

Gim-P1c/dM

**Machine Code:
M158/M159**

Field Service Manual

September, 2014

Important Safety Notices

Important Safety Notices

Prevention of Physical Injury

1. Before disassembling or assembling parts of the main machine and peripherals, make sure that the power cord of the main machine is unplugged.
2. The wall outlet should be near the machine and easily accessible.
3. Note that some components of the machine and the paper tray unit are supplied with electrical voltage even if the main power switch is turned off.
4. If any adjustment or operation check has to be made with exterior covers off or open while the main switch is turned on, keep hands away from electrified or mechanically driven components.
5. 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.

WARNING

- To prevent a fire or explosion, keep the machine away from flammable liquids, gases, and aerosols.

Health Safety Conditions

1. Toner and developer is non-toxic, but if you get either of them in your eyes by accident, it may cause temporary eye discomfort. Immediately wash eyes with plenty of water. If unsuccessful, get medical attention.
2. This machine, which uses a high voltage power source, can generate ozone gas. High ozone density is harmful to human health. Therefore, the machine must be installed in a well-ventilated room.

Observance of Electrical Safety Standards

1. This machine and its peripherals must be serviced by a customer service representative who has completed the training course on those models.
2. The NVRAM on the system control board has a lithium battery which can explode if replaced incorrectly. Replace the NVRAM only with an identical one. The manufacturer recommends replacing the entire NVRAM. Do not recharge or burn this battery. Used NVRAM must be handled in accordance with local regulations.

Handling Toner

- Work carefully when removing paper jams or replacing toner bottles or cartridges to avoid spilling toner on clothing or the hands.
- If toner is inhaled, immediately gargle with large amounts of cold water and move to a well ventilated location. If there are signs of irritation or other problems, seek medical attention.
- If toner gets on the skin, wash immediately with soap and cold running water.
- If toner gets into the eyes, flush the eyes with cold running water or eye wash. If there are signs of irritation or other problems, seek medical attention.
- If toner is swallowed, drink a large amount of cold water to dilute the ingested toner. If there are signs of any problem, seek medical attention.
- If toner spills on clothing, wash the affected area immediately with soap and cold water. Never use hot water! Hot water can cause toner to set and permanently stain fabric.
- Always store toner and developer supplies such as toner and developer packages, cartridges, and bottles (including used toner and empty bottles and cartridges) out of the reach of children.
- Always store fresh toner supplies or empty bottles or cartridges in a cool, dry location that is not exposed to direct sunlight.

WARNING







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

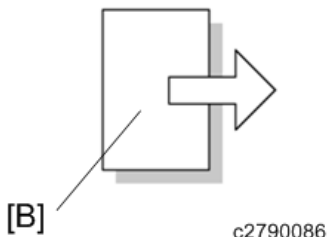
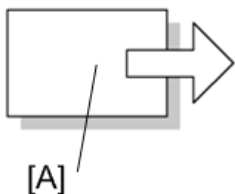
Safety and Ecological Notes for Disposal

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, the maintenance unit which includes developer or the organic photoconductor 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.

Symbols, Abbreviations and Trademarks

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

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



[A] Short Edge Feed (SEF)

[B] Long Edge Feed (LEF)

Trademarks

NetWare is registered trademark of Novell, Inc. in the USA.

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

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

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

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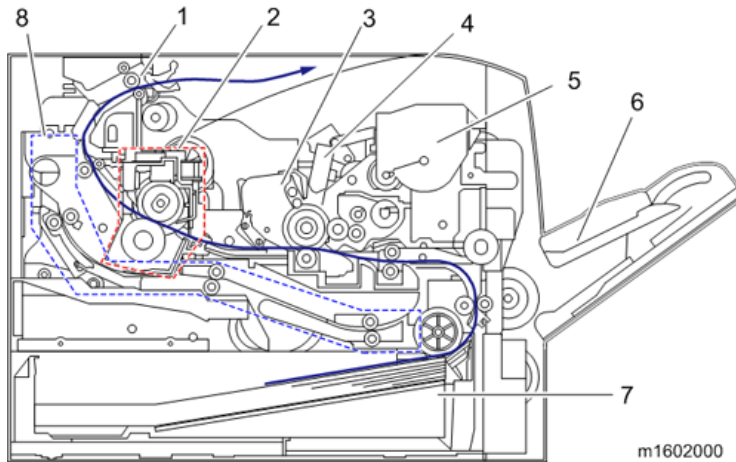
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1. Product Information

Product Overview

1

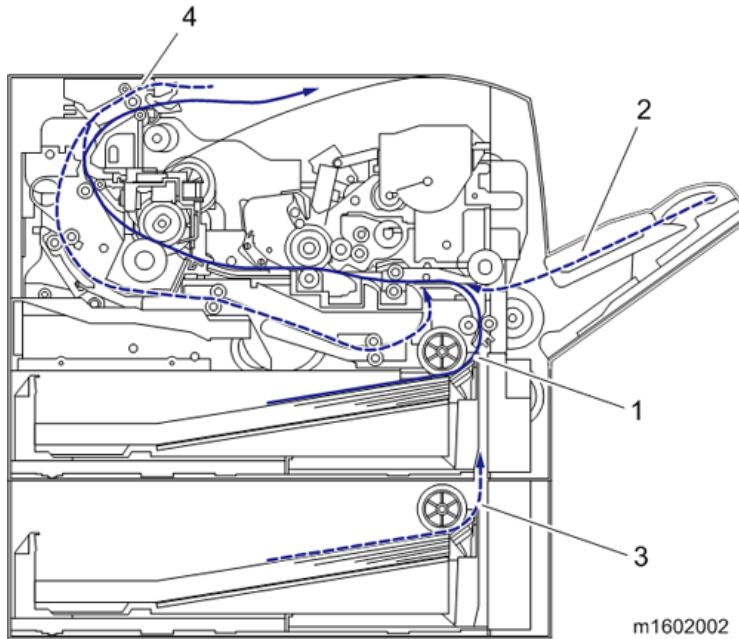
Component Layout



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

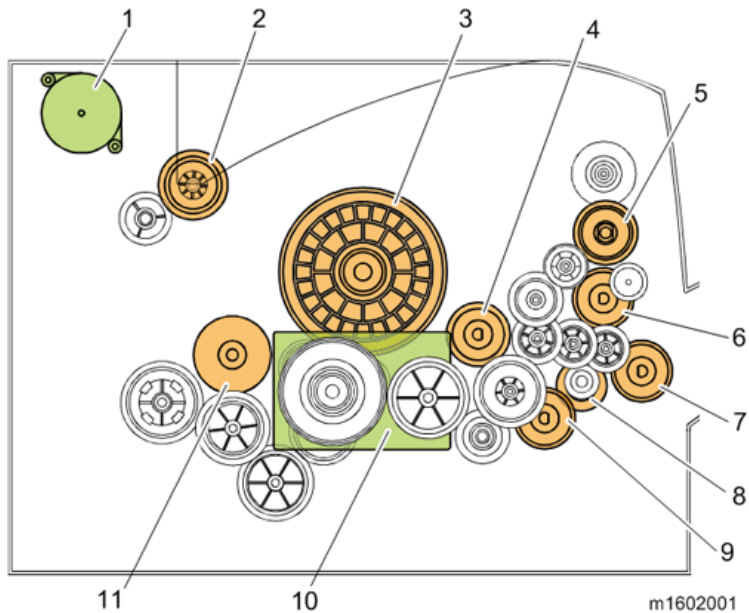
Paper Path

1



1. Main machine paper feed path
2. By-pass 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
5. Toner supply clutch
6. By-pass feed clutch
7. By-pass bottom plate clutch
8. Relay clutch
9. Paper feed clutch
10. Main motor
11. Duplex clutch

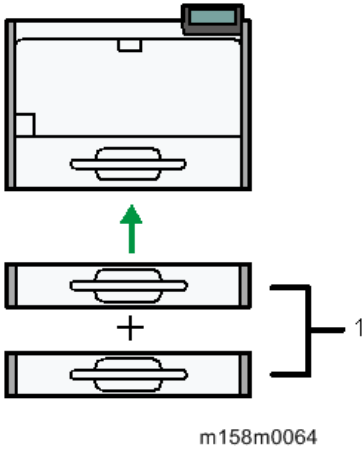
Machine Codes and Peripheral Configuration

1

Main Frame

Item	Machine Code	Remarks
M158 (User Maintenance Model)	M158-17 (NA) M158-27 (EU/AP) M158-21 (CHN)	NEW
M159 (Service Maintenance Model)	M159-17 (NA) M159-27 (EU/AP)	NEW

External Options



No.	Item	Machine Code	Remarks
1	Paper Feed Unit PB1070	M440-17	NEW
	Paper Feed Unit PB1060	M441-17	NEW

Internal Options

Item	Machine Code	Remarks
Memory Unit Type N1 1.0GB	M417-03	-
IEEE802.11 Interface Unit Type O	M417-06	* 1

Item	Machine Code	Remarks
VM CARD Type W	M417-19 (NA) M417-20 (EU) M417-21 (AP/CHN)	*2
Hard Disk Drive Option Type P1	M444-17	NEW
IPDS Unit Type P1	M444-21 (NA) M444-31 (EU) M444-32 (AP/CHN)	NEW
SD card for NetWare printing Type P1	M444-56	NEW
Browser Unit Type P1	M444-57	*3 NEW
XPS Direct Print Option Type P1	M444-25	NEW
IEEE1284 Interface Board Type A	B679-17	*1

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

*2: To install this, Memory Unit Type N1 and Hard Disk Drive Option Type P1 must first be installed.

*3: M159 only

Consumables for M158 (User Maintenance Model)

Item	Machine Code	Remarks	Yield
Print Cartridge SP 4500HA	M901-17	NEW	12,000 pages (ISO)
Print Cartridge SP 4500HE	M901-27	NEW	
Print Cartridge SP 4500HS	M901-20	NEW	
Print Cartridge SP 4500HC	M901-21	NEW	
Print Cartridge SP 4500A	M902-17	NEW	6,000 pages (ISO)
Print Cartridge SP 4500E	M902-27	NEW	
Print Cartridge SP 4500S	M902-20	NEW	
Print Cartridge SP 4500C	M902-21	NEW	

Item	Machine Code	Remarks	Yield
Print Cartridge SP 4500LA	M903-17	NEW	3,000 pages (ISO)
Print Cartridge SP 4500LE	M903-27	NEW	
Print Cartridge SP 4500LS	M903-20	NEW	
Print Cartridge SP 4500LC	M903-21	NEW	
Photo Conductor Unit SP 4500	M906-17 (NA/EU/AP) M906-21 (CHN)	NEW	20,000 pages (3P/J)
Maintenance Kit SP 4500	M907-17 (NA) M907-27 (EU/AP/ CHN)	NEW	-

Consumables for M159 (Service Maintenance Model)

Item	Machine Code	Remarks	Yield
PRINT CARTRIDGE MP 401	M904-17 (NA) M904-25 (AP) M904-29 (AP) M904-27 (EU/NA/AP)	NEW	10,400 pages (6%, 3P/J)
PRINT CARTRIDGE MP 401S	M904-20	NEW	

↓ Note

- (ISO): The number of printable pages is based on pages that are compliant with ISO/IEC 19752 with the image density set as the factory default. ISO/IEC 19752 is an international standard for measurement of printable pages, set by the International Organization for Standardization.
- (6%, 3P/J): A4/Letter 6% test chart, 3 pages/job.
- (3P/J): A4/Letter, 3 pages/job.

Specifications

See "Appendices" for the following information:

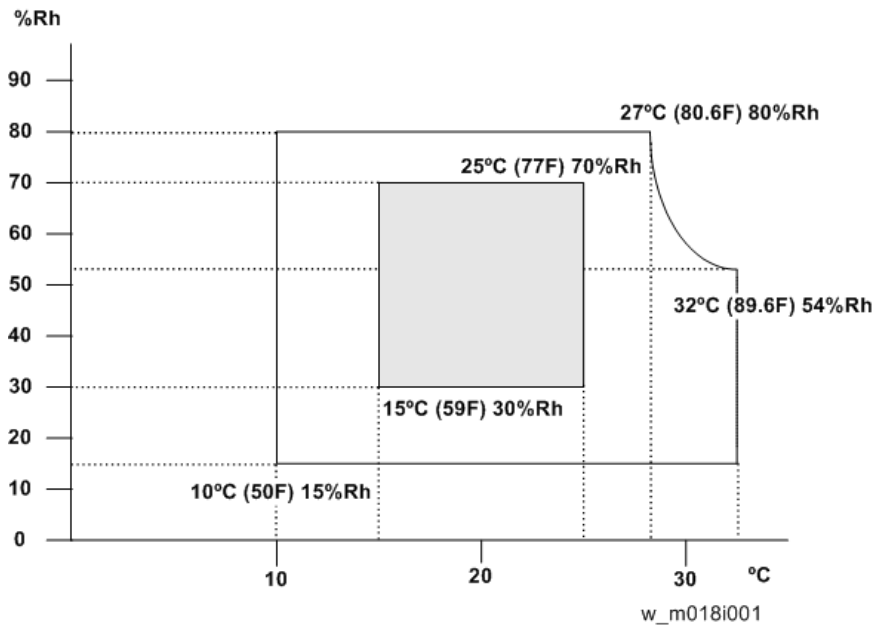
- General Specifications
- Supported Paper Sizes
- Software Accessories
- Optional Equipment

2. Installation

Installation Requirements

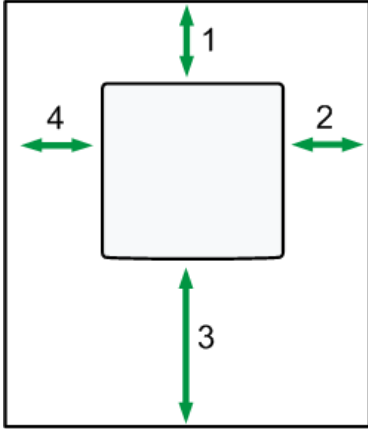
Environment

2



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



m1600239

1	Rear	Over 20 cm (7.9 inches)
2	Right	Over 10 cm (3.9 inches)
3	Front	Over 35 cm (13.8 inches)
4	Left	Over 10 cm (3.9 inches)

Machine Dimensions

Width	<ul style="list-style-type: none"> Printer only: 370 mm (14.6 inches) With Hard Disk: 390 mm (15.4 inches)
Depth	392 mm (15.4 inches)
Height	M158: <ul style="list-style-type: none"> Printer Only: 360 mm (14.2 inches) With two Paper Feed Units PB1070 attached: 506 mm (19.9 inches):
	M159: <ul style="list-style-type: none"> Printer Only: 427 mm (16.8 inches) With two Paper Feed Units PB1070 attached: 556 mm (21.9 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:

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

Main Machine Installation

★ Important

- The user maintenance model (M158) is for installation by users. However, the customer engineer must do the installation if the sales representative requests it.
- The service maintenance model (M159) is for installation by the customer engineer.

Accessory Check (M158)

Description	Q'ty		
	-17	-21	-27
Power Cord	1	1	1
CLEANER:LENS:LED HEAD	1	1	1
Sheet - Security Password	1	1	1
Sheet - EULA (End User License Agreement)	1	1	1
Sheet - Control Panel	1	1	1
Sheet - Eco Night	1	1	1
Sheet - NOTES_ENVELOPE	1	-	1
Sheet - NOTES_FCC	1	-	-
Sheet - TUV EMC	-	-	1
Sheet - Safety Informaion	-	-	1
Sheet - Caution Chart: SANBAO	-	1	-
Caution Chart - Tencircle	-	1	-
Manual - Read This First	1	1	1
Manual - Quick installation Guide	1	1	2
CD-ROM - Driver/OI	1	1	1
Seal – Caution	1	1	1
Leaflet - Help Desk Card	1	-	-

Description	Q'ty		
	-17	-21	-27
User Registration Sheet	1	-	-
Warranty (English)	1	-	-
Warranty (Chinese)	-	1	-
Starter Toner User maintenance model (M158) : 6,000 pages	1	1	1

Accessory Check (M159)

Description	Q'ty	
	-17	-27
Power Cord	1	1
CLEANER:LENS:LED HEAD	1	1
Sheet - Security Password	1	1
Sheet - EULA (End User License Agreement)	1	1
Sheet - Control Panel	1	1
Sheet - Eco Night	1	1
Sheet - NOTES_ENVELOPE	1	1
Sheet - NOTES_FCC	1	1
Sheet - TUV EMC	-	1
Sheet - Safety Informaion	-	1
Manual - Read This First	1	1
Manual - Quick installation Guide	1	2
CD-ROM - Driver/OI	1	1
Seal – Caution	1	1

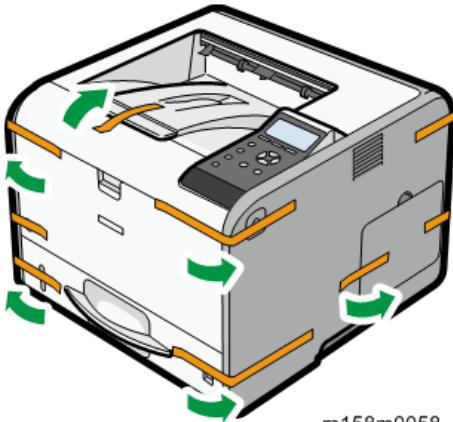
Description	Q'ty	
	-17	-27
Starter Toner Service maintenance model (M159) : 10,400 pages	1	1

Installation Procedure

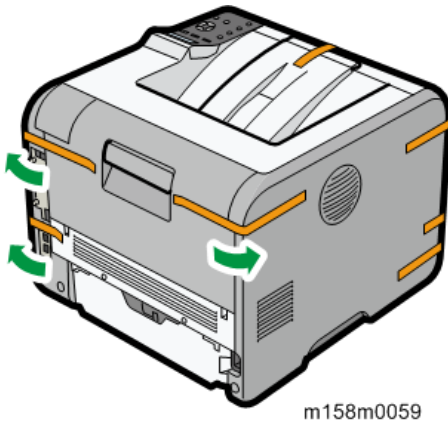
Removal of packing materials and shipping retainers

⚠ CAUTION

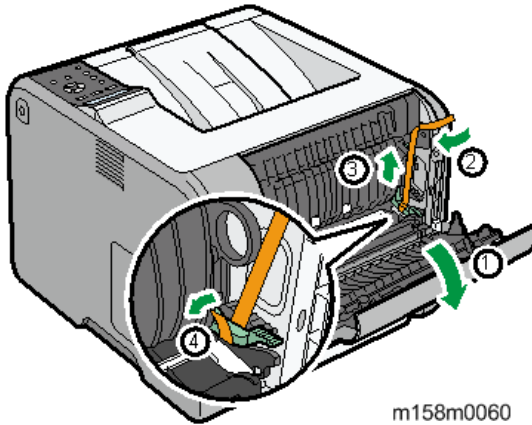
- When lifting the machine, use the inset grips on both sides. The machine could break or cause an injury if dropped.
1. Remove the machine from the box, and check the items in the package.
 2. Remove the adhesive tape attached on the machine's exterior.



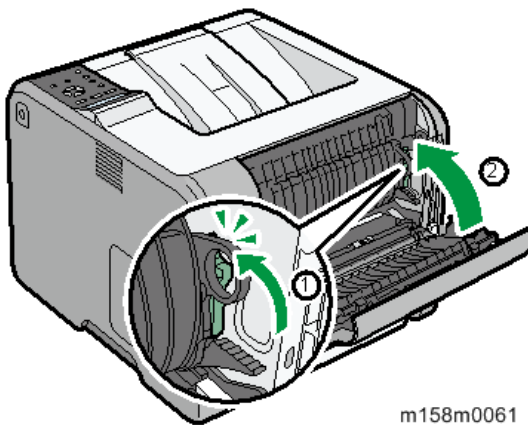
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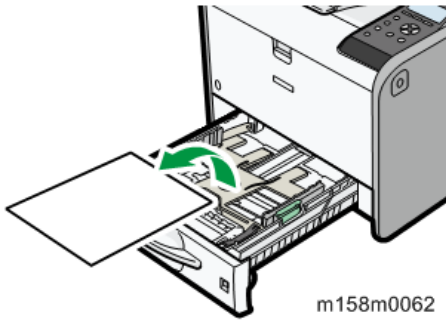
3. Open the rear cover, and then remove the adhesive tape from the machine and the envelope lever.



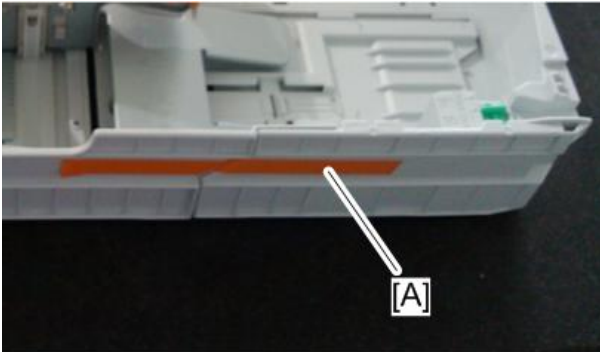
4. Pull up the envelope lever, and then close the rear cover.



5. Open Tray 1, and remove the protective materials.

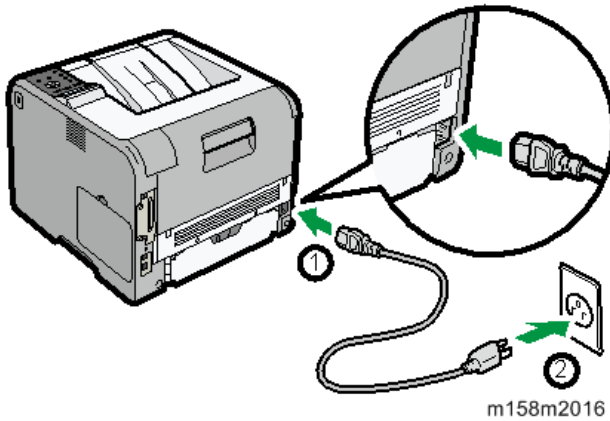


6. Pull out the paper tray, and then remove the adhesive tape [A] on its side.

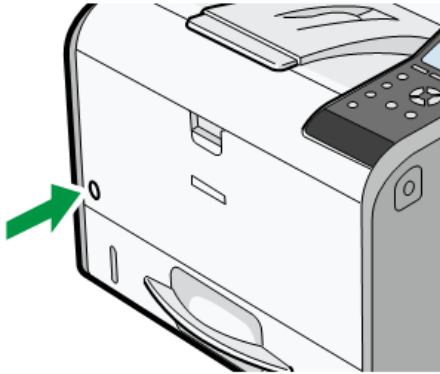


Connecting the Power Cord

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



2. Push the main power switch.

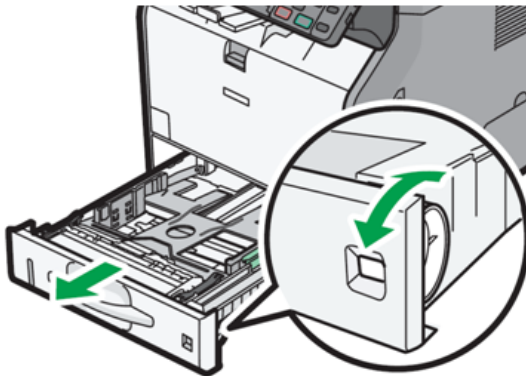


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2

Loading Paper

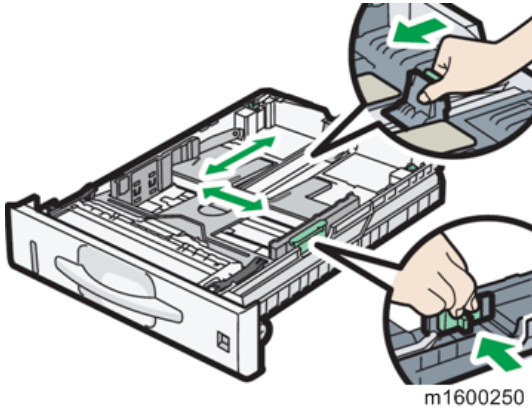
1. Check that paper in the paper tray is not being used, and then pull out the paper tray carefully. Adjust the paper size dial to match the size and feed direction of the paper in the paper tray.



m1600249

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

3. Squeezing the releases on the side and end paper guides, adjust the guides' positions according to the size of paper to be loaded.



4. Load the paper, insert the tray while keeping its front slightly raised, and then push it in all the way in.

Printing a Configuration Page

After you set up the machine or install options, print the configuration page to check the machine status.

M158

1. Press the [Menu] key.
2. Select [List/Test Print].
3. Press the [OK] key.
4. Select [Config. Page].
5. Press the [OK] key.

M159

1. Press the [User Tools] key.
2. Press [Printer Features].
3. Press [List / Test Print].
4. Press [Configuration Page].
5. Press the [User Tools] key.

Instructions for the Customers

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

- Operating the printer function
- Installing consumables and loading paper
- Operating the main power switch
- Removing jammed paper
- Registering/changing/deleting data in the address book
- Providing precautions on use
- Connecting to computers (such as configuring the port setting)
- Giving a brief outline 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 15 kg (33.1 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 by-pass 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 switch 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, and then move it horizontally to the place where you want to use it.

4. If you removed options, reattach them.

↓ Note

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

Security Settings

Changing an Administrator's Password

You will be prompted to enter the password when logging in to the printer. No password is set by default. We strongly recommend you to change the factory default password immediately to prevent information leakage and unauthorized operations by others.

↓ Note

- For details, see the user manuals. User manual "Security Guide"

Configuring SSL/TLS

To prevent unauthorized viewing, analysis or modification of the data during its transmission, enable SSL/TLS as required.

↓ Note

- For details, see the user manuals. User manual "Security Guide"

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.

2

Component Check

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

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

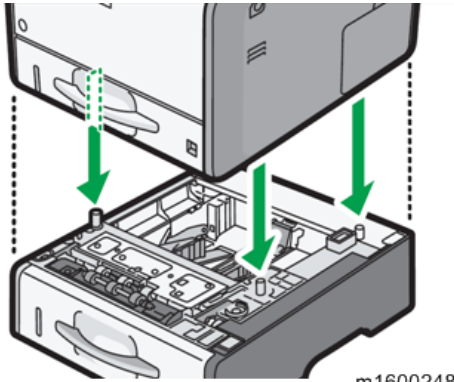
CAUTION

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

Important

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

1. Remove the packaging from the lower paper tray.
2. Lift the machine slowly using the inset grips on both sides, and then position it immediately above the lower paper tray.
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 machine.
5. Print the configuration page to confirm that the tray was attached correctly.

Note

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

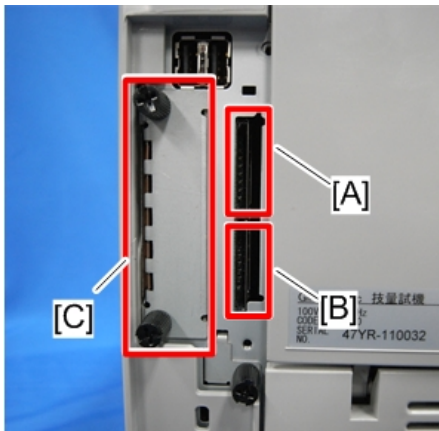
Controller Options

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 I/F card slot and SD card slots for controller options.



m158m0076

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

I/F Card Slot

Slot [C] can be used to attach an interface for IEEE 1284 or IEEE 802.11a/b/g/n (Wireless LAN).

SD Card Slots

Slot 1 (upper) [A] is used for optional applications (e.g.: Netware, Postscript3, Browser Unit, etc).

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

SD Card Appli Move

Overview

2

Since there are only two SD card slots (one of them is a service slot), three or more SD card applications cannot be used simultaneously.

However, if multiple SD card applications are merged, three or more SD card options can be used.

This function is referred to as the "SD card merge function."

The "SD card merge function" is a function which 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, SD card applications are under license, therefore, since an SD card license after merge is transferred to the target SD card, it cannot be used even if it is moved to the target machine.

Also, a process to prevent illegal copying is performed.

The service program "SD Card Appli Move" (SP5-873) lets you 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 move the application program from one card to another card.
- Do not use the SD card if it has been used before for other purposes. Normal operation is not guaranteed when such an SD card is used.
- An SD card, which becomes empty after moving the data in it to another card, cannot be reused.
- After moving the data in an SD card to another card so that the source card becomes empty, keep the empty card in place by, for example, affixing it near the SD card slot with adhesive tape. This is done 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.

SD Card Applications

SD Card Option	Card Size Capacity	Movable to another SD card	Target SD card	Remarks
IPDS Unit Type P1	128M	Yes	Yes	Available for use in Slot 1 (Upper) and Slot 2 (Lower)
SD card for NetWare printing Type P1	128M	Yes	Yes	
XPS Direct Print Option Type P1	128M	Yes	Yes	
Browser Unit Type P1	128M	Yes	Yes	
VM Card Type W	512M	No	Yes	Available for use only in Slot 1 (Upper)

- Both Slots 1 and 2 are vacant when the machine is shipped from the factory.
- VM Card Type W cannot be moved to another SD card.

Move Exec

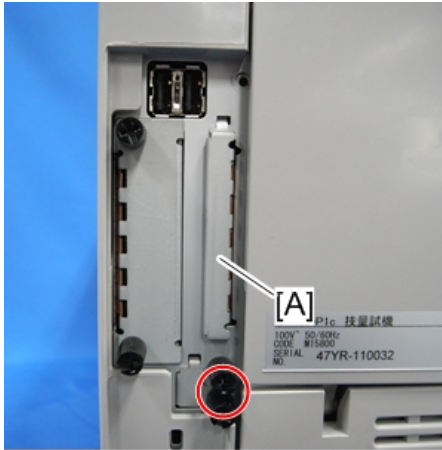
The menu "Move Exec" (SP5-873-001) lets you move application programs from the original SD card to another SD card.

★ Important

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

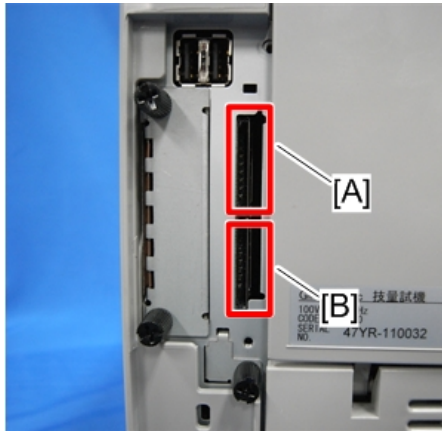
1. Turn the main power switch off.

2. SD card slot cover [A].



m158m0077

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



m158m0078

4. Insert the source SD card with the application program in SD Card Slot 2 [B]. The application program is copied from this source SD card.
5. Turn the main power switch on.
6. Start the SP mode.
7. Select SP5-873-001 "Move Exec".
8. Follow the messages shown on the operation panel.
9. Turn the main power switch 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 switch on.
13. Check that the application programs run normally.

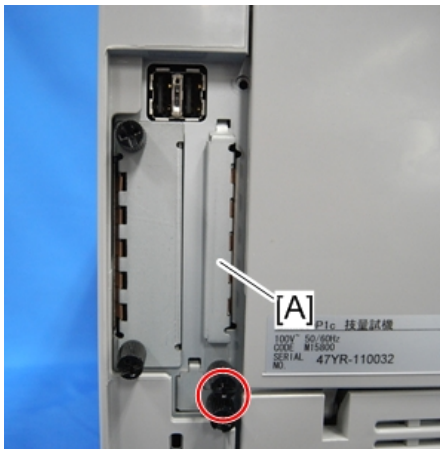
Undo Exec

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

★ Important

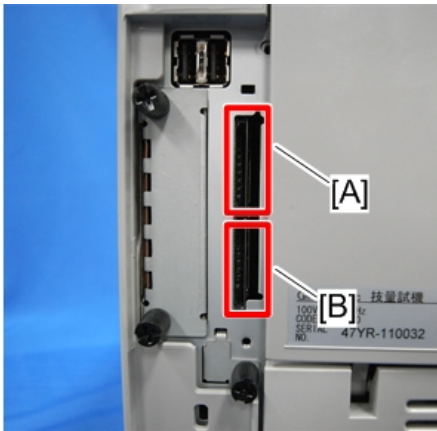
- Do not turn ON the write protect switch of the system SD card or application SD card on the machine. If the write protect switch is ON, a download error (e.g. Error Code 44) occurs during a firmware upgrade or application merge.

1. Turn the main power switch off.
2. SD card slot cover [A].



m158m0077

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



m158m0078

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

IPDS Unit Type P1

Component Check

No.	Description	Q'ty
1	SD Card: IPDS	1

2

Installation Procedure

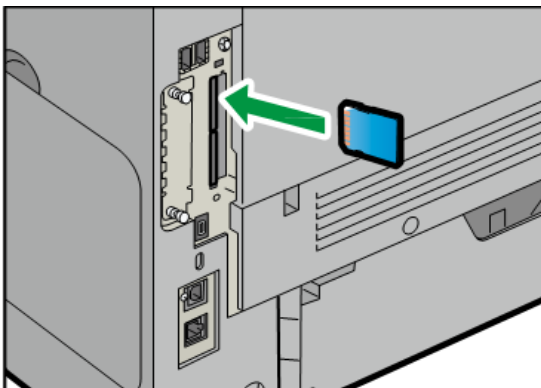
⚠ CAUTION

- Unplug the main machine power cord before you do the following procedure.
1. Loosen the screw and remove the SD card slot cover at an angle.



m158m0079

2. Insert the SD card (IPDS Unit) in SD slot 1 (upper). Then push it slowly until it clicks.



m158m0080a

3. Hook the SD card slot cover onto the opening, attach it flat against the controller board, and then fasten it using the screw.
4. Plug in the power cord, and then turn on the machine.
5. Print the configuration page to confirm the installation. (page 30 "Printing a Configuration Page")

 **Note**

- Confirm that the IPDS was correctly installed by printing the configuration page. If it is correctly installed, "IPDS Menu" will appear on the configuration page.

SD card for NetWare printing Type P1

Component Check

No.	Description	Q'ty
1	SD Card: NetWare	1
2	RoHS Decal	1
3	LABEL:ROHS:DATE:40MM	1

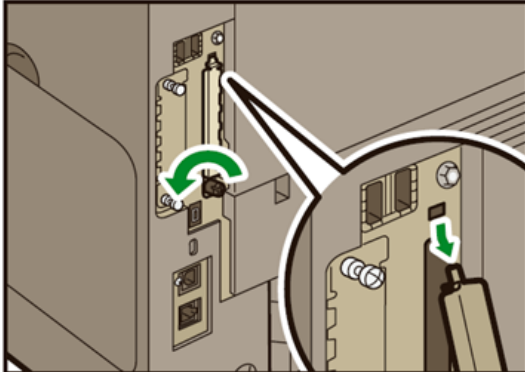
2

Installation Procedure

⚠ CAUTION

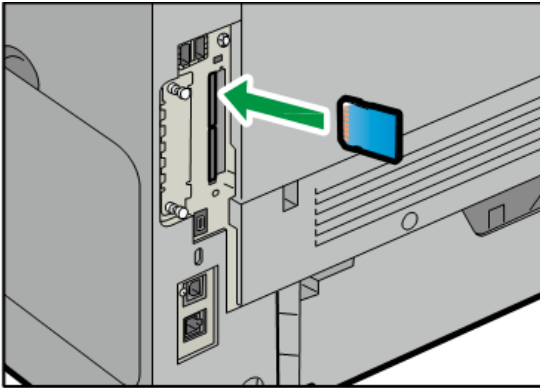
- Unplug the main machine power cord before you do the following procedure.

1. Loosen the screw and remove the SD card slot cover at an angle.



m158m0079

2. Insert the SD card (Netware Printing) in SD slot 1 (upper). Then push it slowly until it clicks.



m158m0080a

3. Hook the SD card slot cover onto the opening, attach it flat against the controller board, and then fasten it using the screw.
4. Plug in the power cord, and then turn on the machine.
5. Print the configuration page to confirm the installation. (page 30 "Printing a Configuration Page")

Note

- Confirm that the NetWare was correctly installed by printing the configuration page. If it is correctly installed, "NetWare" will appear for "Interface Information" on the configuration page.

Browser Unit Type P1 (for M159)

Component Check

No.	Description	Q'ty
1	SD Card: Browser Unit	1
2	RoHS Decal	1
3	LABEL:ROHS:DATE:40MM	1

2

Outline of the Browser Unit

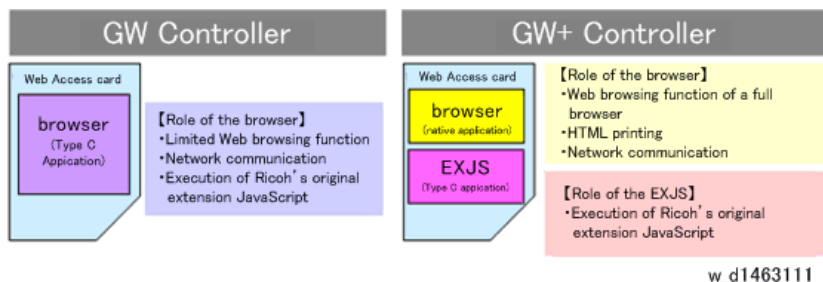
★ Important

- The browser for these models is not installed in the SD card HDD, but in order to start up using the data on the SD card, it must be operated with the SD card inserted.

The browser unit uses a native application such as a full browser in order to improve web browsing.

Also, to provide a solution utilizing the web as in previous machines, Extended JavaScript is also provided as an ESA application.

Due to the above, the browser unit for this model has two firmware modules, native application firmware, and Type-C application EXJS firmware.



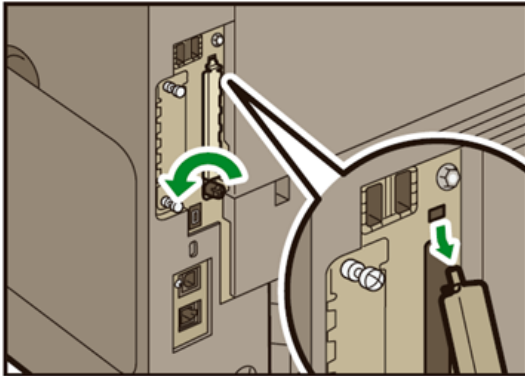
Installation Procedure

This option requires a HDD unit.

⚠ CAUTION

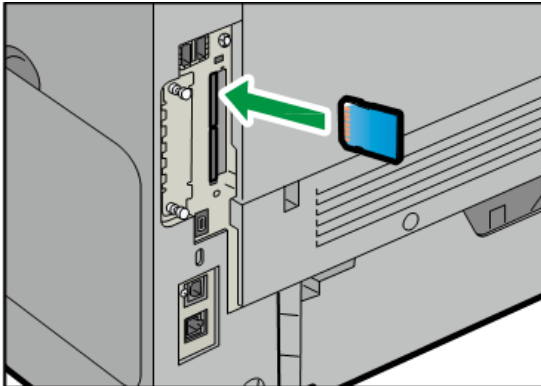
- Unplug the main machine power cord before you do the following procedure.

1. Loosen the screw and remove the SD card slot cover at an angle.



m158m0079

2. Insert the Browser Option SD card in SD slot 1 (upper). Then push it slowly until it clicks.



m158m0080a

3. Turn the main power switch on.
4. Push the [User Tools] key.
5. Touch "Extended Feature Settings" twice on the LCD.
6. Make sure that "Extended JS" application was automatically installed in the Startup Settings tab.
7. Turn the main power switch OFF/ON.
8. Push the [User Tools] key.
9. Touch "Edit Home".
10. Touch "Add Icon".
11. Touch "Select Icon to Add".
12. Touch "Application".
13. Touch "Browser".
14. Touch "Select Destination".

15. Touch a "Blank" to set a location for the browser icon.
16. Touch "Exit" to end the browser icon addition.

Ricoh JavaScript

Do the following steps if the customer is using the Ricoh JavaScript connected to a Web application developed by Operius/RiDP.

2

1. Turn the main power switch ON.
2. Push the [User Tools] key.
3. Touch "Browser Features".
4. Touch "Java Script".
5. Change the Extended JavaScript setting to "Activate".

EXJS Firmware Update

↓ Note

- The Browser Unit consists of the Browser firmware and EXJS firmware. The EXJS firmware is equivalent to the existing browser firmware. Therefore, it is possible to update the EXJS firmware using the same procedure as that of SDK application firmware.

Preparation

1. Extract the exe file (XXXX. exe), after which the following two files are generated: XXXX_machine. exe/ XXXX_stock.exe.

↓ Note

- Note: The file (XXXX_machine) is for updating the EXJS firmware in the field.

2. Extract the file (XXXX_machine), after which the "SDK" folder is created.

↓ Note

- Note: XXXX = part number.

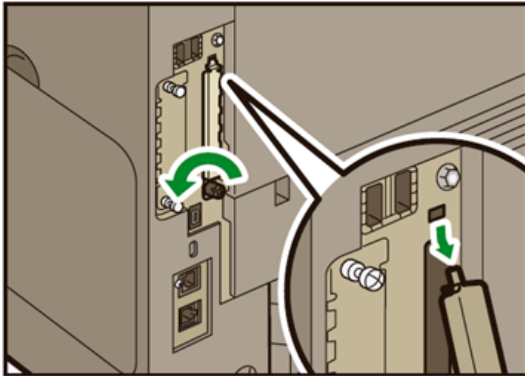
3. Copy the "SDK" folder to an SD card.

Main procedure

⚠ CAUTION

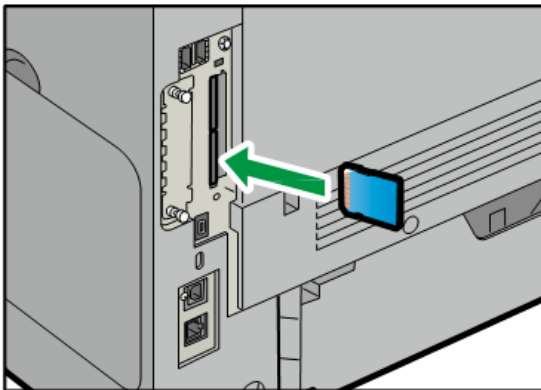
- Unplug the main machine power cord before you do the following procedure.

1. Loosen the screw and remove the SD card slot cover at an angle.



m158m0079

2. Insert the SD card included for firmware update into SD slot 2 (lower). Then push it slowly until it clicks.



m158m0080b

3. Turn the main power switch on.
4. After the Update screen is displayed, select the "Browser".
5. Touch "Update (#)".
6. After the "Update Done" message appears on the screen, turn the main power switch OFF.
7. Remove the SD card from the lower slot.

Updating the Extended JavaScript

Do the following steps if you are updating the Extended JavaScript.

1. Turn the main power switch on.
2. Push the [User Tools] key.

3. Touch "Extended Feature Settings" twice on the LCD.
4. Change the status of "Extended JS" to "Ending" in the Startup Settings tab.
5. Turn the main power switch OFF.
6. Insert the SD card containing the Extended JS firmware into SD slot 2 (lower).
7. Turn the main power switch on.
8. Push the [User Tools] key.
9. Touch "Extended Feature Settings" twice on the LCD.
10. Touch the "Install" tab.
11. Touch "SD card", then select "Extended JS" from the list of Extended Features.
12. Select "Machine HDD" as the "Install to" destination, then touch "Next".
13. Check the Extended Features information on the "Ready to Install" screen, then press "OK".
14. After "The following extended feature has already been installed. Are you sure you want to overwrite it?" is displayed, press "Yes".
15. Change the status of Extended JS to "waiting" in the Startup Settings tab.
16. Turn the main power switch OFF.
17. Remove the SD card from slot 2 (lower slot).
18. Turn the main power switch ON.
19. Press the [User Tools] key.
20. On the touch panel, touch "Extended Feature settings".
21. Touch "Extended Feature settings" in the Extended Feature settings Menu.
22. Make sure that the "Extended JS" has been updated to the latest version in the Startup Settings tab.

Un-installing EXJS Firmware

1. Turn the main power switch ON.
2. Push the [User Tools] key.
3. Login with an administrator user name and password.
4. Touch "Extended Feature Settings" twice on the LCD.
5. Touch "Uninstall".

6. Touch "Browser", and then touch "Yes" after "Are you sure you want to uninstall the following extended feature?" is displayed.

 **Note**

- "Uninstalling the extended feature... Please wait" is then displayed on the touch screen.

7. After "Completed" is displayed, turn the main power switch OFF.

 **Note**

- The Browser firmware is un-installed from the machine when the Browser SD card is removed.

XPS Direct Print Option Type P1

Component Check

No.	Description	Q'ty
1	SD Card: XPS	1
2	RoHS Decal	1
3	LABEL:ROHS:DATE:40MM	1

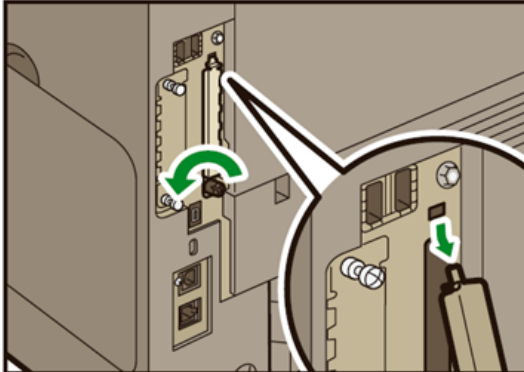
2

Installation Procedure

⚠ CAUTION

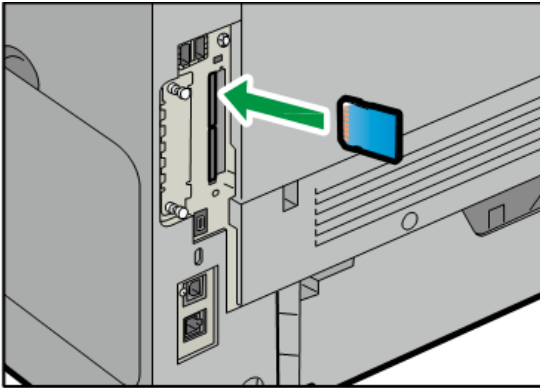
- Unplug the main machine power cord before you do the following procedure.

1. Loosen the screw and remove the SD card slot cover at an angle.



m158m0079

2. Insert the SD card (XPS Direct Print) in SD slot 1 (upper). Then push it slowly until it clicks.



m158m0080a

3. Hook the SD card slot cover onto the opening, attach it flat against the controller board, and then fasten it using the screw.
4. Plug in the power cord, and then turn on the machine.
5. Print the configuration page to confirm the installation. (page 30 "Printing a Configuration Page")

Note

- Confirm that the XPS was correctly installed by printing the configuration page. If it is correctly installed, "XPS Menu" will appear on the configuration page.

VM Card Type W

Component Check

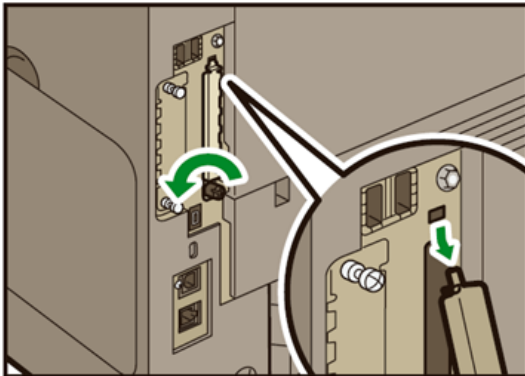
No.	Description	Q'ty
1	SD Card: VM Card	1

2

Installation Procedure

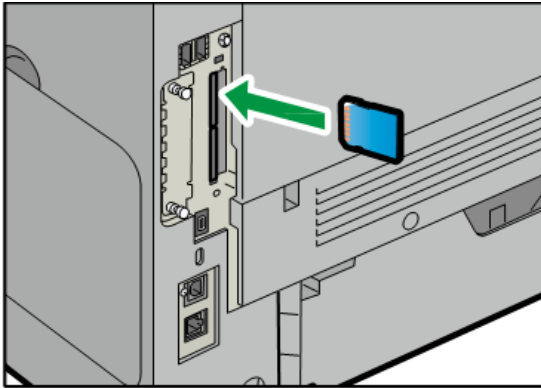
To install the VM card, Memory Unit Type N1 and Hard Disk Drive Option Type P1 must first be installed.

1. Press the [User Tools] key to display System Settings>Timer Settings, and then set [Sleep Mode Timer] to five minutes or longer.
This will prevent the machine from switching to the Sleep mode while installing Java TM Platform.
2. Turn off the main power, and then disconnect the power cord.
3. Loosen the screw and remove the SD card slot cover at an angle.



m158m0079

4. Insert the SD card (VM Card) in SD slot 1 (upper). Then push it slowly until it clicks.



m158m0080a

5. Hook the SD card slot cover onto the opening, attach it flat against the controller board, and then fasten it using the screw.
6. Plug in the power cord, and then turn on the machine.

When you insert the SD card and turn the main power switch on, installation of Java™ Platform starts automatically. Automatic installation takes approximately three minutes.

★ Important

- If you turn the power off during installation, the VM card may be damaged. Be sure to check the following before turning the power off.

7. Press [User Tools] key, and then press [Extended Features].

If installation has completed correctly, [Java™ Platform] appears in the Extended Features menu.

8. Press [Exit] twice to exit from the Extended Features menu.

Operate the machine with the VM card installed in SD Card Slot 1 (upper).

★ Important

- If you have changed the [Sleep Mode Timer] setting in Step 1, change the setting back to the previous one once installation is complete.

↓ Note

- With the M158 model, use Web Image Monitor to check items in Steps 7 and 8.

Memory Unit Type N1 1.0GB

Component Check

No.	Description	Q'ty
1	SDRAM module	1
2	RoHS Decal	1
3	LABEL:ROHS:DATE:40MM	1

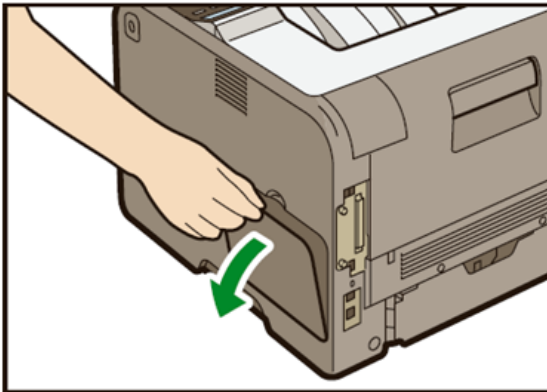
2

Installation Procedure

⚠ CAUTION

- Unplug the main machine power cord before you do the following procedure.
- Before beginning work, ground yourself by touching something metal to discharge any static electricity. Static electricity can damage the memory unit.

1. Remove the memory cover.



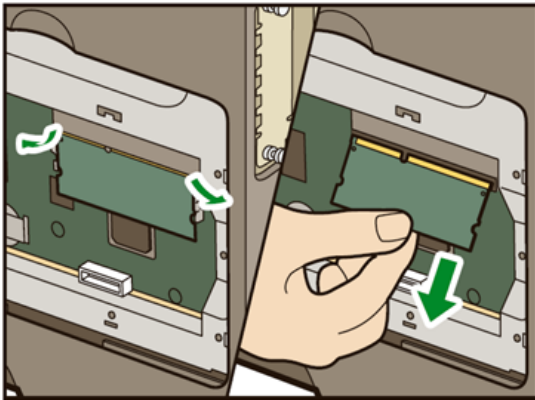
m158m0081

2. Loosen the screw by using a coin, and then slide the inner cover towards the front to remove it.



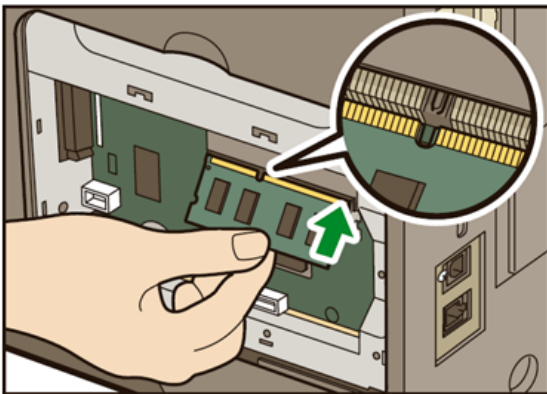
m158m0082

3. Push the levers on both ends of the slot outward, and then remove the default module.



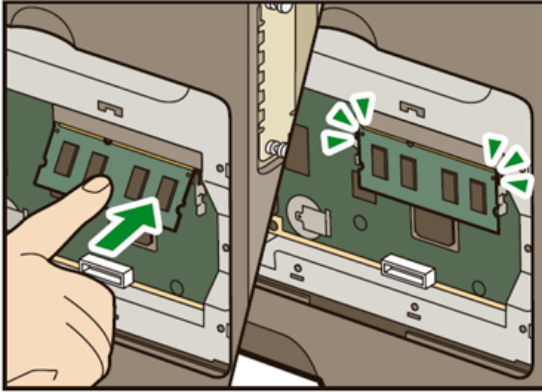
m158m0083

4. To install the recommended memory, align the notch of the recommended memory with the protruding part of the vacant slot, and then carefully insert the module at an angle.



m158m0084

5. Keeping the module at an angle, press it down until it clicks into place.

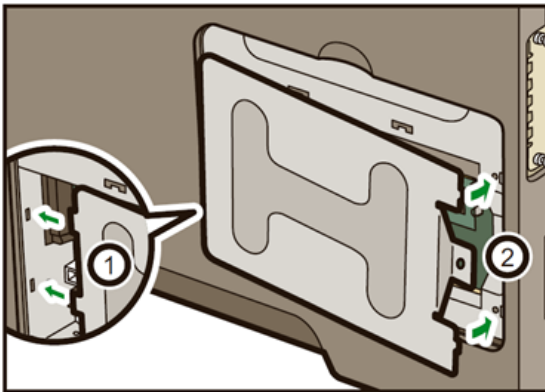


m158m0085

6. When also installing the hard disk, install it before returning the inner cover to the machine.

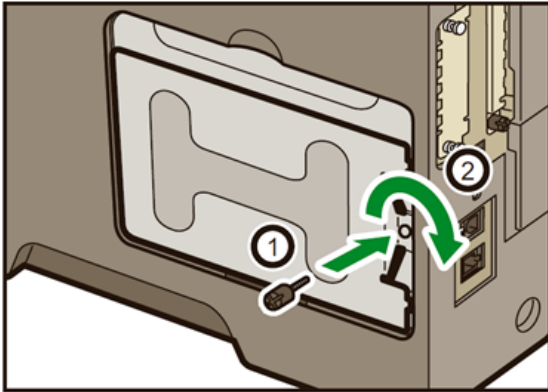
For instructions about installing the hard disk, see "page 59 "Hard Disk Drive Option Type P1"".

7. Insert the two left protrusions of the inner cover, and then insert the two right protrusions into the notches on the machine.



m158m0086

8. Tighten the screw.



m158m0087

9. Attach the memory cover.

10. Plug in the power cord, and then turn on the machine.

11. Print the configuration page to confirm the installation. (page 30 "Printing a Configuration Page")

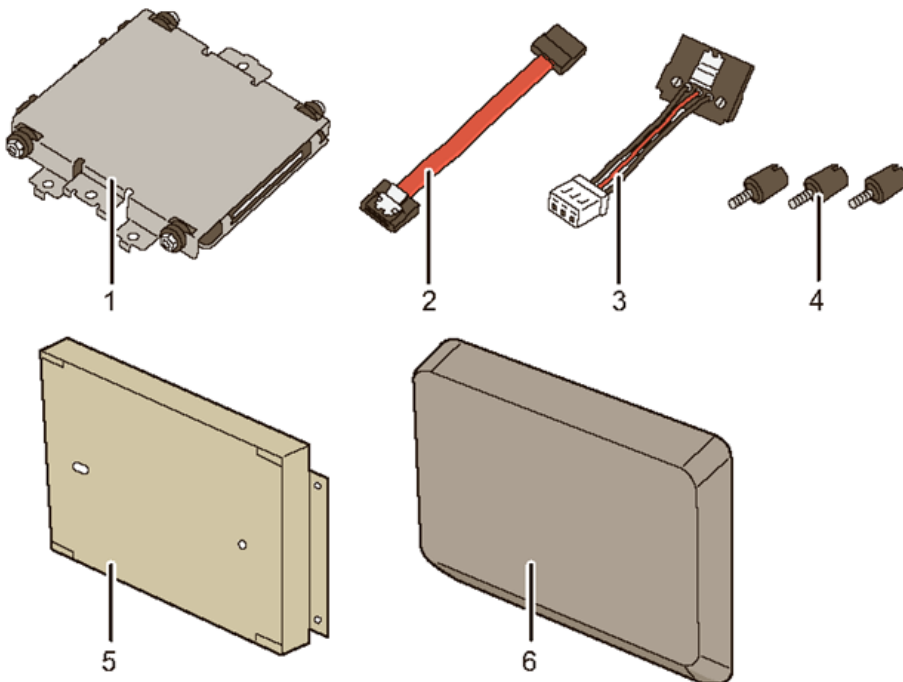
Note

- Confirm that the SDRAM module was correctly installed by printing the configuration page. Check that the total memory value is shown in "Total Memory" on the configuration page.

Hard Disk Drive Option Type P1

Component Check

No.	Description	Q'ty
1	Hard disk	1
2	CABLE:HDD:SATA:RED:102	1
3	CABLE:HDD:SATA:POWER_3P:70	1
4	KNOB SCREW:M3	2
5	Inner cover	1
6	Memory cover	1
-	RoHS Decal	1
-	LABEL:ROHS:DATE:40MM	1



m158m0065

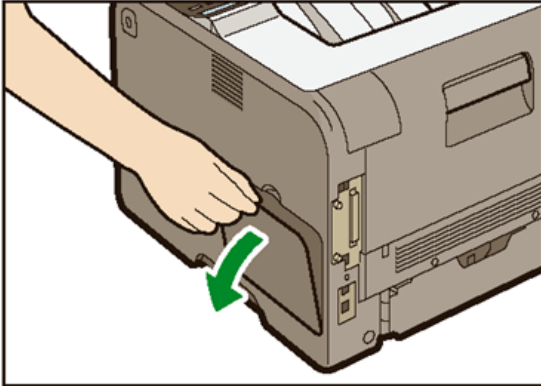
Installation Procedure

★ Important

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

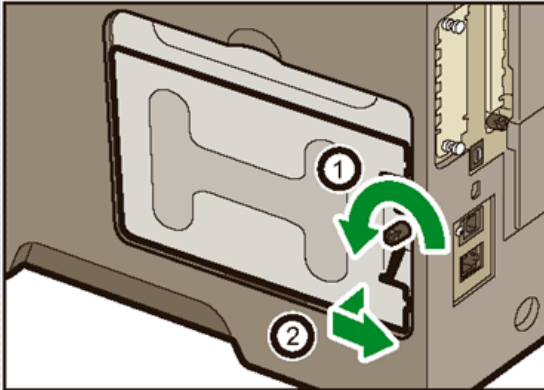
1. Remove the memory cover.

2



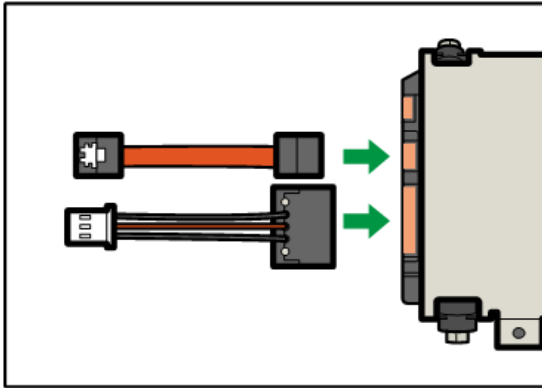
m158m0066

2. Loosen the screw by using a coin, and then remove the inner cover.



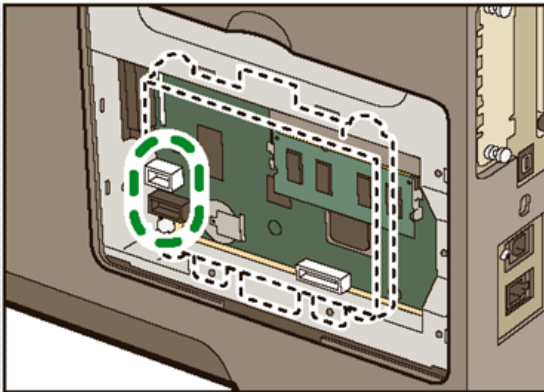
m158m0067

3. Connect the flat cable and power cord to the hard disk.



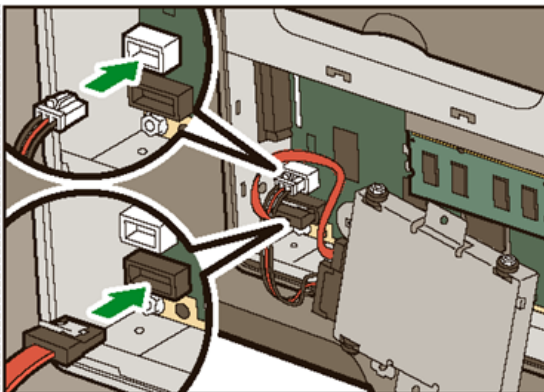
m1608018

4. Check the installation position of the hard disk.



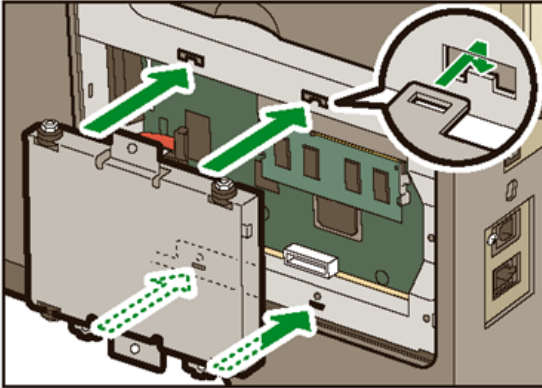
m158m0068

5. Connect the flat cable and power cord to the board of the machine.

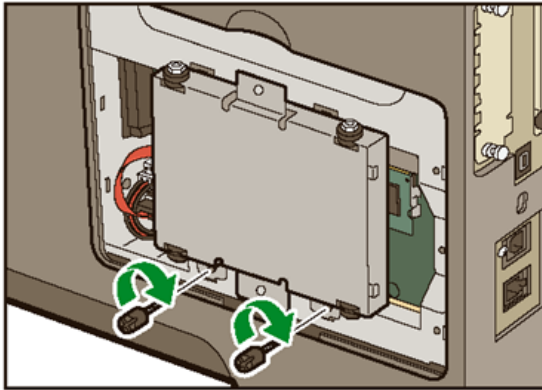


m158m0069

- Align the upper and lower protrusions on the hard disk into the notches on the printer, and then fasten the hard disk to the machine with the two screws.

