal SEF	8.5 x 14 inch	✓	✓

Supported Paper Sizes

Paper	Size	Main Tray	1 Bin Tray
Foolscap SEF	8.5 x 13 inch	✓	✓
Letter SEF	8.5 x 11 inch	✓	✓
GovernmentLG SEF	8.25 x 14 inch	✓	✓
Folio SEF	8.25 x 13 inch	✓	✓
F/GL SEF	8 x 13 inch	✓	✓
Eng Quatro SEF	8 x 10 inch	✓	✓
Executive SEF	7.25 x 10.5 inch	✓	✓
Half Letter SEF	5.5 x 8.5 inch	✓	✓
Half Letter LEF	8.5 x 5.5 inch	✓	-
Com10 Env. SEF	4.125 x 9.5 inch	✓	-
Monarch Env. SEF	3.875 x 7.5 inch	✓	-
C5 Env. SEF	162 x 229 mm	✓	-
C6 Env. SEF	114 x 162 mm	✓	-
DL Env. SEF	110 x 220 mm	✓	-
16K SEF	195 x 267 mm	✓	✓
8.5 × 12 SEF	8.5 x 12 inch	✓	✓
8 1/2 × 13 2/5 SEF	8.5 x 13.4 inch	✓	✓

Custom:

-	Main Tray	1 Bin Tray
Width	76.2 - 216.0 mm 3.00 - 8.50 inch	139.7 - 216.0 mm 5.50 - 8.50 inch
Length	139.0 - 600.0 mm 5.48 - 23.62 inch	210.0 - 600.0 mm 8.27 - 23.62 inch

Remarks

✓: Supported

1.3 SOFTWARE ACCESSORIES

The printer drivers and utility software are provided on one CD-ROM. An auto-run installer allows you to select which components to install.

1.3.1 PRINTER DRIVERS

Windows

OS	Type	PCL5c	PCL6	PS3	XPS
Windows Vista	Starter	-	-	-	-
	Home Basic	✓	✓*3	✓*3	✓*1
	Home Premium	✓	✓*3	✓*3	✓*1
	Business	✓	✓*3	✓*3	✓*1
	Ultimate	✓	✓*3	✓*3	✓*1
	Enterprise	✓	✓*3	✓*3	✓*1
Windows 7	Starter	-	-	-	-
	Home Basic	-	-	-	-
	Home Premium	✓	✓	✓	✓
	Professional	✓	✓	✓	✓
	Ultimate	✓	✓	✓	✓
	Enterprise	✓	✓	✓	✓
Windows 8/8.1	Windows 8	✓	✓	✓	✓
	Pro	✓	✓	✓	✓
	Enterprise	✓	✓	✓	✓
	RT	-	-	-	-
Windows Server 2003/ R2	Standard Edition	✓*2	✓*2	✓*2	-
	Enterprise Edition	✓*2	✓*2	✓*2	-
	Datacenter Edition	-	-	-	-

OS	Type	PCL5c	PCL6	PS3	XPS
	Web Edition	-	-	-	-
Windows Server 2008/R2	Standard Edition	✓	✓	✓	✓
	Enterprise Edition	✓	✓	✓	✓
	Standard without Hyper-V	✓	✓	✓	✓
	Enterprise without Hyper-V	✓	✓	✓	✓
	Datacenter Edition	-	-	-	-
	Web Edition	-	-	-	-
Windows Server 2012/R2	Foundation	✓	✓	✓	✓
	Essentials	✓	✓	✓	✓
	Standard	✓	✓	✓	✓
	Datacenter	-	-	-	-

✓: Supported

-: Not supported

*RPCS driver has been discontinued.

*1:SP1 or later is recommended

*2:SP2 or later is Recommended

*3:SP1 or later is recommended

Mac OS Environment

OS	PS3	Printer Utility for Mac
Mac OS 8.6 or later, Mac OS X classic	-	-
Mac OS X Native: v.10.57 or later	✓	-

✓: Supported

-: Not supported

UNIX Environment

UNIX Platforms	Version
Sun Solaris	9, 10
HP-UX	11.x, 11i v2, 11i v3
Red Hat Linux	Enterprise V4, V5, V6
SCO OpenServer	5.0.7, 6.0
IBM AIX	V 5L, V5.3, V6.1, V7.1

Novell Netware

Netware Server*	Supported Version	Netware 6.5 or later
	Client OS	"Windows Vista/2003/2008/7/8/2012/8.1/2012R2

* Netware option is required.

SAP R/3 Environment (Device Type / Barcode & OCR Package)

Device Type will be provided from SAP itself in SAP Printer Vendor Program.

For the detailed specification, please refer to another announcement to be issued in the future.

Supported Barcode & OCR Fonts	Barcode Fonts	Code 128, Code 39, Code 93, Codabar, 2 of 5 interleaved/Industrial/Matrix, MSI, USPS, UPC/EAN
	OCR Fonts	OCR A, OCR B

Note

- The PS3 drivers are all genuine AdobePS drivers, except for Windows 2000, which uses Microsoft PS.
- A PPD file for each operating system is provided with the driver.

1.3.2 SCANNER AND LAN FAX DRIVERS

Operating system for TWAIN driver:

Windows Vista/7/8/8.1, Windows Server 2003/2003 R2/2008/2008 R2/2012/2012 R2
(TWAIN scanner runs in 32-bit compatible mode on a 64-bit operating system, so TWAIN scanner is not compatible with 64-bit applications. Use it with 32-bit applications.)

Operating system for WIA driver:

Windows Vista (SP1 or later)/7/8/8.1, Windows Server 2008/2008 R2/2012/2012 R2
(WIA scanner can function under both 32- and 64-bit operating systems.)

Operating system for LAN FAX driver:

Windows Vista, Windows 7, 8, 8.1, Windows Server 2003, Windows Server 2008, Windows Server 2012, Windows Server 2008 R2, Windows Server 2012 R2

Note

- The LAN Fax driver lets you fax documents directly from your PC. Address Book Editor and Cover Sheet Editor are to be installed as well.
- The Network TWAIN driver operates in 32-bit compatibility mode on 64-bit operating systems
- The Network TWAIN driver is provided on the scanner drivers CD-ROM.

1.4 OPTIONAL EQUIPMENT

1.4.1 PAPER FEED UNIT (D573)

Paper Feed System:	Feed Roller and Friction Pad
Paper Height Detection:	Empty only
Tray Capacity:	500 sheets
Paper Weight:	60 to 163 g/m ² (16 to 43.5 lb.)
Paper Size:	A5 SEF to A4/LG SEF
Power Source:	DC 24V, 5V (from the main frame)
Power Consumption:	Less than 27 W (Power is supplied from the main unit.)
Dimensions (W x D x H):	498 mm x 552 mm x 150 mm (19.7" x 21.8" x 6.0")
Weight:	10.4 kg (23.0 lb.) or less

1.4.2 1-BIN TRAY UNIT (D574)

Paper detection:	Detects paper
Tray Capacity:	100 sheets (80 g/m ²)
Paper Weight:	60 to 163 g/m ² (16 to 43.5 lb.)
Paper Size:	Width: 139.7 to 216mm (5.0" to 8.5") Length: 210 to 600mm (8.3" to 23.7")
Power Source:	DC 24V, 5V (from the main frame)
Power Consumption:	Less than 1 W (Power is supplied from the main unit.)
Dimensions (W x D x H):	540 mm x 460 mm x 116 mm (21.3" x 18.1" x 4.6")
Weight:	3.0 kg (6.6 lb.) or less

1.4.3 ARDF (D3BE)

Scan:	Simplex / Duplex
ADF Capacity:	50 sheets (80 g/m2, 20 lb. Bond or less) 20 sheets (more than 80 g/m2, 20 lb. Bond)
Paper Weight:	Simplex: 52 to 128 g/m2 (14 to 34 lb.) Duplex: 64 to 105 g/m2 (17 to 28 lb.)
Paper Size:	Simplex: ▪ 5 1/2"x8 1/2" LEF/SEF(HLT) to 8 1/2"x14"SEF(LG) ▪ A6 SEF, B6 SEF,A5 LEF/SEF to A4 SEF ▪ Vertical: 5" to 8.5" / 128 to 216mm ▪ Horizontal: 5.5" to 23.6" / 139.7 to 600mm *Image quality of custom paper and A6/B6 is not guaranteed. Duplex: ▪ 5 1/2"x 8 1/2"LEF/SEF(HLT) to 8 1/2"x14"SEF(LG) ▪ A6 SEF,B6 SEF,A5 LEF/SEF to A4 SEF ▪ Vertical:5" to 8.5" / 128 to 216mm ▪ Horizontal: 5.5" to 14" / 139.7 to 355.6mm *Image quality of custom paper and A6/B6 is not guaranteed.
Power Source:	DC 24V, 5V (from the main frame)
Power Consumption:	20W or less (Power is supplied from the main unit)
Dimensions (W x D x H):	476 × 360 × 79.8 mm (18.8" × 14.2" × 3.2")
Weight:	Approx. 4 kg (8.9 lb.)

APPENDIX:

PREVENTIVE MAINTENANCE TABLES

REVISION HISTORY		
Page	Date	Added/Updated/New
		None

2. PREVENTIVE MAINTENANCE TABLES

2.1 MAINTENANCE TABLES

2.1.1 PREVENTIVE MAINTENANCE ITEMS

Chart: A4 (LT)/5%

Mode: 2 prints/job

Color Ratio: 30%

Environment: Normal temperature and humidity

Yield may change depending on circumstances and print conditions.

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

↓ Note

▪ Yield Parts:

The parts mentioned in these tables have a target yield. However, the total copy/print volume made by the machine will not reach the target yield within the machine's targeted lifetime if the machine is used under the target usage conditions (ACV, color ratio, and P/J). So, these parts are categorized not as PM parts but as yield parts (EM parts). The parts with "(R)" in this table are yield parts.

The PM count for the following items is based on the sheets of copy paper:

Item	36K	60K	90K	120K	EM	Remarks
Scanner Unit						
Exposure Glass					C	Ricoh exposure glass cleaner
ADF Exposure Glass					C	Ricoh exposure glass cleaner
PCDU						
PCDU - K		R				PCDU (K) differs between C306 and C406. Make sure the correct part number before ordering it.
PCDU - C	(R)					

Item	36K	60K	90K	120K	EM	Remarks
PCDU - M	(R)					
PCDU - Y	(R)					
Transfer Unit						
Image Transfer Belt Unit				(R)		
Paper Transfer Roller Unit				(R)		
Fusing Unit						
Fusing Unit				(R)		
Fusing Entrance Guide Plate		C				Remove toner or paper dust with a dry cloth
Fusing Exit Guide Plate		C				
Separation Plate		C				
Thermopile		C				
Pressure Roller		C				
Paper Transport (Mainframe)						
Registration Roller					C	Damp cloth
Registration Sensor					C	Blower brush or dry cloth
Paper Dust Case					C	Blower brush
Paper Feed Roller				(R)	C	Damp cloth
Paper Feed Exit Sensor					C	Blower brush or dry cloth
By-pass Feed Roller				(R)	C	Damp cloth
Separation Pad				(R)	C	Dry cloth
Duplex						

Item	36K	60K	90K	120K	EM	Remarks
Duplex Entrance Sensor					C	Blower brush or dry cloth
Duplex Exit Sensor					C	Blower brush or dry cloth
Duplex Rollers					C	Damp cloth
Duplex Entrance Guide Plate					C	Damp cloth; alcohol
Paper Feed Tray (Optional)						
Paper Feed Roller				(R)	C	Wipe with a damp cloth
Separation Pad				(R)	C	
Transport Roller					C	
Tray Lift Pad					C	
Transport Sensor					C	
1-Bin Tray Unit						
Tray Exit Roller					C	Wipe with a damp cloth
Tray Exit Sensor					C	
Tray Paper Remaining Sensor					C	
Others						
Waste Toner Bottle			R			
Ozone Filter					C	

The PM count for the following items is based on the number of originals fed:

Maintenance Tables

Item	30K	45K	60K	120K	EM	Remarks
ARDF						
Separation Pad	(R)				C	Wipe with a dry cloth
Pick-up Roller		(R)			C	Wipe with a damp cloth
Feed Roller		(R)			C	
Transport Roller					C	Wipe with a damp cloth
Registration Roller					C	
Exit Roller					C	
Inverter Roller					C	

APPENDIX:

SP MODE TABLES

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		None

3. SP MODE TABLES

3.1 SERVICE PROGRAM MODE

CAUTION

- Make sure that the data-in LED (🔌) is not on before you go into the SP mode. This LED indicates that some data is coming to the machine. When the LED is on, wait for the copier to process the data.

3.1.1 ENABLING AND DISABLING SERVICE PROGRAM MODE

Note

- The Service Program Mode is for use by service representatives only. If this mode is used by anyone other than service representatives for any reason, data might be deleted or settings might be changed. In such case, product quality cannot be guaranteed any more.

Entering SP Mode

For details, ask your supervisor.

Exiting SP Mode

- Press "Exit" on the LCD twice to return to the copy window.

3.1.2 TYPES OF SP MODES

- System SP: SP modes related to the engine functions
- Printer SP: SP modes related to the controller functions
- Scanner SP: SP modes related to the scanner functions
- Fax SP: SP modes related to the fax functions

Select one of the Service Program modes (System, Printer, Scanner, or Fax) from the touch panel as shown in the diagram below after you access the SP mode. This section explains the functions of the System/Printer/Scanner SP modes. Refer to the Fax service manual for the Fax SP modes.

SP Mode Button Summary

Here is a short summary of the touch-panel buttons.

1	Opens all SP groups and sublevels.
2	Closes all open groups and sublevels and restores the initial SP mode display.
3	Opens the copy window (copy mode) so you can make test copies. Press SP Mode (highlighted) in the copy window to return to the SP mode screen,
4	Enter the SP code directly with the number keys if you know the SP number. Then press  . (The required SP Mode number will be highlighted when pressing  . If not, just press the required SP Mode number.)
5	Press two times to leave the SP mode and return to the copy window to resume normal operation.
6	Press any Class 1 number to open a list of Class 2 SP modes.
7	Press to scroll the show to the previous or next group.
8	Press to scroll to the previous or next display in segments the size of the screen display (page).
9	Press to scroll the show the previous or next line (line by line).
10	Press to move the highlight on the left to the previous or next selection in the list.

Switching Between SP Mode and Copy Mode for Test Printing

1. In the SP mode, select the test print. Then press "Copy Window".
2. Use the copy window (copier mode), to select the appropriate settings (paper size, etc.) for the test print.
3. Press Start  to start the test print.
4. Press SP Mode (highlighted) to return to the SP mode screen and repeat from step 1.

Selecting the Program Number

Program numbers have two or three levels.

1. Refer to the Service Tables to find the SP that you want to adjust before you begin.
2. Press the Group number on the left side SP Mode window that contains the SP that you want to adjust.
3. Use the scrolling buttons in the center of the SP mode window to show the SP number that you want to open. Then press that number to expand the list.
4. Use the center touch-panel buttons to scroll to the number and title of the item that you want to set and press it. The small entry box on the right activates and shows the below default or the current settings.

Note

- Refer to the Service Tables for the range of allowed settings.

■

5. **Do this procedure to enter a setting:**

- Press  to toggle between plus and minus and use the keypad to enter the appropriate number. The number you enter writes over the previous setting.
- Press  to enter the setting. (The value is not registered if you enter a number that is out of range.)
- Press "Yes" when you are prompted to complete the selection.

6. **If you need to perform a test print, press Copy Window to open the copy window and select the settings for the test print. Press Start and then press SP Mode (highlighted) in the copy window to return to the SP mode display.**

7. **Press Exit two times to return to the copy window when you are finished.**

Exiting Service Mode

- Press the Exit key on the touch-panel.

Service Mode Lock/Unlock

At locations where the machine contains sensitive data, the customer engineer cannot operate the machine until the Administrator turns the service mode lock off. This function makes sure that work on the machine is always done with the permission of the Administrator.

1. **If you cannot go into the SP mode, ask the Administrator to log in with the User Tool and then set "Service Mode Lock" to OFF after he or she logs in: User Tools **

System Settings  Administrator Tools  Service Mode Lock  OFF

- This unlocks the machine and lets you get access to all the SP codes.
- The CE can service the machine and turn the machine off and on. It is not necessary to ask the Administrator to log in again each time the machine is turned on.

2. **Go into the SP mode and set SP5169 to "1" if you must use the printer bit switches.**

3. **After machine servicing is completed:**

- Change SP5169 from "1" to "0".
- Turn the machine off and on. Tell the administrator that you have completed servicing the machine.
- The Administrator will then set the "Service Mode Lock" to ON.

3.1.3 REMARKS

Display on the Control Panel Screen

The maximum number of characters which can show on the control panel screen is limited to 30 characters. For this reason, some of the SP modes shown on the screen need to be abbreviated. The following are abbreviations used for the SP modes for which the full description is over 20 characters.

Paper Weight Plain Paper 1: 60-74 g/m ² , 16-20lb. Plain Paper 2: 75-81 g/m ² , 20-22lb. Middle Thick: 82-105 g/m ² , 22-28lb. Thick Paper 1: 106-130 g/m ² , 28.3-34.6lb. Thick Paper 2: 131-163 g/m ² , 35-43lb. Thick Paper 3: 164-220 g/m ² , 44-58lb.	
Paper Type N: Normal paper MTH: Middle thick paper TH: Thick paper	Paper Feed Station P: Paper tray B: By-pass table
Color Mode [Color] [K]: Black in B&W mode [Y], [M], or [C]: Yellow, Magenta, or Cyan in Full Color mode [YMC]: Only for Yellow, Magenta, and Cyan [FC]: Full Color mode [FC, K], [FC, Y], [FC, M], or [FC, C]: Black, Yellow, Magenta, or Cyan in full color mode	
Print Mode S: Simplex D: Duplex	Process Speed L: Low speed (89 mm/s) M: Middle speed (178 mm/s)

Others

The following symbols are used in the SP mode tables.

FA: Factory setting

(Data may be adjusted from the default setting at the factory. Refer to the factory setting sheets enclosed. You can find it under the jammed paper removal decal.)

DFU: Design/Factory Use only

Do not touch these SP modes in the field.

A sharp (#) to the right hand side of the mode number column means that the main switch must be turned off and on to effect the setting change.

An asterisk (*) to the right hand side of the mode number column means that this mode is stored in the NVRAM and EEPROM. If you do a RAM clear, this SP mode will be reset to the default value. "ENG" and "CTL" show which NVRAM contains the data.

- ENG: EEPROM on the BICU board
- CTL: NVRAM on the controller board

The settings of each SP mode are explained in the right-hand column of the SP table in the following way.

[Adjustable range / **Default setting** / Step] Alphanumeric

 **Note**

- If "Alphanumeric" is written to the right of the bracket as shown above, the setting of the SP mode shows on the screen using alphanumeric characters instead of only numbers. However, the settings in the bracket in the SP mode table are explained by using only the numbers.

SSP: This denotes a "Special Service Program" mode setting.

3.2 MAIN SP TABLES-1

3.2.1 SP1-XXX (FEED)

1001	[Leading Edge Registration] Leading Edge Registration Adjustment (Tray Location, Paper Type, Color Mode), Paper Type: Plain, Thick 1, Thick 2 or Thick3		
	Adjusts the leading edge registration by changing the registration motor operation timing for each mode. Increasing a value: an image is moved to the trailing edge of paper. Decreasing a value: an image is moved to the leading edge of paper.		
1-001-001	Tray: Plain	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-002	Tray: Middle Thick	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-003	Tray: Thick	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-005	Tray: Plain: 1200	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-006	Tray: Middle Thick: 1200	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-007	By-pass: Plain	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-008	By-pass: Middle Thick	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-009	By-pass: Thick	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-012	By-pass: Plain: 1200	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-013	By-pass: Middle Thick: 1200	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-014	Duplex: Plain	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-015	Duplex: Middle Thick	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-016	Duplex: Thick	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-017	Tray: Special 1	ENG	[-9.0 to 9.0 / 1.1 / 0.1 mm/step]
1-001-018	By-pass: Special 1	ENG	[-9.0 to 9.0 / 1.1 / 0.1 mm/step]
1-001-019	Duplex: Plain:1200	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]

1-001-020	Duplex: Middle Thick:1200	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-021	Duplex: Special 1	ENG	[-9.0 to 9.0 / 1.1 / 0.1 mm/step]
1-001-022	Tray: Special 1: 1200	ENG	[-9.0 to 9.0 / 1.1 / 0.1 mm/step]
1-001-023	By-pass: Special 1: 1200	ENG	[-9.0 to 9.0 / 1.1 / 0.1 mm/step]
1-001-024	Duplex: Special 1: 1200	ENG	[-9.0 to 9.0 / 1.1 / 0.1 mm/step]
1-001-026	Offset: Transfer Separation	*ENG	[-4.0 to 4.0 / 0.0 / 0.1 mm/step]
1-001-030	Auto correct: On/Off	*ENG	[0 or 1 / 0 / 1/step]
1-001-031	Std. Measure: On/Off	*ENG	[0 or 1 / 0 / 1/step]
1-001-032	Offset	*ENG	[-5.0 to 5.0 / 0.0 / 0.1 mm /step]
1-001-033	Offset Standard:1	*ENG	[0.0 to 999.0 / 0.0 / 0.1 mm/step]
1-001-034	Offset Standard:2	*ENG	[0.0 to 999.0 / 0.0 / 0.1 mm /step]
1-001-035	Offset Standard:3	*ENG	[0.0 to 999.0 / 0.0 / 0.1 mm /step]
1-001-036	Offset Standard:4	*ENG	[0.0 to 999.0 / 0.0 / 0.1 mm /step]
1-001-037	Offset Standard:5	*ENG	[0.0 to 999.0 / 0.0 / 0.1 mm /step]
1-001-038	Offset Standard:6	*ENG	[0.0 to 999.0 / 0.0 / 0.1 mm /step]
1-001-039	Offset Standard:7	*ENG	[0.0 to 999.0 / 0.0 / 0.1 mm /step]
1-001-040	Offset Standard:8	*ENG	[0.0 to 999.0 / 0.0 / 0.1 mm /step]
1-001-041	Tray: Plain: Std Speed 2	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-043	By-pass: Plain: Std Speed 2	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-045	Duplex: Plain: Std Speed 2	ENG	[-9.0 to 9.0 / 0.0 / 0.1 mm/step]
1-001-047	Tray: Special1: Std Speed 2	ENG	[-9.0 to 9.0 / 1.1 / 0.1 mm/step]
1-001-048	By-pass: Special1: Std Speed 2	ENG	[-9.0 to 9.0 / 1.1 / 0.1 mm/step]

1-001-049	Duplex: Special1: Std Speed 2	ENG	[-9.0 to 9.0 / 1.1 / 0.1 mm/step]

1002	[Side-to-Side Registration]		
	Adjusts the side-to-side registration by changing the laser main scan start position for each mode and tray. Increasing a value: an image is moved to the rear edge of paper. Decreasing a value: an image is moved to the front edge of paper.		
1-002-001	By-pass Table	ENG	[-4.0 to 4.0 / 0.0 / 0.1 mm/step]
1-002-002	Tray 1	ENG	[-4.0 to 4.0 / 0.0 / 0.1 mm/step]
1-002-003	Tray 2	ENG	[-4.0 to 4.0 / 0.0 / 0.1 mm/step]
1-002-004	Tray 3	ENG	[-4.0 to 4.0 / 0.0 / 0.1 mm/step]
1-002-005	Duplex	ENG	[-4.0 to 4.0 / 0.0 / 0.1 mm/step]

1003	[Paper Buckle] Paper Buckle Adjustment (Tray Location, Paper Type), Paper Type: N: Normal, TH: Thick		
	Adjusts the amount of paper buckle at the registration roller by changing the paper feed timing.		
1-003-001	Tray1: Plain	ENG	[-5 to 5 / 2 / 1 mm/step]
1-003-002	Tray1: Middle Thick	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-003	Tray1: Thick	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-004	Tray2/3: Plain	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-005	Tray2/3: Middle Thick	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-006	Tray2/3: Thick	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-007	By-pass: Plain	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-008	By-pass: Middle Thick	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-009	By-pass: Thick	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-010	Duplex: Plain	ENG	[-5 to 5 / 0 / 1 mm/step]

1-003-011	Duplex: Middle Thick	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-012	Duplex: Thick	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-013	Tray1: Plain:1200	ENG	[-5 to 5 / 2 / 1 mm/step]
1-003-014	Tray1: Middle Thick:1200	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-015	Tray2/3: Plain:1200	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-016	Tray2/3: Middle Thick:1200	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-017	By-pass: Plain:1200	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-018	By-pass: Middle Thick:1200	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-019	By-pass: Small size	ENG	[-5 to 5 / -2 / 1 mm/step]
1-003-020	Tray1: Plain: Std. Spd. 2	ENG	[-5 to 5 / 2 / 1 mm/step]
1-003-022	Tray2/3: Plain: Std. Spd. 2	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-024	By-pass: Plain: Std. Spd. 2	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-025	By-pass: Middle Thick: BW	ENG	[-5 to 5 / 0 / 1 mm/step]
1-003-026	Duplex: Plain: Std. Spd. 2	ENG	[-5 to 5 / 0 / 1 mm/step]

1105	[Print Target Temperature]		
	Roller Type Center and Ends: Heating roller, Pressure roller Paper Type: Plain, Thin, Thick, OHP, Middle Thick, Special.		
1-105-001	Plain1:FC:Center	*ENG	C306: [100 to 180 / 143 / 1 deg/step] C406: [100 to 200 / 168 / 1 deg/step]

1-105-003	Plain1:BW:Center	*ENG	[100 to 180 / * / 1 deg/step] * C306: 139 * C406: 157
1-105-005	Plain2:FC:Center	*ENG	C306: [100 to 180 / 154 / 1 deg/step] C406: [100 to 200 / 180 / 1 deg/step]
1-105-007	Plain2:BW:Center	*ENG	[100 to 180 / * / 1 deg/step] * C306: 144 * C406: 162
1-105-009	Thin:FC:Center	*ENG	[100 to 180 / * / 1 deg/step] * C306: 153 * C406: 163
1-105-011	Thin:BW:Center	*ENG	[100 to 180 / * / 1 deg/step] * C306: 143 * C406: 147
1-105-013	Middle Thick:FC:Center	*ENG	[100 to 180 / 168 / 1 deg/step]
1-105-015	Middle Thick:BW:Center	*ENG	[100 to 180 / 158 / 1 deg/step]
1-105-017	Thick1:FC:Center	*ENG	[100 to 180 / 143 / 1 deg/step]
1-105-019	Thick1:BW:Center	*ENG	[100 to 180 / 143 / 1 deg/step]
1-105-021	Thick2:FC:Center	*ENG	[100 to 180 / 145 / 1 deg/step]
1-105-023	Thick2:BW:Center	*ENG	[100 to 180 / 145 / 1 deg/step]
1-105-025	Thick3:FC:Center	*ENG	[100 to 180 / 148 / 1 deg/step]
1-105-027	Thick3:BW:Center	*ENG	[100 to 180 / 148 / 1 deg/step]
1-105-029	Special1:FC:Center	*ENG	C306: [100 to 180 / 143 / 1 deg/step] C406: [100 to 200 / 168 / 1 deg/step]
1-105-031	Special1:BW:Center	*ENG	[100 to 180 / * / 1 deg/step] * C306: 139 * C406: 157
1-105-033	Special2:FC:Center	*ENG	C306: [100 to 180 / 154 / 1 deg/step] C406: [100 to 200 / 180 / 1 deg/step]

1-105-035	Special2:BW:Center	*ENG	[100 to 180 / * / 1 deg/step] * C306: 144 * C406: 162
1-105-037	Special3:FC:Center	*ENG	[100 to 180 / 168 / 1 deg/step]
1-105-039	Special3:BW:Center	*ENG	[100 to 180 / 158 / 1 deg/step]
1-105-041	Envelop:Center	*ENG	[100 to 180 / 146 / 1 deg/step]
1-105-043	OHP:Center	*ENG	[100 to 180 / 160 / 1 deg/step]
1-105-101	Plain1:FC:Center:Low Speed	*ENG	[100 to 180 / 127 / 1 deg/step]
1-105-103	Plain1:BW:Center:Low Speed	*ENG	[100 to 180 / 127 / 1 deg/step]
1-105-105	Plain2:FC:Center:Low Speed	*ENG	[100 to 180 / 129 / 1 deg/step]
1-105-107	Plain2:BW:Center:Low Speed	*ENG	[100 to 180 / 129 / 1 deg/step]
1-105-109	Thin:FC:Center:Low Speed	*ENG	[100 to 180 / 123 / 1 deg/step]
1-105-111	Thin:BW:Center:Low Speed	*ENG	[100 to 180 / 123 / 1 deg/step]
1-105-113	Middle Thick:FC:Center:Low Speed	*ENG	[100 to 180 / 141 / 1 deg/step]
1-105-115	Middle Thick:BW:Center:Low Speed	*ENG	[100 to 180 / 141 / 1 deg/step]
1-105-117	Special1:FC:Center:Low Speed	*ENG	[100 to 180 / 127 / 1 deg/step]
1-105-119	Special1:BW:Center:Low Speed	*ENG	[100 to 180 / 127 / 1 deg/step]
1-105-121	Special2:FC:Center:Low Speed	*ENG	[100 to 180 / 129 / 1 deg/step]

1-105-123	Special2:BW:Center:Low Speed	*ENG	[100 to 180 / 129 / 1 deg/step]
1-105-125	Special3:FC:Center:Low Speed	*ENG	[100 to 180 / 141 / 1 deg/step]
1-105-127	Special3:BW:Center:Low Speed	*ENG	[100 to 180 / 141 / 1 deg/step]
1-105-129	Envelope:Thick1:FC:Center	*ENG	[100 to 180 / 146 / 1 deg/step]
1-105-133	Envelope:Thick2:FC:Center	*ENG	[100 to 180 / 146 / 1 deg/step]
1-105-137	Envelope:Thick3:FC:Center	*ENG	[100 to 180 / 146 / 1 deg/step]
1-105-141	Postcard:Thick1:FC:Center	*ENG	[100 to 180 / 131 / 1 deg/step]
1-105-145	Postcard:Thick2:FC:Center	*ENG	[100 to 180 / 131 / 1 deg/step]
1-105-149	Postcard:Thick3:FC:Center	*ENG	[100 to 180 / 131 / 1 deg/step]
1-105-151	Special 4:FC:Center	*ENG	[100 to 180 / 143 / 1 deg/step]
1-105-153	Special 4:BW:Center	*ENG	[100 to 180 / 143 / 1 deg/step]
1-105-155	Special 5:FC:Center	*ENG	[100 to 180 / 145 / 1 deg/step]
1-105-157	Special 5:BW:Center	*ENG	[100 to 180 / 145 / 1 deg/step]
1-105-159	Special 6:FC:Center	*ENG	[100 to 180 / 148 / 1 deg/step]
1-105-161	Special 6:BW:Center	*ENG	[100 to 180 / 148 / 1 deg/step]

1106	[Fusing Temperature Display] Fusing Temperature Display (Heating or Pressure)		
	Displays the current temperature of the heating and pressure rollers.		
1-106-001	Center	ENG	[-50 to 250 / 0 / 1 deg/step]
1-106-002	End	ENG	[-20 to 348 / 0 / 1 deg/step]
	The heating roller has two lamps. One heats the center of the heating roller and the other heats both ends of the heating roller.		
1-106-003	Pressure: Center	ENG	[-20 to 250 / 0 / 1 deg/step]

	The pressure roller has two lamps. One heats the center of the heating roller and the other heats both ends of the heating roller.		
1-106-005	Pressure: End Rear	ENG	[-20 to 250 / 0 / 1 deg/step]
1-106-006	Pressure: End Front	ENG	[-20 to 250 / 0 / 1 deg/step]

1109	[Rotation Speed Setting]		
	-		
1-109-001	Overshoot Prevent Rotation	*ENG	[0 to 3 / 0 / 1/step]
1-109-002	After Reload Rotation	*ENG	[0 to 3 / 0 / 1/step]
1-109-003	Print Ready Rotation	*ENG	[0 to 3 / 0 / 1/step]

1112	[Image Process Temp. Correct]		
	These SPs are used for the fusing temperature control for variable job images. This control saves the power consumption when the machine copies or prints a job text image in black and white mode.		
1-112-002	Temp.:Plain:Center:Energy Saving	*ENG	[-30 to 20 / * / 1 deg/step] * C306: 13 * C406: 17
1-112-004	Temp.:Plain:Press:Energy Saving	*ENG	[-30 to 20 / 0 / 1 deg/step]

1113	[Curl Correction]		
1-113-001	Execute Pattern	*ENG	[0 or 1 / 0:OFF / 1/step]
	Selects the curl correction type.		

1131	[Continuous Print Mode Switch]		
	Sets the permission for paper to feed.		
1-131-001	Feed Permit Condition Setting	*ENG	[0 to 2 / 1 / 1/step] 0: Productivity Model 1: Fusing Quality 1 2: Fusing Quality 2

1132	[Voltage Detection]		
	Switches maximum fixed duty level and power control.		
1-132-012	Voltage Detection	*ENG	[0.0 to 650.0 / 0.0 / 0.1 V/step]
1-132-014	Max	*ENG	[0.0 to 350.0 / 0.0 / 0.1 V/step]
1-132-015	Min	*ENG	[0.0 to 350.0 / 0.0 / 0.1 V/step]
1-132-016	Latest	*ENG	[0.0 to 350.0 / 0.0 / 0.1 V/step]
1-132-017	SC Detection	*ENG	[0.0 to 350.0 / 0.0 / 0.1 V/step]

1135	[Inrush Control]		
1-135-001	Inrush Control	*ENG	[0 or 1 / 0 / 1/step]

1136	[Engy Svg Paper Feed Judg.]		
1-136-001	Control ON/OFF	*ENG	[0 or 1 / 1 / 1/step]

1141	[Fusing SC Issue Time Info]		
	Displays the time when an SC code was issued.		
1-141-001	SC Number	*ENG	[0 to 99999 / 0 / 1/step]

1-141-101	Heating Roller Temperature 1:Center	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-104	Heating Roller Temperature 1:End	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-107	Press Roller Temperature 1	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-108	Press Roller: End R Temperature 1	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-109	Press Roller: End F Temperature 1	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-151	Heating Roller Temperature 2:Center	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-154	Heating Roller Temperature 2:End	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-157	Press Roller Temperature 2	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-158	Press Roller.End R Temperature 2	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-159	Press Roller.End F Temperature 2	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-201	Heating Roller Temperature 3:Center	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-204	Heating Roller Temperature 3:End	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-207	Press Roller Temperature 3	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-208	Press Roller.End R Temperature 3	*ENG	[-50 to 260 / 0 / 1 deg/step]
1-141-209	Press Roller.End F Temperature 3	*ENG	[-50 to 260 / 0 / 1 deg/step]

1142	[Fusing Jam Detection]		
	This SP displays the SC code that was issued if a fusing unit jam error occurs three times in succession.		
1-142-001	SC Display	*ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON

1152	[Fusing Nip Band Check]		
	Checks and adjusts the nip of the hot roller and pressure roller.		
1-152-001	Execute	ENG	[0 or 1 / 0 / 1/step] [Execute]

1158	[Abnormal Noise Confirmation]		
	-		
1-158-001	Unit: Execute	ENG	[0 or 1 / 0 / 1/step]
1-158-002	No Unit: Execute	ENG	[0 or 1 / 0 / 1/step]
1-158-003	Operation Time	*ENG	[0 to 200 / 20 / 1 sec/step]
1-158-004	Operation Line Speed	*ENG	[0 to 3 / 0 / 1/step]
1-158-005	Heat Center Target Temp	*ENG	[100 to 180 / * / 1 deg/step] * C306: 154 * C406: 180
1-158-007	Press Target Temp	*ENG	[0 to 200 / 150 / 1 deg/step]

1190	[Flicker Control]		
1-190-001	Flicker Control	*ENG	[0 or 1 / 0 / 1/step]

1801	[Motor Speed Adjustment]		
	Adjusts the speeds of each motor.		
1-801-001	Transport M: Plain1/2	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]

1-801-002	Transport M: Thin	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-003	Transport M: M-Thick:Std Spd1	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-004	Transport M: Thick1	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-005	Transport M: Thick2	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-006	Transport M: Thick3	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-007	Transport M: Special1	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-008	Transport M: Special2	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-009	Transport M: Special3	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-010	Transport M: Envelope	*ENG	[-4.00 to 4.00 / 0.00 / 0.01%/step]
1-801-011	Transport M: OHP	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-012	Transport M: Plain1/2:Low Speed	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-013	Transport M: Thin:Low Speed	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-014	Transport M: M-Thick:Low Speed	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-015	Transport M: Special1:Low Speed	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-016	Transport M: Special2:Low Speed	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-017	Transport M: Special3:Low Speed	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-018	Transport M: Plain1/2: Gloss	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-019	Transport M: M-Thick: Gloss:Std Spd1	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-020	Transport M: Postcard	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]

1-801-051	Bk Drum/Dev. Mot: Std Speed 1	*ENG	[-4.00 to 4.00 / 0.00 / 0.01%/step]
1-801-052	Bk Drum/Dev. Mot: Low Speed	*ENG	[-4.00 to 4.00 / 0.00 / 0.01%/step]
1-801-053	Col Drum/Dev. Mot: Std Speed 1	*ENG	C306: [-6 to 6 / 0 / 1/step] C406: [-5 to 5 / 0 / 1/step]
1-801-054	Col Drum/Dev. Mot: Low Speed	*ENG	[-6 to 6 / 0 / 1/step]
1-801-055	Offset: Std Speed 1: Color	*ENG	C306: [-6 to 6 / 0 / 1/step] C406: [-5 to 5 / 0 / 1/step]
1-801-056	Offset:Low Speed:Color	*ENG	[-6 to 6 / 0 / 1/step]
1-801-081	Transport M: Plain1/2: Std Spd 2	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-082	Transport M: Thin:Std Spd2	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-084	Transport M: Special1: Std Spd2	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-085	Transport M: Special2: Std Spd2	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-086	Transport M: Special3:Std Spd2	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-087	Transport M: OHP:Std Spd2	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-088	Transport M: Plain1/2:Gloss:Std Spd 2	*ENG	[-4.00 to 4.00 / 0.43 / 0.01%/step]
1-801-130	Drum Motor Adjustment Control	*ENG	[0 or 1 / 1 / 1/step]
1-801-131	Color Dev. Mot.:Std Speed1	*ENG	[-20 to 20 / 0 / 0.1%/step]
1-801-132	Color Dev. Mot.:Low Speed	*ENG	[-20 to 20 / 0 / 0.1%/step]

1-801-133	Bk Drum/Dev. Mot:Std Speed2	*ENG	[-4.00 to 4.00 / 0 / 0.01%/step]
1-801-134	Bk Drum/Dev. Mot:Middle Speed	*ENG	[-4.00 to 4.00 / 0 / 0.01%/step]
1-801-135	Col Drum/Dev. Mot:Middle Speed	*ENG	[-6 to 6 / 0 / 1/step]
1-801-136	Offset: Middle Speed: Color	*ENG	[-6 to 6 / 0 / 1/step]
1-801-137	Color Dev M: Middle Speed	*ENG	[-20 to 20 / 0 / 0.1%/step]
1-801-138	Col Drum Mot: Std Spd 1: Indep.	*ENG	[-4.00 to 4.00 / 0 / 0.01%/step]
1-801-139	Col Drum Mot: Mid Spd: Indep.	*ENG	[-4.00 to 4.00 / 0 / 0.01%/step]
1-801-140	Col Drum Mot: Low Spd: Indep.	*ENG	[-4.00 to 4.00 / 0 / 0.01%/step]

1902	[Ladder Pattern Print]		
	-		
1-902-001	Execute	ENG	[- / - / -] [Execute]

1907	[Paper Feed Timing Adj.]		
	Adjusts the timing of paper feed. (A "+" setting broadens paper feed interval, a "-" setting narrows paper feed interval.)		
1-907-001	Tray1 Clutch ON: Plain	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-002	Tray1 Clutch ON: Middle Thick	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-003	Tray1 Clutch ON: Thick	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-007	Tray1 Clutch OFF: Plain	ENG	[-10 to 10 / 0 / 1 mm/step]

1-907-008	Tray1 Clutch OFF: Middle Thick	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-009	Tray1 Clutch OFF: Thick	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-010	Tray1 Paper Exit Sensor: Plain	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-011	Tray1 Paper Exit Sensor: Middle Thick	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-012	Tray1 Paper Exit Sensor: Thick	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-013	By-pass Clutch ON: Plain	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-014	By-pass Clutch ON: Middle Thick	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-015	By-pass Clutch ON: Thick	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-016	By-pass Clutch ON: Envelop	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-017	By-pass Clutch OFF: Plain	ENG	[-10 to 10 / -5 / 1 mm/step]
1-907-018	By-pass Clutch OFF: Middle Thick	ENG	[-10 to 10 / -5 / 1 mm/step]
1-907-019	By-pass Clutch OFF: Thick	ENG	[-10 to 10 / -5 / 1 mm/step]
1-907-020	By-pass Clutch OFF: Envelop	ENG	[-10 to 10 / -5 / 1 mm/step]
1-907-021	Exit Junction Solenoid: OFF	ENG	[-20 to 20 / 0 / 1 mm/step]
1-907-022	Exit Junction Solenoid: ON	ENG	[-20 to 20 / 0 / 1 mm/step]
1-907-025	Exit Junction Solenoid: OFF:Low	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-026	Exit Junction Solenoid: ON:Low	ENG	[-10 to 10 / 0 / 1 mm/step]

1-907-029	Tray Lift Motor Pressure	*ENG	[-2540 to 2540 / 0 / 20 msec/step]
1-907-032	Tray Lift Motor Up	*ENG	[-2540 to 2540 / 0 / 20 msec/step]
1-907-033	Tray Lift Motor Down	*ENG	[-2540 to 2540 / 0 / 20 msec/step]
1-907-034	Tray Lift Motor Paper End	*ENG	[-2540 to 2540 / 0 / 20 msec/step]
1-907-035	Tray2: Paper Interval: Plain	*ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-036	Tray2: Paper Interval: Mid. Thick	*ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-037	Tray2: Paper Interval: Thick	*ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-038	Tray3: Paper Interval: Plain	*ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-039	Tray3: Paper Interval: Mid. Thick	*ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-040	Tray3: Paper Interval: Thick	*ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-041	Tray2: 1st Leading Edge Pos.: Plain	*ENG	[0 to 10 / 0 / 1 mm/step]
1-907-042	Tray2: 1st Leading Edge Pos.: Mid. Thick	*ENG	[0 to 10 / 0 / 1 mm/step]
1-907-043	Tray2: 1st Leading Edge Pos.: Thick	*ENG	[0 to 10 / 0 / 1 mm/step]
1-907-044	Tray3: 1st Leading Edge Pos.: Plain	*ENG	[0 to 10 / 0 / 1 mm/step]
1-907-045	Tray3: 1st Leading Edge Pos.: Mid. Thick	*ENG	[0 to 10 / 0 / 1 mm/step]
1-907-046	Tray3: 1st Leading Edge Pos.: Thick	*ENG	[0 to 10 / 0 / 1 mm/step]
1-907-047	Tray2: Min. Paper Interval: Plain	*ENG	[-10 to 10 / 0 / 1 mm/step]

1-907-048	Tray2: Min. Paper Interval: Mid. Thick	*ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-049	Tray2: Min. Paper Interval: Thick	*ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-050	Tray3: Min. Paper Interval: Plain	*ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-051	Tray3: Min. Paper Interval: Mid. Thick	*ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-052	Tray3: Min. Paper Interval: Thick	*ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-053	Tray1 Clutch ON: Plain: Std Speed 2	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-055	Tray1 Clutch OFF: Plain: Std Speed 2	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-057	Tray1 Paper Exit Sen.: Plain: Std Spd 2	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-058	Tray1 Paper Exit Sen.: Middle Thick: BW	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-059	By-pass Clutch ON: Plain: Std Speed 2	ENG	[-10 to 10 / 0 / 1 mm/step]
1-907-061	By-pass Clutch OFF: Plain: Std Speed 2	ENG	[-10 to 10 / -5 / 1 mm/step]
1-907-063	Exit Junction SOL:OFF: Std Speed 2	ENG	[-20 to 20 / 0 / 1 mm/step]
1-907-064	Exit Junction SOL:ON: Std Speed 2	ENG	[-20 to 20 / 0 / 1 mm/step]
1-907-065	Exit Junction SOL:OFF: Mid Speed	ENG	[-20 to 20 / 0 / 1 mm/step]
1-907-066	Exit Junction SOL:ON: Mid Speed	ENG	[-20 to 20 / 0 / 1 mm/step]

1950	[Fan Cooling Time Set]		
	Adjust the rotation time for each fan motor after a job end.		
1-950-001	PCDU Cooling Fan	*ENG	[0 to 600 / 0 / 1 sec/step]
1-950-002	Fusing Fan	*ENG	[0 to 600 / 10 / 1 sec/step]
1-950-003	PSU Fan	*ENG	[0 to 600 / 0 / 1 sec/step]
1-950-004	Laser Unit Fan	*ENG	[0 to 600 / 0 / 1 sec/step]

1951	[Fan Start Time Set]		
	Adjust the start time for each fan motor after a job end.		
1-951-001	PCDU Cooling Fan	*ENG	[0 to 120 / 0 / 1 sec/step]
1-951-002	Fusing Fan	*ENG	[0 to 120 / 0 / 1 sec/step]
1-951-003	PSU Fan	*ENG	[0 to 120 / 120 / 1 sec/step]
1-951-004	Laser Unit Fan	*ENG	[0 to 120 / 0 / 1 sec/step]

1952	[Fan Control Off Mode Time Set]		
	Specifies the time for fan control off mode.		
1-952-001	-	*ENG	[0 to 60 / 10 / 1 min/step]

1953	[Extra Fan Control]		
	Configures the settings of extra fan control.		
1-953-001	Operation Status	*ENG	[0 or 1 / 0 / 1/step]
1-953-006	Extra Fan Start Temp.	*ENG	[0.0 to 50.0 / 5.0 / 0.1 deg/step]
1-953-007	Extra Fan Stop Temp. Threshold	*ENG	[0.0 to 50.0 / 2.0 / 0.1 deg/step]
1-953-008	Set: Extra Operation ON/OFF	*ENG	[0 or 1 / 1 / 1/step]

1955	[Fan Control]		
1-955-001	PCDU Fan Operation Sw Temp.	*ENG	[0.0 to 100.0 / 38.0 / 0.1 deg/step]
1-955-002	Fusing Fan Operation Sw Temp.	*ENG	[0.0 to 100.0 / 0 / 0.1 deg/step]
1-955-004	Laser Unit Fan Operation Sw Temp.	*ENG	[0.0 to 100.0 / 38.0 / 0.1 deg/step]
1-955-005	Fan Operation Sw Temp. Threshold	*ENG	[0.0 to 100.0 / 2.0 / 0.1 deg/step]
1-955-006	PSU Fan Operation Start Time2	*ENG	[0 to 900 / 300 / 1 sec/step]
1-955-007	PSU Fan Ctrl Off Mode Time2	*ENG	[0.0 to 60.0 / 10.0 / 0.1 min/step]

3.3 MAIN SP TABLES-2

3.3.1 SP2-XXX (DRUM)

2005	[Charge DC Voltage: Fix]		
	Adjusts the DC component of the charge roller bias in the print modes.		
2-005-001	Plain: Bk	*ENG	[0 to 2000 / 590 / 10 -V/step]
2-005-002	Plain: C	*ENG	[0 to 2000 / 590 / 10 -V/step]
2-005-003	Plain: M	*ENG	[0 to 2000 / 590 / 10 -V/step]
2-005-004	Plain: Y	*ENG	[0 to 2000 / 590 / 10 -V/step]

2013	[Environmental Correction: PCU]		
2-013-001	Environment Div. FC: Display	*ENG	Displays the environmental condition, which is measured in absolute humidity. [0 to 5 / 0 / 1/step] 1: LL (LL <= 4.3 g/m ³) 2: ML (4.3 < ML <= 11.3 g/m ³) 3: MM (11.3 < MM <= 18.0 g/m ³) 4: MH (18.0 < MH <= 24.0 g/m ³) 5: HH (24.0 g/m ³ < HH)
2-013-002	Forced Setting	*ENG	Selects the environmental condition manually. DFU [0 to 5 / 0 / 1/step] 0: The environmental condition is determined automatically. 1: LL, 2: ML, 3: MM, 4: MH, 5: HH

2016	[Lubricant Apply Operation]		
	-		

2-016-001	Temperature Threshold: Low	*ENG	[0 to 50 / 15 / 1 deg/step]
2-016-002	Temperature Threshold: High	*ENG	[0 to 50 / 30 / 1 deg/step]
2-016-003	Page Setting 1: Low Speed	*ENG	[0 to 999 / 10 / 1 page/step]
2-016-004	Page Setting 2: Low Temp.	*ENG	[0 to 999 / 20 / 1 page/step]
2-016-005	Page Setting 3: Low Temp. 2	*ENG	[0 to 999 / 0 / 1 page/step]
2-016-006	Page Setting 4: High Temp.	*ENG	[0 to 999 / 20 / 1 page/step]
2-016-007	Coverage Threshold 1: Low Speed	*ENG	[0 to 100.00 / 10.00 / 0.01%/step]
2-016-008	Coverage Threshold 2: Low Temp.	*ENG	[0 to 60.00 / 20.00 / 0.01%/step]
2-016-010	Coverage Threshold 4: High Temp.	*ENG	[0 to 100.00 / 20.00 / 0.01%/step]
2-016-011	Application Time:1	*ENG	[0 to 99 / 10 / 1 sec/step]
2-016-012	Application Time:2	*ENG	[0 to 99 / 10 / 1 sec/step]
2-016-013	Application Time:3	*ENG	[0 to 99 / 10 / 1 sec/step]
2-016-014	Application Time:4	*ENG	[0 to 99 / 5 / 1 sec/step]
2-016-033	Page Setting 5: Low Temp.	*ENG	[0 to 999 / 20 / 1 page/step]
2-016-034	Image Area Threshold 5: Low Temp.	*ENG	[60.00 to 100.00 / 60.00 / 0.01%/step]
2-016-035	Application Time:5	*ENG	[0 to 99 / 3 / 1 sec/step]
2-016-036	Temperature Threshold: Low 2	*ENG	[0 to 50 / 15 / 1 deg/step]

2101	[Registration Adjustment]

	These values are the parameters for the automatic line position adjustment and are adjusted at the factory. However, you must input a value for SP2101-001 after replacing the laser optics housing unit. The value should be provided with the new laser optics housing unit.		
2-101-001	Color Main Dot: Bk	*ENG	[−512 to 511 / 0 / 1 dot/step]
2101	[Registration Correction]		
	These values are the parameters for the automatic line position adjustment and are adjusted at the factory. However, you must input a value for SP2101-001 after replacing the laser optics housing unit. The value should be provided with the new laser optics housing unit.		
2-101-002	Color Main Dot: Ma	*ENG	[−512 to 511 / 0 / 1 dot/step]
2-101-003	Color Main Dot: Cy	*ENG	
2-101-004	Color Main Dot: Ye	*ENG	
2-101-005	Color Sub Line: Bk	*ENG	[−16384 to 16383 / 0 / 1 line/step]
2-101-006	Color Sub Line: Ma	*ENG	
2-101-007	Color Sub Line: Cy	*ENG	
2-101-008	Color Sub Line: Ye	*ENG	

2102	[Magnification Adjustment]		
	These values are the parameters for the automatic line position adjustment and are adjusted at the factory. These SPs must be input only when a new laser unit is installed.		
2-102-001	Main Mag.: Standard Speed: Bk	*ENG	[−1.000 to 1.000 / * / 0.001%/step] *C306: 0.091 *C406: 0.094
2-102-002	Main Mag.: Standard Speed2: Bk	*ENG	[−1.000 to 1.000 / * / 0.001%/step] *C306: 0.091 *C406: 0.094
2-102-003	Main Mag.: Low Speed: Bk	*ENG	[−1.000 to 1.000 / * / 0.001%/step] *C306: 0.091 *C406: 0.094

2-102-004	Main Mag.: Standard Speed: Ma	*ENG	[-1.000 to 1.000 / * / 0.001%/step] *C306: 0.091 *C406: 0.094
2-102-006	Main Mag.: Low Speed: Ma	*ENG	[-1.000 to 1.000 / * / 0.001%/step] *C306: 0.091 *C406: 0.094
2-102-007	Main Mag.: High Speed: Cy	*ENG	[-1.000 to 1.000 / * / 0.001%/step] *C306: 0.081 *C406: 0.088
2-102-009	Main Mag.: Low Speed: Cy	*ENG	[-1.000 to 1.000 / * / 0.001%/step] *C306: 0.081 *C406: 0.088
2-102-010	Main Mag.: High Speed: Ye	*ENG	[-1.000 to 1.000 / * / 0.001%/step] *C306: 0.081 *C406: 0.088
2-102-012	Main Mag.: Low Speed: Ye	*ENG	[-1.000 to 1.000 / * / 0.001%/step] *C306: 0.081 *C406: 0.088

2102	[Main Scan Beam Pitch Adj.]		
2-102-013	Bk	*ENG	[0 to 100 / 11.53 / 0.01 dot/step]
2-102-015	Ma	*ENG	[0 to 100 / 11.53 / 0.01 dot/step]
2-102-017	Cy	*ENG	[0 to 100 / 11.53 / 0.01 dot/step]
2-102-019	Ye	*ENG	[0 to 100 / 11.53 / 0.01 dot/step]

2102	[Magnification Adjustment]		
	These values are the parameters for the automatic line position adjustment and are adjusted at the factory. These SPs must be input only when a new laser unit is installed.		

2-102-028	Color Main Mag.: High Speed: Ma	*ENG	[-1.000 to 1.000 / 0.000 / 0.001%/step]
2-102-031	Color Main Mag.: High Speed: Cy	*ENG	[-1.000 to 1.000 / 0.000 / 0.001%/step]
2-102-034	Color Main Mag.: High Speed: Ye	*ENG	[-1.000 to 1.000 / 0.000 / 0.001%/step]

2103	[Erase Margin Adjustment]		
	Adjusts the erase margin by deleting image data at the margins.		
2-103-001	Leading Edge Width	*ENG	[0.0 to 9.9 / 4.2 / 0.1 mm/step]
2-103-002	Trailing Edge Width	*ENG	
2-103-003	Left	*ENG	[0.0 to 9.9 / 2.0 / 0.1 mm/step]
2-103-004	Right	*ENG	
2-103-005	Duplex: Trailing Edge	*ENG	[0.0 to 9.9 / 0.0 / 0.1 mm/step]
2-103-006	Duplex: Left Edge	*ENG	
2-103-007	Duplex: Right Edge	*ENG	

2104	[Unit LD Power Adj.]		
	Adjusts the LD initial power. These SPs must be input only when a new laser unit is installed.		
2-104-001	Bk: LD1	*ENG	[60.0 to 140.0 / 100.0 / 0.1%/step]
2-104-002	Ma: LD1	*ENG	
2-104-003	Cy: LD1	*ENG	
2-104-004	Ye: LD1	*ENG	
2-104-005	Bk: LD2	*ENG	[60.0 to 140.0 / 100.0 / 0.1%/step]
2-104-006	Ma: LD2	*ENG	
2-104-007	Cy: LD2	*ENG	
2-104-008	Ye: LD2	*ENG	

2105	[LD Power Adj.]		
	Adjusts the LD power of each color for each process speed. Each LD power setting is decided by process control.		
2-105-001	High Speed: Bk	*ENG	[50.0 to 120.0 / 100.0 / 0.1%/step]
2-105-002	High Speed: Ma	*ENG	
2-105-003	High Speed: Cy	*ENG	
2-105-004	High Speed: Ye	*ENG	
2-105-005	Standard Speed2: Bk	*ENG	
2-105-009	Low Speed: Bk	*ENG	
2-105-010	Low Speed: Ma	*ENG	
2-105-011	Low Speed: Cy	*ENG	
2-105-012	Low Speed: Ye	*ENG	[50.0 to 120.0 / 100.0 / 0.1%/step]
2-105-013	Middle Speed: Bk	*ENG	
2-105-014	Middle Speed: Ma	*ENG	
2-105-015	Middle Speed: Cy	*ENG	
2-105-016	Middle Speed: Ye	*ENG	

2106	[Polygon Rotation Time]		
	Adjusts the time of the polygon motor rotation.		
2-106-001	Warming-Up Time Set	*ENG	[0 to 60 / 10 / 1 sec/step]
2-106-002	Post Rotating Time Set After Printing	*ENG	[0 to 60 / 0 / 1 sec/step]

2107	[Image Parameter]		
	Adjusts image parameters.		
2-107-001	Image Gamma Flag	ENG	[0 or 1 / 1 / 1/step]

2-107-002	Shading Correction Flag	*ENG	[0 or 1 / 1 / 1/step]

2109	[Test Pattern]		
	Generates the test pattern using "COPY Window" tab in the LCD.		
2-109-003	Pattern Selection	ENG	[0 to 23 / 0 / 1/step]
	0: None 1: Vertical Line (1dot) 2: Vertical Line (2dot) 3: Horizontal (1dot) 4: Horizontal (2dot) 5: Grid Vertical Line 6: Grid Horizontal Line 7: Grid pattern Small 8: Grid pattern Large 9: Argyle Pattern Small 10: Argyle Pattern Large		11: Independent Pattern (1dot) 12: Independent Pattern (2dot) 13: Independent Pattern (4dot) 14: Trimming Area 16: Hound's Tooth Check (Horizontal) 17: Band (Horizontal) 18: Band (Vertical) 19: Checker Flag Pattern 20: Grayscale Vertical Margin 21: Grayscale Horizontal Margin 23: Full Dot Pattern
2-109-005	Color Selection	ENG	Specifies the color for the test pattern. [1 to 4 / 1 / 1/step] 1:All Color, 2:Ma, 3:Ye, 4:Bk
2-109-006	Density:Bk	ENG	Specifies the color density for the test pattern. [0 to 15 / 15 / 1/step] 0: Lightest density 15: Darkest density
2-109-007	Density:Ma	ENG	
2-109-008	Density:Cy	ENG	
2-109-009	Density:Ye	ENG	

2110	[ST OUT]		
2-110-001	ST OUT Selection	*ENG	[0 or 1 / 0 / 1/step]

2111	[Forced Line Position Adj.]		

2-111-001	Mode a	ENG	[- / - / -] [Execute] Executes the fine line position adjustment twice. If this SP is not completed (NG is displayed), do SP2111-003 first and then try this SP again.
2-111-002	Mode b	ENG	[- / - / -] [Execute] Executes the fine line position adjustment once. If this SP is not completed, do SP2111-003 first and then try this SP again
2-111-003	Mode c	ENG	[- / - / -] [Execute] Executes the rough line position adjustment once. After doing this SP, make sure to execute SP2111-001 or -002. Otherwise, the line position adjustment is not perfectly done.
2-111-004	Mode d	ENG	[- / - / -] [Execute] Executes the fine line position adjustment and rough line position adjustment.

2112	[TM/ID Sensor Check]		
	This SP is used to check the ID sensors at the factory. The results of this SP are displayed in SP2140 to SP2145.		
2-112-001	Execute	ENG	[- / - / -] [Execute]
2-112-010	Display Result: Front-Center-Rear	*ENG	[0 to 999 / 0 / 1/step]

2-112-020	Threshold Setting	*ENG	[0.00 to 5.50 / 1.90 / 0.01V/step]

2115	[Gamma Correction] DFU(SSP)		
2-115-001	Low CPP Edge Process Correction	*ENG	[0 to 100 / 80 / 1%/step]

2117	[Skew Adjustment]		
	Specifies a skew adjustment value for the skew motor M, C, Y or Bk.		
2-117-001	Ma:Skew Adjustment	*ENG	[−256 to 256 / 0 / 1 click/step]
2-117-002	Cy:Skew Adjustment	*ENG	
2-117-003	Ye:Skew Adjustment	*ENG	
2-117-004	Bk:Skew Adjustment	*ENG	

2140	[TM/ID Sensor Check]		
	Displays the maximum result values of the ID sensor check. Front, Center, Rear: ID sensors for the automatic line position adjustment and the process control		
2-140-005	PWM: Front	*ENG	[0 to 1024 / 0 / 1/step]
2-140-006	PWM: Center	*ENG	
2-140-007	PWM: Rear	*ENG	

2141	[TM/ID Sensor Check]		
	Displays the maximum result values of the ID sensor check. Front, Center, Rear: ID sensors for the automatic line position adjustment and the process control		
2-141-005	Average: Front	*ENG	[0.00 to 5.50 / 0 / 0.01 V/step]
2-141-006	Average: Center	*ENG	

2-141-007	Average: Rear	*ENG	

2142	[TM/ID Sensor Check]		
	Displays the maximum result values of the ID sensor check. Front, Center, Rear: ID sensors for the automatic line position adjustment and the process control		
2-142-005	Maximum: Front	*ENG	[0.00 to 5.50 / 0 / 0.01 V/step]
2-142-006	Maximum: Center	*ENG	
2-142-007	Maximum: Rear	*ENG	

2143	[TM/ID Sensor Check]		
	Displays the minimum result values of the ID sensor check. Front, Center, Rear: ID sensors for the automatic line position adjustment and the process control		
2-143-005	Minimum: Front	*ENG	[0.00 to 5.50 / 0 / 0.01 V/step]
2-143-006	Minimum: Center	*ENG	
2-143-007	Minimum: Rear	*ENG	

2146	[TM-Sensor Check Result]		
	This SP is used to check the TM sensors.		
2-146-005	Number of Edge Detection:Front	*ENG	[0 to 16 / 0 / 1/step]
2-146-006	Number of Edge Detection:Center	*ENG	
2-146-007	Number of Edge Detection:Rear	*ENG	

2150	[Area Mag. Correction] DFU(SSP) LD Pulse Area Correction (Color, Area) FA		
	Adjusts the magnification for each area. The main scan (297 mm) is divided into 13 areas. Area 1 is at the front side of the machine (left side of the image) and area 13 is at the rear side of the machine (right side of the image). Decreasing a value makes the image shift to the left side on the print. Increasing a value makes the image shift to the right side on the print. 1 pulse = 1/16 dot		
2-150-027	Area 0: Bk	*ENG	[-16.00 to 16.00 / 0.00 / 0.01 dot/step]
2-150-028	Area 1: Bk	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.20 *C406: -0.41
2-150-029	Area 2: Bk	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: -0.45 *C406: -0.76
2-150-030	Area 3: Bk	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: -0.62 *C406: -0.82
2-150-031	Area 4: Bk	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: -0.40 *C406: -0.66
2-150-032	Area 5: Bk	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.00 *C406: -0.28

2-150-033	Area 6: Bk	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.39 *C406: NA:0.30 EU:0.31 AS:0.30 CHN:0.33 TWN:0.34 KOR:0.35
2-150-034	Area 7: Bk	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.56 *C406: 1.02
2-150-035	Area 8: Bk	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.31 *C406: 1.62
2-150-079	Area 0: Ma	*ENG	[-16.00 to 16.00 / 0.00 / 0.01 dot/step]
2-150-080	Area 1: Ma	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.20 *C406: -0.41
2-150-081	Area 2: Ma	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: -0.45 *C406: -0.76
2-150-082	Area 3: Ma	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: NA:-0.62 EU:0.62 AS:-0.62 CHN:-0.62 TWN:-0.62 KOR:-0.62 *C406: -0.82
2-150-083	Area 4: Ma	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: -0.40 *C406: -0.66

2-150-084	Area 5: Ma	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.00 *C406: -0.28
2-150-085	Area 6: Ma	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.39 *C406: NA:0.30 EU:0.31 AS:0.32 CHN:0.33 TWN:0.34 KOR:0.35
2-150-086	Area 7: Ma	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.56 *C406: 1.02
2-150-087	Area 8: Ma	*ENG	[-16.00 to 16.00 / 0.31 / 0.01 dot/step] *C306: 0.31 *C406: 1.62
2-150-131	Area 0: Cy	*ENG	[-16.00 to 16.00 / 0.00 / 0.01 dot/step]
2-150-132	Area 1: Cy	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.18 *C406: NA:-0.14 EU:-0.15 AS:-0.16 CHN:-0.17 TWN:-0.18 KOR:-0.19

2-150-133	Area 2: Cy	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.49 *C406: NA:0.03 EU:0.04 AS:0.05 CHN:0.06 TWN:0.07 KOR:0.08
2-150-134	Area 3: Cy	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.42 *C406: -0.03
2-150-135	Area 4: Cy	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.11 *C406: -0.20
2-150-136	Area 5: Cy	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: -0.26 *C406: -0.32
2-150-137	Area 6: Cy	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: -0.50 *C406: -0.26
2-150-138	Area 7: Cy	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: -0.45 *C406: 0.12
2-150-139	Area 8: Cy	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.02 *C406: 0.81
2-150-183	Area 0: Ye	*ENG	[-16.00 to 16.00 / 0.00 / 0.01 dot/step]

2-150-184	Area 1: Ye	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.18 *C406: NA:-0.14 EU:-0.15 AS:-0.16 CHN:-0.17 TWN:-0.18 KOR:-0.19
2-150-185	Area 2: Ye	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.49 *C406: NA:0.03 EU:0.04 AS:0.05 CHN:0.06 TWN:0.07 KOR:0.08
2-150-186	Area 3: Ye	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.42 *C406: -0.03
2-150-187	Area 4: Ye	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.11 *C406: -0.20
2-150-188	Area 5: Ye	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: -0.26 *C406: -0.32
2-150-189	Area 6: Ye	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: -0.50 *C406: -0.26
2-150-190	Area 7: Ye	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: -0.45 *C406: 0.12

2-150-191	Area 8: Ye	*ENG	[-16.00 to 16.00 / * / 0.01 dot/step] *C306: 0.02 *C406: 0.81

2152	[Area Shad. Correct. Setting] DFU(SSP)		
	Sets the adjust coefficient for exposure shading for each color in each area of the MUSIC pattern.		
2-152-001	Area 0: Bk	*ENG	[-31 to 31 / -1 / 1/step]
2-152-002	Area 1: Bk	*ENG	[-31 to 31 / * / 1/step] *C306: -2 *C406: -1
2-152-003	Area 2: Bk	*ENG	[-31 to 31 / * / 1/step] *C306: -2 *C406: 0
2-152-004	Area 3: Bk	*ENG	[-31 to 31 / * / 1/step] *C306: -1 *C406: 0
2-152-005	Area 4: Bk	*ENG	[-31 to 31 / 0 / 1/step]
2-152-006	Area 5: Bk	*ENG	[-31 to 31 / 1 / 1/step]
2-152-007	Area 6: Bk	*ENG	[-31 to 31 / * / 1/step] *C306: 2 *C406: 1
2-152-008	Area 7: Bk	*ENG	[-31 to 31 / * / 1/step] *C306: 3 *C406: 1
2-152-009	Area 8: Bk	*ENG	[-31 to 31 / * / 1/step] *C306: 3 *C406: 1
2-152-010	Area 9: Bk	*ENG	[-31 to 31 / * / 1/step] *C306: 3 *C406: 1
2-152-011	Area 10: Bk	*ENG	[-31 to 31 / 1 / 1/step]

2-152-012	Area 11: Bk	*ENG	[-31 to 31 / * / 1/step] *C306: 0 *C406: 1
2-152-033	Area 0: Ma	*ENG	[-31 to 31 / -1 / 1/step]
2-152-034	Area 1: Ma	*ENG	[-31 to 31 / * / 1/step] *C306: -2 *C406: -1
2-152-035	Area 2: Ma	*ENG	[-31 to 31 / * / 1/step] *C306: -2 *C406: 0
2-152-036	Area 3: Ma	*ENG	[-31 to 31 / * / 1/step] *C306: -1 *C406: 0
2-152-037	Area 4: Ma	*ENG	[-31 to 31 / 0 / 1/step]
2-152-038	Area 5: Ma	*ENG	[-31 to 31 / 1 / 1/step]
2-152-039	Area 6: Ma	*ENG	[-31 to 31 / * / 1/step] *C306: 2 *C406: 1
2-152-040	Area 7: Ma	*ENG	[-31 to 31 / * / 1/step] *C306: 3 *C406: 1
2-152-041	Area 8: Ma	*ENG	[-31 to 31 / * / 1/step] *C306: 3 *C406: 1
2-152-042	Area 9: Ma	*ENG	[-31 to 31 / * / 1/step] *C306: 3 *C406: 1
2-152-043	Area 10: Ma	*ENG	[-31 to 31 / 1 / 1/step]
2-152-044	Area 11: Ma	*ENG	[-31 to 31 / * / 1/step] *C306: 0 *C406: 1

2-152-065	Area 0: Cy	*ENG	[-31 to 31 / * / 1/step] *C306:-1 *C406:3
2-152-066	Area 1: Cy	*ENG	[-31 to 31 / * / 1/step] *C306:-1 *C406:1
2-152-067	Area 2: Cy	*ENG	[-31 to 31 / * / 1/step] *C306:-2 *C406:1
2-152-068	Area 3: Cy	*ENG	[-31 to 31 / * / 1/step] *C306:-1 *C406:1
2-152-069	Area 4: Cy	*ENG	[-31 to 31 / 0 / 1/step]
2-152-070	Area 5: Cy	*ENG	[-31 to 31 / * / 1/step] *C306:1 *C406:-1
2-152-071	Area 6: Cy	*ENG	[-31 to 31 / * / 1/step] *C306:2 *C406:0
2-152-072	Area 7: Cy	*ENG	[-31 to 31 / * / 1/step] *C306:3 *C406:0
2-152-073	Area 8: Cy	*ENG	[-31 to 31 / * / 1/step] *C306:3 *C406:0
2-152-074	Area 9: Cy	*ENG	[-31 to 31 / * / 1/step] *C306:3 *C406:2
2-152-075	Area 10: Cy	*ENG	[-31 to 31 / * / 1/step] *C306:1 *C406:3

2-152-076	Area 11: Cy	*ENG	[-31 to 31 / * / 1/step] *C306:0 *C406:6
2-152-097	Area 0: Ye	*ENG	[-31 to 31 / * / 1/step] *C306:-1 *C406:3
2-152-098	Area 1: Ye	*ENG	[-31 to 31 / * / 1/step] *C306:-1 *C406:1
2-152-099	Area 2: Ye	*ENG	[-31 to 31 / * / 1/step] *C306:-2 *C406:1
2-152-100	Area 3: Ye	*ENG	[-31 to 31 / * / 1/step] *C306:-1 *C406:1
2-152-101	Area 4: Ye	*ENG	[-31 to 31 / 0 / 1/step]
2-152-102	Area 5: Ye	*ENG	[-31 to 31 / * / 1/step] *C306:1 *C406:-1
2-152-103	Area 6: Ye	*ENG	[-31 to 31 / * / 1/step] *C306:2 *C406:0
2-152-104	Area 7: Ye	*ENG	[-31 to 31 / * / 1/step] *C306:3 *C406:0
2-152-105	Area 8: Ye	*ENG	[-31 to 31 / * / 1/step] *C306:3 *C406:0
2-152-106	Area 9: Ye	*ENG	[-31 to 31 / * / 1/step] *C306:3 *C406:2

2-152-107	Area 10: Ye	*ENG	[-31 to 31 / * / 1/step] *C306:1 *C406:3
2-152-108	Area 11: Ye	*ENG	[-31 to 31 / * / 1/step] *C306:0 *C406:6

2153	[Area Shad. Size Setting] DFU(SSP)		
	Sets the area size for exposure shading for each color in each area of the MUSIC pattern.		
2-153-001	Area 0: Bk	*ENG	[1 to 63 / 5 / 1/step]
2-153-002	Area 1: Bk	*ENG	[1 to 63 / 5 / 1/step]
2-153-003	Area 2: Bk	*ENG	[1 to 63 / 5 / 1/step]
2-153-004	Area 3: Bk	*ENG	[1 to 63 / 5 / 1/step]
2-153-005	Area 4: Bk	*ENG	[1 to 63 / 5 / 1/step]
2-153-006	Area 5: Bk	*ENG	[1 to 63 / 5 / 1/step]
2-153-007	Area 6: Bk	*ENG	[1 to 63 / 5 / 1/step]
2-153-008	Area 7: Bk	*ENG	[1 to 63 / 5 / 1/step]
2-153-009	Area 8: Bk	*ENG	[1 to 63 / 5 / 1/step]
2-153-010	Area 9: Bk	*ENG	[1 to 63 / 5 / 1/step]
2-153-011	Area 10: Bk	*ENG	[1 to 63 / 5 / 1/step]
2-153-012	Area 11: Bk	*ENG	[1 to 63 / 5 / 1/step]
2-153-017	Area 0: Ma	*ENG	[1 to 63 / 5 / 1/step]
2-153-018	Area 1: Ma	*ENG	[1 to 63 / 5 / 1/step]
2-153-019	Area 2: Ma	*ENG	[1 to 63 / 5 / 1/step]
2-153-020	Area 3: Ma	*ENG	[1 to 63 / 5 / 1/step]
2-153-021	Area 4: Ma	*ENG	[1 to 63 / 5 / 1/step]
2-153-022	Area 5: Ma	*ENG	[1 to 63 / 5 / 1/step]

2-153-023	Area 6: Ma	*ENG	[1 to 63 / 5 / 1/step]
2-153-024	Area 7: Ma	*ENG	[1 to 63 / 5 / 1/step]
2-153-025	Area 8: Ma	*ENG	[1 to 63 / 5 / 1/step]
2-153-026	Area 9: Ma	*ENG	[1 to 63 / 5 / 1/step]
2-153-027	Area 10: Ma	*ENG	[1 to 63 / 5 / 1/step]
2-153-028	Area 11: Ma	*ENG	[1 to 63 / 5 / 1/step]
2-153-033	Area 0: Cy	*ENG	[1 to 63 / 5 / 1/step]
2-153-034	Area 1: Cy	*ENG	[1 to 63 / 5 / 1/step]
2-153-035	Area 2: Cy	*ENG	[1 to 63 / 5 / 1/step]
2-153-036	Area 3: Cy	*ENG	[1 to 63 / 5 / 1/step]
2-153-037	Area 4: Cy	*ENG	[1 to 63 / 5 / 1/step]
2-153-038	Area 5: Cy	*ENG	[1 to 63 / 5 / 1/step]
2-153-039	Area 6: Cy	*ENG	[1 to 63 / 5 / 1/step]
2-153-040	Area 7: Cy	*ENG	[1 to 63 / 5 / 1/step]
2-153-041	Area 8: Cy	*ENG	[1 to 63 / 5 / 1/step]
2-153-042	Area 9: Cy	*ENG	[1 to 63 / 5 / 1/step]
2-153-043	Area 10: Cy	*ENG	[1 to 63 / 5 / 1/step]
2-153-044	Area 11: Cy	*ENG	[1 to 63 / 5 / 1/step]
2-153-049	Area 0: Ye	*ENG	[1 to 63 / 5 / 1/step]
2-153-050	Area 1: Ye	*ENG	[1 to 63 / 5 / 1/step]
2-153-051	Area 2: Ye	*ENG	[1 to 63 / 5 / 1/step]
2-153-052	Area 3: Ye	*ENG	[1 to 63 / 5 / 1/step]
2-153-053	Area 4: Ye	*ENG	[1 to 63 / 5 / 1/step]
2-153-054	Area 5: Ye	*ENG	[1 to 63 / 5 / 1/step]
2-153-055	Area 6: Ye	*ENG	[1 to 63 / 5 / 1/step]
2-153-056	Area 7: Ye	*ENG	[1 to 63 / 5 / 1/step]

2-153-057	Area 8: Ye	*ENG	[1 to 63 / 5 / 1/step]
2-153-058	Area 9: Ye	*ENG	[1 to 63 / 5 / 1/step]
2-153-059	Area 10: Ye	*ENG	[1 to 63 / 5 / 1/step]
2-153-060	Area 11: Ye	*ENG	[1 to 63 / 5 / 1/step]

2154	[Non Img Area Shad. Corr. Coef.] DFU(SSP)		
	Sets the adjust coefficient for outside the exposure shading for each color in each area of the MUSIC pattern.		
2-154-001	Leading Edge: Bk	*ENG	[50 to 150 / 100 / 1%/step]
2-154-003	Image Process: Bk	*ENG	[50 to 150 / * / 1%/step] *C306: 105 *C406: 102
2-154-004	Leading Edge: Ma	*ENG	[50 to 150 / 100 / 1%/step]
2-154-006	Image Process: Ma	*ENG	[50 to 150 / * / 1%/step] *C306: 105 *C406: 102
2-154-007	Leading Edge: Cy	*ENG	[50 to 150 / 100 / 1%/step]
2-154-009	Image Process: Cy	*ENG	[50 to 150 / * / 1%/step] *C306: 105 *C406: 95
2-154-010	Leading Edge: Ye	*ENG	[50 to 150 / 100 / 1%/step]
2-154-012	Image Process: Ye	*ENG	[50 to 150 / * / 1%/step] *C306: 105 *C406: 95

2160	[Vertical Line Width]		
2-160-001	600dpi:Bk	*ENG	[10 to 15 / 14 / 1/step]
2-160-002	600dpi:Ma	*ENG	
2-160-003	600dpi:Cy	*ENG	

2-160-004	600dpi:Ye	*ENG	[10 to 15 / 15 / 1/step]
2-160-005	1200dpi:Bk	*ENG	
2-160-006	1200dpi:Ma	*ENG	
2-160-007	1200dpi:Cy	*ENG	
2-160-008	1200dpi:Ye	*ENG	
2-160-009	600dpi:Independent Dot:Bk	*ENG	
2-160-010	1200dpi:Independent Dot:Bk	*ENG	

2180	[Line Pos. Adj. Clear]		
2-180-001	Color Registration	ENG	[- / - / -] [Execute]
2-180-002	Main Scan Length Detection	ENG	
2-180-003	MUSIC Result	ENG	
2-180-004	Area Magnification Correction:unit1	ENG	
2-180-005	Area Magnification Correction:unit2	ENG	

2180	[Shade. Adj. Clear]		
2-180-006	Shading Correction:unit1	ENG	[- / - / -] [Execute]
2-180-007	Shading Correction:unit2	ENG	

2181	[Line Position Adj. Result]		
	Displays the values for each correction. "M. Cor.: Dot" indicates the dot correction value in the main scan direction. "M. Cor.: Subdot" indicates the sub dot correction value in the main scan direction. "S. Cor.: Dot" indicates the dot correction value in the sub scan direction. "S. Cor.: Subdot" indicates the sub dot correction value in the sub scan direction.		
2-181-003	Skew: M	*ENG	[-5000.000 to 5000.000 / 0 / 0.001 um/step]
2-181-011	M. Cor.: Dot: M	*ENG	[-512 to 511 / 0 / 1 dot/step]
2-181-012	M. Cor.: Subdot: M	*ENG	[-1.00 to 1.00 / 0 / 0.01 dot/step]
2-181-015	Left Mag.: Subdot: M	*ENG	[-32.00 to 32.00 / 0 / 0.01 dot/step]
2-181-016	Right Mag.: Subdot: M	*ENG	[-32.00 to 32.00 / 0 / 0.01 dot/step]
2-181-017	S. Cor.: 600 Line: M	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-181-018	S. Cor.: 600 Sub: M	*ENG	[-1.000 to 1.000 / 0 / 0.001 line/step]
2-181-019	S. Cor.: 1200 Line: M	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-181-020	S. Cor.: 1200 Sub: M	*ENG	[-1.000 to 1.000 / 0 / 0.001 line/step]
2-181-021	Skew: C	*ENG	[-5000.000 to 5000.000 / 0 / 0.001 um/step]
2-181-029	M. Cor.: Dot: C	*ENG	[-512 to 511 / 0 / 1 dot/step]
2-181-030	M. Cor.: Subdot: C	*ENG	[-1.00 to 1.00 / 0 / 0.01 dot/step]
2-181-033	Left Mag.: Subdot: C	*ENG	[-32.00 to 32.00 / 0 / 0.01 dot/step]
2-181-034	Right Mag.: Subdot: C	*ENG	[-32.00 to 32.00 / 0 / 0.01 dot/step]
2-181-035	S. Cor.: 600 Line: C	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-181-036	S. Cor.: 600 Sub: C	*ENG	[-1.000 to 1.000 / 0 / 0.001 line/step]
2-181-037	S. Cor.: 1200 Line: C	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-181-038	S. Cor.: 1200 Sub: C	*ENG	[-1.000 to 1.000 / 0 / 0.001 line/step]

2-181-039	Skew: Y	*ENG	[-5000.000 to 5000.000 / 0 / 0.001 um/step]
2-181-047	M. Cor.: Dot: Y	*ENG	[-512 to 511 / 0 / 1 dot/step]
2-181-048	M. Cor.: Subdot: Y	*ENG	[-1.00 to 1.00 / 0 / 0.01 dot/step]
2-181-051	Left Mag.: Subdot: Y	*ENG	[-32.00 to 32.00 / 0 / 0.01 dot/step]
2-181-052	Right Mag.: Subdot: Y	*ENG	[-32.00 to 32.00 / 0 / 0.01 dot/step]
2-181-053	S. Cor.: 600 Line: Y	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-181-054	S. Cor.: 600 Sub: Y	*ENG	[-1.000 to 1.000 / 0 / 0.001 line/step]
2-181-055	S. Cor.: 1200 Line: Y	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-181-056	S. Cor.: 1200 Sub: Y	*ENG	[-1.000 to 1.000 / 0 / 0.001 line/step]
2-181-057	S. Cor.: 600 Sub	*ENG	[-1.000 to 1.000 / 0 / 0.001 line/step]
2-181-059	S. Cor.: 1200 Sub	*ENG	[-1.000 to 1.000 / 0 / 0.001 line/step]
2-181-061	Skew: Bk	*ENG	[-5000.000 to 5000.000 / 0 / 0.001 um/step]
2-181-072	Line Shift: M	*ENG	[0 to 1 / 0 / 1 line/step]
2-181-074	Line Shift: C	*ENG	[0 to 1 / 0 / 1 line/step]
2-181-076	Line Shift: Y	*ENG	[0 to 1 / 0 / 1 line/step]

2182	[Line Position Adj. Offset]		
	(Color) M. Scan: Main scan, S. Scan: Sub-scan		
2-182-004	M. Scan: Standard: Dot: M	*ENG	[-512 to 511 / 0 / 1 dot/step]
2-182-005	M. Scan: Standard: Subdot: M	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 dot/step]
2-182-006	M. Scan: Middle: Dot: M	*ENG	[-512 to 511 / 0 / 1 dot/step]
2-182-007	M. Scan: Middle: Subdot: M	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 dot/step]
2-182-008	M. Scan: Low: Dot: M	*ENG	[-512 to 511 / 0 / 1 dot/step]

2-182-009	M. Scan: Low: Subdot: M	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 dot/step]
2-182-010	M. Scan: Standard: Dot: C	*ENG	[-512 to 511 / 0 / 1 dot/step]
2-182-011	M. Scan: Standard: Subdot: C	*ENG	[-1.00 to 1.00 / 0.00 / 0.01dot/step]
2-182-012	M. Scan: Middle: Dot: C	*ENG	[-512 to 511 / 0 / 1 dot/step]
2-182-013	M. Scan: Middle: Subdot: C	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 dot/step]
2-182-014	M. Scan: Low: Dot: C	*ENG	[-512 to 511 / 0 / 1 dot/step]
2-182-015	M. Scan: Low: Subdot: C	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 dot/step]
2-182-016	M. Scan: Standard: Dot: Y	*ENG	[-512 to 511 / 0 / 1 dot/step]
2-182-017	M. Scan: Standard: Subdot: Y	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 dot/step]
2-182-018	M. Scan: Middle: Dot: Y	*ENG	[-512 to 511 / 0 / 1 dot/step]
2-182-019	M. Scan: Middle: Subdot: Y	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 dot/step]
2-182-020	M. Scan: Low: Dot: Y	*ENG	[-512 to 511 / 0 / 1 dot/step]
2-182-021	M. Scan: Low: Subdot: Y	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 dot/step]
2-182-022	S. Scan: Standard: Line: M	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-182-023	S. Scan: Standard: Subline: M	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 line/step]
2-182-024	S. Scan: Middle: Line: M	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-182-025	S. Scan: Middle: Subline: M	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 line/step]
2-182-026	S. Scan: Low: Line: M	*ENG	[-16384 to 16383 / 0 / 1 line/step]

2-182-027	S. Scan: Low: Subline: M	*ENG	[-1.00 to 1.00 / 0 / 0.01 line/step]
2-182-028	S. Scan: Standard: Line: C	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-182-029	S. Scan: Standard: Subline: C	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 line/step]
2-182-030	S. Scan: Middle: Line: C	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-182-031	S. Scan: Middle: Subline: C	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 line/step]
2-182-032	S. Scan: Low: Line: C	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-182-033	S. Scan: Low: Subline: C	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 line/step]
2-182-034	S. Scan: Standard: Line: Y	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-182-035	S. Scan: Standard: Subline: Y	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 line/step]
2-182-036	S. Scan: Middle: Line: Y	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-182-037	S. Scan: Middle: Subline: Y	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 line/step]
2-182-038	S. Scan: Low: Line: Y	*ENG	[-16384 to 16383 / 0 / 1 line/step]
2-182-039	S. Scan: Low: Subline: Y	*ENG	[-1.00 to 1.00 / 0.00 / 0.01 line/step]

2185	[MUSIC Pattern Timing :Set] DFU(SSP)		
2-185-001	Delay Time	ENG	[0 to 4000 / 0 / 1 msec/step]

2190	[Line Position Adj. Select]		
2-190-012	Detection Error Level: um	*ENG	[-3500 to 3500 / 0 / 1 um/step]

2193	[MUSIC Condition Set]		
	Line Position Adjustment: Condition Setting		
2-193-002	Page: Job End: BW+FC	*ENG	[0 to 999 / 500 / 1 page/step]
	Adjusts the threshold of the line position adjustment for BW and color printing mode after job end.		
2-193-003	Page: Job End: FC	*ENG	[0 to 999 / 200 / 1 page/step]
	Adjusts the threshold of the line position adjustment for color printing mode after job end.		
2-193-004	Page: Interrupt: BW+FC	*ENG	[0 to 999 / 200 / 1 page/step]
	Adjusts the threshold of the line position adjustment for BW and color printing mode during job.		
2-193-005	Page: Interrupt: FC	*ENG	[0 to 999 / 200 / 1 page/step]
	Adjusts the threshold of the line position adjustment for color printing mode during jobs.		
2-193-006	Page: Standby: BW	*ENG	[0 to 999 / 100 / 1 page/step]
	Adjusts the threshold of the line position adjustment for BW printing mode in stand-by mode. The line position adjustment is done when the number of outputs in BW printing mode reaches the value specified with this SP and the condition of SP2-193-008 or SP2-193-009 is satisfied		
2-193-007	Page: Standby: FC	*ENG	[0 to 999 / 100 / 1 page/step]
	Adjusts the threshold of the line position adjustment for BW printing mode in stand-by mode. The line position adjustment is done when the number of outputs in color printing mode reaches the value specified with this SP and the condition of SP2-193-008 or SP2-193-009 is satisfied.		
2-193-008	Temp. Change	*ENG	[0 to 100 / 5 / 1 deg/step]
	Adjust the temperature change threshold for the line position adjustment (Mode b: adjustment once). The timing for line position adjustment depends on the combinations of several conditions.		
2-193-011	Temp. Change 2	*ENG	[0 to 100 / 10 / 1 deg/step]

	Adjust the temperature change threshold for the line position adjustment (Mode a: adjustment twice). The timing for line position adjustment depends on the combinations of several conditions.		
2-193-016	Page: Power ON:BW+FC	*ENG	[0 to 999 / 200 / 1 page/step]

2194	[MUSIC Execution Result]		
	Line Position Adjustment: Execution Result		
2-194-001	Year	*ENG	[0 to 99 / 0 1 year/step]
	Displays the year of the last MUSIC execution.		
2-194-002	Month	*ENG	[1 to 12 / 1 1 month/step]
	Displays the month of the last MUSIC execution.		
2-194-003	Day	*ENG	[1 to 31 / 1 1 day/step]
	Displays the date of the last MUSIC execution.		
2-194-004	Hour	*ENG	[0 to 23 / 0 / 1 hour/step]
	Displays the time (hour) of the last MUSIC execution		
2-194-005	Minute	*ENG	[0 to 59 / 0 / 1 minute/step]
	Displays the time (minute) of the last MUSIC execution.		
2-194-006	Temperature	*ENG	[0 to 100 / 0 / 1 deg/step]
	Displays the temperature of the last MUSIC execution.		
2-194-007	Execution Result	*ENG	[0 or 1 / 0 / 1/step] 0: Completed successfully, 1: Failed
2-194-008	Number of Execution	*ENG	[0 to 999999 / 0 / 1 times/step]
2-194-009	Number of Failure	*ENG	[0 to 999999 / 0 / 1 times/step]
2-194-010	Error Result: C	*ENG	[0 to 9 / 0 / 1/step] 0: Not done 1: Completed successfully 2: Cannot detect patterns
2-194-011	Error Result: M	*ENG	
2-194-012	Error Result: Y	*ENG	

2-194-013	Error Result: K	*ENG	3: Fewer lines on the pattern than the target 4: Out of the adjustment range 5 to 9: Not used

2221	[LD Power: fixed: Set]		
	These SP codes set the LD power level for each laser unit.		
2-221-001	Standard Speed: Bk	*ENG	[0 to 200 / 100 / 1%/step] Increasing this value makes the image density darker.
2-221-002	Standard Speed: C	*ENG	
2-221-003	Standard Speed: M	*ENG	
2-221-004	Standard Speed: Y	*ENG	
2-221-011	Low Speed: M	*ENG	
2-221-012	Low Speed: Y	*ENG	

2229	[Develop DC Bias: Fixed]		
	Adjusts the development bias.		
2-229-001	Standard Speed: Bk	*ENG	[0 to 800 / 450 / 1 V/step]
2-229-002	Standard Speed: C	*ENG	
2-229-003	Standard Speed: M	*ENG	
2-229-004	Standard Speed: Y	*ENG	

2241	[PCDU Temperature: Display]		
	Displays the environment temperature.		
2-241-003	Time Interval: Fan Extension Control	*ENG	[1 to 300 / 10 / 1 ec/step]
2-241-004	PCU Temperature	ENG	[0.0 to 70.0 / 0 / 0.1deg/step]

2242	[TS Operation Env. Log]		
	Displays the rotation of PCU for each temperature.		
2-242-001	Distance: PCU: Bk: TS<=A-3	ENG	[0 to 99999999 / 0 / 1 mm/step]
2-242-002	Distance: PCU: Bk: A-3<TS<=A	ENG	
2-242-003	Distance: PCU: Bk: A<TS<=A+3	ENG	
2-242-004	Distance: PCU: Bk: A+3<TS	ENG	
2-242-100	Log Clear	ENG	[- / - / -] [Execute]

2302	[Environmental Correction:Trans]		
	Environmental Correction: Image Transfer Belt Unit		
2-302-001	Current Environmental Display	ENG	[- / - / -]
2-302-002	Forced Setting	*ENG	Sets the environment condition manually. [0 to 6 / 0 / 1/step] 0: Automatic environment control 1: LL (Low temperature/ Low humidity) 2: ML (Middle temperature/ Low humidity) 3: MM (Middle temperature/ Middle humidity) 4: MH (Middle temperature/ High humidity) 5: HH (High temperature/ High humidity)

2-302-003	Absolute Humidity:Threshold 1	*ENG	Adjusts the threshold value between LL and ML. [0.00 to 100.00 / 4.50 / 0.01 g/m ³ /step]
2-302-004	Absolute Humidity:Threshold 2	*ENG	Adjusts the threshold value between ML and MM. [0.00 to 100.00 / 9.00 / 0.01 g/m ³ /step]
2-302-005	Absolute Humidity:Threshold 3	*ENG	Adjusts the threshold value between MM and MH. [0.00 to 100.00 / 17.50 / 0.01 g/m ³ /step]
2-302-006	Absolute Humidity:Threshold 4	*ENG	Adjusts the threshold value between MH and HH. [0.00 to 100.00 / 24.00 / 0.01 g/m ³ /step]
2-302-007	Temperature:Threshold	*ENG	[-5 to 30 / 10 / 1 deg/step]

2303	[Time-Lapse Correction]		
2-303-001	Current Div Bk	*ENG	[0 to 3 / 0 / 1/step] Displays the current time-lapse division.
2-303-002	Current Div C	*ENG	[0 to 3 / 0 / 1/step] Displays the current time-lapse division.
2-303-003	Current Div M	*ENG	[0 to 3 / 0 / 1/step] Displays the current time-lapse division.
2-303-004	Current Div Y	*ENG	[0 to 3 / 0 / 1/step] Displays the current time-lapse division.

2-303-005	Correction Threshold 1_Bk	*ENG	[0 to 600000 / 5000 / 10 page/step] Adjusts the correction threshold.
2-303-006	Correction Threshold 1_Color	*ENG	[0 to 600000 / 5000 / 10 page/step] Adjusts the correction threshold.
2-303-007	Correction Threshold 2_Bk	*ENG	[0 to 600000 / 20000 / 10 page /step] Adjusts the correction threshold.
2-303-008	Correction Threshold 2_Color	*ENG	[0 to 600000 / 20000 / 10 page/step] Adjusts the correction threshold.
2-303-009	Correction Threshold 3_Bk	*ENG	[0 to 600000 / 50000 / 10 page/step] Adjusts the correction threshold.
2-303-010	Correction Threshold 3_Color	*ENG	[0 to 600000 / 50000 / 10 page/step] Adjusts the correction threshold.

2304	[Time-Lapse Correction:Transfer]		
	Adjusts the correction threshold.		
2-304-001	Threshold 1	*ENG	[0 to 999999999 / 0 / 1 mm/step]
2-304-002	Threshold 2	*ENG	[0 to 999999999 / 0 / 1 mm/step]
2-304-003	Threshold 3	*ENG	[0 to 999999999 / 0 / 1 mm/step]
2-304-004	Threshold 4	*ENG	[0 to 999999999 / 0 / 1 mm/step]

2305	[Vc Correction]		
	Adjusts the correction threshold.		
2-305-001	Threshold 1	*ENG	[0 to 2000 / 450 / 10 -V/step]
2-305-002	Threshold 2	*ENG	[0 to 2000 / 600 / 10 -V/step]
2-305-003	Threshold 3	*ENG	[0 to 2000 / 750 / 10 -V/step]
2-305-004	Threshold 4	*ENG	[0 to 2000 / 900 / 10 -V/step]

2308	[Paper Size Correction]		
	Adjusts the threshold value for the paper size correction.		
2-308-001	Threshold 1	*ENG	[0 to 250 / 194 / 1 mm/step] Threshold 1 ≤ paper: Paper is detected as "S1" size.
2-308-002	Threshold 2	*ENG	[0 to 250 / 165 / 1 mm/step] Threshold 2 ≤ paper ≤ Threshold 1: Paper is detected as "S2" size.
2-308-003	Threshold 3	*ENG	[0 to 250 / 139 / 1 mm/step] Threshold 3 ≤ paper ≤ Threshold 2: Paper is detected as "S3" size.

2311	[Non Image Area:Bias]		
	Adjusts the bias of the paper transfer roller between images		
2-311-001	Image Transfer	*ENG	[0 to 2000 / 100 / 10%/step]
	Adjusts the bias of the image transfer belt between images. This value is added to the value of the image transfer belt bias.		
2-311-003	Paper Transfer	*ENG	[0 to 2100 / 500 / 10 -V/step]

2316	[Power ON:Bias]		
	Adjusts the bias of the image transfer roller at power-on or a closed cover.		
2-316-001	Image Transfer	*ENG	[0 to 2100 / 1400 / 10 V/step]

2326	[Transfer Roller CL:Bias]		
2-326-001	Neg. Bias: Befor and After JOB	*ENG	[0 to 2100 / 250 / 10 -V/step]
	Adjusts the negative current of the paper transfer roller for cleaning the paper transfer roller.		

2-326-002	Pos. Bias Cor Coef: Befor and After JOB	*ENG	[10 to 995 / 100 / 10%/step]
	Adjusts the positive voltage of the paper transfer roller for cleaning the paper transfer roller.		
2-326-003	Neg. Bias: After ProControl	*ENG	[0 to 2100 / 1000 / 10 -V/step]
	Adjusts the negative current limit of the paper transfer roller for cleaning the paper transfer roller.		
2-326-004	Pos. Bias Corr Coef: After ProCon	*ENG	[10 to 995 / 100 / 10%/step]
	Adjusts the positive current limit of the paper transfer roller for cleaning the paper transfer roller.		
2-326-005	Neg. Bias: Dirt Prevention	*ENG	[0 to 2100 / 500 / 10 -V/step]

2326	[Transfer Roller CL: Envir]		
2-326-011	Neg. Bias: Befor and After JOB	*ENG	[0 to 100 / 9 / 1/step]
2-326-013	Neg. Bias: After ProControl	*ENG	[0 to 100 / 2 / 1/step]
2-326-015	Neg. Bias: Dirt Prevention	*ENG	[0 to 100 / 9 / 1/step]

2327	[PTR Cleaning After ProCon]		
2-327-001	ON/OFF	*ENG	[0 to 1 / 0 / 1/step] Enables/disables the PTR cleaning after the process control.

