

MP 305+
Machine Code: D259
Field Service Manual

February, 2016
Subject to Change

Important Safety Notices

Warnings, Cautions, Notes

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

WARNING

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

CAUTION

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

Important

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

Note

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

General Safety Instructions

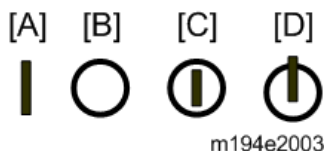
For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

Always obey the following safety precautions when using this product.

Safety During Operation

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



[A]: ON

[B]: OFF

[C]: Push ON/Push OFF

[D]: Standby

Switches and Symbols

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

Safety

Prevention of Physical Injury

1. Before disassembling or assembling parts of the machine and peripherals, make sure that the machine and peripheral power cords are unplugged.
2. The plug should be near the machine and easily accessible.
3. Note that some components of the machine and the paper tray unit are supplied with electrical voltage even if the main power switch is turned off.
4. Always unplug the power cord from the power source before you move the product. Before you move the machine, arrange the power cord so it will not fall under the machine.
5. Disconnect all peripheral units (finisher, LCT, etc.) from the mainframe before you move the machine.
6. If any adjustment or operation check has to be made with exterior covers off or open while the main switch is turned on, keep hands away from electrified or mechanically driven components.
7. The machine drives some of its components when it completes the warm-up period. Be careful to keep hands away from the mechanical and electrical components as the machine starts operation.
8. The inside and the metal parts of the fusing unit become extremely hot while the machine is operating. Be careful to avoid touching those components with your bare hands.
9. To prevent a fire or explosion, keep the machine away from flammable liquids, gases, and aerosols.
10. Do not use flammable sprays or solvent in the vicinity of the machine. Also, avoid placing these items in the vicinity of the machine. Doing so could result in fire or electric shock.
11. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
12. Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries.
13. Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
14. Never do any procedure that defeats the function of any safety device.
15. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
16. For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.
17. For machines installed with the ADF/ARDF:

When a thick book or three-dimensional original is placed on the exposure glass and the ARDF cover is lowered, the back side of the ARDF rises up to accommodate the original. Therefore, when closing the ARDF, please be sure to keep your hands away from the hinges at the back of the ARDF.

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

Health Safety Conditions

1. For the machines installed with the ozone filters:
 - Never operate the machine without the ozone filters installed.
 - Always replace the ozone filters with the specified types at the proper intervals.
2. The machine, which use high voltage power source, can generate ozone gas. High ozone density is harmful to human health. Therefore, locate the machine in a large well ventilated room that has an air turnover rate of more than 50m³/hr/person.
3. Toner and developer are non-toxic, but if you get either of them in your eyes by accident, it may cause temporary eye discomfort. Try to remove with eye drops or flush with water as first aid. If unsuccessful, get medical attention.

Observance of Electrical Safety Standards

1. The machine and its peripherals must be installed and maintained by a customer service representative who has completed the training course on those models with exceptions on some machines where the installation can be handled by the user.

Safety and Ecological Notes for Disposal

1. Do not incinerate toner bottles or used toner. Toner dust may ignite suddenly when exposed to an open flame.
2. Dispose of used toner, developer, organic photoconductors, and AIO unit in accordance with local regulations. (These are non-toxic supplies.)
3. Dispose of replaced parts in accordance with local regulations.

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4. When keeping used lithium batteries in order to dispose of them later, do not put more than 100 batteries per sealed box. Storing larger numbers or not sealing them apart may lead to chemical reactions and heat build-up.
 5. The danger of explosion exists if a battery of this type is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer. Discard used batteries in accordance with the manufacturer's instructions.

Handling Toner

- Work carefully when removing paper jams or replacing toner bottles or cartridges to avoid spilling toner on clothing or the hands.
- If toner is inhaled, immediately gargle with large amounts of cold water and move to a well-ventilated location. If there are signs of irritation or other problems, seek medical attention.
- If toner gets on the skin, wash immediately with soap and cold running water.
- If toner gets into the eyes, flush the eyes with cold running water or eye wash. If there are signs of irritation or other problems, seek medical attention.
- If toner is swallowed, drink a large amount of cold water to dilute the ingested toner. If there are signs of any problem, seek medical attention.
- If toner spills on clothing, wash the affected area immediately with soap and cold water. Never use hot water! Hot water can cause toner to set and permanently stain fabric.
- Always store toner and developer supplies such as toner and developer packages, cartridges, bottles (including used toner and empty bottles and cartridges), and AIO unit out of the reach of children.
- Always store fresh toner supplies or empty bottles or cartridges in a cool, dry location that is not exposed to direct sunlight.
- Do not use a vacuum cleaner to remove spilled toner (including used toner). Vacuumed toner may cause a fire or explosion due to sparks or electrical contact inside the cleaner. However, it is possible to use a cleaner designed to be dust explosion-proof. If toner is spilled over the floor, sweep up spilled toner slowly and clean up any remaining toner with a wet cloth.

Handling the development unit cooling system

For the machines installed the development cooling system:

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

5. Contact a professional industrial waste disposal organization and ask them to dispose of the tank.

Laser Safety

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

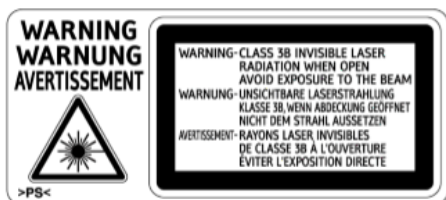
WARNING

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

WARNING FOR LASER UNIT

WARNING:

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



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Safety Instructions for the Color Controller

Fuse

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








Batteries

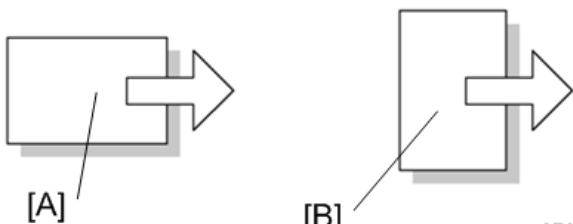
1. Always replace a battery with the same type of battery prescribed for use with the color controller unit. Replacing a battery with any type other than the one prescribed for use could cause an explosion.
2. Never discard used batteries by mixing them with other batteries or other refuse.

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3. Always remove used batteries from the work site and dispose of them in accordance with local laws and regulations regarding the disposal of such items.

Symbols, Abbreviations and Trademarks

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

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



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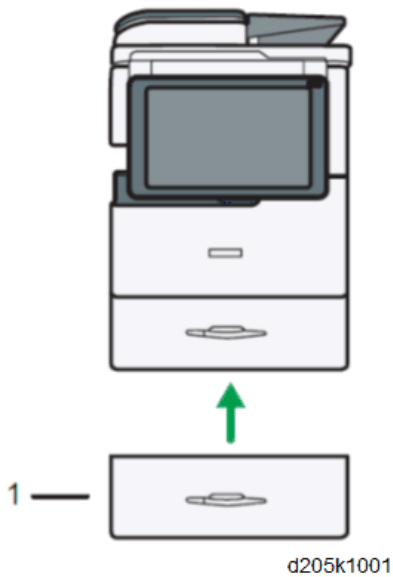


1. Product Information

Machine Codes and Peripherals Configuration

System Configuration and Options

Main Machine and Peripherals



No.	Item	Machine Code	Main Destination				
			NA	EU	AA	TWN	CHN
-	MP 305 ⁺ SP	D259-27	-	✓	-	-	-
		D259-29	-	-	✓	-	-
		D259-21	-	-	-	-	✓
	MP 305 ⁺ SPF	D259-57	✓	-	-	-	-
		D259-67	-	✓	-	-	-
		D259-69	-	-	✓	-	-
		D259-19	-	-	-	✓	-

No.	Item	Machine Code	Main Destination				
			NA	EU	AA	TWN	CHN
1	Paper Feed Unit PB1090	D794-17	✓	✓	✓	✓	-
		D794-21	-	-	-	-	✓

Controller Options

Item	Machine Code	Main Destination				
		NA	EU	AA	TWN	CHN
Bluetooth Interface Unit Type D	D566-01	✓	✓	✓	-	-
XPS Direct Print Option Type M15	D3B4-07	✓	-	-	-	-
	D3B4-08	-	✓	-	-	-
	D3B4-09	-	-	✓	✓	✓
OCR Unit Type M13	D3AC-23	✓	-	-	-	-
	D3AC-24	-	✓	-	-	-
	D3AC-25	-	-	✓	✓	✓
Data Overwrite Security Unit Type I	D362-12	✓	✓	✓	-	-
Copy Data Security Unit Type G	D640-41	✓	✓	✓	✓	✓
Fax Option Type M15	D3B3-02	-	✓	-	-	-
	D3B3-03	-	-	✓	-	-
	D3B3-05	-	-	-	-	✓
Fax Connection Unit Type M15	D3B4-11	✓	-	-	-	-
	D3B4-12	-	✓	-	-	-
	D3B4-13	-	-	✓	✓	✓
NFC Card Reader Type M15	D3B4-31	✓	✓	✓	✓	✓

Item	Machine Code	Main Destination				
		NA	EU	AA	TWN	CHN
RICOH e-sharing Box	D668-01	✓	-	-	-	-
	D668-02	-	✓	-	-	-
	D668-03	-	-	✓	-	-
Optional Counter Interface Unit Type M12	B870-21	✓	✓	✓	✓	✓
Enhanced Security HDD Option Type M10	D792-09	✓	✓	-	-	-

Specifications

1

See “Appendices” for the following information:

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

2. Installation

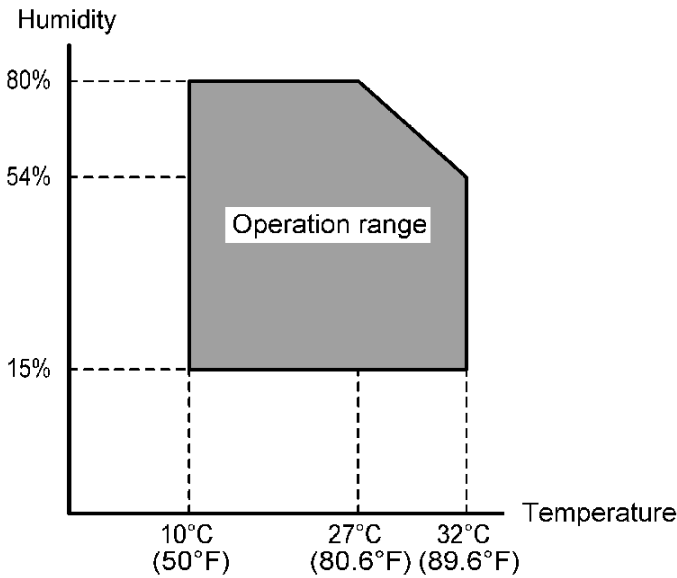
Installation Requirements

Note

- Some illustrations may differ from the actual machine.

Environment

–Temperature and Humidity Chart–



• Temperature Range:	10 - 32°C (50 - 89.6°F)
• Humidity Range:	15% to 80% RH
• Ambient Illumination:	Less than 1,500 lux (do not expose to direct sunlight)
• Ventilation:	3 times/hr/person or more
• Ambient Dust:	Less than 0.075 mg/m ³ (2.0 x 10 ⁻⁶ oz/yd ³)
• Avoid areas exposed to sudden temperature changes: 1) Areas directly exposed to cool air from an air conditioner. 2) Areas directly exposed to heat from a heater.	

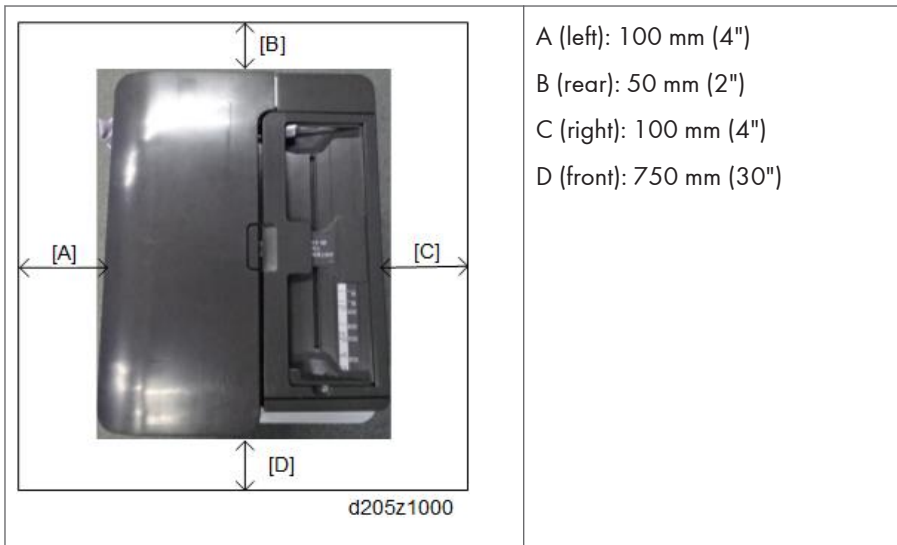
- Do not place the machine in areas where it can get exposed to corrosive gases.
- Do not install the machine at any location over 2,000 m (6,500 ft.) above sea level.
- Place the machine on a strong and level base. (Inclination on any side should be no more than 5 mm.)
- Do not place the machine where it is subjected to strong vibrations.

Machine Level

Front to back:	Within 5 mm (0.2") of level
Right to left:	Within 5 mm (0.2") of level

Minimum Space Requirements

Place the machine near the power source, providing clearance as shown:



The recommended 750 mm (30") front space is sufficient to allow the paper tray to be pulled out. Additional front space is required to allow operators to stand in front of the machine.

Power Requirements

CAUTION

- Make sure that the wall outlet is near the machine and easily accessible. After completing installation, make sure the plug fits firmly into the outlet.
- Avoid multi-wiring.
- Be sure to ground the machine.

Input voltage:

North America	120 - 127V 60Hz 12A
Europe, Asia, China	220V - 240V 50/60Hz 8A
Taiwan	110V 60Hz 13A

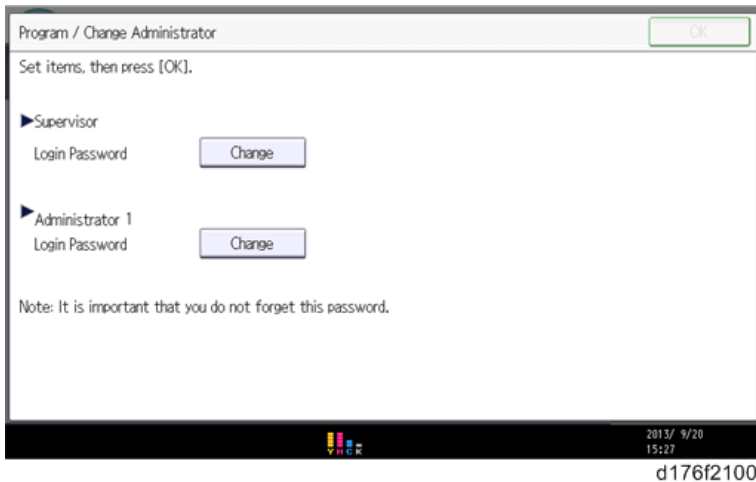
Main Machine Installation

Important Notice on Security Issues

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

Overview

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



- When the customers set the administrator/supervisor login password, the display disappears and the home screen will appear. However, the customers can make this screen disappear with the following procedure if there is no need to set the password.
 - On the Program/Change Administrator screen, press [Change] next to Supervisor and then press [OK] without inputting any password.
 - Press [OK] again when the Confirm password screen shows up.
 - For Administrator 1, do the same procedure as steps 1 and 2.
 - Press [OK], then the home screen appears.
 - SP5-755-002 allows you to skip this screen temporarily and continue the installation procedure without setting an administrator password. However, the Program/Change Administrator screen appears every time when turning OFF then ON the main power, if the password is not set.

Password Setting Procedure

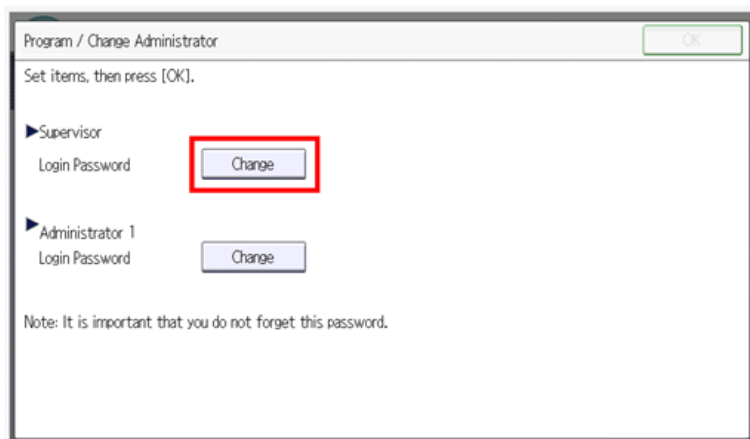
Note

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

CAUTION

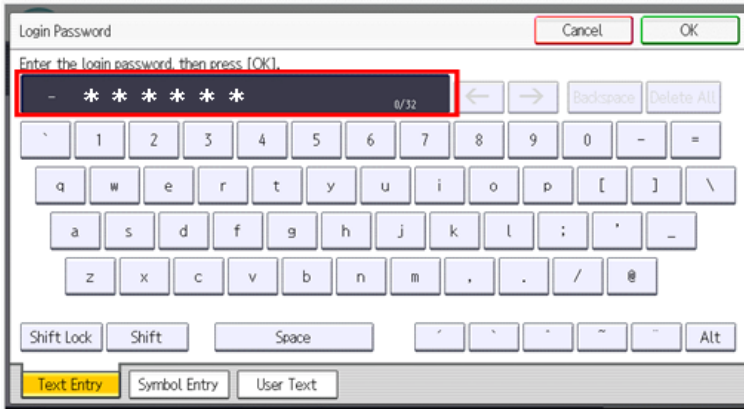
- When Supervisor / Administrator 1-4 passwords are configured via network, the “Change Supervisor login password” window will not display.
- The passwords for Supervisor or Administrator 1 to 4 can be set via “System Settings”. But the Program/Change Administrator screen appears every time when the main power is turned ON if the passwords are input this way. So we recommend the customers to set the passwords via network or the Program/Change Administrator screen.

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



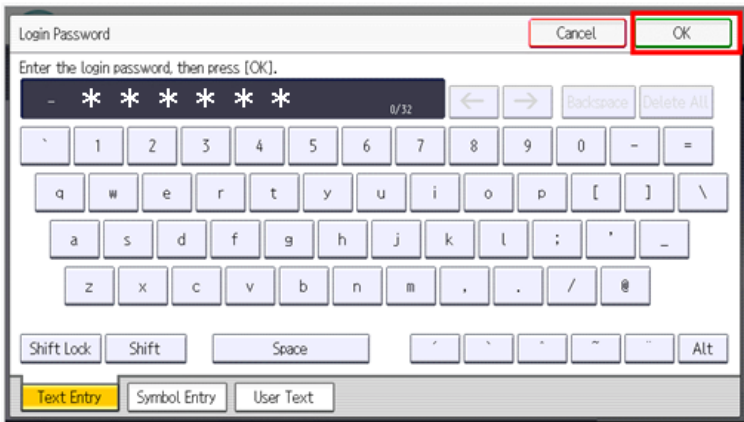
d176f2101

4. Enter the password.



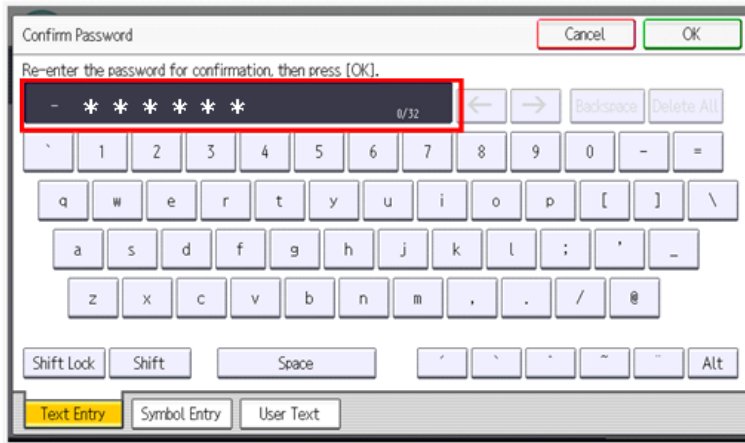
d176f2102

5. Press [OK].



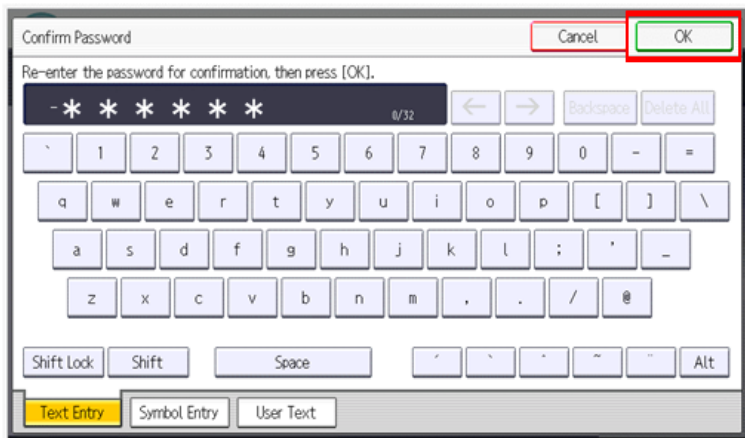
d176f2103

6. Confirm the Password.



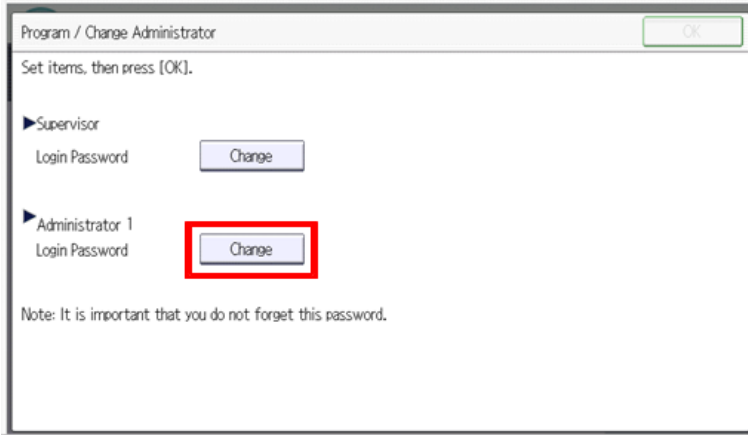
d176f2104

7. Press [OK].



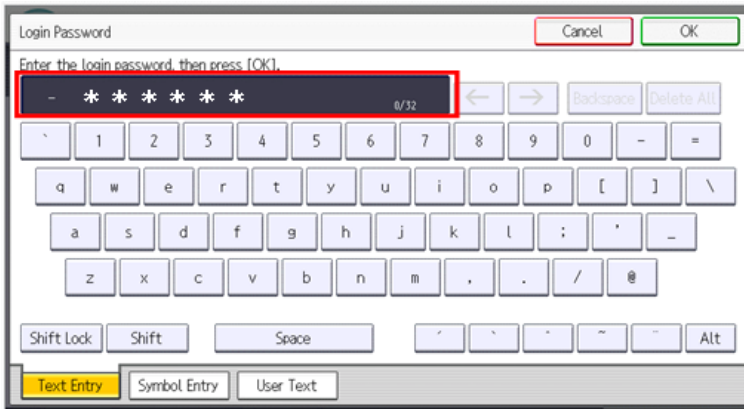
d176f2105

8. Change the Administrator 1 login password.



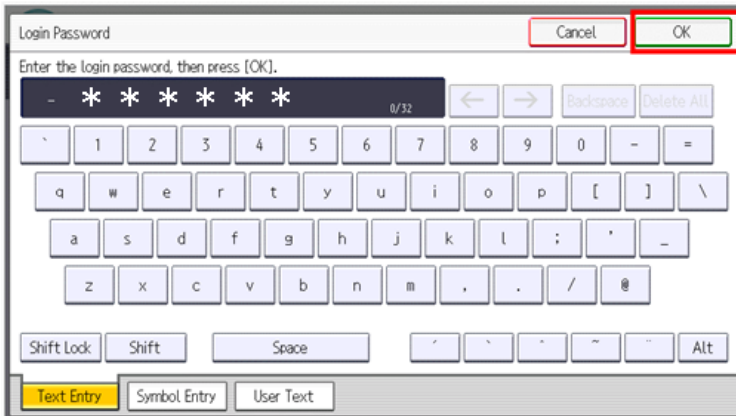
d176f2106

9. Enter the password.



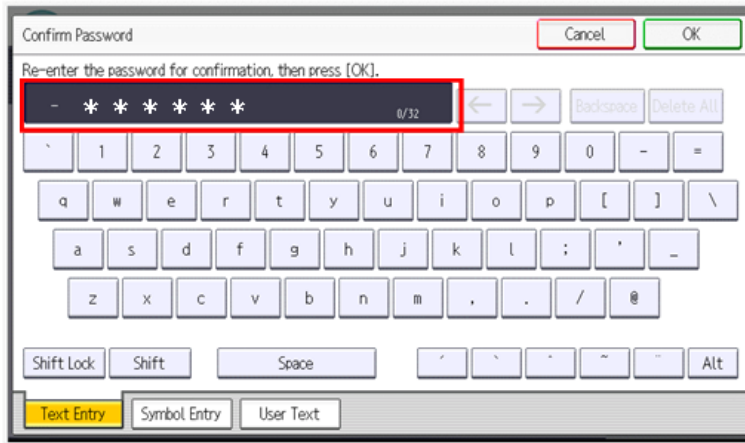
d176f2102

10. Press [OK].



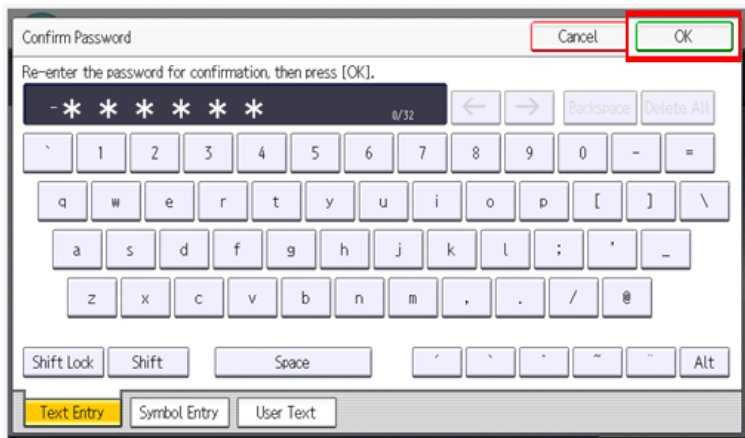
d176f2103

11. Confirm the password.



d176f2104

12. Press [OK].



d176f2105

13. Turn OFF then ON the main power.

Accessory Check

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

No.	Item	Q'ty	Main Destination (Model)						
			TWN (SPF)	CH (SP)	EU (SP)	AA (SP)	NA (SPF)	EU (SPF)	AA (SPF)
1	Power plug (For 125 V or 250 V)	1	✓	✓	✓	✓	✓	✓	✓
2	Decal	3	✓	✓	✓	✓	✓	✓	✓
3	Brand plate	2	-	-	✓	✓	✓	✓	✓
4	NFC tag	1	✓	✓	✓	✓	✓	✓	✓
5	Modular code with Ferrite core	1	-	-	-	-	✓	-	-
6	Ferrite core	1	✓	-	-	-	-	✓	✓
-	Operating Instruction Set	1	✓	✓	✓	✓	✓	✓	✓
-	EMC address	1	-	✓	-	-	-	✓	-
-	Guarantee sheet	1	-	✓	-	-	-	-	-
-	Caution (FCC)	1	-	-	-	-	✓	-	-
-	Caution (Canada)	1	-	-	-	-	✓	-	-
-	Caution (CE/CH)	1	-	-	✓	-	-	✓	-
-	Safety Information	1	-	-	✓	-	-	✓	-

✓: Included; -: Not included



d259z2100

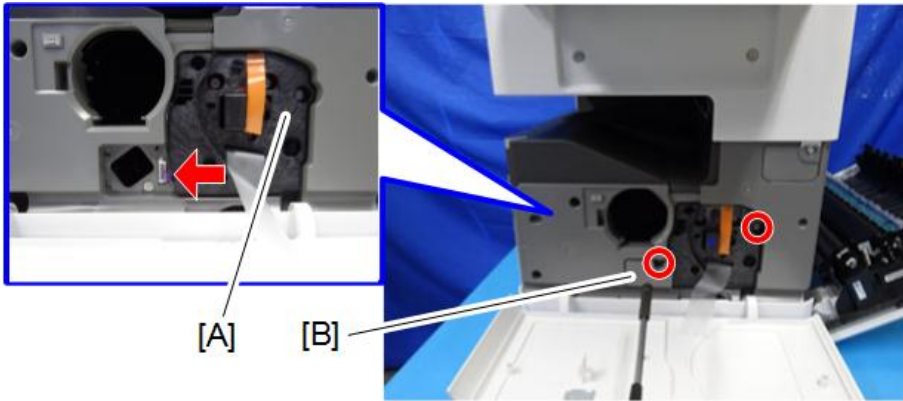
↓ Note

- For NA, modular code and ferrite core is bound in the factory.

Installation Procedure

1. Unpack the machine and remove all the wrapping.
2. Remove all filament tapes and retainers from the machine.
3. Open the front cover and right cover.

4. Remove the small cover [B] and the PCDU [A].



⚙️ x2 🛠️ x1

d205z5044

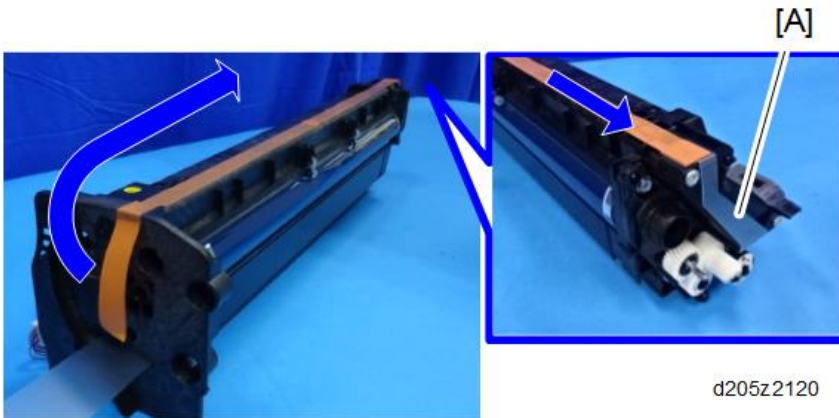
⚠️ Note

- When taking out the PCDU, hold the lower center and the opposite side of the drum as shown below. Otherwise, the drum may be damaged.



d205z2119

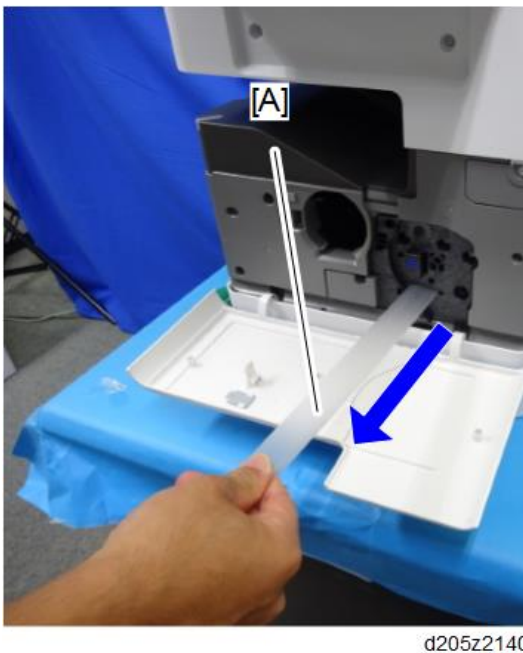
5. Remove the development unit protection sheet [A].



Note

- Do not touch the grease applied to the gears on the PCDU.

6. Attach the PCDU to the machine.
7. Pull out the heat sealing sheet [A] horizontally.



8. Close the right cover.
9. Shake the toner bottle up and down several times with the cap on top.

10. Make sure that the PCDU is securely installed in the machine.

⚠ CAUTION

- If the toner bottle is installed in the machine without a PCDU, toner scatters due to internal pressure.

11. Remove the toner bottle protection cap and install the toner bottle in the machine.

12. Close the front cover.

13. Turn ON the main power.

↓ Note

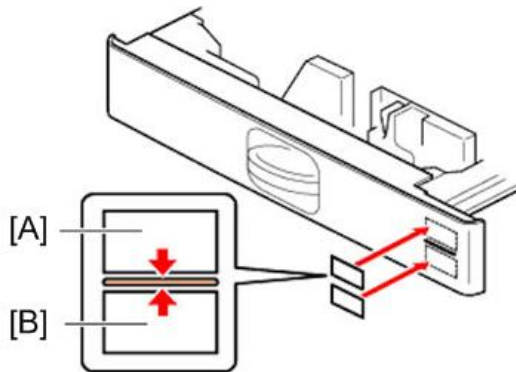
- The initial toner supply starts automatically. A beep sound is emitted when it is finished.

14. Attach the following decals on the ARDF.



d259z2001

15. Attach the decal to the main paper feed tray.



d1462230

[A]: Tray number decal

[B]: Paper size decal

Check Image Quality / Settings

Loading Paper

💡 Preparation

- When there are other options to be installed, install according to the procedure for each.
1. Check that the operation panel shows the following message.
"Please supply the tray with paper."
 2. Pull out the paper feed tray slowly until it stops.
 3. While pressing the release lever, adjust the side fence to the paper size to be set.
 4. Set the end fence.
 5. Square the paper and load it print side up.

⬇️ Note

- The paper size is basically detected automatically.

Checking the copy image with the test chart

Check the copy image with test charts such as the S5S Test Chart.

⬇️ Note

- If the toner density printed on the page is unstable, copy some more pages.

Moving the Machine

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

- Turn OFF the main power and pull out the plug.
- Close all the covers and trays.
- Keep the machine horizontal and move it slowly. Tipping and excess vibrations may damage the machine.
- Follow the instruction below when you lift the machine up or down:

Main Machine Only



Main Machine + Paper Feed Unit



w_d205z2122en

Transporting the Machine

1. Execute SP4-806-001 (* SSP) to move the scanner carriage from the home position. This prevents dust from falling into the machine during transportation.
2. Remove the toner cartridges. This prevents toner leak, which is caused by vibration during transport.
3. Make sure there is no paper left in the paper trays. Then fix down the bottom plates with a sheet of paper and tape.
4. Take out the scanner stay from inside the front cover and install the scanner stay.
5. Do one of the following step:
 - Attach shipping tape to the covers and doors.
 - Shrink-wrap the machine tightly.

Paper Feed Unit PB1090

Preparation

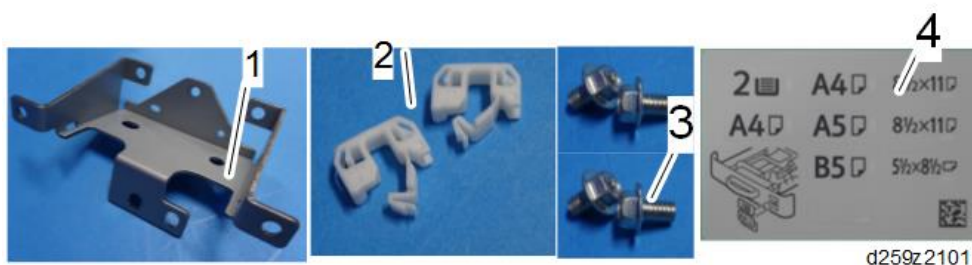
- If dehumidification heater for optional paper feed tray is used simultaneously, install the dehumidification heater for optional paper feed tray before installing the paper feed unit PB1090. (page 48)

2

Accessory Check

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

No.	Description	Q'ty
1	Bracket	1
2	Edge Saddle	2
3	Screw	4
4	Decal	1
-	EMC Address	1
-	Rating Name Plate	1



Installation Procedure

CAUTION

- Turn OFF the main power, and unplug the machine power cord before starting the following procedure.
- You need two or more persons to lift the main machine. The main machine is highly unstable when it is lifted by one person, and may cause injury or property damage.

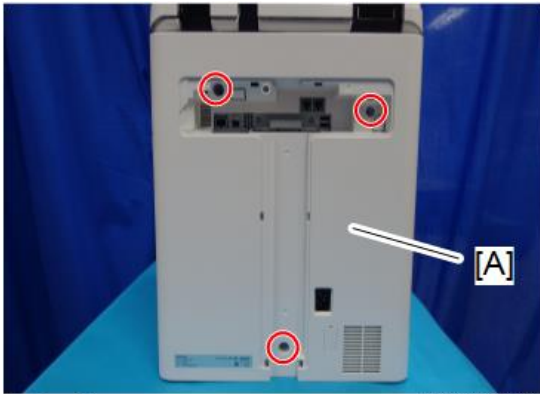
- Be sure to hold the specified positions when lifting the machine.

1. Remove the T-shaped cover [A].



d205m4002

2. Remove the screws of the rear cover [A].



 x3

d205m4003

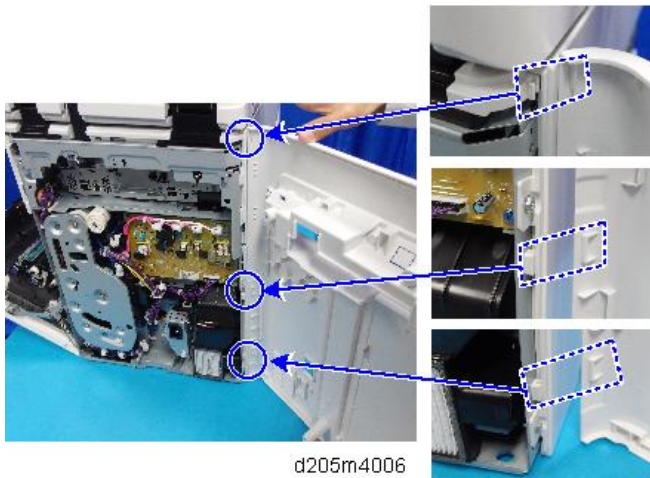
3. Open the right cover.

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



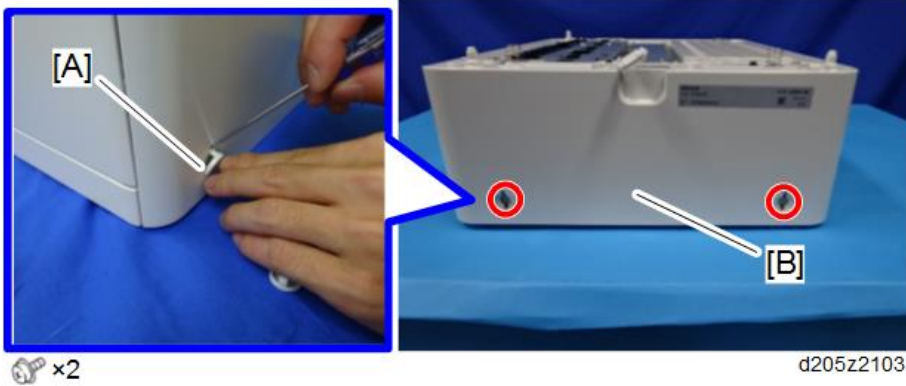
↓ Note

- Be careful not to damage the tabs at the rear of the left cover when removing or installing the rear cover.

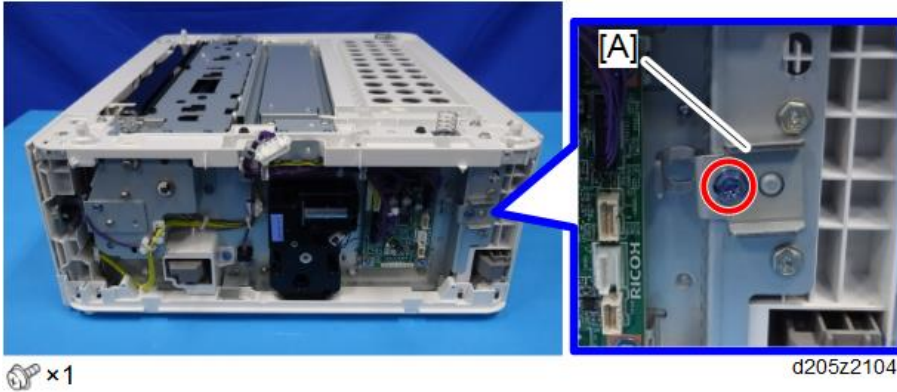


5. Remove the orange tapes retaining the paper feed unit.

6. Remove the screw covers [A], and then remove the screws securing the rear cover [B].



7. Remove the special tool [A].

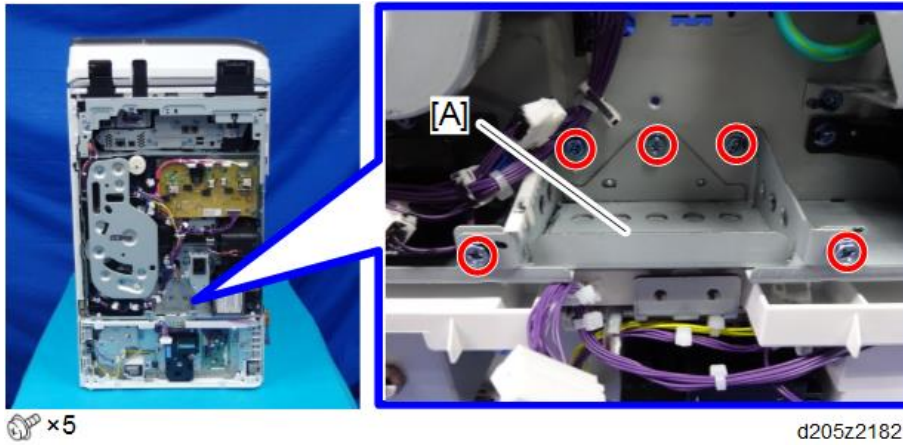


8. Set the main machine on the optional paper feed tray.

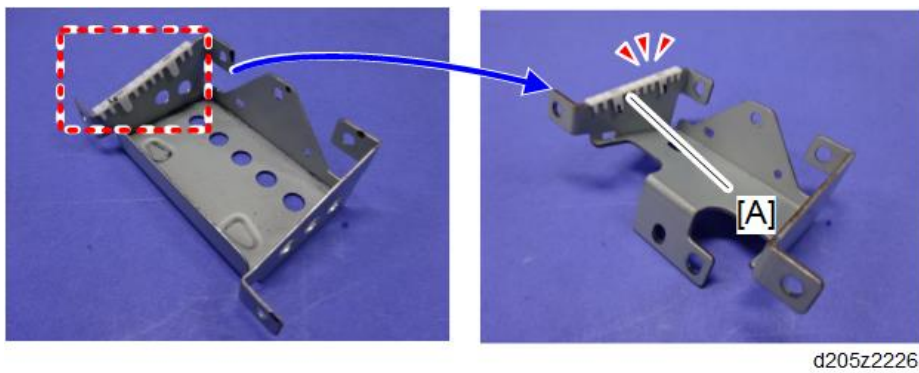
9. Remove the bracket [A].

Note

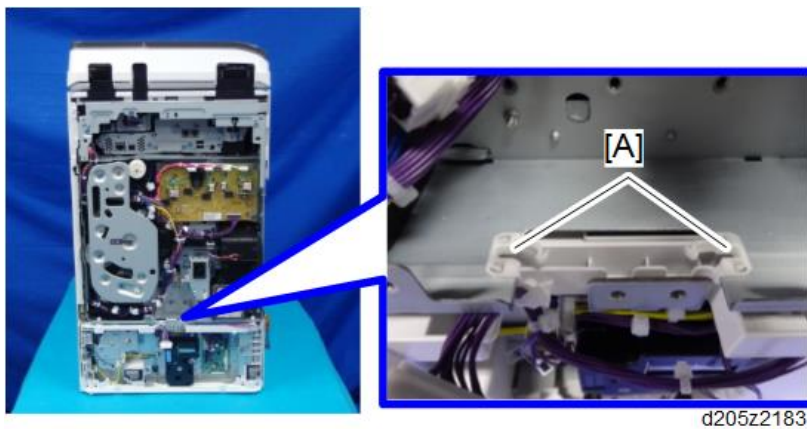
- Discard the bracket that was just removed.



10. Remove the protector [A] from the bracket removed in step 9, and attach it to the bracket packed with this option.



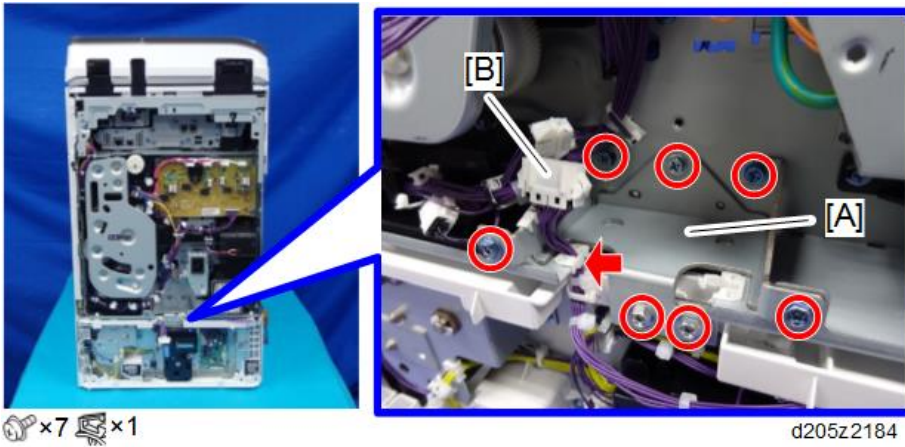
11. Attach the edge saddles [A] packed with this option.



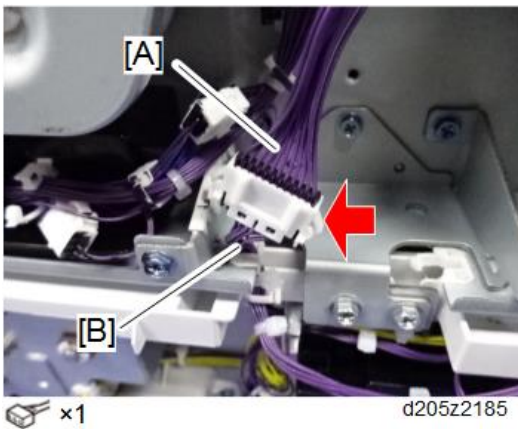
12. Do the following:

1. Attach the joint bracket [A] packed with this option.

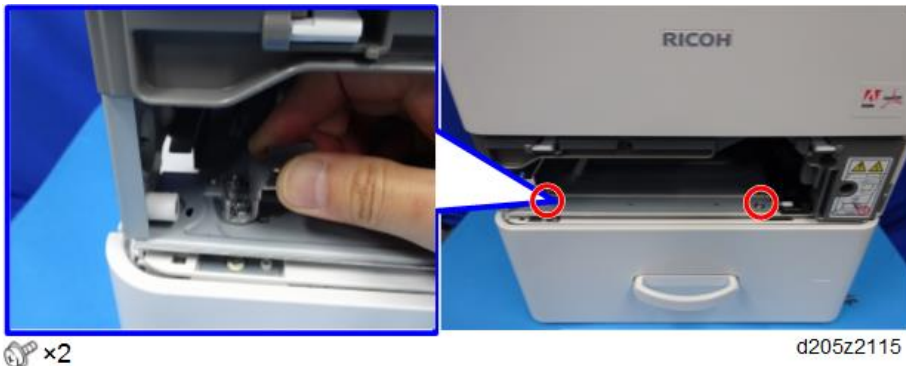
2. Route the harness [B] through the left edge saddle installed in step 11.



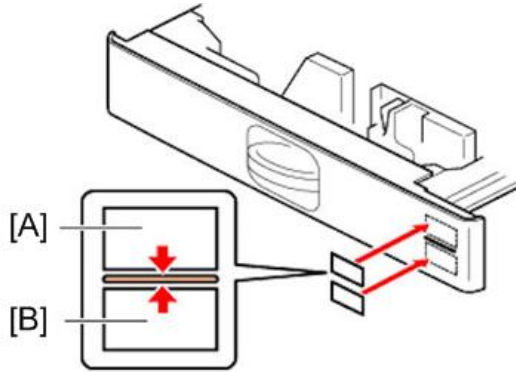
13. Connect the connectors ([A] and [B]) at the rear of the machine.



14. Remove the main paper feed tray.
15. Tighten the optional paper feed tray to the main machine using the special tool (removed in step 7).



16. Reattach the special tool to the storage position (see step 7).
17. Reassemble the machine.
18. Attach the decals as shown below:



d1462230

[A]: Tray number decal

[B]: Paper size decal

Note

- The tray number decal and paper size decal are packaged together with the machine.

Dehumidification Heaters

Note

- There are two dehumidification heaters for MP 305⁺. If both two dehumidification heaters are used simultaneously, creases can be made on sheets in the trays. See the following basic idea to prevent this:
 - The dehumidification heater for **optional** paper feed tray should only be installed if the machine has an optional paper feed unit installed. The dehumidification heater for main paper feed tray should not be installed in this case.
 - The dehumidification heater for **main** paper feed tray should only be installed if the machine has no optional paper feed unit installed.

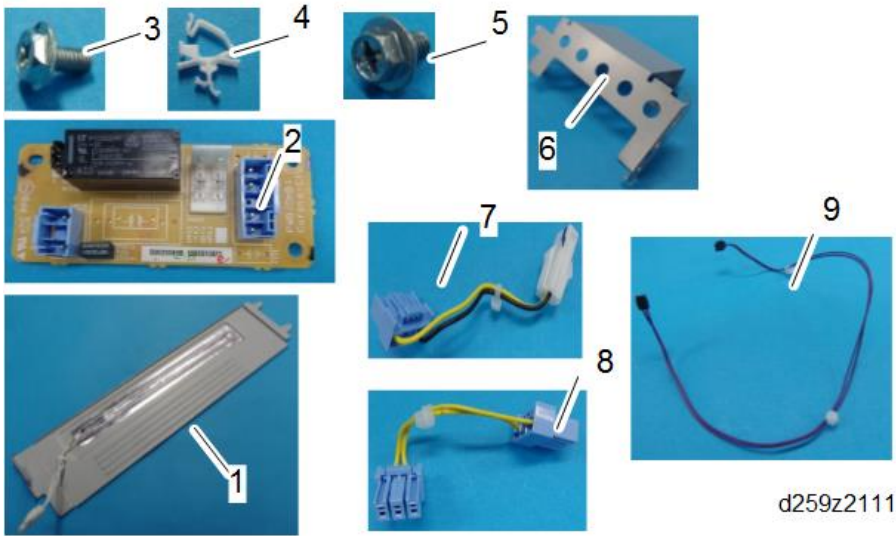
Dehumidification Heater for Main Paper Feed Tray

Accessory Check

No.	Description	Q'ty	Note
1	Heater with bracket	1	
2	DHB	1	
3	Tapping screw 3x6	4	
4	Clamp	2	
5	Screw M4x10	1	
6	Bracket	1	DHB base
7	Harness	1	Main paper feed tray
8	Harness (short)	1	DHB/PSU
9	Harness (long)	1	DHB/PSU
-	Decal	1	

RTB 51

[Additional information about part numbers](#)



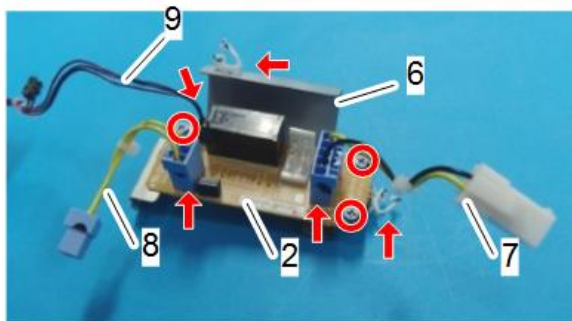
Installation Procedure

⚠ CAUTION

- You need two or more persons to lift the main machine. The main machine is highly unstable when it is lifted by one person, and may cause injury or property damage.
- Be sure to hold the specified positions when lifting the machine.

1. Assemble the DHB, harnesses, and bracket as shown below.

The numbers in the following picture represents the number in the accessory list.



⚙ ×3 🛠 ×3 📡 ×2

2. Remove the T-shaped cover [A].



d205m4002

3. Remove the screws from the rear cover [A].

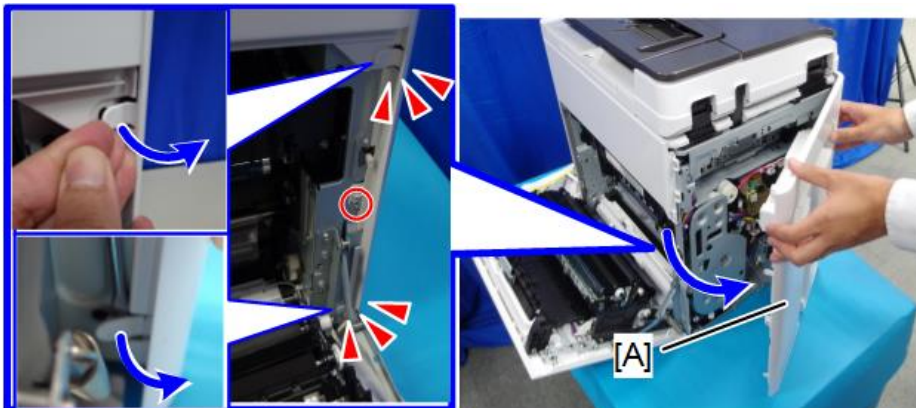


 x3

d205m4003

4. Open the right cover.

5. Remove the rear cover [A].

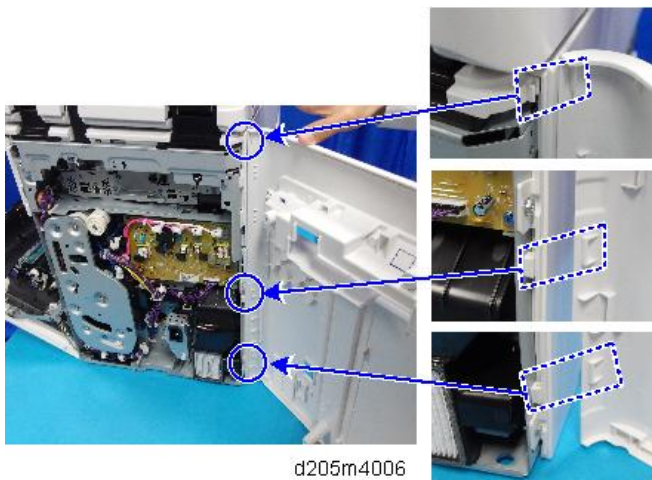


 x1

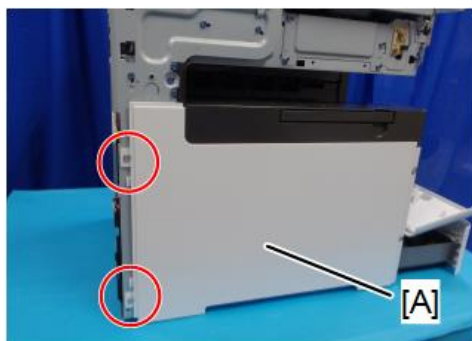
d205m4005

Note

- Be careful not to damage the tabs at the rear of the left cover when removing or installing the rear cover.



6. Pull out the paper feed tray.
7. Open the front cover.
8. Remove the left lower cover [A].

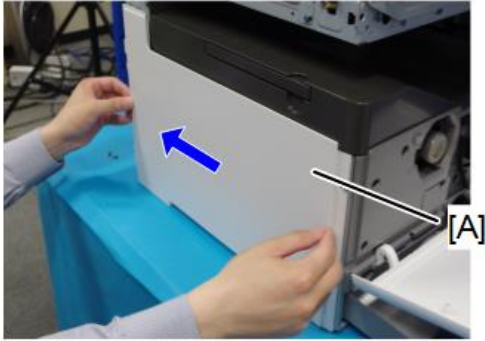


 x2

d205m4014

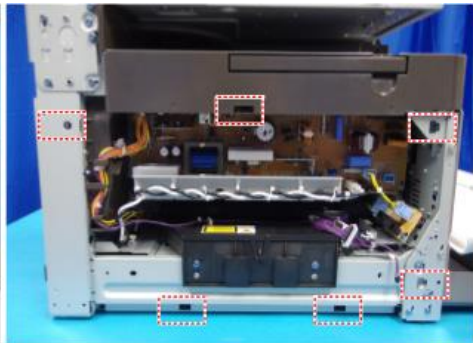
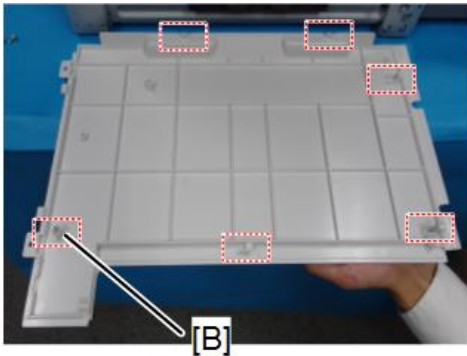
Note

- To remove the left lower cover [A], slide it to the rear.



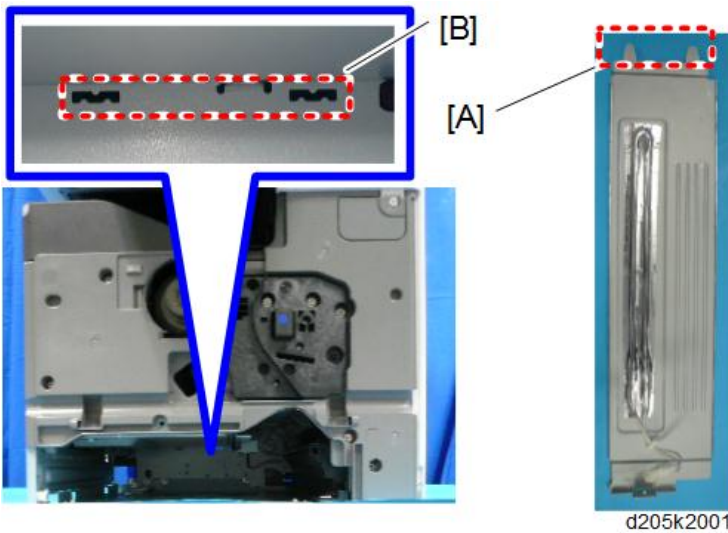
d205m4015

- Be careful not to damage the positioning boss [B] and tabs.



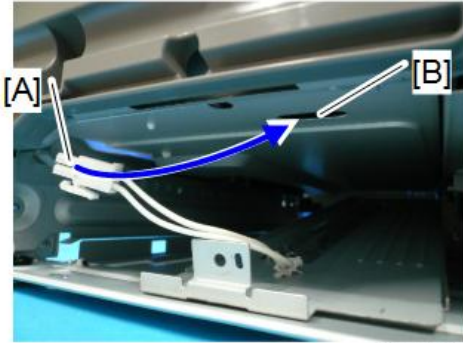
d205m4016

9. Insert the tip [A] of the dehumidification heater for main paper feed tray into the slit [B] in the back of the main paper feed tray.



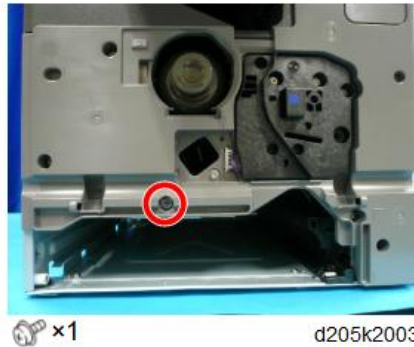
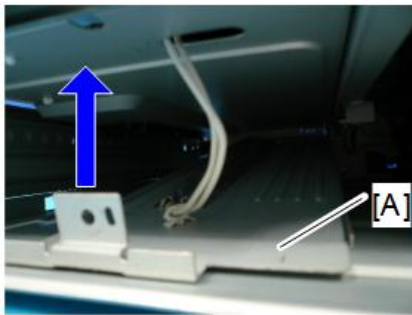
d205k2001

10. Pass the connector [A] of the dehumidification heater for main paper feed tray through the hole [B] in the upper part of the main paper feed tray.



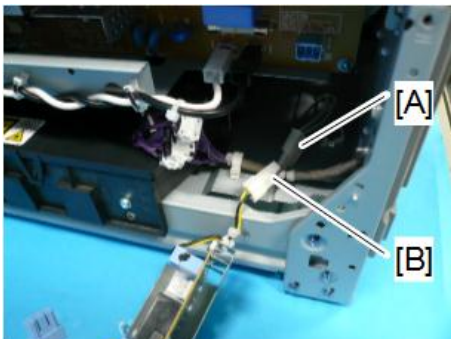
d205k2002

11. Set the dehumidification heater for main paper feed tray [A] and tighten it.



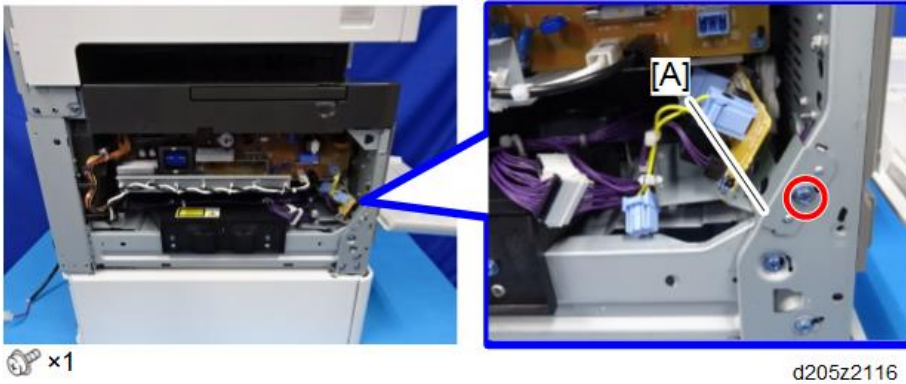
d205k2003

12. Connect the connector [A] of the dehumidification heater for main paper feed tray and the harness [B] (No.7 in the accessory list).

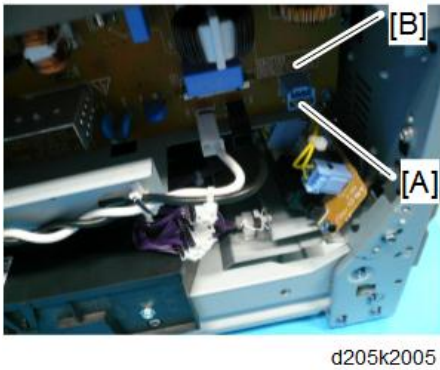


d205k2004

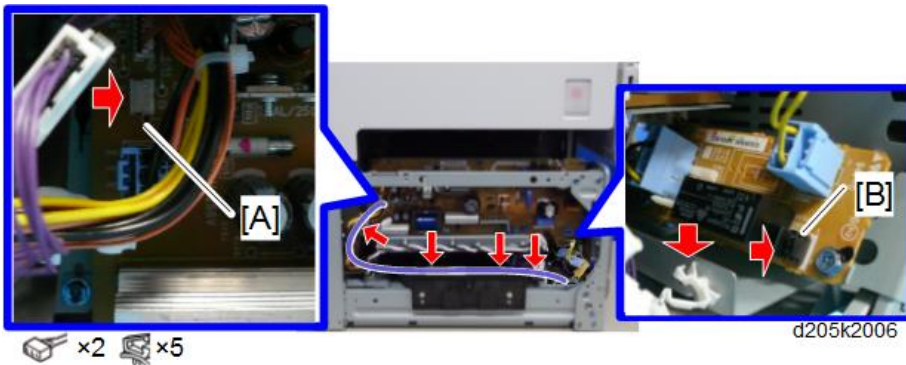
13. Install the DHB assembly [A].



14. Connect the connector [A] of the harness (short) to the PSU [B].



15. Connect the connector of the harness (long) to the connector [A] on the PSU and the connector [B] on the DHB.



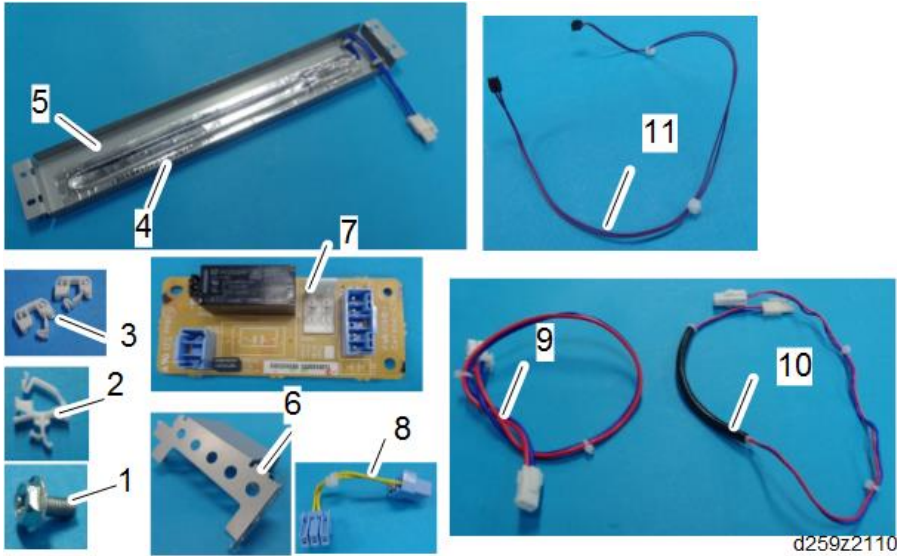
16. Reassemble the machine.

17. To activate the dehumidification heater, set the value of SP5-805-001 to "1".

Dehumidification Heater for Optional Paper Feed Tray

Accessory Check

No.	Description	Q'ty	Note
1	Tapping screw	6	
2	Clamp	11	
3	Edge saddle	2	Not used
4	Heater	1	
5	Bracket for heater	1	
6	Bracket for DHB	1	
7	DHB	1	
8	Harness (short)	1	DHB/PSU
9	Bank harness	1	
10	Relay harness	1	
11	Harness (long)	1	DHB/PSU
-	Decal	1	



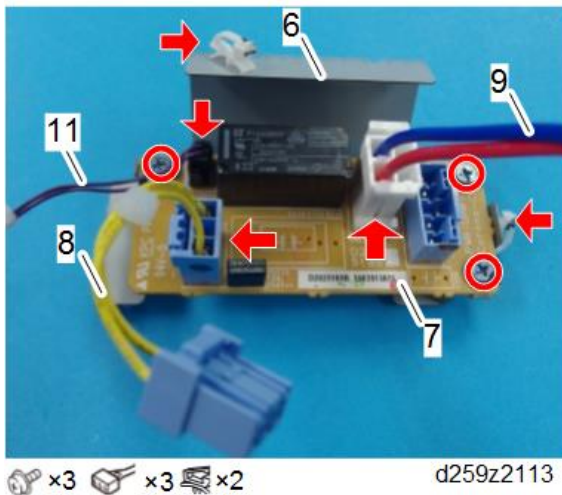
Installation Procedure

⚠ CAUTION

- You need two or more persons to lift the main machine. The main machine is highly unstable when it is lifted by one person, and may cause injury or property damage.
- Be sure to hold the specified positions when lifting the machine.

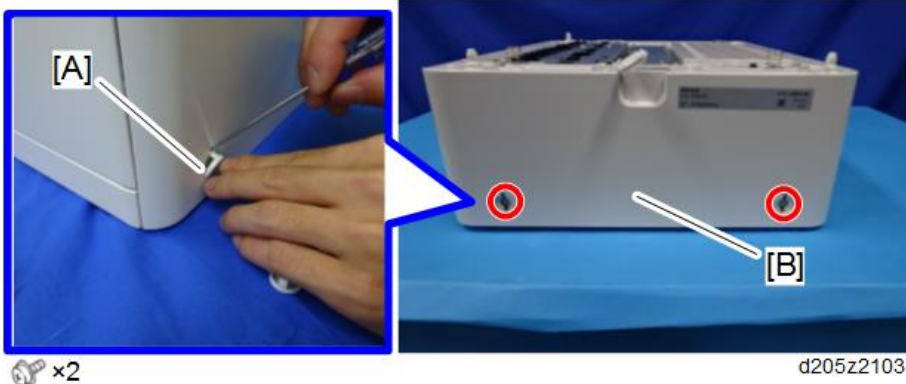
1. Assemble the DHB, bracket, and connectors as shown below.

The numbers in the following picture represents the number in the accessory list.



2. Remove the optional paper feed tray from the main machine (if it is installed).

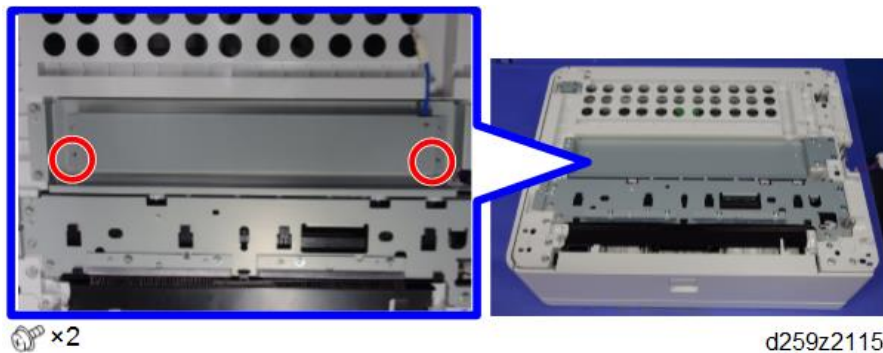
3. Remove the screw covers [A], and then remove the rear cover [B].



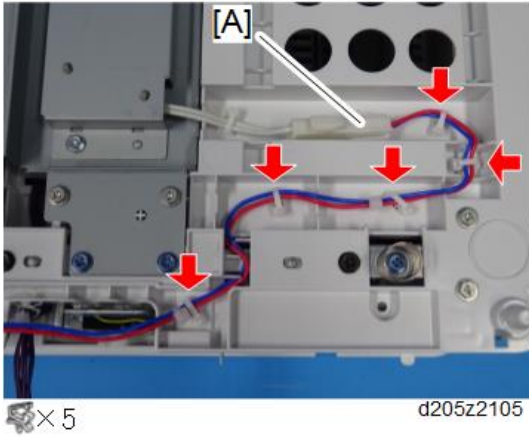
4. Assemble the heater and bracket.



5. Install the heater assembly.



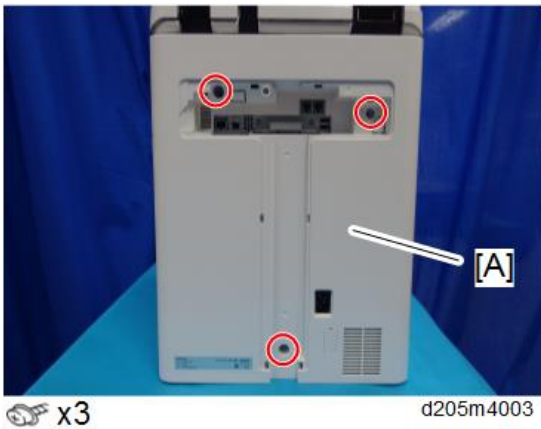
6. Route the relay harness [A].



7. Remove the T-shaped cover [A].

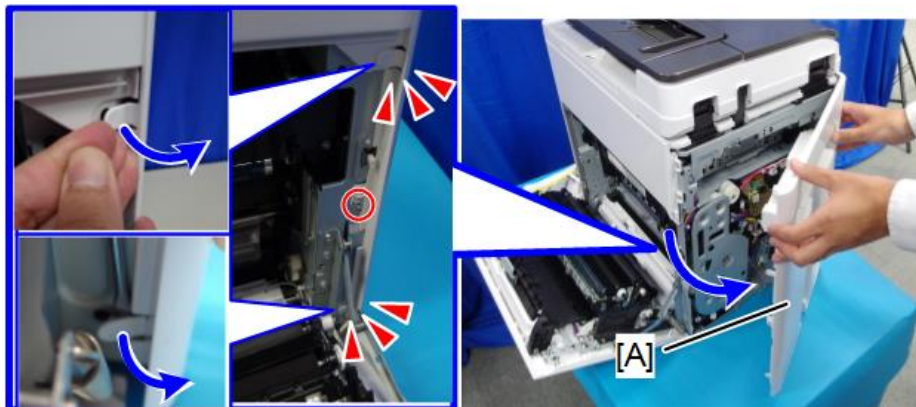


8. Remove the screws from the rear cover [A].



9. Open the right cover.

10. Remove the rear cover [A].

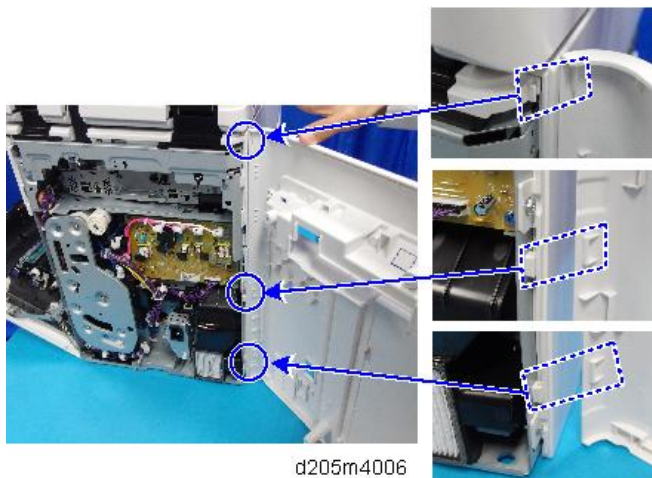


 x1

d205m4005

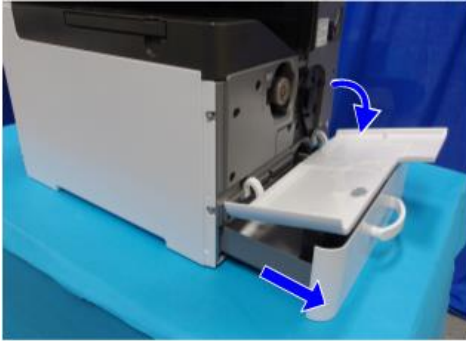
 **Note**

- Be careful not to damage the tabs at the rear of the left cover when removing or installing the rear cover.



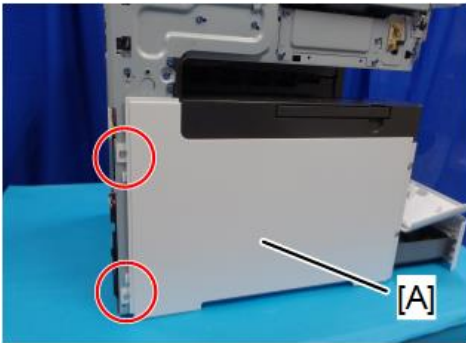
d205m4006

11. Open the front cover and pull the main paper feed tray.



d205z4014

12. Remove the left lower cover [A].

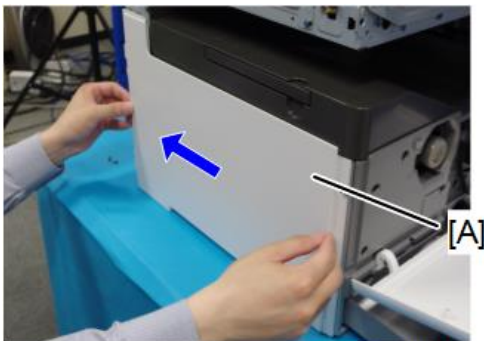


 x2

d205m4014

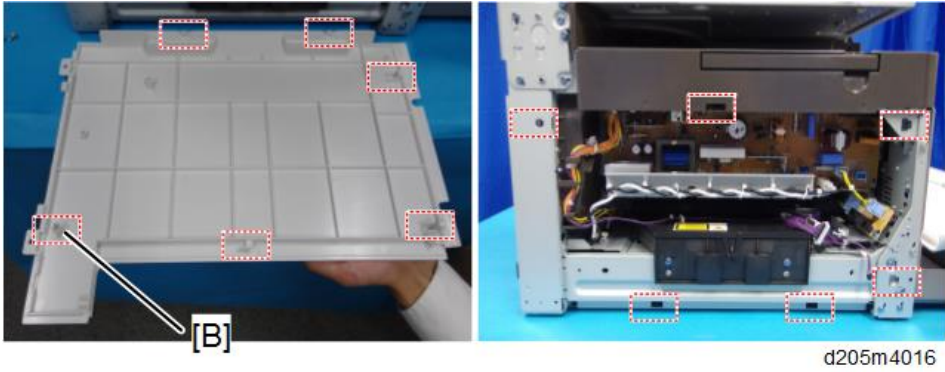
Note

- To remove the left lower cover [A], slide it to the rear.



d205m4015

- Be careful not to damage the positioning boss [B] and tabs.

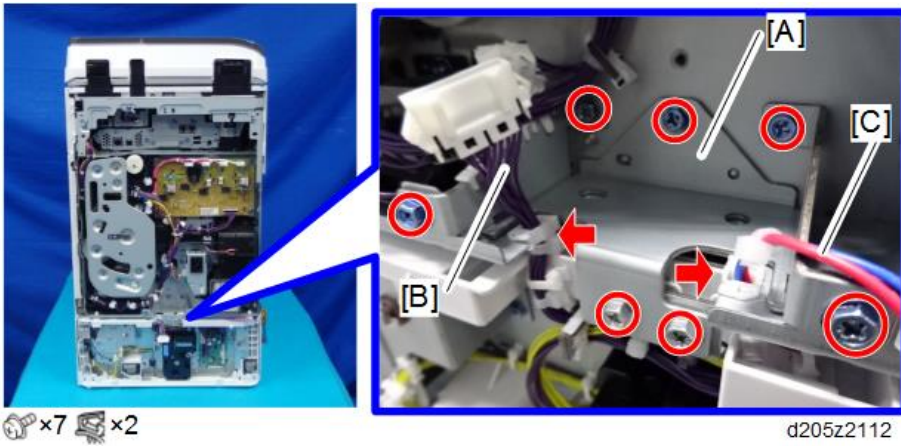


2

13. Set the main machine on the optional paper feed tray.

14. Do the following:

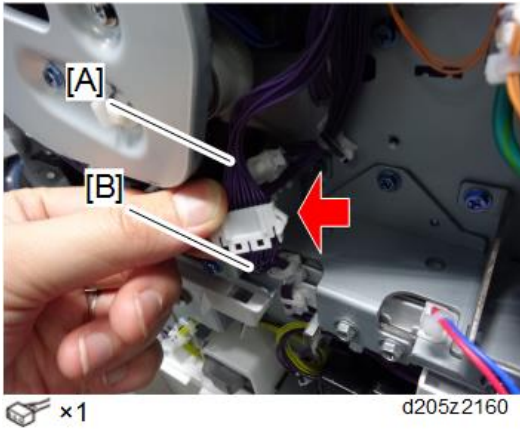
1. Attach the joint bracket [A].
2. Clamp the harness [B] and relay harness [C].



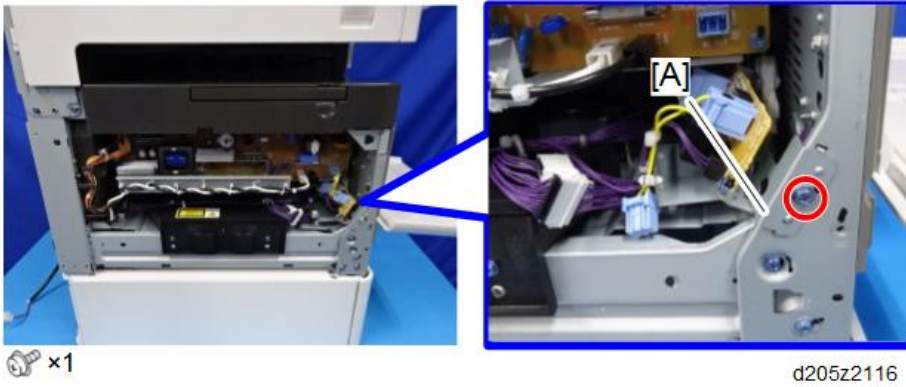
 x7  x2

d205z2112

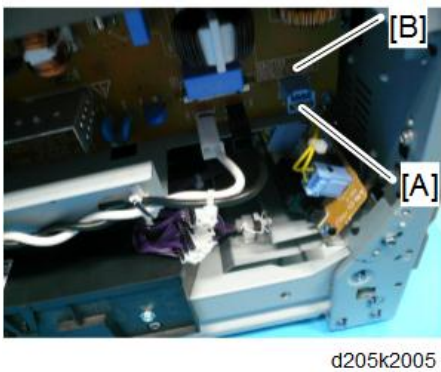
15. Connect the harness coming from the main machine [A] with the harness [B] clamped in step 14.



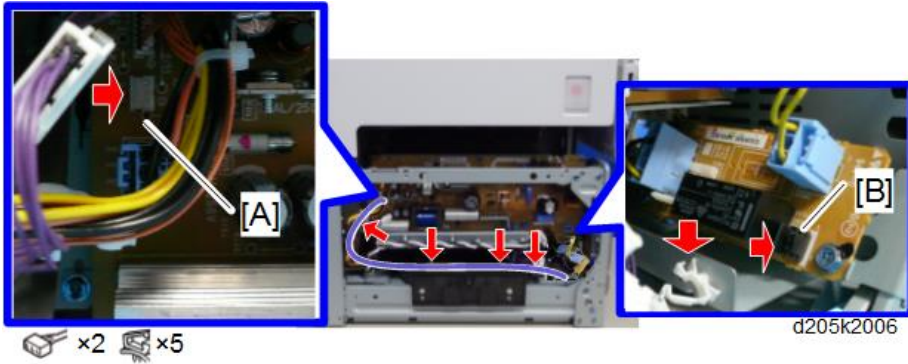
16. Install the DHB assembly [A].



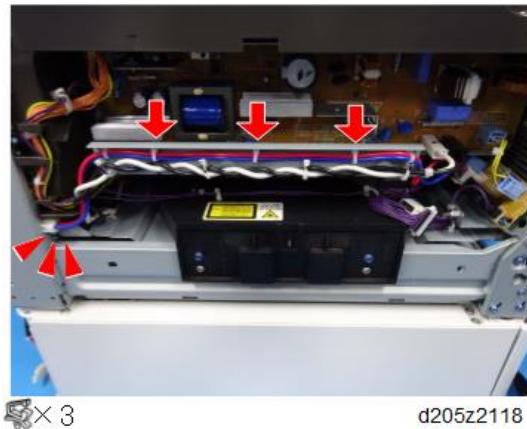
17. Connect the connector [A] of the harness (short) to the PSU [B].



18. Connect the connector of the harness (long) to the connector [A] on the PSU and the connector [B] on the DHB.

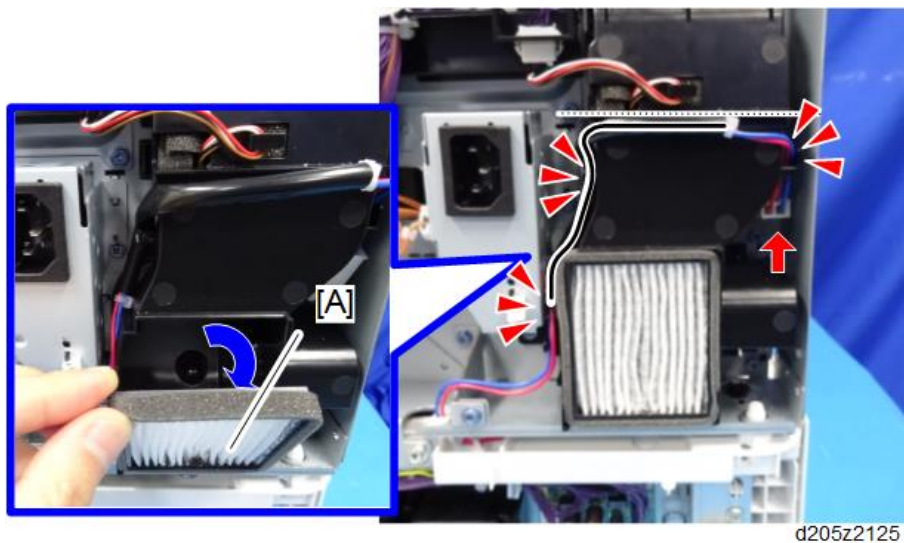


19. Route the bank harness to the rear of the machine.

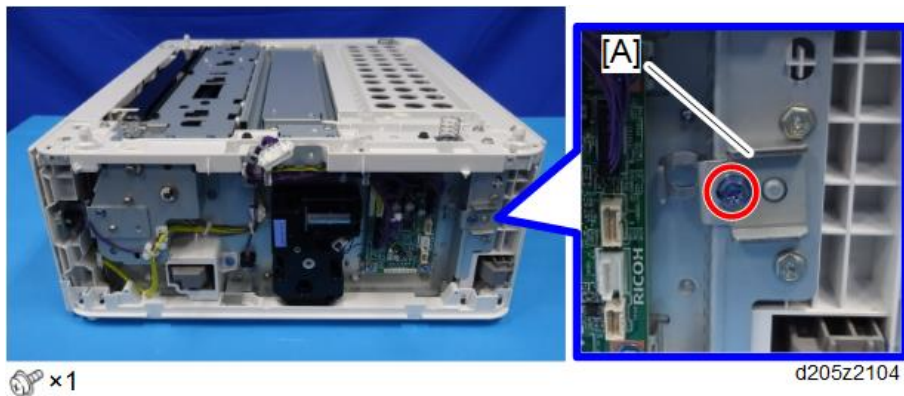


20. Remove the dust filter [A] and route the relay harness to join the bank harness at the rear of the machine.

Attach the filter again after you finished routing.



21. Remove the special tool [A].



22. Remove the main paper feed tray.

23. Tighten the optional paper feed tray to the main machine using the special tool (removed in step 21).



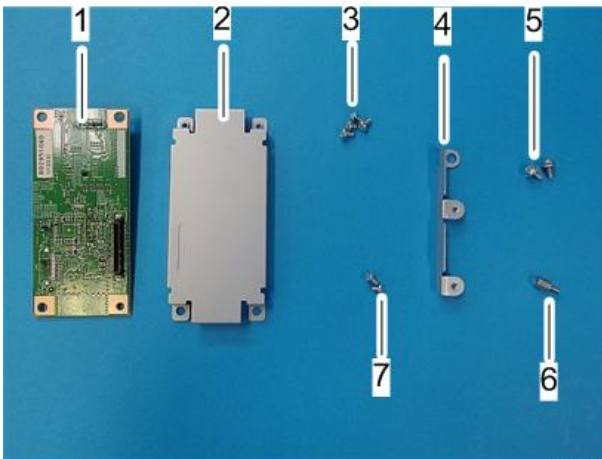
24. Reattach the special tool at the storage position.
25. Reassemble the machine.

Copy Data Security Unit Type G

Accessory Check

2

No.	Description	Q'ty	For this model
1	ICIB-3	1	Yes
2	Bracket	1	Yes
3	Screws: M3x6	4	Yes* *Uses only two screws for this model
4	Small bracket	1	Not used
5	Screws: M3x4	2	Not used
6	Spacer:SQ-7	1	Not used
7	Screws: M3x8	2	Not used



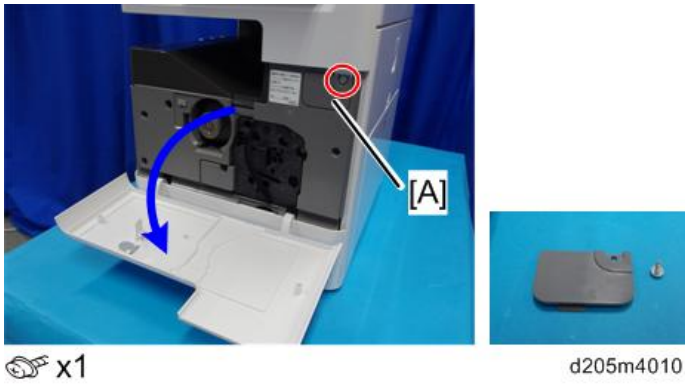
d197f0132

Installation Procedure

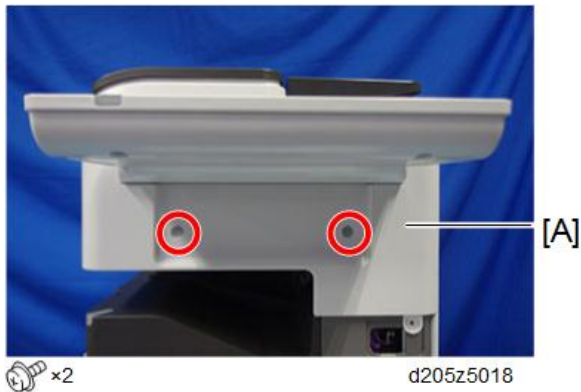
⚠ CAUTION

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

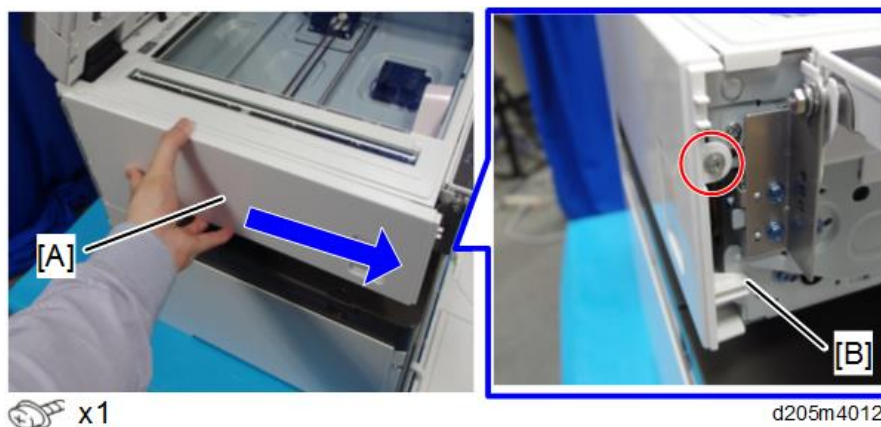
1. Open the front cover and remove the cover [A].



2. Remove the front upper cover [A].

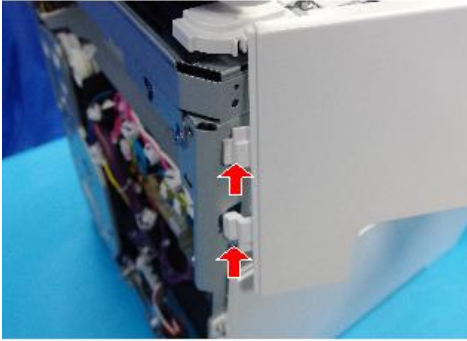


3. Slide and remove the left upper cover [A]. (Positioning boss [B])



Note

- Be careful not to damage the two tabs at the rear when removing or installing.



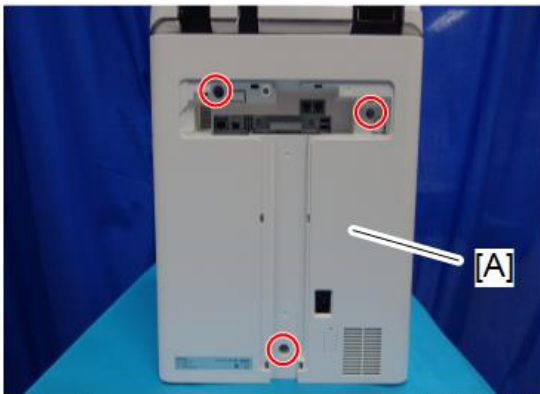
d205m4013

4. Remove the T-shaped cover [A].



d205m4002

5. Remove the screws [A].

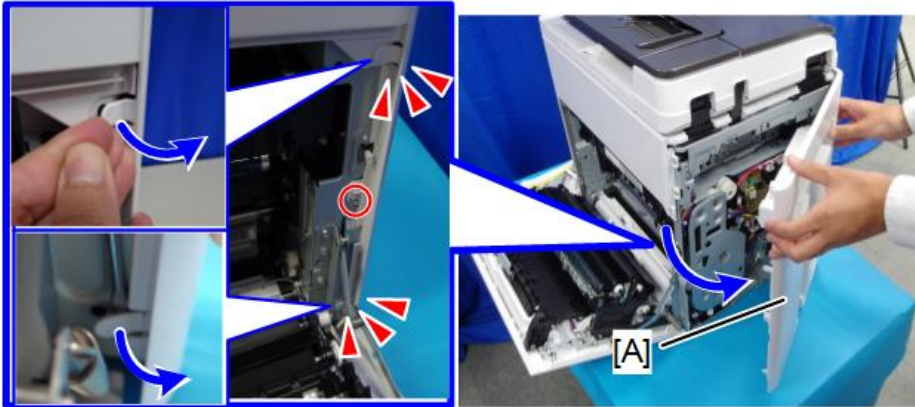


 x3

d205m4003

6. Open the right cover.

7. Remove the rear cover [A]. (tab x2)

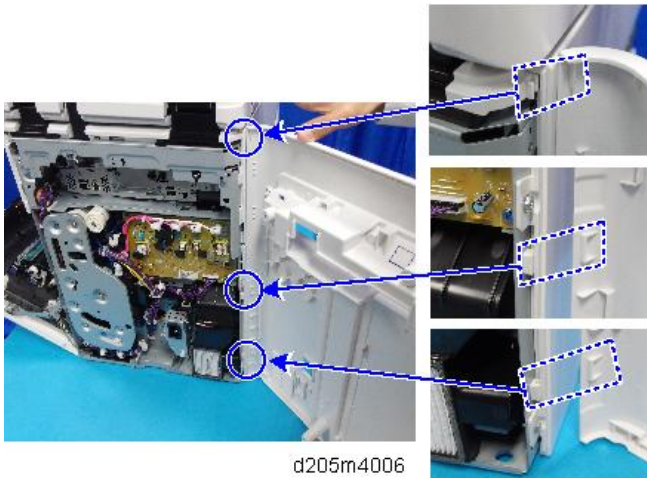


⌀ x1

d205m4005

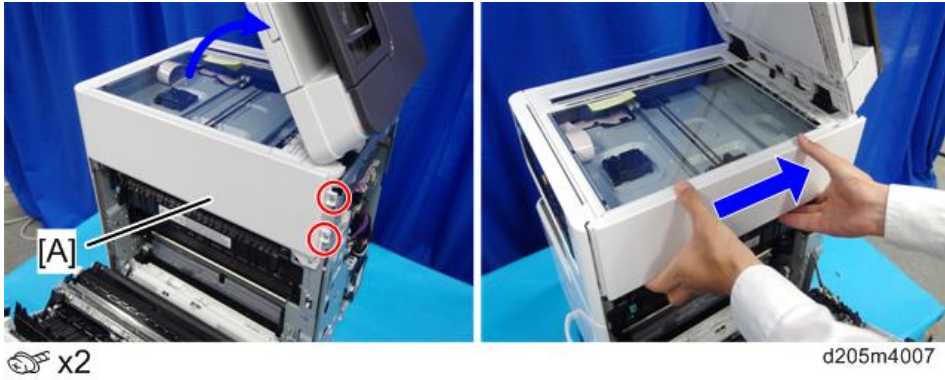
↓ **Note**

- Be careful not to damage the tabs at the rear of the left cover when removing or installing the rear cover.



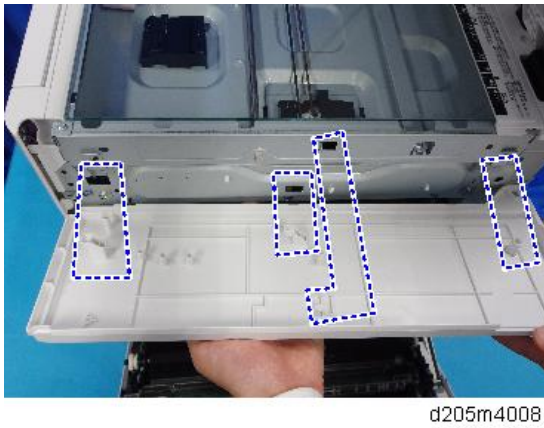
d205m4006

8. Slide and remove the right upper cover [A].



Note

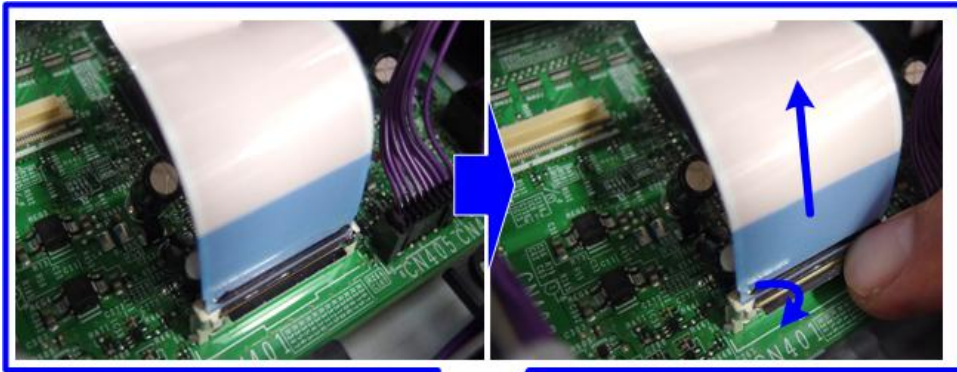
- Be careful not to damage the positioning boss and the tabs on the cover when you remove or install.



9. Slide the scanner unit about 10 cm to the right.

10. Release the FFC on the BiCU.

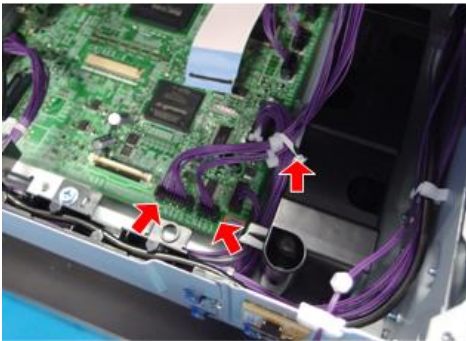
Unlock the connector and release it.



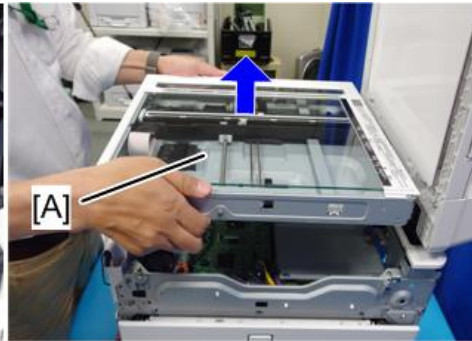
 x1

d205m4031

11. Release all the other harnesses and remove the scanner unit [A].

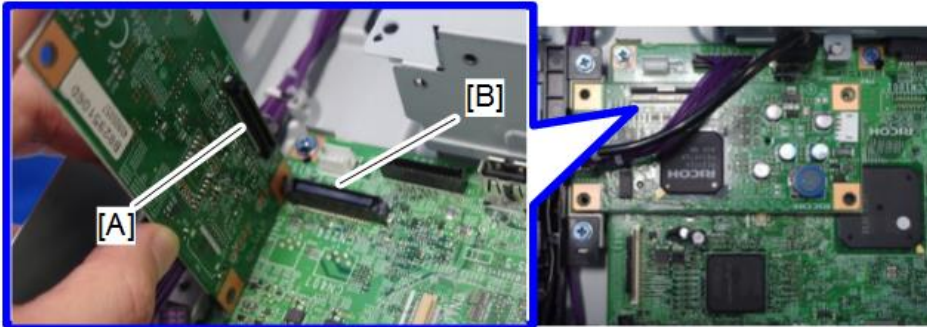


 x1,  x2



d205m4032

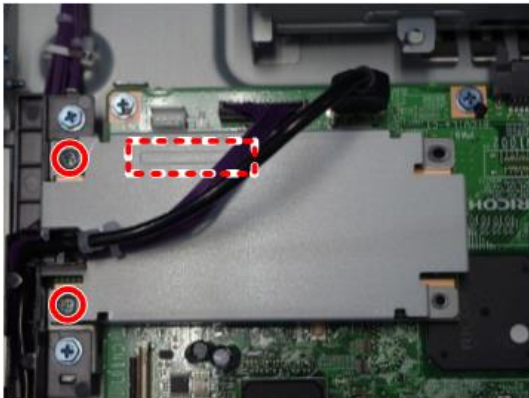
12. Connect the connector [A] on the ICIB-3 and the connector (CN204) [B] on the BiCU.



d205z2133

13. Attach the bracket to the ICIB-3.

Make sure that the connector and the dent enclosed in the red-dotted line below fits correctly.



 x2

d205z2132

14. Plug in the machine and turn ON the main power.

 **Note**

- If this option is installed correctly, the LED on the ICIB-3 blinks.

15. Reassemble the machine.

User Tool Setting

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

4. Check the operation.

Note

- The machine will issue an SC165 error if the machine is turned ON with the ICIB-3 removed and the "Data Security for Copying" feature set to "ON".
- The machine will issue an uncertain SC165 error if ICIB-3 is defective when the machine is turned ON and the "Data Security for Copying" feature is set to "OFF".
- When you remove this option from the machine, first set this feature to "OFF" with the user tool before removing this board. If you forget to do this, "Data Security for Copying" feature cannot appear in the user tool setting. Also, SC165 will appear every time the machine is turned ON, and the machine cannot be used.

5. Make sure that the machine can recognize the option.

Enhanced Security HDD Option Type M10 (D792-09)

2

Accessory Check

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



d191b0076

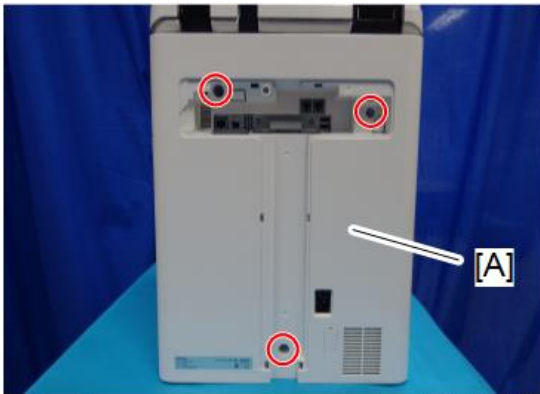
Installation Procedure

1. Remove the T-shaped cover [A].



d205m4002

2. Remove the screws from the rear cover [A].

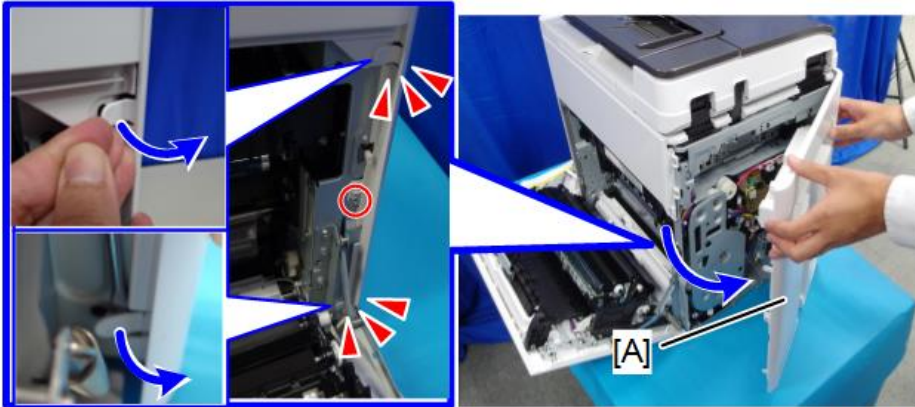


 x3

d205m4003

3. Open the right cover.

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

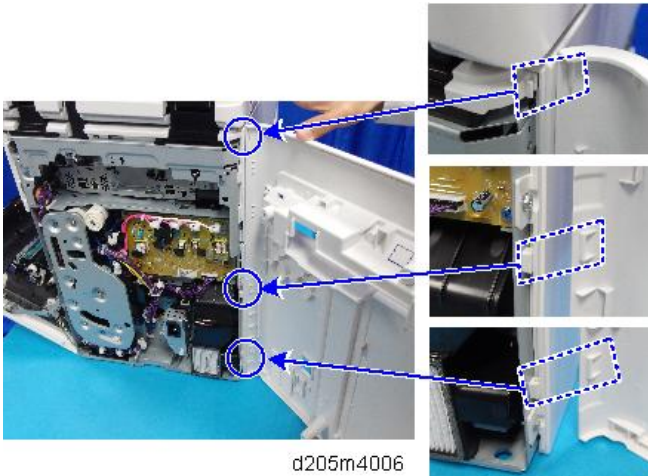


 x1

d205m4005

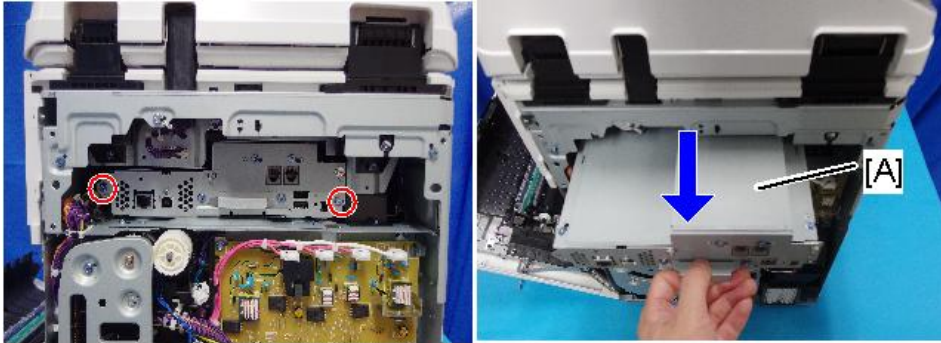
Note

- Be careful not to damage the tabs at the rear of the left cover when removing or installing the rear cover.



d205m4006

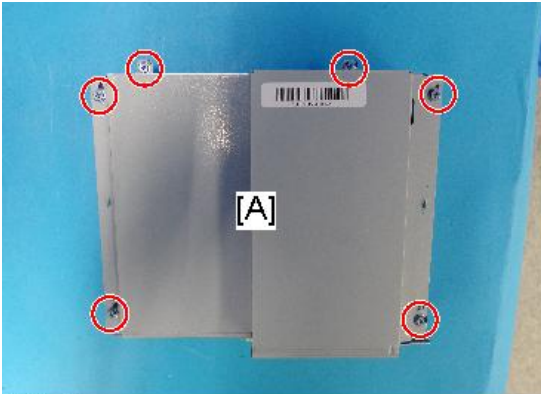
5. Remove the controller box [A].



 x2

d205m4107

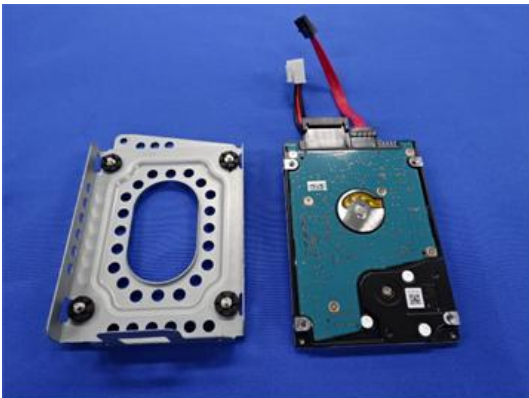
6. Remove the controller box's upper cover [A].



 x6

d205m4109

7. Remove the standard HDD installed.



d196z2120

8. Disconnect the cables from the standard HDD. (📦 x 2)



d191b0077

9. Unpack the enhanced security HDD.



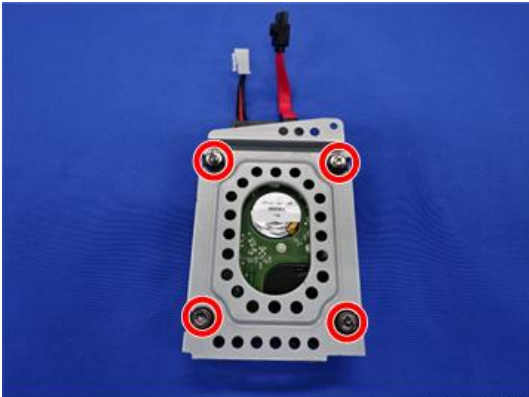
d191b0078

10. Connect the two cables to the enhanced security HDD. (📌 × 2)



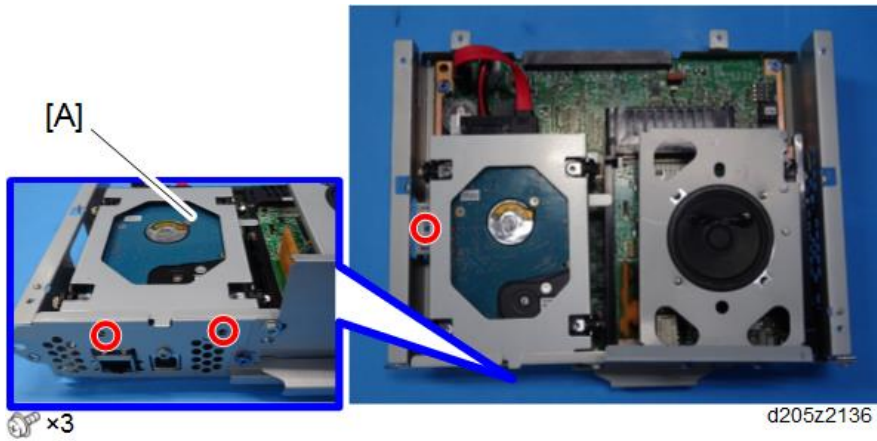
d191b0079

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



d196z2121

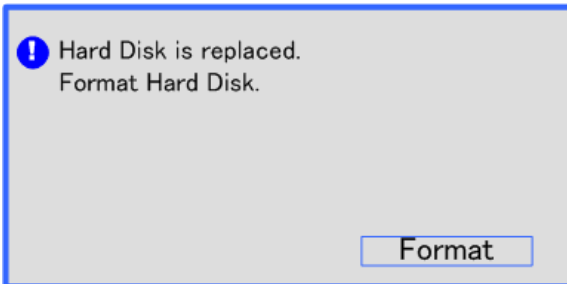
12. Install the HDD bracket in the controller box.



13. Reassemble the machine.

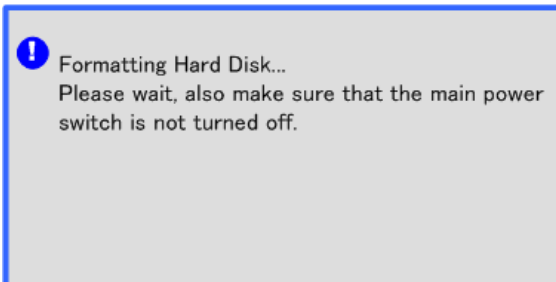
After Installing the HDD

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



d191b0081

2. Touch [Format].

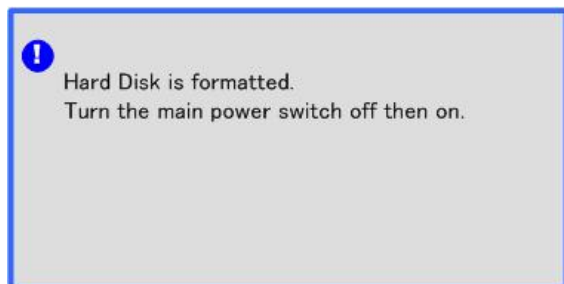


d191b0082

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

★ Important

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



d191b0083

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

★ Important

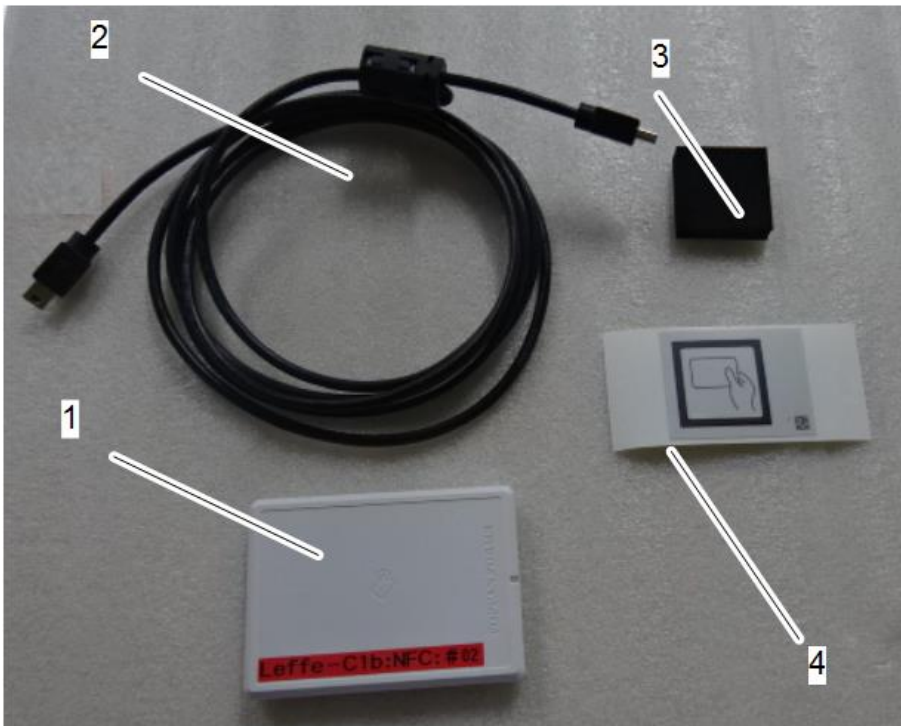
- If the HDD Authentication Code is not registered, the function of the enhanced security HDD is not activated.

NFC Card Reader Type M15 (D3B4)

Accessory Check

2

No.	Item	Q'ty
1	NFC Card Reader	1
2	USB cable	1
3	Cushion	1
4	Decal	1
-	EMC Address	1
-	Caution chart	1



d205z2220

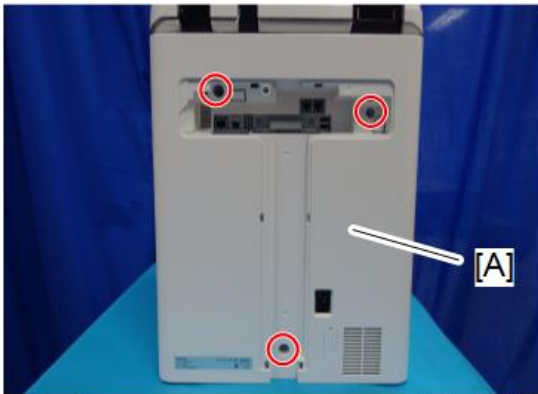
Installation Procedure

1. Remove the T-shaped cover [A].



d205m4002

2. Remove the screws from the rear cover [A].

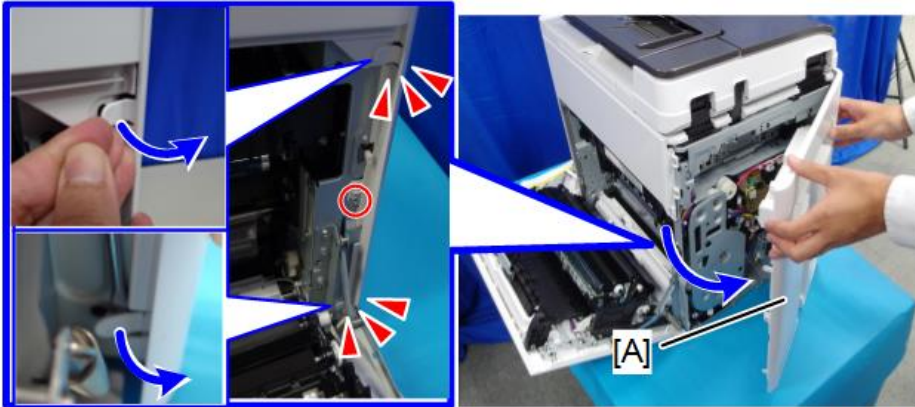


x3

d205m4003

3. Open the right cover.

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

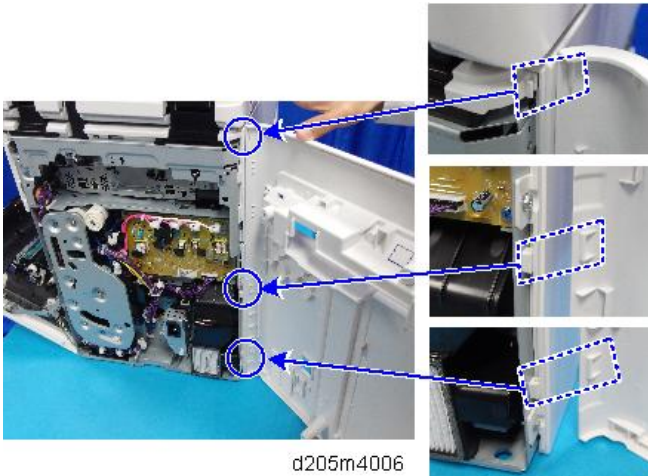


 x1

d205m4005

 **Note**

- Be careful not to damage the tabs at the rear of the left cover when removing or installing the rear cover.



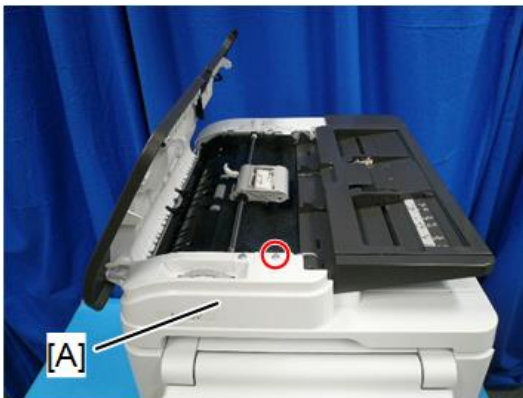
d205m4006

5. Open the ARDF feed cover [A].



d205k4001

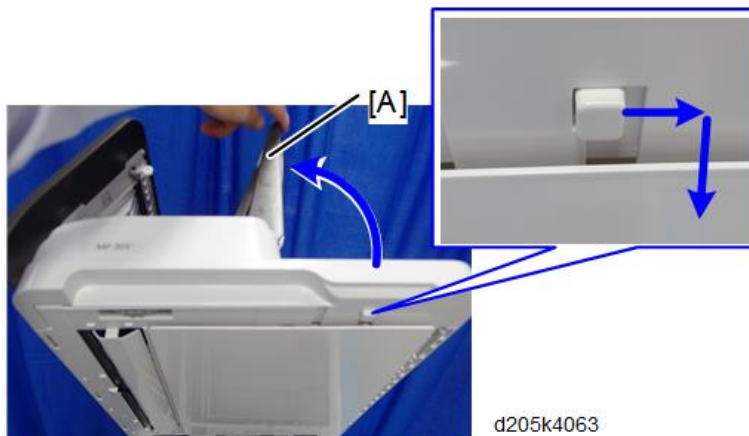
6. Remove the screw from the ARDF front cover [A].



 x1

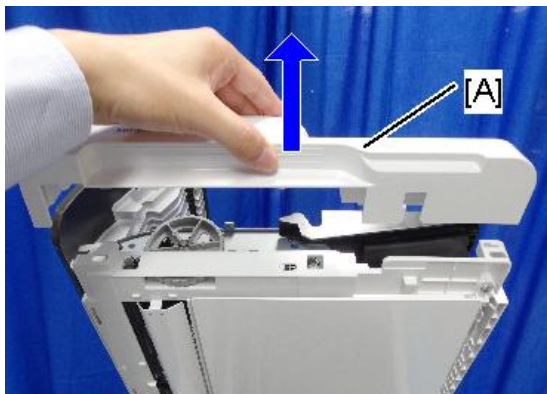
d205k4062

7. Open the copy holder [A] and then release the lock.



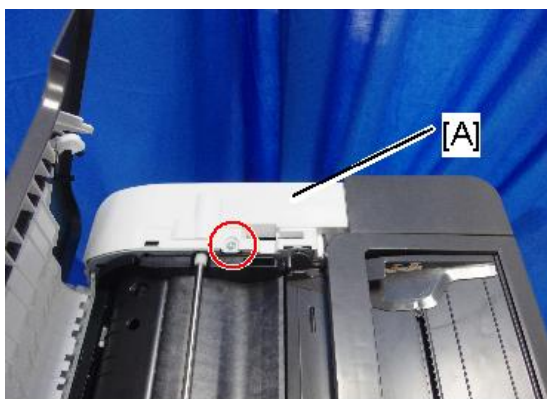
d205k4063

8. Remove the ARDF front cover [A].



d205m4064

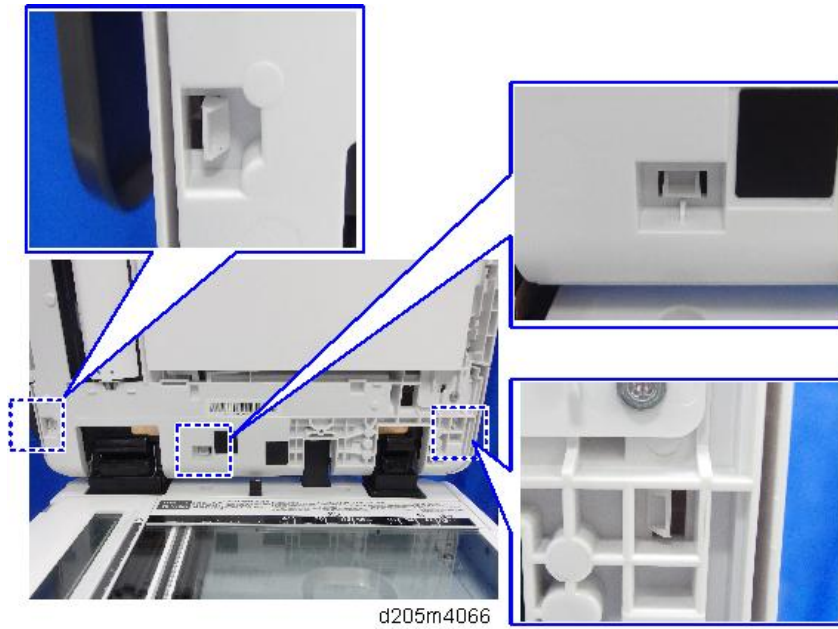
9. Remove the screw from the ARDF rear cover [A].



 X1

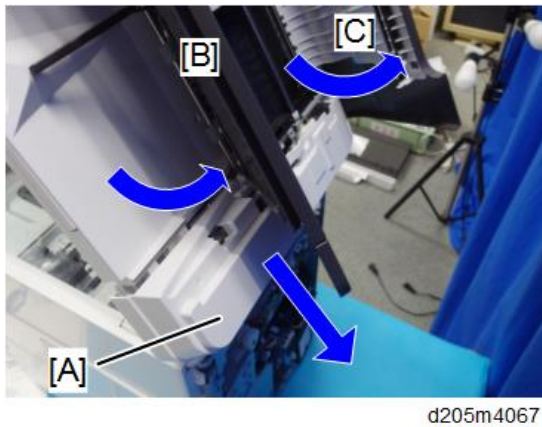
d205m4065

10. Release the tabs (3 points).



2

11. Open the copy holder [B] and the ARDF feed cover [C]. And then remove the ARDF rear cover [A].



12. Attach the cushion [A] included in the accessories to the back of the NFC card reader.



d205z2221

13. Connect the USB cable to the NFC card reader.

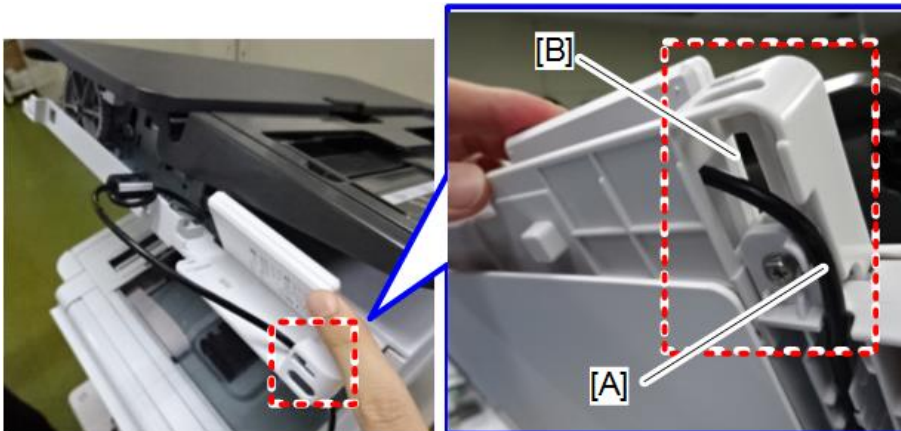
Note

- Connect the card reader to the ferrite core side.



d205z2222

14. Open the ARDF and pass the USB cable [A] through the hole [B] in the front of the ARDF.

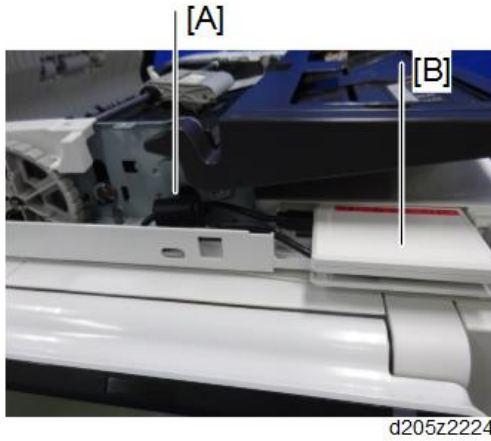


d205z2300

15. Place the NFC card reader.

Make sure that the NFC card reader [B] fits inside the ARDF frame.

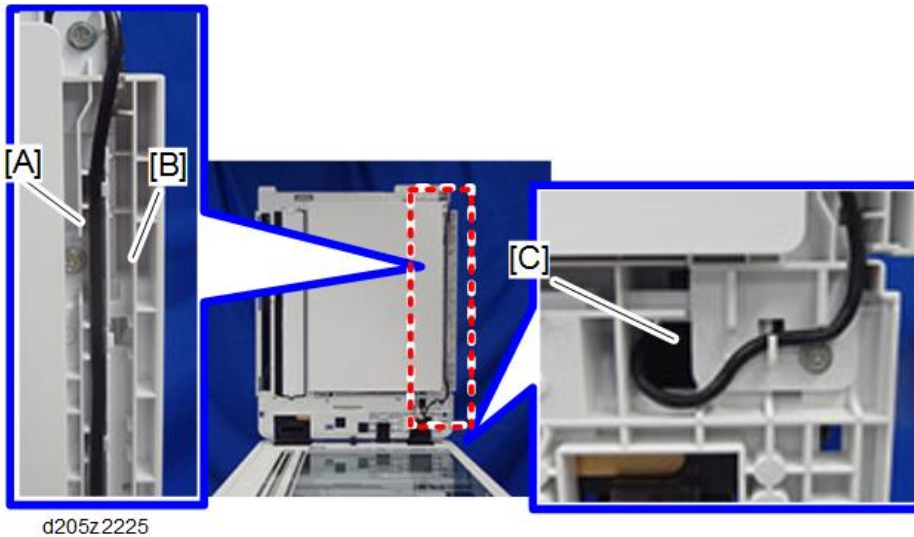
Also make sure that the ferrite core [A] fits inside the ARDF frame.

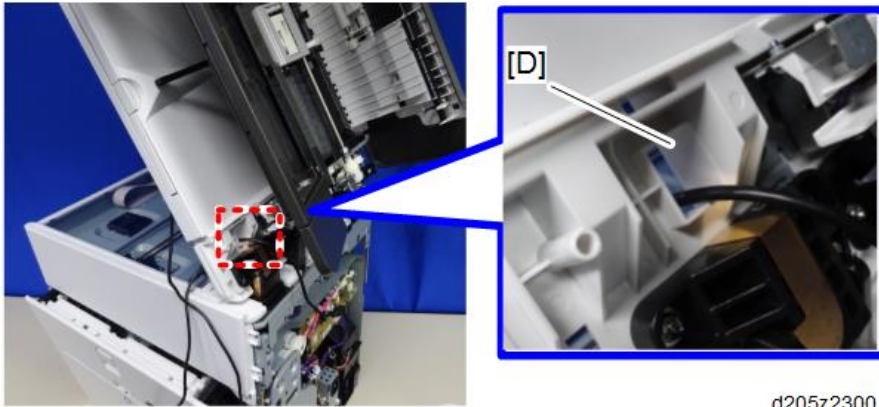


2

16. Attach the ARDF front cover.**17. Route the USB cable along the cable guide ([A] or [B]) and pass it through the hole [C].**

[D] shows the hole [C] from another angle .

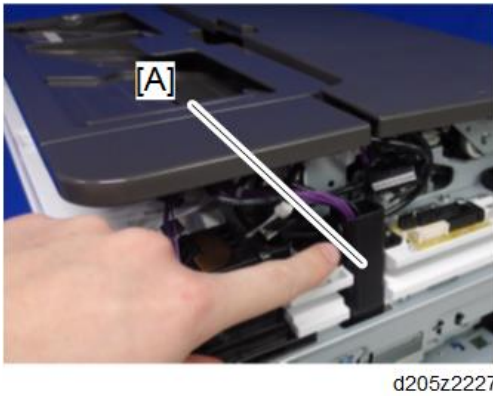




Note

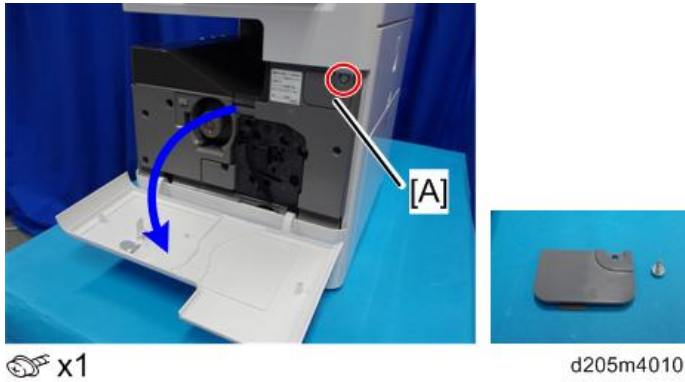
- There are two ways for routing USB cable:
- Narrower route [A]: for product provided by RICOH.
Wider route [B]: for product provided by third-party.

18. Pass the USB cable through the ARDF hinge [A].



19. Remove the front upper cover.

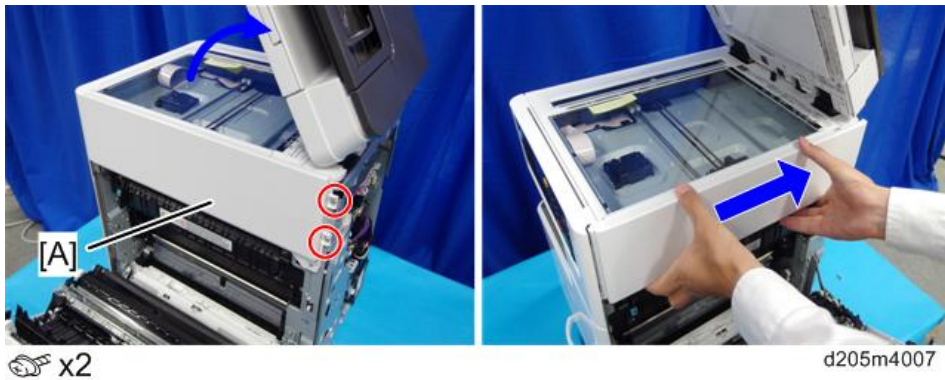
1. Open the front cover and remove the cover [A].



2. Remove the front upper cover [A].

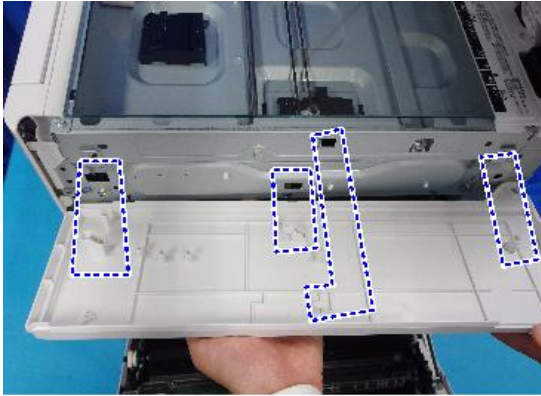


20. Slide and remove the right upper cover [A].



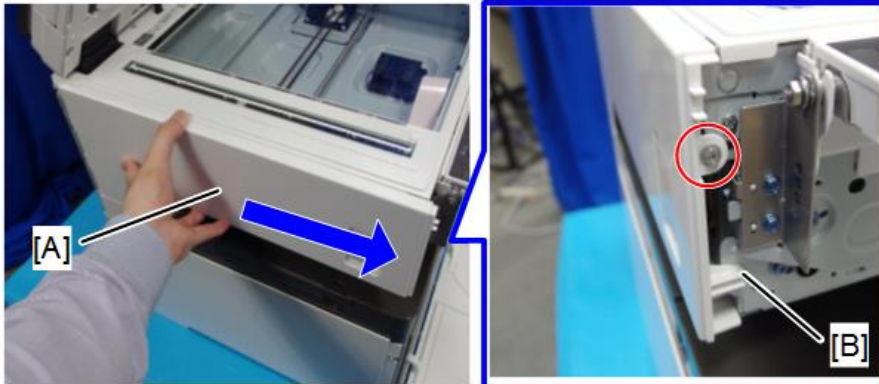
Note

- Be careful not to damage the positioning boss and the tabs on the cover when you remove or install.



d205m4008

21. Slide and remove the left upper cover [A]. (Positioning Boss [B])



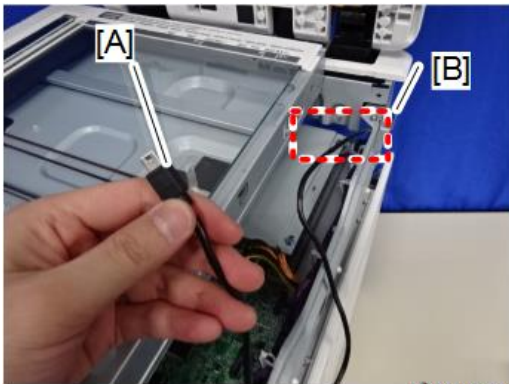
 x1

d205m4012

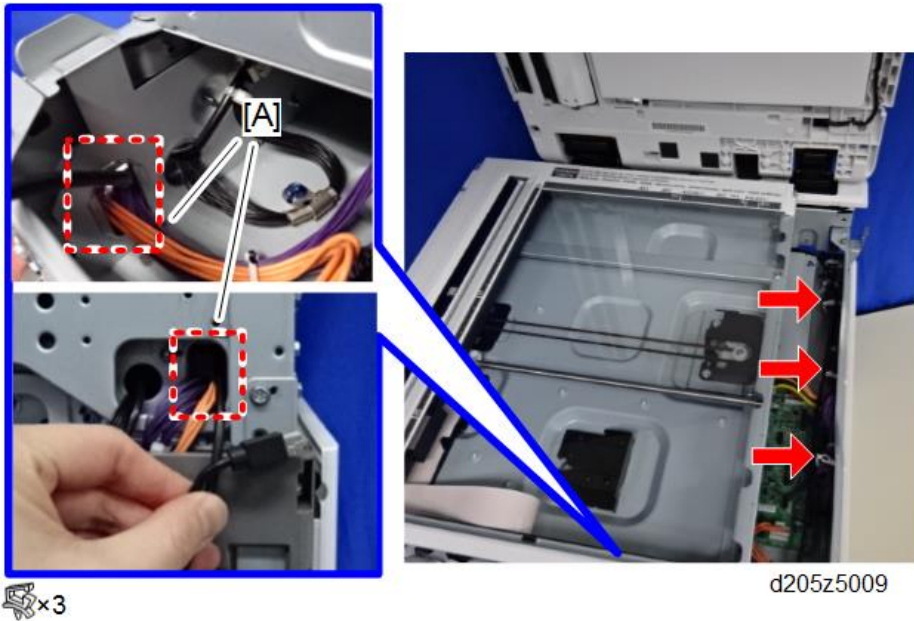
22. Remove the screws and slide the scanner unit about 10 cm to the left.



23. Pass the USB cable [A] to the front side through the gap [B] on the rear.

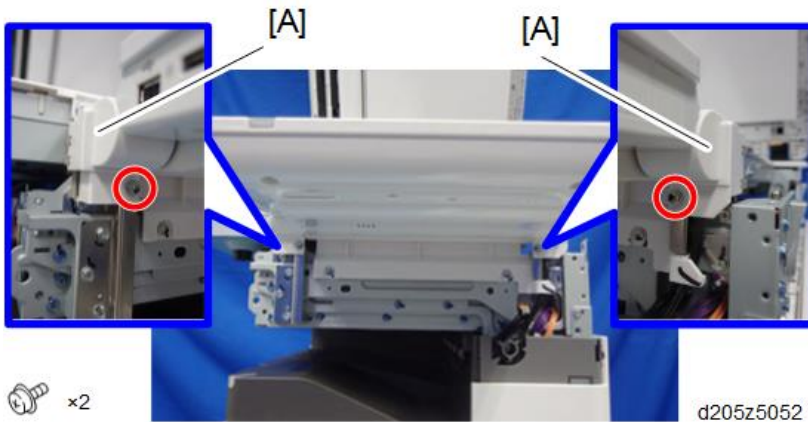


24. Route the USB cable and pass it through the hole [A] in the front of the machine.

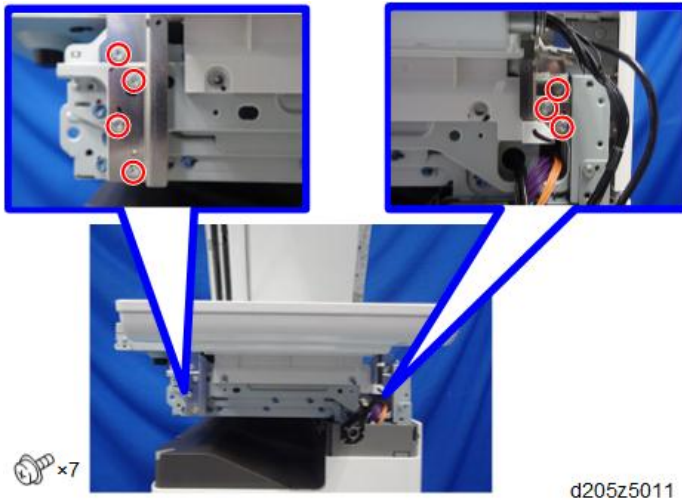


25. Remove the operation panel.

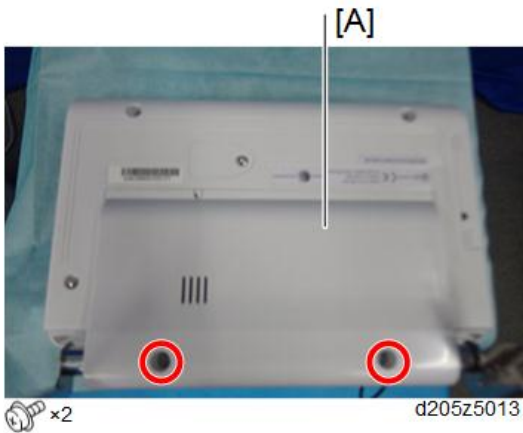
1. Place the service mat on top of the ARDF.
2. Remove the brackets [A] of the operation panel unit.



3. Remove the hinges of the operation panel unit.



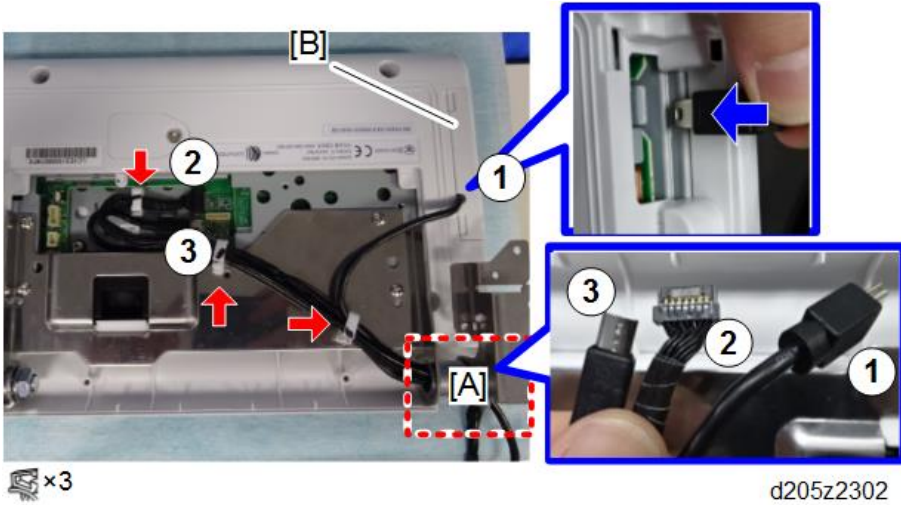
4. Remove the operation panel unit and put it on the service mat.
5. Remove the rear cover [A] of the operation panel unit.



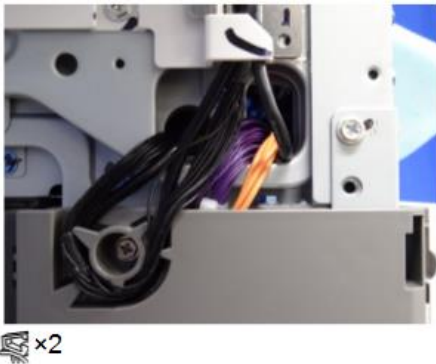
26. Remove the operation panel's USB cable and connector that were originally connected.

27. Do the following:

1. Remove the operation panel's I/F cover [B].
2. Pass the NFC's USB cable (①), then the connector (②: originally connected), and the USB connector (③: originally connected) through the connector duct [A]. Check the harness number and connecting location in the photo below.
3. Attach the operation panel's I/F cover [B]. Note that the USB cable fits into the slit.



- 28. Reassemble the operation panel unit.
- 29. Reinstall the operation panel unit.
- 30. Route the cables as shown below.



Note

- It is not necessary to clamp and hook the cable if you use a third party product that has a thick cable.
- However, wherever possible, arrange the cables to avoid touching the components inside the machine.

- 31. Reattach the covers, and reassemble the machine.

32. Attach the decal on the area [A] as shown below.



d205z4022

33. Turn ON the main power and check the NFC card reader operation.

Optional Counter Interface Unit Type M12

Accessory Check

2

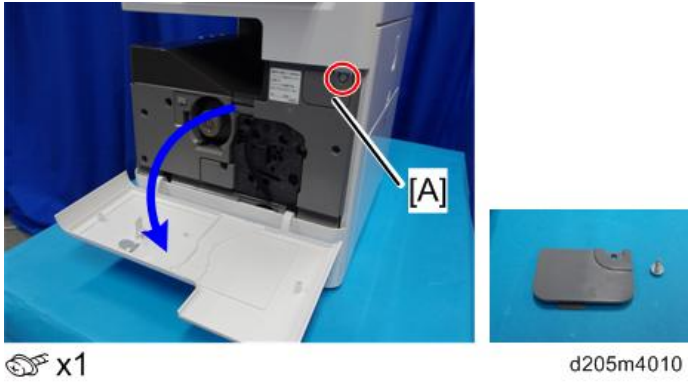
No.	Description	Q'ty
1	MKB Board	1
2	EMC Address Decal	1
3	Tapping Screw: M3x6	4
4	Harness Clamp: LWS-0711	1
5	Stud	4
6	Harness Band	1
7	Harness	1



d205z2163

Installation Procedure

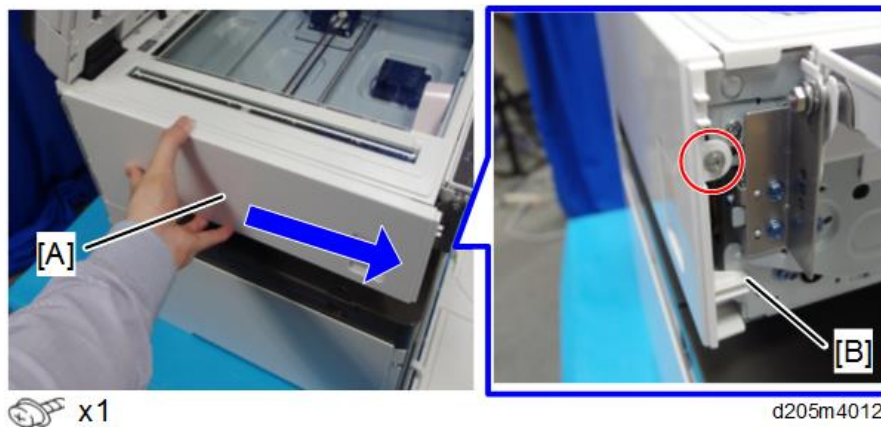
1. Open the front cover and remove the cover [A].



2. Remove the front upper cover [A].

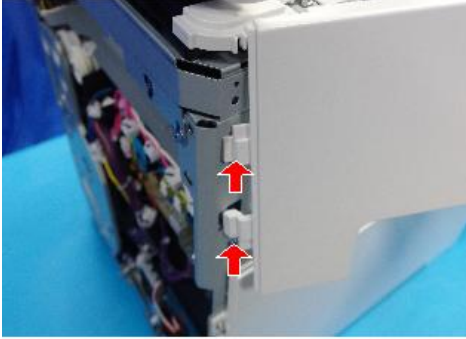


3. Slide and remove the left upper cover [A]. (Positioning Boss [B])



Note

- Be careful not to damage the two tabs at the rear when removing or installing.



