Model Bc-C1
Machine Code: D245/D246/D247

Field Service Manual

June 2015

Important Safety Notices

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. If any adjustment or operation check has to be made with exterior covers off or open while the main switch is turned on, keep hands away from electrified or mechanically driven components.
5. If the [Start] key is pressed before the machine completes the warm-up period (the [Start] key starts blinking red and green), keep hands away from the mechanical and the electrical components as the machine starts making copies as soon as the warm-up period is completed.
6. The inside and the metal parts of the fusing unit become extremely hot while the machine is operating. Be careful to avoid touching those components with your bare hands.
7. To prevent a fire or explosion, keep the machine away from flammable liquids, gases, and aerosols.

Health Safety Conditions

1. For the model with ozone filters installed at the factory, never operate the machine without the ozone filters installed.
2. For the model with ozone filters installed at the factory, always replace the filters with the specified types at the proper intervals.
3. Toner and developer are non-toxic, but if you get either of them in your eyes by accident, it may cause temporary eye discomfort. Try to remove with eye drops or flush with water as first aid. If unsuccessful, get medical attention.

Observance of Electrical Safety Standards

1. The machine and its peripherals must be installed and maintained by a customer service representative who has completed the training course on those models.

Safety and Ecological Notes for Disposal

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

⚠CAUTION

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

Handling Toner

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

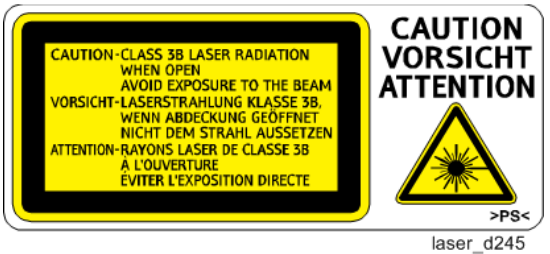
Laser Safety

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. CAUTION MARKING:    laser_d245

Safety Precautions for This Machine

Before moving the mainframe:

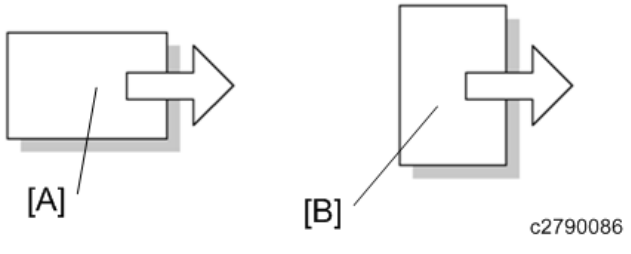
- Disconnect all peripheral units (finisher, LCT, etc.) from the mainframe.
- Hold the four holders of the mainframe to lift the mainframe. For details, see the “Copier Installation” in the field service manual.

Conventions in this Manual

Symbols and Abbreviations

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

	Screw
	Shoulder screw
	Black screw (TCRU)
	Connector
	FFC (Flat Film Connector)
	Harness clamp
	Clip
	E-ring
	C-ring
	Timing belt
	Spring
SEF	Short Edge Feed
LEF	Long Edge Feed



[A] Short Edge Feed (SEF)

[B] Long Edge Feed (LEF)

Cautions, Notes, etc.

The following headings provide special information:

⚠WARNING

- FAILURE TO OBEY WARNING INFORMATION COULD RESULT IN SERIOUS INJURY OR DEATH.

⚠CAUTION

- Obey these guidelines to ensure safe operation and prevent minor injuries.

Note

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

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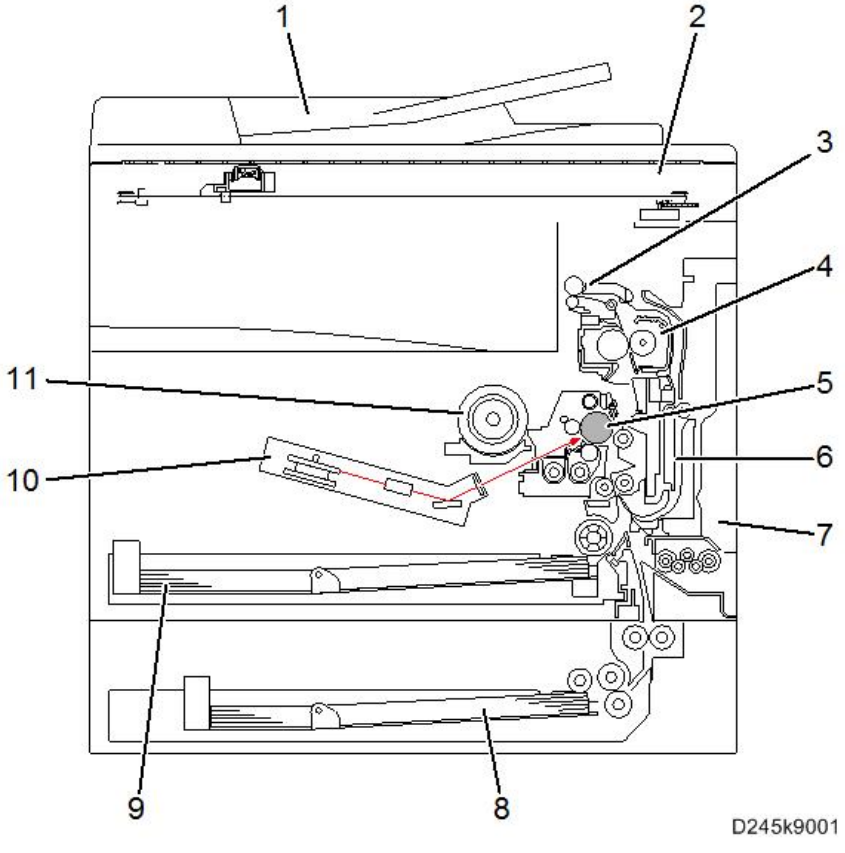
5. System Maintenance

6. Troubleshooting

1. Product Information

Product Overview

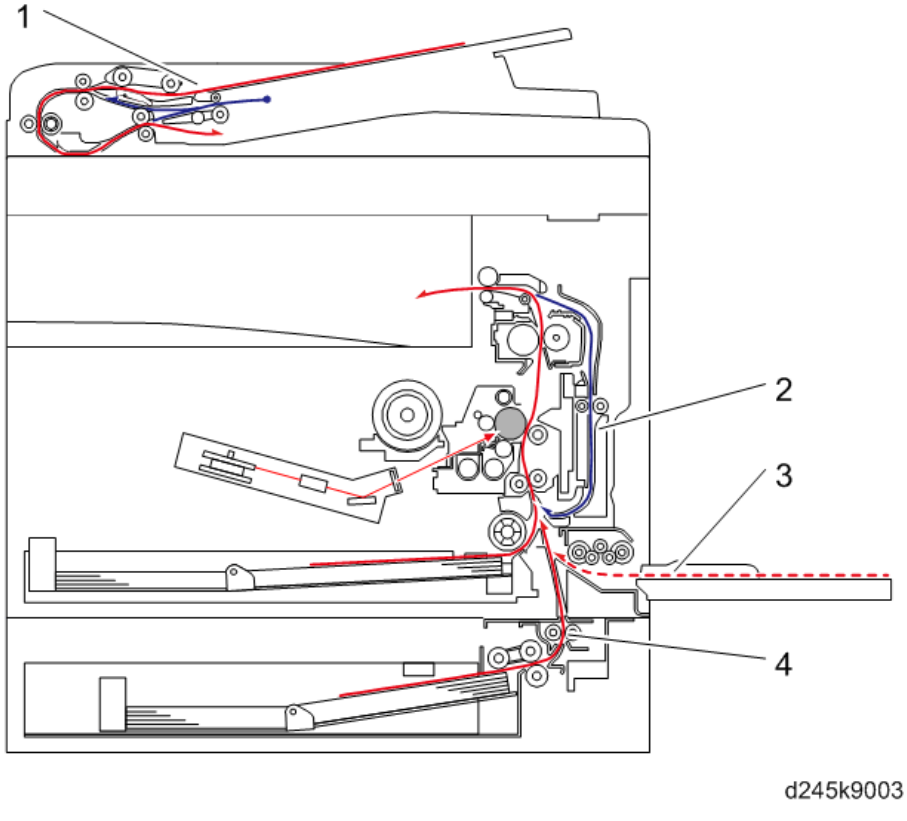
Component Layout



No.	Description	No.	Description
1	ADF unit (D247 only)	7	By-pass tray unit
2	Scanner unit	8	Paper feed unit (Option)
3	Paper exit / reverse unit (D246 / D247) Paper exit unit (D245)	9	Paper tray 1
4	Fusing unit	10	Laser unit

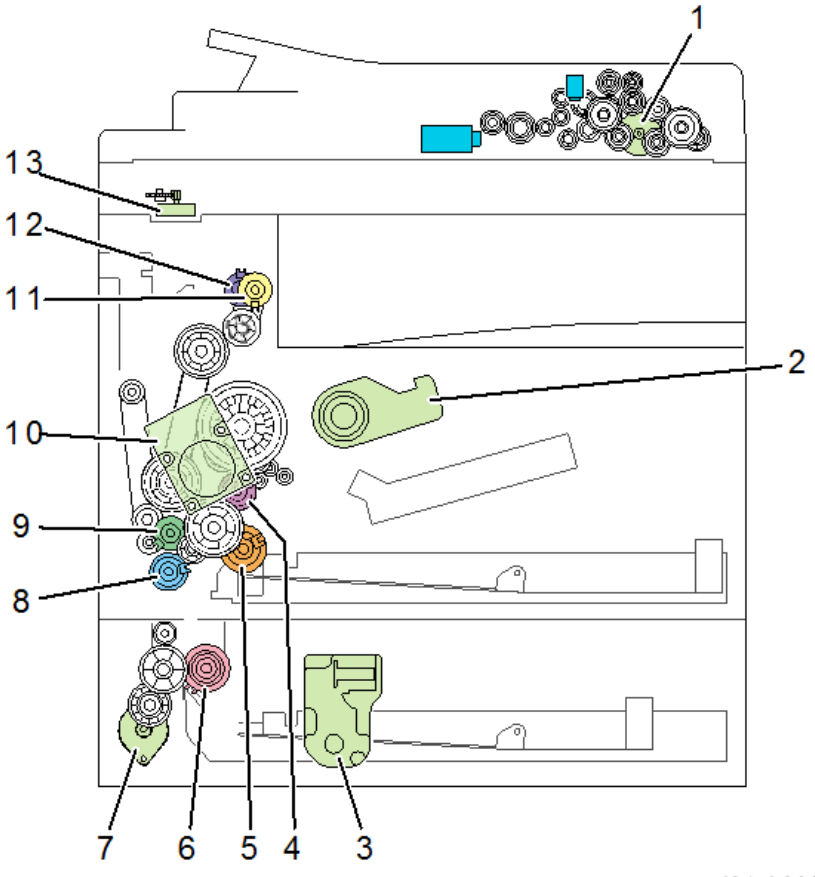
No.	Description	No.	Description
5	OPC drum	11	Toner supply unit
6	Duplex unit (D246 / D247 only)		

Paper Path



No.	Description	No.	Description
1	ADF unit (D247 only)	3	By-pass tray
2	Duplex unit (D246/D247 only)	4	Paper feed unit (Option)