2351	[Common:BW:Bias]		
	Image Transfer Belt: B/W: Bias Adjustment Standard: 260 mm/sec, Middle: 182 mm/sec, Low: 85 mm/sec		
2-351-001	Image Transfer: Standard Speed	*ENG	[0 to 2100 / 1400 / 10 V/step]
	Adjusts the current for the image transfer belt in B/W mode for plain paper.		
2-351-002	Image Transfer: Middle Speed	*ENG	[0 to 2100 / 1400 / 10 V/step]
2-351-003	Image Transfer: Low Speed	*ENG	[0 to 2100 / 1300 / 10 V/step]
	Adjusts the current for the image transfer belt in B/W mode for thick 1 paper.		
2-351-201	Image Transfer: Std Spd:2	*ENG	[0 to 2100 / 1400 / 10 V/step]

2357	[Common:FC:Bias]		
	Image Transfer Belt: Full Color: Bias Adjustment		
2-357-001	Image Transfer: Std Spd: Bk	*ENG	[0 to 2100 / 1400 / 10 V/step]
2-357-002	Image Transfer: Std Spd: C	*ENG	[0 to 2100 / 1400 / 10 V/step]
2-357-003	Image Transfer: Std Spd: M	*ENG	[0 to 2100 / 1400 / 10 V/step]
2-357-004	Image Transfer: Std Spd: Y	*ENG	[0 to 2100 / 1400 / 10 V/step]
2-357-005	Image Transfer: Middle Spd: Bk	*ENG	[0 to 2100 / 1400 / 10 V/step]
2-357-006	Image Transfer: Middle Spd: C	*ENG	[0 to 2100 / 1400 / 10 V/step]

2-357-007	Image Transfer: Middle Spd: M	*ENG	[0 to 2100 / 1400 / 10 V/step]
2-357-008	Image Transfer: Middle Spd: Y	*ENG	[0 to 2100 / 1400 / 10 V/step]
2-357-009	Image Transfer: Low Spd: Bk	*ENG	[0 to 2100 / 1300 / 10 V/step]
2-357-010	Image Transfer: Low Spd: C	*ENG	[0 to 2100 / 1300 / 10 V/step]
2-357-011	Image Transfer: Low Spd: M	*ENG	[0 to 2100 / 1300 / 10 V/step]
2-357-012	Image Transfer: Low Spd: Y	*ENG	[0 to 2100 / 1300 / 10 V/step]

2360	[Common:BW:Env.CorrectionTable]		
2-360-001	Image Transfer: Standard Spd	*ENG	[1 to 100 / 6 / 1/step]
2-360-002	Image Transfer: Middle Spd	*ENG	[1 to 100 / 6 / 1/step]
2-360-003	Image Transfer: Low Spd	*ENG	[1 to 100 / 6 / 1/step]
2360	[Common:FC:Env.CorrectionTable]		
2-360-004	ImageTransfer: Std Spd: Bk	*ENG	[1 to 100 / 6 / 1/step]
2-360-005	ImageTransfer: Std Spd: C	*ENG	[1 to 100 / 5 / 1/step]
2-360-006	ImageTransfer: Std Spd: M	*ENG	[1 to 100 / 5 / 1/step]
2-360-007	ImageTransfer: Std Spd: Y	*ENG	[1 to 100 / 5 / 1/step]
2-360-008	ImageTransfer: Middle Spd: Bk	*ENG	[1 to 100 / 6 / 1/step]

2-360-009	ImageTransfer: Middle Spd: C	*ENG	[1 to 100 / 5 / 1/step]
2-360-010	ImageTransfer: Middle Spd: M	*ENG	[1 to 100 / 5 / 1/step]
2-360-011	ImageTransfer: Middle Spd: Y	*ENG	[1 to 100 / 5 / 1/step]
2-360-012	Image Transfer: Low Spd: Bk	*ENG	[1 to 100 / 6 / 1/step]
2-360-013	Image Transfer: Low Spd: C	*ENG	[1 to 100 / 5 / 1/step]
2-360-014	Image Transfer: Low Spd: M	*ENG	[1 to 100 / 5 / 1/step]
2-360-015	Image Transfer: Low Spd: Y	*ENG	[1 to 100 / 5 / 1/step]

2361	[Time-Lapse Correction: Div 1]		
	Specifies the number of time-lapse correction table.		
2-361-001	Standard Speed: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-361-002	Middle Speed: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-361-003	Low Speed: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-361-004	Standard Speed: FC: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-361-005	Standard Speed: FC: C	*ENG	[0 to 60 / 1 / 1/step]
2-361-006	Standard Speed: FC: M	*ENG	[0 to 60 / 1 / 1/step]
2-361-007	Standard Speed: FC: Y	*ENG	[0 to 60 / 1 / 1/step]
2-361-008	Middle Speed: FC: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-361-009	Middle Speed: FC: C	*ENG	[0 to 60 / 1 / 1/step]
2-361-010	Middle Speed: FC: M	*ENG	[0 to 60 / 1 / 1/step]
2-361-011	Middle Speed: FC: Y	*ENG	[0 to 60 / 1 / 1/step]

2-361-012	Low Speed: FC: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-361-013	Low Speed: FC: C	*ENG	[0 to 60 / 1 / 1/step]
2-361-014	Low Speed: FC: M	*ENG	[0 to 60 / 1 / 1/step]
2-361-015	Low Speed: FC: Y	*ENG	[0 to 60 / 1 / 1/step]

2362	[Time-Lapse Correction: Div 2]		
	Specifies the number of time-lapse correction table.		
2-362-001	Standard Speed: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-362-002	Middle Speed: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-362-003	Low Speed: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-362-004	Standard Speed: FC: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-362-005	Standard Speed: FC: C	*ENG	[0 to 60 / 1 / 1/step]
2-362-006	Standard Speed: FC: M	*ENG	[0 to 60 / 1 / 1/step]
2-362-007	Standard Speed: FC: Y	*ENG	[0 to 60 / 1 / 1/step]
2-362-008	Middle Speed: FC: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-362-009	Middle Speed: FC: C	*ENG	[0 to 60 / 1 / 1/step]
2-362-010	Middle Speed: FC: M	*ENG	[0 to 60 / 1 / 1/step]
2-362-011	Middle Speed: FC: Y	*ENG	[0 to 60 / 1 / 1/step]
2-362-012	Low Speed: FC: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-362-013	Low Speed: FC: C	*ENG	[0 to 60 / 1 / 1/step]
2-362-014	Low Speed: FC: M	*ENG	[0 to 60 / 1 / 1/step]
2-362-015	Low Speed: FC: Y	*ENG	[0 to 60 / 1 / 1/step]

2363	[Time-Lapse Correction: Div 3]		
	Specifies the number of time-lapse correction table.		
2-363-001	Standard Speed: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-363-002	Middle Speed: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-363-003	Low Speed: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-363-004	Standard Speed: FC: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-363-005	Standard Speed: FC: C	*ENG	[0 to 60 / 1 / 1/step]
2-363-006	Standard Speed: FC: M	*ENG	[0 to 60 / 1 / 1/step]
2-363-007	Standard Speed: FC: Y	*ENG	[0 to 60 / 1 / 1/step]
2-363-008	Middle Speed: FC: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-363-009	Middle Speed: FC: C	*ENG	[0 to 60 / 1 / 1/step]
2-363-010	Middle Speed: FC: M	*ENG	[0 to 60 / 1 / 1/step]
2-363-011	Middle Speed: FC: Y	*ENG	[0 to 60 / 1 / 1/step]
2-363-012	Low Speed: FC: Bk	*ENG	[0 to 60 / 1 / 1/step]
2-363-013	Low Speed: FC: C	*ENG	[0 to 60 / 1 / 1/step]
2-363-014	Low Speed: FC: M	*ENG	[0 to 60 / 1 / 1/step]
2-363-015	Low Speed: FC: Y	*ENG	[0 to 60 / 1 / 1/step]

2371	[Time-Lapse Correction: Transfer]		
	Specifies the time-lapse correction value.		
2-371-001	Standard Speed: Div1	*ENG	[0 to 2000 / 0 / 10 V/step]
2-371-002	Middle Speed: Div1	*ENG	
2-371-003	Low Speed: Div1	*ENG	

2372	[Time-Lapse Correction:Transfer]		
	Specifies the time-lapse correction value.		
2-372-001	Standard Speed: Div2	*ENG	[0 to 2000 / 0 / 10 V/step]
2-372-002	Middle Speed: Div2	*ENG	
2-372-003	Low Speed: Div2	*ENG	

2373	[Time-Lapse Correction:Transfer]		
	Specifies the time-lapse correction value.		
2-373-001	Standard Speed: Div3	*ENG	[0 to 2000 / 0 / 10 V/step]
2-373-002	Middle Speed: Div3	*ENG	
2-373-003	Low Speed: Div3	*ENG	

2374	[Time-Lapse Correction:Transfer]		
	Specifies the time-lapse correction value.		
2-374-001	Standard Speed: Div4	*ENG	[0 to 2000 / 0 / 10 V/step]
2-374-002	Middle Speed: Div4	*ENG	
2-374-003	Low Speed: Div4	*ENG	

2381	[Vc Correction]		
	Specifies the time-lapse correction value.		
2-381-001	Standard Speed: Div1	*ENG	[0 to 2000 / 0 / 10 -V/step]
2-381-002	Middle Speed: Div1	*ENG	
2-381-003	Low Speed: Div1	*ENG	

2382	[Vc Correction]		
	Specifies the time-lapse correction value.		
2-382-001	Standard Speed: Div2	*ENG	[0 to 2000 / 0 / 10 -V/step]
2-382-002	Middle Speed: Div2	*ENG	
2-382-003	Low Speed: Div2	*ENG	

2383	[Vc Correction]		
	Specifies the time-lapse correction value.		
2-383-001	Standard Speed: Div3	*ENG	[0 to 2000 / 0 / 10 -V/step]
2-383-002	Middle Speed: Div3	*ENG	
2-383-003	Low Speed: Div3	*ENG	

2384	[Vc Correction]		
	Specifies the time-lapse correction value.		
2-384-001	Standard Speed: Div4	*ENG	[0 to 2000 / 0 / 10 -V/step]
2-384-002	Middle Speed: Div4	*ENG	
2-384-003	Low Speed: Div4	*ENG	

2385	[Vc Correction]		
	Specifies the time-lapse correction value.		
2-385-001	Standard Speed: Div5	*ENG	[0 to 2000 / 0 / 10 -V/step]
2-385-002	Middle Speed: Div5	*ENG	
2-385-003	Low Speed: Div5	*ENG	

2401	[Plain1:Bias]		
	Adjusts the DC voltage of the discharge plate for plain 1 paper. Standard: 260 mm/sec, Low: 85 mm/sec		
2-401-001	Separation DC: Std Spd: 1Side	*ENG	[0 to 4000 / 0 / 10 -V/step]
2-401-002	Separation DC: Std Spd: 2Side	*ENG	
2-401-003	Separation DC: Low Spd: 1Side	*ENG	
2-401-004	Separation DC: Low Spd: 2Side	*ENG	

2403	[Plain1:Bias:BW]		
	Adjusts the current for the paper transfer roller for plain 1 paper in black-and-white mode.		
2-403-001	Paper Transfer: Std Spd: 1Side	*ENG	[0 to 200 / * / 1 uA/step] *C306: 21 *C406: 24
2-403-002	Paper Transfer: Std Spd: 2Side	*ENG	[0 to 200 / * / 1 uA/step] *C306: 16 *C406: 18
2-403-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 200 / 10 / 1 uA/step]
2-403-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 200 / 8 / 1 uA/step]
2-403-201	Paper Transfer: Std Spd 2: 1Side	*ENG	[0 to 200 / 30 / 1 uA/step]
2-403-202	Paper Transfer: Std Spd 2: 2Side	*ENG	[0 to 200 / 22 / 1 uA/step]

2407	[Plain1:Bias:FC]		
	Adjusts the current for the paper transfer roller for plain 1 paper in full color mode.		
2-407-001	Paper Transfer: Std Spd: 1Side	*ENG	[0 to 200 / * / 1 -uA/step] *C306: 22 *C406: 25
2-407-002	Paper Transfer: Std Spd: 2Side	*ENG	[0 to 200 / * / 1 -uA/step] *C306: 18 *C406: 20
2-407-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 200 / 11 / 1 -uA/step]
2-407-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 200 / 10 / 1 -uA/step]

2411	[Plain1:SizeCorrection:BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-411-001	Paper Transfer: Std Spd:1Sid:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-411-002	Paper Transfer: Std Spd:2Sid:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-411-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-411-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-411-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[100 to 995 / 120 / 5%/step]
2-411-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[100 to 995 / 175 / 5%/step]
2-411-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[100 to 995 / 130 / 5%/step]

2-411-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[100 to 995 / 213 / 5%/step]
2-411-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[100 to 995 / 140 / 5%/step]
2-411-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[100 to 995 / 275 / 5%/step]

2412	[Plain1:SizeCorrection:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-412-001	Paper Transfer: Std Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-412-002	Paper Transfer: Std Spd: 2Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-412-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-412-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-412-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[100 to 995 / 118 / 5%/step]
2-412-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[100 to 995 / 150 / 5%/step]
2-412-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[100 to 995 / 130 / 5%/step]
2-412-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[100 to 995 / 180 / 5%/step]
2-412-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[100 to 995 / 140 / 5%/step]
2-412-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[100 to 995 / 250 / 5%/step]

2413	[Plain1:Size-Env.Correct:BW]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-413-001	Paper Transfer: Std Spd: 1Side:S1	*ENG	[1 to 100 / 21 / 1/step]
2-413-002	Paper Transfer: Std Spd: 2Side:S1	*ENG	[1 to 100 / 22 / 1/step]
2-413-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[1 to 100 / 25 / 1/step]
2-413-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[1 to 100 / 26 / 1/step]
2-413-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[1 to 100 / 27 / 1/step]
2-413-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[1 to 100 / 28 / 1/step]
2-413-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[1 to 100 / 29 / 1/step]
2-413-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[1 to 100 / 30 / 1/step]
2-413-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[1 to 100 / 31 / 1/step]
2-413-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[1 to 100 / 32 / 1/step]

2414	[Plain1:Size-Env.Correct:FC]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-414-001	Paper Transfer: Std Spd: 1Side:S1	*ENG	[1 to 100 / 23 / 1/step]
2-414-002	Paper Transfer: Std Spd: 2Side:S1	*ENG	[1 to 100 / 24 / 1/step]

2-414-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[1 to 100 / 25 / 1/step]
2-414-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[1 to 100 / 26 / 1/step]
2-414-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[1 to 100 / 27 / 1/step]
2-414-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[1 to 100 / 28 / 1/step]
2-414-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[1 to 100 / 29 / 1/step]
2-414-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[1 to 100 / 30 / 1/step]
2-414-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[1 to 100 / 31 / 1/step]
2-414-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[1 to 100 / 32 / 1/step]

2415	[Plain1:LeadingEdgeCorrection]		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode.		
2-415-001	Paper Transfer: Std Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-415-002	Paper Transfer: Std Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-415-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-415-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-415-005	Separation DC: Std Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]

2-415-006	Separation DC: Std Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-415-007	Separation DC: Low Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-415-008	Separation DC: Low Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]

2416	[Plain 1: SW Timing Lead Edge]		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
2-416-001	Paper Transfer: Std Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-416-002	Paper Transfer: Std Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-416-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-416-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-416-005	Separation DC: Std Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-416-006	Separation DC: Std Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-416-007	Separation DC: Low Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-416-008	Separation DC: Low Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]

2417	[Plain1:TrailEdgeCorrection]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-417-001	Paper Transfer: Std Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-417-002	Paper Transfer: Std Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-417-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-417-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-417-005	Separation DC: Std Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-417-006	Separation DC: Std Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-417-007	Separation DC: Low Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-417-008	Separation DC: Low Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]

2418	[Plain 1: SW Timing Trail Edge]		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area.		
2-418-001	Paper Transfer: Std Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-418-002	Paper Transfer: Std Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-418-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]

2-418-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-418-005	Separation DC: Std Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-418-006	Separation DC: Std Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-418-007	Separation DC: Low Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-418-008	Separation DC: Low Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]

2419	[Plain 1: Envir Correct. Table]		
2-419-013	Separation DC: Std Spd: 1Side	*ENG	[1 to 100 / 30 / 1/step]
2-419-014	Separation DC: Std Spd: 2Side	*ENG	
2-419-015	Separation DC: Low Spd: 1Side	*ENG	
2-419-016	Separation DC: Low Spd: 2Side	*ENG	
2419	[Plain 1: Edge Envir Correct.]		
2-419-017	Separation DC: Std Spd: 1Side	*ENG	[1 to 100 / 50 / 1/step]
2-419-018	Separation DC: Std Spd: 2Side	*ENG	
2-419-019	Separation DC: Low Spd: 1Side	*ENG	
2-419-020	Separation DC: Low Spd: 2Side	*ENG	

2421	[Plain2:Bias]		
	Adjusts the DC voltage of the discharge plate for plain2 paper.		
2-421-001	Separation DC: Std Spd: 1Side	*ENG	[0 to 4000 / 0 / 10 -V/step]
2-421-002	Separation DC: Std Spd: 2Side	*ENG	[0 to 4000 / 0 / 10 -V/step]
2-421-003	Separation DC: Low Spd: 1Side	*ENG	[0 to 4000 / 0 / 10 -V/step]
2-421-004	Separation DC: Low Spd: 2Side	*ENG	[0 to 4000 / 0 / 10 -V/step]

2423	[Plain2:Bias:BW]		
	Adjusts the current for the paper transfer roller for plain2 paper in black-and-white mode.		
2-423-001	Paper Transfer: Std Spd: 1Side	*ENG	[0 to 200 / * / 1 uA/step] *C306: 19 *C406: 22
2-423-002	Paper Transfer: Std Spd: 2Side	*ENG	[0 to 200 / * / 1 uA/step] *C306: 16 *C406: 18
2-423-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 200 / 11 / 1 uA/step]
2-423-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 200 / 11 / 1 uA/step]
2-423-201	Paper Transfer: Std Spd 2: 1Side	*ENG	[0 to 200 / 26 / 1 uA/step]
2-423-202	Paper Transfer: Std Spd 2: 2Side	*ENG	[0 to 200 / 22 / 1 uA/step]

2427	[Plain2:Bias:FC]		
	Adjusts the current for the paper transfer roller for plain2 paper in full color mode.		
2-427-001	Paper Transfer: Std Spd: 1Side	*ENG	[0 to 200 / * / 1 uA/step] *C306: 22 *C406: 25
2-427-002	Paper Transfer: Std Spd: 2Side	*ENG	[0 to 200 / * / 1 uA/step] *C306: 18 *C406: 20
2-427-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 200 / 13 / 1 uA/step]
2-427-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 200 / 13 / 1 uA/step]

2431	[Plain2:SizeCorrection:BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-431-001	Paper Transfer: Std Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-431-002	Paper Transfer: Std Spd: 2Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-431-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-431-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-431-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[100 to 995 / 120 / 5%/step]
2-431-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[100 to 995 / 175 / 5%/step]

2-431-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[100 to 995 / 140 / 5%/step]
2-431-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[100 to 995 / 213 / 5%/step]
2-431-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[100 to 995 / 150 / 5%/step]
2-431-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[100 to 995 / 275 / 5%/step]

2432	[Plain2:SizeCorrection:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-432-001	Paper Transfer: Std Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-432-002	Paper Transfer: Std Spd: 2Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-432-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-432-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-432-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[100 to 995 / 118 / 5%/step]
2-432-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[100 to 995 / 150 / 5%/step]
2-432-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[100 to 995 / 136 / 5%/step]
2-432-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[100 to 995 / 180 / 5%/step]
2-432-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[100 to 995 / 140 / 5%/step]

2-432-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[100 to 995 / 250 / 5%/step]

2433	[Plain2:Size-Env.Correct:BW]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-433-001	Paper Transfer: Std Spd: 1Side:S1	*ENG	[1 to 100 / 33 / 1/step]
2-433-002	Paper Transfer: Std Spd: 2Side:S1	*ENG	[1 to 100 / 34 / 1/step]
2-433-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[1 to 100 / 37 / 1/step]
2-433-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[1 to 100 / 38 / 1/step]
2-433-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[1 to 100 / 39 / 1/step]
2-433-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[1 to 100 / 40 / 1/step]
2-433-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[1 to 100 / 41 / 1/step]
2-433-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[1 to 100 / 42 / 1/step]
2-433-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[1 to 100 / 43 / 1/step]
2-433-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[1 to 100 / 44 / 1/step]

2434	[Plain2:Size-Env.Correct:FC]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		

2-434-001	Paper Transfer: Std Spd: 1Side:S1	*ENG	[1 to 100 / 35 / 1/step]
2-434-002	Paper Transfer: Std Spd: 2Side:S1	*ENG	[1 to 100 / 36 / 1/step]
2-434-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[1 to 100 / 37 / 1/step]
2-434-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[1 to 100 / 38 / 1/step]
2-434-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[1 to 100 / 39 / 1/step]
2-434-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[1 to 100 / 40 / 1/step]
2-434-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[1 to 100 / 41 / 1/step]
2-434-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[1 to 100 / 42 / 1/step]
2-434-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[1 to 100 / 43 / 1/step]
2-434-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[1 to 100 / 44 / 1/step]

2435	[Plain2:LeadingEdgeCorrection]		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode.		
2-435-001	Paper Transfer: Std Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-435-002	Paper Transfer: Std Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-435-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]

2-435-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-435-005	Separation DC: Std Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-435-006	Separation DC: Std Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-435-007	Separation DC: Low Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-435-008	Separation DC: Low Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]

2436	[Plain 2: SW Timing Lead Edge]		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
2-436-001	Paper Transfer: Std Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-436-002	Paper Transfer: Std Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-436-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-436-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-436-005	Separation DC: Std Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-436-006	Separation DC: Std Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-436-007	Separation DC: Low Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-436-008	Separation DC: Low Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]

2437	[Plain2:Trail Edge Correction]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-437-001	Paper Transfer: Std Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-437-002	Paper Transfer: Std Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-437-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-437-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-437-005	Separation DC: Std Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-437-006	Separation DC: Std Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-437-007	Separation DC: Low Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-437-008	Separation DC: Low Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]

2438	[Plain 2: SW Timing Trail Edge]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-438-001	Paper Transfer: Std Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-438-002	Paper Transfer: Std Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-438-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]

2-438-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-438-005	Separation DC: Std Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-438-006	Separation DC: Std Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-438-007	Separation DC: Low Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-438-008	Separation DC: Low Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]

2439	[Plain 2: Envir Correct. Table]		
2-439-013	Separation DC: Std Spd: 1Side	*ENG	[1 to 100 / 30 / 1/step]
2-439-014	Separation DC: Std Spd: 2Side	*ENG	
2-439-015	Separation DC: Low Spd: 1Side	*ENG	
2-439-016	Separation DC: Low Spd: 2Side	*ENG	
2439	[Plain 2: Edge Envir Correct.]		
2-439-017	Separation DC: Std Spd: 1Side	*ENG	[1 to 100 / 50 / 1/step]
2-439-018	Separation DC: Std Spd: 2Side	*ENG	
2-439-019	Separation DC: Low Spd: 1Side	*ENG	
2-439-020	Separation DC: Low Spd: 2Side	*ENG	

2441	[M-Thick: Bias]		
	Adjusts the DC voltage of the discharge plate for middle thick paper.		
2-441-001	Separation DC: Std Spd: 1Side	*ENG	[0 to 4000 / 0 / 10 -V/step]
2-441-002	Separation DC: Std Spd: 2Side	*ENG	[0 to 4000 / 0 / 10 -V/step]
2-441-003	Separation DC: Low Spd: 1Side	*ENG	[0 to 4000 / 0 / 10 -V/step]
2-441-004	Separation DC: Low Spd: 2Side	*ENG	[0 to 4000 / 0 / 10 -V/step]

2443	[M-Thick: Bias: BW]		
	Adjusts the current for the paper transfer roller for middle thick paper in black-and-white mode.		
2-443-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 200 / 20 / 1 uA/step]
2-443-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	[0 to 200 / 16 / 1 uA/step]
2-443-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 200 / 10 / 1 uA/step]
2-443-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 200 / 8 / 1 uA/step]

2447	[M-Thick: Bias: FC]		
	Adjusts the current for the paper transfer roller for middle thick paper in full color mode.		
2-447-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 200 / 22 / 1 uA/step]
2-447-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	[0 to 200 / 18 / 1 uA/step]

2-447-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 200 / 11 / 1 uA/step]
2-447-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 200 / 10 / 1 uA/step]

2451	[Middle:SizeCorrection:BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-451-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-451-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-451-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-451-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-451-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[100 to 995 / 130 / 5%/step]
2-451-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[100 to 995 / 163 / 5%/step]
2-451-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[100 to 995 / 150 / 5%/step]
2-451-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[100 to 995 / 250 / 5%/step]
2-451-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[100 to 995 / 150 / 5%/step]
2-451-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[100 to 995 / 375 / 5%/step]

2452	[M-Thick: Size Correction:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-452-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-452-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-452-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-452-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-452-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[100 to 995 / 136 / 5%/step]
2-452-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[100 to 995 / 180 / 5%/step]
2-452-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[100 to 995 / 150 / 5%/step]
2-452-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[100 to 995 / 250 / 5%/step]
2-452-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[100 to 995 / 150 / 5%/step]
2-452-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[100 to 995 / 350 / 5%/step]

2453	[M-Thick: Size-Env.Correct:BW]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-453-001	PaperTransfer:Standard:1Sid:S1	*ENG	[1 to 100 / 21 / 1/step]
2-453-002	PaperTransfer:Standard:2Sid:S1	*ENG	[1 to 100 / 22 / 1/step]

2-453-003	PaperTransfer:Low:1Side:S1	*ENG	[1 to 100 / 47 / 1/step]
2-453-004	PaperTransfer:Low:2Side:S1	*ENG	[1 to 100 / 48 / 1/step]
2-453-007	PaperTransfer:Low:1Side:S2	*ENG	[1 to 100 / 49 / 1/step]
2-453-008	PaperTransfer:Low:2Side:S2	*ENG	[1 to 100 / 50 / 1/step]
2-453-011	PaperTransfer:Low:1Side:S3	*ENG	[1 to 100 / 51 / 1/step]
2-453-012	PaperTransfer:Low:2Side:S3	*ENG	[1 to 100 / 52 / 1/step]
2-453-015	PaperTransfer:Low:1Side:S4	*ENG	[1 to 100 / 53 / 1/step]
2-453-016	PaperTransfer:Low:2Side:S4	*ENG	[1 to 100 / 54 / 1/step]

2454	[M-Thick: Size-Env.Correct:FC]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-454-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[1 to 100 / 45 / 1/step]
2-454-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	[1 to 100 / 46 / 1/step]
2-454-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[1 to 100 / 47 / 1/step]
2-454-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[1 to 100 / 48 / 1/step]
2-454-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[1 to 100 / 49 / 1/step]
2-454-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[1 to 100 / 50 / 1/step]
2-454-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[1 to 100 / 51 / 1/step]
2-454-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[1 to 100 / 52 / 1/step]

2-454-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[1 to 100 / 53 / 1/step]
2-454-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[1 to 100 / 54 / 1/step]

2455	[M-Thick: Leading Edge Correct.]		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode.		
2-455-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-455-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-455-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-455-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-455-005	Separation DC: Std Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-455-006	Separation DC: Std Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-455-007	Separation DC: Low Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-455-008	Separation DC: Low Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]

2456	[M-Thick: SW Timing Lead Edge]		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
2-456-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]

2-456-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-456-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-456-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-456-005	Separation DC: Std Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-456-006	Separation DC: Std Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-456-007	Separation DC: Low Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-456-008	Separation DC: Low Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]

2457	[M-Thick: Trail Edge Correction]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-457-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-457-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-457-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-457-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]
2-457-005	Separation DC: Std Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-457-006	Separation DC: Std Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]

2-457-007	Separation DC: Low Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-457-008	Separation DC: Low Spd: 2Side	*ENG	[0 to 995 / 100 / 5%/step]

2458	[M-Thick: SW Timing Trail Edge]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-458-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-458-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-458-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-458-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-458-005	Separation DC: Std Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-458-006	Separation DC: Std Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-458-007	Separation DC: Low Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-458-008	Separation DC: Low Spd: 2Side	*ENG	[0 to 50 / 0 / 2 mm/step]

2459	[M-Thick: Envir Correct. Table]		
2-459-013	Separation DC: Std Spd: 1Side	*ENG	[1 to 100 / 30 / 1/step]
2-459-014	Separation DC: Std Spd: 2Side	*ENG	

2-459-015	Separation DC: Low Spd: 1Side	*ENG	
2-459-016	Separation DC: Low Spd: 2Side	*ENG	
2459	[M-Thick: Edge Envir Correction]		
2-459-017	Separation DC: Std Spd: 1Side	*ENG	[1 to 100 / 50 / 1/step]
2-459-018	Separation DC: Std Spd: 2Side	*ENG	
2-459-019	Separation DC: Low Spd: 1Side	*ENG	
2-459-020	Separation DC: Low Spd: 2Side	*ENG	

2481	[Thick1:Bias]		
	Adjusts the DC voltage of the discharge plate for thick 1 paper.		
2-481-003	Separation DC:1Side	*ENG	[0 to 4000 / 0 / 10-V/step]
2-481-004	Separation DC:2Side	*ENG	

2483	[Thick1:Bias:BW]		
	Adjusts the current for the paper transfer roller for thick 1 paper in black-and-white mode.		
2-483-003	PaperTransfer:1Side	*ENG	[0 to 200 / 14 / 1 uA/step]
2-483-004	PaperTransfer:2Side	*ENG	[0 to 200 / 9 / 1 uA/step]

2487	[Thick1:Bias:FC]		
	Adjusts the current for the paper transfer roller for thick 1 paper in full color mode.		
2-487-003	PaperTransfer:1Side	*ENG	[0 to 200 / 15 / 1 -uA/step]

2-487-004	PaperTransfer:2Side	*ENG	[0 to 200 / 11 / 1 -uA/step]

2491	[Thick1:SizeCorrection:BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-491-003	PaperTransfer:1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-491-004	PaperTransfer:2Side:S1	*ENG	
2-491-007	PaperTransfer:1Side:S2	*ENG	[100 to 995 / 100 / 5%/step]
2-491-008	PaperTransfer:2Side:S2	*ENG	[100 to 995 / 156 / 5%/step]
2-491-011	PaperTransfer:1Side:S3	*ENG	[100 to 995 / 100 / 5%/step]
2-491-012	PaperTransfer:2Side:S3	*ENG	[100 to 995 / 167 / 5%/step]
2-491-015	PaperTransfer:1Side:S4	*ENG	[100 to 995 / 107 / 5%/step]
2-491-016	PaperTransfer:2Side:S4	*ENG	[100 to 995 / 278 / 5%/step]

2492	[Thick1:SizeCorrection:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-492-003	PaperTransfer:1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-492-004	PaperTransfer:2Side:S1	*ENG	
2-492-007	PaperTransfer:1Side:S2	*ENG	[100 to 995 / 100 / 5%/step]
2-492-008	PaperTransfer:2Side:S2	*ENG	[100 to 995 / 164 / 5%/step]
2-492-011	PaperTransfer:1Side:S3	*ENG	[100 to 995 / 120 / 5%/step]
2-492-012	PaperTransfer:2Side:S3	*ENG	[100 to 995 / 227 / 5%/step]
2-492-015	PaperTransfer:1Side:S4	*ENG	[100 to 995 / 130 / 5%/step]
2-492-016	PaperTransfer:2Side:S4	*ENG	[100 to 995 / 364 / 5%/step]

2493	[Thick1:Size-Env.Correct:BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-493-003	PaperTransfer:1Side:S1	*ENG	[1 to 100 / 59 / 1/step]
2-493-004	PaperTransfer:2Side:S1	*ENG	[1 to 100 / 60 / 1/step]
2-493-007	PaperTransfer:1Side:S2	*ENG	[1 to 100 / 61 / 1/step]
2-493-008	PaperTransfer:2Side:S2	*ENG	[1 to 100 / 62 / 1/step]
2-493-011	PaperTransfer:1Side:S3	*ENG	[1 to 100 / 55 / 1/step]
2-493-012	PaperTransfer:2Side:S3	*ENG	[1 to 100 / 56 / 1/step]
2-493-015	PaperTransfer:1Side:S4	*ENG	[1 to 100 / 57 / 1/step]
2-493-016	PaperTransfer:2Side:S4	*ENG	[1 to 100 / 58 / 1/step]

2494	[Thick1:Size-Env.Correct:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-494-003	PaperTransfer:1Side:S1	*ENG	[1 to 100 / 59 / 1/step]
2-494-004	PaperTransfer:2Side:S1	*ENG	[1 to 100 / 60 / 1/step]
2-494-007	PaperTransfer:1Side:S2	*ENG	[1 to 100 / 61 / 1/step]
2-494-008	PaperTransfer:2Side:S2	*ENG	[1 to 100 / 62 / 1/step]
2-494-011	PaperTransfer:1Side:S3	*ENG	[1 to 100 / 63 / 1/step]
2-494-012	PaperTransfer:2Side:S3	*ENG	[1 to 100 / 64 / 1/step]
2-494-015	PaperTransfer:1Side:S4	*ENG	[1 to 100 / 65 / 1/step]
2-494-016	PaperTransfer:2Side:S4	*ENG	[1 to 100 / 66 / 1/step]

2495	[Thick 1: Leading Edge Correct.]		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode.		
2-495-003	Paper Transfer:1side	*ENG	[0 to 995 / 100 / 5%/step]
2-495-004	Paper Transfer:2side	*ENG	
2-495-007	Separation DC:1side	*ENG	
2-495-008	Separation DC:2side	*ENG	

2496	[Thick 1: SW Timing Lead Edge]		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
2-496-003	Paper Transfer:1side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-496-004	Paper Transfer:2side	*ENG	
2-496-007	Separation DC:1side	*ENG	
2-496-008	Separation DC:2side	*ENG	

2497	[Thick1:Trail Edge Correction]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-497-003	Paper Transfer:1side	*ENG	[0 to 995 / 100 / 5%/step]
2-497-004	Paper Transfer:2side	*ENG	
2-497-007	Separation DC:1side	*ENG	
2-497-008	Separation DC:2side	*ENG	

2498	[Thick 1: SW Timing Trail Edge]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-498-003	Paper Transfer:1side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-498-004	Paper Transfer:2side	*ENG	
2-498-007	Separation DC:1side	*ENG	
2-498-008	Separation DC:2side	*ENG	

2499	[Thick 1: Envir Correct. Table]		
2-499-015	Separation DC:1side	*ENG	[1 to 100 / 30 / 1/step]
2-499-016	Separation DC:2side	*ENG	
2499	[Thick 1: Edge Envir Correct.]		
2-499-019	Separation DC:1side	*ENG	[1 to 100 / 30 / 1/step]
2-499-020	Separation DC:2side	*ENG	

2501	[Thick 2: Bias]		
	Adjusts the DC voltage of the discharge plate for thick 2 paper.		
2-501-003	Separation DC:1side	*ENG	[0 to 4000 / 0 / 10 -V/step]
2-501-004	Separation DC:2side	*ENG	

2503	[Thick2: Bias: BW]		
	Adjusts the current for the paper transfer roller for thick 2 paper in black-and-white mode. Middle: 182 mm/sec, Low: 85 mm/sec		
2-503-003	Paper Transfer:1side	*ENG	[0 to 200 / 11 / 1 uA/step]
2-503-004	Paper Transfer:2side	*ENG	[0 to 200 / 8 / 1 uA/step]

2507	[Thick 2:Bias:FC]		
	Adjusts the current for the paper transfer roller for thick 2 paper in full color mode. Middle: 182 mm/sec, Low: 85 mm/sec		
2-507-003	Paper Transfer:1side	*ENG	[0 to 200 / 12 / 1 uA/step]
2-507-004	Paper Transfer:2side	*ENG	[0 to 200 / 9 / 1 uA/step]

2511	[Thick2:SizeCorrection:BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-511-003	Paper Transfer:1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-511-004	Paper Transfer:2Side:S1	*ENG	
2-511-007	Paper Transfer:1Side:S2	*ENG	[100 to 995 / 100 / 5%/step]
2-511-008	Paper Transfer:2Side:S2	*ENG	[100 to 995 / 163 / 5%/step]
2-511-011	Paper Transfer:1Side:S3	*ENG	[100 to 995 / 136 / 5%/step]
2-511-012	Paper Transfer:2Side:S3	*ENG	[100 to 995 / 250 / 5%/step]
2-511-015	Paper Transfer:1Side:S4	*ENG	[100 to 995 / 164 / 5%/step]
2-511-016	Paper Transfer:2Side:S4	*ENG	[100 to 995 / 313 / 5%/step]

2512	[Thick2:SizeCorrection:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-512-003	Paper Transfer:1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-512-004	Paper Transfer:2Side:S1	*ENG	
2-512-007	Paper Transfer:1Side:S2	*ENG	[100 to 995 / 100 / 5%/step]
2-512-008	Paper Transfer:2Side:S2	*ENG	[100 to 995 / 200 / 5%/step]
2-512-011	Paper Transfer:1Side:S3	*ENG	[100 to 995 / 138 / 5%/step]
2-512-012	Paper Transfer:2Side:S3	*ENG	[100 to 995 / 278 / 5%/step]

2-512-015	Paper Transfer:1Side:S4	*ENG	[100 to 995 / 154 / 5%/step]
2-512-016	Paper Transfer:2Side:S4	*ENG	[100 to 995 / 389 / 5%/step]

2513	[Thick2:Size-Env.Correct:BW]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-513-003	Paper Transfer:1Side:S1	*ENG	[1 to 100 / 67 / 1/step]
2-513-004	Paper Transfer:2Side:S1	*ENG	[1 to 100 / 68 / 1/step]
2-513-007	Paper Transfer:1Side:S2	*ENG	[1 to 100 / 69 / 1/step]
2-513-008	Paper Transfer:2Side:S2	*ENG	[1 to 100 / 70 / 1/step]
2-513-011	Paper Transfer:1Side:S3	*ENG	[1 to 100 / 71 / 1/step]
2-513-012	Paper Transfer:2Side:S3	*ENG	[1 to 100 / 72 / 1/step]
2-513-015	Paper Transfer:1Side:S4	*ENG	[1 to 100 / 73 / 1/step]
2-513-016	Paper Transfer:2Side:S4	*ENG	[1 to 100 / 74 / 1/step]

2514	[Thick2:Size-Env.Correct:FC]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-514-003	Paper Transfer:1Side:S1	*ENG	[1 to 100 / 67 / 1/step]
2-514-004	Paper Transfer:2Side:S1	*ENG	[1 to 100 / 68 / 1/step]
2-514-007	Paper Transfer:1Side:S2	*ENG	[1 to 100 / 69 / 1/step]
2-514-008	Paper Transfer:2Side:S2	*ENG	[1 to 100 / 70 / 1/step]
2-514-011	Paper Transfer:1Side:S3	*ENG	[1 to 100 / 71 / 1/step]
2-514-012	Paper Transfer:2Side:S3	*ENG	[1 to 100 / 72 / 1/step]
2-514-015	Paper Transfer:1Side:S4	*ENG	[1 to 100 / 73 / 1/step]
2-514-016	Paper Transfer:2Side:S4	*ENG	[1 to 100 / 74 / 1/step]

2515	[Thick2:LeadingEdgeCorrection]		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode.		
2-515-003	Paper Transfer:1side	*ENG	[0 to 995 / 100 / 5%/step]
2-515-004	Paper Transfer:2side	*ENG	
2-515-007	Separation DC:1side	*ENG	
2-515-008	Separation DC:2side	*ENG	

2516	[Thick 2: SW Timing Lead Edge]		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
2-516-003	Paper Transfer:1side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-516-004	Paper Transfer:2side	*ENG	
2-516-007	Separation DC:1side	*ENG	
2-516-008	Separation DC:2side	*ENG	

2517	[Thick2:Trail EdgeCorrection]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-517-003	Paper Transfer:1side	*ENG	[0 to 995 / 100 / 5%/step]
2-517-004	Paper Transfer:2side	*ENG	
2-517-007	Separation DC:1side	*ENG	
2-517-008	Separation DC:2side	*ENG	

2518	[Thick2:SwitchTimingTrailEdge]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-518-003	Paper Transfer:1side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-518-004	Paper Transfer:2side	*ENG	
2-518-007	Separation DC:1side	*ENG	
2-518-008	Separation DC:2side	*ENG	

2519	[Thick 2: Envir Correct. Table]		
2-519-015	Separation DC:1side	*ENG	[1 to 100 / 30 / 1/step]
2-519-016	Separation DC:2side	*ENG	
2519	[Thick 2: Edge Envir Correct.]		
2-519-019	Separation DC:1side	*ENG	[1 to 100 / 30 / 1/step]
2-519-020	Separation DC:2side	*ENG	

2521	[Thick 3:Bias]		
	Adjusts the DC voltage of the discharge plate for thick 3 paper.		
2-521-003	Separation DC:1side	*ENG	[0 to 4000 / 0 / 10 -V/step]
2-521-004	Separation DC:2side	*ENG	

2523	[Thick 3:Bias:BW]		
	Adjusts the current for the paper transfer roller for thick paper 3 in black-and-white mode.		
2-523-003	Paper Transfer:1side	*ENG	[0 to 200 / 9 / 1 uA/step]
2-523-004	Paper Transfer:2side	*ENG	[0 to 200 / 7 / 1 uA/step]

2527	[Thick 3:Bias:FC]		
	Adjusts the current for the paper transfer roller for thick paper 3 in full color mode.		
2-527-003	Paper Transfer:1side	*ENG	[0 to 200 / 11 / 1 uA/step]
2-527-004	Paper Transfer:2side	*ENG	[0 to 200 / 9 / 1 uA/step]

2531	[Thick 3:Size Correction:BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2523 and SP2527 are multiplied by these SP values.		
2-531-003	PaperTransfer:1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-531-004	PaperTransfer:2Side:S1	*ENG	
2-531-007	PaperTransfer:1Side:S2	*ENG	[100 to 995 / 122 / 5%/step]
2-531-008	PaperTransfer:2Side:S2	*ENG	[100 to 995 / 186 / 5%/step]
2-531-011	PaperTransfer:1Side:S3	*ENG	[100 to 995 / 156 / 5%/step]
2-531-012	PaperTransfer:2Side:S3	*ENG	[100 to 995 / 271 / 5%/step]
2-531-015	PaperTransfer:1Side:S4	*ENG	[100 to 995 / 170 / 5%/step]
2-531-016	PaperTransfer:2Side:S4	*ENG	[100 to 995 / 357 / 5%/step]

2532	[Thick 3:Size Correction:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2523 and SP2527 are multiplied by these SP values.		
2-532-003	Paper Transfer:1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-532-004	Paper Transfer:2Side:S1	*ENG	
2-532-007	Paper Transfer:1Side:S2	*ENG	[100 to 995 / 118 / 5%/step]
2-532-008	Paper Transfer:2Side:S2	*ENG	[100 to 995 / 200 / 5%/step]

2-532-011	Paper Transfer:1Side:S3	*ENG	[100 to 995 / 140 / 5%/step]
2-532-012	Paper Transfer:2Side:S3	*ENG	[100 to 995 / 278 / 5%/step]
2-532-015	Paper Transfer:1Side:S4	*ENG	[100 to 995 / 150 / 5%/step]
2-532-016	Paper Transfer:2Side:S4	*ENG	[100 to 995 / 389 / 5%/step]

2533	[Thick 3:Size-Env.Correct:BW]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-533-003	PaperTransfer:1Side:S1	*ENG	[1 to 100 / 75 / 1/step]
2-533-004	PaperTransfer:2Side:S1	*ENG	[1 to 100 / 76 / 1/step]
2-533-007	PaperTransfer:1Side:S2	*ENG	[1 to 100 / 77 / 1/step]
2-533-008	PaperTransfer:2Side:S2	*ENG	[1 to 100 / 78 / 1/step]
2-533-011	PaperTransfer:1Side:S3	*ENG	[1 to 100 / 79 / 1/step]
2-533-012	PaperTransfer:2Side:S3	*ENG	[1 to 100 / 80 / 1/step]
2-533-015	PaperTransfer:1Side:S4	*ENG	[1 to 100 / 81 / 1/step]
2-533-016	PaperTransfer:2Side:S4	*ENG	[1 to 100 / 82 / 1/step]

2534	[Thick 3:Size-Env.Correct:FC]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-534-003	Paper Transfer:1Side:S1	*ENG	[1 to 100 / 75 / 1/step]
2-534-004	Paper Transfer:2Side:S1	*ENG	[1 to 100 / 76 / 1/step]
2-534-007	Paper Transfer:1Side:S2	*ENG	[1 to 100 / 77 / 1/step]
2-534-008	Paper Transfer:2Side:S2	*ENG	[1 to 100 / 78 / 1/step]
2-534-011	Paper Transfer:1Side:S3	*ENG	[1 to 100 / 79 / 1/step]
2-534-012	Paper Transfer:2Side:S3	*ENG	[1 to 100 / 80 / 1/step]
2-534-015	Paper Transfer:1Side:S4	*ENG	[1 to 100 / 81 / 1/step]

2-534-016	Paper Transfer:2Side:S4	*ENG	[1 to 100 / 82 / 1/step]

2535	[Thick 3: Leading Edge Correct.]		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode.		
2-535-003	Paper Transfer:1side	*ENG	[0 to 995 / 100 / 5%/step]
2-535-004	Paper Transfer:2side	*ENG	
2-535-007	Separation DC:1side	*ENG	
2-535-008	Separation DC:2side	*ENG	

2536	[Thick 3: SW Timing Lead Edge]		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
2-536-003	Paper Transfer:1side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-536-004	Paper Transfer:2side	*ENG	
2-536-007	Separation DC:1side	*ENG	
2-536-008	Separation DC:2side	*ENG	

2537	[Thick 3:Trail Edge Correction]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-537-003	Paper Transfer:1side	*ENG	[0 to 995 / 100 / 5%/step]
2-537-004	Paper Transfer:2side	*ENG	
2-537-007	Separation DC:1side	*ENG	
2-537-008	Separation DC:2side	*ENG	

2538	[Thick 3: SW Timing Trail Edge]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-538-003	Paper Transfer:1side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-538-004	Paper Transfer:2side	*ENG	
2-538-007	Separation DC:1side	*ENG	
2-538-008	Separation DC:2side	*ENG	

2539	[Thick 3: Envir Correct. Table]		
	Adjusts the environment coefficient for each mode. When the environment is detected as MM, SP2651 and SP2652 are multiplied by these SP values.		
2-539-015	Separation DC:1side	*ENG	[1 to 100 / 30 / 1/step]
2-539-016	Separation DC:2side	*ENG	
2539	[Thick 3: Edge Envir Correct.]		
2-539-019	Separation DC:1side	*ENG	[1 to 100 / 30 / 1/step]
2-539-020	Separation DC:2side	*ENG	

2541	[OHP:Bias]		
	Adjusts the DC voltage of the discharge plate for OHP.		
2-541-003	Separation DC	*ENG	[0 to 4000 / 0 / 10 -V/step]

2543	[OHP:Bias:BW]		
	Adjusts the current for the paper transfer roller for OHP in black-and-white mode.		
2-543-003	Paper Transfer	*ENG	[0 to 200 / 9 / 1 uA/step]

2547	[OHP:Bias:FC]		
	Adjusts the current for the paper transfer roller for OHP in full color mode.		
2-547-003	Paper Transfer	*ENG	[0 to 200 / 10 / 1 uA/step]

2551	[OHP:SizeCorrection:BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2543 and SP2547 are multiplied by these SP values.		
2-551-003	PaperTransfer:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-551-007	PaperTransfer:S2	*ENG	[100 to 995 / 122 / 5%/step]
2-551-011	PaperTransfer:S3	*ENG	[100 to 995 / 156 / 5%/step]
2-551-015	PaperTransfer:S4	*ENG	[100 to 995 / 189 / 5%/step]

2552	[OHP:SizeCorrection:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-552-003	PaperTransfer:S1	*ENG	[100 or 995 / 100 / 5%/step]
2-552-007	PaperTransfer:S2	*ENG	[100 or 995 / 118 / 5%/step]
2-552-011	PaperTransfer:S3	*ENG	[100 or 995 / 164 / 5%/step]
2-552-015	PaperTransfer:S4	*ENG	[100 or 995 / 182 / 5%/step]

2553	[OHP:Size-Env.Correct:BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2543and SP2547 are multiplied by these SP values.		
2-553-003	PaperTransfer:S1	*ENG	[1 to 100 / 83 / 1/step]
2-553-007	PaperTransfer:S2	*ENG	[1 to 100 / 84 / 1/step]
2-553-011	PaperTransfer:S3	*ENG	[1 to 100 / 85 / 1/step]

2-553-015	PaperTransfer:S4	*ENG	[1 to 100 / 86 / 1/step]

2554	[OHP:Size-Env.Correct:FC]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-554-003	PaperTransfer:S1	*ENG	[1 to 100 / 83 / 1/step]
2-554-007	PaperTransfer:S2	*ENG	[1 to 100 / 84 / 1/step]
2-554-011	PaperTransfer:S3	*ENG	[1 to 100 / 85 / 1/step]
2-554-015	PaperTransfer:S4	*ENG	[1 to 100 / 86 / 1/step]

2555	[OHP:Leading Edge Correction]		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode.		
2-555-003	Paper Transfer	*ENG	[0 to 995 / 100 / 5%/step]
2-555-007	Separation DC	*ENG	

2556	[OHP:Switch Timing Lead Edge]		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
2-556-003	Paper Transfer	*ENG	[0 to 50 / 0 / 2 mm/step]
2-556-007	Separation DC	*ENG	

2557	[OHP:Trail Edge Correction]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-557-003	Paper Transfer	*ENG	[0 to 995 / 100 / 5%/step]
2-557-007	Separation DC	*ENG	

2558	[OHP:SwitchTimingTrailEdge]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-558-003	Paper Transfer	*ENG	[0 to 50 / 0 / 2 mm/step]
2-558-007	Separation DC	*ENG	

2559	[OHP: Environment Correct Table]		
2-559-015	Separation DC	*ENG	[1 to 100 / 30 / 1/step]
2559	[OHP: Edge Environment Correc.]		
2-559-019	Separation DC	*ENG	[1 to 100 / 30 / 1/step]

2561	[Special 1: Bias]		
	Adjusts the DC voltage of the discharge plate for special paper 1. Standard: 260 mm/sec, Low: 85 mm/sec		
2-561-001	Separation DC: Std Spd: 1Side	*ENG	[0 to 4000 / 2000 / 10 -V/step]
2-561-002	Separation DC: Std Spd: 2Side	*ENG	
2-561-003	Separation DC: Low Spd: 1Side	*ENG	
2-561-004	Separation DC: Low Spd: 2Side	*ENG	

2563	[Special1: Bias: BW]		
	Adjusts the current for the paper transfer roller for special paper 1 in black-and-white mode.		
2-563-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 200 / * / 1 uA/step] *C306: 21 *C406: 24

2-563-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	[0 to 200 / * / 1 uA/step] *C306:16 *C406:18
2-563-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 200 / 10 / 1 uA/step]
2-563-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 200 / 8 / 1 uA/step]
2-563-201	Paper Transfer: Std Spd 2: 1Side	*ENG	[0 to 200 / 30 / 1 uA/step]
2-563-202	Paper Transfer: Std Spd 2: 2Side	*ENG	[0 to 200 / 22 / 1 uA/step]

2567	[Special 1: Bias: FC]		
	Adjusts the current for the paper transfer roller for special paper 1 in full color mode.		
2-567-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 200 / * / 1 -uA/step] *C306:22 *C406:25
2-567-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	[0 to 200 / * / 1 -uA/step] *C306:18 *C406:20
2-567-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 200 / 11 / 1 -uA/step]
2-567-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 200 / 10 / 1 -uA/step]

2571	[Special1: SizeCorrection: BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-571-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]

2-571-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	
2-571-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	
2-571-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	
2-571-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[100 to 995 / 120 / 5%/step]
2-571-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[100 to 995 / 175 / 5%/step]
2-571-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[100 to 995 / 130 / 5%/step]
2-571-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[100 to 995 / 213 / 5%/step]
2-571-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[100 to 995 / 140 / 5%/step]
2-571-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[100 to 995 / 275 / 5%/step]

2572	[Special1:SizeCorrection:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-572-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-572-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	
2-572-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	
2-572-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	

2-572-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[100 to 995 / 118 / 5%/step]
2-572-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[100 to 995 / 150 / 5%/step]
2-572-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[100 to 995 / 130 / 5%/step]
2-572-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[100 to 995 / 180 / 5%/step]
2-572-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[100 to 995 / 140 / 5%/step]
2-572-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[100 to 995 / 250 / 5%/step]

2573	[Special1:Size-Env.Correct:BW]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-573-001	PaperTransfer:Standard:1Sid:S1	*ENG	[1 to 100 / 21 / 1%/step]
2-573-002	PaperTransfer:Standard:2Sid:S1	*ENG	[1 to 100 / 22 / 1%/step]
2-573-003	PaperTransfer:Low:1Side:S1	*ENG	[1 to 100 / 25 / 1%/step]
2-573-004	PaperTransfer:Low:2Side:S1	*ENG	[1 to 100 / 26 / 1%/step]
2-573-007	PaperTransfer:Low:1Side:S2	*ENG	[1 to 100 / 27 / 1%/step]
2-573-008	PaperTransfer:Low:2Side:S2	*ENG	[1 to 100 / 28 / 1%/step]
2-573-011	PaperTransfer:Low:1Side:S3	*ENG	[1 to 100 / 29 / 1%/step]
2-573-012	PaperTransfer:Low:2Side:S3	*ENG	[1 to 100 / 30 / 1%/step]
2-573-015	PaperTransfer:Low:1Side:S4	*ENG	[1 to 100 / 31 / 1%/step]
2-573-016	PaperTransfer:Low:2Side:S4	*ENG	[1 to 100 / 32 / 1%/step]

2574	[Special 1:Size-Env.Correct:FC]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-574-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[1 to 100 / 23 / 1/step]
2-574-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	[1 to 100 / 24 / 1/step]
2-574-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[1 to 100 / 25 / 1/step]
2-574-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[1 to 100 / 26 / 1/step]
2-574-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[1 to 100 / 27 / 1/step]
2-574-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[1 to 100 / 28 / 1/step]
2-574-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[1 to 100 / 29 / 1/step]
2-574-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[1 to 100 / 30 / 1/step]
2-574-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[1 to 100 / 31 / 1/step]
2-574-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[1 to 100 / 32 / 1/step]

2575	[Special 1:LeadingEdgeCorrect.]		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode.		
2-575-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-575-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	
2-575-003	Paper Transfer: Low Spd: 1Side	*ENG	
2-575-004	Paper Transfer: Low Spd: 2Side	*ENG	
2-575-005	Separation DC: Std Spd: 1Side	*ENG	
2-575-006	Separation DC: Std Spd: 2Side	*ENG	
2-575-007	Separation DC: Low Spd: 1Side	*ENG	
2-575-008	Separation DC: Low Spd: 2Side	*ENG	

2576	[Special 1: SW Timing Lead Edge]		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
2-576-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-576-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	
2-576-003	Paper Transfer: Low Spd: 1Side	*ENG	
2-576-004	Paper Transfer: Low Spd: 2Side	*ENG	
2-576-005	Separation DC: Std Spd: 1Side	*ENG	
2-576-006	Separation DC: Std Spd: 2Side	*ENG	
2-576-007	Separation DC: Low Spd: 1Side	*ENG	
2-576-008	Separation DC: Low Spd: 2Side	*ENG	

2577	[Special 1:TrailEdgeCorrection]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-577-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-577-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	
2-577-003	Paper Transfer: Low Spd: 1Side	*ENG	
2-577-004	Paper Transfer: Low Spd: 2Side	*ENG	
2-577-005	Separation DC: Std Spd: 1Side	*ENG	
2-577-006	Separation DC: Std Spd: 2Side	*ENG	
2-577-007	Separation DC: Low Spd: 1Side	*ENG	
2-577-008	Separation DC: Low Spd: 2Side	*ENG	

2578	[Special 1:SwitchTimingTrailEdge]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-578-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-578-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	
2-578-003	Paper Transfer: Low Spd: 1Side	*ENG	

2-578-004	Paper Transfer: Low Spd: 2Side	*ENG	
2-578-005	Separation DC: Std Spd: 1Side	*ENG	
2-578-006	Separation DC: Std Spd: 2side	*ENG	
2-578-007	Separation DC: Low Spd: 1Side	*ENG	
2-578-008	Separation DC: Low Spd: 2Side	*ENG	

2579	[Special 1:EnvCorrectionTable]		
2-579-013	Separation DC: Std Spd: 1Side	*ENG	[1 to 100 / 30 / 1/step]
2-579-014	Separation DC: Std Spd: 2side	*ENG	
2-579-015	Separation DC: Low Spd: 1Side	*ENG	
2-579-016	Separation DC: Low Spd: 2Side	*ENG	
2579	[Special 1:EdgeEnvir Correc.]		
2-579-017	Separation DC: Std Spd: 1Side	*ENG	[1 to 100 / 50 / 1/step]
2-579-018	Separation DC: Std Spd: 2side	*ENG	
2-579-019	Separation DC: Low Spd: 1Side	*ENG	
2-579-020	Separation DC: Low Spd: 2Side	*ENG	

2581	[Special 2: Bias]		
	Adjusts the DC voltage of the discharge plate for special paper 2.		
2-581-001	Separation DC: Std Spd: 1Side	*ENG	[0 to 4000 / 2000 / 10 -V/step]
2-581-002	Separation DC: Std Spd: 2Side	*ENG	
2-581-003	Separation DC: Low Spd: 1Side	*ENG	
2-581-004	Separation DC: Low Spd: 2Side	*ENG	

2583	[Special 2: Bias: BW]		
	Adjusts the current for the paper transfer roller for special paper 2 in black-and-white mode.		
2-583-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 200 / * / 1 uA/step] *C306: 19 *C406: 22
2-583-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	[0 to 200 / * / 1 uA/step] *C306: 16 *C406: 18
2-583-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 200 / 11 / 1 uA/step]
2-583-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 200 / 11 / 1 uA/step]
2-583-201	Paper Transfer: Std Spd 2: 1Side	*ENG	[0 to 200 / 26 / 1 uA/step]
2-583-202	Paper Transfer: Std Spd 2: 2Side	*ENG	[0 to 200 / 22 / 1 uA/step]

2587	[Special 2: Bias: FC]		
	Adjusts the current for the paper transfer roller for special paper 2 in full color mode.		
2-587-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 200 / 22 / 1 uA/step] *C306: 22 *C406: 25
2-587-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	[0 to 200 / 18 / 1 uA/step] *C306: 18 *C406: 20
2-587-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 200 / 13 / 1 uA/step]
2-587-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 200 / 13 / 1 uA/step]

2591	[Special2: SizeCorrection: BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-591-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-591-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	
2-591-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	
2-591-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	
2-591-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[100 to 995 / 120 / 5%/step]
2-591-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[100 to 995 / 175 / 5%/step]

2-591-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[100 to 995 / 140 / 5%/step]
2-591-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[100 to 995 / 213 / 5%/step]
2-591-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[100 to 995 / 150 / 5%/step]
2-591-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[100 to 995 / 275 / 5%/step]

2592	[Special 2:SizeCorrection:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-592-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-592-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	
2-592-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	
2-592-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	
2-592-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[100 to 995 / 118 / 5%/step]
2-592-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[100 to 995 / 150 / 5%/step]
2-592-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[100 to 995 / 136 / 5%/step]
2-592-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[100 to 995 / 154 / 5%/step]
2-592-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[100 to 995 / 140 / 5%/step]

2-592-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[100 to 995 / 250 / 5%/step]

2593	[Special 2:Size-Env.Correct:BW]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-593-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[1 to 100 / 33 / 1/step]
2-593-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	[1 to 100 / 34 / 1/step]
2-593-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[1 to 100 / 37 / 1/step]
2-593-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[1 to 100 / 38 / 1/step]
2-593-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[1 to 100 / 39 / 1/step]
2-593-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[1 to 100 / 40 / 1/step]
2-593-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[1 to 100 / 41 / 1/step]
2-593-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[1 to 100 / 42 / 1/step]
2-593-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[1 to 100 / 43 / 1/step]
2-593-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[1 to 100 / 44 / 1/step]

2594	[Special 2:Size-Env.Correct:FC]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-594-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[1 to 100 / 35 / 1/step]
2-594-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	[1 to 100 / 36 / 1/step]
2-594-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[1 to 100 / 37 / 1/step]
2-594-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[1 to 100 / 38 / 1/step]
2-594-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[1 to 100 / 39 / 1/step]
2-594-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[1 to 100 / 40 / 1/step]
2-594-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[1 to 100 / 41 / 1/step]
2-594-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[1 to 100 / 42 / 1/step]
2-594-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[1 to 100 / 43 / 1/step]
2-594-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[1 to 100 / 44 / 1/step]

2595	[Special 2:LeadingEdgeCorrect.]		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode.		
2-595-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]

2-595-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	
2-595-003	Paper Transfer: Low Spd: 1Side	*ENG	
2-595-004	Paper Transfer: Low Spd: 2Side	*ENG	
2-595-005	Separation DC: Std Spd: 1Side	*ENG	
2-595-006	Separation DC: Std Spd: 2Side	*ENG	
2-595-007	Separation DC: Low Spd: 1Side	*ENG	
2-595-008	Separation DC: Low Spd: 2Side	*ENG	

2596	[Special 2: SW Timing Lead Edge]		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
2-596-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-596-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	
2-596-003	Paper Transfer: Low Spd: 1Side	*ENG	
2-596-004	Paper Transfer: Low Spd: 2Side	*ENG	
2-596-005	Separation DC: Std Spd: 1Side	*ENG	
2-596-006	Separation DC: Std Spd: 2Side	*ENG	

2-596-007	Separation DC: Low Spd: 1Side	*ENG	
2-596-008	Separation DC: Low Spd: 2Side	*ENG	

2597	[Special2:TrailEdgeCorrection]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-597-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-597-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	
2-597-003	Paper Transfer: Low Spd: 1Side	*ENG	
2-597-004	Paper Transfer: Low Spd: 2Side	*ENG	
2-597-005	Separation DC: Std Spd: 1Side	*ENG	
2-597-006	Separation DC: Std Spd: 2Side	*ENG	
2-597-007	Separation DC: Low Spd: 1Side	*ENG	
2-597-008	Separation DC: Low Spd: 2Side	*ENG	

2598	[Special 2: SWTiming Trail Edge]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-598-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]

2-598-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	
2-598-003	Paper Transfer: Low Spd: 1Side	*ENG	
2-598-004	Paper Transfer: Low Spd: 2Side	*ENG	
2-598-005	Separation DC: Std Spd: 1Side	*ENG	
2-598-006	Separation DC: Std Spd: 2side	*ENG	
2-598-007	Separation DC: Low Spd: 1Side	*ENG	
2-598-008	Separation DC: Low Spd: 2Side	*ENG	

2599	[Special 2:EnvCorrectionTable]		
2-599-013	Separation DC: Std Spd: 1Side	*ENG	[1 to 100 / 30 / 1/step]
2-599-014	Separation DC: Std Spd: 2side	*ENG	
2-599-015	Separation DC: Low Spd: 1Side	*ENG	
2-599-016	Separation DC: Low Spd: 2Side	*ENG	
2599	[Special 2:EdgeEnvCorrection]		
2-599-017	Separation DC: Std Spd: 1Side	*ENG	[1 to 100 / 30 / 1/step]
2-599-018	Separation DC: Std Spd: 2side	*ENG	
2-599-019	Separation DC: Low Spd: 1Side	*ENG	

2-599-020	Separation DC: Low Spd: 2Side	*ENG	

2601	[Special 3: Bias]		
	Adjusts the DC voltage of the discharge plate for special paper 3.		
2-601-001	Separation DC: Std Spd: 1Side	*ENG	[0 to 4000 / 2000 / 10 -V/step]
2-601-002	Separation DC: Std Spd: 2Side	*ENG	
2-601-003	Separation DC: Low Spd: 1Side	*ENG	
2-601-004	Separation DC: Low Spd: 2Side	*ENG	

2603	[Special 3: Bias: BW]		
	Adjusts the current for the paper transfer roller for special paper 3 in black-and-white mode.		
2-603-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 200 / 20 / 1 uA/step]
2-603-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	[0 to 200 / 16 / 1 uA/step]
2-603-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 200 / 10 / 1 uA/step]
2-603-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 200 / 8 / 1 uA/step]
2-603-201	Paper Transfer: Std Spd 2: 1Side	*ENG	[0 to 200 / 26 / 1 uA/step]
2-603-202	Paper Transfer: Std Spd 2: 2Side	*ENG	[0 to 200 / 22 / 1 uA/step]

2607	[Special 3:Bias:FC]		
	Adjusts the current for the paper transfer roller for special paper 3 in full color mode.		
2-607-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 200 / 22 / 1 uA/step]
2-607-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	[0 to 200 / 18 / 1 uA/step]
2-607-003	Paper Transfer: Low Spd: 1Side	*ENG	[0 to 200 / 11 / 1 uA/step]
2-607-004	Paper Transfer: Low Spd: 2Side	*ENG	[0 to 200 / 10 / 1 uA/step]

2611	[Special 3:SizeCorrection:BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-611-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-611-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	
2-611-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	
2-611-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	
2-611-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[100 to 995 / 130 / 5%/step]
2-611-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[100 to 995 / 163 / 5%/step]
2-611-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[100 to 995 / 150 / 5%/step]

2-611-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[100 to 995 / 250 / 5%/step]
2-611-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[100 to 995 / 150 / 5%/step]
2-611-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[100 to 995 / 375 / 5%/step]

2612	[Special 3:SizeCorrection:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-612-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-612-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	
2-612-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	
2-612-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	
2-612-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[100 to 995 / 136 / 5%/step]
2-612-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[100 to 995 / 180 / 5%/step]
2-612-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[100 to 995 / 150 / 5%/step]
2-612-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[100 to 995 / 250 / 5%/step]
2-612-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[100 to 995 / 150 / 5%/step]
2-612-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[100 to 995 / 350 / 5%/step]

2613	[Special 3:Size-Env.Correct:BW]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-613-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[1 to 100 / 21 / 1/step]
2-613-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	[1 to 100 / 22 / 1/step]
2-613-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[1 to 100 / 47 / 1/step]
2-613-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[1 to 100 / 48 / 1/step]
2-613-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[1 to 100 / 49 / 1/step]
2-613-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[1 to 100 / 50 / 1/step]
2-613-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[1 to 100 / 51 / 1/step]
2-613-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[1 to 100 / 52 / 1/step]
2-613-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[1 to 100 / 53 / 1/step]
2-613-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[1 to 100 / 54 / 1/step]

2614	[Special 3:Size-Env.Correct:FC]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-614-001	Paper Transfer: Std/Mid Spd: 1Side:S1	*ENG	[1 to 100 / 45 / 1/step]
2-614-002	Paper Transfer: Std/Mid Spd: 2Side:S1	*ENG	[1 to 100 / 46 / 1/step]

2-614-003	Paper Transfer: Low Spd: 1Side:S1	*ENG	[1 to 100 / 47 / 1/step]
2-614-004	Paper Transfer: Low Spd: 2Side:S1	*ENG	[1 to 100 / 48 / 1/step]
2-614-007	Paper Transfer: Low Spd: 1Side:S2	*ENG	[1 to 100 / 49 / 1/step]
2-614-008	Paper Transfer: Low Spd: 2Side:S2	*ENG	[1 to 100 / 50 / 1/step]
2-614-011	Paper Transfer: Low Spd: 1Side:S3	*ENG	[1 to 100 / 51 / 1/step]
2-614-012	Paper Transfer: Low Spd: 2Side:S3	*ENG	[1 to 100 / 52 / 1/step]
2-614-015	Paper Transfer: Low Spd: 1Side:S4	*ENG	[1 to 100 / 53 / 1/step]
2-614-016	Paper Transfer: Low Spd: 2Side:S4	*ENG	[1 to 100 / 54 / 1/step]

2615	[Special 3: LeadingEdgeCorrect.]		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode.		
2-615-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-615-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	
2-615-003	Paper Transfer: Low Spd: 1Side	*ENG	
2-615-004	Paper Transfer: Low Spd: 2Side	*ENG	
2-615-005	Separation DC: Std Spd: 1Side	*ENG	

2-615-006	Separation DC: Std Spd: 2Side	*ENG	
2-615-007	Separation DC: Low Spd: 1Side	*ENG	
2-615-008	Separation DC: Low Spd: 2Side	*ENG	

2616	[Special 3: SW Timing Lead Edge]		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
2-616-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-616-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	
2-616-003	Paper Transfer: Low Spd: 1Side	*ENG	
2-616-004	Paper Transfer: Low Spd: 2Side	*ENG	
2-616-005	Separation DC: Std Spd: 1Side	*ENG	
2-616-006	Separation DC: Std Spd: 2Side	*ENG	
2-616-007	Separation DC: Low Spd: 1Side	*ENG	
2-616-008	Separation DC: Low Spd: 2Side	*ENG	

2617	[Special 3:TrailEdgeCorrection]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-617-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 995 / 100 / 5%/step]
2-617-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	
2-617-003	Paper Transfer: Low Spd: 1Side	*ENG	
2-617-004	Paper Transfer: Low Spd: 2Side	*ENG	
2-617-005	Separation DC: Std Spd: 1Side	*ENG	
2-617-006	Separation DC: Std Spd: 2Side	*ENG	
2-617-007	Separation DC: Low Spd: 1Side	*ENG	
2-617-008	Separation DC: Low Spd: 2Side	*ENG	

2618	[Special 3: SWTiming Trail Edge]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-618-001	Paper Transfer: Std/Mid Spd: 1Side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-618-002	Paper Transfer: Std/Mid Spd: 2Side	*ENG	
2-618-003	Paper Transfer: Low Spd: 1Side	*ENG	

2-618-004	Paper Transfer: Low Spd: 2Side	*ENG	
2-618-005	Separation DC: Std Spd: 1Side	*ENG	
2-618-006	Separation DC: Std Spd: 2side	*ENG	
2-618-007	Separation DC: Low Spd: 1Side	*ENG	
2-618-008	Separation DC: Low Spd: 2Side	*ENG	

2619	[Special 3:EnvCorrectionTable]		
2-619-013	Separation DC: Std Spd: 1Side	*ENG	[1 to 100 / 30 / 1/step]
2-619-014	Separation DC: Std Spd: 2side	*ENG	
2-619-015	Separation DC: Low Spd: 1Side	*ENG	
2-619-016	Separation DC: Low Spd: 2Side	*ENG	
2619	[Special 3: Edge Envir Correc.]		
2-619-017	Separation DC: Std Spd: 1Side	*ENG	[1 to 100 / 30 / 1/step]
2-619-018	Separation DC: Std Spd: 2side	*ENG	
2-619-019	Separation DC: Low Spd: 1Side	*ENG	
2-619-020	Separation DC: Low Spd: 2Side	*ENG	

2621	[Special 4: Bias]		
	Adjusts the DC voltage of the discharge plate for thick 2 paper.		
2-621-003	Separation DC:1side	*ENG	[0 to 4000 / 2000 / 10 -V/step]
2-621-004	Separation DC:2side	*ENG	

2623	[Special 4: Bias: BW]		
	Adjusts the current for the paper transfer roller for thick 2 paper in black-and-white mode.		
2-623-003	Paper Transfer:1side	*ENG	[0 to 200 / 14 / 1 uA/step]
2-623-004	Paper Transfer:2side	*ENG	[0 to 200 / 9 / 1 uA/step]

2627	[Special 4: Bias: FC]		
	Adjusts the current for the paper transfer roller for thick 2 paper in full color mode.		
2-627-003	PaperTransfer:1side	*ENG	[0 to 200 / 15 / 1 uA/step]
2-627-004	PaperTransfer:2side	*ENG	[0 to 200 / 11 / 1 uA/step]

2631	[Special 4: SizeCorrection:BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-631-003	Paper Transfer:1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-631-004	Paper Transfer:2Side:S1	*ENG	
2-631-007	Paper Transfer:1Side:S2	*ENG	[100 to 995 / 100 / 5%/step]
2-631-008	Paper Transfer:2Side:S2	*ENG	[100 to 995 / 156 / 5%/step]
2-631-011	Paper Transfer:1Side:S3	*ENG	[100 to 995 / 107 / 5%/step]
2-631-012	Paper Transfer:2Side:S3	*ENG	[100 to 995 / 167 / 5%/step]
2-631-015	Paper Transfer:1Side:S4	*ENG	[100 to 995 / 100 / 5%/step]

2-631-016	Paper Transfer:2Side:S4	*ENG	[100 to 995 / 278 / 5%/step]

2632	[Special 4: SizeCorrection:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-632-003	Paper Transfer:1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-632-004	Paper Transfer:2Side:S1	*ENG	
2-632-007	Paper Transfer:1Side:S2	*ENG	[100 to 995 / 100 / 5%/step]
2-632-008	Paper Transfer:2Side:S2	*ENG	[100 to 995 / 164 / 5%/step]
2-632-011	Paper Transfer:1Side:S3	*ENG	[100 to 995 / 120 / 5%/step]
2-632-012	Paper Transfer:2Side:S3	*ENG	[100 to 995 / 277 / 5%/step]
2-632-015	Paper Transfer:1Side:S4	*ENG	[100 to 995 / 130 / 5%/step]
2-632-016	Paper Transfer:2Side:S4	*ENG	[100 to 995 / 364 / 5%/step]

2633	[Special 4: Size-Env.Correct:BW]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-633-003	Paper Transfer:1Side:S1	*ENG	[1 to 100 / 59 / 1/step]
2-633-004	Paper Transfer:2Side:S1	*ENG	[1 to 100 / 60 / 1/step]
2-633-007	Paper Transfer:1Side:S2	*ENG	[1 to 100 / 61 / 1/step]
2-633-008	Paper Transfer:2Side:S2	*ENG	[1 to 100 / 62 / 1/step]
2-633-011	Paper Transfer:1Side:S3	*ENG	[1 to 100 / 55 / 1/step]
2-633-012	Paper Transfer:2Side:S3	*ENG	[1 to 100 / 56 / 1/step]
2-633-015	Paper Transfer:1Side:S4	*ENG	[1 to 100 / 57 / 1/step]
2-633-016	Paper Transfer:2Side:S4	*ENG	[1 to 100 / 58 / 1/step]

2634	[Special 4: Size-Env.Correct:FC]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-634-003	Paper Transfer:1Side:S1	*ENG	[1 to 100 / 59 / 1/step]
2-634-004	Paper Transfer:2Side:S1	*ENG	[1 to 100 / 60 / 1/step]
2-634-007	Paper Transfer:1Side:S2	*ENG	[1 to 100 / 61 / 1/step]
2-634-008	Paper Transfer:2Side:S2	*ENG	[1 to 100 / 62 / 1/step]
2-634-011	Paper Transfer:1Side:S3	*ENG	[1 to 100 / 63 / 1/step]
2-634-012	Paper Transfer:2Side:S3	*ENG	[1 to 100 / 64 / 1/step]
2-634-015	Paper Transfer:1Side:S4	*ENG	[1 to 100 / 65 / 1/step]
2-634-016	Paper Transfer:2Side:S4	*ENG	[1 to 100 / 66 / 1/step]

2635	[Special 4: LeadingEdgeCorrect.]		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode.		
2-635-003	Paper Transfer:1side	*ENG	[0 to 995 / 100 / 5%/step]
2-635-004	Paper Transfer:2side	*ENG	
2-635-007	Separation DC:1side	*ENG	
2-635-008	Separation DC:2side	*ENG	

2636	[Special 4: SW Timing Lead Edge]		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
2-636-003	Paper Transfer:1side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-636-004	Paper Transfer:2side	*ENG	
2-636-007	Separation DC:1side	*ENG	

2-636-008	Separation DC:2side	*ENG	

2637	[Special 4: TrailEdgeCorrection]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-637-003	Paper Transfer:1side	*ENG	[0 to 995 / 100 / 5%/step]
2-637-004	Paper Transfer:2side	*ENG	
2-637-007	Separation DC:1side	*ENG	
2-637-008	Separation DC:2side	*ENG	

2638	[Special 4: SWTiming Trail Edge]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-638-003	Paper Transfer:1side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-638-004	Paper Transfer:2side	*ENG	
2-638-007	Separation DC:1side	*ENG	
2-638-008	Separation DC:2side	*ENG	

2639	[Special 4: EnvCorrectionTable]		
2-639-015	Separation DC:1side	*ENG	[1 to 100 / 30 / 1/step]
2-639-016	Separation DC:2side	*ENG	
2639	[Special 4: Edge Envir Correc.]		
2-639-019	Separation DC:1side	*ENG	[1 to 100 / 30 / 1/step]
2-639-020	Separation DC:2side	*ENG	

2641	[Special 5: Bias]		
	Adjusts the DC voltage of the discharge plate for thick2 paper.		
2-641-003	Separation DC:1side	*ENG	[0 to 4000 / 2000 / 10 -V/step]
2-641-004	Separation DC:2side	*ENG	

2643	[Special 5: Bias: BW]		
	Adjusts the current for the paper transfer roller for thick 2 paper in black-and-white mode. Middle: 182 mm/sec, Low: 85 mm/sec		
2-643-003	Paper Transfer:1side	*ENG	[0 to 200 / 11 / 1 uA/step]
2-643-004	Paper Transfer:2side	*ENG	[0 to 200 / 8 / 1 uA/step]

2647	[Thick2:Bias:FC]		
	Adjusts the current for the paper transfer roller for thick 2 paper in full color mode.		
2-647-003	Paper Transfer:1side	*ENG	[0 to 200 / 12 / 1 uA/step]
2-647-004	Paper Transfer:2side	*ENG	[0 to 200 / 9 / 1 uA/step]

2651	[Special 5: SizeCorrection:BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-651-003	Paper Transfer:1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-651-004	Paper Transfer:2Side:S1	*ENG	
2-651-007	Paper Transfer:1Side:S2	*ENG	[100 to 995 / 100 / 5%/step]
2-651-008	Paper Transfer:2Side:S2	*ENG	[100 to 995 / 163 / 5%/step]
2-651-011	Paper Transfer:1Side:S3	*ENG	[100 to 995 / 136 / 5%/step]
2-651-012	Paper Transfer:2Side:S3	*ENG	[100 to 995 / 250 / 5%/step]

2-651-015	Paper Transfer:1Side:S4	*ENG	[100 to 995 / 164 / 5%/step]
2-651-016	Paper Transfer:2Side:S4	*ENG	[100 to 995 / 313 / 5%/step]

2652	[Special 5: SizeCorrection:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-652-003	Paper Transfer:1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-652-004	Paper Transfer:2Side:S1	*ENG	
2-652-007	Paper Transfer:1Side:S2	*ENG	[100 to 995 / 100 / 5%/step]
2-652-008	Paper Transfer:2Side:S2	*ENG	[100 to 995 / 200 / 5%/step]
2-652-011	Paper Transfer:1Side:S3	*ENG	[100 to 995 / 138 / 5%/step]
2-652-012	Paper Transfer:2Side:S3	*ENG	[100 to 995 / 278 / 5%/step]
2-652-015	Paper Transfer:1Side:S4	*ENG	[100 to 995 / 154 / 5%/step]
2-652-016	Paper Transfer:2Side:S4	*ENG	[100 to 995 / 389 / 5%/step]

2653	[Special 5: Size-Env.Correct:BW]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-653-003	Paper Transfer:1Side:S1	*ENG	[1 to 100 / 67 / 1/step]
2-653-004	Paper Transfer:2Side:S1	*ENG	[1 to 100 / 68 / 1/step]
2-653-007	Paper Transfer:1Side:S2	*ENG	[1 to 100 / 69 / 1/step]
2-653-008	Paper Transfer:2Side:S2	*ENG	[1 to 100 / 70 / 1/step]
2-653-011	Paper Transfer:1Side:S3	*ENG	[1 to 100 / 71 / 1/step]
2-653-012	Paper Transfer:2Side:S3	*ENG	[1 to 100 / 72 / 1/step]
2-653-015	Paper Transfer:1Side:S4	*ENG	[1 to 100 / 73 / 1/step]
2-653-016	Paper Transfer:2Side:S4	*ENG	[1 to 100 / 74 / 1/step]

2654	[Special 5: Size-Env.Correct:FC]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-654-003	Paper Transfer:1Side:S1	*ENG	[1 to 100 / 67 / 1/step]
2-654-004	Paper Transfer:2Side:S1	*ENG	[1 to 100 / 68 / 1/step]
2-654-007	Paper Transfer:1Side:S2	*ENG	[1 to 100 / 69 / 1/step]
2-654-008	Paper Transfer:2Side:S2	*ENG	[1 to 100 / 70 / 1/step]
2-654-011	Paper Transfer:1Side:S3	*ENG	[1 to 100 / 71 / 1/step]
2-654-012	Paper Transfer:2Side:S3	*ENG	[1 to 100 / 72 / 1/step]
2-654-015	Paper Transfer:1Side:S4	*ENG	[1 to 100 / 73 / 1/step]
2-654-016	Paper Transfer:2Side:S4	*ENG	[1 to 100 / 74 / 1/step]

2655	[Special 5: LeadingEdgeCorrect.]		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode.		
2-655-003	Paper Transfer:1side	*ENG	[0 to 995 / 100 / 5%/step]
2-655-004	Paper Transfer:2side	*ENG	
2-655-007	Separation DC:1side	*ENG	
2-655-008	Separation DC:2side	*ENG	

2656	[Special 5: SW Timing Lead Edge]		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
2-656-003	Paper Transfer:1side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-656-004	Paper Transfer:2side	*ENG	
2-656-007	Separation DC:1side	*ENG	
2-656-008	Separation DC:2side	*ENG	

2657	[Special 5: TrailEdgeCorrection]		
2-657-003	Paper Transfer:1side	*ENG	[0 to 995 / 100 / 5%/step]
2-657-004	Paper Transfer:2side	*ENG	
2-657-007	Separation DC:1side	*ENG	
2-657-008	Separation DC:2side	*ENG	

2658	[Special 5: SWTiming Trail Edge]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-658-003	Paper Transfer:1side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-658-004	Paper Transfer:2side	*ENG	
2-658-007	Separation DC:1side	*ENG	
2-658-008	Separation DC:2side	*ENG	

2659	[Special 5: EnvCorrectionTable]		
2-659-015	Separation DC:1side	*ENG	[1 to 100 / 30 / 1/step]
2-659-016	Separation DC:2side	*ENG	
2659	[Special 5: Edge Envir Correc.]		
2-659-019	Separation DC:1side	*ENG	[1 to 100 / 30 / 1/step]
2-659-020	Separation DC:2side	*ENG	

2661	[Special 6: Bias]		
	Adjusts the DC voltage of the discharge plate for thick2 paper.		
2-661-003	Separation DC:1side	*ENG	[0 to 4000 / 2000 / 10-V/step]
2-661-004	Separation DC:2side	*ENG	

2663	[Special 6: Bias: BW]		
	Adjusts the current for the paper transfer roller for thick 2 paper in black-and-white mode.		
2-663-003	Paper Transfer:1side	*ENG	[0 to 200 / 9 / 1 uA/step]
2-663-004	Paper Transfer:2side	*ENG	[0 to 200 / 7 / 1 uA/step]

2667	[Special 6: Bias: FC]		
	Adjusts the current for the paper transfer roller for thick 2 paper in full color mode.		
2-667-003	Paper Transfer:1side	*ENG	[0 to 200 / 11 / 1 uA/step]
2-667-004	Paper Transfer:2side	*ENG	[0 to 200 / 9 / 1 uA/step]

2671	[Special 6: SizeCorrection:BW]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-671-003	Paper Transfer:1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]
2-671-004	Paper Transfer:2Side:S1	*ENG	
2-671-007	Paper Transfer:1Side:S2	*ENG	[100 to 995 / 122 / 5%/step]
2-671-008	Paper Transfer:2Side:S2	*ENG	[100 to 995 / 186 / 5%/step]
2-671-011	Paper Transfer:1Side:S3	*ENG	[100 to 995 / 156 / 5%/step]
2-671-012	Paper Transfer:2Side:S3	*ENG	[100 to 995 / 271 / 5%/step]
2-671-015	Paper Transfer:1Side:S4	*ENG	[100 to 995 / 170 / 5%/step]
2-671-016	Paper Transfer:2Side:S4	*ENG	[100 to 995 / 357 / 5%/step]

2672	[Special 6: SizeCorrection:FC]		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size.		
2-672-003	Paper Transfer:1Side:S1	*ENG	[100 to 995 / 100 / 5%/step]

2-672-004	Paper Transfer:2Side:S1	*ENG	
2-672-007	Paper Transfer:1Side:S2	*ENG	[100 to 995 / 118 / 5%/step]
2-672-008	Paper Transfer:2Side:S2	*ENG	[100 to 995 / 200 / 5%/step]
2-672-011	Paper Transfer:1Side:S3	*ENG	[100 to 995 / 140 / 5%/step]
2-672-012	Paper Transfer:2Side:S3	*ENG	[100 to 995 / 278 / 5%/step]
2-672-015	Paper Transfer:1Side:S4	*ENG	[100 to 995 / 150 / 5%/step]
2-672-016	Paper Transfer:2Side:S4	*ENG	[100 to 995 / 389 / 5%/step]

2673	[Special 6: Size-Env.Correct:BW]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-673-003	Paper Transfer:1Side:S1	*ENG	[1 to 100 / 75 / 1/step]
2-673-004	Paper Transfer:2Side:S1	*ENG	[1 to 100 / 76 / 1/step]
2-673-007	Paper Transfer:1Side:S2	*ENG	[1 to 100 / 77 / 1/step]
2-673-008	Paper Transfer:2Side:S2	*ENG	[1 to 100 / 78 / 1/step]
2-673-011	Paper Transfer:1Side:S3	*ENG	[1 to 100 / 79 / 1/step]
2-673-012	Paper Transfer:2Side:S3	*ENG	[1 to 100 / 80 / 1/step]
2-673-015	Paper Transfer:1Side:S4	*ENG	[1 to 100 / 81 / 1/step]
2-673-016	Paper Transfer:2Side:S4	*ENG	[1 to 100 / 82 / 1/step]

2674	[Special 6: Size-Env.Correct:FC]		
	Adjusts the size correction coefficient table for the paper transfer roller current for each paper size.		
2-674-003	PaperTransfer:1Side:S1	*ENG	[1 to 100 / 75 / 1/step]
2-674-004	PaperTransfer:2Side:S1	*ENG	[1 to 100 / 76 / 1/step]
2-674-007	PaperTransfer:1Side:S2	*ENG	[1 to 100 / 77 / 1/step]
2-674-008	PaperTransfer:2Side:S2	*ENG	[1 to 100 / 78 / 1/step]

2-674-011	PaperTransfer:1Side:S3	*ENG	[1 to 100 / 79 / 1/step]
2-674-012	PaperTransfer:2Side:S3	*ENG	[1 to 100 / 80 / 1/step]
2-674-015	PaperTransfer:1Side:S4	*ENG	[1 to 100 / 81 / 1/step]
2-674-016	PaperTransfer:2Side:S4	*ENG	[1 to 100 / 82 / 1/step]

2675	[Special 6: LeadingEdgeCorrect.]		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode.		
2-675-003	Paper Transfer:1side	*ENG	[0 to 995 / 100 / 5%/step]
2-675-004	Paper Transfer:2side	*ENG	
2-675-007	Separation DC:1side	*ENG	
2-675-008	Separation DC:2side	*ENG	

2676	[Special 6: SWTimingLeadEdge]		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
2-676-003	Paper Transfer:1side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-676-004	Paper Transfer:2side	*ENG	
2-676-007	Separation DC:1side	*ENG	
2-676-008	Separation DC:2side	*ENG	

2677	[Special 6: TrailEdgeCorrection]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-677-003	Paper Transfer:1side	*ENG	[0 to 995 / 100 / 5%/step]
2-677-004	Paper Transfer:2side	*ENG	
2-677-007	Separation DC:1side	*ENG	

2-677-008	Separation DC:2side	*ENG	

2678	[Special 6: SWTimingTrailEdge]		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode.		
2-678-003	Paper Transfer:1side	*ENG	[0 to 50 / 0 / 2 mm/step]
2-678-004	Paper Transfer:2side	*ENG	
2-678-007	Separation DC:1side	*ENG	
2-678-008	Separation DC:2side	*ENG	

2679	[Special 6: EnvCorrectionTable]		
2-679-015	Separation DC:1side	*ENG	[1 to 100 / 30 / 1/step]
2-679-016	Separation DC:2side	*ENG	
2679	[Special 6: Edge Envir Correc.]		
2-679-019	Separation DC:1side	*ENG	[1 to 100 / 30 / 1/step]
2-679-020	Separation DC:2side	*ENG	

2690	[ITB Contact Setting]		
	Sets the image transfer belt contact for each paper.		
2-690-001	Thick1	*ENG	[0 or 1 / 0 / 1/step]
2-690-002	Thick2	*ENG	
2-690-003	Thick3	*ENG	
2-690-014	Special4	*ENG	
2-690-015	Special5	*ENG	
2-690-016	Special6	*ENG	

2900	[Job End: Drum Idling Time]		
2-900-001	Standard Speed	*ENG	[0 to 30 / 0 / 1 s/step]
2-900-002	Middle Speed	*ENG	
2-900-003	Low Speed	*ENG	

2901	[Fus.Reload:DrumIdleTimeOffset]		
	Offset coverage for idling rotation time of drum when fusing down reloads.		
2-901-001	Coverage:0-6%	*ENG	[-60 to 300 / 0 / 1 sec/step]
2-901-002	Coverage:6-10%	*ENG	[-60 to 300 / -11 / 1 sec/step]
2-901-003	Coverage:10-20%	*ENG	[-60 to 300 / -26 / 1 sec/step]
2-901-004	Coverage:20-40%	*ENG	[-60 to 300 / -21 / 1 sec/step]
2-901-005	Coverage:40%over	*ENG	[-60 to 300 / -21 / 1 sec/step]

2905	[Dev Rvs Time]		
2-905-003	Bk	ENG	[0 to 200 / 0 / 10 msec/step]
	Sets the clutch on time at drum motor reverse.		
2-905-004	Color	ENG	[0 to 200 / 0 / 10 msec/step]
	Sets the time of development roller reverse rotation when color development motor rotates in reverse.		

2905	[Dev Rvs Counter]		
2-905-005	ALL	ENG	[0 to 400000 / 61420 / 10 mm/step]
	Rotation threshold to determine if development roller reverse is required or not.		

2905	[Dev Rvs Counter]		
2-905-006	Bk	ENG	[0 to 999999999 / 0 / 1 mm/step]

	Rotation counter (Bk) to determine if development roller reverse is required or not.		
2-905-007	Color	ENG	[0 to 999999999 / 0 / 1 mm/step]
	Rotation counter (Color) to determine if development roller reverse is required or not.		

2905	[Dev pre-drive : ON/OFF]		
2-905-010	ON/OFF	*ENG	[0 or 1 / 0 / 1/step]

2907	[ACS Setting (FC)]		
	-		
2-907-001	Continuous Bk Pages	*ENG	[0 to 10 / 0 / 1sheet/step]

2915	[Gain Set: Bk OPC Drum]		
2-915-001	Standard Speed1	*ENG	[0 or 1 / 0 / 1/step]
2-915-002	Low Speed	*ENG	[0 or 1 / 1 / 1/step]
2-915-003	Standard Speed2	*ENG	[0 or 1 / 0 / 1/step]
2-915-004	Middle Speed	*ENG	[0 or 1 / 0 / 1/step]

2916	[Gain Set: Color OPC Drum]		
2-916-001	Standard Speed1	*ENG	[0 or 1 / 0 / 1/step]
2-916-002	Low Speed	*ENG	[0 or 1 / 1 / 1/step]
2-916-003	Middle Speed	*ENG	[0 or 1 / 0 / 1/step]

2930	[Paper Transfer: Bias Limiter]		
	Adjusts the threshold between high resistance (division 1) and low resistance (division 2) at the paper transfer roller.		
2-930-001	Bias	*ENG	[0 to 7000 / 6000 / 10 V/step]

2960	[Process Down Interval]		
	Adjusts the additional time for ending the machine's process.		
2-960-001	Additional Time	*ENG	[0 to 10 / 0 / 1sec/step]

2990	[Print Duty Control]		
2-990-001	Duty Control Status	*ENG	[0 or 1 / 0 / 1/step]
	Displays the Duty limitation status of the current printing. 0: Not limited 1: Limited		
2-990-002	Exec Interval: Duty Control	*ENG	[30 to 3600 / 30 / 1 sec/step]
	Sets the determination time interval to determine if the printing Duty limitation is executed or not.		
2-990-004	Forced Process Down Thresh: No Duty Control	*ENG	[0 to 5000 / 0 / 1 page/step]
	Sets the forced shutdown threshold when the printing Duty is not limited.		
2-990-005	Down-time BW: No Duty Control	*ENG	[0 to 120 / 0 / 1 sec/step]
2-990-006	Down-time FC: No Duty Control	*ENG	
2-990-007	Forced Process Down Thresh: Duty Control	*ENG	[0 to 5000 / 3 / 1 page/step]
	Sets the forced shutdown threshold when the printing Duty is limited.		
2-990-008	Down-time BW: Duty Control	*ENG	[0 to 120 / 0 / 1 sec/step]
2-990-009	Down-time FC: Duty Control	*ENG	[0 to 120 / 64 / 1 sec/step]
2-990-010	Correction Coefficient	*ENG	[-1.0 to -1.0 / -0.5 / 0.1/step]
2-990-011	Execution Temperature	*ENG	[20.0 to 70.0 / 42.0 / 0.1 deg/step]

	Sets the temperature threshold to execute the printing Duty limitation. 0: Not execute		
2-990-012	Cancellation Temp. Threshold	*ENG	[0.0 to 20.0 / 1.0 / 0.1 deg/step]
	Sets the temperature threshold (differences with the temperature of the printing Duty limitation execution) to cancel the printing Duty limitation.		
2-990-013	ON/OFF setting	*ENG	[0 or 1 / 1 / 1/step]
	Control or not control the printing Duty limitation. 0: Not control 1: Control		
2-990-014	Duty Control: Down-time_BW	*ENG	[0 to 120 / 0 / 1 sec/step]
2-990-015	Duty Control: Down-time_FC	*ENG	[0 to 120 / 0 / 1 sec/step]
2-990-016	Execution Temp. Upper Threshold	*ENG	[0.0 to 99.0 / 42.0 / 0.1 deg/step]
2-990-017	Execution Temp. Lower Threshold	*ENG	[0.0 to 99.0 / 38.0 / 0.1 deg/step]

3.4 MAIN SP TABLES-3

3.4.1 SP3-XXX (PROCESS)

3011	[Manual ProCon:Exe]		
3-011-001	Normal ProCon	ENG	[- / - / -] [Execute]
3-011-002	Toner Density Adjustment	ENG	[- / - / -] [Execute]
3-011-003	ACC RunTime ProCon	ENG	[- / - / -] [Execute]
3-011-004	Full MUSIC	ENG	[- / - / -] [Execute]
3-011-005	Normal MUSIC	ENG	[- / - / -] [Execute]
3-011-011	Normal ProCon BW	ENG	[- / - / -] [Execute]

3012	[ProCon Execute Result: Display]		
3-012-001	History:Last	*ENG	Displays the result of the latest process control execution. For details, refer to “Process Control Self-Check Result” in Troubleshooting chapter. [0 to 99999999 / 0 / 1/step]
3-012-002	History:Last 2	*ENG	
3-012-003	History:Last 3	*ENG	
3-012-004	History:Last 4	*ENG	
3-012-005	History:Last 5	*ENG	
3-012-006	History:Last 6	*ENG	
3-012-007	History:Last 7	*ENG	
3-012-008	History:Last 8	*ENG	
3-012-009	History:Last 9	*ENG	

3-012-010	History:Last 10	*ENG	

3030	[TD Sensor Initial Set: Execute]		
3-030-001	Execute:ALL	ENG	[- / - / -] [Execute]
3-030-002	Execute:Color	ENG	[- / - / -] [Execute]
3-030-003	Execute:Bk	ENG	[- / - / -] [Execute]
3-030-004	Execute:C	ENG	[- / - / -] [Execute]
3-030-005	Execute:M	ENG	[- / - / -] [Execute]
3-030-006	Execute:Y	ENG	[- / - / -] [Execute]

3031	[TD Sen. Ini. Set: Result: Disp]		
3-031-001	From Left: Y,M,C,Bk	*ENG	Displays the execution result of TD sensor initialization. [0 to 9999 / 0 / 1/step]

3050	[Force Tnr Supply:Exe]		
3-050-001	Execute:ALL	ENG	[- / - / -] [Execute]
3-050-002	Execute:Color	ENG	[- / - / -] [Execute]
3-050-003	Execute:Bk	ENG	[- / - / -] [Execute]
3-050-004	Execute:C	ENG	[- / - / -] [Execute]

3-050-005	Execute:M	ENG	[- / - / -] [Execute]
3-050-006	Execute:Y	ENG	[- / - / -] [Execute]
3-050-021	Supply Quantity:Bk	*ENG	[0.0 to 5.0 / 0.5 / 0.1 wt%/step]
3-050-022	Supply Quantity:C	*ENG	
3-050-023	Supply Quantity:M	*ENG	
3-050-024	Supply Quantity:Y	*ENG	
3-050-033	Repeat Count	*ENG	[0 to 255 / 8 / 1 times/step]

3072	[TD Sensor Check]		
3-072-001	Exe All Colors	ENG	[- / - / -] [Execute]

3073	[TD Sensor Check: Display]		
3-073-001	mu Count:Bk	*ENG	[0 to 65535 / 0 / 1/step]
3-073-002	mu Count:C	*ENG	
3-073-003	mu Count:M	*ENG	
3-073-004	mu Count:Y	*ENG	

3074	[ID Sensor Check: Exe]		
3-074-001	All Sensors	ENG	[- / - / -] [Execute]

3075	[IID Sensor Check: Display]		
3-075-001	Vsg reg(front)	*ENG	[0.00 to 5.50 / 0 / 0.01 V/step]
3-075-002	Vsg reg(center)	*ENG	
3-075-003	Vsg reg(rear)	*ENG	

3-075-011	Voffset(front)	*ENG	
3-075-012	Voffset(center)	*ENG	
3-075-013	Voffset(rear)	*ENG	

3100	[Toner End Detection: Set]		
3-100-001	ON/OFF	*ENG	Sets if NE/TE is detected or not. [0 or 1 / 0 / 1/step] 0:Detect, 1:NotDetect
3-100-002	NE Detection Select	*ENG	Sets NE/TE detection mode. [0 or 1 / 0 / 1/step] 0:ALL, 1:TESensor

3101	[Toner Status: Display]		
3-101-001	Bk	*ENG	Displays the toner remaining status. [0 to 2 / 2 / 1/step] 0: Full, 1: NE, 2:TE
3-101-002	C	*ENG	
3-101-003	M	*ENG	
3-101-004	Y	*ENG	

3102	[Toner Remaining: Display]		
3-102-001	Toner Supply Motor Drive Time: Bk	*ENG	Displays the toner remaining amount calculated with motor driving time. [0.000 to 500.000 / 0 / 0.001 g/step]
3-102-002	Toner Supply Motor Drive Time: C	*ENG	
3-102-003	Toner Supply Motor Drive Time: M	*ENG	
3-102-004	Toner Supply Motor Drive Time: Y	*ENG	
3-102-011	Pixel: Bk	*ENG	Displays the toner remaining amount calculated with image processing
3-102-012	Pixel: C	*ENG	

3-102-013	Pixel: M	*ENG	coverage. [0.000 to 500.000 / 0 / 0.001 g/step]
3-102-014	Pixel: Y	*ENG	
3-102-021	Replenishment Amount: Bk	*ENG	Displays the toner amount in a new bottle. [0 to 500 / 0 / 1 g/step]
3-102-022	Replenishment Amount: C	*ENG	
3-102-023	Replenishment Amount: M	*ENG	
3-102-024	Replenishment Amount: Y	*ENG	

3110	[NE Detect: Toner Remain Thresh]		
	Sets threshold of toner remaining for NE detection.		
3-110-001	Bk	*ENG	[0 to 500 / 23 / 1 g/step]
3-110-002	C	*ENG	[0 to 500 / 10 / 1 g/step]
3-110-003	M	*ENG	
3-110-004	Y	*ENG	

3121	[TE Counter: Display]		
3-121-001	Bk	*ENG	Displays the number of no toner detections with end sensor. [0 to 99 / 0 / 1 times/step]
3-121-002	C	*ENG	
3-121-003	M	*ENG	
3-121-004	Y	*ENG	

3123	[Toner End Sen Status: Display]		
3-123-021	Latest Output: Bk	ENG	Displays the latest output with end sensor. [0 or 1 / 0 / 1/step] 0: Not output, 1: Output
3-123-022	Latest Output: C	ENG	
3-123-023	Latest Output: M	ENG	
3-123-024	Latest Output: Y	ENG	

3131	[Vt TE Thresh]		
3-131-001	Delta Vt Thresh	*ENG	Sets toner end threshold to sum delta Vt after NE. [0.00 to 5.00 / 0.50 / 0.01 V/step]
3-131-002	Delta Vt Sum Thresh	*ENG	Sets toner end threshold for TE detection delta Vt after NE. [0 to 99 / 10 / 1 V/step]
3-131-011	Delta Vt Thresh Before NE	*ENG	Sets toner end threshold to sum delta Vt before NE. [0.00 to 5.00 / 0.50 / 0.01 V/step]
3-131-012	Delta Vt Sum Thresh Before NE	*ENG	Sets toner end threshold for TE detection delta Vt before NE. [0 to 99 / 10 / 1 V/step]
3-131-021	High TC Delta Vt Thresh	*ENG	[0.00 to 5.00 / 0.30 / 0.01 V/step]
3-131-022	High TC Delta Vt Sum Thresh	*ENG	[0 to 99/ 3 / 1 V/step]
3-131-023	High TC Delta Vt Thresh Before NE	*ENG	[0.00 to 5.00 / 0.70 / 0.01 V/step]
3-131-024	High TC Delta Vt Sum Thresh Before NE	*ENG	[0 to 99 / 10 / 1 V/step]
3-131-031	Low TC Delta Vt Thresh	*ENG	[0.00 to 5.00/ 0.30 / 0.01 V/step]

3-131-032	Low TC Delta Vt Sum Thresh	*ENG	[0 to 99 / 3 / 1 V/step]
3-131-033	Low TC Delta Vt Thresh Before NE	*ENG	[0.00 to 5.00 / 0.70 / 0.01 V/step]
3-131-034	Low TC Delta Vt Sum Thresh Before NE	*ENG	[0 to 99 / 10 / 1 V/step]
3-131-041	TC Thresh	*ENG	[0.0 to 25.5 / 4.0 / 0.1 wt%/step]

3132	[Delta Vt Sum: Display]		
3-132-001	Bk	*ENG	Displays sum of delta Vt for each color. [0.00 to 99.00 / 0 / 0.01/step]
3-132-002	C	*ENG	
3-132-003	M	*ENG	
3-132-004	Y	*ENG	

3200	[Toner Density: Display]		
3-200-001	Bk	*ENG	Displays toner density (wt%) for each color. [0.0 to 25.5 / 0 / 0.1 wt%/step]
3-200-002	C	*ENG	
3-200-003	M	*ENG	
3-200-004	Y	*ENG	

3201	[TnrDensity]		
3-201-001	Upper TC	*ENG	Sets the upper limit for the control range of toner density (wt%). [1.0 to 15.0 / 8.5 / 0.1 wt%/step]
3-201-002	Lower TC	*ENG	Sets the lower limit for the control range of toner density (wt%). [1.0 to 15.0 / 4.0 / 0.1 wt%/step]

3206	[TD Sensor Bulk Corr.: Set]		
3-206-001	Abs. Humidity Cnver. Coef.: Bk	*ENG	[0.0000 to 6.5535 / 0.4945 / 0.0001 g/cm3/step]
3-206-002	Abs. Humidity Cnver. Coef.: C	*ENG	
3-206-003	Abs. Humidity Cnver. Coef.: M	*ENG	
3-206-004	Abs. Humidity Cnver. Coef.: Y	*ENG	
3-206-011	Color Conversion Coef.: Bk	*ENG	[0 to 200 / 100 / 1%/step]
3-206-012	Color Conversion Coef.: C	*ENG	
3-206-013	Color Conversion Coef.: M	*ENG	
3-206-014	Color Conversion Coef.: Y	*ENG	
3-206-021	Weight Coefficient	*ENG	
3-206-031	Offset: Bk	*ENG	[-2.0000 to 2.0000 / 0 / 0.0001 g/cm3/step]
3-206-032	Offset: C	*ENG	
3-206-033	Offset: M	*ENG	
3-206-034	Offset: Y	*ENG	
3-206-041	Conversion Coeff. Beta: Bk	*ENG	[-999.0 to 0.0 / -1.0 / 0.1 count/g/cm3/step]
3-206-042	Conversion Coeff. Beta: C	*ENG	
3-206-043	Conversion Coeff. Beta: M	*ENG	

3-206-044	Conversion Coeff. Beta: Y	*ENG	

3210	[TD.Sens:Vt :Disp]		
3-210-001	Current: Bk	*ENG	Displays the latest TD sensor output for each color. [0.00 to 5.50 / 0 / 0.01 V/step]
3-210-002	Current: C	*ENG	
3-210-003	Current: M	*ENG	
3-210-004	Current: Y	*ENG	

3212	[Vt Shift: Set]		
3-212-001	TC Cor.(ON/OFF)	*ENG	[0 or 1 / 1 / 1/step]

3213	[Vt Shift :Set]		
3-213-001	TC Cor.(ON/OFF)	*ENG	[0 or 1 / 1 / 1/step] 0:OFF, 1:ON
3-213-021	Low Speed TC Correction: Bk	*ENG	[-0.50 to 0.50 / 0 / 0.01 V/step]
3-213-022	Low Speed TC Correction: C	*ENG	
3-213-023	Low Speed TC Correction: M	*ENG	
3-213-024	Low Speed: TC Correction: Y	*ENG	
3-213-031	Std Speed 2 TC Correction: Bk	*ENG	

3214	[Vt Save :Set]		
3-214-001	Dot Coverage Thresh	*ENG	[0 to 100 / 20 / 1%/step]

3230	[Vtref: Display/Set]		
3-230-001	Current: Bk	*ENG	Displays/Sets the target value of current TD sensor output voltage. [0.00 to 5.00 / 2.50 / 0.01 V/step]
3-230-002	Current: C	*ENG	
3-230-003	Current: M	*ENG	
3-230-004	Current: Y	*ENG	

3232	[Vtref Correct:Pixel]		
3-232-001	ON/OFF	*ENG	[0 or 1 / 1 /1/step] 0:OFF, 1:ON
3-232-011	Low Coverage Coefficient: Bk	*ENG	Sets the coefficient Vtref to determine the Vtref correction value with low image coverage. [0.0 to 5.0 / 0.3 / 0.1/step]
3-232-012	Low Coverage Coefficient: C	*ENG	
3-232-013	Low Coverage Coefficient: M	*ENG	
3-232-014	Low Coverage Coefficient: Y	*ENG	
3-232-021	High Coverage Coefficient: Bk	*ENG	Sets the coefficient Vtref to determine the Vtref correction value with high image coverage. [0.0 to 5.0 / 0.4 / 0.1/step]
3-232-022	High Coverage Coefficient: C	*ENG	
3-232-023	High Coverage Coefficient: M	*ENG	
3-232-024	High Coverage Coefficient: Y	*ENG	

3-232-040	Initial ProCon Interval	*ENG	Sets process control flag and executes process control by determining the high image coverage is successive if the cumulative average (M) of image coverage (SP3224-009 to 012) is more than the specified value. [0 to 255 / 6 / 1 times/step]
3-232-041	High Coverage Thresh	*ENG	This SP is referenced when an output of high image coverage. [0 to 100 / 60 / 1%/step]
3-232-050	ProCon Interval	*ENG	[0 to 255 / 14 / 1 times/step]
3-232-060	Low Coverage Thresh	*ENG	This SP is referenced when an output of low image coverage. [0.0 to 20.0 / 3.0 / 0.1%/step]
3-232-070	TC Upper Limit Correction	*ENG	Sets Vtref lower limit (TC upper limit) which can be canceled temporarily by determining the low image coverage is successive if the cumulative average (L) of image coverage (SP3224-013 to 016) is less than the specified value. [0.0 to 5.0 / 0.5 / 0.1 wt%/step]
3-232-071	TC Upper Limit:Display:Bk	*ENG	Displays Vtref lower limit (TC upper limit) which can be canceled temporarily by determining the low image coverage is successive if the cumulative average (L) of image coverage (SP3224-013 to 016) is less than the specified value. [1.0 to 15.0 / 8.5 / 0.1 wt%/step]
3-232-072	TC Upper Limit:Display:C	*ENG	
3-232-073	TC Upper Limit:Display:M	*ENG	
3-232-074	TC Upper Limit:Display:Y	*ENG	

3234	[Vtref Corr :Disp/Set]		
3-234-001	ON/OFF	*ENG	Controls On/Off for potential Vtref correction. [0 or 1 / 1 / 1/step] 0:OFF, 1:ON
3-234-011	Correction Amount (+): Bk	*ENG	Sets Vtref correction value for (+) side to control toner density to lower with developer gamma in potential control. [0.00 to 1.00 / 0.05 / 0.01 V/step]
3-234-012	Correction Amount (+): C	*ENG	
3-234-013	Correction Amount (+): M	*ENG	
3-234-014	Correction Amount (+): Y	*ENG	
3-234-021	Correction Amount (-): Bk	*ENG	Sets Vtref correction value for (-) side to control toner density to lower with developer gamma in potential control. [0.00 to 1.00 / 0.05 / 0.01 V/step]
3-234-022	Correction Amount (-): C	*ENG	
3-234-023	Correction Amount (-): M	*ENG	
3-234-024	Correction Amount (-): Y	*ENG	
3-234-031	P Rank 1 Threshold	*ENG	[0.00 to 2.00 / 0.15 / 0.01/step]
3-234-032	P Rank 2 Threshold	*ENG	[0.00 to 2.00 / 0.05 / 0.01/step]
3-234-033	P Rank 3 Threshold	*ENG	[-2.00 to 0.00 / -0.05 / 0.01/step]
3-234-034	P Rank 4 Threshold	*ENG	[-2.00 to 0.00 / -0.15 / 0.01/step]
3-234-041	T Rank 1 Threshold	*ENG	[-1.00 to 0.00 / -0.20 / 0.01 V/step]
3-234-042	T Rank 2 Threshold	*ENG	[0.00 to 1.00 / 0.20 / 0.01 V/step]
3-234-050	Correction Coefficient	*ENG	[1.0 to 5.0 / 2.0 / 0.1/step]

3250	[Image Area: Display]		
3-250-001	Latest: Bk	*ENG	Displays image area of the latest page. [0 to 9999 / 0 / 1 cm2/step]
3-250-002	Latest: C	*ENG	
3-250-003	Latest: M	*ENG	
3-250-004	Latest: Y	*ENG	

3251	[Dot Coverage: Display]		
3-251-001	Latest: Bk	*ENG	Displays image coverage of the latest page. [0.00 to 100.00 / 0.00 / 0.01%/step]
3-251-002	Latest: C	*ENG	
3-251-003	Latest: M	*ENG	
3-251-004	Latest: Y	*ENG	
3-251-011	Accumulate: Average: S: Bk	*ENG	Displays the cumulative average (S) of image coverage for the latest page. [0.00 to 100.00 / 5.00 / 0.01%/step]
3-251-012	Accumulate: Average: S: C	*ENG	
3-251-013	Accumulate: Average: S: M	*ENG	
3-251-014	Accumulate: Average: S: Y	*ENG	
3-251-021	Accumulate: Average: M: Bk	*ENG	Displays the cumulative average (M) of image coverage for the latest page. [0.00 to 100.00 / 5.00 / 0.01%/step]
3-251-022	Accumulate: Average: M: C	*ENG	
3-251-023	Accumulate: Average: M: M	*ENG	
3-251-024	Accumulate: Average: M: Y	*ENG	

3-251-031	Accumulate: Average: L: Bk	*ENG	Displays the cumulative average (L) of image coverage for the latest page. [0.00 to 100.00 / 5.00 / 0.01%/step]
3-251-032	Accumulate: Average: L: C	*ENG	
3-251-033	Accumulate: Average: L: M	*ENG	
3-251-034	Accumulate: Average: L: Y	*ENG	
3-251-041	Accumulate Page: Set: S	*ENG	Sets the cumulative pages (S). [1 to 255 / 5 / 1 sheets/step]
3-251-042	Accumulate Page: Set: M	*ENG	Sets the cumulative pages (M). [1 to 500 / 10 / 1 sheets/step]
3-251-043	Accumulate Page: Set: L	*ENG	Sets the cumulative pages (L). [1 to 999 / 50 / 1 sheets/step]
3-251-051	Accumulate Page: Set: S2	*ENG	Sets the cumulative pages (S2). [1 to 255 / 40 / 1 sheets/step]
3-251-052	Accumulate Page: Set: M2	*ENG	Sets the cumulative pages (M2). [1 to 500 / 10 / 1 sheets/step]
3-251-053	Accumulate Page: Set: L2	*ENG	Sets the cumulative pages (L2). [1 to 999 / 50 / 1 sheets/step]
3-251-151	Accumulate: Average: Bk	*ENG	[0.00 to 100.00 / 0 / 0.01%/step]
3-251-152	Accumulate: Average: C	*ENG	[0.00 to 100.00 / 0 / 0.01%/step]
3-251-153	Accumulate: Average: M	*ENG	[0.00 to 100.00 / 0 / 0.01%/step]
3-251-154	Accumulate: Average: Y	*ENG	[0.00 to 100.00 / 0 / 0.01%/step]

3252	[Accumulate Image Area: Display]		
3-252-001	Latest: Bk	*ENG	Displays accumulate of image area. [0 to 65535 / 0 / 1 cm ² /step]
3-252-002	Latest: C	*ENG	
3-252-003	Latest: M	*ENG	
3-252-004	Latest: Y	*ENG	
3-252-011	Developer: Bk	*ENG	[0 to 4294967295 / 0 / 1 cm ² /step]
3-252-012	Developer: C	*ENG	
3-252-013	Developer: M	*ENG	
3-252-014	Developer: Y	*ENG	

3260	[Temperature/Humidity: Display]		
3-260-001	Temperature: Display	ENG	Displays the temperature of environment sensor output [-5.0 to 45.0 / 0 / 0.1 deg/step]
3-260-002	Relative Humidity: Display	ENG	Displays the relative humidity of environment sensor output. [0.0 to 100.0 / 0 / 0.1%RH/step]
3-260-003	Absolute Humidity: Display	ENG	Displays the absolute humidity of environment sensor output. [0.00 to 100.00 / 0 / 0.01 g/m ³ /step]

3310	[ID.Sen. Detection: Voffset]		
3-310-001	Voffset reg	*ENG	Displays output voltage of normal reflection light at ID sensor LED off. [0.00 to 5.50 / 0 / 0.01 V/step]
3-310-011	Voffset dif	*ENG	Displays output voltage of diffused reflection light at ID sensor LED off. [0.00 to 5.50 / 0 / 0.01 V/step]
3-310-021	Voffset TM(Front)	*ENG	Displays output voltage of normal

3-310-022	Voffset TM(Center)	*ENG	reflection light at TM_Front, TM_Center or TM_Rear sensor LED off. [0.00 to 5.50 / 0 / 0.01 V/step]
3-310-023	Voffset TM(Rear)	*ENG	

3311	[ID.Sen. Detection :Vmin]		
3-311-001	Vmin_K	*ENG	Displays Vmin output of tone pattern for black. [0.000 to 5.000 / 0 / 0.001/step]

3312	[ID.Sen. Detection: Vct]		
3-312-001	Vct_reg	*ENG	Displays the normal reflection output of crosstalk. [0.000 to 5.000 / 0 / 0.001 V/step]
3-312-011	Vct_dif	*ENG	Displays the diffused reflection output of crosstalk. [0.000 to 5.000 / 0 / 0.001 V/step]

3320	[Vsg Adj: Execute]		
3-320-001	ID/TM Sensor	ENG	[- / - / -] [Execute]

3321	[Vsg Adj. Result: Vsg]		
3-321-001	Vsg reg	*ENG	Displays normal reflection light output from bared belt with Vsg adjustment. [0.00 to 5.50 / 4.00 / 0.01 V/step]
3-321-011	Vsg dif	*ENG	Displays diffused reflection light output from bared belt with Vsg adjustment. [0.00 to 5.50 / 0.00 / 0.01 V/step]
3-321-021	Vsg reg(BW)	*ENG	Displays normal reflection light output from bared belt with Vsg adjustment. [0.00 to 5.50 / 4.00 / 0.01 V/step]

3-321-031	Vsg dif(BW)	*ENG	Displays diffused reflection light output from bared belt with Vsg adjustment. [0.00 to 5.50 / 0.00 / 0.01 V/step]
3-321-041	Vsg TM(Front)	*ENG	Displays normal reflection light output from bared belt with Vsg adjustment (TM_Front, TM_Center or TM_Rear sensor). [0.00 to 5.50 / 4.00 / 0.01 V/step]
3-321-042	Vsg TM(Center)	*ENG	
3-321-043	Vsg TM(Rear)	*ENG	