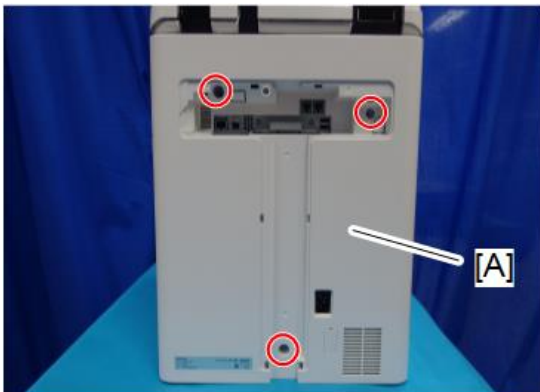
d205m4013

4. Remove the T-shaped cover [A].



d205m4002

5. Remove the screws from the rear cover [A].

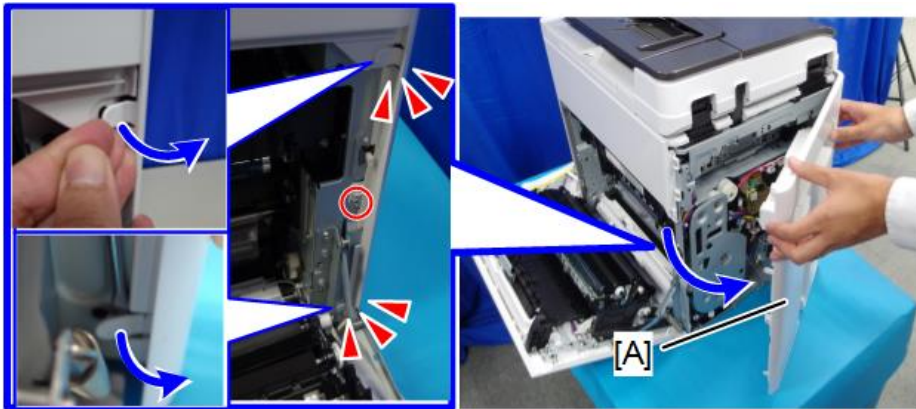


 x3

d205m4003

6. Open the right cover.

7. Remove the rear cover [A]. (tab x2)

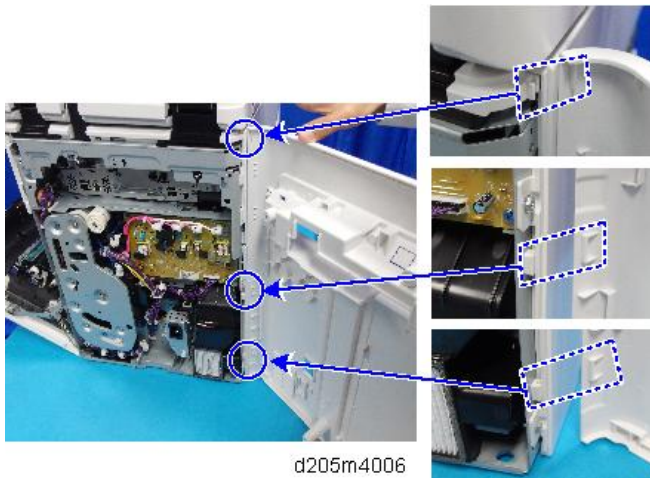


 x1

d205m4005

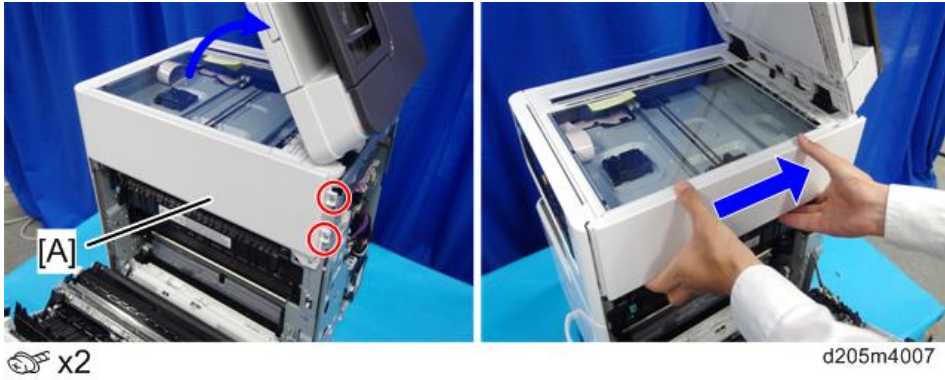
Note

- Be careful not to damage the tabs at the rear of the left cover when removing or installing the rear cover.



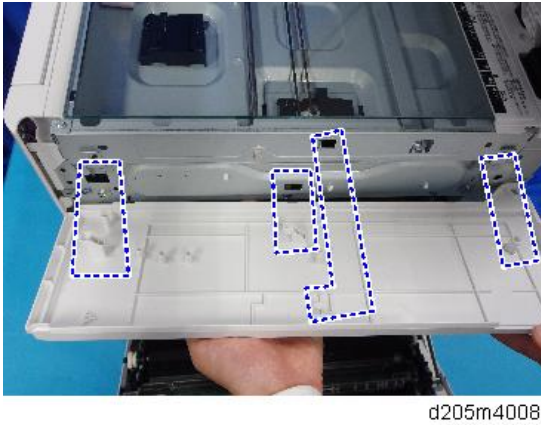
d205m4006

8. Slide and remove the right upper cover [A].



Note

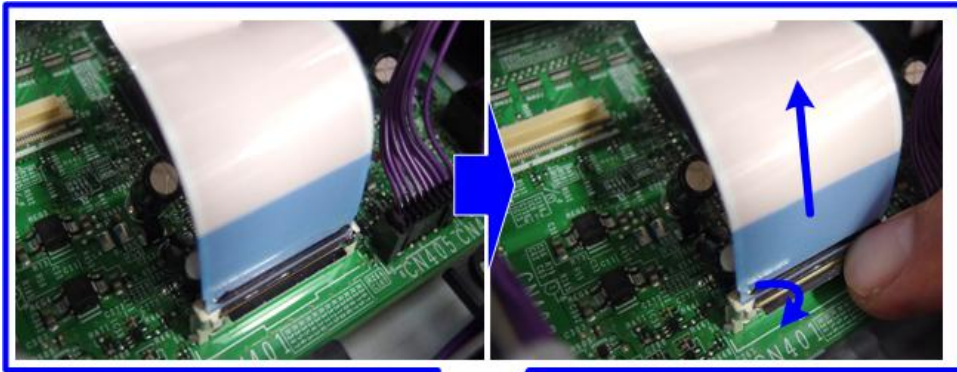
- Be careful not to damage the positioning boss and the tabs on the cover when you remove or install.



9. Slide the scanner unit to the right.

10. Release the FFC on the BiCU.

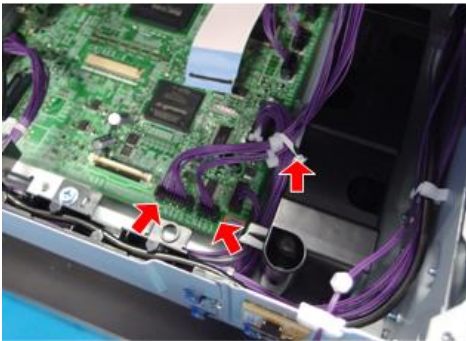
Unlock the connector and release it.



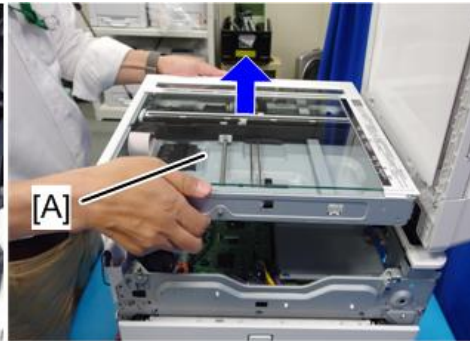
 x1

d205m4031

11. Release all the other harnesses and remove the scanner unit [A].

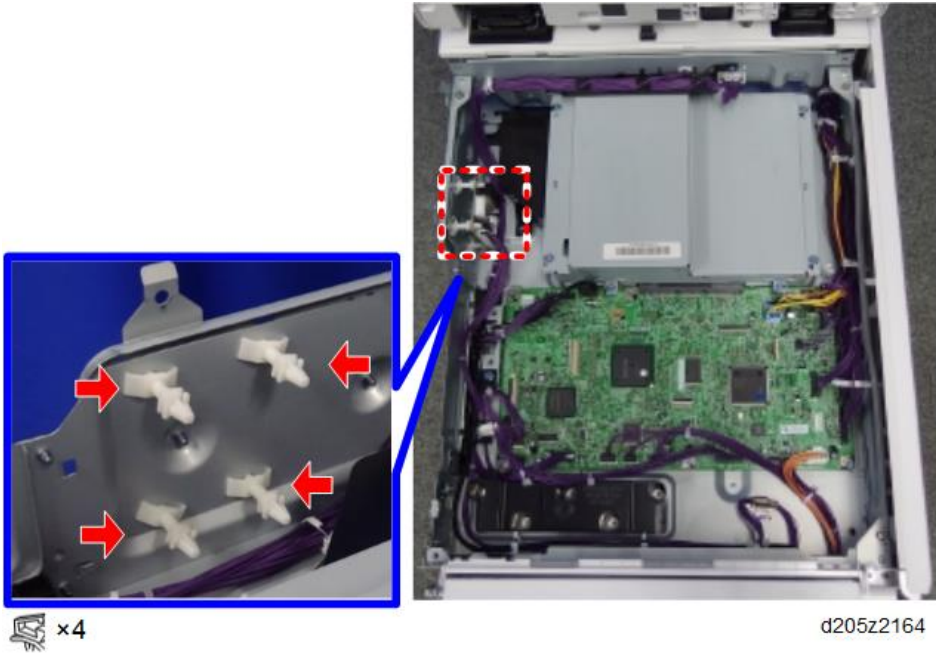


 x1,  x2

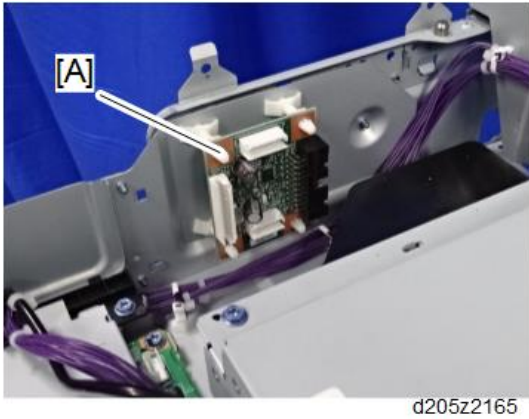


d205m4032

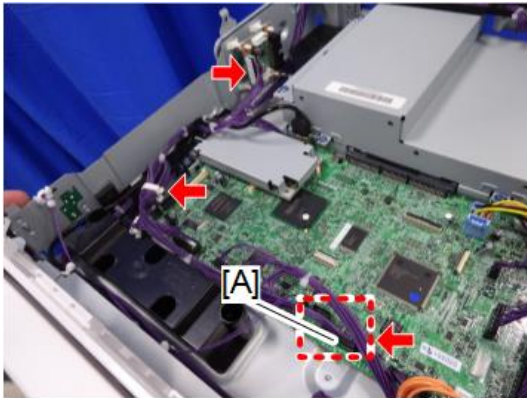
12. Attach the studs to the mainframe.



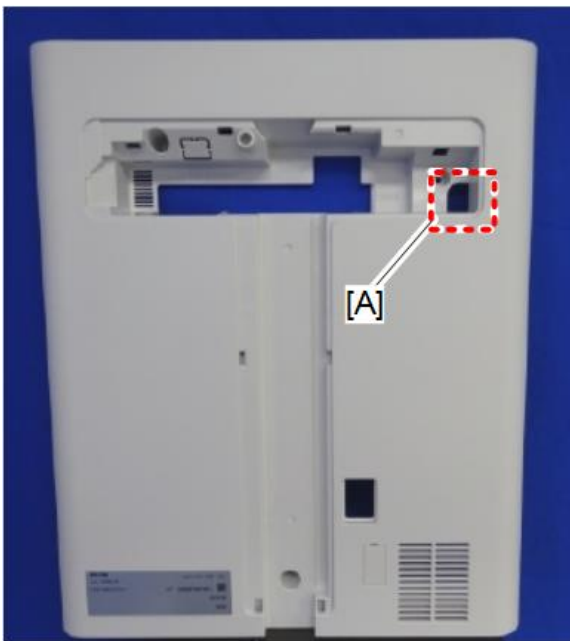
13. Install the MKB board [A].



14. Attach the clamp and connect the connectors (CN1 12 [A] on the BiCU).



15. Cut the part [A] of the rear cover shown in the photo below.



16. Connect the harness provided from third-party's counter device (20pin) and pass the harness through the opening in step 15.
17. Reassemble the machine.

RICOH e-Sharing Box (D668)

Refer to "RICOH e-Sharing Box Field Service Manual".

Controller Options

Overview

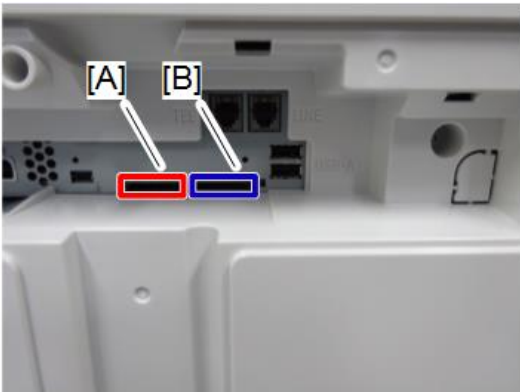
★ Important

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

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

After installing an option, check that the machine can recognize it (see page 119 at the end of this section).

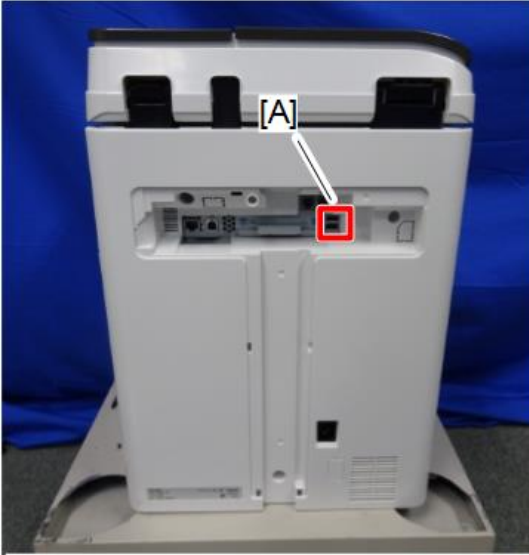
SD Card Slots



d205z2128

- Slot 1 (Left) [A] is used for optional applications (XPS Direct Print Option, Data Overwrite Security Unit, OCR Unit).
- Slot 2 (Right) [B] is used for service only (for example, updating the firmware).
- The mini USB slot to the left of the SD card slots is only for models on sale in Japan.

USB Port



d205z2129

- These ports (lower and upper) are used for the Bluetooth Interface Unit.

SD Card Appli Move

Overview

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

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

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

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

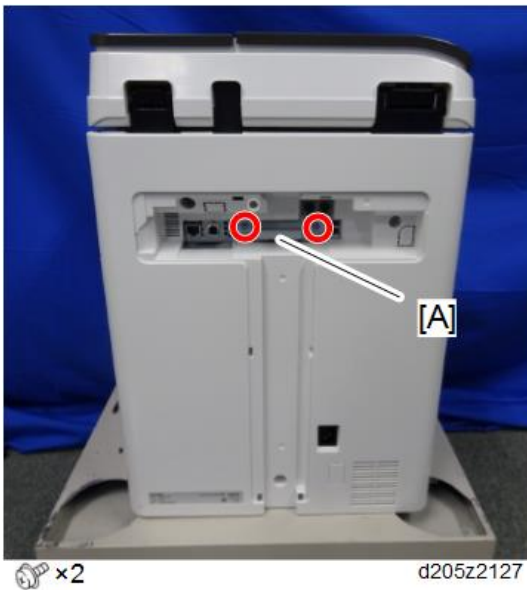
Move Exec

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 turned ON, a download error (e.g. Error Code 44) occurs during a firmware update or application merge.

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



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

12. Turn ON the main power.

13. Check that the application programs run properly.

Undo Exec

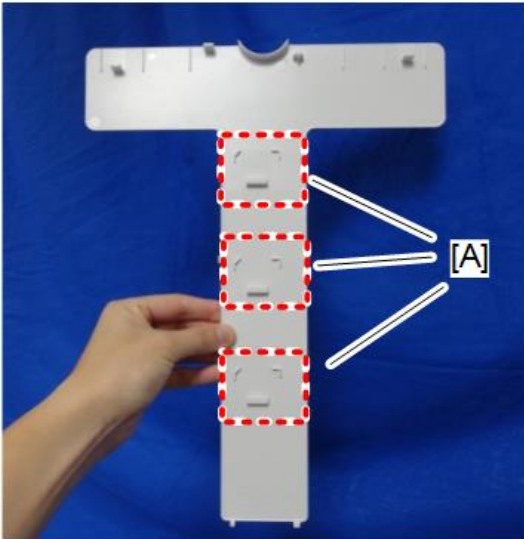
"Undo Exec" (SP5-873-002) lets you move back application programs from an SD card in SD Card Slot 1 (left) to the original SD card in SD Card Slot 2 (right). You can use this program when, for example, you have mistakenly copied some programs by using Move Exec (SP5-873-001).

★ 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 OFF the main power.
 2. Insert the original SD card in SD Card Slot 2 (right). The application program is copied back into this card.
 3. Insert the SD card with the application program in SD Card Slot 1 (left).The application program is copied back from this SD card.
 4. Turn ON the main power.
 5. Start the SP mode.
 6. Select SP5-873-002 "Undo Exec."
 7. Follow the messages shown on the operation panel.
 8. Turn OFF the main power.
 9. Remove the SD card from SD Card Slot 2 (right).
 10. Turn ON the main power.
 11. Check that the application programs run normally.
 12. Make sure that the machine can recognize the option (see page 119 at the end of this section).

Storing the SD Card

Store the SD card at the following storage location [A] after moving the application in the SD card:



d205z2126

2

Bluetooth Interface Unit Type D

⚠ CAUTION

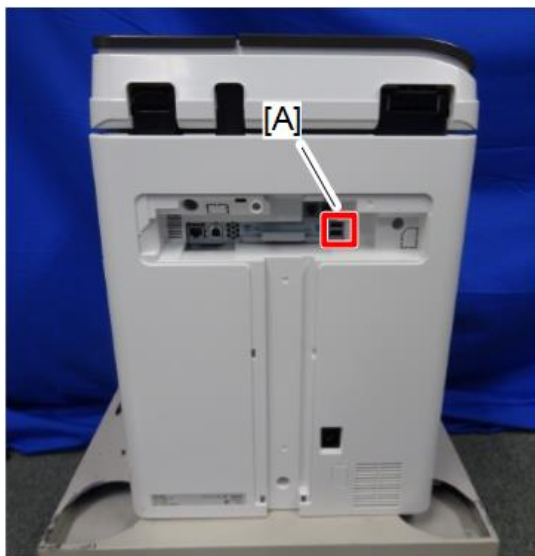
- Unplug the main machine power cord before you do the following procedure.
- Do not remove the Bluetooth unit while the main power is ON.

↓ Note

- This option cannot be installed together with IEEE 802.11a/g/n.

1. Turn OFF the main power, and then unplug the power cable from the wall outlet.

2. Insert the Bluetooth Interface unit into the USB port [A]. (Either USB port can be used.)



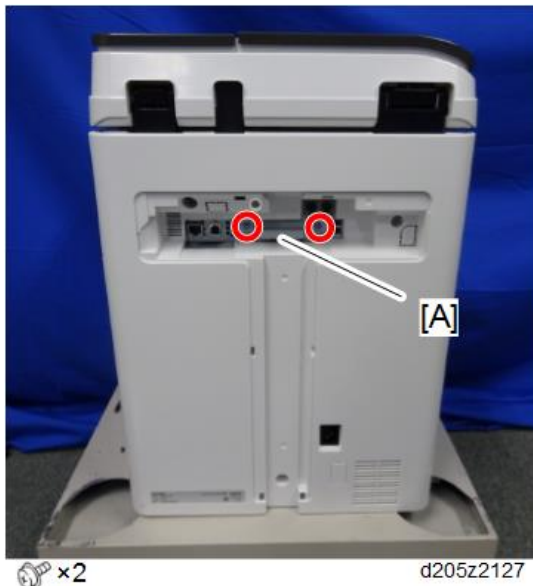
d205z2129

3. Plug the power cable and turn ON the main power.
4. Make sure that the machine can recognize the option (see page 119 at the end of this section).

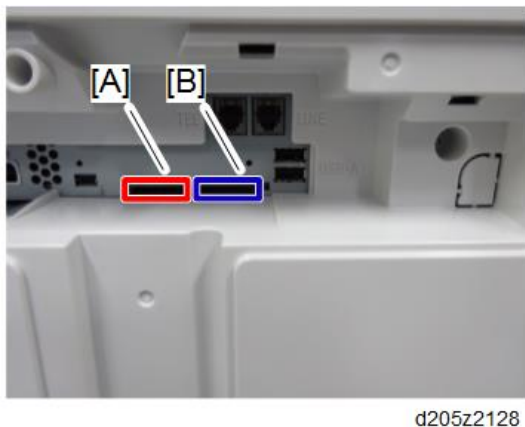
OCR Unit Type M13

1. Turn OFF the main power.

2. Remove the SD card slot cover [A].



3. Insert the SD card in SD slot 1 (left) [A] with its label facing up.



4. Turn ON the main power.
5. Press [Enter] in SP5-878-004 (Option Setup: OCR Dictionary).

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

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

Note

- You cannot install it if you use a used SD card or a write-protected SD card.

7. Turn OFF then ON the main power.

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

Dictionary data is copied to the HDD.

Note

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

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

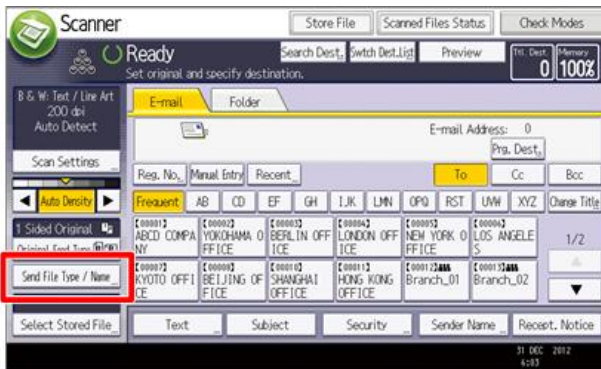
Note

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

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

11. Turn ON the main power.

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



w_d1351739

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



w_d1351740

Note

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

Recovery Procedure

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

When storing the original SD card and;

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

If the original SD card is lost;

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

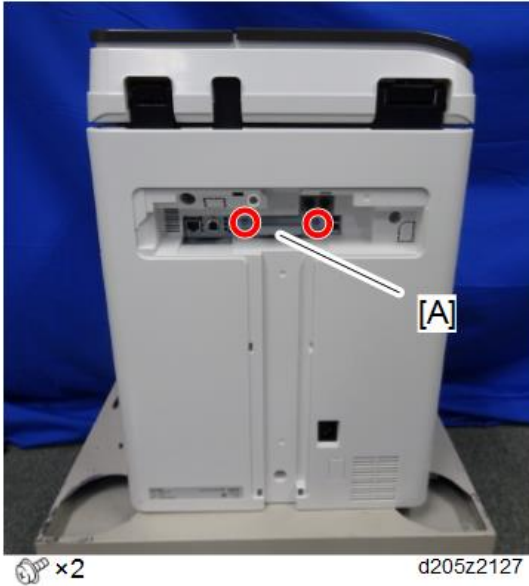
Note

- Perform reinstallation in the same way as installation.

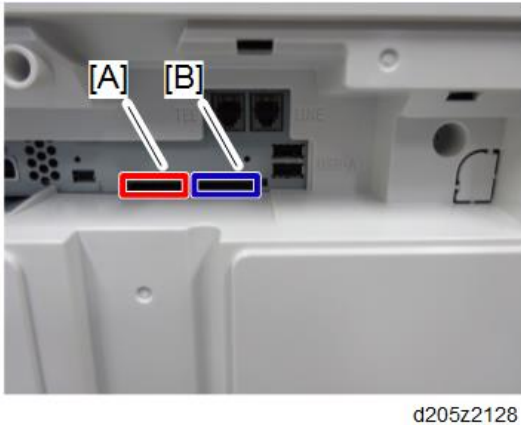
XPS Direct Print Option Type M15

1. Turn OFF the main power.

2. Remove the SD card slot cover [A].



3. Insert the SD card (XPS) in SD slot 1 (left) [A] with its label facing up.



4. Merge the SD card contents if necessary. (page 108)
5. Attach the SD card slot cover.
6. Turn ON the main power.
7. Print out the "Configuration Page", and then check if this option is correctly recognized.

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

Data Overwrite Security Unit Type I

Overview

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

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

2

Before You Begin the Procedure

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

★ Important

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

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

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

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

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

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

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

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

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

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

Seal Check and Removal

⚠ CAUTION

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

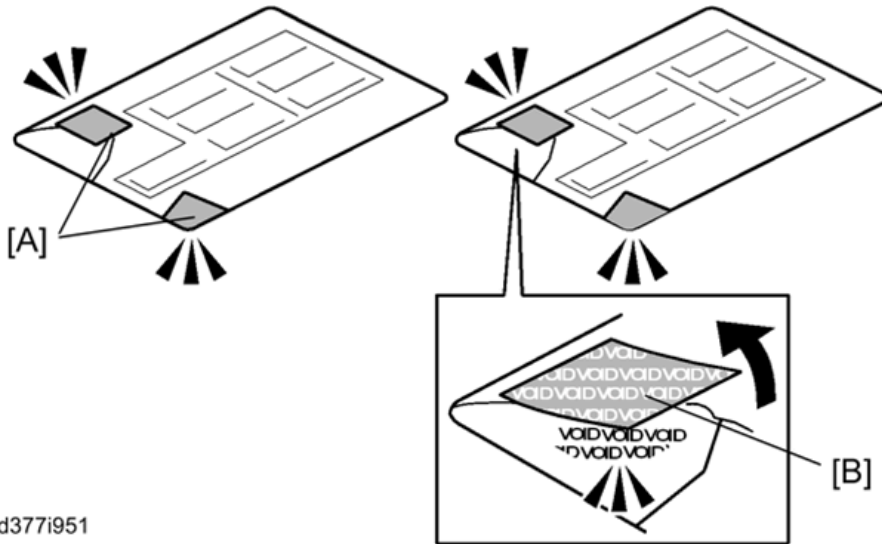
2

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

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

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

3. You can see the "VOID" marks [B] when you remove each seal. In this condition, they cannot be attached to the box again.

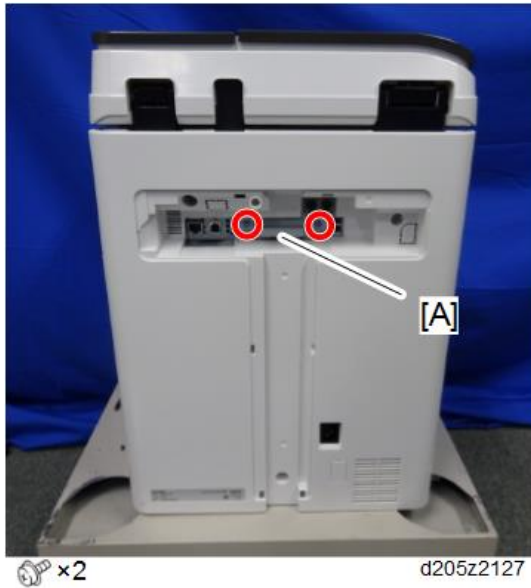


d377i951

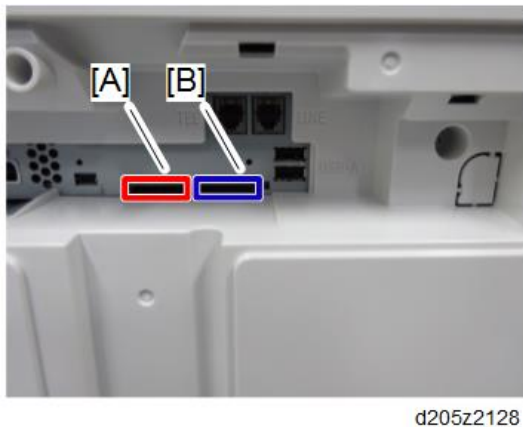
Installation Procedure

1. Turn OFF the main power.

2. Remove the SD card slot cover [A].



3. Insert the SD card (DataOverwriteSecurity Unit) in SD slot 1 (left) [A] with its label facing up. Then push it slowly into SD slot 1 until you hear a click.



4. Execute SP5-878-001 to install (initialize) the application.

Check All Connections

1. Plug in the power cord. Then turn ON the main power.
2. Enter the printer user mode. Then print the configuration page.
User Tools → Machine Features → Printer Features → List Test Print → Configuration Page

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

Security Settings

Security Function Installation

★ Important

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

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

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

↓ Note

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

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

★ Important

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

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

↓ Note

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

The machine cannot be operated while data is being encrypted.

Once the encryption process begins, it cannot be stopped.

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

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

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

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

Note

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

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

Data Overwrite Security

Before You Begin the Procedure

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

(1) Supervisor login password

(2) Administrator login name

(3) Administrator login password

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

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

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

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

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

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

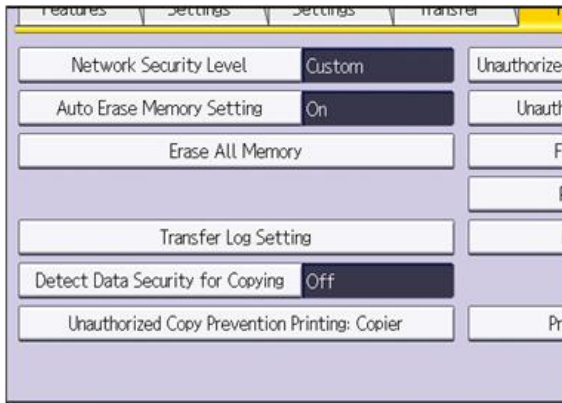
If this setting is disabled (not selected), tell the customer this setting must be enabled (selected) before you do the installation procedure.

Using Auto Erase Memory

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

- 1. Log in as the machine administrator from the control panel.**
- 2. Press [System Settings].**
- 3. Press [Administrator Tools].**
- 4. Press [Next] three times.**

5. Press [Auto Erase Memory Setting].



w_d1822517

6. Press [On].

7. Select the method of overwriting.

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

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

8. Press [Change].

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

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

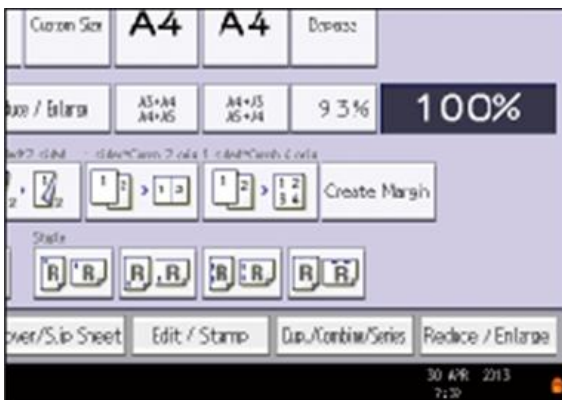
11. Log out.

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



13. Check the overwrite erase icon.

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

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



w_d1822516

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

HDD Encryption

Before You Begin the Procedure:

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

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

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

2. Confirm that "Admin. Authentication" is on: [User tools/Counter] key - [System Settings] - [Administrator Tools] - [Administrator Authentication Management] - [Admin. Authentication] - [On]

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

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

[User tools/Counter] key - [System Settings] - [Administrator Tools] - [Administrator Authentication Management] - [Available Settings]

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

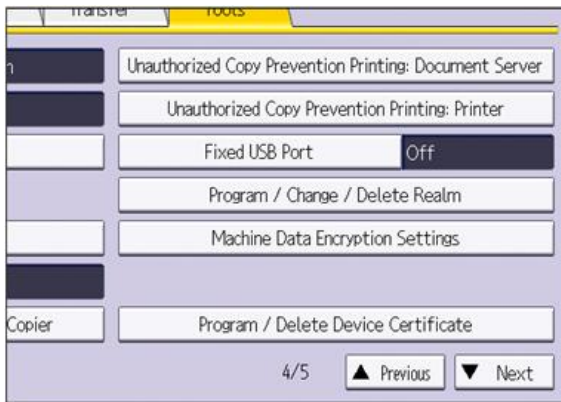
If this setting is not selected, tell the customer that this setting must be selected before you can do the installation procedure.

Enable Encryption Setting

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

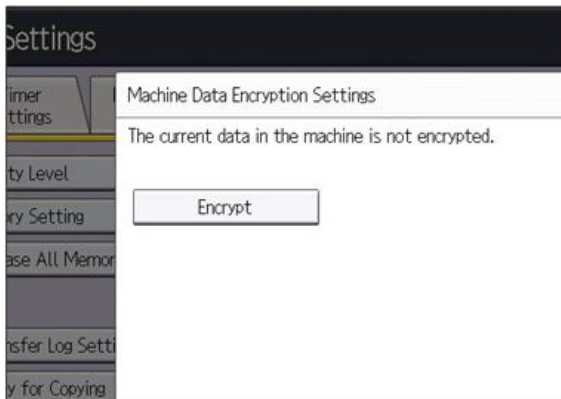
★ Important

- When setting up encryption, specify whether to start encryption after deleting data (initialize) or encrypt and retain existing data. If data is retained, it may take some time to encrypt it.
1. Turn ON the main power.
 2. Log in as the machine administrator from the control panel.
 3. Press [System Settings].
 4. Press [Administrator Tools].
 5. Press [Next] three times.
 6. Press [Machine Data Encryption Settings].



w_d1822518

7. Press [Encrypt].



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

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

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

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

9. Select the backup method.

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

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

10. Press [OK].

11. Press [Exit].

12. Press [Exit].

13. Log out.

14. Turn OFF then ON the main power.

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

Check the Encryption Settings

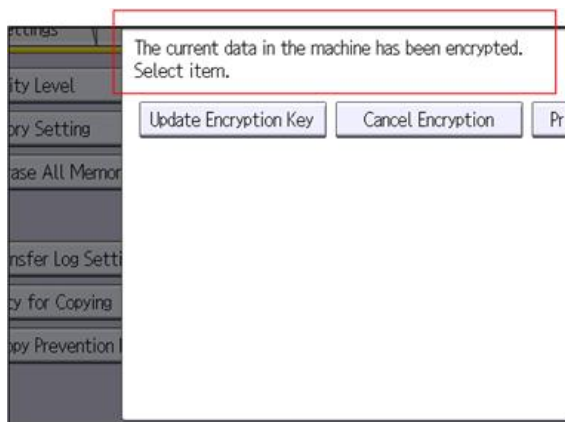
1. Press [User tools/Counter].

2. Press [System Settings].

3. Press [Administrator Tools].

4. Press [Machine Data Encryption Settings].

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



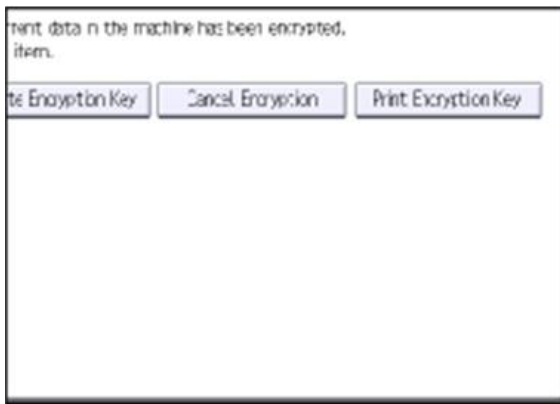
w_d1822520

Backing Up the Encryption Key

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

★ Important

- The encryption key is required for data recovery if the machine malfunctions. Be sure to store the encryption key safely for retrieving backup data.
1. Log in as the machine administrator from the control panel.
 2. Press [System Settings].
 3. Press [Administrator Tools].
 4. Press [Next] three times.
 5. Press [Machine Data Encryption Settings].
 6. Press [Print Encryption Key].



w_d1822515

7. Select the backup method.

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

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

8. Press [Exit].
9. Log out.

Encryption Key Restoration

How to restore the old encryption key to the machine

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

SD card for restoration is required.
Turn the main power switch off and set the
SD card, then turn the main power switch on.

d1420101

2

To do this, follow the procedure below.

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

/restore_key/xxxxxxxxxxx/key_xxxxxxxxxxxx.txt

Note

- Ask an Administrator to enter the encryption key. The key has already been printed out by the user and may have been saved in the "key_xxxxxxxxxxxx.txt" file. (The function of back-up the encryption key to the SD card directly is provided 11A products or later.)

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

Note

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

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

How to do a forced start up with no encryption key

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

Important

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

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

```
/restore_key/nvram_key.txt
```

3. Create a text file and write "nvclear".

★ Important

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

@Remote Settings

↓ Note

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

2

Setting Procedure

Check points before making @Remote settings

1. The value of SP5-816-201 ([Remote Service]-[Regist Status]) to "0".
0: Neither the registered device by the external nor embedded RCG device is set.
2. Print the SMC with SP5-990-002 and then check if a device ID2 (SP5-811-003) must be correctly programmed.
 - 6 spaces must be put between the 3-digit prefix and the following 8-digit number (e.g. xxx____xxxxxxxx).
 - ID2 (SP5-811-003) and the serial number (SP5811-001) must be the same (e.g. ID2: A01____23456789 = serial No. A0123456789)
3. The following settings must be correctly programmed.
 - Proxy server IP address (SP5-816-063)
 - Proxy server Port number (SP5-816-064)
 - Proxy User ID (SP5-816-065)
 - Proxy Password (SP5-816-066)

4. Get a Request Number

Execute the @Remote Settings

1. Enter the SP mode.
2. Input the Request number which you have obtained from @Remote Center GUI, and then enter [OK] with SP5-816-202 ([Remote Service]-[Letter Number]).
3. Confirm the Request number, and then click [EXECUTE] with SP5-816-203 ([Remote Service]-[Confirm Execute]).
4. Check the confirmation result with SP5-816-204 ([Remote Service]-[Confirm Result]).

Value	Meaning	Solution/ Workaround
0	Succeeded	-

Value	Meaning	Solution/ Workaround
3	Communication error (proxy enabled)	Check the network condition.
4	Communication error (proxy disabled)	Check the network condition.
5	Proxy error (authentication error)	Check Proxy user name and password.
6	Communication error	Check the network condition.
8	Other error	See "SP5-816-208 Error Codes" below this.
9	Request number confirmation executing	Processing... Please wait.
11	Already registered	-
12	Parameter error	-
20	Dial-up authentication error	* These errors occur only in the modems that support @Remote.
21	Answer tone detection error	
22	Carrier detection error	
23	Invalid setting value (modem)	
24	Low power supply current	
25	unplugged modem	
26	Busy line	

5. Make sure that the screen displays the Location Information with SP5-816-205 only when it has been input at the Center GUI.
6. Execute the registration with SP5-816-206 ([Remote Service]-[Register Execute]).
7. Check the registration result with SP5-816-207 ([Remote Service]-[Register Result]).

Value	Meaning	Solution/ Workaround
0	Succeeded	-
1	Request number error	Check the request number again.
2	Already registered	Check the registration status.

Value	Meaning	Solution/ Workaround
3	Communication error (proxy enabled)	Check the network condition.
4	Communication error (proxy disabled)	Check the network condition.
5	Proxy error (Authentication error)	Check Proxy user name and password.
8	Other error	See "SP5-816-208 Error Codes" below this.
9	Request number confirmation executing	Processing... Please wait.
11	Already registered	-
12	Parameter error	-
20	Dial-up authentication error	* These errors occur only in the modems that support @Remote.
21	Answer tone detection error	
22	Carrier detection error	
23	Invalid setting value (modem)	
24	Low power supply current	
25	unplugged modem	
26	Busy line	

8. Exit the SP mode.

SP5-816-208 Error Codes

Caused by Operation Error, Incorrect Setting

Code	Meaning	Solution/ Workaround
-12002	Inquiry, registration attempted without acquiring Request No.	Obtain a Request Number before attempting the Inquiry or Registration.
-12003	Attempted registration without execution of a confirmation and no previous registration.	Perform Confirmation before attempting the Registration.

Code	Meaning	Solution/ Workaround
-12004	Attempted setting with illegal entries for certification and ID2.	Check ID2 of the mainframe.
-12005	@Remote communication is prohibited. The device has an Embedded RC gate-related problem.	Make sure that "Remote Service" in User Tools is set to "Do not prohibit".
-12006	A confirmation request was made after the confirmation had been already completed.	Execute registration.
-12007	The request number used at registration was different from the one used at confirmation.	Check Request No.
-12008	Update certification failed because mainframe was in use.	Check the mainframe condition. If the mainframe is in use, try again later.
-12009	The ID2 in the NVRAM does not match the ID2 in the individual certification.	Check ID2 of the mainframe.
-12010	The certification area is not initialized.	Initialize the certification area.

Error Caused by Response from GW URL

Code	Meaning	Solution/ Workaround
-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.	

Code	Meaning	Solution/ Workaround
-2397	Incorrect ID2 format	Check the ID2 of the mainframe.
-2398	Incorrect request number format	Check the Request No.

Operation Guidance for Users

Function/Operation	Instruction to provide
Basic machine functions, operations	<ul style="list-style-type: none"> • How to load the toner bottle • How to load paper and other consumables/supplies • How to turn ON or OFF the main power • How to clear paper jams • How to program, modify, and delete Address Book entries • How to customize the UI and home screen • Overview of machine options/peripherals • How to take the proper action for SC errors (clearing the error, contacting service and support, etc.), how to interpret @Remote notifications • Important notes to keep in mind whenever moving the machine • Product limitations
Copier	<ul style="list-style-type: none"> • Basic Copier operations • How to load an original in the ARDF or place it on the exposure glass for scanning • How to use thick paper and other specialized paper/media • How to configure the Copier main screen (duplex/simplex, auto color selection, User Codes, etc.) • Basic Document Server operations
Fax (when installed)	<ul style="list-style-type: none"> • How to send a fax (Memory Transmission, Direct Transmission)
Printer (when installed)	<ul style="list-style-type: none"> • How to install printer drivers (using the recommended method) • How to connect to a PC (performing the port settings) • How to print out a test page • Overview of various settings inside each tab in the printer driver (e.g. duplex printing)
Scanner (when installed)	<ul style="list-style-type: none"> • How to install printer drivers (using the recommended method) • How to connect to a PC and perform a test scan

3. Preventive Maintenance

Preventive Maintenance Tables

See "Appendices" for the following information:

- Preventive Maintenance Tables

PM/Yield Parts Settings

Set-up Procedure for Replacing the PM/Yield Parts

1. Enter the SP mode.
2. Get the SMC log data using one of the following ways:
 - a) Execute SP5-990-001 to print SMC log data.
 - b) Execute SP5-992-001 (SMC List Card Save Function) to save SMC log data to an SD card.
3. In the SMC data, look at the values of the counters in SP7-621-002 and/or -115, to determine what parts should be replaced.
Refer to the SP table and PM tables in Appendices.
4. The following parts require the manual new unit detection setting by a predetermined SP. See the table below:

Item	SP	Description
120K Parts	SP2-701-108	To detect a new part/unit for these items automatically, set the value of this SP to "1". Turn OFF then ON the main power to apply the setting.

↓ Note

- 120K parts includes the parts as shown below:
Hot roller, Pressure roller, Hot roller stripper pawls, Hot roller bearing, Pressure roller bearing

↓ Note

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

5. If the value of SP2-701-108 is "0", clear the counter for the 120K parts by SP7-622-115 ([PM Counter Reset]-[120K parts]).
6. Turn OFF the main power.
7. Perform the parts replacement.
8. Turn ON the main power.
9. On the operation panel, look at the PM counters of the parts that you replaced, to make sure that these counters were reset to 0. (The PM counter values are in SP7-621-002, and/or -115.) If the PM counter for a unit is not reset, repeat steps 4, 5, and 7.
10. Exit the SP mode.

11. Check if the sample image has been copied correctly.

4. Replacement and Adjustment

Notes on the Main Power Switch

Push Switch

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

Characteristics of the Push Switch (DC Switch)

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

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

In 100V models, only one of the AC lines for the fusing unit is shut off when you turn OFF the main power; the other line carries current even when you turn off the main power switch.

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 (How to Turn OFF the Main Power)

1. Press the main power switch [A] on the machine.

↓ **Note**

- When the shutdown is complete, the LED on the operation panel is turned OFF.



d205z4010

2. Disconnect the power cord.

↓ **Note**

- Wait three minutes to access the internal parts such as the controller board.

⚠ CAUTION

- If some LEDs on any of the boards are blinking or lit, current is still flowing.
- After the shutdown process, the main power is turned OFF automatically.

↓ **Note**

- **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.**

Beforehand

CAUTION

- Turn OFF the main power and unplug the machine power cord before starting the following procedures. Otherwise, it may result in an electric shock or a malfunction.
- After replacing, make sure that all removed harnesses are connected up again and secured in their clamps.

Note

- Some illustrations may differ from the actual machine.

4

In this chapter, a step that has only a part name means that you remove the part.
For example:

1. Front cover

means

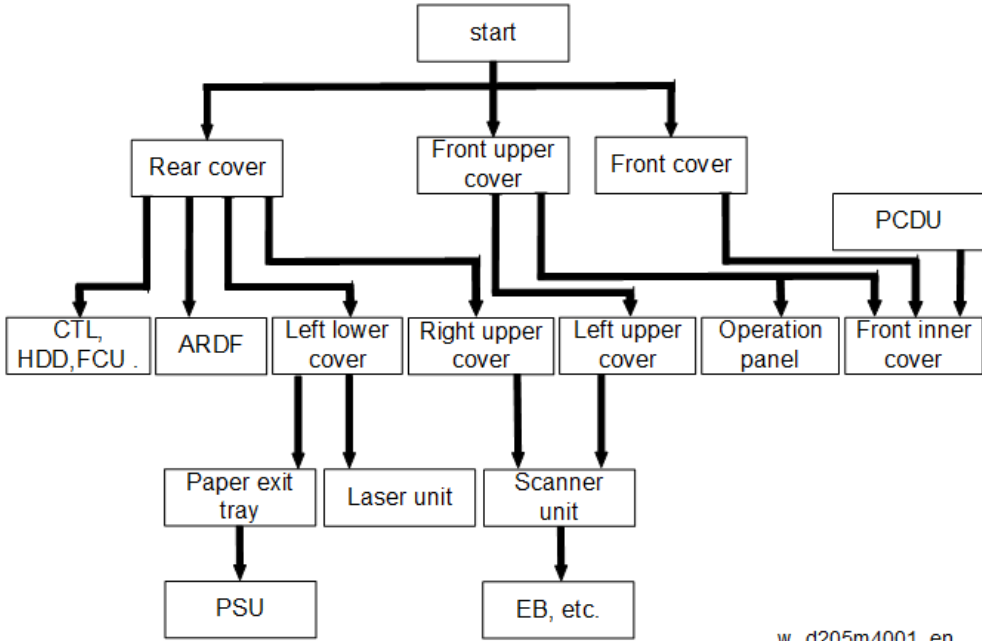
- 1. Remove the front cover.**

Special Tools and Lubricants

No.	Part Number	Description	Q'ty	Unique/Common
1	B6455020	SD Card	1	Common
2	VSSG9006	Grease – G-1077	1	Unique
4	A2929500	Test Chart – S5S (10pcs/set)	1	Common
5	B6455030	SD-CARD:SERVICE PARTS:2GB:ASSY	1	Common
6	52039502	Silicone Grease G-501	1	Common

Quick Reference for Removing Major Units

4



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Exterior Covers

Rear Cover

1. T-shaped Cover [A]



d205m4002

2. Screws of the rear cover [A]

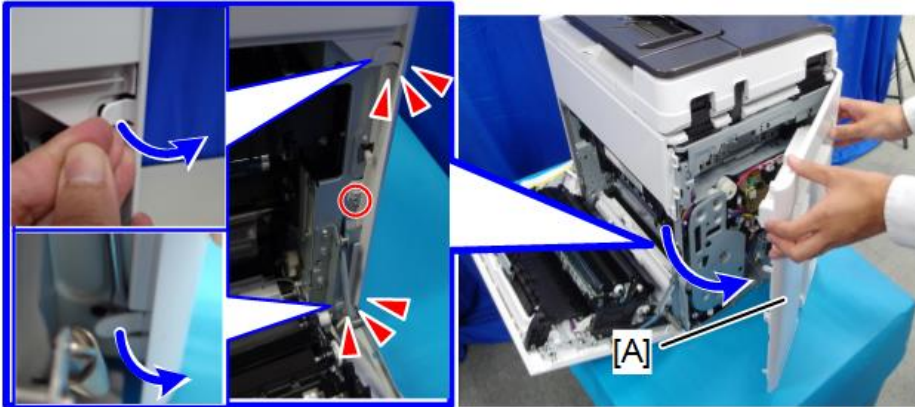


x3

d205m4003

3. Open the right cover.

4. Rear Cover [A] (tab x 2)

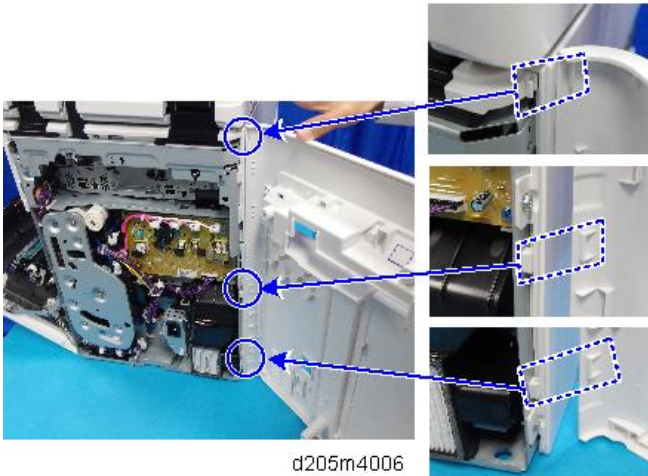


 x1

d205m4005

Note

- Be careful not to damage the tabs at the rear of the left cover when removing or installing the rear cover.

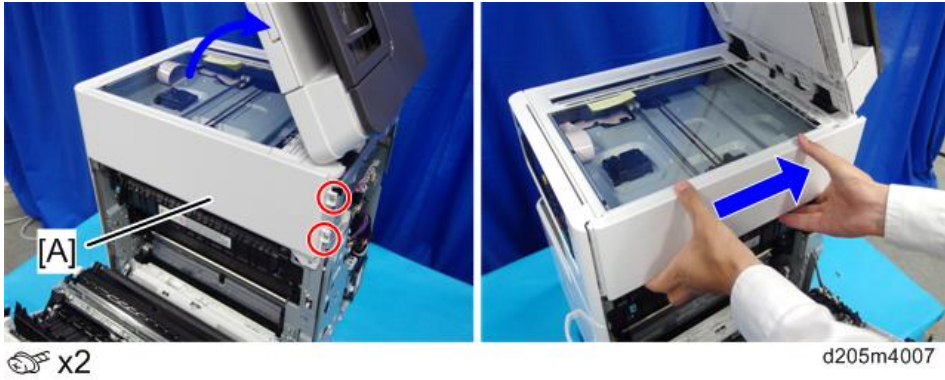


d205m4006

Right Upper Cover

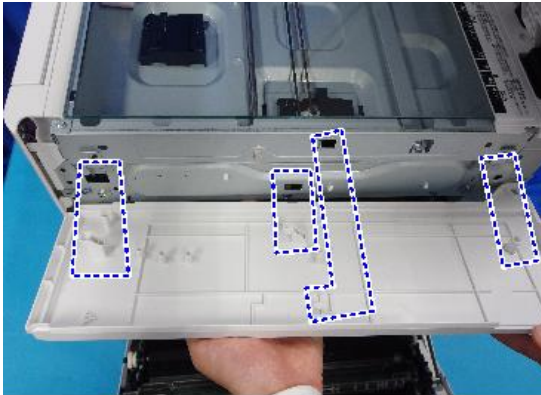
1. Rear Cover (page 147)

2. Slide and remove the right upper cover [A].



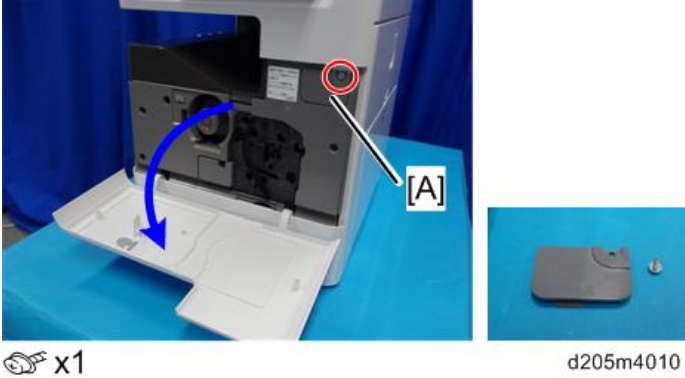
↓ Note

- Be careful not to damage the positioning boss and the tabs on the cover when you remove or install.



Front Upper Cover

1. Open the front cover and remove the cover [A].



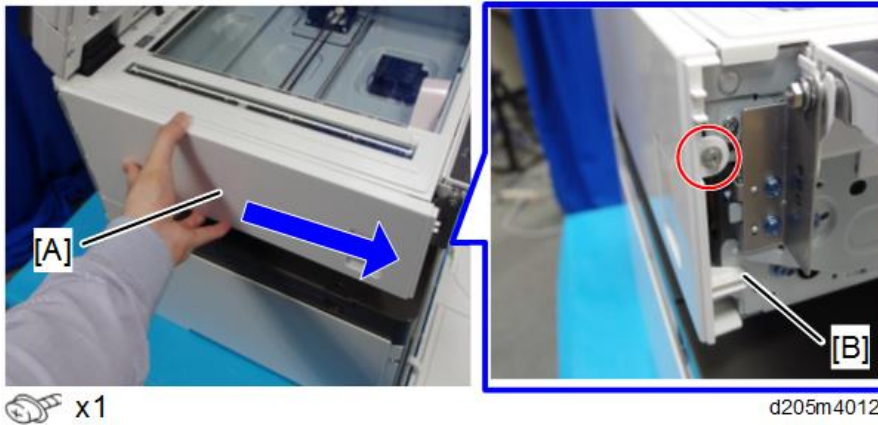
2. Front Upper Cover [A]



Left Upper Cover

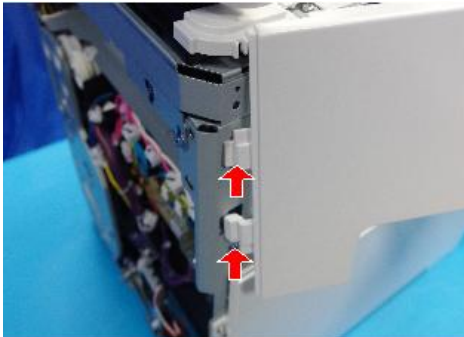
1. Front Upper Cover (page 150)

2. Slide and remove the left upper cover [A]. (Positioning Boss [B])



Note

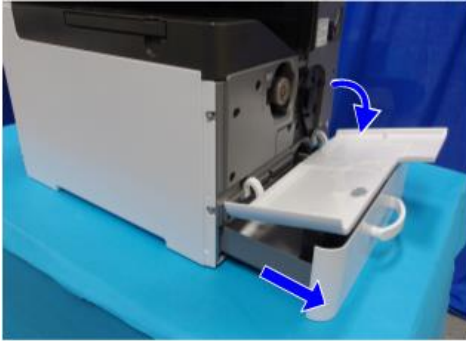
- Be careful not to damage the two tabs at the rear when removing or installing.



Left Lower Cover

1. Rear Cover (page 147)

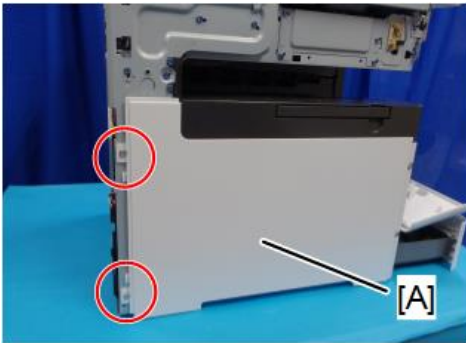
2. Pull the paper feed tray and open the front cover.



d205z4014

4

3. Left lower cover [A].

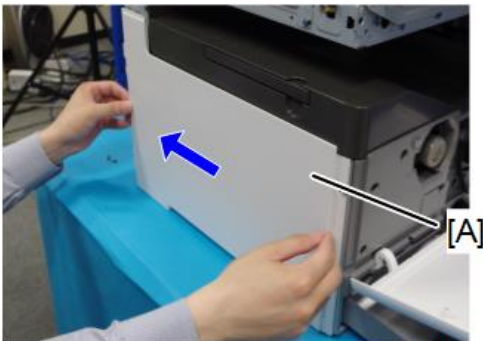


 x2

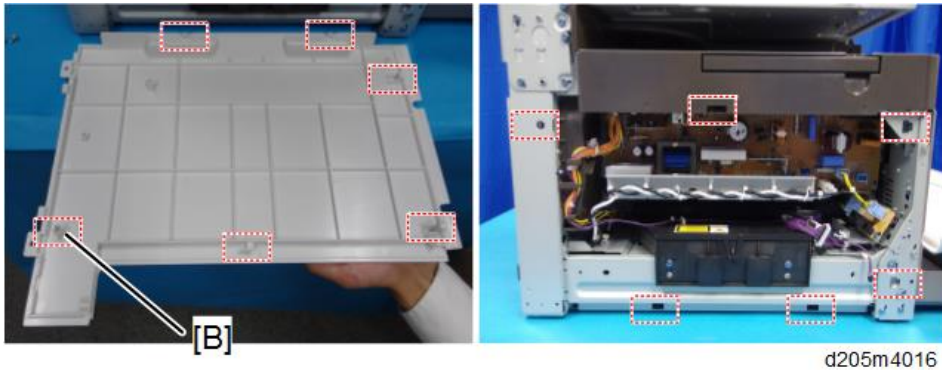
d205m4014

 **Note**

- To remove the left lower cover [A], slide to rear and be careful not to damage the positioning boss [B] and tabs.



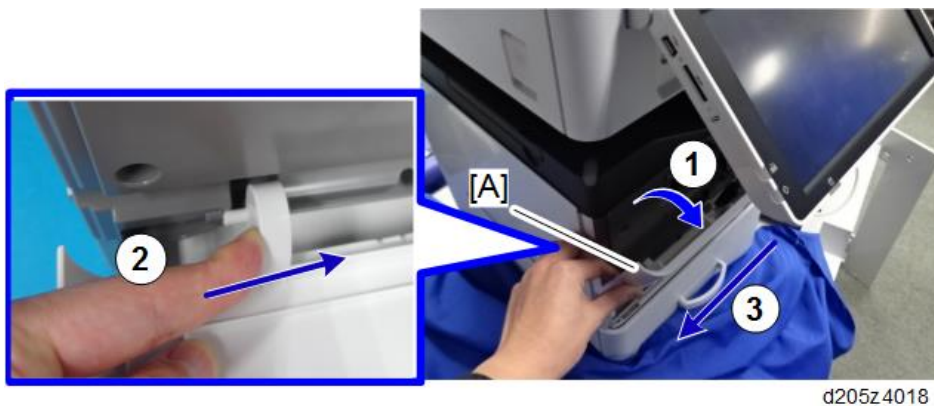
d205m4015



Front Cover

4

1. Pull the paper feed tray.
2. Do the following steps:
 1. Open the front cover.
 2. Push the hinge and detach the shaft.
 3. Remove the front cover [A].



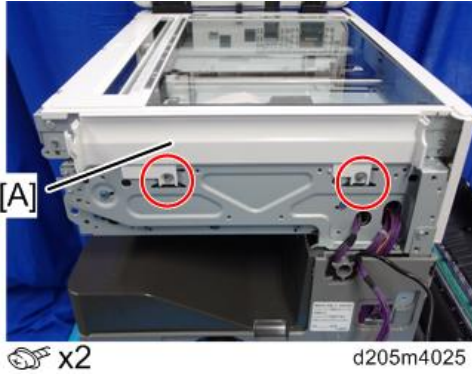
↓ Note

- To remove the front cover, disengage the pin at the left side as shown above.
- Before you disengaging the pin, do not lower the front cover more than 35 degrees, otherwise you might break the pin.

Operation Panel Rear Cover

1. Front Upper Cover (page 150)

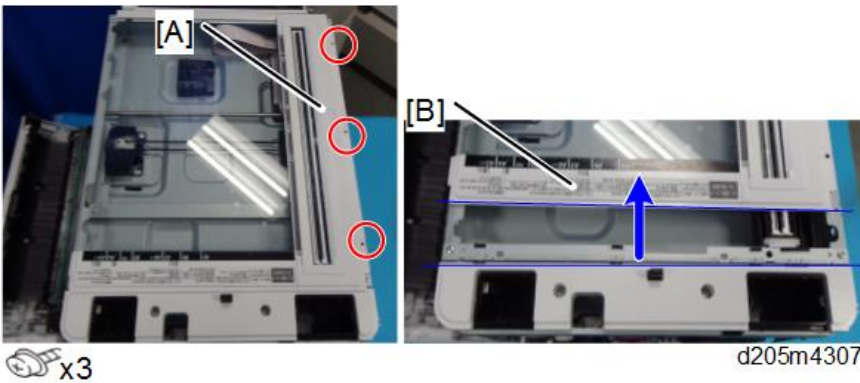
- 2. Operation Panel (page 183)
- 3. Operation Panel Rear Cover [A]



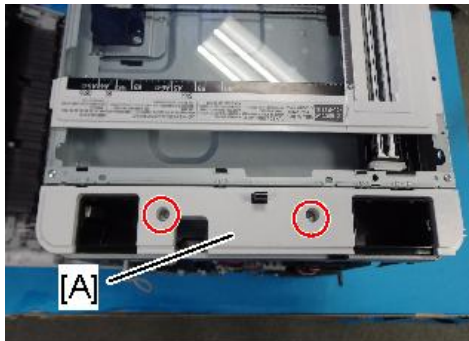
4

Scanner Rear Cover

- 1. Rear Cover (page 147)
- 2. Left Upper Cover (page 150)
- 3. Right Upper Cover (page 148)
- 4. ARDF (page 158)
- 5. Remove the screws on the guide scale [A] and slide the scanner unit [B] to the front slightly.



6. Scanner Rear Cover [A]



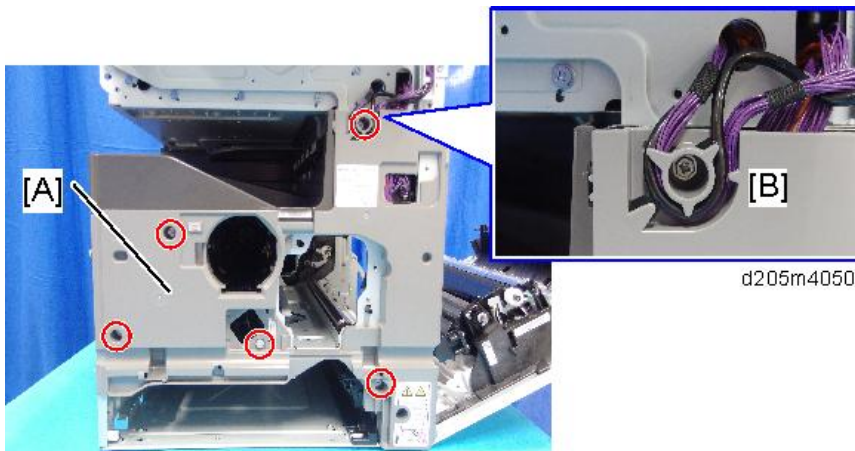
 x2

d205m4308

4

Front Inner Cover

1. Paper Feed Tray
2. Front Upper Cover (page 150)
3. PCDU (page 211)
4. Front Cover (page 153)
5. Release the harness [B] and remove the front inner cover [A].

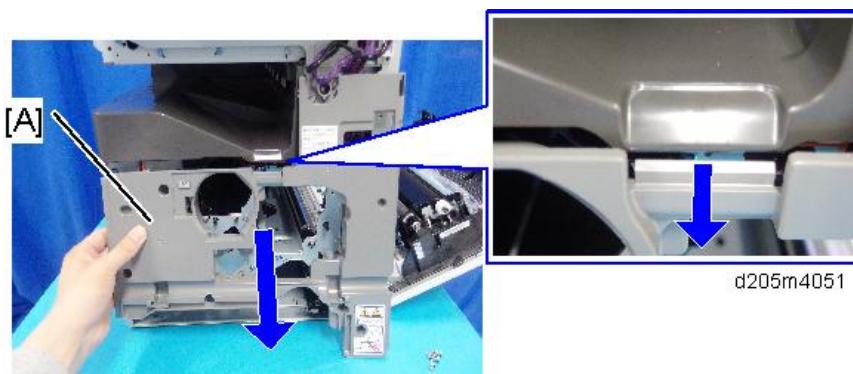


d205m4050

 x5

↓ Note

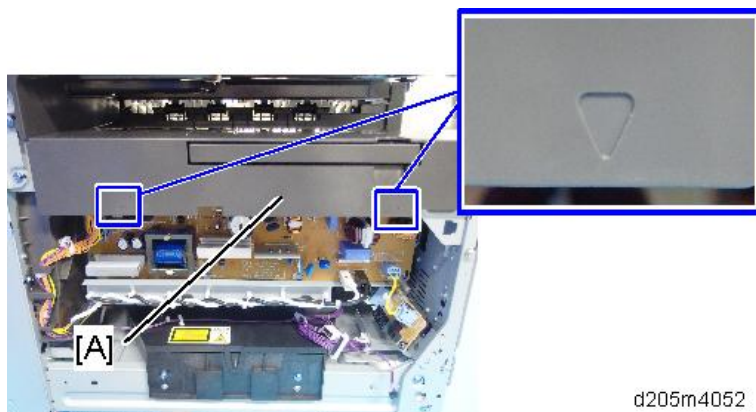
- Slide down to remove the front inner cover [A].



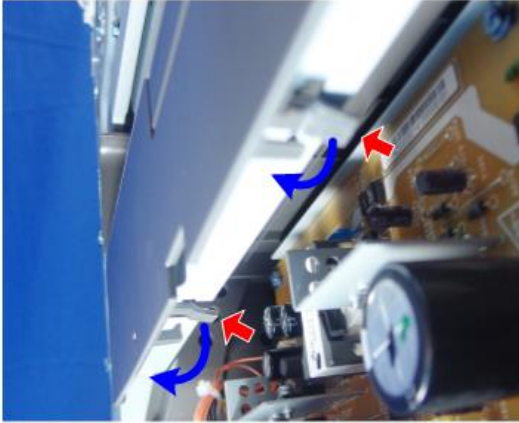
4

Paper Exit Tray

1. Left Lower Cover (page 151)
2. Front Inner Cover (page 155)
3. Check the location of the tabs on the right side of the paper exit tray [A].



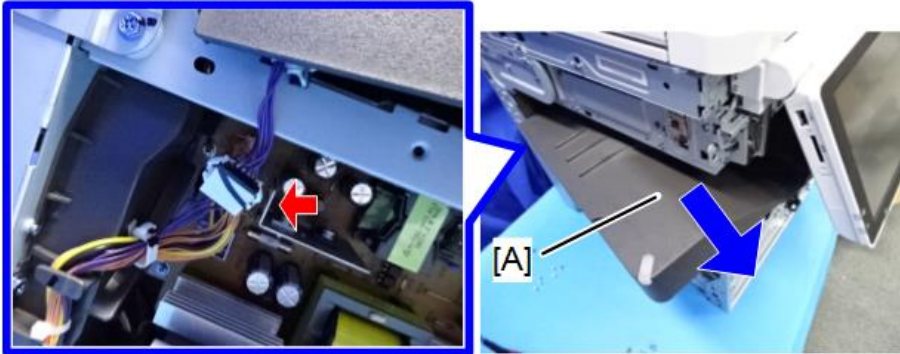
4. Release the tabs checked in step 3, at the rear of the cover.



d205z4053

4

5. Remove the paper exit tray [A] by sliding it to the front.

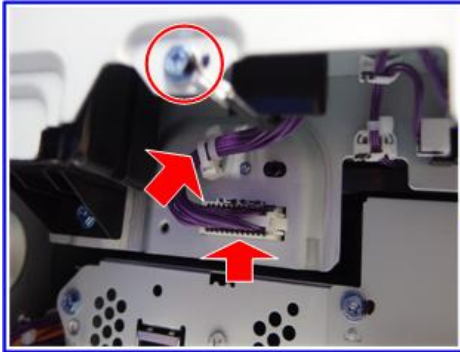
 x1

d205z4054

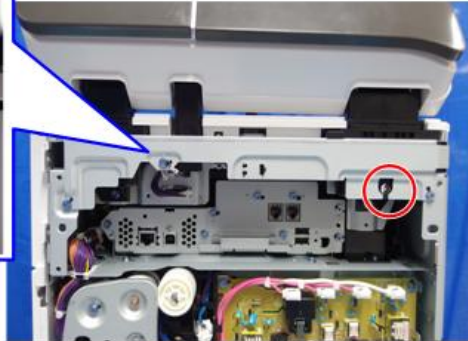
ARDF

ARDF

1. Rear Cover (page 147)
2. Open the ARDF.
3. Harnesses and screws

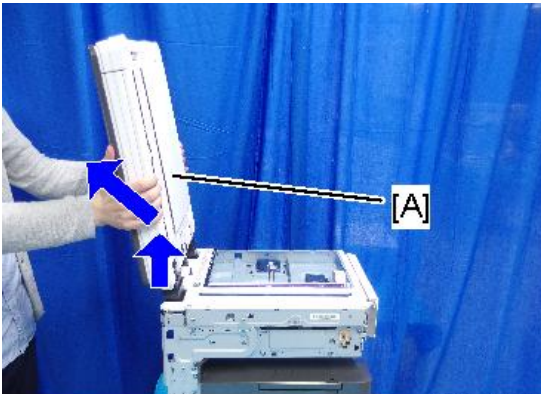


🔑 x2, 🛠️ x1, 📦 x1



d205m4026

4. Lift up the ARDF [A] as much as possible. Then pull towards the rear to remove the ARDF from the machine.

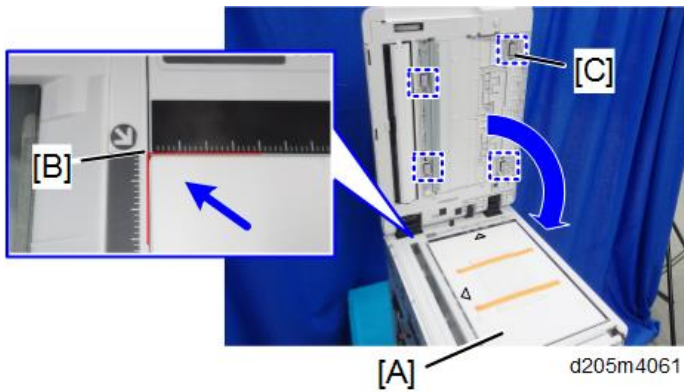


d205m4027

After installing a New ARDF

1. Open the ARDF.
2. Line up the platen sheet [A] on the rear left corner [B] of the exposure glass.

3. Close the ARDF to set the hook and loop fasteners [C: 4 points] on the platen sheet.



4. Open the ARDF and attach the sheet tightly.

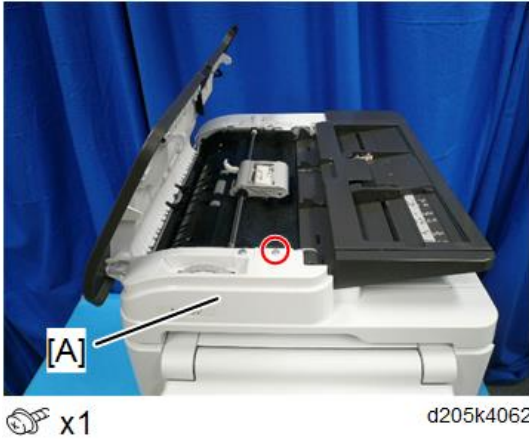
ARDF Exterior

ARDF Front Cover

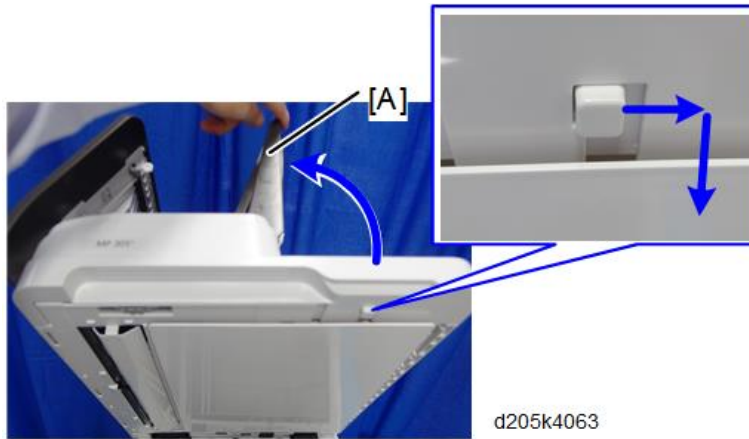
1. Open the ARDF feed cover [A].



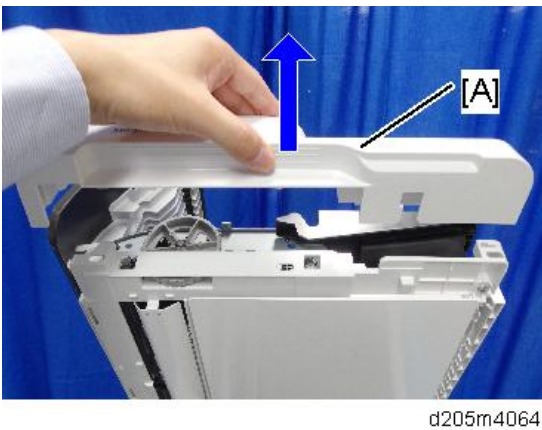
2. Remove the screw from the ARDF front cover [A].



3. Open the copy holder [A] and then release the lock.

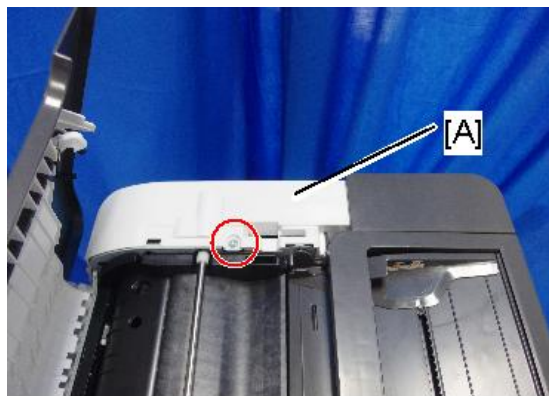


4. ARDF front cover [A]



ARDF Rear Cover

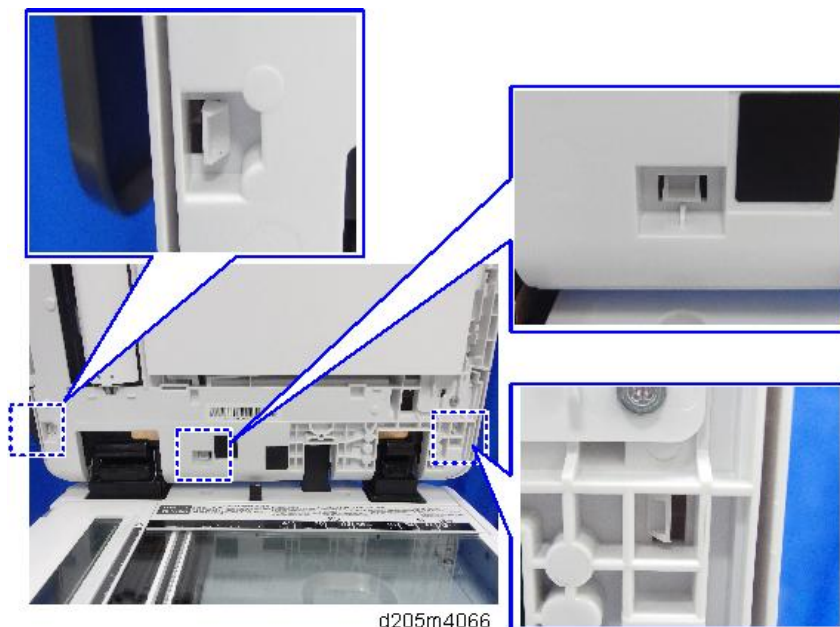
1. ARDF front cover (page 159)
2. Remove the screw from the ARDF rear cover [A].



 x1

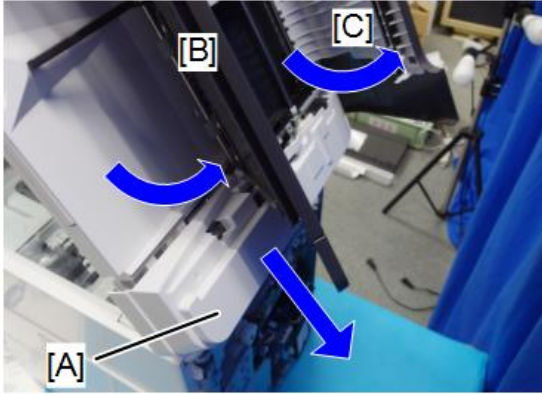
d205m4065

3. Release the tabs (3 points).



d205m4066

4. Open the copy holder [B] and the ARDF feed cover [C]. And then remove the ARDF rear cover [A].



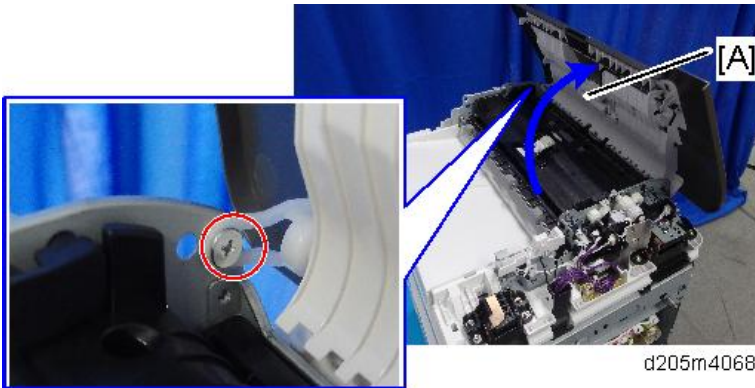
d205m4067

4

ARDF Feed Cover

1. ARDF Front Cover (page 159)
2. ARDF Feed Cover [A]

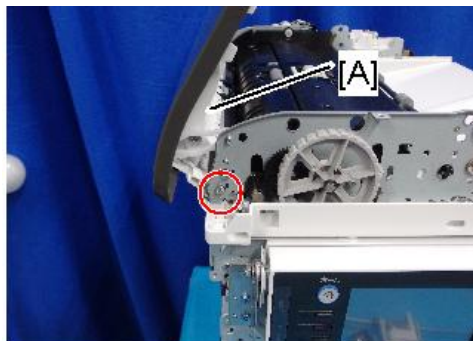
Rear



d205m4068

 x1

Front

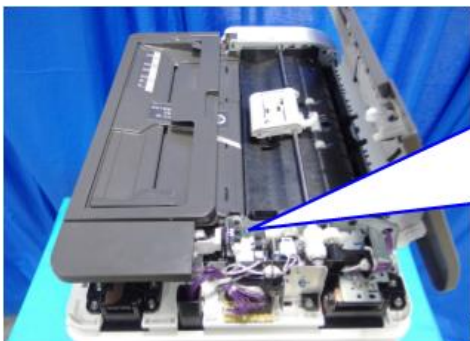
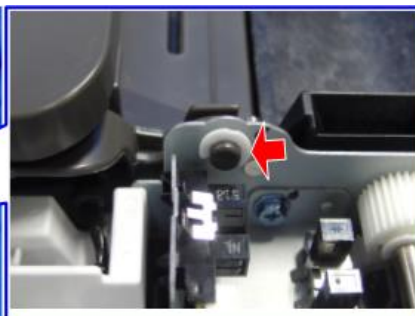
 x1

d205m4069

4

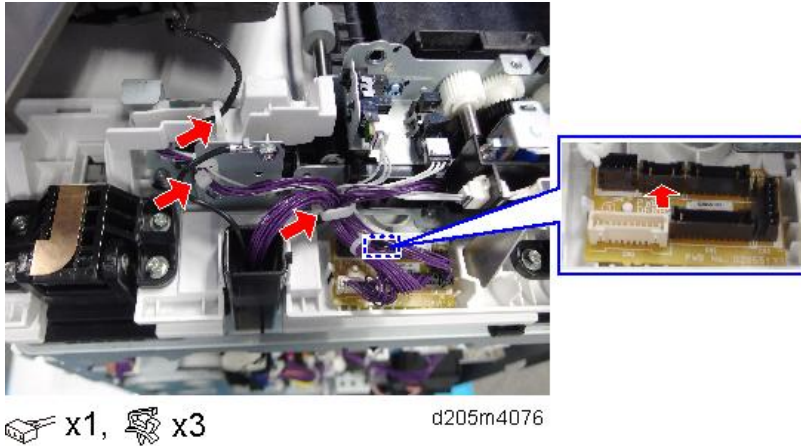
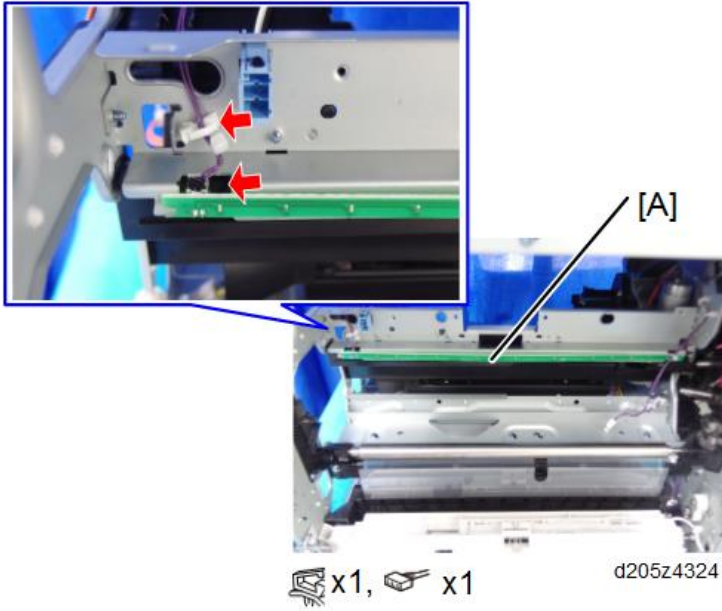
Copy Holder

1. ARDF Rear Cover (page 161)
2. Clip ring

 x1

d205m4075

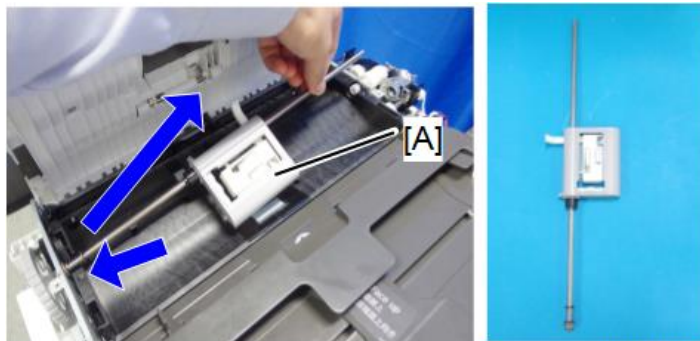
3. Remove the Copy Holder [A] and release the harnesses.



ARDF Feed Unit

1. Open the ARDF feed cover.

2. ARDF Feed Unit [A]

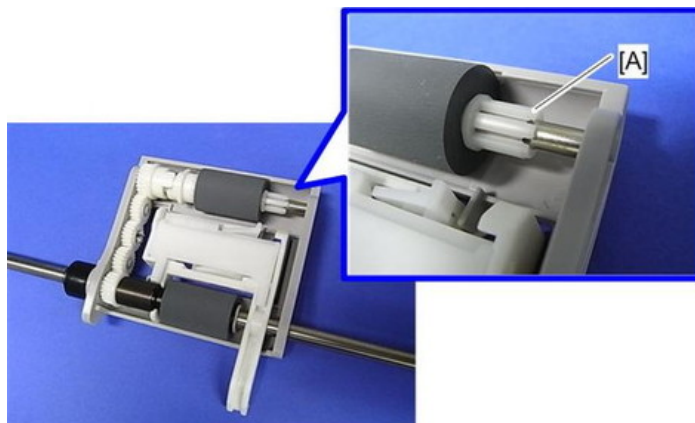


d205m4070

4

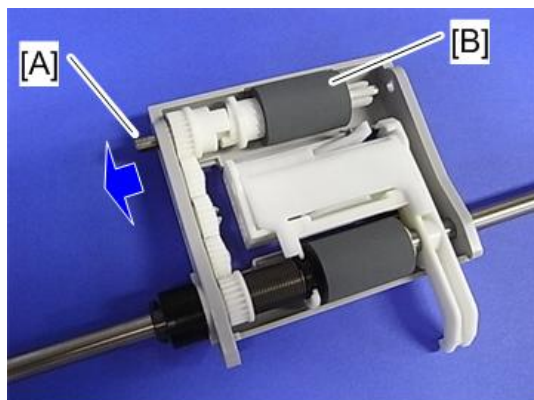
ARDF Pickup Roller

1. ARDF Feed Unit (page 164)
2. Release the tab [A]



d117r820

3. Slide the shaft [A] to remove the ARDF pickup roller [B].

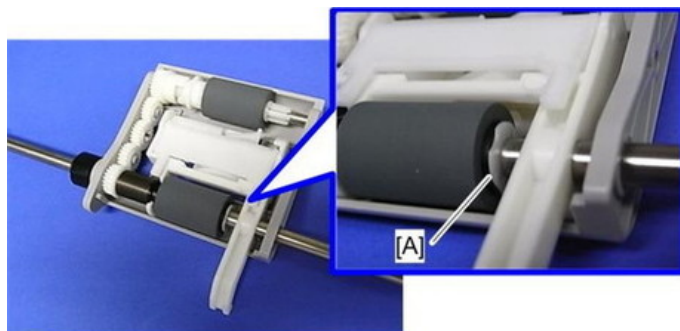


d117r821

4

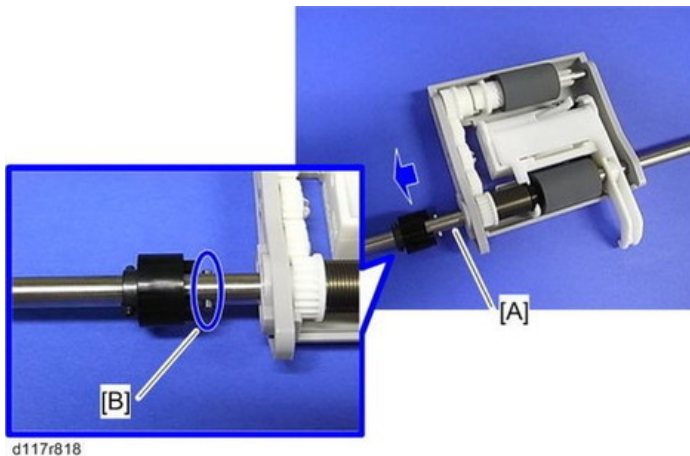
ARDF Feed Roller

1. ARDF Feed Unit (page 164)
2. Clip [A]

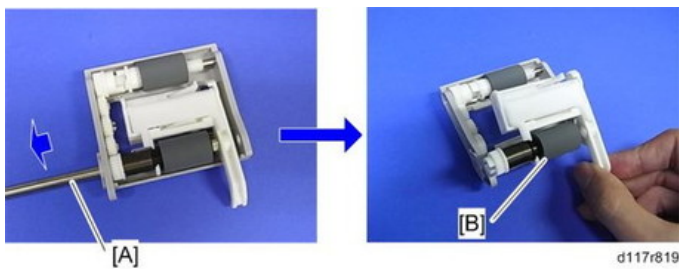


d117r817

- Slide the shaft [A] and pull the pin [B].

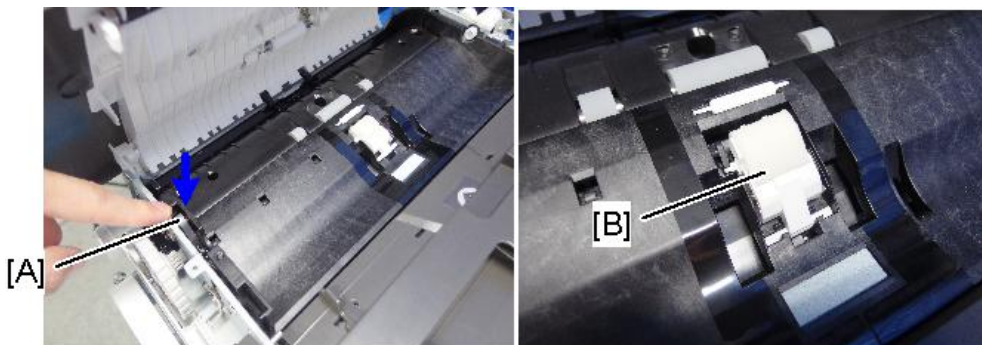


- Slide the shaft [A] to remove the ARDF feed roller [B].

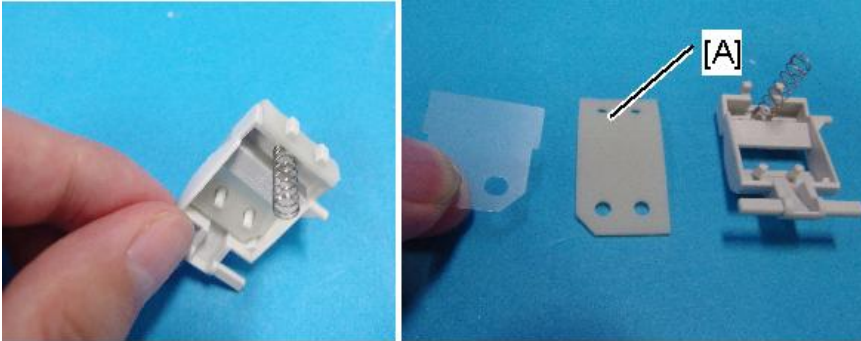


ARDF Friction Pad

- ARDF Feed Unit (page 164)
- Push the lock lever [A] and remove the friction pad [B].



3. Separate the sheet, bracket, and friction pad [A].

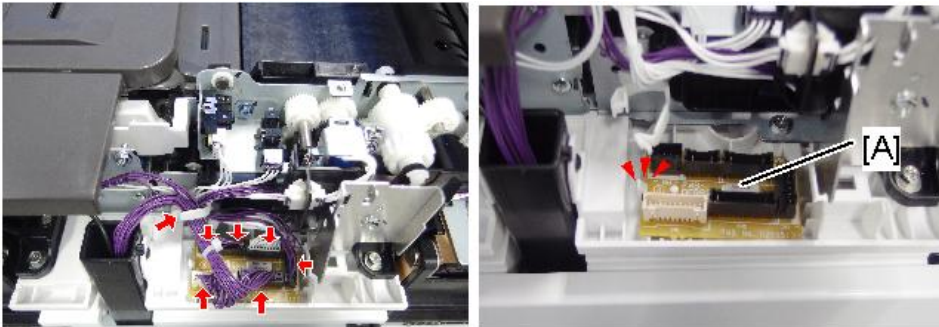


d205m4072



4

DFRB (DF Relay Board)

1. ARDF Rear Cover (page 161)
2. DFRB [A]



d205m4073

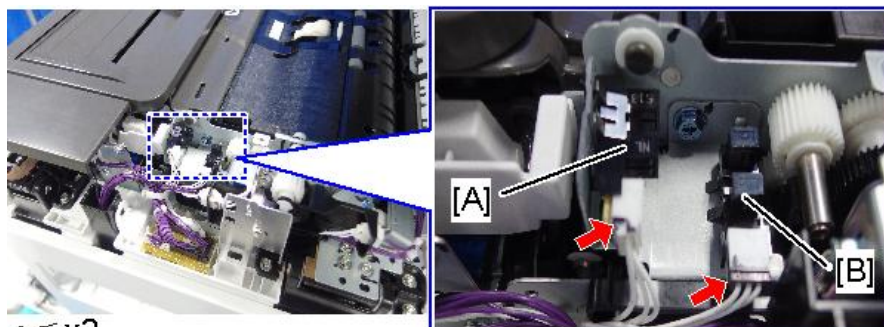
 x1,  x6

Note

- There is a tab holding the DFRB [A].

ARDF Feed Cover Sensor, Original Set Sensor

1. ARDF Rear Cover (page 161)
2. Remove the following:
 1. ARDF Feed Cover Sensor [A]
 2. Original Set Sensor [B]



 x2

d205m4074

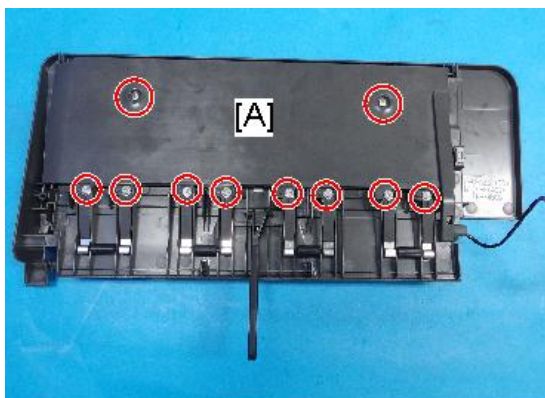
Note

- If it is difficult to remove the original set sensor [B], remove the bracket and release the tab.

4

ARDF Original Width Sensor

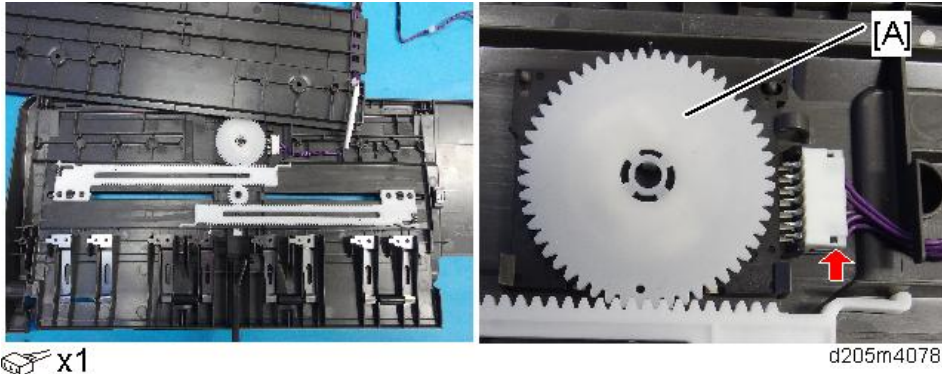
1. ARDF Rear Cover (page 161)
2. Copy Holder (page 163)
3. Rear cover [A] of the copy holder.



 x10

d205m4077

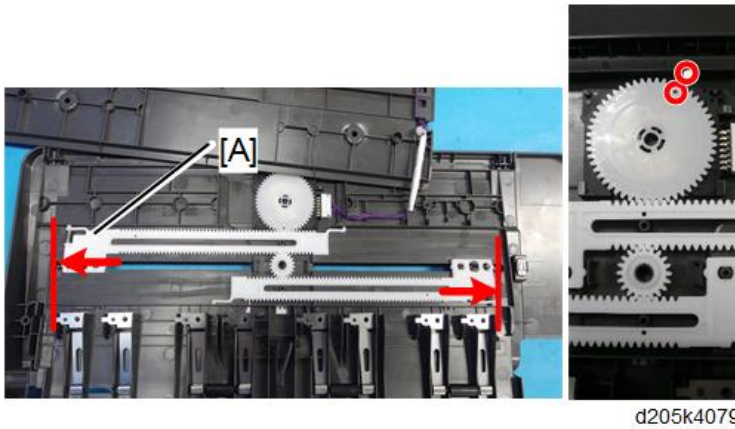
4. ARDF Original Width Sensor [A]



4

Precaution for Installing the ARDF Original Width Sensor

Open the ARDF original width guide to the maximum and install the ARDF original width sensor. The holes must align as shown below.

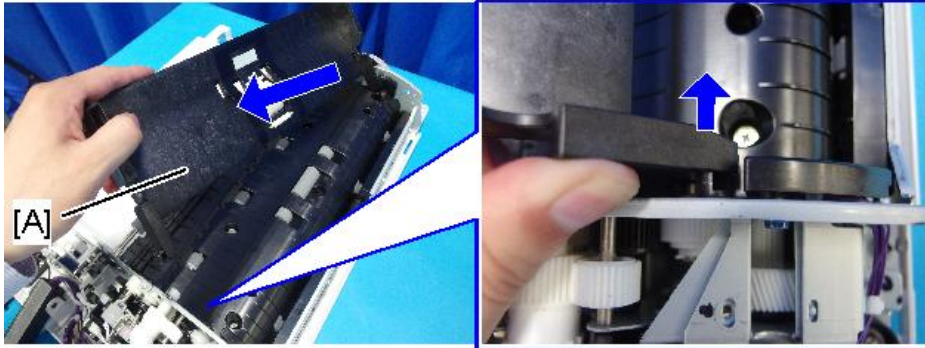


ARDF Drive Motor

💡 Preparation

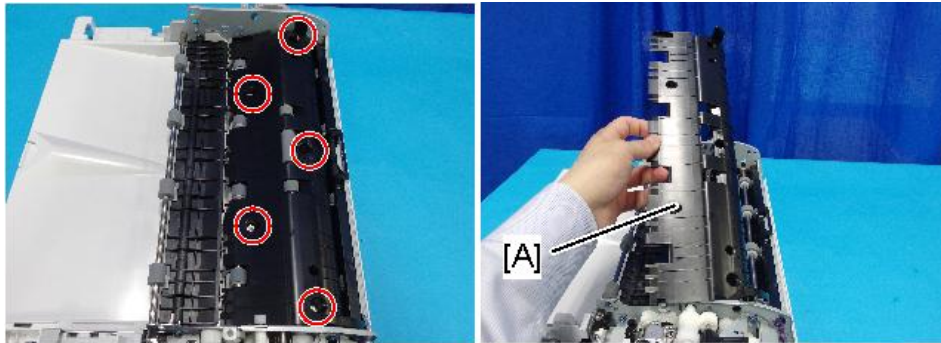
- When removing the ARDF drive motor, the ARDF must be removed. (page 158)
1. ARDF front cover (page 159)
 2. ARDF rear cover (page 161)
 3. ARDF feed cover (page 162)

4. Upper guide plate [A]



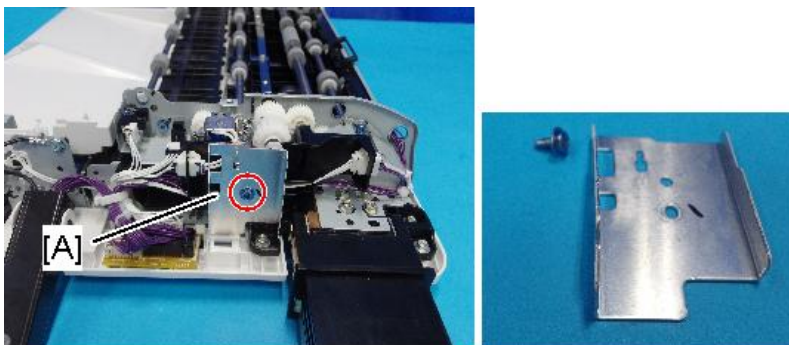
d205m4080

5. Lower guide plate [A]


 x5

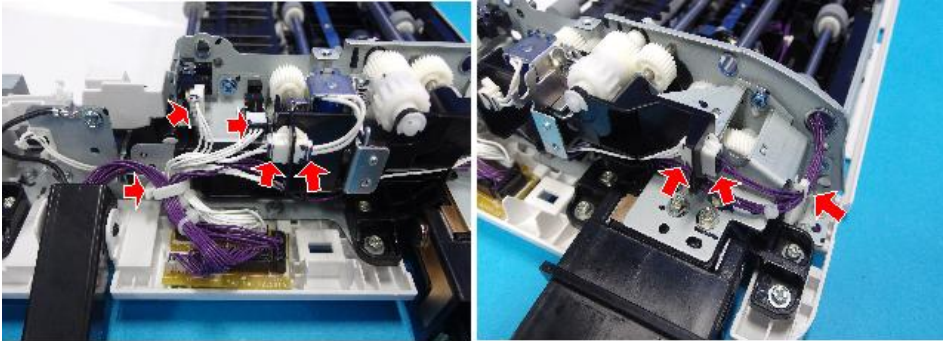
d205m4081

6. Bracket [A]


 x1

d205m4082

7. Harnesses of the holder

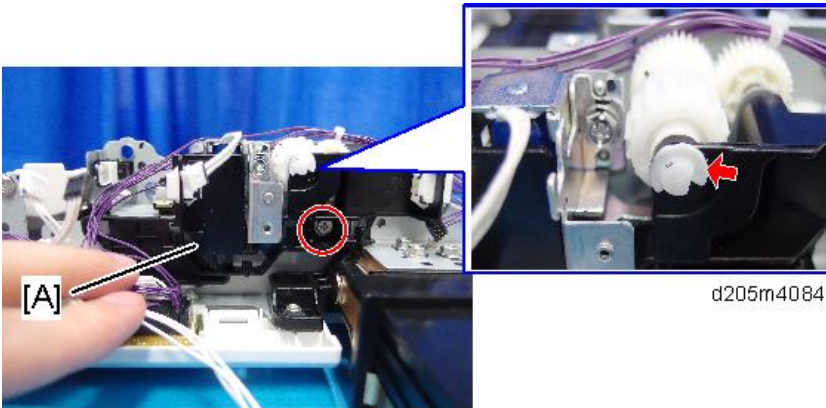


 x2,  x6

d205m4083

4

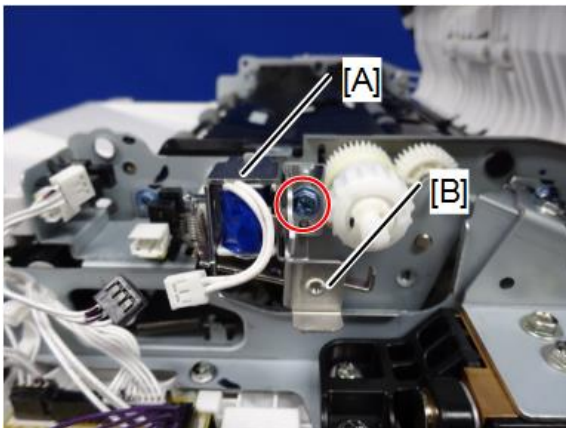
8. Harness Holder [A]



d205m4084

 x1,  x1

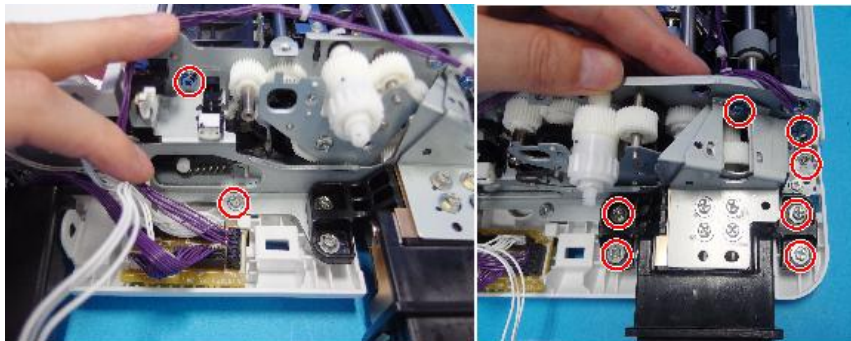
9. ARDF paper feed solenoid [A] and bracket [B]



 x1

d205z4187

10. Bracket [A] and the hinge [B]



 x9



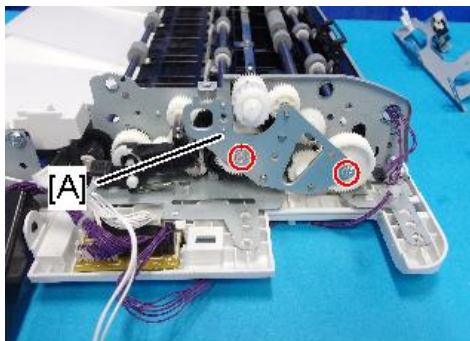
[A]



[B]

d205m4086

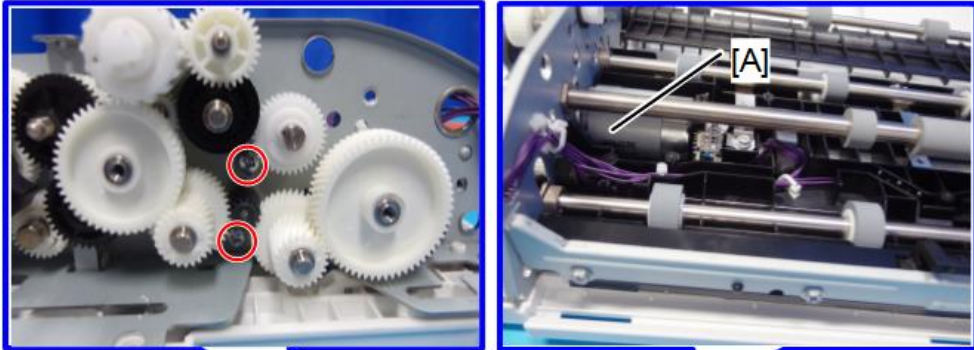
11. Bracket [A]



 x2

d205m4087

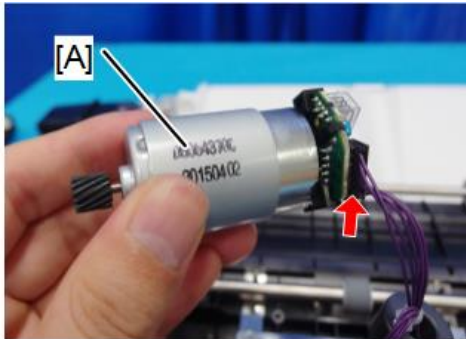
12. ARDF Drive Motor [A]




 x2

d205m4088

4

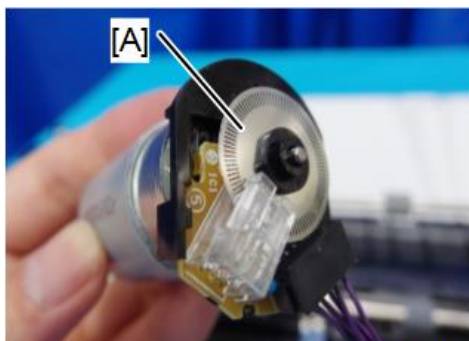


 x1

d205z4089

★ Important

- Do not touch the encoder [A].



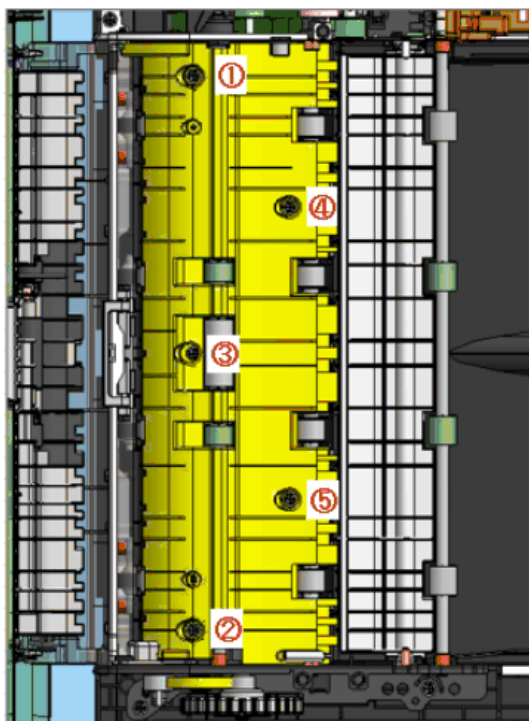
d205m4089

Precautions for Installing the Lower Guide Plate

4

When installing the lower guide plate, be careful of the following points:

- Tighten the screws in the order shown below.
- Do not use non-recommended equipment such as an electric screwdriver.
- Do not fasten the screws too tightly. Otherwise, the ARDF lower guide plate will be installed at an angle, and this will cause skew.

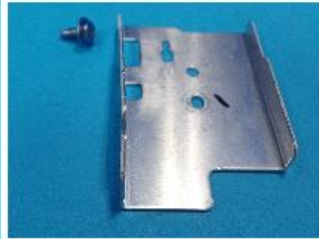
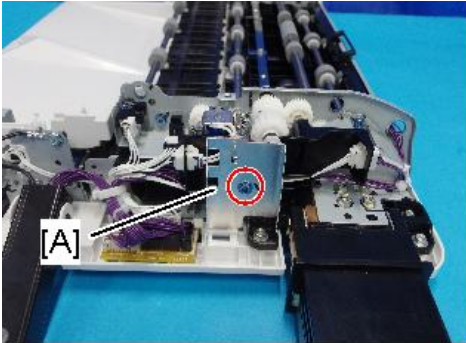


d205z4011

ARDF Paper Feed Solenoid

 Preparation

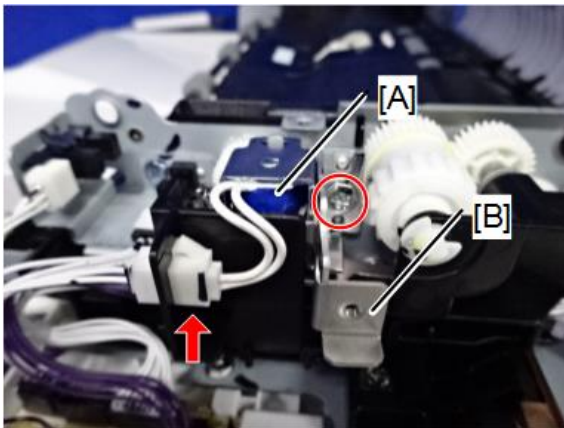
- When removing the ARDF paper feed solenoid, the ARDF must be removed. (page 158)
1. ARDF rear cover (page 161)
 2. ARDF feed cover (page 162)
 3. Bracket [A]



 x1

d205m4082

4. ARDF paper feed solenoid [A] and bracket [B]



 x1  x1

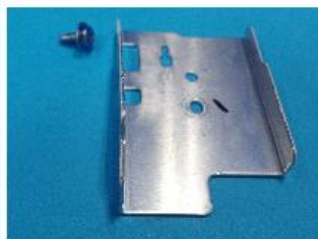
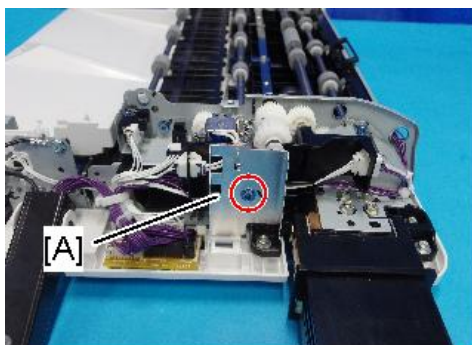
d205z4182

ARDF Reverse Solenoid

 Preparation

- When removing the ARDF reverse solenoid, the ARDF must be removed. (page 158)

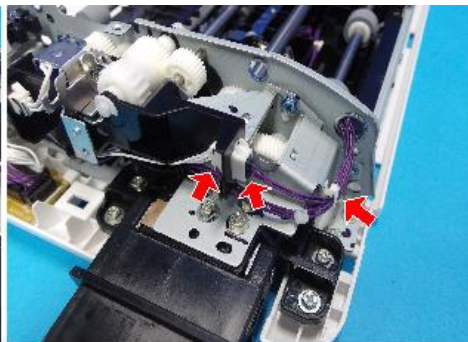
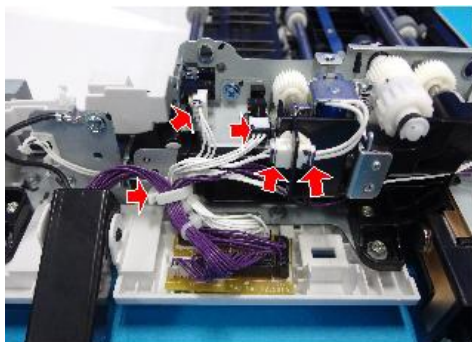
1. ARDF front cover (page 159)
2. ARDF rear cover (page 161)
3. ARDF feed cover (page 162)
4. Copy holder (page 163)
5. Bracket [A]




 x1

d205m4082

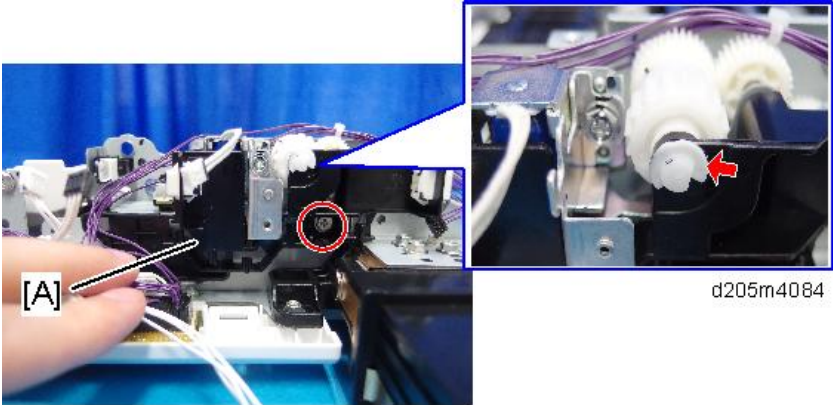
6. Release the harness.




 x2,  x6

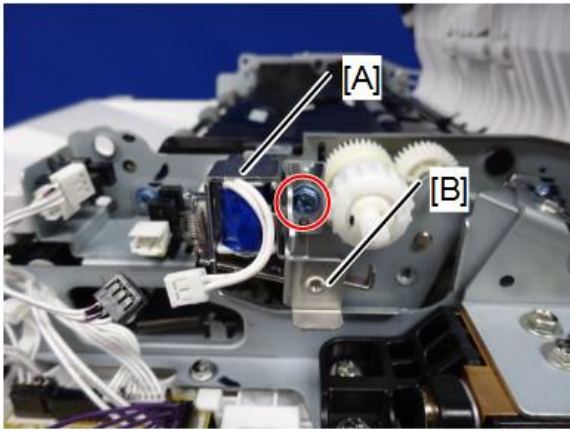
d205m4083

7. Harness holder [A]



 x1,  x1

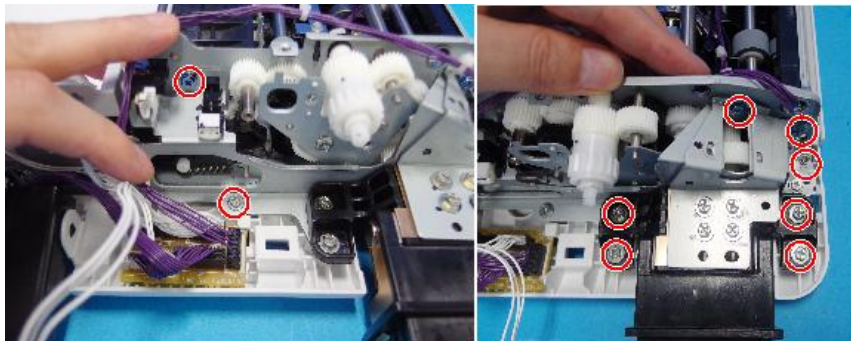
8. Paper feed solenoid [A] and bracket [B]



 x1

d205z4187

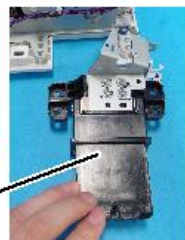
9. Bracket [A] and hinge [B]



 x9



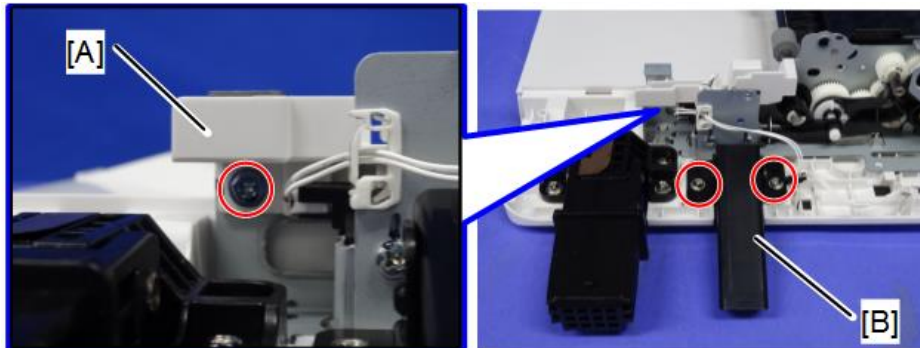
[A]



[B]

d205m4086

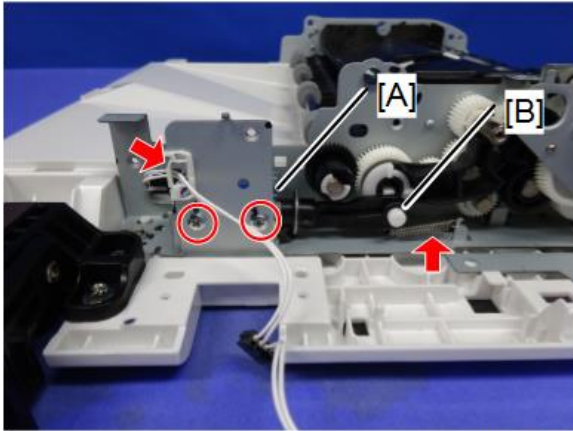
10. Harness holder [A][B]



 x3

d205z4184

11. Release the linkage [B] and remove the ARDF reverse solenoid [A].

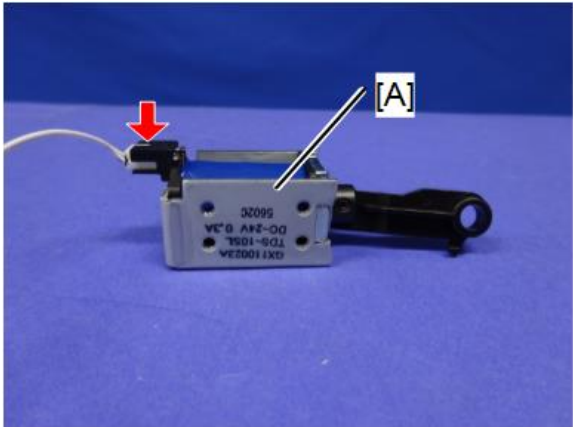


4

🔩 x2, 🛠️ x1, 🌀 x1

d205z4185

12. ARDF reverse solenoid [A]



🛠️ x1,

d205z4186


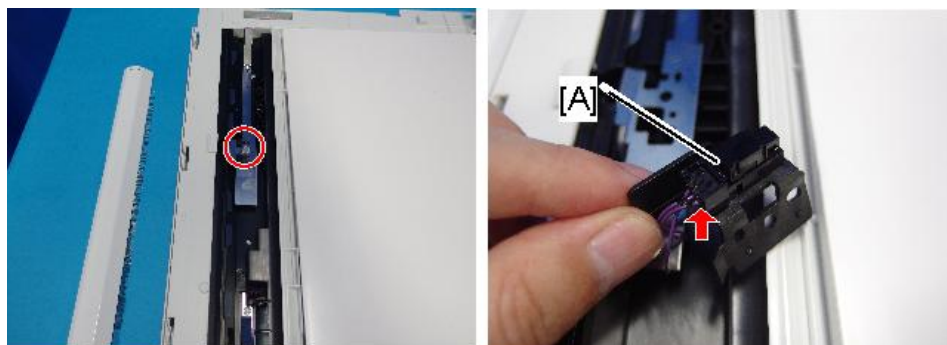

ARDF Scanning Guide Plate, ARDF Registration Sensor

1. ARDF Scanning Guide Plate [A]



d205m4091

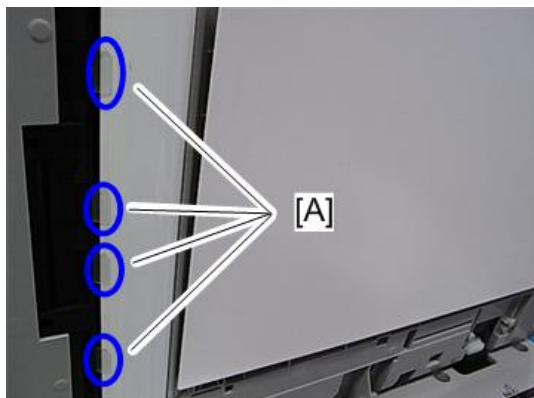
2. ARDF registration sensor [A]

 x1,  x1

d205m4092

Precaution when Installing the ARDF Scanning Guide Plate

The sheets [A] must not be under the ARDF scanning guide plate.



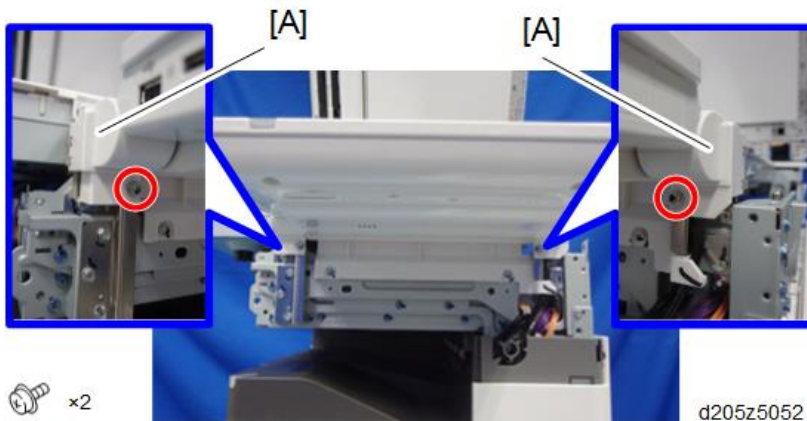
d117r839

Operation Panel

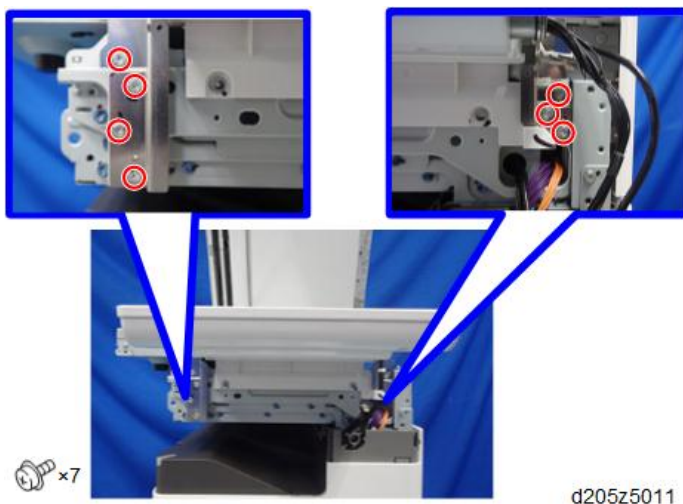
This section includes only the replacement procedure which is unique for the MP 305⁺ series. The replacement procedures for the other parts are included in the FSM for the Smart Operation Panel, because these parts are also used with other models.

Operation Panel

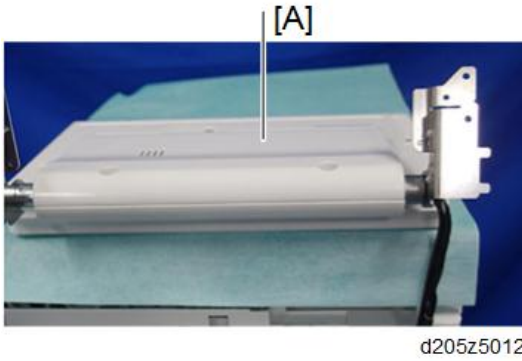
1. Place the service mat on top of the ARDF.
2. Front upper cover (page 150)
3. Brackets [A] of the operation panel unit



4. Hinges of the operation panel unit

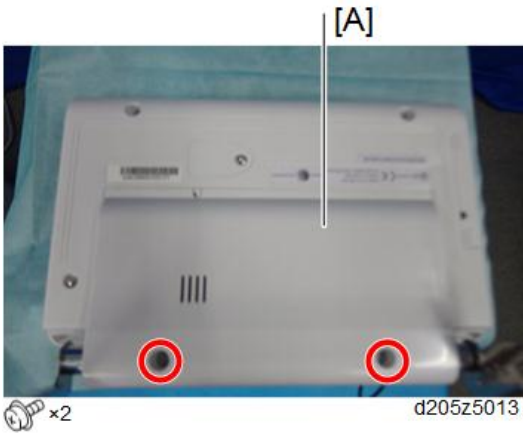


5. Remove the operation panel unit and put it on the service mat.

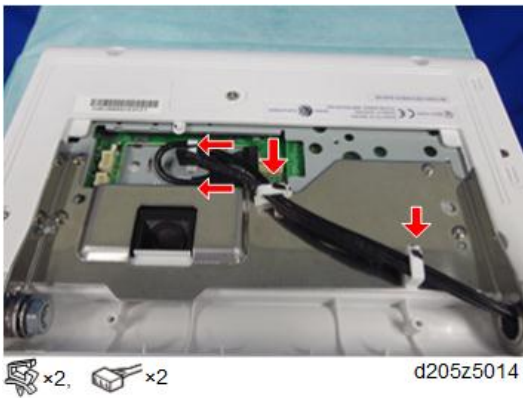


4

6. Rear cover [A] of the operation panel unit



7. Disconnect the harness and the USB cable.



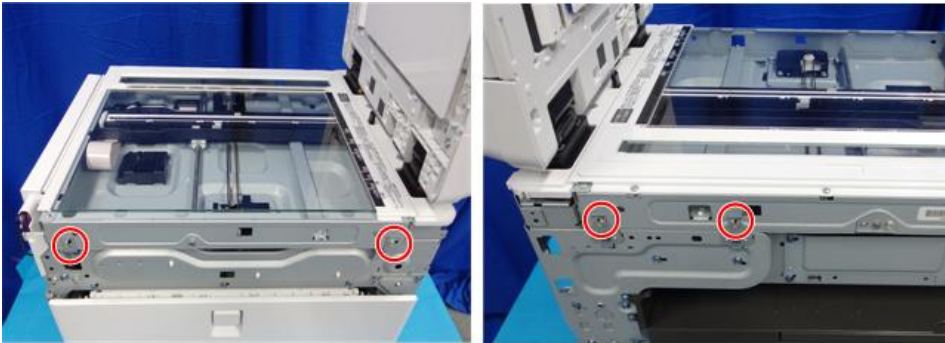
Internal Parts

Refer to the FSM for the Smart Operation Panel.

Scanner

Scanner Unit

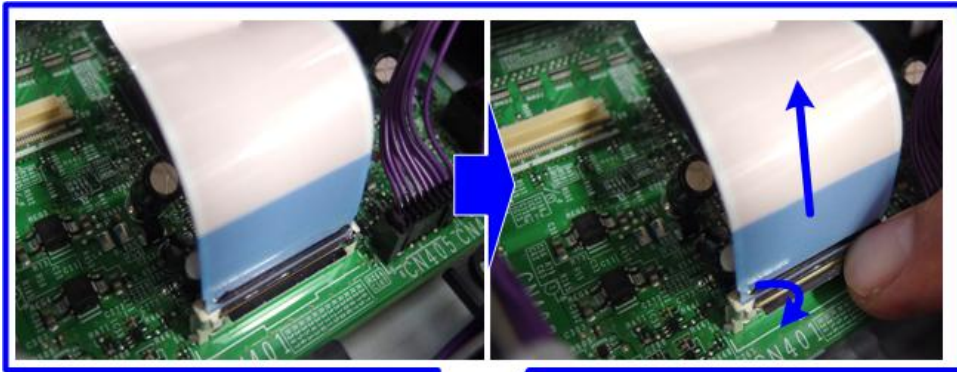
1. Right upper cover (page 148)
2. Left upper cover (page 150)
3. Remove the screws of the scanner unit at the right and left.



 x4

d205m4030

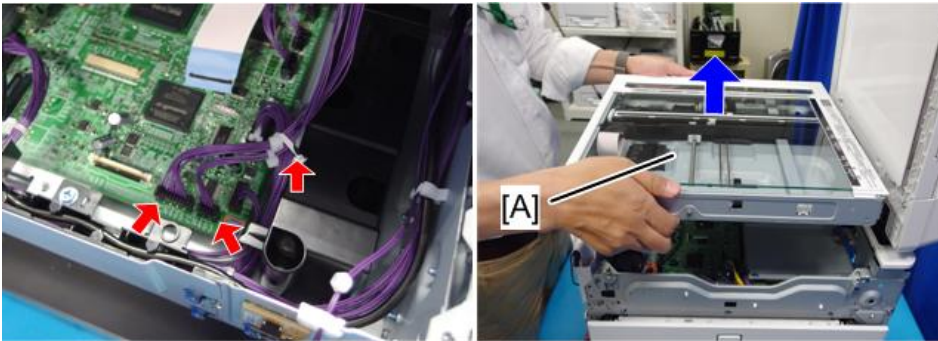
4. Slide the scanner unit about 10 cm to the right.
5. Release the FFC on the BiCU.
Unlock the connector and release it.



 x1

d205m4031

6. Release all the other harnesses and remove the scanner unit [A].



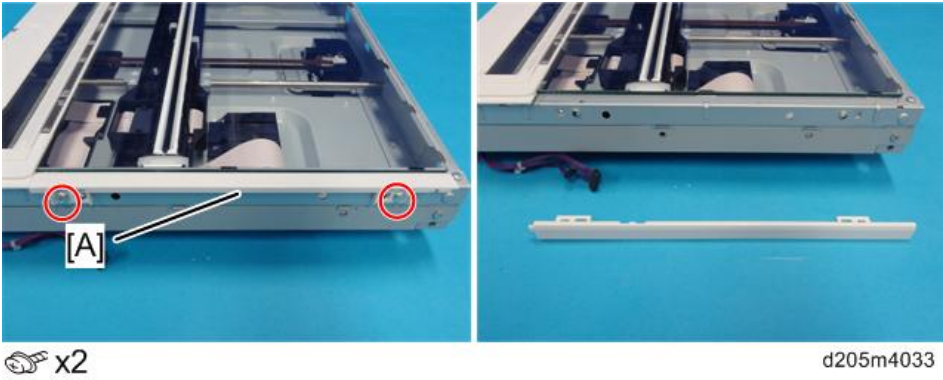
 x1,  x2

d205m4032

Scanner Front Cover

1. Scanner unit (page 186)

2. Scanner front cover [A]



4

Exposure Glass, ARDF Exposure Glass, Left Scale and Rear Scale

↓ Note

- All these parts are attached with hook and loop fasteners.

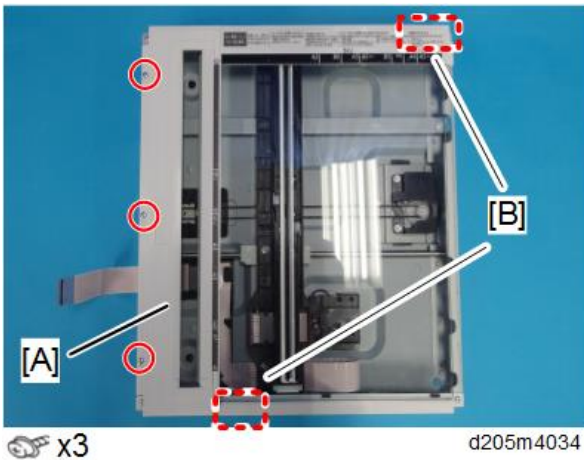
★ Important

- For replacing the ARDF exposure glass, order a [seal:prevention] (D2051770) separately.

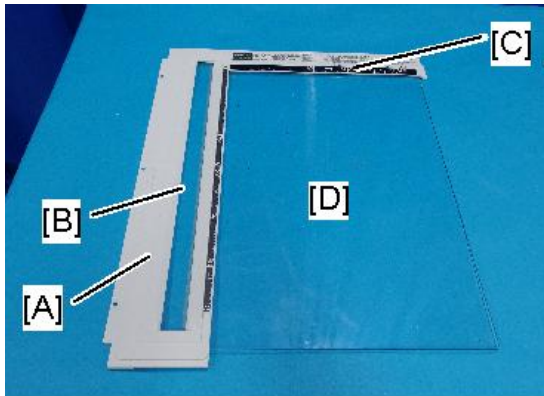
1. Scanner unit (page 186)
2. Screws of the left scale [A]

↓ Note

- To remove the exposure glass, hold the glass by its front left and rear right enclosed by the red-dotted line [B]. Do not hold it by the scale.



Outline



d205m4035

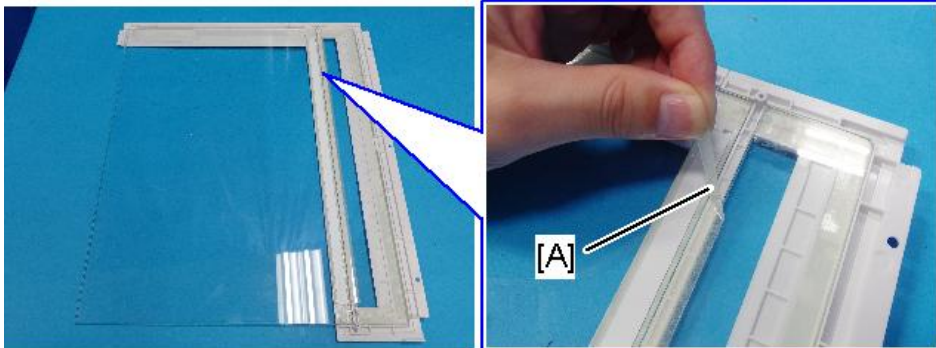
[A]: Left Scale

[B]: ARDF Exposure Glass

[C]: Rear Scale

[D]: Exposure Glass

3. For replacing the ARDF exposure glass, remove the Seal:prevention [A].



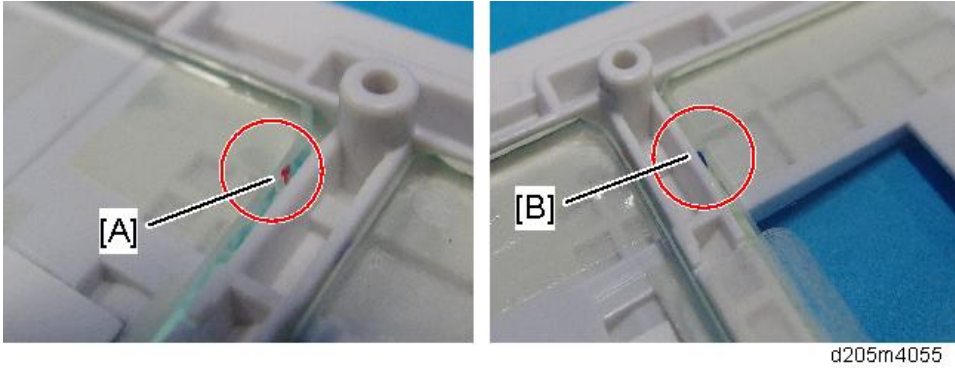
d205m4054

Precaution for Installing These Parts

The ARDF exposure glass and the exposure glass have markings that show the correct orientation.

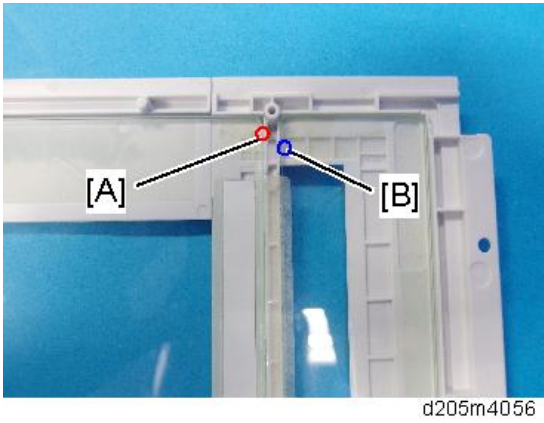
[A]: Red point on the exposure glass

[B]: Blue point on the ARDF exposure glass

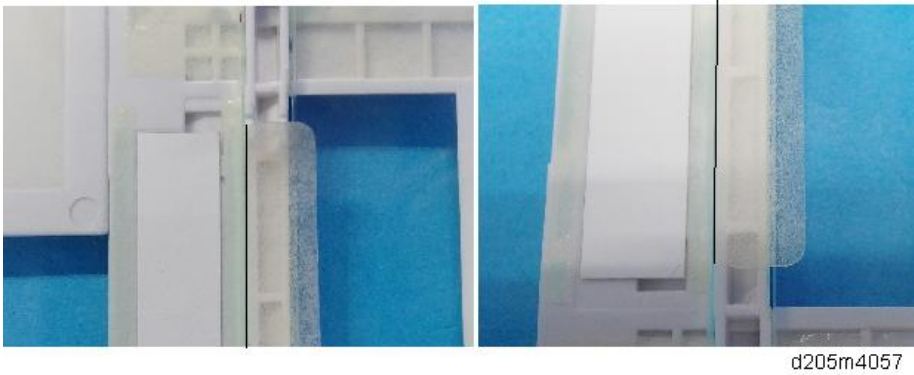


Set the 2 points [A] and [B] to face each other as shown below. After that, attach new sticky tape.

4



Stick the tape at the following location.



APS Sensor 1, 2

Note

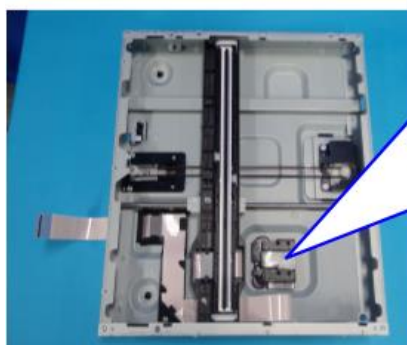
- North America: 1 APS sensor

- Others: 2 APS sensors

1. Exposure glass (page 188)

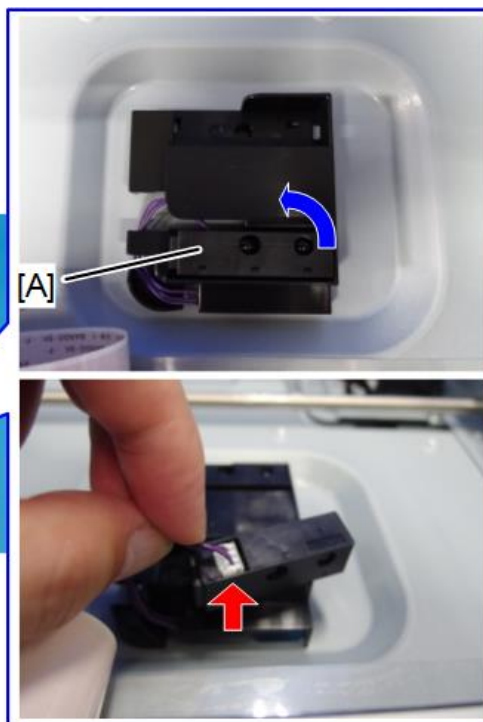
2. APS sensor(s) [A]

North America



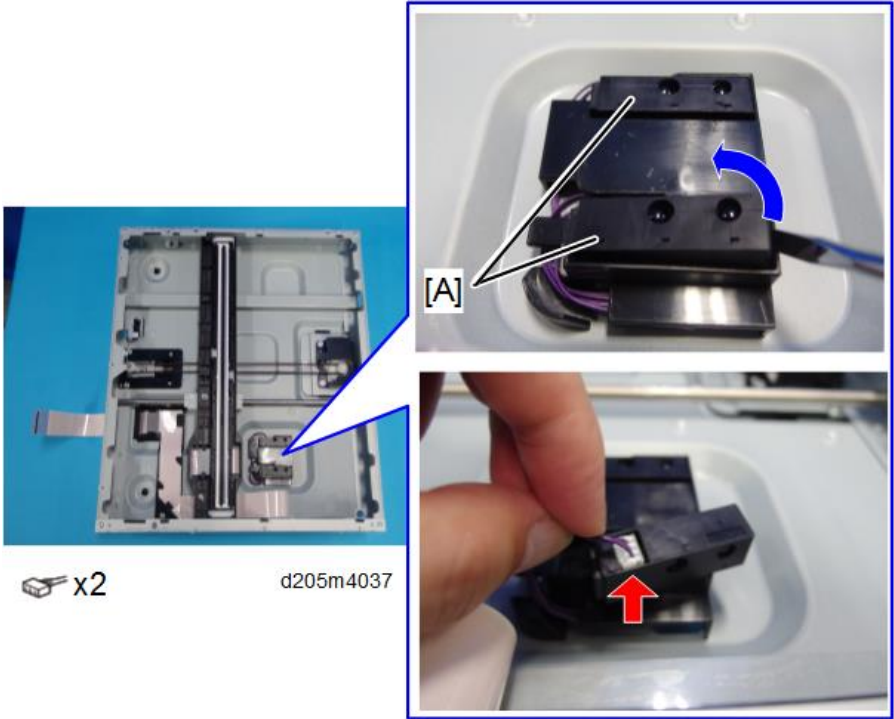
 x1

d205z4181



Others

4

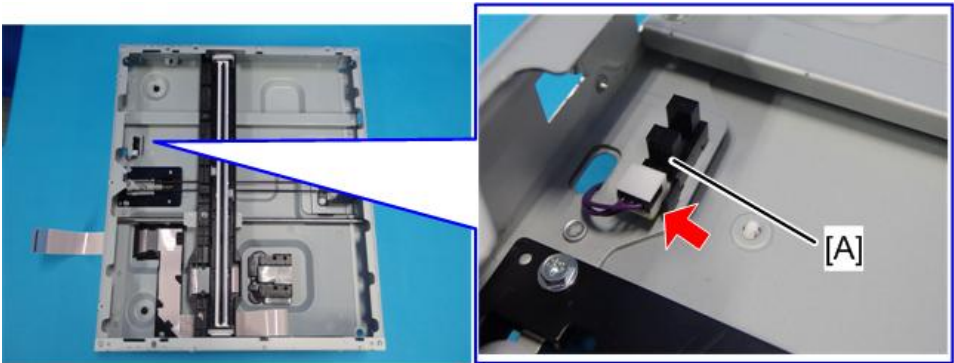


 x2

d205m4037

Scanner HP Sensor

1. Exposure glass (page 188)
2. Scanner HP sensor [A]

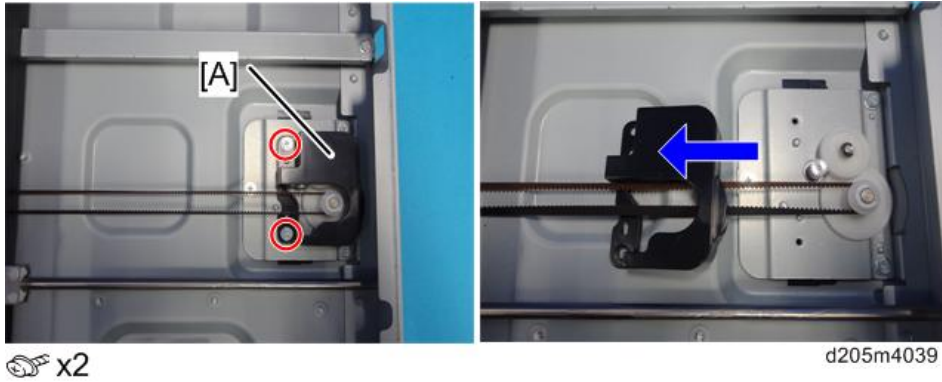


 x1

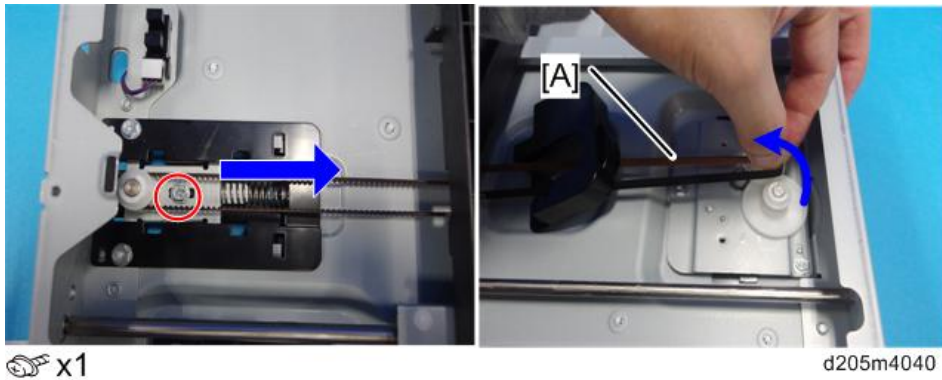
d205m4038

Timing Belt

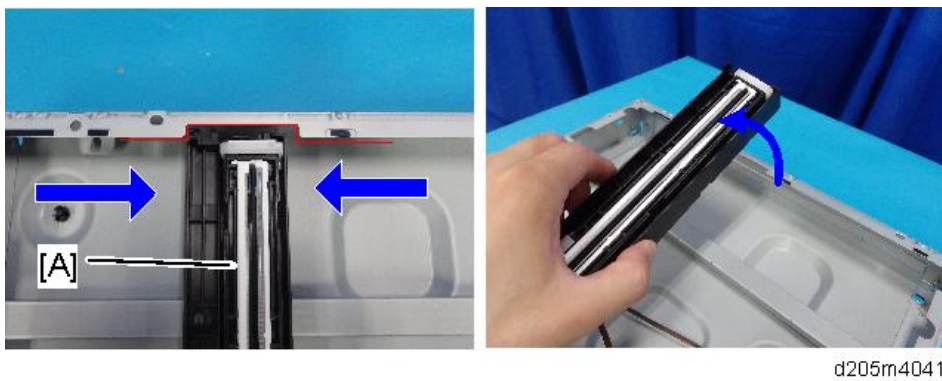
1. Exposure glass (page 188)
2. Scanner motor [A]



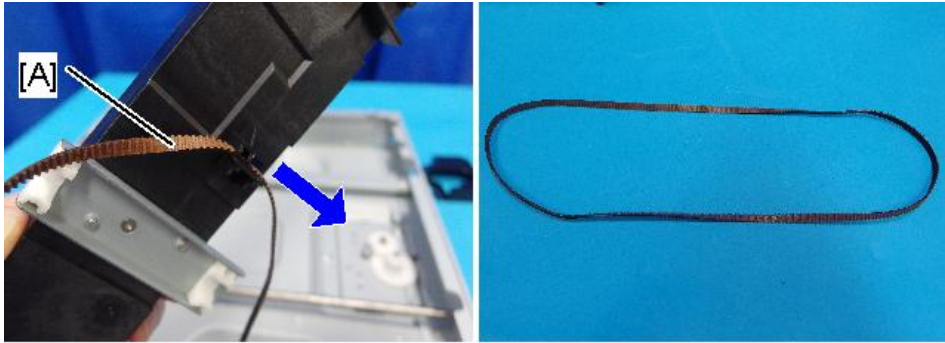
3. Release the timing belt [A] from the gear.