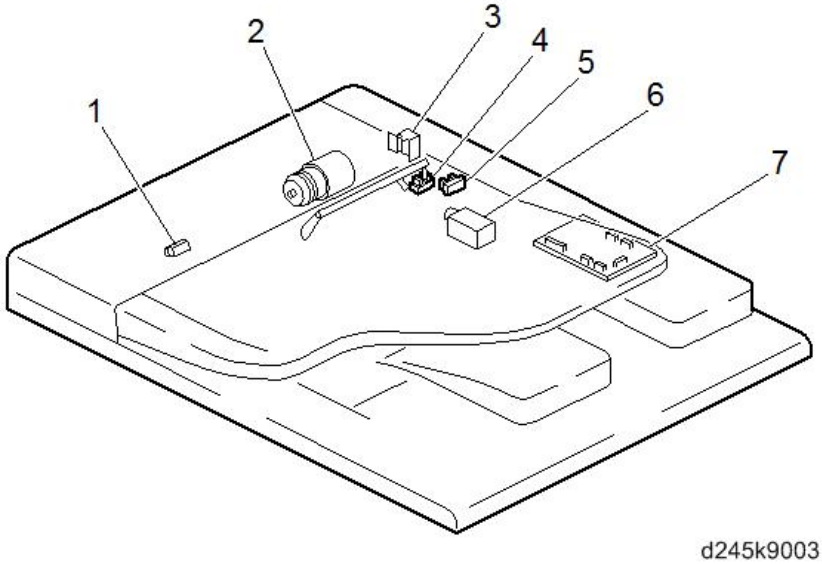
Drive Layout



No.	Description	No.	Description
1	ADF main motor (D247 only)	8	By-pass paper feed clutch
2	Toner supply motor	9	Duplex clutch (D246 / D247 only)
3	Tray lift motor (Option)	10	Main motor
4	Registration clutch	11	Reverse clutch (D246 / D247 only)
5	Paper feed clutch (Main)	12	Paper exit clutch (D246 / D247 only)
6	Paper feed clutch (Option)	13	Scanner motor
7	Transport motor (Option)		

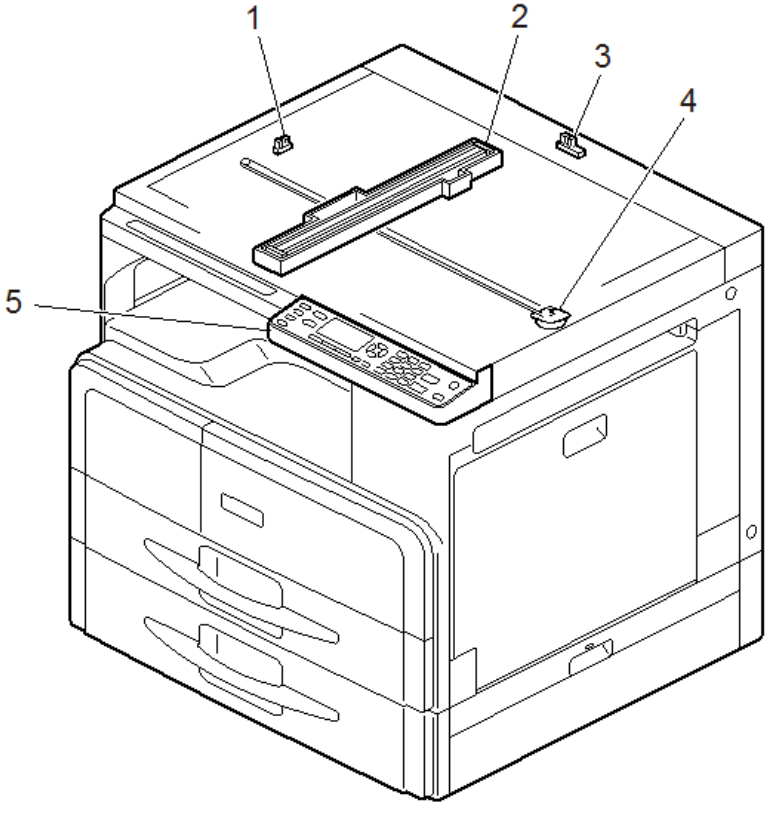
Parts Layout

ADF unit (D247 only)



No.	Description	No.	Description
1	ADF registration sensor	5	ADF cover sensor
2	ADF main motor	6	ADF inverter solenoid
3	ADF pick-up solenoid	7	ADF main board
4	Original set sensor		

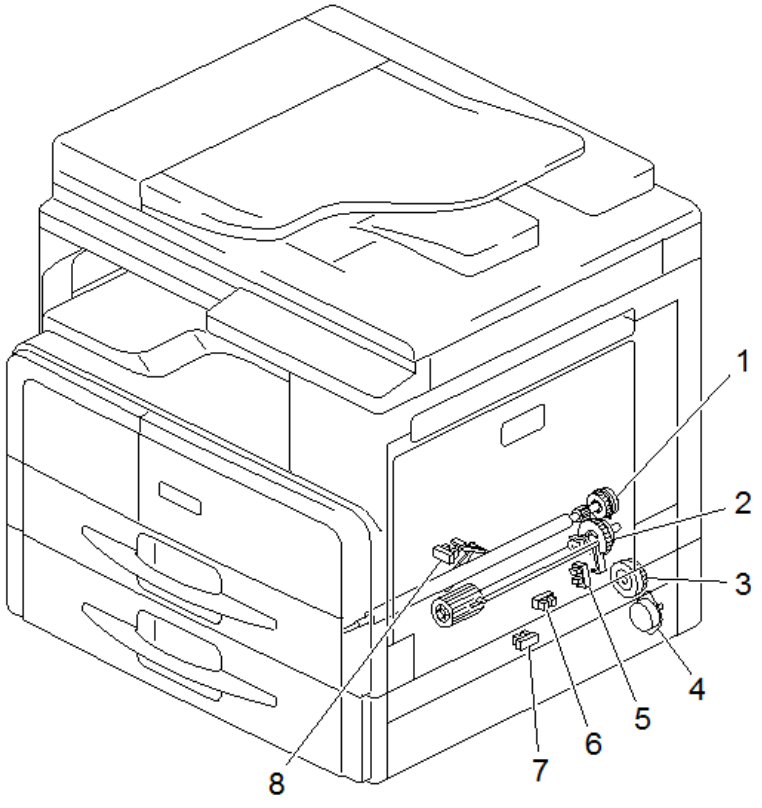
Scanner Unit



D245k9004

No.	Description	No.	Description
1	Scanner HP sensor	4	Scanner motor
2	CIS unit	5	Operation panel
3	Platen cover sensor		

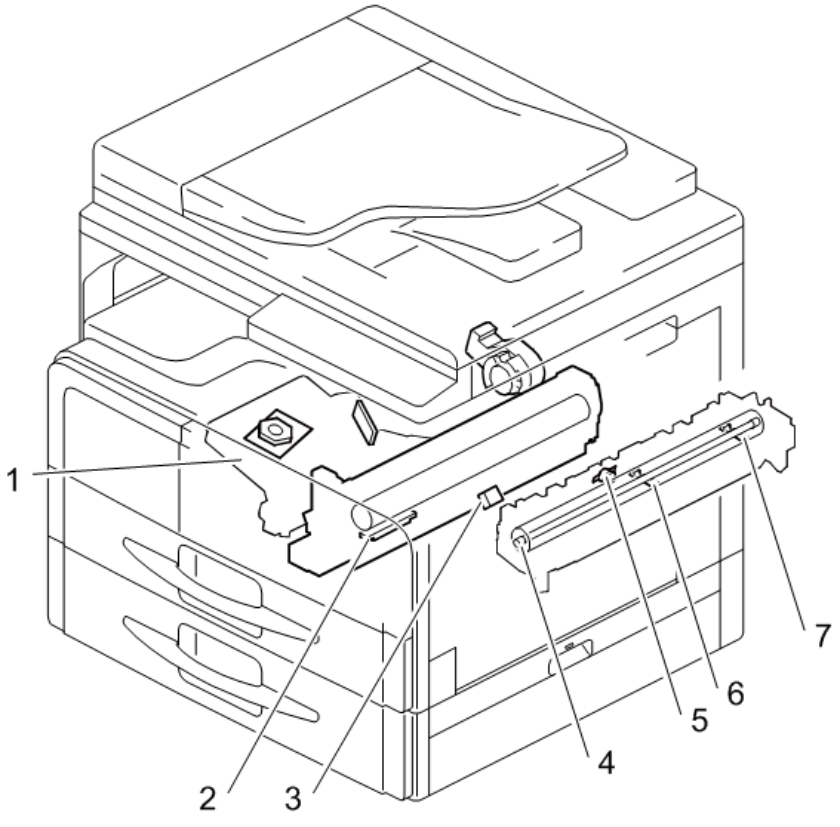
Paper Feed Unit



d245k9006

No.	Description	No.	Description
1	Registration clutch	5	Registration sensor
2	Paper feed clutch (Main)	6	Paper feed sensor (Option)
3	Paper feed clutch (Option)	7	Paper end sensor (Option)
4	Transport motor (Option)	8	Paper end sensor (Main)

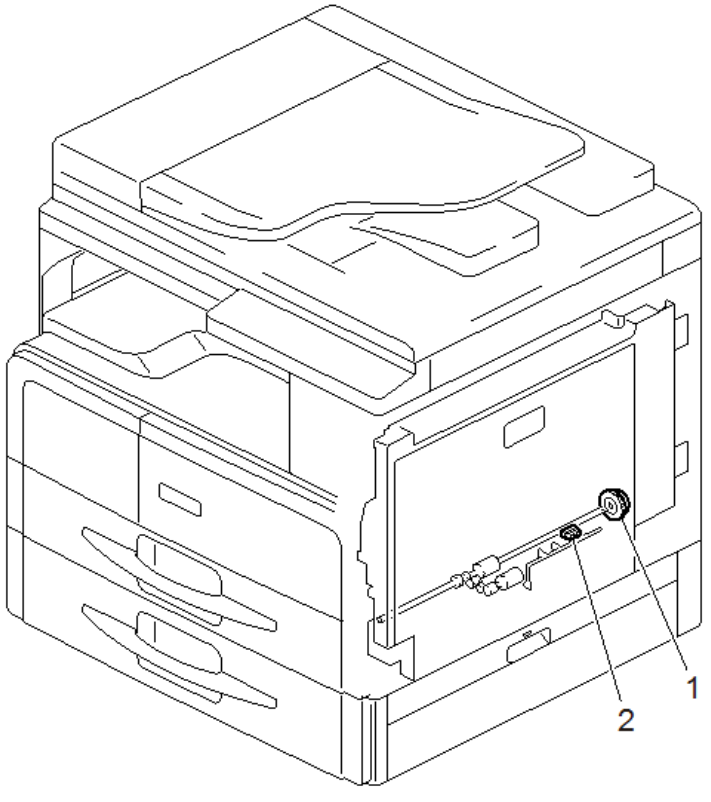
Laser Unit/ PCDU/ Fusing Unit



D245k9005

No.	Description	No.	Description
1	Laser unit	5	Thermostat
2	TD sensor	6	Thermistor (Center)
3	ID sensor	7	Thermistor (End)
4	Fusing lamp		