3322	[Vsg Adj. Result: Ifsg]		
	Displays the result value of the Vsg adjustment for each sensor.		
3-322-001	Ifsg	*ENG	Displays Vsg adjusted ID sensor LED current. [0.000 to 50.000 / 27.000 / 0.001 mA/step]
3-322-011	Ifsg (minimum)	*ENG	Displays Vsg adjusted ID sensor LED current. [0.000 to 50.000 / 27.000 / 0.001 mA/step]
3-322-021	Ifsg: TM(Front)	*ENG	Displays Vsg adjusted ID sensor LED current (TM_Front, TM_Center or TM_Rear sensor). [0.000 to 50.000 / 27.000 / 0.001 mA/step]
3-322-022	Ifsg: TM(Center)	*ENG	
3-322-023	Ifsg: TM(Rear)	*ENG	

3323	[Vsg Adj. Result: Display]		
3-323-001	Latest	*ENG	Displays Vsg adjustment execution result. [0 to 999 / 0 / 1/step]
3-323-002	Latest 1	*ENG	
3-323-003	Latest 2	*ENG	
3-323-004	Latest 3	*ENG	
3-323-005	Latest 4	*ENG	
3-323-006	Latest 5	*ENG	

3-323-007	Latest 6	*ENG	
3-323-008	Latest 7	*ENG	
3-323-009	Latest 8	*ENG	
3-323-010	Latest 9	*ENG	

3330	[ID Sen. Sensitivity Coef.: Set]		
3-330-001	K2(Latest)	*ENG	Displays the latest value for the sensitivity correction coefficient (K2) of ID sensor. [0.0000 to 5.0000 / 0.5280 / 0.0001/step]
3-330-011	K5(Latest)	*ENG	Displays the latest value for the sensitivity correction coefficient (K5) of ID sensor. [0.0000 to 10.0000 / 2.0000 / 0.0001/step]

3331	[ID Sen. Sensitivity Coef.: Set]		
3-331-021	K2: Check	*ENG	[0.000 to 1.000 / 0.528 / 0.001/step]
3-331-031	Diffuse Ratio Correction Coef.	*ENG	[0.75 to 1.35 / 1.00 / 0.01/step]
3-331-041	Vct_reg Check:Slope	*ENG	[0.0000 to 1.0000 / 0.0000 / 0.0001 V/mA/step]
3-331-046	Vct_reg Check:Xint	*ENG	[0.0 to 25.5 / 0.0 / 0.1 mA/step]
3-331-051	Vct_dif Check:Slope	*ENG	[0.0000 to 1.0000 / 0.0000 / 0.0001V/mA/step]
3-331-056	Vct_dif Check:Xint	*ENG	[0.0 to 25.5 / 0.0 / 0.1 mA/step]

3400	[Toner Supply Type Select]		
3-400-001	Bk	*ENG	Selects toner supply mode. [0 to 4 / 4 / 1/step] 0: FIXED 2: PID
3-400-002	C	*ENG	
3-400-003	M	*ENG	

3-400-004	Y	*ENG	4: DANC

3411	[Toner Supply Qty : Display]		
3-411-001	Bk	ENG	Displays the latest value of toner supply quantity from toner supply calculation. [0.0 to 40000.0 / 0 / 0.1 mg/step]
3-411-002	C	ENG	
3-411-003	M	ENG	
3-411-004	Y	ENG	

3420	[Developer Weight: Set]		
3-420-001	Developer Weight: Bk	*ENG	Sets the developer weight. [50 to 2000 / 120 / 1 g/step]

3421	[Toner Supply Ability: Set]		
3-421-001	Bk	*ENG	Sets toner supply ability to developer from sub hopper. [0.001 to 2.000 / 0.469 / 0.001 g/sec/step]
3-421-002	C	*ENG	
3-421-003	M	*ENG	
3-421-004	Y	*ENG	
3-421-011	Coefficient 1	*ENG	[0.50 to 2.00 / 1.00 / 0.01/step]
3-421-012	Coefficient 2	*ENG	
3-421-013	Coefficient 3	*ENG	
3-421-014	Coefficient 4	*ENG	
3-421-015	Coefficient 5	*ENG	
3-421-016	Coefficient 6	*ENG	
3-421-017	Coefficient 7	*ENG	
3-421-018	Coefficient 8	*ENG	
3-421-019	Coefficient 9	*ENG	
3-421-020	Coefficient 10	*ENG	

3-421-021	Unit Time	*ENG	[0 to 60000 / 3000 / 1 msec/step]
3-421-031	Environment Threshold: 1	*ENG	Sets absolute humidity threshold 1 for supply ability correction. [0.0 to 65.0 / 17.0 / 0.1 g/m3/step]
3-421-032	Environment Threshold: 2	*ENG	Sets absolute humidity threshold 2 for supply ability correction. [0.0 to 65.0 / 29.0 / 0.1 g/m3/step]
3-421-033	Environment Threshold: 3	*ENG	Sets absolute humidity threshold 3 for supply ability correction. [0.0 to 65.0 / 34.0 / 0.1 g/m3/step]
3-421-041	Environment Coefficient 1	*ENG	Sets environment correction coefficient 1 that corrects supply ability by absolute humidity. [0.50 to 2.00 / 1.04 / 0.01/step]
3-421-042	Environment Coefficient 2	*ENG	Sets environment correction coefficient 2 or 3 that corrects supply ability by absolute humidity. [0.50 to 2.00 / 1.00 / 0.01/step]
3-421-043	Environment Coefficient 3	*ENG	
3-421-044	Environment Coefficient 4	*ENG	Sets environment correction coefficient 4 that corrects supply ability by absolute humidity. [0.50 to 2.00 / 0.96 / 0.01/step]

3422	[Toner Supply Limits :Set]		
3-422-001	Max Supply Rate:Bk	*ENG	Sets the maximum toner supply rate. [0 to 255 / 100 / 1%/step]
3-422-002	Max Supply Rate:C	*ENG	
3-422-003	Max Supply Rate:M	*ENG	
3-422-004	Max Supply Rate:Y	*ENG	
3-422-011	Min Supply Time: Bk	*ENG	Sets the minimum toner supply rate. [0 to 255 / 100 / 1 msec/step]
3-422-012	Min Supply Time: C	*ENG	
3-422-013	Min Supply Time: M	*ENG	

3-422-014	Min Supply Time: Y	*ENG	

3432	[DrvTime: Setting]		
3-432-001	DriveTime(Maximum)	*ENG	Sets the maximum continuous supply time. [0 to 1500 / 800 / 1 msec/step]

3440	[Fixed Supply Mode]		
3-440-001	Fixed Rate: Bk	*ENG	Sets toner supply ratio for fixed supply mode. [0 to 100 / 10 / 1%/step]
3-440-002	Fixed Rate: C	*ENG	
3-440-003	Fixed Rate: M	*ENG	
3-440-004	Fixed Rate: Y	*ENG	

3450	[Toner Supply PID: Setting]		
3-450-001	Vt Proportion Coef.: Bk	*ENG	Sets supply coefficient to supply toner proportionate to Vt-Vtref at toner supply control. [0 to 2550 / 40 / 1/step]
3-450-002	Vt Proportion Coef.: C	*ENG	
3-450-003	Vt Proportion Coef.: M	*ENG	
3-450-004	Vt Proportion Coef.: Y	*ENG	
3-450-011	Pixel Proportion Coef.1: Bk	*ENG	Sets supply coefficient to supply toner proportionate to output imaging pixel (Pxl) at toner supply control. [0.00 to 2.55 / 0.60 / 0.01/step]
3-450-012	Pixel Proportion Coef.1: C	*ENG	
3-450-013	Pixel Proportion Coef.1: M	*ENG	
3-450-014	Pixel Proportion Coef.1: Y	*ENG	

3-450-021	Pixel Proportion Coef. 2: Bk	*ENG	Displays the current value of pixel proportionality coefficient 2 for supply coefficient to supply toner proportionate to the pixel (Pxl) of output image at toner supply control. [0.00 to 2.55 / 1.00 / 0.01/step]
3-450-022	Pixel Proportion Coef. 2: C	*ENG	
3-450-023	Pixel Proportion Coef. 2: M	*ENG	
3-450-024	Pixel Proportion Coef. 2: Y	*ENG	
3-450-031	Correction Coefficient: 1	*ENG	Sets the supply coefficient to supply toner proportionate to the pixel (Pxl) of output image at toner supply control. [0.00 to 2.55 / 1.00 / 0.01/step]
3-450-032	Correction Coefficient: 2	*ENG	[0.00 to 2.55 / 0.50 / 0.01/step]
3-450-033	Correction Coefficient: 3	*ENG	[0.00 to 2.55 / 0.00 / 0.01/step]
3-450-034	Correction Coefficient: 4	*ENG	[0.00 to 2.55 / 0.25 / 0.01/step]
3-450-035	Correction Coefficient: 5	*ENG	[0.00 to 2.55 / 0.50 / 0.01/step]
3-450-041	Pixel Proportion Coef. 3: Bk	*ENG	Displays the current value of pixel proportionality coefficient 3 for supply coefficient to supply toner proportionate to the pixel (Pxl) of output image at toner supply control. [0.70 to 1.30 / 1.00 / 0.01/step]
3-450-042	Pixel Proportion Coef. 3: C	*ENG	
3-450-043	Pixel Proportion Coef. 3: M	*ENG	
3-450-044	Pixel Proportion Coef. 3: Y	*ENG	
3-450-051	Correction Value 1	*ENG	Sets the supply coefficient to supply toner proportionate to the pixel (Pxl) of output image at toner supply control. [-0.10 to 0.00 / -0.01 / 0.01/step]

3-450-052	Correction Value 2	*ENG	[0.00 to 0.10 / 0.01 / 0.01/step]
3-450-061	Pixel Proportion Coef. Err	*ENG	[0.00 to 1.00 / 0.35 / 0.01/step]
3-450-071	I_Vt_Coef: Bk	*ENG	Sets the supply coefficient to supply toner proportionate to the pixel (Pxl) of output image at toner supply control. [0 to 2550 / 500 / 1/step]
3-450-072	I_Vt_Coef: C	*ENG	
3-450-073	I_Vt_Coef: M	*ENG	
3-450-074	I_Vt_Coef: Y	*ENG	
3-450-081	Si:Bk	*ENG	Sets the supply coefficient to supply toner according to the accumulation of Vt-Vtref differences at toner supply control. [-255.00 to 255.00 / 0.00 / 0.01/step]
3-450-082	Si:C	*ENG	
3-450-083	Si:M	*ENG	
3-450-084	Si:Y	*ENG	
3-450-091	Vt Sum Times: Bk	*ENG	Displays the accumulation of Vt-Vtref differences. [1 to 255 / 20 / 1 times/step]
3-450-092	Vt Sum Times: C	*ENG	
3-450-093	Vt Sum Times: M	*ENG	
3-450-094	Vt Sum Times: Y	*ENG	

3460	[Toner Supply Ctrl: DANC: Set]		
3-460-011	Minimum Supply Time	*ENG	Sets the DANC minimum supply time. [0 to 250 / 100 / 1 msec/step]
3-460-012	Maximum Supply Time	*ENG	Sets the DANC maximum supply time. [0 to 1000 / 200 / 1 msec/step]
3-460-022	SMITH: Supply Amount: Bk	*ENG	Sets the supply quantity at Smith model. [1 to 500 / 129 / 1 mg/step]
3-460-111	Transfer Rate: Bk	*ENG	Sets the inverse of transfer rate to make up for the reverse transfer of ANC. [1.00 to 1.50 / 1.00 / 0.01/step]
3-460-112	Transfer Rate: C	*ENG	
3-460-113	Transfer Rate: M	*ENG	
3-460-114	Transfer Rate: Y	*ENG	

3461	[Toner Supply Ctrl: DANC: Set]		
3-461-001	PI Rate	*ENG	Changes the request values of PI at one time. [5 to 200 / 100 / 1%/step]
3-461-011	PI: P Gain: Bk	*ENG	Sets I gain. [0.0000 to 1.0000 / 0.0100 / 0.0001/step]
3-461-012	P Limits: Ratio: Up: Bk	*ENG	Sets P gain. [0.00 to 1.00 / 0.10 / 0.01/step]
3-461-013	P Limits: Ratio: Low: Bk	*ENG	Sets P gain. [0.00 to 1.00 / 0.20 / 0.01/step]
3-461-021	PI: I Gain: Bk	*ENG	Sets the limit for the I or P request value (supply plus side). [0.000 to 0.100 / 0.0100 / 0.0001/step]
3-461-022	I Limits: Ratio: Up: Bk	*ENG	Sets the limit for the I or P request value (supply plus side). [0.00 to 1.00 / 0.10 / 0.01/step]
3-461-023	I Limits: Ratio: Low: Bk	*ENG	Sets the limit for the I request value (supply minus side). [0.00 to 1.00 / 0.30 / 0.01/step]
3-461-052	AW:AWIpn:Bk	*ENG	
3-461-102	PI: Line Spd Corr.: StdSpd1: Bk	*ENG	[0 to 2000 / 100 / 1/step]
3-461-103	PI: Line Spd Corr.: StdSpd2: Bk	*ENG	[0.05 to 1.00 / * / 0.01/step] *C306: 1.00 *C406: 0.84
3-461-104	PI: Line Spd Corr.: LowSpd: Bk	*ENG	[0.05 to 1.00 / * / 0.01/step] *C306: 1.00 *C406: 0.71
3-461-121	SMITH: Gain: Bk	*ENG	[0.05 to 1.00 / * / 0.01/step] *C306: 0.50 *C406: 0.35

3-461-122	SMITH: Ratio: Std Speed 1: Bk	*ENG	[0.00 to 2.00 / 1.00 / 0.01/step]
3-461-123	SMITH: Ratio: Std Speed 2: Bk	*ENG	[0.00 to 1.00 / 1.00 / 0.01/step]
3-461-124	SMITH: Ratio: Low Speed: Bk	*ENG	[0.00 to 1.00 / 1.00 / 0.01/step]

3462	[TonerSupply :DANC]		
3-462-001	ANC: Rate	*ENG	Sets the request value of ANC to change the all ANC filters at one time. [0 to 200 / 100 / 1%/step] 100: normal control, 0: without ANC
3-462-101	ANC:Gain: Bk	*ENG	Sets the of all ANC filters. [0.00 to 2.00 / 1.00 / 0.01/step]
3-462-102	ANC: Ratio: Std Speed 1: Bk	*ENG	[0.05 to 1.00 / 1.00 / 0.01/step]
3-462-103	ANC: Ratio: Std Speed 2: Bk	*ENG	Sets the liner speed correction to the gain of all ANC filters (Low speed). [0.05 to 1.00 / 1.00 / 0.01/step]
3-462-104	ANC: Ratio: Low Speed: Bk	*ENG	[0.05 to 1.00 / 1.00 / 0.01/step]

3463	[Toner Supply Ctrl: DANC: Set]		
3-463-101	Integral: I: Save: Bk	*ENG	Sets the value for I storage corresponding to the power off/on. [-1000.0000 to 1000.0000 / 0.0000 / 0.0001/step]
3-463-102	Integral: I: Save: C	*ENG	
3-463-103	Integral: I: Save: M	*ENG	
3-463-104	Integral: I: Save: Y	*ENG	
3-463-111	ANC:Ref Save: Bk	*ENG	Sets the value for ANC storage corresponding to the power off/on. [-1000.0000 to 1000.0000 / 0.0000 / 0.0001/step]
3-463-112	ANC:Ref Save: C	*ENG	
3-463-113	ANC:Ref Save: M	*ENG	

3-463-114	ANC:Ref Save: Y	*ENG	
3-463-201	Save_DANC: Bk	*ENG	Displays the image area of the latest page. [0 to 9999 / 0 / 1 cm2/step]
3-463-202	Save_DANC: C	*ENG	
3-463-203	Save_DANC: M	*ENG	
3-463-204	Save_DANC: Y	*ENG	

3500	[ImgQtyAdj :ON/OFF]		
3-500-001	ALL	*ENG	Sets to off for the execution determination of all image processing adjustments, potential controls, MUSIC condition adjustments, or TD sensor initial settings. [0 or 1 / 1 / 1/step] 0:OFF, 1:ON
3-500-002	Process Control	*ENG	
3-500-003	MUSIC	*ENG	
3-500-004	TD Sensor Initial Set	*ENG	

3501	[Toner End Prohibition Setting]		
3-501-001	Process Control	*ENG	[0 or 1 / 1 / 1/step] 0:Permit, 1:Forbid
3-501-002	MUSIC	*ENG	
3-501-003	TC Adjustment	*ENG	

3509	[ImgQtyAdj :ModeSelect] Specifies the process control operation mode (B/W or Full-color).  Note - Setting this SP to the B/W priority applies the image quality adjustment for B/W only without MUSIC. It reduces the warm-up time and color toner consumption. - However, the first copy time in full-color printing will be longer because the adjustment for full-color is executed at full-color jobs.		
3-509-011	FC/BW Mode Priority Setting	*ENG	[0 or 1 / 1 / 1/step] 0:Permit, 1:Forbid

3510	[Image Quality Adj.: Exec Flag]		

3-510-001	MUSIC	*ENG	[0 to 2 / 0 / 1/step]

3520	[ImgQtyAdj :Interval]		
3-520-001	During Job	*ENG	Sets the interval pages for image quality adjustment detection during job. [0 to 100 / 5 / 1 pages/step]
3-520-002	During Stand-by	*ENG	Sets the interval pages for image quality adjustment detection during the stand-by mode. [0 to 100 / 10 / 1 minutes/step]

3521	[Drum Stop Time :Disp]		
	Displays the ending time of image processing (year, month, day, hour, and minute).		
3-521-001	Year:Col	*ENG	[0 to 99 / 0 / 1 year/step]
3-521-002	Month:Col	*ENG	[1 to 12 / 1 / 1 month/step]
3-521-003	Day:Col	*ENG	[1 to 31 / 1 / 1 day/step]
3-521-004	Hour:Col	*ENG	[0 to 23 / 0 / 1 hour/step]
3-521-005	Minute:Col	*ENG	[0 to 59 / 0 / 1 minute/step]

3522	[Drum Stop:Environment:Display]		
3-522-001	Temperature	*ENG	Displays the temperature at the end of the image processing. [-1280.0 to 1270.0 / 0 / 0.1 deg/step]
3-522-002	Relative Humidity	*ENG	Displays the relative humidity at the end of the image processing. [0.0 to 1000.0 / 0 / 0.1%RH/step]
3-522-003	Absolute Humidity	*ENG	Displays the absolute humidity at the end of the image processing. [0.0 to 1000.0 / 0 / 0.1 g/m3/step]

3522	[Drum Stop Environ :Disp]		
3-522-011	Temperature:Col	*ENG	Displays the temperature at the end of the image processing. [-1280.0 to 1270.0 / 0 / 0.1 deg/step]
3-522-012	Rel Humidity:Col	*ENG	Displays the relative humidity at the end of the image processing. [0.0 to 1000.0 / 0 / 0.1%RH/step]
3-522-013	Abs Humidity:Col	*ENG	Displays the absolute humidity at the end of the image processing. [0.0 to 1000.0 / 0 / 0.1 g/m ³ /step]

3522	[Rapi_timer]		
3-522-100	Time Setting	ENG	[0 to 255 / 30 / 1sec/step]

3529	[ProCon Auto Exe Interval: Set]		
3-529-001	Development Gamma Correction	*ENG	Sets on/off for the developer gamma correction or the environment correction of process control execution interval. [0 or 1 / 1 / 1/step] 0:OFF, 1:ON
3-529-002	Environment Correction	*ENG	
3-529-003	Absolute Humidity Threshold	*ENG	Sets absolute humidity threshold for the environment correction of process control execution interval. [0.0 to 99.0 / 4.3 / 0.1 g/m ³ /step]
3-529-004	Maximum Correction Times	*ENG	Sets the maximum number of times for interrupt or job end process control. [0 to 99 / 4 / 1 counts/step]
3-529-005	Execution Counter	ENG	Displays the maximum counter for interrupt or job end process control. [0 to 255 / 0 / 1 counts/step]
3-529-006	Page Counter: BW	*ENG	Displays the page counter of process control. [0 to 5000 / 0 / 1 sheets/step]
3-529-007	Page Counter: FC	*ENG	

3530	[Power ON ProCon :Set]		
3-530-001	Non-use Time Setting	*ENG	[0 to 1440 / 360 / 1 minute/step]
3-530-002	Temperature Range Threshold	*ENG	[0 to 99 / 10 / 1 deg/step]
3-530-003	Relative Humidity Range Thresh	*ENG	[0 to 99 / 50 / 1%RH/step]
3-530-004	Absolute Humidity Range Thresh	*ENG	[0 to 99 / 6 / 1 g/m ³ /step]
3-530-005	Interval:BW	*ENG	[0 to 5000 / 250 / 1 sheets/step]
3-530-006	Interval:FC	*ENG	[0 to 5000 / 100 / 1 sheets/step]
3-530-007	Page Counter: BW	*ENG	[0 to 5000 / 0 / 1 sheets /step]
3-530-008	Page Counter: FC	*ENG	
3-530-009	Non-use Time Setting(Long)	*ENG	[0 to 65535 / 2880 / 1 min/step]

3531	[Non-useTime Procon :Set]		
	Sets the non-use time setting, temperature, relative humidity, absolute humidity or page interval as the threshold of process control execution determination at power on.		
3-531-001	Non-use Time Setting	*ENG	[0 to 1440 / 360 / 1 minute/step]
3-531-002	Temperature Range Threshold	*ENG	[0 to 99 / 10 / 1 deg/step]
3-531-003	Relative Humidity Range Thresh	*ENG	[0 to 99 / 50 / 1%RH/step]
3-531-004	Absolute Humidity Range Thresh	*ENG	[0 to 99 / 6 / 1 g/m ³ /step]

3-531-005	Maximum Execution Number	*ENG	[0 to 99 / 10 / 1 times/step]

3533	[Interrupt ProCon :Set]		
3-533-001	Interval:Set:BW	*ENG	Sets the page interval for interrupt process control. [0 to 5000 / 500 / 1 sheets/step]
3-533-002	Interval: Display: BW	*ENG	Displays the page interval for interrupt process control. [0 to 5000 / 500 / 1 sheets/step]
3-533-003	Correction (Short): BW	*ENG	Sets the correction coefficient (Short) of page interval for interrupt process control. [0.00 to 1.00 / 0.10 / 0.01/step]
3-533-004	Correction (Mid.): BW	*ENG	Sets the correction coefficient (Mid) of page interval for interrupt process control. [0.00 to 1.00 / 1.00 / 0.01/step]
3-533-011	Interval:Set:FC	*ENG	Sets the page interval for interrupt process control. [0 to 5000 / 200 / 1 sheets/step]
3-533-012	Interval: Display:FC	*ENG	Displays the page interval for interrupt process control. [0 to 5000 / 200 / 1 sheets/step]
3-533-013	Correction (Short): FC	*ENG	Sets the correction coefficient (Short) of page interval for interrupt process control. [0.00 to 1.00 / 0.25 / 0.01/step]
3-533-014	Correction (Mid.): FC	*ENG	Sets the correction coefficient (Mid) of page interval for interrupt process control. [0.00 to 1.00 / 1.00 / 0.01/step]

3534	[JobEnd ProCon :Set]		
3-534-001	Interval:Set:BW	*ENG	Sets the page interval for job end process control. [0 to 5000 / 250 / 1 sheets/step]

3-534-002	Interval: Display:BW	*ENG	Displays the page interval for job end process control. [0 to 5000 / 250 / 1 sheets/step]
3-534-003	Correction (Short): BW	*ENG	Sets the correcting coefficient (Short) for job end process control. [0.00 to 1.00 / 0.20 / 0.01/step]
3-534-004	Correction (Mid.): BW	*ENG	Sets the correcting coefficient (Mid) for job end process control. [0.00 to 1.00 / 1.00 / 0.01/step]
3-534-011	Interval:Set:FC	*ENG	Sets the page interval for job end process control. [0 to 1000 / 100 / 1 sheets/step]
3-534-012	Interval: Display:FC	*ENG	Displays the page interval for job end process control. [0 to 5000 / 100 / 1 sheets/step]
3-534-013	Correction (Short): FC	*ENG	Sets the correcting coefficient (Short) for job end process control. [0.00 to 1.00 / 0.50 / 0.01/step]
3-534-014	Correction (Mid.): FC	*ENG	Sets the correcting coefficient (Mid) for job end process control. [0.00 to 1.00 / 1.00 / 0.01/step]

3539	[Dev Agitating Time :Set]		
3-539-001	Agitating Time	*ENG	Sets the developer agitating time. [0 to 3000 / 10 / 1 sec/step]
3-539-010	ON/OFF(Abs Humidity Reference)	*ENG	Sets on/off for absolute humidity correction of the developer agitating time. [0 or 1 / 1 / 1/step] 0:OFF, 1:ON
3-539-011	Absolute Humidity Reference: 1	*ENG	[0 to 3000 / 0 / 1 sec/step]
3-539-012	Absolute Humidity Reference: 2	*ENG	[0 to 3000 / 0 / 1 sec/step]

3-539-013	Absolute Humidity Reference: 3	*ENG	[0 to 3000 / 5 / 1 sec/step]
3-539-014	Absolute Humidity Reference: 4	*ENG	[0 to 3000 / 5 / 1 sec/step]
3-539-015	Absolute Humidity Reference: 5	*ENG	[0 to 3000 / 5 / 1 sec/step]
3-539-016	Absolute Humidity Reference: 6	*ENG	[0 to 3000 / 5 / 1 sec/step]
3-539-021	Absolute Humidity Threshold: 1	*ENG	[0.0 to 65.0 / 4.0 / 0.1 g/m ³ /step]
3-539-022	Absolute Humidity Threshold: 2	*ENG	[0.0 to 65.0 / 8.0 / 0.1 g/m ³ /step]
3-539-023	Absolute Humidity Threshold: 3	*ENG	[0.0 to 65.0 / 12.0 / 0.1 g/m ³ /step]
3-539-024	Absolute Humidity Threshold: 4	*ENG	[0.0 to 65.0 / 16.0 / 0.1 g/m ³ /step]
3-539-025	Absolute Humidity Threshold: 5	*ENG	[0.0 to 65.0 / 24.0 / 0.1 g/m ³ /step]
3-539-030	ON/OFF(Non-use Time Reference)	*ENG	Sets on/off for non-use time correction of the developer agitating time. [0 or 1 / 1 / 1/step] 0:OFF, 1:ON
3-539-031	Non-use Time Reference: 1	*ENG	[0 to 3000 / 0 / 1 sec/step]
3-539-032	Non-use Time Reference: 2	*ENG	
3-539-033	Non-use Time Reference: 3	*ENG	
3-539-034	Non-use Time Reference: 4	*ENG	

3-539-035	Non-use Time Reference: 5	*ENG	
3-539-036	Non-use Time Reference: 6	*ENG	
3-539-037	Non-use Time Reference: 7	*ENG	
3-539-038	Non-use Time Reference: 8	*ENG	
3-539-039	Non-use Time Reference: 9	*ENG	[0 to 3000 / 5 / 1 sec/step]
3-539-040	Non-use Time Reference: 10	*ENG	[0 to 3000 / 10 / 1 sec/step]
3-539-041	Non-use Time Threshold:1	*ENG	[0 to 30000 / 15 / 1 min/step]
3-539-042	Non-use Time Threshold:2	*ENG	[0 to 30000 / 30 / 1 min/step]
3-539-043	Non-use Time Threshold:3	*ENG	[0 to 30000 / 60 / 1 min/step]
3-539-044	Non-use Time Threshold:4	*ENG	[0 to 30000 / 120 / 1 min/step]
3-539-045	Non-use Time Threshold:5	*ENG	[0 to 30000 / 240 / 1 min/step]
3-539-046	Non-use Time Threshold:6	*ENG	[0 to 30000 / 360 / 1 min/step]
3-539-047	Non-use Time Threshold:7	*ENG	[0 to 30000 / 720 / 1 min/step]
3-539-048	Non-use Time Threshold:8	*ENG	[0 to 30000 / 1440 / 1 min/step]
3-539-049	Non-use Time Threshold:9	*ENG	[0 to 30000 / 2880 / 1 min/step]

3-539-050	ON/OFF(Dot Coverage Reference)	*ENG	Sets on/off for image area correction of the developer agitating time. [0 to 1 / 1 / 1/step] 0:OFF, 1:ON
3-539-051	Dot Coverage Reference: 1	*ENG	[0 to 3000 / 0 / 1 sec/step]
3-539-052	Dot Coverage Reference: 2	*ENG	[0 to 3000 / 0 / 1 sec/step]
3-539-053	Dot Coverage Reference: 3	*ENG	[0 to 3000 / 5 / 1 sec/step]
3-539-054	Dot Coverage Reference: 4	*ENG	[0 to 3000 / 5 / 1 sec/step]
3-539-055	Dot Coverage Reference: 5	*ENG	[0 to 3000 / 10 / 1 sec/step]
3-539-056	Dot Coverage Reference: 6	*ENG	[0 to 3000 / 10 / 1 sec/step]
3-539-061	Dot Coverage Threshold: 1	*ENG	[0 to 100 / 10 / 1%/step]
3-539-062	Dot Coverage Threshold: 2	*ENG	[0 to 100 / 20 / 1%/step]
3-539-063	Dot Coverage Threshold: 3	*ENG	[0 to 100 / 40 / 1%/step]
3-539-064	Dot Coverage Threshold: 4	*ENG	[0 to 100 / 60 / 1%/step]
3-539-065	Dot Coverage Threshold: 5	*ENG	[0 to 100 / 80 / 1%/step]
3-539-099	Upper Limit	*ENG	Sets the upper limit of the developer agitating time. [0 to 3600 / 30 / 1 sec/step]

3541	[Music Interval :Set]

3-541-001	Page Counter: BW	*ENG	[0 to 5000 / 0 / 1 sheets/step]
3-541-002	Page Counter: FC	*ENG	

3550	[Refresh Mode]		
3-550-001	Required Area: Bk	*ENG	Displays the image area requiring the refresh. [0 to 65535 / - / 1 cm ² /step]
3-550-002	Required Area: C	*ENG	
3-550-003	Required Area: M	*ENG	
3-550-004	Required Area: Y	*ENG	
3-550-011	Dev. Motor Rotation: Display: Bk	*ENG	Displays the developer motor rotation between the refresh mode executions. [0.0 to 1000.0 / 0 / 0.1 m/step]
3-550-012	Dev. Motor Rotation: Display: C	*ENG	
3-550-013	Dev. Motor Rotation: Display: M	*ENG	
3-550-014	Dev. Motor Rotation: Display: Y	*ENG	
3-550-021	Rotation Threshold	*ENG	Sets the threshold of refresh mode execution determination. [0.0 to 1000.0 / 0.1 / 0.1 m/step]
3-550-031	Refresh Threshold: Bk	*ENG	Sets the refresh execution threshold at toner density adjustment. [0 to 255 / 25 / 1 cm ² /m/step]
3-550-032	Refresh Threshold: C	*ENG	Sets the refresh execution threshold at toner density adjustment. [0 to 255 / 25 / 1 cm ² /m/step]
3-550-033	Refresh Threshold: M	*ENG	
3-550-034	Refresh Threshold: Y	*ENG	
3-550-041	Job End Area Coefficient	*ENG	[0.1 to 25.5 / 1.0 / 0.1/step]

3-550-042	Job End Vb Coefficient	*ENG	[0 to 100 / 34 / 1%/step]
3-550-043	Job End Length	*ENG	[0 to 99 / 77 / 1 mm/step]
3-550-044	Job End Supply	*ENG	[0.000 to 1.000 / 0.450 / 0.001 mg/cm ² /step]
3-550-081	Consumption Counts (Max)	*ENG	Sets the upper limit of number of toner refreshes performs at the same time of process control. [0 to 50 / 0 / 1/step]
3-550-121	Refresh Page Threshold: Bk	*ENG	[0 to 200 / 100 / 1 page/step]
3-550-122	Refresh Page Threshold: Col	*ENG	[0 to 200 / 100 / 1 page/step]
3-550-131	Refresh Page Counter Bk	*ENG	[0 to 999999 / 0 / 1 page/step]
3-550-132	Refresh Page Counter C	*ENG	[0 to 999999 / 0 / 1 page/step]
3-550-133	Refresh Page Counter M	*ENG	[0 to 999999 / 0 / 1 page/step]
3-550-134	Refresh Page Counter Y	*ENG	[0 to 999999 / 0 / 1 page/step]

3553	[Transfer Belt cleaning]		
3-553-001	Transfer Idle Time Temp.: H	*ENG	[0.0 to 3.0 / 0.0 / 0.1 revolutions/step]
3-553-002	Transfer Idle Time Temp.: M	*ENG	
3-553-003	Transfer Idle Time Temp.: L	*ENG	
3-553-004	Transfer Idle Time Temp.: L: ON	*ENG	

3-553-005	Temperature Threshold:T2	*ENG	[20 to 30 / 25 / 1 deg/step]
3-553-006	Temperature Threshold:T1	*ENG	[0 to 15 / 15 / 1 deg/step]
3-553-007	Temperature Threshold:T3	*ENG	[0 to 30 / 18 / 1 deg/step]

3555	[Execution Interval: Set]		
3-555-001	Charge AC Control Counter: FC	*ENG	[0 to 2000 / 500 / 1 page/step]
3-555-002	Charge AC Control Counter: Bk	*ENG	[0 to 2000 / 500 / 1 page/step]

3600	[Select ProCon]		
3-600-001	Potential Control	*ENG	Sets the potential control mode. [0 or 1 / 1 / 1/step] 0:FIXED, 1:CONTROL
3-600-002	LD Control	*ENG	Sets the LD control mode. [0 or 3 / 1 / 1/step] 0:OFF, 1:ON
3-600-003	TC Adj. Mode	*ENG	Sets the execution timing for toner density adjustment process control. [0 to 3 / 3 / 1/step] 0:Do Not Execute 1:1st Power On 2:1st Power On & Job End
3-600-004	ACC Before ProCon	*ENG	Selects the performance same as the process control executed before ACC. [0 to 3 / 2 / 1/step] 0:Not Execute 1:Process Control 2:TC Control

3-600-060	Vsg ITB Prev Pattern Corr.	*ENG	[0 to 2 / 2 / 1/step]

3610	[Charging AC Control: Display]		
3-610-001	Standard Speed: Bk	*ENG	Displays the charged AC control value determined by charged AC control. [0.00 to 3.00 / 210 / 0.01 kV/step]
3-610-002	Standard Speed: C	*ENG	
3-610-003	Standard Speed: M	*ENG	
3-610-004	Standard Speed: Y	*ENG	

3611	[Charging DC Control: Display] Displays charged DC bias determined by process control.		
3-611-001	Standard Speed: Bk	*ENG	[300 to 1000 / 700 / 1 -V/step]
3-611-002	Standard Speed: C	*ENG	[300 to 1000 / 690 / 1 -V/step]
3-611-003	Standard Speed: M	*ENG	[300 to 1000 / 690 / 1 -V/step]
3-611-004	Standard Speed: Y	*ENG	[300 to 1000 / 690 / 1 -V/step]
3-611-011	Mid Speed: Bk	*ENG	[300 to 1000 / 700 / 1 -V/step]
3-611-012	Mid Speed: C	*ENG	[300 to 1000 / 690 / 1 -V/step]
3-611-013	Mid Speed: M	*ENG	[300 to 1000 / 690 / 1 -V/step]
3-611-014	Mid Speed: Y	*ENG	[300 to 1000 / 690 / 1 -V/step]
3-611-021	Low Speed: Bk	*ENG	[300 to 1000 / 700 / 1 -V/step]
3-611-022	Low Speed: C	*ENG	[300 to 1000 / 690 / 1 -V/step]
3-611-023	Low Speed: M	*ENG	[300 to 1000 / 690 / 1 -V/step]
3-611-024	Low Speed: Y	*ENG	[300 to 1000 / 690 / 1 -V/step]
3-611-051	Std Speed: BW	*ENG	[300 to 1000 / 700 / 1 -V/step]
3-611-061	Mid Speed: BW	*ENG	[300 to 1000 / 700 / 1 -V/step]
3-611-071	Low Speed: BW	*ENG	[300 to 1000 / 700 / 1 -V/step]
3-611-081	Std Speed2: BW	*ENG	[300 to 1000 / 700 / 1 -V/step]

3612	[Dev DC Control: Display]		
3-612-001	Std Speed: Bk	*ENG	Displays developer bias determined by process control. [200 to 800 / 550 / 1 -V/step]
3-612-002	Std Speed: C	*ENG	
3-612-003	Std Speed: M	*ENG	
3-612-004	Std Speed: Y	*ENG	
3-612-011	Mid Speed: Bk	*ENG	Displays developer bias determined by process control. [200 to 800 / 550 / 1 -V/step]
3-612-012	Mid Speed: C	*ENG	
3-612-013	Mid Speed: M	*ENG	
3-612-014	Mid Speed: Y	*ENG	
3-612-021	Low Speed: Bk	*ENG	Displays developer bias determined by process control. [200 to 800 / 550 / 1 -V/step]
3-612-022	Low Speed: C	*ENG	
3-612-023	Low Speed: M	*ENG	
3-612-024	Low Speed: Y	*ENG	
3-612-041	Vb Limit	*ENG	[0 to 500 / 50 / 1 V/step]
3-612-051	Std Speed: BW	*ENG	Displays developer bias determined by process control. [200 to 800 / 550 / 1 -V/step]
3-612-061	Mid Speed: BW	*ENG	
3-612-071	Low Speed: BW	*ENG	
3-612-081	Std Speed2: BW	*ENG	

3613	[LD Power Control: Display]		
3-613-001	Std Speed: Bk	*ENG	Displays the LD power determined by process control. [0 to 200 / 100 / 1%/step]
3-613-002	Std Speed: C	*ENG	
3-613-003	Std Speed: M	*ENG	
3-613-004	Std Speed: Y	*ENG	
3-613-011	Mid Speed: Bk	*ENG	

3-613-012	Mid Speed: C	*ENG	
3-613-013	Mid Speed: M	*ENG	
3-613-014	Mid Speed: Y	*ENG	
3-613-021	Low Speed: Bk	*ENG	Displays the LD power determined by process control. [0 to 200 / 100 / 1%/step]
3-613-022	Low Speed: C	*ENG	
3-613-023	Low Speed: M	*ENG	
3-613-024	Low Speed: Y	*ENG	
3-613-051	Std Speed: BW	*ENG	
3-613-061	Mid Speed: BW	*ENG	
3-613-071	Std Speed: BW	*ENG	
3-613-081	Std Speed2: BW	*ENG	
3-613-101	ProCon Corr: Bk	*ENG	
3-613-102	ProCon Corr: C	*ENG	
3-613-103	ProCon Corr: M	*ENG	[0 to 200 / 160 / 1%/step]
3-613-104	ProCon Corr: Y	*ENG	

3619	[Img Bias: Line Spd Corr: Set]		
3-619-001	Vb Coef: Std Speed: Bk	*ENG	[0.00 to 2.55 / * / 0.01/step] *C306: 0.42 *C406: 0.52
3-619-002	Vb Coef: Std Speed: C	*ENG	[0.00 to 2.55 / 1.00 / 0.01/step]
3-619-003	Vb Coef: Std Speed: M	*ENG	
3-619-004	Vb Coef: Std Speed: Y	*ENG	

3-619-005	Vb Coef: Low Speed: Bk	*ENG	[0.00 to 2.55 / * / 0.01/step] *C306: 0.41 *C406: 0.48
3-619-006	Vb Coef: Low Speed: C	*ENG	[0.00 to 2.55 / 1.00 / 0.01/step]
3-619-007	Vb Coef: Low Speed: M	*ENG	
3-619-008	Vb Coef: Low Speed: Y	*ENG	
3-619-011	Vb Offset: Std Speed: Bk	*ENG	[-1000 to 1000 / * / 1 V/step] *C306: 283 *C406: 264
3-619-012	Vb Offset: Std Speed: C	*ENG	[-1000 to 1000 / * / 1 V/step] *C306: 44 *C406: 45
3-619-013	Vb Offset: Std Speed: M	*ENG	
3-619-014	Vb Offset: Std Speed: Y	*ENG	
3-619-015	Vb Offset: Low Speed: Bk	*ENG	[-1000 to 1000 / * / 1 V/step] *C306: 215 *C406: 200
3-619-016	Vb Offset: Low Speed: C	*ENG	[-1000 to 1000 / * / 1 V/step] *C306: -37 *C406: -44
3-619-017	Vb Offset: Low Speed: M	*ENG	
3-619-018	Vb Offset: Low Speed: Y	*ENG	
3-619-021	Vb Coef: Standard Speed 2: Bk	*ENG	[0.00 to 2.55 / 0.51 / 0.01/step]
3-619-024	Vb Coef: Mid Speed: Std Speed 2	*ENG	[0.00 to 2.55 / 0.69 / 0.01/step]

3-619-025	Vb Coef: Low Speed: Std Speed 2	*ENG	[0.00 to 2.55 / 0.55 / 0.01/step]
3-619-026	Vb Coef: Std Speed 2: Std Speed 2	*ENG	[0.00 to 2.55 / 0.85 / 0.01/step]
3-619-031	Vb Offset: Std Speed 2: Bk	*ENG	[-1000 to 1000 / 234 / 1 V/step]
3-619-034	Vb Offset: Mid Speed: Std Speed 2	*ENG	[-1000 to 1000 / 112 / 1 V/step]
3-619-035	Vb Offset: Low Speed: Std Speed 2	*ENG	[-1000 to 1000 / 107 / 1 V/step]
3-619-036	Vb Offset: Std Speed 2: Std Speed 2	*ENG	[-1000 to 1000 / 68 / 1 V/step]
3-619-041	Vb Coef: Mid Speed: Bk	*ENG	[0.00 to 2.55 / 0.47 / 0.01/step]
3-619-042	Vb Coef: Mid Speed: C	*ENG	[0.00 to 2.55 / 1.00 / 0.01/step]
3-619-043	Vb Coef: Mid Speed: M	*ENG	
3-619-044	Vb Coef: Mid Speed: Y	*ENG	
3-619-045	Vb Offset: Mid Speed: Bk	*ENG	[-1000 to 1000 / 265 / 1 V/step]
3-619-046	Vb Offset: Mid Speed: C	*ENG	[-1000 to 1000 / 15 / 1 V/step]
3-619-047	Vb Offset: Mid Speed: M	*ENG	
3-619-048	Vb Offset: Mid Speed: Y	*ENG	

3620	[ProCon Target M/A]		
3-620-001	Maximum M/A:Bk	*ENG	[0.250 to 0.750 / 0.436 / 0.001 mg/cm2/step]
3-620-002	Maximum M/A:C	*ENG	[0.250 to 0.750 / 0.412 / 0.001 mg/cm2/step]
3-620-003	Maximum M/A:M	*ENG	[0.250 to 0.750 / 0.471 / 0.001 mg/cm2/step]
3-620-004	Maximum M/A:Y	*ENG	[0.250 to 0.750 / 0.464 / 0.001 mg/cm2/step]
3-620-051	Maximum M/A:BW	*ENG	[0.250 to 0.750 / 0.383 / 0.001 mg/cm2/step]

3622	[Development Potential: Display]		
3-622-001	Bk	*ENG	Displays the development potential. [0 to 800 / 0 / 1 V/step]
3-622-002	C	*ENG	
3-622-003	M	*ENG	
3-622-004	Y	*ENG	
3-622-021	Bk:BW	*ENG	
3-622-051	Upper Limit: Bk	*ENG	Sets the development potential upper limit.(K) [400 to 800 / 738 / 1 V/step]
3-622-052	Upper Limit: C	*ENG	Sets the development potential upper limit.(C) [400 to 800 / 650 / 1 V/step]
3-622-053	Upper Limit: M	*ENG	Sets the development potential upper limit.(M) [400 to 800 / 650 / 1 V/step]
3-622-054	Upper Limit: Y	*ENG	Sets the development potential upper limit.(Y) [400 to 800 / 650 / 1 V/step]

3-622-061	Lower Limit: Bk	*ENG	Sets the development potential lower limit.(K) [0 to 400 / 250 / 1 V/step]
3-622-062	Lower Limit: C	*ENG	Sets the development potential lower limit.(C) [0 to 400 / 300 / 1 V/step]
3-622-063	Lower Limit: M	*ENG	Sets the development potential lower limit.(M) [0 to 400 / 300 / 1 V/step]
3-622-064	Lower Limit: Y	*ENG	Sets the development potential lower limit.(Y) [0 to 400 / 300 / 1 V/step]

3623	[LD Power :Set]		
3-623-001	Standard Speed Slope: Bk	*ENG	[-1000 to 1000 / * / 1/step] *C306: 186 *C406: 228
3-623-002	Standard Speed Slope: C	*ENG	
3-623-003	Standard Speed Slope: M	*ENG	
3-623-004	Standard Speed Slope: Y	*ENG	
3-623-011	Standard Speed Offset: Bk	*ENG	[-1000 to 1000 / * / 1/step] *C306: 6 *C406: -8
3-623-012	Standard Speed Offset: C	*ENG	
3-623-013	Standard Speed Offset: M	*ENG	
3-623-014	Standard Speed Offset: Y	*ENG	

3-623-021	Mid. Speed Slope: Bk	*ENG	[-1000 to 1000 / 231 / 1/step]
3-623-022	Mid. Speed Slope: C	*ENG	
3-623-023	Mid. Speed Slope: M	*ENG	
3-623-024	Mid. Speed Slope: Y	*ENG	
3-623-031	Mid. Speed Offset: Bk	*ENG	[-1000 to 1000 / -14 / 1/step]
3-623-032	Mid. Speed Offset: C	*ENG	
3-623-033	Mid. Speed Offset: M	*ENG	
3-623-034	Mid. Speed Offset: Y	*ENG	
3-623-041	Low Speed Slope:K	*ENG	[-1000 to 1000 / * / 1/step] *C306: 144 *C406: 154
3-623-042	Low Speed Slope:C	*ENG	
3-623-043	Low Speed Slope:M	*ENG	
3-623-044	Low Speed Slope:Y	*ENG	
3-623-051	Low Speed Offset: Bk	*ENG	[-1000 to 1000 / * / 1/step] *C306: 26 *C406: 12
3-623-052	Low Speed Offset: C	*ENG	
3-623-053	Low Speed Offset: M	*ENG	
3-623-054	Low Speed Offset: Y	*ENG	
3-623-061	Standard Speed 2 Slope: Bk	*ENG	[-1000 to 1000 / 249 / 1/step]
3-623-071	Standard Speed 2 Offset: Bk	*ENG	[-1000 to 1000 / -22 / 1/step]

3624	[TC Adj. Mode: Set]		
3-624-001	Target(Upper Limit)	*ENG	Sets the upper limit of the target range of developer gamma adjustment for toner density adjustment process control. [0.00 to 1.00 / 0.15 / 0.01 mg/cm2/-kV/step]
3-624-002	Target(Lower Limit)	*ENG	Sets the lower limit of the target range of developer gamma adjustment for toner density adjustment process control. [-1.00 to 0.00 / -0.15 / 0.01 mg/cm2/-kV/step]
3-624-021	Consump Pattern Duty:Bk	*ENG	Sets LD Duty of consumption pattern for toner density adjustment process control. [0 to 15 / 15 / 1/step]
3-624-022	Consump Pattern Duty:C	*ENG	
3-624-023	Consump Pattern Duty:M	*ENG	
3-624-024	Consump Pattern Duty:Y	*ENG	
3-624-031	Max Adj. Counts:PowerON	*ENG	Sets the upper limit of number of consumptions for toner density adjustment process control. [0 to 10 / 1 / 1/step]
3-624-032	Max Counts:Job In	*ENG	[0 to 10 / 0 / 1/step]
3-624-033	Max Counts:Printing	*ENG	[0 to 10 / 0 / 1/step]
3-624-034	Max Adj. Counts:Jobend	*ENG	Sets the upper limit of number of consumptions for toner density adjustment process control. [0 to 10 / 1 / 1/step]
3-624-035	Max Adj. Counts:ACC	*ENG	[0 to 10 / 3 / 1/step]

3-624-036	Max Adj. Counts:Initialized	*ENG	
3-624-040	Max Adj. Counts:TE Check	*ENG	[0 to 10 / 1 / 1/step]
3-624-051	Supply Gain(Bk)	*ENG	Sets the supply gain for toner density adjustment process control. [0.0 to 1.0 / 0.5 / 0.1/step]
3-624-052	Supply Gain(C)	*ENG	
3-624-053	Supply Gain(M)	*ENG	
3-624-054	Supply Gain(Y)	*ENG	
3-624-061	Consump Gain(Bk)	*ENG	Sets the consumption gain for toner density adjustment process control. [0.0 to 1.0 / 0.5 / 0.1/step]
3-624-062	Consump Gain(C)	*ENG	
3-624-063	Consump Gain(M)	*ENG	
3-624-064	Consump Gain(Y)	*ENG	

3627	[ID Pattern Extraction :Set]		
3-627-001	Edge Detection Threshold :Bk	*ENG	[0.0 to 5.0 / 2.5 / 0.1 V/step]
3-627-002	Edge Detection Threshold :C	*ENG	
3-627-003	Edge Detection Threshold :M	*ENG	
3-627-004	Edge Detection Threshold :Y	*ENG	
3-627-011	Edge Upper Limit	*ENG	[0 to 255 / * / 1 point/step] *C306: 34 *C406: 28
3-627-012	Edge Upper Limit: Std Speed 2	*ENG	[0 to 255 / 24 / 1 point/step]
3-627-021	Edge Lower Limit	*ENG	[0 to 255 / * / 1 point/step] *C306: 14 *C406: 12

3-627-022	Edge Lower Limit: Std Speed 2	*ENG	[0 to 255 / 10 / 1 point/step]
3-627-031	Vsg Upper Threshold	*ENG	[0.000 to 5.000 / 4.800 / 0.001 V/step]
3-627-041	Vsg Lower Threshold	*ENG	[0.000 to 5.000 / 3.000 / 0.001 V/step]

3628	[ID Pattern Timing :Set]		
3-628-001	Scan: YMCK	*ENG	Sets the process control pattern detection timing with ID sensor. [-500.0 to 500.0 / 0.0 / 0.1 mm/step]
3-628-002	Detection Delay Time	*ENG	Sets the detection delay time of paper transfer. [0 to 2500 / 0 / 1 msec/step]
3-628-003	Delay Time	*ENG	Sets the ID pattern delay time. [0 to 2500 / * / 1 msec/step] *C306: 701 *C406: 641
3-628-004	MUSIC Delay Time	*ENG	Sets the MUSIC delay time. [-2500 to 2500 / 150 / 1 msec/step]
3-628-005	Delay Time: Std Speed 2	*ENG	[0 to 2500 / 592 / 1 msec/step]

3630	[Dev gamma :Disp/Set]		
3-630-001	Current:Bk	*ENG	Displays the latest developer gamma. [0.10 to 6.00 / 0.90 / 0.01 mg/cm2/-kV/step]
3-630-002	Current:C	*ENG	
3-630-003	Current:M	*ENG	
3-630-004	Current:Y	*ENG	
3-630-011	Target:Bk	*ENG	Displays the target value of developer gamma.
3-630-012	Target:C	*ENG	

3-630-013	Target:M	*ENG	[0.50 to 2.55 / 0.90 / 0.01 mg/cm2/-kV/step]
3-630-014	Target:Y	*ENG	
3-630-061	Toner Density: Bk	*ENG	Displays the toner density calculated with TD sensor output. [0.0 to 25.5 / 0 / 0.1wt%/step]
3-630-062	Toner Density: C	*ENG	
3-630-063	Toner Density: M	*ENG	
3-630-064	Toner Density: Y	*ENG	

3631	[Development Start Vk :Display]		
3-631-001	Bk	*ENG	Displays the latest developer starting voltage. [-300 to 300 / 0 / 1 -V/-kV/step]
3-631-002	C	*ENG	
3-631-003	M	*ENG	
3-631-004	Y	*ENG	

3700	[New Unit Detection]		
3-700-001	ON/OFF Setting	*ENG	Sets if new unit is detected or not. [0 or 1 / 1 / 1/step]

3701	[Manual New Unit Set]		
3-701-093	# ITB Unit	*ENG	
3-701-102	# ITB Cleaning Unit	*ENG	
3-701-109	# PTR Unit	*ENG	
3-701-115	# Fusing Unit	*ENG	[0 or 1 / 0 / 1/step]
3-701-116	Fusing Belt	*ENG	
3-701-118	Pressure Roller	*ENG	
3-701-142	Waste Toner Bottle	*ENG	
3-701-206	DF Friction Pad	*ENG	
3-701-207	DF Pickup Roller	*ENG	

3-701-208	DF Feed Roller	*ENG	
3-701-220	Toner Sub Hopper:Bk	*ENG	
3-701-221	Toner Sub Hopper:C	*ENG	
3-701-222	Toner Sub Hopper:M	*ENG	
3-701-223	Toner Sub Hopper:Y	*ENG	

3710	[mu Concentration Control: Set]		
3-710-001	Control Method: Selection	*ENG	Sets the select mode if control is done or not with HST memory. [0 or 1 / 1 / 1/step] 0:NotUse, 1:Use

3800	[Waste Toner Full Detection]		
3-800-001	Condition	*ENG	[0 to 4 / 0 / 1/step]
3-800-002	Print Page After Near Full	*ENG	[0 to 10000 / 0 / 1 sheet/step]
3-800-003	Volume Count 1 After Near Full	*ENG	[0.0 to 100000.0 / 0.0 / 0.1/step]
3-800-005	Volume Count 2 After Near Full	*ENG	[0.0 to 1000000.0 / 0.0 / 0.1/step]
3-800-007	Volume Count After Replacement	*ENG	[0.0 to 1000000.0 / 0.0 / 0.1/step]
3-800-012	Remaining daysThreshold	*ENG	Sets the day threshold from toner near end detection to toner full message. [0 to 255 / 15 / 1/step]
3-800-020	Mechanical Full Detection Date	*ENG	[0 to 1 / 0 / 1/step]

3810	[Paper Interval Ext.: Low Spd]		
	Parameters of calculation for enlargement ratio of paper gap.		
3-810-001	Formula: Slope	*ENG	[0 to 100 / 10 / 1%/step]
3-810-002	Formula: Intercept	*ENG	[-2000 to 2000 / 0 / 1%/step]
3-810-003	Formula: Upper Limit	*ENG	[100 to 2000 / 100 / 1%/step]

3.5 MAIN SP TABLES-4

3.5.1 SP4-XXX (SCANNER)

4008	[Sub Scan Magnification Adj.]		
	Adjusts the sub-scan magnification by changing the scanner motor speed.		
4-008-001	-	*ENG	[-1.0 to 1.0 / 0.0 / 0.1%/step]

4010	[Sub Scan Registration Adj.]		
	Adjusts the leading edge registration by changing the scanning start timing in the sub-scan direction.		
4-010-001	-	*ENG	[-1.0 to 1.0 / 0.0 / 0.1 mm/step]

4011	[Main Scan Registration Adj.]		
	Adjusts the side-to-side registration by changing the scanning start timing in the main scan direction.		
4-011-001	-	*ENG	[-2.0 to 2.0 / 0.0 / 0.1 mm/step]

4012	[Scanner Erase Margin: Scale]		
	Sets the blank margin at each side for erasing the original shadow caused by the gap between the original and the scale.		
4-012-001	Book: Sub Scan Leading Edge (Left)	*ENG	[0.0 to 3.0 / 0.0 / 0.1 mm/step]
4-012-002	Book: Sub Scan Trailing Edge (Right)	*ENG	[0.0 to 3.0 / 0.0 / 0.1 mm/step]
4-012-003	Book: Main Scan Leading Edge (Rear)	*ENG	[0.0 to 3.0 / 0.0 / 0.1 mm/step]
4-012-004	Book: Main Scan Trailing Edge (Front)	*ENG	[0.0 to 3.0 / 0.0 / 0.1 mm/step]

4013	[Scanner Free Run]		
	Performs the scanner free run with the exposure lamp on or off in the following mode. Full color mode / Full Size / A3 or DLT		
4-013-001	Lamp OFF	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON
4-013-002	Lamp ON	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON

4014	[Scan]		
	Execute the scanner free fun with each mode.		
4-014-001	HP Detection Enable	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON
4-014-002	HP Detection Disable	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON
4-014-003	HP Detec. On (FC 600dpi LG)	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON
4-014-004	HP Detec. On (BW 600dpi LG)	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON
4-014-005	HP Detec. On (FC 1200dpi LG)	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON

4016	[DF Scan]		
	-		
4-016-001	HP Detec. On (FC 600x300 LG Duplex)	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON
4-016-002	HP Detec. On (BW 600x300 LG Duplex)	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON
4-016-003	HP Detec. On (FC 600x600 LG Duplex)	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON
4-016-004	HP Detec. On (BW 600x600 LG Duplex)	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON

4-016-005	HP Detec. On (FC 600x200 LG Duplex)	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON
4-016-006	HP Detec. On (FC 600x300 LG Simplex)	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON
4-016-007	HP Detec. On (BW 600x300 LG Simplex)	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON
4-016-008	HP Detec. On (FC 600x600 LG Simplex)	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON
4-016-009	HP Detec. On (BW 600x600 LG Simplex)	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON
4-016-010	HP Detec. On (FC 600x200 LG Simplex)	ENG	[0 or 1 / 0 / 1/step] 0:OFF, 1:ON

4020	[DF Dust Check]		
4-020-001	Detection ON/OFF	*ENG	Turns the ARDF scan glass dust check on/ off. [0 or 1 / 1 / 1step] 0: OFF, 1: ON
4-020-002	Detection Level	*ENG	Selects the detect level. [0 to 8 / 4 / 1step] 0: lowest detection level 8: highest detection level
4-020-003	Correction Level	*ENG	Selects the level of the sub scan line correction when using the ARDF. [0 to 4 / 0 / 1step] 0: Off 1: Weakest 2: Weak 3: Strong 4: Strongest

4400	[Scanner Erase Margin]		
	Sets the Mask for Original. These SPs set the area to be masked during platen (book) mode scanning.		
4-400-001	Book: Sub Scan Leading Edge (Left)	*ENG	[0.0 to 3.0 / 1.0 / 0.1 mm/step]
4-400-002	Book: Sub Scan Leading Edge (Right)	*ENG	[0.0 to 3.0 / 1.0 / 0.1 mm/step]
4-400-003	Book: Main Scan Leading Edge (Rear)	*ENG	[0.0 to 3.0 / 1.0 / 0.1 mm/step]
4-400-004	Book: Main Scan Trailing Edge (Front)	*ENG	[0.0 to 3.0 / 1.0 / 0.1 mm/step]
4400	[ADF Adj. Original Erase Margin]		
4-400-005	Sub Scan Leading Edge (Left)	*ENG	[0.0 to 3.0 / 1.6 / 0.1 mm/step]
4-400-007	Main Scan Leading Edge (Rear)	*ENG	[0.0 to 3.0 / 1.6 / 0.1 mm/step]
4-400-008	Main Scan Trailing Edge (Front)	*ENG	[0.0 to 3.0 / 1.6 / 0.1 mm/step]

4417	[IPU Test Pattern]		
	Selects the IPU test pattern.		
4-417-001	Test Pattern	ENG	[0 to 8 / 0 / 1/step]
			0: Scanned image 1: Gradation main scan A 2: Patch 16C 3: Grid pattern A 4: Slant grid pattern B 5: Slant grid pattern C 6: Slant grid pattern D 7: Scanned+Slant Grid C 8: Scanned+Slant Grid D

4429	[Select Copy Data Security]		
4-429-001	Copying	*ENG	[0 to 3 / 3 / 1/step]
4-429-002	Scanning	*ENG	[0 to 3 / 3 / 1/step]
4-429-003	Fax Operation	*ENG	[0 to 3 / 3 / 1/step]

4460	[Digital AE]		
	Adjusts the background level.		
4-460-001	Low Limit Value	*ENG	[0 to 1023 / 364 / 1/step]
4-460-002	Background Level	*ENG	[512 to 1535 / 932 / 1/step]

4501	[ACC Target Density Notch]		
	Selects the ACC result.		
4-501-001	Copy: Bk: Text	*ENG	[0 to 10 / 5 / 1 /step] 10: Darkest density
4-501-002	Copy: C: Text	*ENG	
4-501-003	Copy: M: Text	*ENG	
4-501-004	Copy: Y: Text	*ENG	
4-501-005	Copy: Bk: Photo	*ENG	
4-501-006	Copy: C: Photo	*ENG	
4-501-007	Copy: M: Photo	*ENG	
4-501-008	Copy: Y: Photo	*ENG	

4505	[ACC Machine Diff. Corr:Bright]		
	Adjusts the offset correction for light areas of the ACC pattern.		
4-505-001	Text:Bk	*ENG	[-128 to 127 / 0 / 1 /step]
4-505-002	Text:C	*ENG	
4-505-003	Text:M	*ENG	
4-505-004	Text:Y	*ENG	
4-505-005	Photo:Bk	*ENG	[-128 to 127 / 0 / 1 /step]
4-505-006	Photo:C	*ENG	
4-505-007	Photo:M	*ENG	
4-505-008	Photo:Y	*ENG	

4506	[ACC Machine Diff. Corr:Dark]		
	Adjusts the offset correction for dark areas of the ACC pattern.		
4-506-001	Text:Bk	*ENG	[-128 to 127 / 0 / 1 /step]
4-506-002	Text:C	*ENG	
4-506-003	Text:M	*ENG	
4-506-004	Text:Y	*ENG	
4-506-005	Photo:Bk	*ENG	[-128 to 127 / 0 / 1 /step]
4-506-006	Photo:C	*ENG	
4-506-007	Photo:M	*ENG	
4-506-008	Photo:Y	*ENG	

4540	[Printer Vector Correction(1)]		
	Corrects the printer coverage of 12 hues (RY, YR, YG, etc. ×4 Colors [R, G, B, Option]) for 48 parameters.		

4-540-001	RY Phase:Option	*ENG	Specifies the printer vector correction value. [0 to 255 / 0 / 1/step]
4-540-002	RY Phase:R	*ENG	[-255 to 255 / 0 / 1/step]
4-540-003	RY Phase:G	*ENG	
4-540-004	RY Phase:B	*ENG	
4-540-005	YR Phase:Option	*ENG	[0 to 255 / 0 / 1/step]
4-540-006	YR Phase:R	*ENG	[-255 to 255 / 0 / 1/step]
4-540-007	YR Phase:G	*ENG	
4-540-008	YR Phase:B	*ENG	
4-540-009	YG Phase:Option	*ENG	[0 to 255 / 0 / 1/step]
4-540-010	YG Phase:R	*ENG	[-255 to 255 / 0 / 1/step]
4-540-011	YG Phase:G	*ENG	
4-540-012	YG Phase:B	*ENG	
4-540-013	GY Phase:Option	*ENG	[0 to 255 / 0 / 1/step]
4-540-014	GY Phase:R	*ENG	[-255 to 255 / 0 / 1/step]
4-540-015	GY Phase:G	*ENG	
4-540-016	GY Phase:B	*ENG	
4-540-017	GC Phase:Option	*ENG	[0 to 255 / 0 / 1 /step]
4-540-018	GC Phase:R	*ENG	[-255 to 255 / 0 / 1/step]
4-540-019	GC Phase:G	*ENG	
4-540-020	GC Phase:B	*ENG	
4-540-021	CG Phase:Option	*ENG	[0 to 255 / 0 / 1/step]
4-540-022	CG Phase:R	*ENG	[-255 to 255 / 0 / 1/step]
4-540-023	CG Phase:G	*ENG	
4-540-024	CG Phase:B	*ENG	

4-540-025	CB Phase:Option	*ENG	[0 to 255 / 0 / 1/step]
4-540-026	CB Phase:R	*ENG	[-255 to 255 / 0 / 1/step]
4-540-027	CB Phase:G	*ENG	
4-540-028	CB Phase:B	*ENG	
4-540-029	BC Phase:Option	*ENG	[0 to 255 / 0 / 1/step]
4-540-030	BC Phase:R	*ENG	[-255 to 255 / 0 / 1/step]
4-540-031	BC Phase:G	*ENG	
4-540-032	BC Phase:B	*ENG	
4-540-033	BM Phase:Option	*ENG	[0 to 255 / 0 / 1/step]
4-540-034	BM Phase:R	*ENG	[-255 to 255 / 0 / 1/step]
4-540-035	BM Phase:G	*ENG	
4-540-036	BM Phase:B	*ENG	
4-540-037	MB Phase:Option	*ENG	[0 to 255 / 0 / 1/step]
4-540-038	MB Phase:R	*ENG	[-255 to 255 / 0 / 1/step]
4-540-039	MB Phase:G	*ENG	
4-540-040	MB Phase:B	*ENG	
4-540-041	MR Phase:Option	*ENG	[0 to 255 / 0 / 1/step]
4-540-042	MR Phase:R	*ENG	[-255 to 255 / 0 / 1/step]
4-540-043	MR Phase:G	*ENG	
4-540-044	MR Phase:B	*ENG	
4-540-045	RM Phase:Option	*ENG	[0 to 255 / 0 / 1/step]
4-540-046	RM Phase:R	*ENG	[-255 to 255 / 0 / 1/step]
4-540-047	RM Phase:G	*ENG	
4-540-048	RM Phase:B	*ENG	
4-540-049	WHITE:Option	*ENG	[0 to 255 / 0 / 1/step]
4-540-050	WHITE:R	*ENG	[-255 to 255 / 0 / 1/step]

4-540-051	WHITE:G	*ENG	
4-540-052	WHITE:B	*ENG	
4-540-053	BLACK:Option	*ENG	[0 to 255 / 0 / 1/step]
4-540-054	BLACK:R	*ENG	[-255 to 255 / 0 / 1/step]
4-540-055	BLACK:G	*ENG	
4-540-056	BLACK:B	*ENG	

4541	[Photo Correction]		
	-		
4-541-001	Copied Photo	*ENG	[0 or 1 / 0 / 1/step]

4550	[Scan Apli:Txt/Chart]		
	Sets the text/chart MTF level of the scanner application.		
4-550-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-550-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]
4-550-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-550-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-550-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]

4551	[Scan Apli:Txt]		
	Sets the text MTF level of the scanner application.		
4-551-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-551-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]

4-551-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-551-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-551-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]

4552	[Scan Apli:Txt Dropout]		
	Sets the text dropout color MTF level of the scanner application.		
4-522-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-522-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]
4-522-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-522-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-522-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]

4553	[Scan Apli:Txt/Photo]		
	Sets the text/photo MTF level of the scanner application.		
4-533-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-533-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]
4-533-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-533-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-533-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]

4554	[Scan Apli:Photo]		
	Sets the photo MTF level of the scanner application.		
4-554-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-554-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]
4-554-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-554-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-554-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]

4565	[Scan Apli:GrayScale]		
	Sets the Grayscale MTF level of the scanner application.		
4-565-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-565-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]
4-565-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-565-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-565-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]

4570	[Scan Apli:Col Txt/Photo]		
	Sets the color text/photo MTF level of the scanner application.		
4-570-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-570-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]
4-570-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-570-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-570-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]

4571	[Scan Apli:Col Gloss Photo]		
	Sets the color gloss photo MTF level of the scanner application.		
4-571-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-571-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]
4-571-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-571-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-571-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]

4572	[Scan Apli:AutoCol]		
	Sets the automatic color MTF level of the scanner application.		
4-572-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-572-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]

4-572-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-572-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-572-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]

4580	[Fax Appli:Txt/Chart]		
	Sets the text/chart MTF level of the fax application.		
4-580-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-580-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]
4-580-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-580-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-580-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]
4-580-010	Texture Erase: 0 (Fix), 1-2	*ENG	[0 to 2 / 0 / 1/step]

4581	[Fax Appli:Txt]		
	Sets the text MTF level of the fax application.		
4-581-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-581-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]
4-581-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-581-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-581-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]

4582	[Fax Apli:Txt/Photo]		
	Sets the text/photo MTF level of the fax application.		
4-582-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-582-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]
4-582-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-582-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-582-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]
4-582-010	Texture Erase: 0 (Fix), 1-2	*ENG	[0 to 2 / 0 / 1/step]

4583	[Fax Apli:Photo]		
	Sets the photo MTF level of the fax application.		
4-583-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-583-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]
4-583-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-583-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-583-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]
4-583-010	Texture Erase: 0 (Fix), 1-2	*ENG	[0 to 2 / 0 / 1/step]

4584	[Fax Apli: Special Original 1]		
	Sets the original 1 MTF level of the fax application.		

4-584-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-584-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]
4-584-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-584-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-584-009	Ind Dot Erase: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]

4585	[Fax Appli: Special Original 2]		
	Sets the original 2 MTF level of the fax application.		
4-585-005	MTF: 0(FF) 1-15 (Weak-Strong)	*ENG	[0 to 15 / 8 / 1/step]
4-585-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	*ENG	[0 to 7 / 4 / 1/step]
4-585-007	Brightness: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-585-008	Contrast: 1-255	*ENG	[1 to 255 / 128 / 1/step]
4-585-009	Ind Dot Erase 0(x1)/ 1-7 (Weak-Strong)	*ENG	[0 to 7 / 0 / 1/step]

4606	[White Level Peak Target]		
	Adjusts the white peak level of the color 600.		
4-606-001	Color 600	*ENG	[0 to 1024 / 784 / 1 digit /step]

4607	[White Level Peak Target]		
	Adjusts the white peak level of the color 1200.		
4-607-001	Color 1200	*ENG	[0 to 1024 / 784 / 1 digit/step]

4608	[White Level Peak Target]		
	Adjusts the white peak level of black.		
4-608-001	BW	*ENG	[0 to 1024 / 784 / 1 digit/step]

4609	[Gray Balance Adj.: R]		
	Displays the adjustment value of the gray balance for red.		
4-609-001	Book Scan	*ENG	[-384 to 255 / -89 / 1 digit/step]
4-609-002	DF Scan	*ENG	[-384 to 255 / -89 / 1 digit/step]

4610	[Gray Balance Adj.: G]		
	Displays the adjustment value of the gray balance for green.		
4-610-001	Book Scan	*ENG	[-384 to 255 / -76 / 1 digit/step]
4-610-002	DF Scan	*ENG	[-384 to 255 / -76 / 1 digit/step]
4610	[Gray Balance Adj.: BW]		
4-610-003	Book Scan	*ENG	[-384 to 255 / -92 / 1 digit/step]
4-610-004	DF Scan	*ENG	[-384 to 255 / -92 / 1 digit/step]

4611	[Gray Balance Adj.: B]		
	Displays the adjustment value of the gray balance for blue.		
4-611-001	Book Scan	*ENG	[-384 to 255 / -85 / 1 digit/step]
4-611-002	DF Scan	*ENG	

4645	[Scan Adjust Error]		
	Displays the error value of the scanning adjustment.		
4-645-001	White level	ENG	[0 to 65535 / 0 / 1/step]
4-645-002	Black level	ENG	

4647	[Scanner Hard Error]		
	Displays the result of the SBU connection check.		
4-647-001	Power-ON	ENG	[0 to 65535 / 0 / 1/step] 0: OK, Other: SBU connection check failure If the SBU connection check fails, SC144 occurs.

4688	[ADF Adjustment Density]		
	-		
4-688-001	-	*ENG	[50 to 150 / 100 / 1%/step]

4802	[DF Shading FreeRun]		
	Executes the document feeder shading free run.		
4-802-001	Lamp OFF	ENG	Turns off the scanner lamp. [0 or 1 / 0 / 1/step] [Execute]
4-802-002	Lamp ON	ENG	Turns on the scanner lamp. [0 or 1 / 0 / 1/step] [Execute]

4804	[Home Position]		
4-804-001	-	ENG	[0 or 1 / 0 / 1/step]

4806	[Carriage Retract Operation]		
4-806-001	-	ENG	Moves the carriage from the scanner home position. Dust may fall through the DF exposure glass. Therefore, do this SP when you transport the machine a long distance. [- / - / -] [Execute]

4813	[LED White Level Peak Target]		
	Adjusts the target value of the LED white level peak.		
4-813-001	Color 600	*ENG	[0 to 1023 / 784 / 1 digit /step]
4-813-002	Color 1200	*ENG	[0 to 1023 / 784 / 1 digit/step]
4-813-003	BW	*ENG	[0 to 1023 / 540 / 1 digit/step]

4902	[Display ACC Data]		
	Outputs the final data read at the end of ACC execution. A zero is returned if there was an error reading the data. [0 to 255 / 0 / 1 /step]		
4-902-001	R_DATA1	*ENG	Photo C Patch Level 1 (8-bit)
4-902-002	G_DATA1	*ENG	Photo M Patch Level 1 (8-bit)
4-902-003	B_DATA1	*ENG	Photo Y Patch Level 1 (8-bit)
4-902-004	R_DATA2	*ENG	Photo C Patch Level 17 (8-bit)
4-902-005	G_DATA2	*ENG	Photo M Patch Level 17(8-bit)
4-902-006	B_DATA2	*ENG	Photo Y Patch Level 17 (8-bit)

4903	[Filter Setting]		
4-903-001	Ind Dot Erase:Black & White: Text	*ENG	[0 to 7 / 0 / 1/step]
4-903-002	Ind Dot Erase:Black & White: Generation Copy	*ENG	[0 to 7 / 0 / 1/step]

4905	[Select Gradation Level]		
	Selects the gradation level.		
4-905-001	-	*ENG	[0 to 255 / 0 / 1/step]

4918	[Man Gamma Adj]		
	Adjusts the offset data of the printer gamma for yellow in Photo mode. See "Printer Gamma Correction" in the Replacement and Adjustment for how to use.		
4-918-009	-	ENG	[- / - / -] [Execute]

4930	[Coverage Ctrl: Text]		
	Sets the total regulation value.		
4-930-001	Copy: Full Color 1	*ENG	[0 to 400 / 200 / 1 /step]
4-930-002	Copy: Full Color 2	*ENG	[0 to 400 / 200 / 1 /step]
4-930-003	Copy: Single Color	*ENG	[0 to 400 / 100 / 1 /step]
4-930-004	Copy: Color Conversion	*ENG	[0 to 400 / 180 / 1 /step]
4-930-005	Coverage Ctrl OFF	*ENG	[0 to 400 / 400 / 1 /step]

4931	[Coverage Ctrl: Photo]		
	Sets the total regulation value.		
4-931-001	Copy: Full Color 1	*ENG	[0 to 400 / 240 / 1 /step]
4-931-002	Copy: Full Color 2	*ENG	[0 to 400 / 260 / 1 /step]
4-931-003	Copy: Single Color	*ENG	[0 to 400 / 100 / 1 /step]
4-931-004	Copy: Color Conversion	*ENG	[0 to 400 / 200 / 1 /step]
4-931-005	Coverage Ctrl OFF	*ENG	[0 to 400 / 400 / 1 /step]

4938	[ACS: Erase Margin]		
	-		
4-938-001	Copy: Sub Scan Leading Edge (Left)	*ENG	[0 to 31 / 10 / 1 mm/step]
4-938-002	Copy: Sub Scan Leading Edge (Right)	*ENG	[0 to 31 / 10 / 1 mm/step]
4-938-003	Copy: Main Scan Leading Edge (Rear)	*ENG	[0 to 31 / 10 / 1 mm/step]
4-938-004	Copy: Main Scan Leading Edge (Front)	*ENG	[0 to 31 / 10 / 1 mm/step]
4-938-005	Scan: Sub Scan Leading Edge (Left)	*ENG	[0 to 31 / 15 / 1 mm/step]
4-938-006	Scan: Sub Scan Trailing Edge (Right)	*ENG	[0 to 31 / 15 / 1 mm/step]
4-938-007	Scan: Main Scan Leading Edge (Rear)	*ENG	[0 to 31 / 15 / 1 mm/step]
4-938-008	Scan: Main Scan Trailing Edge (Front)	*ENG	[0 to 31 / 15 / 1 mm/step]

4939	[ACS:Color Range]		
4-939-001	-	*ENG	[-2 to 2 / 0 / 1/step]

4993	[Highlight Correction]		
4-993-001	Sensitivity Selection	*ENG	Selects the Highlight correction level. [0 to 9 / 4 / 1 /step] 0: weakest sensitivity 9: strongest sensitivity
4-993-002	Range Selection	*ENG	Selects the range level of Highlight correction. [0 to 9 / 4 / 1 /step] 0: weakest skew correction, 9: strongest skew correction

4994	[Text/Photo Detect Level Adj.]		
	Selects the definition level between Text and Photo for high compression PDF.		
4-994-001	High Compression PDF	*ENG	[0 to 2 / 1 / 1 /step] 0: Text priority 1: Normal 2: Photo priority

4996	[WhitePaperDetectLevel]		
	Adjusts the white paper detect level.		
4-996-001	-	*ENG	[0 to 6 / 3 / 1/step]

3.6 MAIN SP TABLES-5

3.6.1 SP5-XXX (MODE)

5009	[Add display language]		
5-009-201	1-8	*CTL	[0 to 255 / 0 / 1 /step]
5-009-202	9-16	*CTL	[0 to 255 / 0 / 1 /step]
5-009-203	17-24	*CTL	[0 to 255 / 0 / 1 /step]
5-009-204	25-32	*CTL	[0 to 255 / 0 / 1 /step]
5-009-205	33-40	*CTL	[0 to 255 / 0 / 1 /step]
5-009-206	41-48	*CTL	[0 to 255 / 0 / 1 /step]
5-009-207	49-56	*CTL	[0 to 255 / 0 / 1 /step]

5024	[mm/inch Display selection]		
5-024-001	0:mm 1:inch	*CTL	[0 to 1 / 0 / 1 /step]

5045	[Accounting Counter]		
	Selects the counting method.  Note The counting method can be changed only once, regardless of whether the counter value is negative or positive.		
5-045-001	Counter Method	*CTL	[0 to 7 / 1 / 1 /step] 0: Developments 1: Prints 2: Coverage 7: Coverage (YMC)

5047	[Paper Display]		
	Turns on or off the printed paper display on the LCD.		
5-047-001	Backing Paper	*CTL	[0 or 1 / 0 / - /step] 0: OFF, 1:ON

5051	[Toner Refill Detection Display]		
5-051-001		*CTL	[0 or 1 / 0 / 1 /step]

5055	[Display IP add]		
5-055-001		*CTL	[0 or 1 / 0 / 1 /step]

5071	[Set Bypass Paper Size Display]		
	Enables or disables the bypass paper size display for confirmation		
5-071-001	-	*CTL	[0 or 1 / 0 / - /step] 0: Disable, 1: Enable
Turn on or off the paper size confirmation pop-up on the LED. This pop-up prevents mismatching between a paper size selected by the operation panel and an actual paper size on the by-pass tray.			

5074	[Home Key Customization]		
5-074-001	User Setting	*CTL	[0 or 1 / 0 / 1 /step]
5-074-002	Login Setting	*CTL	[0 or 255 / 0 / 1 /step]
5-074-050	Show Home Edit	*CTL	[0 or 2 / 0 / 1 /step]
5-074-091	Function Setting	*CTL	[0 or 2 / 0 / 1 /step]
5-074-092	Product ID	*CTL	[0 or 0xffffffff / 0 / 1 /step]

5-074-093	Application screen ID	*CTL	[0 or 255 / 0 / 1 /step]

5076	[Copy:LT/LG Mixed Sizes Setting]		
	Enable or Disable the setting of the copy paper size combined with LT and LG.		
5-076-001	0:OFF 1:ON	*CTL	[0 or 1 / * / - /step] *0: Disable (Default for other than NA) 1: Enable (Default for NA)

5081	[ServiceSP Entry Code Setting]		
5-081-001		*CTL	[- / - / - /step]

5083	[LED Light Switch Setting]		
5-083-001	Toner Near End	*CTL	[0 to 1 / 0 / 1 /step]
5-083-002	Waste Toner Near End	*CTL	[0 to 1 / 0 / 1 /step]

5113	[Optional Counter Type]		
5-113-001	Default Optional Counter Type	*CTL	[0 to 8 / 0 / 1 /step] This program specifies the counter type. 0: None , 1: Key card (RK 3, 4) 2: Key card (down), 3: Prepaid card 4: Coin lock, 5: MF key card 8: Key counter + Vendor 9: Bar-code Printer

5-113-002	External Optional Counter Type	*CTL	[0 to 3 / 0 / 1 /step] This program specifies the external counter type. 0: None 1: Expansion Device 1 2: Expansion Device 2 3: Expansion Device 3

5114	[Optional Counter I/F]		
5-114-001	MF Key Card Extension	*CTL	[0: Not installed / 1: Installed (scanning accounting)]

5118	[Disable Copying]		
	This program disables copying.		
5-118-001	-	*CTL	[0: Enabled / 1: Disabled]

5120	[Mode Clear Opt. Counter Removal]		
	This program updates the information on the optional counter. When you install or remove an optional counter, check the settings.		
5-120-001	0:Yes 1:StandBy 2:No	*CTL	[0: Yes (removed) / 1: Standby (installed but not used)/ 2: No (not removed)]

5121	[Counter Up Timing]		
	This program specifies when the counter goes up. The settings refer to “paper feed” and “paper exit” respectively.		
5-121-001	0:Feed 1:Exit	*CTL	[0: Feed / 1: Exit]

5127	[APS Mode]		
	This program disables the APS.		
5-127-001	-	*CTL	[0 or 1 / 0 / 1/step] 0: Not disabled 1: Disabled

5128	[Code Mode With Key/Card Option]		
5-128-001	-	*CTL	[0 or 1 / 0 / 1/step] 0: not used in combination 1: used in combination

5131	[Paper Size/Type Selection]		
	The program selects a paper size system from the following alternatives: the AB system (0), the LT system (1), and the AF system (2).		
5-131-001	-	*ENG	[0 to 2 / * / 1/step] *NA:1 EU, AS, CHN, TWN, KOR:2

5150	[Bypass Length Setting]		
	Specifies whether or not to use bypass tray as the banner sheet tray.		
5-150-001	0: OFF 1: ON	CTL	[0 to 2 / 0 / 1/step] 0: Off 1: Banner Sheet 2: Banner Sheet when using Vacuum Feed LCIT

5162	[App. Switch Method]		
	This program specifies the switch that selects an application program.		
5-162-001	-	*CTL	[0: Soft Key Set / 1: Hard Key Set]

5167	[Fax Printing Mode at Optional Counter Off]		
	Enables or disables the automatic print out without an accounting device. This SP is used when the receiving fax is accounted by an external accounting device.		

5-167-001	Fax Printing Mode at Optional Counter Off	*CTL	[0 or 1 / 0 / - /step] 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.		
5-169-001	CE Login	*CTL	[0 or 1 / 0 / 1/step] 0: Disabled 1: Enabled

5186	[RK4]		
	Enables or disables the prevention for RK4 (accounting device) disconnection. If the RK4 is disconnected for 10 seconds when this SP is set to "1 (Enable)", the machine automatically jams a sheet of paper.		
5-186-001	-	*ENG	[0 or 1 / 0 / 1/step] 0: Disable 1: Enable

5188	[Copy NvVersion]		
	Displays the version number of the NVRAM on the controller board.		
5-188-001	-	*CTL	-

5191	[Mode Set]		
5-191-001	Power Str Set	*CTL	[0 or 1 / 0 / 1/step]

5193	[External Controller Info. Settings]		
	Specifies the model of the external controller connected to the main unit.		
5-193-001	-	*CTL	[0 to 10 / 0 / 1/step] 0: External Controller is not installed 1: EFI 2: Ratio 3: Egret 4: GJ 5:Creo 6: QX-100 7: Kurofune 8 to 10: Reserved

5195	[Limitless SW]		
	Selects the paper feed mode. Productivity priority: This changes the feeding tray as soon as the machine detects the priority tray even the paper still remains in the feeding tray. Tray priority: This changes the feeding tray after the paper in the tray where the machine has been feeding paper has been run out of.		
5-195-001	-	*CTL	[0 or 1 / 0 / 1/step] 0: Productivity Precede 1: Use paper up

5199	[Paper Exit After Staple End]		
	Not used		
5-199-001	Staple	*CTL	[0 to 2 / 0 / 1/step]
5-199-002	Saddle	*CTL	[0 to 2 / 0 / 1/step]
5-199-003	Stapless	*CTL	[0 to 2 / 0 / 1/step]

5302	[Set Time]		
5-302-002	Time Difference	*CTL	[-1440 to 1440 / 540 / 1 /step]

5305	[Auto Off Set]		
5-305-101	Auto Off Limit Set	*CTL	[0 to 1 / 1 / 1 /step]

5307	[Daylight Saving Time]		
5-307-001	Setting	*CTL	[0 to 1 / 0 / 1 /step]
5-307-003	Rule Set(Start)	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-307-004	Rule Set(End)	*CTL	[0 to 0xffffffff / 0 / 1 /step]

5401	[Access Control]		
5-401-103	Default Document ACL	*CTL	[0 to 3 / 0 / 1 /step]
5-401-104	Authentication Time	*CTL	[0 to 255 / 0 / 1 sec/step] Specifies the timeout of the authentication.

5-401-162	Extend Certification Detail	*CTL	[0 to 0xff / 0 / 1 /step] Selects the log out type for the extend authentication device. Bit 0: Log-out without an IC card 0: Not allowed (default) / 1: Allowed Bit1: Log out with IC card 0: Not allowed (default) / 1: Allowed Bit2: Return from energy save mode with IC card 0: Not allowed (default) / 1: Allowed Bit3, Bit4: Password manual entry 00: Mode 0 (default) / 01: Mode 1 / 10: Mode 2 / 11: Mode 3 Bit5: PIN entry with alphanumeric character 0: Not allowed (default) / 1: Allowed Bit6: Restrict card scanning 0: Not allowed (default) / 1: Allowed Bit7: Panel lock when log out failed 0: Not allowed (default) / 1: Allowed
5-401-163	Extend Install Stats	*CTL	[0 to 255 / 0 / 1 sec/step] Displays the result of the extended authentication device. 0 to 99: Succeed (halfway) 100 to 199: Succeed 200 to 209: Failure 210 to 255: Not used
5-401-200	SDK1 UniqueID	*CTL	[0 to 0xFFFFFFFF / 0 / 1 /step] "SDK" is the "Software Development Kit". This data can be converted from SAS (VAS) when installed or uninstalled.
5-401-201	SDK1 Certification Method	*CTL	[0 to 0xFF / 0 / 1 /step] "SDK" is the "Software Development Kit". This data can be converted from SAS (VAS) when installed or uninstalled.

5-401-210	SDK2 UniqueID	*CTL	[0 to 0xFFFFFFFF / 0 / 1 /step] "SDK" is the "Software Development Kit". This data can be converted from SAS (VAS) when installed or uninstalled.
5-401-211	SDK2 Certification Method	*CTL	[0 to 0xFF / 0 / 1 /step] "SDK" is the "Software Development Kit". This data can be converted from SAS (VAS) when installed or uninstalled.
5-401-220	SDK3 UniqueID	*CTL	[0 to 0xFFFFFFFF / 0 / 1 /step] "SDK" is the "Software Development Kit". This data can be converted from SAS (VAS) when installed or uninstalled.
5-401-221	SDK3 Certification Method	*CTL	[0 to 0xFF / 0 / 1 /step] "SDK" is the "Software Development Kit". This data can be converted from SAS (VAS) when installed or uninstalled.
5-401-230	SDK Certification Device	*CTL	[0 to 0xff / 0 / 1 /step]

5-401-240	Detail Option	*CTL	[0 to 0xff / 0 / 1 /step] Bit0: Logout confirm option 0: OFF, 1: ON Bit1, Bit2: Auto-logout timer (retry timer) 00: 60sec, 01: 10sec, 10: 20sec, 11: 30sec, Bit3: Personal authority / Group authority and operation 0: OFF, 1: ON Bit4: Skip password entry 0: OFF, 1: ON Bit5: Set the display of the remaining Frequence 0: OFF, 1: ON, Bit6, Bit7: Set the display time

5402	[Access Control]		
5-402-101	SDKJ1 Limit Setting	*CTL	[0 to 0xFF / 0 / 1 /step] Bit0: SDKJ Authentication 0: Panel Type 1: Remote Type Bit1: Using user code setup 0: OFF, 1: ON Bit2: Using key-counter setup 0: OFF, 1: ON Bit3: Using external billing device setup 0: OFF, 1: ON Bit4: Using extended external billing device setup 0: OFF, 1: ON Bit5, Bit6: Not used Bit7: Using extended function J limit users 0: OFF, 1: ON
5-402-102	SDKJ2 Limit Setting	*CTL	
5-402-103	SDKJ3 Limit Setting	*CTL	
5-402-104	SDKJ4 Limit Setting	*CTL	
5-402-105	SDKJ5 Limit Setting	*CTL	
5-402-106	SDKJ6 Limit Setting	*CTL	
5-402-107	SDKJ7 Limit Setting	*CTL	
5-402-108	SDKJ8 Limit Setting	*CTL	
5-402-109	SDKJ9 Limit Setting	*CTL	
5-402-110	SDKJ10 Limit Setting	*CTL	
5-402-111	SDKJ11 Limit Setting	*CTL	
5-402-112	SDKJ12 Limit Setting	*CTL	
5-402-113	SDKJ13 Limit Setting	*CTL	
5-402-114	SDKJ14 Limit Setting	*CTL	

5-402-115	SDKJ15 Limit Setting	*CTL	
5-402-116	SDKJ16 Limit Setting	*CTL	
5-402-117	SDKJ17 Limit Setting	*CTL	
5-402-118	SDKJ18 Limit Setting	*CTL	
5-402-119	SDKJ19 Limit Setting	*CTL	
5-402-120	SDKJ20 Limit Setting	*CTL	
5-402-121	SDKJ21 Limit Setting	*CTL	
5-402-122	SDKJ22 Limit Setting	*CTL	
5-402-123	SDKJ23 Limit Setting	*CTL	
5-402-124	SDKJ24 Limit Setting	*CTL	
5-402-125	SDKJ25 Limit Setting	*CTL	
5-402-126	SDKJ26 Limit Setting	*CTL	
5-402-127	SDKJ27 Limit Setting	*CTL	
5-402-128	SDKJ28 Limit Setting	*CTL	
5-402-129	SDKJ29 Limit Setting	*CTL	
5-402-130	SDKJ30 Limit Setting	*CTL	
5-402-141	SDKJ1 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-142	SDKJ2 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-143	SDKJ3 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-144	SDKJ4 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-145	SDKJ5 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-146	SDKJ6 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-147	SDKJ7 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-148	SDKJ8 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-149	SDKJ9 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-150	SDKJ10 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]

5-402-151	SDKJ11 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-152	SDKJ12 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-153	SDKJ13 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-154	SDKJ14 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-155	SDKJ15 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-156	SDKJ16 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-157	SDKJ17 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-158	SDKJ18 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-159	SDKJ19 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-160	SDKJ20 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-161	SDKJ21 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-162	SDKJ22 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-163	SDKJ23 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-164	SDKJ24 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-165	SDKJ25 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-166	SDKJ26 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-167	SDKJ27 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-168	SDKJ28 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-169	SDKJ29 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]
5-402-170	SDKJ30 ProductID	*CTL	[0 to 0xffffffff / 0 / 1 /step]

5404	[User Code Count Clear] DFU		
	Clears all counters for users.		
5-404-001	User Code Count Clear	*CTL	Clears all counters for users.
5-404-101	User Code Count Clear Permit Setting	*CTL	[0 or 1 / 0 / 1 /step]

5411	[LDAP-Certification]		
5-411-004	Simplified Authentication	*CTL	Determines whether easy LDAP certification is done. [0 or 1 / 1 / -/step] 1: On, 0: Off
5-411-005	Password Null Not Permit	*CTL	This SP is referenced only when SP5411-4 is set to "1" (On). [0 or 1 / 1 / -/step] 0: Password NULL not permitted. 1: Password NULL permitted.
5-411-006	Detail Option	*CTL	[0 to 0xFF / 0x1F / 1/step] Determines whether LDAP option (anonymous certification) is turned on or off. Bit0 0: OFF, 1: ON

5412	[Krb-Certification]		
5-412-100	Encrypt Mode	*CTL	[0 to 0xFF / 0x1F / 1/step] 0x01:AES256-CTS-HMAC-SHA1-96 0x02:AES128-CTS-HMAC-SHA1-96 0x04:DES3-CBC-SHA1 0x08:RC4-HMAC 0x10:DES-CBC-MD5 0xFF(0x1F):ALL Executes kerberos certification according to certified encryption strength.

5413	[Lockout Setting]		
5-413-001	Lockout On/Off	*CTL	Switches on/off the lock on the local address book account. [0 or 1 / 0 / 1/step] 0: Off, 1: On
5-413-002	Lockout Threshold	*CTL	Sets a limit on the frequency of lockouts for account lockouts. [1 to 10 / 5 / 1/step]
5-413-003	Cancellation On/Off	*CTL	Determines whether the system waits the prescribed time for input of a correct user ID and password after an account lockout has occurred. [0 or 1 / 0 / 1/step] 0: Off (no wait time, lockout not cancelled) 1: On (system waits, cancels lockout if correct user ID and password are entered).
5-413-004	Cancellation Time	*CTL	Determines the length of time that the system waits for correct input of the user ID and password after a lockout has occurred. This setting is used only if SP5413-3 is set to "1" (on). [1 to 9999 / 60 / 1 min./step]

5414	[Access Mitigation]		
5-414-001	Mitigation On/Off	*CTL	Switches on/off masking of continuously used IDs and passwords that are identical. [0 or 1 / 0 / 1/step] 0: Off, 1: On

5-414-002	Mitigation Time	*CTL	Sets the length of time for excluding continuous access for identical user IDs and passwords. [0 to 60 / 15 / 1 min./step]

5415	[Password Attack]		
5-415-001	Permissible Number	*CTL	Sets the number of attempts to attack the system with random passwords to gain illegal access to the system. [0 to 100 / 30 / 1 attempt/step]
5-415-002	Detect Time	*CTL	Sets the time limit to stop a password attack once such an attack has been detected. [1 to 10 / 5 / 1 sec./step]

5416	[Access Information]		
5-416-001	Access User Max Num	*CTL	Limits the number of users used by the access exclusion and password attack detection functions. [50 to 200 / 200 / 1 users/step]
5-416-002	Access Password Max Num	*CTL	Limits the number of passwords used by the access exclusion and password attack detection functions. [50 to 200 / 200 / 1 password/step]
5-416-003	Monitor Interval	*CTL	Sets the processing time interval for referencing user ID and password information. [1 to 10 / 3 / 1 sec./step]

5417	[Access Attack]		
5-417-001	Access Permissible Number	*CTL	Sets a limit on access attempts when an excessive number of attempts are detected for MFP features. [0 to 500 / 100 / 1/step]

5-417-002	Attack Detect Time	*CTL	Sets the length of time for monitoring the frequency of access to MFP features. [10 to 30 / 10 / 1 sec./step]
5-417-003	Productivity Fall Wait	*CTL	Sets the wait time to slow down the speed of certification when an excessive number of access attempts have been detected. [0 to 9 / 3 / 1 sec./step]
5-417-004	Attack Max Num	*CTL	Sets a limit on the number of requests received for certification in order to slow down the certification speed when an excessive number of access attempts have been detected. [50 to 200 / 200 / 1 attempt/step]

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.		
5-420-001	Copy	*CTL	Determines whether certification is required before a user can use the copy applications. [0 or 1 / 0 /1/step] 0: On, 1: Off
5-420-002	Color Security Setting	*CTL	[0 to 255 / 0 /1/step]

	Enables or disables the color copy limitation for each copy mode when the user authentication is "ON". 0: Enable (default), 1: Disable Bit0: B/W mode Bit1: Mono color mode Bit2: Two colors mode Bit3: Full color mode Bit4: Automatic color mode Bit5 to 7: Reserved		
5-420-011	DocumentServer	*CTL	Determines whether certification is required before a user can use the document server. [0 or 1 / 0 / 1/step]0: On , 1: Off
5-420-021	Fax	*CTL	Determines whether certification is required before a user can use the fax application. [0 or 1 / 0 / 1/step]0: On , 1: Off
5-420-031	Scanner	*CTL	Determines whether certification is required before a user can use the scan applications. [0 or 1 / 0 / 1/step]0: On , 1: Off
5-420-041	Printer	*CTL	Determines whether certification is required before a user can use the printer applications. [0 or 1 / 0 / 1/step]0: On , 1: Off
5-420-051	SDK1	*CTL	[0 or 1 / 0 / 1/step] 0: ON. 1: OFF Determines whether certification is required before a user can use the SDK application.
5-420-061	SDK2	*CTL	
5-420-071	SDK3	*CTL	
5-420-081	Browser	*CTL	[0 or 1 / 0 / 1/step]

5430	[Auth Dialog Message Change]		
5-430-001	Message Change On/Off	*CTL	[0 or 1/ 0 /1/step] 0: Function OFF 1: Function ON
5-430-002	Message Text Download	CTL	[-/ - /-/step] [Execute]
5-430-003	Message Text ID	CTL	[-/ - /-/step]

5431	[External Auth User Preset]		
5-431-010	Tag	*CTL	[0 or 1/ 1 /1/step]
5-431-011	Entry	*CTL	[0 or 1/ 1 /1/step]
5-431-012	Group	*CTL	[0 or 1/ 1 /1/step]
5-431-020	Mail	*CTL	[0 or 1/ 1 /1/step]
5-431-030	Fax	*CTL	[0 or 1/ 1 /1/step]
5-431-031	FaxSub	*CTL	[0 or 1/ 1 /1/step]
5-431-032	Folder	*CTL	[0 or 1/ 1 /1/step]
5-431-033	ProtectCode	*CTL	[0 or 1/ 1 /1/step]
5-431-034	SmtpAuth	*CTL	[0 or 1/ 1 /1/step]
5-431-035	LdapAuth	*CTL	[0 or 1/ 1 /1/step]
5-431-036	Smb Ftp Fldr Auth	*CTL	[0 or 1/ 1 /1/step]
5-431-037	AcntAcl	*CTL	[0 or 1/ 1 /1/step]
5-431-038	DocumentAcl	*CTL	[0 or 1/ 1 /1/step]
5-431-040	CertCrypt	*CTL	[0 or 1/ 0 /1/step]
5-431-050	UserLimitCount	*CTL	[0 or 1/ 1 /1/step]

5481	[Authentication Error Code]		
	These SP codes determine how the authentication failures are displayed.		
5-481-001	System Log Disp	*CTL	Determines whether an error code appears in the system log after a user authentication failure occurs. [0 or 1 / 0 / 1/step] 0: Off, 1: On
5-481-002	Panel Disp	*CTL	Determines whether an error code appears on the operation panel after a user authentication failure occurs. [0 or 1 / 1 / 1/step] 1: On, 0: Off

5490	[MF KeyCard (Japan only)]		
5-490-001	Job Permit Setting	*CTL	Sets up operation of the machine with a keycard. [0 to 1 / 0 / 1/step] 0: Disabled. Cancels operation without a user code. 1: Enabled. Allows operation without a user code.
5-490-002	Count Mode Setting	*CTL	[0 to 1 / 0 / 1/step]

5491	[Optional Counter]		
5-491-001	Detail Option	*CTL	[0 or 1 / 00000000 / 1 /step] 0: Forced Job Canceling ON 1: Forced Job Canceling OFF

5501	[PM Alarm]	*CTL
5-501-001	PM Alarm Level	[0 to 9999 / 0 / 1 /step] 0: Alarm off 1 to 9999: Alarm goes off when Value (1 to 9999) x 1000 > PM counter
5-501-002	Original Count Alarm	[0 or 1 / 0 / 1 /step] 0: No alarm sounds 1: Alarm sounds after the number of originals passing through the ARDF > 10,000

5504	[Jam Alarm]	Sets the alarm to sound for the specified jam level (document misfeeds are not included).	
5-504-001	Level Setting	*CTL	[0 to 3 / 3 / 1 /step] 0: Zero (Off) 1: Low (2.5K jams) 2: Medium (3K jams) 3: High (6K jams)
5-504-002	Threshold	*CTL	[1 to 99 / 10 / 1 /step]

5505	[Error Alarm]	Sets the error alarm level. The error alarm counter counts "1" when any SC is detected. However, the error alarm counter decreases by "1" when an SC is not detected during a set number of copied sheets (for example, default 1500 sheets). The error alarm occurs when the SC error alarm counter reaches "5".	
5-505-001	Level Setting	*CTL	[0 to 255 / 10 / 1 /step]
5-505-002	Threshold	*CTL	[1 to 99 / 5 / 1 /step]

5507	[Supply/CC Alarm]		
	Enables or disables the notifying a supply call via the @Remote.		
5-507-001	Paper Supply Alarm	*CTL	[0 or 1 / 0 / 1 /step] 0: OFF 1: ON
5-507-003	Toner Supply Alarm	*CTL	[0 or 1 / 1 / 1 /step] 0: OFF 1: ON
5-507-080	Toner Call Timing	*CTL	[0 or 1 / 0 / 1 /step] 0: At replacement 1: AtLessThanThresh
5-507-081	Toner Call Threshold	*CTL	[10 to 90 / 10 / 10% /step] This program enables only if SP5-507-080 is "1"
5-507-128	Interval: Others	*CTL	[250 to 10000 / 1000 / 1 /step] Sets report level of paper supply administration call.
5-507-133	Interval: A4	*CTL	
5-507-134	Interval: A5	*CTL	
5-507-142	Interval: B5	*CTL	
5-507-164	Interval: LG	*CTL	
5-507-166	Interval: LT	*CTL	
5-507-172	Interval: HLT	*CTL	

5508	[CC Call]	*CTL	
5-508-001	Jam Remains	[0 or 1 / 1 / 1/step] 0: Disable, 1: Enable	
	Enables/disables initiating a call for an unattended paper jam.		
5-508-002	Continuous Jams	[0 or 1 / 1 / 1/step] 0: Disable, 1: Enable	
	Enables/disables initiating a call for consecutive paper jams.		

5-508-003	Continuous Door Open	[0 or 1 / 1 / 1/step] 0: Disable, 1: Enable
	Enables/disables initiating a call when the front door remains open.	
5-508-011	Jam Detection: Time Length	[3 to 30 / 10 / 1/step]
	Sets the time a jam must remain before it becomes an "unattended paper jam". This setting is enabled only when SP5508-004 is set to "1".	
5-508-012	Jam Detection: Continuous Count	[2 to 10 / 5 / 1 /step]
	Sets the number of consecutive paper jams required to initiate a call. This setting is enabled only when SP5508-004 is set to "1".	
5-508-013	Door Open: Time Length	[3 to 30 / 10 / 1 /step]
	Sets the length of time the door remains open before the machine initiates a call. This setting is enabled only when SP5-508-004 is set to "1".	

5515	[SC/Alarm Setting]	*CTL	-
	With @Remote in use, these SP codes can be set to issue an SC call when an SC error occurs. If this SP is switched off, the SC call is not issued when an SC error occurs.		
5-515-001	SC Call	[0 or 1 / 1 / - /step] 0: Off 1: On	
5-515-002	Service Parts Near End Call		
5-515-003	Service Parts End Call		
5-515-004	User Call		
5-515-006	Communication Test Call	[0 or 1 / 1 / - /step] 0: Off 1: On	
5-515-007	Machine Information Notice		
5-515-008	Alarm Notice		
5-515-009	Non Genuin Tonner Alarm		
5-515-010	Supply Automatic Ordering Call		

5-515-011	Supply Manegement Report Call	
5-515-012	Jam/Door Open Call	
5-515-050	Timeout:Manual Call	[1 to 255 / 5 / 1 min /step]
5-515-051	Timeout:Other Call	[1 to 255 / 10 / 1 min /step]

5517	[Get Machine Information]		
5-517-031	Get SMC Info: Retry Interval	*ENG	[0 to 255 / 10 / 1 min /step]

5610	[Base Gamma Ctrl Pt:Execute]		
5-610-004	Get Factory Default	ENG	[0 or 1 / 0 / 1 /step]
	Recalls the factory settings.		
5-610-005	Set Factory Default	ENG	[0 or 1 / 0 / 1 /step]
	Overwrites the current values onto the factory settings.		
5-610-006	Restore Orginal Value	ENG	[0 or 1 / 0 / 1 /step]
	Recalls the previous settings.		

5611	[Toner Color in 2C]		
5-611-001	B-C	*ENG	[0 to 128 / 100 / 1 /step] 128: Darkest density
	Adjusts the Cyan correction value of the blue signal in two-color mode.		
5-611-002	B-M	*ENG	[0 to 128 / 100 / 1 /step] 128: Darkest density
	Adjusts the Magenta correction value of the blue signal in two-color mode.		
5-611-003	G-C	*ENG	[0 to 128 / 100 / 1 /step] 128: Darkest density

	Adjusts the Cyan correction value of the blue signal in two-color mode.		
5-611-004	G-Y	*ENG	[0 to 128 / 100 / 1 /step] 128: Darkest density
	Adjusts the Yellow correction value of the blue signal in two-color mode.		
5-611-005	R-M	*ENG	[0 to 128 / 100 / 1 /step] 128: Darkest density
	Adjusts the Magenta correction value of the blue signal in two-color mode.		
5-611-006	R-Y	*ENG	[0 to 128 / 100 / 1 /step] 128: Darkest density
	Adjusts the Yellow correction value of the blue signal in two-color mode.		

5618	[Color Mode Display Selection]		
5-618-001	-	*CTL	[0 or 1 / 1 / 1 /step] 0: ACS, Colour, Black & White, Two Colour, Single colour 1: ACD, Full Colour, Black & White
	Selects the color selection display on the LCD.		