4. Move the CIS carriage [A] to the cut out in the frame and remove it.



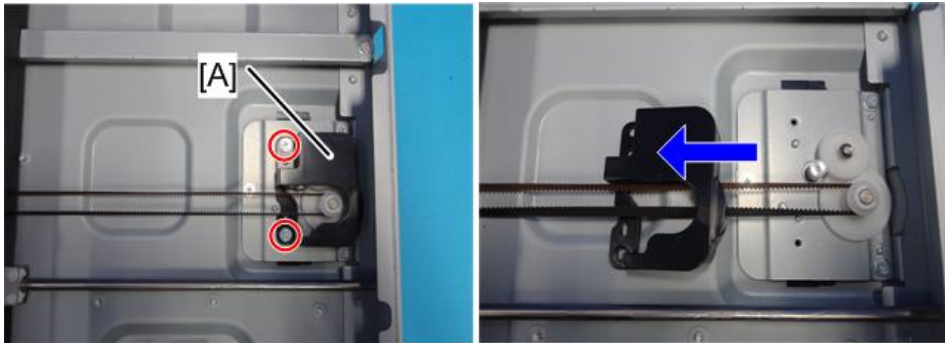
5. Timing belt [A]



d205m4042

Scanner Motor

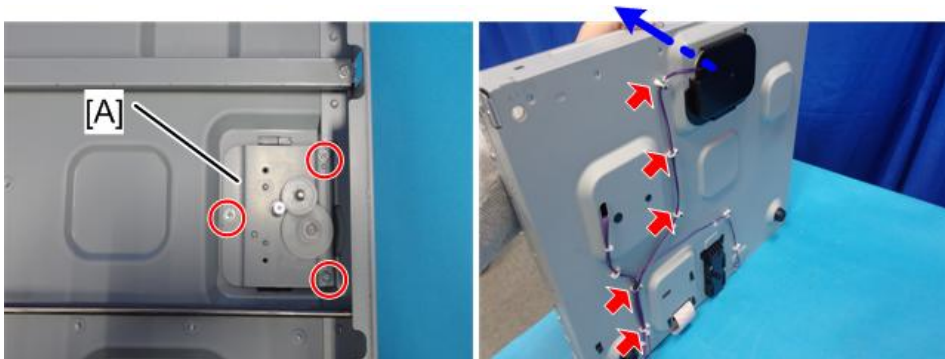
- 1. Exposure glass (page 188)
- 2. Scanner motor cover [A]





 x2

d205m4039

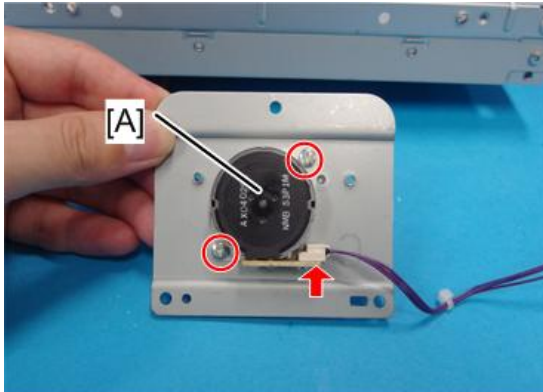
3. Motor bracket [A]



 x3,  x5

d205m4043

4. Scanner motor [A]

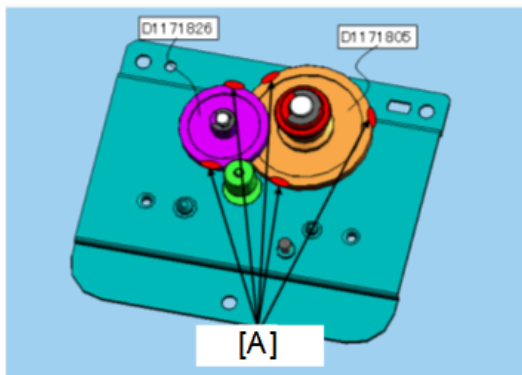


 x2

d205m4044

4

5. Apply grease at the following locations [A].



d205k4015

Minimum amount

Maximum amount



w_d205k4082

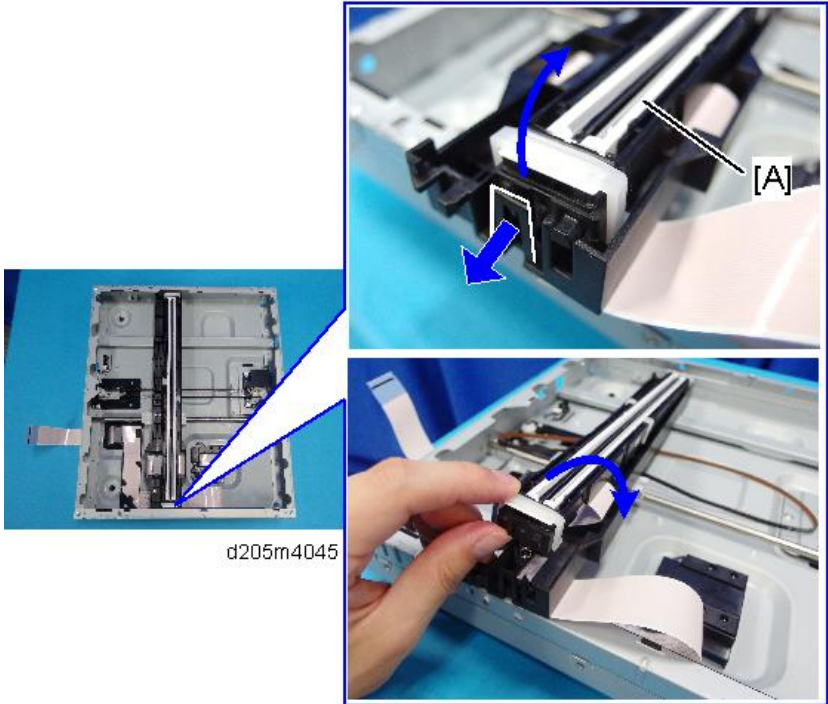
CIS

After changing the CIS

SP	Detail
SP4-803-001	HP Position Adjust

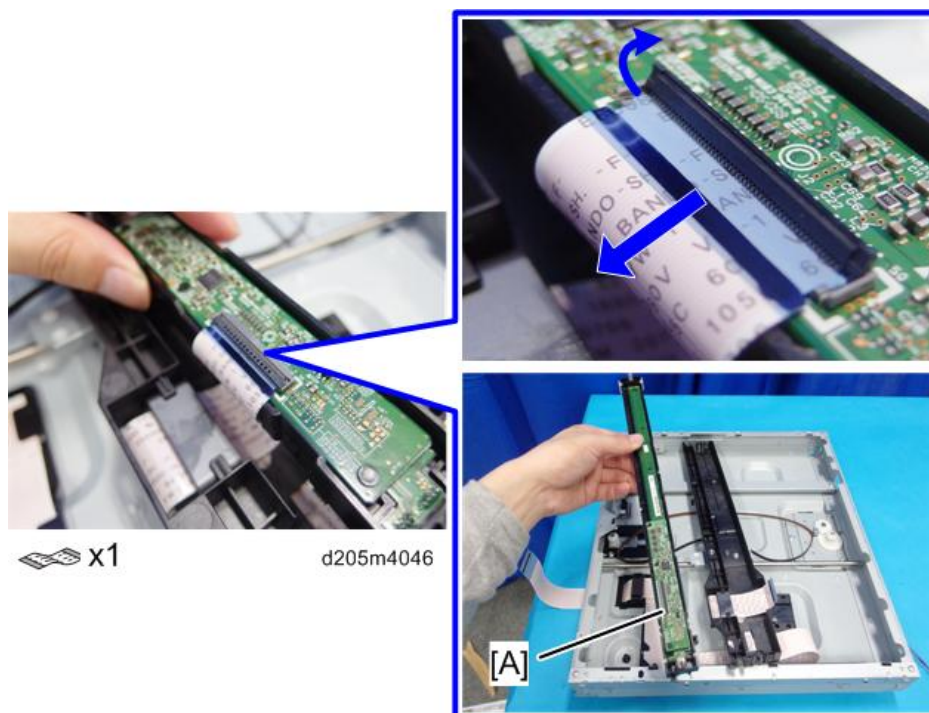
1. Unlock the front lock and turn over the CIS [A].

4



2. CIS [A]

Unlock the connector to release.



 x1

d205m4046

4

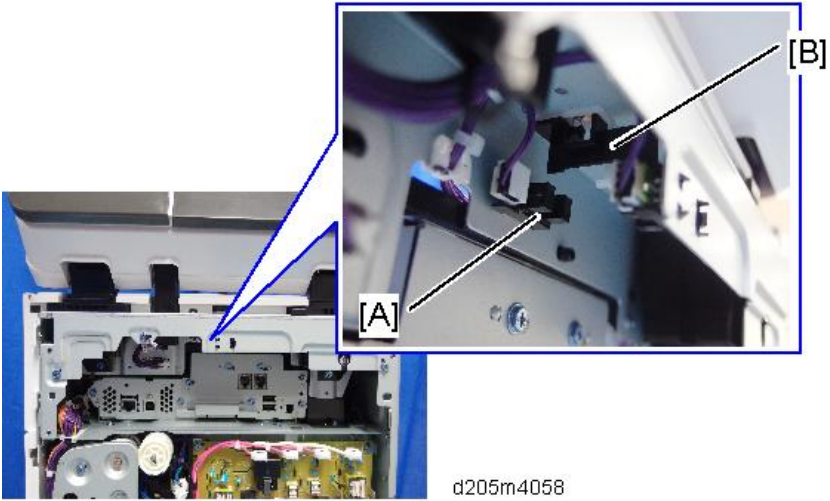
3. Adjust the vertical scanning with SP4-803-001 (HP Position Adjust).
4. Turn OFF then ON the main power to apply the SP setting.
5. Adjust the carriage parallel if necessary (page 199).

Note

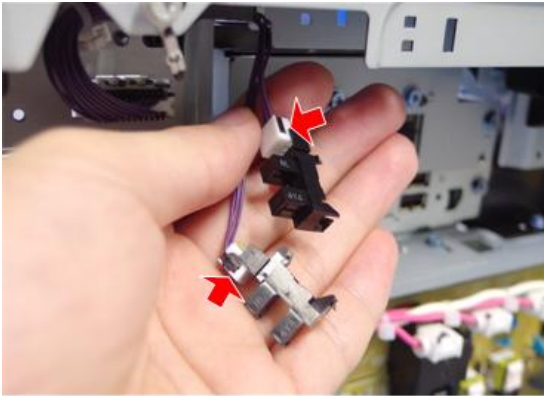
- The CIS correction value is stored in an EEPROM on the BiCU. This correction value must be re-adjusted after the CIS unit is replaced.
 - SP4-008 (Sub scan magnification Adj)
 - SP4-010 (Sub scan registration Adj)
 - SP4-011 (Main scan Reg)
 - SP4-688-001 (DF density adjustment ARDF)

Platen Cover Sensor, ARDF Position Sensor

1. Rear cover (page 147)
2. Remove the following:
 1. Platen cover sensor [A]
 2. ARDF position sensor [B]



d205m4058

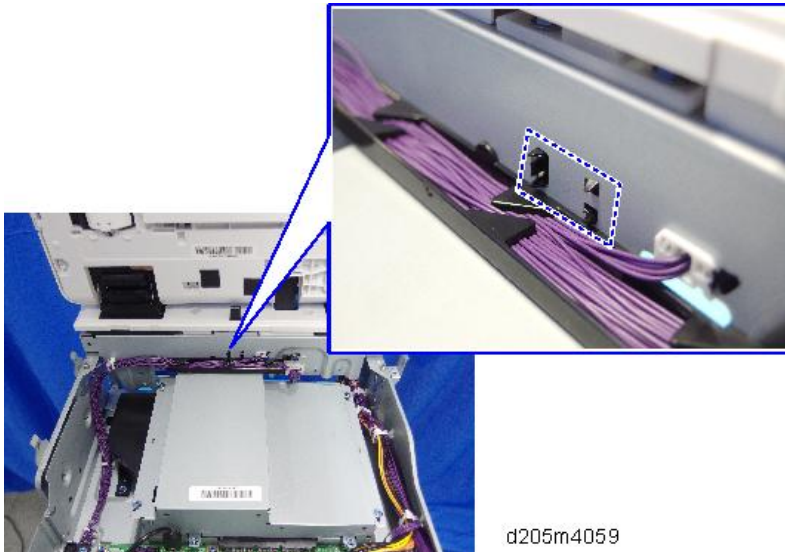


 x2

d205m4060

Note

- Remove the scanner unit to release the tabs that are inside the platen cover sensor.



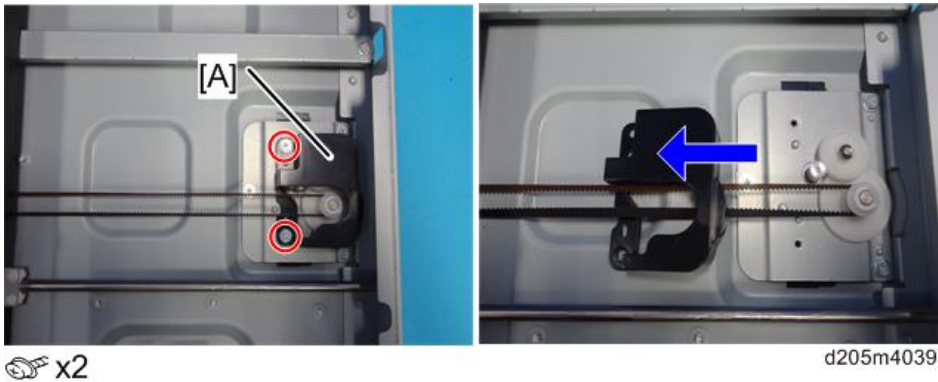
d205m4059

4

Scanner Parallel Adjustment

Use the parallel pins to adjust the scanner skew.

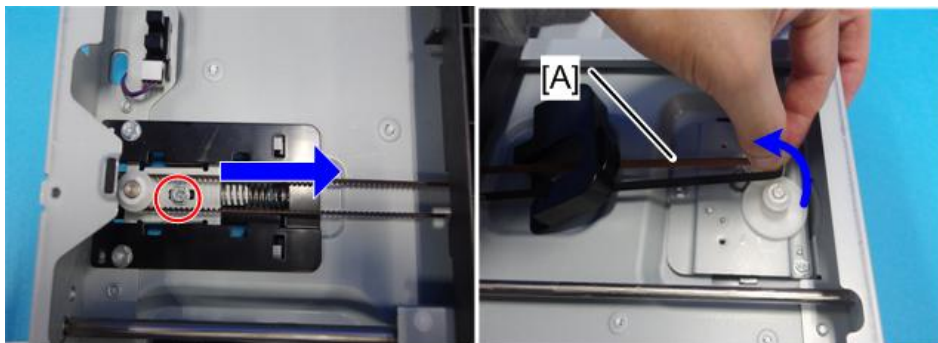
1. Cover of the scanner motor [A]



d205m4039

2. Loosen the screw to release the tension.

3. Timing belt [A]



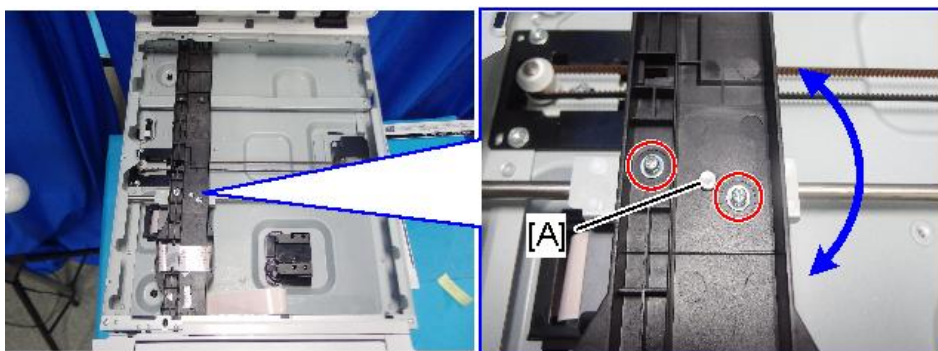
 x1


d205m4040

4

4. CIS and screws

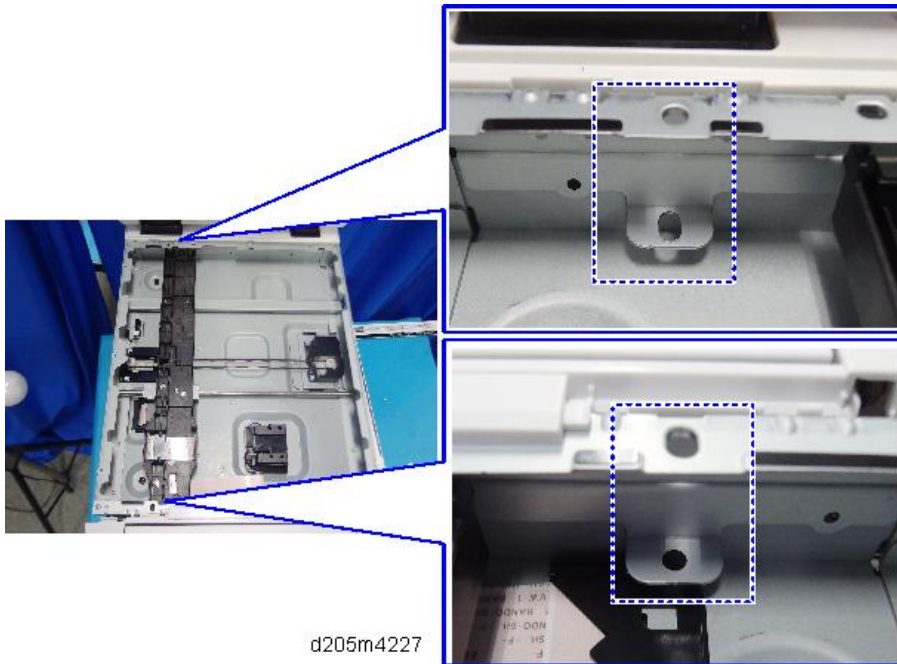
This is to allow you to adjust the position of the carriage at the Point [A].



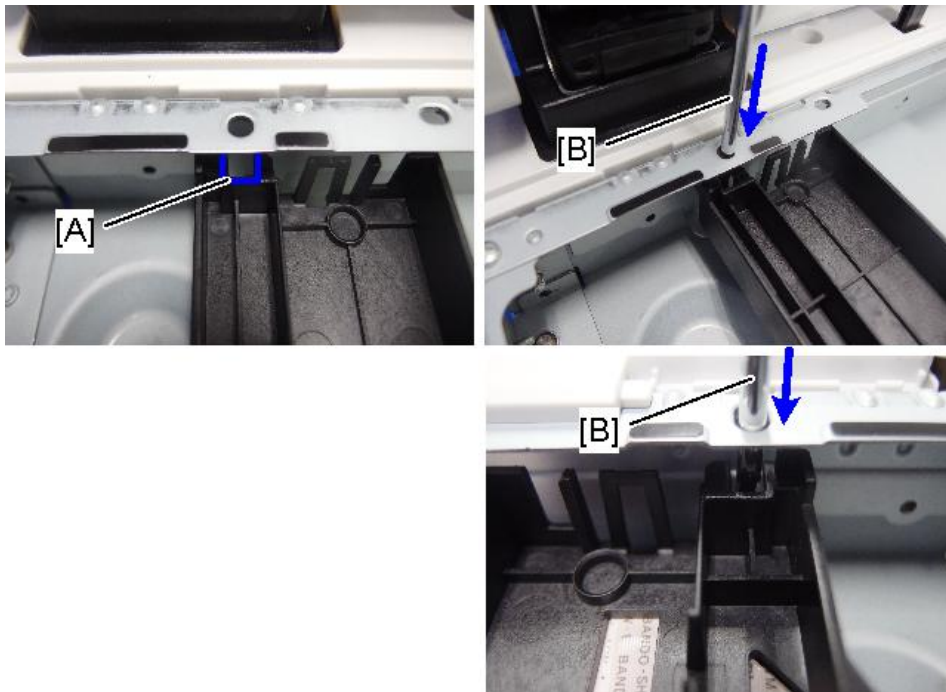
 x2

d205m4225

5. Move the carriage to the insertion position of the parallel pins.



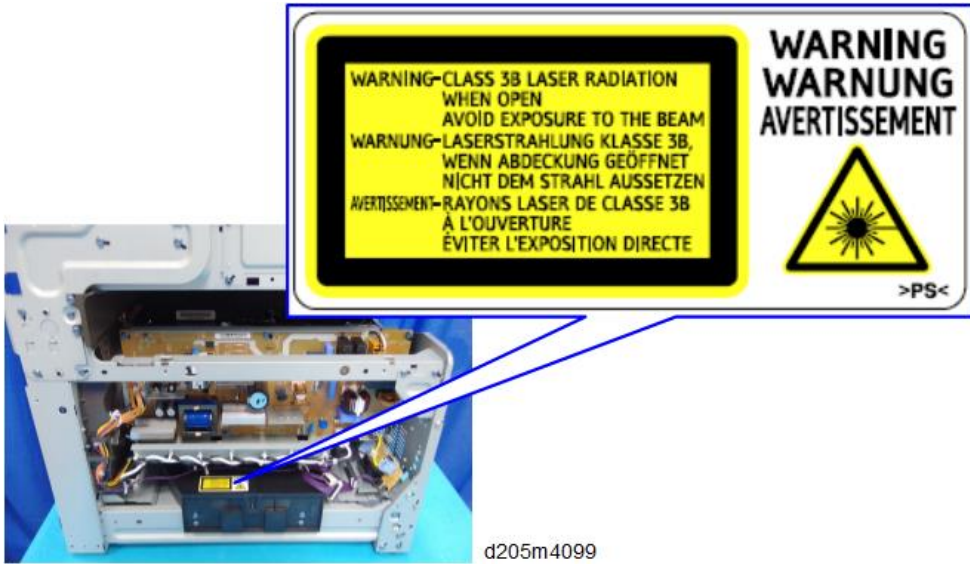
6. When the adjusting position of the carriage [A] is at the pin insertion position, insert the parallel pins [B].



Laser Optics

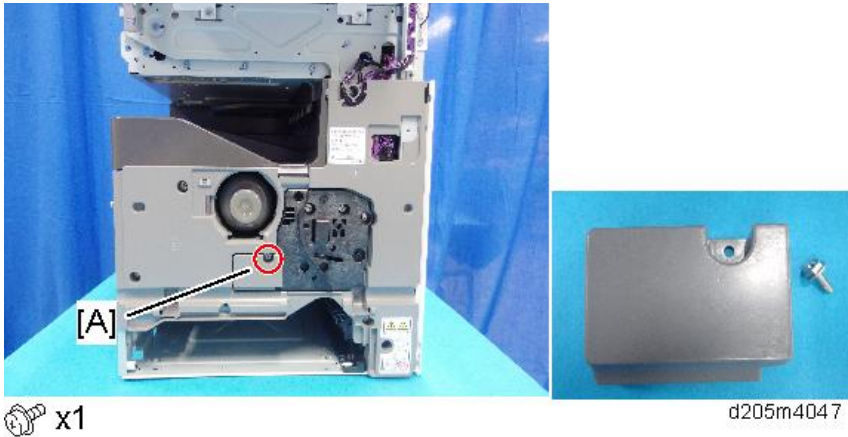
Location of the Caution Decal

4

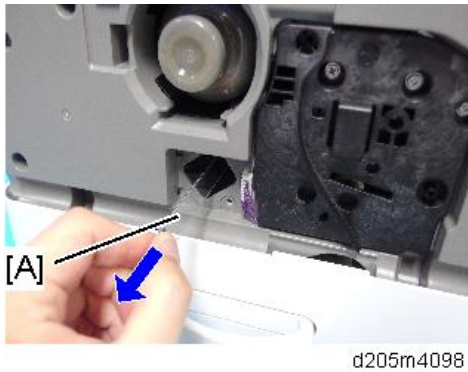


Dust-Shield Glass

1. Open the front cover.
2. Small cover [A]



3. Pull out the dust-shield glass [A].



Notes on Installing the Dust Shield Glass

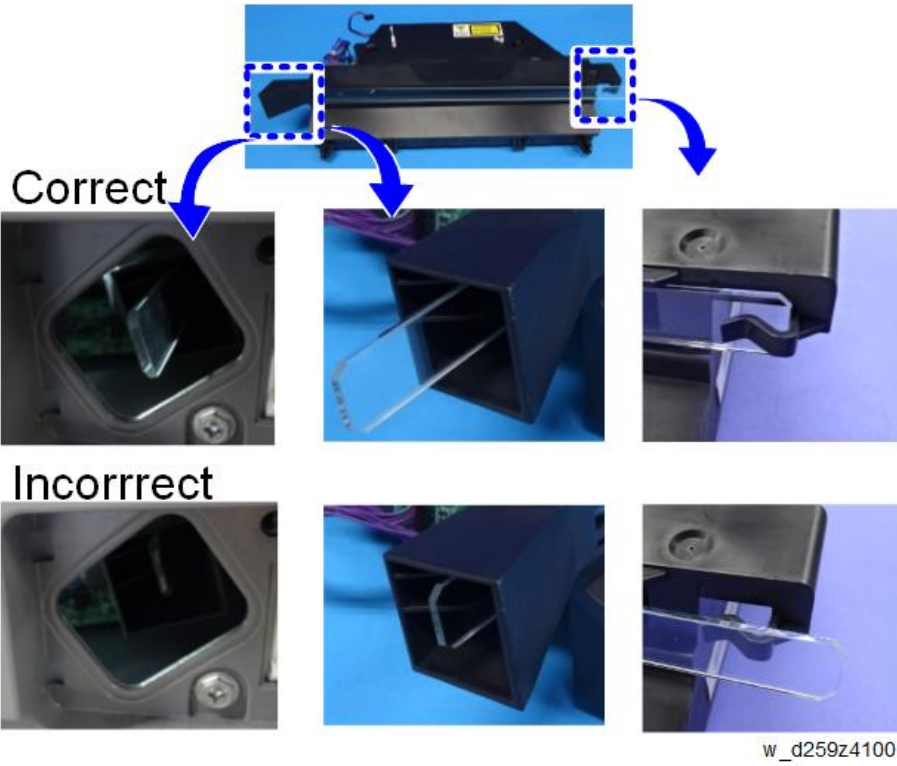
To check whether the glass is installed correctly, see the following:

Correct:

You can feel that the dust shield glass stops at a certain point while inserting the dust shield glass. You cannot push it in any more.

Incorrect:

You cannot feel that the dust shield glass stops while you are inserting it. You can insert the dust shield glass so far that it becomes completely hidden in the hole.

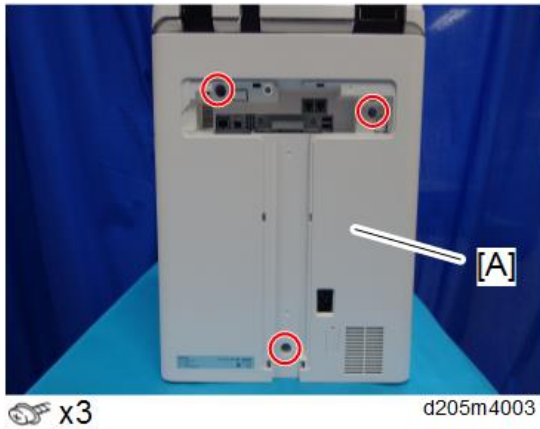


Laser Unit

1. T-shaped cover [A]



2. Screws of the rear cover [A]



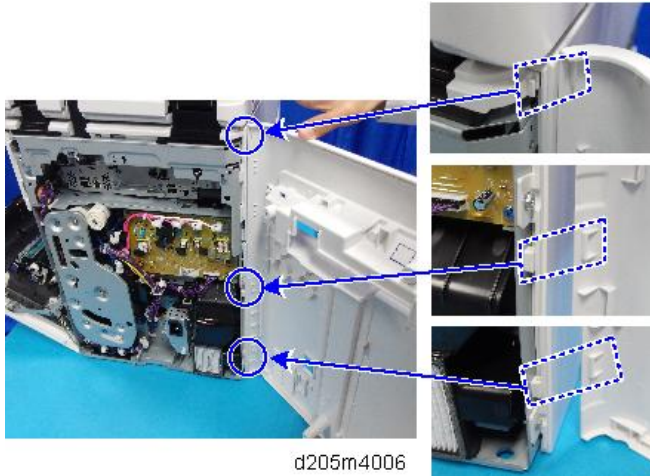
3. Open the right cover. (tab x2)

4. Rear Cover [A]



↓ Note

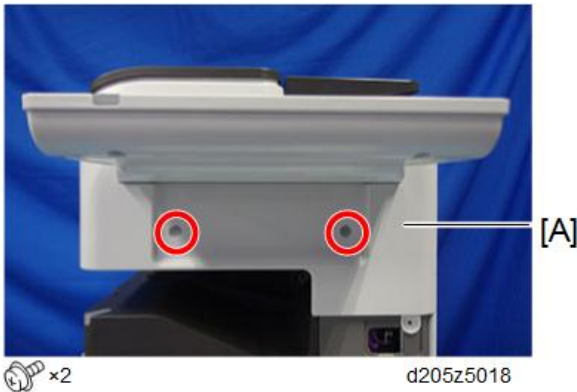
- Be careful not to damage the tabs at the rear of the left cover when removing or installing the rear cover.



d205m4006

5. Open the front cover.

6. Front Upper Cover [A]

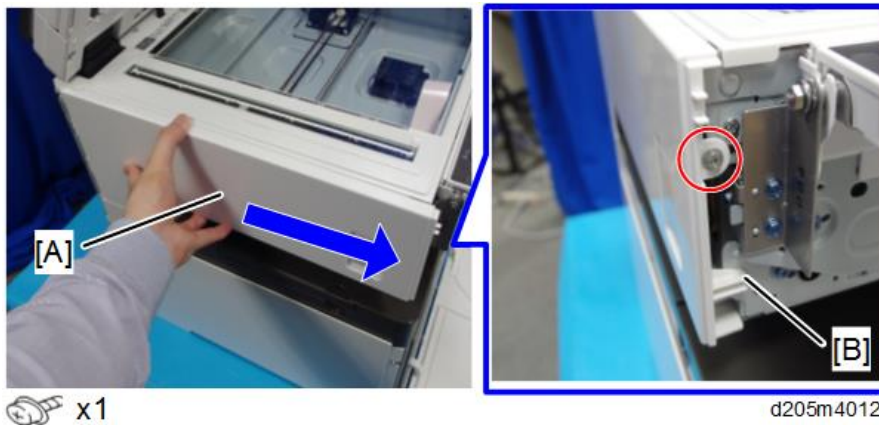


×2

d205z5018

7. Open the ARDF.

8. Slide the left upper cover [A] toward front side (Positioning Boss [B]).

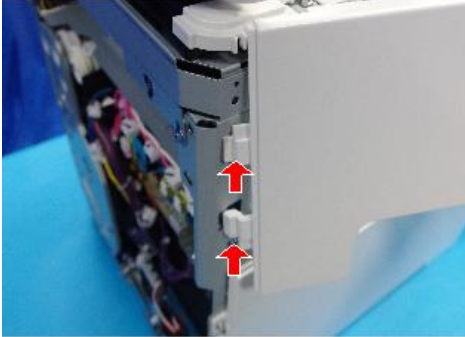


×1

d205m4012

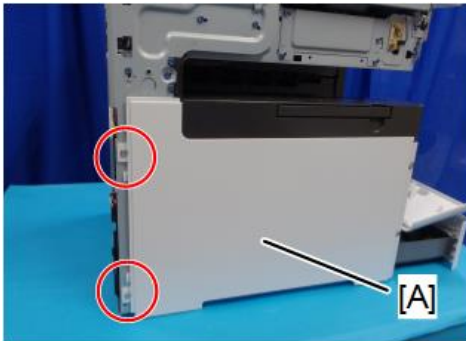
Note

- Be careful not to damage the two tabs at the rear when you remove or install.



d205m4013

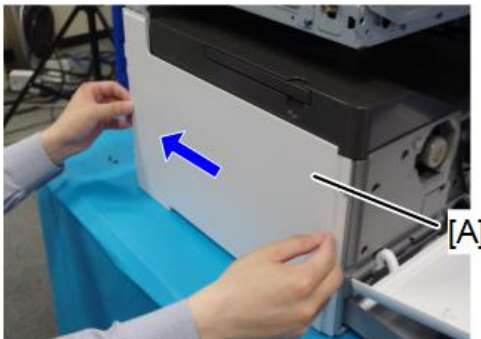
4

9. Left lower cover [A] x2

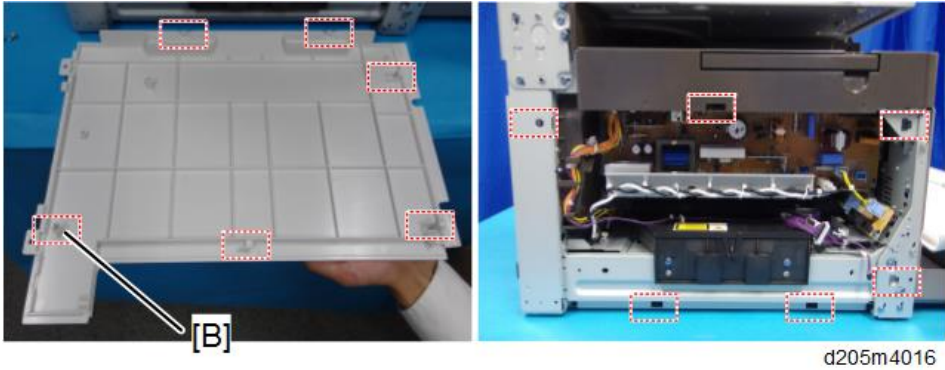
d205m4014

Note

- To remove the left lower cover [A], slide to rear and be careful not to damage the positioning boss [B] and tabs.



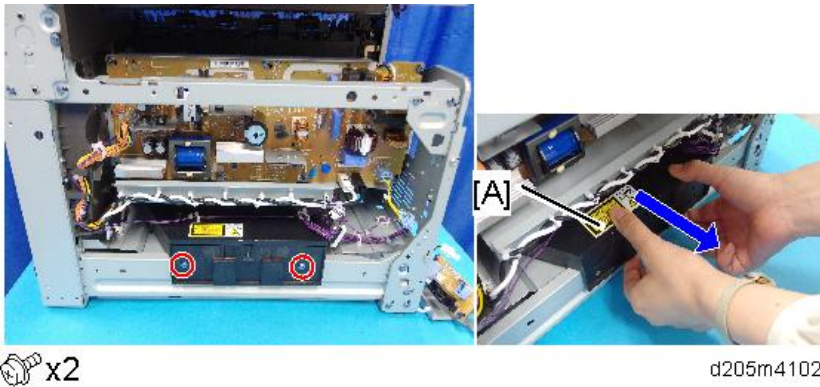
d205m4015



10. Dust-shield Glass (page 202)

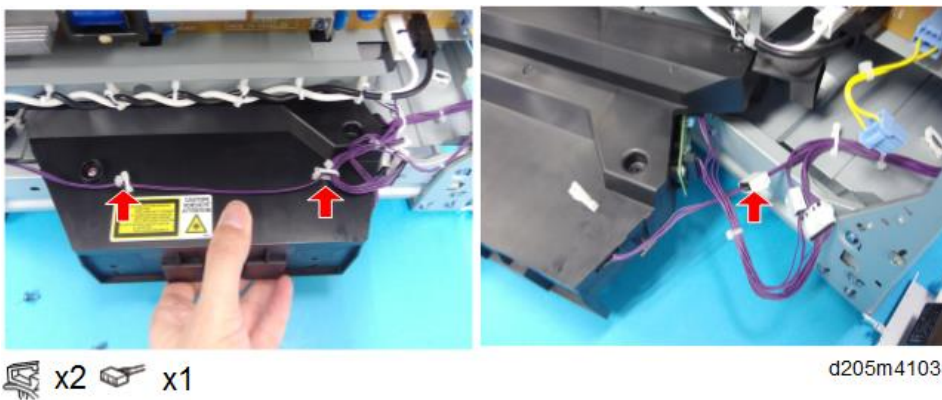
11. Pull out the laser unit halfway.

4



 x2

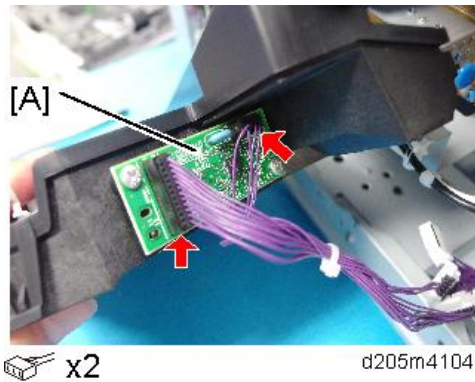
12. Release the clamps and the connectors.



 x2  x1

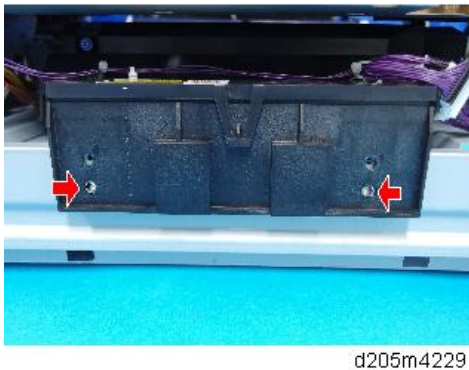
13. LDB [A]

The LDB is attached to the laser unit, and can only be replaced at the same time as the laser unit.



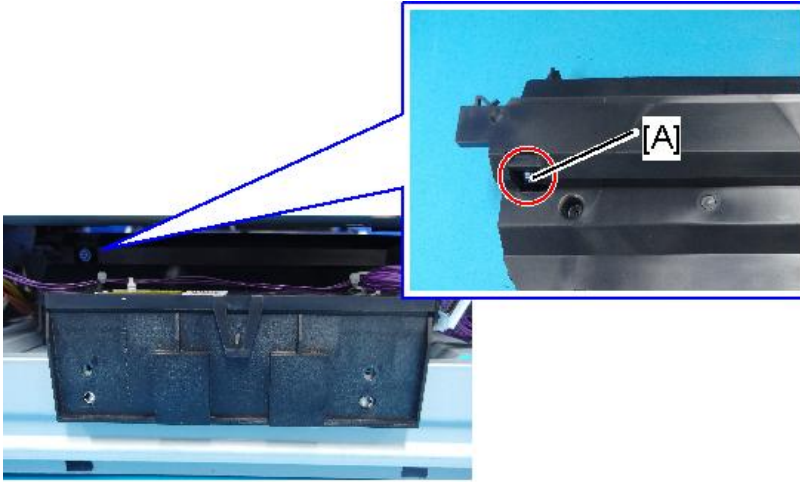
Precaution for Installing the Laser Unit

To prevent skew, first fit the positioning holes in the laser unit securely over the bosses on the machine, then tighten the screws to secure the laser unit.

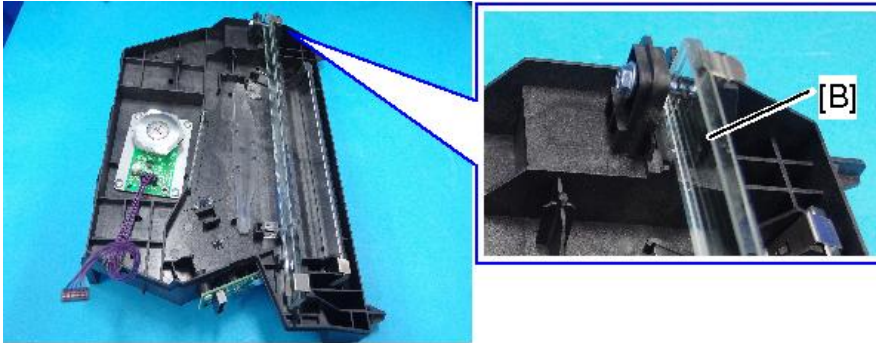


Parallelogram Image Adjustment

The left upper screw [A] on the laser unit allows you to adjust the angle of the second mirror [B] to correct a parallelogram image.



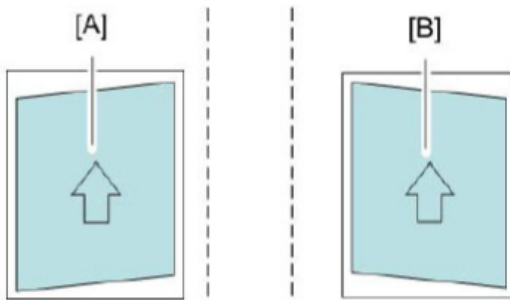
d205m4230



d205m4231

Note

- To correct the image [A], rotate the screw counterclockwise.
- To correct the image [B], rotate the screw clockwise.



d205z5045

- Rotating the screw twice moves the image up/down 1 mm per 300 mm width.

PCDU

↓ Note

- To prevent damage from toner spillage during the PCDU removal, be sure to place a ground cloth on the floor.
- To prevent damage from excess light, wrap the PCDU with protective paper and store the PCDU in a cool dark place.
- Do not touch the drum, cleaning blade or any seals with bare hands.
- Do not use any alcohols or solvents to clean the OPC drum; be sure to wipe with a dry cloth. If excess dirt exists, first wipe with a damp cloth, and next wipe off completely with a dry cloth.
- Do not rotate the PCDU clockwise after the PCDU has been installed.

4

PCDU

↓ Note

- When you take the new PCDU out of the box, hold the lower middle part of the PCDU. Otherwise, you will damage the drum unit and this will cause defective images.
- Remove the developer cap [A] from the new PCDU and put it on the old one. Attach the cap to the toner supply unit of the old PCDU that is in the box with the new PCDU enclosed.

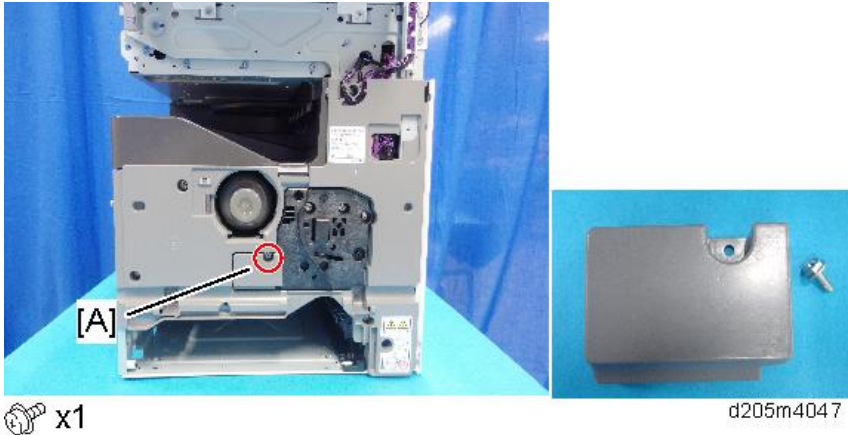


d205z4055

- The PCDU has new unit detection. A flag in a chip in the TD sensor is overwritten when power is turned ON.
- The new PCDU is detected automatically, so it is not necessary to make any settings manually after installing a new unit.

1. Open the front cover.

2. Small cover [A]



 x1

d205m4047

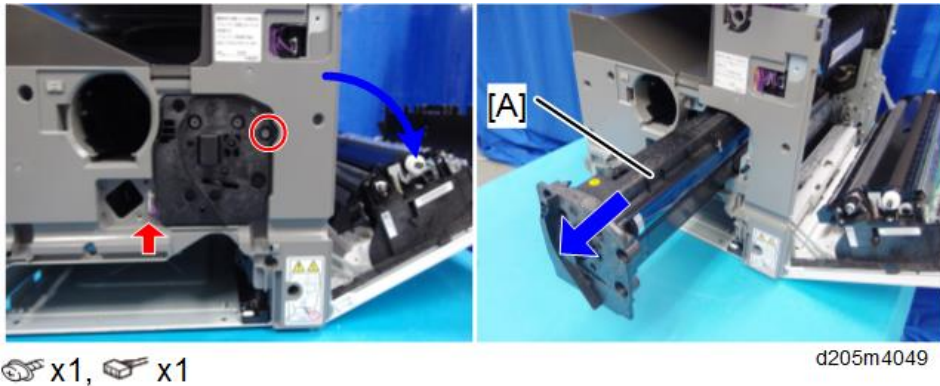
3. Open the right cover and remove the toner bottle.



 Important

- Remove the toner bottle only while the PCDU is in the machine. If the toner bottle is taken out and/or put in while the PCDU is out of the machine, toner scattering may occur because of the bottle's internal pressure.

4. PCDU [A]

Do not touch the surface of the drum with bare hands.



 x1,  x1

d205m4049

5. Do the test after replacement (page 218).

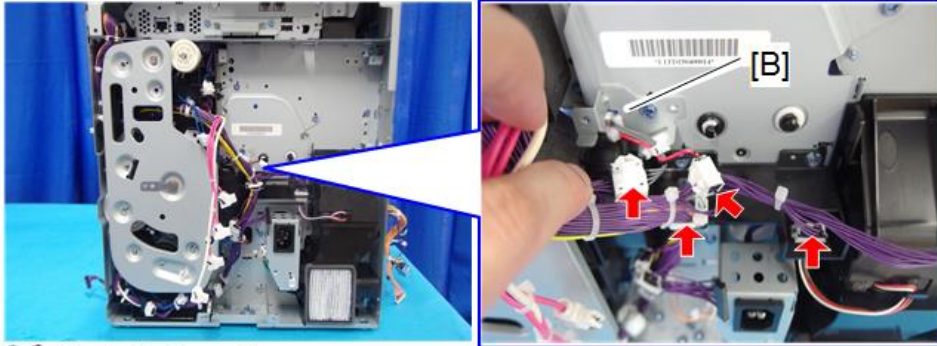
Toner Supply Motor

1. Rear Cover (page 147)
2. HVPS (page 285)

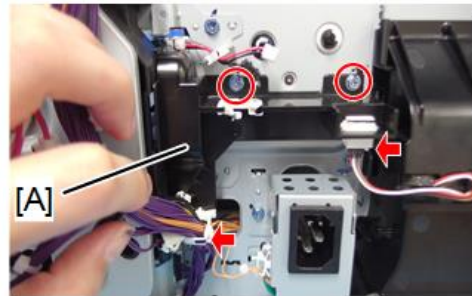
3. Harness holder [A]

★ Important

- Do not remove the bracket [B]. If it is removed, the harness may be damaged.

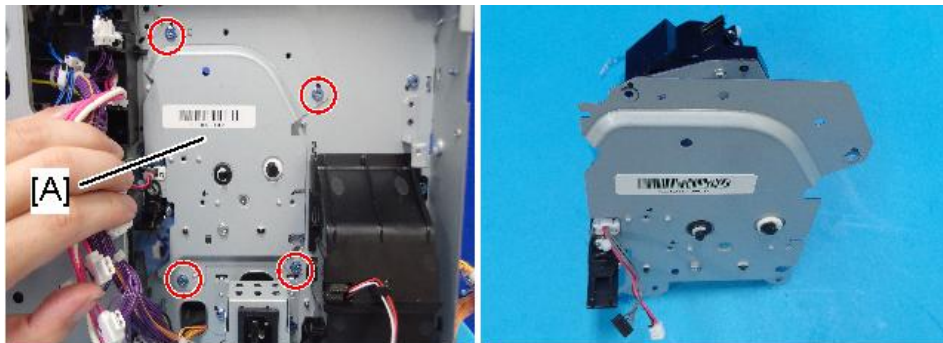


⚙️ x2, 🔩 x2, 🛠️ x4



d205k4199

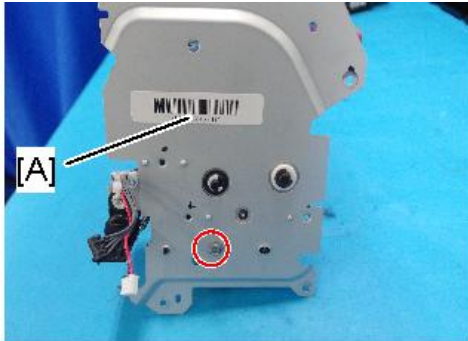
4. Supply unit [A]



🛠️ x4

d205m4201

5. Plate [A]

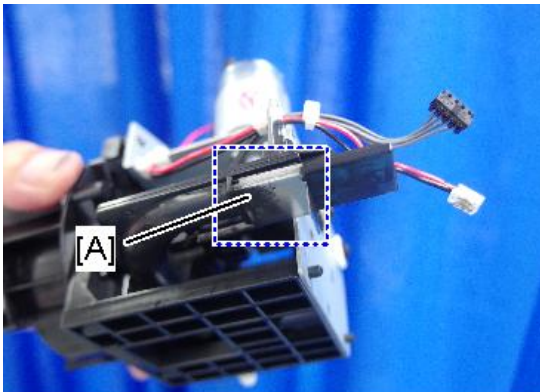


 x1

d205m4211

 Important

- Do not open the stopper [A], or toner will spill out.

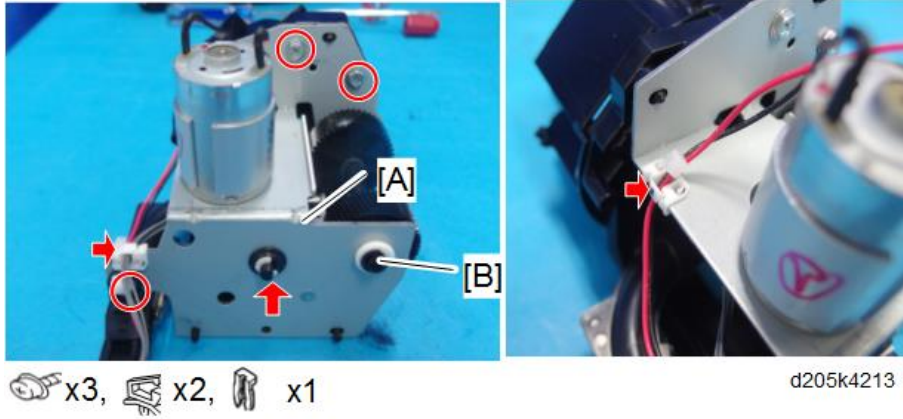


d205m4212

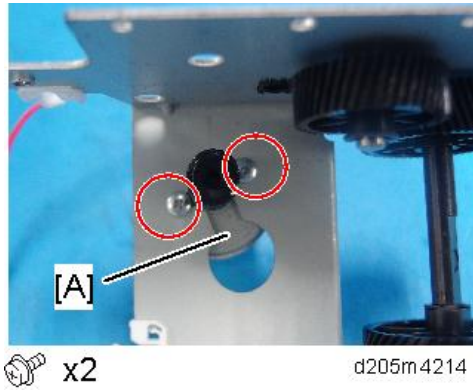
6. Motor Bracket [A]

 Note

- Do not remove the E ring [B]. If it is removed, the axis may be damaged and the unit should be changed.



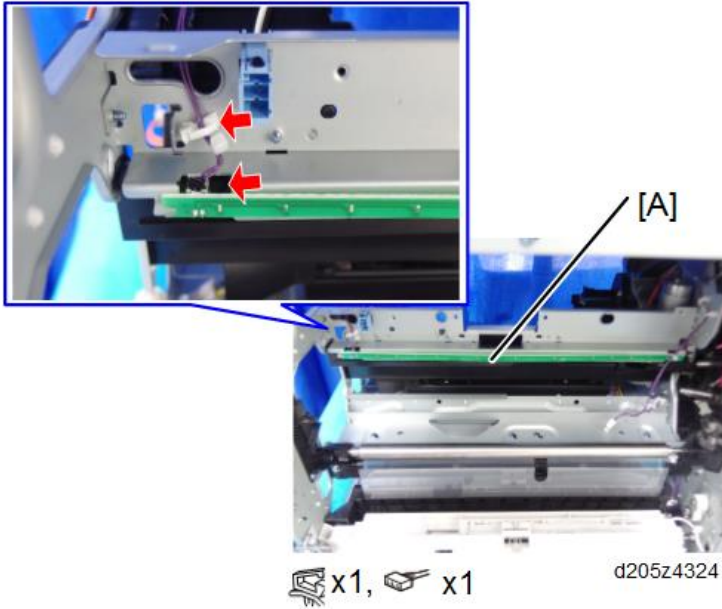
7. Toner Supply Unit [A]



Quenching Lamp

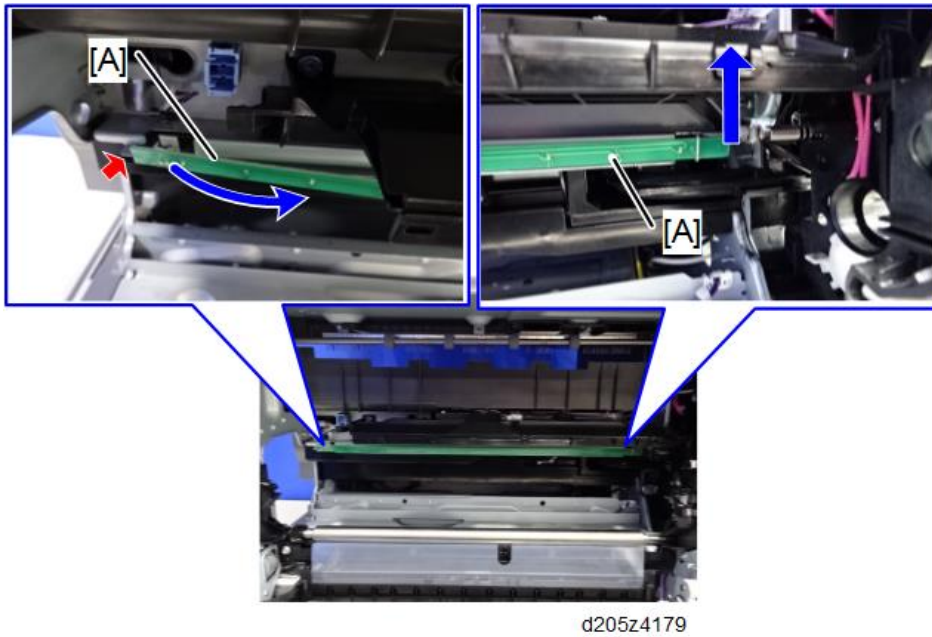
1. PCDU (page 211)
2. Fusing unit (page 237)

3. Quenching lamp [A]



Note

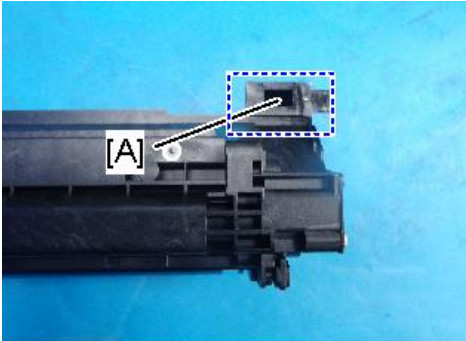
- Bend and slide the quenching lamp [A] to remove as shown below.



TD Sensor

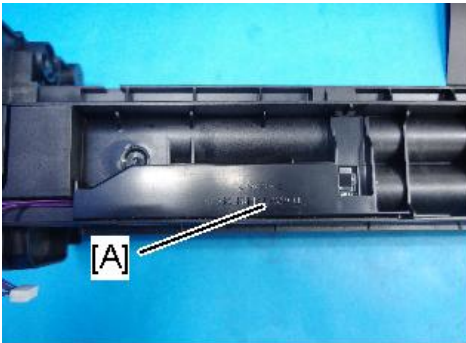
Preparation

- Make sure that the toner supply port [A] has been covered before performing any steps in this section.



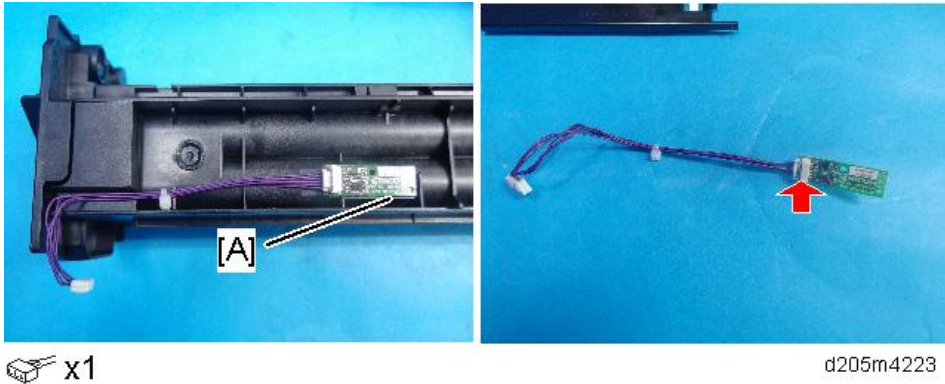
d205m4224

1. PCDU (page 211)
2. Sensor cover [A]



d205m4222

3. TD Sensor [A]



4

Test after Replacing the PCDU

After replacing the PCDU, do the following procedure.

1. Take 5 sample copies.
2. If black dots show on any of the copies, continue as follows.
 - If all copies are clean, skip the following steps.
 - If the drum unit is damaged, black dots appear (while changing parts, make sure to not damage the drum unit).
3. Remove the PCDU.
4. Tap the top of the PCDU with a screwdriver at eight evenly spaced locations (two or three taps at each spot), to knock the recycled toner down into the development section.
5. Re-install the PCDU.
6. Turn ON the main power. Then open and close the front cover and wait until the machine has rotated the development roller for 10 seconds.
7. Open and close the door two or three more times, so that the total rotation time is 30 seconds.
8. Make some solid black prints.
 - If using A4 or 8¹/₂" paper, make 4 copies/prints.
 - If using A3 or 11" x 17" paper, make 2 copies/prints.
 - To make solid black prints, use SP2-109-001 pattern 20.

Paper Feed

Paper Feed Roller, Friction Pad

1. Paper Feed Tray
2. Bearing

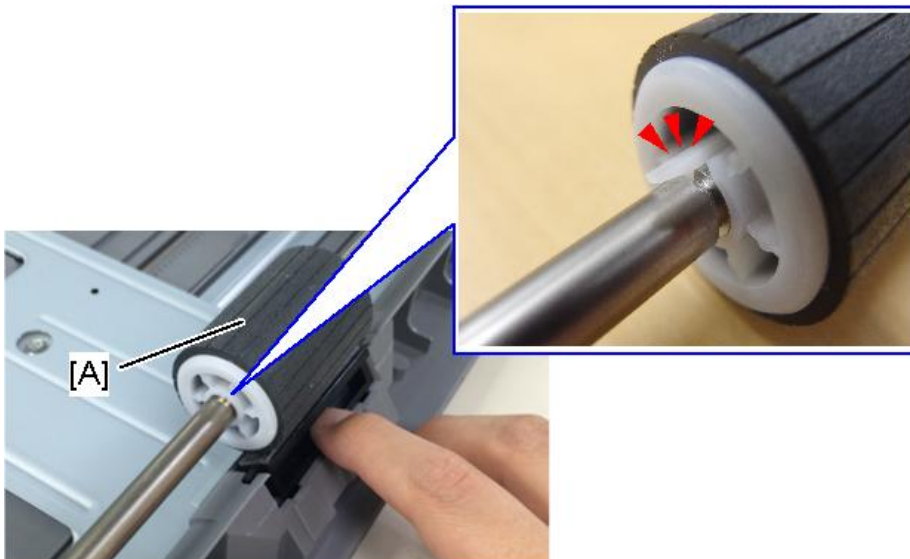


 x1

d205m4217

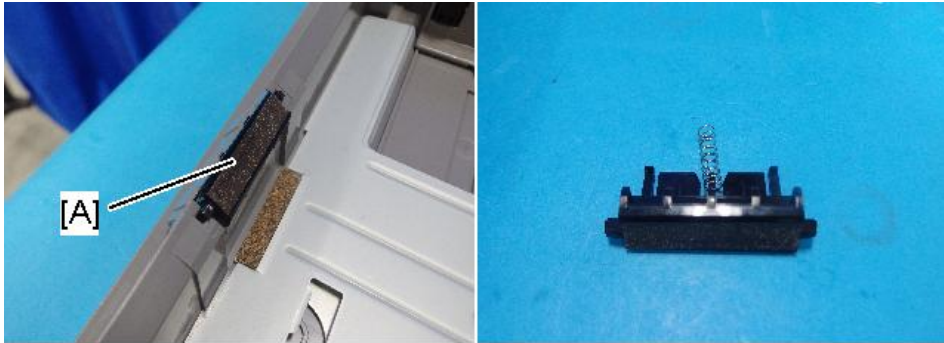
3. Paper feed roller [A]

Hold under the roller and remove the roller.



d205m4219

4. Friction pad [A]

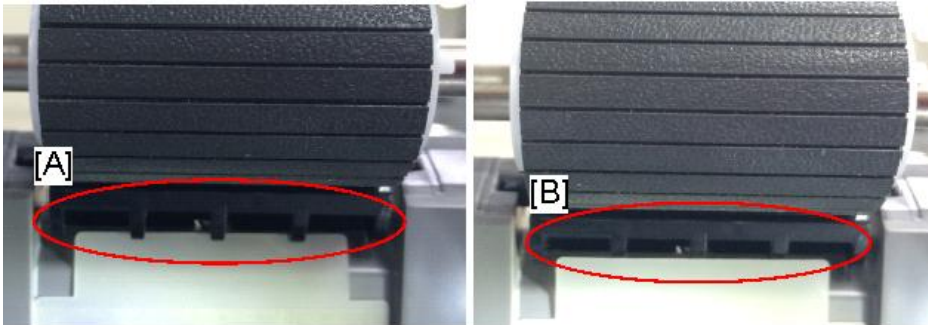


d205m4221

4

Notes on Replacing the Friction Pad

Make sure that the sheet does not go under the friction pad when reinstalling the friction pad. ([A] Incorrect, [B] Correct)



d205m4220

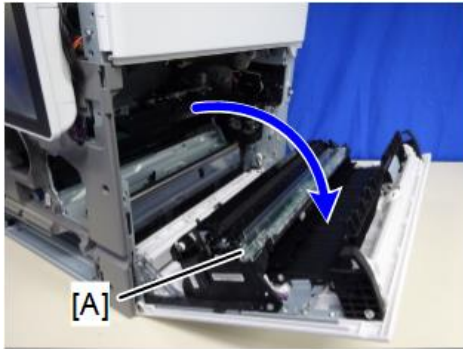
Do not touch the friction pad with your bare hands when replacing it. If you do, clean the friction pad with a damp cloth or alcohol.

Paper Dust Collector

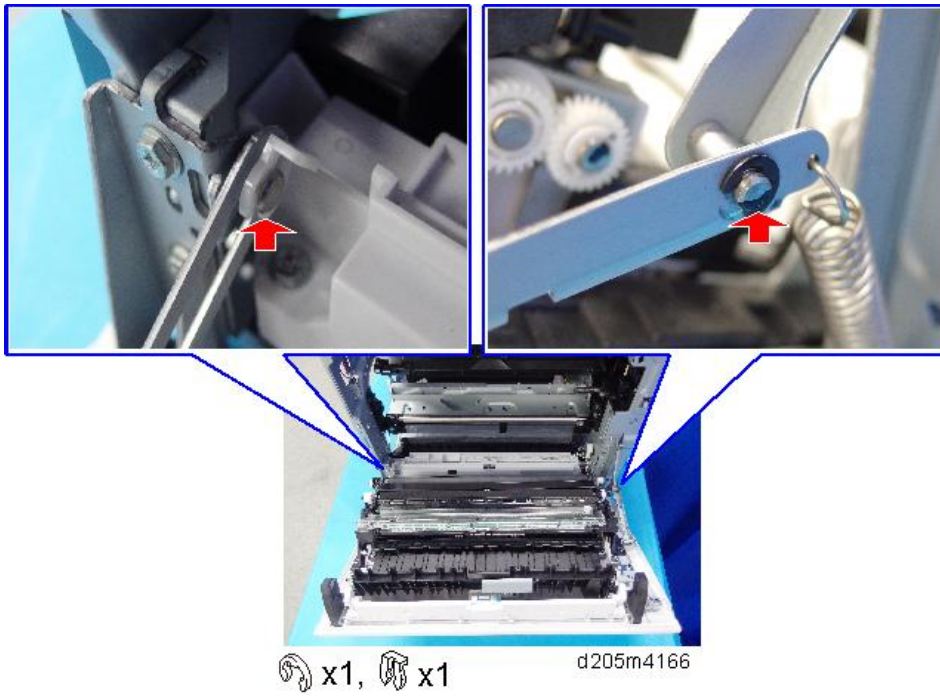
1. Paper feed tray
2. PCPU (page 211)
3. Open the right cover [A] and remove the clip ring and E-ring.

↓ Note

- Do not open the right cover [A] more than 90°.



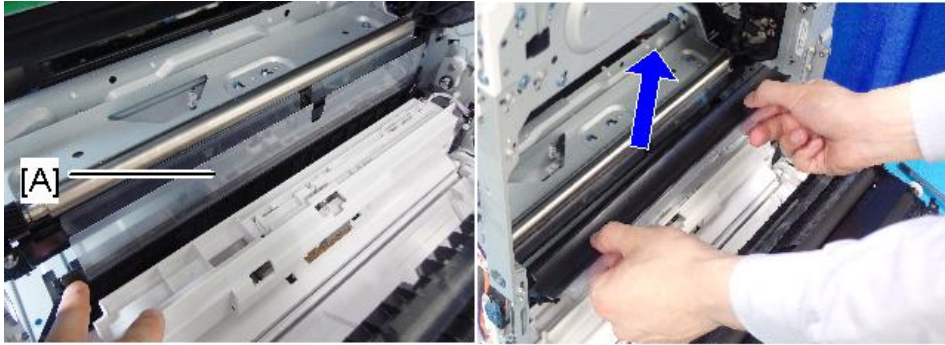
d205z4183



d205m4166

4. Guide plate [A]

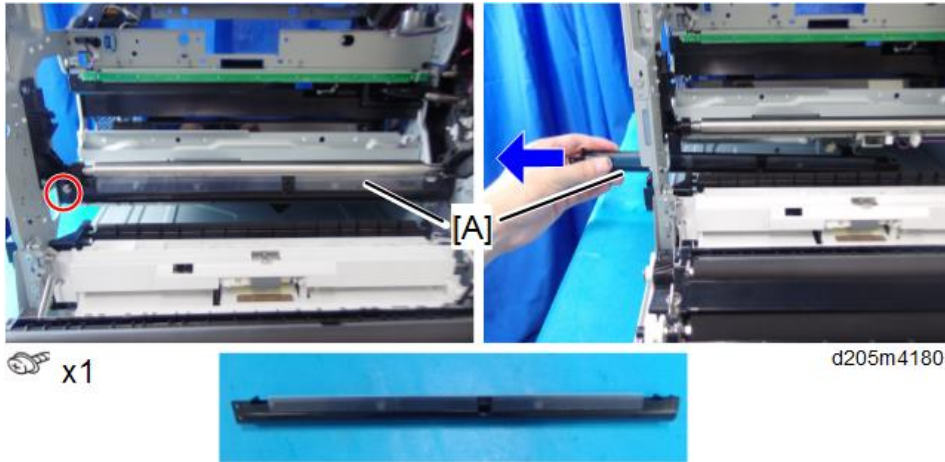
Lift the guide plate [A] as shown below.



d205m4179

5. Paper dust collector [A].

4



d205m4180

Notes on Installing the Paper Dust Collector

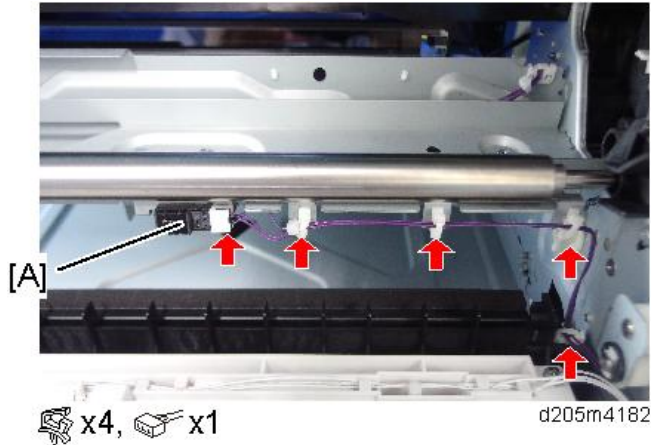
Make sure that the bosses on the paper dust collector fit correctly into the rear frame of the machine.



d205m4181

Registration Sensor

1. Paper dust collector (page 220)
2. Registration sensor



Note

- When installing the registration sensor, make sure that the sensor is connected.

How to Clean the Registration Sensor

Remove the paper dust or dirt on the lens.

If it is difficult to clean, remove the paper dust collector.



d205m4184

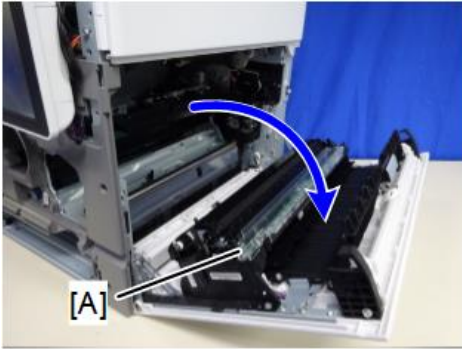
Paper End Sensor

1. Remove the paper feed tray.

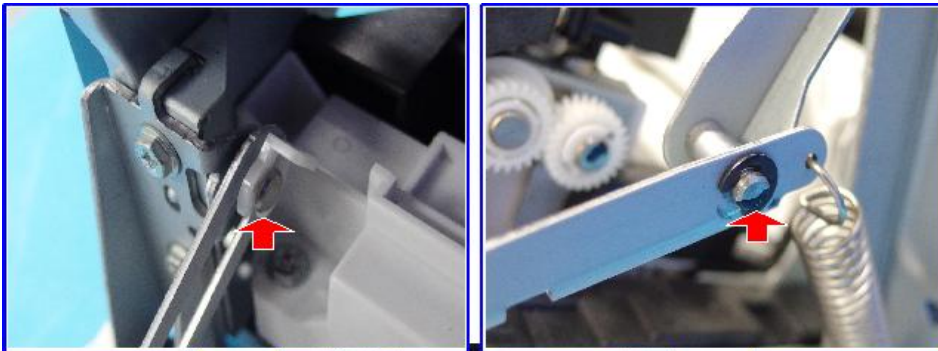
2. Open the right cover [A] and remove the clip ring and E-ring.



Note

- Do not open the right cover [A] more than 90°.



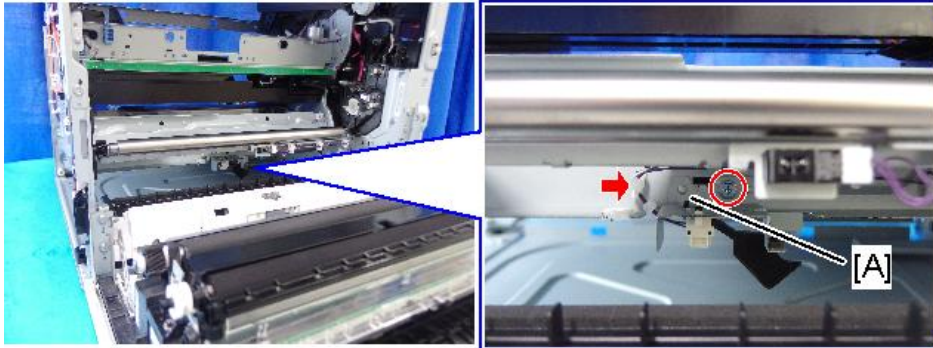
d205z4183





 x1,  x1

d205m4166

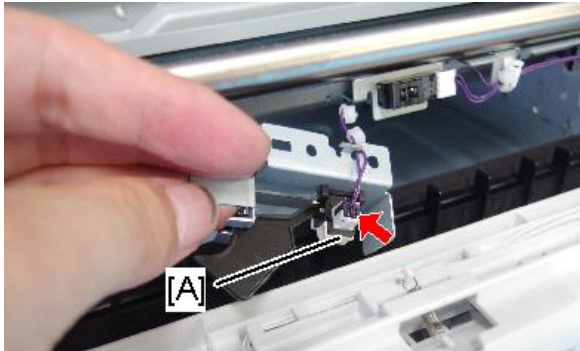
3. Sensor bracket [A]



 x1,  x1

d205m4183

4. Paper end sensor [A]



 x1

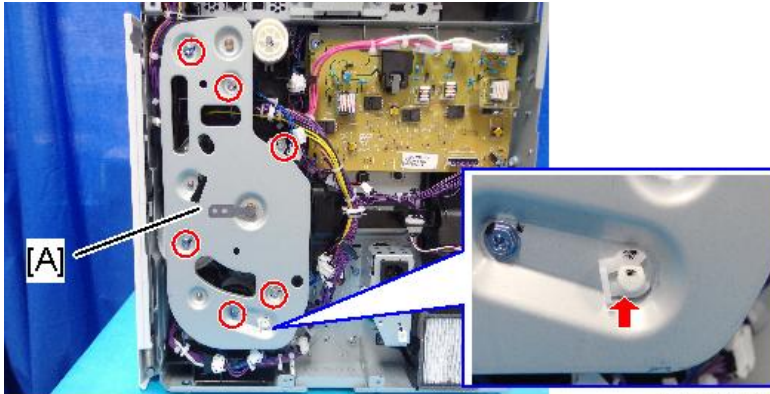
d205m4184



4

Registration Clutch, Paper Feed Clutch

1. Rear cover (page 248)

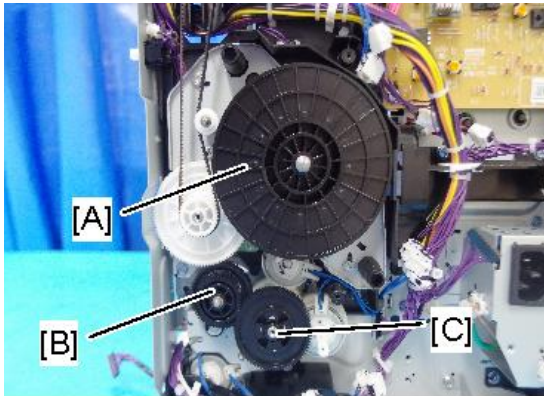
2. Gear bracket [A]



 x6,  x1

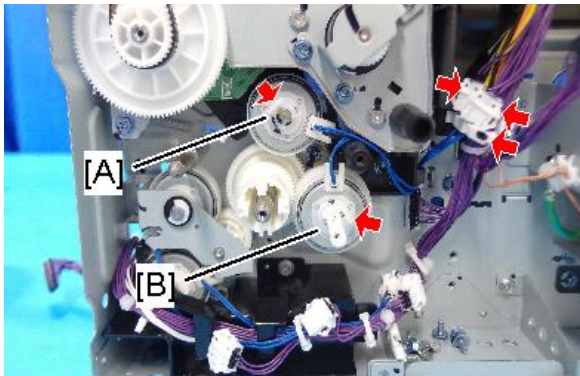
d205m4160




3. Gears [A] [B] [C]



d205m4187

4. Registration clutch [A], and paper feed clutch [B]



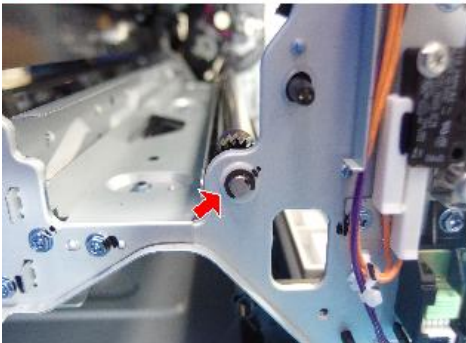
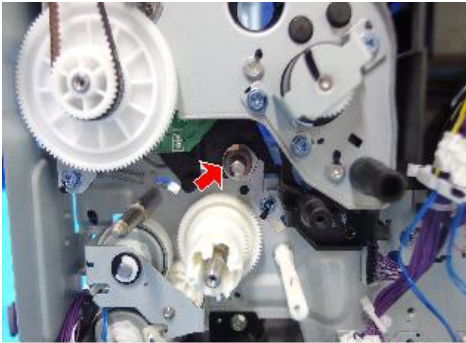
 x1,  x2,  x2

d205m4188

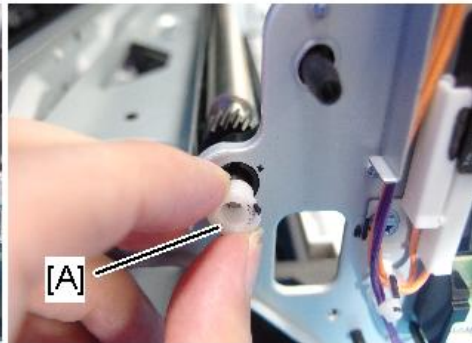
Registration Roller

Registration Roller (main machine side)

1. Front inner cover (page 155)
2. Registration clutch (page 225)
3. Remove the bearing [A] at the rear side of the registration clutch and the front side of the machine.

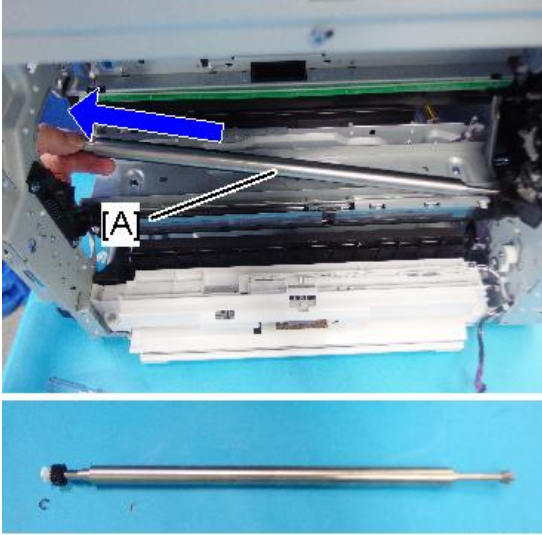


 x1



d205m4189

4. Registration roller [A]



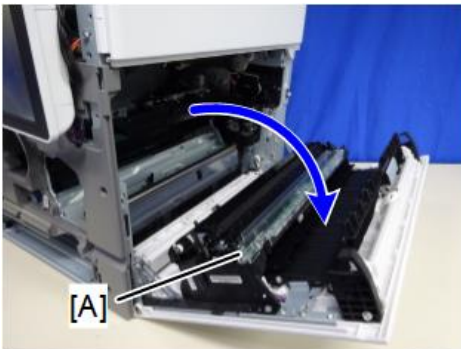
d205m4190

Registration Roller (right cover side)

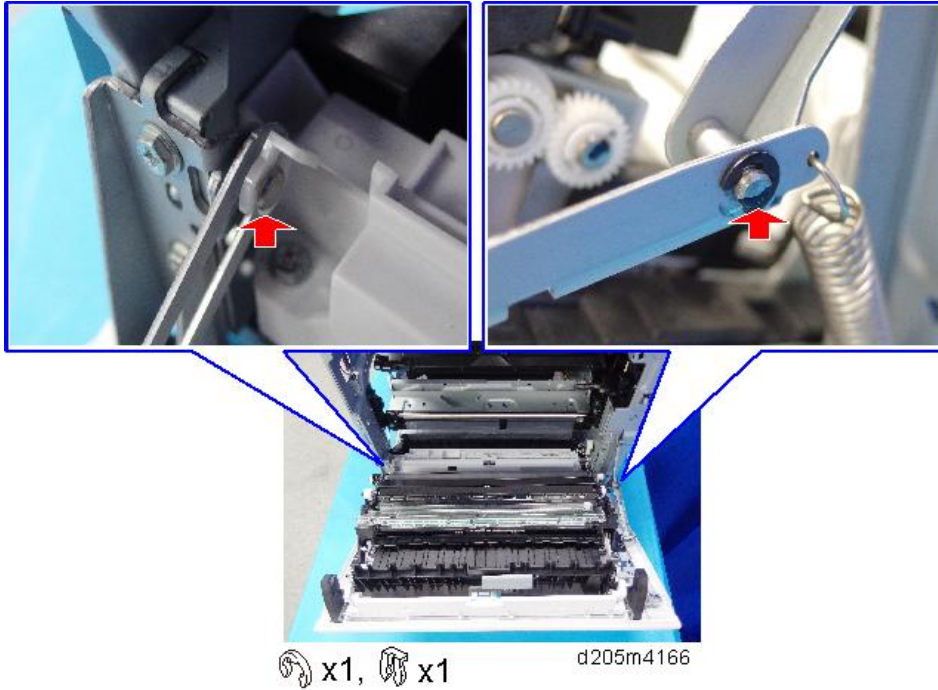
1. Open the right cover [A] and remove the clip ring and E-ring.

Note

- Do not open the right cover [A] more than 90°.

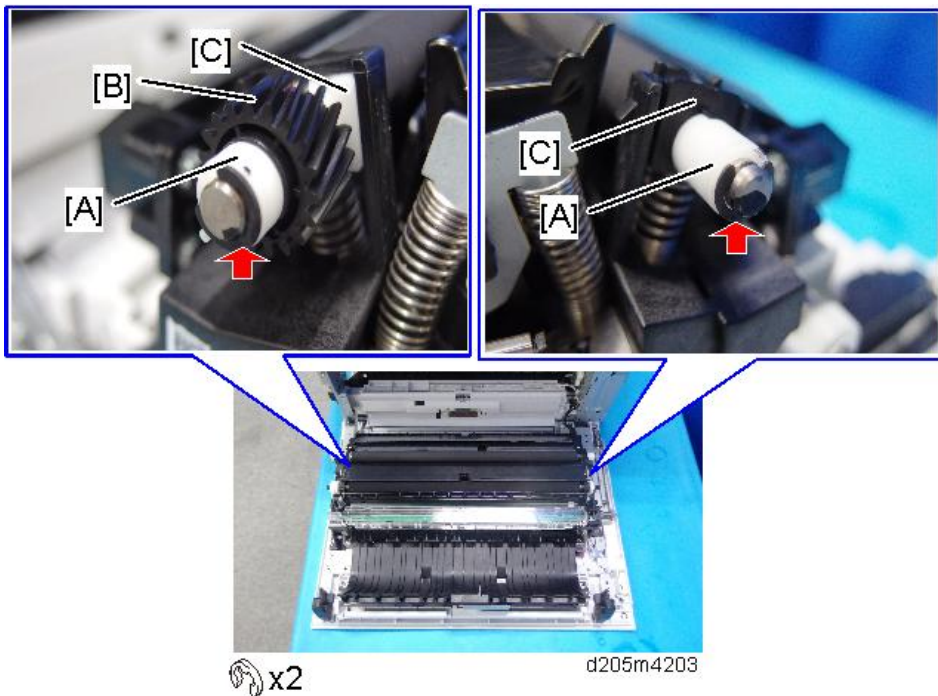


d205z4183

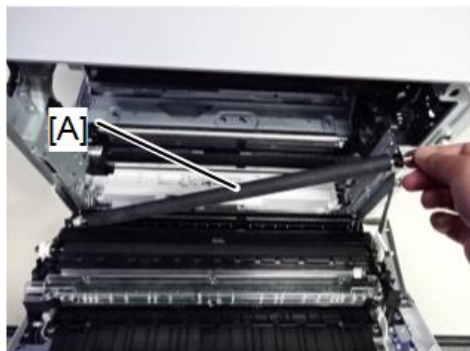


4

2. Remove bearings [A], gear [B], and holders [C] at both ends of the registration roller.
The holder at the front end is white, and the one at the rear end is black.



3. Registration roller [A]

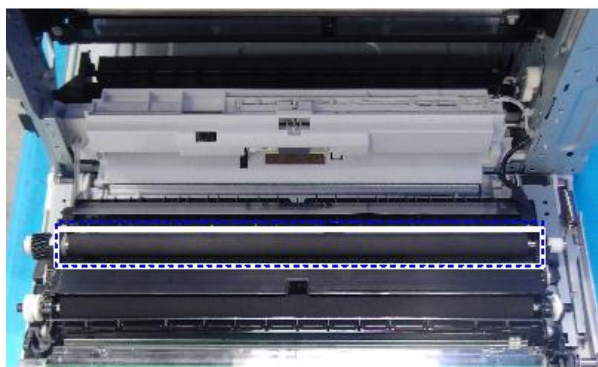


d205m4204

4

How to Clean the Registration Roller

Wipe the right cover side area with a damp cloth.



d205m4206

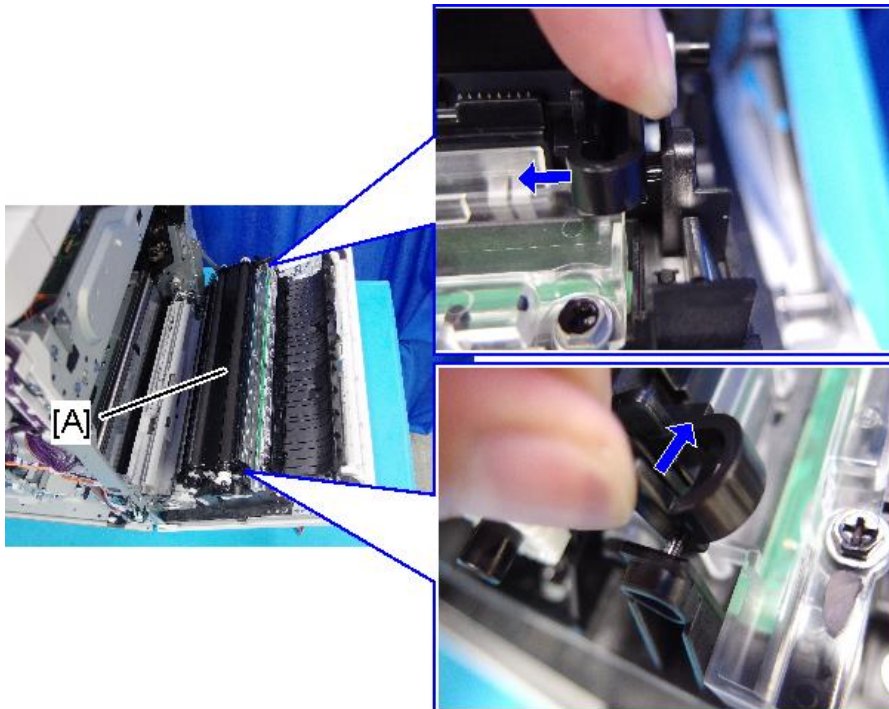
Transfer Unit

Transfer Roller Unit

↓ Note

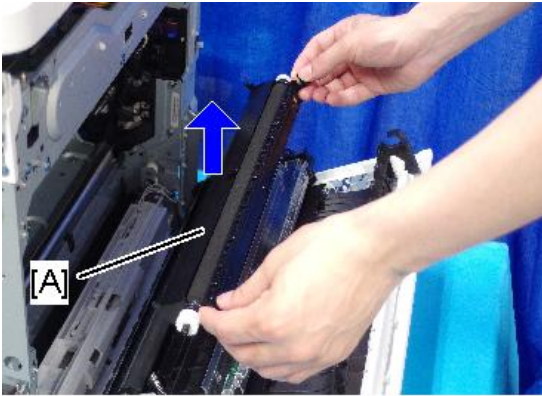
- The transfer roller unit consists of a transfer roller and a discharge plate. It is not possible to replace the transfer roller alone.
- Do not touch the transfer roller surface with bare hands.

1. Open the right cover.
2. Release the tabs of the transfer roller unit [A].



d205m4150

3. Transfer roller unit [A]



d205m4151

4

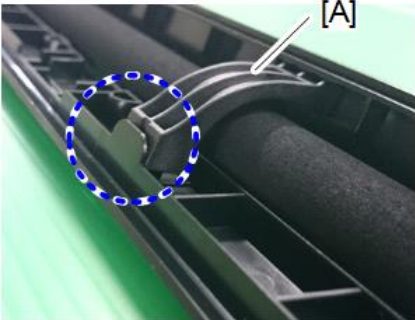
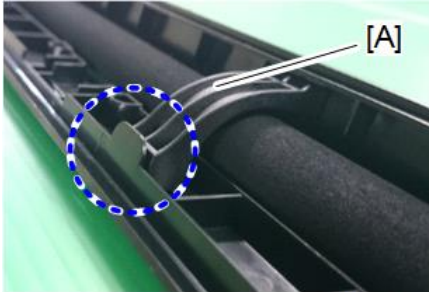
- 4. Enter the SP mode.
- 5. Do SP7-622-115 to clear the counter.

Notes on Installing the Transfer Roller Unit

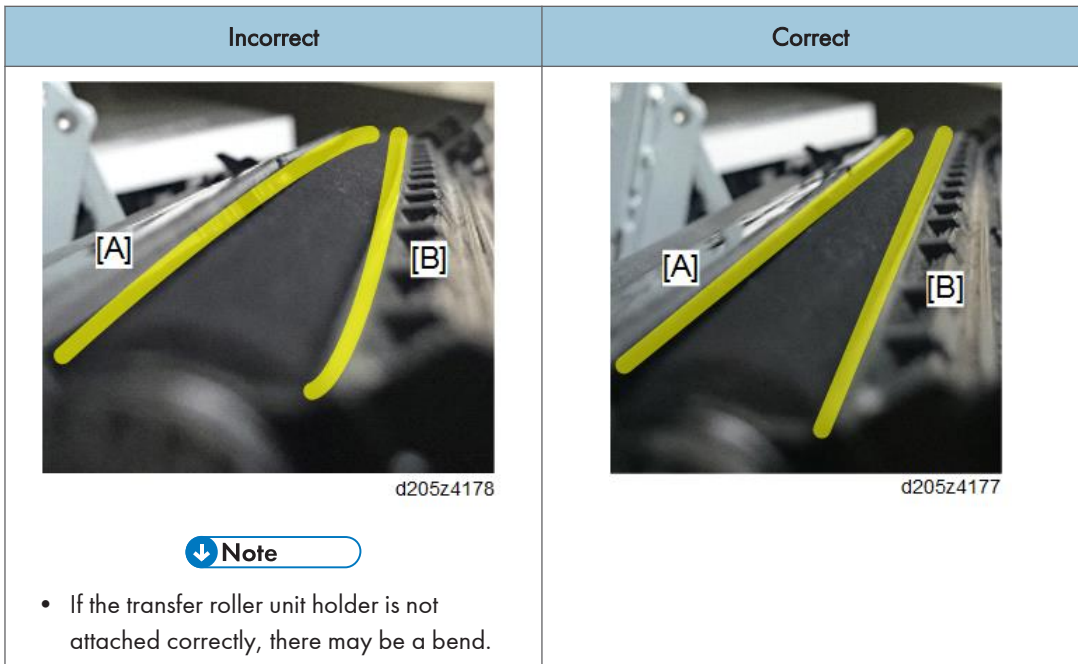
Check the back side of the transfer roller unit.

★ Important

- Make sure that the transfer roller unit holder [A] fits into the boss.

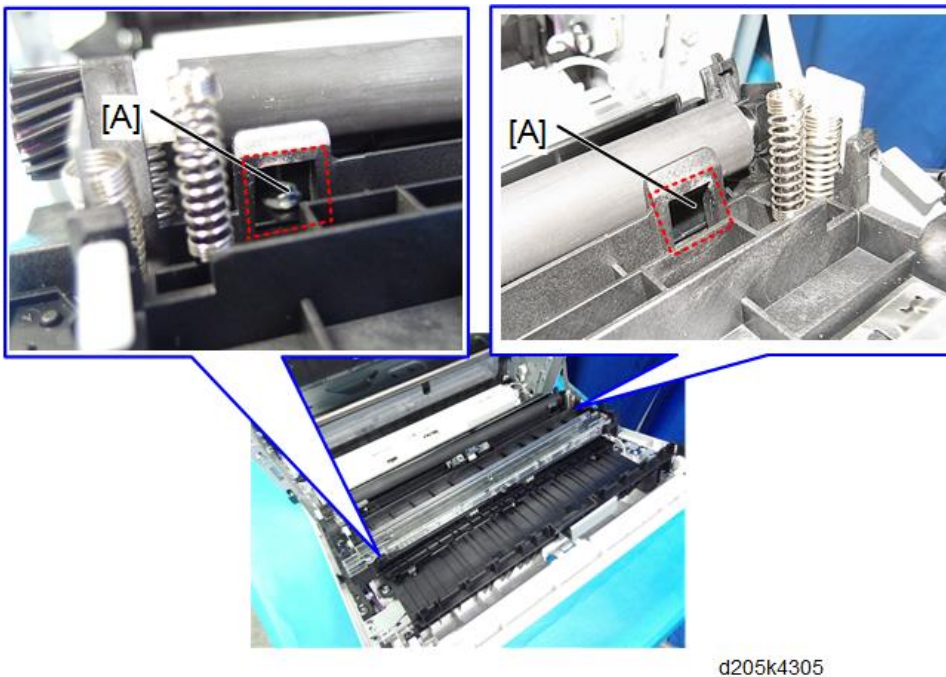
Incorrect	Correct
 <p>d205z4175</p>	 <p>d205z4176</p>

Then, turn the transfer roller unit upside-down. Check that there is no bend on part [A] and part [B].

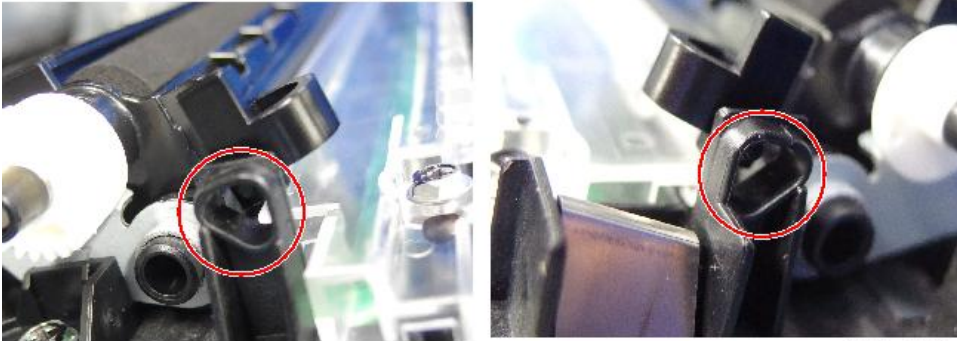


To install the transfer roller unit, check that the roller is correctly installed as explained below.

1. Check that the tabs [A] are engaged in the cutouts.



2. Check that the pins on both sides of the transfer roller unit are engaged correctly.

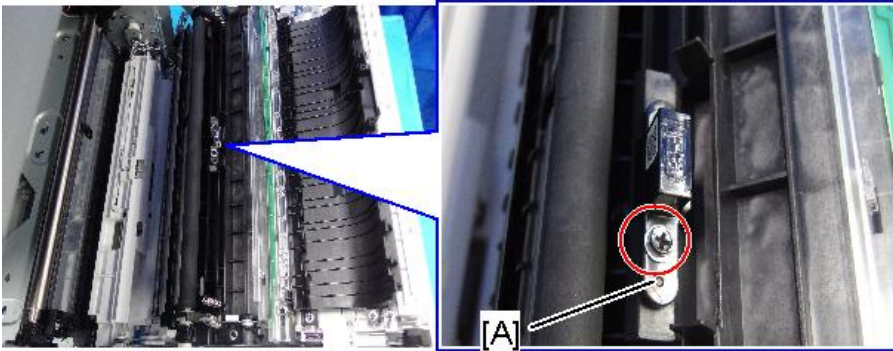


d205m4306

4

ID Sensor

1. Transfer roller unit. (page 231)
2. Bracket [A]



 x1

d205m4152

3. ID sensor [A]



 x1

d205m4153

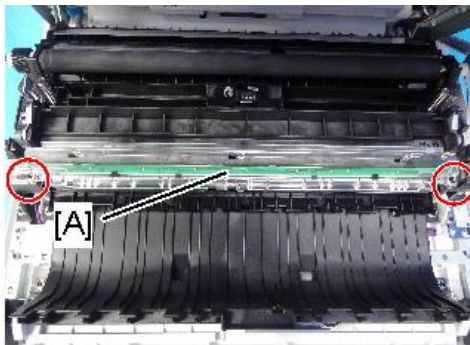
How to Clean the ID Sensor

When cleaning the ID sensor, wipe the sensor part with a damp cloth.

Do not wipe it with a dry cloth. Otherwise, the ID sensor will attract dirt because of static electricity.

PCL (Pre Cleaning Lamp)

1. Transfer roller unit (page 231)
2. Plastic cover [A]

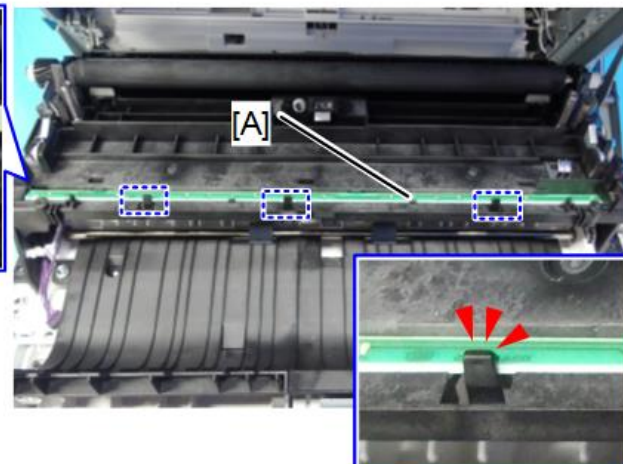


 x2



d205m4154

3. PCL [A]



 x1

d205z4155

Note

- Be very careful not to break the three hooks when removing the PCL. Since the three hooks grab the PCL hardly, they can be broken easily when you remove the PCL.
- To remove the PCL safely, slide the PCL a little toward the front side of the machine to remove the connector first. This will make the PCL warped temporarily but there is no problem. Then, remove the PCL along with the guide (hooks).

How to Clean the PCL

When cleaning the plastic cover of the PCL, wipe it with a damp cloth.

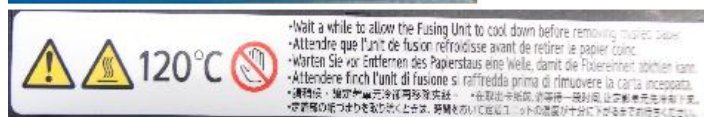
Do not wipe it with a dry cloth, or it may attract dirt because of static electricity.

Fusing Unit

⚠ CAUTION

- Turn OFF the main power and wait until the fusing unit cools down before beginning any of the procedures in this section. The fusing unit can cause serious burns.
- Be careful not to drop the fusing unit when removing it.

Caution Decal Location



d205m4234

↓ Note

- When removing a jammed paper from the fusing unit, wait until the fusing unit cools down.

Fusing Unit



💡 Preparation

- Right cover should be removed before doing this procedure. (page 248)

1. Open the front cover.

2. Small cover [A] and connectors.



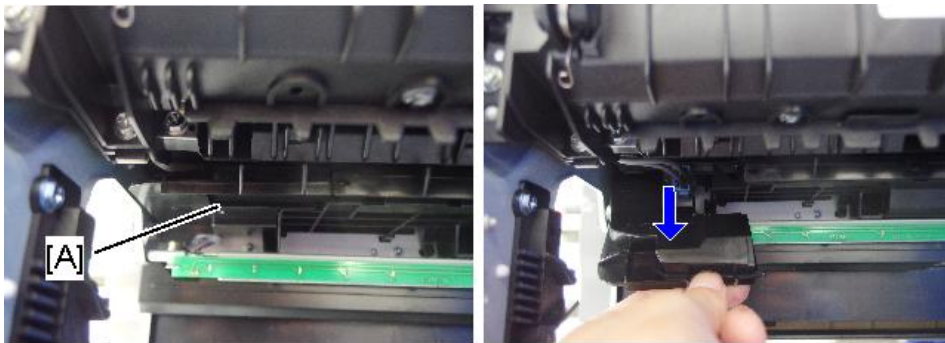
 x1,  x2

d205m4094

4

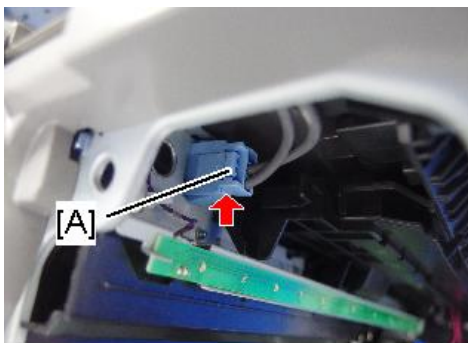
3. PCDU (page 211)

4. Duct [A] located under the fusing unit in the mainframe.



d205m4232

5. Connector [A]



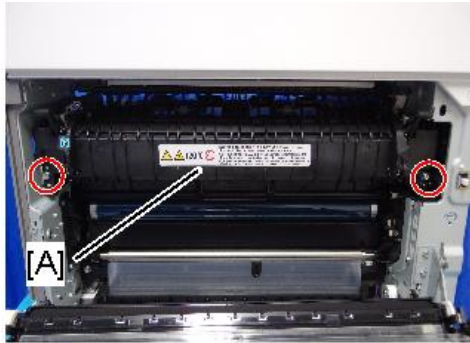
 x1

d205m4233

★ Important

- This connector is a locking connector. Pull out the connector while pushing the releasing point [A] with your fingers.

6. Screws on the fusing unit [A] with washers

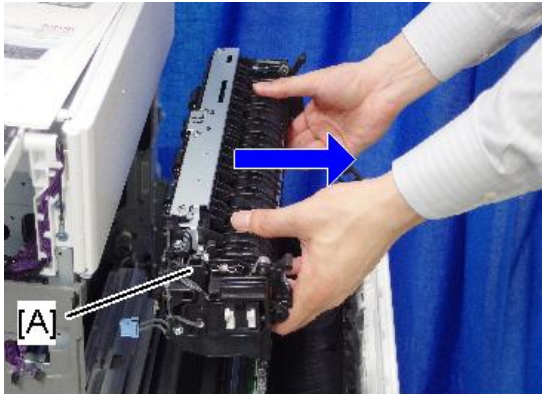


 x2



d205m4095

7. Fusing unit [A]



d205m4097

4

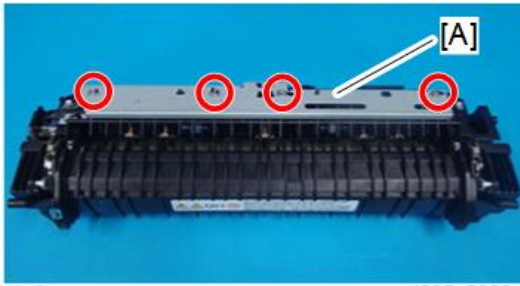
Notes on Installing the Fusing Unit

1. Enter the SP mode.
2. Do SP-7-622-115 to clear the counter.

Fusing Thermistor

1. Fusing unit (page 237)

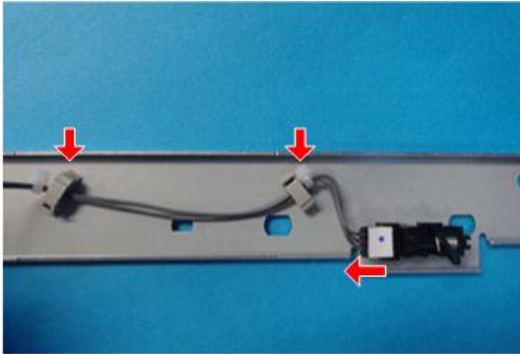
2. Plate [A]



 x4

d205z5028

3. Connector



 x2,  x1

d205z5029

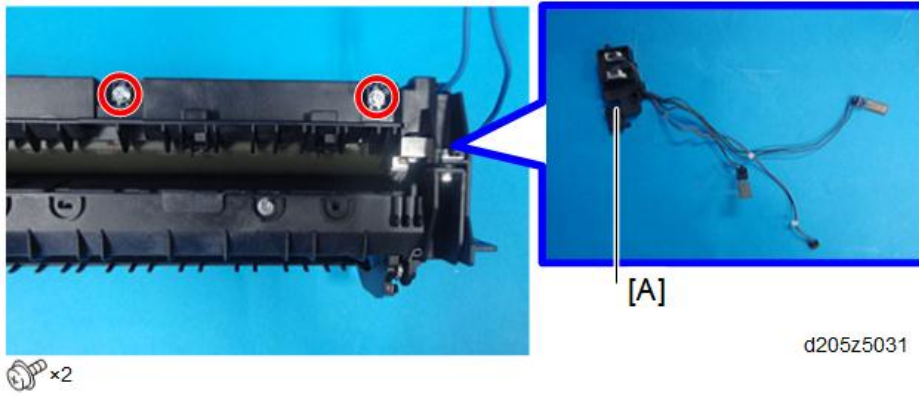
4. Connector cover [A]



 x1

d205z5030

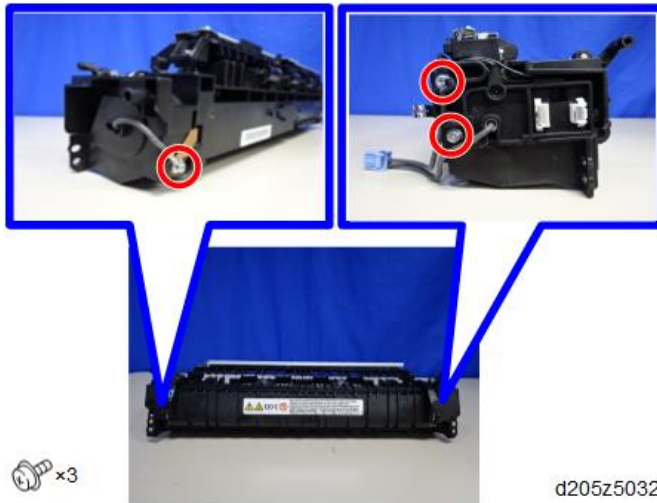
5. Fusing thermistor [A]



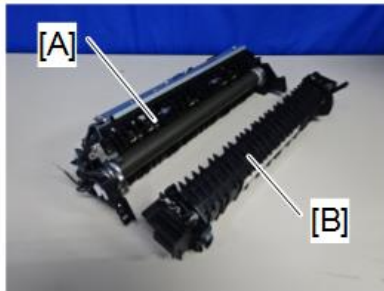
4

Fusing Lamp

1. Fusing thermistor (page 239)
2. Remove the screws attached to the both side of the fusing unit, and harness guide.



3. Dismantle the fusing unit [A] and pressure roller unit [B].



d205z5034

4. Fusing lamp [A]

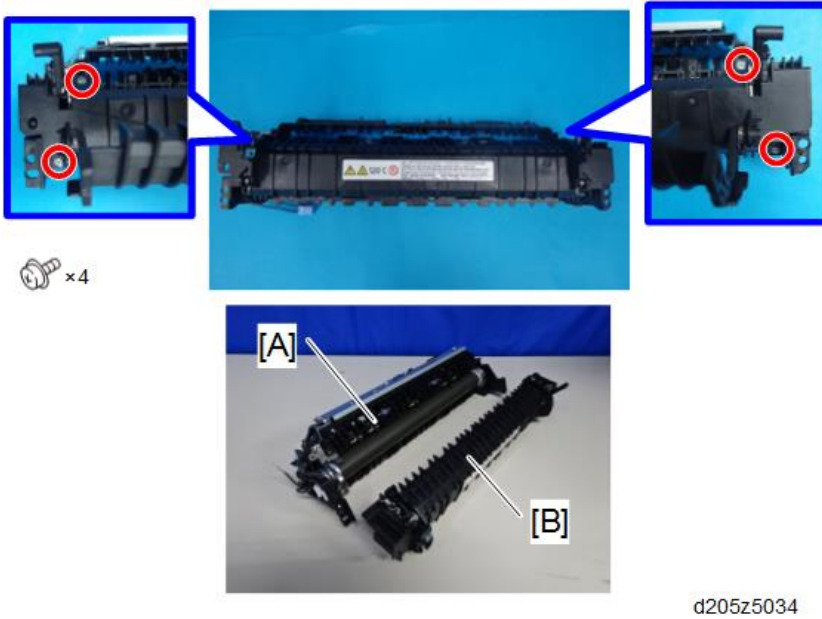


d205z5033

Pressure Roller and Bushings

1. Fusing unit (page 237)

2. Dismantle the fusing unit [A] and pressure roller unit [B].



3. Spring hook [A]



4. Bushings [A]



5. Pressure roller [A]



4

Notes on Installing the Pressure Roller

Do the nip width adjustment after replacing the pressure roller.

1. Place an OHP sheet on the by-pass feed table.

The size of the OHP sheet must be A4/LEF or LT/LEF. Any other sizes may cause a paper jam.

2. Enter SP mode, and run SP1-152-001 (Fusing Nip Band Check).

3. Enter [1] by using the numeric keypad and press [OK].

4. Press [Start]. Switch to the copy mode temporarily.

Make sure that the bypass tray is selected as the feed tray.

5. Press [Start].

The machine feeds the OHP sheet to the fusing unit after 5 minutes as a default, and stops for 20 seconds after the paper exit sensor turns ON. After that, the OHP will be ejected to the paper exit tray.

6. Press [Reset] to return to the SP mode.

7. Enter [0] by using the numeric keypad and press [OK].

8. Press [Return] a few times and exit SP mode.

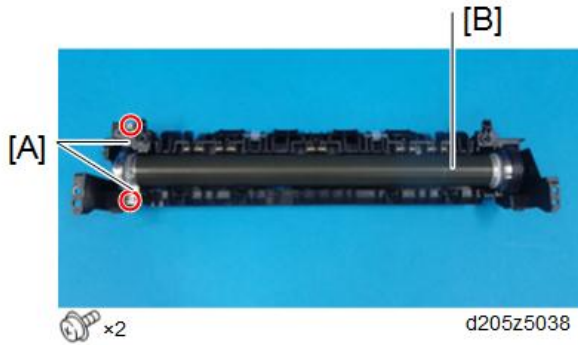
9. Check that the nip band (the opaque stripe) across the ejected OHP sheet is symmetrical, with both ends slightly thicker than the center.

Hot Roller

1. Fusing lamp (page 241)

2. Pressure roller (page 242)

3. Ground plate [A], and hot roller [B]

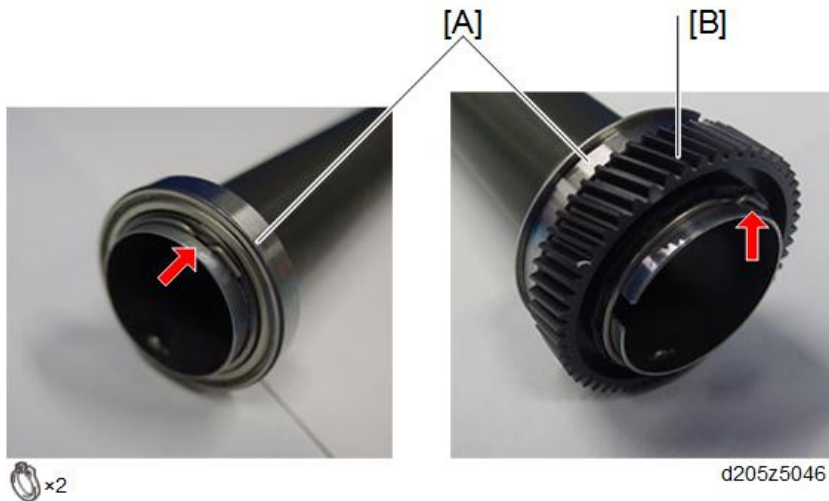


4

Applying the grease

Before installing the hot roller, apply the grease (Silicon Grease G-501) as shown below.

1. Hot roller (page 244)
2. Bearings [A] and gear [B]



3. Attach the bearings to the ends of the hot roller, and apply the grease all around the roller.

Do not fix the bearings at this time.

4. To apply the grease evenly, slide the bearings right and left from 5 to 10 times within the area shown by the blue arrows below.



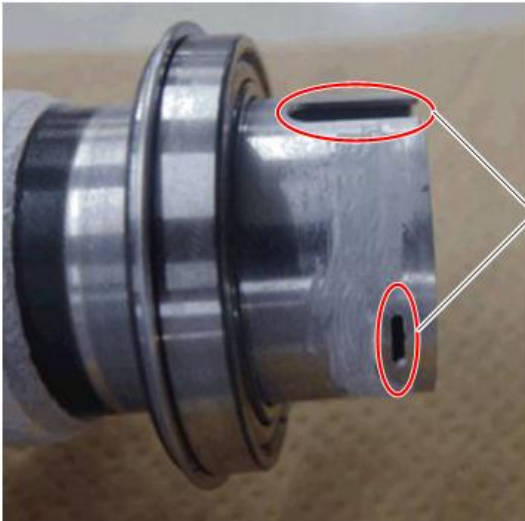
d205z5047

4

Note

- It is acceptable that a little grease spills out when installing the bearing.

5. Fix the bearing to the end of the roller, where the gear is not to be attached, with a C-ring.
6. Apply the grease to the other end of the roller, where the gear is to be attached, as shown below.



[A]

d205z5048

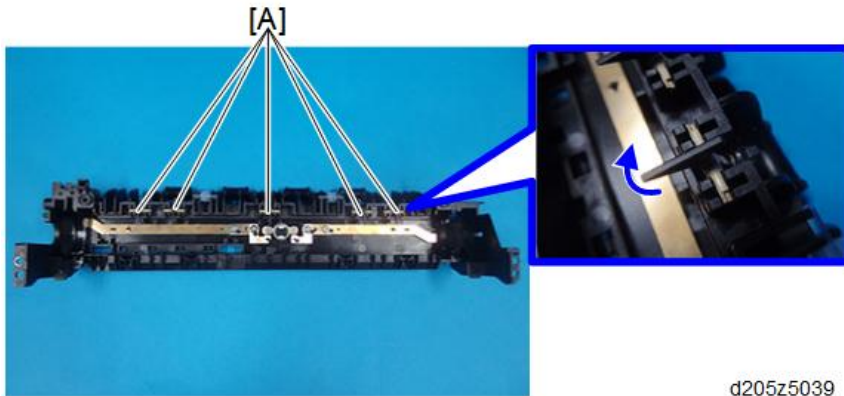
CAUTION

- Do not apply the grease within 1 mm of the areas [A].

7. Attach the other bearing and gear with a C-ring.

Hot Roller Stripper Pawls

1. Hot roller (page 244)
2. Hot roller stripper pawls [A]

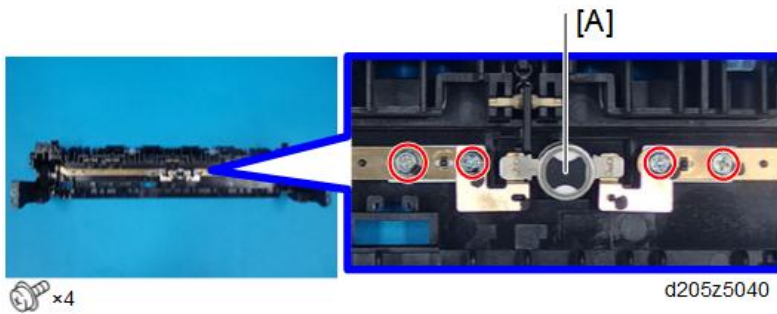


d205z5039

4

Thermostat

1. Hot roller (page 244)
2. Thermostat [A]



x4

d205z5040

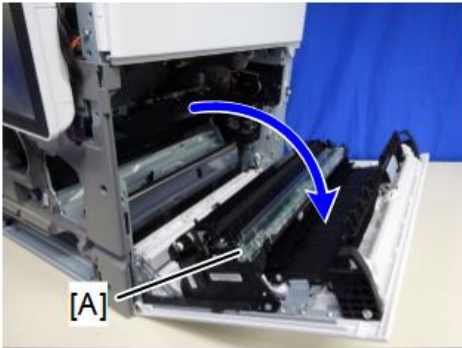
Duplex, Paper Exit

Duplex Unit (Right Cover)

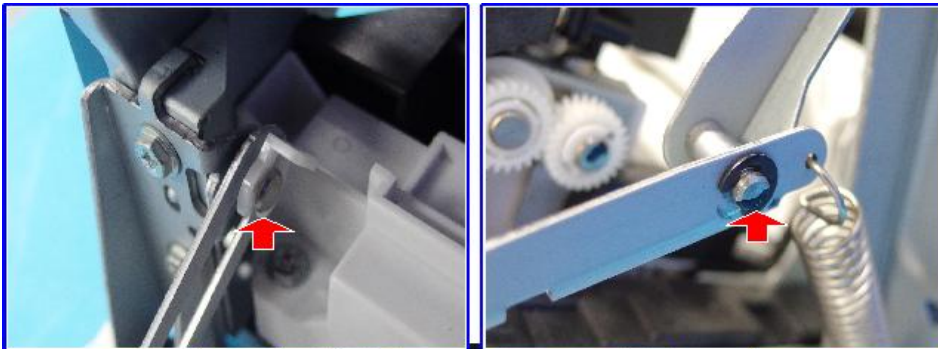
1. Open the right cover [A] and remove the clip ring and E-ring.



Note

- Do not open the right cover [A] more than 90°.



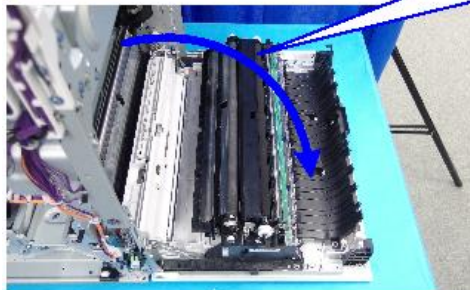
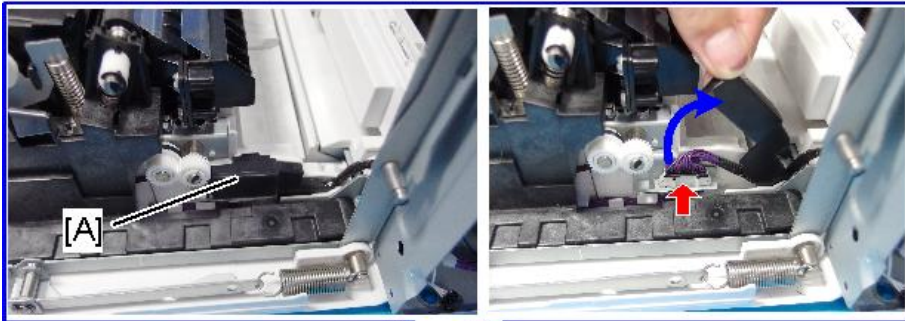
d205z4183



 x1,  x1

d205m4166

2. Open the harness cover [A] and disconnect the connector.



 x1

d205m4167

3. Right cover [A]



 x6

d205m4168



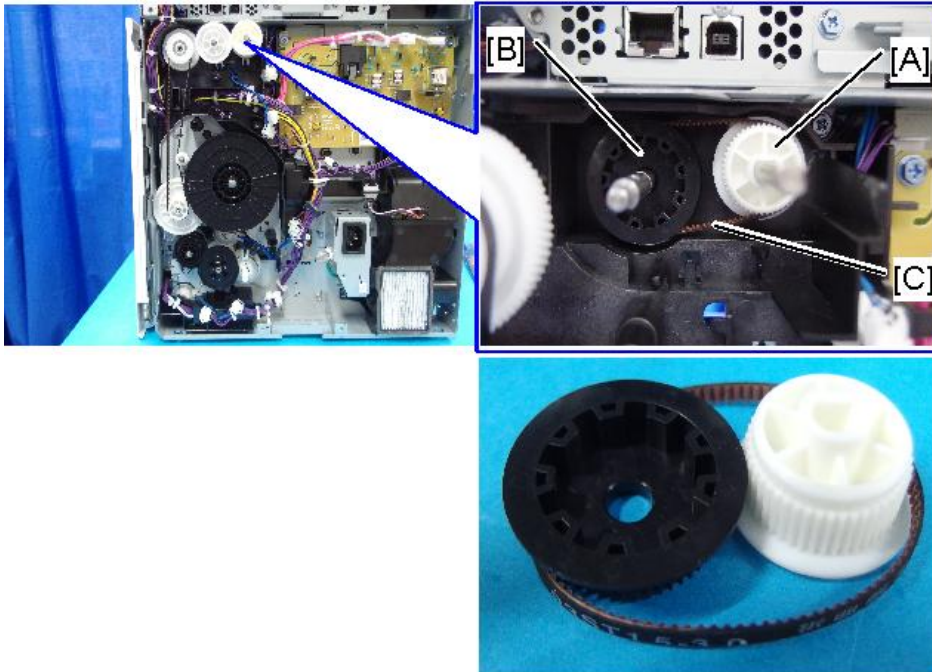
d205m4169

4

Paper Exit Roller

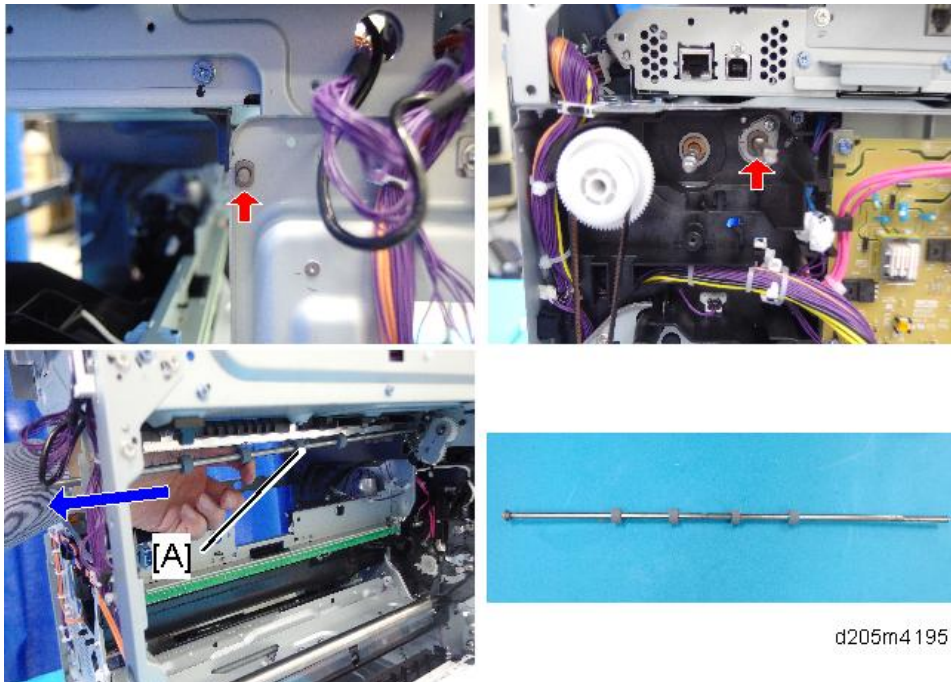
1. Paper exit clutch, Reverse exit clutch (page 252)

2. Gears [A] [B], timing belt [C]



d205m4194

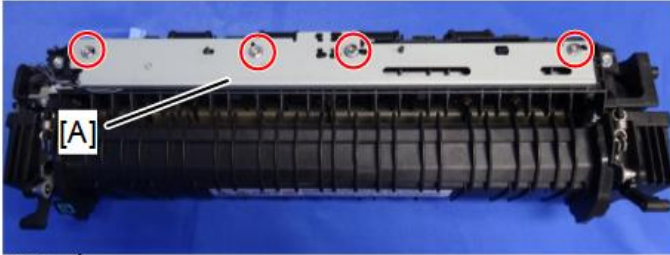
3. Remove the bearings at the front and rear sides of the machine, and then remove the paper exit roller [A].



d205m4195

Paper Exit Reverse Sensor

1. Fusing unit (page 237)
2. Bracket [A]

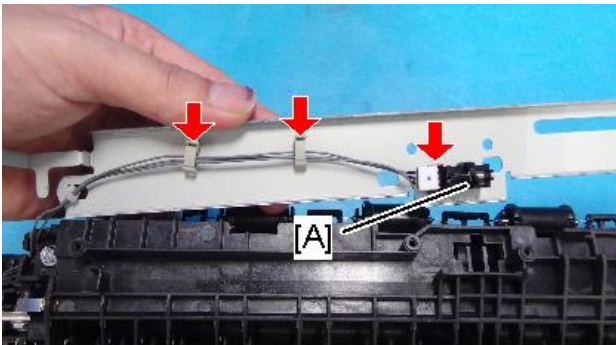




 x4

d205z4170

4

3. Paper exit reverse sensor [A].



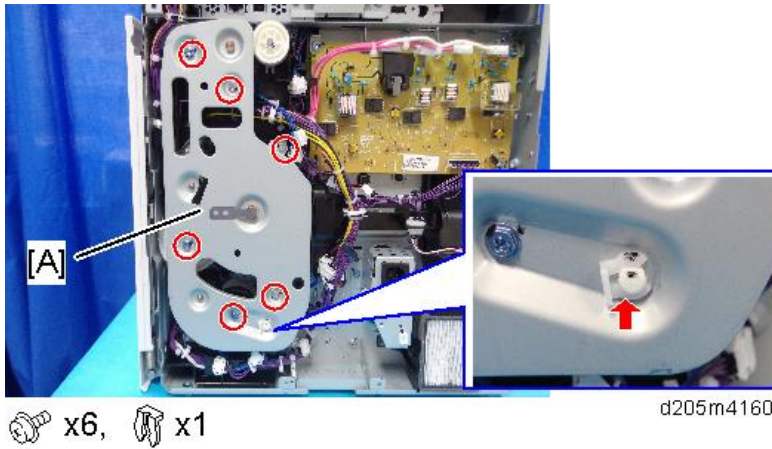
 x2,  x1

d205m4171

Paper Exit Clutch, Reverse Exit Clutch

1. Rear cover (page 147)

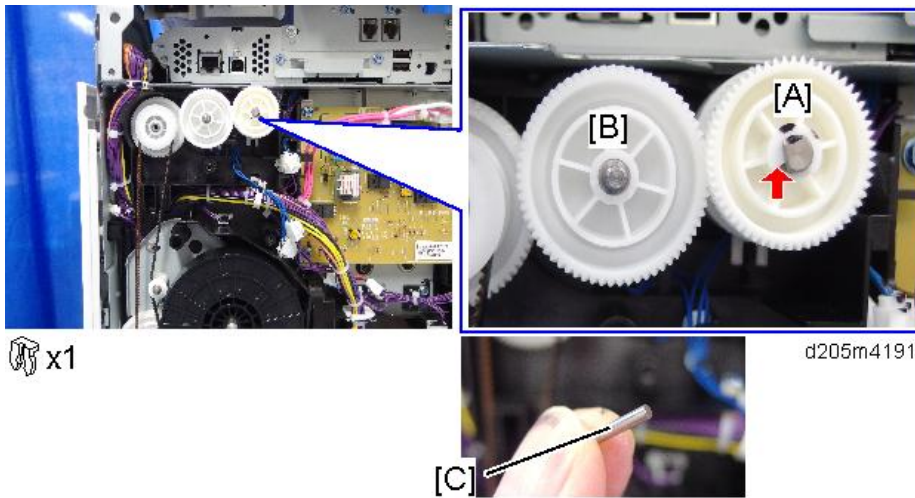
2. Gear bracket [A]



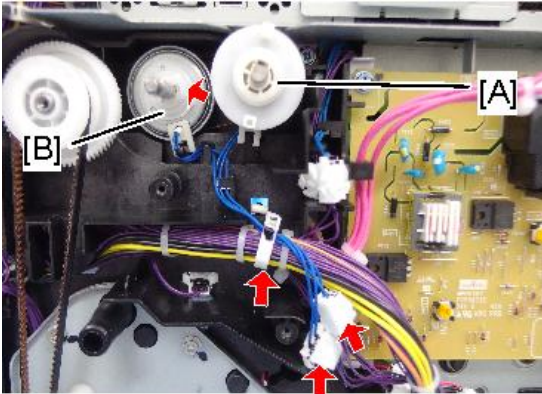
4

3. Gears [A], [B]

Gear [B] has a shaft pin [C]. Be careful not to lose it when you remove these parts.



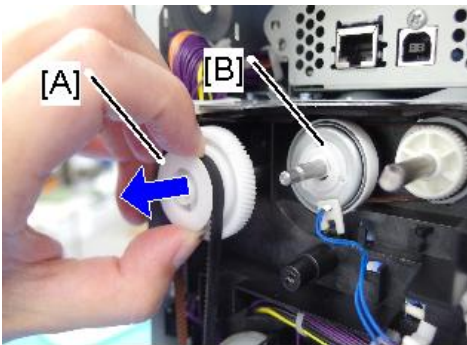
4. Paper exit clutch [A], and reverse exit clutch [B]



 x1,  x2,  x1

d205m4192

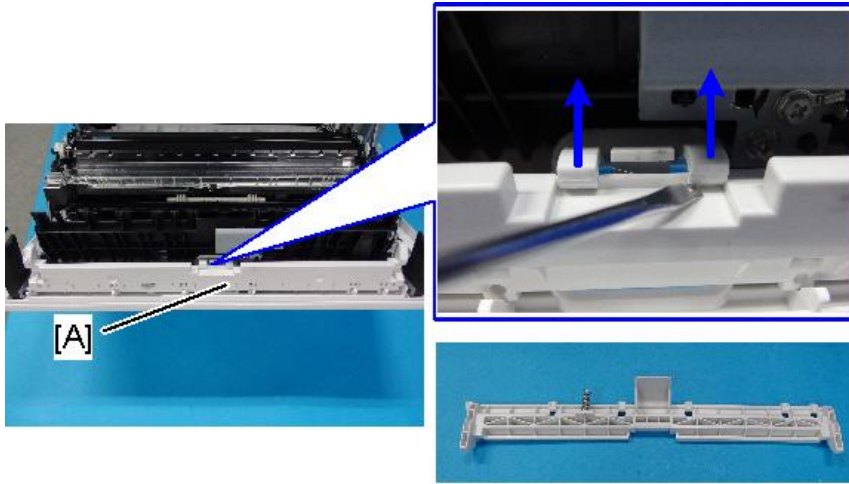
5. Pull out the gear [A] slightly and remove the reverse exit clutch [B].



d205m4193

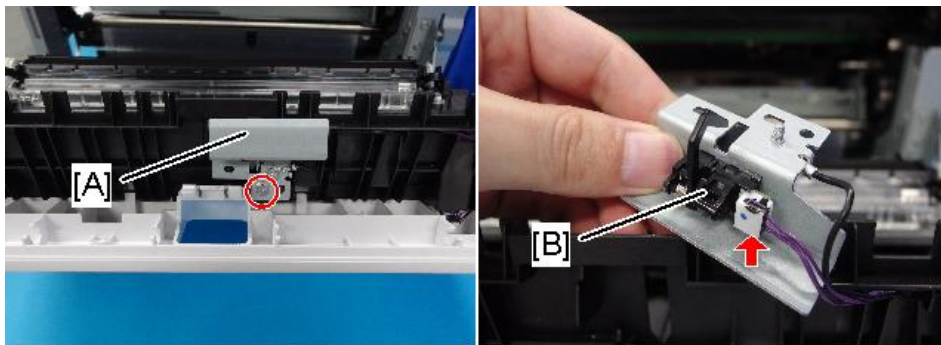
Duplex Entrance Sensor

1. Open the right cover and remove the cover [A].



d205m4144

2. Bracket [A] followed by duplex entrance sensor [B].

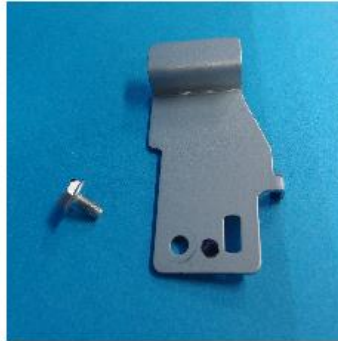
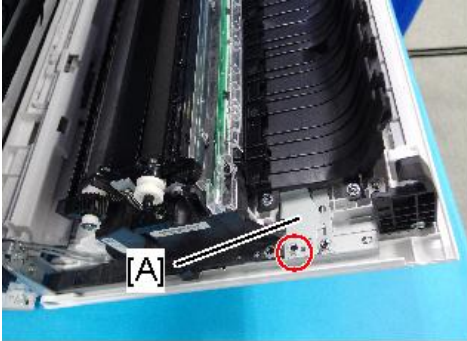


🔩 x1, 📦 x1

d205m4145

Duplex Exit Sensor

1. Open the right cover and remove the connector cover [A].



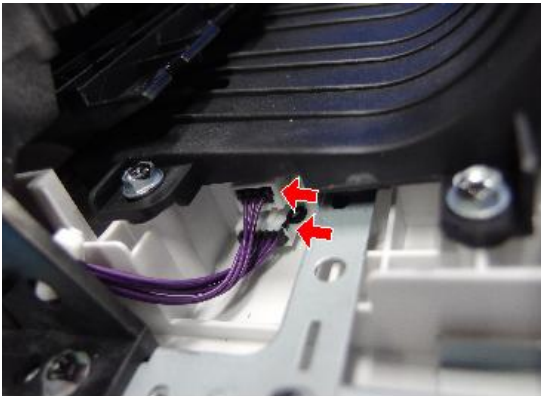
 x1

d205m4140

2. Connectors

Upper: Duplex exit sensor

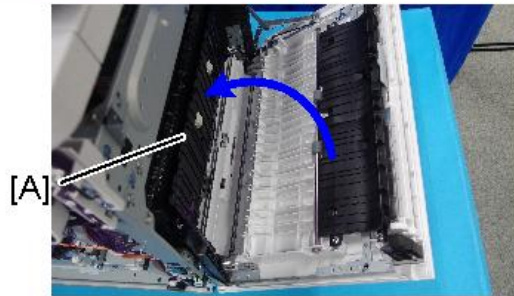
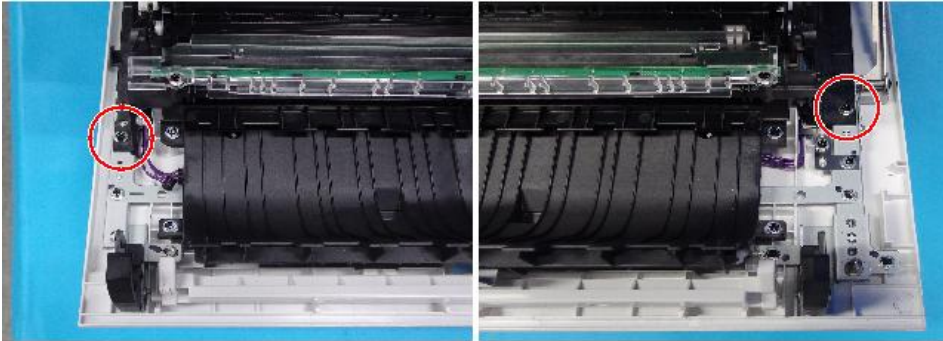
Lower: PCL/ID sensor



 x2

d205m4141

3. Lift the frame [A] of the duplex unit.

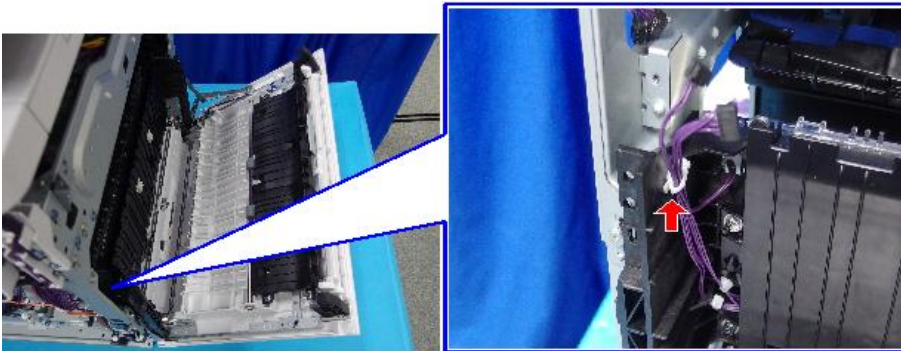


 x2

d205m4142

4

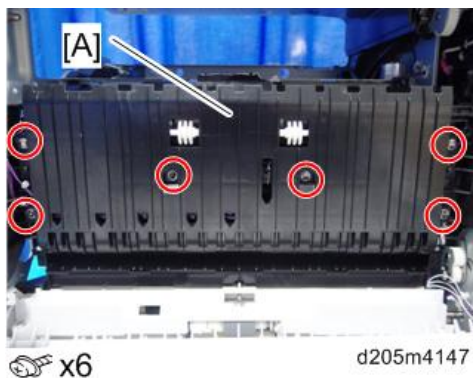
4. Clamp



 x1

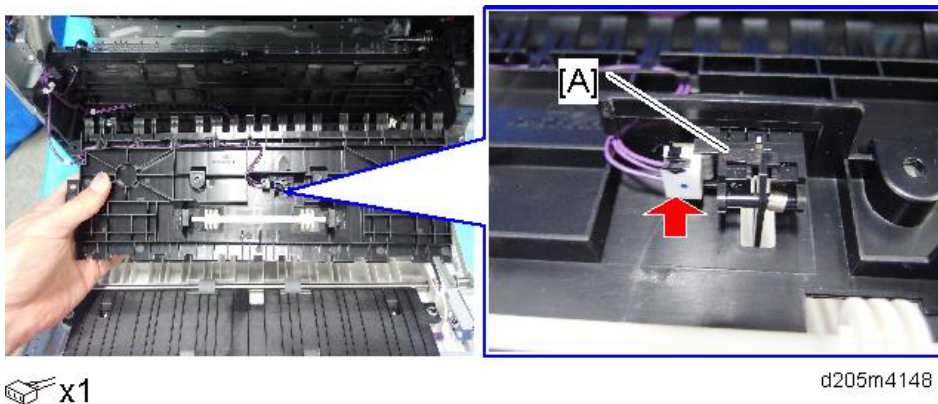
d205m4146

5. Duplex guide plate [A]



4

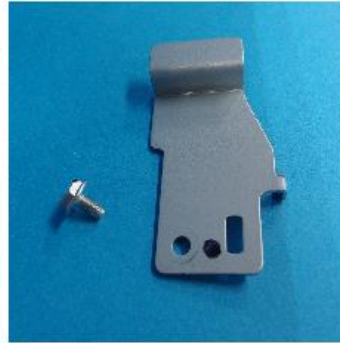
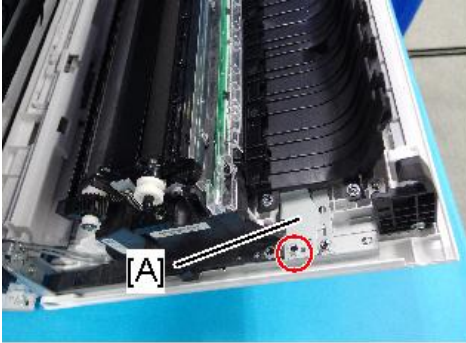
6. Duplex exit sensor [A]



Duplex Rollers

Duplex Drive Roller

1. Open the right cover and remove the connector cover [A].



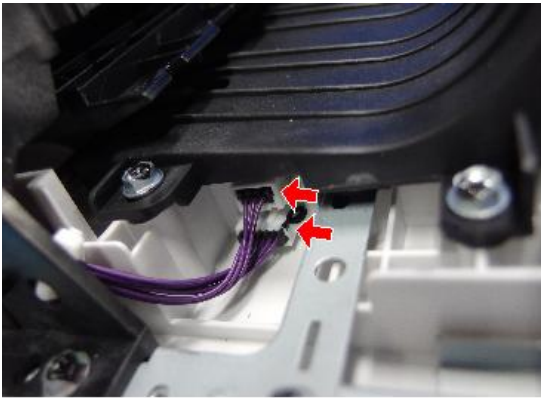
 x1

d205m4140

2. Connectors

Upper: Duplex exit sensor

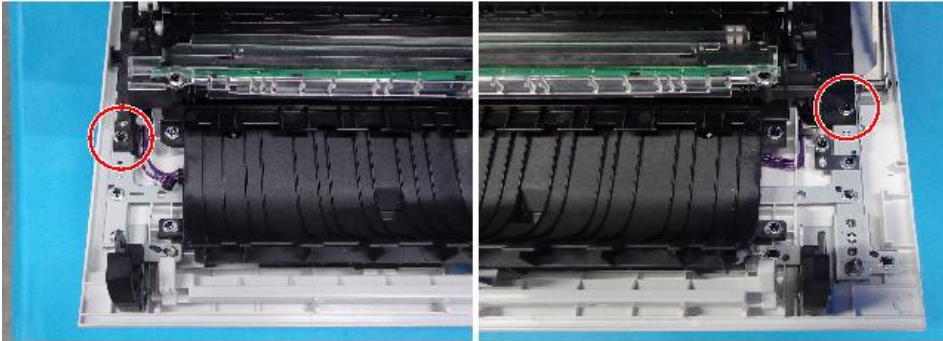
Lower: PCL/ID sensor



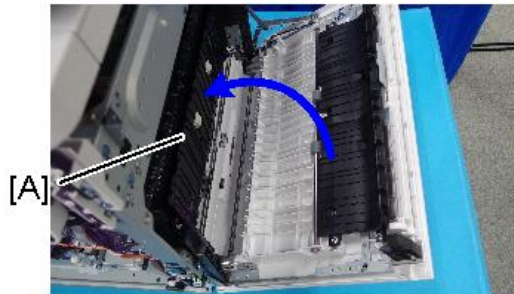
 x2

d205m4141

3. Lift the frame [A] of the duplex unit.



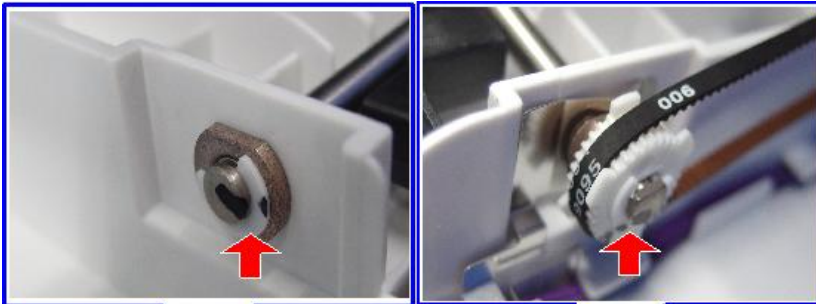
4



 x2

d205m4142

4. Clip rings of the duplex drive roller

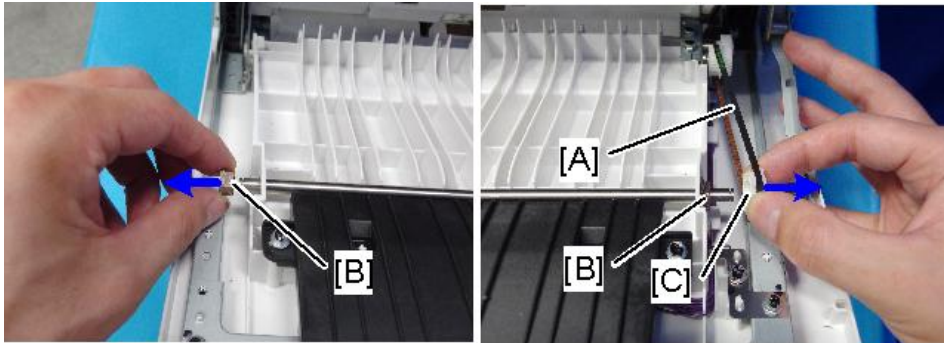


d205m4156



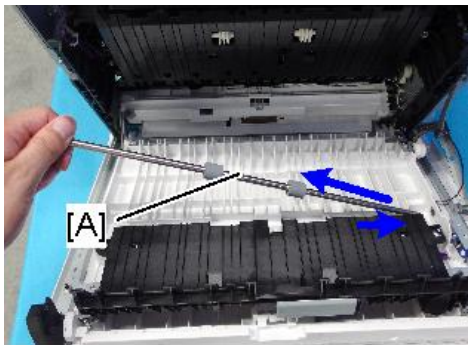
 x2

5. Timing belt [A], bearings [B], and gear [C]



d205m4157

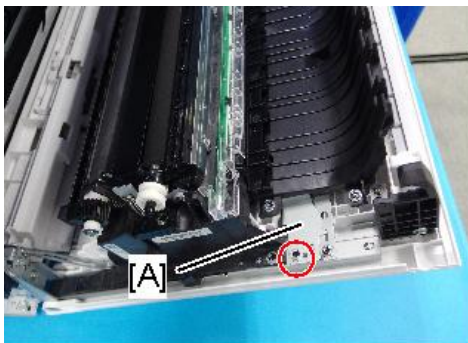
6. Duplex drive roller [A]



d205m4158

Duplex Driven Roller

1. Open the right cover and remove the connector cover [A].



 x1

d205m4140

2. Connectors

Upper: Duplex exit sensor

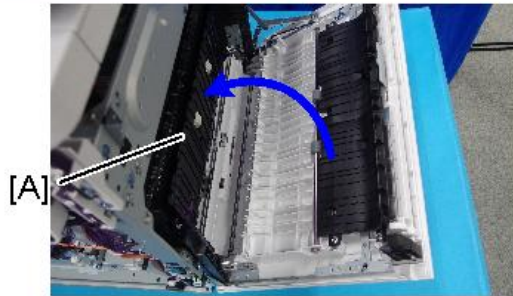
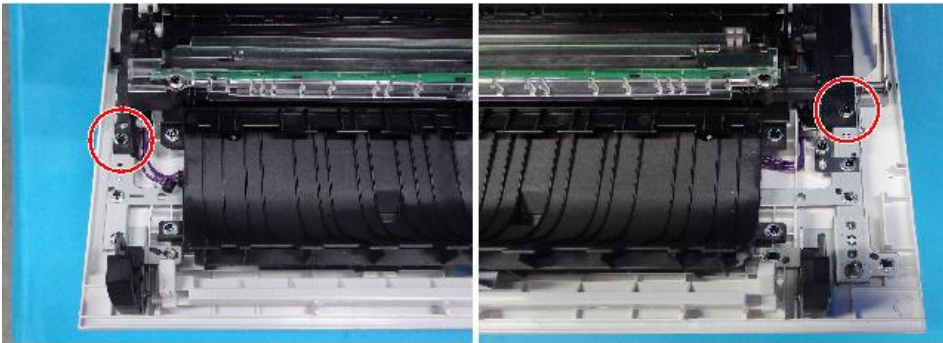
Lower: PCL/ID sensor



 x2

d205m4141

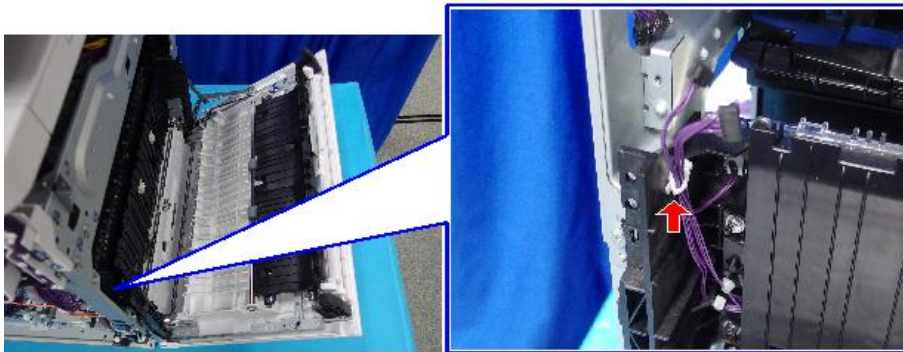
3. Lift the frame [A] of the duplex unit



 x2

d205m4142

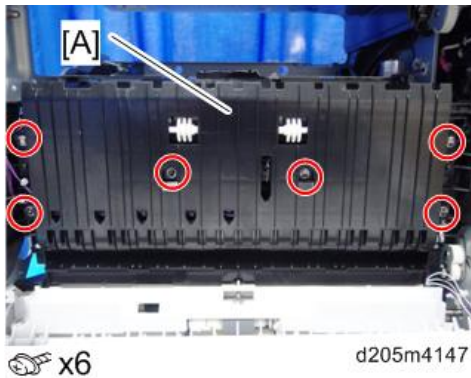
4. Clamp



 x1

d205m4146

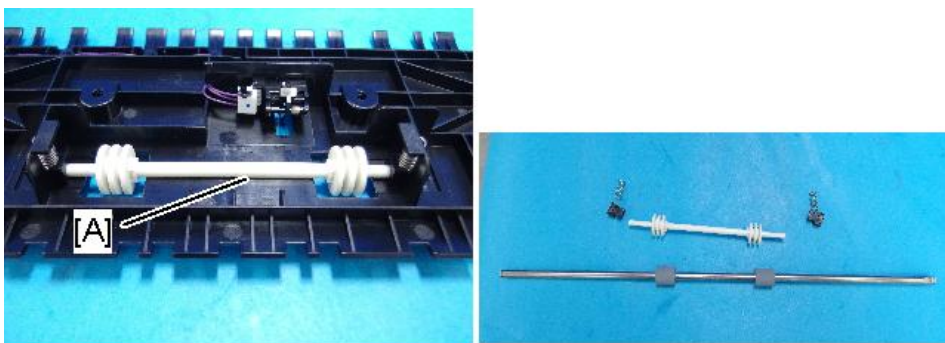
5. Duplex guide plate [A]



 x6

d205m4147

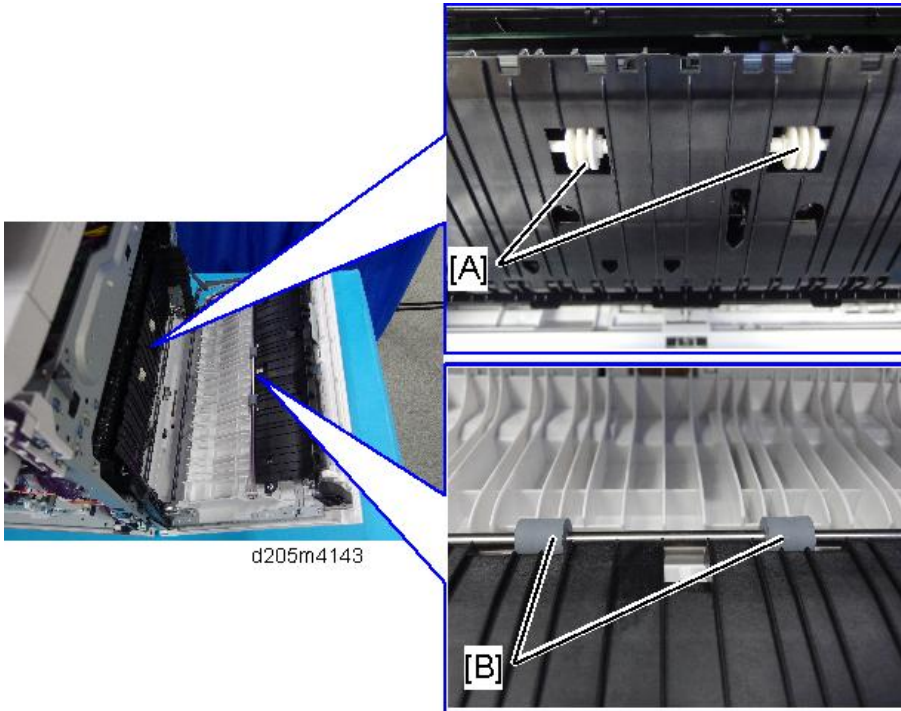
6. Duplex driven roller [A]



d205m4159

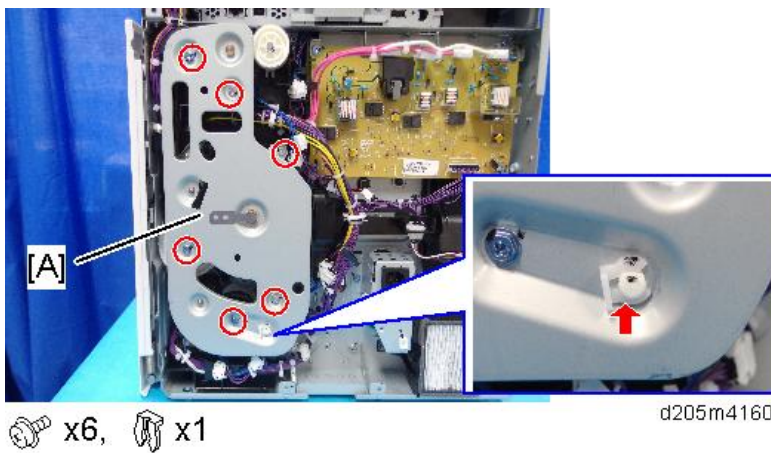
How to Clean the Duplex Driven Roller and the Duplex Drive Roller

Wipe the duplex driven roller [A] and the duplex drive roller [B] with a damp cloth.

