

MP 402SPF
Machine Code: M0A0
Field Service Manual

Ver 1.01

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Important Safety Notices

Warnings, Cautions, Notes

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

WARNING

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

CAUTION

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

Important

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

Note

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

General Safety Instructions

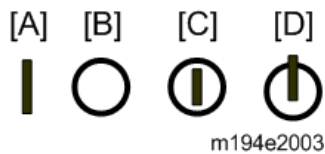
For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

Always obey the following safety precautions when using this product.

Safety During Operation

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



[A]: ON

[B]: OFF

[C]: Push ON/ Push OFF

[D]: Standby

Switches and Symbols

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

Safety

Prevention of Physical Injury

1. Before disassembling or assembling parts of the machine and peripherals, make sure that the machine and peripheral power cords are unplugged.
2. The plug should be near the machine and easily accessible.
3. Note that some components of the machine and the paper tray unit are supplied with electrical voltage even if the main power switch is turned off.
4. Always unplug the power cord from the power source before you move the product. Before you move the machine, arrange the power cord so it will not fall under the machine.
5. Disconnect all peripheral units (finisher, LCT, etc.) from the mainframe before you move the machine.
6. 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.
7. The machine drives some of its components when it completes the warm-up period. Be careful to keep hands away from the mechanical and electrical components as the machine starts operation.
8. 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.
9. To prevent a fire or explosion, keep the machine away from flammable liquids, gases, and aerosols.
10. Do not use flammable sprays or solvent in the vicinity of the machine. Also, avoid placing these items in the vicinity of the machine. Doing so could result in fire or electric shock.
11. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
12. 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.
13. Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
14. Never do any procedure that defeats the function of any safety device.
15. 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.
16. 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.
17. For machines installed with the ADF/ARDF:

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.
18. When using a vacuum cleaner around the machine, keep others away from the cleaner, especially small children.
19. For machines installed with the anti-tip components:

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.

Health Safety Conditions

1. For the machines installed with the ozone filters:
 - Never operate the machine without the ozone filters installed.
 - Always replace the ozone filters with the specified types at the proper intervals.
2. The machine, which use high voltage power source, can generate ozone gas. High ozone density is harmful to human health. Therefore, locate the machine in a large well ventilated room that has an air turnover rate of more than 50m³/hr/person.
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 with exceptions on some machines where the installation can be handled by the user.

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

Handling Toner

- Work carefully when removing paper jams or replacing toner bottles or cartridges to avoid spilling toner on clothing or the hands.
- If toner is inhaled, immediately gargle with large amounts of cold water and move to a well-ventilated location. If there are signs of irritation or other problems, seek medical attention.
- If toner gets on the skin, wash immediately with soap and cold running water.
- If toner gets into the eyes, flush the eyes with cold running water or eye wash. If there are signs of irritation or other problems, seek medical attention.
- If toner is swallowed, drink a large amount of cold water to dilute the ingested toner. If there are signs of any problem, seek medical attention.
- If toner spills on clothing, wash the affected area immediately with soap and cold water. Never use hot water! Hot water can cause toner to set and permanently stain fabric.
- Always store toner and developer supplies such as toner and developer packages, cartridges, bottles (including

used toner and empty bottles and cartridges), and AIO unit 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.
- 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.

Handling the development unit cooling system

For the machines installed the development cooling system:

1. The development unit cooling system circulates propylene glycol from a sealed tank through hoses that pass behind cooling plates on the sides of each development unit.
2. The coolant tank is located at the bottom of the cooling box on the back of the main machine.
3. Always obey local laws and regulations if you need to dispose of a tank or the propylene glycol coolant.
4. The tank must never be emptied directly into a local drainage system, river, pond, or lake.
5. Contact a professional industrial waste disposal organization and ask them to dispose of the tank.

Laser Safety

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

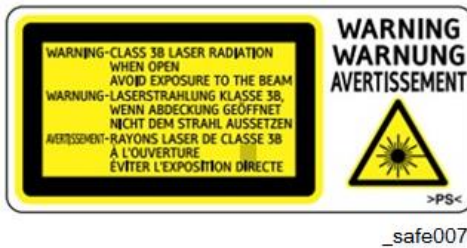
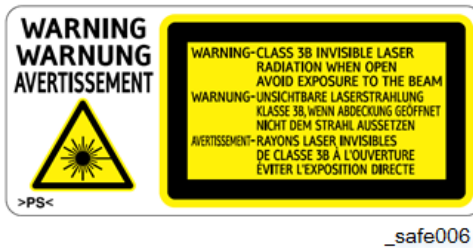
WARNING

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

WARNING FOR LASER UNIT

WARNING:

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



Safety Instructions for the Color Controller

Fuse

The color controller uses a double pole fuse. If this fuse blows, be sure to replace it with an identical fuse.

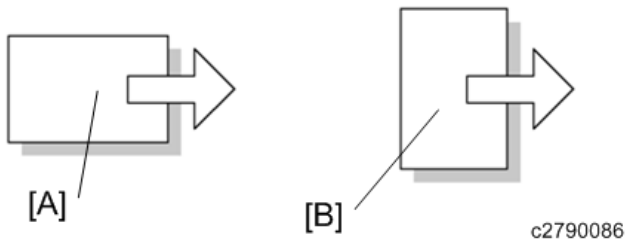
Batteries

1. Always replace a battery with the same type of battery prescribed for use with the color controller unit. Replacing a battery with any type other than the one prescribed for use could cause an explosion.
2. Never discard used batteries by mixing them with other batteries or other refuse.
3. Always remove used batteries from the work site and dispose of them in accordance with local laws and regulations regarding the disposal of such items.

Symbols and Abbreviations

This manual uses several symbols.

Symbol	What it means
	Screw
	Connector
	Clip ring
	Clamp
	FFC
	E-ring
	Spring
SEF	Short Edge Feed
LEF	Long Edge Feed



[A] Short Edge Feed (SEF)

[B] Long Edge Feed (LEF)

Trademarks

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

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

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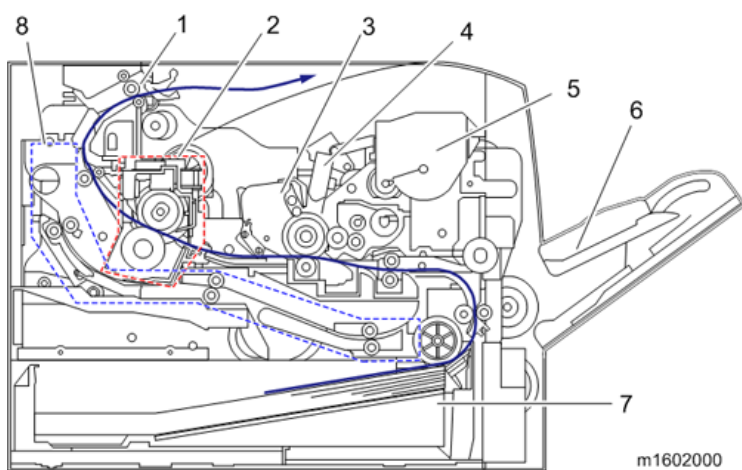
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1. Product Information

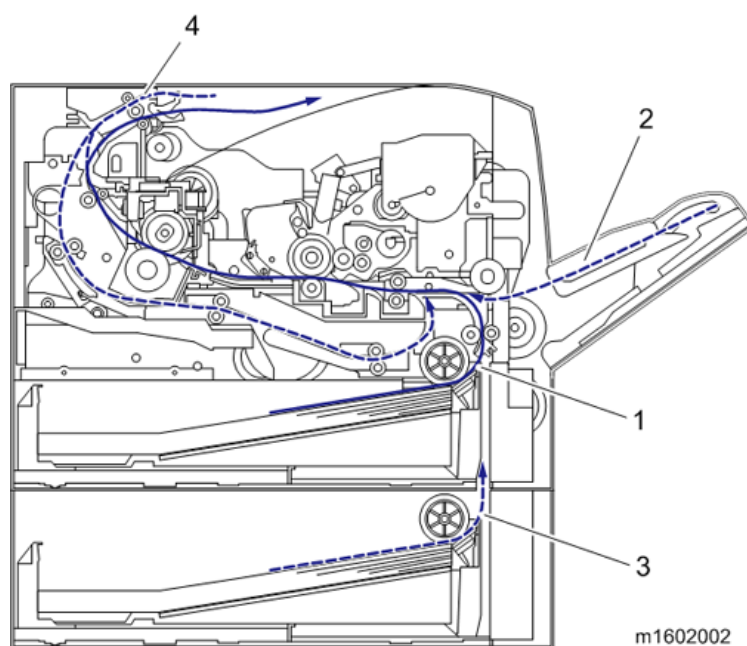
Product Overview

Component Layout



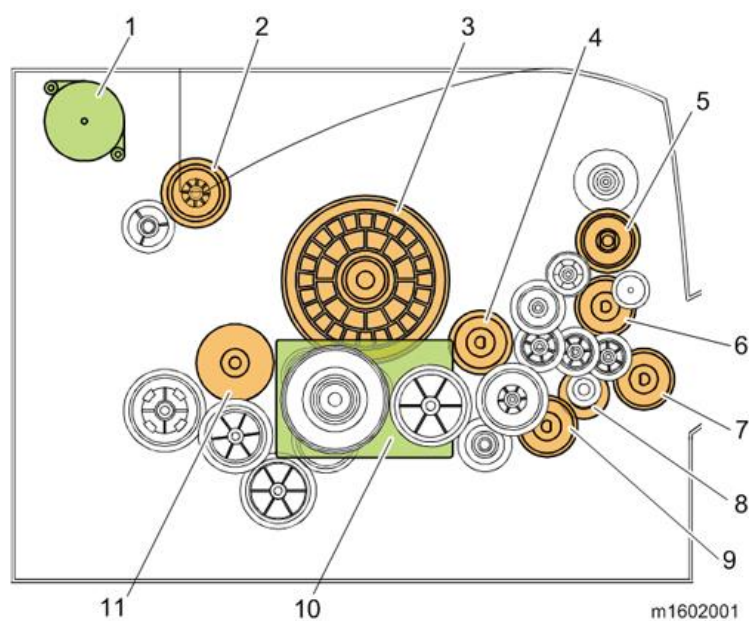
1. Exit / Switchback unit
2. Fusing unit
3. PCDU
4. LED head
5. Toner cartridge
6. Bypass feed tray
7. Paper feed unit
8. Duplex paper path

Paper Path



1. Main machine paper feed path
2. Bypass paper feed path
3. Optional tray paper feed path
4. Duplex paper feed path

Drive Layout



1. Duplex exit motor
2. Fusing drive gear
3. Drum gear
4. Registration clutch

1.Product Information

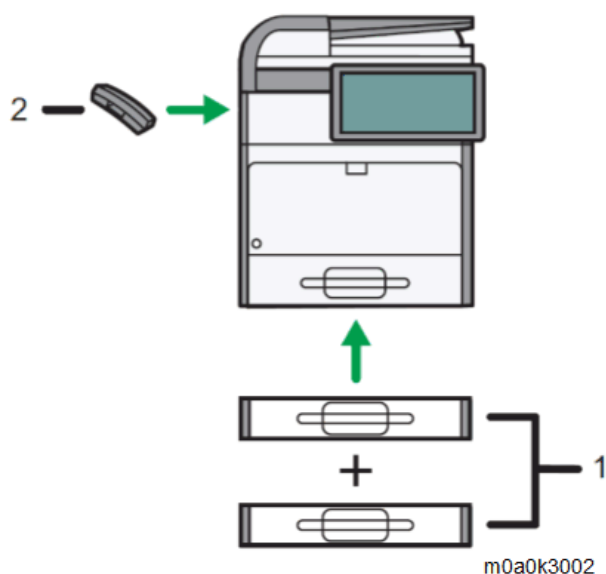
- 5. Toner supply clutch
- 6. Bypass feed clutch
- 7. Bypass bottom plate clutch
- 8. Relay clutch
- 9. Paper feed clutch
- 10. Main motor
- 11. Duplex clutch

Machine Codes and Peripheral Configuration

Main Frame

Item	Machine Code	Remarks
M0A0	M0A0-17 (NA) M0A0-27 (EU) M0A0-21 (AA)	New

External Options



No.	Item	Machine Code	Remarks
1	Paper Feed Unit PB1070	M440-17	-
	Paper Feed Unit PB1060	M441-17	-
2	Handset HS1020	M502-00 (NA only)	New

Internal Options

Item	Machine Code	Remarks
IEEE802.11 Interface Unit Type M24	M500-08	* 1
XPS Direct Print Option Type M27	M502-02 (NA) M502-05 (EU) M502-06 (AA)	New
IEEE1284 Interface Board Type M19	D3C0-17	* 1
USB Device Server Option Type M19	D3BC-28 (NA) D3BC-29 (EU/AA)	* 1
Extended USB Board Type M19	D3BS-01	
Optional Counter Interface Unit Type M12	B870-21	-
OCR Unit Type M13	D3AC-23 (NA)	-

1.Product Information

Item	Machine Code	Remarks
	D3AC-24 (EU) D3AC-25 (AA)	
File Format Converter Type M19	D3BR-04	-
Data Overwrite Security Unit Type M19	D3BS-03	-
Unicode Font Package for SAP(R) 1 License	B869-01	-
Unicode Font Package for SAP(R) 10 License	B869-02	-
Unicode Font Package for SAP(R) 100 License	B869-03	-
SD Card for Fonts Type D	D641-54	-
NFC Card Reader Type M27	M502-10	New
Enhanced Security HDD Option Type M10	D792-09	-

* 1: You can only install one of these at a time.

Consumables

Item	Machine Code	Remarks	Yield
PRINT CARTRIDGE MP 401	M904-17 (NA) M904-25 (AP) M904-29 (AP) M904-27 (EU)	-	10,400 pages (A4/Letter 6% test chart, 3 pages/job)
PRINT CARTRIDGE MP 401S	M904-20 (AP)	-	

Specifications

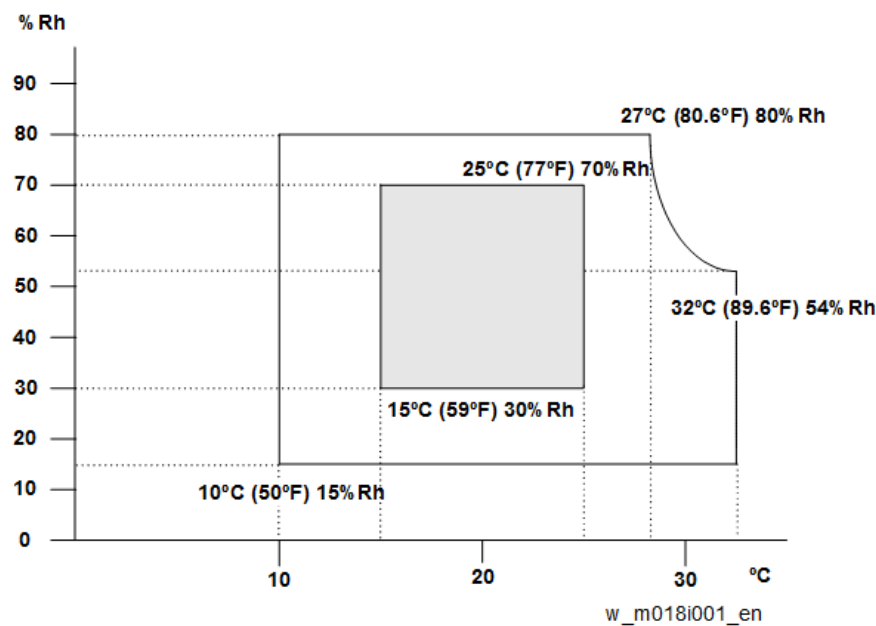
See "Appendices" for the following information:

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

2. Installation

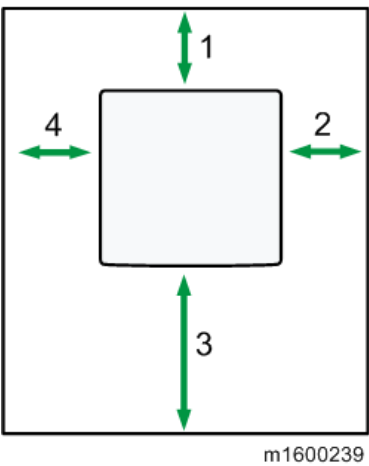
Installation Requirements

Environment



1. Temperature Range: 10°C to 32°C (50°F to 89.6°F)
2. Humidity Range: 15% to 80% RH
3. Ambient Illumination: Less than 1,500 lux (do not expose to direct sunlight)
4. Ventilation: 3 times/hr/person
5. Do not install the machine at locations over 2,000 m (6,562 ft.) above sea level.

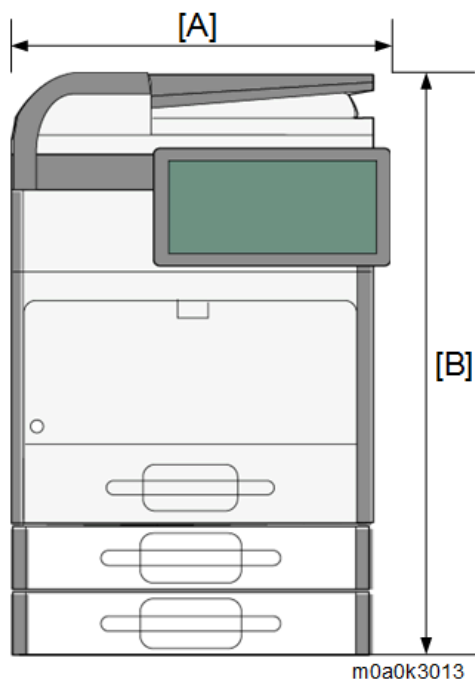
Machine Space Requirements



1	Rear	Over 20 cm (7.9 inches)

2	Right	Over 10 cm (4.0 inches)
3	Front	Over 35 cm (13.8 inches)
4	Left	Over 10 cm (4.0 inches)

Machine Dimensions



[A]	476 mm (18.7 inches)
[B]	With Paper Feed Unit PB1060 (250 sheets) attached: 605 mm (23.8 inches)
	With Paper Feed Unit PB1070 (500 sheets) attached: 635 mm (25.0 inches)
Depth	483 mm (19.0 inches)

Power Requirements

⚠ CAUTION

- Make sure the plug is firmly inserted in the outlet.
- Avoid multi-wiring.
- Be sure to ground the machine.
- Never place anything on the power cord.

1. Input voltage level:

Destination	Power supply voltage	Frequency	Rated current consumption
NA	120 V to 127 V	60 Hz	More than 10 A
EU/AP/CHN	220 V to 240V	50 Hz/60 Hz	5.3 A

2. Permissible voltage fluctuation:

2.Installation

Destination	For printing images	For operating
NA	+8.66 / -10%	+8.66 / -15%
EU/AP/CHN	±10%	±15%

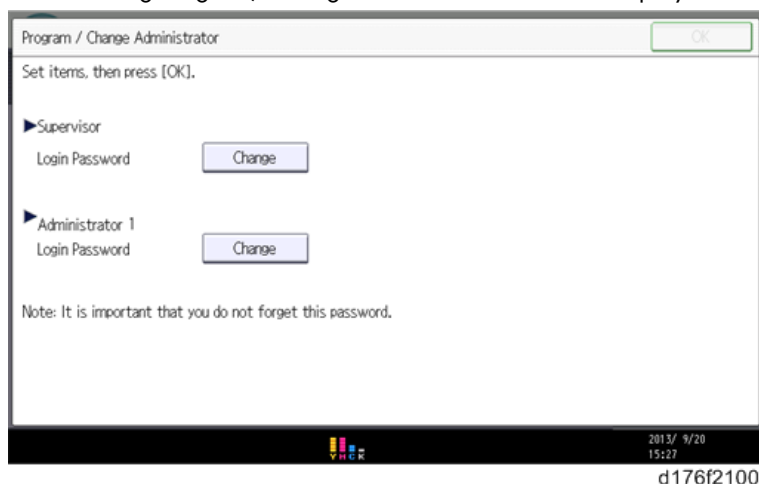
Main Machine Installation

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 screen is displayed at the first power-up.

Overview

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



- When customers set the administrator/supervisor login password, the screen disappears and the home screen is displayed. However, if customers think that there is no need to set a password, they can erase this screen with the following procedure.

1. On the Program/Change Administrator screen, press [Change] next to Supervisor and then press [OK] without inputting any password.
2. Press [OK] again when the Confirm password screen is displayed.
3. For Administrator 1, do the same procedure as steps 1 and 2.
4. Press [OK].

The home screen is displayed.

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

Password Setting Procedure

Note

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

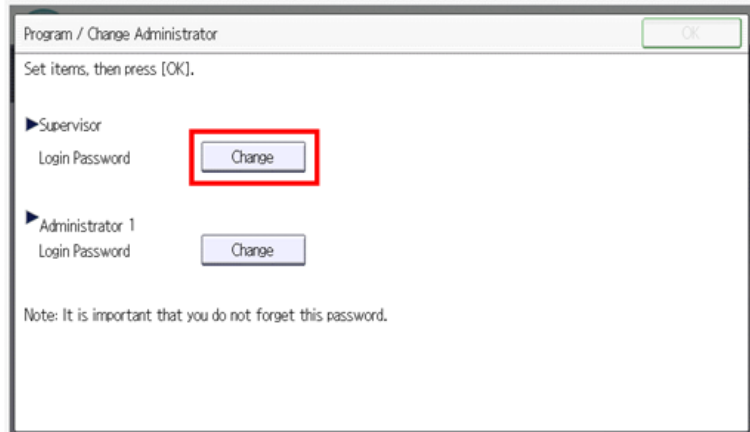
CAUTION

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

2.Installation

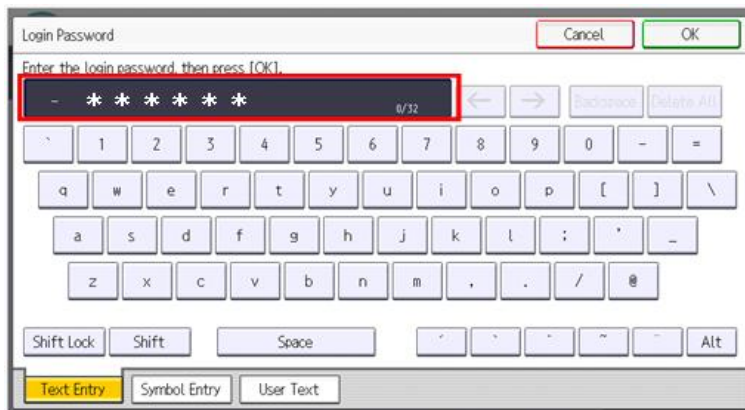
passwords are set in this way, the Program/Change Administrator screen will be displayed every time the power is turned ON. We recommend that customers set the passwords via network or from the Program/Change Administrator screen.

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



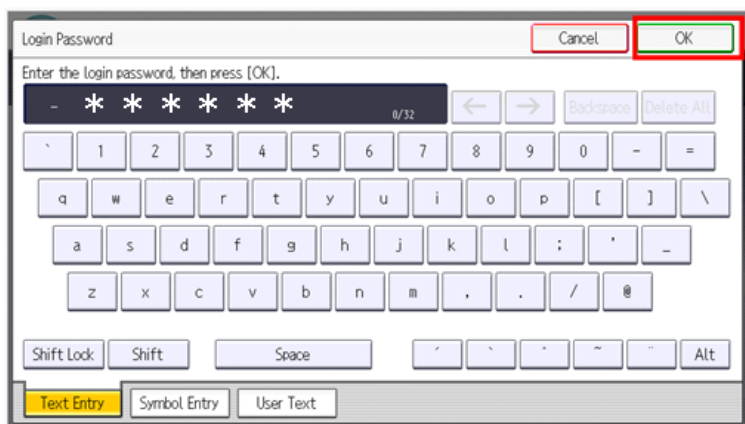
d176f2101

4. Enter the password.



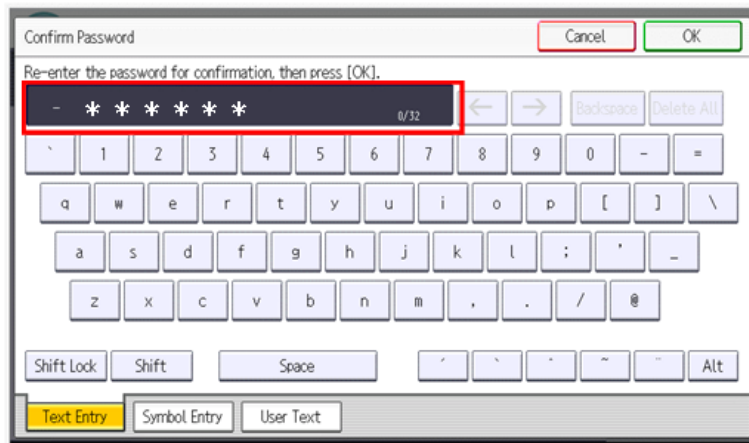
d176f2102

5. Press [OK].



d176f2103

6. Enter the password again.



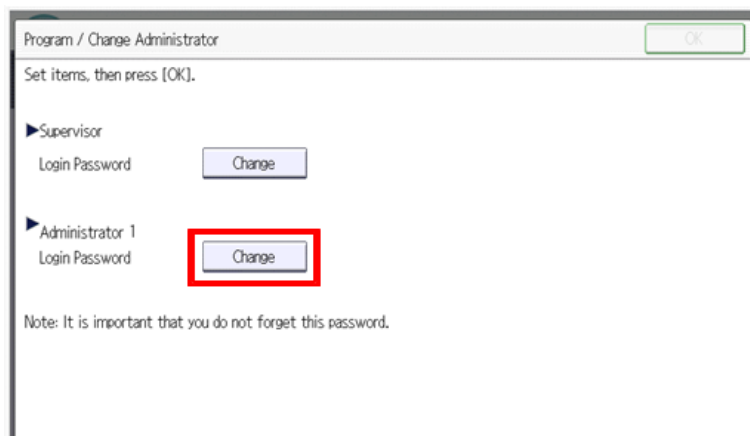
d176f2104

7. Press [OK].



d176f2105

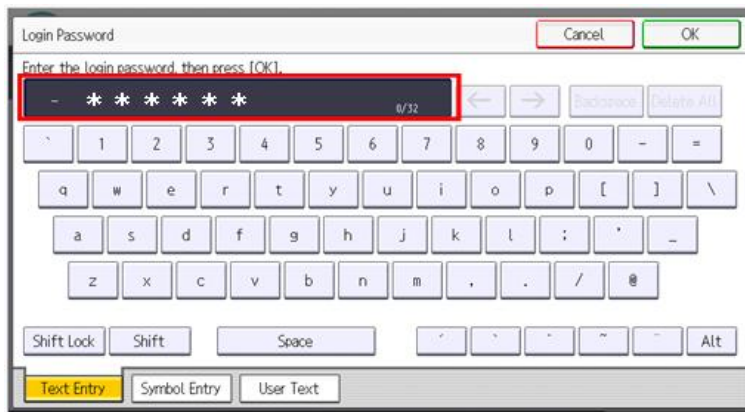
8. Change the Administrator 1 login password.



d176f2106

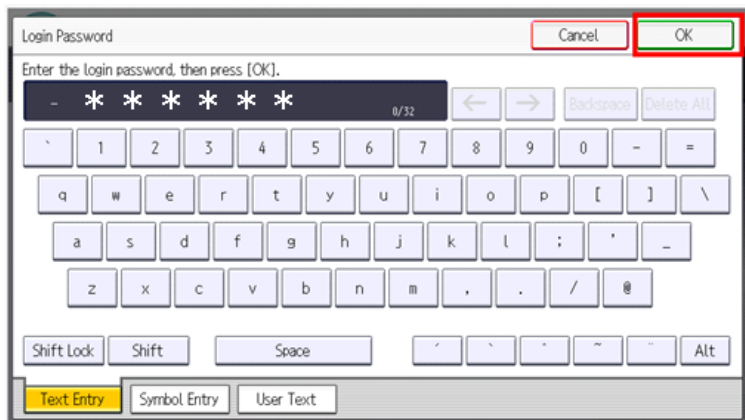
2.Installation

9. Enter the password.



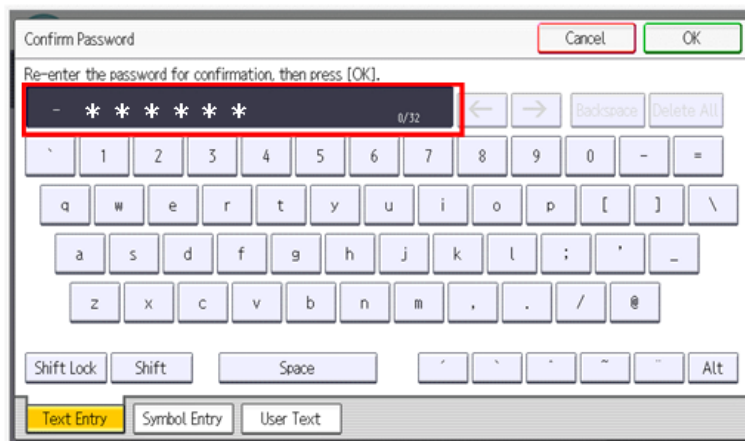
d176f2102

10. Press [OK].

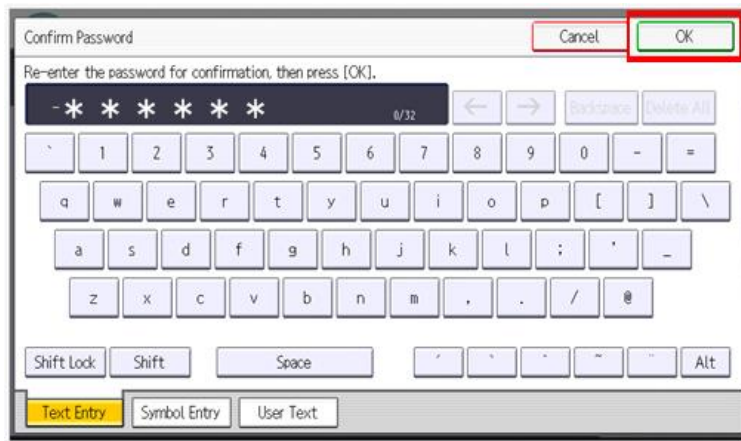


d176f2103

11. Enter the password again.



d176f2104

12. Press [OK].

d176f2105

13. Turn the power OFF/ON.**Accessory Check**

Description	Q'ty		
	-17	-27	-29
Power cord	1	1	1
Telephone cable with ferrite core	1	-	-
Cleaner: Lens: LED Head	1	1	1
Sheet - EULA (End User License Agreement)	1	1	1
Sheet - Notes_FCC	1	-	-
Sheet - Notes_SECU	1	1	1
Sheet - Notes_Envelope	1	1	1
Sheet - Safety Informaion (-27 only)	-	1	-
Sheet - EMC - Traceability (-27 only)	-	1	-
Manual - Read This First	1	1	1
CD-ROM – Driver	1	1	1
CD-ROM - OI	-	-	1
Seal – Caution	1	1	1
Decal – Function	1	1	1
Decal - Function (blank)	1	1	1
Decal - FAX: BLIND	-	1	-
Decal - SDK: ABS	1	1	1
PLATE: LOGOTYPE: GES: IG	-	-	1
PLATE: LOGOTYPE: LAN: IG	-	-	1
PLATE: LOGO: RIC	1	1	1
Starter Toner: 10,400 pages	1	1	1

Installation Procedure

Removal of packing materials and shipping retainers

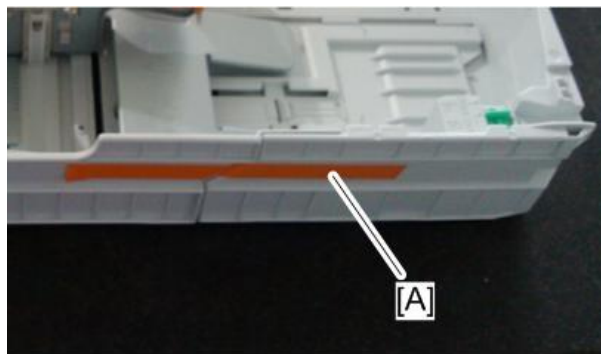
⚠ CAUTION

- When lifting the machine, use the inset grips on both sides. The machine could break or cause an injury if dropped.

1. Remove the machine from the box.
2. Check the items in the package.
3. Remove the adhesive tape attached to the machine's exterior.

Note

- Pull out the paper tray, and remove the adhesive tape [A] on its side.

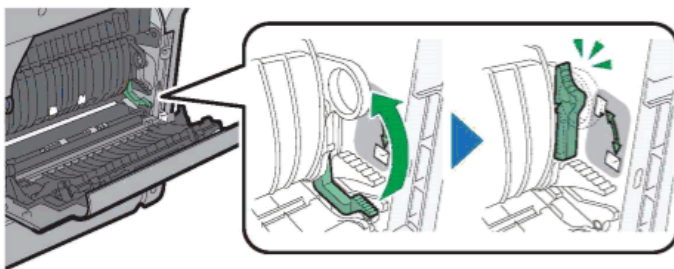


m1600175

4. Remove the protective materials.

★ Important

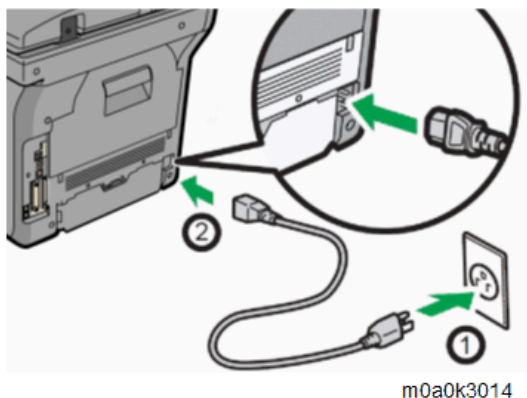
- After installing this machine or replacing the fusing unit, make sure to raise the envelope lever before using the machine. The envelope lever is green, positioned to the right of the user when facing the back cover of the machine. Lower this lever only when printing on envelopes.



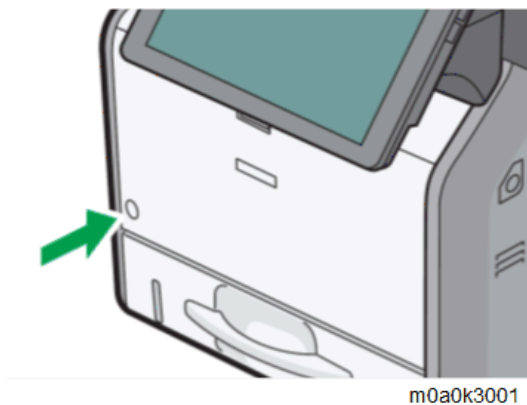
m0a0k1067

Connecting the Power Cord

1. Plug the power cord into the rear of the machine.

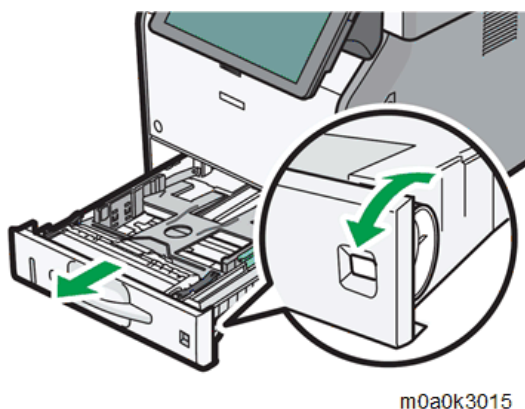


2. Push the main power switch.



Loading Paper

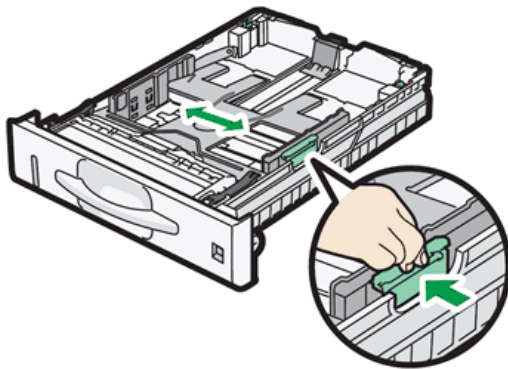
1. Pull out the paper tray carefully. Adjust the paper size dial to match the size and feed direction of the paper in the paper tray.



2. Pull the tray carefully until it stops. Lift the front side of the tray, and then pull it out of the machine.

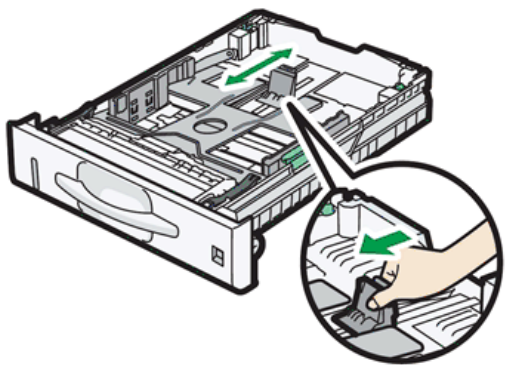
2. Installation

3. Pinch the clip on the side paper guide and slide it to match the paper size.



m0a0k3016

4. Pinch the end guide and slide it inward to match the standard size.



m0a0k3017

5. Load the paper.
6. Insert the tray while keeping its front slightly raised, and push it in all the way in.

Printing a Configuration Page

After you have installed the machine or options, print the configuration page to check the machine status.

1. Press [User Tools].
2. Press [Machine Features].
3. Press [Printer Features].
4. Press [Configuration Page] on the [List / Test Print] tab.
5. Press [User Tools] on the top right of the screen.

Note

- After installing the machine, configure the hard disk overwriting and data encryption settings. ([Data Overwrite Security](#), [HDD Encryption](#))

Instructions for the Customers

Provide instructions on the following matters to customers. For detailed procedures, see the user manuals.

- Operating the printer/copier/scanner/fax functions
- Loading paper and other consumables
- Operating the main power switch

- Removing jammed paper
- Registering/changing/deleting data in the address book
- Precautions on use
- Connecting to computers (such as configuring the port setting)
- Brief explanation of the tabs in the drivers

Moving the Machine

CAUTION

- It is dangerous to handle the power cord plug with wet hands. Doing so could result in electric shock.

CAUTION

- Unplug the power cord from the wall outlet before you move the machine. While moving the machine, take care that the power cord is not damaged under the machine. Failing to take these precautions could result in fire or electric shock.

CAUTION

- If you have to move the machine when the optional paper tray unit is attached, do not push on the main unit's top section. Doing so can cause the optional paper tray unit to detach, possibly resulting in injury.

CAUTION

- When disconnecting the power cord from the wall outlet, always pull the plug, not the cord. Pulling the cord can damage the power cord. Use of damaged power cords could result in fire or electric shock.

CAUTION

- The machine weighs approximately 23 kg (50.7 lb.). When moving the machine, use the inset grips on both sides, and lift slowly in pairs. The machine will break or cause injury if dropped.

CAUTION

- Do not hold the control panel while moving the machine. Doing so may damage the control panel, cause a malfunction, or result in injury.

Important

- Be careful when moving the machine. Take the following precautions:
- Close all covers and trays, including the front cover and bypass tray.
- If optional paper feed units are attached, remove them from the machine and move them separately.
- Keep the machine level and carry it carefully, taking care not to jolt or tip it. Rough handling may cause a malfunction or damage the hard disk or memory, resulting in loss of stored files.

1. Be sure to check the following:

The main power is turned OFF.

The power cord is unplugged from the wall outlet.

The interface cable is unplugged from the machine.

2. If any external options are attached, remove them.

3. Lift the machine using the inset grips on both sides of the machine. Then move it horizontally to the place where you want to use it.

4. If you removed options, reattach them.

2. Installation

Note

- Be sure to move the machine horizontally. To prevent toner from scattering, move the machine slowly.

Paper Feed Unit PB1060/ Paper Feed Unit PB1070

CAUTION

- When lifting the machine, use the inset grips on both sides. The machine could break or cause an injury if dropped.

Component Check

To attach two lower paper trays at the same time, first stack one paper tray on the other, and then attach them as a single unit.

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

Paper Feed Unit PB1070 (500 Sheets M440)

No.	Description	Q'ty
1	Installation Procedure	1
2	Manufacturer Information / Authorized Representative Information (Paper)	1

Paper Feed Unit PB1060 (250 Sheets M441)

No.	Description	Q'ty
1	Installation Procedure	1
2	Manufacturer Information / Authorized Representative Information (Paper)	1
3	Paper size decal / Paper tray number decal	1

Installation Procedure

CAUTION

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

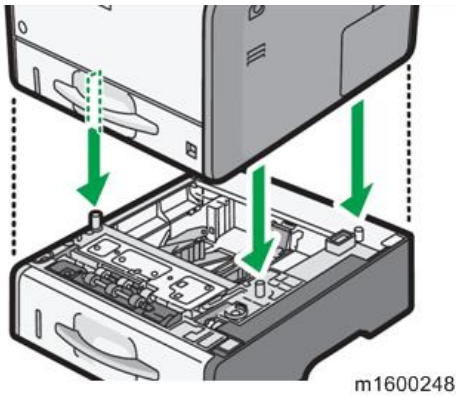
Important

- To attach two lower paper trays at the same time, first stack one paper tray on the other, and then attach them as a single unit.

- Remove the packaging from the lower paper tray.
- Lift the machine slowly using the inset grips on both sides, and then position it immediately above the lower paper tray.

2. Installation

3. There are three upright pins on the optional lower paper tray. Align them with the holes on the underside of the machine, and then carefully lower the machine.



4. Plug in the power cord, and then turn ON the power.
5. Print the configuration page to confirm that the tray is attached correctly.

Note

- Check "Attached Equipment" on the configuration page. If the tray is attached correctly, "Tray 2" and "Tray 3" will be displayed.

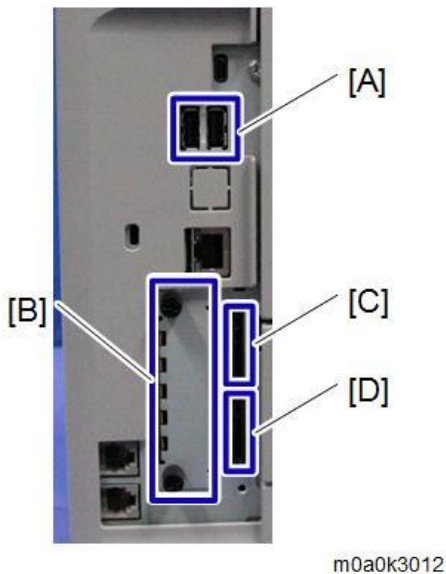
Controller Options

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.

The machine is equipped with a USB host interface, I/F card slot, and SD card slots for controller options.



Remove the SD card slot cover to use the SD card slots.

USB Host Interface

Use the USB host interface [A].

I/F Card Slot

Slot [B] can be used to attach an interface for IEEE 1284, IEEE 802.11 (Wireless LAN), USB Device Server Option, Extended USB Board, or File Format Converter.

SD Card Slots

Slot 1 (upper) [C] is used for optional applications (for example, Fonts, XPS Direct Print, OCR Unit).

Slot 2 (lower) [D] is used for installing applications, or for service only (for example, updating the firmware).

File Format Converter Type M19 (D3BR-04)

Accessory Check

No.	Description	Q'ty
1	File Format Converter board	1
2	Notes for Users	1



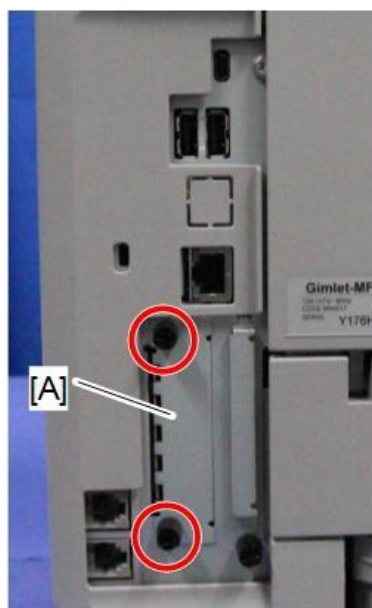
d238m0658

Installation procedure

⚠ CAUTION

- Before installing this option, turn OFF the main power and unplug the power cord from the wall socket. Otherwise an electric shock or a malfunction may occur.
- Do not put your hand into the controller box. It will result in a malfunction or injury.
- Before doing any work, touch a metal object to discharge static electricity from your body. Static electricity may cause the board to malfunction.

1. Remove the slot cover [A].



m0a0k1027

2. Insert the File Format Converter board into the I/F slot.

3. Turn ON the main power.
4. Check the system settings list is output, and that the option is recognized correctly.

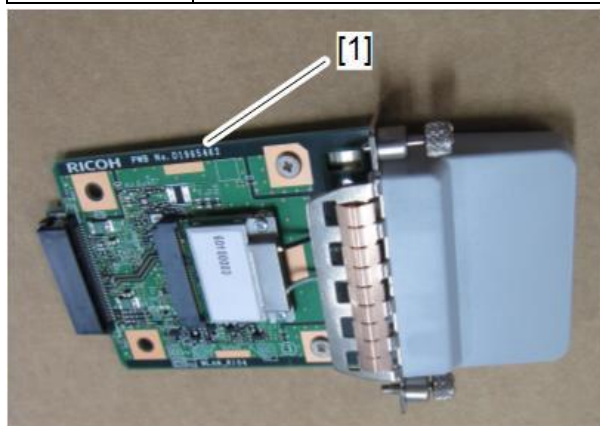
 Note

- The customer should keep the slot covers which were removed.

IEEE 802.11 Interface Unit Type M24 (M500-08)

Accessory Check

No.	Description	Q'ty
1	IEEE 802.11 Interface board	1



m0a0k1065

Installation procedure

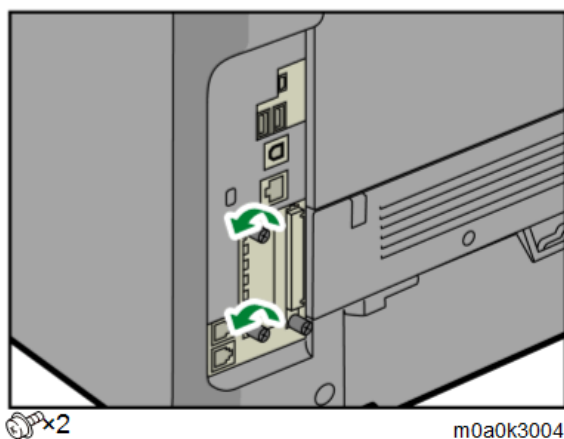
⚠ CAUTION

- Before installing this option, turn OFF the main power and unplug the power cord from the wall socket. Otherwise an electric shock or a malfunction may occur.
- Do not put your hand into the controller box. It will result in a malfunction or injury.
- Before doing any work, touch a metal object to discharge static electricity from your body. Static electricity may cause the board to malfunction.

★ Important

- When using wireless LAN (IEEE802.11 b/g/n:2.4-GHz band), this radio product uses the 2.4-GHz band. Check that industrial, scientific and medical devices using the same frequency bands, such as a microwave oven or a cordless telephone, are not used nearby.
- If there is interference, communication may become unstable. Check that there are no devices likely to cause interference in the surrounding area.

1. Turn OFF the main power of the machine, and unplug the power cord from the wall socket.
2. Loosen the two screws and remove the I/F slot cover.
The removed cover will not be reused.



3. Insert the interface board [A] into the I/F slot.



User Tool Settings for IEEE 802.11a/g/n

Enter the User Tools mode and perform the procedure below. These settings take effect every time the machine is turned ON.

Note

- IEEE 802.11a/g/n function is disabled when using Ethernet.

1. Press the "User Tools" icon.
2. Select "Machine Features" > "System Settings".

2. Installation

Note

- Select "Interface Settings"> "Network" > "LAN Type". The "LAN Type" (default: Ethernet) must be specified for either Ethernet or wireless LAN.

3. Select "Interface Settings"> "Wireless LAN".

Only the wireless LAN options are displayed.

4. Specify the "Communication Mode".

5. Enter the "SSID setting". (The setting is case sensitive.)

6. Specify the "Ad-hoc Channel". You need this setting when Ad Hoc Mode is selected. The allowed range for the channel settings may vary for different countries.

- For mainly Europe and Asia
2412 - 2462 MHz (1 - 11 channels)
5180 - 5240 MHz (36, 40, 44 and 48 channels)
(default: 11)

Note

- In some countries, only the following channels are available: 2412 - 2462 MHz (1 - 11 channels)
- For mainly North America
2412 - 2462 MHz (1 - 11 channels)
5180 - 5240 MHz (36, 40, 44 and 48 channels)
(default: 11)

7. Specify the "Security Method" for encryption of the Wireless LAN.

- The "WEP" (Wired Equivalent Privacy) setting is for protecting wireless data transmission. The same WEP key is required on the receiving side in order 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 "Infrastructure Mode" is selected for "Communication Mode". Specify the "WPA2 Authent. Method".
 - 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" is 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.

- Press "Restore Factory Defaults" to initialize the wireless LAN settings.

SP Mode Settings for IEEE 802.11 Wireless LAN

The following SP commands and UP modes can be specified for IEEE 802.11

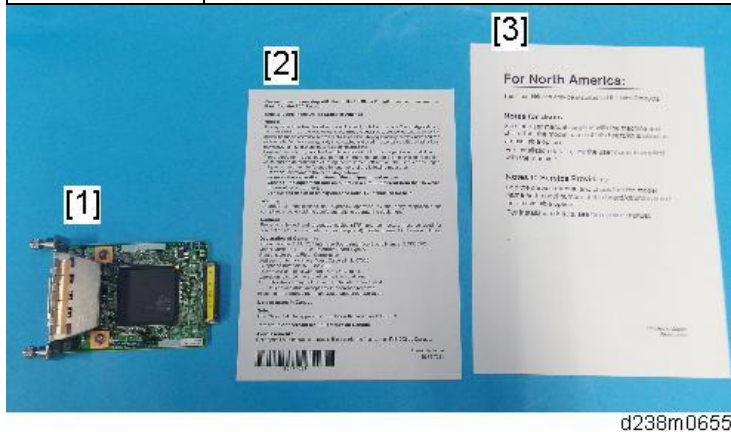
SP No.	Name	Function
SP5-840-	Channel MAX	Specifies the maximum range of the channel settings for the country.

SP No.	Name	Function
006		
SP5-840-007	Channel MIN	Specifies the minimum range of the channels settings allowed for your country.
SP5-840-008	Transmission Speed	Specifies the transmission speed. Auto, 54 Mbps, 48 Mbps, 36 Mbps, 24 Mbps, 18 Mbps, 12 Mbps, 9 Mbps, 6 Mbps, 11 Mbps, 5.5 Mbps, 2 Mbps, 1 Mbps (default: Auto).
SP5-840-011	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.
	WPA2 Authent. Method	Used to confirm the current WPA authentication setting and preshared key.

IEEE 1284 Interface Board Type M19 (D3C0-17)

Accessories

No.	Description	Qty
1	IEEE 1284 Interface board	1
2	FCC document	1
3	Notes for Users	1



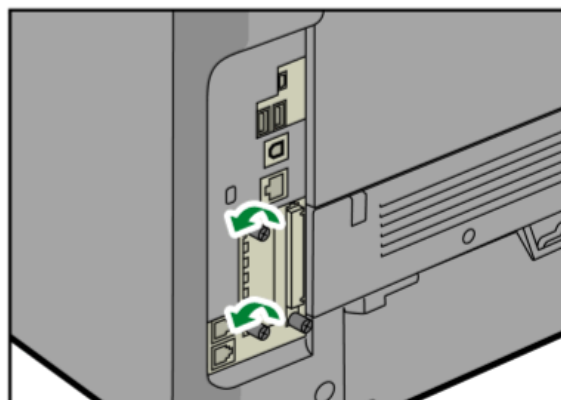
d238m0655

Installation procedure

⚠ CAUTION

- Before installing this option, turn OFF the main power and unplug the power cord from the wall socket. Otherwise an electric shock or a malfunction may occur.
- Do not put your hand into the controller box. It will result in a malfunction or injury.
- Before doing any work, touch a metal object to discharge static electricity from your body. Static electricity may cause the board to malfunction.

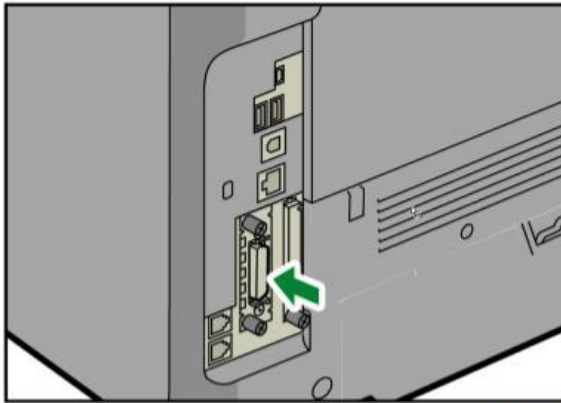
1. Remove the slot cover [A].



x2

m0a0k3004

2. Insert the IEEE 1284 Interface board into the I/F slot.



m0a0k1031

3. Turn ON the main power.
4. Check that the system settings list is output, and that the board is recognized correctly.

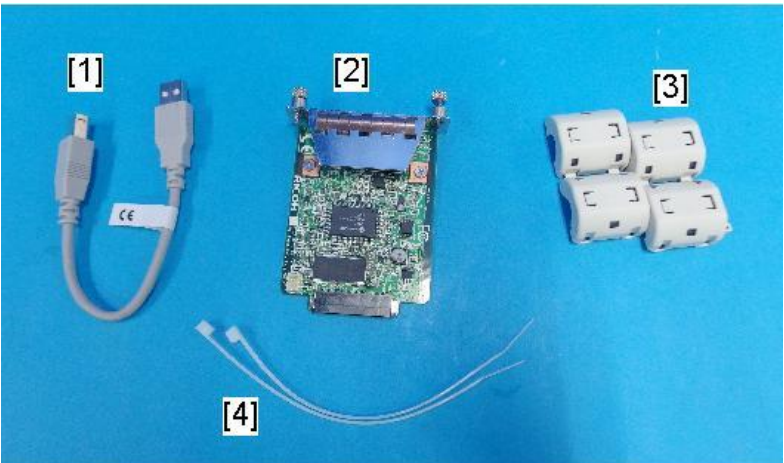
Note

- The customer should keep the slot covers which were removed.

USB Device Server Option Type M19 (D3BC-28,-29)

Component Check

No	Items	Q'ty
1	USB cable	1
2	Interface board	1
3	Ferrite core	2
4	Cable ties	2

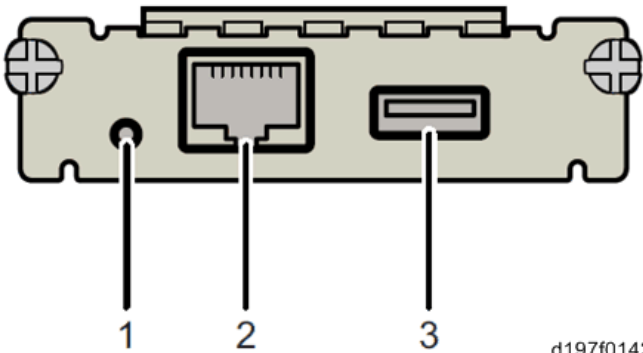


d238m0666

Note

- An Ethernet cable does not come with this option.

Interface Board Surface



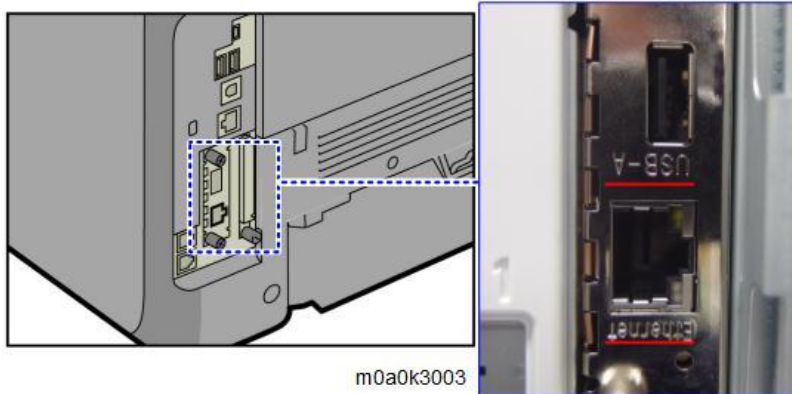
d197f0142

No.	Item	Description
1	Switch	Use to reset to the factory settings.
2	Ethernet port	Use to connect the Ethernet cable.
3	USB port	Use to connect this option to the main machine. Do not use this port with other options.

Note

- When installing the USB device server option, make sure that the labels 'USB-A' and 'Ethernet' are upside

down.



Installation Procedure

⚠ CAUTION

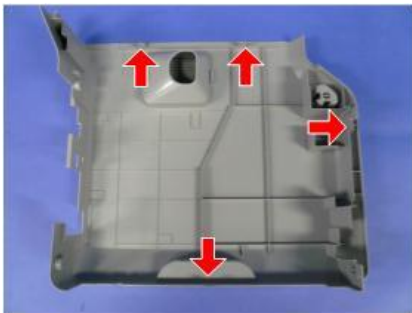
- Before installing this option, turn OFF the main power and unplug the power cord from the wall socket. Otherwise an electric shock or a malfunction may occur.

★ Important

- The USB Device Server Option has an IP address stored on the PCB. This is different from the machine's IP address. The IP address and other network settings of the USB Device Server Option must be configured after installing this option.

↓ Note

- There are four tabs on the back of the right cover.

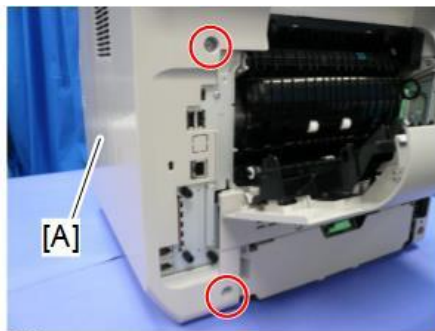


m0a0k1004

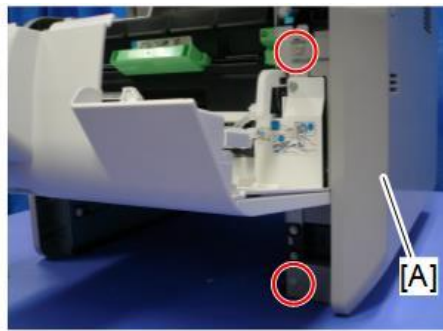
1. Turn OFF the main power of the machine.
2. Unplug the power cord from the wall socket.
3. Open the front cover.
4. Open the rear cover.

2. Installation

5. Remove the right cover [A].

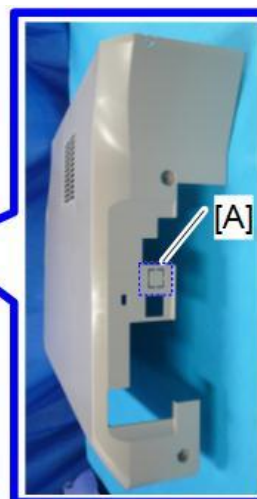


 x4



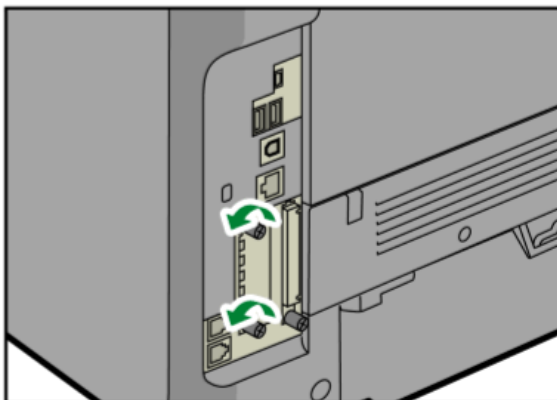
m0a0k1005

6. Cut off the USB port cover [A] with nippers or other such tool.



m0a0k3006

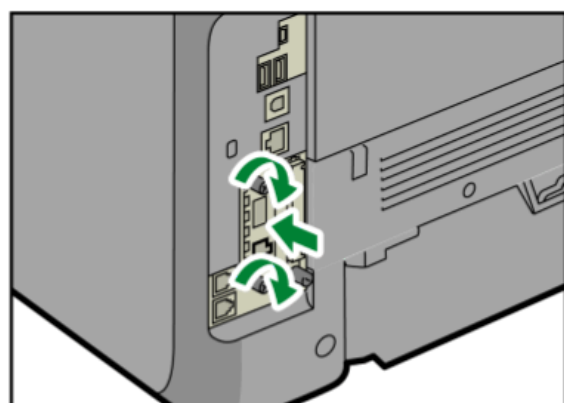
7. Reattach the right cover.
8. Loosen the two screws and remove the I/F slot cover.
The removed cover will not be reused.



 x2

m0a0k3004

9. Insert the USB Device Server Option board [A] into the I/F slot.

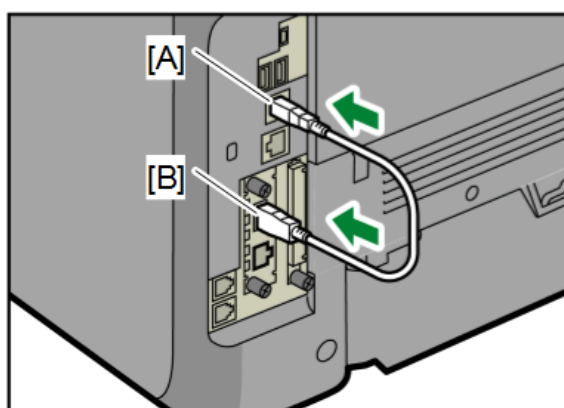


⌀x2

m0a0k3005

10. Insert the USB cable [A] into the USB port (Type A) on the machine I/F.

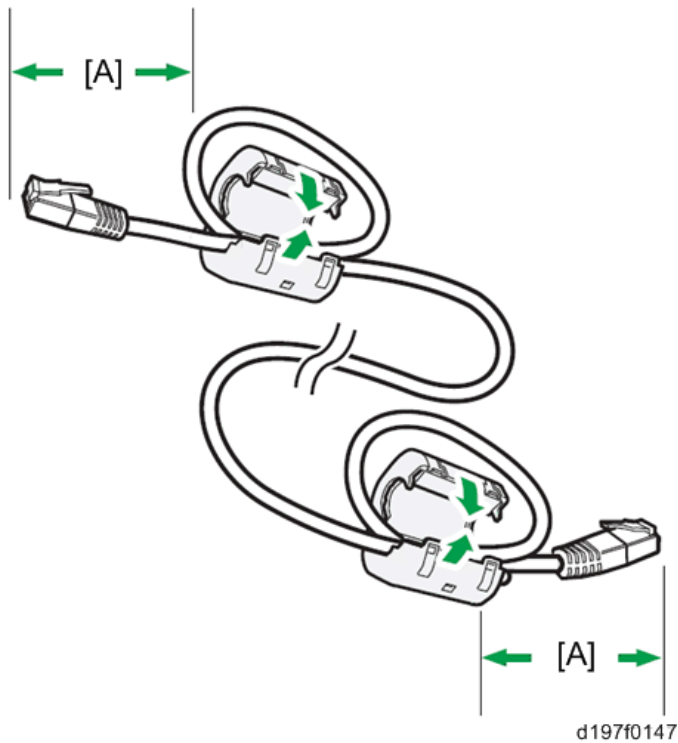
11. Insert the other end of the USB cable [B] into the USB port (Type B) on the USB Device Server Option board.



m0a0k3007

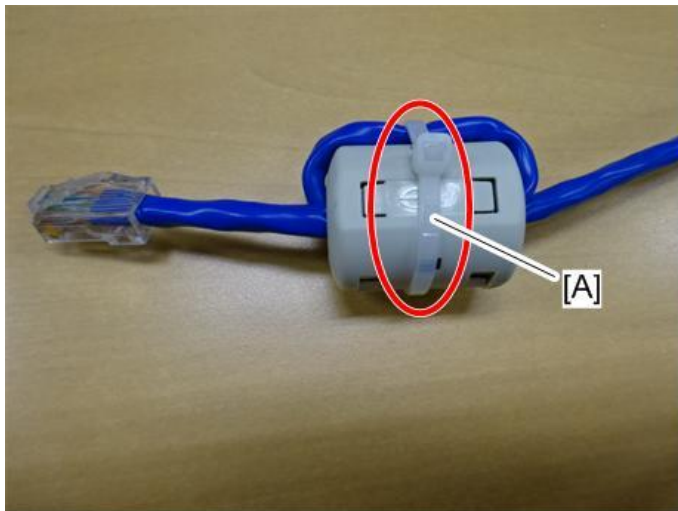
2.Installation

- 12.** Loop the cable at a point 3 cm (approximately 1.2 inch) [A] from each end of the Ethernet cable, and attach the ferrite cores to the cable

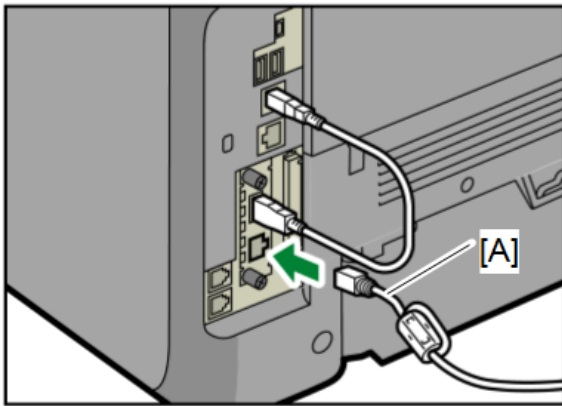


- 13.** (For North America only) Bind both cores with cable ties [A] as shown below.

Cable ties do not come with USB Device Server Option boards manufactured before March, 2015. For such option boards, use the ties supplied as service parts, or similar parts.



- 14.** Insert the Ethernet cable [A] into the Ethernet port on this option.



m0a0k3008

- 15.** Insert the other end of the Ethernet cable to a PC for network settings.
- 16.** 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 trying to identify the USB Device Server Option. If unplugged, connect the cable again.
- It may take between 30 seconds to 1 minute to finish identification (the LEDs on the Ethernet port of the option light up when identification is completed).

- 17.** To ensure that the machine recognizes the USB Device Server Option correctly, perform one of the following:

- Access the option's IP address from a web browser.
- Ping the option's IP address from a command prompt on a Windows PC in the same network as the main machine.

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 Device Server Option.