5728	[Network Setting]		
	Sets port numbers for transferring to the Android operation panel		
5-728-001	NAT Machine Port1	*CTL	[1 to 65535 / 49101 / 1/step]
5-728-002	NAT UI Port1	*CTL	[1 to 65535 / 55101 / 1/step]
5-728-003	NAT Machine Port2	*CTL	[1 to 65535 / 49102 / 1/step]
5-728-004	NAT UI Port2	*CTL	[1 to 65535 / 55102 / 1/step]
5-728-005	NAT Machine Port3	*CTL	[1 to 65535 / 49103 / 1/step]
5-728-006	NAT UI Port3	*CTL	[1 to 65535 / 55103 / 1/step]
5-728-007	NAT Machine Port4	*CTL	[1 to 65535 / 49104 / 1/step]
5-728-008	NAT UI Port4	*CTL	[1 to 65535 / 55104 / 1/step]

5-728-009	NAT Machine Port5	*CTL	[1 to 65535 / 49105 / 1/step]
5-728-010	NAT UI Port5	*CTL	[1 to 65535 / 55105 / 1/step]
5-728-011	NAT Machine Port6	*CTL	[1 to 65535 / 49106 / 1/step]
5-728-012	NAT UI Port6	*CTL	[1 to 65535 / 55106 / 1/step]
5-728-013	NAT Machine Port7	*CTL	[1 to 65535 / 49107 / 1/step]
5-728-014	NAT UI Port7	*CTL	[1 to 65535 / 55107 / 1/step]
5-728-015	NAT Machine Port8	*CTL	[1 to 65535 / 49108 / 1/step]
5-728-016	NAT UI Port8	*CTL	[1 to 65535 / 55108 / 1/step]
5-728-017	NAT Machine Port9	*CTL	[1 to 65535 / 49109 / 1/step]
5-728-018	NAT UI Port9	*CTL	[1 to 65535 / 55109 / 1/step]
5-728-019	NAT Machine Port10	*CTL	[1 to 65535 / 49110 / 1/step]
5-728-020	NAT UI Port10	*CTL	[1 to 65535 / 55110 / 1/step]

5730	[Extended Function Setting]		
	Changes the Mk1 Counter to the combine counter from the paper type counter.		
5-730-001	Java™ Platform setting	*CTL	[0 or 1 / 1 / 1/step] 0: Disable 1: Enable
5-730-010	Expiration Prior Alarm Set	*CTL	[0 to 999 / 20 / 1 days /step]

5731	[Counter Effect]		
	Changes the Mk1 Counter to the combine counter from the paper type counter.		
5-731-001	Change Mk1 Cnt(Paper->Combine)	*CTL	[0 or 1 / 0 / 1/step] 0: Disable 1: Enable

5734	[PDF Setting]		
5-734-001	PDF/A Fixed	*CTL	[0 or 1 / 0 / 1/step]

5741	[Node Authentication Timuout]		
	Specifies the timeout time for node authentication.		
5-741-001	-	*CTL	[1 to 255 / 60 / 1 sec /step]

5745	[Deemed Power Consumption]		
5-745-211	Controller Standby	*CTL	[0 to 9999 / 0 / 1 /step]
5-745-212	STR	*CTL	[0 to 9999 / 0 / 1 /step]
5-745-213	Main Power Off	*CTL	[0 to 9999 / 0 / 1 /step]
5-745-214	Scanning and Printing	*CTL	[0 to 9999 / 0 / 1 /step]
5-745-215	Printing	*CTL	[0 to 9999 / 0 / 1 /step]
5-745-216	Scanning	*CTL	[0 to 9999 / 0 / 1 /step]
5-745-217	Engine Standby	*CTL	[0 to 9999 / 0 / 1 /step]
5-745-218	Low Power Consumption	*CTL	[0 to 9999 / 0 / 1 /step]
5-745-219	Silent condition	*CTL	[0 to 9999 / 0 / 1 /step]
5-745-220	Heater Off	*CTL	[0 to 9999 / 0 / 1 /step]

5747	[Browser Setting]		
5-747-201	JPEG Quality	*CTL	[0 to 100 / 100 / 1%/step]

5-747-202	Number of Common Bookmark	*CTL	[0 to 100 / 0 / 1/step]
5-747-203	Extended Memory Limit	*CTL	[0 or 1 / 0 / 1/step] 0: Use extended memory 1: Not use extended memory
5-747-204	Vertical Scroll Display Setting	*CTL	[0 or 1 / 0 / 1/step] 0: Fixed 1: Not fixed
5-747-205	Browser2	CTL	[0 to 255 / 0 / 1/step]
5-747-206	Browser3	CTL	[0 to 255 / 0 / 1/step]
5-747-207	Browser4	CTL	[0 to 255 / 0 / 1/step]
5-747-208	Browser5	CTL	[0 to 255 / 0 / 1/step]
5-747-209	Browser6	CTL	[0 to 255 / 0 / 1/step]
5-747-210	Browser7	CTL	[0 to 255 / 0 / 1/step]
5-747-211	Browser8	CTL	[0 to 255 / 0 / 1/step]
5-747-212	Browser9	CTL	[0 to 255 / 0 / 1/step]
5-747-213	Browser10	CTL	[0 to 255 / 0 / 1/step]

5748	[OpePanel Setting]		
5-748-101	Op Type Action Setting	CTL	[0 to 255 /0- / 1 /step]
5-748-201	Cheetah Panel Connect Setting	CTL	[0 to 1 / 0 / 1/step]

5749	[Import/Export]		
5-749-001	Export	CTL	Exports the preference information. [EXECUTE]

5-749-101	Import	CTL	Imports the preference information. [EXECUTE]

5751	[Key Event Encryption Setting]		
5-751-001	Password	*CTL	[0 to 255 / 0 / 1/step]

5752	[Copy:WebAPI Setting]		
	Sets the copy Flair API function. Cycling the power off/is required when the setting is changed.		
5-752-001	Copy:FlairAPI Setting	*CTL	[0 to 255 / 0 / 1/step] Refer to the bit SW below.

Bit SW for SP5-752

Bit	Item	0	1	Description	Initial value
0	Flair API Server Boot	No	Yes	Specifies whether to start the HTTP server for Flair API. “0” disables all the Flair API functions (Remote UI).	0
1	Access Permission	Enabled	Disabled	Setting this value to “0” permits only internal access in the machine (MFP browser). Setting this value to “1” permits to access from external devices such as PC, Remote UI, IT-BOX.	0
2	Select IPv6/IPv4	IPv6	IPv4	Setting this value to “0” permits only accessing with IPv6. Setting this value to “1” permits accessing with IPv4 or IPv6.	0
3	Remote UI	Not use	Use	Sets whether to use the Remote UI.	0
4	Reserved	-	-	N/A	N/A

Bit	Item	0	1	Description	Initial value
5	Reserved	-	-	N/A	N/A
6	Reserved	-	-	N/A	N/A
7	Reserved	-	-	N/A	N/A

5753	[SyncLimitCount]			
5-753-001	SyncLimitCountSetting	CTL	[0 to 1 / 0 / 1/step]	
5-753-002	SyncLimitCountSettingSrvDownCase	CTL	[0 to 1 / 0 / 1/step]	
5-753-011	SyncEcoCountSetting	CTL	[0 to 1 / 0 / 1/step]	

5755	[Display Setting]		
5-755-001	Disp Administrator Password Change Scrn	CTL	[- / - / -/step]
5-755-002	Hide Administrator Password Change Scrn	CTL	[- / - / -/step]

5758	[RemoteUI Setting]		
5-758-001	Authentication	* CTL	[0 to 1 / 0 / 1/step]

5759	[Machine Limit Count]		
	-		

5-759-001	Machine Limit Count Setting	* CTL	[0 or 1 / 0 / 1/step]
5-759-061	Full Color Limit Count	*CTL	[0 to 999999999 / 0 / 1/step]
5-759-062	Mono Color Limit Count	*CTL	[0 to 999999999 / 0 / 1/step]

5761	[SmartOperationPanel Setting]		
5-761-001	Restore the default Home screen	*CTL	[- / - / -/step]

5795	[SRM Debug SW]		
5-795-001	001:1	*CTL	[0 to 255 / 0 / 1/step]

 Note

- Memory Clear (SP5-801)
- The following tables list the items that are cleared. The serial number information, meter charge setting and meter charge counters (SP8-581, 582, 583, 584, and 586) are not cleared.

5801	[Memory Clear]		
5-801-001	All Clear	CTL	Resets all correction data for process control and all software counters, and returns all modes and adjustments to their default values.
5-801-002	Engine	ENG	Clears the engine settings.
5-801-003	SCS	CTL	Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information.
5-801-004	IMH Memory Clr	CTL	-

5-801-005	Mcs	CTL	Initializes the Mcs settings.
5-801-006	Copier Application	CTL	Initializes all copier application settings.
5-801-007	Fax Application	CTL	
5-801-008	Printer Application	CTL	The following service settings: ▪ Bit switches ▪ Gamma settings (User & Service) ▪ Toner Limit The following user settings: ▪ Tray Priority ▪ Menu Protect ▪ System Setting except for setting of Energy Saver ▪ I/F Setup (I/O Buffer and I/O Timeout) ▪ PCL Menu
5-801-009	Scanner Application	CTL	Initializes the scanner defaults for the scanner and all the scanner SP modes.
5-801-010	Web Service	CTL	Deletes the network file application management files and thumbnails, and initializes the job login ID.
5-801-011	NCS	CTL	All setting of Network Setup (User Menu) (NCS: Network Control Service)
5-801-012	R-FAX	CTL	
5-801-014	Clear DCS Setting	CTL	Initializes the DCS (Delivery Control Service) settings.
5-801-015	Clear UCS Setting	CTL	
5-801-016	MIRS Setting	CTL	Initializes the MIRS (Machine Information Report Service) settings.
5-801-017	CCS	CTL	Initializes the CCS (Certification and Charge-control Service) settings.

5-801-018	SRM Memory Clr	CTL	Initializes the SRM (System Resource Manager) settings.
5-801-019	LCS	CTL	Initializes the LCS settings.
5-801-020	Web Uapli	CTL	Initializes the web user application settings.
5-801-021	ECS	CTL	Initializes the data in SP5740-001 through -053, and SP5741-001.
5-801-023	AICS	CTL	Initializes the data in SP5740-001 through -053, and SP5741-001.
5-801-025	websys	CTL	Initializes the websys data
5-801-026	PLN	CTL	-
5-801-027	SAS	CTL	-
5-801-028	Rest WebService	CTL	-

5803	[INPUT Check]	See page 3-424.
5804	[OUTPUT Check]	

5807	[Area Selection] Sets the machine destination.		
5-807-001	-	*ENG	[0 to 7/ 2 / 1/step] 1: Japan 2: NA 3: EU 4: Taiwan 5: Asia 6: China 7: Korea * The default value depends on the original machine destination.

5810	[Fusing SC Reset]		
	Resets a type A service call condition.  Note Turn the main switch off and on after resetting the SC code.		
5-807-001	Fusing SC Reset	CTL	[0 to 1 / 0 / 1/step]
5-807-002	Hard High Temp.Detection	CTL	

5811	[MachineSerial]		
5-811-002	Display	*CTL	Displays the machine serial number. [0 to 255 / 0 / 1/step]

5812	[Service Tel. No. Setting]	*CTL
5-812-001	Service	
	Sets the telephone number for a service representative. This number is printed on the Counter List, which can be printed with the user's "Counter" menu. This can be up to 20 characters (both numbers and alphabetic characters can be input).	
5-812-002	Facsimile	
	Sets the fax number for a service representative. This number is printed on the Counter List. This can be up to 20 characters (both numbers and alphabetic characters can be input).	
5-812-003	Supply	
	Use this to input the telephone number of your supplier for consumables. Enter the number and press #.	
5-812-004	Operation	
	Use this to input the telephone number of your sales agency. Enter the number and press #.	

5816	[Remote Service]	*CTL
5-816-001	I/F Setting	
	Selects the remote service setting. [0 to 2 / 2 / 1/step] 0: Remote service off 1: CSS remote service on 2: NRS remote service on	
5-816-002	CE Call	
	Performs the CE Call at the start or end of the service. [0 or 1 / 0 / 1/step] 0: Start of the service 1: End of the service  Note This SP is activated only when SP 5816-001 is set to "2".	
5-816-003	Function Flag	
	Enables or disables the remote service function. [0 to 1 / 0 / 1/step] 0: Disabled, 1: Enabled	
5-816-007	SSL Disable	
	Controls if RCG (Remote Communication Gate) confirmation is done by SSL during an RCG send for the @Remote over a network interface. [0 or 1 / 0 / 1/step] 0: Yes (SSL used) 1: No (SSL not used)	
5-816-008	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 @Remote network. [1 to 90 / 30 / 1 sec/step]	
5-816-009	RCG Write Timeout	

	Sets the length of time (seconds) for the time-out when sent data is written to the RCG during a call over the @Remote network. [0 to 100 / 60 / 1 sec/step]
5-816-010	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 @Remote network. [0 to 100 / 60 / 1 sec /step]
5-816-011	Port 80 Enable
	Controls if permission is given to get access to the SOAP method over Port 80 on the @Remote network. [0 or 1 / 0 / 1 /step] 0: No. Access denied 1: Yes. Access granted.
5-816-013	RFU Timing
	Selects the timing for the remote firmware updating. [0 or 1 / 1 / 1 /step] 0: Any status of a target machine 1: Sleep or panel off mode only
5-816-014	RCG Error Cause
	[0 to 2 / 0 / 1 /step]
5-816-021	RCG-C Registered DFU(SSP)
	[0 or 1 / 0 / 1 /step]
5-816-023	Connect Type (N/M) DFU(SSP)
	[0 or 2 / 0 / 1 /step]
5-816-028	Send Timeout
	[0 to 100 / 30 / 1 sec/step]
5-816-029	Receive Timeout
	[0 to 100 / 30 / 1 sec/step]
5-816-030	Retry Interval

	[0 to 0xffff / 3 / 1 sec/step]
5-816-031	Retry Count
	[0 to 255 / 3 / 1 /step]
5-816-032	Connect Send Delay
	[0 to 255 / 5 / 1 sec/step]
5-816-033	Max Multipart
	[0 to 255 / 10 / 1 /step]
5-816-034	Firm DL Interval
	[0 to 0xffff / 3 / 1 sec/step]
5-816-035	Firm DL Retry Count
	[0 to 255 / 3 / 1 /step]
5-816-061	Cert Expire Timing DFU(SSP)
	Proximity of the expiration of the certification. [0 to 0xffffffff / 0 / 1 /step]
5-816-062	Use Proxy DFU(SSP)
	This SP setting determines if the proxy server is used when the machine communicates with the service center. [0 or 1 / 0 / 1 /step] 0: Not use 1: Use
5-816-063	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 127 characters. Characters beyond the 127 character are ignored. - This address is customer information and is not printed in the SMC report.

5-816-064	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 RC Gate-N. [0 to 0xffff / 0 / 1 /step]  Note This port number is customer information and is not printed in the SMC report.
5-816-065	Proxy User Name
	This SP sets the HTTP proxy certification user name.  Note - The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored. - This name is customer information and is not printed in the SMC report.
5-816-066	Proxy Password
	This SP sets the HTTP proxy certification password.  Note - The length of the password is limited to 31 characters. Any character beyond the 31st character is ignored. - This name is customer information and is not printed in the SMC report.

5816	[Remote Service]	*CTL
5-816-067	CERT: Up State DFU(SSP)	
	Displays the status of the certification update. [0 to 255 / 0 / 1 /step]	
	0	The certification used by Embedded RC Gate is set correctly.
	1	The certification request (setAuthKey) for update has been received from the GW URL and certification is presently being updated.
	2	The certification update is completed and the GW URL is being notified of the successful update.

	3	The certification update failed, and the GW URL is being notified of the failed update.
	4	The period of the certification has expired and new request for an update is being sent to the GW URL.
	11	A rescue update for certification has been issued and a rescue certification setting is in progress for the rescue GW connection.
	12	The rescue certification setting is completed and the GW URL is being notified of the certification update request.
	13	The notification of the request for certification update has completed successfully, and the system is waiting for the certification update request from the rescue GW URL.
	14	The notification of the certification request has been received from the rescue GW controller, and the certification is being stored.
	15	The certification has been stored, and the GW URL is being notified of the successful completion of this event.
	16	The storing of the certification has failed, and the GW URL is being notified of the failure of this event.
	17	The certification update request has been received from the GW URL, the GW URL was notified of the results of the update after it was completed, but a certification error has been received, and the rescue certification is being recorded.
	18	The rescue certification of No. 17 has been recorded, and the GW URL is being notified of the failure of the certification update.

5816	[Remote Service]	*CTL
5-816-068	CERT: Error DFU(SSP)	
	Displays a number code that describes the reason for the request for update of the certification. [0 to 255 / 0 / 1 /step]	
	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.

5816	[Remote Service]	*CTL
5-816-069	CERT:Up ID DFU(SSP)	
	The ID of the request for certification.	
5-816-083	Firm Up Status DFU(SSP)	
	Displays the status of the firmware update [0 or 1 / 0 / 1 /step]	
5-816-085	Firm Up User Check DFU(SSP)	
	[0 or 1 / 0 / 1 /step]	
5-816-086	Firmware Size DFU(SSP)	
	[0 to 0xffffffff / 0 / 1 /step]	
5-816-087	CERT:Macro Ver. DFU(SSP)	
	Displays the macro version of the @Remote certification.	
5-816-088	CERT:PAC Ver. DFU(SSP)	
	Displays the PAC version of the @Remote certification.	
5-816-089	CERT:ID2Code DFU(SSP)	
	Displays ID2 for the @Remote certification. Spaces are displayed as underscores (_). Asterisks (****) indicate that no @Remote certification exists.	

5-816-090	CERT:Subject DFU(SSP)
	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.
5-816-091	CERT:Serial No. DFU(SSP)
	Displays serial number for the NRS certification. Asterisks (****) indicate that no DESS exists.
5-816-092	CERT:Issuer DFU(SSP)
	Displays the common name of the issuer of the @Remote certification. CN = the following 30 bytes. Asterisks (****) indicate that no DESS exists.
5-816-093	CERT:Valid Start DFU(SSP)
	Displays the start time of the period for which the current @Remote certification is enabled.
5-816-094	CERT:Valid End DFU(SSP)
	Displays the end time of the period for which the current @Remote certification is enabled.
5-816-102	CERT:Encrypt Level
	Displays cryptic strength of the NRS certification. 1: 512 bit 2: 2048 bit
5-816-103	Client Communication Method
	[0 to 3 / 0 / 1 /step] Saves the communication type that the machine succeeded in @Remote client communication 0: Not communicated (initial setting) 1: IPv4 2: IPv6 3: Hostname
5-816-104	Client Communication Limit
	[1 to 7 / 7 / 1 /step]

5-816-115	Network Information Waiting timer
	[5 to 255 / 5 / 1 sec /step] Saves the time until the latest network information is determined. If SCS does not notify a boot of the network or IPv6 address event, NRS determines the network information and notifies the setting change(s) to intermediary device(s).
5-816-150	Selection Country
	[0 to 10 / 0 / 1 /step] 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 1: NA 3: EU 0: Other
5-816-151	Line Type Automatic Judgement
	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.
5-816-152	Line Type Judgement Result

	Displays a number to show the result of the execution of SP5816 151. Here is a list of what the numbers mean. [0 to 255 / 0 / 0 /step] 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.
5-816-153	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 2 / 0 / 1 /step] 0: Tone Dialing Phone 1: Pulse Dialing Phone Inside Japan "2" may also be displayed: 0: Tone Dialing Phone 1: Pulse Dialing Phone 10PPS 2: Pulse Dialing Phone 20PPS
5-816-154	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).
5-816-156	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 (").
5-816-157	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 (").
5-816-161	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)
5-816-162	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 x 2 sec. For example, if you set "2" the line will remain open for 4 sec.
5-816-163	Access Point This is the number of the dial-up access point for 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 alphanumeric characters
5-816-164	Line Connecting This SP sets the connection conditions for the customer. This setting dedicates the line to RCG-M only, or sets the line for sharing between RCG-M and a fax unit. [0 or 1 / 0 / 1 /step] 0: Sharing Fax 1: No Sharing Fax  Note ▪ 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 a RCG-M transmission in progress to open the line for fax transaction.
5-816-165	- [0 to 10/ 1 / 1/step] Specifies the ringing count for RCG-M to call when the value of SP5816-164 is "1". Cycling the main power off/on is required if the value of this SP is changed.
5-816-173	Modem Serial No. This SP displays the serial number registered for the RCG-M.
5-816-174	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, RCG-M 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.
5-816-187	FAX TX Priority
	This SP determines whether pushing the off-hook button will interrupt a RCG-M 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 / 1 /step] 0: Disable, 1: Enable
5-816-190	3G DongleID
	[-/ - / - /step]
5-816-200	Manual Polling
	Executes the manual polling.
5-816-201	Regist Status DFU(SSP)
	Displays a number that indicates the status of the @Remote service device. [0 to 255/ 0 / 1 /step] 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.
5-816-202	Letter Number DFU(SSP)
	Allows entry of the number of the request needed for the RCG-N device.
5-816-203	Confirm Execute

	Executes the inquiry request to the @Remote GW URL. [0 or 1/ 0 / 1 /step]
5-816-204	Confirm Result DFU(SSP) [0 to 255 / 0 / 1 /step]
	Displays a number that indicates the result of the inquiry executed with SP5816 203. 0: Succeeded 3: Communication error (proxy enabled) 4: Communication error (proxy disabled) 5: Proxy error (authentication error) 6: Communication error 8: Other error 9: Request number confirmation executing 11: Already registered 12: Parameter error 20: Dial-up authentication error 21: Answer tone detection error 22: Carrier detection error 23: Invalid setting value (modem) 24: Low power supply current 25: unplugged modem 26: Busy line
5-816-205	Confirm Place DFU(SSP)
	[0 or 1/ 0 / 1 /step]
5-816-206	Register Execute
	Executes "Embedded RCG Registration". [0 or 1/ 0 / 1 /step]
5-816-207	Register Result DFU(SSP)

	Displays a number that indicates the registration result. [0 to 255/ 0 / 1 /step] 0: Succeeded 2: Already registered 3: Communication error (proxy enabled) 4: Communication error (proxy disabled) 5: Proxy error (Authentication error) 8: Other error 9: Request number confirmation executing 11: Already registered 12: Parameter error 20: Dial-up authentication error 21: Answer tone detection error 22: Carrier detection error 23: Invalid setting value (modem) 24: Low power supply current 25: unplugged modem 26: Busy line

5816	[Remote Service]	*CTL	
5-816-208	Error Code DFU(SSP)		
	Displays a number that describes the error code that was issued when either SP5816-204 or SP5816-207 was executed. [-2147483647 to 2147483647 / 0 / - /step]		
	Cause	Code	Meaning
	Illegal Modem Parameter	-11001	Chat parameter error
		-11002	Chat execution error
-11003		Unexpected error	

5816	[Remote Service]	*CTL	
5-816-208	Error Code		
	Cause	Code	Meaning

	Operation Error, Incorrect Setting	-12002	Inquiry, registration attempted without acquiring device status.
		-12003	Attempted registration without execution of an inquiry and no previous registration.
		-12004	Attempted setting with illegal entries for certification and ID2.
		-12005	@Remote communication is prohibited. The device has an Embedded RC gate-related problem.
		-12006	A confirmation request was made after the confirmation had been already completed.
		-12007	The request number used at registration was different from the one used at confirmation.
		-12008	Update certification failed because mainframe was in use.
		-12009	D2 mismatch between an individual certification and NVRAM.
		-12010	Certification area is not initialized.

5816	[Remote Service]	*CTL	
5-816-208	Error Code		
	Cause	Code	Meaning
	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	Basil not managed
		-2394	Device not managed
		-2395	Box ID for Basil is illegal
		-2396	Device ID for Basil is illegal
		-2397	Incorrect ID2 format
		-2398	Incorrect request number format
5-816-209	Instl Clear	Releases the machine from its embedded RCG setup. [0 or 1/ 0 / 1 /step]	
5-816-240	CommErrorTime DFU(SSP)	[0 to 0xffffffff/ 0 / 1 /step]	
5-816-241	CommErrorCode 1 DFU(SSP)	[0 to 0xffffffff/ 0x00000000 / 1 /step]	
5-816-242	CommErrorCode 2 DFU(SSP)	[0 to 0xffffffff/ 0x00000000 / 1 /step]	
5-816-243	CommErrorCode 3 DFU(SSP)	[0 to 0xffffffff/ 0x00000000 / 1 /step]	
5-816-244	CommErrorState 1 DFU(SSP)	[0 to 0xffff/ 0x0000 / 1 /step]	
5-816-245	CommErrorState 2 DFU(SSP)	[0 to 0xffff/ 0x0000 / 1 /step]	
5-816-246	CommErrorState 3 DFU(SSP)	[0 to 0xffff/ 0x0000 / 1 /step]	
5-816-247	SSL Error Count DFU(SSP)	[0 to 255/ 0 / 1 /step]	
5-816-248	Other Err Count DFU(SSP)	[0 to 255/ 0 / 1 /step]	

5-816-250	CommLog Print	Prints the communication log. [0 to 255/ 0 / 1 /step]

5821	[Remote Service RCG Setting]		
5-821-002	RCG IPv4 Address	*CTL	[0 to 0xffffffff / 0 /1 /step] Sets the IP address of the RCG (Remote Communication Gate) destination for call processing at the remote service center.
5-821-003	RCG Port	*CTL	[0 to 65535/ 443 / 1 /step]
5-821-004	RCG IPv4 URL Path	*CTL	[- / - / - /step]
5-821-005	RCG IPv6 Address	*CTL	[- / - / - /step]
5-821-006	RCG IPv6 URL Path	*CTL	[- / - / - /step]
5-821-007	RCG Host Name	*CTL	[- / - / - /step]
5-821-008	RCG Host URL Path	*CTL	[- / - / - /step]

5824	[NV-RAM Data Upload]		
5-824-001	NV-RAM Data Upload	CTL	Uploads the UP and SP mode data (except for counters and the serial number) from the NVRAM to an SD card. [EXECUTE]

5825	[NV-RAM Data Download]		
5-825-001	NV-RAM Data Download	CTL	Downloads the UP and SP mode data from an SD card to the NVRAM. [EXECUTE]

5828	[Network Setting]	*CTL
5-828-065	Job Spooling	
	Enables/disables Job Spooling. [0 or 1 / 0 / 1/step] 0: Disabled, 1: Enabled	
5-828-066	Job Spooling Clear: Start Time	
	Treatment of the job when a spooled job exists at power on. [0 or 1 / 1 / 1/step] 0: ON (Data is cleared), 1: OFF (Automatically printed)	
5-828-069	Job Spooling (Protocol)	
	Validates or invalidates the job spooling function for each protocol. [0x00 to 0xff / 0x7f / -/step] 0: Validates, 1: Invalidates bit0: LPR, bit1: FTP bit2: IPP, bit3: SMB bit4: BMLinkS, bit5: DIPRINT bit6: sftp, bit7: (Reserved)	
5-828-087	Protocol usage	
	Used or not used the network. [0x00000000 to 0xffffffff / 0x00000000 / 1/step] 0: Off (Not used the network with the protocol.) 1: On (Used the network with the protocol once or more.) bit0: IPsec, bit1: IPv6, bit2: IEEE 802. 1X, bit3: Wireless LAN, bit4: Security mode level setting, bit5: Appletalk, bit6: DHCP, bit7: DHCPv6, bit8: telnet, bit9: SSL, bit10: HTTPS, bit11: BMLinkS printing, bit12: diprint printing, bit13: LPR printing, bit14: ftp printing, bit15: rsh printing, bit16: SMB printing, bit17: WSD-Printer, bit18: WSD-Scanner, bit19: Scan to SMB, bit20: Scan to NCP, bit21: Reserve, bit22: Bluetooth, bit23: IEEE 1284, bit24: USB printing, bit25: Dynamic DNS, bit26: Netware printing, bit27: LLTD, bit28: IPP printing, bit29: IPP printing (SSL), bit30: ssh, bit31: sftp	
5-828-090	TELNET (0: OFF 1: ON)	

	Enables or disables the Telnet protocol. [0 or 1 / 1 / 1 /step] 0: Disable, 1: Enable	
5-828-091	Web (0: OFF 1: ON)	
	Enables or disables the Web operation. [0 or 1 / 1 / 1 /step] 0: Disable, 1: Enable	
5-828-145	Active IPv6 Link Local Address	
	This is the IPv6 local address link referenced on the Ethernet or wireless LAN (802.11b) in the format: "Link Local Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.	
5-828-147	SettingActive IPv6 Stateless Address 1	These SPs are the IPv6 status addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11b) in the format: "Status Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
5-828-149	SettingActive IPv6 Stateless Address 2	
5-828-151	Active IPv6 Stateless Address 3	
5-828-153	Active IPv6 Stateless Address 4	
5-828-155	Active IPv6 Stateless Address 5	
5-828-156	IPv6 Manual Address	
	This SP is the IPv6 manually set address referenced on the Ethernet or wireless LAN (802.11b) in the format: "Manual Set Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.	
5-828-158	IPv6 Gateway Address	
	This SP is the IPv6 gateway address referenced on the Ethernet or wireless LAN (802.11b). The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.	
5-828-219	IPsec Aggressive Mode Setting	

	[0 or 1 / 0 / 1 /step]
5-828-236	Web Item visible
	Displays or does not display the Web system items. [0x0000 to 0xffff / 0xffff / 1 /step] 0: Not displayed, 1:Displayed bit0: Net RICOH bit1: Consumable Supplier bit2-15: Reserved (all)
5-828-237	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 or 1 / 1 / 1] 0: Not display, 1:Display
5-828-238	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 or 1 / 1 / 1] 0: Not display, 1:Display
5-828-239	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.
5-828-240	Web Link1 URL
	This SP confirms or changes the link to URL1 on the link page of the web system. The maximum characters for the URL are 127 characters.
5-828-241	Web Link1 visible
	Displays or does not display the link to URL1 on the top page of the web system. [0 or 1 / 1 / 1] 0: Not display, 1:Display
5-828-242	Web Link2 Name
	Same as "-239" [- / - / -]

5-828-243	Web Link2 URL
	Same as "-240" [- / - / -]
5-828-244	Web Link2 visible
	Same as "-241" [0 or 1 / 1 / 1/step]

5832	[HDD Formatting]	*CTL
5-832-001	HDD Formatting (ALL)	Initializes the hard disk. Use this SP mode only if there is a hard disk error.
5-832-002	HDD Formatting (IMH)	
5-832-003	HDD Formatting (Thumbnail/OCR)	
5-832-004	HDD Formatting (Job Log)	
5-832-005	HDD Formatting (Printer Fonts)	
5-832-006	HDD Formatting (User Info)	
5-832-007	Mail RX Data	
5-832-008	Mail TX Data	
5-832-009	HDD Formatting (Data for a Design)	
5-832-010	HDD Formatting (Log)	
5-832-011	HDD Formatting (Ridoc I/F)	
5-832-012	HDD Formatting (Thumbnail)	

5835	[File Transfer]		
5-835-034	List/File Select: Scanner	*CTL	[0 to 1 / 0 / 1 /step]

5836	[Capture Settings]	*CTL
5-836-001	Capture Function (0:Off 1:On)	[0 or 1 / 0 / 1 /step] 0 : Disable, 1: Enable
	With this function disabled, the settings related to the capture feature cannot be initialized, displayed, or selected.	
5-836-011	Capture Setting: Copy	[0 or 1 / 0 / 1 /step]
5-836-012	Capture Setting: Doc. Svr.	[0 or 1 / 0 / 1 /step]
5-836-013	Capture Setting: Fax RX Printer	[0 or 1 / 0 / 1 /step]
5-836-014	Capture Setting: Fax TX	[0 or 1 / 0 / 1 /step]
5-836-015	Capture Setting: Printer	[0 or 1 / 0 / 1 /step]
5-836-016	Capture Setting: Scanner	[0 or 1 / 0 / 1 /step]
5-836-017	Capture Setting: SDK	[0 or 1 / 0 / 1 /step]
5-836-071	Reduction for Copy Color	[0 to 3 / 2 / 1 /step] 0: 1to-1, 1: 1/2, 2: 1/3 , 3: 1/4
5-836-072	Reduction for Copy B&W Text	[0 to 6 / 0 / 1 /step] 0: 1to-1 , 1: 1/2, 2: 1/3, 3: 1/4, 6: 2/3
5-836-073	Reduction for Copy B&W Other	[0 to 6 / 0 / 1 /step] 0: 1to-1 , 1: 1/2, 2: 1/3, 3: 1/4, 6: 2/3
5-836-074	Reduction for Printer Color	[0 to 3 / 2 / 1 /step] 0: 1to-1, 1: 1/2, 2: 1/3 , 3: 1/4
5-836-075	Reduction for Printer B&W	[0 to 6 / 0 / 1 /step] 0: 1to-1 , 1: 1/2, 2: 1/3, 3: 1/4, 6: 2/3
5-836-077	Reduction for Printer Color 1200dpi	[1 to 5 / 4 / 1 /step] 1: 1/2, 3: 1/4, 4: 1/6 , 5: 1/8 (2: skipped) , 6: 2/3
5-836-078	Reduction for Printer B&W 1200dpi	[0 or 5 / 0 / 1 /step] 1: 1/2 , 3: 1/4, 4: 1/6, 5: 1/8 (2: skipped) , 6: 2/3

	5836-81 to 5836-86, Stored document format The following 6 SP modes set the default format for stored documents sent to the document management server via the MLB. Enabled only when optional MLB (Media Link Board) is installed.	
5-836-081	Format for Copy Color	[- / - / 1 /step] 0: JFIF/JPEG , 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR  Note ▪ This SP is not used in this model.
5-836-082	Format for Copy B&W Text	[0 to 3 / 1 / 1 /step] 0: JFIF/JPEG, 1: TIFF/MMR , 2: TIFF/MH, 3: TIFF/MR
5-836-083	Format Copy B&W Other	[0 to 3 / 1 / 1 /step] 0: JFIF/JPEG, 1: TIFF/MMR , 2: TIFF/MH, 3: TIFF/MR
5-836-084	Format for Printer Color	[- / - / 1 /step] 0: JFIF/JPEG , 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR  Note ▪ This SP is not used in this model.
5-836-085	Format for Printer B&W	[0 to 3 / 1 / 1 /step] 0: JFIF/JPEG, 1: TIFF/MMR , 2: TIFF/MH, 3: TIFF/MR
5-836-091	Default for JPEG	[5 to 95 / 50 / 1 /step]
	Sets the JPEG format default for documents sent to the document management server via the MLB with JPEG selected as the format. Enabled only when optional MLB (Media Link Board) is installed.	
5-836-101	Primary srv IP address	[0 to 0xffffffff / 0x00 / 1 /step] Sets the IP address for the primary capture server. This is basically adjusted by the remote system.

5-836-102	Primary srv scheme	This is basically adjusted by the remote system.
5-836-103	Primary srv port number	[1 to 65535 / 80 / 1 /step] This is basically adjusted by the remote system.
5-836-104	Primary srv URL path	This is basically adjusted by the remote system.
5-836-111	Secondary srv IP address	Sets the IP address for the secondary capture server. This is basically adjusted by the remote system.
5-836-112	Secondary srv scheme	This is basically adjusted by the remote system.
5-836-113	Secondary srv port number	[1 to 65535 / 80 / 1 /step] This is basically adjusted by the remote system.
5-836-114	Secondary srv URL path	This is basically adjusted by the remote system.
5-836-120	Default Reso Rate Switch	[0 or 1 / 0 / 1 /step] This is basically adjusted by the remote system.
5-836-121	Reso: Copy(Color)	[0 to 255 / 2 / 1/step]
	Selects the resolution for color copy mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 300dpi/ 2: 150dpi/ 3: 75dpi	
5-836-122	Reso: Copy(Mono)	[0 to 255 / 3 / 1/step]
	Selects the resolution for BW copy mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi	
5-836-123	Reso: Print(Color)	[0 to 255 / 2 / 1/step]
	Selects the resolution for color print mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 300dpi/ 2: 150dpi/ 3: 75dpi	

5-836-124	Reso: Print(Mono)	[0 to 255 / 3 / 1/step]
	Selects the resolution for BW print mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi	
5-836-125	Reso: Fax(Color)	[0 to 255 / 4 / 1/step]
5-836-126	Reso: Fax(Mono)	[0 to 255 / 3 / 1/step]
	Selects the resolution for BW fax mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi/ 6: 75dpi	
5-836-127	Reso: Scanner(Color)	[0 to 255 / 4 / 1/step]
	Selects the resolution for color scanning mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi/ 6: 75dpi	
5-836-128	Reso: Scanner(Mono)	[0 to 255 / 3 / 1/step]
	Selects the resolution for BW scanning mode. This is basically adjusted by the remote system. 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi/ 6: 75dpi	
5-836-129	Reso: SDK(Color)	[0 to 255 / 4 / 1/step]
5-836-130	Reso: SDK(Mono)	[0 to 255 / 3 / 1/step]
5-836-141	All Addr Info Switch	[0 or 1 / 1 / 1/step]
5-836-142	Stand-by Doc Max Number	[10 to 10000 / 2000 / 1/step]
5-836-143	ClearLightPDF Switch	[0 or 1 / 0 / 1/step]

5840	[IEEE 802.11]		
5-840-006	Channel Max	*CTL	[1 to 14 / 14 / 1 /step] Europe/Asia: 1 to 13 NA/ Asia: 1 to 11
	Sets the maximum number of channels available for data transmission via the wireless LAN. The number of channels available varies according to location. The default settings are set for the maximum end of the range for each area. Adjust the upper 4 bits to set the maximum number of channels. DFU  Note Do not change the setting.		
5-840-007	Channel Min	*CTL	[1 to 14 / 1 / 1 /step] Europe: 1 to 13 NA/ Asia: 1 to 11
	Sets the minimum number of channels available for data transmission via the wireless LAN. The number of channels available varies according to location. The default settings are set for the minimum end of the range for each area. Adjust the lower 4 bits to set the minimum number of channels. DFU  Note Do not change the setting.		
5-840-011	WEP key Select	*CTL	Selects the WEP key. [0x00 to 0x11 / 0x00 / 1 /step] 00: Key #1 01: Key #2 (Reserved) 10: Key #3 (Reserved) 11: Key #4 (Reserved)
5-840-045	WPA Debug Lvl	*CTL	Selects the debug level for WPA authentication application. [1 to 3 / 3 / 1/step] 1: Info, 2: warning, 3: error] This SP is displayed only when the IEEE802.11 card is installed.
5-840-046	11w	*CTL	[0 to 2 / 0 / 1/step]

5-840-047	PSK Set Type	*CTL	[0 to 1 / 0 / 1/step]

5841	[Supply Name Setting]		
5-841-001	Toner Name Setting:Black	*CTL	Specifies supply names. These appear on the screen when the user presses the Inquiry button in the user tools screen.
5-841-002	Toner Name Setting:Cyan	*CTL	
5-841-003	Toner Name Setting:Yellow	*CTL	
5-841-004	Toner Name Setting:Magenta	*CTL	

5842	[GWWS Analysis]		
5-842-001	Setting 1	*CTL	[0x00 to 0xFF / 0 / 1/step]
5-842-002	Setting 2	*CTL	[0x00 to 0xFF / 0 / 1/step]

5844	[USB]		
5-844-001	Transfer Rate	*CTL	[1 to 4 / 4 / 1 /step] 0001: Full speed 0004: Auto Change
5-844-002	Vendor ID	*CTL	[0x0000 to 0xffff / 0x05ca / 1 /step] Displays the vendor ID. DFU
5-844-003	Product ID	*CTL	[0x0000 to 0xffff / 0x0403 / 1 /step] Displays the product ID. DFU
5-844-004	Device Release Number	*CTL	[0 to 9999 / 100 / 1 /step] Displays the development release version number. DFU
5-844-005	Fixed USB Port	*CTL	[0 to 2 / 0 / 1 /step]
5-844-006	PnP Model Name	*CTL	[- / - / - /step]
5-844-007	PnP Serial Number	*CTL	[- / - / - /step]

5-844-008	Mac Supply Level	*CTL	[0 or 1 / 1 / 1 /step]
5-844-100	Notify Unsupport	*CTL	[0 or 1 / 1 / 1 /step]

5845	[Delivery Server Setting]		*CTL
	Provides items for delivery server settings.		
5-845-001	FTP Port No.		[1 to 65535 / 3670 / 1 /step]
	Sets the FTP port number used when image files to the Scan Router Server.		
5-845-002	IP Address (Primary)		Range: 000.000.000.000 to 255.255.255.255
	Use this SP to set the Scan Router Server address. The IP address under the transfer tab can be referenced by the initial system setting.		
5-845-006	Delivery Error Display Time		[0 to 999 / 300 / 1 sec /step]
	Use this setting to determine the length of time the prompt message is displayed when a test error occurs during document transfer with the NetFile application and an external device.		
5-845-008	IP Address (Secondary)		Range: 000.000.000.000 to 255.255.255.255
	Specifies the IP address assigned to the computer designated to function as the secondary delivery server of Scan Router. This SP allows only the setting of the IP address without reference to the DNS setting.		
5-845-009	Delivery Server Model		[0 to 4/ 0 / 1 /step]
	Allows changing the model of the delivery server registered by the I/O device. 0: Unknown 1: SG1 Provided 2: SG1 Package 3: SG2 Provided 4: SG2 Package		
5-845-010	Delivery Svr. Capability		[0 to 255 / 0 / 1 /step]
	Bit7 = 1 Comment information exits		Changes the

	Bit6 = 1 Direct specification of mail address possible		capability of the registered that the I/O device registered.
	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”)		
5-845-011	Delivery Svr Capability (Ext)	[0 to 255 / 0 / 1 /step]	
	Changes the capability of the registered that the I/O device registered.		
	Bit7 = 1 Address book usage limitation (Limitation for each authorized user) Bit6 = 1 RDH authorization link Bit5 to 0: Not used		
5-845-013	Server Scheme (Primary) DFU		
	This is used for the scan router program.		
5-845-014	Server Port Number (Primary) DFU	[1 to 65535 / 80 / 1 /step]	
	This is used for the scan router program.		
5-845-015	Server URL Path (Primary) DFU		
	This is used for the scan router program.		
5-845-016	Server Scheme (Secondary) DFU		
	This is used for the scan router program.		
5-845-017	Server Port Number (Secondary) DFU	[1 to 65535 / 80 / 1 /step]	
	This is used for the scan router program.		
5-845-018	Server URL Path (Secondary) DFU		

	This is used for the scan router program.
5-845-022	Rapid Sending Control
	Enables or disables the prevention function for the continuous data sending error. [0 to 1 / 1 / 1/step] 0: Disable, 1: Enable

5846	[UCS Setting]		
5-846-001	Machine ID (for Delivery Server)	*CTL	[- / - / -/step] Displays the ID used for directory name of the delivery server.
5-846-002	Machine ID Clear (for Delivery Server)	*CTL	[- / - / -/step] Clears the ID used for directory name of the delivery server.
5-846-003	Maximum Entries	*CTL	[2000 to 20000 / 2000 / 1/step] Sets the maximum account entries that UCS manages.
5-846-006	Delivery Server Retry Timer	*CTL	[0 to 255 / 0 / 1/step] Sets the retrying interval when the delivery server failed to obtain the address book in the delivery server. Setting to "0" disables retrying.
5-846-007	Delivery Server Retry Times	*CTL	[0 to 255 / 0 / 1/step] Sets the retry times when the delivery server failed to obtain the address book in the delivery server. Setting to "0" disables retrying.
5-846-008	Delivery Server Maximum Entries	*CTL	[2000 to 20000 / 2000 / 1/step] Sets the maximum user entries that UCS manages.
5-846-010	LDAP Search Timeout	*CTL	[1 to 255 / 60 / 1/step] Sets the length of the timeout for the search of the LDAP server.

5-846-020	WSD Maximum Entries	*CTL	[50 to 250 / 250 / 1/step] Sets the maximum entries of the WSD address book that UCS manages.
5-846-021	Folder Auth Change	*CTL	[0 or 1 / 0 / 1 /step] Sets whether to use the log-in user or destination, if the folder authentication uses “specify the log-in auth info”.
5-846-040	Addr Book Migration(USB->HDD)	*CTL	[- / - / -/step] Moves the address book data in the SD card or USB Flash ROM to the HDD.
5-846-041	Fill Addr Acl Info	*CTL	[- / - / -/step] 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. 5.However, at this point the address book can be accessed by only the system administrator or key operator. 6.Enter the SP mode and do SP5-846-041. After this SP executes successfully, any user can access the address book.

5-846-043	Addr Book Media	*ENG	[0 to 30 / 0 / 1 /step] 0: Unconfirmed 1: SD Slot 1 2: SD Slot 2 4: USB Flash ROM 10: SD Slot 10 20: HDD 30: Nothing
5-846-047	Initialize Local Addr Book	*ENG	[- / - / -/step] Clears the local address book information, including the user code.
5-846-048	Initialize Delivery Addr Book	*ENG	[- / - / -/step] Initialize the delivery address book.
5-846-049	Initialize LDAP Addr Book	*ENG	[- / - / -/step] Clears the LDAP address book information, except the user code.
5-846-050	Initialize All Addr Book	*ENG	[- / - / -/step] Clears all directory information managed by UCS, including all user codes.
5-846-051	Backup All Addr Book	ENG	[- / - / -/step] Uploads all directory information to the SD card.
5-846-052	Restore All Addr Book	ENG	[- / - / -/step] Downloads all directory information from the SD card.
5-846-053	Clear Backup Info	ENG	[- / - / -/step] Deletes the address book data from the SD card in the service slot. Deletes only the files that were uploaded from this machine. This feature does not work if the card is write-protected.

5-846-060	Search option	*ENG	[0x00 to 0xff / 0x0f / 1 /step] This SP uses bit switches to set up the fuzzy search options for the UCS local address book. Bit: Meaning bit0: Checks both upper/lower case characters bit1: Japan Only bit2: Japan Only bit3: Japan Only bit4 to 7: Not Used
5-846-062	Complexity option 1	*ENG	[0 to 32 / 0 / 1 /step] 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.
5-846-063	Complexity option 2	*ENG	[0 to 32 / 0 / 1 /step] 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.
5-846-064	Complexity option 3	*ENG	[0 to 32 / 0 / 1 /step] 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.
5-846-065	Complexity option 4	*ENG	[0 to 32 / 0 / 1 /step] 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.

5-846-091	FTP Auth Port Setting	*ENG	[0 to 65535 / 3671 / 1 /step] Specifies the FTP port for obtaining the address book of delivery server.
5-846-094	Encryption Stat	*ENG	[0 to 255 / 0 / 1/step] Shows the status of the encryption function for the address book data.

5847	[Rep Resolution Reduction]	*CTL
	SP5847-1 through SP5847-8 changes the default settings of image data transferred externally by the Net File page reference function. [0 to 5 / 2 / 1 /step] SP5847-21 sets the default for JPEG image quality of image files handled by NetFile. “Net files” are jobs to be printed from the document server using a PC and the DeskTopBinder software.	
5-847-001	Rate for Copy Color [0 to 5 / 2 / 1 /step]	0: 1x 1: 1/2x 2: 1/3x 3: 1/4x 4: 1/6x 5: 1/8x 6: 2/3x
5-847-002	Rate for Copy B&W Text [0 to 6 / 0 / 1 /step]	
5-847-003	Rate for Copy B&W Other [0 to 6 / 0 / 1 /step]	
5-847-004	Rate for Printer Color [0 to 5 / 2 / 1 /step]	
5-847-005	Rate for Printer B&W [0 to 6 / 0 / 1 /step]	
5-847-006	Rate for Printer Color 1200dpi	[0 to 5 / 4 / 1/step]
5-847-007	Rate for Printer B&W 1200dpi	[0 to 6 / 1 / 1/step]
5-847-021	Network Quality Default for JPEG	
	Sets the default value for the quality of JPEG images sent as NetFile pages. This function is available only with the MLB (Media Link Board) option installed. [5 to 95 / 50 / 1 /step]	

5848	[Web Service]	*CTL
	SP5848-2 sets the 4-bit switch assignment for the access control setting. A setting of 0001 has no effect on access and delivery from Scan Router. 5848 100 sets the maximum size allowed for downloaded images. The default is equal to 1 gigabyte.	
5-847-002	Access Ctrl: Repository (only Lower 4 bits)	[0x00 to 0xFF / 0x02 / 1/step] 0000 : No access control 0001: Denies access to DeskTop Binder. 0010: No writing control
5-847-003	Access Control: Doc. Svr. Print (Lower 4 bits)	[0x00 to 0xFF / 0x00 / 1/step] Switches access control on and off. 0000 : No access control 0001: Denies access to DeskTop Binder.
5-847-004	Access Control: uirectory (Lower 4 bits)	
5-847-007	Access Ctrl: Comm. Log Fax (Lower 4 bits)	
5-847-009	Access Ctrl: Job Ctrl (Lower 4 bits)	
5-847-011	Access Ctrl: Devicemanagement (Lower 4bits)	
5-847-021	Access Ctrl: Delivery (Lower 4 bits)	
5-847-022	Access Ctrl: administration (Lower 4bits)	
5-847-099	Repository: Download Image Setting	DFU
5-847-100	Repository: Download Image Max. Size	Specifies the max size of the image data that the machine can download. [1 to 2048 / 2048 / 1 /step]
5-847-217	Setting: Timing	N/A

5849	[Installation Date]	*CTL
5-849-001	Display	The "Counter Clear Day" has been changed to "Installation Date" or "Inst. Date".
5-849-002	Switch to Print	Determines whether the installation date is printed on the printout for the total counter. [0 or 1 / 1 / 1/step] 0: OFF (No Print) 1: ON (Print)
5-849-003	Total Counter	Displays the total counter at set the setting day (SP5849-001). [0 to 99999999 / 0 / 1/step]

5851	[Bluetooth]	*CTL
5-851-001	Mode	
	Sets the operation mode for the Bluetooth Unit. Press either key. [0x00 to 0x01 / 0x00 / 1/step] [0:Public][1:Private]	

5856	[Remote ROM Update]		
	Allows the technician to upgrade the firmware using a local port (IEEE1284) when updating the remote ROM.		
5-856-002	Local Port	*CTL	[0 or 1 / 0 / 1/step] 0: Disable 1: Enable

5858	[Save Machine Info]	*CTL
	These SPs select the content of the debugging information to be saved to the destination selected by SP5857-002. SP5858-3 stores one SC specified by number. Refer to Section 4 for a list of SC error codes.	

5-858-001	0:OFF 1:ON	Turns on/off the debug save for SC codes generated by printer engine errors. [0 or 1 / 0 / 1/ step]
5-858-002	Target(0:HDD 1:SD)	Turns on/off the debug save for SC codes generated by GW controller errors. [0 or 1 / 0 / 1/ step]
5-858-003	Make LogTrace Dir	[0 or 1 / 0 / -/ step]
5-858-101	Start Date	[0 to 20371212 / 0 / 1 /step]
5-858-102	Days of Tracing	[0 to 180 / 0 / 1 day/step]
5-858-103	Acquire Fax Address(0:OFF 1:ON)	[0 or 1 / 0 / 1/ step]
5-858-111	Acquire All Info & Logs	[0 or 1 / 0 / -/ step]
5-858-121	Acquire Configuration Page	[0 or 1 / 0 / -/ step]
5-858-122	Acquire Font Page	[0 or 1 / 0 / -/ step]
5-858-123	Acquire Print Setting List	[0 or 1 / 0 / -/ step]
5-858-124	Acquire Error Log	[0 or 1 / 0 / -/ step]
5-858-131	Acquire Fax Info	[0 or 1 / 0 / -/ step]
5-858-141	Acquire All Debug Logs	[0 or 1 / 0 / -/ step]
5-858-142	Acquire Only Controller Debug Logs	[0 or 1 / 0 / -/ step]
5-858-143	Acquire Only Engine Debug Logs	[0 or 1 / 0 / -/ step]
5-858-144	Acquire Only Opepanel Debug Logs	[0 or 1 / 0 / -/ step]
5-858-145	Acquire Only FCU Debug Logs	[0 or 1 / 0 / -/ step]

5860	[SMTP/POP3/IMAP4]	*CTL
5-860-020	Partial Mail Receive Timeout	[1 to 168 / 72 / 1hour/step]
	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.	
5-860-021	MDN Response RFC2298 Compliance	[0 or 1 / 1 / 1 /step]
	Determines whether RFC2298 compliance is switched on for MDN reply mail. 0: No 1: Yes	
5-860-022	SMTP Auth. From Field Replacement	[0 or 1 / 0 / 1 /step]
	Determines whether the FROM item of the mail header is switched to the validated account after the SMTP server is validated. 0 : No. "From" item not switched. 1: Yes. "From" item switched.	
5-860-025	SMTP Auth. Direct Setting	[0 to 0xff / 0x0 / 1 /step]
	Selects the authentication method for SMPT. Bit switch: ▪ Bit 0: LOGIN ▪ Bit 1: PLAIN ▪ Bit 2: CRAM MD5 ▪ Bit 3: DIGEST MD5 ▪ Bit 4 to 7: Not used  Note ▪ This SP is activated only when SMTP authorization is enabled by UP mode.	
5-860-026	S/MIME: MIME Header Setting	Selects the MIME header type of an E-mail sent by S/MIME. [0 to 2 / 0 / 1/step] 0: Microsoft Outlook Express standard 1: Internet Draft standard 2: RFC standard

5-860-028	S/MIME: Authentication Check	[0 to 1 / 0 / 1/step] 0: Check 1: No check

5866	[E-Mail Report]		*CTL
5-866-001	Report Validity		[0 or 1 / 0 / 1/step]
5-866-005	Add Date Field		[0 or 1 / 0 / 1/step]

5869	[RAM Disk Setting]		*CTL
5-869-001	Mail Function		Set whether the RAM disk is used or not used when using the mail functions. [0 or 1 / 0 / 1/step] 0:OFF, 1:ON

5870	[Common KeyInfo Writing]		
5-870-001	Writing	*CTL	[0 or 1 / 0 / 1/step] Writes to flash ROM the common proof for validating the device for @Remote specifications.
5-870-003	Initialize	*CTL	[0 or 1 / 0 / 1/step] Initializes the data area of the common proof for validating.
5-870-004	Writing: 2048bit	*CTL	[0 or 1 / 0 / 1/step]

5873	[SDCardAppliMove]		
5-873-001	MoveExec	*CTL	[0 or 1 / 0 / 1/step] This SP copies the application programs from the original SD card in SD card slot 2 to an SD card in SD card slot 1.

5-873-002	UndoExec	*CTL	[0 or 1 / 0 / 1/step] This SP copies back the application programs from an SD card in SD Card Slot 2 to the original SD card in SD card slot 1. Use this menu when you have mistakenly copied some programs by using "Move Exec" (SP5873-1).

5875	[SC Auto Reboot]		
5-875-001	Reboot Setting	*CTL	Enables or disables the automatic reboot function when an SC error occurs. [0 or 1/ 0 / 1 /step] 0: The machine reboots automatically when the machine issues an SC error and logs the SC error code. If the same SC occurs again, the machine does not reboot. 1: The machine does not reboot when an SC error occurs. The reboot is not executed for Type A or C SC codes.
5-875-002	Reboot Type	*CTL	Selects the reboot method for SC. [0 or 1 / 0 / 1/step] 0: Manual reboot, 1: Automatic reboot

5878	[Option Setup]		
5-878-001	Data Overwrite Security	*CTL	Enables the Data Overwrite Security unit. Press "EXECUTE" on the operation panel. Then turn the machine off and on.
5-878-002	HDD Encryption	*CTL	Installs the HDD Encryption unit.
5-878-004	OCR Dictionary	*CTL	

5881	[Fixed Phrase Block Erasing]		
5-881-001	-	*CTL	Deletes the fixed phrase.

5885	[Set WIM Function] Web Image Monitor Settings		
	Close or disclose the functions of web image monitor.		
5-885-020	DocSvr Acc Ctrl	*CTL	[0x00 or 0xFF / 0x00 / -/step] 0: OFF, 1: ON Bit Meaning 0: Forbid all document server access (1) 1: Forbid user mode access (1) 2: Forbid print function (1) 3: Forbid fax TX (1) 4: Forbid scan sending (1) 5: Forbid downloading (1) 6: Forbid delete (1) 7: Reserved
5-885-050	DocSvr Format	*CTL	[0 to 2 / 0 / 1/step]
5-885-051	DocSvr Trans	*CTL	[5 to 120 / 10 /tep]
5-885-100	Set Signature	*CTL	[0 to 2/ 0 / 1/step]
5-885-101	Set Encryption	*CTL	Determines whether the scanned documents with the WIM are encrypted when they are transmitted by an e-mail. [0 to 1 / 0 / 1/step] 0: Not encrypted, 1:Encryption
5-885-200	Detect Mem Leak	*CTL	[0x00 or 0xFF / 0x00 / -/step]
5-885-202	-	*CTL	[3 to 60 / 30 / 1/step] Sets the auto log-out time for Web Image Monitor.
5-885-203	-	*CTL	[0 or 1 / 0 / 1/step] Setting this SP to “1” disables printing through Web Image Monitor.

5886	[Farm Update Setting]		
5-886-100	Skip Version Check	*CTL	[0 to 1/ 0 / 1/step]
5-886-101	Skip LR Check	*CTL	[0 to 1/ 0 / 1/step]
5-886-150	Cheetah Firm Exclusion	*CTL	[0 to 1/ 0 / 1/step]

5887	[SD GetCounter]		
	Output the counter list in the machine into the SD card in the service slot. Two files are generated as follows: ▪ “(machine serial).txt” contains the Nth time for getting the counter list. ▪ “(machine serial)_(Nth time).txt” contains the counter list. Note that the “SD_COUNTER” folder is required in the root directory in the SD card before doing this SP.		
5-887-001	-	*ENG	[- -/ -step]

5888	[Personal Information Protect]		
5-888-001	-	*CTL	Selects the protection level for logs. [0 to 1 / 0 / 1/step] 0: No authentication, No protection for logs 1: No authentication, Protected logs (only an administrator can see the logs)

5893	[SDK Application Counter]		*ENG
	Displays the counter name of each SDK application.		
5-893-001	SDK-1		
5-893-002	SDK-2		
5-893-003	SDK-3		
5-893-004	SDK-4		
5-893-005	SDK-5		

5-893-006	SDK-6
5-893-007	SDK-7
5-893-008	SDK-8
5-893-009	SDK-9
5-893-010	SDK-10
5-893-011	SDK-11
5-893-012	SDK-12

5894	[Engine Log Upload]		
5-894-001	Mech Counter Switch Setting	*ENG	[0 to 2 / 0 / 1/step] Sets switching charge mode of external charging device setting.

5900	[Engine Log Upload]		
5-900-001	Pattern	*ENG	[0 to 4 / 0 / 1/step] Specifies target module group for engine log upload.
5-900-002	Trigger	*ENG	[0 to 3 / 0 / 1/step] Specifies target trigger group for engine log upload.

5907	[Plug & Play Maker/Model Name]	*ENG
5-907-001	Selects the brand name and the production name for Windows Plug & Play. This information is stored in the NVRAM. If the NVRAM is defective, these names should be registered again. After selecting, press the "Original Type" key and "#" key at the same time. When the setting is completed, the beeper sounds five times. [0 to 255 / 0 / 1 /step]	

5913	[Switchover Permission Time]		
5-913-002	Print Application Timer	*CTL	[0 to 30 / 3 / 1 second /step]

	Sets the amount of time to elapse while the machine is in standby mode (and the operation panel keys have not been used) before another application can gain control of the display.

5967	[Copy Server Set Function]	*CTL	[0 or 1 / 0 / - /step] 0: Enable, 1: Disable
5-967-001	(0:ON 1:OFF) 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.		

5985	[Device Setting]		
5-985-001	On Board NIC	*CTL	[0 to 2 / 0 / 1 /step]
5-985-002	On Board USB	*CTL	[0 or 1 / 0 / 1 /step]

5987	[Mech. Counter Protection]		
5-987-001	0: OFF / 1: ON	* ENG	This SP detects that a mechanical counter device is removed. If it is detected, SC610 occurs.

5990	[SP Print Mode]		
	Prints out the SMC sheets.		
5-990-001	All(Data List)	*CTL	[0 to 255 / 0 / - /step]
5-990-002	SP(Mode Data List)	*CTL	[0 to 255 / 0 / - /step]
5-990-003	User Program	*CTL	[0 to 255 / 0 / - /step]
5-990-004	Logging Data	*CTL	[0 to 255 / 0 / - /step]
5-990-005	Diagnostic Report	*CTL	[0 to 255 / 0 / - /step]
5-990-006	Non-Default	*CTL	[0 to 255 / 0 / - /step]
5-990-007	NIB Summary	*CTL	[- / - / - /step]

5-990-008	Capture Log	*CTL	[0 to 255 / 0 / 1/step]
5990	[SMC Print]		
5-990-021	Copier User Program	*CTL	[- / - / -/step]
5990	[SP Print Mode]		
5-990-022	Scanner SP	*CTL	[0 to 255 / 0 / -/step]
5-990-023	Scanner User Program	*CTL	[0 to 255 / 0 / -/step]
5-990-024	SDK/J Summary	*CTL	[- / - / -/step]
5-990-025	SDK/J Application Info	*CTL	[- / - / -/step]
5-990-026	Printer SP	*CTL	[0 to 255 / 0 / -/step]
5-990-027	SmartOperationPanel SP	*CTL	[0 to 255 / 0 / -/step]
5-990-028	SmartOperationPanel UP	*CTL	[0 to 255 / 0 / -/step]

5992	[SP Text Mode]		
	Exports the SMC sheet data to the SD Card. Press “Execute” key to start exporting the SMC data in the SP mode display.		
5-992-001	All(Data List)	*CTL	[0 to 255 / 0 / -/step]
5-992-002	SP(Mode Data List)	*CTL	[0 to 255 / 0 / -/step]
5-992-003	User Program	*CTL	[0 to 255 / 0 / -/step]
5-992-004	Logging Data	*CTL	[0 to 255 / 0 / -/step]
5-992-005	Diagnostic Report	*CTL	[0 to 255 / 0 / -/step]
5-992-006	Non-Default	*CTL	[0 to 255 / 0 / -/step]
5-992-007	NIB Summary	*CTL	[- / - / -/step]
5-992-008	Capture Log	*CTL	[0 to 255 / 0 / 1/step]
5-992-021	Copier User Program	*CTL	[- / - / -/step]

5-992-022	Scanner SP	*CTL	[0 to 255 / 0 / -/step]
5-992-023	Scanner User Program	*CTL	[0 to 255 / 0 / -/step]
5-992-024	SDK/J Summary	*CTL	[- / - / -/step]
5-992-025	SDK/J Application Info	*CTL	[- / - / -/step]
5-992-026	Printer SP	*CTL	[0 to 255 / 0 / -/step]
5-992-027	SmartOperationPanel SP	*CTL	[0 to 255 / 0 / -/step]
5-992-028	SmartOperationPanel UP	*CTL	[0 to 255 / 0 / -/step]

5998	[Fusing Precedence Warm Up]		
	Turns the silent fusing warm-up mode on or off.		
5-998-001	On/Off	*ENG	[0 to 1 / 1 / - /step] 0: OFF 1: ON

3.7 MAIN SP TABLES-6

3.7.1 SP6-XXX (PERIPHERALS)

6006	[ADF Adj. Side-to-Side Regist]		
	Adjusts the side-to-side and leading registration of originals with the ARDF.		
6-006-001	Face	*ENG	[-2.0 to 2.0 / 0.0 / 0.1 mm/step]
6-006-002	Back	*ENG	[-2.0 to 2.0 / 0.0 / 0.1 mm/step]

6006	[ADF Adj. Leading Edge]		
	Adjusts the side-to-side and leading registration of originals with the ARDF.		
6-006-003	Face	*ENG	[-5.0 to 5.0 / 0.0 / 0.1 mm/step]
6-006-004	Back	*ENG	[-5.0 to 5.0 / 0.0 / 0.1 mm/step]

6006	[ADF Adj. Erase Margin]		
	Adjusts the erase margin at the original trailing edge.		
6-006-007	Trailing Edge	*ENG	[-5.0 to 5.0 / -1.6 / 0.1 mm/step]

6007	[ADF INPUT Check]		
	See page 3-424		

6008	[ADF OUTPUT Check]		
	See page 3-424		

6009	[ADF Free Run]		
	Performs a DF free run in simplex, duplex mode or stamp mode.		
6-009-001	Simplex Mode	ENG	[0 or 1 / 0 / 1/step]
6-009-002	Duplex Mode	ENG	[0 or 1 / 0 / 1/step]

6017	[ADF Adjustment Magnification]		
	Adjusts the magnification in the sub-scan direction for the ARDF.		
6-017-001	-	*ENG	[-5.0 to 5.0 / 0 / 0.1 %/step]

6021	[ARDF Motor]		
6-021-001	Gain selection	*ENG	[0 to 2 / 0 / 1/step] 0: Common 1: Only for GX060050 2: Only for GX060040

6910	[ADF Adjustment Shading Time]		
6-010-001	-	*ENG	[0 to 90 / 60 / 1 sec/step]

6800	[Sheet Conversion (Thick Paper)]		
	Not used		
6-800-001	1 to 3 (Initial: 3 Sheets)	CTL	[1 to 3 / 3 / 1/step]

6810	[Ring Bind Sheet Conversion (Thick Paper)]		
	Not used		
6-810-001	-	CTL	[1 to 3 / 3 / 1/step]

6830	[Extra]		
	Not used		
6-830-001	Staples 0 to 50 (Initial: 0)	*CTL	[0 to 50 / 0 / 1/step]
6-830-002	Saddles 0 to 50 (Initial: 0)	*CTL	[0 to 50 / 0 / 1/step]
6-830-003	Half-Fold 0 to 50 (Initial: 0)	*CTL	[0 to 50 / 0 / 1/step]
6-830-004	Ring Binding 0 to 50 (Initial: 0)	*CTL	[0 to 50 / 0 / 1/step]

6890	[Function Enabled]		
	Not used		
6-890-001	Z-Fold 0: No Punch 1: Punching OK	*CTL	[0 or 1 / 1 / 1/step]
6-890-002	Staple 0: No Shift 1: Shift OK	*CTL	[0 or 1 / 0 / 1/step]

3.8 MAIN SP TABLES-7

3.8.1 SP7-XXX (DATA LOG)

7401	[Total SC]	
	Displays the number of SC codes detected.	
	*CTL	[00000 to 65535 / 0 / -/step]
7-401-001	SC Counter	
7-401-002	Total SC Counter	

7403	[SC History]	
	Logs the SC codes detected. The 10 most recently detected SC Codes are not displayed on the screen, but can be seen on the SMC (logging) outputs.	
	*CTL	[-]
7-403-001	Latest	
7-403-002	Latest 1	
7-403-003	Latest 2	
7-403-004	Latest 3	
7-403-005	Latest 4	
7-403-006	Latest 5	
7-403-007	Latest 6	
7-403-008	Latest 7	
7-403-009	Latest 8	
7-403-010	Latest 9	

7404	[Software Error History]	
	Logs the SC Code 991 detected. The 10 most recently detected SC Code 991s are not displayed on the screen, but can be seen on the SMC (logging) outputs.	
	*CTL	[-]
7-404-001	Latest	
7-404-002	Latest 1	
7-404-003	Latest 2	
7-404-004	Latest 3	
7-404-005	Latest 4	
7-404-006	Latest 5	
7-404-007	Latest 6	
7-404-008	Latest 7	
7-404-009	Latest 8	
7-404-010	Latest 9	

7502	[Total Paper Jam]	
	Displays the total number of jams detected.	
	*CTL	[00000 to 65535 / - / - /step]
7-502-001	Jam Counter	
7-502-002	Total Jam Counter	

7503	[Total Original Jam Counter]	
	Displays the total number of original jams detected.	
	*CTL	[00000 to 65535 / - / 1 sheet/step]
7-503-001	-	
7503	[Total Original Jam]	
7-503-002	Total Original Counter	

7504	[Paper Jam Location]	
	ON: On check, OFF: Off check	
	Displays the number of jams according to the location where jams were detected. For details, see "Jam Detection".	
	*CTL	[0000 to 9999 / - / -/step]
7-504-001	At Power On	
7-504-003	Tray 1: On	
7-504-004	Tray 2: On	
7-504-005	Tray 3: On	
7-504-008	Registration Sn: On (Bypass)	
7-504-009	Registration Sn: On (Duplex)	
7-504-012	Bank: Transport Sn 1: On	
7-504-017	Registration Sn: On (Tray)	
7-504-018	Fusing Entrance: On	
7-504-019	Fusing Exit: On	
7-504-020	Paper Exit: On	
7-504-021	1 bin: Exit Sensor: On	
7-504-025	Duplex Exit: On	
7-504-026	Duplex Entrance: On	

7-504-052	Bank: Transport 1: Off
7-504-053	Bank: Transport 2: Off
7-504-057	Registration Sensor: Off
7-504-060	Paper Exit: Off
7-504-061	1 bin: Exit Sensor: Off
7-504-065	Duplex Exit: Off
7-504-066	Duplex Entrance: Off

7505	[Original Jam Detection0]	
	ON: On check, OFF: Off Check	
	Displays the number of jams according to the location where jams were detected. For details, see "Jam Detection".	
	*CTL	[0000 to 9999 / - / 1/step]
7-505-001	At Power On	
7-505-004	Registration Sensor: On	
7-505-054	Registration Sensor: Off	
7-505-100	Motor Error	

7506	[Jam Count by Paper Size]	
	Displays the number of jams according to the paper size.	
	*CTL	[0000 to 65535 / - / 1 sheet /step]
7-506-006	A5 LEF	
7-506-044	HLT LEF	
7-506-133	A4 SEF	
7-506-134	A5 SEF	
7-506-142	B5 SEF	
7-506-164	LG SEF	

7-506-166	LT SEF
7-506-172	HLT SEF
7-506-255	Others

7507	[Plotter Jam History]	
	Displays the 10 most recently detected paper jams.	
	*CTL	[-]
7-507-001	Latest	
7-507-002	Latest 1	
7-507-003	Latest 2	
7-507-004	Latest 3	
7-507-005	Latest 4	
7-507-006	Latest 5	
7-507-007	Latest 6	
7-507-008	Latest 7	
7-507-009	Latest 8	
7-507-010	Latest 9	

7508	[Original Jam History]	
	Displays the 10 most recently detected original paper jams.	
	*CTL	[-]
7-508-001	Latest	
7-508-002	Latest 1	
7-508-003	Latest 2	
7-508-004	Latest 3	
7-508-005	Latest 4	

7-508-006	Latest 5
7-508-007	Latest 6
7-508-008	Latest 7
7-508-009	Latest 8
7-508-010	Latest 9

7514	[Paper Jam Count by Location]	
	Displays the total count of SP7504-001 through -066.	
	*CTL	[0 to 65535 / - / - /step]
7-514-001	At Power On	
7-514-003	Tray 1: On	
7-514-004	Tray 2: On	
7-514-005	Tray 3: On	
7-514-008	Registration Sn: On (Bypass)	
7-514-009	Registration Sn: On (Duplex)	
7-514-012	Bank: Transport Sn 1: On	
7-514-017	Registration Sn: On (Tray)	
7-514-018	Fusing Entrance: On	
7-514-019	Fusing Exit: On	
7-514-020	Paper Exit: On	
7-514-021	1 bin: Exit Sensor: On	
7-514-025	Duplex Exit: On	
7-514-026	Duplex Entrance: On	
7-514-052	Bank: Transport 1: Off	
7-514-053	Bank: Transport 2: Off	
7-514-057	Registration Sensor: Off	

7-514-060	Paper Exit: Off
7-514-061	1 bin: Exit Sensor: Off
7-514-065	Duplex Exit: Off
7-514-066	Duplex Entrance: Off

7515	[Original Jam Count by Detection]	
	Displays the total count of SP7505-001 through -100.	
	*CTL	[0 to 65535 / - / - /step]
7-515-001	At Power On	
7-515-004	Registration Sensor: On	
7-515-054	Registration Sensor: Off	
7-515-100	Motor Error	

7516	[Paper Size Jam Count]	
	*CTL	[0 to 65535 / - / - /step]
7-516-006	A5 LEF	
7-516-044	HLT LEF	
7-516-133	A4 SEF	
7-516-134	A5 SEF	
7-516-142	B5 SEF	
7-516-164	LG SEF	
7-516-166	LT SEF	
7-516-172	HLT SEF	
7-516-255	Others	

7520	[Update Log]		
7-520-001	ErrorRecord1	*CTL	[0 to 255 / 0 / 1 /step]
7-520-002	ErrorRecord2	*CTL	[0 to 255 / 0 / 1 /step]
7-520-003	ErrorRecord3	*CTL	[0 to 255 / 0 / 1 /step]
7-520-004	ErrorRecord4	*CTL	[0 to 255 / 0 / 1 /step]
7-520-005	ErrorRecord5	*CTL	[0 to 255 / 0 / 1 /step]
7-520-006	ErrorRecord6	*CTL	[0 to 255 / 0 / 1 /step]
7-520-007	ErrorRecord7	*CTL	[0 to 255 / 0 / 1 /step]
7-520-008	ErrorRecord8	*CTL	[0 to 255 / 0 / 1 /step]
7-520-009	ErrorRecord9	*CTL	[0 to 255 / 0 / 1 /step]
7-520-010	ErrorRecord10	*CTL	[0 to 255 / 0 / 1 /step]

7540	MultiLinkPanel Apli Counter		
7-540-001	Apli No,001	*CTL	[- / - / - /step]
7-540-002	Apli No,002	*CTL	[- / - / - /step]
7-540-003	Apli No,003	*CTL	[- / - / - /step]
7-540-004	Apli No,004	*CTL	[- / - / - /step]
7-540-005	Apli No,005	*CTL	[- / - / - /step]
7-540-006	Apli No,006	*CTL	[- / - / - /step]
7-540-007	Apli No,007	*CTL	[- / - / - /step]
7-540-008	Apli No,008	*CTL	[- / - / - /step]
7-540-009	Apli No,009	*CTL	[- / - / - /step]
7-540-010	Apli No,010	*CTL	[- / - / - /step]
7-540-011	Apli No,011	*CTL	[- / - / - /step]

7-540-012	Apli No,012	*CTL	[- / - / - /step]
7-540-013	Apli No,013	*CTL	[- / - / - /step]
7-540-014	Apli No,014	*CTL	[- / - / - /step]
7-540-015	Apli No,015	*CTL	[- / - / - /step]
7-540-016	Apli No,016	*CTL	[- / - / - /step]
7-540-017	Apli No,017	*CTL	[- / - / - /step]
7-540-018	Apli No,018	*CTL	[- / - / - /step]
7-540-019	Apli No,019	*CTL	[- / - / - /step]
7-540-020	Apli No,020	*CTL	[- / - / - /step]
7-540-021	Apli No,021	*CTL	[- / - / - /step]
7-540-022	Apli No,022	*CTL	[- / - / - /step]
7-540-023	Apli No,023	*CTL	[- / - / - /step]
7-540-024	Apli No,024	*CTL	[- / - / - /step]
7-540-025	Apli No,025	*CTL	[- / - / - /step]
7-540-026	Apli No,026	*CTL	[- / - / - /step]
7-540-027	Apli No,027	*CTL	[- / - / - /step]
7-540-028	Apli No,028	*CTL	[- / - / - /step]
7-540-029	Apli No,029	*CTL	[- / - / - /step]
7-540-030	Apli No,030	*CTL	[- / - / - /step]
7-540-031	Apli No,031	*CTL	[- / - / - /step]
7-540-032	Apli No,032	*CTL	[- / - / - /step]
7-540-033	Apli No,033	*CTL	[- / - / - /step]
7-540-034	Apli No,034	*CTL	[- / - / - /step]
7-540-035	Apli No,035	*CTL	[- / - / - /step]

7621	[PM Counter Display: Pages]		
7-621-002	# PCU:Bk	ENG	[0000 to 99999999 / 0 / 1 page /step]
7-621-003	# Dev Unit:Bk	*ENG	
7-621-025	# PCU:C	ENG	
7-621-026	# Dev Unit:C	*ENG	
7-621-048	# PCU:M	ENG	
7-621-049	# Dev Unit:M	*ENG	
7-621-071	# PCU:Y	ENG	
7-621-072	# Dev Unit:Y	*ENG	
7-621-093	# ITB Unit	ENG	
7-621-102	# ITB Cleaning Unit	ENG	
7-621-109	# PTR Unit	ENG	
7-621-115	# Fusing Unit	ENG	
7-621-116	Fusing Belt	ENG	
7-621-118	Pressure Roller	ENG	
7-621-142	Toner Collection Bottle	ENG	[0000 to 999999999 / 0 / 1 mg /step]
7-621-206	DF Friction Pad	ENG	[0000 to 999999999 / 0 / 1 page /step]
7-621-207	DF Pickup Roller	ENG	
7-621-208	DF Feed Roller	ENG	

7622	[PM Counter Clear]	
	ENG	[0 or 1 / 0 / 1 /step]
7-622-002	# PCU:Bk	

7-622-003	# Dev Unit:Bk
7-622-025	# PCU:C
7-622-026	# Dev Unit:C
7-622-048	# PCU:M
7-622-049	# Dev Unit:M
7-622-071	# PCU:Y
7-622-072	# Dev Unit:Y
7-622-093	# ITB Unit
7-622-102	# ITB Cleaning Unit
7-622-109	# PTR Unit
7-622-115	# Fusing Unit
7-622-116	Fusing Belt
7-622-118	Pressure Roller
7-622-206	DF Friction Pad
7-622-207	DF Pickup Roller
7-622-208	DF Feed Roller
7-622-220	Toner Sub Hopper:Bk
7-622-221	Toner Sub Hopper:C
7-622-222	Toner Sub Hopper:M
7-622-223	Toner Sub Hopper:Y
7-622-245	PCU:All Colors
7-622-246	Development Unit:All Colors
7-622-249	Toner Sub Hopper:All Colors
7-622-250	All Clear

7623	[PM Value Setting: Life Pages]	
	ENG	[0 to 99999999 / 0 / 1 page /step]
7-623-002	# PCU:Bk	
7-623-003	# Dev Unit:Bk	
7-623-025	# PCU:C	
7-623-026	# Dev Unit:C	
7-623-048	# PCU:M	
7-623-049	# Dev Unit:M	
7-623-071	# PCU:Y	
7-623-072	# Dev Unit:Y	
7623	[PM Value Setting: Life Pages]	
	ENG	[0 to 99999999 / 120000 / 1 page /step]
7-623-093	# ITB Unit	
7-623-102	# ITB Cleaning Unit	
7-623-109	# PTR Unit	
7-623-115	# Fusing Unit	
7-623-116	Fusing Belt	
7-623-118	Pressure Roller	
7623	[PM Value Setting: Life Pages]	
	ENG	[0 to 99999999 / 800000 / 1 mg /step]
7-623-142	Toner Collection Bottle	

7625	[Previous Unit Counter: Pages]	
	ENG	[0 to 999999999 / 0 / 1 page/step]
7-625-002	# PCU:Bk	
7-625-003	# Dev Unit:Bk	
7-625-025	# PCU:C	
7-625-026	# Dev Unit:C	
7-625-048	# PCU:M	
7-625-049	# Dev Unit:M	
7-625-071	# PCU:Y	
7-625-072	# Dev Unit:Y	
7-625-093	# ITB Unit	
7-625-102	# ITB Cleaning Unit	
7-625-109	# PTR Unit	
7-625-115	# Fusing Unit	
7-625-116	Fusing Belt	
7-625-118	Pressure Roller	
7625	[Previous Unit Counter: Pages]	
	ENG	[0 to 999999999 / 0 / 1 mg/step]
7-625-142	Toner Collection Bottle	
7625	[Previous Unit Counter: Pages]	
	ENG	[0 to 999999999 / 0 / 1 page/step]
7-625-206	DF Friction Pad	
7-625-207	DF Pickup Roller	
7-625-208	DF Feed Roller	

7626	[Previous Unit Counter2: Pages]	
	ENG	[0 to 999999999 / 0 / 1 page /step]
7-626-002	# PCU:Bk	
7-626-003	# Dev Unit:Bk	
7-626-025	# PCU:C	
7-626-026	# Dev Unit:C	
7-626-048	# PCU:M	
7-626-049	# Dev Unit:M	
7-626-071	# PCU:Y	
7-626-072	# Dev Unit:Y	
7-626-093	# ITB Unit	
7-626-102	# ITB Cleaning Unit	
7-626-109	# PTR Unit	
7-626-115	# Fusing Unit	
7-626-116	Fusing Belt	
7-626-118	Pressure Roller	
7626	[Previous Unit Counter2: Pages]	
	ENG	[0 to 999999999 / 0 / 1 mg /step]
7-626-142	Toner Collection Bottle	

7628	[PM Counter Clear]	
	ENG	[0 or 1 / 0 / 1 /step]
7-628-002	All Clear	

7700	[Accum Cvrq 1 img Process.:Disp]	
	*ENG	[0 to 400000000.0 / 0 / 0.1% /step]
7-700-001	Bk	
7-700-002	C	
7-700-003	M	
7-700-004	Y	

7701	[Accum Cvrq 2 img Process.:Disp]	
	*ENG	[0 to 400000000.0 / 0 / 0.1% /step]
7-701-001	Bk	
7-701-002	C	
7-701-003	M	
7-701-004	Y	

7710	[Print Pages: Display]	
	*ENG	[0 to 999999999 / 0 / 1 page /step]
7-710-001	Bk	
7-710-002	C	
7-710-003	M	
7-710-004	Y	

7720	[Avg. Cvrq for img.: Display]	
	*ENG	[0 to 100.00 / 0 / 0.01% /step]
7-720-001	Bk	
7-720-002	C	
7-720-003	M	
7-720-004	Y	

7801	[ROM No.]	
	ENG	[-]
7-801-002	Engine	
7-801-009	PFU	
7-801-019	PFU2	
7801	[Firmware Version]	
	ENG	[-]
7-801-102	Engine	
7-801-109	PFU	
7-801-119	PFU2	
7801	[ROM No/ Firmware Version]	
	Displays all versions and ROM numbers in the machine.	
	CTL	[-]
7-801-255	-	

7803	[PM Counter Display] (Page, Unit, [Color])	
	Displays the number of sheets printed for each current maintenance unit. PM counters click up based on the number of A4 (LT) LEF size sheets printed. Therefore, the A3 (DLT) Double Count is activated. The Double Count cannot be deactivated. When a unit is replaced, the machine automatically detects that the new unit is installed. Then, the current PM counter value is automatically moved to the PM Counter – Previous (SP7-906-1 to 10) and is reset to “0”. The total number of sheets printed with the last unit replaced can be checked with SP7-906-1 to 10.  Note ▪ The LCT is counted as the 3rd feed station.	
	*CTL	[0 to 99999999 / - / - page/step]
7-803-001	Paper	

7804	[PM Counter Reset] PM Counter Clear (Unit, [Color])	
	Clears the PM counter. Press the Enter key after the machine asks “Execute?”, which will store the PM countervalue in SP7-906 (PM Counter - Previous) and reset the value of the current PM counter (SP7-803) to “0”.	
	*CTL	-
7-804-001	PM Counter Reset	

7807	[SC/Jam Counter Reset]	
	Clears the counters related to SC codes and paper jams.	
	CTL	[- / - / -]
7-807-001	-	

7826	[MF Error Counter]	
	Displays the number of count that can not be required the counting to MF counter device.	
	*CTL	[0000000 to 9999999 / - / -/step]
7-826-001	Error Total	
7-826-002	Error Staple	

7827	[MF Error Couter Clear]	
	Resets the MF counter device error counter.	
	*CTL	[- / - / -]
7-827-001	-	

7832	[Self-Diagnose Result Display]	
	Displays the result of the diagnostics.	
	CTL	[- / - / -]
7-832-001	-	

7835	[ACC Counter]	
	Displays the number of times of ACC counter.	
	*CTL	[0 to 9999999 / - / -/step]
7-835-001	Copy ACC	
7-835-002	Printer ACC	

7836	[Total Memory Size]	
	Displays the memory capacity of the controller system.	
	CTL	[0 to 0xffffffff / - / - MB /step]
7-836-001		

7840	[ServiceSP Entry Code Chg Hist]		
7-840-001	Change Time :Latest	*CTL	[- / - / - /step]
7-840-002	Change Time :Last1	*CTL	[- / - / - /step]
7-840-101	Initialize Time :Latest	*CTL	[- / - / - /step]
7-840-102	Initialize Time :Last1	*CTL	[- / - / - /step]

7851	[-]	
	This SP is referenced by SP8-951-007.	
	CTL	[0 to 255 / 0 / 1 /step]
7-851-001		

7852	[DF Glass Dust Check]	
	Counts the number of occurrences (0 to 65,535) when dust was detected on the scanning glass of the ARDF or resets the dust detection counter. Counting is done only if SP4-020-1 (ARDF Scan Glass Dust Check) is switched on.	
	*ENG	
7-852-001	Dust Detection Counter	[0 to 65535 / 0 / 1 /step]
7-852-002	Dust Detection Clear Counter	[0 to 65535 / 0 / 1 /step]

7853	[Replace Counter]	
	Displays the PM parts replacement number.	
	ENG	[0 to 255 / 0 / 1 /step]
7-853-002	# PCU:Bk	
7-853-003	# Dev Unit:Bk	
7-853-025	# PCU:C	
7-853-026	# Dev Unit:C	
7-853-048	# PCU:M	
7-853-049	# Dev Unit:M	
7-853-071	# PCU:Y	
7-853-072	# Dev Unit:Y	
7-853-093	# ITB Unit	
7-853-102	# ITB Cleaning Unit	
7-853-109	# PTR Unit	
7-853-115	# Fusing Unit	
7-853-116	Fusing Belt	
7-853-118	Pressure Roller	
7-853-142	Toner Collection Bottle	

7855	[Coverage Range]	
	The value of SP7-855-001 cannot be bigger than SP7-855-002. This SP does not be cleared, set the initial value when replacing the NVRAM. If this initial value is not set, the value is set to "0" and coverage counter (SP8-601-xxx) does not work properly. *Coverage: amount of toner used per A4 sheet (1% increments)	
	*CTL	[-]
7-855-001	Coverage Range 1	

7-855-002	Coverage Range 2

7901	[Assert Info.]	
	Records the location where a problem is detected in the program. The data stored in this SP is used for problem analysis. DFU	
	*CTL	[-]
7-901-001	File Name	
7-901-002	Number of Lines	
7-901-003	Location	

7903	Shipment :Fee Collection Counter Set		
7-903-001		*CTL	[-]

7906	[Previous Unit Counter:Distance]	
	ENG	[0 to 4294967295 / 0 / 1 mm/step]
7-906-002	# PCU:Bk	
7-906-003	# Dev Unit:Bk	
7-906-025	# PCU:C	
7-906-026	# Dev Unit:C	
7-906-048	# PCU:M	
7-906-049	# Dev Unit:M	
7-906-071	# PCU:Y	
7-906-072	# Dev Unit:Y	
7-906-093	# ITB Unit	
7-906-102	# ITB Cleaning Unit	
7-906-109	# PTR Unit	
7-906-115	# Fusing Unit	

7-906-116	Fusing Belt	
7-906-118	Pressure Roller	
7906	[Previous Unit Counter:Distance]	
	ENG	[0 to 999999999 / 0 / 1 /step]
7-906-220	Toner Sub Hopper:Bk	
7-906-221	Toner Sub Hopper:C	
7-906-222	Toner Sub Hopper:M	
7-906-223	Toner Sub Hopper:Y	
7906	[Previous Unit Counter:Distance]	
	ENG	[0 to 4294967295 / 0 / 1 mm/step]
7-906-230	Low Speed: # PCU:Bk	
7-906-231	Low Speed: # PCU:C	
7-906-232	Low Speed: # PCU:M	
7-906-233	Low Speed: # PCU:Y	
7-906-234	Middle Speed: # PCU:Bk	
7-906-235	Middle Speed: # PCU:C	
7-906-236	Middle Speed: # PCU:M	
7-906-237	Middle Speed: # PCU:Y	
7-906-238	Standard Speed2: # PCU:Bk	

7907	[Previous Unit Cntr:Distance(%)]	
	ENG	[0 to 255 / 0 / 1% /step]
7-907-002	# PCU:Bk	
7-907-003	# Dev Unit:Bk	
7-907-025	# PCU:C	

7-907-026	# Dev Unit:C
7-907-048	# PCU:M
7-907-049	# Dev Unit:M
7-907-071	# PCU:Y
7-907-072	# Dev Unit:Y
7-907-093	# ITB Unit
7-907-102	# ITB Cleaning Unit
7-907-109	# PTR Unit
7-907-115	# Fusing Unit
7-907-116	Fusing Belt
7-907-118	Pressure Roller

7908	[Previous Unit Counter:Pages(%)]	
	ENG	[0 to 255 / 0 / 1% /step]
7-908-002	# PCU:Bk	
7-908-003	# Dev Unit:Bk	
7-908-025	# PCU:C	
7-908-026	# Dev Unit:C	
7-908-048	# PCU:M	
7-908-049	# Dev Unit:M	
7-908-071	# PCU:Y	
7-908-072	# Dev Unit:Y	
7-908-093	# ITB Unit	
7-908-102	# ITB Cleaning Unit	
7-908-109	# PTR Unit	

7-908-115	# Fusing Unit
7-908-116	Fusing Belt
7-908-118	Pressure Roller
7-908-142	Toner Collection Bottle

7910	[ROM No]	
	CTL	[- / - / - /step]
7-910-001	System/Copy	
7-910-002	Engine	
7-910-003	Lcdc	
7-910-009	Bank	
7-910-012	FCU	
7-910-018	NetworkSupport	
7-910-019	Bank2	
7-910-023	HDD Format Option	
7-910-132	NetWare	
7-910-150	RPCS	
7-910-151	PS	
7-910-152	RPDL	
7-910-153	R98	
7-910-154	R16	
7-910-156	R55	
7-910-157	RTIFF	
7-910-158	PCL	
7-910-159	PCLXL	

7-910-160	MSIS
7-910-162	PDF
7-910-164	PictBridge
7-910-165	PJL
7-910-167	MediaPrint:JPEG
7-910-168	MediaPrint:TIFF
7-910-169	XPS
7-910-180	FONT
7-910-181	FONT1
7-910-182	FONT2
7-910-183	FONT3
7-910-184	FONT4
7-910-185	FONT5
7-910-200	Factory
7-910-201	Copy
7-910-202	NetworkDocBox
7-910-203	Fax
7-910-204	Printer
7-910-205	Scanner
7-910-206	RFax
7-910-210	MIB
7-910-211	Websupport
7-910-212	WebUapl
7-910-213	SDK1
7-910-214	SDK2
7-910-215	SDK3

7-910-250	Package

7911	[Firmware Version]	
	CTL	[- / - / - /step]
7-911-001	System/Copy	
7-911-002	Engine	
7-911-003	Lcdc	
7-911-009	Bank	
7-911-012	FCU	
7-911-018	NetworkSupport	
7-911-019	Bank2	
7-911-023	HDD Format Option	
7-911-132	NetWare	
7-911-150	RPCS	
7-911-151	PS	
7-911-152	RPDL	
7-911-153	R98	
7-911-154	R16	
7-911-156	R55	
7-911-157	RTIFF	
7-911-158	PCL	
7-911-159	PCLXL	
7-911-160	MSIS	
7-911-162	PDF	
7-911-164	PictBridge	

7-911-165	PJL
7-911-167	MediaPrint:JPEG
7-911-168	MediaPrint:TIFF
7-911-169	XPS
7-911-180	FONT
7-911-181	FONT1
7-911-182	FONT2
7-911-183	FONT3
7-911-184	FONT4
7-911-185	FONT5
7-911-200	Factory
7-911-201	Copy
7-911-202	NetworkDocBox
7-911-203	Fax
7-911-204	Printer
7-911-205	Scanner
7-911-206	RFax
7-911-210	MIB
7-911-211	Websupport
7-911-212	WebUapl
7-911-213	SDK1
7-911-214	SDK2
7-911-215	SDK3
7-911-250	Package

7931	[Toner Bottle Bk]

	Displays the toner bottle information for Bk.
	*ENG
7932	[Toner Bottle M]
	Displays the toner bottle information for Ma.
	*ENG
7933	[Toner Bottle C]
	Displays the toner bottle information for Cy.
	*ENG
7934	[Toner Bottle Y]
	Displays the toner bottle information for Ye.
	*ENG

Last three digits for 7931 to 7934

7-93x-001	Machine Serial ID [0 to 255 / 0 / 1 /step]	7-93x-012	Toner Remaining [0 to 100 / 100 / 1% /step]
7-93x-002	Cartridge Ver [0 to 255 / 0 / 1 /step]	7-93x-013	EDP Code [0 to 1 / 0 / 1 /step]
7-93x-003	Brand ID [0 to 255 / 0 / 1 /step]	7-93x-014	End History [0 to 1 / 0 / 1 /step]
7-93x-004	Area ID [0 to 255 / 0 / 1 /step]	7-93x-015	Refill Information [0 to 1 / 0 / 1 /step]
7-93x-005	Product ID [0 to 255 / 0 / 1 /step]	7-93x-016	Attachment: Total Counter [0 to 99999999 / 0 / 1 /step]
7-93x-006	Color ID [0 to 255 / 0 / 1 /step]	7-93x-017	Attachment: Color Counter [0 to 99999999 / 0 / 1 /step]
7-93x-007	Maintenance ID [0 to 255 / 0 / 1 /step]	7-93x-018	End: Total Counter [0 to 99999999 / 0 / 1 /step]
7-93x-008	New Product Information [0 to 255 / 0 / 1 /step]	7-93x-019	End: Color Counter [0 to 99999999 / 0 / 1 /step]

7-93x-009	Recycle Counter [0 to 255 / 0 / 1 /step]	7-93x-020	Attachment Date [0 to 1 / 0 / 1 /step]
7-93x-010	Date [0 to 1 / 0 / 1 /step]	7-93x-021	End Date [0 to 1 / 0 / 1 /step]
7-93x-011	SerialNo. [0 to 1 / 0 / 1 /step]	-	-

7935	[Toner Bottle Log 1: Bk]
	Displays the toner bottle information log for Bk.
7936	[Toner Bottle Log 1: M]
	Displays the toner bottle information log for Ma.
7937	[Toner Bottle Log 1: C]
	Displays the toner bottle information log for Cy.
7938	[Toner Bottle Log 1: Y]
	Displays the toner bottle information log for Ye.

Last three digits for 7935 to 7938

7-93x-001	Serial No. [0 to 1 / 0 / 1 /step]	ENG	Displays the toner bottle information log 1 for Bk, Ma, Cy, or Ye.
7-93x-002	Attachment Date [0 to 1 / 0 / 1 /step]		
7-93x-003	Attachment: Total Counter [0 to 99999999 / 0 / 1 /step]		
7-93x-004	Refill Information [0 to 1 / 0 / 1 /step]	*ENG	
7-93x-011	Serial No. [0 to 1 / 0 / 1 /step]	ENG	Displays the toner bottle information log 2 for Bk, Ma, Cy, or Ye.
7-93x-012	Attachment Date [0 to 1 / 0 / 1 /step]		

7-93x-013	Attachment: Total Counter [0 to 999999999 / 0 / 1 /step]		
7-93x-014	Refill Information [0 to 1 / 0 / 1 /step]	*ENG	
7-93x-021	Serial No. [0 to 1 / 0 / 1 /step]	ENG	Displays the toner bottle information log 3 for Bk, Ma, Cy, or Ye.
7-93x-022	Attachment Date [0 to 999999999 / 0 / 1 /step]		
7-93x-023	Attachment: Total Counter [0 to 1 / 0 / 1 /step]		
7-93x-024	Refill Information [0 to 1 / 0 / 1 /step]	*ENG	
7-93x-031	Serial No. [0 to 1 / 0 / 1 /step]	ENG	Displays the toner bottle information log 4 for Bk, Ma, Cy, or Ye.
7-93x-032	Attachment Date [0 to 999999999 / 0 / 1 /step]		
7-93x-033	Attachment: Total Counter [0 to 1 / 0 / 1 /step]		
7-93x-034	Refill Information [0 to 1 / 0 / 1 /step]	*ENG	
7-93x-041	Serial No. [0 to 1 / 0 / 1 /step]	ENG	Displays the toner bottle information log 5 for Bk, Ma, Cy, or Ye.
7-93x-042	Attachment Date [0 to 999999999 / - / 1 /step]		
7-93x-043	Attachment: Total Counter [0 to 1 / 0 / 1 /step]		
7-93x-044	Refill Information [0 to 1 / 0 / 1 /step]	*ENG	

7940	[PM Value Setting:Life Distance]	
	ENG	[0 to 999999999 / 0 / 1 mm/step]
7-940-002	# PCU:Bk	
7-940-003	# Dev Unit:Bk	
7-940-025	# PCU:C	
7-940-026	# Dev Unit:C	
7-940-048	# PCU:M	
7-940-049	# Dev Unit:M	
7-940-071	# PCU:Y	
7-940-072	# Dev Unit:Y	
7940	[PM Value Setting:Life Distance]	
	ENG	[0 to 999999999 / 95873985 / 1 mm/step]
7-940-093	# ITB Unit	
7-940-102	# ITB Cleaning Unit	
7-940-109	# PTR Unit	
7940	[PM Value Setting:Life Distance]	
	ENG	[0 to 999999999 / 168978600 / 1 mm/step]
7-940-115	# Fusing Unit	
7-940-116	Fusing Belt	
7-940-118	Pressure Roller	

7942	[PM Counter Display:Distance(%)]	
	ENG	[0 to 255 / 0 / 1% /step]
7-942-002	# PCU:Bk	
7-942-003	# Dev Unit:Bk	
7-942-025	# PCU:C	
7-942-026	# Dev Unit:C	
7-942-048	# PCU:M	
7-942-049	# Dev Unit:M	
7-942-071	# PCU:Y	
7-942-072	# Dev Unit:Y	
7-942-093	# ITB Unit	
7-942-102	# ITB Cleaning Unit	
7-942-109	# PTR Unit	
7-942-115	# Fusing Unit	
7-942-116	Fusing Belt	
7-942-118	Pressure Roller	

7944	[PM Counter Display: Distance]	
	002 to 072: *ENG 093 to 118: ENG	[0 to 4294967295 / 0 / 1 mm/step]
7-944-002	# PCU:Bk	
7-944-003	# Dev Unit:Bk	
7-944-025	# PCU:C	
7-944-026	# Dev Unit:C	

7-944-048	# PCU:M	
7-944-049	# Dev Unit:M	
7-944-071	# PCU:Y	
7-944-072	# Dev Unit:Y	
7-944-093	# ITB Unit	
7-944-102	# ITB Cleaning Unit	
7-944-109	# PTR Unit	
7-944-115	# Fusing Unit	
7-944-116	Fusing Belt	
7-944-118	Pressure Roller	
7944	[PM Counter Display: Distance]	
	ENG	[0 to 999999999 / 0 / 1 /step]
7-944-220	Toner Sub Hopper:Bk	
7-944-221	Toner Sub Hopper:C	
7-944-222	Toner Sub Hopper:M	
7-944-223	Toner Sub Hopper:Y	
7944	[PM Counter Display: Distance]	
	ENG	[0 to 4294967295 / 0 / 1 /step]
7-944-230	Low Speed: # PCU:Bk	
7-944-231	Low Speed: # PCU:C	
7-944-232	Low Speed: # PCU:M	
7-944-233	Low Speed: # PCU:Y	
7-944-234	Middle Speed: # PCU:Bk	
7-944-235	Middle Speed: # PCU:C	
7-944-236	Middle Speed: # PCU:M	
7-944-237	Middle Speed: # PCU:Y	

7-944-238	Standard Speed2: # PCU:Bk
7-944-240	ITB Unit:FC

7950	[Unit Replacement Date]	
	Displays the replacement date of each PM unit.	
	*ENG	[0 to 1 / 0 / 1 /step]
7-950-002	# PCU:Bk	
7-950-003	# Dev Unit:Bk	
7-950-025	# PCU:C	
7-950-026	# Dev Unit:C	
7-950-048	# PCU:M	
7-950-049	# Dev Unit:M	
7-950-071	# PCU:Y	
7-950-072	# Dev Unit:Y	
7-950-093	# ITB Unit	
7-950-102	# ITB Cleaning Unit	
7-950-109	# PTR Unit	
7-950-115	# Fusing Unit	
7-950-116	Fusing Belt	
7-950-118	Pressure Roller	
7-950-142	Toner Collection Bottle	

7951	[Remain Day Counter: Pages]	
7-951-001 to 026	Displays the remaining unit life of each PM unit.	
	ENG	[0 to 255 / 0 / 1 days/step]
7-951-002	# PCU:Bk	
7-951-003	# Dev Unit:Bk	
7-951-025	# PCU:C	
7-951-026	# Dev Unit:C	
7-951-048	# PCU:M	
7-951-049	# Dev Unit:M	
7-951-071	# PCU:Y	
7-951-072	# Dev Unit:Y	
7-951-093	# ITB Unit	
7-951-102	# ITB Cleaning Unit	
7-951-109	# PTR Unit	
7-951-115	# Fusing Unit	
7-951-116	Fusing Belt	
7-951-118	Pressure Roller	
7-951-142	Toner Collection Bottle	

7952	[Remain Day Counter: Distance]	
	Displays the remaining unit life of each PM unit.	
	ENG	[0 to 255 / 0 / 1 days/step]
7-952-002	# PCU:Bk	
7-952-003	# Dev Unit:Bk	
7-952-025	# PCU:C	
7-952-026	# Dev Unit:C	
7-952-048	# PCU:M	
7-952-049	# Dev Unit:M	
7-952-071	# PCU:Y	
7-952-072	# Dev Unit:Y	
7-952-093	# ITB Unit	
7-952-102	# ITB Cleaning Unit	
7-952-109	# PTR Unit	
7-952-115	# Fusing Unit	
7-952-116	Fusing Belt	
7-952-118	Pressure Roller	

7953	[Operation Env. Log: PCU: Bk]	
7-953-001 to 021	Displays the PCU rotation distance in each specified operation environment. T: Temperature (°C), H: Relative Humidity (%)	
	ENG	[0 to 999999999 / 0 / 1 mm/step]
7-953-001	T<=0	
7-953-002	0<T<=5:0<=H<30	
7-953-003	0<T<=5:30<=H<70	
7-953-004	0<T<=5:70<=H<=100	
7-953-005	5<T<15:0<=H<30	
7-953-006	5<T<15:30<=H<55	
7-953-007	5<T<15:55<=H<80	
7-953-008	5<T<15:80<=H<=100	
7-953-009	15<=T<25:0<=H<30	
7-953-010	15<=T<25:30<=H<55	
7-953-011	15<=T<25:55<=H<80	
7-953-012	15<=T<25:80<=H<=100	
7-953-013	25<=T<30:0<=H<30	
7-953-014	25<=T<30:30<=H<55	
7-953-015	25<=T<30:55<=H<80	
7-953-016	25<=T<30:80<=H<=100	
7-953-017	30<=T<35:0<=H<30	
7-953-018	30<=T<35:30<=H<55	
7-953-019	30<=T<35:55<=H<80	
7-953-020	30<=T<35:80<=H<=100	
7-953-021	35<=T	

7953	[Operation Env. Log Clear]	
7-953-100	-	
	ENG	[0 to 1 / 0 / 1/step]

7954	[PM Counter Display: Pages (%)]	
	ENG	[0 to 255 / 0 / 1%/step]
7-954-002	# PCU:Bk	
7-954-003	# Dev Unit:Bk	
7-954-025	# PCU:C	
7-954-026	# Dev Unit:C	
7-954-048	# PCU:M	
7-954-049	# Dev Unit:M	
7-954-071	# PCU:Y	
7-954-072	# Dev Unit:Y	
7-954-093	# ITB Unit	
7-954-102	# ITB Cleaning Unit	
7-954-109	# PTR Unit	
7-954-115	# Fusing Unit	
7-954-116	Fusing Belt	
7-954-118	Pressure Roller	
7-954-142	Toner Collection Bottle	

7958	[PM Value Setting:DaysThreshold]	
	ENG	[1 to 30 / 15 / 1 days/step]
7-958-002	# PCU:Bk	
7-958-003	# Dev Unit:Bk	
7-958-025	# PCU:C	
7-958-026	# Dev Unit:C	
7-958-048	# PCU:M	
7-958-049	# Dev Unit:M	
7-958-071	# PCU:Y	
7-958-072	# Dev Unit:Y	
7-958-093	# ITB Unit	
7-958-102	# ITB Cleaning Unit	
7-958-109	# PTR Unit	
7-958-115	# Fusing Unit	
7-958-116	Fusing Belt	
7-958-118	Pressure Roller	
7-958-142	Toner Collection Bottle	

3.9 MAIN SP TABLES-8

3.9.1 SP8-XXX (DATA LOG2)

Many of these counters are provided for features that are currently not available, such as sending color faxes, and so on. However, here are some Group 8 codes that when used in combination with others, can provide useful information.

SP Numbers	What They Do
SP8211 to SP8216	The number of pages scanned to the document server.
SP8401 to SP8406	The number of pages printed from the document server.
SP8691 to SP8696	The number of pages sent from the document server.

Specifically, the following questions can be answered:

- How is the document server actually being used?
- What application is using the document server most frequently?
- What data in the document server is being reused?

Most of the SPs in this group are prefixed with a letter that indicates the mode of operation (the mode of operation is referred to as an "application"). Before reading the Group 8 Service Table, make sure that you understand what these prefixes mean.

Prefixes	What it means	
T:	Total: (Grand Total).	Grand total of the items counted for all applications (C, F, P, etc.).
C:	Copy application.	Totals (pages, jobs, etc.) executed for each application when the job was not stored on the document server.
F:	Fax application.	
P:	Print application.	
S:	Scan application.	

Prefixes	What it means	
L:	Local storage (document server)	Totals (jobs, pages, etc.) for the document server. The L: counters work differently case by case. Sometimes, they count jobs/pages stored on the document server; this can be in document server mode (from the document server window), or from another mode, such as from a printer driver or by pressing the Store File button in the Copy mode window. Sometimes, they include occasions when the user uses a file that is already on the document server. Each counter will be discussed case by case.
O:	Other applications (external network applications, for example)	Refers to network applications such as Web Image Monitor. Utilities developed with the SDK (Software Development Kit) will also be counted with this group in the future.

The Group 8 SP codes are limited to 17 characters, forced by the necessity of displaying them on the small LCDs of printers and faxes that also use these SPs. Read over the list of abbreviations below and refer to it again if you see the name of an SP that you do not understand.

Key for Abbreviations

Abbreviation	What it means
/	"By", e.g. "T:Jobs/Apl" = Total Jobs "by" Application
>	More (2> "2 or more", 4> "4 or more")
AddBook	Address Book
Apl	Application
B/W	Black & White
Bk	Black
C	Cyan
ColCr	Color Create
ColMode	Color Mode

Abbreviation	What it means
Comb	Combine
Comp	Compression
Deliv	Delivery
DesApl	Designated Application. The application (Copy, Fax, Scan, Print) used to store the job on the document server, for example.
Dev Counter	Development Count, no. of pages developed.
Dup, Duplex	Duplex, printing on both sides
Emul	Emulation
FC	Full Color
FIN	Post-print processing, i.e. finishing (punching, stapling, etc.)
Full Bleed	No Margins
GenCopy	Generation Copy Mode
GPC	Get Print Counter. For jobs 10 pages or less, this counter does not count up. For jobs larger than 10 pages, this counter counts up by the number that is in excess of 10 (e.g., for an 11-page job, the counter counts up 11-10 =1)
IFax	Internet Fax
ImgEdt	Image Edit performed on the original with the copier GUI, e.g. border removal, adding stamps, page numbers, etc.
K	Black (YMCK)
LS	Local Storage. Refers to the document server.
LSize	Large (paper) Size
Mag	Magnification
MC	One color (monochrome)

Abbreviation	What it means
NRS	New Remote Service, which allows a service center to monitor machines remotely. "NRS" is used overseas, "CSS" is used in Japan.
Org	Original for scanning
OrgJam	Original Jam
Palm 2	Print Job Manager/Desk Top Editor: A pair of utilities that allows print jobs to be distributed evenly among the printers on the network, and allows files to moved around, combined, and converted to different formats.
PC	Personal Computer
PGS	Pages. A page is the total scanned surface of the original. Duplex pages count as two pages, and A3 simplex count as two pages if the A3/DLT counter SP is switched ON.
PJob	Print Jobs
Ppr	Paper
PrtJam	Printer (plotter) Jam
PrtPGS	Print Pages
R	Red (Toner Remaining). Applies to the wide format model A2 only. This machine is under development and currently not available.
Rez	Resolution
SC	Service Code (Error SC code displayed)
Scn	Scan
Sim, Simplex	Simplex, printing on 1 side.
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

Abbreviation	What it means
TonEnd	Toner End
TonSave	Toner Save
TXJob	Send, Transmission
YMC	Yellow, Magenta, Cyan
YMCK	Yellow, Magenta, Cyan, Black

 Note

- All of the Group 8 SPs are reset with SP5 801 1 Memory All Clear.