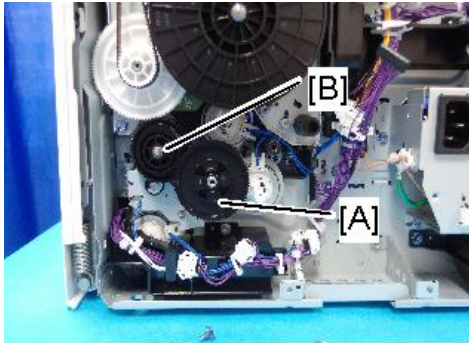


Duplex Reverse Clutch

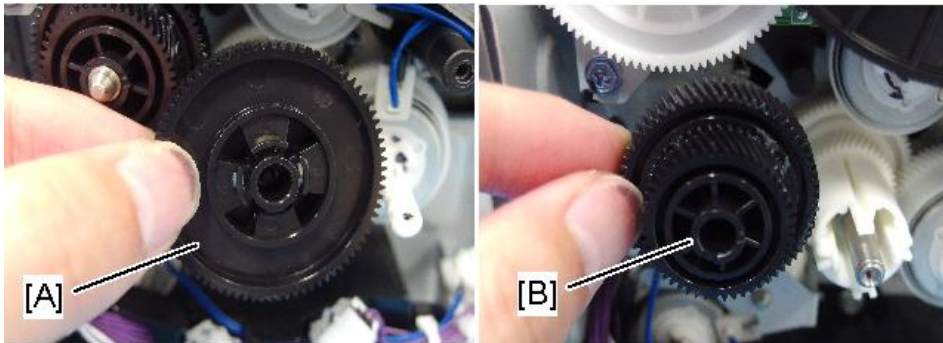
1. Rear cover (page 147)
2. Gear bracket [A]



3. Gear [A] and gear [B]

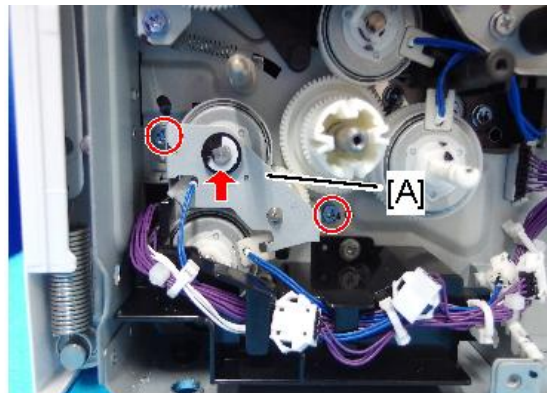




d205m4161



d205m4164

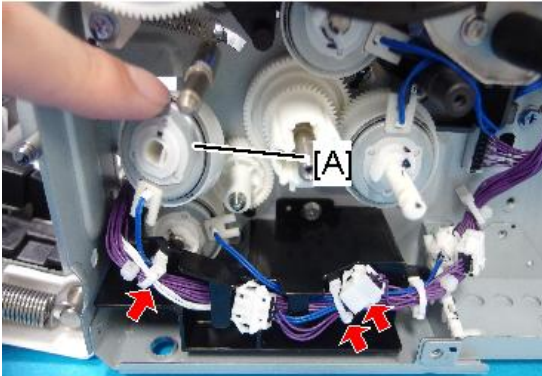
4. Bracket [A]



 x2,  x1

d205m4162

5. Duplex reverse clutch [A]

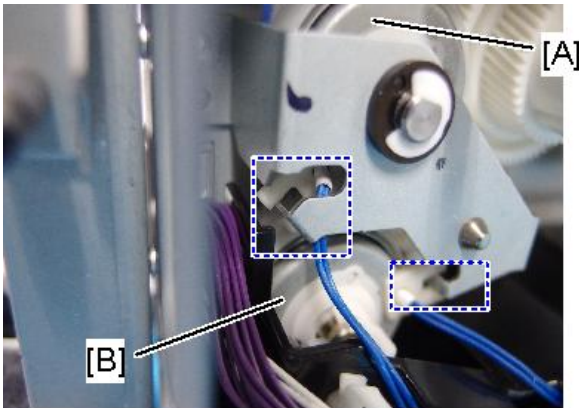


 x2,  x1

d205m4163

Notes on Installing the Duplex Reverse Clutch

The duplex reverse clutch [A] and the bypass clutch [B] are fixed by a bracket. Position the clutches as shown in the following picture.

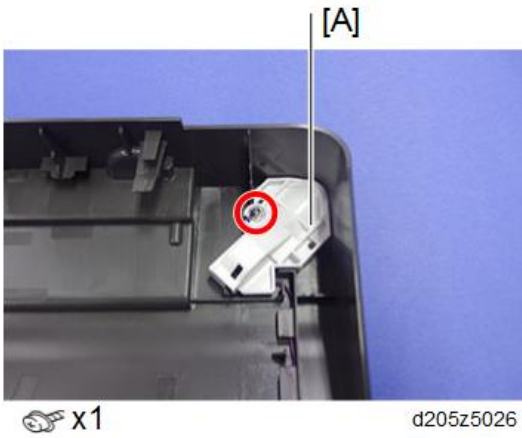


d205m4165

Paper Exit Indicator

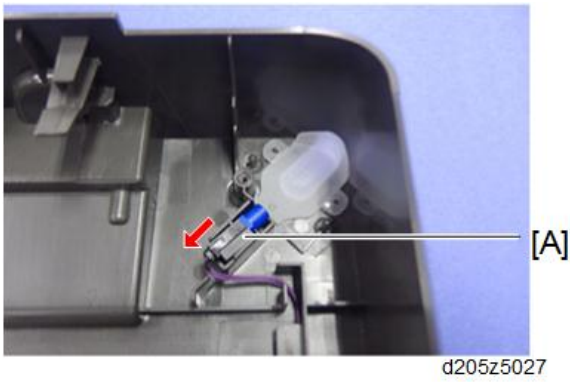
1. Left lower cover (page 151)
2. Paper exit tray (page 156)

3. Cover [A]



4

4. Paper exit indicator [A]

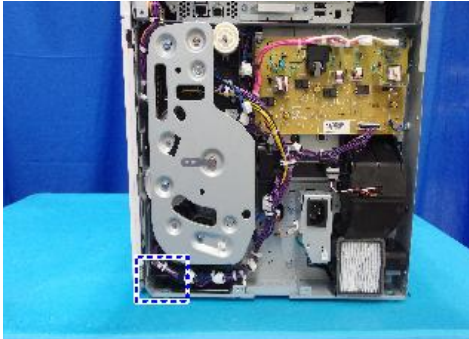


Bypass

Bypass Clutch

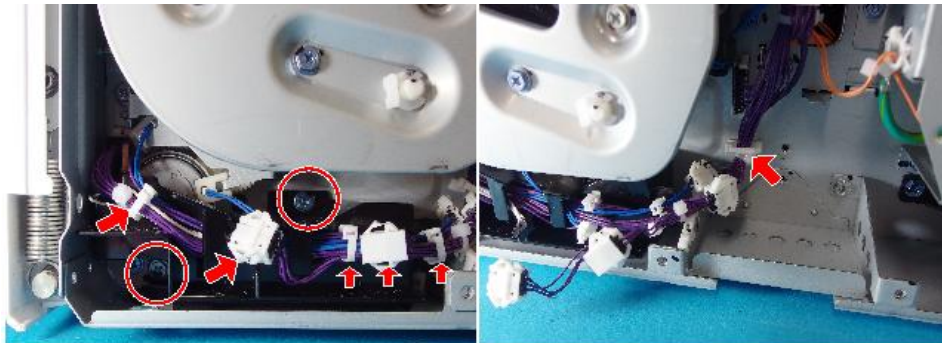
The bypass clutch is located as shown in the picture.

4



d205m4118

1. Rear cover (page 147)
2. Harness holder [A]



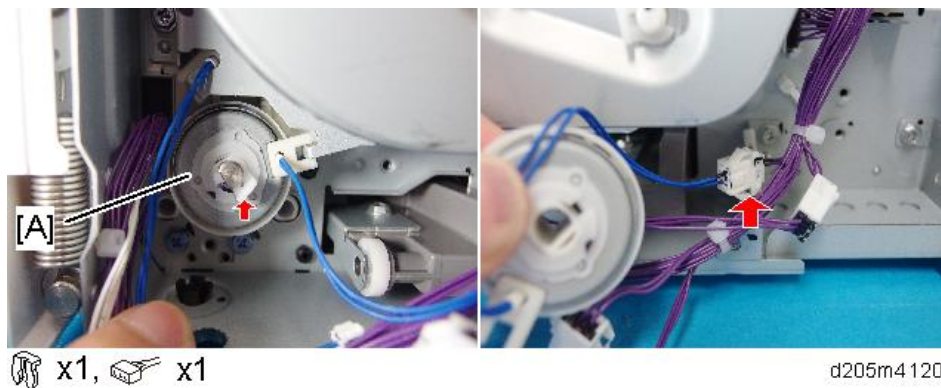
 x2,  x2,  x4

d205m4119

[A]



3. Bypass clutch [A]



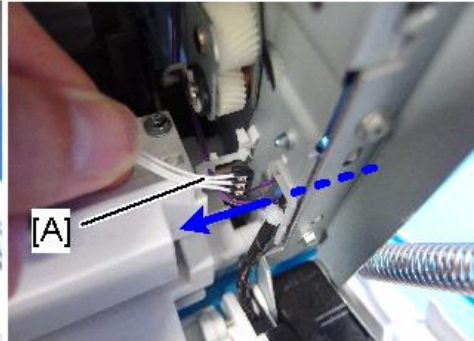
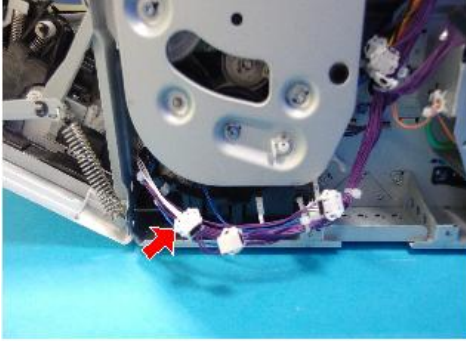
4



Bypass Unit

1. Pull out the paper feed tray.
2. Screw of the front inner cover [A]



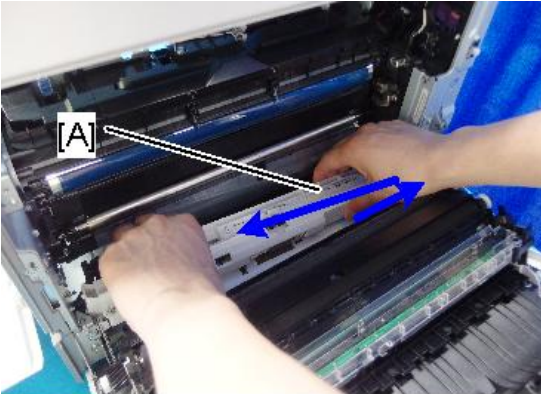
3. Release the harness at the left lower area of the rear and pull the harness of the bypass paper end sensor [A] to the inside.



 x1,  x1

d205m4122

4. Hold the bypass unit [A] with both hands, and slide it towards the rear of the machine. Then remove it upwards at an angle towards the front side of the machine.





d205m4123

Bypass Paper End Sensor

1. Bypass unit (page 269)

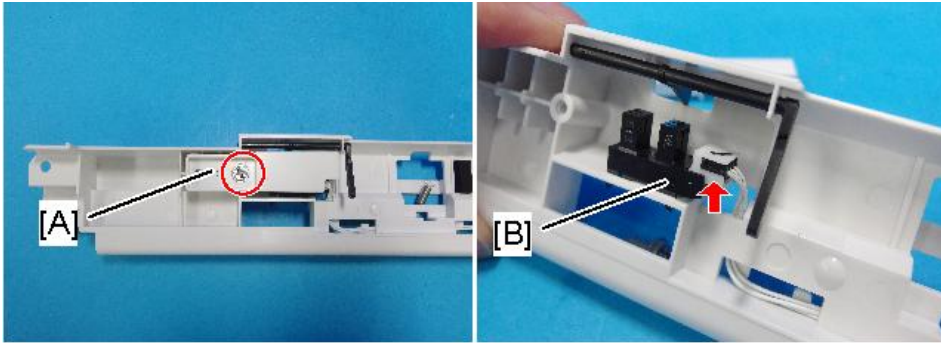
2. Cover





 x2,  x1

d205m4124

3. Bracket [A], and Bypass paper end sensor [B]



 x1,  x1

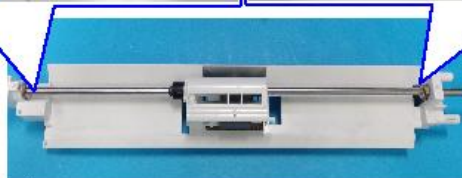
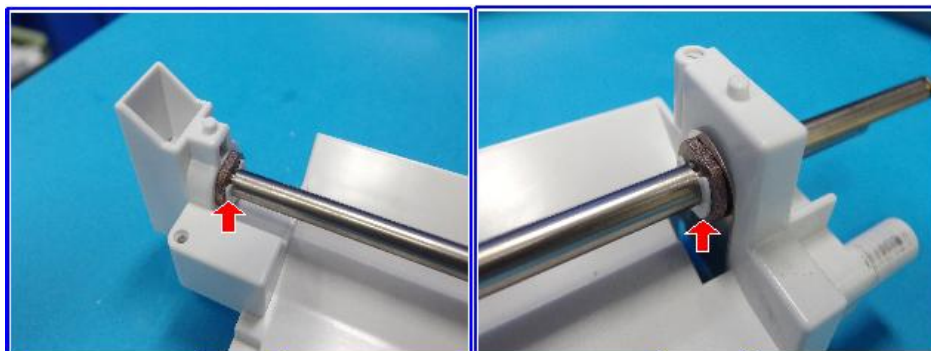
d205m4125

4

Bypass Paper Feed Roller, Bypass Separation Roller

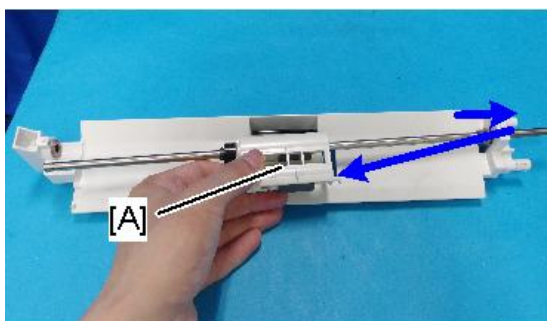
1. Bypass unit (page 269)

2. Bypass paper feed unit [A]



 x2

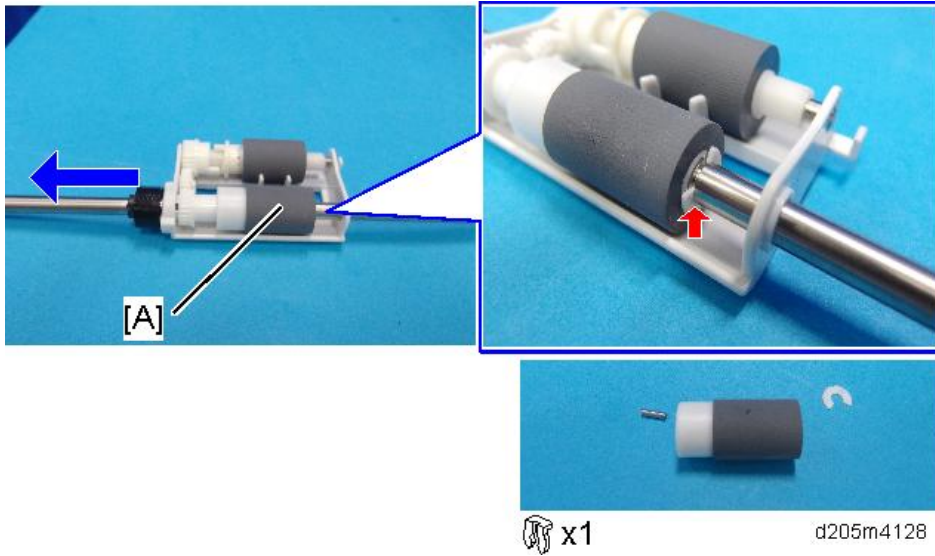
d205m4126



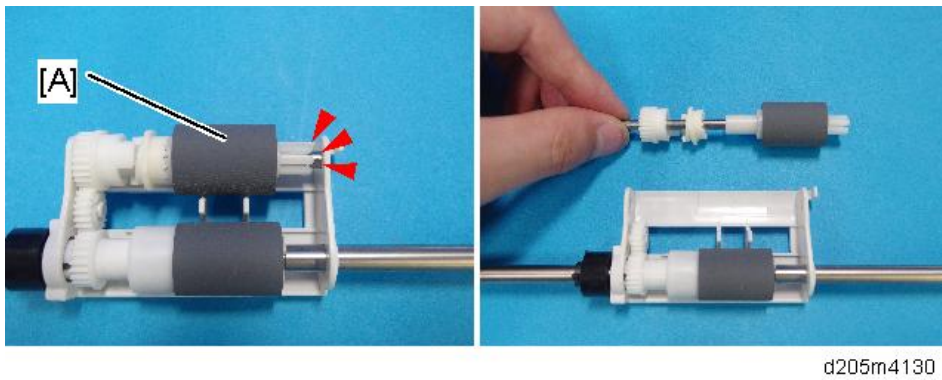
d205m4126

3. Bypass paper feed roller [A]

Pull it out while turning the shaft.

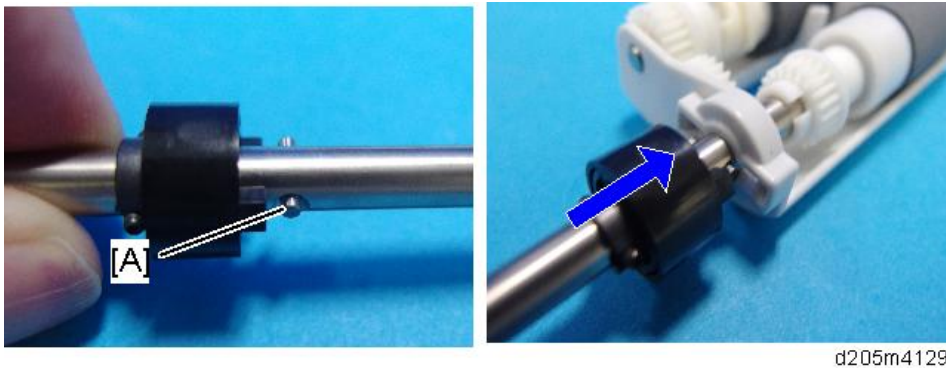


4. Bypass separation roller [A]



Notes on Installing the Bypass Separation Roller

Make sure that the pin [A] is set in the guide of the paper feed unit.



Electrical Components, Other Items

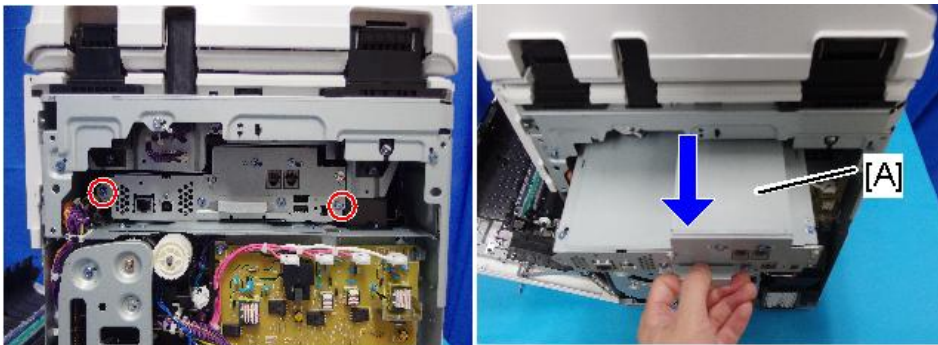
Controller Box

Note

- To remove only the controller box, it is not necessary to remove the scanner unit.

1. Rear cover (page 147)
2. Controller box [A]

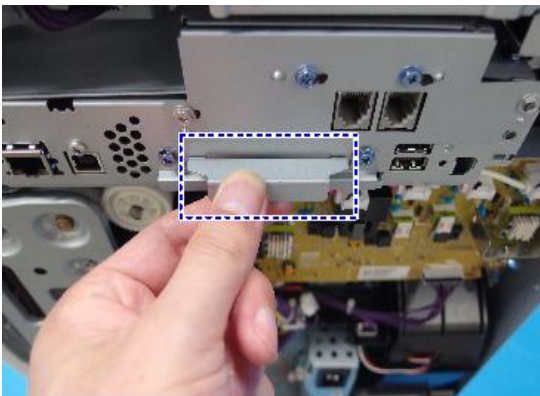
4



 x2

d205m4107

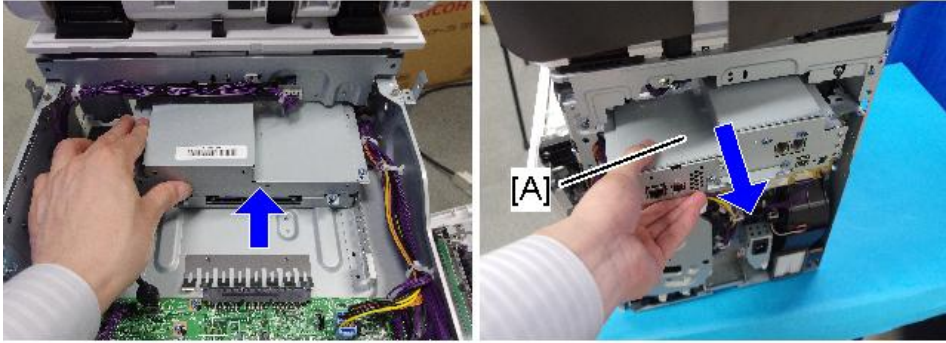
To remove it, hold the slot cover for the SD Card.



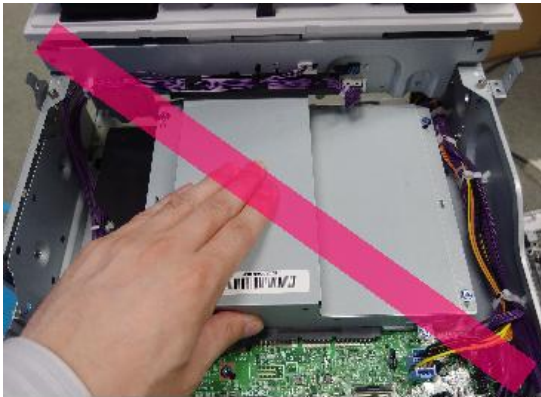
d205m4108

Note

- If the scanner unit has been removed, do not push the controller box [A] with your fingers. Otherwise the connector pins may be damaged. Push the side of the box slowly and remove it.



d205m4111



d205m4112

4

Notes on Installing the Controller Box

After installing the controller box part of the way, push it in gently with your fingers. Then connect it securely to the connector [A] on the BiCU. (This picture shows the machine with the scanner unit removed. You do not have to remove the scanner unit to do this procedure.)



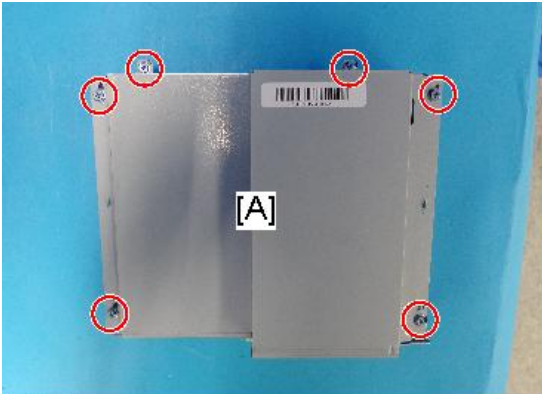
d205m4113

Controller Board

★ Important

- If you remove the controller board right after disconnecting the power cord, the machine will be damaged.

1. Controller box (page 274)
2. Upper cover [A]



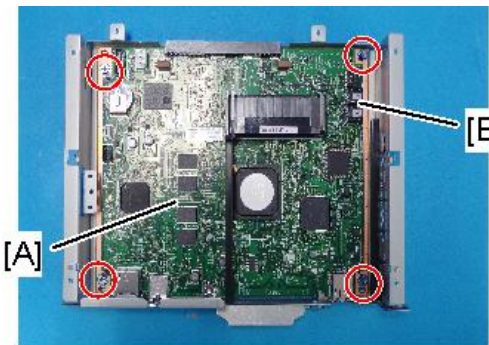
 x6

d205m4109

3. Controller board [A]

↓ Note

- When replacing the controller board, remove the NVRAM [B] and then install it on the new controller board



 x5

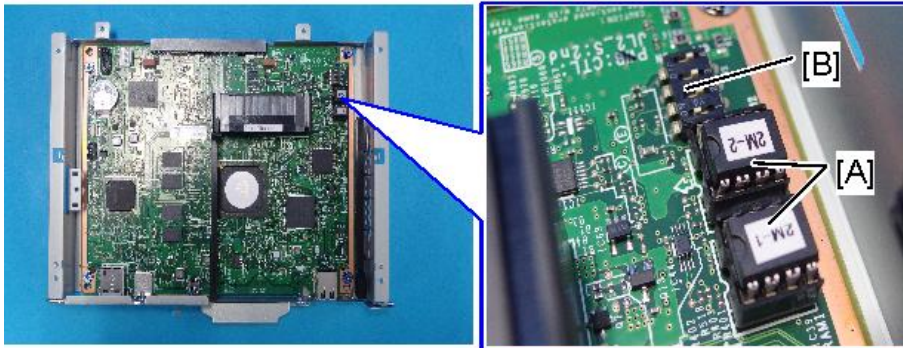


d205m4110

Notes on Replacing the Controller Board

- Install the NVRAM [A] from the old controller board on the new controller board before replacing. The NVRAM contains the SP settings.

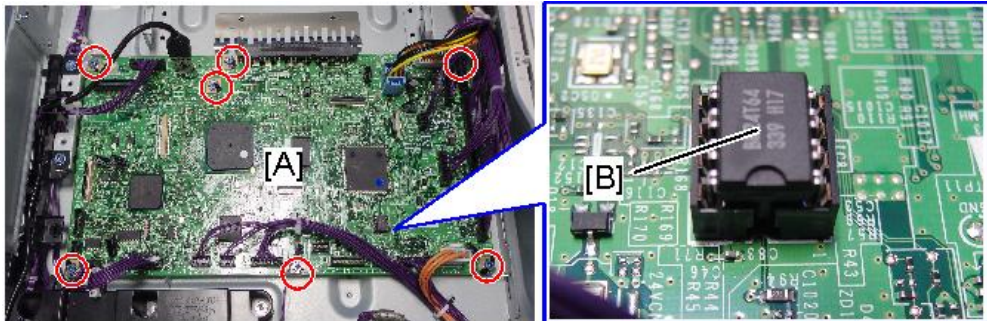
- Do not touch DIP-SW [B]. Do not use in the field.



d205m411b

BiCU (Base-Engine Image Control Unit)

1. Scanner unit (page 186)
2. BiCU [A]



 x7,  x All

w_d205m4114

Note

- When replacing the BiCU, remove the NVRAM [B] from the old BiCU and install it on the new BiCU.

NVRAM

NVRAM on the Controller Board

CAUTION

- SC195 (Machine serial number error) will be displayed if the NVRAM is not attached.

- If you mounted the NVRAM in the wrong direction, each component needs to be replaced because a short circuit was caused in the controller board and the NVRAM.
- Installing a new NVRAM initializes SPs and issues an SC. Reset the SC with the procedure below.

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

2. Output the SMC log using one of the following:

To print SMC log data, execute SP5-990-001.

To save SMC log data to an SD card, execute SP5-992-001.

3. Turn OFF the main power.

4. Insert a blank SD card in the SD slot #2, and then turn ON the main power.

5. Upload the NVRAM data from the controller board using SP5-824-001.

6. Make sure the customer has a backup of their address book data. If not, obtain the backup by referring to SP5-846-051.

★ Important

- The address data stored in the machine will be discarded later during this procedure. So be sure to obtain a backup of the customer's address book data.
- Note that the counters for the user will be reset when doing the backup/restore of the address book data.
- If they have a backup of the address book data, use their own backup data for restoring. This is because there is a risk that the data cannot be backed up properly depending on the NVRAM condition.

7. Do the following if the machine has the fax unit. If not, skip this step:

1. Print the Box List with the User Tools/Counter.

- [User Tools/Counter] - [Facsimile Features] - [General Settings] - [Box Setting: Print List]

2. Print the Special Sender List by pressing these buttons in the following order.

- [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Program Special Sender: Print List]

3. Write down the following fax settings.

- [Receiver] in [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Reception File Settings] - [Forwarding].
- [Notify Destination] in [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Reception File Settings] - [Store].
- [Specify User] in [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Stored Reception File User Setting].
- [Notify Destination] in [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Folder Transfer Result Report].

- Specified folder in [User Tools/Counter] - [Facsimile Features] - [Send Settings] - [Backup File TX Setting].
- [Receiver] in [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Reception File Settings] - [Output Mode Switch Timer].
- [Store: Notify Destination] in [User Tools/Counter] - [Facsimile Features] - [Reception Settings] - [Output Mode Switch Timer].
- All the destination information shown on the display.

Note

- In the fax settings, address book data is stored with entry IDs, which the system internally assigns to each data. The entry IDs may be changed due to re-assigning in backup/restore operations.
4. Make sure that there is no transmission standby file. If any standby file exists, ask the customer to delete it or complete the transmission.

8. Turn OFF the main power and unplug the power supply cord.
9. Press the main power switch again to discharge the residual charge.
10. Replace the NVRAM with a new one.
11. Turn ON the main power.

Important

- SC673 appears at start-up, but this is normal behavior. This is because the controller and the smart operation panel cannot communicate with each other due to changing the SP settings for the operation panel.

1. Change the SP settings for the operation panel.
 - SP5-748-101: (OpePanel Setting: Op Type Action Setting): Change bit 0 from "0" to "1".
 - SP5-748-201: (OpePanel Setting: Cheetah Panel Connect Setting): Change the value from "0" to "1".

12. Turn OFF then ON the main power with the SD card where the NVRAM data has been uploaded in SD slot 2.

Important

- SC992 appears at start-up, but this is normal behavior. This is because information written to the NV-RAM and on the hard disk do not match due to replacement of the NV-RAM. Go to Step 13.

13. Download the NVRAM data stored in the SD card to the brand-new NV-RAM using SP5-825-001.

Note

- The download will take a couple of minutes.

14. Turn OFF the main power and remove the SD card from SD slot 2.

15. Turn ON the main power.

16. Restore the original settings of the following SPs, referring to the SMC data obtained in step 2.

Note

- SP5-825-001 does not download the following SP data to the new NVRAM. So you must set them manually.
 - a. SP5-985-001 (Device Setting: On Board NIC)
 - b. SP5-985-002 (Device Setting: On Board USB)

17. If the security functions (HDD Encryption and HDD Data Overwrite Security) were applied, set the functions again.

18. Ask the customer to restore their address book. Or restore the address book data using SP5-846-052, and ask the customer to ensure the address book data has been restored properly.

Important

- If you have obtained the backup of the customer's address book data, delete the backup immediately after the NVRAM replacement to avoid accidentally taking out the customer's data.

19. Output the SMC log using one of the following methods:

To print SMC log data, execute SP5-990-001.

To save SMC log data to an SD card, execute SP5-992-001

Note

- Check that the counters are reset.

20. Make sure that the list output in step 7-1 through step 7-3 matches the destination information in step 7-4. If not, set it to the setting before replacement.

21. Execute the process control manually (SP2-011-001).

Important

- Try all the items below if NVRAM upload (SP5-824-001) or download (SP5-825-001) cannot be done.
 - Check the SP values that changed on the SMC you printed out in step 2. Adjust the values manually. Make sure that the values of SP5-045-001 and SP5-302-002 are the same as before replacing.
 - Replace all PM parts because all PM counters will be reset.

Note

- If a message states that you need an SD card to restore displays after the NVRAM replacement, create a "SD card for restoration" and restore with the SD card. Refer to page 121

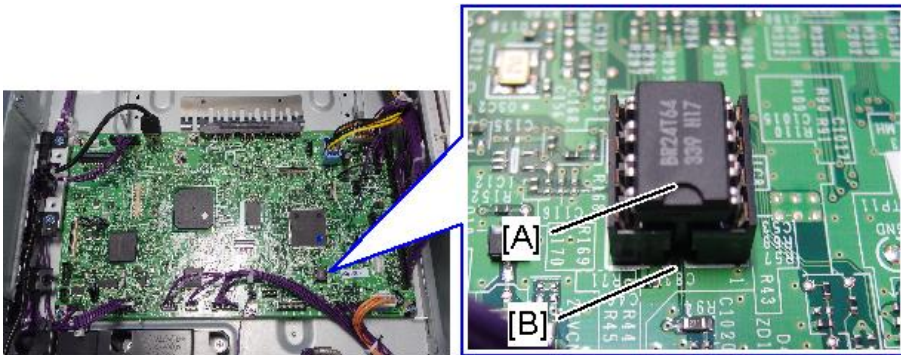
NVRAM (EEPROM) on the BiCU

⚠ CAUTION

- Keep NVRAMs away from any objects that can cause static electricity. Static electricity can damage data in the NVRAM.
1. Make sure that you have the SMC report (factory settings). This report comes with the machine.
 2. Output the SMC log using one of the following methods:
 - To print SMC log data, execute SP5-990-001 ([SP Print Mode]-[All (Data List)]).
 - To save SMC log data to an SD card, execute SP5-992-001 ([SP Text Mode]-[All (Data List)]).
 3. Turn OFF the main power.
 4. Insert a blank SD card in SD slot #2, and then turn ON the main power.
 5. Upload the NVRAM data from the BiCU using SP5-824-001.
 6. Turn OFF the main power and disconnect the power plug.
 7. Replace the NVRAM on the BiCU with a new one.

↓ Note

- Make sure the NVRAM [A] is installed at the correct mounting location and orientation. Install the NVRAM so that the indentation on the NVRAM corresponds with the mark [B] on the BiCU.
- Incorrect installation of the NVRAM will damage both the BiCU and the NVRAM



d205m4115

8. Connect the power plug and turn ON the main power.
9. Select the destination setting (SP5-131-001 –NA: 1, EU/AA/TWN/CHN: 2).

↓ Note

- After changing the EEPROM, some SPs do not have the correct values.
- Because of this, steps 10 to 12 must be done.

10. Set SP5-811-001 ([MachineSerial]-[Set]), and SP5-996-001 ([Machine State]-[Destination]).

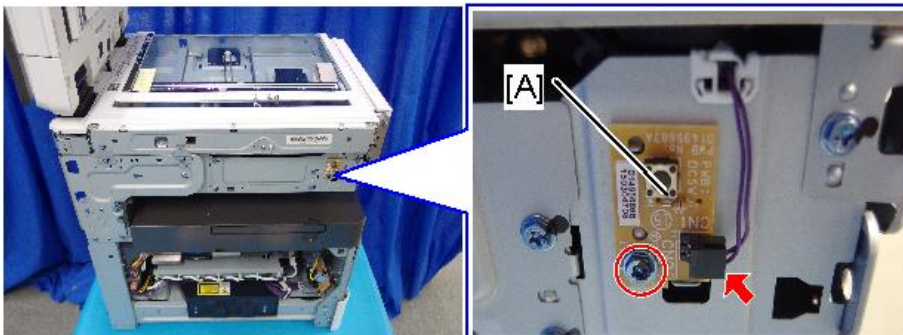
Note



- For information on how to configure the machine serial number and area selection, contact the supervisor in your branch.
- SC995 will appear until the machine serial number and area selection are programmed correctly.

11. Turn OFF then ON the main power.
12. Do SP5-801-002 to clear the all SP settings for the engine data in NVRAM.
13. Turn OFF then ON the main power.
14. From the SD card where you saved the NVRAM data in step 5, download the NVRAM data with SP5-825-001.
15. Turn OFF the main power.
16. Remove the SD card from slot #2.
17. Turn ON the main power.
18. Check the factory setting sheet and the SMC data printout from step2, and set the user tool and SP settings so that they are the same as before replacement.

Main Power Switch

1. Left upper cover (page 150)
2. Main power switch [A]



 x1,  x1

d205m4116

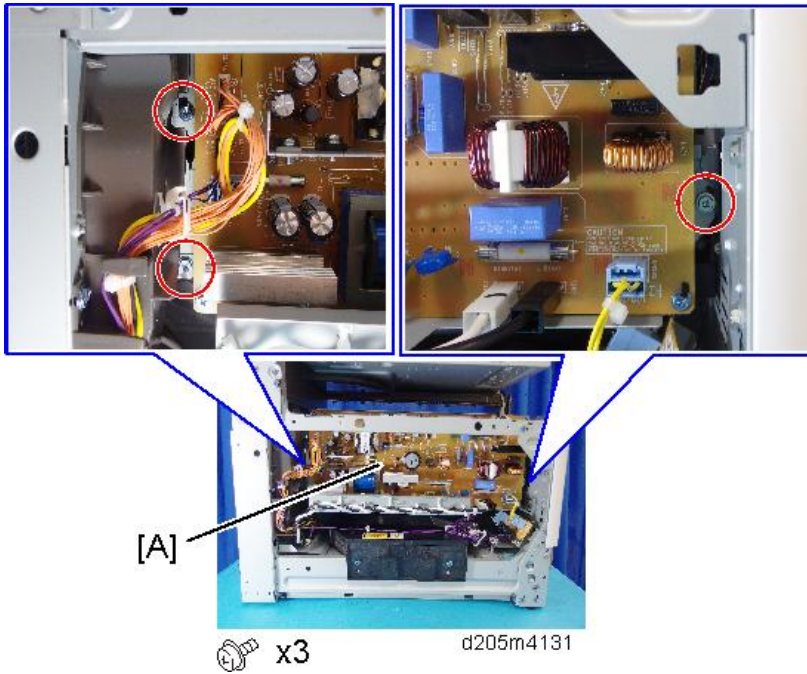
PSU (Power Supply Unit)

⚠ CAUTION

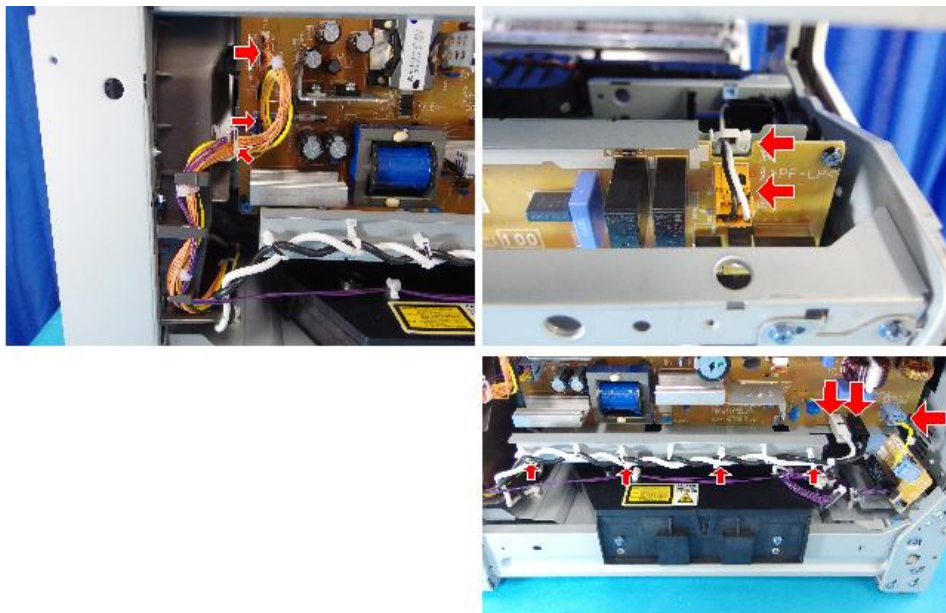
- Do not touch any of the soldered surfaces or any of the components after removing the PSU, because there is residual charge. Also, do not leave the PSU on a conductive metallic area.



1. Paper exit tray (page 156)

2. PSU bracket [A]



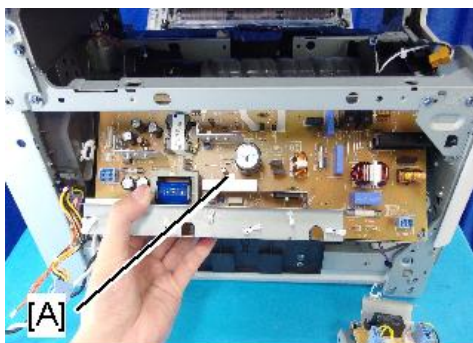
3. Connectors, and clamps



 x6,  x6

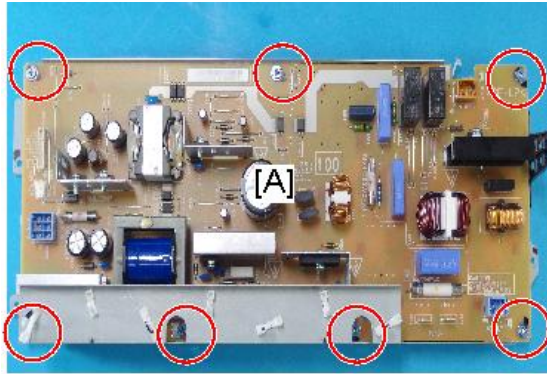
d205m4132


4. PSU bracket [A]



d205m4134

5. PSU [A]



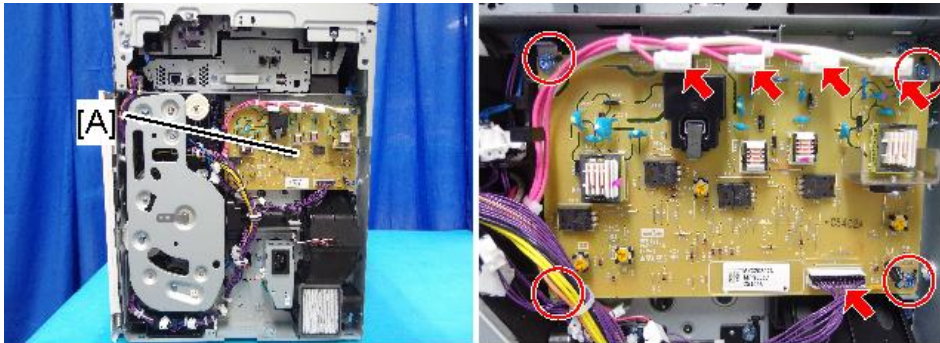
 x7


d205m4135

4

HVPS (High-Voltage Power Supply)

1. Rear cover (page 147)
2. HVPS [A]



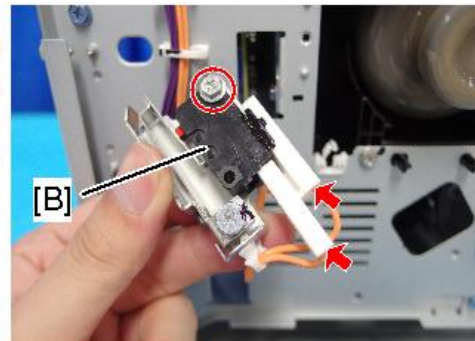
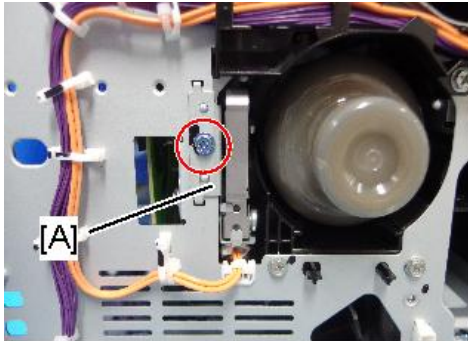
 x4,  x5



d205m4117

Front Cover Switch

1. Front inner cover (page 155)

2. Bracket [A] and front cover switch [B]

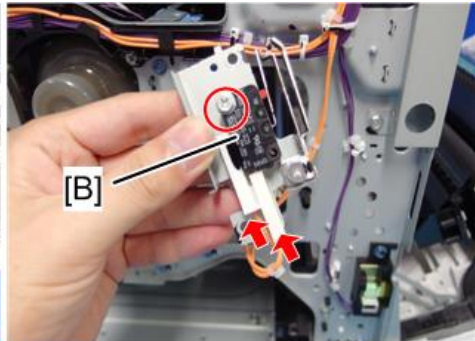
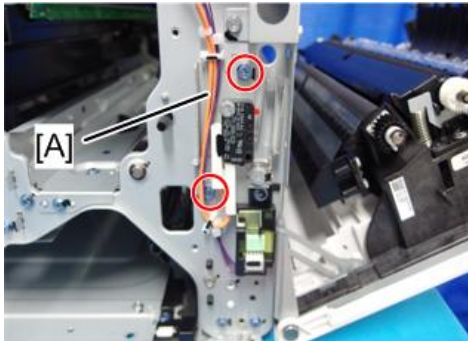




 x2,  x2

d205m4136

Right Cover Open/Close Switch

1. Front inner cover (page 155)
2. Bracket [A] and right cover open/close switch [B]



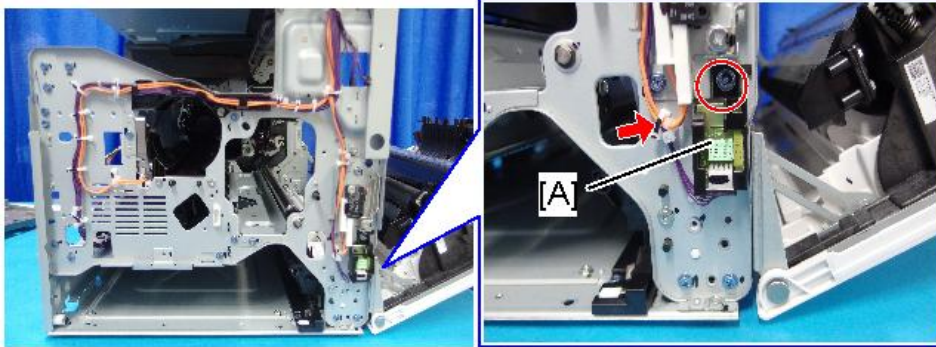
 x3,  x2



d205m4137

Temperature/Humidity Sensor

1. Front inner cover (page 155)

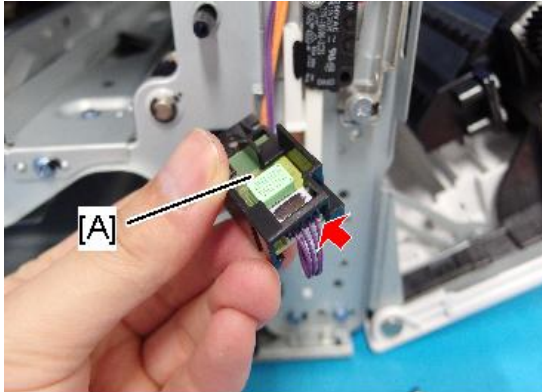
2. Bracket [A]



 x1,  x1

d205m4138

3. Temperature/Humidity sensor [A]



 x1

d205m4139

HDD

↓ Note

- Before replacing the HDD, copy the address book data to an SD card with SP5-846-051 if possible.

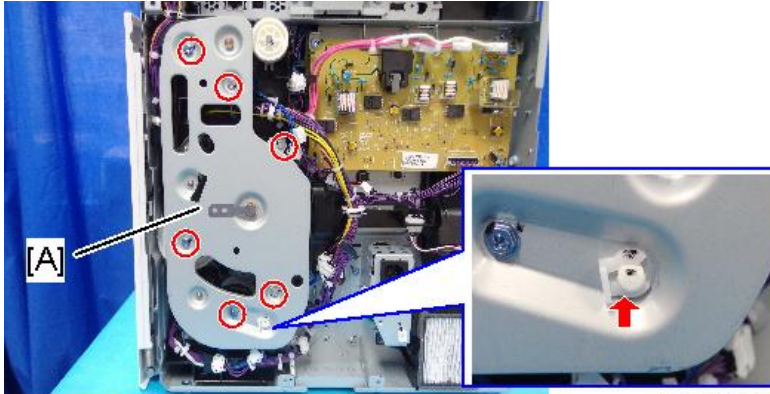
↓ Note

- To use the Data Overwrite Security, IC card reader, or OCR unit, these applications must be installed again.

1. Refer to the installation procedure. (page 74)
2. After replacing the HDD, the HDD will be formatted when you turn ON the main power.
3. When the 'completed' message is displayed, turn OFF the main power.

Main Motor

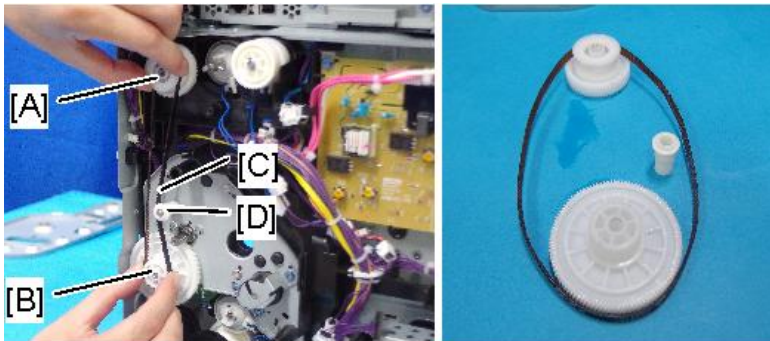
1. Rear cover (page 147)
2. Gear bracket [A]



x6, x1

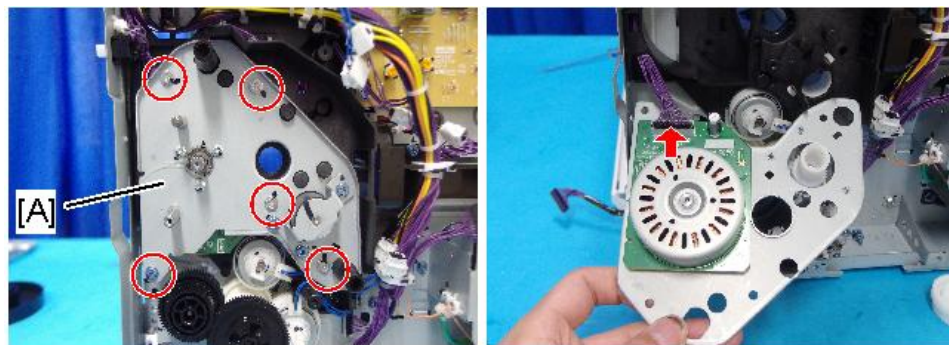
d205m4160

3. Gears [A] [B], timing belt [C], and pulley [D]



d205m4196

4. Motor bracket [A]

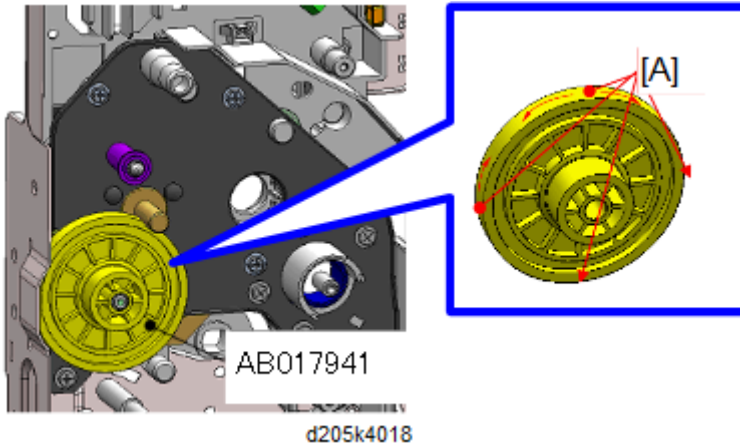


x5, x1

d205m4197

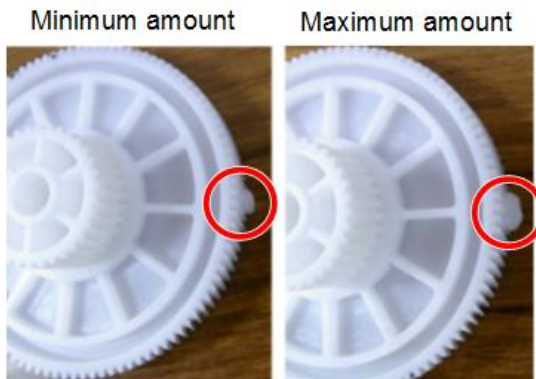
★ Important

- As the motor is attached to the motor bracket using a bonded screw, do not disconnect it from the bracket when you replace it.
5. Before mounting the main motor, apply grease at the following locations [A] on the gear, not on the motor.



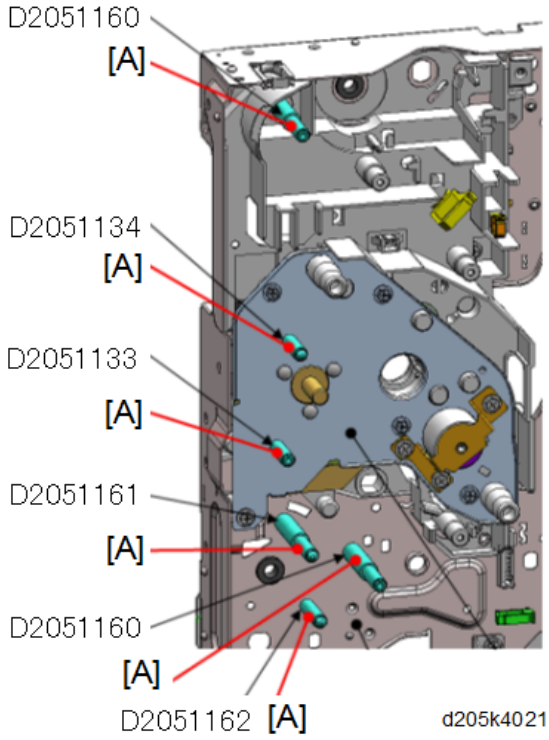
★ Important

- Reuse the grease applied to the old part. If the amount of grease applied is insufficient with the minimum amount as shown below, then use the new grease (G-1077).

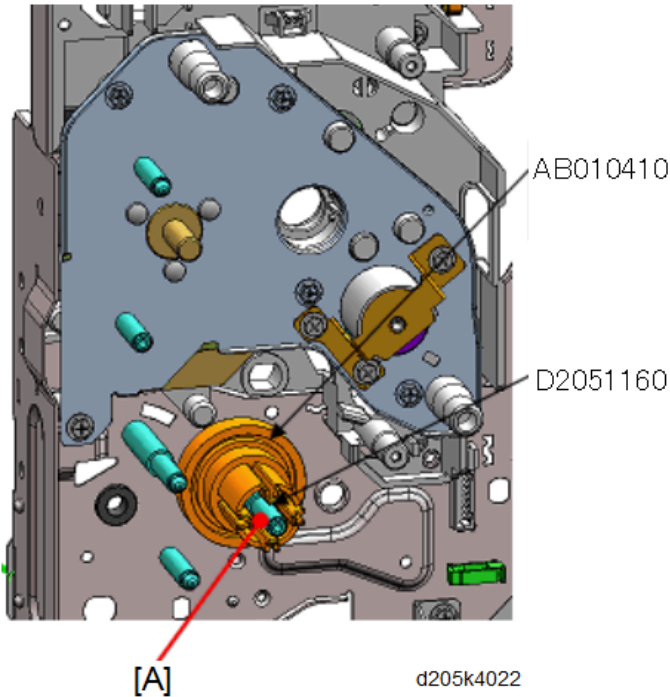


w_d205k4080

6. Apply grease to following locations [A] on the axes of the motor bracket.



d205k4021



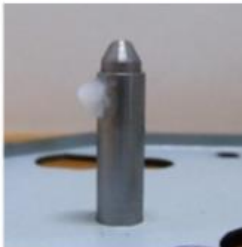
★ Important

- Reuse the grease applied to the old part. If the amount of grease applied is insufficient with the minimum amount as shown below, then use the new grease (G-1077).

Minimum amount



Maximum amount

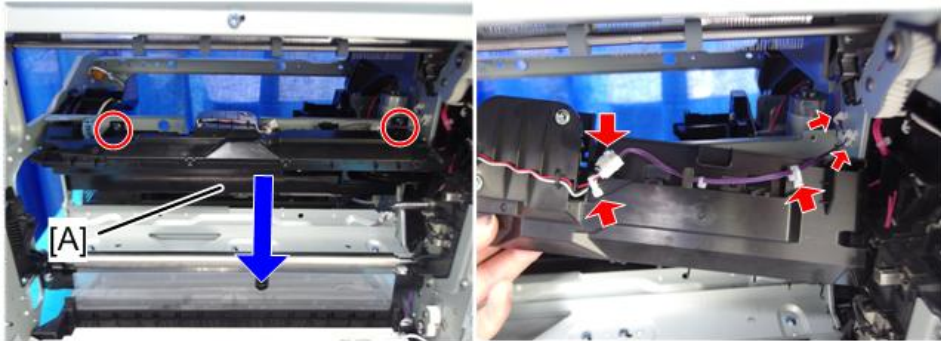





w_d205k4081

Intake Fan

1. PCDU (page 211)
2. Fusing unit (page 237)

3. Open the right cover and remove the duct [A].

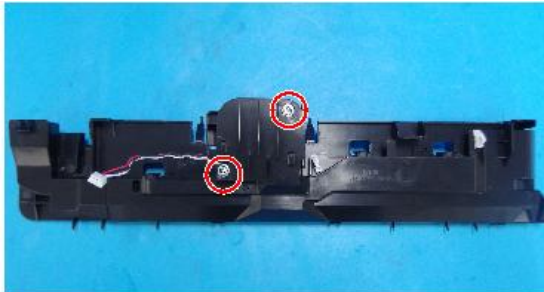


 x4,  x2,  x1

d205m4172

4

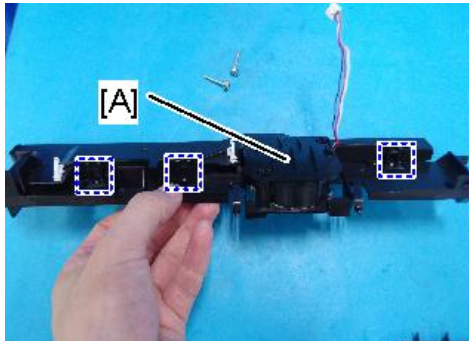
4. Screws



 x2

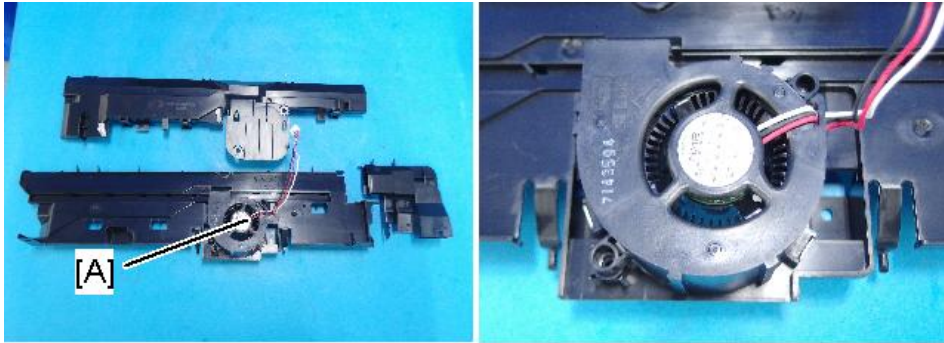
d205m4173

5. Duct upper cover [A] (Hooks x 3)



d205m4175

6. Intake fan [A]

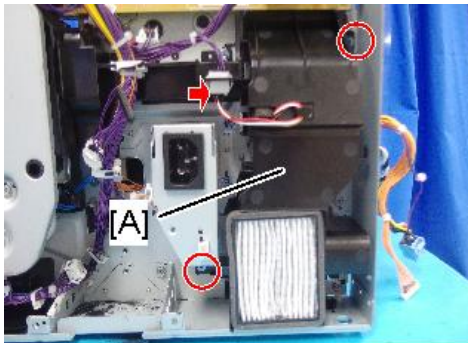




d205m4176

4

Exhaust Fan

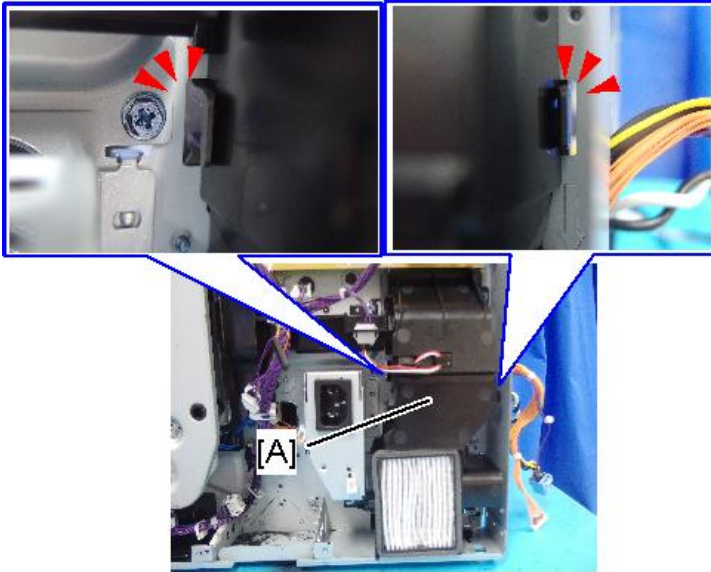
1. Rear cover (page 147)
2. Duct [A]



 x2,  x1

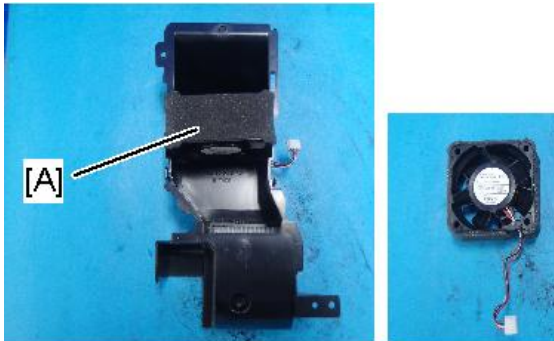
d205m4207

3. Release the left and right hooks and remove the duct [A].



d205m4208

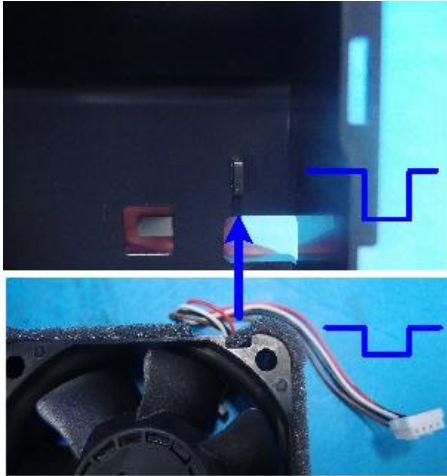
4. Exhaust fan [A]



d205m4209

Notes on Installing the Exhaust Fan

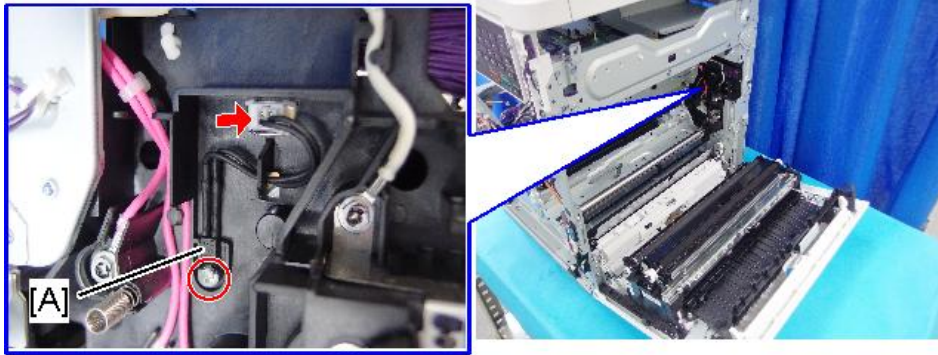
The indentation on the fan must be installed at the tab on the duct. (The decal pasted on the fan must be at the underside.)





d205m4210

Internal Temperature Sensor

1. Fusing unit (page 237)
2. Internal temperature sensor [A]



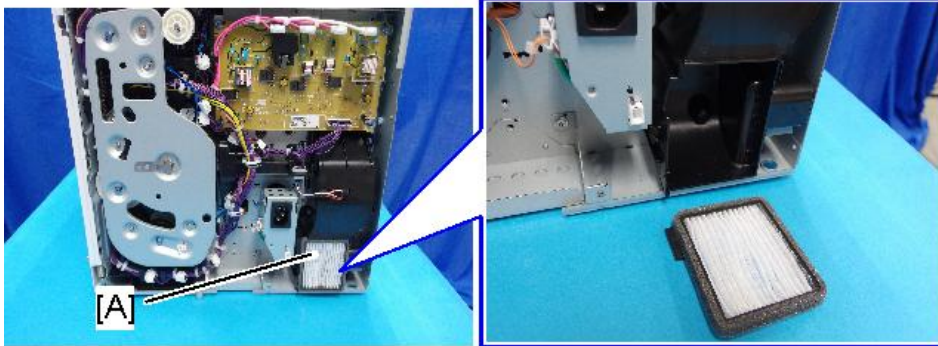
 x1,  x1

d205m4178

Dust Filter

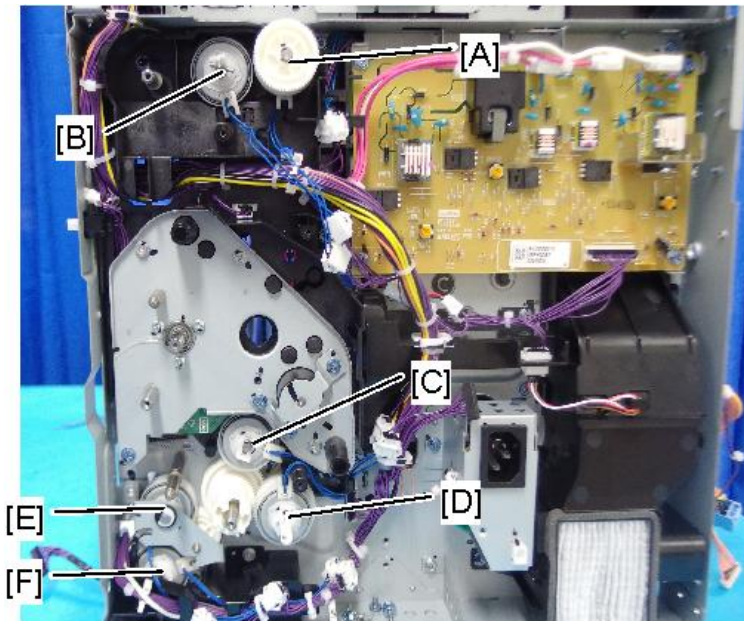
1. Rear cover (page 147)

2. Dust filter [A]



d205m4029

Clutches



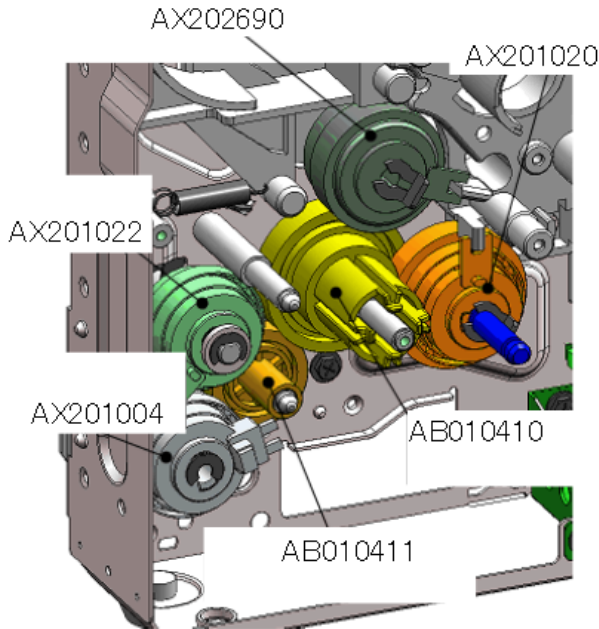
d205m4186

[A]	Paper Exit Clutch	Refer to page 252
[B]	Reverse Exit Clutch	
[C]	Registration Clutch	Refer to page 225
[D]	Paper Feed Clutch	
[E]	Duplex Reverse Clutch	Refer to page 264

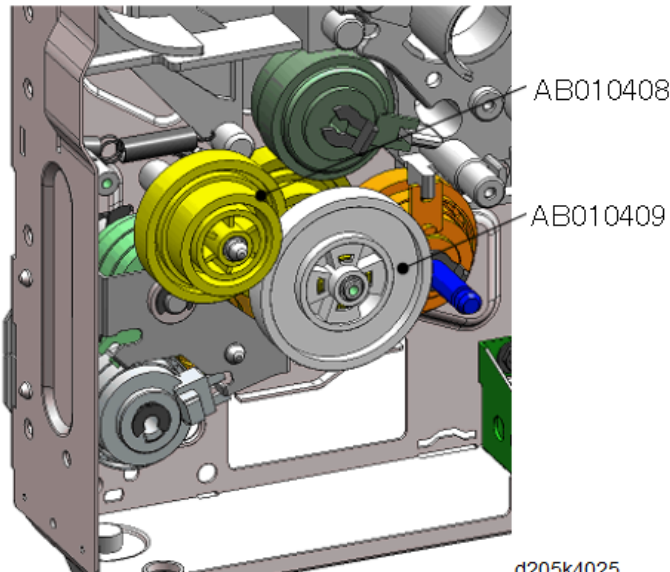
[F]	Bypass Clutch	Refer to page 268
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Applying the Grease

Apply the new grease (G-1077) at the following locations [A].

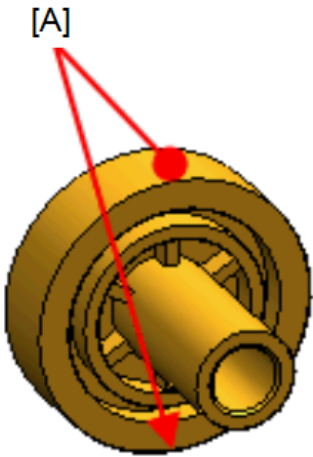


d205k4024



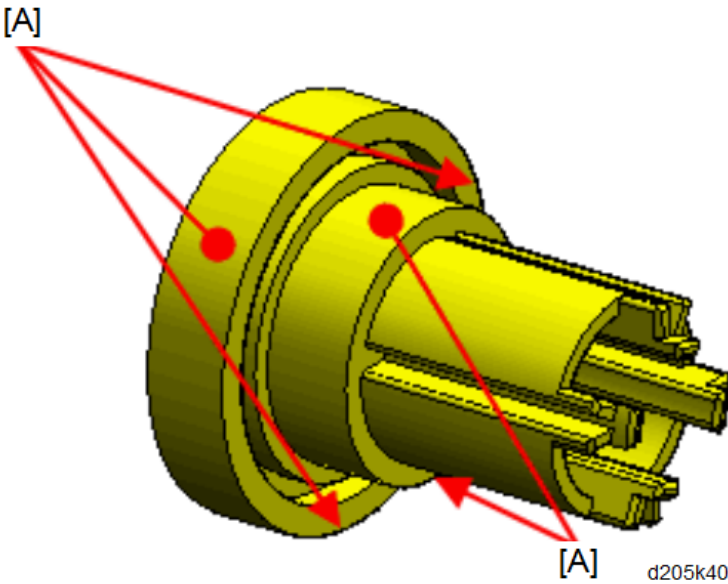
d205k4025

AB010411



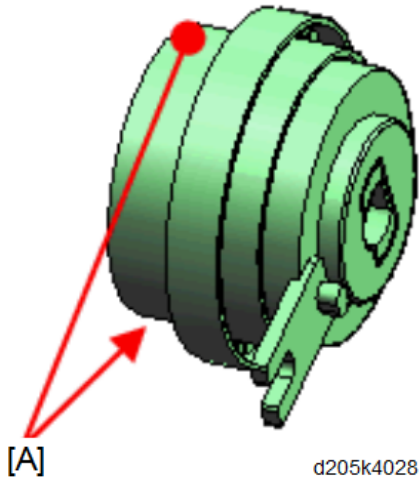
d205k4026

AB010410

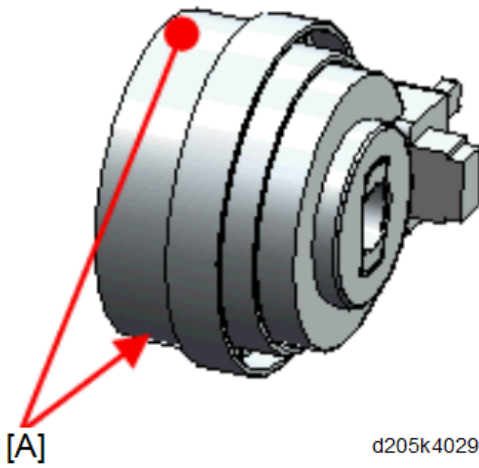


d205k4027

AX201022

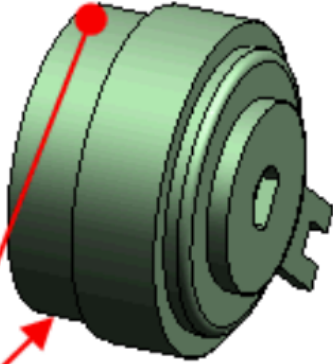


AX201004



AX202690

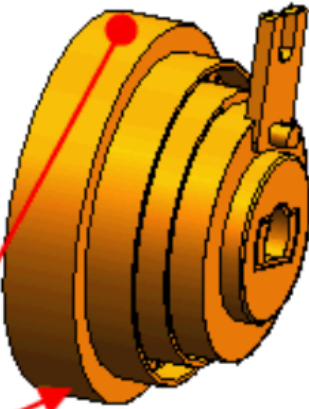
4



[A]

d205k4030

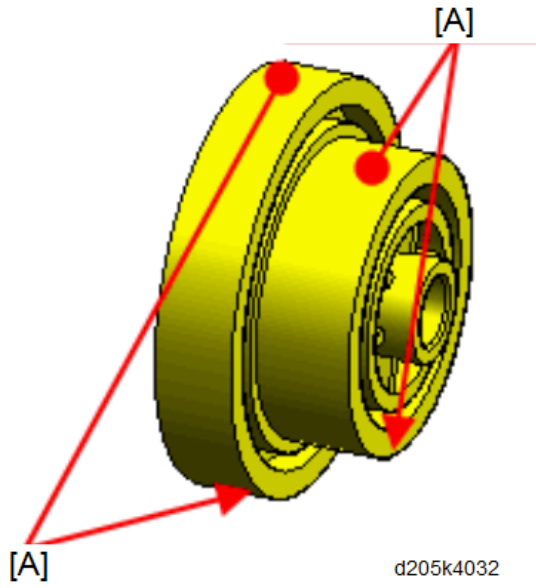
AX201020



[A]

d205k4031

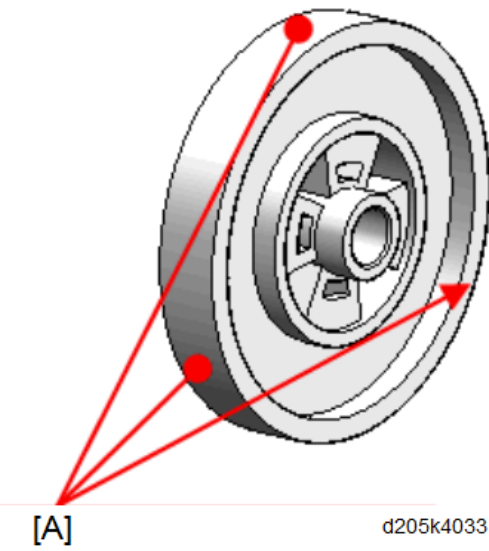
AB010408



[A]

d205k4032

AB010409



[A]

d205k4033

Adjustment after Replacement

↓ Note

- Image adjustment is required after clearing memory or replacing or adjusting the parts shown below.
- First scanner or second scanner
- Lens block
- Scanner motor
- Polygon motor
- Paper tray
- Side paper guides
- To access or use the SP mode, refer to page 313 "Service Program Mode".

4

Printing

↓ Note

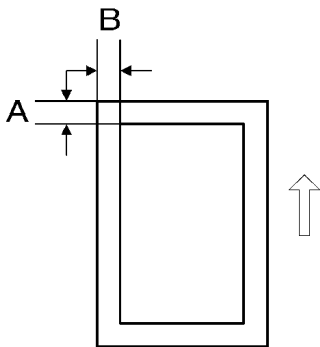
- Make sure the paper is installed correctly in each paper tray before you start these adjustments.
- Use the Trimming Area Pattern (SP2-109-003, No.14) to print the test pattern for the following procedures.
- Set the setting of SP 2-109-003 to "0" again after completing these printing adjustments.

Registration - Leading Edge/Side-to-Side

1. Check the leading edge registration for each paper feed station, and adjust them using SP1-001.
2. Check the side-to-side registration for each paper feed station, and adjust them using SP1-002.

(Adjust Tray 1 first, and then Tray 2.)

Tray	SP No.	SP Name	Threshold
Tray: Plain	SP1-001-002	Leading edge registration adjustment	2 ± 1.5 mm
Tray: MidThick	SP1-001-003	Leading edge registration adjustment	
Tray: Thick	SP1-001-004	Leading edge registration adjustment	
Bypass: Plain	SP1-001-007	Leading edge registration adjustment	
Bypass: MidThick	SP1-001-008	Leading edge registration adjustment	
Bypass: Thick	SP1-001-009	Leading edge registration adjustment	
Duplex: Plain	SP1-001-013	Leading edge registration adjustment	
Duplex: MidThick	SP1-001-014	Leading edge registration adjustment	
Duplex: Thick	SP1-001-015	Leading edge registration adjustment	
Tray 1	SP1-002-001	Side-to-side registration adjustment	
Tray 2	SP1-002-004	Side-to-side registration adjustment	
Duplex	SP1-002-006	Side-to-side registration adjustment	



A: Leading Edge Registration

B: Side-to-side Registration

Blank Margin

↓ Note

- If the leading edge/side-to-side registration cannot be adjusted within the specifications, adjust the leading/left side edge blank margin.

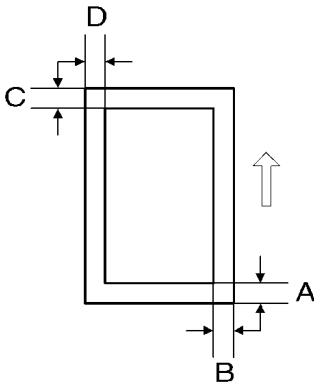
1. Check the trailing edge [A] and right edge [B] blank margins, and adjust them using the following SP modes.

Edge	SP No.	SP Name	Adjustment Range
Leading Edge	SP2-103-001	Blank margin adjustment	3 mm (0.0 - 9.0 mm)
Trailing Edge	SP2-103-002	Blank margin adjustment	
Left Edge	SP2-103-003	Blank margin adjustment	2 mm (0.0 - 9.0 mm)
Right Edge	SP2-103-004	Blank margin adjustment	
Duplex: Trailing Edge: L Size	SP2-103-005	Blank margin adjustment	1.2 mm (0.0 - 4.0 mm)
Duplex: Trailing Edge: M Size	SP2-103-006	Blank margin adjustment	0.8 mm (0.0 - 4.0 mm)
Duplex: Trailing Edge: S Size	SP2-103-007	Blank margin adjustment	0.6 mm (0.0 - 4.0 mm)
Duplex: Left Edge	SP2-103-008	Blank margin adjustment	0.3 mm (0.0 - 1.5 mm)
Duplex: Right Edge:	SP2-103-009	Blank margin adjustment	
Duplex: Trailing Edge: L Size: Thick	SP2-103-010	Blank margin adjustment	1 mm (0.0 - 4.0 mm)
Duplex: Trailing Edge: M Size: Thick	SP2-103-011	Blank margin adjustment	0.6 mm (0.0 - 4.0 mm)

Edge	SP No.	SP Name	Adjustment Range
Duplex: Trailing Edge: S Size: Thick	SP2-103-0 12	Blank margin adjustment	0.4 mm (0.0 - 4.0 mm)
Duplex: Left Edge Thick	SP2-103-0 13	Blank margin adjustment	0.1 mm (0.0 - 1.5 mm)
Duplex: Right Edge: Thick	SP2-103-0 14	Blank margin adjustment	

- L Size: Paper Length is 297.1 mm or more
- M Size: Paper Length is 216.1 to 297 mm
- S Size: Paper Length is 216 mm or less.

4



- A: Trailing Edge Blank Margin
 B: Right Edge Blank Margin
 C: Leading Edge Blank Margin
 D: Left Edge Blank Margin

Main Scan Magnification

1. Use SP2-109-001, no. 7 (Grid Pattern 1, dotted line) to print the single-dot grid pattern.
2. Check the magnification (grid size 2.7 x 2.7), and adjust the magnification using SP2-102-001 (Magnification Adjustment Main Scan) if necessary. The specification is 100 ± 1%.

Example:

(1) Measure 20 grid units in main scanning with the scale

(2) Check that the measured value is 54 mm ± 1% (53.46 to 55.54 mm). If the value is outside of the specified range, adjust it using SP.

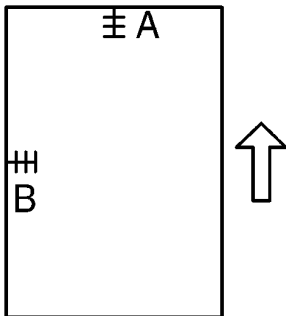
Scanning

1. Before doing the following scanner adjustments, check and adjust the printing leading-edge and side-to-side registrations and the printing blank margins (as described above).
2. Use an A3 test chart to perform the following adjustments.

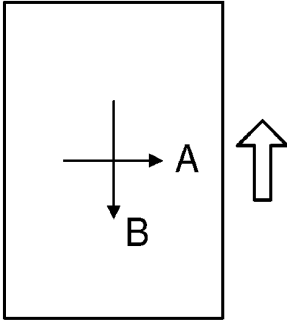
Registration: Platen Mode

1. Place the test chart on the exposure glass and make a copy from one of the feed stations. Use the test chart of SP2-109-001 (Internal test pattern, pattern selection) No. 14.
2. Check the leading edge and side-to-side registration, and adjust as necessary with the following SP modes.

SP No.	SP Name	Specification
SP4-010-001	Side-to-side registration	0 ± 1 mm
SP4-011-001	Leading edge registration	0 ± 2 mm



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



A: Main scan magnification

B: Sub-scan magnification

Sub-Scan Magnification

1. Place the OS-A3 test chart on the exposure glass and make a copy from one of the feed stations.
2. Check the magnification ratio. If necessary, adjust the magnification with the following SP mode.

SP No.	SP Name	Specification
SP4-008-001	Sub-scan magnification	$\pm 1.0\%$

ARDF Image Adjustment

Note

- Make a test chart (SP2-109-001 Test Pattern Printing) using A3/DLT paper.

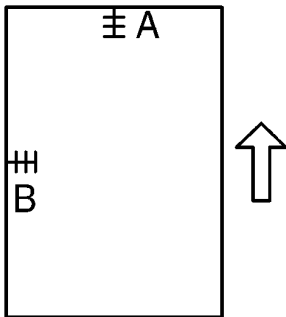
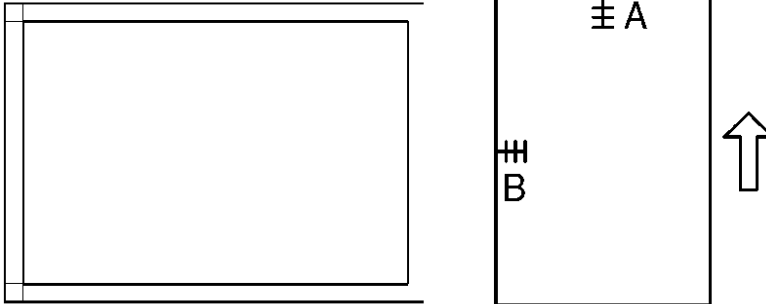
Registration/Blank Margin

1. Place the temporary test chart on the ARDF and make a copy from one of the feed stations.
Use the test chart of SP2-109-001 (Internal test pattern, pattern selection) No. 14.
2. Check the registration, and adjust using the following SP modes if necessary.

SP No.	SP Name
SP6-006-001	Side-to-side Registration Adjustment: Front
SP6-006-002	Side-to-side Registration Adjustment: Rear

SP No.	SP Name
SP6-006-003	Leading Edge Registration Adjustment: Front
SP6-006-004	Leading Edge Registration Adjustment: Rear
SP6-006-007	Trailing Edge Erasing Width Adjustment

4



A: Leading Edge Registration

B: Side-to-side Registration

Sub Scan Magnification

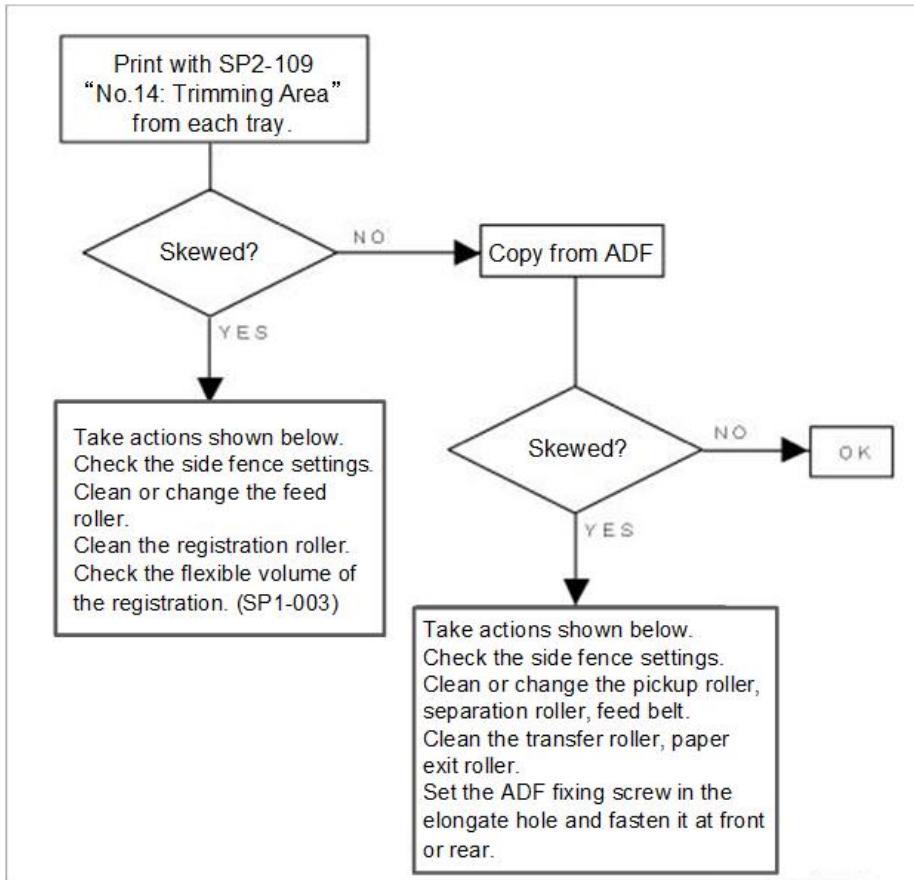
1. Place the temporary test chart on the ARDF and make a copy from one of the feed stations.
2. Check the magnification, and adjust using the following SP modes if necessary.



SP No.	SP Name	Adjustment Range
SP6-017-001	ADF Adjust Mag	±5.0 %

Skew Adjustment

Distinguish the original and take the necessary action following the flowchart below.

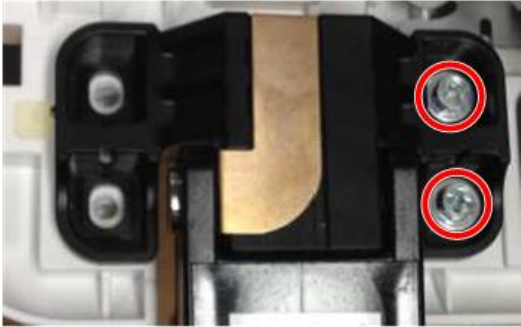


w_d1589015-en

Adjustment Procedure [RTB 49: This procedure is modified](#)

1. Remove the ARDF. (page 158)
2. Remove the right hinge.
3. Remove the two parallel pins.
4. Attach the hinge using four screws with the appropriately spaced along the adjustment slots.

Fasten the screws on the right side first.



d205k4010

4



D205k4011

5. Move the hinge for adjustment, and then fasten the screws.

Adjustable range is 1.3/200 mm

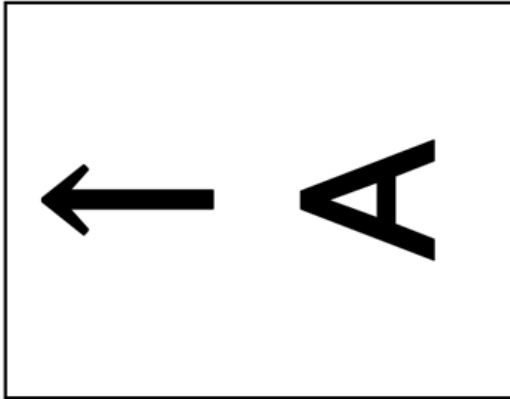


D205k4012

Adjusting the Direction

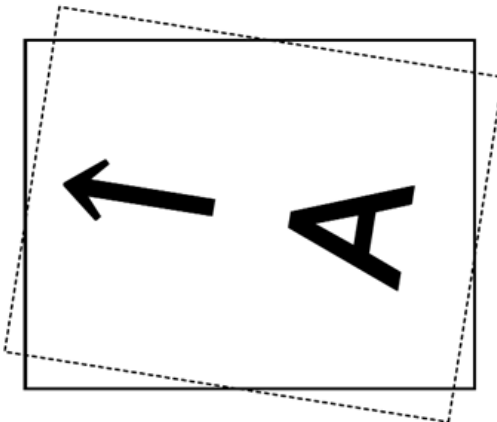
1. Place the original as shown below.

The original moves to the left.



D205k4034

2. If the original is copied as shown below, move the hinge in the direction of the arrow and fasten the screws.

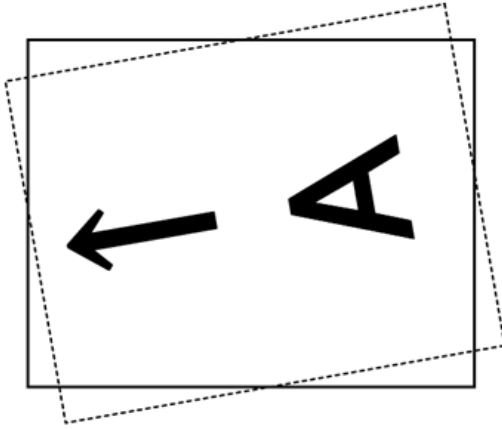


D205k4035

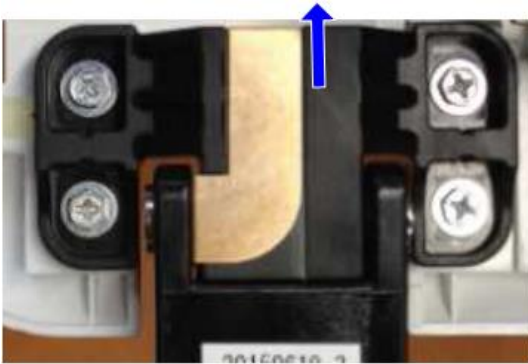


d205k4013

3. If the original is copied as shown below, move the hinge in the direction of the arrow and fasten screws.



D205k4036



d205k4014

5. System Maintenance

Service Program Mode

CAUTION

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

Enabling and Disabling Service Program Mode

Note

- The Service Program Mode is for use by service representatives only. If this mode is used by anyone other than service representatives for any reason, data might be deleted or settings might be changed. In such case, product quality cannot be guaranteed any more.

5

Entering SP Mode

For details, ask your supervisor.

Exiting SP Mode

- Press "Exit" on the LCD twice to return to the copy window.

Types of SP Modes

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

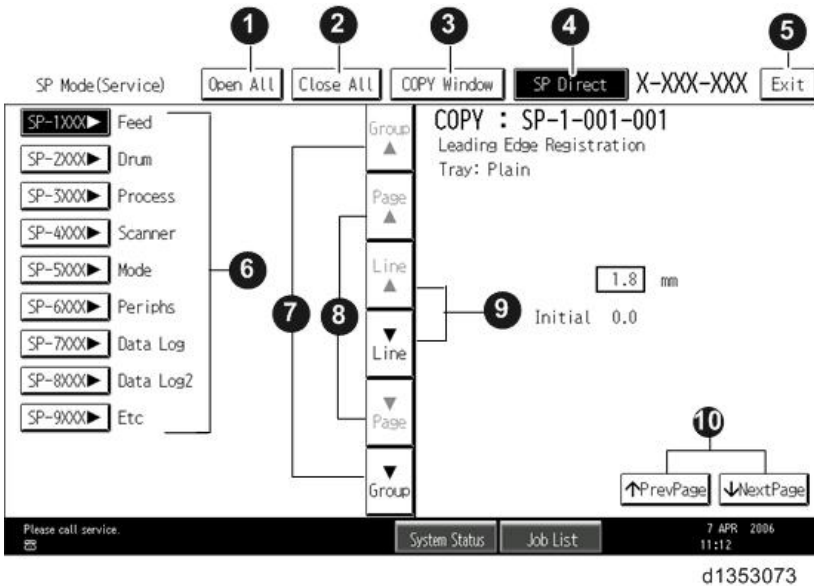
Select one of the Service Program modes (System, Printer, Scanner, or Fax) from the touch panel as shown in the diagram below after you access the SP mode. This section explains the functions of the System/Printer/Scanner SP modes. Refer to the Fax service manual for the Fax SP modes.



5

SP Mode Button Summary

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



1	Opens all SP groups and sublevels.
2	Closes all open groups and sublevels and restores the initial SP mode display.

3	Opens the copy window (copy mode) so you can make test copies. Press SP Mode (highlighted) in the copy window to return to the SP mode screen,
4	Enter the SP code directly with the number keys if you know the SP number. Then press [#]. The required SP Mode number will be highlighted when pressing [#]. If not, just press the required SP Mode number.)
5	Press two times to leave the SP mode and return to the copy window to resume normal operation.
6	Press any Class 1 number to open a list of Class 2 SP modes.
7	Press to scroll the show to the previous or next group.
8	Press to scroll to the previous or next display in segments the size of the screen display (page).
9	Press to scroll the show the previous or next line (line by line).
10	Press to move the highlight on the left to the previous or next selection in the list.

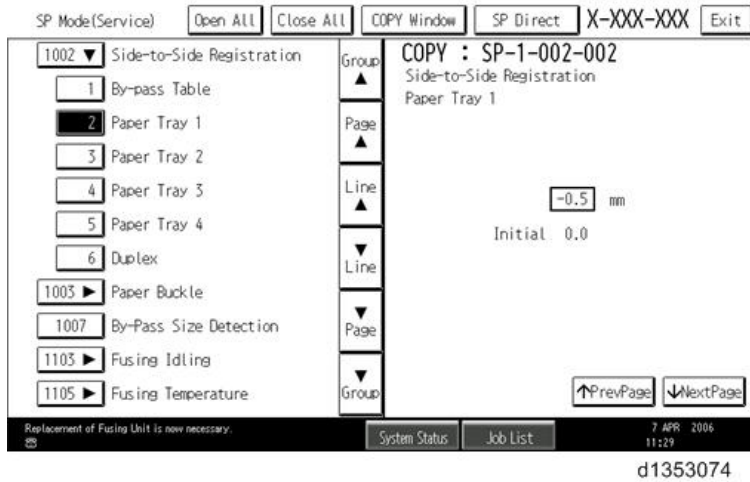
Switching Between SP Mode and Copy Mode for Test Printing

1. In the SP mode, select the test print. Then press "Copy Window".
2. Use the copy window (copier mode), to select the appropriate settings (paper size, etc.) for the test print.
3. Press [Start] key to start the test print.
4. Press SP Mode (highlighted) to return to the SP mode screen and repeat from step 1.

Selecting the Program Number

Program numbers have two or three levels.


1. Refer to the Service Tables to find the SP that you want to adjust before you begin.
2. Press the Group number on the left side SP Mode window that contains the SP that you want to adjust.
3. Use the scrolling buttons in the center of the SP mode window to show the SP number that you want to open. Then press that number to expand the list.
4. Use the center touch-panel buttons to scroll to the number and title of the item that you want to set and press it. The small entry box on the right activates and shows the below default or the current settings.



Note

- Refer to the Service Tables for the range of allowed settings.

5. Do this procedure to enter a setting:

- Press  to toggle between plus and minus and use the keypad to enter the appropriate number. The number you enter writes over the previous setting.
- Press [#] to enter the setting. (The value is not registered if you enter a number that is out of range.)
- Press "Yes" when you are prompted to complete the selection.

6. If you need to perform a test print, press Copy Window to open the copy window and select the settings for the test print. Press [Start] key and then press SP Mode (highlighted) in the copy window to return to the SP mode display.

7. Press Exit two times to return to the copy window when you are finished.

Exiting Service Mode

Press the Exit key on the touch-panel.

Service Mode Lock/Unlock

At locations where the machine contains sensitive data, the customer engineer cannot operate the machine until the Administrator turns the service mode lock off. This function makes sure that work on the machine is always done with the permission of the Administrator.

1. If you cannot go into the SP mode, ask the Administrator to log in with the User Tool and then set "Service Mode Lock" to OFF after he or she logs in:

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

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

PM Counter/ Firmware Update

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

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



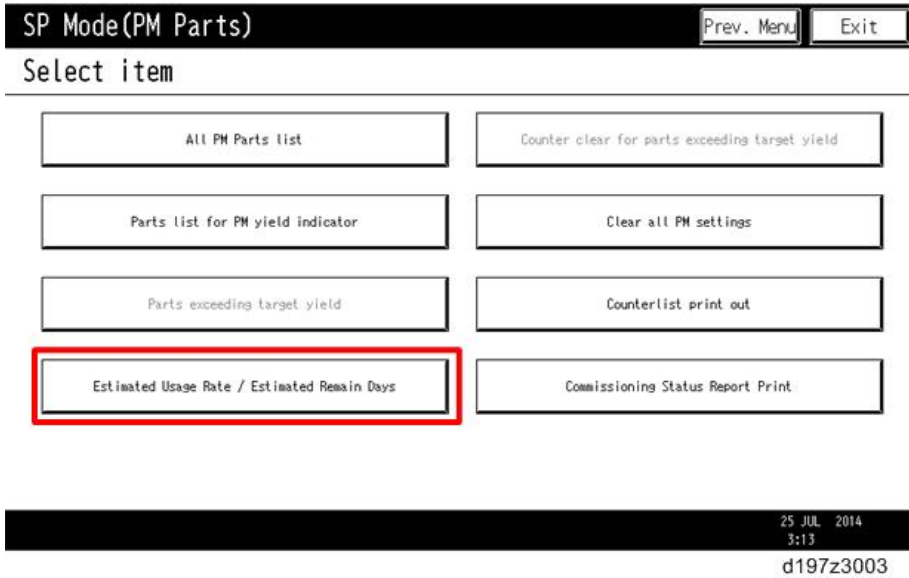
<How to Check the PM Counter>

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



5

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



3. You can see the “Remaining Days for each part”.

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

SP Mode(PM Parts) Prev. Menu Exit

Estimated UsageRate/RemainDays Select parts

01/01

20 MAR 2014 7:29

d197z3004

<How to Use the Firmware Update>

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

Remarks

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

Item	Description
Paper Weight	Thin paper: 52-59 g/m ² , 13.9-15.7lb. Plain Paper1: 60-74 g/m ² , 16-19.7lb. Plain Paper2: 75-81 g/m ² , 20-21.6lb. Middle Thick: 82-105 g/m ² , 21.9-28lb. Thick Paper1: 106-157 g/m ² , 28.3-41.9lb.
Paper Type	N: Normal paper MTH: Middle thick paper TH: Thick paper

Item	Description
Paper Feed Station	P: Paper tray B: By-pass table
Print Mode	S: Simplex D: Duplex

Others

The settings of each SP mode are explained in the right-hand column of the SP table in the following way.

[Adjustable range / **Default setting** / Step] Alphanumeric

↓ Note

- If "Alphanumeric" is written to the right of the bracket as shown above, the setting of the SP mode shows on the screen using alphanumeric characters instead of only numbers. However, the settings in the bracket in the SP mode table are explained by using only the numbers.

The following symbols are used in the SP mode tables.

Notation	What it means
ENG	Engine SP
CTL	Controller SP
FA	Factory setting: Data may be adjusted from the default setting at the factory. Refer to the factory setting sheets enclosed. You can find it in the front cover.
DFU	Design/Factory Use only: Do not touch these SP modes in the field.
*	An asterisk (*) to the left side of ENG/CTL column means that this mode is stored in the NVRAM. If you do a RAM clear, this SP mode will be reset to the default value. "ENG" and "CTL" show which NVRAM contains the data. <ul style="list-style-type: none"> • *ENG: NVRAM on the BiCU board • *CTL: NVRAM on the controller board

Notation	What it means
SSP	This denotes a "Special Service Program" mode setting.

SP Mode Tables

See "Appendices"

Test Pattern Printing

Printing Test pattern: SP2-109

Some of these test patterns are used for copy image adjustments but most are used primarily for design testing.

↓ Note

- Do not operate the machine until the test pattern is printed out completely. Otherwise, SC will occur.

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

↓ Note

- If the value of SP2-109-002 is selected to 0, the color adjusted so will not show up in the test pattern.
5. To print, press [Copy Window], and then set settings within the following window for test print (paper size etc...).
 6. Press [Start] to start test print.
 7. After checking test pattern, press [SP Mode] on the screen to return to SP mode display.
 8. Reset all settings to the default values with SP2-109-003 and SP2-109-006.
 9. Exit SP mode.

No.	Pattern	No.	Pattern
0	None	13	4dot Ind. Pitrn (4dot Independent Pattern)
1	1 dot Vertical Line	14	Trimming Area
2	2dot Vertical Line	15	Hounds tooth H
3	1 dot Horizontal Line	16	Hounds tooth V
4	2dot Horizontal Line	17	Black Band H (Horizontal)
5	Grid Vert (Grid Vertical Line)	18	Black Band V (Vertical)
6	Grid Horizontal (Grid Horizontal Line)	19	Checker Flag Pattern
7	Grid Pattern Small	20	Grayscale V (Vertical)

No.	Pattern	No.	Pattern
8	Grid Pattern Large	21	Grayscale H (Horizontal)
9	Argyle Pattern Small	22	2 Beam Density Pptrn
10	Argyle P:L (Argyle Pattern Large)	23	Full Dot Pattern
11	1 dot Ind. Pptrn (1 dot Independent Pattern)	24	All White Pattern
12	2dot Ind. Pptrn (2dot Independent Pattern)	-	-

Firmware Update

Overview

In order to update the firmware of this machine, it is necessary to download the latest version of firmware on a SD card.

Insert the SD card in SD card slot 2 beside the left rear of the controller box.

Firmware type

Firmware type	Function	Firmware location	Message display
System/Copy	Operating system	Controller board	System/Copy
Engine		BiCU	Engine
Control panel		Control panel	Lcdc
Network support		Controller board	Network Support
Language 1		Control panel	Language 1
Language 2		Controller board	Language 2
RPCS		Controller board	RPCS
PCL (PCLXL)		Controller board	PCL (PCLXL)
Media print JPEG/TIFF		Controller board	MediaPrint:JPEG/TIF
Font		Controller board	FONT
Font 1		Controller board	FONT1
Network document box		Controller board	NetworkDocBox
Printer		Controller board	Printer
Scanner		Controller board	Scanner
Web support		Controller board	Websupport
Web Application		Controller board	WebUapl

Note

- Even when not using a RPCS driver, the XPS driver requires RPCS firmware.

Procedure

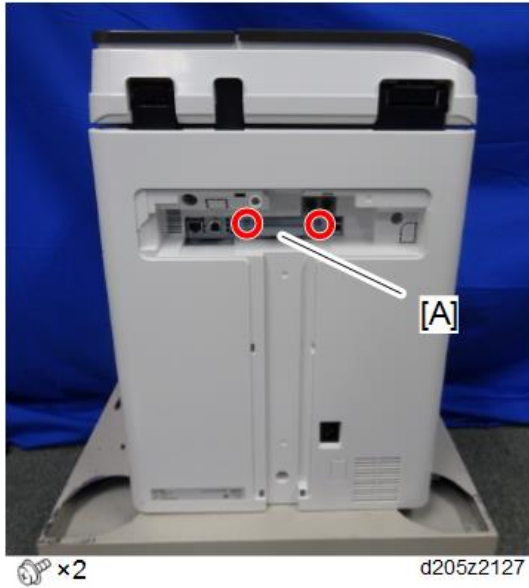
Important

- A SD card is a precision device, so when you handle an SD card, respect the following.
- When the power is turned ON, do not insert or remove a card.
- During installation, do not turn OFF the main power.
- Since the card is manufactured to high precision, do not store it in a hot or humid location, or in direct sunlight.
- Do not bend the card, scratch it, or give it a strong shock.
- Before downloading firmware on an SD card, check whether write-protection of the SD card is canceled. If write-protection is enabled, an error code (error code 44, etc.) will be displayed during download, and the download will fail.
- Before updating firmware, remove the network cable from this machine.
- If SC818 is generated during software update, turn OFF then ON the main power, and complete the update which was interrupted.
- During software update, network cables, remove interface cables, wireless boards, etc., (so that they are not accessed during update).

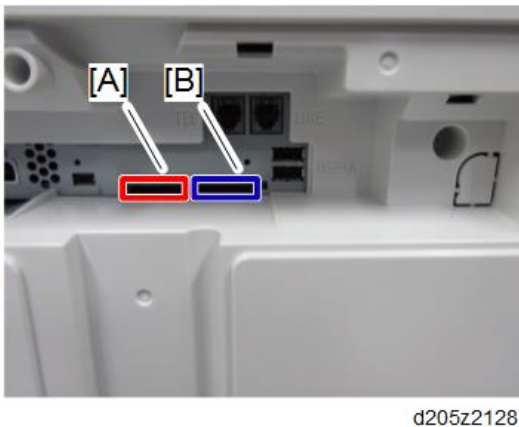
5

Update procedure

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

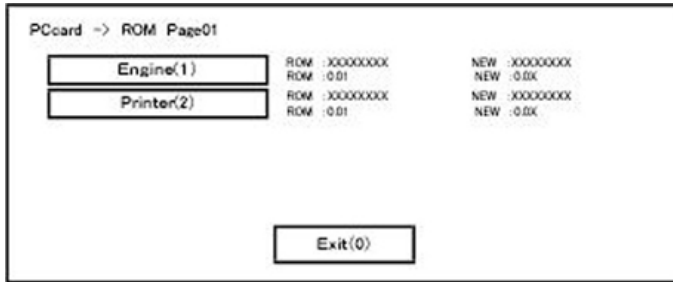


4. Insert the SD card straight in slot 2 [B].



Note

- Check whether the card is properly in the SD card slot. When a SD card is inserted, a click is heard, and it is locked.
 - To remove the card, release by pressing once in the set state.
5. Turn ON the main power.
 6. Wait until the update screen starts (about 45 seconds).
When it appears, "Please Wait" is displayed.
 7. Check whether a program installation screen is displayed. (English display) When two or more software modules are contained in the SD card, they are displayed as follows.



When two or more software names are displayed

1. Press the module selection button or 10 keypad [1] - [5].
2. Choose the appropriate module. (If already selected, cancel the selection)

Operation of keys or buttons

5

Keys or buttons to press	Contents
[Exit] or 10 key [0]	Returns to normal screen.
[Start] Key	Select all modules.
[Clear/Stop] key	Cancel all selection states.

Display contents

On the above screen, two programs, i.e., engine firmware and printer application are displayed. (The screen may change depending on the firmware or application).

The display contents are as follows:

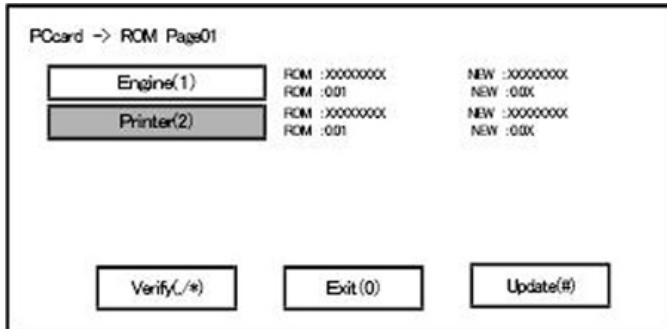
Display	Contents
ROM:	Display installed module number / version information.
NEW:	Display module number / version information in the card.

* The upper row corresponds to the module number, the lower row corresponds to the version name.

8. Select the module with the module selection button or 10 key operation. The selected module is highlighted, and [Verify] and [Update] are displayed.

Note

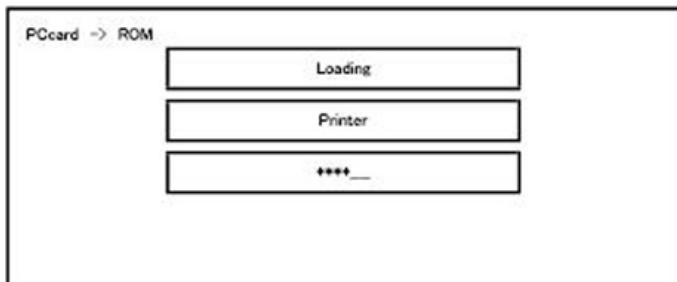
- Depending on the combination of update software, it may not be possible to select simultaneously.



Key or button operations

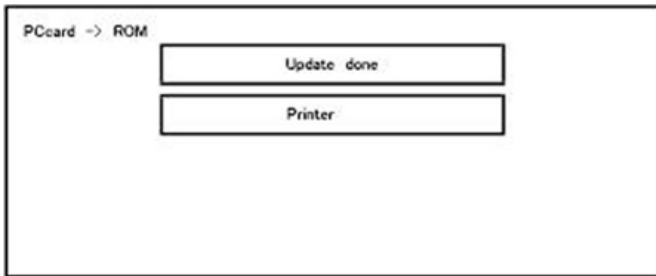
Keys or buttons to press	Contents
[Update] or [#] key	Update the ROM of the selected module.
[Verify] button or [./*] key	Perform verification of the selected module.

9. Press the [Update] or [#] key, and perform software update.
10. During firmware update, a "firmware update/ verification progress screen" is displayed. When firmware update is complete, a "firmware update end screen" is displayed.



- In the middle row, the name of the module currently being updated is displayed. (in this case, the printer is being updated)
- In the lower row, a progress bar is displayed in ten steps. (The more *, the more the progress.)
- When updating the control unit program, since progress cannot be displayed on the screen, the ROM update process is determined when the LED of the [Start] key changes from red to green.

Firmware update end screen



- This screen is displayed when all selected firmware modules are to be updated. "printer" in the second row shows that the module updated last is the printer. (When more than one are updated simultaneously, only what was updated last is displayed.)
- When Verify has completed normally, the Update done display of the above screen is "Verify done." If "Verify Error" is displayed, reinstall the software of the application displayed in the lower row.

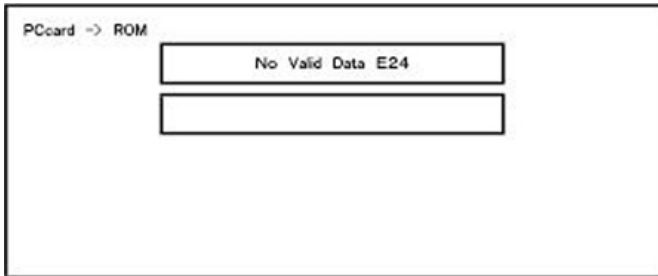
5

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

↓ Note

- When the main power is turned OFF during firmware update, update is interrupted, and the main power is turned ON again, normal operation cannot be guaranteed.
- To guarantee operation, an update error continues to be displayed until update is successful.
- In this case, insert the SD card again, turn ON the main power, and continue download of firmware from the SD card automatically.
- Web access card software: EXJS (EXtended Java Script) is a Type-C ESA application, and like a conventional Web access card, update using an sdk folder is required.
- The PS3 firmware program is included in the preinstalled PDF firmware.
- In the default state, although the PS3 firmware program is hidden in the disabled state, the function is enabled by installing the PS3 card.
- (The program installed in the PS3 card is a dongle (key) for enabling PS3 function).
- Due to the above specification, the self-diagnosis result report shows the ROM module number / software version of the PDF firmware at the PS location.

Error Screens During Updating



EXX shows an error code.

(This error is generated if update was performed when a printer application startup card is removed after system startup. An error indicating failure of card access is displayed on the screen.)

For error codes, refer to the following table:

Error Code List

Code	Contents	Solutions
20	Physical address mapping cannot be performed.	<ul style="list-style-type: none"> • Turn OFF then ON the main power to try again. • Re-insert the SD card to reboot it. • Replace the controller board if the above solutions do not solve the problem.
21	Insufficient memory for the download	<ul style="list-style-type: none"> • Turn OFF then ON the main power to try again. • Replace the controller board if the updating cannot be done by turning OFF then ON the main power.
22	Decompression of compressed data failed.	<ul style="list-style-type: none"> • Turn OFF then ON the main power to try again. • Replace the SD card used for the update. • Replace the controller board if the above solutions do not solve the problem.

Code	Contents	Solutions
24	SD card access error	<ul style="list-style-type: none"> • Re-insert the SD card. • Turn OFF then ON the main power to try again. • Replace the SD card used for the update. • Replace the controller board if the above solutions do not solve the problem.
32	<p>The SD card used after download suspension is incorrect.</p> <p>SD cards are different between the one which was inserted before power interruption and the one which was inserted after power interruption.</p>	<ul style="list-style-type: none"> • Insert the SD card containing the same program as when the firmware update was suspended, and then Turn OFF then ON the main power to try again. • There is a possibility that the SD card is damaged if the update cannot be done after the correct SD card has been inserted. In this case, try again with a different SD card. • Replace the controller board if the above solutions do not solve the problem. Replace all relevant boards if the update is done for the BiCU and FCU. Replace the operation panel unit if the update is done for the operation panel.
33	<p>Card version error.</p> <p>The wrong card version is downloaded.</p>	<ul style="list-style-type: none"> • Install the correct ROM update data for each version in the SD card.
34	<p>Destination error.</p> <p>A card for the wrong destination is inserted.</p>	<ul style="list-style-type: none"> • Install the correct ROM update data for each destination (JPN/ EXP/ OEM) in the SD card.
35	<p>Model error.</p> <p>A card for the wrong model is inserted.</p>	<ul style="list-style-type: none"> • Install the correct ROM update data for each model in the SD card.

Code	Contents	Solutions
36	<p>Module error.</p> <p>The program to be downloaded does not exist on the main unit.</p> <p>The download destination specified by the card does not match up to the destination for the main unit's program.</p>	<ul style="list-style-type: none"> • Install the program to be updated in advance. • There is a possibility that the SD card containing the program to be updated has not been mounted. Check to confirm that the SD card has been correctly mounted. • The SD card is incorrect if the program to be updated has been correctly installed. In this case, insert the correct SC card.
38	<p>The version of the downloaded program has not been authorized for the update.</p>	<ul style="list-style-type: none"> • Make sure that the program to be overwritten is the specified version.
40	<p>Engine download fails.</p>	<ul style="list-style-type: none"> • Turn OFF then ON the main power to try again. • If the download fails again, replace the controller board and the BiCU.
41	<p>Fax download fails.</p>	<ul style="list-style-type: none"> • Turn OFF then ON the main power to try again. • If the download fails again, replace the controller board and the FCU board.
42	<p>Control panel / language download fails.</p>	<ul style="list-style-type: none"> • Turn OFF then ON the main power to try again. • If the download fails again, replace the controller board and the operation panel unit.
43	<p>Printing download fails.</p>	<ul style="list-style-type: none"> • Turn OFF then ON the main power to try again. • The SD card media is damaged if the update fails again. Replace the SD card media.

Code	Contents	Solutions
44	The data to be overwritten cannot be accessed when controller-related programs are downloaded.	<ul style="list-style-type: none"> • Turn OFF then ON the main power to try again. • Install the correct ROM update data in the SD card. • Replace the controller board if the data to be overwritten is contained on the controller board.
49	Firmware updates are currently prohibited.	<ul style="list-style-type: none"> • The setting of Update Firmware in the Administrator Tools has been set to [Prohibit] by an administrator. Amend the setting to [Do not Prohibit] and try again.
50	The results of the electronic authorization check have rejected the update data.	<ul style="list-style-type: none"> • Install the correct ROM update data in the SD card.
57	@Remote is not connected at the date/time reserved for receiving the package firmware update from the network.	<ul style="list-style-type: none"> • Check the @Remote connection.
58	Update cannot be done due to a reception route problem.	<ul style="list-style-type: none"> • Check the @Remote connection.
59	HDD is not mounted.	<ul style="list-style-type: none"> • Check the HDD connection.
60	HDD could not be used during the package firmware update.	<ul style="list-style-type: none"> • Try again. • Replace the HDD if the download fails again.
61	The module ID for the package firmware update is incorrect.	<ul style="list-style-type: none"> • Prepare the correct package files.
62	The configuration of the package firmware update files is incorrect.	<ul style="list-style-type: none"> • Prepare the correct package files.
63	Reception fails due to the power off at the reserved date/time of the remote firmware update from the network.	<ul style="list-style-type: none"> • Update is to be done automatically when the next reception time has elapsed.

Code	Contents	Solutions
64	Reception fails due to the power off at the reserved date/time of the package firmware update from the network.	<ul style="list-style-type: none"> Reset the reservation date/time for the remote update.
65	Reception fails due to the status error of the machine at the reserved date/time of the remote firmware update from the network.	<ul style="list-style-type: none"> Update is to be done automatically when the next reception time has elapsed.
66	Reception failed due to the status error of the machine at the reserved date/time of the package firmware update from the network.	<ul style="list-style-type: none"> Reset the reservation date/time for the remote update.
67	Acquisition of the latest version information from the Gateway fails at the reserved date/time of the remote firmware update from the network.	<ul style="list-style-type: none"> Check that the network is connected correctly.
68	Acquisition of the latest version information from the Gateway fails.	<ul style="list-style-type: none"> Check that the network is connected correctly.
69	Download fails at the reserved date/time of the remote firmware update from the network.	<ul style="list-style-type: none"> Check that the network is connected correctly.
70	Package firmware download from the network fails.	<ul style="list-style-type: none"> Check that the network is connected correctly.
71	Network communication error occurs at the reserved date/time of the package firmware update from the network.	<ul style="list-style-type: none"> Check that the network is connected correctly.
72	The setting of @Remote is invalid at the reserved date/time of the package firmware update from the network.	<ul style="list-style-type: none"> Set the setting of @Remote Service in the Administrator Tools to [Do not Prohibit].

Code	Contents	Solutions
221	Application installed in the machine cannot be terminated when you update or uninstall the application.	<ul style="list-style-type: none"> • If the application runs a job, try update/uninstallation again after the job ends. • Turn OFF then ON the main power to try again.
222	Invalid digital signature	<ul style="list-style-type: none"> • Try again with correct data.
224	Lack of storage capacity	<ul style="list-style-type: none"> • Uninstall unnecessary applications. • Reduce the number of applications to install.
228	Update files are not found.	<ul style="list-style-type: none"> • Turn OFF then ON the main power to try again. • Replace the operation panel.
229	Incorrect file	<ul style="list-style-type: none"> • Try again with correct data.
230	Incorrect folder structure	<ul style="list-style-type: none"> • Try again with correct data.
231	Hardware related error	<ul style="list-style-type: none"> • Turn OFF then ON the main power to try again. • Replace the operation panel.
235	Installation fails because update files are invalid.	<ul style="list-style-type: none"> • Try again with correct data. • If there is the same application installed in the machine, uninstall and reinstall it. Then try update again.
236	Unsupported SDK version	<ul style="list-style-type: none"> • Make sure that the system in the machine's operation panel supports the target application.
255	System error	<ul style="list-style-type: none"> • Turn OFF then ON the main power to try again.

Note

- The PDF firmware installed as standard contains a program required to print PS3 data as default. However, this PS3 program is normally disabled.
- The PS3 firmware is a dongle (key) which enables PS3 data printing functions. When the PS3 firmware is installed, the PS3 program in the PDF firmware is enabled. Due to this specification, the self-diagnosis result report shows the ROM part number/software version of the PDF firmware contained in the PS3 program.

Updating JavaVM

Creating an SD Card for Updating

1. Download the update modules from Firmware Download Center. As one of the model modules, "Java VM v12 UpdateTool" is available for download. (The version differs depending on the model.)
2. Unzip the downloaded file. Copy the whole "sdk" folder to the root of the SD card directly below.

Note

- When unzipping the downloaded file, two subfolders ("update" and "sdk") exist in the "sdk" folder. Rather than just copying the subfolder "sdk", copy the whole folder "sdk".

Updating Procedure

CAUTION

- SD card can be inserted with the machine power off.
 - During the updating process, do not turn off the power.
 - If you turn off the power during the updating, the machine performance is not guaranteed. (There is a possibility that an SC and boot failure occurs.)
 - If you accidentally turn off the power during the updating, retry the updating procedure from the beginning. (If the update fails again, you will need to replace the controller board.)
1. If the boot priority application is set to the ESA application, switch to the copy all the boot priority application is set to the ESA application, switch to the home application. ([User Tools]- [Screen Features]- [Screen Device Settings]- [Function Priority]- [Home])
 2. Take a note of the current Heap size. ([User Tools] – [Machine Features] – [Extended Feature Settings] – [Extended Feature Settings] – [Administrator Tools] – [Heap/Stack Size Settings])
The Heap size setting is changed to the initial setting when updating.
 3. Turn OFF the main power.
 4. Insert the SD card for update into the service slot.
 5. Turn ON the main power.
 6. After booting Java VM, update of the application is started. "Updating SDK/J" appears in the system message of the touch panel display after 1 minute. (Estimated time: about 2.5 minutes)

7. After completing the update and starting the Java VM, "Update SDK / J done SUCCESS" appear in the System message of the touch panel display. After turning off the power, remove the SD card from the slot.

When you fail to update, "Update SDK/J done FAIL" is displayed. You can confirm the cause of the error message below.

8. Turn ON the main power.
9. Reconfigure the Heap size. ([User Tools] – [Machine Features] – [Extended Feature Settings] – [Extended Feature Settings]-[Administrator Tools]-[Heap/Stack Size Settings]) in reference to STEP2.

Note

- If you have not done STEP2, see the manual for the ESA application to know what value to set for the heap size.

10. Return to the previous setting for the boot priority application.

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List of Error Messages

Update results are output as a text file on the SD card called "sdkjversionup.log" in the "\sdk \update" folder.

Result	File contents	Description of the output
Success	script file = /mnt/sd0/sdk/update/ bootscript 2012/08/22 17:57:47 start 2012/08/22 17:59:47 end SUCCESS	Boot script path Boot scripts processing start time End time boot script processing, the results
Failure	script file = /mnt/sd0/sdk/update/ bootscript 2012/08/22 17:57:47 start XXXX Error 2012/08/22 17:57:57 end FAIL	Boot script path Boot scripts processing start time Error message (Possibly multiple) End time boot script processing, the results

Error Message	Cause	Remedy
PIECEMARK Error,machine=XXXXX	Applied the wrong updating tool (Using the updating tool of a different model)	Use the correct updating tool for this model.

Error Message	Cause	Remedy
<p>pasePut() - error : The file of the copy origin is not found</p> <p>Put Error!</p>	<p>Inadequacy with the SD card for updating</p> <p>(Files are missing in the updating tool)</p>	<p>Re-create the SD card for updating.</p>
<p>paseCopy() - error : The file of the copy origin is not found.</p> <p>Copy Error!</p>	<p>Inadequacy SD card for updating</p> <p>(Files in the updating tool are missing)</p>	<p>Inadequacy SD card for updating</p> <p>(Files in the updating tool are missing)</p>
<p>[file name: XX] error, No space left on device</p> <p>pasePut() - error : The destination directory cannot be made.</p> <p>pasePut() - error : fileCopy Error.</p> <p>Put Error!</p>	<p>Writing destination is full. (The NAND flash memory on the controller board is full.)</p>	<p>Uninstall the unnecessary SDK applications.</p> <p>If you can not uninstall it, implement escalation, stating the "model name, application configuration, SMC sheet (SP5-990-006/024/025), and error file."</p>
<p>[file name: XX] error, No space left on device</p> <p>paseCopy() - error : The destination directory cannot be made.</p> <p>paseCopy() - error : fileCopy Error.</p> <p>Copy Error!</p>	<p>Writing destination is full. (The NAND flash memory on the controller board is full.)</p>	<p>Uninstall the unnecessary SDK applications.</p> <p>If you can not uninstall it, implement escalation stating the "model name, application configuration, SMC sheet (SP5-990-006/024/025), and error file."</p>

Error Message	Cause	Remedy
Put Error! * 1	Error, not normally expected to occur	If you cannot uninstall it, implement escalation stating the "model name, application configuration, SMC sheet (SP5-990-006/024/025), and error file." * 1
Copy Error! * 1		
Delete Error!		
[XXXXX] is an unsupported command.		
Version Error		

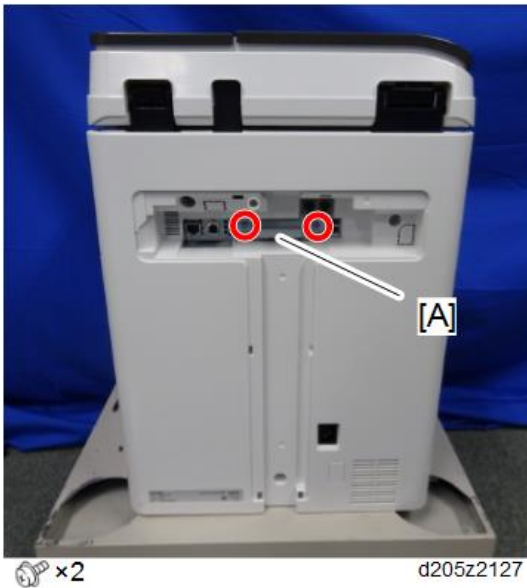
NVRAM Data Upload/Download

Uploading Content of NVRAM to an SD card

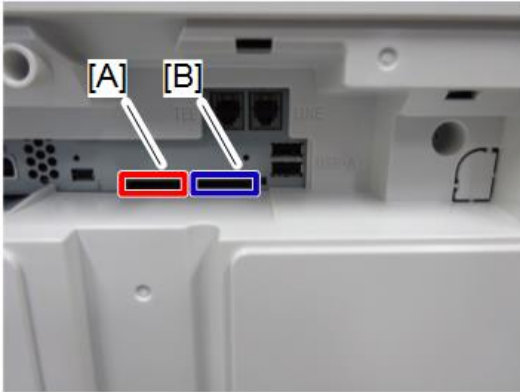
Do the following procedure to upload SP code settings from NVRAM to an SD card.

↓ Note

- This data should always be uploaded to an SD card before the NVRAM is replaced.
 - Make sure that the write protection of an SD card is unlocked
1. Do SP5-990-001 (SMC Print) before turning OFF the main power. You will need a record of the NVRAM settings if the upload fails.
 2. Turn OFF the main power.
 3. Remove the SD card slot cover [A].



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



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5. Turn ON the main power.
6. Execute SP5-824-001 (NVRAM Data Upload) and then press the "Execute" key.
7. The following files are copied to an NVRAM folder on the SD card when the upload procedure is finished.

The file is saved to the path and the following filename:

NVRAM\`<serial number>.NV`

Here is an example with Serial Number "K5000017114":

NVRAM\`K5000017114.NV`

8. In order to prevent an error during the download, be sure to mark the SD card that holds the uploaded data with the number of the machine from which the data was uploaded.

Note

- You can upload NVRAM data from more than one machine to the same SD card.

Downloading an SD Card to NVRAM

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

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

1. Turn OFF the main power.

2. Remove the SD card slot cover.
3. Insert the SD card with the NVRAM data into SD slot 2.
4. Turn ON the main power.
5. Do SP5-825-001 (NVRAM Data Download) and press the "Execute" key.

 **Note**

- The serial number of the file on the SD card must match the serial number of the machine for the NVRAM data to download successfully. The download fails if the serial numbers do not match.

This procedure does not download the following data to the NVRAM:

- Total Count
- C/O, P/O Count

UP/SP Data Import/Export

Overview

Import/export conditions

Import/export is possible between devices only if their model type, region of use, and the following device configurations match.

- Input Tray
- Output Tray
- ARDF
- Whether or not equipped with a hard disk
- Whether or not equipped with a finisher and the type of finisher

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UP Data Import/Export

Data that can be imported and exported

- Copier / Document Server Features
- Printer Features
- Scanner Features
- Facsimile Features
- Browser Features
- Extended Feature Settings
- Program (Document Server)
- Program (Copier)
- Program (Scanner)
- Web Image Monitor Setting
- Web Service Settings
- System Settings

Data that cannot be imported or exported

- Some System Settings *1 *2

*1 The setting for the date, settings that require the device certificate, and settings that need to be adjusted for each machine (for example, image adjustment settings) cannot be imported or exported.

*2 Settings only for executing functions and settings only for viewing cannot be imported or exported.

- Extended Feature Settings
- Address book
- Programs (fax function)
- Programs (printer function)
- User stamp in Copier / Document Server Features
- Settings that can be specified via telnet
- @Remote-related data
- Counters
- EFI printer unit settings
- Settings that can only be specified via Web Image Monitor or Web Service (for example, Bonjour, SSDP setting)

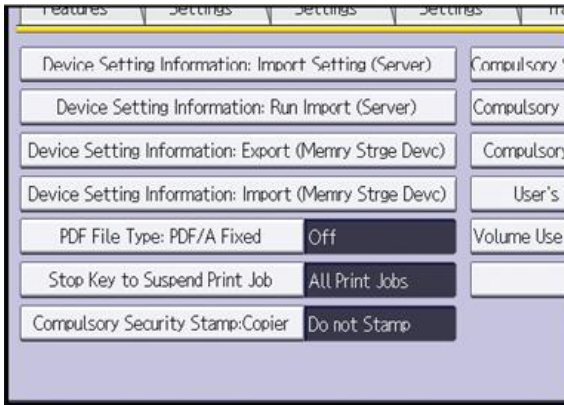
Exporting Device Information

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

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

- 1. Insert an SD card into the media slot on the side of the control panel.**
- 2. Log in from the control panel as an administrator with all privileges.**
- 3. Press [System Settings].**
- 4. Press [Administrator Tools].**
- 5. Press [Next] four times.**

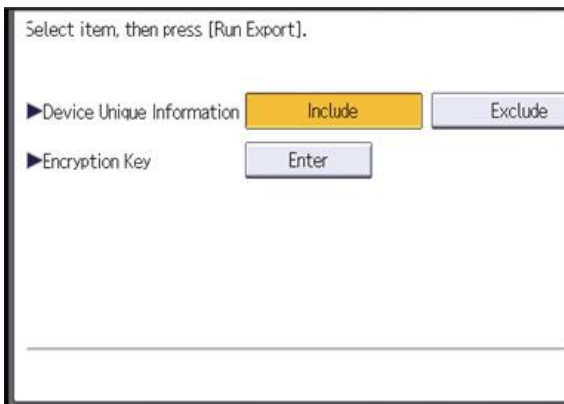
6. Press [Device Setting Information: Export (Memry Strge Devc)].



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7. Set the export conditions.

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- Specify whether to [Include] or [Exclude] the "Device Unique Information". "Device Unique Information" includes the IP address, host name, fax number, etc.
- Specify an encryption key.

8. Press [Run Export].

9. Press [OK].

10. Press [Exit].

11. Log out.

↓ Note

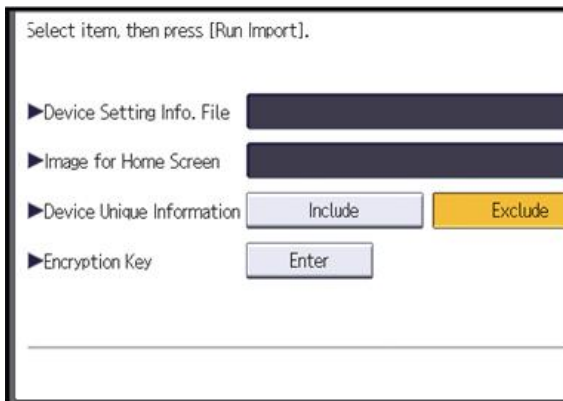
- If data export fails, the details of the error can be viewed in the log.
- When device Information is periodically imported, it is necessary to create the device setting information file with special software and store it on the web server.

Importing Device Information

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

Import device information saved on an SD card.

1. Insert an SD card into the media slot on the side of the control panel.
2. Log in from the control panel as an administrator with all privileges.
3. Press [System Settings].
4. Press [Administrator Tools].
5. Press [Next] four times.
6. Press [Device Setting Information: Import (Memory Storage Device)].
7. Configure the import conditions.



w_d1825503

- Press [Select] of the "Device Setting Info. File" to select the file(s) to import.
- When inserting a file into a home screen, press [Select] for the Image for Home screen and select the file. You cannot use this setting when using the Smart Operation Panel.
- Specify whether to [Include] or [Exclude] the "Device Unique Information". "Device Unique Information" includes the IP address, host name, fax number, etc.
- Enter the encryption key that was specified when the file was exported.

8. Press [Run Import].
9. Press [OK].
10. Press [Exit].

The machine restarts.

Note

- If data export fails, the details of the error can be viewed in the log.

SP Data Import/Export

Data that can be imported and exported

- System SP
- Printer SP
- Fax SP
- Scanner SP

Exporting Device Information

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

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1. Insert an SD card into the media slot on the side of the control panel.
2. Enter SP mode.
3. Press SP5-749-001 (Import/Export: Export)
4. Select "Target" SP settings (System/Printer/Fax/Scanner) to be exported.
5. Select "Option" settings (Unique/Secret).

Item	Specification	Note
Unique	Unique information of the machine is included in the exported file if you select "Unique" setting.	<p>Unique information that can be updated</p> <p>#1. Items that are to be used to identify the machine. Example: Network Information/ Host name / Information related to fax number / Mail address assigned to the machine</p> <p>#2. Items for specifying the options equipped on the machine. Example: Lot number for developer</p> <p>Unique information that cannot be updated</p> <p>#1. Items that may cause a problem if imported Example: Serial number / Information related to @Remote</p> <p>#2. Items for managing the history of the machine Example: Time and date / Counter information / Installation date</p> <p>#3. Setting values for the Engine</p>

Item	Specification	Note
Secret	Secret information is exported if you select "Secret" setting.	<p>Secret information</p> <p>#1. Data that cannot be exported without being encrypted. (Exported data is encrypted.) Example: Password / Encryption key / PIN code</p> <p>#2. Confidential information for the customer Example: User name / User ID / Department code / Mail address / Phone number</p> <p>#3. Personal information Example: Document name / Image data</p> <p>#4. Sensitive information for the customer Example: MAC address / Network parameters</p>

* The IP address is exported when both 'Unique' and 'Secret' are selected.

6. Select "Crpt config" setting (Encryption).

Encryption	<p>Select whether to encrypt or not when exporting.</p> <p>If you push the "Encryption" key, you can export secret information.</p>	<p>If the encryption function is used, setting of an encryption key is required by direct input.</p> <ul style="list-style-type: none"> Type the arbitrary password using the soft keyboard Can enter up to 32 characters
------------	---	---

7. Press [Execute].

8. Press [OK].

↓ Note

- If data export fails, the details of the error can be viewed in the log.

Importing Device Information

Import device information saved on an SD card.

1. Insert an SD card into the media slot on the side of the control panel.
2. Enter SP mode.
3. Press SP5-749-101 (Import/Export: Import)
4. Select a unique setting.

5. Press [Encryption Key], if the encryption key was created when the file was exported.
6. Select an encryption setting.

Unique	If you want to apply the unique information to the target machine, select the "Unique" key.	Refer to the above information.
Encryption	If an encrypted file is selected as the import file, this setting is required.	

7. Press [Execute].
8. Press [OK].

Note

- If data export fails, the details of the error can be viewed in the log.

Possible solutions for import/export problems

The access log file is created when export/import is executed. The file is stored in the same location as the exported device setting information file.

If an error occurs, check the log's result code in the access log file first. Values other than 0 indicate that an error occurred.

The result code will appear in the circled area illustrated below.