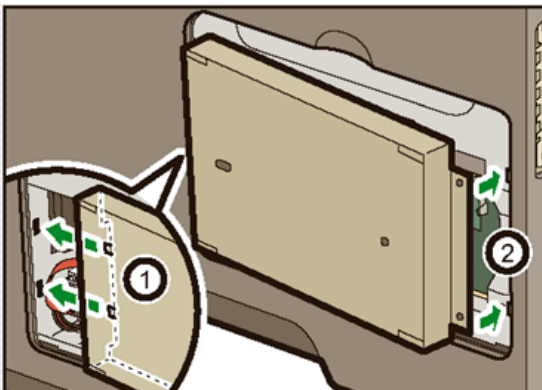


m158m0070



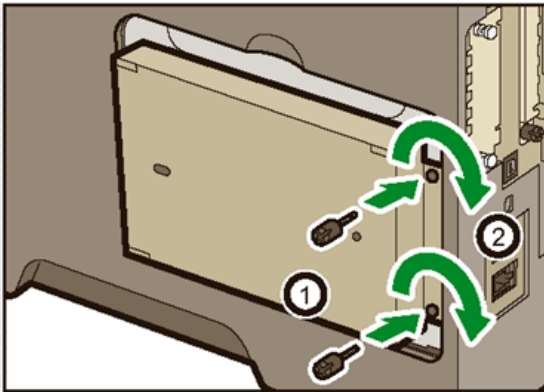
m158m0071

- Insert the two left protrusions of the supplied inner cover, and then the right protrusion, into the notches on the machine.



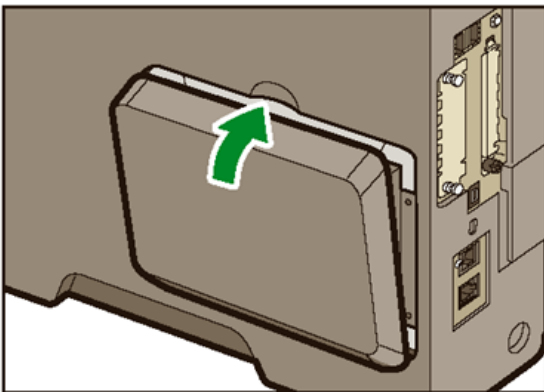
m158m0072

8. Tighten the two screws.



m158m0073

9. Attach the memory cover.



m158m0074

10. Plug in the power cord, and then turn on the machine.

11. Print the configuration page to confirm the installation. (page 30 "Printing a Configuration Page")

↓ Note

- Confirm that the hard disk was correctly installed by printing the configuration page. If it is correctly installed, "Hard Disk" will appear for "Device Connection" on the configuration page.

IEEE 1284 Interface Board Type A

Component Check

2

No.	Description	Q'ty
1	PCB Unit	1
2	SHEET:UL:PERMISSION	1
3	SHEET:FCCDOC:IEEE1284(TYPE_A)	1
4	RoHS Decal	1
5	RoHS Sheet	1
6	LABEL:ROHS:DATE:40MM	1
7	CAUTION CHART:INSTALLATION PROCEDURE: 14LANGUAGES	1

Installation Procedure

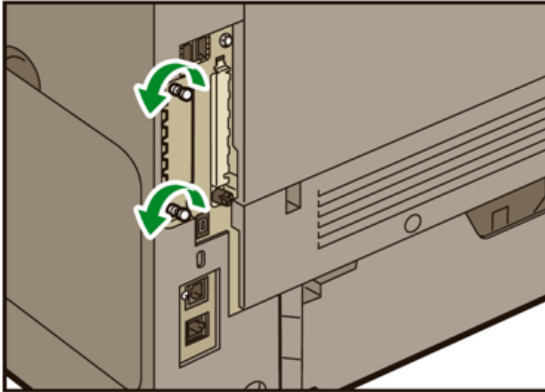
CAUTION

- Unplug the main machine power cord before you do the following procedure.
- Before beginning work, ground yourself by touching something metal to discharge any static electricity. Static electricity can damage the interface board.

You can only install one of the following network interfaces at a time: (IEEE 802.11 a/b/g/n (Wireless LAN), IEEE1284)

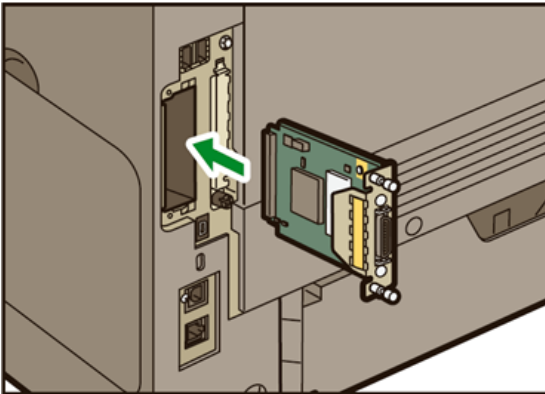
1. Loosen the two screws and remove the slot cover.

The removed cover will not be reused.



m158m0088

2. Fully insert the IEEE 1284 I/F board.



m158m0089

3. Tighten the two screws to secure the board.
4. Plug in the power cord, and then turn on the machine.
5. Print the configuration page to confirm that the board was attached correctly. (page 30 "Printing a Configuration Page")

Note

- Confirm that the IEEE 1284 I/F board was correctly installed by printing the configuration page. If it is correctly installed, "Parallel Interface" will appear for "Device Connection" on the configuration page.

IEEE802.11 Interface Unit Type O

Component Check

2

No.	Description	Q'ty
1	PCB Unit	1
2	SHEET:CEDOC:W-LAN	1
3	SHEET:CAUTION CHART:W-LAN:AUS:NZL	1
4	SHEET:CAUTION CHART:W-LAN:CAN	1
5	SHEET:CAUTION CHART:USERS:W-LAN	1
6	SHEET:CAUTION CHART:W-LAN:GB	1
7	INSTALLATION SUB PROCEDURE:WL:EU	1
8	SHEET:FCCDOC:W-LAN:R-CMN-851	1

Installation Procedure

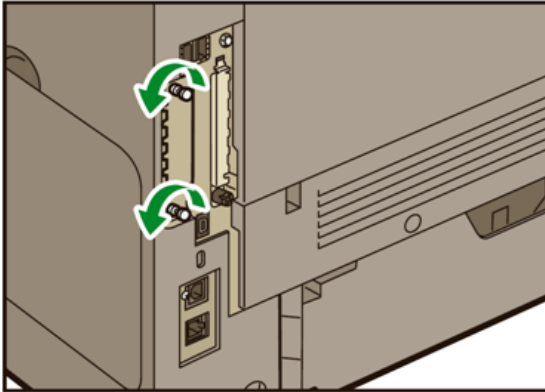
CAUTION

- Unplug the main machine power cord before you do the following procedure.
- Before beginning work, ground yourself by touching something metal to discharge any static electricity. Static electricity can damage the interface board.

You can only install one of the following network interfaces at a time: (IEEE 802.11 a/b/g/n (Wireless LAN), IEEE 1284)

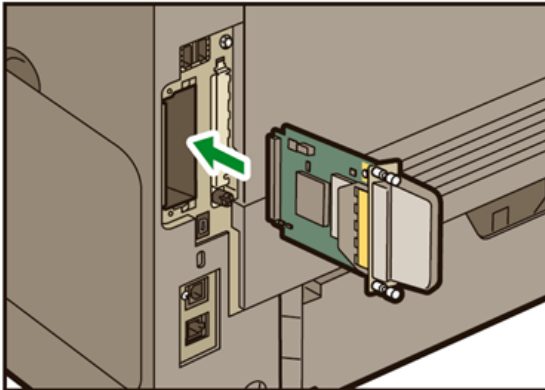
1. Loosen the two screws and remove the slot cover.

The removed cover will not be reused.



m158m0088

2. Fully insert the Wireless LAN board.



m158m0090

- 3. Tighten the two screws to secure the board.**
- 4. Plug in the power cord, and then turn on the machine.**
- 5. Print the configuration page to confirm that the board was attached correctly. (page 30 "Printing a Configuration Page")**

Note

- Confirm that the Wireless LAN board was correctly installed by printing the configuration page. If it is correctly installed, "Wireless LAN" will appear for
- "Device Connection" on the configuration page.
- You may have to move the machine if the reception is not clear.
- Make sure that the machine is not located near an appliance or any type of equipment that generates strong magnetic fields.
- Install the machine as close as possible to the access point.

UP Mode Settings for Wireless LAN

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

↓ Note

- You cannot use the wireless LAN if you use Ethernet.

1. Press the [User Tools] key.
2. On the touch panel, press [System Settings].

↓ Note

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

3. Select [Interface Settings].
4. Press "Wireless LAN". Only the wireless LAN options show.
5. Press "Communication Mode". Select either "802.11 Ad-Hoc Mode", or "Infrastructure Mode".
6. Press "SSID Setting". Enter the SSID setting. (The setting is case sensitive.)
7. Press "Ad-HocChannel". You need this setting when Ad Hoc Mode is selected.

Region A (mainly Europe and Asia)

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

In some countries, only the following channels are available:

Range: 1-11 channels (default: 11)

Region B (mainly North America)

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

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

- The "WEP" (Wired Equivalent Privacy) setting is designed to protect wireless data transmission. The same WEP key is required on the receiving side 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 "Communication Mode" is set to "Infrastructure Mode". Set 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.

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

You can check the status only if [Communication Mode] is set to [Infrastructure Mode].

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

2

SP Mode and UP Mode Settings for IEEE 802.11 a/b/g/n, Wireless LAN

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

SP No.	Name	Function
5840-006	Channel MAX	Sets the maximum range of the channel settings for the country.
5840-007	Channel MIN	Sets the minimum range of the channels settings allowed for your country.
5840-011	WEP Key Select	Used to select the WEP key (Default: 00).
UP mode	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.

Settings for @Remote Service

Note

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

2

Check points before making @Remote settings

1. The setting of SP5816-201 in the mainframe must be "0".
2. Print the SMC with SP5-990-002 and then check if a device ID2 (SP5811-003) must be correctly programmed.
 - 6 spaces must be put between the 3-digit prefix and the following 8-digit number (e.g. xxx____xxx).
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. Input the Request number which you have obtained from @Remote Center GUI, and then enter [OK] with SP5816-202.
3. Confirm the Request number, and then click [EXECUTE] with SP5816-203.
4. Check the confirmation result with SP5816-204.

Value	Meaning	Solution/ Workaround
0	Succeeded	-
3	Communication error (proxy enabled)	Check the network condition.

Value	Meaning	Solution/ Workaround
4	Communication error (proxy disabled)	Check the network condition.
5	Proxy error (Illegal user name or password)	Check Proxy user name and password.
6	Communication error	Check the network condition.
8	Other error	See "SP5816-208 Error Codes" below this.
9	Request number confirmation executing	Processing... Please wait.
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. Make sure that the screen displays the Location Information with SP5816-205 only when it has been input at the Center GUI.
6. Click [EXECUTE] to execute the registration with SP5816-206.
7. Check the registration result with SP5816-207.

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

Value	Meaning	Solution/ Workaround
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	-1200 2	Inquiry, registration attempted without acquiring Request No.	Obtain a Request Number before attempting the Inquiry or Registration.
	-1200 3	Attempted registration without execution of a confirmation and no previous registration.	Perform Confirmation before attempting the Registration.
	-1200 4	Attempted setting with illegal entries for certification and ID2.	Check ID2 of the mainframe.
	-1200 5	@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".
	-1200 6	A confirmation request was made after the confirmation had been already completed.	Execute registration.

Cause	Code	Meaning	Solution/ Workaround
	-1200 7	The request number used at registration was different from the one used at confirmation.	Check Request No.
	-1200 8	Update certification failed because mainframe was in use.	Check the mainframe condition. If the mainframe is in use, try again later.
	-1200 9	The ID2 in the NVRAM does not match the ID2 in the individual certification.	Check ID2 of the mainframe.
	-1201 0	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 mainframe.
-2398	Incorrect request number format	Check the Request No.	

3. Preventive Maintenance

Preventive Maintenance Tables

See "Appendices" for the following information:

- Preventive Maintenance Items

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	$\pm 0.75\%$ or less	Not applicable to the back of the paper when performing duplex printing.
Perpendicularity	$\pm 0.7\text{mm}/100\text{mm}$	
Linearity	$\pm 0.25\text{mm}/100\text{mm}$	
Parallelism	In an office environment: $\pm 1.0\text{mm}$ or less In other environments: $\pm 1.5\text{mm}$ 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	<p>Single Side: Main Scan: 0 ± 2.0 mm Sub Scan: 0 ± 1.5 mm</p> <p>Back of the paper when performing duplex printing: Main Scan: 0 ± 2.0 mm Sub Scan: 0 ± 1.5 mm</p>	
Skew	<p>Single Side: ± 1.2 mm/200 mm or less (B5 SEF or more) ± 1.0 mm/100 mm or less (Less than B5 SEF)</p> <p>Duplex: ± 1.0 mm/100 mm or less (B5 SEF or more) ± 1.5 mm/100 mm or less (Less than B5 SEF)</p>	Not applicable to paper fed from the by-pass tray (Reference value when using the by-pass 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

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

Characteristics of the Push Switch (DC Switch)

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

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

So, when performing maintenance work such as replacing parts, in addition to turning off the main power with the push switch, always unplug the AC power cord.

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. Thus, the charge remaining in the machine is released, and it is possible to remove boards.

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

In order to remove the residual charge, push the main power switch 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, 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

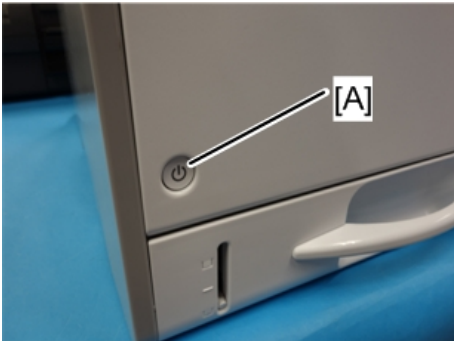
- Automatic restart deals with cases when you accidentally unplugged the AC power cord or unexpected power outages. By keeping the power flag ON, after the resumption of power, the machine will start up automatically.

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.

4

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 the shutdown is complete

Main power LED: Off

Operation panel LED: Off

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

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.

In general, do not use the forced shutdown.

Important

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

Special Tools

Part Number	Description	Q'ty
B6455010	SD Card 128MB	1
B6455020	SD Card 1GB	1

Note

- A PC (Personal Computer) 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.

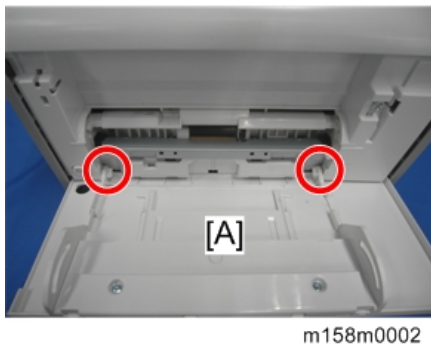
Exterior Covers

Front Cover

1. Paper Feed Tray (page 130 "Paper Feed Tray")
2. Open the by-pass tray [A].
3. Release four hinges indicated below to detach the paper guide plate [B].



4. (☞ x 2) on the by-pass tray [A].



5. Release both the end hinges of the by-pass tray [A] to detach it.



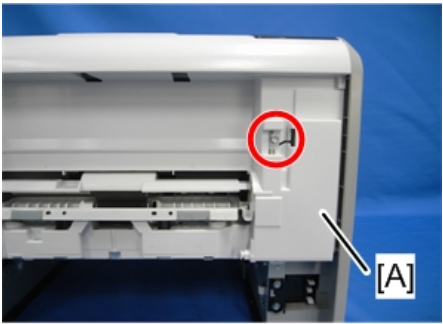
m158m0003

4

Note

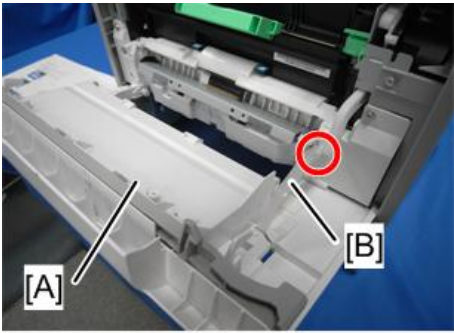
- To remove the by-pass tray, lift the left hinge first to release while raising the by-pass tray upwards.
- The left hinge is C-cut.

6. (⚙️ x 1) on the front cover [A] in order to remove the strap that ties the front cover to the machine.



m158m0004

7. Open the front cover [A] and release the strap [B] (⚙️ x 1).

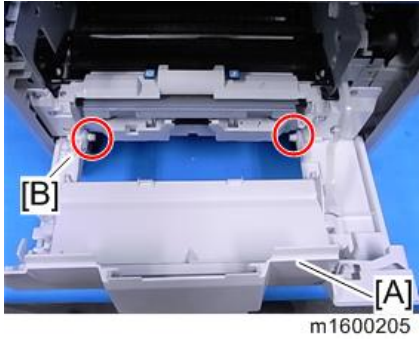


m158m0005

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

↓ Note

- Release the left hinge [B] first to detach the front cover.

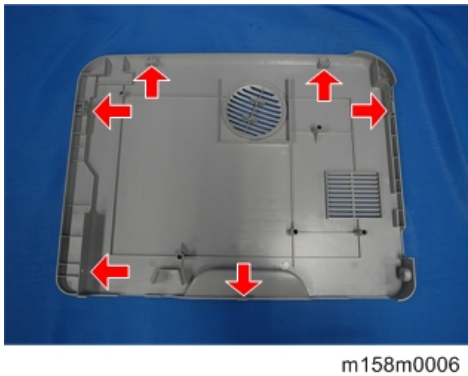


4

Left Cover

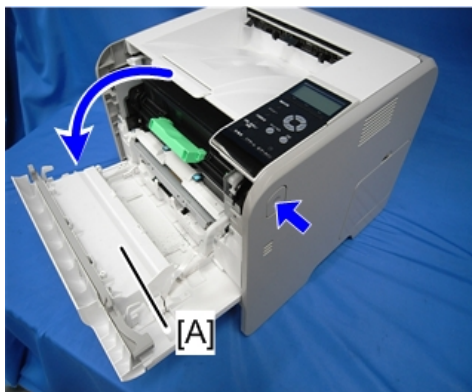
↓ Note

- There are 6 tabs on the back of the left cover. Refer to the picture below.



1. Paper Feed Tray (page 130 "Paper Feed Tray")

2. Press the release button and open the front cover [A].



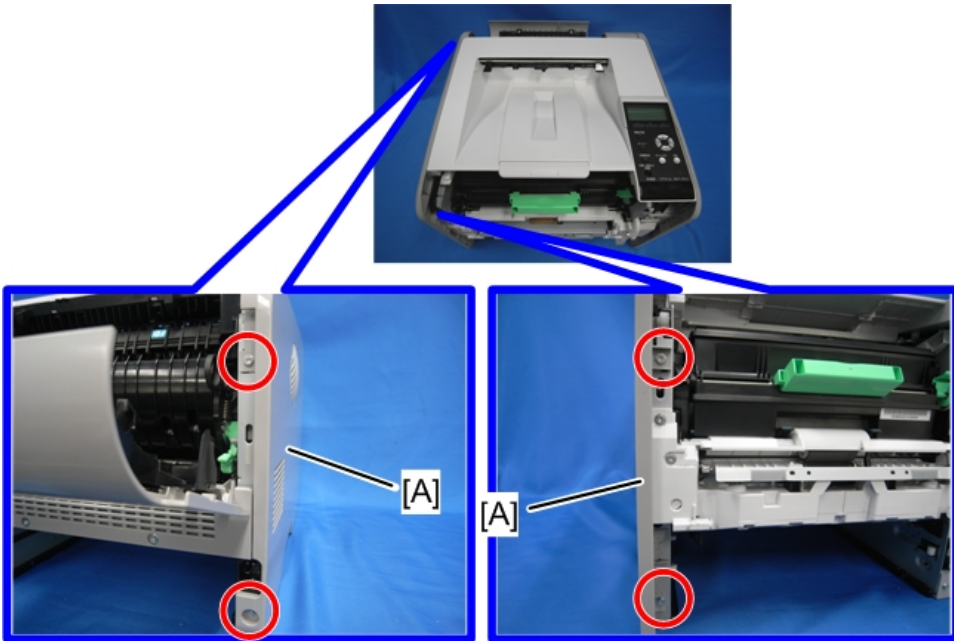
M158m0091

3. Open the rear cover [A].



m158m0011

4. Left Cover [A] (Screw x 4, Hook x 6)

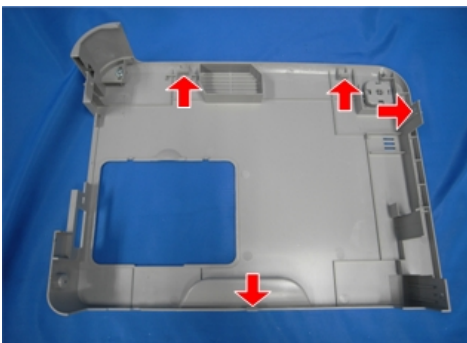


m158m0007

Right Cover / Right Rear Cover

⬇ Note

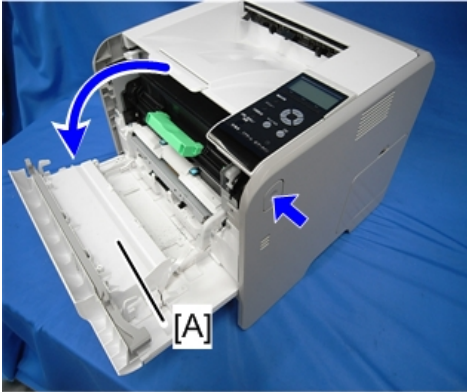
- There are 4 tabs on the back of the right cover. Refer to the picture below.



m158m0008

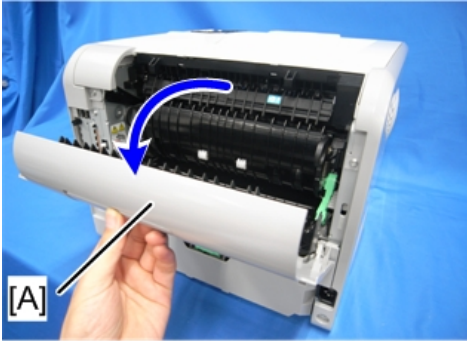
1. Paper Feed Tray (page 130 "Paper Feed Tray")

2. Press the release button and open the front cover [A].



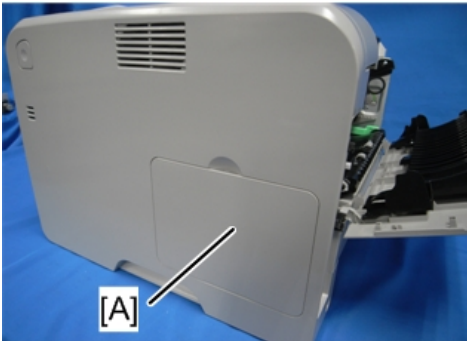
M158m0091

3. Open the rear cover [A].



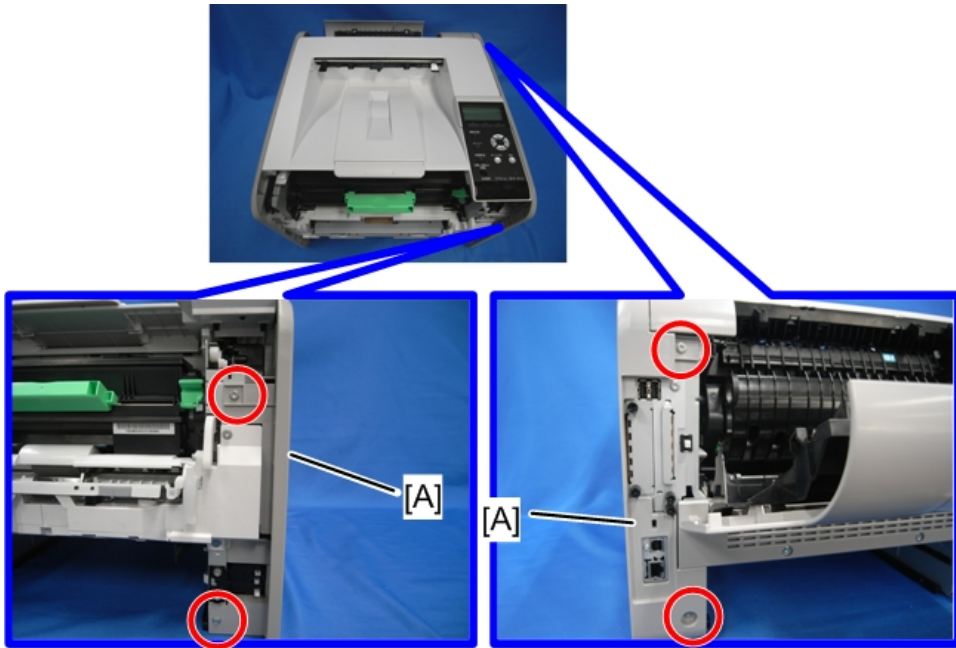
m158m0011

4. Memory cover [A]



m158m0092

5. Right Cover [A] (⚙️ x 4, Hook x 4)



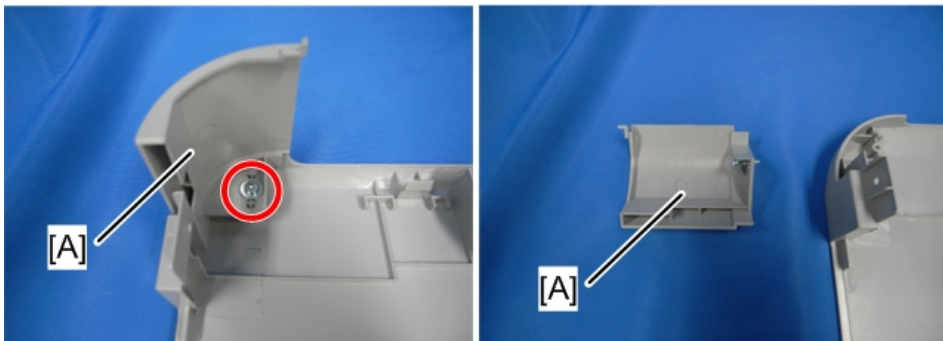
m158m0009

4

For M158

The M158 model is equipped with a right rear cover [A]. Remove this cover after removing the right cover.

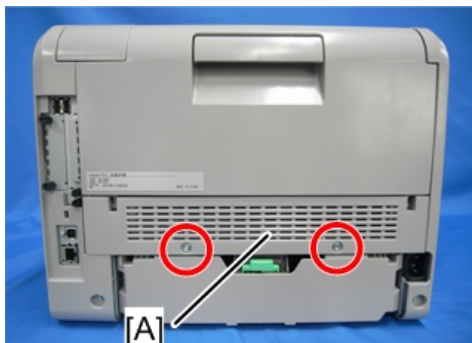
1. Right Rear Cover [A] (⚙️ x 1 with a washer)



m158m0013

Rear Cover / Rear Lower Cover

1. Two screws on Rear Lower Cover [A] (🔩 x 2)



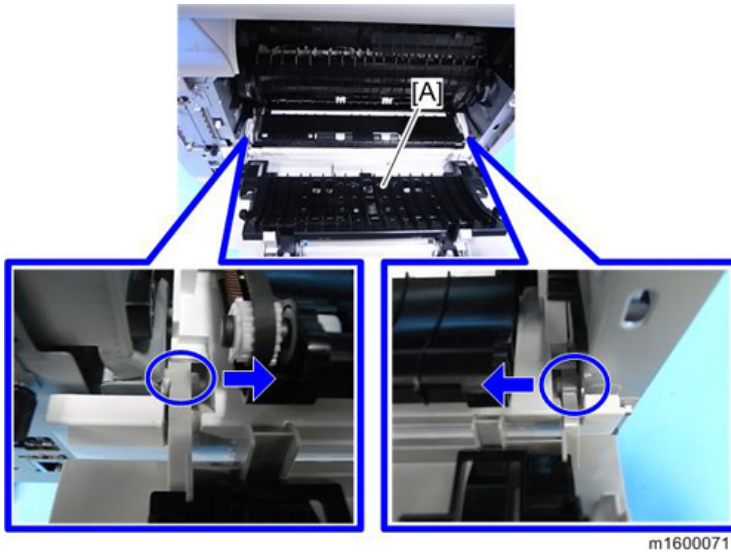
m158m0012

2. Open the rear cover [A].



m158m0011

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



4. Rear Lower Cover [A]

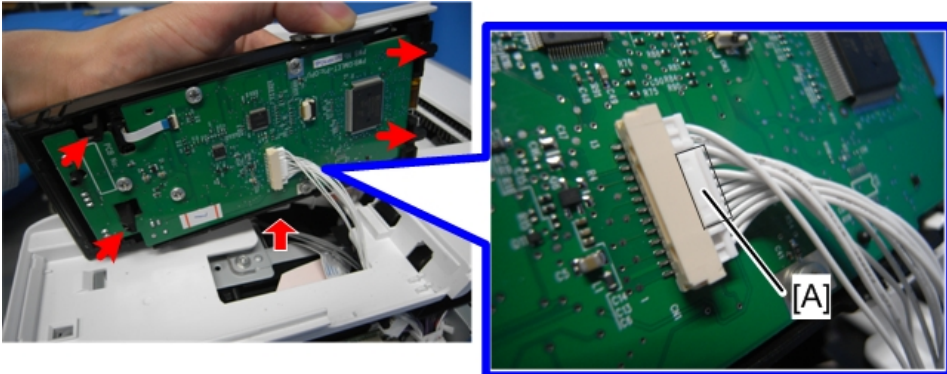


Operation Panel (M158)

1. Right Cover (page 87 "Right Cover / Right Rear Cover")
2. Operation Panel (hook x 4,  x 1)

↓ Note

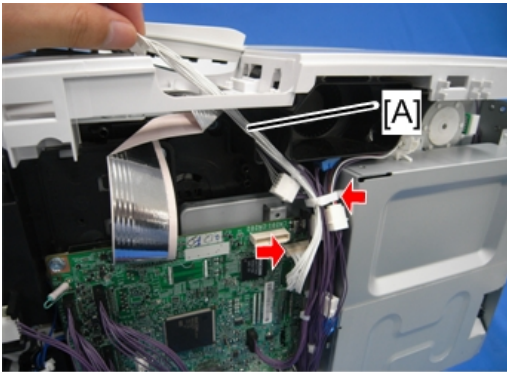
- The connector is a locking type. Pull it out while pressing the part indicated by [A].



m158m0015

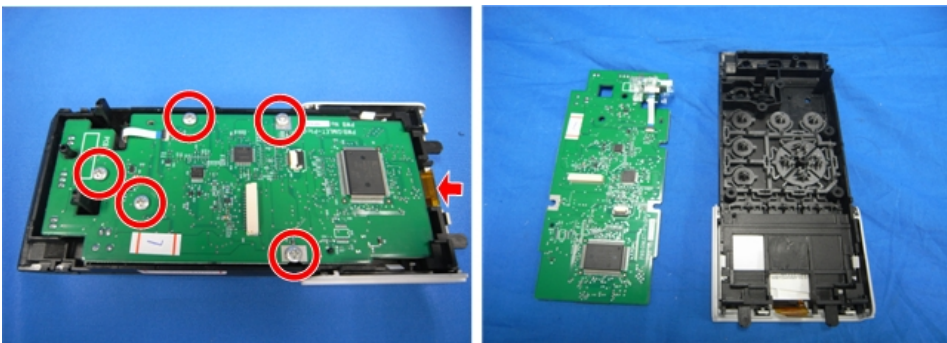
4

3. Harness for Operation Panel [A] (🔧 x 1, 📦 x 1)



m158m0016

4. OPU Board (🔧 x5, 📦 x1)

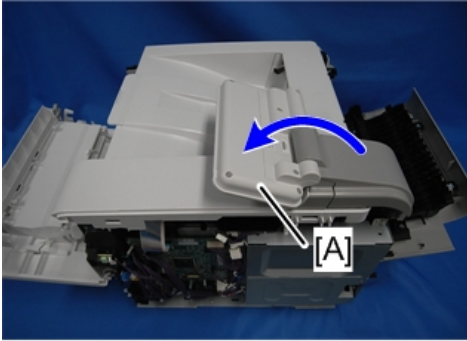


m158m0018

Operation Panel/ Media Slot Board (M159)

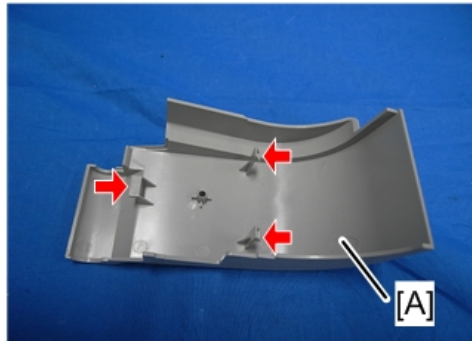
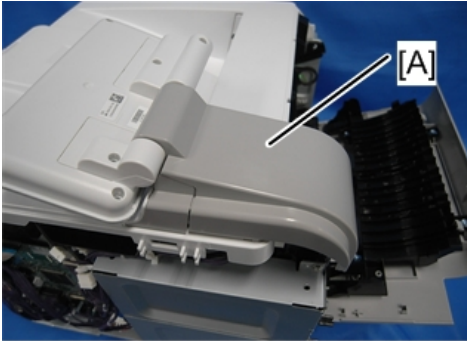
1. Right Cover (page 87 "Right Cover / Right Rear Cover")

2. Tilt the operation panel [A] to the front.



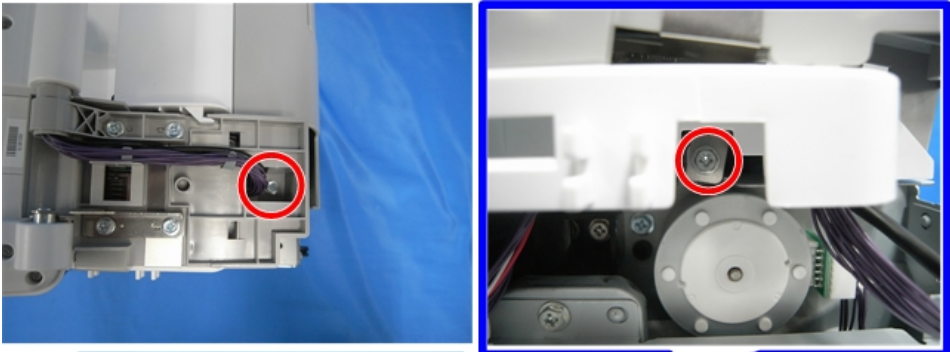
m158m2001

3. Operation Panel Upper Cover [A] (Hook x 3)

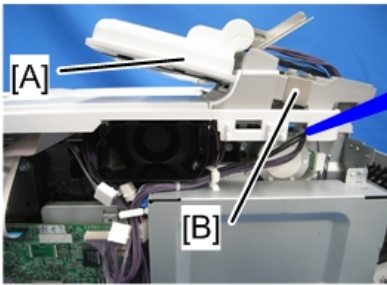


m158m2002

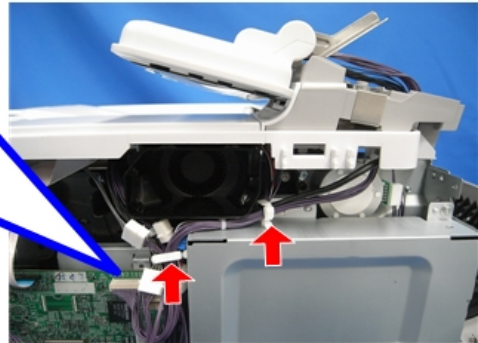
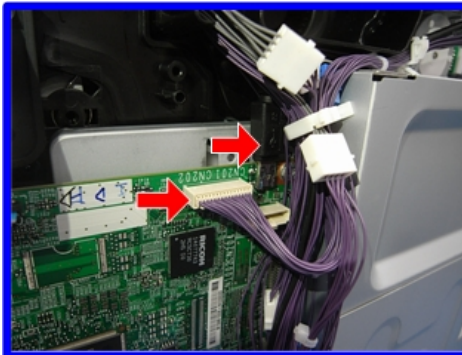
4. Media Slot Cover [B] with Operation Panel [A] (🔧 x 2, 📁 x 2, 🖨️ x 2)



4



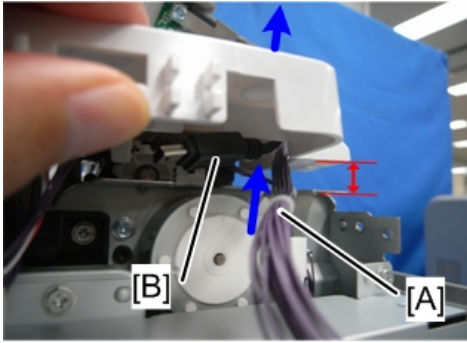
m158m2003



m158m2004

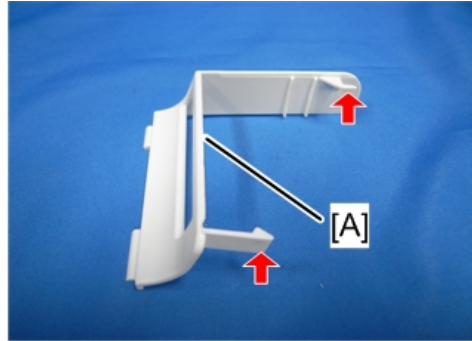
↓ Note

- Remove the operation panel harness [A] and [B] while lifting the upper cover.



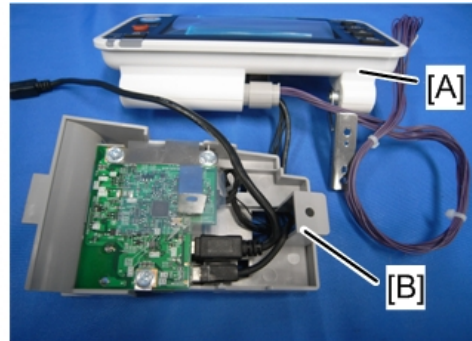
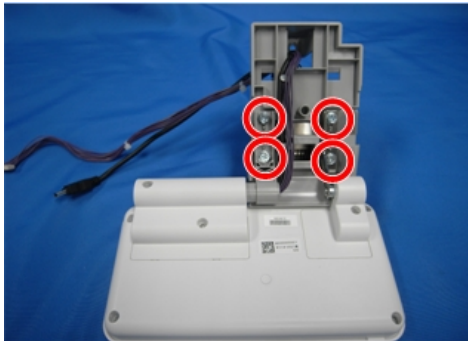
m158m2005

5. Operation Panel Lower Cover [A] (Hook x 2)



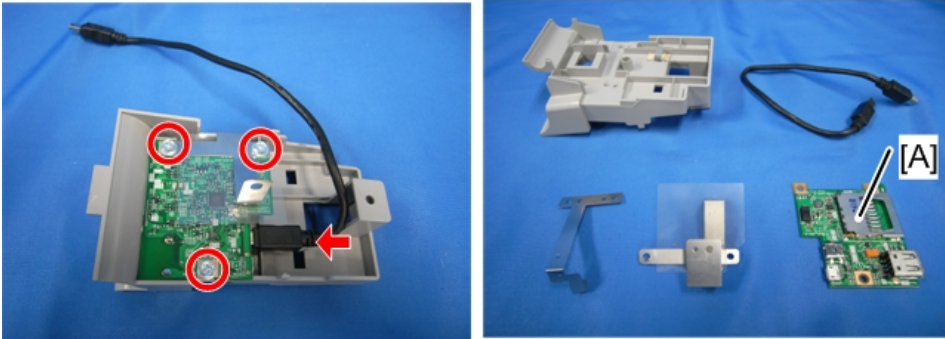
m158m2006

6. Remove the Operation Panel [A] from the Media Slot Cover [B] (⚙ x 4).



m158m2007

7. Media Slot Board [A] (🔧 x3, 📁 x1)

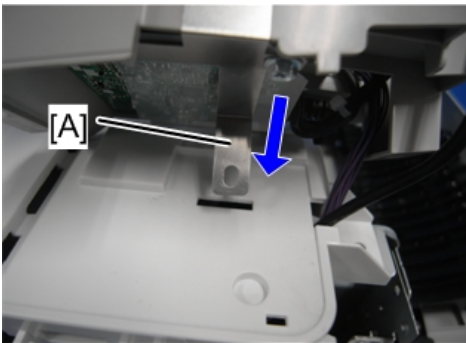


m158m2008

4

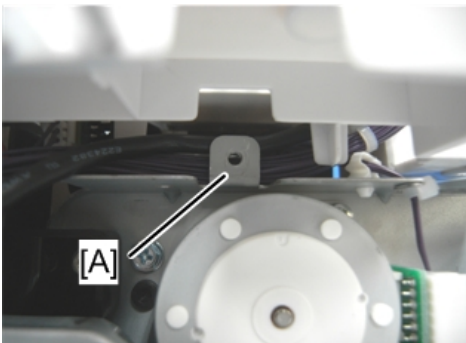
Reinstallation

- Be sure to insert the operation panel's ground plate [A] into the slit in the upper cover.



m158m2010

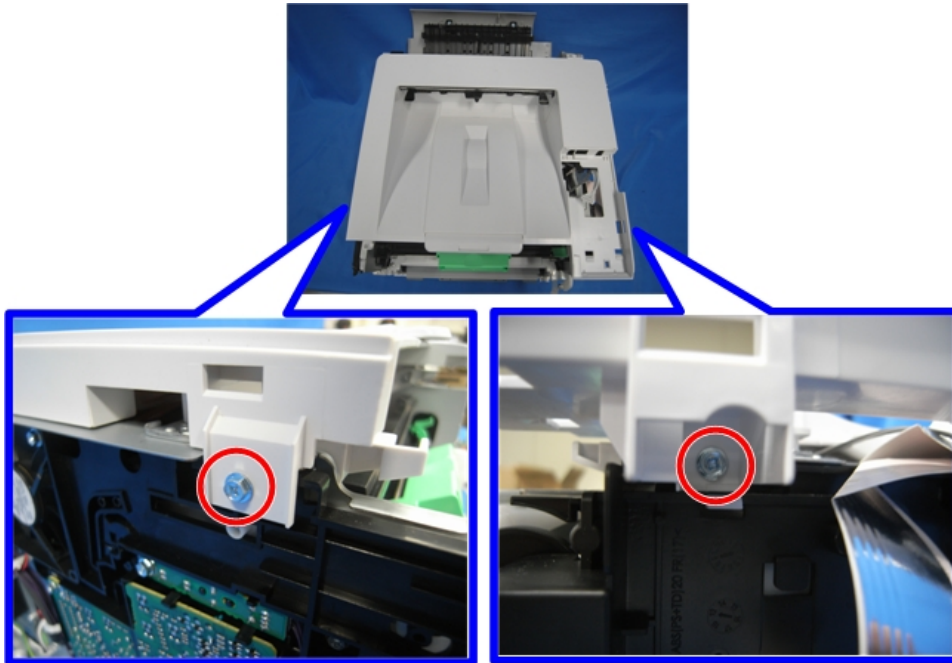
- Be sure to stow the operation panel harness neatly so that it does not protrude from the screw hole frame [A].



m158m2011

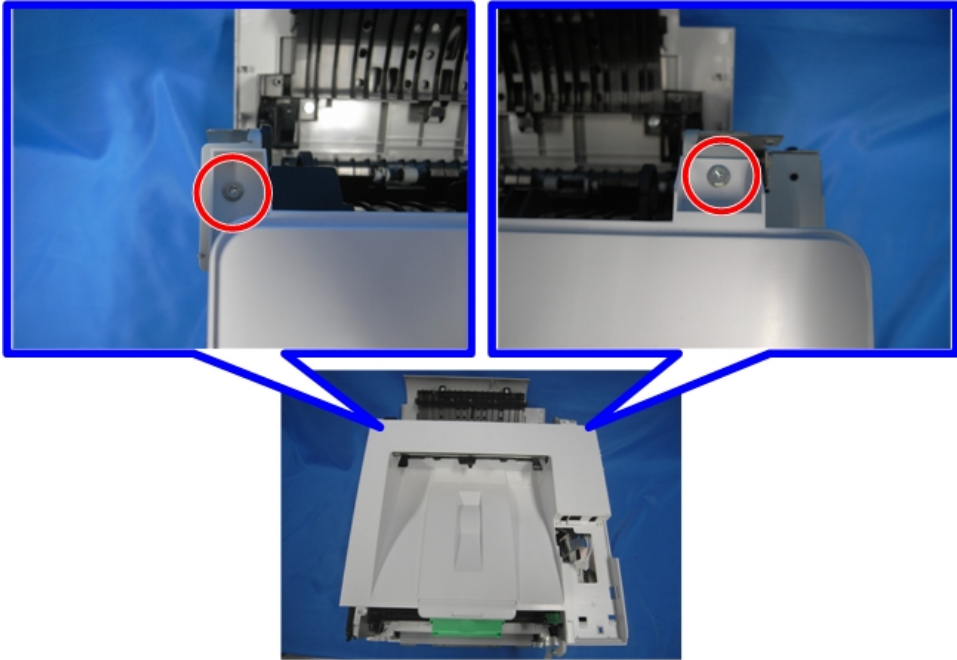
Upper Cover (M158)

1. Left Cover (page 85 "Left Cover")
2. Right Cover (page 87 "Right Cover / Right Rear Cover")
3. Operation Panel (page 91 "Operation Panel (M158)")
4. Remove the screws at the front side (🔩 x 2).



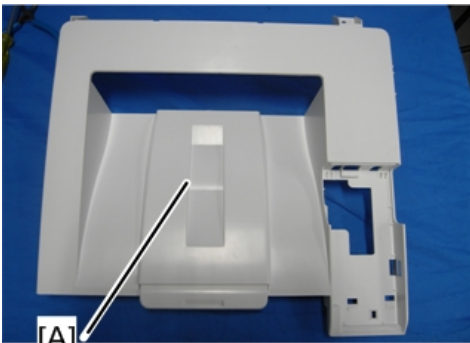
m158m0020

5. Remove the screws at the rear side (⌀ x 2).



m158m0019

6. Upper Cover [A]

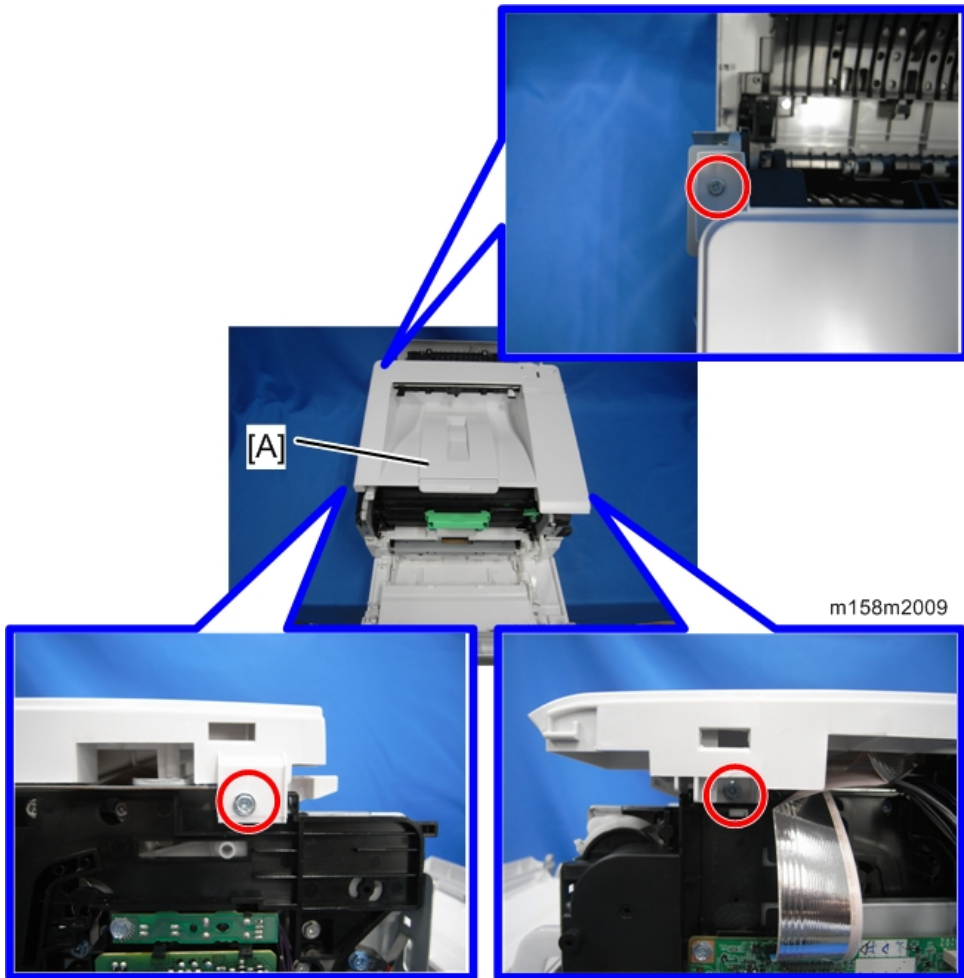


m158m0021

Upper Cover (M159)

1. Right Cover (page 87 "Right Cover / Right Rear Cover")
2. Left Cover (page 85 "Left Cover")
3. Operation Panel and Media Slot Cover (page 92 "Operation Panel/ Media Slot Board (M159)")

4. Upper Cover [A] (⚙ x 3)



LED Optics

⚠ CAUTION

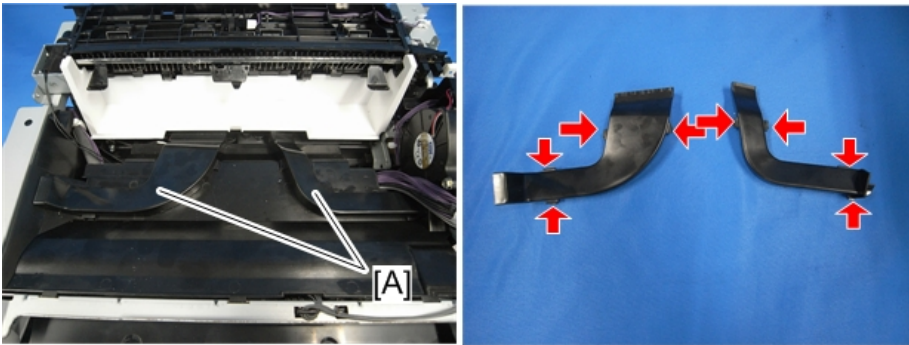
- Turn off the main power switch and disconnect the power cord before you start any of the procedures in this section. (page 79 "General Cautions")

LED Unit

★ Important

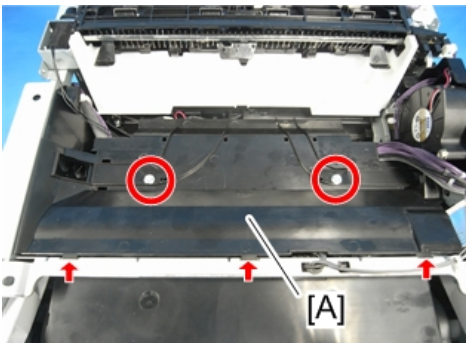
- Be sure to clean the lens of the LED head after replacing the LED unit or if you inadvertently touch the lens when replacing another unit.

1. PCDU (page 107 "PCDU")
2. Upper Cover (page 97 "Upper Cover (M158)", page 98 "Upper Cover (M159)")
3. Duct [A] (Hook x 8)



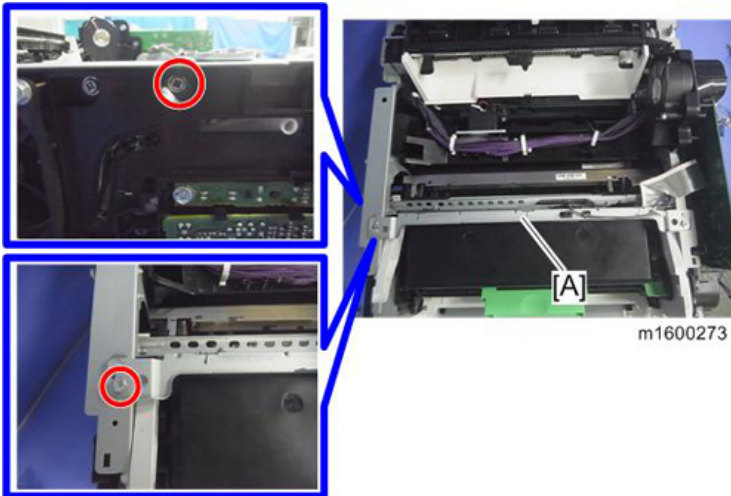
m158m0041

4. Upper Inner Cover [A] (⚙ x 2, Hook x 3)

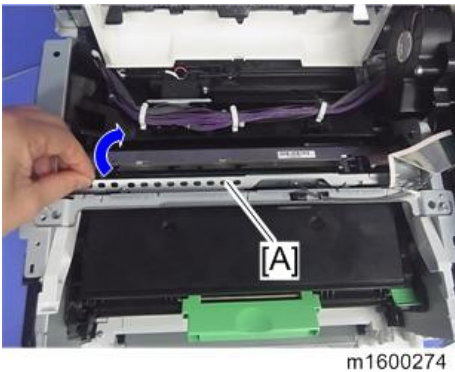


m158m0042

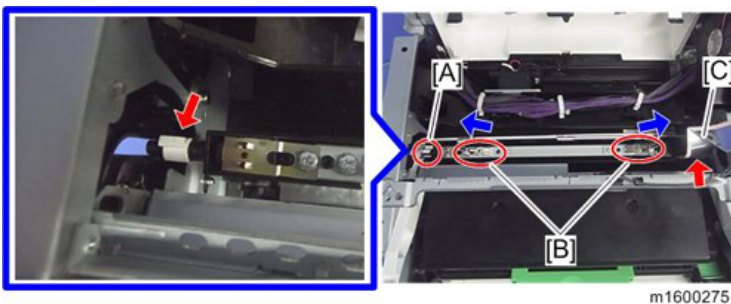
5. Remove the securing screws of the front stay [A] ($\phi 2$ x 2).



6. Rotate the LED unit [A] in the direction of the arrow until it locks.

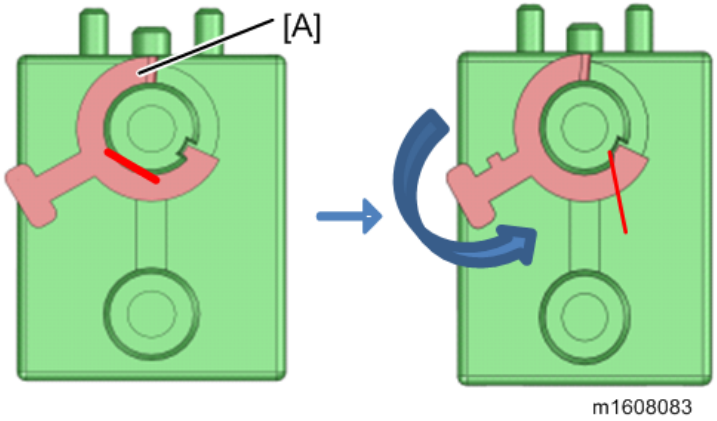


7. Remove the spacer [A], ground wire [B], and flat cable [C] from the LED unit.



Note

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



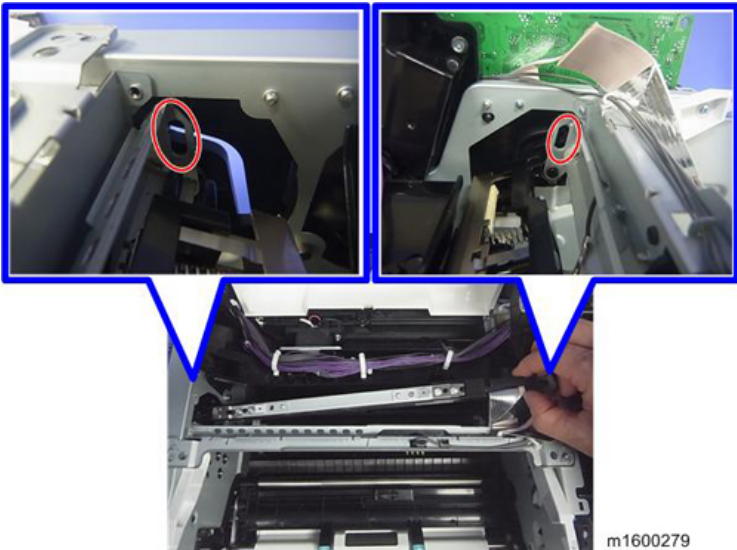
4

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

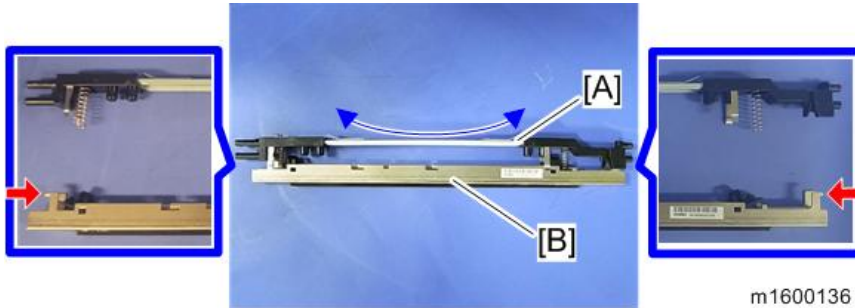


Note

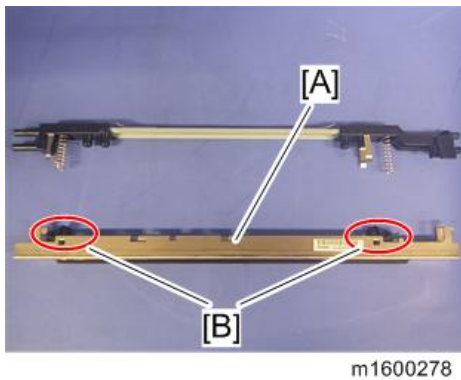
- When you attach the LED unit, engage the LED unit's shaft ends (on the upper part) with the holes in the LED unit holder. Be careful not to force the LED unit in. Doing so may cause the LED unit holder's springs to come off.