8001	T:Total Jobs	*CTL	These SPs count the number of times each application is used to do a job. [0 to 99999999/ - / 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	*CTL	
8003	F:Total Jobs	*CTL	
8004	P:Total Jobs	*CTL	
8005	S:Total Jobs	*CTL	
8006	L:Total Jobs	*CTL	

- These SPs reveal the number of times an application is used, not the number of pages processed.
- When an application is opened for image input or output, this counts as one job.
- Interrupted jobs (paper jams, etc.) are counted, even though they do not finish.
- Only jobs executed by the customer are counted. Jobs executed by the customer engineer using the SP modes are not counted.
- When using secure printing (when a password is required to start the print job), the job is counted at the time when either "Delete Data" or "Specify Output" is specified.
- A job is counted as a fax job when the job is stored for sending.
- When a fax is received to fax memory, the F: counter increments but the L: counter does not (the document server is not used).
- A fax broadcast counts as one job for the F: counter (the fax destinations in the broadcast are not counted separately).
- A fax broadcast is counted only after all the faxes have been sent to their destinations. If one transmission generates an error, then the broadcast will not be counted until the transmission

has been completed.

- A printed fax report counts as one job for the F: counter.
 - The F: counter does not distinguish between fax sending or receiving.
 - When a copy job on the document server is printed, SP8022 also increments, and when a print job stored on the document server is printed, SP8024 also increments.
 - When an original is both copied and stored on the document server, the C: and L: counters both increment.
 - When a print job is stored on the document server, only the L: counter increments.
 - When the user presses the Document Server button to store the job on the document server, only the L: counter increments.
 - When the user enters document server mode and prints data stored on the document server, only the L: counter increments.
 - When an image received from Palm 2 is received and stored, the L: counter increments.
 - When the customer prints a report (user code list, for example), the O: counter increments.
- However, for fax reports and reports executed from the fax application, the F: counter increments.

8011	T:Jobs/LS	*CTL	These SPs count the number of jobs stored to the document server by each application, to reveal how local storage is being used for input. [0 to 99999999/ - / 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	*CTL	
8013	F:Jobs/LS	*CTL	
8014	P:Jobs/LS	*CTL	
8015	S:Jobs/LS	*CTL	
8016	L:Jobs/LS	*CTL	
8017	O:Jobs/LS	*CTL	

- When a scan job is sent to the document server, the S: counter increments. When you enter document server mode and then scan an original, the L: counter increments.
- When a print job is sent to the document server, the P: counter increments.
- When a network application sends data to the document server, the O: counter increments.
- When an image from Palm 2 is stored on the document server, the O: counter increments.
- When a fax is sent to the document server, the F: counter increments.

8021	T:Pjob/LS	*CTL	These SPs reveal how files printed from the document server were stored on the document server originally. [0 to 99999999/ - / 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	*CTL	
8023	F:Pjob/LS	*CTL	
8024	P:Pjob/LS	*CTL	
8025	S:Pjob/LS	*CTL	
8026	L:Pjob/LS	*CTL	
8027	O:Pjob/LS	*CTL	

- When a copy job stored on the document server is printed with another application, the C: counter increments.
- When an application like DeskTopBinder merges a copy job that was stored on the document server with a print job that was stored on the document server, the C: and P: counters both increment.
- When a job already on the document server is printed with another application, the L: counter increments.
- When a scanner job stored on the document server is printed with another application, the S: counter increments. If the original was scanned from within document server mode, then the L: counter increments.
- When images stored on the document server by a network application (including Palm 2), are printed with another application, the O: counter increments.
- When a copy job stored on the document server is printed with a network application (Web Image Monitor, for example), the C: counter increments.
- When a fax on the document server is printed, the F: counter increments.

8031	T:Pjob/DesApl	*CTL	These SPs reveal what applications were used to output documents from the document server. [0 to 99999999/ - / 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	*CTL	
8033	F:Pjob/DesApl	*CTL	
8034	P:Pjob/DesApl	*CTL	
8035	S:Pjob/DesApl	*CTL	
8036	L:Pjob/DesApl	*CTL	
8037	O:Pjob/DesApl	*CTL	

- When documents already stored on the document server are printed, the count for the application that started the print job is incremented.
- When the print job is started from a network application (Desk Top Binder, Web Image Monitor, etc.) the L: counter increments.

8041	T:TX Jobs/LS	*CTL	These SPs count the applications that stored files on the document server that were later accessed for transmission over the telephone line or over a network (attached to an e-mail, or as a fax image by I-Fax). [0 to 99999999/ - / 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	*CTL	
8043	F:TX Jobs/LS	*CTL	
8044	P:TX Jobs/LS	*CTL	
8045	S:TX Jobs/LS	*CTL	
8046	L:TX Jobs/LS	*CTL	
8047	O:TX Jobs/LS	*CTL	

- When a stored copy job is sent from the document server, the C: counter increments.
- When images stored on the document server by a network application or Palm2 are sent as an e-mail, the O: counter increments.

8051	T:TX Jobs/DesApl	*CTL	These SPs count the applications used to send files from the document server over the telephone line or over a network (attached to an e-mail, or as a fax image by I-Fax). Jobs merged for sending are counted separately. [0 to 99999999/ - / 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	*CTL	
8053	F:TX Jobs/DesApl	*CTL	
8054	P:TX Jobs/DesApl	*CTL	
8055	S:TX Jobs/DesApl	*CTL	
8056	L:TX Jobs/DesApl	*CTL	
8057	O:TX Jobs/DesApl	*CTL	

- If the send is started from Desk Top Binder or Web Image Monitor, for example, then the O: counter increments.

8061	T:FIN Jobs	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs total the finishing methods. The finishing method is specified by the application.		
8062	C:FIN Jobs	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs total finishing methods for copy jobs only. The finishing method is specified by the application.		
8063	F:FIN Jobs	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs total finishing methods for fax jobs only. The finishing method is specified by the application. Note: Finishing features for fax jobs are not available at this time.		
8064	P:FIN Jobs	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs total finishing methods for print jobs only. The finishing method is specified by the application.		
8065	S:FIN Jobs	*CTL	[0 to 99999999/ 0 / 1/step]
	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	*CTL	[0 to 99999999/ 0 / 1/step]
	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	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs total finishing methods for jobs executed by an external application, over the network. The finishing method is specified by the application.		

Last three digits for SP8 061 to 067

806x-001	Sort	Number of jobs started in Sort mode. When a stored copy job is set for Sort and then stored on the document server, the L: counter increments. (See SP8 066 1)
806x-002	Stack	Number of jobs started out of Sort mode.
806x-003	Staple	Number of jobs started in Staple mode.
806x-004	Booklet	Number of jobs started in Booklet mode. If the machine is in staple mode, the Staple counter also increments.
806x-005	Z-Fold	Number of jobs started In any mode other than the Booklet mode and set for folding (Z-fold).
806x-006	Punch	Number of jobs started in Punch mode. When Punch is set for a print job, the P: counter increments. (See SP8 064 6.)
806x-007	Other	Reserved. Not used.
806x-008	Inside-Fold	Not used
806x-009	Three-IN-Fold	Not used
806x-010	Three-OUT-Fold	Not used
806x-011	Four-Fold	Not used
806x-012	KANNON-Fold	Not used
806x-013	Perfect-Bind	Not used
806x-014	Ring-Bind	Not used
806x-015	3rd Vendor	

8071	T:Jobs/PGS	*CTL	[0 to 99999999/ 0 / 1/step]
	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	*CTL	[0 to 99999999/ 0 / 1/step]
	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	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count and calculate the number of fax jobs by size based on the number of pages in the job.		
8074	P:Jobs/PGS	*CTL	[0 to 99999999/ 0 / 1/step]
	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	*CTL	[0 to 99999999/ 0 / 1/step]
	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	*CTL	[0 to 99999999/ 0 / 1/step]
	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	*CTL	[0 to 99999999/ 0 / 1/step]
	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.		

Last three digits for SP8 071 to 077

807x-001	1 Page	8 07x 8	21 to 50 Pages
807x-002	2 Pages	8 07x 9	51 to 100 Pages
807x-003	3 Pages	8 07x 10	101 to 300 Pages
807x-004	4 Pages	8 07x 11	301 to 500 Pages
807x-005	5 Pages	8 07x 12	501 to 700 Pages
807x-006	6 to 10 Pages	8 07x 13	701 to 1000 Pages
807x-007	11 to 20 Pages	8 07x 14	More than 1001 Pages

- For example: When a copy job stored on the document server is printed in document server mode, the appropriate L: counter (SP8076 0xx) increments.
- Printing a fax report counts as a job and increments the F: counter (SP 8073).
- Interrupted jobs (paper jam, etc.) are counted, even though they do not finish.
- If a job is paused and re-started, it counts as one job.
- If the finisher runs out of staples during a print and staple job, then the job is counted at the time the error occurs.
- For copy jobs (SP 8072) and scan jobs (SP 8075), the total is calculated by multiplying the number of sets of copies by the number of pages scanned. (One duplex page counts as 2.)
- The first test print and subsequent test prints to adjust settings are added to the number of pages of the copy job (SP 8072).
- When printing the first page of a job from within the document server screen, the page is counted.

8111	T:FAX TX Jobs	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of jobs (color or black-and-white) sent by fax, either directly or using a file stored on the document server, on a telephone line. Note: Color fax sending is not available at this time.		
8113	F: FAX TX Jobs	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of jobs (color or black-and-white) sent by fax directly on a telephone line. Note: Color fax sending is not available at this time.		
811x-001	B/W		
811x-002	Color		

- These counters count jobs, not pages.
- This SP counts fax jobs sent over a telephone line with a fax application, including documents stored on the document server.
- If the mode is changed during the job, the job will count with the mode set when the job started.
- If the same document is faxed to both a public fax line and an I-Fax at a destination where both are available, then this counter increments, and the I-Fax counter (8 12x) also increments.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8121	T:IFAX TX Jobs	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of jobs (color or black-and-white) sent, either directly or using a file stored on the document server, as fax images using I-Fax. Note: Color fax sending is not available at this time.		
8123	F: IFAX TX Jobs	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the number of jobs (color or black-and-white) sent (not stored on the document server), as fax images using I-Fax. Note: Color fax sending is not available at this time.		
812x-001	B/W		
812x-002	Color		

- These counters count jobs, not pages.
- The counters for color are provided for future use; the color fax feature is not available at this time.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8131	T:S-to-Email Jobs	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of jobs (color or black-and-white) scanned and attached to an e-mail, regardless of whether the document server was used or not.		
8135	S: S-to-Email Jobs	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the number of jobs (color or black-and-white) scanned and attached to e-mail, without storing the original on the document server.		
813x-001	B/W		
813x-002	Color		
813x-003	ACS		

- These counters count jobs, not pages.
- If the job is stored on the document server, after the job is stored it is determined to be color or black-and-white then counted.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- If several jobs are combined for sending to the Scan Router, Scan-to-Email, or Scan-to-PC, or if one job is sent to more than one destination. each send is counted separately. For example, if the same document is sent by Scan-to-Email as well as Scan-to-PC, then it is counted twice (once for Scan-to-Email and once for Scan-to-PC).

8141	T:Deliv Jobs/Svr	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent to a Scan Router server.		
8145	S: Deliv Jobs/Svr	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the number of jobs (color or black-and-white) scanned in scanner mode and sent to a Scan Router server.		
814x-001	B/W		
814x-002	Color		
814x-003	ACS		

- These counters count jobs, not pages.
- The jobs are counted even though the arrival and reception of the jobs at the Scan Router server cannot be confirmed.
- If even one color image is mixed with black-and-white images, then the job is counted as a "Color" job.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be delivered, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8151	T:Deliv Jobs/PC	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent to a folder on a PC (Scan-to-PC). Note: At the present time, 8 151 and 8 155 perform identical counts.		
8155	S:Deliv Jobs/PC	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent with Scan-to-PC.		
815x-001	B/W		
815x-002	Color		
815x-003	ACS		

- These counters count jobs, not pages.
- If the job is cancelled during scanning, it is not counted.
- If the job is cancelled while it is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8161	T:PCFAX TX Jobs	*CTL	These SPs count the number of PC Fax transmission jobs. A job is counted from when it is registered for sending, not when it is sent. [0 to 99999999/ 0 / 1/step] Note: At the present time, these counters perform identical counts.
8163	F:PCFAX TX Jobs	*CTL	

- This counts fax jobs started from a PC using a PC fax application, and sending the data out to the destination from the PC through the copier.

8171	T:Deliv Jobs/WSD	*CTL	These SPs count the pages scanned by WS. [0 to 9999999/ 0 / 1/step]
8175	S:Deliv Jobs/WSD	*CTL	
001	B/W		
002	Color		
003	ACS		

8181	T:Scan to Media Jobs	*CTL	These SPs count the scanned pages in a media by the scanner application. [0 to 9999999/ 0 / 1/step]
8185	S:Scan to Media Jobs	*CTL	
001	B/W		
002	Color		
003	ACS		

8191	T:Total Scan PGS	*CTL	These SPs count the pages scanned by each application that uses the scanner to scan images. [0 to 9999999/ 0 / 1/step]
8192	C:Total Scan PGS	*CTL	
8193	F:Total Scan PGS	*CTL	
8195	S:Total Scan PGS	*CTL	
8196	L:Total Scan PGS	*CTL	

- SP 8 191 to 8 196 count the number of scanned sides of pages, not the number of physical pages.
- These counters do not count reading user stamp data, or reading color charts to adjust color.
- Previews done with a scanner driver are not counted.
- A count is done only after all images of a job have been scanned.
- Scans made in SP mode are not counted.

Examples

- If 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 A3/DLT, Larger	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total number of large pages input with the scanner for scan and copy jobs. Large size paper scanned for fax transmission is not counted. Note: These counters are displayed in the SMC Report, and in the User Tools display.		
8203	F: LSize Scan PGS A3/DLT, Larger	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total number of large pages input with the scanner for fax transmission. Note: These counters are displayed in the SMC Report, and in the User Tools display.		
8205	S:LSize Scan PGS A3/DLT, Larger	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total number of large pages input with the scanner for scan jobs only. Large size paper scanned for fax transmission is not counted. Note: These counters are displayed in the SMC Report, and in the User Tools display.		

8211	T:Scan PGS/LS	*CTL	These SPs count the number of pages scanned into the document server [0 to 9999999/ - / 1/step]
8212	C:Scan PGS/LS	*CTL	
8213	F:Scan PGS/LS	*CTL	The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen.
8215	S:Scan PGS/LS	*CTL	
8216	L:Scan PGS/LS	*CTL	

- Reading user stamp data is not counted.
- If a job is cancelled, the pages output as far as the cancellation are counted.
- If the scanner application scans and stores 3 B5 sheets and 1 A4 sheet, the S: count is 4.
- If pages are copied but not stored on the document server, these counters do not change.
- If both sides of 3 A4 sheets are copied and stored to the document server, the C: count is 6 and the L: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8221	ADF Org Feeds	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages fed through the ADF for front and back side scanning.		
001	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.)		
002	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	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages scanned by each ADF mode to determine the work load on the ADF.		
001	Large Volume	Selectable. Large copy jobs that cannot be loaded in the ADF at one time.	
002	SADF	Selectable. Feeding pages one by one through the ADF.	
003	Mixed Size	Selectable. Select "Mixed Sizes" on the operation panel.	
004	Custom Size	Selectable. Originals of non-standard size.	
005	Platen	Book mode. Raising the ADF and placing the original directly on the platen.	
006	Mixed 1side/ 2side	Simplex and Duplex mode.	

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.
- The user cannot select mixed sizes or non-standard sizes with the fax application so if the original's page sizes are mixed or non-standard, these are not counted.
- If the user selects "Mixed Sizes" for copying in the platen mode, the Mixed Size count is enabled.
- In the SADF mode if the user copies 1 page in platen mode and then copies 2 pages with SADF, the Platen count is 1 and the SADF count is 3.

8241	T:Scan PGS/Org	*CTL	[0 to 9999999/ 0 / 1/step]
	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	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages scanned by original type for Copy jobs.		
8243	F:Scan PGS/Org	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages scanned by original type for Fax jobs.		
8245	S:Scan PGS/Org	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages scanned by original type for Scan jobs.		
8246	L:Scan PGS/Org	*CTL	[0 to 9999999/ 0 / 1/step]
	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		

Last three digits for SP8 241 to 246

	8 241	8 242	8 243	8 245	8 246
824x-001: Text	Yes	Yes	Yes	Yes	Yes
824x-002: Text/Photo	Yes	Yes	Yes	Yes	Yes
824x-003: Photo	Yes	Yes	Yes	Yes	Yes
824x-004: GenCopy, Pale	Yes	Yes	No	Yes	Yes
824x-005: Map	Yes	Yes	No	No	Yes
824x-006: Normal/Detail	Yes	No	Yes	No	No
824x-007: Fine/Super Fine	Yes	No	Yes	No	No
824x-008: Binary	Yes	No	No	Yes	No
824x-009: Grayscale	Yes	No	No	Yes	No
824x-010: Color	Yes	No	No	Yes	No
824x-011: 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	*CTL	These SPs show how many times Image Edit features have been selected at the operation panel for each application. Some examples of these editing features are: ▪ Erase → Border ▪ Erase → Center ▪ Image Repeat ▪ Centering ▪ Positive/Negative [0 to 9999999/ - / 1/step] 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	*CTL	
8255	S : Scan PGS/ImgEdr	*CTL	
8256	L:Scan PGS/ImgEdt	*CTL	
8257	O:Scan PGS/ImgEdt	*CTL	

The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen.

8261	T:Scn PGS/ColCr	*CTL	-
8262	C:Scn PGS/ ColCr	*CTL	-
8265	S:Scn PGS/Color	*CTL	-
8266	L:Scn PGS/ColCr	*CTL	-

Last three digits for SP8 261, 262, 265 and 266

826x-001	Color Conversion	These SPs show how many times color creation features have been selected at the operation panel.
826x-002	Color Erase	
826x-003	Background	
826x-004	Other	

8281	T:Scan PGS/TWAIN	*CTL	These SPs count the number of pages scanned using a TWAIN driver. These counters reveal how the TWAIN driver is used for delivery functions. [0 to 9999999/ 0 / 1/step] Note: At the present time, these counters perform identical counts.
8285	S:Scan PGS/TWAIN	*CTL	

8291	T:Scan PGS/Stamp	*CTL	These SPs count the number of pages stamped with the stamp in the ADF unit. [0 to 9999999/ 0 / 1/step]
8293	F:Scan PGS/Stamp	*CTL	
8295	S:Scan PGS/Stamp	*CTL	The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen

8301	T:Scan PGS/Size	*CTL	[0 to 9999999/ 0 / 1/step]
	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	*CTL	[0 to 9999999/ 0 / 1/step]
	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	*CTL	[0 to 9999999/ 0 / 1/step]
	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	*CTL	[0 to 9999999/ 0 / 1/step]
	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	*CTL	[0 to 9999999/ 0 / 1/step]
	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].		

Last three digits for SP8 301 to 306

830x-001	A3	830x-007	LG
830x-002	A4	830x-008	LT
830x-003	A5	830x-009	HLT
830x-004	B4	830x-010	Full Bleed
830x-005	B5	830x-254	Other (Standard)
830x-006	DLT	830x-255	Other (Custom)

8311	T:Scan PGS/Rez	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings.		
8315	S: Scan PGS/Rez	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings. Note: At the present time, SP8-311 and SP8-315 perform identical counts.		

Last three digits for SP8 311 and 315

831x-001	1200 dpi
831x-002	600 dpi to 1199 dpi
831x-003	400 dpi to 599 dpi
831x-004	200 dpi to 399 dpi
831x-005	199 dpi or less

- 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.

8321	T:Sacn Poster	*CTL	[0 to 9999999/ 0 / 1/step]
8322	C:Sacn Poster	*CTL	[0 to 9999999/ 0 / 1/step]
8326	L:Sacn Poster	*CTL	[0 to 9999999/ 0 / 1/step]

832x-001	2 Sheet
832x-002	4 Sheet
832x-003	9 Sheet

8381	T:Total PrtPGS Field Number	*CTL	These SPs count the number of pages printed by the customer. The counter for the application used for storing the pages increments. [0 to 9999999/ - / 1/step] 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 Field Number	*CTL	
8383	F:Total PrtPGS Field Number	*CTL	
8384	P:Total PrtPGS Field Number	*CTL	
8385	S:Total PrtPGS Field Number	*CTL	
8386	L:Total PrtPGS Field Number	*CTL	
8387	O:Total PrtPGS Field Number	*CTL	

- When several documents are merged for a print job, the number of pages stored is 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		
	These SPs count pages printed on paper sizes A4/LT 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.		
001	A3/DLT, Larger	*CTL	[0 to 9999999/ 0 / 1/step]
003	BannaerPaper	*CTL	[0 to 9999999/ 0 / 1/step]

8401	T:PrtPGS/LS	*CTL	These SPs count the number of pages printed from the document server. The counter for the application used to print the pages is incremented. The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel. [0 to 9999999/ - / 1/step]
8402	C:PrtPGS/LS	*CTL	
8403	F:PrtPGS/LS	*CTL	
8404	P:PrtPGS/LS	*CTL	
8405	S:PrtPGS/LS	*CTL	
8406	L:PrtPGS/LS	*CTL	

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the L: count.
- Fax jobs done with Web Image Monitor and Desk Top Binder are added to the F: count.

8411	Prints/Duplex	*CTL	This SP counts the amount of paper (front/back counted as 1 page) used for duplex printing. Last pages printed only on one side are not counted. [0 to 9999999/ - / 1/step]

8421	T:PrtPGS/Dup Comb	*CTL	[0 to 9999999/ 0 / 1/step]
	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	*CTL	[0 to 9999999/ 0 / 1/step]
	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	*CTL	[0 to 9999999/ 0 / 1/step]
	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	*CTL	[0 to 9999999/ 0 / 1/step]
	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	*CTL	[0 to 9999999/ 0 / 1/step]
	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	*CTL	[0 to 9999999/ 0 / 1/step]
	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	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by Other applications		

Last three digits for SP8 421 to 427

842x-001	Simplex> Duplex	-
842x-002	Duplex> Duplex	-
842x-003	Book> Duplex	-
842x-004	Simplex Combine	-
842x-005	Duplex Combine	-
842x-006	2in1	2 pages on 1 side (2-Up)
842x-007	4in1	4 pages on 1 side (4-Up)
842x-008	6in1	6 pages on 1 side (6-Up)
842x-009	8in1	8 pages on 1 side (8-Up)
842x-010	9in1	9 pages on 1 side (9-Up)
842x-011	16in1	16 pages on 1 side (16-Up)
842x-012	Booklet	-
842x-013	Magazine	-
842x-014	2in1 + Booklet	-
842x-015	4in1 + Booklet	-
842x-016	6in1 + Booklet	-
842x-017	8in1 + Booklet	-
842x-018	9in1 + Booklet	-
842x-019	2in1 + Magazine	-
842x-020	4in1 + Magazine	-
842x-021	6in1 + Magazine	-
842x-022	8in1 + Magazine	-
842x-023	9in1 + Magazine	-
842x-024	16in1 + Magazine	-

- These counts (SP8 421 to SP8 427) are especially useful for customers who need to improve their compliance with ISO standards for the reduction of paper consumption.
- Pages that are only partially printed with the n-Up functions are counted as 1 page.
- Here is a summary of how the counters work for Booklet and Magazine modes:

Booklet			Magazine	
Original Pages	Count		Original Pages	Count
1	1		1	1
2	2		2	2
3	2		3	2
4	2		4	2
5	3		5	4
6	4		6	4
7	4		7	4
8	4		8	4

8431	T:PrtPGS/ImgEdt	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of pages output with the three features below, regardless of which application was used.		
8432	C:PrtPGS/ImgEdt	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of pages output with the three features below with the copy application.		
8434	P:PrtPGS/ImgEdt	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of pages output with the three features below with the print application.		
8436	L:PrtPGS/ImgEdt	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of pages output from within the document server mode window at the operation panel with the three features below.		

8437	O:PrtPGS/ImgEdt	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of pages output with the three features below with Other applications.		

Last three digits for SP8 431 to 437

843x-001	Cover/Slip Sheet	Total number of covers or slip sheets inserted. The count for a cover printed on both sides counts 2.
843x-002	Series/Book	The number of pages printed in series (one side) or printed as a book with booklet right/left pagination.
843x-003	User Stamp	The number of pages printed where stamps were applied, including page numbering and date stamping.

8441	T:PrtPGS/Ppr Size	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count by print paper size the number of pages printed by all applications.		
8442	C:PrtPGS/Ppr Size	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count by print paper size the number of pages printed by the copy application.		
8443	F:PrtPGS/Ppr Size	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count by print paper size the number of pages printed by the fax application.		
8444	P:PrtPGS/Ppr Size	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count by print paper size the number of pages printed by the printer application.		
8445	S:PrtPGS/Ppr Size	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count by print paper size the number of pages printed by the scanner application.		

8446	L:PrtPGS/Ppr Size	*CTL	[0 to 99999999/ 0 / 1/step]
	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	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count by print paper size the number of pages printed by Other applications.		

Last three digits for SP8 441 to 447

844x-001	A3
844x-002	A4
844x-003	A5
844x-004	B4
844x-005	B5
844x-006	DLT
844x-007	LG
844x-008	LT
844x-009	HLT
844x-010	Full Bleed
844x-254	Other (Standard)
844x-255	Other (Custom)

- These counters do not distinguish between LEF and SEF.

8451	PrtPGS/Ppr Tray	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the number of sheets fed from each paper feed station.		
001	Bypass Tray	Bypass Tray	
002	Tray 1	Machine	
003	Tray 2	Paper Tray Unit (Option)	
004	Tray 3	Paper Tray Unit (Option)	
005	Tray 4	Paper Tray Unit (Option)	
006	Tray 5	Not used	
007	Tray 6	Not used	
008	Tray 7	Not used	
009	Tray 8	Not used	
010	Tray 9	Not used	
011	Tray10	Not used	
012	Tray11	Not used	
013	Tray12	Not used	
014	Tray13	Not used	
015	Tray14	Not used	
016	Tray15	Not used	

8461	T:PrtPGS/Ppr Type	*CTL	[0 to 99999999/ 0 / 1/step]
	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	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count by paper type the number pages printed by the copy application.		
8463	F:PrtPGS/Ppr Type	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count by paper type the number pages printed by the fax application.		
8464	P:PrtPGS/Ppr Type	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count by paper type the number pages printed by the printer application.		
8466	L:PrtPGS/Ppr Type	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count by paper type the number pages printed from within the document server mode window at the operation panel.		

Last three digits for SP8 461 to 466

846x-001	Normal
846x-002	Recycled
846x-003	Special
846x-004	Thick
846x-005	Normal (Back)
846x-006	Thick (Back)
846x-007	OHP
846x-008	Other

8471	PrtPGS/Mag	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by magnification rate the number of pages printed.		
001	49% or less		
002	50% to 99%		
003	100%		
004	101% to 200%		
005	201% or more		

- 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	*CTL	[0 to 9999999/ 0 / 1/step]
8484	P:PrtPGS/TonSave	*CTL	[0 to 9999999/ 0 / 1/step]
	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.		

8491	T:PrtPGS/Col Mode	*CTL	These SPs count the number of pages printed in the Color Mode by each application.
8492	C:PrtPGS/Col Mode	*CTL	
8493	F:PrtPGS/Col Mode	*CTL	
8496	L:PrtPGS/Col Mode	*CTL	
8497	O:PrtPGS/Col Mode	*CTL	

Last three digits for SP8 491 to 493, 496 and 497

849x-001	B/W
849x-002	Single Color
849x-003	Two Color
849x-004	Full Color
849x-051	B/W(Banner)
849x-052	Single Color(Banner)
849x-053	Two Color(Banner)
849x-054	Full Color(Banner)

8501	T:PrtPGS/Col Mode	*CTL	These SPs count the number of pages printed in the Color Mode by the print application.
8504	P:PrtPGS/Col Mode	*CTL	
8507	O:PrtPGS/Col Mode	*CTL	

Last three digits for SP8 501, 504 and 507

850x-001	B/W
850x-002	Mono Color
850x-003	Full Color
850x-004	Single Color
850x-005	Two Color

850x-051	B/W(Banner)
850x-052	Full Color(Banner)
850x-053	Single Color(Banner)
850x-054	Two Color(Banner)

8511	T:PrtPGS/Emul	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by printer emulation mode the total number of pages printed.		
8514	P:PrtPGS/Emul	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by printer emulation mode the total number of pages printed.		

Last three digits for SP8 511 and 514

851x-001	RPCS	-
851x-002	RPDL	-
851x-003	PS3	-
851x-004	R98	-
851x-005	R16	-
851x-006	GL/GL2	-
851x-007	R55	-
851x-008	RTIFF	-
851x-009	PDF	-
851x-010	PCL5e/5c	-
851x-011	PCL XL	-
851x-012	IPDL-C	-
851x-013	BM-Links	Japan Only
851x-014	Other	-

851x-015	IPDS	-
851x-016	XPS	-

- SP8 511 and SP8 514 return the same results as they are both limited to the Print application.
- Print jobs output to the document server are not counted.

8521	T:PrtPGS/FIN	*CTL	[0 to 9999999 / 0 / 1/step]
	These SPs count by finishing mode the total number of pages printed by all applications.		
8522	C:PrtPGS/FIN	*CTL	[0 to 9999999 / 0 / 1/step]
	These SPs count by finishing mode the total number of pages printed by the Copy application.		
8523	F:PrtPGS/FIN	*CTL	[0 to 9999999 / 0 / 1/step]
	These SPs count by finishing mode the total number of pages printed by the Fax application. Note: Print finishing options for received faxes are currently not available.		
8524	P:PrtPGS/FIN	*CTL	[0 to 9999999 / 0 / 1/step]
	These SPs count by finishing mode the total number of pages printed by the Print application.		
8525	S:PrtPGS/FIN	*CTL	[0 to 9999999 / 0 / 1/step]
	These SPs count by finishing mode the total number of pages printed by the Scanner application.		
8526	L:PrtPGS/FIN	*CTL	[0 to 9999999 / 0 / 1/step]
	These SPs count by finishing mode the total number of pages printed from within the document server mode window at the operation panel.		

Last three digits for SP8 521 to 526

852x-001	Sort	852x-009	Three-IN-Fold
852x-002	Stack	852x-010	Three-OUT-Fold
852x-003	Staple	852x-011	Four-Fold
852x-004	Booklet	852x-012	KANNON-Fold
852x-005	Z-Fold	852x-013	Perfect-Bind
852x-006	Punch	852x-014	Ring-Bind
852x-007	Other	852x-015	3rd Vendor
852x-008	Inside-Fold		

 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 (-001) or count stapled (-002) by the machine.		
001	Staples	*CTR	[0 to 9999999 / - / 1]
002	Stapleless	*CTR	[0 to 9999999 / - / 1]

8551	T:PrtBooks/FIN	*CTL	-
8552	C:PrtBooks/FIN	*CTL	-
8554	P:PrtBooks/FIN	*CTL	-
8556	L:PrtBooks/FIN	*CTL	-
855x-001	Perfect-Bind	Not used	
855x-002	Ring-Bind	Not used	

8561	T:A Sheet Of Paper	*CTL	[0 to 9999999 / 0 / 1/step]
8562	C:A Sheet Of Paper	*CTL	[0 to 9999999 / 0 / 1/step]
8563	F:A Sheet Of Paper	*CTL	[0 to 9999999 / 0 / 1/step]
8564	P:A Sheet Of Paper	*CTL	[0 to 9999999 / 0 / 1/step]
8566	L:A Sheet Of Paper	*CTL	[0 to 9999999 / 0 / 1/step]
8567	O:A Sheet Of Paper	*CTL	[0 to 9999999 / 0 / 1/step]

Last three digits for SP8 561 to 567

856x-001	Total: Over A3/DLT
856x-002	Total: Under A3/DLT
856x-003	Duplex: Over A3/DLT
856x-004	Duplex: Under A3/DLT

8581	T:Counter	*CTL	[0 to 9999999 / 0 / 1/step]
	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.		
001	Total		
002	Total: Full Color		
003	B&W/Single Color		
004	Development: CMY		
005	Development: K		
006	Copy: Color		
007	Copy: B/W		
008	Print: Color		
009	Print: B/W		

010	Total: Color
011	Total: B/W
012	Full Color: A3
013	Full Color: B4 JIS or Smaller
014	Full Color Print
015	Mono Color Print
016	Full Color GPC
017	Twin Color Mode Print
018	Full Color Print(Twin)
019	Mono Color Print(Twin)
020	Full Color Total(CV)
021	Mono Color Total(CV)
022	Full Color Print(CV)
028	Development: CMY(A3)
029	Development: K(A3)
030	Total: Color(A3)
031	Total: B/W(A3)

8582	C:Counter	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total output of the copy application broken down by color output.		
001	B/W		
002	Single Color		
003	Two Color		
004	Full Color		

8583	F:Counter	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total output of the fax application broken down by color output.		
001	B/W		
002	Single Color		

8584	P:Counter	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total output of the print application broken down by color output.		
001	B/W		
002	Mono Color		
003	Full Color		
004	Single Color		
005	Two Color		

8586	L:Counter	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total output of the local storage broken down by color output.		
001	B/W		
002	Single Color		
003	Two Color		
004	Full Color		

8591	O:Counter	*CTL	[0 to 9999999/ 0 / 1/step]
	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.		
001	A3/DLT		

002	Duplex
005	Banner

8601	T:Coverage Counter	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
001	B/W		
002	Color		
011	B/W Printing Pages		
012	Color Printing Pages		
021	Coverage Counter 1		
022	Coverage Counter 2		
023	Coverage Counter 3		
031	Coverage Counter 1 (YMC)		
032	Coverage Counter 2 (YMC)		
033	Coverage Counter 3 (YMC)		

8602	C:Coverage Counter	*CTL	[0 to 2147483647/ 0 / 1%/step]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8603	F:Coverage Counter	*CTL	[0 to 2147483647/ 0 / 1%/step]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8604	P:Coverage Counter	*CTL	[0 to 2147483647/ 0 / 1%/step]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8606	L:Coverage Counter	*CTL	[0 to 2147483647/ 0 / 1%/step]

	These SPs count the total coverage for each color and the total printout pages for each printing mode.

Last three digits for SP8 602 to 606

	8 602	8 603	8 604	8 606
860x-001: B/W	Yes	Yes	Yes	Yes
860x-002: Single Color	Yes	Yes	Yes	Yes
860x-003: Two Color	Yes	No	Yes	Yes
860x-004: Full Color	Yes	No	Yes	Yes

8617	SDK Apli Counter	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total printout pages for each SDK applicaion.		
001	SDK-1		
002	SDK-2		
003	SDK-3		
004	SDK-4		
005	SDK-5		
006	SDK-6		
007	SDK-7		
008	SDK-8		
009	SDK-9		
010	SDK-10		
011	SDK-11		
012	SDK-12		

8621	Func Use Counter DFU
001 to 064	Function 001 to Function 064

8631	T:FAX TX PGS	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the number of pages sent by fax to a telephone number.		
8633	F:FAX TX PGS	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the number of pages sent by fax to a telephone number.		
863x-001	B/W		
863x-002	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:IFAX TX PGS	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the number of pages sent by fax to as fax images using I-Fax.		
8643	F:IFAX TX PGS	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the number of pages sent by Fax as fax images using I-Fax.		
864x-001	B/W		
864x-002	Color		

- If a document has color and black-and-white pages mixed, the pages are counted separately as B/W or Color.
- At the present time, this feature is provided for the Fax application only so SP8641 and SP8643 are the same.
- The counts include error pages.
- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.
- Polling transmissions are counted but polling RX are not.
- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8651	T:S-to-Email PGS	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the total number of pages attached to an e-mail for both the Scan and document server applications.		
8655	S:S-to-Email PGS	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the total number of pages attached to an e-mail for the Scan application only.		
865x-001	B/W		
865x-002	Color		

⬇ Note

- The count for B/W and Color pages is done after the document is stored on the HDD. If the job is cancelled before it is stored, the pages are not counted.
- If Scan-to-Email is used to send a 10-page document to 5 addresses, the count is 10 (the pages are sent to the same SMTP server together).
- If Scan-to-PC is used to send a 10-page document to 5 folders, the count is 50 (the document is sent to each destination of the SMB/FTP server).
- Due to restrictions on some devices, if Scan-to-Email is used to send a 10-page document to a large number of destinations, the count may be divided and counted separately. For example, if a 10-page document is sent to 200 addresses, the count is 10 for the first 100 destinations and the count is also 10 for the second 100 destinations, for a total of 20.).

8661	T:Deliv PGS/Svr	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the total number of pages sent to a Scan Router server by both Scan and LS applications.		
8665	S:Deliv PGS/Svr	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the total number of pages sent to a Scan Router server by the Scan application.		
866x-001	B/W		
866x-002	Color		

 Note

- The B/W and Color counts are done after the document is stored on the HDD of the Scan Router server.
- If the job is canceled before storage on the Scan Router server finishes, the counts are not done.
- The count is executed even if regardless of confirmation of the arrival at the Scan Router server.

8671	T:Deliv PGS/PC	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the total number of pages sent to a folder on a PC (Scan-to-PC) with the Scan and LS applications.		
8675	S: Deliv PGS/PC	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the total number of pages sent with Scan-to-PC with the Scan application.		
867x-001	B/W		
867x-002	Color		

8681	T:PCFAX TXPGS	*CTL	These SPs count the number of pages sent by PC Fax. These SPs are provided for the Fax application only, so the counts for SP8 681 and SP8 683 are the same. [0 to 9999999/ 0 / 1/step]
8683	F:PCFAX TXPGS	*CTL	

- This counts pages sent from a PC using a PC fax application, from the PC through the copier to the destination.
- When sending the same message to more than one place using broadcasting, the pages are only counted once. (For example, a 10-page fax is sent to location A and location B. The counter goes up by 10, not 20.)

8691	T:TX PGS/LS	*CTL	These SPs count the number of pages sent from the document server. The counter for the application that was used to store the pages is incremented. [0 to 9999999/ 0 / 1/step] 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	*CTL	
8693	F:TX PGS/LS	*CTL	
8694	P:TX PGS/LS	*CTL	
8695	S:TX PGS/LS	*CTL	
8696	L:TX PGS/LS	*CTL	

 Note

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the count.
- If several documents are merged for sending, the number of pages stored are counted for the application that stored them.
- When several documents are sent by a Fax broadcast, the F: count is done for the number of pages sent to each destination.

8701	TX PGS/Port	*CTL	[0 to 9999999/ 0 / 1/step]
	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.		
001	PSTN-1		
002	PSTN-2		
003	PSTN-3		
004	ISDN (G3,G4)		
005	Network		

8711	T:Scan PGS/Comp	*CTL	[0 to 9999999/ 0 / 1/step]
8715	S:Scan PGS/Comp	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages sent by each compression mode.		
871x-001	JPEG/JPEG2000		
871x-002	TIFF(Multi/Single)		
871x-003	PDF		
871x-004	Other		
871x-005	PDF/Comp		
871x-006	PDF/A		
871x-007	PDF(OCR)		
871x-008	PDF/Comp(OCR)		
871x-009	PDF/A(OCR)		

8721	T: Deliv PGS/WSD	*CTL	[0 to 9999999/ 0 / 1/step]
8725	S: Deliv PGS/WSD	*CTL	
	These SPs count the number of pages scanned by each scanner mode.		
872x-001	B/W		
872x-002	Color		

8731	T:Scan PGS/Media	*CTL	[0 to 9999999/ 0 / 1/step]
8735	S:Scan PGS/Media	*CTL	
	These SPs count the number of pages scanned and saved in a media by each scanner mode.		
873x-001	B/W		
873x-002	Color		

8741	RX PGS/Port	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages received by the physical port used to receive them.		
001	PSTN-1		
002	PSTN-2		
003	PSTN-3		
004	ISDN (G3,G4)		
005	Network		

8 771	Dev Counter	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the frequency of use (number of rotations of the development rollers) for black and other color toners.		
8 771-001	Total		
8 771-002	K		

8 771-003	Y
8 771-004	M
8 771-005	C

8 781	Toner_Botol_Info.	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs display the number of already replaced toner bottles. Note: Currently, the data in SP7-833-011 through 014 and the data in SP8-781-001 through 004 are the same.		
8 781-001	BK	The number of black-toner bottles	
8 781-002	Y	The number of yellow-toner bottles	
8 781-003	M	The number of magenta-toner bottles	
8 781-004	C	The number of cyan-toner bottles	

8791	LS Memory Remain	*CTL	[0 to 100 / 0 / 1/step]
	This SP displays the percent of space available on the document server for storing documents.		

8801	Toner Remain	*CTL	[0 to 100/ 0 / 1/step]
	These SPs display the percent of toner remaining for each color. This SP allows the user to check the toner supply at any time. Note: This precise method of measuring remaining toner supply (1% steps) is better than other machines in the market that can only measure in increments of 10 (10% steps).		
001	K		
002	Y		
003	M		
004	C		

8811	Eco Counter		
001	Eco Total	*CTL	[0 to 9999999 / 0 / 1/step]
	Displays the number of pages reduced by using the color, full color, duplex and combine function.		
002	Color	*CTL	[0 to 9999999 / 0 / 1/step]
	Displays the number of pages reduced by using the color function.		
003	Full Color	*CTL	[0 to 9999999 / 0 / 1/step]
	Displays the number of pages reduced by using the full color function		
004	Duplex	*CTL	[0 to 9999999 / 0 / 1/step]
	Displays the number of pages reduced by using the duplex function.		
005	Combine	*CTL	[0 to 9999999 / 0 / 1/step]
	Displays the number of pages reduced by using the combine function.		
006	Color(%)	*CTL	[0 to 100/ 0 / 1%/step]
	Displays the utilization ratio of the color function.		
007	Full Color(%)	*CTL	[0 to 100/ 0 / 1%/step]
	Displays the utilization ratio of the full color function.		
008	Duplex(%)	*CTL	[0 to 100/ 0 / 1%/step]
	Displays the utilization ratio of the duplex function.		
009	Combine(%)	*CTL	[0 to 100/ 0 / 1%/step]
	Displays the utilization ratio of the combine function.		
010	Paper Cut(%)	*CTL	[0 to 100/ 0 / 1%/step]
	Displays the paper reduction ratio.		
051	Sync Eco Total	*CTL	[0 to 99999999 / 0 / 1/step]

052	Sync Color	*CTL	[0 to 99999999/ 0 / 1/step]
053	Sync Full Color	*CTL	[0 to 99999999/ 0 / 1/step]
054	Sync Duplex	*CTL	[0 to 99999999/ 0 / 1/step]
055	Sync Combine	*CTL	[0 to 99999999/ 0 / 1/step]
056	Sync Color(%)	*CTL	[0 to 100/ 0 / 1%/step]
057	Sync Full Color(%)	*CTL	[0 to 100/ 0 / 1%/step]
058	Sync Duplex(%)	*CTL	[0 to 100/ 0 / 1%/step]
059	Sync Combine(%)	*CTL	[0 to 100/ 0 / 1%/step]
060	Sync Paper Cut(%)	*CTL	[0 to 100/ 0 / 1%/step]
101	Eco Totalr>Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
102	Color>Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
103	Full Color>Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
104	Duplex>Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
105	Combine>Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
106	Color(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		
107	Full Color(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		

108	Duplex(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		
109	Combine(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		
110	Paper Cut(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		
151	Sync Eco Totalr:Last	*CTL	[0 to 9999999 / 0 / 1/step]
152	Sync Color:Last	*CTL	[0 to 9999999 / 0 / 1/step]
153	Sync Full Color:Last	*CTL	[0 to 9999999 / 0 / 1/step]
154	Sync Duplex:Last	*CTL	[0 to 9999999 / 0 / 1/step]
155	Sync Combine:Last	*CTL	[0 to 9999999 / 0 / 1/step]
156	Sync Color(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
157	Sync Full Color(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
158	Sync Duplex(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
159	Sync Combine(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
160	Sync Paper Cut(%):Last	*CTL	[0 to 100/ 0 / 1%/step]

8851	CVr Cnt: 0-10%	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs display the number of scanned sheets on which the coverage of each color is from 0% to 10%.		
011	0 to 2%: BK	031	5 to 7%: BK
012	0 to 2%: Y	032	5 to 7%: Y
013	0 to 2%: M	033	5 to 7%: M
014	0 to 2%: C	034	5 to 7%: C
021	3 to 4%: BK	041	8 to 10%: BK
022	3 to 4%: Y	042	8 to 10%: Y
023	3 to 4%: M	043	8 to 10%: M
024	3 to 4%: C	044	8 to 10%: C

8861	CVr Cnt: 11-20%	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs display the number of scanned sheets on which the coverage of each color is from 11% to 20%.		
001	BK		
002	Y		
003	M		
004	C		

8871	CVr Cnt: 21-30%	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs display the number of scanned sheets on which the coverage of each color is from 21% to 30%.		
001	BK		
002	Y		

003	M
004	C

8881	CVr Cnt: 31%-	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs display the number of scanned sheets on which the coverage of each color is 31% or higher.		
001	BK		
002	Y		
003	M		
004	C		

8891	Page/Toner Bottle	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs display the amount of the remaining current toner for each color.		
001	BK		
002	Y		
003	M		
004	C		

8901	Page/Toner_Prev1	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs display the amount of the remaining previous toner for each color.		
001	BK		
002	Y		
003	M		
004	C		

8911	Page/Toner_Prev2	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs display the amount of the remaining 2nd previous toner for each color.		
001	BK		
002	Y		
003	M		
004	C		

8921	Cvr Cnt/Total	*CTL	[0 to 2147483647/ 0 / 1/step]
	Displays the total coverage and total printout number for each color.		
001	Coverage (%) BK		
002	Coverage (%) Y		
003	Coverage (%) M		
004	Coverage (%) C		
8921	Cvr Cnt/Total	*CTL	[0 to 9999999/ 0 / 1/step]
011	Coverage /P: BK		
012	Coverage /P: Y		
013	Coverage /P: M		
014	Coverage /P: C		

8941	Machine Status	*CTL	[0 to 99999999/ 0 / 1/step]
	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.		
001	Operation Time	Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).	
002	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.	
003	Energy Save Time	Includes time while the machine is performing background printing.	
004	Low Power Time	Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.	
005	Off Mode Time	Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.	
006	SC	Total time when SC errors have been staying.	
007	PrtJam	Total time when paper jams have been staying during printing.	
008	OrgJam	Total time when original jams have been staying during scanning.	
009	Supply PM Unit End	Total time when toner end has been staying.	

8951	AddBook Register	*CTL	-
	These SPs count the number of events when the machine manages data registration.		
001	User Code /User ID	User code registrations.	[0 to 99999/ 0 / 1/step]
002	Mail Address	Mail address registrations.	
003	Fax Destination	Fax destination registrations.	
004	Group	Group destination registrations.	
005	Transfer Request	Fax relay destination registrations for relay TX.	
006	F-Code	F-Code box registrations.	
007	Copy Program	Copy application registrations with the Program (job settings) feature.	[0 to 255 / 0 / 1/step]
008	Fax Program	Fax application registrations with the Program (job settings) feature.	
009	Printer Program	Printer application registrations with the Program (job settings) feature.	
010	Scanner Program	Scanner application registrations with the Program (job settings) feature.	

8961	Electricity Status	*CTL	[0 to 99999999/ 0 / 1/step]
	-		
001	Ctrl Standby Time		
002	STR Time		
003	Main Power Off Time		
004	Reading and Printing Time		
005	Printing Time		
006	Reading Time		
007	Eng Waiting Time		
008	Low Power State Time		
009	Silent State Time		
010	Heater Off State Time		
011	LCD on Time		
101	Silent Print		

8971	Unit Control	*CTL	[0 to 999999999/ 0 / 1/step]
	-		
001	Engine Off Recovery Count		
002	Power Off Count		
003	Force Power Off Count		

8999	Admin. Counter List		
	Displays the total coverage and total printout number for each color.		
001	Total	*CTL	[0 to 99999999/ - / 1]
002	Copy: Full Color	*CTL	
003	Copy: BW	*CTL	
004	Copy: Single Color	*CTL	
005	Copy: Two Color	*CTL	
006	Printer Full Color	*CTL	
007	Printer BW	*CTL	
008	Printer Single Color	*CTL	
009	Printer Two Color	*CTL	
010	Fax Print: BW	*CTL	
011	Fax Print: Single Color	*CTL	
013	Duplex	*CTL	
022	Copy: Full Color(%)	*CTL	[0 to 2147483647/ - / 1]
023	Copy: BW(%)	*CTL	
024	Copy: Single Color(%)	*CTL	
025	Copy: Two Color(%)	*CTL	
026	Printer: Full Color(%)	*CTL	
027	Printer: BW(%)	*CTL	
028	Printer: Single Color(%)	*CTL	
029	Printer: Two Color(%)	*CTL	
030	Fax Print: BW(%)	*CTL	
031	Fax Print: Single Color(%)	*CTL	

101	Transmission Total: Color	*CTL	[0 to 99999999/ - / 1]
102	Transmission Total: BW	*CTL	
102	Transmission Total: BW	*CTL	
103	FAX Transmission	*CTL	
104	Scanner Transmission: Color	*CTL	
105	Scanner Transmission: BW	*CTL	

3.10 PRINTER SERVICE MODE

3.10.1 PRINTER SERVICE MODE

1001	Bit Switch			
001	Bit Switch 1		0	1
	bit 0	DFU	-	-
	bit 1	Responding with the hostname as the sysName	Model name (PnP name)	Hostname
		This BitSwitch can change the value of the sysName. 0 (default): Model name (PnP name) such as "MP C401SP" 1: Host name		
	bit 2	DFU	-	-
	bit 3	No I/O Timeout	0:Disabled	1:Enabled
		Enables/Disables MFP I/O Timeouts. If enabled, the MFP I/O Timeout setting will have no affect. I/O Timeouts will never occur.		
	bit 4	SD Card Save Mode	0:Disabled	1:Enabled
		If this bit switch is enabled, print jobs will be saved to the GW SD slot and not output to paper.		
	bit 5	[PS and PDF] Paper size error margin	±5pt	±10pt
		When a PS job is printed by using a custom paper size, the job might not be printed because of a paper size mismatch caused by a calculation error. By default, the error margin for matching to a paper size is ±5 points. By enabling this BitSwitch, the error margin for matching to a paper size can be extended to ±10 points.		
	bit 6	Color balance switching	0:Disabled	1:Enabled

1001	Bit Switch			
		This BitSwitch can be used to restore the color balance to match that of previous models. If this BitSwitch is set to "1" (Enabled), the color balance that is equivalent to Fuji-Xerox printers will be used.		
	bit 7	[RPCS,PCL]: Printable area frame border	0: Disable	1: Enable
		Prints all RPCS and PCL jobs with a border around the printable area.		

1001	Bit Switch			
002	Bit Switch 2		0	1
	bit 0	Color balance switching	Disabled	Enabled
		This BitSwitch can be used to restore the color balance to match that of previous models. If this BitSwitch is set to "1" (Enabled), the color balance from 09S and earlier models will be used.		
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	[PCL5e/c.PS]: PDL Auto Switching	0: Enable	1: Disable
		Enables/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	Color balance switching	Disabled	Enabled
		This BitSwitch can be used to restore the color balance to match that of previous models. If this BitSwitch is set to "1" (Enabled), the color balance from 09A and Extended 09A models will be used.		
	bit 5	DFU	-	-
	bit 6	Switch dither	0: Use normal dither	1: Use alternative dither
		See RTB#RD014018.		
	bit 7	DFU	-	-

1001	Bit Switch			
003	Bit Switch 3		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	[PCL5e/c]: Legacy HP compatibility	0:Disabled	1:Enabled
		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 to 7	DFU	-	-

1001	Bit Switch			
004	Bit Switch 4		0	1
	bit 0 to 7	DFU	-	-

1001	Bit Switch			
005	Bit Switch 5		0	1
	bit 0	DFU	-	-
	bit 1	Multiple copies if a paper size or type mismatch occurs	0:Disabled (Single copy)	1:Enabled (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 bit switch, 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:Disabled	1:Enabled

1001	Bit Switch			
		Enable: 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 bit switch 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: (2 to 4): The larger the pattern number, the greater the number of criterion used. Pattern 4 includes most PS commands. Pattern1: A small number of PS tags and headers		
	bit 4	Increase max. number of stored jobs.	0:Disabled (100)	1:Enabled (750)
		Changes the maximum number of jobs that can be stored on the HDD. The default (disabled) is 100. If this is enabled, the max. will be raised to 750 or 1000 depending on the model.		
	bit 5	DFU	-	-
	bit 6	Method for determining the image rotation for the edge to bind on.	0:Disabled	1:Enabled
		Enable: The image rotation will be performed as they were in the specifications of older models for the binding of pages of mixed orientation jobs. The old models are below: - PCL: Pre-04A models - PS/PDF/RPCS: Pre-05S models		
	bit 7	Letterhead mode printing	0:Disabled	1:Enabled (Duplex)
		Routes all pages through the duplex unit. If this is disabled, simplex pages or the last page of an odd-paged duplex job are not routed through the duplex unit. This could result in problems with letterhead/pre-printed pages. Only affects pages specified as Letterhead paper.		

1001	Bit Switch			
006	Bit Switch 6		0	1
	bit 0	Include bypass in auto tray select	0:Disabled	1:Enabled
		If enabled, the Bypass tray tray will be included in auto tray selection.		
	bit 1 to 7	DFU	-	-

1001	Bit Switch			
007	Bit Switch 7		0	1
	bit 0 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:Disabled	1:Enabled (allow BW jobs to print without a user code)
	BW jobs submitted without a user code will be printed even if usercode authentication is enabled. Note: Color jobs will not be printed without a valid user code.			
	bit 4 to 5	DFU	-	-
	bit 6	PCL, RPCS, PS: Forced BW print	0:Disabled	1:Enabled
	Switches whether to ignore PDL color command.			
	bit 7	DFU	-	-

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:Disabled (Immediately)	1:Enabled (10 seconds)
		To be used if PDL auto-detection fails. A failure of PDL autodetection does not necessarily mean that the job can not 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	0:Disabled (Not cancelled)	1:Enabled (Cancelled)
Enable: All jobs will be cancelled after a jam occurs. Note: If this bit switch 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	DFU	-	-
	bit 4	Timing of the PjL Status ReadBack (JOB END) when printing multiple collated copies.	0:Disabled	1:Enabled
		This bit switch determines the timing of the PjL USTATUS JOB END sent when multiple collated copies are being printed. Disable (=0 (default)): JOB END is sent by the device to the client after the first copy has completed printing. This causes the page counter to be incremented after the first copy and then again at the end of the job. Enable (=1): JOB END is sent by the device to the client after the last copy has finished printing. This causes the page counter to be incremented at the end of each job.		

1001	Bit Switch			
009	Bit Switch 9		0	1
	bit 5	Display UTF-8 text in the operation panel	0:Enabled	1:Disabled
		Enable (=0): Text composed of UTF-8 characters can be displayed in the operation panel. Disable (=1): UTF-8 characters cannot be displayed in the operation panel. For example, job names are sometimes stored in the MIB using UTF-8 encoded characters. When these are displayed on the operation panel, they will be garbled unless this bit switch is enabled (=0).		
	bit 6	Disable super option	0:Enabled	1:Disabled
		Switches super option disable on / off. If this is On, multiple jobs are grouped at LPR port. P.JL settings are enabled even jobs that are specified queue names are sent.		
	bit 7	Enable/Disable Print from USB/SD's Preview function	0:Enabled	1:Disabled
		Determines whether print from USB/SD will have the Preview function. Enabled (=0): Print from USB/SD will have the Preview function. Disabled (=1): Print from USB/SD will not have the Preview function.		

1001	Bit Switch			
010	Bit Switch A		0	1
	bit 0 to 3	DFU	-	-
	bit 4	Not Used	-	-
	bit 5	Store and Skip Errored Job locks the queue	0: Queue is not locked after SSEJ	1: Queue locked after SSEJ

1001	Bit Switch			
		If this is 1, then after a job is stored using Store and Skip Errored Job (SSEJ), new jobs cannot be added to the queue until the stored job has been completely printed.		
	bit 6	Allow use of Store and Skip Errored Job if connected to an external charge device.	0: Does not allow SSEJ with ECD	1: Allows SSEJ with ECD
			If this is 0, Store and Skip Errored Job (SSEJ) will be automatically disabled if an external charge device is connected. Note: We do not officially support enabling this bit switch (1). Use it at your own risk.	
	bit 7	Job cancels remaining pages when the paid-for pages have been printed on an external charge device	Job does not cancel	Job cancels
		When setting 1 is enabled, after printing the paid-for pages on an external charge device, the job that includes any remaining pages will be canceled. This setting will prevent the next user from printing the unnecessary pages from the previous user's print job.		

1001	Bit Switch			
011	Bit Switch B		0	1
	bit 0 to 1	DFU	-	-
	bit 2	Switch for enabling or disabling Limitless Paper Feeding for the Bypass Tray	0: Enable	1: Disable
		When the Bypass Tray is the target of the Auto Tray Select and Any Size/Type is configured for the Tray Setting Priority setting of the Bypass Tray, this BitSwitch can switch the behavior whether or not Limitless Paper Feeding is applied to the Bypass Tray.* The default is Enabled (=0). *Limitless Paper Feeding will try a matching tray of the next highest priority if a job specified to Auto Tray Select as the tray setting is submitted and the tray runs out of paper. Enabled (=0: Default): Limitless Paper Feeding is applied to the Bypass Tray. If a tray other than the Bypass Tray matches the job's paper size and type but has run out of paper, printing will occur from the Bypass Tray. Disabled (=1): Limitless Paper Feeding is not applied to the Bypass Tray. If a tray other than the Bypass Tray matches the job's paper size and type but has run out of paper, printing will stop and an alert will appear on the LCD screen, stating that the tray has run out of paper. This prevents unexpected use of the Bypass Tray. Limitations when this BitSwitch is set to "1": - The "Paper Tray Priority: Printer" setting must be configured to a tray other than the Bypass Tray. - Jobs that contain more than one paper size cannot be printed.		
	bit 3	DFU	-	-
	bit 4	Add "Apply Auto Paper Select" is the condition that decides if the device's paper size or paper type should be overwritten.	0:Enabled	1:Disabled

1001	Bit Switch			
		If this BitSwitch is set to "1" (enabled), the "Apply Auto Paper Select" setting will decide if the paper size or paper type that is specified in the device settings should be overwritten by the job's commands when "Tray Setting Priority" is set to "Driver/Command" or "Any Type". - Apply Auto Paper Select = OFF: Overwritten (priority is given to the job's commands) - Apply Auto Paper Select = ON: Not overwritten (priority is given to the device settings)		
	bit 5 to 7	Not Used	-	-

1001	Bit Switch			
012	Bit Switch C		0	1
	bit 0	DFU	-	-
	bit 1 to 4	Not Used	-	-
		Change the user ID type displayed on the operation panel	0:Enabled	1:Disabled
	bit 5	As of 15S models, the Login User Name can be displayed on the operation panel. The user ID type displayed on the operation panel can be changed by configuring BitSwitch #12-5 as follows: - 0 (default): Login User Name - 1: User ID. If this is enabled, User ID will be displayed, which is equivalent to the behavior exhibited in 14A and earlier models.		
	bit 6 to 7	Not Used	-	-

1003	[Clear Setting]	
1003-001	Initialize System	Initializes settings in the System menu of the user mode.
1003-003	Delete Program	DFU

1004	[Print Summary]	
1004-001	Service Summary	Prints the service summary sheet (a summary of all the controller settings).

1005	[Display Version]	
1005-002	Printer Version	Displays the version of the controller firmware.

1006	[Sample/Locked Print]	
1006-001	0:Link with Doc. Srv 1:Enable	-

1101	[ToneCtlSet]	
1101-001	Tone (Factory)	-
	Recalls a set of gamma settings. This can be either a) the factory setting, b) the previous setting, or c) the current setting.	

1102	[Resolution Settings]	
	Sets the printing mode (resolution) for the printer gamma adjustment. The asterisk (*) shows which mode is set. ▪ 00: *1200x1200Photo ▪ 01: 600x600Text ▪ 02: 1200x1200Text ▪ 03: 1200x600Text ▪ 04: 600x600Photo ▪ 05: 1200x600Photo ▪ 06: 600x600Text ▪ 07: 600x600Text	
1102-001	Tone Control Mode Selection	[0 to 99 / 0 / 1/step]

1103	[PrnColorSheet]	
1103-001	ToneCtlSheet	Prints the test page to check the color balance before and after the gamma adjustment.
1103-002	ColorChart	

1104	[ToneCtlValue]	
	Adjusts the printer gamma for the mode selected in the Mode Selection menu.	
1104-001	Black: Highlight	[0 to 30 / 0 / 1/step]
1104-021	Cyan: Highlight	
1104-041	Magenta: Highlight	
1104-061	Yellow: Highlight	
1104-002	Black: Shadow	[0 to 30 / 0 / 1/step]
1104-022	Cyan: Shadow	
1104-042	Magenta: Shadow	
1104-062	Yellow: Shadow	
1104-003	Black: Middle	[0 to 30 / 0 / 1/step]
1104-023	Cyan: Middle	
1104-043	Magenta: Middle	
1104-063	Yellow: Middle	
1104-004	Black: IDmax	[0 to 30 / 0 / 1/step]
1104-024	Cyan: IDmax	
1104-044	Magenta: IDmax	
1104-064	Yellow: IDmax	

1105	[Save Tone Cntrol Value]	
	Saves the print gamma (adjusted with the Gamma Adj.) as the new Current Setting. Before the machine stores the new "current settingR", it moves the data stored as the "current setting" to the "previous setting" memory-storage location.	
1105-001	Save Tone Cntrol Value	[EXECUTE]

1106	[Toner Limit]	
	Adjusts the maximum toner amount for image development.	
1106-001	Toner Limit Value	[100 to 400 / 0 / 1/step]

1110	[Media Print Device Setting]	
	Enable or disable the media print support function. 0: Disable, 1:Enable	
1110-002	0: Disable 1:Enable	[0 to 1 / 1 / 1/step]

1111	[All Job Delete Mode]	
	- 0: Exclusive New Job, 1:Including New Job	
1110-002	0: Exclusive New Job 1: Including New Job	[0 or 1 / 1 / 1/step]

3.11 SCANNER SERVICE MODE

3.11.1 SCANNER SERVICE MODE

1001	[Scan Nv Version]		
1-001-005	-	*CTL	-
	Operates automatic initialization to ensure that scanner NV is initialized if necessary. To do this SP, specify the version of scanner NV within 9 characters. “Function name”_”Machine code”_”Serial number” - Function name: Enter “3”. - Machine code: Enter the machine code with three characters. - Serial number: Enter the number (default: 001).		

1005	[Erase margin(Remote scan)]		
1-005-001	Range from 0 to 5 mm	*CTL	[0 to 5 / 0 / 1 mm/step]
	Creates an erase margin for all edges of the scanned image. If the machine has scanned the edge of the original, create a margin. This SP is activated only when the machine uses TWAIN scanning.		

1009	[Remote scan disable]		
1-009-001	0:enable 1:disable	*CTL	[0 or 1 / 0 / - /step]
	Enable or disable remote scan.		

1010	[Non Display ClearLight PDF]		
1-010-001	0:Display 1:Nondisplay	*CTL	[0 or 1 / 0 / - /step]
	Display or nondisplay ClearLight PDF function.		

1011	[Org Count Disp]		
1-011-001	0:ON 1:OFF	*CTL	[0 or 1 / 0 / - /step]
	Display or nondislay original counter. 0: Displays remaining memory. 1: Displays original counter.		

1012	[UserInfo Release]		
1-012-001	0:No 1:Yes	*CTL	[0 or 1 / 1 / - /step]
	Set if the following user information is released or not. - Destination of the mail, folder, CS - Sender - Message - Subject - Fail name		

1013	[Scan to Media Device Setting]		
1-013-002	0:OFF 1:ON	*CTL	[0 or 1 / 1 / - /step]
	Enable or disable ScanTo media device.		

1014	[Scan to Folder Pass Input Set]		
1-014-001	0:OFF 1:ON	*CTL	[0 or 1 / 0 / - /step]
	Sets enable or disable the password setting when make a Scan to Folder job.		

1040	[Scan: LT/LG Mixed Sized Sizes Setting]		
1-040-001	0:OFF 1:ON	*CTL	[0 or 1/ 1 / - /step]

	Enables or disables mixing LT/LG size documents for scanner. 0: Disable, 1: Enable Default For North America: 1 Others: 0

1041	[Scan:FlairAPI Setting]			
1-041-001	0x00 – 0xff	*CTL	* see BitSwitch below:	
	Sets Scanner FlairAPI Function enable / disable. This SP is set by BitSwitch and needs to reboot the machine after making changes.			
bit	Setting	meanings		Description
		0	1	
bit 0	Start of FlairAPI Server	Off (Do not Start)	On (Start)	Sets whether to start exclusive FlairAPI http server. If it is 0, scanning FlairAPI function and simple UI function will be disabled.
bit 1	Access permission of FlairAPI from outside of the machine	Disabled	Enabled	If it is “0”, accessing is limited from the machine only, such as operating panel, SDK/J, MFP browsers etc... If it is “1”, accessing is allowed from outside of FlairAPI such as PC, Remote UI, IT-Box etc...

bit 2	IPv6 (Exclusive) / IPv4 (Priority) Switching	IPv6 (Exclusive)	IPv4 (Priority)	If this bit is “0”, only IPv6 accessing is permitted. If this bit is “1” and IPv4 is enabled, the machine uses IPv4 accessing. If this bit is “1” and IPv4 is disabled, the machine uses IPv6 accessing. In this case, it is unable to access through Smart Operation Panel if IPv4 address is enabled.
bit 3	Remote UI Function	Not Used	Use	Sets use of Remote UI for scanner function.
bit 4	Reserved	-	-	-
bit 5	Reserved	-	-	-
bit 6	Reserved	-	-	-
bit 7	Reserved	-	-	-

SP2-XXX (Scanning-image quality)

2021	[Compression Level(Grayscale)]		
	Selects the compression ratio for grayscale processing mode (JPEG) for the five settings that can be selected at the operation panel.		
2-021-001	Comp1:5-95	*CTL	[5 to 95 / 20 / 1 /step]
2-021-002	Comp2:5-95	*CTL	[5 to 95 / 40 / 1 /step]
2-021-003	Comp3:5-95	*CTL	[5 to 95 / 65 / 1 /step]
2-021-004	Comp4:5-95	*CTL	[5 to 95 / 80 / 1 /step]
2-021-005	Comp5:5-95	*CTL	[5 to 95 / 95 / 1 /step]

2024	[Compression ratio of ClearLightPDF]		
	Selects the compression ratio for clearlight PDF for the two settings that can be selected at the operation panel.		
2-024-001	Compression Ratio(Normal)	*CTL	[5 to 95 / 25 / 1 /step]
2-024-002	Compression Ratio(High)	*CTL	[5 to 95 / 20 / 1 /step]

2025	[Compression ratio of ClearLightPDF JPEG2000]		
	Selects the compression ratio for clearlight PDF for the two settings that can be selected at the operation panel.		
2-025-001	Compression Ratio(Normal) JPEG2000	*CTL	[5 to 95 / 25 / 1 /step]
2-025-002	Compression Ratio(High) JPEG2000	*CTL	[5 to 95 / 20 / 1 /step]

2030	[OCR PDF DetectSens]		
2-030-001	White Lumi Value: 0 - 255	*CTL	[0 to 255 / 250 / 1 / step]
2-030-002	White Pix Ratio: 0 - 100	*CTL	[0 to 100 / 80 / 1 / step]
2-030-003	White Tile Ratio: 0 -100	*CTL	[0 to 100 / 80 / 1 / step]

3.12 INPUT AND OUTPUT CHECK

3.12.1 INPUT CHECK TABLE

When entering the Input Check mode, 8 digits display the result for a section. Each digit corresponds to a different device as shown in the table.

Bit No.	7	6	5	4	3	2	1	0
Result	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1

SP	Description	Reading	
		0	1
5803	[INPUT Check]		
5-803-001	Registration Sensor	Paper detected	Paper not detected
5-803-002	Tray Paper End Detection Sensor	Paper detected	Paper not detected
5-803-003	Bypass Paper End Detection Sensor	Paper detected	Paper not detected
5-803-004	Bypass Paper Width Detection Sensor	Paper detected	Paper not detected
5-803-006	Duplex Exit Sensor	Paper detected	Paper not detected
5-803-007	Exit Sensor	Paper detected	Paper not detected
5-803-008	Duplex Entrance Sensor	Paper detected	Paper not detected
5-803-010	By-pass Lift Positon Sensor	Up	Down
5-803-011	Tray Exit Sensor	Paper detected	Paper not detected
5-803-012	Interlock Release Detection 1	Door open	Door close
5-803-013	Interlock Release Detection 2	Door open	Door close
5-803-014	Right Cover Sensor	Door close	Door open

SP	Description	Reading	
		0	1
5-803-016	Image Transfer Contact HP Sensor	Not contact	Contact
5-803-019	Toner Collection Full Sensor	Not full	Full
5-803-020	Toner Collection Bottle Set Detection Sensor	Set	Not set
5-803-022	Toner End Sensor: Y	Not end	End
5-803-023	Toner End Sensor: M	Not end	End
5-803-024	Toner End Sensor: C	Not end	End
5-803-026	Fusing Entrance Sensor	Paper detected	Paper not detected
5-803-027	Fusing Exit Sensor	Paper detected	Paper not detected
5-803-028	Set and Destination Detection	-	-
5-803-029	Fusing New Unit Detection	New	Not new
5-803-030	Fusing High Temp Detection	Detected	Not detected
5-803-031	Zero-cross Signal	Not detected	Detected
5-803-032	Fusing Fan: Lock	Lock	Normal
5-803-033	Laser Unit Fan: Lock	Lock	Normal
5-803-034	PSU Fan: Lock	Lock	Normal
5-803-035	PCDU Cooling Fan: Lock	Lock	Normal
5-803-038	Bk Drum Motor: Lock	Lock	Normal
5-803-039	FC Dev Motor: Lock	Lock	Normal
5-803-040	FC Drum Motor: Lock	Lock	Normal
5-803-041	Fusing Motor: Lock	Lock	Normal
5-803-042	Transport Motor: Lock	Lock	Normal
5-803-044	PP:CB:SC Detection	SC detected	No SC

Input and Output Check

SP	Description	Reading	
		0	1
5-803-045	PP:T1T2:SC Detection	SC detected	No SC
5-803-047	Key Counter 1: Set Detection	Set	Not set
5-803-048	Key Counter 2: Set Detection	Not set	Set
5-803-049	Keycard: Set Detection	Set	Not set
5-803-050	1-Bin:Exit Sensor	Paper detected	Paper not detected
5-803-051	1-Bin:Paper Remaining Sensor	Paper detected	Paper not detected
5-803-052	1-Bin: Set Detection	Set	Not set
5-803-053	Tray Lift Sensor	Down	Up
5-803-054	Tray Set Detection	Set	Not set
5-803-056	BiCU Version Detection	-	-
5-803-058	Enviro Fan1: Lock	-	-
5-803-059	Enviro Fan2: Lock	-	-
5-803-060	PFU Vertical Transport Sen. 1	Paper not detected	Paper detected
5-803-061	PFU Vertical Transport Sen. 2	Paper not detected	Paper detected
5-803-062	PFU Door Sensor 1	Close	Open
5-803-063	PFU Door Sensor 2	Close	Open
5-803-071	Option Cover Set Detecion SW	-	-
5-803-094	LD Off Check	-	-
5-803-200	Scanner HP Sensor	HP	Not HP
5-803-201	Platen Cover Sensor	Close	Open

SP	Description	Reading	
		0	1
6007	[ADF INPUT Check]		
6-007-009	ARDF Original Sensor	-	-
6-007-013	ARDF Registration Sensor	-	-
6-007-015	ARDF Feed Cover Sensor	-	-

3.12.2 OUTPUT CHECK TABLE

Activates the electrical components for functional check.

It is not possible to activate more than one component at the same time.

SP	Display	Description
5804	[OUTPUT Check]	
5-804-001	Registration Clutch	-
5-804-002	Paper Feed Clutch	-
5-804-003	Duplex Clutch	-
5-804-004	Bypass Feed Clutch	-
5-804-005	Bypass Lift Clutch	-
5-804-007	Tray Lift Motor	-
5-804-009	Fusing Fan: High Speed	-
5-804-010	Fusing Fan: Low Speed	-
5-804-011	Laser Unit Fan: High Speed	-
5-804-012	Laser Unit Fan: Low Speed	-
5-804-013	PSU Fan: High Speed	-

Input and Output Check

SP	Display	Description
5-804-014	PSU Fan: Low Speed	-
5-804-015	PCDU Cooling Fan: High Speed	-
5-804-016	PCDU Cooling Fan: Low Speed	-
5-804-021	TM Sensor Shutter Solenoid	-
5-804-022	Bk Drum Motor: Std Speed 1	-
5-804-023	Bk Drum Motor: Low Speed	-
5-804-024	FC Dev Motor: Std Speed 1	-
5-804-025	FC Dev Motor: Low Speed	-
5-804-026	Development Clutch: Bk	-
5-804-027	FC Drum Motor: Std Speed 1	-
5-804-028	FC Drum Motor: Low Speed	-
5-804-029	Fusing Motor: Standard Speed 1	-
5-804-030	Fusing Motor: Low Speed	-
5-804-031	Transport Motor: Std Speed 1	-
5-804-032	Transport Motor: Low Speed	-
5-804-033	Image Transfer Contact Motor	-
5-804-035	Toner Supply Motor: Y	-
5-804-036	Toner Supply Motor: M	-
5-804-037	Toner Supply Motor: C	-
5-804-038	Toner Supply Motor: Bk	-
5-804-039	Toner End Sensor Power	-
5-804-042	ID Tag: Power Supply Control	-
5-804-043	Toner Sensor Power	-

SP	Display	Description
5-804-044	PP:Charge DC:Y	-
5-804-045	PP:Charge DC:M	-
5-804-046	PP:Charge DC:C	-
5-804-047	PP:Charge DC:Bk	-
5-804-048	PP:Development: Y	-
5-804-049	PP:Development: M	-
5-804-050	PP:Development: C	-
5-804-051	PP:Development: Bk	-
5-804-053	PP: Image Transfer: YMC	-
5-804-056	PP: Image Transfer: Bk	-
5-804-057	PP: Paper Transfer: +	-
5-804-058	PP: Paper Transfer: -	-
5-804-059	PP:Charge AC:Y	-
5-804-061	PP:Charge AC:M	-
5-804-063	PP:Charge AC:C	-
5-804-065	PP:Charge AC:Bk	-
5-804-071	TM/ID Sensor: Front	-
5-804-072	TM/ID Sensor: Center	-
5-804-073	TM/ID Sensor: Rear	-
5-804-074	Enviro Fan1,2: H	-
5-804-075	Enviro Fan1,2: L	-
5-804-080	PFU Transport Motor 1: High	-
5-804-081	PFU Transport Motor 1: Low	-

Input and Output Check

SP	Display	Description
5-804-082	PFU Transport Motor 2: High	-
5-804-083	PFU Transport Motor 2: Low	-
5-804-084	PFU Paper Feed CL1	-
5-804-085	PFU Paper Feed CL2	-
5-804-086	PFU Vertical Transport CL1	-
5-804-087	PFU Vertical Transport CL2	-
5-804-088	Exit Junction Sol: CW	-
5-804-089	Exit Junction Sol: CCW	-
5-804-090	Bk Drum Motor: Standard Speed 2	-
5-804-091	Fusing Motor: Standard Speed 2	-
5-804-092	Transport Motor: Standard Speed 2	-
5-804-093	Bk Drum Motor: Middle Speed	-
5-804-094	FC Dev Motor: Middle Speed	-
5-804-095	FC Drum Motor: Middle Speed	-
5-804-096	Fusing Motor: Middle Speed	-
5-804-097	Transport Motor: Middle Speed	-
5-804-103	Polygon Motor1: Standard2	-
5-804-104	Polygon Moter1: Standard	-
5-804-105	Polygon Motor1: Low	-
5-804-107	Polygon Motor2: Standard2	-
5-804-108	Polygon Moter2: Standard	-
5-804-109	Polygon Motor2: Low	-

SP	Display	Description
5-804-111	Polygon Motor1,2: Standard2	-
5-804-112	Polygon Moter1,2: Standard	-
5-804-113	Polygon Motor1,2: Low	-
5-804-202	Scanner Lamp: Color 600	-
5-804-203	Scanner Lamp: Color 1200	-
5-804-204	Scanner Lamp: Bk	-
5-804-216	LD1: Bk	-
5-804-217	LD2: Bk	-
5-804-218	LD1: Ma	-
5-804-219	LD2: Ma	-
5-804-220	LD1: Cy	-
5-804-221	LD2: Cy	-
5-804-222	LD1: Ye	-
5-804-223	LD2: Ye	-

D196

SMART OPERATION PANEL

2nd GENERATION

REVISION HISTORY		
Page	Date	Added/Updated/New
		None

SMART OPERATION PANEL

2nd GENERATION

(D196)

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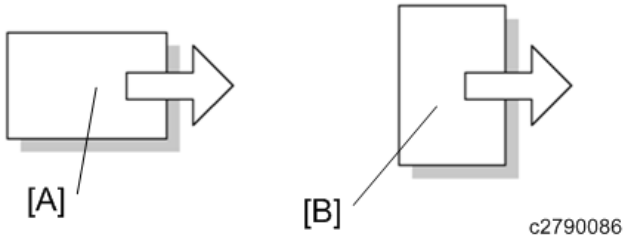
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READ THIS FIRST

Symbols, Abbreviations and Trademarks

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

	Clip ring
	Screw
	Connector
	Clamp
SEF	Short Edge Feed
LEF	Long Edge Feed



[A] Short Edge Feed (SEF)

[B] Long Edge Feed (LEF)

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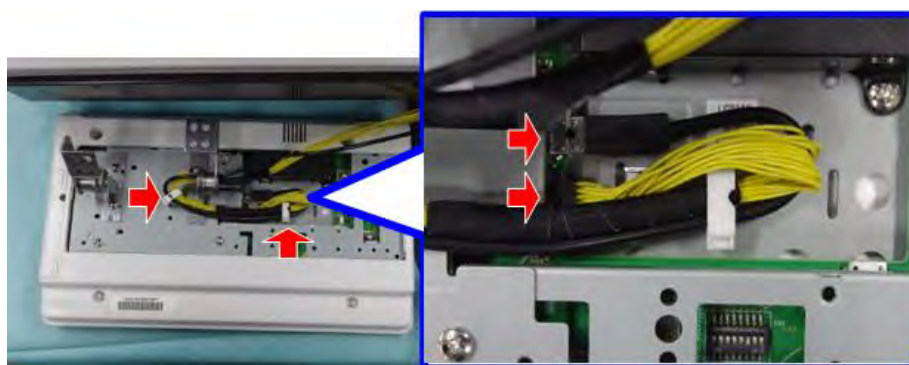
1. REPLACEMENT AND ADJUSTMENT

1.1 SMART OPERATION PANEL

1.1.1 OPERATION PANEL UNIT

★ Important

- Turn off the main power switch of the MFP and disconnect the power cord.
- After replacing, make sure that all disconnected harnesses are connected up again and secured in their clamps (if the MFP has harnesses).



d196z4105

1. Remove the operation panel unit from the MFP.

↓ Note

- For details about how to remove the operation panel unit, refer to the service manual for the MFP.

2. Operation panel arm bracket [A] (⌀×4)

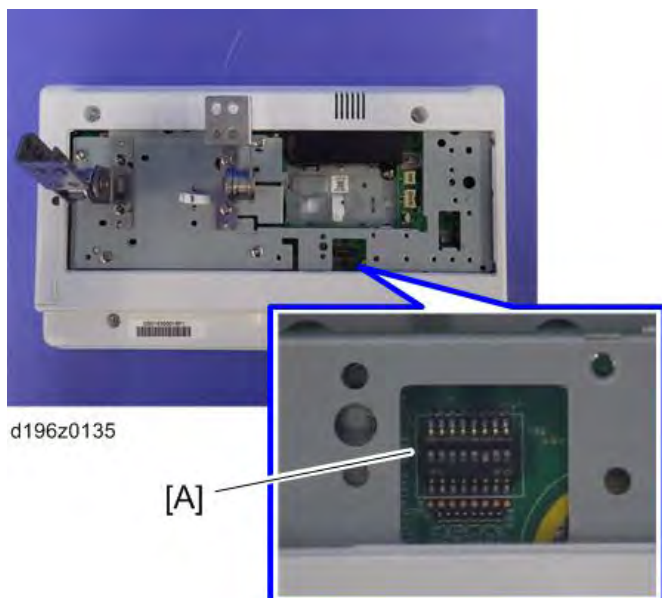


d196z0113

↓ Note

- By factory default, switches No.3 and No.7 of the DIP switch [A] on the micro computer board are set to ON. When installing the operation panel unit, make sure that the DIP switch setting is correct for the MFP on which you are installing the panel.

Smart Operation Panel



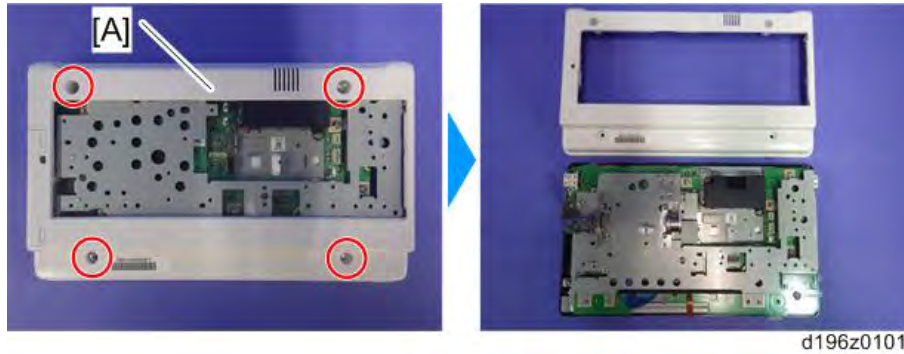
- The correct DIP switch setting depends on the MFP. Note the DIP switch settings of the old operation panel unit before replacing, and apply the same settings to the new Smart Operation Panel. (Below are two examples for DIP switch settings.)

When No.3 and No.7 are set to ON ▪ This is the factory default setting of a service part	When only No.3 is set to ON
 d196z0136	 d196z0137

- If the DIP switch setting is wrong, SC672 will be displayed.
- After replacing the operation panel unit, make sure that the latest version of the firmware is installed on the Smart Operation Panel. Update it if necessary (page 55 "Updating the Smart Operation Panel").

1.1.2 CPU BOARD

1. Operation panel unit (page 1)
2. Bottom cover [A] (🔑×4)

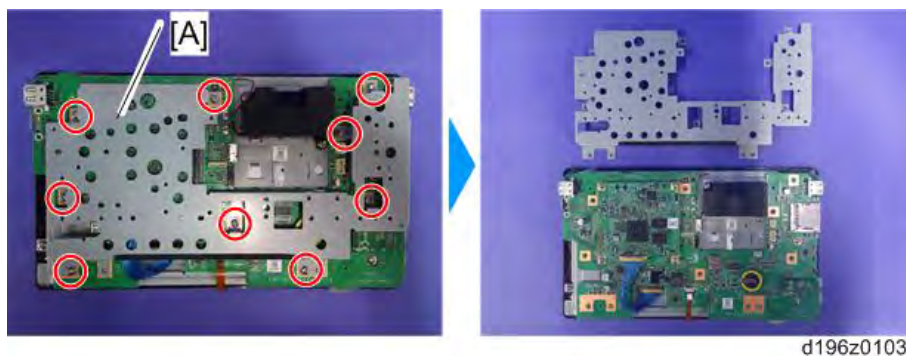


↓ Note

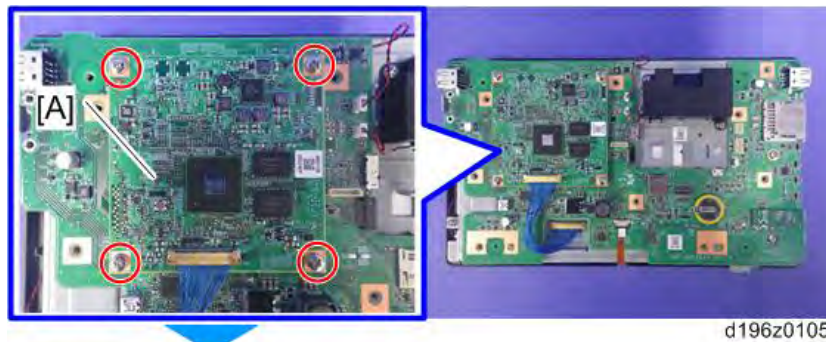
- There are four hooks inside the operation panel unit. Before removing the operation panel bottom cover, check the photos below.



3. Base bracket [A] (🔑×9)



4. Remove the fixing screws (🔑×4) on the CPU board [A], and remove the CPU board from the micro computer board.



Note

- Make sure that the orientation of the connector is correct when attaching the CPU board.



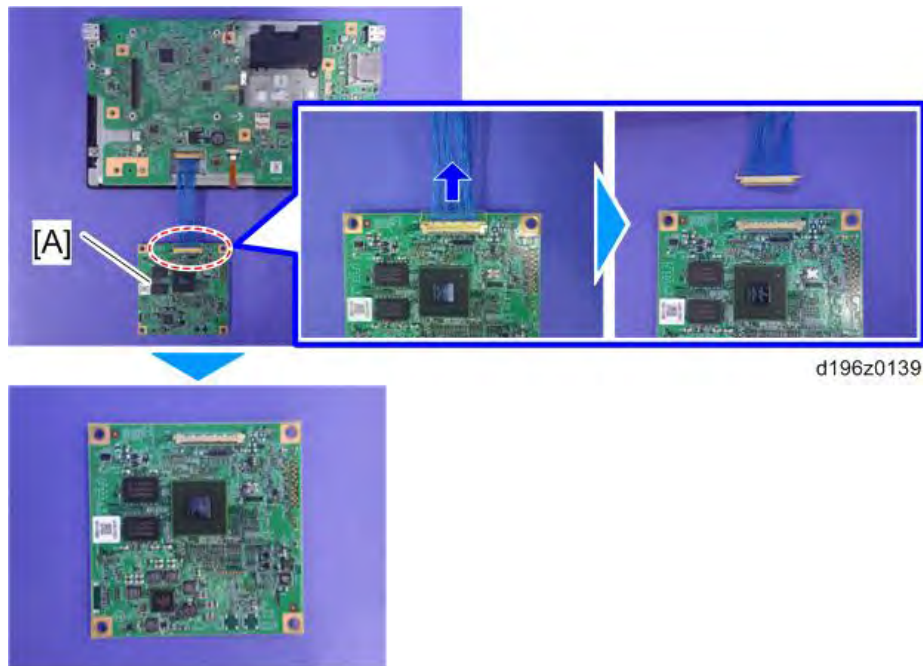
d196z0134

- Lift the fastener of the LCD I/F cable on the CPU board side.



d196z0115

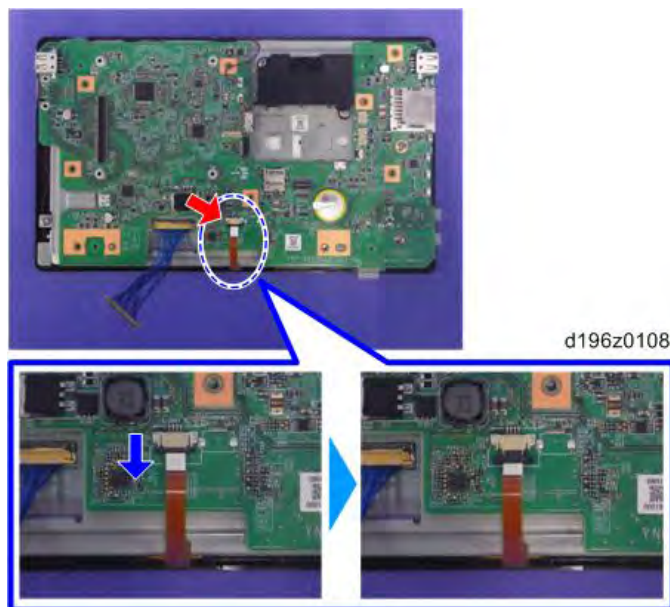
- CPU board [A] (LCD I/F cable ×1)

**Note**

- After replacing the CPU board, make sure that the latest version of the firmware is installed on the Smart Operation Panel. Update it if necessary. (page 55 "Updating the Smart Operation Panel")

1.1.3 MICRO COMPUTER BOARD

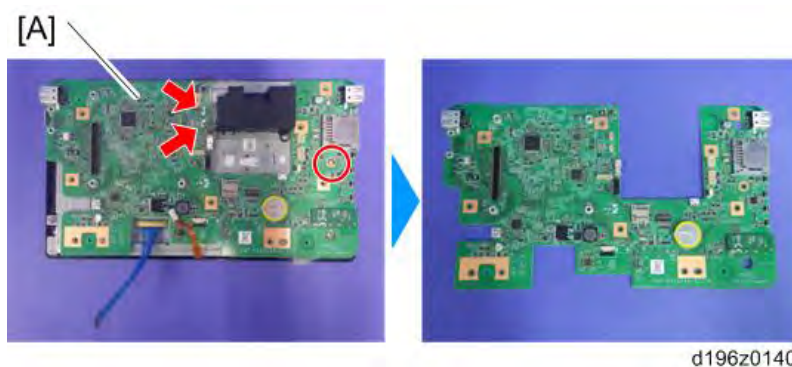
1. Operation panel unit (page 1)
2. CPU board (page 3)
3. Remove the FFC from the micro computer board ( ×1).



Note

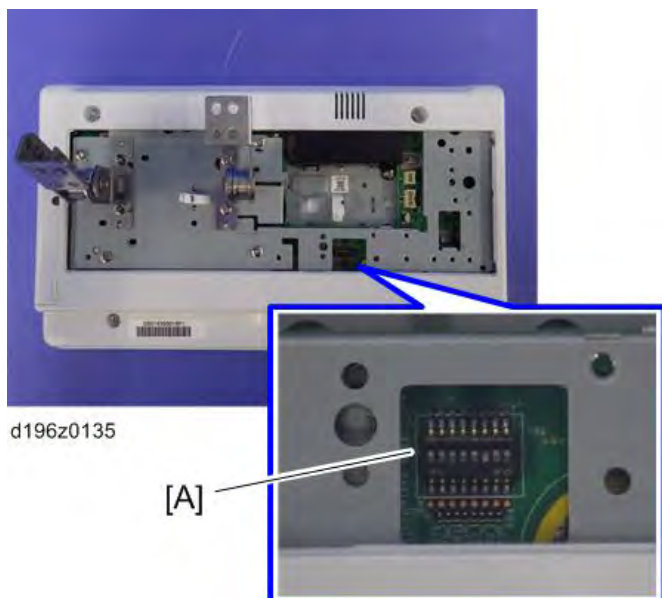
- Pull out the black part to unlock the connector, and then remove the FFC.

4. Micro computer board [A] ( ×1,  ×2)

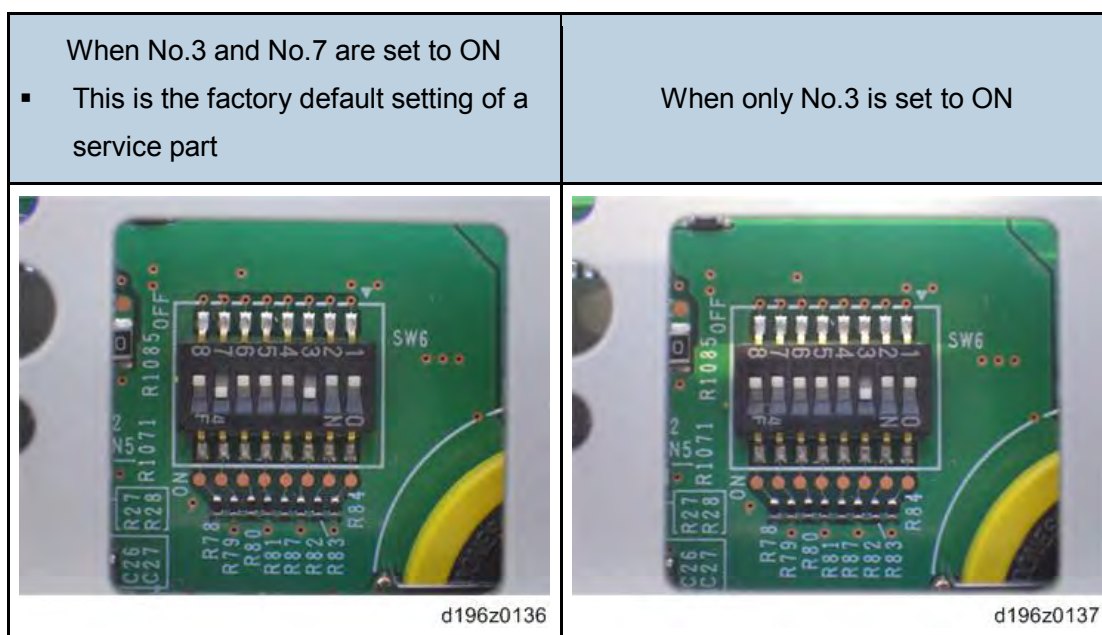


Note

- By factory default, switches No.3 and No.7 of the DIP switch [A] on the micro computer board are set to ON. When installing the operation panel unit, make sure that the DIP switch setting is correct for the MFP on which you are installing the panel.



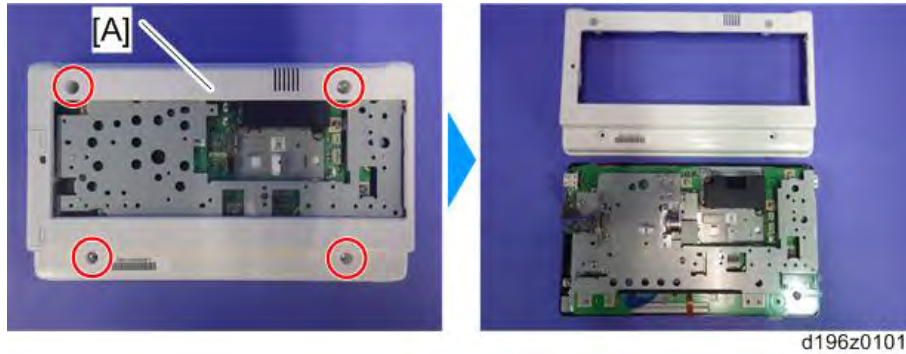
- The correct DIP switch setting depends on the MFP. Note the DIP switch settings of the old operation panel unit before replacing, and apply the same settings to the new Smart Operation Panel. (Below are two examples for DIP switch settings.)



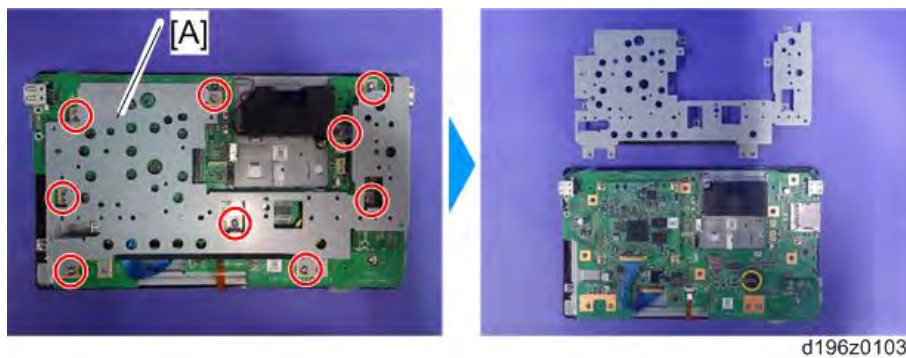
- If the DIP switch setting is wrong, SC672 will be displayed.
- After replacing the micro computer board, perform the following checks:
 - LED Check (page 46)
 - Key Check (page 46)

1.1.4 WI-FI MODULE

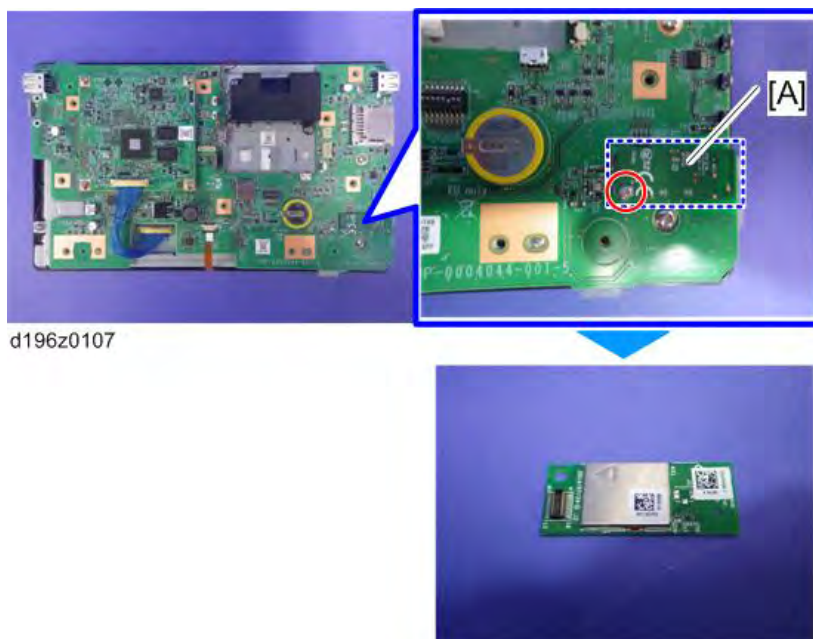
1. Operation panel unit (page 1)
2. Bottom cover [A] (🔑×4)



3. Base bracket [A] (🔑×9)



4. Wi-Fi module [A] (🔑×1)

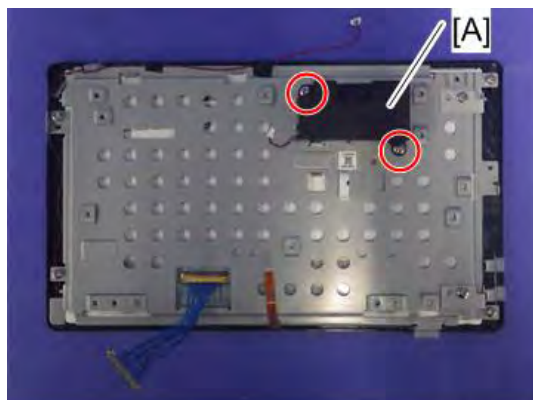


Note

- After replacing the Wi-Fi module, perform the following checks:
 - Wireless LAN Check (page 52)
 - Bluetooth Check (page 53)

1.1.5 LCD

1. Operation panel unit (page 1)
2. CPU board (page 3)
3. Micro computer board (page 6)
4. Speaker [A] (🔊×2)

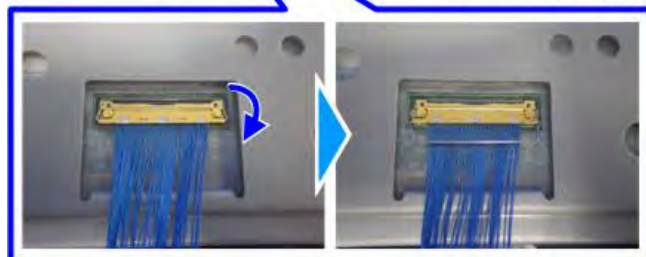


d196z0109

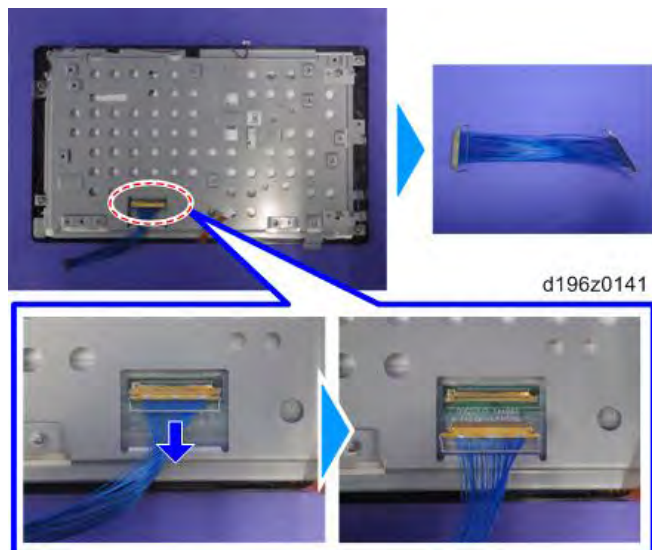
5. Lift the fastener of the LCD I/F cable.



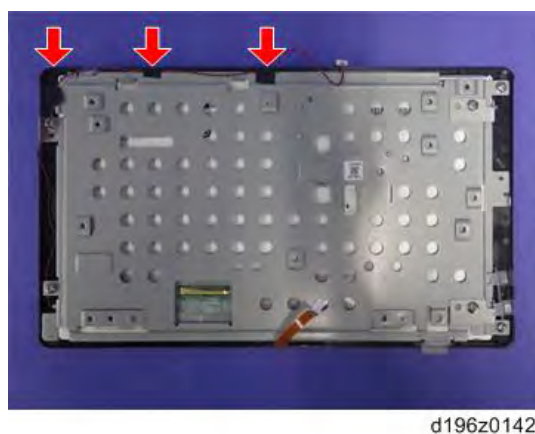
d196z0116



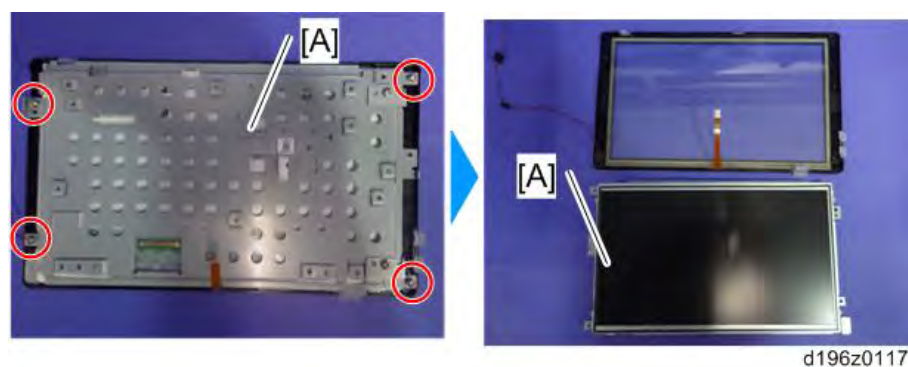
6. LCD I/F cable (cable ×1)



7. Remove the tapes for fixing the microphone harness (tape ×3).



8. LCD [A] (⌘ ×4)

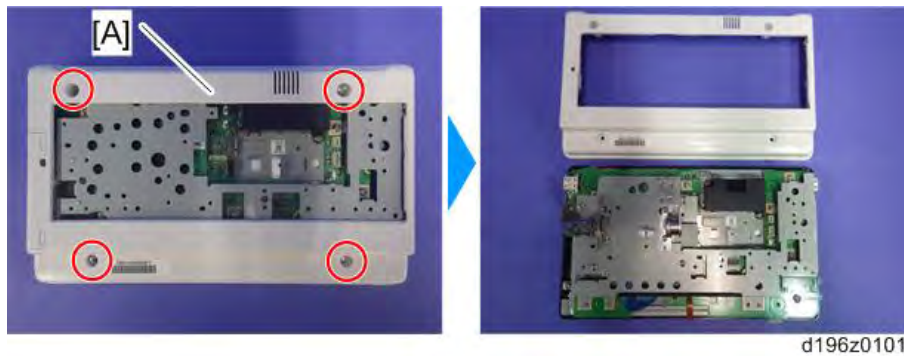


Note

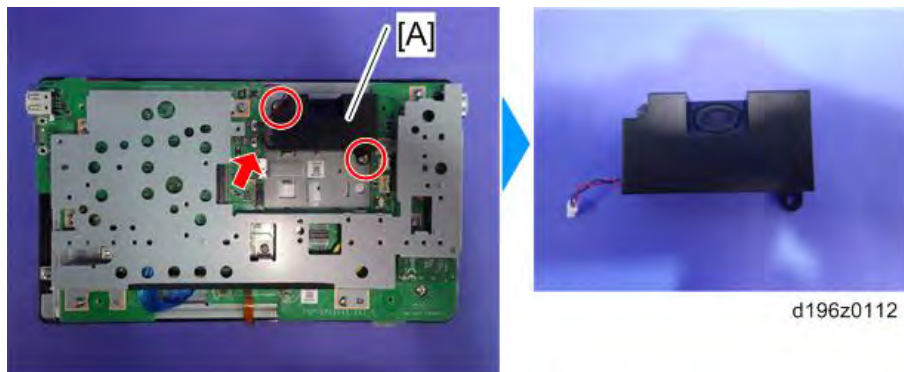
- After replacing the LCD, perform the following checks.
 - LCD Check (page 47)
 - TouchPanel Check (page 49)
- Perform "TouchPanel Calibration" and "MultiTouch Calibration" of the Self Check function.