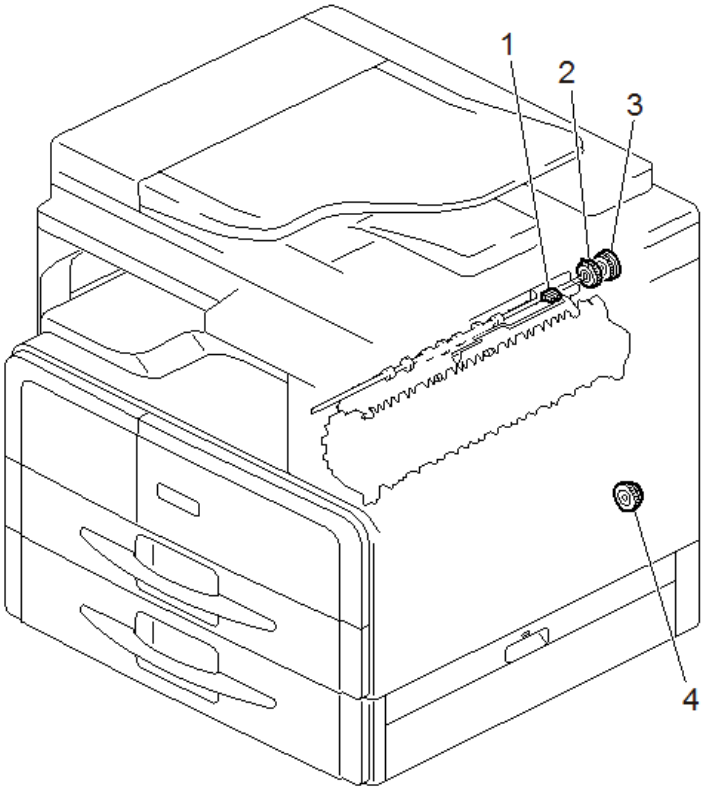
By-pass Unit



D245k9008

No.	Description	No.	Description
1	By-pass paper feed clutch	2	By-pass paper end sensor

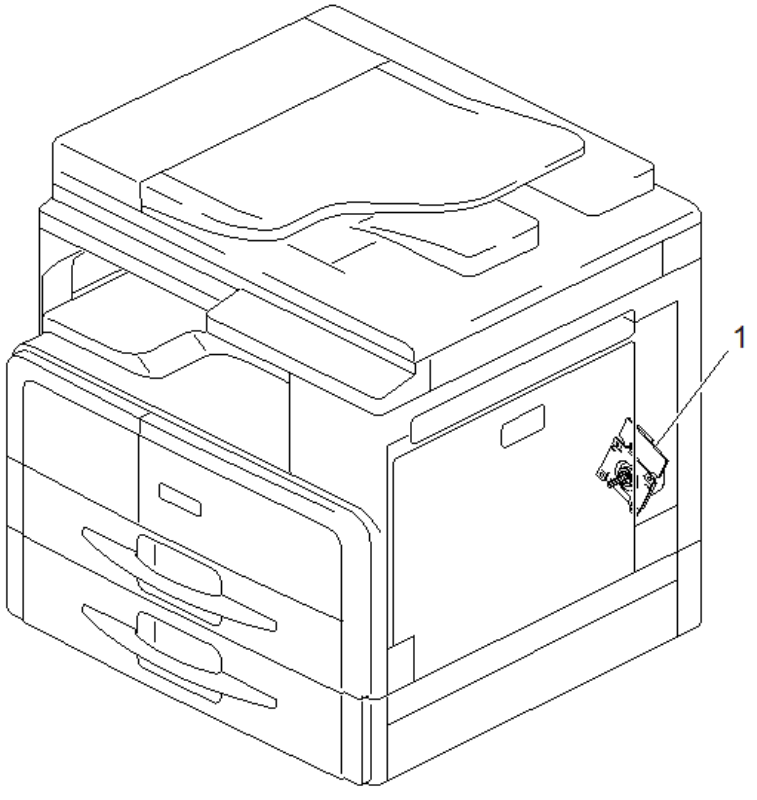
Paper Exit/ Reverse/ Duplex Unit



D245k9007

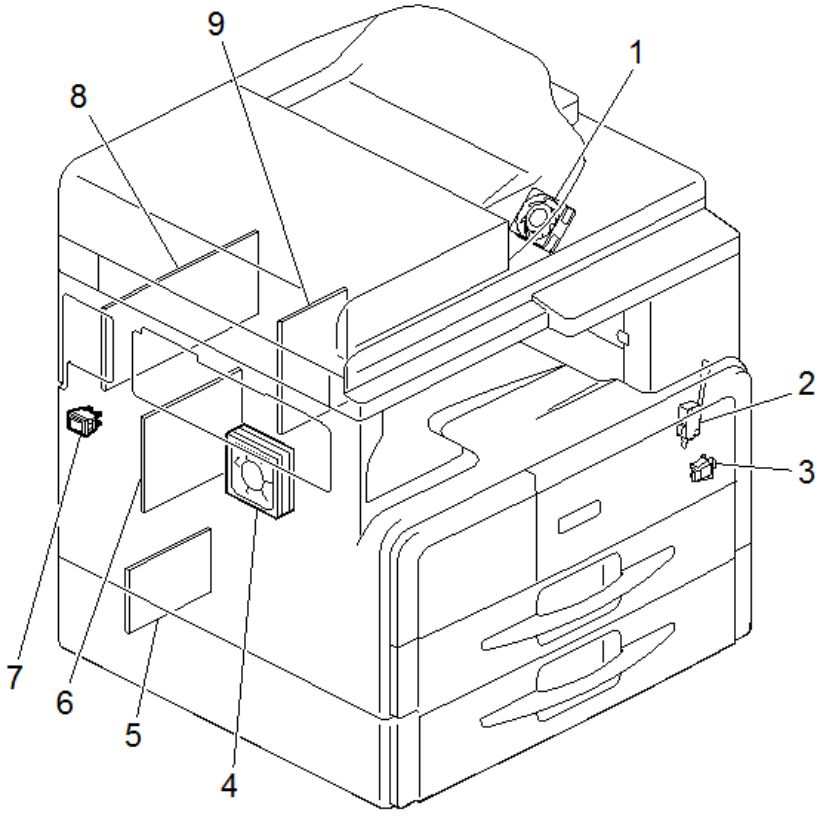
No.	Description	No.	Description
1	Paper exit sensor	3	Reverse clutch (D246 / D247 only)
2	Paper exit clutch (D246 / D247 only)	4	Duplex clutch (D246 / D247 only)

Drive Unit



No.	Description	No.	Description
1	Main motor		

Electrical Component

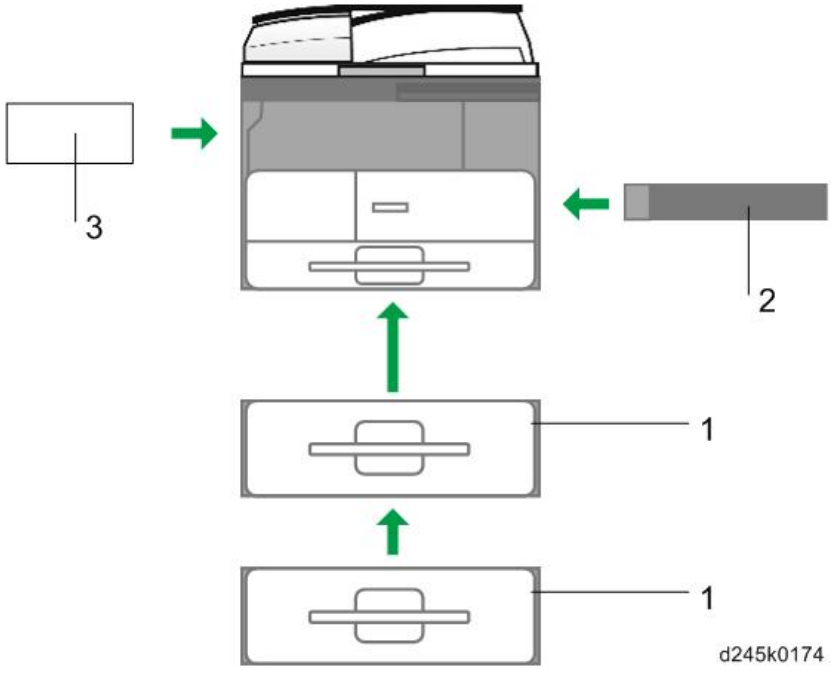


D245k9010

No.	Description	No.	Description
1	Exhaust fan	6	PSU
2	Door switch (Front door/Right door)	7	Main power switch
3	Right door switch	8	MPU
4	Main fan	9	HVP
5	PFU main board (Option)		

Machine Codes and Peripherals Configuration

System Configuration and Options



No.	Item	Machine Code
1	Paper Feed Unit PB2020	D3B1
2	By-pass Tray Cover Type M16	D3B7
3	DDST Unit Type M16	D3B2

Guidance for Those Who are Familiar with The Predecessor Product

Differences between Similar Models

D160/D161 vs. D245/D246/D247

Item	D160/D161	D245/D246/D247
APS in Book Scanning	Yes	No
Right Door Opening	Opened vertically	Opened horizontally
Angle of By-pass Tray at Opening	About 30 deg.	Almost flat
PCDU Connection to Mainframe	Drawer connector	Harness connector at front side of the machine
Tray Lift Motor	Yes	No
Automatic Paper Size Detection	Yes (Tray 1)	No
Scanner Unit Support Pillar	No	Yes
Machine Operation at Low Voltage Condition	No	Yes
Pressure Roller Release Lever	No	Yes
Firmware Updating Method	IC card	SD card
Jam Counter	Yes	No

Specifications

See “Appendices” for the following information:

- General Specifications
- Supported Paper Sizes
- Optional Equipment

2. Installation

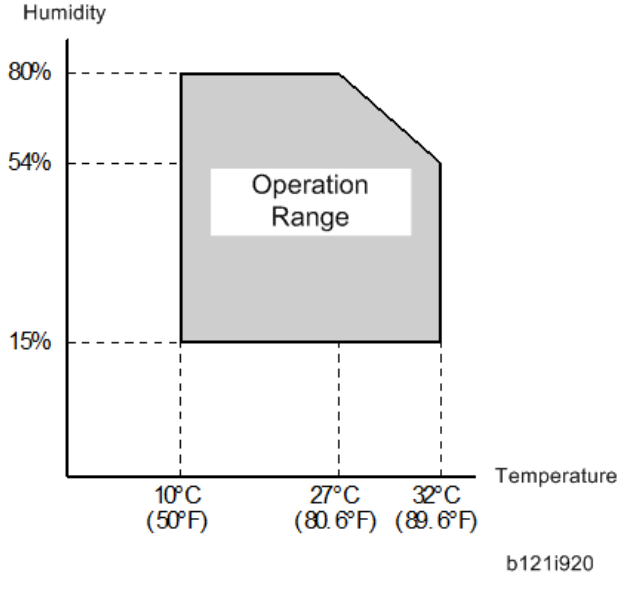
Installation Requirements

⚠CAUTION

- Before installing options, please do the following:
- Turn off the main switch and disconnect the power cord, and the network cable.