- Example of a log file

```

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

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If you cannot solve the problem or do not know how to solve it after checking the code, note down the error log entry, then contact your supervisor.

Result Code	Cause	Solutions
2 (INVALID REQUEST)	A file import was attempted between different models or machines with different device configurations.	Import files exported from the same model with the same device configurations.
4 (INVALID OUTPUT DIR)	Failed to write the device information to the destination device.	Check whether the destination device is operating normally.
7 (MODULE ERROR)	An unexpected error occurred during import or export.	Turn OFF then ON the main power, and then try the operation again. If the error persists, contact your supervisor.
8 (DISK FULL)	The available storage space on the external medium is insufficient.	Execute the operation again after making sure there is enough storage space.
9 (DEVICE ERROR)	Failed to write or read the log file.	Check whether the path to the folder for storing the file or the folder in which the file is stored is missing.
10 (LOG ERROR)	The hard disk is faulty.	Contact your supervisor.

Result Code	Cause	Solutions
20 (PART FAILED)	Failed to import some settings.	<p>The reason for the failure is logged in "NgCode". Check the code.</p> <p>Reason for the Error (Ng-Name)</p> <p>2. INVALID VALUE The specified value exceeds the allowable range.</p> <p>3. PERMISSION ERROR The permission to edit the setting is missing.</p> <p>4. NOT EXIST The setting does not exist in the system.</p> <p>5. INTERLOCK ERROR The setting cannot be changed because of the system status or interlocking with other specified settings.</p> <p>6. OTHER ERROR The setting cannot be changed for some other reason.</p>
21 (INVALID FILE)	Failed to import the file because it is in the wrong format in the external medium.	<p>Check whether the file format is correct.</p> <p>The import file should be a CSV file.</p>
22 (INVALID KEY)	The encryption key is not valid.	Use the correct encryption key.

 **Note**

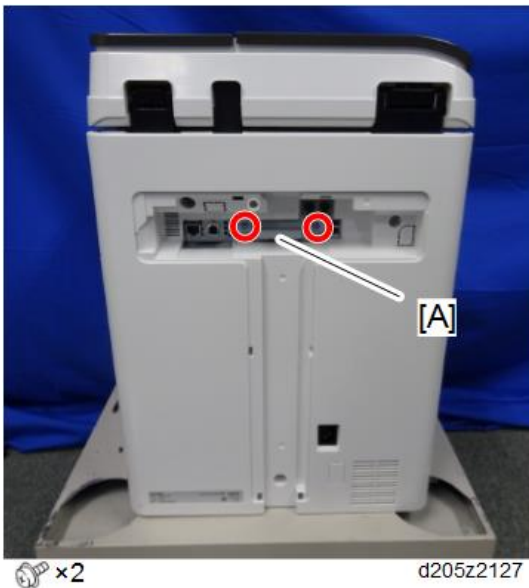
- When exporting device information from the control panel, the data can be saved only on an SD card.
- The file format for exports is CSV.

Address Book Export/Import

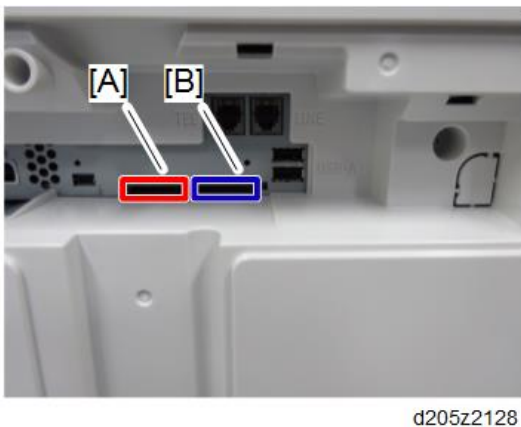
Export

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

1. Turn OFF the main power.
2. Remove the T-shaped cover.
3. Remove the SD slot cover [A].



4. Insert the SD card in the service slot [B].



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

Note

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

Import

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

Note

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

Specification

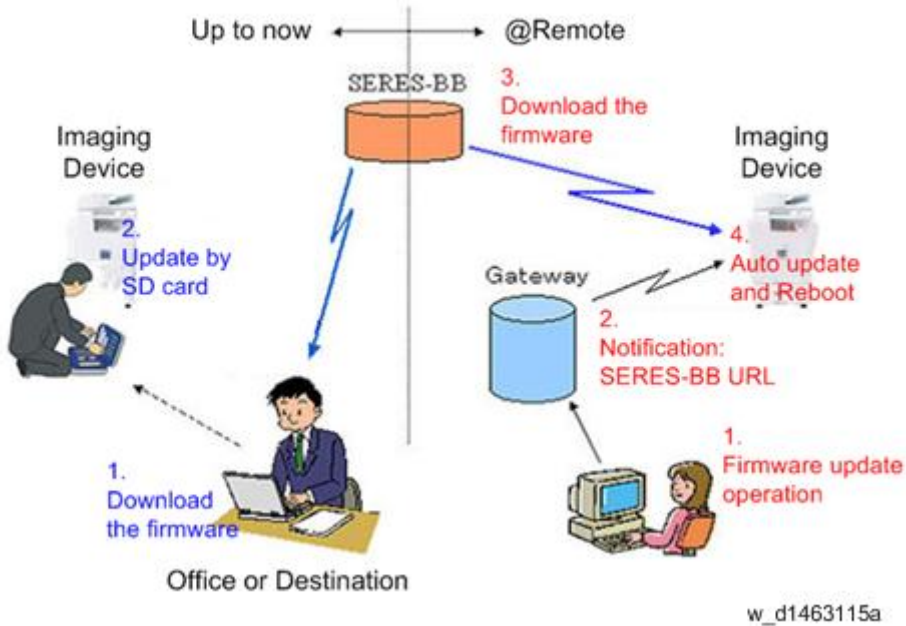
The information which can be exported /imported is the following items.

- Entry information
- User code information
- E-mail information

- Protection code information
- Fax information
- Fax additional information
- Group information
- Title information
- Title position information
- Folder information
- SMTP attestation
- Local authorization
- Folder authorization information
- Account ACL information
- New document initial ACL information
- LDAP authorization information

RFU Updating the Firmware

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



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RFU Performable Condition

RFU is performable for a device which meets the following conditions.

1. The customer consents to the use of RFU.
2. The device is connected to a network via TCP/IP for @Remote.

Package Firmware Update

⚠ CAUTION

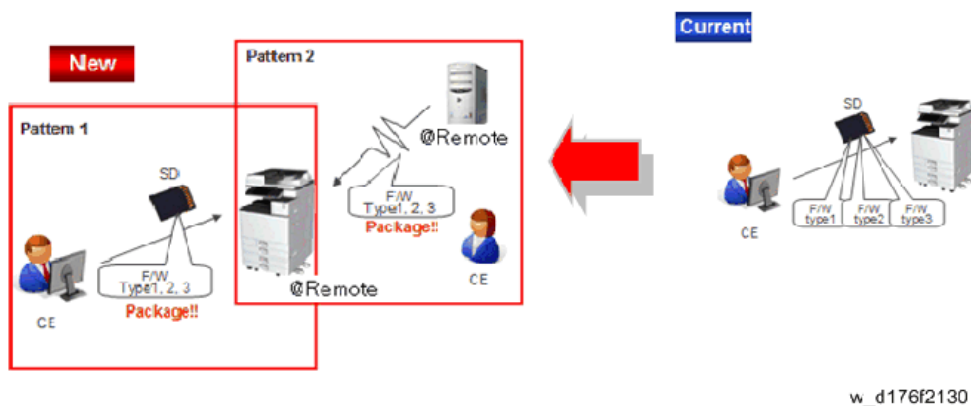
- The HDD unit must be installed on the machine to enable the SFU or the package firmware update via SD card.

Overview

Each firmware module (such as System/Copy, Engine, etc) used to be updated individually. However, an all-inclusive firmware package (package_ALL) is now available.

There are two ways to update using the firmware package.

- Package Firmware Update via a network: SFU (Smart Firmware Update)
- Package Firmware Update with an SD card



Package Firmware Update via a network: SFU (Smart Firmware Update)

- There are two methods for SFU.
 - Immediate Update: To update the firmware when visiting
 - Update at the next visit: To set the date and time for downloading. The firmware will be automatically downloaded beforehand and updated at the following visit.
- “Update at the next visit” is recommended since firmware download may take some minutes due to the network condition.

↓ Note

- SFU requires the connection to @Remote via a device which has the embedded @Remote communicating function. When a machine is connected to @Remote via an intermediate device (RC Gate), the SFU function is disabled.

Package Firmware Update via an SD Card

Package firmware update can also be performed using the conventional SD card method by writing the package firmware directly to the SD card.

Types of firmware update files, supported update methods:

	SFU	SD	RFU
Individual firmware	N/A	Available	Available
Package firmware	Available	Available	N/A

Immediate Update

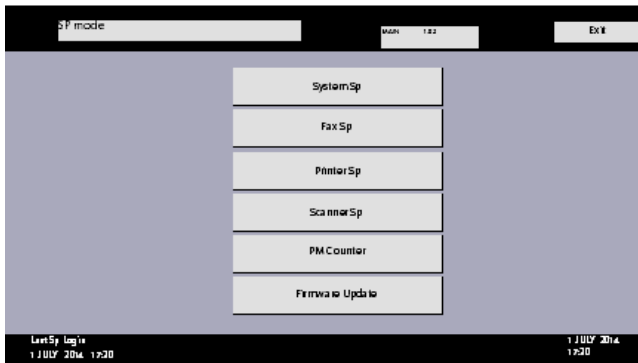
Enter the [Firmware Update] menu in the SP mode and update the package firmware.

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Note

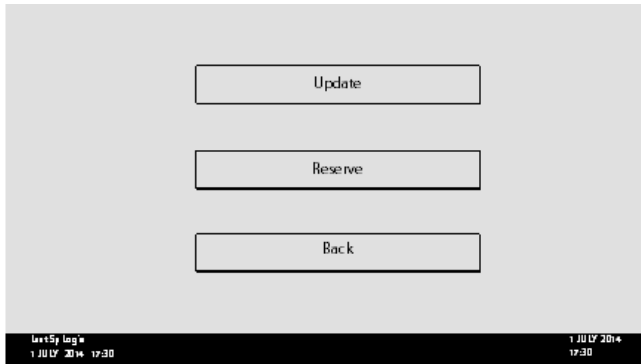
- The [Firmware Update] button will appear even when a machine is connected to @Remote with a device which does not have an embedded @Remote communicating function.
- If an error code is displayed, refer to Error screens during updating (Error Screens During Updating).

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



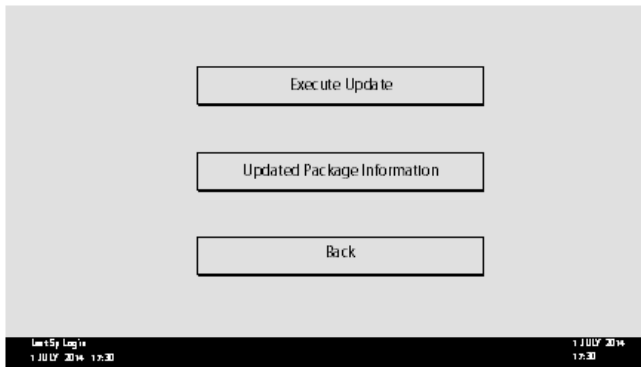
d197f0507

3. Press [Update].



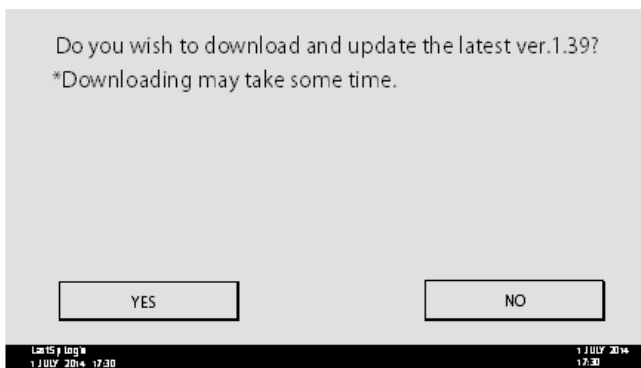
d197f0508

4. Press [Execute Update].



d197f0509

5. Press [YES].



d197f0514

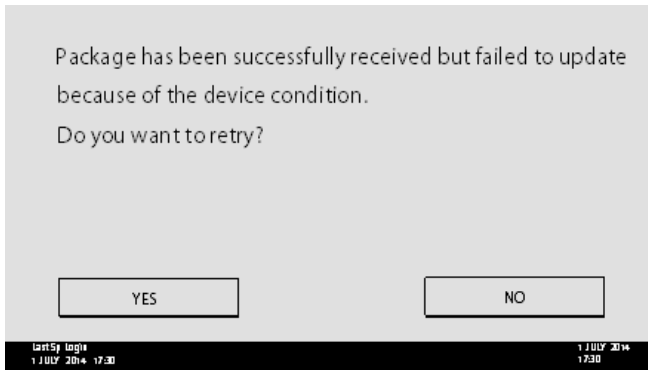
6. The following display will be displayed.



d197f0513

Note

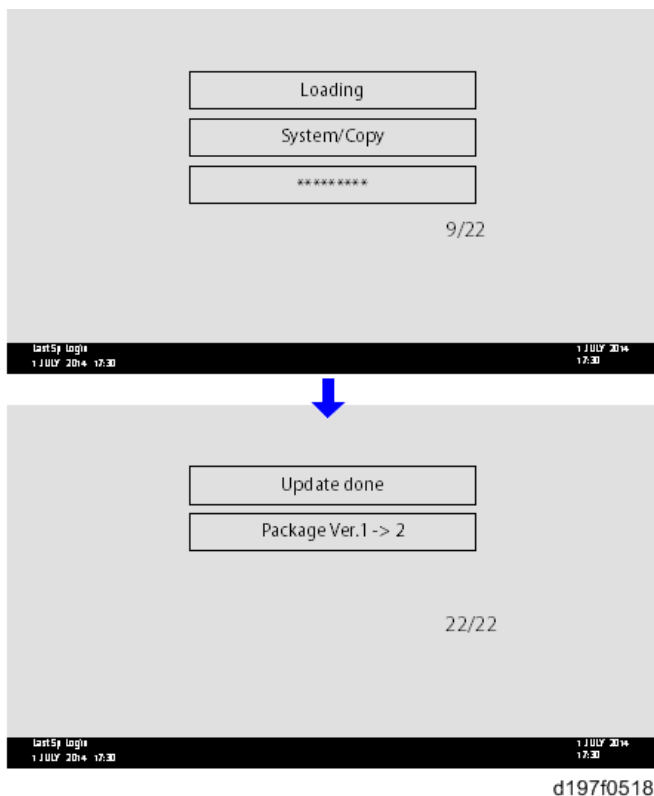
- If the error code E66, which indicates that the download of the firmware has failed, is displayed, implement this procedure from step 1.
- Update will be started automatically after the download is finished.
- When the machine is in the update mode, the automatic update is suspended if a print job is implemented. After the print job is finished, Press [YES] on the display shown with the following picture to restart updating.



d197f0515

7. [Update done] is displayed.

- The machine will automatically reboot itself.



↓ Note

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

Update at the Next Visit (Reserve)

It is possible to set the machine to download the package firmware which is necessary for SFU in advance, and then perform the actual installation at the next service visit. This saves waiting time for the firmware to download at the service visit.

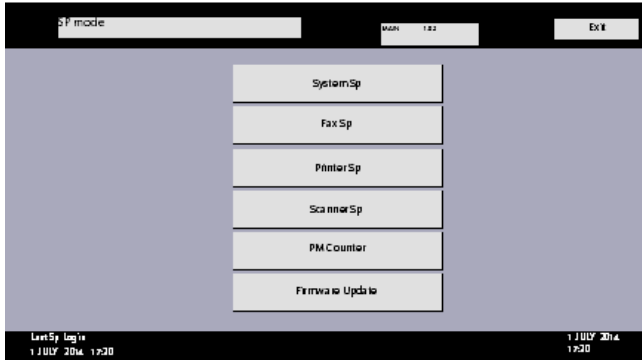
How to Set the Machine to Download Firmware Later (RESERVE)

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

↓ Note

- The [Firmware Update] button will appear even when a machine is connected to @Remote with a device which does not have an embedded @Remote communicating function. If an error code is displayed, refer to Error Screens During Updating.

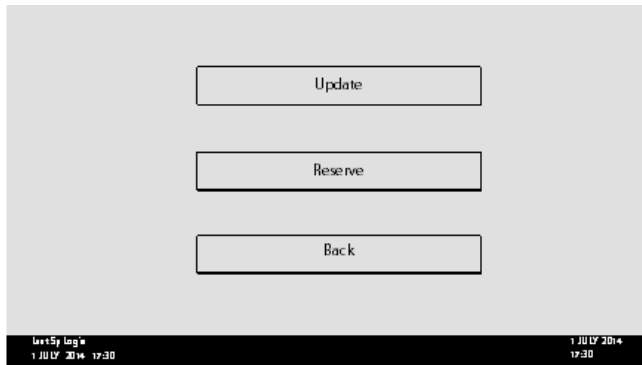
1. Enter the SP mode.
2. Press [Firmware Update].



d197f0507

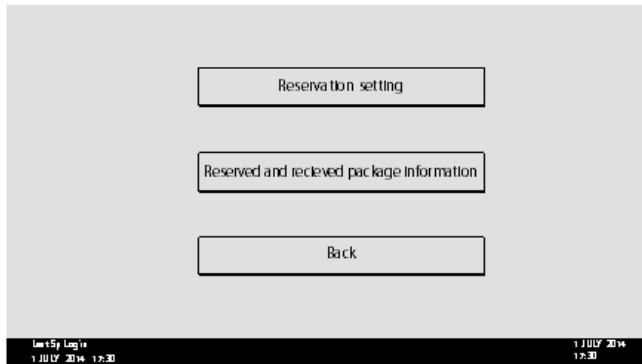
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3. Press [Reserve].



d197f0508

4. Press [Reservation setting].



d197f0510

5. Enter the dates and times of next visit and start of receiving data.

- "Next time to visit this customer": The package firmware will be automatically downloaded by this time/date.

- “When to receive? (1-7)”: The download of the package firmware will begin this number of days before the next visit.

Next time to visit this customer

2013 / 05 / 22 15 : 00
year month day hour minute

When to receive? (1-7) 1 day(s) before visit

Set Clear Cancel

Lasty Ing 1 JULY 2014 17:30

d197f0512

Successful Download

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

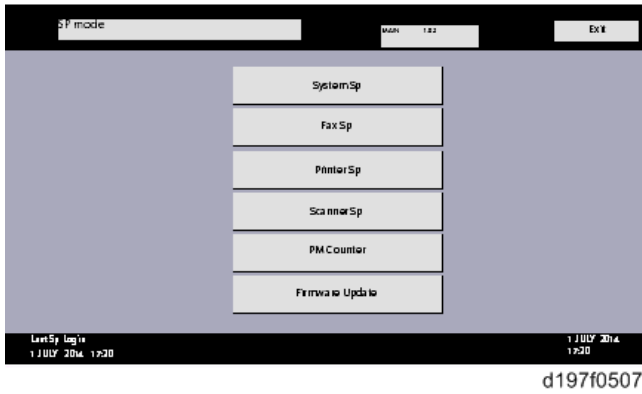


- If the firmware download fails or cannot be completed due to the network settings/condition, no power to the machine, or other reason, the machine will continue retrying every six hours until the scheduled deadline (up to a maximum of four tries). For example, if the download is set for the day before the next visit, the machine will attempt the download at 24 hours before the visit, and then continue trying every six hours (max. four tries total).
- The retry is only performed in cases when the firmware download has failed.
- If the machine is in Energy Saver mode when the download is scheduled to begin, the download will be performed in the background and the machine/panel will stay in Energy Saver mode.
- The download will continue uninterrupted even if the customer initiates a print job, copy job, fax receiving or other operation while the download is in progress.

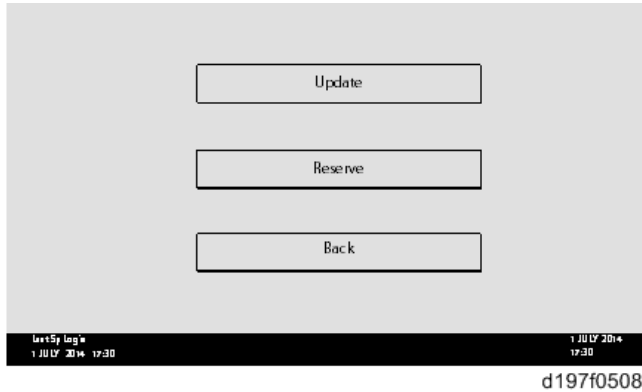
- The download will be terminated if the customer turns OFF the main power while the download is in progress.
- If the download cannot be completed successfully by the time of the next scheduled visit, the machine will stop trying to download the firmware.

How to Check if the Firmware Downloaded with RESERVE

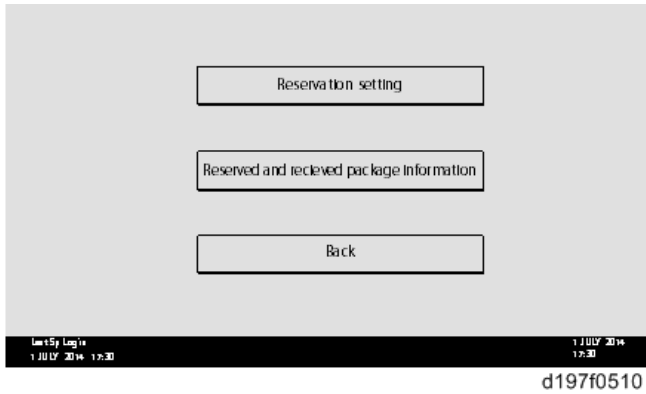
1. Enter the SP mode.
2. Press [Firmware Update].



3. Press [Reserve].

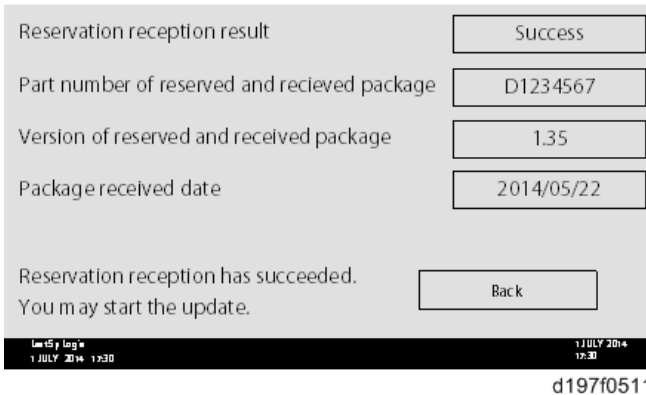


4. Press [Reserve and received package information].



5. Check the information displayed.

When the package firmware is downloaded successfully, the details of the download result are displayed as the following picture shows.



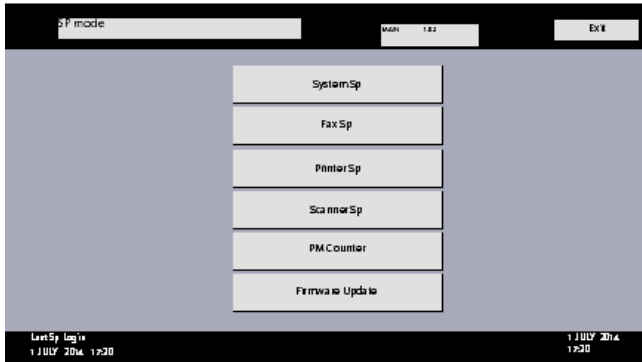
Note

- This information will only be displayed if the reserved firmware has already been downloaded. If not, all the data items are indicated with "-".

How to Install Firmware Downloaded with RESERVE

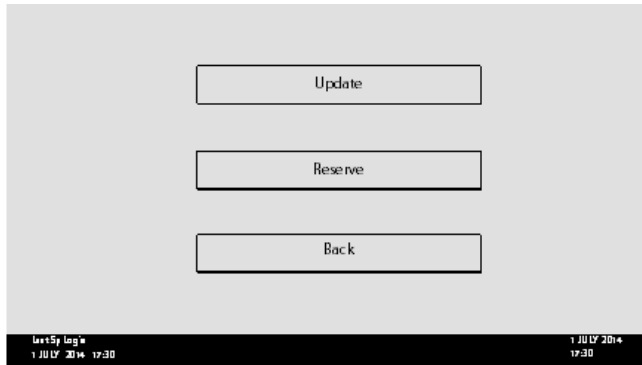
1. Enter the SP mode.

2. Press [Firmware Update].



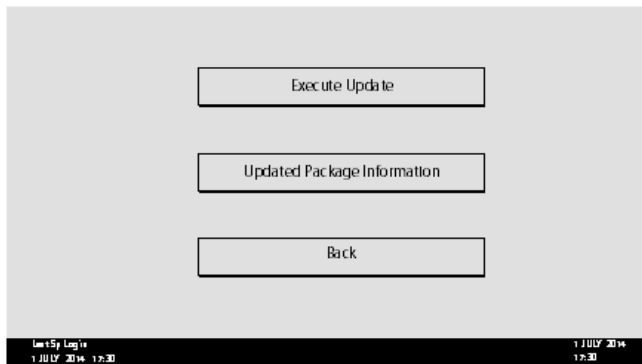
d197f0507

3. Press [Update].



d197f0508

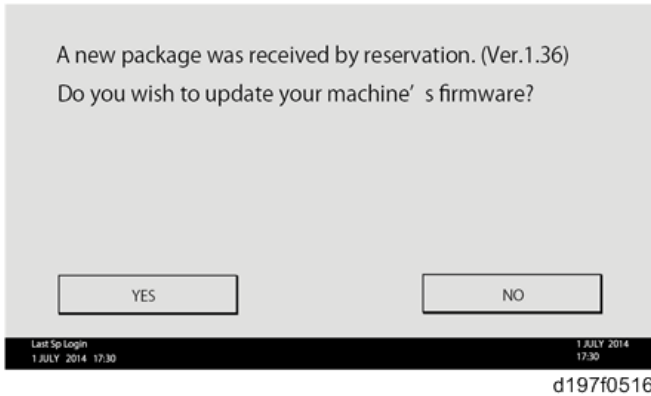
4. Press [Execute Update].



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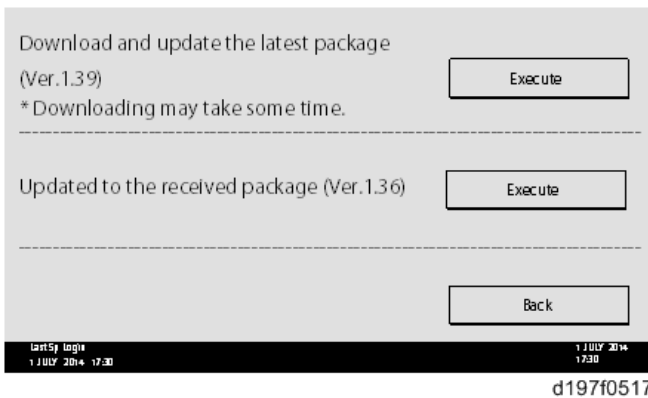
5. Check the version of the received package firmware, and then Press [YES].

- Update is started.



↓ Note

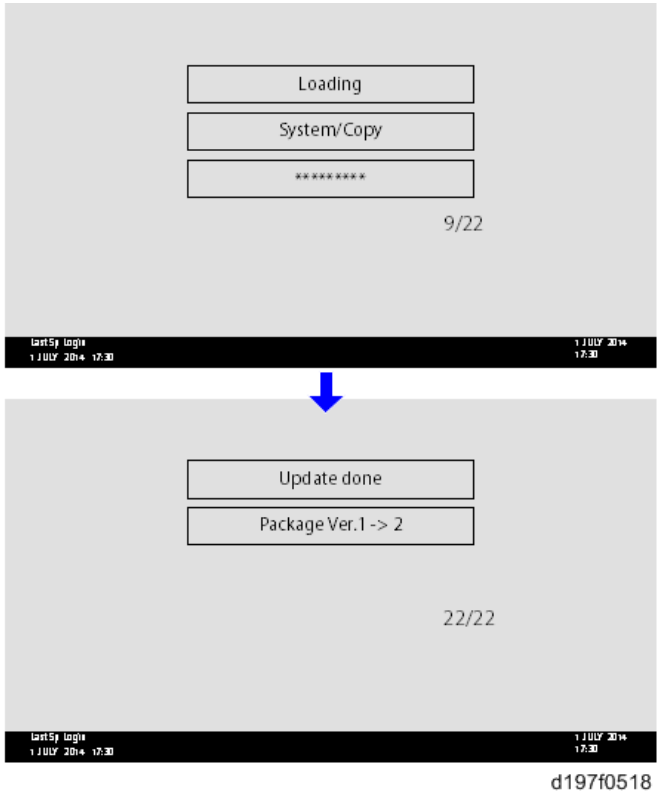
- If the version of the reserved package in the HDD is older than the latest version, the messages shown in the following picture are displayed.



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

6. [Update done] message is displayed.

- The machine will automatically reboot itself.



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Note

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

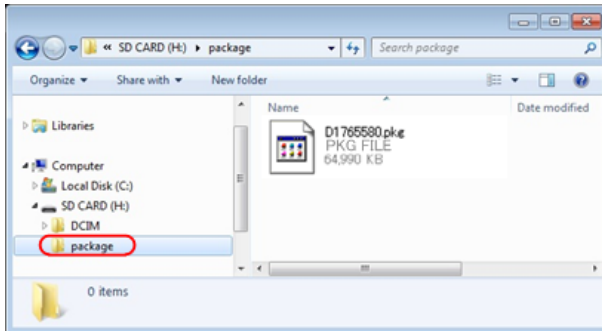
Update via SD card

Update with an SD card, which is the conventional method, is available if you write the package firmware to the SD card.

Note

- If an error code is displayed, refer to Error Screens During Updating.
1. Create a new folder in the SD card, and then name it “package”.

2. Copy the package firmware (xxxxxxx.pkg) to this folder.

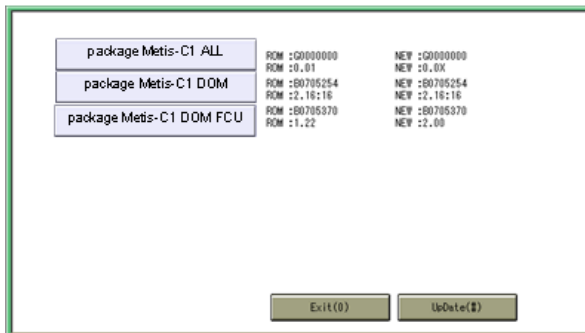


d197f0504

★ Important

- If you copy the package firmware into the conventional “romdata” folder, the update will not work.
- Only one version of the package firmware should be copied into the folder. If you copy multiple versions of package firmware to the SD card, the machine will select only one version of the firmware randomly.

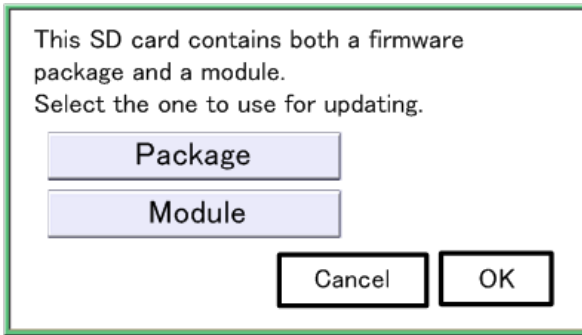
3. Turn OFF the main power.
4. Insert the SD card which contains the package into SD card slot 2 (for service).
5. Turn ON the main power
6. Press [Update].



d176f2127

↓ Note

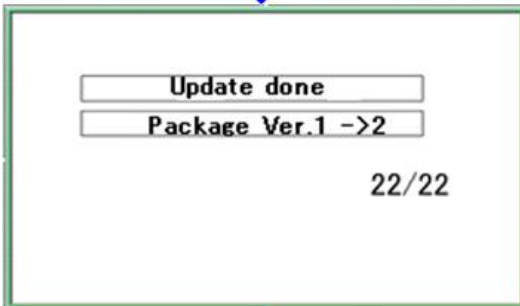
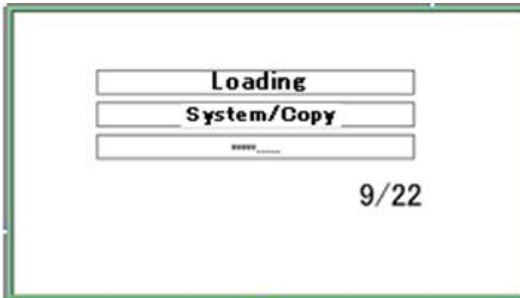
- When the SD card contains both a firmware package and one or more modules, the following display may show up. Select [Package] and Press [OK] to move to step 4 above.



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7. Update is started automatically after the package firmware download to the HDD has been completed.
8. When update is completed, "Update done" is displayed.

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Note

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

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

Capturing the Debug Logs

Overview

With this feature, you can save debug logs that are stored in the machine (HDD or operation panel) on an SD card. It allows the Customer Engineer to save and retrieve error information for analysis.

The Capturing Log feature saves debug logs for the following four.

- Controller debug log including operation log
- Engine debug log
- FCU debug log
- Operation panel log

★ Important

- In older models, a technician enabled the logging tool after a problem occurred. After that, when the problem had been reproduced, the technician was able to retrieve the debug log.
- However, this new feature saves the debug logs at the time that problems occur. Then you can copy the logs to an SD card.
- You can retrieve the debug logs using a SD card without a network.
- Analysis of the debug log is effective for problems caused by the software. Analysis of the debug log is not valid for the selection of defective parts or problems caused by hardware.

Types of debug logs that can be saved

Type	Storage Timing	Destination (maximum storage capacity)
Controller debug log including operation log	<ul style="list-style-type: none"> • Saved at all times 	HDD (4 GB) or SD card connected to the service slot. When the data gets over 4.0 GB, the older data is deleted.
Engine debug log	<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 or SD card connected to the service slot (Up to 300 times)

Type	Storage Timing	Destination (maximum storage capacity)
FCU debug log	<ul style="list-style-type: none"> When a specified amount of FCU debug log is stored in the FCU. If fax application is unavailable (e.g. not installed), the machine does not transfer the log. 	HDD or SD card connected to the service slot
Operation panel log	<ul style="list-style-type: none"> When an error related to the operation panel occurs. 	Memory in the operation panel.

Note

- **Debug logs are not saved in the following conditions:**
- While erasing all memory
- While data encryption equipment is installed
- While changing the firmware configuration
- Forced power OFF (accidentally disconnecting the outlet)
- Engine debug log in shutdown
- When the power supply to the HDD is off because of energy saving (engine OFF mode /STR mode)
- When one of the following SC occurs: SC672, SC816, SC819, SC878, SC899, SC859, SC860, SC861, SC863, or SC864

Note

- **Following logs are not saved:**
- Log related to the energy saver mode (Engine-off, suspend-mode, or other cases)
- Network communication log
- Logs related to NRS
- IP-FAX log
- Access log for unauthorized user (guest)
- HTTP session timeout log
- Auto log-out log
- IC card related log
- Authorization for Fax

Security of the Operation Log

The following operation logs related to security are not saved.

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

Retrieving the Debug Logs

★ Important

- Retrieve debug logs to identify the date of occurrence of the problems and to find details of the problems
- e.g.: At around 8:00 am on March 10, an engine stall occurred. The operation panel does not respond. Turn OFF then ON the main power.
- Analysis of the debug log is effective for problems caused by the software. Analysis of the debug log is not valid for the selection of defective parts or problems caused by hardware

Procedure for Retrieving the Debug Log with SD Card

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

★ Important

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

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

↓ Note

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

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

↓ Note

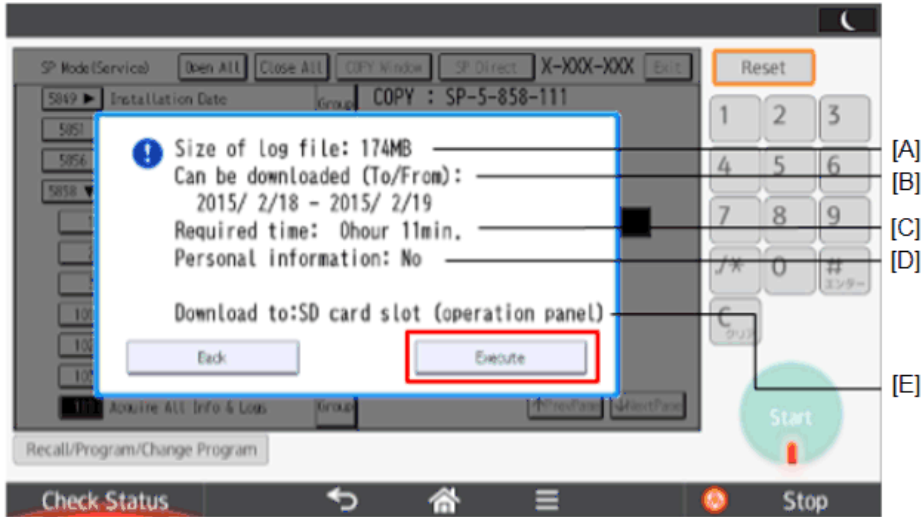
- 2 (days) is set by default for MP 305⁺. The value can be changed from 1 to 180.

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

↓ Note

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

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



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

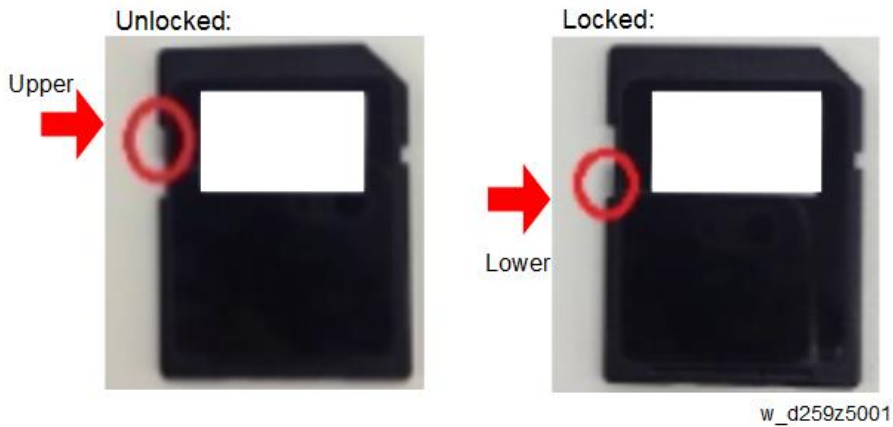
Note

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

Note

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

- **Error code -3:** The SD card is locked. Unlock the SD card as shown below



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8. Wait for the information and/or logs to be copied to the SD card.
9. After a message stating that the process has completed appears on the operation panel, make sure that the LED light next to the SD slot is not flashing. Then, remove the SD card.

↓ **Note**

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

↓ **Note**

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

↓ **Note**

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

Procedure for Retrieving the Debug Log via Web Image Monitor

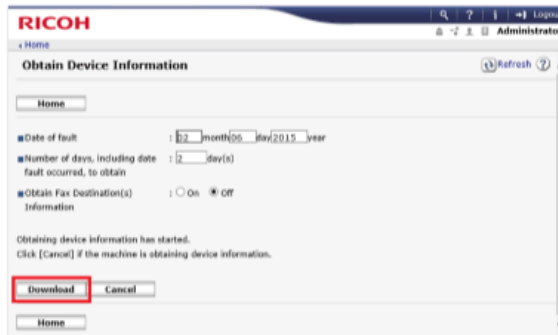
1. Access the following URL and login as an administrator:

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



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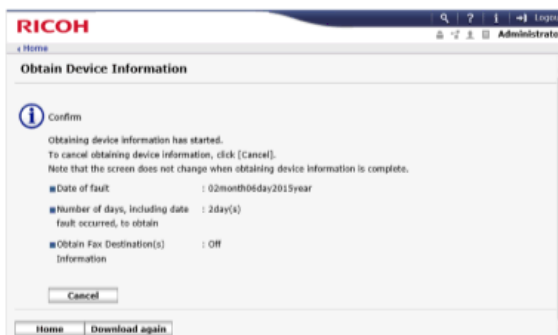
2. Specify the date that the problem occurred and the number of days to download the logs. If the fax destinations need to be included in the fax information, set [On] as [Obtain Fax Destination(s) Information]. Then press [Download].



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Note

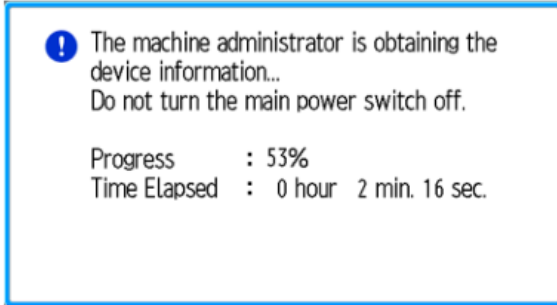
- 2 (days) is set by default for MP 305+ The value can be changed from 1 to 180.
 - [Obtain Fax Destination(s) Information] is set to [Off] by default.
3. The confirmation screen will appear and the information and/or logs will start being downloaded. To proceed to download the information and/or logs,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



d259z5004

Note

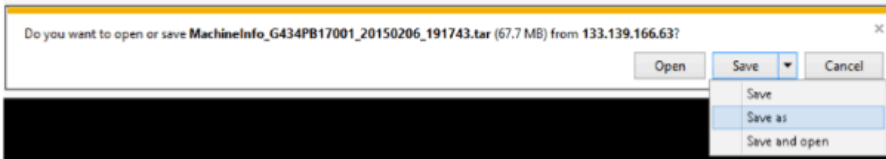
- To cancel downloading, press [Cancel].
- To reconfigure some settings, press [Download again].
- Operation panel shows the following while downloading the logs:



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



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Note

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

Log File List

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

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

Configuration page	/LogTrace/[*the model number]/gps/ConfigurationPage/ ConfigurationPage_[yyyymmdd_hhmmss].csv
Font page	<ul style="list-style-type: none"> • /LogTrace/[*the model number]/gps/FontPage/ FontPage_PCL_[the page number]_[yyyymmdd_hhmmss].jpg • /LogTrace/[*the model number]/gps/FontPage/ FontPage_PDF_[the page number]_[yyyymmdd_hhmmss].jpg • /LogTrace/[*the model number]/gps/FontPage/ FontPage_PS_[the page number]_[yyyymmdd_hhmmss].jpg
Print setting list	<ul style="list-style-type: none"> • /LogTrace/[*the model number]/gps/PrintSettingList/ PrintSettingList_RPGL_[yyyymmdd_hhmmss].txt • /LogTrace/[*the model number]/gps/PrintSettingList/ PrintSettingList_RTIFFF_[yyyymmdd_hhmmss].csv
Error log	/LogTrace/[*the model number]/gps/ErrorLog/ [yyyymmdd_hhmmss].csv
Fax information	/LogTrace/[*the model number]/faxreport/ [yyyymmdd_hhmmss].csv
FCU debug log	/LogTrace/*the model number]/fcuLog/[yyyymmdd_hhmmss].gz

6. Troubleshooting

Self-Diagnostic Mode

Service Call Codes

Service Call Conditions

Pattern	Display	How to reset	SC call or SC alarm in customer support system
A	The SC is displayed on the operation panel, and the machine cannot be used (safety-related SC).	<p>Execute CE reset SP mode, and turn OFF then ON the main power.</p> <p>⚠ CAUTION</p> <ul style="list-style-type: none"> When canceling a fusing unit SC, (SC544-00/ SC554-00/ SC564-00/ SC574-00), perform part replacement in accordance with the above procedure. 	<p>Occurrence & alarm count</p> <p>↓</p> <p>Immediate alarm</p>
B	When a function is selected, the SC is displayed on the operation panel, and the machine cannot be used (down-time mitigation).	Turn OFF then ON the main power.	<p>Occurrence & alarm count</p> <p>↓</p> <p>Power OFF → ON</p> <p>↓</p> <p>Alarm count and alarm only if recurrence</p>
C	No display on the operation panel, and use is permitted.	Count only logging.	<p>Occurrence</p> <p>↓</p> <p>Logging count & alarm count</p>

Pattern	Display	How to reset	SC call or SC alarm in customer support system
D	The SC is displayed on the operation panel, and the machine cannot be used (machine-error SC).	Turn OFF then ON the main power.	Occurrence & alarm count ↓ Power OFF → ON ↓ Alarm count and alarm only if recurrence

↓ Note

- When an ordinary SC (type D) is generated, an automatic reboot is performed. When an event is reported by the customer support system, even in the event of an ordinary SC, reboot is not performed. During automatic reboot, a confirmation screen is displayed after the reboot.
- When automatic reboot occurs twice continuously, an SC is displayed without rebooting, and logging count is performed. Also, when an SMC print is output, an * mark is added alongside the SC number for clarity.
- Automatic reboot can be enabled or disabled with SP5-875-001 (SC automatic reboot setting) (default value: ON).

SC Logging

When an SC is generated, the "total count value when the SC is generated" and the "SC code" are logged. However, if the total count value during the SC is the same as last time, logging is not performed.

Logged data can be checked by outputting an administrative report (SMC print). The SC history is logged up to the last 10 entries, and if there are more than 10 entries, data are progressively deleted starting from the oldest.

SC Automatic Reboot

When an ordinary SC (pattern D) is generated, automatically reboot is performed. Automatic reboot or reboot by user operation can be set by SP5-875-001 (SC automatic reboot setting out) (default value: 0 "Automatic reboot").

When a type D occurs, automatic reboot is done or the machine display asks the customer if it can reboot. However, when the SC occurs twice in a short time, the machine sends a report to the @Remote server without rebooting. This is because just rebooting may not be a good solution if an SC occurs twice.

When an automatic reboot is performed, a confirmation screen is displayed after reboot. The confirmation screen can be cancelled by pressing the [OK] key (display is not cancelled only when the main power is turned OFF then ON).

Screen display during reboot

- Status display on the current screen
 - Post-processing Post-processing during printing, etc.
 - Automatic reboot After operation end

Post-processing

■ ■ □ □ □ □ □ □ □ □

Until automatic reboot

□ □ □ □ □ □ □ □ □ □

- Reset key (Reboot key)
Key to perform reboot
Cancel key is not displayed.
- Turn on spanner LED (same as when an SC is generated).

Operation during SC reboot

- Timing of SC reboot

When @Remote is enabled, and when a NRS alarm* 1 is not generated, the corresponding SC is the object of an automatic reboot.

* 1 NRS alarm: Issued when an ordinary SC (type D) is generated twice while the total counter counts 10 times.

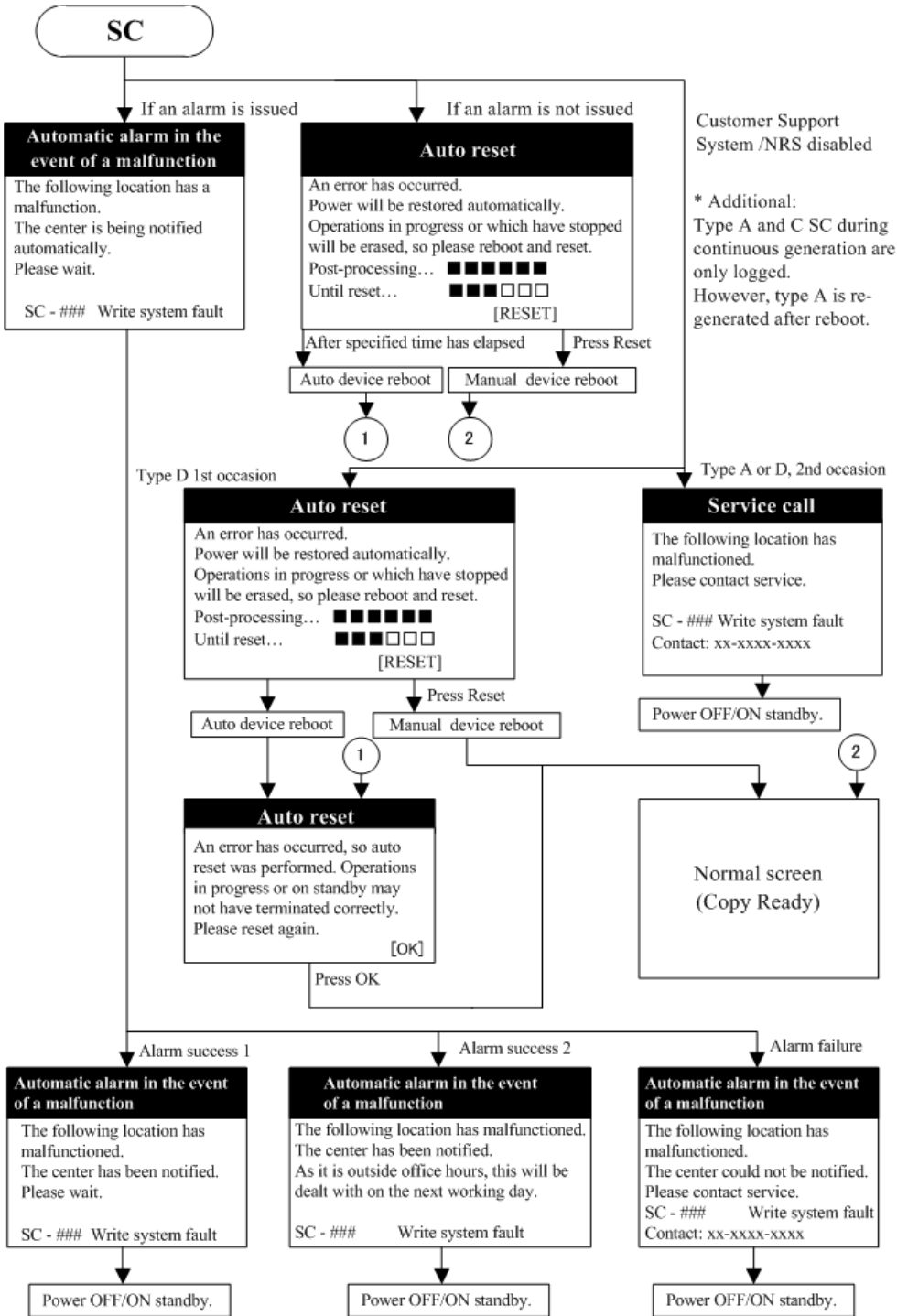
- Time to automatic reboot

Reboot is performed 30 seconds after an engine reboot is possible, after the end of post-processing during printing, etc.

At that time, a reboot is performed even if the MFP is operating. The engine does not start process control when a reboot is possible.

- Automatic reboot

See the flowchart below.



w_d1462643

SC1xx

SC101-01

Error Name

LED Error

Type

D

Symptoms

The peak white level is less than the prescribed value.

Possible Causes

- The connection is loose.
- The LED is defective.
- The LED drive is malfunctioning.
- The BiCU is malfunctioning.
- The mirrors or lenses are not set properly, or are dirty.
- The harness is defective.
- The white plate is not set properly, or is dirty.
- The ARDF's white plate is dirty or defective (intermittent shading model only).

Troubleshooting Procedures

Turn OFF then ON the main power.

If the SC occurs again, check the following. After each step, turn OFF then ON the main power, and see if the SC recurs.

1. Check the ARDF's white plate (white roller).

- Not dirty or defective: Proceed to the next step.
- Dirty or defective: Clean or replace the white plate.

If the SC recurs after power OFF and ON, proceed to the next step.

2. Check the connector between the CIS and the BiCU.

- Not loose or disconnected: Proceed to the next step.
- Loose or disconnected: Reconnect the connector.

If the SC recurs after power OFF and ON, proceed to the next step.

3. Execute an output check for the LEDs (SP5-804-202).

- Not defective: Proceed to the next step.

- Defective: Replace the LEDB and execute SP5-804-202 again. If the LED lights up, proceed to the next step. If not, replace the CIS. If the SC recurs after power OFF and ON, proceed to the next step.

4. Check the BiCU. If it is malfunctioning, replace it.

If the SC recurs after power OFF and ON, proceed to the next step.

5. Check the harness. If it is defective, replace the harness.

If the SC recurs after power OFF and ON, proceed to the next step.

6. Check the white plate (exposure glass).

If it is dirty or defective, replace it. Turn OFF then ON the main power to see if the SC recurs.

SC102-00

Error Name

LED Intensity Adjustment Error

Type

D

Symptoms

The peak white level cannot reach the prescribed value even though adjusting several times.

Possible Causes

- The connection is loose.
- The LED is defective.
- The LED drive is malfunctioning.
- The CIS is malfunctioning.
- The BiCU is malfunctioning.
- The harness is defective.

Troubleshooting Procedures

Turn OFF then ON the main power.

If the SC occurs again, check the following. After each step, turn OFF then ON the main power, and see if the SC recurs.

1. Check the ARDF's white plate (white roller).

- Not dirty or defective: Proceed to the next step.
- Dirty or defective: Clean or replace the white plate.

If the SC recurs after power OFF and ON, proceed to the next step.

2. Check the connector between the CIS and the BiCU.

- Not loose or disconnected: Proceed to the next step.
- Loose or disconnected: Reconnect the connector.

If the SC recurs after power OFF and ON, proceed to the next step.

3. Execute an output check for the LEDs (SP5-804-202).

- Not defective: Proceed to the next step.
- Defective: Replace the LEDB and execute SP5-804-202 again. If the LED lights up, proceed to the next step. If not, replace the CIS. If the SC recurs after power OFF and ON, proceed to the next step.

4. Check the BiCU. If it is malfunctioning, replace it.

If the SC recurs after power OFF and ON, proceed to the next step.

5. Replace the laser unit.

If the SC recurs after power OFF and ON, proceed to the next step.

6. Check the harness. If it is defective, replace the the harness.

If the SC recurs after power OFF and ON, proceed to the next step.

7. Check the white plate (exposure glass).

If it is dirty or defective, replace it. Turn OFF then ON the main power to see if the SC recurs.

SC120-00, SC121-00

Error Name

SC120-00: Scanner Home Position (HP) Error 1

SC121-00: Scanner Home Position (HP) Error 2

Type

D

Symptoms

The scanner HP sensor does not turn OFF.

This SC is detected during:

- Scanner homing (power ON/ recovery from Energy Save)
- Auto-adjustment (power ON/ recovery from Energy Save)
- DF/FB scanning
- Original size detection

Possible Causes

- The connection is loose.

- The BiCU is malfunctioning.
- The scanner motor is malfunctioning.
- The board with the scanner control IC chip (BiCU) is malfunctioning.
- The HP sensor is malfunctioning.
- The harness is defective (broken or short-circuited).
- The timing belt, pulley, wires, carriage are not assembled correctly.

Troubleshooting Procedures

Turn OFF then ON the main power.

If the SC occurs again, check the following. After each step, Turn OFF then ON the main power, and see if the SC recurs.

1. Check all connectors.

- Not loose or disconnected: Proceed to the next step.
- Loose or disconnected: Reconnect the connector.

If the SC recurs after power OFF and ON, proceed to the next step.

2. Check the timing belt, pulley, wires, and carriage.

- Correctly assembled: Proceed to the next step.
- Wrongly assembled: Assemble the scanner carriage and bracket again.

3. Check the HP sensor. If it is defective, replace it.

If the SC recurs after power OFF and ON, proceed to the next step.

4. Check the BiCU (motor drive PCB). If it is defective, replace the PCB.

If the SC recurs after power OFF and ON, proceed to the next step.

5. Check the scanner motor. If it is malfunctioning, replace it.

If the SC recurs after power OFF and ON, proceed to the next step.

6. Check the board with the scanner control IC chip (BiCU). If it is defective, replace the PCB.

If the SC recurs after power OFF and ON, proceed to the next step.

7. Check the harness. If it is defective, replace harness.

SC141-00

Error Name

Black Level Detection Error

Type

D

Symptoms

The black level is not within the prescribed value.

This SC is detected when the scanner turned ON (power ON/ recovery from Energy Save).

Possible Causes

- The CIS is defective.
- The BiCU is malfunctioning.
- The harness is defective

Troubleshooting Procedures

Turn OFF then ON the main power.

If the SC occurs again, check the following. After each step, Turn OFF then ON the main power, and see if the SC recurs.

1. Check the CIS. If it is defective, replace it.

If the SC recurs after power OFF and ON, proceed to the next step.

2. Check the BiCU. If it is defective, replace it.

If the SC recurs after power OFF and ON, proceed to the next step.

SC142-00

Error Name

White Level Detection Error

Type

D

Symptoms

The white peak level is not within the prescribed value when adjusting the scanner gain.

This SC is detected when the scanner is turned ON (power ON/ recovery from Energy Save).

Possible Causes

- There is condensation in the scanner unit.
- The LED is defective.
- The LED driver PCB is defective.
- The CIS is defective.
- The BiCU is malfunctioning.
- The harness is defective.
- The connection is loose.
- The mirrors or lenses are not set properly, or are dirty.

- The white plate is not set properly, or is dirty.
- The scanner motor is malfunctioning.

Troubleshooting Procedures

Turn OFF then ON the main power.

If the SC occurs again, check the following. After each step, Turn OFF then ON the main power, and see if the SC recurs.

1. Check the connector between the CIS and the BiCU.

- Not loose or disconnected: Proceed to the next step.
- Loose or disconnected: Reconnect the connector.

If the SC recurs after power OFF and ON, proceed to the next step.

2. Execute an output check for the LEDs (SP5-804-202).

- Not defective: Proceed to the next step.
- Defective: Replace the LEDB and execute SP5-804-202 again. If the LED lights up, proceed to the next step. If not, replace the CIS. If the SC recurs after power OFF then ON, proceed to the next step.

3. Check the BiCU. If it is defective, replace it.

If the SC recurs after power OFF and ON, proceed to the next step.

4. Replace the laser unit.

If the SC recurs after power OFF and ON, proceed to the next step.

5. Check the harness. If it is defective, replace the harness.

If the SC recurs after power OFF and ON, proceed to the next step.

6. Check the white plate (exposure glass). If it is dirty or defective, replace it. Turn OFF then ON the main power to see if the SC recurs.

SC144-00

Error Name

Scanner Communication Error

Type

D

Symptoms

- Connection detection error
- Cannot communicate with scanning-related devices (AFE, FPGA, ASIC). Or there are communication errors.

This SC is detected when the scanner is turned ON (power ON/ recovery from Energy Save).

Possible Causes

- The CIS is defective.
- The BiCU is malfunctioning.
- The harness is defective.

Troubleshooting Procedures

Turn OFF then ON the main power.

If the SC occurs again, check the following. After each step, Turn OFF then ON the main power, and see if the SC recurs.

1. Check the connector between the CIS and the BiCU.

- Not loose or disconnected: Proceed to the next step.
- Loose or disconnected: Reconnect the connector.

If the SC recurs after power OFF and ON, proceed to the next step.

2. Check the CIS. If it is defective, replace it.

If the SC recurs after power OFF and ON, proceed to the next step.

3. Check the BiCU. If it is defective, replace it.

If the SC recurs after power OFF and ON, proceed to the next step.

SC165-00

Error Name

Copy Data Security Unit Error

Type

D

Symptoms

The copy data security board cannot be detected, or a device check error occurred even though the copy data security function is set to "ON" in System Settings.

Possible Causes

- The copy data security board is not installed properly.
- The copy data security board is malfunctioning.

Troubleshooting Procedures

- Reinstall the copy data security board.
- Replace the copy data security board.

SC2xx

SC202-00, SC203-00, SC204-00

Error Name

SC202-00: Polygon Motor Error: ON Timeout

SC203-00: Polygon Motor Error: OFF Timeout

SC204-00: Polygon Motor Error 0: XSCRDY Signal Error

Type

D

Symptoms

- SC202-00

The polygon mirror motor cannot rotate correctly.

This SC is detected when the polygon mirror motor starts rotating (start of printing), or when its rotating speed is changed (change in printing speed).

- SC203-00

The polygon mirror motor cannot stop rotating correctly.

This SC is detected when the polygon mirror motor stops rotating (end of printing), or when its rotating speed (printing speed) is changed.

- SC204-00

The polygon mirror motor cannot rotate correctly during printing.

This SC is detected when the polygon mirror motor rotates before printing and during printing.

Possible Causes

- The polygon mirror motor or the polygon mirror motor driver is malfunctioning.
- The polygon mirror motor harness is defective, disconnected, or short-circuited.
- The BiCU is malfunctioning (incorrect polygon motor control signal, damaged Laser ASIC).
- The PSU is malfunctioning (main power supply or fuse of the polygon mirror motor is defective).
- The AC voltage is wrong.

Troubleshooting Procedures

1. Turn OFF then ON the main power.
2. Check the harness between the LD unit and the BiCU.
3. Check the 24V power source for the polygon mirror motor (CN286, a 6-pin connector on the PSU).

4. Replace the Laser unit.
5. Replace the harness between the LD unit and the BiCU.
6. Replace the BiCU.
7. Replace the PSU.

If a multimeter is available, perform Step 3. If the meter indicates between 22 to 26V, the power source is normal.

You cannot change only the polygon mirror motor.

SC220-00

Error Name

Laser Synchronizing Detection Error: Start Position LD1

Type

D

Symptoms

Synchronizing detection signal cannot be received.

This SC is detected when the machine starts up, or when it is printing.

Possible Causes

- The LD unit is malfunctioning (synchronizing mechanism or LDB failure).
- The BiCU is malfunctioning (damaged Laser ASIC).
- The LDB harness is loose or broken.

Troubleshooting Procedures

1. Turn OFF then ON the main power.
2. Check if there is condensation on the LDB.
3. Check the harness between the LDB and the BiCU. Replace it if needed.
4. Replace the Laser unit.
5. Replace the BiCU.

SC230-00, SC231-00

Error Name

SC230-00: FGATE ON Error

SC231-00: FGATE OFF Error

Type

D

Symptoms

- SC230-00
An FGATE signal is not sent even when the laser is ready to be emitted.
- SC231-00
The FGATE signal does not go OFF even when laser emission is going to end.

These SCs are detected during printing.

Possible Causes

- The connection between the BiCU and the controller is loose.
- The BiCU is malfunctioning (damaged Laser ASIC).

Troubleshooting Procedures

1. Turn OFF then ON the main power.
2. Check the connection between the BiCU and the controller.
3. Replace the BiCU.

SC240-00

Error Name

LD Error

Type

D

Symptoms

- During light emission, the LD current exceeds the prescribed current.
- The LD driver cannot be initialized.
- The LDB harness is defective.

This SC is detected when the machine starts up, or when it is printing.

Possible Causes

- The LDB harness is loose.
- The LD has deteriorated (LD is damaged, or the current-to-output optical power characteristic is not good).
- The LDB is malfunctioning (the LD driver is defective).
- The LDB harness is loose (disconnected).

Troubleshooting Procedures

1. Turn OFF then ON the main power.
2. Check SP2-110-001.
 - If the value is "0", perform Step 4.
 - If the value is "1", perform Step 3.
 - If the value is between "2" and "FF", perform Step 4.
3. Check the harness between the LDB and the BiCU. Replace it if needed.
4. Replace the Laser unit.

SC270-00

Error Name

Laser ASIC Communication Error

Type

D

Symptoms

There is a communication error between the CPU and the laser ASIC.

This SC is detected when the main power is turned ON, when the machine recovers from Energy Save, or during printing.

Possible Causes

- The connection between the BiCU and the LDB is loose.
- The BiCU is malfunctioning (the laser ASIC is defective, or the I/F between the CPU and the laser ASIC is defective).

Troubleshooting Procedures

1. Turn OFF then ON the main power.
2. Check the connection between the BiCU and the LDB.
3. Replace the BiCU.

SC272-01

Error Name

LD Driver Communication Error

Type

D

Symptoms

There is a communication error between the CPU and the LD driver.

This SC is detected when the main power is turned ON, when the machine recovers from Energy Save, or during printing.

Possible Causes

- The LDB is malfunctioning (LD driver is defective).
- The BiCU is malfunctioning (the I/F between the CPU and the LD driver is defective).
- The LDB harness is defective.

Troubleshooting Procedures

1. Turn OFF then ON the main power.
2. Check the harness between the LDB and BiCU. Replace it if needed.
3. Replace the Laser unit.
4. Replace the BiCU.
5. Replace the harness between the LDB and the BiCU.

SC272-10

Error Name

LD Driver Communication Error: Others

Type

D

Symptoms

The power source of the LD board is wrong.

This SC is detected when the main power is turned ON, the machine recovers from Energy Save, or when covers are closed.

Possible Causes

- The BiCU is malfunctioning (LD5V power source is wrong).
- The LDB is malfunctioning (LD driver is defective).
- The LDB harness is defective.
- The interlock switch is defective.

Troubleshooting Procedures

1. Turn OFF then ON the main power.
2. Check the harness between the LDB and BiCU. Replace it if needed.
3. Replace the BiCU.

4. Replace the Laser unit.
5. Replace the harness between the LDB and the BiCU.
6. Replace the interlock switch.

SC3xx

SC302-00

Error Name

HVPS: Charge Roller Error

Type

D

Symptoms

When a PWM signal is being outputted, the machine checks for incorrect signals once every 20ms, and "L" (an incorrect signal) was detected for ten consecutive times.

Possible Causes

- Hardware-related causes:
 - The HVPS output connector is loose.
 - The connector on the BiCU board is loose.
 - The HVPS charge roller harness has short-circuited.
 - There is not sufficient creeping distance or spatial distance (arc discharge).
 - The harness on the BiCU board has short-circuited.
 - The BiCU is malfunctioning (related signal errors).
 - The HVPS is defective.
- Load-related causes:
 - There is a grounding fault when charging, or there is a short circuit with other power outputs.
 - There is not sufficient creeping distance or spatial distance in the charging output path (including the distance from other power outputs).
 - There is abnormal deterioration of the PCU or excessive current because of a pinhole.
 - There is an abnormal gap between the PCU and the charge roller (PCU is defective).
 - There is excessive current due to condensation on the PCU.
 - The PCU is not installed correctly.

Troubleshooting Procedures

Depending on the machine model, the defective part and whether it can be serviced is different. Change the order of the steps as necessary.

This SC is detected when processing a printing job. After performing the following steps, it is necessary to turn OFF then ON the main power in order to resend the job.

1. After turning OFF then ON the main power, print one sheet of paper to see if the SC recurs.
2. Install the PCU again.
3. Replace the PCU.
4. Reconnect the CN108 connector on the BiCU.
5. Reconnect the CN800 connector and T1 of the HVPS.
6. Replace the HVPS.
7. Replace the BiCU.
8. Replace that harness of the charge roller (output).

SC355-00

Error Name

ID Sensor Error

Type

C

Symptoms

When this SC is detected during normal operation, it will be logged in the SC History. The SC code will not be displayed on the operation panel.

Possible Causes

- The ID sensor is malfunctioning, or the ID sensor harness is broken.
- The ID sensor connector is loose, or the BiCU is malfunctioning.
- There are scanning errors, or the image density is not correct.
- The HVPS is defective, or the ID sensor is dirty.

Troubleshooting Procedures

- Replace the ID sensor.
- Reconnect the ID sensor connector.
- Turn OFF then ON the main power.

SC360-01

Error Name

TD Sensor Error

Type

D

Symptoms

The mu count (mu sensor) is not within the target range for three consecutive times.

Possible Causes

- The TD sensor is malfunctioning.
- The connection is loose, or the harness is broken.
- There is no developer.

Troubleshooting Procedures

1. Check all the connectors.

- Not loose or disconnected: Proceed to the other steps.
- Loose or disconnected: Reconnect the connectors.

If the SC recurs after power OFF and ON, proceed to the other steps.

2. Visually inspect the development unit to see if the gear or harness is loose, the heat protection seal is not removed, or whether it is a used PCDU.

If there is a problem with the development unit, solve the problem in the prescribed way, or replace the development unit.

If the SC recurs after power OFF and ON, proceed to the other steps.

3. Visually inspect the mu sensor to see if it is deformed, scratched, damaged, or if there is a foreign object. If there is a problem, replace the PCDU.

If the SC recurs after power OFF and ON, proceed to the next step.

4. Visually inspect the harnesses to see if they are damaged. Check the mu sensor harness, and the harness connecting the PCDU to the main machine. If there is a problem, replace the PCDU.

If the SC recurs after power OFF and ON, proceed to the next step.

5. Check if there is a problem with the BiCU.

If the problem cannot be solved after performing all the above steps, replace the BiCU.

SC361-01, SC362-01

Error Name

SC361-01: TD Sensor Upper Limit Error (Bk)

SC362-01: TD Sensor Lower Limit Error (Bk)

Type

D

Symptoms

- SC361-01

TS Sensor Output: Vt (SP2-220-004) is detected to be higher than the upper limit threshold specified in SP2-992-001, for the consecutive number of times specified in SP2-992-003.

- SC362-01

TS Sensor Output: Vt (SP2-220-004) is detected to be lower than the lower limit threshold specified in SP2-992-002, for the consecutive number of times specified in SP2-992-004.

Possible Causes

The TD sensor connector is loose.

Checking Procedure

1. After turning OFF then ON the main power, feed one sheet of paper.
2. Check the value of the TD Sensor Output: Vt (SP2-220-004).
3. For SC361-01, check if TD Sensor Output: Vt is higher than the upper limit threshold specified in SP2-992-001. If the Vt is equal or less than the upper limit threshold, it is normal. If the Vt is higher than the upper limit threshold, there is a problem.
4. For SC362-01, check if TD Sensor Output: Vt is lower than the lower limit threshold specified in SP2-992-002. If the Vt is equal or more than the lower limit threshold, it is normal. If the Vt is lower than the lower limit threshold, there is a problem.

Troubleshooting Procedures

1. Check all the connectors.

- Not loose or disconnected: Proceed to the other steps.
- Loose or disconnected: Reconnect the connectors.

If the SC recurs after power OFF and ON, proceed to the other steps.

2. Visually inspect the development unit to see if the gear is loose, the harness is damaged, or if the development unit is not set properly. If there is a problem with the development unit, solve the problem in the prescribed way, or replace the development unit.

If the SC recurs after power OFF and ON, proceed to the other steps.

3. Visually inspect the mu sensor to see if it is deformed, scratched, damaged, or if there is a foreign object. If there is a problem, replace the PCDU.

If the SC recurs after power OFF and ON, proceed to the other steps.

4. Clear the NVRAM, and check if the parameter settings are correct. For example, the mu count (SP2-803-003) should be the factory default value.

If there is a problem, replace the development unit, and then perform TD sensor calibration.

If the SP value is correct, proceed to the other steps.

5. Check the toner supply unit. (If the image density is too low, there may be a problem with supplying toner.)

- Check if the toner bottle is empty.
- Check if the toner supply motor is operating normally.
- Check if the toner supply path is clogged.

If there is a problem with the toner supply unit, solve the problem in the prescribed way.

If the SC recurs after power OFF and ON, proceed to the other steps.

6. Visually inspect the harnesses to see if they are damaged. Check the mu sensor harness, and the harness connecting the development unit to the main machine.

If there is a problem, replace the harness.

7. Check if there is a problem with the BiCU.

If the problem cannot be solved after performing all the above steps, replace the BiCU.

SC391-00

Error Name

HVPS Charge Error

Type

D

Symptoms

When a PWM signal is being outputted, the machine checks for incorrect signals once every 20ms, and "L" (an incorrect signal) was detected for ten consecutive times.

Possible Causes

- Hardware-related causes:
 - The HVPS output connector is loose.
 - The connector on the BiCU board is loose.
 - The HVPS charge roller harness has short-circuited.
 - There is not sufficient creeping distance or spatial distance (arc discharge).
 - The harness on the BiCU board has short-circuited.
 - The BiCU is malfunctioning (related signal errors).

- The HVPS is defective.
- Load-related causes:
 - There is a grounding fault when charging, or there is a short circuit with other power outputs.
 - There is not sufficient creeping distance or spatial distance in the charging output path (including the distance from other power outputs).
 - There is abnormal deterioration of the PCU, or excessive current due to a pinhole.
 - There is an abnormal gap between the PCU and the charge roller (PCU is defective).
 - There is excessive current due to condensation on the PCU.
 - The PCU is not installed correctly.

Troubleshooting Procedures

Depending on the machine model, the defective part and whether it can be serviced is different. Change the order of the steps as necessary.

This SC is detected when processing a printing job. After performing the following steps, it is necessary to turn OFF then ON the main power in order to resend the job.

1. **After turning OFF then ON the main power, print one sheet of paper to see if the SC recurs.**
2. **Install the PCU again.**
3. **Replace the PCU.**
4. **Reconnect the CN108 connector on the BiCU.**
5. **Reconnect the CN800 connector and T1 of the HVPS.**
6. **Replace the HVPS.**
7. **Replace the BiCU.**
8. **Replace the harness of the charge roller (output).**

SC392-00

Error Name

Developer Set Error

Type

D

Symptoms

A scanning error has occurred with the ID sensor pattern that is generated during initialization.

This SC is detected if the heat protection seal is not removed, or there is no developer when the Vsp output is 2.5V or more.

Possible Causes

- The heat protection seal is not removed.
- The ID sensor is defective.
- The PCDU is not rotating.
- The development roller is not rotating.

Troubleshooting Procedures

Turn OFF then ON the main power, and see if the SC recurs.

1. Check all the connectors.

- Not loose or disconnected: Proceed to the other steps.
- Loose or disconnected: Reconnect the connectors.

If the SC recurs after power OFF and ON, proceed to the next step.

2. Visually inspect the development unit to see if the gear is loose, the harness is damaged, or if the development unit is not set properly. If there is a problem with the development unit, solve the problem in the prescribed way, or replace the development unit.

If the SC recurs after power OFF and ON, proceed to the next step.

3. Visually inspect the PCDU. See if it is scratched, damaged, or if there is a foreign object. If there is a problem, replace the PCDU.

If the SC recurs after power OFF and ON, proceed to the next step.

4. Check if the ID sensor is defective. If it is defective, replace the ID sensor.

5. Visually inspect the harnesses to see if they are damaged.

Check the mu sensor harness, and the harness connecting the development unit to the main machine. If there is a problem, replace the harness.

If the SC recurs after power OFF and ON, proceed to the next step.

6. Check if there is a problem with the BiCU.

If the problem cannot be solved after performing all the above steps, replace the BiCU.

SC 4xx

SC440-00

Error Name

HVPS Transfer Output Error

Type

D

Symptoms

When a PWM signal is being outputted, the machine checks for incorrect signals once every 20ms. This SC is displayed when "L" (an incorrect signal) is detected for ten consecutive times.

Possible Causes

- Hardware-related causes:
 - The HVPS output connector is loose.
 - The connector on the BiCU is loose.
 - The HVPS harness is damaged or has short-circuited.
 - The harness on the BiCU has short-circuited.
 - The BiCU is malfunctioning.
 - The HVPS is defective.
- Load-related causes:
 - There is increased impedance of the image transfer roller (due to low temperature or dirty roller).
 - There is an open short circuit in the power feed path.
 - The image transfer unit is not installed properly.

Troubleshooting Procedures

Depending on the machine model, the defective part and whether it can be serviced is different. Change the order of the steps as necessary.

This SC is detected when processing a printing job. After performing the following steps, it is necessary to turn OFF then ON the main power in order to resend the job.

- 1. After turning OFF then ON the main power, print one sheet to see if the SC recurs.**
- 2. Install the image transfer unit again.**

Before re-installation, check if the shaft plate of the transfer roller and the HVPS are properly connected. If power is not supplied from the HVPS to the transfer roller, the voltage will rise and cause this SC.

3. Replace the transfer unit.
4. Reconnect the CN108 connector on the BiCU.
5. Reconnect the CN800 connector and T3 of the HVPS.
6. Replace the HVPS.
7. Replace the BiCU.
8. Replace the transfer output harness of the HVPS.

SC460-00

Error Name

HVPS Isolated Output Error

Type

D

Symptoms

When a PWM signal is being outputted, the machine checks for incorrect signals once every 20ms. This SC is displayed when "L" (an incorrect signal) is detected for ten consecutive times.

Possible Causes

- Hardware-related causes:
 - The HVPS output connector is loose.
 - The connector on the BiCU is loose.
 - The HVPS harness has short-circuited.
 - The harness on the BiCU has short-circuited.
 - The image transfer unit is not installed properly.
 - The BiCU is malfunctioning.
 - The HVPS is defective.
- Load-related causes:
 - There is a short circuit in the output isolation module, or a short circuit involving other power outputs.
 - There is not sufficient creeping distance or spatial distance in the isolated output path (including the distance from other power outputs).

Troubleshooting Procedures

Depending on the machine model, the defective part and whether it can be serviced is different. Change the order of the steps as necessary.

This SC is detected when processing a printing job. After performing the following steps, it is necessary to turn OFF then ON the main power in order to resend the job.

1. After turning OFF then ON the main power, print one sheet to see if the SC recurs.
2. Install the image transfer unit again.
When installing, make sure that the static charge eliminator and the junction plate spring are not bent, and that they are properly connected to the main machine's frame.
3. Replace the transfer unit.
4. Reconnect the CN108 connector on the BiCU.
5. Reconnect the CN800 connector and T4 of the HVPS.
6. Replace the HVPS.
7. Replace the BiCU.
8. Replace the transfer output harness of the HVPS.

SC497-00

6

Error Name

Internal Temperature Sensor Error

Type

C

Symptoms

This SC is detected when the internal temperature sensor output is 0.56V or less, or 3.0V or more.

Possible Causes

- The internal temperature sensor is not installed properly (connector is loose or damaged).
- The internal temperature sensor is malfunctioning.

Troubleshooting Procedures

1. Turn OFF then ON the main power, and see if the SC recurs.
2. Check the connectors of the internal temperature sensor and the BiCU (check for loose connections).
3. Replace the internal temperature sensor.

SC498-00

Error Name

Temperature/Humidity Sensor Error

Type

C

Symptoms

This SC is detected when:

- the temperature sensor output is 0.76V or less, or 2.90V or more.
- the humidity sensor output is 2.4V or more.

Possible Causes

- The sensor is loose or damaged.
- The sensor is defective.

Troubleshooting Procedures

1. Turn OFF then ON the main power, and see if the SC recurs.
2. Check the connectors of the sensor and the BiCU (check for loose connections).
3. Replace the temperature/humidity sensor.

SC5xx

SC502-01

Error Name

2nd Paper Tray Lift Error

Type

B

Symptoms

- Upper Limit Detection Error (during normal tray lift)
During tray initialization, the tray bottom plate was lifted, but the upper limit cannot be detected within 10000ms.
- Upper Limit Detection Error (during paper feed)
During tray initialization, the tray bottom plate was lifted, but the upper limit cannot be detected within 3000ms.

This error occurs when the upper limit cannot be detected for three consecutive times. If the upper limit cannot be detected for two consecutive times, "Reset tray" is displayed.

Possible Causes

- The lift motor is malfunctioning, or the connector is loose or damaged.
- The upper limit sensor is malfunctioning, or the connector is loose or damaged.
- The harnesses are damaged.
- The PCB is malfunctioning.
- There is foreign matter such as paper scraps caught between the paper feed tray and the tray lift motor.
- The limit sensor feelers are damaged.
- The paper is not set properly.
- The bottom plate is damaged.
- The paper feed rollers are missing.
- The lift up arm is damaged.

Troubleshooting Procedures

Turn OFF then ON the main power.

If the SC occurs again, check the following. After each step, turn OFF then ON the main power, and see if the SC recurs.

1. Remove the paper tray. Check for foreign matter inside and around the paper tray.

2. Reconnect the limit sensor connector (check for loose connections).
3. Check the limit sensor feelers, paper feed rollers, and lift up arm (including the tension spring). If they are defective, replace them.
4. Check the lift motor. If it is defective, replace it.
5. Check the harnesses. If they are defective, replace them.
6. Check the paper tray PCB. If it is defective, replace it.

SC502-02

Error Name

2nd Paper Tray Descent Error

Type

B

Symptoms

- Descent Detection Error (during tray descent)

When there is no paper, the tray bottom plate descends, but the upper limit sensor does not turn OFF even though 1000ms have elapsed.

- Overload Sensor Error (during tray descent)

If paper end and upper limit is detected at power ON or tray installation, the upper limit sensor will not turn OFF even though 1000ms have elapsed.

This SC occurs when the error recurs for five consecutive times. If the error recurs for four consecutive times, "Reset tray" is displayed.

Possible Causes

- The tray is overloaded.
- The lift motor is malfunctioning, or the connector is loose or damaged.
- The upper limit sensor is malfunctioning, or the connector is loose or damaged.
- The harnesses are damaged.
- The PCB is malfunctioning.
- There is foreign matter such as paper scraps caught between the paper feed tray and the tray lift motor.
- The limit sensor feelers are damaged.
- The paper is not set properly.
- The bottom plate is damaged.
- The paper feed rollers are missing.

- The lift up arm is damaged.

Troubleshooting Procedures

Turn OFF then ON the main power.

If the SC occurs again, check the following. After each step, turn OFF then ON the main power, and see if the SC recurs.

1. **Remove the paper tray. Check for foreign matter inside and around the paper tray.**
2. **Reconnect the limit sensor connector (check for loose connections).**
3. **Check the limit sensor feelers, paper feed rollers, and lift up arm (including the tension spring). If they are defective, replace them.**
4. **Check the lift motor. If it is defective, replace it.**
5. **Check the harnesses. If they are defective, replace them.**
6. **Check the paper tray PCB. If it is defective, replace it.**

SC520-00

Error Name

Main Motor Error

Type

D

Symptoms

The machine detects a lock signal from the drive motor.

Possible Causes

The motor lock sensor remains High for more than 2 secs when the motor is ON.

Troubleshooting Procedures

Turn OFF then ON the main power. Execute an output check (SP5-804-001). If the SC recurs, perform the following steps.

Depending on the machine model, the defective part and whether it can be serviced is different. Change the order of the steps as necessary.

1. **Check the motor-driven units (PCDU, fusing, paper feed, bypass, duplex, paper exit, registration).**
 - Removable units (fusing, PCDU, paper feed):
Remove the unit and check for external damage or wear. Rotate the feed rollers by hand and check if there is abnormal load, movement or noise. Depending on the machine type, replace the unit or the part.
 - Non-removable units:

As far as possible, visually inspect for external damage or wear. If there are movable parts, move them by hand and check if there is abnormal load, movement or noise. Depending on the machine type, replace the unit or the part.

2. Reconnect the connectors (check for loose connections).

3. Check the gear, motor and timing belt inside the motor unit.

When moving the parts by hand, move them in the same direction as in normal operation.

- If there is no visible damage, move them by hand and check if there is abnormal load, movement or noise. Depending on the machine type, replace the unit or the part.
- If there is visible damage, replace either the unit or the part depending on the machine type.

4. Check the main motor.

When moving the parts by hand, move them in the same direction as in normal operation.

- If there is no visible damage, move the rotor by hand and check if there is abnormal load, movement or noise. If there is a problem, replace the main motor and check if the SC recurs.
- If there is visible damage, replace the main motor and check if the SC recurs.

5. Check the BiCU. If the BiCU is defective, replace it.

6. Perform conduction tests on the harness between the following pins on the BiCU.

- Pin 10 of the motor connector and pin CN103-1
- Pin 9 of the motor connector and pin CN103-2
- Pin 8 of the motor connector and pin CN103-3
- Pin 7 of the motor connector and pin CN103-4
- Pin 4 of the motor connector and pin CN103-7
- Pin 3 of the motor connector and pin CN103-8
- Pin 2 of the motor connector and pin CN103-9
- Pin 1 of the motor connector and pin CN103-10

SC521-00

Error Name

2nd Tray Paper Feed Motor Error

Type

B

Symptoms

- Encoder Error
There is no A-phase/B-phase signal.
- Encoder Phase Pulse Over Error
The difference between the A-phase and the B-phase is larger than the specified pulse count.
- Rotary Hold Time Over Error (Overload)
There was no A-phase/B-phase signal within the specified period of time.

Possible Causes

- The 2nd tray paper feed motor is defective.
- The harness is damaged.
- The connector is loose.
- The PCB is defective.

Troubleshooting Procedures

Turn OFF then ON the main power.

If the SC occurs again, check the following. After each step, turn OFF then ON the main power, and see if the SC recurs.

1. Check the connector of the 2nd tray paper feed motor. If it is loose, reconnect it.
2. Check the gears, paper feed rollers, and lift up arm (including the tension spring). If they are defective, replace them.
3. Check the harness. If it is defective, replace it.
4. Check the 2nd tray paper feed motor. If it is defective, replace it.
5. Check the paper tray PCB. If it is defective, replace it.

SC534-00

Error Name

Main Machine Exhaust Fan Error

Type

D

Symptoms

When the exhaust fan motor is ON, the machine checks for a lock signal once every 100ms. This SC is displayed when a lock signal cannot be detected for 50 consecutive times.

Possible Causes

- The exhaust fan motor is malfunctioning.

- The connector is loose.
- The harness is damaged.
- The BiCU is defective.

Troubleshooting Procedures

1. **Turn OFF then ON the main power. Execute an output check (SP5-804-027).**
If the SC recurs, perform all the steps below. If the SC does not recur, perform only Step 3.
After each step, turn OFF then ON the main power, and see if the SC recurs.
2. **Check the connector between the fan and the harness. If the connection is loose, reconnect the connector.**
3. **Check the connector between the PCB and the harness. If the connection is loose, reconnect the connector.**
4. **Check the fan to see if there is any foreign object that is obstructing rotation. If so, remove the foreign object.**
5. **Replace the fan.**
6. **Check the harness. If it is defective, remove the harness. (If you have difficulty replacing the harness at this point, start from Step 6.)**
7. **Check the BiCU. If it is defective, replace it.**

SC534-01

Error Name

Main Machine Air Intake Fan Error

Type

D

Symptoms

When the air intake fan motor is ON, the machine checks for a lock signal once every 100ms. This SC is displayed when a lock signal cannot be detected for 50 consecutive times.

Possible Causes

- The air intake fan motor is malfunctioning.
- The connector is loose.
- The harness is damaged.
- The BiCU is defective.

Troubleshooting Procedures

1. **Turn OFF then ON the main power. Execute an output check (SP5-804-008).**
If the SC recurs, perform all the steps below. If the SC does not recur, perform only Step 3.
After each step, turn OFF then ON the main power, and see if the SC recurs.
2. **Check the connector between the fan and the harness. If the connection is loose, reconnect the connector.**
3. **Check the connector between the PCB and the harness. If the connection is loose, reconnect the connector.**
4. **Check the fan to see if there is any foreign object that is obstructing rotation. If so, remove the foreign object.**
5. **Replace the fan.**
6. **Check the harness. If it is defective, remove the harness. (If you have difficulty replacing the harness at this point, start from Step 6.)**
7. **Check the BiCU. If it is defective, replace it.**

SC541-00, 02

6

Error Name

SC541-00: Fusing Thermistor (Center) Connection Error

SC541-02: Fusing Thermistor (Center) Connection Error (Low power)

Type

SC541-00: A

SC541-02: D(C)

Symptoms

The fusing thermistor (center) detected that the temperature remained below 0°C for 8 secs when the fusing lamp is activated at power ON/ recovery from Energy Save/ rotation after reload/ before or during or after paper feed/ standby/ energy save/ low power mode.

Possible Causes

- The thermistor is damaged.
- The connector is loose.

Troubleshooting Procedures

1. **Reconnect the connector (inside the fusing unit and the main machine).**
2. **Replace the thermistor.**
3. **Replace the fusing unit.**

4. Replace the BiCU.

SC542-01, -03, -04, -06

Error Name

SC542-01, -03: Fusing Thermistor (Center) Reload Error

SC542-04, -06: Fusing Thermistor (Center) Reload Error (Low power)

Type

SC542-01, -03: A

SC542-04, -06: D(C)

Symptoms

- SC542-01

The fusing thermistor (center) detected that the temperature remained below 22°C for a period of 3 secs for 5 consecutive times when the fusing unit motor is not rotating and the fusing lamp is activated, at power ON or recovery from Energy Save.

Measurement of the temperature gradient starts 2 secs after the fusing lamp is activated when the temperature is 45°C or higher. If the temperature is lower than 45°C, measurement starts 2 secs after the temperature exceeds 45°C. Temperature gradient detection is cancelled if the thermistor reaches the reload temperature during measurement.

- SC542-02

The fusing thermistor (center) cannot detect the reload temperature for a period of 36 secs when the fusing lamp is activated at power ON or recovery from Energy Save.

Possible Causes

- The thermistor is dirty.
- The thermistor is deformed or loose.
- An input voltage other than that guaranteed is used.
- The overheat prevention device is activated.

Troubleshooting Procedures

1. Check the voltage. Reconnect the power plug.
2. Replace the thermistor.
3. Replace the fusing lamp.
4. Replace the BiCU.

SC543-00, SC544-00

Error Name

SC543-00: Fusing Thermistor (Center) High Temperature Error (Software)

SC544-00: Fusing Thermistor (Center) High Temperature Error (Hardware)

Type

A

Symptoms

- SC543-00

The fusing thermistor (center) detected a temperature of over 230°C for 1 sec for 10 times or more, when the relay is activated at power ON/ recovery from Energy Save/ rotation after reload/ before or during or after paper feed/ standby/ energy save/ low power mode.

- SC544-00

The fusing thermistor (center) detected a temperature of over 240°C when the relay is activated.

Possible Causes

- The triac has short-circuited.
- The BiCU is defective.

Troubleshooting Procedures

1. Reconnect the connectors (main machine, BiCU).
2. Replace the thermistor.
3. Replace the harness inside the main machine.
4. Replace the BiCU.

If the problem cannot be solved after performing the above steps, replace the fusing unit.

SC545-00, -04

Error Name

SC545-00: Fusing Lamp Consecutive Full Power Error

SC545-04: Fusing Lamp Consecutive Full Power Error (Low power)

Type

SC545-00: A

SC545-04: D(C)

Symptoms

When the machine is in standby/energy save/low power mode, the fusing lamp remained lit for 30 secs or more after it was activated and the fusing drive has stopped.

Possible Causes

- The thermistor is deformed or loose.
- The fusing lamp is damaged.
- The overheat prevention device is activated.

Troubleshooting Procedures

1. Check if there are paper scraps in the fusing unit.
2. Check the voltage. Reconnect the power plug,
3. Replace the fusing lamp.
4. Replace the thermistor.
5. Replace the BiCU.

SC547-01, -02, -03

Error Name

SC547-01: Zero Cross Error (Relay Contact Welding)

SC547-02: Zero Cross Error (Relay Contact Failure)

SC547-03: Zero Cross Error (Low Frequency Error)

Type

D

Symptoms

- SC547-01

A zero cross signal is detected when the relay is turned OFF.

This SC is detected before the fusing relay is activated (when the main power is turned ON, when the machine recovers from Engine Off mode, or when the interlock switch is turned from OFF to ON).

- SC547-02

A zero cross signal cannot be detected when the relay is turned ON.

This SC is detected immediately after the fusing relay is activated (when the main power is turned ON, when the machine recovers from Engine Off mode, or when the interlock switch is turned from OFF to ON).

- SC547-03

The frequency of the power source is less than 44Hz.

This SC is detected immediately after the fusing relay is activated, or when the main power is turned ON.

Possible Causes

- SC547-01
 - The fusing relay is damaged (there is contact welding).
 - There is a fault in the fusing relay circuit.
- SC547-02
 - The fusing relay is damaged (open circuit).
 - There is a fault in the fusing relay circuit.
 - The PSU fuse (24VS) is worn out.
- SC547-03

The frequency of the power source is unstable.

Troubleshooting Procedures

SC547-01, SC547-02

1. Check the connection between the PSU and BiCU (check for any loose connections or damage).
2. Replace the PSU.
3. Replace the BiCU.
4. Replace the connector between the PSU and the BiCU (SC547-02).

SC547-03

1. Ensure that the frequency of the power source is 45Hz or more. If the frequency is less than 44Hz, there may be a problem with the infrastructure. Ask the customer's network administrator or facilities manager for assistance.
2. Replace the PSU.

SC549-00

Error Name

Fusing Center Low Temperature Error

Type

D

Symptoms

When 40 secs have elapsed after registration restarted, the fusing thermistor (center) detected a compensated target temperature of -75°C for 30 secs.

Possible Causes

- The fusing lamp is disconnected during paper transfer.
- The connection is loose.

Troubleshooting Procedures

1. Check the power plug.
2. Replace the fusing lamp.
3. Replace the fusing thermistor (center).
4. Replace the BiCU.
5. Replace the AC board.

SC551-00, -02

Error Name

SC551-00: Fusing Thermistor (End) Disconnection Error

SC551-02: Fusing Thermistor (End) Disconnection Error (Low power)

Type

SC551-00: A

SC551-02:D (C)

Symptoms

The fusing thermistor (end) detected a temperature of 0°C or less for 8 secs when the fusing lamp is activated at power ON/ recovery from Energy Save/ rotation after reload/ before or during or after paper feed/ standby/ energy save/ low power mode.

Possible Causes

- The thermistor is disconnected.
- The connection is loose.

Troubleshooting Procedures

1. Reconnect the connectors (inside the fusing unit and the main machine).
2. Replace the fusing thermistor (end).
3. Replace the fusing unit.
4. Replace the BiCU.

SC552-01, -03, -04, 06

Error Name

SC552-01, -03: Fusing Thermistor (End) Reload Error

SC552-04, -06: Fusing Thermistor (End) Reload Error (Low power)

Type

SC552-01, -03: A

SC552-04, -06: D (C)

Symptoms

- SC552-01

The rise in temperature of the fusing thermistor (end) within 10 secs was 4°C or less. This was detected for 5 consecutive times when the fusing unit motor is not rotating and Fusing Lamp 2 is activated, at power ON or recovery from Energy Save.

Measurement of the temperature gradient starts 2 secs after the fusing lamp is activated (delay shift between heaters). If the temperature is lower than 45°C, measurement starts 2 secs after the temperature exceeds 45°C. Temperature gradient detection is cancelled if the thermistor reaches the reload temperature during measurement.

- SC552-03

The fusing thermistor (end) cannot detect the reload temperature for a period of 50 secs when Fusing Lamp 2 is activated at power ON or recovery from Energy Save.

Possible Causes

- The thermistor is dirty.
- The thermistor is deformed or loose.
- An input voltage other than that guaranteed is used.
- The overheat prevention device is activated.

Troubleshooting Procedure

1. Check the voltage.
2. Change the power plug.
3. Replace the thermistor.
4. Replace the BiCU.

SC553-00, SC554-00

Error Name

SC553-00: Fusing Thermistor (End) High Temperature Error (Software)

SC554-00: Fusing Thermistor (End) High Temperature Error (Hardware)

Type

A

Symptoms

- SC553-00

The fusing thermistor (end) detected a temperature of over 230°C for 1 sec for 10 times or more, when the relay is activated at power ON/ recovery from Energy Save/ rotation after reload/ before or during or after paper feed/ standby/ energy save/ low power mode.

- SC554-00

The fusing thermistor (end) detected a temperature of over 240°C when the relay is activated.

Possible Causes

- The triac has short-circuited.
- The BiCU is defective.

Troubleshooting Procedures

6

1. Reconnect the connectors (main machine, BiCU).
2. Replace the thermistor.
3. Replace the fusing thermistor harness inside the main machine.
4. Replace the BiCU.

If the problem cannot be solved after performing the above steps, replace the fusing unit.

SC557-00

Error Name

Zero Cross Frequency Over Error

Type

C

Symptoms

The frequency of the power source is 66Hz or more.

This SC is detected immediately after the relay is activated when the main power is turned ON.

Possible Causes

The frequency of the power source is unstable, or there is noise.

Troubleshooting Procedures

Nil

SC559-00

Error Name

Consecutive (3 Times) Fusing Jam Error

Type

A

Symptoms

A fusing jam is detected for three consecutive times.

Possible Causes

Paper is jammed in the fusing unit.

Troubleshooting Procedures

1. Replace the separation plate.
2. Replace the fusing unit.
3. Replace the fusing drive gear (main machine).

SC6xx (Including Controller Service Calls)

SC622-00

Error Name

Paper Tray Communication Error

Type

D

Symptoms

This SC is detected when:

- there is a problem with the cable connection.
- there is a communication error notice from the paper tray.

Possible Causes

- The controller board of the paper tray is defective.
- The BICU is defective.
- The paper tray and the main machine are not properly connected.

Troubleshooting Procedures

- Replace the controller board of the paper tray.
- Replace the BICU.
- Replace or reconnect the cable between the paper tray and the main machine.

SC632-00, SC633-00, SC634-00, SC635-00

Error Name

SC632-00: Counter Device Error 1

SC633-00: Counter Device Error 2

SC634-00: Counter Device Error 3

SC635-00: Counter Device Error 4

Type

B/D

Symptoms

- SC632-00

After three attempts to send a data frame to the optional counter device via the serial communication line, no ACK signal was received within 100 ms.

- SC633-00

After communication was established, the controller received a brake signal.

- SC634-00

The counter device sent a backup RAM error.

- SC635-00

The counter device sent a backup RAM error or a backup battery error.

Possible Causes

- SC632-00, SC633-00

The serial line between the counter device, the relay board and copier control board is disconnected or damaged.

- SC634-00, SC635-00

The counter device control board or the backup battery of the counter device is defective.

Troubleshooting Procedures

Nil

SC636-01

Error Name

IC Card Error

Type

D

Symptoms

This SC is detected when authentication using an external device is set to "ON", but:

- the authentication module is not installed.
- the SD card containing the authentication module is damaged, or the authentication module file is damaged.
- the DESS module is not installed.

Possible Causes

- The DESS module cannot be detected (machine models for which the DESS module is optional).
- The expanded authentication module cannot be detected.
- The SD card is damaged, or the expanded authentication module file is damaged.

Troubleshooting Procedures

Do one of the following:

- Use a valid SD card or a valid expanded authentication module file.
- Install a system/copy firmware that includes the latest DESS module.
- Make the following settings in the SP mode. Turn OFF then ON the main power.
 - Set SP5-401-160 to "0".
 - Set SP5-401-161 to "0".
- Replace the NVRAM.

SC636-02

Error Name

IC Card Error

Type

D

Symptoms

This SC is detected when the version of the expanded authentication module is wrong.

Possible Causes

The version of the expanded authentication module is not correct.

Troubleshooting Procedures

Install the correct version.

SC637-01, -02

Error Name

SC637-01: Tracking Information Notification Error

SC637-02: Tracking Information Notification Error (Management Server Error)

Type

D

Symptoms

This SC is detected when tracking information was lost.

Possible Causes

- SC637-01
 - The tracking SDK application is defective.

- There is an internal communication error.
- SC637-02
 - There is a network error.
 - There is a management server error.
 - The tracking SDK application is defective.

Troubleshooting Procedures

Turn OFF then ON the main power.

SC641-00

Error Name

Engine to Controller Communication Error (No Response)

Type

D

Symptoms

The controller sent a data frame by RAPI protocol, but there was no response after trying 3 times, once every 100ms.

Possible Causes

- The controller board or software is defective.
- The engine board or software is defective.
- The controller board and the engine board are not connected properly.

Troubleshooting Procedures

- Check the connection between the controller board and engine board.
- Turn OFF then ON the main power.

SC650-01, -04, -05, -13

Error Name

SC650-01: Remote Service Modem Communication Error (Dialup authentication failure)

SC650-04: Remote Service Modem Communication Error (Dialup Failure Because of Incorrect Modem Configuration)

SC650-05: Remote Service Modem Communication Error (Insufficient Power or Connection Fault)

SC650-13: Remote Service Modem Communication Error (RC Gate Type M was installed but there is no modem)

Type

C

Symptoms

An error related to communication using RC Gate Type M (such as dialup connection or modem board) was detected, or a problem that prevents RC Gate from operating was detected at power ON.

This SC is detected only when an error occurs during RC Gate operation.

An SC is not detected if an error occurred during RC Gate installation (because it can be referenced using SP).

The machine checks for SC650-13 during operation.

Possible Causes

- The SP settings are invalid.
- The modem line is disconnected.
- The modem board is disconnected.
- The wireless LAN card is not installed.

Troubleshooting Procedures

- SC650-01
Check SP5-816-156 and SP5-816-157.
- SC650-04
Check if SP5-816-160: AT Command is valid. If it is valid, then there is a bug in the software.
- SC650-05
Nothing can be done because the line is not supported.
- SC650-13
 - If the modem board is not installed, install it.
 - Check if the settings for the modem driver (SP5-816-160, SP5-816-165 to 171, SP5-816-188 to SP5-816-189) are valid.
 - If the problem cannot be solved after performing the two steps above, replace the modem board.

SC650-14

Error Name

Remote Service Modem Communication Error (RC Gate Type N was installed but modem is present, or wired/wireless LAN is not working)

Type

C

Symptoms

An error related to communication using RC Gate Type M was detected, or a problem that prevents RC Gate from operating was detected at power ON.

This SC is detected only when an error occurs during RC Gate operation.

An SC is not detected if an error occurred during RC Gate installation (because it can be referenced using SP).

Possible Causes

- The SP settings are invalid.
- The modem line is connected.
- The modem board is installed.
- The wireless LAN card is not installed.

Troubleshooting Procedures

- If the modem board is installed, remove the modem board.
- Check if the wired/wireless LAN is working.

6

SC651-01, -02**Error Name**

SC651-01: Invalid Remote Service Dial-up (Chat Program Parameter Error)

SC651-02: Invalid Remote Service Dial-up (Chat Program Execution Error)

Type

C

Symptoms

An unexpected error occurred when RC Gate Type M dialed up the NRS Center.

Possible Causes

There is a bug in the software.

Troubleshooting Procedures

Nil

SC652-00

Error Name

Remote Service ID2 Mismatch Error

Type

A

Symptoms

ID2 on the machine-specific certificate and ID2 on the NVRAM do not match.

Possible Causes

- The controller board has been used for another machine.
- The NVRAM has been used for another machine (this is not allowed).

ID2 of the machine-specific certificate is stored in the flash ROM of the controller board, and ID2 for RC Gate is stored in the NVRAM. Normally, both IDs should match. However, a mismatch may occur when the controller board is replaced. Because the machine cannot resolve the mismatch by itself, CE action is necessary.

Troubleshooting Procedures

- If the SC was detected during RC Gate installation:
Check the machine serial number. Check if the certificate matches the NVRAM. Write the same certificate for both, and then start RC Gate installation again.
- If the SC was detected after RC-Gate installation:
Uninstall RC Gate. Check the machine serial number. Check if the certificate matches the NVRAM. Write the same certificate for both, and then reinstall RC Gate.

SC653-00

Error Name

Invalid Remote Service ID2

Type

A

Symptoms

- The number of characters is not 17.
- The ID includes a character that cannot be printed.
- The ID is all spaces.
- The ID is NULL.

Possible Causes

Replace the NVRAM.

Troubleshooting Procedures

Uninstall RC Gate. Write the same certificate for both, and then reinstall RC Gate.

SC669-01 to -26, -36, -37

Error Name

SC669-01: EEPROM OPEN: ID Error
SC669-02: EEPROM OPEN: Channel Error
SC669-03: EEPROM OPEN: Device Error
SC669-04: EEPROM OPEN: Communication Abort Error
SC669-05: EEPROM OPEN: Communication Timeout Error
SC669-06: EEPROM OPEN: Operation Stopped Error
SC669-07: EEPROM OPEN: Buffer Full Error
SC669-08: EEPROM OPEN: No Error Code
SC669-09: EEPROM CLOSE: ID Error
SC669-10: EEPROM CLOSE: No Error Code
SC669-11: EEPROM Data Write: ID Error
SC669-12: EEPROM Data Write: Channel Error
SC669-13: EEPROM Data Write: Device Error
SC669-14: EEPROM Data Write: Communication Abort Error
SC669-15: EEPROM Data Write: Communication Timeout Error
SC669-16: EEPROM Data Write: Operation Stopped Error
SC669-17: EEPROM Data Write: Buffer Full Error
SC669-18: EEPROM Data Write: No Error Code
SC669-19: EEPROM Data Read: ID Error
SC669-20: EEPROM Data Read: Channel Error
SC669-21: EEPROM Data Read: Device Error
SC669-22: EEPROM Data Read: Communication Abort Error
SC669-23: EEPROM Data Read: Communication Timeout Error
SC669-24: EEPROM Data Read: Operation Stopped Error
SC669-25: EEPROM Data Read: Buffer Full Error
SC669-26: EEPROM Data Read: No Error Code

SC669-36: SRAM Data Written to EEPROM: Verification Error

SC669-37: EEPROM Failure Detection

Type

D

Symptoms

- SC669-01, -07, -08, -09, -10, -11, -17, -18, -19, -25, -26

An error occurred during EEPROM communication, but recovery failed after retrying three times.

- SC669-02, -12, -20

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when there is:

- arbitration loss (AL=1)
- path error (BER=1)
- ACT error

- SC669-03, -13, -21

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when there is no ACK after sending the slave address (FBT=1 & RACK=1).

- SC669-04, -14, -22

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when:

- there is no ACK after sending the slave address with the master set to write and RACK for the register of SSR/IBSR set to 1.
- stop conditions cannot be detected (SPC=1).

- SC669-05, -15, -23

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when there was a time-out pending interruption (start conditions are not issued).

- SC669-06, -16, -24

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when:

- there is an overrun error (ORE=1).
- there are other errors defined by the software designer.
- SC669-36

An error occurred during EEPROM communication, but recovery failed after two retries.

An invalid value is detected when reading from the EEPROM data at power ON or recovery from Energy Save.
- SC669-37

An error occurred during EEPROM communication, but recovery failed after one retry.

An error is detected in the EEPROM at power ON or recovery from Energy Save.

Possible Causes

- There is noise.
- The EEPROM is defective.

Troubleshooting Procedures

1. Turn OFF then ON the main power.
2. Replace the EEPROM on the BICU.
3. Replace the BiCU.

SC670-01, -02

Error Name

SC670-01: Engine Start Up Error

SC670-02: Engine Down at Start Up (No SC Reboot)

Type

D

Symptoms

- SC670-01
 - A /ENGRDY signal was not asserted at power ON or recovery from Energy Save.
 - There is no response from the EC/PC/SC command within 70 secs after the main power was turned ON.
 - Writing onto the Rapi driver failed (the other party could not be found through PCI).
- SC670-02

After a /ENGRDY signal is asserted, there is an unexpected engine down.

Possible Causes

- SC670-01

The engine board failed to start up.

- SC670-02

The engine board was reset at an unexpected time.

Troubleshooting Procedures

1. Check if new firmware is available for the engine and controller boards. (SC670-02 only)

- If there is new firmware, update the boards.
- If there is no new firmware, proceed to the next step.

2. Reconnect the engine board and the controller board.

If the SC does not recur, no further action is necessary. If the SC recurs, proceed to the next step.

3. Replace the boards in the following order.

- Engine board
- Controller board, or the board between the controller and the engine
- PSU

SC672-10 to -13, -99

Error Name

Controller Start Up Error

Type

D

Symptoms

The SC is detected when:

- the communication line between the controller and the operation panel cannot be established after power ON, or communication with the controller was cut off even though startup was successful.
- no attention code (FDH) or attention acknowledgement code (FEH) was sent from the controller within 30 secs after the power of the operation panel was turned ON or was reset.
- the operation panel sends a command to the controller once every 30 secs to check the communication line, and there was no reply from the controller for two consecutive times.

Because this SC is detected by the operation panel, it will not be logged or reported.

Possible Causes

- The controller freezes.
- The controller board is not installed correctly.

- The controller board is malfunctioning.
- The harness of the operation panel is disconnected, or the connection is loose.
- The controller's response is slow.

Troubleshooting Procedures

- Turn OFF then ON the main power.
- Check if the operation panel harness is properly connected.
- Check if the controller board is installed correctly,
- Replace the controller board.

SC673-10

Error Name

Operation Panel Flair Communication Error (Smart Operation Panel)

Type

D

Symptoms

This SC is detected when:

- The Smart Operation Panel is communicating with the main machine (this is called "flair communication"), and there was no response from the main machine.
- SP5-748-201 for Smart Operation Panel is not enabled.

Possible Causes

This SC is detected when the CATS module (controller) cannot respond to the notification from the monitoring service module (operation panel).

Troubleshooting Procedures

- Turn OFF then ON the main power.
- If SP5748-201 is set to "0" (Not connect), change the value to "1" (Connect).

SC681-01, -06, -11, -16, -21, -26, -31, -36

Error Name

SC681-01: Invalid Device ID

SC681-06: Channel Error

SC681-11: Device Error

SC681-16: Communication Abort Error

SC681-21: Communication Timeout Error

SC681-26: Operation Stopped Error

SC681-31: Buffer Full Error

SC681-36: Verification Error

Type

D

Symptoms

- SC681-01

An error occurred during EEPROM communication, but recovery failed after retrying three times.

- SC681-06

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when there is:

- arbitration loss (AL=1)
- path error (BER=1)
- ACT error

- SC681-11

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when there is no ACK after sending the slave address (FBT=1 & RACK=1)

- SC681-16

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when:

- there is no ACK after sending the slave address with the master set to write and RACK for the register of SSR/IBSR set to 1.
- stop conditions cannot be detected (SPC=1)

- SC681-21

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when there was a time-out pending interruption (start conditions are not issued).

- SC681-26

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when:

- there is an overrun error (ORE=1).
 - there are other errors defined by the software designer.
- SC681-31
- Unknown
- SC681-36

An error occurred during EEPROM communication, but recovery failed after two retries.

Possible Causes

- There is noise.
- The connection is loose.
- There is mis-operation (SC681-01, -06, -21, -26, -31).

Troubleshooting Procedures

- Turn the main power OFF. See if the SC recurs.
- Replace the BiCU.

SC682-01, -06, -11, -16, -21, -26, -31, -36

Error Name

SC682-01: TD Sensor Communication Error: Invalid Device ID

SC682-06: TD Sensor Communication Error: Channel Error

SC682-11: TD Sensor Communication Error: Device Error

SC682-16: TD Sensor Communication Error: Communication Abort Error

SC682-21: TD Sensor Communication Error: Communication Timeout Error

SC682-26: TD Sensor Communication Error: Operation Stopped Error

SC682-31: TD Sensor Communication Error: Buffer Full Error

SC682-36: TD Sensor Communication Error: Verification Error

Type

D

Symptoms

- SC682-01

An error occurred during EEPROM communication, but recovery failed after retrying three times.

- SC682-06

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when there is:

- arbitration loss (AL=1)
- path error (BER=1)
- ACT error

- SC682-11

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when there is no ACK after sending the slave address (FBT=1 & RACK=1).

- SC682-16

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when:

- there is no ACK after sending the slave address with the master set to write and RACK for the register of SSR/IBSR set to 1 (RACK=1).
- stop conditions cannot be detected (SPC=1).

- SC682-21

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when there was a time-out pending interruption (start conditions are not issued).

- SC682-26

An error occurred during EEPROM communication, but recovery failed after retrying three times.

This SC is detected when:

- there is an overrun error (ORE=1).
- there are other errors defined by the software engineer.

- SC682-31

Unknown

- SC682-36

An error occurred during EEPROM communication, but recovery failed after two retries.

Possible Causes

- There is noise.

- The connection is loose.
- There is mis-operation (SC682-01, -06, -21, -26, -31).

Troubleshooting Procedures

- Turn the main power OFF. See if the SC recurs.
- Replace the BiCU.

SC687-00

Error Name

Memory Address Error

Type

D

Symptoms

After an RAPI-PES (request for preparation for image transfer) is sent, there was no RAPI-PER (preparation for image transfer completed) from the controller within the specified period of time (120 secs).

Possible Causes

- There is noise.
- The controller board is malfunctioning.

Troubleshooting Procedures

- Turn OFF then ON the main power.
- Replace the controller board.
- Check if new firmware is available for the engine and controller boards.
 - If there is new firmware, update the boards. Turn OFF then ON the main power, and see if the SC recurs.
 - If there is no new firmware, proceed to the next step.
- Check the mode when the SC occurred.
 - Printer or Fax (Receiving) modes: Replace the controller board.
 - Copier mode: Check the connections of the scanner-related paths (from the ARDF to the BiCU).

SC7xx

Nil

SC8xx

SC816-00 to -96, -99

Error Name

- SC816-00: Energy Save I/O Subsystem Failure Detection
- SC816-01: Energy Save I/O Subsystem Error
- SC816-02, -07, -10, -11, -12: Energy Save I/O Subsystem Error: sysarch (LPUX_GET_PORT_INFO) Error
- SC816-03: Energy Save I/O Subsystem Error: STR Transition Failure
- SC816-04: Energy Save I/O Subsystem Error: Kernel Communication Driver Interruption
- SC816-05, -06: Energy Save I/O Subsystem Error: Preparation for STR Transition Failed
- SC816-08: Energy Save I/O Subsystem Error: sysarch (LPUX_ENGINE_TIMERCTRL) Error
- SC816-09: Energy Save I/O Subsystem Error: sysarch (LPUX_RETURN_FACTOR_STR) Error
- SC816-13, -15 to -18, -20: Energy Save I/O Subsystem Error: Open () Error
- SC816-14: Energy Save I/O Subsystem Error: Memory Address Error
- SC816-19: Energy Save I/O Subsystem Error: Double Open () Error
- SC816-22: Energy Save I/O Subsystem Error: Parameter Error
- SC816-23, -24, -35: Energy Save I/O Subsystem Error: Read () Error
- SC816-25: Energy Save I/O Subsystem Error: Write () Error
- SC816-26, -27, -28: Energy Save I/O Subsystem Error: Write () Communication Retry Error
- SC816-29, -30: Energy Save I/O Subsystem Error: Read () Communication Retry Error
- SC816-36 to -99: Energy Save I/O Subsystem Error: Subsystem Error

Type

D

Symptoms

The Energy Save I/O Subsystem has detected an error.

Possible Causes

- The Energy Save I/O Subsystem itself is malfunctioning.
- The Energy Save I/O Subsystem detects a controller board error (no response).
- An error was detected during preparation for transition to STR.

Troubleshooting Procedures

Generally, these are fatal errors.

Turn OFF then ON the main power. If the problem is not solved, there is a problem with the hardware. Replace the controller board.

SC817-00

Error Name

Monitor Error: File Detection/Digital Signature Error

Type

D

Symptoms

- The bootloader failed to read the diagnostic module, kernel, or root file system.
- The digital signature of the bootloader SD card with a diagnostic module, kernel, or root file system cannot be checked.

Possible Causes

- The diagnostic module, kernel, or root file system in the SD card does not exist or is corrupted.
- The diagnostic module, kernel, or root file system in the SD card was tampered with.

Troubleshooting Procedures

- Update the ROM of the controller system.
- Use a bootloader SD card that has a valid digital signature.

SC818-00

Error Name

Watchdog Violation Error

Type

D

Symptoms

A watchdog violation error is detected.

Possible Causes

The bus or the interruption program goes into an endless loop, causing other processes to stop.

Troubleshooting Procedures

- Turn OFF then ON the main power.
- Replace the system program.
- Replace the controller board.

- Replace the peripherals.

SC819-00 [0x5032]

Error Name

Kernel Halt: HAIC-P2 Error

Type

D

Symptoms

An error has occurred in the HAIC-P2 (the compression/decompression module in the ASIC).

Possible Causes

- If EFI controller is installed:

When HAIC-P2 compression/decompression data is sent from the EFI controller to the GW controller, a decoding error (P2ERR) occurred due to a flaw in the data.

In such a case, check with EFI.

The types of P2ERR errors are as follows:

- T-ERR (Terminal Error): This error
- H-ERR (Code Error): Unlikely to occur because an IP is sent.
- L-ERR (Incorrect Line Length): The contents that were verified during the combined debug with EFI.
- If EFI controller is not installed:
 - The code data in the HDD is corrupted for some reason (for example, the HDD is defective).
 - The code data in the NVRAM is corrupted for some reason (for example, the memory is defective).
 - The ASIC is defective.
 - Due to a fault in the software, data other than the code data is decompressed.

If the problem cannot be solved by replacing the hardware, check with IMH.

Troubleshooting Procedures

- Turn OFF then ON the main power.
- Replace the HDD.
- Replace the NVRAM.
- Replace the controller board.
- Amend the software.

SC819-00 [0x6261], [0x696e], [0x766d], [554C], Others

Error Name

- SC819-00 [0x6261]: Kernel Halt: HDD Error
- SC819-00 [0x696e]: Kernel Halt: gwinit Processing End
- SC819-00 [0x766d]: Kernel Halt: VM Full
- SC819-00 [554C]: Kernel Halt: mips Models SATA Loader Stopped
- SC819-00 (Character string displayed): Kernel Halt: Others

Type

D

Symptoms

- [0x6261]
There is no error reply from the HDD. Even though initialization was successful, the file system data received is corrupted.
- [0x696e], [0x766d]
Unknown
- [554C]
A discrepancy is detected in the SATA loader.
- (Character string displayed)
There is a discrepancy in the OS.

Possible Causes

- [0x6261]
A sudden cut in the power supply when writing data to the HDD.
- [0x696e]
If the SCSI process ends for some reason, the gwinit process will also end (this is in accordance with gwinit specifications). As a result, the kernel will also come to a halt (this is in accordance with kernel specifications).
- [0x766d]
Too much RAM is used during system processing.
- [554C]
Unknown
- (Character string displayed)
 - There is a bug in the software.
 - There is insufficient memory.

- The hardware (RAM, FLASH memory, CPU) is malfunctioning.

Troubleshooting Procedures

- [0x6261]
Replace or remove the HDD.
- [0x696e], [0x766d]
Nil
- [554C]
Replace the controller board.
- (Character string displayed)
 - When there is a software bug, identify the conditions causing the bug, and contact the software engineer.
 - When there is insufficient memory, replace with an expanded memory.

SC820-00 [xxxx]

Error Name

SC820-00: Self-diagnostic Errors (CPU)

[0001]: TLB Change (Store) Exception Error

[0002]: TLB Miss (Load) Exception Error

[0003]: TLB Miss (Store) Exception Error

[0004], [0601]: Read Address Exception Error

[0005], [0602]: Write Address Exception Error

[0006]: Instruction Bus Exception Error

[0007]: Data Bus Exception Error

[0008], [0605]: System Call Exception Error

[0009], [0606]: Break Exception Error

[000A], [0607]: Invalid Instruction Exception Error

[000B]: Co-processor Exception Error

[000C], [0609]: Overflow Exception Error

[000D]: UTLB Miss Exception Error

[0010] to [0015]: Interrupt Lines 0 to 5 Error

[00FF]: Uninitialized Interrupt Error

[060A] to [060E]: Interrupt Lines 0 to 4 Mask Exception Error

[0610]: CPU Interrupt Timer 2 Set Error

[0612]: ASIC Interrupt Error
 [06FF]: CPU Master Clock Error
 [0701]: Instruction Cache Capacity Error
 [0702]: Instruction Cache Error
 [0703]: Instruction Uncache Error
 [0704]: Instruction Cache Hit Error
 [0705]: Instruction Cache Clear Error
 [0706]: Data Cache Size Error
 [0707]: Data Cache Error
 [0708]: Data Uncache Error
 [0709]: Data Cache Hit Error
 [070A]: Data Cache Clear Error
 [0801]: TLB Virtual Address Error
 [0804]: TLB Global Error
 [0807]: UTLB Miss Error
 [0808]: TLB Read Miss Error
 [0809]: TLB Write Miss Error
 [080A]: TLB Modify Error
 [4002]: Single Precision Arithmetic Error
 [4003]: Double Precision Arithmetic Error
 [4004]: Exception Error
 [4005]: Exception Mask Error

Type

C

Symptoms

[001] to [0015], [000A], [000B], [000C], [000D]	There is an unexpected exception or interruption.
[00FF]	There is a cache parity error.
[0601], [0602], [0605], [0606], [0607], [0609]	An exception did not occur even though there was an instruction to deliberately generate an exception.
[060A], [060B], [060C], [060D], [060E]	An interruption did not occur even though interruption was set using the timer.

[0610]	An interruption did not occur even though t\CPU timer interruption was specified.
[0612]	An interruption occurred in the ASIC.
[06FF]	The frequency ratio of the CPU's pipeline clock is different from the specified value.
[0701]	A cache error occurred because only the command cache size is written into the CPU's primary instruction cache. In the case of VR series (by NEC) and RM series (by QED), a check will not be conducted because this function is not supported.
[0702]	A program was executed in the instruction cache, but the result was different from expected.
[0703], [0704], [0705]	Only the command cache size is set in the CPU's primary instruction cache, and a difference is detected when the instruction cache is retrieved. In the case of VR series (by NEC) and RM series (by QED), checking will not be done because this function is not supported.
[0706], [0707], [0708]	Only the command cache size is set in the CPU's primary data cache, and a difference is detected when the instruction cache is retrieved. In the case of VR series (by NEC) and RM series (by QED), checking will not be done because this function is not supported.
[0709], [070A]	Even though data was written to only the cache area, the non-cache areas were also updated.
[0801], [0804], [0807], [0808], [0809], [080A]	An error occurred during TLB checking.
[4002], [4003], [4004], [4005]	An error occurred when the floating-point coprocessor in the CPU was making a calculation.

Possible Causes

[0001] to [0015], [000A], [000B], [000C], [000D]	<ul style="list-style-type: none"> • The CPU is defective. • The boot monitor program or self-diagnostic program is damaged.
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[00FF]	<ul style="list-style-type: none"> • The CPU is defective. • The local bus is defective.
[0601], [0602], [0605], [0606], [0607], [0609], [0610], [0801], [0804], [0807], [0808], [0809], [080A], [4002] to [4005]	The CPU is defective.
[060A], [060B], [060C], [060D], [060E]	<ul style="list-style-type: none"> • The CPU is defective. • The ASIC is defective.
[0612]	<ul style="list-style-type: none"> • The ASIC is defective. • The peripherals are defective.
[06FF]	<ul style="list-style-type: none"> • The CPU is defective. • The module bit data used to initialize the CPU is invalid.
[0701], [0703], [0704], [0705], [0706], [0707], [0708]	Unknown
[0702]	<ul style="list-style-type: none"> • The cache of the CPU is corrupted. • The memory is too slow.
[0709], [070A]	<ul style="list-style-type: none"> • The CPU is defective. • The SPD of the memory is invalid (for example, the SPD contains data for a fast device, but it was a slow device).

Troubleshooting Procedures

[0001] to [0015], [000A], [000B], [000C], [000D]	<ul style="list-style-type: none"> • Replace the controller board. • Reinstall the boot monitor program or self-diagnostic program.
[00FF]	<ul style="list-style-type: none"> • Turn OFF then ON the main power. • Reinstall the controller system program. • Replace the controller board. • Replace the peripherals.

[0601], [0602], [0605], [0606], [0607], [0609], [060A], [060B], [060C], [060D], [060E], [0610], [06FF], [0801], [0804], [0807], [0808], [0809], [080A], [4002], [4003], [4004], [4005]	Replace the controller board.
[0612]	<ul style="list-style-type: none"> • Replace the controller board. • Replace the peripherals.
[0701], [0703], [0704], [0705], [0706], [0707], [0708]	Nil
[0702], [0709], [070A]	<ul style="list-style-type: none"> • Replace the controller board. • Replace the memory.

SC821-00 [xxxx]

6

Error Name

SC821-00: Self-diagnostic Errors (ASIC)

[0B00]: ASIC Register Check Error

[0B06]: ASIC Detection Error

[0D05]: ASIC and CPU Timer Comparison Error

[50A1]: Video Bridge Device Detection Error

[50A2]: Video Bridge Device Register Error

Type

D

Symptoms

- [0B00]

A write-and-verify check error has occurred in the system control ASIC (the main ASIC on the controller board that is used to control buses such as ROM devices).

- [0B06]

The system control ASIC cannot be detected.

- [0D05]

The comparison between the ASIC interrupt timer and the CPU interrupt timer does not fall within the specified range.

- [50A1]

The video bridge device cannot be detected.

- [50A2]

A verify error occurred with a particular register in the video bridge.

Possible Causes

- [0B00]

The ASIC is defective.

- [0B06]

- The system control ASIC is defective.
- North Bridge and PCII/F are defective.

- [0D05]

- The ASIC timer device is defective.
- The CPU is defective.

- [50A1], [50A2]

- The video bridge ASIC (HARP or KLAVIER) is defective.
- The I/F between the controller ASIC and the video bridge ASIC is defective.

Troubleshooting Procedures

Replace the controller board.

SC822-00 [xxxx]

Error Name

SC822-00: Self-diagnostic Errors (HDD)

[3003]: HDD Timeout Error

[3004]: Diagnostic Command Error

[3013]: HDD Timeout Error (First Machine)

[3014]: Diagnostic Command Error (First Machine)

Type

D

Symptoms

- [3003], [3013]
 - The BSYbit of the HDD does not shutdown even though 31 secs have elapsed (busy).
 - The BSYbit does not shutdown even though 6 secs have elapsed after a diagnostic command is set for the HDD.
- [3004], [3014]

A diagnostic command was sent to the HDD but there was no response.

Possible Causes

- [3003], [3013]
 - The HDD is defective.
 - The HDD connector is defective.
- [3004], [3014]

The HDD is defective.

Troubleshooting Procedures

- [3003], [3013]
 - Replace the HDD.
 - Replace the HDD connector.
 - Replace the controller board.
- [3004]

Replace or remove the HDD.
- [3014]

Replace the HDD.

SC823-00 [xxxx]

Error Name

SC823-00: Self-diagnostic Errors (NIC)

[6101]: MAC Address Check Sum Error

[6104]: Invalid PHY Chip ID

[6105]: PHY Loop-back Error

Type

B

Symptoms

- [6101]
 - The MAC address check sum in the SEEP ROM does not match the stored check sum.
 - The MAC address format in the SEEP ROM is different.
- [6104]

The OUI in the MII ID register (PHYIDR1, PHYIDR2) of the PHY chip was not of the specified manufacturer.
- [6105]

An error was detected when conducting a loop-back on the PHY chip.

Possible Causes

- [6101]
 - The SEEP ROM is defective.
 - The I2C bus is not properly connected.
- [6104]
 - The PHY chip is defective.
 - The I/F of the ASIC MII is defective.
- [6105]
 - The PHY chip is defective.
 - The MAC of the ASIC (SIMAC/COMIC/CELLO) is defective.
 - The I/F of the PHY board is defective (if it is installed).
 - The solder on the PHY board is defective (if it is installed).

Troubleshooting Procedures

- [6101]
 - Replace the PHY board (if it is installed).
 - Replace the controller board.
- [6104]

Nil
- [6105]
 - Check the I/F of the PHY board (if it is installed) and the controller board.
 - Replace the PHY board (if it is installed).
 - Replace the controller board.

SC824-00 [1401]

Error Name

Self-diagnostic Error (NVRAM (Resident)): NVRAM Verify Error

Type

C

Symptoms

- The NVRAM is missing.
- The NVRAM is damaged.

Possible Causes

- The NVRAM is defective.
- The backup battery has run out (in the case of an NVRAM with RTC).
- The NVRAM socket is loose.

Troubleshooting Procedures

Replace the NVRAM.

SC827-00 [0201], [0202]

Error Name

SC827-00: Self-diagnostic Errors (RAM)

[0201]: Resident Memory Verify Error

[0202]: Structural error in the resident memory

Type

D

Symptoms

- [0201]
An error has occurred during a write-and-verify check of the RAM on the controller board. (The standard RAM on the controller board is made up of 1 GB of resident RAM and 1 GB of the optional RAM).
- [0202]
All the SPD values of the RAM DIMM are wrong, or they cannot be retrieved.

Possible Causes

- [0201]
The memory is defective.
- [0202]
 - The RAM DIMM does not match the specifications of the ASIC.
 - The SPD ROM on the RAM DIMM is defective.
 - The I2C bus is defective.

Troubleshooting Procedures

- [0201]
Replace the controller board (for machines with no resident RAM, replace the RAM-DIMM).
- [0202]
Replace the RAM DIMM (replace the controller board).

SC828-00 [0101]

Error Name

Self-diagnostic Error (ROM): Bootstrap Code Error

Type

D

Symptoms

The CRC is calculated for the boot monitor and the OS program, and an error is detected when the result is different from expected. However, checking is not done for card boot.

Possible Causes

- The flash ROM in the boot monitor, self-diagnostic program, or the OS program is corrupted or has deteriorated.
- The CPU is defective.

Troubleshooting Procedures

- Reinstall the boot monitor, self-diagnostic program, or OS program.
- Replace the controller board.

SC829-00 [xxxx]

Error Name

SC829-00: Self-diagnostic Errors (Optional RAM)

[0301]: Optional Memory 0 Verify Error

[0302]: Optional Memory 0 Structural Error

[0401]: Optional Memory 1 Verify Error

[0402]: Optional Memory 1 Structural Error

Type

D

Symptoms

- [0301]
 - For machines with resident RAM, Optional Memory 0 refers the RAM DIMM installed in the RAM Slot.
 - For machines without resident RAM, Optional Memory 0 refers to the RAM DIMM installed in Slot 0.

This error does not occur with machines that do not have resident RAM.

- [0302]

Every time the main power is turned ON, the structure of the optional RAM is checked. If an error is detected at this point, the self-diagnostic module will not check the optional RAM.

- [0401]

The standard RAM is made up of 1GB of resident RAM and 1GB of the optional RAM.

- [0402]

Every time the main power is turned ON, the structure of the optional RAM is checked. If an error is detected at this point, the self-diagnostic module will not check the optional RAM.

(The standard RAM is made up of 1GB of resident RAM and 1GB of the optional RAM.)

Possible Causes

- [0301]

The memory is defective.

- [0302], [0402]

Unknown

- [0401]

The memory is defective.

Troubleshooting Procedures

- [0301]

Replace the controller board (for machines with no resident RAM, replace the RAM-DIMM).

- [0302], [0402]

Nil

- [0401]

Replace the controller board.

SC833-00 [0F30], [50B1], [50B2]

Error Name

SC833-00: Self-diagnostic Errors (Engine I/F ASIC)

[0F30]: Engine I/F ASIC Detection Error

[50B1]: Video Device Clock Generator Detection Error

[50B2]: Video Device Clock Generator Verify Error

Type

D

Symptoms

- [0F30]

The ASIC for engine control (Mandolin) cannot be detected.

- [50B1]

Unable to initialize or read the bus connection.

- [50B2]

The value of the SSCG register is not correct.

Possible Causes

- [0F30]

The ASIC for engine control (Mandolin) is defective.

- [50B1]

The connection bus or SSCG is defective.

- [50B2]

The connection bus or SSCG is defective.

Troubleshooting Procedures

Replace the engine I/F board (motherboard).

SC834-00 [5101]

Error Name

Self-diagnostic Errors (Engine I/F ASIC): Optional Memory: Engine I/F Optional Memory Verify Error

Type

D

Symptoms

An error has occurred during a write-&-verify check of the optional RAM on the engine I/F board (motherboard).

Possible Causes

The memory is defective.

Troubleshooting Procedures

Replace the engine I/F board (motherboard).

SC835-00 [1102], [110C], [1120]

Error Name

SC835-00: Self-diagnostic Errors (Centronics Device)

[1102]: Verify Error

[110C]: DMA Verify Error

[1120]: Loopback Connector Detection Error

Type

B

Symptoms

- [1102]
A connection error is detected even though the loopback connector is connected.
- [110C]
An error is detected in the DMA data even though the loopback connector is connected.
- [1120]
The centronics loopback connector is not connected for the detailed self-diagnostic test.

Possible Causes

- [1102]
 - The IEEE 1284 connector is defective.
 - The loopback connector is defective.
- [110C]
 - The ASIC is defective.
 - The IEEE1284 connector is defective.
 - The loopback connector is defective.
- [1120]
 - The centronics loopback connector is not connected.
 - The centronics loopback connector is defective.
 - The centronics loopback connector terminal is defective.
 - The ASIC is defective.

Troubleshooting Procedures

- [1102], [110C]
Replace the controller board.
- [1120]
 - Reconnect the centronics loopback connector.
 - Replace the centronics loopback connector.
 - Replace the controller board.

SC838-00 [2701]

Error Name

Self-diagnostic Error (Clock Generator): Verify Error

Type

C

Symptoms

The setting data retrieved by the clock generator via the I2C bus is not correct.

Possible Causes

- The clock generator is defective.
- The I2C bus is defective.
- The I2C bus port on the CPU is defective.

Troubleshooting Procedures

Replace the controller board.

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SC839-00 [9001]

Error Name

Self-diagnostic Error (Serial Flash): Serial Flash Access Error

Type

D

Symptoms

An error occurred when reading the Software Status Register from the serial Flash or writing the Software Status Register to the serial Flash.

Possible Causes

The serial Flash is defective.

Troubleshooting Procedures

Replace the controller board.

SC840-00

Error Name

EEPROM Access Error

Type

D

Symptoms

- A reading error occurred during I/O processing, and after three subsequent retries reading still failed.
- A writing error occurred during I/O processing.

Possible Causes

The EEPROM is defective.

Troubleshooting Procedures

Nil

SC841-00

Error Name

EEPROM Read Data Error

Type

D

Symptoms

Mirrored data of the EEPROM is different from the original data in EEPROM.

Possible Causes

Data in the EEPROM is overwritten for some reason.

Troubleshooting Procedures

Nil

SC842-00, -02

Error Name

SC842-00: Nand-Flash Verification Error

SC842-01: Nand-Flash Block Threshold Over Error

SC842-02: Nand-Flash Block Deletion Over Error

Type

C

Symptoms

- SC842-00

During remote ROM update or ROM update, the SCS detected a write error (verify error) regarding the data written to the Nand-Flash.

- SC842-01

At startup or recovery from Energy Save, the Nand-Flash status is read and the number of unusable blocks exceeded the threshold.

- SC842-02

At startup or recovery from Energy Save, the Nand-Flash status is read and the number of deleted blocks exceeded the threshold.

Possible Causes

- SC842-00

Nand-Flash is damaged.

- SC842-01

The number of unusable blocks have exceeded the threshold.

- SC842-02

The number of deleted blocks have exceeded the threshold.

Troubleshooting Procedures

Turn OFF then ON the main power.

Replace the controller board.

SC845-01 to -05

Error Name

Hardware Error during Firmware Auto Update

Type

D

Symptoms

Cannot complete firmware update while retrying three times.

Possible Causes

Hardware-related error occurs in a board.

The branch number of this SC represents where the error occurs.

-01: BiCU

-02: Controller Board

-03 or -04: Operation panel board

-05: FCU

Troubleshooting Procedures

Replace the board that causes the SC.

SC853-00

Error Name

Bluetooth Device Connection Error

Type

D

Symptoms

Bluetooth (USB) option is connected when the main power is ON.

Possible Causes

Bluetooth (USB) option cannot be connected while the main power is ON.

Troubleshooting Procedures

Turn ON the main power after the option is connected to the USB port.

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SC850-00

Error Name

Network I/F Error

Type

D

This error is specified but cannot be operated.

SC854-00

Error Name

Bluetooth Device Disconnection

Type

B

Symptoms

The Bluetooth hardware (USB type) was removed after startup.

Possible Causes

The Bluetooth hardware (USB type) was removed after startup.

Troubleshooting Procedures

Connect the Bluetooth hardware (USB type) before turning ON the main power.

SC857-00

Error Name

USB I/F Error

Type

B

Symptoms

A driver error has occurred and the USB I/F cannot be used.

Possible Causes

An error has occurred in the USB driver.

There are three causes for USB driver error: RX error, CRC error, and STALL. This SC is detected only for STALL.

Troubleshooting Procedures

- Check the USB connection.
- Replace the controller board.

SC858-00, -01, -02, -30, -31

Error Name

SC858-00: Data Encryption Conversion Error (Key Acquisition Error)

SC858-01: Data Encryption Conversion Error (HDD Key Setting Error)

SC858-02: Data Encryption Conversion Error (NVRAM Read/Write Error)

SC858-30: Data Encryption Conversion Error (NVRAM Before Conversion Error)

SC858-31: Data Encryption Conversion Error (Other Errors)

Type

A

Symptoms

A serious error occurred after data conversion when updating the encryption key.

Possible Causes

- SC858-00, -01
 - Data such as the USB Flash is corrupted.

- A communication error is caused by electrostatic noise.
- The controller board is defective.
- SC858-02
The NVRAM is defective.
- SC858-30
There is a software error (for example, the parameters used for conversion are invalid).
- SC858-31
The controller board is defective.

Troubleshooting Procedures

- SC858-00, -31
Replace the controller board.
- SC858-01, -30
Turn OFF then ON the main power.
If the error persists, replace the controller board.
- SC858-02
 - Replace the NVRAM.
 - Replace the controller board.

SC859-00, -01, 02, -10

Error Name

SC859-00: Data Encryption Conversion HDD Conversion Error

SC889-01: Data Encryption Conversion HDD Conversion Error (HDD Check Error)

SC859-02: Data Encryption Conversion HDD Conversion Error (Power Failure During Conversion)

SC859-10: Data Encryption Conversion HDD Conversion Error (Data Read/Write Command Error)

Type

B

Symptoms

- SC859-00, -01
When updating the data encryption key, HDD data was not converted correctly. During conversion, only the error screen is displayed and there is no SC. The SC is displayed after the machine is turned OFF and ON.
- SC859-02

When updating the data encryption key, NVRAM/HDD conversion was incomplete. During conversion, only the error screen is displayed and there is no SC. The SC is displayed after the machine is turned OFF and ON.

- SC859-10

When updating the data encryption key, an abnormal DMAC return value (such as DMAC time-out or serial communication error) was detected for two or more times. During data conversion, only the error screen is displayed and there is no SC. The SC is displayed after the machine is turned OFF and ON.

Possible Causes

- SC859-00, -01
 - HDD conversion was specified for data encryption key update, but the HDD was removed.
 - Power was cut during data encryption key update.
 - There was a HDD error or electrostatic noise during data encryption key update.

- SC859-02

Power was cut during data encryption key update.

- SC859-10

There was a HDD error or electrostatic noise during data encryption key update.

Troubleshooting Procedures

- SC859-00, -01, -10
 - Check the HDD connection.
 - Format the HDD.
 - If the HDD is defective, replace it.

- SC859-02

After restart, a screen instructing the user to format the HDD is displayed.

SC860-00

Error Name

HDD Startup Error At Main Power On (HDD Error)

Type

B

Symptoms

- The HDD is connected but the driver detected the following errors:
 - SS_NO.T_READY:/* (-2)HDD does not become READY*/

- SS_BAD_LABEL:/* (-4)Wrong partition type*/
 - SS_READ_ERROR:/* (-5)Error occurred while reading or checking the label*/
 - SS_WRITE_ERROR:/* (-6) Error occurred while writing or checking the label*/
 - SS_FS_ERROR:/* (-7) Failed to repair the file system*/
 - SS_MOUNT_ERROR:/* (-8) Failed to mount the file system*/
 - SS_COMMAND_ERROR:/* (-9) Drive not responding to command*/
 - SS_KERNEL_ERROR:/* (-10) Internal kernel error*/
 - SS_SIZE_ERROR:/* (-11) Drive size too small*/
 - SS_NO_PARTITION:/* (-12) The specified partition does not exist*/
 - SS_NO_FILE:/* (-13) Device file does not exist*/
- The driver attempted to acquire the HDD status but there was no response.

Possible Causes

- The HDD is not formatted.
- The label data is damaged.
- The HDD is defective.

Troubleshooting Procedures

Format the HDD (done through SP mode).

SC862-00

Error Name

Bad Sector: MAX (HDD Error)

Type

B

Symptoms

There are 101 bad sectors in HDD

Possible Causes

SC863 is issued during reading HDD because of a bad sector. Then SC 862 is issued when the bad sector count reaches 101.

Troubleshooting Procedures

Format the HDD (SP4-911-002).

(Replacing the HDD should be performed)

SC863-00

Error Name

HDD Data Read Error

Type

B

Symptoms

Data in HDD cannot be read correctly.

Possible Causes

There is a bad sector in the HDD.

Troubleshooting Procedures

1. Turn OFF then ON the main power.
2. Format the HDD through SP mode.
3. Replace the HDD if:
 - this SC occurs more than 10 times.
 - this SC occurs in a short time interval.
 - it takes 30 seconds to finish the start-up.

SC863-01, -02 to -23

Error Name

HDD Data Read Error

Type

D

Symptoms

HDD data cannot be read.

Possible Causes

- SC863-01
A bad sector was generated during operation. (An error occurred in an area that does not belong to a partition, such as the disk label area.)
- SC863-02 to -23
A bad sector was generated during operation. (An error occurred in partitions from "a" (SC863-02) to "v" (SC863-23).)

Troubleshooting Procedures

Replace the HDD when:

- this SC occurred ten times or more, and
- the error recurs at short intervals.
- the SC repeatedly occurs in the same situation (for example, at power ON).
- startup takes a long time when the main power is turned ON.

It takes a long time for the operation panel to become ready after power ON because it takes time to access the HDD. Normally, HDD access after power ON takes about 5 secs. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, there may be a problem with the HDD. Check if HDD-related SCs such as SC860 and SC863 are also occurring frequently. Print the SC log data to check them.

SC864-01, -02 to -23

Error Name

HDD Data CRC Error

Type

D

Symptoms

During HDD operation, the HDD did not respond to a CRC error query.

Possible Causes

- SC864-01
A bad sector was generated during operation. (An error occurred in an area that does not belong to a partition, such as the disk label area.)
- SC864-02 to -23
A bad sector was generated during operation. (An error occurred in partitions from "a" (SC863-02) to "v" (SC863-23).)

Troubleshooting Procedures

- Format the HDD.
- Replace the HDD.

SC865-00, -01, -02 to -23, -50 to -73

Error Name

SC865-00, -01, -02 to -23: HDD Access Error

SC865-50 to -73: HDD Access Timeout Error

Type

D

Symptoms

- SC865-00, -01, -02 to -23
During HDD operation, the HDD returned an error.
- SC865-50 to -73
There was no response from the HDD (time-out). The area where the error occurred is unknown.

Possible Causes

- SC865-00
The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error).
- SC865-01
The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in an area that does not belong to a partition, such as the disk label area.)
- SC865-02 to -23
The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partitions from "a" (SC863-02) to "v" (SC863-23).
- SC865-50 to -73
The HDD did not respond to the read/ write command from the machine (DMA transfer).

Troubleshooting Procedures

- SC865-00, -01, -02 to -23
Replace the HDD.
- SC865-50 to -73
Check if the HDD power cord and communication cable are properly connected.
If the problem is not solved after reconnecting the cord or cable, replace the HDD.

SC866-00

Error Name

SD Card Authentication Error

Type

B

Symptoms

An error has occurred with the license used for the electronic authentication of an application in the SD card.

Possible Causes

The program data in the SD card is invalid.

Troubleshooting Procedures

Store a valid program in the SD card.

SC867-00 to -02

Error Name

SD Card Removed Error

Type

D

Symptoms

The application SD card was removed.

Possible Causes

The application SD card was removed from the slot (mount point: /mnt/sd*).

SC867-00: /mnt/sd0

SC867-01: /mnt/sd1

SC867-02: /mnt/sd2

Troubleshooting Procedures

Turn the main power OFF then ON.

SC868-00, -02

Error Name

SD Card Access Error

Type

D

Symptoms

During operation, the SD controller returned an error. (An error occurred at mount point: /mnt/sd0).

Note

- The slot number is displayed in the sub code. The detailed code is on the SMC Print, and provides details about the error.
- -2, or no code number refers to device access error.

Possible Causes

- The SD card is defective.
- The SD controller is defective.

Troubleshooting Procedures

- In the case of an application SD Card:
 1. Turn the main power OFF. Check that the SD card is properly inserted.
 2. Turn the main power ON.
 3. If a SC is detected, replace the SD card.
 4. If the SC recurs, replace the controller board.
- In the case of an application SD Card;
If it is a file system error, reformat the SD card (using the specified SD formatter).
If it is a device access error, perform the following procedure.
 1. Turn the main power OFF. Check that the SD card is properly inserted.
 2. Turn the main power ON.
 3. If a SC recurs, replace with another user SD card.
 4. If the SC recurs, replace the controller board.

Important

- **Do not format the SD card that comes with the machine, or the optional SD card. Only format the SD card used by the SE for tasks such as updating.**

SC870-00 to -60

Error Name

These are Address Book Data errors.

SC870-00: Anytime: Address Book Error

SC870-01: Startup: Media required for storing the Address Book is missing

SC870-02: Startup: Encryption is configured but the module required for encryption (DESS) is missing

SC870-03: Initialization: Failed to generate a file for storing the Address Book in the machine

SC870-04: Initialization: Failed to generate a file for storing Senders

- SC870-05: Initialization: Failed to generate a file for storing Send Destinations
- SC870-06: Initialization: Failed to generate a file for storing information needed for searching LDAP
- SC870-07: Initialization: Failed to initialize entries for the system
- SC870-08: Machine Configuration: There is a HDD but the area for storing the Address Book cannot be used
- SC870-09: Machine Configuration: The NVRAM area for storing settings needed to configure the Address Book is inconsistent
- SC870-10: Machine Configuration: A directory for storing the Address Book cannot be created in the SD/USB Flash ROM
- SC870-11: Startup: The number of Address Book entries is inconsistent
- SC870-20: File I/O: Failed to initialize file
- SC870-21: File I/O: Failed to generate file
- SC870-22: File I/O: Failed to open file
- SC870-23: File I/O: Failed to write file
- SC870-24: File I/O: Failed to read file
- SC870-25: File I/O: Failed to check file size
- SC870-26: File I/O: Failed to delete data
- SC870-27: File I/O: Failed to initialize file
- SC870-30: Search: Failed to obtain data from cache when searching for Senders/Destinations in the machine's Address Book
- SC870-31: Search: Failed to obtain data from cache when searching for the LDAP server
- SC870-32: Search: Failed to obtain data from cache when searching the WS-Scanner Address Book
- SC870-41: Cache: Failed to obtain data from cache
- SC870-50: Startup: Address Book encryption error
- SC870-51: Data Encryption: Failed to create directory for converting plain text and encrypted text
- SC870-52: Data Encryption: Failed to convert from plain text to encrypted text
- SC870-53: Data Encryption: Failed to convert from encrypted text to plain text
- SC870-54: Data Encryption: Data inconsistency detected when reading the encrypted Address Book
- SC870-55: Data Encryption: Failed to delete file when changing encryption settings
- SC870-56: Data Encryption: When changing encryption settings, failed to delete file containing the encryption key
- SC870-57: Data Encryption: Failed to move file when changing encryption settings

SC870-58: Data Encryption: Failed to delete directory when changing encryption settings

SC870-59: Data Encryption: Insufficient resource when changing encryption settings

SC870-60: Settings: Unable to obtain the on/off setting for Administrator Authentication

Type

B

Symptoms

This SC is displayed when an error related to the Address Book is detected at startup or during operation.

Possible Causes

- There is a bug in the software.
- There is an inconsistency in the Address Book source location (machine/delivery server/LDAP server).
- There is an inconsistency in the Address Book encryption setting or encryption key (NVRAM or HDD was replaced individually without formatting the Address Book).
- The device storing the Address Book (SD or HDD) was temporarily removed, or the hardware configuration does not match the application configuration.
- The Address Book data is corrupted.

Troubleshooting Procedures

Install the Address Book storage device properly. Turn OFF then ON the main power. If the SC recurs, perform the following steps.

1. **After installing the HDD or SD/USB Flash ROM, execute SP5-846-046.**
2. **Wait more than 3 secs, and then execute SP5-832-006.**
3. **Turn OFF then ON the main power.**

Note

- After SC870 is resolved, if there is backup data in the SD card or Web Image Monitor, restore the Address Book data. (To restore from the SD card, enter the same encryption password as the one entered when backing up the data.)

SC871-01

Error Name

FCU Error

Type

D

Symptoms

The FCS detects an FCU error.

Possible Causes

- There is a time-out error.
- The parameter is invalid.

Troubleshooting Procedures

- Turn OFF then ON the main power.
- If a newer version of the firmware is available, update the firmware.

SC872-00

Error Name

HDD Mail Reception Error

Type

B

Symptoms

A HDD error was detected when the main power is turned ON.

Possible Causes

- The HDD is defective.
- The main power was turned OFF when the machine was accessing the HDD.

Troubleshooting Procedures

- Format the HDD (SP5-832-007).
- Replace the HDD.

When the above steps are taken, the following information will be initialized.

- Partly received partial mail messages
- POP3 messages that are received and already read. (All messages on the mail server are handled as new messages.)

SC873-00

Error Name

HDD Mail Reception Error

Type

B

Symptoms

A HDD error was detected when the main power is turned ON.

Possible Causes

- The HDD is defective.
- The main power was turned OFF when the machine was accessing the HDD.

Troubleshooting Procedures

- Format the HDD (SP5-832-007).
- Replace the HDD.

When the above steps are taken, the following information will be initialized.

- Mail text
- Default sender name and password(SMB/FTP/NCP)
- Administrator mail address
- Scan to email history

SC874-xx

Error Name

- SC874-05: Delete All Error (Delete Data Area): Read Error
- SC874-06: Delete All Error (Delete Data Area): Write Error
- SC874-09: Delete All Error (Delete Data Area): No response from HDD
- SC874-10: Delete All Error (Delete Data Area): Error in Kernel
- SC874-12: Delete All Error (Delete Data Area): No Designated Partition
- SC874-13: Delete All Error (Delete Data Area): No Device File
- SC874-14: Delete All Error (Delete Data Area): Start Option Error
- SC874-15: Delete All Error (Delete Data Area): No Designated Sector Number
- SC874-16: Delete All Error (Delete Data Area): hdderase Execution Failure
- SC874-41: Delete All Error (Delete Data Area): Other Fatal Errors
- SC874-42: Delete All Error (Delete Data Area): End by Cancellation
- SC874-61 to SC874-65: Delete All Error (Delete Data Area): Library Error
- SC874-66: Delete All Error (Delete Data Area): Unavailable
- SC874-67: Delete All Error (Delete Data Area): Erasing Not Finished
- SC874-68: Delete All Error (Delete Data Area): HDD Format Failure (Normal Operation)
- SC874-69: Delete All Error (Delete Data Area): HDD Format Failure (Abnormal Operation)
- SC874-70: Delete All Error (Delete Data Area): Unauthorized Library

SC874-99: Delete All Error (Delete Data Area): Other Errors

Type

D

Symptoms

- An error occurred when deleting data in the HDD or NVRAM.
- Erasing All Memory (deleting all data in the HDD/NVRAM) was executed but the Erase All Memory option was not installed.

Possible Causes

- An error occurred in the program for deleting the HDD.
- An error occurred when deleting data on the NVRAM.
- The Erase All Memory option was not installed.

Troubleshooting Procedures

- Turn OFF then ON the main power, and then execute Erase All Memory again from the UP. (However, if there is a defective sector or other problem with the HDD, the error will recur.)
- Reinstall the Erase All Memory option.

6

SC875-01, -02

Error Name

SC875-01: Delete All Error (Delete HDD): hddchack -i Error

SC875-02: Delete All Error (Delete HDD): Failed to Delete Data

Type

D

Symptoms

An error was detected before the deletion of HDD data starts (Failed to erase data/ failed to logically format HDD).

Possible Causes

- HDD logical formatting failed.
- The modules failed to erase the data.

Troubleshooting Procedures

Turn OFF then ON the main power.

SC876-00

Error Name

Log Data Error

Type

D

Symptoms

An error was detected in the handling of the log data at power ON or during machine operation.

Possible Causes

- The log data file is corrupted (for example, power was cut off during machine operation).
- The log encryption key is invalid (SC876-3). (Log encryption is enabled, but the NVRAM is corrupted, or only the NVRAM is replaced, or only the HDD is replaced, or the HDD is formatted.)
- A mismatch with the HDD occurred because only the NVRAM was replaced (SC876-5).
- A mismatch with the NVRAM occurred because only the HDD was replaced (SC876-5).
- There is a bug in the software.

Troubleshooting Procedures

1. Remove the HDD and turn ON the main power.
2. Initialize the LCS memory (SP5-801-019).
3. Turn OFF the main power.
4. Install the HDD and turn ON the main power.
5. Execute SP5-832-004.
6. Turn OFF the main power.

The SC should be solved at this point. Steps 7 to 9 are for re-configuring the logging/encryption settings.

7. Turn ON the main power.
8. Set SP9-730-002, SP9-730-003, and SP9-730-004 to "1" (On).
9. Turn OFF then ON the main power.

SC877-00

Error Name

HDD Deletion Card Error

Type

B

Symptoms

Auto Erase Memory is not executed even though the option is enabled.

Possible Causes

- The SD card with the Auto Erase Memory option is corrupted.
- The SD card with the Auto Erase Memory option is not installed.

Troubleshooting Procedures

- If the SD card is damaged, replace with a new SD card and replace the machine's NVRAM.
- If the SD card is not installed, turn the main power OFF and install an SD card with the Auto Erase Memory option.

SC878-00, -01, -02, -03

Error Name

SC878-00: TPM Authentication Error

SC878-01: USB Flash Error

SC878-02: TPM Error

SC878-03: TCSD Error

SC878-20: Random Number Generator Error

Type

D

Symptoms

- SC878-00
At startup, the system's hash in the TPM and the USB's hash do not match. As a result, authentication by TPM failed.
- SC878-01
There is an error in the file system of the USB flash memory.
- SC878-02
There is an error in the TPM or TPM driver.
- SC878-03
An error occurred in the TPM software stack.
- SC878-20
An error occurred when doing self-check against seed for random number generated.

Possible Causes

- SC878-00
 - The system module was not updated via the correct update route.
 - The USB flash memory is malfunctioning.
- SC878-01

The file system of the USB flash memory is corrupted.
- SC878-02, -20

The TPM is defective.
- SC878-03
 - The TPM software stack cannot start.
 - A file required by the TPM software stack is missing.

Troubleshooting Procedures

Turn Off then ON the main power. If the SC recurs, replace the controller board.

SC881-01

Error Name

Management Area Error

Type

D

Symptoms

An error occurred in the software.

This error may occur even if an IC card option is not installed.

Possible Causes

- This error is caused by the accumulation of abnormal authentication information in the software. (It is not directly caused by user action.)
- This error occurs at login (for example, when a job is sent to the printer, when a user logged on from the operation panel, or when a user logged on from a Web browser).

Troubleshooting Procedures

Turn OFF then ON the main power.

SC899-00

Error Name

Software Performance Error (Signal Reception End)

Type

D

Symptoms

Unknown

Possible Causes

This error occurs when a GW program behaves abnormally.

Troubleshooting Procedures

- In the case of a hardware fault, replace the hardware.
- In the case of a software fault, turn OFF then ON the main power. Then update the firmware.

SC9xx

SC900-00

Error Name

Electronic Counter Error

Type

D

Symptoms

The electronic total counter value is not the specified value.

This error is detected when the counter moves forward.

Possible Causes

- The NVRAM connection is not correct.
- The NVRAM is defective.
- The NVRAM data is corrupted.
- The data was written in the wrong area due to external factors.
- When PRT received signals at SRM, the requested count is not completed.

Troubleshooting Procedures

Replace the NVRAM.

SC920-02, -04

Error Name

SC920-02: Printer Application Error (WORK memory cannot be acquired)

SC920-04: Printer Application Error (Filter process ended abnormally)

Type

B

Symptoms

An error was detected in the application, and no further operation is possible.

Possible Causes

- There is a bug in the software.
- The hardware configuration is not as planned (for example, insufficient memory).

Troubleshooting Procedures

- Turn OFF then ON the main power.
- Increase the memory storage capacity.

SC921-00

Error Name

Printer Application Error (Resident Font Not Found)

Type

B

Symptoms

The resident fonts cannot be found at printer startup.

Possible Causes

The resident font file is missing.

Troubleshooting Procedures

Turn OFF then ON the main power.

6

SC925-00, -01

Error Name

Net File Function Error

Type

B

Symptoms

The Net File file management area in the HDD cannot be used.

Or the management file is corrupted and no further operation is possible.

Possible Causes

- The HDD is defective.
- Power was cut when writing onto the HDD.
- There is a bug in the software.

Troubleshooting Procedures

If SC860 to SC865 also happened at the same time, there is a problem with the HDD. Follow the troubleshooting procedures for SC860 to SC865.

If SC860 to SC865 is not detected, perform the following steps:

- Turn OFF then ON the main power.
- If the problem is not solved, initialize the Net File partition on the HDD using SP5-832-11. However, because stored faxes will be erased, permission must be obtained from the customer.
 1. From the file delivery settings screen on the UP, print all received faxes before deleting them.
 2. From the Manage: Delete All Documents Waiting to be Sent screen on the UP, delete all the captured documents.
 3. Execute SP5-832-011.
 4. Turn OFF then ON the main power.

If the problem is not solved after executing SP5-832-011, initialize the HDD partition using SP5-832-001, and then turn OFF then ON the main power. However, because all data in the HDD, such as documents and Address Book, will be lost, permission must be obtained from the customer. (Stored incoming faxes will not be deleted, but the order in which they are received may be changed.)

If the problem is still not solved, replace the HDD.

SC990-00

Error Name

Software Performance Error

Type

D

Symptoms, Possible Causes

Unknown

Troubleshooting Procedures

Nil

SC991-00

Error Name

Software Error (Operation Can Continue)

Type

C

Symptoms

The software performed in an unexpected way. By taking recovery measures, further operation is possible.

Possible Causes

- The parameter is invalid.
- There is insufficient work memory.
- This SC is caused by errors that are not normally detected from the hardware.

Troubleshooting Procedures

Nil

SC992-00

Error Name

Undefined SC

Type

D

Symptoms

An undefined SC has occurred.

Possible Causes

There is a bug in the software.

Troubleshooting Procedures

Turn OFF then ON the main power.

SC997-00

Error Name

Application Function Selection Error

Type

D

Symptoms

The application did not function normally after pressing the application key on the operation panel.

Possible Causes

There is a bug in the software.

Troubleshooting Procedures

- Check if the options required by the application (RAM, DIMM, boards) are installed properly.
- Check whether downloaded applications are correctly configured.

SC998-00

Error Name

Application Start Error

Type

D

Symptoms

- After power ON, no application program was registered to the system within the specified period of time. (No application started or ended normally.).
- Even though the application started up, it cannot be rendered due to an unknown fault.

Possible Causes

- There is a bug in the software.
- The options required by the application (RAM, DIMM, board) are not installed.

Troubleshooting Procedures

- Turn OFF then ON the main power.
- Check the RAM, DIMM, and boards.
- Check the application configurations.
- Replace the controller board.

Jam Detection

Paper Jam Display

SP7-507 [Plotter Jam History] shows the paper jam history.