1.1.6 SPEAKER

1. Operation panel unit (page 1)
2. Bottom cover [A] (🔑×4)



3. Speaker [A] (🔑×2, 📦×1)

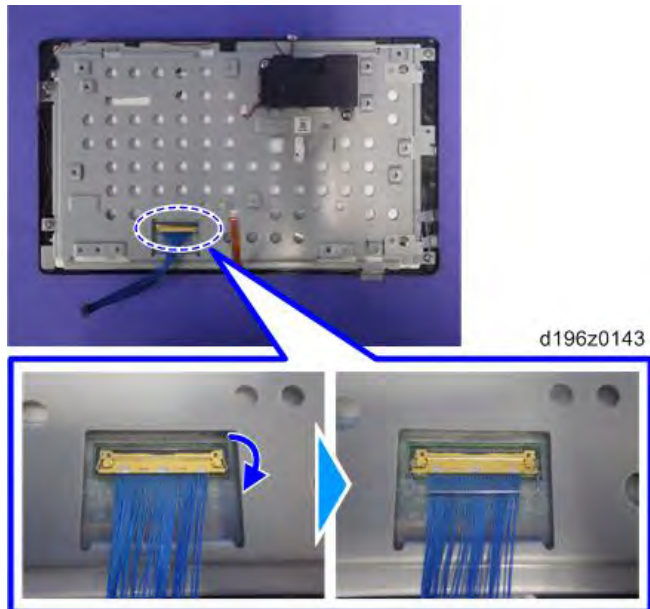


↓ Note

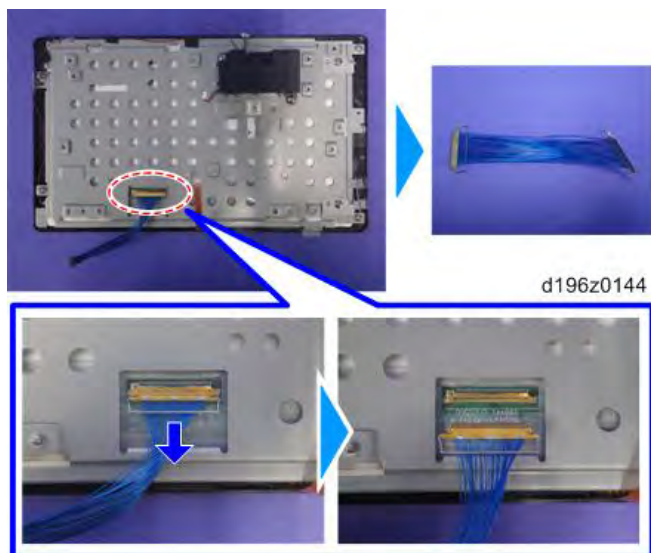
- After replacing the speaker, perform the following check.
 - Speaker Check (page 48)

1.1.7 MICROPHONE

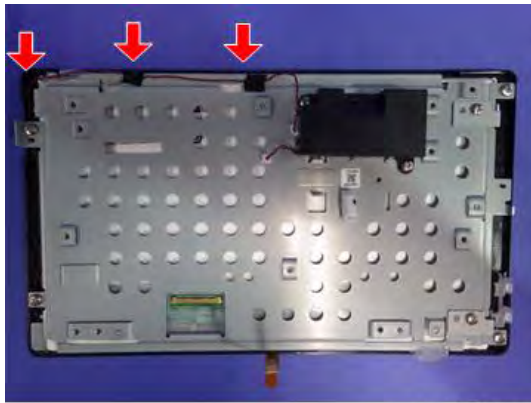
1. Operation panel unit (page 1)
2. CPU board (page 3)
3. Micro computer board (page 6)
4. Lift up the securing wire of the LCD I/F cable.



5. LCD I/F cable (cable ×1)

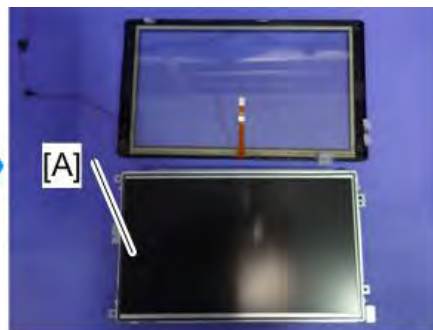
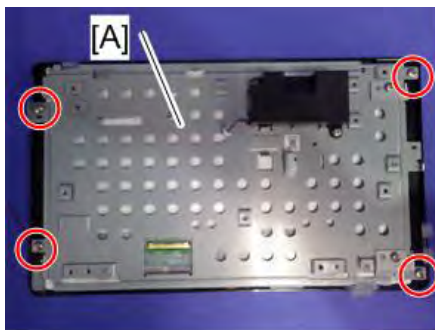


6. Remove the tapes for fixing the microphone harness (tape ×3).



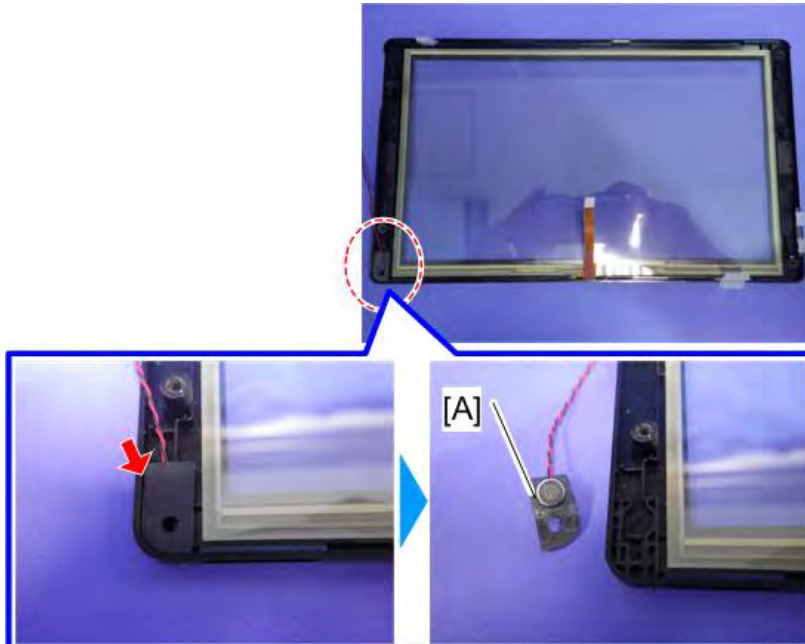
d196z0114

7. LCD [A] (⚙️ ×4)



d196z0118

8. Microphone [A] (cushioning ×1)



d196z0111

2. MECHANISM

2.1 OVERVIEW

2.1.1 SYSTEM COMPONENTS

Hardware Specifications

Components



d196a2022

No.	Name	No.	Name
1	Speaker	13	[Check Status] indicator
2	[Login/Logout] key	14	[Check Status] key
3	Main power indicator	15	Data In indicator (facsimile and printer modes)
4	[Energy Saver] key	16	Fax indicator
5	USB slot for digital cameras	17	Extended Feature key (EX3)
6	HDMI slot	18	Extended Feature key (EX2)
7	USB slot for NFC card readers	19	Extended Feature key (EX1)
8	Microphone	20	Control panel reboot key
9	[Stop] key	21	SD card slot

No.	Name	No.	Name
10	[Menu] key	22	Media access lamp
11	[Home] key	23	USB slot
12	[Back] key		

Basic Specifications

Category	Specification
LCD panel	- Size 10.1 inch panel - Resolution WSVGA (1024x600) - Bit width RGB666 (18 bit color) - Brightness 200cd/m² (typ.) - Backlight LED Backlight (life: 15,000 hours)
CPU	ARM Cortex-A9 Dual Core 1GHz (SoC: MCIMX6D5EYM10AC)
Touch panel	Low load touch panel (recognizes touches to two points)
Memory	- Volatile Memory RAM (DDR3-1066), 2G - Non-Volatile Memory eMMC NAND, 8GB  Note - Uses a 16GB product in SLC Mode. - Program area and data area for the operating system and applications.

Category	Specification
External interfaces	▪ USB Memory USB2.0 Host Type-A ▪ SD Card SD card slot 1ch (SD*¹/SDHC*²) *1 Up to 2GB *2 Up to 32GB ▪ USB expansion USB2.0 Host Type-A (for camera, USB keyboard, USB card reader) ▪ USB expansion USB2.0 Host Type-miniB (for NFC expansion) ▪ HDMI HDMI 1.4 (for large screens available as custom order)
Internal interfaces	▪ Extended Features microSD card slot
Network	▪ Wireless LAN 802.11b/g/n ▪ Bluetooth Bluetooth4.0
Audio input/output	Monaural speaker 1ch (output: 1 to 2 W), Microphone
RTC accuracy	±52.56 seconds per month (using external crystal oscillator, 20 ppm)
Hard keys	▪ Extended Feature keys (EX1, EX2, and EX3) Use for startup in extended mode etc. ▪ Control panel reboot key Use to reboot the control panel when it freezes.

Category	Specification
LED types	▪ Main power indicator (blue) Lights when the power is on. Flashes slowly in Sleep mode. ▪ [Check Status] indicator lamp (red/blue) Lights when an error occurs. ▪ Data In indicator (blue) Flashes when the machine receives data from a printer driver or LAN-Fax driver. ▪ Fax indicator (blue) Flashes while sending or receiving a fax. Lights when there is a received fax document in the fax memory. ▪ Media access lamp (blue) Lights when there is an SD card inserted in the SD card slot.
Maximum power consumption	4 W or less (excluding external interfaces and internal feature expansions)
Power consumption in Sleep mode	0.35 W or less (When in Sleep mode, power is not supplied to USB devices connected to the USB slots.)

Specification comparison with the previous model

Item	This model	Previous model
Appearance	 d196a2016	 d196a2017
Control panel size (Width × Height)	267 × 160 mm	345 × 161 mm
CPU operating frequency	1 GHz	533 MHz
RAM size	2 GB	1 GB
LCD panel size	10.1 inch	10.1 inch

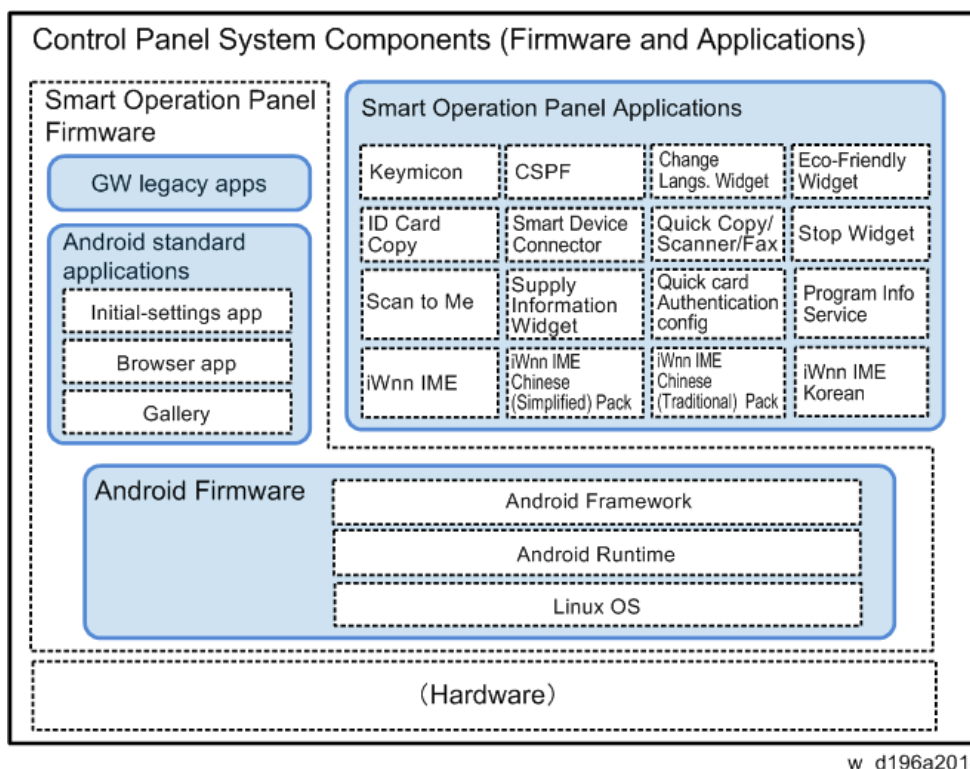
Item	This model	Previous model
Android OS	Version. 4.2	Version. 2.3
Types of the following keys ▪ [Home] key ▪ [Stop] key ▪ [Check Status] key ▪ [Back] key ▪ [Menu] key	Soft keys	Hard keys
LED types	Four types ▪ Main power indicator ▪ [Check Status] indicator ▪ Data In indicator ▪ Media access lamp	Seven types ▪ Main power indicator ▪ [Check Status] indicator ▪ Data In indicator ▪ Media access lamp ▪ [Home] key ▪ [Menu] key ▪ [Back] key
Wireless LAN interface	IEEE802.11bgn	IEEE802.11bgn
Types of external interfaces	▪ USB port (type A/mini) ▪ USB media slot ▪ SD card slot	▪ USB port (mini) ▪ USB media slot ▪ SD card slot
Bluetooth	Available	Not available

Available languages

Japanese, English, French, German, Italian, Spanish, Dutch, Norwegian, Danish, Swedish, Polish, Portuguese, Hungarian, Czech, Finnish, Simplified Chinese, Traditional Chinese, Russian, Greek, Korean, Catalan, Turkish, Brazilian Portuguese

Software Specifications

A software package consisting of the Android Firmware and the manufacturer's own pre-installed applications is installed on the Smart Operation Panel.



The following three types of software are installed on the Smart Operation Panel.

1. Android Firmware (Android OS)
2. Pre-installed applications
3. Applications that can be installed additionally

Android Firmware (Android OS)

The Android Firmware (Android OS) consists of the following modules that are called “stacks”.

- Linux kernel
- Android Runtime
- Library
- Application Framework

Pre-installed applications

On the Smart Operation Panel, applications such as the GW applications (Copy/Printer/Document Server/Scanner/Fax), Control Panel Browser, the standard keyboard, Installer, Gallery, Self Check are pre-installed. Unlike those installed on the controller board of the MFP, GW applications that are installed on the Smart Operation Panel are for controlling operation and display of the Smart Operation Panel.

Pre-installed applications are provided as part of the control panel firmware (Cheetah System) together with the Android firmware. When you update the control panel firmware using the recovery mode or another method, the pre-installed applications will also be updated.

Applications that can be installed

On the Smart Operation Panel, applications can be installed in addition to the pre-installed applications.

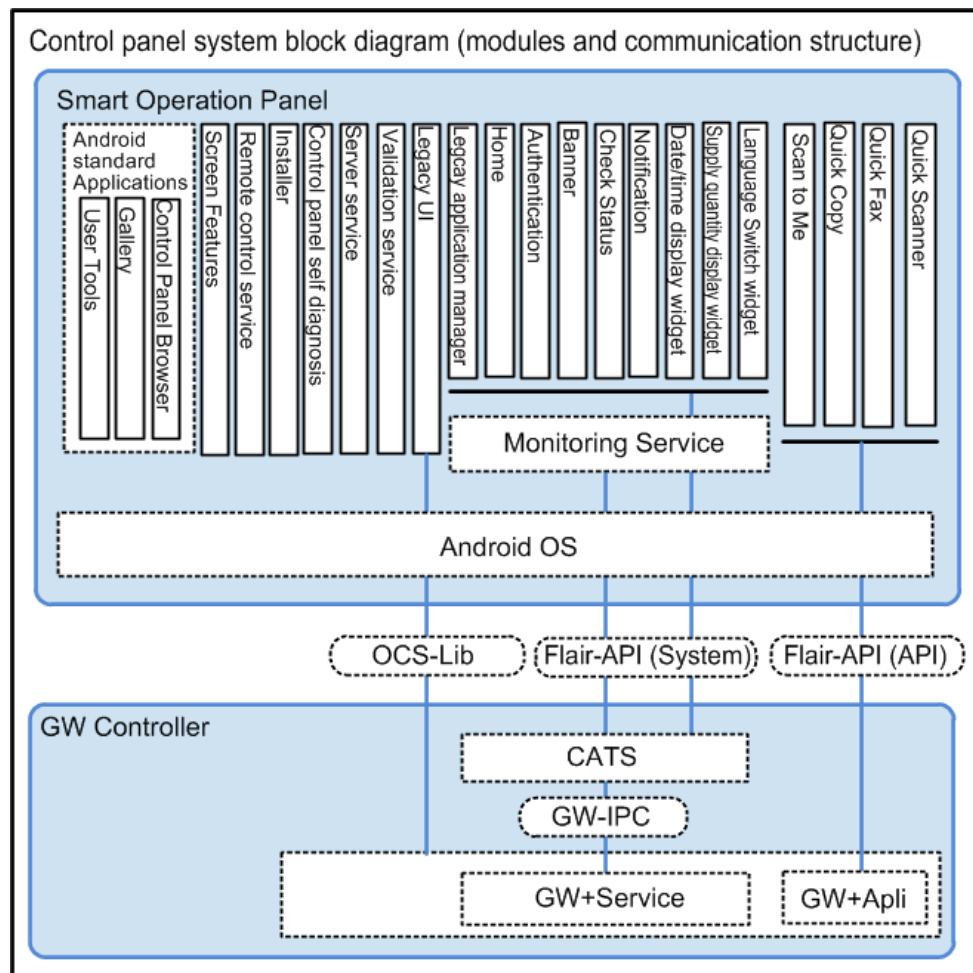
Applications that can be installed include optional applications that customers can purchase, applications that are installed only on machines sold in specific regions, and custom-made applications.

On an MFP, applications such as Simple UI applications (Quick Copy, Quick Fax, and Quick Scanner) and Scan to Me are installed.

Communication specifications

The Smart Operation Panel and the GW controller are connected by a USB 2.0 cable. They communicate with each other via the Android OS on the Smart Operation Panel, using protocols called “OCS Library” and “Flair-API (System/Application)”.

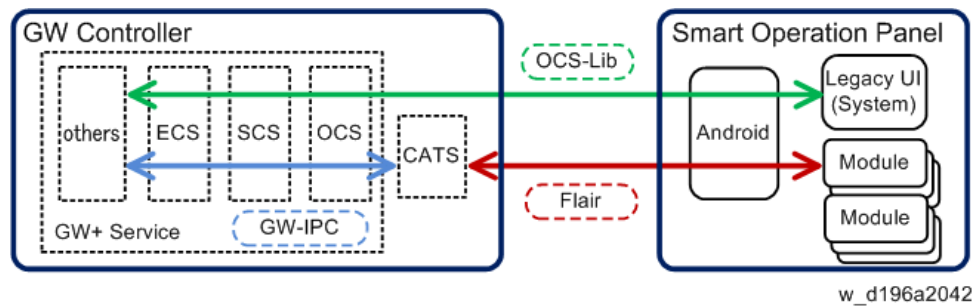
System block diagram



w_d196a2015

Overview of Components

Communication module/signal name	Details
OCS Library	OSC stands for Operating Control Service. It is a module that controls the control panel. The set of signals used by this module to control the control panel are called the OCS Library. It is used during communication between the Legacy UI (system) module on the Smart Operation Panel and the GW module for the following processes. - Deciding on the display format suitable for a particular model of the control panel, so that the intended image data can be converted to actual image data. - Converting touch panel operations to commands.
Flair-API (System/Application)	Flair is the manufacturer's own communication interface between software modules. The interface uses a generic WebAPI. It is divided into two parts: a part that communicates directly with applications such as the application manager, Home, Authentication, Banner, Check Status, and Widgets, and a part that monitors applications. It communicates with the GW controller via the CATS module.
CATS	CATS stands for Cheetah Application Total System. It is a module in the GW controller. Because the Smart Operation Panel uses the Android OS, the contents and protocols of communication are not the same as those of the conventional control panel. CATS serves as an intermediary between the GW controller and the Smart Operation Panel. It also controls the power status of the control panel. CATS communicates with the Smart Operation Panel using the Flair-API, and communicates with the GW module using the GW-API.
GW-IPC	The name of the interface used among modules in the GW controller. The role is the same as that of the Flair-API.



Note

- API stands for Application Programming Interface. An API is an interface that software modules use in order to communicate with each other.

Application Specifications

The pre-installed applications and applications that can be additionally installed on the Smart Operation Panel can be classified into the following 3 categories.

- System applications**
Applications that operate in conjunction with multiple functions (operating regardless of the application)
- Program applications**
Applications that provide a single additional function
- Widget applications**
Applications that provide a widget

The following table explains the function of each application.

Application	Functions
Settings	Provides the Android OS's standard settings.
Screen Features	Provides the manufacturer's own settings.
Authentication	Monitors login to/logout from the MFP, and transmits authentication information to other services and applications.
Monitoring service	Monitors the status of the MFP. This service is used by widgets and applications including Banner, Check Status, Authentication, and Home.
Launcher (Legacy Application Manager)	This application provides an application switching function when there is no Home application.
Installer	Provides the installer UI. Internal operation is controlled by the Package Installer application.

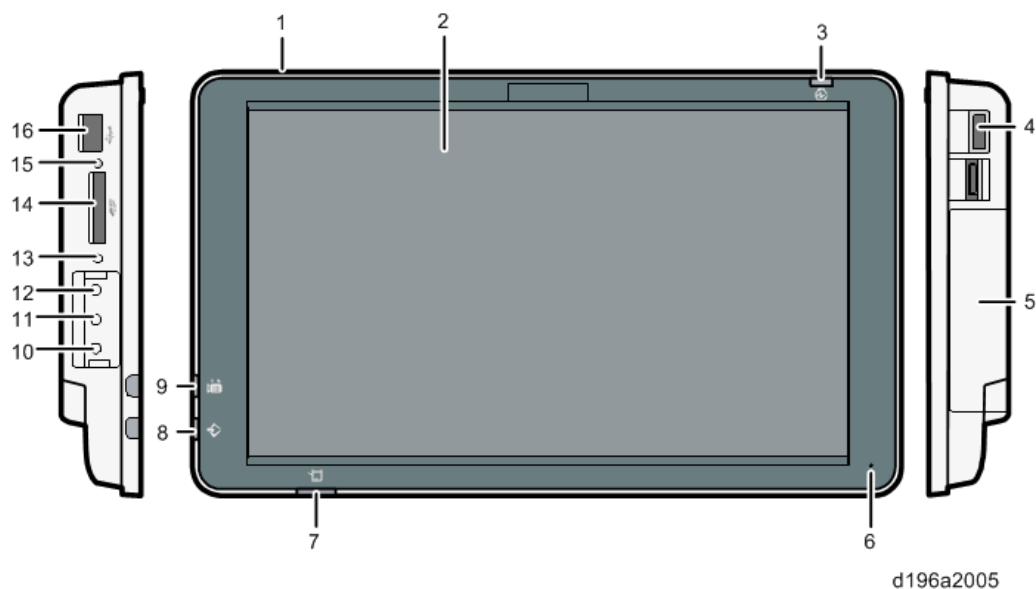
Application	Functions
Server service	Provides server functions for application installation.
Remote control	Works together with the server service and provides the functions and displays of RFU and import/export of settings, including the UI.
Manual	Provides connection to the server where manuals are stored (HTTP server). Manuals are displayed using the Web Browser application.
Splash screen	Provides the image that is displayed immediately after the MFP is turned ON.
Startup animation	Provides the startup animation for the operation screen.
Validation	Performs validation when the machine is started in CC certified mode. * CC stands for Common Criteria. It is the evaluation criteria for IT security (ISO15408).
LUI system	LUI stands for Legacy User Interface. The conventional control panel display is displayed by this application. Model-specific settings are included in this application
Package Installer	Provides installation and update functions for applications. Also provides the screen for uninstallation.
Self Check	Provides a self-check function for the control panel hardware. See page 45 "Panel Self Check" for contents of the self-check.
Initialization	Initializes settings of the MFP or the control panel.
Web Browser	Android OS's standard Browser application
Gallery	Reads images from SD cards or other media, and sets them as wallpaper or live wallpaper.
Standard keyboard	Android OS's standard operation panel that is called up when the user enters characters or numbers.

Application	Functions
Home screen	Provides the Home screen. Also provides screen customization and application switching.
Banner	Displays balloon messages in the banner area at the bottom of the panel display.
OCS emulator	This application serves as an intermediary between the control panel and the controller board. (The emulator allows the controller board to work the same way regardless of the type of control panel.)
Simple UI applications	Simple (Quick) applications. ▪ Quick Copy Provides the Quick Copy function. ▪ Quick Fax Provides the Quick Fax function. ▪ Quick Scanner Provides the Quick Scanner function.
Widgets	Resident applications that display information on the screen as configured. ▪ Date/time indicator Displays the date and time. ▪ Supply information Displays toner status. ▪ Change Languages Provides the language switching function. ▪ Eco-friendly Displays detailed information about the eco functions. ▪ Fax Received File Displays the fax reception status. ▪ Stop Provides a [Stop] key on the application screen. Used by functions such as Quick Copy and Scan to Me.

Application	Functions
IME (excluding the standard keyboard)	Multiple settings can be configured (the user can select one when using the keyboard). ▪ iWnn IME Chinese (Simplified) Pack Chinese (simplified) language pack for iWnnIME ▪ iWnn IME Chinese (Traditional) Pack Chinese (traditional) language pack for iWnnIME ▪ iWnn IME Korean Pack Korean language pack for iWnnIME
NFC dispatcher	Host application for NFC (Near Field Communication). Transmits card information to authentication applications.
Quick Card Authentication	Provides simple authentication using an IC card.
Standard IC card plugin	A plugin for using IC cards. Examples of IC cards are the FeliCa (Lite) and Mifare card systems.

2.1.2 PANEL COMPONENTS/SCREEN LAYOUT

Components of the Control Panel

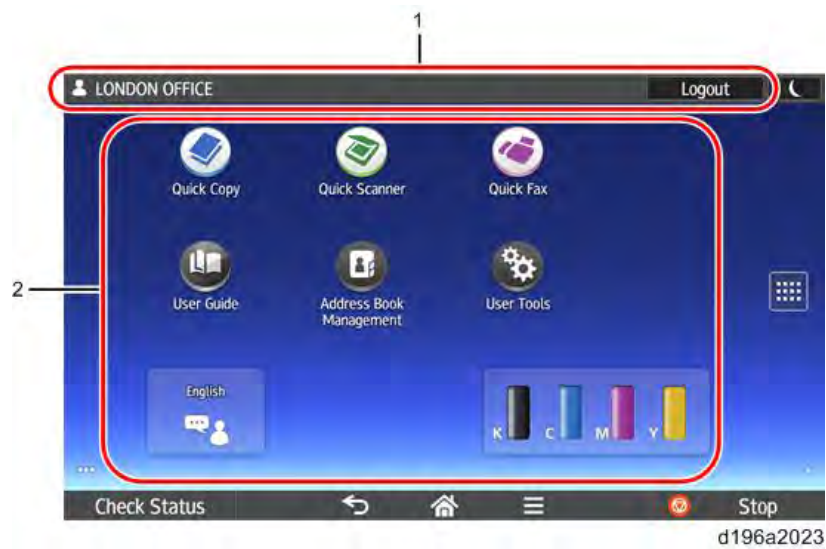


No.	Name	Description
1	Speaker	There is currently no function that uses this.
2	Display panel	Displays icons for functions and applications. Displays the operation screens, operation keys and other information.
3	Main power indicator	Indicates power OFF/ON status.
4	USB slot for digital cameras	A digital camera can be connected here.
5	USB slot for NFC card readers	A near field communication (NFC) device can be connected here.
6	Microphone	There is currently no function that uses this.
7	[Check Status] indicator	Indicates system status.
8	Data In indicator	Flashes when the machine receives data from a printer driver or LAN-Fax driver.

No.	Name	Description
9	Fax indicator	Indicates fax status. ▪ During communication: Flashes ▪ When fax documents have been received using Substitute Reception: Lights ▪ When the machine has received a confidential fax document: Lights
10	Extended Feature key (EX3)	Used for system maintenance, such as control panel self-check.
11	Extended Feature key (EX2)	Used for system maintenance, such as control panel self-check.
12	Extended Feature key (EX1)	Used for system maintenance, such as control panel self-check.
13	Control panel reboot key	Used when rebooting the control panel.
14	SD card slot	Insert an SD card here.
15	Media access lamp	Lights when an external media is inserted into the SD card slot or the USB slot.
16	USB slot	Insert a USB memory device here.

Panel display

Screen Layout



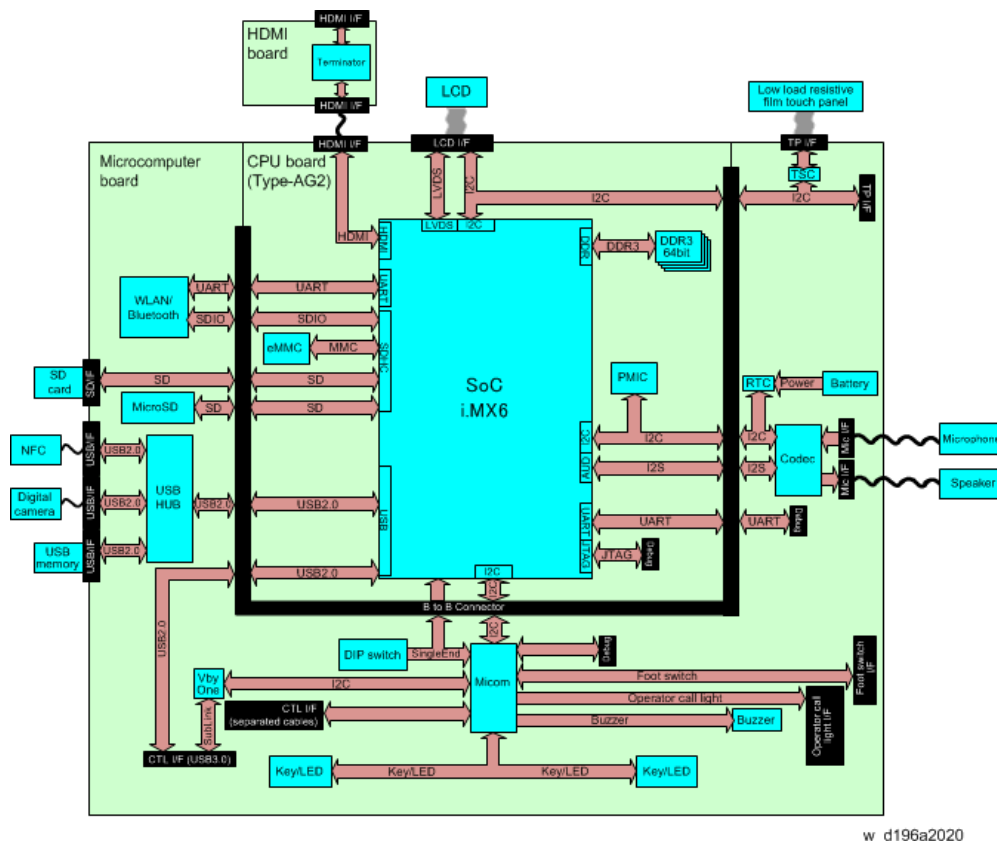
No.	Name	Description
1	Login information area	Login information is displayed.
2	Icon display area	Application icons, widgets, and system messages are displayed.

Soft keys displayed on the screen



No.	Name	Description
1	[Login/Logout] key	Displayed when authentication is enabled. The login screen appears if you press [Login]. [Logout] is displayed if you have already logged in. You will be logged out when you press [Logout].
2	[Energy Saver] key	Enters Sleep mode.
3	[Application List] key	Displays the list of installed applications.
4	[Stop] key	Stops the scanning of a document, fax transmission, or printing to paper.
5	[Menu] key	Displays the menu screen of the application in use. May not be available depending on the application.
6	[Home] key	Displays the Home screen.
7	[Back] key	Use this to go back to the previous screen when the Screen Features screen or the screen of an application is displayed.
8	[Check Status] key	You can check the status of the MFP, each function, and the current job. You can also check the job history and maintenance information of the MFP.

2.1.3 ELECTRICAL COMPONENTS



Note

- The CPU board has a CPU, memory, and a flash drive.
- The Microcomputer board has various interfaces, Wi-Fi module and other devices.

Touch panel

The touch panel of this machine uses a 4-wire resistive film method (low load resistive film analog 4-wire method). It can detect two points for flick/drag/pinch-in/pinch-out operations. Resistive touch panel has been adopted in order to allow operation with a prosthetic hand.

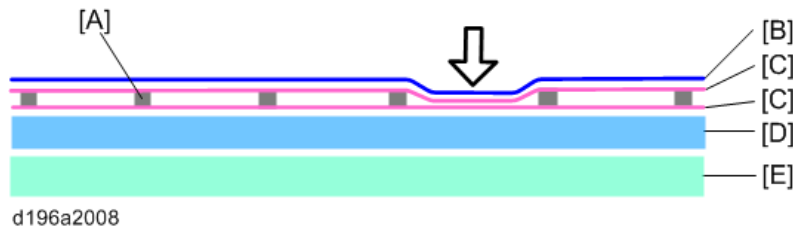
Basic Structure

An analog 4-wire resistive film touch panel has 2 layers. Two materials (mainly film or glass) with transparent conductive film (ITO) are attached such that the transparent conductive film layers face each other.

When the film is pressed with a finger or a pen, the transparent conductive films contact each other and the touch panel operation is recognized.

Insulators (spacing dots) secure space between the two transparent conductive film layers to prevent short-circuiting.

Because the transparent conductive film has a uniform resistance characteristic, the resistance value reflects the distance of contact.



[A]: Spacing dot

[B]: PET film

[C]: Transparent conductive film

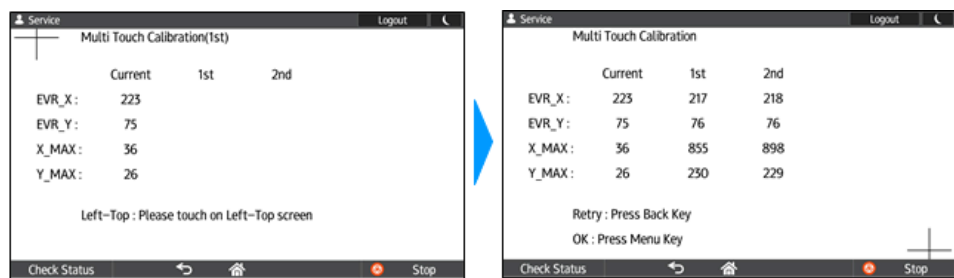
[D]: Base glass

[E]: LCD panel

Self-Check (multi-touch calibration) mechanism

With the Multi-touch calibration in the self-check function, the touch panel is automatically calibrated using the results of touches to the top left and bottom right positions.

The values of "EVR_X", "EVR_Y", "X_MAX", and "Y_MAX" are used for internal processing. They do not indicate the positions or distance of the touched points. There is no problem unless there is a huge difference between the values of the first calibration and the second calibration.



2.2 CONTROLLING THE POWER SUPPLY

2.2.1 EXITING ENERGY SAVING MODES

Because this model of Smart Operation Panel has no hardware keys, the MFP exits from energy saving mode when the user does one of the following:

- Touches the display panel
- Lifts the ADF
- Sets an original in the ADF

With the Smart Operation Panel, recovery from energy saving modes differs from that of the conventional control panel as follows.

	Smart Operation Panel		Conventional control panel
	This model	Previous model	
[Home] key	Not available	The machine exits the energy saving mode and displays the [Home] screen.	The machine does not exit the energy saving mode.
[Check Status] key	Not available	The machine exits the energy saving mode and displays the [Check Status] screen.	The machine exits the energy saving mode and displays the [Check Status] screen
[Energy Saver] key	Not available	Not available	The machine exits the energy saving mode and displays the screen selected in Function Priority ^{*1} .
[Back] key	Not available	The machine exits the energy saving mode and displays the [Home] screen.	Not available

	Smart Operation Panel		Conventional control panel
	This model	Previous model	
[Menu] key	Not available	The machine exits the energy saving mode and displays the [Home] screen.	Not available
[Stop] key	Not available	The machine exits the energy saving mode and displays the [Home] screen.	The machine does not exit the energy saving mode.
[Login/Logout] key	Not available	Not available	The machine does not exit the energy saving mode.
Touching the display panel	The machine exits the energy saving mode and displays the [Home] screen.	The machine exits the energy saving mode and displays the [Home] screen.	The machine does not exit the energy saving mode.
Lifting the ADF	The machine exits the energy saving mode and displays the [Home] screen.		
Setting an original in the ADF	The machine exits the energy saving mode and displays the [Home] screen.		

*1 When exiting Low Power mode, the machine displays the screen of the function that had been selected before entering Low Power mode.

2.2.2 SCREEN STARTUP MODE

Startup Modes

There are two screen startup modes. The factory default setting is Normal.

1. Normal

This is the standard startup mode. When the main power of the MFP is turned ON, the control panel starts up using less power compared to Quick mode.

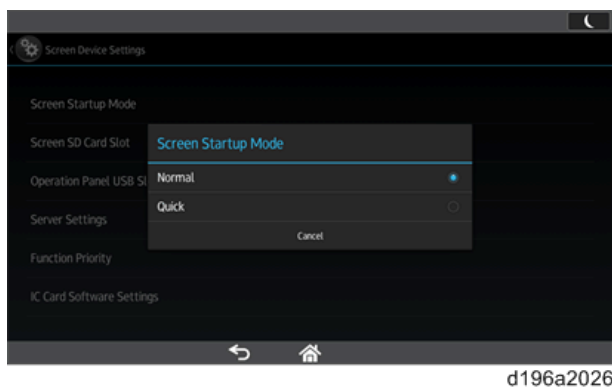
2. Quick

By preparing for the next startup when the machine shuts down, the control panel starts up faster than in Normal mode.

Changing the Screen Startup Mode

Screen Startup Mode can be changed in Screen Features.

Select [Screen Features] > [SYSTEM] > [Screen Device Settings] > [Screen Startup Mode], and then select [Normal] or [Quick].



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Note

- In the following cases, the control panel starts up in Normal mode even if [Quick] is selected.
 - The power cord has been disconnected from the power outlet after the last shutdown.
 - The MFP is turned ON after being turned OFF due to reasons such as a power failure.
 - The MFP was not properly shut down the last time it was turned OFF.

How the Control Panel Starts Up

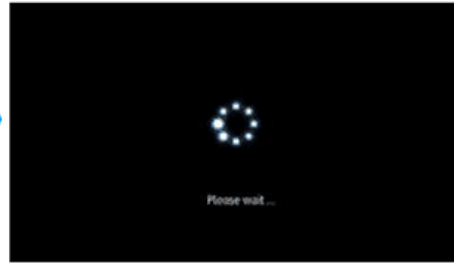
In Normal mode

The startup screen is displayed on the display panel, followed by the startup animation.

Startup screen



Startup animation



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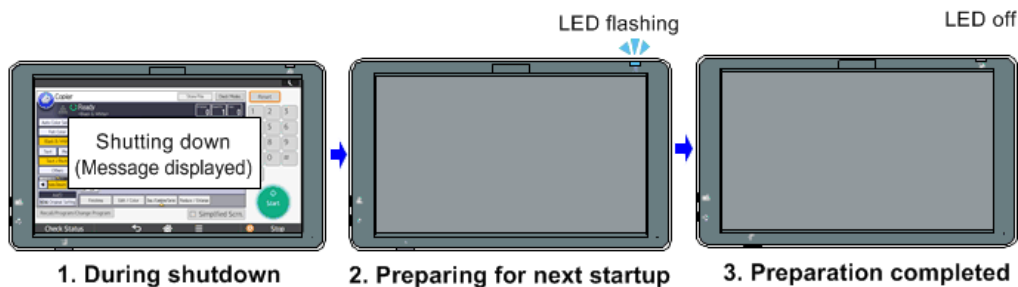
In Quick mode

The [Home] screen is displayed immediately after the main power of the MFP is turned ON.

The startup screen displayed when starting in Normal mode is not displayed.

How the Screen Shuts Down When Quick mode Is Selected

When Quick mode is selected, the MFP prepares for the next startup when it shuts down. The main power indicator flashes during preparation for the next startup. The indicator turns off when preparation is completed.



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If the MFP is turned ON during shutdown, the preparation for the next startup continues. When preparation for the next startup is completed, the control panel starts up in Quick mode.

Note

- When Quick mode is selected, the control panel starts up faster than in Normal mode but shutdown takes longer than in Normal mode.

2.2.3 SHUTDOWN FUNCTIONS

Normal Shutdown

The MFP is equipped with a function to shut down safely in order to:

- Prevent damage to the file systems in the HDD and the NAND flash memory.
- Prevent paper from being left inside the body of the MFP (except when paper is jammed).

If the main power switch is a rocker switch, the shutdown process begins when the rocker switch is moved to the OFF position.

If the main power switch is a push switch, the shutdown process begins when the switch is pressed. To make a forced shutdown, press and hold the push switch for 6 seconds. However, if you force a shutdown during the shutdown process, data being processed may be lost. Forced shutdown is to be used to shut down the MFP without disconnecting the power cord when the shutdown process cannot be completed.

Other Shutdown Functions

This MFP has two additional shutdown functions to facilitate maintenance.

Shutting down the MFP for parts replacement (Starting up in Normal mode when Quick mode is selected)

When Quick mode is selected, the MFP prepares for the next startup when it shuts down.

This causes the shutdown process to take longer than when Normal mode is selected.

If you need to disconnect the power cord after shutdown in order to replace parts or for other reasons, you can use the following procedure to shut down the MFP just like you do in Normal mode. This shortens the time it takes to shut down the MFP.

- Procedure
Turn the main power switch OFF while holding down the [Stop] key on the control panel.
Continue to hold down the [Stop] key until the shutdown screen is displayed.

Shutting down the MFP for software updates (Shutting down the MFP with the control panel in Sleep mode)

If you are going to turn ON the MFP within 5 minutes, you can use the following procedure to shut down the MFP with the control panel in Sleep mode.

- Procedure
Turn the main power switch OFF while holding down the [EX1] key. Continue to hold down the [EX1] key until the shutdown screen is displayed.

Note

- You must turn ON the MFP within 5 minutes.
- If more than 5 minutes has elapsed after shutting down the MFP using the above procedure, the machine starts up in Normal mode even if Quick mode is selected.

3. SYSTEM MAINTENANCE

3.1 SYSTEM MAINTENANCE

3.1.1 MAINTENANCE MODES

Service program (SP) modes for the Smart Operation Panel are as follows:

Mode	Use	Notes
SP Mode (MFP)	SP modes for the MFP (controller, engine)	The numeric keys are required to enter this mode. Display the soft keys of the GW application or of the SP mode.
Service mode (control panel)	SP modes for the Smart Operation Panel. ▪ Changing SP mode settings in the Screen Features menu. ▪ Installing and updating applications that can be installed	Same as above
Recovery mode	Maintenance modes for the Android OS ▪ Updating firmware ▪ Initializing all data	-

3.1.2 LOGIN TO/LOGOUT FROM CONTROL PANEL SERVICE MODE

Login

In the same way as you log in to the SP Mode on the MFP, you use the soft keys to enter a combination of numbers in order to login to the service mode of the control panel.

Note

- You cannot log in to the service mode of the control panel when one of the following screens is displayed.
 - Stop All Jobs
 - User Tools
 - Address Book Management

Use the numeric keys on one of the following screens.

- Soft keys on the GW application screen
- Soft keys for the control panel's service mode (displayed by pressing both the [EX3] key and [Check Status] at the same time)

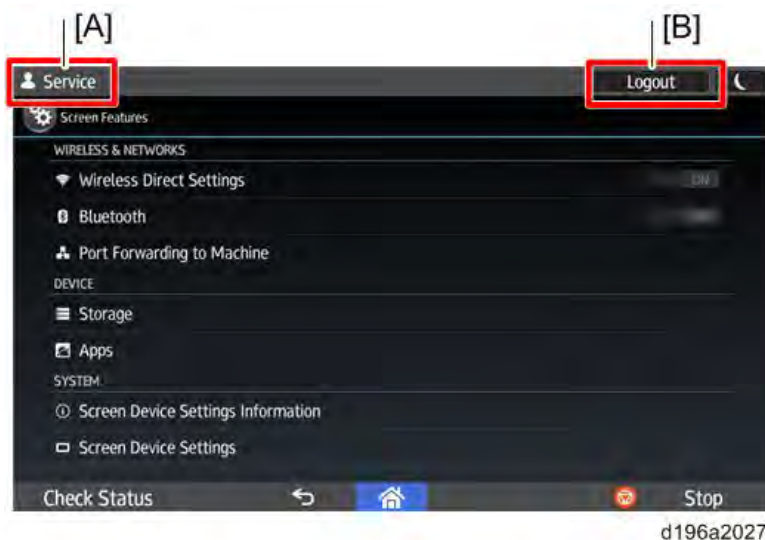
Note

- To exit the soft keys, press [EXIT] on the screen.

Login Status Indicator

When you log in to the control panel's service mode, the Screen Features screen is displayed.

- "Service" is displayed in the login information area [A].
- [Logout] is displayed in the Login key area [B] to allow logout from the service mode.



Logout

Press [Logout] to log out from the control panel's service mode.

Note

- You need to logout manually because the Auto Logout function does not work.

Depending on the authentication settings of the MFP, the following screen is displayed when you log out.

Authentication settings		
Administrator authentication: OFF User authentication: OFF	Administrator authentication: ON User authentication: OFF	Administrator authentication: ON User authentication: ON
Screen of the function selected in [Function Priority]	Screen of the function selected in [Function Priority]	[Home] screen

When Entry to Service Mode Is Prohibited by the Administrator

The administrator of the MFP can prohibit entry into the control panel's service mode by enabling [Service Mode Lock] in [System Settings].

When [Service Mode Lock] is enabled, the machine does not enter the service mode even if you enter the number combination for the control panel's service mode. There will be no error messages or beeping sounds to indicate login failure.

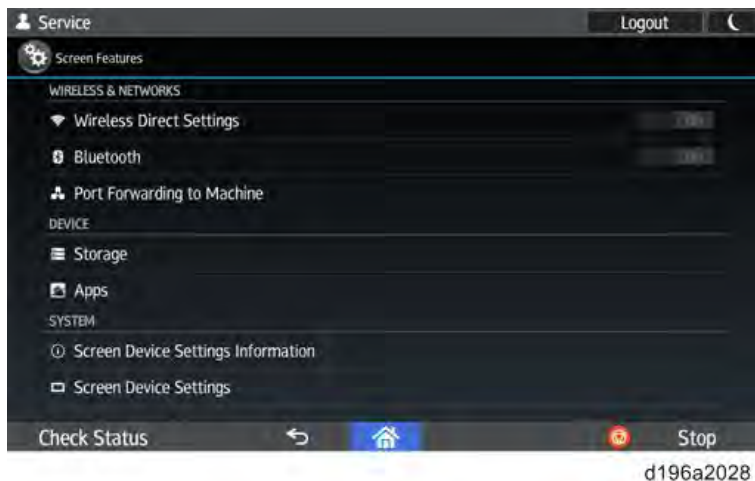
Note

- The machine can enter the recovery mode even if [Service Mode Lock] is enabled.

3.1.3 SERVICE MODE MENU

You can configure the following settings.

- WIRELESS & NETWORKS
- DEVICE
- SYSTEM



WIRELESS & NETWORKS

Menu level			Description
1st level	2nd level	3rd level	
Wireless Direct Settings	Group Owner Mode		You can only view the setting.
	Connection Password		You can only view the setting.
	DHCP Server IP Address		You can only view the setting.
	DHCP IP Address Range		You can only view the setting.
	Select Channel		You can only view the setting.
	PEER DEVICES		View and configure devices that can be connected.

Menu level			Description
1st level	2nd level	3rd level	
	REMEMBERED GROUPS		Displays groups that have been previously connected.
Bluetooth	ON/OFF		You can only view the setting.
	SEARCH FOR DEVICES		Scans for Bluetooth devices in the vicinity.
	(name of this device)		You can only view the setting.
	PAIRED DEVICES		View and configure paired devices.
	AVAILABLE DEVICES		View and configure available devices.
Port Forwarding to Machine	Port Forwarding Settings	Port Forwarding Cinfo 1-20	Requests sent to the wireless LAN unit of the Smart Operation Panel can be forwarded to the controller of the MFP. You can enable or disable ports to forward these requests.

DEVICE

Menu level			Description
1st level	2nd level	3rd level	
Storage	INTERNAL STORAGE	Total space	Displays the total size of the internal storage.
		Available	Displays the available space of the internal storage.
		Apps (app data & media content)	Displays the size of applications in the internal storage.

Menu level			Description
1st level	2nd level	3rd level	
	SD CARD *1	Total space	Displays the total size of the SD card.
		Available	Displays the available space of the SD card.
		Apps (app data & media content)	Displays the size of applications in the SD card.
		Erase SD card	Erase data written to the SD card.
Apps	Install	Install from SD Card	Install or update applications from an SD card.
		Install from Server	Enter a product key to install or update applications from the server.
		Activate Applications	Activate applications that have been installed from the server.
		Update Applications	Update applications that have been installed.
		Uninstall	Uninstall applications.
		Check Server Connect	Check if you can connect to the Server.

*1 Displayed only when an SD card is inserted into the SD card slot of the control panel.

SYSTEM

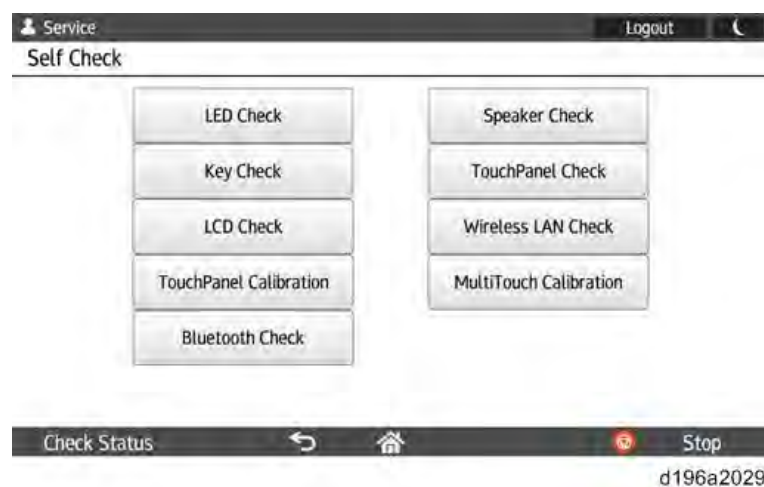
Menu level			Description
1st level	2nd level	3rd level	
Screen Device Settings Information	Status		Displays the following: ▪ Wi-Fi MAC address ▪ Bluetooth address ▪ Interface Settings ▪ Wi-Fi settings (ON/OFF)
	Legal information	Open source licenses	Displays the open source license information.
	Software Version List		Displays the versions of control panel firmware and installed applications. When saving the software version list on an SD card, insert an SD card into the SD card slot of the control panel, and then press [Save to SD Card].
Screen Device Settings	Server Settings	Port number	Input a port number for communication with the import/export and RFU server. The input number is used for both HTTP and HTTPS connections. (Normally, input a number within 55101-55111.)
	Application Settings		Displays a list of installed applications. If you press [Settings] for an application, the setting screen for the CE is displayed. The screen does not change if the application has no setting items.

Menu level			Description
1st level	2nd level	3rd level	
	Authentication priority mode	Authentication priority mode	This setting gives priority to the recovery time from energy saving modes when an IC card authentication device is connected. When this setting is selected, the MFP does not enter Engine OFF mode, and always recovers from Silent mode.
		Start time(hhmm)	You can specify the start time of Authentication priority mode. * This can be changed only when [Authentication priority mode] is deselected.
		Expiration time(hours)	You can specify the period of validity of Authentication priority mode. * This can be changed only when [Authentication priority mode] is deselected.
	Screen device always-connection Setting		This setting prevents the control panel from entering Sleep mode, so that Bluetooth and other communication devices remain connected. When this setting is selected, the control panel does not enter Sleep mode. Only the LCD (display panel) turns OFF.
	Panel Self Check		Starts self-diagnosis of the control panel. (page 45 "Panel Self Check")

3.1.4 PANEL SELF CHECK

The following are available as self-diagnostics functions of the control panel:

- LED Check
- Key Check
- LCD Check
- Speaker Check
- TouchPanel Check
- TouchPanel Calibration
- MultiTouch Calibration
- Wireless LAN Check
- Bluetooth Check



↓ Note

- The [Self Check] menu is displayed in either English or Japanese. The language can be changed using [Change Language] in the Home screen.
- If an unavailable language is selected, English will be displayed.
- With some diagnostic items, press [Back] [A] at the bottom of the screen to return to the top menu of [Self Check].



LED Check

Select the [All Light On] check box, and make sure the following LEDs light:

- Data In indicator (facsimile and printer modes)
- Fax indicator
- [Check Status] indicator (flashes in red and orange alternately)

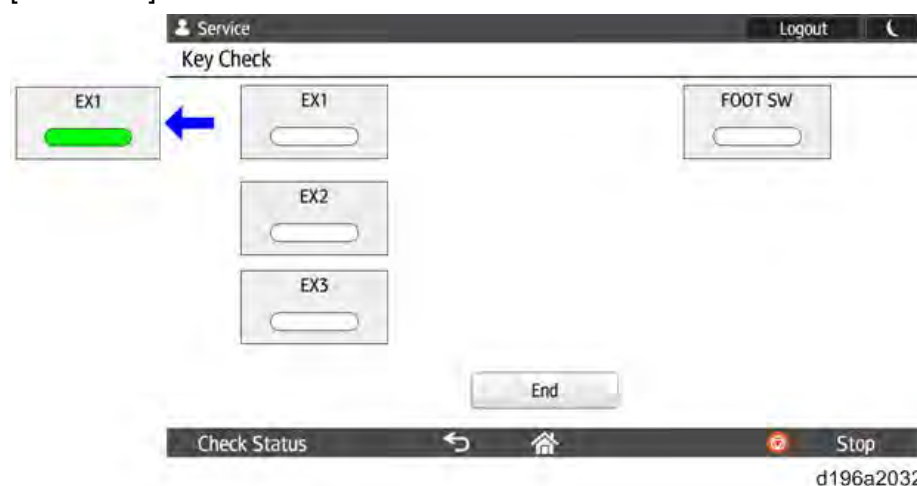


When the check is completed, press [Back] to return to the top menu of [Self Check].

Key Check

Check if the Extended Feature keys on the left side of the control panel (EX1, EX2, EX3 from top to bottom) are functioning normally. If they are functioning normally, the key will turn green when pressed.

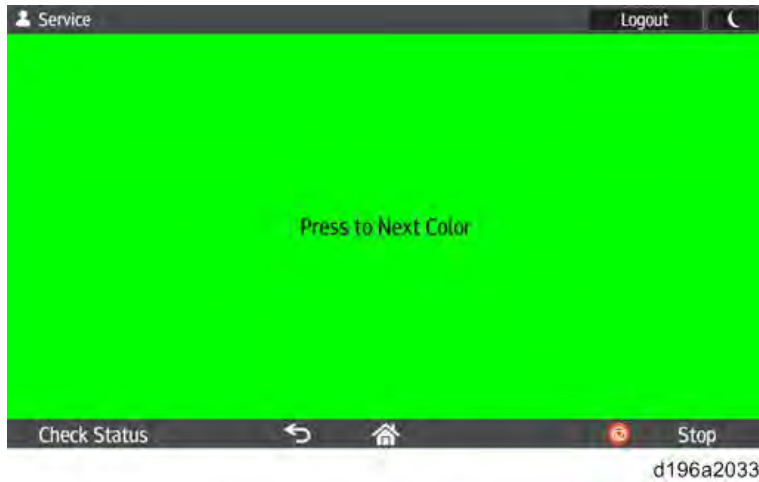
[FOOT SW] is not used.



When the check is completed, press [End] to return to the top menu of [Self Check].

LCD Check

Visually inspect the color of the LCD. The displayed colors are white/black/red/green/blue. The LCD changes to the next color when you press it.



The check is completed when all colors have been displayed. The screen returns to the top menu of [Self Check].

Speaker Check

Tests the speaker by playing the reference sound.

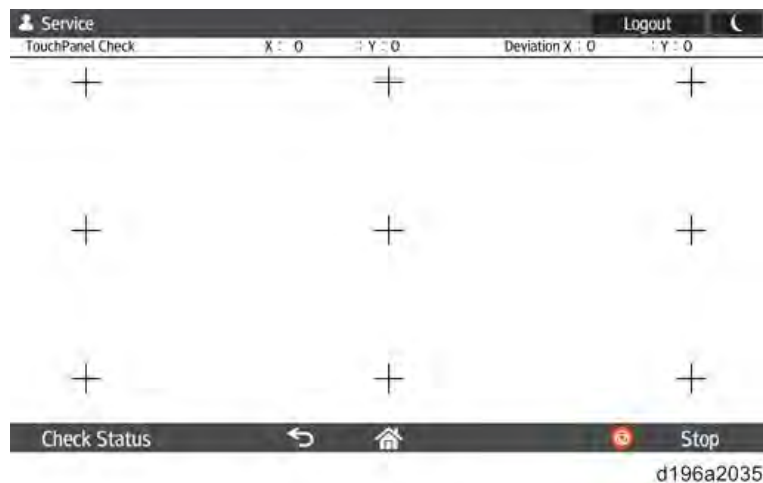
1. Select the frequency (220Hz, 440Hz, 880Hz, 1760Hz, or 2000Hz).
2. Press [START/STOP] to play the sound.
3. Touch the volume bar, and play the sound at minimum and maximum volumes.
4. Press [START/STOP] to stop the sound.



When the check is completed, press [Back] to return to the top menu of [Self Check].

TouchPanel Check

For each of the nine reference points on the screen, the distance between the detected position and the nearest reference point is displayed.



When the check is completed, press [Back] to return to the top menu of [Self Check].

TouchPanel Calibration

Calibrate the touch panel by touching the center of each of the five “+” signs.

The five “+” signs are displayed in the order of top left, bottom right, bottom left, center, and top right.

After you have touched the five “+” signs, the display switches to the [Retry/OK] screen.

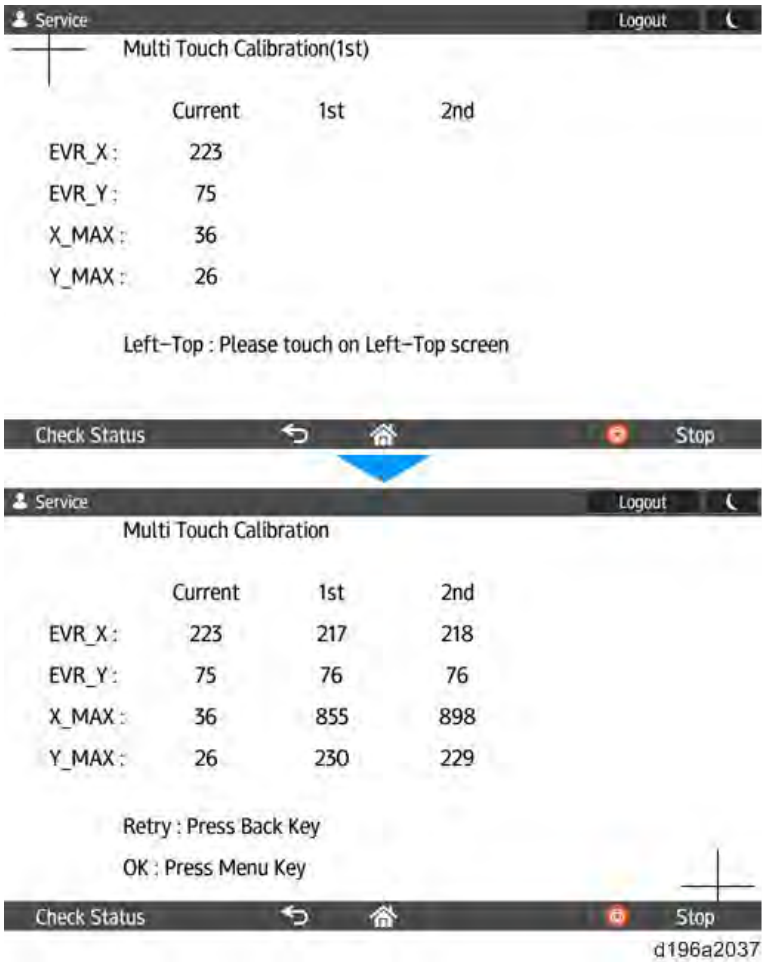
- If you want to calibrate again, press [EX1].
- If you want to confirm the calibration results, press the [EX3] key to return to the top menu of [Self Check].



MultiTouch Calibration

Calibrate the touch panel for multi-tap input methods such as pinch-in/pinch-out. Touching the center of both “+” signs. The two “+” sign are displayed in the order of top left and bottom right. Repeat the procedure. The touch panel will be calibrated.

- If you want to adjust it again, press the [EX1] key.
- If you want to confirm the calibration results, press the [EX3] key to return to the top menu of [Self Check].



The “Back Key” in the message is actually the [EX1] key and the “Menu Key” in the message is actually the [EX3] key.

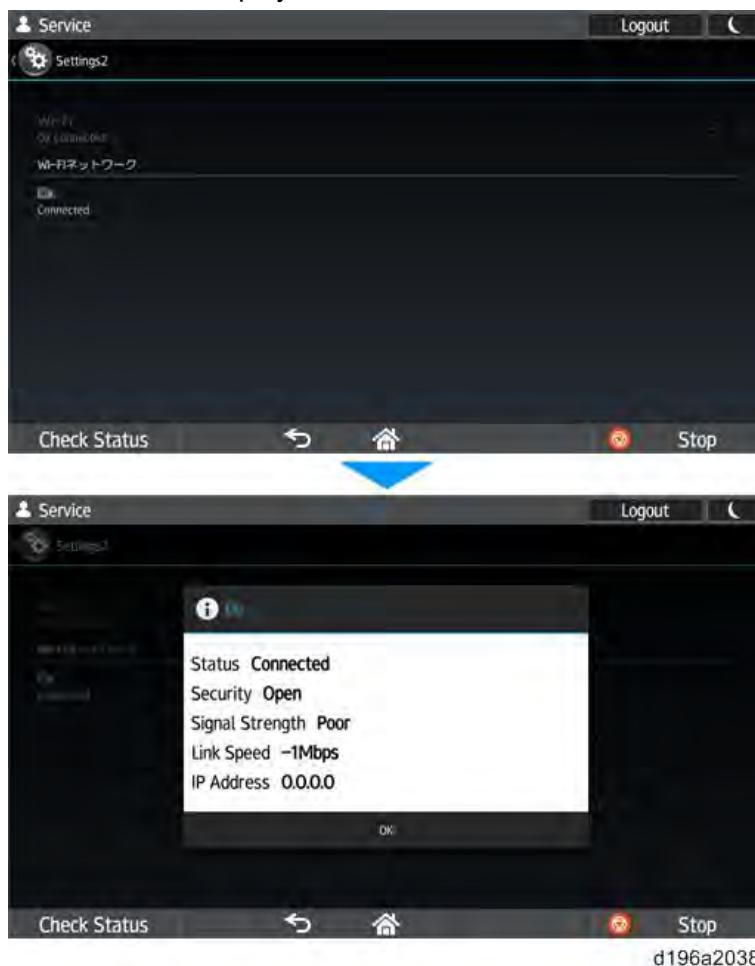
Note

- The values of “EVR_X”, “EVR_Y”, “X_MAX”, and “Y_MAX” are for internal processing and do not indicate the positions or distance of the points touched. There is no problem unless there is a huge difference between the values of the first calibration and the second calibration.

Wireless LAN Check

Checks the condition of the wireless LAN connection.

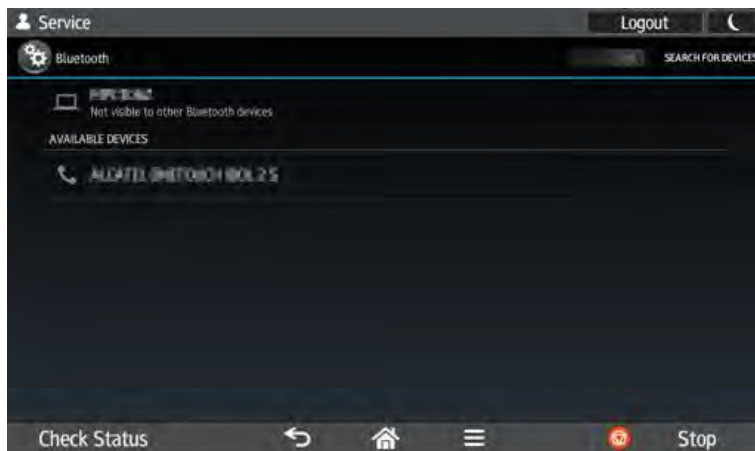
When you select the connected access point, the signal strength, IP address and other information are displayed.



When the check is completed, press [Back] to return to the top menu of [Self Check].

Bluetooth Check

Check and configure the Bluetooth device connection.



When the check is completed, press [Back] to return to the top menu of [Self Check].

Note

- You cannot switch Bluetooth to [ON] or [OFF] from the [Self Check] menu. Before checking the Bluetooth device connection, specify [ON] for [Bluetooth] in [Screen Features] > [WIRELESS & NETWORKS] > [Bluetooth].

3.1.5 RECOVERY MODE

The recovery mode menu is as follows. Ask your manager for details on how to enter Recovery mode.

Menu	Description
reboot system now	Reboots the Android OS.
apply update from sdcard	Updates the Cheetah System firmware by specifying the folder path.
wipe data/factory reset	Deletes all installed applications and all settings on the Cheetah-G1.
wipe cache partition	Deletes all data that is stored on the cache partition. Currently, Cheetah does not use the cache partition, so nothing happens when this menu item is accessed.
wipe free area partition	Deletes all data that is stored on the free partition. Cheetah stores the version history on the free partition. When this menu item is selected, it will then disappear.
wipe LegacyUI area	Deletes Legacy UI.
micon update from sdcard	Updates Keymicon by specifying the folder path.

Note

- If [Update Firmware] is set to [Prohibit] in [System Settings] of the MFP, the control panel cannot enter the recovery mode.
- Ask your manager for information on how to enter the recovery Mode.

3.2 SOFTWARE UPDATE

3.2.1 UPDATING THE SMART OPERATION PANEL

There are three methods to update the Smart Operation Panel. The method is different depending on what you want to update.

1. Installation/update from an SD card
2. Package update
3. Installation/update from the eDC Server

Update method	Features	Control panel firmware	Applications
Installation/update from an SD card	Update using an SD card. ▪ This is the only method to install an older version of currently installed software. ▪ Enter the recovery mode to update the control panel firmware. ▪ Use the installation screen in the control panel's service mode to update applications. ▪ You can install or update multiple applications at once. ▪ You can also uninstall an application.	Yes	Yes
Package update	Uses the Package update function of the GW+ controller to update the software. ▪ The software is updated in the following order: controller firmware, applications, and then the control panel firmware. ▪ The procedure for updating the control panel firmware is the same as when updating from an SD card using Recovery mode.	Yes	Yes
Installation/update from the eDC Server	Downloads applications from the eDC Server for installation or update. This method is mainly for paid applications. A product key is required when an application is installed for the first time.	No	Yes

The following two methods can be used for updating the firmware.

- Update from an SD card (recovery mode)
- Package update

The following three methods can be used for updating an application.

- Installation/update from an SD card
- Package update
- Installation/update from the eDC Server

3.2.2 INSTALLATION/UPDATE FROM AN SD CARD

Updating the Smart Operation Panel Firmware

Enter the recovery mode to update the firmware of the Smart Operation Panel.

Note

- When [Quick] is selected for [Screen Startup Mode], the control panel cannot enter the recovery mode. Change the startup mode to [Normal]. When update is completed, restore the startup mode setting because the setting affects startup time.
- Shut down the MFP with [Normal] selected for [Screen Startup Mode], or shut it down using the special shutdown procedure used for maintenance.
- If [Prohibit] is selected for [Update Firmware] in [System Settings], the machine cannot enter Recovery mode. Ask the administrator of the MFP to change the setting.

Creating an SD card for firmware update

1. **Download the update module “Cheetah System” from the Firmware Download Center.**
2. **Execute the downloaded file.**

A file named “part number + suffix.zip” will be created.

Note

- Do not unzip the created file.

3. **Copy the “part number + suffix.zip” file to the root directory of the SD card.**

Updating the firmware (for the Cheetah System)

1. **Turn OFF the MFP.**

Note

- Shut down the MFP with [Normal] selected for [Screen Startup Mode], or shut it down using the special shutdown procedure used for maintenance.

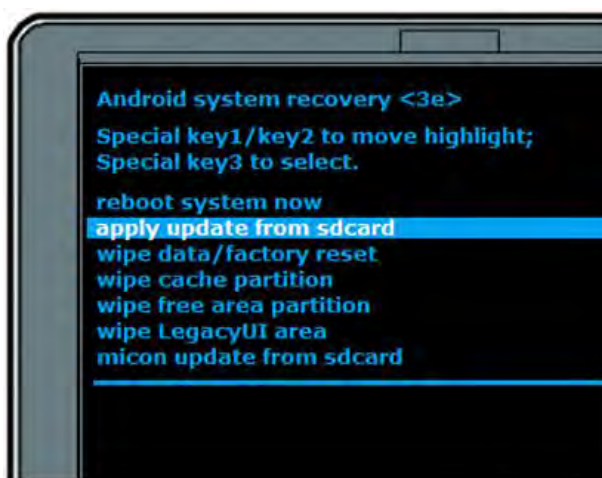
2. **Insert the SD card into the SD card slot of the control panel and start up the MFP in Recovery mode.**

Note

- Ask your manager for details on how to enter the recovery mode.
- In the recovery mode, key functions are shown on the screen. However, the key functions for moving/selecting directories are different for executing an update. Check the key functions while operating.

Keys	When moving/selecting directories	When executing an update
[EX1]	Moves the cursor up.	Executes updating.
[EX2]	Moves the cursor down.	Cancels updating.
[EX3]	Selects the item.	

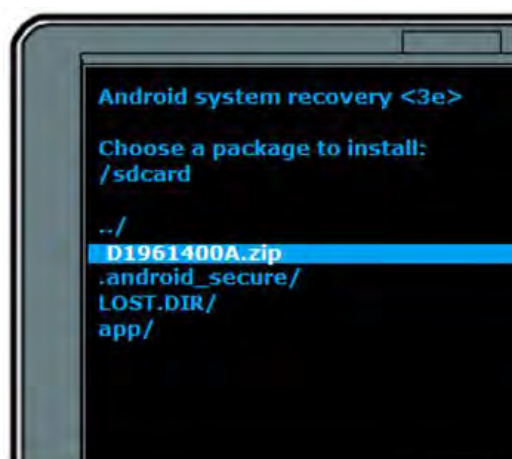
3. Select “apply update from sdcard” in the “Android system recovery” screen, and then press the [EX3] key.



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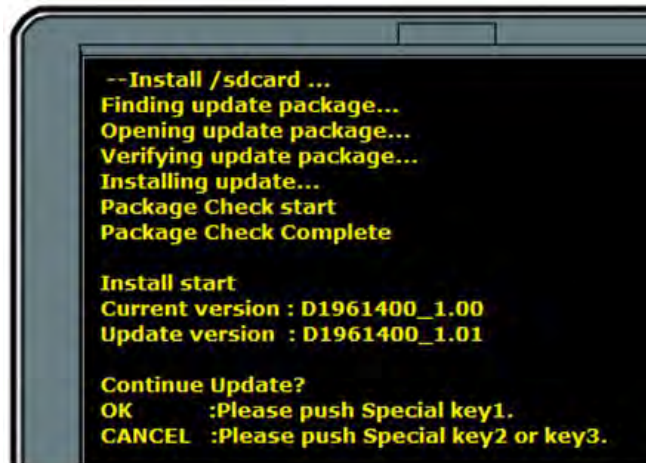
4. The contents of the SD card is displayed. Select “part number + suffix.zip” with the [EX1] or [EX2] key, and then press the [EX3] key.

Example: “D1961400A.zip”



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5. The installation screen is displayed.



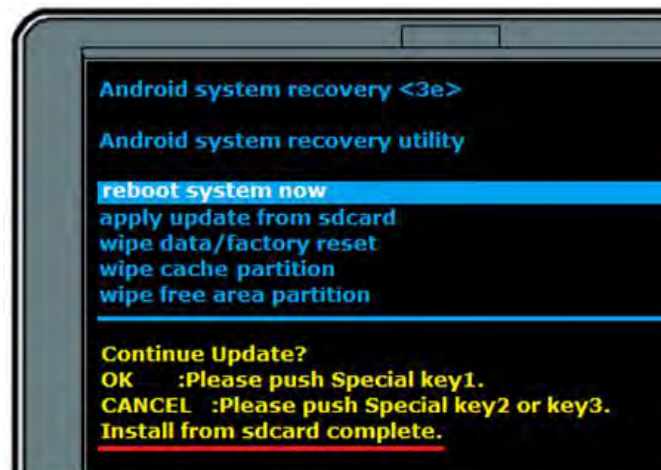
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6. The version of the firmware installed in the control panel is displayed as “Current version” and the version of the firmware saved on the SD card is displayed as “Update version”. Make sure that you have the correct version.
7. When “Continue Update?” is displayed, press [OK] ([EX1] key).
The update process starts.

Note

- To cancel the firmware update, press the [EX2] or [EX3] key.

8. When “Install from sdcard complete.” is displayed, select “reboot system now” and then press the [EX1] key to reboot the system.



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Installing/Updating an Application

Creating an SD card for update

1. Download the update modules from the Firmware Download Center.
2. Unzip the downloaded file.
3. Create a folder named “romdata” in the root directory of the SD card.
4. Put the unzipped file in the “romdata” folder.

Update procedure

1. Log in to the control panel in service mode.
2. Insert the SD card into the SD card slot of the control panel.
3. Select [Apps] > [Install] > [Install from SD Card].
4. Select the application you want to install or update, and then press [Install]
5. The installation or update results are displayed.
6. Check that the application is correctly installed or updated, and then press [reboot operation panel].

3.2.3 PACKAGE UPDATE

This method uses the package update function to update the control panel firmware and/or applications. The package update function is provided by the controller.

Update is done in the following order:

1. Controller firmware
2. Applications
3. Control panel firmware

If the control panel firmware has to be updated, the control panel starts in the recovery mode and the firmware is automatically updated.

The control panel restarts when updating is completed. The result notification is processed after the control panel restarts.

When Installation/Update Is Prohibited

If [Prohibit] is selected for [Update Firmware] in [System Settings], the execution key is grayed out and installation/update cannot be executed.

When trying to update from a PC, updating fails and the result is recorded as “Failed”.

3.2.4 INSTALLATION/UPDATE FROM THE EDC SERVER

Downloads applications from the eDC Server, and installs or updates them.

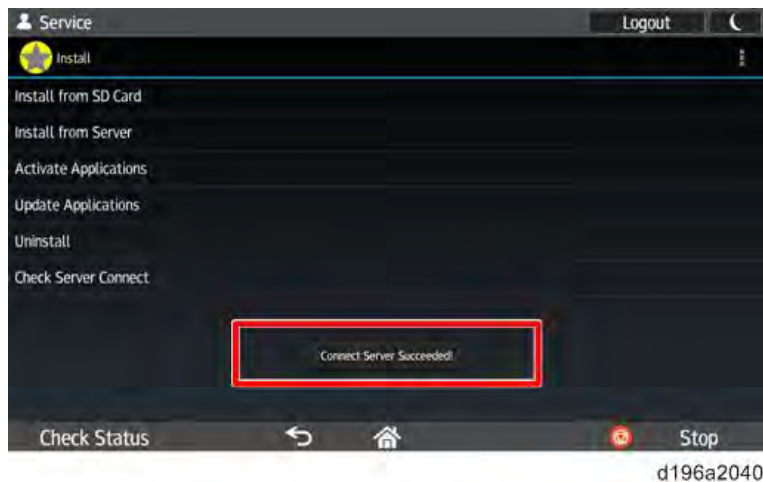
This method is mainly for paid applications. A product key is required when an application is installed for the first time.

Note

- Installation/activation/update of applications from the server can only be done in the service mode.

Check Server Connect

- Log in to the control panel's service mode.
- Select [Apps] > [Install].
- Press [Check Server Connect] and make sure that "Connect Server Succeeded!" is displayed.



Note

- The server address is stored in the firmware of the Smart Operation Panel.
- To connect to the server, the network settings of the MFP must be configured correctly. For the required configuration, see the Field Service Manual of the MFP.
- If server connection fails, see page 63 "Troubleshooting" for error codes.

Installation

1. Log in to the control panel's service mode.
2. Select [Apps] > [Install].
3. Select [Install from Server].
4. Enter the product key and press [Execute].



5. Follow the instructions shown on the screen.

Note

- An application cannot be installed unless it is digitally signed by Ricoh.

Activation

1. Log in to the control panel's service mode.
2. Select [Apps] > [Install].
3. Select [Activate Applications].
4. Select the application to be activated, and then enter the activation key and press [Execute].



5. Follow the instructions shown on the screen.

Note

- Except for onerous applications, there is no problem that the activation status is "Unfinished".

Update

1. Log in to the control panel's service mode.
2. Select [Apps] > [Install].
3. Select [Update Applications].
4. Select the application to be updated, and then press [Check Update Status].
5. Follow the instructions shown on the screen.

4. TROUBLESHOOTING

4.1 TROUBLESHOOTING

4.1.1 SOFTWARE UPDATE ERRORS

Errors that occur during application update from an SD card

Error message / screen display	Explanation	Solution
Insert a correct SD card.	-	- Remove the SD card and insert it again. - Make sure that the directory of the SD card is correct. You must create the "app" folder in the root directory of the SD card and put the zip file in the "app" folder.
You are trying to install the same application with a different part number. Is it OK to continue?	Displayed when you attempt to update an application that is the same but has a different part number.	Check the file, and select [OK] or [Cancel].
Some applications could not be installed.	Displayed in the following cases. - You attempted to update a module (application) in use. - The application is corrupted.	Restart the control panel and repeat the update procedure.

Error message / screen display	Explanation	Solution
- (The application you want to update is not displayed in the list of applications.)	-	- Make sure that the directory of the SD card is correct. You must create the "app" folder in the root directory of the SD card and put the zip file in the "app" folder. - Check the application file in the SD card.

Errors that occur during update from the eDC Server

Error code	Explanation
101	Server connection error
102	Signature verification error
103	License error (for example, the product key was keyed in wrongly)
215	Dependency check error Displayed when the control panel firmware version does not meet the installation requirement of the application. Example: The firmware version of the control panel is 1.02 and you attempted to install an application that requires firmware version 1.03.
20X	Other errors

Example of an error code display



Note

- An additional 3-digit code may be displayed to indicate the details.
Example: 101-805

Errors that occur during remote (batch file) update

When the update is completed, a result report file (install_result_yyyymmddhhmm.txt) is created in the same folder as the batch file.

The result report file shows the IP address of the MFP and whether the update process was successful or not. "yyymmddhhmm" shows the date and time according to the clock of the MFP.

Result	Explanation
Succeed	Updated the machine successfully.
Failed	Failed to update the machine. An error code follows.
Not connected	Failed to connect to the machine.
Can't get result	Failed to obtain the result (occurs only with firmware updates).

Example of a result report file

- Name: install_result_201512041005.txt
- Contents:
 - 192.168.0.100: Succeed
 - 192.168.0.102: Failed error:XX (XX indicates an error code.)
 - 192.168.0.103: Not connected

Error codes

The meanings of error codes recorded after "error:" in the result file are as follows:

Error codes recorded during firmware update

Error code	Explanation	Access Log
-2	Invalid file	Recorded
-3	The target application cannot be found.	Recorded
-501	Installation has already been requested.	Recorded (*1)
-602	Invalid signature	Recorded
-603	Updating is prohibited.	Recorded
-604	Failed to put the application offline.	Not recorded
-610	Authentication failed.	Not recorded

Error code	Explanation	Access Log
-699	Unknown error	Recorded (*2)
-701	Version of the micro computer firmware is invalid.	Recorded
-709	File structure error (invalid file)	Recorded
-710	Writing failure	Recorded

Error codes recorded during application update

Error code	Explanation	Access Log
-2	Invalid file	Recorded
-3	The target application cannot be found.	Recorded
-4	The storage capacity is not enough.	Recorded
-12	The version of the Android application cannot be installed.	Recorded
-602	Invalid signature	Recorded
-603	Updating is prohibited.	Recorded
-604	Failed to put the application offline.	Not recorded
-610	Authentication failed.	Not recorded
-699	Unknown error	Recorded (*2)

*1 The error code recorded in the Access Log will be "223: machine-busy".

*2 If the error occurs during preparation for configuration change, it will not be recorded in the Access Log.

Note

- If the preparation for configuration change (putting the application offline, authentication, file size check) cannot be carried out, an error code is displayed on the screen. However, it is not recorded in the Access Log as a firmware update/installation error.

Error codes recorded in the Access Log

Error code	Error name	Explanation	Solution
49	fwu-prohibit	Firmware update is prohibited.	Enable firmware update, and repeat the procedure.
60	other:E60	The HDD cannot be used.	- Turn the main power OFF and ON, and then repeat the procedure. - If the HDD is damaged, replace it.
62	other:E62	The structure of the application or control panel firmware in the package is invalid.	Prepare a valid package file.
221	terminate-fail	Failed to terminate an application when attempting to update or uninstall it.	- If a job is under way in the target application, wait until the job is finished, and then repeat the procedure. - Turn the main power OFF and ON, and then repeat the procedure.
222	signature-invalid	Failed to verify the signature attached to the application or firmware.	Repeat the procedure using a valid signature.
223	machine-busy	Failed to execute installation because another function was being used on the MFP.	- Wait a while and repeat the procedure. - Turn the main power OFF and ON, and then repeat the procedure.
224	capacity-lack	The storage capacity is not enough.	- Reduce the number of applications to be installed. - Uninstall unnecessary applications.

Error code	Error name	Explanation	Solution
225	download-fail	The product ID is incorrect.	Use a correct product key.
226	dependency-check-fail	The control panel does not meet the installation requirements of the application.	Check the installation requirements of the application. Update the control panel as necessary.
227	license-invalid	There are no remaining licenses. The product key that you are trying to use has already been activated for another device.	Use an unused product key to activate the application.
		An invalid product key was used to issue the license.	Update the application using an activated product key.
		The number of licenses issued has exceeded the limit.	Deactivate the application, and then activate it again.
		The license has expired. The product key being used is no longer valid.	Use an unused product key to activate the application.
		The license contract is invalid.	Use a valid product key to activate the application.
228	file-not-found *	The target firmware file cannot be found.	- Turn the main power OFF and ON, and then repeat the procedure. - Check the file in the SD card. - Check the SD card slot. If there is a problem with the hardware, replace the control panel PCB.

Error code	Error name	Explanation	Solution
229	file-invalid *	The target update file is invalid. Occurs in the following cases. - Failed to decompress the file. - Failed to obtain application information. - Failed to read the public key for signature verification.	Repeat the procedure using a valid file.
230	wrong-folder-structure *	The folder directory of the control panel firmware is invalid.	Repeat the procedure using a valid directory.
231	write-fail *	- Failed to write data when updating the control panel firmware. - There is a problem with the hardware.	Turn the main power OFF and ON, and then repeat the procedure. If updating fails again, replace the control panel.
232	deactivate-fail	The application could not be uninstalled because deactivation failed. - Failed to connect to the server. - The license has not been issued.	- Check whether the network is configured correctly. - If the server is under maintenance, wait a while and repeat the procedure. - Check the activation status of the application. If it has not been activated, activate it.
233	uninstall-fail	Failed to uninstall an application.	Turn the main power OFF and ON, and then repeat the procedure. If updating fails again, replace the control panel.

Error code	Error name	Explanation	Solution
234	fixed-app	You attempted to uninstall an application that cannot be uninstalled.	Cancel uninstallation.
235	install-fail	The target file is invalid, and the Android OS returns an error.	- Repeat the procedure using a valid file. - If the same application has already been installed, uninstall it and then repeat the procedure.
236	sdk-incompatible	The Android SDK version required by the application is not installed on the control panel.	Check that the Android SDK version required by the application is installed on the control panel.
237	server-disconnect	Failed to connect to the eDC server.	- Check the network connection (SSL) settings. - Check the proxy settings. - If the server is under maintenance, wait a while and repeat the procedure.
255	panel-system *	Software malfunction.	Turn the main power OFF and ON, and then repeat the procedure.

* These errors are not expected to occur.

4.1.2 ERRORS THAT OCCUR WHEN THE CONTROL PANEL DOWNLOADS DATA FROM THE CONTROLLER AT STARTUP

Some of the graphic data used in the control panel display is model-specific. Model-specific components are stored in the controller board of the MFP.

During startup, the control panel checks if it is necessary to update the model-specific data. If it is necessary, the control panel downloads the data from the MFP controller board and installs it in the control panel.

During update, a dialog appears to inform you that the settings are being changed. When the update process is completed, a dialog indicates whether update was success or not.

Error code	Explanation
E1	An error has occurred when downloading data from the controller board of the MFP.
E2	An error has occurred when installing data on the control panel. An additional error code is displayed after "E2".

D3A9

FAX OPTION TYPE M13

REVISION HISTORY		
Page	Date	Added/Updated/New
		None

FAX OPTION TYPE M13 (D3A9)

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READ THIS FIRST

Important Safety Notices

WARNING

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use a telephone or cellular phone to report a gas leak in the vicinity of the leak.

CAUTION

- Before installing the fax unit, switch off the main switch, and disconnect the power cord.
- The fax unit contains a lithium battery. The danger of explosion exists if a battery of this type is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer. Discard batteries in accordance with the manufacturer's instructions and local regulations.

Note

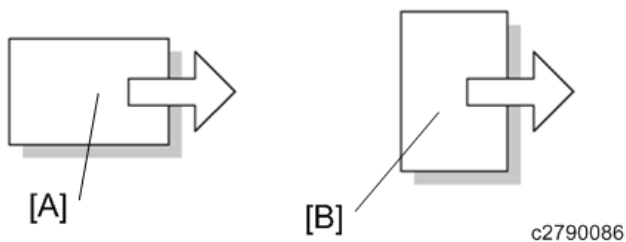
- **Note for Australia:**
- Unit must be connected to Telecommunication Network through a line cord that meets the requirements of ACA Technical Standard TS008.

Symbols and Abbreviations

Conventions Used in this Manual

This manual uses several symbols.

Symbol	What it means
	Screw
	Connector
	E-ring
	Clip ring
	Clamp



[A]: Short Edge Feed (SEF)

[B]: Long Edge Feed (LEF)

Cautions, Notes, etc.

The following headings provide special information:

WARNING

- Failure to obey warning information could result in serious injury or death.

CAUTION

- Obey these guidelines to ensure safe operation and prevent minor injuries.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.
- Always obey these guidelines to avoid serious problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine. bold is added for emphasis.

Note

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

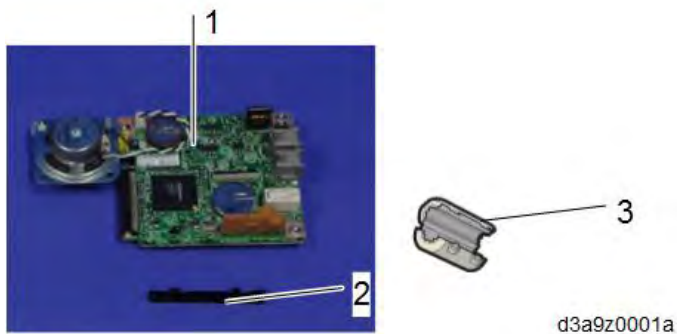
1. INSTALLATION

1.1 FAX OPTION TYPE M13 (D3A9)

This option is not available for North America.

1.1.1 COMPONENT CHECK

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



No.	Description	Q'ty
1	FCU	1
2	Guide Rail	1
3	Ferrite Core	1
-	EMC Address Decal (EU only)	1
-	Serial Number Decal	1

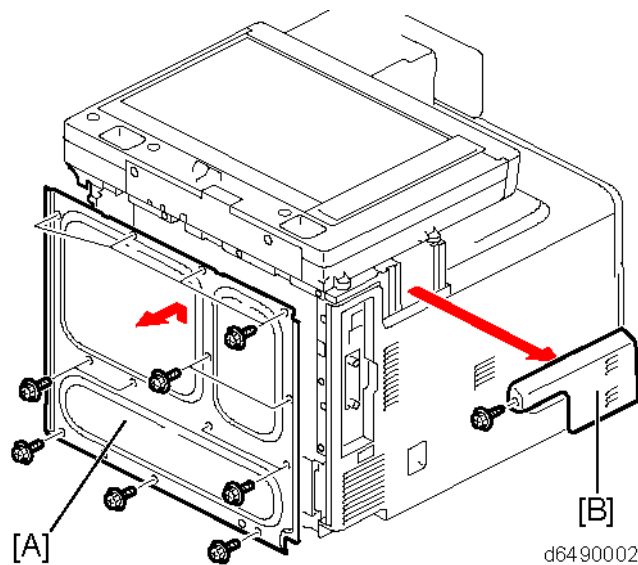
1.1.2 FAX UNIT INSTALLATION PROCEDURE

⚠ CAUTION

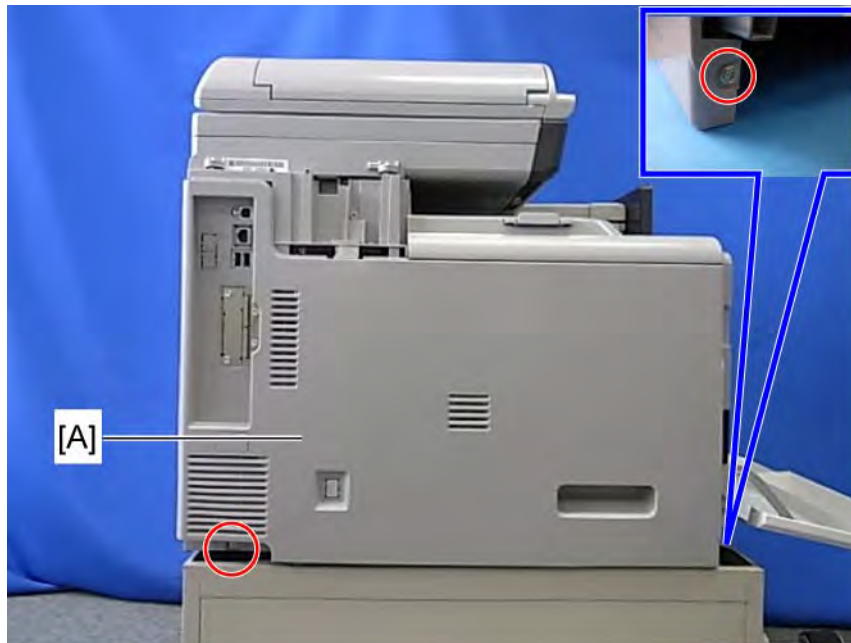
- Before doing this procedure, print out all data in the printer buffer.
- Push the operation switch to put the machine in standby mode. Make sure the power LED is off, turn the main switch off, and then disconnect the power cord and the network cable.
- The mainframe equipped with the fax unit must be connected to a properly grounded socket outlet.

1. Remove the following items:

- Rear cover [A] (⚙ x 13)
- Scanner rear cover [B] (⚙ x 1)



- 2. Remove the paper feed tray, and then open the front cover.**
- 3. Remove the left cover [A]. (⚙ x 2, hook x 2)**



d6490003

4. Disconnect two cables [A] of the HDD.
5. Remove the controller box cover [B]. (⚙ x 7)



d3a9z0002

↓ Note

- The screw [C] is different from other five screws.

6. Install the guide rail [B] into the cutouts [A] on the controller box. (hook x 2)

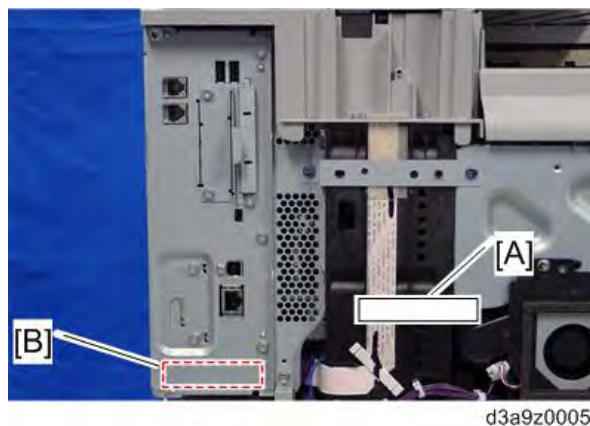


d3a9z0003

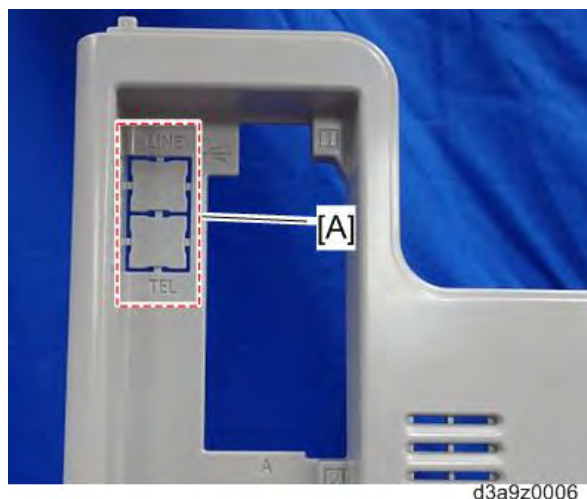
7. Slide the FCU [B] into the slot along the guide rails [A].



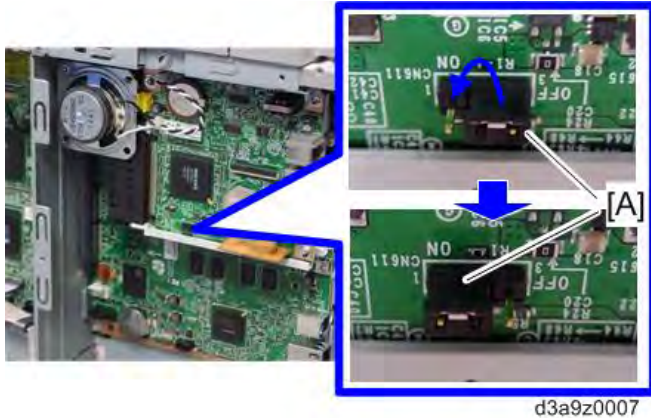
8. Attach the controller box cover. (🔧 x 7)
9. Connect two cables of the HDD to the controller board.
10. Write the serial number of the fax unit on the serial number decal [A], and then attach this decal to the controller box [B].



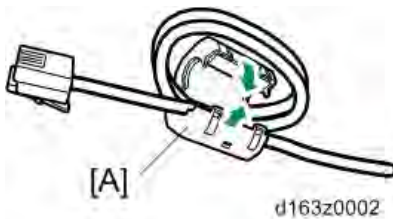
11. Open the line and the telephone connector covers [A] with a flat-head ('minus') screw driver.



12. Attach the left cover. (🔧 x 2)
13. Attach the scanner rear cover. (🔧 x 1)
14. Switch the FCU battery jumper switch [A] to the "ON" position.



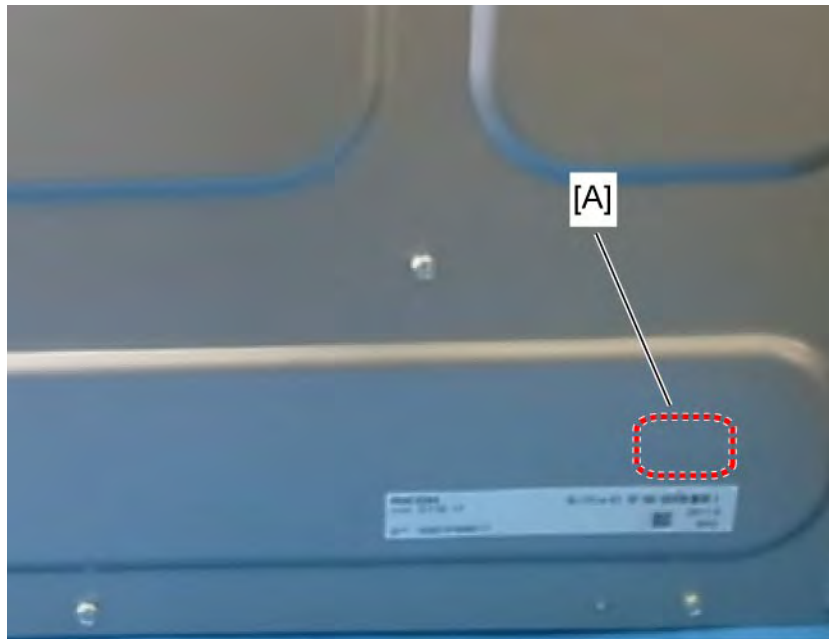
15. Attach the rear cover. (🔧 x 13)
16. Reassemble the machine.
17. Make two loops with the telephone cord, and then attach the ferrite core [A].



18. Connect the end of the telephone cord, having the ferrite core, to the "LINE" jack.



19. Attach the EMC Address Decal at [A] on the rear cover (EU only).



d6490012

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

★ Important

- After you turn the machine on, if you see a message that tells you that the SRAM has been formatted due to a problem with SRAM, turn the machine off and on again to clear the message.

21. Enter the "User Tools" mode and set date and time.

22. Do SP3102-000 in the fax SP mode and enter the serial number for the fax unit.

23. Enter the correct country code with SP2103-001 (NCU Country/ Area Code Setting).

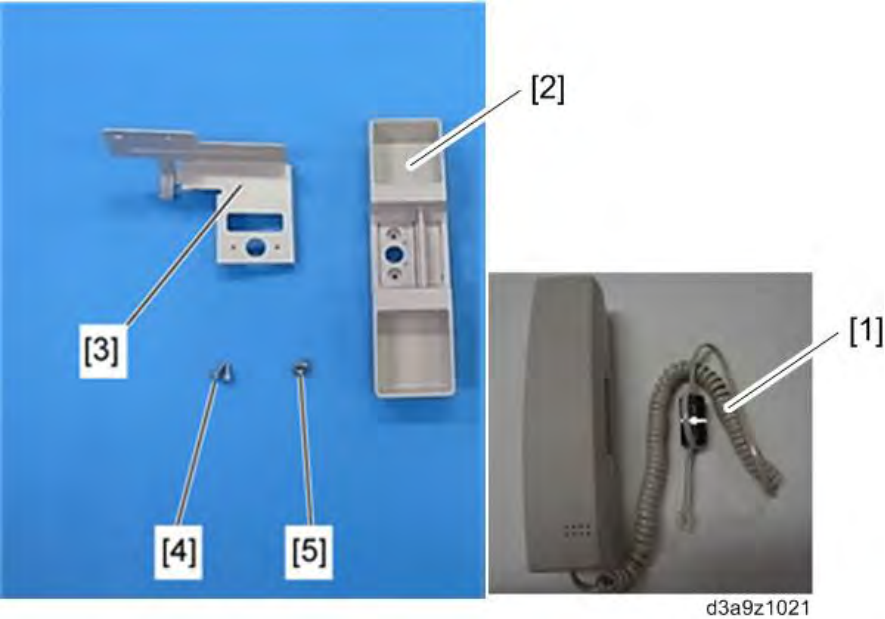
24. Exit the SP mode, and cycle the main power off and on.

1.2 FAX UNIT OPTIONS

1.2.1 HANDSET TYPE C5502 (D645) (ONLY FOR NA)

Accessory Check

Installation of this unit requires the following components. Other components included in this kit are not used for installation on this machine.



No.	Description	Q'ty
1	Handset with ferrite core and bind	1
2	Cradle	1
3	Bracket	1
4	Tapping screw	2
5	Flat head screw	2

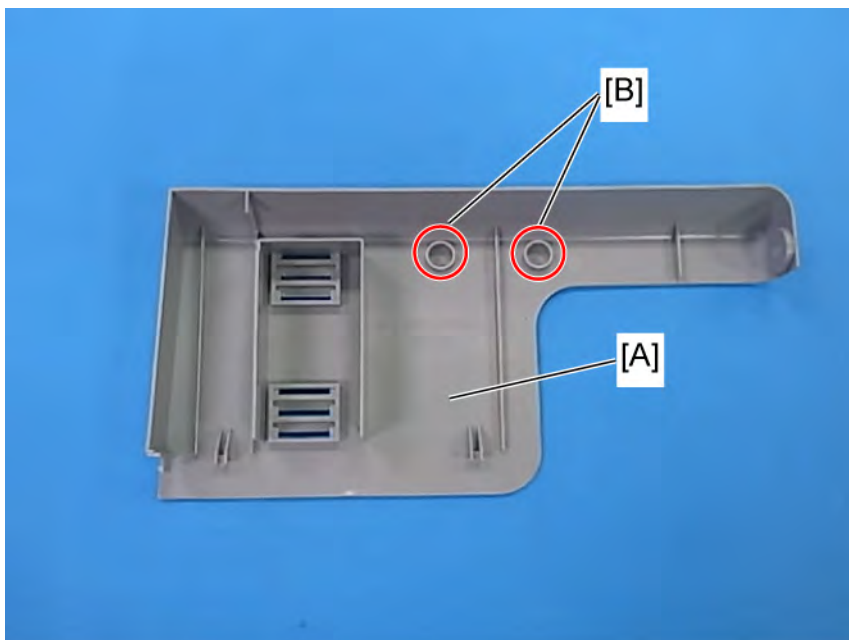
Installation Procedure

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



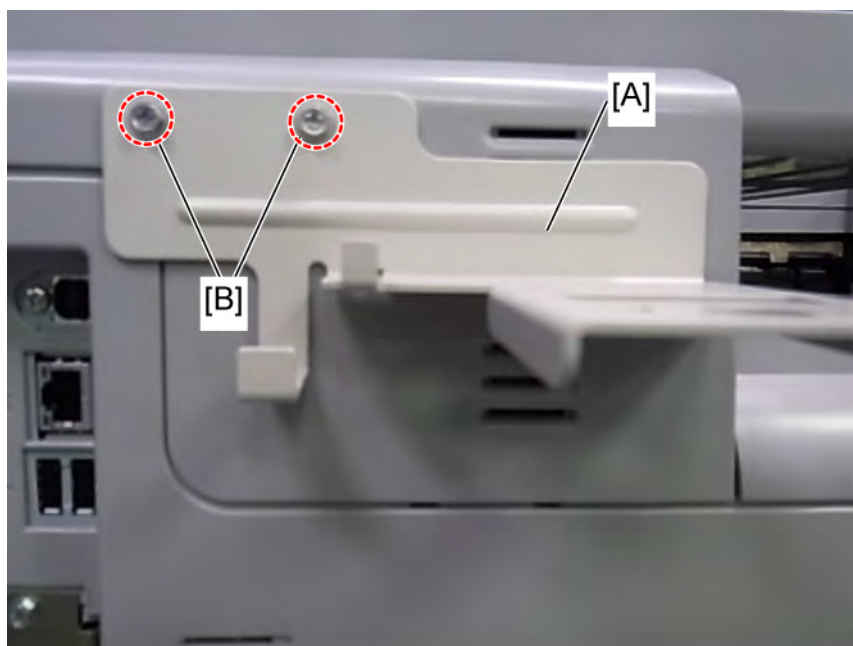
d6490015

2. Cut out the parts [B] from the upper left cover [A] and make two screw holes to attach the bracket.



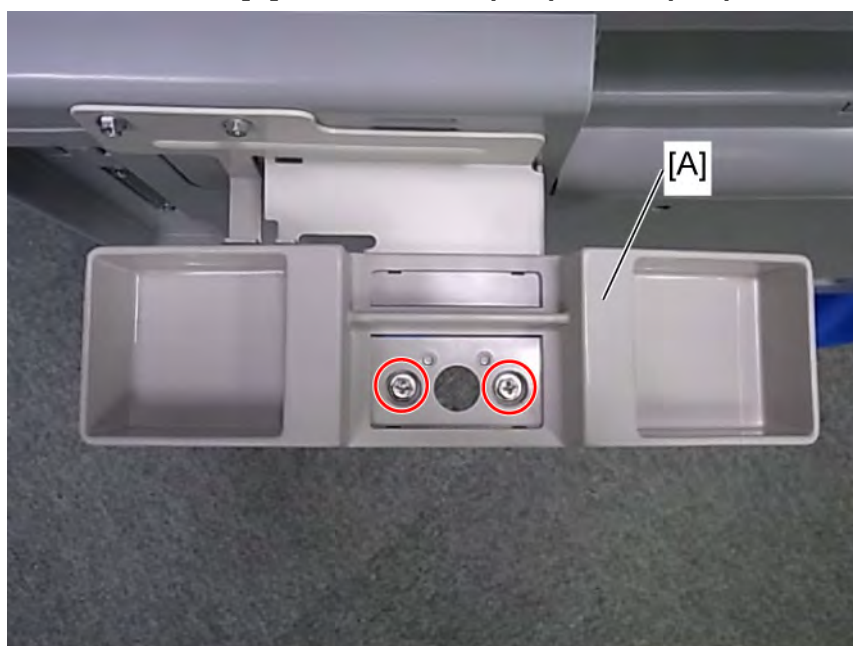
d6490016

3. Attach the upper left cover to the mainframe. (🔧 x 1)
4. Attach the handset bracket [A] to the upper left cover by securing two screws to the frame of the machine through the screw holes [B]. (🔧 (tapping) x 2)



d6490017

5. Attach the cradle [A] to the bracket. (🔩 (flat head) x 2)



d6490018

6. Connect the handset cable connector to the “TEL” connector of the mainframe.



1.2.2 FAX CONNECTION UNIT TYPE M13

Overview of Fax Connection Unit

This unit allows a machine without the fax unit installed (“Client-side Machine”) to send and receive faxes via a machine with the fax unit installed (“Remote Machine”).

Requirements:

- Up to six machines can be registered as the Client-side Machines.
- Machines that have the fax unit installed cannot be used as the Client-side Machine.
- Only one machine can be registered as the Remote Machine.
- Firmware for this unit: “aics” (software number: D3A7759)
- Remote Fax transmissions are possible on a G3 line.
- The remote fax function does not support User Code Authentication. Disable the User Code Authentication on the Remote machine.
- Use this function to check the contents of a file that is stored in memory and not yet sent. Also, use this function to cancel a transmission from the Client-side Machine.

Order of Fax Connection Unit installation procedure:

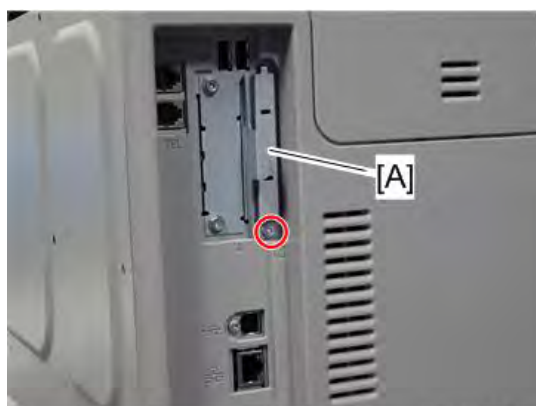
1. Install the Fax Connection Unit in the Remote Machine (fax unit installed).
2. Install the Fax Connection Unit in the Client-side Machine (no fax unit installed).
3. Register the Client-side Machine in the Remote Machine.

★ Important

- **Do not register the Remote Machine before the Client-side Machine is registered in the Remote Machine. Otherwise, registering the Remote Machine fails.**
4. Register the Remote Machine in the Client-side Machine.

Installing the application in the Remote Machine and Client-side Machine

1. Remove the SD card slot cover [A] from the SD card slots. (🔑 x 1)



d3aaz0002

2. Insert the SD card (Fax Connection Unit Type M13) in SD slot 1 (upper) with its label face towards the front of the machine if SD slot 1 is vacant. If slot 1 is not vacant, follow “Moving a Fax Communication application into an SD card in SD slot 1” described below.



d3aaz0003

3. Plug in, and then turn on the machine.
4. Press [Firmware Version] in the [Administrator Tools].
[User Tools/Counter] > [System Settings] > [Administrator Tools]
5. Check whether the aics version is displayed.

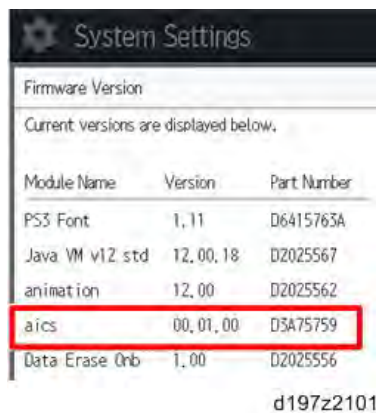
System Settings		
Firmware Version		
Current versions are displayed below.		
Module Name	Version	Part Number
PSS Font	1.11	D6415763A
Java VM v12 std	12.00.18	D2025567
animation	12.00	D2025562
aics	00.01.00	D3A75759
Data Erase Onb	1.00	D2025556

d197z2101

Moving a Fax Communication application into an SD card in SD slot 1

1. Insert the SD card (Fax Connection Unit Type M12) SD slot 2 (lower) with its label face towards the front of the machine. Then push it slowly into SD slot 2 (lower) until you hear a click.