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

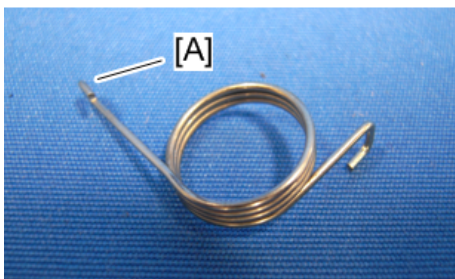


10. Remove the two spring holders [B] from the LED head [A].

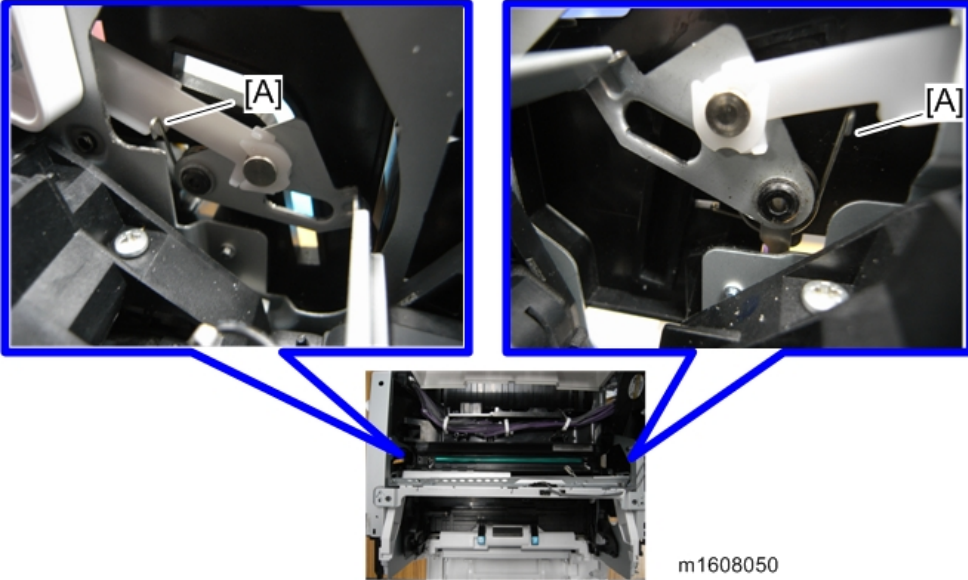


How to Re-engage Disengaged Springs

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

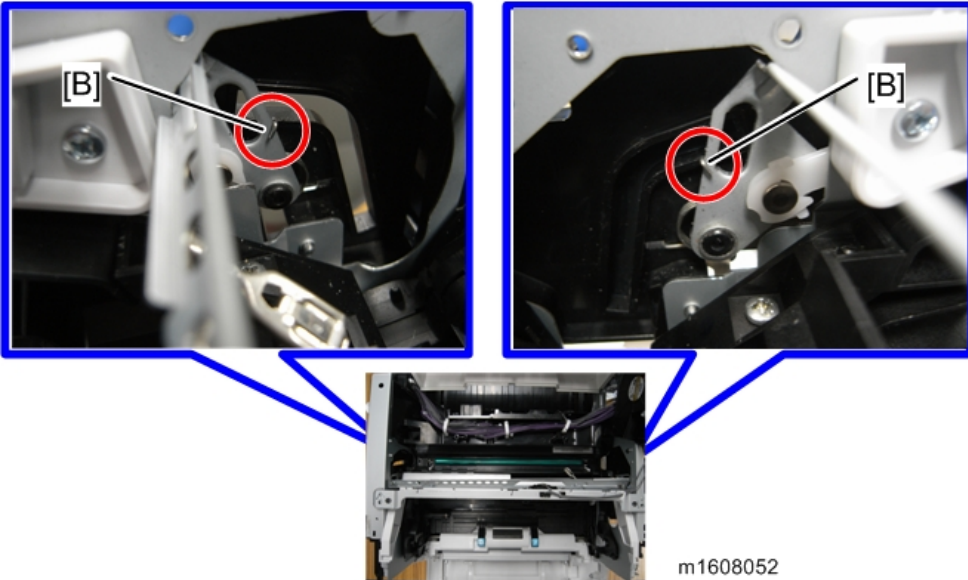


Hook disengaged [A]



4

Hook correctly engaged [B]



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

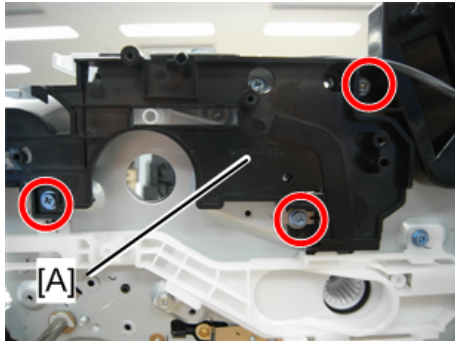
Right side

1. Remove the right cover, and then remove the gear unit. (page 115 "Gear Unit")

2. Loosen the screws on the cover [A] (⌀x3).

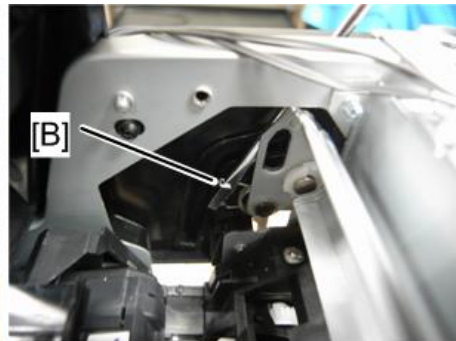
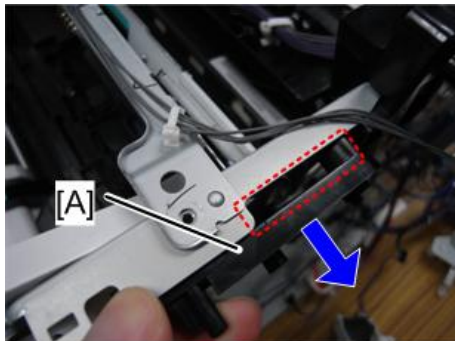
↓ Note

- Be sure to loosen the screws holding the cover [A] just enough to insert tweezers or a screwdriver into the gap. Do not actually remove the screws.

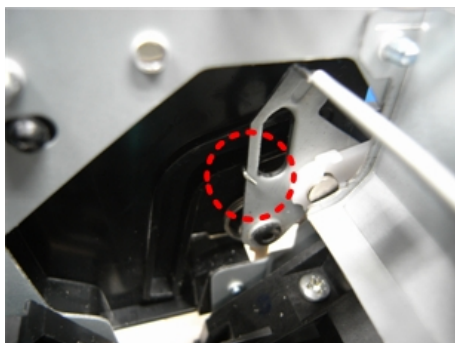


m1608055

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.



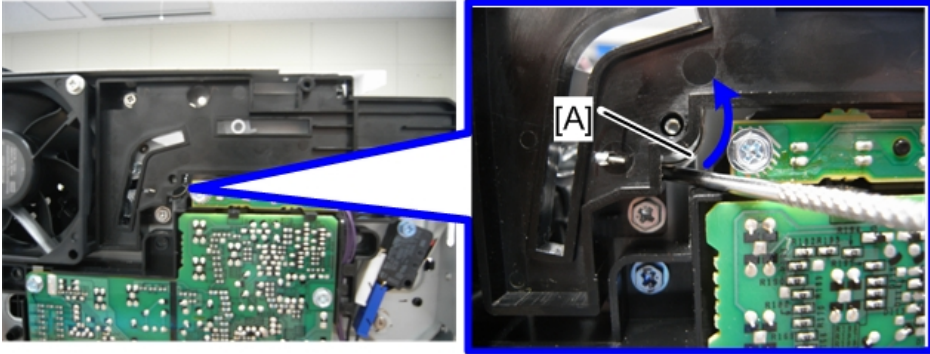
m1608056



m1608057

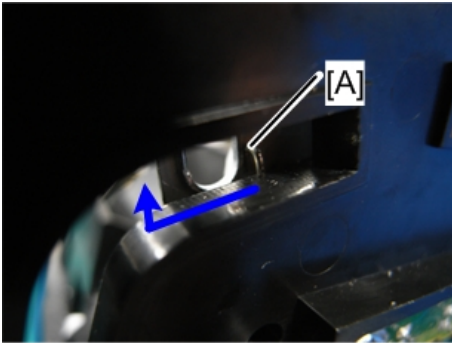
Left side

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].

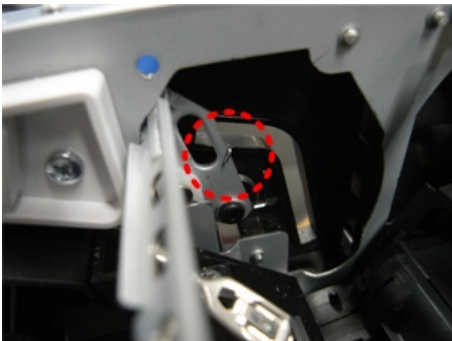


m1608053

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

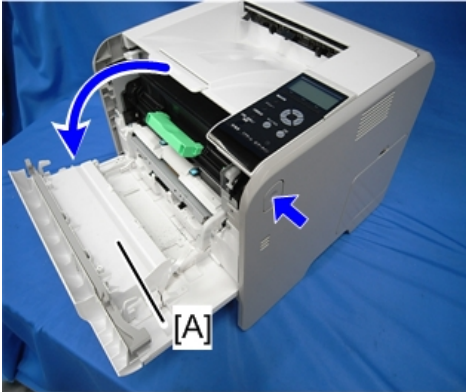


m1608058

PCDU

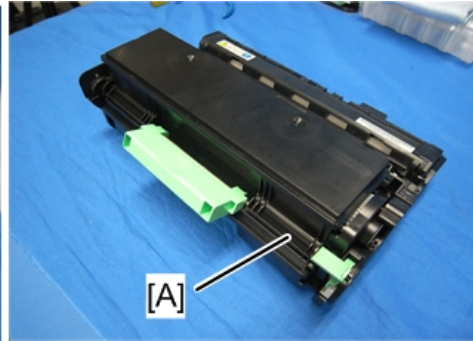
PCDU

1. Press the release button and open the front cover [A].



M158m0091

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

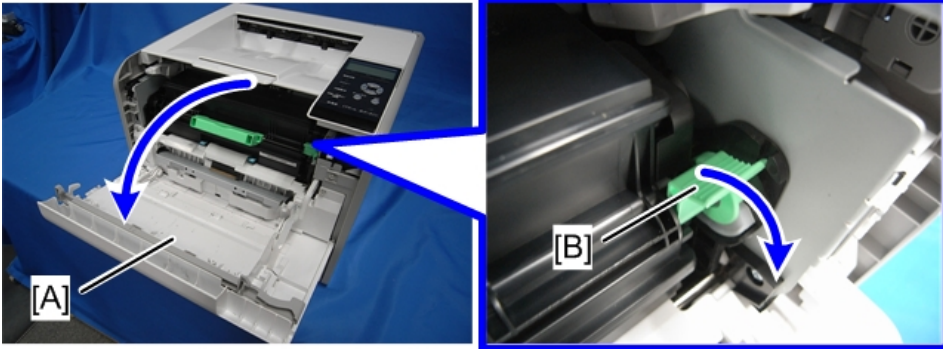


m158m0023

Toner Cartridge

Toner Cartridge

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



m158m0024

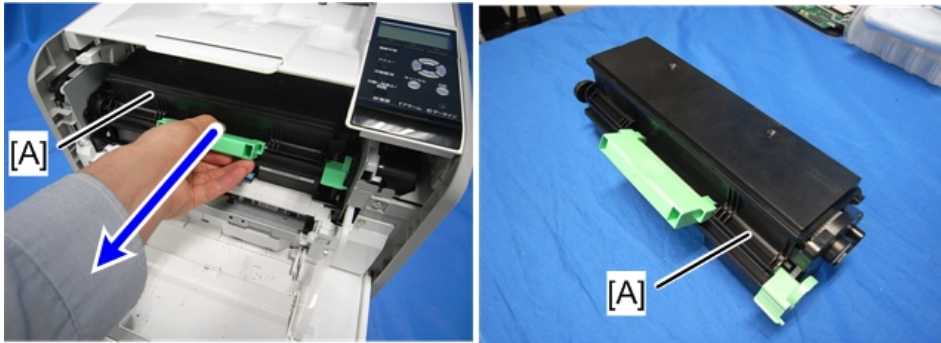
Note

- 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.

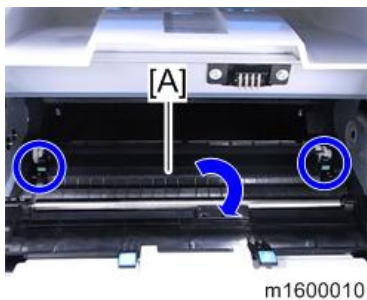


m158m0025

Image Transfer

Image Transfer Roller

1. PCDU (page 107 "PCDU")
2. Pinch both green ends of the guide [A] and pull it towards you.



3. Image Transfer Roller [A]



Drive Unit

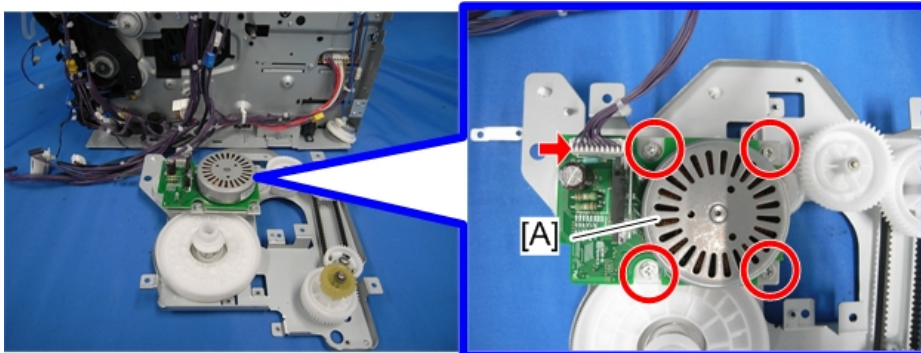
⚠ CAUTION

- Turn off the main power switch and disconnect the power cord before you start any of the procedures in this section. (page 79 "General Cautions")

Main Motor

The main motor is located behind the drive unit.

1. BCU (page 149 "BCU")
2. Duplex Clutch (page 117 "Duplex Clutch")
3. Drive Unit (page 114 "Drive Unit")
4. Main Motor [A] (⚙ x 4, ⚙ x 1)

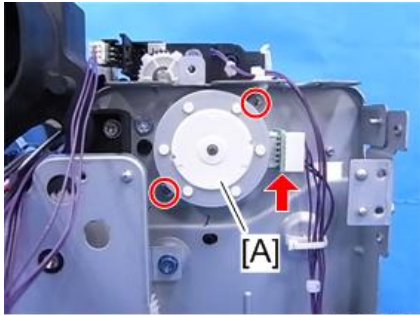


m158m0048

Duplex Exit Motor

1. Upper Cover (page 97 "Upper Cover (M158)", page 98 "Upper Cover (M159)")

- 2. Duplex Exit Motor [A] (⚙️ x 2, 📄 x 1, 🖨️ x 1)

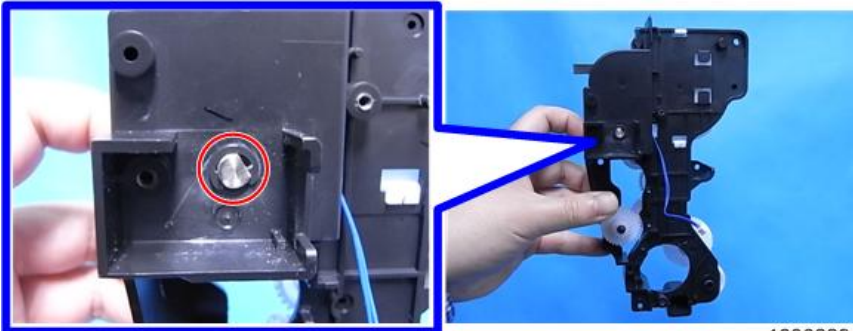


m1600226

4

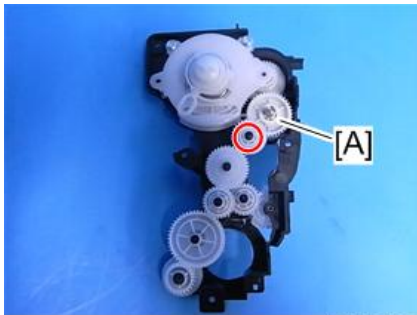
Toner Supply Clutch

- 1. BCU (page 149 "BCU")
- 2. Duplex Clutch (page 117 "Duplex Clutch")
- 3. Drive Unit (page 114 "Drive Unit")
- 4. Gear Unit (page 115 "Gear Unit")
- 5. Temp Humid Sensor (page 159 "Temp Humid Sensor")
- 6. Ⓢ x 1



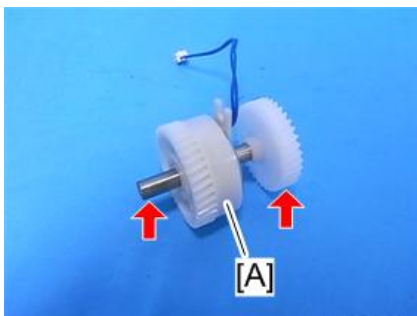
m1600229

7. Toner Supply Clutch [A] with shaft (Gear x 1)



m1600230

8. All things attached to the toner supply clutch [A] (Gear x 1, Shaft x 1).

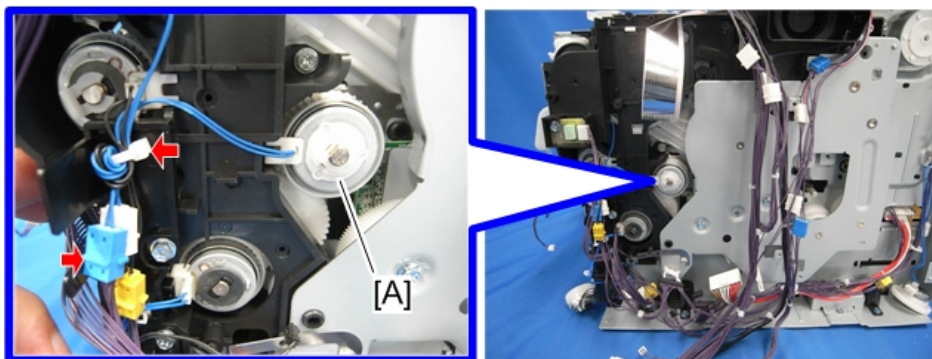


m1600231

4

Registration Clutch

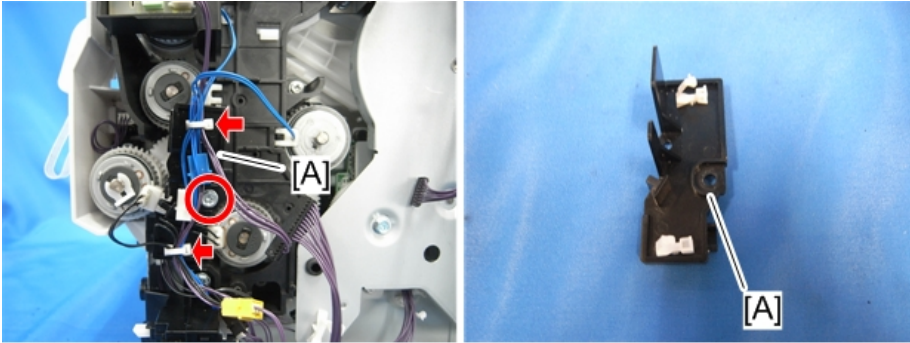
1. BCU (page 149 "BCU")
2. Registration Clutch [A] (⚙️ x 1, ⚙️ x 1)



m158m0049

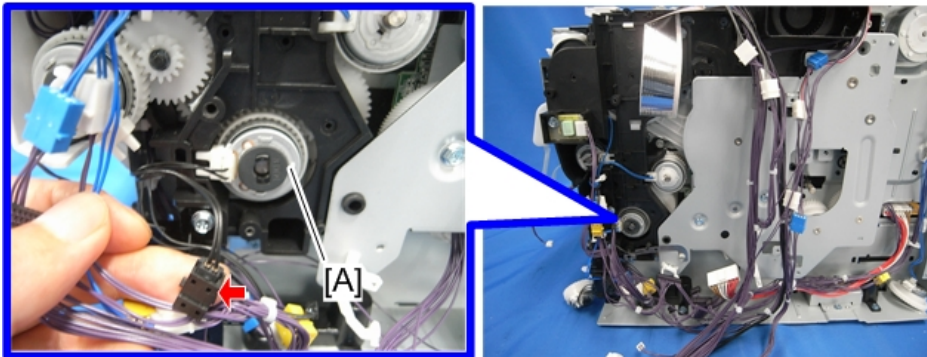
Paper Feed Clutch

1. BCU (page 149 "BCU")
2. Harness Guide [A] (🔧 x 1, 📦 x 2)



m158m0050

3. Paper Feed Clutch [A] (📦 x 1)

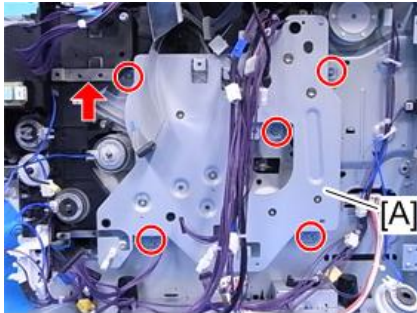


m158m0051

Drive Unit

1. BCU (page 149 "BCU")
2. Duplex Clutch (page 117 "Duplex Clutch")

3. Drive Unit [A] (⚙️ x 5, Grounding Plate x 1)

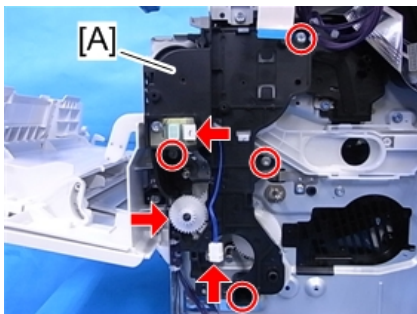


m1600223

4

Gear Unit

1. BCU (page 149 "BCU")
2. By-pass Bottom Plate Clutch (page 117 "By-pass Bottom Plate Clutch")
3. Paper Feed Clutch (page 114 "Paper Feed Clutch")
4. By-pass Feed Clutch (page 115 "By-pass Feed Clutch")
5. Duplex Clutch (page 117 "Duplex Clutch")
6. Drive Unit (page 114 "Drive Unit")
7. Paper Size Detection Switch (page 137 "Paper Size Detection Switch")
8. Gear Unit [A] (⚙️ x 4, ⚙️ x 2, Gear x 1)

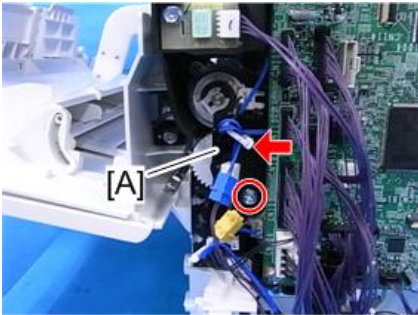


m1608035

By-pass Feed Clutch

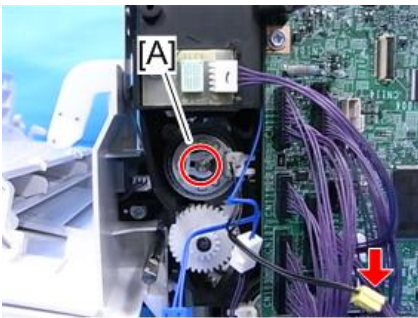
1. Right Cover (page 87 "Right Cover / Right Rear Cover")

2. Harness Guide [A] (🔧 x 1, 📦 x 1)



m1600221

3. By-pass Feed Clutch [A] (🔧 x 1, 📦 x 1)

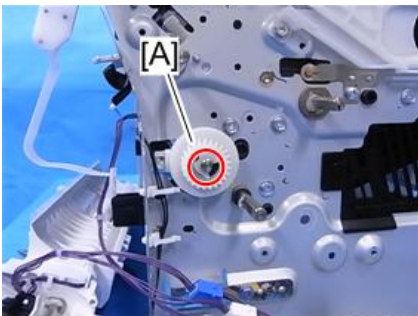


m1600222

4

Relay Clutch

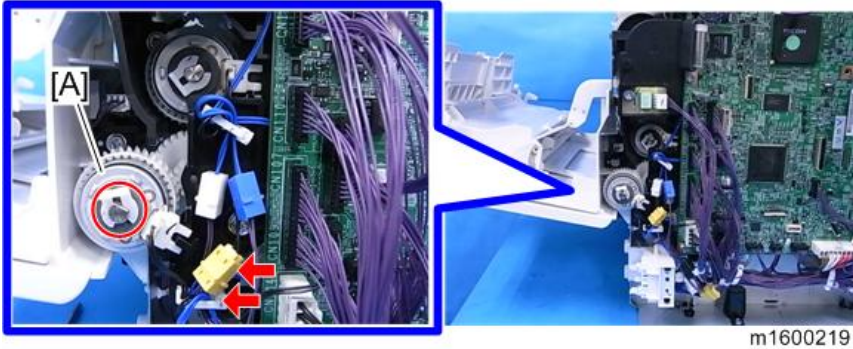
1. By-pass Feed Unit (page 132 "By-pass Feed Unit")
2. Gear Unit (page 115 "Gear Unit")
3. Relay Clutch [A] (🔧 x 1)



m1600220

By-pass Bottom Plate Clutch

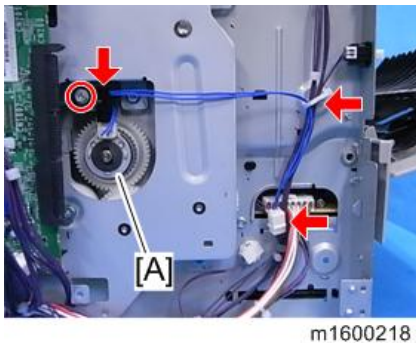
1. Right Cover (page 87 "Right Cover / Right Rear Cover")
2. By-pass Bottom Plate Clutch [A] (⚙️ x 1, 🛠️ x 1, 📏 x 1)



4

Duplex Clutch

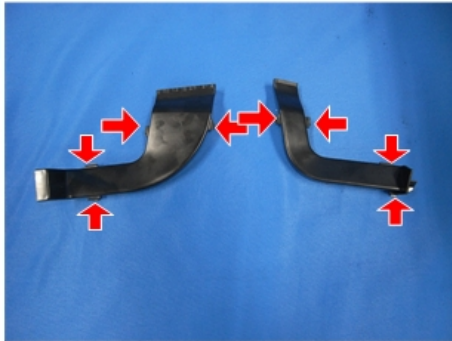
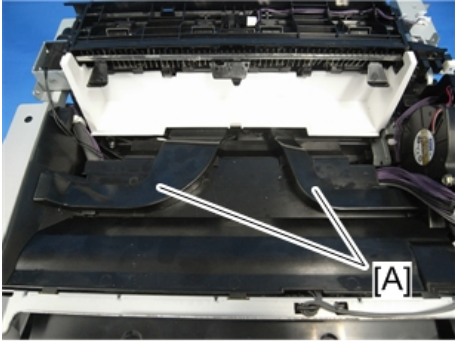
1. Controller Board (page 146 "Controller Board")
2. Duplex Clutch [A] (⚙️ x 1, Bracket x 1, 🛠️ x 1, 📏 x 1)



Junction Gate Solenoid

1. Upper Cover (page 97 "Upper Cover (M158)", page 98 "Upper Cover (M159)")

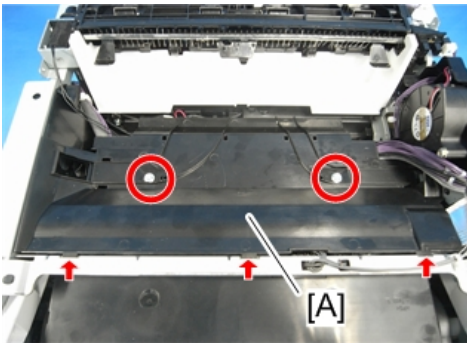
2. Two Ducts [A] (Hook x 8).



m158m0041

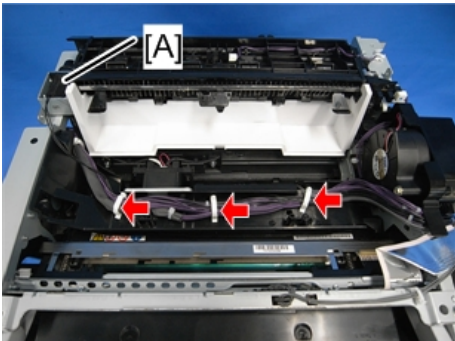
4

3. Cover [A] (⚙️ x 2)



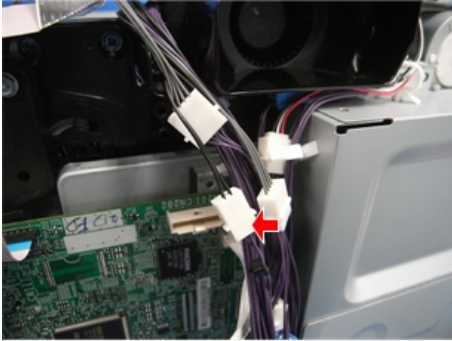
m158m0042

4. Release the harness of the Junction Gate Solenoid [A]. (🔧 x 3)



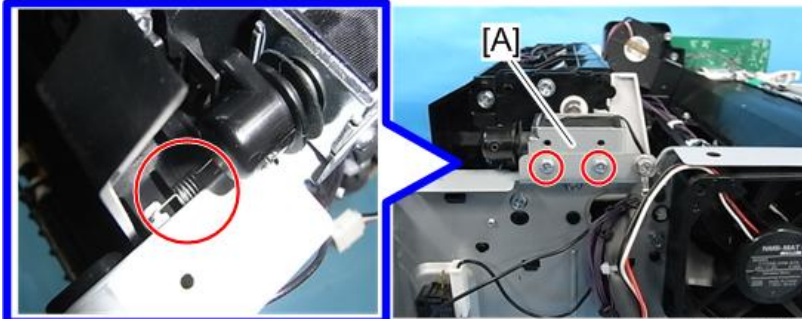
m158m0052

5.  x 1 of the Junction Gate Solenoid.



m158m0053

6. Junction Gate Solenoid [A] ( x 2, Spring x 1)



m1600119



m1600122

Fusing

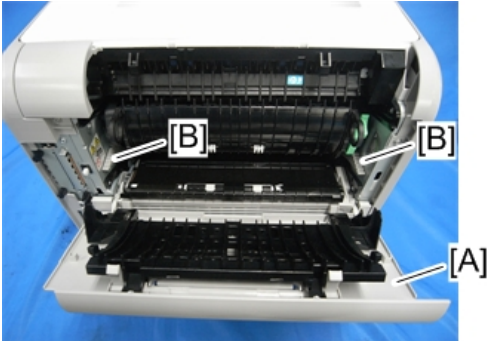
⚠ CAUTION

- Because there is a danger of burns on contact with hot parts of the fusing unit, start work when the temperature drops to a low enough temperature.
- Turn off the main power switch and disconnect the power cord before you start any of the procedures in this section. (page 79 "General Cautions")

Fusing Unit

4

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



m158m0055

3. Fusing Unit [A]



m158m0056

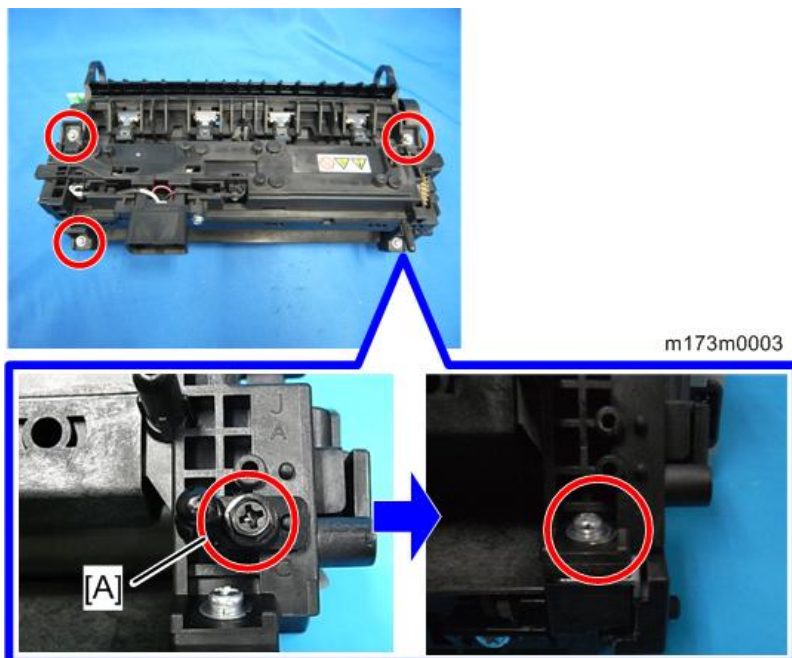
Adjustment after Replacement

- Service Maintenance Model (M159)
For PM: Install a fusing unit without new product detection capability and reset PM Counter Fuser setting (engine SP 7-804-003) after replacement.

- User Maintenance Model (M158)
For PM: Install a fusing unit with new product detection capability from the Maintenance Kit.
(User operation)

Upper Fusing Unit / Lower Fusing Unit

1. Fusing Unit .(page 120 "Fusing Unit")
2. Remove the screws of the fusing unit. (⚙️x5)



↓ Note

- At the time of installation, be sure to attach the pin [A] to the correct position. If not, the fusing unit cannot be attached to the main body properly.
3. Separate the fusing unit into the upper and lower fusing units.

4. Right cover [A] (2)

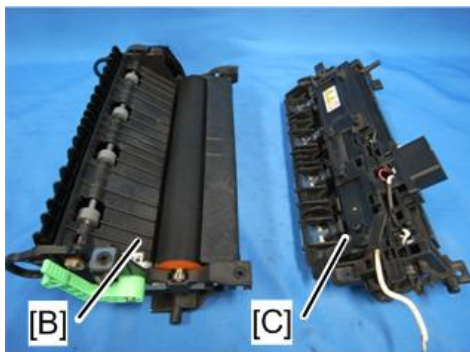


m173m0004

4

[B]: Lower Fusing Unit

[C]: Upper Fusing Unit



m173m0005

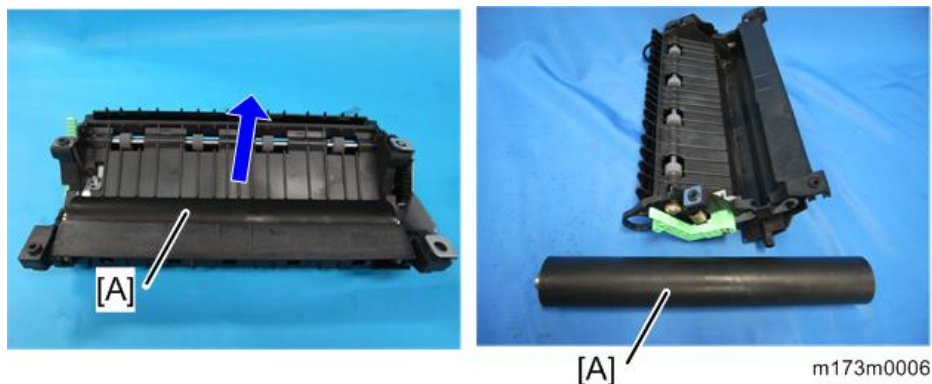
↓ Note

- You can rejoin the upper and lower fusing units with more ease by lowering the envelope lever.

Fusing Pressure Roller

1. Separate the fusing unit into the upper and lower fusing units. (page 121 "Upper Fusing Unit / Lower Fusing Unit")

2. Fusing Pressure Roller [A]

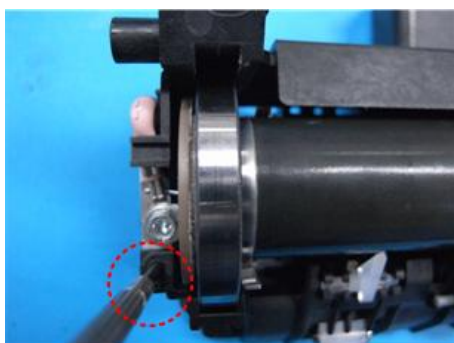


4

Fusing Lamp / Hot Roller

★ Important

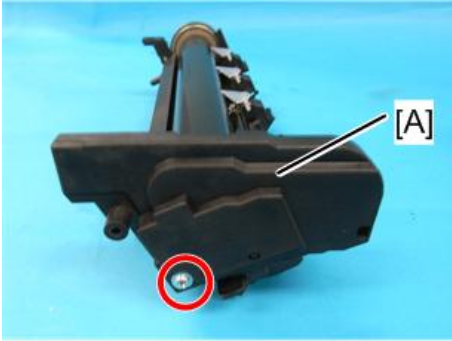
- Be careful not to break the heater when removing screws.
- When removing/attaching lamp securing screws on the side that is away from the drive mechanism, it is recommended to insert a pin or jeweller's screwdriver as shown in the photo below in order to secure the flat nut to the upper frame.



m173m0048

1. Separate the fusing unit into the upper and lower fusing units. (page 121 "Upper Fusing Unit / Lower Fusing Unit")

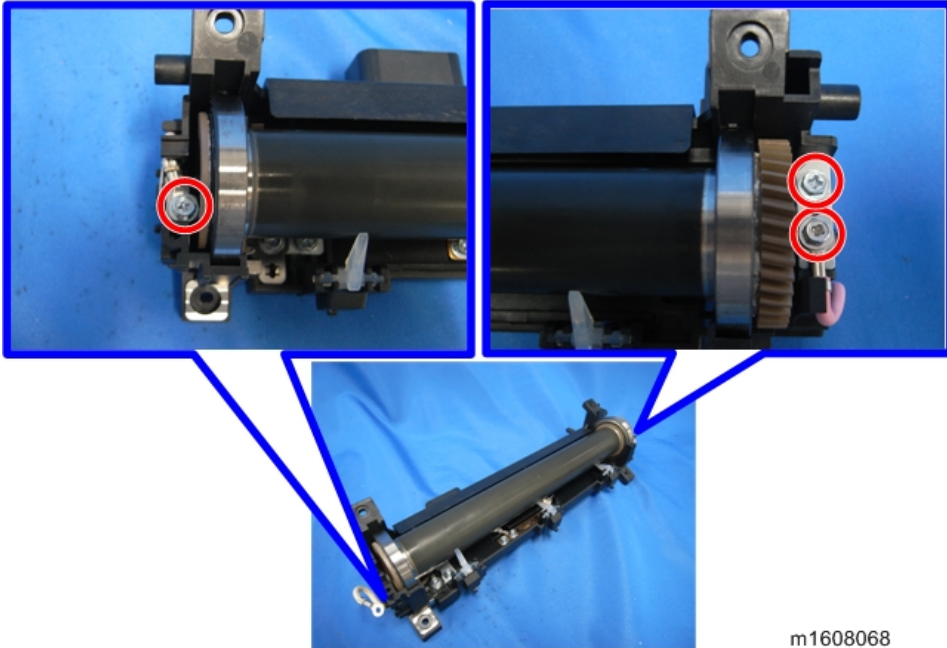
2. Cover [A] (⚙️x1)



m173m0007

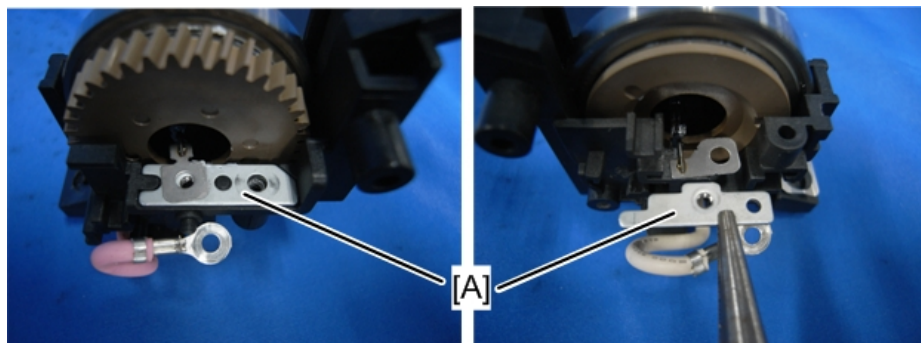
4

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



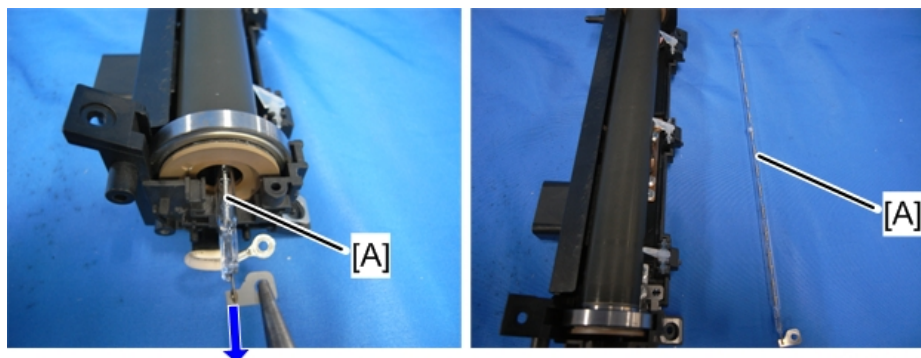
m1608068

4. Two brackets [A]



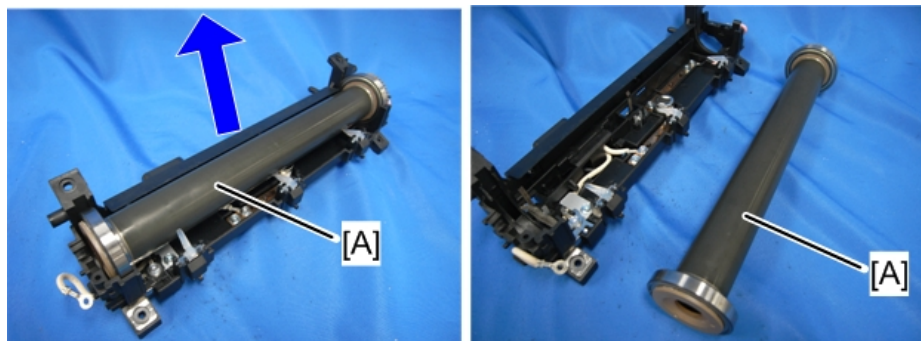
m1608069

5. Fusing lamp [A]



m1608070

6. Hot Roller [A]

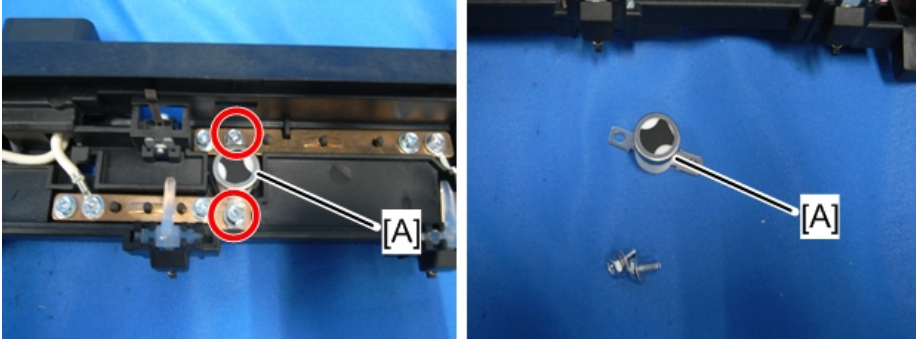


m1608071

Thermostat

1. Separate the fusing unit into the upper and lower fusing units. (page 121 "Upper Fusing Unit / Lower Fusing Unit")

2. Hot Roller (page 123 "Fusing Lamp / Hot Roller")
3. Thermostat [A] (🔩x2)



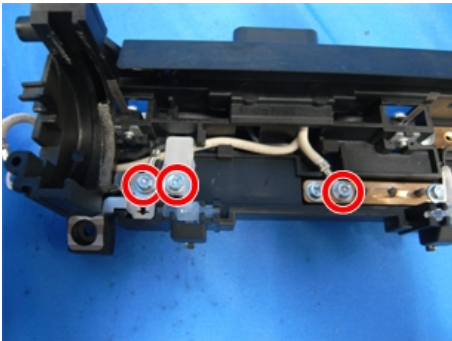
m1608072

4

Thermistor

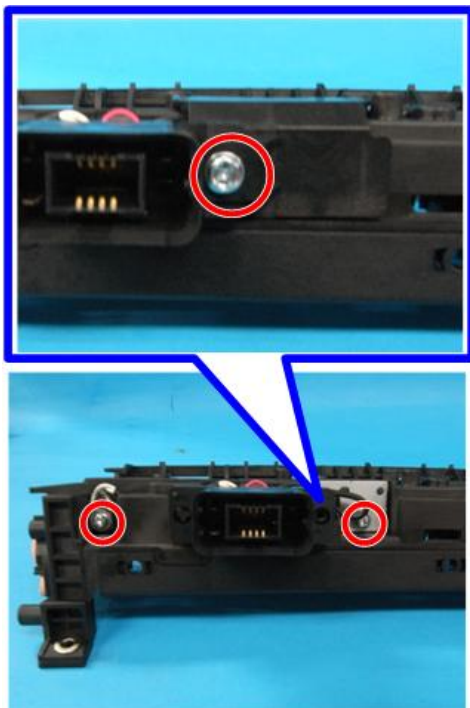
↓ Note

- The thermistor is integrated with the drawer connector.
1. Separate the fusing unit into the upper and lower fusing units. (page 121 "Upper Fusing Unit / Lower Fusing Unit")
 2. Hot Roller (page 123 "Fusing Lamp / Hot Roller")
 3. Remove the screws of the harness. (🔩x3)



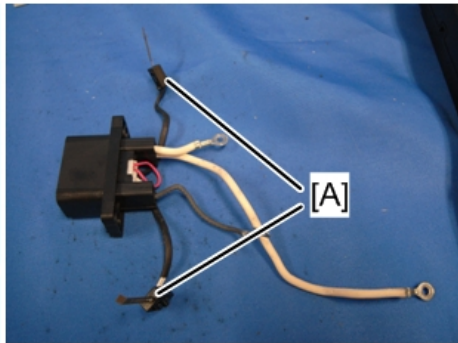
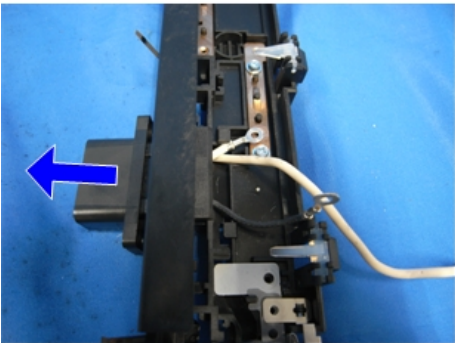
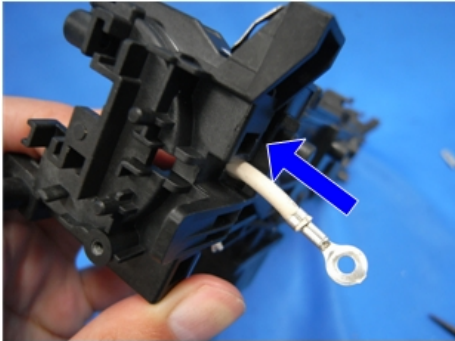
m1608073

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



m173m0008

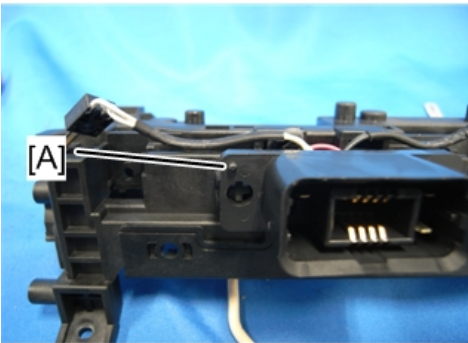
5. Thermistor [A]



m1608075

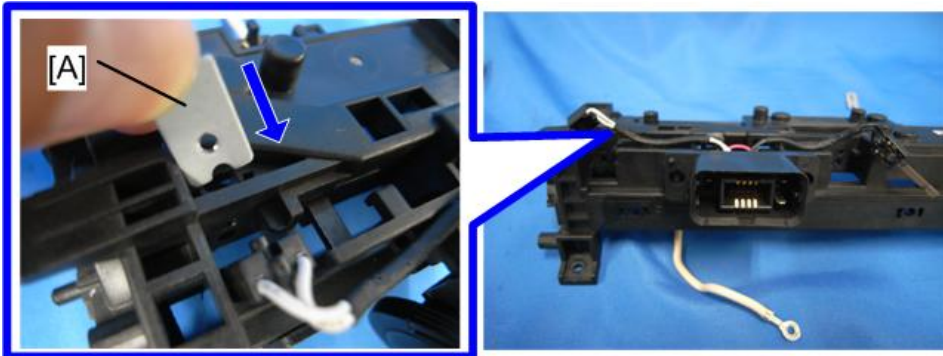
Notes on reassembly

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



m1608076

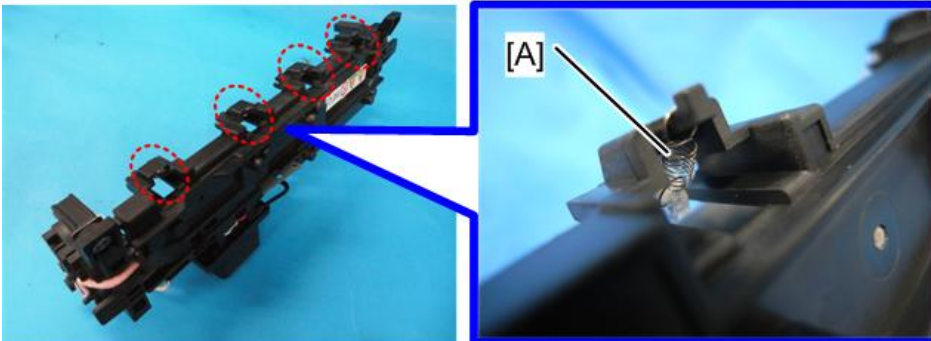
Insert the flat nut [A]. Be sure not to drop them during disassembly.



m173m0009

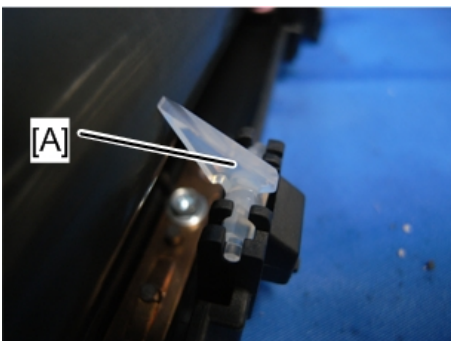
Hot Roller Stripper

1. Separate the fusing unit into the upper and lower fusing units. (page 121 "Upper Fusing Unit / Lower Fusing Unit")
2. Spring [A]



m173m0010

3. Hot Roller Stripper [A]



m1608079

Paper Feed

⚠ CAUTION

- Turn off the main power switch and disconnect the power cord before you start any of the procedures in this section. (page 79 "General Cautions")

Paper Feed Tray

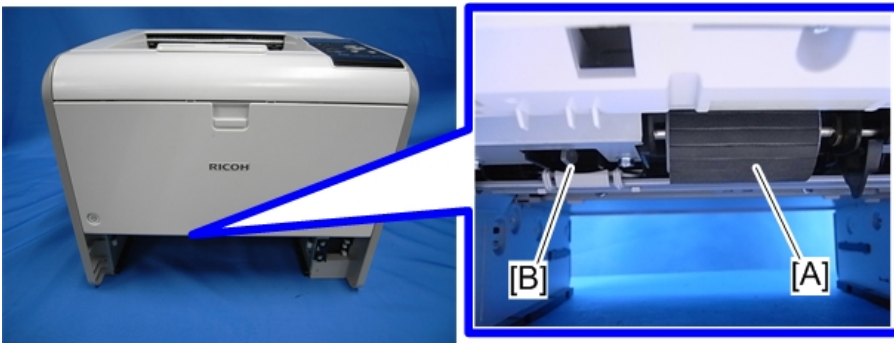
1. Pull the paper feed tray [A] out completely to detach it.



m1600081

Paper Feed Roller

1. Paper Feed Tray (page 130 "Paper Feed Tray")
2. Slide the lever [B] to the left to detach the paper feed roller [A].

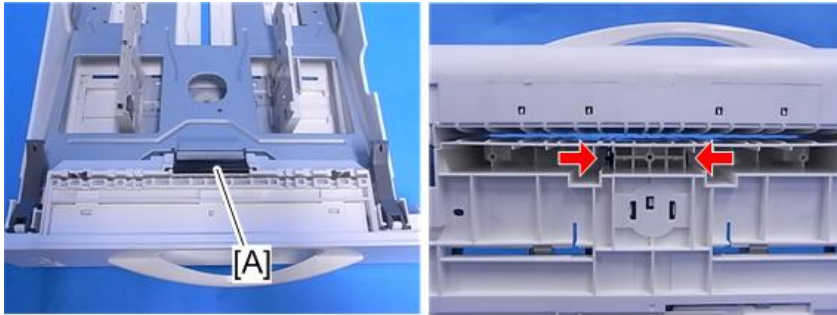


m158m0039

Friction Pad

1. Paper Feed Tray (page 130 "Paper Feed Tray")

2. Release the hooks on the bottom of the paper feed tray to detach the friction pad [A].

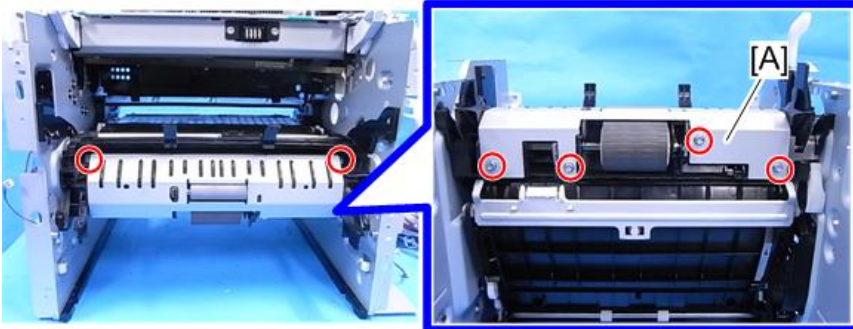


m1600085

Paper End Sensor

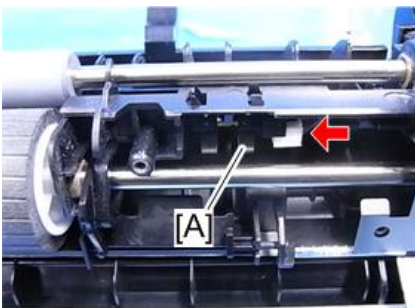
4

1. By-pass Feed Unit (page 132 "By-pass Feed Unit")
2. Bracket [A] (🔧 x 6)



m1600088

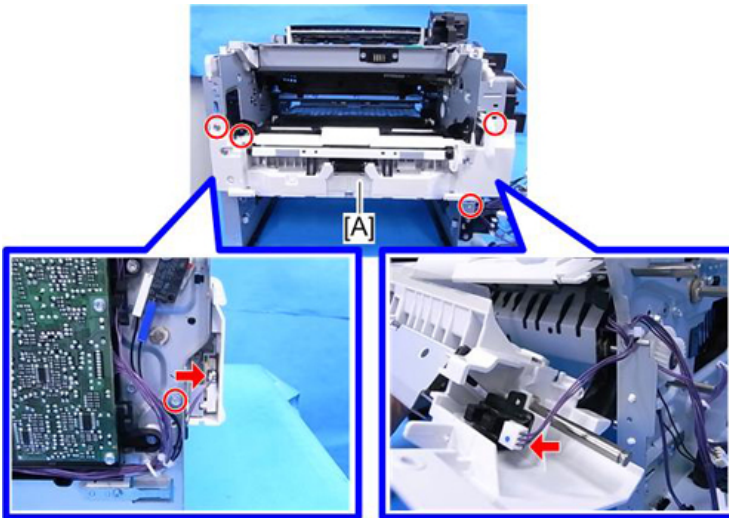
3. Paper End Sensor [A] (🔧 x 1, Hook)



m1600089

By-pass Feed Unit

1. Front Cover (page 83 "Front Cover")
2. Left Cover (page 85 "Left Cover")
3. Right Cover (page 87 "Right Cover / Right Rear Cover")
4. By-pass Bottom Plate Clutch (page 117 "By-pass Bottom Plate Clutch")
5. By-pass Feed Unit [A] (⚙️ x 5, 🛠️ x 2)



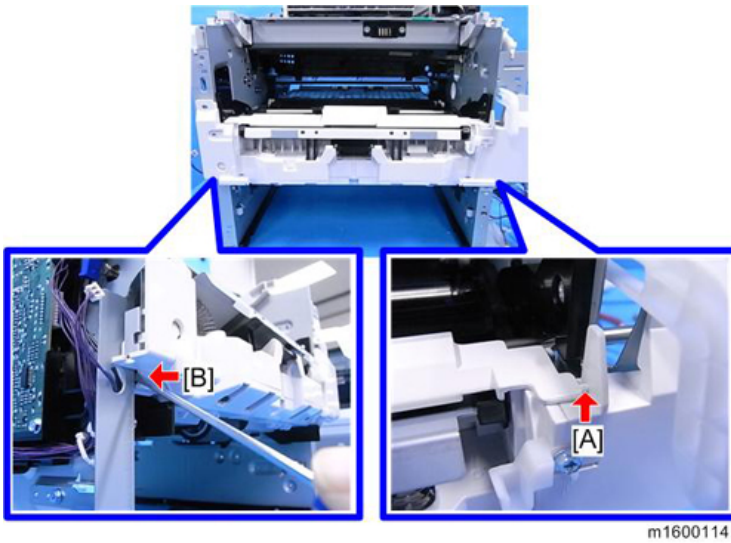
m1600113



m1600115

↓ Note

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

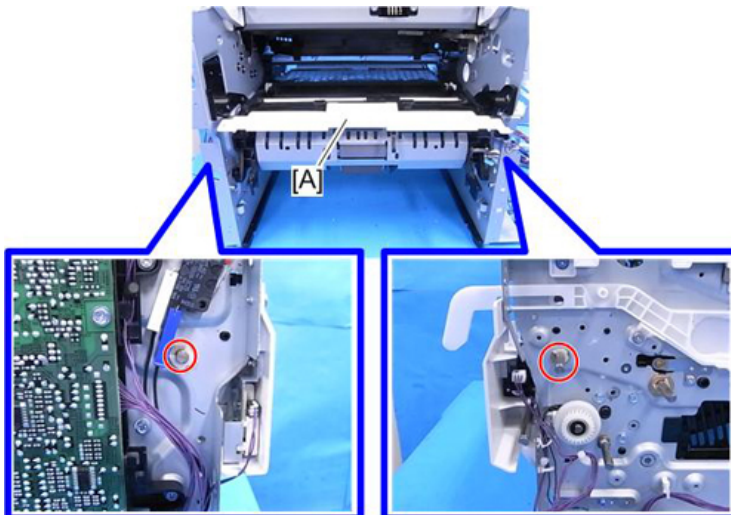


m1600114

4

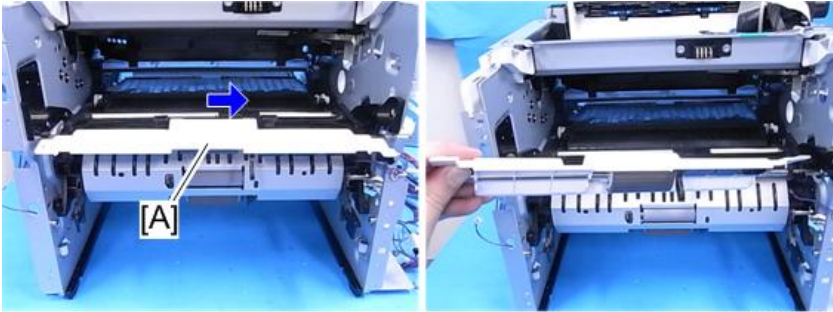
By-pass Feed Roller

1. By-pass Feed Unit (page 132 "By-pass Feed Unit")
2. Gear Unit (page 115 "Gear Unit")
3. (⌀) x 2, Bearing x 2) on both sides of the by-pass feed roller (guide) [A].



m1600109

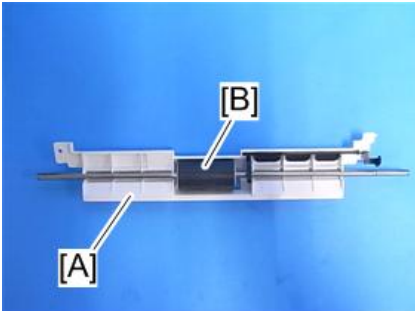
- Slide the by-pass feed guide [A] with the by-pass feed roller to the right to detach it from the machine.



m1600110

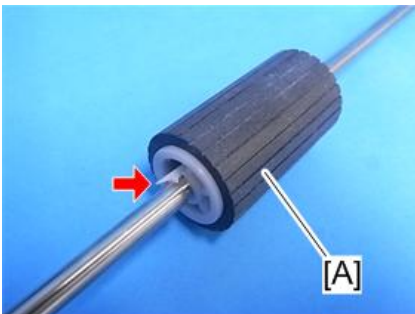
4

- Detach the by-pass feed roller with the shaft [B] from the guide [A].



m1600111

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

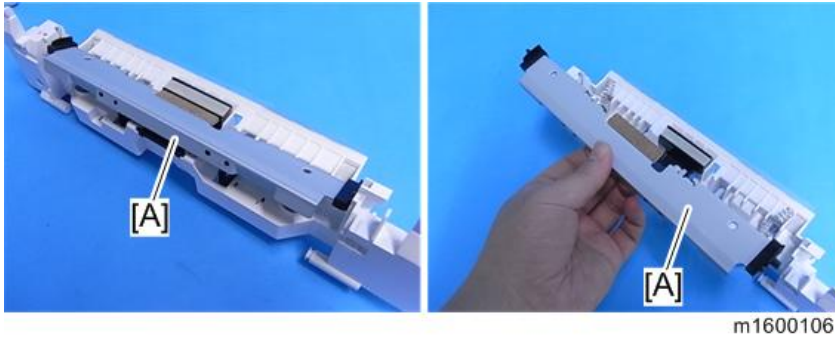


m1600112

By-pass Friction Pad

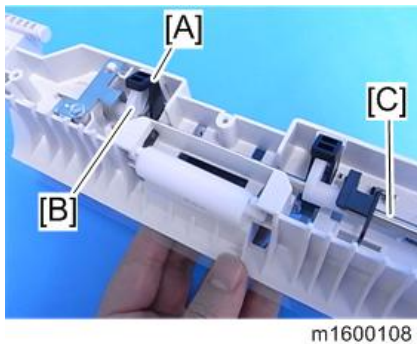
- By-pass Feed Unit (page 132 "By-pass Feed Unit")