```
CODE :011
SIZE  :05h
TOTAL:000034
DATE  :Fri Feb 15 11:44:50 2006
```

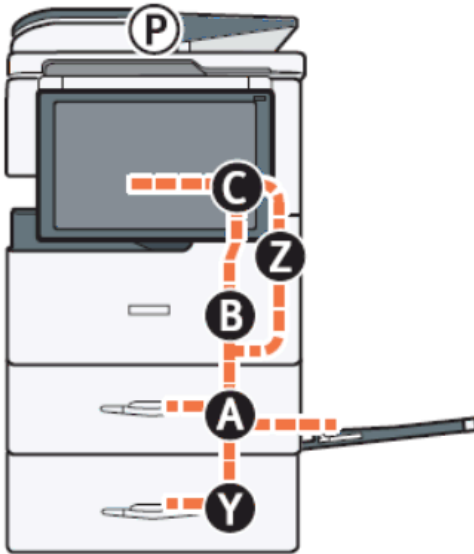
- **CODE:** Indicates the jam code.
- **SIZE:** Indicates the paper size code in hex.
- **TOTAL:** Indicates the total counter (SP7-502-001).
- **DATE:** indicates the date when the jam occurred.

↓ Note

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

Jam Codes and Display Codes

When a jam occurs, the location is displayed on the operation panel.



d205z6560

6

↓ Note

- Jam Code: Indicates the cause of a jam. Appears in the log data.
- Position Code: Indicates the jam location. Appears on the operation panel screen.
- Cover Open Direction: Indicates which cover should be open to check. Does not appear on the operation panel screen.

Jam Code List (Main machine), Cover Open Direction

Jam Code	Description	Position Code	Cover Open Direction
1	Paper Exit Sensor does not turn OFF.	C	Right cover
	Registration Sensor does not turn OFF.		
3	Paper is not fed from Tray 1	A	Right cover
5	Paper is not fed from Tray 2	Y	Right Door (Optional Paper Feed Tray)
8	Bypass Registration Sensor does not detect paper.	A	Right cover
9	Duplex Registration Sensor does not detect paper.	Z	Right cover
17	Registration Sensor does not detect paper.	A	Right cover

Jam Code	Description	Position Code	Cover Open Direction
20	Paper Exit Sensor does not detect paper.	C	Right cover
53	Paper is held up in Paper Feed Sensor.	A,Y	Right cover Right Door (Optional Paper Feed Tray)
57	Paper is held up in Registration Sensor.	B	Right cover
60	Paper is held up in Paper Exit Sensor.	C	Right Door (Optional Paper Feed Tray)

Jam Code List (Duplex), Cover Open Direction

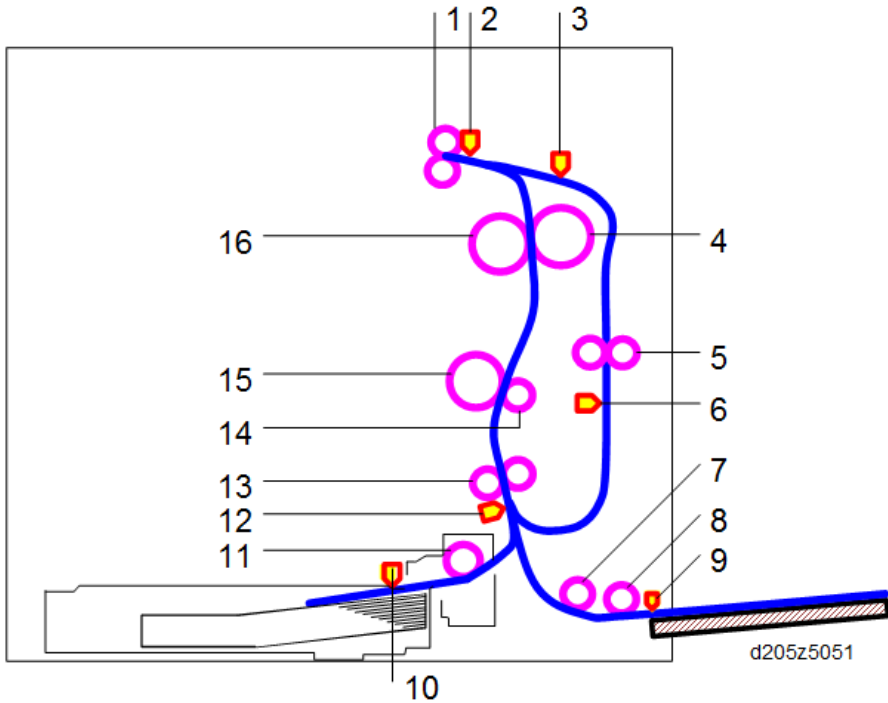
Jam Code	Description	Position Code	Cover Open Direction
1	Duplex Entrance Sensor does not turn OFF	Z	Right Cover
	Paper Feed Sensor does not turn OFF.		
	Duplex Exit Sensor does not turn OFF		
5	Paper is not fed from Tray 2.	Y	Right Door
25	Duplex Exit Sensor does not detect paper.	Z	Right Cover
27	Duplex Entrance Sensor does not detect paper.	Z	Right Cover
53	Paper is held up in the Paper Feed Sensor.	A,Y	Right cover Right Door (Optional Paper Feed Tray)
65	Paper is held up in the Duplex Exit Sensor.	Z	Right Cover
67	Paper is held up in the Duplex Entrance Sensor.	Z	Right Cover

Jam Code List (ARDF) , Cover Open Direction

Jam Code	Description	Position Code	Cover Open Direction
1	Initial Jam	P	ARDF Feed Cover
4	ARDF Registration Sensor does not detect the original.	P	ARDF Feed Cover
54	Original is held up in the ARDF Registration Sensor.	P	ARDF Feed Cover
100	ARDF Drive Motor is defective.	P	ARDF Feed Cover

Sensor Layout

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No.	Item	No.	Item
1	Paper Exit Roller	9	Bypass Paper End Sensor
2	Paper Exit Sensor	10	Paper End Sensor

No.	Item	No.	Item
3	Duplex Entrance Sensor	11	Paper Feed Roller
4	Pressure Roller	12	Registration Sensor
5	Duplex Roller	13	Registration Roller
6	Duplex Exit Roller	14	Transfer Roller
7	Bypass Feed Roller	15	Drum
8	Pick-up Roller	16	Hot Roller

Paper Size Codes

Paper size codes are as follows.

* The unit of Main Scan/Sub Scan Length is 0.1 mm.

Size Code	Paper Size Name	Orientation	Main Scan Length	Sub Scan Length
132(84H)	A3	SEF	2970	4200
005(05H)	A4	LEF	2970	2100
133(85H)	A4	SEF	2100	2970
141(8DH)	B4	SEF	2570	3640
006(06H)	A5	LEF	2100	1480
134(86H)	A5	SEF	1480	2100
014(0EH)	B5	LEF	2570	1820
142(8EH)	B5	SEF	1820	2570
135(87H)	A6	SEF	1050	1480
143(8FH)	B6	SEF	1280	1820
160(A0H)	11"x17"(DLT)	SEF	2794	4318
164(A4H)	8 1/2"x14"(LG)	SEF	2159	3556
166(A6H)	8 1/2"x11"(LT)	SEF	2159	2794

Size Code	Paper Size Name	Orientation	Main Scan Length	Sub Scan Length
038(26H)	8 1/2"x11"(LT)	LEF	2794	2159
172(ACH)	5 1/2"x8 1/2"(HLT)	SEF	1397	2159
175(AFH)	12" x 18"	SEF	3048	4572

Other Problems

How to Re-Install the OCR Unit

When the OCR unit is installed, its function is stored in the HDD, and its ID information in the SD card is stored in the NVRAM. So the OCR unit must be installed again when you replace the HDD and/or NVRAM.

If you have the original SD card and when you replaced:

- Only HDD
Re-install the unit with the original SD card.
- Only NVRAM
Re-install with the original SD card if you upload/download of the NVRAM data.
Order a new SD card and Re-install with the new SD card if you do not upload/download of the NVRAM data.
- Both the HDD and NVRAM at the same time
Re-install the original SD card.

If you do not have the original SD card:

Order a new SD card and Re-install with the new SD card.

Note

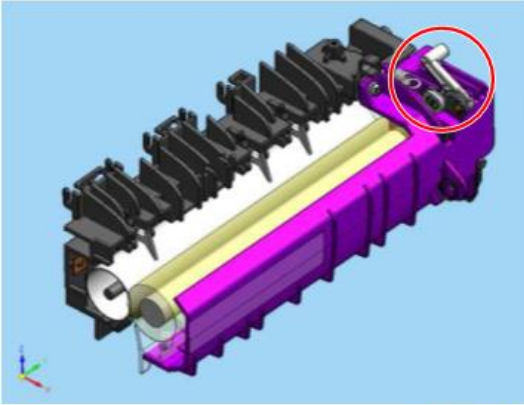
- Re-installation procedure is the same as the installation procedure. (page 112)

Decreasing the Fusing Pressure

As a tentative treatment for fusing curl, decrease the fusing pressure as shown below.

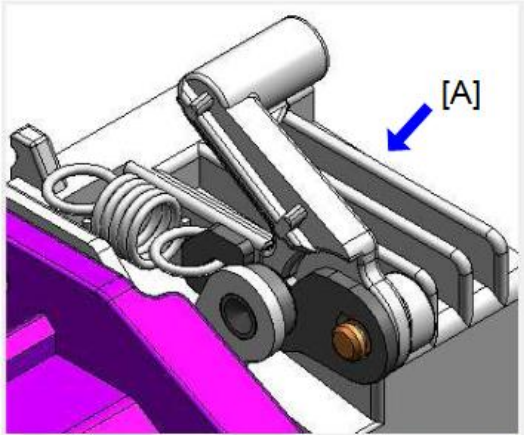
Pressure Mechanism

Layout of the fusing unit



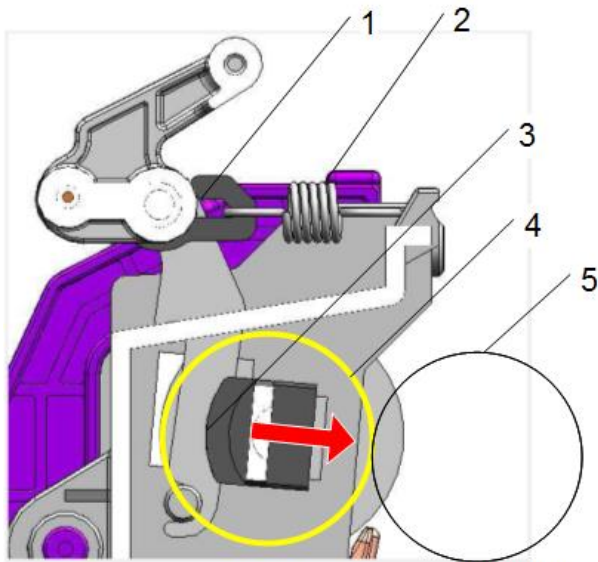
d205k7001

Layout of the pressure block



d205k7002

Pressure mechanism (view from [A])



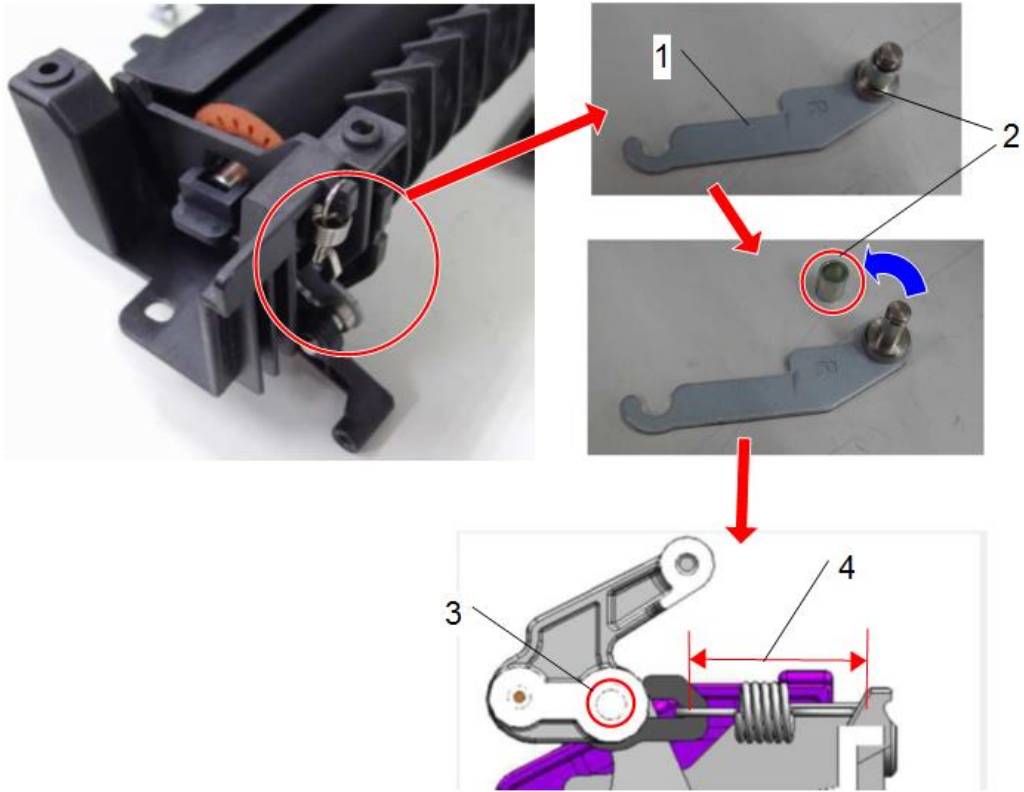
d205k7003

1	Lever
2	Pressure spring
3	The pressure roller is pushed against the hot roller by pressure from the spring latched to the lever.
4	Pressure roller
5	Hot roller

6

Decreasing the Pressure

Pressure is decreased by removing the wound bushing attached to the pressure lever.



d205k7004

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1	Pressure lever
2	Remove the wound bushing (07074060N) and mount it again.
3	Wound bushing
4	Spring length If you remove the bushing, the spring length will be shortened by the thickness of the bushing, which results in decreasing the pressure.

Spring load: 38 N [AA064002 x 2 (F-R)]

After the bushing removed: 34 N (decreased by 10%)

Remove the bushings at both front and rear.

Decreasing the pressure may cause insufficient fusing. Do this considering the usage conditions of the customer.

Removing the bushing repeatedly may cause the Mo part to be reduced. So use this measure tentatively.

Fuse Location

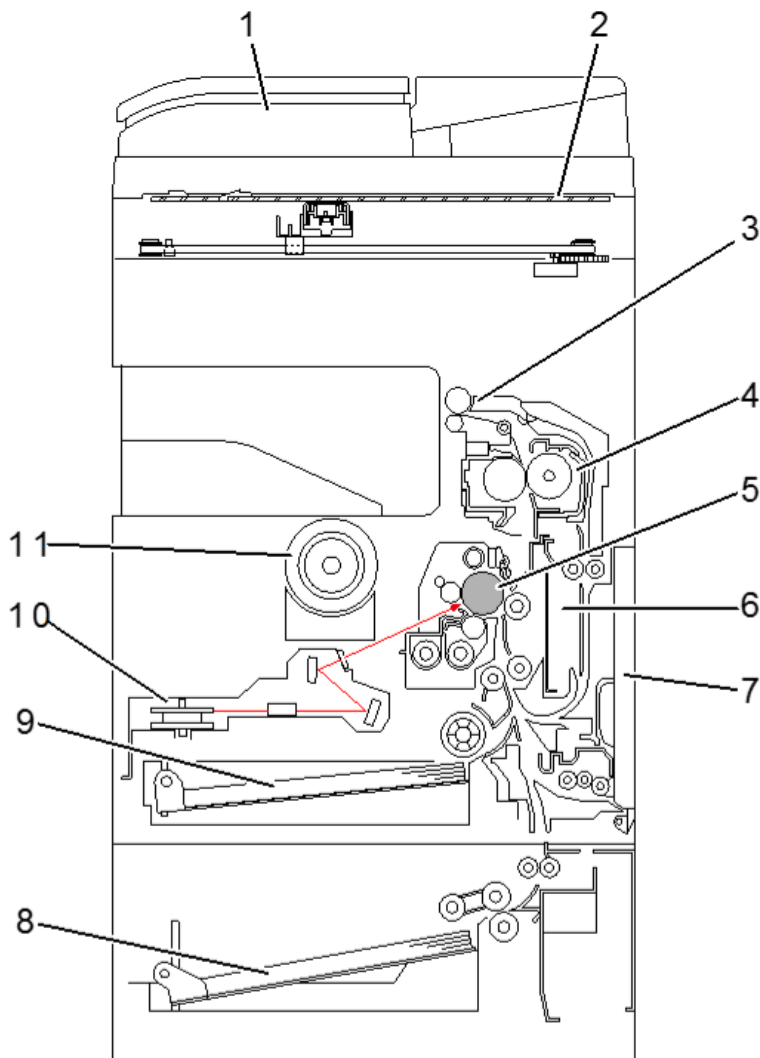
These fuses are all on the PSU board.

Symbol	Connector	C	V	Made by	Part Name	Note
FU1	CN286-4(5VX) CN286-5(5V) CN286-6(24V) CN283-1,3(AC)	15A	250V	HOLLYLAND	65TSRB15 AT-JUCR	Not replaceable
FU2	CN286-4(5VX) CN286-5(5V) CN286-6(24V)	8A	250V	LITTLEFUSE	215RB8A R-SBR	Not replaceable
FU4	CN286-5(5V_LPS)	5A	250V	CONQUER SKYGATE	MSTRB5A R-T SCTRB5AR -ALT	Not replaceable
FU5	CN286-6(24V)	8A	250V	LITTLEFUSE	215RB8A R-SBR	Not replaceable

7. Detailed Descriptions

Product Overview

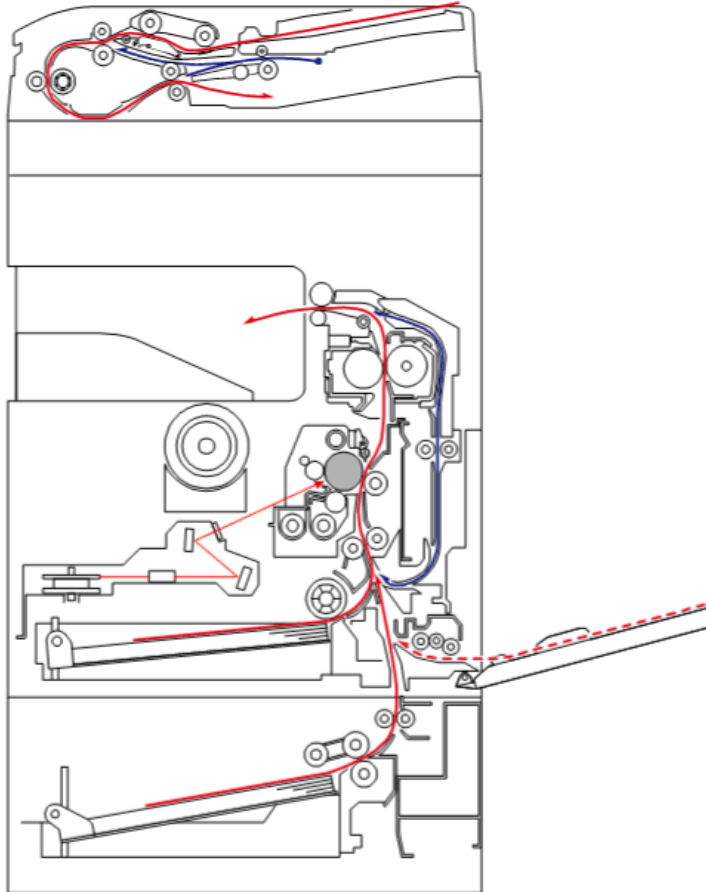
Component Layout



d205c9001

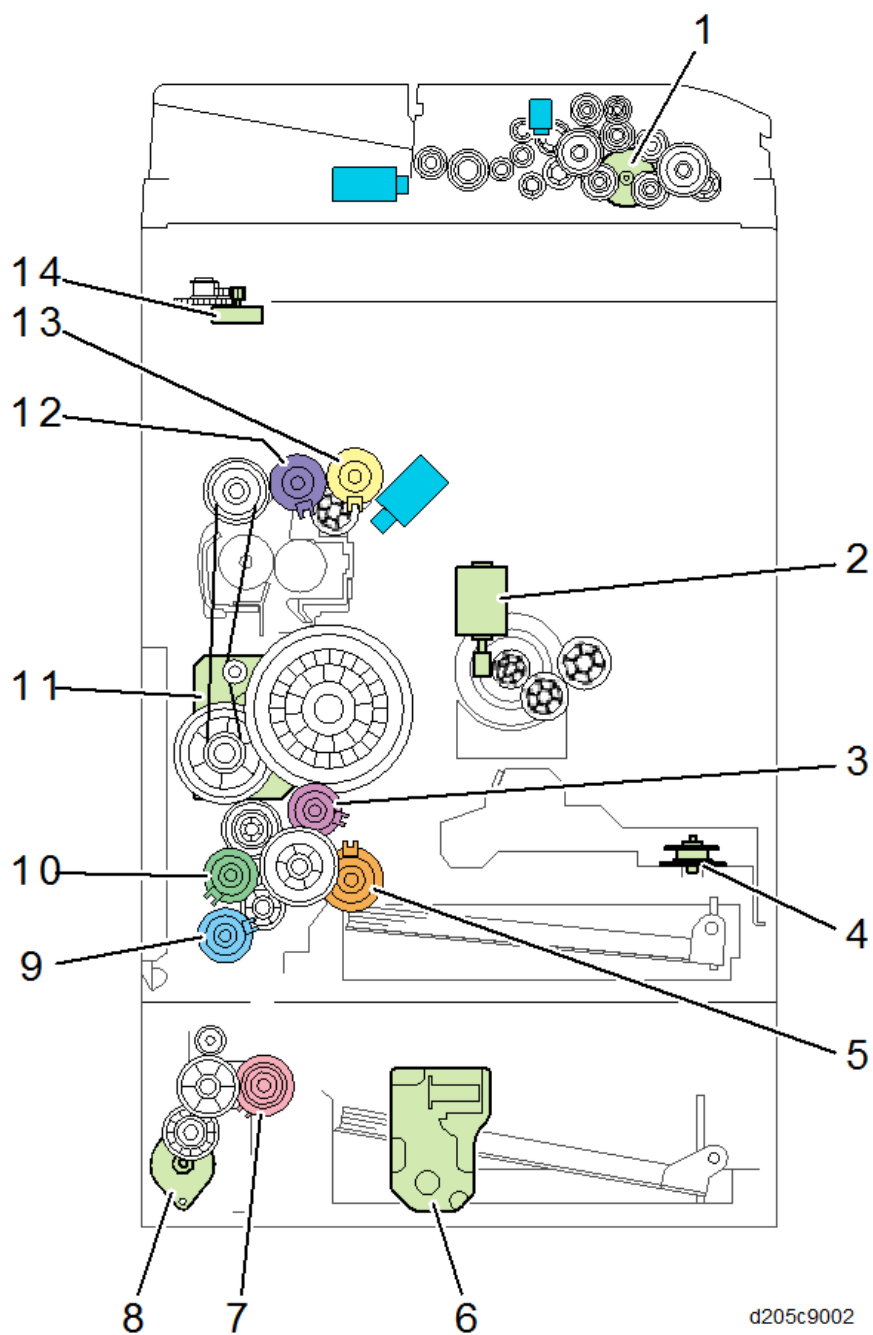
No.	Items	No.	Items
1	ARDF (Auto Reverse Document Feeder)	7	Bypass Feed Unit
2	Scanner Unit	8	Optional Paper Feed Unit
3	Paper Exit Unit	9	Main Paper Feed Unit
4	Fusing Unit	10	Laser Unit
5	PCDU (Photo Conductor and Development Unit)	11	Toner Supply Unit
6	Duplex Unit		

Paper Path



d205c9003

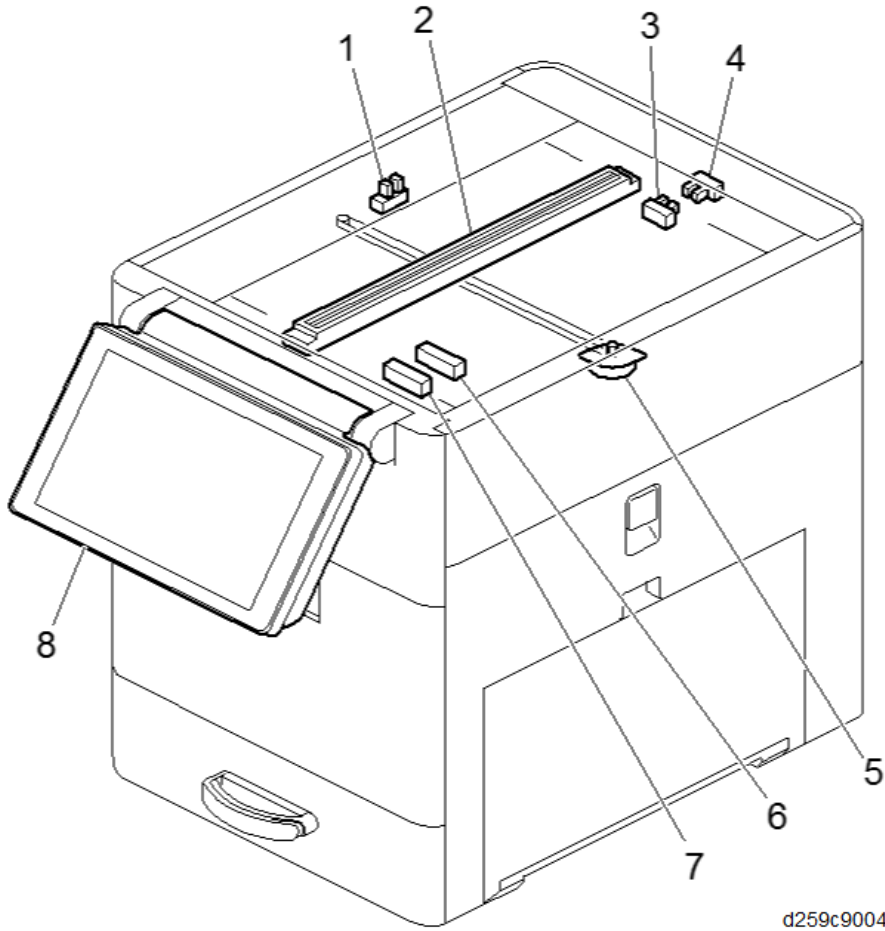
Drive Layout



No.	Items	No.	Items
1	ARDF Drive Motor	8	Paper Feed Motor (Optional Tray)
2	Toner Supply Motor	9	Bypass Clutch
3	Registration Clutch	10	Duplex Reverse Clutch
4	Polygon Motor	11	Main Motor
5	Paper Feed Clutch (Main Tray)	12	Reverse Exit Clutch
6	Tray Lift Motor (Optional Tray)	13	Paper Exit Clutch
7	Paper Feed Clutch (Optional Tray)	14	Scanner Motor

Parts Layout

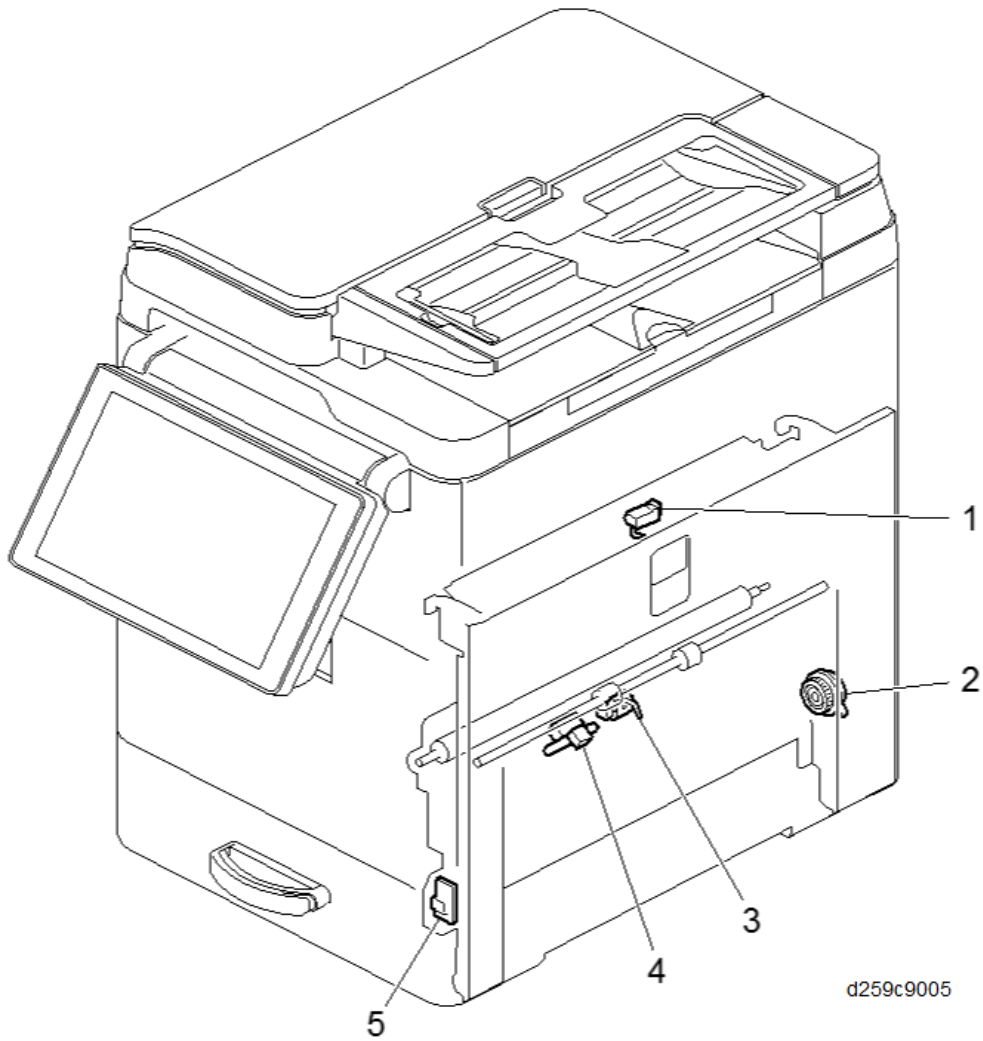
Scanner Unit



d259c9004

No.	Items	No.	Items
1	Scanner HP Sensor	5	Scanner Motor
2	CIS	6	APS Sensor (other than NA)
3	ARDF Position Sensor	7	APS Sensor
4	Platen Cover Sensor	8	Operation Panel

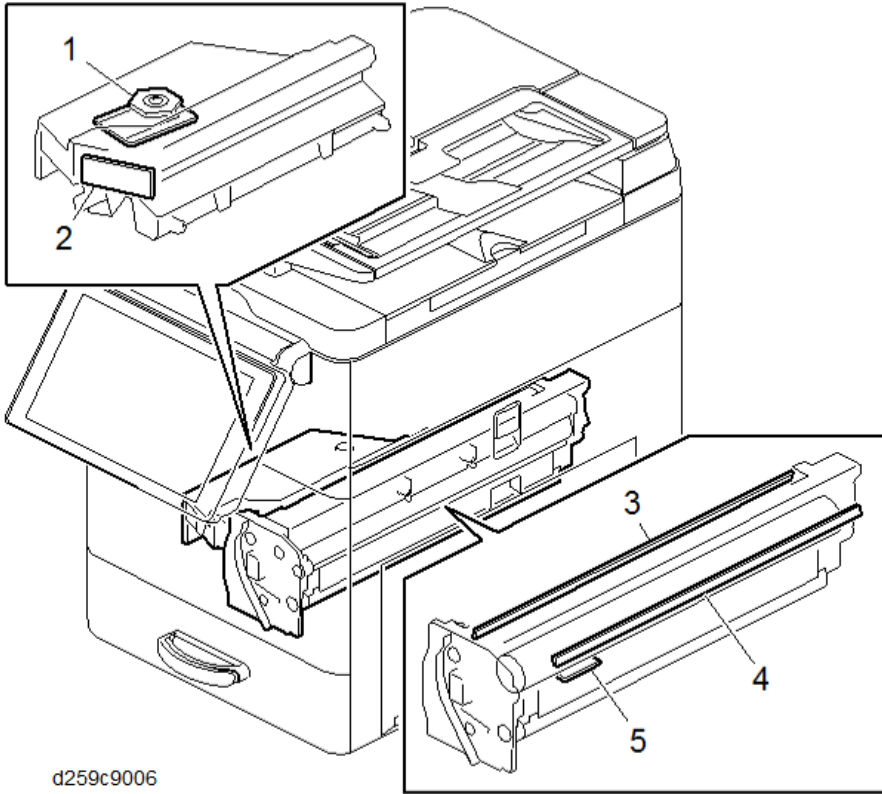
Duplex/Bypass Unit



7

No.	Items
1	Duplex Entrance Sensor
2	Duplex Clutch
3	Duplex Exit Sensor
4	ID Sensor
5	Temperature/Humidity Sensor

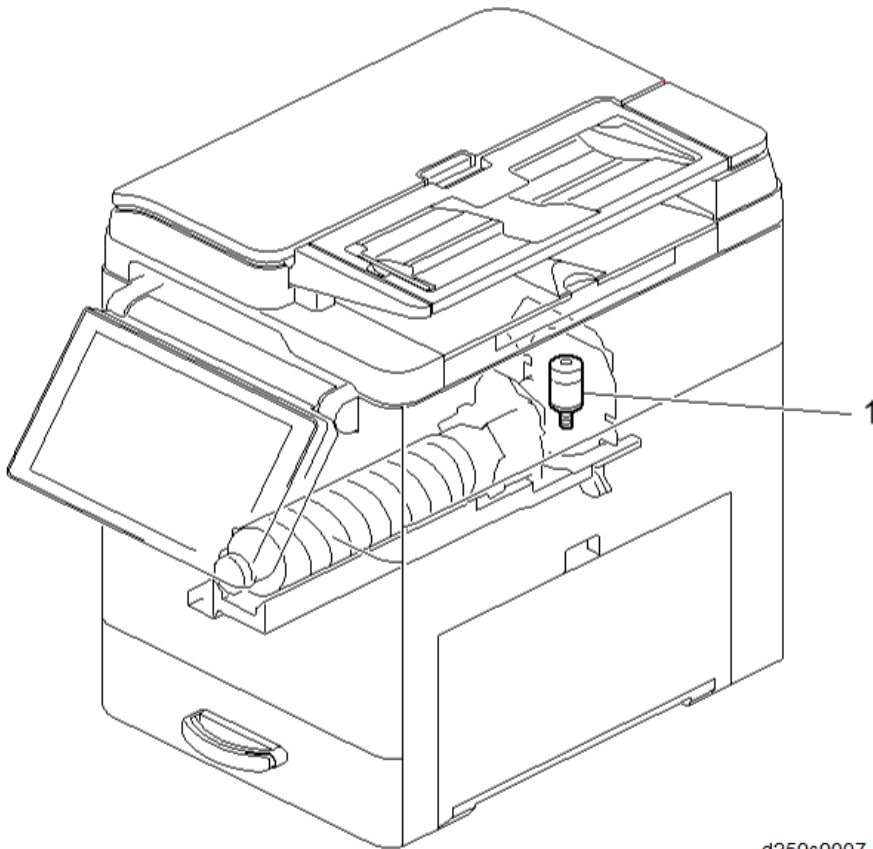
Laser Unit, PCDU



d259c9006

No.	Items
1	Polygon Motor
2	LDB
3	Quenching Lamp
4	Pre-cleaning Lamp (PCL)
5	TD Sensor

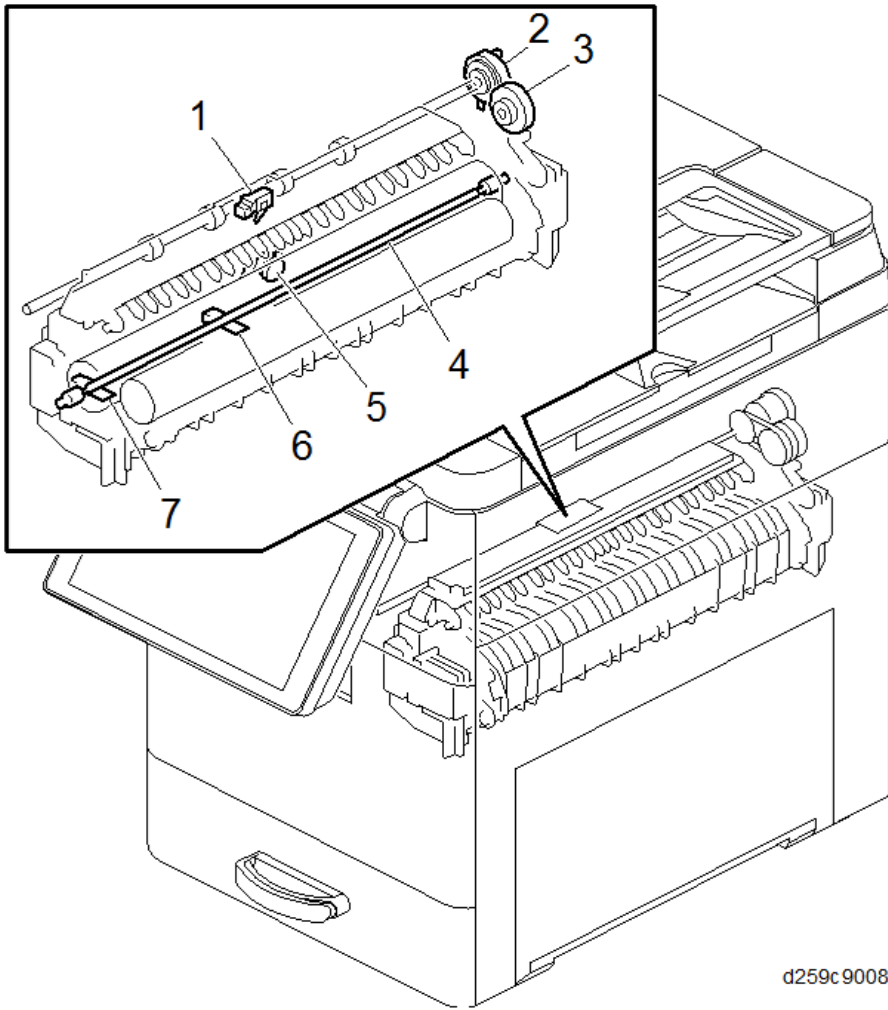
Toner Supply Unit



d259c9007

No.	Items
1	Toner Supply Motor

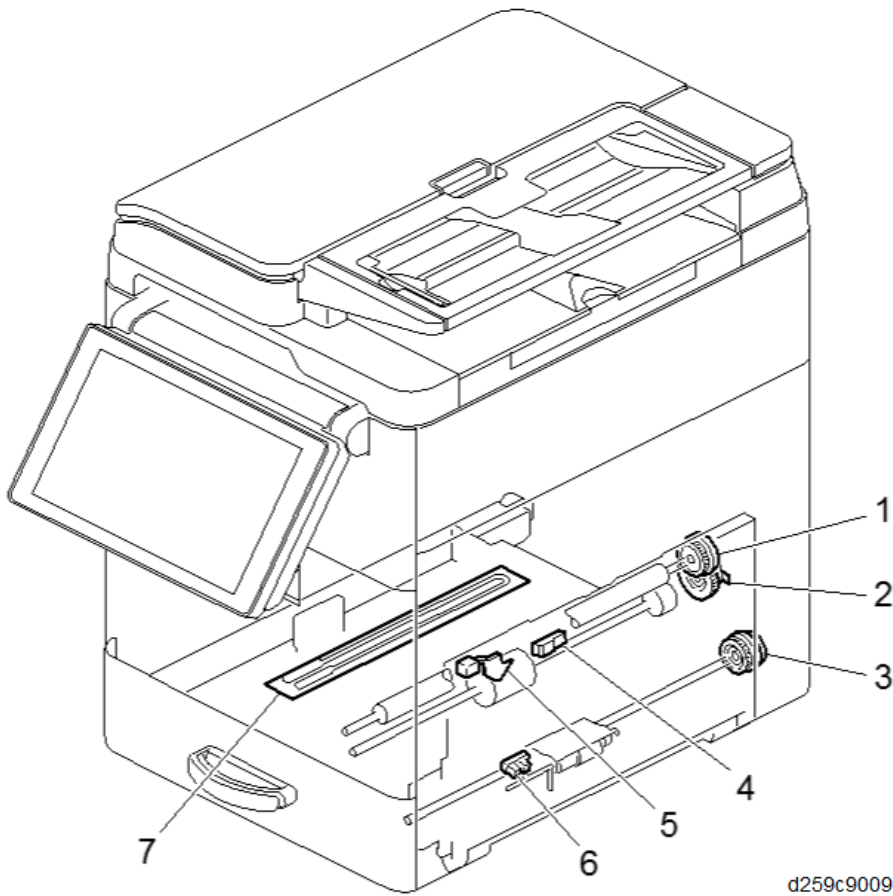
Fusing Unit, Paper Exit Section



d259c9008

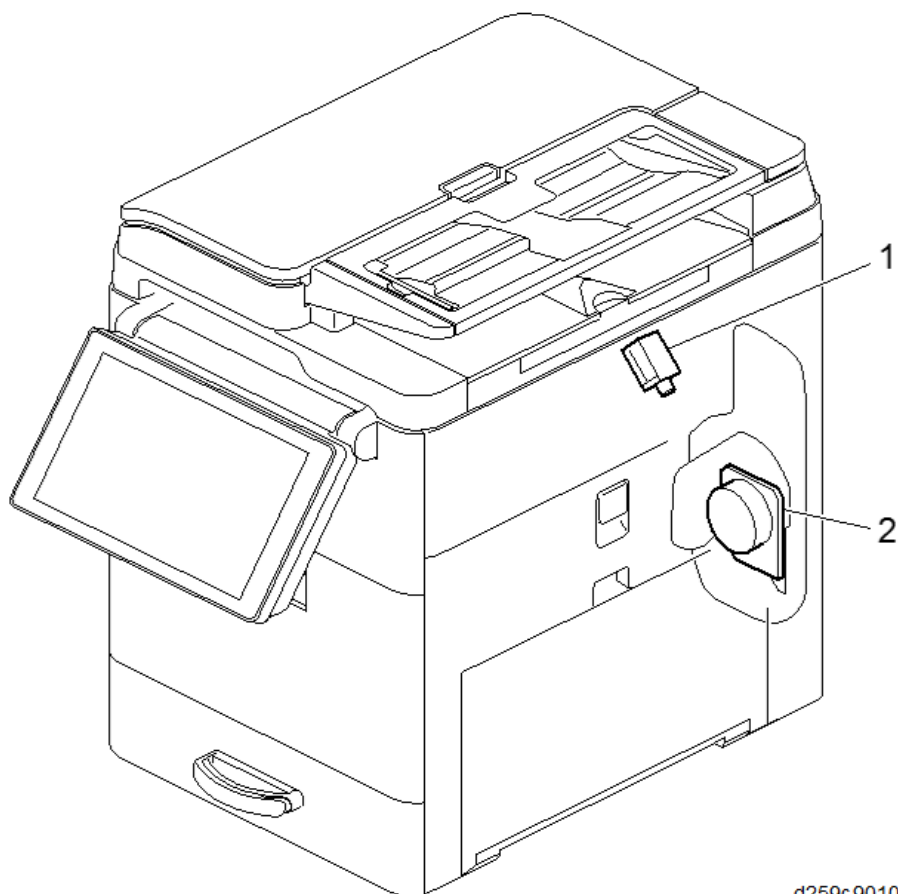
No.	Items	No.	Items
1	Paper Exit Sensor	5	Thermostat
2	Reverse Exit Clutch	6	Thermistor (Center)
3	Reverse Clutch	7	Thermistor (End)
4	Fusing Lamp	-	

Paper Feed Unit



No.	Items	No.	Items
1	Registration Clutch	5	Paper End Sensor
2	Paper Feed Clutch	6	Bypass Paper End Sensor
3	Bypass Clutch	7	Main Tray Dehumidification Heater
4	Registration Sensor	-	

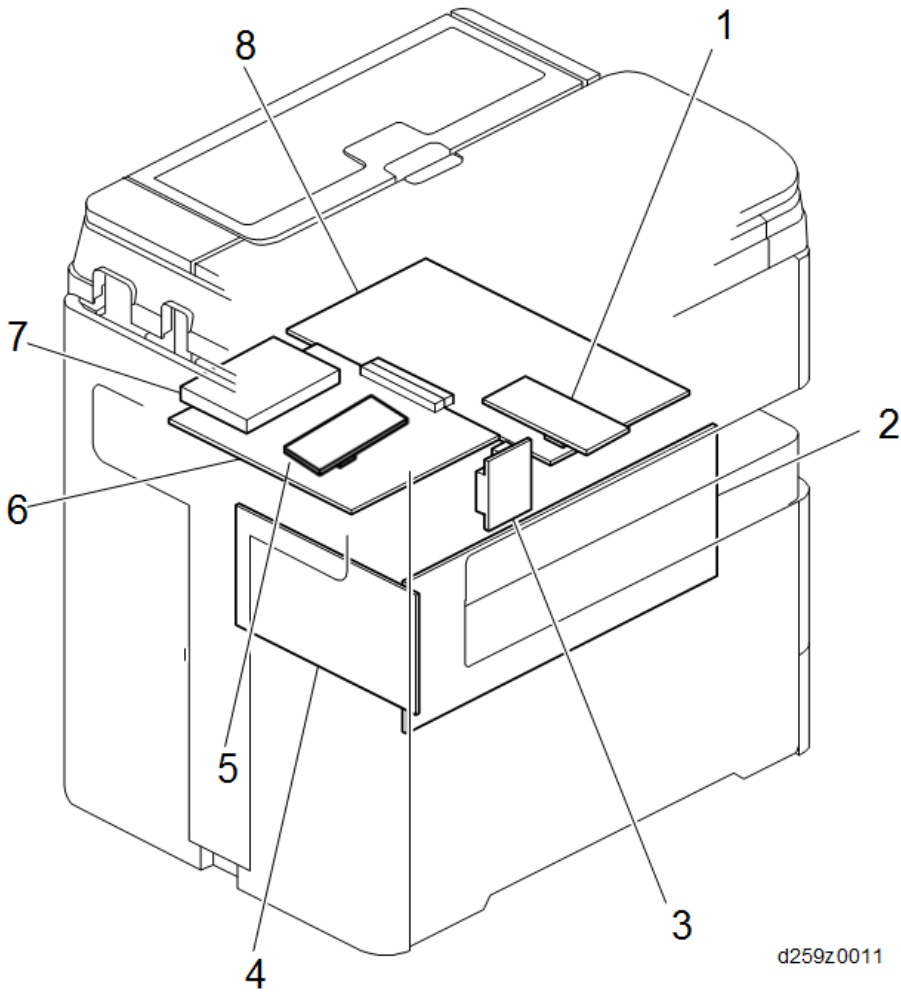
Drive Unit



d259c9010

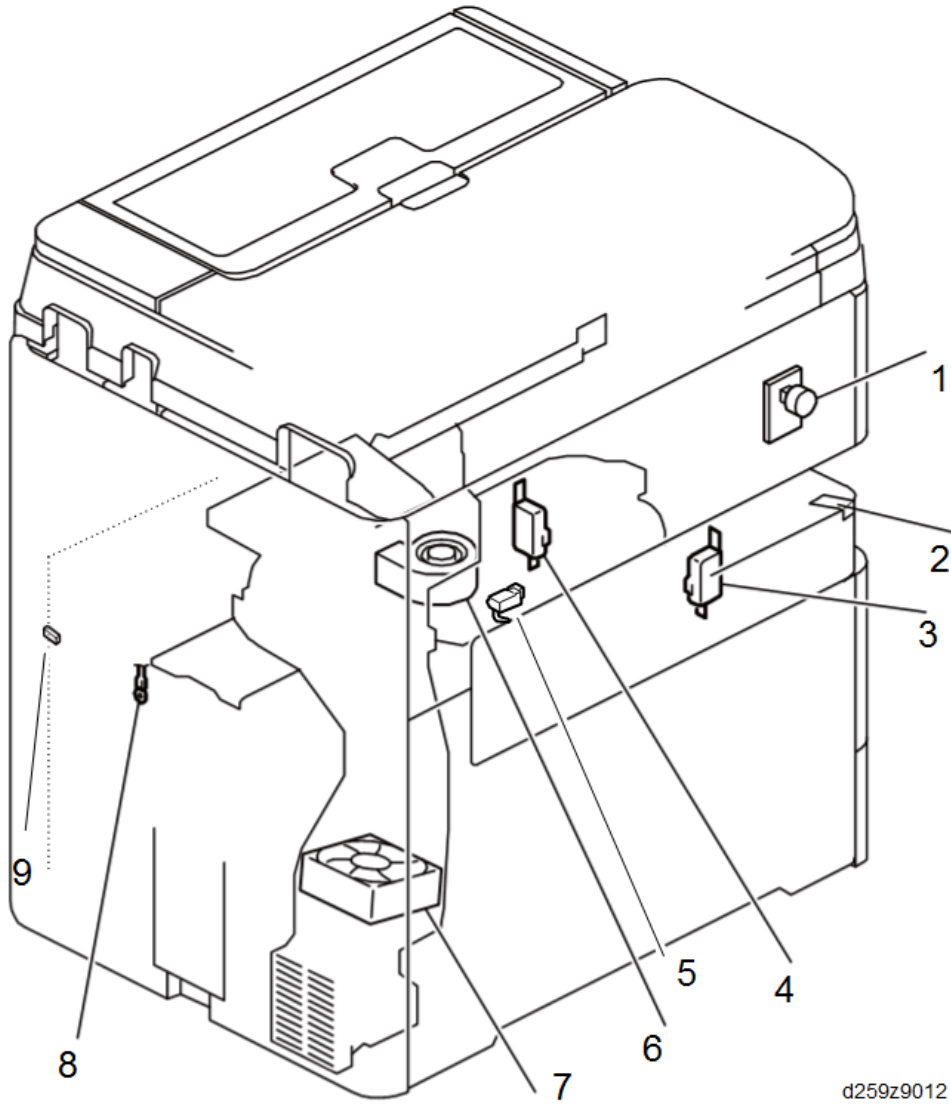
No.	Items
1	Fusing Solenoid
2	Main Motor

Electrical Components 1



No.	Items	No.	Items
1	Copy Data Security Unit	5	FCU (SPF models only)
2	PSU	6	Controller Board
3	Optional Counter Interface Unit	7	HDD
4	HVPS	8	BiCU

Electrical Components 2

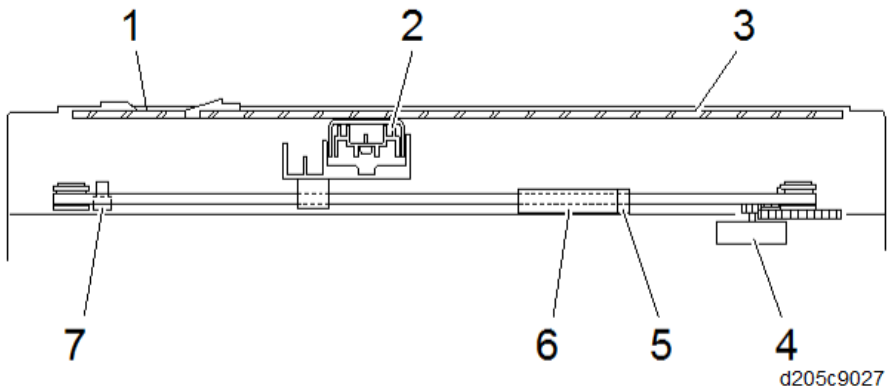


No.	Items	No.	Items
1	Main Power Switch	6	Intake Fan
2	Paper Exit Indicator	7	Exhaust Fan
3	Front Cover Switch	8	Internal Temperature Sensor
4	Right Cover Interlock Switch	9	Right Cover Push Switch

No.	Items	No.	Items
5	Exit Tray Paper Sensor		

Scanner Unit

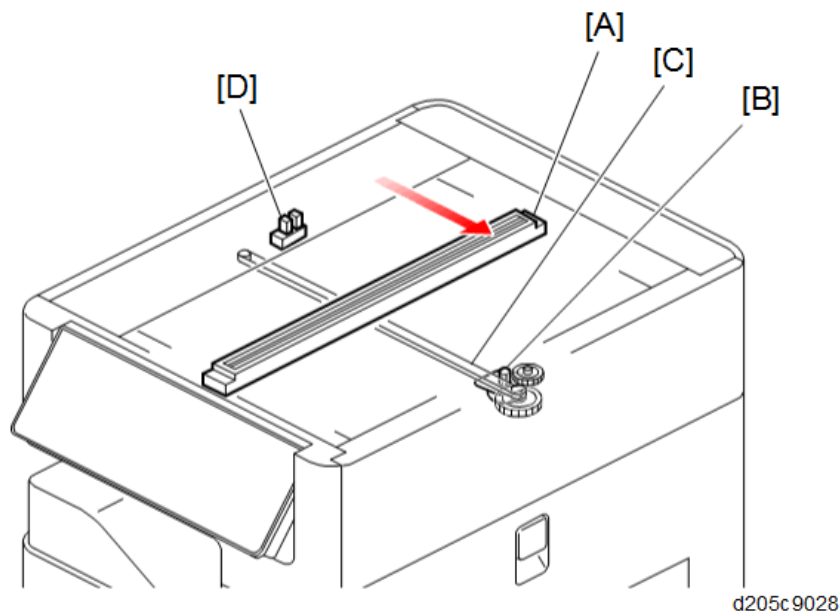
Overview



No.	Items	No.	Items
1	ARDF exposure glass	5	APS sensor
2	CIS and carriage unit	6	APS sensor (EU Only)
3	Exposure glass	7	Scanner HP sensor
4	Scanner motor		

Mechanism

This model uses a six-channel full color CIS (Contact Image Sensor) unit. The BiCU provides the power to the CIS unit through an FFC.



d205c9028

The scanner motor [B] moves the scanner carriage [A] in the main scan direction through the timing belt [C].

While the carriage is moving along the guide rail, the CIS unit on the carriage scans the originals. The scanner HP sensor [D] controls the position of the carriage.

There are two scan modes for this model:

Platen Scan Mode:

To scan an original on the exposure glass, the scanner motor moves the carriage from the home position (left) to the right.

ARDF Scan Mode:

The original set on the ARDF is transported over the ARDF exposure glass. The carriage stays at its home position right under the ARDF exposure glass, and the CIS unit scans the originals passing the ARDF exposure glass.

Original Width Detection

Mechanism

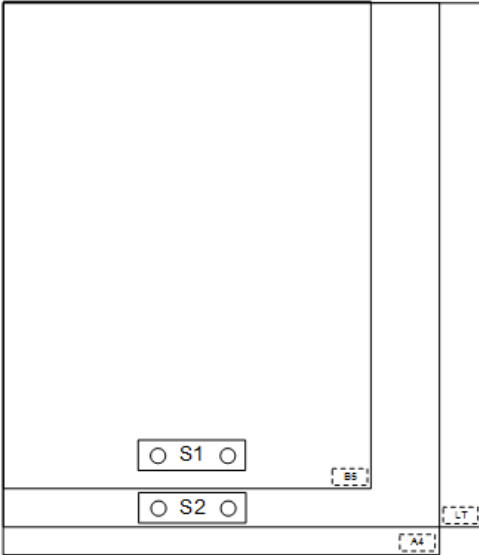
This model uses one or two APS sensor(s) for detecting the width of an original. The number of APS sensors depends on destinations:

For EU: Two APS sensors

For NA: One APS sensor

The platen cover sensor is used to detect the timing of original size detection. When the platen cover sensor is OFF, the scanner carriage moves to the right. When the platen cover sensor is ON, the scanner carriage moves back to its home position to scan the original size.

The ARDF position sensor is used to detect if the ARDF opens or closes.



d205z7003

Paper Size			APS detects?	
Size	LEF/SEF	mm	S1	S2
A4	LEF	297×210	Yes	Yes
B5	LEF	257×182	Yes	-
A5	SEF	148×210	-	-
A5	LEF	210×148	-	-
B6	SEF	128×182	-	-
B6	LEF	182×128	-	-

Related SPs

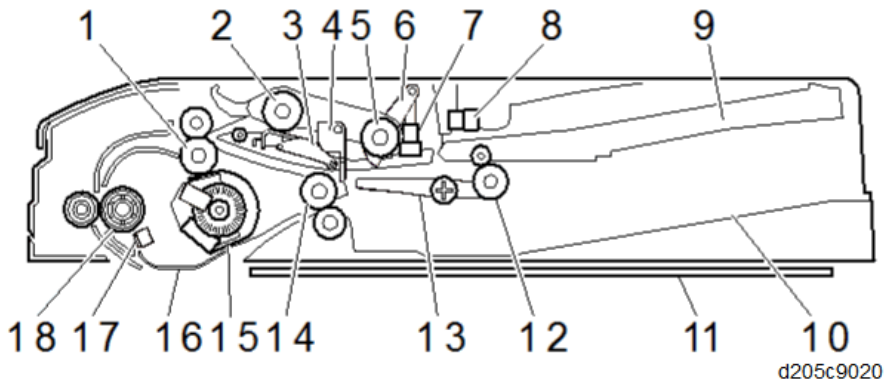
- SP4-301-001 [Operation Check]-[APS Sensor]:**
 Allows the customer engineers to check the sensor status. This SP shows bits as "(7)0000000(0)".
 0: Paper not detected, 1: Paper detected

- **SP4-305-001 [APS Detection Setting]:**
Allows the customer engineers to scan A4/Letter mixed originals or the paper sizes used in China such as 8K/16K.
- **SP4-303-001 [Min Size for APS]:**
Allows the customer engineers to set the machine's behavior when the APS sensor detects an original such as A5/HLT or smaller.

ARDF

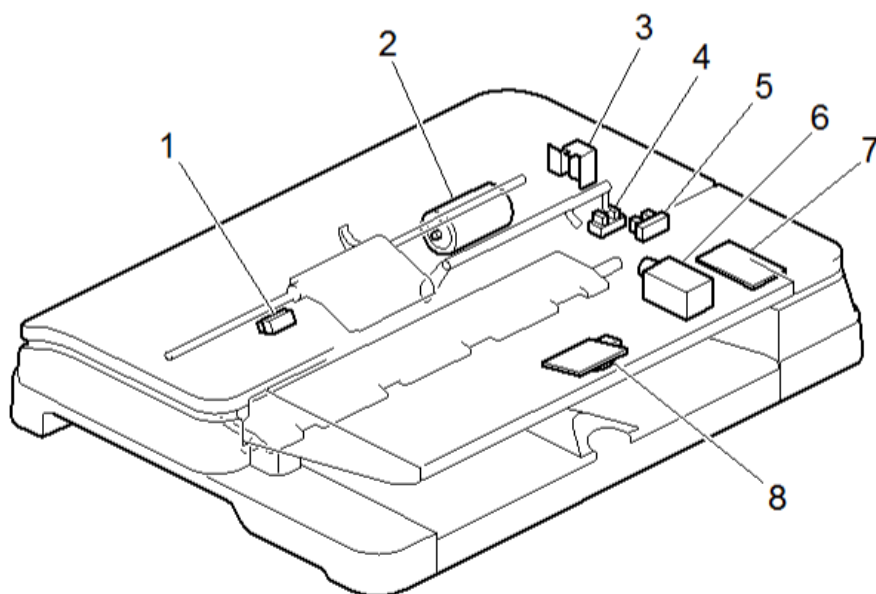
Overview

Layout



7

	Item		Item
1	Transport roller (pullout)	10	Original exit tray
2	Feed roller	11	Platen cover
3	Friction pad	12	Reverse roller
4	Original stopper	13	Junction gate
5	Pickup roller	14	Paper exit roller
6	Original set actuator	15	ARDF drive motor
7	Original set sensor	16	White plate guide
8	Feed cover sensor	17	Registration sensor
9	Original feed tray	18	Transport roller (scan)



d205c9021

	Item		Item
1	Registration sensor	5	Feed cover sensor
2	ARDF drive motor	6	ARDF reverse solenoid
3	ARDF feed solenoid	7	Relay board
4	Original set sensor	8	Original width sensor

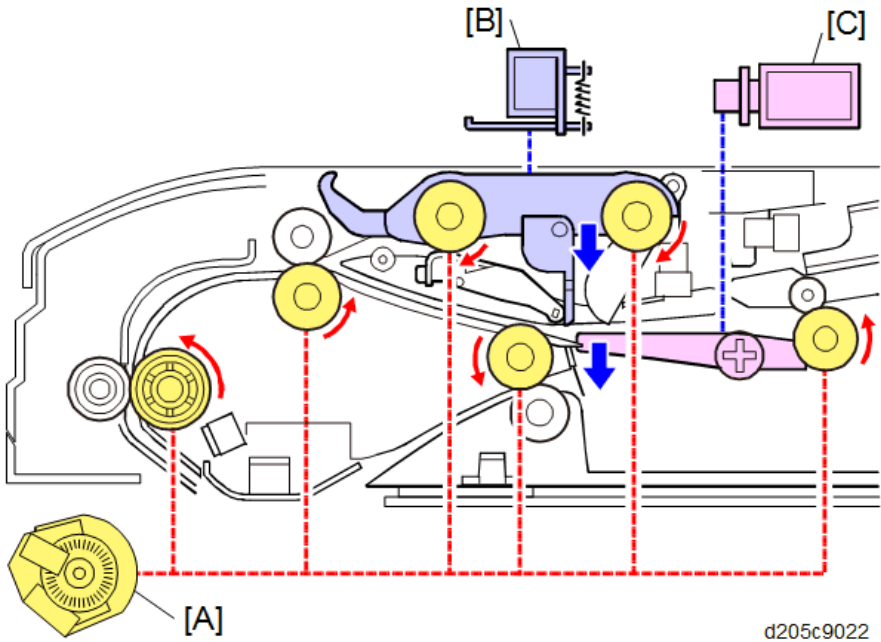
7

Detailed Description

ARDF Drives

The ARDF drive motor [A] drives the rollers in the ARDF via the gears.

The feed solenoid [B] controls the original pick-up. The reverse solenoid [C] switches the junction gate and rotates the reverse roller during duplex scanning.

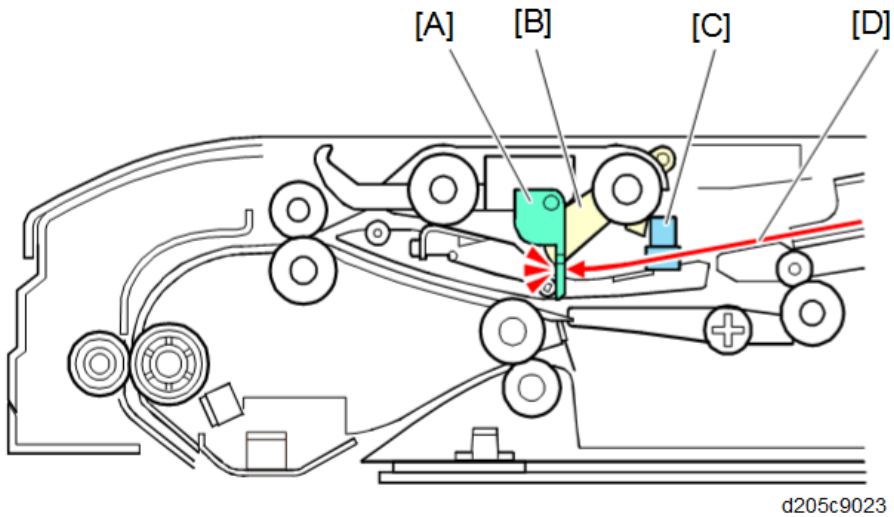


7

Original Set Detection

When an original is set [D], the original pushes against the original set actuator [B]. The original set sensor [C] is uncovered and detects the original.

The stopper [A] prevents the original from being pushed too far into the feeder.

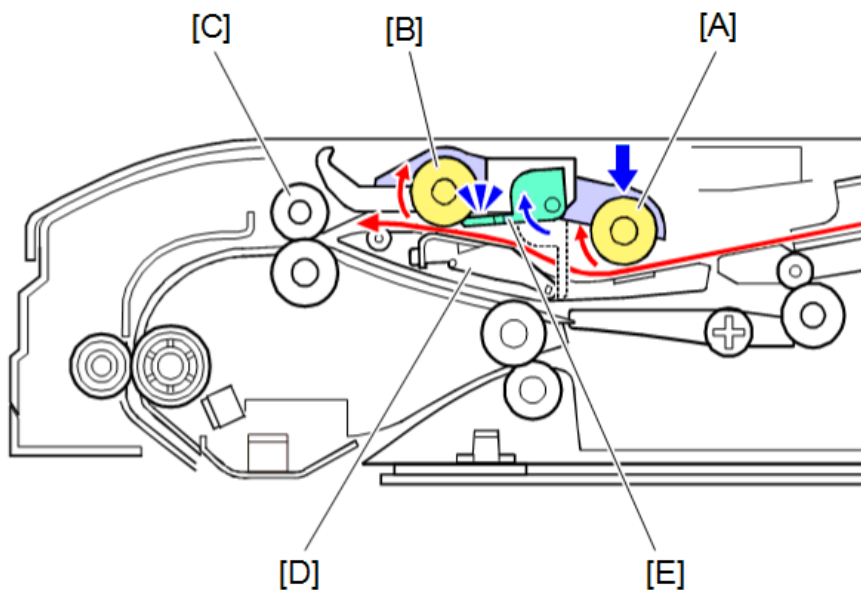


Original Transport (Single-sided Scanning)

When the Start key is pressed to begin scanning, the feed solenoid turns ON and lowers the pickup roller. The original passes through the feed roller [B] and is then transported to the 1st transport roller [C].

When a number of originals are set at the same time, the friction pad [D] prevents double feeding by feeding only the sheet on top to the 1st transport roller.

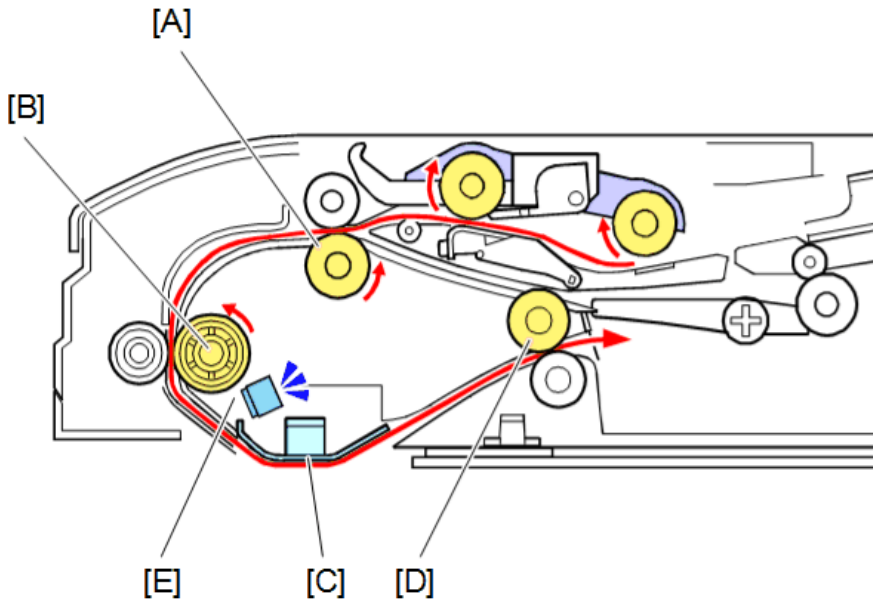
During original transport, the stopper [E] is released to ensure smooth transportation.



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The original is fed through the 1st transport roller [A] and 2nd transport roller [B]. It is scanned on the exposure glass under the white plate guide [C], and comes out through the original exit roller [D].

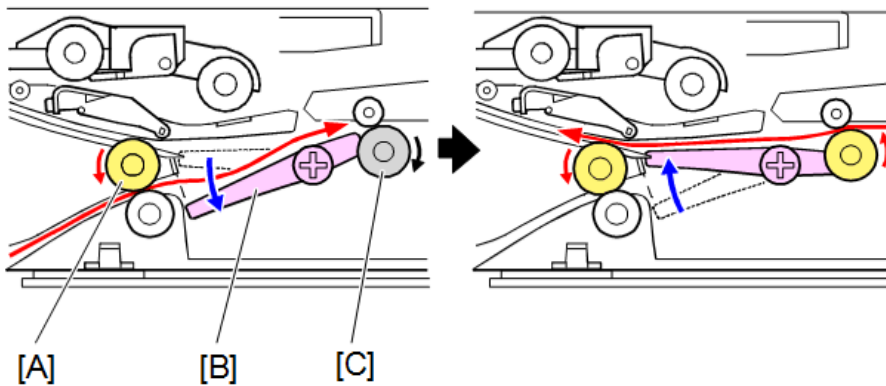
The original transport sensor [E] detects jams in the ARDF.



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Original Transport (Duplex Scanning)



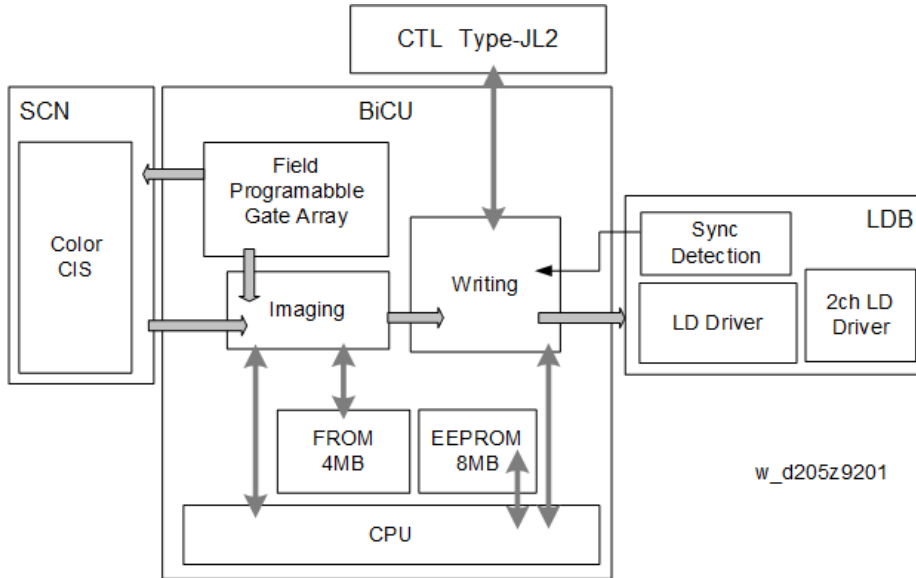
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An original that is scanned on one side comes out through the original exit roller [A]. However, in duplex scanning, the reverse solenoid turns ON and lowers the junction gate [B], and the original is transported through the reverse roller [C] to the original exit tray.

When the trailing edge of the original has passed through the roller, the reverse solenoid turns OFF and the junction gate is lifted. The reverse roller rotates in the opposite direction to send the original back to the 1st transport roller for scanning of the second side.

Image Processing

Block Diagram



Overview

CIS Unit

Functions

Performs Black level correction and White level correction (AGC), and A/D conversion.

Operation Overview

Converts the six-channel analog RGB signals, generated by a line-sequential CIS (Contact Image Sensor) unit to a 10 bit digital signal at the AFE (analog front end) on the CIS unit; and generates the digital signals for the BiCU as an LVDS signal.

SP Correction Value Storage

The following CIS correction values are stored in an EEPROM on the BiCU. They must be re-adjusted after the CIS unit is replaced.

- SP4-008-001 (Sub Scan Magnification Adj)
- SP4-010-001 (Sub Scan Registration Adj)
- SP4-011-001 (Main Scan Reg)

- SP4-688-001 (DF Density Adjustment ARDF)

Note

- **Dirty Background Adjustment When Using DF:**
The image density scanned by using the DF may be lower compared to the image density scanned by using the platen. The image density value of DF scanning can be adjusted by SP4-688-001 (DF Density Adjustment ARDF).

BiCU

Image processing function overview

The image signals from the CIS unit are subjected to various image processing, and output to the controller (memory) via a PCIe bus. The image signals from the controller (memory) are received via the PCIe bus, and output to the LDB via a GAVD (the LDB is provided in the laser unit).

The image signals from the CIS unit are subjected to various image processing, and output to the FCU via the PCIe bus (for direct fax application transmission).

Image processing overview (copy application)

Digital signal data output from the CIS unit is subjected to shading correction and line interval correction, as well as image processing, which are performed by the BiCU. Finally, the data is sent to the MFP unit as digital signals-2 bit/pixels.

Image processing items	Details
Shading correction	Corrects for uneven scanner lamp lighting
Line interval correction	Line shift during sub-scanning magnification/reduction by scanner. Corrects integer part.
Dot correction	Line shift during sub-scanning magnification/reduction by scanner. Corrects below decimal point.
Vertical line correction	Corrects a vertical striped image during sheet-through ARDF.
Image area separation	Determines text parts and photo parts of image.
Scanner gamma correction	Corrects scatter of image data relative to exposure amount. From reflectivity linear to density linear.
Filter	Performs image sharpness adjustment and removes moire.
ADS	Performs natural complexion removal in full color mode.
Color compensation preprocessing	Determines hue in masking mode, and improves chromaticity.

Image processing items	Details
Color compensation	Converts RGB data to density value CMYK data of color materials.
Image magnification change	Arbitrarily changes main scanning magnification, sub-scanning fixed image reduction and magnification of scanner image.
Image shift function	Shifts image data in the main scanning or sub-scanning directions.
Image binarization function	In scanner mode, outputs a binary signal.
Image mask	Masks an area outside a frame of an arbitrary region in scanner or printer data.
Image compression/expansion	Compresses or expands an image.
Printer gamma correction	Adjusts exposure amount of photosensitive body relative to image density.
Gradation processing	Applies 600dpi, 4bit 16 value gradation processing.

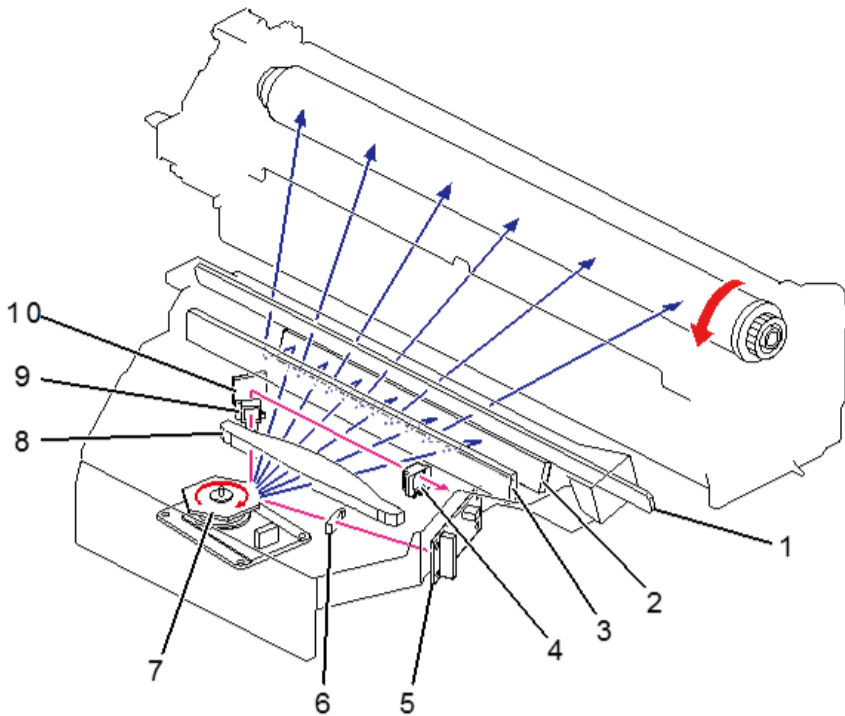
Related SPs

- **SP4-688-001 [DF Density Adjustment ARDF]:**
Adjusts the density gradient between the book mode and ARDF mode.

Laser Exposure

Overview

This model uses the two beam laser system. This system allows the machine to reduce the polygon motor's speed, which enhances the machine's quietness in use.



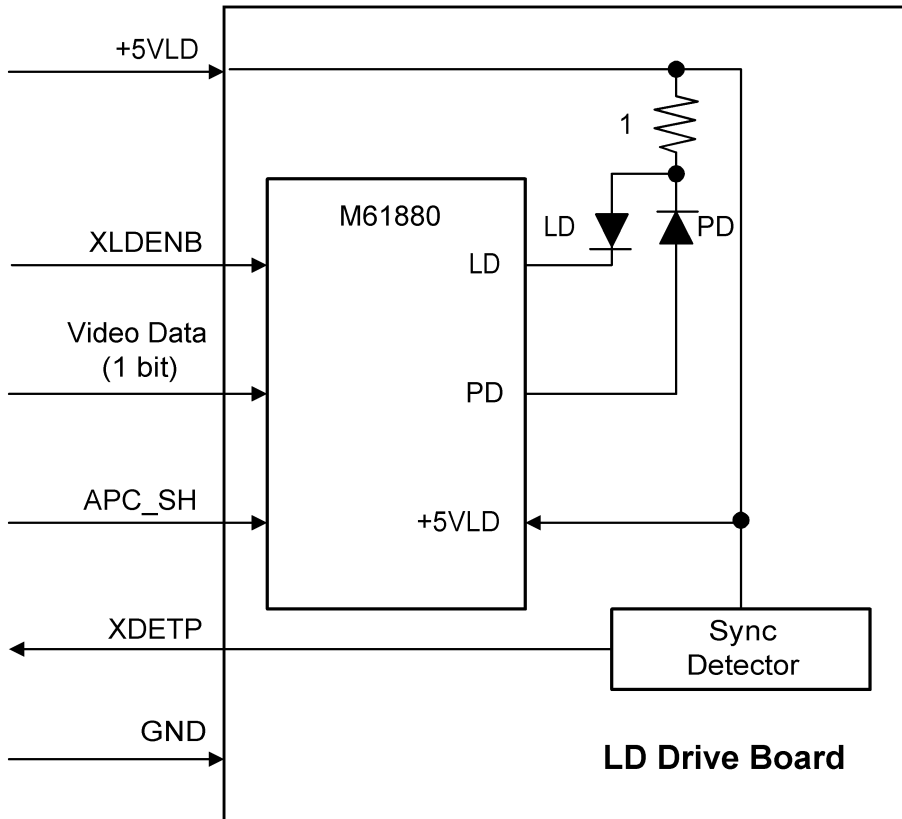
d205c9029

No.	Items	No.	Items
1	Dust Shield Glass	6	Cylindrical lens
2	Mirror	7	Polygon Motor
3	Mirror	8	F-theta lens
4	Lens 2	9	Lens 1
5	LD Board	10	Mirror

Note

- The LD drive board controls both the laser output and laser synchronization mechanism.
- The machine cuts off the power supply to the LD drive board if the front or right cover is opened.

Auto Power Control (APC)



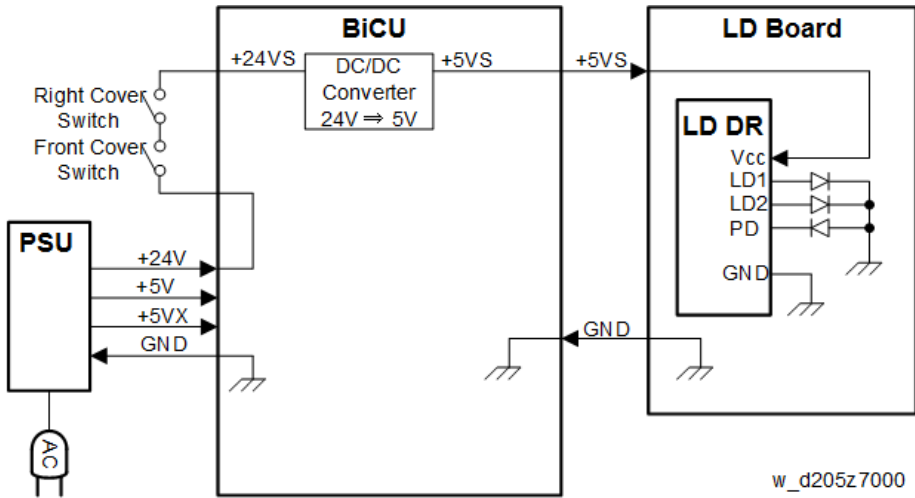
The LD driver IC drives the laser diode. To prevent the intensity of the laser beam from changing because of the temperature, the machine monitors the current passing through the laser diode (LD). The machine adjusts the current to the laser diode by comparing it with the reference level from the reference circuit. This auto power control is done just after the main power is turned ON and during printing.

The laser diode power is adjusted on the production line.

Note

- Do not touch the variable resistors on the LD unit in the field.

LD Safety Switch

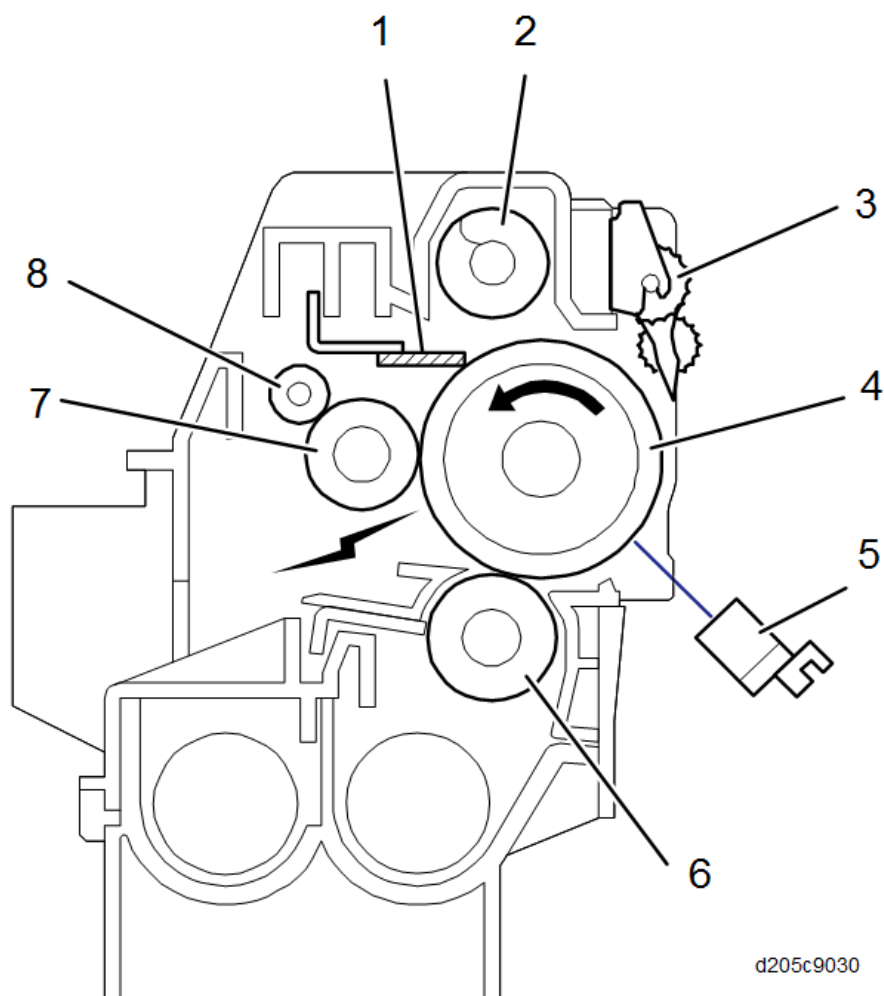


To ensure technician and user safety and to prevent the laser beam from inadvertently switching on during servicing, safety switches are located at the front and right covers. The switches are installed on the +5VLD line through the BICU board.

When the front cover or the right cover is opened, the power supply to the laser diode is interrupted.

PCU

Overview

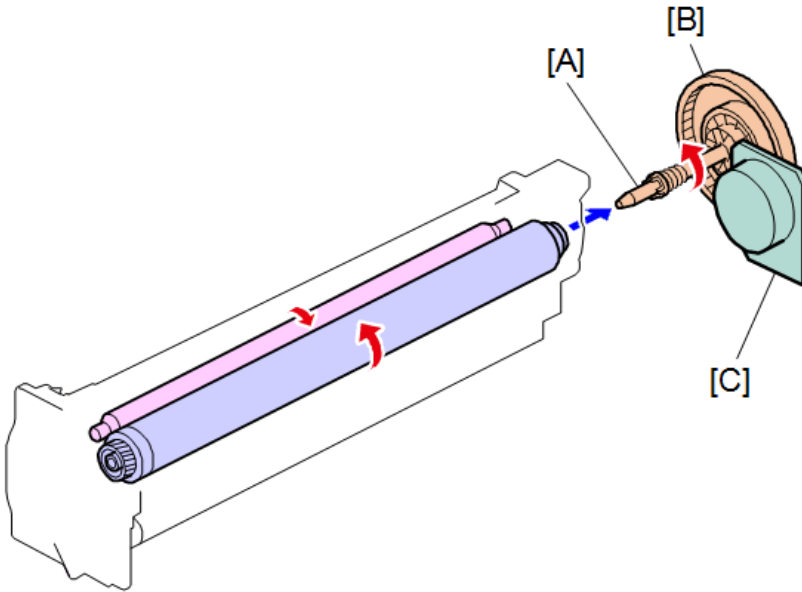


No.	Items	No.	Items
1	Cleaning Blade	5	ID Sensor
2	Toner Collection Coil	6	Development Roller
3	Pick-off Pawl	7	Charge Roller
4	Drum	8	Charge Roller Cleaning Roller

Mechanism

Drum Drive Mechanism

The main motor [C] drives the drum through gear [B] and the drum drive shaft [A]. If the motor speed exceeds the regulation speed, the motor stops for safety.

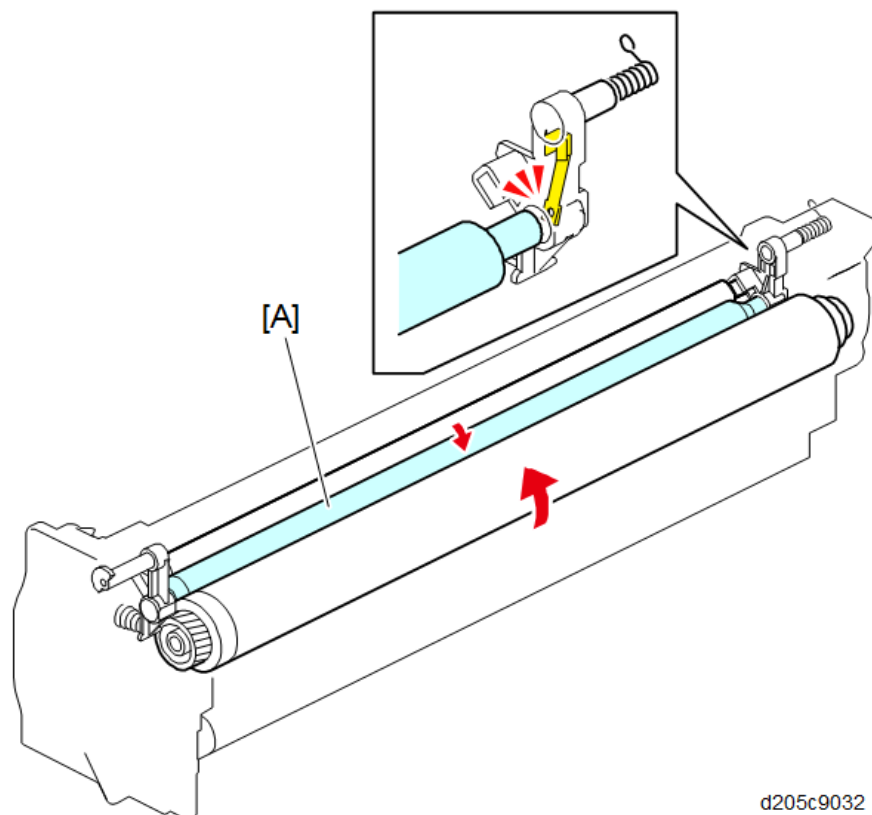


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Drum Charge

Charging the drum is performed by the charge roller [A].

The HVPS applies the bias to the charge roller via a receptacle and electrode terminal. The charge roller is always in contact with the surface of the drum with the pressure spring and applies a charge bias.



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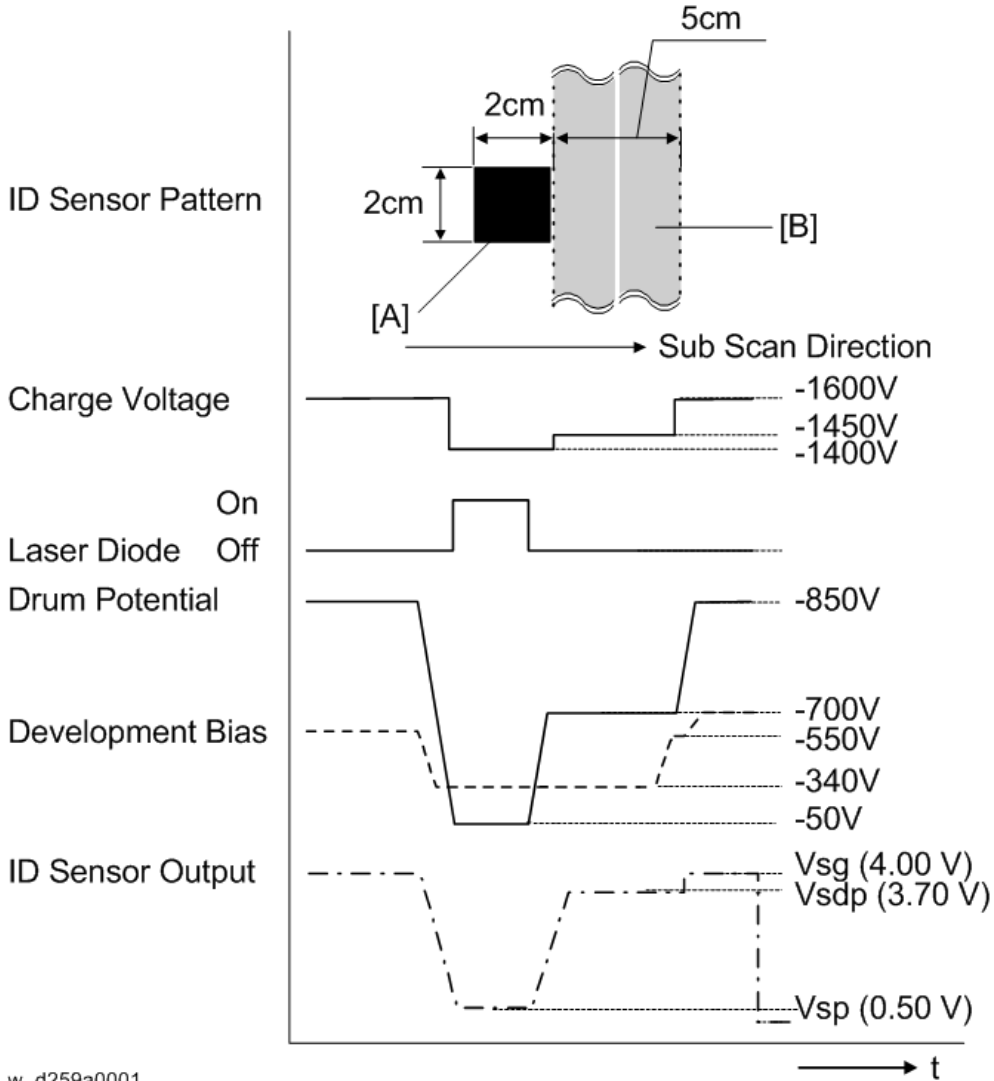
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Charging Bias Correction (Environmental Correction)

With a drum charge roller system, the voltage transferred from roller to drum varies with the temperature and humidity around the charge roller. The higher the temperature or humidity is the higher the applied voltage required.

To compensate, the machine uses the ID sensor to measure the effects of current environmental conditions. For this measurement, the process control parameters are balanced so that any small change in drum potential caused by environmental effects is reflected in a change in the amount of toner transferred to the drum.

This correction is made immediately after the ID sensor pattern for toner density control. Immediately after making ID sensor pattern [A], the development bias stays the same (-340 V), but the charge roller voltage goes up to -1450 V; as a result the drum potential is reduced to -650 V. The laser diode is not switched on, and the drum potential is now slightly higher than the development bias, so a very small amount of toner transfers to the drum. The ID sensor measures the density of this pattern [B], and the output voltage is known as V_{sdp} . This voltage is compared with V_{sg} (read from the bare drum at the same time).



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If the humidity drops, the drum potential goes up (to a higher -ve voltage) even if the charge roller voltage supply stays the same (efficiency of voltage transfer is higher with lower humidity). As a result, less toner is transferred to ID sensor pattern [B]. If the sensor output reaches a certain point, the drum charge voltage will be reduced.

To determine whether to change the drum charge roller voltage, the machine compares V_{sdp} with V_{sg} .

$V_{sdp}/V_{sg} > 0.95$ = Make the drum charge voltage less -ve (smaller) by 50 V

$V_{sdp}/V_{sg} < 0.90$ = Make the drum charge voltage more -ve (larger) by 50 V

ID Sensor

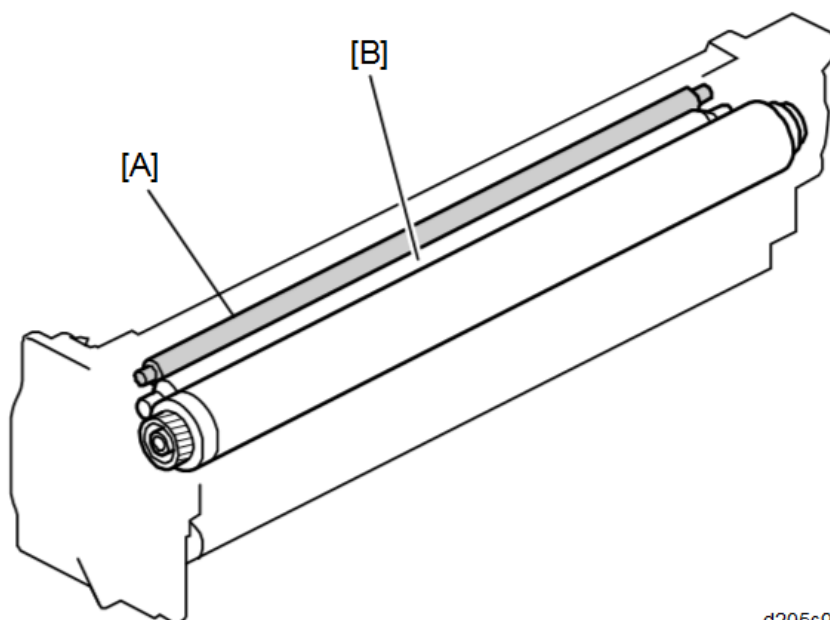
The ID sensor is used to keep image density constant by monitoring the density of a standard sensor pattern. Based on the ID sensor readings, the machine adjusts the development bias, drum potential and LD power.

The ID sensor does not check each page or each job. The ID sensor check is done at the following times:

- When the machine is warming-up at startup.
- When recovering from sleep mode or energy saving mode, and ID sensor control temperature (measured by the internal temperature sensor) is below a certain value. (Initial setting: 30°C)

Cleaning the Charge Roller

Dirt can easily adhere to the charge roller [B] because the roller is always in contact with the drum with the pressure spring. Therefore, the charge roller cleaning roller [A] is always in contact with the charge roller [B] for cleaning.



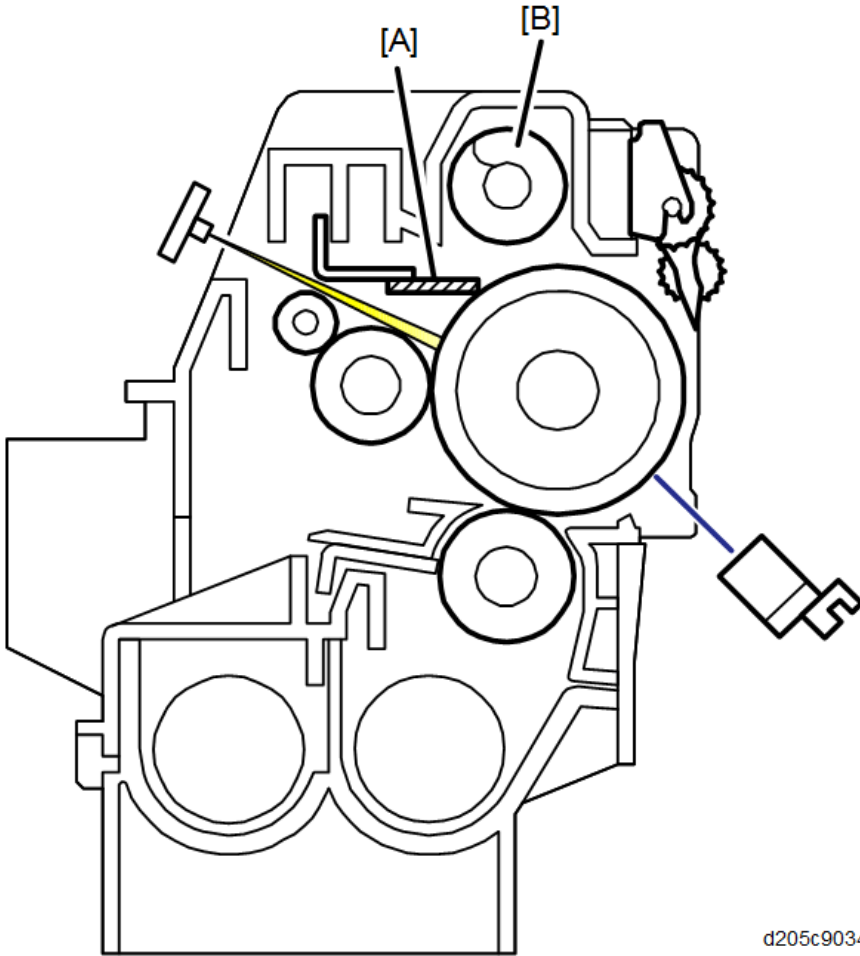
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Drum Cleaning

The cleaning blade [A] removes any toner remaining on the drum after the image is transferred to the paper. This model uses a counter blade system.

The cleaning blade scrapes off toner remaining on the drum. When toner builds up in the cleaning unit, toner at the top of the pile is removed by the toner collection coil [B].

To remove the toner and other particles that are accumulated at the edge of the cleaning blade, the drum turns in reverse for about 6 mm at the end of every copy job.

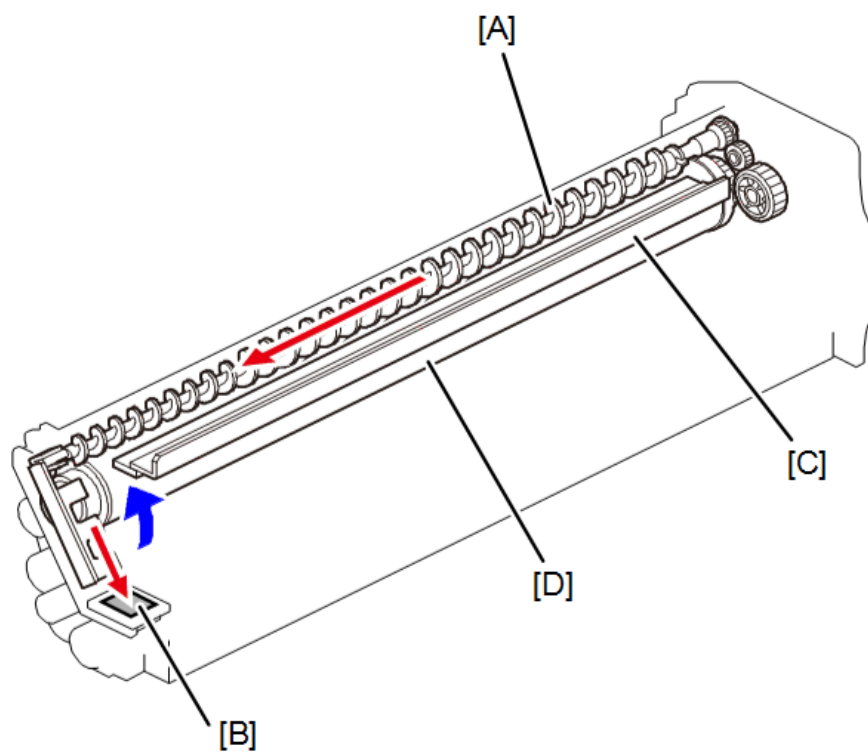


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Toner Recycling

Toner on the drum [D] is scooped by the cleaning blade [C].

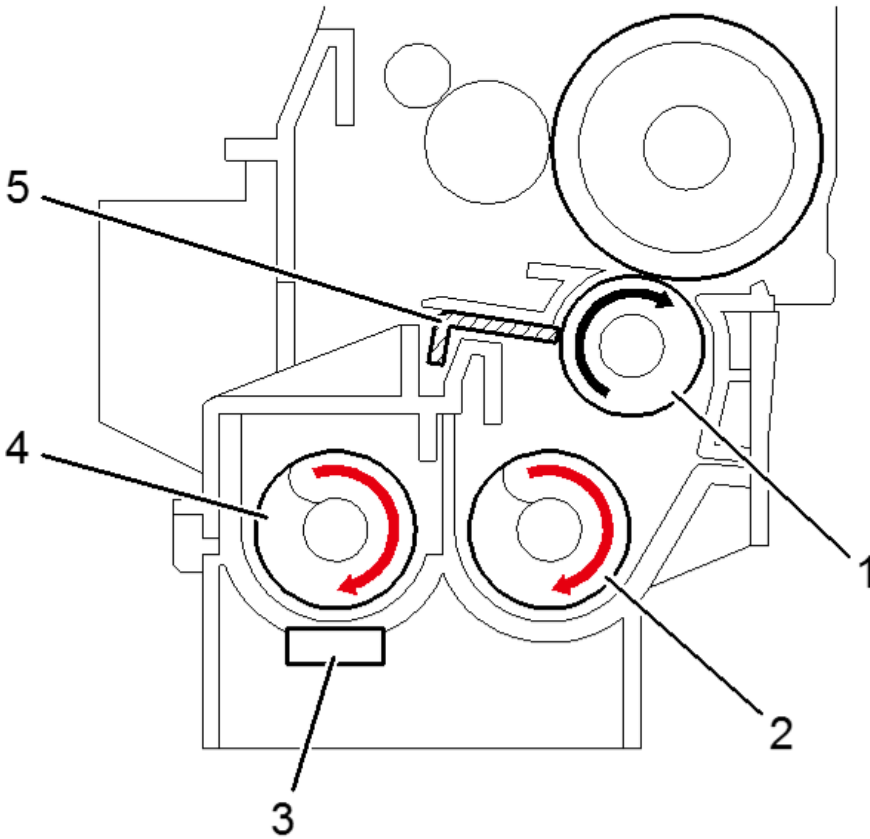
Scooped toner is then picked up by the toner collection coil [A] and transported to the opening [B] in the side of the PCU. Then, this toner falls into the development unit with new toner coming from the toner bottle.



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Development and Toner Supply

Overview



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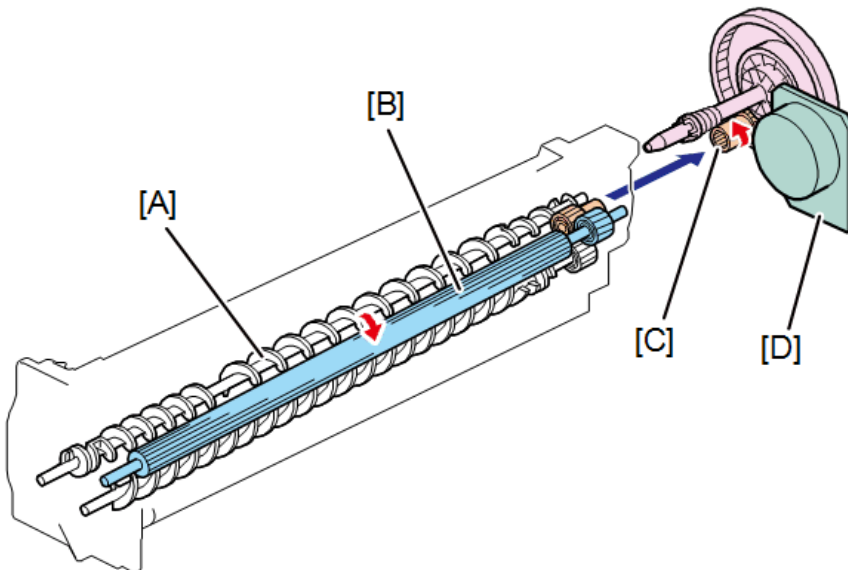
	Part name
1	Development roller
2	Mixing auger 1
3	TD sensor
4	Mixing auger 2
5	Doctor blade

This machine uses a single-roller development system. Two mixing augers mix the developer. The toner density (TD) sensor and image density (ID) sensor (see the illustration in the PCU section) are used to control the image density on the copy.

Mechanism

Drive

The main motor [D] drives the development roller [B] and mixing augers [A] through gear [C] and the development drive shaft.

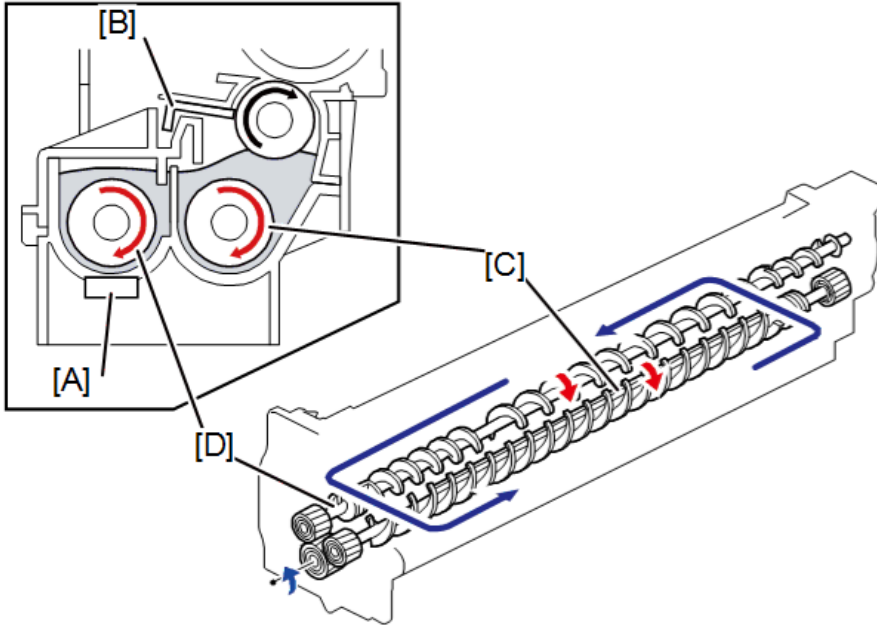


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Developer Mixing

The two mixing augers [C] and [D] keep the developer evenly mixed. Mixing auger 1 [D] transports excess developer, scraped off the development roller by the doctor blade [B], towards the front of the machine. Mixing auger 2 [C] returns the excess developer, along with new toner, to the rear of the mixing assembly. Here the developer is reapplied to the development roller.

The TD sensor [A] detects the density of toner inside the developer.

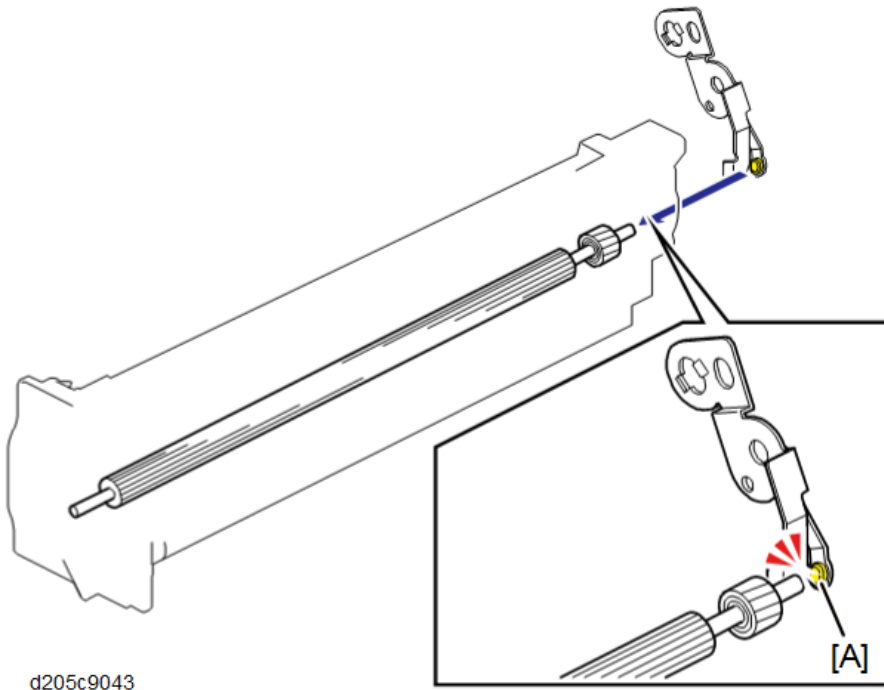


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Development Bias

The bias is applied to the development roller shaft through the carbon terminal [A] and dielectric sheet.



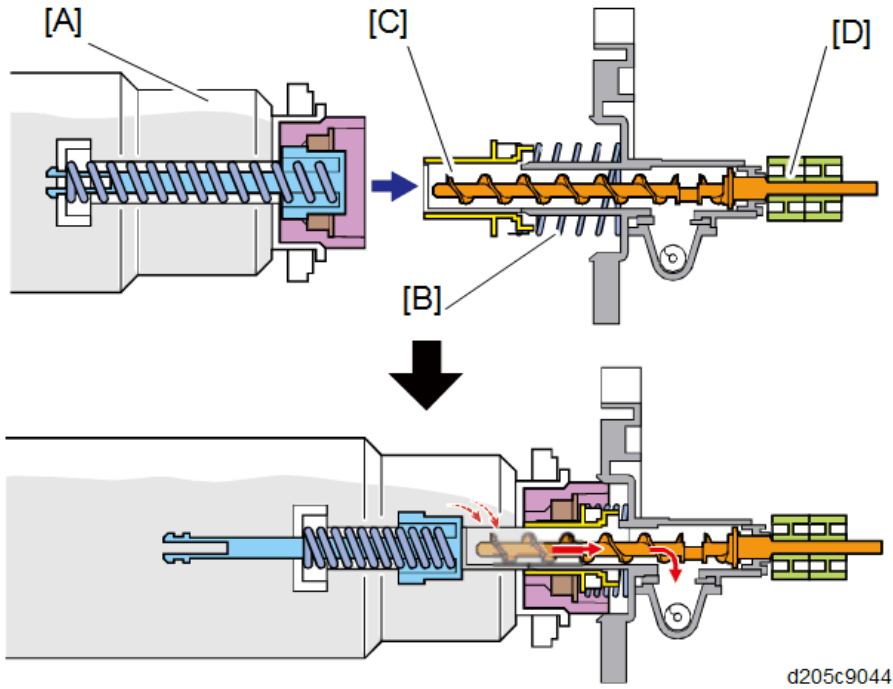
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Toner Supply

When a toner bottle [A] is set, the transporter nozzle [B] is inserted into the bottle.

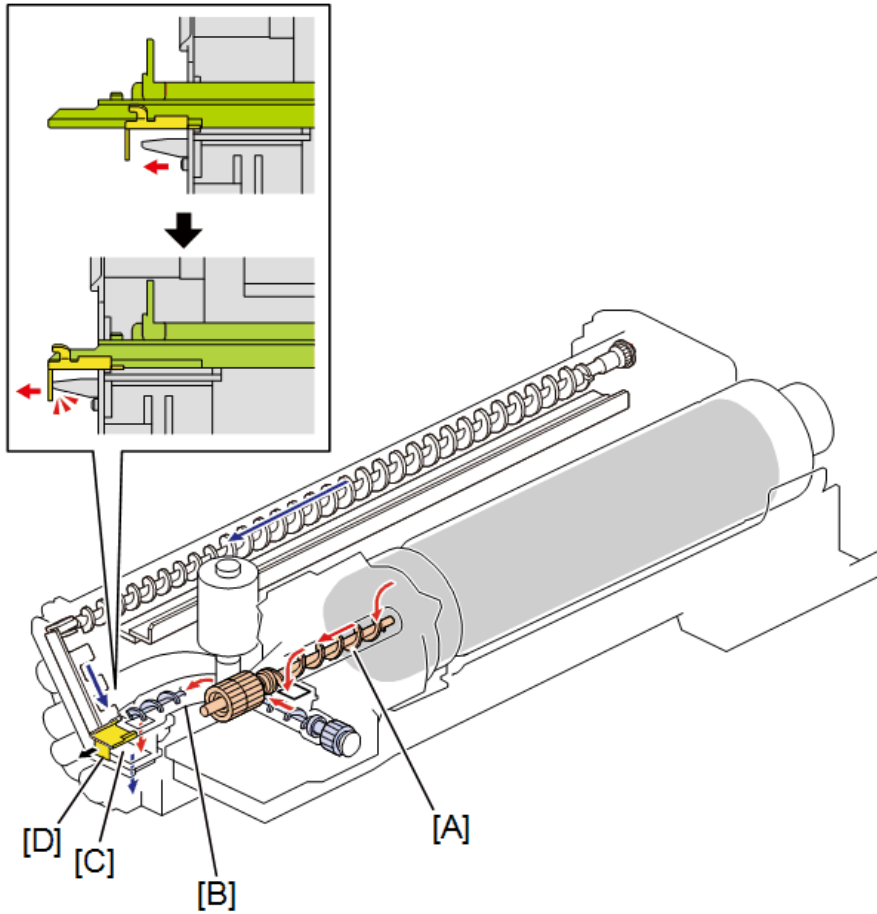
Toner supply motor drives the mixing auger [C] through gear [D], horizontally transporting the toner inside the toner bottle. Stable and precise toner supply and reduction of remaining toner are achieved through transportation by an auger.



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Supplied toner is divided into new toner supplied from the toner bottle and toner collected from the inside of the machine (recycled toner).

New toner transported by the auger [A] passes through the mixing auger and the shutter [D] and falls down into the PCDU through the slit [C]. Recycled toner passes through the inclination in the PCDU and is resupplied into the development unit.

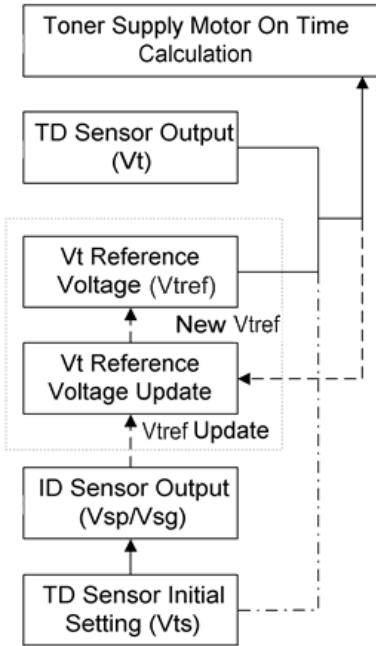


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Toner Density Control

There are four modes for controlling toner supply, which can be changed with by SP2-921-001. The factory setting is sensor control 1 mode.

Basically, the toner concentration in the developer is controlled using the toner supply reference voltage (V_{tref}), actual TD sensor output voltage (V_t), and ID sensor output data (V_{sp}/V_{sg}).



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The four-toner density control modes are as follows.

Mode	Sensor control 1 (SP2-921-001, "0"): Normally use this setting only
Toner supply decision	Compare V_t with a reference voltage (V_{tref})
Toner control process	<p>Toner is supplied to the development unit when V_t is higher than the reference voltage (V_{tref}). This mode keeps the V_{tref} value for use with the next toner density control.</p> <p>V_t is used for the first toner density control after a new PCU has been installed.</p> <p>V_{tref} is used after it has been corrected after the ID sensor density control.</p>
Toner supply amount	Varies
Toner end detection	Performed

Mode	Sensor control 2 (SP2-921-001, "1"): For designer's use only
Toner supply decision	Compare V_t with a reference voltage (V_{tref})
Toner control process	This toner control process is the same as sensor control 1.
Toner supply amount	Varies

Toner end detection	Performed
---------------------	-----------

Mode	Fixed control 1 (SP2-921-001, "2"): For designer's use only
Toner supply decision	Compare V_t with a reference voltage (V_{tref})
Toner control process	This toner control process is the same as sensor control 1.
Toner supply amount	Fixed (SP 2925)
Toner end detection	Performed

Mode	Fixed control 2 (SP2-921-001, "3"): For designer's use only
Toner supply decision	None
Toner control process	Toner is supplied every printed page regardless of V_t .
Toner supply amount	Fixed (SP 2925)
Toner end detection	Not performed

Toner Supply Motor on Time Determinations

For fixed control mode, the toner supply motor on time is specified by the setting of SP 2925, and does not vary. The default setting is 200 ms for each copy.

For sensor control modes 1 and 2, the toner supply motor on time is decided by the following factors.

- V_t
- V_{tref}
- TD sensor sensitivity (coefficient: S , value is 0.3)

There are seven levels for toner supply motor on time as shown below.

Level	Mode	Decision Δ $V_t = V_t - V_{tref}$	Motor On Time (seconds)
0	No supply	$\Delta V_t \leq 0$	0
1	Normal	$0 < \Delta V_t \leq S/16$	T
2	Normal	$S/16 < \Delta V_t \leq S/8$	$a \times t$
3	Normal	$S/8 < \Delta V_t \leq S/4$	$b \times t$

Level	Mode	Decision Δ $Vt=Vt-Vtref$	Motor On Time (seconds)
4	Normal	$S/4 < \Delta Vt \leq S/2$	$c \times t$
5	Normal	$S/2 < \Delta Vt \leq 4S/5$	$d \times t$
6	Intermittent (reference: near-end)	$4S/5 < \Delta Vt \leq S$	T
7	Intermittent (reference: toner end)	$S < \Delta Vt$	T

T means that toner is supplied intermittently in a cycle (e seconds on, f seconds off).

The value of "S" can be changed using SP2-931-001 (default: 0.3V)

The value of "t" can be changed using SP2-922-001 (default: 0.2 second)

The value of "T" can be changed using SP2-923-001 (default: 6 seconds)

The value of "a" can be changed using SP2-922-002 (default: 1.5 seconds)

The value of "b" can be changed using SP2-922-003 (default: 2.0 seconds)

The value of "c" can be changed using SP2-922-004 (default: 2.0 seconds)

The value of "d" can be changed using SP2-922-005 (default: 2.0 seconds)

The value of "e" can be changed using SP2-923-002 (default: 0.3 second)

The value of "f" can be changed using SP2-923-003 (default: 0.3 second)

Toner Near End/End Detection and Recovery

The toner near end and end conditions are detected by the TD sensor.

This is done in all toner supply modes except for fixed mode 2, when toner end is not detected.

Toner Near End Detection

If toner supply motor on time is at level 6 or higher ten times consecutively, the machine enters the toner near end condition and the toner end indicator starts blinking on the operation panel. Then the machine supplies toner for a certain time, which depends on the setting of SP 2-923-001.

Toner Near End Recovery

If toner supply motor on time is at level 5 or lower twice consecutively in any of the following situations, the machine clears the toner near end condition.

- While in the toner recovery cycle after the machine has detected a toner near end condition.
- During copying in the toner near end condition.
- If the front cover is opened and closed for more than 5 seconds.

Toner End Detection

There are two situations for entering the toner end condition.

- When toner supply motor on time is level 7 three times consecutively while in toner near-end condition.
- When 50 copies*² have been made since entering the toner near end condition.

*2 The number of copies between toner near-end and toner end can be changed using SP 2213.

When toner end is detected, the following is performed.

- During paper feed: The machine enters toner end condition as soon as printing on the paper being fed finishes.
- During intermittent toner supply: The machine enters toner end condition as soon as intermittent toner supply finishes.

Toner End Recovery

If the front cover is opened for 5 seconds or more while the main power is turned ON, the machine assumes that the toner bottle has been replaced, and clears the Toner End condition.

Toner bottle

Viewing and printing the log

Ten most recent toner bottle logs can be viewed with SP7-935-001 through SP7-935-038.

Toner log information can be printed with SP5-991-001.

Related SPs

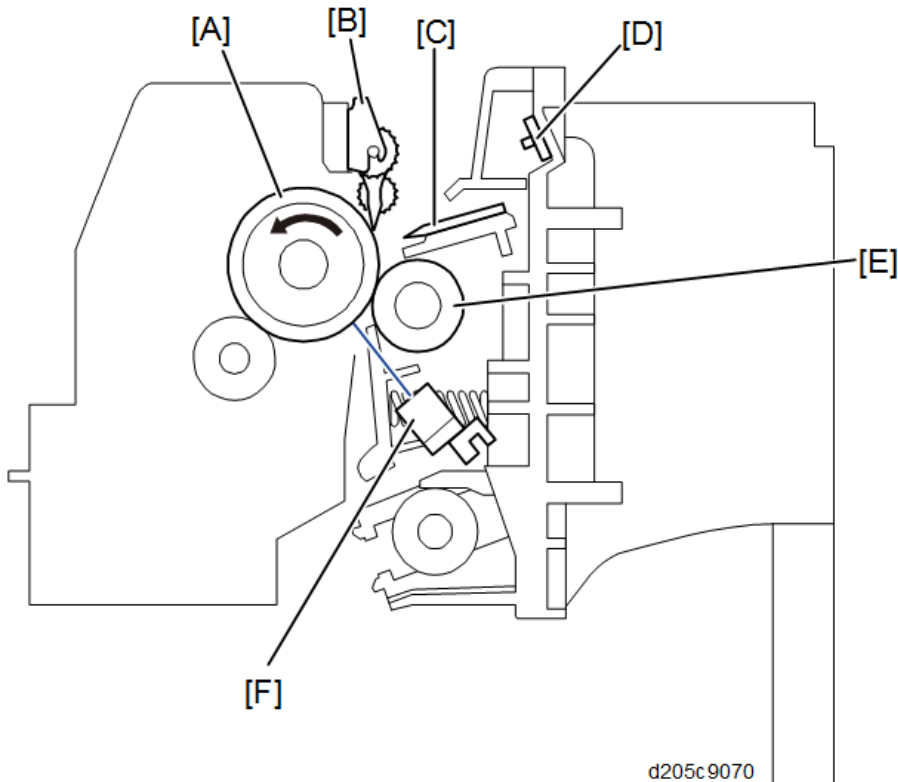
- **2-213-001 [Toner End Output Setting]-[0:50 1:20 2:500]:**
Sets the sheet count for determining a toner-end after detecting a toner near-end.
- **2-921-001 [Toner Supply Mode]-**
Sets the mode for controlling toner supply.
- **2-922-001 [Toner Supply Time]-[[sec]]:**
Sets the standard supply time which is determined by the consequences of TD sensor and Vtref
- **2-922-002 [Toner Supply Time]-[Supply Coefficient Level 2]:**
Sets the standard supply time for Level 2.
- **2-922-003 [Toner Supply Time]-[Supply Coefficient Level 3]:**
Sets the standard supply time for Level 3.
- **2-922-004 [Toner Supply Time]-[Supply Coefficient Level 4]:**
Sets the standard supply time for Level 4.
- **2-922-005 [Toner Supply Time]-[Supply Coefficient Level 5]:**
Sets the standard supply time for Level 5.
- **2-923-001 [Toner Recovery]-[Recovery Time]:**

Sets the supply time of an intermittent toner when a result of TD sensor detection, a Toner near End and a Toner End are detected.

- **2-923-002 [Toner Recovery]-[Intermittent Supply ON Time]:**
Sets the time that toner supply motor is activated for intermittent supply.
- **2-923-003 [Toner Recovery]-[Intermittent Supply OFF Time]:**
Sets the time that toner supply motor is deactivated for intermittent supply.
- **2-925-001 [Fixed Toner Supply Time]:**
Sets the amount of toner supplied.
- **5-991-001 [Kit Summary Print]:**
Prints toner log information.
- **7-935-xxx [Toner Bottle Log]:**
Prints the serial number and attachment date.

Image Transfer and Paper Separation

Overview



7

No.	Name	No.	Name
[A]	Drum	[D]	PCL (Pre Cleaning Lamp)
[B]	Pick-Off Pawl	[E]	Transfer Roller
[C]	Discharge Plate	[F]	ID Sensor

The transfer roller [E] touches the surface of the drum [A].

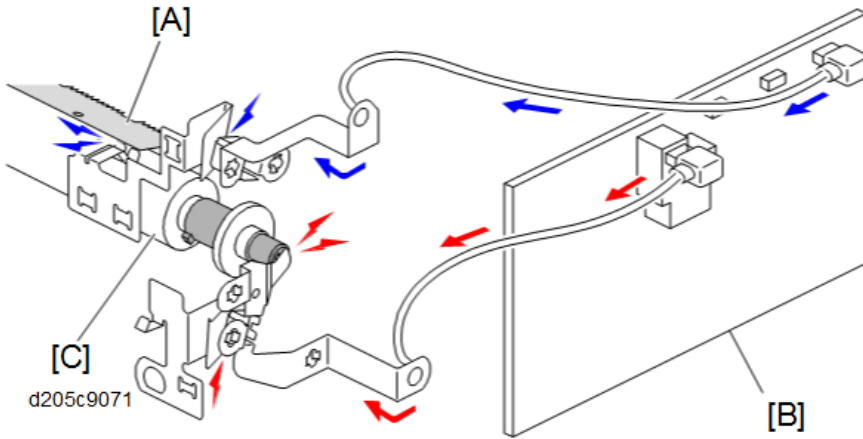
The HVPS supplies a positive current to the transfer roller, which attracts the toner from the drum onto the paper. The PCL (Pre Cleaning Lamp) increases precision of discharge and reduces black streaks on printed sheets.

Mechanism

Image Transfer and Paper Separation

The HVPS [B] supplies a positive current to the transfer roller [C], which attracts the toner from the drum onto the paper.

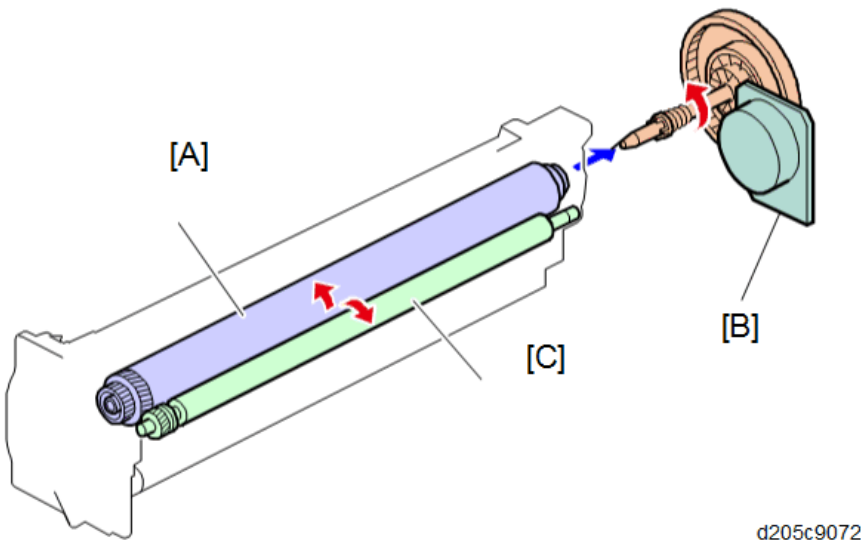
The discharge plate [A] discharges the current applied onto the paper by applying a negative charge.



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Drive

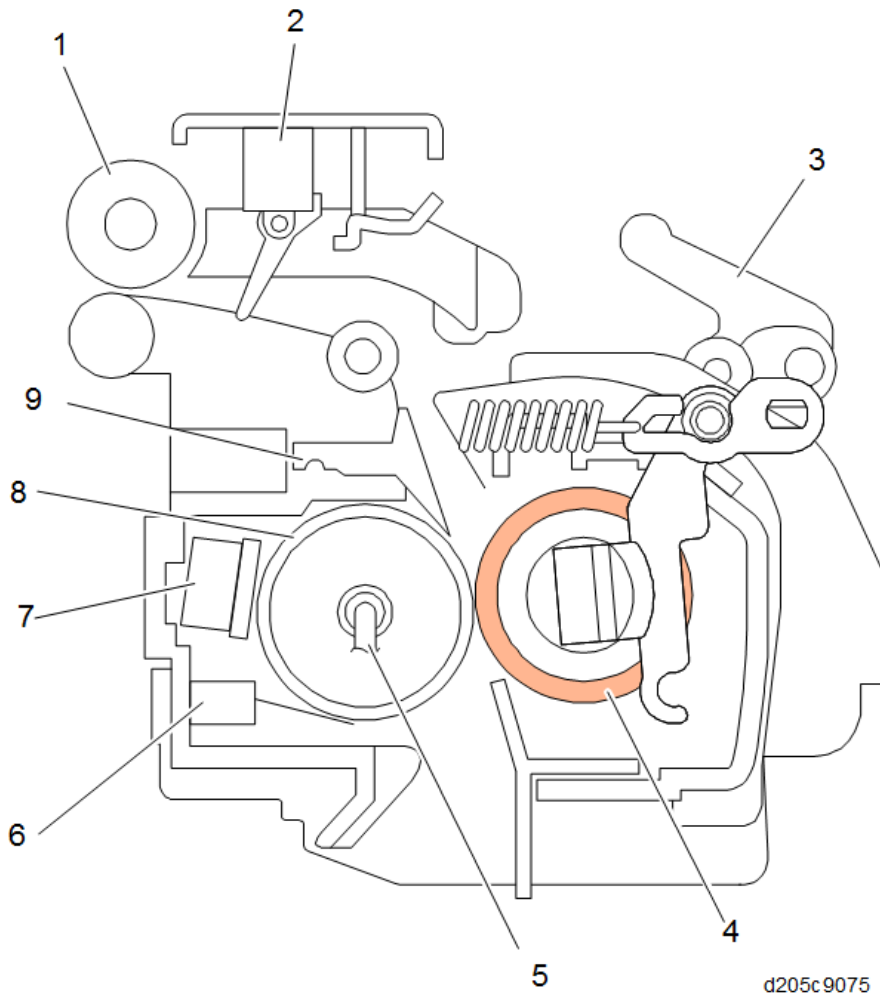
The main motor [B] drives the drum [A] which rotates the transfer roller [C].



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Image Fusing and Paper Exit

Overview



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No.	Name	No.	Name
1	Paper exit roller	6	Fusing Thermistor
2	Exit sensor	7	Thermostat
3	Pressure roller adjustment lever	8	Hot roller
4	Pressure roller	9	Hot roller stripper pawls

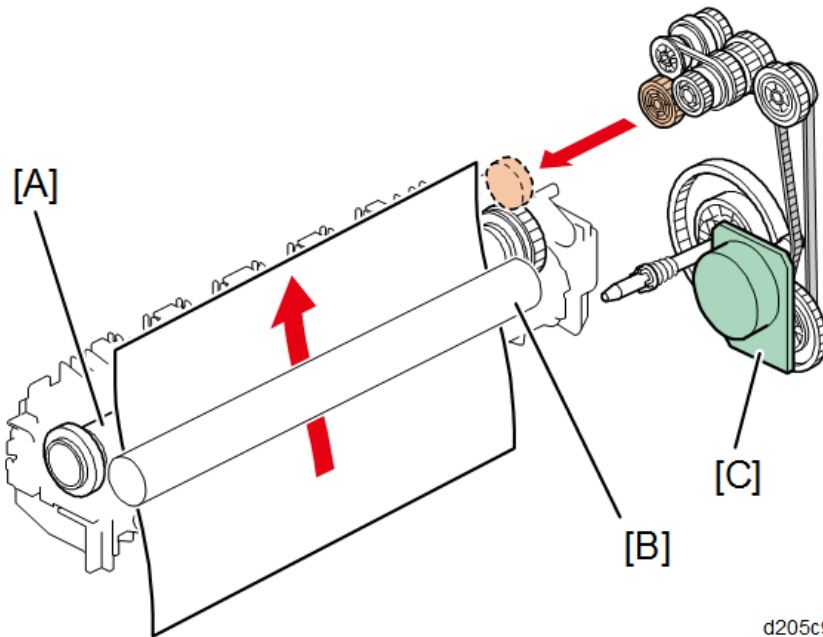
No.	Name	No.	Name
5	Fusing lamp		

Mechanism

Fusing Unit Drive

Fusing Unit Drive

The main motor [C] drives the hot roller [A] through the drive gear. Pressure roller [B] rotates together with the hot roller.



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Contact/Release Control

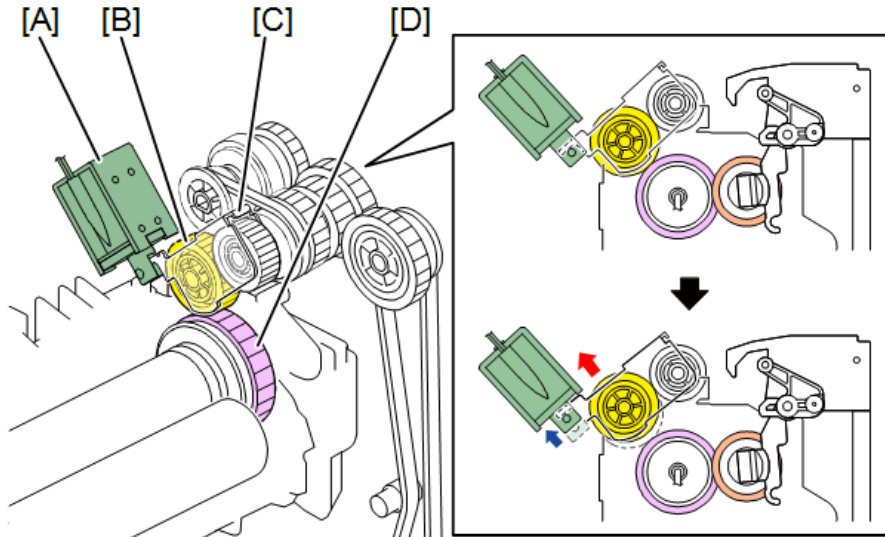
The drive power is not transmitted to the fusing unit during warming up when the fusing temperature (at the start) is 17 °C or higher. The drive power is transmitted when the fusing temperature is less than 17 °C.

The hot roller takes a shorter time to become hot enough if it is not turning during warming up. When, however, the fusing temperature (at the start) is low, the temperature of the hot-roller surface may become uneven.

SP1-103-001 can disable this control. Do not change this SP to 1 unless there is a problem with offset, because when this SP is set to 1, the fusing unit 'reloads' and warm-up time becomes longer than specification (17.6 seconds).

Drive Release Solenoid

When the right cover is closed, the drive gear [B] engages with the fusing unit drive gear [D]. When the fusing solenoid [A] is on, the tip of the fusing bracket [C] is pulled up. As a result, the drive gear is released from the fusing unit drive gear.



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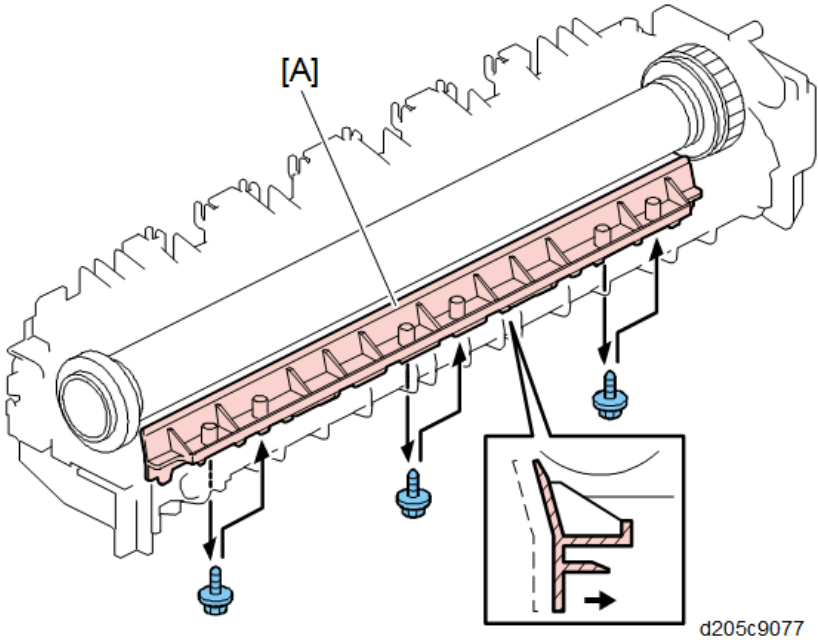
7

When the fusing temperature is 17 °C or higher, the release solenoid comes on when you turn ON the main power. The solenoid releases the drive gear from the fusing unit drive gear.

Fusing Entrance Guide Shift

The entrance guide [A] is adjustable for paper thickness to prevent creasing.

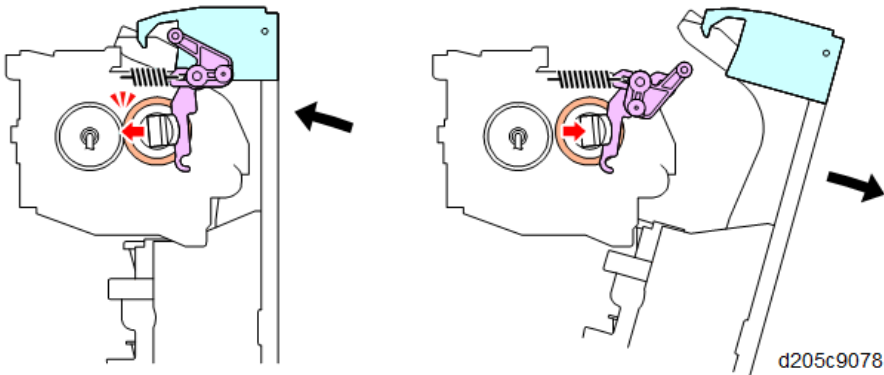
If creasing occurs frequently in the fusing unit, move the entrance guide to the side of the gear, by securing it with the holes on the opposite side of the gear.



7

Pressure Roller

The pressure springs constantly apply pressure between the hot roller and the pressure roller.

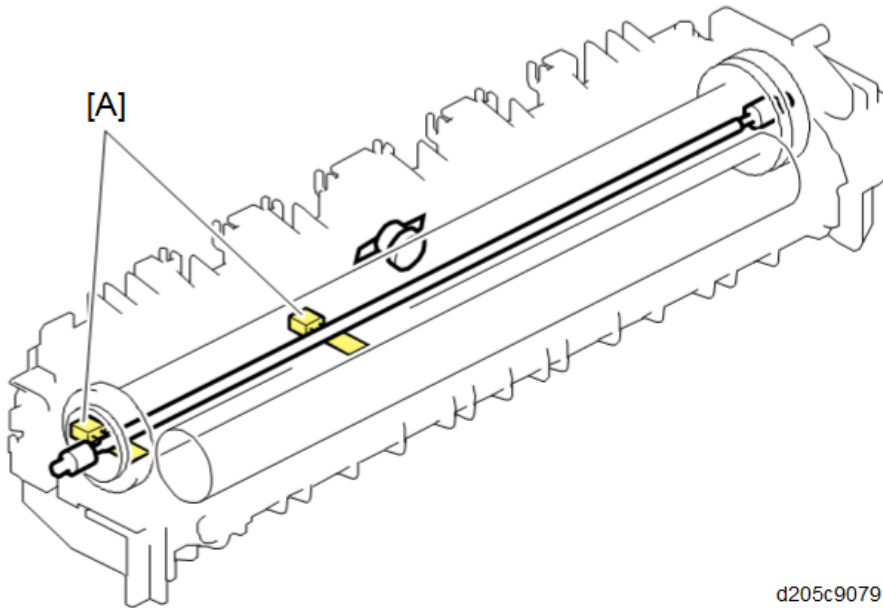


Fusing Temperature Control: Fusing Thermistors

The fusing temperature is controlled using the fusing thermistors [A].

The CPU checks the output from the fusing thermistor once every second. The CPU decides how long the lamps must be switched on during the next second by comparing the temperature of the fusing thermistor and the target temperature.

The fusing lamp works to maintain a target fusing temperature of 145 °C (when plain paper is used) during copying.



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A: Fusing Thermistors

The fusing thermistor (center) is for the fusing lamp (860 W). The fusing thermistor (end) is for various controls.

Temperature Control

According to the operation mode, the fusing temperature is controlled. The diagram illustrates the transition of fusing temperature.

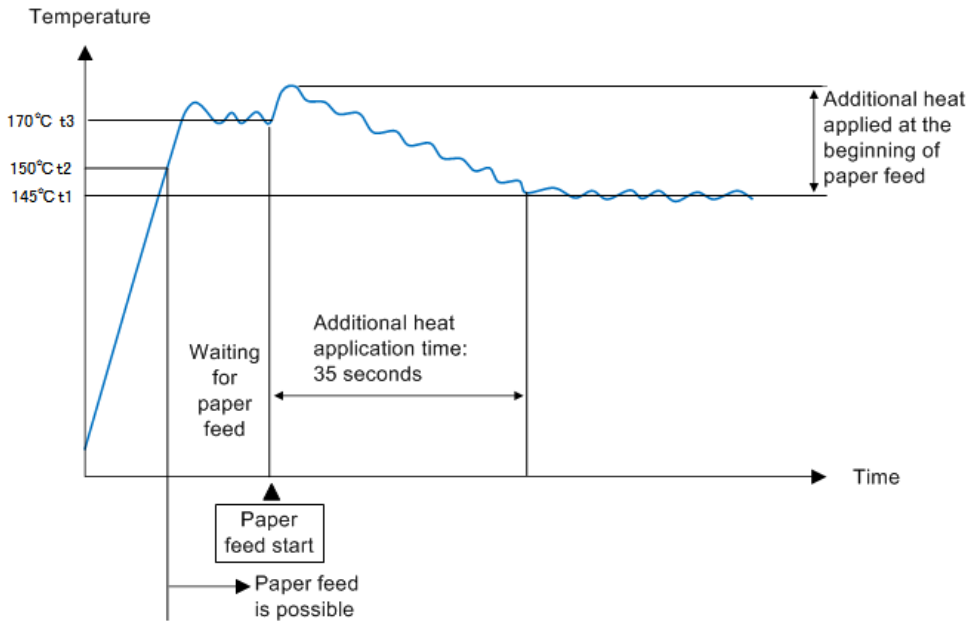
- Between Main Power On and Paper Feed

After the main power is turned ON, the fusing temperature rises from the room temperature to a specified temperature (t_3).

After the temperature reaches t_2 , the machine keeps t_3 until copying and printing are possible and paper feed starts.

At the beginning of paper feed, additional heat is applied and the temperature is higher than the specified fusing temperature (t_1) which differs depending on paper thickness.

The temperature is gradually lowered until it reaches the specified fusing temperature (t_1).



w_d259a0003

- Between Standby and Paper Feed

In standby mode, the fusing temperature is maintained at t_4 (SP1-105-012).

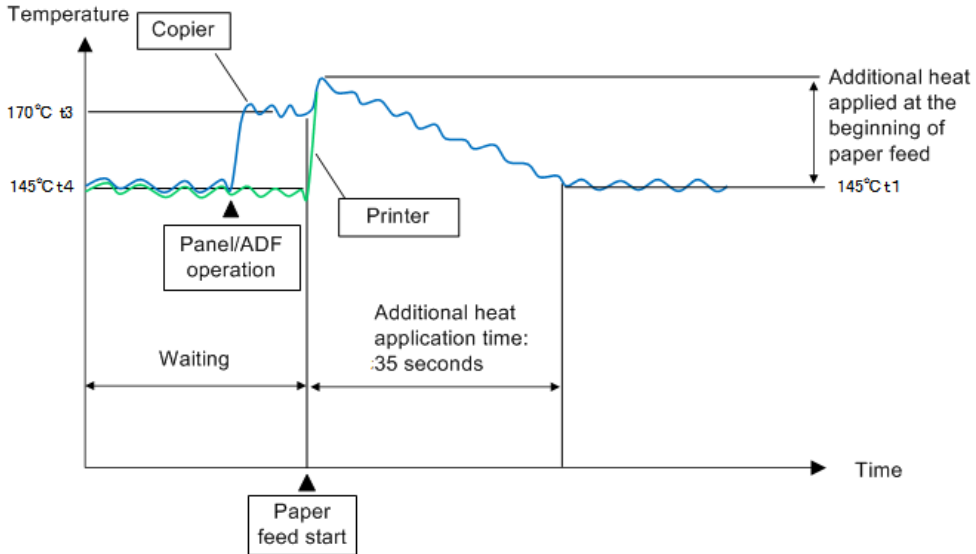
If the operation panel or ARDF is operated during standby, the fusing temperature is maintained at t_3 and kept at t_3 until paper feed starts.

At the beginning of paper feed, additional heat is applied and the temperature is higher than the specified fusing temperature (t_1) which differs depending on paper thickness.

The temperature is gradually lowered until it reaches the specified fusing temperature (t_1).

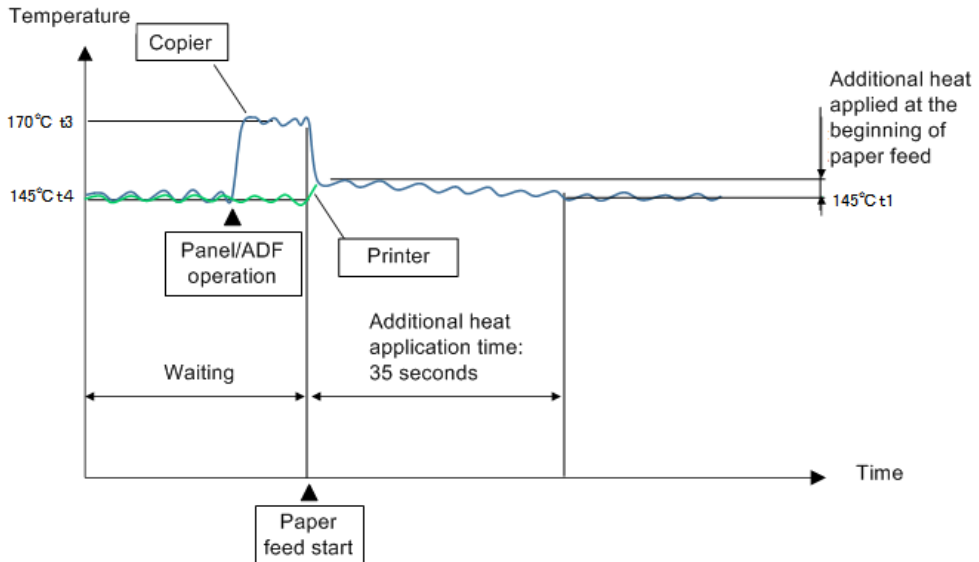
The additional heat applied differs according to the difference between the temperatures of fusing thermistor (center) and fusing thermistor (end) measured at the beginning of paper feed.

When the difference is 25 °C or more: 35 °C is added.



w_d259a0004

When the difference is less than 25 °C: 5 °C is added.



w_d259a0005

Fusing temperature and process speed of each paper type

The fusing temperature differs according to paper type. When printing on Middle Thick or Thick Paper and when printing in silent mode, the process speed is lowered.

	Paper Thickness	Fusing temperature	SP No.	Process speed
Standard mode	Thin Paper (52 – 59 gsm)	135 °C	SP1-105-009	Normal speed: 136 mm/s
	Plain Paper (60 – 81 gsm)	145 °C	SP1-105-001 (Plain Paper 1) SP1-105-003 (Plain Paper 2)	
	Middle Thick (82 – 105 gsm)	145 °C	SP1-105-005	Low speed: 100 mm/s
	Thick Paper 1 (106 – 135 gsm)	155 °C	SP1-105-007	
	Thick Paper 2 (136 – 162 gsm)	160 °C	SP1-105-048	
Silent mode	Thin Paper	130 °C	SP1-105-065	
	Plain Paper	140 °C	SP1-105-063 (Plain Paper 1) SP1-105-064 (Plain Paper 2)	

Fusing temperature during Standby and Energy Saver modes

The fusing temperature during Standby and Energy Saver modes are maintained as follows.

	Fusing temperature	SP No.
Standby mode	145 °C	SP1-105-012
Energy Saver mode	130 °C	SP1-105-062

If fluorescent lights flicker

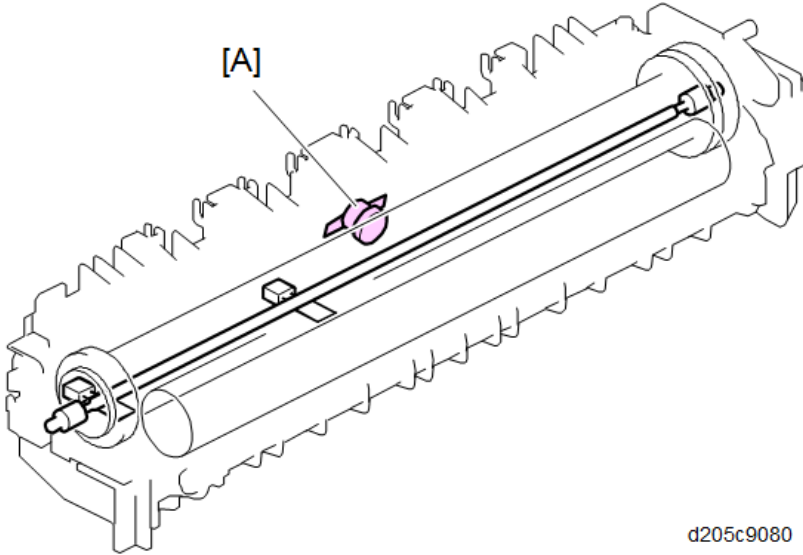
Turning ON and OFF the fusing lamp may cause the fluorescent lights to flicker. This problem can be lightened by changing the setting of SP1-135-002 from 0 to 1.

If you do this, fusing capability may decrease because the power supply to the fusing unit is reduced when the fusing lamp is on.

Overheat Protection/Thermostat

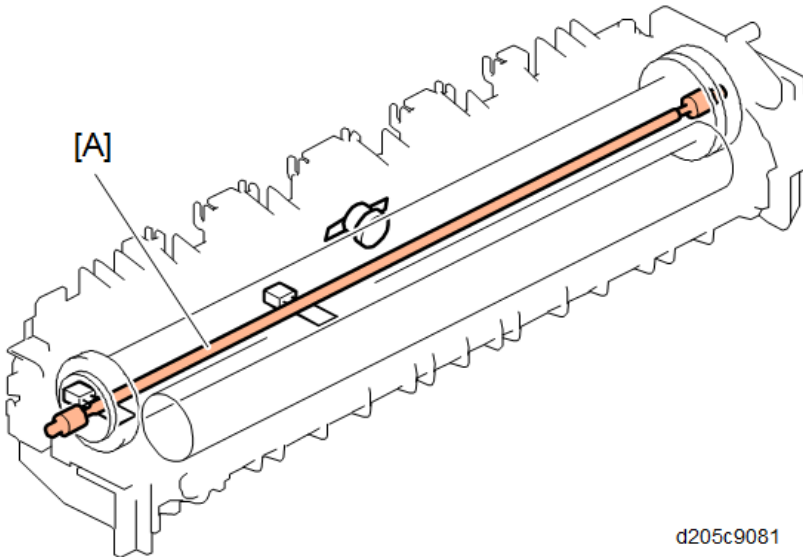
The fusing lamp has a thermostat [A]. The thermostat cuts the power supply to the fusing lamp at 200 °C.

The thermostat used in this model has higher thermal responsiveness than those used in previous models have. Therefore, even though the operation temperature is high, the temperature of the hot roller can be kept lower, which is safer.



Fusing lamp

This machine uses an 860 W halogen heater [A].

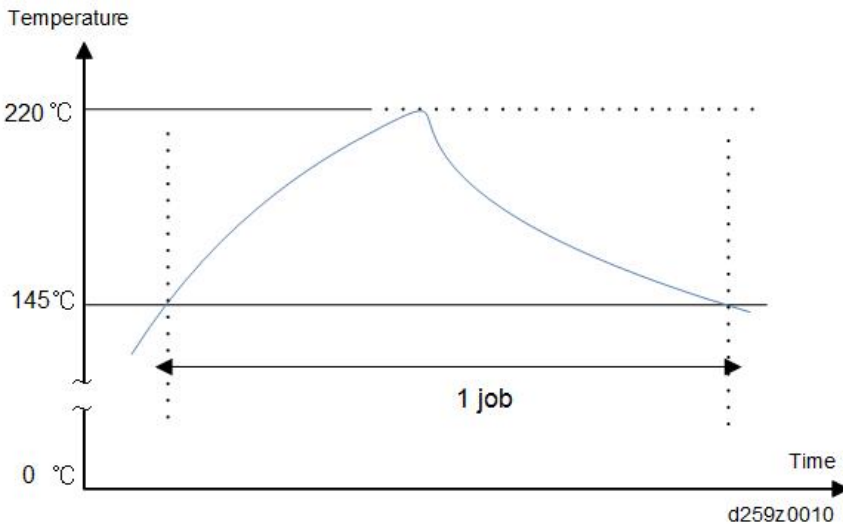


CPM Reduction

CPM reduction is a mechanism that prevents the machine from abnormal temperature rise in the fusing unit.

When the fusing thermistor (end) detects that the fusing temperature becomes 220°C or higher, the machine reduces the CPM by approx. 30% (from 30 CPM to 9 CPM) by increasing the interval of paper transported in the machine to lower the fusing temperature to the target temperature (145°C).

When the fusing thermistor (end) detects that the temperature becomes less than 220°C at the next job, the CPM reduction is finished and the machine transits to the normal.

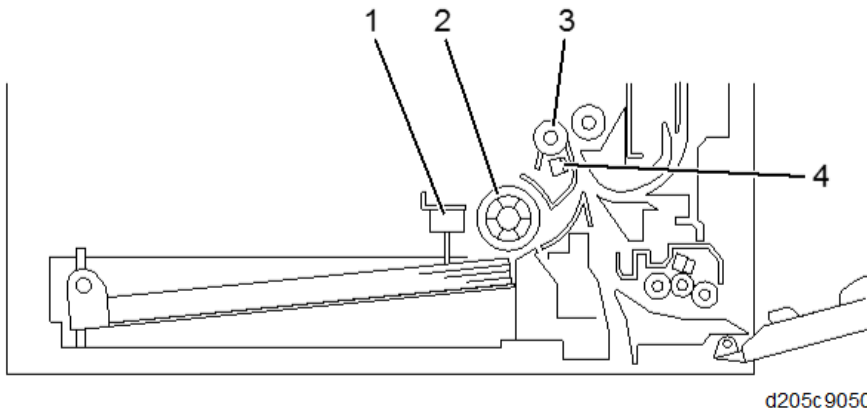


Related SPs

- **1-105-001, -003, -005, -007, -009 [Fusing Temperature Adjustment Roller Center]:**
Sets the fusing temperature for Plain Paper 1, Plain Paper 2, Middle Thick, Thick Paper 1, and Thin Paper.
- **1-105-048 [Fusing Temperature Adjustment Roller Center]:**
Sets the fusing temperature for Thick Paper 2.
- **1-105-063, -064, -65 [Fusing Temperature Adjustment Roller Center]:**
Sets the fusing temperature for Plain Paper 1, Plain Paper 2, and Thin Paper when printing at low speed.
- **1-135-002 [Inrush/Flicker Control]-[Flicker Control]:**
Extends the control cycle to make the flicker less noticeable.

Paper Feed

Overview



No.	Name	No.	Name
1	Paper end sensor	3	Registration Roller
2	Paper feed roller	4	Registration Sensor

7

There is one paper tray, which can hold 250 sheets, in the machine.

The paper tray feed stations use a friction pad system.

To prevent paper from getting caught inside the machine when the tray is pulled out, the paper feed roller and shaft do not separate from the tray when the tray is pulled out.

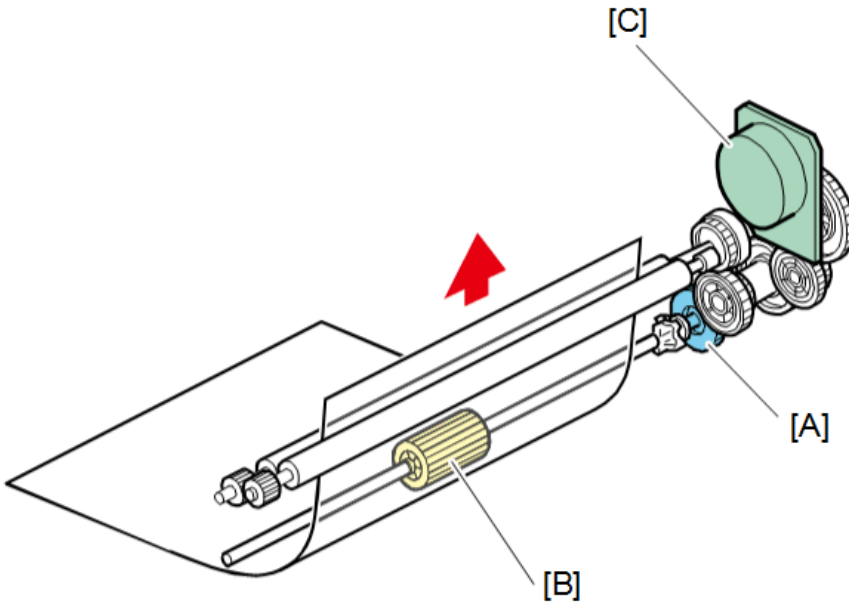
The registration sensor is used for paper jam detection.

Mechanism

Paper Feed Drive Mechanism

The main motor [C] drives the pick-up and feed mechanism. The paper feed clutch [A] transfers drive from this motor to the paper feed roller [B].

When the paper feed clutch [A] turns ON, drive from the main motor [C] is transferred to the feed roller [B]. The paper feed clutch stays on until shortly after the registration sensor has been activated.



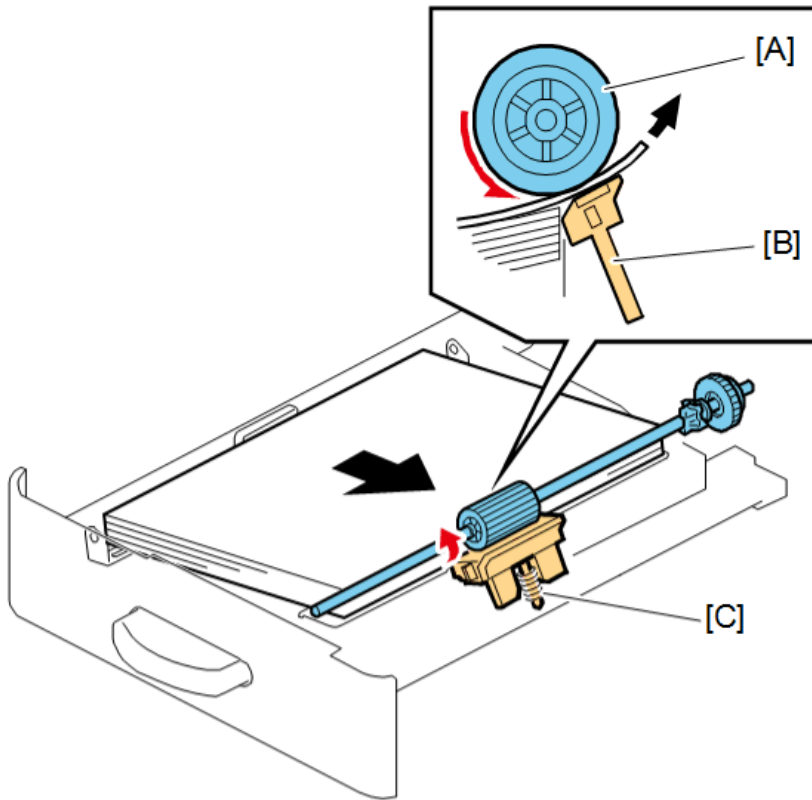
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Paper Feed and Separation Mechanism

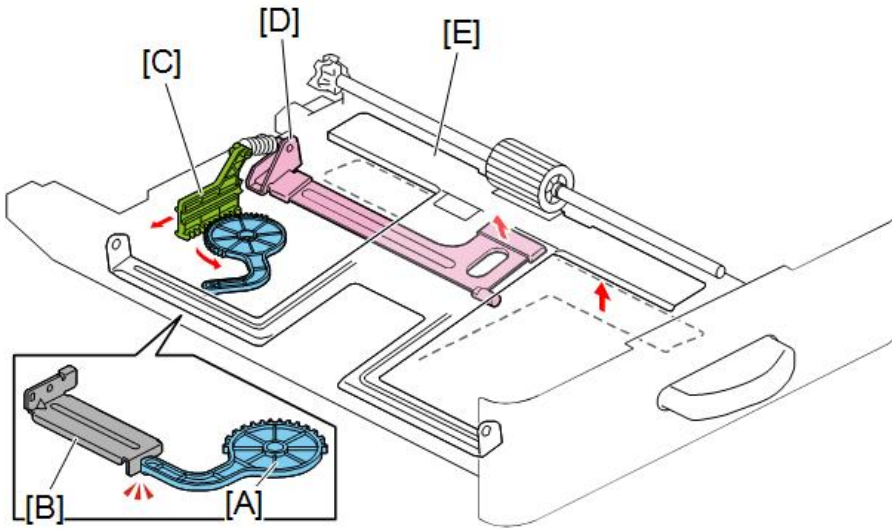
The paper feed roller [A] drives the top sheet of paper from the paper tray to the copier. The friction pad [B] allows only one sheet to feed at a time. The friction pad applies pressure to the feed roller with a spring [C].

The friction pad pressure cannot be adjusted.



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Paper Lift Mechanism



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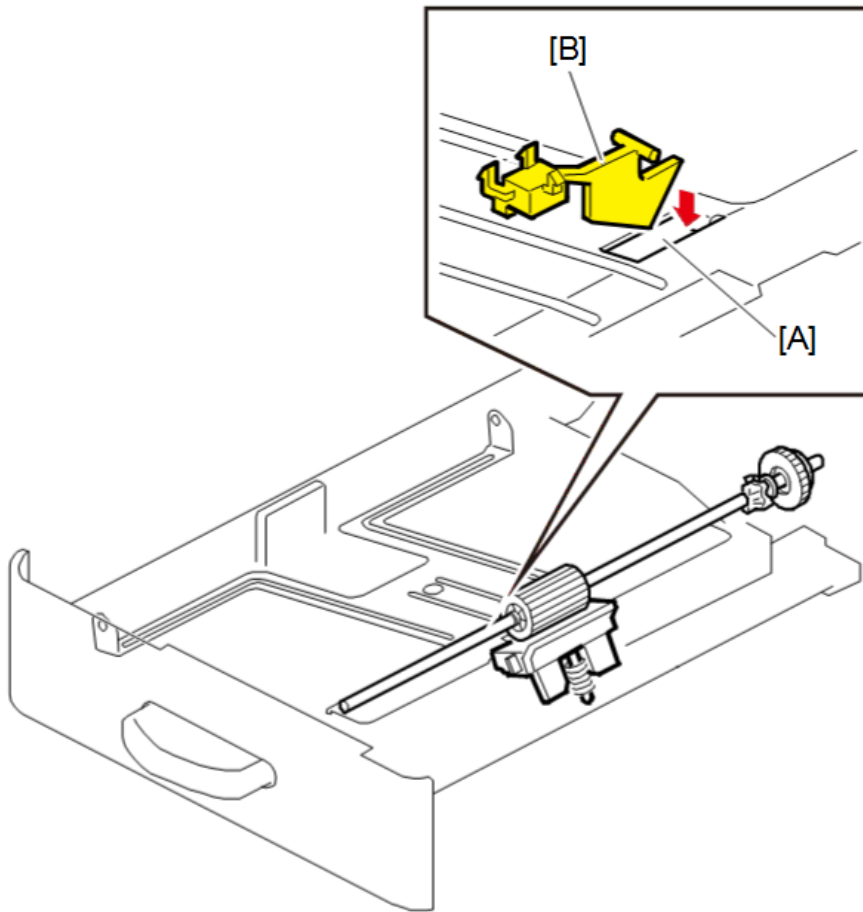
As the tray is inserted to the mainframe, the arm attached to the pinion comes into contact with a component [B] in the mainframe and the pinion [A] rotates gradually. This causes the spring [D] to be pulled by the rack [C] and lifts the bottom plate [E].

7

Paper End Detection

When the paper tray runs out of paper, the paper end feeler*¹ drops into the cutout [A] in the tray bottom plate and the paper end sensor [B] is activated.

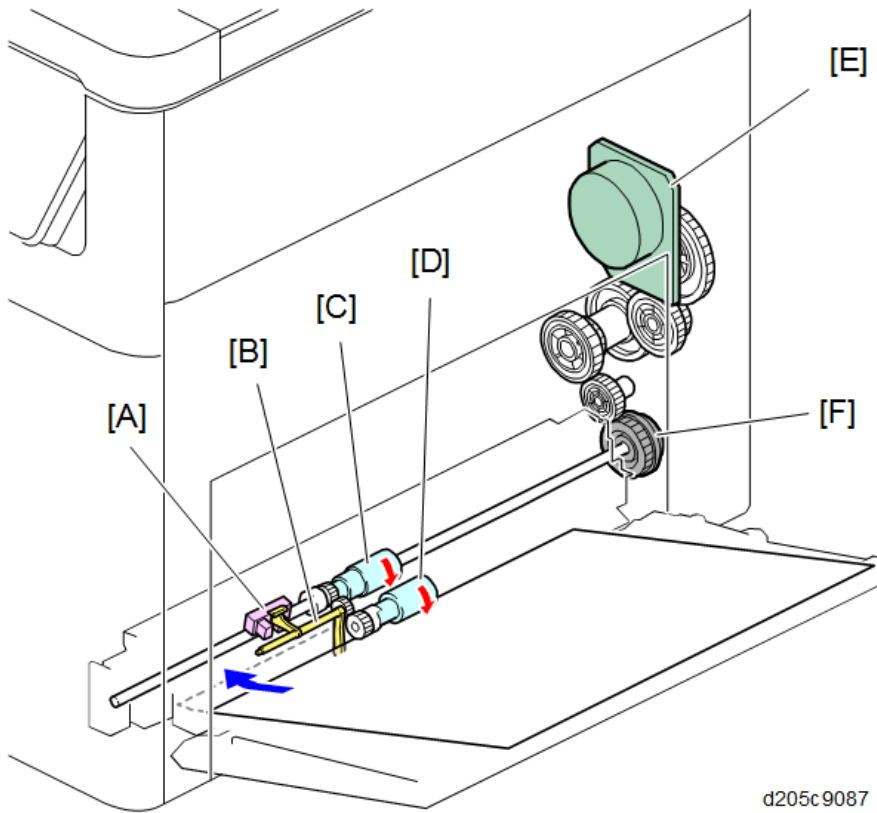
* 1 When the paper tray is drawn out with no paper in the tray, the paper end feeler is not caught in the paper tray due to its shape.



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When the tray is being put in the machine, the sensor returns a paper present signal. This is because the feeler is up, even if the tray is empty (because it is raised by the bottom plate). So, if the sensor state changes to 'detects paper', the machine waits 3 seconds before reporting that paper is present.

Bypass Tray



d205c9087

No.	Name	No.	Name
A	Bypass paper end sensor	D	Bypass paper pick-up roller
B	Feeler	E	Main motor
C	Bypass paper feed roller	F	Bypass paper feed clutch

The bypass tray uses a friction pad system.

When you select the bypass tray and press the Start key, the bypass paper feed clutch [F] turns ON and the drive from the main motor [E] is transferred to the bypass paper pick-up roller [D]. Then the bypass paper pick-up roller is lowered and the paper is sent to the bypass paper feed roller [C]. The bypass paper feed roller feeds the paper into the mainframe.

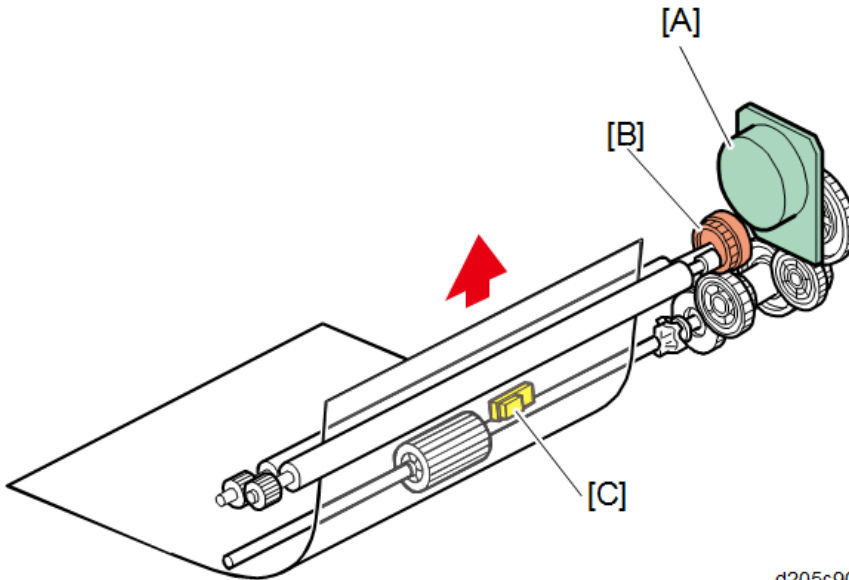
Paper on the bypass tray is detected by the feeler [B] and the bypass paper end sensor [A].

Bypass Tray Paper Registration

The drive from the main motor [A] is transmitted to the registration roller through the registration clutch gear [B].

The registration sensor [C] is used for correcting paper skew and for detecting paper misfeeds.

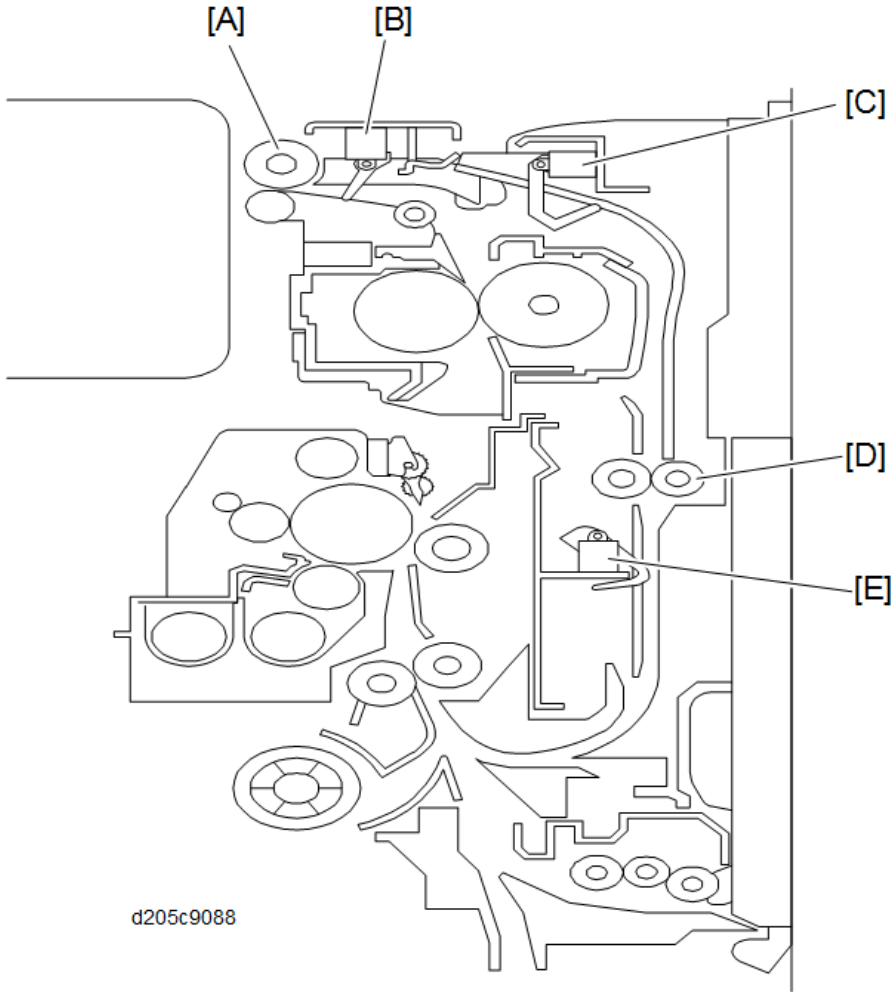
A cleaning sheet is in contact with the registration roller. It removes dust from the registration roller to prevent it from entering the development unit.



d205c9061

Duplex

Overview



No.	Name	No.	Name
A	Paper exit/reverse roller	D	Duplex transport roller
B	Paper exit sensor	E	Duplex Exit Sensor
C	Duplex Entrance Sensor		

The printed sheet of paper from the fusing unit goes to the exit tray.

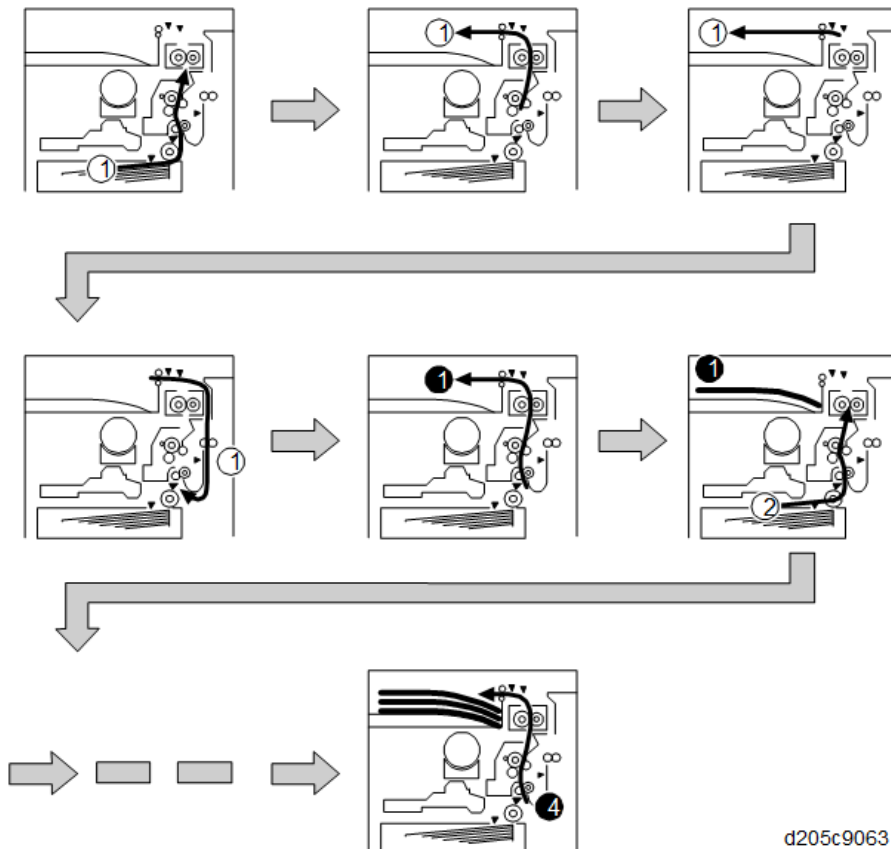
If the user selects the duplex mode, the paper exit/reverse roller [A] rotates in reverse.

Also, the duplex reverse clutch turns ON and the duplex transport roller [D] rotates.

The junction gate switches and the printed sheet of paper is transported to the duplex unit.

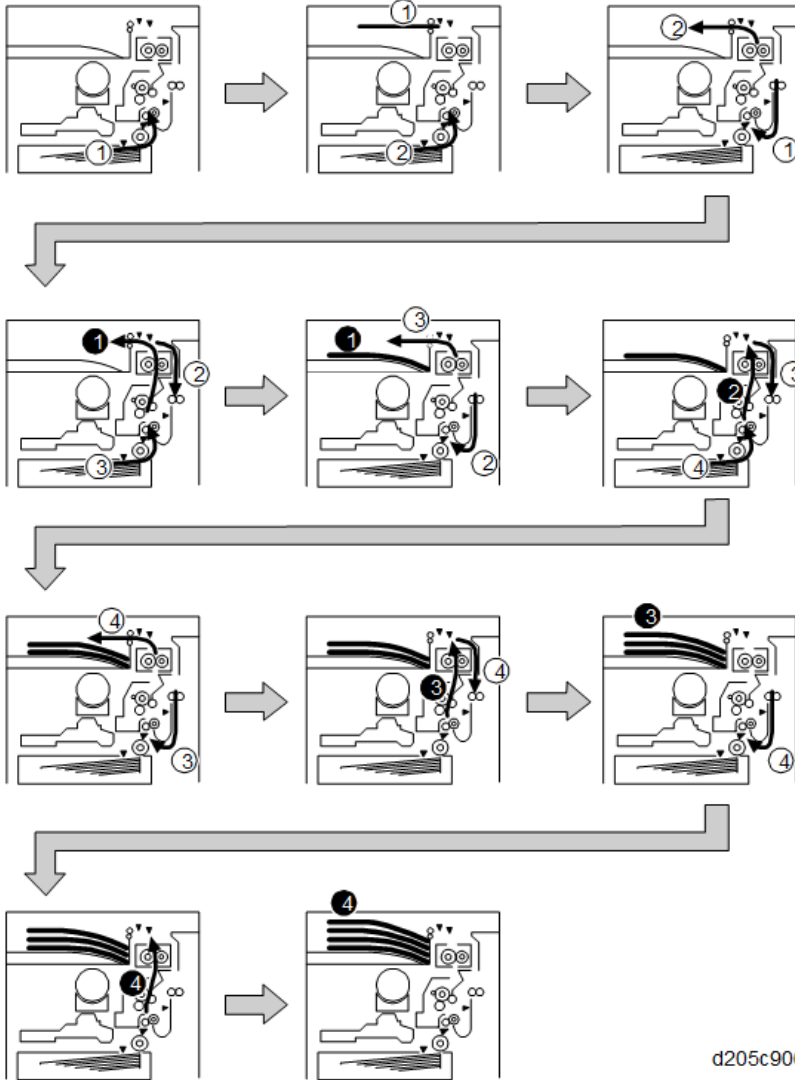
Interleaving

Single-sided



d205c9063

Duplex



d205c9064

Ventilation

Overview

To reduce the noise from the machine, the rotating speed of the intake/exhaust fans are adjusted depending on the following three conditions:

	Sleep mode, or ENG/CTL Off (Operation panel off)	Standby (Operation panel on)	Printing
Exhaust fan	OFF	ON Temperature/Humidity Sensor controls	ON Internal Temperature Sensor controls
Intake fan	OFF	ON Always half speed	ON Internal Temperature Sensor controls

Exhaust Fan Control in Standby

Temp. (°C)	~23	23 ~ 25	25 ~ 27	27 ~ 29	29 ~ 31	31 ~ 33	33 ~ 35	35 ~ 37	37 ~ 39	39~
Exhaust Fan	30%	30%	30%	35%	40%	45%	50%	60%	70%	80%

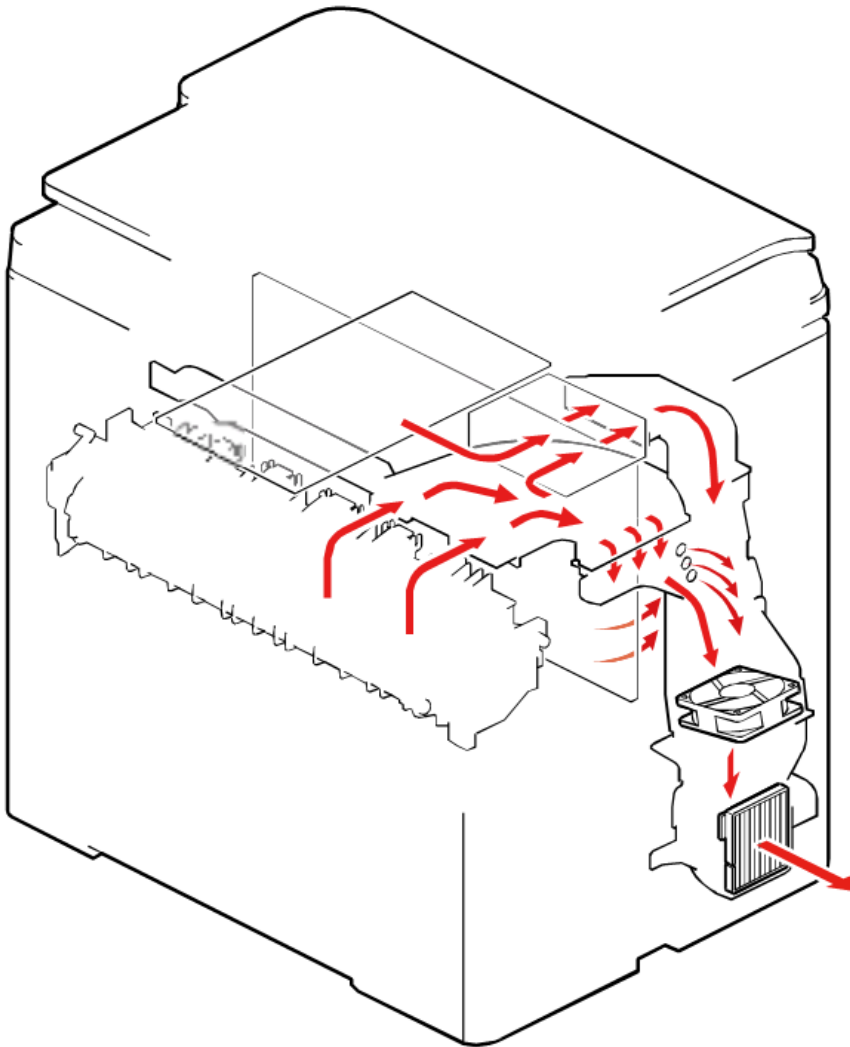
Exhaust Fan Control in Printing

Temp. (°C)	~36.5	36.5 ~ 37.0	37.0 ~ 38.0	38.0 ~ 39.0	39.0~
Exhaust Fan	40%	55%	70%	85%	100%

Intake Fan Control in Printing

Temp. (°C)	~39.0	39.0~
Intake Fan	Half Speed	Full speed

Exhaust



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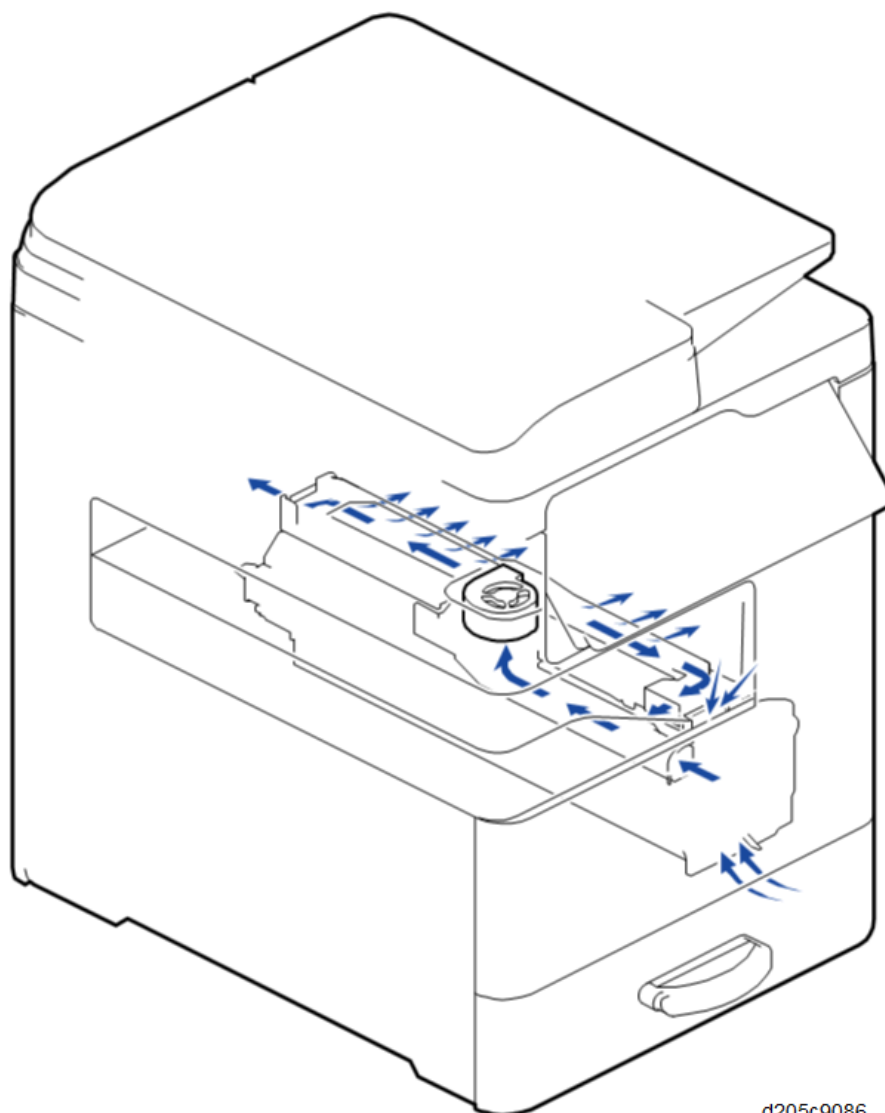
Heat in the controller box and on the PSU come to the main duct at the rear of the machine.

Heat in the fusing unit comes to the main duct through the fusing duct.

The exhaust fan ventilates the heat collected in the main duct.

The rear cover has an exhaust louver.

Intake



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The external air enters into the intake located in front of the PCDU through gaps in the handle of the front cover, or the gaps in the tray's cover. The fresh air comes through the duct, and is collected by the intake fan.

The intake fan cools down the PCDU by ventilating the top side of the PCDU directly.

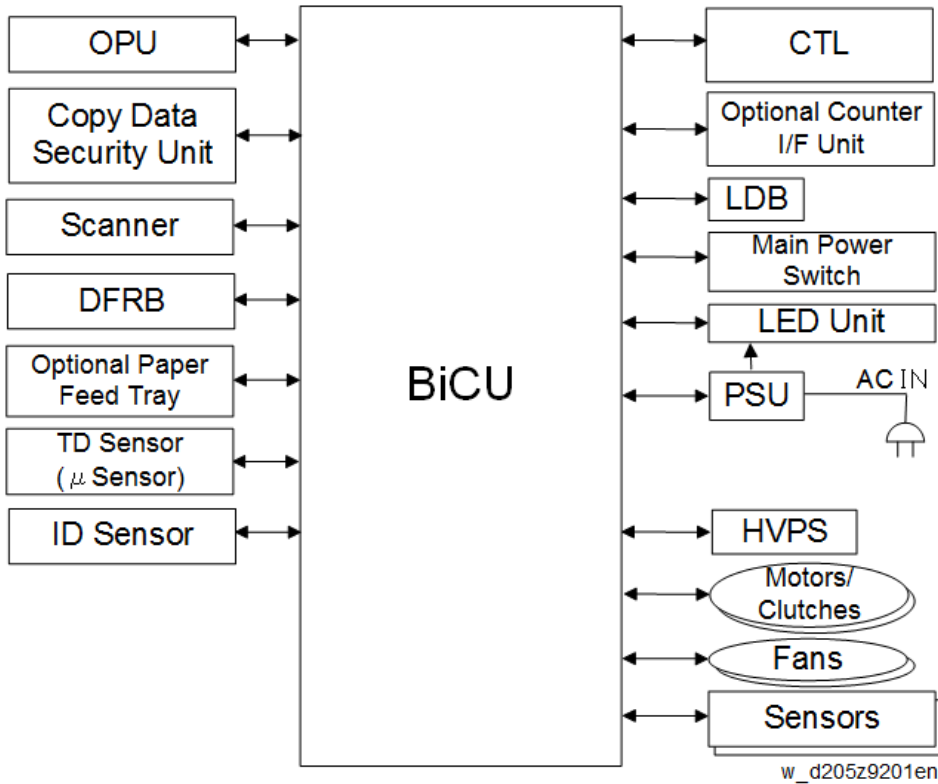
To prevent the temperature rise caused by heat leaked from the fusing unit, there is an insulating layer between the fusing unit and the PCDU.

Operation Panel

Refer to "Smart Operation Panel" manual for details.

Electrical Parts

Block Diagram



Board Outline

Controller

Controls the MFP system overall. Contains an MIPS CPU, controller ASIC, IO control ASIC, and RAM.

LDB

LD control circuit which drives the laser diode with a universal driver.

BiCU (Base-Engine Image Control Unit)

Controls the engine, as well as MFP engine sensors, motors and solenoids (The BiCU has the IOB functions).

FCU (Fax Controller Unit)

Controls the fax program.

OPU (Operation Panel Unit)

Controls the operation panel.

HVPS (High Voltage Power Supply)

Generates high-voltage power required for process control. The power pack consists of two units: T1T2 for transfer and CB for charging/developing.

PSU (Power Supply Unit)

Generates DC power from the mains AC power supply, and supplies it to each control circuit. Contains an AC drive circuit for controlling the fusing lamp.

DFRB (Document Feeder Relay Board)

Controls motors, sensors, and solenoids in the ARDF.

Fuse

Refer to Fuse Location. (page 495)

Other Features

Silent Mechanism

The following features help the machine run as silently as possible.

New lubricant to reduce noise when driving the main unit

Grease with a high silencing effect (G-1077) is applied to the drive components. When replacing one of these components, apply this grease as stated in the replacement procedures.

Features of G-1077

- Low coefficient of friction
- Very stable, thanks to low oil separation

Labyrinth Configuration of the Exterior

Sound insulation properties are improved by the concavo-convex shape of the contact surfaces of the exterior covers.

This may make some covers hard to remove. Be careful when removing covers.

Helmholtz Resonators in the Main Unit

Blowing into an empty bottle may make a sound under some conditions, due to resonance inside the bottle.

Some parts of the internal molds adopt a Helmholtz resonator for friction loss of resonance generated by some specific frequencies.

Silent Mode

Silent mode decreases the noise level by increasing the interval between sheets; slower printing. This prevents the internal temperature from increasing, allowing a lower fan operation level: The silent mode can be selected through the user tools.

	Scanning speed	CPM	Fusing Temp.	Noise Level
Standard mode	136 mm/s	30 CPM	145 °C	59 dB
Silent mode	100 mm/s	15 CPM	140 °C	Less than 55 dB

Transition for Power Saving

Power-saving status and transition conditions are as shown below.

Outline of Power-Saving Transition (1/2)

Power-Saving Status	Power Save LED	Control Panel	Printer	Scanner	HDD	Controller
	Status description and status transition conditions					
[1] Standby	ON	LCD ON	ON (standby)	ON (standby)	ON	ON
	Printable Status transition conditions <ul style="list-style-type: none"> • Power Save key ON: to [2] or [3] • Timer: to [4] or [5] • Light detection in darkness: to [5] 					
[2] Printing in silence/ power saving	ON	LCD OFF/ ON	ON (standby)	ON (silence)	ON	ON
	Status transition conditions <ul style="list-style-type: none"> • Power Save key ON: to [1] • Internal timer: to [3] or [5] • Automatic transition: * to [5] *when the condition before transition to [2] is [1], [5], or [6]					
[3] Lower power status	ON	LCD OFF/ ON	ON (lower power)	ON (silence)	ON	ON
	Fusing temperature is lowered. Status transition conditions <ul style="list-style-type: none"> • Key operation or release request (LCD lights): to [1] • Release request (printing): to [2] • Timer: to [5] 					

Power-Saving Status	Power Save LED	Control Panel	Printer	Scanner	HDD	Controller
	Status description and status transition conditions					
[4] Standby, fusing OFF status	ON	LCD ON	ON (silence)	ON (silence)	ON	ON
	Fusing OFF. The screen is lit. (Functions that do not use the print engine are usable.) Status transition conditions <ul style="list-style-type: none"> • Key operation, displayed software change, release request (LDC ON): to [1] • Timer, Power Save key pressed, light detection in darkness: to [5] 					

Outline of Transition for Power Saving (2/2)

Power Saving Status	Power Save LED	Control Panel	Printer	Scanner	HDD	Controller
	Status description and status transition conditions					
[5] Silent status	ON	LCD OFF/ ON	ON (silence)	ON (silence)	ON	ON
	Fusing OFF, HDD accessible, SD accessible. Peripherals start in silence. Tentative power-saving status for transition to Sleep mode (engine OFF, STR). Status transition conditions <ul style="list-style-type: none"> • Power Save key ON or release request (LCD lights): to [1] • Release request (printing): to [2] • Power Save key pressed, ARDF open/close or original setting, or light detection in brightness: to [4] • Timer: to [6] 					

Power Saving Status	Power Save LED	Control Panel	Printer	Scanner	HDD	Controller
	Status description and status transition conditions					
[6] Engine OFF status (Sleep mode)	Fade IN/OUT +ON	LCD Sleep/OFF/ ON	OFF	OFF	OFF/O N	ON
	Status to control engine OFF (power for control panel, HDD, and engine OFF) Status transition conditions <ul style="list-style-type: none"> • Power Save key ON or release request: to [1] • Engine of the connected submachine OFF and print command from the mainmachine: to [2] • Release request (HDD access): to [5] • Timer: to [7] 					
[7] STR (Sleep mode)	Fade IN/OUT	LCD Sleep/OFF/ ON	OFF	OFF	OFF	STR
	Controller main CPU OFF but power of the sub-CPU ON. Status transition conditions <ul style="list-style-type: none"> • Release request: [6] *Recovery request from the subsystem 					
[8] Main power OFF	OFF	Power OFF/LCD Sleep	OFF	OFF	OFF	OFF
	- Status transition conditions <ul style="list-style-type: none"> • Main power key ON: to [1] or [4] 					

Conditions for no transition to the Power Save mode

- In SP mode
- In UP mode (excluding the transition from standby to fusing standby OFF)
- During updating
- During rebooting

Duty Control

Duty control is a mechanism that prevents overheating, melting and aggregating toner due to internal temperature rise by forcibly stopping an imaging/printing job more often.

The internal temperature sensor measures the temperature of the development drive shaft.

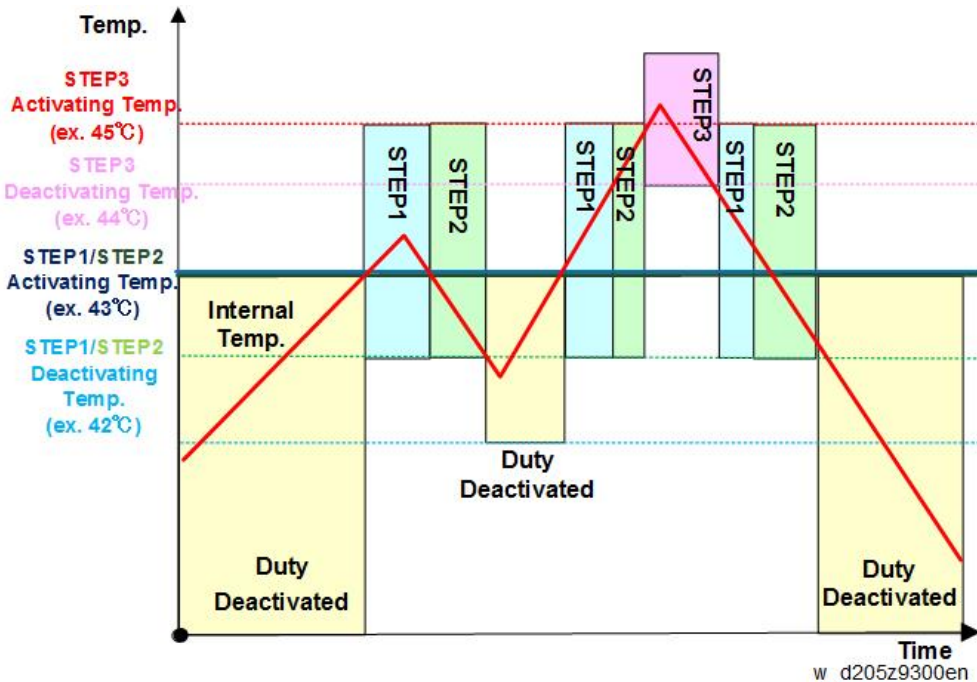
If the internal temperature reaches the activating temperature of STEP1 through STEP3, duty control is activated in accordance with the conditions for each step, to avoid overheating of the parts for imaging.

Upon starting printing in each step, the message "The printing speed is now being limited" is displayed through a banner or pop-up screen, to indicate that duty control is activated.

When the internal temperature becomes higher than the STEP1/STEP2 Activating Temperature, the machine stops the printing job for 30 seconds every after printing four sheets, and the banner "The printing speed is now being limited" is displayed.

When the internal temperature becomes higher than the STEP3 Activating Temperature, the machine stops the printing job and the pop-up screen "The printing speed is now being limited" is displayed.

When the internal temperature becomes lower than the STEP1/STEP2 Deactivating Temperature, duty control is deactivated, the banner disappears, and the machine runs in normal state.



Status	Standard (Duty Deactivated)	STEP1/2 (Duty Activated)	STEP3 (Duty Activated)
Internal Temperature	42°C or lower	43°C or higher	45°C or higher

Status	Standard (Duty Deactivated)	STEP1/2 (Duty Activated)	STEP3 (Duty Activated)
Line speed	136 mm/s		Standby (stop)
Operation panel screen	No	Banner	Pop-up
Printing	Normal (30CPM)	Stops for 30 seconds every 4 sheets	Stops

High Productivity Mode

There are operation modes that keep high productivity without entering under the Duty control. Executing these SPs allows you to configure the best setting for your customer:

	Mode	Standard Mode	High Productivity Mode A	High Productivity Mode B	High Productivity Mode C
	SP	SP1-960-001	SP1-960-002	SP1-960-003	SP1-960-004
Fan (Start Temp)		[A]			[B]
Fusing Temp in Standby		[C]	[D]	[E]	
FCOT		[F]	[G]	[H]	
Fan Rotating Speed in Standby		[I]			[J]

Mode Description

	Description
[A]	Rotates at full speed when the internal temperature is 44°C or higher.
[B]	Rotates at full speed when the internal temperature is 42°C or higher.
[C]	Lowers the fusing temperature from 145°C to 110°C when the internal temperature is 42°C or higher.
[D]	Lowers the fusing temperature from 145°C to 110°C when the internal temperature is 40°C or higher.

	Description
[E]	<p>Lowers the fusing temperature from 145°C to 75°C when the internal temperature is 37°C or higher.</p> <p>Lowers the fusing temperature from 145°C to 75°C when the internal temperature is 37°C or higher.</p>
[F]	Increases FCOT 3 sec (from 5 sec to 8 sec) when the internal temperature is 42°C.
[G]	Increases FCOT 3 sec (from 5 sec to 8 sec) when the internal temperature is 40°C.
[H]	<p>Increases FCOT 3 sec (from 5 sec to 12 sec) when the internal temperature is 37°C.</p> <p>Increases FCOT 3 sec (from 5 sec to 12 sec) when the internal temperature is 37°C.</p>
[I]	Refer to page 567.
[J]	Refer to the table below.

Fan Control in High Productivity Mode C: Standby

Temp. (°C)	~23	23 ~ 25	25 ~ 27	27 ~ 29	29 ~ 31	31 ~ 33	33 ~ 35	35 ~ 37	37 ~ 39	39~
Exhaust Fan	30%	35%	40%	45%	50%	60%	70%	80%	80%	80%

Operation in Low-Voltage Mode

The 200-V machine has a problem caused by low voltage upon start-up or printing.

To solve this problem, the 200-V machines have a "Low-Voltage mode".

	Low-Voltage mode	Standard-Voltage mode	Note
Voltage range	150 V – 187 V	187 V –	181.5 ±5.5 V (guaranteed operating range)
Process speed	100 mm/s	<p>Silent mode speed: 100 mm/s</p> <p>Standard mode speed: 136 mm/s</p>	

	Low-Voltage mode	Standard-Voltage mode	Note
Productivity CPM	4.6 (30% of silent mode speed)	Silent speed: 15.5 Standard speed: 31.0	
Preprinting	Prerotation * 1	No prerotation	Waiting for the temperature of the hot roller to rise

↓ Note

- * 1: The hot roller rotates for 2 to 5 seconds until the roller temperature reaches the specified value.

Starting

Purpose: To decrease SC caused by low voltage

1. If SC542 (temperature gradient) is detected, the machine checks if the voltage is 187 V or lower (low voltage).

If low voltage is detected, the machine retries (the fusing lamp is set to OFF then ON again).

2. If the machine does not start after 3 retries mentioned above, "SC542-04" is displayed on the panel.

The customer turns OFF then ON the main power to restart.

3. For safety purposes, the fusing lamp is not turned ON if the temperature detected at the fusing thermistor (End) is higher than 200°C.

Printing

Purpose: Securing fusing

The voltage upon starting printing is detected, and printing is performed in Low Voltage mode, if the detected voltage is low (less than 187 V).

MEMO

MEMO

MEMO

MP 305+
Machine Code: D259

Appendices

February, 2016
Subject to Change

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1. Specifications

Specifications

Mainframe

Configuration:	Desktop	
Drum Type:	OPC Drum	
Scanning Element:	Line sequential scanning CIS	
Copy Process:	Laser beam scanning/marking & electro-photographic printing	
Development:	Dry two-component magnetic brush development system	
Fusing:	Heating roller pressure system	
Resolution:	Scan: 600 dpi Print: 600 dpi	
Original Type:	Sheets, book, three-dimensional object	
Original Reference Position:	Platen: Left rear corner ARDF: Center	
Warm-up Time:	67 seconds or less (Cold start) 30 seconds or less (Quick start)	
Original Type:	Sheets, book, three-dimensional object	
Max Imageable Area:	Platen: 297 x 216 mm (11.7 x 8.5 in) ARDF: 297 x 1260 mm (11.7 x 49.6 in)	
Print Paper Size:	Standard Tray:	A4 to A6
	Bypass Tray:	A3 to A6, B4 to B6, Postcard
	Optional Tray:	W: 90 to 297 mm (3.5 to 11.7 in) L: 148 to 600 mm (5.8 to 23.6 in)

Printing Paper Weight:	Standard Tray:	60 to 105 g/m ²	
	Bypass Tray:	52 to 162 g/m ²	
Missing Image Area:		Leading Edge: 3 ± 2 Trailing Edge: 3 ± 2 (4.2 ± 2 mm Duplex) Left: 2 ± 1.5 mm Right: 2 + 2.5 / -1.5 mm	
First Copy Time:		5 seconds or less (LT/A4 LEF, 1st tray)	
Copy Speed (Simplex):		Standard mode: 30 cpm Silent Mode: 15 cpm *Thick paper 7.5 cpm	
Copy Speed (Duplex):		Standard: 20 cpm Silent Mode: 9 cpm	
Reproduction Ratio:		Enlargement	400%, 200%, 141%, 122%, 115%
		Same size	100%
		Reduction	93%, 87%, 82%, 71%, 61%, 50%, 25%
Zoom:		25 to 400% (1% step)	
Continuance Copy Amount:		1 to 99 sheets	
Print Paper Capacity:	Standard Tray:	250 sheets x 1 (80 g/m ²)	
	Bypass Tray:	10 sheets	
Image Density:		7 levels	
Auto Clear Time:		60 seconds (default)	
Automatic Shut-off:		1 minute (1 to 240 minutes)	
Toner Replenishment:		Toner bottle	
Optional Equipment:		Paper Feed Tray (1 Tray)	
Toner Yield:		3000 sheets	
Memory:		1024MB (Standard), 1536MB (Extended)	

Power Source:	120 to 127 V, 60 Hz (for NA) 220 to 240 V, 50/60 Hz (for EU/AA) 110 V, 60 Hz (for TWN)
Power Consumption:	NA 1180 W EU 1140 W TW 1100 W CN 1140 W
Noise Emission: *in paper feeding	Standard Mode: 56.5 dB Silent Mode: 52.5 dB
Dimensions (W x D x H):	350 × 493 × 425 mm (13.8 x 19.4 x 16.7 in)
Weight:	32 kg (70.5 lb) or less
Duplex	
Print Paper Size:	A3/DLT to A5/HLT A5/HLT LEF is not supported. Duplex printing with A6 SEF, B6 SEF, or HLT LEF is not supported.

Supported Paper Sizes

1

Paper Feed

✓	Supported
-	Not Supported
1	Size up to DLT/A3 is guaranteed.

Size			Bypass	Main Paper Feed Tray	Optional Paper Feed Tray	Auto Detection
A3	SEF	297 x 420 mm	✓	-	-	1
A4	SEF	210 x 297 mm	✓	-	-	1
A4	LEF	297 x 210 mm	✓	✓	✓	1
A5	SEF	148 x 210 mm	✓	✓	✓	1
A5	LEF	210 x 148 mm	✓	✓	✓	-
A6	SEF	105 x 148 mm	✓	✓	-	-
B4	SEF	257 x 364 mm	✓	-	-	1
B5	SEF	182 x 257 mm	✓	-	-	1
B5	LEF	257 x 182 mm	✓	✓	✓	-
B6	SEF	128 x 182 mm	✓	✓	-	-
DLT	SEF	11 x 17 in.	✓	-	-	1

Size			Bypass	Main Paper Feed Tray	Optional Paper Feed Tray	Auto Detection
Legal	SEF	8.5 x 14 in.	✓	-	-	1
Foolscap	SEF	8.5 x 13 in.	-	-	-	1
Letter	SEF	8.5 x 11 in.	✓	-	-	1
Letter	LEF	11 x 8.5 in.	✓	✓	✓	1
Government LG	SEF	8.25 x 14 in.	✓	-	-	1
Folio	SEF	8.25 x 13 in.	✓	-	-	1
F/GL	SEF	8 x 13 in.	✓	-	-	1
G LT	SEF	8 x 10.5 in.	✓	-	-	1
G LT	LEF	10.5 x 8 in.	✓	-	-	-
Eng Quatro	SEF	8 x 10 in.	✓	-	-	1
Eng Quatro	LEF	10 x 8 in.	✓	-	-	-
Executive	SEF	7.25 x 10.5 in.	✓	-	-	1
Executive	LEF	10.5 x 7.25 in.	✓	-	-	-
Half Letter	SEF	5.5 x 8.5 in.	✓	✓	✓	1
Com10	SEF	4.125 x 9.5 in.	✓	-	-	-
Monarch	SEF	3.875 x 7.5 in.	✓	-	-	-
C5	SEF	162 x 229 mm	✓	-	-	-
C5	LEF	229 x 162 mm	✓	-	-	-
C6	SEF	114 x 162 mm	✓	-	-	-

Size			Bypass	Main Paper Feed Tray	Optional Paper Feed Tray	Auto Detection
DL Env	SEF	110 x 220 mm	✓	-	-	-
8K	SEF	267 x 390 mm	✓			
16K	SEF	195 x 267 mm	✓			
16K	LEF	267 x 195 mm	✓	✓	✓	
11x15	SEF	11 x 15 in.	✓	-	-	1
11x14	SEF	11 x 14 in.	✓	-	-	1
10x15	SEF	10 x 15 in.	✓	-	-	1
10x14	SEF	10 x 14 in.	✓	-	-	1
Oficio	SEF	8.5 x 13.4 in.	✓	-	-	1

Paper Exit

✓	Supported
-	Not Supported

Size			Main Paper Feed Tray
A3	SEF	297 x 420 mm	✓
A4	SEF	210 x 297 mm	✓
A4	LEF	297 x 210 mm	✓
A5	SEF	148 x 210 mm	✓
A5	LEF	210 x 148 mm	✓
A6	SEF	105 x 148 mm	✓

Size			Main Paper Feed Tray
B4	SEF	257 x 364 mm	✓
B5	SEF	182 x 257 mm	✓
B5	LEF	257 x 182 mm	✓
B6	SEF	128 x 182 mm	✓
DLT	SEF	11 x 17 in.	✓
Legal	SEF	8.5 x 14 in.	✓
Foolscap	SEF	8.5 x 13 in.	✓
Letter	SEF	8.5 x 11 in.	✓
Letter	LEF	11 x 8.5 in.	✓
GovernmentLG	SEF	8.25 x 14 in.	✓
Folio	SEF	8.25 x 13 in.	✓
F/GL	SEF	8 x 13 in.	✓
G LT	SEF	8 x 10.5 in.	✓
G LT	LEF	10.5 x 8 in.	✓
Eng Quatro	SEF	8 x 10 in.	✓
Eng Quatro	LEF	10 x 8 in.	✓
Executive	SEF	7.25 x 10.5 in.	✓
Executive	LEF	10.5 x 7.25 in.	✓
Half Letter	SEF	5.5 x 8.5 in.	✓
Com10	SEF	4.125 x 9.5 in.	✓
Monarch	SEF	3.875 x 7.5 in.	✓
C5	SEF	162 x 229 mm	✓
C5	LEF	229 x 162 mm	✓
C6	SEF	114 x 162 mm	✓

Size			Main Paper Feed Tray
DL Env	SEF	110 x 220 mm	✓
16K	SEF	195 x 267 mm	✓
11x15	SEF	11 x 15 in.	✓
11x14	SEF	11 x 14 in.	✓
10x15	SEF	10 x 15 in.	✓
10x14	SEF	10 x 14 in.	✓
Oficio	SEF	8.5 x 13.4 in.	✓

Software Accessories

The printer drivers and utility software are provided on one CD-ROM. An auto-run installer allows you to select which components to install.

1

Printer Drivers

✓: Supported

-: Not supported

Windows

OS	Type	PCL5c	PCL6	PS3	XPS
Windows Vista	Starter	-	-	-	-
	Home Basic	✓	✓*3	✓*3	✓*1
	Home Premium	✓	✓*3	✓*3	✓*1
	Business	✓	✓*3	✓*3	✓*1
	Ultimate	✓	✓*3	✓*3	✓*1
	Enterprise	✓	✓*3	✓*3	✓*1
Windows 7	Starter	-	-	-	-
	Home Basic	-	-	-	-
	Home Premium	✓	✓	✓	✓
	Professional	✓	✓	✓	✓
	Ultimate	✓	✓	✓	✓
	Enterprise	✓	✓	✓	✓
Windows 8/8.1	Windows 8	✓	✓	✓	✓
	Pro	✓	✓	✓	✓
	Enterprise	✓	✓	✓	✓
	RT	-	-	-	-

OS	Type	PCL5c	PCL6	PS3	XPS
Windows Server 2003/ R2	Standard Edition	✓*2	✓*2	✓*2	-
	Enterprise Edition	✓*2	✓*2	✓*2	-
	Datacenter Edition	-	-	-	-
	Web Edition	-	-	-	-
Windows Server 2008/R2	Standard Edition	✓	✓	✓	✓
	Enterprise Edition	✓	✓	✓	✓
	Standard without Hyper-V	✓	✓	✓	✓
	Enterprise without Hyper-V	✓	✓	✓	✓
	Datacenter Edition	-	-	-	-
	Web Edition	-	-	-	-
Windows Server 2012/R2	Foundation	✓	✓	✓	✓
	Essentials	✓	✓	✓	✓
	Standard	✓	✓	✓	✓
	Datacenter	-	-	-	-

*RPCS driver has been discontinued.

* 1:SP1 or later is recommended

* 2:SP2 or later is Recommended

* 3:SP1 or later is recommended

Mac OS Environment

OS	PS3	Printer Utility for Mac
Mac OS 8.6 or later, Mac OS X classic	-	-
Mac OS X Native: v.10.57 or later	✓	-

UNIX Environment

UNIX Platforms	Version
Sun Solaris	9, 10
HP-UX	11.x, 11i v2, 11i v3
Red Hat Linux	Enterprise V4, V5, V6
SCO OpenServer	5.0.7, 6.0
IBM AIX	V 5L, V5.3, V6.1, V7.1

SAP R/3 Environment (Device Type / Barcode & OCR Package)

Device Type will be provided from SAP itself in SAP Printer Vendor Program.

For the detailed specification, please refer to another announcement to be issued in the future.

Supported Barcode & OCR Fonts	Barcode Fonts	Code 128, Code 39, Code 93, Codabar, 2 of 5 interleaved/Industrial/Matrix, MSI, USPS, UPC/EAN
	OCR Fonts	OCR A, OCR B

↓ Note

- The PS3 drivers are all genuine AdobePS drivers, except for Windows 2000, which uses Microsoft PS.
- A PPD file for each operating system is provided with the driver.

Scanner and LAN Fax drivers

Operating system for TWAIN driver:

Windows Vista/7/8/8.1, Windows Server 2003/2003 R2/2008/2008 R2/2012/2012 R2
(TWAIN scanner runs in 32-bit compatible mode on a 64-bit operating system, so TWAIN scanner is not compatible with 64-bit applications. Use it with 32-bit applications.)

Operating system for WIA driver:

Windows Vista (SP1 or later)/7/8/8.1, Windows Server 2008/2008 R2/2012/2012 R2
(WIA scanner can function under both 32- and 64-bit operating systems.)

Operating system for LAN FAX driver:

Windows Vista, Windows 7, 8, 8.1, Windows Server 2003, Windows Server 2008, Windows Server 2012, Windows Server 2008 R2, Windows Server 2012 R2

 **Note**

- The LAN Fax driver lets you fax documents directly from your PC. Address Book Editor and Cover Sheet Editor are to be installed as well.
- The Network TWAIN driver operates in 32-bit compatibility mode on 64-bit operating systems
- The Network TWAIN driver is provided on the scanner drivers CD-ROM.

Optional Equipment

Paper Feed Unit PB1090

1

Items	Specification
Paper Feed System	RF System
Configuration	Front loading paper feed tray
Tray Capacity	500 sheets
Paper Size	A5/HLT SEF to A4/LT LEF
Paper Weight	60 - 162 g/m ²
Power Source	DC 24 V, 5 V (from the main frame)
Power Consumption	Less than 15 W
Dimensions	W:350 × D:460 × H:140 mm (13.8 × 18.1 × 5.5 in)
Weight	6.0 kg (13.2 lb) or less

2. Preventive Maintenance Tables

Maintenance Tables

Preventive Maintenance Items

Chart: A4 (LT)/5%

Mode: 2 prints/job

Color Ratio: 30%

Environment: Normal temperature and humidity

Yield may change depending on circumstances and print conditions.

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

Note

- Yield Parts:**

The parts mentioned in these tables have a target yield. However, the total copy/print volume made by the machine will not reach the target yield within the machine's targeted lifetime if the machine is used under the target usage conditions (ACV, color ratio, and P/J). So, these parts are categorized not as PM parts but as yield parts (EM parts). The parts with "(R)" in this table are yield parts.

The PM count for the following items is based on the sheets of copy paper:

Item	60K	120K	180K	EM	Remarks
Laser Optics					
Exposure Glass		C/I/L		C/I/L	Ricoh exposure glass cleaner
ADF Exposure Glass		C/I/L		C/I/L	Ricoh exposure glass cleaner
APS Sensor		C/I/L		C/I/L	Dry cloth
Dust Shield Glass		C/I/L		C/I/L	Dry cloth
PCDU					
PCDU		R			
Transfer					
Transfer Roller (Quenching Lamp)		R			

Item	60K	120K	180K	EM	Remarks
ID Sensor	C/I/L			C/I/L	Wipe with a damp cloth.
PCL Cover	C/I/L			C/I/L	Wipe with a damp cloth.
Fusing Unit					
Hot Roller		R			
Pressure Roller		R			
Hot Roller Stripper Pawls		R			
Hot Roller Bearing				R	
Pressure Roller Bearing				R	
Paper Transport (Mainframe)					
Registration Roller	C/I/L			C/I/L	Wipe with a damp cloth.
Registration Sensor				C/I/L	Remove paper dusts with blower brush
Paper Dust Collector				C/I/L	Remove paper dusts with blower brush
Paper Feed Roller		R		C/I/L	Wipe with a damp cloth.
Bypass Pick-up Roller				C/I/L	Wipe with a damp cloth.
Bypass Feed Roller				C/I/L	Wipe with a damp cloth.
Friction Roller		R		C/I/L	Wipe with a damp cloth.
Paper Transport (Option)					
Pick-up Roller				C/I/L	Wipe with a damp cloth.
Paper Feed Roller		R		C/I/L	Remove paper dusts with blower brush
Friction Roller		R		C/I/L	Remove paper dusts with blower brush
Vertical Transport Roller		R		C/I/L	Wipe with a damp cloth.
Tray Bottom Plate Pad				C/I/L	Wipe with a damp cloth.

Item	60K	120K	180K	EM	Remarks
Paper Feed Sensor				C/I/L	Remove paper dusts with blower brush
Duplex					
Duplex Roller				C/I/L	Wipe with a damp cloth.
Paper Exit					
Paper Exit Reverse Roller				C/I/L	Wipe with a damp cloth.
Others					
Exhaust Filter				R	

The PM count for the following items is based on the number of originals fed:

Item	30K	45K	EM	Remarks
ARDF				
Platen Cover		C/I/L		Wipe with an alcohol- or water-dampened cloth.
White Guide Plate		C/I/L		
ARDF Original Set Sensor		C/I/L		Wipe with a dry cloth, and remove paper dusts with blower brush
ARDF Feed Cover Sensor		C/I/L		
ARDF Registration Sensor		C/I/L		
ARDF Pick-up Roller		C/I/L		Wipe with an alcohol- or water-dampened cloth.
ARDF Feed Roller		C/I/L		
ARDF Pullout Roller		C/I/L		
ARDF Transport Roller		C/I/L		
ARDF Paper Exit Roller		C/I/L		
ARDF Inverter Drive Roller		C/I/L		
ARDF Inverter Driven Roller		C/I/L		
ARDF Friction Pad	C/I/L			

3. SP Mode Tables

Service Program Mode

CAUTION

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

Enabling and Disabling Service Program Mode

Note

- The Service Program Mode is for use by service representatives only. If this mode is used by anyone other than service representatives for any reason, data might be deleted or settings might be changed. In such case, product quality cannot be guaranteed any more.

Entering SP Mode

For details, ask your supervisor.

Exiting SP Mode

- Press "Exit" on the operation panel twice to return to the copy window.



Types of SP Modes

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


Select one of the Service Program modes (System, Printer, Scanner, or Fax) from the touch panel as shown in the diagram below after you access the SP mode. This section explains the functions of the System/Printer/Scanner SP modes. Refer to the Fax service manual for the Fax SP modes.

SP Mode Button Summary

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

1	Opens all SP groups and sublevels.
2	Closes all open groups and sublevels and restores the initial SP mode display.
3	Opens the copy window (copy mode) so you can make test copies. Press SP Mode (highlighted) in the copy window to return to the SP mode screen,
4	Enter the SP code directly with the number keys if you know the SP number. Then press  . (The required SP Mode number will be highlighted when pressing  . If not, just press the required SP Mode number.)
5	Press two times to leave the SP mode and return to the copy window to resume normal operation.
6	Press any Class 1 number to open a list of Class 2 SP modes.
7	Press to scroll the show to the previous or next group.
8	Press to scroll to the previous or next display in segments the size of the screen display (page).
9	Press to scroll the show the previous or next line (line by line).
10	Press to move the highlight on the left to the previous or next selection in the list.

Switching Between SP Mode and Copy Mode for Test Printing

1. In the SP mode, select the test print. Then press "Copy Window".
2. Use the copy window (copier mode), to select the appropriate settings (paper size, etc.) for the test print.
3. Press Start  to start the test print.
4. Press SP Mode (highlighted) to return to the SP mode screen and repeat from step 1.

Selecting the Program Number

Program numbers have two or three levels.



1. Refer to the Service Tables to find the SP that you want to adjust before you begin.
2. Press the Group number on the left side SP Mode window that contains the SP that you want to adjust.
3. Use the scrolling buttons in the center of the SP mode window to show the SP number that you want to open. Then press that number to expand the list.


4. Use the center touch-panel buttons to scroll to the number and title of the item that you want to set and press it. The small entry box on the right activates and shows the below default or the current settings.

Note

- Refer to the Service Tables for the range of allowed settings.

5. Do this procedure to enter a setting:

- Press  to toggle between plus and minus and use the keypad to enter the appropriate number. The number you enter writes over the previous setting.
- Press  to enter the setting. (The value is not registered if you enter a number that is out of range.)
- Press "Yes" when you are prompted to complete the selection.

6. If you need to perform a test print, press Copy Window to open the copy window and select the settings for the test print. Press Start  and then press SP Mode (highlighted) in the copy window to return to the SP mode display.

7. Press Exit two times to return to the copy window when you are finished.

Exiting Service Mode

- Press the Exit key on the touch-panel.

Service Mode Lock/Unlock

At locations where the machine contains sensitive data, the customer engineer cannot operate the machine until the Administrator turns the service mode lock off. This function makes sure that work on the machine is always done with the permission of the Administrator.

1. If you cannot go into the SP mode, ask the Administrator to log in with the User Tool and then set "Service Mode Lock" to OFF after he or she logs in: User Tools → System Settings → Administrator Tools → Service Mode Lock → OFF
 - This unlocks the machine and lets you get access to all the SP codes.
 - The CE can service the machine and turn the machine off and on. It is not necessary to ask the Administrator to log in again each time the machine is turned on.
2. Go into the SP mode and set SP5169 to "1" if you must use the printer bit switches.
3. After machine servicing is completed:
 - Change SP5169 from "1" to "0".
 - Turn the machine off and on. Tell the administrator that you have completed servicing the machine.
 - The Administrator will then set the "Service Mode Lock" to ON.

Remarks

Display on the Operation Panel Screen

The maximum number of characters which can show on the operation panel screen is limited. For this reason, some of the SP modes shown on the screen need to be abbreviated. The following are abbreviations used for the SP modes for which the full description is over 20 characters.

3

Paper Weight Plain Paper 1: 60-74 g/m ² , 16-20lb. Plain Paper 2: 75-81 g/m ² , 20-22lb. Middle Thick: 82-105 g/m ² , 22-28lb. Thick Paper 1: 106-130 g/m ² , 28.3-34.6lb. Thick Paper 2: 131-163 g/m ² , 35-43lb. Thick Paper 3: 164-220 g/m ² , 44-58lb.	
Paper Type N: Normal paper MTH: Middle thick paper TH: Thick paper	Paper Feed Station P: Paper tray B: By-pass table
Print Mode S: Simplex D: Duplex	Process Speed L: Low speed (89 mm/s) M: Middle speed (178 mm/s)

Others

The following symbols are used in the SP mode tables.

- The settings of each SP mode are explained in the right-hand column of the SP table in the following way.

[Adjustable range / **Default setting** / Step] Alphanumeric

↓ Note

- If "Alphanumeric" is written to the right of the bracket as shown above, the setting of the SP mode shows on the screen using alphanumeric characters instead of only numbers. However, the settings in the bracket in the SP mode table are explained by using only the numbers.

- An asterisk (*) to the right hand side of the mode number column means that this mode is stored in the NVRAM and EEPROM. If you do a RAM clear, this SP mode will be reset to the default value. "ENG" and "CTL" show which NVRAM contains the data.
 - ENG: EEPROM on the BICU board
 - CTL: NVRAM on the controller board
- A sharp (#) to the right hand side of the mode number column means that the main power must be turned OFF and ON to effect the setting change.
- **FA**: Factory setting
(Data may be adjusted from the default setting at the factory. Refer to the factory setting sheets enclosed.)

Main SP Tables-1

SP1-XXX (Feed)

1001	[Leading Edge Registration]		
1-001-002	Tray: Plain	ENG *	[-9 to 9 / 0 / 0.1 mm / step]
1-001-003	Tray: Middle Thick	ENG *	[-9 to 9 / 0 / 0.1 mm / step]
1-001-004	Tray: Thick	ENG *	[-9 to 9 / 0 / 0.1 mm / step]
1-001-007	Bypass: Plain	ENG *	[-9 to 9 / 0 / 0.1 mm / step]
1-001-008	Bypass: Middle Thick	ENG *	[-9 to 9 / 0 / 0.1 mm / step]
1-001-009	Bypass: Thick	ENG *	[-9 to 9 / 0 / 0.1 mm / step]
1-001-013	Duplex: Plain	ENG *	[-9 to 9 / 0 / 0.1 mm / step]
1-001-014	Duplex: Middle Thick	ENG *	[-9 to 9 / 0 / 0.1 mm / step]
1-001-015	Duplex: Thick	ENG *	[-9 to 9 / 0 / 0.1 mm / step]

1002	[Side-to-Side Registration]		
1-002-001	Bypass	ENG *	[-4 to 4 / 0 / 0.1 mm / step]
1-002-002	Tray 1	ENG *	[-4 to 4 / 0 / 0.1 mm / step]
1-002-004	Tray 2	ENG *	[-4 to 4 / 0 / 0.1 mm / step]
1-002-006	Duplex	ENG *	[-4 to 4 / 0 / 0.1 mm / step]

1003	[Paper Buckle Adjustment]		
1-003-002	Tray1: Plain	ENG *	[-9 to 5 / 0 / 1 mm / step]
1-003-003	Tray1: Middle Thick	ENG *	[-9 to 5 / 0 / 1 mm / step]
1-003-004	Tray1: Thick	ENG *	[-9 to 5 / 0 / 1 mm / step]
1-003-007	Tray2: Plain	ENG *	[-9 to 5 / 0 / 1 mm / step]
1-003-008	Tray2: Middle Thick	ENG *	[-9 to 5 / 0 / 1 mm / step]

1-003-009	Tray2: Thick	ENG *	[-9 to 5 / 0 / 1 mm / step]
1-003-012	Bypass: Plain	ENG *	[-9 to 5 / 0 / 1 mm / step]
1-003-013	Bypass: Middle Thick	ENG *	[-9 to 5 / 0 / 1 mm / step]
1-003-014	Bypass: Thick	ENG *	[-9 to 5 / 0 / 1 mm / step]
1-003-018	Duplex: Plain	ENG *	[-9 to 5 / 0 / 1 mm / step]
1-003-019	Duplex: Middle Thick	ENG *	[-9 to 5 / 0 / 1 mm / step]
1-003-020	Duplex: Thick	ENG *	[-9 to 5 / 0 / 1 mm / step]

1103	[Reload Permit Setting]		
1-103-001	0:OFF 1:ON 2:OFF +Temp Reload	ENG *	[0 to 2 / 0 / 1 / step]
1-103-002	Reload Temp.:Center	ENG *	[100 to 180 / 150 / 1 deg / step]
1-103-003	Reload Temp.:Ends	ENG *	[50 to 150 / 100 / 1 deg / step]
1-103-004	Reload Temp.:Cold:Center	ENG *	[100 to 180 / 150 / 1 deg / step]
1-103-005	Reload Temp.:Cold:Ends	ENG *	[50 to 150 / 100 / 1 deg / step]

1105	[Fusing Temperature Adjustment]		
1-105-001	Roller Center:Plain 1	ENG *	[100 to 200 / 145 / 1 deg / step]
1-105-003	Roller Center:Plain 2	ENG *	[100 to 200 / 145 / 1 deg / step]
1-105-005	Roller Center:M-Thick	ENG *	[100 to 200 / 145 / 1 deg / step]
1-105-007	Roller Center:Thick Paper 1	ENG *	[100 to 200 / 155 / 1 deg / step]
1-105-009	Roller Center:Thin	ENG *	[100 to 200 / 135 / 1 deg / step]
1-105-012	Wait Temp.: Center	ENG *	[0 to 200 / 145 / 1 deg / step]
1-105-013	Wait Temp.: Duty Control	ENG *	[0 to 200 / 100 / 1 deg / step]
1-105-014	Thresh:S1	ENG *	[0 to 50 / 16 / 1 deg / step]
1-105-015	Thresh:delta t	ENG *	[0 to 50 / 0 / 1 deg / step]

1-105-016	Low:Plain1	ENG *	[0 to 30 / 5 / 1 deg / step]
1-105-017	Low:Plain2	ENG *	[0 to 30 / 5 / 1 deg / step]
1-105-018	Low:M-Thick	ENG *	[0 to 30 / 5 / 1 deg / step]
1-105-019	Low:Thick1	ENG *	[0 to 30 / 10 / 1 deg / step]
1-105-020	Waiting:Plain1	ENG *	[0 or 1 / 1 / 1 / step]
1-105-021	Waiting:Plain2	ENG *	[0 or 1 / 1 / 1 / step]
1-105-022	Waiting:M-Thick	ENG *	[0 or 1 / 1 / 1 / step]
1-105-023	Waiting:Thick1	ENG *	[0 or 1 / 1 / 1 / step]
1-105-024	Waiting:Center Lower:Plain1:Center	ENG *	[0 to 60 / 60 / 1 deg / step]
1-105-025	Waiting:Center Lower:Plain1:Ends	ENG *	[0 to 60 / 60 / 1 deg / step]
1-105-026	Waiting:Center Lower:Plain2:Center	ENG *	[0 to 60 / 60 / 1 deg / step]
1-105-027	Waiting:Center Lower:Plain2:Ends	ENG *	[0 to 60 / 60 / 1 deg / step]
1-105-028	Waiting:Center Lower:M- Thick:Center	ENG *	[0 to 60 / 5 / 1 deg / step]
1-105-029	Waiting:Center Lower:M- Thick:Ends	ENG *	[0 to 60 / 60 / 1 deg / step]
1-105-030	Waiting:Center Lower:Thick1:Center	ENG *	[0 to 60 / 0 / 1 deg / step]
1-105-031	Waiting:Center Lower:Thick1:Ends	ENG *	[0 to 60 / 60 / 1 deg / step]
1-105-032	Waiting:Center Upper:Plain1:Center	ENG *	[0 to 60 / 40 / 1 deg / step]
1-105-033	Waiting:Center Upper:Plain1:Ends	ENG *	[0 to 60 / 40 / 1 deg / step]
1-105-034	Waiting:Center Upper:Plain2:Center	ENG *	[0 to 60 / 40 / 1 deg / step]

1-105-035	Waiting:Center Upper:Plain2:Ends	ENG *	[0 to 60 / 40 / 1 deg / step]
1-105-036	Waiting:Center Upper:M- Thick:Center	ENG *	[0 to 60 / 40 / 1 deg / step]
1-105-037	Waiting:Center Upper:M- Thick:Ends	ENG *	[0 to 60 / 40 / 1 deg / step]
1-105-038	Waiting:Center Upper:Thick1:Center	ENG *	[0 to 60 / 40 / 1 deg / step]
1-105-039	Waiting:Center Upper:Thick1:Ends	ENG *	[0 to 60 / 40 / 1 deg / step]
1-105-040	Low:Thin	ENG *	[0 to 30 / 5 / 1 deg / step]
1-105-041	Registration Waiting:Thin	ENG *	[0 or 1 / 1 / 1 / step]
1-105-042	Waiting:Center Lower:Thin:Center	ENG *	[0 to 60 / 60 / 1 deg / step]
1-105-043	Waiting:Center Lower:Thin:Ends	ENG *	[0 to 60 / 60 / 1 deg / step]