d196z2350

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

2.Installation



d196z2351

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

```
C:\Users\>Ping RX0080926A3264

Pinging RX0080926A3264 [192.168.100.100] with 32 bytes of data:
Reply from 192.168.100.100: bytes=32 time=1ms TTL=255
Reply from 192.168.100.100: bytes=32 time<1ms TTL=255
Reply from 192.168.100.100: bytes=32 time<1ms TTL=255
Reply from 192.168.100.100: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.100.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

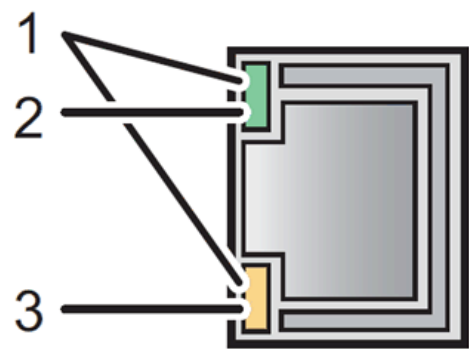
d196z2352

Note

- When installing the USB Device Server Option Type M19, the installation status is not shown on the Configuration Page.
- The customer should keep the slot covers which were removed.

What Do the LED Indicators Mean?

When the USB device server option is correctly installed and recognized by the main machine, the LED indicators light up under the following conditions.



d197f0149

No.	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 USB device server option is installed and the machine enters into the energy save mode, you cannot print because there will be a communication error. Follow the instructions below to prevent the machine from entering the energy save mode.

1. Enter SP mode, and then set SP5-191-001 (Power Setting: Power Str) to "0 (Off)".

IP Address Setting

This section describes how to manually specify an IP address for the USB device server option. Note that you can specify an IP address not only on the same network segment, but also on a different network segment. This will enable you to share a single printer with devices in multiple networks.

★ Important

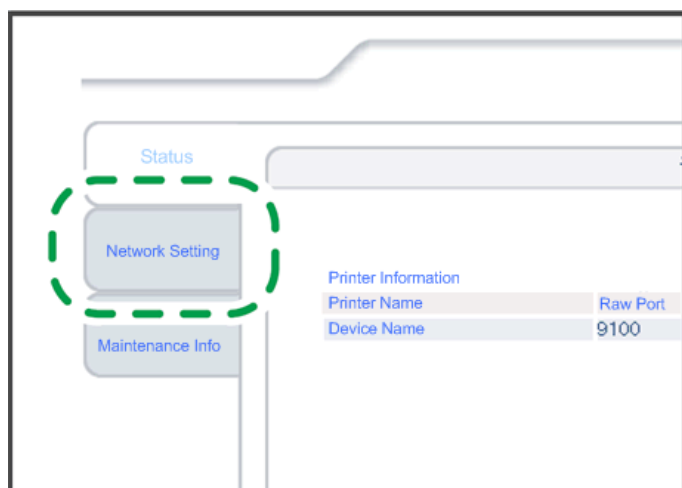
- You cannot change the IP address of this option from the operation panel of the main machine. The setting must be done from a web browser on your PC.
- The network setting of this option is initially assigned as follows:
IP address: 192.168.100.100 / Subnet mask: 255.255.255.0
- The network setting 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 of your PC to [192.168.100.xxx (*0 - 255)].
3. Change the subnet mask of 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 is displayed.

7. Click [Network Setting].



d197f0134

8. Type [root] in the user name text box, and click [OK].

2.Installation

9. Input the [IP Address], [Subnet Mask] and [Default Gateway].

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

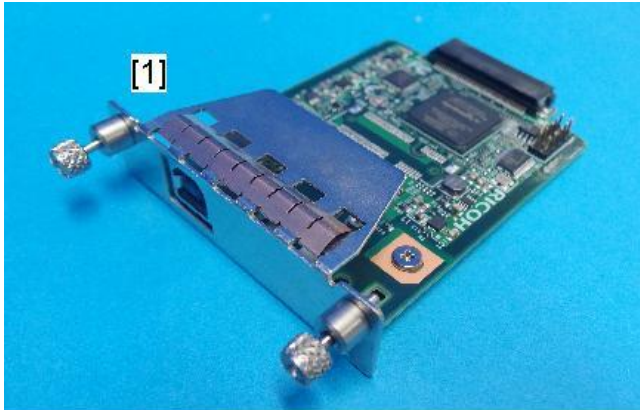
d197f0135a

10. Specify other items if needed.
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 (such as a switching hub).
15. Specify the IP address of the USB device server option in the printer driver that you are using.

Extended USB Board Type M19 (D3BS-01)

Component Check

No	Items	Q'ty
1	Extended USB board	1



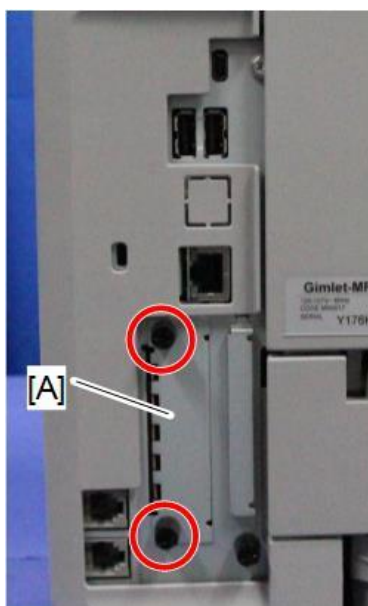
d238m0668

Installation Procedure

⚠ CAUTION

- Before installing this option, turn OFF the main power and unplug the power cord from the wall socket. Otherwise an electric shock or a malfunction may occur.
- Do not put your hand into the controller box. It will result in a malfunction or injury.
- Before doing any work, touch a metal object to discharge static electricity from your body. Static electricity may cause the board to malfunction.

1. Remove the slot cover [A].



m0a0k1027

2.Installation

2. Insert the Extended USB Board into the I/F slot.
3. Turn ON the main power.
4. Check that the system settings list is output, and that the board is recognized correctly.

Note

- The customer should keep the slot covers which were removed.

Data Overwrite Security Unit Type M19 (D3BS-03)

Overview

The machine's hard disk stores all document data from the Copier, Printer, and Scanner functions. It also stores user data such as Document Server data, code counters, and Address Book data. To prevent the leakage of such information when the machine is discarded, you can overwrite all data stored on the hard disk (Erase All Memory). You can also automatically overwrite temporarily-stored data (Auto Erase Memory).

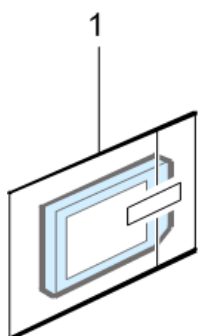
The function of this option is completely the same as the Data Overwrite Security in Security Functions, which is a standard feature of this machine (Security Settings)

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

Component List

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

No.	Description	Q'ty
1.	SD card	1
-	Comments Sheet	1
-	Operating Instructions CD-ROM	1



d1351921

Before You Begin the Procedure

1. Confirm that the Data Overwrite Security unit SD card is the correct type for this machine. The correct type is Type M19.

★ Important

- If you install any type other than **Type M19**, you will have to replace the NVRAM and perform this installation procedure again.

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

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

If any of these settings is at a factory default, ask the customer to change the settings before you perform the installation procedure.

2. Installation

3. 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, ask the customer to change the setting to ON before you perform the installation procedure.

4. 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), ask the customer to enable (select) the setting before you perform the installation procedure.

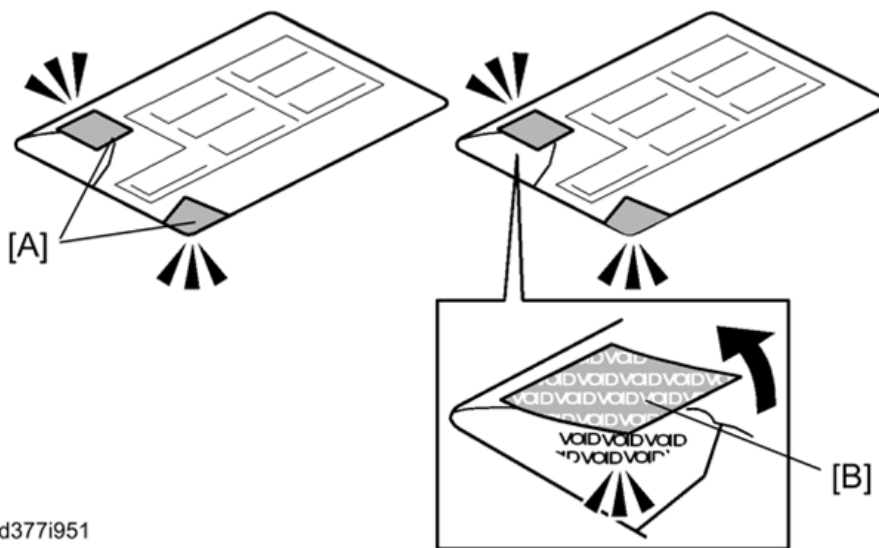
Note

- See the Operating Instructions (Security Guide) for the factory defaults.

Seal Check and Removal

Before opening the box (corrugated envelope), make sure that the seal has not been broken or peeled off. If the seal is peeled off, it will leave a mark on the box.

If the seal has been broken or peeled off, even if only partially, this is considered an arrival defect.



d377i951

Important

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

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

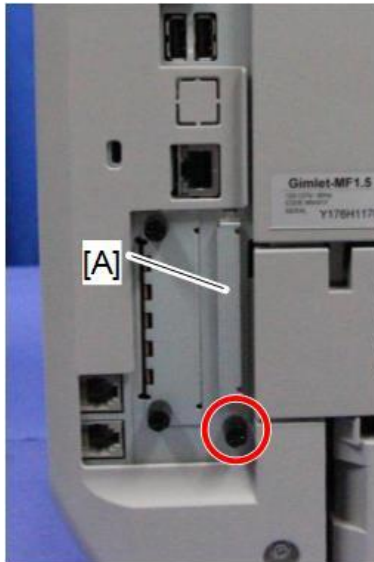
- Make sure that a tape is affixed in each corner.
- The surfaces of the tapes must be blank. If you see "VOID" on the tapes, do not install the components in the box.

2. If the surfaces of the tapes do not show "VOID", remove them from the corners of the box.

3. When the seal is removed, you would see "VOID" marks [B]. In this condition, they cannot be attached to the box again.

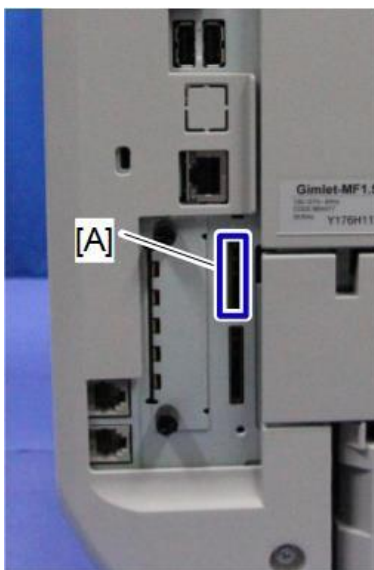
Installation Procedure

1. Turn the main power OFF.
2. Disconnect the power plug and cables.
3. Remove the SD card slot covers [A].



m0a0k1025

4. Insert the Data Overwrite Security Unit Type M19 SD card in SD Card Slot 1 [A: Upper Slot].



m0a0k1029

5. Reattach the SD card slot cover.
6. Insert the power cord into the wall outlet and turn ON the main power.

Note

- When installing more than one SD card, perform the merge operation.

7. Enter the SP mode.
8. Perform this step only if you are installing the option on a machine that is already in use (not a new machine):
 - If the customer wishes to continue using the same hard disk, execute all the three SP modes below.

2. Installation

- SP5-801-014 (Clear DCS Setting)
- SP5-832-001 (HDD Formatting (ALL))
- SP5-832-002 (HDD Formatting (IMH))
- **If the customer wishes to replace the hard disk with a new one, execute SP5-801-014 only.**

Note

- If the customer continues using the same hard disk, overwriting of data stored on the disk before the option was installed cannot be guaranteed. It is highly recommended that the hard disk be replaced with a new one.

9. Set SP5-836-001 (Capture Function (0:Off 1:On)) to a value of 0 (disable).

10. Execute SP5-878-001 ([Option Setup: Data Overwrite Security])

If installation is not successful, "Installation failed" is displayed when this SP is executed.

11. Print out the System Settings List and make sure that the option is installed successfully.

12. Reconnect the network cable.

13. Execute SP5-990-005 (SP print mode Diagnostic Report).

Important

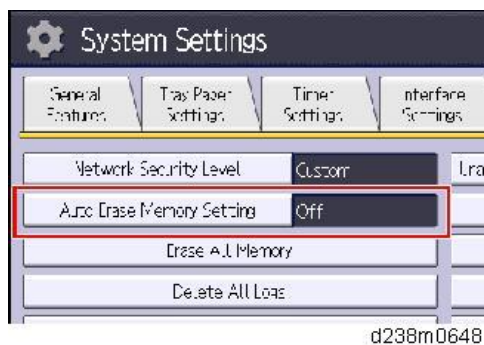
Make sure to shut down and reboot the machine once before printing the SMC. Otherwise, the SMC may not show the latest settings.

14. Make sure that ROM number "D3BC5757A" and firmware version "1.02" appear in both of the following areas on the report (they must match):

- "ROM Number / Firmware Version" - "HDD Format Option"
- "Loading Program"

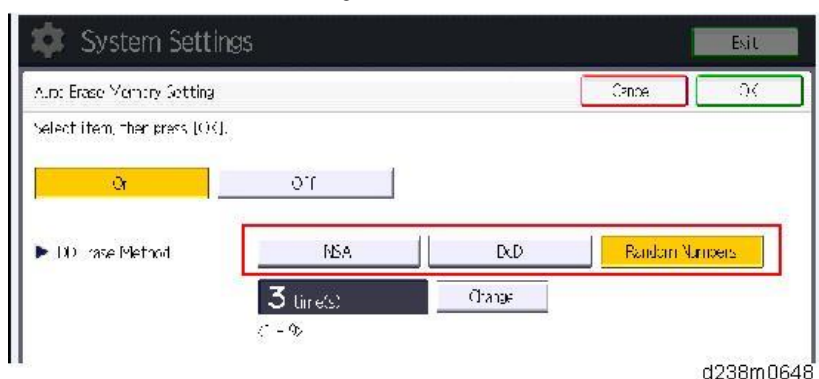
Configuring "Auto Erase Memory" (Performed by the Customer)

1. Press the [User Tools] icon.
2. Press [Machine Features].
3. Press [System Settings].
4. Press [Administrator Tools].
5. Press [Next] three times.
6. Press [Auto Erase Memory Setting].



Z. Press [On].

8. Select the method of overwriting.



- If you select [NSA] or [DoD], proceed to Step 11.
- If you select [Random Numbers], proceed to Step 9.

9. Press [Change].

10. Enter the number of times that you want to overwrite using the ten-key pad, and then press [#].



The Random Numbers method overwrites the data using random numbers. You can set overwriting to be performed anywhere from 1-9 times, with a default of 3 times.

11. Press [OK].

12. Make sure that the Data Overwrite icon is displayed in the bottom right hand corner of the screen.

13. Take a test copy, and then make sure that the Data Overwrite icon changes from "Dirty" (solid) to "Dirty" (blinking), and then to "Clear".

- If the Data Overwrite icon does not change to Clear, check to see if there are any active Sample Print or Locked Print jobs. A Sample Print or Locked Print job can only be overwritten after it has been executed.
- The Dirty icon blinks when overwriting is in progress.
- If you use your machine for a while with Auto Erase Memory disabled, and then suddenly enables it, the overwrite process may take 10 or more hours depending on HDD usage.

Data Overwrite icon:

	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.Installation

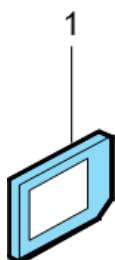
Related SPs

- SP5-801-014 (Memory Clear: Clear DCS Setting)
Initializes the DCS (Delivery Control Service) settings.
- SP5-832-001 (HDD Formatting : HDD Formatting (ALL))
Initializes the hard disk.
- SP5-832-002 (HDD Formatting : HDD Formatting (IMH))
Initializes the hard disk.
- SP5-836-001 (Capture Settings: Capture Function (0:Off 1:On))
With this function disabled, the settings related to the capture feature cannot be initialized, displayed, or selected.
- 5-878-001 (Data Overwrite Security)
Enables the Data Overwrite Security unit. Press "EXECUTE" on the operation panel. Then turn the machine OFF and ON.
- SP5-990-005 (SP Print Mode: Diagnostic Report).
Prints the configuration sheets of the system and user settings : SMC.
Make sure to shut down and reboot the machine once before printing the SMC. Otherwise, the SMC may not show the latest settings.

XPS Direct Print Option Type M27 (M502-02, -05, -06)

Accessories

No.	Description	Qty
1	XPS Direct Print SD card	1



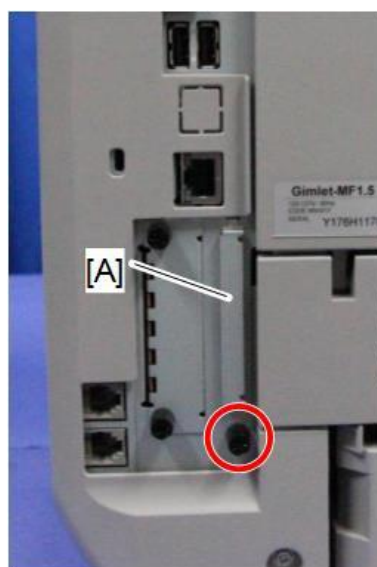
d595i900b

Installation Procedure

Note

- When installing more than one SD card, perform the merge operation ([SD Card Appli Move](#)).

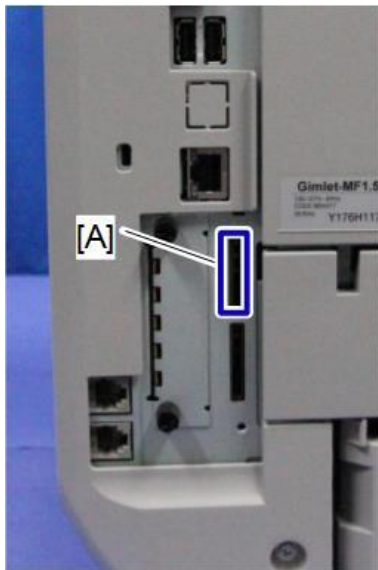
1. Remove the SD card slot covers [A].



m0a0k1025

2. Installation

2. Insert the XPS Direct Print SD card into SD Card Slot 1 [A: Upper Slot].



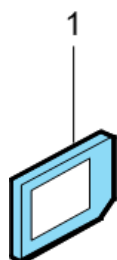
m0a0k1029

3. Reattach the SD card slot cover.
4. Turn ON the main power.
5. 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

OCR Unit Type M13 (D3AC-23, -24, -25)

Accessory Check

No.	Description	Q'ty
1	SD card	1



d595i900b

Overview of Searchable PDF Function

This option adds a searchable PDF function to the scanner function.

- With this option, OCR is performed on a document read with the scanner, and text data is embedded in the PDF. This enables PDF text browsing, automatic assignment of file names, and automatic alignment of document orientation.
- This option is provided as an SD card. When the SD card is installed on the machine, a icon for the function is added. It is not necessary to install any software on a PC.
- If this option is installed, various settings related to the searchable PDF function are available.
- OCR is performed is after reading of the document is completed (after it is read by the SPDF and output). After reading is completed, the documents can be removed from the document glass or SPDF.
- Other functions, such as the copier and printer functions, can be used during OCR.

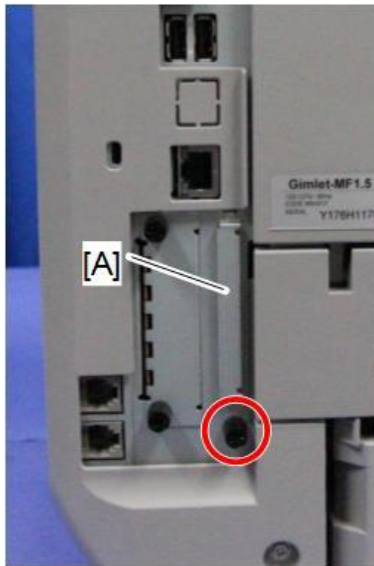
Installation Procedure

Note

- When installing more than one SD card, perform the merge operation (SD Card Appli Move).

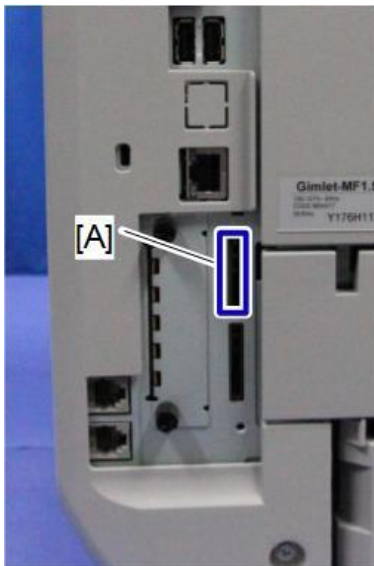
2. Installation

1. Remove the SD card slot covers [A].



m0a0k1025

2. Insert the OCR Unit SD card into SD Card Slot 1 [A: Upper Slot].



m0a0k1029

3. Turn ON the main power.
4. Enter the SP mode, and then press "Enter" in SP5-878-004 (Option Setup: OCR Dictionary).
The SD card ID is saved in the NVRAM, and the ID of the machine is saved on the SD card. The machine and SD card are then linked.
5. When "operation complete" is displayed, press "Close".

Note

- If installation is not successful, "Failed" is displayed.
- If installation fails, perform the following steps.

3. Check whether it is a used SD card.
4. Turn the power OFF, and repeat Steps 1-5.

6. Turn the power OFF and then ON again.

7. 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.

8. Turn OFF the main power.**9.** Remove the SD card from the SD card slot.**Note**

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

10. Reattach the SD card slot cover.**11.** Turn ON the main power.**12.** Press [File Format / File Name] on the scanner function screen.**13.** Check that [OCR setting] is displayed on the "File format / "File 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 the OCR option is installed, the OCR function is saved on the HDD, and ID information on the SD card is saved in the NVRAM. Therefore, when replacing the HDD or NVRAM, this option must be reinstalled.

When storing the original SD card

- 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.

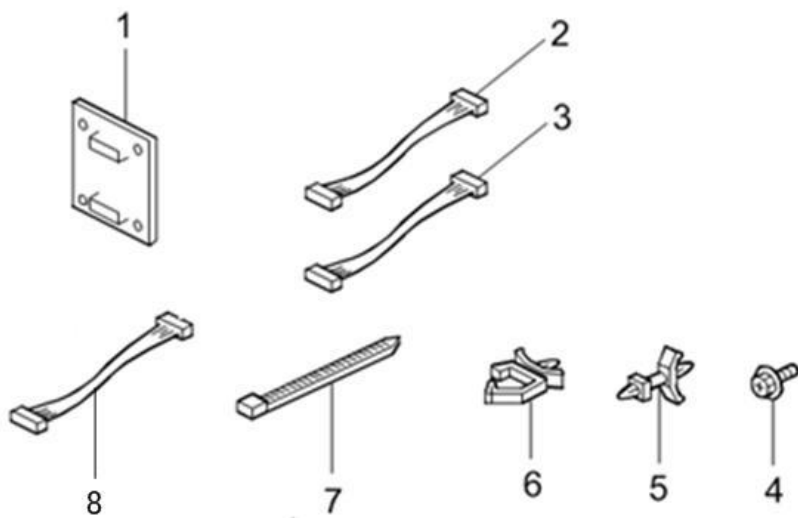
If the original SD card is lost

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

Optional Counter Interface Unit Type M12 (B870-21)

Accessory Check

No.	Description	Q'ty	Remarks
1	PCB: MKB	1	
2	Harness (MB to MKB)	1	Not Used
3	Harness (MB to MKB)	1	Not Used
4	Screws M3x6	4	
5	Standoffs	4	
6	Clamp	1	
7	Lock band	1	
8	Relay harness	1	Not Used



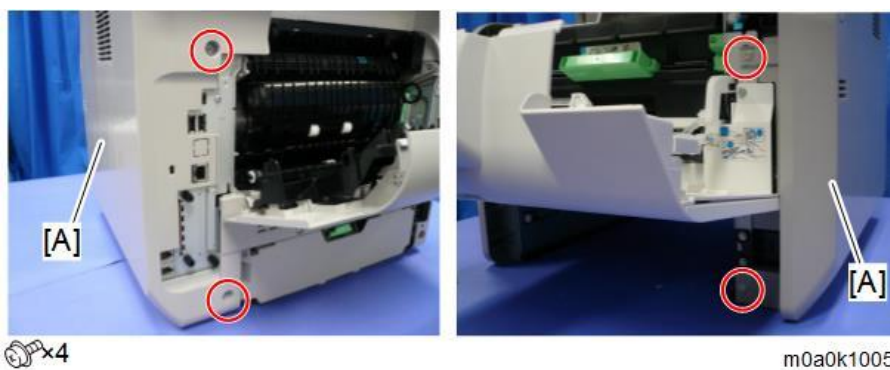
d135d1748

Installation procedure

⚠ CAUTION

- When installing this option, turn OFF the main power and unplug the power cord from the wall socket. If you install without turning OFF the main power, an electric shock or a malfunction may occur.

1. Open the front cover.
2. Open the rear cover.
3. Remove the right cover [A].



Note

- There are four tabs on the back of the right cover.



- 4.** Remove the short connector [A].

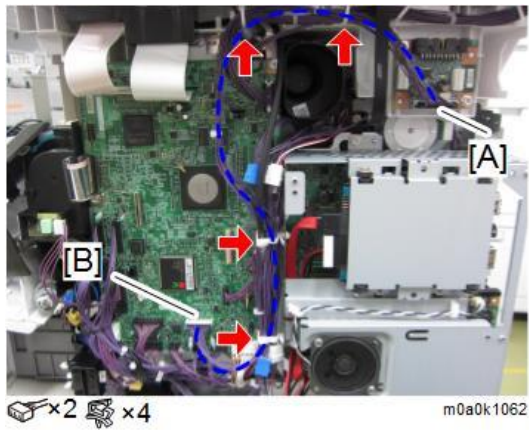


- 5.** Attach the counter interface board [A].



2.Installation

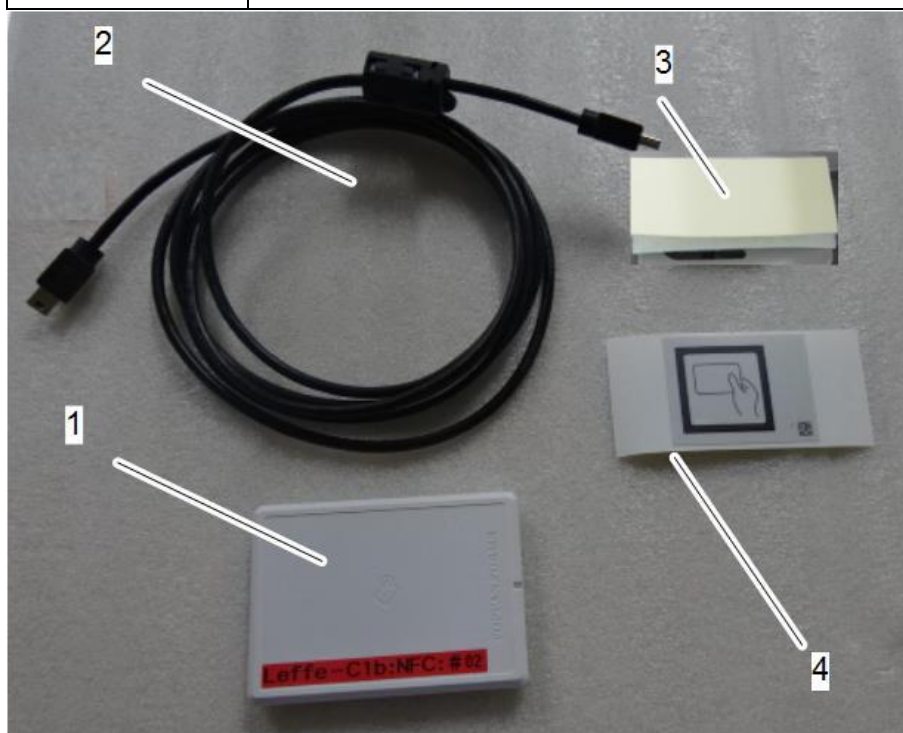
6. Connect the harness of the interface board to the lower connector (white/13 pin) [A] and to the connector on the BiCU [B].



NFC Card Reader Type M27 (M502-10)

Accessory Check

No.	Description	Q'ty
1	NFC card reader	1
2	USB cable	1
3	Double-sided tape	1
4	Decal	1
-	EMC address	1
-	Caution chart	1



d205z2220

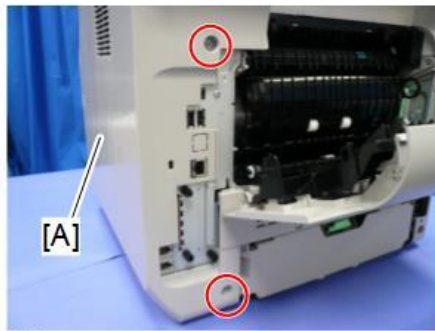
Installation Procedure

⚠ CAUTION

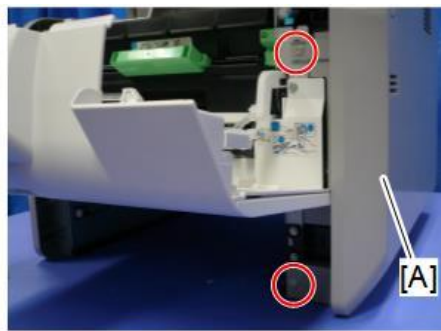
- When installing this option, turn OFF the main power and unplug the power cord from the wall socket. If you install without turning OFF the main power, an electric shock or a malfunction may occur.

1. Open the front cover.
2. Open the rear cover.
3. Remove the right cover [A].

2. Installation



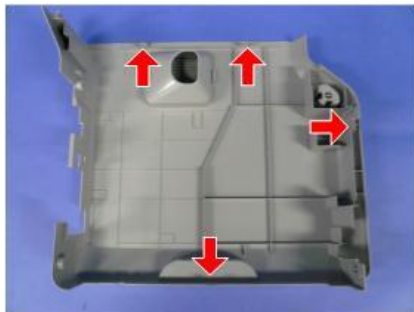
⚙️ x4



m0a0k1005

Note

- There are four tabs on the back of the right cover.



m0a0k1004

4. Open the SPDF top cover.

5. Remove the SPDF rear cover [A].

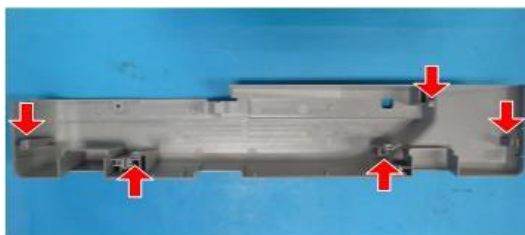


⚙️ x1

m0a0k1013

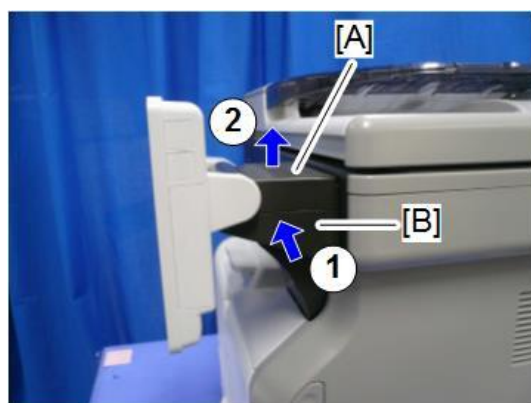
Note

- There are five tabs on the back of the SPDF rear cover.



m0a0k0061

6. Remove the operation panel upper cover [A] and operation panel lower cover [B].



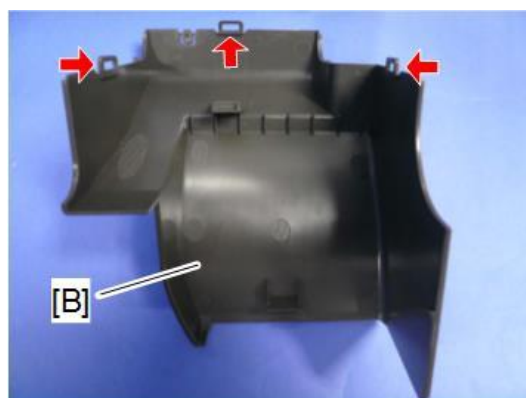
m0a0k0049

Note

- There are three tabs on the upper cover [A] and lower cover [B].



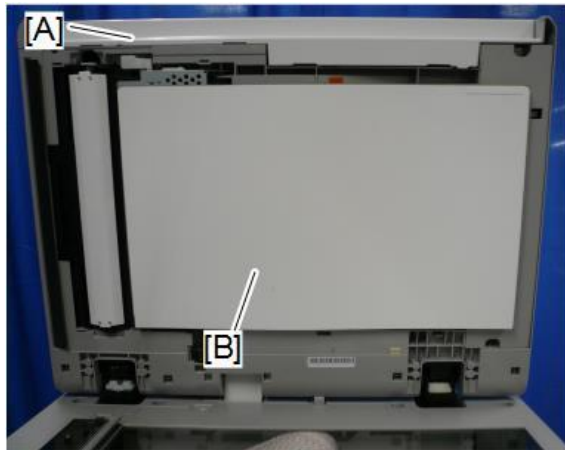
m0a0k1009



m0a0k0051

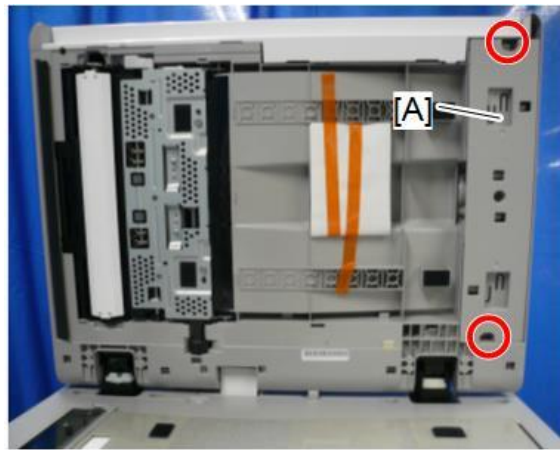
- Z. Open the SPDF [A].
8. Remove the white sheet [B].

2.Installation



m0a0k1036

9. Remove the SPDF bottom cover [A].



⌀x2

m0a0k1037

10. Use the double-sided tape to attach the NFC card reader [A] to the rear of the SPDF bottom cover [B].



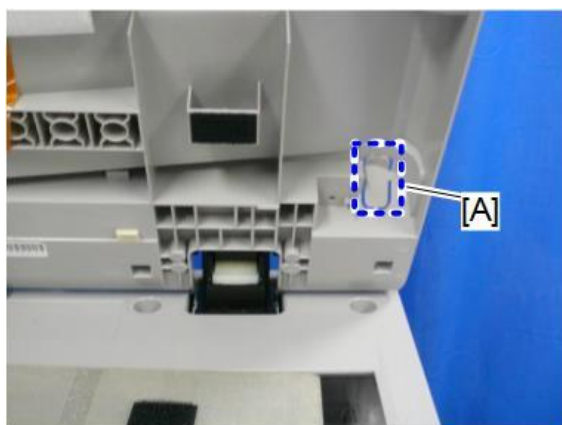
m0a0k1038

11. Connect the USB cable [A] to the NFC card reader [B].
Route the cable as shown below.



m0a0k1039

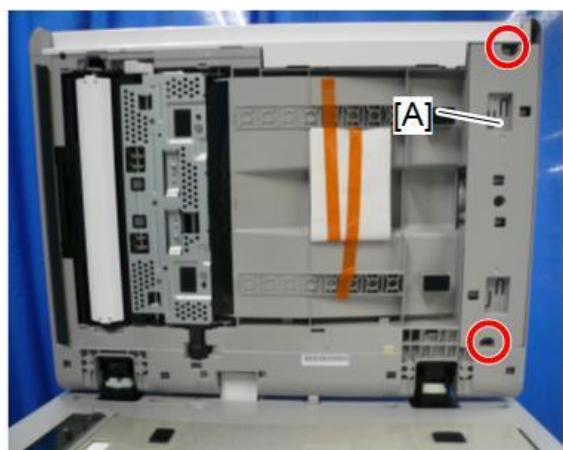
12. Push the tab [A] through the SPDF to create a hole.



m0a0k1040

13. Pass the USB cable through the hole.

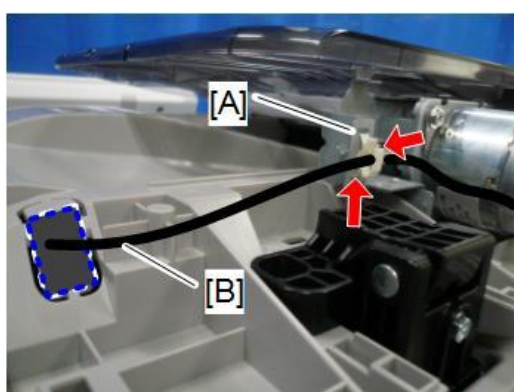
14. Attach the SPDF bottom cover [A] with the NFC card reader to the SPDF.



⚙️ x2

m0a0k1037

15. Pass the USB cable [B] through the clamp [A].

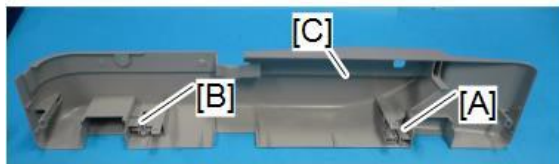


⚙️ x1

m0a0k1052

16. Remove the tab [A] and the short tab [B] from the rear of the SPDF rear cover [C].

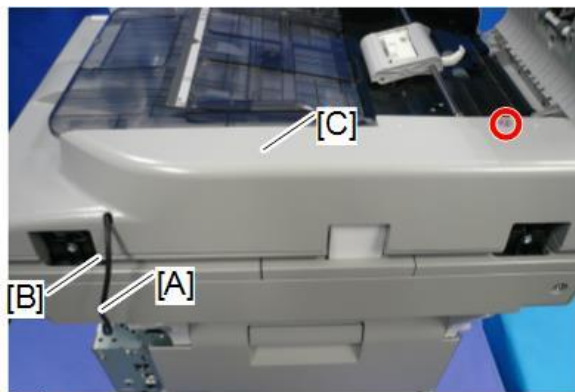
2. Installation



m0a0k1041

17. Pass the USB cable [A] through the hole in the SPDF rear cover and attach the short tab [B].

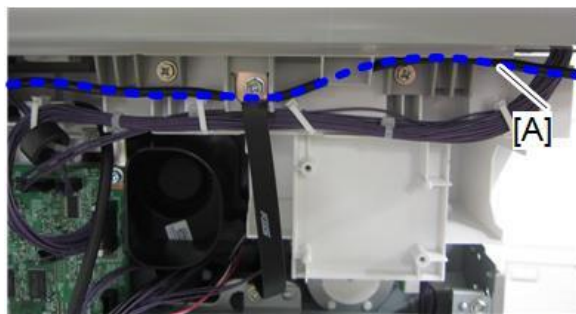
18. Attach the SPDF rear cover [C] to the SPDF.



⚙️ x1

m0a0k1042

19. Route the USB cable [A] on the right side of the machine.

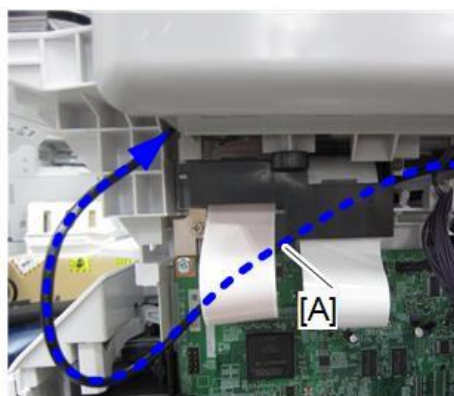
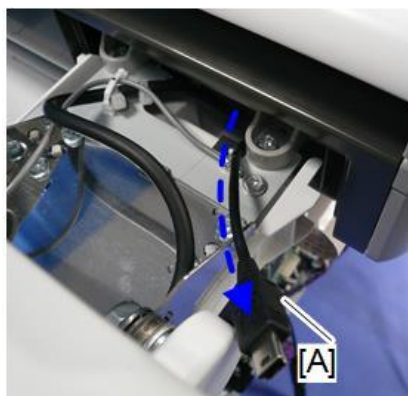


m0a0k1043

Note

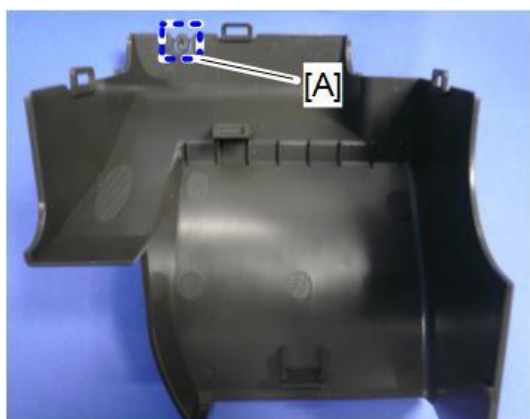
- It is not necessary to clamp the USB cable.

20. Pass the USB cable [A] through the slit in the front of the machine.



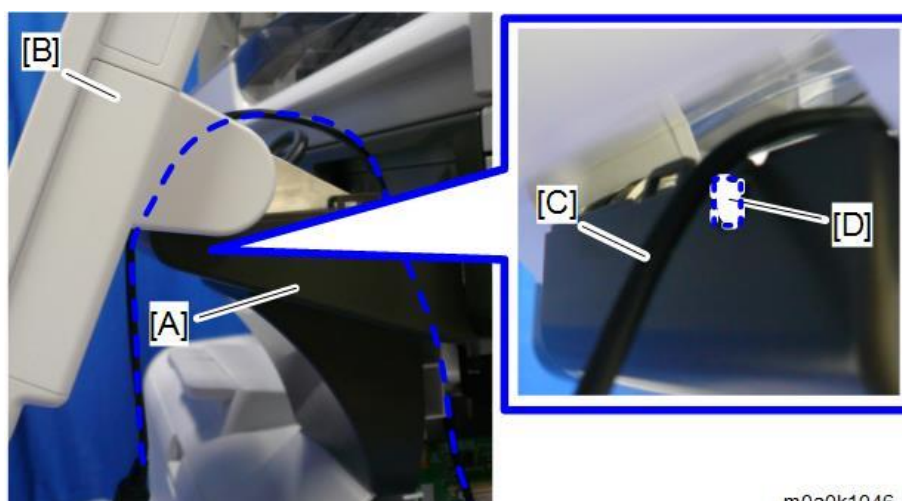
m0a0k1044

21. Remove the tab [A] from the operation panel lower cover to create a cutout.



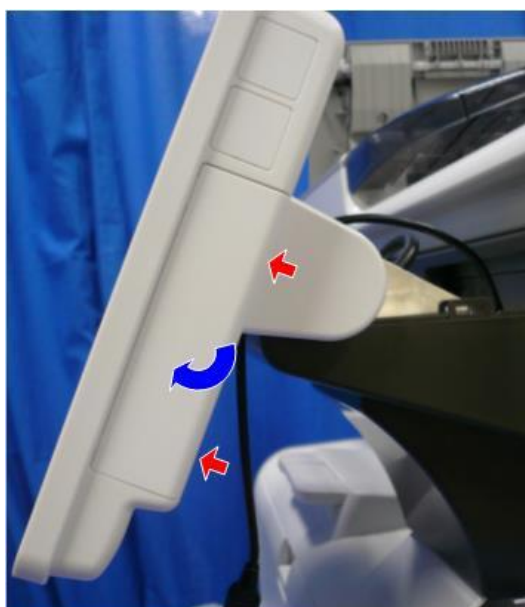
m0a0k1045

- 22.** Attach the operation panel lower cover [A] to the operation panel [B], with the USB cable [C] passing through the cutout [D].



m0a0k1046

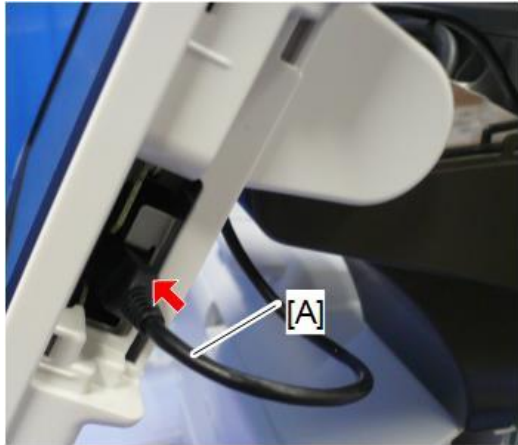
- 23.** Remove the side cover of the operation panel.



m0a0k1047

- 24.** Connect the USB cable [A] to the operation panel.

2.Installation

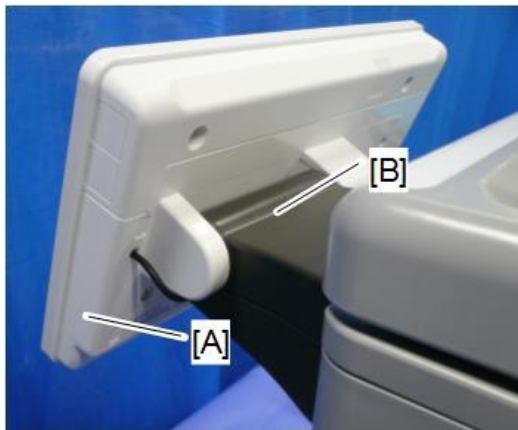


×1

m0a0k1048

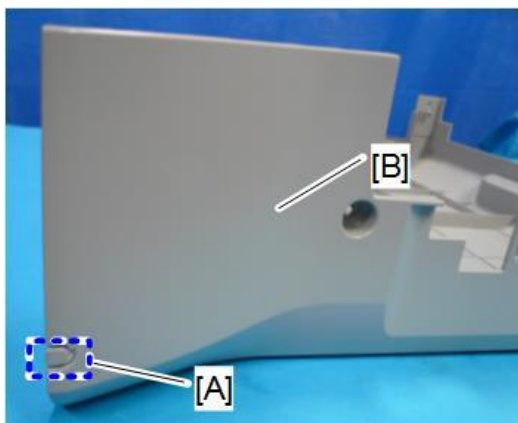
25. Attach the side cover of the operation panel [A].

26. Attach the operation panel upper cover [B].

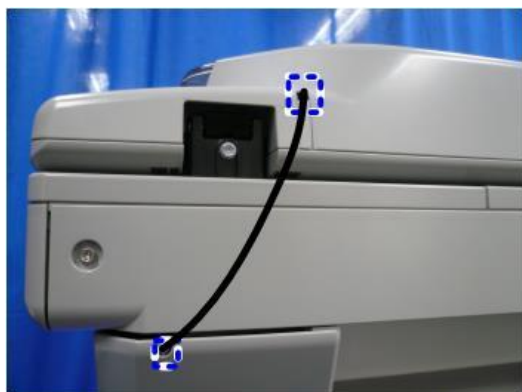


m0a0k1049

27. Remove the tab [A] from the right cover [B] to create a cutout. Then attach the right cover, with the USB cable passing through the cutout.



m0a0k1050



m0a0k1051

Enhanced Security HDD Option Type M10 (D792-09)

Accessory Check

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



d191b0076

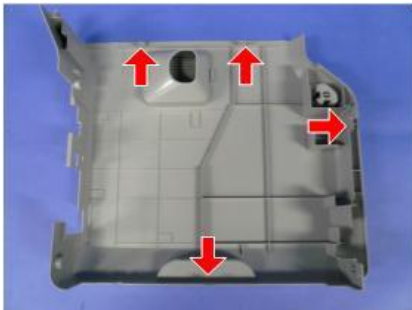
Installation Procedure

⚠ CAUTION

When installing this option, turn OFF the main power and unplug the power cord from the wall socket. If installing without turning OFF the main power, an electric shock or a malfunction may occur.

↓ Note

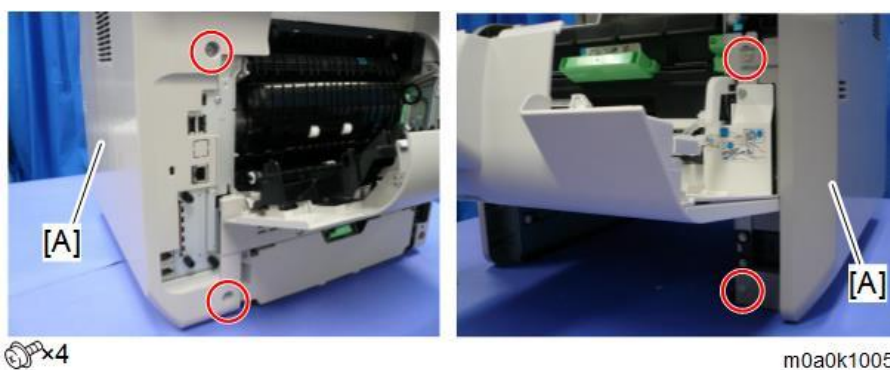
- There are four tabs on the back of the right cover.



m0a0k1004

1. Open the front cover.
2. Open the rear cover.

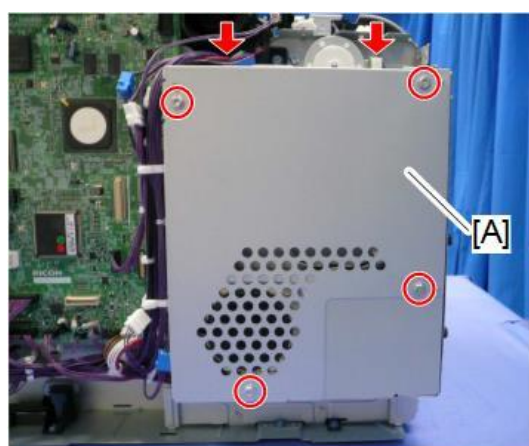
3. Remove the right cover [A].



⌀x4

m0a0k1005

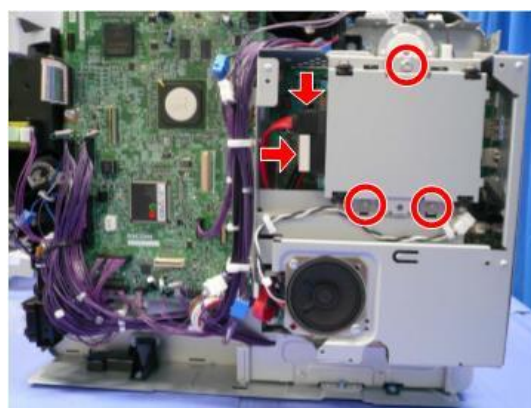
4. Remove the controller box cover [A].



⌀x4

m0a0k0024

5. Remove the standard HDD installed on the machine.



⌀x3 ⌀x2

m0a0k0039

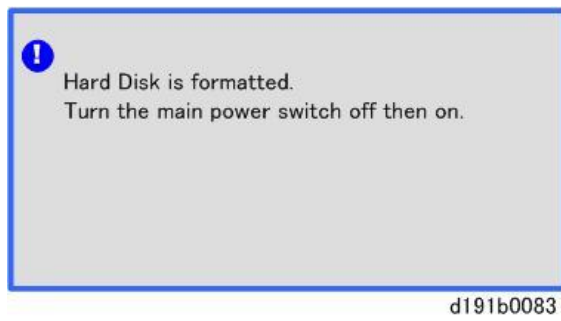
6. Separate the standard HDD [A] from the bracket [B].



! Formatting Hard Disk...
Please wait, also make sure that the main power switch is not turned off.

76

2. Touch [Format].



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.



4. Turn the main power OFF and back ON again after the message tells you formatting is finished.
5. Enter the SP mode.
6. Turn the main power OFF and back ON again.
7. 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.

SD Card Appli Move

Overview

There are only two SD card slots (one of them is a service slot).

However, if multiple SD card applications are merged, three or more SD card applications can be used simultaneously. The SD card merge function enables the use of three or more functions within the capacity of two SD cards by physically transferring the function of one SD card to other SD cards (all SD card options can be stored in two SD cards).

However, because SD card applications are licensed, an SD card license will be transferred to the target SD card after merging. The original SD card cannot be used even if it is inserted into the machine.

A process to prevent illegal copying is also performed.

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

Notes on Using the SD Merge Function

- 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 moved the application program from one card to another card.
- Do not use an SD card that has been used before for other purposes. Normal operation is not guaranteed when such an SD card is used.
- An SD card, which becomes empty after the data in it has been moved to another card, cannot be reused.
- Keep the empty source card (card which has had its data moved to another card) by, for example, affixing it near the SD card slot using adhesive tape. This is 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.

↓ Note

- Do not move OCR Unit to another SD card.

SD Card Applications

SD Card Option	Card Size Capacity	Movable to another SD card	Target SD card	Remarks
Data Overwrite Security Unit Type M19	512Mb	Yes	Yes	Available for use in Slot 1 (Upper) and Slot 2 (Lower)
XPS Direct Print Option Type M27	512Mb	Yes	Yes	
OCR Unit Type M13	512Mb	No	No	

- Both Slots 1 and 2 are vacant when the machine is shipped from the factory.
- OCR Unit Type M13 cannot be moved to another SD card and is unavailable for target SD card.

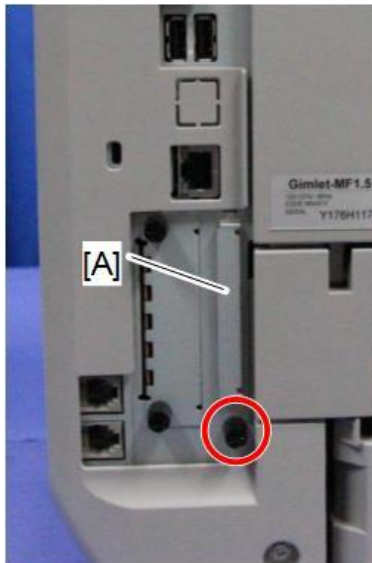
Move Exec

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

★ Important

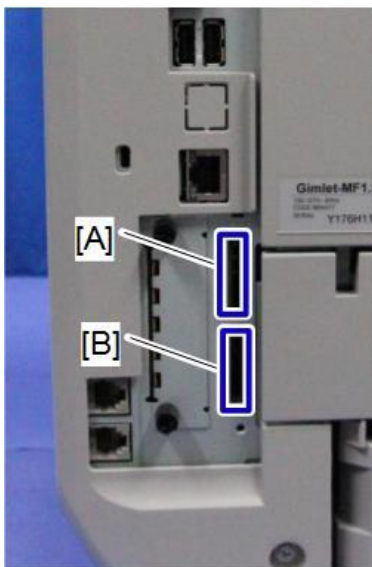
- Do not turn ON the write protect switch of the system SD card or application SD card on the machine. If the write protect switch is ON, a download error (e.g. Error Code 44) will occur during a firmware upgrade or application merge.

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



m0a0k1025

3. Make sure that a target SD card is in SD Card Slot 1 [A]. The application program is moved to this SD card.



m0a0k1026

4. Insert the source SD card with the application program into SD Card Slot 2 [B].
The application program is copied from this source SD card.
5. Turn the main power ON.

2. Installation

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 power OFF.
10. Remove the source SD card from SD Card Slot 2 [B].
11. Attach the SD card slot cover.
12. Turn the main power ON.
13. Check that the application programs run normally.

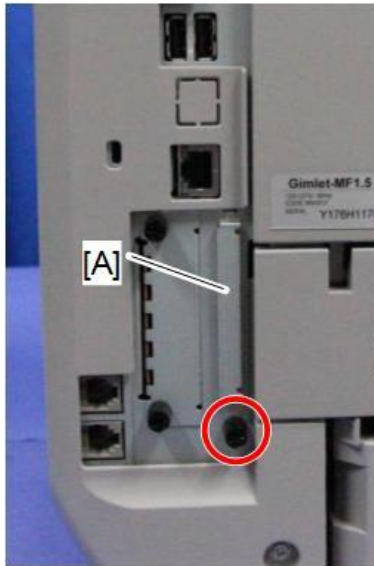
Undo Exec

"Undo Exec" (SP5-873-002) lets you move application programs from an SD card in SD Card Slot 1 (upper) back 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

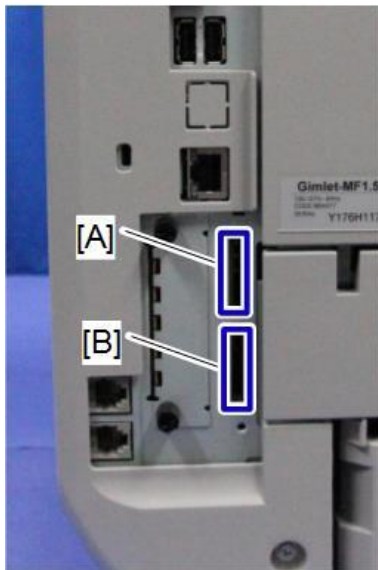
- Do not turn ON the write protect switch of the system SD card or application SD card on the machine. If the write protect switch is ON, a download error (e.g. Error Code 44) will occur during a firmware upgrade or application merge.

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



m0a0k1025

3. Insert the integrated SD card into Slot 1 [A].



m0a0k1026

4. Insert the SD card which became empty after merging into Slot 2 [B].
5. Turn the main power ON.
6. Enter the SP mode.
7. Select SP5-873-002 "Undo Exec."
8. Follow the messages shown on the operation panel.
9. Turn the main power OFF.
10. Remove the SD card from SD Card Slot 2 [B].
11. Attach the SD card slot cover.
12. Turn the main power ON.
13. Check that the application has been deleted.

Security Settings

Security Function Installation

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 that you activate 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 HDD yet (for example, Address Book data, image data).

If the customer wishes to activate the Data Overwrite Security and HDD Encryption unit on a machine that is already running, it is recommended that you 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 disk, or of the encryption key is changed, this process can take 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 hard disk will be damaged and all data on it will be unusable.

Print 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, not the "NVRAM" or EEPROM on the BiCU.

Please use the following procedure when the Data Overwrite Security and HDD Encryption are reinstalled.

Data Overwrite Security

Before You Begin the Procedure

1. Make sure that the following settings (1) to (3) are not at their factory defaults.
 - (1) Supervisor login password
 - (2) Administrator login name

(3) Administrator login password

If any of these settings is at a factory default, ask the customer to change the settings before you perform the installation procedure.

2. Make sure that "Machine Management" is ON.

[User Tools/Counter] key -> [System Settings] -> [Administrator Tools] -> [Administrator Authentication Management] -> [Machine Management] -> [On]

If this setting is OFF, ask the customer to change the setting to ON before you perform the installation procedure.

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

[User Tools/Counter] key -> [System Settings] -> [Administrator Tools] -> [Administrator Authentication Management] -> [Machine Management] -> [On] -> [Select available settings] -> [Administrator Tools]

If this setting is disabled (not selected), ask the customer to enable (select) the setting before you perform the installation procedure.

Installation Procedure

1. Connect the network cable if necessary.
2. Turn ON the main power.
3. Enter the SP mode.
4. Execute SP5-878-001.
5. Exit the SP mode and turn OFF the main power.
6. Turn ON the power.
7. Execute SP5-990-005 (SP print mode Diagnostic Report).
8. Enter the User Tools mode, and select [System Settings] - [Administrator Tools] - [Auto Erase Memory Setting] - [On].
9. Exit the User Tools mode.

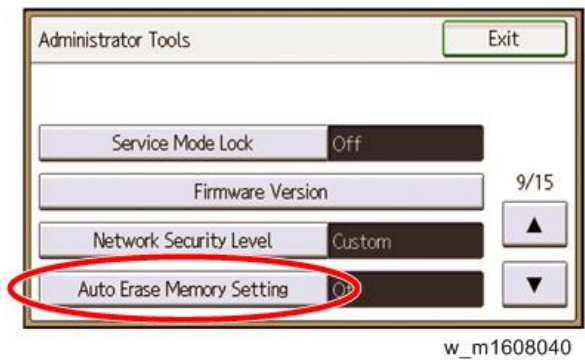
Using Auto Erase Memory

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 [System Settings].
3. Press [Administrator Tools].
4. Press [▼] to display Page 9.

2.Installation

5. Press [Auto Erase Memory Setting].



6. Press [On].

7. Select the method of overwriting.

If you select [NSA] or [DoD], proceed to step 10.

If you select [Random Numbers], proceed to step 8.

8. Enter the number of times that you want to overwrite using the number keys, and then press [#].

9. Press [OK]. Auto Erase Memory is set.

10. Log out.

11. Check the display and make sure that the overwrite erase icon appears.

12. 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.

HDD Encryption

Before You Begin the Procedure:

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

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

These settings must be set up by the customer before the HDD Encryption unit can be installed.

2. Make sure that "Machine Management" is ON.

[User Tools/Counter] key -> [System Settings] -> [Administrator Tools] -> [Administrator Authentication Management] -> [Machine Management] -> [On]

If this setting is OFF, ask the customer to change the setting to ON before you perform the installation procedure.

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

[User Tools/Counter] key -> [System Settings] -> [Administrator Tools] -> [Administrator Authentication Management] -> [Machine Management] -> [On] -> [Select available settings] -> [Administrator Tools]

If this setting is disabled (not selected), ask the customer to enable (select) the setting before you perform the installation procedure.

Installation Procedure

1. Turn ON the main power.
2. Enter the SP mode.
3. Execute SP5878-002.
4. Exit the SP mode after "Completed" is displayed.
5. Turn OFF the main power.

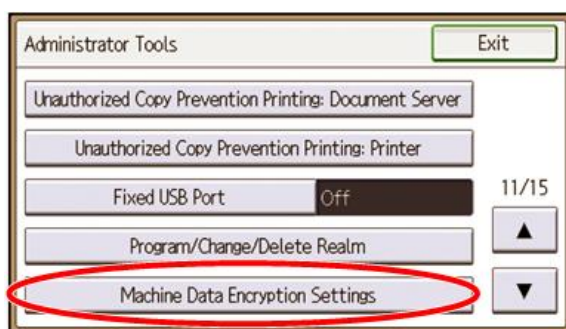
Enable Encryption Setting

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

★ 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.

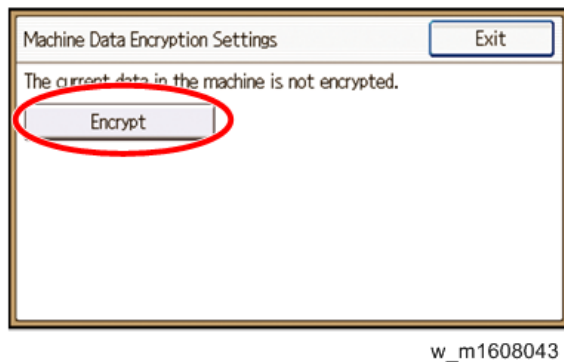
1. Log in as the machine administrator from the control panel.
2. Press [System Settings].
3. Press [Administrator Tools].
4. Press [▼] to display Page 11.
5. Press [Machine Data Encryption Settings].



w_m1608042

2. Installation

6. Press [Encrypt].



7. Select the data to be carried over to the hard disk and not be reset.
To carry all of the data over to the hard disk, 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].
8. Select the backup method.
If you have selected [Save to SD], 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 Ppr], press the [Start] key. Print out the machine's data encryption key.
9. Press [OK].
10. Press [Exit].
11. Press [Exit]
12. Log out.
13. Turn off the main power switch, and then turn the main power switch 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 switches off again.

Check the Encryption Settings

1. Press the [User Tools/Counter] key.
2. Press [System Settings].
3. Press [Administrator Tools].
4. Press [Machine Data Encryption Settings].
5. If the following message appears, the encryption settings have been enabled.
"The data in the machine has been encrypted. Select item."

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

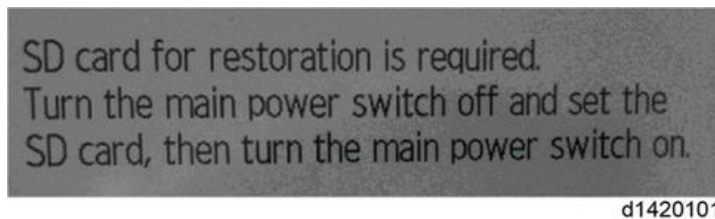
- The encryption key is required for data recovery if the machine malfunctions. Be sure to store the encryption key safely for retrieving backup data.

1. Log in from the control panel as the machine administrator.
2. Press [System Settings].
3. Press [Administrator Tools].
4. Press [▼] to display Page 11.
5. Press [Machine Data Encryption Settings].
6. Press [Print Encryption Key].
7. Select the backup method.
 If you have selected [Save to SD], load an SD card into the media slot on the side of the control panel and press [OK]; once the machine's data encryption key is backed up, press [Exit].
 If you have selected [Print on Ppr], press the [Start] key. Print out the machine's data encryption key.
8. Press [Exit].
9. 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, "xxxxxxxxxx" (11 digits).
4. Create a text file called "key_xxxxxxxxxx.txt" and save it in the "xxxxxxxxxx" folder. Write the encryption key in the text file.

/restore_key/xxxxxxxxxx/key_xxxxxxxxxx.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_xxxxxxxxxx.txt" file. (The function of back-up the encryption key to the SD card directly is provided 11A products or later.)

5. Turn ON the 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 Slot 2 (the lower slot).
9. Turn ON the main power.

2. Installation

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 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 Slot 2 (the lower slot).

7. Turn ON the main power.

The machine automatically clear the HDD encryption.

8. Turn OFF the main power when the machine has returned to normal status.

9. Remove the SD card from 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 in User Tools key.

Settings for @Remote Service

Note

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

Points to Check Before Making @Remote Settings

1. The setting of SP5816-201 in the mainframe must be "0".
2. Print the SMC with SP5990-002 and then check if a device ID2 (SP5811-003) is correctly programmed.
 - 6 spaces must be put between the 3-digit prefix and the following 8-digit number (e.g. xxx____xxxxxxxx).
3. The following settings must be correctly programmed.
4. If a proxy server is available, configure the following SP settings.
 - Use Proxy (SP5816-062) Set to "1: Enable".
 - Proxy server IP address (SP5816-063)
 - Proxy server Port number (SP5816-064)
 - Proxy User ID (SP5816-065)
 - Proxy Password (SP5816-066)
5. Get a Request Number.

Execute the @Remote Settings

1. Enter the SP mode.
2. Using SP5816-202, input the request number which you have obtained from @Remote Center GUI, and then enter [OK].
3. Confirm the request number, and then execute SP5816-203.
4. Check the confirmation result using SP5816-204.

Value	Meaning	Solution/ Workaround
0	Succeeded	-
3	Communication error (proxy enabled)	Check the network condition.
4	Communication error (proxy disabled)	Check the network condition.
5	Proxy error (Illegal user name or password)	Check proxy user name and password.
6	Communication error	Check the network condition.
8	Other error	See "SP5816-208 Error Codes" below.
9	Request number confirmation executing	Processing... Please wait.
11	Request number error (Data is already registered under this number.)	Check the request number again.
12	Request number error (invalid parameter)	Check the request number again.

5. Using SP5816-205, check that the screen displays the location Information only when it has been input at the

2. Installation

Center GUI.

6. Execute the registration with SP5816-206.

7. Check the registration result using SP5816-207.

Value	Meaning	Solution/ Workaround
0	Succeeded	-
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.
9	Request number confirmation executing	Processing... Please wait.
10	Request number error (The applicable device was not registered when moving the machine was requested.)	-
11	Request number error (Data is already registered under this number.)	Check the request number again.
12	Request number error (invalid parameter)	Check the request number again.

8. Exit the SP mode.

SP5816-208 Error Codes

Cause	Code	Meaning	Solution/ Workaround
Operation Error, Incorrect Setting	- 12002	An Inquiry or registration attempted without acquiring a request number.	Obtain a Request Number before inquiry or registration.
	- 12003	Attempted registration without execution of a confirmation and no previous registration.	Perform Confirmation before attempting registration.
	- 12004	Attempted setting with illegal entries for certification and ID2.	Check ID2 of the machine.
	- 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 the request number.

Cause	Code	Meaning	Solution/ Workaround
	- 12008	Update certification failed because mainframe was in use.	Check the machine status. If the machine 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 machine.
	- 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	
	-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 machine.
	-2398	Incorrect request number format	Check the request number.

3. Preventive Maintenance

Preventive Maintenance Tables

See "Appendices" for the following information:

- Preventive Maintenance

Image Quality Standards

Engine

Item	Specification	Remarks
Assured Image Area	Leading edge: 4.3 mm Left/Right: 4.3 mm Trailing edge: 4.3 mm	Envelopes Leading edge: 15 mm Left/Right: 10 mm Trailing edge: 15 mm
Magnification Error	± 0.75% or less	Not applicable to the back of the paper when performing duplex printing.
Perpendicularity	± 0.7 mm/100 mm	
Linearity	± 0.25 mm/100 mm	
Parallelism	In an office environment: ± 1.0mm or less In other environments: ± 1.5mm or less	

Copy

Item	Specification	Remarks
Resolution	100%/Enlargement: Min 3.6 lines/mm or more Reduction: Min 3.6 × M lines /mm or more	Not applicable when using the SPDF
Assured Image Area	Leading edge: 4.3 mm Left/Right: 4.3 mm Trailing edge: 4.3 mm	Envelopes Leading edge: 15 mm Left/Right: 10 mm Trailing edge: 15 mm
Magnification Error	100% Main: ± 1.25% or less Sub: ± 1.25% or less Reduced-size Both: ± 1.25% or less Enlarged-size Both: ± 1.25% or less	Not applicable to the back of the paper when performing duplex printing.
Perpendicularity	± 1.2 mm/100 mm or less ± 2.4 mm/200 mm or less	
Missing Image Area	Left: 2.0 ± 1.5 mm Right: 2.0 mm Leading edge: 3.0 ± 1.5 mm	

3.Preventive Maintenance

Item	Specification	Remarks
	Trailing edge: 3.0 mm	

SPDF

Item	Specification	Remarks
Magnification Error	100% SEF: ± 1.75% or less Reduction/Enlargement SEF: ± 1.75% or less	

↓ Note

- To check whether the problem is with the image or is due to another issue, print the test pattern.

Paper Transfer Quality Standards

Engines

Item	Specification	Remarks
Margin position	Single Side: Main Scan: 0 ± 2.0 mm Sub Scan: 0 ± 1.5 mm Back of the paper when performing duplex printing: Main Scan: 0 ± 2.0 mm Sub Scan: 0 ± 1.5 mm	
Skew	Single Side: ± 1.2 mm/200 mm or less (B5 SEF or more) ± 1.0 mm/100 mm or less (Less than B5 SEF) Duplex: ± 1.0 mm/100 mm or less (B5 SEF or more) ± 1.5 mm/100 mm or less (Less than B5 SEF)	Not applicable to paper fed from the bypass tray (Reference value when using the bypass tray: ± 1.0 mm/100 mm)
Curling after fusing	20 mm or less from the leading and trailing edges with a radius of 40 mm or greater.	In an office environment

SPDF

Item	Specification	Remarks
Margin position	Main Scan: 0 ± 2.0 mm Sub Scan: 0 ± 1.5 mm	
Skew	Single Side: ± 2.0 mm/200 mm or less (B5 SEF or more) ± 2.5 mm/200 mm or less (Less than B5 SEF) Duplex: ± 2.5 mm/100 mm or less	Paper thickness (ream weight) Single Side: 45-110 kg Duplex: 45-90 kg

These standards are determined using standard paper under standard conditions.

Values may vary depending on environmental conditions such as temperature, humidity, use of used paper, etc.

4. Replacement and Adjustment

General Cautions

Notes on the Main Power Switch

The main power switch 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 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.

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.

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, inside the machine for a while there is still residual charge. 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, be sure to press the main power switch. The charge remaining in the machine will then be 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 while 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 wall outlet, 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 while 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 left side of the machine.



m171m0003

After the shutdown process, the main power is turned OFF automatically.

When shutdown is completed:

Main power LED: OFF

Operation panel LED: OFF

2. Disconnect the power cord.
3. Wait 3 minutes (this is the waiting time if you will remove the rear cover and access the interior of the machine in order to, for example, take out the controller board).

Note

If some LEDs on any of the boards are blinking or lit, current is still flowing.

How to start from shutdown

To start the machine, press the main power switch. However, if you press the main power switch between the beginning and the end of a shutdown, the machine will not start.

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.

Normally, do not execute a forced shutdown.

Important

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

Special Tools

Part Number	Description	Q'ty
B6455010	SD card 128MB	1
B6455020	SD card 1GB	1
M1091948	Lens cleaner	1

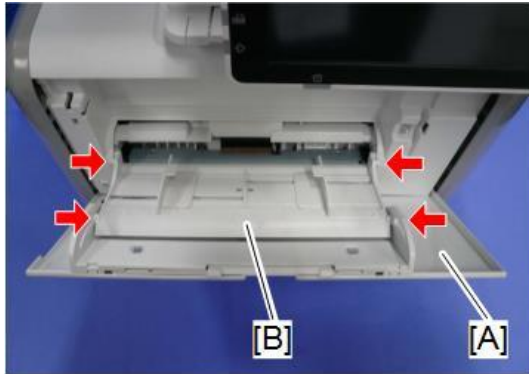
Note

- A PC is required for creating the Encryption key file on an SD card when replacing the controller board for a model in which HDD encryption has been enabled.

Exterior Covers

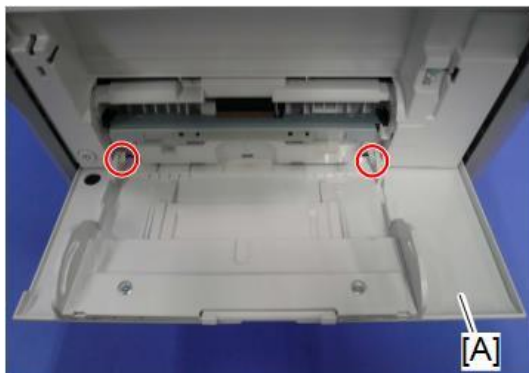
Front Cover Unit

1. Remove the paper cassette
2. Open the bypass tray [A].
3. Release the four hinges indicated below to detach the paper guide plate [B].



m0a0k0001

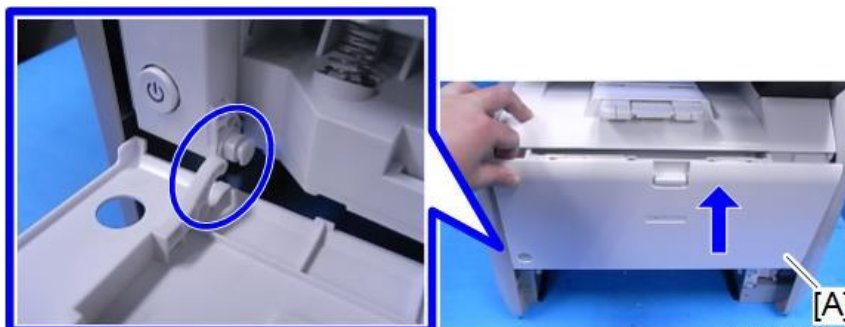
4. Remove the clip rings on the bypass tray [A].



x2

m0a0k0002

5. Release both end hinges of the bypass tray [A] to detach it.



m0a0k1007

Note

- To remove the bypass tray, lift the left hinge first to release while lifting the bypass tray.
- The left hinge is C-cut.

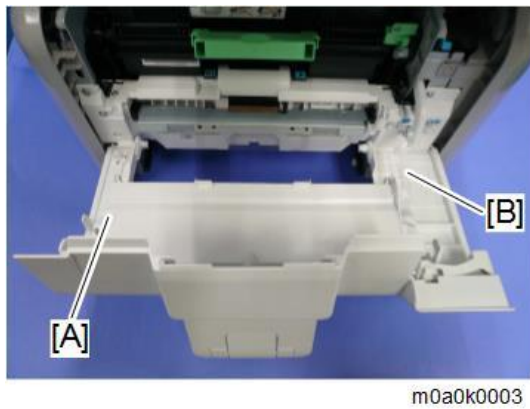
6. Remove the screw on the front cover [A] in order to release the strap that attaches the front cover to the

4.Replacement and Adjustment

machine.(🔑 x1)



- Z. Open the front cover [A] and release the strap [B].



8. Release both side hinges to detach the front cover [A].



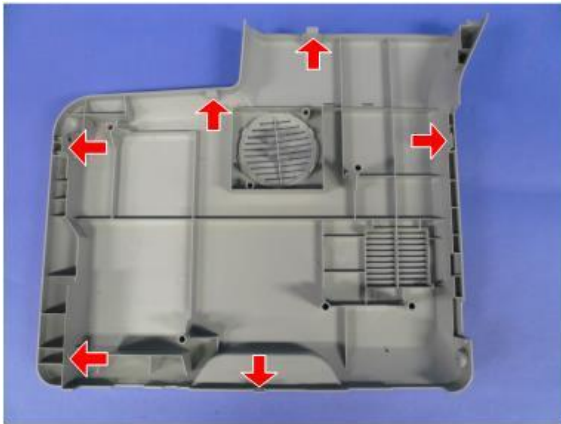
Note

- Release the left hinge [B] first.

Left Cover

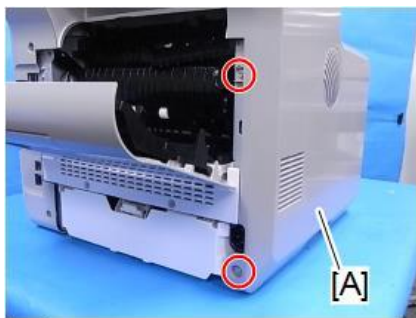
↓ Note

- There are six tabs on the back of the left cover.

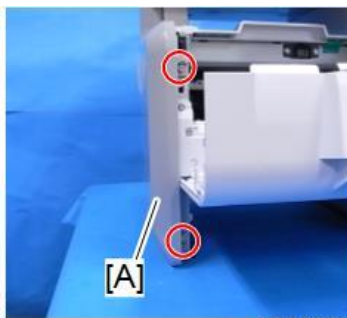


m0a0k1034

1. Open the front cover.
2. Open the rear cover.
3. Remove the left cover [A].



x4



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Right Cover

↓ Note

- There are four tabs on the back of the right cover.

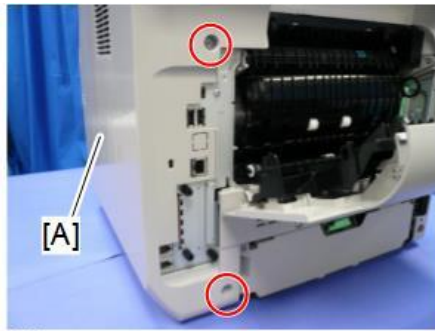


m0a0k1004

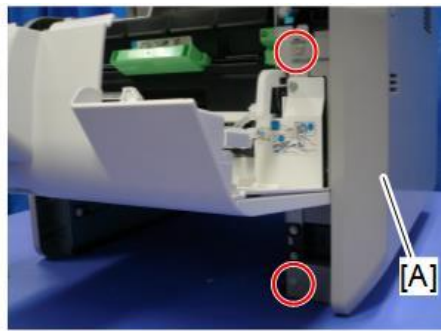
1. Open the front cover.
2. Open the rear cover.

4.Replacement and Adjustment

3. Remove the right cover [A].



x4



m0a0k1005

Rear Cover, Rear Lower Cover

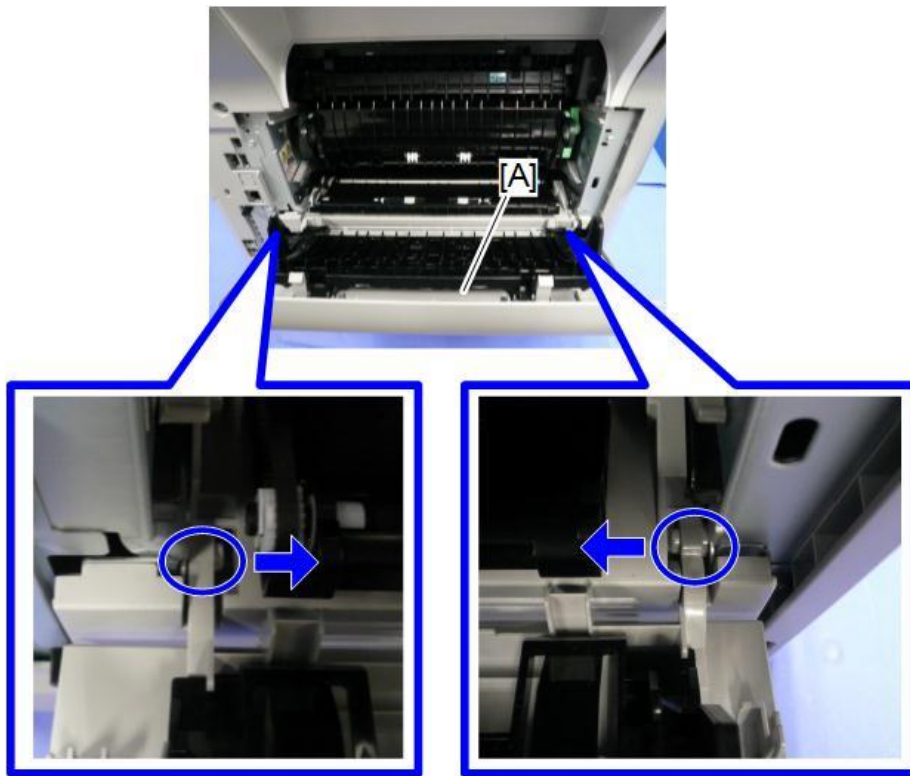
1. Remove the screws on the rear lower cover [A].
2. Open the rear cover [B].



x2

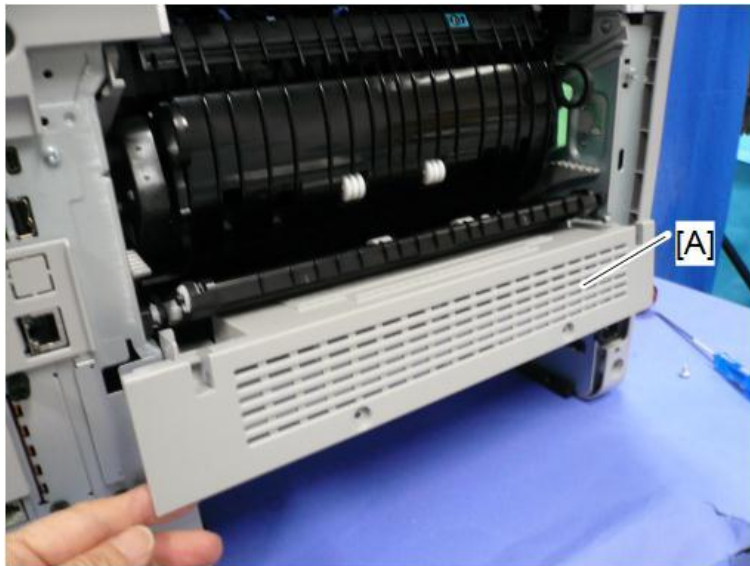
m0a0k1001

3. Release both side hinges to detach the rear cover [A].



m0a0k1002

4. Remove the rear lower cover [A].



m0a0k1003

Upper Cover

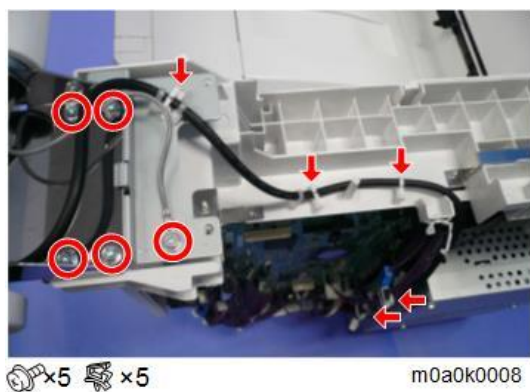
1. Remove the SPDF and scanner unit. ([Scanner Unit \(with SPDF\)](#))

4.Replacement and Adjustment

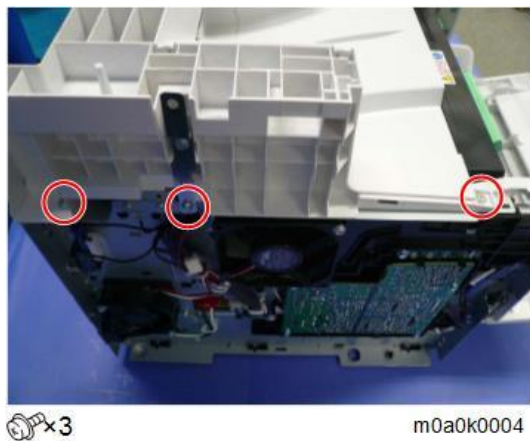
2. Disconnect the connector on the BiCU [A].



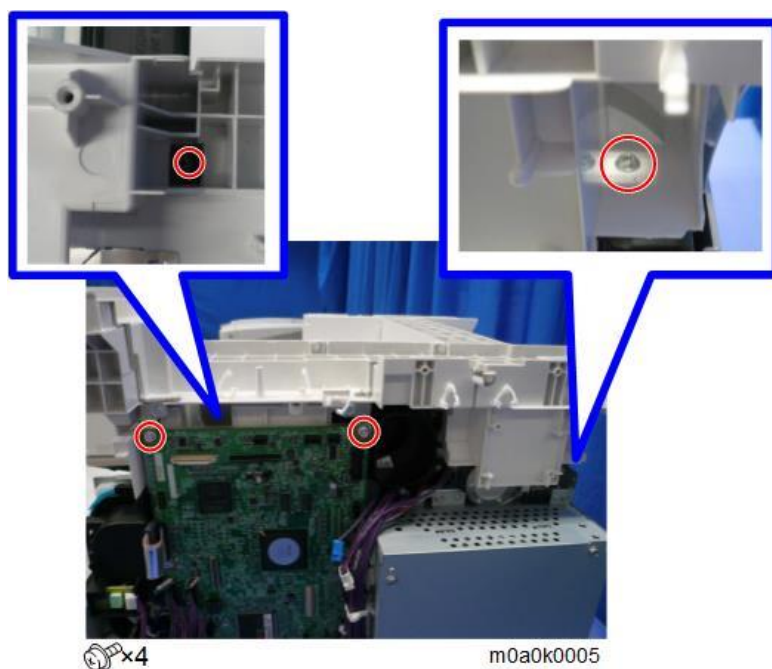
3. Remove the operation panel [A].



4. Remove the screws on the left side of the upper cover [A].



5. Remove the screws on the right side of the upper cover [A].

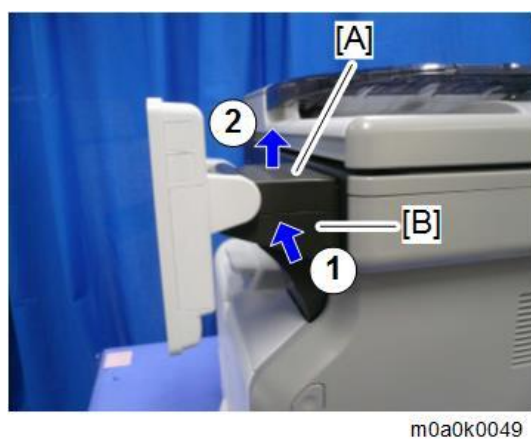


6. Remove the upper cover [A].



Operation Panel

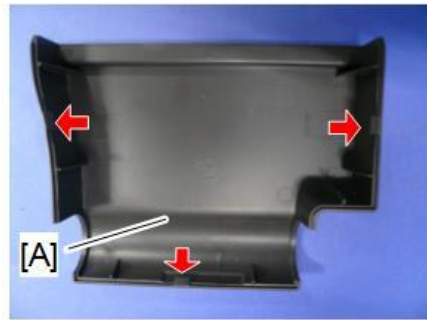
1. Place a service mat on top of the SPDF.
2. Remove the operation panel upper cover [A] and operation panel lower cover [B].



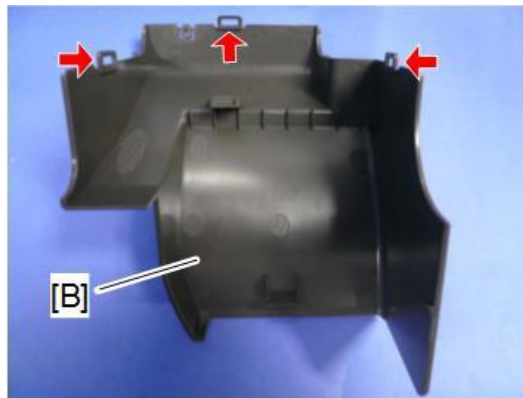
4.Replacement and Adjustment

Note

- There are three tabs on the upper cover [A] and lower cover [B].

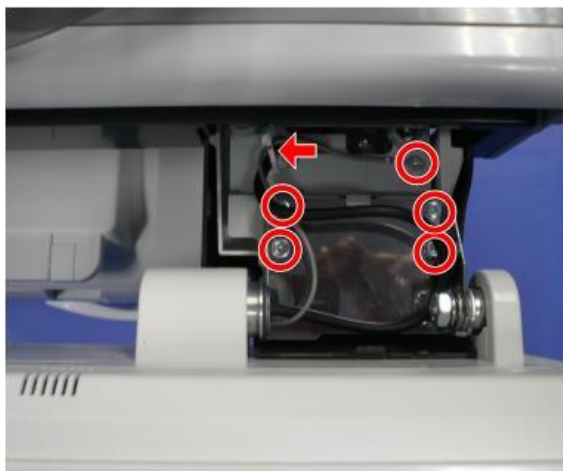


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m0a0k0051

3. Remove the hinge of the operation panel.



⚙️ x5 🛠️ x1

m0a0k1020

4. Remove the operation panel [A] and place it on the service mat.

5. Remove the rear cover [B] of the operation panel.



6. Release the clamp and disconnect the connector.



Note

This section explains how to remove the Smart Operation Panel from the machine. For details about disassembling the Smart Operation Panel, see the service manual for Smart Operation Panel 2nd Generation.

LED Optics

★ Important

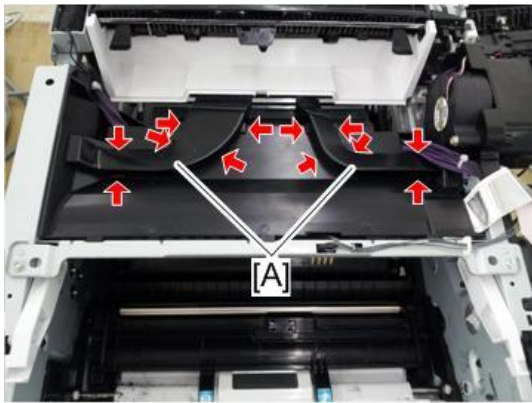
Turn OFF the main power and disconnect the power cord before you start any of the procedures in this section.

LED Unit

★ Important

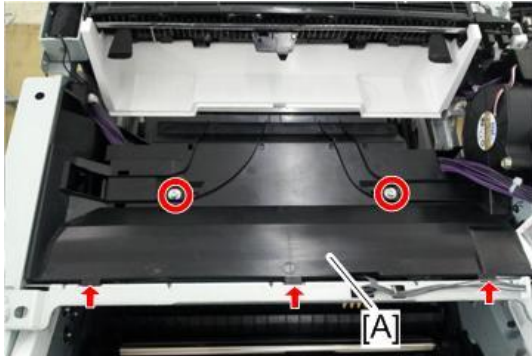
- Be sure to clean the lens of the LED head after replacing the LED unit or if you inadvertently touch the lens when replacing another unit.

1. Remove the PCDU. (PCDU)
2. Remove the upper cover. (Upper Cover)
3. Remove the duct [A]. (Hook x 12)



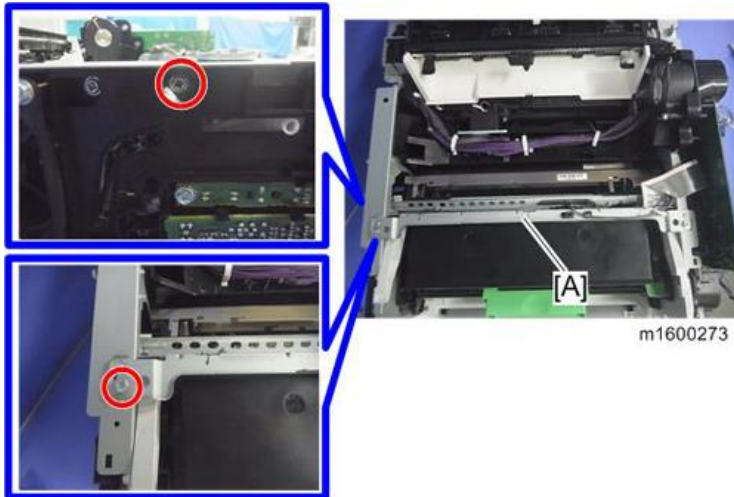
m1600271

4. Remove the upper inner cover [A] (Screw x2, Hook x3)



m1600272

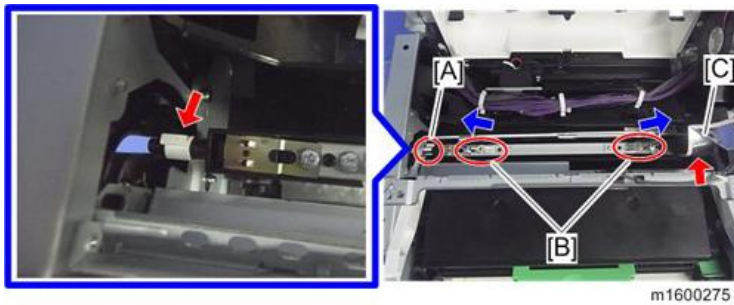
5. Remove the securing screws of the front stay [A] (⌀ x2).



6. Push the LED unit [A] in.



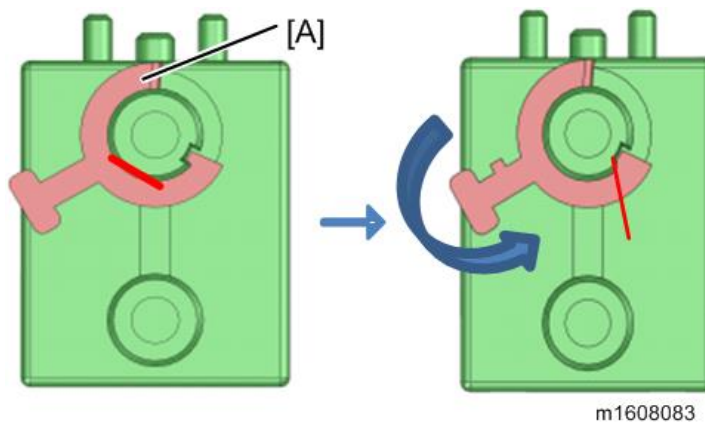
- Z. Remove the spacer [A], ground wires [B], and flat cable [C] from the LED unit.



4.Replacement and Adjustment

Note

- The spacer [A] has a protruding part that locks with the groove in the shaft to secure it. When you remove the spacer, pull its handle downward as if to rotate the spacer slightly.

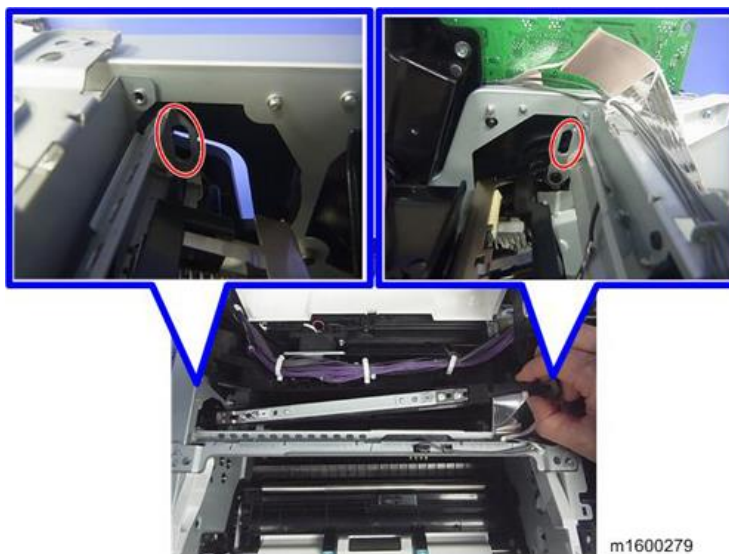


8. Slightly flex the side plates outward and pull the LED unit [A] out of the machine.

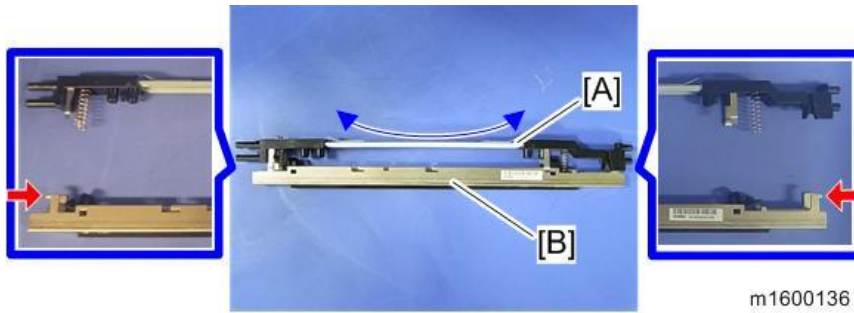


Note

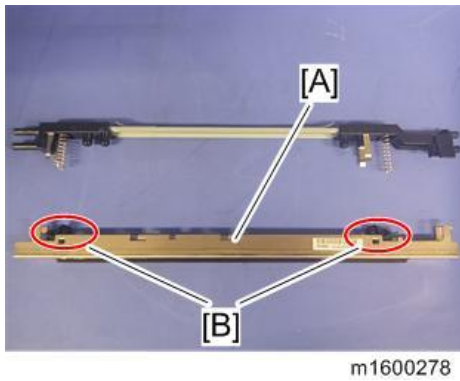
- When attaching the LED unit, make sure that the LED unit's shaft ends (on the upper part) fit into the holes in the LED unit holder. Be careful not to force the LED unit in. Doing so may cause the LED unit holder's springs to come off.



9. Bend the stay [A] to release the left and right tabs, and then separate the stay from the LED head [B].

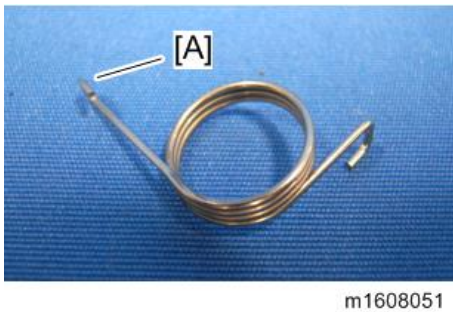


10. Remove the two spring holders [B] from the LED head [A].



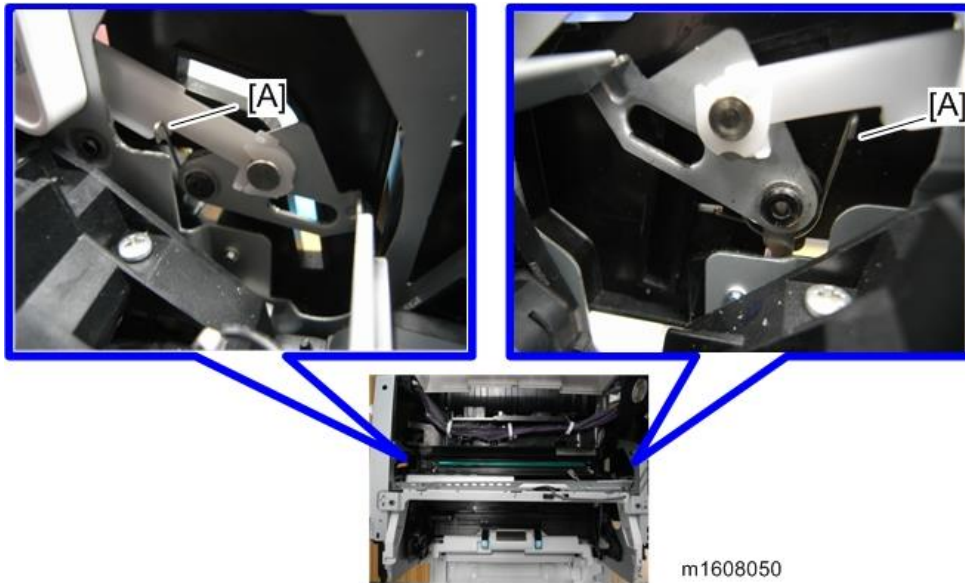
Re-engaging Disengaged Springs

If the spring hook [A] of the LED unit holder is disengaged, re-engage it according to the following procedure:

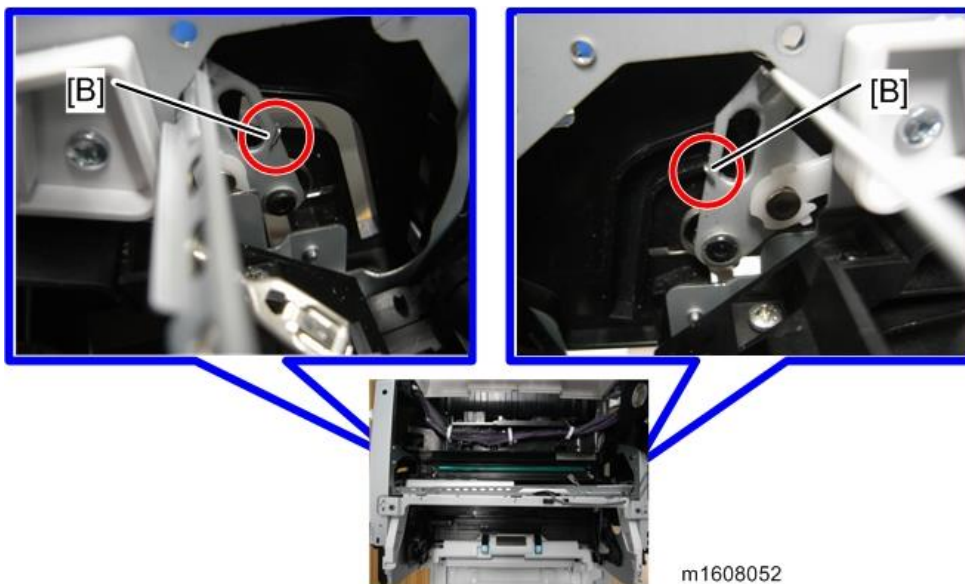


4.Replacement and Adjustment

Hook disengaged [A]



Hook correctly engaged [B]



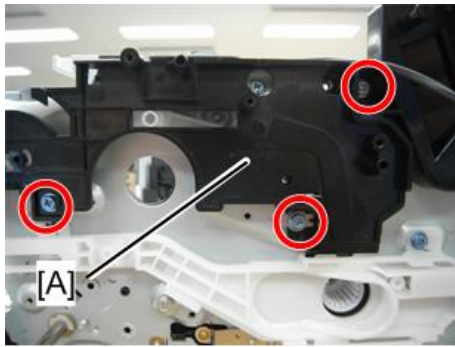
If the hook is engaged correctly, the LED unit holder is raised to the front by the spring.

Right side

1. Remove the right cover, and then remove the gear unit. ([Gear Unit](#))
2. Loosen the screws on the cover [A]. (⚙️ x3).

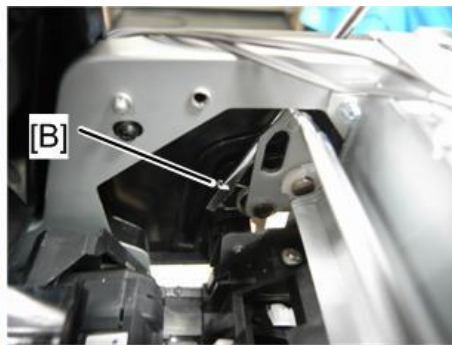
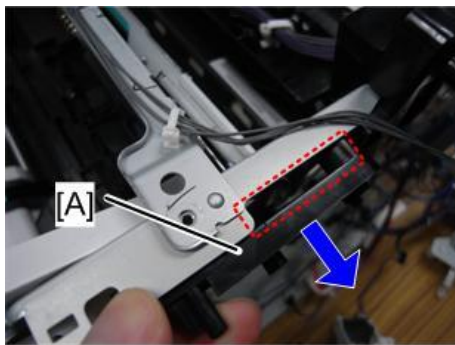
Note

- Do not remove the screws. Only loosen them enough to insert tweezers or a screwdriver into the gap.

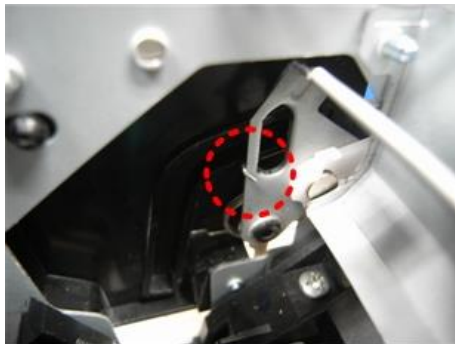


m1608055

3. Insert tweezers or a screwdriver into the gap between the cover [A] and frame and re-engage the spring hook [B] in the correct position.



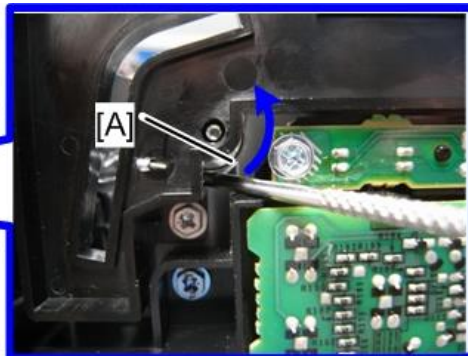
m1608056



m1608057

Left side

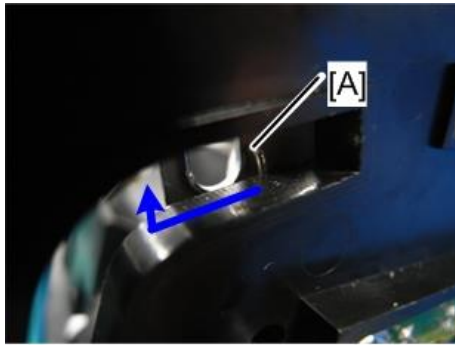
1. Remove the left cover, and then raise the spring using tweezers or a screwdriver inserted through the gap at the lower right of the spring [A].



m1608053

4.Replacement and Adjustment

2. You can check the position of the hook [A] through the guide of the LED unit. Using tweezers or a screwdriver, re-engage the hook in the correct position.



m1608054



m1608058

PCDU

PCDU

1. Open the front cover [A].



m0a0k0009

2. Hold the grip to pull the PCDU [A] out.

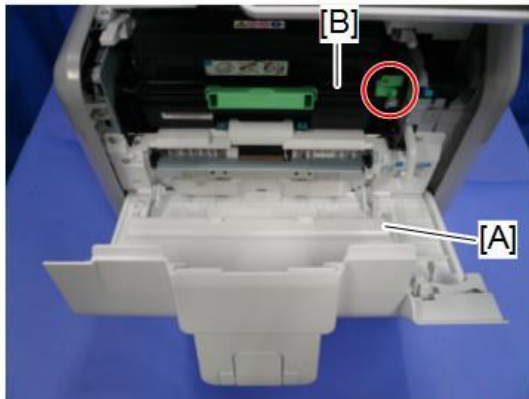


m0a0k0010

Toner Cartridge

Toner Cartridge

1. Open the front cover [A] and push down the lever of the toner cartridge [B].



m0a0k0011

Note

- The release lever works in two steps. To release the lock, push down the release lever to the horizontal position.



m1600280

2. Hold the grip to pull the toner cartridge [A] out.

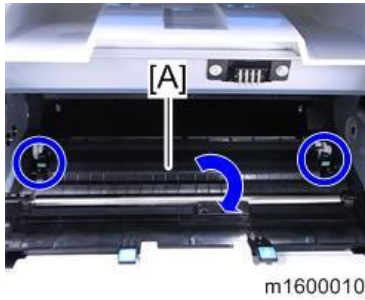


m0a0k0012

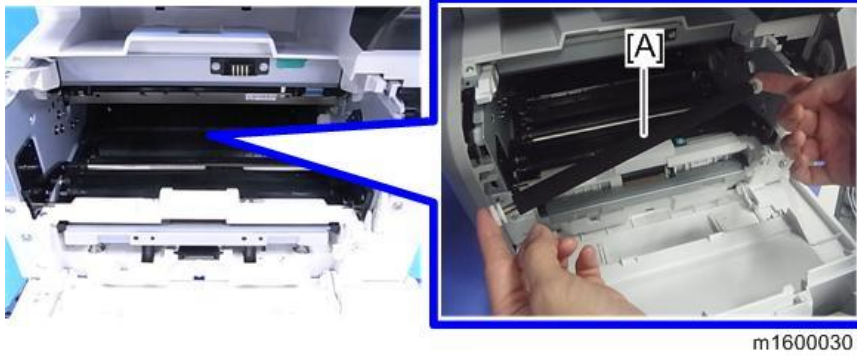
Image Transfer

Image Transfer Roller

1. Remove the PCDU. (PCDU)
2. Pinch both green ends of the guide [A] and pull it towards you.



3. Remove the image transfer roller [A].



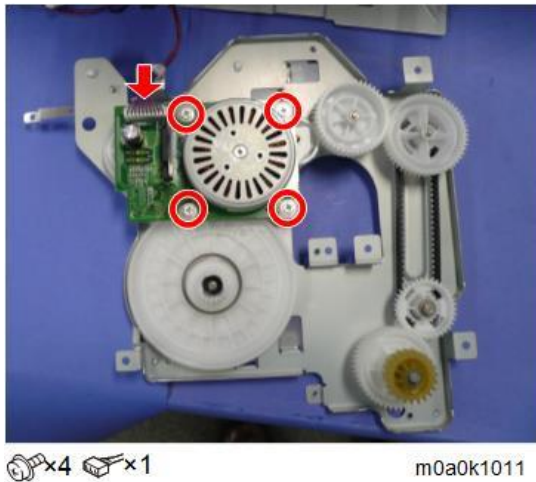
Drive Units

⚠ CAUTION

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

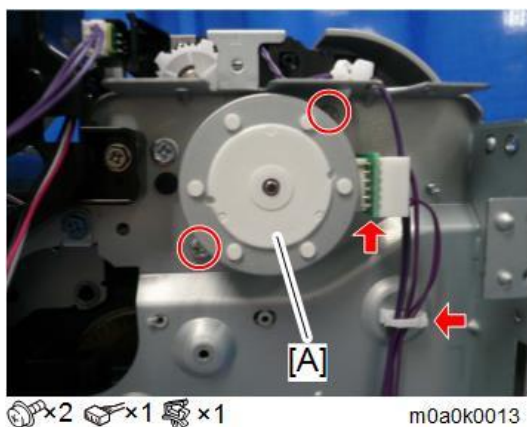
Main Motor

1. Remove the right cover. ([Right Cover](#))
2. Remove the drive unit. ([Drive Unit](#))
3. Remove the main motor [A].



Duplex Exit Motor

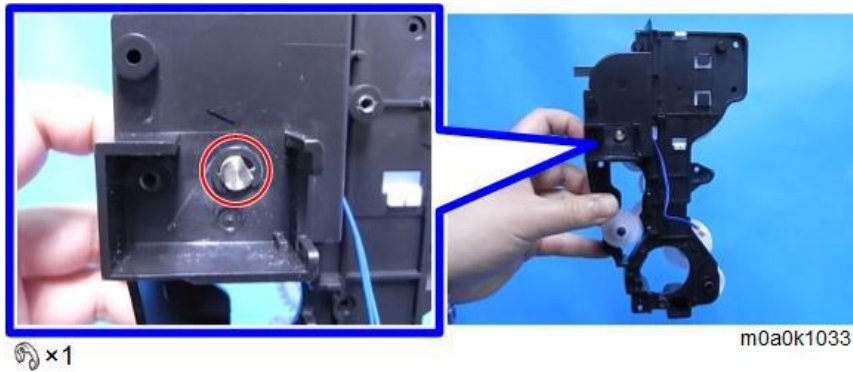
1. Remove the upper cover. ([Upper Cover](#))
2. Remove the duplex exit motor [A].



Toner Supply Clutch

1. Remove the gear unit ([Gear Unit](#))

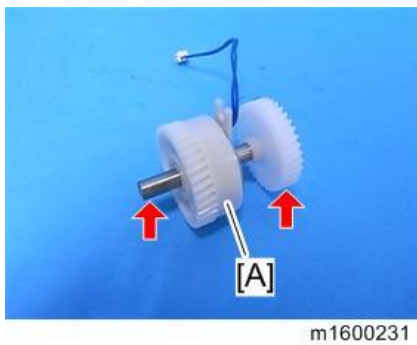
2. Remove the temperature/humidity sensor ([Temperature/Humidity Sensor](#))
3. Remove the E-ring.



4. Remove the toner supply clutch [A] with shaft. (Gear x1)



5. Remove all parts attached to the toner supply clutch [A]. (Gear x1, Shaft x1)

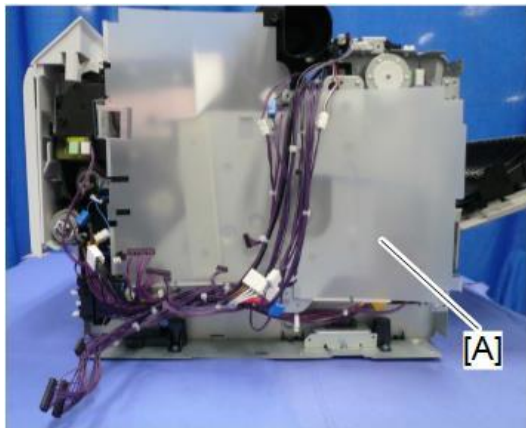


Registration Clutch

1. Remove the BiCU. ([BiCU](#))

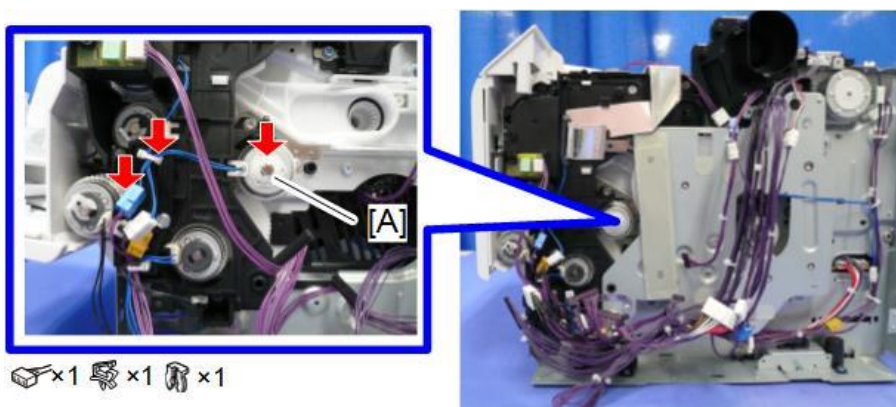
4.Replacement and Adjustment

2. Remove the sheet [A].



m0a0k0014

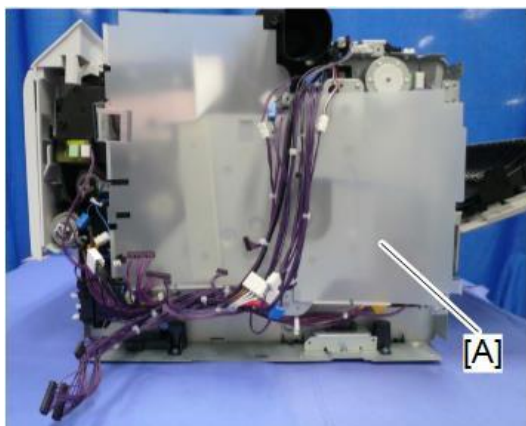
3. Remove the registration clutch [A].



m0a0k1010

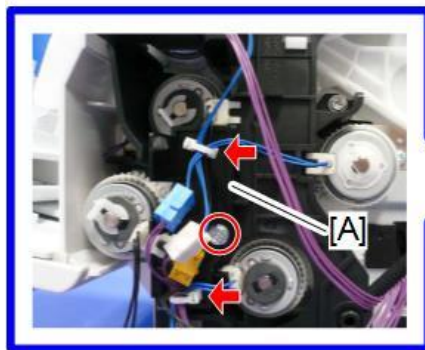
Paper Feed Clutch

1. Remove the BiCU. (BiCU)
2. Remove the sheet [A].

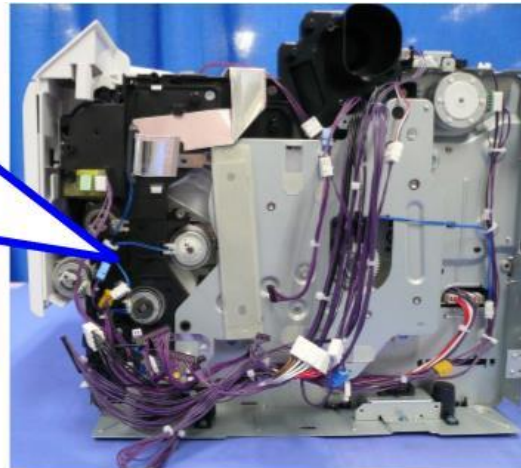


m0a0k0014

3. Remove the harness guide [A].

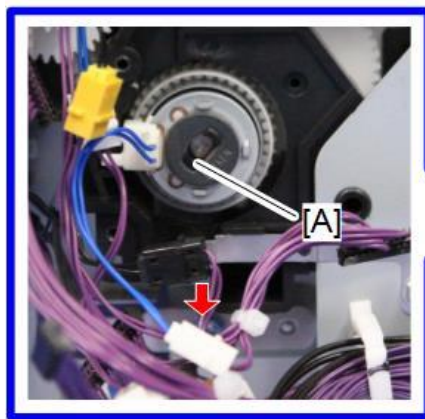


⚙️×1 🛠️×2

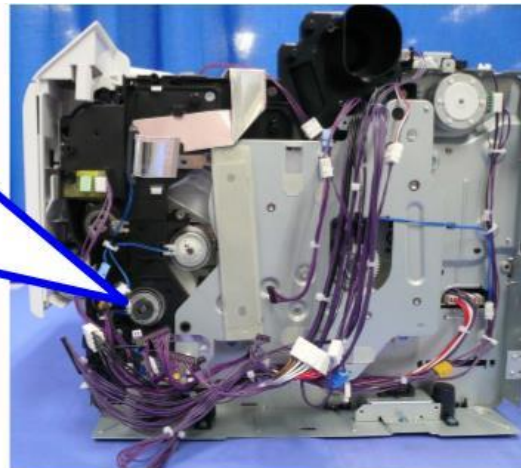


m0a0k0015

4. Remove the paper feed clutch [A].



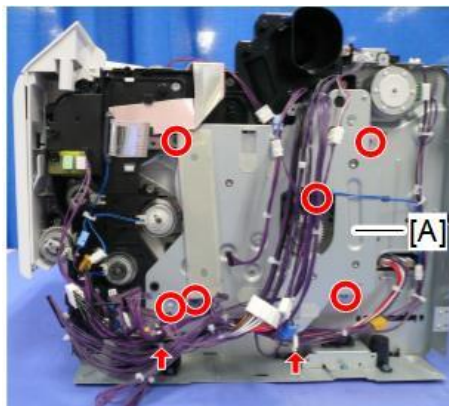
🛠️×1



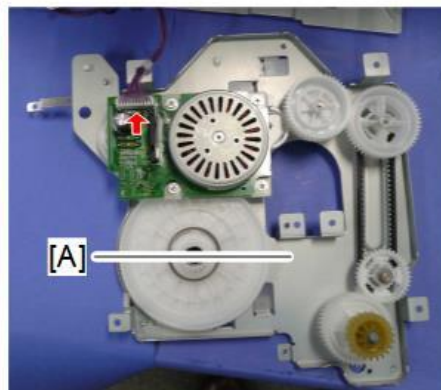
m0a0k0016

Drive Unit

1. Remove the BiCU. (BiCU)
2. Remove the duplex clutch. (Duplex Clutch)
3. Remove the drive unit [A].



⚙️×6 🛠️×1 🛠️×2

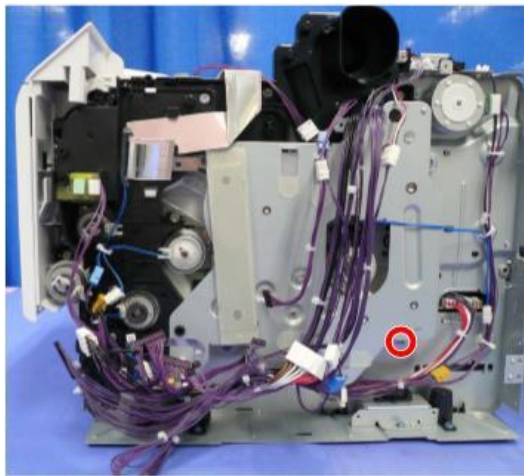


m0a0k0017

4.Replacement and Adjustment

Note

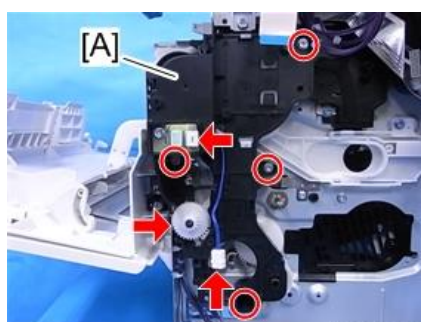
- To mount the drive unit, use the rounded end screw (blue) at the position indicated in the figure below.



m0a0k0018

Gear Unit

1. Remove the drive unit ([Drive Unit](#))
2. Remove the registration clutch. ([Registration Clutch](#))
3. Remove the bypass-bottom plate clutch. ([Bypass Bottom Plate Clutch](#))
4. Remove the paper feed clutch. ([Paper Feed Clutch](#))
5. Remove the bypass feed clutch. ([Bypass Feed Clutch](#))
6. Remove the duplex clutch. ([Duplex Clutch](#))
7. Remove the paper size switch ([Paper Size Switch](#))
8. Remove the temperature/humidity sensor. ([Temperature/Humidity Sensor](#))
9. Release the FFC from the hook and remove the gear unit [A] (⌀ x4, ⌀ x2, Gear x1)

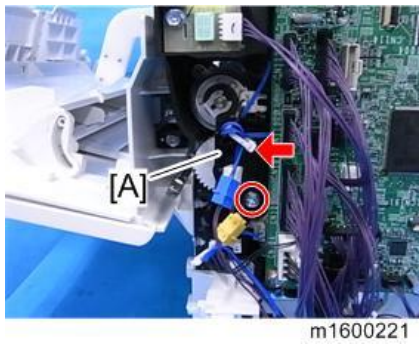


m1608035

Bypass Feed Clutch

1. Remove the right cover. ([Right Cover](#))

2. Remove the harness guide [A]. (🔧 x1, 🛠️ x1)

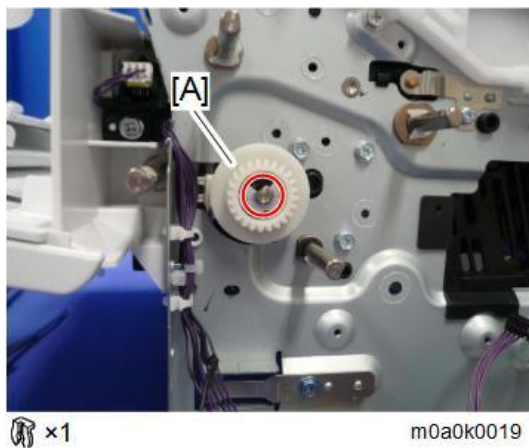


3. Remove the bypass feed clutch [A]. (🔧 x1, 🛠️ x1)



Relay Clutch

1. Remove the bypass feed unit. (Bypass Feed Unit)
2. Remove the gear unit. (Gear Unit)
3. Remove the relay clutch [A].

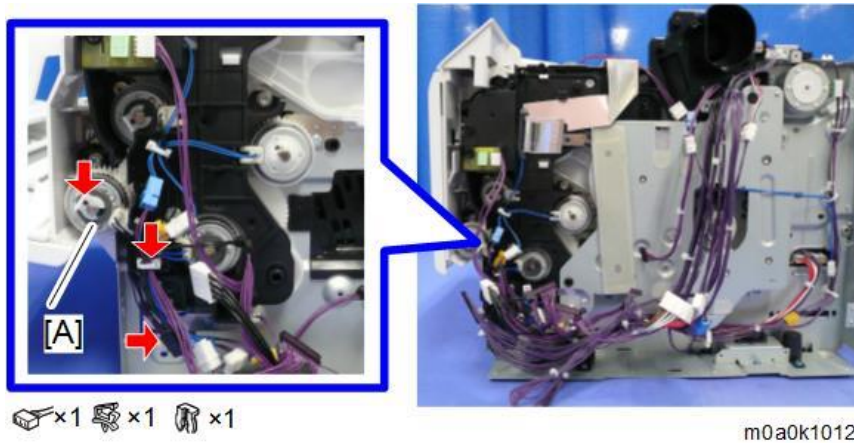


Bypass Bottom Plate Clutch

1. Remove the right cover. (Right Cover)

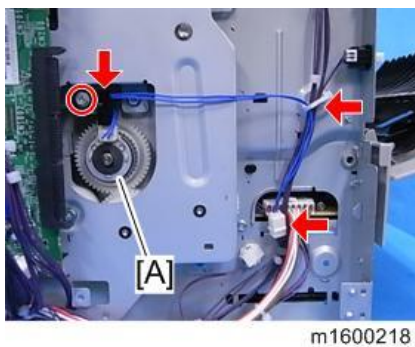
4.Replacement and Adjustment

2. Remove the bypass bottom plate clutch [A].



Duplex Clutch

1. Remove the controller board. ([Controller Board](#))
2. Remove the duplex clutch [A]. (⌀ x1, Bracket x1, ⌀ x1, ⌀ x1)



Junction Gate Solenoid

1. Remove the upper cover. ([Upper Cover](#))
2. Remove the upper inner cover. ([LED Unit](#))
3. Disconnect the harness of the junction gate solenoid. (⌀ x3)

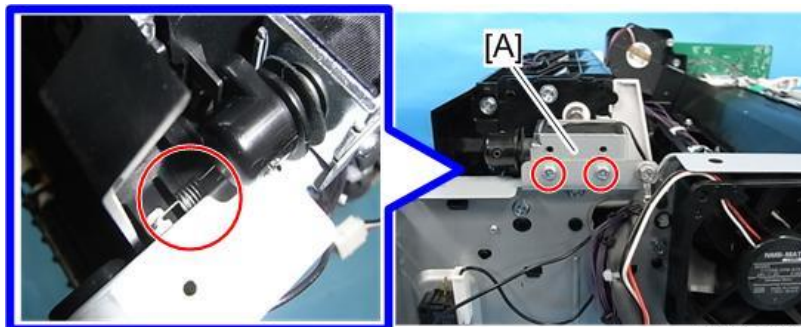


4. Remove the connector of the junction gate solenoid. (🔌 x1)



m1600121

5. Remove the junction gate solenoid [A]. (🔩 x2, Spring x1)



m1600119



m1600122

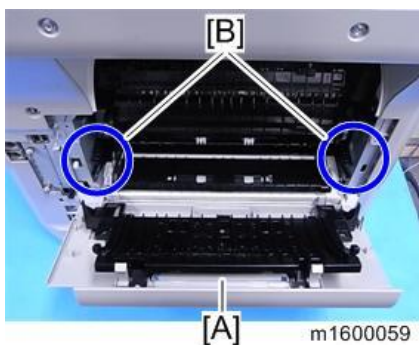
Fusing

⚠ CAUTION

- Start work only when the fusing unit has dropped to a low temperature. Otherwise you may suffer burns from contact with hot parts of the fusing unit,
- Turn OFF the main power switch and disconnect the power cord before you start any of the procedures in this section. ([General Cautions](#))

Fusing Unit

1. Open the rear cover [A].
2. Release the lock levers [B].



3. Remove the fusing unit [A]

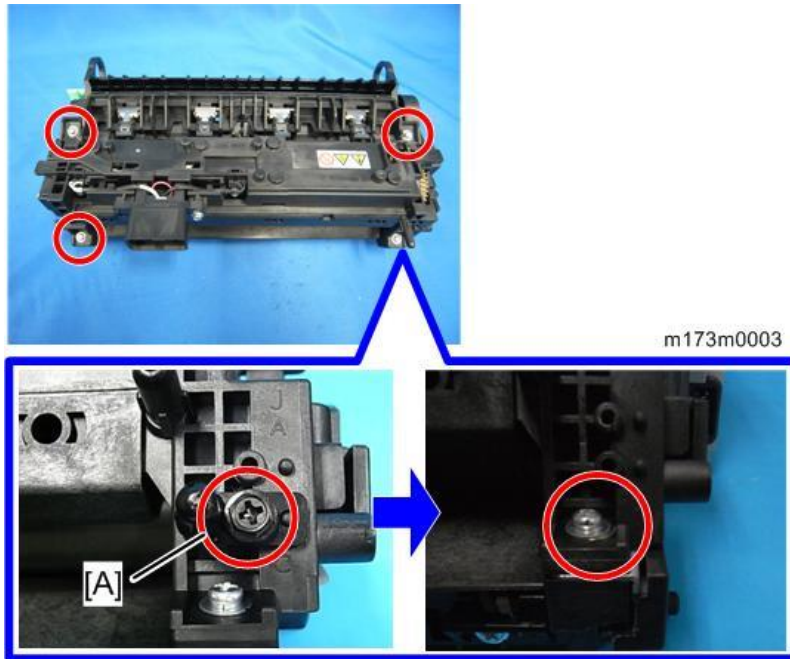


Adjustment after Replacement

For PM: Install a fusing unit without new product detection capability and reset PM Counter Fuser setting (engine SP 7-804-003) after replacement.