2. Bottom Plate [A]

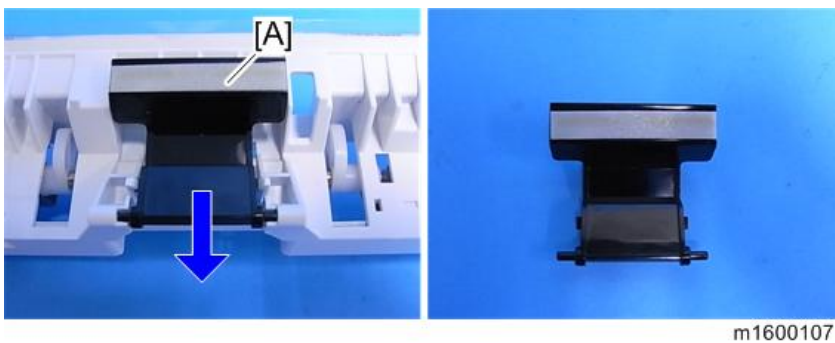


↓ Note

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



3. Push the friction pad [A] down to detach it (Spring x 1).



By-pass Paper End Sensor

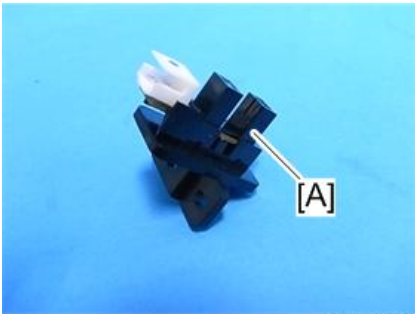
1. By-pass Feed Unit (page 132 "By-pass Feed Unit")

2. Bracket with By-pass Sensor [A] (🔩 x 1)



m1600105

3. Detach the By-pass Paper End Sensor [A] from the bracket (Hook).

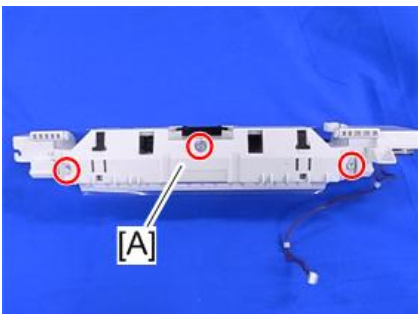


m1600086

4

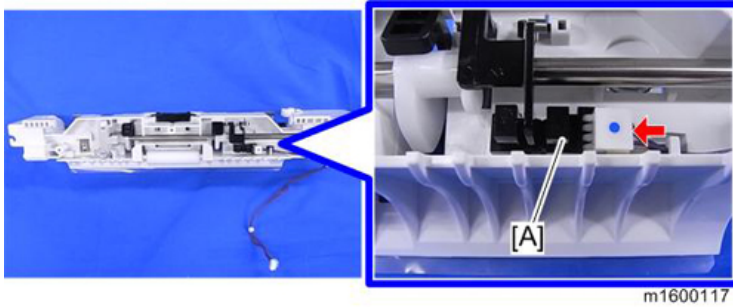
By-pass Bottom Plate HP Sensor

1. By-pass Feed Unit (page 132 "By-pass Feed Unit")
2. By-pass Feed Lower Cover [A] (🔩 x 3)



m1600116

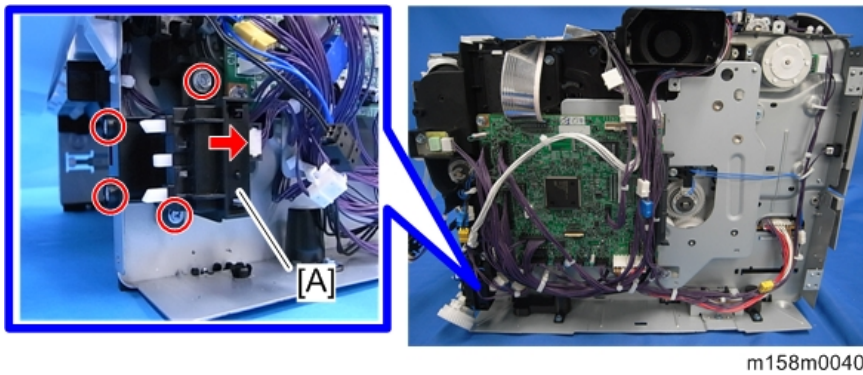
3. By-pass Bottom Plate HP Sensor [A] (🔧 x 1, Hook)



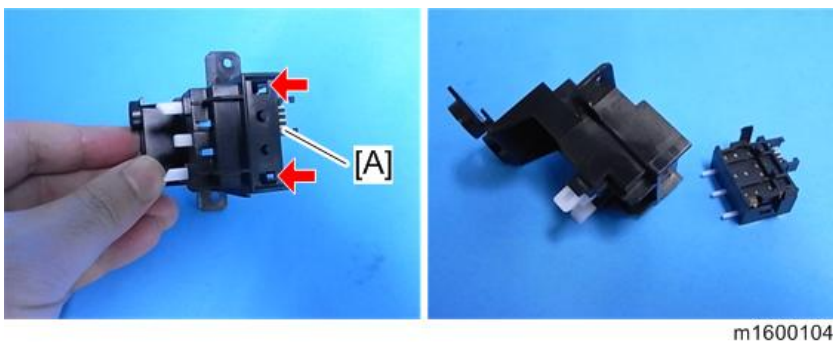
Paper Size Detection Switch

4

1. Paper Feed Tray (page 130 "Paper Feed Tray")
2. Right Cover (page 87 "Right Cover / Right Rear Cover")
3. Bracket with Paper Size Detection Switch [A] (🔧 x 4, 📌 x 1)



4. Detach the Paper Size Detection Switch [A] from the bracket (Hook x 2).



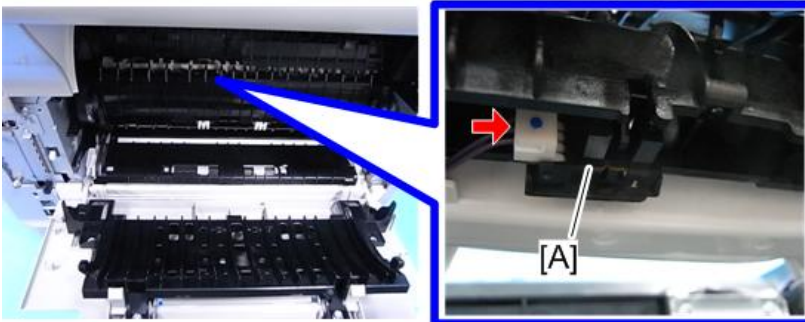
Paper Transport

⚠ CAUTION

- Turn off the main power switch and disconnect the power cord before you start any of the procedures in this section. (page 79 "General Cautions")

Paper Exit Sensor

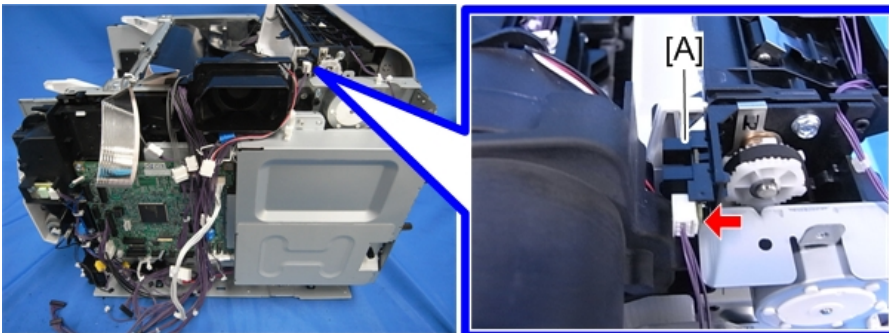
1. Rear Cover (page 90 "Rear Cover / Rear Lower Cover")
2. Fusing Unit (page 120 "Fusing Unit")
3. Paper Exit Sensor [A] (🔧 x 1, Hook)



m1600130

Paper Overflow Sensor

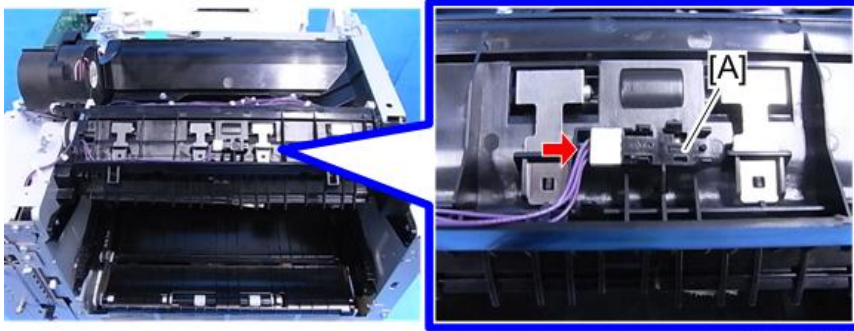
1. Upper Cover (page 97 "Upper Cover (M158)", page 98 "Upper Cover (M159)")
2. Paper Overflow Sensor [A] (🔧 x 1, Hook)



m158m0054

Duplex Exit Sensor

1. Upper Cover (page 97 "Upper Cover (M158)", page 98 "Upper Cover (M159)")
2. Duplex Exit Sensor [A] (🔧 x 1, Hook)

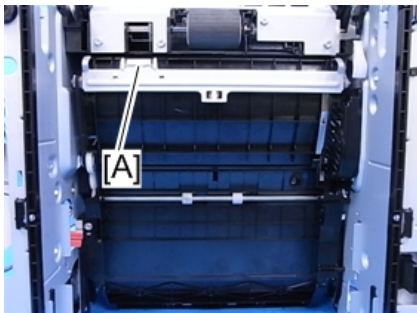


m1600129

4

Duplex Entrance Sensor

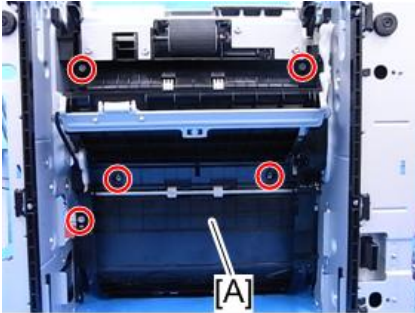
1. PSU (page 144 "PSU")
2. Duplex Clutch (page 117 "Duplex Clutch")
3. Open the duplex exit guide plate [A].



m1608082

4. Remove screws circled in the picture below (🔧 x 5).

[A] Duplex exit guide unit



m1600125

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

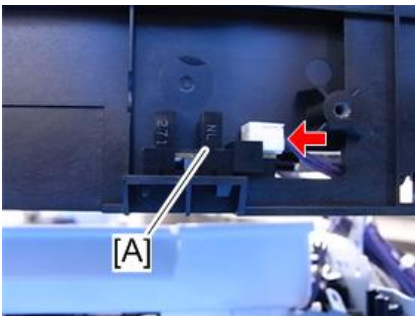


m1600126

Note

- Use pliers to pinch the linking part in order to separate.

6. Duplex Entrance Sensor [A] (🔧 x 1, Hook)

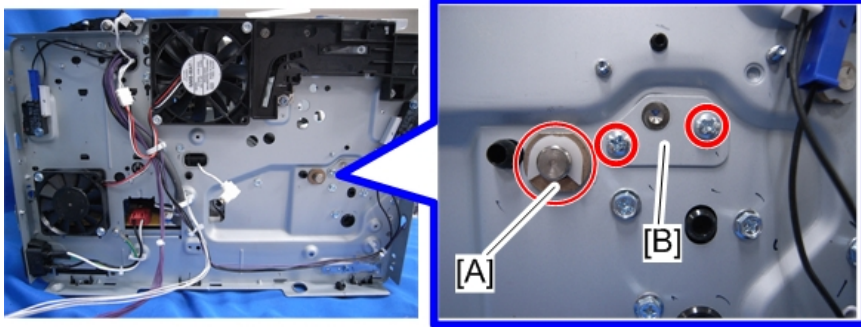


m1600128

Registration Roller (Driven)

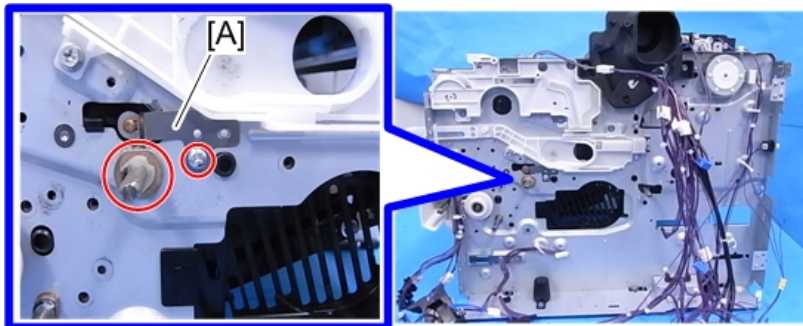
1. Gear Unit (page 115 "Gear Unit")
2. Registration Sensor (page 143 "Registration Sensor")
3. HVPS with bracket (page 154 "HVPS with Bracket")

4. Release the bearing [A] ×1 at the left end of the registration roller (drive) and fixing plate[B] ×1. (⚙️×1, 🔧×2)



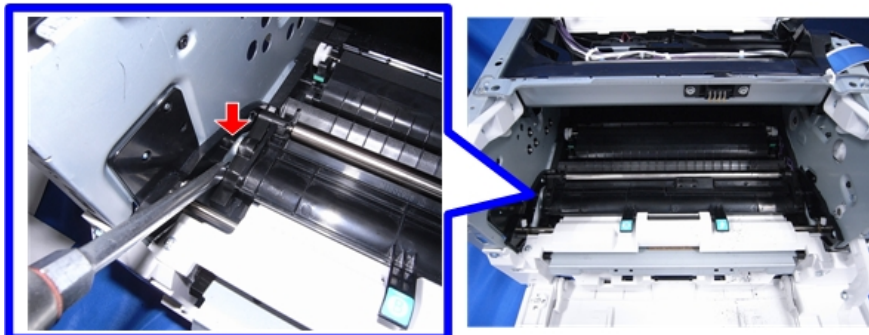
m171m0054

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



m171m0056

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



m171m0055

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



m1600097

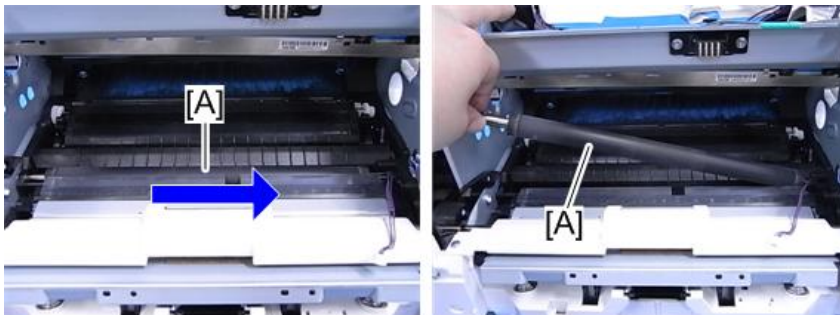
- 4
8. Detach the registration roller (driven) [B] from the guide [A].



m1600099

Registration Roller (Drive)

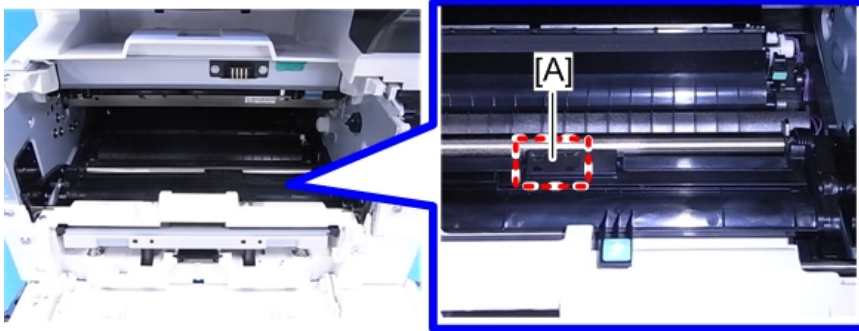
1. Registration Roller (Driven) (page 140 "Registration Roller (Driven)")
2. Slide the registration roller (drive) [A] to the right to remove it.



m1600100

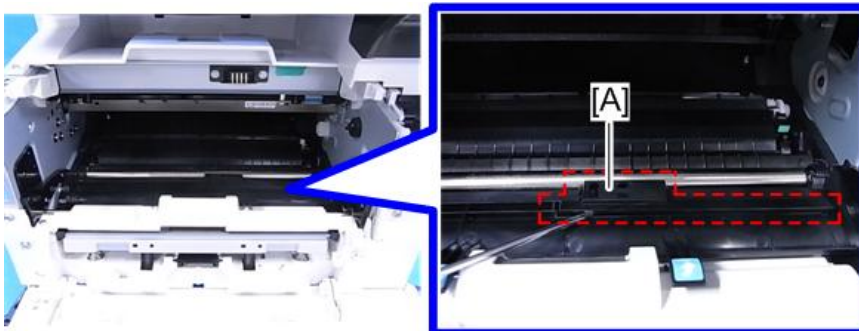
Registration Sensor

1. PCDU (page 107 "PCDU")
2. Sheet [A]



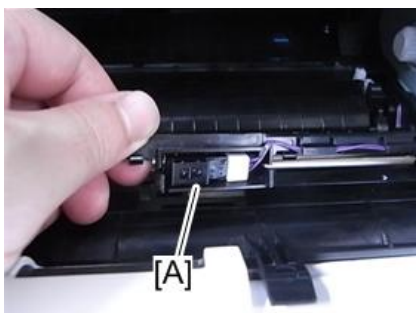
m158m0100

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



m1600021

4. Registration Sensor [A] (Hook,  x 1)



m1600092

Electrical Components

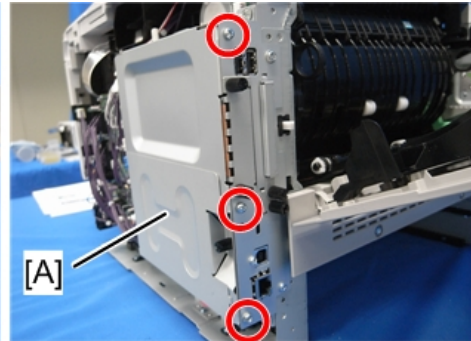
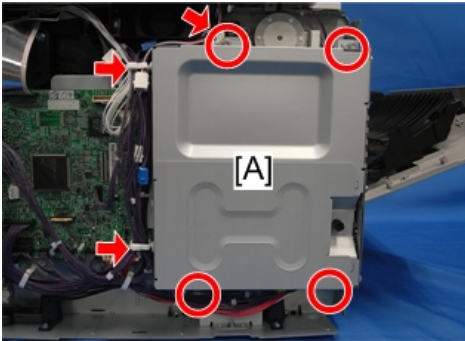
⚠ CAUTION

- Turn off the main power switch and disconnect the power cord before you start any of the procedures in this section. (page 79 "General Cautions")

Controller Box / Interface Cover

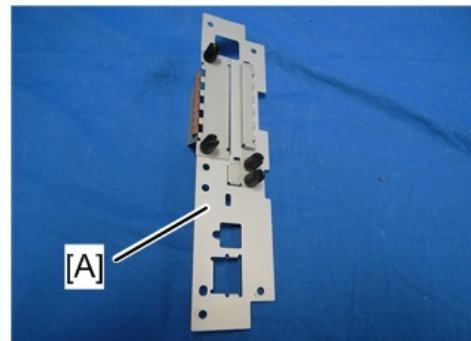
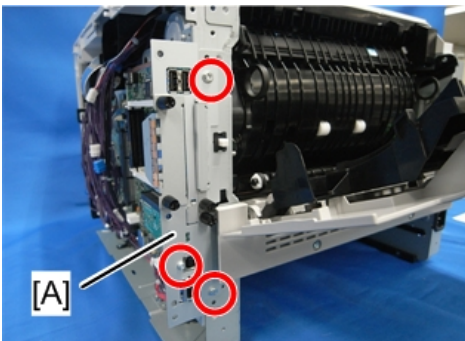
1. Right Cover (page 87 "Right Cover / Right Rear Cover")
2. Controller Box [A] (⚙ x 7, 🖨 x 3)

4



m158m0026

3. Interface Cover [A] (⚙ x 3)

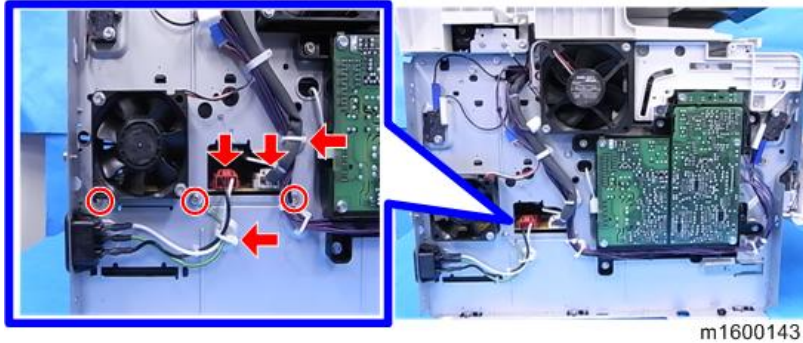


m158m0027

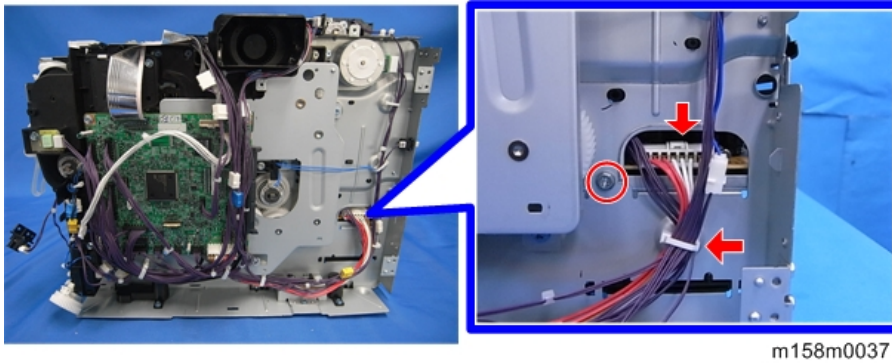
PSU

1. Paper Feed Tray (page 130 "Paper Feed Tray")
2. Left Cover (page 85 "Left Cover")
3. Right Cover (page 87 "Right Cover / Right Rear Cover")

4. Rear Cover, Rear Lower Cover (page 90 "Rear Cover / Rear Lower Cover")
5. Controller Box, Interface Cover (page 144 "Controller Box / Interface Cover")
6. Controller Board (page 146 "Controller Board")
7. (🔧 x 3, 📏 x 2, 📏 x 2) on the left side of the PSU.



8. (🔧 x 1, 📏 x 1, 📏 x 1) on the right side of the PSU.



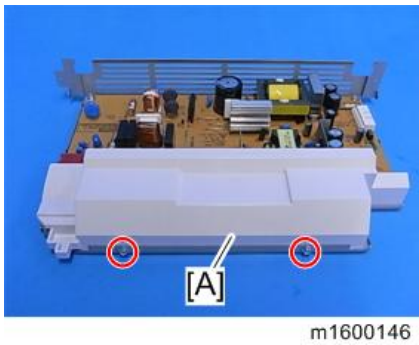
9. (🔧 x 2) on the rear side of the PSU.



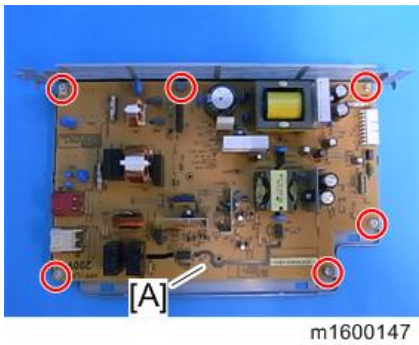
10. PSU [A] with Bracket (🔧 x 1)



11. Cover [A] (🔧 x 2)



12. Detach the PSU [A] from the bracket. (🔧 x 6)



RTB 29

Some parts retain a charge a long while after disconnection. See the RTB for places that can retain this charge.

Controller Board

★ Important

- If you intend to replace the NVRAM, upload its contents to an SD card with SP5-824 before you remove NVRAM and replace it with a new one. Never remove the NVRAM until after you have uploaded its contents.

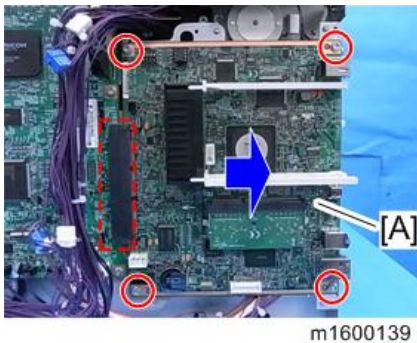
Before replacing the controller board in the model without HDD

When you replace the controller board in a model without a HDD, address book data can be copied from an old controller board to a new controller board using an SD card.

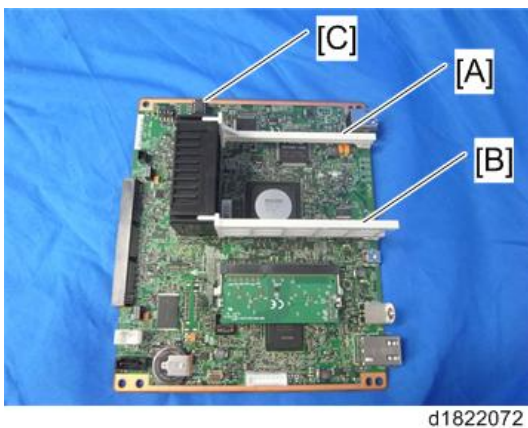
Copy the address book data to an SD card from the flash ROM on the controller board with SP5-846-051 if possible.

Replacement Procedure

1. Right Cover (page 87 "Right Cover / Right Rear Cover")
2. Controller Box, Interface Cover (page 144 "Controller Box / Interface Cover")
3. Detach the controller board [A] by sliding it to the right (🔧 x 4, 🛠️ x 1).

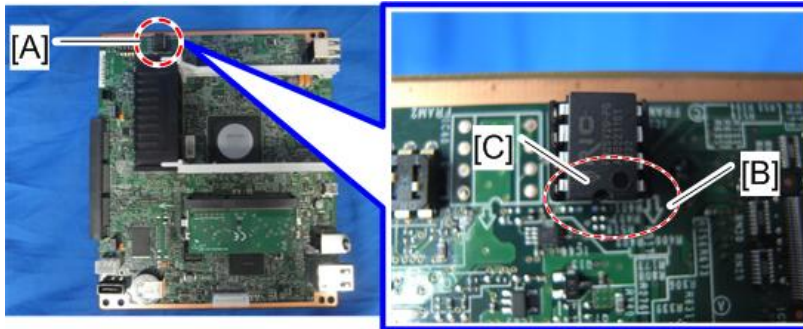


4. Remove the NVRAM [C], the upper brace [A] and the lower brace [B].



↓ Note

- Before removing the NVRAM, back up data.
- When replacing the controller board, remove the NVRAM from the old controller board. Then install it at the same position on the new controller board. Install so that the indentation [C] on NVRAM [A] is facing the direction of the arrow [B] that is printed on the controller board.



d1824054

4

- 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)).

5. 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 replacement, the encryption key should be restored.
2. Turn the main power switch off and on.

NVRAM on the Controller Board

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 switch.
4. Insert a blank SD card into slot #2, and then turn on the main switch.
5. Upload the NVRAM data to the blank SD card using SP5-824-001 (NVRAM Data Upload).
6. Turn off the main power switch, and then unplug the AC power cord.
7. Remove the SD card containing the NVRAM data from slot #2.
8. Replace the NVRAM on the controller board with a new one.

9. Plug in the AC power cord, and then turn on the main power switch.

Note

- When you do this, SC995-02 (Defective NVRAM) will be displayed. However, DO NOT turn off the main power switch. Continue with this procedure.

10. Re-insert the SD card that you removed in step 5 back into slot #2.

11. 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.

12. Turn off the main power switch, and then remove the SD card from slot #2.

13. Turn on the main power switch.

14. 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).

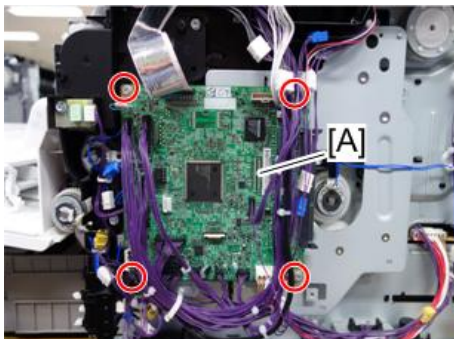
Important

- 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 enter all data on the SMC report (factory settings).
 2. Install the Security function (Data Overwrite Security and HDD Encryption unit) again.

BCU

1. Controller Board (page 146 "Controller Board")

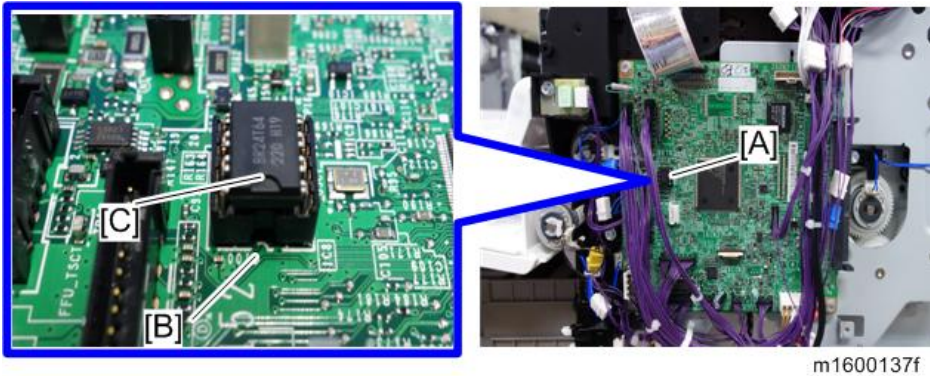
2. BCU [A] (🔧 x 4, 📁 x all)



m1600137e

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 BCU board.



4. Install the new BCU in the machine.
5. Enter the BCU serial number.

Note

- If the BCU serial number is not entered correctly, SC995-01 (serial number entry error) appears.

6. Turn the main power switch off and on.
7. Set the DIP switches on the new BCU board to the same settings as the old board.

Note

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

EEPROM on the BCU

CAUTION

- Keep EEPROM 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 switch off.
 4. Install an SD card into SD card slot 2. Then turn the main power on.
 5. Copy the EEPROM data to an SD card (SP5-824-001) onto the SD card.
 6. Turn off the main power switch. Then unplug the power cord.
 7. Replace the EEPROM on the BCU and reassemble the machine.

8. Plug in the power cord. Then turn the main power switch on.

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

9. Copy the data from the SD card to the EEPROM (SP5-825-001).**10. Enter the BCU serial number.****11. Turn the main power switch off. Then remove the SD card from SD card slot 2.****12. Turn the main power switch on.****★ Important**

- If the BCU serial number is not entered correctly, SC995-01 (serial number entry error) appears.

13. Access SP5-996-001 and set the area code.**★ Important**

- SP5-996-001 is a Factory SP mode. Please contact your Service key-person about the access method.
- 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 list.

Area code Destination	
1	Japan
2	North America
3	EU
4	Taiwan
5	Asia
6	China
7	Korea

14. Turn the main power switch off and on.**15. In accordance with SMC data, specify the UP and SP mode settings.**

HDD

Before HDD Replacement

1. Insert an SD card in SD card slot 2 (lower slot).
2. Go into the SP mode.
3. Do SP5-846 51 to upload the address book data to the SD card.

Replacement Procedure

For details about the replacement procedure, see page 59 "Hard Disk Drive Option Type P1" in 2, "Installation".

Important

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

After HDD Replacement

1. When you turn the main power switch on after installing the hard disk, initialization of the disk starts automatically.
2. Go into the SP mode.
3. Do SP5-846-52 to restore the address book data to the HDD.

Note

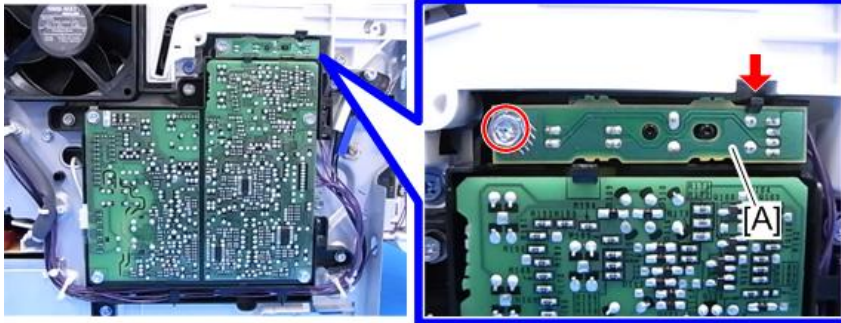
- Never remove a used HDD unit from the work site (even if it is suspected of being damaged) without the consent of the client.
- The HDD must remain with the customer for disposal or safe keeping.
- The HDD may contain proprietary or classified (Confidential, Secret) information. Specifically, the HDD contains the user's documents and jam recovery data. Such data is stored on the HDD in a special format, so it cannot normally be read but it can possibly be recovered with illegal methods.

Reinstallation

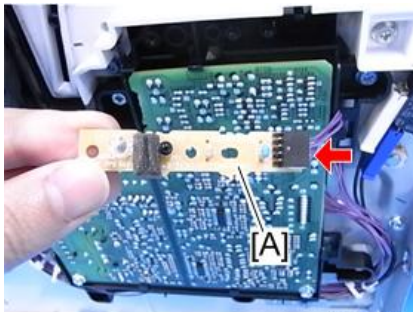
- Explain to the customer that the following information stored on the HDD is lost when the HDD is replaced: user's documents
- The user's documents (if needed) must be input again.
- If the customer is using the Data Overwrite Security, the Data Encryption feature, these applications must be installed again.

Toner End Sensor

1. Left Cover (page 85 "Left Cover")
2. Toner End Sensor [A] (⚙️ x 1, 📏 x 1, Tab x 1)



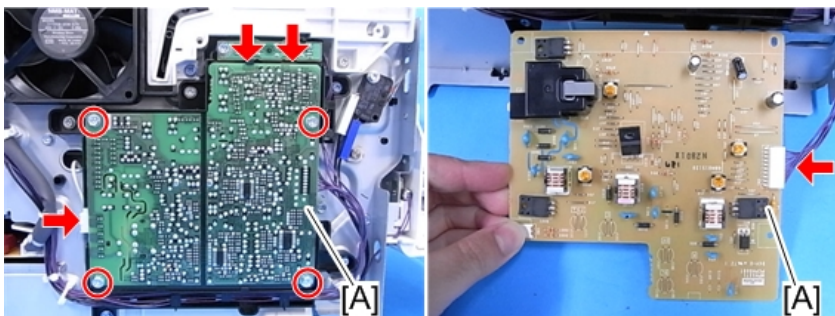
m1600233



m1600234

HVPS

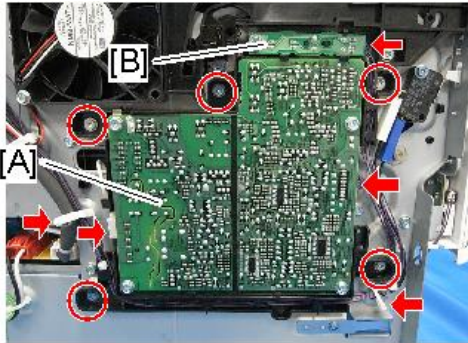
1. Left Cover (page 85 "Left Cover")
2. HVPS [A] (⚙️ x 4, 📏 x 2, Tab x 2)



m158m0029

HVPS with Bracket

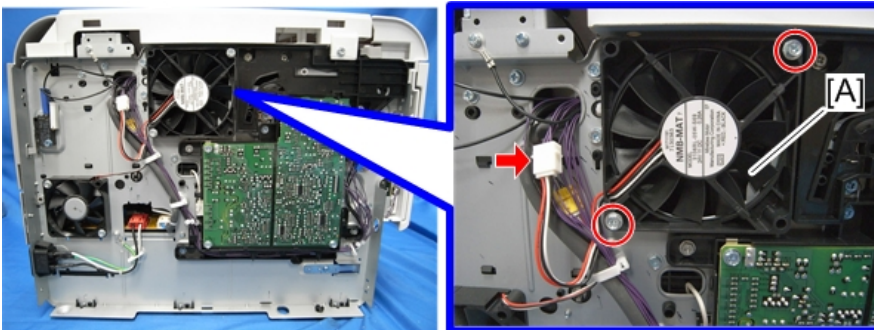
1. Left Cover (page 85 "Left Cover")
2. Toner End Sensor [B] and HVPS [A] with Bracket (🔧 x 5, 📏 x 3, 📌 x 2)



m158m0030

Fusing Fan

1. Left Cover (page 85 "Left Cover")
2. Fusing Fan [A] (🔧 x 2, 📏 x 1)



m158m0101

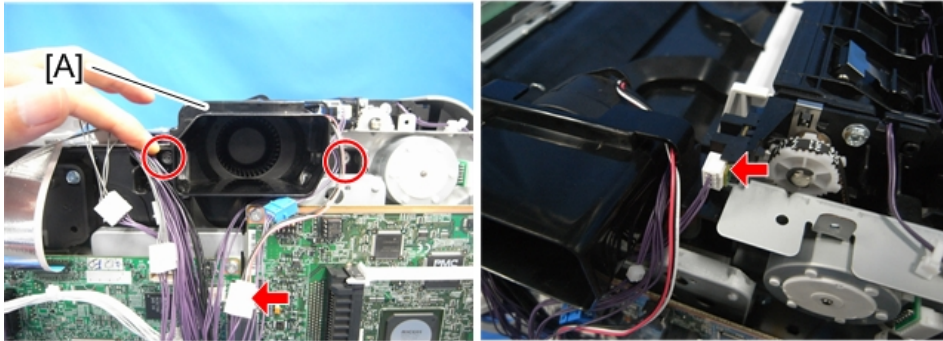
⬇ Note

- 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

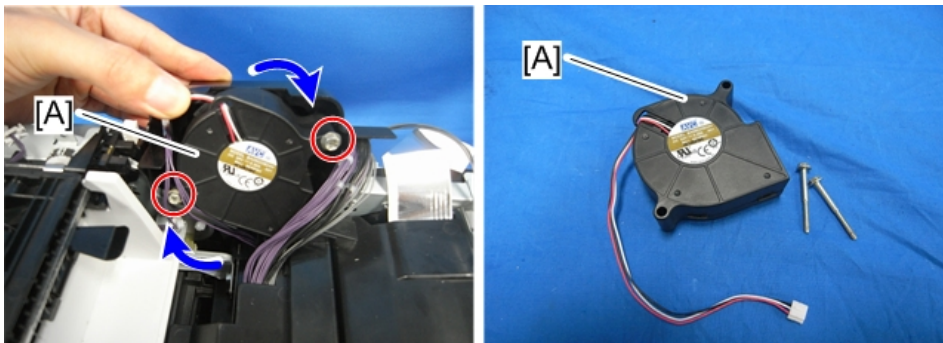
1. Upper Cover (page 97 "Upper Cover (M158)", page 98 "Upper Cover (M159)")
2. Controller Box (page 144 "Controller Box / Interface Cover")

3. Remove the screws securing the bracket [A] of the PCDU cooling fan to release the bracket (🔩 x 2, 🛠️ x 2).



m158m0031

4. Move the bracket to the position which allows you to remove the screws of the PCDU cooling fan.
5. PCDU Cooling Fan [A] (🔩 x 2)

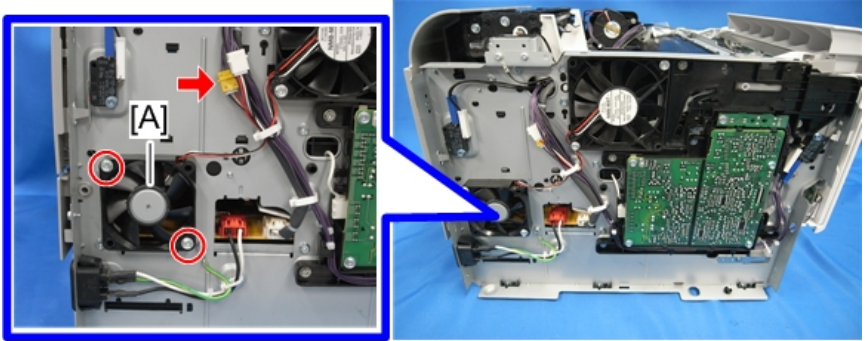


m158m0032

PSU Cooling Fan

1. Left Cover (page 85 "Left Cover")

2. PSU Cooling Fan [A] (⚙️ x 2, 📏 x 1)



m158m0102

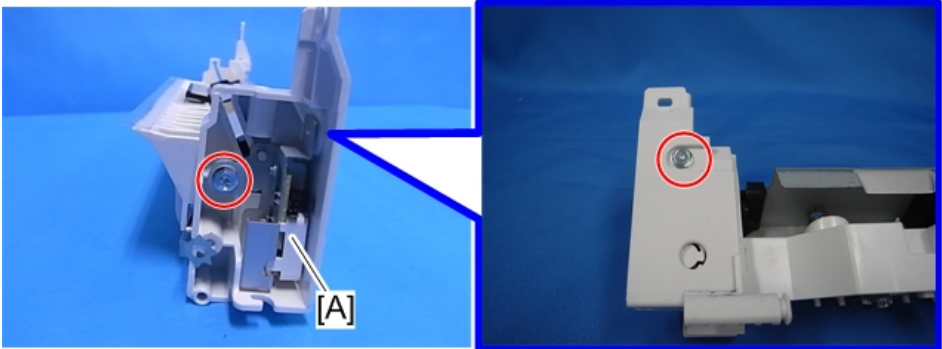
4

⬇️ Note

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

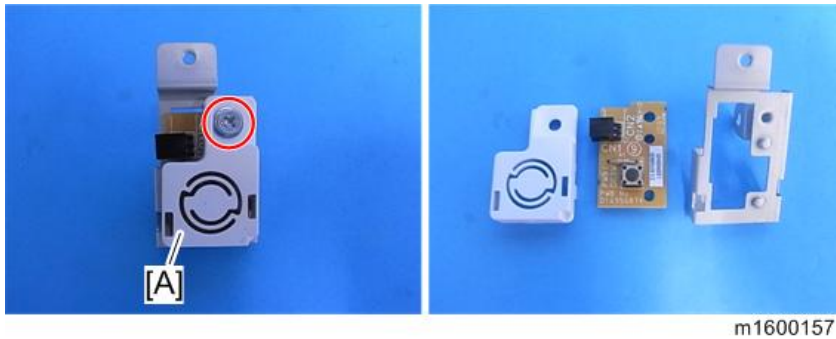
DC Switch

1. By-pass Feed Unit (page 132 "By-pass Feed Unit")
2. DC Switch [A] with Bracket (⚙️ x 2)



m158m0038

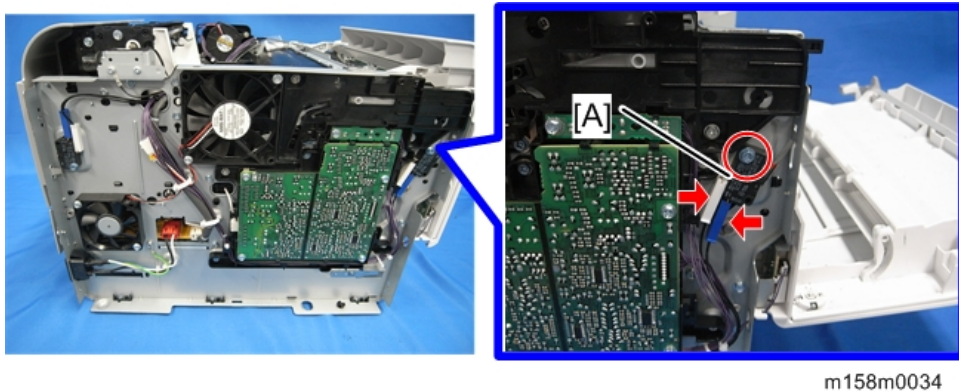
3. Detach the DC Switch from the bracket [A] (⚙️ x 1).



Front Door Interlock Switch

4

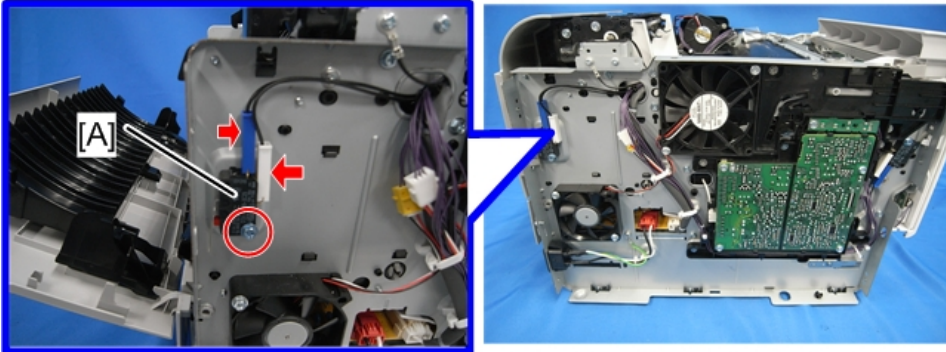
1. Left Cover (page 85 "Left Cover")
2. Front Door Interlock Switch [A] (⚙️ x 1, ⚙️ x 2)



Rear Door Interlock Switch

1. Left Cover (page 85 "Left Cover")

2. Rear Door Interlock Switch [A] (🔩 x 1, 📡 x 2)

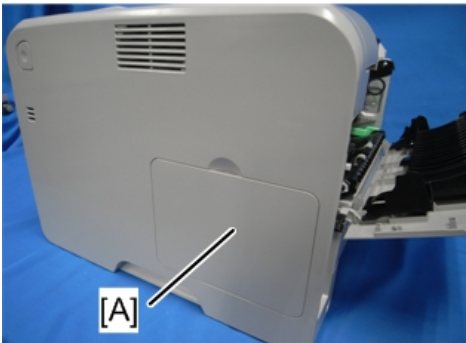


m158m0035

4

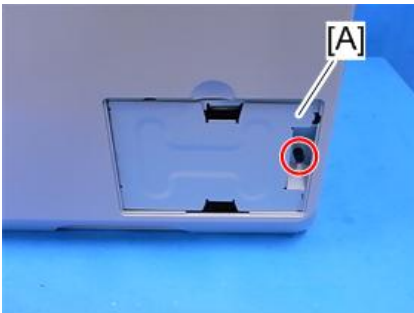
DIMM

1. Cover [A]



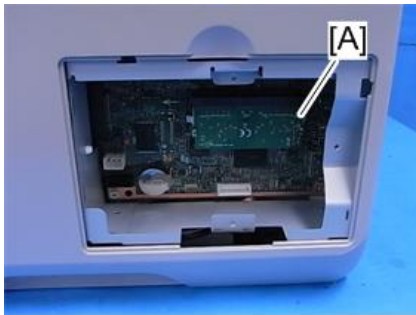
m158m0092

2. Shield [A] (🔩 x 1)



m1600209

3. DIMM [A] (Hook)

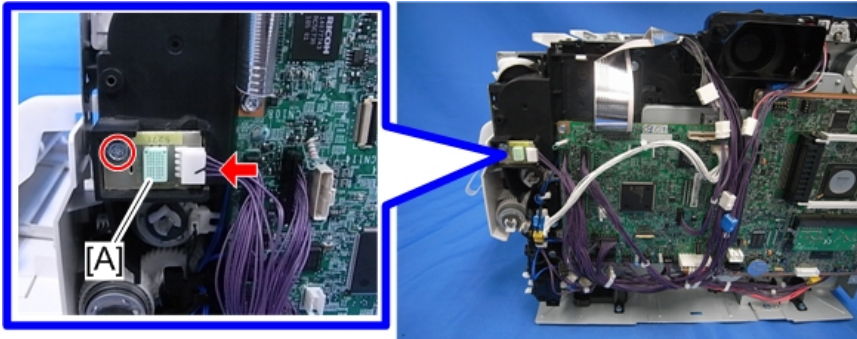


m1600210

Temp Humid Sensor

4

1. Right Cover (page 87 "Right Cover / Right Rear Cover")
2. Temp Humid Sensor [A] (🔧 x 1, 📦 x 1)

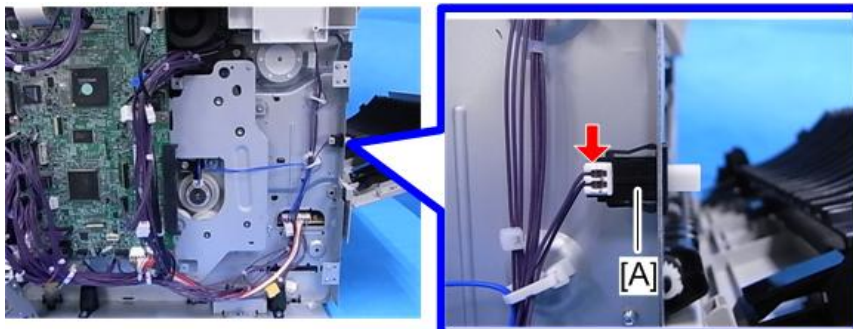


m158m0036

Rear Cover Switch

1. Controller Board (page 146 "Controller Board")

2. Rear Cover Switch [A] (🔌 x 1, Hook)



m1600087

5. System Maintenance

Service Program Mode

CAUTION

- Make sure that the data-in LED is not on before you go into the SP mode. This LED indicates that some data is coming to the machine. When the LED is on, wait for the printer to process the data.
- Do not let the user access the SP mode. Only service representatives are allowed to access the SP mode. The machine quality or its operation is NOT guaranteed if persons other than service representatives accesses the SP mode.

SP Tables

See "Appendices" for the following information:

- Service SP Tables
- Main SP Tables-1
- Main SP Tables-2
- Main SP Tables-3
- Main SP Tables-5
- Main SP Tables-7
- Main SP Tables-8

Enabling and Disabling Service Program Mode

Entering SP Mode

For details, ask your supervisor.

Exiting SP Mode

M158

Select "End" from the service mode main menu, than press the "OK" key.

M159

Press "Exit" on the LCD twice to return to the user screen.

Note

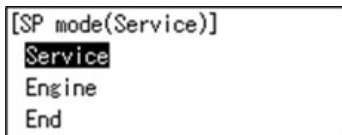
- To make the settings effective, turn the main power switch off and on after exiting service mode.

Types of SP Modes

Type	Description
Service SP	SP modes related to the controller/printer functions
Engine SP	SP modes related to the engine functions

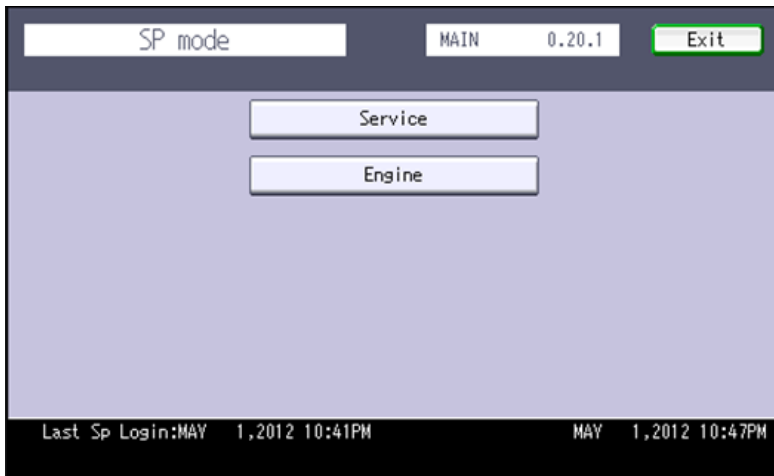
M158

Select one of the Service Program modes (Service, or Engine) with "**▲/▼**" keys, and then push the "OK" key.



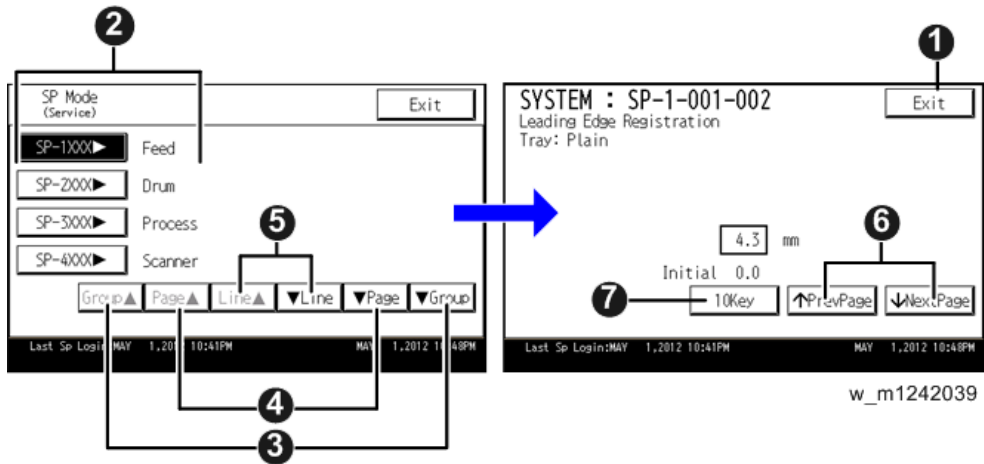
M159

Select one of the Service Program modes (Service, or Engine) from the touch panel.



w_m1242040

Here is a short summary of the touch-panel buttons.



1	Press two times to leave the SP mode and return to the user screen to resume normal operation.
2	Press any Class 1 number to open a list of Class 2 SP modes.
3	Press to scroll the show to the previous or next group.
4	Press to scroll to the previous or next display in segments the size of the screen display (page).
5	Press to scroll the show the previous or next line (line by line).
6	Press to move the highlight on the left to the previous or next selection in the list.
7	Switch to the number key screen. For an SP that requires you to enter numbers, press "10 key" to display the number key screen, enter the number, and then press "OK" to confirm the specified value.

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:

M158: Menu > Security Options > Service Mode Lock > OFF

M159: User Tools > System Settings > Administrator Tools > Service Mode Lock > OFF

- This unlocks the machine and lets you get access to all the SP codes.

- The CE can service the machine and turn the machine off and on. It is not necessary to ask the Administrator to log in again each time the machine is turned on.

2. Go into the SP mode and set SP5169 to "1" if you must use the printer bit switches.

3. After machine servicing is completed:

- Change SP5169 from "1" to "0".
- Turn the machine off and on. Tell the administrator that you have completed servicing the machine.
- The Administrator will then set the "Service Mode Lock" to ON.

Updating the Firmware

Overview

To update the firmware for this machine, you must have the new version of the firmware downloaded onto an SD (Secure Digital) Card. The SD Card is inserted into SD Card Slot 2 (lower) on the left rear side of the controller box.

Type of Firmware

There are several types of firmware as shown below.

Type of firmware	Function	Location of firmware	Message shown
Engine	Printer engine control	BCU Flash ROM	Engine
System	Operating system	Flash ROM on the controller board	System
Lcdc	Panel control	Operation Panel	Lcdc
Bank	Bank control	Bank	Bank
NIB/DESS	Network interface/ Security control	Flash ROM on the controller board	Network Support
Security & Encryption	HDD encryption / Data Overwrite	Flash ROM on the controller board	HDD Format Option
RPCS	Page description Language (RPCS for XPS driver data process)	Flash ROM on the controller board	RPCS
PS3/PDF Adobe	Page description language (PostScript3)	Flash ROM on the controller board	PS/PDF
PCL/ PCLXL	Page description language (PCL)	Flash ROM on the controller board	PCL/PCL XL
MediaPrint: JPEG/ TIFF	MediaPrint control	Flash ROM on the controller board	MediaPrint: JPEG/ TIFF

Type of firmware	Function	Location of firmware	Message shown
Summary Font	Summary fonts	Flash ROM on the controller board	Font
PCL Font	PCL fonts	Flash ROM on the controller board	FONT1
PS Font	PostScript3 fonts	Flash ROM on the controller board	FONT2
Netfile Application	Feature application	Flash ROM on the controller board	NetworkDocBox
Printer Application	Feature application	Flash ROM on the controller board	Printer
WebSys	Web Service application	Flash ROM on the controller board	Web Support
WebDocBox	Document server application	Flash ROM on the controller board	Web Uapl
Java VM	Java VM platform	Java VM card Option	SDK1

Updating Firmware

Before You Begin

An SD card is a precision device. Always observe the following precautions when you handle SD cards:

- Always switch the machine off before you insert an SD card. Never insert the SD card into the slot with the power on.
- Do not remove the SD card from the service slot after the power has been switched on.
- Never switch the machine off while the firmware is downloading from the SD card.
- Keep SD cards in a safe location where they are not exposed to high temperature, high humidity, or exposure to direct sunlight.
- Always handle SD cards with care. Do not bend or scratch them. Do not let the SD card get exposed to shock or vibration.
- Make sure that the write protection of an SD card is unlocked when you download an application to it. If not, downloading fails and a download error (e.g. Error Code 44) occurs during a firmware upgrade.

- Keep the following points in mind when you use the firmware update software:
 - "Upload" means to send data from the machine to the SD card. "Download" means to send data from the SD card to the machine.
 - To select an item on the LCD, touch the appropriate button on the soft touch-screen of the LCD.
 - Disconnect the Ethernet interface cable, IEEE1284 interface cable and remove the Wireless LAN interface board before you start the firmware update procedure. Make sure that the machine is disconnected from the network to prevent a print job for arriving while the firmware update is in progress.

Preparation

- If the SD card is blank, copy the entire "romdata" folder onto the SD card.
- If the card already contains the "romdata" folder, copy the "M158" folder onto the card.

If the card already contains folders up to "M158", copy the necessary firmware files (e.g. M158xxxx.fwu) into this folder.

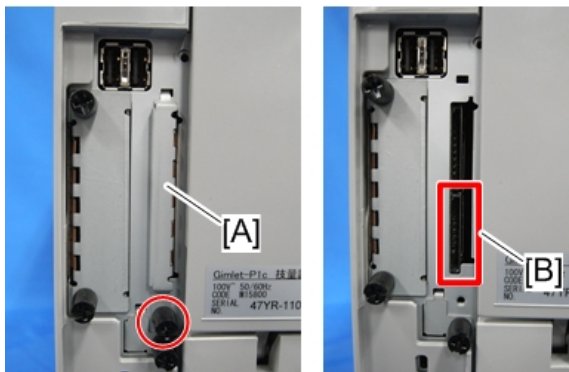
↓ Note

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

Updating Procedure

M158 (4-line Panel)

1. Turn the main power switch off.
2. Remove the slot cover [A] (✂ × 1).
3. Insert the SD card into SD Card Slot 2 [B].



m158m0075

Note

- Make sure the label on the SD card faces the front side of the machine.
- Slowly push the SD card into the slot so it locks in place. You will hear it click. Make sure the SD card locks in place.
- To remove the SD, push it in to unlock the spring lock. Then release it so it pops out of the slot.

4. Disconnect the network cable if the machine is connected to a network.

5. Turn the main power switch on.

After a few seconds, the initial version update screen appears on the LCD in English.

6. On the screen, press the corresponding key (▲, ▼) to select the update file that you want to update.



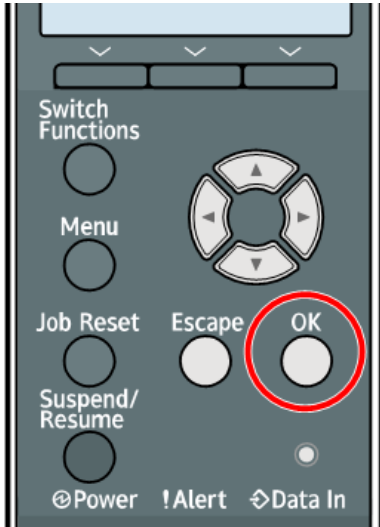
ROM/NEW	What it means
ROM:	Tells you the number of the module and name of the version currently installed.
NEW:	Tells you the number of the module and name version on the SD card.

Note

- You can change the module name screen or module version screen by using ◀, ▶ keys.
- Controller and engine firmware cannot be updated at the same time. It is recommended to update firmware modules one by one.

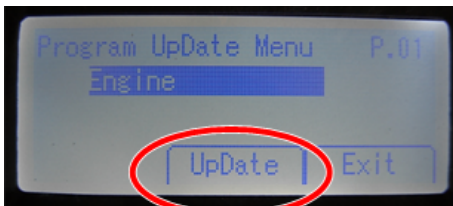
7. Press the "OK" key after selecting the item that you want to update.

The "UpDate" button appears.



w_m158m0095

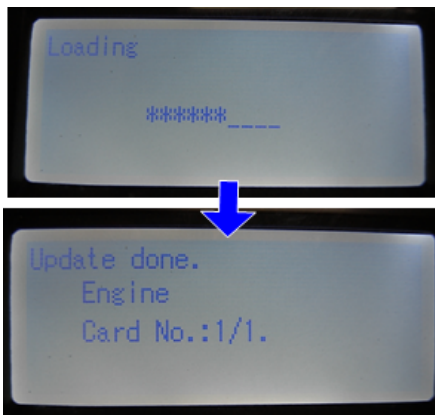
8. Press the "UpDate" key to start the update.



w_m158m0096

Note

- The progress bar appears on the operation panel.



w_m158m0097

9. The "Update Done" message appears after completing the updating.

The message differs depending on the firmware that has been updated.