1-105-044	Waiting:Center Upper:Thin:Center	ENG *	[0 to 60 / 40 / 1 deg / step]
1-105-045	Waiting:Center Upper:Thin:Ends	ENG *	[0 to 60 / 40 / 1 deg / step]
1-105-046	Print Ready:Center	ENG *	[120 to 180 / 170 / 1 deg / step]
1-105-048	Roller Center:Thick Paper2	ENG *	[100 to 200 / 160 / 1 deg / step]
1-105-049	Roller Center:Thick Paper3	ENG *	[100 to 200 / 160 / 1 deg / step]
1-105-050	Low:Thick2	ENG *	[0 to 30 / 10 / 1 deg / step]
1-105-051	Low:Thick3	ENG *	[0 to 30 / 10 / 1 deg / step]
1-105-052	Registration Waiting:Thick2	ENG *	[0 or 1 / 1 / 1 / step]
1-105-053	Registration Waiting:Thick3	ENG *	[0 or 1 / 1 / 1 / step]
1-105-054	Waiting:Center Lower:Thick2:Center	ENG *	[0 to 60 / 0 / 1 deg / step]

1-105-055	Waiting:Center Lower:Thick2:Ends	ENG *	[0 to 60 / 60 / 1 deg / step]
1-105-056	Waiting:Center Upper:Thick2:Center	ENG *	[0 to 60 / 40 / 1 deg / step]
1-105-057	Waiting:Center Upper:Thick2:Ends	ENG *	[0 to 60 / 40 / 1 deg / step]
1-105-058	Waiting:Center Lower:Thick3:Center	ENG *	[0 to 60 / 0 / 1 deg / step]
1-105-059	Waiting:Center Lower:Thick3:Ends	ENG *	[0 to 60 / 60 / 1 deg / step]
1-105-060	Waiting:Center Upper:Thick3:Center	ENG *	[0 to 60 / 40 / 1 deg / step]
1-105-061	Waiting:Center Upper:Thick3:Ends	ENG *	[0 to 60 / 40 / 1 deg / step]
1-105-062	Low Voltage: Roller Center	ENG *	[0 to 200 / 130 / 1 deg / step]
1-105-063	Roller Center:Plain1:LowSpeed	ENG *	[100 to 200 / 140 / 1 deg / step]
1-105-064	Roller Center:Plain2:LowSpeed	ENG *	[100 to 200 / 140 / 1 deg / step]
1-105-065	Roller Center:Thin:LowSpeed	ENG *	[100 to 200 / 130 / 1 deg / step]

1106	[Fusing Temperature Display]		
1-106-001	Roller Center	ENG *	[-20 to 250 / 0 / 1 deg / step]
1-106-002	Roller Ends	ENG *	[-20 to 250 / 0 / 1 deg / step]
1-106-003	In The Machine at Power On	ENG *	[-20 to 250 / 0 / 1 deg / step]

1108	[Fusing Soft Start Setting]		
1-108-001	Warming-up	ENG *	[100 to 2000 / 1000 / 100 msec / step]
1-108-002	Print	ENG *	[100 to 2000 / 1000 / 100 msec / step]

1-108-003	Wait	ENG*	[100 to 2000 / 1000 / 100 msec / step]
1-108-004	Print Start	ENG*	[100 to 2000 / 200 / 100 msec / step]
1-108-005	Print Start Time	ENG*	[0 to 999 / 5 / 1 sec / step]

1112	[Image Process Temp. Correction]		
1-112-001	Temp. :Normal:Level1	ENG*	[-25 to 10 / 0 / 1 deg / step]
1-112-002	Temp. :Normal:Level2	ENG*	[-25 to 10 / -5 / 1 deg / step]

1123	[Repeat Temp. Correction]		
1-123-004	1st Threshold Temp. :A4	ENG*	[100 to 250 / 200 / 1 deg / step]
1-123-005	2nd Threshold Temp. :A4	ENG*	[100 to 250 / 210 / 1 deg / step]
1-123-006	3rd Threshold Temp. :A4	ENG*	[100 to 250 / 240 / 1 deg / step]
1-123-007	1st Threshold Temp. :B5	ENG*	[100 to 250 / 200 / 1 deg / step]
1-123-008	2nd Threshold Temp. :B5	ENG*	[100 to 250 / 210 / 1 deg / step]
1-123-009	3rd Threshold Temp. :B5	ENG*	[100 to 250 / 240 / 1 deg / step]
1-123-010	1st Threshold Temp. :A5	ENG*	[100 to 250 / 200 / 1 deg / step]
1-123-011	2nd Threshold Temp. :A5	ENG*	[100 to 250 / 210 / 1 deg / step]
1-123-012	3rd Threshold Temp. :A5	ENG*	[100 to 250 / 240 / 1 deg / step]
1-123-013	1st Threshold Temp. :A6	ENG*	[100 to 250 / 200 / 1 deg / step]
1-123-014	2nd Threshold Temp. :A6	ENG*	[100 to 250 / 210 / 1 deg / step]

1-123-015	3rd Threshold Temp. :A6	ENG*	[100 to 250 / 240 / 1 deg / step]
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1124	[CPM Down Setting]		
1-124-002	Low:Up Temp	ENG*	[-50 to 0 / -5 / 1 deg / step]
1-124-003	Low: 1st CPM	ENG*	[10 to 100 / 75 / 5% / step]
1-124-004	Low: 2nd CPM	ENG*	[10 to 100 / 65 / 5% / step]
1-124-005	Low: 3rd CPM	ENG*	[10 to 100 / 40 / 5% / step]
1-124-024	Judging Interval	ENG*	[1 to 250 / 10 / 1 sec / step]
1-124-025	Start Timing	ENG*	[1 to 999 / 10 / 1 sec / step]
1-124-140	High: 1st CPM	ENG*	[10 to 100 / 50 / 1% / step]
1-124-141	High: 2nd CPM	ENG*	[10 to 100 / 30 / 1% / step]
1-124-142	High: 3rd CPM	ENG*	[10 to 100 / 30 / 1% / step]
1-124-143	High:1st CPM Down Temp.:A3	ENG*	[100 to 250 / 220 / 1 deg / step]
1-124-144	High:2nd CPM Down Temp.:A3	ENG*	[100 to 250 / 220 / 1 deg / step]
1-124-145	High:3rd CPM Down Temp.:A3	ENG*	[100 to 250 / 220 / 1 deg / step]
1-124-146	High:1st CPM Down Temp.:A4	ENG*	[100 to 250 / 220 / 1 deg / step]
1-124-147	High:2nd CPM Down Temp.:A4	ENG*	[100 to 250 / 220 / 1 deg / step]
1-124-148	High:3rd CPM Down Temp.:A4	ENG*	[100 to 250 / 220 / 1 deg / step]
1-124-149	High:1st CPM Down Temp.:B5	ENG*	[100 to 250 / 220 / 1 deg / step]
1-124-150	High:2nd CPM Down Temp.:B5	ENG*	[100 to 250 / 220 / 1 deg / step]

1-124-151	High:3rd CPM Down Temp.:B5	ENG *	[100 to 250 / 220 / 1 deg / step]
1-124-152	High:1st CPM Down Temp.:A5	ENG *	[100 to 250 / 220 / 1 deg / step]
1-124-153	High:2nd CPM Down Temp.:A5	ENG *	[100 to 250 / 220 / 1 deg / step]
1-124-154	High:3rd CPM Down Temp.:A5	ENG *	[100 to 250 / 220 / 1 deg / step]
1-124-155	High:1st CPM Down Temp.:A6	ENG *	[100 to 250 / 220 / 1 deg / step]
1-124-156	High:2nd CPM Down Temp.:A6	ENG *	[100 to 250 / 220 / 1 deg / step]
1-124-157	High:3rd CPM Down Temp.:A6	ENG *	[100 to 250 / 220 / 1 deg / step]

1135	[Inrush/Flicker Control]		
1-135-001	Inrush Control	ENG *	[0 or 1 / 0 / 1 / step]
1-135-002	Control Flicker Control	ENG *	[0 or 1 / 0 / 1 / step]

1152	[Fusing Nip Band Check]		
1-152-001	0:OFF 1:ON	ENG	[0 or 1 / 0 / 1 / step]
1-152-002	Pre-idling Time	ENG *	[0 to 999 / 300 / 1 sec / step]
1-152-003	Stop Time	ENG *	[0 to 100 / 20 / 1 sec / step]

1159	[Fusing Jam Detection]		
1-159-001	SC Display	ENG *	[0 or 1 / 0 / 1 / step]

1903	[Feed CI Re-energize]		
1-903-001	Tray1 Feed	ENG *	[-10 to 30 / 0 / 1 mm / step]
1-903-002	Bypass Feed	ENG *	[-30 to 30 / 0 / 1 mm / step]

1907	[Paper Feed Timing Adj.]		
1-907-001	FWD CL Stop Position	ENG *	[-12 to 12 / 0 / 1 mm / step]
1-907-002	FWD CL Start Position	ENG *	[-10 to 20 / 0 / 1 mm / step]
1-907-003	FWD CL Stop Position: Duplex	ENG *	[-7 to 7 / 0 / 1 mm / step]
1-907-004	RVS CL Start Timing: Duplex	ENG *	[0 to 150 / 0 / 10 msec / step]
1-907-005	Duplex: Wait Position 1	ENG *	[-10 to 10 / 0 / 1 mm / step]
1-907-006	Duplex: Wait Position 2	ENG *	[-10 to 10 / 0 / 1 mm / step]

1911	[By-Pass Envelope]		
1-911-001	By-Pass Envelope	ENG *	[0 or 1 / 0 / 1 / step] 0: Disable, 1: Enable

1960	[High Productivity Mode Setting]		
1-960-001	Standard Mode A	ENG	[0 or 1 / 0 / 1 / step]
1-960-002	High Productivity Mode A	ENG	[0 or 1 / 0 / 1 / step]
1-960-003	High Productivity Mode B	ENG	[0 or 1 / 0 / 1 / step]
1-960-004	High Productivity Mode C	ENG	[0 or 1 / 0 / 1 / step]

1990	[SC990 plt detail]		
1-990-001	-	ENG *	[0 to 4294967295 / 0 / 1 / step]

1991	[Max Fusing Lamp Duty]		
1-991-001	Roller Center	ENG *	[40 to 100 / 100 / 10% / step]
1-991-003	After Warming-up – Center	ENG *	[40 to 100 / 100 / 10% / step]

1996	[Heater Forced Off]		
1-996-005	Time Heater OFF	ENG*	[0 to 120 / 7 / 1 sec / step]

Main SP Tables-2

SP2-XXX (Drum)

2011	[Manual ProCon]		
2-011-001	Exe Normal ProCon	ENG	[0 to 1 / 0 / 1 / step]

2101	[Registration Correction]		
2-101-001	Main Dot	ENG*	[-512 to 511 / 0 / 1 dot / step]

2102	[Main Scan Mag. Adjustment]		
2-102-001	-	ENG*	[-0.5 to 0.5 / 0 / 0.1% / step]

2103	[Erase Margin Adjustment]		
2-103-001	Leading Edge	ENG	[0 to 9 / 3 / 0.1 mm / step]
2-103-002	Trailing Edge	ENG	[0 to 9 / 3 / 0.1 mm / step]
2-103-003	Left	ENG	[0 to 9 / 2 / 0.1 mm / step]
2-103-004	Right	ENG	[0 to 9 / 2 / 0.1 mm / step]
2-103-005	Duplex Trail. Edge: L Size: Plain	ENG	[0 to 4 / 1.2 / 0.1 mm / step]
2-103-006	Duplex Trail. Edge: M Size: Plain	ENG	[0 to 4 / 0.8 / 0.1 mm / step]
2-103-007	Duplex. Trail. Edge: S Size: Plain	ENG	[0 to 4 / 0.6 / 0.1 mm / step]
2-103-008	Duplex Left: Plain	ENG	[0 to 1.5 / 0.3 / 0.1 mm / step]
2-103-009	Duplex Right: Plain	ENG	[0 to 1.5 / 0.3 / 0.1 mm / step]
2-103-010	Duplex Trail. Edge: L Size: Thick	ENG	[0 to 4 / 1 / 0.1 mm / step]
2-103-011	Duplex Trail. Edge: M Size: Thick	ENG	[0 to 4 / 0.6 / 0.1 mm / step]

2-103-012	Duplex Trail. Edge: S Size: Thick	ENG	[0 to 4 / 0.4 / 0.1 mm / step]
2-103-013	Duplex Left: Thick	ENG	[0 to 1.5 / 0.1 / 0.1 mm / step]
2-103-014	Duplex Right: Thick	ENG	[0 to 1.5 / 0.1 / 0.1 mm / step]

2107	[Image Parameter]		
2-107-001	Image Gamma Flag	ENG*	[0 or 1 / 1 / 1 / step] 0: OFF, 1: ON
2-107-002	Shading Correction Flag	ENG*	[0 or 1 / 0 / 1 / step] 0: ON, 1: OFF

2109	[Test Pattern]		
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2-109-001	Pattern Select	ENG	<p>[0 to 24 / 0 / 1 / step]</p> <p>0: None</p> <p>1: Vertical Line (1 dot)</p> <p>2: Vertical Line (2dot)</p> <p>3: Horizontal Line (1 dot)</p> <p>4: Horizontal Line (2dot)</p> <p>5: Grid Vertical Line</p> <p>6: Grid Horizontal Line</p> <p>7: Grid Pattern Small</p> <p>8: Grid Pattern Large</p> <p>9: Argyle Pattern Small</p> <p>10: Argyle Pattern Large</p> <p>11: Independent Pattern (1 dot)</p> <p>12: Independent Pattern (2dot)</p> <p>13: Independent Pattern (4dot)</p> <p>14: Trimming Area</p> <p>15: Hound's Tooth Check (Vertical)</p> <p>16: Hound's Tooth Check (Horizontal)</p> <p>17: Black Band (Horizontal)</p> <p>18: Black Band (Vertical)</p> <p>19: Checker Flag Pattern</p> <p>20: Grayscale (Vertical)</p> <p>21: Grayscale (Horizontal)</p> <p>22: Two Beam Density Pattern</p> <p>23: Full Dot Pattern</p> <p>24: All White Pattern</p>
2-109-002	Test Pattern Density	ENG	<p>[0 to 15 / 15 / 1 / step]</p> <p>1: N: Normal</p> <p>2: H: Dark</p> <p>3: L: Light</p> <p>4: HH: Much Darker</p> <p>5: LL: Much Lighter</p>

2110	[LD Driver]		
2-110-001	Error Flag	ENG*	[0x00 to 0xFF / 0x00 / 1 / step]
2-110-005	Memory Transfer	ENG	[0 or 1 / 0 / 1 / step]

2160	[Vertical Line Width]		
2-160-001	1 dot Line	ENG*	[0 to 31 / 31 / 1 / step]

2201	[Development Bias Adjust]		
2-201-002	ID Sensor Pattern Correction	ENG*	[0 to 4 / 0 / 1 / step]

2220	[Process Data Display]		
2-220-001	Vsp	ENG*	[0 to 9.99 / 0 / 0.01 vol / step]
2-220-002	Vsg	ENG*	[0 to 9.99 / 0 / 0.01 vol / step]
2-220-003	Vsdp	ENG*	[0 to 9.99 / 0 / 0.01 vol / step]
2-220-004	Vt	ENG*	[0 to 9.99 / 0 / 0.01 vol / step]
2-220-005	Vtref	ENG*	[0 to 9.99 / 2.5 / 0.01 vol / step]

2241	[Image Process Temp. : Display]		
2-241-004	Display Image Process Temp Display	ENG	[0 to 70 / 0 / 0.1 deg / step]

2242	[TS Operation Env. Log]		
2-242-001	TS<=A	ENG*	[0 to 99999999 / 0 / 1 mm / step]
2-242-002	A<TS<=B	ENG*	[0 to 99999999 / 0 / 1 mm / step]
2-242-003	B<TS	ENG*	[0 to 99999999 / 0 / 1 mm / step]
2-242-100	Log Clear	ENG	[0 or 1 / 0 / 1 / step]

2243	[Temperature/Humidity: Display]		
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2-243-001	Temperature	ENG	[-5 to 45 / 0 / 0.1 deg / step]
2-243-002	Relative Humidity	ENG	[0 to 100 / 0 / 1%RH / step]
2-243-003	Absolute Humidity	ENG	[0 to 100 / 0 / 1 g/m3 / step]

2302 [Environment Correct: Transfer]

2-302-001	Current Env. : Display	ENG	[0 to 0 / 0 / 0 / step]
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2303 [Age Correction]

2-303-001	Current Div K	ENG*	[0 to 3 / 0 / 1 / step]
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2700 [New Unit Detection]

2-700-001	ON/OFF Setting	ENG*	[0 or 1 / 1 / 1 / step] 0: OFF, 1: ON
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2701 [Manual New Unit Set]

2-701-108	120k Part	ENG*	[0 or 1 / 0 / 1 / step]
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2801 [Developer Initialization]

2-801-001	Init. TD Sensor Set: Execute	ENG	[0 or 1 / 0 / 0 / step]
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2802 [Developer Mixing]

2-802-001	-	ENG	[0 or 1 / 0 / 0 / step]
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2803 [Developer Initialization Data]

2-803-001	Vtref	ENG*	[0 to 9.99 / 2.5 / 0.01 vol / step]
2-803-002	ID Sensor PWM Value	ENG*	[0 to 1023 / 0 / 1 / step]
2-803-007	Initial Abs. Humidity	ENG*	[0 to 100 / 10 / 1 g/m3 / step]

2804 [Total Image Area: Display]

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2-804-001	Latest	ENG*	[0 to 4294967295 / 0 / 1 cm2 / step]
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2906	[Tailing Control]		
2-906-001	Shift Range	ENG*	[0 or 1 / 0 / 0.1 mm / step]
2-906-002	Number of Sheets	ENG*	[0 to 10 / 0 / 1 sheets / step]

2908	[Forced Toner Supply]		
2-908-001	-	ENG	[0 or 1 / 0 / 0 / step]

2909	[Filling Mode]		
2-909-001	Init. Toner Replenish Exe Flag	ENG*	[0 or 1 / 0 / 1 / step]

2915	[Polygon Rotate Time]		
2-915-001	Idling Time ADJ	ENG*	[0 to 60 / 10 / 1 sec / step]
2-915-002	Post Idling Time ADJ	ENG*	[0 to 60 / 0 / 1 sec / step]

2921	[Toner Supply Mode]		
2-921-001	Mode Select	ENG*	[0 to 4 / 0 / 1 / step] 0: Normal1 1: Normal2 2: Fixed1 3: Fixed2

2936	[ID Sensor Detection]		
2-936-001	Interval Counter	ENG*	[0 to 999 / 0 / 1 page / step]

Main SP Tables-3

SP3-XXX (Process)

None

Main SP Tables-4

SP4-XXX (Scanner)

4008	[Sub Scan Mag. Adjustment]		
4-008-001	-	ENG *	[-1 to 1 / 0 / 0.1 % / step]

4010	[Sub Scan Regist Adjustment]		
4-010-001	-	ENG *	[-1 to 1 / 0 / 0.1 mm / step]

4011	[Main Scan Regist Adjustment]		
4-011-001	-	ENG *	[-2 to 2 / 0 / 0.1 mm / step]

4012	[Scanner Erase Margin: Scale]		
4-012-001	Book: Sub Scan: Lead Edge	ENG *	[0 to 3 / 1 / 0.1 mm / step]
4-012-002	Book: Sub Scan: Trail Edge	ENG *	[0 to 3 / 0 / 0.1 mm / step]
4-012-003	Book: Main Scan: Lead Edge	ENG *	[0 to 3 / 1 / 0.1 mm / step]
4-012-004	Book: Main Scan: Trail Edge	ENG *	[0 to 3 / 0 / 0.1 mm / step]

4020	[DF Dust Check]		
4-020-001	Dust Detect:On/Off	ENG	[0 or 1 / 1 / 1 / step]
4-020-002	Dust Detect:Lvl	ENG	[0 to 8 / 4 / 1 / step]
4-020-003	Dust Reject:Lvl	ENG	[0 to 4 / 0 / 1 / step]

4301	[Operation Check APS Sensor]		
4-301-001	-	ENG	[0 to 255 / 0 / 1 / step]

4303	[Min Size for APS]		
4-303-001	-	ENG *	[0 to 2 / 0 / 1 / step] 0: No Original 1: A5 SEF 2: A5 LEF

4305	[APS Detection Setting]		
4-305-001	-	ENG *	[0 or 1 / 0 / 1 / step] 0: Normal Detection 1: 8K 16K

4400	[Scanner Erase Margin]		
4-400-001	Book: Sub Scan: Leading Edge	ENG *	[0 to 3 / 0 / 0.1 mm / step]
4-400-002	Book: Sub Scan: Trailing Edge	ENG *	[0 to 3 / 0 / 0.1 mm / step]
4-400-003	Book: Main Scan: Left	ENG *	[0 to 3 / 0 / 0.1 mm / step]
4-400-004	Book: Main Scan: Right	ENG *	[0 to 3 / 0 / 0.1 mm / step]
4-400-005	ADF: Sub Scan: Trailing Edge	ENG *	[0 to 3 / 0 / 0.1 mm / step]
4-400-007	ADF: Main Scan: Left	ENG *	[0 to 3 / 0 / 0.1 mm / step]
4-400-008	ADF: Main Scan: Right	ENG *	[0 to 3 / 0 / 0.1 mm / step]

4417	[IPU Test Pattern]		
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4-417-001	Test Pattern	ENG	[0 to 8 / 0 / 1 / step] 0: Scanned image 1: 256 Gradation: Main scan A 2: Patch 16 C 3: Grid pattern A 4: Slant grid pattern B 5: Slant grid pattern C 6: Slant grid pattern D 7: Scanned+Slant Grid C 8: Scanned+Slant Grid D
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4429	[Select Copy Data Security]		
4-429-001	Copying	ENG	[0 to 3 / 3 / 1 / step]
4-429-002	Scanning	ENG	[0 to 3 / 3 / 1 / step]
4-429-003	Fax Operation	ENG	[0 to 3 / 3 / 1 / step]

4606	[White Level Adjust]		
4-606-001	Color	ENG*	[0 to 1024 / 707 / 1 digit / step]

4607	[White Level Adjust]		
4-607-001	Bk	ENG*	[0 to 1024 / 707 / 1 digit / step]

4609	[Gray Balance Set: R]		
4-609-001	Book Scan	ENG*	[-384 to 255 / -89 / 1 digit / step]
4-609-002	DF Scan	ENG*	[-384 to 255 / -89 / 1 digit / step]

4610	[Gray Balance Set: G]		
4-610-001	Book Scan	ENG*	[-384 to 255 / -76 / 1 digit / step]
4-610-002	DF Scan	ENG*	[-384 to 255 / -76 / 1 digit / step]
4-610-003	Book Scan(Bk)	ENG*	[-384 to 255 / -92 / 1 digit / step]

4-610-004	DF Scan(Bk)	ENG*	[-384 to 255 / -92 / 1 digit / step]
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4611	[Gray Balance Set: B]		
4-611-001	Book Scan	ENG*	[-384 to 255 / -85 / 1 digit / step]
4-611-002	DF Scan	ENG*	[-384 to 255 / -85 / 1 digit / step]

4645	[Scan Adjust Error]		
4-645-001	White level	ENG	[0 to 65535 / 0 / 1 / step]
4-645-002	Black level	ENG	[0 to 65535 / 0 / 1 / step]

4647	[Scanner Hard Error]		
4-647-001	Power-ON	ENG	[0 to 65535 / 0 / 1 / step]

4688	[ADF Adjustment Density]		
4-688-001	-	ENG*	[50 to 150 / 100 / 1 % / step]

4803	[Home Position Adjustment]		
4-803-001	-	ENG*	[-2.0 to 1.4 / 0.0 / 0.1 mm / step]

4903	[Filter Setting]		
4-903-001	Ind Dot Erase: Text	ENG*	[0 to 7 / 0 / 1 / step]
4-903-002	Ind Dot Erase: Generation Copy	ENG*	[0 to 7 / 0 / 1 / step]

4905	[Select Gradation Level]		
4-905-001	-	ENG*	[0 to 255 / 0 / 1 / step]

4909	[Man Gamma:P Colk]		
4-909-001	Offset:Highlight	ENG*	[0 to 30 / 15 / 1 / step]
4-909-002	Offset:Middle	ENG*	[0 to 30 / 15 / 1 / step]

4-909-003	Offset:Shadow	ENG*	[0 to 30 / 15 / 1 / step]
4-909-004	Offset:IDmax	ENG*	[0 to 30 / 15 / 1 / step]
4-909-005	Option:Highlight	ENG*	[0 to 255 / 0 / 1 / step]
4-909-006	Option:Middle	ENG*	[0 to 12 / 0 / 1 / step]
4-909-007	Option:Shadow	ENG*	[0 to 255 / 0 / 1 / step]
4-909-008	Option:IDmax	ENG*	[0 to 255 / 0 / 1 / step]

4914	[Man Gamma:T:ColK]		
4-914-001	Offset:Highlight	ENG*	[0 to 30 / 15 / 1 / step]
4-914-002	Offset:Middle	ENG*	[0 to 30 / 15 / 1 / step]
4-914-003	Offset:Shadow	ENG*	[0 to 30 / 15 / 1 / step]
4-914-004	Offset:IDmax	ENG*	[0 to 30 / 15 / 1 / step]
4-914-005	Option:Highlight	ENG*	[0 to 255 / 0 / 1 / step]
4-914-006	Option:Middle	ENG*	[0 to 12 / 0 / 1 / step]
4-914-007	Option:Shadow	ENG*	[0 to 255 / 0 / 1 / step]
4-914-008	Option:IDmax	ENG*	[0 to 255 / 0 / 1 / step]

4938	[ACS:Edge Mask]		
4-938-005	Scan:Sub LEdge	ENG*	[0 to 31 / 15 / 1 / step]
4-938-006	Scan:Sub TEdge	ENG*	[0 to 31 / 15 / 1 / step]
4-938-007	Scan:Main LEdge	ENG*	[0 to 31 / 15 / 1 / step]
4-938-008	Scan:Main TEdge	ENG*	[0 to 31 / 15 / 1 / step]

4939	[ACS:Color Range]		
4-939-001	-	ENG*	[-2 to 2 / 0 / 1 / step]

4991	[IPU Image Pass Selection]		
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4-991-001	RGB Frame Memory	ENG	[0 to 19 / 2 / 1 / step]
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4994	[Adj Txt/Photo Recog Level]		
4-994-001	High Compression PDF	ENG*	[0 to 2 / 1 / 1 / step]

4996	[White Paper Detection Level]		
4-996-001	-	ENG	[0 to 6 / 3 / 1 / step]

Main SP Tables-5 (Engine)

SP5-XXX (Mode)

5126	[Set F-size Document]		
5-126-001	-	ENG	[0 to 2 / 0 / 1 / step] 0: 8 1/2 x 13 1: 8 1/4 x 13 2: 8 x 13
5131	[Paper Size Type Selection]		
5-131-001	-	ENG*	[0 to 2 / NA:1, Other:2 / 1 / step] 0: JP, 1: NA, 2: EU/AP/CH/TW
5135	[LG_Oficio Change]		
5-135-001	-	ENG*	[0 or 1 / 0 / 1 / step]
5178	[Copy Data Security Setting]		
5-178-001	0: OFF/1: ON	ENG*	[0 or 1 / 0 / 1 / step]
5182	[Clutch Timing Adjust]		
5-182-002	Tray2: 1	ENG*	[-10 to 10 / 0 / 1 mm / step]
5183	[Next feed timing adjust]		
5-183-002	Tray2: 1	ENG*	[-10 to 10 / 0 / 1 mm / step]
5184	[Re-feed timing adjust]		
5-184-002	Tray2: 1	ENG*	[-10 to 10 / 0 / 1 mm / step]
5186	[RK4: Setting]		

5-186-001	-	ENG*	[0 or 1 / 0 / 1 / step]
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5801	[Memory Clear]		
5-801-002	Engine	ENG	[0 or 1 / 0 / 1 / step]

5803	[INPUT Check]		
5-803-001	Tray: Paper Set Sensor	ENG	[0 or 1 / 0 / 1 / step]
5-803-002	Bypass: Paper Set Sensor	ENG	[0 or 1 / 0 / 1 / step]
5-803-003	RVS: Paper Exit Sensor	ENG	[0 or 1 / 0 / 1 / step]
5-803-004	Registration Sensor	ENG	[0 or 1 / 0 / 1 / step]
5-803-005	Duplex: Exit Sensor	ENG	[0 or 1 / 0 / 1 / step]
5-803-006	Duplex: Entrance Sensor	ENG	[0 or 1 / 0 / 1 / step]
5-803-011	Front Interlock SW	ENG	[0 or 1 / 0 / 1 / step]
5-803-012	Right Interlock SW	ENG	[0 or 1 / 0 / 1 / step]
5-803-013	Exhaust Fan: Lock	ENG	[0 or 1 / 0 / 1 / step]
5-803-014	Intake Fan: Lock	ENG	[0 or 1 / 0 / 1 / step]
5-803-015	Main Motor Lock	ENG	[0 or 1 / 0 / 1 / step]
5-803-016	Key Card Set	ENG	[0 or 1 / 0 / 1 / step]
5-803-017	Key Counter Set	ENG	[0 to 3 / 0 / 1 / step]
5-803-018	BICU Version	ENG	[0 to 7 / 0 / 1 / step]
5-803-019	Right Door Open/Close Switch	ENG	[0 or 1 / 0 / 1 / step]
5-803-020	Paper Exit Sensor	ENG	[0 or 1 / 0 / 1 / step]
5-803-200	Scanner HP Sensor	ENG	[0 or 1 / 0 / 1 / step]
5-803-201	Platen Cover Sensor	ENG	[0 or 1 / 0 / 1 / step]

5-803-211	Bank1: Feed Cover Open Detection	ENG	[0 or 1 / 0 / 1 / step]
5-803-212	Bank1:Paper End Sensor	ENG	[0 or 1 / 0 / 1 / step]
5-803-213	Bank1:Feed Sensor	ENG	[0 or 1 / 0 / 1 / step]
5-803-214	Bank1:Upper Limit Sensor	ENG	[0 or 1 / 0 / 1 / step]
5-803-215	Bank1:Tray Set Sensor	ENG	[0 or 1 / 0 / 1 / step]

5804	[OUTPUT Check]		
5-804-001	Main Motor: CW: Standard Spd	ENG	[0 or 1 / 0 / 1 / step]
5-804-002	Main Motor: CW: Low Spd	ENG	[0 or 1 / 0 / 1 / step]
5-804-005	Toner Bottle Motor: CCW	ENG	[0 or 1 / 0 / 1 / step]
5-804-008	Intake Fan Motor: Full Spd	ENG	[0 or 1 / 0 / 1 / step]
5-804-009	Intake Fan Motor: Half Spd	ENG	[0 or 1 / 0 / 1 / step]
5-804-010	HVP: Transfer: -	ENG	[0 or 1 / 0 / 1 / step]
5-804-011	HVP: Transfer: +	ENG	[0 or 1 / 0 / 1 / step]
5-804-012	HVP.: Separation Voltage	ENG	[0 or 1 / 0 / 1 / step]
5-804-013	HVP.: Development	ENG	[0 or 1 / 0 / 1 / step]
5-804-014	HVP.: Charge	ENG	[0 or 1 / 0 / 1 / step]
5-804-015	Potential Sensor	ENG	[0 or 1 / 0 / 1 / step]
5-804-016	Fusing Solenoid	ENG	[0 or 1 / 0 / 1 / step]
5-804-017	Drum Quenching LED	ENG	[0 or 1 / 0 / 1 / step]
5-804-018	Paper Feed CL	ENG	[0 or 1 / 0 / 1 / step]

5-804-019	Registration CL	ENG	[0 or 1 / 0 / 1 / step]
5-804-020	Bypass CL	ENG	[0 or 1 / 0 / 1 / step]
5-804-021	Duplex: RVS Sensor CL	ENG	[0 or 1 / 0 / 1 / step]
5-804-022	Paper Exit RVS CL	ENG	[0 or 1 / 0 / 1 / step]
5-804-023	Paper Exit CL	ENG	[0 or 1 / 0 / 1 / step]
5-804-024	Anti-Condensation Heater	ENG	[0 or 1 / 0 / 1 / step]
5-804-027	Exhaust Fan Motor	ENG	[0 or 1 / 0 / 1 / step]
5-804-028	Pre Cleaning Lamp	ENG	[0 or 1 / 0 / 1 / step]
5-804-049	Polygon Motor: High Spd	ENG	[0 or 1 / 0 / 1 / step]
5-804-050	Polygon Motor: Low Spd	ENG	[0 or 1 / 0 / 1 / step]
5-804-202	Scanner Lamp: Color	ENG	[0 or 1 / 0 / 1 / step]
5-804-203	Scanner Lamp: Bk	ENG	[0 or 1 / 0 / 1 / step]
5-804-241	Bank1:Feed Motor	ENG	[0 or 1 / 0 / 1 / step]
5-804-242	Bank1:Paper feed clutch	ENG	[0 or 1 / 0 / 1 / step]

5805	[Anti-Condensation Heater]		
5-805-001	0:OFF / 1:ON	ENG *	[0 or 1 / 0 / 1 / step]

5810	[SC Reset]		
5-810-001	Fusing SC Reset	ENG	[0 or 1 / 0 / 1 / step]

5811	[MachineSerial]		
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5-811-002	Display	ENG*	[0 to 255 / 0 / 1 / step] 1: DOM 2: NA 3: EU 4: TWN 5: AA 6: CHN 7: KOR
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5884	[Plain Paper 1/2 Type]		
5-884-001	By-pass	ENG*	[0 or 1 / 1 / 1 / step] 0: Bypass: Plain Paper 1 1: Bypass: Plain Paper 2
5-884-002	Tray1	ENG*	[0 or 1 / 1 / 1 / step] 0: Tray 1: Plain Paper 1 1: Tray 1: Plain Paper 2
5-884-003	Tray2	ENG*	[0 or 1 / 1 / 1 / step] 0: Tray 2: Plain Paper 1 1: Tray 2: Plain Paper 2

5894	[ExternalCountSet]		
5-894-001	SW Charge Mode	ENG*	[0 to 2 / 0 / 1 / step]

5900	[Engine Log Upload]		
5-900-001	Pattern	ENG*	[0 to 4 / 0 / 1 / step]
5-900-002	Trigger	ENG*	[0 to 3 / 0 / 1 / step]

5903	[Adj. Remaining Toner Detection]		
5-903-001	Toner Bottle Motor: Total ON Time	ENG*	[0 to 99999999 / 0 / 1 msec / step]

5-903-002	Toner Remaining Amount	ENG*	[0 to 100 / 100 / 1 % / step]
5-903-004	Clear Total ON Time Count	ENG	[0 to 1 / 0 / 0 / step]
5-903-005	0:OFF 1:ON	ENG*	[0 to 1 / 0 / 1 / step]

5995	[Factory Mode]		
5-995-001	-	ENG*	[0 to 1 / 0 / 1 / step]

5996	[Machine State]		
5-996-001	Destination	ENG*	[1 to 7 / 1 / 1 / step] 1: Japan 2: NA 3: EU 4: Taiwan 5: Asia 6: China 7: Korea

Main SP Tables-5 (Controller)

SP5-XXX (Mode)

5009	[Add display language]		
5-009-201	1-8	CTL *	[1 to 255 / 0 / 1 / step]
5-009-202	9-16		
5-009-203	17-24		
5-009-204	25-32		
5-009-205	33-40	CTL *	[1 to 255 / 0 / 1 / step]
5-009-206	41-48		
5-009-207	49-56		

5024	[mm/inch Display selection]		
5-024-001	0:mm 1:inch	CTL *	[0 or 1 / NA:1, Other:0 / 1 / step]

5045	[Accounting Counter]		
5-045-001	Counter Method	CTL *	[0 to 7 / 0 / 1 / step]

5047	[Paper Display]		
5-047-001	Backing Paper	CTL *	[0 or 1 / 0 / 1 / step] 0: OFF, 1:ON

5055	[Display IP add]		
5-055-001	-	CTL *	[0 or 1 / 0 / 1 / step]

5062	[Parts Replacement Alert Display]		
5-062-001	Photoconductor Unit	CTL *	[0 or 1 / 0 / 1 / step]
5-062-002	Maintenance Parts	CTL *	[0 or 1 / 0 / 1 / step]

5066	[PM Parts Display]		
5-066-001	-	CTL*	[0 or 1 / 0 / 1 / step]

5067	[Part Replacement Operation Type]		
5-067-001	Photoconductor Unit	CTL*	[0 or 1 / 0 / 1 / step]
5-067-002	Maintenance Parts	CTL*	[0 or 1 / 0 / 1 / step]

5071	[Set Bypass Paper Size Display]		
5-071-001	-	CTL	[0 or 1 / 0 / 1 / step]

5074	[Home Key Customization]		
5-074-002	Login Setting	CTL*	[0 to 255 / 0 / 1 / step]
5-074-050	Show Home Edit	CTL	[0 to 2 / 0 / 1 / step]
5-074-091	Function Setting	CTL*	[0 to 2 / 0 / 1 / step]
5-074-092	Product ID	CTL*	[0 to 0xffffffff / 0 / 1 / step]
5-074-093	Application screen ID	CTL*	[0 to 255 / 0 / 1 / step]

5076	[Copy:LT/LG Mixed Sizes Setting]		
5-076-001	0:OFF 1:ON	CTL*	[0 or 1 / 0 / 1 / step]

5081	[ServiceSP Entry Code Setting]		
5-081-001	-	CTL*	[- / - / - / step]

5083	[LED Light Switch Setting]		
5-083-001	Toner Near End	CTL*	[0 or 1 / 0 / 1 / step]

5104	[Counter Size Setting]		
5-104-001	A3/DLT Double Count	CTL*	[0 or 1 / 0 / 1 / step]

5-104-002	Bypass Paper Size Undetection	CTL*	[0 or 1 / 0 / 1 / step]
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5113	[Optional Counter Type]		
5-113-001	Default Optional Counter Type	CTL*	[0 to 12 / 0 / 1 / step] 0: None, 1: Key Card(RK3,4) 2: Key Card(down), 3: PrepaidCard 4: Coin Rack 5: MFKeyCard 11: Exp.KeyCard(Add) 12: Exp.KeyCard(Deduct)
5-113-002	External Optional Counter Type	CTL*	[0 to 3 / 0 / 1 / step] 0: None 1: Expansion Device 1 2: Expansion Device 2 3: Expansion Device 3

5114	[Optional Counter I/F]		
5-114-001	MF Key Card Extension	CTL*	[0 or 1 / 0 / 1 / step] 0: Not installed 1: Installed (scanning accounting)

5118	[Disable Copying]		
5-118-001	-	CTL*	[0 or 1 / 0 / 1 / step] 0: Not disabled 1: Disabled

5120	[Mode Clear Opt. Counter Removal]		
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5-120-001	-	CTL*	[0 to 2 / 0 / 1 / step] 0: Yes (removed) 1: Standby (installed but not used) 2: No (not removed)
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5121	[Counter Up Timing]		
5-121-001	-	CTL*	[0 or 1 / 0 / 1 / step] 0: Feed 1: Exit

5127	[APS Mode]		
5-127-001	-	CTL*	[0 or 1 / 0 / 1 / step] 0: Not disabled 1: Disabled

5162	[App. Switch Method]		
5-162-001	-	CTL*	[0 or 1 / 0 / 1 / step] 0: Soft Key Set 1: Hard Key Set

5167	[Fax Printing Mode at Optional Counter Off]		
5-167-001	-	CTL*	[0 or 1 / 0 / 1 / step] 0: Automatic printing 1: No automatic printing

5169	[CE Login]		
5-169-001	-	CTL*	[0 or 1 / 0 / 1 / step] 0: Disabled 1: Enabled

5188	[Copy NvVersion]		
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5-188-001	-	CTL*	[- / - / - / step]
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5191	[Mode Set]		
5-191-001	Power Str Set	CTL*	[0 or 1 / 1 / 1 / step] 0: OFF 1: ON

5212	[Page Numbering]		
5-212-003	Duplex Printout Left/ Right Position of Left/ Right Facing	CTL*	[-1000 or 1000 / 0 / 0.01 mm/step]
5-212-004	Duplex Printout Top/ Bottom Position of Left/ Right Facing	CTL*	[-1000 or 1000 / 0 / 0.01 mm/step]
5-212-018	Duplex Printout Left/ Right Position of Top/ Bottom Facing	CTL*	[-1000 or 1000 / 0 / 0.01 mm/step]
5-212-019	Duplex Printout Top/ Bottom Position of Top/Bottom Facing	CTL*	[-1000 or 1000 / 0 / 0.01 mm/step]

5227	[Page Numbering]		
5-227-201	Allow Page No. Entry	CTL*	[2 to 9 / 0 / 1 / step]
5-227-202	Zero Surplus Setting	CTL*	[0 or 1 / 0 / 1 / step]

5302	[Set Time]		
5-302-002	Time Difference	CTL*	[-1440 to 1440 / NA: -300, EU: 60, KOR: 540, Other: 480 / 1 / step]

5305	[Auto Off Set]		
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5-305-101	Auto Off Limit Set	CTL*	[0 or 1 / 0 / 1 / step] 0: Limitation off 1: Limitation on
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5307	[Daylight Saving Time]		
5-307-001	Setting	CTL*	[0 or 1 / NA/EU:0, Other:0 / 1 / step]
5-307-003	Rule Set(Start)	CTL*	[0 to 0xffffffff / NA: 0x03200210 EU: 0x03500010 AA: 0x10500010 Other: 0 / 1 / step]
5-307-004	Rule Set(End)	CTL*	[0 to 0xffffffff / 0 / 1 / step]

5401	[Access Control]		
5-401-103	Default Document ACL	CTL*	[0 to 3 / 0 / 1 / step] 0: Read Only 1: Edit 2: Edit/Delete 3: Full control
5-401-104	Authentication Time	CTL*	[0 to 255 / 0 / 1 sec / step]
5-401-160	Extend Certification	CTL*	[0 or 1 / 0 / 1 / step]
5-401-161	Extend Certification Detail	CTL*	[0 to 0xFF / 0 / 1 / step]
5-401-162	Extend Certification Detail	CTL*	[0 to 0xFF / 0 / 1 / step]
5-401-163	Extend Install State	CTL*	[0 to 0xFF / 0 / 1 / step]
5-401-200	SDK1 UniqueID	CTL*	[0 to 0xFFFFFFFF / 0 / 1 / step]
5-401-201	SDK1 Certification Method	CTL*	[0 to 0xFF / 0 / 1 / step]
5-401-210	SDK2 UniqueID	CTL*	[0 to 0xFFFFFFFF / 0 / 1 / step]

5-401-211	SDK2 Certification Method	CTL*	[0 to 0xFF / 0 / 1 / step]
5-401-220	SDK3 UniqueID	CTL*	[0 to 0xFFFFFFFF / 0 / 1 / step]
5-401-221	SDK3 Certification Method	CTL*	[0 to 0xFF / 0 / 1 / step]
5-401-230	SDK Certification Device	CTL*	[0 to 0xff / 0 / 1 / step]
5-401-240	Detail Option	CTL*	[0 to 0xff / 0 / 1 / step]

5402	[Access Control]		
5-402-101	SDKJ1 Limit Setting	CTL*	[0 to 0xFF / 0 / 1 / step]
5-402-102	SDKJ2 Limit Setting	CTL*	
5-402-103	SDKJ3 Limit Setting	CTL*	
5-402-104	SDKJ4 Limit Setting	CTL*	
5-402-105	SDKJ5 Limit Setting	CTL*	
5-402-106	SDKJ6 Limit Setting	CTL*	
5-402-107	SDKJ7 Limit Setting	CTL*	
5-402-108	SDKJ8 Limit Setting	CTL*	
5-402-109	SDKJ9 Limit Setting	CTL*	
5-402-110	SDKJ10 Limit Setting	CTL*	

5-402-111	SDKJ11 Limit Setting	CTL*	
5-402-112	SDKJ12 Limit Setting	CTL*	
5-402-113	SDKJ13 Limit Setting	CTL*	
5-402-114	SDKJ14 Limit Setting	CTL*	
5-402-115	SDKJ15 Limit Setting	CTL*	
5-402-116	SDKJ16 Limit Setting	CTL*	
5-402-117	SDKJ17 Limit Setting	CTL*	
5-402-118	SDKJ18 Limit Setting	CTL*	
5-402-119	SDKJ19 Limit Setting	CTL*	
5-402-120	SDKJ20 Limit Setting	CTL*	
5-402-121	SDKJ21 Limit Setting	CTL*	
5-402-122	SDKJ22 Limit Setting	CTL*	
5-402-123	SDKJ23 Limit Setting	CTL*	
5-402-124	SDKJ24 Limit Setting	CTL*	
5-402-125	SDKJ25 Limit Setting	CTL*	
5-402-126	SDKJ26 Limit Setting	CTL*	
5-402-127	SDKJ27 Limit Setting	CTL*	
5-402-128	SDKJ28 Limit Setting	CTL*	
5-402-129	SDKJ29 Limit Setting	CTL*	
5-402-130	SDKJ30 Limit Setting	CTL*	

5-402-141	SDKJ1 Product ID	CTL*	[0 to 0xffffffff / 0 / 1 / step]
5-402-142	SDKJ2 Product ID	CTL*	
5-402-143	SDKJ3 Product ID	CTL*	
5-402-144	SDKJ4 Product ID	CTL*	
5-402-145	SDKJ5 Product ID	CTL*	
5-402-146	SDKJ6 Product ID	CTL*	
5-402-147	SDKJ7 Product ID	CTL*	
5-402-148	SDKJ8 Product ID	CTL*	
5-402-149	SDKJ9 Product ID	CTL*	
5-402-150	SDKJ10 Product ID	CTL*	
5-402-151	SDKJ11 Product ID	CTL*	
5-402-152	SDKJ12 Product ID	CTL*	
5-402-153	SDKJ13 Product ID	CTL*	
5-402-154	SDKJ14 Product ID	CTL*	
5-402-155	SDKJ15 Product ID	CTL*	
5-402-156	SDKJ16 Product ID	CTL*	
5-402-157	SDKJ17 Product ID	CTL*	
5-402-158	SDKJ18 Product ID	CTL*	
5-402-159	SDKJ19 Product ID	CTL*	
5-402-160	SDKJ20 Product ID	CTL*	

5-402-161	SDKJ21 Product ID	CTL*	
5-402-162	SDKJ22 Product ID	CTL*	
5-402-163	SDKJ23 Product ID	CTL*	
5-402-164	SDKJ24 Product ID	CTL*	
5-402-165	SDKJ25 Product ID	CTL*	
5-402-166	SDKJ26 Product ID	CTL*	
5-402-167	SDKJ27 Product ID	CTL*	
5-402-168	SDKJ28 Product ID	CTL*	
5-402-169	SDKJ29 Product ID	CTL*	
5-402-170	SDKJ30 Product ID	CTL*	

5404	[User Code Count Clear]		
5-404-001	User Code Count Clear	CTL*	[- / - / - / step]

5411	[LDAP-Certification]		
5-411-004	Simplified Authentication	CTL*	[0 or 1 / 1 / 1 / step] 0: OFF 1: ON
5-411-005	Password Null Not Permit	CTL*	[0 or 1 / 1 / 1 / step] 0: Password NULL permitted. 1: Password NULL not permitted.
5-411-006	Detail Option	CTL*	[0 to 0xff / 0 / 1 / step] 0: Anonymous authentication OFF 1: Anonymous authentication ON

5412	[Krb-Certification]		
	-		
5-412-100	Encrypt Mode	CTL*	[0 to 0xFF / 0x1F / 1 / step]

5413	[Lockout Setting]		
5-413-001	Lockout On/Off	CTL*	[0 or 1 / 0 / 1 / step] 0: OFF 1: ON
5-413-002	Lockout Threshold	CTL*	[1 to 10 / 5 / 1 / step]
5-413-003	Cancelation On/Off	CTL*	[0 or 1 / 0 / 1 / step] 0: OFF 1: ON
5-413-004	Cancelation Time	CTL*	[1 to 9999 / 60 / 1 min / step]

5414	[Access Mitigation]		
5-414-001	Mitigation On/Off	CTL*	[0 or 1 / 0 / 1 / step] 0: OFF 1: ON
5-414-002	Mitigation Time	CTL*	[0 to 60 / 15 / 1 min / step]

5415	[Password Attack]		
5-415-001	Permissible Number	CTL*	[0 to 100 / 30 / 1 / step]
5-415-002	Detect Time	CTL*	[0 to 10 / 5 / 1 / step]

5416	[Access Information]		
5-416-001	Access User Max Num	CTL*	[50 to 200 / 200 / 1 / step]
5-416-002	Access Password Max Num	CTL*	[50 to 200 / 200 / 1 / step]
5-416-003	Monitor Interval	CTL*	[1 to 10 / 3 / 1 / step]

5417	[Access Attack]		
5-417-001	Access Permissible Number	CTL*	[0 to 500 / 100 / 1 / step]
5-417-002	Attack Detect Time	CTL*	[10 to 30 / 10 / 1 sec / step]

5-417-003	Productivity Fall Wait	CTL*	[0 to 9 / 3 / 1 sec / step]
5-417-004	Attack Max Num	CTL*	[50 to 200 / 200 / 1 / step]

5420	[User Authentication]		
5-420-001	Copy	CTL*	[0 or 1 / 0 / 1 / step] 0: ON, 1: OFF
5-420-011	Document Server	CTL*	[0 or 1 / 0 / 1 / step] 0: ON, 1: OFF
5-420-021	Fax	CTL*	[0 or 1 / 0 / 1 / step] 0: ON, 1: OFF
5-420-031	Scanner	CTL*	[0 or 1 / 0 / 1 / step] 0: ON, 1: OFF
5-420-041	Printer	CTL*	[0 or 1 / 0 / 1 / step] 0: ON, 1: OFF
5-420-051	SDK1	CTL*	[0 or 1 / 0 / 1 / step] 0: ON, 1: OFF
5-420-061	SDK 2	CTL*	[0 or 1 / 0 / 1 / step] 0: ON, 1: OFF
5-420-071	SDK 3	CTL*	[0 or 1 / 0 / 1 / step] 0: ON, 1: OFF
5-420-081	Browser	CTL*	[0 or 1 / 0 / 1 / step] 0: ON, 1: OFF

5430	[Auth Dialog Message Change]		
5-430-001	Message Change On/Off	CTL*	[0 or 1 / 0 / 1 / step] 0: Function OFF 1: Function ON
5-430-002	Message Text Download	CTL*	[- / - / - / step]

5-430-003	Message Text ID	CTL*	[- / - / - / step]
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5431	[External Auth User Preset]		
5-431-010	Tag	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit
5-431-011	Entry	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit
5-431-012	Group	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit
5-431-020	Mail	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit
5-431-030	FAX	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit
5-431-031	FaxSub	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit
5-431-032	Folder	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit
5-431-033	Protect Code	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit
5-431-034	Smtph Auth	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit
5-431-035	Ldap Auth	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit
5-431-036	Smb Ftp Fldr Auth	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit
5-431-037	Acnt Acl	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit
5-431-038	Document Acl	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit

5-431-040	Cert Crypt	CTL*	[0 or 1 / 0 / 1 / step] 0: Not permit, 1: Permit
5-431-050	User Limit Count	CTL*	[0 or 1 / 1 / 1 / step] 0: Not permit, 1: Permit

5481	[Authentication Error Code]		
5-481-001	System Log Disp	CTL*	[0 or 1 / 0 / 1 / step] 0: Display OFF, 1: Display ON
5-481-002	Panel Disp	CTL*	[0 or 1 / 1 / 1 / step] 0: Display OFF, 1: Display ON

5490	[MF KeyCard (Japan only)]		
5-490-001	Job Permit Setting	CTL*	[0 or 1 / 0 / 1 / step] 0: Disable, 1: Enable

5491	[Optional Counter]		
5-491-001	Detail Option	CTL*	[0 to 0xff / 0 / 1 / step] 0: Forced Job Canceling OFF 1: Forced Job Canceling ON

5501	[PM Alarm]		
5-501-001	PM Alarm Level	CTL*	[0 to 9999 / 0 / 1 / step]
5-501-002	Original Count Alarm	CTL*	[0 or 1 / 0 / 1 / step]

5504	[Jam Alarm]		
5-504-001	Level Setting	CTL*	[0 to 3 / 3 / 1 / step] 0: Zero (Off) 1: Low (2.5K jams) 2: Medium (3K jams) 3: High (6K jams)

5-504-002	Threshold	CTL*	[1 to 99 / 10 / 1 / step]
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5505	[Error Alarm]		
5-505-001	Level Setting	CTL*	[0 to 255 / 2 / 1 / step]
5-505-002	Threshold	CTL*	[1 to 99 / * / 1 / step]

5507	[Supply/CC Alarm]		
5-507-001	Paper Supply Alarm	CTL*	[0 or 1 / 0 / 1 / step] 0: OFF, 1: ON
5-507-003	Toner Supply Alarm	CTL*	[0 or 1 / 0 / 1 / step] 0: OFF, 1: ON
5-507-080	Toner Call Timing	CTL*	[0 or 1 / 1 / 1 / step] 0: At replacement 1: AtLessThanThresh
5-507-081	Toner Call Threshold	CTL*	[10 to 90 / 10 / 10 % / step]
5-507-128	Interval: Others	CTL*	[250 to 10000 / 1000 / 1 / step]
5-507-132	Interval:A3	CTL*	[250 to 10000 / 1000 / 1 / step]
5-507-133	Interval:A4	CTL*	[250 to 10000 / 1000 / 1 / step]
5-507-134	Interval:A5	CTL*	[250 to 10000 / 1000 / 1 / step]
5-507-141	Interval:B4	CTL*	[250 to 10000 / 1000 / 1 / step]
5-507-142	Interval:B5	CTL*	[250 to 10000 / 1000 / 1 / step]
5-507-160	Interval:DLT	CTL*	[250 to 10000 / 1000 / 1 / step]
5-507-164	Interval:LG	CTL*	[250 to 10000 / 1000 / 1 / step]
5-507-166	Interval:LT	CTL*	[250 to 10000 / 1000 / 1 / step]
5-507-172	Interval:HLT	CTL*	[250 to 10000 / 1000 / 1 / step]

5508	[CC Call]		
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5-508-001	Jam Remains	CTL*	[0 or 1 / 1 / 1 / step] 0: Disable, 1: Enable
5-508-002	Continuous Jams	CTL*	[0 or 1 / 1 / 1 / step] 0: Disable, 1: Enable
5-508-003	Continuous Door Open	CTL*	[0 or 1 / 1 / 1 / step] 0: Disable, 1: Enable
5-508-011	Jam Detection: Time Length	CTL*	[3 to 30 / 10 / 1 / step]
5-508-012	Jam Detection: Continuous Count	CTL*	[2 to 10 / 5 / 1 / step]
5-508-013	Door Open: Time Length	CTL*	[3 to 30 / 10 / 1 / step]

5515	[SC/Alarm Setting]		
5-515-001	SC Call	CTL*	[0 or 1 / 1 / 1 / step] 0: Off, 1: On
5-515-002	Service Parts Near End Call	CTL*	[0 or 1 / 1 / 1 / step] 0: Off, 1: On
5-515-003	Service Parts End Call	CTL*	[0 or 1 / 1 / 1 / step] 0: Off, 1: On
5-515-004	User Call	CTL*	[0 or 1 / 1 / 1 / step] 0: Off, 1: On
5-515-006	Communication Test Call	CTL*	[0 or 1 / 1 / 1 / step] 0: Off, 1: On
5-515-007	Machine Information Notice	CTL*	[0 or 1 / 1 / 1 / step] 0: Off, 1: On
5-515-008	Alarm Notice	CTL*	[0 or 1 / 1 / 1 / step] 0: Off, 1: On
5-515-010	Supply Automatic Ordering Call	CTL*	[0 or 1 / 1 / 1 / step] 0: Off, 1: On

5-515-011	Supply Management Report Call	CTL*	[0 or 1 / 1 / 1 / step] 0: Off, 1: On
5-515-012	Jam/Door Open Call	CTL*	[0 or 1 / 1 / 1 / step] 0: Off, 1: On
5-515-050	Timeout:Manual Call	CTL*	[1 to 255 / 5 / 1 min / step]
5-515-051	Timeout:Other Call	CTL*	[1 to 255 / 10 / 1 min / step]

5517	[Get Machine Information]		
5-517-031	Get SMC Info: Retry Interval	CTL*	[0 to 255 / 10 / 1 min / step]

5713	[Service Blanch Information]		
5-713-001	Service Blanch Information Code	CTL*	[7digit / - / - / step]

5728	[Network Setting]		
5-728-001	NAT Machine Port1	CTL*	[1 to 65535 / 49101 / 1 / step]
5-728-002	NAT UI Port1	CTL*	[1 to 65535 / 55101 / 1 / step]
5-728-003	NAT Machine Port2	CTL*	[1 to 65535 / 49102 / 1 / step]
5-728-004	NAT UI Port2	CTL*	[1 to 65535 / 55102 / 1 / step]
5-728-005	NAT Machine Port3	CTL*	[1 to 65535 / 49103 / 1 / step]
5-728-006	NAT UI Port3	CTL*	[1 to 65535 / 55103 / 1 / step]
5-728-007	NAT Machine Port4	CTL*	[1 to 65535 / 49104 / 1 / step]
5-728-008	NAT UI Port4	CTL*	[1 to 65535 / 55104 / 1 / step]
5-728-009	NAT Machine Port5	CTL*	[1 to 65535 / 49105 / 1 / step]
5-728-010	NAT UI Port5	CTL*	[1 to 65535 / 55105 / 1 / step]
5-728-011	NAT Machine Port6	CTL*	[1 to 65535 / 49106 / 1 / step]
5-728-012	NAT UI Port6	CTL*	[1 to 65535 / 55106 / 1 / step]

5-728-013	NAT Machine Port7	CTL*	[1 to 65535 / 49107 / 1 / step]
5-728-014	NAT UI Port7	CTL*	[1 to 65535 / 55107 / 1 / step]
5-728-015	NAT Machine Port8	CTL*	[1 to 65535 / 49108 / 1 / step]
5-728-016	NAT UI Port8	CTL*	[1 to 65535 / 55108 / 1 / step]
5-728-017	NAT Machine Port9	CTL*	[1 to 65535 / 49109 / 1 / step]
5-728-018	NAT UI Port9	CTL*	[1 to 65535 / 55109 / 1 / step]
5-728-019	NAT Machine Port10	CTL*	[1 to 65535 / 49110 / 1 / step]
5-728-020	NAT UI Port10	CTL*	[1 to 65535 / 55110 / 1 / step]

5730	[Extended Function Setting]		
5-730-001	Java™ Platform setting	CTL*	[0 or 1 / 0 / 1 / step] 0: Disable 1: Enable
5-730-010	Expiration Prior Alarm Set	CTL*	[0 to 999 / 20 / 1 days / step]

5731	[Counter Effect]		
5-731-001	Change Mk1 Cnt(Paper->Combine)	CTL*	[0 or 1 / 0 / 1 / step] 0: Disable 1: Enable

5734	[PDF Setting]		
5-734-001	PDF/A Fixed	CTL*	[0 or 1 / 0 / 1 / step]

5745	[Deemed Power Consumption]		
5-745-211	Controller Standby	CTL*	[0 to 9999 / 0 / 1 / step]
5-745-212	STR	CTL*	[0 to 9999 / 0 / 1 / step]
5-745-213	Main Power Off	CTL*	[0 to 9999 / 0 / 1 / step]
5-745-214	Scanning and Printing	CTL*	[0 to 9999 / 0 / 1 / step]
5-745-215	Printing	CTL*	[0 to 9999 / 0 / 1 / step]

5-745-216	Scanning	CTL*	[0 to 9999 / 0 / 1 / step]
5-745-217	Engine Standby	CTL*	[0 to 9999 / 0 / 1 / step]
5-745-218	Low Power Consumption	CTL*	[0 to 9999 / 0 / 1 / step]
5-745-219	Silent condition	CTL*	[0 to 9999 / 0 / 1 / step]
5-745-220	Heater Off	CTL*	[0 to 9999 / 0 / 1 / step]

5748	[OpePanel Setting]		
5-748-101	Op Type Action Setting	CTL*	[0 to 255 / 0 / 1 / step]

5749	[Import/Export]		
5-749-001	Export	CTL	[EXECUTE]
5-749-101	Import	CTL	[EXECUTE]

5751	[Key Event Encryption Setting]		
5-751-001	Password	CTL*	[0 to 255 / 0 / 1 / step]

5752	[Copy:WebAPI Setting]		
5-752-001	Copy:FlairAPI Setting	CTL*	<p>[0 to 255 / 0 / 1 / step]</p> <p>Bit0: FlairAPI server start up 0:Off, 1: On</p> <p>Bit1: Access permission from FlairAPI external device 0: Disabled, 1: Enabled</p> <p>Bit2: Switching dedicated IPv6 0: IPv6 only, 1: IPv4 priority</p> <p>Bit3:Remote UI function 0: Disabled, 1: Enabled</p> <p>Bit4 to Bit7: Not used</p>

5755	[Display Setting]		
5-755-001	Disp Administrator Password Change Scrn	CTL*	[- / - / - / step]
5-755-002	Hide Administrator Password Change Scrn	CTL*	[- / - / - / step]

5759	[Machine Limit Count]		
5-759-001	Machine Limit Count Setting	CTL*	[0 or 1 / 0 / 1 / step]
5-759-051	Limit Count	CTL*	[0 to 99999999 / 0 / 1 / step]

5761	[SmartOperationPanel Setting]		
5-761-001	Restore the default Home screen	CTL*	[0 to 255 / 0 / 1 / step]

5801	[Memory Clear]		
5-801-001	All Clear	CTL	[- / - / - / step]
5-801-003	SCS	CTL	[- / - / - / step]
5-801-004	IMH	CTL	[- / - / - / step]
5-801-005	MCS	CTL	[- / - / - / step]
5-801-006	Copier Application	CTL	[- / - / - / step]
5-801-007	Fax Application	CTL	[- / - / - / step]
5-801-008	Printer Application	CTL	[- / - / - / step]
5-801-009	Scanner Application	CTL	[- / - / - / step]
5-801-010	Web Service	CTL	[- / - / - / step]
5-801-011	NCS	CTL	[- / - / - / step]

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Not used

5-801-012	R-FAX	CTL	[- / - / - / step]
5-801-014	Clear DCS Setting	CTL	[- / - / - / step]
5-801-015	Clear UCS Setting	CTL	[- / - / - / step]
5-801-016	MIRS Setting	CTL	[- / - / - / step]
5-801-017	CCS	CTL	[- / - / - / step]
5-801-018	SRM Memory Clr	CTL	[- / - / - / step]
5-801-019	LCS	CTL	[- / - / - / step]
5-801-020	WebUapl	CTL	[- / - / - / step]
5-801-021	ECS	CTL	[- / - / - / step]
5-801-023	AICS	CTL	[- / - / - / step]
5-801-025	websys	CTL	[- / - / - / step]
5-801-026	PLN	CTL	[- / - / - / step]
5-801-027	SAS	CTL	[- / - / - / step]
5-801-028	Rest Webservice	CTL	[- / - / - / step]

5812	[Service Tel. No. Setting]		
5-812-001	Service	CTL*	[- / - / - / step]
5-812-002	Facsimile	CTL*	[- / - / - / step]
5-812-003	Supply	CTL*	[- / - / - / step]
5-812-004	Operation	CTL*	[- / - / - / step]

5816	[Remote Service]		
5-816-001	I/F Setting	CTL*	[0 to 2 / 2 / 1 / step]
5-816-002	CE Call	CTL*	[0 or 1 / 0 / 1 / step]
5-816-003	Function Flag	CTL*	[0 or 1 / 0 / 1 / step]

5-816-007	SSL Disable	CTL*	[0 or 1 / 0 / 1 / step]
5-816-008	RCG Connect Timeout	CTL*	[0 to 90 / 30 / 1 sec / step]
5-816-009	RCG Write Timeout	CTL*	[0 to 100 / 60 / 1 sec / step]
5-816-010	RCG Read Timeout	CTL*	[0 to 100 / 60 / 1 sec / step]
5-816-011	Port 80 Enable	CTL*	[0 or 1 / 0 / 1 / step]
5-816-013	RFU Timing	CTL*	[0 or 1 / 1 / 1 / step]
5-816-014	RCG Error Cause	CTL	[0 to 2 / 0 / 1 / step]
5-816-063	Proxy Host	CTL	[- / 0 / - / step]
5-816-064	Proxy PortNumber	CTL	[0xffff to 0 / 0 / 1 / step]
5-816-065	Proxy User Name	CTL	[- / 0 / - / step]
5-816-066	Proxy Password	CTL	[- / 0 / - / step]
5-816-102	CERT:Encrypt Level	CTL*	[1 to 2 / 1 / 1 / step]
5-816-103	Client Communication Method	CTL*	[0 to 3 / 0 / 1 / step]
5-816-104	Client Communication Limit	CTL*	[1 to 7 / 7 / 1 / step]
5-816-115	Network Information Waiting timer	CTL*	[5 to 255 / 5 / 1 sec / step]
5-816-190	3G DongleID	CTL*	[- / - / - / step]
5-816-209	Instl Clear	CTL	[0 or 1 / 0 / 1 / step]

5821	[Remote Service RCG Setting]		
5-821-002	RCG IPv4 Address	CTL*	[00000000h to FFFFFFFFh / 00000000h / 1 / step]
5-821-003	RCG Port	CTL*	[0 to 65535 / 443 / 1 / step]
5-821-004	RCG IPv4 URL Path	CTL*	[- / - / - / step]

5-821-005	RCG IPv6 Address	CTL*	[- / - / - / step]
5-821-006	RCG IPv6 URL Path	CTL*	[- / - / - / step]
5-821-007	RCG Host Name	CTL*	[- / - / - / step]
5-821-008	RCG Host URL Path	CTL*	[- / - / - / step]

5824	[NV-RAM Data Upload]		
5-824-001	-	CTL	[- / - / - / step]

5825	[NV-RAM Data Download]		
5-825-001	-	CTL	[- / - / - / step]

5828	[Network Setting]		
5-828-050	1284 Compatibility (Centro)	CTL*	[0 or 1 / 1 / 1 / step]
5-828-052	ECP(Centro)	CTL*	[0 or 1 / 1 / 1 / step]
5-828-065	Job Spooling	CTL*	[0 or 1 / 0 / - / step] 0: Disabled, 1: Enabled
5-828-066	Job Spooling Clear: Start Time	CTL*	[0 or 1 / 1 / - / step] 0: ON (Data is cleared), 1: OFF (Automatically printed)
5-828-069	Job Spooling (Protocol)	CTL*	[- / 0x7f : All Active / - / step] 0: Validates, 1: Invalidates bit0: LPR, bit1: FTP bit2: IPP, bit3: SMB bit4: BMLinkS, bit5: DIPRINT bit6: sftp, bit7: (Reserved)

5-828-087	Protocol usage	CTL*	<p>[0x00000000 to 0xffffffff / 0x00000000 / 1 / step]</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)	CTL*	<p>[0 or 1 / 1 / 1 / step]</p> <p>0: Disable, 1: Enable</p>
5-828-091	Web (0: OFF 1: ON)	CTL*	<p>[0 or 1 / 1 / 1 / step]</p> <p>0: Disable, 1: Enable</p>

5-828-145	Active IPv6 Link Local Address	CTL	[00000000000000000000 00000000000000000000h to FFFFFFFFFFFFFFFF FFFFFFFFFFFFFFFF80h / 0000000000000000 000000000000000040h (0000:0000:0000:0000: 0000:0000:0000:0000 / 40) / - / step]
5-828-147	SettingActive IPv6 Stateless Address 1	CTL	[00000000000000000000 00000000000000000000h to FFFFFFFFFFFFFFFF FFFFFFFFFFFFFFFF80h / 0000000000000000 000000000000000040h (0000:0000:0000:0000: 0000:0000:0000:0000 / 40) / - / step]
5-828-149	SettingActive IPv6 Stateless Address 2	CTL	[00000000000000000000 00000000000000000000h to FFFFFFFFFFFFFFFF FFFFFFFFFFFFFFFF80h / 0000000000000000 000000000000000040h (0000:0000:0000:0000: 0000:0000:0000:0000 / 40) / - / step]
5-828-151	Active IPv6 Stateless Address 3	CTL	[00000000000000000000 00000000000000000000h to FFFFFFFFFFFFFFFF FFFFFFFFFFFFFFFF80h / 0000000000000000 000000000000000040h (0000:0000:0000:0000: 0000:0000:0000:0000 / 40) / - / step]

5-828-153	Active IPv6 Stateless Address 4	CTL	[000000000000000000 000000000000000000h to FFFFFFFFFFFFFFFF FFFFFFFFFFFFFFFF80h / 0000000000000000 000000000000000040h (0000:0000:0000:0000: 0000:0000:0000:0000 / 40) / - / step]
5-828-155	Active IPv6 Stateless Address 5	CTL	[000000000000000000 000000000000000000h to FFFFFFFFFFFFFFFF FFFFFFFFFFFFFFFF80h / 0000000000000000 000000000000000040h (0000:0000:0000:0000: 0000:0000:0000:0000 / 40) / - / step]
5-828-156	IPv6 Manual Address	CTL*	[000000000000000000 000000000000000000h to FFFFFFFFFFFFFFFF FFFFFFFFFFFFFFFF80h / 0000000000000000 000000000000000040h (0000:0000:0000:0000: 0000:0000:0000:0000 / 40) / - / step]
5-828-158	IPv6 Gateway Address	CTL*	[000000000000000000 000000000000000000h to FFFFFFFFFFFFFFFF FFFFFFFFFFFFFFFFh / 0000000000000000 000000000000000040h (0000:0000:0000:0000: 0000:0000:0000:0000) / - / step]

5-828-161	IPv6 Stateless Auto Setting	CTL*	[0 or 1 / 1 / 1 / step]
5-828-219	IPsec Aggressive Mode Setting	CTL*	[0 or 1 / 0 / 1 / step]
5-828-236	Web Item visible	CTL*	[0x0000 to 0xffff / 0xffff / - / step] bit0: Net RICOH bit1: Consumable Supplier bit2-15: Reserved (all)
5-828-237	Web shopping link visible	CTL*	[0 or 1 / 1 / - / step]
5-828-238	Web supplies Link visible	CTL*	[0 or 1 / 1 / 1 / step]
5-828-239	Web Link1 Name	CTL*	[31 characters / URL1 / - / step]
5-828-240	Web Link1 URL	CTL*	[127 characters / NULL / - / step]
5-828-241	Web Link1 visible	CTL*	[0 or 1 / 1 / - / step]
5-828-242	Web Link2 Name	CTL*	[31 characters / URL2 / - / step]
5-828-243	Web Link2 URL	CTL*	[127 characters / NULL / - / step]
5-828-244	Web Link2 visible	CTL*	[0 or 1 / 1 / - / step]
5-828-249	DHCPv6 DUID	CTL	[000000000000000000000000h to FFFFFFFFFFFFFFFFFFFFFFFFh / 000000000000000000000000h / - / step]

5832	[HDD Formatting]		
5-832-001	HDD Formatting (ALL)	CTL	[- / - / - / step]
5-832-002	HDD Formatting (IMH)	CTL	[- / - / - / step]
5-832-003	HDD Formatting (Thumbnail/OCR)	CTL	[- / - / - / step]
5-832-004	HDD Formatting (Job Log)	CTL	[- / - / - / step]

5-832-005	HDD Formatting (Printer Fonts)	CTL	[- / - / - / step]
5-832-006	HDD Formatting (User Info)	CTL	[- / - / - / step]
5-832-007	Mail RX Data	CTL	[- / - / - / step]
5-832-008	Mail TX Data	CTL	[- / - / - / step]
5-832-009	HDD Formatting (Data for a Design)	CTL	[- / - / - / step]
5-832-010	HDD Formatting (Log)	CTL	[- / - / - / step]
5-832-011	HDD Formatting (Ridoc I/F)	CTL	[- / - / - / step]
5-832-012	HDD Formatting (Thumbnail)	CTL	[- / - / - / step]

5840	[IEEE 802.11]		
5-840-011	WEP key Select	CTL*	[00 to 11 / 00 / - / step]
5-840-045	WPA Debug Lvl	CTL*	[1 to 3 / 3 / 1 / step] 1: Info, 2: warning, 3: error
5-840-046	11w	CTL*	[0 to 2 / 0 / 1 / step]
5-840-047	PSK Set Type	CTL*	[0 or 1 / 0 / 1 / step]

5841	[Supply Name Setting]		
5-841-001	Toner Name Setting:Black	CTL*	[- / - / - / step]

5842	[GWWS Analysis]		
5-842-001	Setting 1	CTL*	[8bit / 00000000 / - / step]
5-842-002	Setting 2	CTL*	[8bit / 00000000 / - / step]

5844	[USB]		
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5-844-001	Transfer Rate	CTL *	[0x01 to 0x04 / 0x04 / - / step] 0001: Full speed 0004: Auto Change
5-844-005	Fixed USB Port	CTL *	[0 to 2 / 0 / 1 / step]
5-844-006	PnP Model Name	CTL *	[- / " Laser Printer " / - / step]
5-844-007	PnP Serial Number	CTL *	[- / - / - / step]
5-844-008	Mac Supply Level	CTL *	[0 or 1 / 1 / - / step]
5-844-100	Notify Unsupport	CTL *	[0x00 to 0x01 / 0x01 / 1 / step]

5845	[Delivery Server Setting]		
5-845-001	FTP Port No.	CTL *	[1 to 65535 / 3670 / 1 / step]
5-845-002	IP Address (Primary)	CTL *	[000.000.000.000 to 255.255.255.255 / 000.000.000.000 / 1 / step]
5-845-006	Delivery Error Display Time	CTL *	[0 to 999 / 300 / 1 sec / step]
5-845-008	IP Address (Secondary)	CTL *	[000.000.000.000 to 255.255.255.255 / 000.000.000.000 / 1 / step]
5-845-009	Delivery Server Model	CTL *	[0 to 4 / 0 / 1 / step] 0: Unknown 1: SG1 Provided 2: SG1 Package 3: SG2 Provided 4: SG2 Package
5-845-010	Delivery Svr. Capability	CTL *	[0 to 255 / 0 / 1 / step]
5-845-011	Delivery Svr Capability (Ext)	CTL *	[0 to 255 / 0 / multiples of 2 / step]
5-845-022	Rapid Sending Control	CTL *	[0 or 1 / 1 / 1 / step]

5846	[UCS Setting]		
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5-846-001	Machine ID (for Delivery Server)	CTL*	[- / - / - / step]
5-846-002	Machine ID Clear (for Delivery Server)	CTL*	[- / - / - / step]
5-846-003	Maximum Entries	CTL*	[2000 to 20000 / 2000 / 1 / step]
5-846-006	Delivery Server Retry Timer	CTL*	[0 to 255 / 0 / 1 / step]
5-846-007	Delivery Server Retry Times	CTL*	[0 to 255 / 0 / 1 / step]
5-846-008	Delivery Server Maximum Entries	CTL*	[2000 to 20000 / 2000 / 1 / step]
5-846-010	LDAP Search Timeout	CTL*	[1 to 255 / 60 / 1 / step]
5-846-020	WSD Maximum Entries	CTL*	[50 to 250 / 250 / 1 / step]
5-846-021	Folder Auth Change	CTL*	[0 or 1 / 0 / 1 / step]
5-846-040	Addr Book Migration(USB->HDD)	CTL	[- / - / - / step]
5-846-041	Fill Addr Acl Info	CTL	[- / - / - / step]
5-846-043	Addr Book Media	CTL *	[0 to 30 / 0 / 1 / step] 0: Unconfirmed 1: SD Slot 1 2: SD Slot 2 4: USB Flash ROM 10: SD Slot 10 20: HDD 30: Nothing
5-846-047	Initialize Local Addr Book	CTL	[- / - / - / step]
5-846-048	Initialize Delivery Addr Book	CTL	[- / - / - / step]

5-846-049	Initialize LDAP Addr Book	CTL	[- / - / - / step]
5-846-050	Initialize All Addr Book	CTL	[- / - / - / step]
5-846-051	Backup All Addr Book	CTL	[- / - / - / step]
5-846-052	Restore All Addr Book	CTL	[- / - / - / - / step]
5-846-053	Clear Backup Info	CTL	[- / - / - / step]
5-846-060	Search option	CTL*	[0x00 to 0xff / 0x0f / 1 / step]
5-846-062	Complexity option 1	CTL*	[0 to 32 / 0 / 1 / step]
5-846-063	Complexity option 2	CTL*	[0 to 32 / 0 / 1 / step]
5-846-064	Complexity option 3	CTL*	[0 to 32 / 0 / 1 / step]
5-846-065	Complexity option 4	CTL*	[0 to 32 / 0 / 1 / step]
5-846-091	FTP Auth Port Setting	CTL*	[0 to 65535 / 3671 / 1 / step]
5-846-094	Encryption Stat	CTL*	[0 to 255 / - / 1 / step]

5848	[Web Service]		
5-848-002	Access Ctrl: Repository (only Lower 4 bits)	CTL*	[4bit / 0010 / bit switch / step]
5-848-003	Access Control: Doc. Svr. Print (Lower 4 bits)	CTL*	[4bit / 0000 / bit switch / step]
5-848-004	Access Control: udirectory (Lower 4 bits)	CTL*	[4bit / 0000 / bit switch / step]
5-848-007	Access Ctrl: Comm. Log Fax (Lower 4 bits)	CTL*	[4bit / 0000 / bit switch / step]
5-848-009	Access Ctrl: Job Ctrl (Lower 4 bits)	CTL*	[4bit / 0000 / bit switch / step]

5-848-011	Access Ctrl: Device management (Lower 4bits)	CTL*	[4bit / 0000 / bit switch / step]
5-848-021	Access Ctrl: Delivery (Lower 4 bits)	CTL*	[[4bit / 0000 / bit switch / step]
5-848-022	Access Ctrl: administration (Lower 4bits)	CTL*	[4bit / 0000 / bit switch / step]
5-848-024	Access Ctrl: Log Service (Lower 4bits)	CTL*	[4bit / 0000 / bit switch / step]
5-848-025	Access Ctrl: Rest WebService (Lower 4bits)	CTL*	[4bit / 0000 / bit switch / step]
5-848-099	Repository: Download Image Setting	CTL*	[0000 to 0111 / 0000 / 1 / step]
5-848-100	Repository: Download Image Max. Size	CTL*	[1 to 2048 / 2048 / 1 MByte / step]
5-848-150	Log Operation Mode	CTL*	[0 to 9 / 0 / 1 / step]

5848	[LogTrans]		
5-848-217	Setting: Timing	CTL*	[0 to 2 / 0 / 1 / step]

5849	[Installation Date]		
5-849-001	Display	CTL*	[- / - / - / step]
5-849-002	Switch to Print	CTL*	[0 or 1 / 0 / 1 / step]
5-849-003	Setup Count	CTL*	[0 to 99999999 / 0 / 1 / step]

5851	[Bluetooth]		
5-851-001	mode	CTL*	[0 or 1 / 0 / - / step] 0: Public, 1:Private

5856	[Remote ROM Update]		
5-856-002	Local Port	CTL	[0 or 1 / 0 / 1 / step] 0: Disable, 1: Enable

5858	[Save Machine Info]		
5-858-001	0:OFF 1:ON	CTL*	[0 or 1 / 1 / 1 / step]
5-858-002	Target(0:HDD 1:SD)	CTL*	[0 or 1 / 0 / 1 / step]
5-858-003	Make LogTrace Dir	CTL*	[- / - / - / step]
5-858-101	Start Date	CTL*	[0 to 20371212 / 0 / 1 / step]
5-858-102	Days of Tracing	CTL*	[1 to 180 / 2 / 1 day / step]
5-858-103	Acquire Fax Address(0:OFF 1:ON)	CTL*	[0 or 1 / 0 / 1 / step]
5-858-111	Acquire All Info & Logs	CTL*	[- / - / - / step]
5-858-121	Acquire Configuration Page	CTL*	[- / - / - / step]
5-858-122	Acquire Font Page	CTL*	[- / - / - / step]
5-858-123	Acquire Print Setting List	CTL*	[- / - / - / step]
5-858-124	Acquire Error Log	CTL*	[- / - / - / step]
5-858-131	Acquire Fax Info	CTL*	[- / - / - / step]
5-858-141	Acquire All Debug Logs	CTL*	[- / - / - / step]
5-858-142	Acquire Only Controller Debug Logs	CTL*	[- / - / - / step]
5-858-143	Acquire Only Engine Debug Logs	CTL*	[- / - / - / step]
5-858-144	Acquire Only Opepanel Debug Logs	CTL*	[- / - / - / step]
5-858-145	Acquire Only FCU Debug Logs	CTL*	[- / - / - / step]

5860	[SMTP/POP3/IMAP4]		
5-860-020	Partial Mail Receive Timeout	CTL *	[1 to 168 / 72 / 1 hour / step]
5-860-021	MDN Response RFC2298 Compliance	CTL *	[0 or 1 / 1 / 1 / step] 0: No, 1: Yes
5-860-022	SMTP Auth. From Field Replacement	CTL *	[0 or 1 / 0 / 1 / step]
5-860-025	SMTP Auth. Direct Setting	CTL *	[0 to 0xff / 0 / multiples of 2 / step]
5-860-026	S/MIME: MIME Header Setting	CTL *	[0 to 2 / 0 / 1 / step] 0: Microsoft Outlook Express standard 1: Internet Draft standard 2: RFC standard
5-860-028	S/MIME: Authentication Check	CTL *	[0 or 1 / 0 / 1 / step] 0: Check 1: No check

5866	[E-Mail Report]		
5-866-001	Report Validity	CTL	[0 or 1 / 0 / 1 / step]
5-866-005	Add Date Field	CTL	[0 or 1 / 0 / 1 / step]

5869	[RAM Disk Setting]		
5-869-001	Mail Function	CTL	[0 or 1 / 0 / 1 / step] 0:OFF, 1:ON

5870	[Common KeyInfo Writing]		
5-870-001	Writing	CTL	[- / - / - / step]
5-870-003	Initialize	CTL	[- / - / - / step]
5-870-004	Writing: 2048bit	CTL	[- / - / - / step]

5873		[SD Card Appli Move]		
5-873-001	MoveExec	CTL	[- / - / - / step]	
5-873-002	UndoExec	CTL	[- / - / - / step]	

5875		[SC Auto Reboot]		
5-875-001	Reboot Setting	CTL*	[0 or 1 / 0 / 1 / step]	
5-875-002	Reboot Type	CTL*	[0 or 1 / 1 / 1 / step] 0: Manual reboot, 1: Automatic reboot	

5878		[Option Setup]		
5-878-001	Data Overwrite Security	CTL	[- / - / - / step]	
5-878-002	HDD Encryption	CTL	[- / - / - / step]	
5-878-004	OCR Dictionary	CTL	[- / - / - / step]	

5881		[Fixed Phrase Block Erasing]		
5-881-001	-	CTL	[- / - / - / step]	

5885		[Set WIM Function]		
5-885-020	DocSvr Acc Ctrl	CTL*	[8bit / 00000000 / bit switch / step] Bit Meaning 0: Forbid all document server access (1) 1: Forbid user mode access (1) 2: Forbid print function (1) 3: Forbid fax TX (1) 4: Forbid scan sending (1) 5: Forbid downloading (1) 6: Forbid delete (1) 7: Reserved	
5-885-050	DocSvr Format	CTL*	[0 to 2 / 0 / 1 / step]	

5-885-051	DocSvr Trans	CTL*	[5 to 20 / 10 / 1 / step]
5-885-100	Set Signature	CTL*	[0 to 2 / 0 / 1 / step]
5-885-101	Set Encryption	CTL*	[0 or 1 / 0 / 1 / step] 0: Not encrypted, 1:Encryption
5-885-200	Detect Mem Leak	CTL*	[8bit / 00000000 / bit switch / step]

5886	[Farm Update Setting]		
5-886-100	Skip Version Check	CTL*	[0 to 1 / 0 / 1 / step]
5-886-101	Skip LR Check	CTL*	[0 to 1 / 0 / 1 / step]
5-886-150	Cheetah Firm Exclusion	CTL*	[0 to 1 / 0 / 1 / step]

5887	[SD Get Counter]		
5-887-001	-	CTL	[- / - / - / step]

5888	[Personal Information Protect]		
5-888-001	-	CTL*	[0 or 1 / 0 / 1 / step]

5893	[SDK Application Counter]		
5-893-001	SDK-1	CTL	[- / - / - / step]
5-893-002	SDK-2	CTL	[- / - / - / step]
5-893-003	SDK-3	CTL	[- / - / - / step]
5-893-004	SDK-4	CTL	[- / - / - / step]
5-893-005	SDK-5	CTL	[- / - / - / step]
5-893-006	SDK-6	CTL	[- / - / - / step]
5-893-007	SDK-7	CTL	[- / - / - / step]
5-893-008	SDK-8	CTL	[- / - / - / step]
5-893-009	SDK-9	CTL	[- / - / - / step]
5-893-010	SDK-10	CTL	[- / - / - / step]

5-893-011	SDK-11	CTL	[- / - / - / step]
5-893-012	SDK-12	CTL	[- / - / - / step]

5907	[Plug & Play Maker/Model Name]		
5-907-001	-	CTL*	[0 to 255 / 0 / 1 / step]

5913	[Switchover Permission Time]		
5-913-002	Print Application Timer	CTL*	[0 to 30 / 3 / 1 / step]

5967	[Copy Server Set Function]		
5-967-001	0: Enable, 1: Disable	CTL*	[0 or 1 / 0 / 1 / step] 0: Enable, 1: Disable

5973	[User Stamp Registration]		
5-973-101	Frame deletion setting	CTL*	[0 to 3 / 0 / 1 / step]

5985	[Device Setting]		
5-985-001	On Board NIC	CTL	[0 to 2 / 0 / 1 / step]
5-985-002	On Board USB	CTL	[0 or 1 / 0 / 1 / step]

5990	[SP Print Mode]		
5-990-001	All(Data List)	CTL	[- / - / - / step]
5-990-002	SP(Mode Data List)	CTL	[- / - / - / step]
5-990-003	User Program	CTL	[- / - / - / step]
5-990-004	Logging DataLogging Data	CTL	[- / - / - / step]
5-990-005	Diagnostic Report	CTL	[- / - / - / step]
5-990-006	Non-Default	CTL	[- / - / - / step]
5-990-007	NIB Summary	CTL	[- / - / - / step]

5-990-021	Copier User Program	CTL	[- / - / - / step]
5-990-022	Scanner SP	CTL	[- / - / - / step]
5-990-023	Scanner User Program	CTL	[- / - / - / step]
5-990-024	SDK/J Summary	CTL	[- / - / - / step]
5-990-025	SDK/J Application Info	CTL	[- / - / - / step]
5-990-026	Printer SP	CTL	[- / - / - / step]

5992	[SP Text Mode]		
5-992-001	All(Data List)	CTL	[- / - / - / step]
5-992-002	SP(Mode Data List)	CTL	[- / - / - / step]
5-992-003	User Program	CTL	[- / - / - / step]
5-992-004	Logging Data	CTL	[- / - / - / step]
5-992-005	Diagnostic Report	CTL	[- / - / - / step]
5-992-006	Non-Default	CTL	[- / - / - / step]
5-992-007	NIB Summary	CTL	[- / - / - / step]
5-992-021	Copier User Program	CTL	[- / - / - / step]
5-992-022	Scanner SP	CTL	[- / - / - / step]
5-992-023	Scanner User Program	CTL	[- / - / - / step]
5-992-024	SDK/J Summary	CTL	[- / - / - / step]
5-992-025	SDK/J Application Info	CTL	[- / - / - / step]
5-992-026	Printer SP	CTL	[- / - / - / step]

Main SP Tables-6

SP6-XXX (Peripherals)

6006	[ADF Adjustment]		
6-006-001	Main Scan: Regist: Front Side	ENG*	[-3 to 3 / 0 / 0.1 mm / step]
6-006-002	Main Scan: Regist: Rear Side	ENG*	[-3 to 3 / 0 / 0.1 mm / step]
6-006-003	Sub Scan: Regist: Front Side	ENG*	[-5 to 5 / 0 / 0.1 mm / step]
6-006-004	Sub Scan: Regist: Rear Side	ENG*	[-5 to 5 / 0 / 0.1 mm / step]
6-006-007	Trailing Edge Erase Width	ENG*	[-5 to 5 / -3 / 0.1 mm / step]

6007	[ADF INPUT Check]		
6-007-009	Original Detection Sensor	ENG	[0 or 1 / 0 / 1 / step]
6-007-013	Registration Sensor	ENG	[0 or 1 / 0 / 1 / step]
6-007-015	Feed Cover Sensor	ENG	[0 or 1 / 0 / 1 / step]
6-007-016	Lift-up Sensor	ENG	[0 or 1 / 0 / 1 / step]

6008	[ADF OUTPUT Check]		
6-008-003	Feed/Relay Motor FWD Rotation	ENG	[0 or 1 / 0 / 1 / step]
6-008-004	Feed/Relay Motor RVS Rotation	ENG	[0 or 1 / 0 / 1 / step]
6-008-009	Feed Clutch	ENG	[0 or 1 / 0 / 1 / step]
6-008-011	Reverse Solenoid	ENG	[0 or 1 / 0 / 1 / step]

6011	[ADF INPUT Check]		
6-011-004	DF_WSS_1	ENG	[0 or 1 / 0 / 1 / step]

6-011-005	DF_WSS_2	ENG	[0 or 1 / 0 / 1 / step]
6-011-006	DF_WSS_3	ENG	[0 or 1 / 0 / 1 / step]
6-011-007	DF_WSS_4	ENG	[0 or 1 / 0 / 1 / step]
6-011-008	DF_WSS_5	ENG	[0 or 1 / 0 / 1 / step]

6016	[Original Size Detect Setting]		
6-016-001	NA-1	ENG*	[0 to 2 / 0 / 1 / step] 0: DLT/LT(LEF)/11x15(SEF) 1: 10x14(SEF) 2 US EXE(LEF)
6-016-002	NA-2	ENG*	[0 or 1 / 0 / 1 / step] 0: LG/8.5x13/LT(SEF)/HLT(LEF) 1: 8x10(SEF)
6-016-003	EU-1	ENG*	[0 or 1 / 0 / 1 / step] 0: A3(SEF)/B4(SEF)/A4(LEF)/B5(LEF) 1: 8KAI(SEF)/16KAI(LEF)
6-016-004	EU-2	ENG*	[0 to 2 / 0 / 1 / step] 0: A4(SEF)/B5(SEF)/A5(LEF)/B6(LEF) 1: 8.5x13 2: 16KAI(SEF)

6017	[ADF Adjustment: Sub Scan Mag]		
6-017-001	-	ENG*	[-5 to 5 / 0 / 0.1% / step]

Main SP Tables-7 (Engine)

SP7-XXX (Data Log)

7621	[PM Counter Display: Pages]		
7-621-002	#PCDU	ENG *	[0 to 9999999 / 0 / 1 page / step]
7-621-115	120K part	ENG *	[0 to 9999999 / 0 / 1 page / step]

7622	[PM Counter Reset]		
7-622-002	#PCDU	ENG	[0 or 1 / 0 / 1 / step]
7-622-115	120K part	ENG	[0 or 1 / 0 / 1 / step]

7625	[Previous Unit Counter: Pages]		
7-625-002	#PCDU	ENG *	[0 to 9999999 / 0 / 1 page / step]
7-625-115	120K part	ENG *	[0 to 9999999 / 0 / 1 page / step]

7801	[ROM Info.]		
7-801-002	No.:Engine	ENG	[0 to 0 / 0 / 0 / step]
7-801-102	Version:Engine	ENG	[0 to 0 / 0 / 0 / step]

7852	[DF Glass Dust Check]		
7-852-001	Dust Detection: Counter	ENG *	[0 to 65535 / 0 / 1 / step]
7-852-002	Dust Detection: Clear Counter	ENG *	[0 to 65535 / 0 / 1 / step]

7853	[Replacement Counter]		
7-853-002	#PCDU	ENG *	[0 to 255 / 0 / 1 / step]
7-853-115	120K part	ENG *	[0 to 255 / 0 / 1 / step]

7935	[Toner Bottle Log]		
7-935-001	1: Bk Serial No.	ENG*	[0 to 255 / 0 / 1 / step]
7-935-002	1: Bk Attachment Date	ENG*	[0 to 255 / 0 / 1 / step]
7-935-005	2: Bk Serial No.	ENG*	[0 to 255 / 0 / 1 / step]
7-935-006	2: Bk Attachment Date	ENG*	[0 to 255 / 0 / 1 / step]
7-935-009	3: Bk Serial No.	ENG*	[0 to 255 / 0 / 1 / step]
7-935-010	3: Bk Attachment Date	ENG*	[0 to 255 / 0 / 1 / step]
7-935-013	4: Bk Serial No.	ENG*	[0 to 255 / 0 / 1 / step]
7-935-014	4: Bk Attachment Date	ENG*	[0 to 255 / 0 / 1 / step]
7-935-017	5: Bk Serial No.	ENG*	[0 to 255 / 0 / 1 / step]
7-935-018	5: Bk Attachment Date	ENG*	[0 to 255 / 0 / 1 / step]
7-935-021	6: Bk Serial No.	ENG*	[0 to 255 / 0 / 1 / step]
7-935-022	6: Bk Attachment Date	ENG*	[0 to 255 / 0 / 1 / step]
7-935-025	7: Bk Serial No.	ENG*	[0 to 255 / 0 / 1 / step]
7-935-026	7: Bk Attachment Date	ENG*	[0 to 255 / 0 / 1 / step]
7-935-029	8: Bk Serial No.	ENG*	[0 to 255 / 0 / 1 / step]
7-935-030	8: Bk Attachment Date	ENG*	[0 to 255 / 0 / 1 / step]
7-935-033	9: Bk Serial No.	ENG*	[0 to 255 / 0 / 1 / step]
7-935-034	9: Bk Attachment Date	ENG*	[0 to 255 / 0 / 1 / step]
7-935-037	10: Bk Serial No.	ENG*	[0 to 255 / 0 / 1 / step]
7-935-038	10: Bk Attachment Date	ENG*	[0 to 255 / 0 / 1 / step]

7942	[PM Counter Display:Distance(%)]		
7-942-002	#PCDU	ENG*	[0 to 255 / 0 / 1% / step]
7-942-115	120K part	ENG*	[0 to 255 / 0 / 1% / step]

7944	[PM Counter Display: Distance]		
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7-944-002	#PCDU	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-944-115	120K part	ENG	[0 to 999999999 / 0 / 1 mm / step]

7950	[Unit Replacement Date]		
7-950-002	#PCDU	ENG*	[0 or 1 / 0 / 1 / step]
7-950-115	120K part	ENG*	[0 or 1 / 0 / 1 / step]

7951	[Remaining Day Counter: Pages]		
7-951-002	#PCDU	ENG*	[0 to 255 / 255 / 1 days / step]
7-951-115	120K part	ENG*	[0 to 255 / 255 / 1 days / step]

7952	[Remaining Day Counter:Distance]		
7-952-002	#PCDU	ENG*	[0 to 255 / 255 / 1 days / step]
7-952-115	120K part	ENG*	[0 to 255 / 255 / 1 days / step]

7953	[Operation Env. Log: PCU: K]		
7-953-001	T<0	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-002	0<=T<10:0<=H<15	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-003	0<=T<10:15<=H<30	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-004	0<=T<10:30<=H<55	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-005	0<=T<10:55<=H<80	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-006	0<=T<10:80<=H<=100	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-007	10<=T<15:0<=H<15	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-008	10<=T<15:15<=H<30	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-009	10<=T<15:30<=H<55	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-010	10<=T<15:55<=H<80	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-011	10<=T<15:80<=H<=100	ENG*	[0 to 999999999 / 0 / 1 mm / step]

7-953-012	15<=T<25:0<=H<15	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-013	15<=T<25:15<=H<30	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-014	15<=T<25:30<=H<55	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-015	15<=T<25:55<=H<80	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-016	15<=T<25:80<=H<=100	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-017	25<=T<27:0<=H<15	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-018	25<=T<27:15<=H<30	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-019	25<=T<27:30<=H<55	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-020	25<=T<27:55<=H<80	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-021	25<=T<27:80<=H<=100	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-022	27<=T<30:0<=H<15	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-023	27<=T<30:15<=H<30	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-024	27<=T<30:30<=H<55	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-025	27<=T<30:55<=H<80	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-026	27<=T<30:80<=H<=100	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-027	30<=T<=32:0<=H<15	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-028	30<=T<=32:15<=H<30	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-029	30<=T<=32:30<=H<55	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-030	30<=T<=32:55<=H<80	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-031	30<=T<=32:80<=H<=100	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-032	32<T<35:0<=H<15	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-033	32<T<35:15<=H<30	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-034	32<T<35:30<=H<55	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-035	32<T<35:55<=H<80	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-036	32<T<35:80<=H<=100	ENG*	[0 to 999999999 / 0 / 1 mm / step]
7-953-037	35<=T:0<=H<=100	ENG*	[0 to 999999999 / 0 / 1 mm / step]

7-953-100	Log Clear	ENG	[0 or 1 / 0 / 1 1 / step]
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7954	[PM Counter Display: Pages(%)]		
7-954-002	#PCDU	ENG *	[0 to 255 / 0 / 1% / step]
7-954-115	120K part	ENG *	[0 to 255 / 0 / 1% / step]

7955	[Estimated Remaining Pages]		
7-955-002	#PCDU	ENG *	[0 to 9999999 / 0 / 1 page / step]
7-955-115	120K part	ENG *	[0 to 9999999 / 0 / 1 page / step]

7956	[Estimated Remaining Days]		
7-956-002	#PCDU	ENG *	[0 to 255 / 255 / 1 days / step]
7-956-115	120K part	ENG *	[0 to 255 / 255 / 1 days / step]

7960	[Estimated Usage Rate]		
7-960-002	#PCDU	ENG *	[0 to 255 / 0 / 1% / step]
7-960-115	120K part	ENG *	[0 to 255 / 0 / 1% / step]

Main SP Tables-7 (Controller)

SP7-XXX (Data Log)

7401	[Total SC]		
7-401-001	SC Counter	CTL*	[00000 to 65535 / 0 / 0 / step]
7-401-002	Total SC Counter	CTL*	[00000 to 65535 / 0 / 0 / step]

7403	[SC History]		
7-403-001	Latest	CTL*	[- / - / - / step]
7-403-002	Latest 1	CTL*	[- / - / - / step]
7-403-003	Latest 2	CTL*	[- / - / - / step]
7-403-004	Latest 3	CTL*	[- / - / - / step]
7-403-005	Latest 4	CTL*	[- / - / - / step]
7-403-006	Latest 5	CTL*	[- / - / - / step]
7-403-007	Latest 6	CTL*	[- / - / - / step]
7-403-008	Latest 7	CTL*	[- / - / - / step]
7-403-009	Latest 8	CTL*	[- / - / - / step]
7-403-010	Latest 9	CTL*	[- / - / - / step]

7404	[Software Error History]		
7-404-001	Latest	CTL*	[- / - / - / step]
7-404-002	Latest 1	CTL*	[- / - / - / step]
7-404-003	Latest 2	CTL*	[- / - / - / step]
7-404-004	Latest 3	CTL*	[- / - / - / step]
7-404-005	Latest 4	CTL*	[- / - / - / step]
7-404-006	Latest 5	CTL*	[- / - / - / step]

7-404-007	Latest 6	CTL*	[- / - / - / step]
7-404-008	Latest 7	CTL*	[- / - / - / step]
7-404-009	Latest 8	CTL*	[- / - / - / step]
7-404-010	Latest 9	CTL*	[- / - / - / step]

7502	[Total Paper Jam]		
7-502-001	Jam Counter	CTL*	[00000 to 65535 / 0 / 0 / step]
7-502-002	Total Jam Counter	CTL*	[00000 to 65535 / 0 / 0 / step]

7503	[Total Original Jam Counter]		
7-503-001		CTL*	[00000 to 65535 / 0 / 0 / step]
7503	[Total Original Jam]		
7-503-002	Total Original Counter	CTL*	[00000 to 65535 / 0 / 0 / step]

7504	[Paper Jam Location]		
7-504-001	At Power On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-504-003	Tray 1: On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-504-005	Tray 2: On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-504-008	Registration Sn: On (Bypass)	CTL*	[00000 to 65535 / 0 / 0 / step]
7-504-009	Registration Sn: On (Duplex)	CTL*	[00000 to 65535 / 0 / 0 / step]
7-504-017	Registration Sn: On (Bank)	CTL*	[00000 to 65535 / 0 / 0 / step]
7-504-020	Paper Exit: On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-504-025	Duplex Exit: On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-504-027	Duplex Entrance: On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-504-053	Bank: Transport 1: Off	CTL*	[00000 to 65535 / 0 / 0 / step]

7-504-057	Registration Sensor: Off	CTL*	[00000 to 65535 / 0 / 0 / step]
7-504-060	Paper Exit: Off	CTL*	[00000 to 65535 / 0 / 0 / step]
7-504-065	Duplex Exit: Off	CTL*	[00000 to 65535 / 0 / 0 / step]
7-504-067	Duplex Entrance: Off	CTL*	[00000 to 65535 / 0 / 0 / step]

7505	[Original Jam Detection]		
7-505-001	At Power On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-505-004	Registration Sensor: On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-505-054	Registration Sensor: Off	CTL*	[00000 to 65535 / 0 / 0 / step]
7-505-100	Motor Error	CTL*	[00000 to 65535 / 0 / 0 / step]

7506	[Jam Count by Paper Size]		
7-506-005	A4 LEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-506-006	A5 LEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-506-014	B5 LEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-506-038	LT LEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-506-044	HLT LEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-506-132	A3 SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-506-133	A4 SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-506-134	A5 SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-506-141	B4 SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-506-142	B5 SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-506-160	DLT SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-506-164	LG SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-506-166	LT SEF	CTL*	[00000 to 65535 / 0 / 0 / step]

7-506-172	HLT SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-506-255	Others	CTL*	[00000 to 65535 / 0 / 0 / step]

7507	[Plotter Jam History]		
7-507-001	Latest	CTL*	[- / - / - / step]
7-507-002	Latest 1	CTL*	[- / - / - / step]
7-507-003	Latest 2	CTL*	[- / - / - / step]
7-507-004	Latest 3	CTL*	[- / - / - / step]
7-507-005	Latest 4	CTL*	[- / - / - / step]
7-507-006	Latest 5	CTL*	[- / - / - / step]
7-507-007	Latest 6	CTL*	[- / - / - / step]
7-507-008	Latest 7	CTL*	[- / - / - / step]
7-507-009	Latest 8	CTL*	[- / - / - / step]
7-507-010	Latest 9	CTL*	[- / - / - / step]

7508	[Original Jam History]		
7-508-001	Latest	CTL*	[- / - / - / step]
7-508-002	Latest 1	CTL*	[- / - / - / step]
7-508-003	Latest 2	CTL*	[- / - / - / step]
7-508-004	Latest 3	CTL*	[- / - / - / step]
7-508-005	Latest 4	CTL*	[- / - / - / step]
7-508-006	Latest 5	CTL*	[- / - / - / step]
7-508-007	Latest 6	CTL*	[- / - / - / step]
7-508-008	Latest 7	CTL*	[- / - / - / step]
7-508-009	Latest 8	CTL*	[- / - / - / step]
7-508-010	Latest 9	CTL*	[- / - / - / step]

7514	[Paper Jam Count by Location]		
7-514-001	At Power On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-514-003	Tray 1: On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-514-005	Tray 2: On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-514-008	Registration Sn: On (Bypass)	CTL*	[00000 to 65535 / 0 / 0 / step]
7-514-009	Registration Sn: On (Duplex)	CTL*	[00000 to 65535 / 0 / 0 / step]
7-514-017	Registration Sn: On (Bank)	CTL*	[00000 to 65535 / 0 / 0 / step]
7-514-020	Paper Exit: On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-514-025	Duplex Exit: On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-514-027	Duplex Entrance: On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-514-053	Bank: Transport 1: Off	CTL*	[00000 to 65535 / 0 / 0 / step]
7-514-057	Registration Sensor: Off	CTL*	[00000 to 65535 / 0 / 0 / step]
7-514-060	Paper Exit: Off	CTL*	[00000 to 65535 / 0 / 0 / step]
7-514-065	Duplex Exit: Off	CTL*	[00000 to 65535 / 0 / 0 / step]
7-514-067	Duplex Entrance: Off	CTL*	[00000 to 65535 / 0 / 0 / step]

7515	[Original Jam Count by Detection]		
7-515-001	At Power On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-515-004	Registration Sensor: On	CTL*	[00000 to 65535 / 0 / 0 / step]
7-515-054	Registration Sensor: Off	CTL*	[00000 to 65535 / 0 / 0 / step]
7-515-100	Motor Error	CTL*	[00000 to 65535 / 0 / 0 / step]

7516	[Paper Size Jam Count]		
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7-516-005	A4 LEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-006	A5 LEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-014	B5 LEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-038	LT LEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-044	HLT LEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-132	A3 SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-133	A4 SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-134	A5 SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-141	B4 SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-142	B5 SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-160	DLT SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-164	LG SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-166	LT SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-172	HLT SEF	CTL*	[00000 to 65535 / 0 / 0 / step]
7-516-255	Others	CTL*	[00000 to 65535 / 0 / 0 / step]

7520	[Update Log]		
7-520-001	Error Record 1	CTL*	[0 to 255 / 0 / 1 / step]
7-520-002	Error Record 2	CTL*	[0 to 255 / 0 / 1 / step]
7-520-003	Error Record 3	CTL*	[0 to 255 / 0 / 1 / step]
7-520-004	Error Record 4	CTL*	[0 to 255 / 0 / 1 / step]
7-520-005	Error Record 5	CTL*	[0 to 255 / 0 / 1 / step]
7-520-006	Error Record 6	CTL*	[0 to 255 / 0 / 1 / step]
7-520-007	Error Record 7	CTL*	[0 to 255 / 0 / 1 / step]
7-520-008	Error Record 8	CTL*	[0 to 255 / 0 / 1 / step]
7-520-009	Error Record 9	CTL*	[0 to 255 / 0 / 1 / step]

7-520-010	Error Record 10	CTL*	[0 to 255 / 0 / 1 / step]
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7624	[Part Replacement Operation ON/OFF]		
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7-624-001	PCU	CTL*	[0 or 1 / 1 / 1 / step]
7-624-002	Maintenance Parts	CTL*	[0 or 1 / 1 / 1 / step]

7801	[ROM No/ Firmware Version]		
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7-801-255	-	CTL	[- / - / - / step]
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7803	[PM Counter Display]		
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7-803-001	Paper	CTL*	[0 to 9999999 / - / - / step]
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7804	[PM Counter Reset]		
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7-804-001	PM Counter Reset	CTL	[- / - / - / step]
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7807	[SC/Jam Counter Reset]		
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7-807-001	-	CTL	[- / - / - / step]
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7826	[MF Error Counter]		
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7-826-001	Error Total	CTL*	[0 to 9999999 / - / - / step]
7-826-002	Error Staple	CTL*	[0 to 9999999 / - / - / step]

7827	[MF Error Counter Clear]		
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7-827-001	-	CTL	[- / - / - / step]
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7832	[Self-Diagnose Result Display]		
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7-832-001	-	CTL	[- / - / - / step]
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7836	[Total Memory Size]		
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7-836-001	-	CTL	[0 to 0xffffffff / - / - MB / step]
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7840	[Service SP Entry Code Chg Hist]		
7-840-001	Change Time :Latest	CTL*	[- / - / - / step]
7-840-002	Change Time :Last1	CTL*	[- / - / - / step]
7-840-101	Initialize Time :Latest	CTL*	[- / - / - / step]
7-840-102	Initialize Time :Last1	CTL*	[- / - / - / step]

7901	[Assert Info.]		
7-901-001	File Name	CTL*	[- / - / - / step]
7-901-002	Number of Lines	CTL*	[- / - / - / step]
7-901-003	Location	CTL*	[- / - / - / step]

7910	[ROM No]		
7-910-001	System/Copy	CTL*	[- / - / - / step]
7-910-002	Engine	CTL*	[- / - / - / step]
7-910-003	Lcdc	CTL*	[- / - / - / step]
7-910-012	FCU	CTL*	[- / - / - / step]
7-910-018	NetworkSupport	CTL*	[- / - / - / step]
7-910-023	HDD Format Option	CTL*	[- / - / - / step]
7-910-132	NetWare	CTL*	[- / - / - / step]
7-910-150	RPCS	CTL*	[- / - / - / step]
7-910-151	PS	CTL*	[- / - / - / step]
7-910-152	RPDL	CTL*	[- / - / - / step]
7-910-158	PCL	CTL*	[- / - / - / step]
7-910-159	PCLXL	CTL*	[- / - / - / step]
7-910-162	PDF	CTL*	[- / - / - / step]
7-910-165	PJL	CTL*	[- / - / - / step]
7-910-167	MediaPrint:JPEG	CTL*	[- / - / - / step]

7-910-168	MediaPrint:TIFF	CTL*	[- / - / - / step]
7-910-169	XPS	CTL*	[- / - / - / step]
7-910-180	FONT	CTL*	[- / - / - / step]
7-910-181	FONT1	CTL*	[- / - / - / step]
7-910-182	FONT2	CTL*	[- / - / - / step]
7-910-183	FONT3	CTL*	[- / - / - / step]
7-910-184	FONT4	CTL*	[- / - / - / step]
7-910-185	FONT5	CTL*	[- / - / - / step]
7-910-200	Factory	CTL*	[- / - / - / step]
7-910-201	Copy	CTL*	[- / - / - / step]
7-910-202	NetworkDocBox	CTL*	[- / - / - / step]
7-910-203	FAX	CTL*	[- / - / - / step]
7-910-204	Printer	CTL*	[- / - / - / step]
7-910-205	Scanner	CTL*	[- / - / - / step]
7-910-206	RFax	CTL*	[- / - / - / step]
7-910-210	MIB	CTL*	[- / - / - / step]
7-910-211	Websupport	CTL*	[- / - / - / step]
7-910-212	WebUapl	CTL*	[- / - / - / step]
7-910-213	SDK1	CTL*	[- / - / - / step]
7-910-214	SDK2	CTL*	[- / - / - / step]
7-910-215	SDK3	CTL*	[- / - / - / step]
7-910-250	Package	CTL*	[- / - / - / step]

7911	[Firmware Version]		
7-911-001	System/Copy	CTL*	[- / - / - / step]
7-911-002	Engine	CTL*	[- / - / - / step]

7-911-003	Lcdc	CTL*	[- / - / - / step]
7-911-012	FCU	CTL*	[- / - / - / step]
7-911-018	NetworkSupport	CTL*	[- / - / - / step]
7-911-023	HDD Format Option	CTL*	[- / - / - / step]
7-911-132	NetWare	CTL*	[- / - / - / step]
7-911-150	RPCS	CTL*	[- / - / - / step]
7-911-151	PS	CTL*	[- / - / - / step]
7-911-158	PCL	CTL*	[- / - / - / step]
7-911-159	PCLXL	CTL*	[- / - / - / step]
7-911-162	PDF	CTL*	[- / - / - / step]
7-911-165	PJL	CTL*	[- / - / - / step]
7-911-167	MediaPrint:JPEG	CTL*	[- / - / - / step]
7-911-168	MediaPrint:TIFF	CTL*	[- / - / - / step]
7-911-169	XPS	CTL*	[- / - / - / step]
7-911-180	FONT	CTL*	[- / - / - / step]
7-911-181	FONT1	CTL*	[- / - / - / step]
7-911-182	FONT2	CTL*	[- / - / - / step]
7-911-183	FONT3	CTL*	[- / - / - / step]
7-911-184	FONT4	CTL*	[- / - / - / step]
7-911-185	FONT5	CTL*	[- / - / - / step]
7-911-200	Factory	CTL*	[- / - / - / step]
7-911-201	Copy	CTL*	[- / - / - / step]
7-911-202	NetworkDocBox	CTL*	[- / - / - / step]
7-911-203	FAX	CTL*	[- / - / - / step]
7-911-204	Printer	CTL*	[- / - / - / step]
7-911-205	Scanner	CTL*	[- / - / - / step]

7-911-206	RFax	CTL*	[- / - / - / step]
7-911-210	MIB	CTL*	[- / - / - / step]
7-911-211	Websupport	CTL*	[- / - / - / step]
7-911-212	WebUapl	CTL*	[- / - / - / step]
7-911-213	SDK1	CTL*	[- / - / - / step]
7-911-214	SDK2	CTL*	[- / - / - / step]
7-911-215	SDK3	CTL*	[- / - / - / step]
7-911-250	Package	CTL*	[- / - / - / step]

Main SP Tables-8

SP8-XXX (Data Log2)

Many of these counters are provided for features that are currently not available, such as sending color faxes, and so on. However, here are some Group 8 codes that when used in combination with others, can provide useful information.

SP Numbers	What They Do
SP8211 to SP8216	The number of pages scanned to the document server.
SP8401 to SP8406	The number of pages printed from the document server.
SP8691 to SP8696	The number of pages sent from the document server.

Specifically, the following questions can be answered:

- How is the document server actually being used?
- What application is using the document server most frequently?
- What data in the document server is being reused?

Most of the SPs in this group are prefixed with a letter that indicates the mode of operation (the mode of operation is referred to as an "application"). Before reading the Group 8 Service Table, make sure that you understand what these prefixes mean.

Prefixes	What it means	
T:	Total: (Grand Total).	Grand total of the items counted for all applications (C, F, P, etc.).
C:	Copy application.	Totals (pages, jobs, etc.) executed for each application when the job was not stored on the document server.
F:	Fax application.	
P:	Print application.	
S:	Scan application.	

Prefixes	What it means	
L:	Local storage (document server)	Totals (jobs, pages, etc.) for the document server. The L: counters work differently case by case. Sometimes, they count jobs/pages stored on the document server; this can be in document server mode (from the document server window), or from another mode, such as from a printer driver or by pressing the Store File button in the Copy mode window. Sometimes, they include occasions when the user uses a file that is already on the document server. Each counter will be discussed case by case.
O:	Other applications (external network applications, for example)	Refers to network applications such as Web Image Monitor. Utilities developed with the SDK (Software Development Kit) will also be counted with this group in the future.

The Group 8 SP codes are limited to 17 characters, forced by the necessity of displaying them on the small LCDs of printers and faxes that also use these SPs. Read over the list of abbreviations below and refer to it again if you see the name of an SP that you do not understand.