Upper Fusing Unit, Lower Fusing Unit

1. Remove the fusing unit. ([Fusing Unit](#))
2. Remove the screws of the fusing unit. (⌀x5)



Note

- When reassembling, be sure to attach the pin [A] to the correct position. If not, the fusing unit cannot be attached to the mainframe correctly.

3. Separate the fusing unit into the upper and lower fusing units.

4. Right cover [A] (⌀ x2)



[B]: Lower Fusing Unit

[C]: Upper Fusing Unit



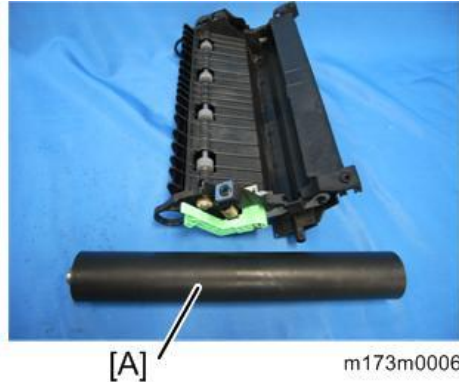
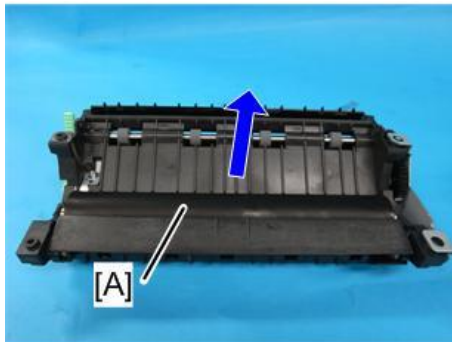
Note

- You can rejoin the upper and lower fusing units easily by lowering the envelope lever.

4.Replacement and Adjustment

Fusing Pressure Roller

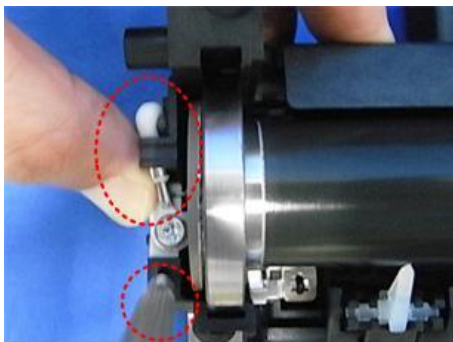
1. Separate the fusing unit into the upper and lower fusing units. ([Upper Fusing Unit](#), [Lower Fusing Unit](#))
2. Remove the fusing pressure roller [A]



Fusing Lamp, Hot Roller

★ Important

- Be careful not to break the fusing lamp when removing/attaching screws.
- Insert a pin or jeweller's screwdriver into the service hole (see the lower red circle in the photo below), and hold the flat nut with your finger (see the upper red circle in the photo). Otherwise, the lamp secured to the flat nut will move together with the rotation of the screw, and the lamp will break.

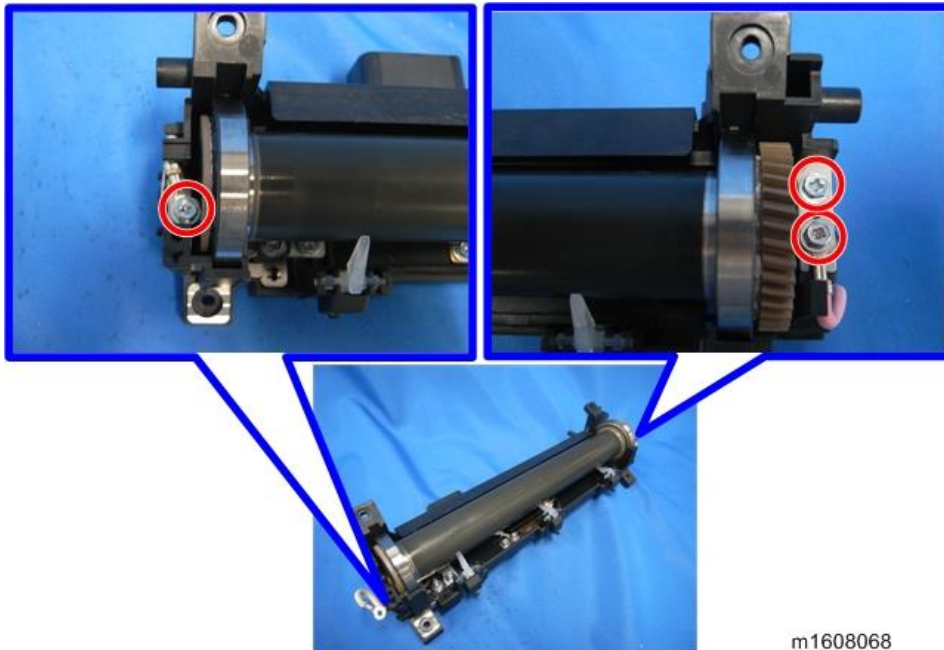


1. Separate the fusing unit into the upper and lower fusing units. ([Upper Fusing Unit](#), [Lower Fusing Unit](#))
2. Remove the cover [A]. (⚙ x1)



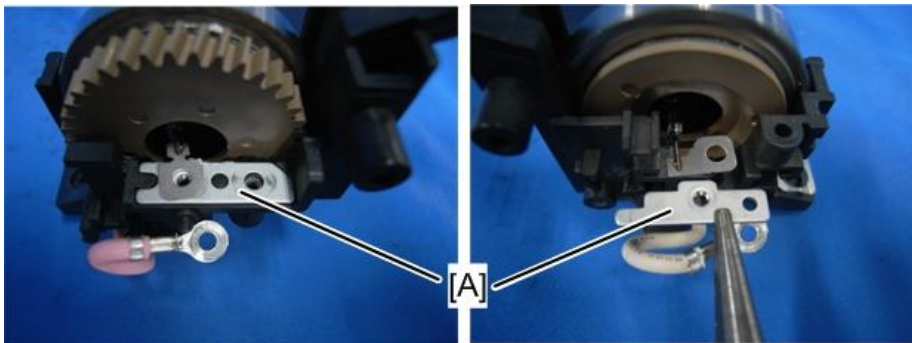
m173m0007

3. Remove the screws of the fusing lamp. (⌀ x3)



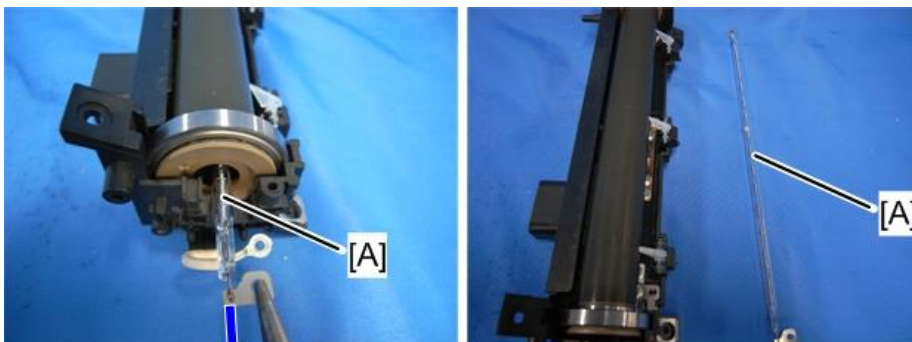
m1608068

4. Remove the two brackets [A].



m1608069

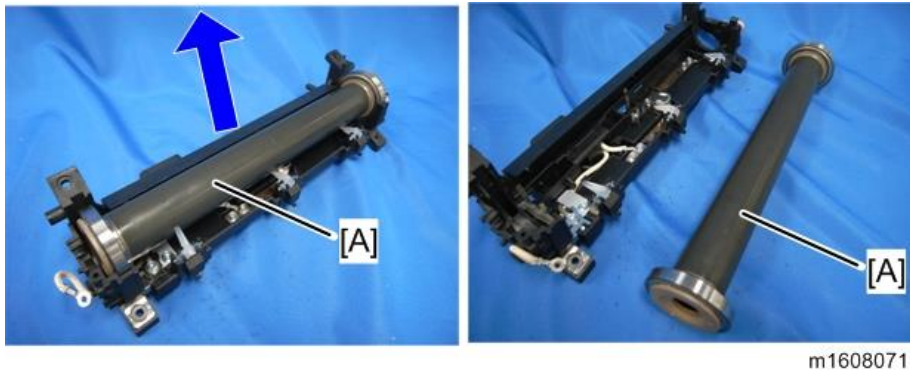
5. Remove the fusing lamp [A].



m1608070

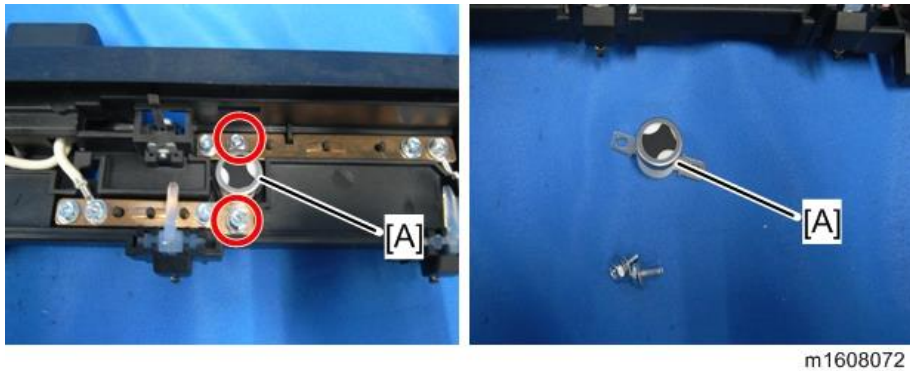
4.Replacement and Adjustment

6. Remove the hot roller [A].



Thermostat

1. Separate the fusing unit into the upper and lower fusing units. ([Upper Fusing Unit](#), [Lower Fusing Unit](#))
2. Remove the hot roller ([Fusing Lamp](#), [Hot Roller](#))
3. Remove the thermostat [A]. (⚙️ x2)



Thermistor

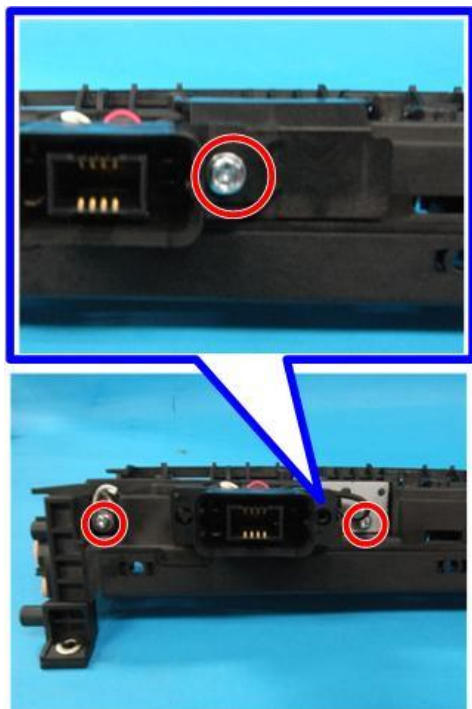
↓ Note

- The thermistor is integrated with the drawer connector.

1. Separate the fusing unit into the upper and lower fusing units. ([Upper Fusing Unit](#), [Lower Fusing Unit](#))
2. Remove the hot roller. ([Fusing Lamp](#), [Hot Roller](#))
3. Remove the screws of the harness. (⚙️ x3)

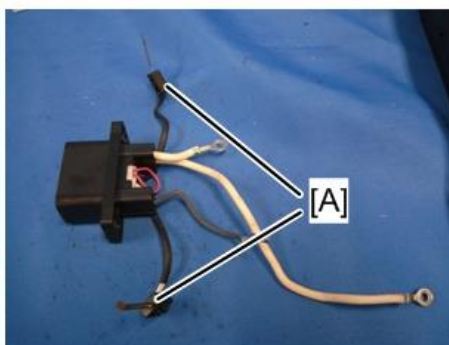
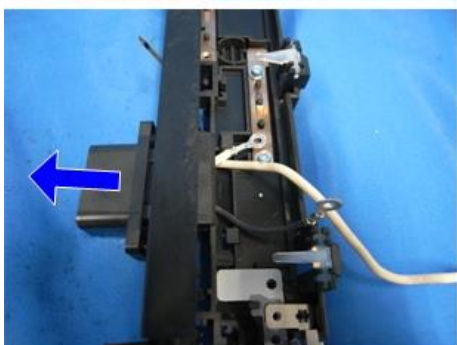
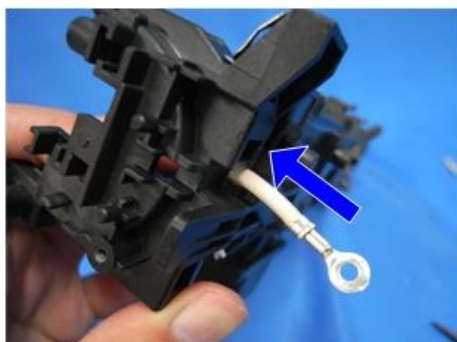


4. Remove the bracket of the drawer connector, and then remove the screws of the thermistor. (🔩 x3)



m173m0008

5. Remove the thermistor [A]

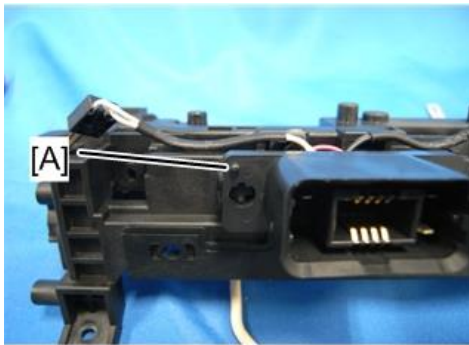


m1608075

Notes on reassembly

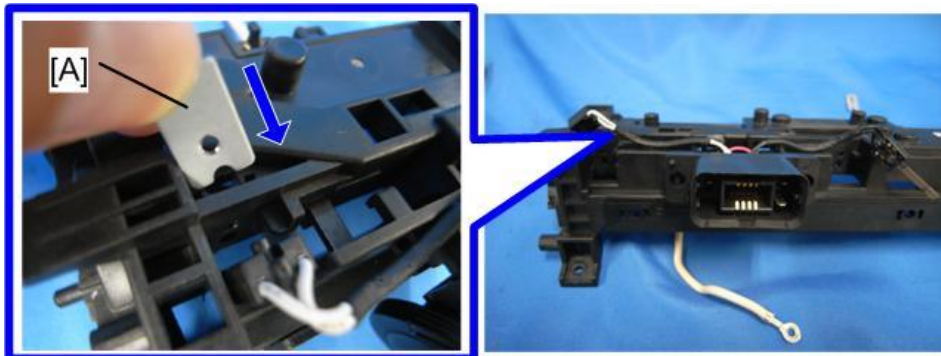
Be sure to attach the drawer connector with its protruding part [A] in the position shown below.

4.Replacement and Adjustment



m1608076

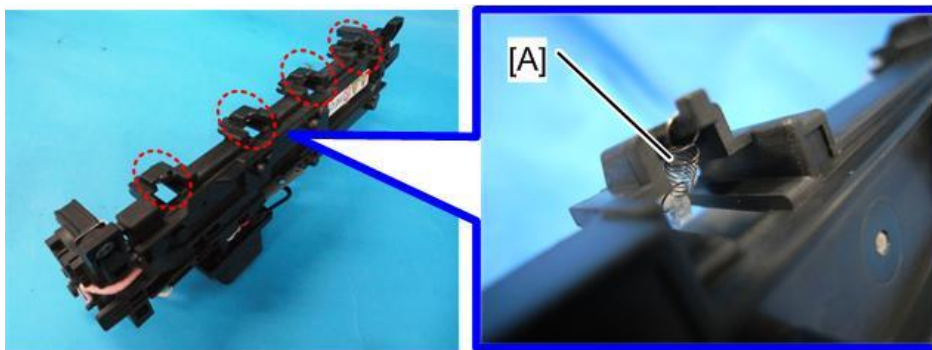
Insert the flat nut [A]. Be sure not to drop them inside the fusing unit during disassembly.



m173m0009

Hot Roller Stripper

1. Separate the fusing unit into the upper and lower fusing units. ([Upper Fusing Unit](#), [Lower Fusing Unit](#))
2. Remove the spring [A].



m173m0010

3. Remove the hot roller stripper [A].



m1608079

Paper Feed

⚠ CAUTION

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

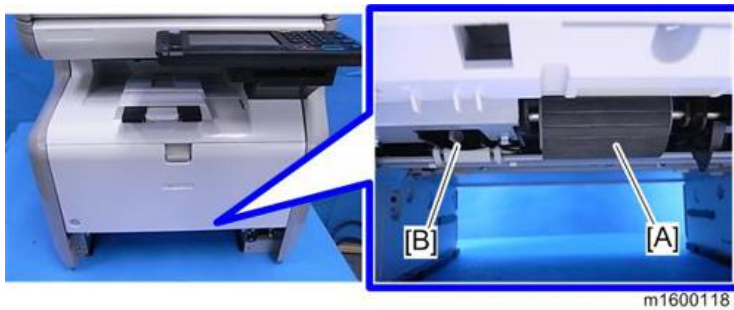
Paper Feed Tray

1. Remove the paper feed tray [A].



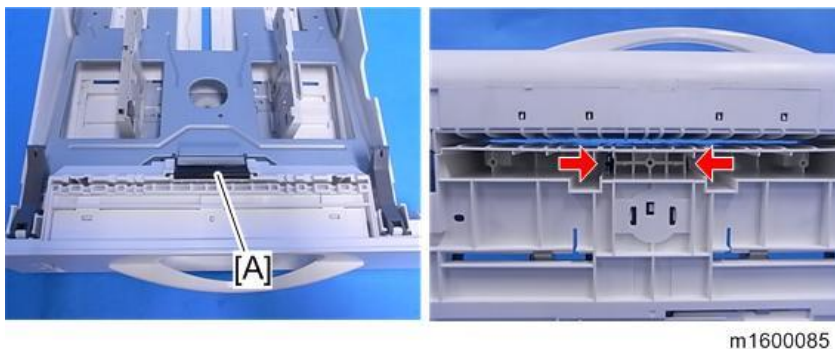
Paper Feed Roller

1. Remove the paper feed tray. ([Paper Feed Tray](#))
2. Slide the lever [B] to the left to detach the paper feed roller [A].



Friction Pad

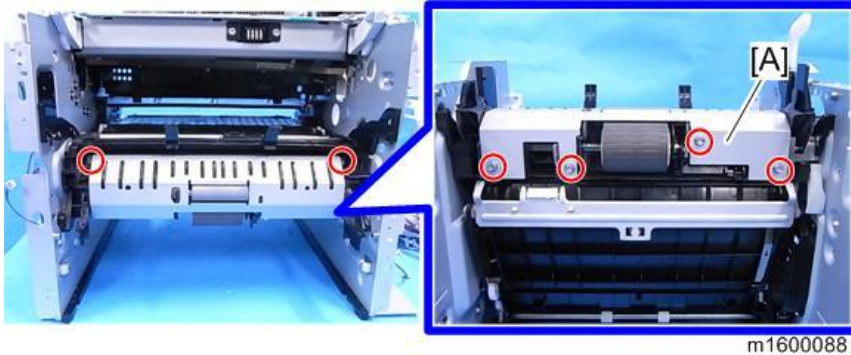
1. Remove the paper feed tray. ([Paper Feed Tray](#))
2. Release the hooks on the bottom of the paper feed tray to detach the friction pad [A].



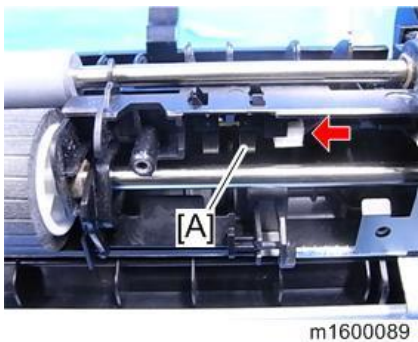
4.Replacement and Adjustment

Paper End Sensor

1. Remove the bypass feed unit. ([Bypass Feed Unit](#))
2. Remove the bracket [A]. (🔩 x6)

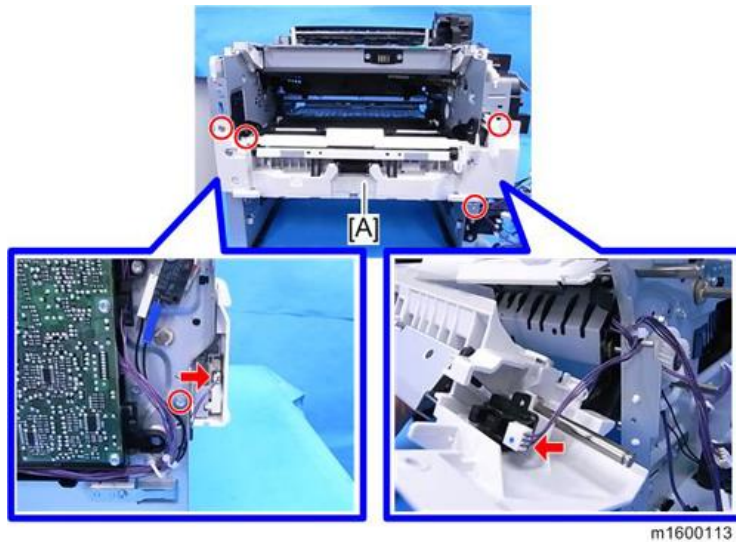


3. Remove the paper end sensor [A]. (🔧 x1, Hook)



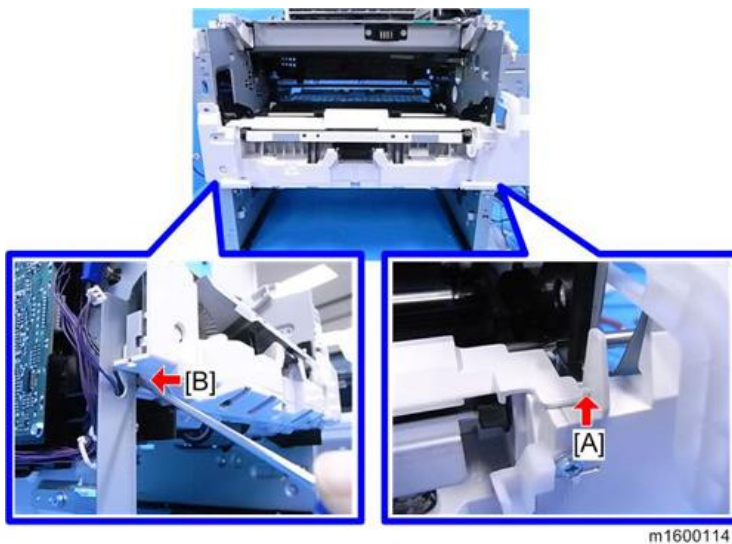
Bypass Feed Unit

1. Remove the front cover. ([Front Cover Unit](#))
2. Remove the left cover. ([Left Cover](#))
3. Remove the right cover. ([Right Cover](#))
4. Remove the bypass bottom plate clutch. ([Bypass Bottom Plate Clutch](#))
5. Remove the bypass feed unit [A]. (🔩 x5, 🧰 x2)



Note

- Release the hook [A] and then insert a flat-blade screwdriver into the space [B] to detach the bypass feed unit from the machine.

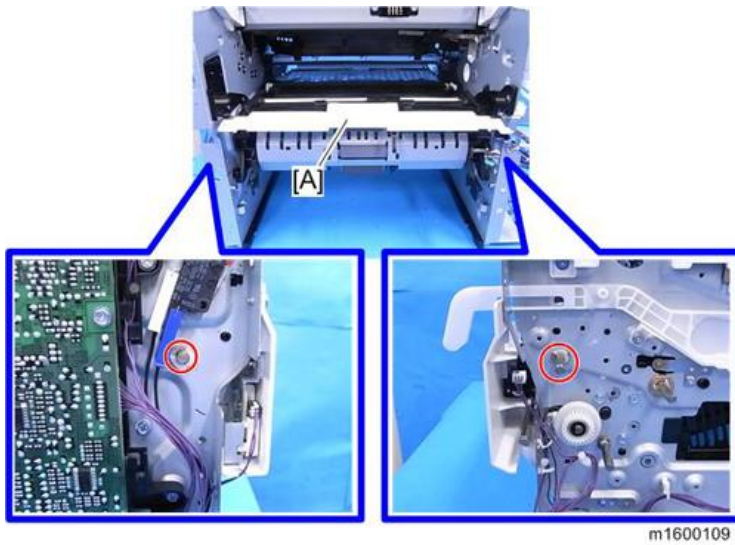


Bypass Feed Roller

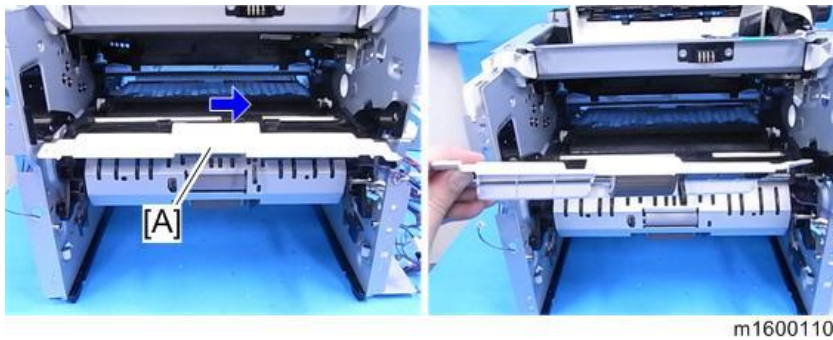
1. Remove the bypass feed unit. ([Bypass Feed Unit](#))
2. Remove the gear unit. ([Gear Unit](#))

4.Replacement and Adjustment

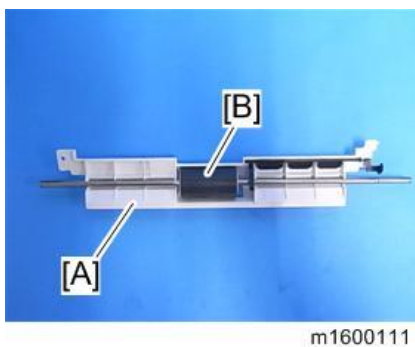
3. Remove the x2, Bearing x2 on both sides of the bypass feed roller (guide) [A].



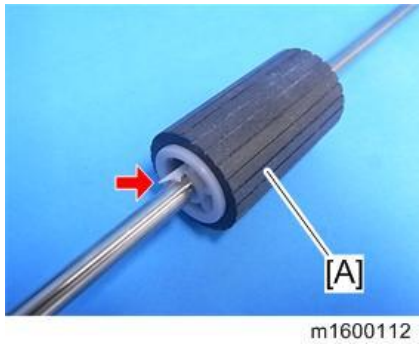
4. Slide the bypass feed guide [A] with the bypass feed roller to the right to detach it from the machine.



5. Detach the bypass feed roller with the shaft [B] from the guide [A].

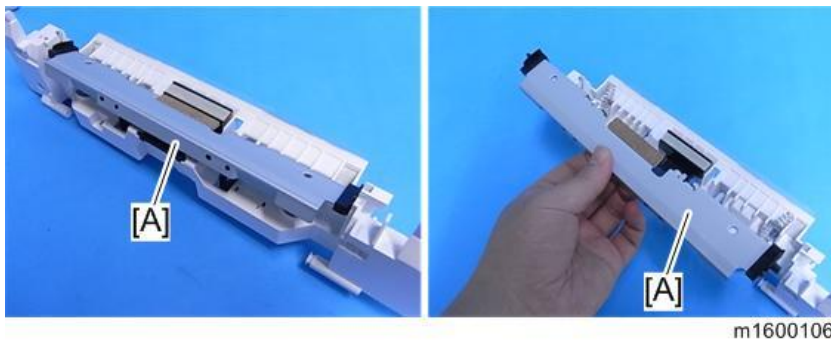


6. Separate the bypass feed roller [A] from the shaft (Hook x1)



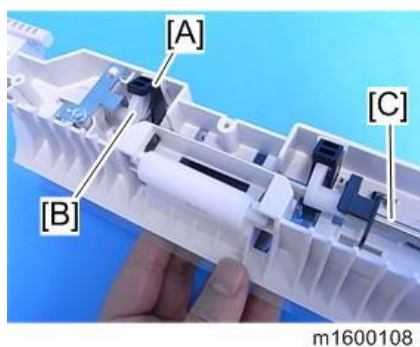
Bypass Friction Pad

1. Remove the bypass feed unit. ([Bypass Feed Unit](#))
2. Remove the bottom plate [A].



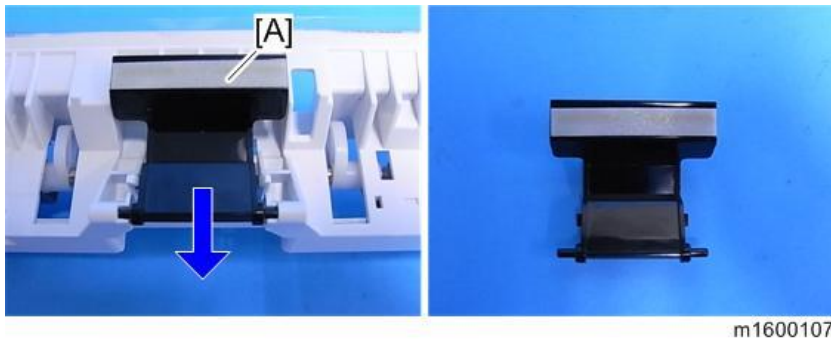
Note

- If you cannot remove the bottom plate because the part [A] prevents the cam [B] from releasing, rotate the shaft [C] to move the cam [B] away from the bottom plate link [A].



4.Replacement and Adjustment

3. Push the friction pad [A] down to detach it. (Spring x1)



Bypass Paper End Sensor

1. Remove the bypass feed unit. ([Bypass Feed Unit](#))
2. Remove the bracket with sensor [A] (⚙️ x1)



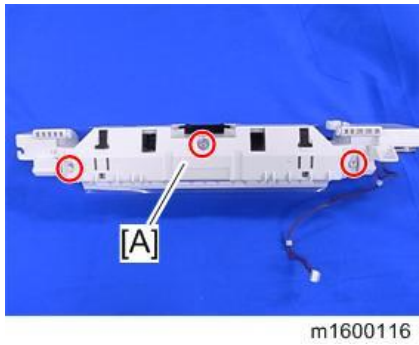
3. Detach the bypass paper end sensor [A] from the bracket. (Hook)



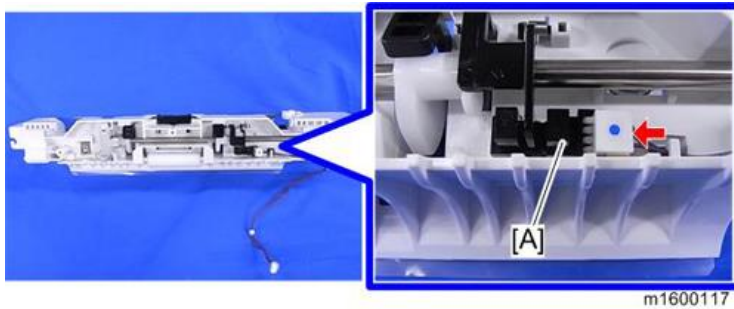
Bypass Bottom Plate HP Sensor

1. Remove the bypass feed unit. ([Bypass Feed Unit](#))

2. Remove the bypass feed lower cover [A]. (⚙️ x3)

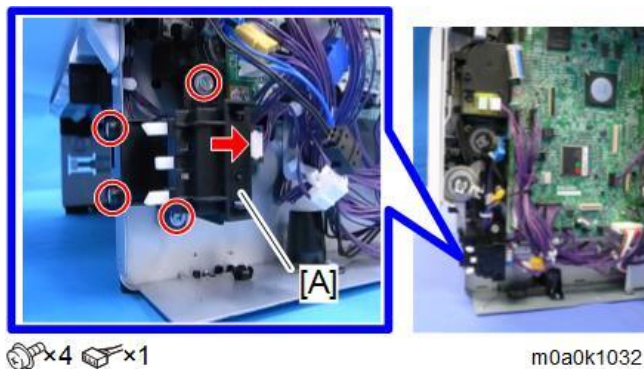


3. Remove the bypass bottom plate HP sensor [A]. (🔗 x1, Hook)

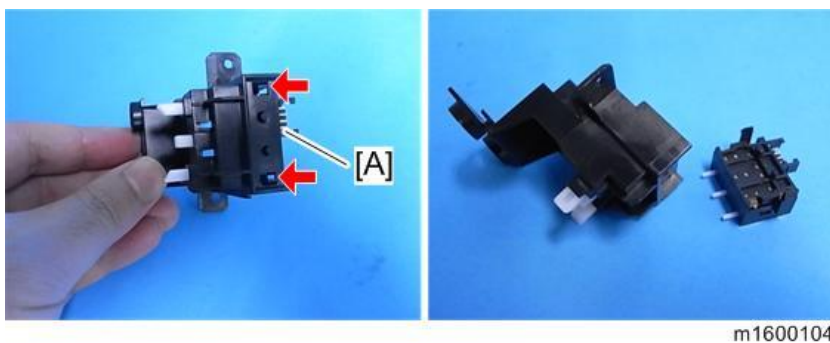


Paper Size Switch

1. Remove the right cover. (Right Cover)
2. Remove the bracket with paper size switch [A].



3. Remove the paper size switch [A] from the bracket.



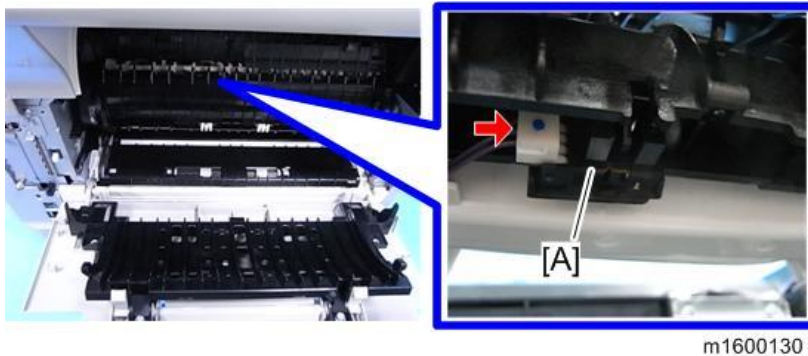
Paper Transport

⚠ CAUTION

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

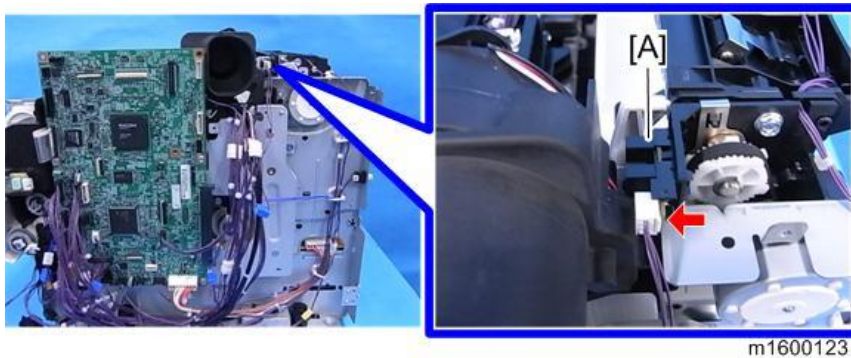
Paper Exit Sensor

1. Open the rear cover.
2. Remove the paper exit sensor [A]. (🔧 x1, Hook)



Paper Overflow Sensor

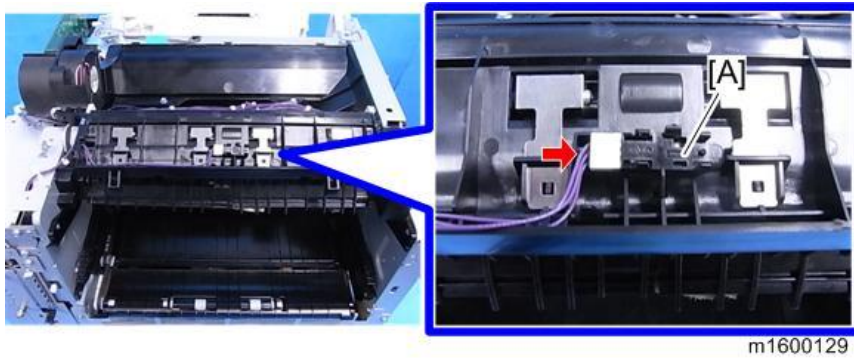
1. Remove the upper cover. (Upper Cover)
2. Remove the paper overflow sensor [A]. (🔧 x1, Hook)



Duplex Exit Sensor

1. Remove the upper cover. (Upper Cover)

2. Remove the duplex exit sensor [A]. (🔧 x1, Hook)

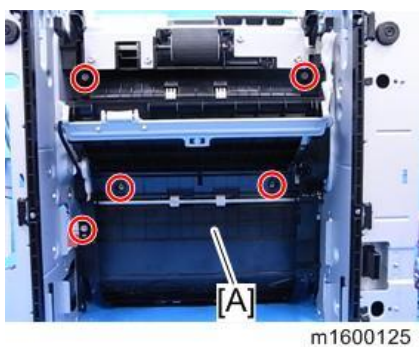


Duplex Entrance Sensor

1. Remove the PSU. (PSU)
2. Remove the duplex clutch. (Duplex Clutch)
3. Open the duplex exit guide plate [A].

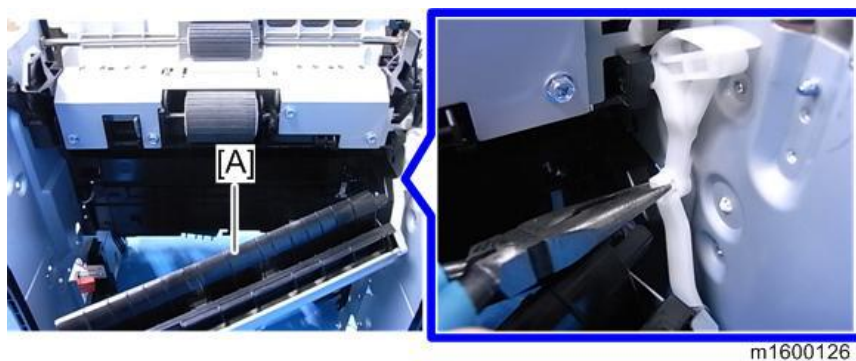


4. Remove the screws circled in the picture below (🔩 x5).
[A]: Duplex exit guide unit



5. Release the link to remove the duplex exit guide unit [A].

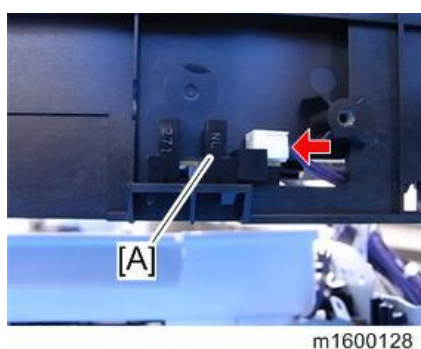
4.Replacement and Adjustment



Note

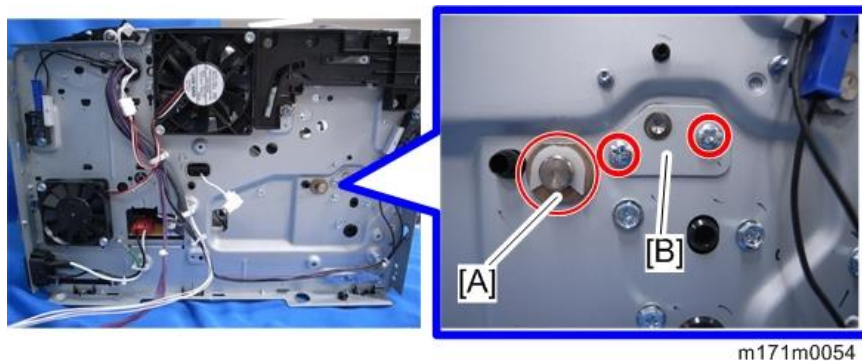
- Use pliers to pinch the link in order to release it.

6. Remove the duplex entrance sensor [A]. (🔧 x1, Hook)



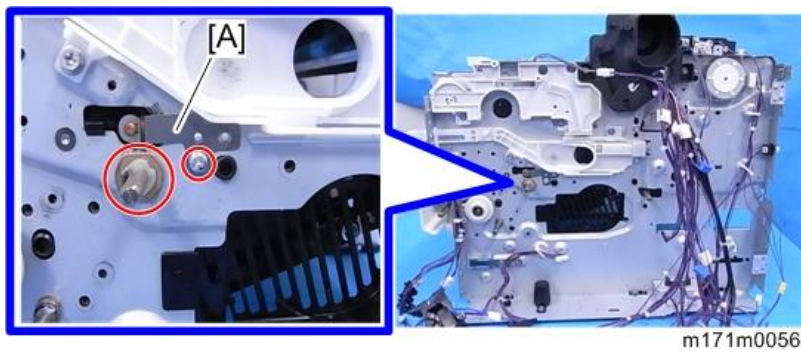
Registration Roller (Driven)

1. Remove the drive unit. ([Drive Unit](#))
2. Remove the gear unit. ([Gear Unit](#))
3. Remove the paper size switch ([Paper Size Switch](#))
4. Remove the registration sensor. ([Registration Sensor](#))
5. Remove the HVPS with bracket. ([HVPS with Bracket](#))
6. Release the bearing [A] × 1 at the left end of the registration roller (drive) and fixing plate [B] × 1. (🔧 x1, 🔧 x2)

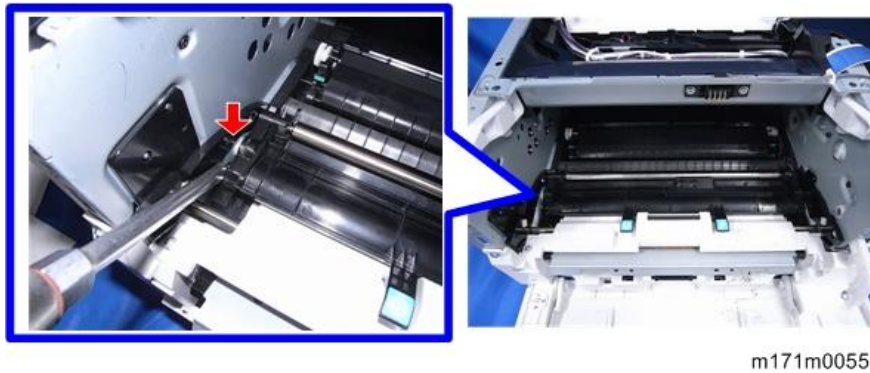


7. Release the bearing at the right end of the registration roller (drive), and remove the grounding plate [A]. (🔧 x 1,

 x 1)



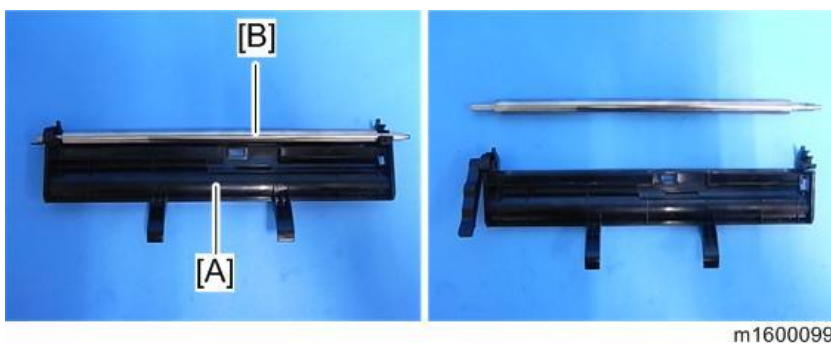
8. Insert a flathead screwdriver into the gap on the left of the registration roller guide to release the protruding part.



9. Release the harness from the guide [A] to detach the guide [A] with the registration roller (driven).



10. Detach the registration roller (driven) [B] from the guide [A].

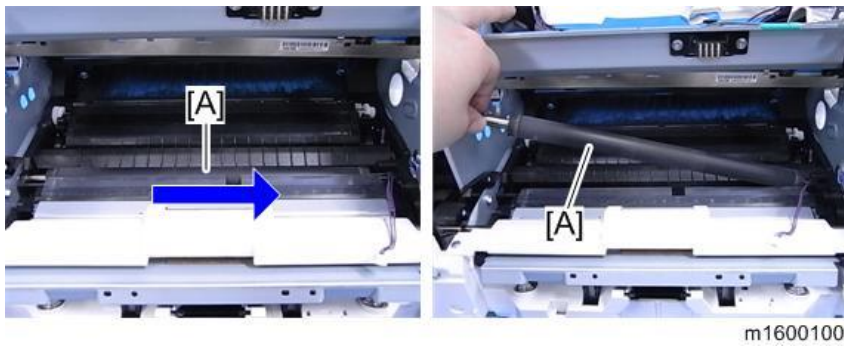


Registration Roller (Drive)

1. Remove the registration roller (Driven). ([Registration Roller \(Driven\)](#))

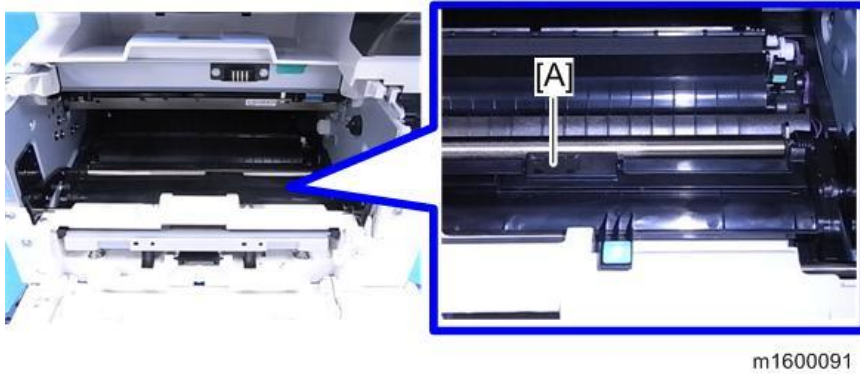
4.Replacement and Adjustment

2. Slide the registration roller (drive) [A] to the right to remove it.

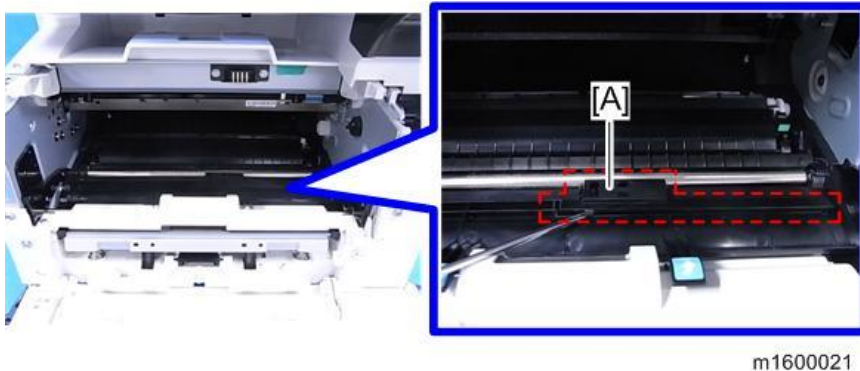


Registration Sensor

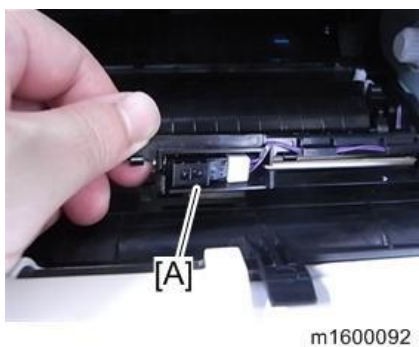
1. Remove the PCDU. (PCDU)
2. Remove the sheet [A].



3. Release the hooks of the harness cover [A] with a screwdriver to remove it.



4. Remove the registration sensor [A]. (Hook,  x1)



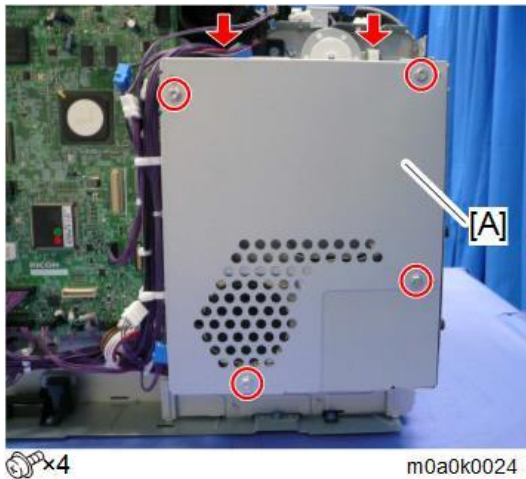
Electrical Components

⚠ CAUTION

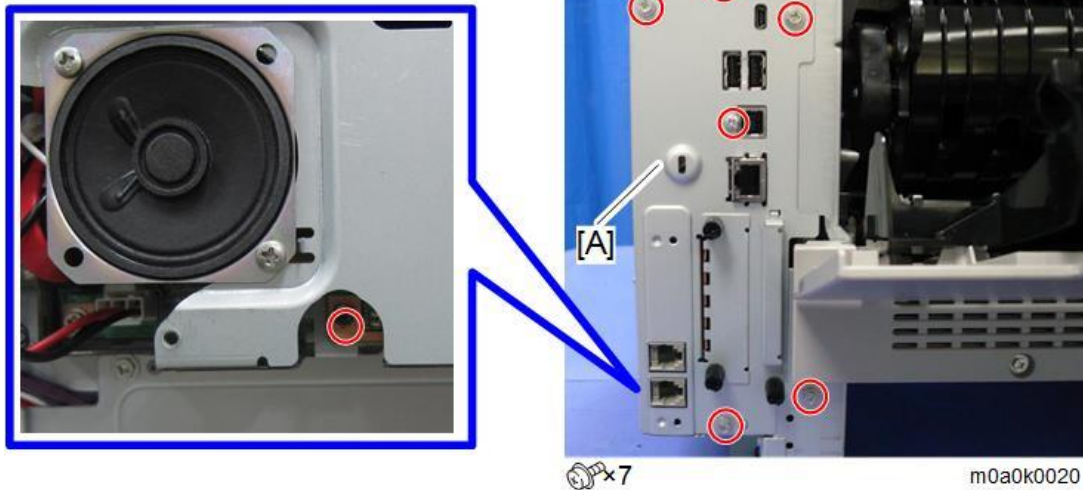
- Turn OFF the main power and disconnect the power cord before you start any of the procedures in this section.

FCU Board

1. Remove the right cover [A]. ([Right Cover](#))
2. Remove the controller box cover [A].

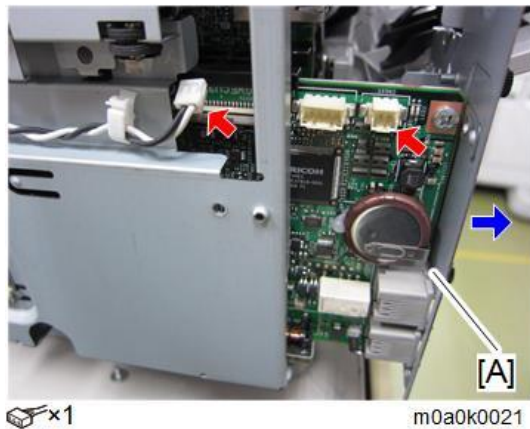


3. Remove the screws of the bracket [A] and the FCU board.

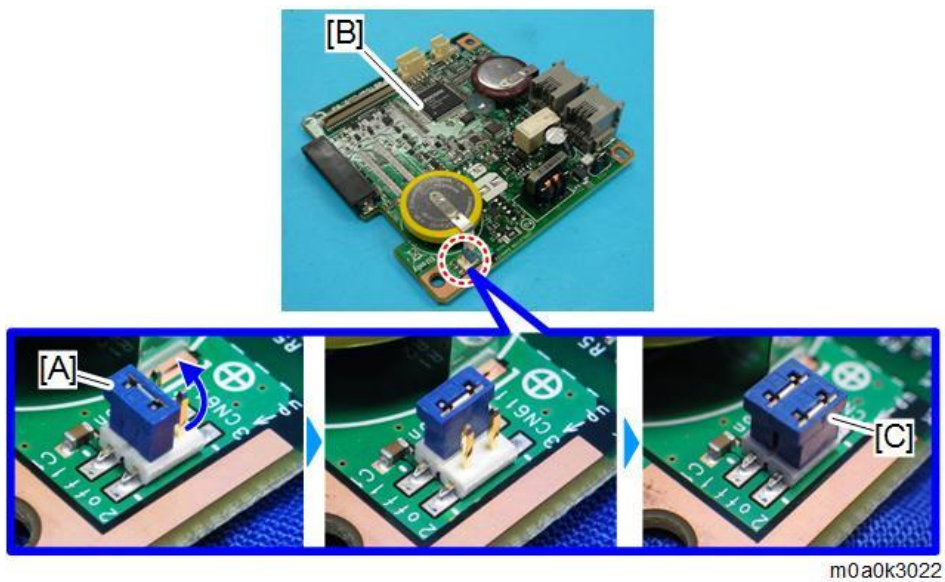


4.Replacement and Adjustment

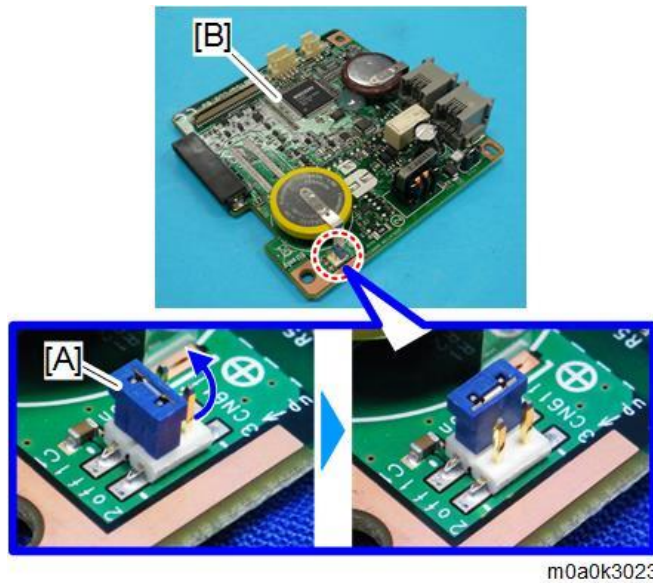
4. Disconnect the speaker connector and remove the FCU board [A] with the bracket.



5. Change the orientation of the battery jumper switch [A] on the removed FCU board [B], and then attach the battery jumper switch [C]. The battery jumper switch [C] comes with the new FCU board.



6. Change the orientation of the battery jumper switch [A] on the new FCU board [B].



Note

- If the battery jumper switch is not in the correct position, SC820 will occur.

Z. Remove the HDD. (HDD)

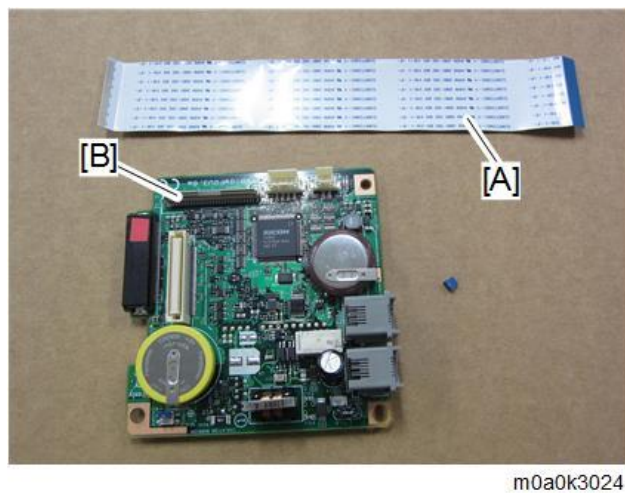
Note

- It is not necessary to disconnect the HDD cable.

8. Insert one end of the supplied flat cable [A] into the CN603 connector [B] on the new FCU board.

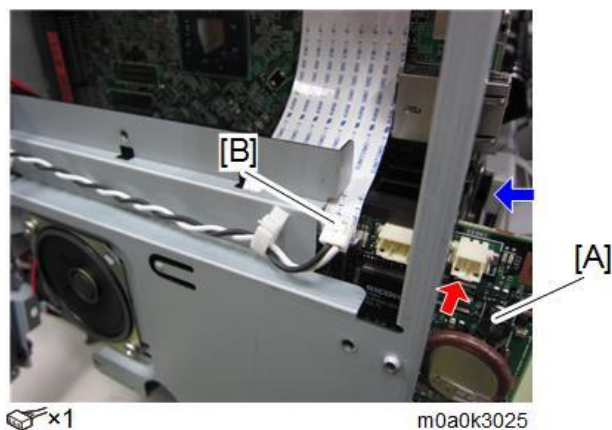
Note

- Make sure that the blue tape of the flat cable faces outward.

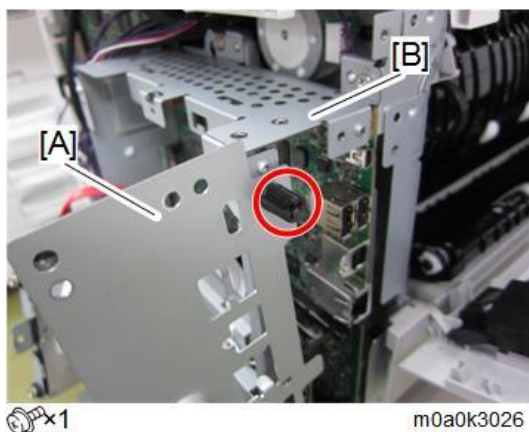


4.Replacement and Adjustment

9. Insert the new FCU board [A] into the machine and connect the speaker connector [B] to the new FCU board.



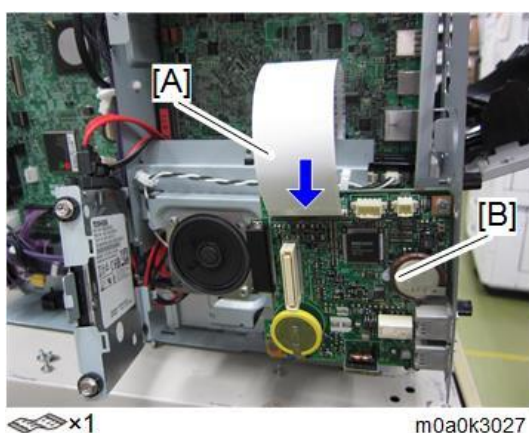
10. Mount the old FCU board with bracket [A] to the controller box temporarily.



11. Insert the other end of the flat cable [A] into the CN603 connector on the old FCU board [B].

Note

- To prevent a short circuit, make sure the old FCU board does not come into contact with anything metallic.
- Make sure that the blue tape of the flat cable faces outward.



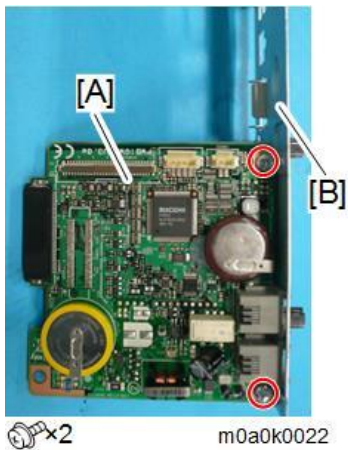
12. Turn the main power ON.

The SRAM data transfer begins. Transfer is complete when a beep sounds.

Note

- The volume of the beeping sound is set to the same level as the speaker volume.
- If the speaker volume is set to off, the volume of the beeping sound is set to its initial factory-set level.
- If the machine does not beep, turn the main power OFF and then ON, and attempt data transfer again. Try several times if necessary.
- Be sure to check the transfer result after executing data transfer. If the transfer has failed, you need to specify settings manually in the SP mode.

- 13.** When "Ready" is displayed on the control panel, turn the power OFF, and remove the AC power plug from the receptacle.
- 14.** Disconnect the flat cable from both FCU boards.
- 15.** Remove the old FCU board with bracket from the controller box.
- 16.** Disconnect the speaker connector and remove the new FCU board [A] from the machine.
- 17.** Remove the bracket [B] from the old FCU board [A] and attach the bracket to the new FCU board.



- 18.** Mount the new FCU board in the machine and connect the speaker connector to the new FCU board.
- 19.** Reattach the controller box cover.
- 20.** Reattach the cover.
- 21.** Turn the main power ON.
- 22.** Enter the SP mode.
- 23.** Print the system parameter list from SP6-101 in the Fax SP menu, and then check the list to see whether the SRAM data has been transferred correctly.
- 24.** Set the correct date and time from the [User Tools].
 - User Tools > Machine Features > System Settings > Timer Setting > Set Date/Time

Note

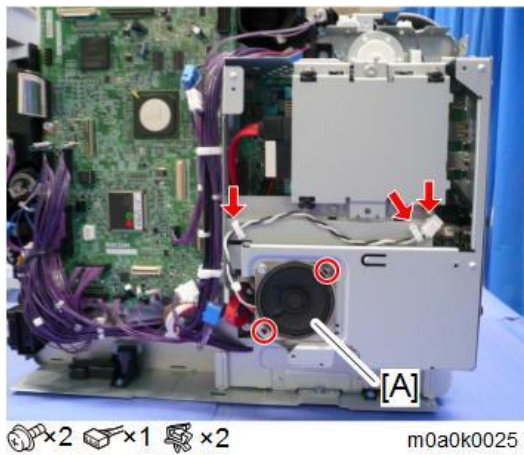
- If any of the SRAM data was not transferred, input those settings manually.

Speaker

- 1.** Remove the right cover ([Right Cover](#))
- 2.** Remove the controller box cover [A]. ([FCU Board](#))

4.Replacement and Adjustment

3. Remove the speaker [A].

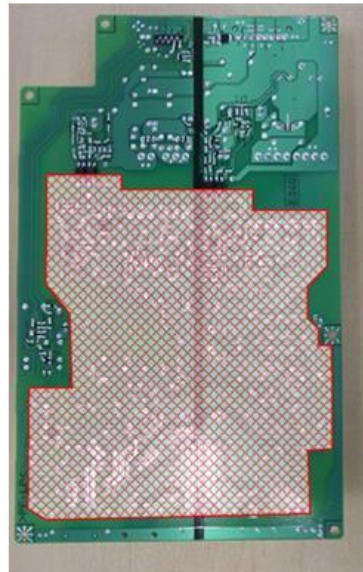
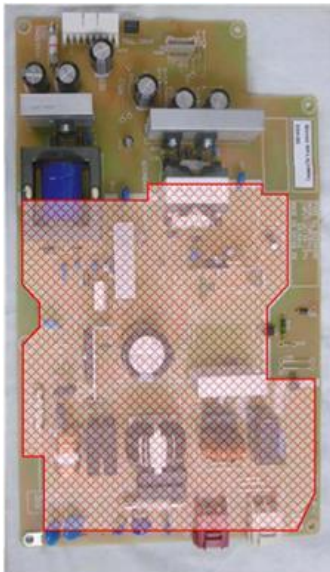


PSU

★ Important

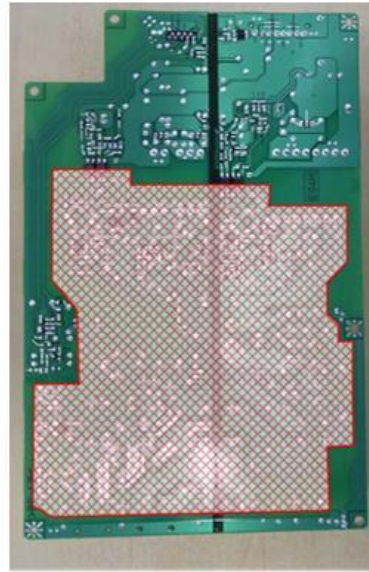
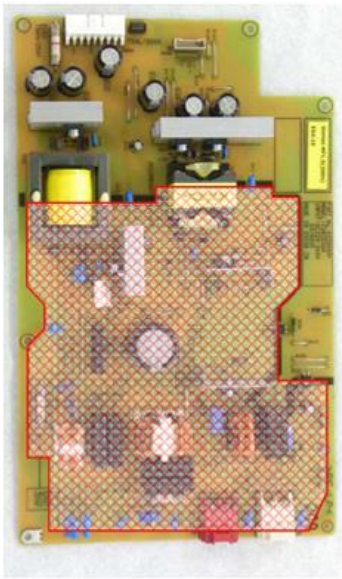
- Turn OFF the main power and unplug the power cord before replacing the PSU.
- Do not touch the areas outlined in red in the following diagrams when replacing the PSU. Residual charge on the board may cause electric shock.

100V



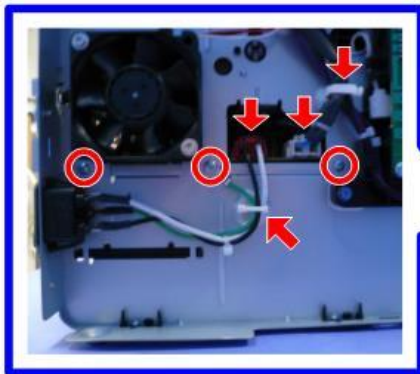
m0a0k3019

200V



m0a0k3020

1. Remove the paper feed tray. (Paper Feed Tray)
2. Remove the left cover. (Left Cover)
3. Remove the right cover (Right Cover)
4. Remove the rear cover (Rear Cover, Rear Lower Cover)
5. Remove the rear lower cover (Rear Cover, Rear Lower Cover)
6. Remove the screws and connectors, and release the clamps on the left side of the PSU.



⌀x3 ⌀x2 ⌀x2

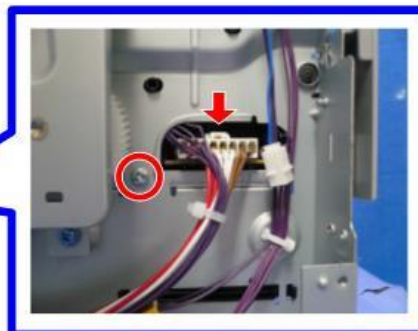


m0a0k0026

- Z. Remove the screw and connector under the sheet [A] on the right side of the PSU.



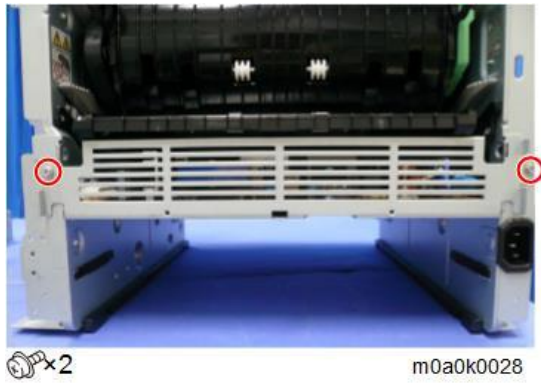
⌀x1 ⌀x1



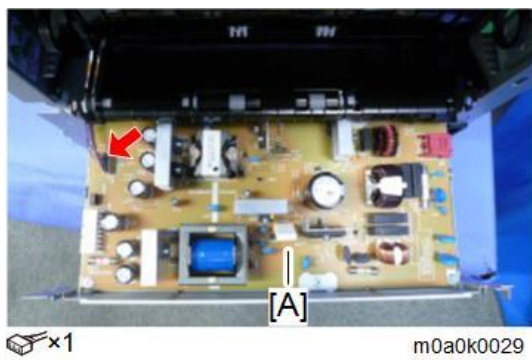
m0a0k0027

4.Replacement and Adjustment

8. Remove the screws on the rear side of the PSU.



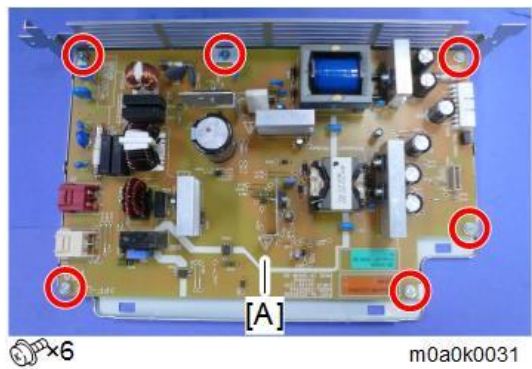
9. Pull out the PSU [A] with the bracket.



10. Remove the cover [A].



11. Detach the PSU [A] from the bracket.



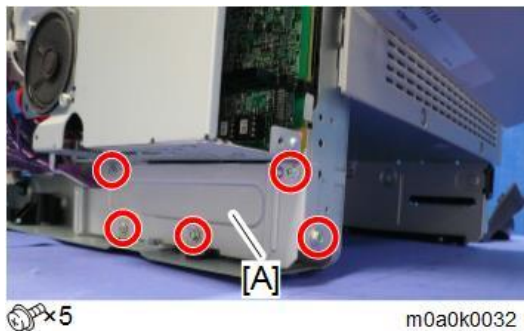
Controller Board

★ Important

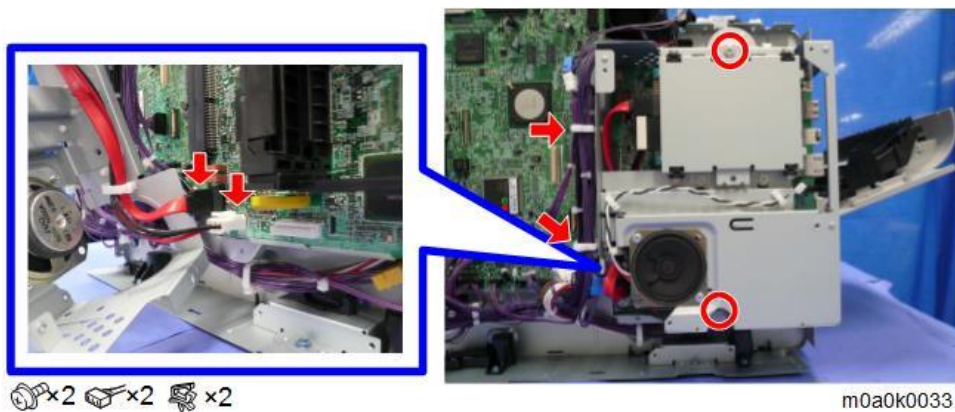
- If you intend to replace the NVRAM, upload its contents to an SD card using SP5-824 before you replace the NVRAM. Never remove the NVRAM until after you have uploaded its contents.

Replacement Procedure

1. Remove the controller box cover. ([Speaker](#))
2. Remove the bracket with the FCU board. ([FCU Board](#))
3. Remove the lower cover [A].



4. Remove the controller box.

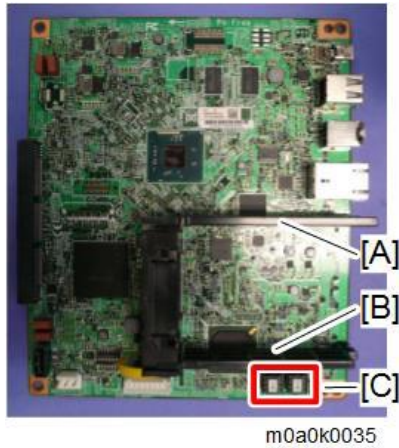


5. Detach the controller board [A] by sliding it to the right.



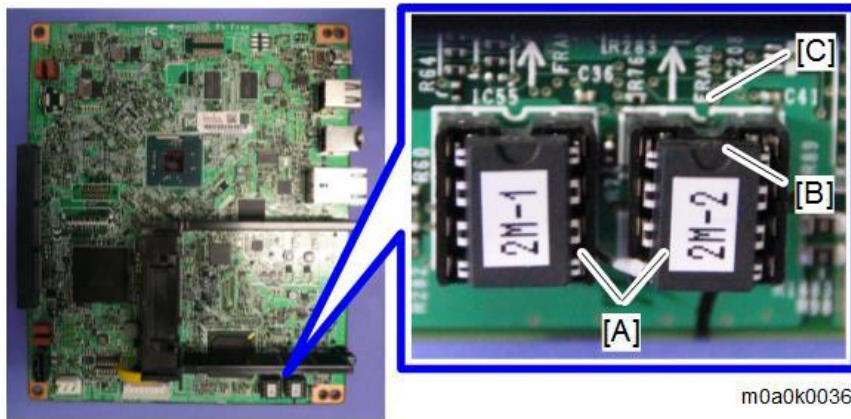
6. Remove the NVRAM [C], the upper brace [A] and the lower brace [B].

4.Replacement and Adjustment



Note

- Before removing the NVRAM, back up data.
- Install the NVRAM so that the indentation [B] on the NVRAM [A] is facing the indentation mark [C] on the controller board. If they are not installed correctly, the controller board and NVRAM may be damaged.



- Before replacing the controller board, check which ESA applications have been installed. After replacing the controller board, re-install the ESA applications by following the installation instructions for each application.
- After reinstalling the ESA applications, print the SMC (SP-5-990-024/025 (SMC: SDK/ Application Info)).

- Z.** If you have replaced the controller board, set the DIP switches on the new controller board to the same settings as the old board.

After Installing the Controller Board

- 1.** If the customer is using the data encryption feature, the encryption key must be restored.
 - If the message "SD card for restoration is required." appears after the controller board is replaced, the encryption key must be restored.
- 2.** Turn the main power OFF and then ON.

NVRAM on the Controller Board

★ Important

- SC195 (Machine serial number error) will occur if the NVRAM is not attached.
 - Mounting the NVRAM in the wrong direction will cause a short circuit between the controller board and the NVRAM, and all components will have to be replaced.
 - 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 data ("ALL") using SP5-990-001. (SP5-990-001)
 3. Turn OFF the main power.
 4. Insert a blank SD card into Slot 2.
 5. Turn ON the main power.
 6. Upload the NVRAM data to the blank SD card using SP5-824-001 (NVRAM Data Upload).
 7. Turn OFF the main power, and then disconnect the AC power cord.
 8. Remove the SD card containing the NVRAM data from Slot 2.
 9. Replace the NVRAM on the controller board with a new one.
 10. Connect the AC power cord, and then turn ON the main power.

↓ Note

- When you do this, SC995-02 (Defective NVRAM) will be displayed. However, DO NOT turn off the main power. Continue with this procedure.
11. Re-insert the SD card that you removed in Step 5 back into Slot 2.
 12. Download the old NVRAM data from the SD card onto the new NVRAM using SP5-825-001 (NVRAM Data Download).

↓ Note

- This will take about 2 or 3 minutes.
13. Turn OFF the main power.
 14. Remove the SD card from Slot 2.
 15. Turn ON the main power.
 16. Output the SMC data ("ALL") using SP5-990-001, and make sure that it matches the SMC data you printed out in step 2 above (except for the value of the total counter).

★ Important

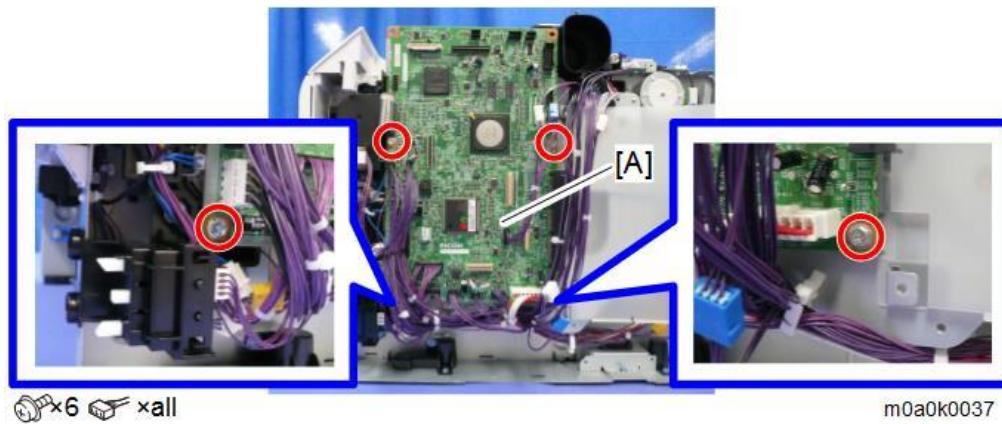
- Do all of the following if SP5-824-001 (NVRAM Data Upload) and SP5-825-001 (NVRAM Data Download) cannot be performed for some reason.
 1. Manually input all data based on the SMC report (factory settings).
 2. Install the Security function (Data Overwrite Security and HDD Encryption unit) again.

BiCU

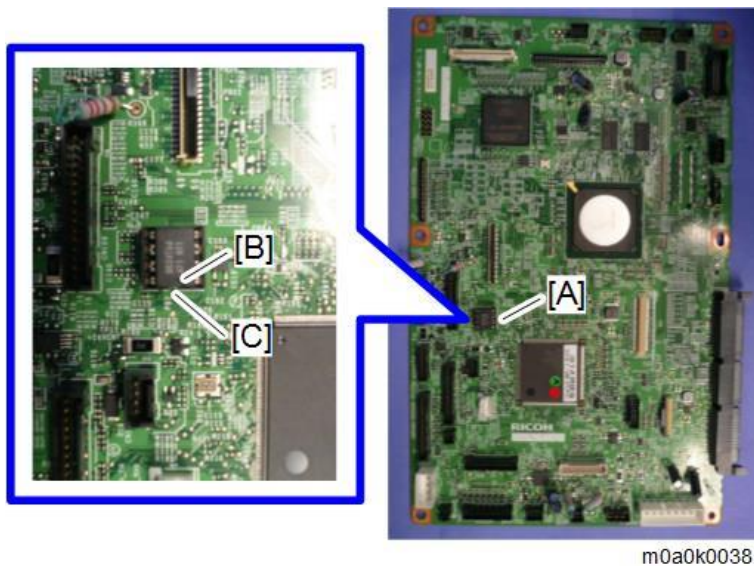
1. Remove the controller board. ([Controller Board](#))

4.Replacement and Adjustment

2. Remove the BiCU [A].



3. Remove the EEPROM [A] from the old board and install it on the new board.
Install so that the indentation [B] on EEPROM is facing the direction of the dent [C] that is printed on the BiCU board.



4. Install the new BiCU in the machine.

5. Enter the BiCU serial number.

Note

- If the BiCU serial number is not entered correctly, SC995-01 (serial number entry error) will occur.

6. Turn the main power OFF then ON.

7. Set the DIP switches on the new BiCU board to the same settings as the old board.

Note

- Make sure the EEPROM is correctly installed on the BiCU. Insert the EEPROM in the EEPROM slot with the "half-moon" pointing [C] to the downside.

EEPROM on the BiCU

Important

Keep EEPROMs away from any objects that can cause static electricity. Static electricity can damage EEPROM data.

1. Make sure that you have the SMC report (factory settings). This report comes with the machine.

2. Print out the SMC data (SP5-990-001).
3. Turn the main power OFF.
4. Install an SD card into SD Card Slot 2.
5. Turn the main power ON.
6. Copy the EEPROM data to an SD card (SP5-824-001).
7. Turn OFF the main power. Disconnect the power cord.
8. Replace the EEPROM on the BiCU and reassemble the machine.
9. Connect the power cord. Then turn the main power ON.

 Note

When you do this, SC995 will be displayed. However, DO NOT turn off the main power. Continue with this procedure.

10. Copy the data from the SD card to the EEPROM (SP5-825-001).
11. Enter the BiCU serial number.
12. Turn the main power OFF.
13. Remove the SD card from SD Card Slot 2.
14. Turn the main power ON.

 Important

- If the BiCU serial number is not entered correctly, SC995-01 (serial number entry error) will occur.

15. Use SP5-996-001 to set the area code.

 Important

- SP5-996-001 is a Factory SP mode. Please contact your Service key-person about how to access this mode.
- The initial value stored in the EEPROM is "1".
- After the EEPROM is replaced, the display for SP5-996-001 changes to Japanese.
- Refer to the following area code/destination list.
 - 1: Japan
 - 2: North America
 - 3: Europe
 - 4: Taiwan
 - 5: Asia
 - 6: China
 - 7: Korea

16. Turn the main power OFF and then ON.
17. Input the UP and SP mode settings based on the SMC data.

HDD

Before HDD Replacement

1. Insert an SD card in SD Card Slot 2 (lower slot).

4.Replacement and Adjustment

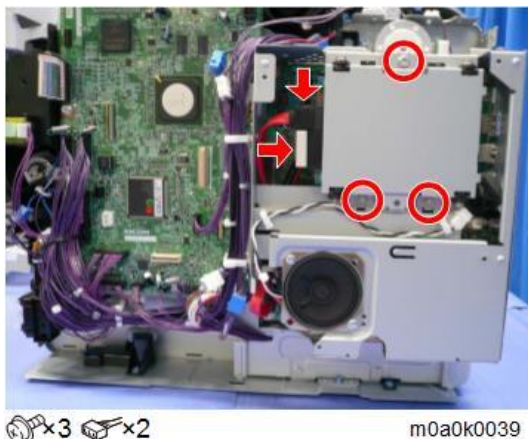
2. Enter the SP mode.
3. Execute SP5-846 51 to upload the address book data to the SD card.

Replacement Procedure

★ Important

Disconnect the machine power cord before starting the following procedure.

1. Remove the right cover. ([Right Cover](#))
2. Remove the controller box cover. ([FCU Board](#))
3. Remove the HDD.



4. Separate the old HDD [A] from the bracket [B].



★ Important

- If the HDD is damaged, you may not be able to retrieve this data from the HDD.

After HDD Replacement

When you turn the main power ON after installing the hard disk, initialization of the disk starts automatically.

1. Enter the SP mode.
2. Execute SP5-846-52 to restore the address book data to the HDD.

Note

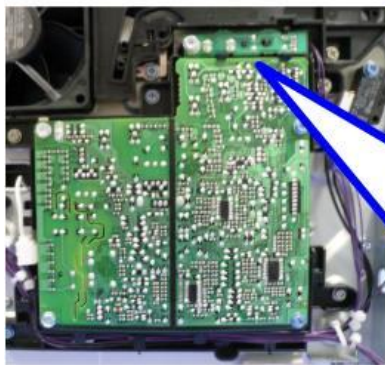
- Never remove a used HDD unit from the work site without the consent of the customer (even if it is suspected to be damaged).
- The HDD must remain with the customer for disposal or safe keeping.
- The HDD may contain proprietary or classified (confidential or secret) information. Specifically, the HDD contains Document Server data and data stored in temporary files created automatically during copy job sorting and jam recovery. Such data is stored on the HDD in a special format. Normally, this data cannot be read, but could be possible that the data is recovered with illegal methods.

Reinstallation

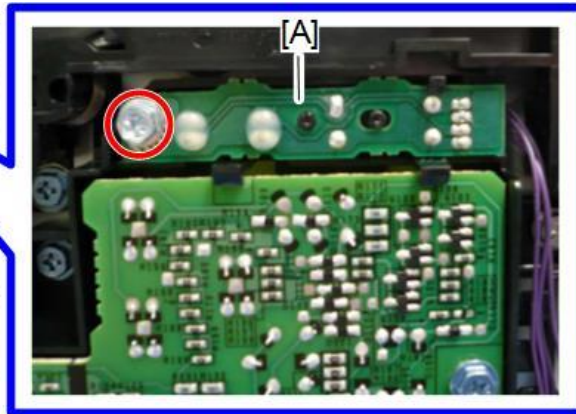
- Explain to the customer that the following information stored on the HDD is lost when the HDD is replaced:
Document Server documents, and Document Server address book.
- The address book and document server documents (if needed) must be input again.
- If the customer is using Data Overwrite Security, the Data Encryption feature or the Searchable PDF feature, these applications must be installed again.

Toner End Sensor

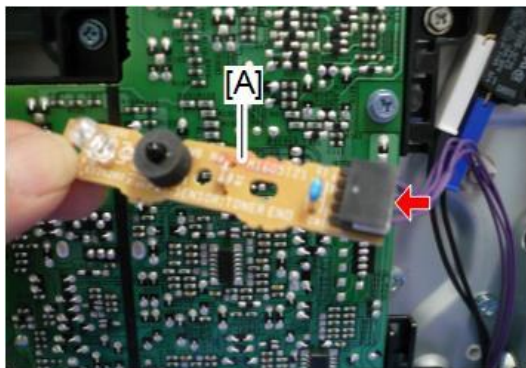
1. Remove the left cover. ([Left Cover](#))
2. Remove the toner end sensor [A].



①x1



m0a0k0040



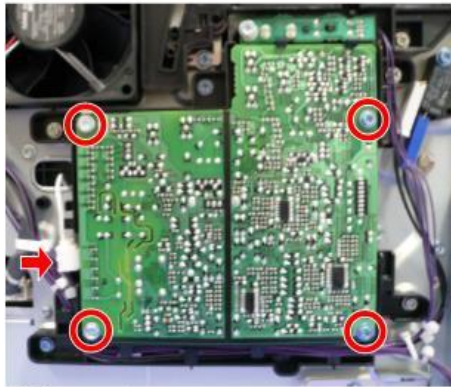
①x1

m0a0k0041

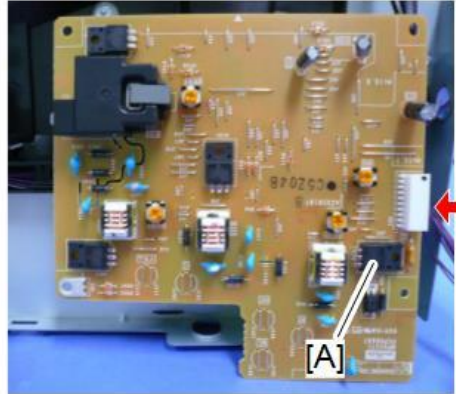
4.Replacement and Adjustment

HVPS

1. Remove the left cover. ([Left Cover](#))
2. Remove the HVPS [A].



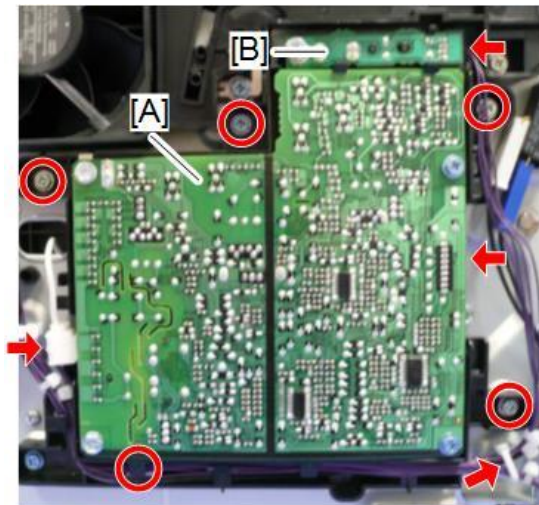
⚙️x4 📦x2



m0a0k0042

HVPS with Bracket

1. Remove the left cover. ([Left Cover](#))
2. Remove the toner end sensor [B] and HVPS [A] with bracket.

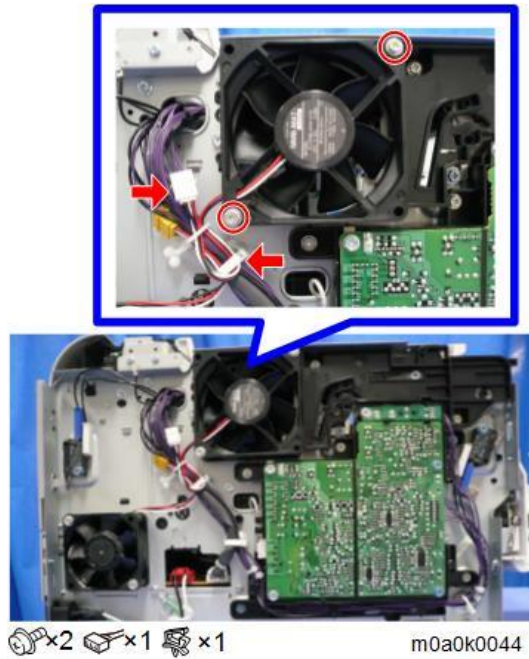


⚙️x5 📦x3 📦x1

m0a0k0043

Fusing Fan

1. Remove the left cover. ([Left Cover](#))
2. Remove the fusing fan [A].

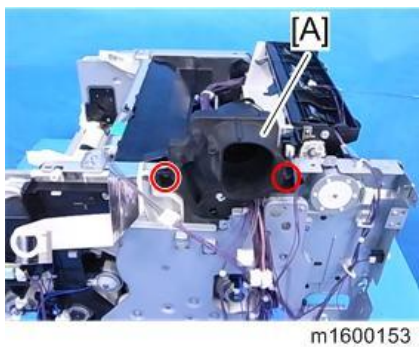


Note

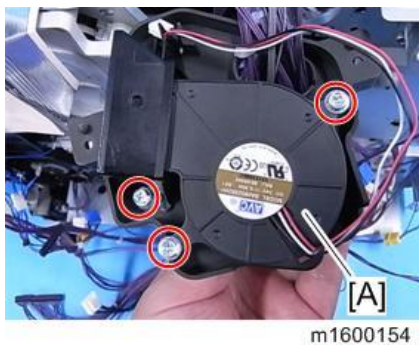
- When you reattach the fusing fan, attach it correctly (as shown above, the face of the fan with the sticker is on the outside).

PCDU Cooling Fan

1. Remove the upper cover. ([Upper Cover](#))
2. Remove the BiCU. ([BiCU](#))
3. Remove the PCDU cooling fan [A] with bracket. ( x2,  x1)



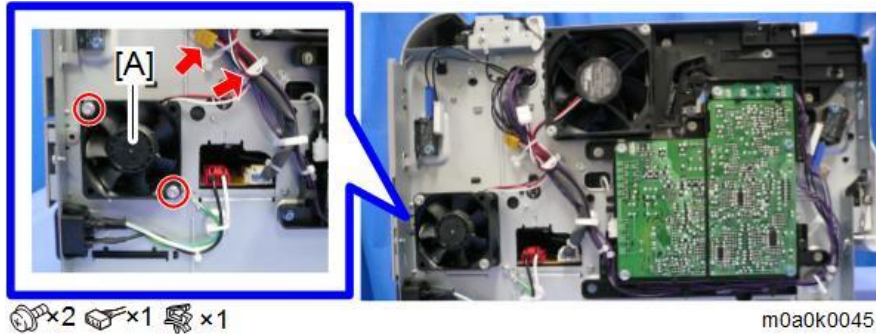
4. Remove the PCDU cooling fan [A] from the bracket. ( x3)



4.Replacement and Adjustment

PSU Cooling Fan

1. Remove the left cover. ([Left Cover](#))
2. Remove the PSU cooling fan [A].

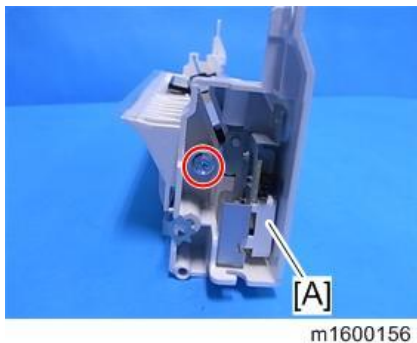


Note

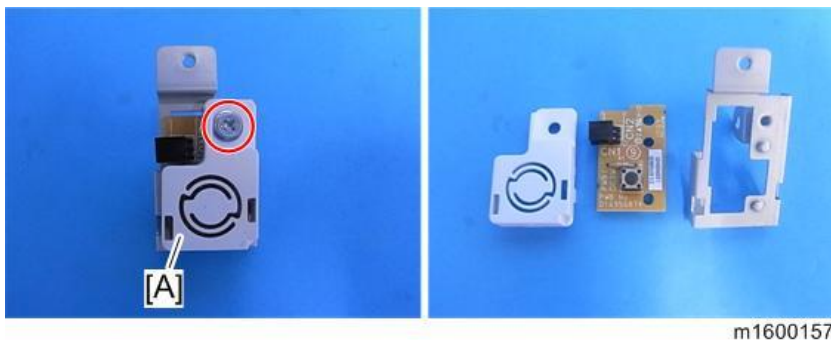
- When you reattach the PSU cooling fan, the face of the fan with the sticker must be on the inside.

DC Switch

1. Remove the bypass feed unit. ([Bypass Feed Unit](#))
2. Remove the DC Switch [A] with bracket. (⚙️ x1)



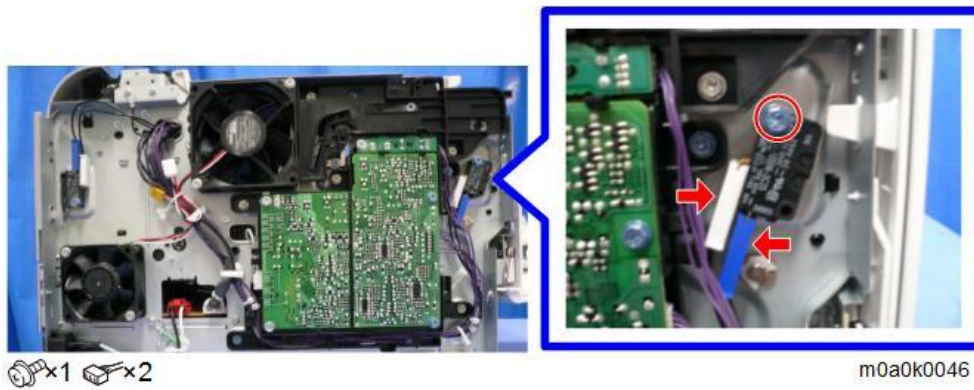
3. Remove the DC Switch from the bracket [A]. (⚙️ x1)



Front Door Interlock Switch

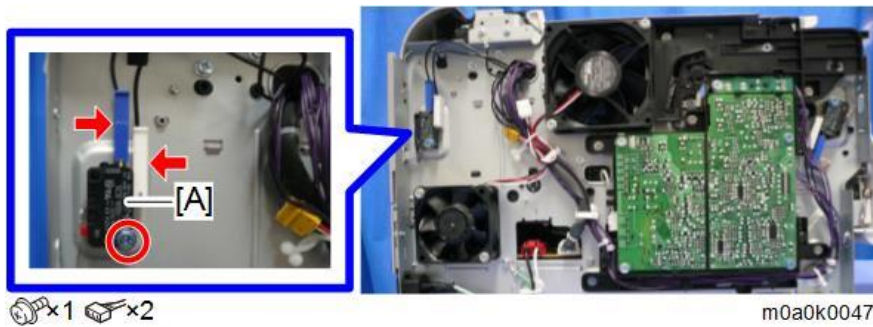
1. Remove the left cover. ([Left Cover](#))

2. Remove the front door interlock switch [A].



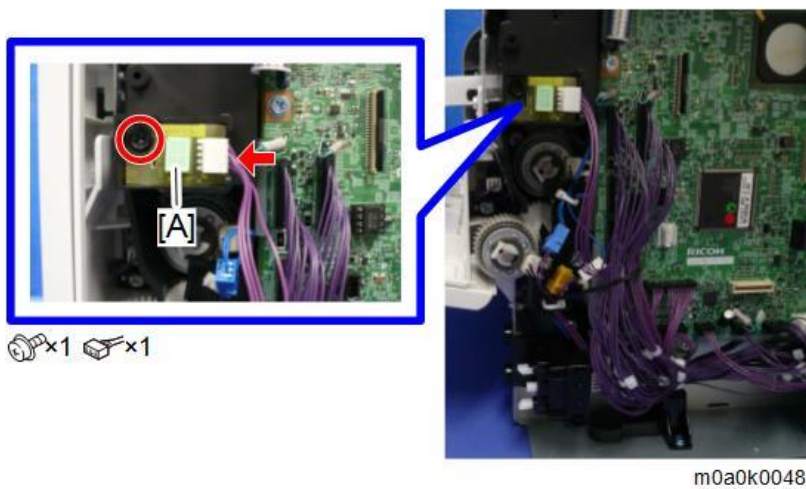
Rear Door Interlock Switch

1. Remove the left cover. (Left Cover)
2. Remove the rear door interlock switch [A].



Temperature/Humidity Sensor

1. Remove the right cover. (Right Cover)
2. Remove the temperature/humidity sensor [A].



SPDF

⚠ CAUTION

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

SPDF Unit

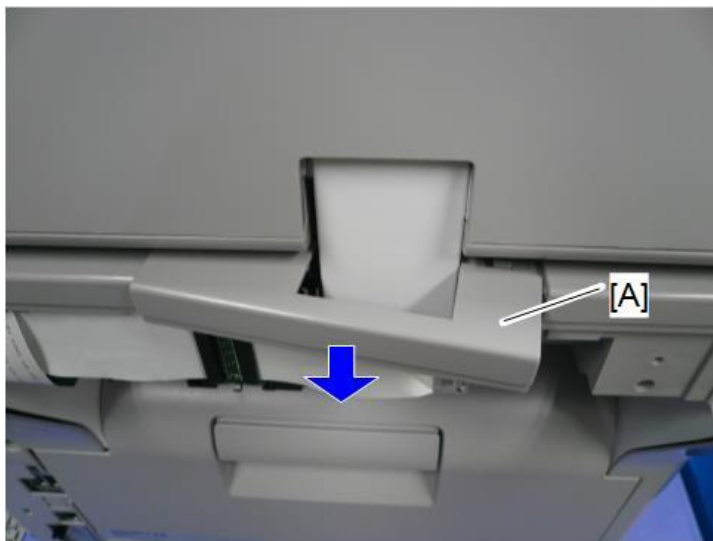
1. Remove the scanner rear cover [A].



 x2

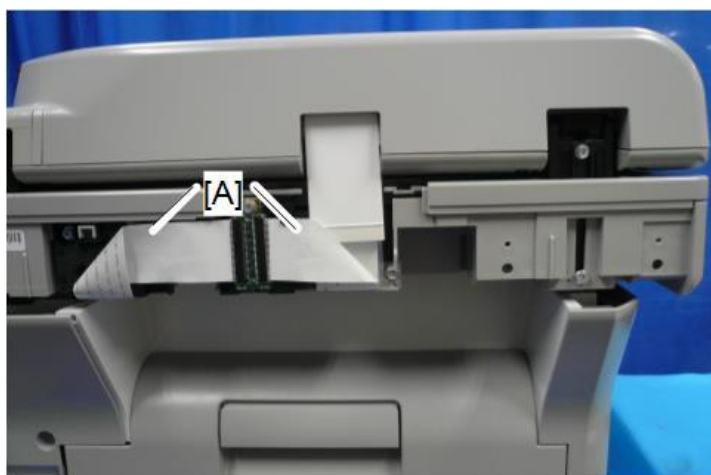
m0a0k1014

2. Remove the scanner rear upper cover [A].



m0a0k1015

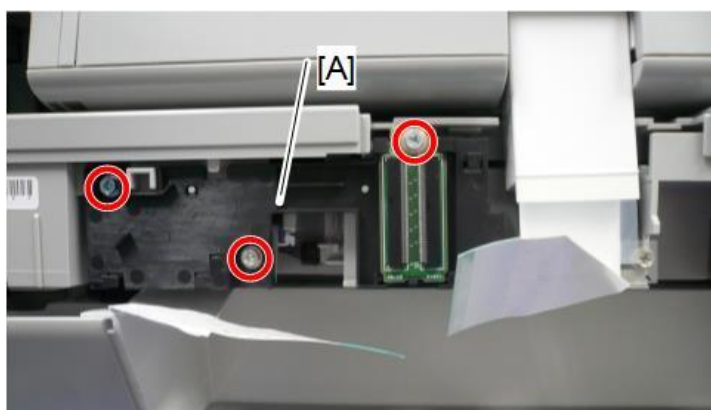
3. Disconnect the FFCs [A].



x2

m0a0k1016

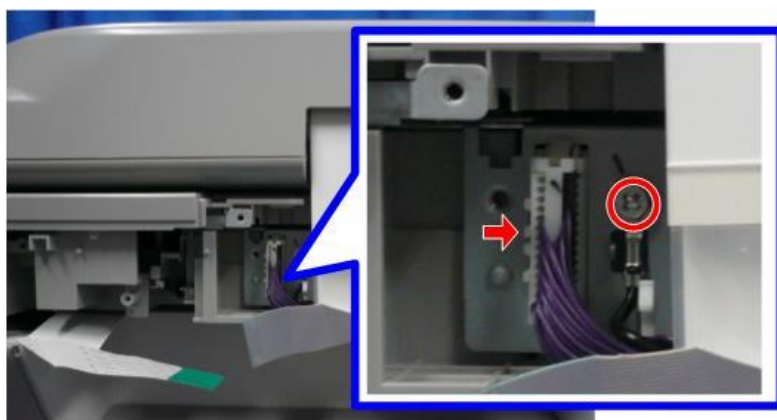
4. Remove the bracket [A].



x3

m0a0k1017

5. Remove the screw and disconnect the connector.

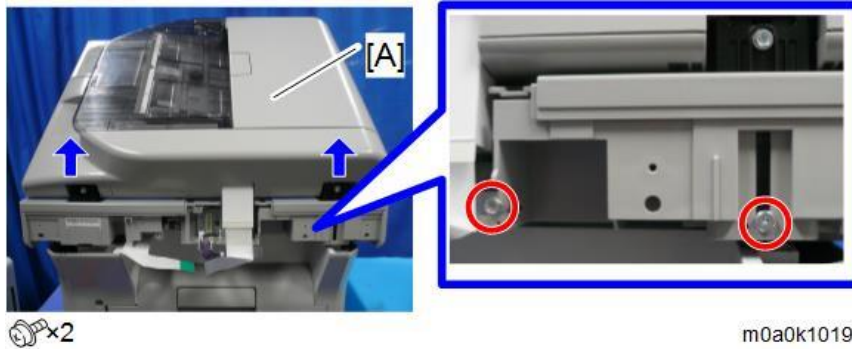


x1 x1

m0a0k1018

6. Lift the SPDF [A] to remove it.

4.Replacement and Adjustment



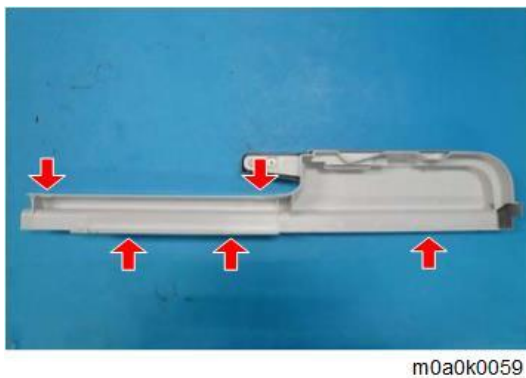
Note

- The joint parts of the SPDF have tabs that latch onto the scanner. You need to push the SPDF forward fully while removing it, in order to detach the SPDF from the tabs.

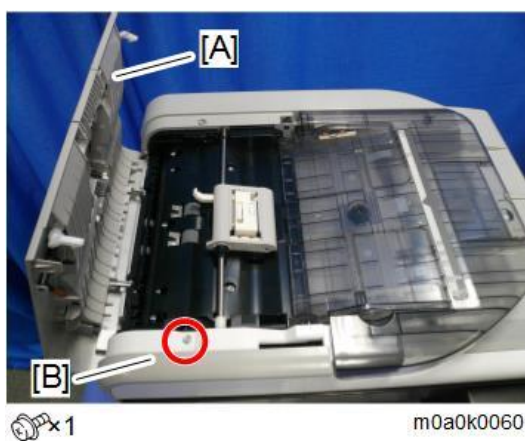
SPDF Front Cover

Note

- There are five tabs on the back of the SPDF front cover.



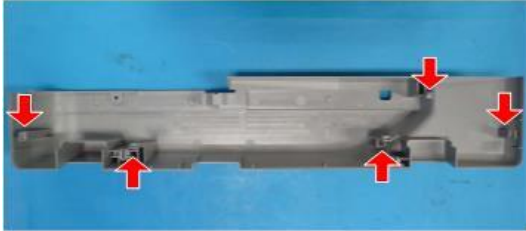
1. Open the SPDF top cover [A].
2. Remove the SPDF front cover [B].



SPDF Rear Cover

↓ Note

- There are five tabs on the back of the SPDF rear cover.



m0a0k0061

1. Open the SPDF top cover.
2. Remove the SPDF rear cover.

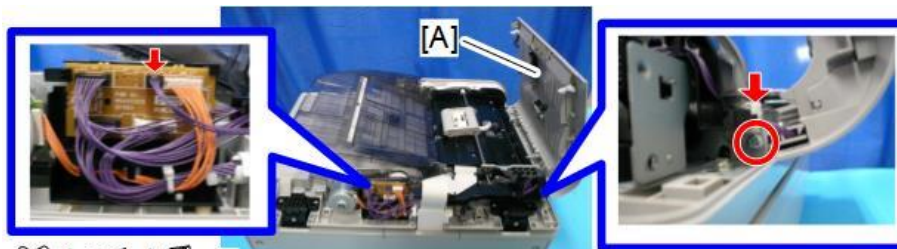


x1

m0a0k1013

SPDF Top Cover

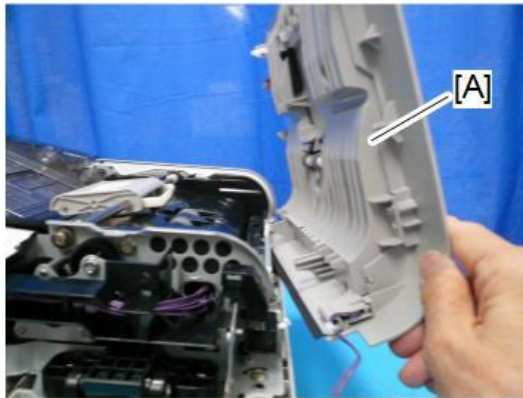
1. Remove the SPDF rear cover. ([SPDF Rear Cover](#))
2. Remove the SPDF top cover [A].



x1
 x1
 x4

m0a0k0063

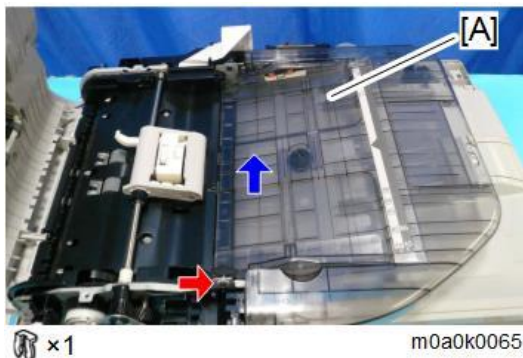
4.Replacement and Adjustment



m0a0k0064

SPDF Original Tray

1. Remove the SPDF front cover. ([SPDF Front Cover](#))
2. Remove the SPDF rear cover. ([SPDF Rear Cover](#))
3. Slide the SPDF original tray [A] to remove it.

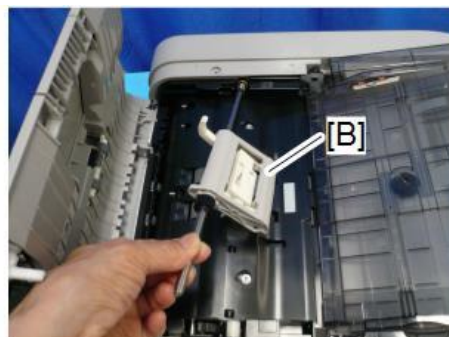
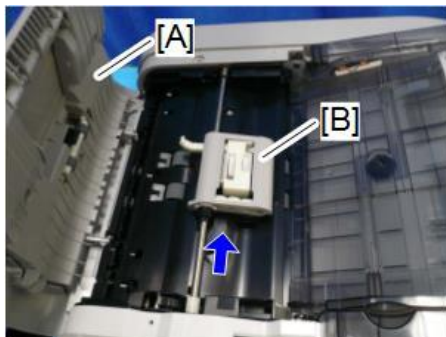


×1

m0a0k0065

Original Feed Unit

1. Open the SPDF top cover [A].
2. Slide the original feed unit [B] towards the rear to remove it.

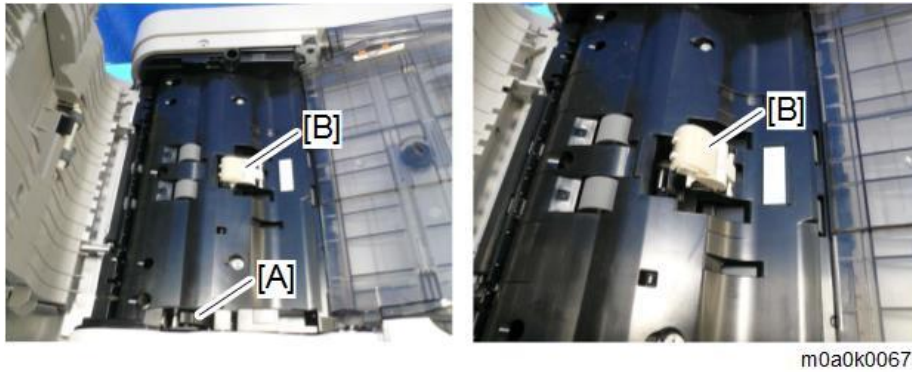


m0a0k0066

SPDF Friction Pad

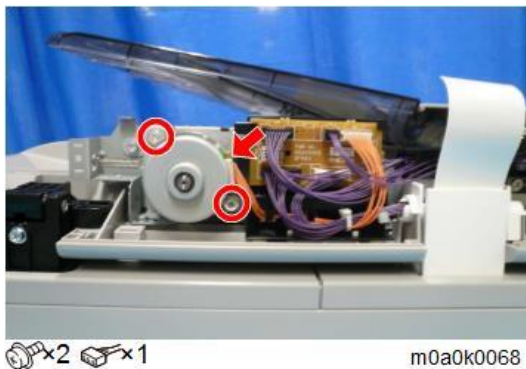
1. Remove the original feed unit. ([Original Feed Unit](#))

2. Push the lever [A] and then remove the SPDF friction pad [B].



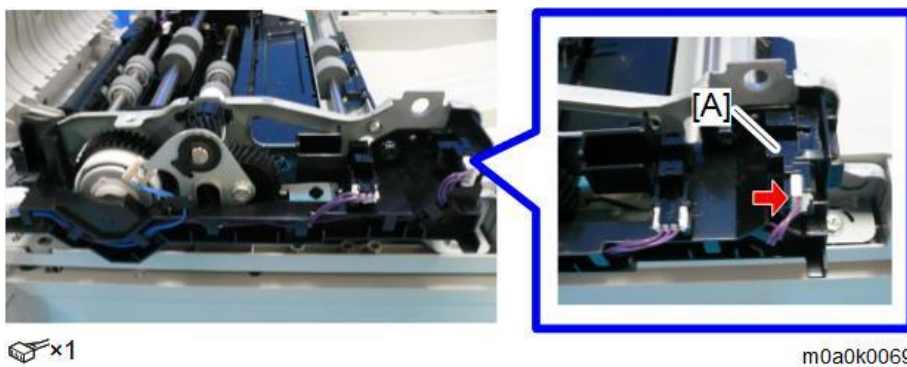
SPDF Drive Motor

1. Remove the SPDF rear cover. ([SPDF Rear Cover](#))
2. Remove the SPDF drive motor.



SPDF Top Cover Sensor

1. Remove the SPDF front cover. ([SPDF Front Cover](#))
2. Remove the SPDF top cover sensor [A].



SPDF Original Set Sensor

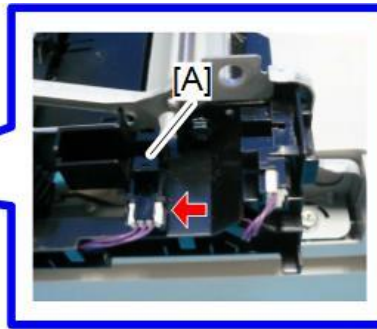
1. Remove the SPDF front cover. ([SPDF Front Cover](#))

4.Replacement and Adjustment

2. Remove the SPDF original set sensor [A].



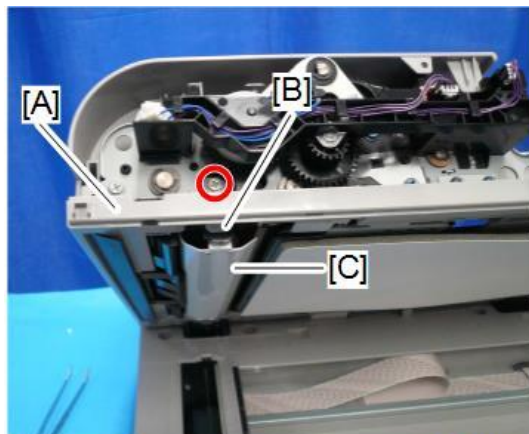
×1



m0a0k0070

SPDF Registration Sensor

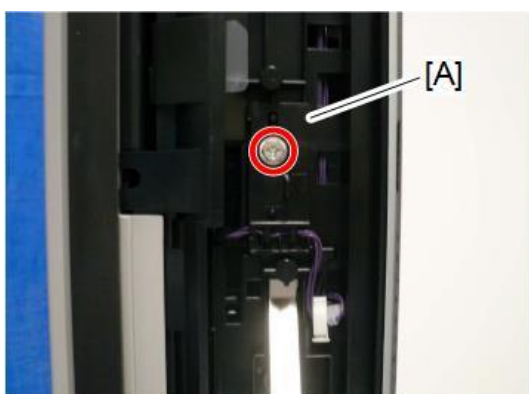
1. Open the SPDF [A].
2. Remove the plate [B] to remove the scanning guide plate [C].



×1

m0a0k0071

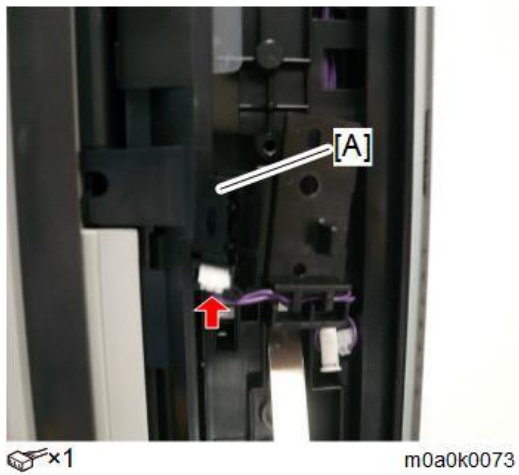
3. Remove the SPDF registration sensor with bracket [A].



×1

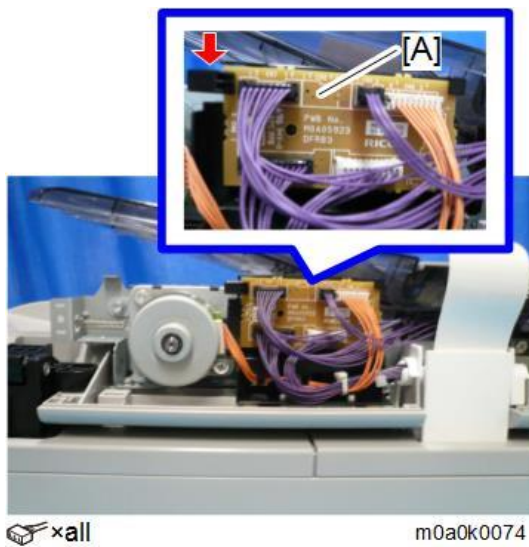
m0a0k0072

4. Remove the registration sensor [A] from the bracket.



DFRB

1. Remove the SPDF rear cover. ([SPDF Rear Cover](#))
2. Remove the DFRB [A].

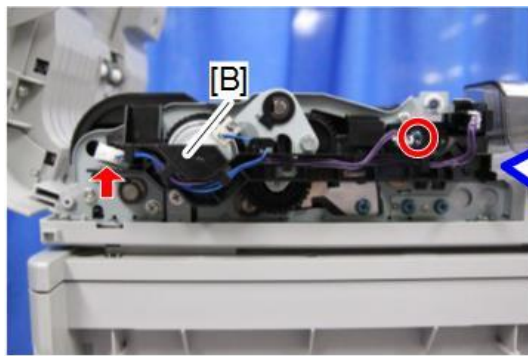


SPDF Feed Clutch

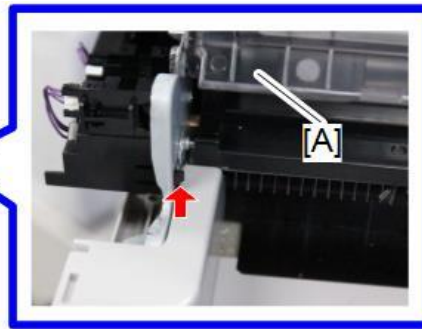
1. Remove the front cover. ([SPDF Front Cover](#))

4.Replacement and Adjustment

2. Release the hook with the original tray [A] swinging up and remove the harness guide [B].

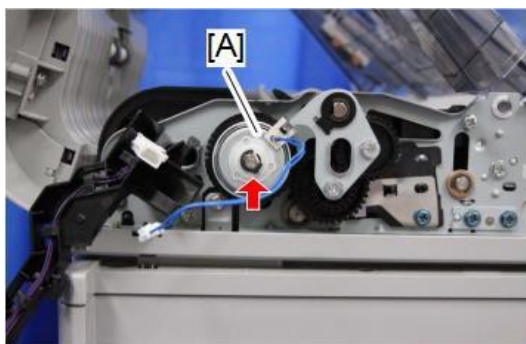


⚙️ x1 📦 x1



m0a0k0075

3. Remove the SPDF feed clutch [A].

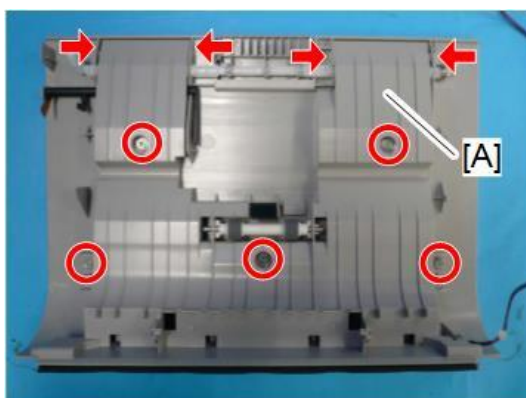


⚙️ x1

m0a0k0076

SPDF Feed Sensor

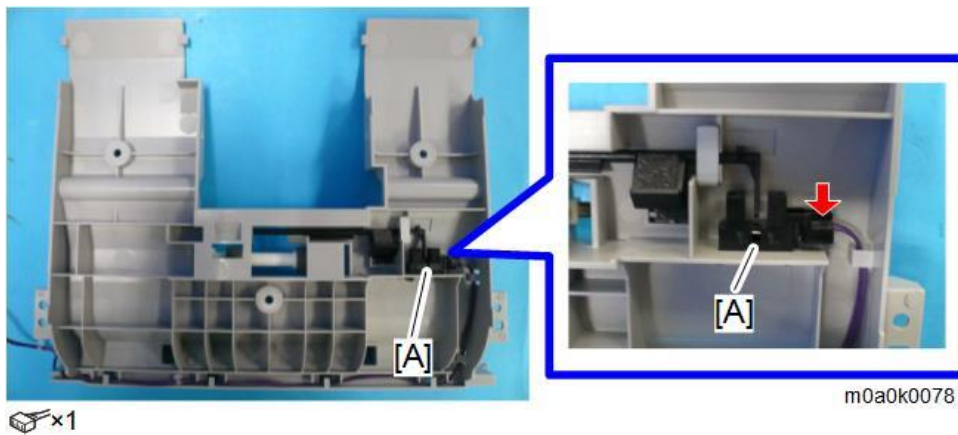
1. Remove the SPDF top cover. ([SPDF Top Cover](#))
2. Remove the SPDF feed sensor bracket [A].



⚙️ x5

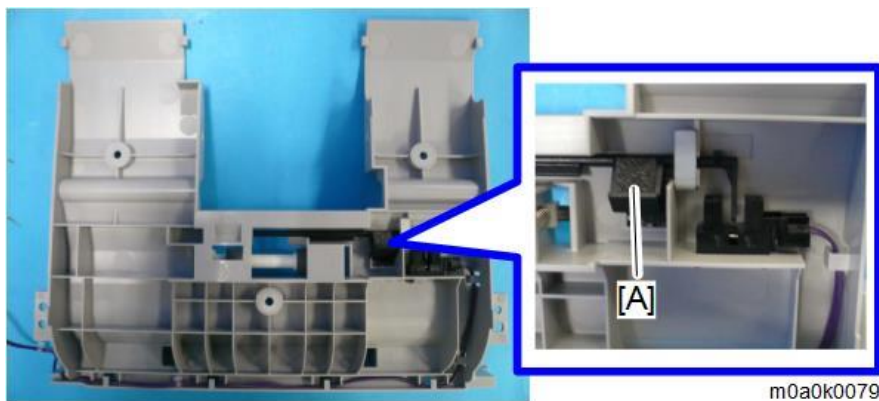
m0a0k0077

3. Remove the SPDF feed sensor [A].



SPDF Feed Sensor Actuator

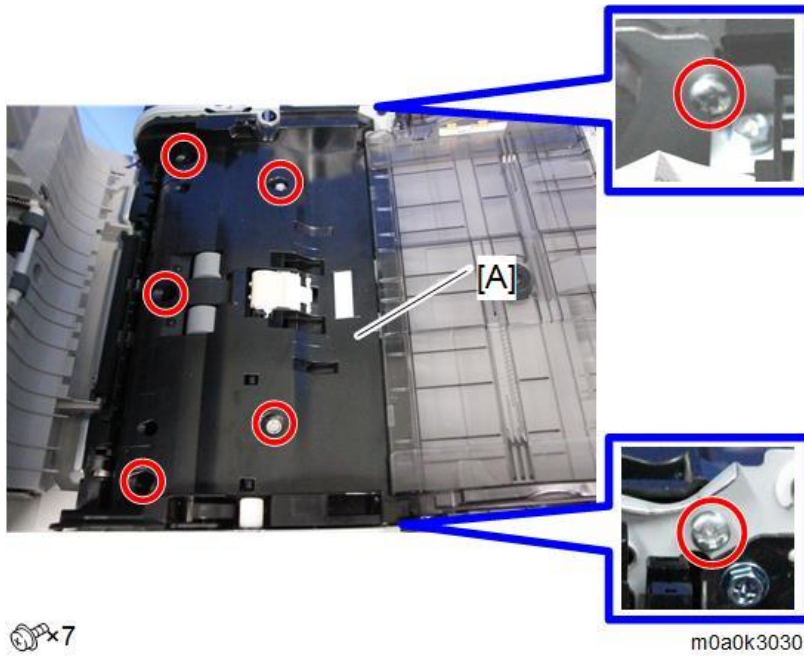
1. Remove the SPDF top cover. ([SPDF Top Cover](#))
2. Remove the SPDF feed sensor bracket. ([SPDF Feed Sensor](#))
3. Remove the SPDF feed sensor actuator [A].



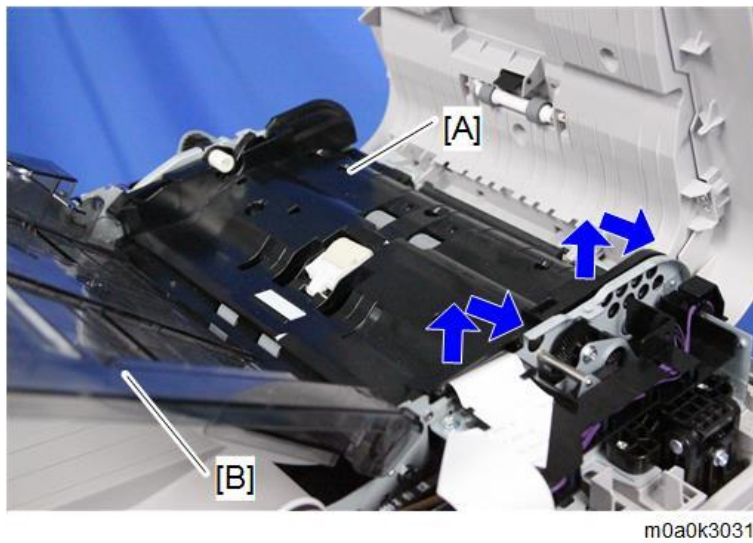
SPDF CIS

1. Remove the SPDF front cover.
2. Remove the SPDF rear cover.
3. Remove the original feed unit.
4. Remove the SPDF guide plate [A].

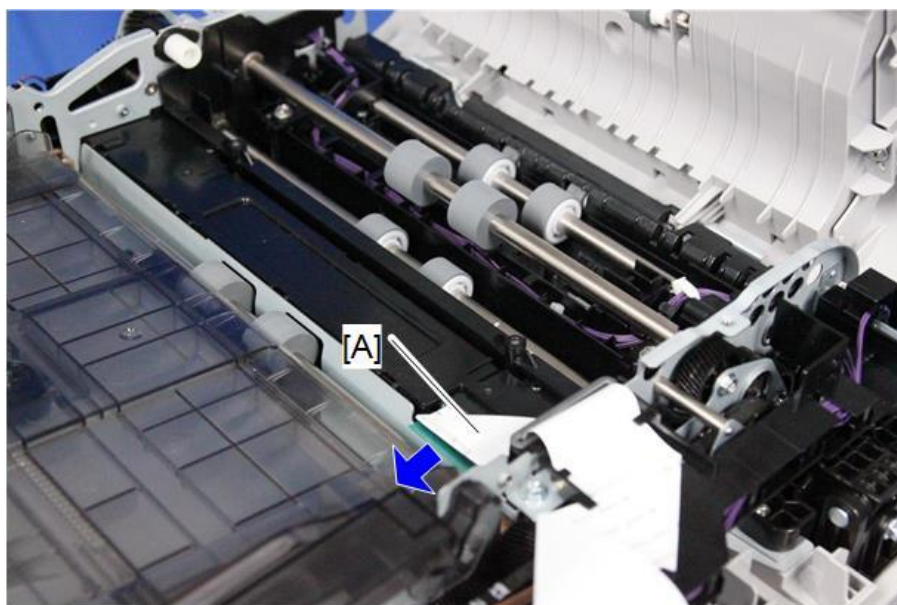
4.Replacement and Adjustment



- Lift the back of the SPDF guide plate [A] while swinging up the original tray [B], and slide it toward the back of the SPDF unit.



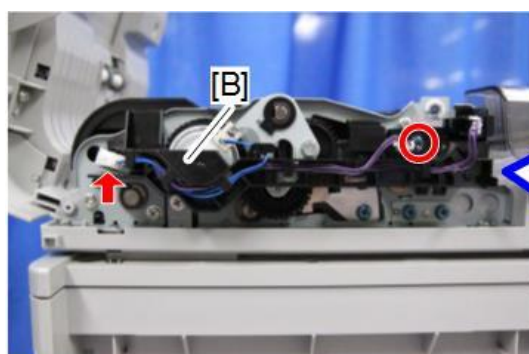
5. Disconnect the FFC [A].



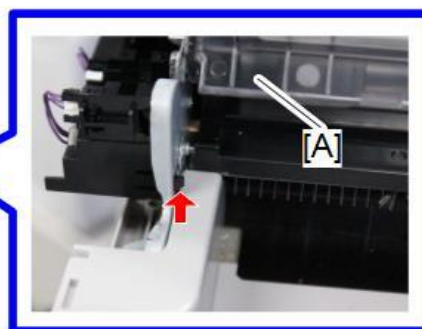
x1

m0a0k3035

6. Remove the harness guide [B] by releasing the hook while swinging up the original tray [A].

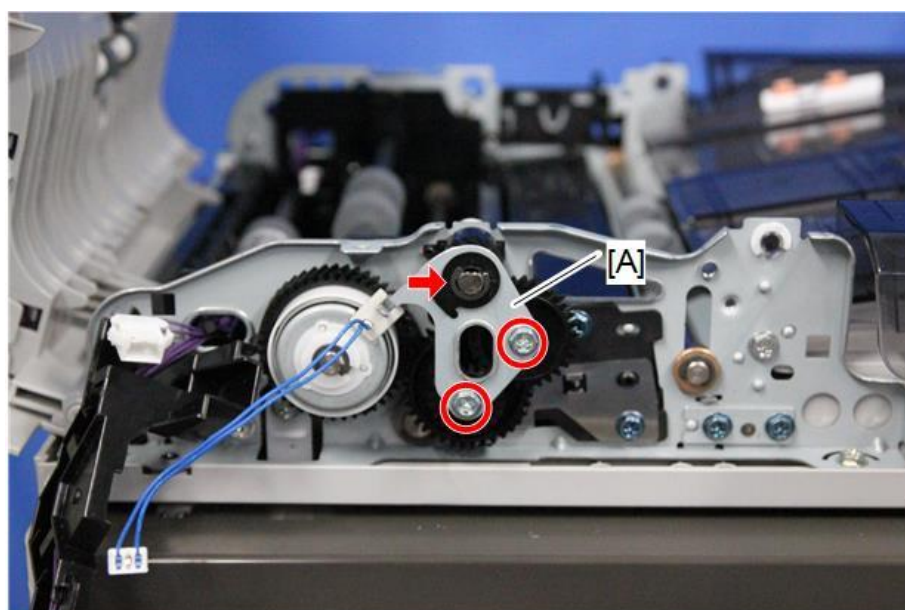


x1 x1



m0a0k0075

- Z. Remove the SPDF drive bracket [A].



x2 x1

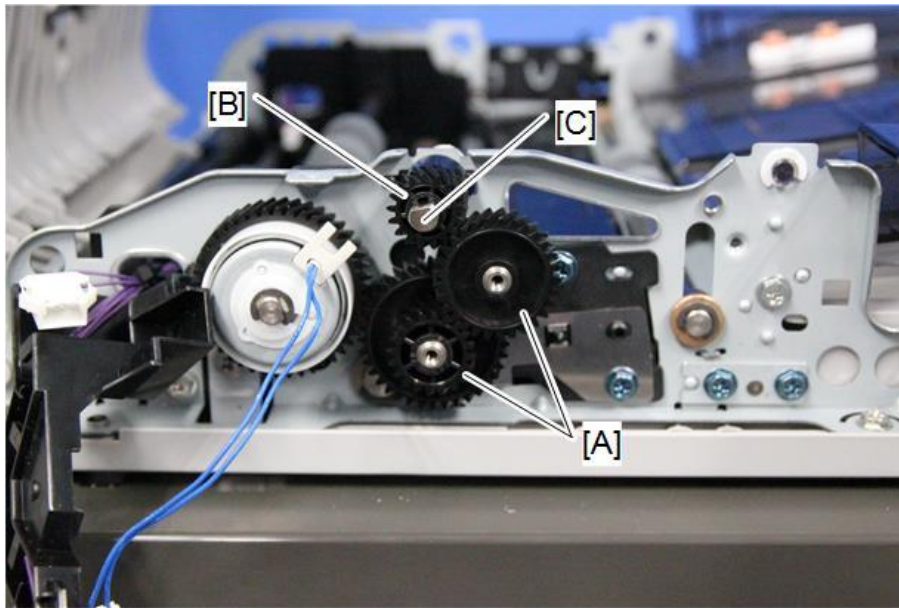
m0a0k3032

4.Replacement and Adjustment

8. Remove the gears [A].

★ Important

- Do not remove the gear [B], to prevent the inner pin [C] from dropping into the machine.

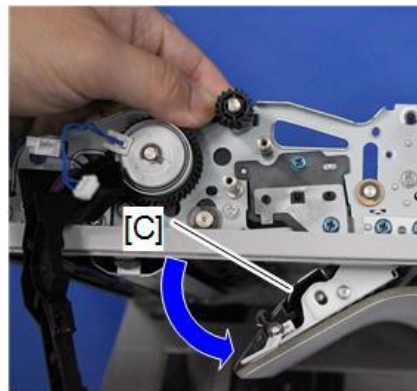
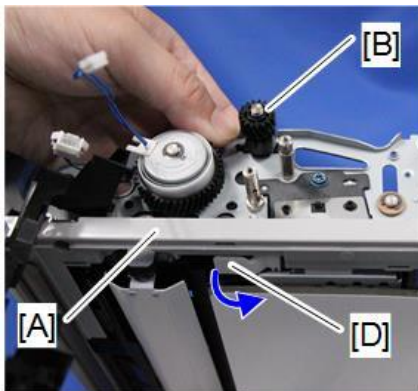


m0a0k3033

9. Open the SPDF unit [A] while holding the gear [B] by hand, and open the scanning guide plate (rear side) [C] by pulling the release lever [D].

★ Important

- Hold the gear [B]. It is not fixed, and may drop into the machine.
- Open the scanning guide plate (rear side) [C] before replacing SPDF CIS. Otherwise, the surface could be damaged.



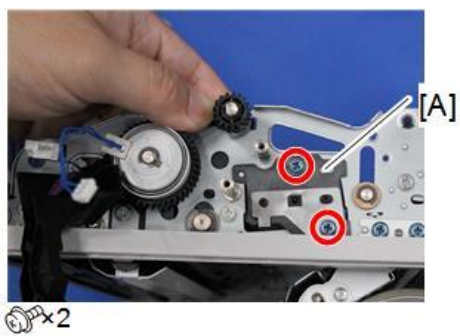
m0a0k3034

10. Pull out the SPDF CIS [A] from the SPDF unit.

↓ Note

- The SPDF CIS can be easily removed by pushing it from behind.

4.Replacement and Adjustment



m0a0k3036

Scanner

⚠ CAUTION

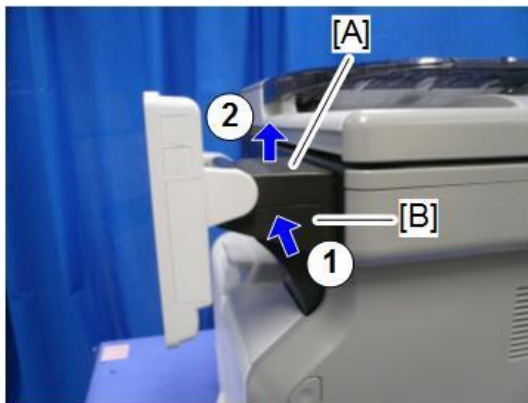
- Turn OFF the main power and disconnect the power cord before you start any of the procedures in this section.

Scanner Unit (with SPDF)

↓ Note

- If you want to remove only the SPDF, see [SPDF Unit](#).

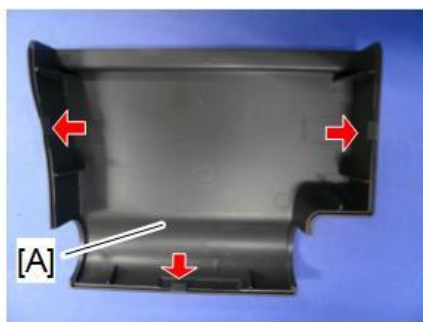
1. Remove the left cover. ([Left Cover](#))
2. Remove the right cover. ([Right Cover](#))
3. Pull the side of the operation panel lower cover [B] to release the hooks of the operation panel upper cover [A] and remove the covers.



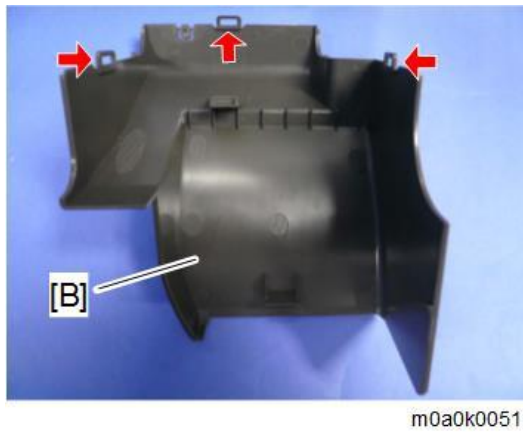
m0a0k0049

↓ Note

- There are three tabs on the upper cover [A] and lower cover [B].



m0a0k1009



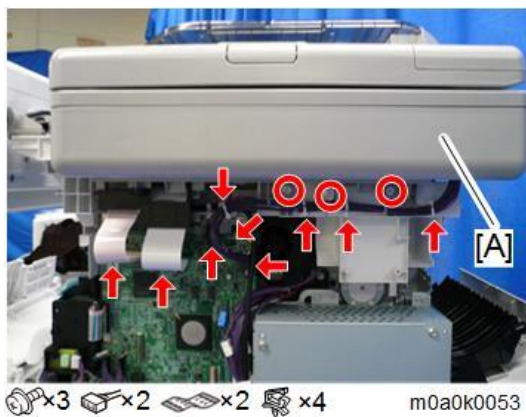
4. Remove the scanner front cover [A].



m0a0k0052

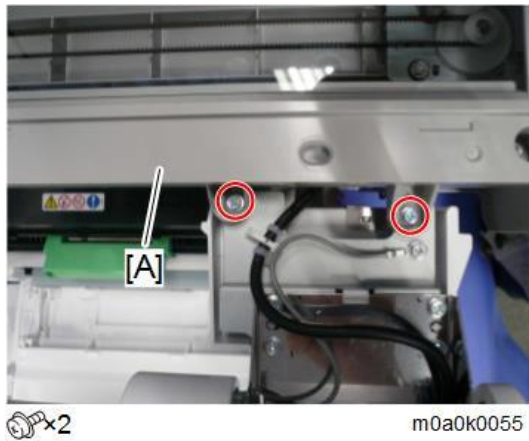
5. Remove the screws for scanner unit and SPDF unit [A].

Right Side

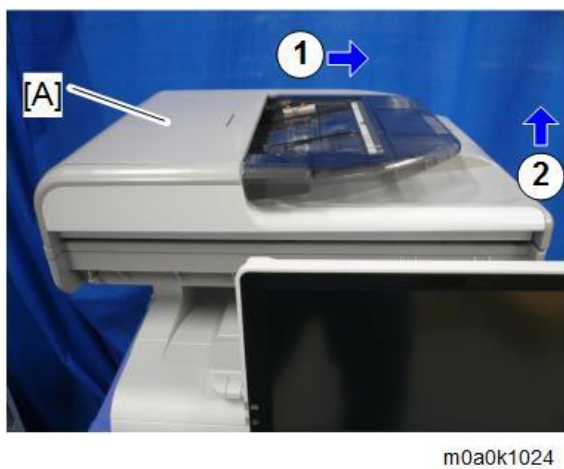


Upper Side

4.Replacement and Adjustment

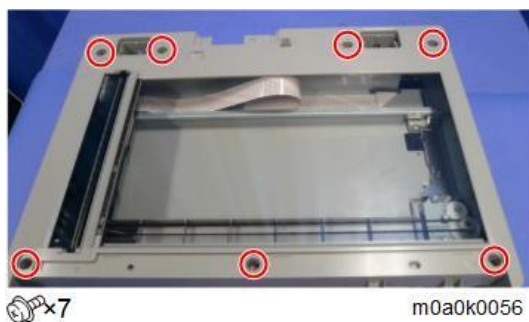


6. Slide the SPDF and the scanner unit [A] to the right and then lift them from the machine.



Scanner Upper Cover

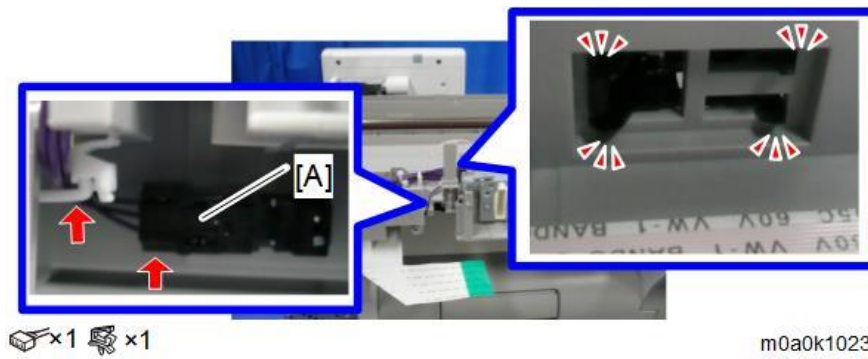
1. Remove the SPDF. ([SPDF Unit](#))
2. Remove the scanner front cover. ([Scanner Unit \(with SPDF\)](#))
3. Remove the scanner upper cover [A].



SPDF Open/Closed Sensor

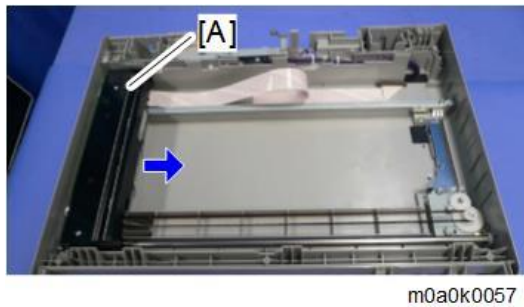
1. Remove the scanner upper cover. ([Scanner Upper Cover](#))

2. Remove the SPDF open/closed sensor [A].

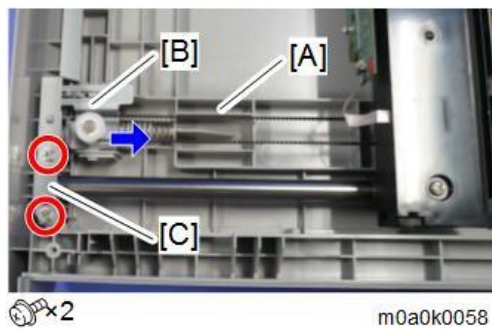


Carriage

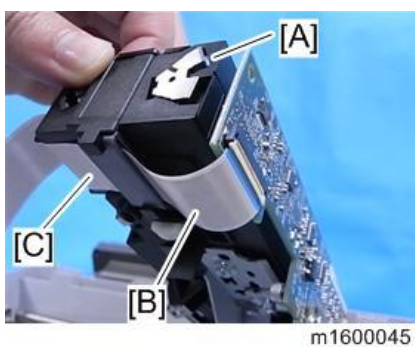
1. Remove the scanner upper cover. ([Scanner Upper Cover](#))
2. Move the carriage [A] to the right.



3. Slide the bracket [B] as shown below to detach the belt [A] from the pulley.
4. Remove the bracket [C].



5. Remove the carriage [A]. (x1)

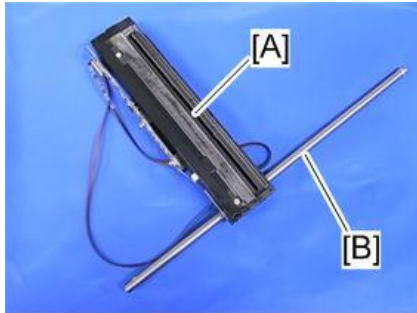


4.Replacement and Adjustment

Note

- In the area [C], the flat cable [B] is fixed with double-sided tape. Do not try to strip the flat cable [B] off by force.

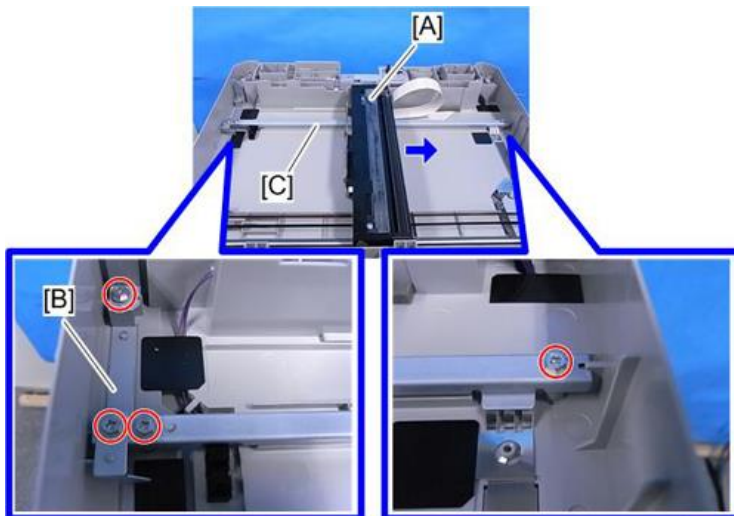
6. Remove the shaft [B] from the carriage [A].



m1600046

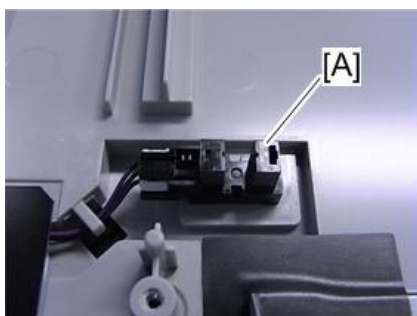
Carriage Unit HP Sensor

1. Remove the scanner upper cover. ([Scanner Upper Cover](#))
2. Move the carriage [A] to the middle of the scanner unit.
3. Remove the bracket [B] and rail [C]. (⚙ x4)



m1600047

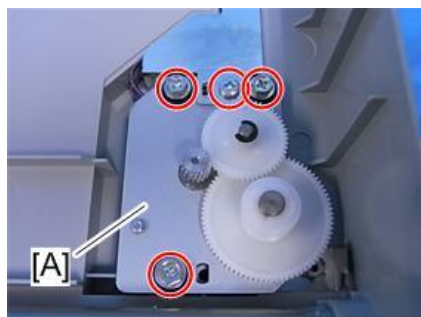
4. Remove the carriage unit HP sensor [A]. (🔧 x1, Hook)



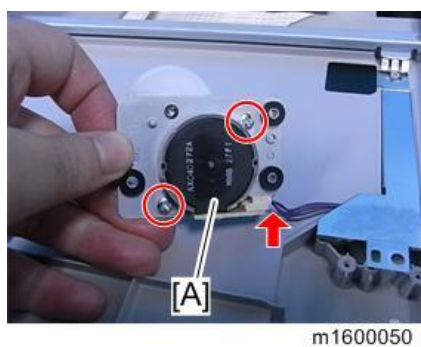
m1600048

Scanner Motor

1. Remove the scanner upper cover. ([Scanner Upper Cover](#))
2. Remove the scanner motor [A] from the scanner unit. (⚙️ x4)



3. Remove the scanner motor [A]. (⚙️ x2, 📦 x1)



5. System Maintenance

Service Program Mode

CAUTION

- Make sure that the data-in LED (🔌) is not on before you enter the SP mode. This LED indicates that some data is coming to the machine. When the LED is on, wait for the machine to process the data.

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 may be deleted or settings may be changed. In such a case, product quality can no longer be guaranteed.

Entering SP Mode

For details, ask your supervisor.

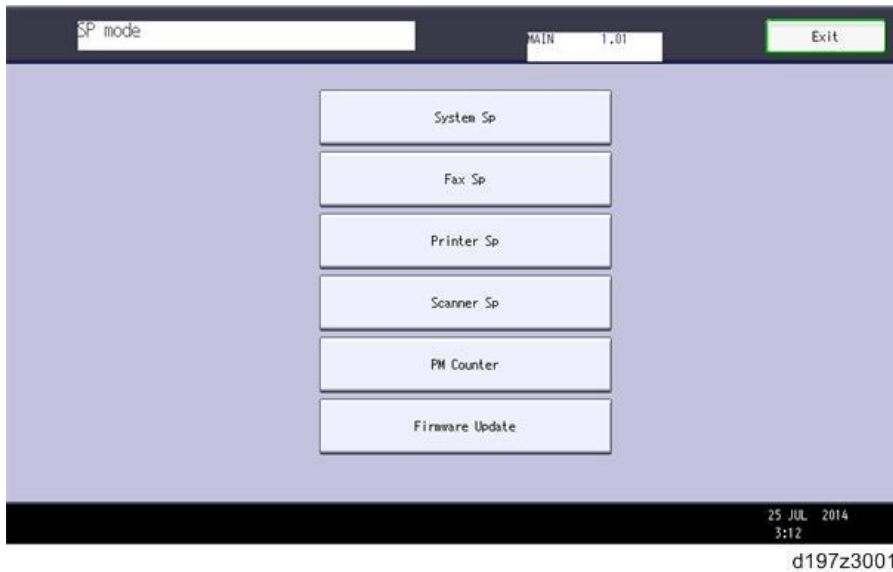
Exiting SP Mode

- Press "Exit" on the LCD twice to return to the copier screen.

Types of SP Modes

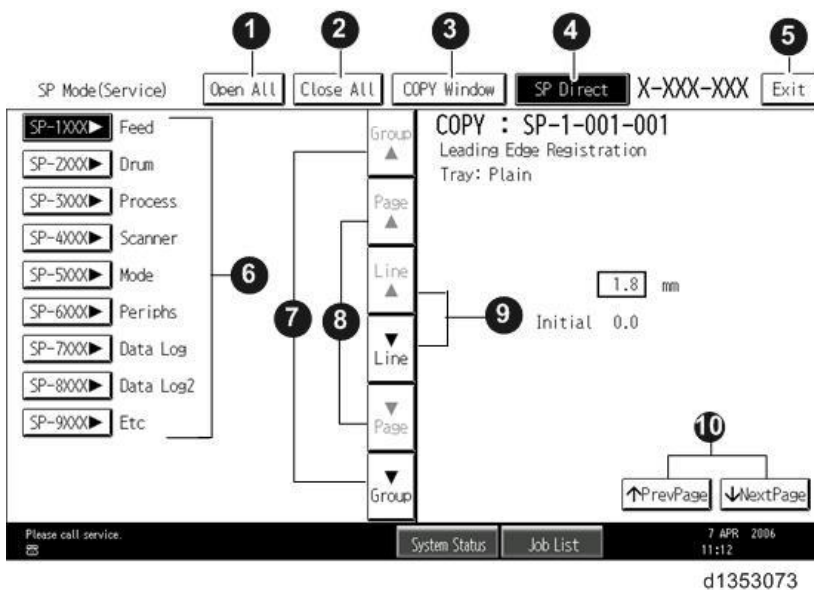
- System SP: SP modes related to the engine functions
- Printer SP: SP modes related to the controller functions
- Scanner SP: SP modes related to the scanner functions
- Fax SP: SP modes related to the fax functions

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 copier screen (copy mode) so you can make test copies. Press SP Mode (highlighted) in the copier screen to return to the SP mode screen,
4	If you know the SP number, enter the SP code directly by using the number keys and then pressing [#]. 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 copier screen to resume normal operation.
6	Press any Class 1 number to open a list of Class 2 SP modes.
7	Press to scroll 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).

5. System Maintenance

9	Press to scroll to 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.

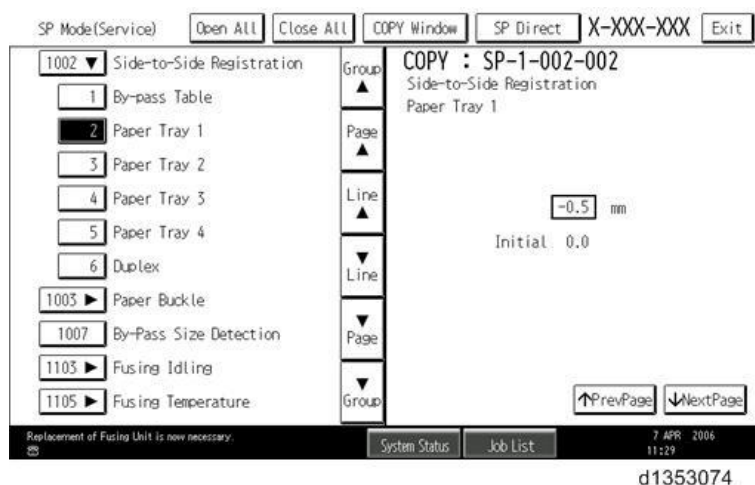
Switching Between SP Mode and Copy Mode for Test Printing

1. In the SP mode, select the test print. Then press "Copy Window".
2. From the copier screen (copier mode), select the appropriate settings (such as paper size) for the test print.
3. Press the [Start] key 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] key 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:

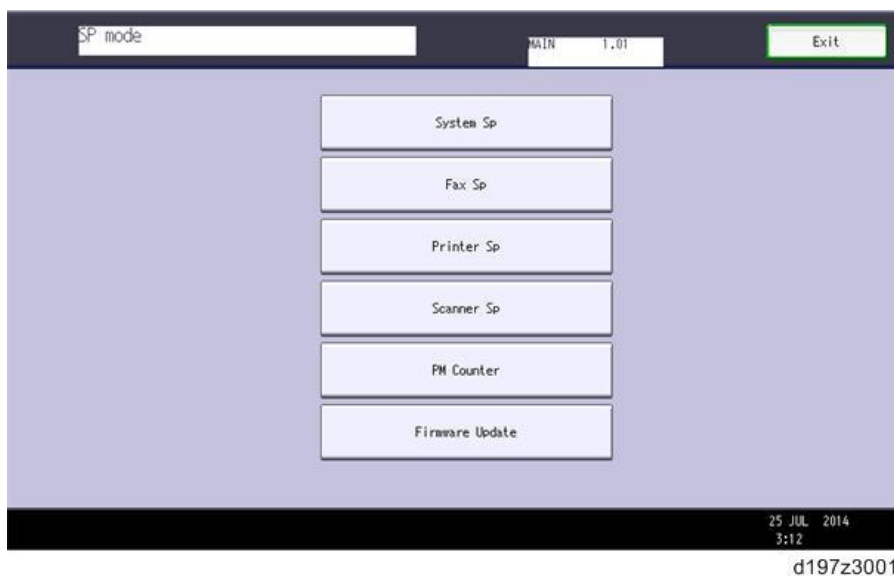
User Tools > System Settings > Administrator Tools > Service Mode Lock > OFF

- This unlocks the machine and lets you get access to all the SP codes.
 - The CE can service the machine and turn OFF then ON the machine power. It is not necessary to ask the Administrator to log in again each time the main power is turned ON.
2. Go into the SP mode and set SP5-169 to "1" if you must use the printer bit switches.
 3. After machine servicing is completed:
 - Change SP5-169 from "1" to "0".
 - Turn OFF then ON the machine power. Tell the administrator that you have completed servicing the machine.
 - The Administrator will then set the "Service Mode Lock" to ON.

PM Counter/ Firmware Update

PM Counter and Firmware Update can be entered in the SP mode main screen.

- PM Counter: PM counters for each PM part
- Firmware Update: Immediate remote update and remote update at next visit



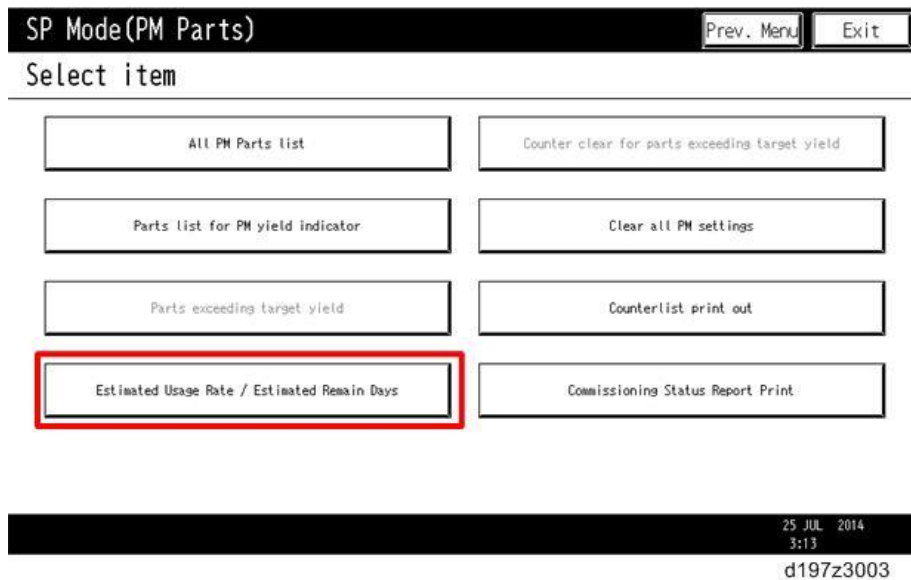
How to Check the PM Counter

5. System Maintenance

1. Enter the SP mode, and then press [PM Counter].



2. Press [Estimated Usage Rate/Estimated Remain Days].



3. You can see the "Remaining Days for each part".

No	Description	Exceed	Usage Rate	Remain Days	
002	#PCU	000	255	255	Clear
023	#Dev Unit	000	255	255	Clear
108	#Paper Transfer Roller Unit	000	255	255	Clear
115	#Fusing Unit	000	255	255	Clear
206	#ADF Pick-up Roller	000	255	255	Clear
207	#ADF Paper Supply Belt	000	255	255	Clear
208	#ADF Reverse Roller	000	255	255	Clear

01/01

▲Prev ▼Next

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How to Use the Firmware Update

For details about how to use the Firmware Update, refer to Package Firmware Update.

Remarks

The maximum number of characters on the control panel screen is limited to 30. For this reason, some of the SP modes shown on the screen have been abbreviated. The following are abbreviations used for the SP modes for which the full description is over 20 characters.

Item	Description
Paper Weight	Thin paper: 52-59 g/m ² , 13.9-15.7lb. Plain Paper1: 60-74 g/m ² , 16-19.7lb. Plain Paper2: 75-81 g/m ² , 20-21.6lb. Middle Thick: 82-105 g/m ² , 21.9-28lb. Thick Paper1: 106-157 g/m ² , 28.3-41.9lb.
Paper Type	N: Normal paper MTH: Middle thick paper TH: Thick paper
Paper Feed Station	P: Paper tray B: Bypass tray
Print Mode	S: Simplex D: Duplex

Others

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.

The following symbols are used in the SP mode tables.

Notation	What it means
ENG	Engine SP
CTL	Controller SP
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 in the front cover.
DFU	Design/Factory Use only: Do not touch these SP modes in the field.
*	An asterisk (*) to the left side of ENG/CTL column means that this mode is stored in the NVRAM. If you do a RAM clear, this SP mode will be reset to the default value. "ENG" and "CTL" show which NVRAM contains the data. • *ENG: NVRAM on the BiCU board • *CTL: NVRAM on the controller board
SSP	This denotes a "Special Service Program" mode setting.

SP Mode Tables

See "Appendices"

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, SC will occur.

1. Enter the SP mode.
2. Press SP2-109-001.
3. Select a test pattern from the list, and then press [OK].
4. To change the density of the test pattern, select the density with SP2-109-002, then press [#].

↓ Note

- If the value of SP2-109-002 is 0, the color adjusted so will not show up in the test pattern.

5. To print, press [Copy Window], and then make settings within the copy window for the test print (paper size etc...).
6. Press [Start] to start the test print.
7. After checking the test pattern, press [SP Mode] on the screen to return to the SP mode display.
8. Reset all settings to the default values with SP2-109-003 and SP2-109-006.
9. Exit SP mode.

No.	Pattern	No.	Pattern
0	None	8	Arg. Grid
1	Vert. (1 dot)	9	Arg.Grid20mm
2	Hori. (1 dot)	10	Indep.(1 dot)
3	Vert. (2 dot)	11	Indep.(2 dot)
4	Hori. (2 dot)	12	Indep.(4 dot)
5	Grid Vert.	13	Full
6	Grid Hori.	14	Band
7	Grid 20mm	15	Trim Area

Firmware Update

Overview

In order to update the firmware, it is necessary to download the latest version of the firmware to an SD card.
Insert the SD card into SD card slot 2 beside the rear left of the controller box.

Firmware Type

Firmware type	Firmware location
System/Copy	Controller Board
Engine	BCU
Printer	Controller Board
Scanner	Controller Board
Web Support	Controller Board
CheetahSystem	Smart Operation Panel
FCU	FCU
Network Support	Controller Board
BIOS	BCU
HDD format option	Controller Board
RPCS	Controller Board
PS	Controller Board
PCL	Controller Board
PCLXL	Controller Board
PDF	Controller Board
PJL	Controller Board
MediaPrint: JPEG	Controller Board
MeidaPrint: TIFF	Controller Board
XPS	Controller Board
FONT	Controller Board
FONT1	Controller Board
FONT2	Controller Board
Copy apl	Smart Operation Panel – CPU board
NetworkDocBox	Smart Operation Panel – CPU board
Fax apl	Smart Operation Panel – CPU board
Printer apl	Smart Operation Panel – CPU board
Scanner apl	Smart Operation Panel – CPU board
Remote Fax apl	Smart Operation Panel – CPU board
MIB	Smart Operation Panel – CPU board

Firmware type	Firmware location
Websupport	Controller Board
WebUapl	Smart Operation Panel – CPU board
CSPF	Smart Operation Panel – CPU board

What is Included in the Firmware Package

Modules included in the firmware package are indicated by ticks (✓).

Firmware not included in the package require updating by SD cards, etc.

Included	Firmware
-	aics
✓	animation
✓	Application Site
✓	BluetoothService
✓	CheetahSystem
-	CSPF
-	Data Erase Onb
-	EcoInfoWidget
✓	Engine
-	External Auth
✓	Fax
-	FaxInfoWidget
✓	GWFCU3.8-9(WW)

Procedure

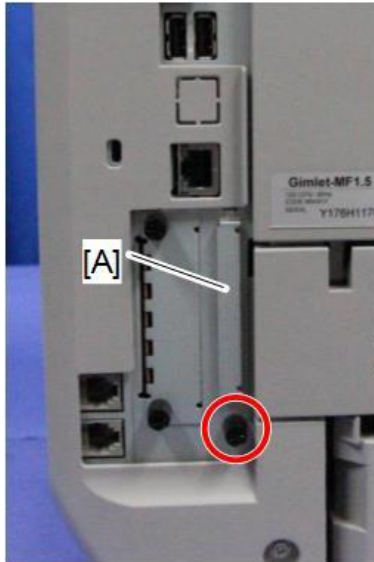
★ Important

- A SD card is a precision device, so when you handle an SD card, respect the following.
- When the power is turned ON, do not insert or remove a card.
- During installation, do not turn OFF the main power.
- 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, turn the main power OFF then 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 the update).

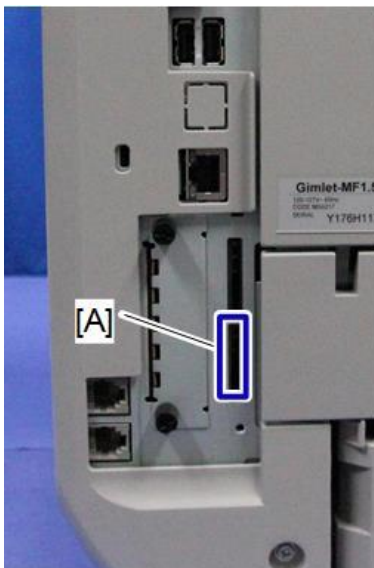
Update procedure

1. First download the new firmware to the SD card.
2. Turn OFF the main power.
3. Remove the SD card slot cover [A].



m0a0k1025

4. Insert the SD card straight into slot 2 [A].



m0a0k3018

Note

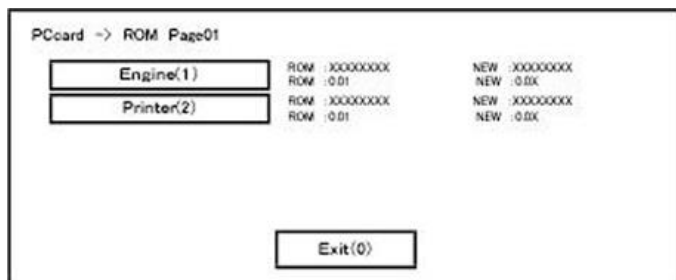
- Check whether the card is properly in the SD card slot. When a SD card is inserted, a click is heard, and it is locked.
- To remove the card, release by pressing once.

5. Turn ON the main power.
6. Wait until the update screen starts (about 45 seconds).

5. System Maintenance

When it appears, "Please Wait" is displayed.

7. Check whether a program installation screen is displayed. 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 are displayed, i.e., engine firmware and printer application. (The screen may change depending on the firmware or application).

The display contents are as follows:

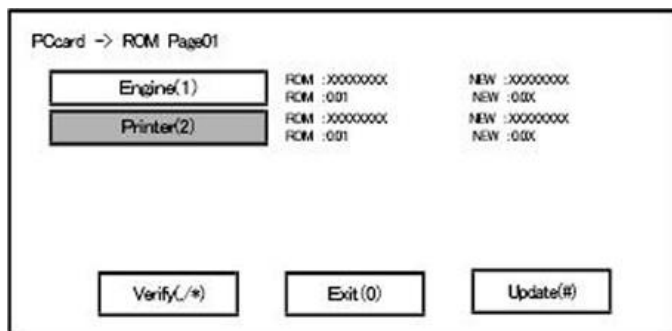
Display	Contents
ROM:	Displays installed module number / version information.
NEW:	Displays module number / version information in the card.

* 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

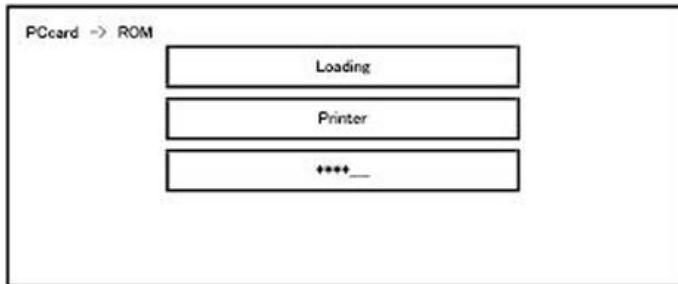
- Depending on the combination of update software, it may not be possible to select simultaneously.



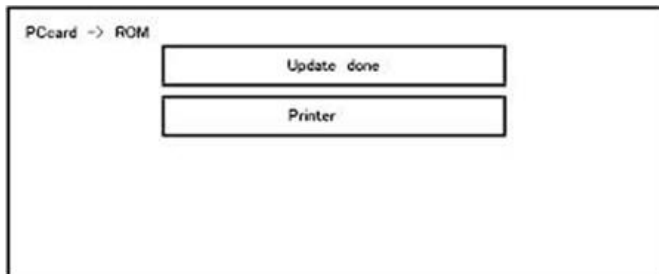
Key or button operations

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 have been 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, "Update done" in the above screen changes to "Verify done." If "Verify Error" is displayed, reinstall the module displayed in the lower row.

11. After turning OFF the main power, remove the SD card.
12. Again, turn ON the main power, and check whether the machine is operating normally.
13. Return the SD card slot cover to the original position.

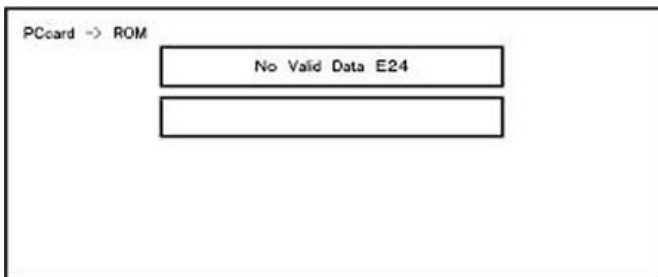
Note

- When the main power is turned OFF during firmware update, update is interrupted, and the main power is turned 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, turn ON the main power, 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.

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.	• Turn the main power OFF then 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	• Turn the main power OFF then ON to try again. • Replace the controller board if the updating cannot be done by turning OFF then ON the main power.
22	Decompression of compressed data failed.	• Turn the main power OFF then 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. • Turn the main power OFF then 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 turn the main power OFF then 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 BiCU 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.
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.	- Turn the main power OFF then ON to try again. - If the download fails again, replace the controller board and the BiCU.
41	Fax download fails.	- Turn the main power OFF then ON to try again. - If the download fails again, replace the controller board and the FCU board.
42	Control panel / language download fails.	- Turn the main power OFF then ON to try again. - If the download fails again, replace the controller board and the operation panel unit.

5. System Maintenance

Code	Contents	Solutions
43	Printing download fails.	- Turn the main power OFF then ON to try again. - The SD card media is damaged if the update fails again. Replace the SD card media.
44	The data to be overwritten cannot be accessed when controller-related programs are downloaded.	- Turn the main power OFF then 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.
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	Check that the network is connected correctly.

Code	Contents	Solutions
	from the Gateway fails at the reserved date/time of the remote firmware update from the network.	
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.
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].
221	Application installed in the machine cannot be terminated when you update or uninstall the application.	- If the application runs a job, try update/uninstallation again after the job ends. - Turn the main power OFF then ON to try again.
222	Invalid digital signature	Try again with correct data.
224	Lack of storage capacity	- Uninstall unnecessary applications. - Reduce the number of applications to install.
228	Update files are not found.	- Turn the main power OFF then ON to try again. - Replace the operation panel.
229	Incorrect file	Try again with correct data.
230	Incorrect folder structure	Try again with correct data.
231	Hardware related error	- Turn the main power OFF then ON to try again. - Replace the operation panel.
235	Installation fails because update files are invalid.	- Try again with correct data. - If there is the same application installed in the machine, uninstall and reinstall it. Then try update again.
236	Unsupported SDK version	Make sure that the system in the machine's operation panel supports the target application.
255	System error	Turn the main power OFF then ON to try again.

 Note

- The PDF firmware installed as standard contains a program required to print PS3 data as default. However, this PS3 program is normally disabled.

5. System Maintenance

- 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.

Updating JavaVM

Creating an SD Card for Updating

1. Download the update modules from Firmware Download Center. As one of the model modules, "Java VM v12 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

- An 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. Take a note of the current Heap size. ([User Tools] – [Machine Features] – [Extended Feature Settings] – [Extended Feature Settings] – [Administrator Tools] – [Heap/Stack Size Settings])
The Heap size setting is changed to the initial setting when updating.
 3. Turn OFF the main power.
 4. Insert the SD card for update into the service slot.
 5. Turn ON the main power.
 6. After booting Java VM, update of the application is started. "Updating SDK/J" appears in the system message of the touch panel display after 1 minute. (Estimated time: about 2.5 minutes)
 7. After completing the update and starting the Java VM, "Update SDK / J done SUCCESS" appear in the System 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.
 8. Turn ON the main power.
 9. Reconfigure the Heap size. ([User Tools] – [Machine Features] – [Extended Feature Settings] – [Extended Feature Settings]-[Administrator Tools]-[Heap/Stack Size Settings]) in reference to step 2.
- #### Note
- If you have not done step 2, see the manual for the ESA application to know what value to set for the heap size.
10. 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/bootscrip 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/bootscrip 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=XXXXX	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)	Inadequate 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 cannot 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.	Writing destination is full. (The NAND flash memory on the controller board is full.)	Uninstall the unnecessary SDK applications. If you cannot uninstall it, implement escalation stating the "model name, application configuration, SMC sheet (SP5-990-006/024/025), and error file."

Error Message	Cause	Remedy
paseCopy() - error : fileCopy Error. Copy Error!		
Put Error! * 1	Error, not normally expected to occur	If you cannot uninstall it, implement escalation 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
Copy Error! * 1		
Delete Error!		
[XXXXX] is an unsupported command.		
Version Error		

NVRAM Data Upload/Download

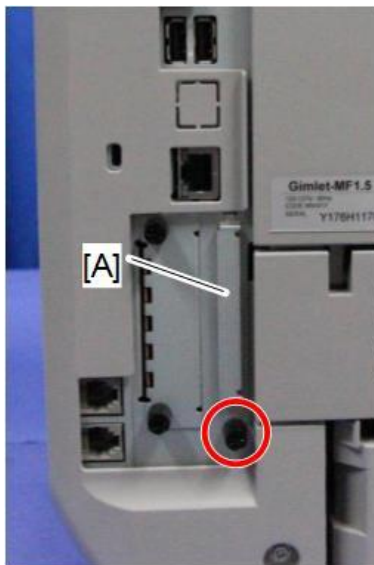
Uploading Content of NVRAM to an SD card

Do the following procedure to upload SP code settings from NVRAM to an SD card.

Note

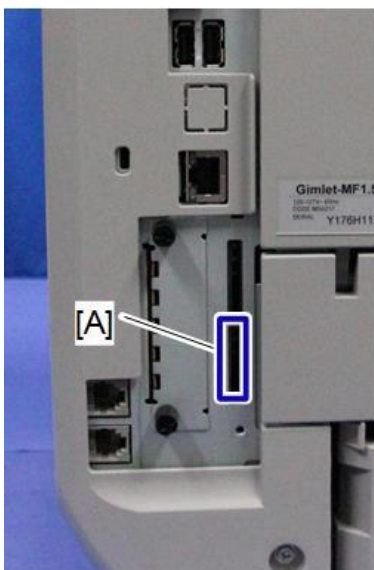
- This data should always be uploaded to an SD card before the NVRAM is replaced.
- Make sure that the write protection of an SD card is unlocked

1. Do SP5-990-001 (SMC Print) before turning OFF the main power. You will need a record of the NVRAM settings if the upload fails.
2. Turn OFF the main power.
3. Remove the SD card slot cover [A].



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4. Insert the SD card into SD slot 2 [A].



m0a0k3018

5. Turn ON the main power.
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.

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 BiCU 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. Turn OFF the main power.
 2. Remove the SD card slot cover.
 3. Insert the SD card with the NVRAM data into SD slot 2.
 4. Turn ON the main power.
 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

UP/SP Data Import/Export

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
- SPDF
- Whether or not equipped with a hard disk
- Whether or not equipped with a finisher and the type of finisher

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

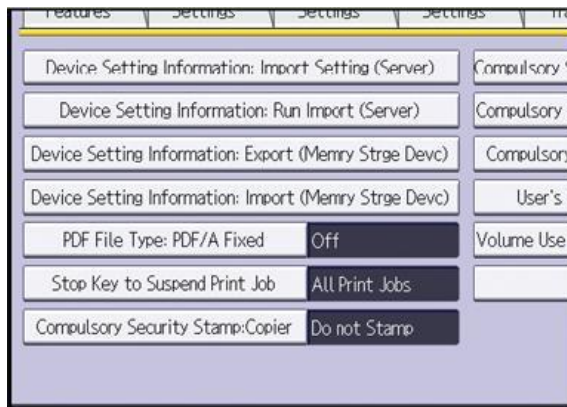
- Settings that can be specified via telnet
- @Remote-related data
- Counters
- EFI printer unit settings
- Settings that can only be specified via Web Image Monitor or Web Service (for example, Bonjour, SSDP setting)

Exporting Device Information

This can be exported / imported by an administrator with all privileges.

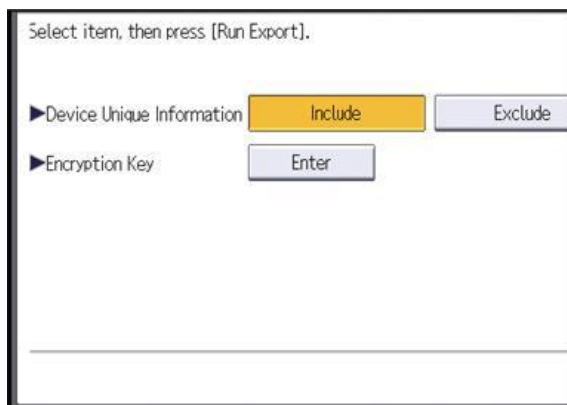
When exporting SP device information from the control panel, the data is saved on an SD card.

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].

5. System Maintenance

9. Press [OK].

10. Press [Exit].

11. Log out.

Note

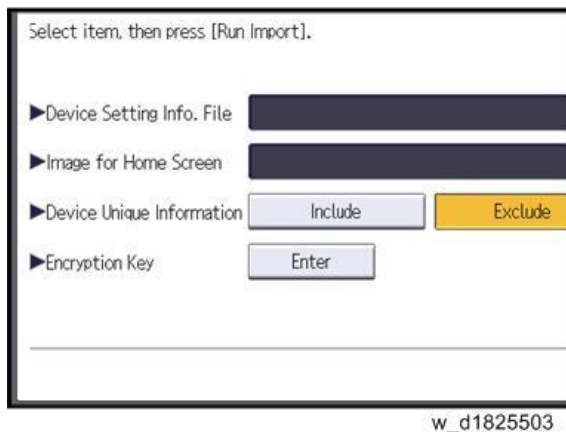
- If data export fails, the details of the error can be viewed in the log.
- When device Information is periodically imported, it is necessary to create the device setting information file with special software and store it on the web server.

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.

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
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 /

5. System Maintenance

Item	Specification	Note
		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.

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