2. Plug in, and then turn on the machine.
3. Move the Fax Connection Unit Type M12 application from the SD card in SD slot 2 (lower) to the SD card in SD slot 1 (upper) with SP5-873-001.
4. Turn off the machine.
5. Remove the SD card from SD slot 2 (lower), and then keep it in a safe place (see “SD Card Appli Move” in the field service manual for the mainframe).
6. Attach the SD-card slot cover, and then turn on the machine (🔑 x 1).
7. Turn on the machine.
8. Press [Firmware Version] in the [Administrator Tools].
[User Tools/Counter] > [System Settings] > [Administrator Tools]
9. Check whether the aics version is displayed.



System Settings		
Firmware Version		
Current versions are displayed below.		
Module Name	Version	Part Number
PSS Font	1.11	D6415763A
Java VM v12 std	12.00.18	D2025567
animation	12.00	D2025562
aics	00.01.00	D3A75759
Data Erase Onb	1.00	D2025556

d197z2101

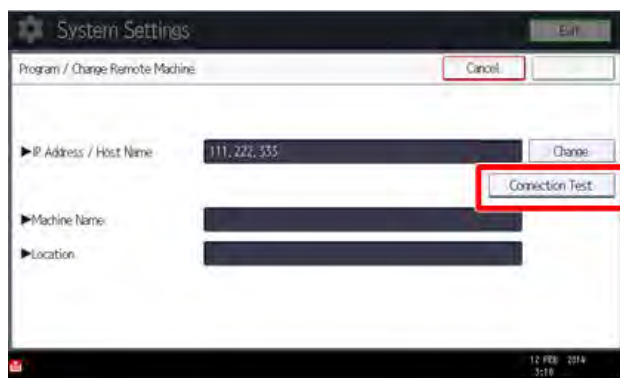
Registering the Client-side Machine(s)

★ Important

- Do not register the Remote Machine in the Client-side machine before the Client-side Machine is registered in the Remote Machine. Otherwise, registering the Remote Machine fails.

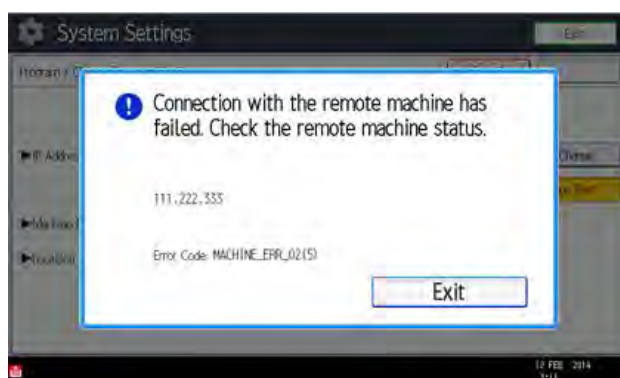
On the Remote Machine:

1. Press [User Tools/Counter] on the operation panel.
2. Press [System Settings].
3. Press [Administrator Tools].
4. Press [Program/Change/Delete Remote Machine].
5. Press one of the machine registration lines, and then enter the IP address or host name of one of the Client-side Machines.
6. Press [Connection Test] to check the connection with the client-side machine.



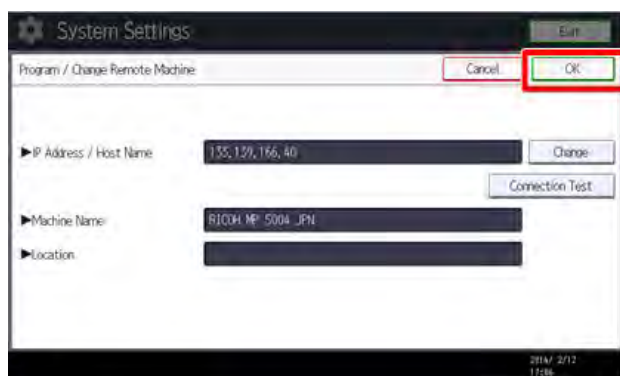
d197z2104

If an error message is displayed, check the network connection with the client-side machine and make sure that the IP address of the client-side machine is correct.



d197z2105

7. Press [OK] after "Connection Test" has been successfully done.



d197z2106

8. Press [User Tools/Counter] on the operation panel to terminate the System Settings.

Registering the Remote Machine

★ Important

- First register the Client-side Machine in the Remote Machine before proceeding this procedure. Otherwise, registering the Remote Machine fails.

Note

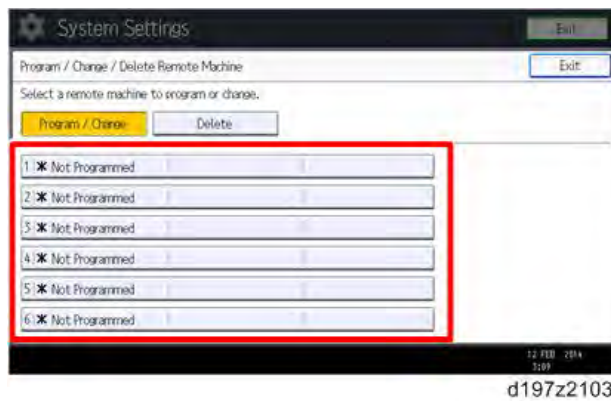
- Only one machine can be registered as the Remote Machine.

On the Client-side Machine(s):

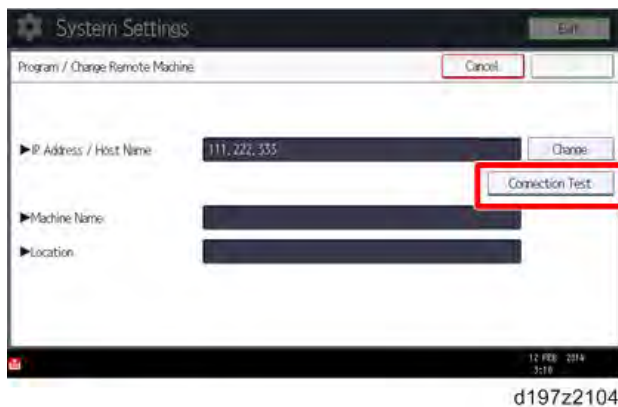
1. Press [User Tools/Counter] on the operation panel.
2. Press [System Settings].
3. Press [Administrator Tools].
4. Press [Program/Change/Delete Remote Machine].
5. Enter the IP address or host name of the Remote Machine.
6. Press one of the machine registration lines, and then enter the IP address or host name of the Remote Machine.

Note

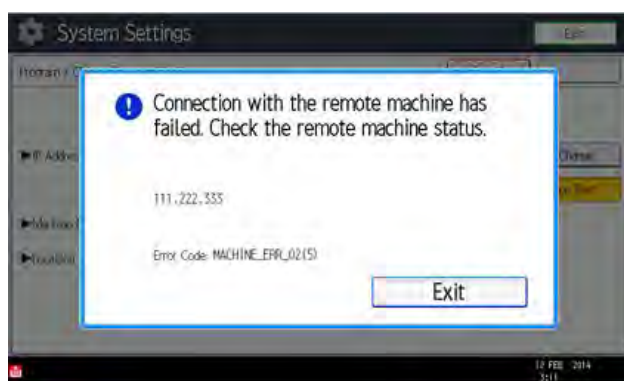
- Only one machine can be registered as the Remote Machine.



7. Press [Connection Test] to check the connection with the remote machine.

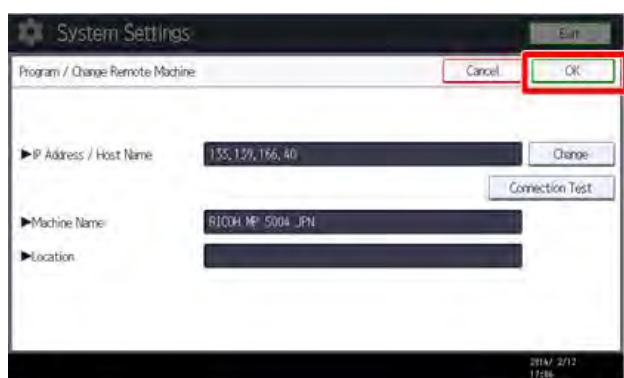


If an error message is displayed, check the network connection with the remote machine and make sure that the IP address of the remote machine is correct.



d197z2105

8. Press [OK] after "Connection Test" has been successfully done.



d197z2106

9. Press [User Tools/Counter] key on the operation panel to terminate the System Settings.

Configuring the Remote Reception Settings

Do the following procedure to enable the Client-side Machine(s) to receive faxes via the Remote Machine. You can forward or route received documents per line or special sender.

↓ Note

- By performing procedures described above (Installing the application in the Remote Machine and Client-side Machine, Registering the Client-side Machine(s), Registering the Remote Machine), the Client-side Machines can **send** faxes via the Remote Machine. The procedures shown below are necessary to enable the Client-side Machines to **receive** faxes.

On the Remote Machine:

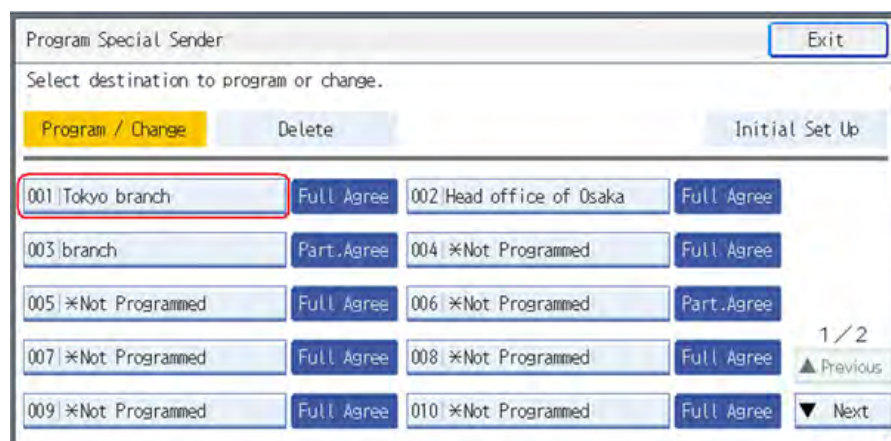
1) If you use "Remote Reception Setting per Line"

- Press [Facsimile Features].
- Press [Remote Reception Setting per Line] in [Reception Settings].
- Enter an IP address or a host name of the client-side machine to connect.
- Press [Set], and [Exit] to exit from the setting.

2) If you use "Remote Reception per Sender"

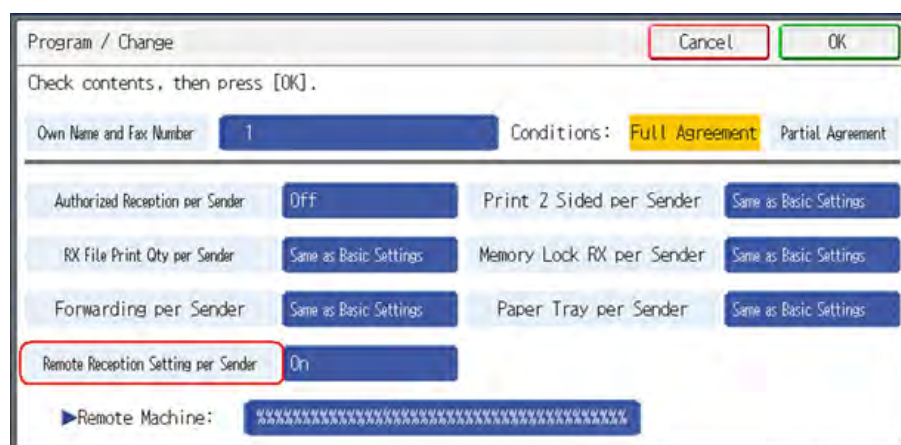
- Press [Facsimile Features].

2. Press [Program Special Sender] in [Reception Settings].
3. Select the Special Sender.



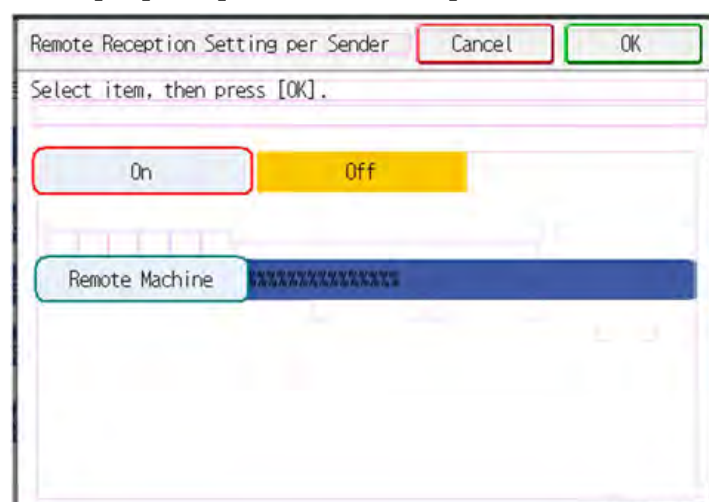
d1661001

4. Press [Remote Reception Setting per Sender].



d1661002

5. Press [On] and [Remote Machine].



d1661003

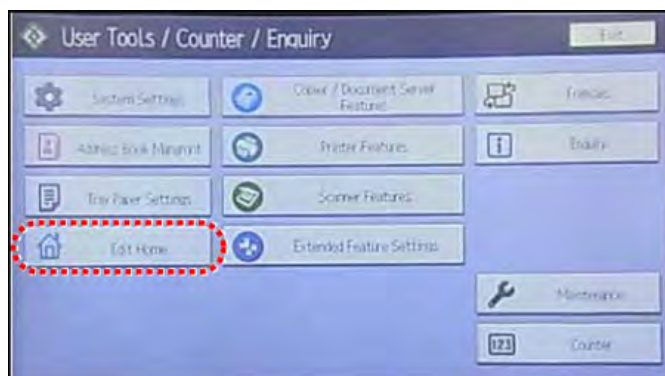
6. Enter an IP address or a host name of the client-side machine to connect.
7. Press [OK] to exit from the setting.

Remote Fax Icon Addition for Remote Machine

The icon of the fax communication is supposed to appear automatically on the home screen of the Client-side Machine(s) after installation of the Fax Communication. If the icon of the fax communication does not appear, add the icon manually. This procedure allows the remote fax icon to appear on the home screen of the operation panel.

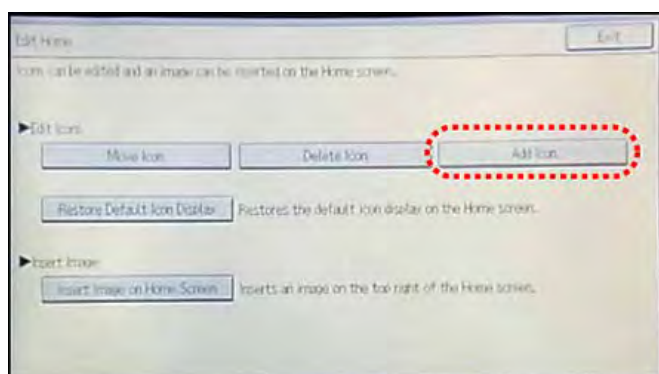
On both the Remote Machine and the Client-side Machines:

1. Press [User Tools].
2. Press [Edit Home].



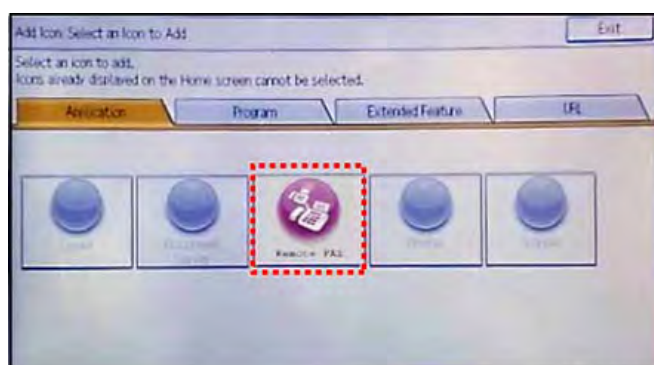
d1440144

3. Press [Add Icon].



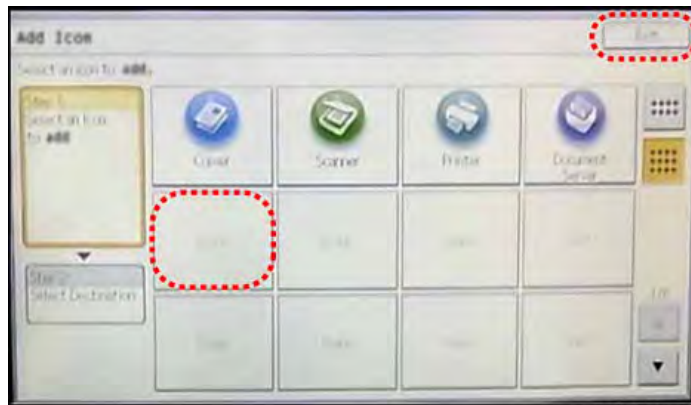
d1440145

4. Press [Remote Fax].



d1440146a

5. Press a [Blank] to set a location for the remote fax icon.



d1440147

6. Press [Exit] to exit from the set-up procedure.

2. REPLACEMENT AND ADJUSTMENT

2.1 FCU

2.1.1 SRAM DATA TRANSFER PROCEDURE

When you replace the FCU board, transfer the SRAM data from the old FCU board to the new FCU board. Do the following procedure to back up the SRAM data.

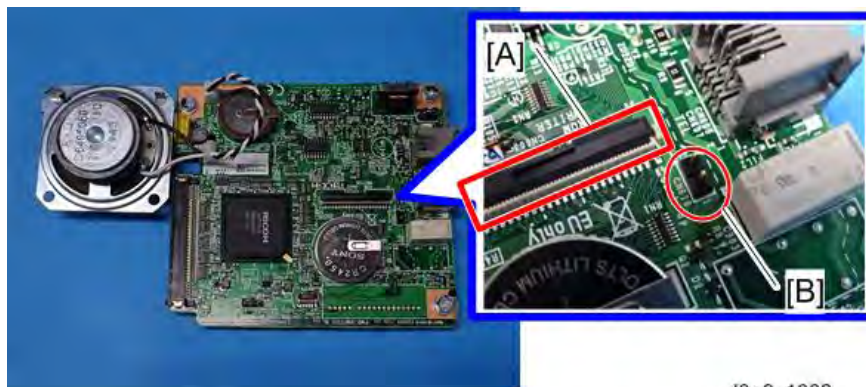
Note

- The following data can be transferred: TTI, RTI, CSI, Fax bit switch settings, RAM address settings, NCU parameter settings.

1. Replace the FCU board. (page 1)
2. Keep the rear cover opened after the new FCU board installation for the SRAM transfer work.
3. Connect the flat flexible cable to the connector [A] of the new FCU board ( x 1). This flexible cable is shipped with the new FCU board.

Note

- The blue side of the flat flexible cable must face outward.
4. Attach the jumper pin to the CN616 [B] of the new FCU board, and connect the flat flexible cable to the connector [A] of the old FCU board.



d3a9z1009

5. Turn on the main power switch.
6. SRAM data transmission starts. When the transmission is completed, you will hear a beeper sound.

 Note

- The beeper sound is the same volume as the speaker sound.
 - The beeper sounds even if the speaker sound is turned off.
 - If the beeper does not sound, turn the main power switch on and off repeatedly and do the transmission procedure 2 or 3 times.
 - If the beeper does not sound after turning the main switch on and off 3 times, you need to input the settings stored in SRAM memory manually.
7. **When “Ready” appears on the operation panel display, turn off the main power switch, and then disconnect the flat flexible cable from the old FCU board.**
 8. **Disconnect the flat flexible cable from the new FCU board.**
 9. **Reassemble the machine (Attach the rear cover).**

3. TROUBLESHOOTING

3.1 FAX CONNECTION UNIT ERROR CODES

3.1.1 FAX CONNECTION UNIT ERROR CODE LIST

MACHINE_ERR_01

Error Code	Suggested Cause	Action
01(1)	IPv4/IPv6 not enabled	Enable IPv4 and IPv6
01(3)	"Cancel" is pressed by user.	-
01(4)	A false connection ID is being used.	Check that the network is established.
01(5)	Network disconnected because of no response within a specified time.	
01(14)	- The machine either of destination or of local is entering SP or Initial setting. - An established connection exists.	- Exit SP or initial setting. - Wait until the connection has finished.

MACHINE_ERR_02

Error Code	Suggested Cause	Action
02(5)	- Wrong IP address/hostname is used - The machine at destination power off - LAN cable is disconnected - Network is rebooting.	- Enter the correct IP address/Host name - Turn on the main power. - Connect the LAN cable - Wait until the rebooting has finished.

MACHINE_ERR_03

Error Code	Suggested Cause	Action	
03	- No user authentication applies for fax application (i.e. Basic/Windows/LDAP/Custom Auth.) - Settings other than user authentication are applied to the fax application.	Configure the user authentication setting for client-side and Remote Machine as the following table.	
		Client-side Machine	Remote Machine
		OFF	OFF
		ON	OFF
		ON	ON

MACHINE_ERR_04

Error Code	Suggested Cause	Action
04	Although the same user registered to the Remote Machine and Client-side Machine, the user name and password for login are unmatched between the two locations.	- Register the same user to both the Remote Machine and Client-side Machine. - Be sure to match the username and password for login between the two locations.

MACHINE_ERR_05

Error Code	Suggested Cause	Action
05	An unauthorized user connects to the fax connection.	Authorize the user to use fax connection.

MACHINE_ERR_06

Error Code	Suggested Cause	Action
06	Timeout error on the node authentication	Adjust the value of SP5-741-001 to prolong the timeout for node authentication.

MACHINE_ERR_07

Error Code	Suggested Cause	Action
07	Multiple destinations are set in the Client-side Machine.	In the Client-side Machine, execute SP5-801-021 to clear AICS memory

MACHINE_ERR_08

Error Code	Suggested Cause	Action
08(1)	▪ A Client-side Machine connects to other Client-side Machine. ▪ The Client-side Machine not registered in the Remote Machine as destinations.	▪ Connect to the Remote Machine. ▪ Register the Client-side Machine to the Remote Machine as a destination.
08(2)	▪ A Remote Machine connects to other Remote Machine. ▪ Wrong Remote Machine registered in the Client-side Machine.	▪ Connect to the Client-side Machine. ▪ Check what Remote Machine registered in the Client-side Machine.

3.2 ERROR CODES

If an error code occurs, retry the communication. If the same problem occurs, try to fix the problem as suggested below. Note that some error codes appear only in the error code display and on the service report.

Code	Meaning	Suggested Cause/Action
0-00	DIS/NSF not detected within 40 s of Start being pressed	- Check the line connection. - The machine at the other end may be incompatible. - Replace the FCU. - Check for DIS/NSF with an oscilloscope. - If the rx signal is weak, there may be a bad line.
0-01	DCN received unexpectedly	- The other party is out of paper or has a jammed printer. - The other party pressed Stop during communication.
0-03	Incompatible modem at the other end	The other terminal is incompatible.
0-04	CFR or FTT not received after modem training	- Check the line connection. - Try changing the tx level and/or cable equalizer settings. - Replace the FCU. - The other terminal may be faulty; try sending to another machine. - If the rx signal is weak or defective, there may be a bad line. Cross reference Tx level - NCU Parameter 01 (PSTN) Cable equalizer - G3 Switch 07 (PSTN) Dedicated Tx parameters in Service Program Mode

Error Codes

Code	Meaning	Suggested Cause/Action
0-05	Modem training fails even G3 shifts down to 2400 bps.	▪ Check the line connection. ▪ Try adjusting the tx level and/or cable equalizer. ▪ Replace the FCU. ▪ Check for line problems. Cross reference See error code 0-04.
0-06	The other terminal did not reply to DCS	▪ Check the line connection. ▪ Try adjusting the tx level and/or cable equalizer settings. ▪ Replace the FCU. ▪ The other end may be defective or incompatible; try sending to another machine. ▪ Check for line problems. Cross reference See error code 0-04.
0-07	No post-message response from the other end after a page was sent	▪ Check the line connection. ▪ Replace the FCU. ▪ The other end may have jammed or run out of paper. ▪ The other end user may have disconnected the call. ▪ Check for a bad line. ▪ The other end may be defective; try sending to another machine.

Code	Meaning	Suggested Cause/Action
0-08	The other end sent RTN or PIN after receiving a page, because there were too many errors	- Check the line connection. - Replace the FCU. - The other end may have jammed, or run out of paper or memory space. - Try adjusting the tx level and/or cable equalizer settings. - The other end may have a defective modem/FCU; try sending to another machine. - Check for line problems and noise. Cross reference - Tx level - NCU Parameter 01 (PSTN) - Cable equalizer - G3 Switch 07 (PSTN) - Dedicated Tx parameters in Service Program Mode
0-14	Non-standard post message response code received	- Incompatible or defective remote terminal; try sending to another machine. - Noisy line: resend. - Try adjusting the tx level and/or cable equalizer settings. - Replace the FCU. Cross reference See error code 0-08.
0-15	The other terminal is not capable of specific functions.	The other terminal is not capable of accepting the following functions, or the other terminal's memory is full. - Confidential rx - Transfer function - SEP/SUB/PWD/SID

Code	Meaning	Suggested Cause/Action
0-16	CFR or FTT not detected after modem training in confidential or transfer mode	- Check the line connection. - Replace the FCU. - Try adjusting the tx level and/or cable equalizer settings. - The other end may have disconnected, or it may be defective; try calling another machine. - If the rx signal level is too low, there may be a line problem. Cross reference See error code 0-08.
0-17	Communication was interrupted by pressing the stop key	If the Stop key was not pressed and this error keeps occurring, replace the operation panel or the operation panel drive board.
0-20	Facsimile data not received within 6 s of retraining	- Check the line connection. - Replace the FCU. - Check for line problems. - Try calling another fax machine. - Try adjusting the reconstruction time for the first line and/or rx cable equalizer setting. Cross reference Reconstruction time - G3 Switch 0A, bit 6 Rx cable equalizer - G3 Switch 07 (PSTN)
0-21	EOL signal (end-of-line) from the other end not received within 5 s of the previous EOL signal	- Check the connections between the FCU and line. - Check for line noise or other line problems. - Replace the FCU. - The remote machine may be defective or may have disconnected. Cross reference Maximum interval between EOLs and between ECM frames - G3 Bit Switch 0A, bit 4

Code	Meaning	Suggested Cause/Action
0-22	The signal from the other end was interrupted for more than the acceptable modem carrier drop time (default: 200 ms)	- Check the line connection. - Replace the FCU. - Defective remote terminal. - Check for line noise or other line problems. - Try adjusting the acceptable modem carrier drop time. Cross reference Acceptable modem carrier drop time - G3 Switch 0A, bits 0 and 1
0-23	Too many errors during reception	- Check the line connection. - Replace the FCU. - Defective remote terminal - Check for line noise or other line problems. - Try asking the other end to adjust their tx level. - Try adjusting the rx cable equalizer setting and/or rx error criteria. Cross reference Rx cable equalizer - G3 Switch 07 (PSTN) Rx error criteria - Communication Switch 02, bits 0 and 1
0-30	The other terminal did not reply to NSS(A) in AI short protocol mode	- Check the line connection. - Try adjusting the tx level and/or cable equalizer settings. - The other terminal may not be compatible. Cross reference Dedicated tx parameters - Section 4
0-32	The other terminal sent a DCS, which contained functions that the receiving machine cannot handle.	- Check the protocol dump list. - Ask the other party to contact the manufacturer.
0-33	The data reception (not ECM) is not completed within 10 minutes.	- Check the line connection. - The other terminal may have a defective modem/FCU.
0-52	Polarity changed during communication	- Check the line connection. - Retry communication.

Code	Meaning	Suggested Cause/Action
0-55	FCU does not detect the SG3.	- FCU firmware or board defective. - SG3 firmware or board defective.
0-56	The stored message data exceeds the capacity of the mailbox in the SG3.	SG3 firmware or board defective.
0-70	The communication mode specified in CM/JM was not available (V.8 calling and called terminal)	- The other terminal did not have a compatible communication mode (e.g., the other terminal was a V.34 data modem and not a fax modem.) - A polling tx file was not ready at the other terminal when polling rx was initiated from the calling terminal.
0-74	The calling terminal fell back to T.30 mode, because it could not detect ANSam after sending CI.	- The calling terminal could not detect ANSam due to noise, etc. - ANSam was too short to detect. - Check the line connection and condition. - Try making a call to another V.8/V.34 fax.
0-75	The called terminal fell back to T.30 mode, because it could not detect a CM in response to ANSam (ANSam timeout).	- The terminal could not detect ANSam. - Check the line connection and condition. - Try receiving a call from another V.8/V.34 fax.
0-76	The calling terminal fell back to T.30 mode, because it could not detect a JM in response to CM (CM timeout).	- The called terminal could not detect a CM due to noise, etc. - Check the line connection and condition. - Try making a call to another V.8/V.34 fax.
0-77	The called terminal fell back to T.30 mode, because it could not detect a CJ in response to JM (JM timeout).	- The calling terminal could not detect a JM due to noise, etc. - A network that has narrow bandwidth cannot pass JM to the other end. - Check the line connection and condition. - Try receiving a call from another V.8/V.34 fax.

Code	Meaning	Suggested Cause/Action
0-79	The called terminal detected CI while waiting for a V.21 signal.	- Check for line noise or other line problems. - If this error occurs, the called terminal falls back to T.30 mode.
0-80	The line was disconnected due to a timeout in V.34 phase 2 – line probing.	- The guard timer expired while starting these phases. Serious noise, narrow bandwidth, or low signal level can cause these errors. If these errors happen at the transmitting terminal: - Try making a call at a later time. - Try using V.17 or a slower modem using dedicated tx parameters. - Try increasing the tx level. - Try adjusting the tx cable equalizer setting. If these errors happen at the receiving terminal: - Try adjusting the rx cable equalizer setting. - Try increasing the tx level. - Try using V.17 or a slower modem if the same error is frequent when receiving from multiple senders.
0-81	The line was disconnected due to a timeout in V.34 phase 3 – equalizer training.	
0-82	The line was disconnected due to a timeout in the V.34 phase 4 – control channel start-up.	
0-83	The line was disconnected due to a timeout in the V.34 control channel restart sequence.	
0-84	The line was disconnected due to abnormal signaling in V.34 phase 4 – control channel start-up.	- The signal did not stop within 10 s. - Turn off the machine, then turn it back on. - If the same error is frequent, replace the FCU.
0-85	The line was disconnected due to abnormal signaling in V.34 control channel restart.	- The signal did not stop within 10 s. - Turn off the machine, then turn it back on. - If the same error is frequent, replace the FCU.
0-86	The line was disconnected because the other terminal requested a data rate using MPh that was not available in the currently selected symbol rate.	- The other terminal was incompatible. - Ask the other party to contact the manufacturer.

Code	Meaning	Suggested Cause/Action
0-87	The control channel started after an unsuccessful primary channel.	- The receiving terminal restarted the control channel because data reception in the primary channel was not successful. - This does not result in an error communication.
0-88	The line was disconnected because PPR was transmitted/received 9 (default) times within the same ECM frame.	- Try using a lower data rate at the start. - Try adjusting the cable equalizer setting.
2-11	Only one V.21 connection flag was received	Replace the FCU.
2-12	Modem clock irregularity	Replace the FCU.
2-13	Modem initialization error	- Turn off the machine, then turn it back on. - Update the modem ROM. - Replace the FCU.
2-22	Counter overflow error of JBIG chip	If this error occurs frequently, change the settings for resolution, paper size and compression type.
2-23	JBIG compression or reconstruction error	Turn off the machine, then turn it back on.
2-24	JBIG ASIC error	Turn off the machine, then turn it back on.
2-25	JBIG data reconstruction error (BIH error)	- JBIG data error - Check the sender's JBIG function. - Update the MBU ROM.
2-26	JBIG data reconstruction error (Float marker error)	
2-27	JBIG data reconstruction error (End marker error)	
2-28	JBIG data reconstruction error (Timeout)	

Code	Meaning	Suggested Cause/Action
2-29	JBIG trailing edge maker error	- FCU defective - Check the destination device.
2-50	The machine resets itself for a fatal FCU system error	If this is frequent, update the ROM, or replace the FCU.
2-51	The machine resets itself because of a fatal communication error	If this is frequent, update the ROM, or replace the FCU.
2-53	Snd msg() in the manual task is an error because the mailbox for the operation task is full.	The user did the same operation many times, and this gave too much load to the machine.
4-01	Line current was cut	- Check the line connector. - Check for line problems. - Replace the FCU.
4-10	Communication failed because of an ID Code mismatch (Closed Network) or Tel. No./CSI mismatch (Protection against Wrong Connections)	- Get the ID Codes the same and/or the CSIs programmed correctly, then resend. - The machine at the other end may be defective.
5-00	Data reconstruction not possible	Replace the FCU
5-10	DCR timer expired	Replace the FCU.
5-20	Storage impossible because of a lack of memory	- Temporary memory shortage. - Test the SAF memory.
5-21	Memory overflow	
5-23	Print data error when printing a substitute rx or confidential rx message	- Test the SAF memory. - Ask the other end to resend the message.

Code	Meaning	Suggested Cause/Action
5-25	SAF file access error	- Replace an SD card or HDD. - Replace the FCU.
6-00	G3 ECM - T1 time out during reception of facsimile data	- Try adjusting the rx cable equalizer. - Replace the FCU.
6-01	G3 ECM - no V.21 signal was received	
6-02	G3 ECM - EOR was received	
6-04	G3 ECM - RTC not detected	- Check the line connection. - Check for a bad line or defective remote terminal. - Replace the FCU.
6-05	G3 ECM - facsimile data frame not received within 18 s of CFR, but there was no line fail	- Check the line connection. - Check for a bad line or defective remote terminal. - Replace the FCU. - Try adjusting the rx cable equalizer Cross reference - Rx cable equalizer - G3 Switch 07 (PSTN)
6-06	G3 ECM - coding/decoding error	- Defective FCU. - The other terminal may be defective.
6-08	G3 ECM - PIP/PIN received in reply to PPS.NULL	- The other end pressed Stop during communication. - The other terminal may be defective.
6-09	G3 ECM - ERR received	- Check for a noisy line. - Adjust the tx levels of the communicating machines. - See code 6-05.

Code	Meaning	Suggested Cause/Action
6-10	G3 ECM - error frames still received at the other end after all communication attempts at 2400 bps	- Check for line noise. - Adjust the tx level (use NCU parameter 01 or the dedicated tx parameter for that address). - Check the line connection. - Defective remote terminal.
6-21	V.21 flag detected during high speed modem communication	The other terminal may be defective or incompatible.
6-22	The machine resets the sequence because of an abnormal handshake in the V.34 control channel	- Check for line noise. - If the same error occurs frequently, replace the FCU. - Defective remote terminal.
6-99	V.21 signal not stopped within 6 s	Replace the FCU.
13-17	SIP user name registration error	- Double registration of the SIP user name. - Capacity for user-name registration in the SIP server is not sufficient.
13-18	SIP server access error	- Incorrect initial setting for the SIP server. - Defective SIP server.
13-24	SIP authentication error	Registered password in the device does not match the password in the SIP server.
13-25	Network I/F setting error	- IPv4 is not active in the active protocol setting. - IP address of the device is not registered.
13-26	Network I/F setting error at power on	- Active protocol setting does not match the I/F setting for SIP server. - IP address of the device is not registered.
13-27	IP address setting error	IP address of the device is not registered.
14-00	SMTP Send Error	Error occurred during sending to the SMTP server. Occurs for any error other than 14-01 to 16. For example, the mail address of the system administrator is not registered.

Code	Meaning	Suggested Cause/Action
14-01	SMTP Connection Failed	- Failed to connect to the SMTP server (timeout) because the server could not be found. - The PC is not ready to transfer files. - SMTP server not functioning correctly. - The DNS IP address is not registered. - Network not operating correctly. - Destination folder selection not correct.
14-02	No Service by SMTP Service (421)	- SMTP server operating incorrectly, or the destination for direct SMTP sending is not correct. - Contact the system administrator and check that the SMTP server has the correct settings and operates correctly. - Contact the system administrator for direct SMTP sending and check the sending destination.
14-03	Access to SMTP Server Denied (450)	- Failed to access the SMTP server because the access is denied. - SMTP server operating incorrectly. Contact the system administrator to determine if there is a problem with the SMTP server and to check that the SMTP server settings are correct. - Folder send destination is incorrect. Contact the system administrator to determine that the SMTP server settings and path to the server are correct. - Device settings incorrect. Confirm that the user name and password settings are correct. - Direct SMTP destination incorrect. Contact the system administrator to determine if there is a problem at the destination at that the settings at the destination are correct.
14-04	Access to SMTP Server Denied (550)	- SMTP server operating incorrectly - Direct SMTP sending not operating correctly

Code	Meaning	Suggested Cause/Action
14-05	SMTP Server HDD Full (452)	- Failed to access the SMTP server because the HDD on the server is full. - Insufficient free space on the HDD of the SMTP server. Contact the system administrator and check the amount of space remaining on the SMTP server HDD. - Insufficient free space on the HDD where the destination folder is located. Contact the system administrator and check the amount of space remaining on the HDD where the target folder is located. - Insufficient free space on the HDD at the target destination for SMTP direct sending. Contact the system administrator and check the amount of space remaining on the target HDD.
14-06	User Not Found on SMTP Server (551)	- The designated user does not exist. - The designated user does not exist on the SMTP server. - The designated address is not for use with direct SMTP sending.
14-07	Data Send to SMTP Server Failed (4XX)	- Failed to access the SMTP server because the transmission failed. - PC not operating correctly. - SMTP server operating incorrectly - Network not operating correctly. - Destination folder setting incorrect. - Direct SMTP sending not operating correctly.
14-08	Data Send to SMTP Server Failed (5XX)	- Failed to access the SMTP server because the transmission failed. - SMTP server operating incorrectly - Destination folder setting incorrect. - Direct SMTP sending not operating correctly. - Software application error.

Code	Meaning	Suggested Cause/Action
14-09	Authorization Failed for Sending to SMTP Server	- POP-Before-SMTP or SMTP authorization failed. - Incorrect setting for file transfer
14-10	Addresses Exceeded	Number of broadcast addresses exceeded the limit for the SMTP server.
14-11	Buffer Full	The send buffer is full so the transmission could not be completed. Buffer is full due to using Scan-to-Email while the buffer is being used send mail at the same time.
14-12	Data Size Too Large	Transmission was cancelled because the detected size of the file was too large.
14-13	Send Cancelled	Processing is interrupted because the user pressed Stop.
14-14	Security Locked File Error	Update the software because of the defective software.
14-15	Mail Data Error	- The transmitting a mail is interrupted via DCS due to the incorrect data. - Update the software because of the defective software.
14-16	Maximum Division Number Error	- When a mail is divided for the mail transmission and the division number of a mail are more than the specified number, the mail transmission is interrupted. - Update the software because of the defective software.
14-17	Incorrect Ticket	Update the software because of the defective software.
14-18	Access to MCS File Error	- The access to MCS file is denied due to the no permission of access. - Update the software because of the defective software.

Code	Meaning	Suggested Cause/Action
14-20	SMTP Authentication Error	Make sure that the administrator's e-mail address is the same as the SMTP authentication address or POP before SMTP address.
14-21	Transmission error of S/MIME	Register the correct user certificate and device certificate.
14-30	MCS File Creation Failed	Failed to create the MCS file because: - The number of files created with other applications on the Document Server has exceeded the limit. - HDD is full or not operating correctly. - Software error.
14-31	UFS File Creation Failed	UFS file could not be created: - Not enough space in UFS area to handle both Scan-to-Email and IFAX transmission. - HDD full or not operating correctly. - Software error.
14-32	Cancelled the Mail Due to Error Detected by NFAX	Error detected with NFAX and send was cancelled due to a software error.
14-33	No Mail Address For the Machine	Neither the mail address of the machine nor the mail address of the network administrator is registered.
14-34	Address designated in the domain for SMTP sending does not exist	- Operational error in normal mail sending or direct SMTP sending. - Check the address selected in the address book for SMTP sending. - Check the domain selection.
14-50	Mail Job Task Error	Due to an FCU mail job task error, the send was cancelled: - Address book was being edited during creation of the notification mail. - Software error.

Code	Meaning	Suggested Cause/Action
14-51	UCS Destination Download Error	Not even one return notification can be downloaded: ▪ The address book was being edited. ▪ The number for the specified destination does not exist (it was deleted or edited after the job was created).
14-60	Send Cancel Failed	▪ The cancel operation by the user failed to cancel the send operation.
14-61	Notification Mail Send Failed for All Destinations	▪ All addresses for return notification mail failed.
14-62	Transmission Error due to the existence of zero line page	▪ When the 0 line page exists in received pages with G3 communication, the transmission is interrupted.
14-63	Fax Communication Unit: Transmission Error	Check the followings. ▪ Name of SMTP server ▪ Port number of SMTP ▪ DNS setting ▪ Server name (FTP) ▪ Path name (computer name and shared folder name at SMTP/ NCP) ▪ Active protocol setting (Netware/ NCP) ▪ NW flame type (NCP) ▪ Log-on mode (NDS tree/ bindery)
-		Check the SMTP server. ▪ Check if the SMTP server works normally and is connected to the network. ▪ Check if the settings of the SMTP are correct.
-		Check the DNS server. ▪ Check if the DNS server works normally and is connected to the network. ▪ Check if the settings of the DNS server are correct.

Code	Meaning	Suggested Cause/Action
-		Check the network. - Check if the LAN works normally. - Check if the no firewall exists.
-		Check the destination folder for the data transfer. - Check if the destination folder works normally. - Check if the settings of the destination folder are correct.
-		Ask an administrator of the direct SMTP server in which the data is supposed to be transferred. - Check if the destination SMTP server works normally. - Check if the settings of the destination SMTP server are correct.
15-01	POP3/IMAP4 Server Not Registered	At startup, the system detected that the IP address of the POP3/IMAP4 server has not been registered in the machine.
15-02	POP3/IMAP4 Mail Account Information Not Registered	The POP3/IMAP4 mail account has not been registered.
15-03	Mail Address Not Registered	The mail address has not been registered.
15-10	DCS Mail Receive Error	Error other than 15-11 to 15-18.
15-11	Connection Error	The DNS or POP3/IMAP4 server could not be found: - The IP address for DNS or POP3/IMAP4 server is not stored in the machine. - The DNS IP address is not registered. - Network not operating correctly.
15-12	Authorization Error	POP3/IMAP4 send authorization failed: - Incorrect IFAX user name or password. - Access was attempted by another device, such as the PC. - POP3/IMAP4 settings incorrect.

Code	Meaning	Suggested Cause/Action
15-13	Receive Buffer Full	Occurs only during manual reception. Transmission cannot be received due to insufficient buffer space. The buffer is being used for mail send or Scan-to-Email.
15-14	Mail Header Format Error	The mail header is not standard format. For example, the Date line description is incorrect.
15-15	Mail Divide Error	The e-mail is not in standard format. There is no boundary between parts of the e-mail, including the header.
15-16	Mail Size Receive Error	The mail cannot be received because it is too large.
15-17	Receive Timeout	May occur during manual receiving only because the network is not operating correctly.
15-18	Incomplete Mail Received	Only one portion of the mail was received.
15-31	Final Destination for Transfer Request Reception Format Error	The format of the final destination for the transfer request was incorrect.
15-39	Send/Delivery Destination Error	The transmission cannot be delivered to the final destination: - Destination file format is incorrect. - Could not create the destination for the file transmission.
15-41	SMTP Receive Error	Reception rejected because the transaction exceeded the limit for the "Auth. E-mail RX" setting.
15-42	Off Ramp Gateway Error	The delivery destination address was specified with Off Ramp Gateway OFF.
15-43	Address Format Error	Format error in the address of the Off Ramp Gateway.
15-44	Addresses Over	The number of addresses for the Off Ramp Gateway exceeded the limit of 30.

Code	Meaning	Suggested Cause/Action
15-61	Attachment File Format Error	The attached file is not TIFF format.
15-62	TIFF File Compatibility Error	Could not receive transmission due to: - Resolution error - Image of resolution greater than 200 dpi without extended memory. - Resolution is not supported. - Page size error - The page size was larger than A3. - Compression error - File was compressed with other than MH, MR, or MMR.
15-63	TIFF Parameter Error	The TIFF file sent as the attachment could not be received because the TIFF header is incorrect: - The TIFF file attachment is a type not supported. - The TIFF file attachment is corrupted. - Software error.
15-64	TIFF Decompression Error	The file received as an attachment caused the TIFF decompression error: - The TIFF format of the attachment is corrupted. - Software error.
15-71	Not Binary Image Data	The file could not be received because the attachment was not binary image data.
15-73	MDN Status Error	Could not find the Disposition line in the header of the Return Receipt, or there is a problem with the firmware.
15-74	MDN Message ID Error	Could not find the Original Message ID line in the header of the Return Receipt, or there is a problem with the firmware.

Code	Meaning	Suggested Cause/Action
15-80	Mail Job Task Read Error	Could not receive the transmission because the destination buffer is full and the destination could not be created (this error may occur when receiving a transfer request or a request for notification of reception).
15-81	Repeated Destination Registration Error	Could not repeat receive the transmission because the destination buffer is full and the destination could not be created (this error may occur when receiving a transfer request or a request for notification of reception).
15-91	Send Registration Error	Could not receive the file for transfer to the final destination: - The format of the final destination or the transfer destination is incorrect. - Destinations are full so the final and transfer destinations could not be created.
15-92	Memory Overflow	Transmission could not be received because memory overflowed during the transaction.
15-93	Memory Access Error	Transaction could not complete due to a malfunction of SAF memory.
15-94	Incorrect ID Code	The machine rejected an incoming e-mail for transfer request, because the ID code in the incoming e-mail did not match the ID code registered in the machine.
15-95	Transfer Station Function	The machine rejected an incoming e-mail for transfer because the transfer function was unavailable.
22-00	Original length exceeded the maximum scan length	- Divide the original into more than one page. - Check the resolution used for scanning. Lower the scan resolution if possible. - Add optional page memory.

Code	Meaning	Suggested Cause/Action
22-01	Memory overflow while receiving	▪ Wait for the files in the queue to be sent. ▪ Delete unnecessary files from memory. ▪ Transfer the substitute reception files to another fax machine, if the machine's printer is busy or out of order. ▪ Add an optional SAF memory card or hard disk.
22-02	Tx or rx job stalled due to line disconnection at the other end	▪ The job started normally but did not finish normally; data may or may not have been received fully. ▪ Restart the machine.
22-04	The machine cannot store received data in the SAF	▪ Update the ROM ▪ Replace the FCU.
22-05	No G3 parameter confirmation answer	▪ Defective FCU board or firmware.
23-00	Data read timeout during construction	▪ Restart the machine. ▪ Replace the FCU.
25-00	The machine software resets itself after a fatal transmission error occurred	▪ Update the ROM ▪ Replace the FCU.
F0-xx	V.34 modem error	▪ Replace the FCU.
F6-xx	SG3 modem error	▪ Update the SG3 modem ROM. ▪ Replace the SG3 board. ▪ Check for line noise or other line problems. ▪ Try communicating another V.8/V.34 fax.

3.3 IFAX TROUBLESHOOTING

Use the following procedures to determine whether the machine or another part of the network is causing the problem.

Communication Route	Item	Action [Remarks]
General LAN	1. Connection with the LAN	- Check that the LAN cable is connected to the machine. - Check that the LEDs on the hub are lit.
	2. LAN activity	Check that other devices connected to the LAN can communicate through the LAN.
Between IFAX and PC	1. Network settings on the PC	Check the network settings on the PC. [Is the IP address registered in the TCP/IP properties in the network setup correct? Check the IP address with the administrator of the network.]
	2. Check that PC can connect with the machine	Use the "ping" command on the PC to contact the machine. [At the MS-DOS prompt, type ping then the IP address of the machine, then press Enter.]
	3. LAN settings in the machine	- Check the LAN parameters - Check if there is an IP address conflict with other PCs. [Use the "Network" function in the User Tools. If there is an IP address conflict, inform the administrator.]
Between machine and e-mail server	1. LAN settings in the machine	- Check the LAN parameters - Check if there is an IP address conflict with other PCs. [Use the "Network" function in the User Tools. If there is an IP address conflict, inform the administrator.]

Communication Route	Item	Action [Remarks]
	2. E-mail account on the server	- Make sure that the machine can log into the e-mail server. - Check that the account and password stored in the server are the same as in the machine. [Ask the administrator to check.]
	3. E-mail server	Make sure that the client devices which have an account in the server can send/receive e-mail. [Ask the administrator to check. Send a test e-mail with the machine's own number as the destination. The machine receives the returned e-mail if the communication is performed successfully.]
Between e-mail server and internet	1. E-mail account on the Server	- Make sure that the PC can log into the e-mail server. - Check that the account and password stored in the server are the same as in the machine. [Ask the administrator to check.]
	2. E-mail server	Make sure that the client devices which have an account in the server can send/receive e-mail. [Ask the administrator to check. Send a test e-mail with the machine's own number as the destination. The machine receives the returned e-mail if the communication is performed successfully.]
	3. Destination e-mail address	- Make sure that the e-mail address is actually used. - Check that the e-mail address contains no incorrect characters such as spaces.

Communication Route	Item	Action [Remarks]
	4. Router settings	▪ Use the "ping" command to contact the router. ▪ Check that other devices connected to the router can send data over the router. [Ask the administrator of the server to check.]
	5. Error message by e-mail from the network of the destination.	▪ Check whether e-mail can be sent to another address on the same network, using the application e-mail software. ▪ Check the error e-mail message. [Inform the administrator of the LAN.]

3.4 IP-FAX TROUBLESHOOTING

3.4.1 IP-FAX TRANSMISSION

Cannot send by IP Address/Host Name

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Specified IP address/host name correct?	Check the IP address/host name.
3	Firewall/NAT is installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
4	Transmission sent manually?	Manual sending not supported.
5	IP address of local machine registered?	Register the IP address.
6	Remote terminal port number setting other than 1720 (When using H.323) or 5060 (when using SIP)?	Send by specifying the port number.
7	Specified port number correct?	Confirm the port number of the remote fax.
8	DNS server registered when host name specified?	Contact the network administrator.
9	Remote fax a T.38 terminal?	Check whether the remote fax is a T38 terminal.
10	Remote fax switched off or busy?	Check that the remote fax is switched on.

11	Network bandwidth too narrow?	Request the network administrator to increase the bandwidth.
		Raise the delay level. IPFAX SW 01 Bit 0 to 3
		IP-Fax bandwidth is the same as the DCS speed. Set IP-Fax SW00 Bit 6 to 1.
12	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.

Cannot Send via VoIP Gateway.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	VoIP Gateway T.38 standard?	Contact the network administrator.
3	VoIP Gateway installed correctly?	Contact the network administrator.
4	VoIP Gateway power switched on?	Contact the network administrator.
5	Is the IP address/host name of the specified Gateway correct?	Check the IP address/host name.
6	Number of the specified fax correct?	Check the remote fax number.
7	Firewall/NAT is installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
8	Transmission sent manually?	Manual sending not supported.
9	IP address of local fax registered?	Register the IP address.
10	DNS registered when host name specified?	Contact the network administrator.
11	Remote fax a G3 fax?	Check that the remote fax is a G3 fax.

12	G3 fax is connected to VoIP gateway?	Check that G3 fax is connected.
13	Remote G3 fax turned on?	Check that G3 fax is switched on.
14	Network bandwidth too narrow?	Request the network administrator to increase the bandwidth.
		Raise the network delay level. IPFAX SW 01 Bit 0 to 3
		IP-Fax bandwidth is the same as the DCS speed. Set IP-Fax SW00 Bit 6 to 1.

Cannot Send by Alias Fax Number.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Number of specified Alias fax correct?	Confirm the Alias of the remote fax. Error Code: 13-14
3	Firewall/NAT installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
4	Transmission sent manually?	Manual sending not supported.
5	Gatekeeper/SIP server installed correctly?	Contact the network administrator.
6	Gatekeeper/SIP server power switched on?	Contact the network administrator.
7	IP address/host name of Gatekeeper/SIP server correct?	Check the IP address/host name.
8	DNS server registered when Gatekeeper/SIP host name specified?	Contact the network administrator.
9	Enable H.323 SW is set to on?	Check the settings. See User Parameter SW 34 Bit 0/SW 34 Bit 1

10	IP address of local fax registered?	Register the IP address of the local fax.
11	Alias number of local fax registered?	Register the Alias number of the local fax.
12	Remote fax registered in Gatekeeper?	Contact the network administrator.
13	Remote fax a T.38 terminal?	Check whether the remote fax is a T38 terminal.
14	Remote fax switched off or busy?	Contact the network administrator.
15	Network bandwidth too narrow?	Request the system administrator to increase the bandwidth.
		Raise the delay level. IPFAX SW 01 Bit 0 to 3
		Lower the modem transmission baud rate. IPFAX SW 05
16	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.

3.4.2 IP-FAX RECEPTION

Cannot Receive via IP Address/Host Name.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Firewall/NAT is installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
3	IP address of local fax registered?	Register the IP address.
4	Port number specified at remote sender fax (if required)?	Request the sender to specify the port number.
5	Specified port number correct (if required)?	Request the sender to check the port number.
6	DNS server registered when host name specified on sender side?	Contact the network administrator.  Note The sender machine displays this error code if the sender fax is a Ricoh model.
7	Network bandwidth too narrow?	Request the system administrator to increase the bandwidth.
		Lower the start modem reception baud rate on the receiving side. IPFAX SW06
8	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.

Cannot Receive by VoIP Gateway.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Firewall/NAT is installed?	Cannot breach the firewall. Request the remote fax to send by using another method (Fax, Internet Fax)
3	VoIP Gateway installed correctly?	Contact the network administrator.
4	VoIP Gateway power switched on?	Contact the network administrator.
5	IP address/host name of specified VoIP Gateway correct on sender's side?	Request the remote fax to check the IP address/host name.
6	DNS server registered when host name specified on sender side?	Contact the network administrator.
7	Network bandwidth too narrow?	Request the network administrator to increase the bandwidth.
8	G3 fax connected?	Check that G3 fax is connected.
9	G3 fax power switched on?	Check that G3 fax is switched on.

Cannot Receive by Alias Fax Number.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Firewall/NAT is installed?	Cannot the breach firewall. Request the remote fax to send by using another method (Fax, Internet Fax)
3	Gatekeeper installed correctly?	Contact the network administrator.  Note The sender machine displays this error code when the sender fax is a Ricoh model.
4	Power to Gatekeeper switched on?	Contact the network administrator.  Note The sender machine displays this error code when the sender fax is a Ricoh model.
5	IP address/host name of Gatekeeper correct on the sender's side?	Request the sender to check the IP address/host name.  Note The sender machine displays this error code when the sender fax is a Ricoh model.
6	DNS server registered when Gatekeeper host name specified on sender's side?	Contact the network administrator.  Note The sender machine displays this error code when the sender fax is a Ricoh model.
7	Enable H.323 SW is set to on?	Request the sender to check the settings. User Parameter SW 34 Bit 0/SW 34 bit 1  Note Only if the remote sender fax is a Ricoh fax.

8	Local fax IP address registered?	Register the IP address.
9	Local fax Alias number registered?	Register the Alias number.
10	Network bandwidth too narrow?	Request the system administrator to increase the bandwidth.
		Lower the start modem reception baud rate on the receiving side. IPFAX SW06
11	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.
12	Local fax registered in Gatekeeper/SIP server ?	Contact the network administrator.  Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.

4. SERVICE TABLES

4.1 BEFOREHAND

CAUTION

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

Note

- The main power LED (ⓘ) lights or flashes while the platen cover or ARDF is open, while the main machine is communicating with a facsimile or the network server, or while the machine is accessing the hard disk or memory for reading or writing data.

4.2 SERVICE TABLES

4.2.1 SP1-XXX (BIT SWITCHES)

Bit Switches

1	Mode No.		Function
101	System Switch		
	001 – 032	00 – 1F	Change the bit switches for system settings for the fax option See "Bit Switches"
102	Ifax Switch		
	001 – 016	00 – 0F	Change the bit switches for internet fax settings for the fax option See "Bit Switches"
103	Printer Switch		
	001 – 016	00 – 0F	Change the bit switches for printer settings for the fax option See "Bit Switches"
104	Communication Switch		
	001 – 032	00 – 1F	Change the bit switches for communication settings for the fax option See "Bit Switches"
105	G3-1 Switch		
	001 – 016	00 – 0F	Change the bit switches for the protocol settings of the standard G3 board See "Bit Switches"
111	IP fax Switch		
	001 – 016	00 – 0F	Change the bit switches for optional IP fax parameters See "Bit Switches"

4.2.2 SP2-XXX (RAM)

2	Mode No.		Function
101	RAM Read/Write		
	001		Change RAM data for the fax board directly. See "Service RAM Addresses"
102	Memory Dump		
	001	G3-1 Memory Dump	Print out RAM data for the fax board. See "Service RAM Addresses"
103	G3-1 NCU Parameters		
	001 – 023	CC, 01 – 22	NCU parameter settings for the standard G3 board. See "NCU Parameters"

4.2.3 SP3-XXX (MACHINE SET)

3	Mode No.		Function
101	Service Station		
	001	Fax Number	Enter the fax number of the service station.
102	Serial Number		
	000		Enter the fax unit's serial number.
103	PSTN-1 Port Settings		
	001	Select Line	Select the line type setting for the G3-1 line. If the machine is installed on a PABX line, select "PABX", "PABX(GND)" or "PABX(FLASH)".
	002	PSTN Access Number	Enter the PSTN access number for the G3-1 line.
	003	Memory Lock Disabled	Not used

107	IPFAX Port Settings		
	001	H323 Port	Sets the H323 port number.
	002	SIP Port	Sets the SIP port number.
	003	RAS Port	Sets the RAS port number.
	004	Gatekeeper port	Sets the Gatekeeper port number.
	005	T.38 Port	Sets the T.38 port number.
	006	SIP Server Port	Sets the SIP port number.
	007	IPFAX Protocol Priority	Select "H323" or "SIP".
201	FAX SW		
	001 – 032	00 – 1F	
301	Fax:FlairAPI Setting		
	101	-	

4.2.4 SP4-XXX (ROM VERSION)

4	Mode No.		Function
101	001	FCU ROM Version	Displays the FCU ROM version.
102	001	Error Codes	Displays the latest 64 fax error codes.
103	001	G3-1 ROM Version	Displays the G3-1 modem version.

4.2.5 SP5-XXX (RAM CLEAR)

5	Mode No.	Function
101	Initialize SRAM (except Secure)	
	000	Initializes the bit switches and user parameters, user data in the SRAM, files in the SAF memory, and clock.
102	Erase All Files	
	000	Erases all files stored in the SAF memory.
103	Reset Bit Switches (except Secure)	
	000	Resets the bit switches and user parameters.
104	Factory setting	
	000	Resets the bit switches and user parameters, user data in the SRAM and files in the SAF memory.
105	Reset All Bit Switches	
	000	Initializes all the current bit switch settings.
106	Reset Secure Bit Switches	
	000	Initializes only the security bit switches. If you select automatic output/display for the user parameter switches, the security settings are initialized.

4.2.6 SP6-XXX (REPORT)

6	Mode No.	Function
101	System Parameter List	
	000	- Touch the “ON” button to print the system parameter list.
102	Service Monitor Report	
	000	- Touch the “ON” button to print the service monitor report.
103	G3 Protocol Dump List	
	002	G3-1 (All Communications) Prints the protocol dump list of all communications for the G3-1 line.
	003	G3-1 (1 Communication) Prints the protocol dump list of the last communication for the G3-1 line.
105	All Files Print out	
	000	- Prints out all the user files in the SAF memory, including confidential messages. Note Do not use this function, unless the customer is having trouble printing confidential messages or recovering files stored using the memory lock feature.
106	Journal Print out	
	001	All Journals The machine prints all the communication records on the report.
	002	Specified Date The machine prints all communication records after the specified date.

107	Log List Print out		
	001	All log files	These log print out functions are for designer use only.
	002	Printer	
	003	SC/TRAP Stored	
	004	Decompression	
	005	Scanner	
	006	JOB/SAF	
	007	Reconstruction	
	008	JBIG	
	009	Fax Driver	
	010	G3CCU	
	011	Fax Job	
	012	CCU	
	013	Scanner Condition	
108	IP Protocol Dump List		
	001	All Communications	Prints the protocol dump list of all communications for the IP fax line.
	002	1 Communication	Prints the protocol dump list of the last communication for the IP fax line.

4.2.7 SP7-XXX (TESTS)

These are the test modes for PTT approval.

7	Function
101	G3-1 Modem Tests
102	G3-1 DTMF Tests
103	Ringer Test
104	G3-1 V34 (S2400baud)
105	G3-1 V34 (S2800baud)
106	G3-1 V34 (S3000baud)
107	G3-1 V34 (S3200baud)
108	G3-1 V34 (S3429baud)
109	Recorded Message Test

4.3 BIT SWITCHES - 1

↓ Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

4.3.1 SYSTEM SWITCHES

System Switch 00 (SP No. 1-101-001)		
No	Function	Comments
0	Dedicated transmission parameter programming 0: Disabled 1: Enabled	Set this bit to 1 before changing any dedicated transmission parameters. This setting is automatically reset to "0" after turning off and on.
1	Not used	Do not change this setting.
2	Technical data printout on the Journal 0: Disabled 1: Enabled	1: Instead of the personal name, the following data are listed on the Journal for each G3 communication.

	Example: 0000 32V34 288/264 L0100 03 04 (1) (2)(3) (4) (5) (6) (7) (8) (1): EQM value (Line quality data). A larger number means more errors. (2): Symbol rate (V.34 only) (3): Final modem type used (4): Starting data rate (for example, 288 means 28.8 kbps) (5): Final data rate (6): Rx level (see below for how to read the rx level) (7): Total number of error lines that occurred during non-ECM reception. (8): Total number of burst error lines that occurred during non-ECM reception.  Note ▪ EQM and rx level are fixed at "FFFF" in tx mode. ▪ The seventh and eighth numbers are fixed at "00" for transmission records and ECM reception records.	
	Rx level calculation Example: 0000 32V34 288/264 L0100 03 04 (1) (2)(3) (4) (5) (6) (7) (8) The four-digit hexadecimal value (N) after "L" indicates the rx level. The high byte is given first, followed by the low byte. Divide the decimal value of N by -16 to get the rx level. In the above example, the decimal value of N (= 0100 [H]) is 256. So, the actual rx level is $256/-16 = -16$ dB	
3	Not used	Do not change this setting.
4	Line error mark print 0: OFF, 1: ON (print)	When "1" is selected, a line error mark is printed on the printout if a line error occurs during reception. This shows error locations when ECM is turned off.
5	G3 communication parameter display 0: Disabled 1: Enabled	This is a fault-finding aid. The LCD shows the key parameters (see "G3 Communication Parameters" below this table). This is normally disabled because it cancels the CSI display for the user. Be sure to reset this bit to "0" after testing.

6	Protocol dump list output after each communication 0: Off 1: On	This is only used for communication troubleshooting. It shows the content of the transmitted facsimile protocol signals. Always reset this bit to 0 after finishing testing. If system switch 09 bit 6 is at "1", the list is only printed if there was an error during the communication.
7	Not used	Do not change the setting.

G3 Communication Parameters

Modem rate	336: 33600 bps 168: 16800 bps 312: 31200 bps 144: 14400 bps 288: 28800 bps 120: 12000 bps 264: 26400 bps 96: 9600 bps 240: 24000 bps 72: 7200 bps 216: 21600 bps 48: 4800 bps 192: 19200 bps 24: 2400 bps
Resolution	S: Standard (8 x 3.85 dots/mm) D: Detail (8 x 7.7 dots/mm) F: Fine (8 x 15.4 dots/mm) SF: Superfine (16 x 15.4 dots/mm) 21: Standard (200 x 100 dpi) 22: Detail (200 x 200 dpi) 44: Superfine (400 x 400 dpi)
Compression mode	MMR: MMR compression MR: MR compression MH: MH compression JBO: JBIG compression (Optional mode) JBB: JBIG compression (Basic mode)
Communication mode	ECM: With ECM NML: With no ECM
Width and reduction	A4: A4 (8.3"), no reduction B4: B4 (10.1"), no reduction A3: A3 (11.7"), no reduction
I/O rate	0: 0 ms/line 5: 5 ms/line 10: 10 ms/line 20: 20 ms/line 25: 2.5 ms/line 40: 40 ms/line  Note "40" is displayed while receiving a fax message using AI short protocol.

System Switch 01 - Not used (Do not change the factory settings.)

System Switch 02 (SP No. 1-101-003)		
No	Function	Comments
0-1	Not used	Do not change these settings.
2	Forced reset after transmission stalls 0: Off 1: On	With this setting on, the machine resets itself automatically if a transmission stalls and fails to complete the job.
3	Not used	Do not change these settings.
4	File retention time 0: Depends on User Parameter 24 [18(H)] 1: No limit	1: A file that had a communication error will not be erased unless the communication is successful.
5-7	-	Do not change this setting

System Switch 03 - Not used (Do not change the factory settings.)

System Switch 04 (SP No. 1-101-005)		
No	Function	Comments
0-2	Not used	Do not change these settings.
3	Printing dedicated tx parameters on Quick/Speed Dial Lists 0: Disabled 1: Enabled	1: Each Quick/Speed dial number on the list is printed with the dedicated tx parameters (10 bytes each). The first 10 bytes of data are the programmed dedicated tx parameters; 34 bytes of data are printed (the other 24 bytes have no use for service technicians).
4-7	Not used	Do not change these settings.

System Switch 05 - Not used (Do not change the factory settings.)
System Switch 06 - Not used (Do not change the factory settings.)
System Switch 07 - Not used (Do not change the factory settings.)
System Switch 08 - Not used (Do not change the factory settings.)

System Switch 09 (SP No. 1-101-010)		
No	Function	Comments
0	Addition of image data from confidential transmissions on the transmission result report 0: Disabled 1: Enabled	If this feature is enabled, the top half of the first page of confidential messages will be printed on transmission result reports.
1	Print timing of communication reports on the Journal when no image data was exchanged. 0: After DCS/NSS communication (default), 1: After polling	0: The Journal is printed only when image data is sent. 1: The Journal is printed when any data is sent.
2	Automatic error report printout 0: Disabled 1: Enabled	0: Error reports will not be printed. 1: Error reports will be printed automatically after failed communications.
3	Printing of the error code on the error report 0: No 1: Yes	1: Error codes are printed on the error reports. This can be used for detecting an error which occurs rarely.
4	Not used	Do not change this setting.
5	Power failure report 0: Disabled 1: Enabled (default)	1: A power failure report will be automatically printed after the power is switched on if a fax message disappeared from the memory when the power was turned off last. NOTE: If "0" is selected, no reports are printed and no one may recognize that fax data is gone due to a power failure.

6	Conditions for printing the protocol dump list 0: Print for all communications 1: Print only when there is a communication error	This switch becomes effective only when system switch 00 bit 6 is set to 1. 1: Set this bit to 1 when you wish to print a protocol dump list only for communications with errors. NOTE: The memory size is limited. Use this bit switch only when some log reports are necessary.
7	Not used	Do not change this setting.

System Switch 0A (SP No. 1-101-011)		
No	Function	Comments
0	Automatic port selection 0: Disabled, 1: Enabled	When "1" is selected, a suitable port is automatically selected if the selected port is not used. NOTE: This bit is useful if all communication lines at a customer site are not the same quality
1-3	Not used	Do not change these settings.
4	Dialing on the ten-key pad when the external telephone is off-hook 0: Disabled 1: Enabled	0: Prevents dialing from the ten-key pad while the external telephone is off-hook. Use this setting when the external telephone is not by the machine, or if a wireless telephone is connected as an external telephone. 1: The user can dial on the machine's ten-key pad when the handset is off-hook.
5	On hook dial 0: Disabled 1: Enabled	0: On hook dial is disabled.
6-7	Not used	Do not change these settings

System Switch 0B - Not used (Do not change the factory settings.)

System Switch 0C - Not used (Do not change the factory settings.)

System Switch 0D - Not used (Do not change the factory settings.)

System Switch 0E (SP No. 1-101-015)		
No	Function	Comments
0-1	Not used	Do not change the settings.
2	Enable/disable for direct sending selection 0: Direct sending off 1: Direct sending on	Direct sending cannot operate when the capture function is on during sending. Setting this switch to "1" enables direct sending without capture. Setting this switch to "0" masks the direct sending function on the operation panel so direct sending with ScanRouter cannot be selected.
3	Action when the external handset goes off-hook 0: Manual tx and rx operation 1: Memory tx and rx operation (the display remains the same)	0: Manual tx is possible while the external handset is off-hook. However, manual tx during handset off-hook may not be sent to a correct direction. Manual tx is not possible. 1: The display stays in standby mode even when the external handset is used, so that other people can use the machine for memory tx operation. Note that manual tx and rx are not possible with this setting.
4-7	Not used	Do not change these settings.

System Switch 0F (SP No. 1-101-016)		
No	Function	Comments
0 to 7	Country/area code for functional settings (Hex)	This country/area code determines the factory settings of bit switches and RAM addresses. However, it has no effect on the NCU parameter settings and communication parameter RAM addresses. Cross reference NCU country code: SP No. 2-103-001 for G3-1 SP No. 2-104-001 for G3-2 SP No. 2-105-001 for G3-3
	00: France	12: Asia
	01: Germany	13: Japan
	02: UK	14: Hong Kong
	03: Italy	15: South Africa
	04: Austria	16: Australia
	05: Belgium	17: New Zealand
	06: Denmark	18: Singapore
	07: Finland	19: Malaysia
	08: Ireland	1A: China
	09: Norway	1B: Taiwan
	0A: Sweden	1C: Korea
	0B: Switz.	1D: Brazil
	0C: Portugal	20: Turkey
	0D: Holland	21: Greece
	0E: Spain	22: Hungary
	0F: Israel	23: Czech
	10: ---	24: Poland
	11: USA	

System Switch 10 (SP No. 1-101-017)		
No	Function	Comments
0-7	Threshold memory level for parallel memory transmission	Threshold = $N \times 128 \text{ KB} + 256 \text{ KB}$ N can be between 00 - FF(H) Default setting: 02(H) = 512 KB

System Switch 11 (SP No. 1-101-018)		
No	Function	Comments
0	TTI printing position 0: Superimposed on the page data 1: Printed before the data leading edge	Change this bit to 1 if the TTI overprints information that the customer considers to be important (G3 transmissions). NOTE: If "1" is selected, it is possible that sent data is printed on two sheets of paper.
1-2	Not used	Do not change these settings.
3	TTI used for broadcasting 0: The TTIs selected for each Quick/Speed dial are used 1: The same TTI is used for all destinations	1: The TTI (TTI_1 or TTI_2) which is selected for all destinations during broadcasting.
4-7	Not used	Do not change these settings.

System Switch 12 (SP No. 1-101-019)		
No	Function	Comments
0-7	TTI printing position in the main scan direction	TTI: 08 to 92 (BCD) mm Input even numbers only. This setting determines the print start position for the TTI from the left edge of the paper. If the TTI is moved too far to the right, it may overwrite the file number which is on the top right of the page. On an A4 page, if the TTI is moved over by more than 50 mm, it may overwrite the page number.

System Switch 13 - Not used (do not change these settings)

System Switch 14 - Not used (do not change these settings)

System Switch 15 (SP No. 1-101-022)			
No	Function		Comments
0	Not used		Do not change the settings.
1	Going into the Energy Saver mode automatically 0: Enabled 1: Disabled		1: The machine will restart from the Energy Saver mode quickly, because the +5V power supply is active even in the Energy Saver mode. The LED of the operation switch is flashing instead of entering Energy Saver mode. Use this setting if an external telephone has to be used when the machine is in the Energy Saver mode.
2-3	Not used		Do not change these settings.
4-5	Interval for preventing the machine from entering Energy Saver mode if there is a pending transmission file.		If there is a file waiting for transmission, the machine does not go to Energy Saver mode during the selected period. After transmitting the file, if there is no file waiting for transmission, the machine goes to the Energy Saver mode.
	Bit 5	Bit 4	
	0	0	
	0	1	
	1	0	
	1	1	
6-7	Not used		Do not change

System Switch 16 (SP No. 1-101-023)		
No	Function	Comments
0	Parallel Broadcasting 0: Disabled 1: Enabled	1: The machine sends messages simultaneously using all available ports during broadcasting. NOTE: If a customer wants to keep a line available for fax reception or other reasons, select "0" (Disable).
1	Priority setting for the G3 line. 0: PSTN-1 > PSTN-2 or 3 1: PSTN-2 or 3 > PSTN-1	This function allows the user to select the default G3 line type. The optional SG3 units are required to use the PSTN-2 or 3 setting.
2-7	Not used	Do not change these settings.

System Switch 17 - Not used (do not change these settings)

System Switch 18 - Not used (do not change these settings)

System Switch 19 (SP No. 1-101-026)		
No	Function	Comments
0-5	Not used	Do not change the settings.
6	Extended scanner page memory after memory option is installed 0: Disabled 1: Enabled	0: After installing the memory expansion option, the scanner page memory is extended to 4 MB from 2 MB. 1: If this bit is set to 1 after installing the memory expansion option, the scanner page memory is extended to 12 MB. But the SAF memory decreases to 18 MB.
7*	Special Original mode 0: Disabled 1: Enabled	1: If the customer frequently wishes to transmit a form or letterhead which has a colored or printed background, change this bit to "1". "Original 1" and "Original 2" can be selected in addition to the "Text", "Text/Photo" and "Photo" modes.

* This setting can be used for the client machine which has no FCU.

System Switch 1A (SP No. 1-101-027)		
No	Function	Comments
0 to 7	LS RX memory capacity threshold setting 00-FF (0-1020 Kbyte: Hex)	Sets the value to x4KB. When the amount of available memory drops below this setting, RX documents are printed to conserve memory. Initial setting 0x80 (512 KB) NOTE: If a customer wants available memory size to be larger, decrease this threshold

System Switch 1B - Not used (do not change these settings)

System Switch 1C - Not used (do not change these settings)

System Switch 1D (SP No. 1-101-030)		
No	Function	Comments
0	RTI/CSI/CPS code display 0: Enable 1: Disable	0: RTI, CSI, CPS codes are displayed on the top line of the LCD panel during communication. 1: Codes are switched off (no display)
1-7	Not used	Do not change these settings.

System Switch 1E (SP No. 1-101-031)		
No	Function	Comments
0	Communication after the Journal data storage area has become full 0: Impossible 1: Possible	0: When this switch is on and the journal history becomes full, the next report prints. If the journal history is not deleted, the next transmission cannot be received. This prevents overwriting communication records before the machine can print them. 1: If the buffer memory of the communication records for the Journal is full, fax communications are still possible. But the machine will overwrite the oldest communication records.  Note This setting is effective only when Automatic Journal printout is enabled but the machine cannot print the report (e.g., no paper).
1*	Action when the SAF memory has become full during scanning 0: The current page is erased. 1: The entire file is erased.	0: If the SAF memory becomes full during scanning for a memory transmission, the successfully scanned pages are transmitted. 1: If the SAF memory becomes full during scanning for a memory transmission, the file is erased and no pages are transmitted.  Note This setting is effective only when Automatic Journal printout is enabled but the machine cannot print the report (e.g., no paper).
2	RTI/CSI display priority 0: RTI 1: CSI	This bit determines which identifier, RTI or CSI, is displayed on the LCD while the machine is communicating in G3 non-standard mode.

3	File No. printing 0: Enabled 1: Disabled	1: File numbers are not printed on any reports. NOTE: The file numbers may not be printed in the sequential order. If a customer does not like this numbering, select "0".
4	Action when authorized reception is enabled but authorized RTIs/CSIs are not yet programmed 0: All fax reception is disabled 1: Faxes can be received if the sender has an RTI or CSI	0: If the user has stored no acceptable sender RTIs or CSIs, the user can select "ON" in the authorized reception setting but the setting becomes invalid ("OFF"). The machine will not be able to receive any fax messages. If the customer wishes to receive messages from any sender that includes an RTI or CSI, and to block messages from senders that do not include an RTI or CSI, change this bit to "0", then enable Authorized Reception. Otherwise, keep this bit at "1 (default setting)".
5-7	Not used	Do not change the settings

* This setting can be used for the client machine which has no FCU.

System Switch 1F (SP No. 1-101-032)		
No	Function	Comments
0	Not used	Do not change the settings.
1	Report printout after an original jam during SAF storage or if the SAF memory fills up 0: Enabled 1: Disabled	0: When an original jams, or the SAF memory overflows during scanning, a report will be printed. Change this bit to "1" if the customer does not want to have a report in these cases. Memory tx – Memory storage report Parallel memory tx – Transmission result report
2	Not used	Do not change the settings.
3	Received fax print start timing (G3 reception) 0: After receiving each page 1: After receiving all pages	0: The machine prints each page immediately after the machine receives it. 1: The machine prints the complete message after the machine receives all the pages in the memory.
4-6	Not used	Do not change the factory settings.
7	Action when a fax SC has occurred 0: Automatic reset 1: Fax unit stops	0: When the fax unit detects a fax SC code other than SC1201 and SC1207, the fax unit automatically resets itself. 1: When the fax unit detects any fax SC code, the fax unit stops. Cross Reference Fax SC codes - See "Troubleshooting"

4.4 BIT SWITCHES - 2

⬇ Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

4.4.1 I-FAX SWITCHES

I-fax Switch 00 (SP No. 1-102-001)		
No	Function	Comments
Original Width of TX Attachment File		This setting sets the maximum size of the original that the destination can receive. (Bits 3 to 6 are reserved for future use or not used.)
0	A4	-
1	B4	
2	A3	
3-6	Reserved	
7	Not used	
	0: Off (not selected), 1: On (selected) If more than one of these three bits is set to "1", the larger size has priority. For example, if both Bit 2 and Bit 1 are set to "1" then the maximum size is "A3" (Bit 2). When mail is sent, there is no negotiation with the receiving machine at the destination, so the sending machine cannot make a selection for the receiving capabilities (original width setting) of the receiving machine. The original width selected with this switch is used as the RX machine's original width setting, and the original is reduced to this size before sending. The default is A4. If the width selected with this switch is higher than the receiving machine can accept, the machine detects this and this causes an error.	

I-fax Switch 01 (SP No. 1-102-002)		
No	Function	Comments
Original Line Resolution of TX Attachment File		These settings set the maximum resolution of the original that the destination can receive.
0	200x100 Standard	0: Not selected 1: Selected If more than one of these three bits is set to "1", the higher resolution has priority. For example, if both Bit 0 and Bit 2 are set to "1" Then The Resolution is set for "Bit 2 200 x 400.
1	200x200 Detail	
2	200x400 Fine	
3	300 x 300 Reserve	
4	400 x 400 Super Fine	
5	600 x 600 Reserve	
6	Reserve	
7	mm/inch	
	This setting selects mm/inch conversion for mail transmission. 0: Off (No conversion), 1: On (Conversion) When on (set to "1"), the machine converts millimeters to inches for sending mail. There is no switch for converting inches to millimeters. Unlike G3 fax transmissions which can negotiate between sender and receiver to determine the setting, mail cannot negotiate between terminals; the mm/inch selection is determined by the sender fax. When this switch is Off (0): ▪ Images scanned in inches are sent in inches. ▪ Images scanned in mm are sent in mm. ▪ Images received in inches are transmitted in inches. ▪ Images received in mm are transmitted in mm. When this switch is On (1): ▪ Images scanned in inches are sent in inches. ▪ Images scanned in mm are converted to inches. ▪ Images received in inches are transmitted in inches. ▪ Images received in mm are converted to inches.	

I-fax Switch 02 (SP No. 1-102-003)		
No	Function	Comments

0	RX Text Mail Header Processing
	This setting determines whether the header information is printed with text e-mails when they are received. 0: Prints only text mail. 1: Prints mail header information attached to text mail. When a text mail is received with this switch On (1), the "From" address and "Subject" address are printed as header information. When a mail with only binary data is received (a TIFF-F file, for example), this setting is ignored and no header is printed.
1	Output from Attached Document at E-mail TX Error
	This setting determines whether only the first page or all pages of an e-mail attachment are printed at the sending station when a transmission error occurs. This allows the customer to see which documents have not reached their intended destinations if sent to the wrong e-mail addresses, for example. 0: Prints 1st page only. 1: Prints all pages.
2-3	Text String for Return Receipt
	This setting determines the text string output for the Return Receipt that confirms the transmission was received normally at the destination.
	00: "Dispatched" Sends from PC mail a request for a Return Receipt. Receives the Return Receipt with "dispatched" in the 2nd part: Disposition: Automatic-action/MDN-send automatically; dispatched The "dispatched" string is included in the Subject string. 01: "Displayed" Sends from PC mail a request for a Return Receipt. Receives the Return Receipt with "displayed" in the 2nd part: Disposition: Automatic-action/MDN-send automatically; displayed The "displayed" string is included in the Subject string. 10: Reserved 11: Reserved A mail requesting a Return Receipt sent from an IFAX with this switch set to "00" (for "dispatched") received by Microsoft Outlook 2000 may cause an error. If any setting other than "displayed" (01) causes a problem, change the setting to "01" to enable normal sending of the Return Receipt.

4	Media accept feature
	This setting adds or does not add the media accept feature to the answer mail to confirm a reception. 0: Does not add the media accept feature to the answer mail 1: Adds the media accept feature to the answer mail. Use this bit switch if a problem occurs when the machine receives an answer mail, which contains the media accept feature field.
5-6	Not Used
7	Image Resolution of RX Text Mail
	This setting determines the image resolution of the received mail. 0: 200 x 200 1: 400 x 400 The "1" setting requires installation of the Memory Unit in order to have enough SAF (Store and Forward) memory to receive images at 400 x 400 resolution.

I-fax Switch 03 - Not used (do not change these settings)

I-fax Switch 04 (SP No. 1-102-005)		
No	Function	Comments
0	Subject for Delivery TX/Memory Transfer	
	This setting determines whether the RTI/CSI registered on this machine or the RTI/CSI of the originator is used in the subject lines of transferred documents. 0: Puts the RTI/CSI of the originator in the Subject line. If this is used, either the RTI or CSI is used. Only one of these can be received for use in the subject line. 1: Puts the RTI/CSI registered on this machine in the Subject line. When this switch is used to transfer and deliver mail to a PC, the information in the Subject line that indicates where the transmission originated can be used to determine automatically the destination folder for each e-mail.	

1	Subject corresponding to mail post database 0: Standard subject 1: Mail post database subject The standard subject is replaced by the mail post database subject in the following three cases: 1) When the service technician sets the service (software) switch. 2) When memory sending or delivery specified by F code is applied by the SMTP server 3) With relay broadcasting (1st stage without the Schmidt 4 function).  Note This switch does not apply for condition 3) when the RX system is set up for memory sending, delivery by F-code, sending with SMTP RX and when operators are using FOL (to prevent problems when receiving transmissions).
2-7	Not Used

I-fax Switch 05 (SP No. 1-102-006)		
No	Function	Comments
0	Mail Addresses of SMTP Broadcast Recipients	Determines whether the e-mail addresses of the destinations that receive transmissions broadcasted using SMTP protocol are recorded in the Journal. For example: "1st destination + Total number of destinations: 9" in the Journal indicates a broadcast to 9 destinations. 0: Not recorded 1: Recorded
1	IFAXTX Retries	Determines whether the machine retries sending IFAX when connection and transmission fails due to errors. 0: Disabled 1: Enabled
2-7	Not Used	

I-fax Switch 06 - Not used (do not change the settings)

I-fax Switch 07 - Not used (do not change the settings)

I-fax Switch 08 (SP No. 1-102-009)		
No	Function	Comments
0-7	Memory Threshold for POP Mail Reception	
	This setting determines the amount of SAF (Store and Forward) memory. (SAF stores fax messages to send later for transmission to more than one location, and also holds incoming messages if they cannot be printed.) When the amount of SAF memory available falls below this setting, mail can no longer be received; received mail is then stored on the mail server. 00-FF (0 to 1024 KB: HEX) The hexadecimal number you enter is multiplied by 4 KB to determine the amount of memory.	

I-fax Switch 09 (SP No. 1-102-010)		
No	Function	Comments
0-3	Not used	Do not change the settings
4-7	Restrict TX Retries	This setting determines the number of retries when connection and transmission fails due to errors. 01-F (1-15 Hex)

I-fax Switch 0A - Not used (do not change the settings)

I-fax Switch 0B - Not used (do not change the settings)

I-fax Switch 0C - Not used (do not change the settings)

I-fax Switch 0D (SP No. 1-102-014)				
No	Function			Comments
0-1	Not used			Do not change the settings
2-3	Select the signature when sending mail notification of the send results			In response to IEEE2600.1.
	Bit 2	Bit 3	Setting	
	0	0	No sign	
	0	1	No setting	
	1	0	Individual setting	
	1	1	Always sign	
4-5	Select the signature when sending mail.			In response to IEEE2600.1.
	Bit 5	Bit 4	Setting	
	0	0	No sign	
	0	1	No setting	
	1	0	Individual setting	
	1	1	Always sign	
6-7	Not used			Do not change the settings.

I-fax Switch 0E - Not used (do not change the settings)

I-fax Switch 0F (SP No. 1-102-016)		
No	Function	Comments
0	Delivery Method for SMTP RX Files	
	This setting determines whether files received with SMTP protocol are delivered or output immediately. 0: Off. Files received via SMTP are output immediately without delivery. 1: On. Files received via SMTP are delivered immediately to their destinations.	
1	Set to select the signature when receiving SMTP mail.	
	0: No sign 1: Always sign	
2	Set to encrypt the data when receiving SMTP mail.	
	0: No encryption 1: Encryption	
3-7	Not used	

4.4.2 PRINTER SWITCHES

Printer Switch 00 (SP No. 1-103-001)		
No	Function	Comments
0	Select page separation marks 0: Off 1: On	0: If a 2 page RX transmission is split, [*] is printed in the bottom right corner of the 1st page and only a [2] is printed in the upper right corner of the 2nd page. 1: If a 2 page RX transmission is split into two pages, for example, [*] [2] is printed in the bottom right corner of the 1st page and only a [2] is printed in the upper right corner of the 2nd page.  Note This helps the user to identify pages that have been split because the size of the paper is smaller than the size of the document received. (When A5 is used to print an A4 size document, for example.)
1	Repetition of data when the received page is longer than the printer paper 0: Off 1: On	1: Default. 10 mm of the trailing edge of the previous page are repeated at the top of the next page. 0: The next page continues from where the previous page stopped without any repeated text.
2	Prints the date and time on received fax messages 0: Disabled 1: Enabled	This switch is only effective when user parameter 02 - bit 2 (printing the received date and time on received fax messages) is enabled. 1: The machine prints the received and printed date and time at the bottom of each received page.
3-7	Not used	Do not change the settings.

Printer Switch 01 (SP No. 1-103-002)			
No	Function		Comments
0-2	Not used		Do not change the settings.
3-4	Maximum print width used in the setup protocol		These bits are only effective when bit 7 of printer switch 01 is "1".
	Bit 4	Bit 3	
	0	0	
	0	1	
	1	0	
	1	1	
5-6	Not used		Do not change the settings.
7	Received message width restriction in the protocol signal to the sender 0: Disabled 1: Enabled		0: The machine informs the transmitting machine of the print width depending on the paper size available from the paper feed stations. Refer to the table on the next page for how the machine chooses the paper width used in the setup protocol (NSF/DIS). 1: The machine informs the transmitting machine of the fixed paper width which is specified by bits 3 and 4 above.

Relationship between available paper sizes and printer width used in the setup protocol

Available Paper Size	Printer width used in the Protocol (NSF/DIS)
A4 or 8.5" x 11"	297 mm width
B5	256 mm width
A5 or 8.5" x 5.5"	216 mm width
No paper available (Paper end)	216 mm width

Printer Switch 02 (SP No. 1-103-003)		
No	Function	Comments
0*	1st paper feed station usage for fax printing 0: Enabled 1: Disabled	0: The paper feed station can be used to print fax messages and reports. 1: The specified paper feed station will not be used for printing fax messages and reports. Note Do not disable usage for a paper feed station which has been specified by User Parameter Switch 0F (15), or which is used for the Specified Cassette Selection feature.
1*	2nd paper feed station usage for fax printing 0: Enabled 1: Disabled	
2*	3rd paper feed station usage for fax printing 0: Enabled 1: Disabled	
3*	4th paper feed station usage for fax printing 0: Enabled 1: Disabled	
4*	LCT usage for fax printing 0: Enabled 1: Disabled	
5-7	Not used	Do not change the settings.

* This setting can be used for the client-side machine which has no FCU.

Printer Switch 03 (SP No. 1-103-004)		
No	Function	Comments
0*	Length reduction of received data 0: Disabled 1: Enabled	0: Incoming pages are printed without length reduction. (Page separation threshold: Printer Switch 03, bits 4 to 7) 1: Incoming page length is reduced when printing. (Maximum reducible length: Printer Switches 04, bits 0 to 4)
1-3	Not used	Do not change the settings
4 to 7	Page separation setting when sub scan compression is forbidden 00-0F (0-15 mm: Hex) Default: 6 mm	Page separation threshold (with reduction disabled with switch 03-0 above). For example, if this setting is set to "10", and A4 is the selected paper size: If the received document is 10 mm or less longer than A4, then the 10 mm are cut and only 1 page prints. If the received document is 10 mm longer than A4, then the document is split into 2 pages.

* This setting can be used for the client-side machine which has no FCU.

Printer Switch 04 (SP No. 1-103-005)						
No	Function			Comments		
0 to 4	Maximum reducible length when length reduction is enabled with switch 03-0 above.					
	[Maximum reducible length] = [Paper length] + (N x 5mm)					
	"N" is the decimal value of the binary setting of bits 0 to 4.					
	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Setting
	0	0	0	0	0	0 mm
	0	0	0	0	1	5 mm

	0	0	1	0	0	20 mm
	1	1	1	1	1	155 mm
	For A5 sideways and B5 sideways paper [Maximum reducible length] = [Paper length] + 0.75 x (N x 5mm)					
5 6	Length of the duplicated image on the next page, when page separation has taken place.					
	Bit 6		Bit 5		Setting	
	0		0		4 mm	
	0		1		10 mm	
	1		0		15 mm	
	1		1		Not used	
7	Not used.		Do not change the setting.			

Printer Switch 05 - Not used (do not change the settings)

Printer Switch 06 (SP No. 1-103-007)		
No	Function	Comments
0*	Printing while a paper cassette is pulled out, when the Just Size Printing feature is enabled. 0: Printing will not start 1: Printing will start if another cassette has a suitable size of paper, based on the paper size selection priority tables.	Cross reference Just size printing on/off – User switch 05, bit 5
1-7	Not used.	Do not change the settings.

* This setting can be used for the client-side machine which has no FCU.

Printer Switch 07 (SP No. 1-103-008)		
No	Function	Comments
0-3	Not used.	Do not change the settings.
4	Receiver name printed on the transmission result report	Selects the printing target on the transmission result report. 0: All receivers 1: Printing only receivers which have received fax transmission.
5-7	Not used.	Do not change the settings.

Printer Switch 08 - Not used (do not change the settings)

Printer Switch 09 - Not used (do not change the settings)

Printer Switch 0A - Not used (do not change the settings)

Printer Switch 0B - Not used (do not change the settings)

Printer Switch 0C - Not used (do not change the settings)

Printer Switch 0E (SP No. 1-103-015)		
No	Function	Comments
0*	Paper size selection priority 0: Width 1: Length	0: A paper size that has the same width as the received data is selected first. 1: A paper size which has enough length to print all the received lines without reduction is selected first.
1*	Paper size selected for printing A4 width fax data 0: 8.5" x 11" size 1: A4 size	This switch determines which paper size is selected for printing A4 width fax data, when the machine has both A4 and 8.5" x 11" size paper.

2	Page separation 0: Enabled 1: Disabled			1: If all paper sizes in the machine require page separation to print a received fax message, the machine does not print the message (Substitute Reception is used). After a larger size of paper is set in a cassette, the machine automatically prints the fax message.
3-4	Printing the sample image on reports			"Same size" means the sample image is printed at 100%, even if page separation occurs. User Parameter Switch 19 (13H) bit 4 must be set to "0" to enable this switch. Refer to Detailed Section Descriptions for more on this feature.
	Bit 4	Bit 3	Setting	
	0	0	The upper half only	
	0	1	50% reduction (sub-scan only)	
	1	0	Same size	
	1	1	Not used	
5-6	Not used			Do not change the settings.
7	Equalizing the reduction ratio among separated pages (Page Separation) 0: Enabled 1: Disabled			0: When page separation has taken place, all the pages are reduced with the same reduction ratio. 1: Only the last page is reduced to fit the selected paper size when page separation has taken place. Other pages are printed without reduction.

* This setting can be used for the client-side machine which has no FCU.

Printer Switch 0F (SP No. 1-103-016)				
No	Function			Comments
0-1*	Smoothing feature			(0, 0) (0, 1): Disable smoothing if the machine receives halftone images from other manufacturers fax machines frequently.
	Bit 1	Bit 0	Setting	
	0	0	Disabled	
	0	1	Disabled	
	1	0	Enabled	
	1	1	Not used	
2*	Duplex printing 0: Disabled 1: Enabled			1: The machine always prints received fax messages in duplex printing mode:
3	Binding direction for Duplex printing 0: Left binding 1: Top binding			0: Sets the binding for the left edge of the stack. 1: Sets the binding for the top of the stack.
4-7	Not used			Do not change the settings.

* This setting can be used for the client-side machine which has no FCU.

4.5 BIT SWITCHES – 3

⬇ Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

4.5.1 COMMUNICATION SWITCHES

Communication Switch 00 (SP No. 1-104-001)				
No	Function			Comments
0-1	Compression modes available in receive mode			These bits determine the compression capabilities to be declared in phase B (handshaking) of the T.30 protocol.
	Bit 1	Bit 0	Modes	
	0	0	MH only	
	0	1	MH/MR	
	1	0	MH/MR/MMR	
	1	1	MH/MR/MMR/JBIG	
2-3	Compression modes available in transmit mode			These bits determine the compression capabilities to be used in the transmission and to be declared in phase B (handshaking) of the T.30 protocol.
	Bit 3	Bit 2	Modes	
	0	0	MH only	
	0	1	MH/MR	
	1	0	MH/MR/MMR	
	1	1	MH/MR/MMR/JBIG	
4	Not used			Do not change the settings.

5	JBIG compression method: Reception 0: Only basic supported 1: Basic and optional both supported	Change the setting when communication problems occur using JBIG compression.
6	JBIG compression method: Transmission 0: Basic mode priority 1: Optional mode priority	Change the setting when communication problems occur using JBIG compression.
7	Closed network (reception) 0: Disabled 1: Enabled	1: Reception will not go ahead if the polling ID code of the remote terminal does not match the polling ID code of the local terminal. This function is only available in NSF/NSS mode.

Communication Switch 01 (SP No. 1-104-002)				
No	Function			Comments
0	ECM 0: Off 1: On			If this bit is set to 0, ECM is switched off for all communications. In addition, V.8 protocol and JBIG compression are switched off automatically.
1	Not used			Do not change the setting.
2-3	Wrong connection prevention method			(0,1): The machine will disconnect the line without sending a fax message, if the last 8 digits of the received CSI do not match the last 8 digits of the dialed telephone number. This does not work when manually dialed. (1,0): The same as above, except that only the last 4 digits are compared. (1,1): The machine will disconnect the line without sending a fax message, if the other end
	Bit 3	Bit 2	Setting	
	0	0	None	
	0	1	8 digit CSI	
	1	0	4 digit CSI	
	1	1	CSI/RTI	

		does not identify itself with an RTI or CSI. (0,0): Nothing is checked; transmission will always go ahead. ⬇️ Note This function does not work when dialing is done from the external telephone.		
4-5	Not used	Do not change the setting.		
6-7	Maximum printable page length available		The setting determined by these bits is informed to the transmitting terminal in the pre-message protocol exchange (in the DIS/NSF frames).	
	Bit 7	Bit 6		Setting
	0	0		No limit
	0	1		B4 (364 mm)
	1	0		A4 (297 mm)
	1	1		Not used

Communication Switch 02 (SP No. 1-104-003)			
No	Function		Comments
0	G3 Burst error threshold 0: Low 1: High		If there are more consecutive error lines in the received page than the threshold, the machine will send a negative response. The Low and High threshold values depend on the sub-scan resolution, and are as follows.
			100 dpi 6(L) →12(H)
			200 dpi 12(L) →24(H)
			300 dpi 18(L) →36(H)
			400 dpi 24(L) →48(H)
1	Acceptable total error line ratio 0: 5% 1: 10%		If the error line ratio for a page exceeds the acceptable ratio, RTN will be sent to the other end.

2	Treatment of pages received with errors during G3 reception 0: Deleted from memory without printing 1: Printed	0: Pages received with errors are not printed.
3	Hang-up decision when a negative code (RTN or PIN) is received during G3 immediate transmission 0: No hang-up, 1: Hang-up	0: The next page will be sent even if RTN or PIN is received. 1: The machine will send DCN and hang up if it receives RTN or PIN. This bit is ignored for memory transmissions or if ECM is being used.
4-7	Not used	Do not change these settings.

Communication Switch 03 (SP No. 1-104-004)		
No	Function	Comments
0-7	Maximum number of page retransmissions in a G3 memory transmission	00 - FF (Hex) times. This setting is not used if ECM is switched on. Default setting - 03(H)

Communication Switch 04 (SP No. 1-104-005)		
No	Function	Comments
0	Remote mode switch (TEL mode) 0: Disable 1: Enable (Active)	Set this bit to ON when you wish to switch TEL mode to FAX mode remotely.
1	Remote mode switch (FAX mode) 0: Disable 1: Enable (Active)	Set this bit to ON when you wish to turn on the remote mode switch after automatic reception with FAX mode.
2	Remote mode switch (AUTO mode) 0: Disable 1: Enable (Active)	Set this bit to ON when you wish to turn on the remote mode switch after automatic reception with AUTO mode.
3-7	Not used	Do not change the settings.

Communication Switch 05 (SP No. 1-104-006)		
No	Function	Comments
0-3	Remote mode switch number 00-09 (0-9:HEX)	Enter the number to switch between TEL/FAX modes using the external phone.
4-7	Not used	Do not change the settings.

Communication Switch 06 - Not used (do not change the settings)

Communication Switch 07 - Not used (do not change the settings)

Communication Switch 08 - Not used (do not change the settings)

Communication Switch 09 (SP No. 1-104-009)		
No	Function	Comments
0-7	Minimum interval between automatic dialing attempts	This value is the minimum time that the machine waits before it dials the next destination.

Communication Switch 0A (SP No. 1-104-011)		
No	Function	Comments
0	Point of resumption of memory transmission upon redialing 0: From the error page 1: From page 1	0: The transmission begins from the page where transmission failed the previous time. 1: Transmission begins from the first page, using normal memory transmission.
1-7	Not used	Do not change these settings.

Communication Switch 0B (SP No. 1-104-012)		
No	Function	Comments
0-3	Not used	Do not change these settings.
4	Printout of the message when acting as a Transfer Station 0: Disabled, 1: Enabled	When the machine is acting as a Transfer Station, this bit determines whether the machine prints the fax message coming in from the Requesting Terminal.
5-7	Not used	Do not change the settings.

Communication Switch 0C - Not used (do not change the settings)

Communication Switch 0D (SP No. 1-104-014)		
No	Function	Comments
0-7	The available memory threshold, below which ringing detection (and therefore reception into memory) is disabled	00 to FF (Hex), unit = 4 kbytes (e.g., 06(H) = 24 kbytes) One page is about 24 kbytes. The machine refers to this setting before each fax reception. If the amount of remaining memory is below this threshold, the machine cannot receive any fax messages. If this setting is kept at 0, the machine will detect ringing signals and go into receive mode even if there is no memory available. This will result in communication failure.

Communication Switch 0E (SP No. 1-104-015)		
No	Function	Comments
0-7	Minimum interval between automatic dialing attempts	06 to FF (Hex), unit = 2 s (e.g., 06(H) = 12 s) This value is the minimum time that the machine waits before it dials the next destination.

Communication Switch 0F – Not used (do not change the settings.)

Communication Switch 10 (SP No. 1-104-017)		
No	Function	Comments
0-7	Memory transmission: Maximum number of dialing attempts to the same destination	01 – FE (Hex) times

Communication Switch 11 – Not used (do not change the settings.)

Communication Switch 12 (SP No. 1-104-019)		
No	Function	Comments
0-7	Memory transmission: Interval between dialing attempts to the same destination	01 – FF (Hex) minutes

Communication Switch 13 – Not used (do not change the settings.)

Communication Switch 14 (SP No. 1-104-021)			
No	Function		Comments
0	Inch-to-mm conversion during transmission 0: Disabled, 1: Enabled		0: In immediate transmission, data scanned in inch format are transmitted without conversion. In memory transmission, data stored in the SAF memory in mm format are transmitted without conversion. Note: When storing the scanned data into SAF memory, the fax unit always converts the data into mm format. 1: The machine converts the scanned data or stored data in the SAF memory to the format which was specified in the set-up protocol (DIS/NSF) before transmission.
1-5	Not used		Do not change the factory settings.
6-7	Available unit of resolution in which fax messages are received		For the best performance, do not change the factory settings. The setting determined by these bits is informed to the transmitting terminal in the pre-message protocol exchange (in the DIS/NSF frames).
	Bit 7	Bit 6	
	0	0	
	0	1	
	1	0	
	1	1	
			Unit
			mm
			inch
			mm and inch
			Not used

Communication Switch 15 – Not used (do not change the settings)

Communication Switch 16 (SP No. 1-104-023)		
No	Function	Comments
0	Not used	Do not change the settings.
1	Optional G3 unit (G3-2) 0: Not installed 1: Installed	Change this bit to 1 when installing the first optional G3 unit.
2	Not used	
3	Select PSTN connection 0: Off 1: On	This switch enables the G3-2. 0: Off, no connection 1: Recognizes and enables G3-2. This switch can be used only after G3-2 has been installed.
4-7	Not used	Do not change the settings.

Communication Switch 17 (SP No. 1-104-024)		
No	Function	Comments
0	SEP reception 0: Disabled 1: Enabled	0: Polling transmission to another maker's machine using the SEP (Selective Polling) signal is disabled.
1	SUB reception 0: Disabled 1: Enabled	0: Confidential reception to another maker's machine using the SUB (Sub-address) signal is disabled.
2	PWD reception 0: Disabled 1: Enabled	0: Disables features that require PWD (Password) signal reception.
3-4	Not used	Do not change the settings.
5	PSTN dial-in routing setting 0: OFF 1: ON	1: The machine sets multiple PSTN dial-in numbers in the PSTN dial-in line and transfers received data from each PSTN dial-in number to each address.

6	Not used	Do not change the settings.
7	Action when there is no box with an F-code that matches the received SUB code 0: Disconnect the line 1: Receive the message (using normal reception mode)	Change this setting when the customer requires.

Communication Switch 18 (SP No. 1-104-025)		
No	Function	Comments
0-4	Not used	Do not change the settings.
5	IP-Fax dial-in routing selection 0: Off 1: On	1: Transfers received data to each IP-Fax dial-in number. IP-Fax dial-in number is a 4-digit number.
6	PSTN 2 dial-in routing 0: Off 1: On	Enables or disables dial-in routing for the PSTN 2 connection.
7	PSTN 3 dial-in routing 0: Off 1: On	Enables or disables dial-in routing for the PSTN 3 connection.

Communication Switch 19 - Not used (do not change the settings)

Communication Switch 1A - Not used (do not change the settings)

Communication Switch 1B (SP No. 1-104-028)		
No	Function	Comments
0-7	Extension access code (0 to 7) to turn V.8 protocol On/Off 0: On 1: Off	If the PABX does not support V.8/V.34 protocol procedure, set this bit to "1" to disable V.8. Example: If "0" is the PSTN access code, set bit 0 to 1. When the machine detects "0" as the first dialed number, it automatically disables V.8 protocol. (Alternatively, if "3" is the PSTN access code, set bit 3 to 1.)

Communication Switch 1C (SP No. 1-104-029)		
No	Function	Comments
0-1	Extension access code (8 and 9) to turn V.8 protocol On/Off 0: On 1: Off	Refer to communication switch 1B. Example: If "8" is the PSTN access code, set bit 0 to 1. When the machine detects "8" as the first dialed number, it automatically disables V.8 protocol. (If "9" is the PSTN access code, use bit 1.)
2-7	Not used	Do not change the settings.

Communication Switch 1D - Not used (do not change the settings)

Communication Switch 1E - Not used (do not change the settings)

Communication Switch 1F - Not used (do not change the settings)

4.6 BIT SWITCHES – 4

⬇ Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

4.6.1 G3 SWITCHES

G3 Switch 00 (SP No. 1-105-001)				
No	Function			Comments
0 1	Monitor speaker during communication (tx and rx)			(0, 0): The monitor speaker is disabled all through the communication.
	Bit 1	Bit 0	Setting	(0, 1): The monitor speaker is on up to phase B in the T.30 protocol.
	0	0	Disabled	(1, 0): Used for testing. The monitor speaker is on all through the communication. Make sure that you reset these bits after testing.
	0	1	Up to Phase B	
	1	0	All the time	
	1	1	Not used	
2	Monitor speaker during memory transmission 0: Disabled 1: Enabled			1: The monitor speaker is enabled during memory transmission.
3-5	Not used			Do not change the settings.
6	Dedicated G3 line mode selection 0: Off 1: On (Dedicated)			Set this bit to 1 when you wish to dedicate a line for G3.
7	Not used			Do not change this setting.

G3 Switch 01 (SP No. 1-105-002)

No	Function	Comments
0-3	Not used	Do not change the settings.
4	DIS frame length 0: 10 bytes 1: 4 bytes	1: The bytes in the DIS frame after the 4th byte will not be transmitted (set to 1 if there are communication problems with PC-based faxes which cannot receive the extended DIS frames).
5	Not used	Do not change the setting.
6	Forbid CED/ANSam output 0: Off 1: On (Forbid output)	Do not change this setting (Default: 0: Off), unless communication problem is caused by a CED or ANSam transmission.
7	Not used	Do not change this setting.

G3 Switch 02 (SP No. 1-105-003)

No	Function	Comments
0	G3 protocol mode used 0: Standard and non-standard 1: Standard only	Change this bit to 1 only when the other end can only communicate with machines that send T.30-standard frames only. 1: Disables NSF/NSS signals (these are used in non-standard mode communication)
1-6	Not used	Do not change the settings.
7	Short preamble 0: Disabled 1: Enabled	Refer to Appendix B in the Group 3 Facsimile Manual for details about Short Preamble.

G3 Switch 03 (SP No. 1-105-004)

No	Function	Comments
0	DIS detection number (Echo countermeasure) 0: 1 1: 2	0: The machine will hang up if it receives the same DIS frame twice. 1: Before sending DCS, the machine will wait for the second DIS which is caused by echo on the line.
1	Not Used	Do not change the settings.