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)

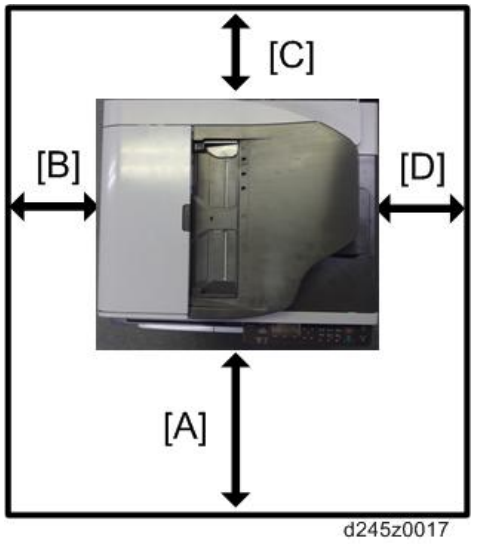
• Avoid areas exposed to sudden temperature changes: 1) Areas directly exposed to cool air from an air conditioner. 2) Areas directly exposed to heat from a heater.
• Do not place the machine in areas where it can get exposed to corrosive gases.
• Do not install the machine at any location over 2,000 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 copier near the power source, providing clearance as shown:



A (front): 750 mm (30")

B (left): 150 mm (6")

C (rear): 300 mm (12")

D (right): 450 mm (18")

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 at the front of the machine.

Machine Dimensions

- DF Model (D247)

  Width: 587 mm

  Depth: 581 mm

  Height: 537 mm
- Platen Model (D245/D246)

  Width: 587 mm

  Depth: 581 mm

  Height: 461 mm

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:

Latin America	120V - 127V, 60Hz, 10A
Europe, Latin America, Asia, China	220V - 240V, 50/60Hz, 5A

Copier Installation

Accessory Check

Check that you have the accessories in this list.

No.	Description	-17	-27	-29	-21 -25	Q'ty
1	Power cord	Y	Y	Y	Y	1
2	USB cable	Y	Y	Y	Y	1
3	Brand plate	Y	Y	Y	-	1
4	Application blank decal sheet	Y	Y	Y	Y	1
5	Environment symbol mark (China)	-	-	-	Y	1
6	Energy saving mark (China)	-	-	-	Y	1
7	Driver CD	Y	Y	Y	Y	1
8	EULA sheet	Y	Y	Y	Y	1
9	Caution sheet	Y	Y	Y	Y	1
10	Warranty sheet (China)	-	-	-	Y	1
11	EMC sheet	-	Y	-	-	1
12	Safety sheet	-	Y	-	-	1
13	Developer	-	-	-	Y	1
14	Toner bottle	-	-	-	Y	1
15	Paper size/tray number decal	Y	Y	Y	Y	1
16	Copy inhibit decal	-	Y	-	-	1

Installation Procedure

⚠CAUTION

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

1. **Remove filament tape and other padding.**

DF Model (D247)

d245z0001

Platen Model (D245/D246)

d245z0002

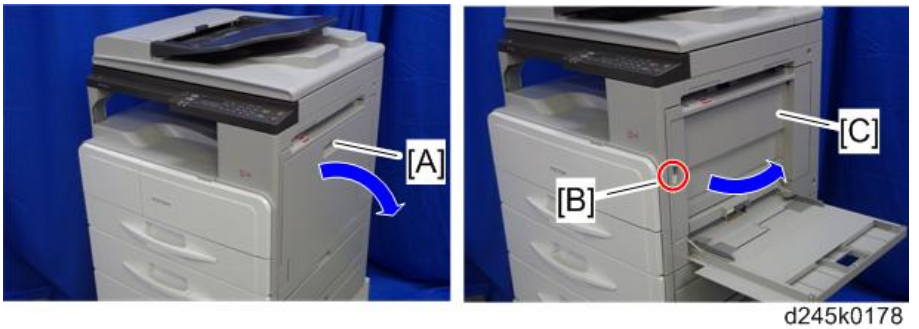
2. **Open the ADF [A] or platen cover [B], and then remove the sheet and filament tapes.**

d245k0177

3. **Hold the places shown below, and then lift the machine.**
   - Two persons are required to lift the machine.

d245z0005

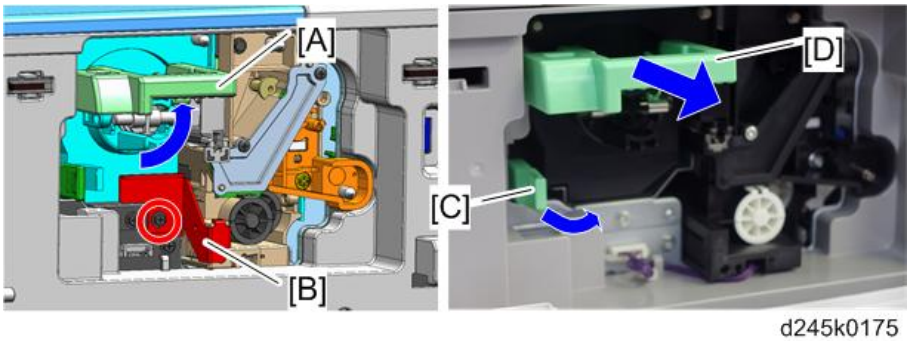
4. **Place the machine on a table or optional paper feed unit.**
5. **Open the by-pass tray [A], and then press the button [B] to open the right door [C].**



d245k0178

6. **Open the front door, and then pull the toner bottle holder lever [A] upward.**
7. **Remove the fixing bracket [B] (x 1).**

8. **Release the lock lever [C], and then pull the toner bottle holder [D].**

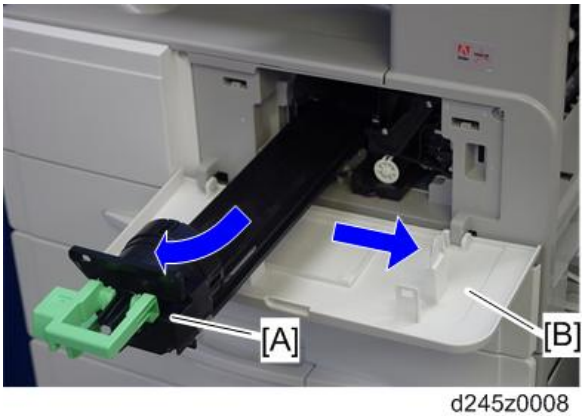


d245k0175

Note

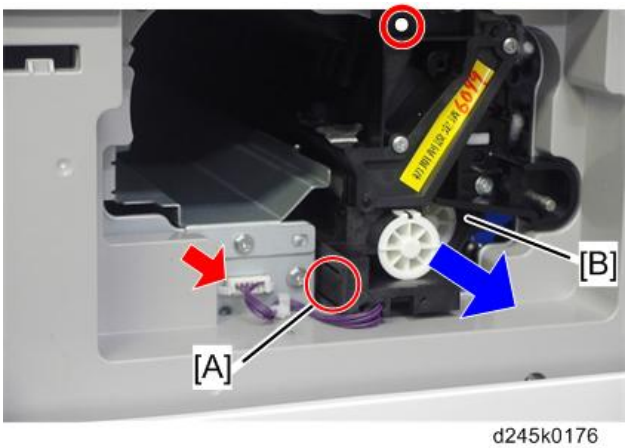
- The removed fixing bracket will not be used, so discard it.

9. **Remove the toner bottle holder [A] and the front door [B].**



d245z0008

10. **Hold the lock [A], and then remove the PCDU [B] (x 1, x 1).**

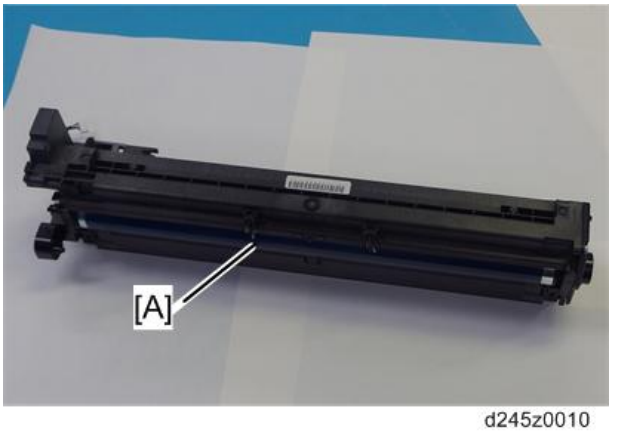


d245k0176

Note

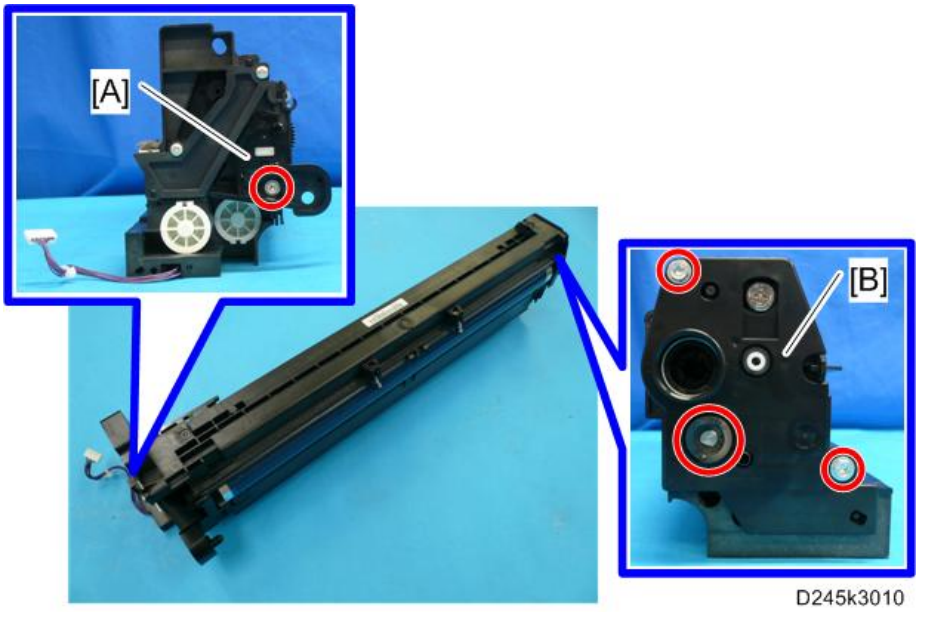
- The removed screw will not be used, so discard it.