```
*1.0.0*
*ExecType*,*Date*,*SerialNo*,*PnP*,*Model*,*Destination*,*IP*,*Host*,*Storage*,*FileNam
e*,*FileID*,*TotalItem*,*NumOfOkItem*,*ResultCode*,*ResultName*,*Identifier*
*IMPORT*
*2012-07-05T15:29:16+09:00*
*3C35-7M0014*
*Brand Name*
*Product Name*
*0*
*10*
*10.250.155.125*
*RNP00267332582D*
*SD*
*201207051519563C35-710220.csv*
*201207051519563C35-710220*
* 0*
* 2*
*...ID REQUEST*
*TargetID*,*ModuleID*,*PrefID*,*Item*,*NgCode*,*NgName*
```

w_d1825500

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.	Turn OFF then ON the main power, and then try the operation again. If the error persists, contact your supervisor.
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

Result Code	Cause	Solutions
		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

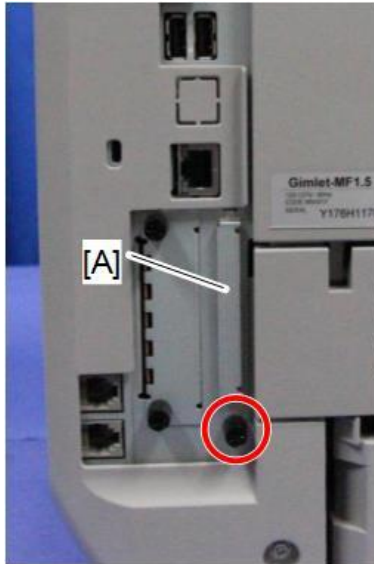
- When exporting device information from the control panel, the data can be saved only on an SD card.
- The file format for exports is CSV.

Address Book Export/Import

Export

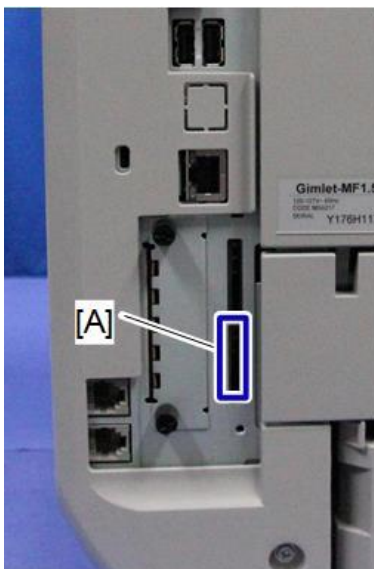
Backup address book information on SD card formatted with the specified software.

1. Turn OFF the main power.
2. Remove the SD slot cover [A].



m0a0k1025

3. Insert the SD card in the service slot [A].



m0a0k3018

4. Turn ON the main power.
5. Execute SP5-846-051 full address book backup.
6. Turn OFF the main power.
7. Remove the SD card.
8. Attach the SD slot cover to the original position.

Note

- When local user information to be uploaded is not contained in the SD card, an execute malfunction is displayed. It cannot be used in the write-protect state.
- Since the address book is the customer's information, take care about handling it, and never bring it back.

Import

1. Turn OFF the main power.
2. Remove the SD slot cover of the controller unit.
3. Set the SD card in the service slot.
4. Turn ON the main power.
5. Execute SP5-846-052 (address book information restore).
6. Turn OFF the main power.
7. Remove the SD card.
8. Attach the SD slot cover to the original position.
9. Turn ON the main power, and check that the address book has been restored.

Note

- User code counter information is initialized.
- Administrator and supervisor information is not backed up. Also, it is not erased during restore.
- If a download file does not exist, or if erasure is complete, execution malfunction is displayed.

Specification

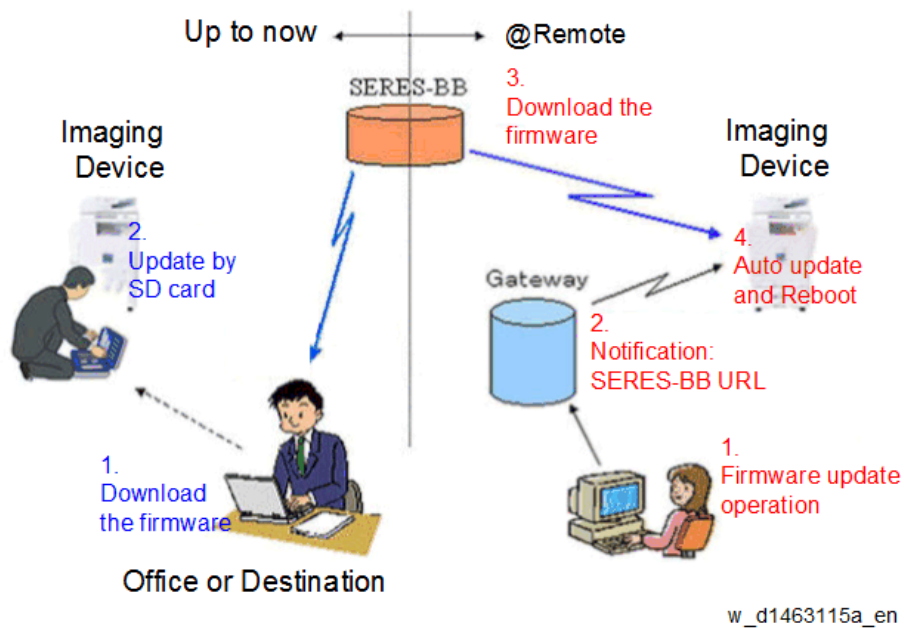
The information which can be exported /imported is the following items.

- Entry information
- User code information
- E-mail information
- Protection code information
- Fax information
- Fax additional information
- Group information
- Title information
- Title position information
- Folder information
- SMTP attestation
- Local authorization
- Folder authorization information
- Account ACL information
- New document initial ACL information

- LDAP authorization information

RFU Updating the Firmware

In this machine, software can be updated by remote control using @Remote.



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.

Package Firmware Update

⚠ CAUTION

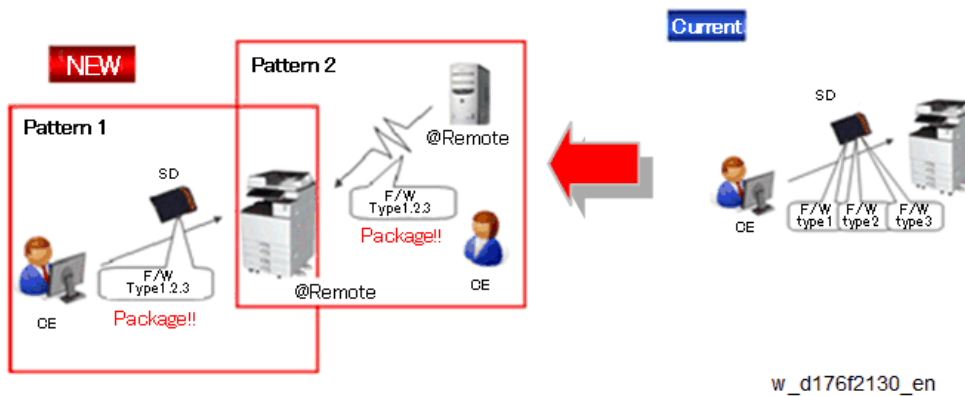
- The HDD unit must be installed on the machine to enable the SFU or the package firmware update via SD card.

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

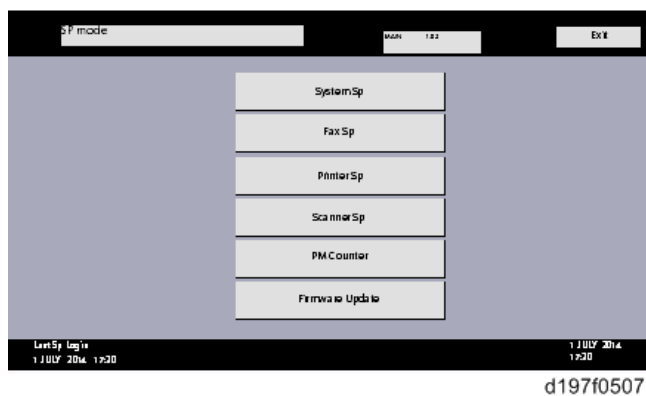
Immediate Update

Enter the [Firmware Update] menu in the SP mode and update the package firmware.

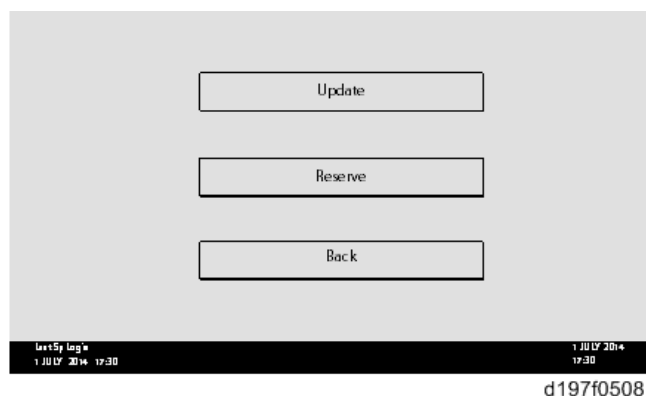
Note

- 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 (Error Screens During Updating).

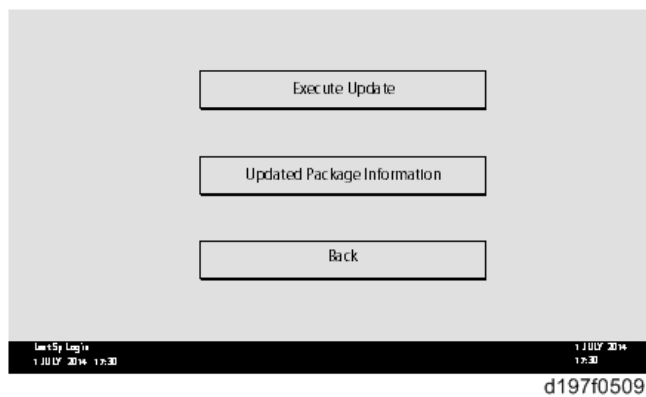
1. Enter the SP mode.
2. Press [Firmware Update].



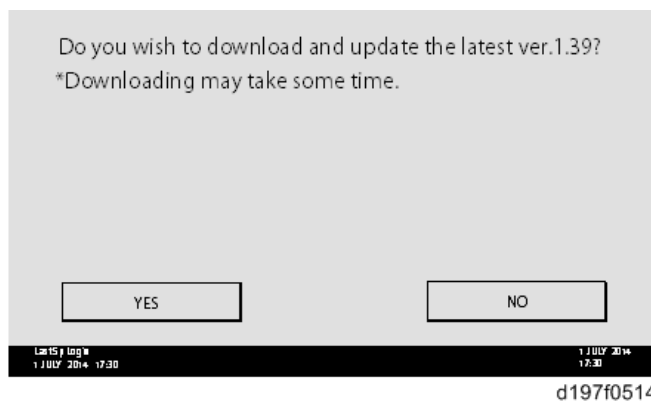
3. Press [Update].



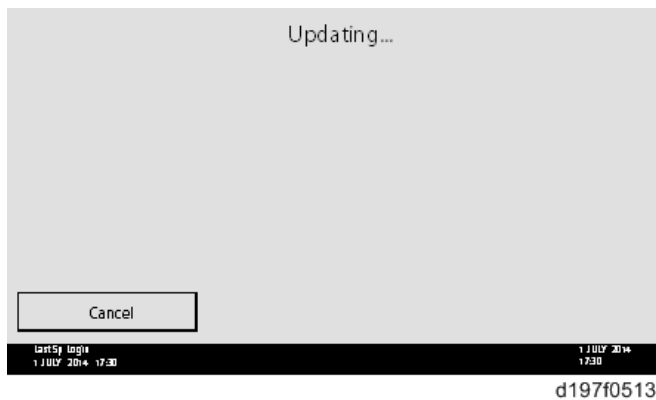
4. Press [Execute Update].



5. Press [YES].



6. The following display will be displayed.

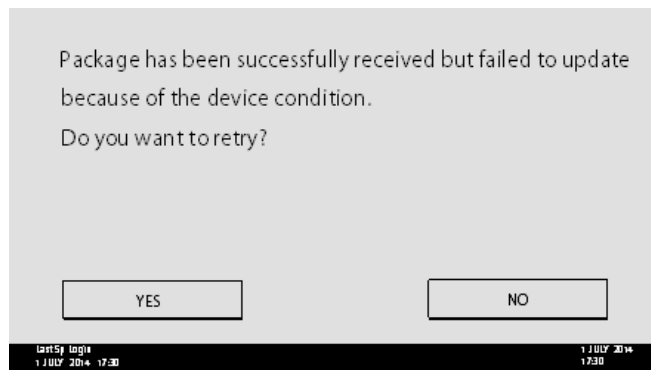


Note

- 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.

5. System Maintenance

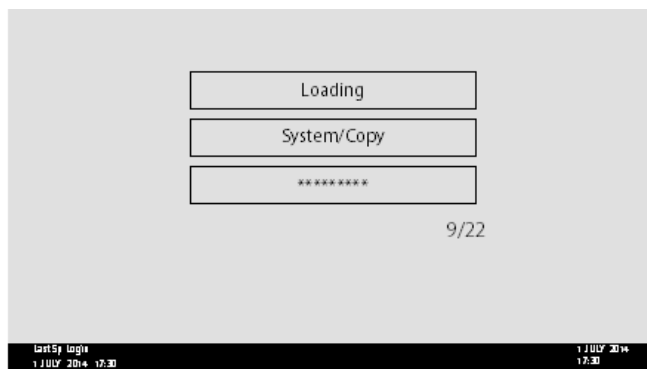
- When the machine is in the update mode, the automatic update is suspended if a print job is implemented. After the print job is finished, Press [YES] on the display shown with the following picture to restart updating.



d197f0515

Z. [Update done] is displayed.

- The machine will automatically reboot itself.



d197f0518

Note

- The figures at the lower right of the display indicate "Number of updated items/ All items to be updated".

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.

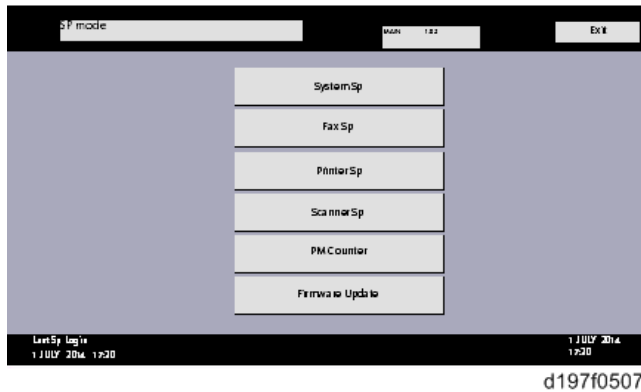
How to Set the Machine to Download Firmware Later (RESERVE)

Enter the [Firmware Update] menu in the SP mode and update the package firmware.

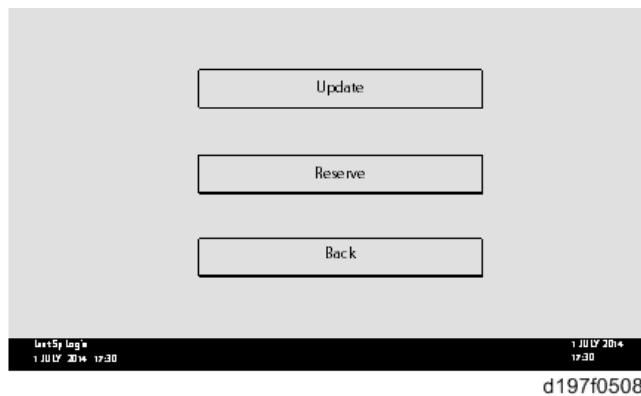
Note

- 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.

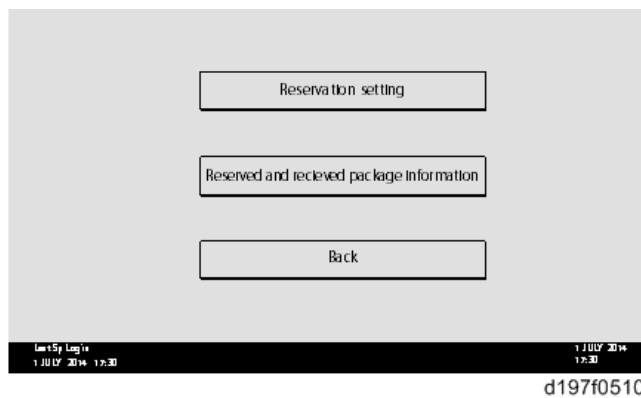
1. Enter the SP mode.
2. Press [Firmware Update].



3. Press [Reserve].



4. Press [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.

5. System Maintenance

- “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

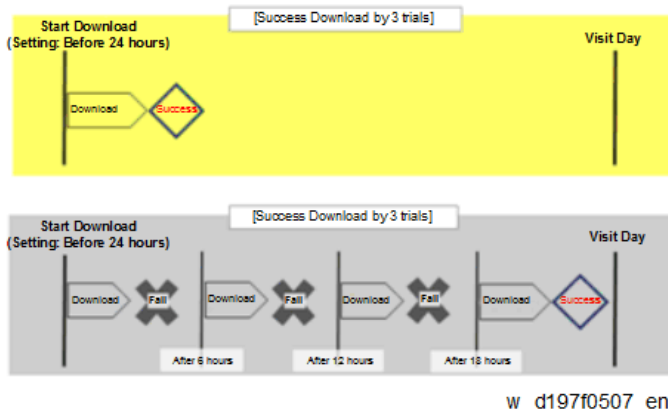
Set Clear Cancel

Last log
1 JULY 2014 17:30

d197f0512

Successful Download

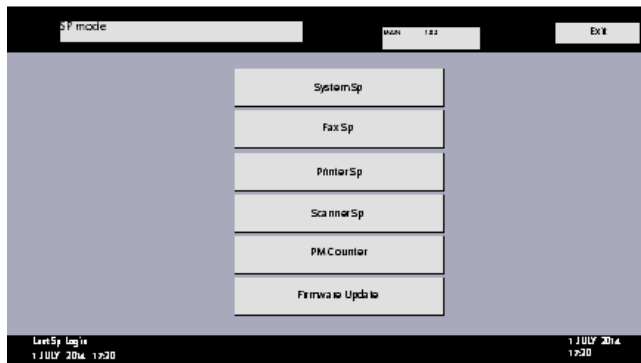
In the two diagrams below, the firmware is set to be downloaded by the day before the next scheduled visit. In the first diagram, the download is successful on the first try. In the second diagram, the download fails three times and is successful on the fourth try.



- 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.
- The download will be terminated if the customer turns OFF the main power 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.

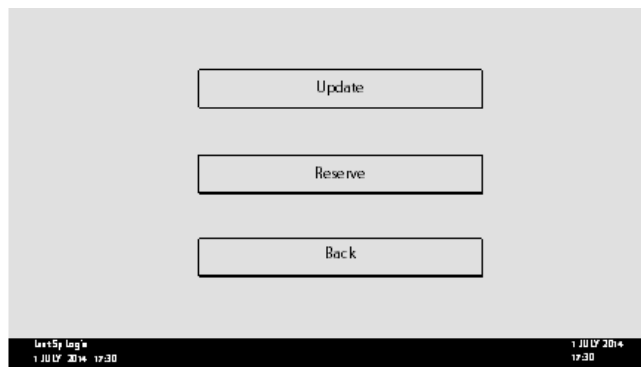
How to Check if the Firmware Downloaded with RESERVE

1. Enter the SP mode.
2. Press [Firmware Update].



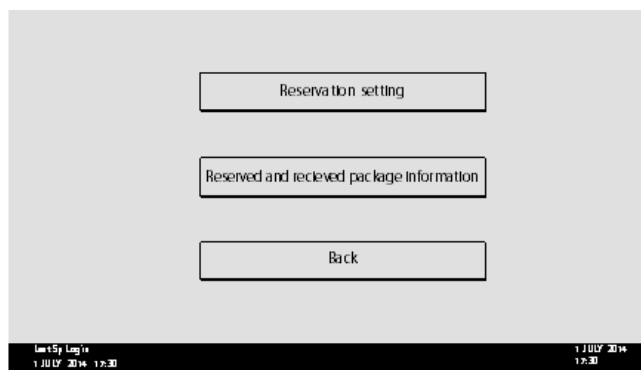
d197f0507

3. Press [Reserve].



d197f0508

4. Press [Reserve and received package information].

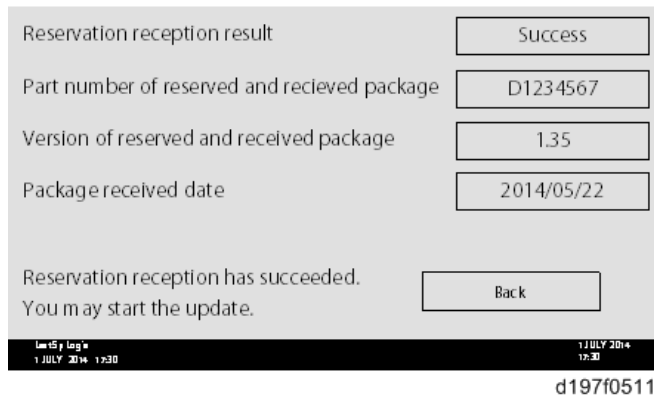


d197f0510

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.

5. System Maintenance



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

Left: Sy login 1 JULY 2014 12:30 Right: 1 JULY 2014 12:30

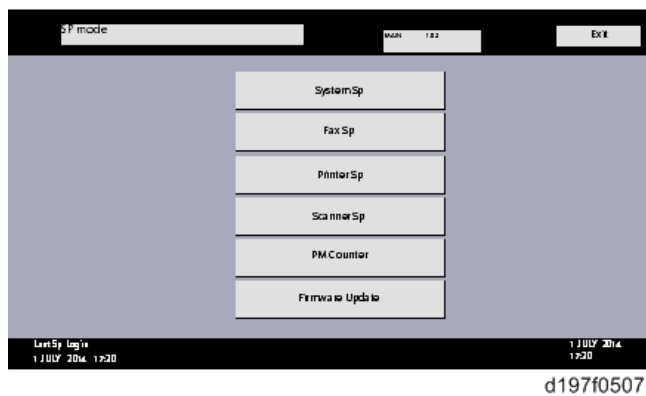
d197f0511

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. Press [Firmware Update].



SP mode

MAIN 1.02

Exit

System Sp

Fax Sp

Printer Sp

Scanner Sp

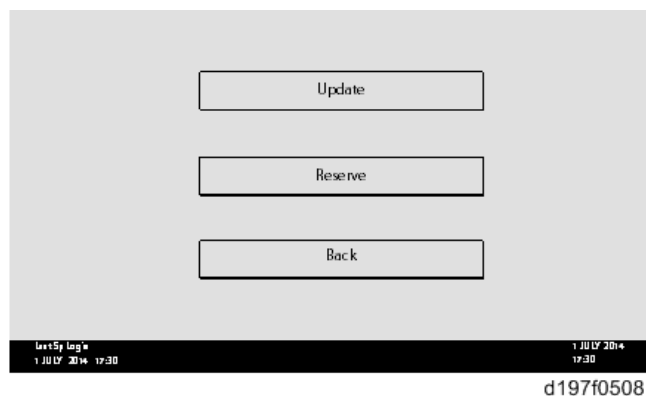
PM Counter

Firmware Update

Left: Sy login 1 JULY 2014 12:30 Right: 1 JULY 2014 12:30

d197f0507

3. Press [Update].



Update

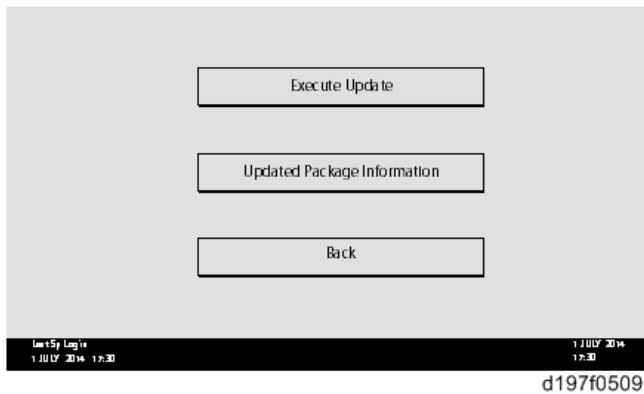
Reserve

Back

Left: Sy login 1 JULY 2014 12:30 Right: 1 JULY 2014 12:30

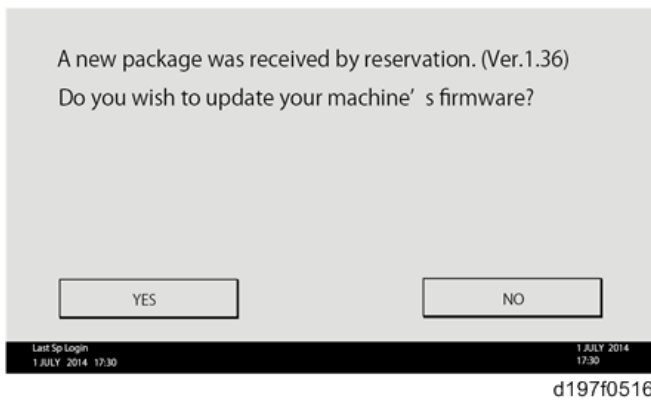
d197f0508

4. Press [Execute Update].



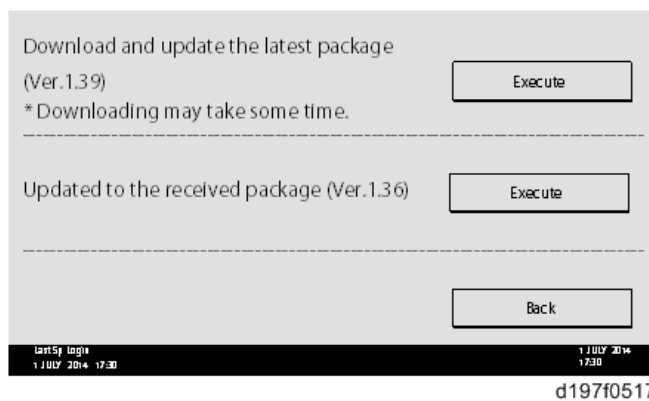
5. Check the version of the received package firmware, and then Press [YES].

- 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.

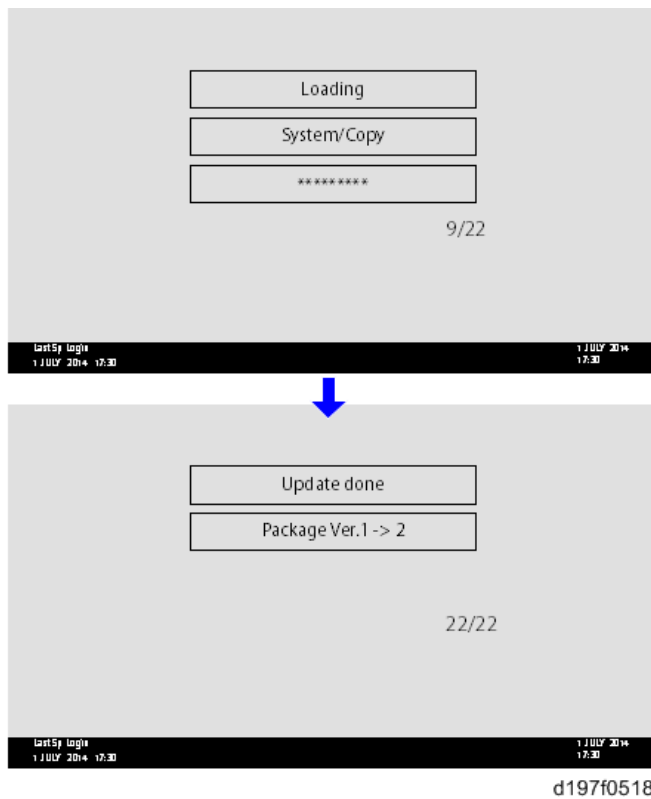


- If you wish to download the latest version, Press [Execute] beside the message "Download and update the latest package." Then update of the package firmware will be started.
- If you wish to update using the firmware in the HDD (old version), Press [Execute] beside the message "Update to the received package."

6. [Update done] message is displayed.

5. System Maintenance

- 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".

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.
1. Create a new folder in the SD card, and then name it "package".
 2. Copy the package firmware (xxxxxxx.pkg) to this folder.

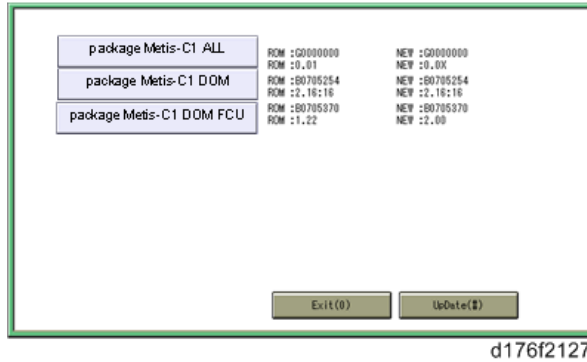


Important

- 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

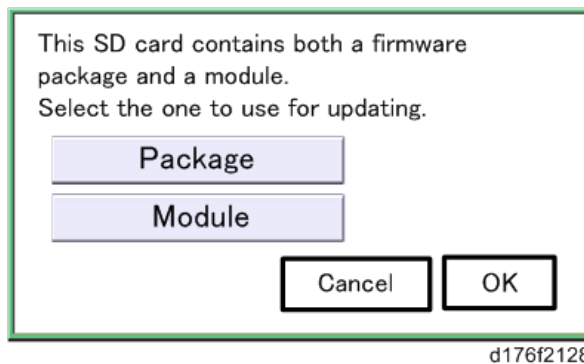
versions of package firmware to the SD card, the machine will select only one version of the firmware randomly.

3. Turn OFF the main power.
4. Insert the SD card which contains the package into SD card slot 2 (for service).
5. Turn ON the main power
6. Press [Update].



Note

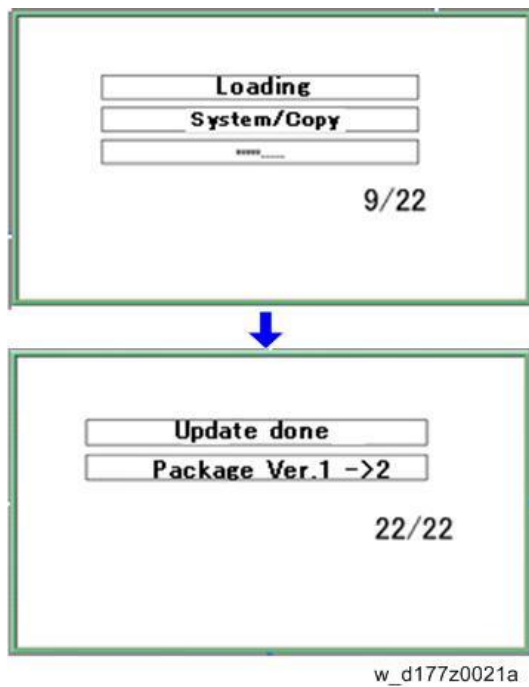
- When the SD card contains both a firmware package and one or more modules, the following display may show up. Select [Package] and Press [OK] to move to step 4 above.



- Z. Update is started automatically after the package firmware download to the HDD has been completed.

5. System Maintenance

- 8.** 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".

- 9.** Turn OFF the main power.
- 10.** Pull out the SD card from SD card slot 2.
- 11.** Turn ON the main power.

Capturing the Debug Logs

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.
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:

5. System Maintenance

- 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

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 OFF then ON the main power.
- 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 either the SD card with 2 GBs (P/N: B6455030) or 8 GBs (P/N: B6455040) provided as service parts. This is because the log data can be acquired much faster than when using commercially available SD cards.
- Format the SD card by using SD Formatter from Panasonic before copying the logs:
- https://www.sdcard.org/downloads/formatter_4/ (The URL is current as of Jun, 2016; and is subject to change)
- Insert the SD card into the machine's service slot instead of the SD slot on the side of the operation panel.

2. Turn ON the main power.

3. Enter SP mode.

4. Specify the date that the problem occurred in SP5-858-101 (Start Date) by setting it to the year-month-day calendar format.

↓ Note

- For example, if a problem occurred on February 1, 2015, the date should be set to "20150201", as shown above.
- Be sure to confirm the date that the problem occurred before obtaining the logs.

5. Specify the number of days to collect the logs in SP5-858-102 (Days of Tracing).

↓ Note

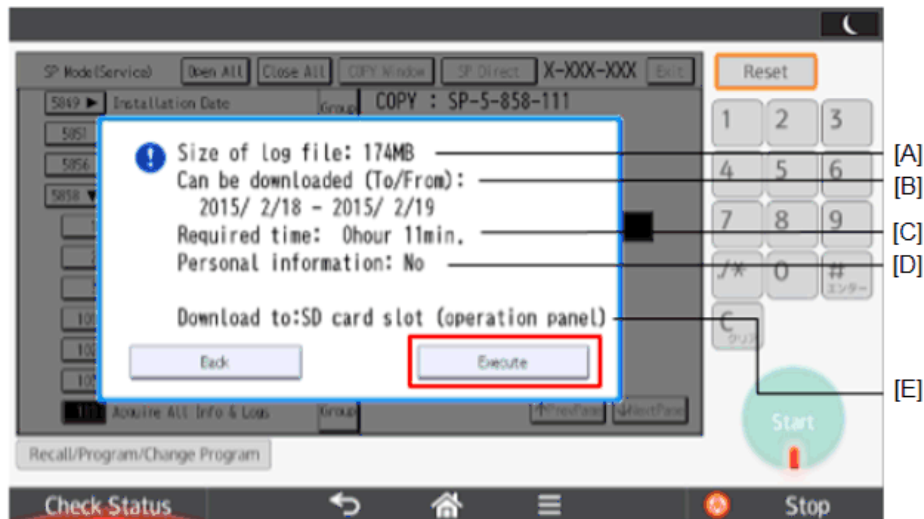
- 2 (days) is set by default for MP 305⁺. The value can be changed from 1 to 180.

6. Execute SP5-858-111 (Acquire All Info & Logs) to copy all of the log types to an SD card.

↓ Note

- It is possible to obtain the logs separately by the SPs below:
- **SP5-858-111:** All of the information and logs collected by executing the SPs from SP5-858-121 to SP5-858-145, and SMC
- **SP5-858-121:** Configuration page
- **SP5-858-122:** Font page
- **SP5-858-123:** Print setting list
- **SP5-858-124:** Error log
- **SP5-858-131:** Fax information (whether the fax destinations are included or not depends on the setting of SP5-858-103)
- **SP5-858-141:** Controller debug log, engine debug log, operation panel debug log, and SMC
- **SP5-858-142:** Controller debug log
- **SP5-858-143:** Engine debug log
- **SP5-858-144:** Operation panel log
- **SP5-858-145:** FCU debug log
- **SP5-992-001:** SMC

7. After executing the SP for copying the information and/or logs, a confirmation screen will appear. To proceed obtaining the information and/or logs, press [execute].



d259z5000

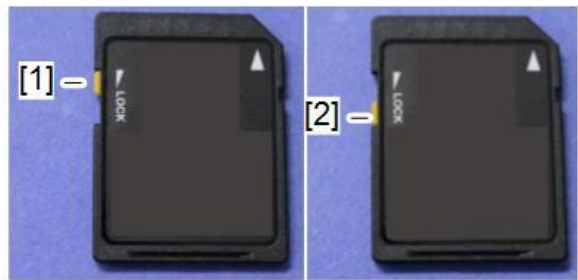
[A]	File size
[B]	Period to copy
[C]	Estimated time to copy
[D]	If [Fax Contacts] is displayed, it means that the fax destinations will be included in the fax information.
[E]	Where the data will be copied.

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.
- Controller log (GW debug log): 2 - 20 minutes
- Engine log: 2 minutes
- Operation panel log: 2 - 20 minutes

Note

- If the estimated time is not calculated due to an error, an error code will be displayed.
- **Error code -1:** Other problem.
- **Error code -2:** No SD card is inserted in the service slot or in the SD slot on the side of the operation panel. Insert an SD card to either of the SD slots.
- **Error code -3:** The SD card is locked. Unlock the SD card as shown below



m0a0k1058

1. Unlocked
2. Locked

8. Wait for the information and/or logs to be copied to the SD card.

2. After a message stating that the process has completed appears on the operation panel, make sure that the LED light next to the SD slot is not flashing. Then, remove the SD card.

Note

- The process of obtaining logs fails when:
 - the size of the logs to obtain exceeds the amount of space available on the SD card.
 - the SD card is removed while the logs are being copied to it.
 - the SD card is not formatted.

Note

- If 'failed' appears on the touch panel display, turn OFF the main power, and then recover from step 1 again.

Note

- Refer to "Log File List" below to check the location of log files and file name.

Procedure for Retrieving the Debug Log via Web Image Monitor

1. Access the following URL and login as an administrator:

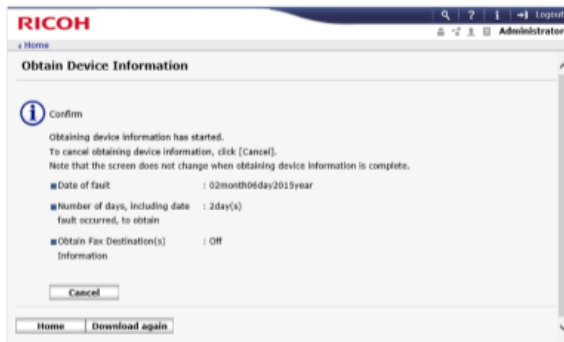
[http://\[IP address or hostname\]/web/entry/df/websys/direct/getSysinfo.cgi](http://[IP address or hostname]/web/entry/df/websys/direct/getSysinfo.cgi)

2. Specify the date that the problem occurred and the number of days to download the logs. If the fax destinations need to be included in the fax information, set [On] as [Obtain Fax Destination(s) Information]. Then press [Download].

Note

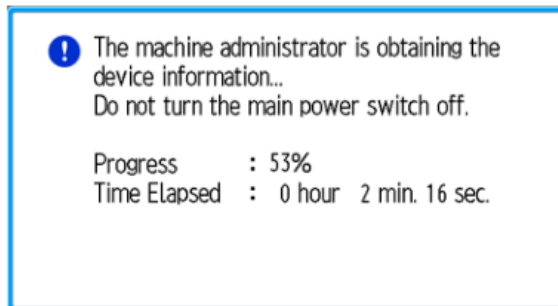
- 2 (days) is set by default for MP 305+ The value can be changed from 1 to 180.
 - [Obtain Fax Destination(s) Information] is set to [Off] by default.
3. The confirmation screen will appear and the information and/or logs will start being downloaded. To proceed to download the information and/or logs, wait for the open-or-save dialog to appear.

5. System Maintenance



Note

- To cancel downloading, press [Cancel].
- To reconfigure some settings, press [Download again].
- Operation panel shows the following while downloading the logs:



d259z5005

4. After a while, the open-or-save dialog will appear. Specify where to download and save the file.



d259z5006

Note

- Refer to "Log File List" below to check the location of log files and file name.

Log File List

The logs are saved with the following file path + names.

Controller debug log (mmesg)	/LogTrace/[*the model number]/watching/[yyyymmdd_hhmmss]_[aunique value].gz
Engine debug log	/LogTrace/[*the model number]/engine/[yyyymmdd_hhmmss].gz
Operation panel log	/LogTrace/[*the model number]/opepanel/[yyyymmdd_hhmmss].tar.gz
SMC	/LogTrace/[*the model number]/smc/[*the model number]_[5992xxx]_[yyyymmdd_hhmmss].csv
Configuration	/LogTrace/[*the model

page	number]/gps/ConfigurationPage/ConfigurationPage_[yyyymmdd_hhmmss].csv
Font page	• /LogTrace/[*the model number]/gps/FontPage/FontPage_PCL_[the page number]_[yyyymmdd_hhmmss].jpg • /LogTrace/[*the model number]/gps/FontPage/FontPage_PDF_[the page number]_[yyyymmdd_hhmmss].jpg • /LogTrace/[*the model number]/gps/FontPage/FontPage_PS_[the page number]_[yyyymmdd_hhmmss].jpg
Print setting list	• /LogTrace/[*the model number]/gps/PrintSettingList/PrintSettingList_RPGL_[yyyymmdd_hhmmss].txt • /LogTrace/[*the model number]/gps/PrintSettingList/PrintSettingList_RTIF_[yyyymmdd_hhmmss].csv
Error log	/LogTrace/[*the model number]/gps/ErrorLog/[yyyymmdd_hhmmss].csv
Fax information	/LogTrace/[*the model number]/faxreport/[yyyymmdd_hhmmss].csv
FCU debug log	/LogTrace/[*the model number]/fcuLog/[yyyymmdd_hhmmss].gz

6. Troubleshooting

Self-Diagnostic Mode

Self-Diagnostic Mode at Power On

As soon as the main machine is powered on, the controller waits for the initial settings of the copy engine to take effect and then starts an independent self-diagnostic test program.

The self-diagnostic test checks the CPU, memory, HDD, and so on. An SC code is displayed if the self-diagnostic program detects any malfunction or abnormal condition. In the case of the error that can start the machine, record it in System Error Log.

Service Call

Summary

Level	Definition	Reset Procedure
A	To prevent damage to the machine, the main machine cannot be operated until the SC has been reset by a service representative (see the note below).	Enter SP mode, go into SP5-810-001, press [Execute], and turn the main power switch off and on.
B	SCs that disable only the features that use the defective item. Although these SCs are not shown to the user under normal conditions, they are displayed on the operation panel only when the defective feature is selected.	Turn the main power switch off and on.
C	The SC history is updated. The machine can be operated as usual.	The SC will not be displayed. Only the SC history is updated.
D	Turning the main power switch off then on resets SCs displayed on the operation panel. These are re-displayed if the error occurs again.	Turn the main power switch off and on.

When a Level “D” SC code occurs

When a Level D SC occurs, a screen opens on the operation panel to tell the operator:

- An error occurred
- The job in progress will be erased
- The machine will reboot automatically after approximately 30 seconds.

The operator can wait until the machine reboots automatically or touch “Reset” on the screen to reset the machine immediately and go back to the copy screen.

If the operator does not touch “Reset”

The next message tells the operator that the machine will reset automatically and that the previous job was lost and must be started again. After reading the message, the operator touches “Confirm” on the screen. The next screen shows the number and title of the SC code, and stops until the operator turns the machine off and on.

If the operator touches “Reset”

If the operator touches “Reset” to bypass the 30-second interval for the machine to reboot, the machine reboots immediately and the operation panel displays the copy screen.

★ Important

- Do not try to use the operation panel during an automatic reboot. If the Remote Service System is in use, the SC code is sent immediately to the Service Center.

SC100 (Scanning)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC101-01	D	LED Error (scanning)
		The peak white level is less than the prescribed value.
		• The connection is loose. • The LED is defective. • The LED drive is malfunctioning. • The BiCU is malfunctioning. • The mirrors or lenses are not set properly, or are dirty. • The harness is defective. • The white plate is not set properly, or is dirty. • The SPDF's white plate is dirty or defective (intermittent shading model only).
		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. 1. Clean the white guide plate (SPDF). 2. Reconnect the following connectors; • Scanner Carriage - BiCU harness (FFC) • BiCU - LEDB harness (FFC) 3. Replace the white guide plate (SPDF). 4. Replace the Scanner Carriage. 5. Replace the following harnesses; • Scanner Carriage - BiCU harness (FFC) • BiCU - LEDB harness (FFC) 6. Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC101-02	D	LED Error (LED illumination adjustment)
		LED error was detected.
		• Connector defective (disconnected, loose) • Scanner Carriage defective • Harness defective • BiCU defective
		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. 1. Clean the white guide plate (SPDF). 2. Reconnect the following connectors; • Scanner Carriage - BiCU harness (FFC) • BiCU - LEDB harness (FFC)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		3. Replace the white guide plate (SPDF). 4. Replace the Scanner Carriage. 5. Replace the following harnesses; • Scanner Carriage - BiCU harness (FFC) • BiCU - LEDB harness (FFC) 6. Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC102-00	D	LED Illumination Adjustment Error
		The white level peak reached the prescribed threshold when the white plate was scanned after a specified number of adjustments.
		• LED defective • LED driver defective • BiCU defective • Power/signal harness defective
		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. 1. Reconnect the power/signal harness. 2. Replace the following parts: • Replace the Scanner Carriage. • Replace the IPU board. • Replace the power/signal harness.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC111-01	D	LED Error (scanning): rear side
		The peak white level is less than the prescribed value.
		• The connection is loose. • The SPDF CIS is defective. • The white plate is not set properly, or is dirty. • The SPDF's white plate (rear side) is dirty or defective.
		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. 1. Reconnect the power/signal harness. 2. Replace the following parts: • Clean or replace the SPDF's white plate (rear side). • Replace the SPDF CIS. • Replace the BiCU board.

6.Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		Replace the power/signal harness.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC112-00	D	LED Illumination Adjustment Error: rear side
		The white level peak reached the prescribed threshold when the white plate was scanned after a specified number of adjustments.
		- The connection is loose. - The SPDF CIS is defective. - The white plate is not set properly, or is dirty. - The SPDF's white plate (rear side) is dirty or defective.
		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. - Reconnect the power/signal harness. - Replace the following parts: - Clean or replace the SPDF's white plate (rear side). - Replace the SPDF CIS. - Replace the BiCU board. - Replace the power/signal harness.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC120-00	D	Scanner home position error 1
		The scanner home position sensor does not detect the scanner leaving the home position.
		- Defective scanner home position sensor - Defective scanner home position sensor harness - Defective scanner motor driver - Defective scanner motor - Timing belt, pulley, wire, or carriage not installed correctly
		Check if the SC occurs by turning the power OFF then ON. If the SC occurs again, do the following steps. - Reconnect the power/signal harness. - Replace the following parts: - Replace the HP sensor - Replace the scanner motor - Replace the harness.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC121-	D	Scanner home position error 2

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
00		The scanner home position sensor does not detect the scanner coming back to the home position.
		- Defective scanner home position sensor - Defective scanner home position sensor harness - Defective scanner motor driver - Defective scanner motor - Timing belt, pulley, wire, or carriage not installed correctly
		Check if the SC occurs by turning the power OFF then ON. If the SC occurs again, do the following steps. - Reconnect the power/signal harness. - Replace the following parts: - Replace the HP sensor - Replace the scanner motor - Replace the harness.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC141-00	D	Black level correction error
		The automatic adjustment has failed to correct the black level to the permissible range.
		- Defective scanner carriage - Defective BiCU board - Defective harness
		Turn the main power OFF and then ON.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC142-00	D	White level correction error
		The automatic adjustment has failed to correct the white level to the permissible range.
		- BiCU defective - Harness defective - Connector defective (disconnected, loose) - Condensation in scanner unit - White plate dirty or installed incorrectly
		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. - Reconnect the following connectors; - Scanner Carriage - BiCU harness (FFC) - BiCU - LEDB harness (FFC) - Replace the scanner carriage.

6. Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		3. Replace the following harnesses; • Scanner Carriage - BiCU harness (FFC) 4. Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC144-00	D	SBU Communication Error
		Cannot correctly establish communication with the SBU.
		• BiCU defective • Harness defective • Connector defective (disconnected, loose)
		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. 1. Reconnect the following connectors; • Scanner Carriage - BiCU harness (FFC) • BiCU - LEDB harness (FFC) 2. Replace the following harnesses; • Scanner Carriage - BiCU harness (FFC) 3. Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC151-00	D	Black level correction error: rear side
		The automatic adjustment has failed to correct the black level (rear side) to the permissible range.
		• SPDF CIS defective • BiCU defective • Harness defective • Connector defective (disconnected, loose)
		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. 1. Reconnect the following connectors; • SPDF CIS - BiCU harness (FFC) 2. Replace the SPDF CIS. 3. Replace the following harnesses; • SPDF CIS - BiCU harness (FFC) 4. Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC152-00	D	White level correction error: rear side
		The automatic adjustment has failed to correct the white level (rear side) to the permissible range.
		• BiCU defective • Harness defective • Connector defective (disconnected, loose) • White plate (rear side) dirty or installed incorrectly
		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. 1. Clean or replace the white plate (rear side). 2. Reconnect the following connectors; • SPDF CIS - BiCU harness (FFC) 3. Replace the SPDF CIS. 4. Replace the following harnesses; • SPDF CIS - BiCU harness (FFC) 5. Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC154-00	D	SBU Communication Error: rear side
		Cannot correctly establish communication with the SBU.
		• SPDF CIS defective • BiCU defective • Harness defective • Connector defective (disconnected, loose)
		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. 1. Reconnect the following connectors; • SPDF CIS - BiCU harness (FFC) 2. Replace the SPDF CIS. 3. Replace the following harnesses; • SPDF CIS - BiCU harness (FFC) 4. Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC161-20	D	IPU error (DRAM initialization failure)
		An error occurred every time the machine is turned on, or returns to full operation from energy save mode.
		IPU (BiCU) defective (Macaron/ DRAM device connection error) "DRAM device defective"

6.Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		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. 1. Reconnect all the connectors on the BiCU board if they are disconnected, or loose. 2. Replace the BiCU.

SC200 (LED Optics)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC230-00	D	FGATEON Error
		• An FGATE signal is not sent even when the laser is ready to be emitted. This SCs is detected during printing.
		• The connection between the BiCU and the controller is loose. • The BiCU is malfunctioning (damaged Laser ASIC).
		• Turn the main power OFF and then ON. • Check the connection between BiCU and the controller board. • Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC231-00	D	FGATE OFF Error
		• The FGATE signal does not go OFF even when laser emission is going to end. This SCs is detected during printing.
		• The connection between the BiCU and the controller is loose. • The BiCU is malfunctioning (damaged Laser ASIC).
		• Turn the main power OFF and then ON. • Check the connection between BiCU and the controller board. • Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC277-00	D	LEDA communication error
		The head type data was read three times in succession
		• Loosen or disconnect of FFC between the BiCU and LED array • Defective FFC between the BiCU and LED array • Defective ASIC • Defective LED array
		• Turn the main power OFF and then ON. • Check and connect the FFC. • Replace the FFC between the BiCU and LED array.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		- Replace the LED head. - Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC277-10	D	LEDA communication error
		The head type data was read three times in succession
		- Loosen or disconnect of FFC between the BiCU and LED array - Defective FFC between the BiCU and LED array - Defective ASIC
		- Turn the main power OFF and then ON. - Check and connect the FFC. - Replace the FFC between the BiCU and LED array. - Replace the BiCU.

SC300 (Image Processing - 1)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC302	D	High voltage output error: Charge unit /Development unit
		This SC is issued if the BiCU detects a short in the power pack 10 times consecutively.
		Short circuit (-)
		- Replace the controller board. - Check the connector connection.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC332-00	D	Toner supply feed lock
		Under the condition that the Toner Cartridge has not reached the end, an error that no toner is supplied has been detected over n times in succession. n: The value was specified at SP2-931-005.
		- Overloaded toner feeding system (toner clogging) - Detection screw of the PCDU not rotating - Failure in the sensing element (sensor): Light leak - Failure in the toner supply pawl - Failure in the toner supply clutch
		- Replace the Toner Cartridge. - Replace the PCDU

6.Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC364-00	D	Toner End Sensor output count error
		Under the condition that the toner cartridge has not reached the end, an error that no toner is supplied has been detected over n times in succession. (where n is to be configured using SP2-931-003)
		• Bad connector contact or connector disconnected/wire broken • Failed toner end sensor • Dirty detection surface inside the development unit
		• Check the connector connection or check for broken wire. • Replace the harness. • Replace the toner end sensor. • Replace the PCDU.

SC400 (Image Processing - 2)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC440-00	D	High voltage output error: Transfer unit
		This SC is issued if the BiCU detects a short in the power pack 10 times consecutively.
		Short circuit (-)
		• Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC498-00	C	Temperature/humidity Sensor error
		• Temperature sensor output error: Out of range between 0.76 V and 2.90 V • Humidity sensor output error: 2.4 V or more
		• Unmounted sensor (Disconnected connector or broken wire) • Failed sensor
		• Check that the connector is set. • Set the sensor. • Replace the sensor. • Replace the connector.

SC500 (Paper Feed and Fusing)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC508-00	B	Bypass bottom plate operation error
		The signal from the bypass bottom plate position sensor has not changed (the signal has not changed from ON to OFF or vice versa) for 4 seconds or more after the start of reverse Paper Feed Unit rotation. If the error is detected three times in succession, the SC number is displayed on

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		the operation panel.
		• Bypass bottom plate clutch connector disconnected or other error • Bypass bottom plate sensor connector disconnected or other error • Bypass bottom plate sensor feeler stuck or other error
		• Check and replace the bypass bottom plate sensor connector connection. • Replace the bypass bottom plate sensor feeler. • Replace the harness. • Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC520-00	D	Main motor error
		When the main motor is driven, the lock (state of rotation) signal is checked every 100 milliseconds. If the machine detects the lock signal in the High status 20 times in succession, it reports this error.
		• The main motor incurs too much load from a defective unit. • The main motor is defective.
		Replace the defective unit or the motor.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC530-00	D	Fusing fan error
		The fan motor lock (rotating state) signal is sampled at 100 ms intervals and the machine fails to receive the lock signal 50 times in succession.
		• Failure in the motor • Loose connector • Harness damaged • Failure in the BiCU
		• Replace the fan motor. • Check the connector. • Replace the harness. • Replace the BiCU

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC531-00	D	Development Cooling fan error
		The fan motor lock (rotating state) signal is sampled at 100 ms intervals and the machine fails to receive the lock signal 50 times in succession.
		• Failure in the motor • Loose connector

6.Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Harness damaged • Failure in the BiCU
		• Replace the fan motor. • Check the connector. • Replace the harness. • Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC532-00	D	PSU Cooling fan error
		The fan motor lock (rotating state) signal is sampled at 100 ms intervals and the machine fails to receive the lock signal 50 times in succession.
		• Failure in the motor • Loose connector • Harness damaged • Failure in the BiCU
		• Replace the fan motor. • Check the connector. • Replace the harness. • Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC541-00	A	Broken fusing (Center) thermistor wire
		The condition whereby the temperature is -20 deg C or less for 5 seconds has been detected 10 times or more.
		• Broken thermistor wire • Bad connector contact
		• Clear the SP: fusing SC. • Check the connector connection. • Replace the fusing (Center) thermistor.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC542-01	A	Fusing lamp (Center) not reloaded (Deformed thermistor)
		The heater thermistor has increased by less than 20 degrees C in 3 seconds 5 times in a row.
		• Deformed or floating thermistor • Input voltage out of range
		• Clear the SP: fusing SC. • Replace the thermistor.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC542-02	A	Fusing lamp (Center) not reloaded (Broken heater wire)
		The heater (Center) thermistor does not reach the reload temperature 23 seconds after the start of motor rotation.
		The overtemperature prevention mechanism started working
		- Clear the SP: fusing SC. - Replace the thermistor.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC543-00	A	Fusing (Center) thermopile high-temperature detected (software)
		The temperature is detected to stay at 250 degrees C or higher for one second.
		- Shorted triac - Failure in the BiCU
		- Clear the SP: fusing SC. - Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC544-00	A	Fusing (Center) thermopile high-temperature detected (hardware)
		The hardware high-temperature error sensor flag is detected (250 degrees C or higher).
		- Damaged triac (shorted) - Failed engine control board - Failed fusing thermopile - Failed fusing thermistor - Abnormal fusing control software behavior - The PWM signal is continuously supplied from the IH inverter (due to a software or temperature sensor error).
		- Clear the SP: fusing SC. - Replace the PSU. - Replace the Engine Board. - Replace the fusing thermopile. - Replace the fusing thermistor. - Replace the Fusing Unit.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC545-00	A	Fusing (Center) lamp stays ON
		The thermistor (center) has not detected the target temperature, even after the fusing lamp stays ON for more than 11 seconds after reloading.
		Deformed or floating thermistor

6.Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		- Broken fusing lamp wire - The overtemperature prevention mechanism started working
		- Clear the SP: fusing SC. - Replace the fusing thermistor. - Replace the fusing (Center) lamp.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC547-01	D	Zero-crossing error (adhered relay contact)
		When the fusing relay is in an OFF state, a "zero-crossing interrupt request" occurs in 50 ms.
		- Damaged fusing relay (adhered contact) - Failure in the fusing relay drive circuit - PSU fuse (24VS) blown - Unstable frequencies at the commercial power supply
		- Check the commercial power supply. - Replace the fuse. - Replace the PSU.
SC547-02	D	Zero-crossing error (bad relay contact)
		If a "zero-crossing interrupt request" does not occur in three seconds after the fusing relay is in an ON state, an error results.
		- Damaged fusing relay (open contact) - Failed fusing relay drive circuit - PSU fuse (24VS) blown - Unstable frequencies at the commercial power supply
		- Check the commercial power supply. - Replace the fuse. - Replace the PSU.
SC547-03	D	Zero-crossing error (low frequency error)
		The number of zero-crossing interrupts does not reach a certain value in 500 ms.
		Unstable frequencies at the commercial power supply
		- Check the commercial power supply. - Replace the PSU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC551-00	A	Broken fusing (End) thermistor wire
		At least ten times, the temperature is detected to stay at -20 degrees C or less for 5 seconds.
		- Broken thermistor wire - Bad connector contact

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Clear the SP: fusing SC. • Check the connector connection. • Replace the fusing (End) thermistor.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC553-01	A	Fusing (End) thermistor high-temperature detected (software)
		(553-01)
SC553-02		In a condition of 235 degrees C or higher temperature, the temperature has increased more than 10 degrees C per 1 second, the heater has continuously reached 100% (maximum) duty, and the center thermistor has detected the failure to reach the target temperature by 11 degrees C.
		(553-02) The temperature is detected to stay at 250 degrees C or higher for one second. • Failed fusing (end) thermistor • Clear the SP: fusing SC. • Replace the fusing (end) thermistor.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC554-00	A	Fusing (End) thermistor high-temperature detected (hardware)
		The hardware high-temperature error sensor flag is detected (250 degrees C or higher).
		• Damaged triac (shorted) • Failed engine control board • Failed fusing thermopile • Failed fusing thermistor • Abnormal fusing control software behavior • The PWM signal is continuously supplied from the IH inverter (due to a software or temperature sensor error).
		• Clear the SP: fusing SC. • Replace the PSU. • Replace the Engine Board. • Replace the fusing thermopile. • Replace the Fusing Unit.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC557-00	C	Zero-crossing frequency exceeded
		The number of zero-crossing interrupts exceeds a certain value in 500 ms.
		The frequency of the commercial power supply line is unstable or noise occurs.
		None

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC559-00	A	Fusing jam detected 3 times in succession
		Fusing jam is detected three times in succession.
		Paper is wrapped around the fusing roller.
		Clear the SP: fusing SC.

SC600 (Device Communication)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC632-00	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.
		• Turn the main power off/on. • Check the serial communication line.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC633-00	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.
		• Turn the main power off/on. • Check the serial communication line.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC634-00	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 is defective
		• Replace the counter device control board. • Replace the backup battery.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC635-00	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 is defective
		• Replace the counter device control board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		Replace the backup battery.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC636-01	D	IC Card Error (Expanded authentication module error)
		Issued when expanded authentication management is set to "ON" but either of the following occur. - There is no expanded authentication module in the machine. - The SD card or the file of the expanded authentication module is broken. - There is no DESS module in the machine.
		- There is no DESS module in the machine (models on which the function is optional). - There is no expanded authentication module in the machine. - The SD card or the file of the expanded authentication module is broken.
		- Set a working SD card/expanded authentication module file. - Install the DESS module. - In the SSP mode set SP5-401-160 to 0. - In the SSP mode, set SP5-401-161 to 0. - Replace the NVRAM.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC636-02	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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC636-11	D	IC Card Error (OSM user code file error)
		- The correct "usercode" file could not be found in the root folder of the SD card. - The "usercode" file on the SD card could not be read.
		- The "usercode" file does not exist on the SD card. - The "usercode" file on the SD card is an invalid file. - Data in the "usercode" file on the SD card is invalid. "usercode" file was not moved when moving the application to another SD card
		Use the user code configuration tool for OSM users (Idissuer.exe) to create the "usercode" and store it in the root folder of the SD card containing the IC card module (eccm.mod).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC637-01	D	Tracking Information Notification Error (Tracking application error)

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		Tracking information was lost.
		- Tracking SDK application error - Internal notification error
		Turn the main power off/on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC637-02	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
		Turn the main power off/on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC641-00	D	Engine to Controller Communication Error (No Response)
		The controller sent a data frame by RAPI protocol, but there was no response after trying 3 times, once every 100ms.
		- The controller board or software is defective. - The engine board or software is defective. - The controller board and the engine board are not connected properly.
		Check the connection between the controller board and engine board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC650-01	B	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).
		Dialup authentication failure
		Check the following SPs. - SP5-816-156 - SP5-816-157

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC650-04	B	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).
		Dialup failing because of incorrect modem configuration
		Check if the setting of SP5-816-160 is correct. If it is correct, then there is a software bug.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC650-05	B	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).
		Insufficient current or connection fault
		The line is not supported and nothing can be done.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC650-13	B	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 it can be referenced using SP).
		RC Gate Type M was installed but modem is not present (detected during operation)
		- If a modem board is not installed, install it. - Check again if the modem driver configurations (SP5-816-160, SP5-816-165 to 171, SP5-816-165 to 171) are correct. - If the problem is not solved, replace the modem.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC650-14	B	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 it can be referenced using SP).
		RC Gate Type N was installed but modem is present or wired/wireless LAN is not working correctly
		- If a modem board is attached, remove it. - Check if wired/wireless LAN works.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC651-01	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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC651-02	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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC652-00	D	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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC653-00	D	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 installation status, write the common certificate, and then begin installation again.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC665-41	D	Macaron connection error
		The machine detects the communication error between CPU and Macaron when starting up, or recovery from energy saver mode.
		• The BiCU defects (Parts implementation defect, solder scrap, implemented parts defect, etc.)
		• Turn the main power OFF/ON. • Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC667-01	D	Master Device Mode Setting Error
		The machine detects the CPU mode error when starting up, or recovery from energy saver mode.
		The BiCU defects (Parts implementation defect, solder scrap, implemented parts defect, etc.)
		• Turn the main power OFF/ON. • Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC667-40	D	Macaron Mode Setting Error
		The machine detects the Macaron1 mode error when starting up, or recovery from energy saver mode.
		The BiCU defects (Parts implementation defect, solder scrap, implemented parts defect, etc.)
		• Turn the main power OFF/ON. • Replace the BiCU.

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC669- * *	D	EEPROM communication error
		An error is notified during EEPROM communication and the printer does not recover after three retries.
		669 - 1 ID error during EEPROM OPEN 669 - 2 Channel error during EEPROM OPEN 669 - 3 Device error during EEPROM OPEN 669 - 4 Communication interrupted error during EEPROM OPEN 669 - 5 Communication timeout error 669 - 6 Not operating error during EEPROM OPEN 669 - 7 Buffer full during EEPROM OPEN 669 - 8 No error code during EEPROM OPEN 669 - 9 ID error 669 - 10 No error code during EEPROM Close 669 - 11 ID error during EEPROM data write 669 - 12 Channel error during EEPROM data write 669 - 13 Device error during EEPROM data write 669 - 14 Communication interrupted error during EEPROM data write
		669 - 15 Communication timeout error 669 - 16 Not operating error during EEPROM data write 669 - 17 Buffer full during EEPROM data write 669 - 18 No error code during EEPROM data write 669 - 19 ID error during EEPROM data read 669 - 20 Channel error EEPROM data read 669 - 21 Device error during EEPROM data read 669 - 22 Communication interrupted error during EEPROM data read 669 - 23 Communication timeout error 669 - 24 Not operating error during EEPROM data read 669 - 25 Buffer full during EEPROM data read 669 - 26 No error code during EEPROM data read 669 - 36 Verification error 669 - 37 Error Detection • Electromagnetic noise • EEPROM error
		• Turn the main power OFF and then ON. • Replace the BiCU

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC670-01, 02	D	SC670-01: Engine Start Up Error SC670-02: Engine Down at Start Up (No SC Reboot)
		- SC670-01 - A /ENGRDY signal was not asserted at power ON or recovery from Energy Save. - There is no response from the EC/PC/SC command within 70 secs after the main power was turned ON. - Writing onto the Rapi driver failed (the other party could not be found through PCI). - SC670-02 - After a /ENGRDY signal is asserted, there is an unexpected engine down.
		- Case 1 - Engine board does not start up. - Case 2 - Engine board reset unexpectedly. - SC670-01 - The engine board failed to start up. - SC670-02 - The engine board was reset at an unexpected time. - Check if new firmware is available for the engine and controller boards. (SC670-02 only) - If there is new firmware, update the boards. - If there is no new firmware, proceed to the next step. - Reconnect the engine board and the controller board. - If the SC does not recur, no further action is necessary. If the SC recurs, proceed to the next step. - Replace the boards in the following order. - Engine board - Controller board, or the board between the controller and the engine - PSU

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC672-10 to -13, -99	D	Controller start up error The SC is detected when: - the communication line between the controller and the operation panel cannot be established after power ON, or communication with the controller was cut off even though startup was successful. - no attention code (FDH) or attention acknowledgement code (FEH) was sent from the controller within 30 secs after the power of the operation panel was turned ON or was

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		reset. - the operation panel sends a command to the controller once every 30 secs to check the communication line, and there was no reply from the controller for two consecutive times. - Because this SC is detected by the operation panel, it will not be logged or reported.
		- The controller freezes. - The controller board is not installed correctly. - The controller board is malfunctioning. - The harness of the operation panel is disconnected, or the connection is loose. - The controller's response is slow.
		- Turn the main power OFF then ON. - Check if the operation panel harness is properly connected. - Check if the controller board is installed correctly, - Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC673-10	D	Operation Panel Flair Communication Error (Smart Operation Panel) This SC is detected when: - The Smart Operation Panel is communicating with the main machine (this is called "flair communication"), and there was no response from the main machine. - SP5-748-201 for Smart Operation Panel is not enabled. This SC is detected when the CATS module (controller) cannot respond to the notification from the monitoring service module (operation panel). - Turn the main power OFF then ON. - If SP5748-201 is set to "0" (Not connect), change the value to "1" (Connect).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC681- **	D	Device ID is not identified (toner cartridge) An error is notified during the ID identification after three retries. 681 - 1 Device ID error (Incorrect ID) 681 - 6 Channel error 681 - 11 Device ID error (No ID chip) 681 - 16 Communication Error 681 - 21 Communication timeout 681 - 26 The device has stopped its operation 681 - 31 The requested buffer is full 681 - 36 EEPROM SRAM OPEN: Verification error

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		681 - 37 Failure detection error
		• Turn the main power OFF and then ON. • Replace the toner cartridge (ID chip). • Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC682- **	D	Device ID is not identified (PCDU)
		An error is notified during the ID identification after three retries.
		682 - 1 Device ID error (Incorrect ID)
		682 - 6 Channel error
		682 - 11 Device ID error (No ID chip)
		682 - 16 Communication Error
		682 - 21 Communication timeout
		682 - 26 The device has stopped its operation
		682 - 31 The requested buffer is full
		682 - 36 EEPROM SRAM OPEN: Verification error
		682 - 37 Failure detection error
		• Turn the main power OFF and then ON. • Replace the PCPU (ID chip). • Replace the BiCU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC687-00	D	RAPI-PER receipt failure
		Even though 120 seconds have elapsed after RAPI-PES (request for image transfer) is issued, a RAPI-PER receipt is not received from the controller board.
		• Defective controller board • Noise
		• Turn the main power OFF and then ON. • Replace the controller board.

SC700 (Peripherals)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC790-00	D	Maximum number of banks (paper tray units) exceeded
		When the power is turned ON, the number of mounted paper tray units is detected and the number exceeds three.
		The number of mounted paper tray units exceeds the specifications.
		Reduce the number of mounted paper tray units according to the specifications.

SC800 (Controller)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC816-00	[0x0000]	Energy save I/O subsystem error
SC816-01	D	Subsystem error
SC816-02	D	Sysarch (LPUX_GET_PORT_INFO) error
SC816-03	D	Transition to STR was denied.
SC816-04	D	Interrupt in kernel communication driver
SC816-05	D	Preparation for transition to STR failed.
SC816-07	D	Sysarch (LPUX_GET_PORT_INFO) error
SC816-08	D	Sysarch (LPUX_ENGINE_TIMERCTRL) error
SC816-09	D	Sysarch (LPUX_RETURN_FACTOR_STR) error
SC816-10	D	Sysarch (LPUX_GET_PORT_INFO) error
SC816-11	D	Sysarch (LPUX_GET_PORT_INFO) error
SC816-12	D	Sysarch (LPUX_GET_PORT_INFO) error
SC816-13	D	open() error
SC816-14	D	Memory address error
SC816-15	D	open() error
SC816-16	D	open() error
SC816-17	D	open() error
SC816-18	D	open() error
SC816-19	D	Double open() error
SC816-20	D	open() error
SC816-22	D	Parameter error
SC816-23	D	read() error
SC816-24	D	read() error
SC816-25	D	read() error
SC816-26	D	write() communication retry error
SC816-27	D	write() communication retry error
SC816-28	D	write() communication retry error
SC816-29	D	write() communication retry error
SC816-30	D	write() communication retry error
SC816-35	D	read() error
SC816-36 to 98	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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Turn the main power off/on. • Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC817-00	D	Monitor error: File detection / Digital signature error
		• Boot loader cannot read any of diagnostic module, kernel, or root filesystem. • In a boot loader 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

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC818-00	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
		• Turn the main power off/on. • Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC819-00	D	Fatal kernel 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.
		• System program defective • Controller board defective • Optional board defective
		Replace controller firmware
[0x5032]		HAIC-P2 error
		HAIC-P2 decompression error (An error occurred in the ASIC compression/decompression module.)

6.Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
[0x5245]		Link up error
		0x53554D45 → "Link up error"
[0c5355]		L2 status time out
		0x5350454E44 → "L2 status time out"
[0x6261]		HDD defective
		6261 6420 6469 7200 00 → "bad dir"
[0x696e]		gwinit process ending
		x69742064 → "init died"
[0x766d]		VM is full
		0x5f706167 → "vm_pageout: VM is full"
----		Others
		Error in the OS
		Others
		"init died", "vm_pageout: VM is full", "Cache Error"

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC840-00	D	EEPROM access error
		While executing I/O to the EEPROM, an error is detected:
		- When a read error still occurs even after three attempts; - When a write error has occurred.
		EEPROM is defective or has reached its end of life.
		-

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC841-00	D	Error in data read from the EEPROM
		When mirrored data read from three different regions in the EEPROM differ each other.
		For some reason, the data stored in a particular region of the EEPROM has been overwritten.
		-

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC842-00	C	Verification error in the NAND-Flash update
		When updating the remote ROM and the ROM, SCS encountered an error in writing to the NAND-Flash memory that holds the module data.
		Defective NAND-Flash memory.
		Turn the main power switch off and on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC842-01	B	Verification error during NAND-Flash update
		When starting-up the machine or re-starting it from the energy saving, the machine reads the state of the NAND-Flash and detects that there are defective blocks whose amount exceeds the threshold. This means that the life of the NAND-Flash is near-end.
		Near-end Life of NAND-Flash
		Replace the controller board as soon as possible.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC842-02	B	NAND-Flash Block-deletion Excess-error
		When starting-up the machine or re-starting it from the energy saving, the machine reads the state of the NAND-Flash and detects that there are block-deletions whose amount exceeds the threshold. This means that the life of the NAND-Flash is near-end.
		Near-end Life of NAND-Flash
		Replace the controller board as soon as possible.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC845-01 to 05	D	Hardware Error Detected when the automatic firmware update
		SC845-01: Engine Board
		SC845-02: Controller Board
		SC845-03: Operation Panel (Normal)
		SC845-04: Operation Panel (Smart Panel)
		SC845-05: FCU
		When updating the firmware automatically (ARFU), the firmware cannot be read or written normally, and the firmware update cannot be completed even by 3 retries.
		Hardware abnormality of the target board
		Replacing the target board
		For SC852-02, HDD may cause the problem. Replace the HDD if the SC cannot be recovered by replacing the controllerboard.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC855-01	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
		- Turn the main power off/on. - Replace wireless LAN board

6.Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC855-02	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
		- Turn the main power off/on. - Replace wireless LAN board

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC858-00	A	Data encryption conversion error (Key error)
		A serious error occurred during an attempt to update the encryption key.
		- Data in the USB Flash etc. is corrupted - Communication error because of electromagnetic interference etc. - Controller board is defective
		Replace the Controller Board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC858-01	A	Data encryption conversion error (HDD Key Setting Error)
		A serious error occurred during an attempt to update the encryption key.
		- Data in the USB Flash etc. is corrupted - Communication error because of electromagnetic interference etc. - Controller board is defective
		Replace the Controller Board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC858-02	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 is defective
		- Replace the NVRAM. - Replace the Controller Board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC858-30	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.
		Replace the Controller Board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC858-31	A	Data encryption conversion error (Other Error)
		A serious error occurred after data conversion during an attempt to update the encryption key.
		Controller board is defective
		Replace the Controller Board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC859-00	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 the HDD connection. • Format the HDD (SP5-832: HDD formatting). • If there is a problem with the HDD, it has to be replaced.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC859-01	B	Data encryption conversion HDD conversion error (HDD check error)
		HDD was not converted correctly during an attempt to update the encryption key. Only an error screen is displayed and no SC is issued during conversion. This SC is issued after machine restarts.
		- HDD conversion was selected in the Encryption key update function but the machine was turned on with the HDD removed. - Power failure occurred during encryption key update. - HDD was not successfully converted during encryption key update due to HDD errors or cable noises.
		• Check the HDD connection. • Format the HDD. • If there is a problem with the HDD, it has to be replaced.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC859-02	B	Data encryption conversion HDD conversion error (Power failure during conversion)
		HDD was not converted correctly during an attempt to update the encryption key. Only an error screen is displayed and no SC is issued during conversion. This SC is issued after

6.Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		machine restarts. Details: NVRAM/HDD conversion is incomplete.
		Power failure occurred during encryption key update.
		None The display after the restarting instructs the user to format the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC859-10	B	Data encryption conversion HDD conversion error (Data read/write command error) HDD was not converted correctly during an attempt to update the encryption key. Only an error screen is displayed and no SC is issued during conversion. This SC is issued after machine restarts. 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 the HDD connection. • Format the HDD. • If there is a problem with the HDD, it has to be replaced.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC860-00	B	Hard disk startup error at power-on
		A hard disk is connected, but the driver detected the following errors: SS_NOT_READY (-2) The HDD is not ready. SS_BAD_LABEL (-4) Incorrect partition type. SS_READ_ERROR (-5) An error occurred while reading or checking labels. SS_WRITE_ERROR (-6) An error occurred while writing or checking labels. SS_FS_ERROR (-7) Failed to restore filesystem. SS_MOUNT_ERROR (-8)Failed to mount filesystem.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		SS_COMMAND_ERROR (-9) The driver does not respond to the command. SS_KERNEL_ERROR (-10) Internal kernel error. SS_SIZE_ERROR: (-11) The drive is too small. SS_NO_PARTITION: (-12) The specified partition does not exist. SS_NO_FILE No device file exists. Tried to obtain the information about the status of the hard disk from the driver, but no response has been returned for more than 30 seconds.
		• The hard disk has not yet initialized. • Broken label data • Defective hard disk
		Initialize the hard disk from SP mode.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC862-00	D	Number of the defective sector reaches the maximum count
		101 defective sectors are generated at the image storage area in the HDD.
		SC863 occurs during the HDD reading and defective sectors are registered up to 101.
		• Format the HDD with SPSP5-832. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-01	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 disklabel area.)
		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,

6.Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-02	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".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-03	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 "b".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-04	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 "c".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-05	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 "d".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-06	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation.

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		(An error occurred in partition "e".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-07	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 "f".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-08	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 "g".)
		Guide for when to replace the HDD When SC863 has occurred ten times or more

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		- 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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-09	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 "h".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-10	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 "i".)
		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.

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-11	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 "j".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-12	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 "k".)
		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

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-13	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 "l".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-14	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 "m".)
		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.

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-15	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 "n".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-16	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 "o".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-17	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		(An error occurred in partition "p".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-18	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 "q".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-19	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 "r".)
		Guide for when to replace the HDD When SC863 has occurred ten times or more

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		- 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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-20	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 "s".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-21	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 "t".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-22	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 "u".)
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC863-23	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 "v".)
		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

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-00	D	HDD data CRC error
		While reading data from the HDD or storing data in the HDD, data transmission fails.
		Defective HDD
		- Format the HDD. - Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-01	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in an area that does not belong to a partition, such as the disklabel area.)
		- Format the HDD. - Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-02	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "a".)
		- Format the HDD. - Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-03	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "b".)
		- Format the HDD. - Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-04	D	HDD data CRC error

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "c".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-05	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "d".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-06	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "e".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-07	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "f".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-08	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "g".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-09	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "h".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-10	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "i".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-11	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "j".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-12	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "k".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-13	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "l".)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		- Format the HDD. - Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-14	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "m".)
		- Format the HDD. - Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-15	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "n".)
		- Format the HDD. - Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-16	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "o".)
		- Format the HDD. - Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-17	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "p".)
		- Format the HDD. - Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-18	D	HDD data CRC error

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "q".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-19	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "r".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-20	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "s".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-21	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "t".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-22	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "u".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-23	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "v".)
		- Format the HDD. - Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-00	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).
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-01	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 disklabel area.)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-02 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) partition "v" (SC865-23).)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-50 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.

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC866-00	B	SD card authentication error
		When a correct license for digital authentication is not found in an SD card application.
		The SD card contains the wrong program data.
		Store the correct program data on the SD card.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC867-00 to 02	D	SD card removal detection
		When an application SD card is removed from the slot while the application is being activated.
		An application SD card has been removed from the slot (from the mount point /mnt/sd*). SC867-00: /mnt/sd0 SC867-01: /mnt/sd1 SC867-02: /mnt/sd2
		Turn the main power switch off and on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC868-00	D	SD card access error
		The SD controller returned an error during operation. (An error occurred at the mount point of /mnt/sd0)
		• SD card is defective • SD controller is defective
		• Reformat the SD card (using the "SD Formatter" made by Panasonic).* • Check the SD card insertion status. • Replace the SD card. • Replace the controller board.

* Do not format the SD card supplied with the main machine or sold as an option. You may only format SD cards used for Firmware Update by the Customer Engineer.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC868-01	D	SD card access error
		The SD controller returned an error during operation. (An error occurred at the mount point of /mnt/sd1)
		• SD card is defective • SD controller is defective
		SD card used for starting an application
		• Turn the main power off and check the SD card insertion status. • If no problem is found, insert the SD card and turn the main power on. • If an error occurs, replace the SD card.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		- SD card for users - In the case of a file system error, reformat the SD card (using the "SD Formatter" made by Panasonic).* - In the case of a device access error, turn the main power off and check the SD card insertion status. - If no problem is found, insert the SD card and turn the main power on. - If an error occurs, use another SD card. - If the error persists even after replacing the SD card, replace the controller board.

* Do not format the SD card supplied with the main machine or sold as an option. You may only format SD cards used for Firmware Update by the Customer Engineer.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC869-01	C	Malfunction of the proximity sensor is detected
		Continuously detecting malfunction
		The proximity sensor keeps in a detection state and accumulated time exceeds 24 hours.
		The proximity sensor is disabled and is in the detection state at all times.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC869-02	C	Malfunction of the proximity sensor is detected
		Continuously non-detecting malfunction
		In the non-detection state, the following operations are detected 20 times continuously. - Pressing "energy saver" key or touching the operation panel - Opening/closing the plate cover or SPDF - Setting the original - Opening the front cover - Opening the paper feed tray
		The proximity sensor is disabled and is in the non-detection state at all times.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC870-00	B	Address Book data error (Anytime: Address Book Error.)
SC870-01	B	Address Book data error (On startup: Media required for storing the Address Book is missing.)
SC870-02	B	Address Book data error (On startup: encryption is configured but the module required for encryption (DESS) is missing.)
SC870-03	B	Address Book data error (Initialization: Failed to generate a file to store internal Address Book.)

6.Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC870-04	B	Address Book data error (Initialization: Failed to generate a file to store delivery sender.)
SC870-05	B	Address Book data error (Initialization: Failed to generate a file to store delivery destination.)
SC870-06	B	Address Book data error (Initialization: Failed to generate a file to store information required for LDAP search.)
SC870-07	B	Address Book data error (Initialization: Failed to initialize entries required for machine operation.)
SC870-08	B	Address Book data error (Machine configuration: HDD is present but the space for storing the Address Book is unusable.)
SC870-10	B	Address Book data error (Machine configuration: Cannot make a directory for storing the Address Book in the SD/USB FlashROM.)
SC870-11	B	Address Book data error (On startup: Inconsistency in Address Book entry number.)
SC870-20	B	Address Book data error (File I/O: Failed to initialize file.)
SC870-21	B	Address Book data error (File I/O: Failed to generate file.)
SC870-22	B	Address Book data error (File I/O: Failed to open file.)
SC870-23	B	Address Book data error (File I/O: Failed to write to file.)
SC870-24	B	Address Book data error (File I/O: Failed to read file.)
SC870-25	B	Address Book data error (File I/O: Failed to check file size.)
SC870-26	B	Address Book data error (File I/O: Failed to delete data.)
SC870-27	B	Address Book data error (File I/O: Failed to add data.)
SC870-30	B	Address Book data error (Search: Failed to obtain data from cache when searching in the machine Address Book. delivery destination/sender.)
SC870-31	B	Address Book data error (Search:Failed to obtain data from cache during LDAP search.)
SC870-32	B	Address Book data error (Search:Failed to obtain data from cache while searching the WS-Scanner Address Book.)
SC870-	B	Address Book data error (Cache: failed to obtain data from cache.)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
41		
SC870-50	B	Address Book data error (On startup: Detected abnormality of the Address Book encryption status.)
SC870-51	B	Address Book data error (Encryption settings: Failed to create directory required for conversion between plaintext and encrypted text.)
SC870-52	B	Address Book data error (Encryption settings: Failed to convert from plaintext to encrypted text.)
SC870-53	B	Address Book data error (Encryption settings: Failed to convert from encrypted text to plaintext.)
SC870-54	B	Address Book data error (Encryption settings: Detected data inconsistency when reading the encrypted Address Book.)
SC870-55	B	Address Book data error (Encryption settings: Failed to delete file when changing encryption setting.)
SC870-56	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.)
SC870-57	B	Address Book data error (Encryption settings: Failed to move a file during an attempt to change the encryption setting.)
SC870-58	B	Address Book data error (Encryption settings: Failed to delete a directory during an attempt to change the encryption setting.)
SC870-59	B	Address Book data error (Encryption settings: Detected a resource shortage during an attempt to change the encryption setting.)
		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. • Check the HDD connection. • Initialize all UCS settings and address/authentication information (SP5-846-046). • Initialize the Address Book partition (SP5-832-006).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC872-00	B	HDD mail received data error
		An error is detected in the HDD at machine power-on.
		• Defective HDD

6.Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		- Power failure while accessing the HDD - Use SP5832-007 to initialize the HDD (HDD-related: Format: Mail received data). - Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC873-00	B	HDD mail transfer error
		An error is detected in the HDD at machine power-on.
		- Defective HDD - Power failure while accessing the HDD
		- Use SP5832-008 to initialize the HDD (HDD-related: Format: Mail transfer data). - Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC874-05	D	Delete all error (Delete data area) : Read error
SC874-06	D	Delete all error (Delete data area) : Write error
SC874-10	D	Delete all error (Delete data area) : Error in Kernel
SC874-12	D	Delete all error (Delete data area) : No designated partition
SC874-13	D	Delete all error (Delete data area) : No device file
SC874-14	D	Delete all error (Delete data area) : Start option error
SC874-15	D	Delete all error (Delete data area) : No designated sector number
SC874-16	D	Delete all error (Delete data area) : failure in performing hdd erase
SC874-41	D	Delete all error (Delete data area) : Other fatal errors
SC874-42	D	Delete all error (Delete data area) : End by cancellation
SC874-61 to -65	D	Delete all error (Delete data area) : library error
SC874-66	D	Delete all error (Delete data area) : Unavailable
SC874-67	D	Delete all error (Delete data area) : Erasing not finished
SC874-68	D	Delete all error (Delete data area) : HDD format failure (Normal)
SC874-69	D	Delete all error (Delete data area) : HDD format failure (Abnormal)
SC874-70	D	Delete all error (Delete data area) : Unauthorized library
SC874-99	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

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		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.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC875-**	D	Delete All error (HDD)
		An error is detected before executing HDD Erase.
		875-01
		Error occurred at "hddchack -l".
		875-02
		Data erase failed.
		Turn the main power switch off and on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC877-00	B	Data Overwrite Security card error
		The "Auto Erase Memory" function of the Data Overwrite Security is enabled but it cannot be executed.
		- Data Overwrite Security option SD card is broken. - Data Overwrite Security option SD card has been removed.
		- If the SD card is broken, prepare a new Data Overwrite Security option SD card and replace the NVRAM. - If the SD card has been removed, turn the main power off and reinstall a working Data Overwrite Security option SD card.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC878-00	D	TPM electronic authentication error
		The machine failed TPM electronic authentication.
		System hash registered in the TPM did not match the data on the USB flash.
		- System module was updated in an unauthorized manner. - USB flash is not working correctly.
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC878-01	D	USB Flash error
		USB Flash file system error
		USB Flash file system has been destroyed.
		Replace the controller board.

6.Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC878-02	D	TPM error
		An error occurred in the TPM or TPM driver.
		TPM is defective
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC878-03	D	TCSD error
		An error occurred in TPM software stack.
		- Unable to start TPM - Necessary files missing from the TPM.
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC878-20	D	Random Number Generator Error
		An error occurred when doing self-check against seed for random number generated.
		TPM is defective
		- Turn the main power switch off and on. - Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC880-00	D	MLB error
		The response is not received within the specified time during the access to the MLB.
		Defective MLB
		- Replace the MLB - Remove the MLB

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC899-00	D	Software performance error (signal reception end)
		-
		Occurs when an internal program behaves abnormally.
		In the case of a hardware defect - Replace the hardware. In the case of a software error - Turn the main power off/on. - Try updating the firmware.

SC900 (Others)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC900-00	D	Electronic counter error
		The electronic total counter value is not the specified value.
		This error is detected when the counter moves forward.
		• The NVRAM connection is not correct. • The NVRAM is defective. • The NVRAM data is corrupted. • The data was written in the wrong area due to external factors. • When PRT received signals at SRM, the requested count is not completed.
		Replace the NVRAM.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC990-00	D	Software performance error
		The software attempted to make an unexpected operation.
		• Incorrect argument • Incorrect internal parameter • Insufficient working memory • Abnormal performance caused by an error that cannot be detected in normal SC detection due to hardware specifications.
		• Turn the main power switch off and on. • Reinstall the software of the controller board. • Reinstall the software of the engine board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC991-00	C	Software Error (Operation Can Continue)
		The software performed in an unexpected way. By taking recovery measures, further operation is possible.
		• The parameter is invalid. • There is insufficient work memory. • This SC is caused by errors that are not normally detected from the hardware.
		Not required

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC992-00	D	Undefined SC
		An undefined SC has occurred.
		There is a bug in the software.

6. Troubleshooting

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		Turn the main power switch off and on.

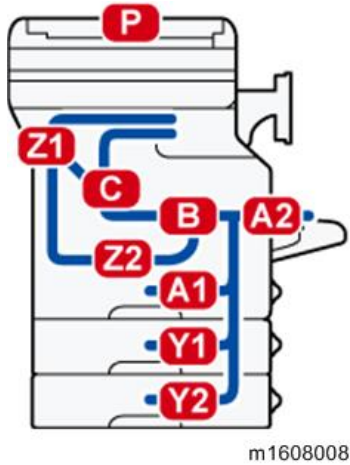
SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC997-00	B	Application function selection error
		The application did not function normally after pressing the application key on the operation panel.
		There is a bug in the software.
		Check if the options required by the application (RAM, DIMM, boards) are installed properly. Check whether downloaded applications are correctly configured.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC998-00	D	Application start error
		- After power ON, no application program was registered to the system within the specified period of time. (No application started or ended normally.). - Even though the application started up, it cannot be rendered due to an unknown fault.
		- There is a bug in the software. - The options required by the application (RAM, DIMM, board) are not installed.
		- Turn the main power OFF then ON. - Check the RAM, DIMM, and boards. - Check the application configurations. - Replace the controller board.

Jam Detection

Jam Displays

When a jam occurs, the location is displayed on the operation panel.



Jam History

SP7-507 shows the paper jam history.

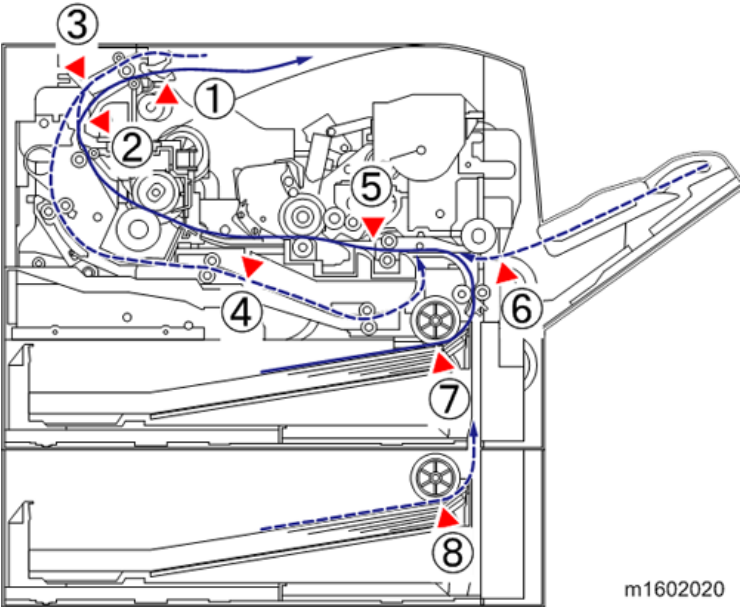
```
CODE :011
SIZE  :05h
TOTAL:000034
DATE  :Fri Feb 15 11:44:50 2006