2	Not Used	Do not change the settings.
3	ECM frame size 0: 256 bytes 1: 64 bytes	Keep this bit at "0" in most cases.
4	CTC transmission conditions 0: After one PPR signal received 1: After four PPR signals received (ITU-T standard)	0: When using ECM in non-standard (NSF/NSS) mode, the machine sends a CTC to drop back the modem rate after receiving a PPR, if the following condition is met in communications at 14.4, 12.0, 9.6, and 7.2 kbps. $\sqrt{N_{\text{Transmit}}} \leq N_{\text{Resend}}$ N_{Transmit}- Number of transmitted frames N_{Resend}- Number of frames to be retransmitted 1: When using ECM, the machine sends a CTC to drop back the modem rate after receiving four PPRs. PPR, CTC: These are ECM protocol signals. This bit is not effective in V.34 communications.
5	Modem rate used for the next page after receiving a negative code (RTN or PIN) 0: No change 1: Fallback	1: The machine's tx modem rate will fall back before sending the next page if a negative code is received. This bit is ignored if ECM is being used.
6	Not used	Do not change the settings
7	Select detection of reverse polarity in ringing 0: Off 1: On	This switch is used to prevent reverse polarity in ringing on the phone line (applied to PSTN-G3 ringing). Do not change this setting 0: No detection 1: Detection (Japan and Korea only)

G3 Switch 04 (SP No. 1-105-005)		
No	Function	Comments
0-3	Training error detection threshold	0 - F (Hex); 0 - 15 bits If the number of error bits in the received TCF is below this threshold, the machine informs the sender that training has succeeded.
4-7	Not used	Do not change the settings.

G3 Switch 05 (SP No. 1-105-006)						
No	Function					Comments
0-3	Initial Tx modem rate (kbps)					These bits set the initial starting modem rate for transmission. Use the dedicated transmission parameters if you need to change this for specific receivers. If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually. Cross reference V.8 protocol on/off - G3 switch 03, bit 2
	Bit 3	Bit 2	Bit 1	Bit 0	kbps	
	0	0	0	1	2.4	
	0	0	1	0	4.8	
	0	0	1	1	7.2	
	0	1	0	0	9.6	
	0	1	0	1	12.0	
	0	1	1	0	14.4	
	0	1	1	1	16.8	
	1	0	0	0	19.2	
	1	0	0	1	21.6	
	1	0	1	0	24.0	
	1	0	1	1	26.4	
	1	1	0	0	28.8	
	1	1	0	1	31.2	
	1	1	1	0	33.6	

	Other settings - Not used			
4-5	Initial modem type for 9.6 k or 7.2 kbps.			These bits set the initial modem type for 9.6 and 7.2 kbps, if the initial modem rate is set at these speeds.
	Bit 5	Bit 4	Setting	
	0	0	V.29	
	0	1	V.17	
	1	0	V.34	
	1	1	Not used	
6-7	Not used			Do not change the settings.

G3 Switch 06 (SP No. 1-105-007)						
No	Function					Comments
0-3	Initial Rx modem rate(kbps)					These bits set the initial starting modem rate for reception. Use a lower setting if high speeds pose problems during reception. If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually. Cross reference V.8 protocol on/off - G3 switch 03, bit2
	Bit 3	Bit 2	Bit 1	Bit 0	kbps	
	0	0	0	1	2.4	
	0	0	1	0	4.8	
	0	0	1	1	7.2	
	0	1	0	0	9.6	
	0	1	0	1	12.0	
	0	1	1	0	14.4	
	0	1	1	1	16.8	
	1	0	0	0	19.2	
	1	0	0	1	21.6	
	1	0	1	0	24.0	
	1	0	1	1	26.4	
	1	1	0	0	28.8	
	1	1	0	1	31.2	

	1	1	1	0	33.6	
	Other settings - Not used					
4-7	Modem types available for reception The setting of these bits is used to inform the transmitting terminal of the available modem type for the machine in receive mode. If V.34 is not selected, V.8 protocol must be disabled manually. Cross reference V.8 protocol on/off - G3 switch 03, bit 2					
	Bit 7	Bit 6	Bit 5	Bit 4	Types	
	0	0	0	1	V.27ter	
	0	0	1	0	V.27ter, V.29	
	0	0	1	1	V.27ter, V.29, V.33	
	0	1	0	0	V.27ter, V.29, V.17	
	0	1	0	1	V.27ter, V.29, V.17, V.34	
	Other settings - Not used					

G3 Switch 07 (SP No. 1-105-008)						
No	Function			Comments		
0-1	PSTN cable equalizer (tx mode: Internal)			Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange. Use the dedicated transmission parameters for specific receivers. Also, try using the cable equalizer if one or more of the following symptoms occurs. Communication error Modem rate fallback occurs frequently. Note This setting is not effective in V.34 communications.		
	Bit 1	Bit 0	Setting			
	0	0	None			
	0	1	Low			
	1	0	Medium			
	1	1	High			

2-3	PSTN cable equalizer (rx mode: Internal)			Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange. Also, try using the cable equalizer if one or more of the following symptoms occurs. Communication error with error codes such as 0-20, 0-23, etc. Modem rate fallback occurs frequently. Note This setting is not effective in V.34 communications.
	Bit 3	Bit 2	Setting	
	0	0	None	
	0	1	Low	
	1	0	Medium	
	1	1	High	
4	PSTN cable equalizer (V.8/V.17 rx mode: External) 0: Disabled 1: Enabled			Keep this bit at "1".
5	Not used			Do not change the settings.
6	Parameter selection for dial tone detection 0: Normal parameter 1: Specific parameter			0: This uses the fixed table in the ROM for dial tone detection. 1: This uses the specific parameter adjusted with SRAM (69ECBEH - 69ECDEH). Select this if the dial tone cannot be detected when the "Normal parameter: 0" is selected.
7	Not used			Do not change the settings.

G3 Switch 08 - Not used (do not change the settings)

G3 Switch 09 - Not used (do not change the settings)

G3 Switch 0A (SP No. 1-105-011)				
No	Function			Comments
0-1	Maximum allowable carrier drop during image data reception			These bits set the acceptable modem carrier drop time.
	Bit 1	Bit 0	Value (ms)	Try a longer setting if error code 0-22 is frequent.
	0	0	200	
	0	1	400	
	1	0	800	
	1	1	Not used	
2	Select cancellation of high-speed RX if carrier signal lost while receiving 0: Off 1: On			This switch setting determines if high-speed receiving ends if the carrier signal is lost when receiving during non-ECM mode
3	Not used			Do not change the settings
4	Maximum allowable frame interval during image data reception. 0: 5 s 1: 13 s			This bit set the maximum interval between EOL (end-of-line) signals and the maximum interval between ECM frames from the other end. Try using a longer setting if error code 0-21 is frequent.
5	Not used			Do not change the settings.

6	Reconstruction time for the first line in receive mode 0: 6 s 1: 12 s	When the sending terminal is controlled by a computer, there may be a delay in receiving page data after the local machine accepts set-up data and sends CFR. This is outside the T.30 recommendation. But, if this delay occurs, set this bit to 1 to give the sending machine more time to send data. Refer to error code 0-20. ITU-T T.30 recommendation: The first line should come within 5 s of CFR.
7	Not used	Do not change the settings.

G3 Switch 0B Not used (do not change the settings).

G3 Switch 0C (SP No. 1-105-013)		
No	Function	Comments
0-1	Not used	Do not change these settings.
4-5	Select detection of DTMF/DP detection when using remote switch. 00: DTMF+PSTN (Simultaneous detection) 01: DTMF 10: DP (10 PPPS) 11: DP (20 PPS)	This setting determines how to detect the signals from the handset when remote switch is active.

G3 Switch 0D Not used (do not change the settings).

G3 Switch 0E (SP No. 1-105-015)		
No	Function	Comments
0-7	Set CNG send time interval Some machines on the receiving side may not be able to automatically switch the 3-second CNG interval.	
	High order bit	3000-2250ms: 3000-50xNms 3000 – 50 x Nms 0F (3000 ms) <= N <= FF (2250 ms)
	Low order bit	00-0E(3000-3700ms: 3000+50xNms 3000 – 50 x Nms 0F (3000 ms) <= N <= 0F (3700 ms)

G3 Switch 0F (SP No. 1-105-016)		
No	Function	Comments
0	Alarm when an error occurred in Phase C or later 0: Disabled 1: Enabled	If the customer wants to hear an alarm after each error communication, change this bit to "1".
1	Alarm when the handset is off-hook at the end of communication 0: Disabled 1: Enabled	If the customer wants to hear an alarm if the handset is off-hook at the end of fax communication, change this bit to "1".
2-3	Not used	Do not change these settings.
4	Sidaa manual calibration setting 0: Off 1: On	1: manually calibrates for communication with a line whose current change occurs such as an optical fiber line.
5-7	Not used	Do not change the settings.

4.7 BIT SWITCHES – 5

↓ Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

4.7.1 IP FAX SWITCHES

IP Fax Switch 00 (SP No. 1-111-001)		
No.	Function	Comments
0	Not used	Do not change this setting.
1	IP Fax Transport 0: TCP, 1: UDP	Selects TCP or UDP protocol for IP-Fax
2	IP Fax single port selection 0: OFF, 1: ON (enable)	Selects single data port.
3	IP Fax double ports (single data port) selection 0: OFF, 1: ON (enable)	Selects whether IP-Fax uses a double port.
4	IP Fax Gatekeeper 0: OFF, 1: ON (enable)	Enables/disables the gatekeeper for IP-Fax.
5	IP Fax T30 bit signal reverse 0: LSB first, 1: MSB first	Reverses the T30 bit signal.
6	IP Fax max bit rate setting 0: Not affected, 1: Affected	When "0" is selected, the max bit rate does not affect the value of the DIS/DCS. When "1" is selected, the max bit rate affects the value of the DIS/DCS.

7	IP Fax received telephone number confirmation 0: No confirmation, 1: Confirmation	When "0" is selected, fax data is received without checking the telephone number. When "1" is selected, fax data is received only when confirming that the telephone number from the sender matches the registered telephone number in this machine. If this confirmation fails, the line is disconnected.

IP Fax Switch 01 (SP No. 1-111-002)					
No.	Function			Comments	
0-3	IP Fax delay level setting Selects the acceptable delay level. Level 0 is the highest quality Default is "0000" (level 0).				
	Bit 3	Bit 2	Bit 1	Bit 0	
	0	0	0	0	Level 0
	0	0	0	1	Level 1
	0	0	1	0	Level 2
	0	0	1	1	Level 3
4-7	IP Fax preamble wait time setting		Selects the preamble wait time. [00 to 0f] There are 16 values in this 4-bit binary switch combination. Waiting time: set value level x 100 ms Max: 0f (1500 ms) Min: 00 (No wait time) The default is "0000" (00H).		

IP Fax Switch 02 (SP No. 1-111-003)		
No.	Function	Comments
0	IP Fax bit signal reverse setting 0: Maker code setting 1: Internal bit switch setting	When "0" is selected, the bit signal reverse method is decided by the maker code. When "1" is selected, the bit signal reverse method is decided by the internal bit switch. (When communicating between IP Fax devices, LSB first is selected.)
1	IP Fax transmission speed setting 0: Modem speed 1: No limitation	Selects the transmit speed for IP Fax communication.
2	SIP transport setting 0: TCP 1: UDP	This bit switch sets the transport that has priority for receiving IP Fax data. This function is activated only when the sender has both TCP and UDP.
3	CCM connection 0: No CCM connection 1: CCM connection	When "1" is selected, only the connection call message with H.323 or no tunneled H.245 is transmitted via CCM.
4	Message reception selection from non-registered SIP server 0: Answer 1: Not answer	0: This answers the INVITE message from the SIP server not registered for the machine. 1: This does not receive the INVITE message from the SIP server not registered for the machine and send a refusal message.
5	ECM communication setting 0: No limit for image compression 1: Limit for image compression	0: This does not limit the type of the image compression with ECM communication. 1: When the other end machine is Cisco, this permits the image compression other than JBIG or MMR with ECM communication.
6-7	Not used	Do not change these settings.

IP Fax Switch 03 (SP No. 1-111-004)		
No.	Function	Comments
0	Effective field limitation for G3 standard function information 0: OFF, 1: 4byte (DIS)	Limits the effective field for standard G3 function information.
1	Switching between G3 standard and G3 non standard 0: Enable switching 1: G3 standard only	Enables/disables switching between G3 standard and G3 non-standard.
2	Not used	Do not change this setting.
3	ECM frame size selection at transmitting 0: 256byte, 1: 64byte	Selects the ECM frame size for sending.
4	DIS detection times for echo prevention 0: 1 time, 1: 2 times	Sets the number of times for DIS to detect echoes.
5	CTC transmission selection 0: PPRx1 1: PPRx4	When "0" is selected, the transmission condition is decided by error frame numbers. When "1" is selected, the transmission condition is based on the ITU-T method.
6	Shift down setting at receiving negative code 0: OFF, 1: ON	Selects whether to shift down when negative codes are received.
7	Not used	Do not change this setting.

IP Fax Switch 04 (SP No. 1-111-005)		
No.	Function	Comments
0-3	TCF error threshold	Sets the TCF error threshold level. [00 to 0f] The default is "1111" (0fH).
4-7	Not used	Do not change these settings.

IP Fax Switch 05 (SP No. 1-111-006)						
No.	Function					Comments
0-3	Modem bit rate setting for transmission (kbps)					Sets the modem bit rate for transmission. The default is "0110" (14.4K bps).
	Bit 3	Bit 2	Bit 1	Bit 0	kbps	
	0	0	0	1	2.4	
	0	0	1	1	4.8	
	0	0	1	1	7.2	
	0	1	0	0	9.6	
	0	1	0	1	12.0	
	0	1	1	0	14.4	
4-5	Modem setting for transmission					Sets the modem type for transmission. The default is "00" (V29).
	Bit 5		Bit 4		Types	
	0		0		V29	
	0		1		V17	
	1		0		Not used	
	1		1		Not used	
6-7	Not used					Do not change these settings.

IP Fax Switch 06 (SP No. 1-111-007)					
No.	Function				Comments
0-3	Modem bit rate setting for reception Sets the modem bit rate for reception. The default is "0110" (14.4K bps).				
4-7	Modem setting for reception Sets the modem type for reception. The default is "0100" (V27ter, V29, V17).				
	Bit 7	Bit 6	Bit 5	Bit 4	Types
	0	0	0	1	V.27ter

	0	0	1	0	V.27ter, V.29
	0	0	1	1	V.27ter, V.29, V.33
	0	1	0	0	V.27ter, V.29, V.17/V.33
	Other settings - Not used				

IP Fax Switch 07 (SP No. 1-111-008)		
No.	Function	Comments
0	TSI information 0: Not added, 1: Added	Adds or does not add TSI information to NSS(S).
1	DCN transmission setting at T1 timeout 0: Not transmitted 1: Transmitted	Transmits or does not transmit DCN at T1 timeout.
2	Not used	Do not change this setting.
3	Hang up setting at DIS reception disabled 0: No hang up 1: Hang up after transmitting DCN	Sets whether the machine disconnects after DIS reception.
4	Number of times for training 0: 1 time, 1: 2 times	Selects the number of times training is done at the same bit rate.
5	Space CSI transmission setting at no CSI registration 0: Not transmitted 1: Transmitted	When "0" is selected, frame data is enabled. When "1" is selected, the transmitted data is all spaces.
6-7	Not used	Do not change these settings.

IP Fax Switch 08 (SP No. 1-111-009)				
No.	Function			Comments
0-1	T1 timer adjustment			Adjusts the T1 timer. The default is "00" (35 seconds).
	Bit 1	Bit 0		
	0	0	35 s	
	0	1	40 s	
	1	0	50 s	
	1	1	60 s	
2-3	T4 timer adjustment			Adjust the T4 timer. The default is "00" (3 seconds).
	Bit 3	Bit 2		
	0	0	3 s	
	0	1	3.5 s	
	1	0	4 s	
	1	1	5 s	
4-5	T0 timer adjustment			Adjusts the fail safe timer. This timer sets the interval between "setup" data transmission and T.38 phase decision. If your destination return is late on the network or G3 fax return is late, adjust the longer interval timer. The default is "00" (75 seconds).
	Bit 5	Bit 4		
	0	0	75 s	
	0	1	120 s	
	1	0	180 s	
	1	1	240 s	
6-7	Not used			Do not change these settings.

IP Fax Switch 09 (SP No. 1-111-010)			
No.	Function		Comments
0	Network I/F setting for SIP connection 0: IPv4 1: IPv6.		Selects the connection type (IPv4 or IPv6) to connect to the SIP server.
1	Network I/F setting for Fax communication 0: Same setting as SIP server connection 1: Automatic setting		0: The I/F setting for fax communication follows the setting for SIP server connection. 1: The negotiation between the SIP server and the device decides whether IPv4 or IPv6 is used for the I/F setting for fax communication.
2	Record-route setting 0: Disable 1: Enable		0: Disables the record-route function of the SIP server. 1: Enables the record-route function of the SIP server.
3-4	re-INVITE transmission delay timer setting		This changes the interval for transmit re-INVITE after receiving the ACK message transmitted by T.38 device.
	Bit 4	Bit 3	
	0	0	
	0	1	
	1	0	
	1	1	
5	SIP-IPFAX: Adding vender information selection 0: Declare T38VendorInfo=RICOH 1: Not declare T38VendorInfo=RICOH		0: Use this setting normally. 1: This setting is used only when a customer wants to connect the machine with SIP server + VOIP-GW provided by AVAYA Inc.
6-7	Not used.		Do not change these settings.

IP Fax Switch 0A - Not used (do not change the settings)
IP Fax Switch 0B - Not used (do not change the settings)
IP Fax Switch 0C - Not used (do not change the settings)
IP Fax Switch 0D - Not used (do not change the settings)

IP Fax Switch 0E (SP No. 1-111-013)		
No.	Function	Comments
0-1	SIP: IP-FAX port mode (UDP) 00: 3 port mode 01: 2 port mode 10: 1 port mode	Switch the port mode for IP-FAX (T38 transport: UDP) at SIP call control.
2-3	SIP: IP-FAX port mode (TCP) 00: 3 port mode 01: 2 port mode 10: 1 port mode	Switch the port mode for IP-FAX (T38 transport: TCP) at SIP call control.
4-7	Not used.	Do not change these settings.

4.8 NCU PARAMETERS

The following tables give the RAM addresses and the parameter calculation units that the machine uses for ringing signal detection and automatic dialing. The factory settings for each country are also given. Most of these must be changed by RAM read/write (SP2-102), but some can be changed using NCU Parameter programming (SP2-103, 104 and 105); if SP2-103, 104 and 105 can be used, this will be indicated in the Remarks column. The RAM is programmed in hex code unless (BCD) is included in the Unit column.

↓ Note

- The following addresses describe settings for the standard NCU.

#	RAM Addr.	Function	Remarks
CC	680500	Country/Area code for NCU parameters	Use the Hex value to program the country/area code directly into this address, or use the decimal value to program it using SP2-103-001

Country Code List

Country /Area	Decimal	Hex	Country /Area	Decimal	Hex
France	00	00	Asia	18	12
Germany	01	01	Japan	19	13
UK	02	02	Hong Kong	20	14
Italy	03	03	South Africa	21	15
Austria	04	04	Australia	22	16
Belgium	05	05	New Zealand	26	17
Denmark	06	06	Singapore	24	18
Finland	07	07	Malaysia	25	19
Ireland	08	08	China	26	1A
Norway	09	09	Taiwan	27	1B

Sweden	10	0A	Korea	28	1C
Switzerland	11	0B	Brazil	29	1D

#	RAM Addr.	Function	Unit	Remarks
01	6805B4	PSTN: Tx level from the modem	-N – 3 dBm	SP2-103-002
02	680572	Acceptable ringing signal frequency: range 1, upper limit	1000/ N (Hz).	SP2-103-003
03	680573	Acceptable ringing signal frequency: range 1, lower limit		SP2-103-004
04	680574	Acceptable ringing signal frequency: range 2, upper limit		SP2-103-005
05	680575	Acceptable ringing signal frequency: range 2, lower limit		SP2-103-006
06	680576	Number of rings until a call is detected	1	SP2-103-007 The setting must not be zero.
07	680577	Minimum required length of the first ring	20 ms	See Note B. SP2-103-008
08	680578	Minimum required length of the second and subsequent rings	20 ms	SP2-103-009
09	680579	Ringing signal detection reset time (LOW)	20 ms	SP2-103-010
10	68057A	Ringing signal detection reset time (HIGH)		SP2-103-011
11	68054A	Time between opening or closing the DO relay and opening the OHDI relay	1 ms	See Notes A, D and E. SP2-103-012
12	68054B	Break time for pulse dialing	1 ms	See Note A. SP2-103-013

13	68054C	Make time for pulse dialing	1 ms	See Note A. SP2-103-014
14	68054D	Time between final OHDI relay closure and DO relay opening or closing	1 ms	EU only. SP2-103-015 See Notes A, D and E.
15	68054E	Minimum pause between dialed digits (pulse dial mode)	20 ms	See Note A and E. SP2-103-016
16	68054F	Time waited when a pause is entered at the operation panel		SP2-103-017 See Note A.
17	680550	DTMF tone on time	1 ms	SP2-103-018
18	680551	DTMF tone off time		SP2-103-019
19	680552	Tone attenuation level of DTMF signals while dialing	-N x 0.5 -3.5 dBm	SP2-103-020 See Note C.
20	680553	Tone attenuation value difference between high frequency tone and low frequency tone in DTMF signals	-dBm x 0.5	SP2-103-021 The setting must be less than -5dBm, and should not exceed the setting at 680552h above. See Note C.
21	680554	PSTN: DTMF tone attenuation level after dialling	-N x 0.5 -3.5 dBm	SP2-103-022 See Note C.
22	680555	ISDN: DTMF tone attenuation level after dialling	-dBm x 0.5	See Note C

 Note

- A: Pulse dial parameters (addresses 68054A to 68054F) are the values for 10 pps. If 20 pps is used, the machine automatically compensates.
- B: The first ring may not be detected until 1 to 2.5 wavelengths after the time specified by this parameter.
- C: The calculated level must be between 0 and 10.
The attenuation levels calculated from RAM data are:
High frequency tone:
– $0.5 \times N680552/680554 - 3.5$ dBm
– $0.5 \times N680555$ dBm
Low frequency tone:
– $0.5 \times (N680552/680554 + N680553) - 3.5$ dBm
– $0.5 \times (N680555 + N680553)$ dBm
*Note: N680552, for example, means the value stored in address 680552(H)
- D: 68054A: Europe - Between Ds opening and Di opening, France - Between Ds closing and Di opening
68054D: Europe - Between Ds closing and Di closing, France - Between Ds opening and Di closing
- E: 68054A, 68054D, 68054E: The actual inter-digit pause (pulse dial mode) is the sum of the period specified by the RAM addresses 68054A, 68054D, and 68054E.

4.9 DEDICATED TRANSMISSION PARAMETERS

There are two sets of transmission parameters: Fax and E-mail

Each Quick Dial Key and Speed Dial Code has eight bytes of programmable parameters allocated to it. If transmissions to a particular machine often experience problems, store that terminal's fax number as a Quick Dial or Speed Dial, and adjust the parameters allocated to that number.

The programming procedure will be explained first. Then, the eight bytes will be described.

4.9.1 PROGRAMMING PROCEDURE

1. Set the bit 0 of System Bit Switch 00 to 1.
2. Enter Address Book Management mode ([User Tools]> System Settings> Key Operator> Address Book Management).
3. Select the address book that you want to program.
4. For the fax parameter, select "Fax Dest.", for the E-mail parameter, select "E-mail", then press "Start". Make sure that the LED of the Start button lights green.
5. The settings for the switch 00 are now displayed. Press the bit number that you wish to change.
6. To scroll through the parameter switches, either:
7. Select the next switch: press "Next" or Select the previous switch: "Prev." until the correct switch is displayed. Then go back to step 6.
8. After the setting is changed, press "OK".
9. After finishing, reset bit 0 of System Bit Switch 00 to 0.

4.9.2 PARAMETERS

Fax Parameters

The initial settings of the following fax parameters are all FF(H) - all the parameters are disabled.

Switch 00
FUNCTION AND COMMENTS
ITU-T T1 time (for PSTN G3 mode) If the connection time to a particular terminal is longer than the NCU parameter setting, adjust this byte. The T1 time is the value stored in this byte (in hex code), multiplied by 1 second. Range: 0 to 120 s (00h to 78h) FFh - The local NCU parameter factory setting is used. Do not program a value between 79h and FEh.

Switch 01							
No	FUNCTION					COMMENTS	
0-4	Tx level					If communication with a particular remote terminal often contains errors, the signal level may be inappropriate. Adjust the Tx level for communications with that terminal until the results are better. If the setting is "Disabled", the NCU parameter 01 setting is used.  Note Do not use settings other than listed on the left.	
	Bit4	Bit3	Bit2	Bit1	Bit0		
	0	0	0	0	0		0
	0	0	0	0	1		-1
	0	0	0	1	0		-2
	0	0	0	1	1		-3
	0	0	1	0	0		-4
	↓	↓	↓	↓	↓		↓
	0	1	1	1	1		-15
	1	1	1	1	1		Disabled

5-7	Cable equalizer Bit 7: 0, Bit 6: 0, Bit 5: 0 = None Bit 7: 0, Bit 6: 0, Bit 5: 1 = Low Bit 7: 0, Bit 6: 1, Bit 5: 0 = Medium Bit 7: 0, Bit 6: 1, Bit 5: 1 = High Bit 7: 1, Bit 6: 1, Bit 5: 1 = Disabled	Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange when calling the number stored in this Quick/Speed Dial. Also, try using the cable equalizer if one or more of the following symptoms occurs. Communication error with error codes such as 0-20, 0-23, etc. Modem rate fallback occurs frequently. Note Do not use settings other than listed on the left. If the setting is "Disabled", the bit switch setting is used.

Switch 02						
No	FUNCTION					COMMENTS
0-3	Initial Tx modem rate					If training with a particular remote terminal always takes too long, the initial modem rate may be too high. Reduce the initial Tx modem rate using these bits. For the settings 14.4 or kbps slower, Switch 04 bit 4 must be changed to 0. ⬇️ Note Do not use settings other than listed on the left. If the setting is "Disabled", the bit switch setting is used.
	Bit3	Bit2	Bit1	Bit0	bps	
	0	0	0	0	Not used	
	0	0	0	1	2400	
	0	0	1	0	4800	
	0	0	1	1	7200	
	0	1	0	0	9600	
	0	1	0	1	12000	
	0	1	1	0	14400	
	0	1	1	1	16800	
	1	0	0	0	19200	

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	1	0	0	1	21600	
	1	0	1	0	24000	
	1	0	1	1	26400	
	1	1	0	0	28800	
	1	1	0	1	31200	
	1	1	1	0	33600	
	1	1	1	1	Disabled	
	Other settings: Not used					
4-7	Not used				Do not change the settings.	

Switch 03		
No	FUNCTION	COMMENTS
0-1	Inch-mm conversion before tx Bit 1: 0, Bit 0: 0 = Inch-mm conversion available Bit 1: 0, Bit 0: 1 = Inch only Bit 1: 1, Bit 0: 0 = Not used Bit 1: 1, Bit 0: 1 = Disabled	If "inch only" is selected on the machine uses inch-based resolutions for scanning, the printed copy may be slightly distorted at the other end if that machine uses mm-based resolutions. If the setting is "Inch-mm conversion available ", Inch-mm conversion become effective to the special senders. If the setting is "Disabled", the bit switch setting is used.
2-3	DIS/NSF detection method Bit 3: 0, Bit 2: 0 = First DIS or NSF Bit 3: 0, Bit 2: 1 = Second DIS or NSF Bit 3: 1, Bit 2: 0 = Not used Bit 3: 1, Bit 2: 1 = Disabled	(0, 1): Use this setting if echoes on the line are interfering with the set-up protocol at the start of transmission. The machine will then wait for the second DIS or NSF before sending DCS or NSS. If the setting is "Disabled", the bit switch setting is used.

4	V.8 protocol 0: Off 1: Disabled	If transmissions to a specific destination always end at a lower modem rate (14,400 bps or lower), disable V.8 protocol so as not to use V.34 protocol. 0: V.34 communication will not be possible. If the setting is "Disabled", the bit switch setting is used.
5	Compression modes available in transmit mode 0: MH only 1: Disabled	This bit determines the capabilities that are informed to the other terminal during transmission. If the setting is "Disabled", the bit switch setting is used.
6-7	ECM during transmission Bit 7: 0, Bit 6: 0 = Off Bit 7: 0, Bit 6: 1 = On Bit 7: 1, Bit 6: 0 = Not used Bit 7: 1, Bit 6: 1 = Disabled	For example, if ECM is switched on but is not wanted when sending to a particular terminal, use the (0, 0) setting. Note - V.8/V.34 protocol and JBIG compression are automatically disabled if ECM is disabled. - If the setting is "Disabled", the bit switch setting is used.

Switch 04 - Not used (do not change the settings)

Switch 05 - Not used (do not change the settings)

Switch 06 - Not used (do not change the settings)

Switch 07 - Not used (do not change the settings)

Switch 08 - Not used (do not change the settings)

Switch 09 - Not used (do not change the settings)

E-mail Parameters

The initial settings of the following e-mail parameters are all "0" (all parameters disabled).

Switch 00		
No	FUNCTION	COMMENTS
0	MH Compression mode for e-mail attachments 0: Off 1: On	Switches MH compression on and off for files attached to e-mails for sending.
1	MR Compression mode for e-mail attachments 0: Off 1: On	Switches MR compression on and off for files attached to e-mails for sending.
2	MMR Compression mode for e-mail attachments 0: Off 1: On	Switches MMR compression on and off for files attached to e-mails for sending.
3-6	Not used	Do not change these settings.
7	Designates the bits to reference for compression method of e-mail attachments 0: Registered (Bit 0 to 6) 1: No registration.	The "0" selection (default) references the settings for Bits 00, 01, 02 above. The "1" selection ignores the selections of Bits 00, 01, 02.

Switch 01		
No	FUNCTION	COMMENTS
0	Original width of e-mail attachment: A4 0: Off 1: On	Sets the original width of the e-mail attachment as A4.

1	Original width of e-mail attachment: B4 0: Off 1: On	Sets the original width of the e-mail attachment as B4.
2	Original width of e-mail attachment: A3 0: Off 1: On	Sets the original width of the e-mail attachment as A3.
3-6	Not used	Do not change these settings.
7	Designates the bits to reference for original size of e-mail attachments 0: Registered (Bit 0 to 6) 1: No registration.	The "0" selection (default) references the settings for Bits 00, 01, 02 above. The "1" selection ignores the selections of Bits 00, 01, 02.

Switch 02		
No	FUNCTION	COMMENTS
0	Line resolution of e-mail attachment: 200 x 100 0: Off 1: On	Sets the line resolution of the e-mail attachment as 200 x100.
1	Line resolution of e-mail attachment: 200 x 200 0: Off 1: On	Sets the line resolution of the e-mail attachment as 200 x 200.
2	Line resolution of e-mail attachment: 200 x 400 0: Off 1: On	Sets the line resolution of the e-mail attachment as 200 x 400.
3	Not used	Do not change these settings.

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4	Line resolution of e-mail attachment: 400 x 400 0: Off 1: On	Sets the line resolution of the e-mail attachment as 400 x 400.
5-6	Not used	Do not change these settings.
7	Designates the bits to reference for original size of e-mail attachments 0: Registered (Bit 0 to 6) 1: No registration.	The "0" selection (default) references the settings for Bits 00, 01, 02, 04 above. The "1" selection ignores the selections of Bits 00, 01, 02, 04.

Switch 03 - Not used (do not change the settings)

Switch 04		
No	FUNCTION	COMMENTS
0	Full mode address selection 0: Full mode address 1: No full mode (simple mode)	If the other ends have the addresses, which have the full mode function flag ("0"), this machine determines them as full mode standard machines. - This machine attaches the "demand of reception confirmation" to a message when transmitting. - This machine updates the reception capability to the address book when receiving.
1-7	Not used	Do not change these settings.

Switch 05		
No	FUNCTION	COMMENTS
0	Directr transmission selection to SMTP server 0: ON 1: OFF	Allows or does not allow the direct transmission to SMTP server.
1-7	Not used	Do not change these settings.

Switch 06 - Not used (do not change the settings)

Switch 07 - Not used (do not change the settings)

Switch 08 - Not used (do not change the settings)

Switch 09 - Not used (do not change the settings)

4.10 GENERAL SPECIFICATIONS

4.10.1 FCU

Type:	Desktop type transceiver
Circuit:	PSTN PABX
Connection:	Direct couple
Original Size:	Book (Face down): Maximum Width: 216 mm [8.5 inch] ARDF (Face up): (Single-sided document) Length: 139 - 1200 mm [5.5 - 47.2 inch] Width: 139 - 216 mm [5.5 - 8.5 inch] (Double-sided document) Length: 160 - 356 mm [6.3 - 14.0 inch] Width: 139 - 216 mm [5.5 - 8.5 inch]
Scanning Method:	Flat bed, with CCD
Resolution:	G3: 8 x 3.85 lines/mm, 200 x 100 dpi (Standard character), 8 x 7.7 lines/mm, 200 x 200 dpi (Detail character),
Transmission Time:	G3: 3 s at 28800 bps; Measured with G3 ECM using memory for an ITU-T #1 test document (Slerexe letter) at standard resolution
Data Compression:	MH, MR, MMR, JBIG
Protocol:	Group 3 with ECM
Modulation:	V.34, V.17 (TCM), V.29, V.17 (QAM), V.27ter (PHM), V.8, V.21 (FSK)
Data Rate:	G3: 33600/31200/28800/26400/24000/21600/ 19200/16800/14400/12000/9600/7200/4800/2400 bps Automatic fallback

I/O Rate:	With ECM: 0 ms/line Without ECM: 2.5, 5, 10, 20, or 40 ms/line
Memory Capacity:	ECM: 128 KB SAF: 4MB

4.10.2 CAPABILITIES OF PROGRAMMABLE ITEMS

The following table shows the capabilities of each programmable items.

Item	Standard
Quick Dial	2000
Groups	100
Destination per Group	500
Programs	100
Communication records for Journal stored in the memory	200
Specific Senders	250

Note

- Measured using an ITU-T #1 test document (Slerexe letter) at the standard resolution, the auto image density mode and the Text mode.

4.11 IFAX SPECIFICATIONS

Connectivity:	Local area network Ethernet 1000 Base-T/ 100base-Tx/ 10base-T IEEE802.11a/g/n (wireless LAN)
Resolution:	Main scan: 200 dpi Sub scan: 200 dpi, 100 dpi
Transmission Time:	1 s (through a LAN to the server) Condition: ITU-T #1 test document (Selerexe Letter) MTF correction: OFF TTI: None Resolution: 200 x 100 dpi Communication speed: 10 Mbps Correspondent device: E-mail server Line conditions: No terminal access
Document Size:	Maximum message width is A4/LT.
E-mail File Format:	Single/multi-part MIME conversion Image: TIFF-F (MH, MR, MMR)
Protocol:	Transmission: SMTP, TCP/IP Reception: POP3, SMTP, IMAP4, TCP/IP
Data Rate:	1000Mbps (1000 Base-T) 100 Mbps (100base-Tx) 10 Mbps (10base-T)
Authentication Method:	SMTP-AUTH POP before SMTP A-POP
Remark:	The machine must be set up as an e-mail client before installation. Any client PCs connected to the machine through a LAN must also be e-mail clients, or some features will not work (e.g. Autorouting).

4.12 IP-FAX SPECIFICATIONS

Network:	Local Area Network Ethernet/10base-T, 100base-TX IEEE802.11a/g/n (wireless LAN), 1000 Base-T
Scan line density:	8 x 3.85 lines/mm, 200x100dpi (standard character), 8 x 7.7lines/mm, 200x200dpi (detail character),
Original size:	A4
Maximum scanning size:	A4, 216 x 356 mm, Irregular, 216 x 1200 mm
Transmission protocol:	Recommendation: T.38, TCP, UDP/IP communication, SIP (RFC 3261 compliant), H.323 v2
Compatible machines:	IP-Fax compatible machines
IP-Fax transmission function:	Specify IP address and send fax to an IP-Fax compatible fax through a network. Also capable of sending fax from a G3 fax connected to the public telephone lines via a VoIP gateway.
IP-Fax reception function:	Receive a fax sent from an IP-Fax compatible fax through a network. Also capable of receiving fax from a G3 fax connected the public telephone lines via a VoIP gateway.

4.13 FAX UNIT CONFIGURATION



Component	Code	No.	Remarks
FCU	D3A9	1	Included with the fax unit
Speaker		2	
Fax Connection Unit Type M13	D3AA	-	Optional This is used to set up the remote fax function.
Handset Type C5502	D645	-	Optional only for NA

D573

PAPER FEED UNIT PB1050

REVISION HISTORY		
Page	Date	Added/Updated/New
		None

PAPER FEED UNIT PB1050 (D573)

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READ THIS FIRST

Symbols, Abbreviations and Trademarks

Conventions Used in This Manual

This manual uses several symbols.

Symbol	What it means
	Screw
	Connector
	E-ring
	Clip ring
	Clamp



Cautions, Notes, etc.

The following headings provide special information:

WARNING

- Failure to obey warning information could result in serious injury or death.

CAUTION

- Obey these guidelines to ensure safe operation and prevent minor injuries.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.
- Always obey these guidelines to avoid serious problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine. bold is added for emphasis.

 Note

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

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1. REPLACEMENT AND ADJUSTMENT

1.1 BEFOREHAND

CAUTION

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

CAUTION

- **Do not lift the machine together with one or more paper feed unit(s):**
If there is already a machine with one or more optional paper feed unit(s), be sure to disconnect the machine and paper feed unit(s), and lift them up separately when moving/transporting. Otherwise, the handle of the paper feed unit breaks which can cause an injury, because the handle cannot hold the mainframe's weight.

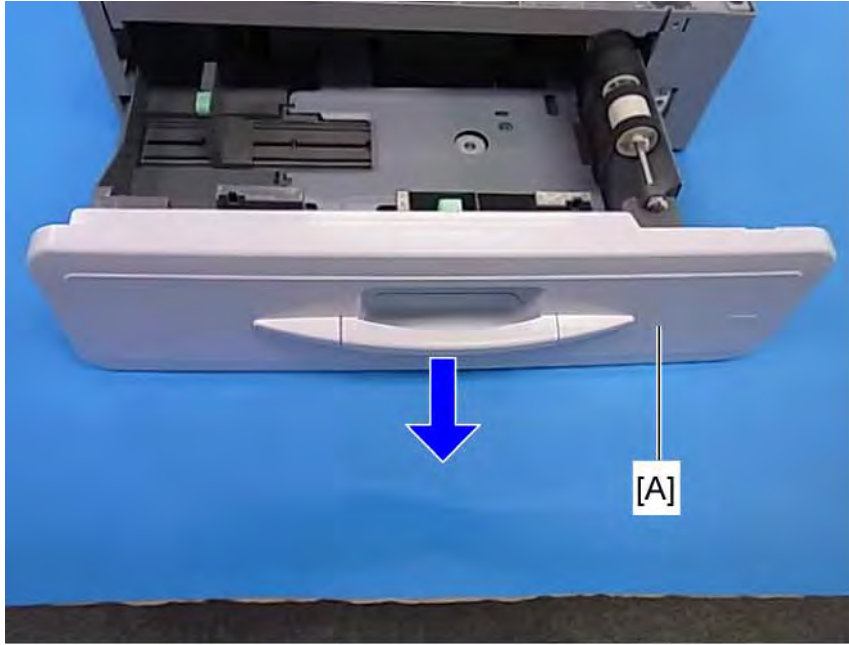
Important

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

1.2 PAPER FEED UNIT (D573)

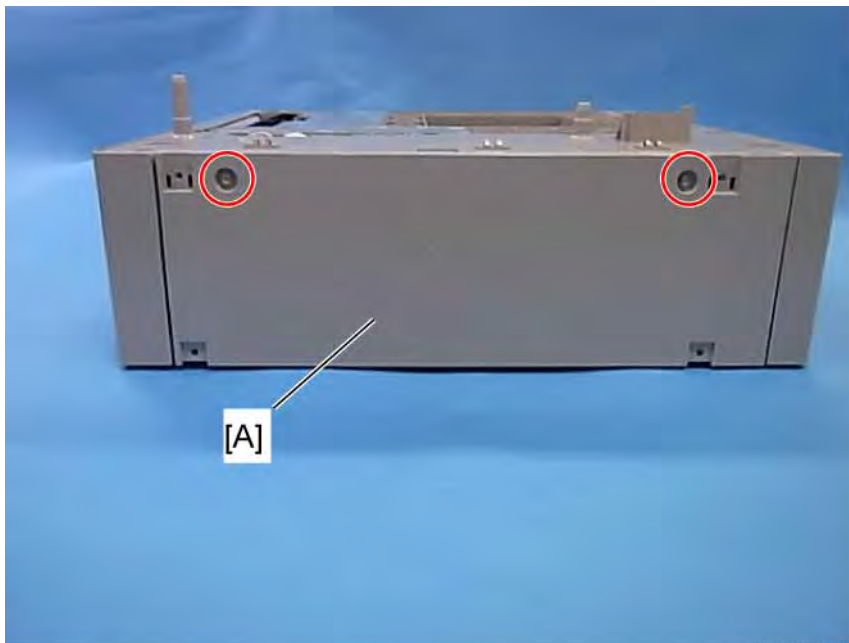
1.2.1 REAR COVER

1. Pull out the paper tray [A].



d5730002

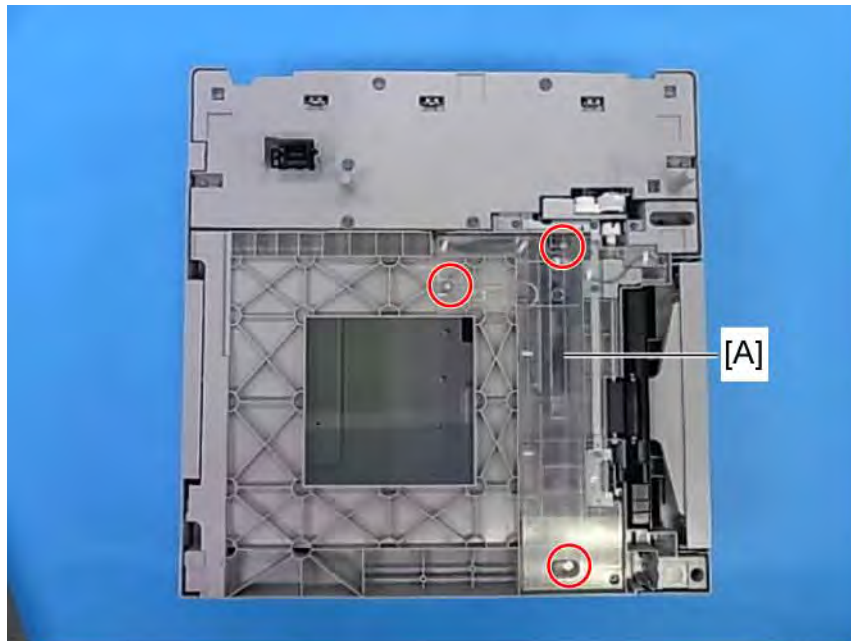
2. Rear cover [A] (⌀ × 2)



d5730001

1.2.2 UPPER COVER

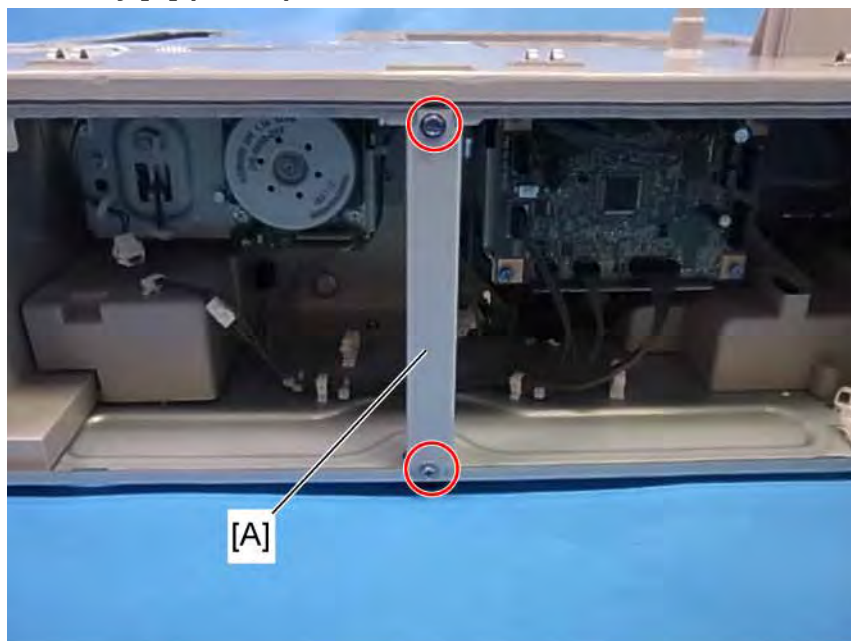
1. Remove the upper cover [A] (🔩 × 3).



d5730007

1.2.3 CONTROLLER BOARD

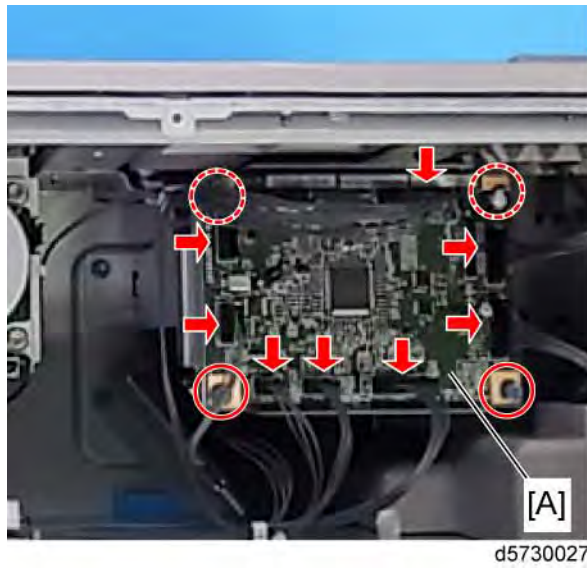
1. Pull out the paper tray.
2. Rear cover (page 2)
3. Rear stay [A] (🔩 × 2)



d5730011

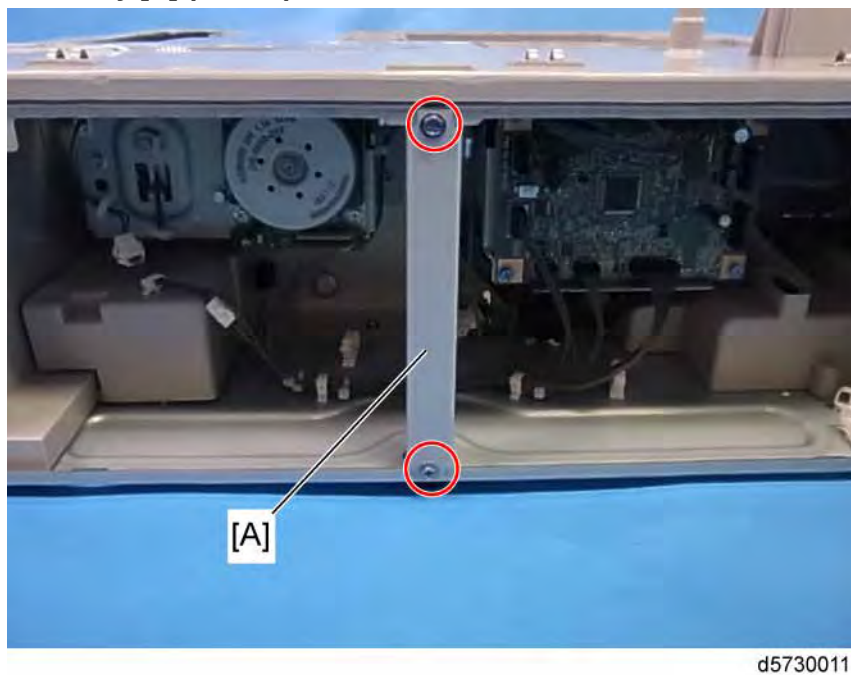
4. Controller board [A] (All 📦 s, 🔩 × 4)

Paper Feed Unit (D573)

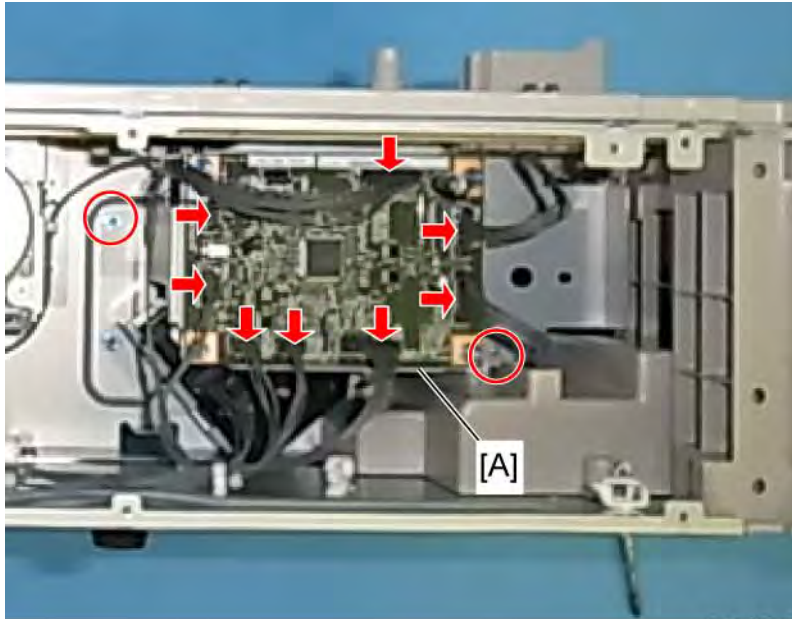


Controller Board with the Bracket

1. Pull out the paper tray.
2. Rear cover (page 2)
3. Rear stay [A] (🔩 × 2)



4. Controller board with the bracket [A] (All 📏s, 🔩 × 2)



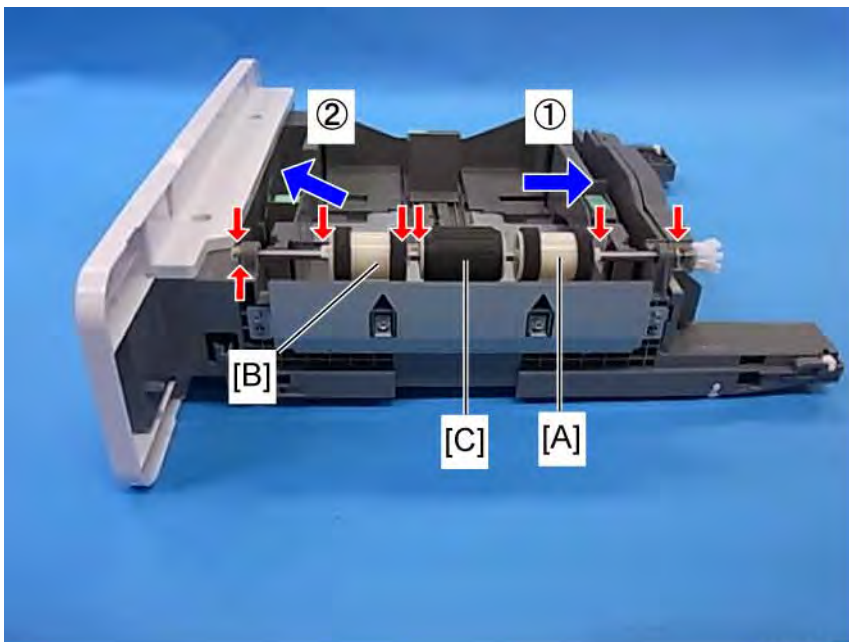
d5730028

1.2.4 PAPER FEED ROLLER

1. Pull out the paper tray.

1. Do the following steps:

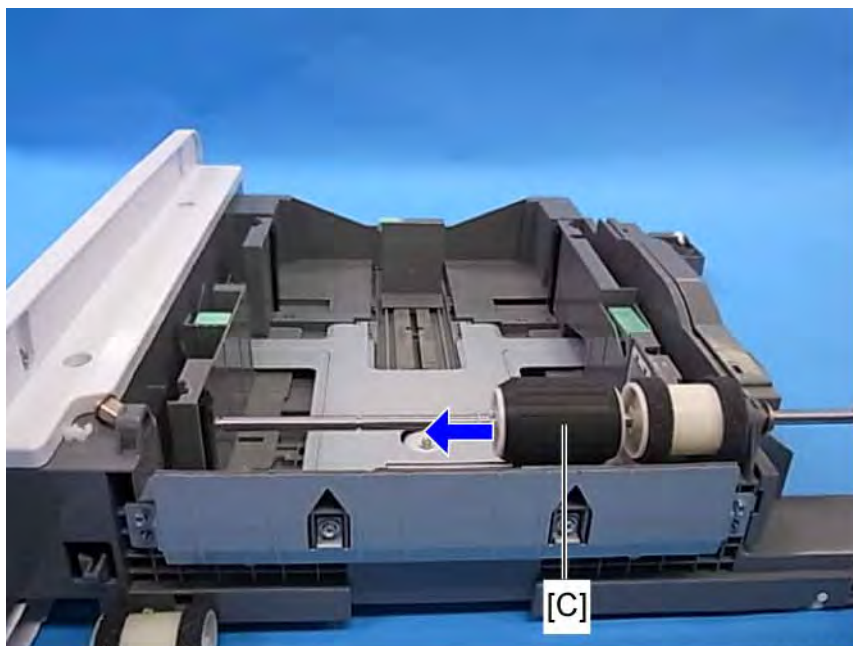
- Remove all clips on the shaft and move the roller [A] to the right side [1]. (⌀× 6, bearing × 1)
- Move the shaft to the right, and pull out the shaft from the bushing at the left side.
- Lift up the shaft [2] and remove the shaft from the bushing at the right side.
- Remove the roller [B].



d5730003

- Remove the paper feed roller [C]

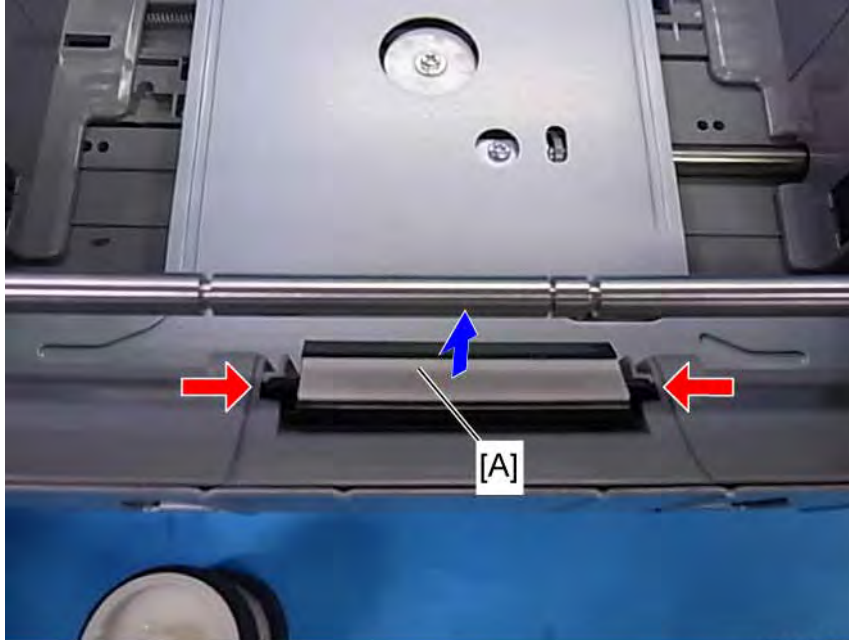
Paper Feed Unit (D573)



d5730004

1.2.5 FRICTION PAD

1. Paper Feed Roller (page 5)
2. Friction pad [A] (Hooks $\times 2$,  $\times 1$)

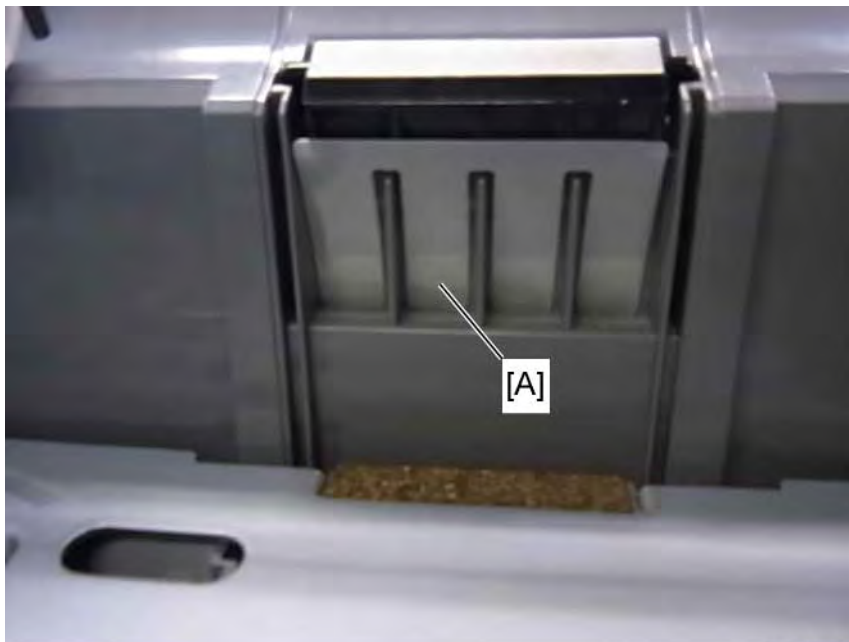


d5730029

When reinstalling the friction pad:

 Note

- To prevent the friction pad from catching on the sheet [A], place the friction pad while bending the sheet slightly outward.

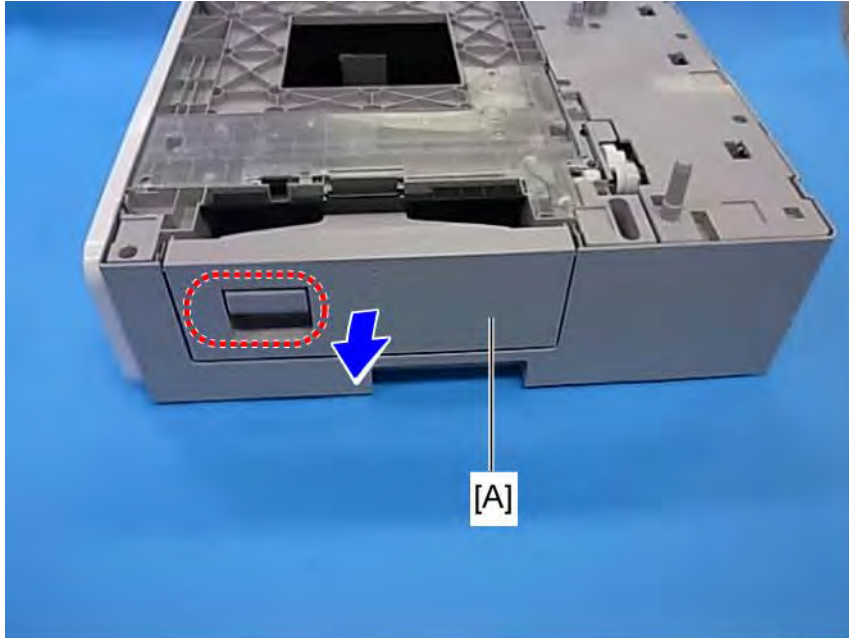


d5730030

1.2.6 VERTICAL TRANSPORT ROLLERS

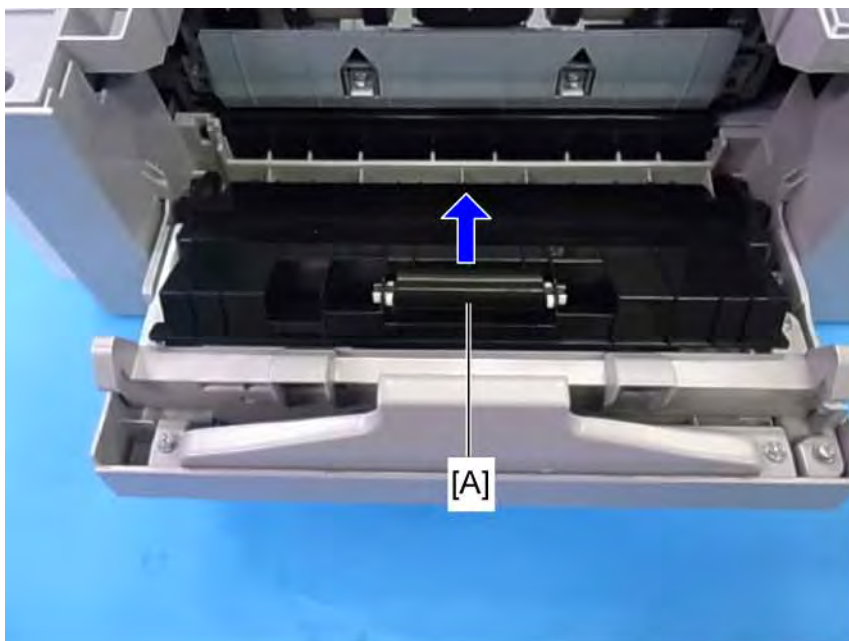
Vertical Transport Roller (Driven side)

1. Open the vertical transport cover [A].



d5730005

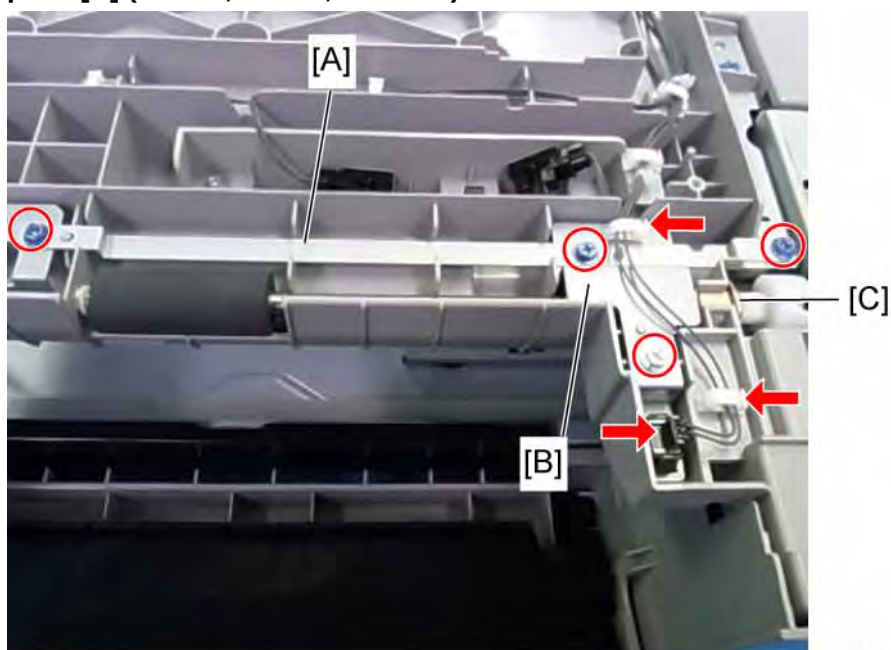
2. Vertical transport roller [A] (hooks × 2)



d5730006

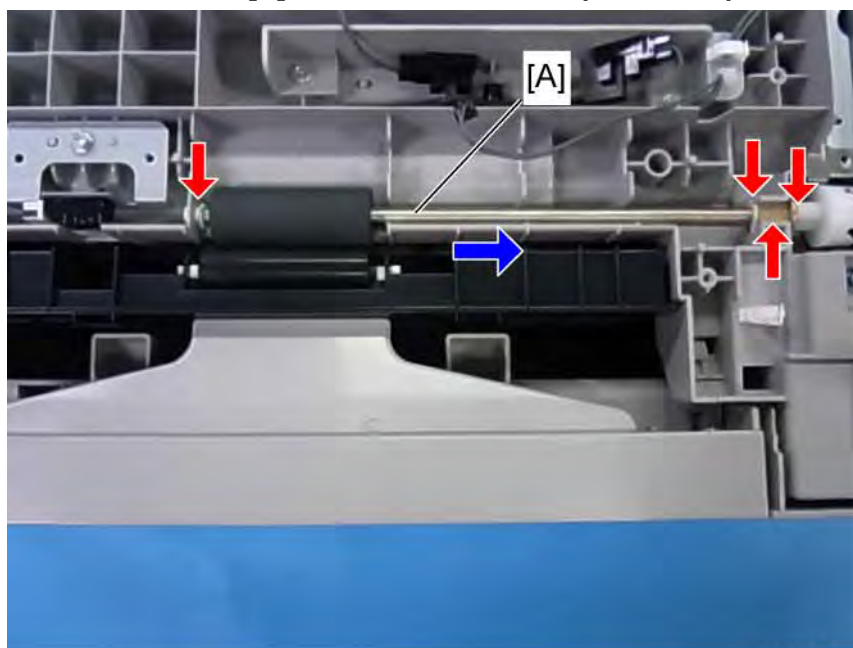
Vertical Transport Roller (Driving Side)

1. Upper cover (page 3)
2. Open the vertical transport cover.
3. Paper feed motor assembly (page 19)
4. Remove the grounding plate [A] and sensor bracket [B], and then loosen the discharge plate [C] (⌀ × 4, ⌀ × 2, ⌀ × 1)



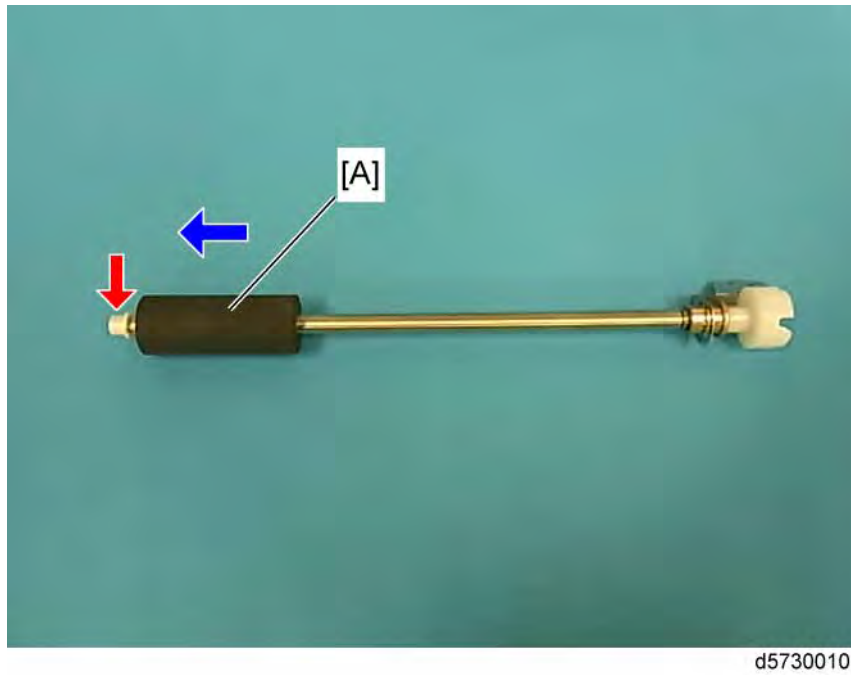
d5730008

5. Remove the shaft [A] with the vertical transport roller (⌀ × 2, bearings × 2).



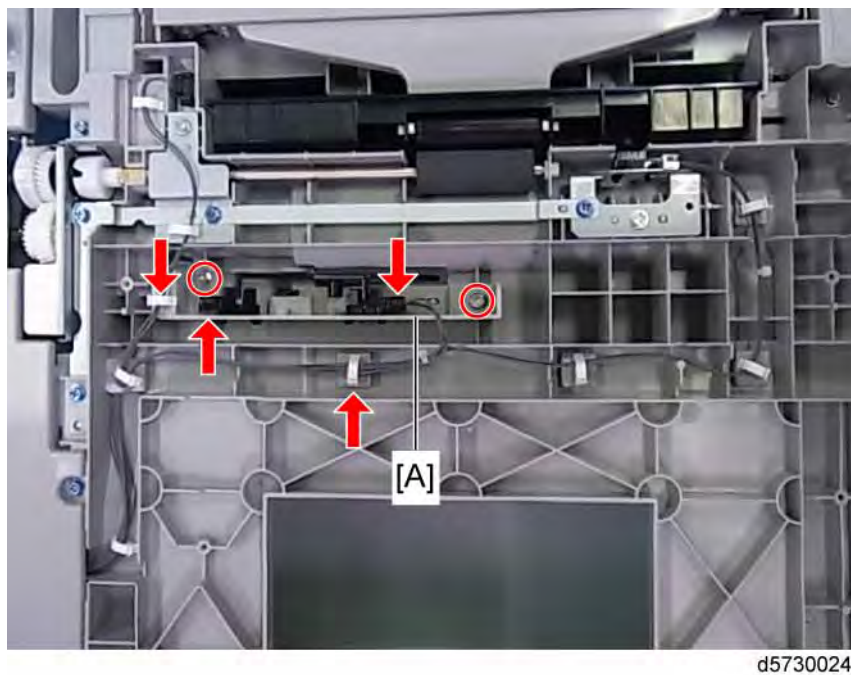
d5730009

6. Vertical transport roller (Driving side) [A] (Bearing × 1)

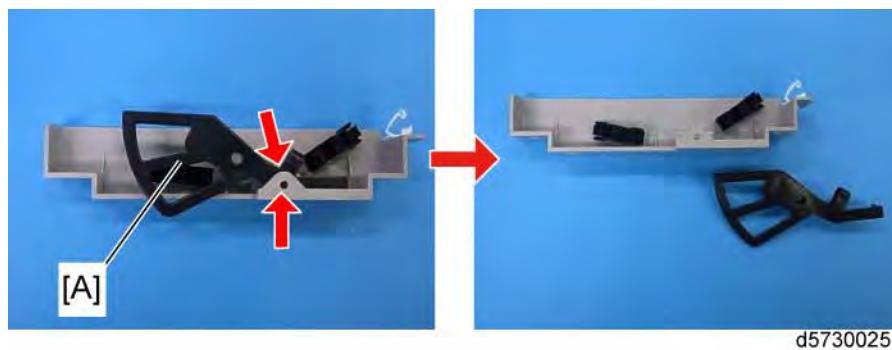


1.2.7 PAPER END SENSOR/ REMAINING PAPER SENSOR

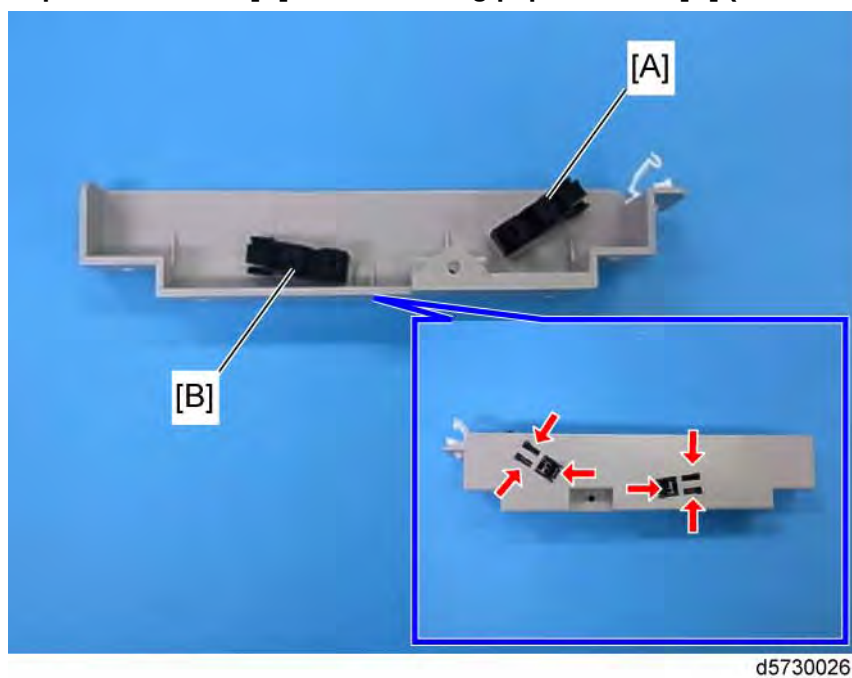
1. Pull out the paper tray.
2. Upper Cover (page 3)
3. Paper end sensor assembly [A] (🔩 × 2, 📦 × 2, 🔑 × 2)



4. Feeler [A] (Snap points × 2)

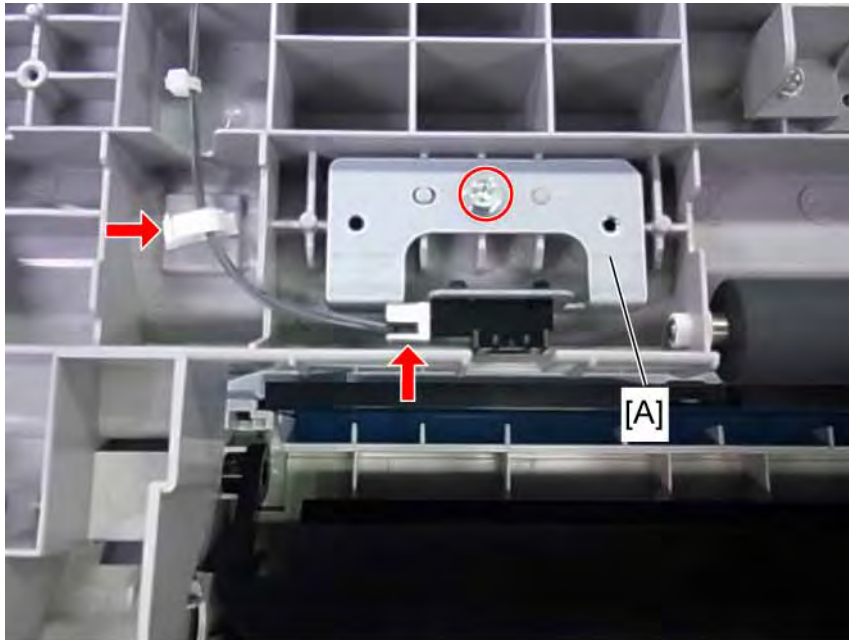


5. Paper end sensor [A] and remaining paper sensor [B] (hooks × 3 each)



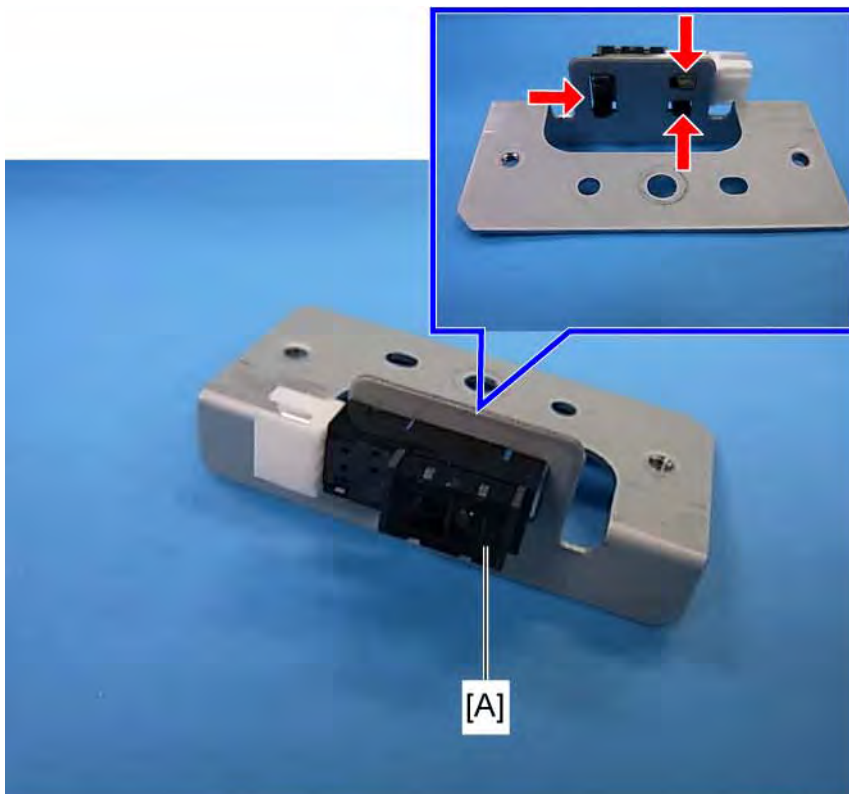
1.2.8 PAPER TRANSPORT SENSOR

1. Pull out the paper tray.
2. Grounding plate and vertical transport cover open/close switch bracket (page 16)
3. Paper transport sensor with bracket [A] (🔧 × 1, 📦 × 1, 🔩 × 1)



d5730022

4. Paper transport sensor [A] (Hooks × 3)

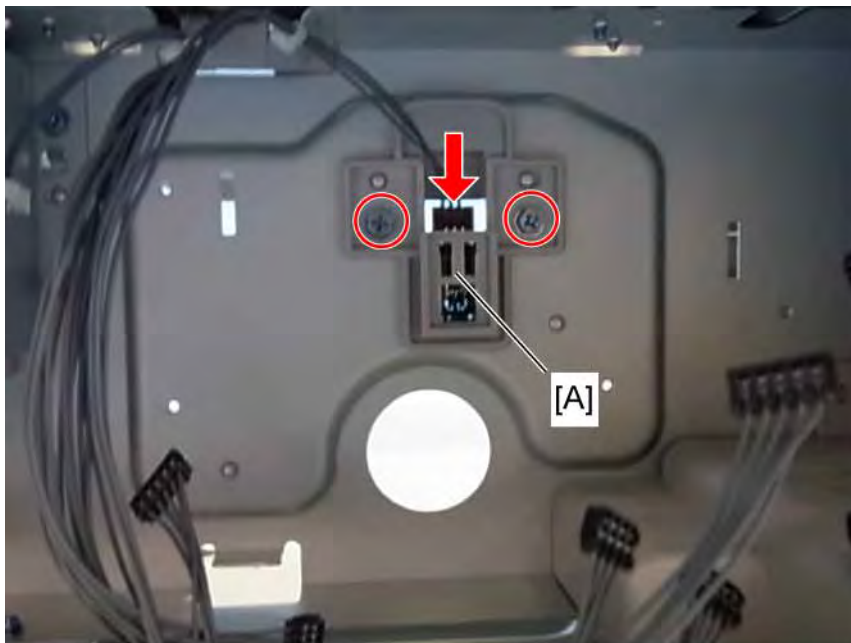


d5730023

1.2.9 TRAY BOTTOM PLATE LIFT SENSOR AND HP SENSOR

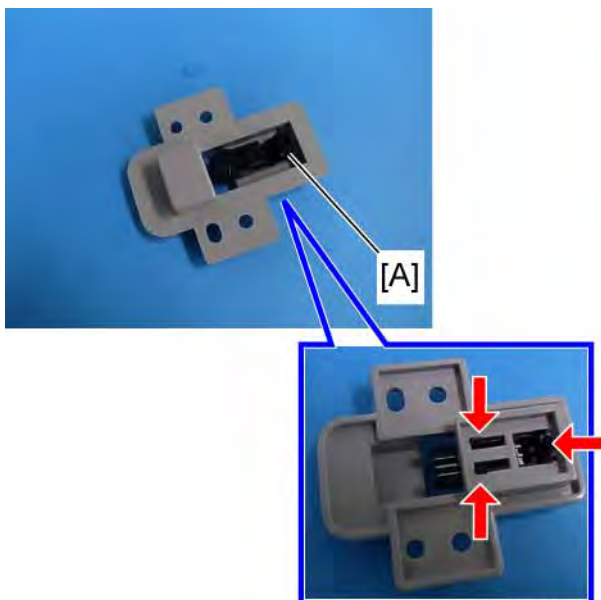
Tray Bottom Plate Lift Sensor

1. Tray lift motor (page 17)
2. Tray bottom plate lift sensor with the bracket [A] ( × 1,  × 2)



d5730017

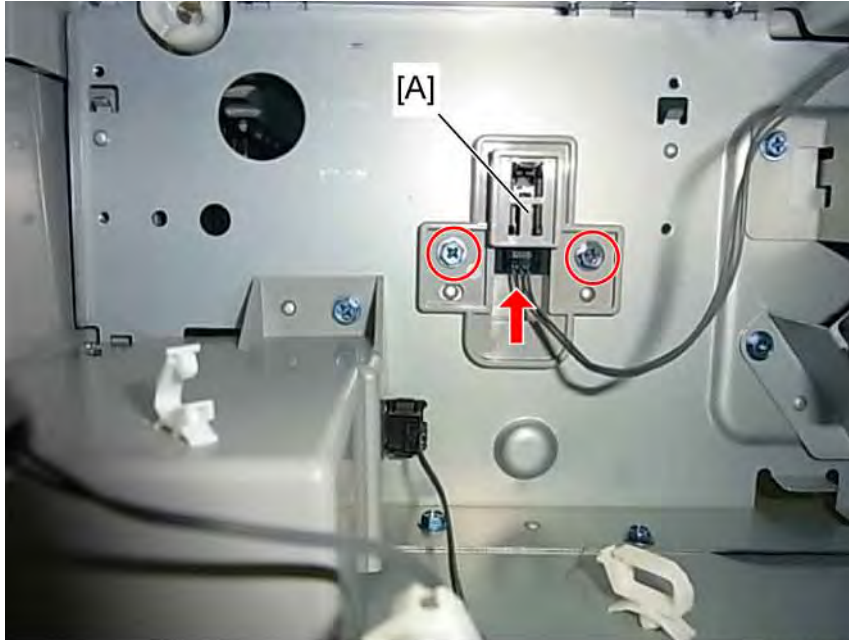
3. Tray bottom plate lift sensor [A] (Hooks × 3)



d5730018

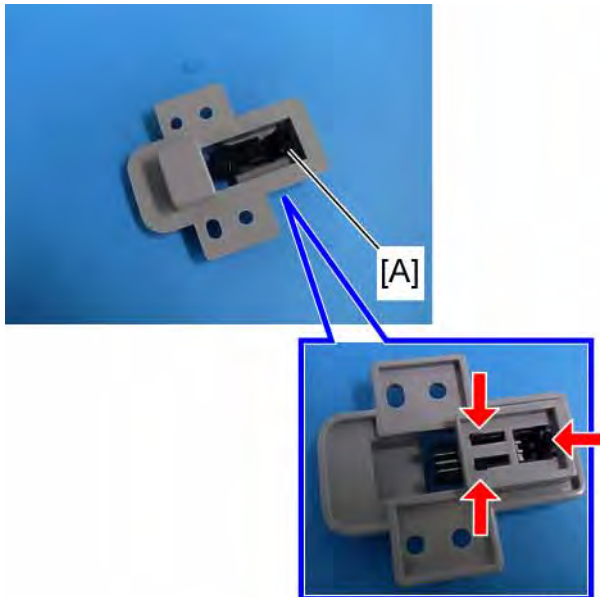
Tray Bottom Plate HP Sensor

1. Paper feed gear assembly (page 19)
2. Tray bottom plate HP sensor with the bracket [A] ( × 1,  × 2)



d5730019

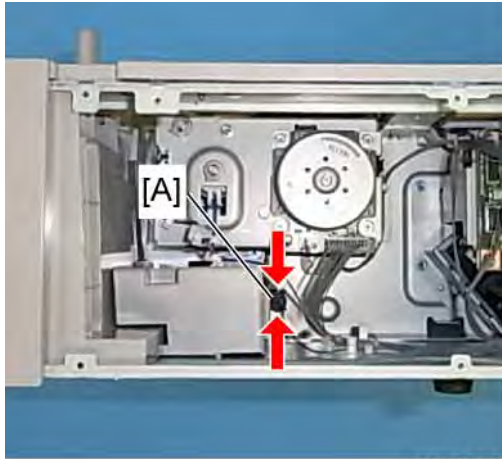
3. Tray bottom plate HP sensor [A] (Hooks × 3)



d5730018

1.2.10 TRAY SET SWITCH

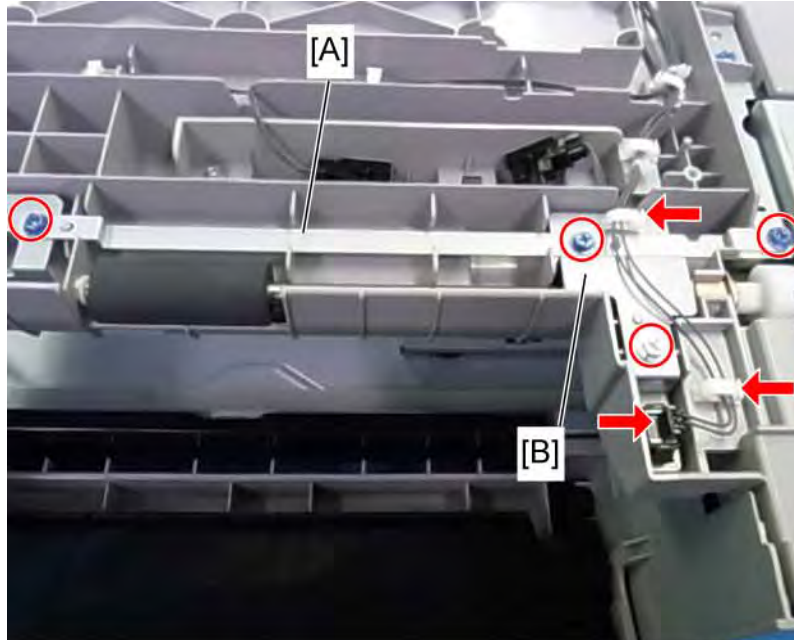
1. Pull out the paper tray.
2. Rear cover (page 2)
3. Pull out the tray set switch [A] from the front while releasing the hooks (Hooks × 2).



d5730020

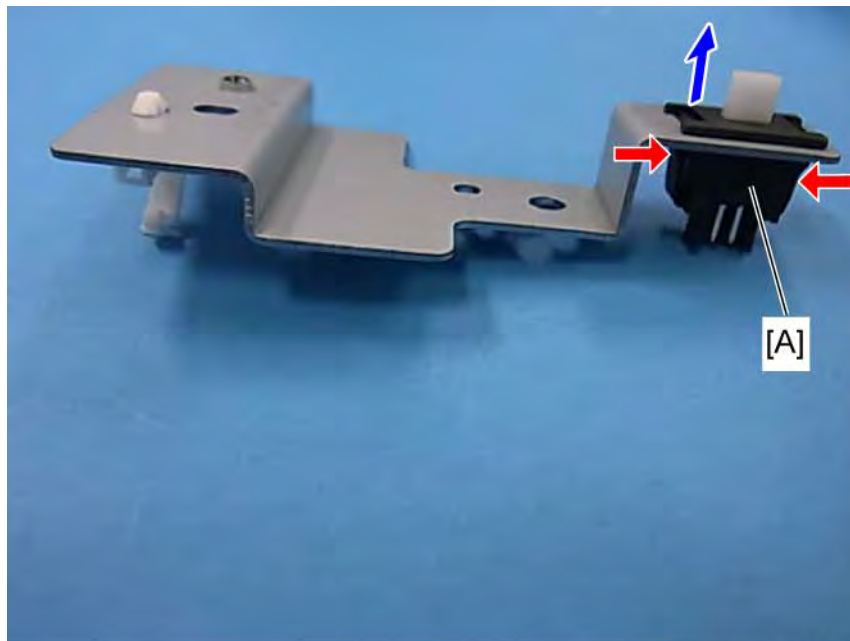
1.2.11 VERTICAL TRANSPORT COVER OPEN/CLOSE SWITCH

1. Open the right door.
2. Upper cover (page 3)
3. Remove the grounding plate [A] and the sensor bracket [B] (⚙️ × 4, 🛠️ × 2, 📦 × 1)



d5730008a

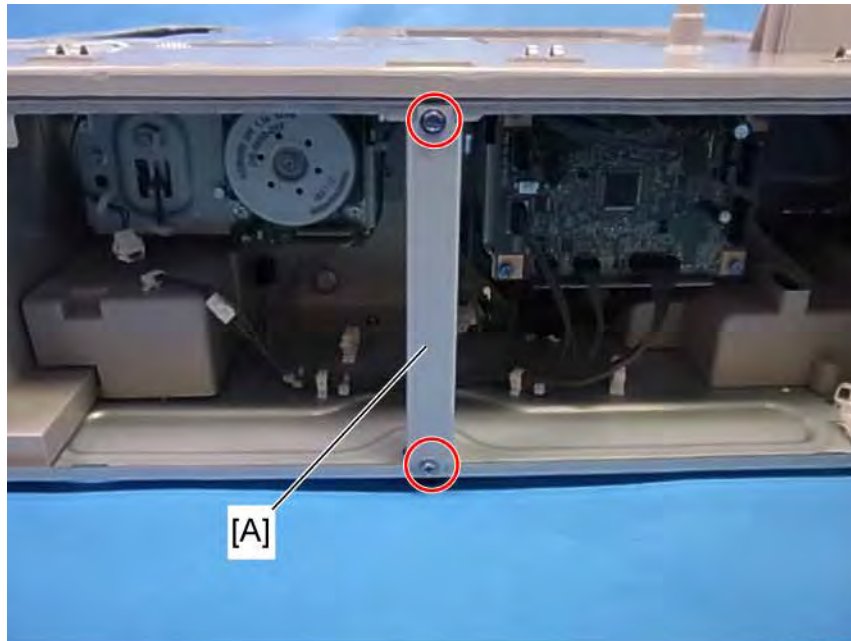
4. Vertical transport cover open/close switch [A] (Hooks × 2)



d5730021

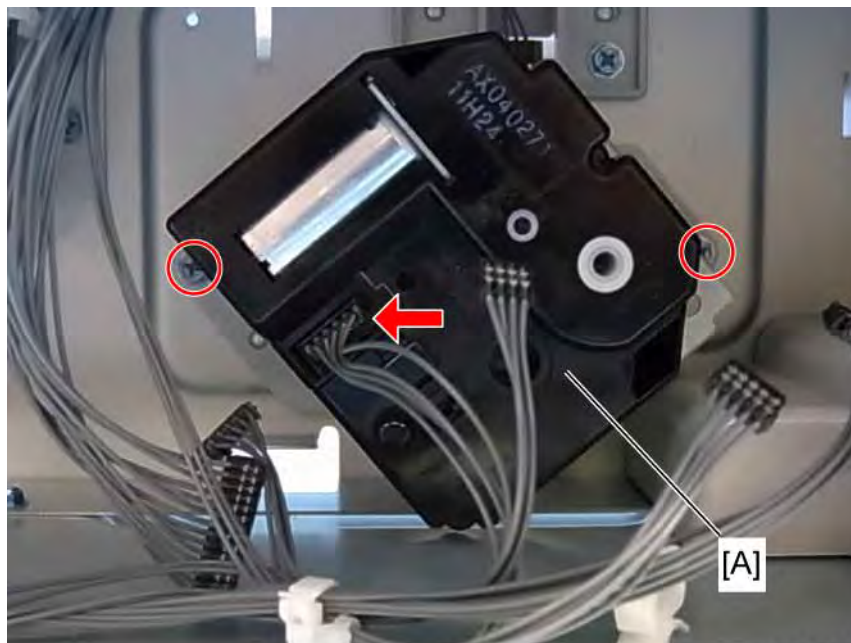
1.2.12 TRAY LIFT MOTOR

1. Pull out the paper tray.
2. Rear cover (page 2)
3. Rear stay [A] (🔩 × 2)



d5730011

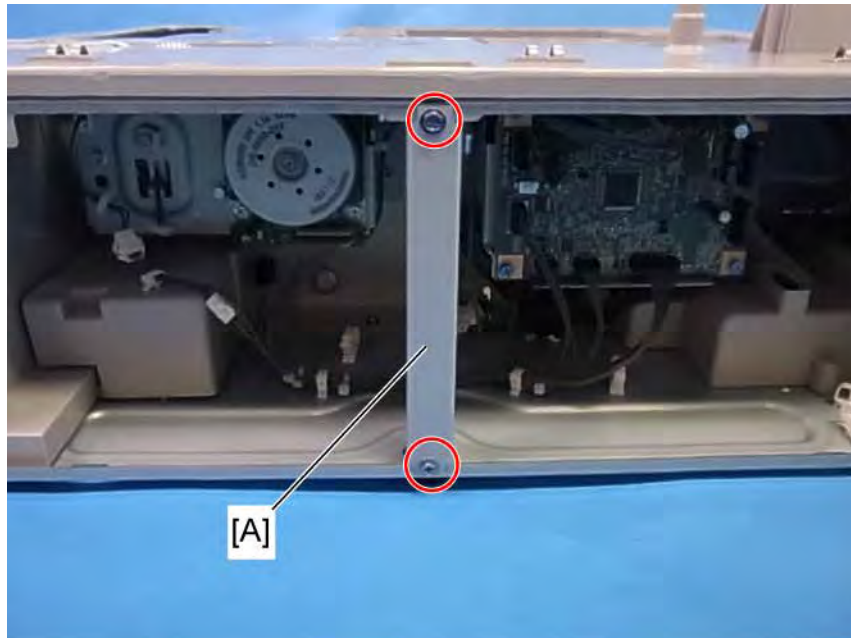
4. Controller board with bracket (page 3)
5. Tray lift motor [A] (🔩 × 2, 📦 × 1)



d5730012

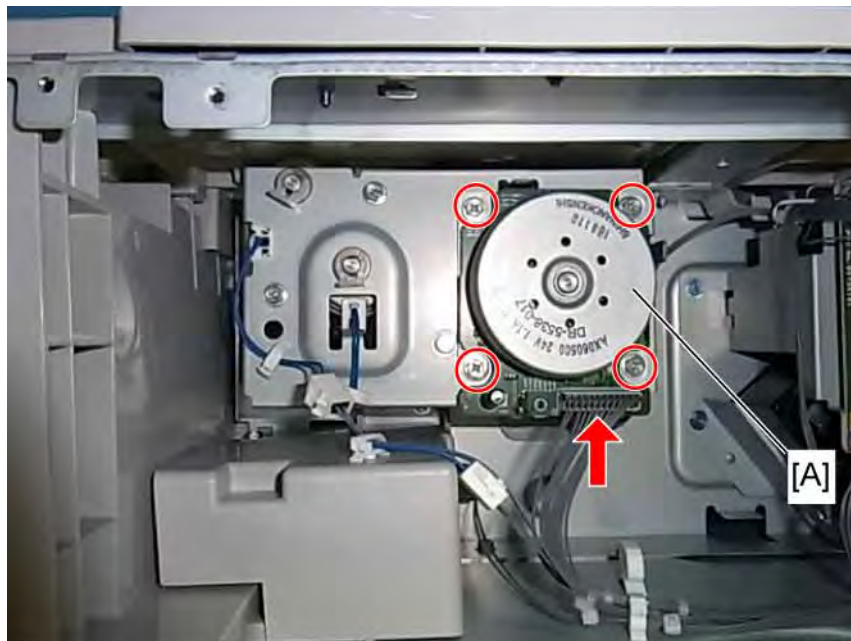
1.2.13 PAPER FEED MOTOR

1. Pull out the paper tray.
2. Rear cover (page 2)
3. Rear stay [A] (🔩 × 2)



d5730011

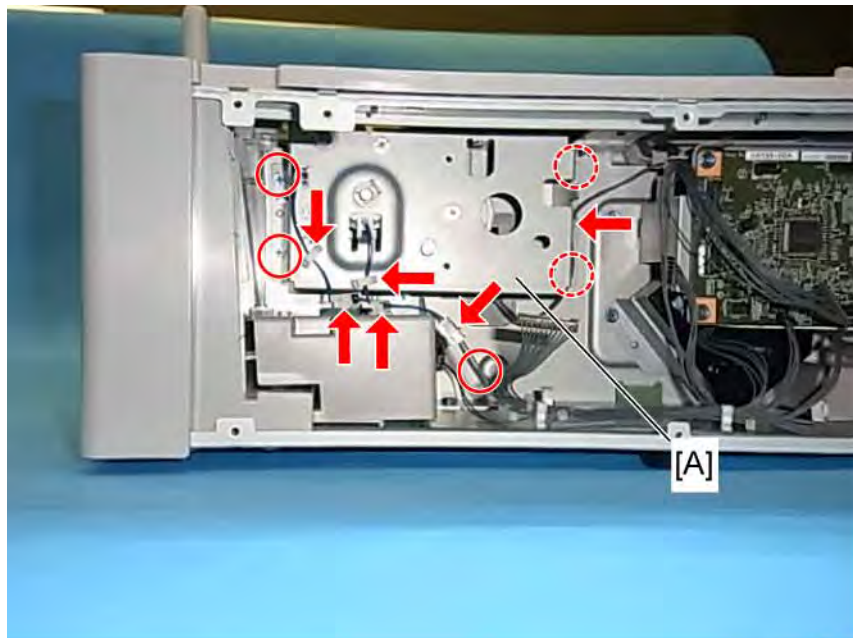
4. Paper feed motor [A] (🔧 × 1, 🔩 × 4)



d5730013

1.2.14 VERTICAL TRANSPORT CLUTCH AND RELAY CLUTCH

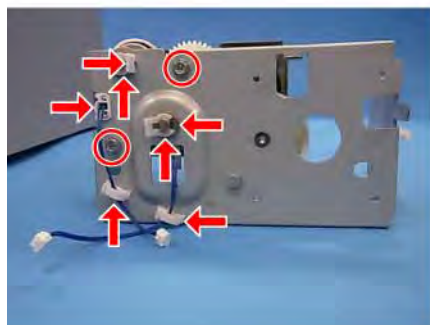
1. Paper feed motor (page 18)
2. Paper feed gear assembly [A] ( × 2,  × 4,  × 4)



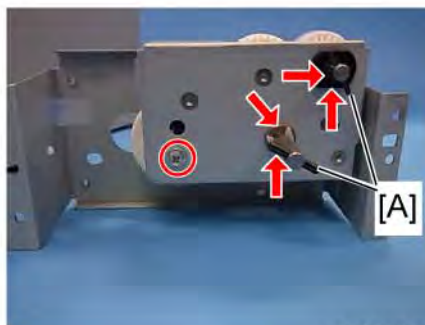
d5730014

3. Remove all screws, clips, clamps, e-rings and bearings.
4. Pull out the wedges [A].

1:



2:



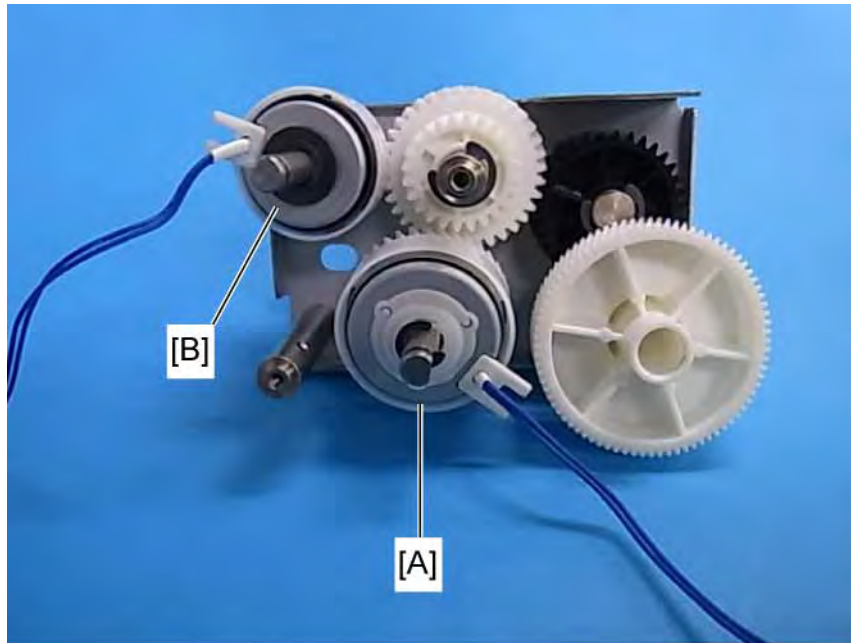
d5730015

1: Front

2: Rear

5. Pull out the vertical transport clutch [A] and relay clutch [B] from the bracket.

Paper Feed Unit (D573)



d5730016

↓ Note

- Refer to the above photo when reassembling the paper feed gear assembly.

D574

1-BIN TRAY BN1010

REVISION HISTORY		
Page	Date	Added/Updated/New
		None

1-BIN TRAY BN1010 (D574)

TABLE OF CONTENTS

- 1. REPLACEMENT AND ADJUSTMENT 1
 - 1.1 BEFOREHAND 1
 - 1.2 ELECTRICAL COMPONENTS 2
 - 1.2.1 PAPER SENSOR 2
 - 1.2.2 PAPER EXIT SENSOR 3
 - 1.2.3 LED BOARD 4

READ THIS FIRST

Symbols, Abbreviations and Trademarks

Conventions Used in This Manual

This manual uses several symbols.

Symbol	What it means
	Screw
	Connector
	Clamp



Cautions, Notes, etc.

The following headings provide special information:

WARNING

- Failure to obey warning information could result in serious injury or death.

CAUTION

- Obey these guidelines to ensure safe operation and prevent minor injuries.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.
- Always obey these guidelines to avoid serious problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine. bold is added for emphasis.

Note

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

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1. REPLACEMENT AND ADJUSTMENT

1.1 BEFOREHAND

CAUTION

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

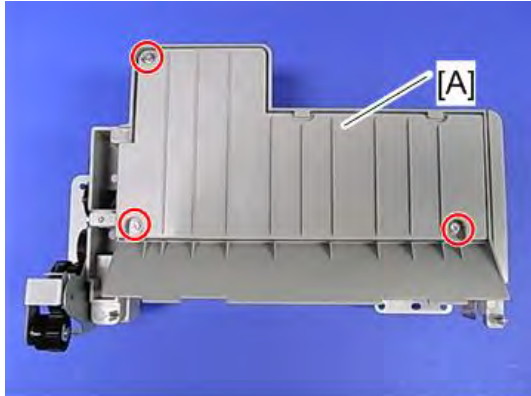
Important

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

1.2 ELECTRICAL COMPONENTS

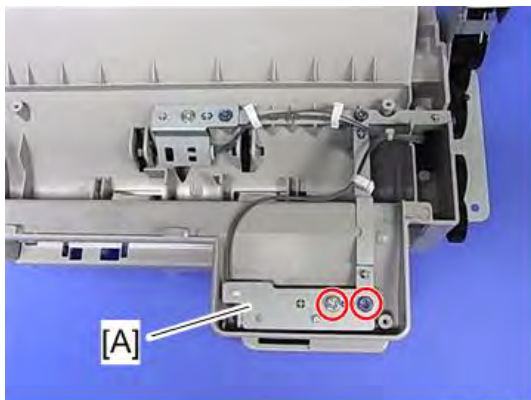
1.2.1 PAPER SENSOR

1. 1-Bin tray unit (See “1-Bin Tray BN1010” in the mainframe service manual)
2. 1-Bin tray upper cover [A] (⌀ × 3)



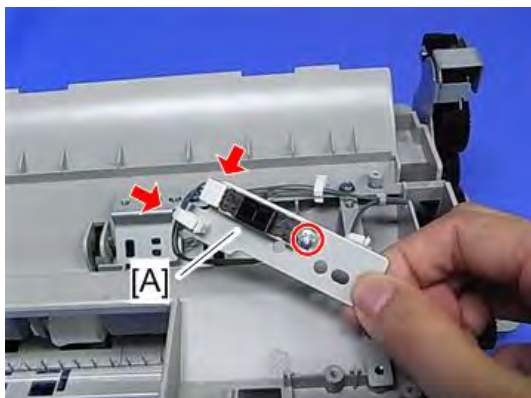
d574r503

3. Paper sensor bracket [A] (⌀ × 2)



d574r501

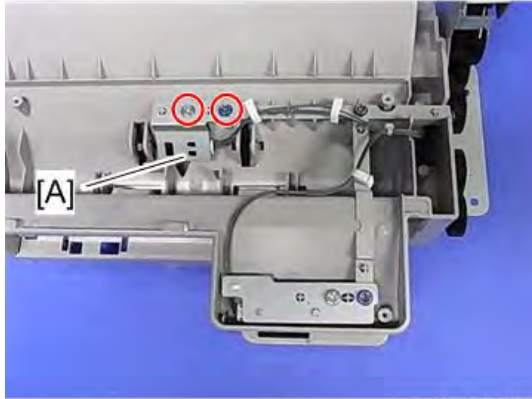
4. Paper sensor [A] (⌀ × 1, ⊞ × 1, ⊞ × 1)



d574r502

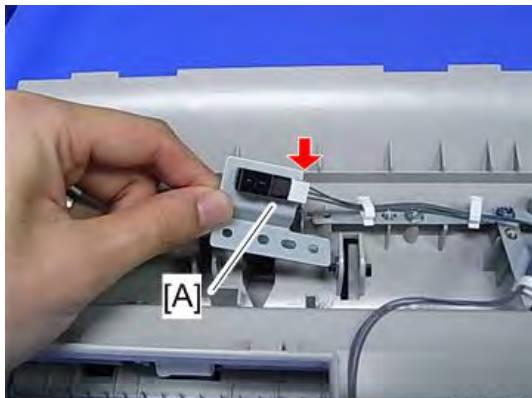
1.2.2 PAPER EXIT SENSOR

1. 1-Bin tray unit (See “1-Bin Tray BN1010” in the Mainframe Service Manual)
2. 1-Bin tray upper cover (page 2)
3. Paper exit sensor bracket [A] (🔩 × 2)



d574r504

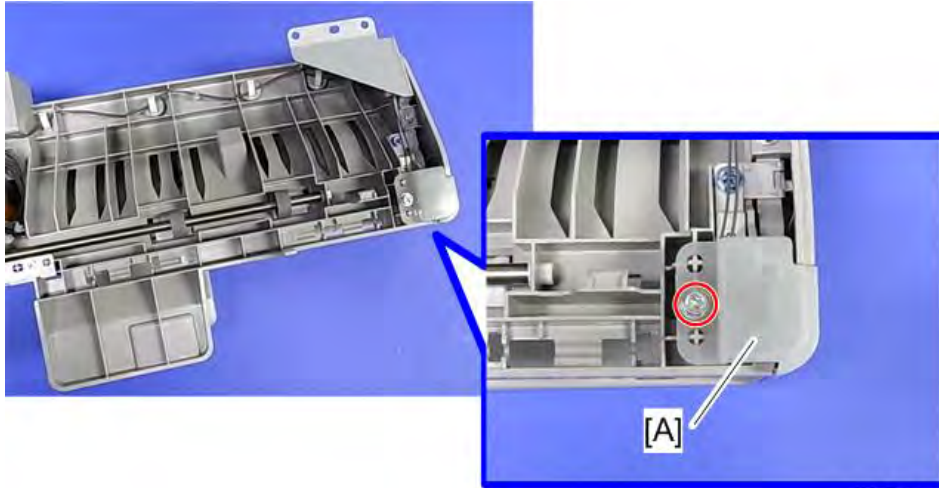
4. Paper exit sensor [A] (🔌 × 1, hooks)



d574r505

1.2.3 LED BOARD

1. 1-Bin tray unit (See “1-Bin Tray BN1010” in the Mainframe Service Manual)
2. LED board cover [A] (🔩 × 1)



3. LED board [A] (📦 × 1)