11. Place sheets of paper on a flat surface, and then put the PCDU [A] on it.



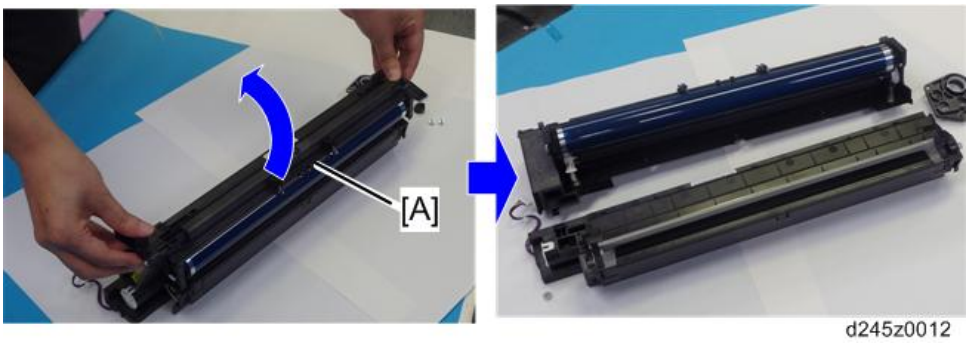
d245z0010

12. Remove the front face plate [A] (x 1) and rear face plate [B] (x 2, 1 coupling).



D245k3010

13. **Separate the PCDU [A] into the upper part and the lower part.**



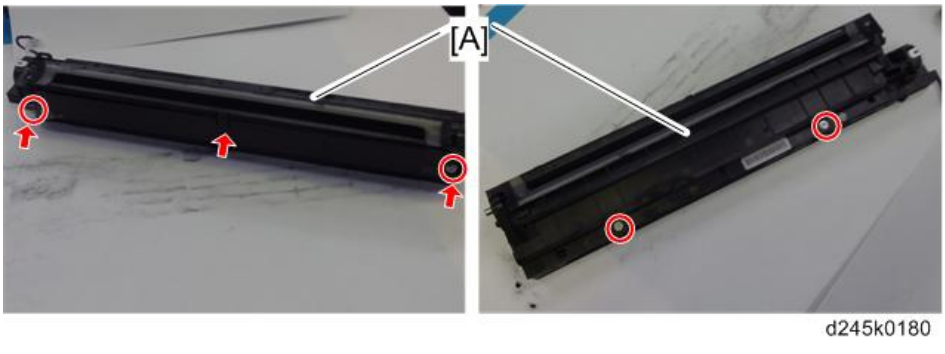
14. **Put a sheet of paper on a level surface and place the development unit on it.**

Note

- This prevents foreign material from getting on the sleeve rollers.

15. **Remove the upper case [A] of the development unit (x 4, x 3).**

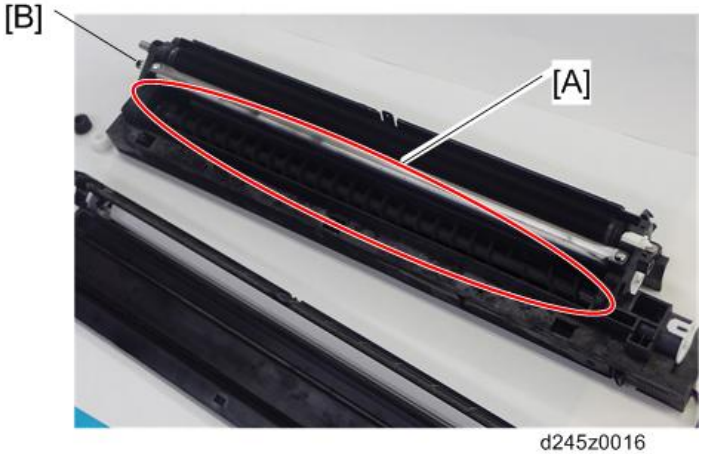
RTB 7
This step was modified (Notes were added)



16. **Distribute a pack of developer to all openings [A] equally.**

Note

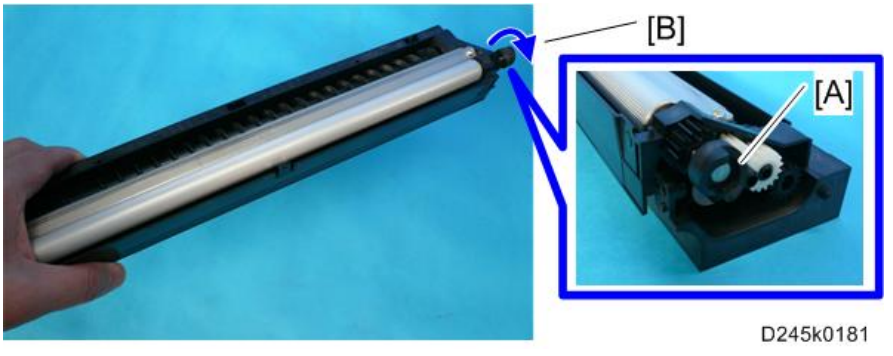
- Do not spill the developer on the gears [B]. If you have spilled it, remove the developer by using a magnet or magnetized screwdriver.
- Be sure to pour in all the developer from the pack.



d245z0016

RTB 7
Three steps deleted, and a step added

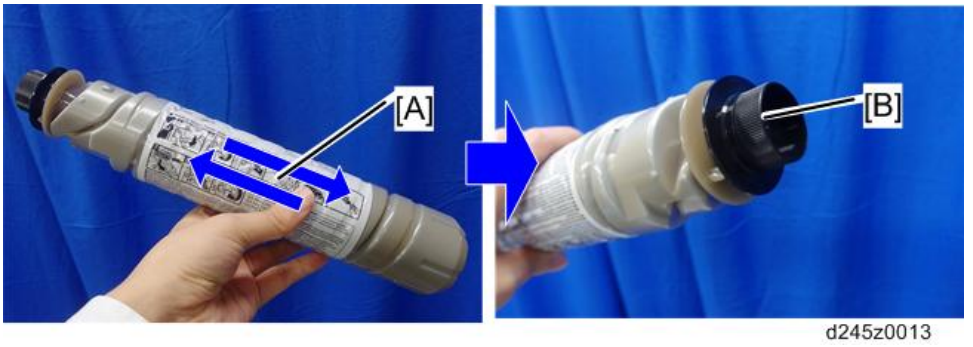
17. Set the coupling [A] back on the shaft.
18. Turn the coupling in the direction of the arrow [B].
19. Rotate the gears to spread the developer.



D245k0181

RTB 7
A note was added.

20. Reassemble the PCDU and install it in the machine.
21. Shake the toner bottle [A] several times, and then remove the bottle cap [B]. (Do not remove the bottle cap [B] before you shake the bottle.)



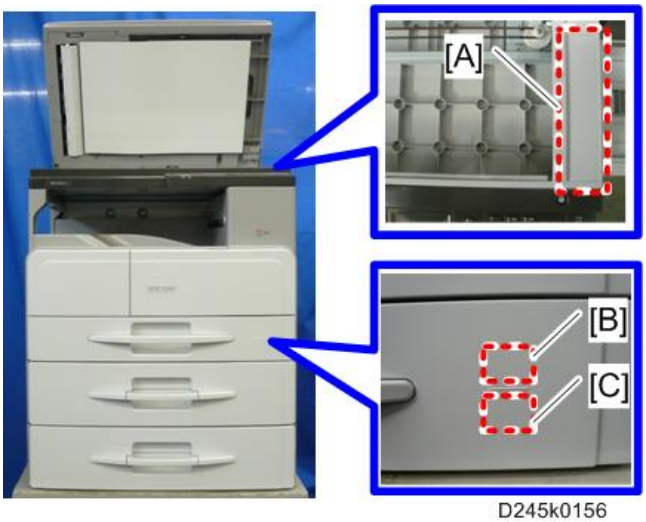
d245z0013

22. Install the toner bottle holder and the front door in the machine.

23. **Install the toner bottle [A] on the holder [B], and then set the holder in the machine.**

d245z0014

24. **Paste the decals on the specified locations.**



D245k0156

[A]: Copy inhibit decal

[B]: Tray number decal

[C]: Paper size decal

25. **Pull out the paper tray, and then adjust the positions of the end and side guides.**
26. **Plug in the main power cord and turn on the main switch.**
27. **Activate the SP mode and execute "Developer Initialization" (SP2-801-001).**
28. **Wait until the message "Execute Result = OK" shows (about 2 minutes) and then press the "OK" key.**
29. **Activate the User Tools and select the "Language" menu.**
30. **Specify a language. This language is used for the operation panel.**

31. **Load the paper in the paper tray and make a full size copy, and make sure the side-to-side and leading edge registrations are correct.**

Check Image Quality / Settings

Checking the copy image with the test chart

Check the copy image with the test chart.

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 the main power OFF and pull out the plug.
- Close all the covers and trays.
- Remove peripherals physically attached to the main machine: paper feed unit and by-pass tray cover.
- Keep the machine horizontal and move it slowly. Tipping and excess vibrations may damage the machine.

Transporting the Machine

1. **Remove the PCDU. This prevents toner leak, which is caused by vibration during transport.**
2. **Make sure there is no paper left in the paper trays. Then fix down the bottom plates with a sheet of paper and tape.**
3. **Do one of the following steps:**
    - Attach shipping tape to the covers and doors.
    - Shrink-wrap the machine tightly.

Paper Feed Unit PB2020

Accessory Check

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

No.	Description	Q'ty
1	Relay harness	1
2	Clamp	3
3	Screw	4

d245z0075

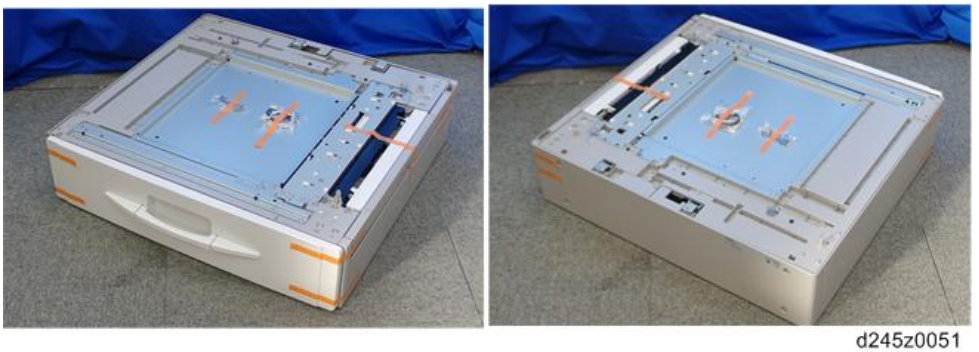
Installation Procedure

⚠CAUTION

- Turn off the main switch of the copier and unplug the power cord before you start the installation procedure.
- You need two or more persons to lift the copier. The copier is highly unstable when lifted by one person, and may cause human injury or property damage.
- Do not lift the copier with the paper feed unit installed. The grips may be damaged.

For Installing Single Paper Feed Unit

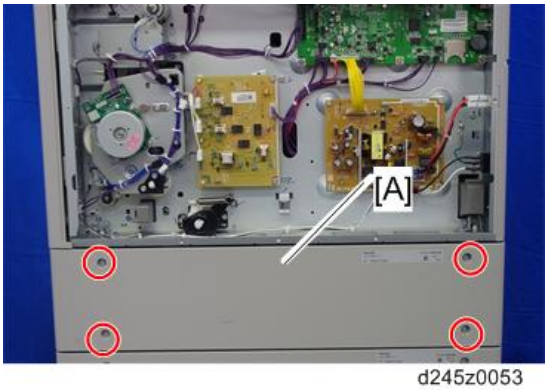
1. Remove all tapes and accessories on the paper feed unit.