```

- CODE: Indicates the jam code.
- SIZE: Indicates the paper Size Code.
- TOTAL: Indicates the total counter (SP7-502-001).
- DATE: indicates the date when the jam occurred.

↓ Note

- The 10 latest printer jams are displayed.
- Initial jams are not recorded.

Sensor Position Layout



1. Paper Overflow Sensor
2. Paper Exit Sensor
3. Duplex Exit Sensor
4. Duplex Entrance Sensor
5. Registration Sensor
6. Bypass Paper End Sensor
7. Paper End Sensor (Main Machine)
8. Paper End Sensor (Optional Bank)

Sensor Position

Note

- Jam code: Shows the cause of a jam. Appears in the log data.
- Position code: Shows the location of a jam. Appears on the operation panel.

These are lists of jam codes for the main machine and peripheral devices. Please note:

- **Late jam.** The paper has failed to arrive within the prescribed time due to a jam that has occurred upstream of the referenced sensor.
- **Lag jam.** The paper has failed to leave the location of the referenced sensor within the prescribed time due to a jam downstream of the referenced sensor.

SPDF

Jam Code	Jam Type	Position Code
4	Registration Sensor: Late jam	P
54	Registration Sensor: Lag jam	P
100	Motor Defective	P

Jam Code	Jam Type	Position Code
13	SPDF Feed Sensor: Late jam	P
63	SPDF Feed Sensor: Lag jam	P
1	Initial Jam	P
97	Timing Error Jam	P
98	Original Proximity Jam	P

Main Machine

Jam Code	Jam Type	Position Code
1	Registration Sensor Jam	B
1	Paper Exit Sensor Jam	B Z1
1	Duplex Exit Sensor Jam	Z1
1	Duplex Entrance Sensor Jam	Z1 Z2
3	Tray 1 : No Paper Feeding	A1
8	Bypass Tray : No Paper Feeding	A0
9	Duplex : No Paper Feeding	Z2
17	Registration Sensor: Late Jam	A1
20	Paper Exit Sensor: Late Jam	B C
57	Registration Sensor: Lag Jam	B
60	Paper Exit Sensor: Lag Jam	B Z1
23	Duplex Exit Sensor: Late Jam	B C
63	Duplex Exit Sensor: Lag Jam	Z1
26	Duplex Entrance Sensor: Late Jam	Z1
66	Duplex Entrance Sensor: Lag Jam	Z1 Z2

Optional Bank

Jam Code	Jam Type	Position Code
4	Tray 2 : No Paper Feeding	Y1
13	Tray 2 Relay Sensor (Vertical Transport Sensor): Late Jam	Y2
53	Tray 2 Relay Sensor (Vertical Transport Sensor): Lag Jam	A1 Y1
1	Tray 2 Relay Sensor (Vertical Transport Sensor) Jam	Y1

6.Troubleshooting

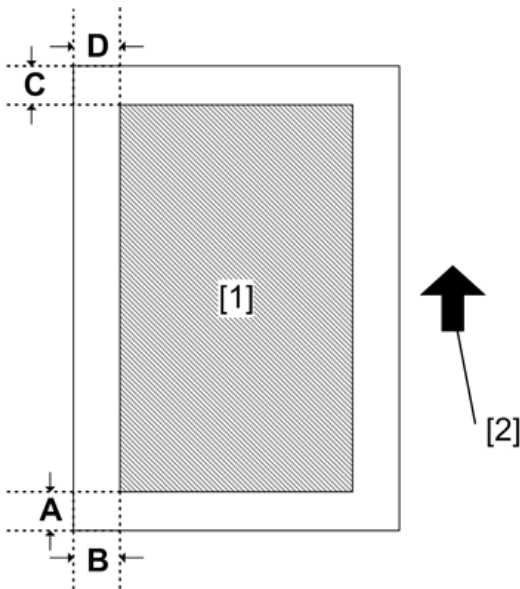
Jam Code	Jam Type	Position Code
5	Tray 3 : No Paper Feeding	Y2
54	Tray 3 Relay Sensor (Vertical Transport Sensor): Lag Jam	A1 Y1 Y2
1	Tray 3 Relay Sensor (Vertical Transport Sensor) Jam	Y2

Troubleshooting

Image Position Adjustment

Note

- Adjust the blank margin width only if it cannot be adjusted by registration (leading edge/side-to-side). First adjust C and D; then A and B.



- [1]: Print area
- [2]: Paper feed direction

1. Enter the SP mode, and then print the test pattern (17: Trim Area) with SP2-109-001.

2. Adjust the blank margin width of the image with SP2-103-(001-004).

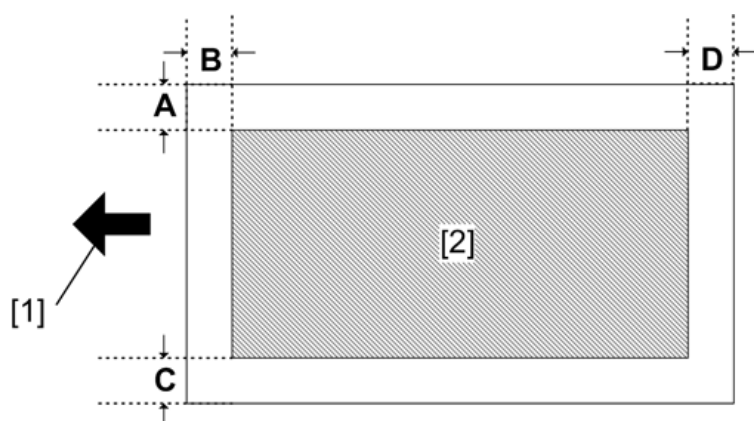
- Leading edge: 2.7 to 9.9 mm (Default: 3.0 mm)
- Trailing edge: 0.0 to 9.9 mm (Default: 2.0 mm)
- Left: 0.0 to 9.9 mm (Default: 2.0 mm)
- Right: 0.0 to 9.9 mm (Default: 2.0 mm)

Registration Adjustment

Print Area

Check that the adjustment meets the product specification.

6.Troubleshooting



- [1]: Paper feed direction
- [2]: Print area

Adjustment Reference Values

- B: Leading edge (Sub scanning direction): 3.0 ± 1.5 mm
- D: Trailing edge (Sub scanning direction): 3.0 mm
- C: Left (Main scanning direction): 2.0 ± 1.5 mm
- A: Right (Main scanning direction): 2.0 mm

Adjustment Procedure

1. Enter the SP mode, and then print the test pattern (17: Trim Area) with SP2-109-001.

Note

- Print the test pattern, and then adjust the leading edge registration in the SP mode to the optimum value.

2. Do SP1-002-(001,002,003,004,006) to check and adjust the registration.

3. Check the side-to-side registration for each paper feed tray.

Scanner, SPDF Image Adjustment

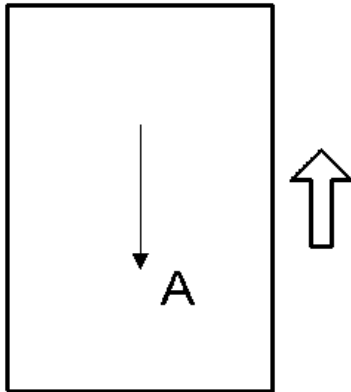
Scanner Image Adjustment

Before the scanner adjustment, do the Side-to-Side registration and blank margin width adjustment.

Note

- Use a test chart to adjust these settings.

Magnification

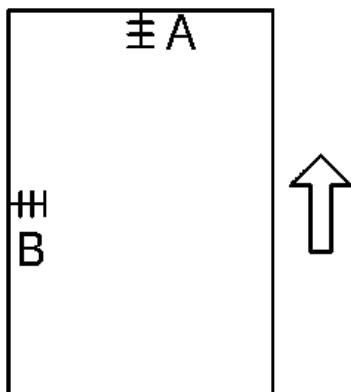


A: Sub-scan magnification

1. Place the test chart on the exposure glass and make a copy from one of the paper feed trays.
2. Check the magnification ratio. If necessary, adjust the magnification with the following SP mode.

SP No.	Name	Specification
SP4-008	Sub-scan magnification	$\pm 1.0\%$

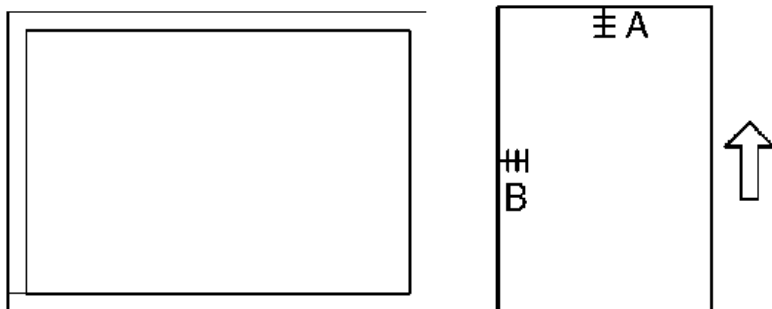
Registration



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

1. Place the test chart on the exposure glass and make a copy from one of the paper feed trays.
2. Check the leading edge and side-to-side registration, and adjust as necessary with the following SP modes.

Name	SP No.	Specification
L-Edge Regist Adjustment	SP4-010-001	$0 \pm 2\text{mm}$
S-to-S Regist Adjustment	SP4-011-001	$0 \pm 2.5\text{mm}$

Registration**Note**

- Use the above test charts to adjust these settings.

- Place the temporary test chart on the SPDF and make a copy from one of the paper feed trays.
- Check the registrations, and adjust as necessary with the appropriate SP modes, as follows.

Allowable registration errors: 4.2 ± 2 mm (Leading edge) / 2 ± 1 mm (Left, right)

SP No.	Name	Range
SP6-006-001	Side-to-Side Regist: Front	± 2.0 mm
SP6-006-003	Leading Edge Regist: Front	± 5.0 mm
SP6-006-007	Rear Edge Erase	± 5.0 mm

Magnification

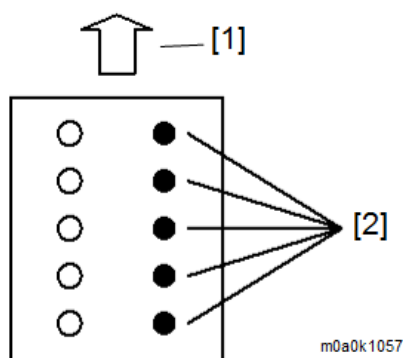
- Place the temporary test chart on the SPDF and make a copy from one of the paper feed trays.
- Check the magnification and adjust it with SP6-017-001 if necessary.

SP No.	Name	Range
SP6-017-001	SPDF Adjustment Magnification	± 5.0 %

Problem at Regular Intervals

Image problems may appear at regular intervals that depend on the circumference of certain components.

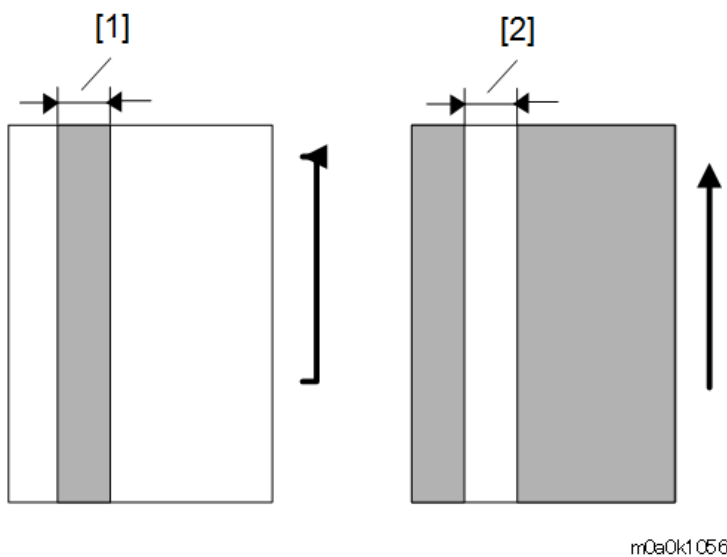
The following diagram shows the possible symptoms (black or white dots at regular intervals or other problems).



- Paper feed direction
- Problems at regular intervals

Problems	Intervals	Defective parts
Problems with the printed result (other than black or white dots)	29.9mm	Charge roller
	37.7mm	Registration roller
	45.8mm	Image transfer roller
	112mm	Fusing pressure roller
	94mm	Fusing roller
	100.5mm	Paper feed roller
Black or white dots	35.6mm	Development roller
	94.4mm	Drum

The LED head contains 26 LED chips, each covering a line 8 mm wide. If a line 8 mm wide extending in the paper feed direction appears, an LED chip may be damaged. If so, replace the LED head.



1. 8 mm
2. 8 mm

When Vertical Banding is Generated

The vertical banding on a print image may be improved by the [Drum Rotation] function.

1. Select a drum rotation level.
[User Tools/Counter] key > Maintenance > Drum Rotation
2. Select a drum rotation level from the following 2 levels: Level 1 (Normal) and Level 2 (Strong).

Operation

- Level 1 : Photoconductor idles for 55 seconds
- Level 2 : Photoconductor idles for 30 seconds (for black and white vertical banding)

Effectively Prevented Problems

- Level 1 : Pieces of white banding (for half tone or continuous printing)
- Level 2 : White vertical banding (for half tone), black vertical banding, and black horizontal banding

Note

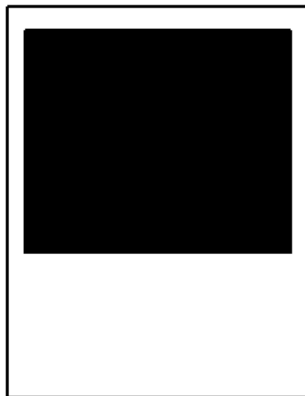
- If the [Drum Rotation] function is performed many times, the life of the drum unit may be shortened.

6. Troubleshooting

When Black Spots are Generated on Print Images

The black spots on a print image may be improved by the [Fusing Roller Cleaning] function.

1. Load paper (A4 or LT size plain paper) in the bypass tray.
2. Perform [Fusing Roller Cleaning] (toner is consumed).
[User Tools/Counter] key > Maintenance > Fusing Roller Cleaning
3. A sheet of paper is fed and images are printed on both sides of the paper.



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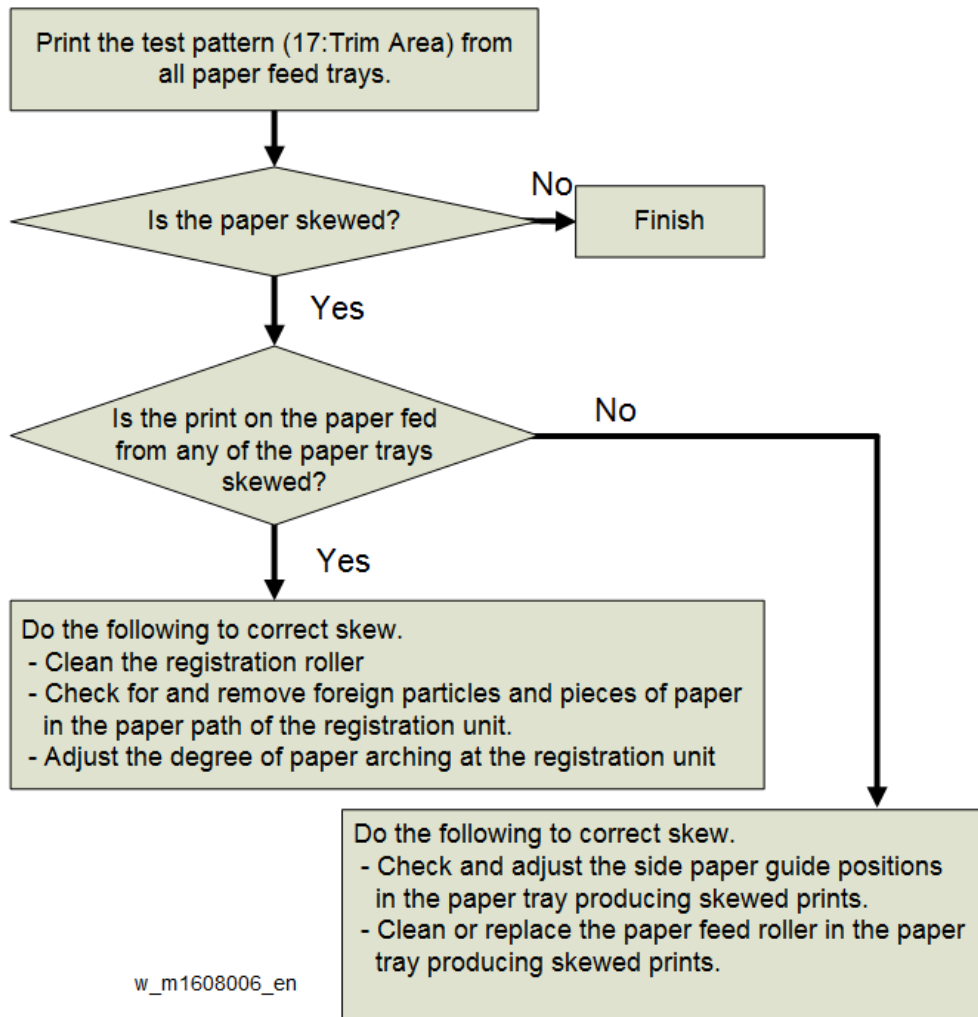
4. Check that the black spots do not appear any more.

Note

- The effectiveness of the fusing cleaning varies depending on the types of images printed or paper types used until now. Therefore, the problem may be improved by performing [Fusing Roller Cleaning] several times, which consumes toner.

Paper Feed (Skew)

Use the following flowchart to determine the cause and deal with the problem.



Stack Error (Spilling of the Paper Stacked in the Output Tray)

Depending on the number of sheets delivered, the stacked paper may spill.



m1600178

If the number of stacked sheets is substantial, you can prevent the stack from spilling by adjusting the stopper [A]. The stopper supports paper up to Legal size.

A4 size	Legal size
 m0a0k1054	 m0a0k1055

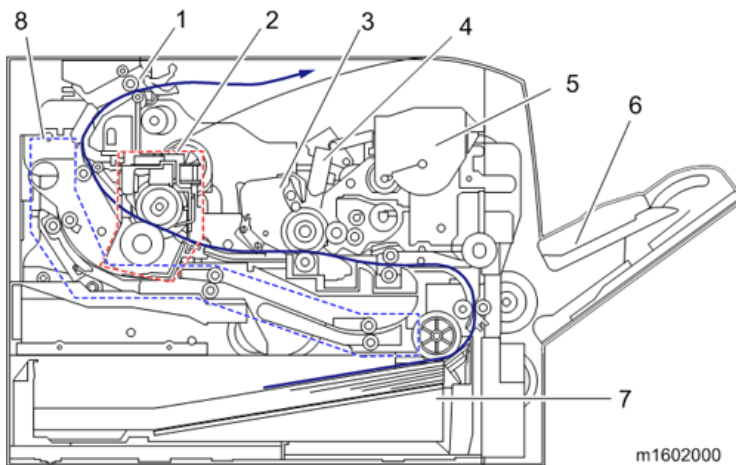
Recycled or Thin Paper Is Severely Curled after Printing

If the delivered paper is curled, it cannot be stacked properly. In such a case, raise the paper stopper on the output tray and remove the paper frequently.

7. Detailed Descriptions

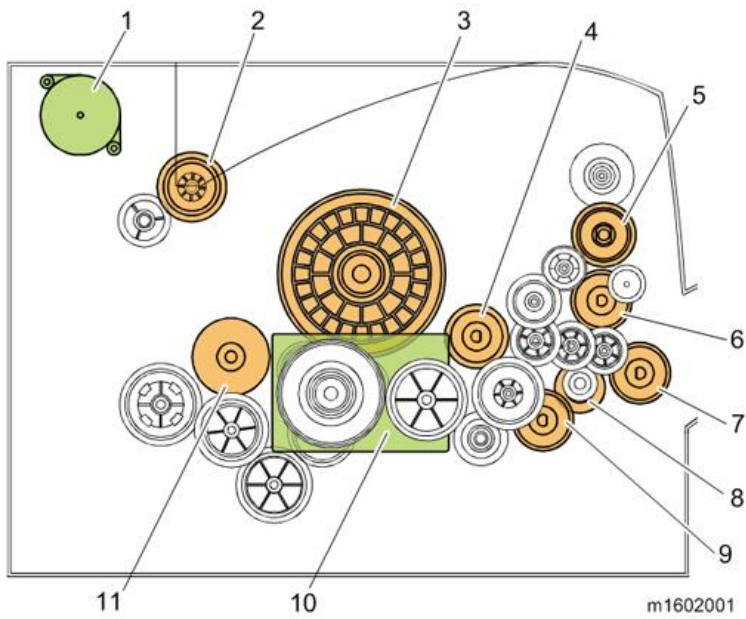
Overview

Mechanical Component Layout



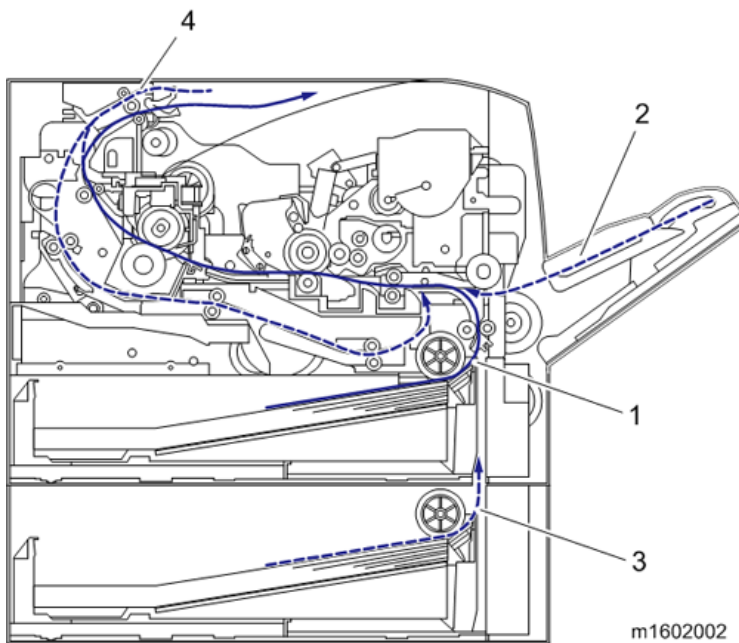
1. Exit / Switchback unit
2. Fusing unit
3. PCDU
4. LED head
5. Toner cartridge
6. Bypass feed tray
7. Paper feed unit
8. Duplex paper path

Drive Layout



1. Duplex exit motor
2. Fusing drive gear
3. Drum gear
4. Registration clutch
5. Toner supply clutch
6. Bypass feed clutch
7. Bypass bottom plate clutch
8. Relay clutch
9. Paper feed clutch
10. Main motor
11. Duplex clutch

Tray Layout and Paper Path



1. Main machine paper feed path
2. Bypass paper feed path
3. Optional tray paper feed path
4. Duplex paper feed path

Guidance for Those Who Are Familiar with Predecessor Products

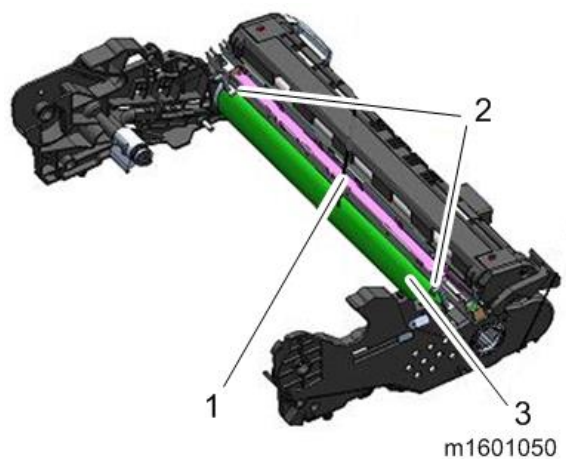
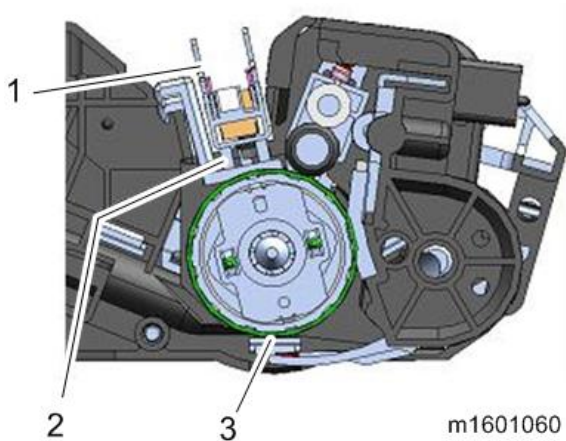
Unit	Items	MP 402SPF	SP 401SPF
Operation Panel	Smart Operation Panel, 2nd generation	Available	Not available
Scanner	Legal Size Original	Available	Not available
Document Feeder	Method	Single Pass Document Feeder	Auto Reverse Document Feeder
	CIS	Available	Not available
	Reverse Junction Mechanism	Not available	Available
PCBs	Copy Data Security on BiCU	Available	Optional

LED Unit

General Descriptions

LED writing is superior to LD writing in unit-downsizing, noise reduction, and energy saving.

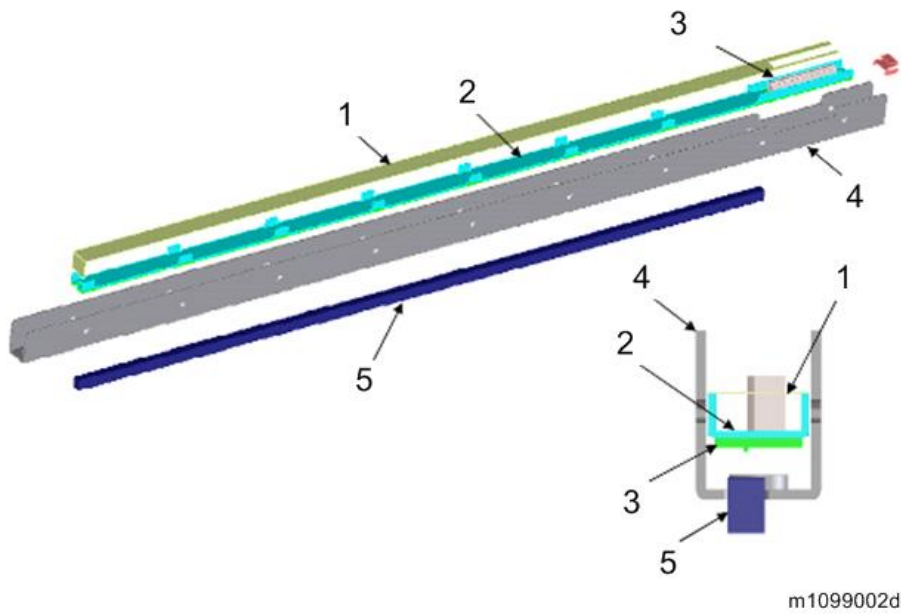
The writing process uses only an LED head. The LED spacer contacts the drum unit and keeps the LED array at the correct distance from the OPC for correct focusing.



1. LED Head
2. LED Spacer
3. OPC

LED Head Components

The LED head is composed of the following parts. You cannot replace each part. You can only replace the complete LED head.

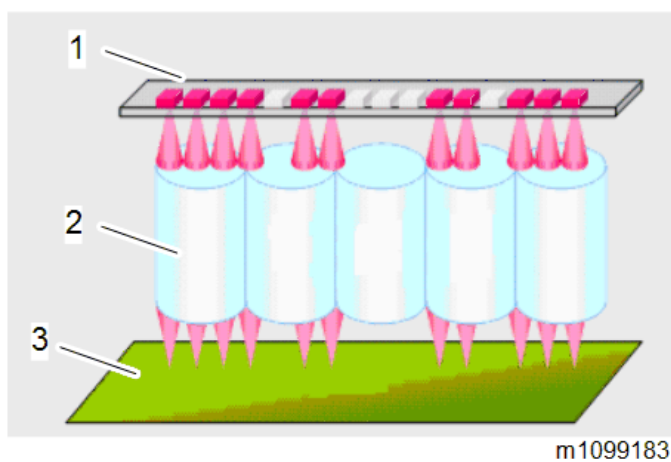


1. Sheet
2. Base
3. LED Board
4. Frame
5. SLA (SELFOC LENS ARRAY)

Mechanisms

Writing method

Tiny LEDs capable of creating images at 1200 dpi are arranged in a line. Light beams emitted by the LEDs are focused using the Self-focusing Lens Array (SLA), creating an image on the OPC drum.



1. LED Board
2. SLA (SELFOC LENS ARRAY)
3. OPC

LED Head

Each LED head has 26 LED chips on board, and each chip has a line of LEDs 8mm in length.

↓ Note

- If a vertical line 8mm in width appears on the image parallel to the direction of paper feed, it may be caused by a broken LED chip.

LED Positioning

The LED head contacts the spacer on the drum in order to hold and adjust the correct focal distance from the PCPU (slide-and-move method).

Image Position Adjustment

You can adjust the printing position from each tray with [Registration] in Menu.

At this time, the following controls are done as the adjustment in the machine;

Horizontal Scan: Adjusted by moving the whole image position.

Vertical Scan: Adjusted by changing the light-emission timing.

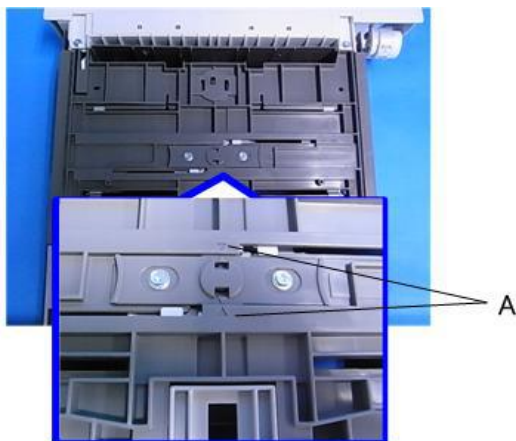
↓ Note

- There is no mechanical adjustment, unlike laser writing.
Writing is applied across the extent of the LED head in the horizontal direction. So, if you want to adjust to printing position to an area that is outside the one that is within the setting range in [Registration], adjust the paper position in the feed tray.

To adjust the paper position in the feed tray, you can adjust horizontal registration by loosening the screws on the bottom of the tray, and then moving the holder to right or left (up to 2mm).

↓ Note

- When at the default (± 0) position, the holder position is the triangle marked area [A] in the picture below.



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LED Light Volume Adjustment

An EEPROM on the LED head contains data which controls the light intensity of each element. There is no adjustment.

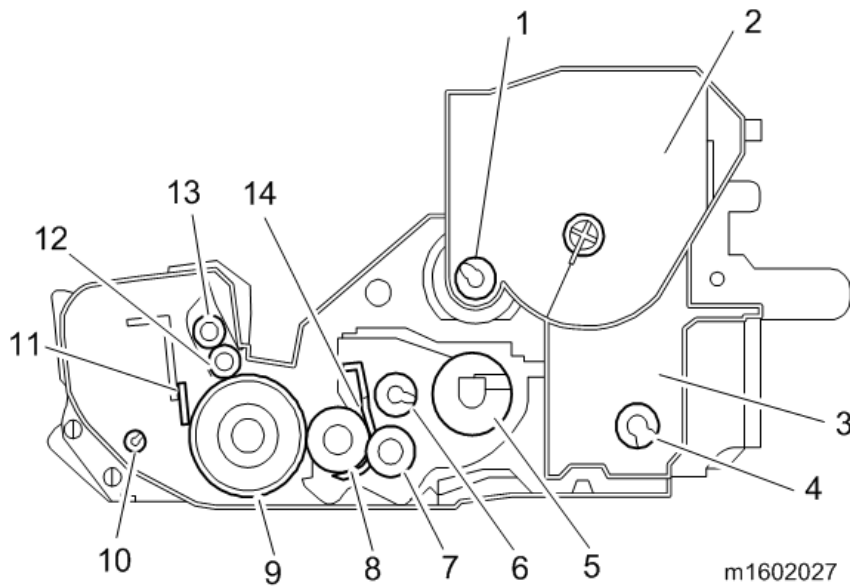
Adjustment at Replacement

Adjustment at LED head replacement is not needed because there is an EEPROM on the LED board. This ROM contains light volume adjustment data.

Toner Cartridge, PCDU (Photo Conductor Development Unit)

Mechanism

The toner cartridge is mounted on the PCDU installed in the machine, but can be detached from the machine on its own.



1. Toner Supply coil
2. Toner box
3. Used toner collection box
4. Used toner transport coil
5. 1st Mixing coil
6. 2nd Mixing coil
7. Toner Supply Roller
8. Development Roller
9. OPC
10. Waste Toner Collection coil
11. OPC Cleaning Blade
12. Charge Roller
13. Charge Cleaning Roller
14. Development Blade

Separating the Toner Cartridge and PCDU

- The toner cartridge can be detached from the machine either on its own or together with the PCDU.

- After detaching the toner cartridge together with the PCDU, you can use the release lever to separate the PCDU from the toner cartridge.



[A]: Locked, [B]: Unlocked

Note

- The release lever works in two steps. To release the lock, push down the release lever to the horizontal position.



Toner Cartridge

Overview

- The toner cartridge contains the toner box, toner supply mechanisms and the used toner collection box.
- The toner supply port on the toner cartridge has a shutter that opens when the toner cartridge is installed in the PCDU.

Toner
One type only. 10,400 pages (6%, 3P/J)

Details

Toner Supply

The toner supply clutch turns ON and the coils in the toner cartridge rotate to transfer toner to the box tap and then the PCDU. The toner transferred to the PCDU is transferred to the development unit by the 1st mixing coil.

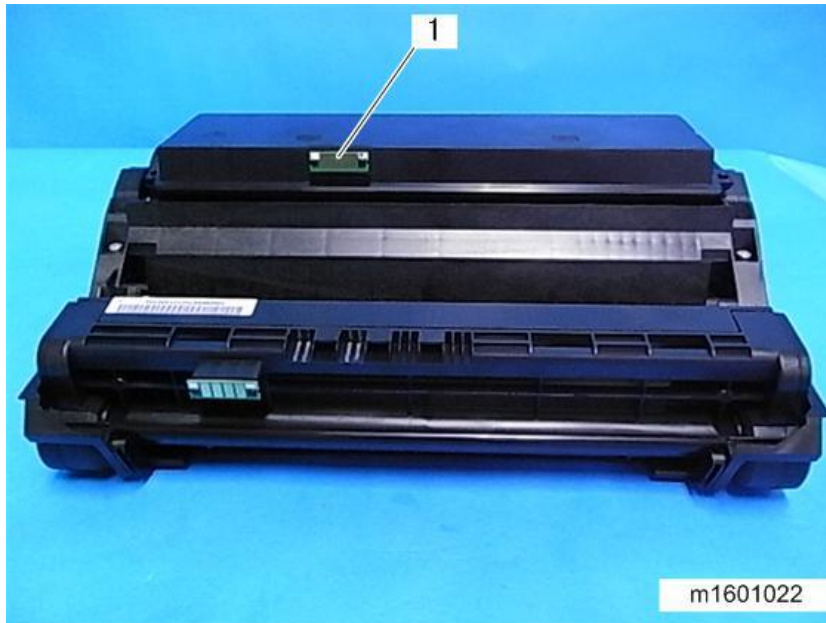
7.Detailed Descriptions

New Unit Detection

The machine reads the ID chip to detect the status of the cartridge.

ID chip information

The toner cartridge has an ID chip [1] that records how many sheets the copier has printed with its toner cartridge, and product information.



ID chip information can be checked when in SP mode.

SP No.	Item
SP7-931-001	Toner info: Machine ID
SP7-931-002	Toner info: Version
SP7-931-003	Toner info: Brand ID
SP7-931-004	Toner info: Area ID
SP7-931-005	Toner info: Class ID
SP7-931-006	Toner info: Color ID
SP7-931-007	Toner info: Maintenance ID
SP7-931-008	Toner info: New AIO
SP7-931-009	Toner info: Recycle Count
SP7-931-010	Toner info: EDP Code
SP7-931-011	Toner info: Serial No
SP7-931-012	Toner info: Remaining Toner
SP7-931-013	Toner info: Toner End
SP7-931-014	Toner info: Refill Flag
SP7-931-015	Toner info: R: Total Counter
SP7-931-016	Toner info: E: Total Counter
SP7-931-017	Toner info: Unit Output Counter

SP No.	Item
SP7-931-018	Toner info: Install Date
SP7-931-019	Toner info: Toner End Date
SP7-931-020	Toner info: Total Consumption
SP7-931-021	Toner info: Distance
SP7-931-022	Toner info: Initial Amount

Toner Near End (TNE) / Toner End (TE) Detection

Toner near end detection: A counter determines when the toner has almost run out by calculating the remaining toner from the initial amount of toner and subsequently replenished toner.

Toner end detection: A sensor checks whether toner is being added to the PCDU. If it cannot see that toner is being replenished, then the machine detects that toner has actually run out, and the machine cannot print.

The toner near end counter works as follows:

The near-end alert sounds when the number of prints that can be made until toner end is as follows (Rough indication)

Notify Sooner	Before 7 days	about 920 pages
Normal (factory default)	Before 5 days	about 660 pages
Notify Later	Before 3 days	about 400 pages

- This setting is not available in the UP mode. To adjust, use SP3-098-001 (Days Before End Toner) 0: Notify Sooner, 1: Normal, 2: Notify Later
- The number of prints (rough indication) that can be made after toner near end notification is calculated assuming an average print volume (APV) of 3,000 sheets per month.
- The number of prints is that when continuously printing the test chart on A4 paper at 6% coverage.

Used toner

The waste toner collection coil sends used toner in the PCDU down to the used toner box.

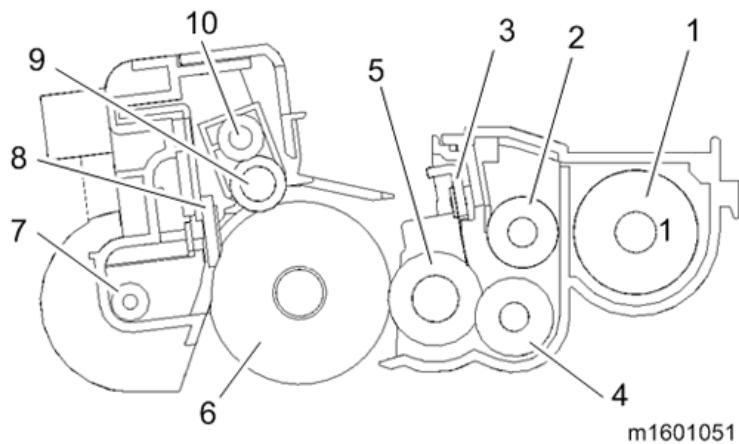
The used toner collection box does not have a function to detect when it is full.

PCDU

Overview

The PCDU section consists of four mechanisms: charge, photoconduction, development, and cleaning. It does not have an antistatic mechanism.

7.Detailed Descriptions



1. 1st Mixing coil
2. 2nd Mixing coil
3. Development Blade
4. Toner Supply Roller
5. Development Roller
6. OPC
7. Waste Toner Collection coil
8. OPC Cleaning Blade
9. Charge Roller
10. Charge Cleaning Roller

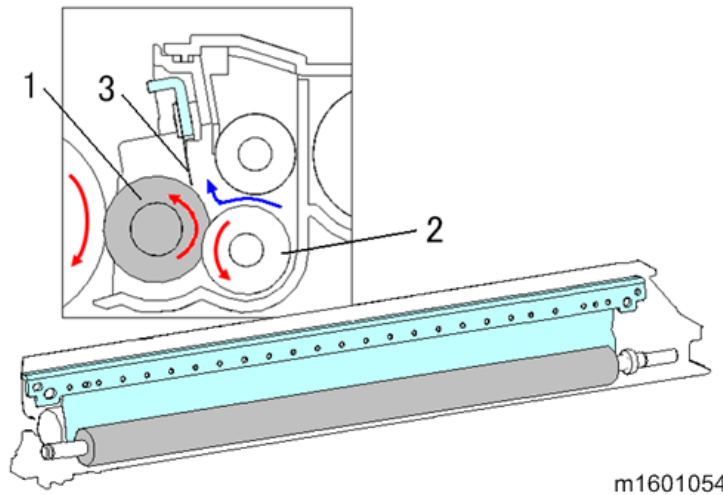
Details

Drive

The main motor drives PCDU through a coupling.

Development

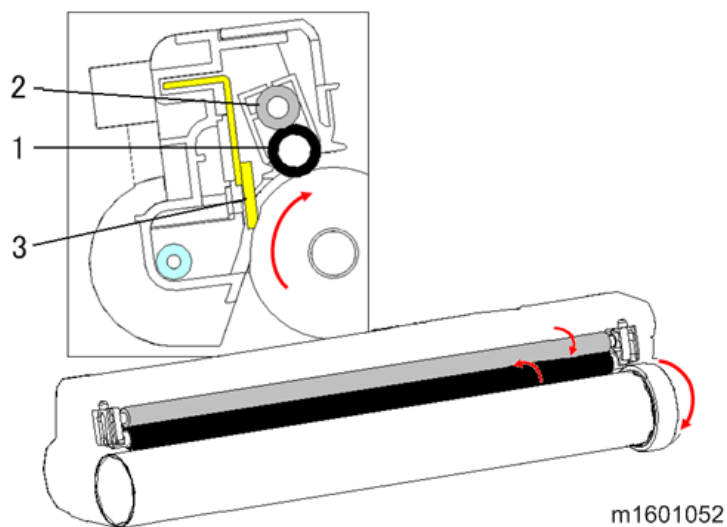
The development mechanism contains the development roller [1], the toner supply roller [2], and the development blade [3]. The toner supply roller [2] provides the development roller [1] with toner. The electrostatic latent image on the surface of the PCPU takes on toner and turns into a visible toner image. The development blade [3] ensures that the toner is applied to the development roller [1] with even thickness.



Charge, Charge Roller Cleaning, OPC Cleaning

To prevent ozone from being generated, the machine has a charge roller [1].

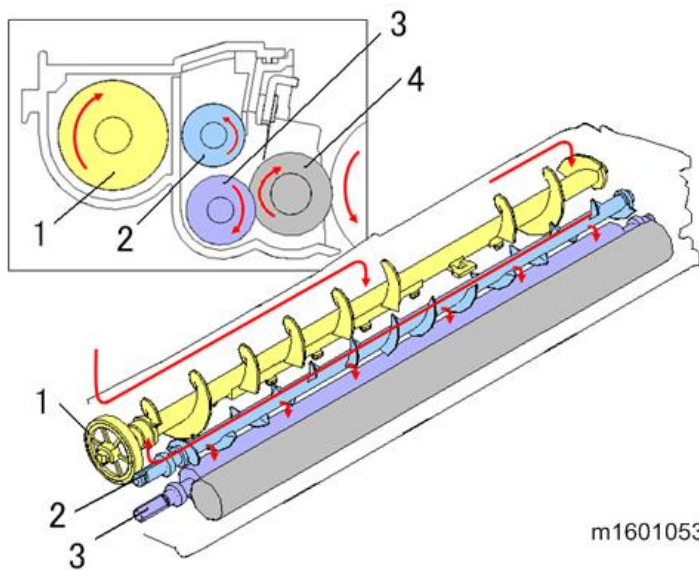
The charge roller [1] rotates with the OPC drum to apply an electric charge evenly to the drum surface. However, if the charge roller [1] is dirty, the applied electric charge becomes uneven. Therefore, the charge roller is always in contact with the charge cleaning roller [2], which cleans the charge roller.



Toner Mixing

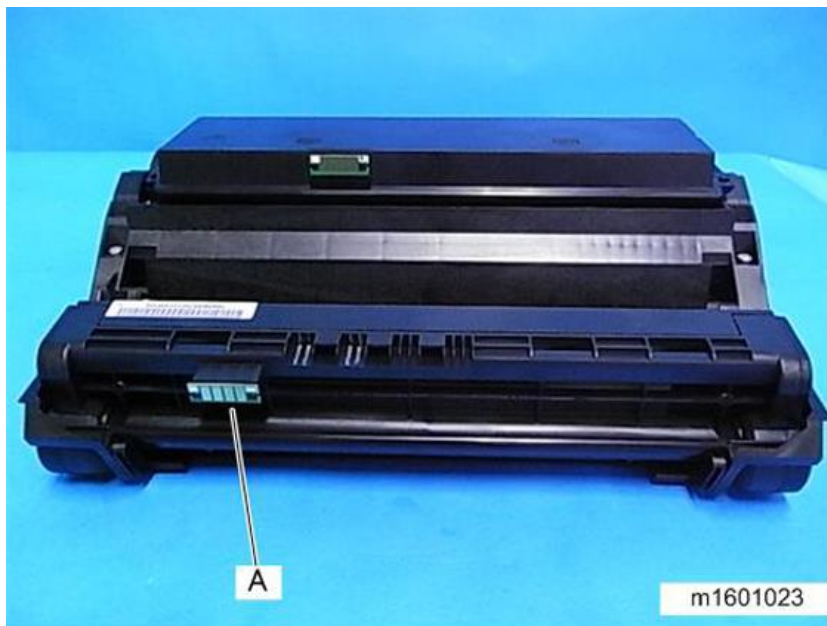
The toner moves as shown in the following drawing. The 1st mixing coil [1] moves the toner to the right side. The 2nd mixing coil [2] moves toner to the left side. Finally, the toner supply roller [3] supplies toner to the development roller [4]. By mixing the toner, the toner is circulated and evenly spread.

7.Detailed Descriptions



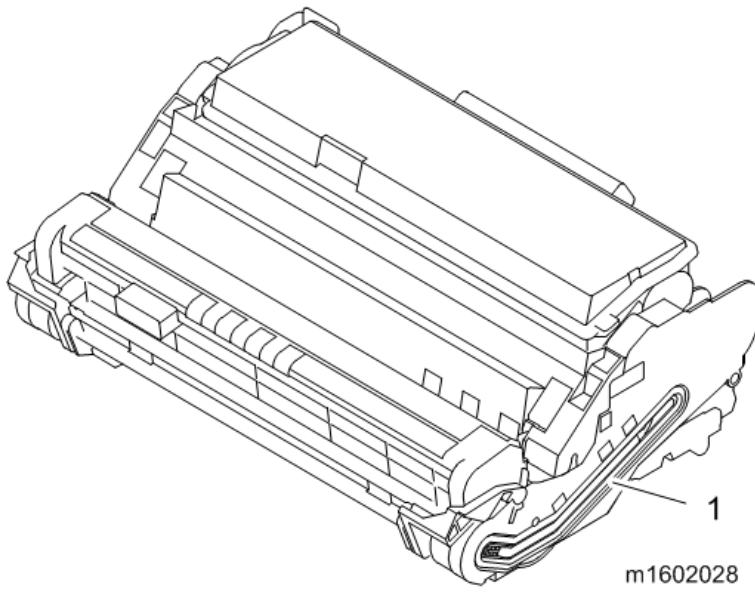
New PCDU Detection, and Set Detection

When a PCDU is placed in the machine, the ID chip [A] is read. In this way, the machine detects when a new PCDU is inserted.



Used Toner Transport

Used toner is collected from the PCDU by the waste toner collection coil and transferred via the used toner transport path [1] on the side of the PCDU to the toner cartridge's used toner collection box.

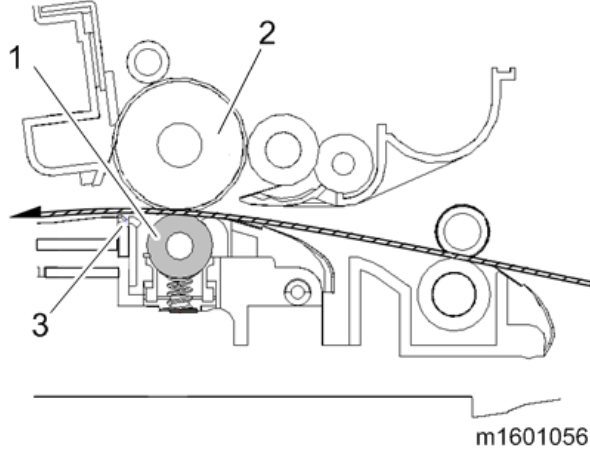


Related SPs

- 3-098-001 [Days Before End]-[Toner]:
Changes the toner near-end alert timing
- 7-931-xxx [Toner info]:
ID chip information can be checked.

Image Transfer and Paper Separation

Overview



1. Transfer roller
2. OPC drum
3. Discharge plate

Details

Image Transfer / Paper Separation

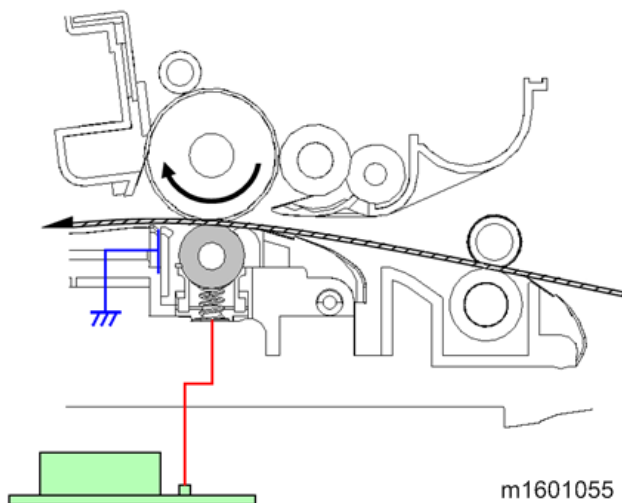


Image Transfer

After passing through the registration unit, the paper passes between the OPC drum and the transfer roller. During this time, the toner on the OPC drum surface is transferred to the paper by the positive electric charge on the transfer roller. The voltage is applied to the transfer roller from the PSU via receptacles, electrode terminals, transfer roller spring (at the front) and bearings (conductive resin).

To minimize fluctuations caused by factors such as the environment and paper types, constant current control is performed.

The transfer current is adjusted in accordance with the paper tray (paper feed unit, bypass tray, and duplex tray), paper size, paper type, and print number of sheets.

Note

- You can adjust these levels (SP2-301 T bias control).
- Increasing the transfer current may produce ghost images—part of the image near the leading edge reappears on another part of the page.
- Increasing the transfer current might damage the OPC drum.

Paper Separation

The paper separates from the OPC drum because of the curvature of the OPC drum and because of the grounded discharge plate downstream of the transfer roller. Irregularities in the toner image at the time of separation are prevented by an electric field.

Transfer Roller Cleaning

Toner may transfer to the roller surface following a paper jam or if the paper is smaller than the image. Periodic cleaning of the roller is required to prevent this toner from migrating back to the rear of new printouts.

The machine cleans the roller at the following times:

- After initial power on.
- After clearing of a copy jam
- At the end of a job

The PSU first supplies a negative cleaning current (about -4 A) to the transfer roller, causing negatively charged toner on the roller to move back to the drum. It then applies a positive cleaning current (+5 A) to the roller, causing any positively charged toner to migrate back to the drum.

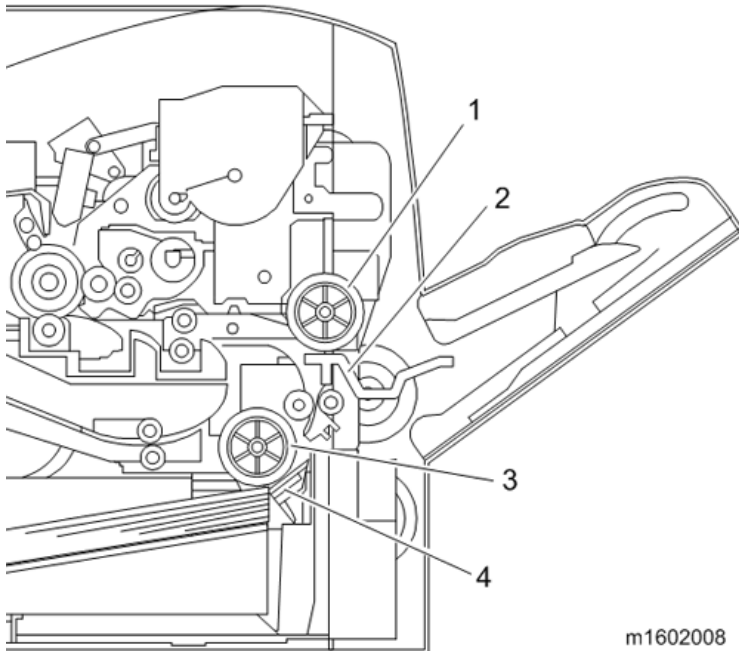
Related SPs

- 2-301-xxx [T bias Control]:
Use these SPs to adjust the power output and power coefficient used to transfer the toner image from drum to paper. Four separate voltages are applied: before the leading edge, at the leading edge of the paper, across the image area, and at the trailing edge of the paper.

Paper Feed

Overview

Paper Feed



1. Bypass Paper Feed Roller
2. Bypass Friction Pad
3. Tray 1 Feed Roller
4. Tray 1 Friction Pad

This machine has a paper tray and a bypass tray.

The separation mechanism uses the friction pad system for both the paper feed tray and the bypass feed tray.

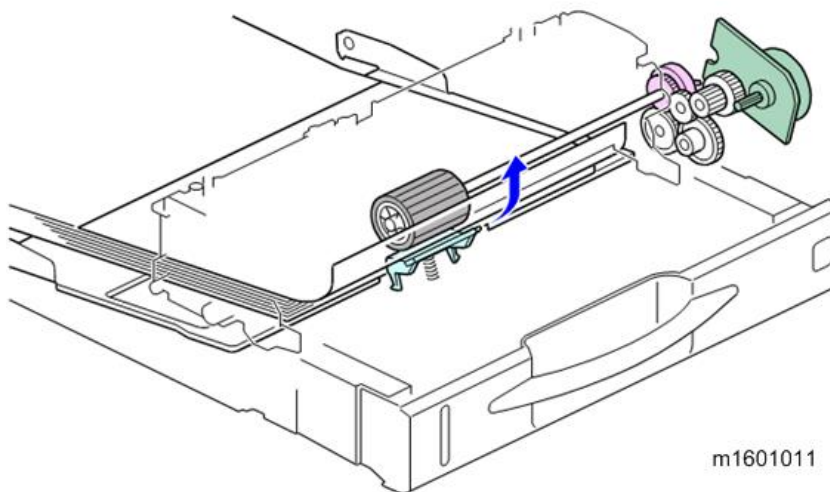
Mechanism

Paper Feeding

Upon receiving the paper feed signal, the Paper Feed Clutch is turned on to rotate the Paper Feed Roller.

The friction pad ensures that only the top sheet is fed.

When the paper fed into the machine activates the Registration Sensor, the Paper Feed Clutch is turned off. When the toner image on the transfer belt is at the correct position, the Registration Clutch is turned on to feed the paper to the Image Transfer Unit.

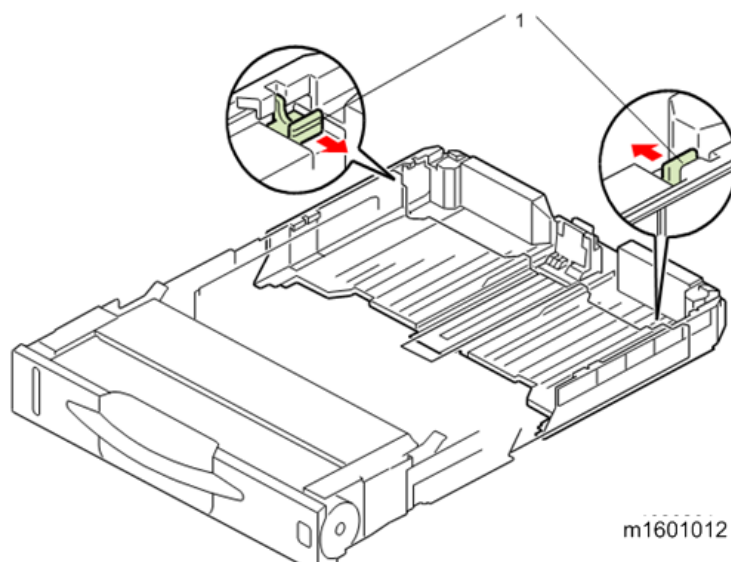


Paper Volume Detection

If the tray becomes empty, a feeler enters a cutout in the bottom plate, and the paper end sensor at the other end of this feeler turns on.

Adjustable Cassette

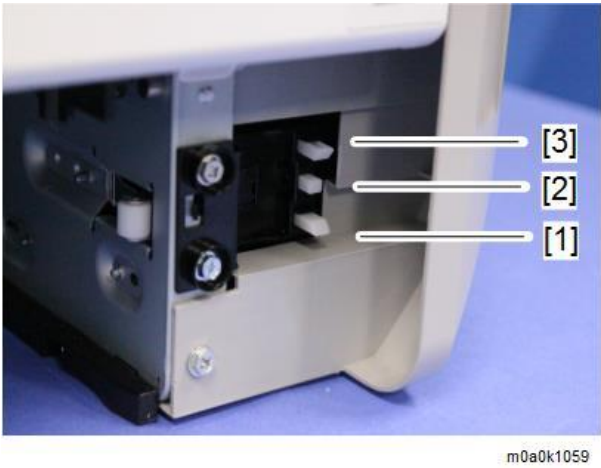
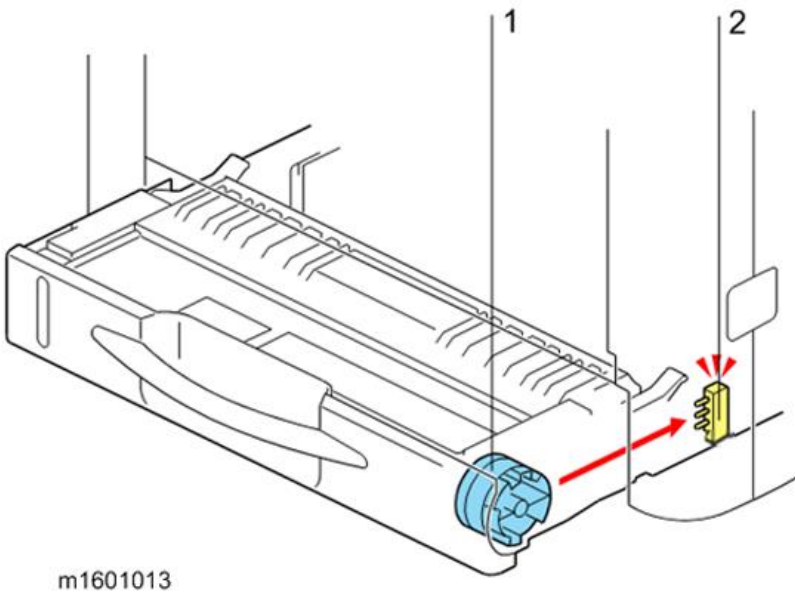
When shipped from the factory, sizes up to A4 SEF can be loaded in the cassette. To support paper sizes larger than A4 SEF, unlock the tray extension lock ([1] in the diagram) to extend the tray, and then place the Paper Feed Cover on the tray.



Paper Size Detection

The paper size is detected by a combination of three switches on the Paper Size Switch [2]. The switches are operated by the Paper Size Dial [1] located on the right side of the Paper Feed Tray.

7.Detailed Descriptions



- 1. SW1
- 2. SW2
- 3. SW3

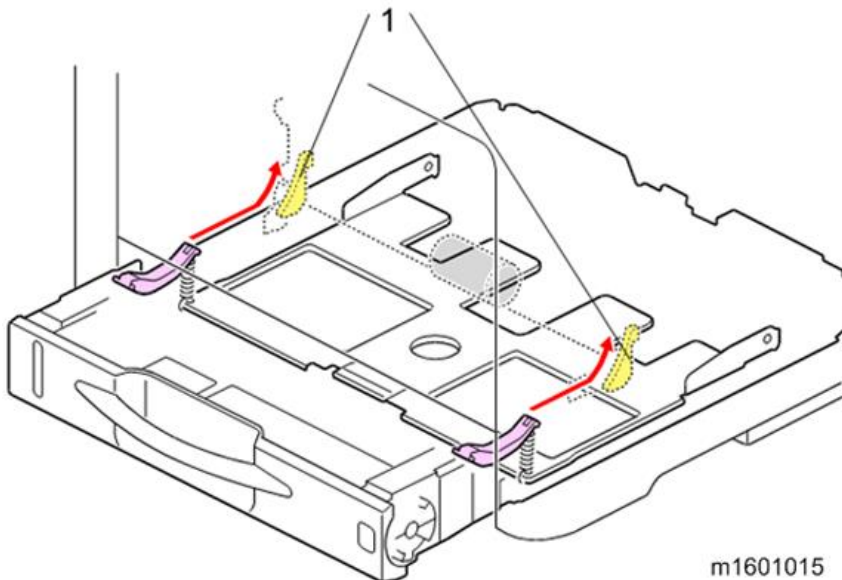
Paper size detection combination (L: Switch is pressed)

	SW 1	SW 2	SW 3	Paper Size
1	L	L	L	A4 SEF
2	L	H	L	A5 SEF
3	H	L	L	A6 LEF
4	H	H	L	LegalSEF
5	L	L	H	Letter SEF
6	L	H	H	-
7	H	L	H	HalfLetter_SEF
8	H	H	H	Paper cassette is not set.

Paper Feed Tray Bottom Plate Lift Mechanism

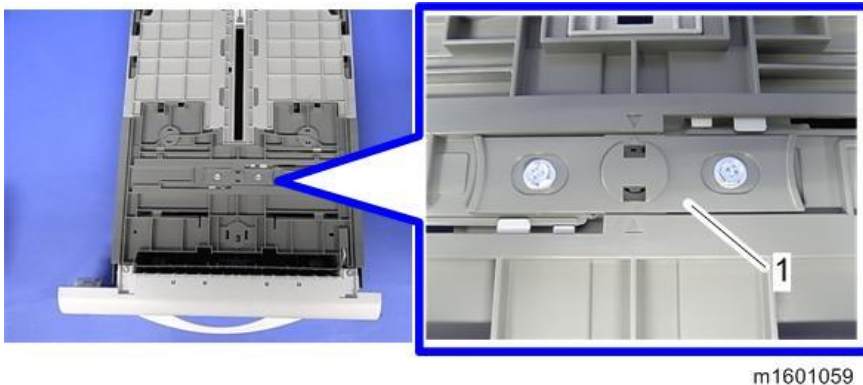
When you slide the paper feed tray into the unit, the bottom plate arms [1] slide along the sloping guide of the main frame, and then the bottom plate is pushed upward by the springs.

As a result, the lifted bottom plate presses the sheet on the top of the stack up against the paper feed roller.



Side-to-side Registration Adjustment in the Machine Paper Feed Tray

To adjust side-to-side registration, loosen the two screws on the underside of the tray and move the rack and pinion mechanism of the side guides from side to side.



Bypass Tray Paper Feed Operation

When the paper feed signal is received by the Bypass Feed Tray, the Bypass Bottom plate is lifted up, and then the Bypass Clutch is turned on to rotate the Bypass Feed Roller.

The friction pad ensures that only the top sheet is fed. After the paper is fed out, the Duplex Exit Clutch is turned on to feed the paper along the same path as is used for feeding paper from the Paper Feed Tray. When the paper fed into the machine activates the Registration Sensor, the Bypass Clutch is turned off. When the toner pattern on the transfer belt is at the correct position, the Registration Clutch is turned on to feed the paper to the Image Transfer Unit.

Bypass Feed Tray Automatic Lifting System

The Bypass Tray Bottom Plate has an automatic lifting system.

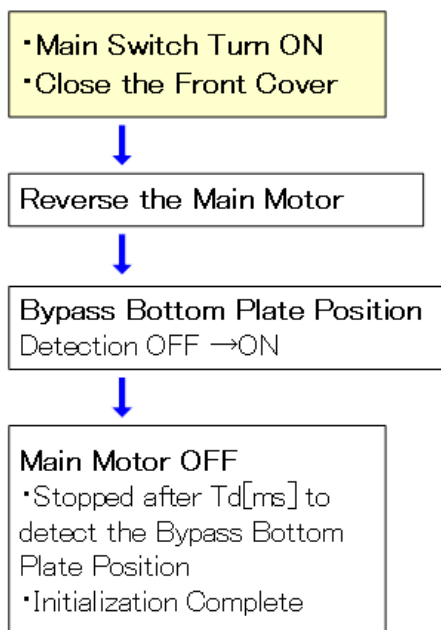
When the main motor rotates in reverse, a one-way clutch transfers the drive to the bottom plate lifting system of the bypass tray. Then, a cam (on the left as you face the machine) starts rotating to lift the bottom plate up and down. The bottom plate position sensor detects up/down movement of the bottom plate by detecting a sensor actuator on the left side of the cam.

Bottom Plate Position Sensor

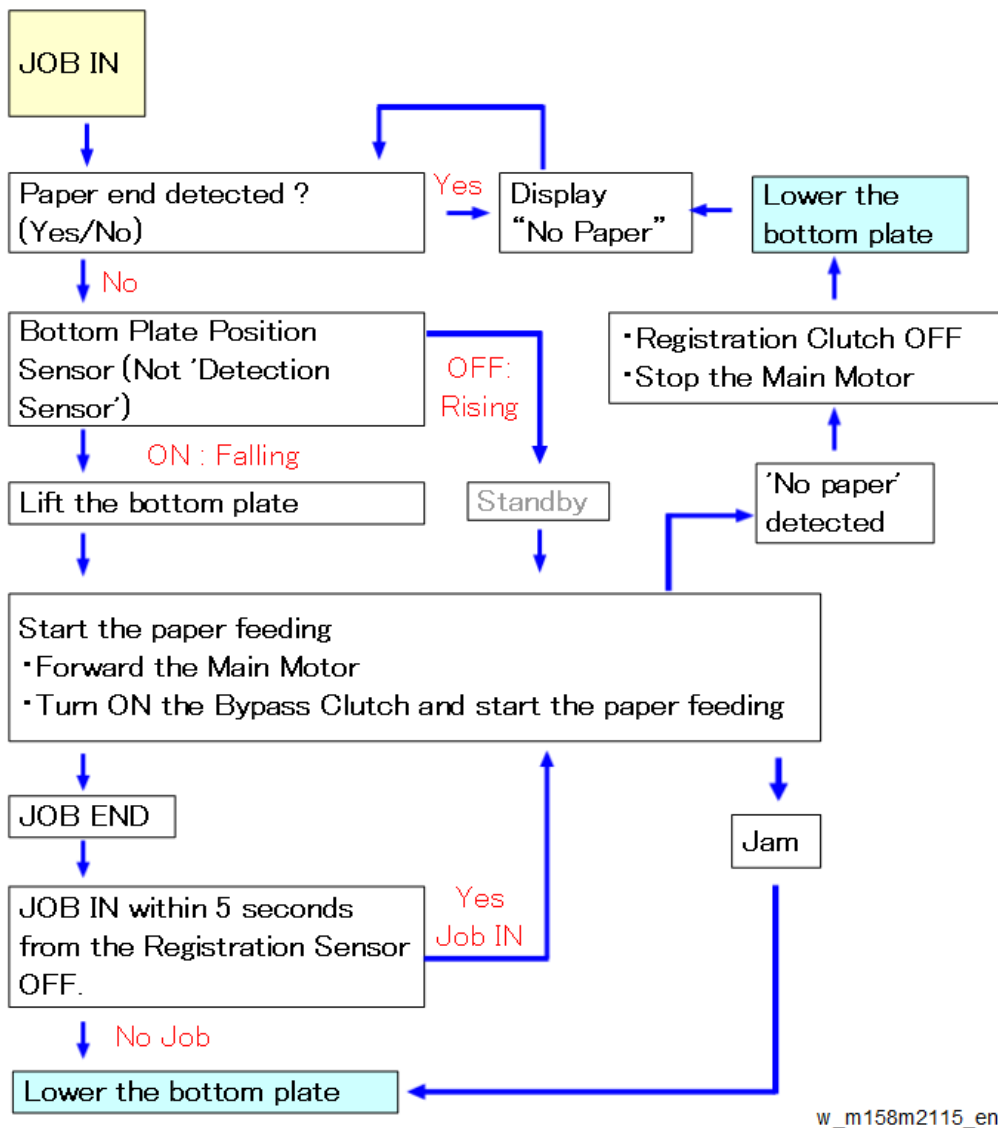
ON: Bottom Plate is down

OFF: Bottom Plate is rising

Bypass Bottom Plate Control Sequence



w_m158m2114_en

Bottom Plate Rising/Falling Control**Bypass Tray Paper Size Detection**

The machine does not have a function to detect the size of paper loaded in the bypass tray.

Bypass Paper Set Detection / End Detection

The bypass tray has a paper set sensor and a paper end sensor. When paper is loaded into the tray, the Bypass Paper End Sensor is turned ON (allowing the light beam to pass through).

Bypass Paper End Sensor

ON: Contains paper

OFF: Does not contain paper

Side-to-side Registration Adjustment in the Bypass Tray

To adjust side-to-side registration, loosen the screw at the right side of the tray and move the bypass bottom plate and

7.Detailed Descriptions

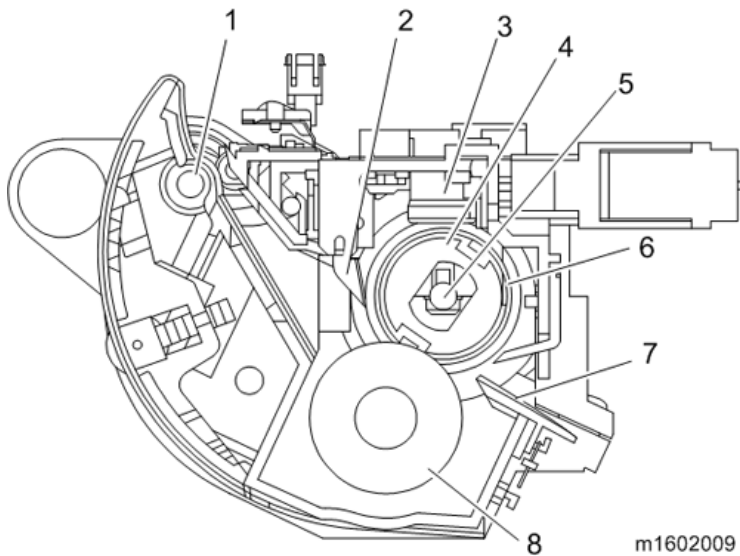
side guides from side to side.



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Image Fusing

Overview



1. Fusing exit roller
2. Hot roller strippers
3. Thermostat
4. Hot roller
5. Fusing lamp
6. Thermistor (Edge/Center)
7. Fusing entrance guide
8. Fusing pressure roller

Details

Fusing Drive

Fusing Method

A certain temperature and pressure are applied to the paper fed from the transfer unit to fuse the toner to the paper. A contact thermistor is mounted on the center of the hot roller to detect the temperature and turn the fusing lamp on and off. To prevent overheating, a thermostat is mounted at the center and a contact thermistor is mounted at one of the ends.

Fusing Pressure, Separation, Exit

Pressure is applied at all times to the hot roller and fusing pressure roller by springs.

The fused paper is separated from the hot roller by the hot roller strippers, and then delivered to the paper exit.

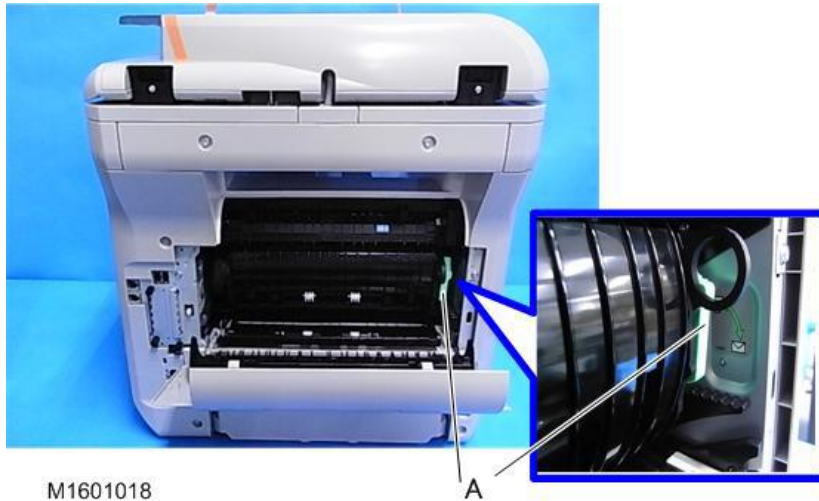
Fusing Drive

The main motor drives the fusing unit (hot roller and fusing exit roller) through a gear train.

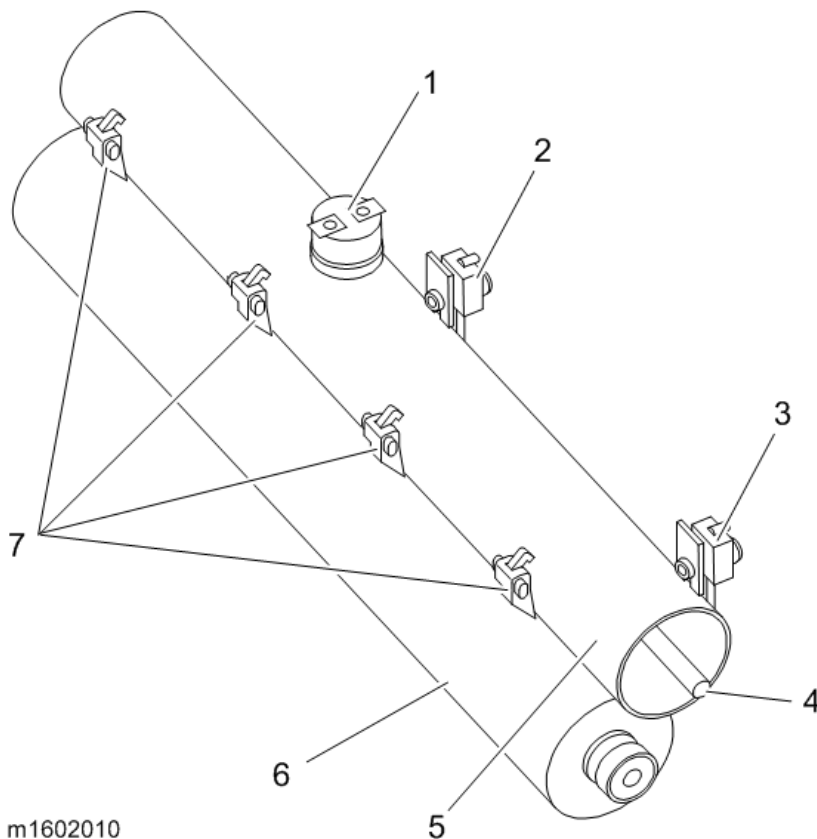
7.Detailed Descriptions

Envelope Lever

The envelope lever [A] is mounted on the right of the fusing unit. Lowering the lever decreases the fusing pressure (to approximately 20% of normal fusing pressure) to reduce wrinkles on envelopes. Since the machine does not have a sensor to detect the position of this lever, be sure to raise the lever to its original position after printing on envelopes. Before being shipped from the factory, the envelope lever is lowered to prevent deformation of the hot roller. Keep the envelope lever lowered when not using the machine for a long period (Rough indication: Approx. 2 weeks).



Parts Layout



1. Thermostat (185°C)
2. Thermistor (Center)

3. Thermistor (Edge)
4. Fusing Lamp
5. Hot roller
6. Pressure roller
7. Hot roller strippers

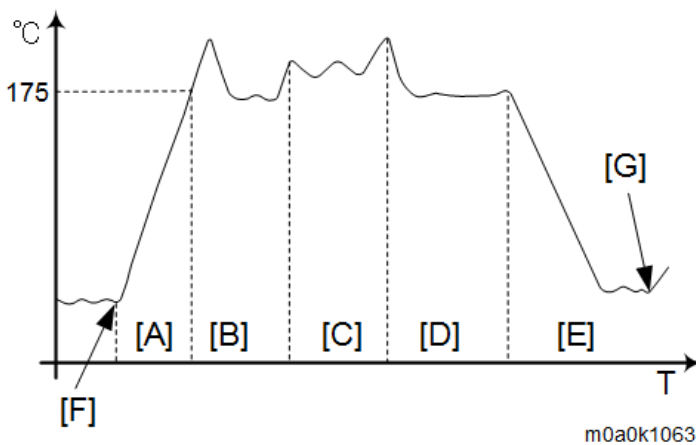
Thermal Control Mechanism

After machine power is turned on, the fusing lamp operates until the temperature reaches pre-rotation temperature.

Then, the hot roller rotates to heat its surface evenly and raise fusing temperature to the reload temperature.

The hot roller lamp stays on until the thermistor detects the Standby Mode [B] temperature. The lamp turns on/off to keep this temperature. To print, the temperature is increased to the Print Mode [C] temperature.

After printing, the hot roller rotates (pre-rotation) to prevent overshooting after printing.



[A] : Warming Up Mode

[B] : Standby Mode

[C] : Print Mode

[D] : Standby Mode

[E] : Energy Saver Mode

[F] : Power On

[G] : Job In

The fusing temperature in each mode is as follows:

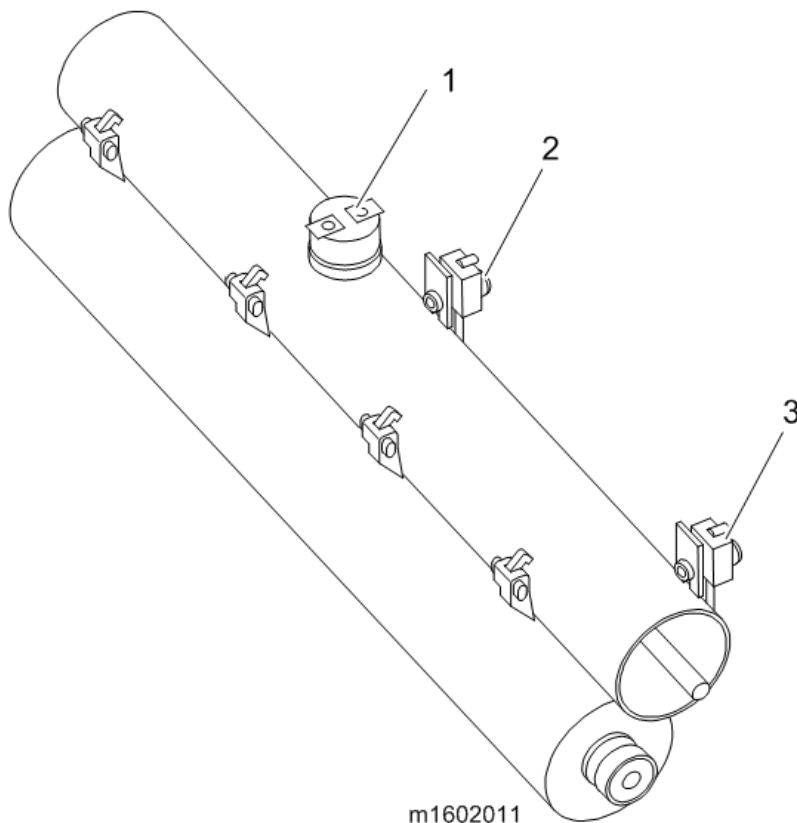
Status		Temperature (Celsius)
Standby Mode		175
Energy Saver Mode		Ambient temperature
Print Mode	Plain paper 1	178
	Plain paper 2	183
	Middle Thick	187
	Thick Paper 1	192
	Thick Paper 2	189
	Thin Paper	168

7.Detailed Descriptions

Status		Temperature (Celsius)
	Envelopes	200
	Post Cards	195
	Recycled Paper	178

The fusing temperature, except for that of the Energy Saver mode, can be adjusted in the SP mode.

Overheat Protection



If the thermistor overheat protection fails, there is a thermostat [1] that also monitors the hot roller temperature.

The thermostat [1] monitors the external temperature of the hot roller.

If the temperature of the thermostat becomes greater than 185 °C, the thermostat opens, removing power from the fusing lamp. At this time, the machine stops.

The thermistor (center) [2] monitors the surface temperature of the hot roller.

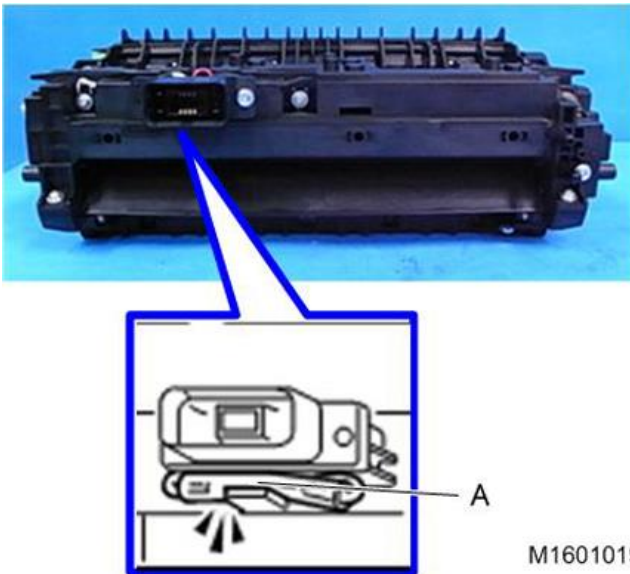
If the temperature becomes greater than 250 °C, the CPU cuts off the power to the fusing lamp.

The thermistor (edge) [3] also monitors the surface temperature of the hot roller.

If the temperature becomes greater than 250 °C, the CPU cuts off the power to the fusing lamp. At this time, SC543 will be generated.

The customer engineer can use the SP mode (5-8 10-001) to make the machine recover from the SC543 status.

New Unit Detection



There are two types of fusing unit: one for emergency maintenance (EM) and another for periodical replacement. The fusing unit for periodical replacement has a new unit detection mechanism.

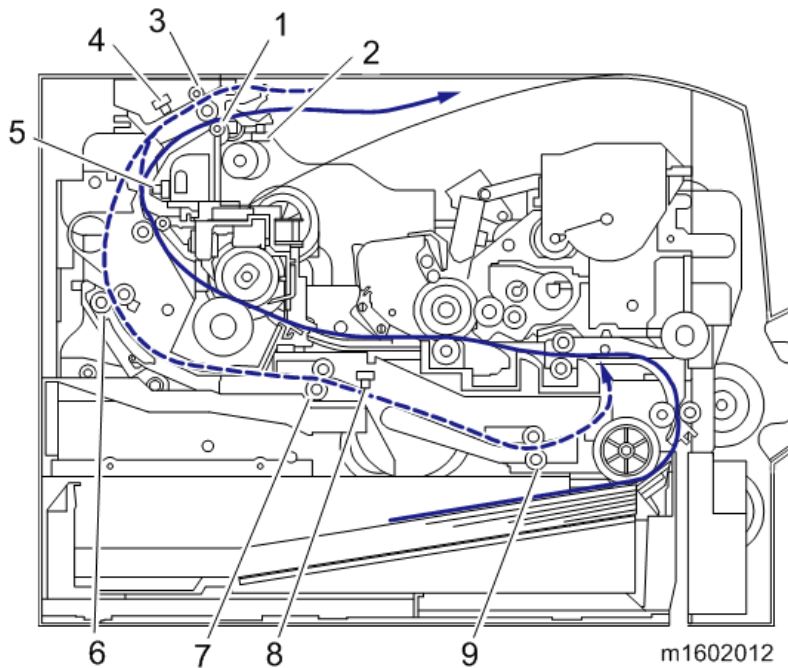
When the machine is switched on after installing a new fusing unit, the engine board detects the fuse [A] under the drawer connector of the new fusing unit, and then blows the fuse. This resets the counter.

Related SPs

- 5-810-001 [SC Reset]-[Fusing SC Reset]:
The CE uses this to cancel the fusing unit SC condition.

Paper Exit/ Duplex Unit

Overview



1. Paper Exit Roller
2. Paper Overflow Sensor
3. Duplex Switchback Roller
4. Duplex Switchback Sensor
5. Paper Exit Sensor
6. Duplex Entrance Roller
7. Duplex Relay Roller
8. Duplex Entrance Sensor
9. Duplex Exit Roller

Details

Duplex

This machine performs duplex printing by means of a duplex switchback delivery system, which turns the paper over by rotating the duplex exit roller in reverse.

In duplex printing, the junction gate performs a switchback operation and the duplex exit roller rotates in reverse to feed the leading edge of the paper (on which Side 1 has been printed) to the duplex exit roller. After the paper's trailing edge passes the paper exit sensor, the junction gate returns to its original position before the paper is delivered completely and the duplex exit roller rotates forward to feed the paper into the paper path for duplex printing. After printing on Side 2, the machine delivers the paper to the output tray.

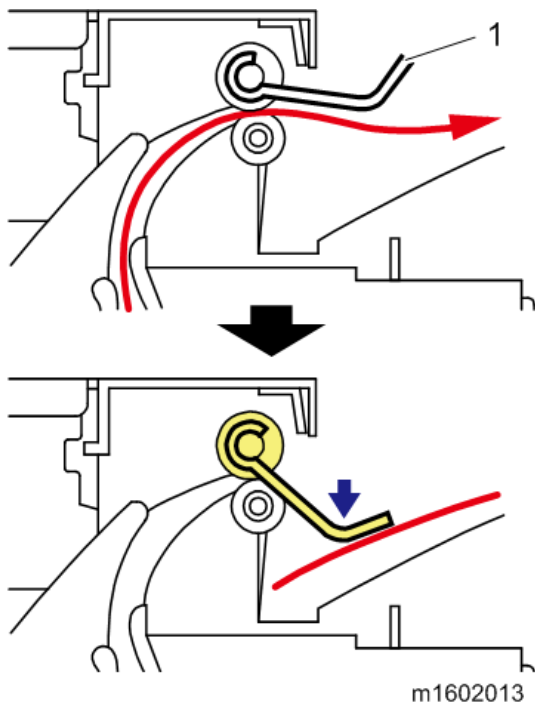
Paper Exit

The paper exit sensor uses the exit sensor feeler to detect paper at the exit.

When printing on one side, the paper is fed under the junction gate to the duplex exit roller, and then delivered. When printing on both sides, the paper is fed over the junction gate and duplex exit roller to initiate the switchback operation. If the height of the paper stacked on the output tray exceeds a certain limit, the paper overflow sensor detects it based on the position of the paper overflow sensor feeler, and then the machine stops printing.

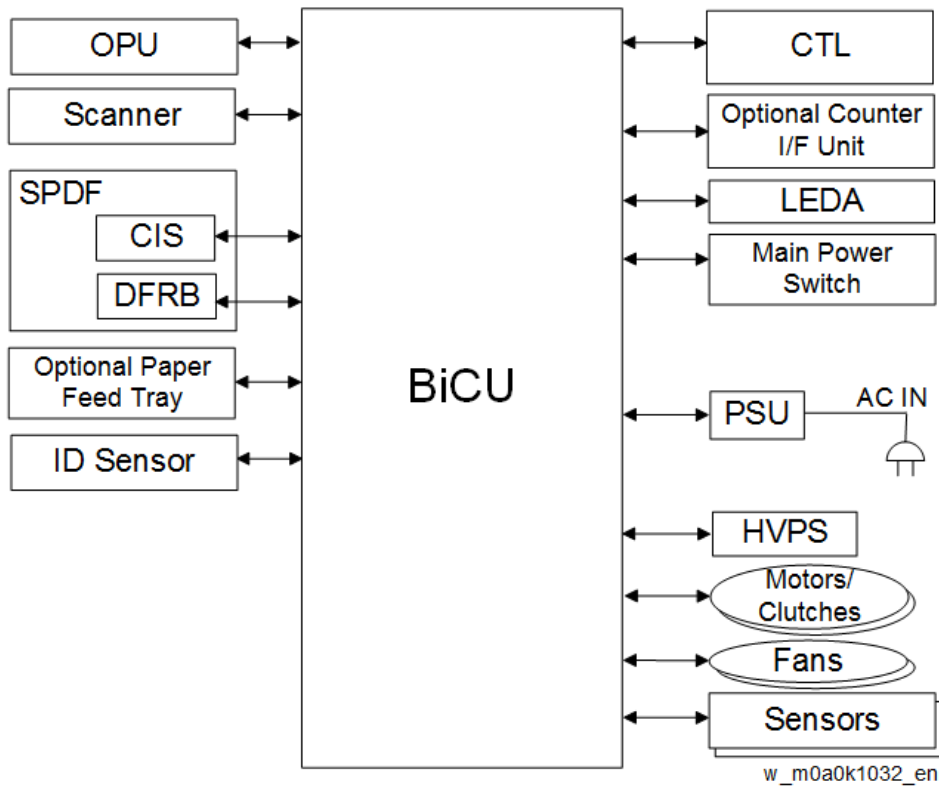
Paper Exit Guide-Plate

The paper exit guide-plate [1] holds down the trailing edge of each sheet of paper after it exits in order to prevent it from obstructing following sheets of paper as they exit.



Electrical Parts

Block Diagram



Board Outline

BiCU (Engine Board)

The BiCU board controls the following functions:

- Engine sequence
- Timing control for peripherals
- Image processing, video control

CTL (Controller Board)

The Controller board controls the following functions:

- SDRAM
- 10Base-T/100Base-Tx/Giga Ethernet
- USB2.0
- NV-RAM
- Operation panel interface

PSU (Power Supply Unit)

Generates DC power from the wall socket AC power supply, and supplies it to each control circuit

HVPS (High-Voltage Power Supply)

Generates the high-voltage power required for process control.

FCU

Controls the fax program.

PCDU Set Detection Board

Detects whether or not the PCDU is installed correctly.

ID Chip Relay Board

Relays the ID chip data of the toner cartridge.

DC Switch

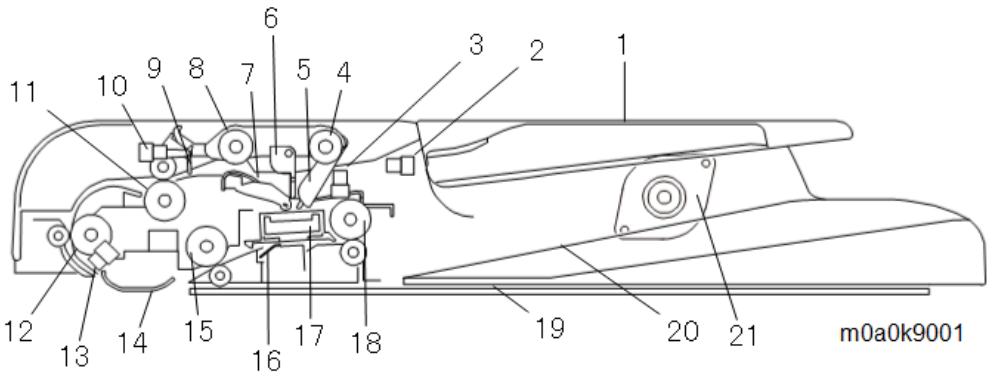
Controls the on/off operation of the DC power supply.

Toner End Detection Board (Toner End Sensor)

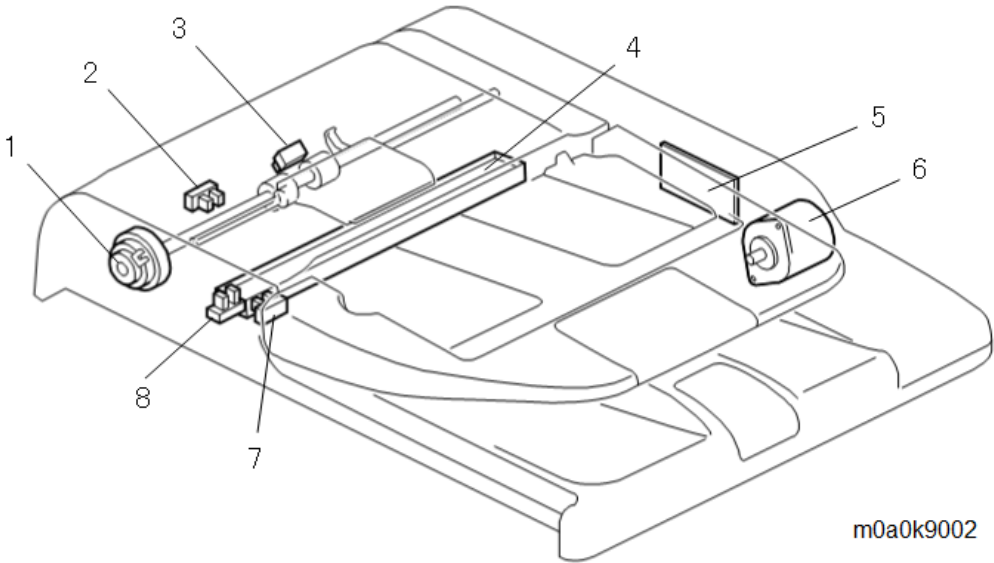
Detects whether the toner has run out.

SPDF

Overview
Components



	Name		Name
1	Original tray	12	Pre-scanning roller (front side)
2	SPDF upper cover sensor	13	SPDF transport sensor
3	SPDF original set sensor	14	Scanning guide plate (front side)
4	Pick-up roller	15	Pre-scanning roller (rear side)
5	Original set sensor actuator	16	Scanning guide plate (rear side)
6	Stopper	17	SPDF CIS
7	Friction pad	18	Exit roller
8	Feed roller	19	Platen
9	Feed sensor actuator	20	Original exit tray
10	SPDF feed sensor	21	SPDF motor
11	SPDF entrance roller		



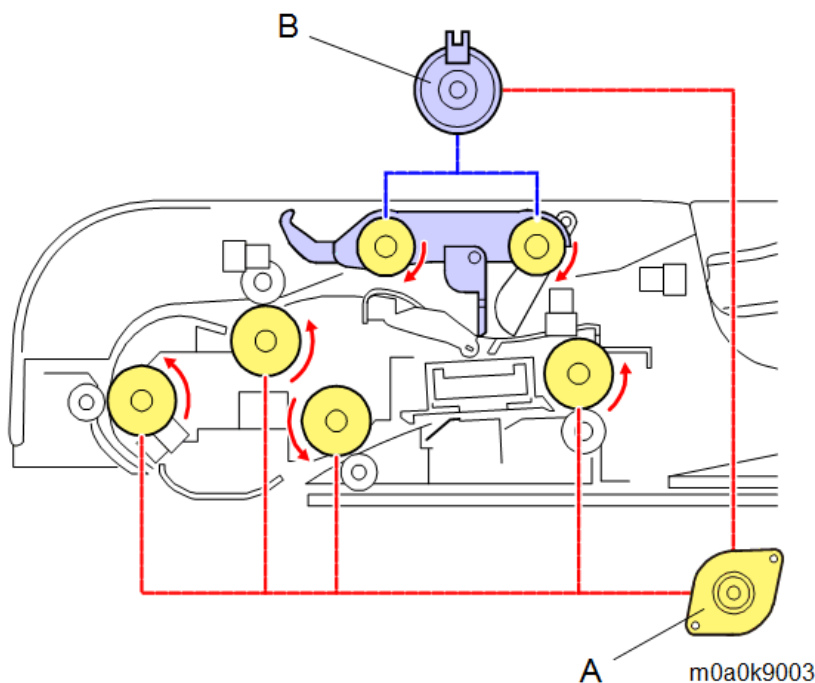
	Name		Name
1	SPDF feed roller clutch	5	DFRB
2	SPDF feed sensor	6	SPDF motor
3	SPDF Transport sensor	7	SPDF upper cover sensor
4	SPDF CIS	8	SPDF original set sensor

Mechanism

SPDF Drive

The SPDF Motor [A] drives all SPDF rollers via gears.

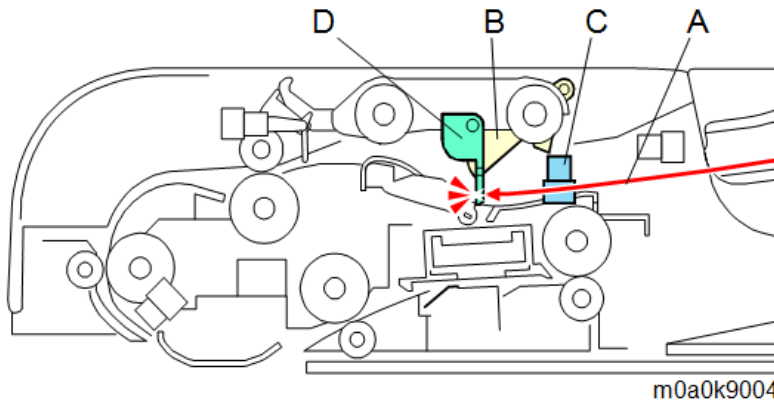
The feed roller clutch [B] controls the mechanism for picking up the original.



Original Detection

When an original [A] is placed on the original tray correctly, the original set sensor actuator [B] is pushed up and the original set sensor [C] turns off (not interrupted). The machine judges this state as the placement of an original.

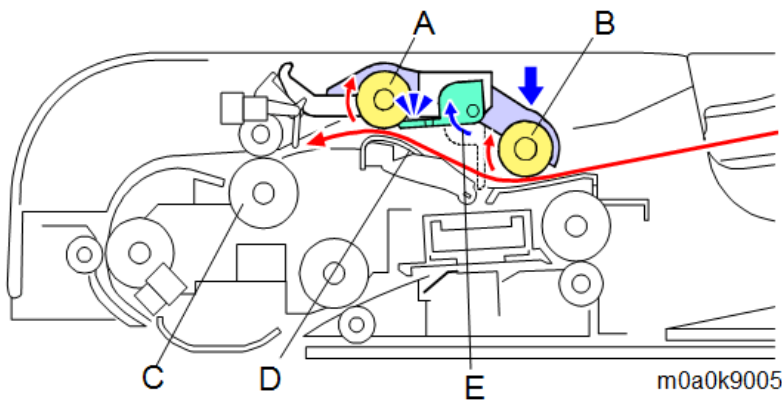
The stopper [D] prevents the user from placing originals too far into the feeder.



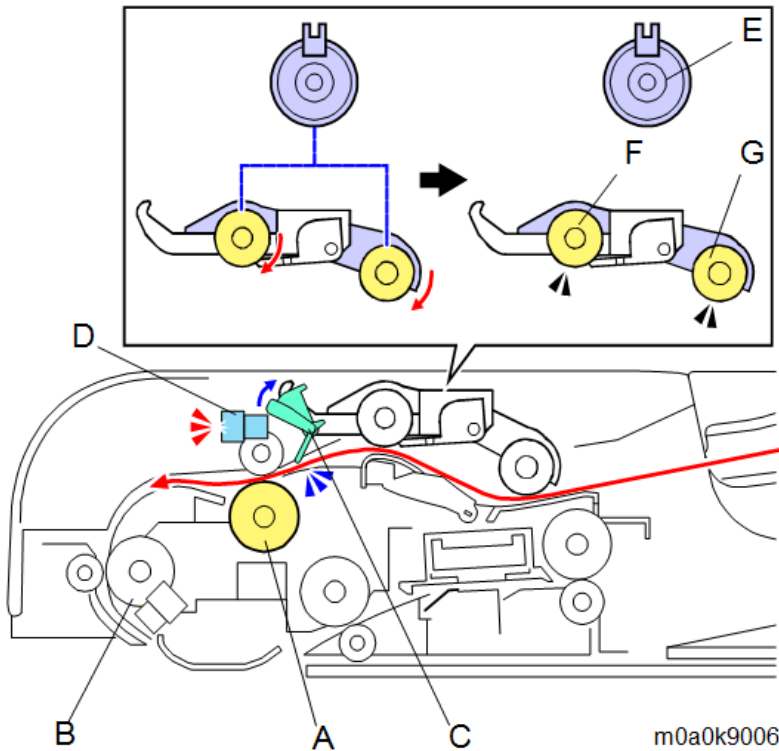
Original Transport Path

When [Start] is pressed, the feed roller clutch is turned ON. Then the feed roller [A] rotates to drop the pick-up roller [B] onto the top original of the stack. This moves the stopper [E] out of the way, and the original can be fed from the feed roller [A] to the SPDF entrance roller [C].

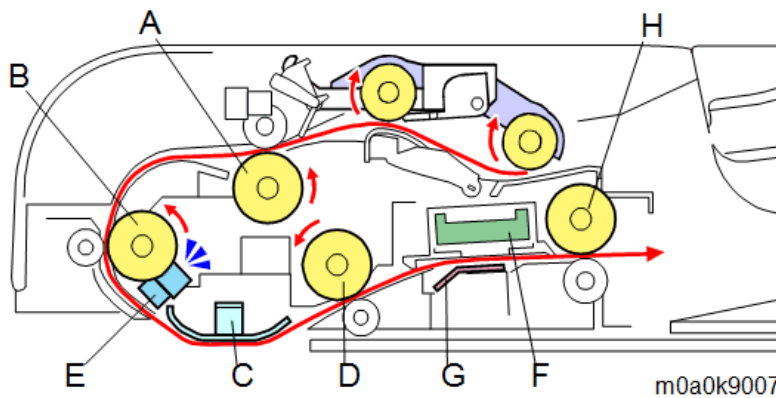
The friction pad [D] ensures that only one sheet of the original enters the feeder at a time.



When the original reaches the pre-scanning (front side) roller [B] via the SPDF entrance roller, the original moves the feed sensor actuator [C] and the feed sensor [D] is turned ON. Then the feed roller clutch [E] is turned OFF to stop the feed roller [F] and the pick-up roller [G], to prevent the next original from being picked up.

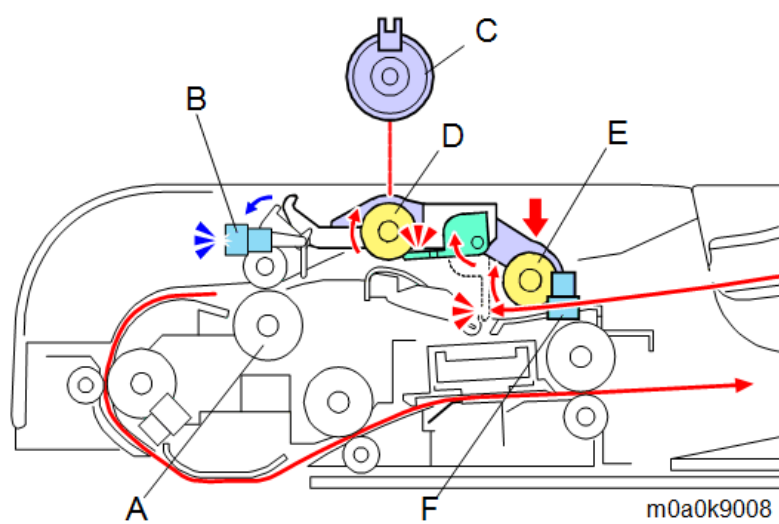


The original is fed by the SPDF entrance roller [A] and the pre-scanning (front side) roller [B], scanned on the exposure glass under the scanning guide plate (front side) [C], and then delivered by the pre-scanning (rear side) roller [D]. The feeding of the original is detected by transport sensor [E]. If an error occurs, it is reported as a paper jam. The original is fed by the pre-scanning (rear side) roller [D], scanned by the SPDF CIS [F] on the scanning guide plate (rear side) [G], and then fed out by the exit roller [H].



When the original passes through the SPDF entrance roller [A], the feed sensor [B] is detected OFF. If the next original is set, the original set sensor [F] detects ON and the feed roller clutch [C] is turned ON. Then, the feed roller [D] and pick-up roller [E] rotate to pick up the next original.

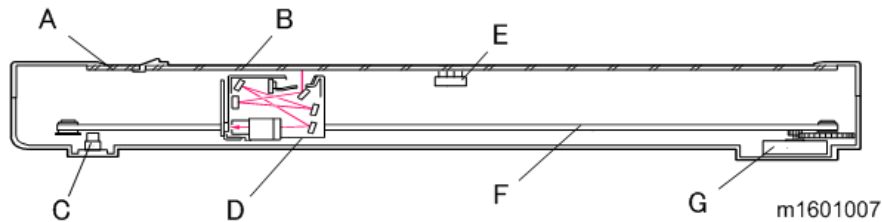
7.Detailed Descriptions



Scanner

Overview

Components



	Name		Name
A	SPDF Exposure Glass	E	SPDF/Platen Cover Open Sensor
B	Exposure Glass	F	Scanner Drive Belt
C	Scanner Carriage HP Sensor	G	Scanner Drive Motor
D	Scanner Carriage		

Mechanism

Inside the Carriage

All scanner optics are included inside one carriage.

The light source is an LED array.

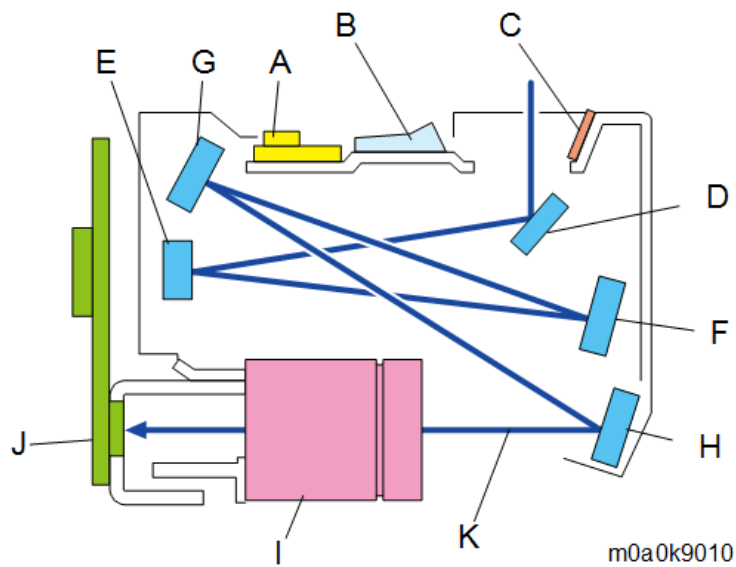
Light from the LED array board [A] goes to the original via the light guiding panel [B] and the reflector [C]. Then from the original, the light follows the light path to the CCD [J].

The elements in the array are more densely spaced at the ends than at the center, to make sure that enough light reaches the left and right edges of the original.

The light reflected from the original travels as follows:

LED exposure -> 1st mirror [D] -> 2nd mirror [E] -> 3rd mirror [F] -> 4th mirror [G] -> 5th mirror [H] -> Lens [I] -> CCD [J]

7.Detailed Descriptions



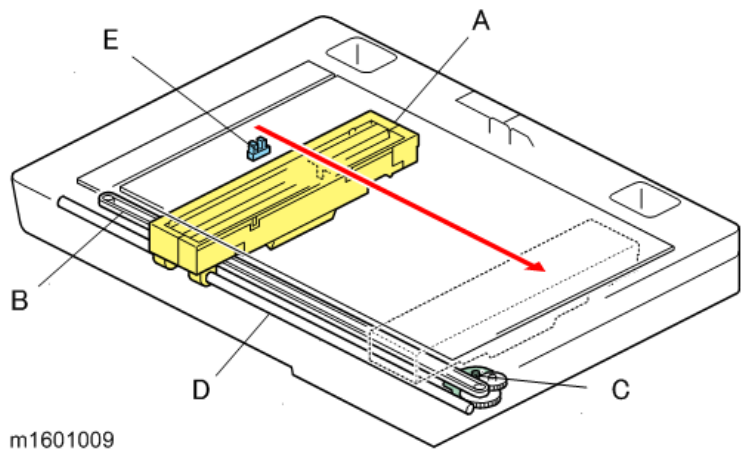
	Name		Name
A	LED array board	G	4th mirror
B	Light Guiding Panel	H	5th mirror
C	Reflectors	I	Lens
D	1st mirror	J	CCD
E	2nd mirror	K	Light path
F	3rd mirror		

Drive

The scanner drive motor [C] drives the drive belt [B] in order to move the carriage [A] along the guide rod [D]. Scanning starts with the carriage [A] at the scanner HP sensor [E]. After scanning, the carriage [A] returns to the HP sensor [E].

The actuator for the scanner HP sensor [E] is on the underside of the carriage [B].

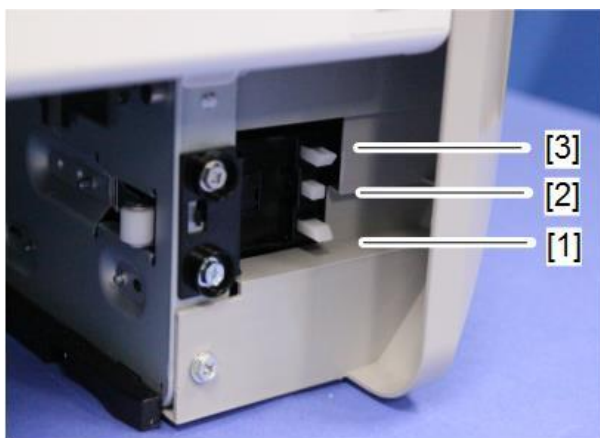
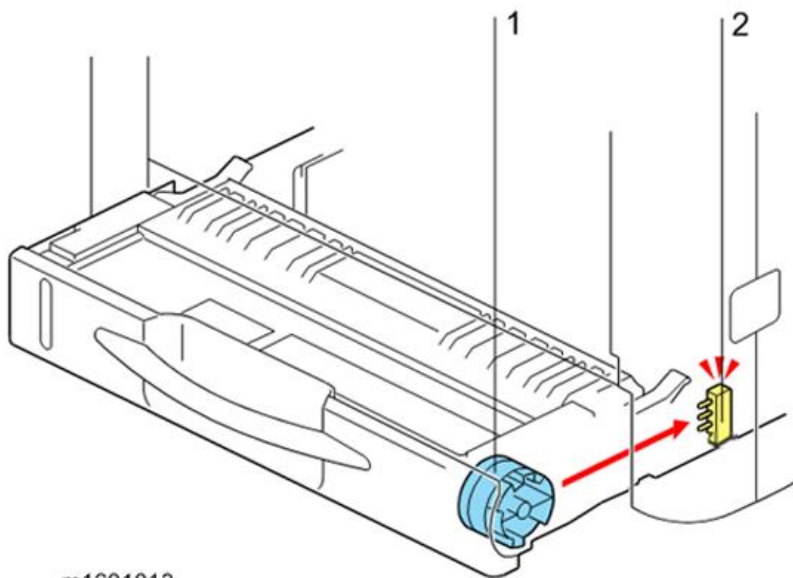
When you wish to move the carriage, use the drive belt. Do not pull the carriage directly.



Paper Feed Unit PB1060/ Paper Feed Unit PB1070

Paper Size Detection

The paper size is detected by a combination of three switches on the Paper Size Switch [2]. The switches are operated by the Paper Size Dial [1] located on the right side of the Paper Feed Tray.



1. SW1
2. SW2
3. SW3

Paper size detection combination (L: Switch is pressed)

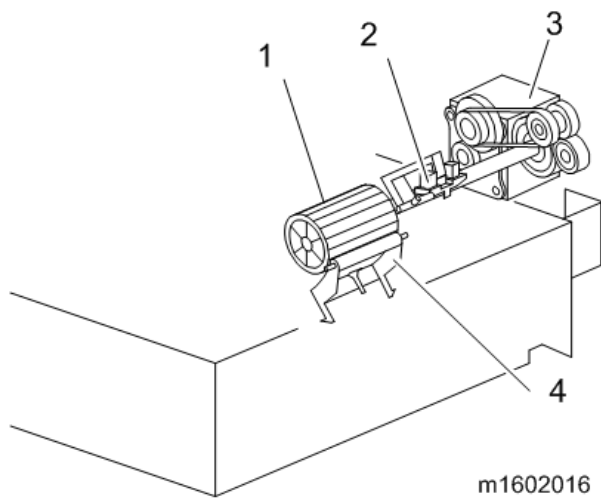
	SW 1	SW 2	SW 3	Paper Size
1	L	L	L	A4 SEF
2	L	H	L	A5 SEF
3	H	L	L	A6 LEF
4	H	H	L	Legal SEF

7.Detailed Descriptions

	SW 1	SW 2	SW 3	Paper Size
5	L	L	H	Letter SEF
6	L	H	H	-
7	H	L	H	Half Letter SEF
8	H	H	H	Paper cassette is not set.

Paper Feed and Separation

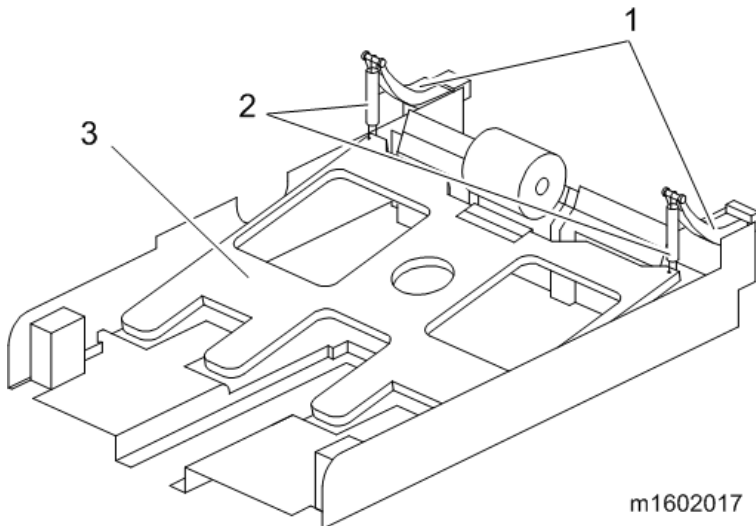
The paper feed unit uses the feed roller and friction pad method to separate paper. The friction pad method makes it possible to feed only one sheet at a time (the top sheet) by the friction between the friction pad and the paper.



1. Paper feed roller
2. Paper feed sensor
3. Paper feed motor
4. Friction pad

Paper Lift

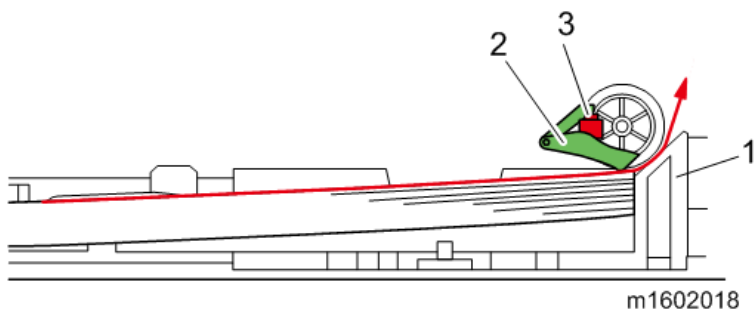
Pushing in the paper cassette makes the tray arms rise along the grooves in the sloping guide and then the bottom plate is lifted by the springs.



1. Tray arms
2. Springs
3. Bottom plate

Paper End Detection

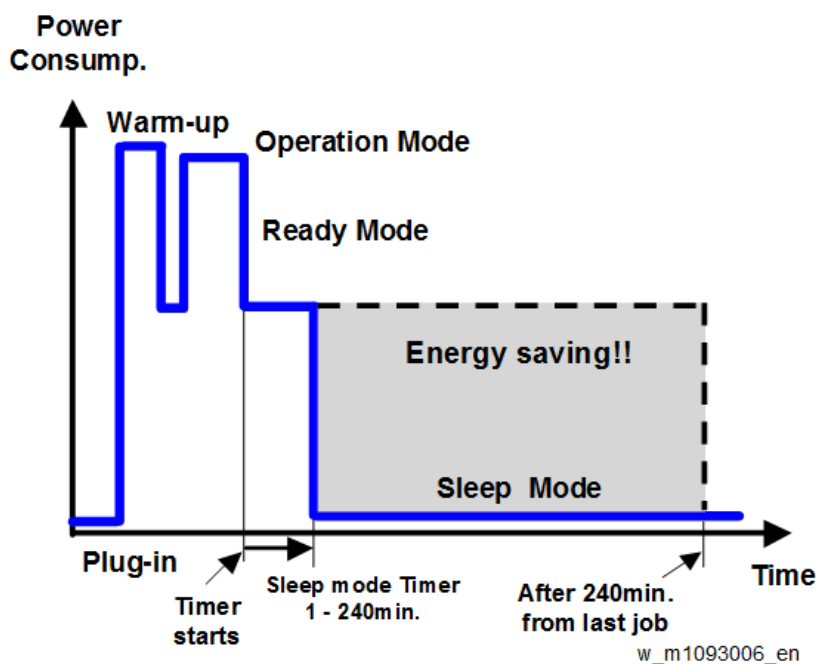
When the optional bank [1] runs out of paper, the feeler [2] drops into the cutout in the bottom plate to actuate the paper end sensor [3].



1. Optional bank
2. Feeler
3. Paper end sensor

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.

Sleep Mode Setting

Sleep Mode Entry by Sleep Mode Timer

The user can specify whether or not to use Sleep Mode with User Tools. (System settings > Administrator Tools > Sleep Mode Entry by Sleep Mode Timer)

Default: **[Enable]**

Sleep Mode Timer

The user can set these timers with User Tools (System settings > Timer setting > Sleep Mode Timer)

Default: 1 min. (1- 60 min):

Weekly Timer

(System settings > Timer Settings > Weekly Timer)

Specify time when the machine switches to and from Off mode or Sleep mode. This timer can be set daily or for Monday through Sunday. You can set up to six timer settings a day.

Default: **[Inactive]**

If you select **[Active (Daily)]** or **[Active (Day of the Week)]**, specify **[Weekly Timer Code]**, **[Weekly Timer Schedule]**, or **[Main Power On Timer Suspension Period]**.

- Weekly Timer Code

If the Weekly Timer setting is specified, you can set a password (up to eight digits) for when the machine recovers from Off mode or Sleep mode. If a password is registered, the password input screen appears when you cancel Sleep mode, or when you press the main power switch during Off mode. The machine recovers from Sleep mode or Off mode after you enter the password. If you select [Off], you do not have to enter a password to recover the machine from Off mode or Sleep mode.

- Weekly Timer Schedule

- Event

- Enter Sleep Mode
 - Cancel Weekly Timer Code
 - Main Power Off
 - Main Power On
 - None

Default for "Event": **[None]**

If you select any event, enter the time for the event in "Event Timer".

(mainly Europe and Asia): Enter the time in [Event Timer] using the 24-hour format.

(mainly North America): Enter the time in [Event Timer] using the 12-hour format.

- Main Power On Timer Suspension Period

Set the dates for [Start Date] and [End Date] using the number keys.

If the Main Power On Timer Suspension Period timer has been set and the machine's main power switch is not turned on at the date specified for [End Date] in [Main Power On Timer Suspension Period], the Main Power On timer will not be performed although the Main Power On Timer Suspension Period term expires. To enable Main Power On timer, you need to turn the main power switch on manually.

Fusing Off Mode

(System settings > Timer Settings > Fusing Unit Off Mode (Energy Saving) On/Off)

Fusing Unit Off Mode (Energy Saving) On/Off

You can specify whether Fusing Unit Off mode is enabled or not.

When Fusing Unit Off mode is enabled, the display is on but the fusing unit is off to save energy. The machine requires roughly the same time as warm-up time to recover from Fusing Unit Off mode. For details about warm-up time, see "Specifications for the Main Unit", Maintenance and Specifications.

Default: **[Off]**

If [Fusing Unit Off Mode (Energy Saving) On/Off] is set to [On], you can specify when to exit Fusing Unit Off mode and the time to elapse before entering Fusing Unit Off mode.

If [Exit Fusing Unit Off Mode] is set to [On Printing], the machine exits Fusing Unit Off mode when printing is performed.

If [Exit Fusing Unit Off Mode] is set to [On Operating Control Panel], the machine exits Fusing Unit Off mode when a key other than the copy function key is pressed on the control panel of the machine.

If printing is performed with the copy function or a key in the copy function is pressed on the control panel of the

7.Detailed Descriptions

machine, the machine exits Fusing Unit Off mode regardless of this setting.

If the timer is set to [On], you can set the time from 10 seconds to 240 minutes, using the number keys.

Fusing Heater Off on Standby

You can specify whether or not to turn off the fusing heater automatically when Sleep mode timer is set to 30 minutes or longer or Fusing Unit Off mode is disabled and the printer remains in standby mode for 30 minutes or longer. The printer consumes less energy when the fusing heater is turned off than when the printer is in standby mode.

- Auto Turn Off
- Do not Auto Turn Off

Default: [Auto Turn Off]

Return to Stand-by Mode

Sleep Mode

Recovery time: Less than 10 sec.

Recommendation

We recommend that the default settings should be kept.

- If the customer requests that these settings should be changed, please explain that their energy costs could increase, and that they should consider the effects on the environment of extra energy use.
- If it is necessary to change the settings, please try to make sure that the Sleep Mode timer is not too long. Try with a shorter setting first, such as 5 min., then go to a longer one (such as 15 min.) if the customer is not satisfied.
- If the Sleep Mode timer is 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.

MP 402SPF
Machine Code: M0A0
Appendices

Latest Release: -

Initial Release: August, 2016

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1. Appendices: Specifications

General Specifications

Mainframe

Items	Specification	
Type	Desktop	
Memory	Standard: 2.0GB	
Photoconductor Type	OPC Drum	
Copy System	LED array and electro-photographic printing	
Development System	Dry two-component magnetic brush development system	
Fusing System	Heating roller and pressure system	
Scanning Method	One-dimensional solid-state scanning system by CCD	
Warm-up Time	63 seconds or less (If [Screen Startup Mode] is set to [Normal]) (23°C, rated voltage) 26 seconds or less (If [Screen Startup Mode] is set to [Quick]) (23°C, rated voltage)	
First Print Time	5 seconds or less (A4 SEF, LT SEF, feeding from Tray 1)	
First Copy Time	6 seconds or less (A4 SEF, LT SEF, feeding from Tray 1)	
Continuous Copy Speed	One-sided copy (300 x 300 dpi, feeding from Tray 1)	40 pages per minute (A4 SEF) 42 pages per minute (LT SEF)
	Two-sided copy (300 x 300 dpi, feeding from Tray 1)	35 pages per minute (A4 SEF) 36 pages per minute (LT SEF)
Max Original Size	- Exposure Glass: 216 × 356 mm (8.5 x 14.0 inches) (A4/LT/Legal) - Single Pass Document Feeder (SPDF): One-sided originals: 216 × 600 mm (8.5 x 23.6 inches) Two-sided originals: 216 × 356 mm (8.5 x 14.0 inches)	
Originals	Sheet, Book, Three-dimensional object, ID card	
SPDF Original Thickness	- One-sided originals: 52 - 128 g/m² (45 - 110kg) - Two-sided originals: 52 - 128 g/m² (45 - 110kg)	
SPDF Original Capacity	50 sheets (80g/m ²)	
Copy Paper Size	Std. Tray	A4 (SEF), B5 (SEF), A5, B6 (SEF), A6 (SEF), LG (SEF), LT (SEF), HLT (SEF), Executive (SEF), F (SEF), Foolscap (SEF), Folio (SEF), 16K (SEF)

1. Appendices: Specifications

Items	Specification	
		Custom size: Min. 100mm x 148mm (4.0"x5.9"), Max. 216mm x 356mm (8.5"x14.0")
	Bypass Tray	A4 (SEF), B5 (SEF), A5, B6, A6 (SEF), LG (SEF), LT (SEF), HLT, Executive (SEF), F (SEF), Foolscap (SEF), Folio (SEF), 16K (SEF) Custom size: Min. 60mm x 127mm (2.4" x 5.0"), Max. 216mm x 900mm (8.5" x 35.4")
	Optional Paper Tray	A4 (SEF), B5 (SEF), A5, B6 (SEF), A6 (SEF), LG (SEF), LT (SEF), HLT (SEF), Executive (SEF), F (SEF), Foolscap (SEF), Folio (SEF), 16K (SEF) Custom size: Min. 100mm x 210mm (4.0" x 8.3"), Max. 216mm x 356mm (8.5" x 14.0")
Copy Paper Weight	- Tray 1: 52 - 162g/m² (45 - 139kg) - Bypass: 52 - 162g/m² (45 - 139kg) - Duplex: 52 - 162g/m² (45 - 139kg)	
Auto Original Size Detection	SPDF: No Exposure Glass: No	
Edge Erase Margin (Copier)	- Leading edge: 3.0±1.5mm - Trailing edge: 3.0mm - Left edge: 2.0±1.5mm - Right edge: 2.0mm The margin for envelopes is 15 mm (0.6 inches) for the leading edge and 10 mm (0.4 inches) for the other edges.	
Reproduction Ratio (Fixed)	NA	- Enlargement: 155%, 129% - Full size: 100% - Reduction: 93%, 78%, 65%
	EU/AP	- Enlargement: 200%, 141% - Full size: 100% - Reduction: 93%, 71%, 50%
Reproduction Ratio (Zoom)	25 - 400% (by 1% step)	
Resolution (Scan)	Exposure Glass: 100 – 1200 dpi SPDF: 100 – 1200 dpi (TWIN: 100 – 600 dpi)	
Resolution (Print)	1200 dpi	
Greyscales	256 tones	
Paper Feed Capacity (80g/m ² ,	Max. 1600 sheets Standard: 500 sheets (Main) + 100 sheets (Bypass tray) Option: 500 sheet tray x 2	

Items	Specification	
20lb.Bond)		
Power Source	NA	120 – 127V, 60 Hz, 10A
	EU/AP	220 – 240V, 50 / 60 Hz, 5.3A
Max Power	NA	1180W or less
Consumption	EU/AP	1140W or less
Dimensions	W × D × H (up to SPDF): 476 x 483 x 510mm (18.7 x 19.0 x 20.1 inches)	
Space for Main Unit	W×D: 476 x 683mm (18.7 x 26.9 inches): Including the bypass tray	
Weight	Approx. 26kg (57.2 lb.)	

Printer

Items	Specification
Print Size	- Fixed: Max. A4 LEF (210×297mm), 8 1/2×14 SEF (215.9×355.6mm) - Custom: Max. 216.0 × 900.0mm (Bypass tray)
Continuous Printing Speed	One-sided printing: 40 ppm (A4 SEF), 42 ppm (LT SEF) Two-sided printing: 35 ppm (A4 SEF), 36 ppm (LT SEF)
Resolution	300/600/1200dpi
Printer Language	- Standard: PCL5e/6, Postscript3, PDF Direct - Option: XPS, IPDS
Interface	- Standard: Ethernet (1000BASE-T, 100BASE-TX, 10BASE-T), USB2.0 (Type A), USB2.0 (Type B), SD card - Option: IEEE1284, IEEE802.11a/b/g/n (Wireless LAN), NIC (Print server)
Protocol	TCP/IP (IPv4, IPv6), SNMP, MIB, WSM, IPP
Compatible OS	Windows Vista/7/8/8.1/, Windows Server 2008/2008 R2/2012/2012 R2, Mac OS X 10.7 or later
Resident Fonts	PCL: 45 fonts + International fonts 13 fonts PS: 136 fonts IPDS: 108 fonts (Option)
Reproduction Ratio	25 - 400%

Scanner

Items	Specification
Type	Full color Scanner

1. Appendices: Specifications

Items	Specification
Scanning Method	Flatbed Scanning
Image Sensor Type	CCD Image Sensor
Scan Type	Sheet, book, three-dimensional object, ID card
Original size	Length: 10 - 216mm Width: 10 - 356mm
Scan Speed	Scan to Email / Scan to Folder / WSD scanner / Save to external media / Network delivery scanner: Original size: A4(SEF), Scanning one side - Black/White: 40 ipm or more (200dpi/300dpi) - Full color: 40 ipm or more (200dpi/300dpi)
Grayscales	- Black and White: 2 tones - Full color / Gray scale: 256 tones
Scanning Resolution	- Basic: 200dpi - Scan to Email: 100dpi, 200dpi, 300dpi, 400dpi, 600dpi - Scan to Folder: 100dpi, 200dpi, 300dpi, 400dpi, 600dpi - Network TWAIN scanner: 100 - 1200dpi - WIA scanner: 100 - 1200dpi
Compression Method	- Black and White: TIFF (MH, MR, MMR, JBIG2) - Full color/Grayscale: JPEG
Interface	- Standard: Ethernet (1000BASE-T, 100BASE-TX, 10BASE-T), USB2.0 (Type A: Operation Panel), SD card slot (Operation Panel) - Option: IEEE802.11a/b/g/n (Wireless LAN)
Protocol	- Network: POP, TCP/IP, IMAP4 - Scan to Email: SMTP - Scan to Folder: SMB, FTP, NCP - WSD scanner: Web Service on Devices for Scanning - Network TWAIN scanner: TCP/IP - WIA scanner: TCP/IP
Scan to Email/Folder Format	TIFF, JPEG, PDF, High Compression PDF, PDF/A

Supported Paper Sizes

Paper Feed

Paper	Size (W x L)	Standard Tray	Optional Tray	Bypass Tray	Duplex Tray
12 x 18inch (SEF)	305×458	N	N	N	N
A3 (SEF)	297×420	N	N	N	N
A3 (LEF)	420×297	N	N	N	N
B4 (SEF)	257×364	N	N	N	N
B4 (LEF)	364×257	N	N	N	N
A4 (SEF)	210×297	A	A	D	C
A4 (LEF)	297×210	N	N	N	N
B5 (SEF)	182×257	B	B	D	C
B5 (LEF)	257×182	N	N	N	N
A5 (SEF)	148×210	A	A	D	C
A5 (LEF)	210×148	B	B	D	C
B6 (SEF)	128×182	B	B	D	C
B6 (LEF)	182×128	N	N	D	N
A6 (SEF)	105×148	A	A	D	C
A6 (LEF)	148×105	N	N	N	N
DLT (SEF)	11"×17"	N	N	N	N
DLT (LEF)	17"×11"	N	N	N	N
LG (SEF)	8 1/2"×14"	A	A	D	C
LG (LEF)	14"×8 1/2"	N	N	N	N
LT (SEF)	8 1/2"×11"	A	A	D	C
LT (LEF)	11"×8 1/2"	N	N	N	N
HLT (SEF)	5 1/2"×8 1/2"	A	A	D	C
HLT (LEF)	8 1/2"×5 1/2"	N	N	D	N
Exective (SEF)	7 1/4"×10 1/2"	B	B	D	C
Exective (LEF)	10 1/2"×7 1/4"	N	N	N	N
F (SEF)	8"×13"	B	B	D	C
F (LEF)	13"×8"	N	N	N	N
Foolscap (SEF)	8 1/2"×13"	B	B	D	C
Foolscap (LEF)	13"×8 1/2"	N	N	N	N
Folio (SEF)	8 1/4"×13"	B	B	D	C
Folio (LEF)	13"×8 1/4"	N	N	N	N
8K (SEF)	267×390	N	N	N	N
16K (SEF)	195×267	B	B	D	C

1. Appendices: Specifications

Paper	Size (W x L)	Standard Tray	Optional Tray	Bypass Tray	Duplex Tray
16K (LEF)	267×195	N	N	N	N
Custom Size (Width)	mm	100 – 216	100 – 216	60 – 216	100 – 216
Custom Size (Length)	mm	148 - 356	210 – 356	127 – 900	148 – 356
Postcard (SEF)	100×148	B	B	D	N
Postcard (LEF)	148×100	N	N	N	N
Double postcard (SEF)	200×148	B	B	D	N
Double postcard (LEF)	148×200	B	B	D	N

Remarks: Standard Tray, Optional Tray

A	Supported size. Need to set the dial to the paper size.
B	Supported size. Need to set the dial to “*” and select the paper size at the operation panel.
N	Not supported.

Remarks: Bypass Tray

C	Supported.
D	Supported. Need to select the Bypass Tray and the paper size at the operation panel.
N	Not supported.

Remarks: Duplex

C	Supported.
N	Not supported.

Paper Exit

Mainframe

Paper	Size (W x L)	Paper Exit Tray
12 x 18inch (SEF)	305×458	N
A3 (SEF)	297×420	N
A3 (LEF)	420×297	N
B4 (SEF)	257×364	N
B4 (LEF)	364×257	N
A4 (SEF)	210×297	C
A4 (LEF)	297×210	N
B5 (SEF)	182×257	C
B5 (LEF)	257×182	N
A5 (SEF)	148×210	C
A5 (LEF)	210×148	C
B6 (SEF)	128×182	C
B6 (LEF)	182×128	C
A6 (SEF)	105×148	C

Paper	Size (W x L)	Paper Exit Tray
A6 (LEF)	148×105	N
DLT (SEF)	11"×17"	N
DLT (LEF)	17"×11"	N
LG (SEF)	8 1/2"×14"	C
LG (LEF)	14"×8 1/2"	N
LT (SEF)	8 1/2"×11"	C
LT (LEF)	11"×8 1/2"	N
HLT (SEF)	5 1/2"×8 1/2"	C
HLT (LEF)	8 1/2"×5 1/2"	C
Executive (SEF)	7 1/4"×10 1/2"	C
Executive (LEF)	10 1/2"×7 1/4"	N
F (SEF)	8"×13"	C
F (LEF)	13"×8"	N
Foolscap (SEF)	8 1/2"×13"	C
Foolscap (LEF)	13"×8 1/2"	N
Folio (SEF)	8 1/4"×13"	C
Folio (LEF)	13"×8 1/4"	N
8K (SEF)	267×390	N
16K (SEF)	195×267	C
16K (LEF)	267×195	N
Custom Size (Width)	mm	60 – 216
Custom Size (Length)	mm	127 – 900
Postcard (SEF)	100×148	C
Postcard (LEF)	148×100	N
Double postcard (SEF)	200×148	C
Double postcard (LEF)	148×200	C

Remarks: Output Tray

C	Supported.
N	Not supported.

Software Accessories

The printer drivers and utility software are provided on one CD-ROM. An auto-run installer lets you select the components you want to install.

Printer Drivers

Printer Language	Windows Vista	Windows 7	Windows 8	Windows 8.1	Windows 10
PCL 5e / 6	Yes	Yes	Yes	Yes	Yes
PostScript3	Yes	Yes	Yes	Yes	Yes
XPS	Yes	Yes	Yes	Yes	No

Printer Language	Windows Server 2008 / 2008 R2	Windows Server 2012 / 2012 R2	Mac OSX 10.7 or later
PCL 5e / 6	Yes	Yes	No
PostScript3	Yes	Yes	Yes
XPS	Yes	Yes	No

Scanner and LAN Fax Drivers

Printer Language	Windows Vista	Windows 7	Windows 8	Windows 8.1	Windows 10
TWAIN	Yes	Yes	Yes	Yes	Yes
PC-FAX	Yes	Yes	Yes	Yes	Yes

Printer Language	Windows Server 2008 / 2008 R2	Windows Server 2012 / 2012 R2	Mac OSX 10.7 or later
TWAIN	Yes	Yes	No
PC-FAX	Yes	Yes	No

Note

- The Network TWAIN and LAN Fax drivers are provided on the scanner drivers CD-ROM.
- This software lets you fax documents directly from your PC. Address Book Editor and Cover Sheet Editor are to be installed as well.

Utility Software

The following utilities are available.

Software	Description
Device Manager NX Lite	A PC Client based application program that monitors and manages up to 250 networked print devices.
Device Manager NX Accounting	
DeskTopBinder-	A printer management utility for client users.
SmartDeviceMonitor for Client	A utility for peer-to-peer printing over a NetBEUI or TCP/IP network.

Software	Description
	A peer-to-peer print utility over a TCP/IP network. This provides the parallel printing and recovery printing features. This is provided on the printer drivers CD-ROM.
Remote Communication Gate A	A communication device that enables digital MFPs and printers to be connected to the communication server in the maintenance center.

Optional Equipment

Paper Feed Unit PB1060

Category	Item	Unit
Paper Size	A4, B5, A5, B6, A6, Legal, Letter, HLT, Executive, F, Foolscap, Folio, 16K, Custom size: Min. 100mm x 216mm (3.93" x 8.46"), Max. 216mm x 356mm (8.46" x 14.0")	
Paper Weight	52-162	g/m ²
	14-43	lbs
Paper Output Capacity	250	sheet
Power Consumption	15.0 or less (Power is supplied from the main unit.)	W
Dimensions (W x D x H)	370×392×95	mm
	14.6×15.4×3.7	inch
Weight	4.1	kg
	9.0	lbs.

Paper Feed Unit PB1070

Category	Item	Unit
Paper Size	A4, B5, A5, B6, A6, Legal, Letter, HLT, Executive, F, Foolscap, Folio, 16K, Custom size: Min. 100mm x 216mm (3.93" x 8.46"), Max. 216mm x 356mm (8.46" x 14.0")	
Paper Weight	52-162	g/m ²
	14-43	lbs
Paper Output Capacity	500	sheet
Power Consumption	15.0 or less (Power is supplied from the main unit.)	W
Dimensions (W x D x H)	370×392×125	mm
	14.6×15.4×4.9	inch
Weight	4.5	kg
	9.9	lbs.

2. Appendices: Preventive Maintenance Tables

Preventive Maintenance Tables

Maintenance Tables

Chart: A4 (LT)/6%

Mode: 3 prints/job

Environment: Normal temperature and humidity

Yield may change depending on circumstances and print conditions.

Symbol keys: C: Clean, R: Replace

Mainframe

- 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.

Paper Feed

Item	40K	180K	600K	EM	Remarks
Registration Roller				C	Wipe with a damp cloth when cleaning
Registration Sensor				C	Remove paper dust
Transport Roller				C	Wipe with a damp cloth when cleaning
Paper Feed Roller (Tray)		(R)		C	- Replace when a feeding failure occurs - Wipe with a damp cloth when cleaning
Friction Pad (Tray)		(R)		C	- Replace when a double feed occurs - Wipe with a dry cloth when cleaning
Paper Feed Roller (Bypass)				C	- Replace when a feeding failure occurs - Wipe with a damp cloth when cleaning
Friction Pad (Bypass)				C	- Replace when a double feed occurs - Wipe with a dry cloth when cleaning

PCDU

Item	40K	180K	600K	EM	Remarks
PCDU	R				

2. Appendices: Preventive Maintenance Tables

LED Optics

Item	40K	180K	600K	EM	Remarks
LED Lens	C				- Perform this at the same time as PCDU replacement - Use the LED lens cleaner packed with the unit or mainframe

Transfer/Fusing

Item	40K	180K	600K	EM	Remarks
Transfer Roller		(R)		C	Wipe with a damp cloth, then a dry cloth when cleaning
Fusing Unit		(R)			
Image Transfer Entrance Guide (front)				C	*1
Image Transfer Exit Guide (Rear)				C	*1

Paper Exit

Item	40K	180K	600K	EM	Remarks
Paper Exit Roller				C	Wipe with a damp cloth, then a dry cloth when cleaning
Paper Exit Sensor				C	Remove paper dust

Scanner

Item	40K	180K	600K	EM	Remarks
Exposure Glass				C	Use the Ricoh exposure glass cleaner
SPDF Exposure Glass				C	Use the Ricoh exposure glass cleaner

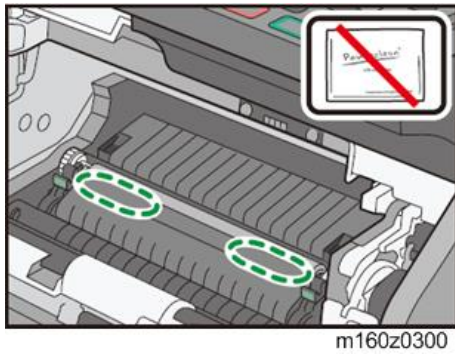
SPDF

The PM count for the following items is based on the number of originals fed:

Item	30K	45K	180K	EM	Remarks
Friction Pad	(R)			C	Wipe with a dry cloth when cleaning
Pick-up Roller		(R)		C	Wipe with a damp cloth when cleaning
Feed Roller		(R)		C	Wipe with a damp cloth when cleaning
SPDF entrance roller				C	Wipe with a damp cloth when cleaning
Pre-scanning roller (front side)				C	Wipe with a damp cloth when cleaning
Pre-scanning roller (rear side)				C	Wipe with a damp cloth when cleaning
Exit Roller				C	Wipe with a damp cloth when cleaning
Platen			C	C	Wipe with a damp cloth when cleaning
Scanning guide plate (front side)			C	C	Wipe with a damp cloth when cleaning
Scanning guide plate (rear side)			C	C	Wipe with a damp cloth when cleaning

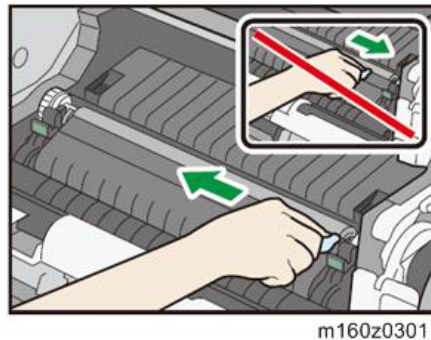
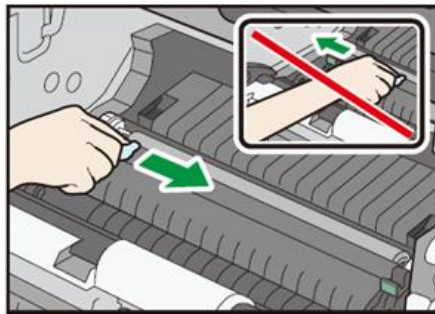
*1 When replacing the PCDU, be sure to clean the following parts;

1. Image Transfer Entrance Guide (front)



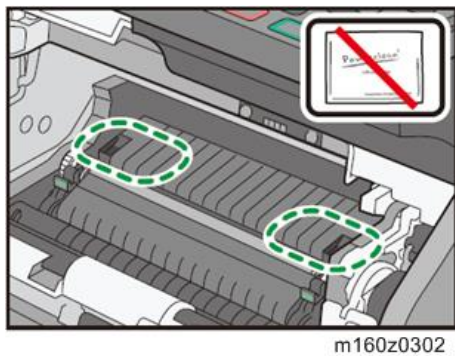
Note

- Do not use the LED lens cleaner.



Remove toner and paper dust with a slightly wet cloth. Wipe off towards to the center from the green seals indicated at both sides. Do not use alcohol or detergent. Only use water, and also do not wipe off to the outside.

2. Image Transfer Exit Guide (Rear)



Note

- Do not use the LED lens cleaner.

Clean toner stacked in the hollows with a slightly wet cloth. Wipe off five to six times towards to the center from outside until stacked toner is completely wiped off.

Make sure you do not use detergent and also do not wipe off to the outside.

Paper Feed Tray PB1060 / Paper Feed Tray PB1070

Item	40K	180K	600K	EM	Remarks
Grip Roller				C	Wipe with a damp cloth when cleaning
Paper Feed Roller (Tray)		R		C	Replace when a feeding failure occurs

2.Appendices: Preventive Maintenance Tables

Item	40K	180K	600K	EM	Remarks
					Wipe with a damp cloth when cleaning
Friction Pad (Tray)		R		C	- Replace when a double feed occurs - Wipe with a dry cloth when cleaning

3. Appendices: SP Mode Tables

Service Program Mode

Service Table Key

Notation	What it means
[range / default / step]	Example: [-9 to +9 / 0 / 0.1 mm step]. The setting can be adjusted in the range ± 9 , value reset to +3.0 after an NVRAM reset, and the value can be changed in 0.1 mm steps with each key press.
*	Value stored in NVRAM. After a RAM reset, this default value (factory setting) is restored.
DFU	Denotes "Design or Factory Use". Do not change this value.
Japan only	The feature or item is for Japan only. Do not change this value.
SSP	This denotes a "Special Service Program" mode.
FSP	This denotes a "Factory Service Program" mode.

Main SP Tables-1

SP1-XXX (Feed)

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
1-001-001	User LeadEdge Reg	By-pass	ENG*	[-4 to 4/0/0.1mm]
1-001-002	User LeadEdge Reg	Tray 1	ENG*	[-4 to 4/0/0.1mm]
1-001-003	User LeadEdge Reg	Tray 2	ENG*	[-4 to 4/0/0.1mm]
1-001-004	User LeadEdge Reg	Tray 3	ENG*	[-4 to 4/0/0.1mm]
1-001-006	User LeadEdge Reg	Duplex	ENG*	[-4 to 4/0/0.1mm]
1-002-001	User S-to-S Reg	By-pass	ENG*	[-4 to 4/0/0.1mm]
1-002-002	User S-to-S Reg	Tray 1	ENG*	[-4 to 4/0/0.1mm]
1-002-003	User S-to-S Reg	Tray 2	ENG*	[-4 to 4/0/0.1mm]
1-002-004	User S-to-S Reg	Tray 3	ENG*	[-4 to 4/0/0.1mm]
1-002-006	User S-to-S Reg	Duplex	ENG*	[-4 to 4/0/0.1mm]
1-003-011	Paper Buckle	By-pass: Plain	ENG*	[-5 to 5/0/1mm]
1-003-012	Paper Buckle	By-pass: Thick	ENG*	[-5 to 5/0/1mm]
1-003-013	Paper Buckle	By-pass: Envelope	ENG*	[-5 to 5/0/1mm]
1-003-021	Paper Buckle	Tray1: Plain	ENG*	[-5 to 5/0/1mm]
1-003-022	Paper Buckle	Tray1: Thick	ENG*	[-5 to 5/0/1mm]
1-003-023	Paper Buckle	Tray1: Envelope	ENG*	[-5 to 5/0/1mm]
1-003-031	Paper Buckle	Tray2: Plain	ENG*	[-5 to 5/0/1mm]
1-003-032	Paper Buckle	Tray2: Thick	ENG*	[-5 to 5/0/1mm]
1-003-041	Paper Buckle	Tray3: Plain	ENG*	[-5 to 5/0/1mm]
1-003-042	Paper Buckle	Tray3: Thick	ENG*	[-5 to 5/0/1mm]
1-003-061	Paper Buckle	Duplex: Plain	ENG*	[-5 to 5/0/1mm]
1-003-062	Paper Buckle	Duplex: Thick	ENG*	[-5 to 5/0/1mm]
1-101-001	Flicker Control	Flicker Control	ENG*	[0 to 1/0/1]
1-105-001	PrintTargetTemp	C:Plain1	ENG*	[140 to 205/178/1deg]
1-105-003	PrintTargetTemp	C:Plain2	ENG*	[140 to 205/183/1deg]
1-105-005	PrintTargetTemp	C:Thick1	ENG*	[140 to 205/192/1deg]
1-105-007	PrintTargetTemp	C:Thick2	ENG*	[140 to 230/191/1deg]
1-105-011	PrintTargetTemp	C:Thin	ENG*	[140 to 205/168/1deg]
1-105-013	PrintTargetTemp	C:Envelope	ENG*	[140 to 230/205/1deg]
1-105-015	PrintTargetTemp	C:card	ENG*	[140 to 205/195/1deg]
1-105-017	PrintTargetTemp	C:Transparency	ENG*	[140 to 205/173/1deg]
1-105-019	PrintTargetTemp	C:Special	ENG*	[140 to 205/185/1deg]
1-105-023	PrintTargetTemp	C:Middle Thick	ENG*	[140 to 205/187/1deg]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
1-105-025	PrintTargetTemp	C:Thick1(LowTemp)	ENG*	[140 to 205/185/1deg]
1-105-031	PrintTargetTemp	FuserOffMode	ENG*	[0 to 1/1/1]
1-106-001	FusingTempDisp	RollerCenter	ENG	[-20 to 250/0/1deg]
1-106-002	FusingTempDisp	RollerEnds	ENG	[-20 to 250/0/1deg]
1-106-003	FusingTempDisp	MachinePowerOn	ENG	[-20 to 250/0/1deg]
1-107-001	PrintTargetTemp	FusingCleanTemp	ENG*	[140 to 205/140/1deg]
1-109-001	MicroPtclSW	0:OFF 1:ON	ENG*	[0 to 1/EU:1, other:0/1]
1-110-001	FusingCoolDown	OFF/ON	ENG*	[0 to 1/1/1] 0:OFF 1:ON
1-111-001	CurlDecMode	Mode Display	ENG*	[0 to 1/0/1]
1-111-002	CurlDecMode (DFU)	PrePrtRotTime	ENG*	[500 to 60000/20000/500msec]
1-113-001	EnvFusCond	PrePrtRotTime	ENG*	[500 to 60000/7000/500msec]
1-120-001	FusCondTime	FusSideHighTempSec	ENG*	[0 to 255/0/1sec]
1-120-002	FusCondTime	FusSideHighTempMin	ENG*	[0 to 65535/0/1min]
1-135-001	Inrush Control	Inrush Control	ENG*	[0 to 1/0/1]
1-152-001	NipWidthMeasuring	0:OFF 1:ON	ENG	[0 to 1/0/1]
1-159-001	FusingJamDetect	SCdisplay	ENG*	[0 to 1/0/1]
1-801-011	Motor Speed Adj	Exit Reverse	ENG*	[-4 to 4/0/0.1%]
1-907-005	Paper Timing Adj	Reverse Stop Posi	ENG*	[-10 to 10/0/1mm]
1-907-015	Paper Timing Adj	Re-Feed Stop Posi	ENG*	[-10 to 10/0/1mm]
1-908-015	Paper Timing Adj	Junc Gate SOL:ON	ENG*	[-10 to 10/0/1mm]
1-908-017	Paper Timing Adj	Junc Gate SOL:OFF	ENG*	[-10 to 10/0/1mm]
1-921-011	Fact LeadEdge Reg	By-pass: Plain	ENG*	[-4 to 4/0/0.1mm]
1-921-012	Fact LeadEdge Reg	By-pass: Thick	ENG*	[-4 to 4/0/0.1mm]
1-921-013	Fact LeadEdge Reg	By-pass: Envelope	ENG*	[-4 to 4/0/0.1mm]
1-921-021	Fact LeadEdge Reg	Tray1: Plain	ENG*	[-4 to 4/0/0.1mm]
1-921-022	Fact LeadEdge Reg	Tray1: Thick	ENG*	[-4 to 4/0/0.1mm]
1-921-023	Fact LeadEdge Reg	Tray1: Envelope	ENG*	[-4 to 4/0/0.1mm]
1-921-031	Fact LeadEdge Reg	Tray2: Plain	ENG*	[-4 to 4/0/0.1mm]
1-921-032	Fact LeadEdge Reg	Tray2: Thick	ENG*	[-4 to 4/0/0.1mm]
1-921-041	Fact LeadEdge Reg	Tray3: Plain	ENG*	[-4 to 4/0/0.1mm]
1-921-042	Fact LeadEdge Reg	Tray3: Thick	ENG*	[-4 to 4/0/0.1mm]
1-921-061	Fact LeadEdge Reg	Duplex: Plain	ENG*	[-4 to 4/0/0.1mm]
1-921-062	Fact LeadEdge Reg	Duplex: Thick	ENG*	[-4 to 4/0/0.1mm]
1-922-001	Fact S-to-S Reg	By-pass	ENG*	[-4 to 4/0/0.1mm]
1-922-002	Fact S-to-S Reg	Tray 1	ENG*	[-4 to 4/0/0.1mm]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
1-922-003	Fact S-to-S Reg	Tray 2	ENG*	[-4 to 4/0/0.1mm]
1-922-004	Fact S-to-S Reg	Tray 3	ENG*	[-4 to 4/0/0.1mm]
1-922-006	Fact S-to-S Reg	Duplex	ENG*	[-4 to 4/0/0.1mm]
1-952-001	Fan Off Mode Time		ENG*	[0 to 60/13/1min]

Main SP Tables-2

SP2-XXX (Drum)

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
2-001-001	C bias Control	C setting	ENG*	[-1350 to -900/-1020/1V]
2-001-002	C bias Control	C(low) setting	ENG*	[-400 to -200/-350/50V]
2-001-011	C bias Control	Vd_ref_lowhumi	ENG*	[-700 to -400/-420/10V]
2-001-012	C bias Control	Vd_ref_midhumi	ENG*	[-700 to -400/-430/10V]
2-001-013	C bias Control	Vd_ref_highhumi	ENG*	[-700 to -400/-470/10V]
2-001-100	C bias Control	F:Coefficient:a0	ENG*	[-500 to -350/-350/1]
2-001-101	C bias Control	F:Coefficient:a1	ENG*	[0.8 to 1.2/1/0.01]
2-001-102	C bias Control	F:Coefficient:a2	ENG*	[0 to 10/5/0.1]
2-001-103	C bias Control	F:Coefficient:a3	ENG*	[-20 to 0/-9.9/0.1]
2-101-001	Reg Correct	Main Dot	ENG*	[-300 to 300/0/1dot]
2-102-002	Magnification Adj	Sub Mag.:N	ENG*	[-1 to 0.3/-0.2/0.1%]
2-102-004	Magnification Adj	Sub Mag.:L	ENG*	[-1 to 1/-0.2/0.1%]
2-103-001	Erase Margin Adj	Lead Edge Width	ENG*	[2.7 to 9.9/3/0.1mm]
2-103-002	Erase Margin Adj	Trail. Edge Width	ENG*	[0 to 9.9/2/0.1mm]
2-103-003	Erase Margin Adj	Left	ENG*	[0 to 9.9/2/0.1mm]
2-103-004	Erase Margin Adj	Right	ENG*	[0 to 9.9/2/0.1mm]
2-103-	Erase Margin Adj	Duplex:Lead	ENG*	[0 to 4/0/0.1mm]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
005				
2-103-006	Erase Margin Adj	Duplex:Trail.	ENG*	[0 to 4/0/0.1mm]
2-103-007	Erase Margin Adj	Duplex:Left Width	ENG*	[0 to 4/0/0.1mm]
2-103-008	Erase Margin Adj	Duplex:RightWidth	ENG*	[0 to 4/0/0.1mm]
2-104-010	Exposure energy	Normal Print	ENG*	[0.23 to 0.98/0.5/0.01uJ/cm^2]
2-104-011	Exposure energy	Nomal Discharge	ENG*	[0.23 to 0.98/0.7/0.01uJ/cm^2]
2-104-012	Exposure energy	Low Discharge	ENG*	[0.23 to 0.98/0.7/0.01uJ/cm^2]
2-105-001	LED Emit Time Adj	Normal Speed	ENG*	[50 to 200/100/1%]
2-105-002	LED Emit Time Adj	Low Speed	ENG*	[50 to 200/100/1%]
2-106-021	LEDA Emit Time	Print:Normal	ENG*	[1000 to 8800/3000/1ns]
2-106-022	LEDA Emit Time	Print:Low	ENG*	[1000 to 8800/3000/1ns]
2-106-023	LEDA Emit Time	Quenching:Normal	ENG*	[1000 to 8800/3000/1ns]
2-106-024	LEDA Emit Time	Quenching:Low	ENG*	[1000 to 8800/3000/1ns]
2-109-001	Test Printing	Pattern Selection	ENG	[0 to 15/0/1] 0:None 1:Vert. (1dot) 2:Hori. (1dot) 3:Vert. (2dot) 4:Hori. (2dot) 5:Grid Vert. 6:Grid Hori. 7:Grid 20mm 8:Arg. Grid 9:Arg.Grid20mm

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
				10:Indep.(1dot) 11:Indep.(2dot) 12:Indep.(4dot) 13:Full 14:Band 15:Trim Area
2-109-002	Test Printing	1 Sheet Printing	ENG	[0 to 1/0/1]
2-109-003	Test Printing	Cont. Printing	ENG	[0 to 1/0/1]
2-109-004	Test Printing	Print Side Select	ENG	[0 to 1/0/1] 0:One Side 1:Both Sides
2-201-001	DV bias Control	DV(-)_setting	ENG*	[-350 to -10/-150/1v]
2-201-002	DV bias Control	DV(+)_offset	ENG*	[-100 to 0/0/25v]
2-201-003	DV bias Control	DV(-)_offset	ENG*	[-75 to 75/0/25v]
2-201-011	DV bias Control	Line1:L1	ENG*	[500000 to 950000/500000/50000mm]
2-201-012	DV bias Control	Line2:L2	ENG*	[1000000 to 1950000/1000000/50000mm]
2-201-013	DV bias Control	Line3:L3	ENG*	[2000000 to 3950000/3000000/50000mm]
2-201-014	DV bias Control	Line4:L4	ENG*	[4000000 to 7950000/5000000/50000mm]
2-201-015	DV bias Control	Line5:L5	ENG*	[8000000 to 19950000/8000000/50000mm]
2-201-016	DV bias Control	Line6:L6	ENG*	[20000000 to 29950000/20000000/50000mm]
2-201-017	DV bias Control	Line7:L7	ENG*	[30000000 to 39950000/33000000/50000mm]
2-201-204	DV bias Control	Coefficient:a4	ENG*	[0 to 0.5/0.13/0.01]
2-201-	DV bias Control	Coefficient:a5	ENG*	[0 to 5/0/0.1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
205				
2-201-206	DV bias Control	Coefficient:a6	ENG*	[-200 to 0/0/1]
2-211-001	PcuReverse	On/Off	ENG*	[0 to 1/1/1] 0:OFF 1:ON
2-212-001	ExeSheets	Normal	ENG*	[1 to 500/200/1page]
2-212-002	ExeSheets	ConsecutivePrint	ENG*	[1 to 500/300/1page]
2-221-005	LEDA Data:Display	Serial No.	ENG*	[0 to 0/0/0]
2-221-009	LEDA Data:Display	Power Error	ENG*	[0 to 1/0/1]
2-301-002	Transfer bias Control	T(+)_2_face_offset	ENG*	[-15 to 15/0/1uA]
2-301-003	Transfer bias Control	T(+)_2_back_offset	ENG*	[-15 to 15/0/1uA]
2-301-101	Transfer bias Control	Used Adjust A2	ENG*	[0 to 100/80/1%]
2-301-102	Transfer bias Control	Used Adjust A3	ENG*	[0 to 100/70/1%]
2-301-103	Transfer bias Control	Used Adjust A4	ENG*	[0 to 100/65/1%]
2-301-104	Transfer bias Control	Used Adjust A5	ENG*	[0 to 100/60/1%]
2-301-105	Transfer bias Control	Used Adjust A1_2	ENG*	[0 to 100/73/1%]
2-301-106	Transfer bias Control	Used Adjust A2_2	ENG*	[0 to 100/70/1%]
2-401-003	Timing Control	T[rotation print]	ENG*	[600 to 9900/600/100msec]
2-401-004	Timing Control	T[rotation WU]	ENG*	[600 to 9900/5000/100msec]
2-411-001	envi_section	AH_LM	ENG*	[0 to 10/5.5/0.5g/m^3]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
2-411-002	envi_section	AH_MH	ENG*	[11 to 30/15/0.5g/m ³]
2-924-001	Supply Speed	Remaining H:240	ENG*	[0.01 to 1/0.35/0.01g/sec]
2-924-002	Supply Speed	Remaining M:240	ENG*	[0.01 to 1/0.29/0.01g/sec]
2-924-003	Supply Speed	Remaining L:240	ENG*	[0.01 to 1/0.22/0.01g/sec]
2-924-004	Supply Speed	Remaining H:182	ENG*	[0.01 to 1/0.25/0.01g/sec]
2-924-005	Supply Speed	Remaining M:182	ENG*	[0.01 to 1/0.21/0.01g/sec]
2-924-006	Supply Speed	Remaining L:182	ENG*	[0.01 to 1/0.17/0.01g/sec]
2-925-001	Toner Supply	consumed amount	ENG*	[0 to 100000/0/0.1mg]
2-925-002	Toner Supply	Supply Threshold	ENG*	[1 to 100000/300/0.1mg]
2-925-003	Toner Supply	Sup- Coefficient	ENG*	[0 to 5/0.7/0.1]
2-926-001	Recovery Supply	Recovery Amount	ENG*	[0 to 300/5/1g]
2-926-002	Recovery Supply	Mixing Time	ENG*	[0 to 300/10/1sec]
2-926-003	Recovery Supply	Recovery Count	ENG*	[0 to 10000/0/1count]
2-926-004	Recovery Supply	Self-Recovery	ENG	[0 to 1/0/1]
2-927-001	Initial Supply	Initial Amount	ENG*	[1 to 50/5/1g]
2-927-002	Initial Supply	Initial Mixing T	ENG*	[0 to 300/10/1sec]
2-927-003	Initial Supply	Ini-Coefficient	ENG*	[0 to 5/1.5/0.1]
2-927-004	Initial Supply	Initial Flag	ENG*	[0 to 1/0/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
2-927-005	Initial Supply	Exchange Count	ENG*	[0 to 1000/0/1count]
2-930-001	Detection	Cleaner Count	ENG*	[1 to 20/5/1cycle]
2-930-002	Detection	stabilization T	ENG*	[0 to 3/0/0.1sec]
2-930-003	Detection	Upper n cycle	ENG*	[0 to 20/1/1]
2-930-004	Detection	Lower m cycle	ENG*	[0 to 20/1/1]
2-930-005	Detection	HH:240 Upper	ENG*	[0 to 70/25/1count]
2-930-006	Detection	HH:240 Lower	ENG*	[0 to 70/38/1count]
2-930-007	Detection	MM:240 Upper	ENG*	[0 to 70/18/1count]
2-930-008	Detection	MM:240 Lower	ENG*	[0 to 70/34/1count]
2-930-009	Detection	LL:240 Upper	ENG*	[0 to 70/18/1count]
2-930-010	Detection	LL:240 Lower	ENG*	[0 to 70/36/1count]
2-930-011	Detection	HH:182 Upper	ENG*	[0 to 70/38/1count]
2-930-012	Detection	HH:182 Lower	ENG*	[0 to 70/52/1count]
2-930-013	Detection	MM:182 Upper	ENG*	[0 to 70/33/1count]
2-930-014	Detection	MM:182 Lower	ENG*	[0 to 70/48/1count]
2-930-015	Detection	LL:182 Upper	ENG*	[0 to 70/34/1count]
2-930-016	Detection	LL:182 Lower	ENG*	[0 to 70/46/1count]
2-930-017	Detection	Sensor Standard V	ENG*	[0 to 3.3/2/0.1V]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
2-930-018	Detection	Average Count	ENG*	[0 to 255/0/1count]
2-930-019	Detection	Self-Detection	ENG	[0 to 1/0/1]
2-930-020	Detection	Self-Mixing Time	ENG*	[0 to 300/10/1sec]
2-931-002	Supply Error	0 count	ENG*	[0 to 10000/0/1count]
2-931-003	Supply Error	0 count Threshold	ENG*	[1 to 50/30/1count]
2-931-004	Supply Error	Lower Count	ENG*	[0 to 10000/0/1count]
2-931-005	Supply Error	Lower Threshold	ENG*	[1 to 10/5/1count]
2-931-006	Supply Error	SC332 Count	ENG*	[0 to 10/0/1count]
2-932-001	End Detection	End Count	ENG*	[0 to 10000/0/1count]
2-932-002	End Detection	End Threshold	ENG*	[1 to 10/3/1count]
2-940-001	Remain Control	Remaining Amount	ENG*	[0 to 30/0/0.1g]
2-940-002	Remain Control	Remaining Time	ENG*	[0 to 300/0/1sec]
2-941-001	Related control	closing count	ENG*	[0 to 65535/0/1count]
2-941-002	Related control	close count:Upper	ENG*	[0 to 100/0/1count]
2-952-001	S_PaperRefresh	InputCoefficient	ENG*	[1 to 65535/3300/1]
2-952-002	S_PaperRefresh	ThresholdDist	ENG*	[1 to 65535/2100/10mm]
2-952-003	S_PaperRefresh	W.T.Coefficient	ENG*	[1 to 7100/2280/10]
2-961-001	CleaningOperation	Level 1	ENG	[0 to 1/0/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
2-961-002	CleaningOperation	Level 2	ENG	[0 to 1/0/1]
2-990-001	Duty Control	Counter	ENG*	[0 to 65535/0/1count]
2-990-002	Duty Control	Lower	ENG*	[2000 to 60000/14400/1count]
2-990-003	Duty Control	Upper	ENG*	[2000 to 60000/15840/1count]
2-990-004	Duty Control	OFF/ON	ENG*	[0 to 1/1/1] 0:OFF 1:ON
2-990-005	Duty Control	Accumulation	ENG*	[0 to 65535/0/1count]
2-997-001	PCDU STOP	End Mgn Distance	ENG*	[100000 to 960000000/2000000/10000mm]
2-998-001	Timing Control	T:ReverseRotation	ENG*	[1 to 100/34/1msec]
2-998-002	Timing Control	T:MotorStop	ENG*	[550 to 1000/550/50msec]
2-998-003	Timing Control	T:NormalRotation1	ENG*	[1 to 100/30/1msec]
2-998-004	Timing Control	T:NormalRotation2	ENG*	[1 to 200/100/1msec]

Main SP Tables-3

SP3-XXX (Process)

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
3-098-001	Days Before End	Toner	ENG *	[0 to 2/1/1]
3-501-001	DV Bias Control	On/Off	ENG *	[0 to 1/1/1] 0:OFF 1:ON
3-502-001	C bias Control	On/Off	ENG *	[0 to 1/1/1] 0:OFF 1:ON
3-800-001	Days Before End	Waste Toner	ENG *	[0 to 2/1/1]
3-920-002	Density Adjust	Mode select	ENG *	[0 to 1/0/1]

Main SP Tables-4

SP4-XXX (Scanner)

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
4-008-001	Sub Scan Magnification Adj.		ENG*	[-1 to 1/0/0.1%]
4-010-001	Sub Scan Registration Adj.		ENG*	[-1 to 1/0/0.1mm]
4-011-001	Main Scan Registration Adj.		ENG*	[-2 to 2/0/0.1mm]
4-012-001	Scanner Erase Margin: Scale	Book: Sub Scan Leading Edge (Left)	ENG*	[0 to 3/1/0.1mm]
4-012-002	Scanner Erase Margin: Scale	Book: Sub Scan Trailing Edge (Right)	ENG*	[0 to 3/1/0.1mm]
4-012-003	Scanner Erase Margin: Scale	Book: Main Scan Leading Edge (Rear)	ENG*	[0 to 3/1/0.1mm]
4-012-004	Scanner Erase Margin: Scale	Book: Main Scan Trailing Edge (Front)	ENG*	[0 to 3/1/0.1mm]
4-013-001	Scanner Free Run	Lamp OFF	ENG	[0 to 1/0/1]
4-013-002	Scanner Free Run	Lamp ON	ENG	[0 to 1/0/1]
4-014-001	Scan	HP Detection Enable	ENG	[0 to 1/0/1]
4-014-002	Scan	HP Detection Disable	ENG	[0 to 1/0/1]
4-014-003	Scan	HP Detec. On (FC 600dpi LG)	ENG	[0 to 1/0/1]
4-014-004	Scan	HP Detec. On (BW 600dpi LG)	ENG	[0 to 1/0/1]
4-016-001	DF Scan	FC 600 x 300dpi Duplex Mode	ENG	[0 to 1/0/1STEP]
4-016-002	DF Scan	Bk 600 x 300dpi Duplex Mode	ENG	[0 to 1/0/1STEP]
4-016-003	DF Scan	FC 600 x 600dpi Duplex Mode	ENG	[0 to 1/0/1STEP]
4-016-	DF Scan	Bk 600 x 600dpi Duplex Mode	ENG	[0 to 1/0/1STEP]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
004				
4-016-005	DF Scan	Bk 600 x 200dpi Duplex Mode	ENG	[0 to 1/0/1STEP]
4-016-006	DF Scan	FC 600 x 300dpi Simplex Mode	ENG	[0 to 1/0/1STEP]
4-016-007	DF Scan	Bk 600 x 300dpi Simplex Mode	ENG	[0 to 1/0/1STEP]
4-016-008	DF Scan	FC 600 x 600dpi Simplex Mode	ENG	[0 to 1/0/1STEP]
4-016-009	DF Scan	Bk 600 x 600dpi Simplex Mode	ENG	[0 to 1/0/1STEP]
4-016-010	DF Scan	Bk 600 x 200dpi Simplex Mode	ENG	[0 to 1/0/1STEP]
4-020-001	Dust Check	Dust Detect:On/Off	ENG*	[0 to 1/0/1]
4-020-002	Dust Check	Dust Detect:Lvl	ENG*	[0 to 8/4/1]
4-020-003	Dust Check	Dust Reject:Lvl	ENG*	[0 to 4/0/1]
4-020-011	Dust Check	Dust Detect Level:Rear	ENG*	[0 to 1/0/1]
4-020-012	Dust Check	Correction Level:Rear	ENG*	[0 to 8/4/1]
4-400-001	Original Edge Mask	Book: Sub Scan Leading Edge (Left)	ENG*	[0 to 3/1/0.1mm]
4-400-002	Original Edge Mask	Book: Sub Scan Leading Edge (Right)	ENG*	[0 to 3/1/0.1mm]
4-400-003	Original Edge Mask	Book: Main Scan Leading Edge (Rear)	ENG*	[0 to 3/1/0.1mm]
4-400-004	Original Edge Mask	Book: Main Scan Trailing Edge (Front)	ENG*	[0 to 3/1/0.1mm]
4-400-005	Original Edge Mask	ADF:Sub:L-Edge	ENG*	[0 to 3/1.6/0.1mm]
4-400-007	Original Edge Mask	ADF:Main:Edge	ENG*	[0 to 3/1.6/0.1mm]
4-400-	Original Edge Mask	ADF:Main:T-Edge	ENG*	[0 to 3/1.6/0.1mm]

3. Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
008				
4-417-001	IPU Test Pattern	Test Pattern	ENG	[0 to 8/0/1] 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
4-429-001	Select Copy Data Security	Copying	ENG*	[0 to 3/3/1]
4-429-002	Select Copy Data Security	Scanning	ENG*	[0 to 3/3/1]
4-429-003	Select Copy Data Security	Fax Operation	ENG	[0 to 3/3/1]
4-460-001	Digital AE	Low Limit Value	ENG*	[0 to 1023/364/1]
4-460-002	Digital AE	Background level	ENG*	[512 to 1535/932/1]
4-550-005	Scan Apli:Txt/Print	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15/8/1]
4-550-006	Scan Apli:Txt/Print	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7/4/1]
4-550-007	Scan Apli:Txt/Print	Brightness: 1-255	ENG*	[1 to 255/128/1]
4-550-008	Scan Apli:Txt/Print	Contrast: 1-255	ENG*	[1 to 255/128/1]
4-550-009	Scan Apli:Txt/Print	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7/0/1]
4-551-005	Scan Apli:Txt	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15/8/1]
4-551-006	Scan Apli:Txt	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7/4/1]
4-551-	Scan Apli:Txt	Brightness: 1-255	ENG*	[1 to 255/128/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
007				
4-551-008	Scan Apli:Txt	Contrast: 1-255	ENG*	[1 to 255/128/1]
4-551-009	Scan Apli:Txt	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7/0/1]
4-552-005	Scan Apli:Txt Dropout	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15/8/1]
4-552-006	Scan Apli:Txt Dropout	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7/4/1]
4-552-007	Scan Apli:Txt Dropout	Brightness: 1-255	ENG*	[1 to 255/128/1]
4-552-008	Scan Apli:Txt Dropout	Contrast: 1-255	ENG*	[1 to 255/128/1]
4-552-009	Scan Apli:Txt Dropout	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7/0/1]
4-553-005	Scan Apli:Txt/Photo	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15/8/1]
4-553-006	Scan Apli:Txt/Photo	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7/4/1]
4-553-007	Scan Apli:Txt/Photo	Brightness: 1-255	ENG*	[1 to 255/128/1]
4-553-008	Scan Apli:Txt/Photo	Contrast: 1-255	ENG*	[1 to 255/128/1]
4-553-009	Scan Apli:Txt/Photo	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7/0/1]
4-554-005	Scan Apli:Photo	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15/8/1]
4-554-006	Scan Apli:Photo	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7/4/1]
4-554-007	Scan Apli:Photo	Brightness: 1-255	ENG*	[1 to 255/128/1]
4-554-008	Scan Apli:Photo	Contrast: 1-255	ENG*	[1 to 255/128/1]
4-554-009	Scan Apli:Photo	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7/0/1]
4-565-	Scan Apli:GrayScale	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15/8/1]

3. Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
005				
4-565-006	Scan Apli:GrayScale	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7/4/1]
4-565-007	Scan Apli:GrayScale	Brightness: 1-255	ENG*	[1 to 255/128/1]
4-565-008	Scan Apli:GrayScale	Contrast: 1-255	ENG*	[1 to 255/128/1]
4-565-009	Scan Apli:GrayScale	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7/0/1]
4-570-005	Scan Apli:Col Txt/Photo	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15/8/1]
4-570-006	Scan Apli:Col Txt/Photo	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7/4/1]
4-570-007	Scan Apli:Col Txt/Photo	Brightness: 1-255	ENG*	[1 to 255/128/1]
4-570-008	Scan Apli:Col Txt/Photo	Contrast: 1-255	ENG*	[1 to 255/128/1]
4-570-009	Scan Apli:Col Txt/Photo	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7/0/1]
4-571-005	Scan Apli:Col Gloss Photo	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15/8/1]
4-571-006	Scan Apli:Col Gloss Photo	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7/4/1]
4-571-007	Scan Apli:Col Gloss Photo	Brightness: 1-255	ENG*	[1 to 255/128/1]
4-571-008	Scan Apli:Col Gloss Photo	Contrast: 1-255	ENG*	[1 to 255/128/1]
4-571-009	Scan Apli:Col Gloss Photo	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7/0/1]
4-572-005	Scan Apli:AutoCol	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15/8/1]
4-572-006	Scan Apli:AutoCol	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7/4/1]
4-572-007	Scan Apli:AutoCol	Brightness: 1-255	ENG*	[1 to 255/128/1]
4-572-	Scan Apli:AutoCol	Contrast: 1-255	ENG*	[1 to 255/128/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
008				
4-572-009	Scan Apli:AutoCol	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7/0/1]
4-580-005	Fax Apli:Txt/Chart	MTF: 0(Off) 1-15 (Weak-Strong)	ENG	[0 to 15/8/1]
4-580-006	Fax Apli:Txt/Chart	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG	[0 to 7/4/1]
4-580-007	Fax Apli:Txt/Chart	Brightness: 1-255	ENG	[1 to 255/128/1]
4-580-008	Fax Apli:Txt/Chart	Contrast: 1-255	ENG	[1 to 255/128/1]
4-580-009	Fax Apli:Txt/Chart	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG	[0 to 7/0/1]
4-580-010	Fax Apli:Txt/Chart	Texture Erase: 0	ENG	[0 to 2/0/1]
4-581-005	Fax Apli:Txt	MTF: 0(Off) 1-15 (Weak-Strong)	ENG	[0 to 15/8/1]
4-581-006	Fax Apli:Txt	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG	[0 to 7/4/1]
4-581-007	Fax Apli:Txt	Brightness: 1-255	ENG	[1 to 255/128/1]
4-581-008	Fax Apli:Txt	Contrast: 1-255	ENG	[1 to 255/128/1]
4-581-009	Fax Apli:Txt	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG	[0 to 7/0/1]
4-582-005	Fax Apli:Txt/Photo	MTF: 0(Off) 1-15 (Weak-Strong)	ENG	[0 to 15/8/1]
4-582-006	Fax Apli:Txt/Photo	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG	[0 to 7/4/1]