Key for Abbreviations

Abbreviation	What it means
/	"By", e.g. "T:Jobs/Apl" = Total Jobs "by" Application
>	More (2> "2 or more", 4> "4 or more")
AddBook	Address Book
Apl	Application
B/W	Black & White
Bk	Black
C	Cyan
ColCr	Color Create
ColMode	Color Mode
Comb	Combine
Comp	Compression
Deliv	Delivery

Abbreviation	What it means
DesApl	Designated Application. The application (Copy, Fax, Scan, Print) used to store the job on the document server, for example.
Dev Counter	Development Count, no. of pages developed.
Dup, Duplex	Duplex, printing on both sides
Emul	Emulation
FC	Full Color
FIN	Post-print processing, i.e. finishing (punching, stapling, etc.)
Full Bleed	No Margins
GenCopy	Generation Copy Mode
GPC	Get Print Counter. For jobs 10 pages or less, this counter does not count up. For jobs larger than 10 pages, this counter counts up by the number that is in excess of 10 (e.g., for an 11-page job, the counter counts up $11-10=1$)
IFax	Internet Fax
ImgEdt	Image Edit performed on the original with the copier GUI, e.g. border removal, adding stamps, page numbers, etc.
K	Black (YMCK)
LS	Local Storage. Refers to the document server.
LSize	Large (paper) Size
Mag	Magnification
MC	One color (monochrome)
NRS	New Remote Service, which allows a service center to monitor machines remotely. "NRS" is used overseas, "CSS" is used in Japan.
Org	Original for scanning
OrgJam	Original Jam

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 be moved around, combined, and converted to different formats.
PC	Personal Computer
PGS	Pages. A page is the total scanned surface of the original. Duplex pages count as two pages, and A3 simplex count as two pages if the A3/DLT counter SP is switched ON.
PJob	Print Jobs
Ppr	Paper
PrtJam	Printer (plotter) Jam
PrtPGS	Print Pages
R	Red (Toner Remaining). Applies to the wide format model A2 only. This machine is under development and currently not available.
Rez	Resolution
SC	Service Code (Error SC code displayed)
Scn	Scan
Sim, Simplex	Simplex, printing on 1 side.
S-to-Email	Scan-to-E-mail
SMC	SMC report printed with SP5990. All of the Group 8 counters are recorded in the SMC report.
Svr	Server
TonEnd	Toner End
TonSave	Toner Save
TXJob	Send, Transmission
YMC	Yellow, Magenta, Cyan
YMCK	Yellow, Magenta, Cyan, Black

 **Note**

- All of the Group 8 SPs are reset with SP5 801 1 Memory All Clear.

8001	T:Total Jobs	*CTL	<p>These SPs count the number of times each application is used to do a job.</p> <p>[0 to 9999999 / - / 1]</p> <p>Note: The L: counter is the total number of times the other applications are used to send a job to the document server, plus the number of times a file already on the document server is used.</p>
8002	C:Total Jobs	*CTL	
8003	F:Total Jobs	*CTL	
8004	P:Total Jobs	*CTL	
8005	S:Total Jobs	*CTL	
8006	L:Total Jobs	*CTL	

- These SPs reveal the number of times an application is used, not the number of pages processed.
- When an application is opened for image input or output, this counts as one job.
- Interrupted jobs (paper jams, etc.) are counted, even though they do not finish.
- Only jobs executed by the customer are counted. Jobs executed by the customer engineer using the SP modes are not counted.
- When using secure printing (when a password is required to start the print job), the job is counted at the time when either "Delete Data" or "Specify Output" is specified.
- A job is counted as a fax job when the job is stored for sending.
- When a fax is received to fax memory, the F: counter increments but the L: counter does not (the document server is not used).
- A fax broadcast counts as one job for the F: counter (the fax destinations in the broadcast are not counted separately).
- A fax broadcast is counted only after all the faxes have been sent to their destinations. If one transmission generates an error, then the broadcast will not be counted until the transmission has been completed.
- A printed fax report counts as one job for the F: counter.
- The F: counter does not distinguish between fax sending or receiving.
- When a copy job on the document server is printed, SP8022 also increments, and when a print job stored on the document server is printed, SP8024 also increments.
- When an original is both copied and stored on the document server, the C: and L: counters both increment.
- When a print job is stored on the document server, only the L: counter increments.
- When the user presses the Document Server button to store the job on the document server, only the L: counter increments.

- When the user enters document server mode and prints data stored on the document server, only the L: counter increments.
- When an image received from Palm 2 is received and stored, the L: counter increments.
- When the customer prints a report (user code list, for example), the O: counter increments. However, for fax reports and reports executed from the fax application, the F: counter increments.

8011	T:Jobs/LS	*CTL	These SPs count the number of jobs stored to the document server by each application, to reveal how local storage is being used for input. [0 to 9999999/ - / 1] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8012	C:Jobs/LS	*CTL	
8013	F:Jobs/LS	*CTL	
8014	P:Jobs/LS	*CTL	
8015	S:Jobs/LS	*CTL	
8016	L:Jobs/LS	*CTL	
8017	O:Jobs/LS	*CTL	

- When a scan job is sent to the document server, the S: counter increments. When you enter document server mode and then scan an original, the L: counter increments.
- When a print job is sent to the document server, the P: counter increments.
- When a network application sends data to the document server, the O: counter increments.
- When an image from Palm 2 is stored on the document server, the O: counter increments.
- When a fax is sent to the document server, the F: counter increments.

8021	T:Pjob/LS	*CTL	These SPs reveal how files printed from the document server were stored on the document server originally. [0 to 9999999/ - / 1] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8022	C:Pjob/LS	*CTL	
8023	F:Pjob/LS	*CTL	
8024	P:Pjob/LS	*CTL	
8025	S:Pjob/LS	*CTL	
8026	L:Pjob/LS	*CTL	
8027	O:Pjob/LS	*CTL	

- When a copy job stored on the document server is printed with another application, the C: counter increments.

- When an application like DeskTopBinder merges a copy job that was stored on the document server with a print job that was stored on the document server, the C: and P: counters both increment.
- When a job already on the document server is printed with another application, the L: counter increments.
- When a scanner job stored on the document server is printed with another application, the S: counter increments. If the original was scanned from within document server mode, then the L: counter increments.
- When images stored on the document server by a network application (including Palm 2), are printed with another application, the O: counter increments.
- When a copy job stored on the document server is printed with a network application (Web Image Monitor, for example), the C: counter increments.
- When a fax on the document server is printed, the F: counter increments.

8031	T:Pjob/DesApl	*CTL	These SPs reveal what applications were used to output documents from the document server. [0 to 99999999 / - / 1] The L: counter counts the number of jobs printed from within the document server mode screen at the operation panel.
8032	C:Pjob/DesApl	*CTL	
8033	F:Pjob/DesApl	*CTL	
8034	P:Pjob/DesApl	*CTL	
8035	S:Pjob/DesApl	*CTL	
8036	L:Pjob/DesApl	*CTL	
8037	O:Pjob/DesApl	*CTL	

- When documents already stored on the document server are printed, the count for the application that started the print job is incremented.
- When the print job is started from a network application (Desk Top Binder, Web Image Monitor, etc.) the L: counter increments.

8041	T:TX Jobs/LS	* CTL	These SPs count the applications that stored files on the document server that were later accessed for transmission over the telephone line or over a network (attached to an e-mail, or as a fax image by I-Fax). [0 to 9999999/ - / 1] Note: Jobs merged for sending are counted separately. The L: counter counts the number of jobs scanned from within the document server mode screen at the operation panel.
8042	C:TX Jobs/LS	* CTL	
8043	F:TX Jobs/LS	* CTL	
8044	P:TX Jobs/LS	* CTL	
8045	S:TX Jobs/LS	* CTL	
8046	L:TX Jobs/LS	* CTL	
8047	O:TX Jobs/LS	* CTL	

- When a stored copy job is sent from the document server, the C: counter increments.
- When images stored on the document server by a network application or Palm2 are sent as an e-mail, the O: counter increments.

8051	T:TX Jobs/DesApl	* CTL	These SPs count the applications used to send files from the document server over the telephone line or over a network (attached to an e-mail, or as a fax image by I-Fax). Jobs merged for sending are counted separately. [0 to 9999999/ - / 1] The L: counter counts the number of jobs sent from within the document server mode screen at the operation panel.
8052	C:TX Jobs/DesApl	* CTL	
8053	F:TX Jobs/DesApl	* CTL	
8054	P:TX Jobs/DesApl	* CTL	
8055	S:TX Jobs/DesApl	* CTL	
8056	L:TX Jobs/DesApl	* CTL	
8057	O:TX Jobs/DesApl	* CTL	

- If the send is started from Desk Top Binder or Web Image Monitor, for example, then the O: counter increments.

8061	T:FIN Jobs	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs total the finishing methods. The finishing method is specified by the application.		
8062	C:FIN Jobs	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs total finishing methods for copy jobs only. The finishing method is specified by the application.		

8063	F:FIN Jobs	*CTL	[0 to 9999999/ 0 / 1/step]
	<p>These SPs total finishing methods for fax jobs only. The finishing method is specified by the application.</p> <p>Note: Finishing features for fax jobs are not available at this time.</p>		
8064	P:FIN Jobs	*CTL	[0 to 9999999/ 0 / 1/step]
	<p>These SPs total finishing methods for print jobs only. The finishing method is specified by the application.</p>		
8065	S:FIN Jobs	*CTL	[0 to 9999999/ 0 / 1/step]
	<p>These SPs total finishing methods for scan jobs only. The finishing method is specified by the application.</p> <p>Note: Finishing features for scan jobs are not available at this time.</p>		
8066	L:FIN Jobs	*CTL	[0 to 9999999/ 0 / 1/step]
	<p>These SPs total finishing methods for jobs output from within the document server mode screen at the operation panel. The finishing method is specified from the print window within document server mode.</p>		
8067	O:FIN Jobs	*CTL	[0 to 9999999/ 0 / 1/step]
	<p>These SPs total finishing methods for jobs executed by an external application, over the network. The finishing method is specified by the application.</p>		

Last three digits for SP8 061 to 067

806x-001	Sort	Number of jobs started in Sort mode. When a stored copy job is set for Sort and then stored on the document server, the L: counter increments. (See SP8 066 1)
806x-002	Stack	Number of jobs started out of Sort mode.
806x-003	Staple	Number of jobs started in Staple mode.
806x-004	Booklet	Number of jobs started in Booklet mode. If the machine is in staple mode, the Staple counter also increments.
806x-005	Z-Fold	Number of jobs started In any mode other than the Booklet mode and set for folding (Z-fold).
806x-006	Punch	Number of jobs started in Punch mode. When Punch is set for a print job, the P: counter increments. (See SP8 064 6.)

806x-007	Other	Reserved. Not used.
806x-008	Inside-Fold	Not used
806x-009	Three-IN-Fold	Not used
806x-010	Three-OUT-Fold	Not used
806x-011	Four-Fold	Not used
806x-012	KANNON-Fold	Not used
806x-013	Perfect-Bind	Not used
806x-014	Ring-Bind	Not used
806x-015	3rd Vendor	

8071	T:Jobs/PGS	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of jobs broken down by the number of pages in the job, regardless of which application was used.		
8072	C:Jobs/PGS	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count and calculate the number of copy jobs by size based on the number of pages in the job.		
8073	F:Jobs/PGS	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count and calculate the number of fax jobs by size based on the number of pages in the job.		
8074	P:Jobs/PGS	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count and calculate the number of print jobs by size based on the number of pages in the job.		
8075	S:Jobs/PGS	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count and calculate the number of scan jobs by size based on the number of pages in the job.		
8076	L:Jobs/PGS	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count and calculate the number of jobs printed from within the document server mode window at the operation panel, by the number of pages in the job.		

8077	O:Jobs/PGS	*CTL	[0 to 9999999/ 0 / 1/step]
These SPs count and calculate the number of "Other" application jobs (Web Image Monitor, Palm 2, etc.) by size based on the number of pages in the job.			

Last three digits for SP8 071 to 077

807x-001	1 Page	8 07x 8	21 to 50 Pages
807x-002	2 Pages	8 07x 9	51 to 100 Pages
807x-003	3 Pages	8 07x 10	101 to 300 Pages
807x-004	4 Pages	8 07x 11	301 to 500 Pages
807x-005	5 Pages	8 07x 12	501 to 700 Pages
807x-006	6 to 10 Pages	8 07x 13	701 to 1000 Pages
807x-007	11 to 20 Pages	8 07x 14	More than 1001 Pages

- For example: When a copy job stored on the document server is printed in document server mode, the appropriate L: counter (SP8076 0xx) increments.
- Printing a fax report counts as a job and increments the F: counter (SP 8073).
- Interrupted jobs (paper jam, etc.) are counted, even though they do not finish.
- If a job is paused and re-started, it counts as one job.
- If the finisher runs out of staples during a print and staple job, then the job is counted at the time the error occurs.
- For copy jobs (SP 8072) and scan jobs (SP 8075), the total is calculated by multiplying the number of sets of copies by the number of pages scanned. (One duplex page counts as 2.)
- The first test print and subsequent test prints to adjust settings are added to the number of pages of the copy job (SP 8072).
- When printing the first page of a job from within the document server screen, the page is counted.

8111	T:FAX TX Jobs	*CTL	[0 to 9999999/ 0 / 1/step]
These SPs count the total number of jobs (color or black-and-white) sent by fax, either directly or using a file stored on the document server, on a telephone line. Note: Color fax sending is not available at this time.			

8113	F: FAX TX Jobs	* CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of jobs (color or black-and-white) sent by fax directly on a telephone line. Note: Color fax sending is not available at this time.		
811x-001	B/W		
811x-002	Color		

- These counters count jobs, not pages.
- This SP counts fax jobs sent over a telephone line with a fax application, including documents stored on the document server.
- If the mode is changed during the job, the job will count with the mode set when the job started.
- If the same document is faxed to both a public fax line and an I-Fax at a destination where both are available, then this counter increments, and the I-Fax counter (8 12x) also increments.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8121	T:IFAX TX Jobs	* CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of jobs (color or black-and-white) sent, either directly or using a file stored on the document server, as fax images using I-Fax. Note: Color fax sending is not available at this time.		
8123	F: IFAX TX Jobs	* CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the number of jobs (color or black-and-white) sent (not stored on the document server), as fax images using I-Fax. Note: Color fax sending is not available at this time.		
812x-001	B/W		
812x-002	Color		

- These counters count jobs, not pages.
- The counters for color are provided for future use; the color fax feature is not available at this time.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8131	T:S-to-Email Jobs	* CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the total number of jobs (color or black-and-white) scanned and attached to an e-mail, regardless of whether the document server was used or not.		

8135	S: S-to-Email Jobs	* CTL	[0 to 99999999 / 0 / 1/step]
	These SPs count the number of jobs (color or black-and-white) scanned and attached to e-mail, without storing the original on the document server.		
813x-001	B/W		
813x-002	Color		
813x-003	ACS		

- These counters count jobs, not pages.
- If the job is stored on the document server, after the job is stored it is determined to be color or black-and-white then counted.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- If several jobs are combined for sending to the Scan Router, Scan-to-Email, or Scan-to-PC, or if one job is sent to more than one destination. each send is counted separately. For example, if the same document is sent by Scan-to-Email as well as Scan-to-PC, then it is counted twice (once for Scan-to-Email and once for Scan-to-PC).

8141	T:Deliv Jobs/Svr	* CTL	[0 to 99999999 / 0 / 1/step]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent to a Scan Router server.		
8145	S: Deliv Jobs/Svr	* CTL	[0 to 99999999 / 0 / 1/step]
	These SPs count the number of jobs (color or black-and-white) scanned in scanner mode and sent to a Scan Router server.		
814x-001	B/W		
814x-002	Color		
814x-003	ACS		

- These counters count jobs, not pages.
- The jobs are counted even though the arrival and reception of the jobs at the Scan Router server cannot be confirmed.
- If even one color image is mixed with black-and-white images, then the job is counted as a "Color" job.

- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be delivered, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8151	T:Deliv Jobs/PC	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent to a folder on a PC (Scan-to-PC). Note: At the present time, 8 151 and 8 155 perform identical counts.		
8155	S:Deliv Jobs/PC	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent with Scan-to-PC.		
815x-001	B/W		
815x-002	Color		
815x-003	ACS		

- These counters count jobs, not pages.
- If the job is cancelled during scanning, it is not counted.
- If the job is cancelled while it is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8161	T:PCFAX TX Jobs	*CTL	These SPs count the number of PC Fax transmission jobs. A job is counted from when it is registered for sending, not when it is sent. [0 to 9999999/ 0 / 1/step] Note: At the present time, these counters perform identical counts.
8163	F:PCFAX TX Jobs	*CTL	

- This counts fax jobs started from a PC using a PC fax application, and sending the data out to the destination from the PC through the copier.

8171	T:Deliv Jobs/WSD	*CTL	These SPs count the pages scanned by WS. [0 to 9999999/ 0 / 1/step]
8175	S:Deliv Jobs/WSD	*CTL	
001	B/W		
002	Color		
003	ACS		

8181	T:Scan to Media Jobs	*CTL	These SPs count the scanned pages in a media by the scanner application. [0 to 9999999/ 0 / 1/step]
8185	S:Scan to Media Jobs	*CTL	
001	B/W		
002	Color		
003	ACS		

8191	T:Total Scan PGS	*CTL	These SPs count the pages scanned by each application that uses the scanner to scan images. [0 to 9999999/ 0 / 1/step]
8192	C:Total Scan PGS	*CTL	
8193	F:Total Scan PGS	*CTL	
8195	S:Total Scan PGS	*CTL	
8196	L:Total Scan PGS	*CTL	

- SP 8 191 to 8 196 count the number of scanned sides of pages, not the number of physical pages.
- These counters do not count reading user stamp data, or reading color charts to adjust color.
- Previews done with a scanner driver are not counted.
- A count is done only after all images of a job have been scanned.
- Scans made in SP mode are not counted.

Examples

- If both sides of 3 A4 sheets are copied and stored to the document server using the Store File button in the Copy mode window, the C: count is 6 and the L: count is 6.
- If both sides of 3 A4 sheets are copied but not stored, the C: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8201	T:LSize Scan PGS A3/DLT, Larger	*CTL	[0 to 9999999/ 0 / 1/step]
	<p>These SPs count the total number of large pages input with the scanner for scan and copy jobs. Large size paper scanned for fax transmission is not counted.</p> <p>Note: These counters are displayed in the SMC Report, and in the User Tools display.</p>		
8203	F: LSize Scan PGS A3/DLT, Larger	*CTL	[0 to 9999999/ 0 / 1/step]
	<p>These SPs count the total number of large pages input with the scanner for fax transmission.</p> <p>Note: These counters are displayed in the SMC Report, and in the User Tools display.</p>		
8205	S:LSize Scan PGS A3/DLT, Larger	*CTL	[0 to 9999999/ 0 / 1/step]
	<p>These SPs count the total number of large pages input with the scanner for scan jobs only. Large size paper scanned for fax transmission is not counted.</p> <p>Note: These counters are displayed in the SMC Report, and in the User Tools display.</p>		

8211	T:Scan PGS/LS	*CTL	<p>These SPs count the number of pages scanned into the document server</p> <p>[0 to 9999999/ - / 1/step]</p> <p>The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen.</p>
8212	C:Scan PGS/LS	*CTL	
8213	F:Scan PGS/LS	*CTL	
8215	S:Scan PGS/LS	*CTL	
8216	L:Scan PGS/LS	*CTL	

- Reading user stamp data is not counted.
- If a job is cancelled, the pages output as far as the cancellation are counted.
- If the scanner application scans and stores 3 B5 sheets and 1 A4 sheet, the S: count is 4.
- If pages are copied but not stored on the document server, these counters do not change.
- If both sides of 3 A4 sheets are copied and stored to the document server, the C: count is 6 and the L: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8221	ADF Org Feeds	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the number of pages fed through the ADF for front and back side scanning.		
001	Front Number of front sides fed for scanning: With an ADF that can scan both sides simultaneously, the Front side count is the same as the number of pages fed for either simplex or duplex scanning. With an ADF that cannot scan both sides simultaneously, the Front side count is the same as the number of pages fed for duplex front side scanning. (The front side is determined by which side the user loads face up.)		
002	Back Number of rear sides fed for scanning: With an ADF that can scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex scanning. With an ADF that cannot scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex rear-side scanning.		

- When 1 sheet is fed for duplex scanning the Front count is 1 and the Back count is 1.
- If a jam occurs during the job, recovery processing is not counted to avoid double counting. Also, the pages are not counted if the jam occurs before the first sheet is output.

8231	Scan PGS/Mode	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the number of pages scanned by each ADF mode to determine the work load on the ADF.		
001	Large Volume	Selectable. Large copy jobs that cannot be loaded in the ADF at one time.	
002	SADF	Selectable. Feeding pages one by one through the ADF.	
003	Mixed Size	Selectable. Select "Mixed Sizes" on the operation panel.	
004	Custom Size	Selectable. Originals of non-standard size.	
005	Platen	Book mode. Raising the ADF and placing the original directly on the platen.	
006	Mixed 1side/ 2side	Simplex and Duplex mode.	

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.
- The user cannot select mixed sizes or non-standard sizes with the fax application so if the original's page sizes are mixed or non-standard, these are not counted.
- If the user selects "Mixed Sizes" for copying in the platen mode, the Mixed Size count is enabled.
- In the SADF mode if the user copies 1 page in platen mode and then copies 2 pages with SADF, the Platen count is 1 and the SADF count is 3.

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8241	T:Scan PGS/Org	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total number of scanned pages by original type for all jobs, regardless of which application was used.		
8242	C:Scan PGS/Org	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages scanned by original type for Copy jobs.		
8243	F:Scan PGS/Org	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages scanned by original type for Fax jobs.		
8245	S:Scan PGS/Org	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages scanned by original type for Scan jobs.		
8246	L:Scan PGS/Org	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen		

Last three digits for SP8 241 to 246

	8 241	8 242	8 243	8 245	8 246
824x-001: Text	Yes	Yes	Yes	Yes	Yes
824x-002: Text/Photo	Yes	Yes	Yes	Yes	Yes
824x-003: Photo	Yes	Yes	Yes	Yes	Yes
824x-004: GenCopy, Pale	Yes	Yes	No	Yes	Yes
824x-005: Map	Yes	Yes	No	No	Yes
824x-006: Normal/Detail	Yes	No	Yes	No	No
824x-007: Fine/Super Fine	Yes	No	Yes	No	No

824x-008: Binary	Yes	No	No	Yes	No
824x-009: Grayscale	Yes	No	No	Yes	No
824x-010: Color	Yes	No	No	Yes	No
824x-011: Other	Yes	Yes	Yes	Yes	Yes

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.

8251	T:Scan PGS/ImgEdt	*CTL	<p>These SPs show how many times Image Edit features have been selected at the operation panel for each application. Some examples of these editing features are:</p> <ul style="list-style-type: none"> • Erase → Border • Erase → Center • Image Repeat • Centering • Positive/Negative <p>[0 to 9999999 / - / 1/step]</p> <p>Note: The count totals the number of times the edit features have been used. A detailed breakdown of exactly which features have been used is not given.</p>
8252	C:Scan PGS/ImgEdt	*CTL	
8255	S : Scan PGS/ImgEdr	*CTL	
8256	L:Scan PGS/ImgEdt	*CTL	
8257	O:Scan PGS/ImgEdt	*CTL	

The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen.

8261	T:Scn PGS/ColCr	*CTL	-
8262	C:Scn PGS/ ColCr	*CTL	-
8265	S:Scn PGS/Color	*CTL	-
8266	L:Scn PGS/ColCr	*CTL	-

Last three digits for SP8 261, 262, 265 and 266

826x-001	Color Conversion	These SPs show how many times color creation features have been selected at the operation panel.
826x-002	Color Erase	
826x-003	Background	
826x-004	Other	

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8281	T:Scan PGS/TWAIN	*CTL	These SPs count the number of pages scanned using a TWAIN driver. These counters reveal how the TWAIN driver is used for delivery functions. [0 to 9999999 / 0 / 1/step] Note: At the present time, these counters perform identical counts.
8285	S:Scan PGS/TWAIN	*CTL	

8291	T:Scan PGS/Stamp	*CTL	These SPs count the number of pages stamped with the stamp in the ADF unit. [0 to 9999999 / 0 / 1/step] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen
8293	F:Scan PGS/Stamp	*CTL	
8295	S:Scan PGS/Stamp	*CTL	

8301	T:Scan PGS/Size	*CTL	[0 to 9999999 / 0 / 1/step]
These SPs count by size the total number of pages scanned by all applications. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-441].			
8302	C:Scan PGS/Size	*CTL	[0 to 9999999 / 0 / 1/step]
These SPs count by size the total number of pages scanned by the Copy application. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-442].			
8303	F:Scan PGS/Size	*CTL	[0 to 9999999 / 0 / 1/step]
These SPs count by size the total number of pages scanned by the Fax application. Use these totals to compare original page size (scanning) and output page size [SP 8-443].			

8305	S:Scan PGS/Size	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by size the total number of pages scanned by the Scan application. Use these totals to compare original page size (scanning) and output page size [SP 8-445].		
8306	L:Scan PGS/Size	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by size the total number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen. Use these totals to compare original page size (scanning) and output page size [SP 8-446].		

3

Last three digits for SP8 301 to 306

830x-001	A3	830x-007	LG
830x-002	A4	830x-008	LT
830x-003	A5	830x-009	HLT
830x-004	B4	830x-010	Full Bleed
830x-005	B5	830x-254	Other (Standard)
830x-006	DLT	830x-255	Other (Custom)

8311	T:Scan PGS/Rez	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings.		
8315	S: Scan PGS/Rez	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings. Note: At the present time, SP8-311 and SP8-315 perform identical counts.		

Last three digits for SP8 311 and 315

831x-001	1200 dpi
831x-002	600 dpi to 1199 dpi
831x-003	400 dpi to 599 dpi
831x-004	200 dpi to 399 dpi

831x-005	199 dpi or less
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- Copy resolution settings are fixed so they are not counted.
- The Fax application does not allow finely-adjusted resolution settings so no count is done for the Fax application.

8321	T:Saen Poster	* CTL	[0 to 99999999 / 0 / 1/step]
8322	C:Saen Poster	* CTL	[0 to 99999999 / 0 / 1/step]
8326	L:Saen Poster	* CTL	[0 to 99999999 / 0 / 1/step]

832x-001	2 Sheet
832x-002	4 Sheet
832x-003	9 Sheet

8381	T:Total PrtPGS Field Number	* CTL	<p>These SPs count the number of pages printed by the customer. The counter for the application used for storing the pages increments.</p> <p>[0 to 99999999 / - / 1/step]</p> <p>The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.</p>
8382	C:Total PrtPGS Field Number	* CTL	
8383	F:Total PrtPGS Field Number	* CTL	
8384	P:Total PrtPGS Field Number	* CTL	
8385	S:Total PrtPGS Field Number	* CTL	
8386	L:Total PrtPGS Field Number	* CTL	
8387	O:Total PrtPGS Field Number	* CTL	

- When several documents are merged for a print job, the number of pages stored is counted for the application that stored them.

- These counters are used primarily to calculate charges on use of the machine, so the following pages are not counted as printed pages:
 - Blank pages in a duplex printing job.
 - Blank pages inserted as document covers, chapter title sheets, and slip sheets.
 - Reports printed to confirm counts.
 - All reports done in the service mode (service summaries, engine maintenance reports, etc.)
 - Test prints for machine image adjustment.
 - Error notification reports.
 - Partially printed pages as the result of a copier jam.

8391	LSize PrtPGS		
	These SPs count pages printed on paper sizes A4/LT and larger. Note: In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine.		
001	A3/DLT, Larger	* CTL	[0 to 99999999 / 0 / 1/step]
003	BannaerPaper	* CTL	[0 to 99999999 / 0 / 1/step]

8401	T:PrtPGS/LS	* CTL	These SPs count the number of pages printed from the document server. The counter for the application used to print the pages is incremented. The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel. [0 to 99999999 / - / 1/step]
8402	C:PrtPGS/LS	* CTL	
8403	F:PrtPGS/LS	* CTL	
8404	P:PrtPGS/LS	* CTL	
8405	S:PrtPGS/LS	* CTL	
8406	L:PrtPGS/LS	* CTL	

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the L: count.
- Fax jobs done with Web Image Monitor and Desk Top Binder are added to the F: count.

8411	Prints/Duplex	* CTL	This SP counts the amount of paper (front/back counted as 1 page) used for duplex printing. Last pages printed only on one side are not counted. [0 to 99999999 / - / 1/step]
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8421	T:PrtPGS/Dup Comb	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing. This is the total for all applications.		
8422	C:PrtPGS/Dup Comb	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the copier application.		
8423	F:PrtPGS/Dup Comb	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the fax application.		
8424	P:PrtPGS/Dup Comb	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the printer application.		
8425	S:PrtPGS/Dup Comb	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the scanner application.		
8426	L:PrtPGS/Dup Comb	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing from within the document server mode window at the operation panel.		
8427	O:PrtPGS/Dup Comb	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by Other applications		

Last three digits for SP8 421 to 427

842x-001	Simplex> Duplex	-
842x-002	Duplex> Duplex	-
842x-003	Book> Duplex	-
842x-004	Simplex Combine	-
842x-005	Duplex Combine	-
842x-006	2in1	2 pages on 1 side (2-Up)

842x-007	4in1	4 pages on 1 side (4-Up)
842x-008	6in1	6 pages on 1 side (6-Up)
842x-009	8in1	8 pages on 1 side (8-Up)
842x-010	9in1	9 pages on 1 side (9-Up)
842x-011	16in1	16 pages on 1 side (16-Up)
842x-012	Booklet	-
842x-013	Magazine	-
842x-014	2in1 + Booklet	-
842x-015	4in1 + Booklet	-
842x-016	6in1 + Booklet	-
842x-017	8in1 + Booklet	-
842x-018	9in1 + Booklet	-
842x-019	2in1 + Magazine	-
842x-020	4in1 + Magazine	-
842x-021	6in1 + Magazine	-
842x-022	8in1 + Magazine	-
842x-023	9in1 + Magazine	-
842x-024	16in1 + Magazine	-

- These counts (SP8 421 to SP8 427) are especially useful for customers who need to improve their compliance with ISO standards for the reduction of paper consumption.
- Pages that are only partially printed with the n-Up functions are counted as 1 page.
- Here is a summary of how the counters work for Booklet and Magazine modes:

Booklet		Magazine	
Original Pages	Count	Original Pages	Count
1	1	1	1
2	2	2	2

Booklet			Magazine	
Original Pages	Count		Original Pages	Count
3	2		3	2
4	2		4	2
5	3		5	4
6	4		6	4
7	4		7	4
8	4		8	4

8431	T:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total number of pages output with the three features below, regardless of which application was used.		
8432	C:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total number of pages output with the three features below with the copy application.		
8434	P:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total number of pages output with the three features below with the print application.		
8436	L:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total number of pages output from within the document server mode window at the operation panel with the three features below.		
8437	O:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total number of pages output with the three features below with Other applications.		

Last three digits for SP8 431 to 437

843x-001	Cover/Slip Sheet	Total number of covers or slip sheets inserted. The count for a cover printed on both sides counts 2.
843x-002	Series/Book	The number of pages printed in series (one side) or printed as a book with booklet right/left pagination.

843x-003	User Stamp	The number of pages printed where stamps were applied, including page numbering and date stamping.
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8441	T:PrtPGS/Ppr Size	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by print paper size the number of pages printed by all applications.		
8442	C:PrtPGS/Ppr Size	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by print paper size the number of pages printed by the copy application.		
8443	F:PrtPGS/Ppr Size	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by print paper size the number of pages printed by the fax application.		
8444	P:PrtPGS/Ppr Size	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by print paper size the number of pages printed by the printer application.		
8445	S:PrtPGS/Ppr Size	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by print paper size the number of pages printed by the scanner application.		
8446	L:PrtPGS/Ppr Size	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by print paper size the number of pages printed from within the document server mode window at the operation panel.		
8447	O:PrtPGS/Ppr Size	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by print paper size the number of pages printed by Other applications.		

Last three digits for SP8 441 to 447

844x-001	A3
844x-002	A4
844x-003	A5
844x-004	B4
844x-005	B5
844x-006	DLT
844x-007	LG

844x-008	LT
844x-009	HLT
844x-010	Full Bleed
844x-254	Other (Standard)
844x-255	Other (Custom)

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- These counters do not distinguish between LEF and SEF.

8451	PrtPGS/Ppr Tray	*CTL	[0 to 9999999/ 0 / 1/step]
These SPs count the number of sheets fed from each paper feed station.			
001	Bypass Tray	Bypass Tray	
002	Tray 1	Machine	
003	Tray 2	Paper Tray Unit (Option)	
004	Tray 3	Paper Tray Unit (Option)	
005	Tray 4	Paper Tray Unit (Option)	
006	Tray 5	Not used	
007	Tray 6	Not used	
008	Tray 7	Not used	
009	Tray 8	Not used	
010	Tray 9	Not used	
011	Tray10	Not used	
012	Tray11	Not used	
013	Tray12	Not used	
014	Tray13	Not used	
015	Tray14	Not used	
016	Tray15	Not used	

8461	T:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ 0 / 1/step]
	<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. 		
8462	C:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by paper type the number pages printed by the copy application.		
8463	F:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by paper type the number pages printed by the fax application.		
8464	P:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by paper type the number pages printed by the printer application.		
8466	L:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by paper type the number pages printed from within the document server mode window at the operation panel.		

Last three digits for SP8 461 to 466

846x-001	Normal
846x-002	Recycled
846x-003	Special
846x-004	Thick
846x-005	Normal (Back)
846x-006	Thick (Back)
846x-007	OHP
846x-008	Other

8471	PrtPGS/Mag	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by magnification rate the number of pages printed.		
001	49% or less		
002	50% to 99%		
003	100%		
004	101% to 200%		
005	201% or more		

- Counts are done for magnification adjusted for pages, not only on the operation panel but performed remotely with an external network application capable of performing magnification adjustment as well.
- Magnification adjustments done with printer drivers with PC applications such as Excel are also counted.
- Magnification adjustments done for adjustments after they have been stored on the document server are not counted.
- Magnification adjustments performed automatically during Auto Reduce/Enlarge copying are counted.
- The magnification rates of blank cover sheets, slip sheets, etc. are automatically assigned a rate of 100%.

8481	T:PrtPGS/TonSave	* CTL	[0 to 9999999/ 0 / 1/step]
8484	P:PrtPGS/TonSave	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages printed with the Toner Save feature switched on. Note: These SPs return the same results as this SP is limited to the Print application.		

8491	T:PrtPGS/Col Mode	* CTL	These SPs count the number of pages printed in the Color Mode by each application.
8492	C:PrtPGS/Col Mode	* CTL	
8493	F:PrtPGS/Col Mode	* CTL	
8496	L:PrtPGS/Col Mode	* CTL	
8497	O:PrtPGS/Col Mode	* CTL	

Last three digits for SP8 491 to 493, 496 and 497

849x-001	B/W
849x-002	Single Color
849x-003	Two Color
849x-004	Full Color
849x-051	B/W(Banner)
849x-052	Single Color(Banner)
849x-053	Two Color(Banner)
849x-054	Full Color(Banner)

8501	T:PrtPGS/Col Mode	* CTL	These SPs count the number of pages printed in the Color Mode by the print application.
8504	P:PrtPGS/Col Mode	* CTL	
8507	O:PrtPGS/Col Mode	* CTL	

Last three digits for SP8 501, 504 and 507

850x-001	B/W
850x-002	Mono Color
850x-003	Full Color
850x-004	Single Color
850x-005	Two Color
850x-051	B/W(Banner)
850x-052	Full Color(Banner)
850x-053	Single Color(Banner)
850x-054	Two Color(Banner)

8511	T:PrtPGS/Emul	* CTL	[0 to 9999999 / 0 / 1/step]
	These SPs count by printer emulation mode the total number of pages printed.		

8514	P:PrtPGS/Emul	*CTL	[0 to 99999999 / 0 / 1/step]
	These SPs count by printer emulation mode the total number of pages printed.		

Last three digits for SP8 511 and 514

851x-001	RPCS	-
851x-002	RPDL	-
851x-003	PS3	-
851x-004	R98	-
851x-005	R16	-
851x-006	GL/GL2	-
851x-007	R55	-
851x-008	RTIFF	-
851x-009	PDF	-
851x-010	PCL5e/5c	-
851x-011	PCL XL	-
851x-012	IPDL-C	-
851x-013	BM-Links	Japan Only
851x-014	Other	-
851x-015	IPDS	-
851x-016	XPS	-

- SP8 511 and SP8 514 return the same results as they are both limited to the Print application.
- Print jobs output to the document server are not counted.

8521	T:PrtPGS/FIN	*CTL	[0 to 99999999 / 0 / 1/step]
	These SPs count by finishing mode the total number of pages printed by all applications.		

8522	C:PrtPGS/FIN	*CTL	[0 to 9999999 / 0 / 1/step]
	These SPs count by finishing mode the total number of pages printed by the Copy application.		
8523	F:PrtPGS/FIN	*CTL	[0 to 9999999 / 0 / 1/step]
	These SPs count by finishing mode the total number of pages printed by the Fax application. Note: Print finishing options for received faxes are currently not available.		
8524	P:PrtPGS/FIN	*CTL	[0 to 9999999 / 0 / 1/step]
	These SPs count by finishing mode the total number of pages printed by the Print application.		
8525	S:PrtPGS/FIN	*CTL	[0 to 9999999 / 0 / 1/step]
	These SPs count by finishing mode the total number of pages printed by the Scanner application.		
8526	L:PrtPGS/FIN	*CTL	[0 to 9999999 / 0 / 1/step]
	These SPs count by finishing mode the total number of pages printed from within the document server mode window at the operation panel.		

Last three digits for SP8 521 to 526

852x-001	Sort	852x-009	Three-IN-Fold
852x-002	Stack	852x-010	Three-OUT-Fold
852x-003	Staple	852x-011	Four-Fold
852x-004	Booklet	852x-012	KANNON-Fold
852x-005	Z-Fold	852x-013	Perfect-Bind
852x-006	Punch	852x-014	Ring-Bind
852x-007	Other	852x-015	3rd Vendor
852x-008	Inside-Fold		

↓ Note

- If stapling is selected for finishing and the stack is too large for stapling, the unstapled pages are still counted.

- The counts for staple finishing are based on output to the staple tray, so jam recoveries are counted.

8531	Staples		
	This SP counts the amount of staples used (-001) or count stapled (-002) by the machine.		
001	Staples	*CTL	[0 to 9999999 / - / 1]
002	Stapleless	*CTL	[0 to 9999999 / - / 1]

8551	T:PrtBooks/FIN	*CTL	-
8552	C:PrtBooks/FIN	*CTL	-
8554	P:PrtBooks/FIN	*CTL	-
8556	L:PrtBooks/FIN	*CTL	-
855x-001	Perfect-Bind	Not used	
855x-002	Ring-Bind	Not used	

8561	T:A Sheet Of Paper	*CTL	[0 to 9999999 / 0 / 1/step]
8562	C:A Sheet Of Paper	*CTL	[0 to 9999999 / 0 / 1/step]
8563	F:A Sheet Of Paper	*CTL	[0 to 9999999 / 0 / 1/step]
8564	P:A Sheet Of Paper	*CTL	[0 to 9999999 / 0 / 1/step]
8566	L:A Sheet Of Paper	*CTL	[0 to 9999999 / 0 / 1/step]
8567	O:A Sheet Of Paper	*CTL	[0 to 9999999 / 0 / 1/step]

Last three digits for SP8 561 to 567

856x-001	Total: Over A3/DLT
856x-002	Total: Under A3/DLT
856x-003	Duplex: Over A3/DLT
856x-004	Duplex: Under A3/DLT

8581	T:Counter	*CTL	[0 to 9999999 / 0 / 1/step]
	These SPs count the total output broken down by color output, regardless of the application used. In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine.		
001	Total		
002	Total: Full Color		
003	B&W/Single Color		
004	Development: CMY		
005	Development: K		
006	Copy: Color		
007	Copy: B/W		
008	Print: Color		
009	Print: B/W		
010	Total: Color		
011	Total: B/W		
012	Full Color: A3		
013	Full Color: B4 JIS or Smaller		
014	Full Color Print		
015	Mono Color Print		
016	Full Color GPC		
017	Twin Color Mode Print		
018	Full Color Print(Twin)		
019	Mono Color Print(Twin)		
020	Full Color Total(CV)		
021	Mono Color Total(CV)		
022	Full Color Print(CV)		

028	Development: CMY(A3)
029	Development: K(A3)
030	Total: Color(A3)
031	Total: B/W(A3)

8582	C:Counter	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total output of the copy application broken down by color output.		
001	B/W		
002	Single Color		
003	Two Color		
004	Full Color		

8583	F:Counter	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total output of the fax application broken down by color output.		
001	B/W		
002	Single Color		

8584	P:Counter	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total output of the print application broken down by color output.		
001	B/W		
002	Mono Color		
003	Full Color		
004	Single Color		
005	Two Color		

8586	L:Counter	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total output of the local storage broken down by color output.		

001	B/W
002	Single Color
003	Two Color
004	Full Color

8591	O:Counter	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the totals for A3/DLT paper use, number of duplex pages printed, and the number of staples used. These totals are for Other (O:) applications only.		
001	A3/DLT		
002	Duplex		
005	Banner		

8601	T:Coverage Counter	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
001	B/W		
002	Color		
011	B/W Printing Pages		
012	Color Printing Pages		
021	Coverage Counter 1		
022	Coverage Counter 2		
023	Coverage Counter 3		
031	Coverage Counter 1 (YMC)		
032	Coverage Counter 2 (YMC)		
033	Coverage Counter 3 (YMC)		

8602	C:Coverage Counter	*CTL	[0 to 2147483647/ 0 / 1%/step]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8603	F:Coverage Counter	*CTL	[0 to 2147483647/ 0 / 1%/step]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8604	P:Coverage Counter	*CTL	[0 to 2147483647/ 0 / 1%/step]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8606	L:Coverage Counter	*CTL	[0 to 2147483647/ 0 / 1%/step]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		

Last three digits for SP8 602 to 606

	8 602	8 603	8 604	8 606
860x-001: B/W	Yes	Yes	Yes	Yes
860x-002: Single Color	Yes	Yes	Yes	Yes
860x-003: Two Color	Yes	No	Yes	Yes
860x-004: Full Color	Yes	No	Yes	Yes

8617	SDK Apli Counter	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the total printout pages for each SDK applicaion.		
001	SDK-1		
002	SDK-2		
003	SDK-3		
004	SDK-4		
005	SDK-5		
006	SDK-6		
007	SDK-7		

008	SDK-8
009	SDK-9
010	SDK-10
011	SDK-11
012	SDK-12

8621	Func Use Counter DFU
001 to 064	Function 001 to Function 064

3

8631	T:FAX TX PGS	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the number of pages sent by fax to a telephone number.		
8633	F:FAX TX PGS	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the number of pages sent by fax to a telephone number.		
863x-001	B/W		
863x-002	Color		

- If a document has color and black-and-white pages mixed, the pages are counted separately as B/W or Color.
- At the present time, this feature is provided for the Fax application only so SP8631 and SP8633 are the same.
- The counts include error pages.
- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.
- Polling transmissions are counted but polling RX are not.
- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8641	T:IFAX TX PGS	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the number of pages sent by fax to as fax images using I-Fax.		

8643	F:IFAX TX PGS	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count by color mode the number of pages sent by Fax as fax images using I-Fax.		
864x-001	B/W		
864x-002	Color		

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- If a document has color and black-and-white pages mixed, the pages are counted separately as B/W or Color.
- At the present time, this feature is provided for the Fax application only so SP8641 and SP8643 are the same.
- The counts include error pages.
- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.
- Polling transmissions are counted but polling RX are not.
- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8651	T:S-to-Email PGS	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count by color mode the total number of pages attached to an e-mail for both the Scan and document server applications.		
8655	S:S-to-Email PGS	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count by color mode the total number of pages attached to an e-mail for the Scan application only.		
865x-001	B/W		
865x-002	Color		

Note

- The count for B/W and Color pages is done after the document is stored on the HDD. If the job is cancelled before it is stored, the pages are not counted.
- If Scan-to-Email is used to send a 10-page document to 5 addresses, the count is 10 (the pages are sent to the same SMTP server together).
- If Scan-to-PC is used to send a 10-page document to 5 folders, the count is 50 (the document is sent to each destination of the SMB/FTP server).
- Due to restrictions on some devices, if Scan-to-Email is used to send a 10-page document to a large number of destinations, the count may be divided and counted separately. For example, if a

10-page document is sent to 200 addresses, the count is 10 for the first 100 destinations and the count is also 10 for the second 100 destinations, for a total of 20.)

8661	T:Deliv PGS/Svr	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the total number of pages sent to a Scan Router server by both Scan and LS applications.		
8665	S:Deliv PGS/Svr	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the total number of pages sent to a Scan Router server by the Scan application.		
866x-001	B/W		
866x-002	Color		

↓ Note

- The B/W and Color counts are done after the document is stored on the HDD of the Scan Router server.
- If the job is canceled before storage on the Scan Router server finishes, the counts are not done.
- The count is executed even if regardless of confirmation of the arrival at the Scan Router server.

8671	T:Deliv PGS/PC	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the total number of pages sent to a folder on a PC (Scan-to-PC) with the Scan and LS applications.		
8675	S: Deliv PGS/PC	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count by color mode the total number of pages sent with Scan-to-PC with the Scan application.		
867x-001	B/W		
867x-002	Color		

8681	T:PCFAX TXPGS	*CTL	These SPs count the number of pages sent by PC Fax. These SPs are provided for the Fax application only, so the counts for SP8 681 and SP8 683 are the same. [0 to 9999999/ 0 / 1/step]
8683	F:PCFAX TXPGS	*CTL	

- This counts pages sent from a PC using a PC fax application, from the PC through the copier to the destination.

- When sending the same message to more than one place using broadcasting, the pages are only counted once. (For example, a 10-page fax is sent to location A and location B. The counter goes up by 10, not 20.)

8691	T:TX PGS/LS	* CTL	These SPs count the number of pages sent from the document server. The counter for the application that was used to store the pages is incremented. [0 to 9999999/ 0 / 1/step] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.
8692	C:TX PGS/LS	* CTL	
8693	F:TX PGS/LS	* CTL	
8694	P:TX PGS/LS	* CTL	
8695	S:TX PGS/LS	* CTL	
8696	L:TX PGS/LS	* CTL	

Note

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the count.
- If several documents are merged for sending, the number of pages stored are counted for the application that stored them.
- When several documents are sent by a Fax broadcast, the F: count is done for the number of pages sent to each destination.

8701	TX PGS/Port	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages sent by the physical port used to send them. For example, if a 3-page original is sent to 4 destinations via ISDN G4, the count for ISDN (G3, G4) is 12.		
001	PSTN-1		
002	PSTN-2		
003	PSTN-3		
004	ISDN (G3,G4)		
005	Network		

8711	T:Scan PGS/Comp	* CTL	[0 to 9999999/ 0 / 1/step]
8715	S:Scan PGS/Comp	* CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages sent by each compression mode.		

871x-001	JPEG/JPEG2000
871x-002	TIFF(Multi/Single)
871x-003	PDF
871x-004	Other
871x-005	PDF/Comp
871x-006	PDF/A
871x-007	PDF(OCR)
871x-008	PDF/Comp(OCR)
871x-009	PDF/A(OCR)

8721	T: Deliv PGS/WSD	*CTL	[0 to 9999999/ 0 / 1/step]
8725	S: Deliv PGS/WSD	*CTL	
	These SPs count the number of pages scanned by each scanner mode.		
872x-001	B/W		
872x-002	Color		

8731	T:Scan PGS/Media	*CTL	[0 to 9999999/ 0 / 1/step]
8735	S:Scan PGS/Media	*CTL	
	These SPs count the number of pages scanned and saved in a media by each scanner mode.		
873x-001	B/W		
873x-002	Color		

8741	RX PGS/Port	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs count the number of pages received by the physical port used to receive them.		
001	PSTN-1		
002	PSTN-2		

003	PSTN-3
004	ISDN (G3,G4)
005	Network

3

8 771	Dev Counter	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the frequency of use (number of rotations of the development rollers) for black and other color toners.		
8 771-001	Total		
8 771-002	K		
8 771-003	Y		
8 771-004	M		
8 771-005	C		

8 781	Toner_Botol_Info.	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs display the number of already replaced toner bottles. Note: Currently, the data in SP7-833-011 through 014 and the data in SP8-781-001 through 004 are the same.		
8 781-001	BK	The number of black-toner bottles	
8 781-002	Y	The number of yellow-toner bottles	
8 781-003	M	The number of magenta-toner bottles	
8 781-004	C	The number of cyan-toner bottles	

8791	LS Memory Remain	*CTL	[0 to 100 / 0 / 1/step]
	This SP displays the percent of space available on the document server for storing documents.		

8801	Toner Remain	*CTL	[0 to 100/ 0 / 1/step]
	<p>These SPs display the percent of toner remaining for each color. This SP allows the user to check the toner supply at any time.</p> <p>Note: This precise method of measuring remaining toner supply (1% steps) is better than other machines in the market that can only measure in increments of 10 (10% steps).</p>		
001	K		
002	Y		
003	M		
004	C		

8811	Eco Counter		
001	Eco Total	*CTL	[0 to 9999999 / 0 / 1/step]
	<p>Displays the number of pages reduced by using the color, full color, duplex and combine function.</p>		
002	Color	*CTL	[0 to 9999999 / 0 / 1/step]
	<p>Displays the number of pages reduced by using the color function.</p>		
003	Full Color	*CTL	[0 to 9999999 / 0 / 1/step]
	<p>Displays the number of pages reduced by using the full color function</p>		
004	Duplex	*CTL	[0 to 9999999 / 0 / 1/step]
	<p>Displays the number of pages reduced by using the duplex function.</p>		
005	Combine	*CTL	[0 to 9999999 / 0 / 1/step]
	<p>Displays the number of pages reduced by using the combine function.</p>		
006	Color(%)	*CTL	[0 to 100/ 0 / 1%/step]
	<p>Displays the utilization ratio of the color function.</p>		
007	Full Color(%)	*CTL	[0 to 100/ 0 / 1%/step]
	<p>Displays the utilization ratio of the full color function.</p>		

008	Duplex(%)	*CTL	[0 to 100/ 0 / 1%/step]
	Displays the utilization ratio of the duplex function.		
009	Combine(%)	*CTL	[0 to 100/ 0 / 1%/step]
	Displays the utilization ratio of the combine function.		
010	Paper Cut(%)	*CTL	[0 to 100/ 0 / 1%/step]
	Displays the paper reduction ratio.		
051	Sync Eco Total	*CTL	[0 to 99999999/ 0 / 1/step]
052	Sync Color	*CTL	[0 to 99999999/ 0 / 1/step]
053	Sync Full Color	*CTL	[0 to 99999999/ 0 / 1/step]
054	Sync Duplex	*CTL	[0 to 99999999/ 0 / 1/step]
055	Sync Combine	*CTL	[0 to 99999999/ 0 / 1/step]
056	Sync Color(%)	*CTL	[0 to 100/ 0 / 1%/step]
057	Sync Full Color(%)	*CTL	[0 to 100/ 0 / 1%/step]
058	Sync Duplex(%)	*CTL	[0 to 100/ 0 / 1%/step]
059	Sync Combine(%)	*CTL	[0 to 100/ 0 / 1%/step]
060	Sync Paper Cut(%)	*CTL	[0 to 100/ 0 / 1%/step]
101	Eco Total>Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
102	Color>Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
103	Full Color>Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
104	Duplex>Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		

105	Combine:Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
106	Color(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		
107	Full Color(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		
108	Duplex(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		
109	Combine(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		
110	Paper Cut(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		
151	Sync Eco Totalr:Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
152	Sync Color:Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
153	Sync Full Color:Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
154	Sync Duplex:Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
155	Sync Combine:Last	*CTL	[0 to 9999999 / 0 / 1/step]
	-		
156	Sync Color(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		
157	Sync Full Color(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		
158	Sync Duplex(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		
159	Sync Combine(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		
160	Sync Paper Cut(%):Last	*CTL	[0 to 100/ 0 / 1%/step]
	-		

8851	CVr Cnt: 0-10%	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs display the number of scanned sheets on which the coverage of each color is from 0% to 10%.		
011	0 to 2%: BK	031	5 to 7%: BK
012	0 to 2%: Y	032	5 to 7%: Y
013	0 to 2%: M	033	5 to 7%: M
014	0 to 2%: C	034	5 to 7%: C
021	3 to 4%: BK	041	8 to 10%: BK
022	3 to 4%: Y	042	8 to 10%: Y
023	3 to 4%: M	043	8 to 10%: M
024	3 to 4%: C	044	8 to 10%: C

8861	CVr Cnt: 11-20%	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs display the number of scanned sheets on which the coverage of each color is from 11% to 20%.		
001	BK		
002	Y		
003	M		
004	C		

8871	CVr Cnt: 21-30%	*CTL	[0 to 9999999/ 0 / 1/step]
	These SPs display the number of scanned sheets on which the coverage of each color is from 21% to 30%.		
001	BK		
002	Y		
003	M		
004	C		

8881	CVr Cnt: 31%-	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs display the number of scanned sheets on which the coverage of each color is 31% or higher.		
001	BK		
002	Y		
003	M		
004	C		

8891	Page/Toner Bottle	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs display the amount of the remaining current toner for each color.		
001	BK		
002	Y		
003	M		
004	C		

8901	Page/Toner_Prev1	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs display the amount of the remaining previous toner for each color.		
001	BK		
002	Y		
003	M		
004	C		

8911	Page/Toner_Prev2	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs display the amount of the remaining 2nd previous toner for each color.		
001	BK		
002	Y		
003	M		

004	C
-----	---

8921	Cvr Cnt/Total	*CTL	[0 to 2147483647/ 0 / 1/step]
	Displays the total coverage and total printout number for each color.		
001	Coverage (%) BK		
002	Coverage (%) Y		
003	Coverage (%) M		
004	Coverage (%) C		
8921	Cvr Cnt/Total	*CTL	[0 to 99999999/ 0 / 1/step]
011	Coverage /P: BK		
012	Coverage /P: Y		
013	Coverage /P: M		
014	Coverage /P: C		

8941	Machine Status	*CTL	[0 to 99999999/ 0 / 1/step]
	These SPs count the amount of time the machine spends in each operation mode. These SPs are useful for customers who need to investigate machine operation for improvement in their compliance with ISO Standards.		
001	Operation Time	Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).	
002	Standby Time	Engine not operating. Includes time while controller saves data to HDD. Does not include time spent in Energy Save, Low Power, or Off modes.	
003	Energy Save Time	Includes time while the machine is performing background printing.	
004	Low Power Time	Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.	

005	Off Mode Time	Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.
006	SC	Total time when SC errors have been staying.
007	PrtJam	Total time when paper jams have been staying during printing.
008	OrgJam	Total time when original jams have been staying during scanning.
009	Supply PM Unit End	Total time when toner end has been staying.

8951	AddBook Register	*CTL	-
	These SPs count the number of events when the machine manages data registration.		
001	User Code /User ID	User code registrations.	[0 to 99999 / 0 / 1/step]
002	Mail Address	Mail address registrations.	
003	Fax Destination	Fax destination registrations.	
004	Group	Group destination registrations.	
005	Transfer Request	Fax relay destination registrations for relay TX.	
006	F-Code	F-Code box registrations.	
007	Copy Program	Copy application registrations with the Program (job settings) feature.	[0 to 255 / 0 / 1/step]
008	Fax Program	Fax application registrations with the Program (job settings) feature.	
009	Printer Program	Printer application registrations with the Program (job settings) feature.	
010	Scanner Program	Scanner application registrations with the Program (job settings) feature.	

8961	Electricity Status	*CTL	[0 to 99999999/ 0 / 1/step]
	-		
001	Ctrl Standby Time		
002	STR Time		
003	Main Power Off Time		
004	Reading and Printing Time		
005	Printing Time		
006	Reading Time		
007	Eng Waiting Time		
008	Low Power State Time		
009	Silent State Time		
010	Heater Off State Time		
011	LCD on Time		
101	Silent Print		

8971	Unit Control	*CTL	[0 to 999999999/ 0 / 1/step]
	-		
001	Engine Off Recovery Count		
002	Power Off Count		
003	Force Power Off Count		

8999	Admin. Counter List
	Displays the total coverage and total printout number for each color.

001	Total	* CTL	[0 to 99999999/ - / 1]
002	Copy: Full Color	* CTL	
003	Copy: BW	* CTL	
004	Copy: Single Color	* CTL	
005	Copy: Two Color	* CTL	
006	Printer Full Color	* CTL	
007	Printer BW	* CTL	
008	Printer Single Color	* CTL	
009	Printer Two Color	* CTL	
010	Fax Print: BW	* CTL	
011	Fax Print: Single Color	* CTL	
013	Duplex	* CTL	
022	Copy: Full Color(%)	* CTL	[0 to 2147483647/ - / 1]
023	Copy: BW(%)	* CTL	
024	Copy: Single Color(%)	* CTL	
025	Copy: Two Color(%)	* CTL	
026	Printer: Full Color(%)	* CTL	
027	Printer: BW(%)	* CTL	
028	Printer: Single Color(%)	* CTL	
029	Printer: Two Color(%)	* CTL	
030	Fax Print: BW(%)	* CTL	
031	Fax Print: Single Color(%)	* CTL	

101	Transmission Total: Color	*CTL	[0 to 99999999/- / 1]
102	Transmission Total: BW	*CTL	
102	Transmission Total: BW	*CTL	
103	FAX Transmission	*CTL	
104	Scanner Transmission: Color	*CTL	
105	Scanner Transmission: BW	*CTL	

Printer Service Mode

Printer Service Mode

1001	Bit Switch			
001	Bit Switch 1		0	1
	bit 0	DFU	-	-
	bit 1	Responding with the hostname as the sysName	Model name (PnP name)	Hostname
		This BitSwitch can change the value of the sysName. 0 (default): Model name (PnP name) such as "MP C401SP" 1: Host name		
	bit 2	DFU	-	-
	bit 3	No I/O Timeout	0:Disabled	1:Enabled
		Enables/Disables MFP I/O Timeouts. If enabled, the MFP I/O Timeout setting will have no affect. I/O Timeouts will never occur.		
	bit 4	SD Card Save Mode	0:Disabled	1:Enabled
		If this bit switch is enabled, print jobs will be saved to the GW SD slot and not output to paper.		
	bit 5	[PS and PDF] Paper size error margin	±5pt	±10pt
		When a PS job is printed by using a custom paper size, the job might not be printed because of a paper size mismatch caused by a calculation error. By default, the error margin for matching to a paper size is ±5 points. By enabling this BitSwitch, the error margin for matching to a paper size can be extended to ±10 points.		
	bit 6	Not used	-	-
	bit 7	[RPCS,PCL]: Printable area frame border	0: Disable	1: Enable
		Prints all RPCS and PCL jobs with a border around the printable area.		

1001		Bit Switch	
002	Bit Switch 2	0	1
	bit 0	Not used	-
	bi 1	DFU	-
	bit 2	Applying a Collate Type	Shift Collate Normal Collate
	<p>A collate type (shift or normal) will be applied to all jobs that do not explicitly define a collate type.</p> <p>Note: If #5-0 is enabled, this BitSwitch has no effect.</p>		
	bit 3	[PCL5e/c.PS]: PDL Auto Switching	0: Enabled 1: Disabled
	<p>Enables/disable the MFPs ability to change the PDL processor mid-job.</p> <p>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.</p>		
	bit 4	Not used	-
	bit 5	DFU	-
	bit 6	Not used	-
	bit 7	DFU	-

1001		Bit Switch	
003	Bit Switch 3	0	1
	bit 0 to 1	DFU	-
	bit 2	[PCL5e/c]: Legacy HP compatibility	0:Disabled 1:Enabled
	<p>Uses the same left margin as older HP models such as HP4000/HP8000.</p> <p>In other words, the left margin defined in the job (usually "<ESC>*r0A") will be changed to "<ESC>*r1A".</p>		
	bit 3 to 7	DFU	-

1001	Bit Switch			
004	Bit Switch 4		0	1
	bit 0 to 2	DFU	-	-
	bit 3	Not used	-	-
	bit 4 to 5	DFU	-	-
	bit 6	Not used	-	-
	bit 7	DFU	-	-

1001	Bit Switch			
005	Bit Switch 5		0	1
	bit 0	Not used	-	-
	bit 1	Multiple copies if a paper size or type mismatch occurs	0:Disabled (Single copy)	1:Enabled (Multiple copy)
		If a paper size or type mismatch occurs during the printing of multiple copies, only a single copy is output by default. Using this bit switch, the device can be configured to print all copies even if a paper mismatch occurs.		
	bit 2	Prevent SDK applications from altering the contents of a job.	0:Disabled	1:Enabled
		Enable: SDK applications will not be able to alter print data. This is achieved by preventing SDK applications from accessing a module called the "GPS Filter". Note: The main purpose of this bit switch is for troubleshooting the effects of SDK applications on data.		
	bit 3	[PS] PS Criteria	0: Pattern3	1: Pattern 1
		Change the number of PS criterion used by the PS interpreter to determine whether a job is PS data or not. Pattern3: (2 to 4): The larger the pattern number, the greater the number of criterion used. Pattern 4 includes most PS commands. Pattern 1: A small number of PS tags and headers		

1001		Bit Switch		
	bit 4	Increase max. number of stored jobs.	0:Disabled (100)	1:Enabled
		Changes the maximum number of jobs that can be stored on the HDD. The default (disabled) is 100. If this is enabled, the max. will be raised to 750 or 1000 depending on the model.		
	bit 5	Not used	-	-
	bit 6	Method for determining the image rotation for the edge to bind on.	0:Disabled	1:Enabled
		Enable: The image rotation will be performed as they were in the specifications of older models for the binding of pages of mixed orientation jobs. The old models are below: - PCL: Pre-04A models - PS/PDF/RPCS: Pre-05S models		
	bit 7	Letterhead mode printing	0:Disabled	1:Enabled (Duplex)
		Routes all pages through the duplex unit. If this is disabled, simplex pages or the last page of an odd-paged duplex job are not routed through the duplex unit. This could result in problems with letterhead/pre-printed pages. Only affects pages specified as Letterhead paper.		

1001		Bit Switch		
006	Bit Switch 6		0	1
	bit 0	Not used	-	-
	bit 1 to 5	DFU	-	-
	bit 6	Not used	-	-
	bit 7	DFU	-	-

1001	Bit Switch			
007	Bit Switch 7		0	1
	bit 0	Not used	-	-
	bit 1 to 7	DFU	-	-

1001	Bit Switch			
008	Bit Switch 8		0	1
	bit 0 to 2	DFU	-	-
	bit 3 to 4	Not used	-	-
	bit 5	DFU	-	-
	Bit 6 to 7	Not used	-	-

1001		Bit Switch		
009	Bit Switch 9		0	1
	bit 0	PDL Auto Detection timeout of jobs submitted via USB or Parallel Port (IEEE 1284).	0:Disabled (Immediately)	1:Enabled (10 seconds)
	To be used if PDL auto-detection fails. A failure of PDL autodetection does not necessarily mean that the job can not be printed. This bit switch tells the device whether to time-out immediately (default) upon failure or to wait 10 seconds.			
	bit 1	Not used	-	-
	bit 2	Job Cancel	0:Disabled (Not cancelled)	1:Enabled (Cancelled)
Enable: All jobs will be cancelled after a jam occurs. Note: If this bit switch is enabled, printing under the following conditions might result in problems: - Job submission via USB or parallel port - Spool printing (WIM > Configuration > Device Settings > System)				
	bit 3	Not used	-	-
	bit 4	Timing of the PDL Status ReadBack (JOB END) when printing multiple collated copies.	0:Disabled	1:Enabled
This bit switch determines the timing of the PDL USTATUS JOB END sent when multiple collated copies are being printed. Disable (=0 (default)): JOB END is sent by the device to the client after the first copy has completed printing. This causes the page counter to be incremented after the first copy and then again at the end of the job. Enable (=1): JOB END is sent by the device to the client after the last copy has finished printing. This causes the page counter to be incremented at the end of each job.				

1001		Bit Switch	
009	Bit Switch 9	0	1

1001		Bit Switch		
bit 5	Display UTF-8 text in the operation panel	0:Enabled	1:Disabled	
	<p>Enable (=0): Text composed of UTF-8 characters can be displayed in the operation panel.</p> <p>Disable (=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 bit switch is enabled (=0).</p>			
bit 6	Disable super option	0:Enabled	1:Disabled	
	<p>Switches super option disable on / off. If this is On, multiple jobs are grouped at LPR port. PJI settings are enabled even jobs that are specified queue names are sent.</p>			
bit 7	Enable/Disable Print from USB/SD's Preview function	0:Enabled	1: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		0	1
	bit 0 to 3	DFU	-	-
	bit 4	Not Used	-	-
	bit 5	Store and Skip Errored Job locks the queue	0: Queue is not locked after SSEJ	1: Queue locked after SSEJ
	If this is 1, then after a job is stored using Store and Skip Errored Job (SSEJ), new jobs cannot be added to the queue until the stored job has been completely printed.			
bit 6	Allow use of Store and Skip Errored Job if connected to an external charge device.		0: Does not allow SSEJ with ECD	1: Allows SSEJ with ECD
	If this is 0, Store and Skip Errored Job (SSEJ) will be automatically disabled if an external charge device is connected. Note: We do not officially support enabling this bit switch (1). Use it at your own risk.			
bit 7	Job cancels remaining pages when the paid-for pages have been printed on an external charge device		Job does not cancel	Job cancels
	When setting 1 is enabled, after printing the paid-for pages on an external charge device, the job that includes any remaining pages will be canceled. This setting will prevent the next user from printing the unnecessary pages from the previous user's print job.			

1001		Bit Switch		
011	Bit Switch B		0	1
	bit 0	Show Menu List	Hide Menu List	Show Menu List
If this is 0, the Menu List button will be removed from Printer Features.				

1001		Bit Switch		
		Print job interruption	Does not allow interruption	Allow interruption
	bit 1	<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>		
		Switch for enabling or disabling Limitless Paper Feeding for the Bypass Tray	0: Enable	1: Disable
	bit 2	<p>When the Bypass Tray is the target of the Auto Tray Select and Any Size/Type is configured for the Tray Setting Priority setting of the Bypass Tray, this BitSwitch can switch the behavior whether or not Limitless Paper Feeding is applied to the Bypass Tray.* The default is Enabled (=0).</p> <p>* Limitless Paper Feeding will try a matching tray of the next highest priority if a job specified to Auto Tray Select as the tray setting is submitted and the tray runs out of paper.</p> <p>Enabled (=0: Default): Limitless Paper Feeding is applied to the Bypass Tray.</p> <p>If a tray other than the Bypass Tray matches the job's paper size and type but has run out of paper, printing will occur from the Bypass Tray.</p> <p>Disabled (=1): Limitless Paper Feeding is not applied to the Bypass Tray.</p> <p>If a tray other than the Bypass Tray matches the job's paper size and type but has run out of paper, printing will stop and an alert will appear on the LCD screen, stating that the tray has run out of paper. This prevents unexpected use of the Bypass Tray.</p> <p>Limitations when this BitSwitch is set to "1":</p> <ul style="list-style-type: none"> - The "Paper Tray Priority: Printer" setting must be configured to a tray other than the Bypass Tray. - Jobs that contain more than one paper size cannot be printed. 		
	bit 3	DFU	-	-

1001 Bit Switch				
		Add "Apply Auto Paper Select" is the condition that decides if the device's paper size or paper type should be overwritten.	0:Enabled	1:Disabled
	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) 		
	bit 5 to 7	Not Used	-	-

1001 Bit Switch				
012	Bit Switch C		0	1
	bit 0	DFU	-	-
	bit 1 to 4	Not Used	-	-
		Change the user ID type displayed on the operation panel	0:Enabled	1:Disabled
	bit 5	<p>As of 15S models, the Login User Name can be displayed on the operation panel. The user ID type displayed on the operation panel can be changed by configuring BitSwitch #12-5 as follows:</p> <ul style="list-style-type: none"> - 0 (default): Login User Name - 1: User ID. If this is enabled, User ID will be displayed, which is equivalent to the behavior exhibited in 14A and earlier models. 		
		Ability to use AirPrint	Enabled	Disabled
	bit 6	For 15S and later models that support AirPrint, AirPrint can be disabled by changing this Bit Switch from 0 (default) to 1.		
	bit 7	Not Used		

1003	[Clear Setting]	
1003-001	Initialize System	Initializes settings in the System menu of the user mode.
1003-003	Delete Program	DFU

1004	[Print Summary]	
1004-001	Service Summary	Prints the service summary sheet (a summary of all the controller settings).

1005	[Display Version]	
1005-002	Printer Version	Displays the version of the controller firmware.

1006	[Sample/Locked Print]	
1006-001	O:Link with Doc. Srv 1:Enable	-

1101	[ToneCtSet]	
1101-001	Tone (Factory)	-
	Recalls a set of gamma settings. This can be either a) the factory setting, b) the previous setting, or c) the current setting.	

1102	[Resolution Settings]	
Sets the printing mode (resolution) for the printer gamma adjustment. The asterisk (*) shows which mode is set.		
<ul style="list-style-type: none"> • 00: *1200x1200Photo • 01: 600x600Text • 02: 1200x1200Text • 03: 1200x600Text • 04: 600x600Photo • 05: 1200x600Photo • 06: 600x600Text • 07: 600x600Text 		

1102-001	Tone Control Mode Selection	[0 to 99 / 0 / 1/step]
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1103	[PrnColorSheet]	
1103-001	ToneCtlSheet	Prints the test page to check the color balance before and after the gamma adjustment.
1103-002	ColorChart	

3

1104	[ToneCtlValue]	
	Adjusts the printer gamma for the mode selected in the Mode Selection menu.	
1104-001	Black: Highlight	[0 to 30 / 0 / 1/step]
1104-021	Cyan: Highlight	
1104-041	Magenta: Highlight	
1104-061	Yellow: Highlight	
1104-002	Black: Shadow	[0 to 30 / 0 / 1/step]
1104-022	Cyan: Shadow	
1104-042	Magenta: Shadow	
1104-062	Yellow: Shadow	
1104-003	Black: Middle	[0 to 30 / 0 / 1/step]
1104-023	Cyan: Middle	
1104-043	Magenta: Middle	
1104-063	Yellow: Middle	
1104-004	Black: IDmax	[0 to 30 / 0 / 1/step]
1104-024	Cyan: IDmax	
1104-044	Magenta: IDmax	
1104-064	Yellow: IDmax	

1105	[Save Tone Control Value]	
	Saves the print gamma (adjusted with the Gamma Adj.) as the new Current Setting. Before the machine stores the new "current settingR", it moves the data stored as the "current setting" to the "previous setting" memory-storage location.	
1105-001	Save Tone Control Value	[EXECUTE]

1106	[Toner Limit]	
	Adjusts the maximum toner amount for image development.	
1106-001	Toner Limit Value	[100 to 400 / 0 / 1/step]

1110	[Media Print Device Setting]	
	Enable or disable the media print support function. 0: Disable, 1:Enable	
1110-002	0: Disable 1:Enable	[0 to 1 / 1 / 1/step]

1111	[All Job Delete Mode]	
	- 0: Exclusive New Job, 1:Including New Job	
1110-002	0: Exclusive New Job 1: Including New Job	[0 or 1 / 1 / 1/step]

Scanner Service Mode

SP1-XXX

1001	[Scan Nv Version]		
1-001-005	-	CTL *	[- / - / - / step]
1005	[Erase margin(Remote scan)]		
1-005-001	Range from 0 to 5 mm	CTL *	[0 to 5 / 0 / 1 / step]
1009	[Remote scan disable]		
1-009-001	0:enable 1:desable	CTL *	[0 or 1 / 0 / 1 / step]
1010	[Non Display ClearLight PDF]		
1-010-001	0:Display 1:Nondisplay	CTL *	[0 or 1 / 0 / 1 / step]
1011	[Org Count Disp]		
1-011-001	0:ON 1:OFF	CTL *	[0 or 1 / 0 / 1 / step]
1012	[UserInfo Release]		
1-012-001	0:No 1:Yes	CTL *	[0 or 1 / 1 / 1 / step]
1013	[Scan to Media Device Setting]		
1-013-002	0:OFF 1:ON	CTL *	[0 or 1 / 1 / 1 / step]
1014	[Scan to Folder Pass Input Set]		
1-014-001	0:OFF 1:ON	CTL *	[0 or 1 / 0 / 1 / step]
1041	[Scan:FlairAPI Setting]		

1-041-001	0x00 - 0xff	CTL *	[0 to 255 / 0 / 1 / step]
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SP2-XXX

2021	[Compression Level(Grayscale)]		
2-021-001	Comp1:5-95	CTL *	[5 to 95 / 20 / 1 / step]
2-021-002	Comp2:5-95	CTL *	[5 to 95 / 40 / 1 / step]
2-021-003	Comp3:5-95	CTL *	[5 to 95 / 65 / 1 / step]
2-021-004	Comp4:5-95	CTL *	[5 to 95 / 80 / 1 / step]
2-021-005	Comp5:5-95	CTL *	[5 to 95 / 95 / 1 / step]

2024	[Compression ratio of ClearLightPDF]		
2-024-001	Compression Ratio(Normal)	CTL *	[5 to 95 / 25 / 1 / step]
2-024-002	Compression Ratio(High)	CTL *	[5 to 95 / 20 / 1 / step]

2025	[Compression ratio of ClearLightPDF JPEG2000]		
2-025-001	Compression Ratio(Normal) JPEG2000	CTL *	[5 to 95 / 25 / 1 / step]
2-025-002	Compression Ratio(High) JPEG2000	CTL *	[5 to 95 / 20 / 1 / step]

2030	[OCR PDF DetectSens]		
2-030-001	White Lumi Value: 0 - 255	CTL *	[0 to 255 / 250 / 1 / - / step]
2-030-002	White Pix Ratio: 0 - 100	CTL *	[0 to 100 / 80 / 1 / - / step]

3. SP Mode Tables

2-030-003	White Tile Ratio: 0 -100	CTL *	[0 to 100 / 80 / 1 / - / step]
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Input and Output Check

Input Check Table (SP5-803)

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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SP	Description	Reading	
		0	1
5-803-001	Tray: Paper Set Sensor	Paper detected	Paper not detected
5-803-002	Bypass: Paper Set Sensor	Paper detected	Paper not detected
5-803-003	RVS: Paper Exit Sensor	Paper detected	Paper not detected
5-803-004	Registration Sensor	Paper detected	Paper not detected
5-803-005	Duplex: Exit Sensor	Paper detected	Paper not detected
5-803-006	Duplex Entrance Sensor	Paper detected	Paper not detected
5-803-011	Front Interlock SW	Open	Close
5-803-012	Right Interlock SW	Open	Close
5-803-013	Exhaust Fan: Lock	Lock	Normal
5-803-014	Intake Fan: Lock	Lock	Normal
5-803-015	Main Motor Lock	Lock	Normal
5-803-016	Key Card Set	Set	Not set
5-803-017	Key Counter Set		
5-803-018	BICU Version		
5-803-019	Right Door Open/Close Switch	Close	Open
5-803-020	Paper Exit Sensor	Paper detected	Paper not detected

SP	Description	Reading	
		0	1
5-803-200	Scanner HP Sensor		
5-803-201	Platen Cover Sensor		
5-803-211	Bank 1: Feed Cover Open Detection		
5-803-212	Bank 1: Paper End Sensor		
5-803-213	Bank 1: Feed Sensor		
5-803-214	Bank 1: Upper Limit Sensor		
5-803-215	Bank 1: Tray Set Sensor		

Output Check Table (SP5-804)

Activates the electrical components for functional check.

It is not possible to activate more than one component at the same time.

SP	Display
5-804-001	Main Motor: CW: Standard Spd
5-804-002	Main Motor: CW: Low Spd
5-804-005	Toner Bottle Motor: CCW
5-804-008	Intake Fan Motor: Full Spd
5-804-009	Intake Fan Motor: Half Spd
5-804-010	HVP: Transfer: -
5-804-011	HVP: Transfer: +
5-804-012	HVP.: Separation Voltage
5-804-013	HVP.: Development
5-804-014	HVP.: Charge
5-804-015	Potential Sensor
5-804-016	Fusing Solenoid

SP	Display
5-804-017	Drum Quenching LED
5-804-018	Paper Feed CL
5-804-019	Registration CL
5-804-020	Bypass CL
5-804-021	Duplex: RVS Sensor CL
5-804-022	Paper Exit RVS CL
5-804-023	Paper Exit CL
5-804-024	Anti-Condensation Heater
5-804-027	Exhaust Fan Motor
5-804-028	Pre Cleaning Lamp
5-804-049	Polygon Motor: High Spd
5-804-050	Polygon Motor: Low Spd
5-804-202	Scanner Lamp: Color
5-804-203	Scanner Lamp: Bk
5-804-241	Bank 1: Feed Motor
5-804-242	Bank 1: Paper feed clutch

4. Device Software Configuration

Printing Features

Behavior of USB Printer Detection

An MFP/LP connected via USB sends its product name and unique serial number. With the data, the machine determines whether requires a printer driver for the USB device to be installed.

SP5-844-005 allows you to change how to determine the MFP/LP requires a printer driver installation:

- **OFF**

If SP5-844-005 is set to OFF, the unique serial number of the device is sent to the computer. As a result, if the device is swapped out for a device of the same product, pop-up messages will appear, because the serial numbers between the two are different.

- **Level 1**

If SP5-844-005 is set to Level 1, a common serial number for the product such as "MP 305+" series is sent to the computer. As a result, if the device is swapped out for a device of the same product, pop-up messages will not appear because the devices are recognized as having the same serial number.

- **Level 2**

If SP5-844-005 is set to Level 2, a common serial number for all GW/GW+ models is sent to the computer. As a result, if a GW/GW+ device is swapped out for a different GW/GW+ device, pop-up messages will not appear because the devices are both recognized as being based on GW/GW+.

Scanning Features

None

Management Features

How to Disable the Document Server Function

1. Enter 'Copy' SP mode.
2. Change SP5-967-001 to 1. (0:ON 1:OFF)
3. Reboot the machine.

Note

- When the above SP mode (SP5-967-001) is OFF (=1), both the Document Server and Locked Print functions will be disabled.

How to Use Locked Print When the Document Server Is Disabled

1. Enter 'Printer' SP mode.
2. Set SP1-006-001 to 1.
0: Link with Doc. Srv (default)
Locked print will only be enabled if the document server is enabled.
1: Enable
Enable Locked
Print will be enabled no matter the status of the document server.
3. Turn OFF then ON the main power.

Security Features

How to Restrict Access to the WIM Job Menu

1. Enter 'Printer' SP mode.
2. Set SP5-888-001
0: (default): "Job" menu is enabled.
1: "Job" menu is disabled.

Note

- This setting takes effect only if user authentication (other than User Code auth.) is disabled.



How to Restrict Web Image Monitor Access to the Document Server

System (Copier) SP 5-885-020 bit 0, 1 and 7 restrict Web Image Monitor access to the DS. It disables the following WIM settings:

- The entire Document Server menu (shown in blue in fig1)
- Job > Document Server (shown in red in fig1)

See the following for details:

Bit 0:

Bit 0 = 0 (default): Allows anyone (guests, users, admins) access to the DS via WIM.

Bit 0 = 1: Prevents everyone from accessing the DS via WIM.

Bit 1:

Bit 1 = 0 (default): Allows anyone (guests, users, admins) access to the DS via WIM.

Bit 1 = 1: Only administrators can access the DS via WIM.

↓ Note

- Without admin privileges, even authenticated users will be unable to access the DS via WIM.

Bit 7:

Bit 7 = 0 (default): Allows anyone (guests, users, admins) access to the DS via WIM.

Bit 7 = 1: Only administrators and authenticated users can access the DS via WIM.

The most restrictive result of combining these three configurations will take priority. So for example:

Bit 0 = 0

Bit 1 = 1

Bit 7 = 1

As Bit 1 = 1 is the most restrictive of the three, it will take precedence over the other two and only administrators will be able to access the DS via WIM.



↓ Note

- In order for SP5-885-020 to have any effect, the Document Server must be enabled (SP5-967-001=0). For information about SP5-967-001, refer to Disabling the Document Server using System SP5-967-001 and Printer SP1-006-001.
- Access to the entire "Job" menu can be restricted using SP 5-888-001. For details, refer to Use of SP 5-888-001 to restrict access to the "Job" menu on WIM.

User Authentication for Specific MFP Applications

The SP5-420 settings enable/disable User Authentication for specific MFP applications.

SP 5-420	User Authentication	Value (Default: 0)	
SP5-420-001	Copy	0 (ON)	1 (OFF)
SP5-420-011	Document Server		
SP5-420-021	Fax		
SP5-420-031	Scanner		
SP5-420-041	Printer		

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1. Enable User Authentication for the device as a whole:

User Tools > System Settings > Administrator Tools > User Authentication Management

2. Use the SP5-420 settings to specify the applications to which User authentication is to apply.

Connectivity

None

MEMO

MEMO

MEMO