2. Pull the tray, and then remove the filament tapes and other padding.

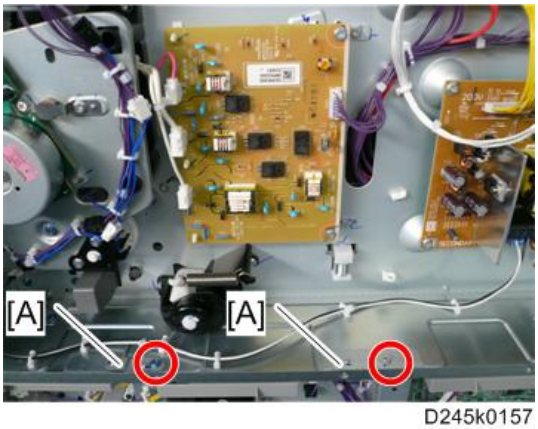
3. Lift the copier and install it on the paper feed unit.
4. Remove the rear cover of the main machine [A] (x 9).

5. Remove the rear cover [A] of the paper feed unit (x 4).



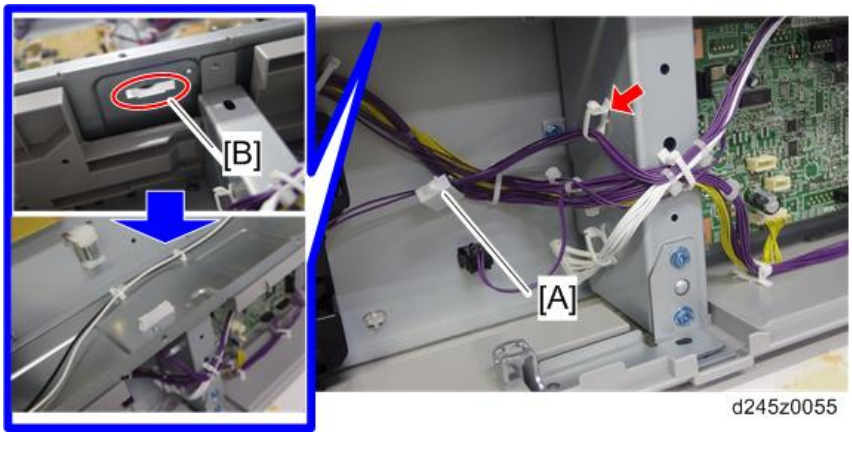
d245z0053

6. Remove the brackets [A] on the bottom of the main machine (x 2).



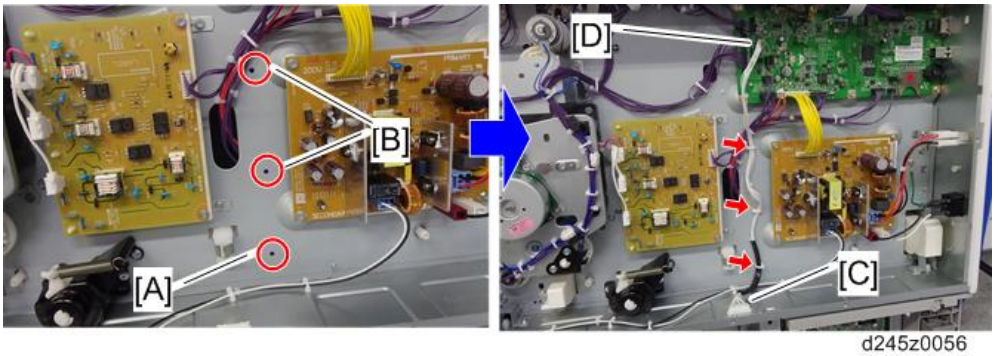
D245k0157

7. Release the relay harness [A] of the paper feed unit, and then insert the relay harness into the notch [B] of the main machine (x 1).



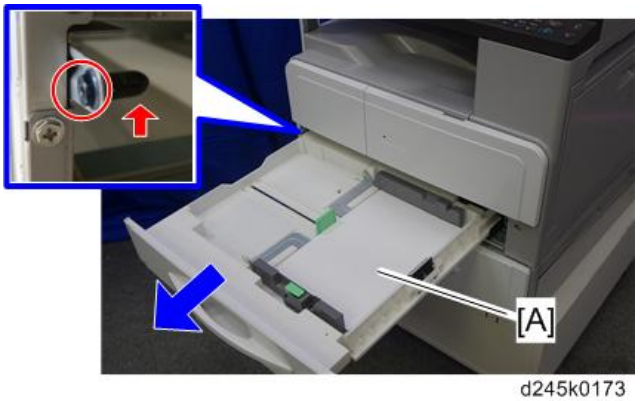
d245z0055

8. **Attach the long clamp to the lowest hole [A] and short clamps to other holes [B].**
    - These clamps are provided with the paper feed unit.
9. **Connect the relay harness provided with the paper feed unit to the bottom connector [C] and CN215 [D] on the MPU board (x 3).**



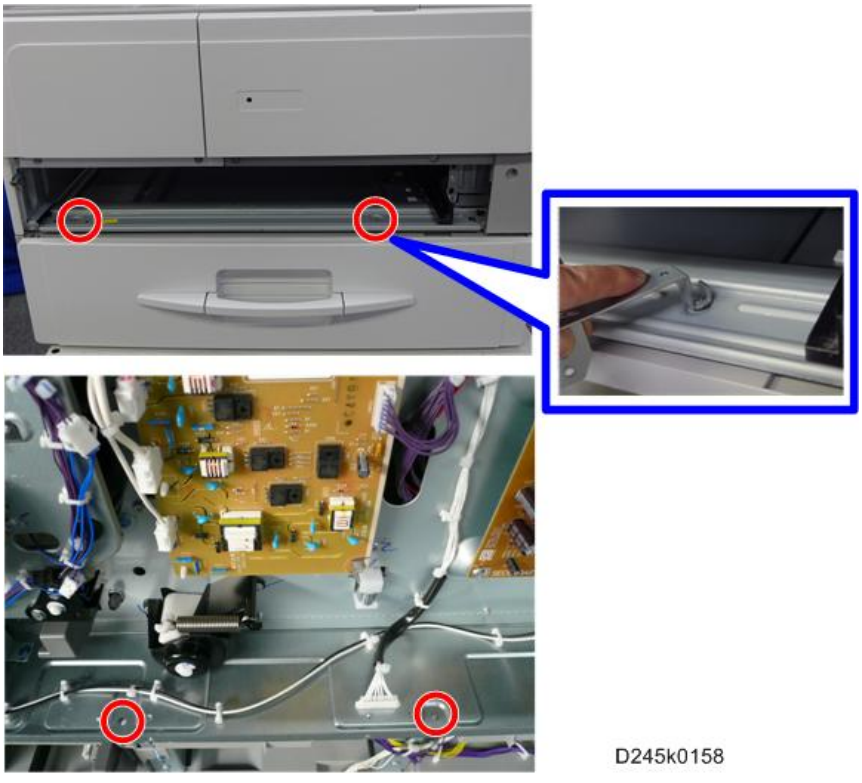
d245z0056

10. **Pull out the paper tray [A] (x 1, Cap x 1).**



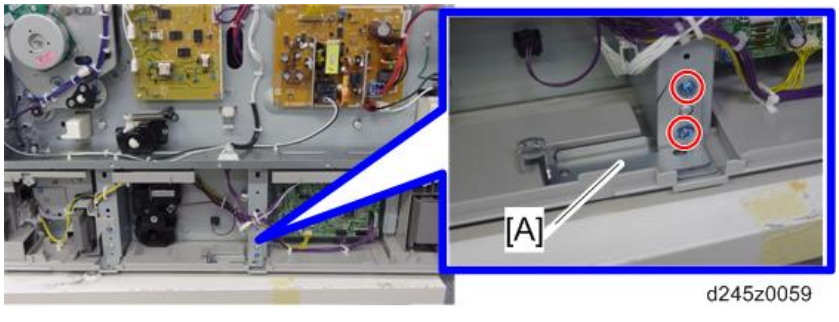
d245k0173

11. **Tighten the main machine to the paper feed unit (x 4; M4x6 provided with the paper feed unit).**



D245k0158

- Use a stubby driver or bracket wrench [A] which is installed at the rear bottom of the paper feed unit (x 2).



d245z0059

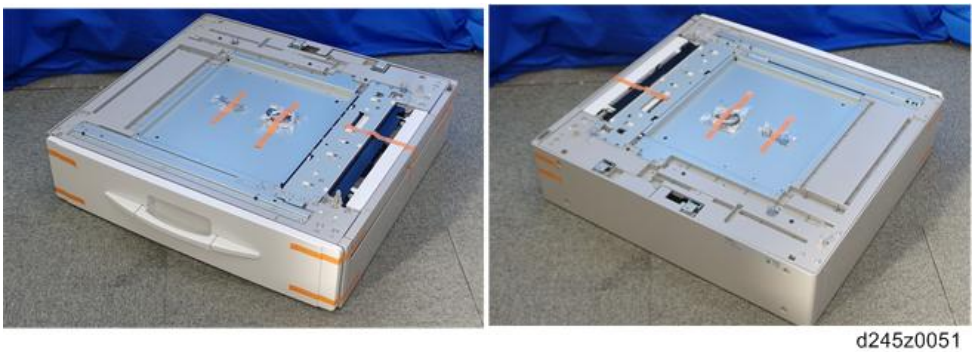
- Reinstall the bracket wrench after tightening the screws.

12. **Reassemble all trays and covers.**
13. **Load paper into the paper feed unit.**
14. **Turn on the main power switch of the machine.**
15. **Adjust the registration for the paper feed unit (tray 2) (page 140).**
    - Use SP1-002-004.

16. Check the paper feed unit operation and copy quality.

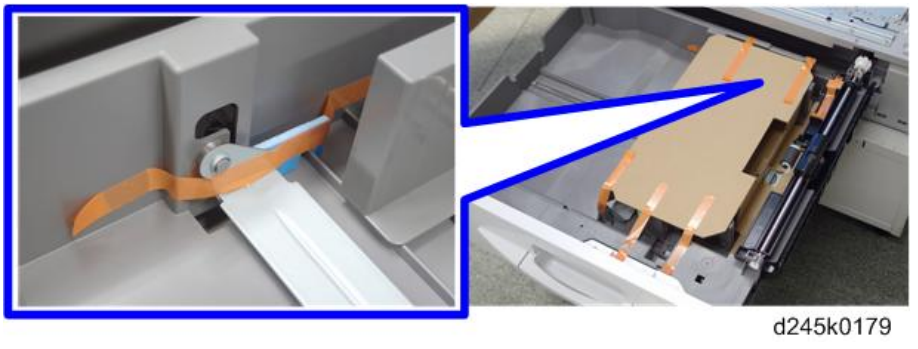
For Installing Double Paper Feed Units

1. Remove all tapes and accessories on the paper feed units.



d245z0051

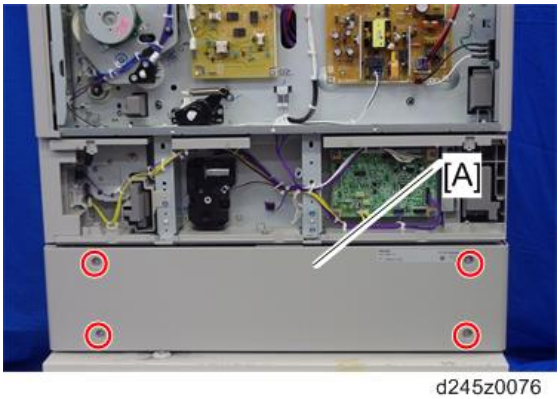
2. Pull the tray, and then remove the filament tapes and other padding.



d245k0179

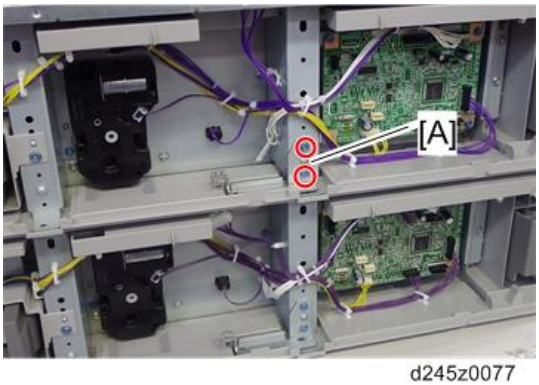
3. Lift the paper feed unit, and then install it on another paper feed unit.
4. Lift the copier, and then install it on the top of the paper feed units.
5. Repeat steps from 4 to 11 in the “For Installing Single Paper Feed unit”.