4-582-007	Fax Apli:Txt/Photo	Brightness: 1-255	ENG	[1 to 255/128/1]
4-582-008	Fax Apli:Txt/Photo	Contrast: 1-255	ENG	[1 to 255/128/1]
4-582-009	Fax Apli:Txt/Photo	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG	[0 to 7/0/1]
4-582-	Fax Apli:Txt/Photo	Texture Erase: 0	ENG	[0 to 2/0/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
010				
4-583-005	Fax Apli:Photo	MTF: 0(Off) 1-15 (Weak-Strong)	ENG	[0 to 15/8/1]
4-583-006	Fax Apli:Photo	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG	[0 to 7/4/1]
4-583-007	Fax Apli:Photo	Brightness: 1-255	ENG	[1 to 255/128/1]
4-583-008	Fax Apli:Photo	Contrast: 1-255	ENG	[1 to 255/128/1]
4-583-009	Fax Apli:Photo	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG	[0 to 7/0/1]
4-583-010	Fax Apli:Photo	Texture Erase: 0	ENG	[0 to 2/0/1]
4-584-005	Fax Apli:Original 1	MTF: 0(Off) 1-15 (Weak-Strong)	ENG	[0 to 15/8/1]
4-584-006	Fax Apli:Original 1	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG	[0 to 7/4/1]
4-584-007	Fax Apli:Original 1	Brightness: 1-255	ENG	[1 to 255/128/1]
4-584-008	Fax Apli:Original 1	Contrast: 1-255	ENG	[1 to 255/128/1]
4-584-009	Fax Apli:Original 1	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG	[0 to 7/0/1]
4-585-005	Fax Apli:Original 2	MTF: 0(Off) 1-15 (Weak-Strong)	ENG	[0 to 15/8/1]
4-585-006	Fax Apli:Original 2	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG	[0 to 7/4/1]
4-585-007	Fax Apli:Original 2	Brightness: 1-255	ENG	[1 to 255/128/1]
4-585-008	Fax Apli:Original 2	Contrast: 1-255	ENG	[1 to 255/128/1]
4-585-009	Fax Apli:Original 2	Independent Dot Erase (0)/ 1-7 (Strong)	ENG	[0 to 7/0/1]
4-600-001	SCN Version Display	SCN ID	ENG	[0x00 to 0xFF/0/1]
4-609-	Gray Balance Set: R	Book Scan	ENG*	[-384 to 255/-]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
001				100/1 digit]
4-609-002	Gray Balance Set: R	DF Scan	ENG*	[-384 to 255/-100/1 digit]
4-610-001	Gray Balance Set: G	Book Scan	ENG*	[-384 to 255/-100/1 digit]
4-610-002	Gray Balance Set: G	DF Scan	ENG*	[-384 to 255/-100/1 digit]
4-611-001	Gray Balance Set: B	Book Scan	ENG*	[-384 to 255/-100/1 digit]
4-611-002	Gray Balance Set: B	DF Scan	ENG*	[-384 to 255/-100/1 digit]
4-646-001	Scan Adjust Error	White level	ENG*	[0 to 65535/0/1]
4-646-002	Scan Adjust Error	Black level	ENG*	[0 to 65535/0/1]
4-647-001	Scanner Hard Error	Power-ON	ENG	[0 to 65535/0/1]
4-688-002	DF Density Adjustment	1-Pass	ENG*	[80 to 120/100/1%]
4-703-001	Scan Mode Selection	Copying	ENG	[0 to 1/0/1]
4-703-002	Scan Mode Selection	Scanning	ENG	[0 to 1/0/1]
4-712-001	CIS GB Adj. Value: R		ENG*	[-384 to 255/-89/1 digit]
4-713-001	CIS GB Adj. Value: G		ENG*	[-384 to 255/-76/1 digit]
4-714-001	CIS GB Adj. Value: B		ENG*	[-384 to 255/-85/1 digit]
4-723-001	OUTPUT Check	Scanner Lamp: Color	ENG	[0 to 1/0/1]
4-745-001	CIS Scan Adjust Error	White level	ENG	[0 to 65535/0/1]
4-745-002	CIS Scan Adjust Error	Black level	ENG	[0 to 65535/0/1]
4-746-	CIS GB Adj Error Flag		ENG	[0 to 7/0/1]

3. Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
001				
4-747-001	CIS Scanner Hard Error	Power-ON	ENG	[0 to 65535/0/1]
4-785-001	White Level Adjust	Color	ENG*	[0 to 1024/707/1 digit]
4-796-001	Low Density Color Correction	Front Side	ENG*	[0 to 3/0/1] 0:OFF 1:WEAK 2:MEDIUM 3:STRONG
4-796-002	Low Density Color Correction	Rear Side	ENG*	[0 to 3/0/1] 0:OFF 1:WEAK 2:MEDIUM 3:STRONG
4-797-001	Rear Side: Digital AE	Low Limit Setting	ENG*	[0 to 1023/364/1]
4-797-002	Rear Side: Digital AE	Background Erase Level	ENG*	[512 to 1535/932/1]
4-799-001	CIS Test Pattern Change		ENG	[0 to 255/0/1]
4-802-001	DF Shading FreeRun	Lamp OFF	ENG	[0 to 1/0/1]
4-802-002	DF Shading FreeRun	Lamp ON	ENG	[0 to 1/0/1]
4-803-001	Home Position Adjustment		ENG*	[-1.5 to 1/0/0.1mm]
4-804-001	Home Position		ENG	[0 to 1/0/1]
4-806-001	Carriage Retract Operation		ENG	[0 to 1/0/1]
4-903-001	Filter Setting	Ind Dot Erase: Text	ENG*	[0 to 7/0/1]
4-903-002	Filter Setting	Ind Dot Erase: Generation Copy	ENG*	[0 to 7/0/1]
4-905-	Select Gradation Level		ENG*	[0 to 255/0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
001				
4-918-009	Man Gamma Adj		ENG	[0 to 0/0/0]
4-938-005	ACS:Edge Mask	Scan:Sub LEdge	ENG*	[0 to 31/30/1]
4-938-006	ACS:Edge Mask	Scan:Sub TEdge	ENG*	[0 to 31/15/1]
4-938-007	ACS:Edge Mask	Scan:Main LEdge	ENG*	[0 to 31/15/1]
4-938-008	ACS:Edge Mask	Scan:Main TEdge	ENG*	[0 to 31/15/1]
4-939-001	ACS:Color Range		ENG*	[-2 to 2/0/1]
4-993-001	High Light Correction	Sensitivity Selection	ENG*	[0 to 9/4/1]
4-993-002	High Light Correction	Range Selection	ENG*	[0 to 9/4/1]
4-994-001	Adj Txt/Photo Recog Level	High Compression PDF	ENG*	[0 to 2/1/1]
4-996-001	White Paper Detection Level		ENG*	[0 to 6/3/1]

Main SP Tables-5 (Engine)

SP5-XXX (Mode)

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-801-002	Memory Clear	Engine	ENG	[0 to 1/0/1]
5-803-001	INPUT Check	Paper Size	ENG	[0 to 15/0/1]
5-803-002	INPUT Check	Paper End	ENG	[0 to 1/0/1]
5-803-003	INPUT Check	Bypass:Paper End	ENG	[0 to 1/0/1]
5-803-004	INPUT Check	Bypass:Tray	ENG	[0 to 1/0/1]
5-803-005	INPUT Check	Paper Exit Full	ENG	[0 to 1/0/1]
5-803-006	INPUT Check	Paper Exit	ENG	[0 to 1/0/1]
5-803-008	INPUT Check	Registration	ENG	[0 to 1/0/1]
5-803-010	INPUT Check	Duplex:Entrance	ENG	[0 to 1/0/1]
5-803-011	INPUT Check	Duplex:Reverse	ENG	[0 to 1/0/1]
5-803-012	INPUT Check	Rear Interlock	ENG	[0 to 1/0/1]
5-803-013	INPUT Check	Front Interlock	ENG	[0 to 1/0/1]
5-803-017	INPUT Check	Fusing Unit New	ENG	[0 to 1/0/1]
5-803-018	INPUT Check	Fusing Unit Set	ENG	[0 to 1/0/1]
5-803-019	INPUT Check	HVP: SC_C_DV	ENG	[0 to 1/0/1]
5-803-020	INPUT Check	HVP: SC_T	ENG	[0 to 1/0/1]
5-803-022	INPUT Check	PSU Fan Lock	ENG	[0 to 1/0/1]
5-803-023	INPUT Check	Fusing Fan Lock	ENG	[0 to 1/0/1]
5-803-024	INPUT Check	Drum Fan Lock	ENG	[0 to 1/0/1]
5-803-025	INPUT Check	Main Motor Lock	ENG	[0 to 1/0/1]
5-803-026	INPUT Check	Key Card Set	ENG	[0 to 1/0/1]
5-803-027	INPUT Check	BiCU Ver	ENG	[0 to 7/0/1]
5-803-028	INPUT Check	Key Counter Set1	ENG	[0 to 1/0/1]
5-803-029	INPUT Check	Key Counter Set2	ENG	[0 to 1/0/1]
5-803-083	INPUT Check	BANK1:500/250	ENG	[0 to 1/0/1]
5-803-084	INPUT Check	BANK2:500/250	ENG	[0 to 1/0/1]
5-803-087	INPUT Check	BANK1:Relay SN	ENG	[0 to 1/0/1]
5-803-088	INPUT Check	BANK2:Relay SN	ENG	[0 to 1/0/1]
5-803-092	INPUT Check	BANK1:Paper End	ENG	[0 to 1/0/1]
5-803-093	INPUT Check	BANK2:Paper End	ENG	[0 to 1/0/1]
5-803-094	INPUT Check	BANK1:Paper Size	ENG	[0 to 7/0/1]
5-803-095	INPUT Check	BANK2:Paper Size	ENG	[0 to 7/0/1]
5-803-200	INPUT Check	Scanner HP Sensor	ENG	[0 to 1/0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-803-201	INPUT Check	Platen Cover Sensor	ENG	[0 to 1/0/1]
5-804-001	OUTPUT Check	All Off	ENG	[0 to 1/0/1]
5-804-002	OUTPUT Check	MainMT: CW:High	ENG	[0 to 1/0/1]
5-804-003	OUTPUT Check	MainMT: CW:Mid	ENG	[0 to 1/0/1]
5-804-004	OUTPUT Check	MainMT: CW:Low	ENG	[0 to 1/0/1]
5-804-005	OUTPUT Check	MainMT: CCW:High	ENG	[0 to 1/0/1]
5-804-006	OUTPUT Check	MainMT: CCW:Mid	ENG	[0 to 1/0/1]
5-804-007	OUTPUT Check	MainMT: CCW:Low	ENG	[0 to 1/0/1]
5-804-009	OUTPUT Check	PSU Fan	ENG	[0 to 1/0/1]
5-804-010	OUTPUT Check	Fusing Fan: High	ENG	[0 to 1/0/1]
5-804-011	OUTPUT Check	Fusing Fan: Low	ENG	[0 to 1/0/1]
5-804-012	OUTPUT Check	Drum Fan: High	ENG	[0 to 1/0/1]
5-804-013	OUTPUT Check	Drum Fan: Low	ENG	[0 to 1/0/1]
5-804-014	OUTPUT Check	Registration CL	ENG	[0 to 1/0/1]
5-804-015	OUTPUT Check	Paper Feed CL	ENG	[0 to 1/0/1]
5-804-016	OUTPUT Check	Feed Connect CL	ENG	[0 to 1/0/1]
5-804-017	OUTPUT Check	Duplex CL	ENG	[0 to 1/0/1]
5-804-018	OUTPUT Check	Bypass:Feed CL	ENG	[0 to 1/0/1]
5-804-019	OUTPUT Check	Bypass:Tray CL	ENG	[0 to 1/0/1]
5-804-020	OUTPUT Check	Toner Supply CL	ENG	[0 to 1/0/1]
5-804-021	OUTPUT Check	Exit Junc SOL	ENG	[0 to 1/0/1]
5-804-023	OUTPUT Check	HVP: Charge	ENG	[0 to 1/0/1]
5-804-024	OUTPUT Check	HVP: Development	ENG	[0 to 1/0/1]
5-804-025	OUTPUT Check	HVP: Transfer: -	ENG	[0 to 1/0/1]
5-804-026	OUTPUT Check	HVP: Transfer: +	ENG	[0 to 1/0/1]
5-804-027	OUTPUT Check	BICTL	ENG	[0 to 1/0/1]
5-804-029	OUTPUT Check	Toner End Sensor	ENG	[0 to 1/0/1]
5-804-030	OUTPUT Check	ExtRevMt:HOLD	ENG	[0 to 1/0/1]
5-804-031	OUTPUT Check	ExtRevMt: CW:Hi	ENG	[0 to 1/0/1]
5-804-032	OUTPUT Check	ExtRevMt: CW:Mid	ENG	[0 to 1/0/1]
5-804-033	OUTPUT Check	ExtRevMt: CW:Low	ENG	[0 to 1/0/1]
5-804-034	OUTPUT Check	ExtRevMt: CCW:Hi	ENG	[0 to 1/0/1]
5-804-035	OUTPUT Check	ExtRevMt: CCW:Mid	ENG	[0 to 1/0/1]
5-804-036	OUTPUT Check	ExtRevMt: CCW:Low	ENG	[0 to 1/0/1]
5-804-163	OUTPUT Check	BANK1:Motor:High	ENG	[0 to 1/0/1]
5-804-164	OUTPUT Check	BANK1:Motor:Mid	ENG	[0 to 1/0/1]
5-804-165	OUTPUT Check	BANK2:Motor:High	ENG	[0 to 1/0/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-804-166	OUTPUT Check	BANK2:Motor:Mid	ENG	[0 to 1/0/1]
5-804-169	OUTPUT Check	BANK1:Feed CL	ENG	[0 to 1/0/1]
5-804-170	OUTPUT Check	BANK2:Feed CL	ENG	[0 to 1/0/1]
5-804-202	OUTPUT Check	Scanner Lamp	ENG	[0 to 1/0/1]
5-810-001	SC Reset	Fusing SC Reset	ENG	[0 to 1/0/1]
5-811-002	MachineSerial	Display	ENG*	[0 to 255/0/1]
5-811-004	MachineSerial	BCU	ENG	[0 to 255/0/1]
5-894-001	ExternalCountSet	SW Charge Mode	ENG*	[0 to 2/0/1]
5-900-001	Engine Log Upload	Pattern	ENG*	[0 to 4/0/1]
5-900-002	Engine Log Upload	Trigger	ENG*	[0 to 3/0/1]
5-930-001	MeterClick Charge	Setting	ENG*	[0 to 1/0/1] 0:No 1:Yes
5-931-001	Life Alert Disp.	Maintenance Kit	ENG*	[0 to 1/0/1] 0:No 1:Yes
5-931-002	Life Alert Disp.	PCDU	ENG*	[0 to 1/NA:0, other:1/1] 0:No 1:Yes
5-931-003	Life Alert Disp.	PCDU STOP	ENG*	[0 to 1/NA:0, other:1/1] 0:No 1:Yes
5-987-001	Mech. Counter	0:OFF / 1:ON	ENG*	[0 to 1/0/1]

Main SP Tables-5 (Controller)

SP5-XXX (Mode)

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-009-201	Add display language	1-8	CTL*	[0 to 255/0/1]
5-009-202	Add display language	9-16	CTL*	[0 to 255/0/1]
5-009-203	Add display language	17-24	CTL*	[0 to 255/0/1]
5-009-204	Add display language	25-32	CTL*	[0 to 255/0/1]
5-009-205	Add display language	33-40	CTL*	[0 to 255/0/1]
5-009-206	Add display language	41-48	CTL*	[0 to 255/0/1]
5-009-207	Add display language	49-56	CTL*	[0 to 255/0/1]
5-024-001	mm/inch Display Selection	0:mm 1:inch	CTL*	[0 to 1/NA:1, other:0/1]
5-045-001	Accounting counter	Counter Method	CTL*	[0 to 7/0/1]
5-051-001	TonerRefillDetectionDisplay		CTL*	[0 to 1/0/1]
5-055-	Display IP address		CTL*	[0 to 1/0/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
001				
5-071-001	Set Bypass Paper Size Display		CTL	[0 to 1/0/1]
5-074-002	Home Key Customization	Login Setting	CTL*	[0 to 255/0/1]
5-074-050	Home Key Customization	Show Home Edit Menu	CTL	[0 to 2/0/1]
5-074-091	Home Key Customization	Function Setting	CTL*	[0 to 2/0/1]
5-074-092	Home Key Customization	Product ID	CTL*	[0 to 0xffffffff/0/1]
5-074-093	Home Key Customization	Application Screen ID	CTL*	[0 to 255/0/1]
5-075-003	USB Keyboard	Display setting	CTL*	[0 to 1/0/1]
5-076-001	Copy:LT/LG Mixed Sizes Setting	0:OFF 1:ON	CTL*	[0 to 1/NA:1, other:0/1]
5-081-001	ServiceSP Entry Code Setting		CTL*	[0 to 0/0/0]
5-083-001	LED Light Switch Setting	Toner Near End	CTL*	[0 to 1/0/1]
5-083-002	LED Light Switch Setting	Waste Toner Near End	CTL*	[0 to 1/0/1]
5-	Copy Auto Clear Setting	Auto Clear Timer Setting	CTL*	[0 to 1/0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
101-202		(0:ON 1:OFF)		
5-113-001	Optional Counter Type	Default Optional Counter Type	CTL*	[0 to 12/0/1]
5-113-002	Optional Counter Type	External Optional Counter Type	CTL*	[0 to 3/0/1]
5-114-001	Optional Counter I/F	MF Key Card Extension	CTL*	[0 to 1/0/1]
5-118-001	Disable Copying		CTL*	[0 to 1/0/1]
5-120-001	Mode Clear Opt. Counter Removal	0:Yes 1:StandBy 2:No	CTL*	[0 to 2/0/1]
5-121-001	Counter Up Timing	0:Feed 1:Exit	CTL*	[0 to 1/0/1]
5-127-001	APS OFF Mode		CTL*	[0 to 1/0/1]
5-167-001	Fax Printing Mode at Optional Counter Off		CTL*	[0 to 1/0/1]
5-169-001	CE Login		CTL*	[0 to 1/0/1]
5-188-001	Copy Nv Version		CTL*	[0 to 0/0/0]
5-191-001	Mode Set	Power Str Set	CTL*	[0 to 1/1/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-195-001	Limitless SW		CTL*	[0 to 1/0/1]
5-212-003	Page Numbering	Duplex Printout Left/Right Position of Left/Right Facing	CTL*	[-1000 to 1000/0/0.01mm]
5-212-004	Page Numbering	Duplex Printout Top/Bottom Position of Left/Right Facing	CTL*	[-1000 to 1000/0/0.01mm]
5-212-018	Page Numbering	Duplex Printout Left/Right Position of Top/Bottom Facing	CTL*	[-1000 to 1000/0/0.01mm]
5-212-019	Page Numbering	Duplex Printout Top/Bottom Position of Top/Bottom Facing	CTL*	[-1000 to 1000/0/0.01mm]
5-227-201	Page Numbering	Allow Page No. Entry	CTL*	[2 to 9/9/1]
5-227-202	Page Numbering	Zero Surplus Setting	CTL*	[0 to 1/0/1]
5-302-002	Set Time	Time Difference	CTL*	[-1440 to 1440/NA: -300, EU: 60, KOR:540, Other: 480/1]
5-305-101	Auto Off Set	Auto Off Limit Set	CTL*	[0 to 1/1/1]
5-307-001	Daylight Saving Time	Setting	CTL*	[0 to 1/NA/EU:1, Other:0/1]
5-307-003	Daylight Saving Time	Rule Set(Start)	CTL*	[0 to 0xffffffff/NA: 0x03200210 EU: 0x03500010 AA: 0x10500010 Other: 0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-307-004	Daylight Saving Time	Rule Set(End)	CTL*	[0 to 0xffffffff/NA: 0x11100200 EU: 0x10500100 AA: 0x03100000 Other: 0/1]
5-401-103	Access Control	Default Document ACL	CTL*	[0 to 3/0/1]
5-401-104	Access Control	Authentication Time	CTL*	[0 to 255/0/1 sec]
5-401-162	Access Control	Extend Certification Detail	CTL*	[0 to 0xff/0/1]
5-401-200	Access Control	SDK1 UniqueID	CTL*	[0 to 0xFFFFFFFF/0/1]
5-401-201	Access Control	SDK1 Certification Method	CTL*	[0 to 0xFF/0/1]
5-401-210	Access Control	SDK2 UniqueID	CTL*	[0 to 0xFFFFFFFF/0/1]
5-401-211	Access Control	SDK2 Certification Method	CTL*	[0 to 0xFF/0/1]
5-401-220	Access Control	SDK3 UniqueID	CTL*	[0 to 0xFFFFFFFF/0/1]
5-401-221	Access Control	SDK3 Certification Method	CTL*	[0 to 0xFF/0/1]
5-401-230	Access Control	SDK Certification Device	CTL*	[0 to 0xff/0/1]

3. Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-401-240	Access Control	Detail Option	CTL*	[0 to 0xff/0/1]
5-402-101	Access Control	SDKJ1 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-102	Access Control	SDKJ2 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-103	Access Control	SDKJ3 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-104	Access Control	SDKJ4 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-105	Access Control	SDKJ5 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-106	Access Control	SDKJ6 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-107	Access Control	SDKJ7 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-108	Access Control	SDKJ8 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-109	Access Control	SDKJ9 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-110	Access Control	SDKJ10 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-	Access Control	SDKJ11 Limit Setting	CTL*	[0 to 0xFF/0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
111				
5-402-112	Access Control	SDKJ12 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-113	Access Control	SDKJ13 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-114	Access Control	SDKJ14 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-115	Access Control	SDKJ15 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-116	Access Control	SDKJ16 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-117	Access Control	SDKJ17 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-118	Access Control	SDKJ18 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-119	Access Control	SDKJ19 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-120	Access Control	SDKJ20 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-121	Access Control	SDKJ21 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-122	Access Control	SDKJ22 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-	Access Control	SDKJ23 Limit Setting	CTL*	[0 to 0xFF/0/1]

3. Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
402-123				
5-402-124	Access Control	SDKJ24 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-125	Access Control	SDKJ25 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-126	Access Control	SDKJ26 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-127	Access Control	SDKJ27 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-128	Access Control	SDKJ28 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-129	Access Control	SDKJ29 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-130	Access Control	SDKJ30 Limit Setting	CTL*	[0 to 0xFF/0/1]
5-402-141	Access Control	SDKJ1 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-142	Access Control	SDKJ2 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-143	Access Control	SDKJ3 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-144	Access Control	SDKJ4 ProductID	CTL*	[0 to 0xffffffff/0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-402-145	Access Control	SDKJ5 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-146	Access Control	SDKJ6 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-147	Access Control	SDKJ7 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-148	Access Control	SDKJ8 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-149	Access Control	SDKJ9 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-150	Access Control	SDKJ10 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-151	Access Control	SDKJ11 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-152	Access Control	SDKJ12 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-153	Access Control	SDKJ13 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-154	Access Control	SDKJ14 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-155	Access Control	SDKJ15 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-	Access Control	SDKJ16 ProductID	CTL*	[0 to 0xffffffff/0/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
156				
5-402-157	Access Control	SDKJ17 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-158	Access Control	SDKJ18 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-159	Access Control	SDKJ19 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-160	Access Control	SDKJ20 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-161	Access Control	SDKJ21 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-162	Access Control	SDKJ22 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-163	Access Control	SDKJ23 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-164	Access Control	SDKJ24 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-165	Access Control	SDKJ25 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-166	Access Control	SDKJ26 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-167	Access Control	SDKJ27 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-	Access Control	SDKJ28 ProductID	CTL*	[0 to 0xffffffff/0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
402-168				
5-402-169	Access Control	SDKJ29 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-402-170	Access Control	SDKJ30 ProductID	CTL*	[0 to 0xffffffff/0/1]
5-404-001	User Code Count Clear	User Code Count Clear	CTL	[0 to 0/0/0]
5-404-101	User Code Count Clear	User Code Count Clear Permit Setting	CTL*	[0 to 1/0/1]
5-411-004	LDAP-Certification	Simplified Authentication	CTL*	[0 to 1/1/1]
5-411-005	LDAP-Certification	Password Null Not Permit	CTL*	[0 to 1/1/1]
5-411-006	LDAP-Certification	Detail Option	CTL*	[0 to 0xff/0/1]
5-412-100	Krb-Certification	Encrypt Mode	CTL*	[0 to 0xFF/0x1F/1]
5-413-001	Lockout Setting	Lockout On/Off	CTL*	[0 to 1/0/1]
5-413-002	Lockout Setting	Lockout Threshold	CTL*	[1 to 10/5/1]
5-413-003	Lockout Setting	Cancellation On/Off	CTL*	[0 to 1/0/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-413-004	Lockout Setting	Cancellation Time	CTL*	[1 to 9999/60/1 min]
5-414-001	Access Mitigation	Mitigation On/Off	CTL*	[0 to 1/0/1]
5-414-002	Access Mitigation	Mitigation Time	CTL*	[0 to 60/15/1 min]
5-415-001	Password Attack	Permissible Number	CTL*	[0 to 100/30/1]
5-415-002	Password Attack	Detect Time	CTL*	[1 to 10/5/1]
5-416-001	Access Information	Access User Max Num	CTL*	[50 to 200/200/1]
5-416-002	Access Information	Access Password Max Num	CTL*	[50 to 200/200/1]
5-416-003	Access Information	Monitor Interval	CTL*	[1 to 10/3/1]
5-417-001	Access Attack	Access Permissible Number	CTL*	[0 to 500/100/1]
5-417-002	Access Attack	Attack Detect Time	CTL*	[10 to 30/10/1 sec]
5-417-003	Access Attack	Productivity Fall Waite	CTL*	[0 to 9/3/1 sec]
5-417-	Access Attack	Attack Max Num	CTL*	[50 to 200/200/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
004				
5-420-001	User Authentication	Copy	CTL*	[0 to 1/0/1]
5-420-011	User Authentication	DocumentServer	CTL*	[0 to 1/0/1]
5-420-021	User Authentication	Fax	CTL*	[0 to 1/0/1]
5-420-031	User Authentication	Scanner	CTL*	[0 to 1/0/1]
5-420-041	User Authentication	Printer	CTL*	[0 to 1/0/1]
5-420-051	User Authentication	SDK1	CTL*	[0 to 1/0/1]
5-420-061	User Authentication	SDK2	CTL*	[0 to 1/0/1]
5-420-071	User Authentication	SDK3	CTL*	[0 to 1/0/1]
5-420-081	User Authentication	Browser	CTL*	[0 to 1/0/1]
5-430-001	Auth Dialog Message Change	Message Change On/Off	CTL*	[0 to 1/0/1]
5-430-002	Auth Dialog Message Change	Message Text Download	CTL	[0 to 0/0/0]
5-	Auth Dialog Message	Message Text ID	CTL	[0 to 0/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
430-003	Change			
5-431-010	External Auth User Preset	Tag	CTL*	[0 to 1/1/1]
5-431-011	External Auth User Preset	Entry	CTL*	[0 to 1/1/1]
5-431-012	External Auth User Preset	Group	CTL*	[0 to 1/1/1]
5-431-020	External Auth User Preset	Mail	CTL*	[0 to 1/1/1]
5-431-030	External Auth User Preset	Fax	CTL*	[0 to 1/1/1]
5-431-031	External Auth User Preset	FaxSub	CTL*	[0 to 1/1/1]
5-431-032	External Auth User Preset	Folder	CTL*	[0 to 1/1/1]
5-431-033	External Auth User Preset	ProtectCode	CTL*	[0 to 1/1/1]
5-431-034	External Auth User Preset	SmtpAuth	CTL*	[0 to 1/1/1]
5-431-035	External Auth User Preset	LdapAuth	CTL*	[0 to 1/1/1]
5-431-036	External Auth User Preset	Smb Ftp Fldr Auth	CTL*	[0 to 1/1/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-431-037	External Auth User Preset	AcntAcl	CTL*	[0 to 1/1/1]
5-431-038	External Auth User Preset	DocumentAcl	CTL*	[0 to 1/1/1]
5-431-040	External Auth User Preset	CertCrypt	CTL*	[0 to 1/0/1]
5-431-050	External Auth User Preset	UserLimitCount	CTL*	[0 to 1/1/1]
5-481-001	Authentication Error Code	System Log Disp	CTL*	[0 to 1/0/1]
5-481-002	Authentication Error Code	Panel Disp	CTL*	[0 to 1/1/1]
5-490-001	MF KeyCard	Job Permit Setting	CTL*	[0 to 1/0/1]
5-491-001	Optional Counter	Detail Option	CTL*	[0 to 0xff/0/1]
5-501-001	PM Alarm	PM Alarm Level	CTL*	[0 to 9999/0/1]
5-501-002	PM Alarm	Original Count Alarm	CTL*	[0 to 1/0/1]
5-504-001	Jam Alarm		CTL*	[0 to 3/3/1]
5-504-	Jam Alarm	Threshold	CTL*	[1 to 99/10/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
002				
5-505-001	Error Alarm		CTL*	[0 to 255/19/1]
5-505-002	Error Alarm	Threshold	CTL*	[1 to 99/5/1]
5-507-001	Supply/CC Alarm	Paper Supply Alarm	CTL*	[0 to 1/0/1]
5-507-003	Supply/CC Alarm	Toner Supply Alarm	CTL*	[0 to 1/1/1]
5-507-004	Supply/CC Alarm	MaintenanceKit	CTL*	[0 to 2/2/1]
5-507-005	Supply/CC Alarm	DrumLifeRemain	CTL*	[0 to 2/2/1]
5-507-006	Supply/CC Alarm	WasteTonerBottle Supply Alarm	CTL*	[0 to 1/1/1]
5-507-080	Supply/CC Alarm	Toner Call Timing	CTL*	[0 to 1/0/1]
5-507-081	Supply/CC Alarm	Toner Call Threshold	CTL*	[10 to 90/10/10%]
5-507-128	Supply/CC Alarm	Interval: Others	CTL*	[250 to 10000/1000/1]
5-507-133	Supply/CC Alarm	Interval: A4	CTL*	[250 to 10000/1000/1]
5-	Supply/CC Alarm	Interval: A5	CTL*	[250 to 10000/1000/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
507-134				
5-507-142	Supply/CC Alarm	Interval: B5	CTL*	[250 to 10000/1000/1]
5-507-164	Supply/CC Alarm	Interval: LG	CTL*	[250 to 10000/1000/1]
5-507-166	Supply/CC Alarm	Interval: LT	CTL*	[250 to 10000/1000/1]
5-507-172	Supply/CC Alarm	Interval: HLT	CTL*	[250 to 10000/1000/1]
5-508-001	CC Call	Jam Remains	CTL*	[0 to 1/1/1]
5-508-002	CC Call	Continuous Jams	CTL*	[0 to 1/1/1]
5-508-003	CC Call	Continuous Door Open	CTL*	[0 to 1/1/1]
5-508-011	CC Call	Jam Detection: Time Length	CTL*	[3 to 30/10/1]
5-508-012	CC Call	Jam Detection: Continuous Count	CTL*	[2 to 10/5/1]
5-508-013	CC Call	Door Open: Time Length	CTL*	[3 to 30/10/1]
5-515-001	SC/Alarm Setting	SC Call	CTL*	[0 to 1/1/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-515-002	SC/Alarm Setting	Service Parts Near End Call	CTL*	[0 to 1/1/1]
5-515-003	SC/Alarm Setting	Service Parts End Call	CTL*	[0 to 1/1/1]
5-515-004	SC/Alarm Setting	User Call	CTL*	[0 to 1/1/1]
5-515-006	SC/Alarm Setting	Communication Test Call	CTL*	[0 to 1/1/1]
5-515-007	SC/Alarm Setting	Machine Information Notice	CTL*	[0 to 1/1/1]
5-515-008	SC/Alarm Setting	Alarm Notice	CTL*	[0 to 1/1/1]
5-515-009	SC/Alarm Setting	Non Genuine Tonner Ararm	CTL*	[0 to 1/1/1]
5-515-010	SC/Alarm Setting	Supply Automatic Ordering Call	CTL*	[0 to 1/1/1]
5-515-011	SC/Alarm Setting	Supply Management Report Call	CTL*	[0 to 1/1/1]
5-515-012	SC/Alarm Setting	Jam/Door Open Call	CTL*	[0 to 1/1/1]
5-515-050	SC/Alarm Setting	Timeout:Manual Call	CTL*	[1 to 255/5/1min]
5-515-	SC/Alarm Setting	Timeout:Other Call	CTL*	[1 to 255/10/1min]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
051				
5-517-061	Get Machine Information	AutoDiscovery Execution Setting	CTL*	[0 to 1/0/1]
5-517-062	Get Machine Information	AutoDiscovery Execution Interval	CTL*	[0 to 1/0/1]
5-517-063	Get Machine Information	AutoDiscovery Execution Weekday	CTL*	[0 to 6/0/1]
5-517-064	Get Machine Information	AutoDiscovery Execution Hour	CTL*	[0 to 23/0/1]
5-517-065	Get Machine Information	AutoDiscovery Execution Minute	CTL*	[0 to 59/0/1]
5-517-066	Get Machine Information	AutoDiscovery SNMP Community Name	CTL*	[0 to 0/0/0]
5-728-001	Network Setting	NAT Machine Port1	CTL*	[1 to 65535/49101/1]
5-728-002	Network Setting	NAT UI Port1	CTL*	[1 to 65535/55101/1]
5-728-003	Network Setting	NAT Machine Port2	CTL*	[1 to 65535/49102/1]
5-728-004	Network Setting	NAT UI Port2	CTL*	[1 to 65535/55102/1]
5-728-005	Network Setting	NAT Machine Port3	CTL*	[1 to 65535/49103/1]
5-	Network Setting	NAT UI Port3	CTL*	[1 to 65535/55103/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
728-006				
5-728-007	Network Setting	NAT Machine Port4	CTL*	[1 to 65535/49104/1]
5-728-008	Network Setting	NAT UI Port4	CTL*	[1 to 65535/55104/1]
5-728-009	Network Setting	NAT Machine Port5	CTL*	[1 to 65535/49105/1]
5-728-010	Network Setting	NAT UI Port5	CTL*	[1 to 65535/55105/1]
5-728-011	Network Setting	NAT Machine Port6	CTL*	[1 to 65535/49106/1]
5-728-012	Network Setting	NAT UI Port6	CTL*	[1 to 65535/55106/1]
5-728-013	Network Setting	NAT Machine Port7	CTL*	[1 to 65535/49107/1]
5-728-014	Network Setting	NAT UI Port7	CTL*	[1 to 65535/55107/1]
5-728-015	Network Setting	NAT Machine Port8	CTL*	[1 to 65535/49108/1]
5-728-016	Network Setting	NAT UI Port8	CTL*	[1 to 65535/55108/1]
5-728-017	Network Setting	NAT Machine Port9	CTL*	[1 to 65535/49109/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-728-018	Network Setting	NAT UI Port9	CTL*	[1 to 65535/55109/1]
5-728-019	Network Setting	NAT Machine Port10	CTL*	[1 to 65535/49110/1]
5-728-020	Network Setting	NAT UI Port10	CTL*	[1 to 65535/55110/1]
5-728-101	Network Setting	PacketCapture	CTL*	[0 to 1/0/1]
5-728-102	Network Setting	PacketCapture:mode	CTL*	[0 to 1/0/1]
5-728-103	Network Setting	PacketCapture:interface	CTL*	[0 to 3/0/1]
5-728-104	Network Setting	PacketCapture:length	CTL*	[54 to 65535/128/1]
5-728-105	Network Setting	PacketCapture:broadcast	CTL*	[0 to 1/0/1]
5-728-106	Network Setting	PacketCapture:specify port	CTL*	[0 to 1/0/1]
5-728-107	Network Setting	PacketCapture:portnumber	CTL*	[0 to 65535/0/1]
5-728-108	Network Setting	PacketCapture:time	CTL*	[0 to 0xffffffff/0/1]
5-730-	Extended Function Setting	JavaTM Platform setting	CTL*	[0 to 1/1/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
001				
5-730-010	Extended Function Setting	Expiration Prior Alarm Set	CTL*	[0 to 999/20/1 days]
5-731-001	Counter Effect	Change Mk1 Cnt(Paper->Combine)	CTL*	[0 to 1/0/1]
5-734-001	PDF Setting	PDF/A Fixed	CTL*	[0 to 1/0/1]
5-741-001	Node Authentication Timuout		CTL*	[1 to 255/60/1 sec]
5-745-211	DeemedPowerConsumption	Controller Standby	CTL*	[0 to 9999/0/1]
5-745-212	DeemedPowerConsumption	STR	CTL*	[0 to 9999/0/1]
5-745-213	DeemedPowerConsumption	Main Power Off	CTL*	[0 to 9999/0/1]
5-745-214	DeemedPowerConsumption	Scanning and Printing	CTL*	[0 to 9999/0/1]
5-745-215	DeemedPowerConsumption	Printing	CTL*	[0 to 9999/0/1]
5-745-216	DeemedPowerConsumption	Scanning	CTL*	[0 to 9999/0/1]
5-745-217	DeemedPowerConsumption	Engine Standby	CTL*	[0 to 9999/0/1]
5-	DeemedPowerConsumption	Low Power Consumption	CTL*	[0 to 9999/0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
745-218				
5-745-219	DeemedPowerConsumption	Silent condition	CTL*	[0 to 9999/0/1]
5-745-220	DeemedPowerConsumption	Heater Off	CTL*	[0 to 9999/0/1]
5-748-101	OpePanel Setting	Op Type Action Setting	CTL	[0 to 255/0/1]
5-748-201	OpePanel Setting	Cheetah Panel Connect Setting	CTL	[0 to 1/0/1]
5-749-001	Import/Export	Export	CTL	[0 to 0/0/0]
5-749-101	Import/Export	Import	CTL	[0 to 0/0/0]
5-751-001	Key Event Encryption Setting	Password	CTL*	[0 to 255/0/1]
5-752-001	Copy:WebAPI Setting	Copy:FlairAPI Setting	CTL*	[0 to 255/0/1]
5-755-001	Display Setting	Disp Administrator Password Change Scrn	CTL*	[0 to 0/0/0]
5-755-002	Display Setting	Hide Administrator Password Change Scrn	CTL	[0 to 0/0/0]
5-758-001	RemoteUI Setting	Authentication	CTL*	[0 to 1/0/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-759-001	Machine Limit Count	Machine Limit Count Setting	CTL*	[0 to 1/0/1]
5-759-051	Machine Limit Count	Limit Count	CTL*	[0 to 99999999/0/1]
5-761-001	SmartOperationPanel Setting	Restore the default Home screen	CTL*	[0 to 255/0/1]
5-801-001	Memory Clear	All Clear	CTL	[0 to 0/0/0]
5-801-003	Memory Clear	SCS	CTL	[0 to 0/0/0]
5-801-004	Memory Clear	IMH Memory Clr	CTL	[0 to 0/0/0]
5-801-005	Memory Clear	MCS	CTL	[0 to 0/0/0]
5-801-006	Memory Clear	Copier application	CTL	[0 to 0/0/0]
5-801-007	Memory Clear	Fax Application	CTL	[0 to 0/0/0]
5-801-008	Memory Clear	Printer Application	CTL	[0 to 0/0/0]
5-801-009	Memory Clear	Scanner Application	CTL	[0 to 0/0/0]
5-801-	Memory Clear	Web Service	CTL*	[0 to 0/0/0]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
010				
5-801-011	Memory Clear	NCS	CTL*	[0 to 0/0/0]
5-801-012	Memory Clear	R-FAX	CTL	[0 to 0/0/0]
5-801-014	Memory Clear	Clear DCS Setting	CTL	[0 to 0/0/0]
5-801-015	Memory Clear	Clear UCS Setting	CTL*	[0 to 0/0/0]
5-801-016	Memory Clear	MIRS Setting	CTL	[0 to 0/0/0]
5-801-017	Memory Clear	CCS	CTL	[0 to 0/0/0]
5-801-018	Memory Clear	SRM Memory Clr	CTL	[0 to 0/0/0]
5-801-019	Memory Clear	LCS	CTL*	[0 to 0/0/0]
5-801-020	Cleae Memory	Web Uapli	CTL*	[0 to 0/0/0]
5-801-021	Memory Clear	ECS	CTL*	[0 to 0/0/0]
5-801-023	Memory Clear	AICS	CTL	[0 to 0/0/0]
5-	Cleae Memory	websys	CTL*	[0 to 0/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
801-025				
5-801-026	Memory Clear	PLN	CTL*	[0 to 0/0/0]
5-801-027	Memory Clear	SAS	CTL*	[0 to 0/0/0]
5-801-028	Memory Clear	Rest WebService	CTL*	[0 to 0/0/0]
5-812-001	Service Tel. No. Setting	Service	CTL*	[0 to 0/0/0]
5-812-002	Service Tel. No. Setting	Facsimile	CTL*	[0 to 0/0/0]
5-812-003	Service Tel. No. Setting	Supply	CTL*	[0 to 0/0/0]
5-812-004	Service Tel. No. Setting	Operation	CTL*	[0 to 0/0/0]
5-812-101	Service Tel. No. Setting	Disp Inquiry	CTL*	[0 to 1/0/1]
5-816-001	Remote Service	I/F Setting	CTL*	[0 to 2/2/1]
5-816-002	Remote Service	CE Call	CTL*	[0 to 1/0/1]
5-816-003	Remote Service	Function Flag	CTL*	[0 to 1/0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-816-007	Remote Service	SSL Disable	CTL*	[0 to 1/0/1]
5-816-008	Remote Service	RCG Connect Timeout	CTL*	[1 to 90/30/1 sec]
5-816-009	Remote Service	RCG Write Timeout	CTL*	[0 to 100/60/1 sec]
5-816-010	Remote Service	RCG Read Timeout	CTL*	[0 to 100/60/1 sec]
5-816-011	Remote Service	Port 80 Enable	CTL*	[0 to 1/0/1]
5-816-013	Remote Service	RFU Timing	CTL*	[0 to 1/1/1]
5-816-014	Remote Service	RCG Error Cause	CTL	[0 to 2/0/1]
5-816-021	Remote Service	RCG-C Registered	CTL*	[0 to 1/0/1]
5-816-023	Remote Service	Connect Type(N/M/3G)	CTL*	[0 to 2/0/1]
5-816-061	Remote Service	Cert Expire Timing	CTL*	[0 to 0/0/1]
5-816-062	Remote Service	Use Proxy	CTL*	[0 to 1/0/1]
5-816-	Remote Service	Proxy Host	CTL*	[0 to 0/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
063				
5-816-064	Remote Service	Proxy PortNumber	CTL*	[0 to 0xffff/0/1]
5-816-065	Remote Service	Proxy User Name	CTL*	[0 to 0/0/0]
5-816-066	Remote Service	Proxy Password	CTL*	[0 to 0/0/0]
5-816-067	Remote Service	CERT:Up State	CTL*	[0 to 255/0/1]
5-816-068	Remote Service	CERT:Error	CTL*	[0 to 255/0/1]
5-816-069	Remote Service	CERT:Up ID	CTL*	[0 to 0/0/0]
5-816-083	Remote Service	Firm Up Status	CTL*	[0 to 1/0/1]
5-816-085	Remote Service	Firm Up User Check	CTL*	[0 to 1/0/1]
5-816-086	Remote Service	Firmware Size	CTL*	[0 to 0xffffffff/0/1]
5-816-087	Remote Service	CERT:Macro Ver.	CTL	[0 to 0/0/0]
5-816-088	Remote Service	CERT:PAC Ver.	CTL	[0 to 0/0/0]
5-	Remote Service	CERT:ID2Code	CTL	[0 to 0/0/0]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
816-089				
5-816-090	Remote Service	CERT:Subject	CTL	[0 to 0/0/0]
5-816-091	Remote Service	CERT:SerialNo.	CTL	[0 to 0/0/0]
5-816-092	Remote Service	CERT:Issuer	CTL	[0 to 0/0/0]
5-816-093	Remote Service	CERT:Valid Start	CTL	[0 to 0/0/0]
5-816-094	Remote Service	CERT:Valid End	CTL	[0 to 0/0/0]
5-816-102	Remote Service	CERT:Encrypt Level	CTL*	[1 to 2/1/1]
5-816-103	Remote Service	Client Communication Method	CTL*	[0 to 3/0/1]
5-816-104	Remote Service	Client Communication Limit	CTL*	[1 to 7/7/1]
5-816-115	Remote Service	Network Information Waiting timer	CTL*	[5 to 255/5/1 sec]
5-816-190	Remote Service	3G DongleID	CTL*	[0 to 0/0/0]
5-816-200	Remote Service	Manual Polling	CTL	[0 to 1/0/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-816-201	Remote Service	Regist Status	CTL	[0 to 255/0/1]
5-816-202	Remote Service	Letter Number	CTL*	[0 to 0/0/0]
5-816-203	Remote Service	Confirm Execute	CTL	[0 to 1/0/1]
5-816-204	Remote Service	Confirm Result	CTL	[0 to 255/0/1]
5-816-205	Remote Service	Confirm Place	CTL	[0 to 1/0/1]
5-816-206	Remote Service	Register Execute	CTL	[0 to 1/0/1]
5-816-207	Remote Service	Register Result	CTL	[0 to 255/0/1]
5-816-208	Remote Service	Error Code	CTL	[-2147483647 to 2147483647/0/0]
5-816-209	Remote Service	Instl Clear	CTL	[0 to 1/0/1]
5-816-240	Remote Service	CommErrorTime	CTL	[0 to 0/0/1]
5-816-241	Remote Service	CommErrorCode 1	CTL*	[0 to 0xffffffff/0x00000000/1]
5-816-	Remote Service	CommErrorCode 2	CTL*	[0 to 0xffffffff/0x00000000/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
242				
5-816-243	Remote Service	CommErrorCode 3	CTL*	[0 to 0xffffffff/0x00000000/1]
5-816-244	Remote Service	CommErrorState 1	CTL*	[0 to 0xffff/0x0000/1]
5-816-245	Remote Service	CommErrorState 2	CTL*	[0 to 0xffff/0x0000/1]
5-816-246	Remote Service	CommErrorState 3	CTL*	[0 to 0xffff/0x0000/1]
5-816-247	Remote Service	SSL Error Count	CTL*	[0 to 255/0/1]
5-816-248	Remote Service	Other Err Count	CTL*	[0 to 255/0/1]
5-816-250	Remote Service	CommLog Print	CTL	[0 to 255/0/0]
5-821-002	Remote Service RCG Setting	RCG IPv4 Address	CTL*	[0 to 0xffffffff/0/1]
5-821-003	Remote Service RCG Setting	RCG Port	CTL*	[0 to 65535/443/1]
5-821-004	Remote Service RCG Setting	RCG IPv4 URL Path	CTL*	[0 to 0/0/0]
5-821-005	Remote Service RCG Setting	RCG IPv6 Address	CTL*	[0 to 0/0/0]
5-	Remote Service RCG Setting	RCG IPv6 URL Path	CTL*	[0 to 0/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
821-006				
5-821-007	Remote Service RCG Setting	RCG Host Name	CTL*	[0 to 0/0/0]
5-821-008	Remote Service RCG Setting	RCG Host URL Path	CTL*	[0 to 0/0/0]
5-824-001	NV-RAM Data Upload		CTL	[0 to 0/0/0]
5-825-001	NV-RAM Data Download		CTL	[0 to 0/0/0]
5-828-039	Network Setting	User Class	CTL*	[0 to 0/0/0]
5-828-040	Network Setting	Class Id	CTL*	[0 to 0/0/0]
5-828-050	Network Setting	1284 Compatibility (Centro)	CTL*	[0 to 1/1/1]
5-828-052	Network Setting	ECP (Centro)	CTL*	[0 to 1/1/1]
5-828-065	Network Setting	Job Spooling	CTL*	[0 to 1/0/1]
5-828-066	Network Setting	Job Spooling Clear: Start Time	CTL*	[0 to 1/1/1]
5-828-069	Network Setting	Job Spooling (Protocol)	CTL*	[0x00 to 0xff/0x7f/0]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-828-087	Network Setting	Protocol usage	CTL*	[0x00000000 to 0xffffffff/0x00000000/1]
5-828-090	Network Setting	TELNET(0:OFF 1:ON)	CTL*	[0 to 1/1/1]
5-828-091	Network Setting	Web(0:OFF 1:ON)	CTL*	[0 to 1/1/1]
5-828-145	Network Setting	Active IPv6 Link Local Address	CTL*	[0 to 0/0/0]
5-828-147	Network Setting	Active IPv6 Stateless Address 1	CTL*	[0 to 0/0/0]
5-828-149	Network Setting	Active IPv6 Stateless Address 2	CTL*	[0 to 0/0/0]
5-828-151	Network Setting	Active IPv6 Stateless Address 3	CTL*	[0 to 0/0/0]
5-828-153	Network Setting	Active IPv6 Stateless Address 4	CTL*	[0 to 0/0/0]
5-828-155	Network Setting	Active IPv6 Stateless Address 5	CTL*	[0 to 0/0/0]
5-828-156	Network Setting	IPv6 Manual Address	CTL*	[0 to 0/0/0]
5-828-158	Network Setting	IPv6 Gateway Address	CTL*	[0 to 0/0/0]
5-828-	Network Setting	IPv6 Stateless Auto Setting	CTL*	[0 to 1/1/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
161				
5-828-219	Network Setting	IPsec Aggressive Mode Setting	CTL*	[0 to 1/0/1]
5-828-236	Network Setting	Web Item visible	CTL*	[0x0000 to 0xffff/0xffff/1]
5-828-237	Network Setting	Web shopping link visible	CTL*	[0 to 1/1/1]
5-828-238	Network Setting	Web Supplies Link visible	CTL*	[0 to 1/1/1]
5-828-239	Network Setting	Web Link1 Name	CTL*	[0 to 0/0/0]
5-828-240	Network Setting	Web Link1 URL	CTL*	[0 to 0/0/0]
5-828-241	Network Setting	Web Link1 visible	CTL*	[0 to 1/1/1]
5-828-242	Network Setting	Web Link2 Name	CTL*	[0 to 0/0/0]
5-828-243	Network Setting	Web Link2 URL	CTL*	[0 to 0/0/0]
5-828-244	Network Setting	Web Link2 visible	CTL*	[0 to 1/1/1]
5-828-249	Network Setting	DHCPv6 DUID	CTL*	[0 to 0/0/0]
5-	HDD	HDD Formatting (ALL)	CTL	[0 to 0/0/0]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
832-001				
5-832-002	HDD	HDD Formatting (IMH)	CTL	[0 to 0/0/0]
5-832-003	HDD	HDD Formatting (Thumbnail/OCR)	CTL	[0 to 0/0/0]
5-832-004	HDD	HDD Formatting (Job Log)	CTL	[0 to 0/0/0]
5-832-005	HDD	HDD Formatting (Printer Fonts)	CTL	[0 to 0/0/0]
5-832-006	HDD	HDD Formatting (User Info)	CTL	[0 to 0/0/0]
5-832-007	HDD	Mail RX Data	CTL	[0 to 0/0/0]
5-832-008	HDD	Mail TX Data	CTL	[0 to 0/0/0]
5-832-009	HDD	HDD Formatting (Data for a Design)	CTL	[0 to 0/0/0]
5-832-010	HDD	HDD Formatting (Log)	CTL	[0 to 0/0/0]
5-832-011	HDD	HDD Formatting (Ridoc I/F)	CTL	[0 to 0/0/0]
5-832-012	HDD	HDD Formatting (Thumbnail)	CTL	[0 to 0/0/0]

3. Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-836-001	Capture Setting	Capture Function (0:Off 1:On)	CTL*	[0 to 1/0/1]
5-836-011	Capture Setting	Capture Setting: Copy	CTL*	[0 to 1/0/1]
5-836-012	Capture Setting	Capture Setting: Doc. Svr.	CTL*	[0 to 1/0/1]
5-836-013	Capture Setting	Capture Setting: Fax RX Printer	CTL*	[0 to 1/0/1]
5-836-014	Capture Setting	Capture Setting: Fax TX	CTL*	[0 to 1/0/1]
5-836-015	Capture Setting	Capture Setting: Printer	CTL*	[0 to 1/0/1]
5-836-016	Capture Setting	Capture Setting: Scanner	CTL*	[0 to 1/0/1]
5-836-017	Capture Setting	Capture Setting: SDK	CTL*	[0 to 1/0/1]
5-836-061	Capture Setting	Captured File Resend (0:Off 1:On)	CTL*	[0 to 1/1/1]
5-836-072	Capture Setting	Reduction for Copy B&W Text	CTL*	[0 to 6/0/1]
5-836-073	Capture Setting	Reduction for Copy B&W Other	CTL*	[0 to 6/0/1]
5-836-	Capture Setting	Reduction for Printer B&W	CTL*	[0 to 6/0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
075				
5-836-082	Capture Setting	Format for Copy B&W Text	CTL*	[0 to 3/1/1]
5-836-083	Capture Setting	Format for Copy B&W Other	CTL*	[0 to 3/1/1]
5-836-085	Capture Setting	Format for Printer B&W	CTL*	[0 to 3/1/1]
5-836-091	Capture Setting	Default for JPEG	CTL*	[5 to 95/50/1]
5-836-092	Capture Setting	High Quality for JPEG	CTL*	[5 to 95/60/1]
5-836-093	Capture Setting	Low Quality for JPEG	CTL*	[5 to 95/40/1]
5-836-094	Capture Setting	Default Format for Back Up Files	CTL*	[0 to 4/0/1]
5-836-095	Capture Setting	Default Resolution for Back Up Files	CTL*	[0 to 6/2/1]
5-836-096	Capture Setting	Default User Name for Back Up Files	CTL*	[0 to 0/0/0]
5-836-097	Capture Setting	Default Compression for Back Up Files	CTL*	[0 to 2/0/1]
5-836-101	Capture Setting	Primary srv IP address	CTL*	[0 to 0xffffffff/0x00/0]
5-	Capture Setting	Primary srv scheme	CTL*	[0 to 0/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
836-102				
5-836-103	Capture Setting	Primary srv port number	CTL*	[1 to 65535/80/1]
5-836-104	Capture Setting	Primary srv URL path	CTL*	[0 to 0/0/0]
5-836-111	Capture Setting	Secondary srv IP address	CTL*	[0 to 0xffffffff/0x00/0]
5-836-112	Capture Setting	Secondary srv scheme	CTL*	[0 to 0/0/0]
5-836-113	Capture Setting	Secondary srv port number	CTL*	[1 to 65535/80/1]
5-836-114	Capture Setting	Secondary srv URL path	CTL*	[0 to 0/0/0]
5-836-120	Capture Setting	Default Reso Rate Switch	CTL*	[0 to 1/0/1]
5-836-122	Capture Setting	Reso: Copy(Mono)	CTL*	[0 to 255/3/1]
5-836-124	Capture Setting	Reso: Print(Mono)	CTL*	[0 to 255/3/1]
5-836-125	Capture Setting	Reso: Fax(Color)	CTL*	[0 to 255/4/1]
5-836-126	Capture Setting	Reso: Fax(Mono)	CTL*	[0 to 255/3/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-836-127	Capture Setting	Reso: Scan(Color)	CTL*	[0 to 255/4/1]
5-836-128	Capture Setting	Reso: Scan(Mono)	CTL*	[0 to 255/3/1]
5-836-129	Capture Setting	Reso: SDK(Color)	CTL*	[0 to 255/4/1]
5-836-130	Capture Setting	Reso: SDK(Mono)	CTL*	[0 to 255/3/1]
5-836-141	Capture Setting	All Addr Info Switch	CTL*	[0 to 1/1/1]
5-836-142	Capture Setting	Stand-by Doc Max Number	CTL*	[10 to 10000/2000/1]
5-836-143	Capture Setting	ClearLightPDF Switch	CTL*	[0 to 1/0/1]
5-840-006	IEEE 802.11	Channel MAX	CTL*	[1 to 14/14/1]
5-840-007	IEEE 802.11	Channel MIN	CTL*	[1 to 14/1/1]
5-840-011	IEEE 802.11	WEP Key Select	CTL*	[0x00 to 0x11/0x00/0]
5-840-045	IEEE 802.11	WPA Debug Lvl	CTL*	[1 to 3/3/1]
5-840-	IEEE 802.11	11w	CTL*	[0 to 2/0/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
046				
5-840-047	IEEE 802.11	PSK Set Type	CTL*	[0 to 1/0/1]
5-841-001	Supply Name Setting	Toner Name Setting: Black	CTL*	[0 to 0/0/0]
5-842-001	GWWS Analysis	Setting 1	CTL*	[0x00 to 0xFF/0/1]
5-842-002	GWWS Analysis	Setting 2	CTL*	[0x00 to 0xFF/0/1]
5-844-001	USB	Transfer Rate	CTL*	[1 to 4/4/0]
5-844-002	USB	Vendor ID	CTL*	[0x0000 to 0xffff/0x05ca/0]
5-844-003	USB	Product ID	CTL*	[0x0000 to 0xffff/0x0403/0]
5-844-004	USB	Device Release Number	CTL*	[0 to 9999/100/1]
5-844-005	USB	Fixed USB Port	CTL*	[0 to 2/0/1]
5-844-006	USB	PnP Model Name	CTL*	[0 to 0/0/0]
5-844-007	USB	PnP Serial Number	CTL*	[0 to 0/0/0]
5-	USB	Mac Supply Level	CTL*	[0 to 1/1/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
844-008				
5-844-009	USB	USB Toggle Clear Mode	CTL*	[0 to 1/0/1]
5-844-100	USB	Notify Unsupport	CTL*	[0 to 1/1/1]
5-845-001	Delivery Server Setting	FTP Port No.	CTL*	[1 to 65535/3670/1]
5-845-002	Delivery Server Setting	IP Address (Primary)	CTL*	[0 to 0xffffffff/0x00/]
5-845-006	Delivery Server Setting	Delivery Error Display Time	CTL*	[0 to 999/300/1sec]
5-845-008	Delivery Server Setting	IP Address (Secondary)	CTL*	[0 to 0xffffffff/0x00/]
5-845-009	Delivery Server Setting	Delivery Server Model	CTL*	[0 to 4/0/1]
5-845-010	Delivery Server Setting	Delivery Svr. Capability	CTL*	[0 to 255/0/1]
5-845-011	Delivery Server Setting	Delivery Svr. Capability (Ext)	CTL*	[0 to 255/0/1]
5-845-013	Delivery Server Setting	Server Scheme(Primary)	CTL*	[0 to 0/0/0]
5-845-014	Delivery Server Setting	Server Port Number(Primary)	CTL*	[1 to 65535/80/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-845-015	Delivery Server Setting	Server URL Path(Primary)	CTL*	[0 to 0/0/0]
5-845-016	Delivery Server Setting	Server Scheme(Secondary)	CTL*	[0 to 0/0/0]
5-845-017	Delivery Server Setting	Server Port Number(Secondary)	CTL*	[1 to 65535/80/1]
5-845-018	Delivery Server Setting	Server URL Path(Secondary)	CTL*	[0 to 0/0/0]
5-845-022	Delivery Server Setting	Rapid Sending Control	CTL*	[0 to 1/1/1]
5-846-001	UCS Setting	Machine ID (for Delivery Server)	CTL*	[0 to 0/0/0]
5-846-002	UCS Setting	Machine ID Clear (for Delivery Server)	CTL*	[0 to 0/0/0]
5-846-003	UCS Setting	Maximum Entries	CTL*	[2000 to 20000/2000/1]
5-846-006	UCS Setting	Delivery Server Retry Timer	CTL*	[0 to 255/0/1]
5-846-007	UCS Setting	Delivery Server Retry Times	CTL*	[0 to 255/0/1]
5-846-008	UCS Setting	Delivery Server Maximum Entries	CTL*	[2000 to 20000/2000/1]
5-846-	UCS Setting	LDAP Search Timeout	CTL*	[1 to 255/60/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
010				
5-846-020	UCS Setting	WSD Maximum Entries	CTL*	[50 to 250/250/1]
5-846-021	UCS Setting	Folder Auth Change	CTL*	[0 to 1/0/1]
5-846-040	UCS Setting	Addr Book Migration(USB->HDD)	CTL*	[0 to 0/0/0]
5-846-041	UCS Setting	Fill Addr Acl Info	CTL*	[0 to 0/0/0]
5-846-043	UCS Setting	Addr Book Media	CTL*	[0 to 30/0/1]
5-846-047	UCS Setting	Initialize Local Addr Book	CTL*	[0 to 0/0/0]
5-846-048	UCS Setting	Initialize Delivery Addr Book	CTL*	[0 to 0/0/0]
5-846-049	UCS Setting	Initialize LDAP Addr Book	CTL*	[0 to 0/0/0]
5-846-050	UCS Setting	Initialize All Addr Book	CTL*	[0 to 0/0/0]
5-846-051	UCS Setting	Backup All Addr Book	CTL*	[0 to 0/0/0]
5-846-052	UCS Setting	Restore All Addr Book	CTL*	[0 to 0/0/0]
5-	UCS Setting	Clear Backup Info	CTL*	[0 to 0/0/0]

3. Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
846-053				
5-846-060	UCS Setting	Search option	CTL*	[0x00 to 0xff/0x0f/1]
5-846-062	UCS Setting	Complexity option 1	CTL*	[0 to 32/0/1]
5-846-063	UCS Setting	Complexity option 2	CTL*	[0 to 32/0/1]
5-846-064	UCS Setting	Complexity option 3	CTL*	[0 to 32/0/1]
5-846-065	UCS Setting	Complexity option 4	CTL*	[0 to 32/0/1]
5-846-091	UCS Setting	FTP Auth Port Setting	CTL*	[0 to 65535/3671/1]
5-846-094	UCS Setting	Encryption Stat	CTL*	[0 to 255/0/0]
5-847-002	Rep Resolution Reduction	Rate for Copy B&W Text	CTL*	[0 to 6/0/1]
5-847-003	Rep Resolution Reduction	Rate for Copy B&W Other	CTL*	[0 to 6/0/1]
5-847-005	Rep Resolution Reduction	Rate for Printer B&W	CTL*	[0 to 6/0/1]
5-847-007	Rep Resolution Reduction	Rate for Printer B&W 1200dpi	CTL*	[0 to 6/1/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-847-021	Rep Resolution Reduction	Network Quality Default for JPEG	CTL*	[5 to 95/50/1]
5-848-002	Web Service	Access Ctrl: Repository(onlyLower4bits)	CTL*	[0x00 to 0xFF/0x02/0]
5-848-003	Web Service	Access Ctrl: Doc.Svr.Print (Lower 4bits)	CTL*	[0x00 to 0xFF/0x00/0]
5-848-004	Web Service	Access Ctrl: udirectory (Lower 4bits)	CTL*	[0x00 to 0xFF/0x00/0]
5-848-007	Web Service	Access Ctrl: Comm. Log Fax(Lower 4bits)	CTL*	[0x00 to 0xFF/0x00/0]
5-848-009	Web Service	Access Ctrl: Job Ctrl (Lower 4bits)	CTL*	[0x00 to 0xFF/0x00/0]
5-848-011	Web Service	Access Ctrl: Devicemanagement(Lower 4bits)	CTL*	[0x00 to 0xFF/0x00/0]
5-848-021	Web Service	Access Ctrl: Delivery (Lower 4bits)	CTL*	[0x00 to 0xFF/0x00/0]
5-848-022	Web Service	Access Ctrl: uadministration (Lower 4bits)	CTL*	[0x00 to 0xFF/0x00/0]
5-848-024	Web Service	Access Ctrl: Log Service (Lower 4bits)	CTL*	[0x00 to 0xFF/0x00/0]
5-848-025	Web Service	Access Ctrl: Rest WebService (Lower 4bits)	CTL*	[0x00 to 0xFF/0x00/0]
5-848-	Web Service	Repository: Download Image Setting	CTL*	[0x00 to 0xFF/0x00/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
099				
5-848-100	Web Service	Repository: Download Image Max. Size	CTL*	[1 to 2048/2048/1]
5-848-150	Web Service	Log Operation Mode	CTL*	[0 to 9/0/1]
5-848-217	LogTrans	Setting: Timing	CTL*	[0 to 2/0/1]
5-849-001	Installation Date	Display	CTL*	[0 to 0/0/0]
5-849-002	Installation Date	Switch to Print	CTL*	[0 to 1/0/1]
5-849-003	Installation Date	Total Counter	CTL*	[0 to 99999999/0/1]
5-851-001	Bluetooth	Mode	CTL*	[0x00 to 0x01/0x00/1]
5-853-001	Stamp Data Download		CTL	[0 to 0/0/0]
5-856-002	Remote ROM Update	Local Port	CTL	[0 to 1/0/1]
5-858-001	Collect Machine Info	0:OFF 1:ON	CTL	[0 to 1/1/1]
5-858-002	Collect Machine Info	Save To (0:HDD 1:SD)	CTL	[0 to 1/0/1]
5-	Collect Machine Info	Make Log Trace Dir	CTL	[0 to 1/0/0]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
858-003				
5-858-101	Collect Machine Info	Failure Occuring Date	CTL	[0 to 20371212/0/1]
5-858-102	Collect Machine Info	Tracing Days	CTL	[1 to 180/2/1day]
5-858-103	Collect Machine Info	Acquire Fax Address(0:OFF 1:ON)	CTL	[0 to 1/0/1]
5-858-111	Collect Machine Info	Acquire All Info & Logs	CTL	[0 to 1/0/0]
5-858-121	Collect Machine Info	Acquire Configuration Page	CTL	[0 to 1/0/0]
5-858-122	Collect Machine Info	Acquire Font Page	CTL	[0 to 1/0/0]
5-858-123	Collect Machine Info	Acquire Print Setting List	CTL	[0 to 1/0/0]
5-858-124	Collect Machine Info	Acquire Error Log	CTL	[0 to 1/0/0]
5-858-131	Collect Machine Info	Acquire Fax Info	CTL	[0 to 1/0/0]
5-858-141	Collect Machine Info	Acquire All Debug Logs	CTL	[0 to 1/0/0]
5-858-142	Collect Machine Info	Acquire Controller Debug Logs Only	CTL	[0 to 1/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-858-143	Collect Machine Info	Acquire Engine Debug Logs Only	CTL	[0 to 1/0/0]
5-858-144	Collect Machine Info	Acquire Opepanel Debug Logs Only	CTL	[0 to 1/0/0]
5-858-145	Collect Machine Info	Acquire FCU Debug Logs Only	CTL	[0 to 1/0/0]
5-858-146	Collect Machine Info	Acquire Only Network Packets	CTL	[0 to 1/0/0]
5-860-020	SMTP/POP3/IMAP4	Partial Mail Receive Timeout	CTL*	[1 to 168/72/1 hour]
5-860-021	SMTP/POP3/IMAP4	MDN Response RFC2298 Compliance	CTL*	[0 to 1/1/1]
5-860-022	SMTP/POP3/IMAP4	SMTP Auth. From Field Replacement	CTL*	[0 to 1/0/1]
5-860-025	SMTP/POP3/IMAP4	SMTP Auth. Direct Setting	CTL*	[0 to 0xff/0x0/1]
5-860-026	SMTP/POP3/IMAP4	S/MIME:MIME Header Setting	CTL*	[0 to 2/0/1]
5-860-028	SMTP/POP3/IMAP4	S/MIME: Authentication Check	CTL*	[0 to 1/0/1]
5-866-001	E-Mail Report	Report Validity	CTL	[0 to 1/0/1]
5-866-	E-Mail Report	Add Date Field	CTL*	[0 to 1/0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
005				
5-866-110	E-Mail Report	CounterE-Mail:Validity	CTL*	[0 to 1/0/1]
5-866-111	E-Mail Report	CounterE-Mail:Destination Registration	CTL*	[0 to 0/0/0]
5-866-112	E-Mail Report	CounterE-Mail:Send Test	CTL*	[0 to 0/0/0]
5-866-113	E-Mail Report	CounterE-Mail:Next Send Date	CTL*	[0 to 0/0/0]
5-866-114	E-Mail Report	CounterE-Mail:Send Date Setting	CTL*	[0 to 31/0/1]
5-866-115	E-Mail Report	CounterE-Mail:Send Time Setting	CTL*	[0 to 2359/0/1]
5-866-121	E-Mail Report	CounterE-Mail:Destination 1	CTL*	[0 to 0/0/0]
5-866-122	E-Mail Report	CounterE-Mail:Destination2	CTL*	[0 to 0/0/0]
5-866-123	E-Mail Report	CounterE-Mail:Destination3	CTL*	[0 to 0/0/0]
5-870-001	Common KeyInfo Writing	Writing	CTL	[0 to 1/0/1]
5-870-003	Common KeyInfo Writing	Initialize	CTL	[0 to 1/0/1]
5-	Common Key Info Writing	Writing: 2048bit	CTL	[0 to 1/0/1]

3. Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
870-004				
5-873-001	SDCardAppliMove	MoveExec	CTL	[0 to 0/0/1]
5-873-002	SDCardAppliMove	UndoExec	CTL	[0 to 0/0/1]
5-875-001	SC Auto Reboot	Reboot Setting	CTL*	[0 to 1/0/1]
5-875-002	SC Auto Reboot	Reboot Type	CTL*	[0 to 1/1/1]
5-878-001	Option Setup	Data Overwrite Security	CTL	[0 to 0/0/0]
5-878-002	Option Setup	HDD Encryption	CTL	[0 to 0/0/0]
5-878-004	Option Setup	OCR Dictionary	CTL	[0 to 0/0/0]
5-881-001	Fixed Phrase Block Erasing		CTL	[0 to 0/0/0]
5-885-020	Set WIM Function	DocSvr Acc Ctrl	CTL*	[0x00 to 0xFF/0x00/0]
5-885-050	Set WIM Function	DocSvr Format	CTL*	[0 to 2/0/1]
5-885-051	Set WIM Function	DocSvr Trans	CTL*	[5 to 20/10/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-885-100	Set WIM Function	Set Signature	CTL*	[0 to 2/0/1]
5-885-101	Set WIM Function	Set Encrypsion	CTL*	[0 to 1/0/1]
5-885-200	Set WIM Function	Detect Mem Leak	CTL*	[0x00 to 0xFF/0x00/0]
5-885-201	Set WIM Function	DocSvr Timeout	CTL*	[1 to 30/30/1]
5-886-100	Farm Update Setting	Skip Version Check	CTL	[0 to 1/0/1]
5-886-101	Farm Update Setting	Skip LR Check	CTL	[0 to 1/0/1]
5-886-111	Farm Update Setting	Auto Update Setting	CTL*	[0 to 1/0/1]
5-886-112	Farm Update Setting	Auto Update Prohibit Term Setting	CTL*	[0 to 1/1/1]
5-886-113	Farm Update Setting	Auto Update Prohibit Start hour	CTL*	[0 to 23/9/1 hour]
5-886-114	Farm Update Setting	Auto Update Prohibit End hour	CTL*	[0 to 23/17/1 hour]
5-886-115	Farm Update Setting	SFU Auto Download Setting	CTL*	[0 to 1/0/1]
5-886-	Farm Update Setting	Auto Update Next Date	CTL*	[0 to 0/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
116				
5-886-117	Farm Update Setting	Auto Update Retry Interval Hour	CTL*	[1 to 24/1/1 hour]
5-886-119	Farm Update Setting	Auto Update @Remote Using Setting	CTL*	[0 to 1/0/1]
5-886-120	Farm Update Setting	Auto Update Prohibit Day of Week Setting	CTL*	[0 to 255/0/1]
5-886-201	Farm Update Setting	Restore Date	CTL*	[0 to 0/0/0]
5-886-202	Farm Update Setting	Save Old Version List	CTL*	[0 to 0/0/0]
5-887-001	SD GetCounter		CTL	[0 to 0/0/0]
5-888-001	Personal Information Protect		CTL*	[0 to 1/0/1]
5-893-001	SDK Application Counter	SDK-1	CTL	[0 to 0/0/0]
5-893-002	SDK Application Counter	SDK-2	CTL	[0 to 0/0/0]
5-893-003	SDK Application Counter	SDK-3	CTL	[0 to 0/0/0]
5-893-004	SDK Application Counter	SDK-4	CTL	[0 to 0/0/0]
5-	SDK Application Counter	SDK-5	CTL	[0 to 0/0/0]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
893-005				
5-893-006	SDK Application Counter	SDK-6	CTL	[0 to 0/0/0]
5-893-007	SDK Application Counter	SDK-7	CTL	[0 to 0/0/0]
5-893-008	SDK Application Counter	SDK-8	CTL	[0 to 0/0/0]
5-893-009	SDK Application Counter	SDK-9	CTL	[0 to 0/0/0]
5-893-010	SDK Application Counter	SDK-10	CTL	[0 to 0/0/0]
5-893-011	SDK Application Counter	SDK-11	CTL	[0 to 0/0/0]
5-893-012	SDK Application Counter	SDK-12	CTL	[0 to 0/0/0]
5-895-001	Application invalidation	Printer	CTL*	[0 to 1/0/0]
5-895-002	Application invalidation	Scanner	CTL*	[0 to 1/0/0]
5-907-001	Plug & Play Maker/Model Name		CTL*	[0 to 255/0/1]
5-913-002	Switchover Permission Time	Print Application Timer	CTL*	[0 to 30/3/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-967-001	Copy Server : Set Function	(0:ON 1:OFF)	CTL*	[0 to 1/0/1]
5-973-101	User Stamp Registration	Frame deletion setting	CTL*	[0 to 3/0/1]
5-985-001	Device Setting	On Board NIC	CTL	[0 to 2/0/1]
5-985-002	Device Setting	On Board USB	CTL	[0 to 1/0/1]
5-990-001	SP Print Mode	All (Data List)	CTL	[0 to 255/0/0]
5-990-002	SP Print Mode	SP (Mode Data List)	CTL	[0 to 255/0/0]
5-990-003	SP Print Mode	User Program	CTL	[0 to 255/0/0]
5-990-004	SP Print Mode	Logging Data	CTL	[0 to 255/0/0]
5-990-005	SP Print Mode	Diagnostic Report	CTL	[0 to 255/0/0]
5-990-006	SP Print Mode	Non-Default	CTL	[0 to 255/0/0]
5-990-007	SP Print Mode	NIB Summary	CTL	[0 to 0/0/0]
5-990-	SP Print Mode	Capture Log	CTL	[0 to 255/0/1]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
008				
5-990-021	SMC Print	Copier User Program	CTL	[0 to 0/0/0]
5-990-022	SP Print Mode	Scanner SP	CTL	[0 to 255/0/0]
5-990-023	SP Print Mode	Scanner User Program	CTL	[0 to 255/0/0]
5-990-024	SP Print Mode	SDK/J Summary	CTL	[0 to 0/0/0]
5-990-025	SP Print Mode	SDK/J Application Info	CTL	[0 to 0/0/0]
5-990-026	SP Print Mode	Printer SP	CTL	[0 to 255/0/0]
5-990-027	SP Print Mode	SmartOperationPanel SP	CTL	[0 to 255/0/0]
5-990-028	SP Print Mode	SmartOperationPanel UP	CTL	[0 to 255/0/0]
5-992-001	SP Text Mode	All (Data List)	CTL	[0 to 255/0/0]
5-992-002	SP Text Mode	SP (Mode Data List)	CTL	[0 to 255/0/0]
5-992-003	SP Text Mode	User Program	CTL	[0 to 255/0/0]
5-	SP Text Mode	Logging Data	CTL	[0 to 255/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
992-004				
5-992-005	SP Text Mode	Diagnostic Report	CTL	[0 to 255/0/0]
5-992-006	SP Text Mode	Non-Default	CTL	[0 to 255/0/0]
5-992-007	SP Text Mode	NIB Summary	CTL	[0 to 0/0/0]
5-992-008	SP Text Mode	Capture Log	CTL	[0 to 255/0/1]
5-992-021	SP Text Mode	Copier User Program	CTL	[0 to 0/0/0]
5-992-022	SP Text Mode	Scanner SP	CTL	[0 to 255/0/0]
5-992-023	SP Text Mode	Scanner User Program	CTL	[0 to 255/0/0]
5-992-024	SP Text Mode	SDK/J Summary	CTL	[0 to 0/0/0]
5-992-025	SP Text Mode	SDK/J Application Info	CTL	[0 to 0/0/0]
5-992-026	SP Text Mode	Printer SP	CTL	[0 to 255/0/0]
5-992-027	SP Text Mode	SmartOperationPanel SP	CTL	[0 to 255/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5- 992- 028	SP Text Mode	SmartOperationPanel UP	CTL	[0 to 255/0/0]

Main SP Tables-6

SP6-XXX (Peripherals)

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
6-006-001	ADF Adjustment	Side-to-Side Regist:Face	ENG *	[-3 to 3/0/0.1 mm]
6-006-002	ADF Adjustment	Side-to-Side Regist:Back	ENG *	[-2 to 2/0/0.1 mm]
6-006-010	ADF Adjustment	L-Edge Regist (1-Pass):Face	ENG *	[-5 to 5/0/0.1 mm]
6-006-011	ADF Adjustment	L-Edge Regist (1-Pass):Back	ENG *	[-5 to 5/0/0.1 mm]
6-006-014	ADF Adjustment	T-Edge Erase (1-Pass):Face	ENG *	[-5 to 5/-1.6/0.1 mm]
6-006-015	ADF Adjustment	T-Edge Erase (1-Pass):Back	ENG *	[-5 to 5/-1.6/0.1 mm]
6-009-001	ADF Free Run	Simplex Mode	ENG	[0 to 1/0/1 STEP]
6-009-002	ADF Free Run	Duplex Mode	ENG	[0 to 1/0/1 STEP]
6-011-009	1-Pass ADF INPUT Check	Original Detection	ENG	[0 to 1/0/1 STEP]
6-011-010	1-Pass ADF INPUT Check	Feed After sensor	ENG	[0 to 1/0/1 STEP]
6-011-013	1-Pass ADF INPUT Check	Registration Sensor	ENG	[0 to 1/0/1 STEP]
6-011-015	1-Pass ADF INPUT Check	Feed Cover Sensor	ENG	[0 to 1/0/1 STEP]
6-012-003	1-Pass ADF OUTPUT Check	Motor Forward	ENG	[0 to 1/0/1 STEP]
6-012-004	1-Pass ADF OUTPUT Check	Motor Reverse	ENG	[0 to 1/0/1 STEP]
6-012-014	1-Pass ADF OUTPUT Check	Feed Clutch	ENG	[0 to 1/0/1 STEP]
6-017-001	DF Magnification Adj.		ENG *	[-5 to 5/0/0.1%]
6-018-001	1-Pass ADF OUTPUT Check	Back shading	ENG	[0 to 1/0/1 STEP]

Main SP Tables-7 (Engine)

SP7-XXX (Data Log)

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
7-803-002	Disp. PM Counter	Sheets PCDU	ENG*	[0 to 99999999/0/1 sheet]
7-803-003	Disp. PM Counter	Sheets Fuser	ENG*	[0 to 99999999/0/1 sheet]
7-803-004	Disp. PM Counter	Sheets Trans.	ENG*	[0 to 99999999/0/1 sheet]
7-803-005	Disp. PM Counter	Sheets Feed	ENG*	[0 to 99999999/0/1 sheet]
7-803-006	Disp. PM Counter	Sheets Fric. Pad	ENG*	[0 to 99999999/0/1 sheet]
7-803-007	Disp. PM Counter	Sheets ADF Pad	ENG*	[0 to 99999999/0/1 sheet]
7-803-008	Disp. PM Counter	Sheets ADF Pickup	ENG*	[0 to 99999999/0/1 sheet]
7-803-009	Disp. PM Counter	Sheets ADF Feed	ENG*	[0 to 99999999/0/1 sheet]
7-803-012	Disp. PM Counter	Distance PCDU	ENG*	[0 to 999999999/0/1 mm]
7-803-013	Disp. PM Counter	Distance Fuser	ENG*	[0 to 999999999/0/1 mm]
7-803-014	Disp. PM Counter	Distance Trans.	ENG*	[0 to 999999999/0/1 mm]
7-803-022	Disp. PM Counter	Usage PCDU	ENG*	[0 to 255/0/1%]
7-803-023	Disp. PM Counter	Usage Fuser	ENG*	[0 to 255/0/1%]
7-803-024	Disp. PM Counter	Usage Trans.	ENG*	[0 to 255/0/1%]
7-803-025	Disp. PM Counter	Usage Feed	ENG*	[0 to 255/0/1%]
7-803-026	Disp. PM Counter	Usage Fric. Pad	ENG*	[0 to 255/0/1%]
7-803-	Disp. PM Counter	Usage ADF Pad	ENG*	[0 to 255/0/1%]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
027				
7-803-028	Disp. PM Counter	Usage ADF Pickup	ENG*	[0 to 255/0/1%]
7-803-029	Disp. PM Counter	Usage ADF Feed	ENG*	[0 to 255/0/1%]
7-804-002	Reset PM Counter	PCDU	ENG	[0 to 0/0/0]
7-804-003	Reset PM Counter	Fuser	ENG	[0 to 0/0/0]
7-804-004	Reset PM Counter	Trans.	ENG	[0 to 0/0/0]
7-804-005	Reset PM Counter	Feed	ENG	[0 to 0/0/0]
7-804-006	Reset PM Counter	Fric. Pad	ENG	[0 to 0/0/0]
7-804-007	Reset PM Counter	ADF Pad	ENG	[0 to 0/0/0]
7-804-008	Reset PM Counter	ADF Pickup	ENG	[0 to 0/0/0]
7-804-009	Reset PM Counter	ADF Feed	ENG	[0 to 0/0/0]
7-804-010	Reset PM Counter	Maintenance Kit	ENG	[0 to 0/0/0]
7-804-011	Reset PM Counter	All	ENG	[0 to 0/0/0]
7-805-001	Counter Continue	Setting	ENG	[0 to 0/0/0]
7-805-002	Counter Continue	Distance PCDU	ENG*	[0 to 999999999/0/1mm]
7-850-001	Toner Counter	PCDU Distance	ENG*	[0 to 999999999/0/1mm]
7-850-002	Toner Counter	Total Consump	ENG*	[0 to 10000000/0/10.1mg]
7-852-001	DF Glass Dust Check	Dust Detection Counter	ENG*	[0 to 65535/0/1]
7-852-	DF Glass Dust	Dust Detection Clear	ENG*	[0 to 65535/0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
002	Check	Counter		
7-852-003	DF Glass Dust Check	Dust Detection Counter: Back	ENG*	[0 to 65535/0/1]
7-931-001	Toner Info.	Machine ID	ENG	[0 to 255/0/1]
7-931-002	Toner Info.	Version	ENG	[0 to 255/0/1]
7-931-003	Toner Info.	Brand ID	ENG	[0 to 255/0/1]
7-931-004	Toner Info.	Area ID	ENG	[0 to 255/0/1]
7-931-005	Toner Info.	Class ID	ENG	[0 to 255/0/1]
7-931-006	Toner Info.	Color ID	ENG	[0 to 255/0/1]
7-931-007	Toner Info.	Maintenance ID	ENG	[0 to 255/0/1]
7-931-008	Toner Info.	New AIO	ENG	[0 to 255/0/1]
7-931-009	Toner Info.	Recycle Count	ENG	[0 to 255/0/1]
7-931-010	Toner Info.	EDP Code	ENG	[0 to 0/0/0]
7-931-011	Toner Info.	Serial No.	ENG	[0 to 0/0/0]
7-931-012	Toner Info.	Remaining Toner	ENG	[0 to 100/0/20%]
7-931-013	Toner Info.	Toner End	ENG	[0 to 0/0/0]
7-931-014	Toner Info.	Refill Flag	ENG	[0 to 0/0/0]
7-931-015	Toner Info.	R:Total Cnt.	ENG	[0 to 99999999/0/1 sheet]
7-931-016	Toner Info.	E:Total Cnt.	ENG	[0 to 99999999/0/1 sheet]
7-931-	Toner Info.	Unit Output Cnt.	ENG	[0 to 99999999/0/1 sheet]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
017				
7-931-018	Toner Info.	Install Date	ENG	[0 to 0/0/0]
7-931-019	Toner Info.	Toner End Date	ENG	[0 to 0/0/0]
7-931-020	Toner Info.	Total Consump	ENG	[0 to 10000000/0/10.1mg]
7-931-021	Toner Info.	PCDU Distance	ENG	[0 to 999999999/0/1mm]
7-931-022	Toner Info.	Initial Amount	ENG	[0 to 65535/0/1g]
7-932-001	PCDU Info.	Machine ID	ENG	[0 to 255/0/1]
7-932-002	PCDU Info.	Class ID	ENG	[0 to 255/0/1]
7-932-003	PCDU Info.	Maintenance ID	ENG	[0 to 255/0/1]
7-932-004	PCDU Info.	New AIO	ENG	[0 to 255/0/1]
7-932-005	PCDU Info.	Serial No.	ENG	[0 to 0/0/0]
7-932-006	PCDU Info.	Install Date	ENG	[0 to 0/0/0]
7-932-007	PCDU Info.	Sheets	ENG	[0 to 999999/0/1sheet]
7-932-008	PCDU Info.	Distance	ENG	[0 to 999999999/0/1mm]
7-932-010	PCDU Info.	Control Distance	ENG	[0 to 999999999/0/1mm]
7-932-011	PCDU Info.	PM Chg Sheets	ENG	[0 to 999999/0/1sheet]
7-932-012	PCDU Info.	PM Chg Distance	ENG	[0 to 999999999/0/1mm]
7-932-013	PCDU Info.	Cleaning1 Count	ENG	[0 to 65535/0/1count]
7-932-	PCDU Info.	Cleaning2Count	ENG	[0 to 65535/0/1count]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
014				
7-935-001	Toner Info. Log	1:Serial No.	ENG*	[0 to 0/0/0]
7-935-002	Toner Info. Log	1:Install Date	ENG*	[0 to 0/0/0]
7-935-003	Toner Info. Log	1:R:Total Cnt.	ENG*	[0 to 99999999/0/1]
7-935-004	Toner Info. Log	1:Refill Flag	ENG*	[0 to 0/0/0]
7-935-005	Toner Info. Log	2:Serial No.	ENG*	[0 to 0/0/0]
7-935-006	Toner Info. Log	2:Install Date	ENG*	[0 to 0/0/0]
7-935-007	Toner Info. Log	2:R:Total Cnt.	ENG*	[0 to 99999999/0/1]
7-935-008	Toner Info. Log	2:Refill Flag	ENG*	[0 to 0/0/0]
7-935-009	Toner Info. Log	3:Serial No.	ENG*	[0 to 0/0/0]
7-935-010	Toner Info. Log	3:Install Date	ENG*	[0 to 0/0/0]
7-935-011	Toner Info. Log	3:R:Total Cnt.	ENG*	[0 to 99999999/0/1]
7-935-012	Toner Info. Log	3:Refill Flag	ENG*	[0 to 0/0/0]
7-935-013	Toner Info. Log	4:Serial No.	ENG*	[0 to 0/0/0]
7-935-014	Toner Info. Log	4:Install Date	ENG*	[0 to 0/0/0]
7-935-015	Toner Info. Log	4:R:Total Cnt.	ENG*	[0 to 99999999/0/1]
7-935-016	Toner Info. Log	4:Refill Flag	ENG*	[0 to 0/0/0]
7-935-017	Toner Info. Log	5:Serial No.	ENG*	[0 to 0/0/0]
7-935-	Toner Info. Log	5:Install Date	ENG*	[0 to 0/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
018				
7-935-019	Toner Info. Log	5:R:Total Cnt.	ENG*	[0 to 999999999/0/1]
7-935-020	Toner Info. Log	5:Refill Flag	ENG*	[0 to 0/0/0]
7-935-021	Toner Info. Log	1:Toner End	ENG*	[0 to 0/0/0]
7-935-022	Toner Info. Log	2:Toner End	ENG*	[0 to 0/0/0]
7-935-023	Toner Info. Log	3:Toner End	ENG*	[0 to 0/0/0]
7-935-024	Toner Info. Log	4:Toner End	ENG*	[0 to 0/0/0]
7-935-025	Toner Info. Log	5:Toner End	ENG*	[0 to 0/0/0]
7-936-001	PCDU Log	1:Serial No	ENG*	[0 to 0/0/1]
7-936-002	PCDU Log	1:Install Date	ENG*	[0 to 0/0/0]
7-936-003	PCDU Log	2:Serial No	ENG*	[0 to 0/0/1]
7-936-004	PCDU Log	2:Install Date	ENG*	[0 to 0/0/0]
7-936-005	PCDU Log	3:Serial No	ENG*	[0 to 0/0/1]
7-936-006	PCDU Log	3:Install Date	ENG*	[0 to 0/0/0]
7-936-007	PCDU Log	4:Serial No	ENG*	[0 to 0/0/1]
7-936-008	PCDU Log	4:Install Date	ENG*	[0 to 0/0/0]
7-936-009	PCDU Log	5:Serial No	ENG*	[0 to 0/0/1]
7-936-010	PCDU Log	5:Install Date	ENG*	[0 to 0/0/0]
7-952-	Days Before End	Mentenance Kit	ENG*	[0 to 2/1/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
001				
7-952-002	Days Before End	PCDU	ENG*	[0 to 2/1/1]
7-979-001	ENG Reset Log	Data1	ENG*	[0x00 to 0xFF/0x00/1]
7-979-002	ENG Reset Log	Data2	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-003	ENG Reset Log	Data3	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-004	ENG Reset Log	Data4	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-005	ENG Reset Log	Data5	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-006	ENG Reset Log	Data6	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-007	ENG Reset Log	Data7	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-008	ENG Reset Log	Data8	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-009	ENG Reset Log	Data9	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-010	ENG Reset Log	Data10	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-011	ENG Reset Log	Data11	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-012	ENG Reset Log	Data12	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-013	ENG Reset Log	Data13	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-014	ENG Reset Log	Data14	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-015	ENG Reset Log	Data15	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-016	ENG Reset Log	Data16	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-	ENG Reset Log	Data17	ENG*	[0x0000 to

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
017				0xFFFF/0x0000/1]
7-979-018	ENG Reset Log	Data18	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-019	ENG Reset Log	Data19	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-020	ENG Reset Log	Data20	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-979-021	ENG Reset Log	Data21	ENG*	[0x0000 to 0xFFFF/0x0000/1]
7-993-001	Total Counter		ENG*	[0 to 99999999/0/1]

Main SP Tables-7 (Controller)

SP7-XXX (Data Log)

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
7-401-001	Total SC	SC Counter	CTL*	[0 to 65535/0/0]
7-401-002	Total SC	Total SC Counter	CTL*	[0 to 65535/0/0]
7-403-001	SC History	Latest	CTL*	[0 to 0/0/0]
7-403-002	SC History	Latest 1	CTL*	[0 to 0/0/0]
7-403-003	SC History	Latest 2	CTL*	[0 to 0/0/0]
7-403-004	SC History	Latest 3	CTL*	[0 to 0/0/0]
7-403-005	SC History	Latest 4	CTL*	[0 to 0/0/0]
7-403-006	SC History	Latest 5	CTL*	[0 to 0/0/0]
7-403-007	SC History	Latest 6	CTL*	[0 to 0/0/0]
7-403-008	SC History	Latest 7	CTL*	[0 to 0/0/0]
7-403-009	SC History	Latest 8	CTL*	[0 to 0/0/0]
7-403-010	SC History	Latest 9	CTL*	[0 to 0/0/0]
7-404-001	Software Error History	Latest	CTL*	[0 to 0/0/0]
7-404-002	Software Error History	Latest 1	CTL*	[0 to 0/0/0]
7-404-003	Software Error History	Latest 2	CTL*	[0 to 0/0/0]
7-404-004	Software Error History	Latest 3	CTL*	[0 to 0/0/0]
7-404-	Software Error History	Latest 4	CTL*	[0 to 0/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
005				
7-404-006	Software Error History	Latest 5	CTL*	[0 to 0/0/0]
7-404-007	Software Error History	Latest 6	CTL*	[0 to 0/0/0]
7-404-008	Software Error History	Latest 7	CTL*	[0 to 0/0/0]
7-404-009	Software Error History	Latest 8	CTL*	[0 to 0/0/0]
7-404-010	Software Error History	Latest 9	CTL*	[0 to 0/0/0]
7-502-001	Total Paper Jam	Jam Counter	CTL*	[0 to 65535/0/0]
7-502-002	Total Paper Jam	Total Jam Counter	CTL*	[0 to 65535/0/0]
7-503-001	Total Original Jam	Original Jam Counter	CTL*	[0 to 65535/0/0]
7-503-002	Total Original Jam	Total Original Jam Counter	CTL*	[0 to 65535/0/0]
7-504-001	Paper Jam Location	Initial Jam	CTL*	[0 to 65535/0/0]
7-504-003	Paper Jam Location	Tray 1: On	CTL*	[0 to 65535/0/0]
7-504-004	Paper Jam Location	Tray2: On	CTL*	[0 to 65535/0/0]
7-504-005	Paper Jam Location	Tray3: On	CTL*	[0 to 65535/0/0]
7-504-008	Paper Jam Location	Bypass: On	CTL*	[0 to 65535/0/0]
7-504-009	Paper Jam Location	Duplex: On	CTL*	[0 to 65535/0/0]
7-504-013	Paper Jam Location	Tray 2 Vertical Trans.Sn: On	CTL*	[0 to 65535/0/0]
7-504-017	Paper Jam Location	Registration Sensor : On	CTL*	[0 to 65535/0/0]
7-504-	Paper Jam Location	Paper Exit: On	CTL*	[0 to 65535/0/0]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
020				
7-504-023	Paper Jam Location	Duplex Inverter: On	CTL*	[0 to 65535/0/0]
7-504-026	Paper Jam Location	Duplex Entrance: On	CTL*	[0 to 65535/0/0]
7-504-053	Paper Jam Location	Tray 2 Vertical Trans.Sn: Off	CTL*	[0 to 65535/0/0]
7-504-054	Paper Jam Location	Tray 3 Vertical Trans.Sn: Off	CTL*	[0 to 65535/0/0]
7-504-057	Paper Jam Location	Registration Sensor: Off	CTL*	[0 to 65535/0/0]
7-504-060	Paper Jam Location	Paper Exit: Off	CTL*	[0 to 65535/0/0]
7-504-063	Paper Jam Location	Duplex Inverter: Off	CTL*	[0 to 65535/0/0]
7-504-066	Paper Jam Location	Duplex Entrance: Off	CTL*	[0 to 65535/0/0]
7-505-001	Original Jam Detection	Initial Jam	CTL*	[0 to 65535/0/0]
7-505-004	Original Jam Detection	Registration Sensor: On	CTL*	[0 to 65535/0/0]
7-505-013	Original Jam Detection	Paper Feed Rear Sensor: On	CTL*	[0 to 65535/0/0]
7-505-054	Original Jam Detection	Registration Sensor: Off	CTL*	[0 to 65535/0/0]
7-505-063	Original Jam Detection	Paper Feed Rear Sensor: Off	CTL*	[0 to 65535/0/0]
7-505-097	Original Jam Detection	Timing Error	CTL*	[0 to 65535/0/0]
7-505-098	Original Jam Detection	Short Paper Interval	CTL*	[0 to 65535/0/0]
7-505-100	Original Jam Detection	Motor Error	CTL*	[0 to 65535/0/0]
7-506-006	Jam Count by Paper Size	A5 LEF	CTL*	[0 to 65535/0/0]
7-506-	Jam Count by Paper Size	HLT LEF	CTL*	[0 to 65535/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
044				
7-506-133	Jam Count by Paper Size	A4 SEF	CTL*	[0 to 65535/0/0]
7-506-134	Jam Count by Paper Size	A5 SEF	CTL*	[0 to 65535/0/0]
7-506-142	Jam Count by Paper Size	B5 SEF	CTL*	[0 to 65535/0/0]
7-506-164	Jam Count by Paper Size	LG SEF	CTL*	[0 to 65535/0/0]
7-506-166	Jam Count by Paper Size	LT SEF	CTL*	[0 to 65535/0/0]
7-506-172	Jam Count by Paper Size	HLT SEF	CTL*	[0 to 65535/0/0]
7-506-255	Jam Count by Paper Size	Others	CTL*	[0 to 65535/0/0]
7-507-001	Plotter Jam History	Latest	CTL*	[0 to 0/0/0]
7-507-002	Plotter Jam History	Latest 1	CTL*	[0 to 0/0/0]
7-507-003	Plotter Jam History	Latest 2	CTL*	[0 to 0/0/0]
7-507-004	Plotter Jam History	Latest 3	CTL*	[0 to 0/0/0]
7-507-005	Plotter Jam History	Latest 4	CTL*	[0 to 0/0/0]
7-507-006	Plotter Jam History	Latest 5	CTL*	[0 to 0/0/0]
7-507-007	Plotter Jam History	Latest 6	CTL*	[0 to 0/0/0]
7-507-008	Plotter Jam History	Latest 7	CTL*	[0 to 0/0/0]
7-507-009	Plotter Jam History	Latest 8	CTL*	[0 to 0/0/0]
7-507-010	Plotter Jam History	Latest 9	CTL*	[0 to 0/0/0]
7-508-	Original Jam History	Latest	CTL*	[0 to 0/0/0]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
001				
7-508-002	Original Jam History	Latest 1	CTL*	[0 to 0/0/0]
7-508-003	Original Jam History	Latest 2	CTL*	[0 to 0/0/0]
7-508-004	Original Jam History	Latest 3	CTL*	[0 to 0/0/0]
7-508-005	Original Jam History	Latest 4	CTL*	[0 to 0/0/0]
7-508-006	Original Jam History	Latest 5	CTL*	[0 to 0/0/0]
7-508-007	Original Jam History	Latest 6	CTL*	[0 to 0/0/0]
7-508-008	Original Jam History	Latest 7	CTL*	[0 to 0/0/0]
7-508-009	Original Jam History	Latest 8	CTL*	[0 to 0/0/0]
7-508-010	Original Jam History	Latest 9	CTL*	[0 to 0/0/0]
7-514-001	Paper Jam Count by Location	Initial Jam	CTL*	[0 to 65535/0/0]
7-514-003	Paper Jam Count by Location	Tray 1: On	CTL*	[0 to 65535/0/0]
7-514-004	Paper Jam Count by Location	Tray2: On	CTL*	[0 to 65535/0/0]
7-514-005	Paper Jam Count by Location	Tray3: On	CTL*	[0 to 65535/0/0]
7-514-008	Paper Jam Count by Location	Bypass: On	CTL*	[0 to 65535/0/0]
7-514-009	Paper Jam Count by Location	Duplex: On	CTL*	[0 to 65535/0/0]
7-514-013	Paper Jam Count by Location	Tray 2 Vertical Trans.Sn: On	CTL*	[0 to 65535/0/0]
7-514-017	Paper Jam Count by Location	Registration Sensor : On	CTL*	[0 to 65535/0/0]
7-514-	Paper Jam Count by Location	Paper Exit: On	CTL*	[0 to 65535/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
020				
7-514-023	Paper Jam Count by Location	Duplex Inverter: On	CTL*	[0 to 65535/0/0]
7-514-026	Paper Jam Count by Location	Duplex Entrance: On	CTL*	[0 to 65535/0/0]
7-514-053	Paper Jam Count by Location	Tray 2 Vertical Trans.Sn: Off	CTL*	[0 to 65535/0/0]
7-514-054	Paper Jam Count by Location	Tray 3 Vertical Trans.Sn: Off	CTL*	[0 to 65535/0/0]
7-514-057	Paper Jam Count by Location	Registration Sensor: Off	CTL*	[0 to 65535/0/0]
7-514-060	Paper Jam Count by Location	Paper Exit: Off	CTL*	[0 to 65535/0/0]
7-514-063	Paper Jam Count by Location	Duplex Inverter: Off	CTL*	[0 to 65535/0/0]
7-514-066	Paper Jam Count by Location	Duplex Entrance: Off	CTL*	[0 to 65535/0/0]
7-515-001	Original Jam Count by Detection	Initial Jam	CTL*	[0 to 65535/0/0]
7-515-004	Original Jam Count by Detection	Registration Sensor: On	CTL*	[0 to 65535/0/0]
7-515-013	Original Jam Count by Detection	Paper Feed Rear Sensor: On	CTL*	[0 to 65535/0/0]
7-515-054	Original Jam Count by Detection	Registration Sensor: Off	CTL*	[0 to 65535/0/0]
7-515-063	Original Jam Count by Detection	Paper Feed Rear Sensor: Off	CTL*	[0 to 65535/0/0]
7-515-097	Original Jam Count by Detection	Timing Error	CTL*	[0 to 65535/0/0]
7-515-098	Original Jam Count by Detection	Short Paper Interval	CTL*	[0 to 65535/0/0]
7-515-100	Original Jam Count by Detection	Motor Error	CTL*	[0 to 65535/0/0]
7-516-006	Paper Size Jam Count	A5 LEF	CTL*	[0 to 65535/0/0]
7-516-	Paper Size Jam Count	HLT LEF	CTL*	[0 to 65535/0/0]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
044				
7-516-133	Paper Size Jam Count	A4 SEF	CTL*	[0 to 65535/0/0]
7-516-134	Paper Size Jam Count	A5 SEF	CTL*	[0 to 65535/0/0]
7-516-142	Paper Size Jam Count	B5 SEF	CTL*	[0 to 65535/0/0]
7-516-164	Paper Size Jam Count	LG SEF	CTL*	[0 to 65535/0/0]
7-516-166	Paper Size Jam Count	LT SEF	CTL*	[0 to 65535/0/0]
7-516-172	Paper Size Jam Count	HLT SEF	CTL*	[0 to 65535/0/0]
7-516-255	Paper Size Jam Count	Others	CTL*	[0 to 65535/0/0]
7-520-001	Update Log	ErrorRecord1	CTL*	[0 to 255/0/1]
7-520-002	Update Log	ErrorRecord2	CTL*	[0 to 255/0/1]
7-520-003	Update Log	ErrorRecord3	CTL*	[0 to 255/0/1]
7-520-004	Update Log	ErrorRecord4	CTL*	[0 to 255/0/1]
7-520-005	Update Log	ErrorRecord5	CTL*	[0 to 255/0/1]
7-520-006	Update Log	ErrorRecord6	CTL*	[0 to 255/0/1]
7-520-007	Update Log	ErrorRecord7	CTL*	[0 to 255/0/1]
7-520-008	Update Log	ErrorRecord8	CTL*	[0 to 255/0/1]
7-520-009	Update Log	ErrorRecord9	CTL*	[0 to 255/0/1]
7-520-010	Update Log	ErrorRecord10	CTL*	[0 to 255/0/1]
7-520-	Update Log	Auto:StartDate1	CTL*	[0 to 0/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
011				
7-520-012	Update Log	Auto:StartDate2	CTL*	[0 to 0/0/0]
7-520-013	Update Log	Auto:StartDate3	CTL*	[0 to 0/0/0]
7-520-014	Update Log	Auto:StartDate4	CTL*	[0 to 0/0/0]
7-520-015	Update Log	Auto:StartDate5	CTL*	[0 to 0/0/0]
7-520-021	Update Log	Auto:EndDate1	CTL*	[0 to 0/0/0]
7-520-022	Update Log	Auto:EndDate2	CTL*	[0 to 0/0/0]
7-520-023	Update Log	Auto:EndDate3	CTL*	[0 to 0/0/0]
7-520-024	Update Log	Auto:EndDate4	CTL*	[0 to 0/0/0]
7-520-025	Update Log	Auto:EndDate5	CTL*	[0 to 0/0/0]
7-520-031	Update Log	Auto:Piecemark1	CTL*	[0 to 0/0/0]
7-520-032	Update Log	Auto:Piecemark2	CTL*	[0 to 0/0/0]
7-520-033	Update Log	Auto:Piecemark3	CTL*	[0 to 0/0/0]
7-520-034	Update Log	Auto:Piecemark4	CTL*	[0 to 0/0/0]
7-520-035	Update Log	Auto:Piecemark5	CTL*	[0 to 0/0/0]
7-520-041	Update Log	Auto:Version1	CTL*	[0 to 0/0/0]
7-520-042	Update Log	Auto:Version2	CTL*	[0 to 0/0/0]
7-520-043	Update Log	Auto:Version3	CTL*	[0 to 0/0/0]
7-520-	Update Log	Auto:Version4	CTL*	[0 to 0/0/0]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
044				
7-520-045	Update Log	Auto:Version5	CTL*	[0 to 0/0/0]
7-520-051	Update Log	Auto:Result1	CTL*	[0 to 255/0/1]
7-520-052	Update Log	Auto:Result2	CTL*	[0 to 255/0/1]
7-520-053	Update Log	Auto:Result3	CTL*	[0 to 255/0/1]
7-520-054	Update Log	Auto:Result4	CTL*	[0 to 255/0/1]
7-520-055	Update Log	Auto:Result5	CTL*	[0 to 255/0/1]
7-520-056	Update Log	Auto:Result6	CTL*	[0 to 255/0/1]
7-520-057	Update Log	Auto:Result7	CTL*	[0 to 255/0/1]
7-520-058	Update Log	Auto:Result8	CTL*	[0 to 255/0/1]
7-520-059	Update Log	Auto:Result9	CTL*	[0 to 255/0/1]
7-520-060	Update Log	Auto:Result10	CTL*	[0 to 255/0/1]
7-801-255	ROM No./ Firmware Version		CTL	[0 to 0/0/0]
7-803-001	PM Counter Display	Paper	CTL*	[0 to 9999999/0/0]
7-804-001	PM Counter Reset	Paper	CTL	[0 to 0/0/0]
7-807-001	SC/Jam Counter Reset		CTL	[0 to 0/0/0]
7-826-001	MF Error Counter	Error Total	CTL*	[0 to 9999999/0/0]
7-826-002	MF Error Counter	Error Staple	CTL*	[0 to 9999999/0/0]
7-827-	MF Error Counter Clear		CTL	[0 to 0/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
001				
7-832-001	Self-Diagnose Result Display		CTL	[0 to 0/0/0]
7-836-001	Total Memory Size		CTL	[0 to 0xffffffff/0/0MB]
7-840-001	ServiceSP Entry Code Chg Hist	Change Time :Latest	CTL*	[0 to 0/0/0]
7-840-002	ServiceSP Entry Code Chg Hist	Change Time :Last1	CTL*	[0 to 0/0/0]
7-840-101	ServiceSP Entry Code Chg Hist	Initialize Time :Latest	CTL*	[0 to 0/0/0]
7-840-102	ServiceSP Entry Code Chg Hist	Initialize Time :Last1	CTL*	[0 to 0/0/0]
7-901-001	Assert Info.	File Name	CTL*	[0 to 0/0/0]
7-901-002	Assert Info.	Number of Lines	CTL*	[0 to 0/0/0]
7-901-003	Assert Info.	Location	CTL*	[0 to 0/0/0]
7-910-001	ROM No	System/Copy	CTL	[0 to 0/0/0]
7-910-002	ROM No	Engine	CTL	[0 to 0/0/0]
7-910-003	ROM No	Lcdc	CTL	[0 to 0/0/0]
7-910-012	ROM No	FCU	CTL	[0 to 0/0/0]
7-910-018	ROM No	NetworkSupport	CTL	[0 to 0/0/0]
7-910-022	ROM No	BIOS	CTL	[0 to 0/0/0]
7-910-023	ROM No	HDD Format Option	CTL	[0 to 0/0/0]
7-910-132	ROM No	NetWare	CTL	[0 to 0/0/0]
7-910-	ROM No	RPCS	CTL	[0 to 0/0/0]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
150				
7-910-151	ROM No	PS	CTL	[0 to 0/0/0]
7-910-158	ROM No	PCL	CTL	[0 to 0/0/0]
7-910-159	ROM No	PCLXL	CTL	[0 to 0/0/0]
7-910-162	ROM No	PDF	CTL	[0 to 0/0/0]
7-910-165	ROM No	PJL	CTL	[0 to 0/0/0]
7-910-167	ROM No	MediaPrint:JPEG	CTL	[0 to 0/0/0]
7-910-168	ROM No	MediaPrint:TIFF	CTL	[0 to 0/0/0]
7-910-169	ROM No	XPS	CTL	[0 to 0/0/0]
7-910-180	ROM No	FONT	CTL	[0 to 0/0/0]
7-910-181	ROM No	FONT1	CTL	[0 to 0/0/0]
7-910-182	ROM No	FONT2	CTL	[0 to 0/0/0]
7-910-183	ROM No	FONT3	CTL	[0 to 0/0/0]
7-910-184	ROM No	FONT4	CTL	[0 to 0/0/0]
7-910-185	ROM No	FONT5	CTL	[0 to 0/0/0]
7-910-200	ROM No	Factory	CTL	[0 to 0/0/0]
7-910-201	ROM No	Copy	CTL	[0 to 0/0/0]
7-910-202	ROM No	NetworkDocBox	CTL	[0 to 0/0/0]
7-910-	ROM No	Fax	CTL	[0 to 0/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
203				
7-910-204	ROM No	Printer	CTL	[0 to 0/0/0]
7-910-205	ROM No	Scanner	CTL	[0 to 0/0/0]
7-910-206	ROM No	RFax	CTL	[0 to 0/0/0]
7-910-210	ROM No	MIB	CTL	[0 to 0/0/0]
7-910-211	ROM No	Websupport	CTL	[0 to 0/0/0]
7-910-212	ROM No	WebUapl	CTL	[0 to 0/0/0]
7-910-213	ROM No	SDK1	CTL	[0 to 0/0/0]
7-910-214	ROM No	SDK2	CTL	[0 to 0/0/0]
7-910-215	ROM No	SDK3	CTL	[0 to 0/0/0]
7-910-250	ROM No	Package	CTL	[0 to 0/0/0]
7-911-001	Firmware Version	System/Copy	CTL	[0 to 0/0/0]
7-911-002	Firmware Version	Engine	CTL	[0 to 0/0/0]
7-911-003	Firmware Version	Lcdc	CTL	[0 to 0/0/0]
7-911-012	Firmware Version	FCU	CTL	[0 to 0/0/0]
7-911-018	Firmware Version	NetworkSupport	CTL	[0 to 0/0/0]
7-911-022	Firmware Version	BIOS	CTL	[0 to 0/0/0]
7-911-023	Firmware Version	HDD Format Option	CTL	[0 to 0/0/0]
7-911-	Firmware Version	NetWare	CTL	[0 to 0/0/0]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
132				
7-911-150	Firmware Version	RPCS	CTL	[0 to 0/0/0]
7-911-151	Firmware Version	PS	CTL	[0 to 0/0/0]
7-911-158	Firmware Version	PCL	CTL	[0 to 0/0/0]
7-911-159	Firmware Version	PCLXL	CTL	[0 to 0/0/0]
7-911-162	Firmware Version	PDF	CTL	[0 to 0/0/0]
7-911-165	Firmware Version	PJL	CTL	[0 to 0/0/0]
7-911-167	Firmware Version	MediaPrint:JPEG	CTL	[0 to 0/0/0]
7-911-168	Firmware Version	MediaPrint:TIFF	CTL	[0 to 0/0/0]
7-911-169	Firmware Version	XPS	CTL	[0 to 0/0/0]
7-911-180	Firmware Version	FONT	CTL	[0 to 0/0/0]
7-911-181	Firmware Version	FONT1	CTL	[0 to 0/0/0]
7-911-182	Firmware Version	FONT2	CTL	[0 to 0/0/0]
7-911-183	Firmware Version	FONT3	CTL	[0 to 0/0/0]
7-911-184	Firmware Version	FONT4	CTL	[0 to 0/0/0]
7-911-185	Firmware Version	FONT5	CTL	[0 to 0/0/0]
7-911-200	Firmware Version	Factory	CTL	[0 to 0/0/0]
7-911-201	Firmware Version	Copy	CTL	[0 to 0/0/0]
7-911-	Firmware Version	NetworkDocBox	CTL	[0 to 0/0/0]

3.Appendices: SP Mode Tables

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
202				
7-911-203	Firmware Version	Fax	CTL	[0 to 0/0/0]
7-911-204	Firmware Version	Printer	CTL	[0 to 0/0/0]
7-911-205	Firmware Version	Scanner	CTL	[0 to 0/0/0]
7-911-206	Firmware Version	RFax	CTL	[0 to 0/0/0]
7-911-210	Firmware Version	MIB	CTL	[0 to 0/0/0]
7-911-211	Firmware Version	Websupport	CTL	[0 to 0/0/0]
7-911-212	Firmware Version	WebUapl	CTL	[0 to 0/0/0]
7-911-213	Firmware Version	SDK1	CTL	[0 to 0/0/0]
7-911-214	Firmware Version	SDK2	CTL	[0 to 0/0/0]
7-911-215	Firmware Version	SDK3	CTL	[0 to 0/0/0]
7-911-250	Firmware Version	Package	CTL	[0 to 0/0/0]

Main SP Tables-8

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.	
L:	Local storage (document server)	Totals (jobs, pages, etc.) for the document server. The L: counters work differently case by case. Sometimes, they count jobs/pages stored on the document server; this can be in document server mode (from the document server window), or from another mode, such as from a printer driver or by pressing the Store File button in the Copy mode window. Sometimes, they include occasions when the user uses a file that is already on the document server. Each counter will be discussed case by case.
O:	Other applications (external network applications, for example)	Refers to network applications such as Web Image Monitor. Utilities developed with the SDK (Software Development Kit) will also be counted with this group in the future.

The Group 8 SP codes are limited to 17 characters, forced by the necessity of displaying them on the small LCDs of printers and faxes that also use these SPs. Read over the list of abbreviations below and refer to it again if you see the name of an SP that you do not understand.

Key for Abbreviations

Abbreviation	What it means
/	"By", e.g. "T:Jobs/Apl" = Total Jobs "by" Application
>	More (2> "2 or more", 4> "4 or more")
AddBook	Address Book
Apl	Application
B/W	Black & White
Bk	Black
C	Cyan
ColCr	Color Create
ColMode	Color Mode
Comb	Combine
Comp	Compression
Deliv	Delivery
DesApl	Designated Application. The application (Copy, Fax, Scan, Print) used to store the job on the document server, for example.
Dev Counter	Development Count, no. of pages developed.
Dup, Duplex	Duplex, printing on both sides
Emul	Emulation
FC	Full Color
FIN	Post-print processing, i.e. finishing (punching, stapling, etc.)
Full Bleed	No Margins
GenCopy	Generation Copy Mode