10. Turn the main power off and on. Then, select the items that you updated, and then push the [Verify] button.

This is to check that the modules were updated correctly. Press in the SD card to release it. Then remove it from the slot.

11. If you see "Verify Error" in the first bar on the screen, then you must do the procedure again for the module shown in the bottom bar.

Note

- The "Verify" procedure is not necessary but it is strongly recommended.

12. After the firmware is correctly updated, turn the main power switch off, and then switch the machine on for normal operation.

M159 (Touch Panel)

1. Turn the main power switch off.
2. Remove the slot cover (1).
3. Insert the SD card into SD Card Slot 2.

Make sure the label on the SD card faces the front side of the machine.

4. Slowly push the SD card into the slot so it locks in place.

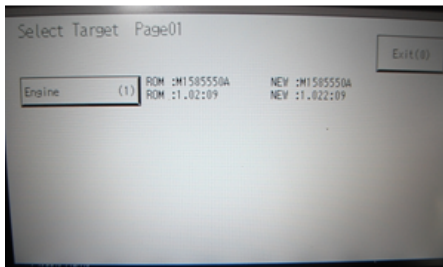
Note

- You will hear it click. Make sure the SD card locks in place.
- To remove the SD, push it in to unlock the spring lock. Then release it so it pops out of the slot.

5. Disconnect the network cable if the machine is connected to a network.
6. Turn the main power switch on.

After a few seconds, the initial version update screen appears on the LCD in English.

7. On the screen, touch the button on the operation panel to select the update file that you want to update.



w_m158m0098

ROM/NEW	What it means
ROM:	Tells you the number of the module and name of the version currently installed. The first line is the module number, the second line the version name.
NEW:	Tells you the number of the module and name version on the SD card. The first line is the module number, the second line the version name.

Note

- Controller, engine and operation panel firmware cannot be updated at the same time. It is recommended to update firmware modules one by one.

8. Press "UpDate" to start the update.



Note

- The progress bar appears on the operation panel.

9. The "Update Done" message appears after completing the updating.

The message differs depending on the firmware that has been updated.

The name of the module in the bottom bar is the name of the last module that was updated (only the name of the last module is shown, if several modules were been updated).

10. Turn the main power off and on. Then, select the items that you updated, and then push the [Verify] button.

This is to check that the modules were updated correctly. Press in the SD card to release it. Then remove it from the slot.

11. If you see "Verify Error" in the first bar on the screen, then you must do the procedure again for the module shown in the bottom bar.

Note

- The "Verify" procedure is not necessary but it is strongly recommended.

12. After the firmware is correctly updated, turn the main power switch off, and then switch the machine on for normal operation.

Firmware Update Error

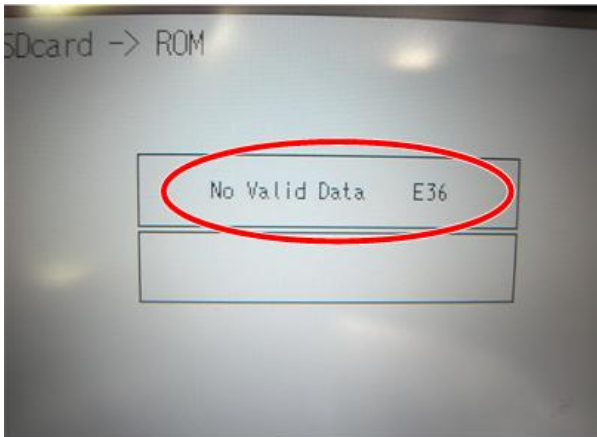
If firmware update fails, an error code appears.

An error message shows in the first line if an error occurs during the download.

The error code consists of the letter "E" and a number (for example, "E36", "E50"). For details, refer to the Error Message Table. (Handling Firmware Update Errors in this section)

M159

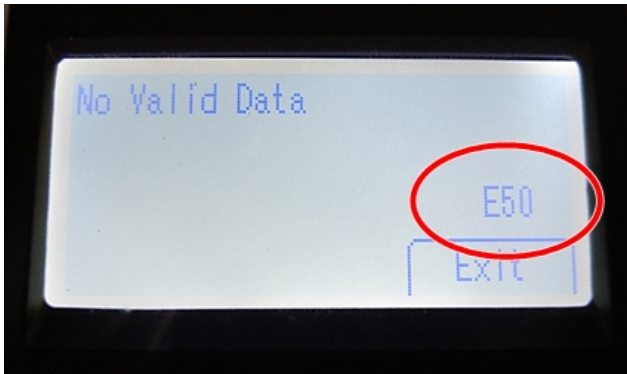
4.3inch color LCD



w_m1242089

M158

4-line LCD



w_m158m2015

Recovery after Power Loss

If the ROM update is interrupted as a result of accidental loss of power while the firmware is updating, then the correct operation of the machine cannot be guaranteed after the machine is switched on again.

If the ROM update does not complete successfully for any reason, then in order to ensure the correct operation of the machine, the ROM update error will continue to show until the ROM is updated successfully.

In this case, insert the card again and switch on the machine to continue the firmware download automatically from the card without the menu display.

Handling Firmware Update Errors

Error Message Table

Code	Meaning	Solution
01	The module data does not match.	<ul style="list-style-type: none"> • Cycle the machine off/on. • If the update cannot be made even if you insert the correct SD card, there is a possibility that the SD card is broken. Retry again with a different SD card. • If you cannot resolve the problem with the above steps, replace the controller board.
02	An error occurred while initializing the update program.	<ul style="list-style-type: none"> • Cycle the machine off/on. • If you cannot resolve the problem with the above steps, replace the controller board.
03	The ROM data to be rewritten is missing.	<ul style="list-style-type: none"> • Cycle the machine off/on. • Turn the power off, switch DIPSW-1 on the controller to ON, and then turn the power back on to force the ROM data to be rewritten. • Reset the ROM-DIMM. • If you cannot resolve the problem with the above steps, replace the controller board.
04	Failed to check the GNU ZIP data.	<ul style="list-style-type: none"> • Cycle the machine off/on. • Turn the power off, switch DIPSW-1 on the controller to ON, and then turn the power back on to force the ROM data to be rewritten. • Replace the ROM-DIMM. • If you cannot resolve the problem with the above steps, replace the controller board.

Code	Meaning	Solution
05	A device error occurred while rewriting data.	<ul style="list-style-type: none"> • Cycle the machine off/on. • Turn the power off, switch DIPSW-1 on the controller to ON, and then turn the power back on to force the ROM data to be rewritten. • Reset the ROM-DIMM. • If you cannot resolve the problem with the above steps, replace the controller board.
06	CPU clock error	<ul style="list-style-type: none"> • Turn the power off, switch DIPSW-1 on the controller to ON, and then turn the power back on to force the ROM data to be rewritten. • If you cannot resolve the problem with the above steps, replace the controller board.
10	A startup option error has occurred.	<ul style="list-style-type: none"> • Restore the SD card for installation.
11	An error occurred while waiting to read the installed SD card.	<ul style="list-style-type: none"> • Cycle the machine off/on. • Restore the SD card for installation. • Retry again with a different SD card. • If you cannot resolve the problem with the above steps, replace the controller board.
12	Configuration file error	<ul style="list-style-type: none"> • Cycle the machine off/on. • Restore the SD card for installation. • Retry again with a different SD card.
13	The memory is insufficient to install the data.	<ul style="list-style-type: none"> • Reduce the number of module files to be installed.
14	Failed to execute system call.	<ul style="list-style-type: none"> • Cycle the machine off/on. • Restore the SD card for installation. • Retry again with a different SD card. • If you cannot resolve the problem with the above steps, replace the controller board.

Code	Meaning	Solution
15	Failed to execute self-update.	<ul style="list-style-type: none"> • Cycle the machine off/on. • Restore the SD card for installation. • Retry again with a different SD card. • If you cannot resolve the problem with the above steps, replace the controller board.
19	Schedule data error	<ul style="list-style-type: none"> • Turn the power off, switch DIPSW-1 on the controller to ON, and then turn the power back on to force the ROM data to be rewritten. • If you cannot resolve the problem with the above steps, replace the controller board.
20	Cannot map logical address	<ul style="list-style-type: none"> • Cycle the machine off/on. • If the program starts in the SD card, reinsert the SD card. • If you cannot resolve the problem with the above steps, replace the controller board.
21	Not enough memory for downloading	<ul style="list-style-type: none"> • Cycle the machine off/on. • If you cannot resolve the problem with the above steps, replace the controller board.
22	Cannot decompress compressed data	<ul style="list-style-type: none"> • Cycle the machine off/on. • Replace the SD card that was used to update • If you cannot resolve the problem with the above steps, replace the controller board.
24	SD card access error	<ul style="list-style-type: none"> • Cycle the machine off/on. • Make sure SD card inserted correctly, or use another SD card. • If you cannot resolve the problem with the above steps, replace the controller board.

Code	Meaning	Solution
31	An error to continue downloading has occurred. When using two or more SD cards to download data, the data from the second or later SD card was incompatible.	<ul style="list-style-type: none"> • Install the SD card containing the subsequent program(s), and then turn the power off and then back on to resume downloading. • Retry again with a different SD card. • If the problem persists even if you try to install the subsequent data using another SD card, turn the power off, switch DIPSW-1 on the controller to ON, and then turn the power back on to force the ROM data to be rewritten. • If forcing the data to be rewritten fails, replace the controller board.
32	Different SD card between download interruption and download resumption	<ul style="list-style-type: none"> • Setting the SD card was interrupted. Cycle the machine off/on. • If the update cannot be made even if you insert the correct SD card, there is a possibility that the SD card is broken. Retry again with a different SD card. • If you cannot resolve the problem with the above steps, replace the controller board. • If the program is in the SD card, reinsert the SD card. • If you updated engine, FCU, or operating unit, replace each board.
33	Incorrect version data in the SD card	<ul style="list-style-type: none"> • Acquire correct update data then install again.
34	Module error - Correct module (destination) is not in the SD card.	<ul style="list-style-type: none"> • Acquire the correct data (Japan, Overseas, OEM, etc.) then install again.
35	Module error – Module in the SD card is not for this machine	<ul style="list-style-type: none"> • Acquire correct update data then install again.
36	Module error – The machine does not have the program that you are trying to download.	<ul style="list-style-type: none"> • Install the correct program in advance. • Make sure SD card inserted correctly. • If the update cannot be made even if you insert the correct SD card, there is a possibility that the SD card is broken. Retry again with a different SD card.

Code	Meaning	Solution
38	Program version is not allowed to update	<ul style="list-style-type: none"> Acquire correct update data then install again.
40	Engine module download failed	<ul style="list-style-type: none"> Cycle the machine off/on. If the download failed again, replace the controller board.
42	Operation/language module download failed (M159 only)	<ul style="list-style-type: none"> Cycle the machine off/on. If the download failed again, replace the controller board and operation board.
44	Controller module download failed (access error)	<ul style="list-style-type: none"> Cycle the machine off/on. If the program is in the SD card, replace the SD card. If the program is in the controller board, replace the controller board.
49	Firmware update is prohibited	<ul style="list-style-type: none"> Firmware update is disabled in the administrator settings. Retry by changing the settings to allow firmware update.
50	Digital certificate check result of updating data was NG.	<ul style="list-style-type: none"> Acquire correct update data then install again.

Uploading/Downloading NVRAM Data

Uploading Content of NVRAM to an SD Card

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

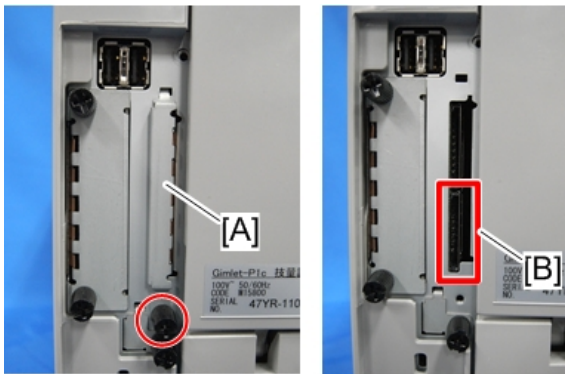
↓ Note

- All data that is stored in NV-RAM of the engine and controller is subject to update.

↓ Note

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

1. **Do SP5990 (SMC Print) before you switch the machine off. You will need a record of the NVRAM settings if the upload fails.**
2. **Turn the machine main power switch off.**
3. **Remove the SD slot cover [A] (🔧 x 1)**
4. **Insert the SD card into SD card slot [B].**



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5. Then turn the machine on.
6. Execute SP5-824-001 (NVRAM Data Upload) and then press the "Execute" key.
7. The following files are copied to an NVRAM folder on the SD card when the upload procedure is finished. The file is saved to the following path and 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.

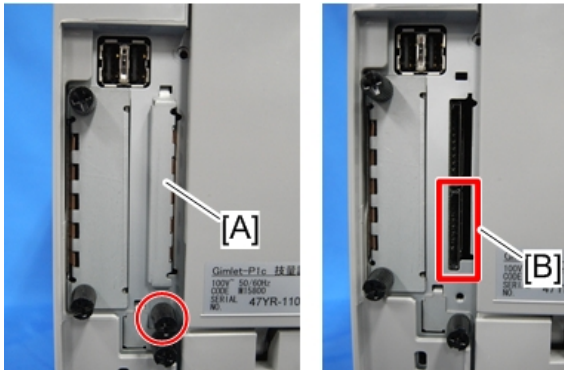
Downloading an SD Card to NVRAM

Do the following procedure to download SP data from an SD card to the NVRAM in the machine.

Note

- The NVRAM data download may fail if the SD card with the NVRAM data is damaged, or if the connection between the controller and BCU is defective.
- Do the download procedure again if the download fails.
- Do the following procedure if the second attempt fails:
- Enter the NVRAM data manually using the SMC print you created before uploading the NVRAM data.

- Turn the machine main power switch off.
- Remove the SD slot cover [A] (🔧 x 1)
- Insert the SD card with the NVRAM data into SD Card Slot [B].



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- Turn the machine main power switch on.
- 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.

The following data cannot be downloaded to the NVRAM:

- Total Counters
- Charging Counters

Address Book Upload/Download

Information List

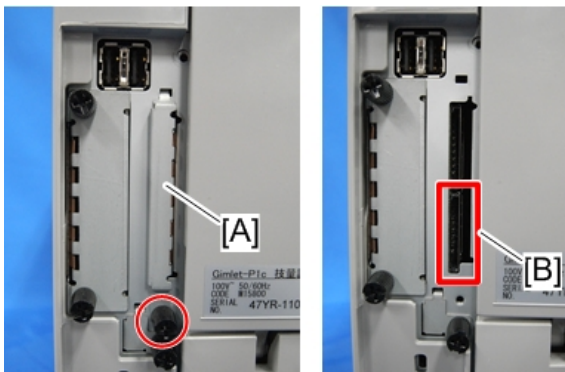
The following information can be uploaded and downloaded.

Information	
<ul style="list-style-type: none"> • Registration No. • User Code • Group Name • Key Display 	<ul style="list-style-type: none"> • Select Title • Local Authentication • Account ACL

5

Upload (Backup) to SD Card

1. Prepare a formatted SD card.
2. Make sure that the write-protection on the SD card is off.
3. Turn off the main power switch.
4. Remove the SD card slot cover [A] (⚙ x 1), and then install the SD card into the SD card slot 2 [B] (for service use).



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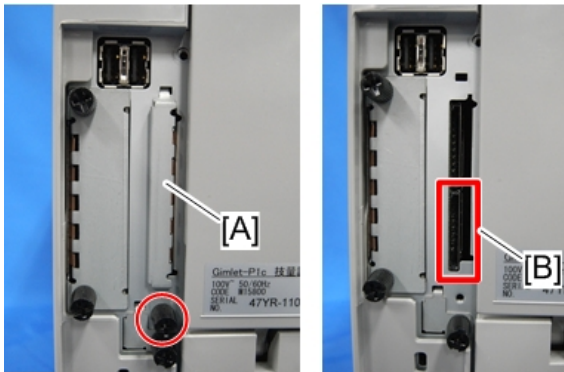
5. Turn on the main power switch.
6. Enter the SP mode, and then execute SP5-846-051 (Backup All Addr Book).
7. Exit from the SP mode, and then turn off the main power switch.
8. Remove the SD card from the SD card slot 2.
9. Install the SD card slot cover.

↓ Note

- If the capacity of SD card is not enough to store the local user information, an error message is displayed.
- Carefully handle the SD card, which contains user information. Do not take it back to your location.

Download (Restore) to Machine

1. Turn off the main power switch.
2. Remove the SD card slot cover [A] (⚠ x 1), and then install the SD card, in which the data has been uploaded, into the SD card slot 2 [B].



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3. Turn on the main power switch.
4. Enter the SP mode, and then execute SP5-846-052 (Restore All Addr Book).
5. Exit from the SP mode, and then turn off the main power switch.
6. Remove the SD card from the SD card slot 2.
7. Install the SD card slot cover.
8. Turn on the main power, and then check that the address book has been restored.

↓ Note

- The counter in the user code information is initialized after uploading.
- The information of an administrator and supervisor cannot be downloaded nor uploaded.
- If there is no data of address book information in the SD card, an error message is displayed.

Erasing the Backup Data

After restoring the data, execute SP5-846-053 (Clear Backup Info) to erase the address book data stored in the SD card.

Capturing Log to SD card

Overview

★ Important

- This function is not available on models without a hard disk.

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 three.

- Controller debug log
- Engine debug log
- Debug log of the operation panel (This log cannot be captured with the four-line display model [M158].)

★ 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 an 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 (GW debug log)	<ul style="list-style-type: none"> • Saved at all times 	HDD (4 GB) Compressed when written to an SD card from the HDD (from 4 GB to about 300 MB)
Engine debug log	<ul style="list-style-type: none"> • When an engine SC occurs • When paper feeding/output stop by jams • When the machine doors are opened during normal operation 	HDD (Up to 300 times)

Type	Storage Timing	Destination (maximum storage capacity)
Operation panel debug log	<ul style="list-style-type: none"> • When a controller SC occurs • When saving by manual operation with the Number keys and the Reset key (Press "Reset", "0", "1" and "C" (hold for 3 seconds)) • When the operation unit detects an error • When the operation panel detects an error 	<p>Operation panel (400 MB /Up to 30 times)</p> <p>When updating the firmware for the operation panel, the debug logs are erased.</p>

↓ Note

- Debug logs are not saved in the following conditions.
- When there is no optional HDD.
- 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)

Security of the Operation Log

- User ID
- Password
- IP address
- Telephone number
- Encryption key
- Transition to SP mode

Also the following operation logs are not saved.

- Number keys (0 to 9) on the operation panel
- Soft keyboard on the touch panel display

- External keyboard

Retrieving the Debug Logs

★ Important

- Retrieve debug logs to identify the date of occurrence of the problems and to find details of the problems
- e.g.: At around 8:00 am on March 10, an engine stall occurred. The operation panel does not respond. Turn the main power supply off / on.
- You need to retrieve the debug logs dating back three days from the date of the problem.
- 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.

5

Procedure for Retrieving the Debug Log

1. Insert the SD card into the slot on the side of the operation panel.

With the four-line display model (M158), insert the SD card into Service Slot 2 (lower) on the back of the machine.

2. Enter SP mode.

3. Set the start date of the log with SP5-857-101 (Start date of debug log output)

e.g.: March 28, 2013: input 20130328 (yyyymmdd)

- Set the date three days earlier than the occurrence of the problems.

4. Set the end date of the log with SP5-857-102 (End date of debug log output)

e.g.: March 31, 2013: input 20130331 (yyyymmdd)

5. Execute SP5-857-103 (Get a debug log of all) to write the debug log to the SD card.

6. If the transfer is finished successfully, 'completed' is displayed on the touch panel display.

↓ Note

- The approximate time it takes to transfer the debug log is as follows. Transfer time may be affected by the type or format of the SD card. (It is recommended that you format the SD card using the Panasonic SD Formatter (freeware)).
- Controller debug log (GW debug log): 2 - 20 minutes
- Engine debug log: 2 minutes
- Operation panel debug log: 2 - 20 minutes

7. Make sure that the SD card access LED is off, then remove the SD card.

Note

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

The debug logs are saved with the following file names.

Controller debug log (GW debug log)	/LogTrace/machine number/watching/ yyyymmdd_hhmmss_unique identification number.gz
Engine debug log	/LogTrace/machine number/engine/yyyymmdd_hhmmss.gz
Operation panel debug log	/LogTrace/machine number/oepanel/ yyyymmdd_hhmmss.tar.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

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC195	D	Machine serial number error
		Comparison of the product identification code in the machine serial number (11 digits).
		The product identification code in the machine serial number (11 digits) does not match.
		Re-enter the machine serial number.

6

SC200 (LED Optics)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC230-00	D	FGATE ^{*1} : Does not turn ON.
		GPIO ^{*2} has not been asserted, although the specified time (200 ms) elapsed after setting JOB to be started and reaching the FGAT assert time.
		Control Board
		Turn the main power OFF and then ON

(*1)FGATE: Signals used between the controller and the engine in order to send the information about the sub scan length of the page to be printed.

(*2)GPIO: A type of input/output terminal

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC231-00	D	FGATE ^{*1} : Does not turn OFF.
		GPIO ^{*2} has not been negated, although the specified time (200 ms) elapsed after detecting GPIO* assert and then reaching the expected FGATE negate time.
		* This is an I/O pin. Such I/O pins can be used for a variety of applications, depending on the setting.
		<ul style="list-style-type: none"> Control Board Engine Board

(*1)FGATE: Signals used between the controller and the engine in order to send the information about the sub scan length of the page to be printed.

(*2)GPIO: A type of input/output terminal

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC270-00	D	Write ASIC communication error
		<ul style="list-style-type: none"> When the Engine Board could not read the Unique ID of the Writing ASIC properly when starting this machine. When an Error bit occurred in the communication between the Engine Board and the Writing ASIC.
		The unique ID of the write ASIC was not read normally.
		<ul style="list-style-type: none"> Turn the main power OFF and then ON. Engine Board

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC277-00 SC277-10	D	LEDA communication error
		The head type data was read three times in succession
		(277-00) <ul style="list-style-type: none"> Defective ASIC Defective LEDA
		(277-10) <ul style="list-style-type: none"> LEDA power source error
		<ul style="list-style-type: none"> Turn the main power OFF and then ON. Replace the LED head

SC300 (Image Processing – 1)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC302-00	D	High voltage output error: Charge unit /Development unit
		This SC is issued if the BCU detects a short in the power pack 10 times consecutively.
		Open circuit (+) / Short circuit (-)
		<ul style="list-style-type: none"> Turn the main power OFF and then ON. 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 Toner supply coil drive mechanism 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. n: The value was specified at SP2-931-005.
		<ul style="list-style-type: none"> • Disconnected or broken Solenoid: Upper cover. (Failed to open the toner supply shutter) • Disconnection of Toner Supply Clutch • Failed PCDU. (Toner leak) • Toner clogging
		<ul style="list-style-type: none"> • Check the connector connection or check for broken wire. • Replace the Solenoid: Upper Cover • Replace the PCDU • Replace the Toner Cartridge.

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)
		<ul style="list-style-type: none"> • Bad connector contact or connector disconnected/wire broken • Failed TE Sensor
		<ul style="list-style-type: none"> • Turn the main power of the printer OFF and then ON • Check the connector connection or check for broken wire. • Replace the LED Head. • Replace the TE sensor (using the same troubleshooting procedure as for LED).

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 BCU detects a short in the power pack 10 times consecutively.
		Open circuit (+) / Short circuit (-)
		<ul style="list-style-type: none"> • Turn the main power OFF and then ON. • Replace the controller board. • Check the connector connection.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC498-00	C	Temperature/humidity Sensor error
		<ul style="list-style-type: none"> • Temperature Sensor output error: Out of range between 0.76 V and 2.90 V • Humidity Sensor output error: 2.4 V or more
		<ul style="list-style-type: none"> • Unmounted Sensor (Unset connector or broken wire) • Failed Sensor
		<ul style="list-style-type: none"> • Turn the main power OFF and then ON. • 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	By-pass bottom plate operation error
		The signal from the by-pass bottom plate position Sensor has not changed (that is, 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 appropriate SC number is displayed on the operation panel unit.
		<ul style="list-style-type: none"> • By-pass bottom plate Sensor connector disconnected or other error • By-pass bottom plate Sensor feeler stuck or other error
		<ul style="list-style-type: none"> • Turn the main power OFF and then ON. • Check and replace the by-pass bottom plate Sensor connector connection. • Replace the by-pass bottom plate Sensor feeler. • Replace the Paper Feed Motor. • Replace the harness. • Replace the BCU.

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.
		<ul style="list-style-type: none"> • 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.
		<ul style="list-style-type: none"> Failed fan motor Disconnected connector
		<ul style="list-style-type: none"> Replace the fan motor. Check the connector. Replace the harness. Replace the IOB.

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.
		<ul style="list-style-type: none"> Failed fan motor Disconnected connector
		<ul style="list-style-type: none"> Replace the fan motor. Check the connector. Replace the harness. Replace the IOB.

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.
		<ul style="list-style-type: none"> Failed fan motor Disconnected connector
		<ul style="list-style-type: none"> Replace the fan motor. Check the connector. Replace the harness. Replace the IOB.

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.
		<ul style="list-style-type: none"> Broken thermistor wire Bad connector contact
		<ul style="list-style-type: none"> 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) thermistor not reloaded 1
		The heater thermistor has increased by less than 2.0 degrees in 1.5 seconds 5 times in a row.
		<ul style="list-style-type: none"> Deformed or floating thermistor Input voltage out of range
		<ul style="list-style-type: none"> Clear the SP: fusing SC. Replace the thermistor.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC542-02	A	Fusing lamp (Center) thermistor not reloaded 2
		The heater (Center) thermistor does not reach the reload temperature 50 seconds after the start of motor rotation.
		<ul style="list-style-type: none"> • Fusing lamp Disconnected • The overtemperature prevention mechanism started working
		<ul style="list-style-type: none"> • 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 245 deg C or higher for one second.
		<ul style="list-style-type: none"> • Shorted triac • Failed Engine Board
		<ul style="list-style-type: none"> • Clear the SP: fusing SC. • Replace the PSU. • Replace the Engine Board.

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.
		<ul style="list-style-type: none"> • 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).
		<ul style="list-style-type: none"> • 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
SC545-00	A	Fusing (Center) heater stay ON
		The thermistor (center) has not detected the target temperature, even after the fusing heater stays ON for more than 30 seconds after reloading.
		<ul style="list-style-type: none"> • Deformed or floating thermistor • Broken fusing lamp wire • The overtemperature prevention mechanism started working
		<ul style="list-style-type: none"> • 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)
		<ul style="list-style-type: none"> • Turn the main power OFF and then ON. • Replace the harness. • Replace the PC board. • Replace the PSU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC547-02	D	Zero-crossing error (bad relay contact)
		If a "zero-crossing interrupt request" does not occur when the fusing relay is in an ON state, an error results.
		<ul style="list-style-type: none"> - Damaged fusing relay (open contact) - Failed fusing relay drive circuit - PSU fuse (24VS) blown
		<ul style="list-style-type: none"> • Turn the main power OFF and then ON. • Replace the harness. • Replace the Engine Board. • Replace the PSU. • Replace the fuse.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC547-03	D	Zero-crossing error (low frequency error)
		The number of zero-crossing interrupts does not reach a certain value in 500 ms.
		The frequency of the commercial power supply line is unstable.
		<ul style="list-style-type: none"> • Turn the main power OFF and then ON. • Check the commercial power supply line. • Replace the harness. • Replace the Engine Board. • 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 0 deg C or less for three seconds.
		<ul style="list-style-type: none"> • Broken thermistor wire • Bad connector contact
		<ul style="list-style-type: none"> • 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 SC553-02	A	Fusing (End) thermistor high-temperature detected (software)
		(553-01) 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 245 deg C or higher for one second.
		<ul style="list-style-type: none"> • Shorted triac • Failed Engine Board
		<ul style="list-style-type: none"> • Clear the SP: fusing SC. • Replace the PSU. • Replace the Engine Board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC554-00	A	Fusing (End) thermistor high-temperature detected (software)
		The hardware high-temperature error Sensor flag is detected.
		<ul style="list-style-type: none"> • 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).
		<ul style="list-style-type: none"> • 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
SC636-01	D	IC Card Error (Expanded authentication module error)
		<p>Issued when expanded authentication management is set to "ON" but either of the following occur.</p> <ul style="list-style-type: none"> • 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.
		<ul style="list-style-type: none"> • 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.
		<ul style="list-style-type: none"> • 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)
		<ul style="list-style-type: none"> 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.
		<ul style="list-style-type: none"> 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 (ldissuer.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)
		Tracking information was lost.
		<ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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	D	Communication error: Engine → Controller (No response)
		No response from engine to frame after frame sending from controller with RAPI protocol. (No response after 3 attempts of sending every 100 ms)
		Asserts the error detected by the serial driver from PSC module to SRM with RAPI command.
		Turn the main power off/on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC650-01	B	Remote Service Modem Communication Error (Dialup authentication failure)
		<ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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)
		<ul style="list-style-type: none"> • 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)
		<ul style="list-style-type: none"> • 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 Mwas installed but modem is not present (detected during operation))
		<ul style="list-style-type: none"> • 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 Mwas installed but modem is not present (detected during operation)
		<ul style="list-style-type: none"> • 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)
		<ul style="list-style-type: none"> • 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
		<ul style="list-style-type: none"> • 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.
		<ul style="list-style-type: none"> Used controller board installed Used NVRAM installed (such action is not allowed.)
		<ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> • Number of characters is not 17. • Includes a character that cannot be printed. • All spaces • NULL
		Replace the NVRAM.
		Clear the RC Gate install status, write the common certificate, and then begin installation again.

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

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		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 <ul style="list-style-type: none"> • Electromagnetic noise • EEPROM error
		<ul style="list-style-type: none"> • Turn the main power OFF and then ON. • Replace the BCU

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC669-36	D	EEPROM communication error
		The EEPROM data has been transferred to the SRAM twice in succession, but the two sets of transferred data do not match.
		669 - 36 EEPROM SRAM OPEN: Verified error <ul style="list-style-type: none"> • Electromagnetic noise • EEPROM error
		<ul style="list-style-type: none"> • Turn the main power OFF and then ON.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC670-00	D	Engine start up error

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		<ul style="list-style-type: none"> • Case 1 <ul style="list-style-type: none"> • /ENGRDY signal was not asserted when the machine was turned on or returned from energy saver mode. • /IPURDY signal was not asserted when the machine was turned on or returned from energy saver mode. • The EC response from the engine was not received within the specified time after turning on the main power. • The PC response from the engine was not received within the specified time after turning on the power. • The SC response from the engine was not received within the specified time after turning on the power (MFP models only). • Writing to Rapi driver failed (the other party not found through PCI). • Case 2 <ul style="list-style-type: none"> • Unexpected down status was detected after /ENGRDY assertion.
		<ul style="list-style-type: none"> • Case 1 <ul style="list-style-type: none"> • Engine board does not start up. • Case 2 <ul style="list-style-type: none"> • Engine board reset unexpectedly. <p>Check the connection between the engine board and the controller board.</p> <ul style="list-style-type: none"> • If this problem always occurs, replace the engine board. If the problem persists, consider replacing the controller board or other boards between them. • If this problem occasionally occurs, multiple causes are to be considered, such as the software, engine board, controller board, and PSU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC672-10 (M159 only)	D	Controller start up error
		The controller and control panel failed to establish communication when the power was turned on.
		<ul style="list-style-type: none"> • Controller stalled • Board installed incorrectly • Controller board defective • Operation panel connector is loose, broken, or defective • Controller's late response
		<ul style="list-style-type: none"> • Turn the main power off/on. • Check the connection of the controller board. • Replace the controller board. • Check the control panel harness.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC672-11 (M159 only)	D	Controller start up error
		After the machine was powered on, communication between the controller and the operation panel was not established, or data transmission failed after a normal startup.
		<ul style="list-style-type: none"> • Controller stalled • Board installed incorrectly • Controller board defective • Operation panel connector is loose, broken, or defective • Controller's late response
		<ul style="list-style-type: none"> • Turn the main power off/on. • Check the connection of the controller board. • Replace the controller board. • Check the control panel harness.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC672-12 (M159 only)	D	Controller start up error
		Communication with controller was interrupted after a normal startup.
		<ul style="list-style-type: none"> • Controller stalled • Board installed incorrectly • Controller board defective • Operation panel connector is loose, broken, or defective • Controller's late response
		<ul style="list-style-type: none"> • Turn the main power off/on. • Check the connection of the controller board. • Replace the controller board. • Check the control panel harness.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC672-13 (M159 only)	D	Controller start up error
		The operation panel detected that the controller is down.
		<ul style="list-style-type: none"> • Controller stalled • Board installed incorrectly • Controller board defective • Operation panel connector is loose, broken, or defective • Controller's late response
		<ul style="list-style-type: none"> • Turn the main power off/on. • Check the connection of the controller board. • Replace the controller board. • Check the control panel harness.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC672-99 (M159 only)	D	Controller start up error
		The operation panel software ended abnormally.
		<ul style="list-style-type: none"> • Controller stalled • Board installed incorrectly • Controller board defective • Operation panel connector is loose, broken, or defective • Controller's late response
		<ul style="list-style-type: none"> • Turn the main power off/on. • Check the connection of the controller board. • Replace the controller board. • Check the control panel harness.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC674-01	D	Transfer error: M2P
		The video transfer error has occurred on the controller board. If image data transfer to the engine fails for some reason, an SC occurs.
		<ul style="list-style-type: none"> • Defective Controller Board/software
		<ul style="list-style-type: none"> • Turn the main power off/on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC674-02	D	Transfer error: PCI
		The video transfer error has occurred on the controller board. A PCI error interrupt is generated by the expanded engine ASIC (SELENE,SELENE2).
		The expanded engine ASIC has failed in its attempt to access another PCI device. The PCI error may occur simultaneously with the M2P error (SC674-01). If this happens, the PCI error takes priority when the SC is displayed.
		<ul style="list-style-type: none"> Defective Controller Board/software Turn the main power off/on.

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		
		<ul style="list-style-type: none"> Turn the main power OFF and then ON. Replace the toner cartridge (ID chip)

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		
		<ul style="list-style-type: none"> • Turn the main power OFF and then ON. • Replace the PCDU (ID chip)

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.
		<ul style="list-style-type: none"> • Defective controller board • Noise
		<ul style="list-style-type: none"> • Turn the main power OFF and then ON. • Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC688-00	D	PRREQ signal not asserted
		The print request signal (PRREQ) signal is not asserted within the prescribed time after paper reaches the registration stand-by position,
		<ul style="list-style-type: none"> Noise Engine Board error
		<ul style="list-style-type: none"> Turn the main power OFF and then ON Replace the Engine Board.

SC700 (Peripherals)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC790-00	D	Maximum number of banks (paper tray units) exceeded error
		When the main 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.

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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

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
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 to94	D	Subsystem error

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		Energy save I/O subsystem detected some abnormality.
		<ul style="list-style-type: none"> • 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.
		<ul style="list-style-type: none"> • Turn the main power off/on. • Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		Watchdog timer error
		<ul style="list-style-type: none"> • The system program fell into a bus-hold state or an endless loop of the program interruption occurred, causing other process to stop.
SC818-00	D	<ul style="list-style-type: none"> • System program defective • Controller board defective • Optional board defective
		<ul style="list-style-type: none"> • Turn the main power off/on. • Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		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.
SC819-00	D	<ul style="list-style-type: none"> • System program defective • Controller board defective • Optional board defective
		Replace controller firmware

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
[0x5032]		HAIC-P2 error
		HAIC-P2 decompression error (An error occurred in the ASIC compression/decompression module.)
[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
SC820-00	D	Self-diagnostics error: CPU [XXXX]: Detailed error code

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
[0001] to [06FF] [0801] to [4005]		<p>CPU error</p> <p>During the self-diagnosis, the controller CPU detects an error. There are 47 types of error code (0001 to 4005) depending on the cause of the error. The CPU detects an error and displays the specific error code with the program address where the error occurs.</p>
		<ul style="list-style-type: none"> • System firmware problem • Defective controller
		<ol style="list-style-type: none"> 1. Turn the main power switch off and on. 2. Reinstall the controller system firmware. 3. Replace the controller. <p>When the problem cannot be fixed with the above procedure, the following information displayed on the screen needs to be reported to the technical support center.</p> <ul style="list-style-type: none"> - SC code - Detailed error code - Program address
[0701] to [070A]		<p>CPU/Memory Error</p>
		<ul style="list-style-type: none"> • System firmware problem • Defective RAM-DIMM • Defective controller
		<ul style="list-style-type: none"> • Reinstall the controller system software. • Replace the RAM-DIMM. • Replace the controller.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC821-00	D	<p>Self-diagnostics error: ASIC</p> <p>[XXXX]: Detailed error code</p>

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
[0B00]		ASIC register check error
		The write-&-verify check has occurred in the ASIC.
		Defective ASIC device
		Replace the controller board.
[0B06]		ASIC detection error
		The I/O ASIC for system control is not detected.
		<ul style="list-style-type: none"> • Defective ASIC • Defective North Bridge and PCII/F
		Replace the controller board.
[50A2]		Video bridge device (ASIC) register error 1
		The CPU detects the video bridge device, but detects error data from the video bridge device.
		Defective I/F between the video bridge device and controller
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC823-00	B	Self-diagnostics error: NIC [XXXX]: Detailed error code
[6101]		MAC address check sum error
		The result of the MAC address check sum does not match the check sum stored in ROM.
		<ul style="list-style-type: none"> • Defective SEEP ROM • Defective I2C bus (connection)
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
[6104]		PHY IC error
		The PHY IC on the controller cannot be correctly recognized.
		<ul style="list-style-type: none"> Defective PHY chip Defective ASIC MII I/F
		Replace the controller board.
[6105]		PHY IC loop-back error
		An error occurred during the loop-back test for the PHY IC on the controller.
		<ul style="list-style-type: none"> PHY chip Defective MAC of ASIC (SIMAC/COMIC/CELLO) Defective I/F with the PHY board Defective solder on the PHY board
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC824-00	D	Self-diagnostics error: NVRAM (resident) [XXXX]: Detailed error code
[1401]		NVRAM verify error
		NVRAM device is missing or NVRAM device is damaged.
		<ul style="list-style-type: none"> The NVRAM device is missing The NVRAM device is damaged NVRAM backup battery exhausted NVRAM socket damaged
		Replace the NVRAM device.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC827-00	D	Self-diagnostic error: Standard SDRAM DIMM [XXXX]: Detailed error code

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
[0201]		Verification error
		Error detected during a write/verify check for the standard RAM (SDRAM DIMM).
		<ul style="list-style-type: none"> Loose connection Defective SDRAM DIMM Defective controller
[0202]		Resident memory error
		The SPD values in all RAM DIMM are incorrect or unreadable.
		<ul style="list-style-type: none"> Defective RAM DIMM Defective SPD ROM on RAM DIMM Defective 12C bus
		Replace the RAM DIMM

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC828-00	D	Self-diagnostic error: ROM [XXXX]: Detailed error code
[0101]		Check sum error 1
		The boot monitor and OS program stored in the ROM DIMM is checked. If the check sum of the program is incorrect, this SC code is displayed.
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC829-00	D	Self-diagnostic error: Optional RAM [XXXX]: Detailed error code

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
[0301] [0401]		Verification error (Optional RAM slot)
		Error detected during a write/verify check for the optional RAM (SDRAM DIMM).
		<ul style="list-style-type: none"> Loose connection Defective SDRAM DIMM Defective controller
		<ul style="list-style-type: none"> Turn the main power switch off and on. Replace the SDRAM DIMM. Replace the controller.
[0302] [0402]		Memory structure data error (Optional RAM slot)
		The memory structure data error for the optional RAM (SDRAM DIMM) is detected during self-diagnosis.
		<ul style="list-style-type: none"> Defective RAM DIMM Defective SPD ROM on RAM DIMM Defective I2C bus
		Replace the RAM DIMM.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC835-00	B	Self-diagnostic error: Standard SDRAM DIMM [XXXX]: Detailed error code
[1102]		The loopback connector is connected but check results is an error.
		<ul style="list-style-type: none"> IEEE1284 connector error Centronic loopback connector is defective
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
[110C]		The loopback connector is connected but check results is an error.
		<ul style="list-style-type: none"> • ASIC device error • IEEE1284 connector error • Centronic loopback connector is defective
		Replace the controller board.
[1120]		Centronic loopback connector is not connected for detailed self-diagnostic test.
		<ul style="list-style-type: none"> • Centronic loopback connector not connected correctly • Centronic loopback connector is defective • ASIC device is defective
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC838-00	D	Self-diagnostic Error: Clock Generator [XXXX]: Detailed error code
[2701]		A verify error occurred when setting data was read from the clock generator via the I2C bus.
		<ul style="list-style-type: none"> • Defective clock generator • Defective I2C bus • Defective I2C port on the CPU
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC839-00	D	Self-diagnostic Error: Serial Flash [XXXX]: Detailed error code
[9001]		USB NAND Flash ROM cannot be read.
		Defective controller board

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: <ul style="list-style-type: none"> • 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
SC853-00	B	Bluetooth device connection error
		When a Bluetooth hardware device (USB type) is connected after startup.
		A Bluetooth hardware device (USB type) has been connected after startup.
		Connect the Bluetooth hardware device (USB type) before turning on the main power switch.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC854-00	B	Bluetooth device removal error
		When a Bluetooth hardware device (USB type) is removed after startup.
		A Bluetooth hardware device (USB type) has been removed after startup.
		Connect the Bluetooth hardware device (USB type) before turning on the main power switch.

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)
		<ul style="list-style-type: none"> Defective wireless LAN board Loose connection
		<ul style="list-style-type: none"> Turn the main power off/on. Replace wireless LAN board

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)
		<ul style="list-style-type: none"> Defective wireless LAN board Loose connection
		<ul style="list-style-type: none"> Turn the main power off/on. Replace wireless LAN board

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC857-00	B	USB driver error
		USB I/F is not available due to USB driver error.
		<ul style="list-style-type: none"> Make sure that the USB is connected correctly. Replace the controller 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.
		<ul style="list-style-type: none"> 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.
		<ul style="list-style-type: none"> 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 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
SC859-01	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.
		<ul style="list-style-type: none"> • 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.
		<ul style="list-style-type: none"> • Check 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 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.
		<ul style="list-style-type: none"> • Check 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

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		<p>A hard disk is connected, but the driver detected the following errors:</p> <p>SS_NOT_READY (-2) The HDD is not ready.</p> <p>SS_BAD_LABEL (-4) Incorrect partition type.</p> <p>SS_READ_ERROR (-5) An error occurred while reading or checking labels.</p> <p>SS_WRITE_ERROR (-6) An error occurred while writing or checking labels.</p> <p>SS_FS_ERROR (-7) Failed to restore filesystem.</p> <p>SS_MOUNT_ERROR (-8) Failed to mount filesystem.</p> <p>SS_COMMAND_ERROR (-9) The driver does not respond to the command.</p> <p>SS_KERNEL_ERROR (-10) Internal kernel error.</p> <p>SS_SIZE_ERROR: (-11) The drive is too small.</p> <p>SS_NO_PARTITION: (-12) The specified partition does not exist.</p> <p>SS_NO_FILE No device file exists.</p> <p>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.</p>
		<ul style="list-style-type: none"> • 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
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.)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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. (An error occurred in partition "e".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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 "I".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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. (An error occurred in partition "p".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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 "r".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> 1. When SC863 has occurred ten times or more <ul style="list-style-type: none"> • 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. <p>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.</p>

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".)
		<p>Guide for when to replace the HDD</p> <ol style="list-style-type: none"> When SC863 has occurred ten times or more <ul style="list-style-type: none"> 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. <p>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.</p>

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
		<ul style="list-style-type: none"> 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.)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-04	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 "c".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • Format the HDD. • Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC864-18	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 "q".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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".)
		<ul style="list-style-type: none"> • 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	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".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-03	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 "b".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-04	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 "c".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-05	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 "d".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-06	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 "e".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-07	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 "f".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-08	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 "g".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-09	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 "h".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-10	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 "i".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-11	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 "j".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-12	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 "k".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-13	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 "l".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-14	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 "m".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-15	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 "n".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-16	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 "o".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-17	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 "p".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-18	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 "q".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-19	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 "r".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-20	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 "s".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-21	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 "t".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-22	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 "u".)
		Replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC865-23	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 "v".)
		Replace the HDD.

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	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/sd0).
		Turn the main power switch off and on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC867-01	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/sd1).
		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)
		<ul style="list-style-type: none"> • SD card is defective • SD controller is defective
		<ul style="list-style-type: none"> • 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)
		<ul style="list-style-type: none"> • SD card is defective • SD controller is defective
		SD card used for starting an application <ul style="list-style-type: none"> • Turn the main power off and check the SD card insertion status. <ul style="list-style-type: none"> • If no problem is found, insert the SD card and turn the main power on. • If an error occurs, replace the SD card. • SD card for users <ul style="list-style-type: none"> • In case of a file system error, reformat the SD card (using the "SD Formatter" made by Panasonic).* • In case of a device access error, 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
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.)

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.)
SC870-09	B	Address Book data error (Machine configuration: Inconsistency in the NVRAM area used for storing settings required for Address Book configuration.)
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.)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC870-41	B	Address Book data error (Cache: failed to obtain data from cache.)
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.)
SC870-60	B	Address Book data error (Unable to obtain the on/off setting for administrator authentication (06A and later).)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		<p>When an error related to the Address Book is detected during startup or operation.</p> <ul style="list-style-type: none"> • 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.
		<ul style="list-style-type: none"> • 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
		HDD mail received data error
		An error is detected in the HDD at machine power-on.
		<ul style="list-style-type: none"> • Defective HDD • Power failure while accessing the HDD
SC872-00	B	<ul style="list-style-type: none"> • 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.
		<ul style="list-style-type: none"> Defective HDD Power failure while accessing the HDD
		<ul style="list-style-type: none"> 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
SC874-99	D	Delete data area (other errors)
		An error occurred while data was being erased on HDD or NVRAM.
		<ul style="list-style-type: none"> Error detected in HDD data delete program Error detected in NVRAM data delete program The "Delete All" option was not set
		<ul style="list-style-type: none"> Turn the main power switch off and back on, and then execute "Erase All Memory" under UP mode again. (However, if there is a defective sector or other problem with the hard disk, the error will persist even after trying the above.) If the "Delete All" option is not installed when this error occurs, install the option.

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 <ul style="list-style-type: none"> Error occurred at "hddcheck -l". 875-02 <ul style="list-style-type: none"> Data erase failed.
		Turn the main power switch off and on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC876-01	D	Log Data Error 1
		An error was detected in the acquisition or configuration of the log data at power on or during machine operation.
		Damaged log data file
		Initialize the HDD (SP5-832-004).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC876-02	D	Log Data Error 2
		An error was detected in the acquisition or configuration of the log data at power on or during machine operation.
		Log encryption is enabled but encryption module is not installed.
		<ul style="list-style-type: none"> • Replace or set again the encryption module. • Disable the log encryption setting.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC876-03	D	Log Data Error 3
		An error was detected in the acquisition or configuration of the log data at power on or during machine operation.
		Inconsistency of encryption key between NV-RAM and HDD.
		<ul style="list-style-type: none"> • Disable the log encryption setting. • Initialize LCS memory (SP5801-019). • Initialize the HDD (SP5-832-004).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC876-04	D	Log Data Error 4
		An error was detected in the acquisition or configuration of the log data at power on or during machine operation.
		<ul style="list-style-type: none"> Log encryption key is disabled but the log data file is encrypted. (NVRAM data corruption) Log encryption key is enabled but the log data file is not encrypted. (NVRAM data corruption)
		<ul style="list-style-type: none"> Initialize the HDD (SP5-832-004).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC876-05	D	Log Data Error 5
		An error was detected in the acquisition or configuration of the log data at power on or during machine operation.
		<ul style="list-style-type: none"> Only the NV-RAM has been replaced with one previously used in another machine. Only the HDD has been replaced with one previously used in another machine.
		<ul style="list-style-type: none"> Attach the original NV-RAM. Attach the original HDD. With the configuration that caused the SC, initialize the HDD (SP5-832-004).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC876-99	D	Log Data Error 99
		An error was detected in the acquisition or configuration of the log data at power on or during machine operation.
		Other causes
		-

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.
		<ul style="list-style-type: none"> Data Overwrite Security option SD card is broken. Data Overwrite Security option SD card has been removed.
		<ul style="list-style-type: none"> 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.
		<ul style="list-style-type: none"> System module was updated in an unauthorized manner. USB flash is not working correctly.
		Replace the 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.

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.
		<ul style="list-style-type: none"> • Unable to start TPM • Necessary files missing from the TPM.
		Replace the controller board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC881-01	D	Management area error
		Defective software has been detected.
		Abnormal accumulation of authentication information in the software
		Turn the main power switch off and on.

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 case of a hardware defect <ul style="list-style-type: none"> • Replace the hardware. In case of a software error <ul style="list-style-type: none"> • 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 value provided by the electronic total counter is outside the normal range.
		<ul style="list-style-type: none"> • Unexpected NVRAM installed • Defective NVRAM • NVRAM data corruption • Data is stored in an unexpected area due to external causes. • The count requests made by SRM upon receiving the PRT have not yet been processed.
		Install an NVRAM device designed specifically for the model.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC920-**	B	Printer application error
		A serious application error that stops the machine from operating is detected.
		<ul style="list-style-type: none"> • 920-02 WORK memory acquisition failed. • 920-04 The filter process was aborted.
		Turn the main power switch off and on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC921-00	B	Printer font error
		A font that is usually included as the standard font was not found when the printer application was started.
		The standard font file is missing.
		Turn the main power switch off and on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC925-00	B	Net File function error
		The Net File storage area on the HDD is not available, or the management file used for handling the Net File data is broken. As a result, access to the Net File data cannot be continued.
		<ul style="list-style-type: none"> • Defective HDD • HDD inconsistency caused by switching the machine off while writing to HDD • Software bug • When HDD error-related service calls (SC860-SC865) are issued at the same time: <p>This error can be caused by a defective HDD. Therefore, take the necessary countermeasures specified for SC860, etc.</p> <ul style="list-style-type: none"> • When other HDD error-related service calls (SC860-SC865) are NOT issued at the same time: <ol style="list-style-type: none"> 1) Turn the main power switch off and on. 2) If it cannot be restored by taking the above measure, initialize the Net File partition in the HDD. <p>Note, however, that this may delete stored data such as documents remaining in the Fax transmission queue and those waiting for capture. Therefore, you must obtain the consent of your customer before executing the initialization. Note that after executing commands including Plumeria/Palm2, the job history will also be cleared.</p> <ol style="list-style-type: none"> 3) If the error persists even after taking the above step, initialize all of the partitions in the HDD in accordance with SP5-832-001, then turn the main power off and then on again. <p>Note, however, that this step will clear all of the data stored on the HDD including various documents, address book data, and so on. Therefore, again you must obtain the prior consent of your customers. Note that saved received Fax documents will be protected, but the receiving order may not be maintained.</p> <ol style="list-style-type: none"> 4) If the error still cannot be restored, replace the HDD.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC990-00	D	Software performance error
		The software attempted to make an unexpected operation.
		<ul style="list-style-type: none"> • 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.
		<ul style="list-style-type: none"> • 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 continuity error
		The software has attempted to perform an unexpected operation. (However, the process can continue running if recovery processing is carried out.)
		<ul style="list-style-type: none"> • Incorrect argument • Incorrect internal parameter • Insufficient working memory • May have resulted from an error that cannot be detected by the hardware using normal SC detection.
		Not required

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC992-00	D	Undefined SC error
		An error that is not controlled by the system occurred (the error does not come under any other SC code).
		A SC code used in the previous machine was applied erroneously.
		Turn the main power switch off and on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC994-00	C	Operation error caused by abnormalities that are normally undetectable.
		An error occurred because the number of records exceeded the limit for images managed in the service layer of the firmware.
		This can occur if there are too many application screens open on the operation panel.
		Logging only.

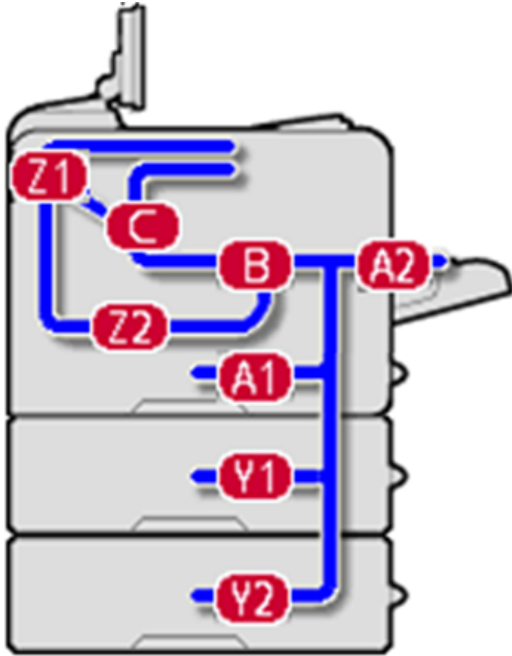
SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC995-**	D	CPM setting error
		Comparison of machine serial number (11 digits) and machine identification code. Details: <ul style="list-style-type: none"> Machine serial number cannot be identified because of BCU replacement or malfunctioning. Machine serial number cannot be identified because of NV-RAM replacement
		Machine serial number (11 digits) or machine identification code does not match.
		<ul style="list-style-type: none"> Replace the board(s) to match the CPM of the controller and BCU boards. 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
		<ul style="list-style-type: none"> The application has not responded to the set command created by SCS within a certain period of time. The application selected ended abnormally.
		Software bug
		<ul style="list-style-type: none"> Check whether an option required by the application (RAM, DIMM, board) is installed properly. Check whether downloaded applications are correctly configured. (Take necessary countermeasures specific to the application in which the error occurs. In some applications, the logs can be taken from the monitor. If this option is available, analyze the logs.)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC998-00	D	Application start error
		<ul style="list-style-type: none"> After power on, no application program is registered to the system within a predetermined period of time. (No application starts or ends normally.) Even if they are started, all applications have become unable to be rendered due to an unknown defect.
		<ul style="list-style-type: none"> Software bug An option required by the application (RAM, DIMM, board) is not installed properly
		<ul style="list-style-type: none"> Turn the main power switch off and on. Check whether an option required by the application (RAM, DIMM, board) is installed properly. Check whether downloaded applications are correctly configured. Replace the Controller Board.

Jam Detection

Jam Displays



m158m2013

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M158

The operation panel of this model has a four-line display which shows only the message indicating the paper jam location. (e.g "⌘ (A1)", "⌘ (B)")

M159

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

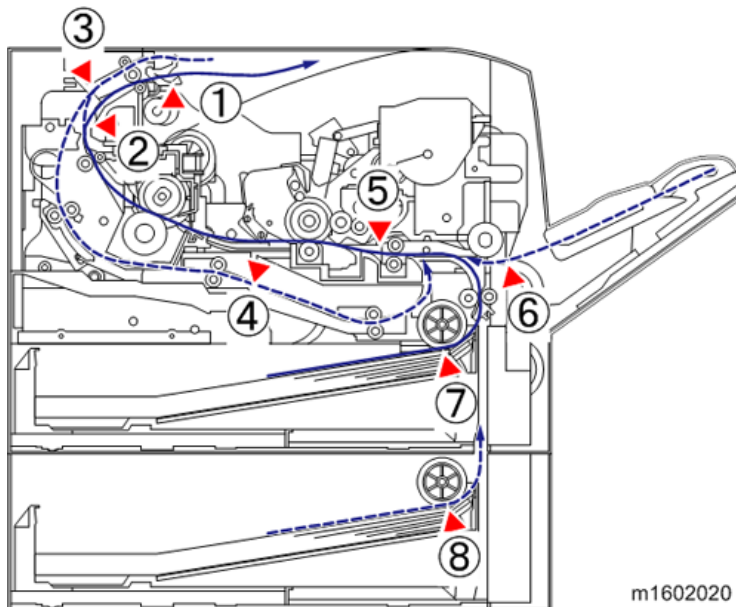
- CODE: Indicates the jam code.
- SIZE: Indicates the paper Size Code.
- TOTAL: Indicates the total counter (SP7-502-001).
- DATE: indicates the date when the jam occurred.

↓ Note

- The 10 latest printer jams are displayed.
- Initial jams are not recorded.

Sensor Position Layout

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1. Paper Overflow Sensor
2. Paper Exit Sensor
3. Duplex Exit Sensor
4. Duplex Entrance Sensor

5. Registration Sensor
6. By-pass 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.

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	By-pass Tray : No Paper Feeding	A2
9	Duplex : No Paper Feeding	Z2
17	Registration Sensor: Late Jam	A1
20, 23	Paper Exit Sensor: Late Jam	B C

Jam Code	Jam Type	Position Code
57	Registration Sensor: Lag Jam	B
60	Paper Exit Sensor: Lag Jam	B Z1
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 Transprot Sensor) : Late Jam	Y2
53	Tray 2 Relay Sensor(VERTICAL Transprot Sensor) : Lag Jam	A1 Y1
1	Tray 2 Relay Sensor(VERTICAL Transprot Sensor) Jam	Y1
5	Tray 3 : No Paper Feeding	Y2
54	Tray 3 Relay Sensor(VERTICAL Transprot Sensor) : Lag Jam	A1 Y1 Y2
1	Tray 3 Relay Sensor(VERTICAL Transprot Sensor) Jam	Y2

Troubleshooting

Test Pattern Printing

Follow the test pattern print procedure below to print a test pattern.

↓ Note

- Do not operate the machine until the test pattern has been printed. Otherwise, an SC occurs.

- Enter the SP mode, and then select SP2-109-001.
- Select the pattern number, and then press [OK].
- Do the following SP to print the test pattern.

SP	
SP2-109-002	Test Printing 1 Sheet
SP2-109-003	Test Printing Cont. Printing (On: Continue /Off: Stop)
SP2-109-004	Test Printing Print Side Select

- Check the test pattern.

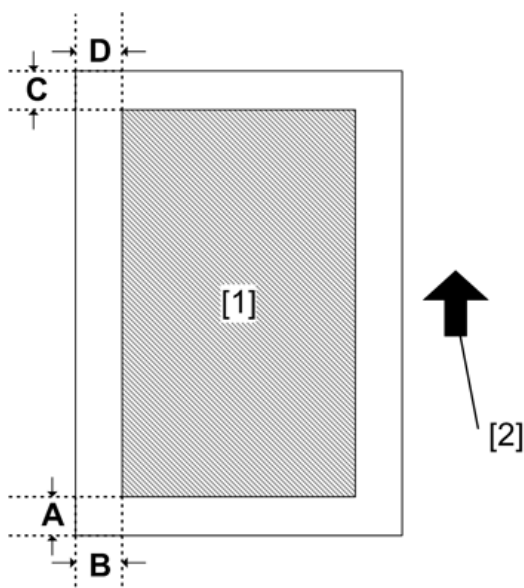
Pattern number

No.	Pattern	No.	Pattern
0	None	9	Slanting Grid 20mm Pitch
1	Vertical Line (1 dot)	10	Independent Pattern (1 dot)
2	Horizontal Line (1 dot)	11	Independent Pattern (2 dot)
3	Vertical Line (2 dot)	12	Independent Pattern (4 dot)
4	Horizontal Line (2 dot)	13	Full Dot Pattern
5	Grid Vertical Line	14	Band
6	Grid Horizontal Line	15	Gray 10mm Pitch
7	Grid 20mm Pitch	16	Gray 20mm Pitch
8	Slanting Grid	17	Trimming Area

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.



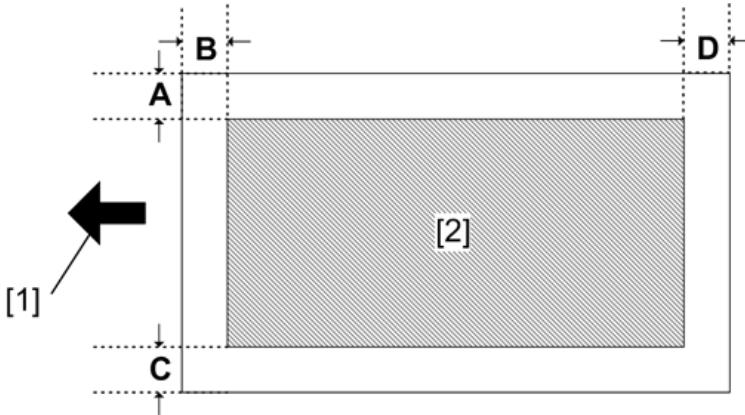
- [1]: Print area
- [2]: Paper feed direction

- Enter the SP mode, and then print the test pattern (17: Trimming Area) with SP2-109-001.
- 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.



- [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: Trimming Area) with SP2-109-001.

Note

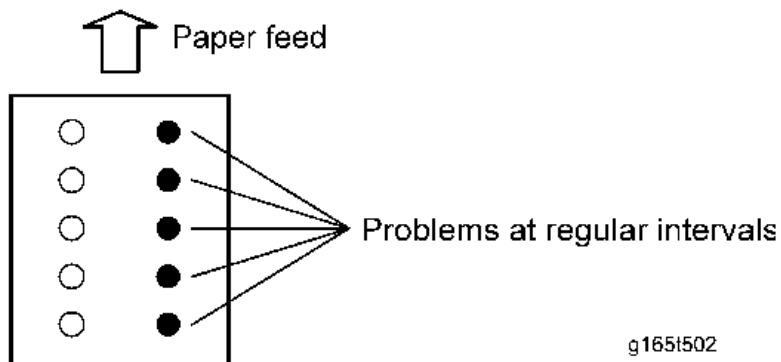
- Print the test pattern, and then adjust the leading edge registration in the SP mode to the optimum value.