6. Remove the rear cover [A] of the lower paper feed unit (☞ x 4).



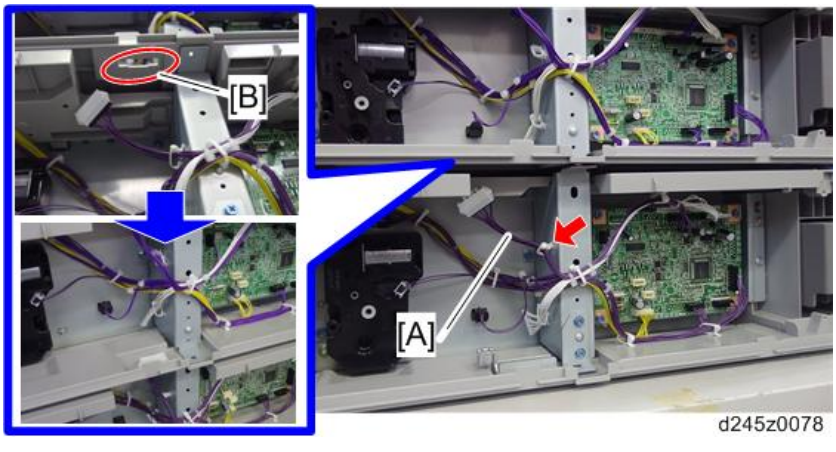
d245z0076

7. Remove the bracket wrench [A] of the upper paper feed unit (☞ x 2).



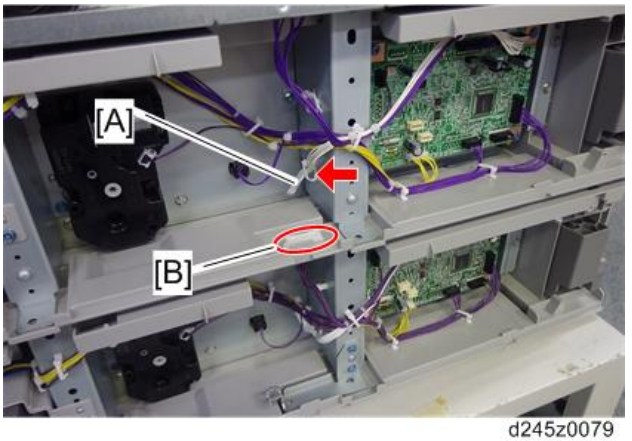
d245z0077

8. Release the relay harness [A] of the lower paper feed unit, and then insert the relay harness into the notch [B] of the upper paper feed unit (☞ x 1).



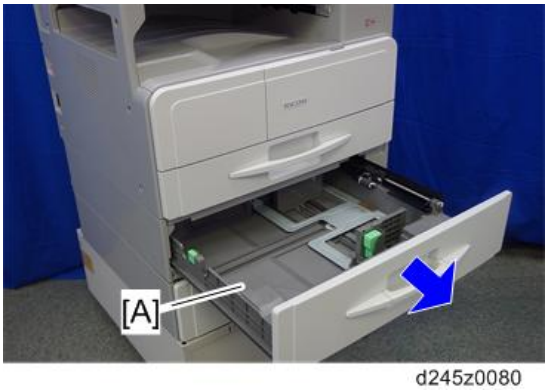
d245z0078

9. **Release the relay harness [A] of the upper paper feed unit, and then connect the relay harness to the bottom connector [B] (x 1).**



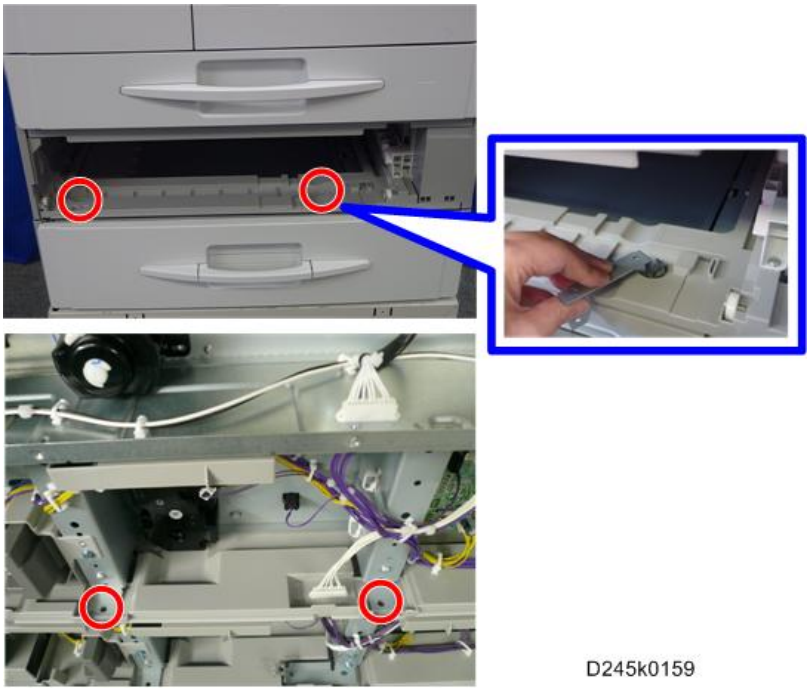
d245z0079

10. **Pull out the paper tray [A] of the upper paper feed unit.**



d245z0080

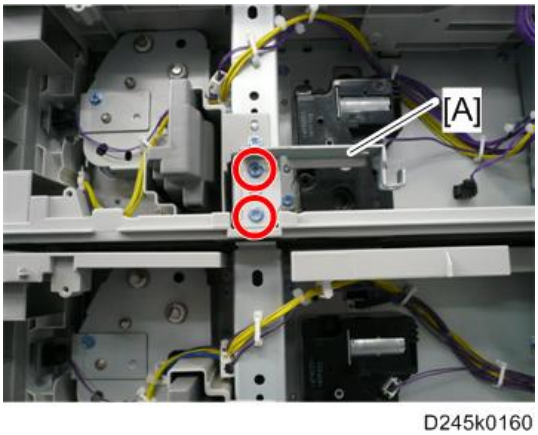
11. **Tighten the upper paper feed to the lower paper feed unit (M4x6: x 4).**



D245k0159

- Use a stubby driver or bracket wrench which is removed in step 7.

12. **Attach the bracket wrench [A] (x 2).**



D245k0160

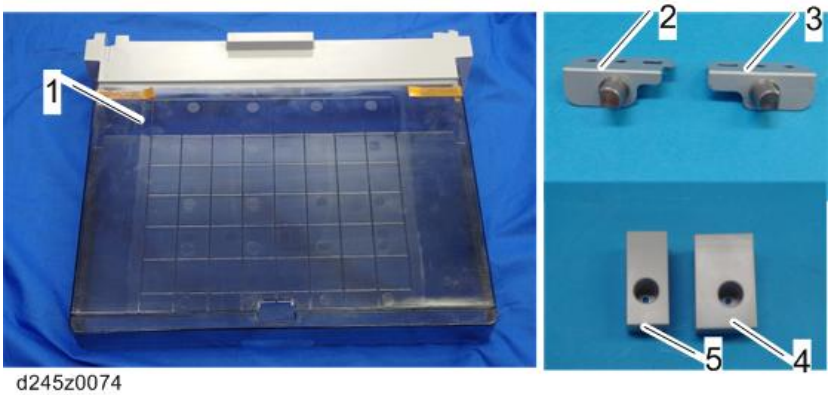
13. **Reassemble all trays and covers.**
14. **Load paper into the paper feed unit.**
15. **Turn on the main power switch of the machine.**

16. **Adjust the registration for the upper paper feed unit (tray 2) and lower paper feed unit (tray 3) (page 140).**
    - Use SP1-002-004 for the tray 2 and SP1-002-005 for the tray 3.
17. **Check the paper feed unit operation and copy quality.**

By-pass Tray Cover Type M16

Component Check

No.	Description	Q'ty
1	By-pass tray cover	1
2	Rear stud bracket	1
3	Front stud bracket	1
4	Rear stud cover	1
5	Front stud cover	1
-	Screw: M3x6	2
-	Screw: M3x8	2



d245z0074

Installing the Expansion Component

⚠CAUTION

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

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

d245z0064

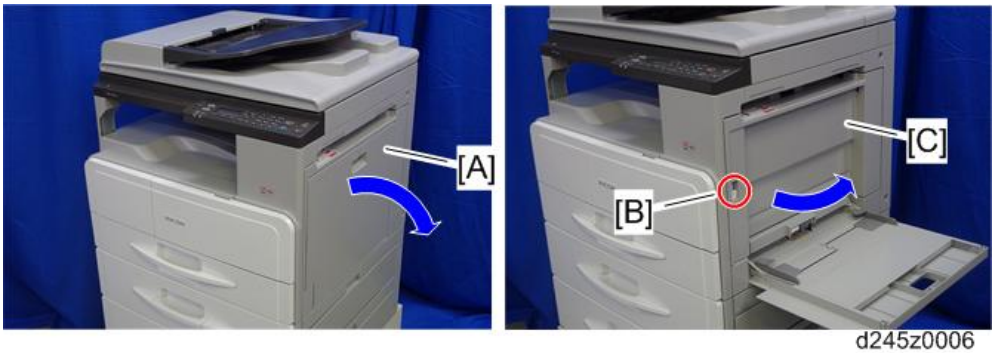
2. **Cut off the part [A] of the left rear cover.**

Note

- Be careful not to get hurt when cutting off.