GPC	Get Print Counter. For jobs 10 pages or less, this counter does not count up. For jobs larger than 10 pages, this counter counts up by the number that is in excess of 10 (e.g., for an 11-page job, the counter counts up 11-10=1)
IFax	Internet Fax
ImgEdt	Image Edit performed on the original with the copier GUI, e.g. border removal, adding stamps, page numbers, etc.
K	Black (YMCK)
LS	Local Storage. Refers to the document server.
LSize	Large (paper) Size
Mag	Magnification
MC	One color (monochrome)
NRS	New Remote Service, which allows a service center to monitor machines remotely. "NRS" is used overseas, "CSS" is used in Japan.
Org	Original for scanning
OrgJam	Original Jam

Abbreviation	What it means
Palm 2	Print Job Manager/Desk Top Editor: A pair of utilities that allows print jobs to be distributed evenly among the printers on the network, and allows files to moved around, combined, and converted to different formats.
PC	Personal Computer
PGS	Pages. A page is the total scanned surface of the original. Duplex pages count as two pages, and A3 simplex count as two pages if the A3/DLT counter SP is switched ON.
PJob	Print Jobs
Ppr	Paper
PrtJam	Printer (plotter) Jam
PrtPGS	Print Pages
R	Red (Toner Remaining). Applies to the wide format model A2 only. This machine is under development and currently not available.
Rez	Resolution
SC	Service Code (Error SC code displayed)
Scn	Scan
Sim, Simplex	Simplex, printing on 1 side.
S-to-Email	Scan-to-E-mail
SMC	SMC report printed with SP5990. All of the Group 8 counters are recorded in the SMC report.
Svr	Server
TonEnd	Toner End
TonSave	Toner Save
TXJob	Send, Transmission
YMC	Yellow, Magenta, Cyan
YMCK	Yellow, Magenta, Cyan, Black

 Note

- All of the Group 8 SPs are reset with SP5 801 1 Memory All Clear.

8001	T:Total Jobs	*CTL	These SPs count the number of times each application is used to do a job. [0 to 99999999 / 0 / 1/step] 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	*CTL	

3. Appendices: SP Mode Tables

	Jobs		

- These SPs reveal the number of times an application is used, not the number of pages processed.
- When an application is opened for image input or output, this counts as one job.
- Interrupted jobs (paper jams, etc.) are counted, even though they do not finish.
- Only jobs executed by the customer are counted. Jobs executed by the customer engineer using the SP modes are not counted.
- When using secure printing (when a password is required to start the print job), the job is counted at the time when either "Delete Data" or "Specify Output" is specified.
- A job is counted as a fax job when the job is stored for sending.
- When a fax is received to fax memory, the F: counter increments but the L: counter does not (the document server is not used).
- A fax broadcast counts as one job for the F: counter (the fax destinations in the broadcast are not counted separately).
- A fax broadcast is counted only after all the faxes have been sent to their destinations. If one transmission generates an error, then the broadcast will not be counted until the transmission has been completed.
- A printed fax report counts as one job for the F: counter.
- The F: counter does not distinguish between fax sending or receiving.
- When a copy job on the document server is printed, SP8022 also increments, and when a print job stored on the document server is printed, SP8024 also increments.
- When an original is both copied and stored on the document server, the C: and L: counters both increment.
- When a print job is stored on the document server, only the L: counter increments.
- When the user presses the Document Server button to store the job on the document server, only the L: counter increments.
- When the user enters document server mode and prints data stored on the document server, only the L: counter increments.
- When an image received from Palm 2 is received and stored, the L: counter increments.
- When the customer prints a report (user code list, for example), the O: counter increments. However, for fax reports and reports executed from the fax application, the F: counter increments.

8011	T:Jobs/LS	*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 / 0 / 1/step] 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 / 0 / 1/step] 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 / 0 / 1/step] 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 / 0 / 1/step] 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	*CTL	

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	Jobs/LS		
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 / 0 / 1/step] 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]

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	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 999999999 / 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 999999999 / 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 999999999 / 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 999999999 / 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 999999999 / 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 999999999 / 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 999999999 / 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 (812x) also increments.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8121	T:IFAX TX Jobs	*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

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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 999999999 / 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 999999999 / 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 999999999 / 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 999999999 / 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

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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 99999999 / 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 99999999 / 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 99999999 / 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 99999999 / 0 / 1/step] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen.
8212	C:Scan PGS/LS	*CTL	
8213	F:Scan PGS/LS	*CTL	
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 99999999 / 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 99999999/ 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 1 side/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 99999999/ 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 99999999/ 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 99999999/ 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 99999999/ 0 / 1/step]

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	These SPs count the number of pages scanned by original type for Scan jobs.		
8246	L:Scan PGS/Org	*CTL	[0 to 999999999/ 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 999999999/ 0 / 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 99999999 / 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 99999999 / 0 / 1/step] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen
8293	F:Scan PGS/Stamp	*CTL	
8295	S:Scan PGS/Stamp	*CTL	

8301	T:Scan PGS/Size	*CTL	[0 to 99999999 / 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 99999999 / 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 99999999 / 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 99999999 / 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 99999999 / 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 99999999 / 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 99999999 / 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:Saen Poster	*CTL	[0 to 99999999 / 0 / 1/step]
8322	C:Saen Poster	*CTL	[0 to 99999999 / 0 / 1/step]
8326	L:Saen Poster	*CTL	[0 to 99999999 / 0 / 1/step]

832x-001	2 Sheet
832x-002	4 Sheet
832x-003	9 Sheet

8381	T:Total PrtPGS	*CTL	These SPs count the number of pages printed by the customer. The counter for the application used for storing the pages increments.
8382	C:Total PrtPGS	*CTL	[0 to 99999999 / 0 / 1/step] The L: counter counts the number of pages stored from within the document server mode

8383	F:Total PrtPGS	*CTL	screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.
8384	P:Total PrtPGS	*CTL	
8385	S:Total PrtPGS	*CTL	
8386	L:Total PrtPGS	*CTL	
8387	O:Total PrtPGS	*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 99999999 / 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.
8402	C:PrtPGS/LS	*CTL	
8403	F:PrtPGS/LS	*CTL	The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel. [0 to 99999999 / 0 / 1/step]
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 99999999 / 0 / 1/step]

3. Appendices: SP Mode Tables

8421	T:PrtPGS/Dup Comb	*CTL	[0 to 99999999/ 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 99999999/ 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 99999999/ 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 99999999/ 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 99999999/ 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 99999999/ 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 99999999/ 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	Tray 10	Not used	
012	Tray 11	Not used	
013	Tray 12	Not used	
014	Tray 13	Not used	
015	Tray 14	Not used	
016	Tray 15	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 999999999/ 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 999999999/ 0 / 1/step]
8484	P:PrtPGS/TonSave	*CTL	[0 to 999999999/ 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 99999999 / 0 / 1/step]
	These SPs count by printer emulation mode the total number of pages printed.		
8514	P:PrtPGS/Emul	*CTL	[0 to 99999999 / 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	-

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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 99999999 / 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 99999999 / 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 99999999 / 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 99999999 / 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 99999999 / 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 99999999 / 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	Staple		
	This SP counts the amount of staples used (-001) or count stapled (-002) by the machine.		
001	Staples	*CTL	[0 to 99999999 / 0 / 1]
002	Stapless	*CTL	[0 to 99999999 / 0 / 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 99999999 / 0 / 1/step]
8562	C:A Sheet Of Paper	*CTL	[0 to 99999999 / 0 / 1/step]
8563	F:A Sheet Of Paper	*CTL	[0 to 99999999 / 0 / 1/step]
8564	P:A Sheet Of Paper	*CTL	[0 to 99999999 / 0 / 1/step]
8566	L:A Sheet Of Paper	*CTL	[0 to 99999999 / 0 / 1/step]
8567	O:A Sheet Of Paper	*CTL	[0 to 99999999 / 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 99999999 / 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		

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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)
032	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 99999999 / 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 99999999 / 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 999999999/ 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 999999999/ 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 2147483647/ 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]

3. Appendices: SP Mode Tables

	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 999999999/ 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 999999999/ 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 999999999/ 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 99999999/ 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 99999999/ 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 99999999/ 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 99999999/ 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 99999999/ 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		

3. Appendices: SP Mode Tables

	applications.		
8665	S:Deliv PGS/Svr	*CTL	[0 to 99999999 / 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 99999999 / 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 99999999 / 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 99999999 / 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 99999999 / 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 99999999/ 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 99999999/ 0 / 1/step]
8715	S:Scan PGS/Comp	*CTL	[0 to 99999999/ 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 99999999/ 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 99999999/ 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		

3.Appendices: SP Mode Tables

873x-002	Color

8741	RX PGS/Port	*CTL	[0 to 99999999 / 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		

8771	Dev Counter	*CTL	[0 to 99999999 / 0 / 1/step]
	These SPs count the frequency of use (number of rotations of the development rollers) for black and other color toners.		
001	Total		
002	K		
003	Y		
004	M		
005	C		

8781	Toner_Botol_Info.	*CTL	[0 to 99999999 / 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.		
001	BK	The number of black-toner bottles	
002	Y	The number of yellow-toner bottles	
003	M	The number of magenta-toner bottles	
004	C	The number of cyan-toner bottles	

8791	LS Memory Remain	*CTL	[0 to 100 / 0 / 1/%]
	This SP displays the percent of space available on the document server for storing documents.		
001	BK	The number of black-toner bottles	

8801	Toner Remain	*CTL	[0 to 100 / 0 / 1/%]
	These SPs display the percent of toner remaining for each color. This SP allows the user to check the toner supply at any time. Note: This precise method of measuring remaining toner supply (1% steps) is better than other machines in the market that can only measure in increments of 10 (10% steps).		
001	K		

002	Y
003	M
004	C

8811	Eco Counter		
001	Eco Total	*CTL	[0 to 99999999 / 0 / 1/step]
	Displays the number of pages reduced by using the color, full color, duplex and combine function.		
004	Duplex	*CTL	[0 to 99999999 / 0 / 1/step]
	Displays the number of pages reduced by using the duplex function.		
005	Combine	*CTL	[0 to 99999999 / 0 / 1/step]
	Displays the number of pages reduced by using the combine function.		
008	Duplex(%)	*CTL	[0 to 100 / 0 / 1/%]
	Displays the utilization ratio of the duplex function.		
009	Combine(%)	*CTL	[0 to 100 / 0 / 1/%]
	Displays the utilization ratio of the combine function.		
010	Paper Cut(%)	*CTL	[0 to 100/ 0 / 1/%]
	Displays the paper reduction ratio.		
051	Sync Eco Total	*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]
058	Sync Duplex(%)	*CTL	[0 to 100/ 0 / 1/%]
059	Sync Combine(%)	*CTL	[0 to 100/ 0 / 1/%]
060	Sync Paper Cut(%)	*CTL	[0 to 100/ 0 / 1/%]
101	Eco Totalr:Last	*CTL	[0 to 99999999/ 0 / 1/step]
104	Duplex:Last	*CTL	[0 to 99999999/ 0 / 1/step]
105	Combine:Last	*CTL	[0 to 99999999/ 0 / 1/step]
108	Duplex(%):Last	*CTL	[0 to 100/ 0 / 1/%]
109	Combine(%):Last	*CTL	[0 to 100/ 0 / 1/%]
110	Paper Cut(%):Last	*CTL	[0 to 100/ 0 / 1/%]
151	Sync Eco Totalr:Last	*CTL	[0 to 99999999 / 0 / 1/step]
154	Sync Duplex:Last	*CTL	[0 to 99999999 / 0 / 1/step]
155	Sync Combine:Last	*CTL	[0 to 99999999 / 0 / 1/step]
158	Sync Duplex(%):Last	*CTL	[0 to 100/ 0 / 1/%]
159	Sync Combine(%):Last	*CTL	[0 to 100/ 0 / 1/%]
160	Sync Paper Cut(%):Last	*CTL	[0 to 100/ 0 / 1/%]

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%.		

3.Appendices: SP Mode Tables

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 99999999 / 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 99999999 / 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 99999999 / 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 999999999/ 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/%]
	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 999999999/ 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 999999999/ 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.	

3. Appendices: SP Mode Tables

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 999999999/ 0 / 1]
002	Copy: Full Color	*CTL	[0 to 999999999/ 0 / 1]
003	Copy: BW	*CTL	[0 to 999999999/ 0 / 1]
004	Copy: Single Color	*CTL	[0 to 999999999/ 0 / 1]
005	Copy: Two Color	*CTL	[0 to 999999999/ 0 / 1]
006	Printer Full Color	*CTL	[0 to 999999999/ 0 / 1]
007	Printer BW	*CTL	[0 to 999999999/ 0 / 1]
008	Printer Single Color	*CTL	[0 to 999999999/ 0 / 1]
009	Printer Two Color	*CTL	[0 to 999999999/ 0 / 1]
010	Fax Print: BW	*CTL	[0 to 999999999/ 0 / 1]
011	Fax Print: Single Color	*CTL	[0 to 999999999/ 0 / 1]
013	Duplex	*CTL	[0 to 999999999/ 0 / 1]
022	Copy: Full Color(%)	*CTL	[0 to 2147483647/ 0 / 1]
023	Copy: BW(%)	*CTL	[0 to 2147483647/ 0 / 1]
024	Copy: Single Color(%)	*CTL	[0 to 2147483647/ 0 / 1]
025	Copy: Two Color(%)	*CTL	[0 to 2147483647/ 0 / 1]
026	Printer: Full Color(%)	*CTL	[0 to 2147483647/ 0 / 1]
027	Printer: BW(%)	*CTL	[0 to 2147483647/ 0 / 1]
028	Printer: Single Color(%)	*CTL	[0 to 2147483647/ 0 / 1]
029	Printer: Two Color(%)	*CTL	[0 to 2147483647/ 0 / 1]
030	Fax Print: BW(%)	*CTL	[0 to 2147483647/ 0 / 1]
031	Fax Print: Single Color(%)	*CTL	[0 to 2147483647/ 0 / 1]
101	Transmission Total: Color	*CTL	[0 to 999999999/ 0 / 1]
102	Transmission Total: BW	*CTL	[0 to 999999999/ 0 / 1]
103	FAX Transmission	*CTL	[0 to 999999999/ 0 / 1]
104	Scanner Transmission: Color	*CTL	[0 to 999999999/ 0 / 1]
105	Scanner Transmission: BW	*CTL	[0 to 999999999/ 0 / 1]

Input and Output Check

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

Input Check Table

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-803-001	INPUT Check	Paper Size	ENG	[0 to 15/0/1]
5-803-002	INPUT Check	Paper End	ENG	[0 to 1/0/1]
5-803-003	INPUT Check	Bypass:Paper End	ENG	[0 to 1/0/1]
5-803-004	INPUT Check	Bypass:Tray	ENG	[0 to 1/0/1]
5-803-005	INPUT Check	Paper Exit Full	ENG	[0 to 1/0/1]
5-803-006	INPUT Check	Paper Exit	ENG	[0 to 1/0/1]
5-803-008	INPUT Check	Registration	ENG	[0 to 1/0/1]
5-803-010	INPUT Check	Duplex:Entrance	ENG	[0 to 1/0/1]
5-803-011	INPUT Check	Duplex:Reverse	ENG	[0 to 1/0/1]
5-803-012	INPUT Check	Rear Interlock	ENG	[0 to 1/0/1]
5-803-013	INPUT Check	Front Interlock	ENG	[0 to 1/0/1]
5-803-017	INPUT Check	Fusing Unit New	ENG	[0 to 1/0/1]
5-803-018	INPUT Check	Fusing Unit Set	ENG	[0 to 1/0/1]
5-803-019	INPUT Check	HVP: SC_C_DV	ENG	[0 to 1/0/1]
5-803-020	INPUT Check	HVP: SC_T	ENG	[0 to 1/0/1]
5-803-022	INPUT Check	PSU Fan Lock	ENG	[0 to 1/0/1]
5-803-023	INPUT Check	Fusing Fan Lock	ENG	[0 to 1/0/1]
5-803-024	INPUT Check	Drum Fan Lock	ENG	[0 to 1/0/1]
5-803-025	INPUT Check	Main Motor Lock	ENG	[0 to 1/0/1]
5-803-026	INPUT Check	Key Card Set	ENG	[0 to 1/0/1]
5-803-027	INPUT Check	BiCU Ver	ENG	[0 to 7/0/1]
5-803-028	INPUT Check	Key Counter Set1	ENG	[0 to 1/0/1]
5-803-029	INPUT Check	Key Counter Set2	ENG	[0 to 1/0/1]
5-803-083	INPUT Check	BANK1:500/250	ENG	[0 to 1/0/1]
5-803-084	INPUT Check	BANK2:500/250	ENG	[0 to 1/0/1]
5-803-087	INPUT Check	BANK1:Relay SN	ENG	[0 to 1/0/1]
5-803-088	INPUT Check	BANK2:Relay SN	ENG	[0 to 1/0/1]
5-803-092	INPUT Check	BANK1:Paper End	ENG	[0 to 1/0/1]
5-803-093	INPUT Check	BANK2:Paper End	ENG	[0 to 1/0/1]

5-803-094	INPUT Check	BANK1:Paper Size	ENG	[0 to 7/0/1]
5-803-095	INPUT Check	BANK2:Paper Size	ENG	[0 to 7/0/1]
5-803-200	INPUT Check	Scanner HP Sensor	ENG	[0 to 1/0/1]
5-803-201	INPUT Check	Platen Cover Sensor	ENG	[0 to 1/0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
6-011-009	1-Pass ADF INPUT Check	Original Detection	ENG	[0 to 1/0/1 STEP]
6-011-010	1-Pass ADF INPUT Check	Feed After sensor	ENG	[0 to 1/0/1 STEP]
6-011-013	1-Pass ADF INPUT Check	Registration Sensor	ENG	[0 to 1/0/1 STEP]
6-011-015	1-Pass ADF INPUT Check	Feed Cover Sensor	ENG	[0 to 1/0/1 STEP]

Output Check Table

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
5-804-001	OUTPUT Check	All Off	ENG	[0 to 1/0/1]
5-804-002	OUTPUT Check	MainMT: CW: High	ENG	[0 to 1/0/1]
5-804-003	OUTPUT Check	MainMT: CW: Mid	ENG	[0 to 1/0/1]
5-804-004	OUTPUT Check	MainMT: CW: Low	ENG	[0 to 1/0/1]
5-804-005	OUTPUT Check	MainMT: CCW: High	ENG	[0 to 1/0/1]
5-804-006	OUTPUT Check	MainMT: CCW: Mid	ENG	[0 to 1/0/1]
5-804-007	OUTPUT Check	MainMT: CCW: Low	ENG	[0 to 1/0/1]
5-804-009	OUTPUT Check	PSU Fan	ENG	[0 to 1/0/1]
5-804-010	OUTPUT Check	Fusing Fan: High	ENG	[0 to 1/0/1]
5-804-011	OUTPUT Check	Fusing Fan: Low	ENG	[0 to 1/0/1]
5-804-012	OUTPUT Check	Drum Fan: High	ENG	[0 to 1/0/1]
5-804-013	OUTPUT Check	Drum Fan: Low	ENG	[0 to 1/0/1]
5-804-014	OUTPUT Check	Registration CL	ENG	[0 to 1/0/1]
5-804-015	OUTPUT Check	Paper Feed CL	ENG	[0 to 1/0/1]
5-804-016	OUTPUT Check	Feed Connect CL	ENG	[0 to 1/0/1]
5-804-017	OUTPUT Check	Duplex CL	ENG	[0 to 1/0/1]
5-804-018	OUTPUT Check	Bypass: Feed CL	ENG	[0 to 1/0/1]
5-804-019	OUTPUT Check	Bypass: Tray CL	ENG	[0 to 1/0/1]
5-804-020	OUTPUT Check	Toner Supply CL	ENG	[0 to 1/0/1]
5-804-021	OUTPUT Check	Exit Junc SOL	ENG	[0 to 1/0/1]
5-804-023	OUTPUT Check	HVP: Charge	ENG	[0 to 1/0/1]
5-804-024	OUTPUT Check	HVP: Development	ENG	[0 to 1/0/1]
5-804-025	OUTPUT Check	HVP: Transfer: -	ENG	[0 to 1/0/1]
5-804-026	OUTPUT Check	HVP: Transfer: +	ENG	[0 to 1/0/1]

3. Appendices: SP Mode Tables

5-804-027	OUTPUT Check	BICTL	ENG	[0 to 1/0/1]
5-804-029	OUTPUT Check	Toner End Sensor	ENG	[0 to 1/0/1]
5-804-030	OUTPUT Check	ExtRevMt:HOLD	ENG	[0 to 1/0/1]
5-804-031	OUTPUT Check	ExtRevMt:CW:Hi	ENG	[0 to 1/0/1]
5-804-032	OUTPUT Check	ExtRevMt:CW:Mid	ENG	[0 to 1/0/1]
5-804-033	OUTPUT Check	ExtRevMt:CW:Low	ENG	[0 to 1/0/1]
5-804-034	OUTPUT Check	ExtRevMt:CCW:Hi	ENG	[0 to 1/0/1]
5-804-035	OUTPUT Check	ExtRevMt:CCW:Mid	ENG	[0 to 1/0/1]
5-804-036	OUTPUT Check	ExtRevMt:CCW:Low	ENG	[0 to 1/0/1]
5-804-163	OUTPUT Check	BANK1:Motor:High	ENG	[0 to 1/0/1]
5-804-164	OUTPUT Check	BANK1:Motor:Mid	ENG	[0 to 1/0/1]
5-804-165	OUTPUT Check	BANK2:Motor:High	ENG	[0 to 1/0/1]
5-804-166	OUTPUT Check	BANK2:Motor:Mid	ENG	[0 to 1/0/1]
5-804-169	OUTPUT Check	BANK1:Feed CL	ENG	[0 to 1/0/1]
5-804-170	OUTPUT Check	BANK2:Feed CL	ENG	[0 to 1/0/1]
5-804-202	OUTPUT Check	Scanner Lamp	ENG	[0 to 1/0/1]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
6-012-003	1-Pass ADF OUTPUT Check	Motor Forward	ENG	[0 to 1/0/1 STEP]
6-012-004	1-Pass ADF OUTPUT Check	Motor Reverse	ENG	[0 to 1/0/1 STEP]
6-012-014	1-Pass ADF OUTPUT Check	Feed Clutch	ENG	[0 to 1/0/1 STEP]
6-018-001	1-Pass ADF OUTPUT Check	Back shading	ENG	[0 to 1/0/1 STEP]

Printer Service Mode

SP1-XXX (Service Mode)

1001	[Bit Switch]		
001	Bit Switch 1 Settings		
	0	DFU	-
	1	Responding with the hostname as the sysName	Model name (PnP name)
	This BitSwitch can change the value of the sysName. 0 (default): Model name (PnP name) such as "MP 402SPF" 1: Host name		
	2	DFU	-
	3	No I/O Timeout	Disabled
	Enables/Disables MFP I/O Timeouts. If enabled, the MFP I/O Timeout setting will have no affect. I/O Timeouts will never occur.		
	4	SD Card Save Mode	Disabled
	If this bit switch is enabled, print jobs will be saved to the GW SD slot and not output to paper.		
	5	[PS and PDF] Paper size error margin	±5pt
	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.		
	6	DFU	-
	7	[RPCS,PCL]: Printable area frame border	Disabled
	Prints all RPCS and PCL jobs with a border around the printable area.		

1001	[Bit Switch]		
002	Bit Switch 2 Settings		
	0	DFU	-
	1	DFU	-
	2	DFU	-
	3	[PCL5e/c,PS]: PDL Auto Switching	Enabled
	Enables/Disables the MFPs ability to change the PDL processor mid-job.		

3.Appendices: SP Mode Tables

		Some host systems submit jobs that contain both PS and PCL5e/c. If Auto PDL switching is disabled, these jobs will not be printed properly.		
bit 4	DFU	-	-	
bit 5	DFU	-	-	
bit 6	Switch dither *Please refer to RTB#RD014018	Use normal dither	Use alternative dither	
bit 7	DFU	-	-	

1001	[Bit Switch]			
003	Bit Switch 3 Settings		0	1
bit 0	DFU	-	-	
bit 1	DFU	-	-	
bit 2	[PCL5e/c]: Legacy HP compatibility 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".		Disabled	Enabled
bit 3	DFU	-	-	
bit 4	DFU	-	-	
bit 5	DFU	-	-	
bit 6	DFU	-	-	
bit 7	DFU	-	-	

1001	[Bit Switch]			
004	Bit Switch 4 Settings		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	DFU	-	-

	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	[Bit Switch]			
005	Bit Switch 5 Settings		0	1
	bit 0	DFU	-	-
	bit 1	Multiple copies if a paper size or type mismatch occurs If a paper size or type mismatch occurs during the printing of multiple copies, only a single copy is output by default. Using this BitSw, the device can be configured to print all copies even if a paper mismatch occurs.	Disabled (single copy) Enabled (multiple)	Enabled (multiple)
	bit 2	Prevent SDK applications from altering the contents of a job. If this switch is enabled, SDK applications will not be able to alter print data. This is achieved by preventing SDK applications from accessing a module called the "GPS Filter". Note: The main purpose of this switch is for troubleshooting the effects of SDK applications on data.	Disabled Enabled	Enabled
	bit 3	[PS] PS Criteria Change the number of PS criterion used by the PS interpreter to determine whether a job is PS data or not. Pattern3: includes most PS commands. Pattern1: A small number of PS tags and headers	Pattern3 Pattern1	Pattern1
	bit 4	Increase max number of the stored jobs. 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.	Disabled (100) Enabled (750)	Enabled (750)
	bit 5	DFU	-	-
	bit 6	Method for determining the image rotation for the edge to bind on. If enabled, the image rotation will be performed as they were in the specifications of older models for the binding of pages of mixed orientation jobs. The old models are below: - PCL: Pre-04A models - PS/PDF/RPCS:Pre-05S models	Disabled Enabled	Enabled
	bit 7	Letterhead mode printing Routes all pages through the duplex unit.	Disabled Enabled (Duplex)	Enabled (Duplex)

3.Appendices: SP Mode Tables

		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 Settings	-	-

1001	[Bit Switch]			
007	Bit Switch 7 Settings		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	[Bit Switch]			
008	Bit Switch 8 Settings		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	[Bit Switch]			
009	Bit Switch 9 Settings		0	1
	bit	PDL Auto Detection timeout of jobs submitted via USB or Parallel Port (IEEE 1284).	Disabled	Enabled
	0		(Immediately)	(10 seconds)
	To be used if PDL auto-detection fails. A failure of PDL autodetection doesn't necessarily mean that the job can't be printed. This bit switch tells the device whether to time-out immediately (default) upon failure or to wait 10 seconds.			
	bit	DFU	-	-
	1			

	bit 2	Job Cancel	Disabled (Not cancelled)	Enabled (Cancelled)
		If this bit switch, 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.	Disable	Enable
		This switch determines the timing of the PjL USTATUS JOB END sent when multiple collated copies are being printed. 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. 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.		
	bit 5	Display UTF-8 text in the operation panel	Enabled	Disabled
		Enabled (=0): Text composed of UTF-8 characters can be displayed in the operation panel. Disabled (=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 switch is enabled (=0).		
	bit 6	Disable super option	OFF	ON
		Switches super option disable on / off. If this is On, multiple jobs are grouped at LPR port. PjL settings are enabled even jobs that are specified queue names are sent.		
	bit 7	Enable/Disable Print from USB/SD's Preview function	Enabled	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 Settings		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-

3. Appendices: SP Mode Tables

	bit 2	DFU	-	-
	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	Auto Job Promotion locks the queue	Queue is not locked after AJP	Queue locked after AJP
		If this is 1, then after a job is stored using Auto Job Promotion, new jobs cannot be added to the queue until the stored job has been completely printed.		
	bit 6	Allow use of Auto Job Promotion if connected to an external charge device.	Does not allow AJP with ECD	Allows AJP with ECD
		If this is 0, Auto Job Promotion will be automatically disabled if an external charge device is connected. Note: We do not officially support enabling this 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 Settings		0	1
	bit 0	Show Menu List	Hide Menu List	Show Menu List
	bit 1	Print job interruption	Does not allow interruption	Allow interruption
		0 (default): Print jobs are not interrupted. If a job is promoted to the top of the print queue, it will wait for the currently printing job to finish. 1: If a job is promoted to the top of the queue, it will interrupt the currently printing job and start printing immediately.		
	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
	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	DFU	-	-
bit 6	DFU	-	-
bit 7	DFU	-	-

1001	[Bit Switch]		
012	Bit Switch C Settings	0	1
bit 0	DFU	-	-
bit 1	DFU	-	-
bit 2	DFU	-	-

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	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	Change the user ID type displayed on the operation panel	0:Enabled	1:Disabled
		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	Ability to use AirPrint	Enabled	Disabled
		For 15S and later models that support AirPrint, AirPrint can be disabled by changing this Bit Switch from 0 (default) to 1.		
	bit 7	DFU	-	-

1003	[Clear Setting]		
001	Initialize Printer System	*CTL	[- / - / -] [Execute]
	Initializes settings in the "System" menu of the user mode.		
003	Delete Program	*CTL	[- / - / -] [Execute]

1004	[Print Summary]			
	Prints the service summary sheet (a summary of all the controller settings).			
001	Print Printer Summary	CTL	[- / - / -] [Execute]	
002	Print Summary2	CTL	[- / - / -] [Execute]	

1005	[Display Version]		
001	-	CTL	[- / - / -]
	Displays the version of the controller firmware.		

1007	[Supply Display]			
	Sets displaying remaining supply amount information or not.			
	0: Displays remaining supply amount information			

	1: Does not display remaining supply amount information		
001	Development	*CTL	[0 or 1 / 1 / 1 /step] *The Default setting is 1 but the Factory setting is 0
002	PCU	*CTL	
003	Transfer	*CTL	
004	Int. Transfer	*CTL	
005	Transfer Roller	*CTL	
006	Fuser	*CTL	
007	Fuser Oil	*CTL	

1110	[Media Print Device Setting]		
002	0:Disable 1:Enable	CTL	[- / 1 / -]

1111	[All Job Delete Mode]		
001	0:excluding New Job 1:including New Job	*CTL	[- / 1 / -]

1112	[Supply End]		
001	0:continue 1:stop	*CTL	[- / 0 / -]

Scanner SP Mode

SP1-XXX (System and Others)

1001	[Scan Nv Version]		
1-001-005	-	C*	-

1005	[Erase margin] Creates an erase margin for all edges of the scanned image. If the machine has scanned the edge of the original, create a margin. This SP is activated only when the machine uses TWAIN scanning.		
1-005-001	Range from 0 to 5 mm	C*	[0 to 5 / 0 / 1 mm/step]

1009	[Remote scan disable] Enable or disable remote scan.		
1-009-001	0:Enable 1:Disable	C*	[0 or 1 / 0 / -] 0: enable, 1: disable

1010	[Non Display Clear Light PDF] Enable or disable remote scan.		
1-010-001	0:Enable 1:Disable	C*	[0 or 1 / 0 / -] 0: Display, 1: No display

1011	[Org count Disp] Selects the original counter display. 0: Displays remaining memory for the original scanning.. 1: Displays original counter.		
1-011-001	0:ON 1:OFF	C*	[0 or 1 / 0 / -]

1012	[UserInfo release] Clear the following settings: Address, Sender, Text / Subject, Filename		
1-012-001	0:NO 1:YES	C*	[0 or 1 / 1 / -] 0: No, 1: Yes

1013	[Scan to Media Device Setting] On or off multimedia function		
1-013-001	0:OFF 1:ON	C*	[0 or 1 / 1 / -]

			0: OFF, 1: ON

1014	[Scan to Folder Pass Input Set]		
1-014-001	0:OFF 1:ON	C*	[0 or 1 / 0 / -] 0: OFF, 1: ON

1040	[Scan:LT/LG Mixed Size Setting]		
1-040-001	0:OFF 1:ON	C*	[0 or 1 / 1 / -] 0: OFF, 1: ON

1041	[Scan:FlairAPI Setting]		
1-041-001	0x00 – 0xff	C*	[- / 00000000 / -]

SP2-XXX (Scanning-image quality)

2021	[Compression Level (Grayscale)] Selects the compression ratio for grayscale processing mode (JPEG) for the three settings that can be selected at the operation panel.		
2-021-001	Comp 1: 5-95	C*	[5 to 95 / 20 / 1 /step]
2-021-002	Comp 2: 5-95		[5 to 95 / 40 / 1 /step]
2-021-003	Comp 3: 5-95		[5 to 95 / 65 / 1 /step]
2-021-004	Comp 4: 5-95		[5 to 95 / 80 / 1 /step]
2-021-005	Comp 5: 5-95		[5 to 95 / 95 / 1 /step]

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
2-023-001	ClearLightPDF:ACS Setting	0:OFF 1:ON	CTL*	[0 to 1/1/1]

2024	[Compression ratio of ClearLight PDF] Selects the compression ratio for clearlight PDF for the two settings that can be selected at the operation panel.		
2-024-001	Compression Ratio (Normal)	C*	[5 to 95 / 25 / 1 /step]
2-024-002	Compression Ratio (High)		[5 to 95 / 20 / 1 /step]

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2025	[Compression ratio of ClearLight PDF 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	C*	[5 to 95 / 25 / 1 /step]	
2-025-002	Compression Ratio (High) JPEG2000		[5 to 95 / 20 / 1 /step]	

2030	[OCR PDF DetectSens]			
2-030-001	White Lumi Value: 0 - 255	C*	[- / 250 / -]	
2-030-002	White Pix Ratio: 0 - 100		[- / 80 / -]	
2-030-003	White Tile Ratio: 0 - 100		[- / 80 / -]	

SP No.	Large Category	Small Category	ENG or CTL	[Min to Max/Init./Step]
2-031-001	Vertical Judgment Setting	Function Setting: 0 - 1	CTL*	[0 to 1/0/1]
2-031-002	Vertical Judgment Setting	Algorithm Setting: 0 - 2	CTL*	[0 to 2/0/1]

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Printing Features

Behavior of USB Printer Detection

An MFP/LP connected via USB sends its product name and unique serial number. With the data, the machine determines whether requires a printer driver for the USB device to be installed.

SP5-844-005 allows you to change how to determine the MFP/LP requires a printer driver installation:

- **OFF**

If SP5-844-005 is set to OFF, the unique serial number of the device is sent to the computer. As a result, if the device is swapped out for a device of the same product, pop-up messages will appear, because the serial numbers between the two are different.

- **Level 1**

If SP5-844-005 is set to Level 1, a common serial number for the product such as "MP 305+" series is sent to the computer. As a result, if the device is swapped out for a device of the same product, pop-up messages will not appear because the devices are recognized as having the same serial number.

- **Level 2**

If SP5-844-005 is set to Level 2, a common serial number for all GW/GW+ models is sent to the computer. As a result, if a GW/GW+ device is swapped out for a different GW/GW+ device, pop-up messages will not appear because the devices are both recognized as being based on GW/GW+.

Auto PDL Detection Function

Overview

The Auto PDL Detection function gives the MFP the ability to determine the PDL of a job or of specific parts of a job. This can be especially useful in cases where the PDL is not specified or if the job contains multiple PDLs. This is only possible if the job was not created using a driver.

Conditions for detection of the PDL

The MFP will only attempt to detect a job's PDL if all of the following conditions are met.

- No @PJL ENTER LANGUAGE command is contained in the job
- No submission protocol options (lpr, ftp, rcp, or rsh options) have been used to specify the PDL
- User Tools > Printer > System > Printer Language = Auto

Note

- The printer is unable to detect PCL6 or RPCS. However these are almost always created using a driver and therefore contain the PJL command specifying the PDL.

PDL detection by the printer system, PCL interpreter and PS interpreter

There are 3 components in the printer which can perform Auto PDL Detection:

1. **Printer system:**

Uses a set of triggers unique to PCL5, PS or PDF. Up to 2KB from the start of the job can be searched for triggers.

2. **PCL interpreter:**

It can detect PS triggers in PCL data. If a PS trigger is detected, the PCL interpreter will abort processing and return the unprocessed part of the job back to the printer system. Up to 256 bytes from the start of each page can be searched for triggers.

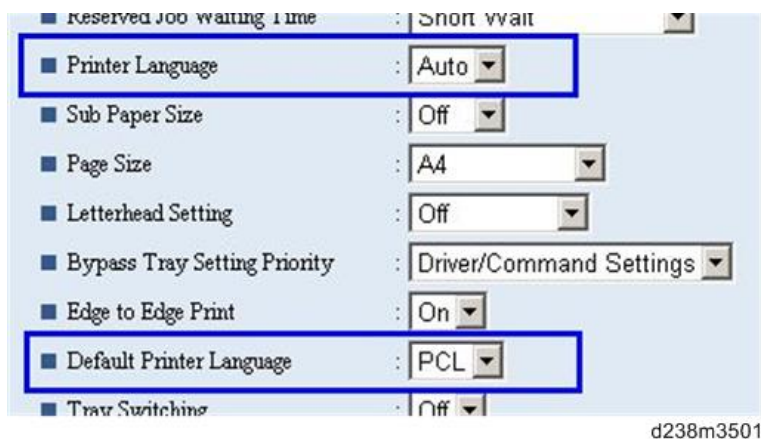
3. **PS interpreter:**

It can detect PCL5 triggers in PS data. If a PCL trigger is detected, the PS interpreter will abort processing and return the unprocessed part of the job back to the printer system. The entire page (regardless of the number of bytes) is searched for triggers.

Note

- 2. and 3. can be disabled using Printer Bit Switch 2-3=1.
- If the "Printer Language" is configured to anything other than Auto, all detection will be disabled.
- An interpreter submits a job page by page to the rasterizer. Therefore, when an interpreter detects a trigger mid-job, the previous pages will have already been submitted and will be output using the previously detected PDL.
- If the PDL cannot be detected by the printer system, then the PDL defaults to the one configured in "Configuration > Printer Basic Settings > Default Printer Language".

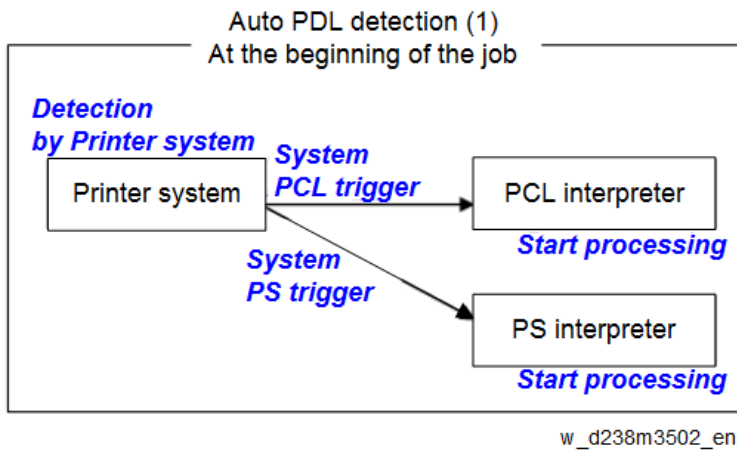
The Printer Language setting and Default Printer Language setting in WIM:



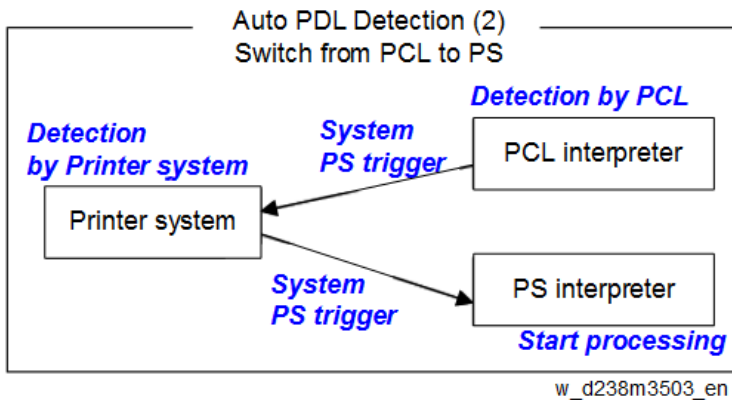
PDL selection and switching

3 types of PDL selection/switching are performed:

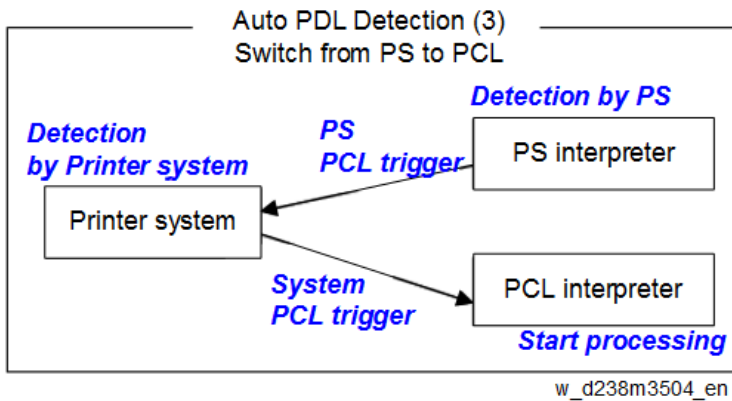
1. PDL selection (PCL5 or PS (including PDF)) at the beginning of the job: performed by the printer system



2. PDL switching from PCL5 to PS: performed by the PCL interpreter and the printer system



3. PDL switching from PS to PCL5: performed by the PS interpreter and the printer system



Triggers

Printer system

PCL5 triggers	[ESC]E [FF]
PS triggers	%!PS-Adobe-3.1 %! dict begin

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	bind def findfont showpage /statusdict O startjob [EOT] } + space character + "def" userdict (*)
PDF triggers	%PDF- %!PS-Adobe-M.nPDF- (*M, n=numeric)

* "userdict" is excluded by configuring Printer Bit Switch 5-3=1.

Note

- Up to 2KB from the start of the job can be searched for triggers.
- "%%" can be added to the PS triggers by configuring Printer Bit Switch 5-3=1
- If a job is identified as PDF, it will be sent to the PS interpreter to be processed as a regular PS job.

PS interpreter

PCL5 trigger	[ESC]E and 2 or more continuous PCL commands

Note

- Up to 256 bytes from the start of each page can be searched for triggers.

Some possible problems

Garbled output:

If a string of characters (or binary data) is mistaken as a trigger and an incorrect PDL is applied, the output will be garbled.

Incorrect printer settings:

Printer settings, for example the paper size, is incorrectly applied. This can happen when the printer settings at the beginning of the job are initialized before a PDL switch occurred and no settings were configured for the rest of the job.

Printer Bit Switch description

Bit Switch 2-3

This controls Auto PDL Detection by the PCL interpreter and PS interpreter.

BitSW 2-3=0 (default):

If PDL switching is applied to the job, all of the printer system, PCL interpreter and PS interpreter will search for switching criteria (triggers).

BitSW 2-3=1:

Only the printer system will search for switching criteria (triggers). PCL/PS interpreters will not.

Bit Switch 5-3

This affects the PDL switching criteria (triggers) used by the printer system.

BitSW 5-3=0 (default):

"%%" is not used as a printer system PS trigger. "%%" will not call the PS interpreter.

BitSW 5-3=1:

"%%" is used as a printer system PS trigger.

The reason that "%%" is not included as a trigger by default, is that a string of text in the body of the job such as the below, could result in a false positive. This would trigger a switch and result garbled output.

%%%%%%%%%

However some customers prefer that "%%" be included as a switching criteria. BitSW5-3=1 should be used in such a case.

Note

- A side effect of BitSW5-3=1 is that "userdict" will no longer be used as a PS trigger.

Bit Switch 9-0

These determine whether Auto PDL Detection for print jobs transmitted via USB/parallel will wait 10 seconds to make sure the first 2KB of the job has been sent.

The Printer system portion of the Auto PDL Detection function is only performed on the first 2KB of a job and can wait up to 10 seconds for that first 2KB to arrive. As the printer is unable to detect the end of jobs submitted over a USB/Parallel connection, it might be preferable to not wait 10 seconds if jobs of less than 2KB are going to be printed.

Enabling/disabling this waiting time is the purpose of BitSw 9-0.

BitSw 9-0=0 (default):

The printer system will not wait 10 seconds for the first 2KB of data to arrive.

BitSw 9-0=1:

The printer system will wait up to 10 seconds for the first 2KB of data to arrive.

Print Images Rotation

Printer Bit Switch description

Bit Switch 5-6

This change the way an MFP/LP rotates PCL, PS, PDF, or RPCS print images.

BitSW 5-6=0 (default):

A uniform binding edge (short or long edge) will be applied to every page of every job. Pages will always be rotated as if they were to be bound on that edge.

BitSW 5-6=1:

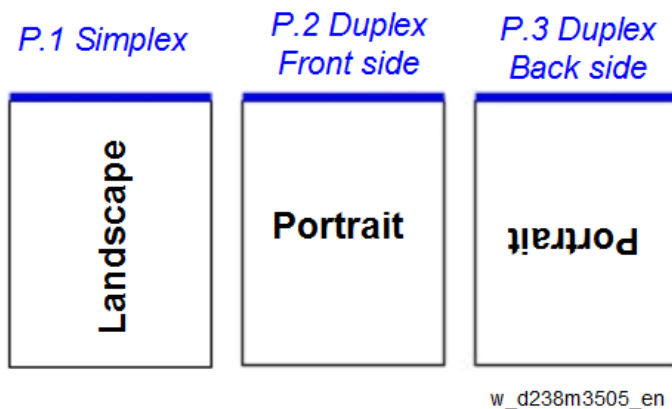
A uniform binding edge (short or long edge) will only be applied if the job is stapled, punched, or Z-folded. Otherwise, the bound edge might differ from page to page.

Example:

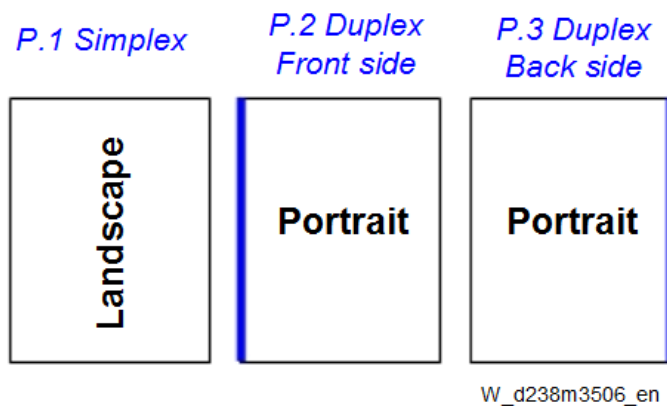
A 3-page job. Page 1 has the PCL simplex command. Page 2 and 3 have the PCL duplex long-edge bind commands.

No finishing options (staple, punch, z-fold) are used.

Bit Switch #5-6=0:



Bit Switch #5-6=1:



Note

- Used in conjunction with Bit Switch #5-6, Orientation Auto Detect for PS/PDF jobs might cause unexpected results.

PJL USTATUS

Printer Bit Switch description

Bit Switch 9-4

These control the way PJL USTATUS returns page count totals in cases where multiple copies of a job are being printed.

BitSw 9-4=0 (default):

This change the way an MFP/LP rotates PCL, PS, PDF, or RPCS print images.

1. The page count for a single copy is returned after the first copy is printed.
2. The page count for the rest of the copies, excluding the first copy, is returned after all copies have been printed.
3. This emulates an older HP PCL firmware spec. It is only needed for compatibility with legacy software.

BitSw 9-4=1:

The page count for all copies is output after all copies have been printed.

This emulates more recent HP PCL firmware specs.

For example, consider 3 copies of a 3 page job:

9-4 = 0

@PJL USTATUS JOB

START

NAME="TEST_page1-3"

@PJL USTATUS PAGE

1

@PJL USTATUS PAGE

2

@PJL USTATUS PAGE

3

@PJL USTATUS JOB

END

NAME="TEST_page1-3"

PAGES=3

<comment> The page count of the first copy is returned.</comment>

@PJL USTATUS PAGE

1

@PJL USTATUS PAGE

2

@PJL USTATUS PAGE

3

@PJL USTATUS PAGE

4

@PJL USTATUS PAGE

5

@PJL USTATUS PAGE

6

<comment> The page count of the remaining two copies is returned.</comment>

9-4 = 1

@PJL USTATUS JOB

START

NAME="Microsoft Word - TEST_page1-3"

@PJL USTATUS PAGE

1

@PJL USTATUS PAGE

2

@PJL USTATUS PAGE

3

@PJL USTATUS PAGE

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4

@PJL USTATUS PAGE

5

@PJL USTATUS PAGE

6@PJL USTATUS PAGE

7

@PJL USTATUS PAGE

8

@PJL USTATUS PAGE

9

@PJL USTATUS JOB

END

NAME="Microsoft Word - TEST_page1-3"

PAGES=9

<comment> The page count of all three copies is returned.</comment>

Scanner Features

Display settings of recently used scan destination

Configuring the scanner interface so that the most recently used scan destination is cleared.

Whether the MFP clears the most recently used scan destination, can be configured using Scanner SP 1-012-001.

By default, this is cleared to avoid subsequent users scanning to it by mistake.

Scanner SP 1-012-001

1 (default): Clear

0: Do not clear

This will cause all of the following to be cleared after the scanning is complete:

- Destination
- Sender
- Email subject
- Email message
- File name

The information in the list above will be cleared after scanning is finished.

Exceptions:

- User Auth.:
If SP 1-012-001 = 0 and if User Auth. (excluding User Code authentication) is enabled, the most recently used scan destination will only be retained until the user logs out.
- Scanner Auto Reset timer:
Even if SP 1-012-001 = 0 the most recently used scan destination can still be cleared by the Scanner Auto Reset timer. If the Scanner Auto Reset timer is shorter than the System Auto Reset timer, then the most recently used scan destination will be cleared when the Scanner Auto Reset timer elapses.

The Setting of SMTP authentication in Scan to Email

Scan to Email fails with the error message "Transmission has failed ". The SMTP username and password are correct.

How can I make Scan to Email pass?

Change SP 5-860-022 "SMTP Auth. From Field Replacement" to On. By doing this, Scan to Email will pass the SMTP authentication.

Note

- Using this option to solve the above problem, the device email address will appear in the email's "From" field.
The email address of the user who sent the email will appear in the "Reply-to" field.

Explanation

This is an SMTP authentication issue that aborts transmission of an already started Scan to Email. Currently this has only been reproduced using MS-Exchange server.

MS-Exchange requires that all of the following match:

1. The sender's address in the "MAIL FROM" field. This is also known as the "envelope sender" or "MIME sender". It

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is an SMTP command sent at the beginning of the email transmission process.

2. The sender's address in the mail header "From:" field. This appears as "From" in email clients. It is a part of the email itself.
3. The email address corresponding to the SMTP username used to login into the SMTP server.

When the MFP logs into the SMTP server, the email address of the username 3) will be compared to 1) and 2). If these comparisons fail, authentication will also fail. Exchange server will stop the transmission procedure, and the "Transmission has failed" message will be returned to the sender.

Typical example

NG case:

SP5-860-022 is Off:

1. The "MAIL FROM" field = device
2. The mail header "From:" field = use
3. The SMTP username = device

When the SMTP server compares 2) and 3) the Exchange Server will stop the transmission procedure.

OK case:

SP5-860 can be used to make the values in the above example, match.

In this example, if SP5-860-022 is On, the user's email address in the mail header '2)' will be replaced by the Administrator's email address.

To solve the problem, the Administrator's address must be the same as the device's address.

If this is done:

1. The "Mail From: field = device
 2. The mail header "From:" field = administrator
 3. The SMTP username = device
- 1, 2 and 3 must match and the authentication should be successful.

Note

- The user's email address will still be inserted into the reply-to field.

The device SMTP user name, password, and email address are configurable in [User Tools] > [Machine Features] > [System Settings] > [File Transfer] > [SMTP Authentication].

User email addresses are configurable in the user configuration of the Address Book.

The administrator email address is configurable in [User Tools] > [Machine Features] > [System Settings] > [File Transfer] > [Administrator's Email Address].

The Qualification Switching of Scan to Folder

Determining which account Scan to Folder uses to access a scan destination and the effects of System SP 5-846-021. This method depends on how the destination is accessed, whether authentication is being used, and SP 5-846-021.

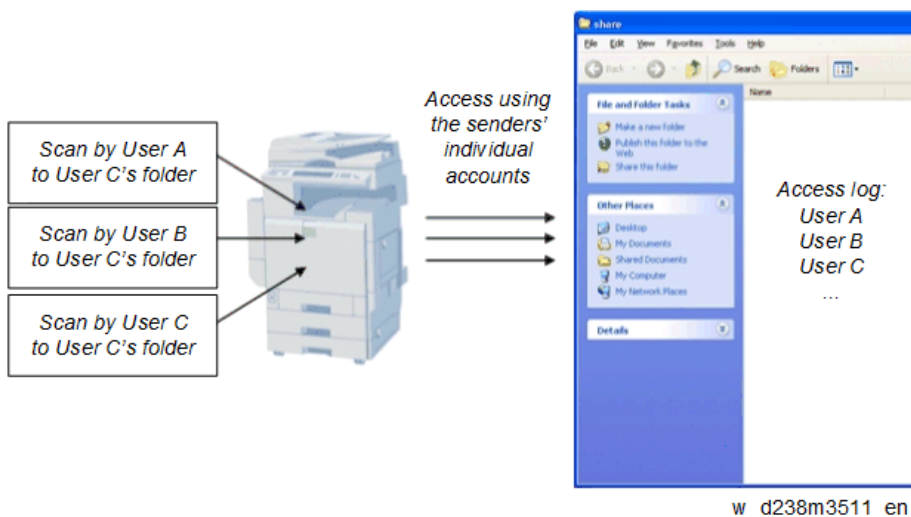
Cases:

Case	Destination selection	User auth.	Account used to access the folder
A	Manual entry	Either enabled or disabled	The user's account *
B	Destination list	disabled	The recipient's account (as configured in the Address Book's Folder Authentication setting)
C		enabled	If SP 5-846-021 = 0 (default): The authenticated user's account 1: The recipient's account (as configured in the Address Book's Folder Authentication setting)

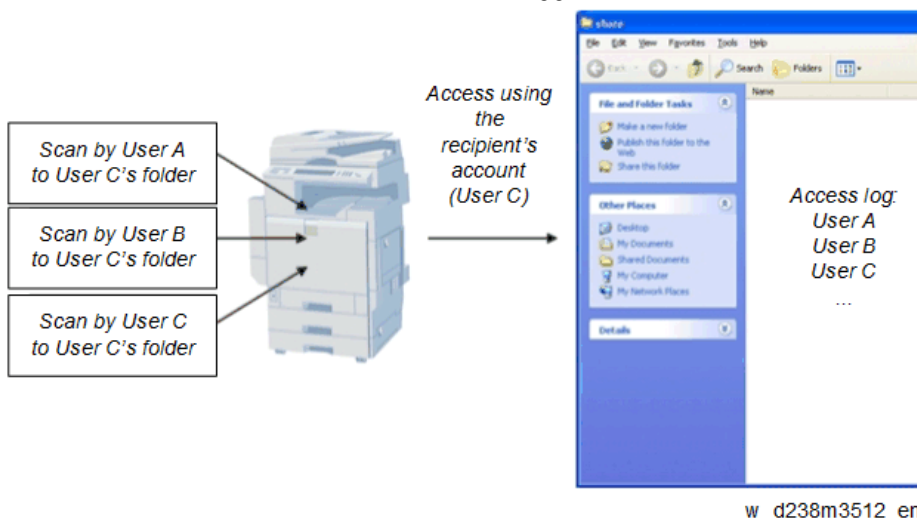
* The "user's account" will be either the one entered during scanning (see the Manual Entry screen capture) or if User Auth. is enabled, the account configured in the user's Folder Authentication setting will be used.

The destination's access logs:

Case A or Case C with SP=0: The access logs can be used to determine which user sent the scan.



Case B or Case C with SP=1: All access will be logged as the same user.



Management Features

How to Disable the Document Server Function

1. Enter 'Copy' SP mode.
2. Change SP5-967-001 to 1. (0:ON 1:OFF)
3. Reboot the machine.

 Note

- When the above SP mode (SP5-967-001) is OFF (=1), both the Document Server and Locked Print functions will be disabled.

How to Use Locked Print When the Document Server Is Disabled

1. Enter 'Printer' SP mode.
2. Set SP1-006-001 to 1.
0: Link with Doc. Srv (default)
Locked print will only be enabled if the document server is enabled.
1: Enable
Enable Locked
Print will be enabled no matter the status of the document server.
3. Turn OFF then ON the main power.

Security Features

How to Restrict Access to the WIM Job Menu

1. Enter 'Printer' SP mode.
2. Set SP5-888-001
0: (default): "Job" menu is enabled.
1: "Job" menu is disabled.

Note

- This setting takes effect only if user authentication (other than User Code auth.) is disabled.



How to Restrict Web Image Monitor Access to the Document Server

System (Copier) SP 5-885-020 bit 0, 1 and 7 restrict Web Image Monitor access to the DS. It disables the following WIM settings:

- The entire Document Server menu (shown in blue in fig1)
- Job > Document Server (shown in red in fig1)

See the following for details:

Bit 0:

Bit 0 = 0 (default): Allows anyone (guests, users, admins) access to the DS via WIM.

Bit 0 = 1: Prevents everyone from accessing the DS via WIM.

Bit 1:

Bit 1 = 0 (default): Allows anyone (guests, users, admins) access to the DS via WIM.

Bit 1 = 1: Only administrators can access the DS via WIM.

Note

- Without admin privileges, even authenticated users will be unable to access the DS via WIM.

Bit 7:

Bit 7 = 0 (default): Allows anyone (guests, users, admins) access to the DS via WIM.

Bit 7 = 1: Only administrators and authenticated users can access the DS via WIM.

The most restrictive result of combining these three configurations will take priority. So for example:

Bit 0 = 0

Bit 1 = 1

4. Appendices: Software Configuration

Bit 7 = 1

As Bit 1 = 1 is the most restrictive of the three, it will take precedence over the other two and only administrators will be able to access the DS via WIM.



Note

- In order for SP5-885-020 to have any effect, the Document Server must be enabled (SP5-967-001=0). For information about SP5-967-001, refer to Disabling the Document Server using System SP5-967-001 and Printer SP1-006-001.
- Access to the entire "Job" menu can be restricted using SP 5-888-001. For details, refer to Use of SP 5-888-001 to restrict access to the "Job" menu on WIM.

User Authentication for Specific MFP Applications

The SP5-420 settings enable/disable User Authentication for specific MFP applications.

SP 5-420 User Authentication Value (Default: 0)

SP 5-420	User Authentication	Value (Default: 0)	
SP5-420-001	Copy	0 (ON)	1 (OFF)
SP5-420-011	Document Server		
SP5-420-021	Fax		
SP5-420-031	Scanner		
SP5-420-041	Printer		

1. Enable User Authentication for the device as a whole:
User Tools > System Settings > Administrator Tools > User Authentication Management
2. Use the SP5-420 settings to specify the applications to which User authentication is to apply.

**Smart Operation Panel
2nd Generation
Field Service Manual
Ver 1.01**

Latest Release: -

Initial Release: August, 2016

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1. Replacement and Adjustment

Smart Operation Panel

Operation Panel Unit

★ Important

- Turn off the main power switch of the MFP and disconnect the power cord.
- When handling the operation panel cable, hold down the connector of the cable with your finger as shown in the picture to prevent excessive force from being applied to the connector of the PCB.



m0a0k3038

- If excessive force is applied to the connector of the PCB in the direction of the arrow, connection failure may occur.



d238a2002

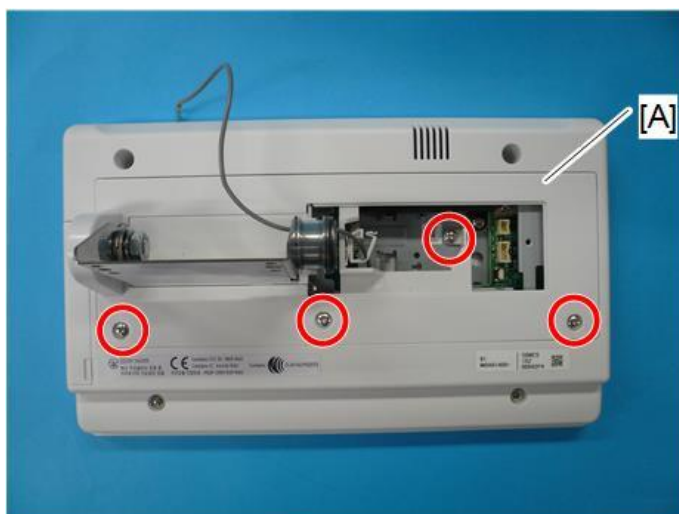
1. Remove the operation panel unit from the MFP.

↓ Note

- For details about how to remove the operation panel unit, refer to the service manual for the MFP.

1.Replacement and Adjustment

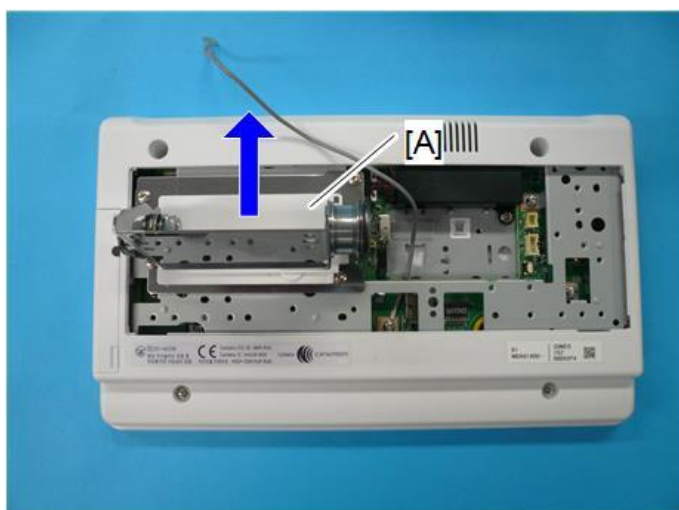
- 2.** Remove the rear cover [A] of the operation panel.



x4

m0a0k3039

- 3.** Slide and remove the arm cover [A].



m0a0k3040

- 4.** Remove the operation panel arm bracket [A].

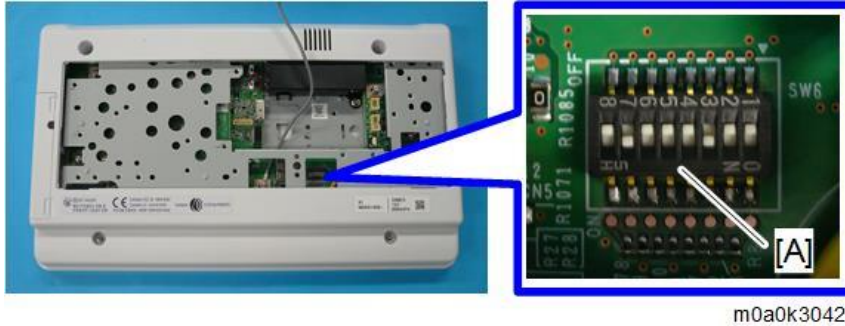


x4

m0a0k3041

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.



m0a0k3042

- 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

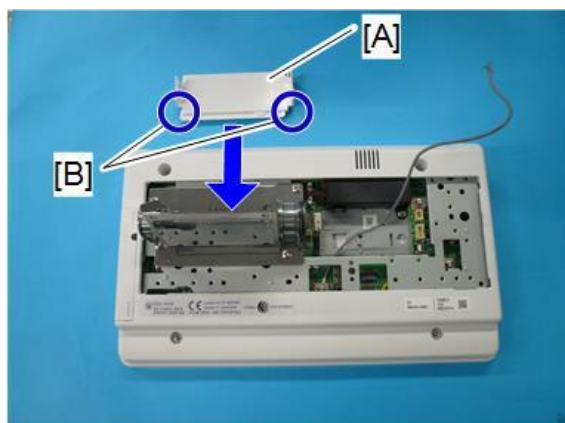
d196z0137

- 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 ([Updating the Smart Operation Panel](#)).

Precaution

When you reinstall the arm cover [A], set the cover so that the cut-offs [B] are placed in the direction shown below.

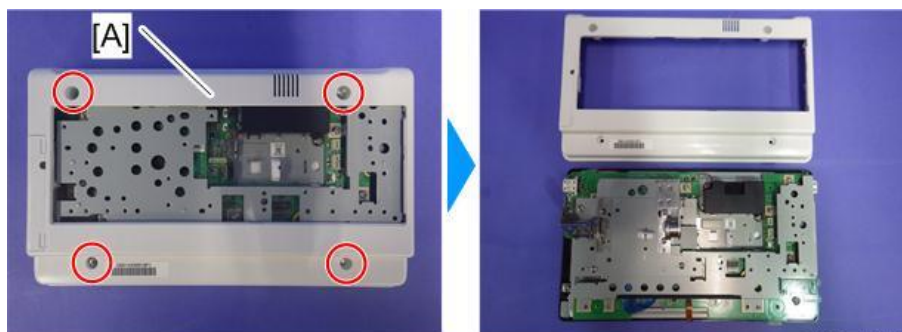
1.Replacement and Adjustment



m0a0k3043

CPU Board

1. Operation panel unit ([Operation Panel Unit](#))
2. Bottom cover [A] (⌀×4)



d196z0101

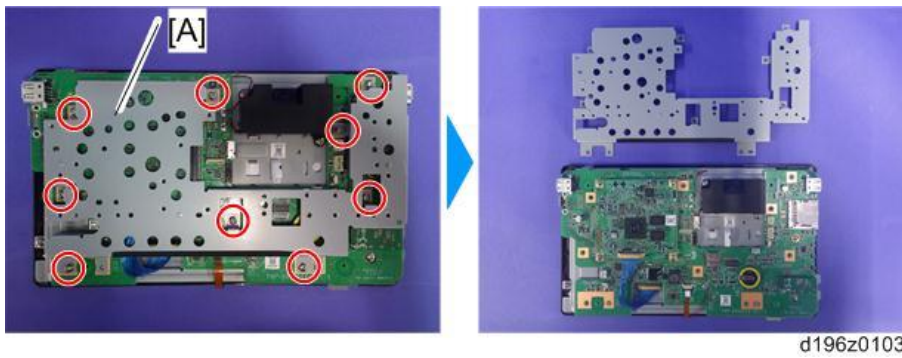
Note

- There are four hooks inside the operation panel unit. Before removing the operation panel bottom cover, check the photos below.



d196z0138

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.



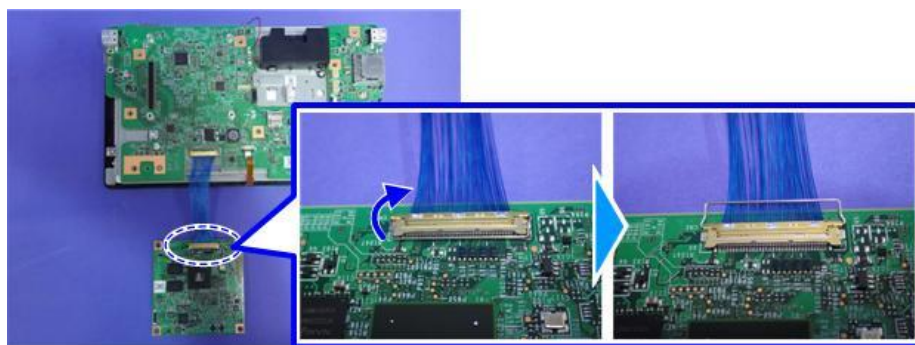
Note

- Make sure that the orientation of the connector is correct when attaching the CPU board.



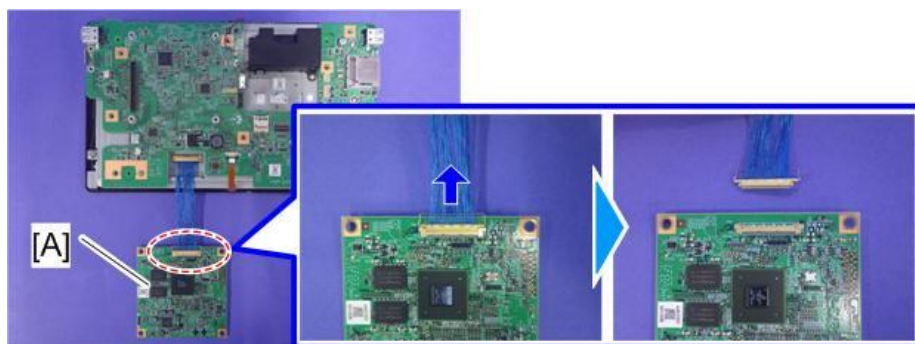
1.Replacement and Adjustment

5. Lift the fastener of the LCD I/F cable on the CPU board side.



d196z0115

6. CPU board [A] (LCD I/F cable ×1)



d196z0139

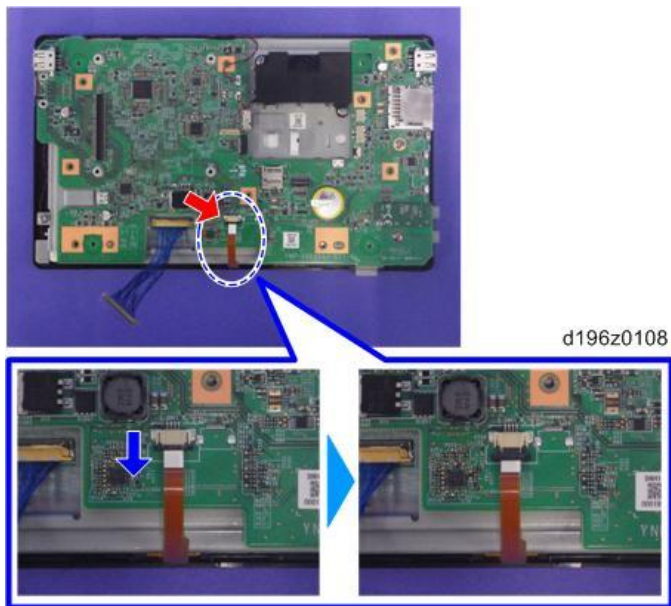
Note

- 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. ([Updating the Smart Operation Panel](#))

Micro Computer Board

1. Operation panel unit ([Operation Panel Unit](#))
2. CPU board ([CPU Board](#))

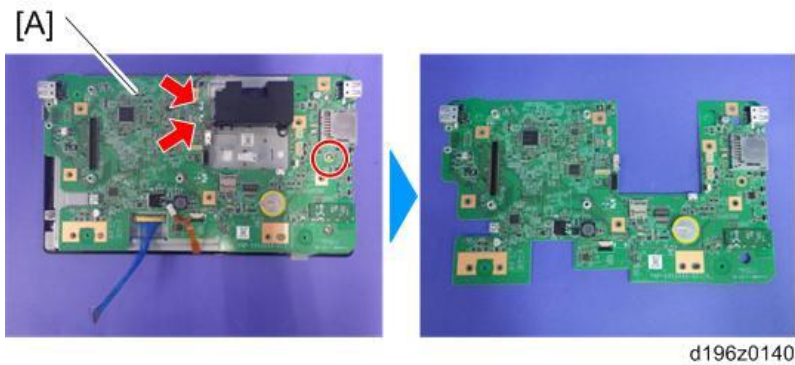
3. Remove the FFC from the micro computer board ( ×1).



Note

- Pull out the black part to unlock the connector, and then remove the FFC.

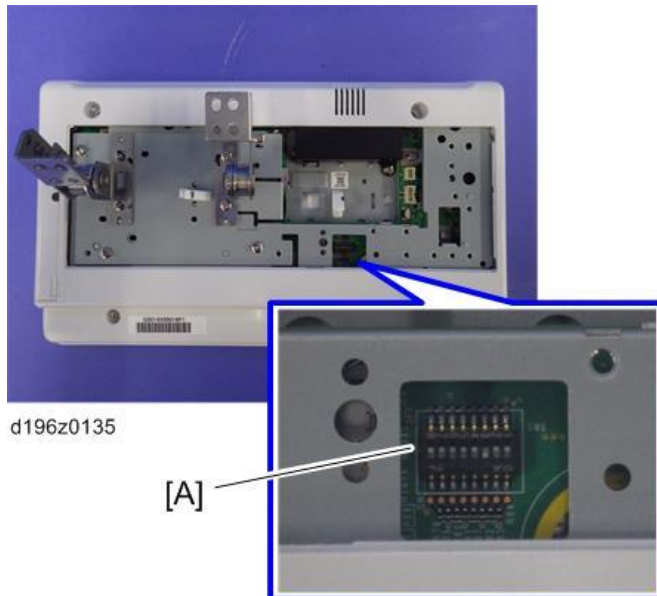
4. Micro computer board [A] ( ×1,  ×2)



1.Replacement and Adjustment

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.)
- 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

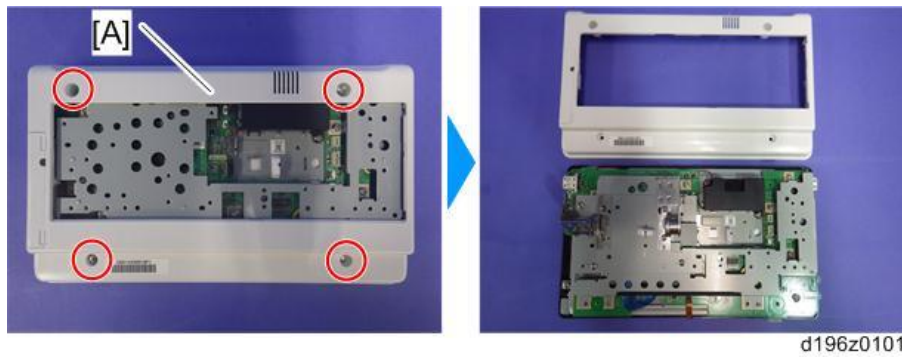


- If the DIP switch setting is wrong, SC672 will be displayed.
- After replacing the micro computer board, perform the following checks:
- LED Check ([LED Check](#))
- Key Check ([Key Check](#))

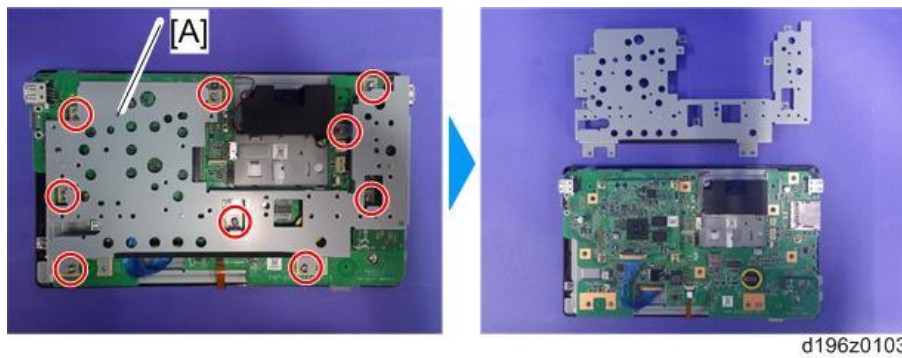
Wi-Fi Module

1. Operation panel unit ([Operation Panel Unit](#))

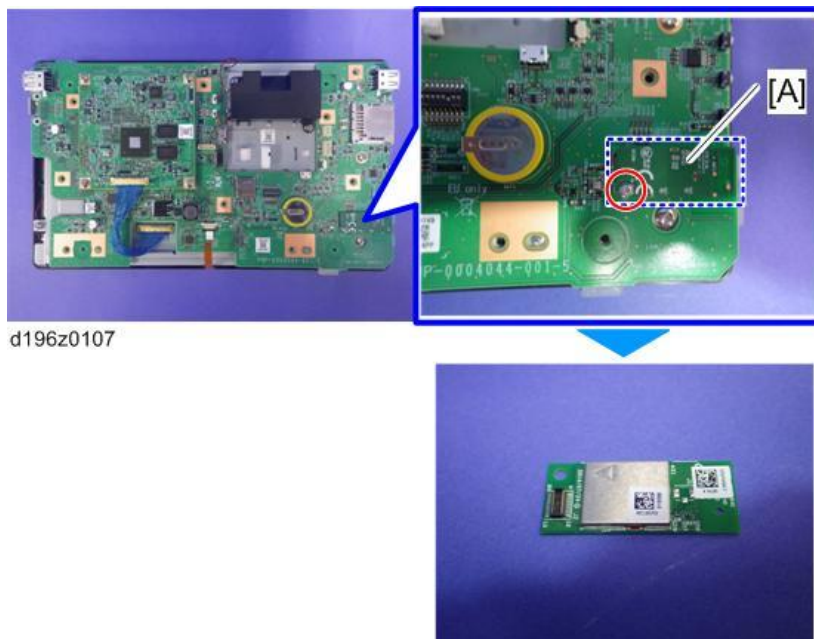
2. Bottom cover [A] (⌀×4)



3. Base bracket [A] (⌀×9)



4. Wi-Fi module [A] (⌀×1)

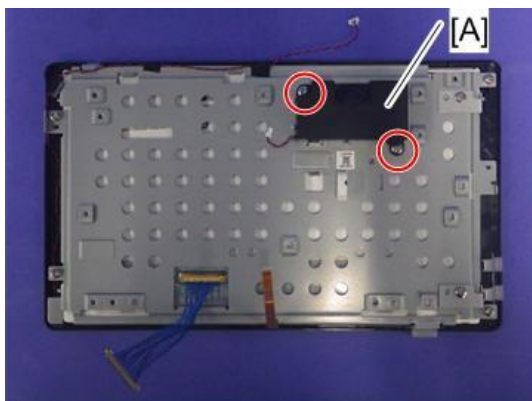


Note

- After replacing the Wi-Fi module, perform the following checks:
- Wireless LAN Check ([Wireless LAN Check](#))
- Bluetooth Check ([Bluetooth Check](#))

LCD

1. Operation panel unit ([Operation Panel Unit](#))
2. CPU board ([CPU Board](#))
3. Micro computer board ([Micro Computer Board](#))
4. Speaker [A] (🔊×2)

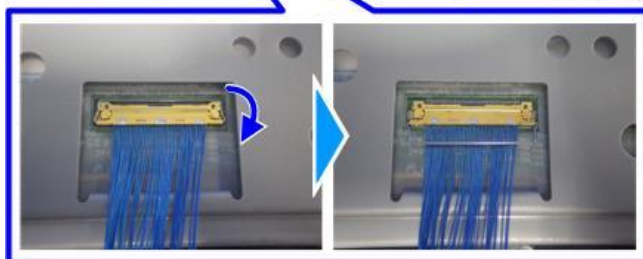


d196z0109

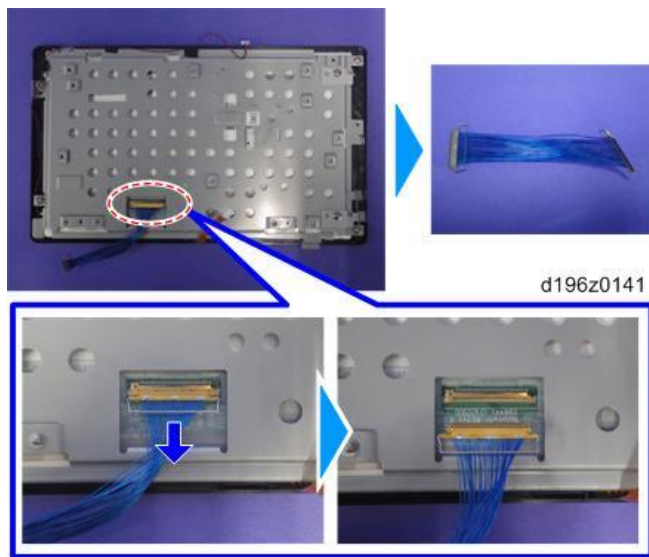
5. Lift the fastener of the LCD I/F cable.



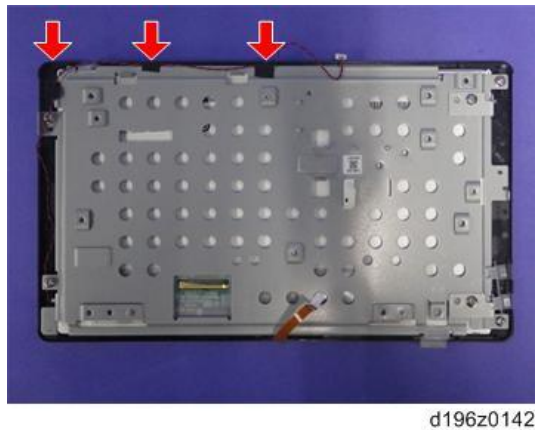
d196z0116



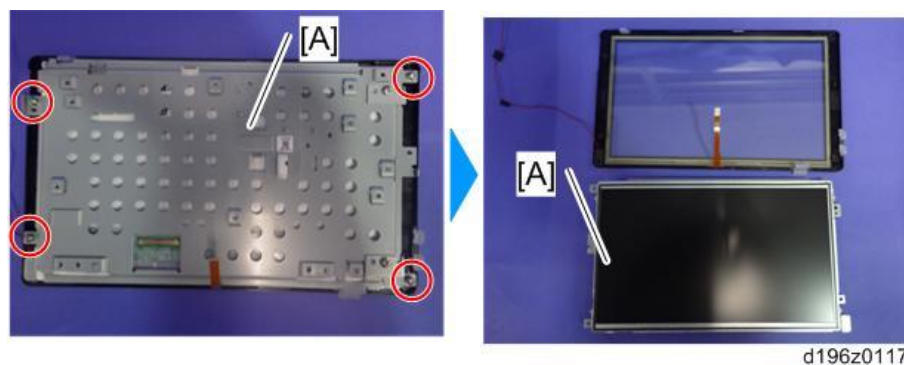
6. LCD I/F cable (cable ×1)



7. Remove the tapes for fixing the microphone harness (tape ×3).



8. LCD [A] (⌀ ×4)

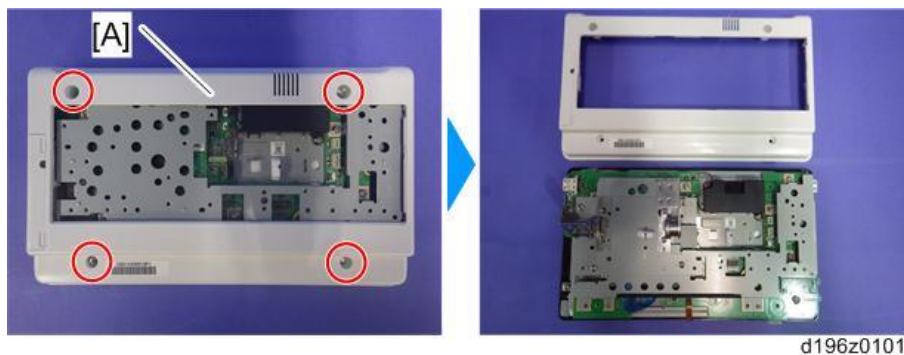


Note

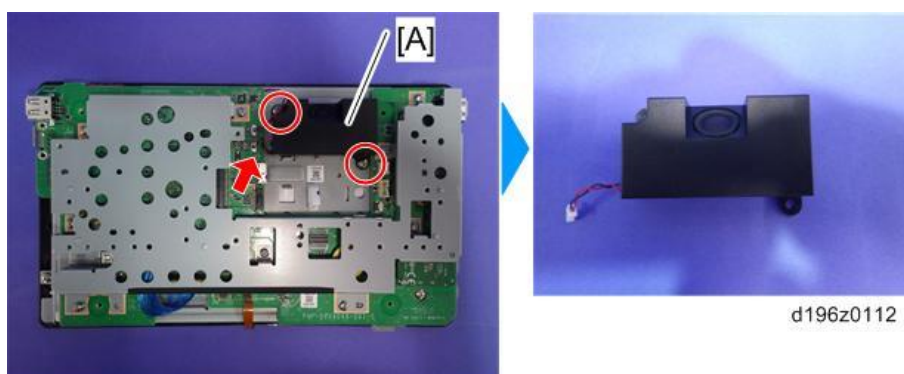
- After replacing the LCD, perform the following checks.
- LCD Check ([LCD Check](#))
- TouchPanel Check ([TouchPanel Check](#))
- Perform "TouchPanel Calibration" ([TouchPanel Calibration](#)) and "MultiTouch Calibration" ([MultiTouch Calibration](#)) of the Self Check function.

Speaker

1. Operation panel unit ([Operation Panel Unit](#))
2. Bottom cover [A] (🔩×4)



3. Speaker [A] (🔩×2, 📦×1)



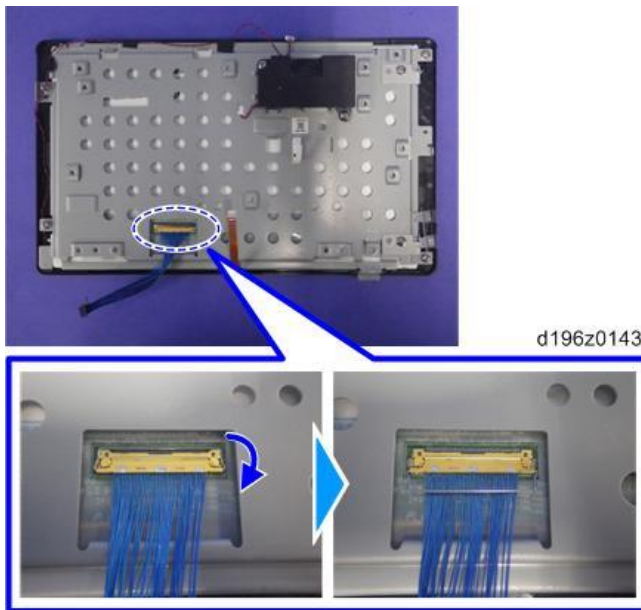
Note

- After replacing the speaker, perform the following check.
- Speaker Check ([Speaker Check](#))

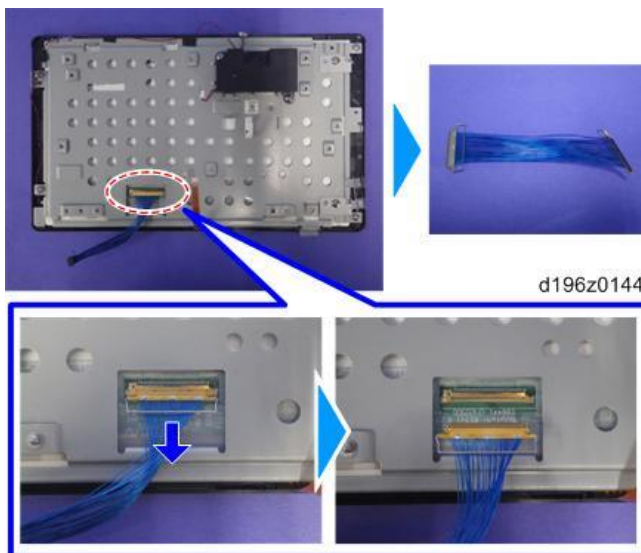
Microphone

1. Operation panel unit ([Operation Panel Unit](#))
2. CPU board ([CPU Board](#))
3. Micro computer board ([Micro Computer Board](#))

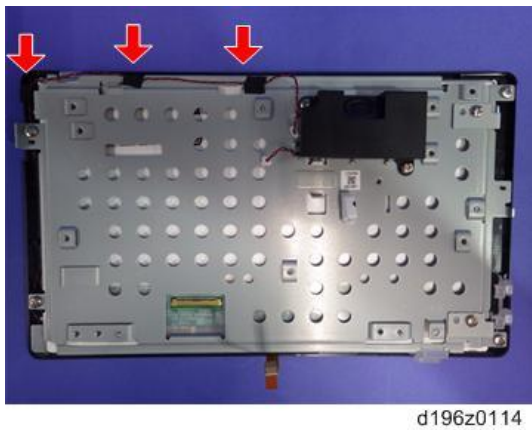
4. Lift up the securing wire of the LCD I/F cable.



5. LCD I/F cable (cable ×1)

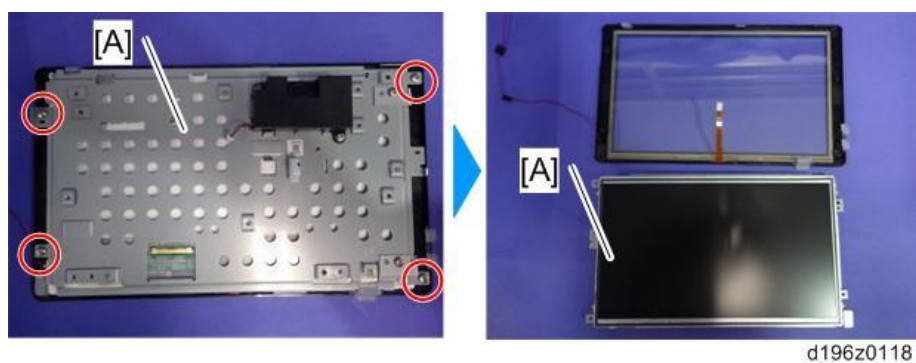


6. Remove the tapes for fixing the microphone harness (tape ×3).



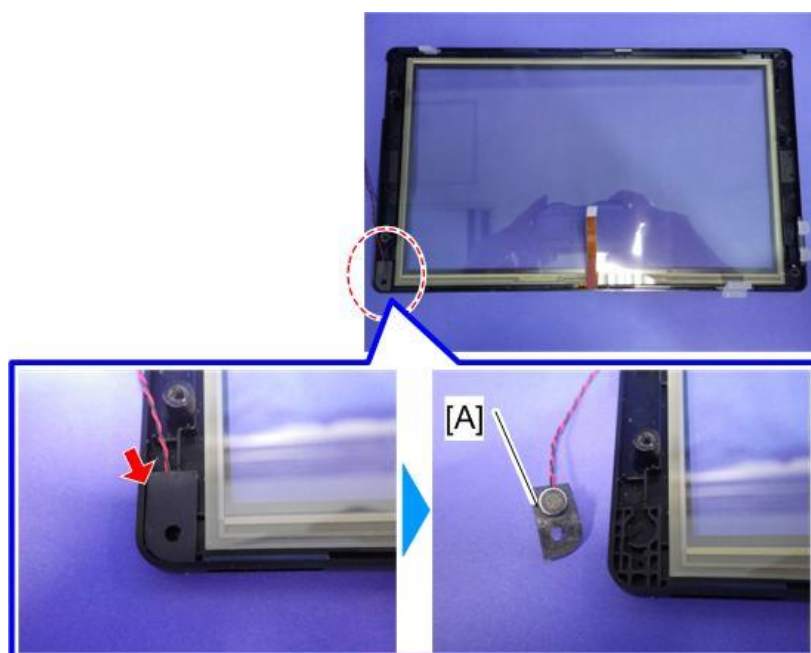
1.Replacement and Adjustment

Z. LCD [A] (⌀×4)



d196z0118

8. Microphone [A] (cushioning ×1)



d196z0111

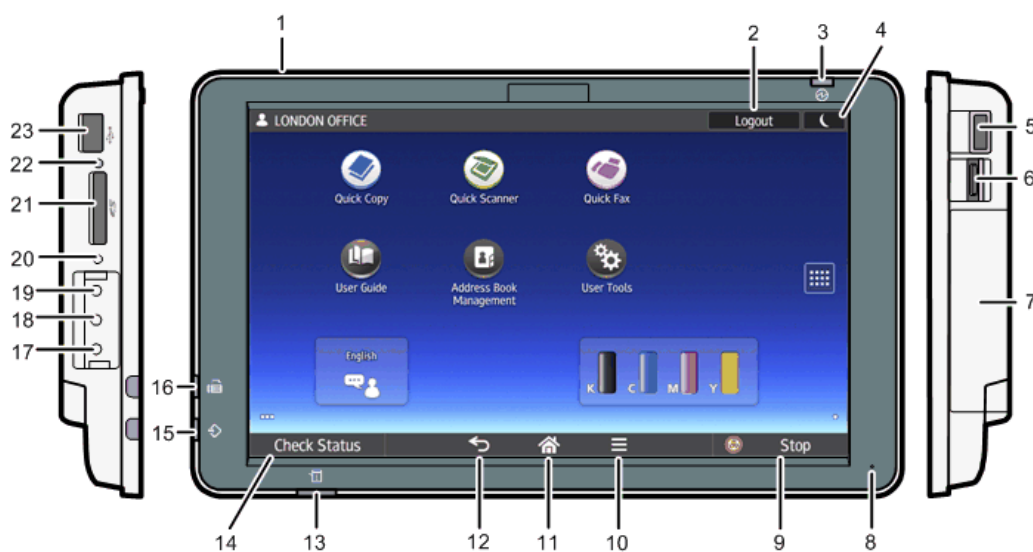
2. Mechanism

Overview

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
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.
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

Category	Specification
	Note When a media is inserted in the microSD card slot, its capacity is shown in the control panel service mode (Screen Features > Device > microSD card) and the SMC (in the report for the Smart Operation Panel).
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.
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

2.Mechanism

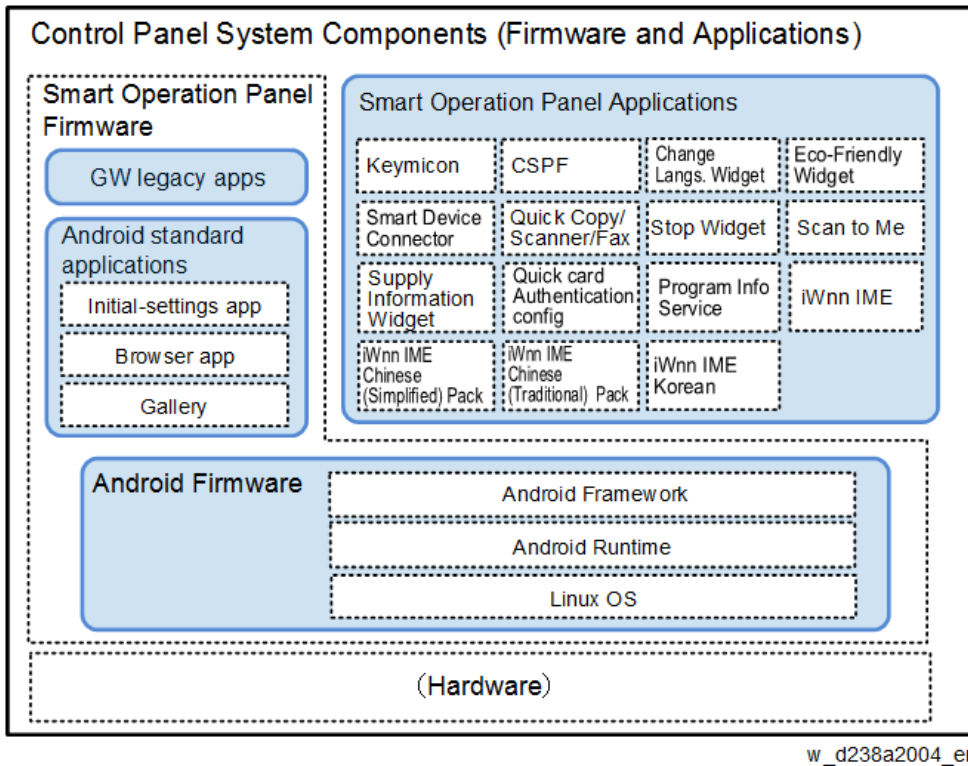
Item	This model	Previous model
CPU operating frequency	1 GHz	533 MHz
RAM size	2 GB	1 GB
LCD panel size	10.1 inch	10.1 inch
Android OS	Version. 4.2	Version. 2.3
Types of the following keys • [Home] key • [Stop] key • [Check Status] key • [Back] key • [Menu] key	Soft keys	Hard keys
LED types	Four types • 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.

2.Mechanism

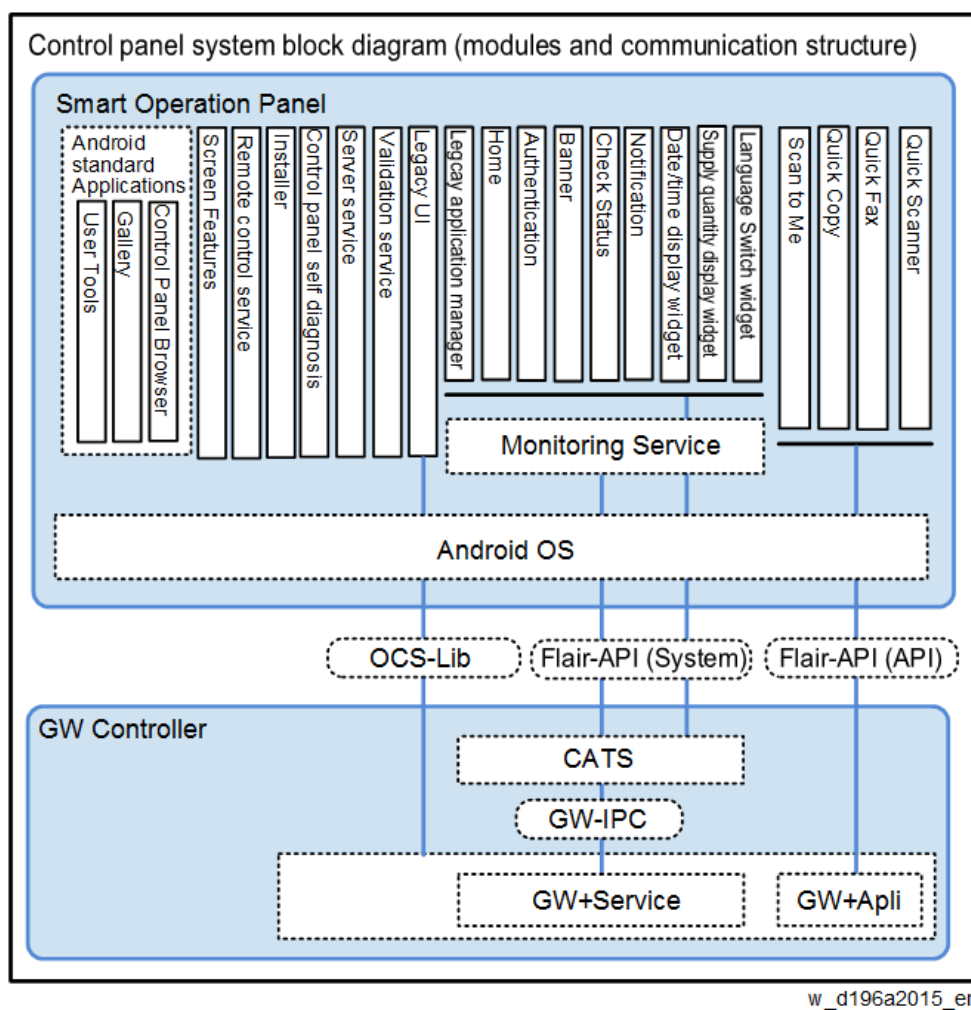
Applications that can be installed include optional applications that customers can purchase, applications that are installed only on machines sold in specific regions, and custom-made applications.

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)".

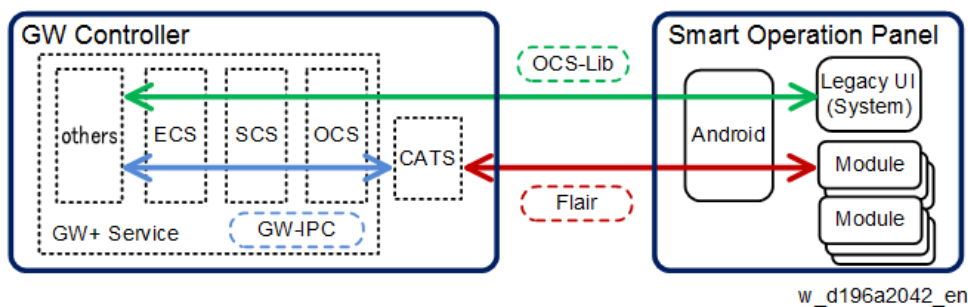
System block diagram



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.

Communication module/signal name	Details
	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

2.Mechanism

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.
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 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.
Home screen	Provides the Home screen. Also provides screen customization and application

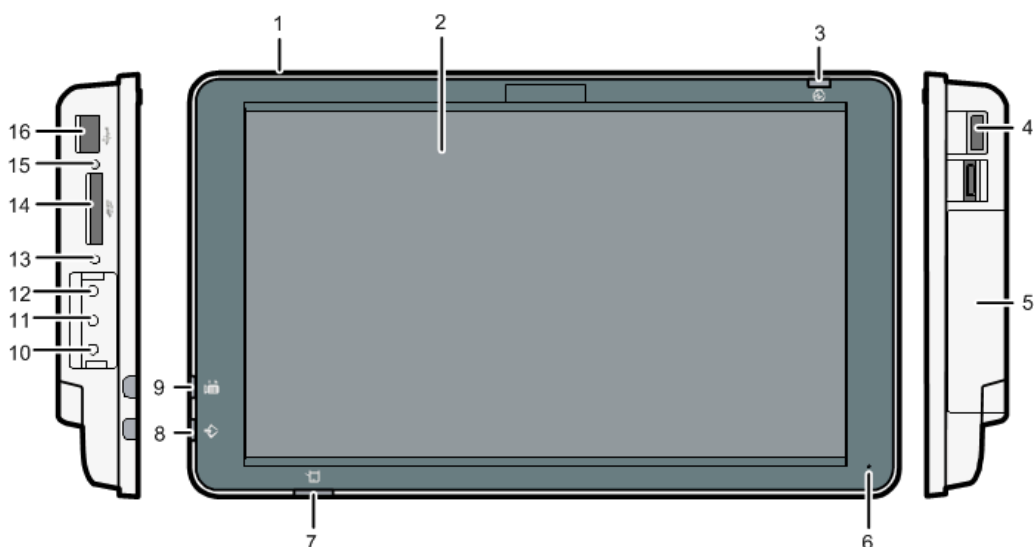
Application	Functions
	switching.
Banner	Displays balloon messages in the banner area at the bottom of the panel display.
OCS emulator	This application serves as an intermediary between the control panel and the controller board. (The emulator allows the controller board to work the same way regardless 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. - System Message Displays system messages.
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
ICCardDispatcher	Host application for NFC (Near Field Communication). Transmits card information to authentication applications.
Quick Card Authentication	Provides simple authentication using an IC card.

2.Mechanism

Application	Functions
Standard IC card plugin	A plugin for using IC cards. Examples of IC cards are the FeliCa (Lite) and Mifare card systems.
Bluetooth Service	Provides configurations for standard Bluetooth on the Android OS.
Bluetooth Authentication Plugin	This plugin is required to use Bluetooth authentication.
Copy	Copy application with a new UI. This application is not available for MP C 306Z/406Z series.
Fax	Fax application with a new UI. This application is not available for MP C 306Z/406Z series.
Scan	Scan application with a new UI. This application is not available for MP C 306Z/406Z series.
Printer	Printer application with a new UI. This application is not available for MP C 306Z/406Z series.
Quick Print Release	Ability to view and print stored documents. This application is not available for MP C 306Z/406Z series.
Print/Scan (Memory Storage Device)	"Media Print" and "Scan to Media" have been integrated into this application. This application is not available for MP C 306Z/406Z series.
Web Browser NX	Provides an operating environment for solution applications' functions and configuration.
Proximity Card Reader Support Plugin	Provides support for USB card readers.

Panel Components/Screen Layout

Components of the Control Panel



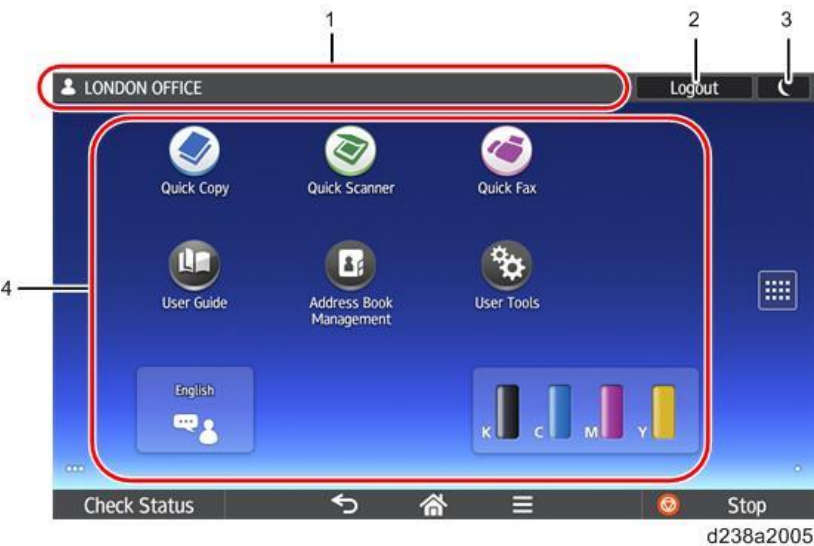
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No.	Name	Description
1	Speaker	There is currently no function that uses this.
2	Display panel	Displays icons for functions and applications. Displays the operation screens, operation keys and other information.
3	Main power indicator	Indicates power 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.
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

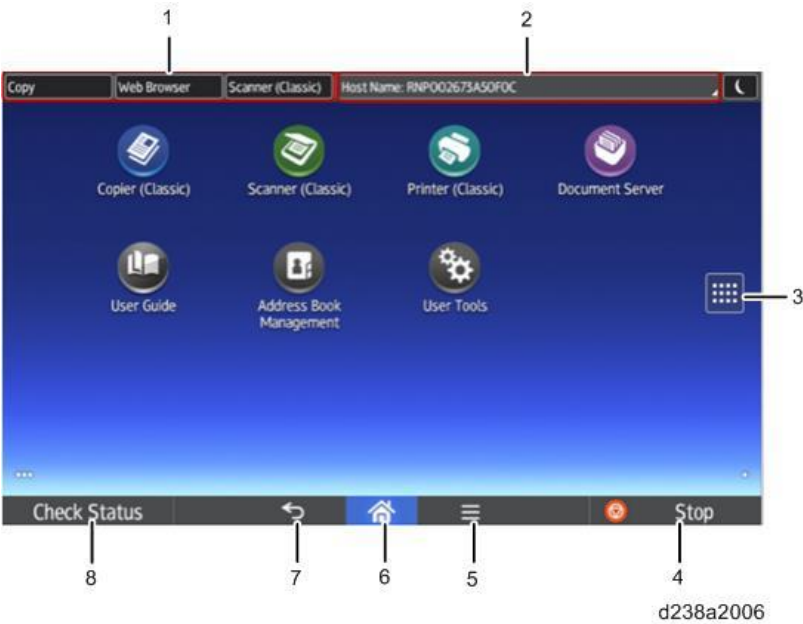
Screen Layout

2.Mechanism



No.	Name	Description
1	Login information area	Login information is displayed.
2	[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].
3	[Energy Saver] key	Enters Sleep mode.
4	Icon display area	Application icons, widgets, and system messages are displayed.

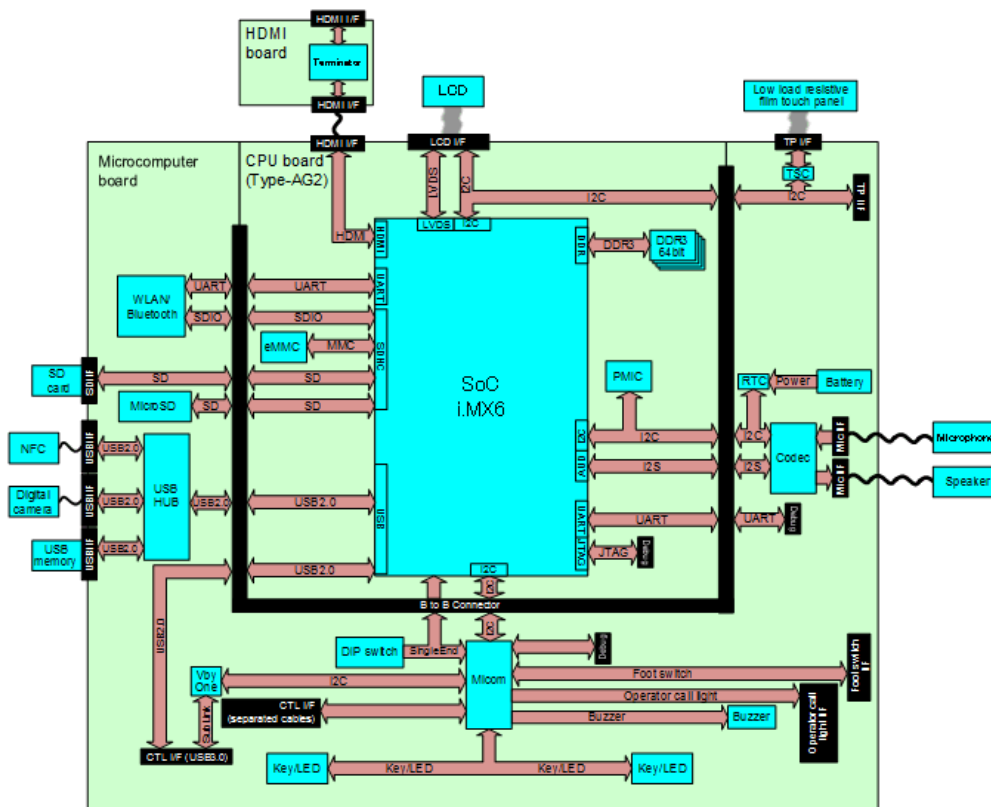
Soft keys displayed on the screen



No.	Name	Description
1	Function keys	Users can assign shortcuts for each application. Up to three applications can be assigned as shortcuts. When an application is assigned as a function key, users can call the application from any screen. The function keys are disabled by default. Users must enable this function to

No.	Name	Description
		be able to allocate applications to function keys.
2	System messages key	System messages are displayed in this area. If there are multiple messages to be displayed, they are displayed in rotation. Tapping the message opens a dialog which shows all the messages.
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.

Electrical Components



w_d196a2020_en

Note

- The CPU board has a CPU, memory, and a flash drive.
- The Microcomputer board has various interfaces, Wi-Fi module and other devices.

2.Mechanism

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.

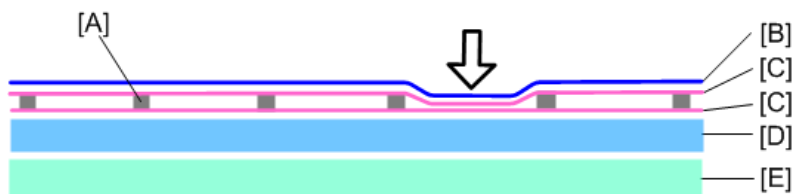
Basic Structure

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.



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[A]: Spacing dot

[B]: PET film

[C]: Transparent conductive film

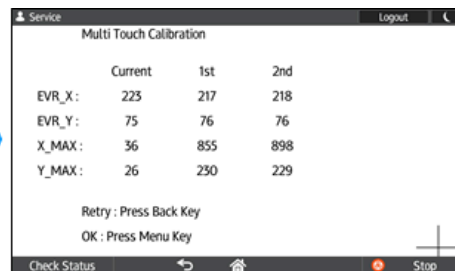
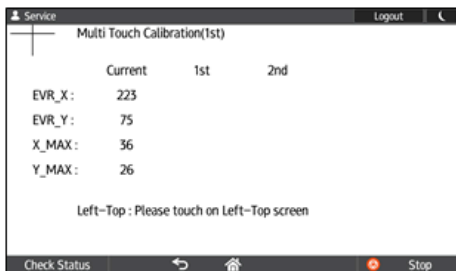
[D]: Base glass

[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.



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Controlling the Power Supply

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

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.

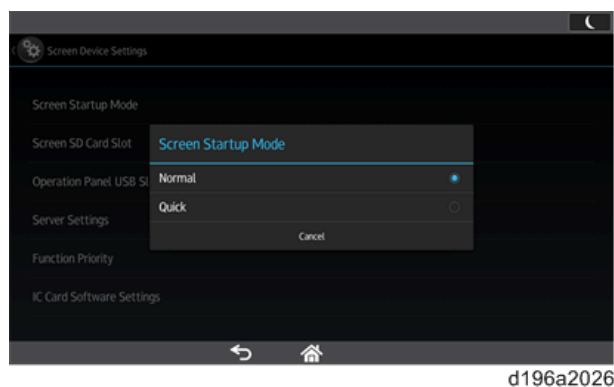
2. Quick

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.

2.Mechanism

How the Control Panel Starts Up

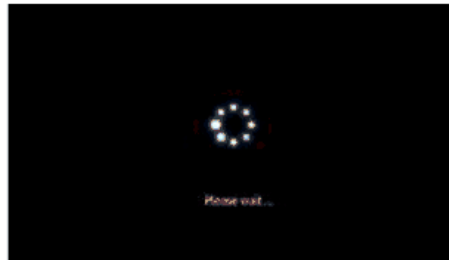
In Normal mode

The startup screen is displayed on the display panel, followed by the startup animation.

Startup screen



Startup animation



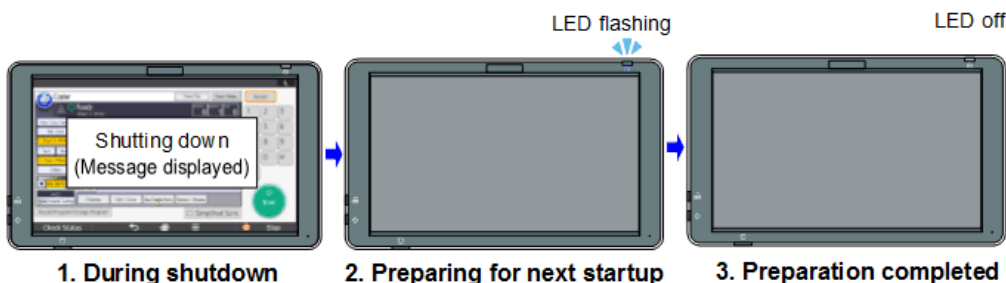
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In Quick mode

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.

Shutdown Functions

The shutdown functions and their uses are as follows.

Shutdown mode	Use	Operation
Normal Shutdown	Same as shutdown by users.	Turn the main power switch off.

Forced shutdown	When normal shutdown does not complete even though you waited a long time.	Hold the main power switch 6 seconds or longer.
Shutdown for parts replacement	- When you have to disconnect the power cord from the power outlet, such as when replacing parts. - When you want to start the machine normally and then enter recovery mode, without changing the Startup mode in Screen Features. (For updating control panel firmware)	Turn the main power switch off while holding down [Stop].
Shutdown for software update	When you are going to turn on the MFP within 5 minutes for updating the MFP firmware or package. (Use shutdown for parts replacement if you are updating the control panel firmware.)	Turn the main power switch off while holding down the [EX1] key.

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

2.Mechanism

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

System Maintenance

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	-

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)

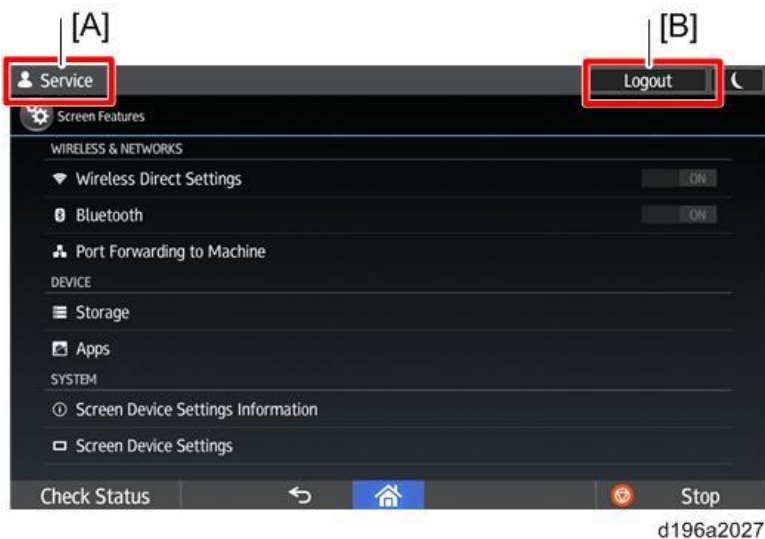
Note

- 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 after 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.

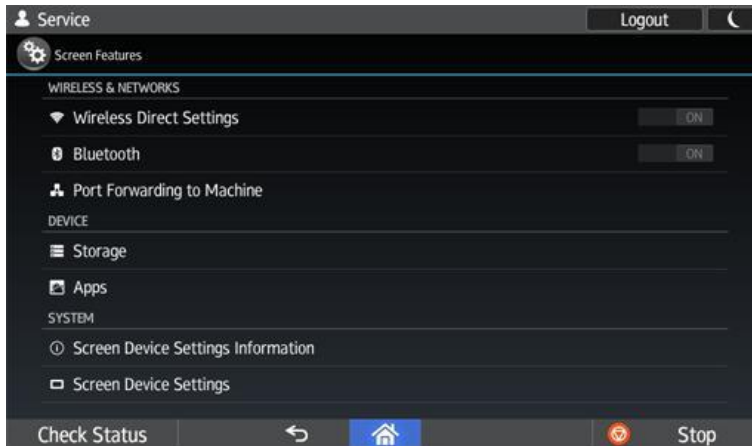
Note

- The machine can enter the recovery mode even if [Service Mode Lock] is enabled.

Service Mode Menu

There are three menus of settings.

- WIRELESS & NETWORKS
- DEVICE
- SYSTEM



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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.
	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	Port Forwarding Settings	Port Forwarding	Requests sent to the wireless LAN unit of the Smart Operation Panel can be forwarded to the controller

3.System Maintenance

Menu level			Description
1st level	2nd level	3rd level	
Machine		Cinfig 1-20	of the MFP. You can enable or disable ports to forward these requests.
MTU Settings	PathMTU(Enable/Disable)		Enables/disables the PathMTU size set in [MTU Size]. When you change this setting, the control panel restarts.
	MTU Size		Sets the size of PathMTU. Default: 1500.

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.
	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	Status		Displays the following: Wi-Fi MAC address

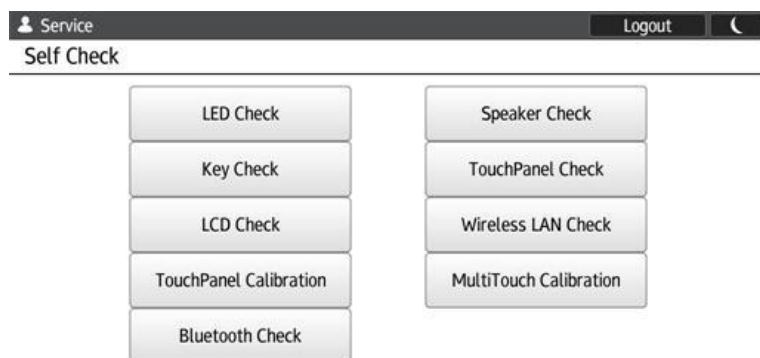
Menu level			Description
1st level	2nd level	3rd level	
Information			- Bluetooth address - Interface Settings - Wi-Fi settings (ON/OFF)
	Legal information	Open source licenses	Displays the open source license information.
	Software Version List		Displays the versions of control panel firmware and installed 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.
	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. Note: 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. Note: 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

Menu level			Description
1st level	2nd level	3rd level	
			not enter Sleep mode. Only the LCD (display panel) turns OFF.
	Panel Self Check		Starts self-diagnosis of the control panel. (Panel Self Check)

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)

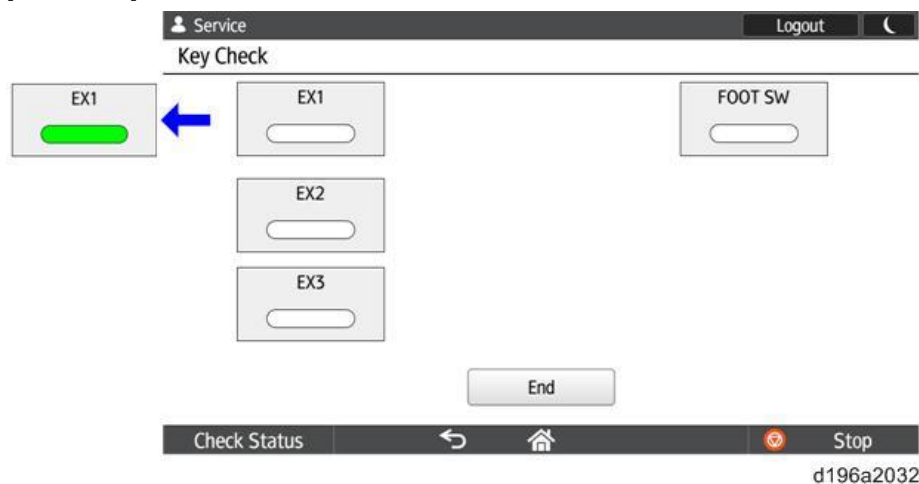


When the check is completed, press [Back] to return to the top menu of [Self Check].

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.

3. System Maintenance

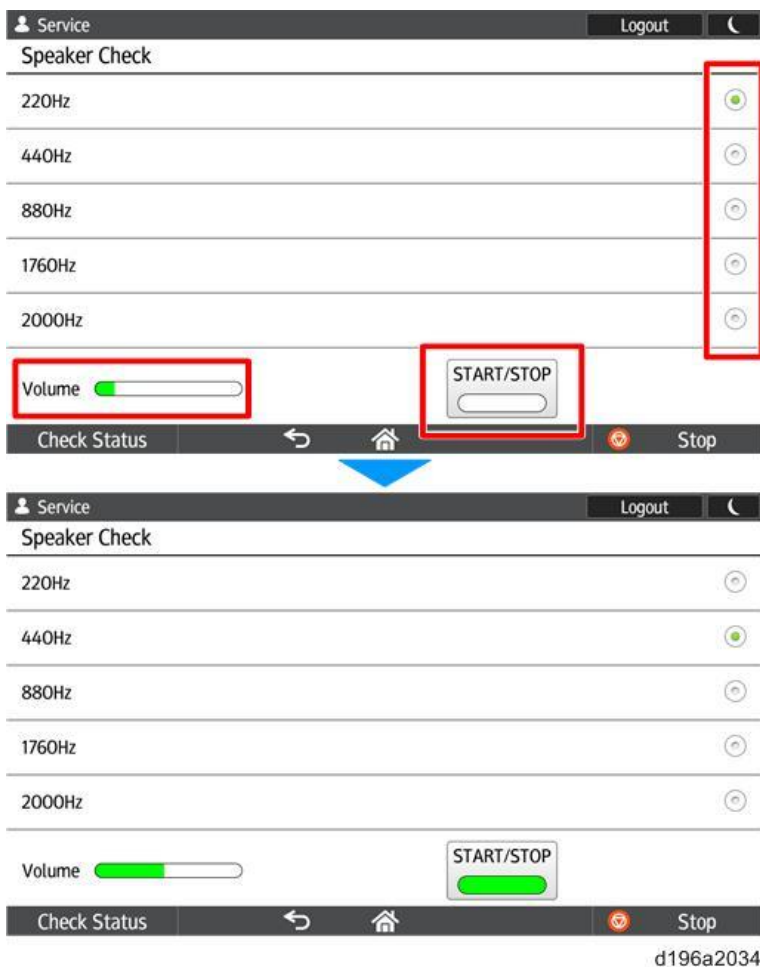


The check is completed when all colors have been displayed. The screen returns to the top menu of [Self Check].

Speaker Check

Tests the speaker by playing the reference sound.

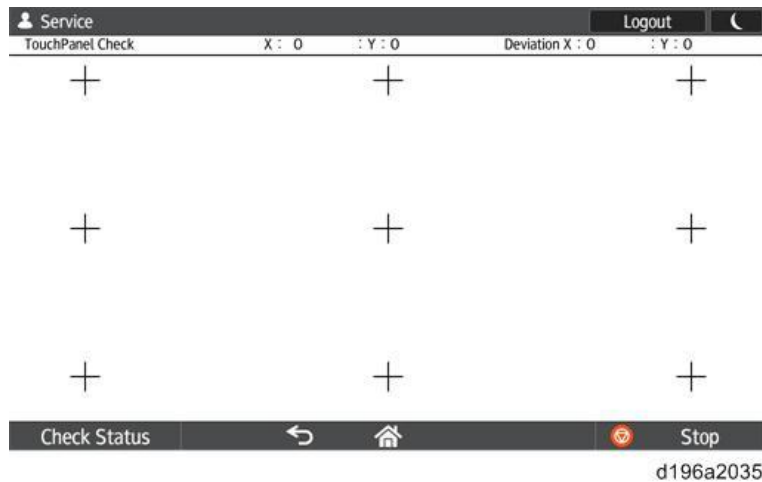
1. Select the frequency (220Hz, 440Hz, 880Hz, 1760Hz, or 2000Hz).
2. Press [START/STOP] to play the sound.
3. Touch the volume bar, and play the sound at minimum and maximum volumes.
4. Press [START/STOP] to stop the sound.



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 that the calibration results are OK, press the [EX3] key to return to the top menu of [Self Check].

3.System Maintenance



Retry : Press EX1 key
OK : Press EX3 key



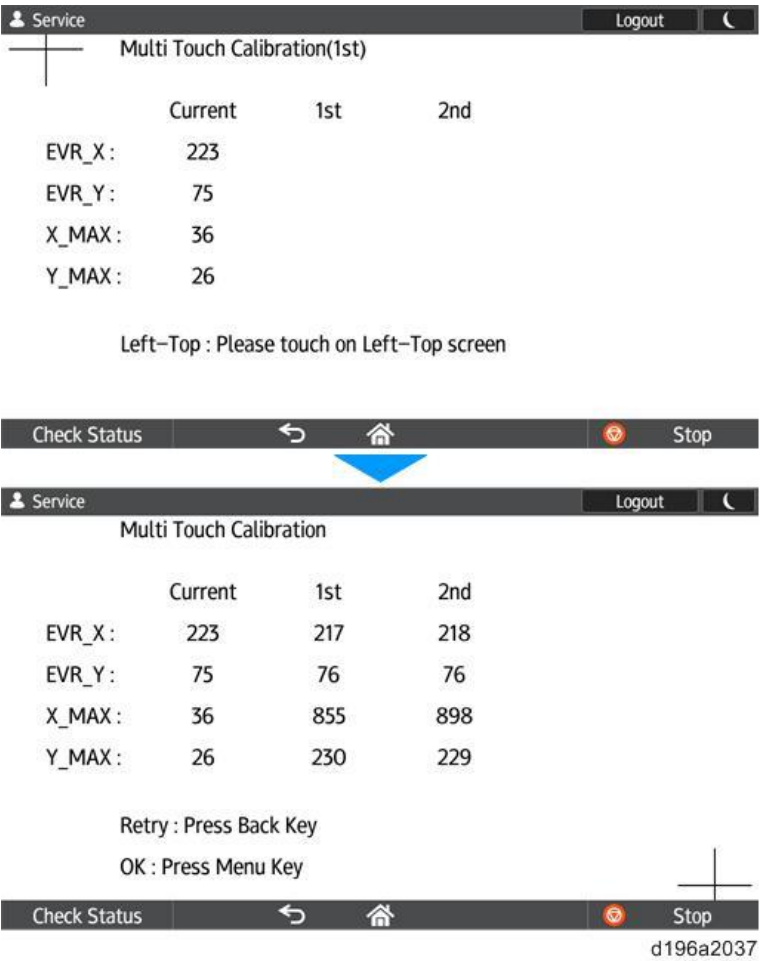
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MultiTouch Calibration

Calibrate the touch panel for multi-tap input methods such as pinch-in/pinch-out.

Touch the center of both "+" signs. The two "+" signs 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 that the calibration results are OK, 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

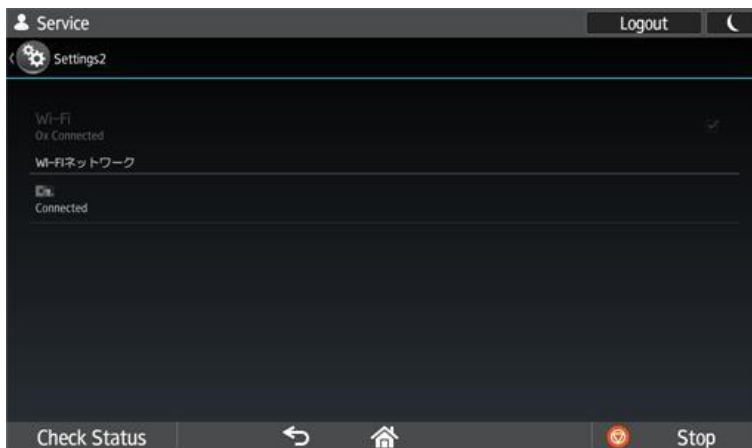
- The values of “EVR_X”, “EVR_Y”, “X_MAX”, and “Y_MAX” are for internal processing and do not indicate the positions or distance of the points touched. There is no problem unless there is a huge difference between the values of the first calibration and the second calibration.

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.

3.System Maintenance

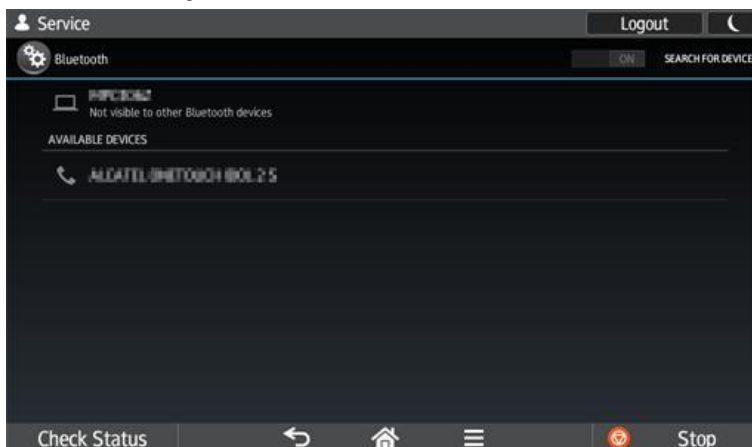


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When the check is completed, press [Back] to return to the top menu of [Self Check].

Bluetooth Check

Check and configure the Bluetooth device connection.



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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].

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.
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.

Special Key Combinations

This section describes special key combinations for operations which required combinations of hardware keys on the previous models.

Function	Operation for previous models	Operation for Smart Operation Panel
SSP (Super Service) mode login	Login to SP mode, and then press an SP mode item while holding down the [#] key.	Login to SP mode, and then press an SP mode item while holding down the EX3 key.
Resetting User Tools	In the User Tools screen, press a User Tools category while holding down the [#] key. Available for: System Settings, Copier/Document Server Features, and Scanner Features.	In the User Tools screen, press a User Tools category while holding down the EX3 key. Available for: System Settings, Copier/Document Server Features, and Scanner Features.
System Reset	Hold down the [*] and [#] keys simultaneously for 10 seconds. Resets the controller software.	Hold down the EX3 key and [#] simultaneously for 10 seconds. Resets the controller software of the main machine.
Application Reset	Hold down the [7] and [9] keys simultaneously for 10 seconds.	Hold down the EX3 key and [9] simultaneously for 10 seconds.

3.System Maintenance

Function	Operation for previous models	Operation for Smart Operation Panel
	Resets a single application.	Resets a single application.
Resetting User Code Authentication	Press the [Reset] key and [Clear] key simultaneously. Returns to the User Code entry screen.	Hold down [Reset] for 2 seconds. Returns to the User Code entry screen.

Software Update

Updating the Smart Operation Panel

There are four 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
4. Installation/update from Application Site

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
Installation/update from Application Site	Installation and Updating of applications and firmware update can be done from Application Site. When administrator authentication is enabled, an administrator privilege is required to start Application Site. If you log in to the operation panel service mode, however, you can use it	Yes* ¹	Yes

3. System Maintenance

Update method	Features	Control panel firmware	Applications
	with CE privilege.		

* 1 Update can only be done by using a package file.

The following three methods can be used for updating the firmware.

- Update from an SD card (recovery mode)
- Package update
- Installation/update from Application Site

The following four methods can be used for updating an application.

- Installation/update from an SD card
- Package update
- Installation/update from the eDC Server
- Installation/update from Application Site

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]

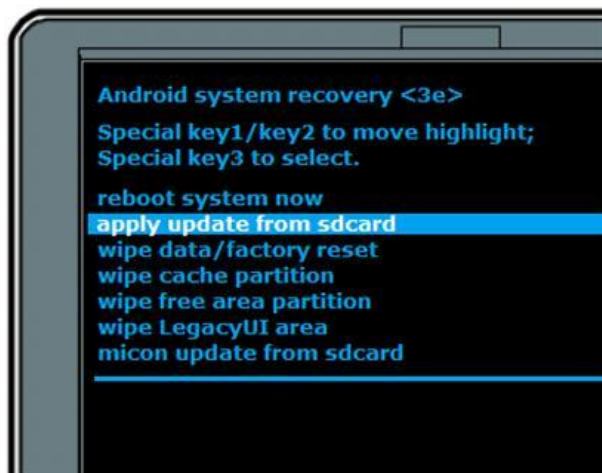
Moves the cursor down.

Cancels updating.

[EX3]

Selects the item.

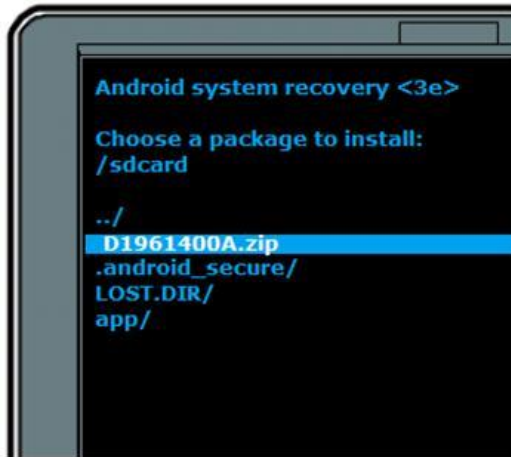
3. Select "apply update from sdcard" in the "Android system recovery" screen, and then press the [EX3] key.



d196a2043

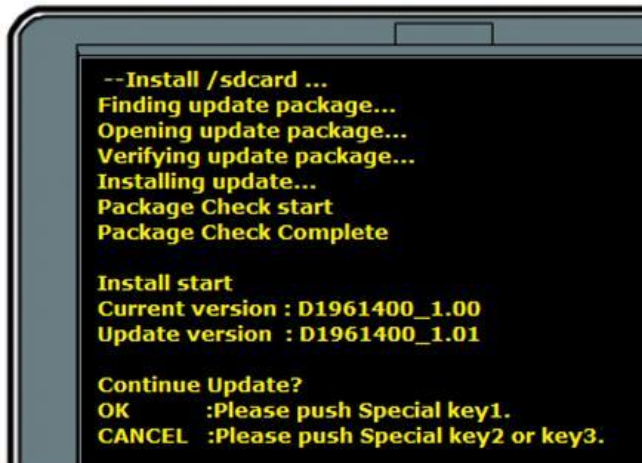
4. The contents of the SD card is displayed. Select "part number + suffix.zip" with the [EX1] or [EX2] key, and then press the [EX3] key.

Example: "D1961400A.zip"



d196a2044

5. The installation screen is displayed.



d196a2045

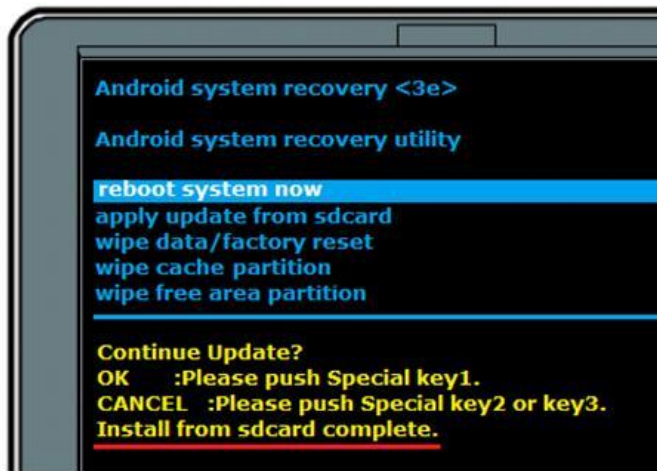
6. The version of the firmware installed in the control panel is displayed as "Current version" and the version of the firmware saved on the SD card is displayed as "Update version". Make sure that you have the correct version.
- Z. When "Continue Update?" is displayed, press [OK] ([EX1] key).

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].

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

3. System Maintenance

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".

Installation/update from the eDC Server

Downloads applications from the eDC Server, and installs or updates them.

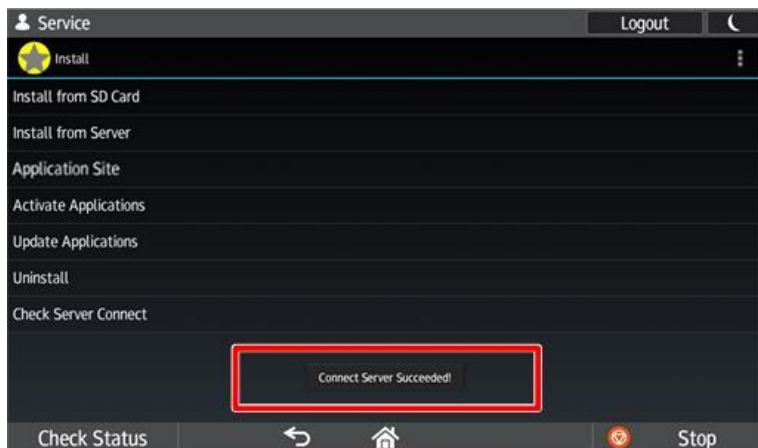
This method is mainly for paid applications. A product key is required when an application is installed for the first time.

Note

- Installation/activation/update of applications from the server can only be done in the service mode.

Check Server Connect

1. Log in to the control panel's service mode.
2. Select [Apps] > [Install].
3. Press [Check Server Connect] and make sure that "Connect Server Succeeded!" is displayed.



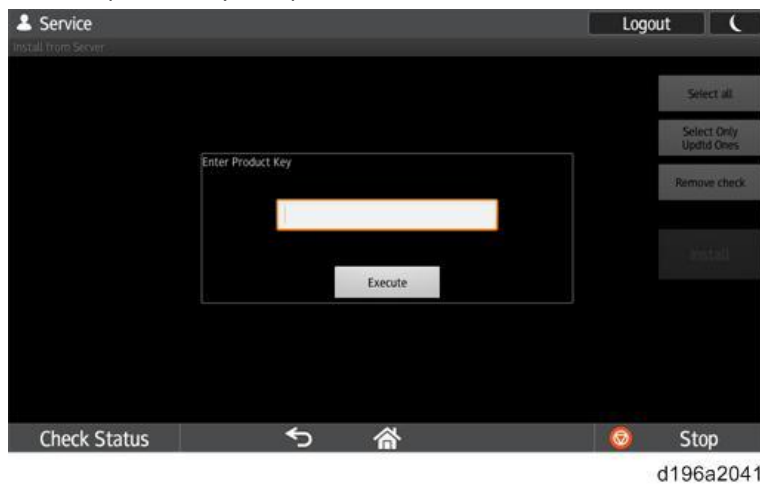
Note

- 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 [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].



d196a2041

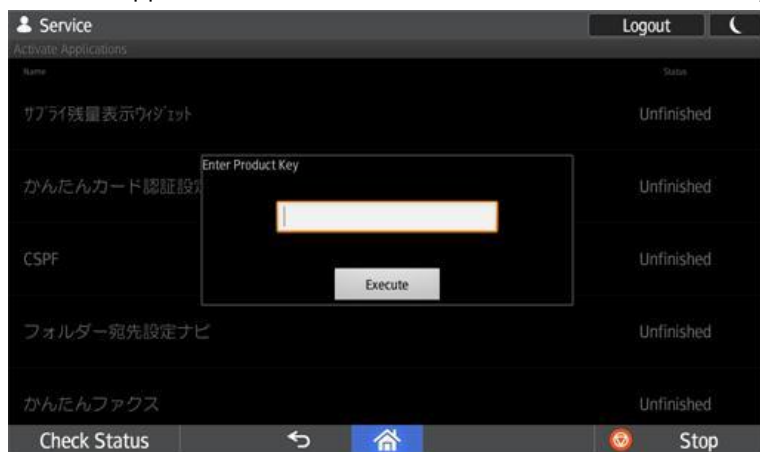
5. Follow the instructions shown on the screen.

↓ 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].



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5. Follow the instructions shown on the screen.

↓ Note

- Only charged applications have to be activated.

Update

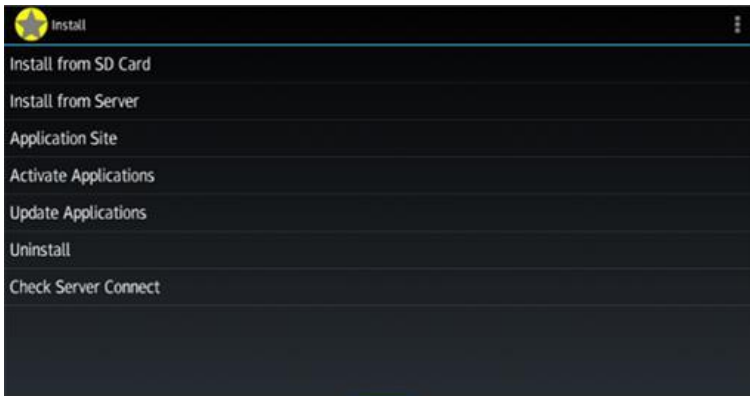
1. Log in to the control panel's service mode.
2. Select [Apps] > [Install].
3. Select [Update Applications].
4. Select the application to be updated, and then press [Check Update Status].

3.System Maintenance

5. Follow the instructions shown on the screen.

Application Site

"Application Site" has been added to Screen Service mode. Field engineers can start up Application Site to install or update applications or firmware without needing user administrator credentials.



d238a2008

This menu item opens Application Site by using the Web Browser NX app.

4. Troubleshooting

Troubleshooting

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.
- (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.

4. Troubleshooting

Error code	Explanation
	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.

“yyyymmddhhmm” 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: Successful
 - 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
-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

4. Troubleshooting

Error code	Error name	Explanation	Solution
			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.
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.

Error code	Error name	Explanation	Solution
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.
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.
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-	The Android SDK version required by the	Check that the Android SDK version

4. Troubleshooting

Error code	Error name	Explanation	Solution
	incompatible	application is not installed on the control panel.	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.

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 successful 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".

Fax Unit
Machine Code: M50203
Field Service Manual
Ver 1.01

Latest Release: -

Initial Release: August, 2016

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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

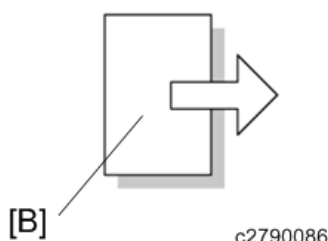
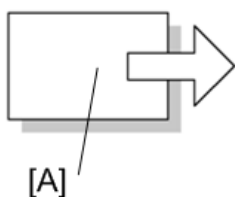
- **Note for Australia:**
- Unit must be connected to Telecommunication Network through a line cord that meets the requirements of ACA Technical Standard TS008.

Symbols and Abbreviations

Conventions Used in this Manual

This manual uses several symbols.

Symbol	What it means
	Screw
	Connector
	Clip ring
	Clamp
SEF	Short Edge Feed
LEF	Long Edge Feed



c2790086

[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.

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1. Installation

Fax Unit Option

Handset (HS1020)

Note

- The optional handset is available for the U.S. version only.

Component Check

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

No.	Description	Q'ty
1	Handset	1
2	Cradle	1
3	Bracket	1
4	Round screw (for cradle)	2
5	Cable clamp	2



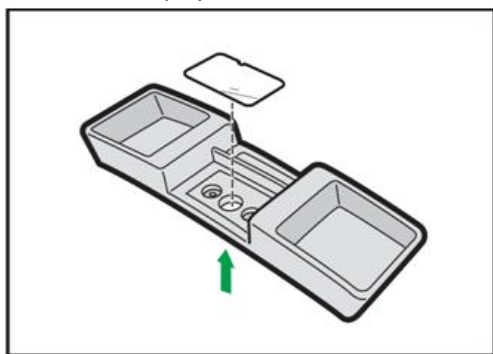
Installation Procedure

Note

- Do not apply strong impact or force to the handset bracket, or it may be damaged.
- The ferrite core is attached to the handset cord for reducing noise. Do not remove the ferrite core.

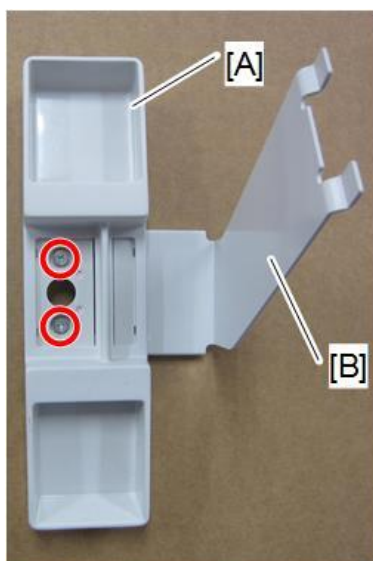
1. Installation

1. Remove the inquiry card from the handset cradle.



m1603002

2. Remove the protective tape from the handset bracket, and fix the handset cradle [A] to the handset bracket [B].



⚙️x2

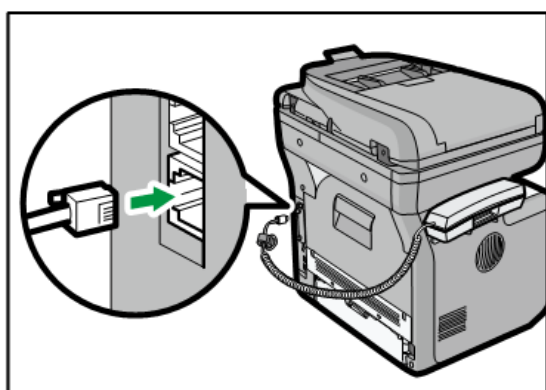
m0a0k3028

3. Place the inquiry card back on the handset cradle.
4. Attach the bracket at the left side of the machine, as shown below.



m0a0k3028

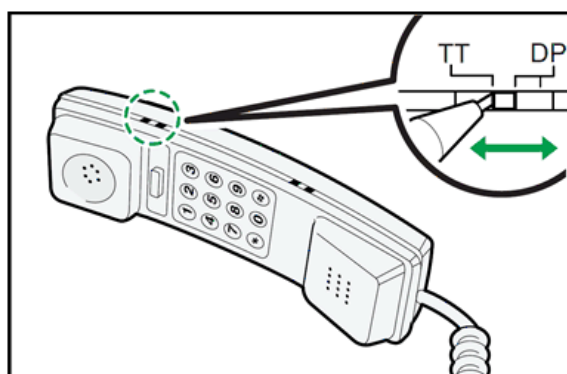
5. Place the handset on the handset cradle, and connect the handset cord to the TEL socket.



m1608037

Selecting the telephone line type of the handset

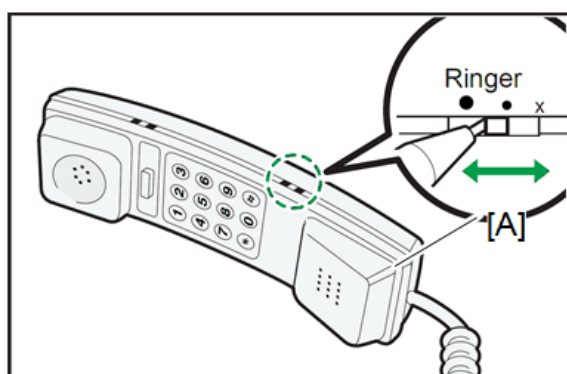
The switch on the handset should be in the appropriate position - TT (Tone Dialing) or DP (Pulse Dialing).



m0a0k3009

Adjusting the handset bell volume

Adjust the handset ringer volume using the volume switch.

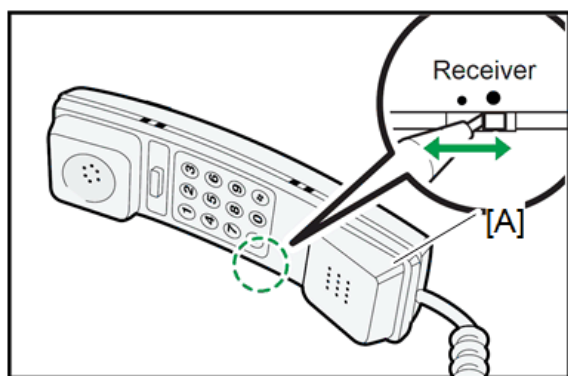


m0a0k3010

Adjusting the handset receiver volume

Adjust the handset receiver volume using the volume switch.

1. Installation



m0a0k3011

2. Replacement and Adjustment

FCU

⚠ CAUTION

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

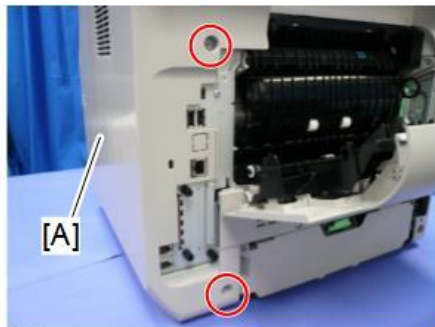
SRAM Data Transfer Procedure

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.

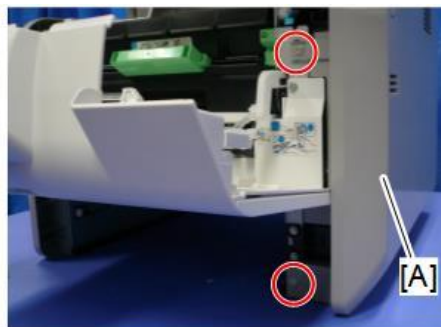
↓ Note

- The following data can be transferred: TTI, RTI, CSI, Fax bit switch settings, RAM address settings, NCU parameter settings

1. Open the front cover.
2. Open the rear cover.
3. Remove the right cover [A].



⚙ x4



m0a0k1005

↓ Note

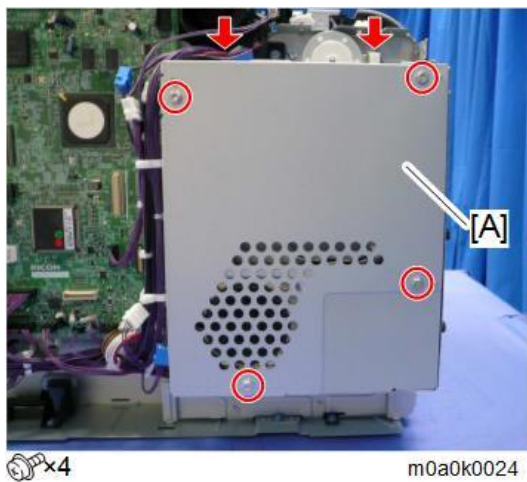
- There are four tabs on the back of the right cover.



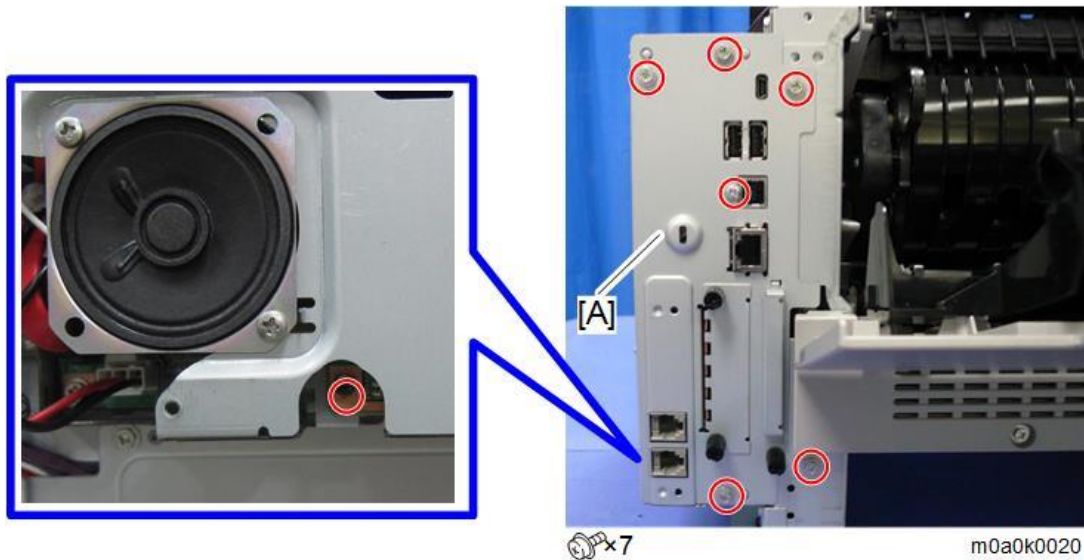
m0a0k1004

2.Replacement and Adjustment

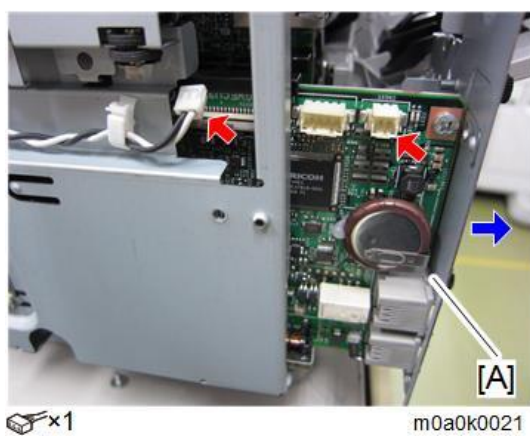
4. Remove the controller box cover [A].



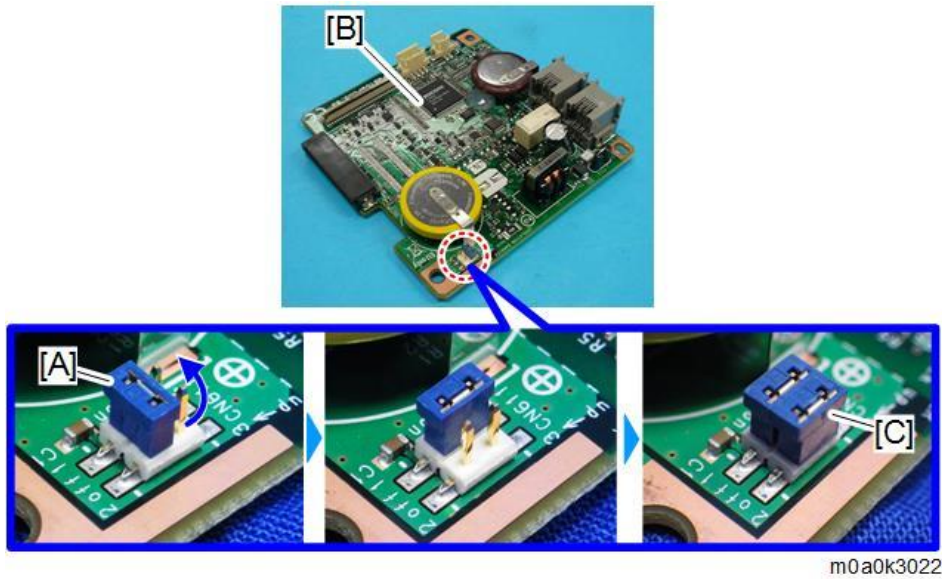
5. Remove the screws of the bracket [A] and the FCU board.



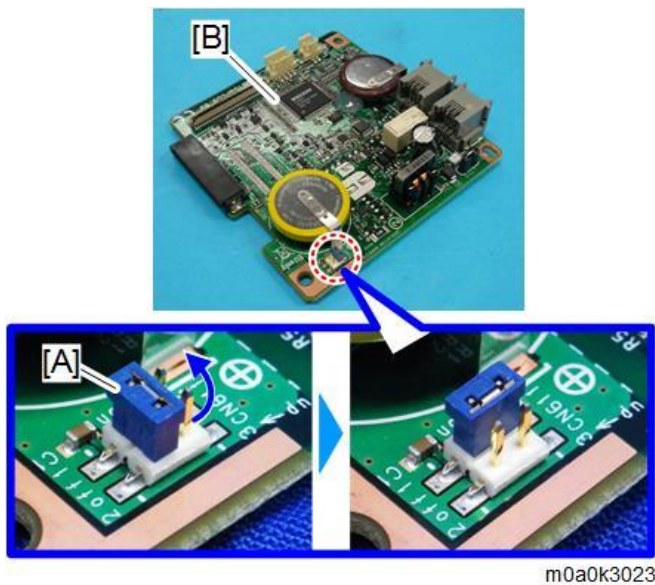
6. Disconnect the speaker connector and remove the FCU board [A] with the bracket.



7. Change the orientation of the battery jumper switch [A] on the removed FCU board [B], and then attach the battery jumper switch [C]. The battery jumper switch [C] is provided with the new FCU board.



8. Change the orientation of the battery jumper switch [A] on the new FCU board [B].



Note

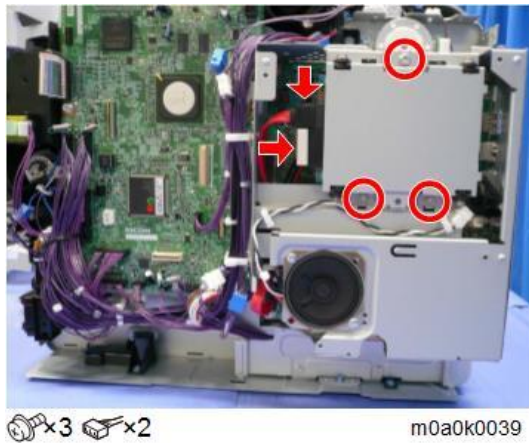
- If the battery jumper switch is not in the correct position, SC820 will occur.

9. Remove the HDD.

Note

- It is not necessary to disconnect the HDD cable.

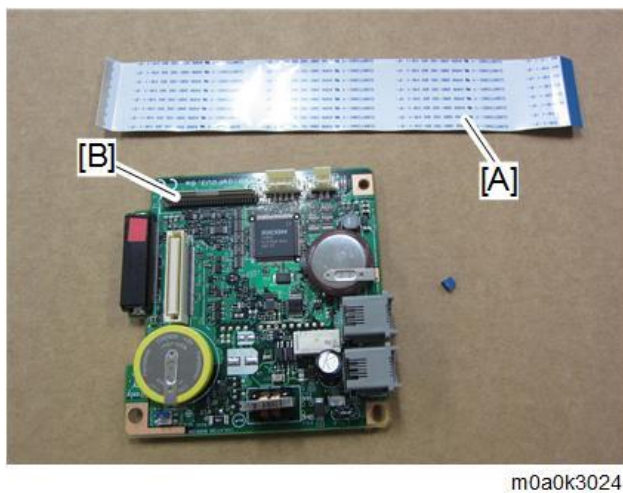
2.Replacement and Adjustment



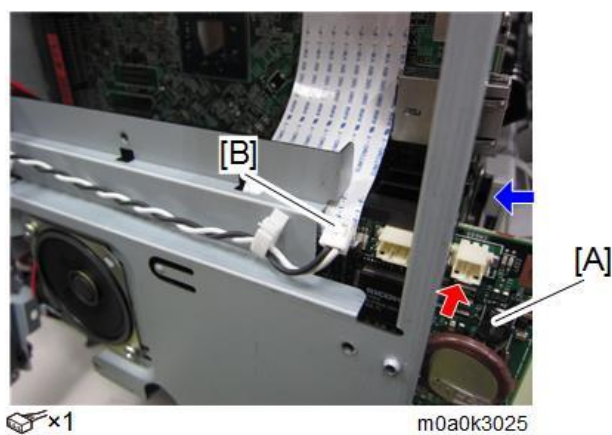
10. Insert one end of the supplied flat cable [A] into the CN603 connector [B] on the new FCU board.

Note

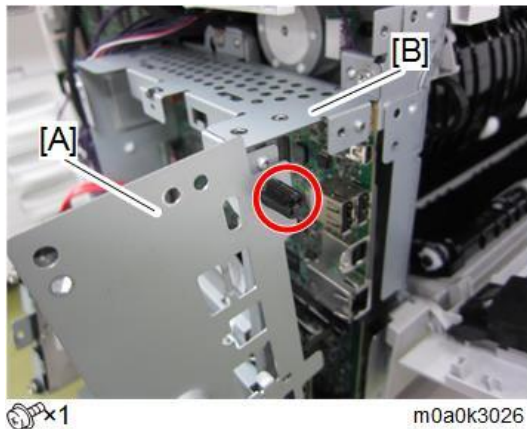
- Make sure that the blue tape of the flat cable faces outward.



11. Insert the new FCU board [A] in the machine and connect the speaker connector [B] to the new FCU board.



12. Mount the old FCU board with bracket [A] to the controller box temporarily.



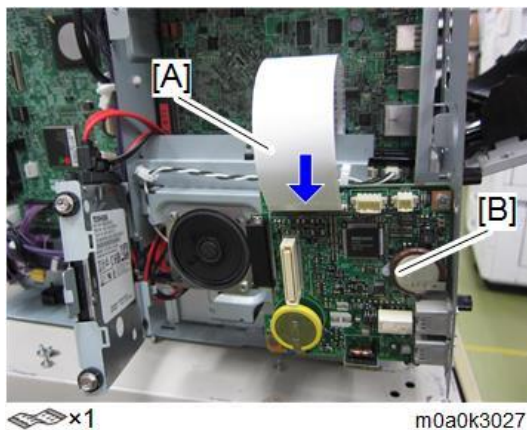
13. Insert the other end of the flat cable [A] into the CN603 connector on the old FCU board [B].

Note

- To prevent a short circuit, make sure the old FCU board does not come into contact with anything metal.

Note

- Make sure that the blue tape of the flat cable faces outward.



14. Turn the main power switch ON.

15. The SRAM data transfer begins. Transfer is complete when a beep sounds.

Note

- The volume of the beep is set to the same level as the speaker volume.
- If the speaker volume is set to off, the volume of the beep is set to its initial factory-set level.
- If the machine does not beep, switch the main power off and then back on and try the data transfer again. Try several times if necessary.
- Be sure to check the transfer result after executing data transfer. If the transfer has failed, you need to specify settings manually in the SP mode.

16. When "Ready" appears on the control panel, switch the power OFF, and then remove the AC power plug from the receptacle.

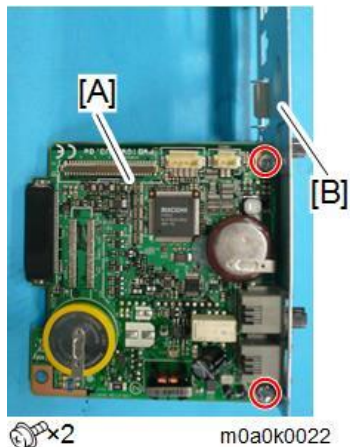
17. Disconnect the flat cable from both FCU boards.

18. Remove the old FCU board with bracket from the controller box.

2.Replacement and Adjustment

19. Disconnect the speaker connector and remove the new FCU board [A] from the machine.

20. Remove the bracket [B] from the old FCU board [A] and attach the bracket to the new FCU board.



21. Mount the new FCU board in the machine and connect the speaker connector to the new FCU board.

22. Reattach the controller box cover.

23. Reattach the cover.

24. Turn the main power switch on.

25. Enter the SP mode, print the system parameter list from SP6-101 in the Fax SP menu, and then check the list to see whether the SRAM data has been transferred correctly.

26. Set the correct date and time from the [User Tools].

- User Tools > Machine Features > System Settings > Timer Setting > Set Date/Time

↓ Note

- If any of the SRAM data was not transferred, input those settings manually.

3. Troubleshooting

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
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

3.Troubleshooting

Code	Meaning	Suggested Cause/Action
		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.
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
0-16	CFR or FTT not detected after modem	• Check the line connection.