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 trays.

Problem at Regular Intervals

Image problems may appear at regular intervals that depend on the circumference of certain components.

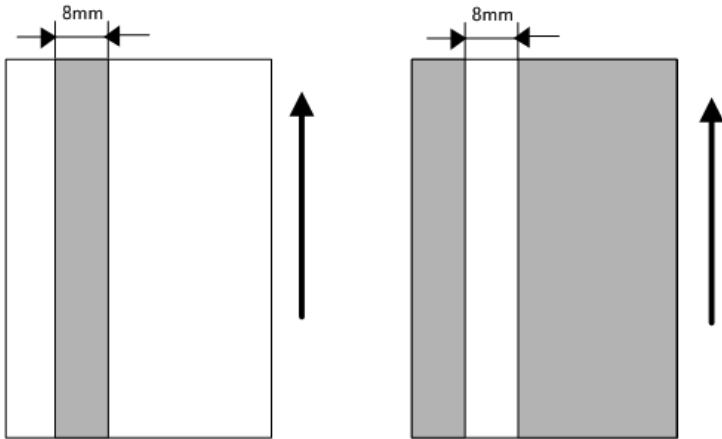
The following diagram shows the possible symptoms (black or white dots at regular intervals or other problems).



g1651502

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.



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When Vertical Banding is Generated

6

The vertical banding on a print image may be improved by the [Drum Rotation] function.

1. Select a drum rotation level.

M158: Menu > Maintenance > Quality Maintenance > Drum Rotation

M159: User Tools > Maintenance: Print > Drum Rotation

2. Select a drum rotation level from the following 2 levels: Level 1 (Normal) and Level 2 (Strong).

<Operation>

- Level1 : Photo conductor idles for 55 seconds
- Level2 : Photo conductor idles for 30 seconds (for black and white vertical banding)

<Effectively Prevented Phenomena>

- Level1 : Pieces of white banding (for half tone or continuous printing)
- Level2 : 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.

When Black Spots are Generated on Print Image

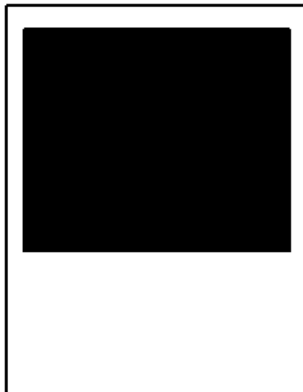
The black spots on a print image may be improved by the [Fusing Roller Cleaning].

1. Load a paper (A4 or LT size plain paper) to the by-pass tray.

2. Perform the [Fusing Roller Cleaning] (toners are consumed).

M158: Menu > Maintenance > Quality Maintenance > Fusing Roller Cleaning

M159: User Tools > Maintenance: Image > Fusing Roller Cleaning

3. A paper is fed and images are printed on both sides of the paper.

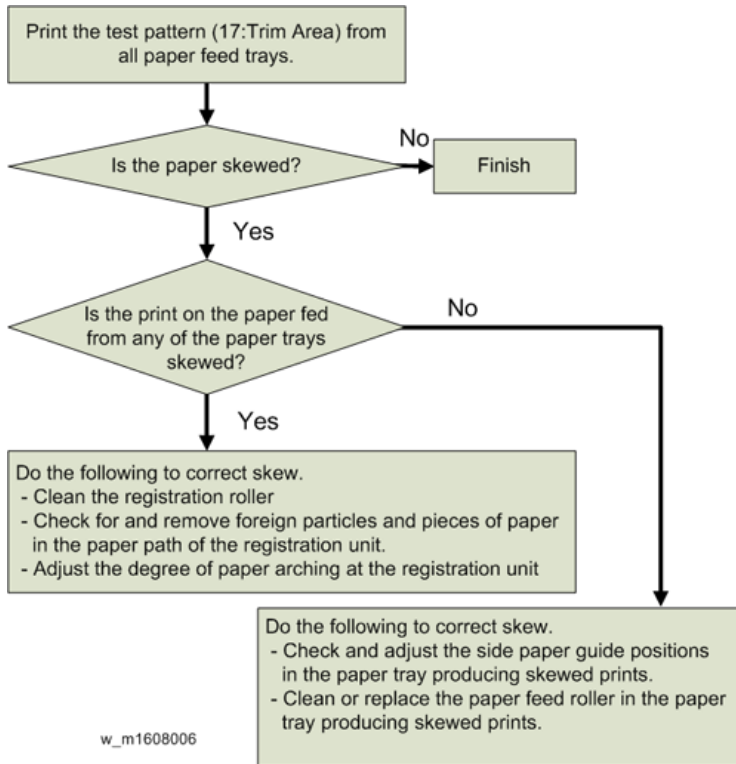
m1608086

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 papers used until now. Therefore, the problem may be improved by performing the [Fusing Roller Cleaning] several times, which consumes the toners.

Paper Feed (Skew)

Use the following flowchart to determine the cause and deal with the problem.



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 stop on the output tray and remove the delivered paper frequently. You can also configure [Curl Prevention] in the UP mode

- M159: User Tools > Maintenance > Maintenance: Print > Curl Prevention
- M158: Menu > Maintenance > Quality Maintenance > Curl Prevention

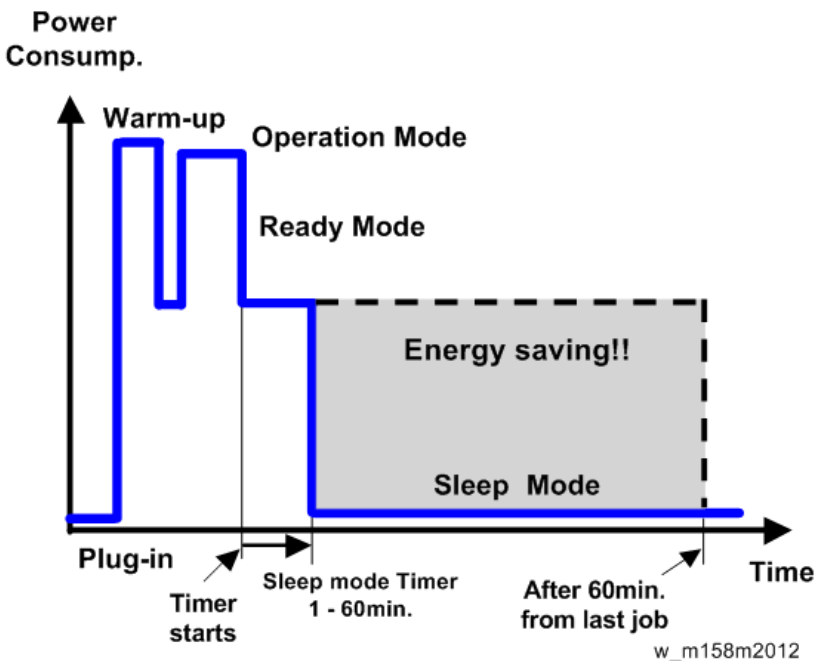
If you set [Curl Prevention] to [Active], the machine idles for 20 seconds before it starts printing. By adding the idle time before printing, it takes longer to print, but paper curling can be reduced. To stop the 20-second idling, set [Curl Prevention] to [Inactive].

7. Energy Save

Energy Save

Energy Saver Modes

Customers should use energy saver modes properly, to save energy and protect the environment.



The area shaded grey in this diagram represents the amount of energy that is saved when the timers are at the default settings. If the timers are changed, then the energy saved will be different. For example, if the timers are all set to 60 min., the grey area will disappear, and no energy is saved before 60 min. expires.

Sleep Mode Setting (M158)

Sleep Mode

(Menu > System > Sleep Mode > Sleep Mode Timer)

The user can specify the duration the printer waits before entering Sleep mode. The printer enters Sleep mode if no user input has been made during the specified duration. When the printer is in Sleep mode, it takes longer to start printing.

Default: [1 minute]

- 1 minute
- 5 minutes
- 15 minutes
- 30 minutes
- 45 minutes
- 60 minutes

Sleep Mode Setting (M159)

Sleep Mode Timer

(User Tools > System Settings > Timer Settings > Sleep Mode Timer)

After a specified period has passed, or the [Energy Saver] key is pressed, the printer enters Sleep Mode in order to conserve energy.

Specify the time to elapse before Sleep Mode.

The time can be set from 1 to 60 minutes, using the number keys.

Default:"1" minute(s)

Depending on which Embedded Software Architecture application is installed on it, the printer might take longer than indicated to enter Sleep Mode.

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Weekly Timer (M158)

Weekly Timer

(Menu > System > Weekly Timer)

The user can set the timer for the printer to turn off and on the main power or enter and exit Sleep mode every day or on specified days of the week. Detailed settings for Weekly Timer, such as setting the day or time to enable Weekly Timer, can be configured using Web Image Monitor.

Default: [Inactive]

- Daily (Web Preset Time)
- Day of Week(Preset Time)
- Inactive

Weekly Timer Code

(Menu > System > Weekly Timer Code)

The user can set a password (up to eight digits) for Weekly Timer. Once the password is set, the screen requiring the password is displayed while the printer is turned off or in Sleep mode by Weekly Timer. Enter the password to turn on the printer or recover the printer from Sleep mode.

If you set Weekly Timer Code to [Off], you do not need to enter a password to recover the printer.

Default: [Off]

Weekly Timer (M159)

(User Tools > System Settings > Timer Settings > Weekly Timer)

The user can set the timer for the printer to turn off and on the main power or to enter and exit Sleep mode every day or on specified days of the week.

When Weekly Timer is set to [Daily] or [Day of the Week], the printer does not turn on even if [ECO Night Sensor] is set to [Auto Power Off and On] and the time for turning on the main power specified in [Timer to Turn On] elapses.

Default: [Inactive]

- Daily
- Day of the Week
- Inactive

Weekly Timer Code

Set a password (up to eight digits) for Weekly Timer. Once the password is set, the screen requiring the password is displayed while the printer is turned off or in Sleep mode by Weekly Timer. Enter the password to turn on the printer or recover the printer from Sleep mode.

If you set Weekly Timer Code to [Off], you do not need to enter a password to recover the printer.

Default: [Off]

Weekly Timer Schedule

Specify when Weekly Timer takes effect (up to six settings).

Main Power On Timer Suspension Period

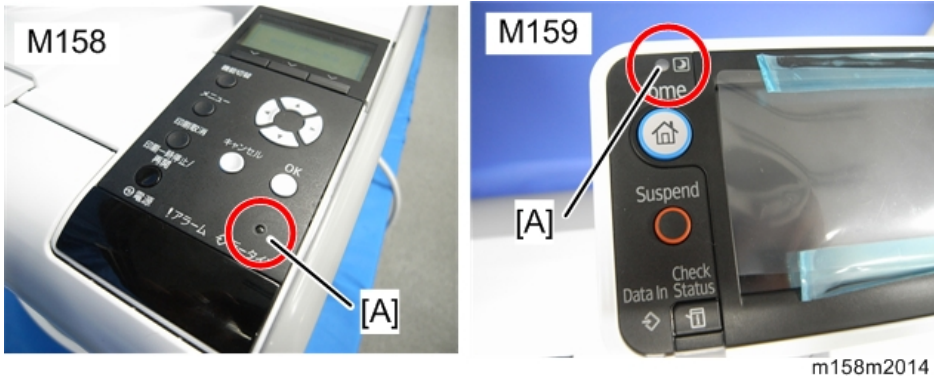
Specify the period when the printer does not turn on the main power with the Weekly Timer settings.

During the period specified in [Main Power On Timer Suspension Period], the Weekly Timer Code is canceled at the time the printer turns on the main power with the Weekly Timer settings. If the printer is turned off during the period specified in [Main Power On Timer Suspension Period], the Weekly Timer setting to turn on the main power is disabled until the printer is turned on manually.

Eco Night Mode (M158/M159)

(M158: Menu > System > Eco Night Sensor)

(M159: User Tools > System Settings > Administrator Tools > Eco Night Sensor)



The ECO Night Sensor [A] (ambient light sensor) enables the printer to automatically turn off and on the main power when changes in the ambient light level are detected.

The user can specify how the printer performs when the ECO Night Sensor detects changes in the ambient light level.

When Weekly Timer is set to [Daily] or [Day of the Week], the printer does not turn on even if [ECO Night Sensor] is set to [Auto Power Off and On] and the time for turning on the main power specified in [Timer to Turn On] elapses.

Default: [Auto Power Off Only]

- Auto Power Off Only

The printer turns off the main power when the ECO Night Sensor detects a low ambient light level.

- Auto Power Off and On

The printer turns off the main power when a decrease in the ambient light level is detected. It turns on the main power when an increase in the ambient light level is detected.

- Inactive

The ECO Night Sensor is disabled.

Timer to Turn Off

Specify how long the printer waits to turn off the main power when the ECO Night Sensor detects a low ambient light level.

The timer is reset when:

- The sensor detects changes in the ambient light level.
- Any key on the control panel is pressed or printing is performed.
- The main power switch is turned on.
- The printer configuration screen is displayed on the control panel.
- The printer settings are changed using Web Image Monitor.
- The printer settings are imported or exported.
- A program is downloaded.

- The printer resumes Fusing Unit Off mode.
- The printer enters Sleep mode.

Default: [120 minutes]

- 1 minute
- 5 minutes
- 30 minutes
- 60 minutes
- 120 minutes

Timer to Turn On

Specify how long the printer waits before it turns on the main power when the ECO Night Sensor detects an increase in the ambient light level.

The timer is reset when:

- The sensor detects changes in the ambient light level.
- The ECO Night Sensor setting is changed.
- The main power is turned on.
- The printer enters Sleep mode.

Default: [1 minute]

- 1 minute
- 5 minutes
- 30 minutes
- 60 minutes
- 120 minutes

Brightness Sensor Level

Brightness Sensor Level to Turn Off

Set the brightness threshold for the sensor to turn off the main power.

Default: 0

0 (Dark) - 15 (Bright)

Level 0 (Very dark): Equivalent to a moonlit night

Level 5 (Dark): Equivalent to a dimly-lit room

Level 7 (Dim): Equivalent to a room at sunset

Level 9 (Bright): Equivalent to a brightly lit room at night

Level 15 (Very bright): Equivalent to a sunlit room

Brightness Sensor Level to Turn On

Set the brightness threshold for the sensor to turn on the main power.

Default: 8

0 (Dark) - 15 (Bright)

Level 0 (Very dark): Equivalent to a moonlit night

Level 5 (Dark): Equivalent to a dimly-lit room

Level 7 (Dim): Equivalent to a room at sunset

Level 9 (Bright): Equivalent to a brightly lit room at night

Level 15 (Very bright): Equivalent to a sunlit room

Fusing Off Mode (M158/159)

(M158: Menu > System > Fusing Off Mode(EnSav)On/Off)

(M159: User Tools > System Settings > Timer Settings > Fusing Unit Off Mode (Energy Saving) On/Off)

The user can specify whether the printer enters Fusing Unit Off mode or not.

Default: [Off]

- On

Turn on Fusing Unit Off mode. This setting further reduces power consumption, but the printer may take longer to recover from Fusing Unit Off mode.

- Off

Turn off Fusing Unit Off mode.

Exit Fusing Unit Off Mode

Specify the condition for the printer to exit Fusing Unit Off mode.

Default: [On Printing]

- On Printing

The printer exits Fusing Unit Off mode when printing is performed.

- On Operating Control Panel

The printer exits Fusing Unit Off mode when any key on the control panel is pressed.

Fusing Unit Off Mode Timer

Specify the period of time the printer waits before entering Fusing Unit Off mode.

The timer is reset if any key on the control panel is pressed or printing is performed.

Default: [10 seconds]

M158

- 10 seconds
- 30 seconds

- 1 minute
- 15 minutes
- 30 minutes
- 60 minutes
- 120 minutes
- 240 minutes

M159

- Set the time from 10 seconds to 240 minutes, using the number keys.

The Fusing Unit Off Mode Timer is reset when:

- A print is performed
- A cover is opened when [Exit Fusing Unit Off Mode] is set to [On Printing]
- Any key on the operating panel is pressed when [Exit Fusing Unit Off Mode] is set to [On Operating Control Panel]

Fusng Heater Off on Stndby (M158/159)

(M158: Menu > System > Fusng Heater Off on Stndby)

(M159: User Tools > System Settings > Timer Settings > Fusng Heater Off on Stndby)

The user 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.

Default: [Auto Turn Off]

- Auto Turn Off
- Do not Auto Turn Off

Return to Stand-by Mode

Sleep Mode

Recovery time: 9 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 60 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 SP8-941, as explained below.

Energy Save Effectiveness

SP 8941 (Machine Status) keeps a record of the amount of time that the machine spends in each mode.

- 8-941-001: Operating mode
- 8-941-002: Standby mode
- 8-941-003: Panel off mode (Not used in this model)
- 8-941-004: Sleep mode (Fusing off mode)
- 8-941-005: Off mode

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With this data, and the power consumption values from the specifications, we can estimate the amount of energy that is used by the machine.

This should only be used as a reference value, because the power consumption specifications are measured in a controlled environment with a constant power supply.

To get an exact measurement at the customers site, a watt meter must be used to measure the actual energy consumed.

To use SP8-941 to calculate the energy consumed:

- At the start of the measurement period, read the values of SP8-941-001 to 005.
- At the end of the measurement period, read the values of SP8-941-001 to 005 again.
- Find the amount of time spent in each mode (subtract the earlier measurement from the later measurement).
- Multiply this by the power consumption spec for each mode.
- Convert the result to kWh (kilowatt hours)

Here is an example calculation.

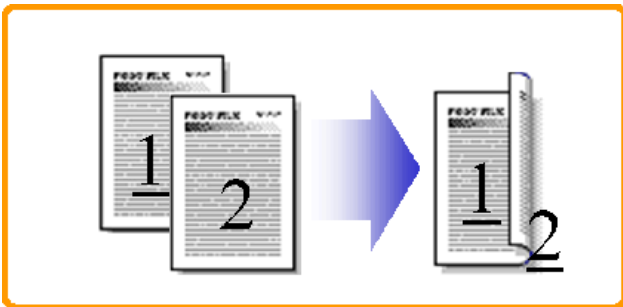
Machine Date	Power Consumption (W): Data: a	SP8941: Machine Status	Start Time: (min.) Data: b	End Time: (min.) Data: c	Time Differences (Data:b - Data: c) (min.) Data: d	Power Consumption (Data:a x Data:d) (Wmin.) Data: e
Operating mode	NA: 543W EU: 565W	001: Operating Time	21089	21386	21386	NA: 161271 EU: 167805
Ready mode (stand by)	51W	002: Standby Time	306163	308046	308046	96033
Energy mode (Panel off)	1W or less	003: Energy Save Time	0	0	0	0
Low power mode	20W or less	004: Low power Time	71386	71386	75111	74500
Sleep mode	1W or less	005: Off mode Time	508776	508776	520377	11601
Total Time of Data: d (min.)					17506	
Total Time of Data: d/60min. (Hour)					291.7667	
Total Power Consumption of Data: e (Wmin.)						NA: 343405 EU: 349939
Total Power Consumption of Data: e /60min./1000W (KWH)						NA: 5.72342 EU: 5.83232

Paper Save

Effectiveness of Duplex/Combine Function

Duplexing and the combine functions reduce the amount of paper used. This means that less energy overall is used for paper production, which improves the environment.

1. Duplex:

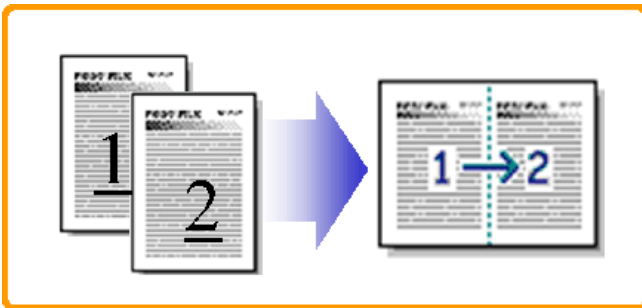


d062d102

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Reduce paper volume in half!

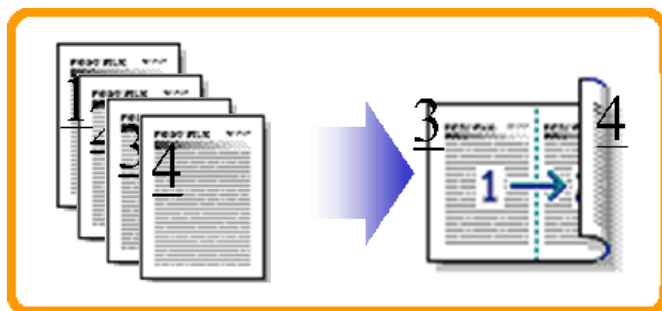
2. Combine mode:



d062d100

Reduce paper volume in half!

3. Duplex + Combine:



d062d101

Using both features together can further reduce paper volume by 1/4!

To check the paper consumption, look at the total counter and the duplex counter.

The total counter counts all pages printed.

- For one duplex page, the total counter goes up by 2.
- For a duplex job of a three-page original, the total counter goes up by 3.
- The duplex counter counts pages that have images on both sides.
- For one duplex page, the duplex counter goes up by 1.
- For a duplex job of a three-page original, the duplex counter will only increase by 1, even though two sheets are used.

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Recommendation

Please explain the above features to the customers, so that they can reduce their paper usage.

- Total counter: SP8-581-001
- Duplex counter: SP8-411-001
- Single-sided with combine mode: SP8-421-004
- Duplex with combine mode: SP8-421-005

The following table shows paper savings and how the counters increase for some simple examples of single-sided and duplex jobs

Duplex mode:

Originals	Simplex Sheet used	Duplex Sheets used	Paper Saved	Total counter SP8-581-001	Duplex counter SP8-411-001
1	1	1	0	1	0
2	2	1	1	2	1

Originals	Simplex Sheet used	Duplex Sheets used	Paper Saved	Total counter SP8-581-001	Duplex counter SP8-411-001
3	3	2	1	3	1
4	4	2	2	4	2
5	5	3	2	5	2
10	10	5	5	10	5
20	20	10	10	20	10

If combine mode is used, the total and duplex counters work in the same way as explained previously. The following table shows paper savings and how the counters increase for some simple examples of duplex/combine jobs.

2 in 1 mode:

Originals	Simplex Sheet used	Duplex Sheets used	Paper Saved	Total counter SP8-581-001	Single-sided with combine mode SP8-421-004
1	1	1	0	1	1
2	2	1	1	1	1
3	3	2	1	2	2
4	4	2	2	2	2
5	5	3	2	3	2
10	10	5	5	5	5
20	20	10	10	10	10

Duplex + 2 in 1 mode:

Originals	Simplex Sheet used	Duplex Sheets used	Paper Saved	Total counter SP8-581-001	Duplex with combine mode SP8-421-005
1	1	1	0	1	1
2	2	1	1	1	1

Originals	Simplex Sheet used	Duplex Sheets used	Paper Saved	Total counter SP8-581-001	Duplex with combine mode SP8-421-005
3	3	1	2	2	2
4	4	1	3	2	2
5	5	2	3	3	3
6	6	2	4	3	3
7	7	2	5	4	4
8	8	2	6	4	4
9	9	3	6	5	5
10	10	3	7	5	5
11	11	3	8	6	6
12	12	3	9	6	6

MEMO

Gim-P1c/dM

**Machine Code:
M158/M159**

Appendices

January, 2015

Revision Lists (V1.01)

Revision Date: 16.01.2015

Appendices

Section	Item	Note
Preventive Maintenance Tables	Maintenance Tables for User Maintenance Model (M158)	Maintenance Tables are revised.
Preventive Maintenance Tables	Maintenance Tables for Service Maintenance Model (M159) > Mainframe	Maintenance Tables are revised. Cleaning procedure is added.

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1. Appendices: Specifications

General Specifications

Mainframe

Items	Specification
Type	Desktop
CPU	PMC-Sierra RM7035C-533L 533MHz
Memory	Standard: 512MB Extension: 1GB
Hard Disk	250GB (Optional)
Photosensitivity Type	OPC Drum
Copy System	LED alley and electro-photographic printing
Development System	Non-magnetic one-component development system
Fusing System	Thin, hard heating roller fusing system
Scanning Method	One-dimensional solid scanning system through CCD
Warm-up Time	19 seconds or less (23°C, rated voltage) Warm-up may take a minute or two for image adjustment.
First Print Time	5 seconds or less (A4, LT SEF)

Items	Specification	
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) 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")
	Op. 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")
Paper Thickness	<ul style="list-style-type: none"> • Tray1: 52 - 162g/m²(45 - 139kg) • Bypass: 52 - 162g/m²(45 - 139kg) • Duplex: 52 - 162g/m²(45 - 139kg) 	
Paper Feed Capacity (80g/m ² , 20lb.Bond)	Max. 1600 sheets Standard: 500 sheets (Main) + 100 sheets (Bypass tray) Option: 500 sheet tray x 2	
Power Source	NA	120 – 127V, 60 Hz, 10A
	EU/AP/CHN	220 – 240V, 50 / 60 Hz, 5.3A
Max Power Consumption	NA	1150 W or less
	EU/AP/CHN	1110 W or less
Dimensions (W × D × H)	<ul style="list-style-type: none"> • M158 (4-line panel) 370 x 392 x 306 mm (14.6 x 15.5 x 12.1 inches) • M159 (Touch panel) 370 x 392 x 427 mm (14.6 x 15.5 x 16.9 inches) The width increases by 20 cm when the optional hard disk is attached.	
Space for Main Unit	W×D: 424 x 629mm (16.7 x 24.8 inches): Including the bypass tray	

Items	Specification
Weight	Approx. 15.5 kg (34.2 lb.)

Printer

Items	Specification
Print Size	<ul style="list-style-type: none"> Fixed: Max. A4(LEF)(210×297mm), 8 1/2×14(SEF)(215.9×355.6mm) Custom: Max.127.0 × 900.0mm (Bypass tray)
Continuous Printing Speed	<p>One-side printing: 40 ppm (A4 SEF), 42 ppm (LT SEF)</p> <p>Two-side printing: 35 ppm (A4 SEF), 36 ppm (LT SEF)</p>
Resolution	<p>1200 × 1200 dpi</p> <p>600 × 600 dpi</p>
Printer Language	<ul style="list-style-type: none"> Standard: RPCS, PCL5e/6, Postscript3, PDF Direct Option: XPS, IPDS
Interface	<ul style="list-style-type: none"> 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), AppleTalk, SNMP, MIB, WSM, IPP
Compatible OS	<ul style="list-style-type: none"> Standard: Windows XP/Vista/7/8, Windows Server 2003/2003 R2/2008/2008 R2/2012 Option: Mac OS X 10.4 or later
Resident Fonts	<p>PCL: 45 fonts + International fonts 13 fonts</p> <p>PS: 136 fonts</p> <p>IPDS: 108 fonts (Option)</p>

Supported Paper Sizes

1

Paper Feed

The following tables show the paper sizes that can be loaded in each paper tray. The "Paper size" column shows the names of paper sizes and their dimensions in millimeters and inches.

The letters in the tables indicate the following:

- A : Select the paper size using the control panel.
- B : Select the paper size using the paper size dial on the tray.
- C : Set the paper size dial on the tray to " * ", and select the paper size with the control panel.
- V : You can print on both sides of paper.
- - : Not supported

Paper sizes not listed in the table (such as 12"×18" and A3 [SEF]) are not supported.

Metric Size

Paper	Size (W x L)	Duplex Tray	Bypass Tray	Tray1	Bank
A4 (SEF)	210×297	V	A	B	B
A5 (SEF)	148×210	V	A	B	B
A5 (LEF)	210×148	V	A	C	C
A6 (SEF)	105×148	V	A	B	B
B5 (SEF)	182×257	V	A	C	C
B6 (SEF)	128×182	V	A	C	C
B6 (LEF)	182×128	-	A	-	-
C5 Env (SEF)	162 × 229	-	A	C	-
C6 Env (SEF)	114 × 162	-	A	C	-
DL Env (SEF)	110 × 220	-	A	C	-
16K (SEF)	195 × 267	V	A	C	C

Imperial Size

Paper	Size (W x L)	Duplex Tray	Bypass Tray	Tray1	Bank
8 1/2 × 14 (SEF)	8.5" × 14"	V	A	B	B
8 1/2 × 13 (SEF)	8.5" × 13"	V	A	C	C
8 1/2 × 11 (SEF)	8.5" × 11"	V	A	B	B
8 1/4 × 14 (SEF)	8.25" × 14"	V	A	C	C
8 1/4 × 13 (SEF)	8.25" × 13"	V	A	C	C
8 × 13 (SEF)	8" × 13"	V	A	C	C
8 × 10 1/2 (SEF)	8" × 10.5"	V	A	C	C
8 × 10 (SEF)	8" × 10"	V	A	C	C
7 1/4 × 10 1/2 (SEF)	7.25" × 10.5"	V	A	C	C
5 1/2 × 8 1/2 (SEF)	5.5" × 8.5"	V	A	B	B
5 1/2 × 8 1/2 (LEF)	5.5" × 8.5"	-	A	-	-
4 1/8 × 9 1/2 (SEF)	4.125" × 9.5"	-	A	C	-
3 7/8 × 7 1/2 (SEF)	3.875" × 7.5"	-	A	C	-

Custom Size Specifications

You can also load custom size paper by specifying horizontal and vertical sizes.

The following tables show the custom paper sizes that can be loaded in each tray.

Metric Size

Tray	Hori. Size (1 side)	Ver. Size (1 side)	Hori. Size (2 side)	Ver. Size (2 side)
Bypass tray	60.0 to 216.0	127.0 to 900.0	100.0 to 216.0	148.0 to 356.0
Trays 1–3	100.0 to 216.0	148.0 to 356.0	100.0 to 216.0	279.0 to 356.0

Imperial Size

Tray	Hori. Size (1 side)	Ver. Size (1 side)	Hori. Size (2 side)	Ver. Size (2 side)
Bypass tray	2.37 to 8.50"	5.00 to 35.43"	3.94 to 8.50"	5.83 to 14.01"
Trays 1–3	3.94 to 8.50"	5.83 to 14.01"	3.94 to 8.50"	10.99 to 14.01"

Paper Exit**Mainframe**

Paper sizes not listed in the table (such as 12"×18" and A3 [SEF]) are not supported.

Paper	Size (W x L)	Paper Exit Tray
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
A6 (LEF)	148×105	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
GovernmentLG (SEF)	8 1/4" x 14"	C

Paper	Size (W x L)	Paper Exit Tray
HLT (SEF)	5 1/2"x8 1/2"	C
HLT (LEF)	8 1/2"x5 1/2"	C
Executive (SEF)	7 1/4"x10 1/2"	C
Executive (LEF)	10 1/2"x7 1/4"	N
F (SEF)	8"x13"	C
F (LEF)	13"x8"	N
G LT (SEF)	8" x 10 1/2"	C
G LT (LEF)	10 1/2" x 8"	N
Eng Quatro (SEF)	8" x 10"	C
Eng Quatro (LEF)	10" x 8"	N
Foolscap (SEF)	8 1/2"x13"	C
Foolscap (LEF)	13"x8 1/2"	N
Folio (SEF)	8 1/4"x13"	C
Folio (LEF)	13"x8 1/4"	N
8K (SEF)	267x390	N
16K (SEF)	195x267	C
16K (LEF)	267x195	N
Com10 (SEF)	4.125x9.5	C
Com10 (LEF)	9.54x125	N
Monarch (SEF)	3.875x75	C
Monarch (LEF)	75x3.875	N
C5 (SEF)	162x229	C
C5 (LEF)	229x162	N
C6 (SEF)	114x162	C
C6 (LEF)	162x114	N

Paper	Size (W x L)	Paper Exit Tray
DL Env (SEF)	110x220	C
DL Env (LEF)	220x110	N
Custom Size (Width)	mm	60 – 216
Custom Size (Length)	mm	127 – 900

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.

1

Printer Drivers

For printing, install a printer driver on your computer. The following drivers are included on the CDROM:

Operating System *1	Printer Drivers		
	PCL 5c/5e	PCL 6	PostScript 3
Windows XP *2	A	A	A
Windows Vista *3	A	A	A
Windows 7 *4	A	A	A
Windows 8 *5	A	A	A
Windows Server 2003 *6	A	A	A
Windows Server 2008 *7	A	A	A
Windows Server 2012 *8	A	A	A
Mac OS X *9	-	-	A

A : Supported

- : Not Supported

*1 Printer drivers support both 32-bit and 64-bit Windows.

*2 Microsoft Windows XP Professional Edition/Microsoft Windows XP Home Edition

*3 Microsoft Windows Vista Ultimate/Microsoft Windows Vista Enterprise/Microsoft Windows Vista Business/Microsoft Windows Vista Home Premium/Microsoft Windows Vista Home Basic

*4 Microsoft Windows 7 Home Premium/Microsoft Windows 7 Professional/Microsoft Windows 7 Ultimate/Microsoft Windows 7 Enterprise

*5 Microsoft Windows 8/Microsoft Windows 8 Pro/Microsoft Windows 8 Enterprise

*6 Microsoft Windows Server 2003 Standard Edition/Microsoft Windows Server 2003 Enterprise Edition/ Microsoft Windows Server 2003 R2 Standard Edition/Microsoft Windows Server 2003 R2 Enterprise Edition

*7 Microsoft Windows Server 2008 Standard/Microsoft Windows Server 2008 Enterprise/Microsoft Windows Server 2008 R2 Standard/Microsoft Windows Server 2008 R2 Enterprise

*8 Microsoft Windows Server 2012 Foundation/Microsoft Windows Server 2012 Essentials/Microsoft

Windows Server 2012 Standard

*9 Mac OS X 10.5 or later

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-SmartDeviceMonitor for Client	A printer management utility for client users. A utility for peer-to-peer printing over a NetBEUI or TCP/IP network. A peer-to-peer print utility over a TCP/IP network. This provides the parallel printing and recovery printing features. This is provided on the printer drivers CD-ROM.
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/m2
	14-43	lbs
Paper Output Capacity	250	sheet
Power Consumption	15.0 or less (Power is supplied from the main unit.)	W
Dimension (W x D x H)	W370xD392xH95	mm
	W14.6xD15.4xH3.7	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/m2
	14-43	lbs
Paper Output Capacity	500	sheet
Power Consumption	15.0 or less (Power is supplied from the main unit.)	W

Category	Item	Unit
Dimension (W x D x H)	W370×D392×H125	mm
	W14.6×D15.4×H4.9	inch
Weight	4.5	kg
	9.9	lbs.

2. Appendices: Preventive Maintenance Tables

Preventive Maintenance Tables

Maintenance Tables for User Maintenance Model (M158)

Chart: A4 (LT)/5%

Mode: 3 prints/job

Ratio: 50%

Environment: Normal temperature and humidity

Yield may change depending on circumstances and print conditions.

Symbol keys: C: Clean, R: Replace

Mainframe

Paper Feed

Item	20K	120K	600K	EM	Remarks
Paper Feed Roller (Tray)		R		C	<ul style="list-style-type: none"> • Replace when a feeding failure occurs • Wipe with a damp cloth when cleaning
Friction Pad (Tray)		R		C	<ul style="list-style-type: none"> • Replace when a double feed occurs • Wipe with a dry cloth when cleaning

PCDU

Item	20K	120K	600K	EM	Remarks
PCDU	R				

LED Optics

Item	20K	120K	600K	EM	Remarks
LED Lens	C				<ul style="list-style-type: none"> Customers perform this concurrently with PCDU replacement Use the LED lens cleaner packed with the unit or mainframe

Transfer/Fusing

Item	20K	120K	600K	EM	Remarks
Transport Roller		R			Replace to the maintenance kit
Fusing Unit		R			

Paper Feed Tray PB1060 / Paper Feed Tray PB1070

Item	20K	120K	600K	EM	Remarks
Grip Roller				C	<ul style="list-style-type: none"> Wipe with a damp cloth when cleaning
Paper Feed Roller (Tray)		R		C	<ul style="list-style-type: none"> Replace when a feeding failure occurs Wipe with a damp cloth when cleaning
Friction Pad (Tray)		R		C	<ul style="list-style-type: none"> Replace when a double feed occurs Wipe with a dry cloth when cleaning

Maintenance Tables for Service Maintenance Model (M159)

Chart: A4 (LT)/5%

Mode: 3 prints/job

Ratio: 50%

Environment: Normal temperature and humidity

Yield may change depending on circumstances and print conditions.

Symbol keys: C: Clean, R: Replace

Mainframe

Paper Feed

Item	40K	180K	600K	EM	Remarks
Registration Roller				C	Wipe with a damp cloth when cleaning
Registration Sensor				C	<ul style="list-style-type: none"> Wipe with a damp cloth when cleaning Remove paper dusts
Transport Roller				C	Wipe with a damp cloth when cleaning
Paper Feed Roller (Tray)		R		C	<ul style="list-style-type: none"> Replace when a feeding failure occurs Wipe with a damp cloth when cleaning
Friction Pad (Tray)		R		C	<ul style="list-style-type: none"> Replace when a double feed occurs Wipe with a dry cloth when cleaning
Paper Feed Roller (Bypass)				C	<ul style="list-style-type: none"> Replace when a feeding failure occurs Wipe with a damp cloth when cleaning
Friction Pad (Bypass)				C	<ul style="list-style-type: none"> Replace when a double feed occurs Wipe with a dry cloth when cleaning

PCDU

Item	40K	180K	600K	EM	Remarks
PCDU	R				

LED Optics

Item	40K	180K	600K	EM	Remarks
LED Lens	C				<ul style="list-style-type: none"> Perform this concurrently with PCDU replacement Use the LED lens cleaner packed with the unit or mainframe

Transfer/Fusing

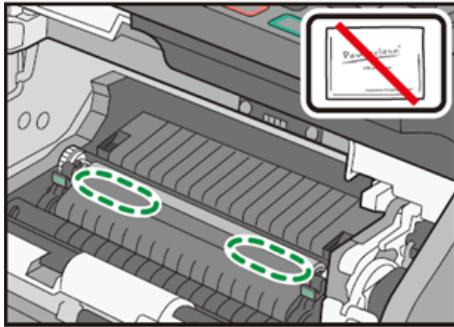
Item	40K	180K	600K	EM	Remarks
Transfer Roller		R			
Fusing Unit		R			
Image Transfer Entrance Guide (front)	C				* 1
Image Transfer Exit Guide (Rear)	C				* 1

Paper Exit

Item	40K	180K	600K	EM	Remarks
Paper Exit Roller				C	Wipe with a damp cloth, then dry cloth when cleaning
Paper Exit Sensor				C	Wipe with a dry cloth when cleaning

* 1 When replacing the PCDU, be sure to clean the following parts;

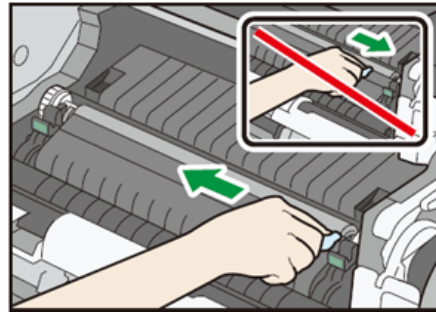
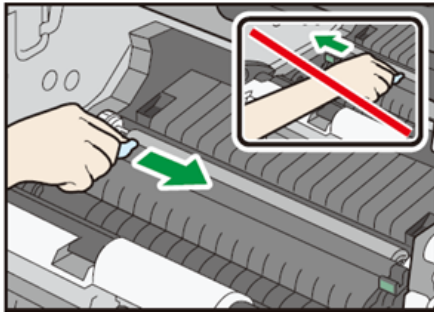
1. Image Transfer Entrance Guide (front)



m160z0300

↓ **Note**

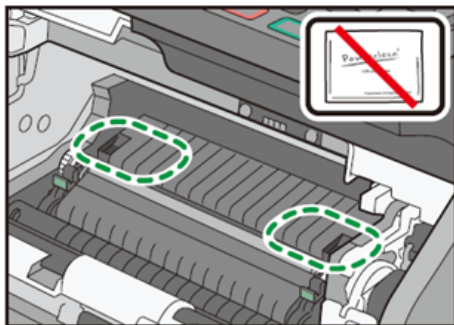
- Do not use the LED lens cleaner.



m160z0301

Clean toner and paper dust with a slightly wet cloth. Wipe off towards to the center from the green seals indicated at both sides. Make sure you do not use alcohol or detergent but water, and also do not wipe off to the outside.

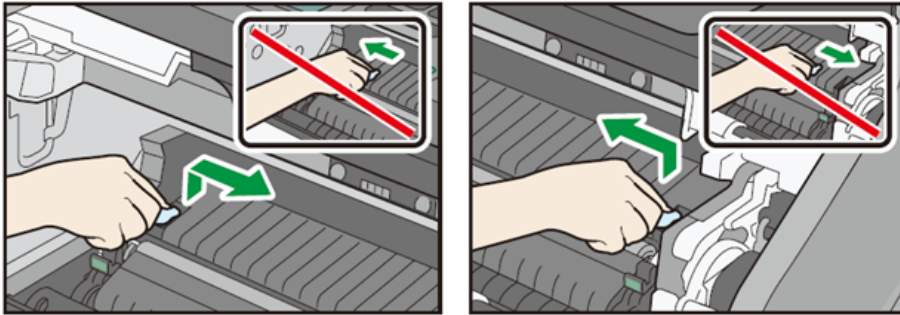
2. Image Transfer Exit Guide (Rear)



m160z0302

↓ **Note**

- Do not use the LED lens cleaner.



m160z0303

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	<ul style="list-style-type: none"> Wipe with a damp cloth when cleaning
Paper Feed Roller (Tray)		R		C	<ul style="list-style-type: none"> Replace when a feeding failure occurs Wipe with a damp cloth when cleaning
Friction Pad (Tray)		R		C	<ul style="list-style-type: none"> Replace when a double feed occurs Wipe with a dry cloth when cleaning

Other

	Yield – Condition		Compatibility	
	Yield (Page)	Condition	User Maintenance Model (M158)	Service Maintenance Model (M159)
Extra High Yield Toner	12,000	ISO	Available	N/A

	Yield – Condition		Compatibility	
	Yield (Page)	Condition	User Maintenance Model (M158)	Service Maintenance Model (M159)
High Yield Toner	6,000	ISO	Available	N/A
Low Yield Toner	3,000	ISO	Available	N/A
Toner for Service Maintenance Model	10,400	6%, 3P/J	N/A	Available
Standard PCDU	20,000	3P/J	Available	N/A
PCDU for Service Maintenance Model	40,000	3P/J	N/A	Available

As for Service Maintenance Model (M159), service technicians must replace all the consumables other than toners.

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.

Notes on the LCD

Since the M158 (4-line panel model) and M159 (touch panel model) have different types of control panel, characters are displayed differently. In this manual, characters are shown as they appear on the M159 (touch panel model).

Main SP Tables-1

SP1-XXX (Feed)

3

1001	[User LeadEdge Reg]		
	Adjusts the leading edge registration by changing the registration motor operation timing for each mode.		
	<ul style="list-style-type: none"> Increasing a value: an image is moved to the trailing edge of paper. Decreasing a value: an image is moved to the leading edge of paper. 		
	1-001-001	By-pass	E*
	1-001-002	Tray 1	E*
	1-001-003	Tray 2	E*
1-001-004	Tray 3	E*	
1-001-006	Duplex	E*	[-4.0 to 4.0 / 0.0 / 0.1 mm/step]

1002	[User S-to-S Reg]		
	Adjusts the printing side-to-side registration from each paper feed station, using the Trimming Area Pattern.		
	<ul style="list-style-type: none"> To move the start position to the right, increase the value (+). To move the start position to the left, decrease the value (-). 		
	1-002-001	By-pass	E*
	1-002-002	Tray 1	E*
	1-002-003	Tray 2	E*
1-002-004	Tray 3	E*	
1-002-006	Duplex	E*	[-4.0 to 4.0 / 0.0 / 0.1 mm/step]

1003	[Paper Buckle]		
	This SP eliminates the amount of buckle at the registration roller.		
	<ul style="list-style-type: none"> When paper is fed from the paper cassette, before the registration rollers start to rotate the leading edge of the paper stops and hits the nip of the registration rollers and stops. The registration rollers remain idle long enough to stop the paper from skewing in the paper path. This SP adjusts the amount of time that the registration rollers remain idle to reduce paper buckle. Raise this setting to lengthen the amount of time that the paper pauses at the nip of the registration rollers if you notice a large amount of skew in printouts. 		
	1-003-011	By-pass: Plain	E*
	1-003-012	By-pass: Thick	E*
	1-003-013	By-pass: Envelope	E*
	1-003-021	Tray1: Plain	E*
	1-003-022	Tray1: Thick	E*
	1-003-023	Tray1: Envelope	E*
	1-003-031	Tray2: Plain	E*
	1-003-032	Tray2: Thick	E*
	1-003-041	Tray3: Plain	E*
	1-003-042	Tray3: Thick	E*
1-003-061	Duplex: Plain	E*	
1-003-062	Duplex: Thick	E*	
[-5 to 5 / 0 / 1 mm/step]			
[-5 to 5 / 0 / 1 mm/step]			
1101	[Flicker Control]		
	Sets the flicker control (0: Disable, 1: Enable).		
1-101-001	Flicker Control	E*	[0 or 1 / 0 / 1 /step] 0: Disabled 1: Enabled

1105	[PrintTargetTemp] Adjusts the target fusing temperature for each paper type. "C" indicates the center of the roller.		
1-105-001	C: Plain 1	E*	[140 to 205 / 178 / 1deg/step]
1-105-003	C: Plain2	E*	[140 to 205 / 183 / 1deg/step]
1-105-005	C: Thick 1	E*	[140 to 205 / 192 / 1deg/step]
1-105-007	C: Thick2	E*	[140 to 230 / 191 / 1deg/step]
1-105-011	C: Thin	E*	[140 to 205 / 168 / 1deg/step]
1-105-013	C: Envelope	E*	[140 to 230 / 205 / 1deg/step]
1-105-015	C: Card	E*	[140 to 205 / 195 / 1deg/step]
1-105-017	C: Transparency	E*	[140 to 205 / 173 / 1deg/step]
1-105-019	C: Special	E*	[140 to 205 / 185 / 1deg/step]

1105	[CurlDecMode]		
1-105-021	Mode Display	E*	[0 or 1 / 0 / 1 /step] Enables or disables the CurlDecMode (0: Disabled, 1: Enabled)
1-105-022	PreprtRotTime	E*	[500 to 60000 / 20000 / 500msec/step] Sets the pre-print rotation time for reducing curls.

1105	[PrintTargetTemp] Specifies the heating roller target temperature for coated paper (Center) during printing.		
1-105-023	C:Middle Thick	E*	[140 to 205 / 187 / 1deg/step]
1-105-025	C:Thick 1 (LowTemp)	E*	[140 to 205 / 185 / 1deg/step]
1-105-031	FuserOffMode	E*	[0 or 1 / 1 / 1 /step] The switch that turns the fuser off after the idle process runs over 30 minutes.

1106	[FusingTempDisp] This SP displays the hot roller and pressure roller temperatures.		
1-106-001	RollerCenter	E	[-20 to 250 / 0 / 1 deg/step] Displays the current fusing thermistor temperature (Center).
1-106-002	RollerEnds	E	[-20 to 250 / 0 / 1 deg/step] Displays the current fusing thermistor temperature (Ends).
1-106-003	MachinePowerOn	E	[-20 to 250 / 0 / 1 deg/step] Displays the external temperature measured at power ON, which is detected with the temperature and humidity sensor.

1109	[MicroPtclSW]		
1-109-001	0:OFF 1:ON	E*	[0 or 1 / 0 / 1 /step]

1113	[EnvFusCond]		
1-113-001	PrePrtRotTime	E*	[500 to 60000 / 7000 / 500msec / step]

1135	[Inrush Control] Enables or disables the setting of Inrush control (0: Disabled, 1: Enabled)		
1-135-001	Inrush control	E*	[0 or 1 / 0 / 1 /step]

1152	[NipWidthMeasuring] Checks the fusing nip band.		
1-152-001	0:OFF 1:ON	E	[0 or 1 / 0 / 1 /step]

1159	[FusingJamDetect] Disables or enables the consecutive jam error for the fusing unit. When set to "1" (on) this SC code is issued after the 3rd consecutive jam in the fusing unit.		
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1-152-001	SCdisplay	E*	[0 or 1 / 0 / 1 /step] 0: Not detects SC 1: Detects SC
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1801	[Motor Speed Adj] This SP adjusts the speed of the motor. The motor speed can be adjusted to correct images that appear scratchy or of uneven density. This can occur when:		
	<ul style="list-style-type: none"> • Copying originals with large quantities of black. • Copying originals with a large quantity of black near the trailing edge. • Printing multiple copies of positive/negative (reverse) images. 		
1-801-011	Exit Reverse	E*	[-4.0 to 4.0 / 0.0 / 0.1%/step]

1907	[Paper Timing Adj] Adjusts the timing of paper feed. (A "+" setting broadens paper feed interval, a "-" setting narrows paper feed interval.)		
	1-907-005	Reverse Stop Posi	E* [-10 to 10 / 0 / 1mm/step] Adjusts the reverse stop timing of the range from the Registration Sensor OFF to the Paper Exit Inverter motor. Makes it slower (+) or faster (-) than the default.
1-907-015	Re-Feed Stop Posi	E*	[-10 to 10 / 0 / 1mm/step] Adjusts the reverse stop timing of the range from the duplex entrance sensor ON to the duplex clutch. Makes it slower (+) or faster (-) than the default.

1908	[Paper Timing Adj] Adjusts the timing of paper feed. (A "+" setting broadens paper feed interval, a "-" setting narrows paper feed interval.)		
	1-908-015	Junc Gate SOL:ON	E*
	1-908-017	Junc Gate SOL:OFF	E*
			[-10 to 10 / 0 / 1mm/step]

1912	[Lower Pow Consump]		
1-912-001	Mode Display	E*	[0 or 1 / 0 / 1 /step]

1921	[Fact LeadEdge Reg]		
	<ul style="list-style-type: none"> Increasing a value: an image is moved to the trailing edge of paper. Decreasing a value: an image is moved to the leading edge of paper. 		
1-921-011	By-Pass: Plain	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step] Reflects adjustment values with no change.
1-921-012	By-Pass: Thick	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step] Adds on to the adjusted values of the Plain paper.
1-921-013	By-Pass: Envelope	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step] Adds on to the adjusted values of the Plain paper.
1-921-021	Tray1: Plain	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step] Reflects adjustment values with no change.
1-921-022	Tray1: Thick	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step] Adds on to the adjusted values of the Plain paper.
1-921-023	Tray1: Envelope	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step] Adds on to the adjusted values of the Plain paper.
1-921-031	Tray2: Plain	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step] Reflects adjustment values with no change.
1-921-032	Tray2: Thick	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step] Adds on to the adjusted values of the Plain paper.
1-921-041	Tray3: Plain	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step] Reflects adjustment values with no change.

1-921-042	Tray3: Thick	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step] Adds on to the adjusted values of the Plain paper.
1-921-061	Duplex: Plain	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step] Reflects adjustment values with no change.
1-921-062	Duplex: Thick	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step] Adds on to the adjusted values of the Plain paper.

1922	[Fact S-to-S Reg]		
	Reflects adjustment values with no change. <ul style="list-style-type: none"> To move the start position to the right, increase the value (+). To move the start position to the left, decrease the value (-). 		
1-922-001	By-pass	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step]
1-922-002	Tray 1	E*	
1-922-003	Tray 2	E*	
1-922-004	Tray 3	E*	
1-922-006	Duplex	E*	[-4.0 to 4.0 / 0.0 / 0.1mm/step] The value of this SP adds on to the adjusted values of the front page of each tray.

1952	[Fan Off Mode Time]		
	-		
1-952-001	-	E*	[0 to 60 / 13 / 1min/step]

1998	[Reserve SP]		
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1-998-001	reserve01	E*	[0 to 255 / 0 / 1/step]
1-998-002	reserve02	E*	
1-998-003	reserve03	E*	
1-998-004	reserve04	E*	
1-998-005	reserve05	E*	
1-998-006	reserve06	E*	[0 to 65535 / 0 / 1/step]
1-998-007	reserve07	E*	
1-998-008	reserve08	E*	
1-998-009	reserve09	E*	
1-998-010	reserve10	E*	

Main SP Tables-2

SP2-XXX (Drum)

2001	[C biasControl]		
2-001-001	C setting	E*	[-1350 to -900 / -1020 / 1V/step] C: bias value. Note <ul style="list-style-type: none"> This setting is available when the bias control is OFF.
2-001-002	C(low) setting	E*	[-400 to -200 / -350 / 50V/step] C(low): The value of C(low) output.
2-001-011	Vd_ref_lowhumi	E*	[-700 to -400 / -420 / 10V /step] Displays or adjusts the target dark potential (Vd) in the Env Division, low humidity. Note <ul style="list-style-type: none"> This setting is available when the bias control is ON.
2-001-012	Vd_ref_midhumi	E*	[-700 to -400 / -430 / 10V/step] Displays or adjusts the target dark potential (Vd) in the Env Division, mid humidity. Note <ul style="list-style-type: none"> This setting is available when the bias control is ON.
2-001-013	Vd_ref_highhumi	E*	[-700 to -400 / -470 / 10V/step] Displays and adjusts the target dark potential (Vd) in the Env Division, high humidity. Note <ul style="list-style-type: none"> This setting is available when the bias control is ON.

2-001-100	F:Coefficient:a0	E*	<p>[-500 to -350 / -350 / 1/step]</p> <p>Displays and adjusts the coefficient a0 used for the C-calculated function F (Vd, AH, D).</p> <p>Note</p> <ul style="list-style-type: none"> This setting is available when the bias control is ON.
2-001-101	F:Coefficient:a1	E*	<p>[0.80 to 1.20 / 1.00 / 0.01/step]</p> <p>Displays and adjusts the coefficient a1 used for the C-calculated function F (Vd, AH, D).</p> <p>Note</p> <ul style="list-style-type: none"> This setting is available when the bias control is ON.
2-001-102	F:Coefficient:a2	E*	<p>[0.0 to 10.0 / 5.0 / 0.1/step]</p> <p>Displays and adjusts the coefficient a2 that is of the C-calculated function F (Vd, AH, D).</p> <p>Note</p> <ul style="list-style-type: none"> This setting is available when the bias control is ON.
2-001-103	F:Coefficient:a3	E*	<p>[-20 to 0 / -9.9 / 0.1/step]</p> <p>Displays and adjusts the coefficient a3 that is of the C-calculated function F (Vd, AH, D).</p> <p>Note</p> <ul style="list-style-type: none"> This setting is available when the bias control is ON.

2101	[Reg Correct] The amount of the correction for the main scan position.		
2-101-001	Main Dot	E*	[-300 to 300 / 0 / 1 dot/step]

2102	[Magnification Adj] Sub Scan Magnification Adjustment		
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2-102-002	Sub Mag.:N	E*	[-1.0 to 1.0 / 0.0 / 0.1%/step]
2-102-004	Sub Mag.:L	E*	

2103	[Erase Margin Adj] Image Erase Margin Adjustment Adjusts the erase margin by deleting image data at the margins.		
2-103-001	Lead Edge Width	E*	[2.7 to 9.9 / 3.0 / 0.1 mm/step]
2-103-002	Trail. Edge Width	E*	[0.0 to 9.9 / 2.0 / 0.1 mm/step]
2-103-003	Left	E*	
2-103-004	Right	E*	
2103	[Erase Margin Adj] Image Erase Margin Adjustment: Back side		
2-103-005	Duplex:Lead	E*	[0.0 to 4.0 / 0.0 / 0.1 mm/step]
2-103-006	Duplex:Trail.	E*	
2-103-007	Duplex:Left Width	E*	
2-103-008	Duplex:RightWidth	E*	

2104	[Exposure energy]		
2-104-010	Normal Print	E*	[0.23 to 0.98 / 0.50 / 0.01 uJ/ cm ² /step] LEDA light emission energy: Normal printing Bk: Display/Setting
2-104-011	Nomal Discharge	E*	[0.23 to 0.98 / 0.70 / 0.01 uJ/ cm ² /step] LEDA light emission energy: Quenching pattern Normal speed: Display/Setting
2-104-012	Low Discharge	E*	[0.23 to 0.98 / 0.70 / 0.01uJ/ cm ² /step] LEDA light emission energy: Quenching pattern Low speed: Display/Setting

2105	[LED Emit Time Adj] Adjusts the LEDA Light emission time.		
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2-105-001	Normal Speed	E*	[50 to 200 / 100 / 1%/step]
2-105-002	Low Speed	E*	

2106	[LEDA Emit Time] LEDA Light emission time.		
2-106-021	Print:Normal	E	[1000 to 8800 / 3000 / 1ns/step]
2-106-022	Print:Low	E	
2-106-023	Quenching:Normal	E	
2-106-024	Quenching:Low	E	

2109	[Test Printing] Printing test patterns		
2-109-001	Pattern Selection	E	[0 to 17 / 0 / 1/step] See the selections below. See also page 155 for checking the procedure.
2-109-002	1 Sheet Printing	E	[0 or 1 / 0 / 1/step]
2-109-003	Cont. Printing	E	
2-109-004	Print Side Select	E	

Selections for SP2109

0	None	9	Arg. Grid20mm
1	Vert. (1dot)	10	Indep. (1dot)
2	Hori. (1dot)	11	Indep. (2dot)
3	Vert/ (2dot)	12	Indep. (4dot)
4	Hori. (2dot)	13	Full
5	Grid Vert.	14	Band
6	Grid Hori.	15	Gray 10mm
7	Grid 20mm	16	Gray 20mm

8	Arg. Grid	17	Trim Area
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2201	[DV bias Control]		
2-201-001	DV(-)_setting	E*	[-350 to -10 / -150 / 1v/step]
2-201-002	DV(+)_offset	E*	[-100 to 0 / 0 / 25v/step]
2-201-003	DV(-)_offset	E*	[-75 to 75 / 0 / 25v/step]
2-201-011	Line1:L1	E*	[500000 to 950000 / 500000 / 50000mm/step]
2-201-012	Line2:L2	E*	[1000000 to 1950000 / 1000000 / 50000mm/step]
2-201-013	Line3:L3	E*	[2000000 to 3950000 / 3000000 / 50000mm/step]
2-201-014	Line4:L4	E*	[4000000 to 7950000 / 5000000 / 50000mm/step]
2-201-015	Line5:L5	E*	[8000000 to 19950000 / 8000000 / 50000mm/step]
2-201-016	Line6:L6	E*	[20000000 to 29950000 / 20000000 / 50000mm/step]
2-201-017	Line7:L7	E*	[30000000 to 39950000 / 33000000 / 50000mm/step]
2-201-204	Coefficient:a4	E*	[0.00 to 0.50 / 0.13 / 0.01/step]
2-201-205	Coefficient:a5	E*	[0.0 to 5.0 / 0.0 / 0.1/step]
2-201-206	Coefficient:a6	E*	[-200 to 0 / 0 / 1/step]

2211	[PcuReverse]		
Switches the PCU reverse on / off.			
2-211-001	On/Off	E*	[0 to 1 / 1 / 1/step] 0: Switch Off 1: Switch On with the reverse rotation sheet counts

2212	[ExeSheets]		
2-212-001	Normal	E*	[101 to 999 / 300 / 1 page/step] Stops printing and executing reversing PCU every sheets that has been set for normal printing.
2-212-002	LowPrinting	E*	[1 to 500 / 50 / 1 page/step] Stops printing and executing reversing PCU every sheets that has been set for low printing.

2221	[LEDA Data:Display] Displays LEDA data.		
2-221-005	Serial No.	E	[- / - / -]
2-221-009	Power Error	E	[0 or 1 / 0 / 1/step]

2301	[T bias Control] Transfer Bias Control Use these SP's 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. Notes: <ul style="list-style-type: none"> The coefficient adjustment should be done before the power output. The amount of voltage applied to each area can be set independently in each area for the type of paper in use. 		
2-301-001	T(+)_1:setting	E*	[1 to 50 / 14 / 1uA/step] Displays the setting of the transfer bias control level for non image area.
2-301-002	T(+)_2_FaceOffset	E*	[-15 to 15 / 0 / 1uA/step] Displays the setting of the offset amount of transfer bias control level during creating an image on the face page.

2-301-003	T(+)_2_BackOffset	E*	[-15 to 15 / 0 / 1uA/step] Displays the setting of the offset amount of transfer bias control level during creating an image on the back page.
2-301-101	Used Adjust A2	E*	[0 to 100 / 80 / 1%/step] Output adjustment for the value of the transfer output table which is to be a basis when the transfer paper count is in the range of 15K and 30K.
2-301-102	Used Adjust A3	E*	[0 to 100 / 70 / 1%/step] Output adjustment for the value of the transfer output table which is to be a basis when the transfer paper count is in the range of 30K and 60K.
2-301-103	Used Adjust A4	E*	[0 to 100 / 65 / 1%/step] Output adjustment for the value of the transfer output table which is to be a basis when the transfer paper count is in the range of 60K and 90K.
2-301-104	Used Adjust A5	E*	[0 to 100 / 60 / 1%/step] Output adjustment for the value of the transfer output table which is to be a basis when the transfer paper count is over 90K.

2401	[Timing Control]		
2-401-003	T[rotation print]	E*	[600 to 9900 / 600 / 100msec/step]
2-401-004	T[rotation WU]	E*	[600 to 9900 / 5000 / 100msec/step]

2411	[envi_section]		
2-411-001	AH_LM	E*	[0.0 to 10.0 / 5.5 / 0.5g/m ³ /step] Displays and adjusts the threshold under low/mid humidity on environment section in regard to control the Environment Correction.

2-411-002	AH_MH	E*	[11.0 to 30.0 / 15.0 / 0.5g/ m ³ /step] Displays and adjusts the threshold under mid/high humidity on environment section in regard to control the Environment Correction.
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2924	[Supply Speed] For circulating the time to supply certain amount		
2-924-001	Remaining H:240	E*	[0.01 to 1.00 / 0.35 / 0.01g/sec/ step]
2-924-002	Remaining M:240	E*	[0.01 to 1.00 / 0.29 / 0.01g/sec/ step]
2-924-003	Remaining L:240	E*	[0.01 to 1.00 / 0.22 / 0.01g/sec/ step]
2-924-004	Remaining H:182	E*	[0.01 to 1.00 / 0.25 / 0.01g/sec/ step]
2-924-005	Remaining M:182	E*	[0.01 to 1.00 / 0.21 / 0.01g/sec/ step]
2-924-006	Remaining L:182	E*	[0.01 to 1.00 / 0.17 / 0.01g/sec/ step]

2925	[Toner Supply]		
2-925-001	consumed amount	E*	[0.0 to 100000.0 / 0.0 / 0.1mg/step] Counter for judging to supply toner during printing.
2-925-002	Supply Threshold	E*	[1.0 to 100000.0 / 300.0 / 0.1mg/step] Threshold for judging to supply toner during printing.
2-925-003	Sup- Coefficient	E*	[0.0 to 5.0 / 0.7 / 0.1/step] Coefficient for calculating toner amount to supply during printing.

2926	[Recovery Supply]		
2-926-001	Recovery Amount	E*	[0 to 300 / 5 / 1g/step] Amount for Recovery Supply.
2-926-002	Mixing Time	E*	[0 to 300 / 10 / 1sec/step] Idle time to mix for Recovery Supply.

2-926-003	Recovery Count	E*	[0 to 10000 / 0 / 1count/step] Total count of executed Recovery Supply
2-926-004	Self-Recovery	E	[- / - / -] [Execute] Forcibly executes one time Recovery Supply.

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2927	[Initial Supply]		
2-927-001	Initial Amount	E*	[1 to 50 / 5 / 1g/step] Target toner amount for supplying fixed amount of toner when replacing.
2-927-002	Initial Mixing T	E*	[0 to 300 / 10 / 1sec/step] Idle time to mix for supplying fixed amount of toner when replacing.
2-927-003	Ini-Coefficient	E*	[0.0 to 5.0 / 1.5 / 0.1/step] Coefficient for calculating the amount of toner supplying during printing after toner cartridge is replaced.
2-927-004	Initial Flag	E*	[0 or 1 / 0 / 1/step] Information used to detect the replacements and judge the upper limit.
2-927-005	Exchange Count	E*	[0 to 1000 / 0 / 1count/step] Counter for new toner detection.

2930	[Detection]		
2-930-001	Cleaner Count	E*	[1 to 20 / 5 / 1cycle/step] Counter to rotate the cleaner parts when remaining toner in the developer detected.
2-930-002	stabilization T	E*	[0.0 to 3.0 / 0.0 / 0.1sec/step] Stability time of the sensor used for detecting remaining toner in the developer.

2-930-003	Upper n cycle	E*	[0 to 20 / 1 / 1/step] Upper counter to exclude from the obtained result when toner remaining in the developer detected.
2-930-004	Lower m cycle	E*	[0 to 20 / 1 / 1/step] Lower counter to set it aside from the obtained result if toner remaining in the developer detected.
2-930-005	HH:240 Upper	E*	[0 to 70 / 25 / 1 count/step] Counter for judging the upper limit when toner remaining in the developer detected.
2-930-006	HH:240 Lower	E*	[0 to 70 / 38 / 1 count/step] Counter for judging the lower limit when toner remaining in the developer detected.
2-930-007	MM:240 Upper	E*	[0 to 70 / 18 / 1 count/step] Counter for judging the upper limit when toner remaining in the developer detected.
2-930-008	MM:240 Lower	E*	[0 to 70 / 34 / 1 count/step] Counter for judging the lower limit when toner remaining in the developer detected.
2-930-009	LL:240 Upper	E*	[0 to 70 / 18 / 1 count/step] Counter for judging the upper limit when toner remaining in the developer detected.
2-930-010	LL:240 Lower	E*	[0 to 70 / 36 / 1 count/step] Counter for judging the lower limit when toner remaining in the developer detected.
2-930-011	HH:182 Upper	E*	[0 to 70 / 38 / 1 count/step] Counter for judging the upper limit when toner remaining in the developer detected.
2-930-012	HH:182 Lower	E*	[0 to 70 / 52 / 1 count/step] Counter for judging the lower limit when toner remaining in the developer detected.

2-930-013	MM:182 Upper	E*	[0 to 70 / 33 / 1 count/step] Counter for judging the upper limit when toner remaining in the developer detected.
2-930-014	MM:182 Lower	E*	[0 to 70 / 48 / 1 count/step] Counter for judging the lower limit when toner remaining in the developer detected.
2-930-015	LL:182 Upper	E*	[0 to 70 / 34 / 1 count/step] Counter for judging the upper limit when toner remaining in the developer detected.
2-930-016	LL:182 Lower	E*	[0 to 70 / 46 / 1 count/step] Counter for judging the lower limit when toner remaining in the developer detected.
2-930-017	Sensor Standard V	E*	[0.0 to 3.3 / 2.0 / 0.1V/step] Threshold for judging the detection result of toner end sensor.
2-930-018	Average Count	E*	[0 to 255 / 0 / 1 count/step] Result of remaining detection in the developer.
2-930-019	Self- Detection	E	[- / - / -] [Execute] Detects forcibly the toner remaining in the developer.
2-930-020	Self-Mixing Time	E*	[0 to 300 / 10 / 1sec/step] Required time for mixing prior to forcibly execute remaining detection.

2931	[Supply Error]		
2-931-002	0 count	E*	[0 to 10000 / 0 / 1 count/step] Counter for detecting the SC364.
2-931-003	0 count Threshold	E*	[1 to 50 / 30 / 1 count/step] Threshold for detecting the SC364.

2-931-004	Lower Count	E*	[0 to 10000 / 0 / 1count/step] Counter for detecting the SC332.
2-931-005	Lower Threshold	E*	[1 to 10 / 5 / 1count/step] Threshold for detecting the SC332.
2-931-006	SC332 Count	E*	[0 to 10 / 0 / 1count/step] Counts that continuously detected the SC332.

2932	[End Detection]		
2-932-001	End Count	E*	[0 to 10000 / 0 / 1count/step]
2-932-002	End Threshold	E*	[1 to 10 / 3 / 1count/step]

2940	[Remain Control]		
2-940-001	Remaining Amount	E*	[0.0 to 30.0 / 0.0 / 0.1g/step] Counter for detecting toner end.
2-940-002	Remaining Time	E*	[0 to 300 / 0 / 1sec/step] Threshold for detecting toner end.

2941	[Remain Control] Counter for supplying triggered by the front cover open/close during Power ON.		
2-941-001	closing count	E*	[0 to 65535 / 0 / 1count/step]

2952	[S_PaperRefresh] Correction coefficients of the toner refresh control when printing the small sized paper.		
2-952-001	Input Coefficient	E*	[1000 to 3000 / 1884 / 1 / step]
2-952-002	Threshold Dist	E	[2010 to 7500 / 2100 / 1mm / step]
2-952-003	W.T.Coefficient	E	[1800 to 7100 / 2280 / 10 / step]

2961	[CleaningOperation]		
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2-961-001	Level 1	E*	[0 or 1 / 0 / 1 / step] The trigger of drum cleaning operation level 1. Select 1 to execute.
2-961-002	Level 2	E*	[0 or 1 / 0 / 1 / step] The trigger of drum cleaning operation level 2. Select 1 to execute.

2990	[Duty Control] Correction values of printing interval control in order to avoid the increasing temperature from continuous printing.		
2-990-001	Counter	E*	[0 to 65535 / 0 / 1 count / step]
2-990-002	Lower	E*	[2000 to 60000 / 14400 / 1 count / step]
2-990-003	Upper	E*	[2000 to 60000 / 158400 / 1 count / step]
2-990-004	OFF/ON	E*	[0 to 1 / 0 / 1 / step]
2-990-005	Accumulation	E*	[0 to 65535 / 0 / 1 count / step]

2998	[Timing Control]		
2-998-001	T:ReverseRotation	E*	[1 to 100 / 34 / 1msec/step] Adjusts the reverse rotation time of PCU reverse rotation.
2-998-002	T:MotorStop	E*	[550 to 1000 / 550 / 50msec/step] Adjusts the stop rotation time of PCU reverse rotation.
2-998-003	T:NormalRotation	E*	[1 to 100 / 30 / 1msec/step] Adjusts the normal rotation time of PCU reverse rotation.
2-998-004	T:NormalRotation2	E*	[1 to 200 / 100 / 1msec/step] Adjusts the normal rotation time of PCU reverse rotation.

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SP 2997
added

Main SP Tables-3

SP3-XXX (Process)

3098	[Days Before End] Switches the near end timing: days before end toner		
3-098-001	Toner	E*	[0 to 2 / 1 / 1/step] 0: earlier 1: normal 2: later
3501	[Dev Bias Control] Development Bias Control: On/Off designation.		
3-501-001	On/Off	E*	[0 or 1 / 1 / 1-/step] 0: Off 1: On
3502	[C Bias Control] C bias Control: On/Off designation		
3-502-001	On/Off	E*	[0 or 1 / 1 / 1/step] 0: Off 1: On
3800	[Days Before End] Switches the near end timing: days before end toner		
3-800-001	Waste Toner	E*	[0 to 2 / 1 / 1/step] 0: earlier 1: normal 2: later

Main SP Tables-4

SP4-XXX (Scanner)

None

Main SP Tables-5

SP5-XXX (Mode)

5001	[All Indicators On]		
5-001-001	All Indicators On	C*	<p>[- / - / - / -]</p> <p>For machine demonstration and quality determination of the LCD and LEDs on the control panel, the LCD and all LEDs light. Since the LCD will have been lit from the beginning to show the SP code, there is no change to it.</p> <p>Off: Normal</p> <p>On: All LEDs Light</p>

5009	<p>[Add Display Language]</p> <p>Adds language available in user choice. (Only the languages registered in the machine)</p> <p>Refer to the displayed language list to set in the way showed below.</p> <p>List Number Assigned Bit Switch</p> <p>No.1 to 8 BIT1 to 8 (SP5009-201)</p> <p>No.9 to 16BIT1 to 8 (SP5009-202)</p> <p>No.17 to 24BIT1 to 8 (SP5009-203)</p> <p>No.25 to 32BIT1 to 8 (SP5009-204)</p> <p>Example: To add American(No.3 in the list) or Czech (No.15)</p> <p>Turn Bit 3 of "SP5009-201" 0 to 1 for American.</p> <p>Turn Bit 7 of "SP5009-202" 0 to 1 for Czech.</p> <p>After setting, turn the main power switch off and on to make the setting valid.</p> <p>0: None, 1: Japanese (ja), 2: British English (en-GB), 3: American English (en-US), 4: French (fr), 5: German (de), 6: Italian (it), 7: Spanish (es), 8: Dutch (nl), 9: Norwegian (no), 10: Danish (da), 11: Swedish (sv), 12: Polish (pl), 13: Portuguese (pt), 14: Hungarian (hu), 15: Czech (cs), 16: Finnish (fi), 17: Chinese (zh-CN), 18: Taiwanese (zh-TW), 19: Thai (th), 20: Russian (ru), 21: Hebrew (iw), 22: Arabic (ar), 23: Greek (el), 24: Korean (ko), 25: Catalan(ct), 26: Turkish (tr), 27: Brazilian Portuguese(br), 28: Language Definition End</p>		
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5-009-201	1-8	C*	[1 to 255 / 00000000 / 1/step]
5-009-202	9-16	C*	
5-009-203	17-24	C*	
5-009-204	25-32	C*	

3

5024	[mm/inch Display Selection] Selects whether mm or inches are used in the display. Note: After selecting the number, you must turn the main power switch off and on.		
5-004-001	0:mm 1:inch	C*	[0 or 1 / 1 / 1/step] 0: mm (Europe/Asia) 1: inch (USA)

5051	[TonerRefillDetectionDisplay] Enables or disables the toner refill detection display.		
5-051-001	-	C*	[0 or 1 / 0 / 1/step] 0: ON 1: OFF

5055	[Display IP Address] Display or does not display the IP address on the operation panel.		
5-055-001	-	C*	[0 or 1 / 0 / 1/step] 0: OFF 1: ON

5074	[Home Key Customization] Sets the application that appears when the home key is pressed.		
5-074-002	Login Setting	C*	[FFh / 00000000 / 1hex/step] 0:On 1:Off Sets the log-in operation mode of the home menu.

5-074-050	Show Home Edit Menu	C*	<p>[0 to 2 / 0 / 1 /step]</p> <p>0: Auto 1: Display 2: Not display</p> <p>Sets whether to display the home edit menu on the system initial setting or WebImageMonitor.</p> <p>It depends whether the machine has the Smart Oeration Panel or not.</p>
5-074-091	Function Setting	C*	<p>[0 to 2 / 0 / 1/step]</p> <p>0: Function disable 1: SDK application 2: MFP browser application</p> <p>Selects the application to show up when pressed the home key.</p>
5-074-092	Product ID	C*	<p>[0x00 to 0xFFFF FFFF / 0h / 1/step]</p> <p>Sets the Application product ID.</p>
5-074-093	Application Screen ID	C*	<p>[0 to 255 / 0 / 1/step]</p> <p>Sets the display category of the application that is specified in the SP5075-001</p>
5083	<p>[LED Light Switch Setting]</p> <p>Specifies whether the alert LED is lit or not when toner near end condition is detected. (This does not change the toner near end condition indication in the operation panel LCD.)</p>		
5-083-001	Toner Near End	C*	<p>[0 or 1 / * / 1/step]</p> <p>0: OFF 1: ON</p> <p>* Default for M158 is "1", M159 is "0".</p>
5112	<p>[Non-Std. Paper Sel.]</p> <p>Selects On/Off to allow the setting of the custom size.</p>		

5-112-001	(0:OFF 1:ON)	C*	[0 or 1 / 1 / 1/step] 0: OFF 1: ON
5150	[Bypass Length Setting] Sets up the by-pass tray for long paper.		
5-150-001	0:OFF 1:ON	C*	[0 or 1 / 0 / 1/step] 0: OFF 1: ON
5169	[CE Login] If you will change the printer bit switches, you must "log in" to service mode with this SP before you go into the printer SP mode.		
5-169-001	-	C*	[0 or 1 / 0 / 1/step] 0: Disabled 1: Enabled
5191	[Mode Set] Shifts to the power save mode or not.		
5-191-001	Power Str Set	C*	[0 or 1 / 1 / 1/step] 0: OFF 1: ON
5195	[Limitless Sw] Sets limitless paper feed.		
5-195-001	-	C*	[0 or 1 / 0 / 1/step]

5302	[Set Time] Adjusts the RTC (real time clock) time setting for the local time zone. Examples: For Japan (+9 GMT), enter 540 (9 hours x 60 min.) JP: +540 (Tokyo) NA: -300 (New York) EU: + 60 (Paris) CH: +480 (Peking) TW: +480 (Taipei) AS: +480 (Hong Kong) KO: +540 (Korea)		
	5-302-002	Time Difference	C* [-1440 to 1440 / -300 / 1 min./step]

5305	[Auto Off Set] Auto Off Limit Set		
	5-305-001	Auto Off Limit Set	C* [0 or 1 / 0 / 1/step]

5307	[Daylight Saving Time]		
	5-307-001	Setting	C* [0 or 1 / 1 / 1/step] 0: Disabled 1: Enabled (Default) 1: NA and EUR 0: ASIA and others Enables or disables the summer time mode. Note <ul style="list-style-type: none"> Make sure that both SP5-307-3 and -4 are correctly set. Otherwise, this SP is not activated even if this SP is set to "1".

RTB 36
Default
changed

5-307-003	Rule Set(Start)	<p>[- / 3200210h / -]</p> <p>Specifies the start setting for the summer time mode.</p> <p>There are 8 digits in this SP. For months 1 to 9, the "0" cannot be input in the first digit, so the eight-digit setting for -2 or -3 becomes a seven-digit setting.</p> <p>1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [1 to 5] 4th digit: The day of the week. [0 to 6 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] 7th digit: The length of the advanced time. [0 to 9 / 1 hour /step] 8th digit: The length of the advanced time. [0 to 5 / 10 minutes /step]</p> <ul style="list-style-type: none"> • The digits are counted from the left. • Make sure that SP5-307-1 is set to "1". <p>For example: 3500010 (EU default) The timer is advanced by 1 hour at am 0:00 on the 5th Sunday in March</p>
5-307-004	Rule Set(End)	<p>[- / 11100200h / -]</p> <p>Specifies the end setting for the summer time mode.</p> <p>There are 8 digits in this SP.</p> <p>1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [0 to 5] 4th digit: The day of the week. [0 to 7 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] The 7th and 8 digits must be set to "00".</p> <ul style="list-style-type: none"> • The digits are counted from the left. • Make sure that SP5-307-1 is set to "1".

5401	[Access Control] DFU
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5-401-104	Authentication Time	C*	[- / 0 / -]
5-401-162	Extend Certification Detail	C*	
5-401-200	SDK1 UniqueID	C*	
5-401-201	SDK1 Certification Method	C*	
5-401-210	SDK2 UniqueID	C*	[- / 0 / -]
5-401-211	SDK2 Certification Method	C*	
5-401-220	SDK3 UniqueID	C*	
5-401-221	SDK3 Certification Method	C*	
5-401-230	SDK Certification Device	C*	
5-401-240	Detail Option	C*	

5402	<p>[Accsss Control]</p> <p>bit0: SDKJ Authentication -0: Panel Type -1: Remote Type</p> <p>bit1: Using user code setup -0: OFF, 1: ON</p> <p>bit2: Using key-counter setup -0: OFF, 1: ON</p> <p>bit3: Using external billing device setup -0: OFF, 1: ON</p> <p>bit4: Using extended external billing device setup -0: OFF, 1: ON</p> <p>bit5~6: Not used</p> <p>bit7: Using extended function J limit users -0: OFF, 1: ON</p>
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5-402-101	SDKJ1 Limit Setting	C*	[- / 0x00 / 0x01/step]
5-402-102	SDKJ2 Limit Setting	C*	
5-402-103	SDKJ3 Limit Setting	C*	
5-402-104	SDKJ4 Limit Setting	C*	
5-402-105	SDKJ5 Limit Setting	C*	
5-402-106	SDKJ6 Limit Setting	C*	
5-402-107	SDKJ7 Limit Setting	C*	
5-402-108	SDKJ8 Limit Setting	C*	
5-402-109	SDKJ9 Limit Setting	C*	
5-402-110	SDKJ10 Limit Setting	C*	
5-402-111	SDKJ11 Limit Setting	C*	[- / 0x00 / 0x01/step]
5-402-112	SDKJ12 Limit Setting	C*	
5-402-113	SDKJ13 Limit Setting	C*	
5-402-114	SDKJ14 Limit Setting	C*	
5-402-115	SDKJ15 Limit Setting	C*	
5-402-116	SDKJ16 Limit Setting	C*	
5-402-117	SDKJ17 Limit Setting	C*	
5-402-118	SDKJ18 Limit Setting	C*	
5-402-119	SDKJ19 Limit Setting	C*	
5-402-120	SDKJ20 Limit Setting	C*	
5-402-121	SDKJ21 Limit Setting	C*	

5-402-122	SDKJ22 Limit Setting	C*	[- / 0x00 / 0x01/step]
5-402-123	SDKJ23 Limit Setting	C*	
5-402-124	SDKJ24 Limit Setting	C*	
5-402-125	SDKJ25 Limit Setting	C*	
5-402-126	SDKJ26 Limit Setting	C*	
5-402-127	SDKJ27 Limit Setting	C*	
5-402-128	SDKJ28 Limit Setting	C*	
5-402-129	SDKJ29 Limit Setting	C*	
5-402-130	SDKJ30 Limit Setting	C*	

5402	[Access Control] Sets limited uses for SDKJ application data.		
5-402-141	SDKJ1 ProductID	C*	[0 to 0xffffffff / 0 / 1/step]
5-402-142	SDKJ2 ProductID	C*	
5-402-143	SDKJ3 ProductID	C*	
5-402-144	SDKJ4 ProductID	C*	
5-402-145	SDKJ5 ProductID	C*	
5-402-146	SDKJ6 ProductID	C*	
5-402-147	SDKJ7 ProductID	C*	
5-402-148	SDKJ8 ProductID	C*	
5-402-149	SDKJ9 ProductID	C*	

5-402-150	SDKJ10 ProductID	C*	[0 to 0xffffffff / 0 / 1/step]
5-402-151	SDKJ11 ProductID	C*	
5-402-152	SDKJ12 ProductID	C*	
5-402-153	SDKJ13 ProductID	C*	
5-402-154	SDKJ14 ProductID	C*	
5-402-155	SDKJ15 ProductID	C*	
5-402-156	SDKJ16 ProductID	C*	
5-402-157	SDKJ17 ProductID	C*	
5-402-158	SDKJ18 ProductID	C*	
5-402-159	SDKJ19 ProductID	C*	
5-402-160	SDKJ20 ProductID	C*	[0 to 0xffffffff / 0 / 1/step]
5-402-161	SDKJ21 ProductID	C*	
5-402-162	SDKJ22 ProductID	C*	
5-402-163	SDKJ23 ProductID	C*	
5-402-164	SDKJ24 ProductID	C*	
5-402-165	SDKJ25 ProductID	C*	
5-402-166	SDKJ26 ProductID	C*	
5-402-167	SDKJ27 ProductID	C*	
5-402-168	SDKJ28 ProductID	C*	
5-402-169	SDKJ29 ProductID	C*	
5-402-170	SDKJ30 ProductID	C*	

5404	[User Code Count Clear] Clears the counts for the user codes assigned by the key operator to restrict the use of the machine. Press [Execute] to clear.		
5-404-001	-	C	[- / - / -] [Execute]

5411	[LDAP-Certification]		
5-411-004	Simplified Authentication	C*	[0 or 1 / 1 / 1/step] 0: OFF 1: ON Determines whether easy LDAP certification is done.
5-411-005	Password Null Not Permit	C*	[0 or 1 / 1 / 1/step] 0: Password NULL permitted. 1: Password NULL not permitted. This SP is referenced only when SP5411-4 is set to "1" (On).
5-411-006	Detail Option	C*	[- / 00000000 / 0x01/step] Determines whether LDAP option (anonymous certification) is turned on or off.

5412	[Krb-Certification] Sets the level of Kerberos Certification.		
5-412-100	Encrypt Mode	C*	[- / 11111111 / 1/step] 0x01:AES256-CTS-HMAC-SHA1-96 0x02:AES128-CTS-HMAC-SHA1-96 0x04:DES3-CBC-SHA1 0x08:RC4-HMAC 0x10:DES-CBC-MD5 0xFF(0x1F):ALL

5413	[Lockout Setting] Sets the lockout setting for local address book.		
5-413-001	Lockout On/Off	C*	[0 or 1 / 0 / 1/step] 0: OFF 1: ON Switches on/off the lock on the local address book account.

5-413-002	Lockout Threshold	C*	[1 to 10 / 5 / 1time/step] Sets a limit on the frequency of lockouts for account lockouts.
5-413-003	Cancellation On/Off	C*	[0 or 1 / 0 / 1/step] 0: OFF (lockout not cancelled) 1: ON (system waits, cancels lockout if correct user ID and password are entered) Determines whether the system waits the prescribed.
5-413-004	Cancelation Time	C*	[1 to 9999 / 60 / 1 min./step] Determines the length of time that the system waits for correct input of the user ID and password after a lockout has occurred. This setting is used only if SP5413-3 is set to "1" (on).

5414	[Access Mitigation]		
5-414-001	Mitigation On/Off	C*	[0 or 1 / 0 / 1/step] 0: OFF 1: ON Switches on/off masking of continuously used IDs and passwords that are identical.
5-414-002	Mitigation Time	C*	[0 to 60 / 15 / 1 min./step] Sets the length of time for excluding continuous access for identical user IDs and passwords.

5415	[Password Attack]		
5-415-001	Permissible Number	C*	[0 to 100 / 30 / 1 time/step] Sets the number of attempts to attack the system with random passwords to gain illegal access to the system.

5-415-002	Detect Time	C*	[1 to 10 / 5 / 1sec/step] Sets the time limit to stop a password attack once such an attack has been detected.
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5416	[Access Information]		
5-416-001	Access User Max Num	C*	[50 to 200 / 200 / 1 users/step] Limits the number of users used by the access exclusion and password attack detection functions.
5-416-002	Access Password Max Num	C*	[50 to 200 / 200 / 1 users/step] Limits the number of passwords used by the access exclusion and password attack detection functions.
5-416-003	Monitor Interval	C*	[1 to 10 / 3 / 1 sec/step] Sets the processing time interval for referencing user ID and password information.

5417	[Access Attack]		
5-417-001	Access Permissible Number	C*	[0 to 500 / 100 / 1time/step] Sets a limit on access attempts when an excessive number of attempts are detected for MFP features.
5-417-002	Attack Detect Time	C*	[10 to 30 / 10 / 1sec/step] Sets the length of time for monitoring the frequency of access to MFP features.
5-417-003	Productivity Fall Waite	C*	[0 to 9 / 3 / 1 sec/step] Sets the wait time to slow down the speed of certification when an excessive number of access attempts have been detected.

5-417-004	Attack Max Num	C*	[50 to 200 / 200 / 1/step] Sets a limit on the number of requests received for certification in order to slow down the certification speed when an excessive number of access attempts have been detected.
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5420	[User Authentication] These settings should be done with the System Administrator.		
	<div style="border: 1px solid blue; border-radius: 10px; padding: 2px; display: inline-block;"> Note </div> <ul style="list-style-type: none"> • These functions are enabled only after the user access feature has been enabled. 		
	5-420-041	Printer	C* [0 or 1 / 0 / 1/step] 0: Authentication ON 1: Authentication OFF Determines whether certification is required before a user can use the printer applications.
	5-420-051	SDK1	C* [0 or 1 / 0 / 1/step]
	5-420-061	SDK2	C* 0: Authentication ON 1: Authentication OFF
5-420-071	SDK3	C* Determines whether certification is required before a user can use the SDK application.	
5-420-081	Browser	C* [0 or 1 / 0 / 1/step] 0: Authentication ON 1: Authentication OFF Determines whether certification is required before a user can use the Browser application. *This SP is only for M159 (touch panel model).	

5430	[Auth Dialog Message Change] Displays the Authentication dialog message or not.		
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5-430-001	Message Chande On/Off	C*	[0 or 1 / 0 / 1/step] Turns on or off the displayed message change for the authentication. *This SP is only for M159 (touch panel model).
5-430-002	Message Text Download	C*	[- / - / -] [Execute] Executes the message download for the authentication. *This SP is only for M159 (touch panel model).
5-430-003	Message Text ID	C*	[characters(max.16Byte) / \0 /-] Inputs message text for the authentication. *This SP is only for M159 (touch panel model).

5481	[Authentication Error Code] Determines how the authentication failures are displayed.		
5-481-001	System Log Disp	C*	[0 or 1 / 0 / 1/step] 0: Display OFF 1: Display ON Determines whether an error code appears in the system log after a user authentication failure occurs.
5-481-002	Panel Disp	C*	[0 or 1 / 1 / 1/step] 0: Display OFF 1: Display ON Determines whether an error code appears on the operation panel after a user authentication failure occurs. *This SP is only for M159 (touch panel model).

5501	[PM Alarm]		
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5-501-001	PM Alarm Level	C*	[0 to 9999 / 0 / 1/step] 0: Alarm off 1 to 9999: Alarm goes off when Value (1 to 9999) x 1000 > PM counter
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5504		[Jam Alarm]	
5-504-001	-	C*	[0 to 3 / 3 / 1/step] 0: Zero (Off) 1: Low (2.5K jams) 2: Medium (3K jams) 3: High (6K jams) Sets the alarm to sound for the specified jam level (document misfeeds are not included).

5505		[Error Alarm] Sets the error alarm level. The error alarm counter counts "1" when any SC is detected. However, the error alarm counter decreases by "1" when an SC is not detected during a set number of copied sheets (for example, default 700 sheets). The error alarm occurs when the SC error alarm counter reaches "5".	
5-505-001	-	C*	[0 to 255 / 15 / 1hundred/step] 0: Alarm Off

5507		[Supply/CC Alarm] Enables or disables the notifying a supply call via the @Remote.	
5-507-001	Paper Supply Alarm	C*	[0 or 1 / 0 / 1/step] Switches the control call on/off for the paper supply. DFU 0: No alarm 1: Sets the alarm to sound for the specified number transfer sheets for each paper size (A3, A4, B4, B5, DLT, LG, LT, HLT)

5-507-003	Toner Supply Alarm	C*	[0 or 1 / 1 / 1/step] Switches the control call on/off for the stapler installed in the finisher. DFU If you select "1" the alarm will sound when the copier detects toner end. 0: Off 1: On
5-507-004	MaintenanceKlt	C*	[0 or 1 / 1 / 1/step] 0: OFF 1: ON
5-507-005	DrumLifeRermain	C*	[0 or 1 / 1 / 1/step] 0: OFF 1: ON
5-507-006	Toner Collection Bottle Alarm	C*	[0 or 1 / 1 / 1/step] 0: OFF 1: ON
5-507-080	Toner Call Timing	C*	[0 or 1 / 0 / 1/step] 0: At replacement 1: AtLessThanThresh Changes the timing of the "Toner Supply Call" via the @Remote, when the following conditions occur.
5-507-081	Toner Call Threshold	C*	[10 or 90 / 10 / 10%/step]
5-507-128	Interval: Others	C*	[250 to 10000 / 1000 / 1 page/step] The "Paper Supply Call Level: nn" SPs specify the paper control call interval for the referenced paper sizes. DFU
5-507-133	Interval: A4	C*	
5-507-134	Interval: A5	C*	
5-507-142	Interval: B5	C*	
5-507-164	Interval: LG	C*	
5-507-166	Interval: LT	C*	
5-507-172	Interval: HLT	C*	

5508		[CC Call]	
5-508-001	Jam Remains	C*	[0 or 1 / 1 / 1/step]
5-508-002	Continuous Jams	C*	0: Disable
5-508-003	Continuous Door Open	C*	1: Enable Enables/disables initiating a call.
5-508-011	Jam Detection: Time Length	C*	[3 to 30 / 10 / 1 min./step] Sets the length of time to determine paper jams required to initiate a call.
5-508-012	Jam Detection: Continuous Count	C*	[2 to 10 / 5 / 1time/step] Sets the number of continuous paper jams required to initiate a call.
5-508-013	Door Open: Time Length	C*	[3 to 30 / 10 / 1 min./step] Sets the length of time the door remains open before the machine initiates a call.

5515		[SC/Alarm Setting]	
5515		With NRS (New Remote Service) in use, these SP codes can be set to issue an SC call when an SC error occurs. If this SP is switched off, the SC call is not issued when an SC error occurs.	
5-515-001	SC Call	C*	[0 or 1 / 1 / 1/step] 0: OFF 1: ON
5-515-002	Service Parts Near End Call	C*	
5-515-003	Service Parts End Call	C*	
5-515-004	User Call	C*	
5-515-006	Communication Test Call	C*	
5-515-007	Machine Information Notice	C*	
5-515-008	Alarm Notice	C*	
5-515-009	Non Genuine Tonner Ararm	C*	
5-515-010	Supply Automatic Ordering Call	C*	
5-515-011	Supply Management Report Call	C*	

5516	[Individual PM Part Alarm Call] With @Remote in use, these SP codes can be set to issue a PM alarm call when one of SP parts reaches its yield.		
5-516-001	Disable/Enable Setting (0:Not Send,1:Send)	C*	[0 or 1 / 1 / 1/step] 0: Not send 1: Send
5-516-004	Percent yield for triggering PM alert	C*	[1 to 255 / 75 / 1%/step]

5517	[Get Machine Information] When SMC info collect is interrupt, retries during the time between receiving Request for obtaining SMC info, to value set with this setting.		
5-517-031	Get SMC Info: Retry Interval	C*	[10 to 255 / 10 / 1min/step]

5730	[Extended Function Setting]		
5-730-010	Expiration Prior Alarm Set	C*	[0 to 999 / 20 / 1day/step]

5731	[Counter Effect] Converts the paper count to the combine count for MK-1 counter.		
5-731-001	Change MK1 Cnt (Paper->Combine)	C*	[0 or 1 / 0 / 1/step]

5745	[DeemedPowerConsumption] Displays the deemed power consumption of each condition.		
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5-745-211	Contoroller Standby	C*	[0 to 9999 / 0 / 1/step]
5-745-212	STR	C*	
5-745-213	Main Power Off	C*	
5-745-214	Scanning and Printing	C*	
5-745-215	Printing	C*	
5-745-216	Scanning	C*	
5-745-217	Engine Standby	C*	
5-745-218	Low Power Consumption	C*	
5-745-219	Silent condition	C*	
5-745-220	Heater Off	C*	

5747	[Browser Setting]		
5-747-201	JPEG Quality	C*	[- / - / -]
5-747-203	Extended Memory Limit	C*	
5-747-204	Vertical Scroll Display Setting	C*	
5-747-206	Browser Setting 3	C*	
5-747-207	Browser Setting 4	C*	
5-747-208	Browser Setting 5	C*	
5-747-209	Browser Setting 6	C	[- / - / -]
5-747-210	Browser Setting 7	C	
5-747-211	Browser Setting 8	C	
5-747-212	Browser Setting 9	C	
5-747-213	Browser Setting 10	C	

5748	[OpePanelSetting] Settings in regard to Operation Panel.		
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5-748-101	Op Type Action Setting	C	<p>[0 to 0xFF / 00000000 / 1/step]</p> <p>Bit0: disables/enables the re-connection.</p> <p>1: Enabled 0: Disabled</p> <p>Bit1: sets whether to stop a job when communication with the operation panel disconnected.</p> <p>1: Stop Job 0: Not Stop</p> <p>Bit2: switches the launch mode of the Smart Operation Panel.</p> <p>*This SP is only for M159 (touch panel model).</p>
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5749	[Import/Export] Imports and exports preference information.		
5-749-001	Export	C	[- / - / -]
5-749-101	Import	C	[Execute]

5751	[Key Event Encryption Setting] Specifies the key to encrypt the key information.		
5-751-001	Password	C*	[Letters (Up to 31) / NULL / -]

5755	[Display Setting] Sets the display for the administrator password.		
5-755-001	Disp Administrator Password Change Scrn	C	<p>[- / - / -]</p> <p>[Execute]</p> <p>Displays the password setting screen for the supervisor and administrator 1 in the startup after the execution.</p>

5-755-002	Hide Administrator Password Change Scrn	C	[- / - / -] [Execute] Hides the input screen of the administrator password temporarily after the execution.
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5801	[Memory Clear]		
5-801-001	All Clear	C	[- / - / -] [Execute] Initializes items 002 to 027. Take a memo of the settings prior to execute this SP
5-801-002	Engine	E	[0 or 1 / 0 / 1/step] Initializes all registration settings for the engine and copy process settings.
5-801-003	SCS	C	[- / - / -] [Execute] Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information.
5-801-004	IMH Memory Clr	C	[- / - / -] [Execute]
5-801-005	MCS	C	[- / - / -] [Execute] Initializes the Mcs settings.

5-801-008	Printer Application	C	<p>[- / - / -] [Execute]</p> <p>The following service settings:</p> <ul style="list-style-type: none"> • Bit switches • Gamma settings (User & Service) • Toner Limit <p>The following user settings:</p> <ul style="list-style-type: none"> • Tray Priority • Menu Protect • System Setting except for setting of Energy Saver • I/F Setup (I/O Buffer and I/O Timeout) • PCL Menu
5-801-010	Web Service	C	<p>[- / - / -] [Execute]</p> <p>Deletes the network file application management files and thumbnails, and initializes the job login ID.</p>
5-801-011	NCS	C	<p>[- / - / -] [Execute]</p> <p>All setting of Network Setup (User Menu) (NCS: Network Control Service)</p>
5-801-014	Clear DCS Setting	C	<p>[- / - / -] [Execute]</p> <p>Initializes the DCS (Delivery Control Service) settings.</p>
5-801-015	Clear UCS Setting	C	<p>[- / - / -] [Execute]</p> <p>Initializes the UCS (User Information Control Service) settings.</p>

5-801-016	MIRS Setting	C	[- / - / -] [Execute] Initializes the MIRS (Machine Information Report Service) settings.
5-801-017	CCS	C	[- / - / -] [Execute] Initializes the CCS (Certification and Charge-control Service) settings.
5-801-018	SRM Memory Clr	C	[- / - / -] [Execute] Initializes the SRM (System Resource Manager) settings.
5-801-021	ECS	C	[- / - / -] [Execute] Initializes the ECS settings.
5-801-024	BROWSER	C	[- / - / -] Initializes the Browser settings.
5-801-025	Websys	C	[- / - / -] [Execute]
5-801-026	PLN	C	
5-801-027	SAS	C	

5803	[INPUT Check] See page 140
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5804	[OUTPUT Check] See page 141
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5810	[SC Reset] Cancel SC of the CE cancellation.
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5-810-001	Fusing SC Reset	E	[0 or 1 / 0 / 1/step] [Execute]
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5811	[MachineSerial]		
5-811-002	Display	E	[0 to 255 / 0 / 1/step] Displays the machine serial number.
5-811-004	BCU	E	[0 to 255 / 0 / 1/step] Inputs the serial number.

5812	[Service Tel. No. Setting]		
5-812-001	Service	C*	[up to 16 / - / 1/step] Sets the telephone number for a service representative. This number is printed on the Counter List, which can be printed with the user's "Counter" menu. This can be up to 20 characters (both numbers and alphabetic characters can be input).
5-812-002	Facsimile	C*	[up to 16 / - / 1/step] Sets the fax or telephone number for a service representative. This number is printed on the Counter List. This can be up to 20 characters (both numbers and alphabetic characters can be input).
5-812-003	Supply	C*	[up to 16 / - / 1/step] Use this to input the telephone number of your supplier for consumables. Enter the number and press #. *This SP is only for M159 (touch panel model).
5-812-004	Operation	C*	[up to 16 / - / 1/step] Use this to input the telephone number of your sales agency. Enter the number and press #. *This SP is only for M159 (touch panel model).

5-812-101	Disp Inquiry	C*	[0 or 1 / 0 / 1/step] *This SP is only for M159 (touch panel model).
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5816	[Remote Service]		
5-816-001	I/F Setting	C*	[0 to 2 / 2 / 1/step] 0: Remote service off 1: CSS remote service on 2: NRS remote service on Selects the remote service setting.
5-816-002	CE Call	C*	[0 or 1 / 0 / 1/step] 0: Start of the service 1: End of the service Performs the CE Call at the start or end of the service. Note: This SP is activated only when SP5816-001 is set to "1".
5-816-003	Function Flag	C*	[0 or 1 / 0 / 1/step] 0: Disabled 1: Enabled Enables or disables the remote service function. NOTE: This SP setting is changed to "1" after @Remote register has been completed.
5-816-007	SSL Disable	C*	[0 or 1 / 0 / 1/step] 0: No. SSL used. 1: Yes. SSL not used. Controls if RCG (Remote Communication Gate) confirmation is done by SSL during an RCG send for the @Remote over a network interface.

5-816-008	RCG Connect Timeout	C*	[1 to 90 / 30 / 1second/step] Sets the length of time (seconds) for the time-out when the RCG (Remote Communication Gate) connects during a call via the @Remote network.
5-816-009	RCG Write Timeout	C*	[0 to 100 / 60 / 1second/step] Sets the length of time (seconds) for the time-out when sent data is written to the RCG during a call over the @Remote network.
5-816-010	RCG Read Timeout	C*	[0 to 100 / 60 / 1second/step] Sets the length of time (seconds) for the timeout when sent data is written from the RCG during a call over the @Remote network.
5-816-011	Port 80 Enable	C*	[0 or 1 / 0 / 1/step] 0: No. Access denied 1: Yes. Access granted Controls if permission is given to get access to the SOAP method over Port 80 on the @Remote network.
5-816-013	RFU Timing	C*	[0 or 1 / 1 / 1/step] 0: RFU is executed whenever update request is received. 1: RFU is executed only when the machine is in the sleep mode. Selects the timing for the remote firmware updating.
5-816-014	RCG Error Cause	C*	[0 or 1 / 0 / 1/step] 0: Initial state, normal condition 1: Error Displays RCG connection error. cause

5-816-021	RCG-C Registered	C*	<p>[0 or 1 / 0 / 1/step]</p> <p>0: Initial state, normal condition</p> <p>1: Error</p> <p>Displays the Embedded RC Gate installation end flag.</p>
5-816-023	Connect Type(N/M)	C*	<p>[0 or 1 / 0 / 1/step]</p> <p>0: Initial state, normal condition</p> <p>1: Error</p> <p>Displays/selects the Embedded RC Gate connection method.</p>
5-816-061	Cert Expire Timing	C*	<p>[- / 0 / -]</p> <p>Proximity of the expiration of the certification.</p>
5-816-062	Use Proxy	C*	<p>[- / - / -]</p> <p>Determines if the proxy server is used when the machine communicates with the service center.</p>
5-816-063	Proxy Host	C*	<p>[up to 127 / - / 1/step]</p> <p>This SP sets the address of the proxy server used for communication between the RCG device and the gateway. Use this SP to set up or display the customer proxy server address. The address is necessary to set up the embedded RCG-N.</p> <p>Note</p> <ul style="list-style-type: none"> The address display is limited to 128 characters. Characters beyond the 128 character are ignored. This address is customer information and is not printed in the SMC report.

5-816-064	Proxy PortNumber	C*	<p>[0 to 0xffff / 0 / 1/step]</p> <p>This SP sets the port number of the proxy server used for communication between the embedded RCG-N and the gateway. This setting is necessary to set up the embedded RC Gate-N.</p> <p>Note</p> <ul style="list-style-type: none"> This port number is customer information and is not printed in the SMC report.
5-816-065	Proxy User Name	C*	<p>[up to 31 / - / 1/step]</p> <p>This SP sets the HTTP proxy certification user name.</p> <p>Note</p> <ul style="list-style-type: none"> The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored. This name is customer information and is not printed in the SMC report.
5-816-066	Proxy Password	C*	<p>[up to 31 / - / 1/step]</p> <p>This SP sets the HTTP proxy certification password.</p> <p>Note</p> <ul style="list-style-type: none"> The length of the password is limited to 31 characters. Any character beyond the 31st character is ignored. This name is customer information and is not printed in the SMC report.

5-816-067	CERT:Up State		C*	[- / - / -] Displays the status of the certification update.
	0	The certification used by Embedded RC Gate is set correctly.		
1	The certification request (setAuthKey) for update has been received from the GW URL and certification is presently being updated.			
2	The certification update is completed and the GW URL is being notified of the successful update.			
3	The certification update failed, and the GW URL is being notified of the failed update.			
4	The period of the certification has expired and new request for an update is being sent to the GW URL.			
11	A rescue update for certification has been issued and a rescue certification setting is in progress for the rescue GW connection.			
12	The rescue certification setting is completed and the GW URL is being notified of the certification update request.			
13	The notification of the request for certification update has completed successfully, and the system is waiting for the certification update request from the rescue GW URL.			
14	The notification of the certification request has been received from the rescue GW controller, and the certification is being stored.			
15	The certification has been stored, and the GW URL is being notified of the successful completion of this event.			
16	The storing of the certification has failed, and the GW URL is being notified of the failure of this event.			
17	The certification update request has been received from the GW URL, the GW URL was notified of the results of the update after it was completed, but a certification error has been received, and the rescue certification is being recorded.			
18	The rescue certification of No. 17 has been recorded, and the GW URL is being notified of the failure of the certification update.			

5-816-068	CERT:Error	C*	[- / - / -] Displays a number code that describes the reason for the request for update of the certification.
	0	Normal. There is no request for certification update in progress.	
	1	Request for certification update in progress. The current certification has expired.	
	2	An SSL error notification has been issued. Issued after the certification has expired.	
	3	Notification of shift from a common authentication to an individual certification.	
	4	Notification of a common certification without ID2.	
	5	Notification that no certification was issued.	
6	Notification that GW URL does not exist.		
5-816-069	CERT:Up ID	C*	[- / - / -] The ID of the request for certification.
5-816-083	Firm Up Status	C*	[- / - / -] Displays the status of the firmware update.
5-816-085	Firm Up User Check	C*	[- / - / -] Determines if the operator can confirm the previous version of the firmware before the firmware update execution. If the option to confirm the previous version is selected, a notification is sent to the system manager and the firmware update is done with the firmware files from the URL.
5-816-086	Firmware Size	C*	[- / - / -] Allows the service technician to confirm the size of the firmware data files during the firmware update execution.
5-816-087	CERT:Macro Ver.	C*	[- / - / -] Displays the macro version of the @Remote certification.

5-816-088	CERT:PAC Ver.	C*	[- / - / -] Displays the PAC version of the @Remote certification.
5-816-089	CERT:ID2Code	C*	[- / - / -] Displays ID2 for the @Remote certification. Spaces are displayed as underscores (_). Asterisks (*) indicate that no @Remote certification exists. "000000_____" indicates "Common certification".
5-816-090	CERT:Subject	C*	[- / - / -] Displays the common name of the @Remote certification subject. CN = the following 17 bytes. Spaces are displayed as underscores (_). Asterisks (*) indicate that no @Remote certification exists. "000000_____" indicates "Common certification".
5-816-091	CERT:SerialNo.	C*	[- / - / -] Displays serial number for the @Remote certification. Asterisks (*) indicate that no @Remote certification exists.
5-816-092	CERT:Issuer	C*	[- / - / -] Displays the common name of the issuer of the @Remote certification. CN = the following 30 bytes. Asterisks () indicate that no @Remote certification exists.
5-816-093	CERT:Valid Start	C*	[- / - / -] Displays the start time of the period for which the current @Remote certification is enabled.
5-816-094	CERT: Valid End	C*	[- / - / -] Displays the end time of the period for which the current @Remote certification is enabled.
5-816-102	CERT:Encrypt Level	C*	[- / 1 / -] Displays cryptic strength of the NRS certification.

5-816-200	Manual Polling	C*	[- / - / -] [Execute] Executes the center polling manually.
5-816-201	Regist Status	C*	[0 to 4 / 0 / 1/step] Displays a number that indicates the status of the @Remote service device. 0: Neither the @Remote device nor Embedded RCG Gate is set. 1: The Embedded RCG Gate is being set. Only Box registration is completed. In this status, @Remote device cannot communicate with this device. 2: The Embedded RCG Gate is set. In this status, the @Remote device cannot communicate with this device. 3: The @Remote device is being set. In this status the Embedded RCG Gate cannot be set. 4: The @Remote module has not started.
5-816-202	Letter Number	C*	[- / - / -] Allows entry of the request number needed for the Embedded RCG Gate.
5-816-203	Confirm Execute	C*	[- / - / -] [Execute] Executes the confirmation request to the @Remote Gateway.

5-816-204	Confirm Result	C*	<p>[0 to 255/ 0 / 1/step]</p> <p>Displays a number that indicates the result of the inquiry executed with SP5816-203.</p> <p>0: Succeeded</p> <p>1: Inquiry number error</p> <p>3: Proxy error (proxy enabled)</p> <p>4: Proxy error (proxy disabled)</p> <p>5: Proxy error (Illegal user name or password)</p> <p>6: Communication error</p> <p>8: Other error</p> <p>9: Inquiry executing</p>
5-816-205	Confirm Place	C*	<p>[- / - / -]</p> <p>Displays the result of the notification sent to the device from the GW URL in answer to the inquiry request. Displayed only when the result is registered at the GW URL.</p>
5-816-206	Register Execute	C*	<p>[- / - / -]</p> <p>[Execute]</p> <p>Executes "Embedded RCG Registration".</p>
5-816-207	Register Result	C*	<p>[0 to 255 / 0 / 1/step]</p> <p>Displays a number that indicates the registration result.</p> <p>0: Succeeded</p> <p>1: Inquiry number error</p> <p>2: Registration in progress</p> <p>3: Proxy error (proxy enabled)</p> <p>4: Proxy error (proxy disabled)</p> <p>5: Proxy error (Illegal user name or password)</p> <p>8: Other error</p> <p>9: Registration executing</p>

5-816-208	Error Code	C*	[-2147483647 to 2147483647 / -]
	Cause	Code	Meaning
Illegal Modem Parameter		-11001	Chat parameter error
		-11002	Chat execution error
		-11003	Unexpected error
		-11004	Cutting process occurred during modem communication.
		-11005	NCS reboot occurred during modem communication.
Operation Error, Incorrect Setting		-12002	Inquiry, registration attempted without acquiring device status.
		-12003	Attempted registration without execution of an inquiry and no previous registration.
		-12004	Attempted setting with illegal entries for certification and ID2.
		-12005	@Remote communication is prohibited. The device has an Embedded RC gate-related problem.
		-12006	A confirmation request was made after the confirmation had been already completed.
Operation Error, Incorrect Setting		-12007	The request number used at registration was different from the one used at confirmation.
		-12008	Update certification failed because mainframe was in use.
		-12009	D2 mismatch between an individual certification and NVRAM.
		-12010	Certification area is not initialized.

		-2385	Attempted dial up overseas without the correct international prefix for the telephone number.	
		-2387	Not supported at the Service Center	
		-2389	Database out of service	
	Error Caused by Response from GW URL	-2390	Program out of service	
		-2391	Two registrations for same device	
		-2392	Parameter error	
		-2393	Basil not managed	
		-2394	Device not managed	
		-2395	Box ID for Basil is illegal	
		-2396	Device ID for Basil is illegal	
		-2397	Incorrect ID2 format	
		-2398	Incorrect request number format	
5-816-209		Instl Clear	C	[- / - / -] [Execute] Releases the machine from its embedded RCG setup.
5-816-240		CommErrorTime	C	
5-816-241	CommErrorCode 1	C*	[- / - / -]	
5-816-242	CommErrorCode 2	C*	[Execute]	
5-816-243	CommErrorCode 3	C*		
5-816-244	CommErrorState 1	C*		
5-816-245	CommErrorState 2	C*	[- / - / -] [Execute]	
5-816-246	CommErrorState 3	C*		
5-816-247	SSL Error Count	C*		
5-816-248	Other Err Count	C*	[- / 0 / -]	

5-816-250	CommLog Print	C	[- / - / -] [Execute]
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5821	[Remote Service Address]		
5-821-002	RCG IP Address	C*	[00000000h to FFFFFFFFh / 00000000h / 1/step] Sets the IP address of the RCG (Remote Communication Gate) destination for call processing at the remote service center.
5-821-003	RCG Port	C*	[0 to 65535/ 443 / 1/step] Sets the port number of the RCG (Remote Communication Gate) destination for call processing at the remote service center.
5-821-004	RCG URL Path	C*	[0 to 16 characters (half characters) Default /RCG/services/ -]

5824	[NV-RAM Data Upload]		
5-824-001	-	C	[- / - / -] [Execute] Uploads the NVRAM data to an SD card. Push Execute. Note: When uploading data in this SP mode, the front door must be open.

5825	[NV-RAM Data Download] Downloads data from an SD card to the NVRAM in the machine. After downloading is completed, remove the card and turn the machine power off and on.		
5-825-001	-	C	[- / - / -] [Execute]

5828	[Network Setting] Job spool settings/ Interface selection for Ethernet and wireless LAN		
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5-828-065	Job Spooling		C*	[0 or 1 / 0 / 1 /step] Switches the job spooling on and off. 0: No spooling 1: Spooling enabled
5-828-066	Job Spooling Clear: Start Time		C*	[0 or 1 / 1 / 1/step] Determines whether the job interrupted at power off is resumed at the next power on. This SP operates only when SP5828-065 is set to "1". 0: ON 1: OFF
5-828-069	Job Spooling (Protocol)		C*	[0 or 1 / 1 / 1/step] Determines whether job spooling is enabled or disabled for each protocol. This is an 8-bit setting.
	0	LPR	4	BMLinks (Japan Only)
	1	FTP (Not Used)	5	DIPRINT
	2	IPP	6	Reserved (Not Used)
	3	SMB	7	Reserved (Not Used)
5-828-084	delete password		C	[- / - / - /] Prints the NCS parameters.

5-828-087	Protocol usage	C*	<p>[- / - / -]</p> <p>Shows which protocols have been used with the network.</p> <p>0: Off (Not used the network with the protocol.)</p> <p>1: On (Used the network with the protocol once or more.)</p> <p>bit0: IPsec, bit1: IPv6, bit2: IEEE 802. 1X, bit3: Wireless LAN,</p> <p>bit4: Security mode level setting, bit5: Appletalk, bit6: DHCP,</p> <p>bit7: DHCPv6, bit8: telnet, bit9: SSL, bit10: HTTPS,</p> <p>bit11: BMLinkS printing, bit12: diprint printing, bit13: LPR printing,</p> <p>bit14: ftp printing, bit15: rsh printing, bit16: SMB printing,</p> <p>bit17: WSD-Printer, bit18: WSD-Scanner, bit19: Scan to SMB,</p> <p>bit20: Scan to NCP, bit21: Reserve, bit22: Bluetooth,</p> <p>bit23: IEEE 1284, bit24: USB printing, bit25: Dynamic DNS,</p> <p>bit26: Netware printing, bit27: LLTD, bit28: IPP printing,</p> <p>bit29: IPP printing (SSL), bit30: ssh, bit31: sftp</p>
5-828-090	TELNET(0:OFF 1:ON)	C*	<p>[0 or 1 / 1 / 1/step]</p> <p>Enables or disables the Telnet protocol.</p> <p>0: Disable, 1: Enable</p>
5-828-091	Web (0:OFF 1:ON)	C*	<p>[0 or 1 / 1 / 1/step]</p> <p>Enables or disables the Web operation.</p> <p>0: Disable, 1: Enable</p>

5-828-096	Bonjour (Rendezvous)	C*	[0 to 1 / 1 / 1 /] Enables or disables the Bonjour protocol. 0 :Off 1 :On
5-828-145	Active IPv6 Link Local Address	C*	[- / - / -] This is the IPv6 local address link referenced on the Ethernet or wireless LAN (802.11b) in the format: "Link Local Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
5-828-147	Active IPv6 Stateless Address 1	C	[- / - / -] These SPs are the IPv6 status addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11b) in the format: "Status Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
5-828-149	Active IPv6 Stateless Address 2	C	
5-828-151	Active IPv6 Stateless Address 3	C	
5-828-153	Active IPv6 Stateless Address 4	C	
5-828-155	Active IPv6 Stateless Address 5	C	
5-828-156	IPv6 Manual Address	C*	[- / - / -] This SP is the IPv6 manually set address referenced on the Ethernet or wireless LAN (802.11b) in the format: "Manual Set Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
5-828-158	IPv6 Gateway Address	C*	[- / - / -] This SP is the IPv6 gateway address referenced on the Ethernet or wireless LAN (802.11b). The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
5-828-161	IPv6 Stateless Auto Setting	C*	[0 or 1 / 1 / 1 /step] Enables or disables the automatic setting for IPv6 stateless. 0: Disable, 1: Enable

5-828-236	Web Item visible	C*	[0x0000 to 0xffff / FFFh / 0x0001/step] Displays or does not display the Web system items. bit0: Net RICOH bit1: Consumable Supplier bit2-15: Reserved (all)
5-828-237	Web shopping link visible	C*	[0 or 1 / 1 / 1 /step] Displays or does not display the link to Net RICOH on the top page and link page of the web system. 0: Not display 1: Display
5-828-238	Web Supplies link visible	C*	[0 or 1 / 1 / 1 /step] Displays or does not display the link to Consumable Supplier on the top page and link page of the web system. 0: Not display 1: Display
5-828-239	Web Link1 Name	C*	[- / - / -] Confirms or changes the URL1 name on the link page of the web system. The maximum characters for the URL name are 31 characters.
5-828-240	Web Link1 URL	C*	[- / - / -] Confirms or changes the link to URL1 on the link page of the web system. The maximum characters for the URL are 127 characters.
5-828-241	Web Link1 visible	C*	[0 or 1 / 1 / 1 /step] Displays or does not display the link to URL1 on the top page of the web system.
5-828-242	Web Link2 Name	C*	[- / - / -] Same as "-239"

5-828-243	Web Link2 URL	C*	[- / - / -] Same as "-240"
5-828-244	Web Link2 visible	C*	[- / 1 / -] Same as "-241"

5832	[HDD] Initializes the hard disk. Use this SP mode only if there is a hard disk error.		
5-832-001	HDD Formatting (ALL)	C	[- / - / -] [Execute]

5840	[IEEE 802.11]		
5-840-006	Channel MAX	C*	[- / 14 / -] DFU
5-840-011	WEP Key Select	C*	[- / 00000000 / -] Selects the WEP key.
5-840-045	WPA debug Lvl	C*	[1 to 3 / 3 / 1/step] Selects the debug level for WPA authentication application. This SP is displayed only when the IEEE802.11 card is installed. 1: Info 2: warning 3: error
5-840-046	llw	C*	[0 to 2 / 0 / 1/step]

5841	[Supply Name Setting] Specifies supply names. These appear on the screen when the user presses the Inquiry button in the user tools screen.		
5-841-001	Toner Name Setting: Black	C*	[- / - / -] The top 1 byte: character code scheme Rest 20 bytes: character string

5842	[GWWS Analysis] This is a debugging tool. It sets the debugging output mode of each Net File process.		
5-842-001	Setting 1	C*	[- / 00000000 / -]
5-842-002	Setting 2	C*	

5844	[USB]		
5-844-001	Transfer Rate	C*	[- / 0x04 / -] Sets the speed for USB data transmission. 0x01: Full Speed 0x04: Auto Change
5-844-002	Vendor ID	C*	[- / 5CAh / -] DFU
5-844-003	Product ID	C*	[- / 403h / -] DFU
5-844-004	Device Release Number	C*	[- / 100 / -] DFU
5-844-005	Fixed USB Port	C*	[0 to 2 / 0 / 1/step] Standardizes for common use the model name and serial number for USB PnP (Plug & Play). It determines whether the driver requires re-installation. 0: OFF 1: Level1 2: Level2
5-844-006	PnP Model Name	C*	[up to 20 characters / - / -] Sets the model name to be used by the USB PnP when "Function Enable (Level 2) is set so the USB Serial No. can have a common name (SP5-844-005).

5-844-007	PnP Serial Number	C*	<p>[- / - / -]</p> <p>Sets the serial number to be used by the USB PnP when "Function Enable (Level 2) set so the USB Serial No. can have a common name (SP5-844-005).</p> <ul style="list-style-type: none"> • Make sure that this entry is the same as the serial number in use. • At initialization the serial number generated from the model name is used, not the setting of this SP code. • At times other than initialization, the value set for this SP code is used.
5-844-008	Mac Supply Level	C*	<p>[0 or 1 / 1 / 1/step]</p> <p>0: OFF</p> <p>1: ON</p>
5-844-100	Notify Unsupported	C*	[0 or 1 / 1 / 1/step]

5845	[Delivery Server Setting] These are delivery server settings.		
5-845-003	Retry Interval	C*	<p>[0 to 900 / 300 / 1/step]</p> <p>You can configure the interval before the sending of e-mail notification is retried when it fails.</p>
5-845-004	No. of Retries	C*	<p>[0 to 99 / 3 / 1/step]</p> <p>You can configure the number of times the sending of e-mail notification is retried when it fails. If this is set to 3, the machine tries to send e-mail notification up to four times.</p>
5-845-022	Rapid Sending Control	C*	<p>[0 or 1 / 1 / -/step]</p> <p>0: Control disabled</p> <p>1: Control enabled</p> <p>Enables or disables the prevention function for the continuous data sending error.</p>

5846	[UCS Setting]		
5-846-010	LDAP Search Timeout	C*	[1 to 255 / 60 / 1/step] Sets the length of the timeout for the search of the LDAP server.
5-846-022	Initial Value of Upper Limit Count	C*	[0 to 999999 / 500 / 1/step] Sets the initial max. printable value that allows a user to print.
5-846-041	Fill Addr Acl Info	C	[- / - / -] [Execute] This SP must be executed immediately after installation of an HDD unit in a basic machine that previously had no HDD. The first time the machine is powered on with the new HDD installed, the system automatically takes the address book from the NVRAM and writes it onto the new HDD. However, the new address book on the HDD can be accessed only by the system administrator at this stage. Executing this SP by the service technician immediately after power on grants full address book access to all users. Procedure <ol style="list-style-type: none"> 1. Turn the machine off. 2. Install the new HDD. 3. Turn the machine on. 4. The address book and its initial data are created on the HDD automatically. 5. However, at this point the address book can be accessed by only the system administrator or key operator. 6. Enter the SP mode and do SP5846-041. After this SP executes successfully, any user can access the address book.