Code	Meaning	Suggested Cause/Action
	training in confidential or transfer mode	• 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 Switch 0A, bit 4
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.

3.Troubleshooting

Code	Meaning	Suggested Cause/Action
		• 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
0-29	Data block format failure in ECM reception	• Check for line noise or other line problems. • Check the FCU - NCU connectors. • Replace the NCU or FCU.
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.
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	• The calling terminal could not detect ANSAm due to noise, etc.

Code	Meaning	Suggested Cause/Action
	sending CI.	• 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.
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. If these errors happen at the receiving terminal: • 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 main power switch, 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 main power switch, then turn it back on.

3.Troubleshooting

Code	Meaning	Suggested Cause/Action
		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.
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 error occurs frequently, change the settings for resolution, paper size, 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 FCU ROM.
2-26	JBIG data reconstruction error (Float marker error)	
2-27	JBIG data reconstruction error (End marker error)	
2-28	JBIG data reconstruction error (Timeout)	
2-29	JBIG trailing edge maker error	- FCU defective - 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.

Code	Meaning	Suggested Cause/Action
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.
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.
6-10	G3 ECM - error frames still received at the	Check for line noise.

3.Troubleshooting

Code	Meaning	Suggested Cause/Action
	other end after all communication attempts at 2400 bps	- 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.
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

Code	Meaning	Suggested Cause/Action
		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
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.

3.Troubleshooting

Code	Meaning	Suggested Cause/Action
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
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.

Code	Meaning	Suggested Cause/Action
		Update the software because of the defective software.
14-20	SMTP Authentication error	Make sure the administrator's e-mail address is 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.
14-22	Destination certificate is invalid in S/MIME transmission.	Register the correct destination certificate.
14-23	Device certificate is invalid in S/MIME transmission.	Register the correct device certificate.
14-24	Destination and device certificate is in valid in 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
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

3.Troubleshooting

Code	Meaning	Suggested Cause/Action
		(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.
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
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-	Incomplete Mail Received	Only one portion of the mail was received.

Code	Meaning	Suggested Cause/Action
18		
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.
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-	MDN Status Error	Could not find the Disposition line in the header of the Return

3.Troubleshooting

Code	Meaning	Suggested Cause/Action
73		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.
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.
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 an 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.

Code	Meaning	Suggested Cause/Action
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. • Check for line noise or other line problems. • Try communicating another V.8/V.34 fax.

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.
	1. 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.]
	1. 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.]
	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.]
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.]
	1. 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.]
	1. 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

Communication Route	Item	Action [Remarks]
		server are the same as in the machine. [Ask the administrator to check.]
	1. 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.]
	1. Destination e-mail address	- Make sure that the e-mail address is actually used. - Check that the e-mail address does not contain incorrect characters such as spaces.
	1. 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.]
	1. 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.]

IP-Fax Troubleshooting

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

Check Point		Action
		(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 server host name specified?	Contact the network administrator.
9	Enable H.323/Enable SIP 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.

3.Troubleshooting

Check Point		Action
		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.

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.

Check Point		Action
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/SIP server 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/SIP server 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/SIP server 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/SIP server 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/Enable SIP 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.

3.Troubleshooting

Check Point		Action
		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

Cautions

★ Important

- 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 SPDF is open, while the main machine is communicating with a facsimile or the network server, or while the machine is accessing the hard disk or memory for reading or writing data.

Service Program Tables

SP1-XXX (BIT SW)

1	Mode No.		Function
101	System Switch		
	001 – 032	00 – 1F	Change the bit switches for system settings for the fax option "Bit Switches - 1" : "System Switches"
102	I fax Switch		
	001 – 016	00 – 0F	Change the bit switches for internet fax settings for the fax option "Bit Switches - 2" : "I-Fax Switches"
103	Printer Switch		
	001 – 016	00 – 0F	Change the bit switches for printer settings for the fax option "Bit Switches - 2" : "Printer Switches"
104	Communication Switch		
	001 – 032	00 – 1F	Change the bit switches for communication settings for the fax option "Bit Switches - 3" : "Communication Switches"
105	G3-1 Switch		
	001 – 016	00 – 0F	Change the bit switches for the protocol settings of the standard G3 board "Bit Switches - 4" : "G3 Switches"
111	IP fax Switch		
	001 – 016	00 – 0F	Change the bit switches for optional IP fax parameters "Bit Switches - 6" : "IP Fax Switches"

SP2-XXX (RAM)

2	Mode No.		Function
101	001	RAM Read/Write	Change RAM data for the fax board directly. Service RAM Addresses
102	Memory Dump		
	001	G3-1 Memory Dump	Print out RAM data for the fax board. Service RAM Addresses
103	G3-1 NCU Parameters		
	001 – 023	CC, 01 – 22	NCU parameter settings for the standard G3 board. NCU Parameters

SP3-XXX (Machine Set)

3	Mode No.		Function
101	Service Station		
	001	Fax Number	Enter the fax number of the service station.

3	Mode No.		Function
102	001	Serial Number	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	If the customer does not want to receive transmissions using Memory Lock on this line, turn this SP on.
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	IP FAX Protocol Priority	Select "H323" or "SIP".
201	FAX SW		
	001 – 032	00 – 1F	
301	Fax: FlairAPI Setting		
	101	-	

SP4-XXX (ROM Versions)

4	Mode No.		Function
101	001	FCU ROM Version	Displays the FCU ROM version.
102	001	Error Codes	Displays the latest 64 fax error codes.
103	001	G3-1 ROM Version	Displays the G3-1 modem version.

SP5-XXX (RAM Clear)

5	Mode No.		Function
101	001	Initialize SRAM (except Secure)	Initializes the bit switches and user parameters, user data in the SRAM, files in the SAF memory, and clock.
102	001	Erase All Files	Erases all files stored in the SAF memory.
103	001	Reset Bit Switches (except Secure)	Resets the bit switches and user parameters.

4. Service Tables

5	Mode No.		Function
104	001	Factory Setting	Resets the bit switches and user parameters, user data in the SRAM and files in the SAF memory.
105	001	Reset All Bit Switches	Resets all the current bit switch settings.
106	001	Reset Security Bit Switches	Resets only the security bit switches. If you select automatic output/display for the user parameter switches, the security settings are initialized.

SP6-XXX (Reports)

6	Mode No.		Function
101	001	System Parameter List	Touch the "ON" button to print the system parameter list.
102	001	Service Monitor Report	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	001	All Files print out	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	

6	Mode No.		Function
	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.

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

Bit Switches - 1

★ Important

- 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.

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 in 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

4. Service Tables

	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	1: Each Quick/Speed dial number on the list is printed with the dedicated

	on Quick/Speed Dial Lists 0: Disabled 1: Enabled	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 turned 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	This switch becomes effective only when system switch 00 bit 6 is set to 1.

4. Service Tables

	0: Print for all communications 1: Print only when there is a communication error	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 is possible while the external handset is off-hook. However, manual TX during handset off-hook may not be sent to a correct direction.

	0: Manual TX and RX operation 1: Memory TX and RX operation (the display remains the same)	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

4. Service Tables

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: 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

	1: Disabled			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	Setting	
	0	0	1 min	
	0	1	30 min	
	1	0	1 hour	
	1	1	24 hours	
6-7	Not used			Do not change

System Switch 16 (SP No. 1-101-023)		
No	Function	Comments
0	Parallel Broadcasting 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.

4. Service Tables

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

4. Service Tables

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. Reference: For fax SC codes, see "Troubleshooting".

Bit Switches - 2

★ Important

- 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.

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
1	200x200 Detail	
2	200x400 Fine	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.
3	300 x 300 Reserve	
4	400 x 400 Super Fine	

4. Service Tables

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	

4. Service Tables

	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)

4. Service Tables

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	

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-	Not used	Do not change the settings.

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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	

4. Service Tables

	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 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 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	Length of the duplicated image on the next page, when page separation has taken place.					
6	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.	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 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.

4. Service Tables

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.
	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 machine which has no FCU.

Printer Switch OF (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 machine which has no FCU.

Bit Switches - 3

★ Important

- 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.

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	Bit	Modes	
	1	0		
	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	Bit	Modes	
	3	2		
	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 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.
	Bit 3	Bit 2	Setting	
	0	0	None	
	0	1	8 digit CSI	
	1	0	4 digit CSI	
	1	1	CSI/RTI	
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.	

4. Service Tables

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	00 to FF (Hex), unit = 4 Kbytes (e.g., 06(H) = 24 Kbytes)

4. Service Tables

	reception into memory) is disabled	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	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	0: Disables features that require PWD (Password) signal reception.

4. Service Tables

	1: Enabled	
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)

Bit Switches - 4

★ Important

- 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.

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. (0, 1): The monitor speaker is on up to phase B in the T.30 protocol. (1, 0): Used for testing. The monitor speaker is on all through the communication. Make sure that you reset these bits after testing.
	Bit 1	Bit 0	
	0	0	
	0	1	
	1	0	
	1	1	
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	Do not change this setting (Default: 0: Off), unless communication problem is caused by a CED or ANSam transmission.

	output 0: Off 1: On (Forbid output)	
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. $\sqrt{N_{\text{Transmit}}} \leq N_{\text{Resend}}$ NTransmit- Number of transmitted frames NResend- 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.

4. Service Tables

		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.
	Bit 3	Bit 2	Bit 1	Bit 0	kbps	Use the dedicated transmission parameters if you need to change this for specific receivers.
	0	0	0	1	2.4	If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually.
	0	0	1	0	4.8	
	0	0	1	1	7.2	Cross reference
	0	1	0	0	9.6	V.8 protocol on/off - G3 switch 03, bit 2
	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.
	Bit 3	Bit 2	Bit 1	Bit 0	kbps	Use a lower setting if high speeds pose problems during reception.
	0	0	0	1	2.4	If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually.
	0	0	1	0	4.8	
	0	0	1	1	7.2	Cross reference
	0	1	0	0	9.6	V.8 protocol on/off - G3 switch 03, bit2
	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					

4. Service Tables

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.
	Bit 1	Bit 0	Setting	Use the dedicated transmission parameters for specific receivers.
	0	0	None	Also, try using the cable equalizer if one or more of the following symptoms occurs.
	0	1	Low	Communication error
	1	0	Medium	Modem rate fallback occurs frequently.
	1	1	High	 Note This setting is not effective in V.34 communications.
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.
	Bit 3	Bit 2	Setting	Also, try using the cable equalizer if one or more of the following symptoms occurs.
	0	0	None	Communication error with error codes such as 0-20, 0-23, etc.
	0	1	Low	Modem rate fallback occurs frequently.
	1	0	Medium	 Note This setting is not effective in V.34 communications.
	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			0: This uses the fixed table in the ROM for dial tone detection. 1: This uses the specific parameter adjusted with SRAM (69ECBEH - 69ECDEH).

	detection 0: Normal parameter 1: Specific parameter	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. Try a longer setting if error code 0-22 is frequent.
	Bit 1 Bit 0 Value (ms)	
	0 0 200	
	0 1 400	
	1 0 800	
	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 0E (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 PPS) 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	Manual calibration setting	1: manually calibrates for communication with a line whose current

	0: Off 1: On	change occurs such as an optical fiber line.
5- 7	Not used	Do not change the settings.

Bit Switches - 5

★ Important

- 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.

G3-2 and G3-3 Switches

These switches require an optional G3 interface unit.

G3-3 switches are the same as for G3-2 switches.

G3-2 Switch 00 (SP No. 1-106-001)				
No	Function			Comments
0 1	Monitor speaker during communication (TX and RX)			(0, 0): The monitor speaker is disabled all through the communication. (0, 1): The monitor speaker is on up to phase B in the T.30 protocol. (1, 0): Used for testing. The monitor speaker is on all through the communication. Make sure that you reset these bits after testing.
	Bit 1	Bit 0	Setting	
	0	0	Disable	
	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- 7	Not used			Do not change the settings.

G3-2 Switch 01 (SP No. 1-106-002)		
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	Do not change this setting (Default: 0: Off), unless communication problem is caused by a CED or ANSam transmission.

	0: Off 1: On (Forbid output)	
7	Not used	Do not change the setting.

G3-2 Switch 02 (SP No. 1-106-003)

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)
1-4	Not used	Do not change the settings.
5	AI modem rate selection 0: OFF, 1: ON	Selects if the AI modem rate is ON or OFF.
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.

G3-2 Switch 03 (SP No. 1-106-004)

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. $\sqrt{N_{\text{Transmit}}} \leq N_{\text{Re send}}$ $N_{\text{transmit}} = \text{Number of transmitted frames}$

4. Service Tables

		Nresend = 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)

G3-2 Switch 04 (SP No. 1-106-005)		
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.

G3-2 Switch 05 (SP No. 1-106-006)						
No	Function					Comments
0-3	Initial TX modem rate (kbps)					These bits set the initial starting modem rate for transmission.
	Bit 3	Bit 2	Bit 1	Bit 0	kbps	Use the dedicated transmission parameters if you need to change this for specific receivers.
	0	0	0	1	2.4	If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually.
	0	0	1	0	4.8	
	0	0	1	1	7.2	Cross reference
	0	1	0	0	9.6	V.8 protocol on/off - G3 switch 03, bit 2
	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	
	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.

G3-2 Switch 06 (SP No. 1-106-007)						
No	Function					Comments
0-3	Initial RX modem rate(kbps)					These bits set the initial starting modem rate for reception.
	Bit 3	Bit 2	Bit 1	Bit 0	kbps	Use a lower setting if high speeds pose problems during reception.
	0	0	0	1	2.4	If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually.
	0	0	1	0	4.8	
	0	0	1	1	7.2	Cross reference
	0	1	0	0	9.6	V.8 protocol on/off - G3 switch 03, bit2
	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	
	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.						

4. Service Tables

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
0	0	1	1	V.27ter
0	1	0	0	V.27ter
0	1	0	1	V.27ter
Other settings - Not used				

G3-2 Switch 07 (SP No. 1-106-008)				
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.
	Bit 1	Bit 0	Setting	Use the dedicated transmission parameters for specific receivers.
	0	0	None	Also, try using the cable equalizer if one or more of the following symptoms occurs.
	0	1	Low	Communication error
	1	0	Medium	Modem rate fallback occurs frequently.
	1	1	High	 Note This setting is not effective in V.34 communications.
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.
	Bit 3	Bit 2	Setting	Also, try using the cable equalizer if one or more of the following symptoms occurs.
	0	0	None	Communication error with error codes such as 0-20, 0-23, etc.
	0	1	Low	Modem rate fallback occurs frequently.
	1	0	Medium	 Note This setting is not effective in V.34 communications.
	1	1	High	
4	PSTN cable equalizer (V.8/V.17 RX mode: External) 0: Disabled 1: Enabled			Keep this bit at "1".
5-7	Not used			Do not change the settings.

G3-2 Switch 08 - Not used (do not change the settings)

G3-2 Switch 09 - Not used (do not change the settings)

G3-2 Switch 0A (SP No. 1-106-011)

No	Function	Comments
0-1	Maximum allowable carrier drop during image data reception	These bits set the acceptable modem carrier drop time. Try a longer setting if error code 0-22 is frequent.
	Bit 1 Bit 0 Value (ms)	
	0 0 200	
	0 1 400	
	1 0 800	
	1 1 Not used	
2-3	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.

G3-2 Switch 0B- Not used (do not change the settings)

G3-2 Switch 0C- Not used (do not change the settings)

G3-2 Switch 0E- Not used (do not change the settings)

G3-2 Switch 0F- Not used (do not change the settings)

G4 Internal Switches

The G4 internal switches (SW00 to 1F) are displayed but do not change these settings.

G4 Parameter Switches

The G4 parameter switches (SW00 to 0F) are displayed but do not change these settings.

Bit Switches - 6

★ Important

- 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.

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	

4. Service Tables

	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	

4. Service Tables

	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.	
	Bit 5		Bit 4		Types	The default is "00" (V29).
	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.
	Bit 1	Bit 0		The default is "00" (35 seconds).
	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.
	Bit 3	Bit 2		The default is "00" (3 seconds).
	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.
	Bit 5	Bit 4		The default is "00" (75 seconds).
	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.

4. Service Tables

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 <table border="1"> <tr> <td>Bit 4</td><td>Bit 3</td><td></td></tr> <tr> <td>0</td><td>0</td><td>No delay</td></tr> <tr> <td>0</td><td>1</td><td>1 sec</td></tr> <tr> <td>1</td><td>0</td><td>2 sec</td></tr> <tr> <td>1</td><td>1</td><td>3 sec</td></tr> </table>	Bit 4	Bit 3		0	0	No delay	0	1	1 sec	1	0	2 sec	1	1	3 sec	This changes the interval for transmit re-INVITE after receiving the ACK message transmitted by T.38 device.
Bit 4	Bit 3																
0	0	No delay															
0	1	1 sec															
1	0	2 sec															
1	1	3 sec															
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 OA - Not used (do not change the settings)
IP Fax Switch OB - Not used (do not change the settings)
IP Fax Switch OC - Not used (do not change the settings)
IP Fax Switch OD - Not used (do not change the settings)

IP Fax Switch OE (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.

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); if SP2-103 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.

Address	Function					
680500	Country/Area code for NCU parameters					
	Use the Hex value to program the country/area code directly into this address, or use the decimal value to program it using SP2-103-001					
	Country /Area	Decimal	Hex	Country /Area	Decimal	Hex
	France	00	00	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
	Portugal	12	0C	Turkey	32	20
	Holland	13	0D	Greece	33	21
	Spain	14	0E	Hungary	34	22
	Israel	15	0F	Czech	35	23
	USA	17	11	Poland	36	24

Address	Function	Unit	Remarks
680501	Line current detection time	20 ms	Line current detection is disabled. Line current is not detected if 680501 contains FF.
680502	Line current wait time		
680503	Line current drop detect time		
680504	PSTN dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF (H), tone detection is disabled.

4. Service Tables

Address	Function	Unit	Remarks
680505	PSTN dial tone frequency upper limit (low byte)		
680506	PSTN dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF (H), tone detection is disabled.
680507	PSTN dial tone frequency lower limit (low byte)		
680508	PSTN dial tone detection time	20 ms	If 680508 contains FF (H), the machine pauses for the pause time (address 68050D / 68050E). Italy: See Note 2.
680509	PSTN dial tone reset time (LOW)		
68050A	PSTN dial tone reset time (HIGH)		
68050B	PSTN dial tone continuous tone time		
68050C	PSTN dial tone permissible drop time		
68050D	PSTN wait interval (LOW)		
68050E	PSTN wait interval (HIGH)		
68050F	PSTN ring-back tone detection time	20 ms	Detection is disabled if this contains FF.
680510	PSTN ring-back tone off detection time	20 ms	-
680511	PSTN detection time for silent period after ring-back tone detected (LOW)	20 ms	-
680512	PSTN detection time for silent period after ring-back tone detected (HIGH)	20 ms	-
680513	PSTN busy tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF (H), tone detection is disabled.
680514	PSTN busy tone frequency upper limit (low byte)		
680515	PSTN busy tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF (H), tone detection is disabled.
680516	PSTN busy tone frequency lower limit (low byte)		
680517	PABX dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF (H), tone detection is disabled.
680518	PABX dial tone frequency upper limit (low byte)		
680519	PABX dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF (H), tone detection is disabled.
68051A	PABX dial tone frequency lower limit (low byte)		
68051B	PABX dial tone detection time	20 ms	If 68051B contains FF, the machine pauses for the pause time (680520 / 680521).
68051C	PABX dial tone reset time (LOW)		

Address	Function	Unit	Remarks
68051D	PABX dial tone reset time (HIGH)		
68051E	PABX dial tone continuous tone time		
68051F	PABX dial tone permissible drop time		
680520	PABX wait interval (LOW)		
680521	PABX wait interval (HIGH)		
680522	PABX ringback tone detection time	20 ms	If both addresses contain FF (H), tone detection is disabled.
680523	PABX ringback tone off detection time	20 ms	
680524	PABX detection time for silent period after ringback tone detected (LOW)	20 ms	If both addresses contain FF (H), tone detection is disabled.
680525	PABX detection time for silent period after ringback tone detected (HIGH)	20 ms	
680526	PABX busy tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF (H), tone detection is disabled.
680527	PABX busy tone frequency upper limit (low byte)		
680528	PABX busy tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF (H), tone detection is disabled.
680529	PABX busy tone frequency lower limit (low byte)		
68052A	Busy tone ON time: range 1	20 ms	-
68052B	Busy tone OFF time: range 1		
68052C	Busy tone ON time: range 2		
68052D	Busy tone OFF time: range 2		
68052E	Busy tone ON time: range 3		
68052F	Busy tone OFF time: range 3	20 ms	
680530	Busy tone ON time: range 4		
680531	Busy tone OFF time: range 4		
680532	Busy tone continuous tone detection time		
680533	Busy tone signal state time tolerance for all ranges, and number of cycles required for detection (a setting of 4 cycles means that ON-OFF-ON or OFF-ON-OFF must be detected twice). Tolerance (±) Bit 1: 0, Bit 0: 0 = 75% Bits 2 and 3 must always be kept at 0. Bit 1: 0, Bit 0: 0 = 50% Bits 2 and 3 must always be kept at 0. Bit 1: 0, Bit 0: 0 = 25% Bit 1: 0, Bit 0: 0 = 12.5% Bits 7, 6, 5, 4 - number of cycles required for cadence detection		
680534	International dial tone frequency upper	Hz (BCD)	If both addresses contain FF (H), tone

4. Service Tables

Address	Function	Unit	Remarks
	limit (high byte)		detection is disabled.
680535	International dial tone frequency upper limit (low byte)		
680536	International dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF (H), tone detection is disabled.
680537	International dial tone frequency lower limit (low byte)		
680538	International dial tone detection time	20 ms	If 680538 contains FF, the machine pauses for the pause time (68053D / 68053E). Belgium: See Note 2.
680539	International dial tone reset time (LOW)		
68053A	International dial tone reset time (HIGH)		
68053B	International dial tone continuous tone time		
68053C	International dial tone permissible drop time		
68053D	International dial wait interval (LOW)		
68053E	International dial wait interval (HIGH)		-
68053F	Country dial tone upper frequency limit (HIGH)	Hz (BCD)	If both addresses contain FF (H), tone detection is disabled.
680540	Country dial tone upper frequency limit (LOW)		
680541	Country dial tone lower frequency limit (HIGH)		If both addresses contain FF (H), tone detection is disabled.
680542	Country dial tone lower frequency limit (LOW)		
680543	Country dial tone detection time	20 ms	If 680543 contains FF, the machine pauses for the pause time (680548 / 680549).
680544	Country dial tone reset time (LOW)		
680545	Country dial tone reset time (HIGH)		
680546	Country dial tone continuous tone time	-	-
680547	Country dial tone permissible drop time	20 ms	-
680548	Country dial wait interval (LOW)		
680549	Country dial wait interval (HIGH)		
68054A	Time between opening or closing the DO relay and opening the OHDI relay	1 ms	See Notes 3, 6 and 8. SP2-103-012 (parameter 11).
68054B	Break time for pulse dialing	1 ms	See Note 3. SP2-103-013 (parameter 12).
68054C	Make time for pulse dialing	1 ms	See Note 3. SP2-103-014 (parameter 13).

Address	Function	Unit	Remarks
68054D	Time between final OHDI relay closure and DO relay opening or closing	1 ms	See Notes 3, 6 and 8. SP2-103-015 (parameter 14). This parameter is only valid in Europe.
68054E	Minimum pause between dialed digits (pulse dial mode)	20 ms	See Note 3 and 8. SP2-103-016 (parameter 15).
68054F	Time waited when a pause is entered at the operation panel		SP2-103-017 (parameter 16). See Note 3.
680550	DTMF tone on time	1 ms	SP2-103-018 (parameter 17).
680551	DTMF tone off time		SP2-103-019 (parameter 18).
680552	Tone attenuation level of DTMF signals while dialing	-N x 0.5 -3.5 dBm	SP2-103-020 (parameter 19). See Note 5.
680553	Tone attenuation value difference between high frequency tone and low frequency tone in DTMF signals	-dBm x 0.5	SP2-103-021 (parameter 20). The setting must be less than -5dBm, and should not exceed the setting at 680552h above. See Note 5.
680554	PSTN: DTMF tone attenuation level after dialing	-N x 0.5 -3.5 dBm	SP2-103-022 (parameter 21). See Note 5.
680555	ISDN: DTMF tone attenuation level after dialing	-dBm x 0.5	See Note 5.
680556	Not used	-	Do not change the settings.
680557	Time between 68054Dh (NCU parameter 14) and 68054Eh (NCU parameter 15)	1 ms	This parameter takes effect when the country code is set to France.
680558	Not used	-	Do not change the setting.
680559	Grounding time (ground start mode)	20 ms	The Gs relay is closed for this interval.
68055A	Break time (flash start mode)	1 ms	The OHDI relay is open for this interval.
68055B	International dial access code (High)	BCD	For a code of 100: 68055B - F1 68055C - 00
68055C	International dial access code (Low)		
68055D	PSTN access pause time	20 ms	This time is waited for each pause input after the PSTN access code. If this address contains FF[H], the pause time stored in address 68054F is used. Do not set a number more than 7 in the UK.
68055E	Progress tone detection level, and cadence detection enable flags	Bit 7: 0, Bit 6: 0, Bit 5: 0 = -25.0 dBm Bit 7: 0, Bit 6: 0, Bit 5: 1 = -35.0 dBm	

4. Service Tables

Address	Function	Unit	Remarks
		Bit 7: 0, Bit 6: 1, Bit 5: 0 = -30.0 dBm Bit 7: 1, Bit 6: 0, Bit 5: 0 = -40.0 dBm Bit 7: 1, Bit 6: 1, Bit 5: 0 = -49.0 dBm Bits 2, 0 - See Note 2.	
68055F to 680564	Not used	-	Do not change the settings.
680565	Long distance call prefix (HIGH)	BCD	For a code of 0: 680565 – FF 680566 - FF
680566	Long distance call prefix (LOW)	BCD	
680567 to 680571	Not used	-	Do not change the settings.
680572	Acceptable ringing signal frequency: range 1, upper limit	1000/ N (Hz)	SP2-103-003 (parameter 02).
680573	Acceptable ringing signal frequency: range 1, lower limit		SP2-103-004 (parameter 03).
680574	Acceptable ringing signal frequency: range 2, upper limit		SP2-103-005 (parameter 04).
680575	Acceptable ringing signal frequency: range 2, lower limit		SP2-103-006 (parameter 05).
680576	Number of rings until a call is detected.	1	SP2-103-007 (parameter 06). The setting must not be zero.
680577	Minimum required length of the first ring	20 ms	See Note 4. SP2-103-008 (parameter 07).
680578	Minimum required length of the second and subsequent rings	20 ms	SP2-103-009 (parameter 08).
680579	Ringing signal detection reset time (LOW)	20 ms	SP2-103-010 (parameter 09).
68057A	Ringing signal detection reset time (HIGH)		SP2-103-011 (parameter 10).
68057B to 680580	Not used	-	Do not change the settings.
680581	Interval between dialing the last digit and switching the Oh relay over to the external telephone when dialing from	20 ms	Factory setting: 500 ms

Address	Function	Unit	Remarks
	the operation panel in handset mode.		
680582	Bits 0 and 1 - Handset off-hook detection time Bit 1:0, Bit 0: 0 = 200 ms Bit 1:0, Bit 0: 1 = 800 ms Other Not used Bits 2 and 3 - Handset on-hook detection time Bit 3: 0, Bit 2: 0 = 200 ms Bit 3: 0, Bit 2: 1 = 800 ms Other Not used Bits 4 to 7 - Not used	-	
680583 to 6805A0	Not used	-	Do not change the settings.
6805A1	Acceptable CED detection frequency upper limit (high byte)	BCD (Hz)	If both addresses contain FF (H), tone detection is disabled.
6805A2	Acceptable CED detection frequency upper limit (low byte)		
6805A3	Acceptable CED detection frequency lower limit (high byte)	BCD (Hz)	If both addresses contain FF (H), tone detection is disabled.
6805A4	Acceptable CED detection frequency lower limit (low byte)		
6805A5	CED detection time	20 ms ± 20 ms	Factory setting: 200 ms
6805A6	Acceptable CNG detection frequency upper limit (high byte)	BCD (Hz)	If both addresses contain FF (H), tone detection is disabled.
6805A7	Acceptable CNG detection frequency upper limit (low byte)		
6805A8	Acceptable CNG detection frequency lower limit (high byte)	BCD (Hz)	If both addresses contain FF (H), tone detection is disabled.
6805A9	Acceptable CNG detection frequency lower limit (low byte)		
6805AA	Not used	-	Do not change the setting.
6805AB	CNG on time	20 ms	Factory setting: 500 ms
6805AC	CNG off time	20 ms	Factory setting: 3000 ms
6805AD	Number of CNG cycles required for detection	-	The data is coded in the same way as address 680533.
6805AE	Not used	-	Do not change the settings.

4. Service Tables

Address	Function	Unit	Remarks
6805AF	Acceptable AI short protocol tone (800Hz) detection frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF (H), tone detection is disabled.
6805B0	Acceptable AI short protocol tone (800Hz) detection frequency upper limit (low byte)		
6805B1	Acceptable AI short protocol tone (800Hz) detection frequency lower limit (high byte)	Hz(BCD)	If both addresses contain FF (H), tone detection is disabled.
6805B2	Acceptable AI short protocol tone (800Hz) detection frequency lower limit (low byte)		
6805B3	Detection time for 800 Hz AI short protocol tone	20 ms	Factory setting: 360 ms
6805B4	PSTN: Tx level from the modem	-N – 3 dBm	SP2-103-002 (parameter 01).
6805B5	PSTN: 1100 Hz tone transmission level	- N 6805B4 - 0.5N 6805B5 –3.5 (dB) See Note 7.	
6805B6	PSTN: 2100 Hz tone transmission level	- N6805B4 - 0.5N 6805B6 –3 (dB) See Note 7.	
6805B7	PABX: Tx level from the modem	- dBm	
6805B8	PABX: 1100 Hz tone transmission level	- N 6805B7 - 0.5N 6805B8 (dB)	
6805B9	PABX: 2100 Hz tone transmission level	- N 6805B7 - 0.5N 6805B9 (dB)	
6805BD	Modem turn-on level (incoming signal detection level)	-37-0.5N (dBm)	
6805BE to 6805C6	Not used	-	Do not change the settings.
6805C7	Bits 0 to 3 – Not used Bit 4 = V.34 protocol dump 0: Simple, 1: Detailed (default) Bits 5 to 7 – Not used.		
6805C8 to 6805D9	Not used	-	Do not change the settings.
6805DA	T.30 T1 timer	1 s	
6805E0 bit 3	Maximum wait time for post message	0: 12 s 1: 30 s	1: Maximum wait time for post message (EOP/EOM/MPS) can be changed to 30 s. Change this bit to "1" if communication

Address	Function	Unit	Remarks
			errors occur frequently during V.17 reception.
6805E3	Bits 0 and 1 – DCV (TIP/RING) Voltage Bit 1:0, Bit 0: 0 = 3.1 V Bit 1:0, Bit 0: 1 = 3.2 V Bit 1:1, Bit 0: 0 = 3.35 V Bit 1:1, Bit 0: 1 = 3.5 V Bits 2 and 3 – MINI (minimum loop electric current) Bit 2:0, Bit 3: 0 = 10 mA Bit 2:0, Bit 2: 1 = 12 mA Bit 2:1, Bit 3: 0 = 14 mA Bit 2:1, Bit 3: 1 = 16 mA Bits 6 and 7 – ACIM (AC impedance) Bit 7:0, Bit 6: 0 Bit 5:0, Bit 4: 0 = 600 Bit 7:0, Bit 6: 0 Bit 5:1, Bit 4: 0 = TBR21		
6805E4	Bit 0 – OHS (on hook speed) 0: OHS=0 1: OHS=1 Bit 1 – SQ (spark quench) 0: SQ=00 1: SQ=11 Bit 2 – RZ (call signal Impedance) 0: RZ=0 (high) 1: RZ=1 (low) Bit 3 – RT (call signal detection level) 0: RT=0 (low) 1: RT=1 (high) Bit 4 – ILIM (DC limitation) 0: ILIM=0 (CTR 21) 1: ILIM=1 (other than CTR 21) Bit 5 –FILTER 0: FILTER=0 (around 5Hz) 1: FILTER=1 (around 200Hz) Bits 6 to 7 – Calibration in off hook state Bit 6:0, Bit 7: 0 = off hook to ACAL:128 ms, off hook to MCAL: 1000 ms Bit 6:1, Bit 7: 0 = off hook to ACAL:128 ms, off hook to MCAL: 500 ms Bit 6:0, Bit 7: 1 = off hook to ACAL:128 ms (no MCAL) Bit 6:1, Bit 7: 1 = off hook to ACAL:8 ms (no MCAL)		

4. Service Tables

Address	Function	Unit	Remarks
6805E5	Bits 0 to 6 – Not used Bits 7 – Energy saving for DSP, COMBLK, SiDAA 0: Does not save energy 1: Saves energy		

NOTES

- If a setting is not required, store FF in the address.
 - Italy and Belgium only
 RAM address 68055E: the lower four bits have the following meaning.
 Bit 2 - 1: International dial tone cadence detection enabled (Belgium)
 Bit 1 - Not used
 Bit 0 - 1: PSTN dial tone cadence detection enabled (Italy)
 If bit 0 or bit 2 is set to 1, the functions of the following RAM addresses are changed.
 680508 (if bit 0 = 1) or 680538 (if bit 2 = 1): tolerance for on or off state duration (%), and number of cycles required for detection, coded as in address 680533.
 68050B (if bit 0 = 1) or 68053B (if bit 2 = 1): on time, hex code (unit = 20 ms)
 68050C (if bit 0 = 1) or 68053C (if bit 2 = 1): off time, hex code (unit = 20 ms)
 - Pulse dial parameters (addresses 68054A to 68054F) are the values for 10 pps. If 20 pps is used, the machine automatically compensates.
 - The first ring may not be detected until 1 to 2.5 wavelengths after the time specified by this parameter.
 - The calculated level must be between 0 and 10.
 The attenuation levels calculated from RAM data are:
 High frequency tone:
 - $-0.5 \times N_{680552} / 680554 - 3.5 \text{ dBm}$
 - $-0.5 \times N_{680555} \text{ dBm}$
 Low frequency tone:
 - $-0.5 \times (N_{680552} / 680554 + N_{680553}) - 3.5 \text{ dBm}$
 - $-0.5 \times (N_{680555} + N_{680553}) \text{ dBm}$
-  **Note**
- N_{680552} , for example, means the value stored in address 680552(H)
- 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
 - Tone signals which frequency is lower than 1500Hz (e.g., 800Hz tone for AI short protocol) refer to the setting at 6805B5h. Tones which frequency is higher than 1500Hz refer to the setting at 6805B6h.
 - 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.

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.

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.

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-	Tx level	If communication with a particular remote terminal often contains

4. Service Tables

Switch 01							
No	FUNCTION						COMMENTS
4	Bit4	Bit3	Bit2	Bit1	Bit0		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.
	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	
	1	0	0	1	21600	

Switch 02						
No	FUNCTION					COMMENTS
	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					
6	Not used					Do not change this setting.

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	This bit determines the capabilities that are informed to the other terminal during

4. Service Tables

Switch 03		
No	FUNCTION	COMMENTS
	available in transmit mode 0: MH only 1: Disabled	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 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	The "0" selection (default) references the settings for Bits 00, 01,

Switch 00		
No	FUNCTION	COMMENTS
	compression method of e-mail attachments 0: Registered (Bit 0 to 6) 1: No registration.	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.
1-6	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 x 100.
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.
2-6	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.)

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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.

Switch 05		
No	FUNCTION	COMMENTS
0	Direct transmission selection to SMTP server 0: ON 1: OFF	Allows or does not allow the direct transmission to SMTP server.

Service RAM Addresses

CAUTION

- Do not change the settings which are marked as "Not used" or "Read only."

680001 to 680004(H) - ROM version (Read only)

680001(H) - Revision number (BCD)

680002(H) - Year (BCD)

680003(H) - Month (BCD)

680004(H) - Day (BCD)

680006 to 680015(H) - Machine's serial number (16 digits - ASCII)

680016(H) - Language code

0: Japanese, 1: UK English, 2: US English, 3: French, 4: German, 5: Spanish, 6: Italian, 7: Dutch, 8: Swedish, 9: Norwegian, 10: Danish, 11: Finnish, 12: Czech, 13: Hungarian, 14: Polish, 15: Portuguese, 16: Russian, 17: Traditional Chinese, 18: Simplified Chinese, 19: Korean

680018(H) - Total program checksum (low)

680019(H) - Total program checksum (high)

680020 to 68003F(H) - System bit switches

680050 to 68005F(H) - Printer bit switches

680060 to 68007F(H) - Communication bit switches

680080 to 68008F(H) - G3 bit switches

6800D2(H) - User parameter switch 02 (SWUSR_02)

Bit 0: Forwarding mark printing on forwarded messages 0: Disabled, 1: Enabled

Bit 1: Center mark printing on received copies (This switch is not printed on the user parameter list.) 0: Disabled, 1: Enabled

Bit 2: Reception time printing (This switch is not printed on the user parameter list.) 0: Disabled, 1: Enabled

Bit 3: TSI print on received messages 0: Disabled, 1: Enabled

Bit 4: Checkered mark printing (This switch is not printed on the user parameter list.) 0: Disabled, 1: Enabled

Bit 5 and 6: Not used

6800D3(H) - User parameter switch 03 (SWUSR_03: Automatic report printout)

Bit 0: Transmission result report (memory transmissions) 0: Off, 1: On

Bit 1: Not used

Bit 2: Memory storage report 0: Off, 1: On

Bit 3: Polling reserve report (polling reception) 0: Off, 1: On

Bit 4: Polling result report (polling reception) 0: Off, 1: On

Bit 5: Transmission result report (immediate transmissions) 0: Off, 1: On

Bit 6: Not used

Bit 7: Journal 0: Off, 1: On

6800D4(H) - User parameter switch 04 (SWUSR_04: Automatic report printout)

Bit 0: Not used

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Bit 1: Automatic communication failure report and transfer result report output 0: Off, 1: On

Bit 4: Indicates the parties 0: Not indicated, 1: Indicated

Bit 5: Include sender's name on reports 0: Off, 1: On

Bit 7: Inclusion of a sample image on reports 0: Off, 1: On

6800D5(H) - User parameter switch 05 (SWUSR_05)

Bit 0: Substitute reception when the base copier is in an SC condition 0: Enabled, 1: Disabled

Bits 1 and 2: Condition for substitute rx when the machine cannot print messages (Paper end, toner end, jam, and during night mode)

Bit 2: 0, Bit 1: 0 = The machine receives all the fax messages.

Bit 2: 0, Bit 1: 1 = The machine receives the fax messages with RTI or CSI.

Bit 2: 1, Bit 1: 0 = The machine receives the fax messages with the same ID code.

Bit 2: 1, Bit 1: 1 = The machine does not receive anything.

Bit 4: Not used

Bit 5: Just size printing 0: Off, 1: On

Bit 6: Not used

Bit 7: Add paper display when a cassette is empty 0: Off, 1: On

6800D6(H) - User parameter switch 06 (SWUSR_06): Not used

6800D7(H) - User parameter switch 07 (SWUSR_07)

Bit 0 Ringing 0: Off, 1: On

Bit 1: Automatic answering message 0: Off, 1: On

Bit 2: Parallel memory transmission 0: Off, 1: On

Bit 5: Remote control 0: Off, 1: On

6800D8(H) - User parameter switch 08 (SWUSR_08)

Bits 1: Not used.

Bit 2: Authorized reception

0: Only faxes from senders whose RTIs/CSIs are specified for this feature are accepted.

1: Only faxes from senders whose RTIs/CSIs are not specified for this feature are accepted.

6800DA(H) - User parameter switch 10 (SWUSR_0A)

Bits 0: Restrict control panel operations such as printing or deleting received documents 0: Off, 1: On

Bits 1: Combined two originals 0: Off, 1: On

Bit 3 to 5: Not used

Bit 6: Use both e-mail notification and printed reports to confirm the transmission results 0: Off, 1: On

Bit 7: Have the machine delete the document data without printing it when an error occurs 0: Off, 1: On

6800DB(H) - User parameter switch 11 (SWUSR_0B)

Bits 1 and 2: Not used

Bit 3: Receive rejection for 1300 Hz transmission 0: Off (receive), 1: On (not receive)

Bit 5: Print documents that are forwarded to other parties with Forwarding per Sender 0: Off, 1: On

Bit 6: Printout of messages received while acting as a forwarding station 0: Off, 1: On

Bit 7: Not used

6800DD(H) - User parameter switch 13 (SWUSR_OD): Not used

6800DE(H) - User parameter switch 14 (SWUSR_OE)

Bit 0: Message printout while the machine is in Night Printing mode 0: On, 1: Off

Bit 1: Maximum document length detection 0: Double letter, 1: Longer than double-letter (well log) – up to 1,200 mm

Bit 2: Not used

Bit 3: Fax mode settings, such as resolution, before a mode key (Copy/Fax/Printer/Scanner) is pressed 0: Not cleared, 1: Cleared

Bit 7: Not used

6800DF(H) - User parameter switch 15 (SWUSR_OF)

(This switch is not printed on the user parameter list.)

Bits 0, 1 and 2: Cassette for fax printout

Bit 2: 0, Bit 1: 0, Bit 0: 1 = 1st paper feed station

Bit 2: 0, Bit 1: 1, Bit 0: 0 = 2nd paper feed station

Bit 2: 0, Bit 1: 1, Bit 0: 1 = 3rd paper feed station

Bit 2: 1, Bit 1: 0, Bit 0: 0 = 4th paper feed station

Bit 2: 1, Bit 1: 0, Bit 0: 1 = LCT

Other settings Not used

Bit 5: Using the cassette specified by bits 0, 1 and 2 above only 0: On, 1: Off

6800E0(H) – User parameter switch 16 (SWUSR_10): Not used

6800E1(H) – User parameter switch 17 (SWUSR_11)

Bit 0: Not used

Bit 1: Prohibit broadcasting 0: No, 1: Yes

Bit 2: Inclusion of the "Add" button when a sequence of Quick/Speed dials is selected for broadcasting 0: Not needed, 1: Needed

Bits 3: Whether or not to reset the settings when original is scanned 0: On, 1: Off

Bits 4: Display the confirmation message prompting the user to check the destination before sending a file 0: No, 1: Yes

Bits 5: Automatic entry of the external line access code 0: Off, 1: On

Bits 7: Not used

6800E2(H) - User parameter switch 18 (SWUSR_12)

Bit 0: TTI date 0: Off, 1: On

Bit 1: TTI sender 0: Off, 1: On

Bit 2: TTI file number 0: Off, 1: On

Bit 3: TTI page number 0: Off, 1: On

Bit 7: Japan only

6800E3(H) - User parameter switch 19 (SWUSR_13)

Bit 0: Use paper delivery shift function 0: Off, 1: On

Bit 1: Sort Journal by line type

0: The Journal is separated into transmissions and receptions.

4. Service Tables

1: The Journal is separated into G3-1, G3-2, and G3-3 communications.

Bit 2: Select the function to postpone the printing of a received file if the selected paper tray has run out of paper 0: Off, 1: On

Bit 3: Not used

Bit 4: Reduction of sample images on reports to 50% in the main scan and sub-scan directions. (This switch is not printed on the user parameter list.) 0: Technician adjustment (printer switch 0E bits 3 and 4), 1: 50% reduction

Bit 5: Use of A5 size paper for reports (This switch is not printed on the user parameter list.) 0: Off, 1: On

6800E4(H) - User parameter switch 20 (SWUSR_14)

Bit 0: Automatic printing of the LAN fax result report 0: Off, 1: On

Bit 1: Not used

Bits 2 to 5: Store documents in memory which could not be printed from PC fax (LAN fax) driver

Bit 5	Bit 4	Bit 3	Bit 2	Setting
0	0	0	0	0 min.
0	0	0	1	1 min.
↓	↓	↓	↓	↓
1	1	1	0	14 min.
1	1	1	1	15 min.

Bit 7: Not used.

6800E5(H) - User parameter switch 21 (SWUSR_15)

Bit 0: Print results of sending reception notice request message 0: Disabled (print only when error occurs), 1: Enabled

Bit 1: Respond to e-mail reception acknowledgment request 0: Disabled, 1: Enabled

Bit 2: Choose whether to print JPEG or PDF files attached to incoming e-mail 0: Off (Do not print), 1: On

Bit 3: File format for forwarded folders 0: TIFF, 1: PDF

Bit 4: Transmit Journal by E-mail 0: Disabled, 1: Enabled

Bit 5: Limit printing of subjects and texts in normal e-mail (attached TIFF files) 0: No, 1: Yes

Bit 6: Network error display 0: Displayed, 1: Not displayed

Bit 7: Transmit error mail notification 0: Enabled, 1: Disabled

6800E6(H) - User parameter switch 22 (SWUSR_16)

(This switch is not printed on the user parameter list.)

Bit 0: Dial tone detection (PSTN 1) 0: Disabled, 1: Enabled

Bits 1 to 7: Not used

6800E7(H) - User parameter switch 23 (SWUSR_17)

Bit 0 to 7: Information to be printed for transmit terminal identification (TTI)

6800E8(H) - User parameter switch 24 (SWUSR_18)

Bit 0: Store documents that could not be transmitted in memory 0: Off, 1: On

Bit 1: Length of time documents that could not be transmitted are stored in memory 0: 24 hours, 1: 72 hours

Bit 2: Retain the files stored in the Document Server, regardless of the settings of [Auto Delete File in Document Server] under [System Settings] 0: No, 1: Yes

Bit 3: Cancel the use of the fixed sentence when sending a file by e-mail 0: No, 1: Yes

6800E9(H) - User parameter switch 25 (SWUSR_19)

Bit 1: Reception mode switch timer 0: Off, 1: On (switching Fax or Fax/Tel)

Bit 2: Mode priority switch 0: Fax first, 1: Tel first

Bit 3: Dial in function (Japan Only)

Bit 4: Not used.

Bit 5 to 7: Not used

6800EA(H) and 6800EB(H) - User parameter switches 26 and 27 (SWUSR_1A and 1B): Not used**6800EC(H) - User parameter switch 28 (SWUSR_1C): Not used****6800ED(H) - User parameter switch 29 (SWUSR_1D): Not used****6800EE(H) and 6800EF(H) - User parameter switches 30 and 31 (SWUSR_1E and 1F): Not used****6800F0(H) - User parameter switch 32 (SWUSR_20)**

Bit 0: Quotation priority for a destination when there is no destination of the specified type 0: Paper output priority =

Priority order: 1. IP-fax destination, 2. Fax Number, 3. E-mail address, 4. Folder

1: Electric putout order = Priority order: 1. E-mail address, 2. Folder, 3. IP-fax destination, 4. Fax number

Bits 1 to 7: Not used

6800F1(H) - User parameter switch 33 (SWUSR_21): Not used**6800F2(H) - User parameter switch 34 (SWUSR_22)**

Bit 0: Gatekeeper server used with IP-Fax 0: Disabled, 1: Enabled

Bit 1: SIP server used with IP-Fax 0: Disabled, 1: Enabled

Bits 2 to 7: Not used

6800F3(H) - User parameter switch 35 (SWUSR_23)

Redial interval when sending a backup file

6800F4(H) - User parameter switch 36 (SWUSR_24)

Maximum number of redials when sending a backup file

6800F5(H) - User parameter switch 37 (SWUSR_25)

Bit 0: Whether to stop sending a backup file if the destination folder becomes full while the machine is sending or waiting to send a fax or the backup file. 0: No, 1: Yes

Bit 2 and 3: Backup file is printed along with the TX communication failure report when a backup file transmission failure occurs. 00: Do not print, 01: Print first page only, 10: Print whole file

Bit 4: Display the sender's information in the file name of documents that are forwarded to folder destinations. 0: Disabled, 1: Enabled

Bit 5: Limit the file names of documents that are forwarded to folder destinations to plain characters only. 0: Disabled, 1: Enabled

Bit 6: When using the remote fax function, the sub-machine beeps to let you know when it has printed a received document (If you specify "On", the machine will beep according to the setting of [Panel Key Sound] under [System Settings].) 0: On, 1: Off

6800F6(H) - User parameter switch 38 (SWUSR_26): Not used**6800F7(H) - User parameter switch 39 (SWUSR_27): Not used****6800F8(H) - User parameter switch 40 (SWUSR_28)**

4. Service Tables

Bit 0: When memory space is insufficient, the machine prints and then deletes the oldest faxes, creating memory space for storage of new faxes. 0: Disabled, 1: Enabled

6800FD (H) - User parameter switch 45 (SWUSR_2D)

Bit 0 and 1: Not used

Bit 2: File format for files transmitted to e-mail addresses and folders registered as forwarding, destinations of backup file transmission, receivers for Personal Box, or end receivers for Transfer Box. 0: PDF 1: PDF/A

Bit 3: Specify the criteria for printing files when forwarding them 0: Depends on Reception file settings, 1: Do not print

680130 to 68016F(H) - Service Switches

680170 to 68017F(H) - IFAX Switches

680180 to 68018F(H) - IP-FAX Switches

680190 to 6801A3(H) - PSTN-1 RTI (Max. 20 characters - ASCII) - See the following note.

6801CF to 68020E(H) - TTI 1 (Max. 64 characters - ASCII) - See the following note.

68020F to 68024E(H) - TTI 2

68024F to 68028E(H) - TTI 3

68028F to 6802CE(H) - TTI 4

6802CF to 68030E(H) - TTI 5

68030F to 68034E(H) - TTI 6

68034F to 68038E(H) - TTI 7

68038F to 6803CE(H) - TTI 8

6803CF to 68040E(H) - TTI 9

68040F to 68044E(H) - TTI 10

Note

- If the number of characters is less than the maximum (20 for RTI, 32 for TTI), add a stop code (00[H]) after the last character.

68044F(H) - Printing format for TTI 1 0: DOM (Japan), 1:EXP (Export)

680450(H) - Printing format for TTI 2 0: DOM, 1:EXP

680451(H) - Printing format for TTI 3 0: DOM, 1:EXP

680452(H) - Printing format for TTI 4 0: DOM, 1:EXP

680453(H) - Printing format for TTI 5 0: DOM, 1: EXP

680454(H) - Printing format for TTI 6 0: DOM, 1: EXP

680455(H) - Printing format for TTI 7 0: DOM, 1: EXP

680456(H) - Printing format for TTI 8 0: DOM, 1: EXP

680457(H) - Printing format for TTI 9 0: DOM, 1: EXP

680458(H) - Printing format for TTI 10 0: DOM, 1: EXP

680459 to 68046C(H) - PSTN-1 CSI (Max. 20 characters - ASCII)

680495(H) - Number of PSTN-1 CSI characters (Hex)

6804C6(H) - Memory Lock ID (BCD)

6804D2 to 6804D9(H) - Last power off time (Read only)

6804D2(H) - 01(H) - 24-hour clock, 00(H) - 12-hour clock (AM), 02(H) - 12-hour clock (PM)

6804D3(H) - Year (BCD)
 6804D4(H) - Month (BCD)
 6804D5(H) - Day (BCD)
 6804D6 (H) - Hour
 6804D7 (H) - Minute
 6804D8(H) - Second
 6804D8 (H) - 00: Monday, 01: Tuesday, 02: Wednesday, ///, 06: Sunday
6804E6(H) - Optional equipment (Read only – Do not change the settings)
 Bit 0: Page Memory 0: Not installed, 1: Installed
 Bit 1: SAF Memory (4M) 0: Not installed, 1: Installed
 Bit 2: SAF Memory 0: Not installed, 1: Installed
 Bits 3 to 7; Not used
6804E7(H) - Optional equipment (Read only – Do not change the settings)
 Bits 0 to 7: Not used
6804EE(H) - Machine code (Check ram 3)
680500(H) - Start address of G3 table for G3-1
680820 to 68083F(H) - Service station's fax number (SP3-101)
680840 to 680849(H) - Own fax PABX extension number - Not used
68084A to 680853(H) - Own fax number (PSTN) - Not used
680868 to 680873(H) - The first subscriber number (ISDN G3) - Not used
680874 to 68087F(H) - The second subscriber number (ISDN G3) - Not used
680908(H) - G3-1 Modem ROM version (Read only)
680918(H) - Number of multiple sets print (Read only)
68096E(H) - Not used
68096F(H) - Not used
68098A(H) - Transmission monitor volume 00 - 07(H)
68098B(H) - Reception monitor volume 00 - 07(H)
68098C(H) - On-hook monitor volume 00 - 07(H)
68098D(H) - Dialing monitor volume 00 - 07(H)
68098E(H) - Buzzer volume 00 - 07(H)
68098F(H) - Beeper volume 00 - 07(H)
6809A0(H) - Machine code (Check ram 4)
6809CA(H) - Machine serial number (ASCII)
686D98 to 686D9B(H) - Transmission counter 00000000 - FFFFFFFF(H)
686D9C to 686D9F(H) - Reception counter 00000000 - FFFFFFFF(H)
686E08 to 686E0B(H) - Mail transmission counter 00000000 - FFFFFFFF(H)
686E0C to 686E0F(H) - Mail reception counter 00000000 - FFFFFFFF(H)
6A69EE(H) to 6A6CED(H) - SIP server address (Read only)
 6A69EE(H) - Proxy server - Main (Max. 128 characters - ASCII)

4. Service Tables

6A6A6E(H) - Proxy server - Sub (Max. 128 characters - ASCII)
6A6AEE(H) - Redirect server - Main (Max. 128 characters - ASCII)
6A6B6E(H) - Redirect server - Sub (Max. 128 characters - ASCII)
6A6BEE(H) - Registrar server - Main (Max. 128 characters - ASCII)
6A6C6E(H) - Registrar server - Sub (Max. 128 characters - ASCII)
6A6CEE(H) - Gatekeeper server address - Main (Max. 128 characters - ASCII)
6A6D6E(H) - Gatekeeper server address - Sub (Max. 128 characters - ASCII)
6A6DEE(H) - Alias Number (Max. 128 characters - ASCII)
6A6E6E(H) - SIP user name (Max. 128 characters - ASCII)
6A6EEE(H) - SIP digest authentication password (Max. 128 characters - ASCII)
6A6F6E(H) - Gateway address information (Max. 7100 characters - ASCII)
6A8B2A(H) - NGN initial setting method 0: Simple, 1: Manual
6A8B2B(H) - SIP digest authentication user name (Max. 128 characters - ASCII)
6A8BAB(H) - NGN-SIP domain name (Max. 64 characters - ASCII)
6A8BEB(H) - NGN-home gateway address (Max. 128 characters - ASCII)
6A8C6C(H) - Stand-by port number for H.323 connection
6A8C6E(H) - Stand-by port number for SIP connection
6A8C70(H) - RAS port number
6A8C72(H) - Gatekeeper port number
6A8C74(H) - Port number of data waiting for T.38
6A8C76(H) - Port number of SIP server
6A8C78(H) - Priority for SIP and H.323 0: H.323, 1: SIP
6A8C79(H) - SIP function 0: Disabled, 1: Enabled
6A8C7A(H) - H.323 function 0: Disabled, 1: Enabled
6A8C7B(H) - **SIP digest authentication function** 0: Disabled, 1: Enabled
6B35A4(H) - 6B35C4 (H) - Dial tone detection parameter (Max. 11 x 3 lines)
This initializes following order. [0x04, 0x40, 0x03, 0x60, 0x64, 0xf4, 0x01, 0x64, 0x04, 0xc8, 0x00]
6B35A4(H) - Dial tone detection frequency – Upper limit (High)
Defaults: NA: 06, EU: 06, ASIA: 06
6B35A5(H) - Dial tone detection frequency – Upper Limit (Low)
Defaults: NA: 50, EU: 50, ASIA: 50
6B35A6(H) - Dial tone detection frequency – Lower Limit (High)
Defaults: NA: 03, EU: 02, ASIA: 02
6B35A7(H) - Dial tone detection frequency – Lower Limit (Low)
Defaults: NA: 60, EU: 90, ASIA: 90
6B35A8(H) - Dial tone detection waiting time (20 ms)
Defaults: NA: 64, EU 64, ASIA: 64
6B35A9 to 6B35AA - Dial tone detection monitoring time (20 ms)

Defaults

Area	6B35A9	6B35AA
NA	F4	01
EU	F4	01
ASIA	F4	01

6B35AB(H) - Dial tone detect judge time (20 ms)

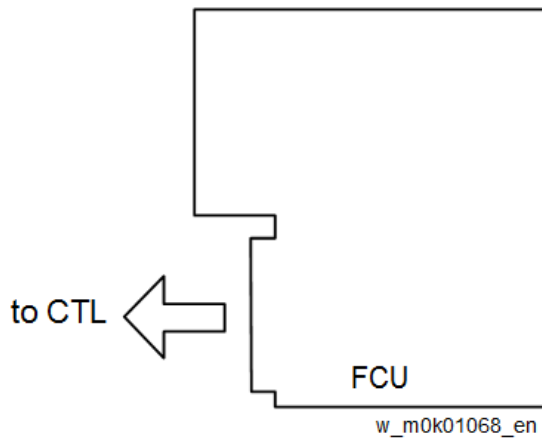
Defaults: NA: 64, EU: 1B, ASIA: 32

6B35AC(H) - Dial tone disconnect permission time (20 ms)

Defaults: NA: 11, EU: 0F, ASIA: 11

5. Detailed Section Descriptions

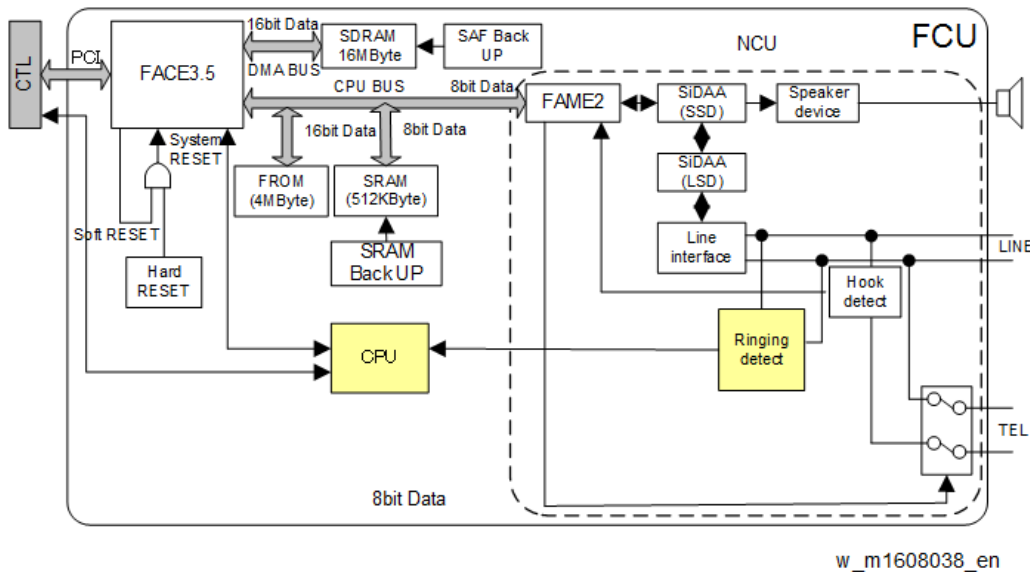
Overview



The FCU controls all the fax communications and fax features, in cooperation with the controller board. Also, the FCU contains the ROM, SRAM and NCU circuits.

Boards

FCU



The FCU (Facsimile Control Unit) controls fax communications, the video interface to the base copier's engine, and all the fax options.

FACE3.5 (Fax Application Control Engine)

- CPU
- Data compression and reconstruction (DCR)
- DMA control
- Clock generation
- DRAM backup control

Modem (FAME2)

V.34, V.33, V.17, V.29, V.27_{ter}, V.21, and V.8

DRAM

The 16 MB of DRAM is shared as follows.

- SAF memory: 4MB
- Working memory: 4MB
- Page memory: 4MB
- The SAF memory is backed up by a rechargeable battery.

SAF Memory Back-up

A rechargeable battery backs up the SAF memory (DRAM) for 12 hours.

5.Detailed Section Descriptions

ROM

4 MB flash ROMs for system software storage

SRAM

The 512 KB SRAM for system and user parameter storage is backed up by a lithium battery.

SRAM Back-up

A lithium battery backs up the system parameters and programmed items in the SRAM, in case the base copier's main power switch is turned off.

Switches

Item	Description
SW1	Switches the SRAM backup battery on/off.

CPU

This controls the energy-efficient operation of the FCU board.

Fax Communication Features

Internet Mail Communication

Mail Transmission

This machine supports T.37 full mode. (ITU-T Recommendation, RFC2532). The difference between T.37 simple mode and full mode is as follows.

Function	T.37 Simple Mode	T.37 Full Mode
Resolution	200 x 100 200 x 200	200 x 100 200 x 200 200 x 400 400 x 400 (if available)
RX Paper Width	A4, 8.5" x 14"	A4, B4, A3
RX Data Compression Method	MH	MH (default), MR, MMR,
Signals	Image data transmission only	Image data transmission, exchange of capability information between the two terminals, and acknowledgement of receipt of fax messages

Data Formats

The scanned data is converted into a TIFF-F formatted file.

The fields of the e-mail and their contents are as follows:

Field	Content
From	Mail address of the sender
Reply To	Destination requested for reply
To	Mail address of the destination
Bcc	Backup mail address
Subject	From CSI or RTI (Fax Message No. xxxx)
Content Type	Multipart/mixed Attached files: image/tiff
Content Transfer Encoding	Base 64, 7-bit, 8-bit, Quoted Printable
Message Body	MIME-converted TIFF-F (MIME standards specify how files are attached to e-mail messages)

Direct SMTP Transmission

Internet Fax documents can be sent directly to their destinations without going through the SMTP server. (Internet Faxes normally transmit via the SMTP server.)

For example:

5.Detailed Section Descriptions

e-mail address:	gts@ricoh.co.jp
SMTP server address:	gts.abcd.com

In this case, this feature destination e-mail address (gts@ricoh.co.jp) is read as the SMTP server address "gts.abcd.com", and the transmissions bypass the SMTP server.

Selectable Options

These options are available for selection:

- With the default settings, the scan resolution can be either standard or detail. Inch-mm conversion before TX depends on IFAX SW01 Bit 7. Detail resolution will be used if Super Fine resolution is selected, unless Fine resolution is enabled with IFAX SW01.
- The requirements for originals (document size, scan width, and memory capacity) are the same as for G3 fax memory TX.
- The default compression is TIFF-F format.
- IFAX SW00: Acceptable paper widths for sending
- IFAX SW09: Maximum number of attempts to the same destination

Secure Internet Transmission

SMTP Authentication:

- User Tools> System Settings> File Transfer> SMTP Authentication

POP Before SMTP:

- User Tools> System Settings> File Transfer> POP Before SMTP

Mail Reception

This machine supports three types of e-mail reception:

- POP3 (Post Office Protocol Ver. 3.)
- IMAP4 (Internet Messaging Access Protocol)
- SMTP (Simple Mail Transfer Protocol)

Note

- For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – Mail Reception

POP3/IMAP4 Mail Reception Procedure

The machine automatically picks up e-mail from the server at an interval which is adjustable in the range 2 to 1440 min. in 1-minute steps:

- User Tools> System Settings> File Transfer> E-mail Reception Interval

SMTP Reception

1. The IFAX must be registered as an SMTP server in the MX record of the DNS server, and the address of the received mail must specify the IFAX.

2. To enable SMTP reception: User Tools> System Settings> File Transfer> Reception Protocol
 - Even if the MX record on the DNS server includes the IFAX, mail cannot be received with SMTP until SMTP reception is enabled:
 - However, if SMTP reception is selected and the machine is not registered in the MX record of the DNS server, then either IMAP4 or POP3 is used, depending on the setting: User Tools> System Settings> File Transfer> Reception Protocol

Mail Delivery Conditions: Transferring Mail Received With SMTP

1. The machine must be set up for SMTP mail delivery:
User Tools> Facsimile Features> Reception Settings> SMTP RX File Delivery Settings
2. If the user wishes to limit this feature so that the machine will only deliver mail from designated senders, the machine's "Auth. E-mail RX" feature must be set (User Tools> Facsimile Features> E-mail Settings > SMTP RX File Delivery Settings).
3. If the "SMTP RX File Delivery Setting" is set to "0" to prohibit SMTP receiving, and if there is mail designated for delivery, then the machine responds with an error. (User Tools> Facsimile Features> E-mail Settings > SMTP RX File Delivery Settings)
4. If the quick dial, speed dial, or group dial entry is incorrect, the mail transmission is lost, and the IFAX issues an error to the SMTP server and outputs an error report.

Auth. E-mail RX

In order to limit access to mail delivery with IFAX, the addresses of senders must be limited using the Access Limit Entry. Only one entry can be registered.

1. Access Limit Entry

For example, to limit access to @IFAX.ricoh.co.jp:

gts@IFAX.ricoh.co.jp	Matches and is delivered.
gts@IFAX.abcde.co.jp	Does not match and is not delivered.
IFAX@ricoh.co.jp	Does not match and is not delivered.

2. Conditions
 - The length of the Access Limit Entry is limited to 127 characters.
 - If the Access Limit Entry address and the mail address of the incoming mail do not match, the incoming mail is discarded and not delivered, and the SMTP server responds with an error. However, in this case an error report is not output.
 - If the Access Limit Entry address is not registered, and if the incoming mail specifies a delivery destination, then the mail is delivered unconditionally.

Handling Mail Reception Errors

Abnormal files

When an error of this type occurs, the machine stops receiving and commands the server to erase the message. Then the machine prints an error report and sends information about the error by e-mail to the sender address (specified in

5.Detailed Section Descriptions

the "From" or "Reply-to" field of the message). If there is an incomplete received message in the machine memory, it will be erased.

The machine prints an error message when it fails to send the receive error notification after a certain number of attempts.

The following types of files are judged to be abnormal if one or more of the following are detected:

1. Unsupported MIME headers.

Supported types of MIME header

Header	Supported Types
Content-Type	Multipart/mixed, text/plain, message/rfc822 Image/tiff
Charset	US-ASCII, ISO 8859 X. Other types cannot be handled, and some garbage may appear in the data.
Content-Transfer-Encoding	Base 64, 7-bit, 8-bit, Quoted Printable

2. MIME decoding errors
3. File format not recognized as TIFF-F format
4. Resolution, document size, or compression type cannot be accepted

Remaining SAF capacity error

The machine calls the server but does not receive e-mail if the remaining SAF capacity is less than a certain value (the value depends on IFAX Switch 08. The e-mail will be received when the SAF capacity increases (for example, after substitute reception files have been printed). The error handling method for this type of error is the same as for "Abnormal files".

If the capacity of the SAF memory drops to zero during reception, the machine operates in the same way as when receiving an abnormal file (refer to "Abnormal files" above).

Secure Internet Reception

To enable password encryption and higher level security: User Tools> System Settings> File Transfer> POP3/IMAP4 Settings> Encryption (set to "On")

Transfer Request: Request By Mail

For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – Transfer Request

The fields of the e-mail and their contents are as follows:

Field	Content
From	E-mail address of the requesting terminal
To	Destination address (Transfer Station address)
Bcc	Blind carbon copy
Subject	From TSI (Fax Message No. xxxx)
Content-Type	Multipart/mixed

Field	Content
	Text/Plain (for a text part), image/tiff (for attached files)
Content-Transfer-Encoding	Base 64, 7-Bit, 8-bit, Quoted Printable
Mail body (text part)	RELAY-ID-: xxxx (xxxx: 4 digits for an ID code) RELAY: #01#*X#*01....
Message body	MIME-converted TIFF-F.

E-Mail Options (Sub TX Mode)

The following features are available as options for mail sending: entering a subject, designating the level of importance, confirming reception of the mail.

Subject and Level of Importance

You can enter a subject message with: Sub TX Mode> E-mail Options

The Subject entry for the mail being sent is limited to 64 characters. The subject can also be prefixed with an "Urgent" or "High" notation.

How the Subject Differs According to Mail Type

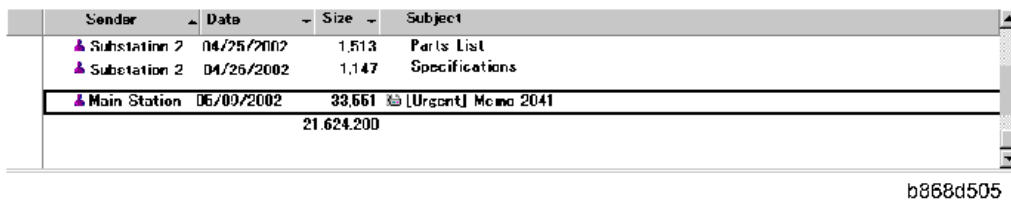
Mail Type	Item 1	Item 2		Item 3
Subject Entry	---	Entry Condition		Fax Message No.
No Subject Entry		1. "CSI" ("RTI")		+ File No.
		2. "RTI"	CSI not registered	
		3. "CSI"	RTI not registered	
		4. None	CSI, RTI not registered	
Confirmation of Reception	From	1. "CSI" ("RTI")		Normal: Return Receipt (dispatched). You can select "displayed" with IFAX SW02 Bits 2 and 3.
		2. "RTI"	CSI not registered	
		3. "CSI"	RTI not registered	Error: Return Receipt (processed/error)
		4. None	CSI, RTI not registered	
Mail delivery, memory transfer, SMTP receiving and delivery	From	RTI or CSI of the station designated for delivery	Mail delivery	Fax Message No. + File Number
		RTI or CSI of sender	Mail sending from G3 memory	
		Mail address of	Memory sending	

5.Detailed Section Descriptions

Mail Type	Item 1	Item 2		Item 3
		sender		
		Mail address of sender	SMTP receiving and delivery (Off Ramp Gateway)	
Mail error notification	---	Error Message No. xxxx From CSI (RTI)		

Items 1, 2, and 3 in the table above are in the Subject.

Subjects Displayed on the PC



Sender	Date	Size	Subject
Substation 2	04/25/2002	1,513	Parts List
Substation 2	04/25/2002	1,147	Specifications
Main Station	06/00/2002	33,551	[Urgent] Memo 2041
		21,624,200	

E-mail Messages

After entering the subject, you can enter a message with: Sub TX Mode> E-mail Options

An e-mail message (up to 5 lines) can be pre-registered with: User Tools> System Settings> File Transfer>

Program/Change/Delete E-mail Message

Limitations on Entries

Item	Maximum
Number of Lines	5 lines
Line Length	80 characters
Name Length	20 characters

Message Disposition Notification (MDN)

For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – E-mail Options

The network system administrator can confirm whether a sent mail has been received correctly or not. This function is enabled only when "I-FAX switch 02 Bit 4" is set to "1". This confirmation is done in four steps.

1. Send request for confirmation of mail reception. To enable or disable this request (known as MDN):
2. Sub TX Mode> E-mail Options
3. Mail reception (receive confirmation request)
4. Send confirmation of mail reception
5. Receive confirmation of mail reception

The other party's machine will not respond to the request unless the two conditions below are met:

- The other party's machine must be set up to respond to the confirmation request.
- The other party's machine must support MDN (Message Disposition Notification).

- Setting up the Receiving Party -

The receiving party will respond to the confirmation request if:

1. The "Disposition Notification To" field is in the received mail header (automatically inserted in the 4th line in the upper table on the previous page, if MDN is enabled), and
2. Sending the disposition notification must be enabled (User Parameter Setting SW21 (15 [H]) Bit 1 for this model).

The content of the response is as follows:

Normal reception:	"Return Receipt (dispatched)" in the Subject line
IFAX SW02 (Bit 2, 3)	"Return Receipt (displayed)" in the Subject line
Error:	"Return Receipt (processed/error)" in the Subject line

Handling Reports

1. Sending a Request for a Return Receipt by Mail

After the mail sender transmits a request for a return receipt, the mail sender's journal is annotated with two hyphens (--) in the Result column and a "Q" in the Mode column.

2. Mail Receipt (Request for Receipt Confirmation) and Sending Mail Receipt Response

After the mail receiver sends a response to the request for a return receipt, the mail receiver's journal is annotated with two hyphens (--) in the Result column and an "A" in the Mode column.

3. Receiving the Return Receipt Mail

- After the mail sender receives a return receipt, the information in the mail sender's journal about the receipt request is replaced, i.e. the journal is annotated with "OK" in the Result column.
- When the return receipt reports an error, the journal is annotated with an "E" in the Result column.
- The arrival of the return receipt is not recorded in the journal as a separate communication. Its arrival is only reported by the presence of "OK" or "E" in the Result column.
- If the mail address used by the sender specifies a mailing list (i.e., a Group destination; the machine sends the mail to more than one location. See "How to set up Mail Delivery"), the Result column of the Journal is updated every time a return receipt is received. For example, if the mailing list was to 5 destinations, the Result column indicates the result of the communication with the 5th destination only. The results of the communications to the first 4 destinations are not shown.

Exceptions: If one of the communications had an error, the Result column will indicate E, even if subsequent communications were OK.

If two of the communications had an error, the Journal will indicate the destination for the first error only.

5.Detailed Section Descriptions

Report Sample

DATE	TIME	ADDRESS	MODE	TIME	PAGE

MAY. 5	10:15	fuser_01@domlg. rlcch. co.	Mail SM	0'09"	2
	10:16	fuser_01@domlg. rlcch. co.	Mail SEQ	0'03"	1
	10:17	s_tadashi@domlg. rlcch. co.	Mail SEQ	0'03"	2
	10:19	m_masatake@domlg. rlcch. co.	Mail SMA	0'05"	1

b868d506

IP-Fax

What is IP-FAX?

For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – IP-FAX

T.38 Packet Format

TCP is selected by default for this machine, but you can change this to UDP with IPFAX SW 00 Bit 1.

UDP Related Switches

IP-Fax Switch 01						
No.	Function					Comments
0-3	Select IP FAX Delay Level					Raise the level by selecting a higher setting if too many transmission errors are occurring on the network.
	Bit	Bit	Bit	Bit	Level	If TCP/UDP is enabled on the network, raise this setting on the T.30 machine.
	3	2	1	0		Increasing the delay time allows the recovery of more lost packets.
	0	0	0	0	0	If only UDP is enabled, increase the number of redundant packets.
	0	0	0	1	1	Level 1~2: 3 Redundant packets
	0	0	1	0	2	Level 3: 4 Redundant packets
	0	0	1	1	3	

Settings

User parameter switch 34 (22[H]), bit 0

IP-Fax Gate Keeper usage, 0: No, 1: Yes

IP Fax Switches: Various IP-FAX settings (see the bit switch table)

6. Specifications

General Specifications

FCU

Standard:	Group 3
Resolution:	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:	3 seconds at 28,800 bps, Standard resolution (JBIG transmission: 2 seconds)
Data Compression:	MH, MR, MMR, JBIG
Maximum Original Size:	Standard: A4 (SEF) or 8.5" x 14" (SEF) Custom: 216 mm x 600 mm (8.5" x 23.6")
Maximum Scanning Size:	216 mm x 600 mm (8.5" x 23.6")
Print Process:	LED alloy and electro-photographic printing
Transmission speed:	33,600/31,200/28,800/26,400/24,000/21,600/19,200/16,800/14,400/12,000/9,600 /7,200/4,800/2,400 bps (Auto shift down system)

Capabilities of Programmable Items

The following table shows the capabilities of each programmable items.

Item	Standard
Quick Dial	1000
Groups	100
Destination per Group	500
Destination per document	500
Programs	100
Communication records for Journal stored in the memory	200
Specific Senders	250
Memory Transmission file	800
Maximum number of page for memory transmission	320

↓ Note

- Measured using an ITU-T #1 test document (Slerexe letter) at the standard resolution, the auto image density mode and the Text mode.

IFax Specifications

Network:	Standard: Ethernet interface (1000 Base-T/100 Base-TX/10 Base-T) Optional: IEEE802.11a/b/g/n (Wireless LAN interface)
Transmit function:	E-mail
Scan line density:	200 × 100 dpi (Standard character) 200 × 200 dpi (Detail character)
Original Size (Scanning width):	A4, (8.5" × 14")
E-mail File Format:	Single/multi-part, MIME conversion Attached file forms: TIFF-F (MH, MR ^{*1} , MMR ^{*1} compression)
Communication Protocol:	Transmission: SMTP, TCP/IP Reception: POP3, SMTP, IMAP4, TCP/IP
E-mail Format:	Single/Multi-part, MIME Conversion Attached file forms: TIFF-F (MH, MR ^{*1} , MMR ^{*1} compression)
Authentication method:	SMTP-AUTH, POP before SMTP, A-POP
Internet communication:	Send and receive e-mail with a computer that has an e-mail address
Encryption method:	S/MIME
Internet Fax send functions:	Automatic conversion of sent documents to e-mail format and e-mail transmission. Memory transmission only.
Internet Fax receive functions:	Automatic detection and printing of appended TIFF-F (MH) files and ASCII text. Memory reception only.

*1 :Full mode

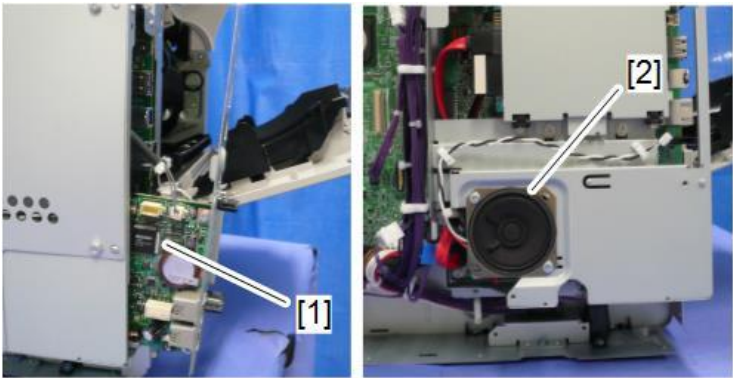
↓ Note

- 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).

IP-Fax Specifications

Network:	Standard: Ethernet interface (1000 Base-T/100 Base-TX/10 Base-T) Optional: IEEE802.11a/b/g/n wireless LAN interface
Scan line density:	8 x 3.85 lines/mm, 200 x 100 dpi (Standard character) 8 x 7.7 lines/mm, 200 x 200 dpi (Detail character)
Maximum Original size:	Standard: A4 (SEF) or 8.5" x 14" (SEF) Custom: 216 mm x 600 mm (8.5" x 23.6")
Maximum scanning size:	216 mm x 600 mm (8.5" x 23.6")
Transmission protocol:	Recommended: T.38, TCP, UDP/IP communication, SIP (RFC 3261 compliant), H.323 v2
Compatible machines:	IP-Fax compatible machines
IP-Fax transmission function:	Specify an IP address and send faxes to an IP-Fax compatible fax through a network. Also capable of sending faxes to a G3 fax connected to a telephone line via a VoIP gateway.
IP-Fax reception function:	Receive faxes sent from an IP-Fax compatible fax through a network. Also capable of receiving faxes from a G3 fax connected to a telephone line via a VoIP gateway.

Fax Unit Configuration



m0a0k1064

Component	No.	Remarks
FCU	1	
Speaker	2	

**Paper Feed Unit PB1070 / Paper Feed Unit
PB1060**

Machine Code: M440 / M441

Field Service Manual

Ver 1.00

Latest Release: -

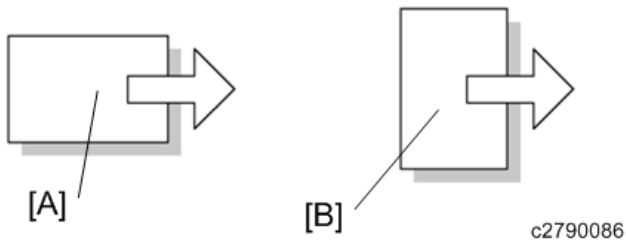
Initial Release: August, 2016

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Symbols and Abbreviations

This manual uses several symbols.

Symbol	What it means
	Screw
	Connector
	Clip ring
	Clamp
	FFC
	E-ring
	Spring
SEF	Short Edge Feed
LEF	Long Edge Feed



[A] Short Edge Feed (SEF)

[B] Long Edge Feed (LEF)

Trademarks

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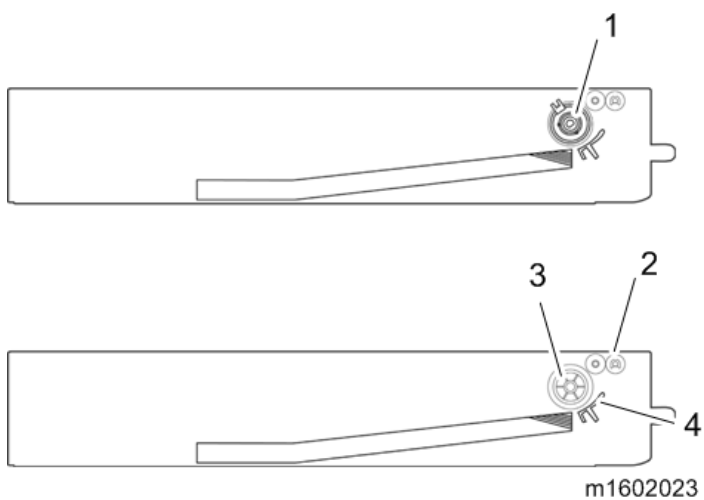
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1. Detailed Descriptions

Overview

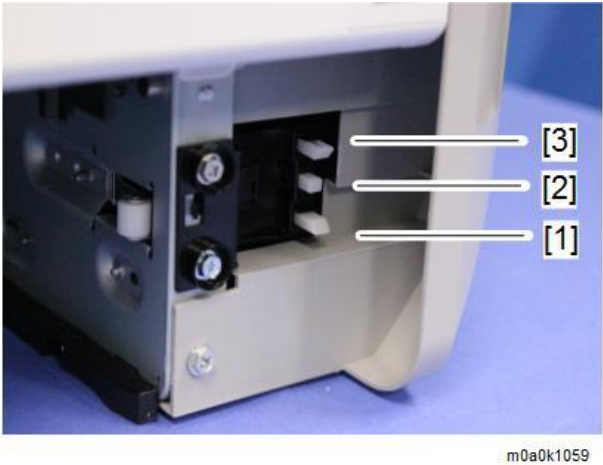
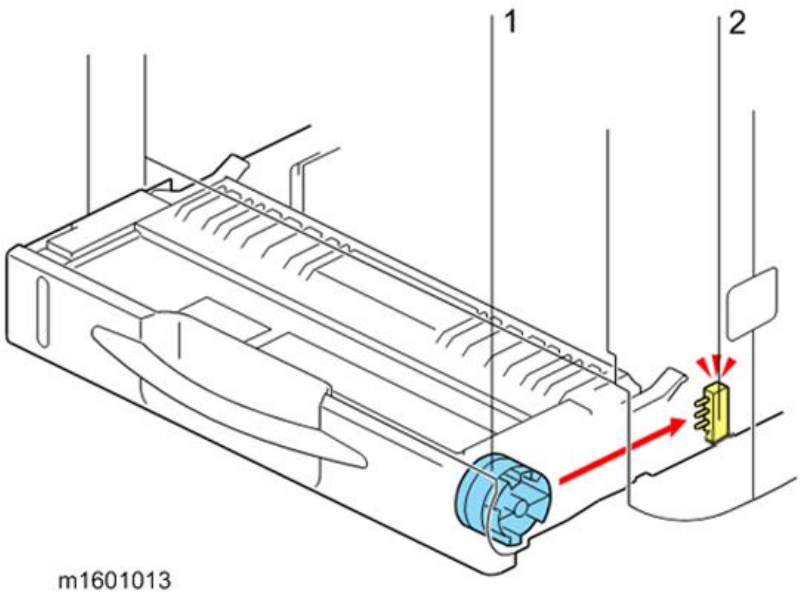
Mechanical Components



1. Paper feed clutch
2. Grip roller
3. Paper feed roller
4. Friction pad

Paper Size Detection

The paper size is detected by a combination of three switches built into the Paper Size Switch [2]. The switches are operated by the Paper Size Dial [1] located on the right side of the Paper Feed Tray.



- 1. SW1
- 2. SW2
- 3. SW3

Paper size detection combinations (L: Switch is pressed)

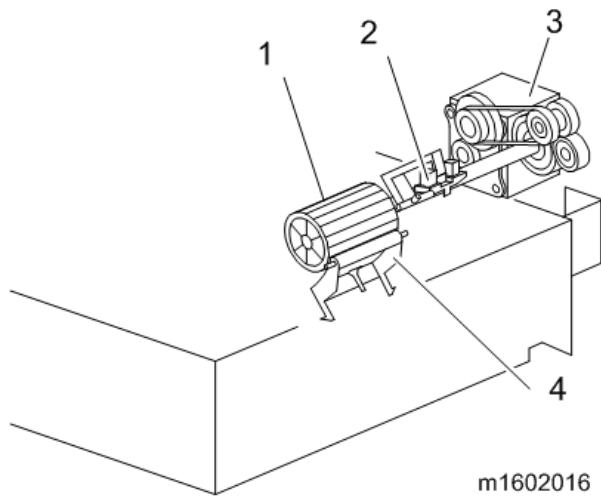
	SW 1	SW 2	SW 3	Paper Size
1	L	L	L	A4 SEF
2	L	H	L	A5 SEF
3	H	L	L	A6 LEF
4	H	H	L	Legal SEF
5	L	L	H	Letter SEF
6	L	H	H	-

1.Detailed Descriptions

	SW 1	SW 2	SW 3	Paper Size
7	H	L	H	Half Letter SEF
8	H	H	H	Paper cassette is not set.

Paper Feed and Separation

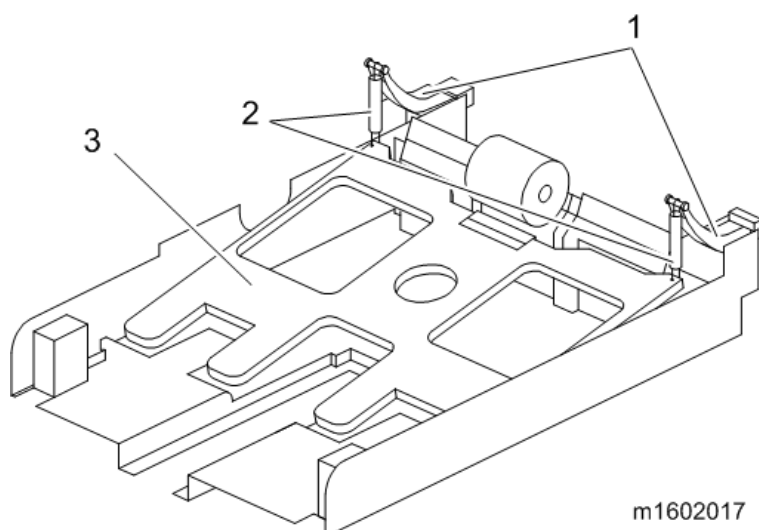
The paper feed unit uses the feed roller and friction pad method to separate paper. The friction pad method makes it possible to feed only one sheet at a time (the top sheet) because of the friction between the friction pad and the paper.



1. Paper feed roller
2. Paper feed sensor
3. Paper feed motor
4. Friction pad

Paper Lift

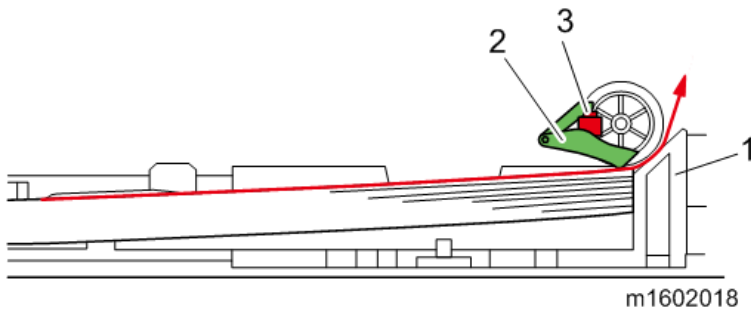
Pushing in the paper cassette makes the tray arms move up along the groove in the tilted guide and lift the bottom plate with springs.



1. Tray arms
2. Springs
3. Bottom plate

Paper End Detection

When the optional bank [1] runs out of paper, the feeler [2] drops into the cutout in the bottom plate to actuate the paper end sensor [3].



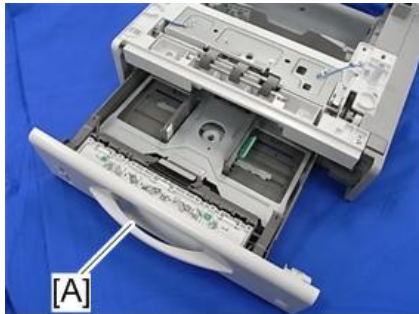
1. Optional bank
2. Feeler
3. Paper end sensor

2. Replacement and Adjustment

Paper Feed Unit PB1060 (250 sheets) / PB1070 (500 sheets)

Paper Feed Tray

1. Paper Feed Tray [A]

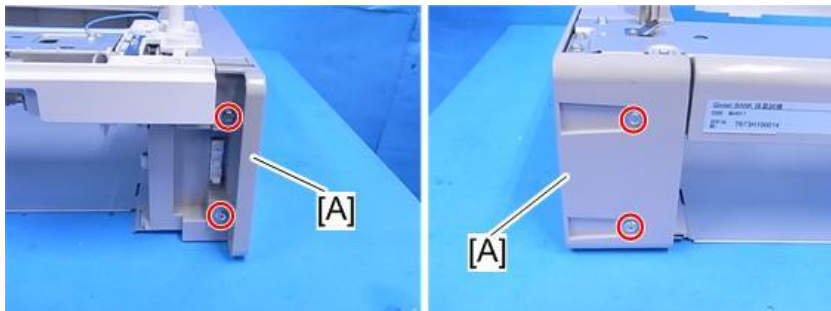


m1600236

Exterior

Right Cover PB1070 (500 Sheets)

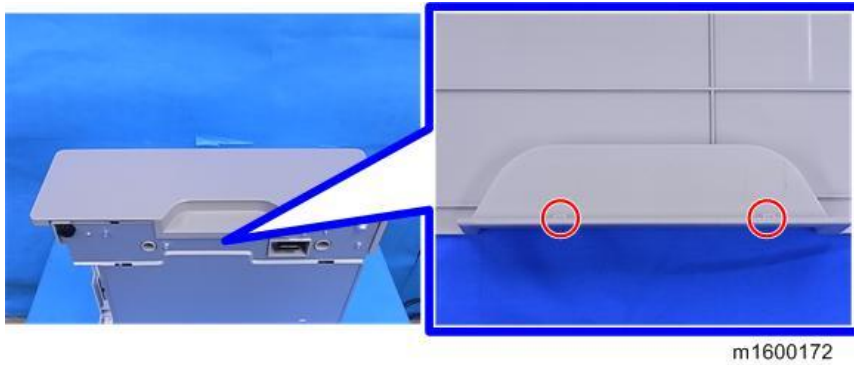
1. Paper Feed Tray ([Paper Feed Tray](#))
2. Right Cover [A] (⌘ x4, Tab x2)



m1600171

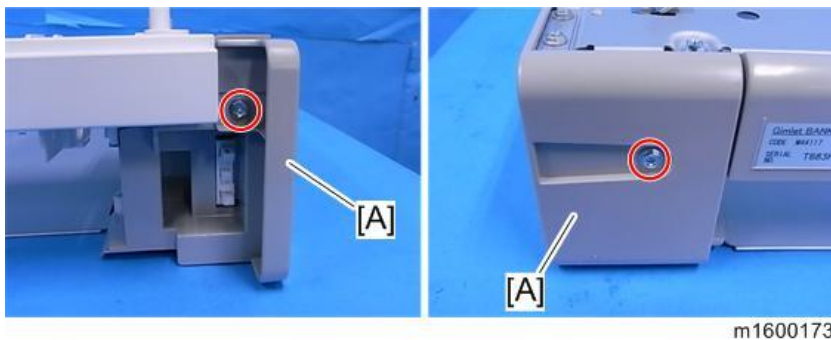
Note

- Be sure to release two tabs on the bottom of (and behind) the right cover while trying to remove it.



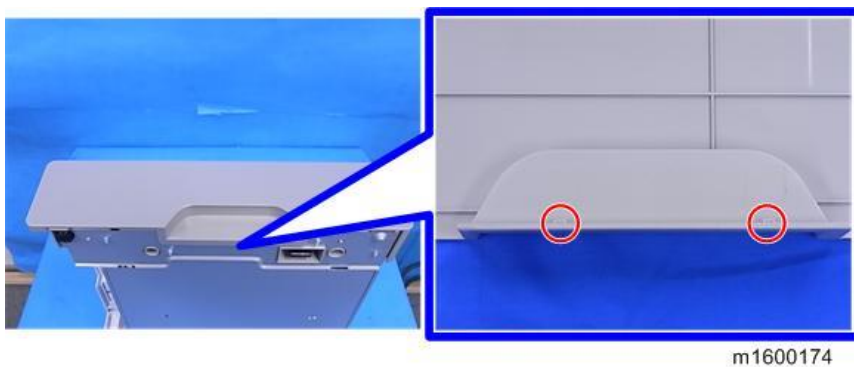
Right Cover PB1060 (250 Sheets)

1. Paper Feed Tray ([Paper Feed Tray](#))
2. Right Cover [A] (x2, Tab)



Note

- Be sure to release two tabs on the bottom of (and behind) the right cover while trying to remove it.

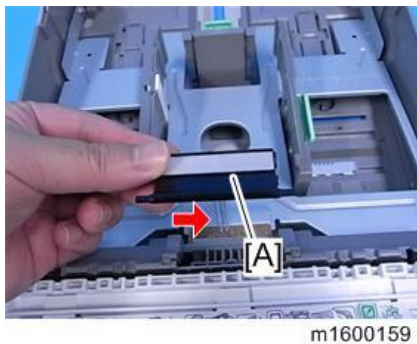
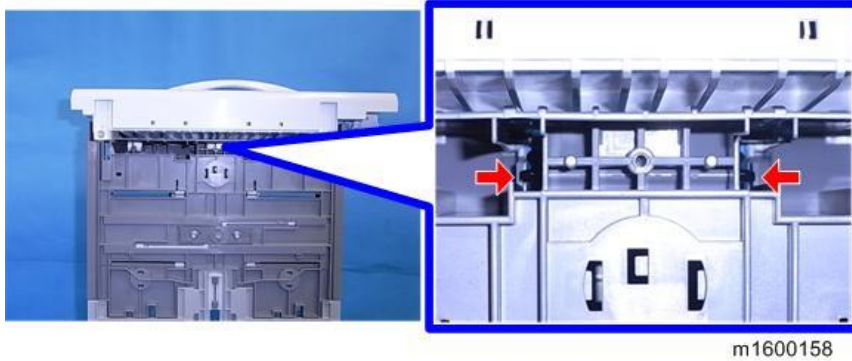


Friction Pad

1. Paper Feed Tray ([Paper Feed Tray](#))

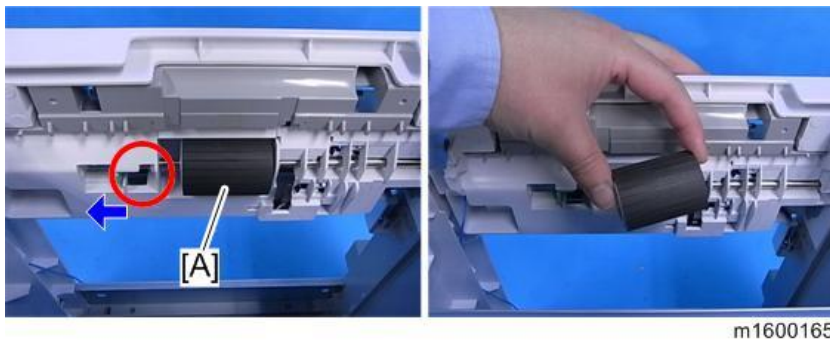
2.Replacement and Adjustment

2. Friction Pad [A] (Tab x2, Spring x1)



Paper Feed Roller

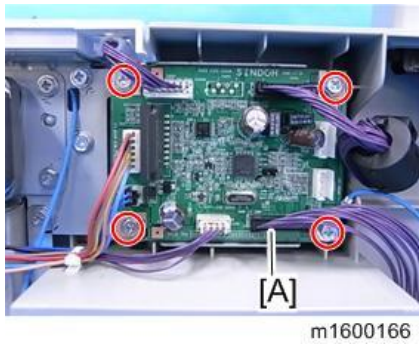
1. Paper Feed Tray ([Paper Feed Tray](#))
2. Release the lever to the left as shown below to remove the paper feed roller [A].



Tray Main Board

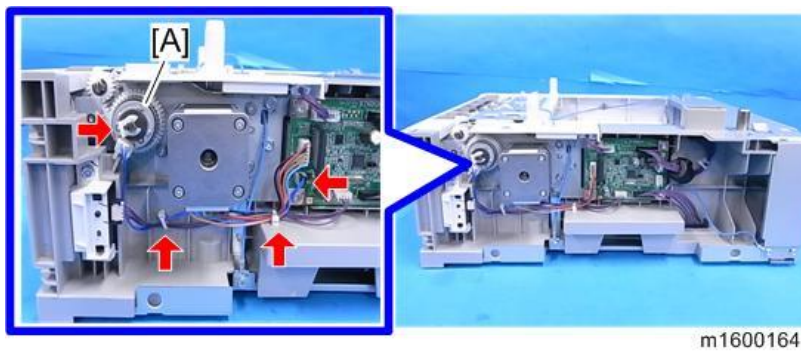
1. Paper Feed Tray ([Paper Feed Tray](#))
2. Right Cover ([Exterior](#))

3. Tray Main Board [A] (🔩x4, 📏x all)



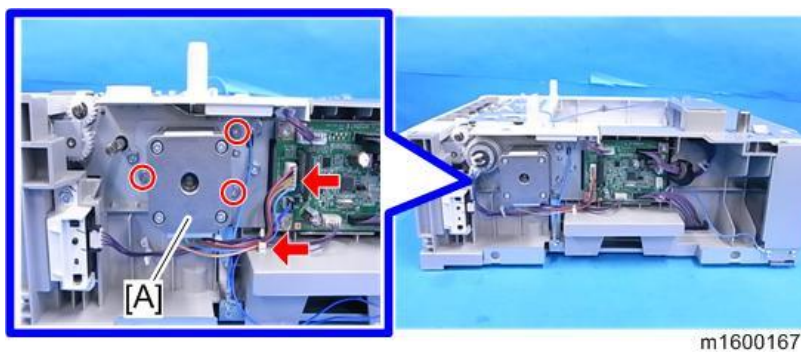
Paper Feed Clutch

1. Paper Feed Tray ([Paper Feed Tray](#))
2. Right Cover ([Exterior](#))
3. Paper Feed Clutch [A] (📏x1, 🔄x2, 🛠️x1)



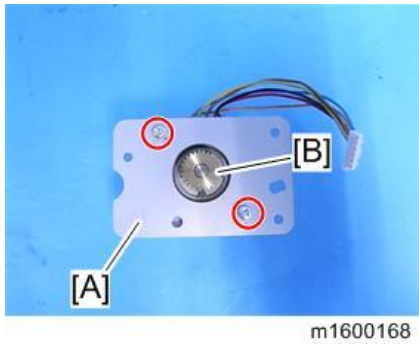
Paper Feed Motor

1. Paper Feed Clutch ([Paper Feed Clutch](#))
2. Bracket [A] with Paper Feed Motor (🔩x3, 📏x1, 🔄x1)



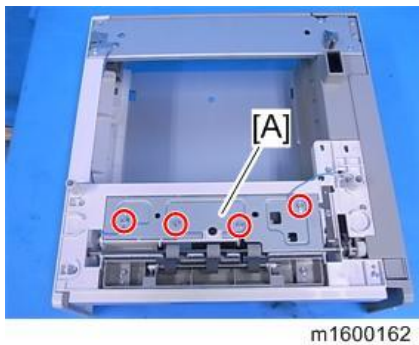
2.Replacement and Adjustment

3. Detach the paper feed motor [B] from the bracket [A]. (⚙️x2)

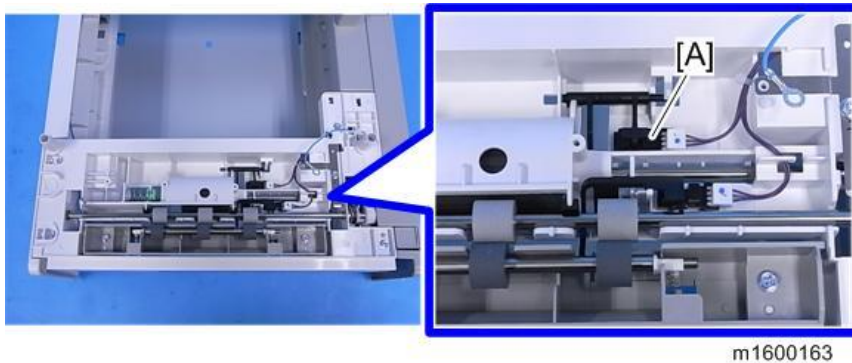


Paper End Sensor

1. Paper Feed Tray ([Paper Feed Tray](#))
2. Bracket [A] (⚙️x4)



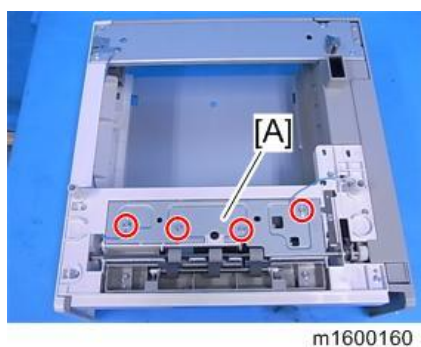
3. Paper End Sensor [A] (⚙️x1, Hook)



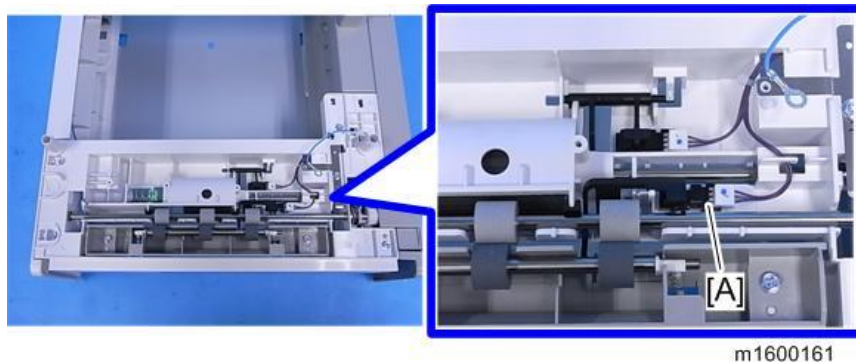
Paper Feed Sensor

1. Paper Feed Tray ([Paper Feed Tray](#))

2. Bracket [A] (🔩x4)

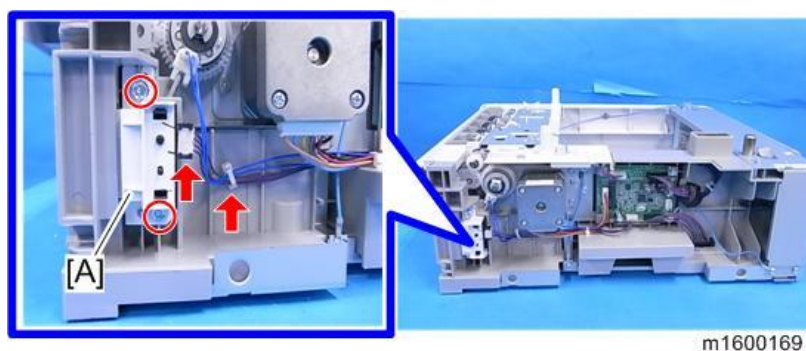


3. Paper Feed Sensor [A] (🔌x1, Hook)



Paper Size Switch

1. Paper Feed Tray (Paper Feed Tray)
2. Right Cover (Exterior)
3. Bracket [A] with paper size switch (🔩x2, 📏x1, 📏x1)



2.Replacement and Adjustment

- 4.** Detach the paper size switch from the bracket [A]. (Hook x2)