5-846-043	Addr Book Media	C*	<p>[0 to 30 / 0 / 1 / step]</p> <p>0: Unconfirmed</p> <p>1: SD Slot 1</p> <p>2: SD Slot 2</p> <p>3: SD Slot 3</p> <p>4: USB Flash ROM</p> <p>10: SD Slot 10</p> <p>20: HDD</p> <p>30: Nothing</p>
5-846-047	Initialize Local Address Book	C	<p>[- / - / -]</p> <p>[Execute]</p> <p>Clears the local address book information, including the user code.</p>
5-846-049	Initialize LDAP Addr Book	C	<p>[- / - / -]</p> <p>[Execute]</p> <p>Clears the LDAP address book information, except the user code.</p>
5-846-050	Initialize All Addr Book	C	<p>[- / - / -]</p> <p>[Execute]</p> <p>Clears all directory information managed by UCS, including all user codes.</p>
5-846-051	Backup All Addr Book	C	<p>[- / - / -]</p> <p>[Execute]</p> <p>Uploads all directory information to the SD card.</p>
5-846-052	Restore All Addr Book	C	<p>[- / - / -]</p> <p>[Execute]</p> <p>Downloads all directory information from the SD card.</p>

5-846-053	Clear Backup Info	C	<p>[- / - / -] [Execute]</p> <p>Deletes the address book data from the SD card in the service slot.</p> <p>Deletes only the files that were uploaded from this machine.</p> <p>This feature does not work if the card is write-protected.</p> <p>Note</p> <ul style="list-style-type: none"> After you do this SP, go out of the SP mode, and then turn the power off. Do not remove the SD card until the Power LED stops flashing.
5-846-060	Search Option	C*	<p>[0x00 to 0xff / 00001111 / 1/step]</p> <p>This SP uses bit switches to set up the fuzzy search options for the UCS local address book.</p> <p>Bit: Meaning</p> <p>0: Checks both upper/lower case characters</p> <p>1: Japan Only</p> <p>2: Japan Only</p> <p>3: Japan Only</p> <p>4 to 7: Not Used</p>
5-846-062	Complexity Option 1	C*	<p>[0 to 32 / 0 / 1/step]</p> <p>Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to upper case and sets the length of the password.</p> <p>Note</p> <ul style="list-style-type: none"> This SP does not normally require adjustment. This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.

5-846-063	Complexity Option 2	C*	[0 to 32 / 0 / 1/step] Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to lower case and defines the length of the password.
5-846-064	Complexity Option 3	C*	[0 to 32 / 0 / 1/step] Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to numbers and defines the length of the password.
5-846-065	Complexity Option 4	C*	[0 to 32 / 0 / 1/step] Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to symbols and defines the length of the password.
5-846-094	Encryption Stat	C*	[0 to 255 / - / 1/step]

5848	[Web Service] Sets the 4-bit switch assignment for the access control setting.		
5-848-004	Access Ctrl: udirectory (Lower 4bits)	C*	[4bit assign / 00000010 / bit switch]
5-848-009	Access Ctrl: Job Ctrl(Lower 4bits)	C*	[4bit assign / 00000000 / bit switch]
5-848-011	Access Ctrl: Devicemanagement (Lower 4bits)	C*	
5-848-022	Access Ctrl: uadministration (Lower 4bits)	C*	
5-848-024	Access Ctrl: Log Service (Lower 4bits)	C*	[4bit assign / 0000 / bit switch] 0000: No access control 0001: Access control

5-848-217	Setting: Timing	C*	[0 to 2 / 0 / 1/step]
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5849	[Installation Date] Displays or prints the installation date of the machine.		
5-849-001	Display	C*	[- / - / -] Displays the installation date. The installation date is set automatically after test copies are done at the installation site.
5-849-002	Switch to Print	C*	[0 or 1 / 1 / 1 /step] 0: OFF (No Print) 1: ON (Print) Determines whether the installation date is printed on the printout for the total counter.
5-849-003	Total Counter	C*	[0 to 99999999 / 0 / 1/step] Displays the total counts at the installed date (SP5-849-001).

5851	[Bluetooth]		
5-851-001	Mode	C*	[0 or 1 / 0 / 1/step] Sets the operation mode for the Bluetooth Unit. 0: Public 1: Private

5856	[Remote ROM Update] Allows reception of firmware data via the local port (IEEE 1284) during a remote ROM update, when the value set to "1". This setting is reset to "0" after the machine is cycled off and on. Allows the technician to upgrade the firmware using a parallel cable.		
5-856-002	Local Port	C	[0 or 1 / 0 / 1/step] 0: Disable 1: Enable

5857		[Save Debug Log]	
5-857-001	On/Off	C*	[0 or 1 / 0 / 1 / -] 0: OFF 1: ON Switches on the debug log feature. The debug log cannot be captured until this feature is switched on.
5-857-002	Target (2:HDD 3:SD)	C*	[1 to 3 / 2 / 1/step] 1: IC Card 2: HDD 3: SD Card Selects the destination where the debugging information generated by the event selected by SP5-858 will be stored if an error is generated.
5-857-101	Debug Logging Start Date	C*	[- / 20120101 / 1/step] Sets start date of the debug log output.
5-857-102	Debug Logging End Date	C*	[- / 20371212 / -] Sets end date of the debug log output.
5-857-103	Aquire All Debug Logs	C*	[- / - / -] [Execute] Obtains all debug logs.
5-857-104	Aquire Only Contoroller Debug Logs	C*	[- / - / -] [Execute] Obtains controller debug logs.
5-857-105	Aquire Only Engine Debug Logs	C*	[- / - / -] [Execute] Obtains engine debug logs.
5-857-107	Aquire Only Opepanel Debug Logs	C*	[- / - / -] [Execute] Obtains controller debug logs to the media inserted front I/F.

5-857-120	Make LogTrace Dir	C*	[- / - / -] [Execute]
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5858	<p>[Debug Save When]</p> <p>These SPs select the content of the debugging information to be saved to the destination selected by SP5857-002. SP5858-3 stores one SC specified by number. Refer to Section 4 for a list of SC error codes.</p>		
5-858-001	Engine SC Error (0: OFF, 1: ON)	C*	[0 or 1 / 0 / 1 / step] 0: OFF
5-858-002	Controller SC Error (0: OFF, 1: ON)	C*	1: ON
5-858-003	Any SC Error	C*	[0 to 65535 / 0 / 1 / step]
5-858-004	Jam(0: OFF 1: ON)	C*	[0 or 1 / 0 / 1 / step] 0: OFF 1: ON Stores jam errors.

5859	<p>[Debug Save Key No.]</p> <p>These SPs allow you to set up to 10 keys for log files for functions that use common memory on the controller board.</p>		
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5-859-001	Key 1	C*	[-999999 to 999999999 / 0 / 1/step]
5-859-002	Key 2	C*	
5-859-003	Key 3	C*	
5-859-004	Key 4	C*	
5-859-005	Key 5	C*	
5-859-006	Key 6	C*	
5-859-007	Key 7	C*	
5-859-008	Key 8	C*	
5-859-009	Key 9	C*	
5-859-010	Key 10	C*	

5860	[SMTP/POP3/IMAP4]		
5-860-002	SMTP Server Port Number	C*	[1 to 65535 / 25 / 1 /step] This SP sets the number of the SMTP server port.
5-860-003	SMTP Authentication	C*	[0 to 1 / 0 / 1 /step] This setting switches SMTP certification on and off for mail sending. 0: Off 1: On
5-860-006	SMTP Auth. Encryption	C*	[0 to 2 / 0 / 1 /step] This setting determines whether the password for SMTP certification is encrypted. 0: Automatic, 1: No encryption done, 2: Encryption done
5-860-007	POP before SMTP	C*	[0 to 1 / 0 / 1 /step] This setting determines whether the transmission connects with the POP server first for certification before it connects to the SMTP server for sending. 0: Off 1: On

5-860-008	POP to SMTP Waiting Time	C*	[0 to 10000 / 300 / 1 / step] This SP sets the amount of time to allow for the connection to the SMTP server after the transmission has connected to the POP server and been certified during the execution of POP Before SMTP.
5-860-009	Mail Receive Protocol	C*	[0 to 3 / 1 / 1 / step] This SP specifies a protocol for the mail reception or switches off receiving. 0: No receiving, 1: POP3 protocol 2: IMAP4 protocol, 3: SMTP protocol
5-860-013	POP3/IMAP4 Auth. Encryption	C*	[0 to 2 / 0 / 1 / step] This SP specifies whether password encryption is done for POP3/IMAP4 certification. 0: Automatic, 1: No encryption done, 2: Encryption done
5-860-014	POP3 Server Port Number	C*	[1 to 65535 / 110 / 1 / step] This SP sets the number of the POP3 server port.
5-860-015	IMAP4 Server Port Number	C*	[1 to 65535 / 143 / 1 / step] This SP sets the number of the IMAP4 server port.
5-860-016	SMTP Receive Port Number	C*	[1 to 65535 / 25 / 1 / step] This SP sets the number of the port that receives SMTP mail.
5-860-017	Mail Receive Interval	C*	[2 to 1440 / 3 / 1 / -] This SP sets the timing for mail received at regular intervals.

5-860-019	Mail Keep Setting	C*	<p>[0 to 2 / 0 / 1 /step]</p> <p>This SP setting determines whether received mail is stored on the server.</p> <p>0: Received mail not stored</p> <p>1: All received mail stored</p> <p>2: Stores only mail that generated errors during receiving</p>
5-860-020	Partial Mail Receive Timeout	C*	<p>[1 or 168 / 72 / 1/step]</p> <p>Sets the amount of time to wait before saving a mail that breaks up during reception. The received mail is discarded if the remaining portion of the mail is not received during this prescribed time.</p>
5-860-021	MDN Response RFC2298 Compliance	C*	<p>[0 or 1 / 1 / 1/step]</p> <p>0: No</p> <p>1: Yes</p> <p>Determines whether RFC2298 compliance is switched on for MDN reply mail.</p>
5-860-022	SMTP Auth. From Field Replacement	C*	<p>[0 or 1 / 0 / 1/step]</p> <p>0: No</p> <p>1: Yes</p> <p>Determines whether the FROM item of the mail header is switched to the validated account after the SMTP server is validated.</p>

5-860-025	SMTP Auth. Direct Setting	C*	<p>[- / 00000000 / -]</p> <p>Occasionally, SMTP certification may fail with encryption enabled for the SMTP server. This can occur if the SMTP server does not meet RFC standards. In such cases you can use this SP to set the SMTP certification method directly. However, this SP can be used only encryption has been enabled.</p> <p>Selects the authentication method for SMTP.</p> <p>Bit switch:</p> <p>Bit 0: LOGIN</p> <p>Bit 1: PLAIN</p> <p>Bit 2: CRAM MD5</p> <p>Bit 3: DIGEST MD5</p> <p>Bit 4 to 7: Not used</p>
5-860-026	S/MIME: MIME Header Setting	C*	<p>[0 to 2 / 0 / 1 /step]</p> <p>Selects the MIME header type of an E-mail sent by S/MIME.</p> <p>0: Microsoft Outlook Express standard</p> <p>1: Internet Draft standard</p> <p>2: RFC standard</p>
5-860-028	S/MIME: Authentication Check	C*	<p>[0 or 1 / 0 / 1/step]</p> <p>0: No (not check)</p> <p>1: Yes (check)</p> <p>Specifies whether to check destination certificate when sending S/MIME mail.</p>

5866	[E-Mail Report]		
5-866-001	Report Validity	C	<p>[0 or 1 / 0 / 1/step]</p> <p>Enables or disables the E-mail alert function.</p>

5-866-005	Add Date Field	C*	<p>[0 or 1 / 0 / 1/step]</p> <p>Adds or does not add the date field to the header of the alert mail.</p> <p>0: Not added</p> <p>1: Added</p>
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5869	<p>[RAM Disk Setting]</p> <p>Enables or disables the email sending/receiving function.</p> <p>Although the RAM Disk size for receiving email can be configured with this setting, the system will manage the size because the size (MB) depends on each machine.</p> <p>The RAM Disk will be created during gwinit started, thus it will be applied with the main power OFF/ON after SCS(SP) writes the size on the NVRAM of gwinit.</p>		
	5-869-001	Mail Function	<p>C</p> <p>[0 or 1 / 0 / 1/step]</p> <p>0: Enabled</p> <p>1: Disabled</p>

5870	<p>[Common Key Info Writing]</p> <p>Writes to flash ROM the common proof for validating the device for NRS specifications.</p>		
	5-870-001	Writing	<p>C</p> <p>[- / - / -]</p> <p>[Execute]</p> <p>Writes the authentication data (used for NRS) in the memory.</p>
	5-870-003	Initialize	<p>C</p> <p>[- / - / -]</p> <p>[Execute]</p>
	5-870-004	Writing: 2048bit	<p>C</p> <p>[- / - / -]</p> <p>[Execute]</p> <p>Writes the authentication data 2048bit (used for NRS) in the memory.</p>

5873	<p>[SD Card Appli Move]</p> <p>Allows you to move applications from one SD card to another.</p>		
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5-873-001	MoveExec	C	[- / - / -] [Execute] This SP copies the application programs from the original SD card to another.
5-873-002	UndoExec	C	[- / - / -] [Execute] This SP copies back the application programs from an SD card to the original SD card. Use this menu when you have mistakenly copied some programs by using "Move Exec" (SP5873-1).

5875	[SC Auto Reboot] Determines whether the machine reboots automatically when an SC error occurs.		
5-875-001	Reboot Setting	*C	[0 or 1 / 0 / 1/step] Enables or disables the automatic reboot function when an SC error occurs. The reboot is not executed for Type A or C SC codes. 0: The machine reboots automatically when the machine issues an SC error and logs the SC error code. If the same SC occurs again, the machine does not reboot. 1: The machine does not reboot when an SC error occurs.
5-875-002	Reboot Type	*C	[0 or 1 / 1 / 1/step] 0: Manual reboot 1: Automatic reboot Selects the reboot method for SC.

5878	[Option Setup] Enables the Data Overwrite Security option or HDD Encryption Option after installation.		
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5-878-001	Data Overwrite Security	C	[- / - / -] [Execute]
5-878-002	HDD Encryption	C	[- / - / -] [Execute] Executes the encryption set-up.

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5887	<p>[SD GetCounter]</p> <p>This SP sends a text file to an SD card inserted in SD card Slot 2 (lower slot). The operation stores.</p> <p>The file is stored in a folder created in the root directory of the SD card called SD_COUNTER.</p> <p>The file is saved as a text file (*.txt) prefixed with the number of the machine.</p> <p>Insert the SD card in SD card Slot 2 (lower slot).</p> <p>Select SP5887 then touch [EXECUTE].</p> <p>Touch [Execute] in the message when you are prompted.</p> <p>Note</p> <ul style="list-style-type: none"> • "SD_COUNTER" folder must be created under the root directory of the SC card before this SP is executed. 		
5-887-001	-	C	[- / - / -] [Execute]

5888	<p>[Personal Information Protect]</p> <p>Selects the protection level for logs.</p>		
5-888-001	-	C*	[0 or 1 / 0 / 1/step] 0: No authentication, No protection for logs 1: No authentication, Protected logs (only an administrator can see the logs)

5893	<p>[SDK Application Counter]</p> <p>Displays the counter name of each SDK application.</p>		
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5-893-001	SDK-1	C	[- / - / -] [Display text]
5-893-002	SDK-2	C	
5-893-003	SDK-3	C	
5-893-004	SDK-4	C	[- / - / -] [Display text]
5-893-005	SDK-5	C	
5-893-006	SDK-6	C	

5894	[ExternalCountSet] Switch the Charge Mode of External Mech Count		
5-894-001	SW Change Mode	E*	[0 to 2 / 0 / 1/step]

5907	[Plug & Play Maker/Model Name] Selects the brand name and the production name for Windows Plug & Play. This information is stored in the NVRAM. If the NVRAM is defective, these names should be registered again. After selecting, press the "Original Type" key and "#" key at the same time. When the setting is completed, the beeper sounds five times.		
5-907-001	-	C*	[- / - / -]

5930	[MeterClick Charge]		
5-930-001	Setting	E*	[0 or 1 / 0 / 1/step]

5931	[Life Alert Disp.]		
5-931-001	Maintenance Kit	E*	[0 or 1 / 0 / 1/step]
5-931-002	PCDU	E*	

5967	[Copy Server: Set Function] Enables or disables the document server. This is a security measure that prevents image data from being left in the temporary area of the HDD. After changing this setting, you must switch the main switch off and on to enable the new setting.		
5-967-001	(0:ON 1:OFF)	C*	[0 or 1 / 0 / 1/step]

5987	[Mech. Counter] This SP detects that a mechanical counter device is removed. If it is detected, SC610 occurs.		
5-987-001	0:OFF / 1:ON	E*	[0 or 1 / 0 / 1/step] 0: OFF. 1: ON

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5990	[SP Print Mode] Prints out the SMC sheets.		
5-990-001	All(Data List)	C	[- / - / -] [Execute] Press "Execute" key to start printing the SMC sheets.
5-990-002	SP(Mode Data List)	C	
5-990-003	User Program	C	[- / - / -] [Execute] Press "Execute" key to start printing the SMC sheets. This SP is only for M159 (touch panel model).
5-990-004	Logging Data	C	[- / - / -] [Execute] Press "Execute" key to start printing the SMC sheets.
5-990-005	Diagnostic Report	C	
5-990-006	Non-Default	C	
5-990-007	NIB Summary	C	
5-990-008	Capture Log	C	
5-990-024	SDK/J Summary	C	
5-990-025	SDK/J Application Info	C	
5-990-026	Printer SP	C	

5992	[SP Text Mode] Exports the SMC sheet data to the SD Card. Press "Execute" key to start exporting the SMC data in the SP mode display.		
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5-992-001	All(Data List)	C	[- / - / -]
5-992-002	SP(Mode Data List)	C	[Execute]
5-992-003	User Program	C	[- / - / -] [Execute] * MFP only
5-992-004	Logging Data	C	[- / - / -] [Execute]
5-992-005	Diagnostic Report	C	
5-992-006	Non-Default	C	
5-992-007	NIB Summary	C	
5-992-024	SDK/J Summary	C	[- / - / -] [Execute]
5-992-025	SDK/J Application Info	C	
5-992-026	Printer SP	C	

5997	[PSC] PSC debug SP		
5-997-001	COMMAND	E	[0 to 3 / 2 / 1 / step]
5-997-002	DOMAIN_IF	E	[0 to 3 / 0 / 1 / step]
5-997-003	RAPI	E	[0 to 3 / 0 / 1 / step]
5-997-004	RAPI	E	[0 to 3 / 0 / 1 / step]
5-997-005	ENGINE	E	[0 to 3 / 0 / 1 / step]
5-997-006	THREAD	E	[0 to 3 / 0 / 1 / step]
5-997-007	THREAD_OBJ	E	[0 to 3 / 0 / 1 / step]
5-997-008	STS_TREE	E	[0 to 3 / 0 / 1 / step]
5-997-009	TREE_INIT	E	[0 to 3 / 0 / 1 / step]
5-997-010	EVENT	E	[0 to 3 / 0 / 1 / step]
5-997-011	SP	E	[0 to 3 / 0 / 1 / step]
5-997-012	OTHER	E	[0 to 3 / 0 / 1 / step]

5-997-013	MEMORY	E	[0 to 3 / 0 / 1 / step]
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Main SP Tables-6

SP6-XXX (Peripherals)

None

Main SP Tables-7

SP7-XXX (Data Log)

3

7401	[Total SC]		
	Stores total SC occurring count. If the same SC codes are detected continuously and total counter is not increasing, it only logs once in case of deleting other SC code logs.		
	7-401-001	SC Counter	C*
7-401-002	Total SC Counter	C*	[0 to 65535 / - / 1/step]

7403	[SC History]		
	Logs and displays the SC codes detected. The 10 most recently detected SC Codes are displayed on the screen, and also can be seen on the SMC (logging) outputs.		
	<div style="border: 1px solid blue; border-radius: 10px; padding: 2px; display: inline-block;"> ↓ Note </div> <ul style="list-style-type: none"> If the same SC codes are detected continuously and total counter is not increasing, it only logs once in case of deleting other SC code logs. 		
	7-403-001	Latest	C*
	7-403-002	Latest 1	C*
	7-403-003	Latest 2	C*
	7-403-004	Latest 3	C*
	7-403-005	Latest 4	C*
	7-403-006	Latest 5	C*
	7-403-007	Latest 6	C*
	7-403-008	Latest 7	C*
7-403-009	Latest 8	C*	
7-403-010	Latest 9	C*	

7404	[SC990 / SC991 History]			
	Logs and displays the SC990 / SC991 detected.			
	The 10 most recently detected SC.			
	<div style="border: 1px solid blue; border-radius: 10px; padding: 2px; display: inline-block;"> Note </div>			
	<ul style="list-style-type: none"> If the same SC codes are detected continuously and total counter is not increasing, it only logs once in case of deleting other SC code logs. 			
	7-401-001	Latest	C*	[- / - / -]
	7-401-002	Latest 1	C*	
	7-401-003	Latest 2	C*	
	7-401-004	Latest 3	C*	
	7-401-005	Latest 4	C*	
	7-401-006	Latest 5	C*	[- / - / -]
7-401-007	Latest 6	C*		
7-401-008	Latest 7	C*		
7-401-009	Latest 8	C*		
7-401-010	Latest 9	C*		

7502	[Total Paper Jam]		
	Displays the total number of jams detected.		
	7-502-001	Jam Counter	C* [00000 to 65535 / 0 / 1/step] If the JAM occurred in multiple places, it logs as one SC.
7-502-002	Total Jam Counter	C* [00000 to 65535 / 0 / 1/step]	

7504	[Paper Jam Count by Location]		
	Displays counts for transfer paper jam for each incidence place.		
7-504-001	At Power On	C* <div style="border: 1px solid blue; border-radius: 10px; padding: 2px; display: inline-block;"> Note </div> <ul style="list-style-type: none"> Paper is not fed at power on. 	

7-504-003	Tray1: On	C*	[0000 to 9999 / - / 1/step]
7-504-004	Tray2: On	C*	
7-504-005	Tray3: On	C*	
7-504-008	Bypass: On	C*	
7-504-009	Duplex: On	C*	
7-504-013	Tray 2 Vertical Trans.Sn: On	C*	
7-504-017	R: On	C*	
7-504-020	Paper Exit: On	C*	[0000 to 9999 / - / 1/step]
7-504-023	Duplex Inverter: On	C*	
7-504-026	Duplex Entrance: On	C*	
7-504-053	Tray 2 Vertical Trans.Sn: Off	C*	
7-504-054	Tray 3 Vertical Trans.Sn: Off	C*	
7-504-057	Registration Sensor: Off	C*	
7-504-060	Paper Exit: Off	C*	
7-504-063	Duplex Inverter: Off	C*	
7-504-066	Duplex Entrance: Off	C*	

7506	[Jam Count by Paper Size] Displays the number of jams according to the paper size.
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7-506-006	A5 LEF	C*	[0000 to 9999 / 0 / 1/step]
7-506-044	HLT LEF	C*	
7-506-133	A4 SEF	C*	
7-506-134	A5 SEF	C*	
7-506-142	B5 SEF	C*	
7-506-164	LG SEF	C*	
7-506-166	LT SEF	C*	
7-506-172	HLT SEF	C*	
7-506-255	Others	C*	

7507	[Plotter Jam History]			
	Logs and displays the 10 most recent detected transfer paper jams. (CAUSE, SIZE, TOTAL, DATE)			
	7-507-001	Latest	C*	[0 to 9999 / 0 / 1 sheets/step]
	7-507-002	Latest 1	C*	
	7-507-003	Latest 2	C*	
	7-507-004	Latest 3	C*	
	7-507-005	Latest 4	C*	
	7-507-006	Latest 5	C*	[0 to 9999 / 0 / 1 sheets/step]
	7-507-007	Latest 6	C*	
	7-507-008	Latest 7	C*	
	7-507-009	Latest 8	C*	
7-507-010	Latest 9	C*		

7514	[Paper Jam Count by Location]		
	Total counter of transfer paper jam by each incidence place. Displays occurring count of transfer paper jams by each incidence place.		

7-514-001	At Power On	C*	[0000 to 9999 / - / 1/step]
7-514-003	Tray 1: On	C*	
7-514-004	Tray 2: On	C*	
7-514-005	Tray 3: On	C*	
7-514-008	Bypass: On	C*	
7-514-009	Duplex: On	C*	[0000 to 9999 / - / 1/step]
7-514-013	-	C*	
7-514-017	Resistration: On	C*	
7-514-020	Paper Exit: On	C*	
7-514-023	-	C*	
7-514-026	-	C*	
7-514-053	-	C*	
7-514-054	-	C*	[0000 to 9999 / - / 1/step]
7-514-057	Resistration Sensor: Off	C*	
7-514-060	Paper Exit: Off	C*	
7-514-063	-	C*	
7-514-066	Duplex Entrance: Off	C*	

7624	[Part Replacement Operation ON/OFF] Selects the PM maintenance for each part.		
7-624-001	PCU	C*	[0 to 9999999 / - / -]

7801	[ROM No./ Firmware Version] Displays all version numbers, part numbers in machine.		
7-801-255	-	C	[- / - / -] [9 digit characters]

7803	[PM Counter Display] Displays the PM counter value.		
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7-803-001	Paper	C*	[0 to 9999999 / - / -]
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7803	[Disp. PM Counter] Displays and sets the Sheets/Distance/Usage counter		
7-803-002	Sheets PCDU	E*	[0 to 9999999 / 0 / 1 sheet/step]
7-803-003	Sheets Fuser	E*	
7-803-004	Sheets Trans.	E*	
7-803-005	Sheets Feed	E*	
7-803-006	Sheets Fric. Pad	E*	
7-803-012	Distance PCDU	E*	
7-803-013	Distance Fuser	E*	
7-803-014	Distance Trans.	E*	
7-803-022	Usage PCDU	E*	[0 to 255 / 0 / 1%/step]
7-803-023	Usage Fuser	E*	
7-803-024	Usage Trans.	E*	
7-803-025	Usage Feed	E*	
7-803-026	Usage Fric. Pad	E*	

7804	[PM Counter Reset] Clears the PM counter. Press the Enter key after the machine asks "Execute?", which will store the PM counter value in SP7-906 (PM Counter - Previous) and reset the value of the current PM counter (SP7-803) to "0".		
7-804-001	Paper	C	[- / - / -] [Execute]

7804	[Reset PM Counter] Counter reset by execution SP.		
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7-804-002	PCDU	E	[- / - / -] [Execute]
7-804-003	Fuser	E	
7-804-004	Trans.	E	
7-804-005	Feed	E	[- / - / -] [Execute]
7-804-006	Fric. Pad	E	
7-804-010	Maintenance Kit	E	
7-804-011	All	E	

7805	[Counter Continue]		
7-805-001	Setting	E	[- / - / -] [Execute]
7-805-002	Distance PCDU	E	[0 to 99999999 / 0 / 1 mm/ step]

7807	[SC/Jam Counter Reset] Resets the SC, paper, original, and total jam counters. When the program ends normally, the message "Completed" is displayed.  Note <ul style="list-style-type: none"> SP7-807-1 does not reset the following logs: SP7-507 (Display-Paper Jam History) and SP7-508 (Display-Original Jam History). 		
7-807-001	-	C	[- / - / -] [Execute]

7832	[Self-Diagnose Display] Displays the result of the diagnostics. To scroll the return codes, press the up-arrow key or the down-arrow key.		
7-832-001	-	C	[- / - / -] [Execute]

7836	[Total Memory Size] Displays the memory capacity of the controller system.		
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7-836-001	-	C	[- / - / -]
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7840	[ServiceSP Entry Code Chg Hist]		
	Records dates and times of resetting / changing "Service SP mode switch code setting" for the recent 2 times. (Decides whether the record is for setting changes or resets by branch number.)		
	7-840-001	Change Time :Latest	C*
	7-840-002	Change Time : Last 1	C*
	7-840-101	Initialize Time : Latest	C*
7-840-102	Initialize Time : Last 1	C*	[- / - / -]

7850	[Toner Counter]		
	Counter resetting by execution SP.		
	7-850-001	PCDU Distance	E* [0 to 999999999 / 0 / 1mm/step]
7-850-002	Total Consump	E* [0.0 to 10000000.0 / 0.0 / 0.1mg/step]	

7901	[Assert Info.]		
	Displays the detail information of SC990 that occurred lastly.		
	7-901-001	File Name	C*
	7-901-002	Number of Lines	C* [- / - / -]
7-901-003	Location	C*	

7931	[Toner Info.]		
	Displays the ID chip information in the toner cartridge. Returns "0", if it could not access to the ID chip.		

7-931-001	Machine ID	E	[0 to 255 / 0 / 1/step]
7-931-002	Version	E	
7-931-003	Brand ID	E	
7-931-004	Area ID	E	
7-931-005	Class ID	E	
7-931-006	Color ID	E	
7-931-007	Maintenance ID	E	
7-931-008	New AIO	E	
7-931-009	Recycle Count	E	
7-931-010	EDP Code	E	
7-931-011	Serial No.	E	
7-931-012	Remaining Toner	E	[0 to 100 / 0 / 20%/step]
7-931-013	Toner End	E	[- / - / -]
7-931-014	Refill Flag	E	
7-931-015	R:Total Cnt.	E	[0 to 99999999 / 0 / 1sheet/step]
7-931-016	E:Total Cnt.	E	
7-931-017	Unit Output Cnt.	E	
7-931-018	Install Date	E	[- / - / -]
7-931-019	Toner End Date	E	
7-931-020	Total Consump	E	[0.0 to 10000000.0 / 0.0 / 0.1mg/step]
7-931-021	PCDU Distance	E	[0 to 999999999 / 0 / 1mm/step]
7-931-022	Initial Amount	E	[0 to 65535 / 0 / 1g/step]

7932	<p>[PCDU Info.] Displays the ID chip information in the PCDU. Returns "0", if it could not access to the ID chip.</p>
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7-932-001	Machine ID	E	[0 to 255 / 0 / 1/step]
7-932-002	Class ID	E	
7-932-003	Maintenance ID	E	
7-932-004	New AIO	E	
7-932-005	Serial No.	E	[- / - / -]
7-932-006	Install Date	E	
7-932-007	Sheets	E	[0 to 999999 / 0 / 1 sheet/step]
7-932-008	Distance	E	[0 to 999999999 / 0 / 1mm/step]
7-932-010	Control Distance	E	
7-932-011	PM Chg Sheets	E	
7-932-012	PM Chg Distance	E	
7-932-013	Cleaning1Count	E	[0 to 65535 / 0 / 1count / step]
7-932-014	Cleaning2Count	E	

7935	[Toner Info. Log] Displays the ID chip log data in the toner cartridge.		
7-935-001	1:Serial No.	E*	[- / - / -]
7-935-002	1:Install Date	E*	
7-935-003	1:R:Total Cnt.	E*	[0 to 999999999 / 0 / 1/step]
7-935-004	1:Refill Flag	E*	[- / - / -]
7-935-005	2:Serial No.	E*	
7-935-006	2:Install Date	E*	
7-935-007	2:R:Total Cnt.	E*	[0 to 999999999 / 0 / 1/step]
7-935-008	2:Refill Flag	E*	[- / - / -]
7-935-009	3:Serial No.	E*	
7-935-010	3:Install Date	E*	

7-935-011	3:R:Total Cnt.	E*	[0 to 999999999 / 0 / 1/step]
7-935-012	3:Refill Flag	E*	[- / - / -]
7-935-013	4:Serial No.	E*	
7-935-014	4:Install Date	E*	
7-935-015	4:R:Total Cnt.	E*	[0 to 999999999 / 0 / 1/step]
7-935-016	4:Refill Flag	E*	[- / - / -]
7-935-017	5:Serial No.	E*	
7-935-018	5:Install Date	E*	
7-935-019	5:R:Total Cnt.	E*	[0 to 999999999 / 0 / 1/step]
7-935-020	5:Refill Flag	E*	[- / - / -]
7-935-021	1:Toner End	E*	
7-935-022	2:Toner End	E*	
7-935-023	3:Toner End	E*	
7-935-024	4:Toner End	E*	
7-935-025	5:Toner End	E*	

7936	[PCDU Log]		
	Displays the ID chip log data in the toner cartridge.		
	7-936-001	1:Serial No	E* [0 / 0 / 1/step]
	7-936-002	1:Install Date	E* [0 / 0 / 0/step]
	7-936-003	2:Serial No	E* [0 / 0 / 1/step]
	7-936-004	2:Install Date	E* [0 / 0 / 0/step]
	7-936-005	3:Serial No	E* [0 / 0 / 1/step]
	7-936-006	3:Install Date	E* [0 / 0 / 0/step]
	7-936-007	4:Serial No	E* [0 / 0 / 1/step]
	7-936-008	4:Install Date	E* [0 / 0 / 0/step]

7-936-009	5:Serial No	E*	[0 / 0 / 1/step]
7-936-010	5:Install Date	E*	[0 / 0 / 0/step]

7952	[Days Before End] Switch the timing of the near end: Days until the end.		
7-952-001	Maintenance Kit	E*	[0 to 2 / 1 / 1/step] 0: Earlier 1: Normal 2: Later
7-952-002	PCDU	E*	[0 to 2 / 1 / 1/step] 0: Earlier 1: Normal 2: Later

7993	[Total Counter] Sheet number counter: Engine: Total		
7-993-001	-	E*	[0 to 999999999 / 0 / 1/step]

Main SP Tables-8

Overview

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.

Since this machine is an LP, this manual does not list prefixes used for MFPs (such as F for fax).

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Prefixes	What it means	
T:	Total: (Grand Total).	Grand total of the items counted for all applications.
P:	Print application.	Totals (pages, jobs, etc.) executed for each application when the job was not stored on the document server.
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. 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.

Keys and abbreviations in Data Log 2

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

Abbreviation	What it means
ColCr	Color Create
ColMode	Color Mode
Comb	Combine
Comp	Compression
Deliv	Delivery
DesApl	Designated Application. The application (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
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 $11-10=1$)
ImgEdt	Image Edit performed on the original with the copier GUI, e.g. border removal, adding stamps, page numbers, etc.
K	Black
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.

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 move 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)
Sim, Simplex	Simplex, printing on 1 side.
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

Note

- All of the Group 8 SPs are able to reset by "SP5-801-001 Memory All Clear".

SP8-XXX (Data Log 2)

8381	[T:Total PrtPGS]	C*	[0 to 99999999 / 0 / 1/step]
8384	[P:Total PrtPGS]	C*	These SPs count the number of pages printed by the customer. The counter for the application used for storing the pages increments.
8387	[O:Total PrtPGS]	C*	

- When the A3/DLT double count function is switched on with SP5-104, 1 A3/DLT page is counted as 2.
- 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	C*	[0 to 99999999 / 0 / 1/step] This SPs count pages printed on paper sizes A3/DLT and larger. Note: In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine.
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8411	Prints/Duplex	C*	[0 to 99999999 / 0 / 1/step] 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.
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8421	<p>[T:PrtPGS/Dup Comb] 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.</p>		
8424	<p>[P:PrtPGS/Dup Comb] These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the printer application.</p>		
8427	<p>[O:PrtPGS/Dup Comb] These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by Other applications</p>		
8-42x-001	Simplex> Duplex	C*	[0 to 99999999 / 0 / 1/step]
8-42x-002	Duplex> Duplex	C*	
8-42x-003	Book> Duplex	C*	
8-42x-004	Simplex Combine	C*	
8-42x-005	Duplex Combine	C*	
8-42x-006	2in1	C*	[0 to 99999999 / 0 / 1/step] 2 pages on 1 side (2-Up)
8-42x-007	4 in1	C*	[0 to 99999999 / 0 / 1/step] 4 pages on 1 side (4-Up)
8-42x-008	6 in1	C*	[0 to 99999999 / 0 / 1/step] 6 pages on 1 side (6-Up)
8-42x-009	8 in1	C*	[0 to 99999999 / 0 / 1/step] 8 pages on 1 side (8-Up)
8-42x-010	9 in1	C*	[0 to 99999999 / 0 / 1/step] 9 pages on 1 side (9-Up)
8-42x-011	16 in1	C*	[0 to 99999999 / 0 / 1/step] 16 pages on 1 side (16-Up)

8-42x-012	Booklet	C*	[0 to 99999999 / 0 / 1/step]
8-42x-013	Magazine	C*	
8-42x-014	2-in-1 + Booklet	C*	
8-42x-015	4-in-1 + Booklet	C*	
8-42x-016	6-in-1 + Booklet	C*	
8-42x-017	8-in-1 + Booklet	C*	
8-42x-018	9-in-1 + Booklet	C*	
8-42x-019	2-in-1 + Magazine	C*	
8-42x-020	4-in-1 + Magazine	C*	
8-42x-021	6-in-1 + Magazine	C*	
8-42x-022	8-in-1 + Magazine	C*	
8-42x-023	9-in-1 + Magazine	C*	
8-42x-024	16-in-1 + Magazine	C*	

- 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

Booklet		Magazine	
Original Pages	Count	Original Pages	Count
8	4	8	4

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8441	[T:PrtPGS/Ppr Size] These SPs count by print paper size the number of pages printed by all applications.		
8444	[P:PrtPGS/Ppr Size] These SPs count by print paper size the number of pages printed by the printer application.		
8447	[O:PrtPGS/Ppr Size] These SPs count by print paper size the number of pages printed by Other applications.		
8-44x-001	A3	C*	[0 to 99999999 / 0 / 1/step]
8-44x-002	A4	C*	
8-44x-003	A5	C*	
8-44x-004	B4	C*	
8-44x-005	B5	C*	
8-44x-006	DLT	C*	
8-44x-007	LG	C*	[0 to 99999999 / 0 / 1/step]
8-44x-008	LT	C*	
8-44x-009	HLT	C*	
8-44x-010	Full Bleed	C*	
8-44x-254	Other (Standard)	C*	
8-44x-255	Other (Custom)	C*	

- These counters do not distinguish between LEF and SEF.

8451	[PrtPGS/Ppr Tray] These SPs count the number of sheets fed from each paper feed station.		
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8-451-001	Bypass Tray	C*	[0 to 99999999 / 0 / 1/step] Bypass Tray
8-451-002	Tray 1	C*	[0 to 99999999 / 0 / 1/step]
8-451-003	Tray 2	C*	Copier
8-451-004	Tray 3	C*	[0 to 99999999 / 0 / 1/step]
8-451-005	Tray 4	C*	Paper Tray Unit (Option)
8-451-006	Tray 5	C*	[0 to 99999999 / 0 / 1/step] LCT (Option)
8-451-007	Tray 6	C*	Currently not used.
8-451-008	Tray 7	C*	
8-451-009	Tray 8	C*	
8-451-010	Tray 9	C*	
8-451-011	Tray 10	C*	
8-451-012	Tray 11	C*	
8-451-013	Tray 12	C*	
8-451-014	Tray 13	C*	
8-451-015	Tray 14	C*	
8-451-016	Tray 15	C*	

8461	<p>[T:PrtPGS/Ppr Type]</p> <p>These SPs count by paper type the number pages printed by all applications.</p> <ul style="list-style-type: none"> • 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.
8464	<p>[P:PrtPGS/Ppr Type]</p> <p>These SPs count by paper type the number pages printed by the printer application.</p>

8-46x-001	Normal	C*	[0 to 99999999 / 0 / 1/step]
8-46x-002	Recycled	C*	
8-46x-003	Special	C*	
8-46x-004	Thick	C*	
8-46x-005	Normal (Back)	C*	[0 to 99999999 / 0 / 1/step]
8-46x-006	Thick (Back)	C*	
8-46x-007	OHP	C*	
8-46x-008	Other	C*	

8521	[T:PrHPGS/FIN] These SPs count by finishing mode the total number of pages printed by all applications.		
8524	[P:PrHPGS/FIN] These SPs count by finishing mode the total number of pages printed by the print application.		
8-52x-001	Sort	C*	[0 to 99999999 / 0 / 1/step]
8-52x-002	Stack	C*	
8-52x-003	Staple	C*	
8-52x-004	Booklet	C*	
8-52x-005	Z-Fold	C*	[0 to 99999999 / 0 / 1/step]
8-52x-006	Punch	C*	
8-52x-007	Other	C*	
8-52x-008	Inside Fold	C*	[0 to 99999999 / 0 / 1/step] Half-Fold (FM2) (Multi Fold Unit)
8-52x-009	Three-IN-Fold	C*	[0 to 99999999 / 0 / 1/step] Letter Fold-in (FM4) (Multi Fold Unit)
8-52x-010	Three-OUT-Fold	C*	[0 to 99999999 / 0 / 1/step] Letter Fold-out (FM3) (Multi Fold Unit)

8-52x-011	Four Fold	C*	[0 to 99999999 / 0 / 1/step] Double Parallel Fold (FM5) (Multi Fold Unit)
8-52x-012	KANNON-Fold	C*	[0 to 99999999 / 0 / 1/step] Gate Fold (FM6) (Multi Fold Unit)
8-52x-013	Perfect-Bind	C*	[0 to 99999999 / 0 / 1/step] Perfect Binder
8-52x-014	Ring-Bind	C*	[0 to 99999999 / 0 / 1/step] Ring Binder

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.

8551	[T:FIN Books]		
8554	[P:FIN Books]		
8-55x-001	Perfect-Bind	C*	Booklet finishing
8-55x-002	Ring-Bind	C*	Not used

8564	[P:A Sheet Of Paper]		
8567	[O:A Sheet Of Paper]		
8-56x-001	Total: Over A3/DLT	C*	[0 to 99999999 / 0 / 1/step]
8-56x-002	Total: Under A3/DLT	C*	
8-56x-003	Duplex: Over A3/DLT	C*	
8-56x-004	Duplex: Under A3/DLT	C*	

8581	[T:Counter]		
	These SPs count the total output broken down by color output, regardless of the application used. In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine.		

8-581-001	Total	C*	[0 to 99999999 / 0 / 1/step]
8-581-032	Total (A3)	C*	

8591	[O:Counter] These SPs count the totals for A3/DLT paper use, number of duplex pages printed, and the number of staples used. These totals are for Other (O:) applications only.		
8-591-001	A3/DLT	C*	[0 to 99999999 / 0 / 1/step]
8-591-002	Duplex	C*	

8601	[T:CoverageCounter] These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8-601-001	B/W	C*	[0 to 2147483647 / 0 / 1%/step]
8-601-011	B/W Printing Page	C*	[0 to 9999999 / 0 / 1/step]

8604	[P:Coverage Counter]	C*	[0 to 2147483647 / 0 / 1%/step]
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8617	[SDK Apli Counter] These SPs count the total printout pages for each SDK application.		
8-617-001 to 006	SDK-1 to 6	C*	[0 to 99999999 / 0 / 1/step]

8621	[Func Use Counter]		
8-621-001 to 064	Function-001 to 064	C*	[0 to 99999999 / 0 / 1/step]

8771	[Dev Counter]	C*	[0 to 99999999 / 0 / 1/step] This SP counts the frequency of use (number of rotations of the development rollers) for black and other color toners.
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8781	[Toner_Botol_Info.]	E*	[0 to 9999999 / 0 / 1/step] This SP displays 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.
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8801	[Toner Remain]	C*	[0 to 100 / 0 / 10%/step] This SP displays the percent of toner remaining for each color. This SP allows the user to check the toner supply at any time.
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8811	[Eco Counter]		
8-811-001	Eco Total	C*	[0 to 99999999 / 0 / 1/step]
8-811-004	Duplex	C*	
8-811-005	Combine	C*	
8-811-008	Duplex (%)	C*	[0 to 100 / 0 / 1%/step]
8-811-009	Combine (%)	C*	
8-811-010	Paper Cut (%)	C*	
8-811-101	Eco Total:Last	C*	[0 to 99999999 / 0 / 1/step]
8-811-104	Duplex:Last	C*	
8-811-105	Combine:Last	C*	
8-811-108	Duplex (%):Last	C*	[0 to 100 / 0 / 1%/step]
8-811-109	Combine (%):Last	C*	
8-811-110	Paper Cut (%):Last	C*	

8851	[Cvr Cnt: 0-10%]		These SPs display the number of scanned sheets on which the coverage of each color is from 0% to 10%.
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8-851-011	0 to 2%: BK	E*	[0 to 99999999 / 0 / 1/step]
8-851-021	3 to 4%: BK	E*	
8-851-031	5 to 7%: BK	E*	
8-851-041	8 to 10%: BK	E*	

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8861	[Cvr Cnt: 11-20%]	E*	[0 to 99999999 / 0 / 1/step] This SP displays the number of scanned sheets on which the coverage of each color is from 11% to 20%.
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8871	[Cvr Cnt: 21-30%]	E*	[0 to 99999999 / 0 / 1/step] This SP displays the number of scanned sheets on which the coverage of each color is from 21% to 30%.
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8881	[Cvr Cnt: 31%-]	E*	[0 to 99999999 / 0 / 1/step] This SP displays the number of scanned sheets on which the coverage of each color is 31% or higher.
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8891	[Page/Toner Bottle]	E*	[0 to 99999999 / 0 / 1/step] This SP displays the amount of the remaining current toner for each color.
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8901	[Page/Toner_prev1]	E*	[0 to 99999999 / 0 / 1/step] This SP displays the amount of the remaining previous toner for each color.
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8911	[Page/Toner_prev2]	E*	[0 to 99999999 / 0 / 1/step] This SP displays the amount of the remaining 2nd previous toner for each color.
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8921	[Cvr Cnt/Total] This SP displays the total coverage and total printout number for each color.		
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8-921-001	Coverage (%) Bk	C*	[0 to 2147483647 / 0 / 1%/step]
8-921-011	Coverage /P: Bk	C*	[0 to 99999999 / 0 / 1/step]

8941	[Machine Status] These SPs count the amount of time the machine spends in each operation mode. These SPs are useful for customers who need to investigate machine operation for improvement in their compliance with ISO Standards.		
8-941-001	Operation Time	C*	[0 to 99999999 / 0 / 1/step] Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).
8-941-002	Standby Time	C*	[0 to 99999999 / 0 / 1/step] Engine not operating. Includes time while controller saves data to HDD. Does not include time spent in Energy Save, Low Power, or Off modes.
8-941-003	Energy Save Time	C*	[0 to 99999999 / 0 / 10/step] Includes time while the machine is performing background printing.
8-941-004	Low Power Time	C*	[0 to 99999999 / 0 / 1/step] Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.
8-941-005	Off Mode Time	C*	[0 to 99999999 / 0 / 1/step] Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.
8-941-006	SC	C*	[0 to 99999999 / 0 / 1/step] Total time when SC errors have been staying.
8-941-007	PrtJam	C*	[0 to 99999999 / 0 / 1/step] Total time when paper jams have been staying during printing.

8-941-008	OrgJam	C*	[0 to 99999999 / 0 / 1/step] Total time when original jams have been staying during scanning.
8-941-009	Supply PM Unit End	C*	[0 to 99999999 / 0 / 1/step] Total time when toner end has been staying

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8961	[Electricity Status]		
8-961-001	Ctrl Standby Time	C*	[0 to 99999999 / 0 / 1/step]
8-961-002	STR Time	C*	
8-961-003	Main Power Off Time	C*	
8-961-004	Reading and Printing Time	C*	
8-961-005	Printing Time	C*	
8-961-006	Reading Time	C*	
8-961-007	Eng Waiting Time	C*	[0 to 99999999 / 0 / 1/step]
8-961-008	Low Power State Time	C*	
8-961-009	Silent State Time	C*	
8-961-010	Heater Off State Time	C*	
8-961-011	LCD on Time	C*	

8971	[Unit Control]		
8-971-001	Engine Off Recovery Count	C*	[0 to 99999999 / 0 / 1/step]
8-971-002	Power Off Count	C*	
8-971-003	Force Power Off Count	C*	

8999	[Admin. Counter List]		
8-999-001	Total	C*	[0 to 99999999 / 0 / 1/step]
8-999-007	Printer:BW	C*	
8-999-013	Duplex	C*	

8-999-027	Printer: BW(%)	C*	[0 to 2147483647/ 0 / 1/step]
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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

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Input Check Table

5803	[INPUT Check]		
5-803-001	Paper Size	E	[0 to 15 / 0 / 1/step]
5-803-002	Paper End	E	[0 or 1 / 0 / 1/step]
5-803-003	Bypass:Paper End	E	
5-803-004	Bypass:Tray	E	
5-803-005	Paper Exit Full	E	
5-803-006	Paper Exit	E	
5-803-008	Registration	E	
5-803-010	Duplex:Entrance	E	[0 or 1 / 0 / 1/step]
5-803-011	Duplex:Reverse	E	
5-803-012	Rear Interlock	E	
5-803-013	Front Interlock	E	
5-803-014	Rear Cover Open	E	
5-803-017	Fusing Unit New	E	

5-803-018	Fusing Unit Set	E	[0 or 1 / 0 / 1/step]
5-803-019	HVP: SC_C_DV	E	
5-803-020	HVP: SC_T	E	
5-803-022	PSU Fan Lock	E	
5-803-023	Fusing Fan Lock	E	
5-803-024	Drum Fan Lock	E	
5-803-025	Main Motor Lock	E	[0 or 1 / 0 / 1/step]
5-803-027	BiCU Ver	E	[0 to 7 / 0 / 1/step]
5-803-083	BANK1: 500 / 250	E	[0 or 1 / 0 / 1/step]
5-803-084	BANK2: 500 / 250	E	
5-803-087	BANK1:Relay SN	E	
5-803-088	BANK2:Relay SN	E	
5-803-092	BANK1:Paper End	E	
5-803-093	BANK2:Paper End	E	
5-803-094	BANK1:Paper Size	E	[0 to 7 / 0 / 1/step]
5-803-095	BANK2:Paper Size	E	

6007	[ADF INPUT Check]		
6-007-009	Original Detection	E	[0 or 1 / 0 / 1STEP/step]
6-007-013	Registration Sensor	E	
6-007-015	Feed Cover	E	

Output Check Table

5804	[OUTPUT Check]		
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5-804-001	All Off	E	[0 or 1 / 0 / 1/step]
5-804-002	MainMT:CW:High	E	
5-804-003	MainMT:CW:Mid	E	
5-804-004	MainMT:CW:Low	E	
5-804-005	MainMT:CCW:High	E	
5-804-006	MainMT:CCW:Mid	E	[0 or 1 / 0 / 1/step]
5-804-007	MainMT:CCW:Low	E	
5-804-009	PSU Fan	E	
5-804-010	Fusing Fan: High	E	
5-804-011	Fusing Fan: Low	E	
5-804-012	Drum Fan: High	E	[0 or 1 / 0 / 1/step]
5-804-013	Drum Fan: Low	E	
5-804-014	Registration CL	E	
5-804-015	Paper Feed CL	E	
5-804-016	Feed Connect CL	E	
5-804-017	Duplex CL	E	[0 or 1 / 0 / 1/step]
5-804-018	Bypass:Feed CL	E	
5-804-019	Bypass:Tray CL	E	
5-804-020	Toner Supply CL	E	
5-804-021	Exit Junc SOL	E	
5-804-023	HVP: Charge	E	[0 or 1 / 0 / 1/step]
5-804-024	HVP: Development	E	
5-804-025	HVP: Transfer: -	E	
5-804-026	HVP: Transfer: +	E	
5-804-027	BICTL	E	

5-804-029	Toner End Sensor	E	[0 or 1 / 0 / 1/step]
5-804-030	ExtRevMt:HOLD	E	
5-804-031	ExtRevMt:CW:Hi	E	
5-804-032	ExtRevMt:CW:Mid	E	
5-804-033	ExtRevMt:CW:Low	E	
5-804-034	ExtRevMt:CCW:Hi	E	[0 or 1 / 0 / 1/step]
5-804-035	ExtRevMt:CCW:Mid	E	
5-804-036	ExtRevMt:CCW:Low	E	
5-804-163	BANK1:Motor:High	E	
5-804-164	BANK1:Motor:Mid	E	
5-804-165	BANK2:Motor:High	E	[0 or 1 / 0 / 1/step]
5-804-166	BANK2:Motor:Mid	E	
5-804-169	BANK1:Feed CL	E	
5-804-170	BANK2:Feed CL	E	
5-804-171	BANK1:Motor:Low	E	
5-804-172	BANK2:Motor:Low	E	

Printer Service Mode

SP1-XXX (Service Mode)

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1001	[Bit Switch]			
001	Bit Switch 1 Settings		0	1
	bit 0	DFU	-	-
	bit 1	You can switch the information displayed under the "sysName" standard MIB object between the normal data (PnP model name) and data for a custom model (host name). The host name is the name appearing under SP5-828-080.	Normal	Host Name (Custom)
	bit 2	DFU	-	-
	bit 3	No I/O Timeout	Disabled	Enabled
		Enables/Disables MFP I/O Timeouts. If enabled, the MFP I/O Timeout setting will have no affect. I/O Timeouts will never occur.		
	bit 4	SD Card Save Mode	Disabled	Enabled
		If this bit switch is enabled, print jobs will be saved to the GW SD slot and not output to paper.		
	bit 5	DFU	-	-
	bit 6	DFU	-	-
bit 7	[RPCS,PCL]: Printable area frame border	Disabled	Enabled	
	Prints all RPCS and PCL jobs with a border around the printable area.			
1001	[Bit Switch]			

002	Bit Switch 2 Settings		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	[PCL5e/c,PS]: PDL Auto Switching	Enabled	Disabled
		Enables/Disables the MFPs ability to change the PDL processor mid-job. Some host systems submit jobs that contain both PS and PCL5e/c. If Auto PDL switching is disabled, these jobs will not be printed properly.		
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	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	Disabled	Enabled
		Uses the same left margin as older HP models such as HP4000/HP8000. In other words, the left margin defined in the job (usually "<ESC>*r0A") will be changed to "<ESC>*r1A".		
	bit 3	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	IPDS print-side reversal	Disabled	Enabled
		If enabled, the simplex pages of IPDS jobs will be printed on the front side because of printing on the back side of the page. This might reduce printing speed.		
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	[PCL, PS, PDF]: Changes the paper direction used with the settings "Any Size/Type" or "Any Custom Size/Type".	LEF	SEF
By default "Any Size/Type" and "Any Custom Size/Type" treat all paper in the bypass tray as if it were loaded in the SEF direction. This bitswitch changes the assumed direction to LEF.				
bit 7	You can enable/disable the port for IPDS printing.	OFF	On	

1001	[Bit Switch]			
005	Bit Switch 5 Settings		0	1
	bit 0	Show "Collate Type", "Staple Type" and "Punch Type" buttons on the operation panel.	Disabled	Enabled
		If enabled, users will be able to configure a Collate Type, Staple Type, and Punch Type from the operation panel. The available types will depend on the device and configured options. After enabling the function, the settings will appear under: "User Tools > Printer Features > System"		

bit 1	Multiple copies if a paper size or type mismatch occurs	Disabled (single copy)	Enabled (multiple)
	If a paper size or type mismatch occurs during the printing of multiple copies, only a single copy is output by default. Using this BitSw, the device can be configured to print all copies even if a paper mismatch occurs.		
bit 2	Prevent SDK applications from altering the contents of a job.	Disabled	Enabled
	<p>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".</p> <p>Note: The main purpose of this switch is for troubleshooting the effects of SDK applications on data.</p>		
bit 3	[PS] PS Criteria	Pattern3	Pattern 1
	<p>Change the number of PS criterion used by the PS interpreter to determine whether a job is PS data or not.</p> <p>Pattern3: includes most PS commands.</p> <p>Pattern1: A small number of PS tags and headers</p>		
bit 4	Increase max number of the stored jobs.	Disabled (100)	Enabled (750)
	Changes the maximum number of jobs that can be stored on the HDD. The default (disabled) is 100. If this is enabled, the max. will be raised to 750.		
bit 5	DFU	-	-
bit 6	Method for determining the image rotation for the edge to bind on.	Disabled	Enabled
	<p>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.</p> <p>The old models are below:</p> <ul style="list-style-type: none"> - PCL: Pre-04A models - PS/PDF/RPCS:Pre-05S models 		

	bit 7	Letterhead mode printing	Disabled	Enabled (Duplex)
	<p>Routes all pages through the duplex unit.</p> <p>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.</p> <p>Only affects pages specified as Letterhead paper.</p>			

1001	[Bit Switch]			
006	Bit Switch 6 Settings	-	-	

1001	[Bit Switch]			
007	Bit Switch 7 Settings		0	1
		Print path	Disabled	Enabled
	bit 0	If enabled, simplex pages (in mixed simplex/duplex PS/PCL5 jobs only) and the last page of an odd paged duplex job (PS, PCL5, PCL6), are always routed through the duplex unit. Not having to switch paper paths increases the print speed slightly.		
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	[Bit Switch]			
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008	Bit Switch 8 Settings		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	[PCL,PS]: Allow BW jobs to print without requiring User Code	Disabled	Enabled (allow BW jobs to print without a user code)
	BW jobs submitted without a user code will be printed even if usercode authentication is enabled. Note: Color jobs will not be printed without a valid user code.			
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	PCL, RPCS, PS: Forced BW print	Enabled	Disabled
Switches whether to ignore PDL color command.				
bit 7	DFU	-	-	

1001	[Bit Switch]			
009	Bit Switch 9 Settings		0	1
	bit 0	PDL Auto Detection timeout of jobs submitted via USB or Parallel Port (IEEE 1284).	Disabled (Immediately)	Enabled (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 1	DFU	-	-
	Job Cancel	Disabled (Not cancelled)	Enabled (Cancelled)
<p>If this bit switch, all jobs will be cancelled after a jam occurs.</p> <p>Note: If this bitsw is enabled, printing under the following conditions might result in problems:</p> <ul style="list-style-type: none"> - 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
	<p>This switch determines the timing of the PjL USTATUS JOB END sent when multiple collated copies are being printed.</p> <p>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.</p> <p>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.</p>		
bit 5	Display UTF-8 text in the operation panel	Enabled	Disabled
	<p>Enabled (=0): Text composed of UTF-8 characters can be displayed in the operation panel.</p> <p>Disabled (=1): UTF-8 characters cannot be displayed in the operation panel.</p> <p>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).</p>		
bit 6	Disable super option	OFF	ON
	<p>Switches super option disable on / off.</p> <p>If this is On, multiple jobs are grouped at LPR port. PjL settings are enabled even jobs that are specified queue names are sent.</p>		

	bit 7	Enable/Disable Print from USB/SD's Preview function	Enabled	Disabled
	<p>Determines whether Print from USB/SD will have the Preview function.</p> <p>Enabled (=0): Print from USB/SD will have the Preview function.</p> <p>Disabled (=1): Print from USB/SD will not have the Preview function.</p>			

1001	[Bit Switch]			
010	Bit Switch A Settings		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	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
	<p>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.</p> <p>*This bit switch is only for M159 (touch pane model).</p>			
	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
	<p>If this is 0, Auto Job Promotion will be automatically disabled if an external charge device is connected.</p> <p>Note: We do not officially support enabling this switch (1). Use it at your own risk.</p> <p>*This bit switch is only for M159 (touch pane model).</p>			
	bit 7	DFU	-	-

1001	[Bit Switch]			
011	Bit Switch B Settings		0	1

	bit 0	DFU	-	-
	bit 1	Print job interruption	Does not allow interruption	Allow interruption
		<p>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.</p> <p>1: If a job is promoted to the top of the queue, it will interrupt the currently printing job and start printing immediately.</p>		
	bit 2	You can specify whether or not to apply "Extended Auto Tray Switching" to the bypass tray when Printer Features > System > Tray Setting Priority > Bypass Tray is set to "Any Size/Type" (when the bypass tray is set to receive any type of paper).	Off	On
	bit 3	DFU	-	-
	bit 4	<p>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".</p> <ul style="list-style-type: none"> - 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) 	Disabled	Enabled
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	[Bit Switch]
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012	Bit Switch C 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	-	-

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]

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		
002	PCU	*CTL	[0 or 1 / 1 / 1 /step]
006	Fuser	*CTL	*The Default setting is 1 but the Factory setting is 0

1110	[Media Print Device Setting]		
	*This bit switch is only for M159 (touch pane model).		
002	0:Disable 1:Enable	CTL	[- / 1 / -]

1111	[All Job Delete Mode]		
	*This bit switch is only for M159 (touch pane model).		
001	0:excluding New Job 1:including New Job	*CTL	[- / 1 / -]

Test Pattern Printing

Test Pattern Printing

Printing Test pattern: SP2-109

Some of these test patterns are used for copy image adjustments but most are used primarily for design testing.

Note

- Do not operate the machine until the test pattern is printed out completely. Otherwise, an SC occurs.
1. Enter the SP mode and select **SP2-109-001**.
 2. Select the number for the test pattern that you want to print and press [OK].
 3. Print the test pattern with SP2-109

SP2-109-002	1 Sheet Printing
SP2-109-003	Continuous Printing
SP2-109-004	Print Side Select

4. Check the output.

SP2-109-001 Pattern list

0	None	9	Arg. Grid20mm
1	Vert. (1dot)	10	Indep. (1dot)
2	Hori. (1dot)	11	Indep. (2dot)
3	Vert/ (2dot)	12	Indep. (4dot)
4	Hori. (2dot)	13	Full
5	Grid Vert.	14	Band
6	Grid Hori.	15	Gray 10mm
7	Grid 20mm	16	Gray 20mm
8	Arg. Grid	17	Trim Area

MEMO