d245z0063

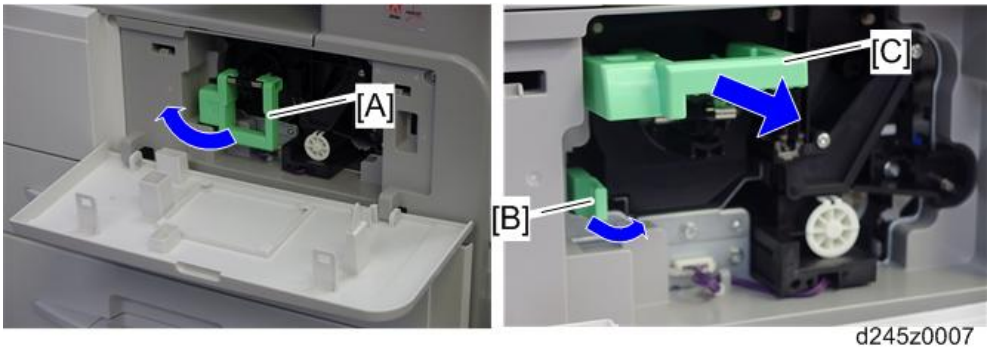
3. **Open the by-pass tray [A], and then press the button [B] to open the right door [C].**



d245z0006

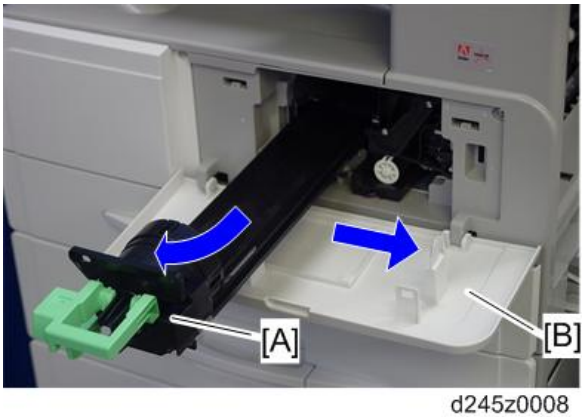
4. **Open the front door, and then pull the toner bottle holder lever [A] upward.**

5. Release the lock lever [B], and then pull the toner bottle holder [C].



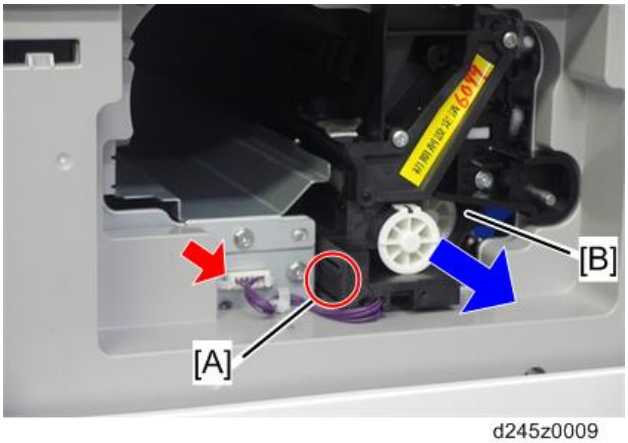
d245z0007

6. Remove the toner bottle holder [A] and the front door [B].



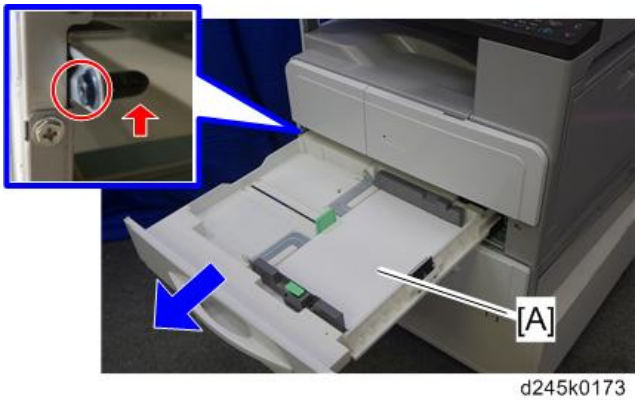
d245z0008

7. Hold the lock [A], and then remove the PCDU [B] (x 1).



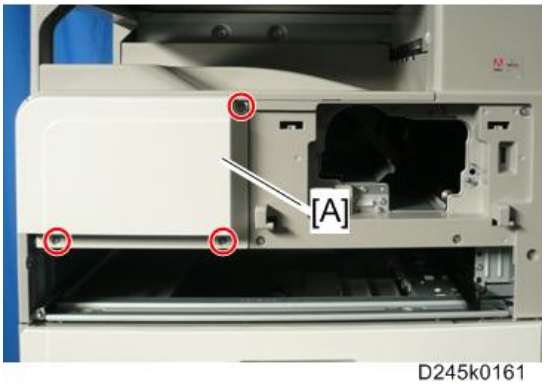
d245z0009

8. **Pull out the paper tray 1 [A] (☞ x 1, Cap x 1)**



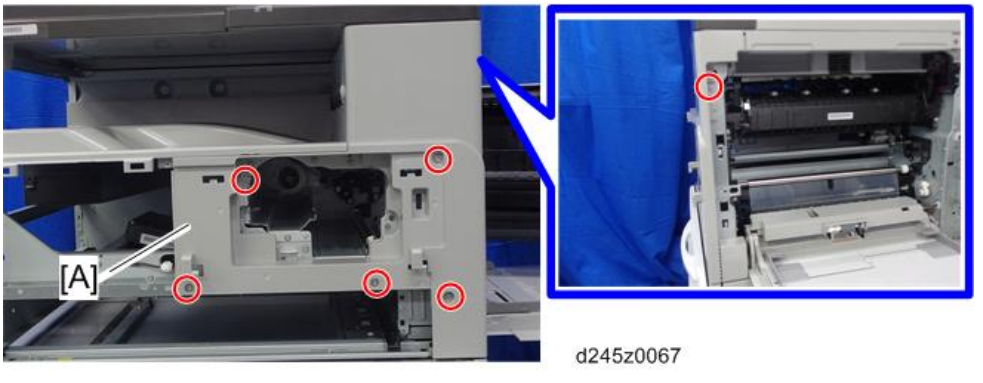
d245k0173

9. **Remove the front left cover [A] (☞ x 3).**



D245k0161

10. **Remove the front cover [A] (☞ x 6).**

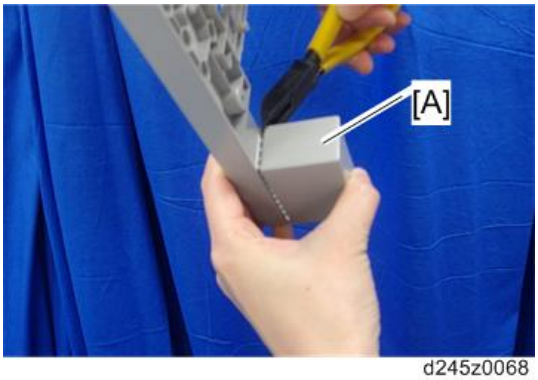


d245z0067

11. **Cut off the part [A] of the front cover.**

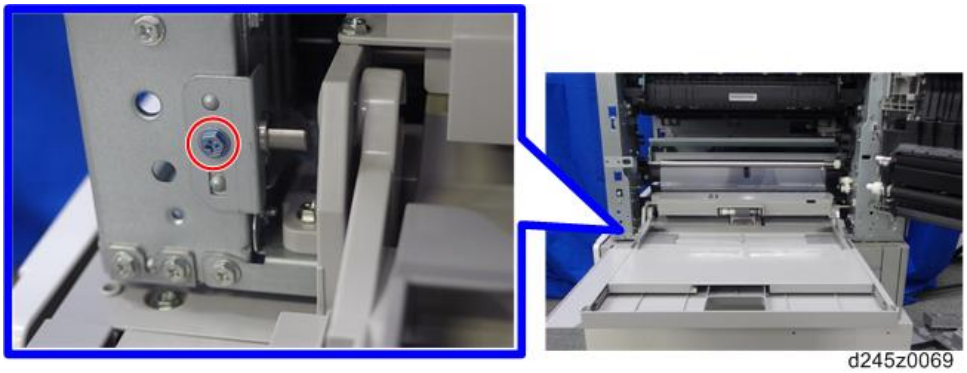
Note

- Be careful not to get hurt when cutting off.



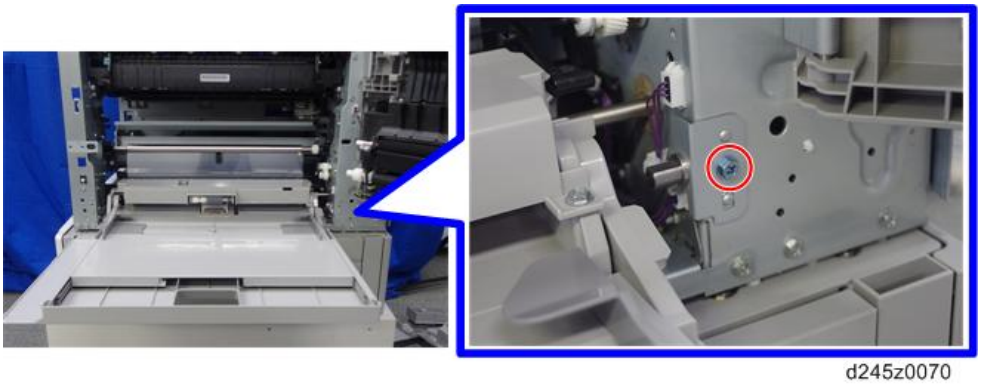
d245z0068

12. Attach the front stud bracket (x 1: M3x6).



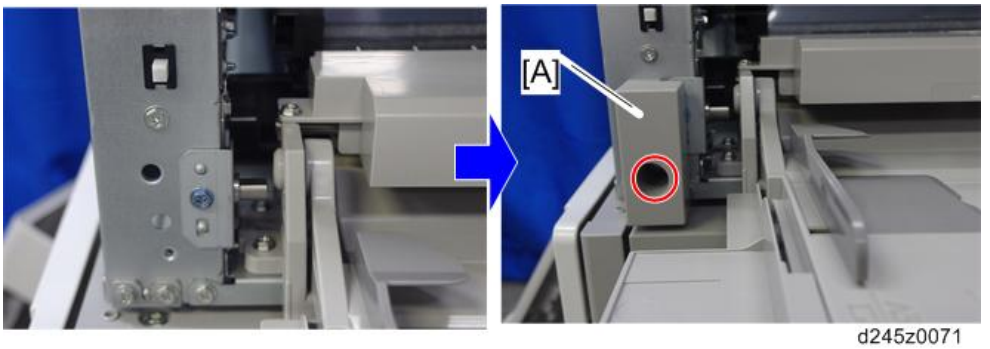
d245z0069

13. Attach the rear stud bracket (x 1: M3x6).

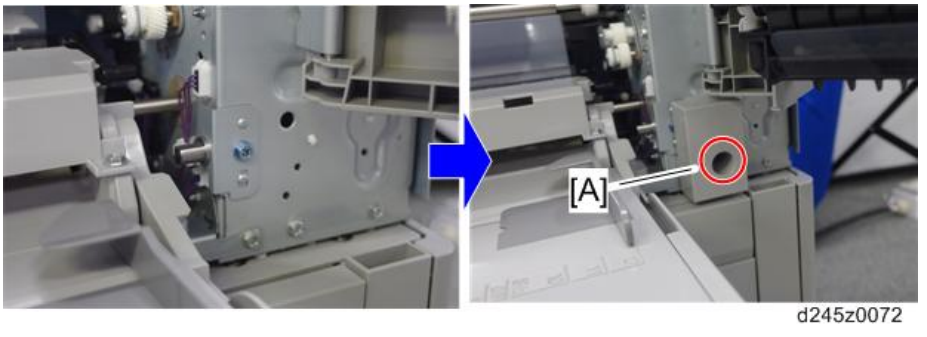


d245z0070

14. **Attach the front stud cover [A] (x 1: M3x8).**



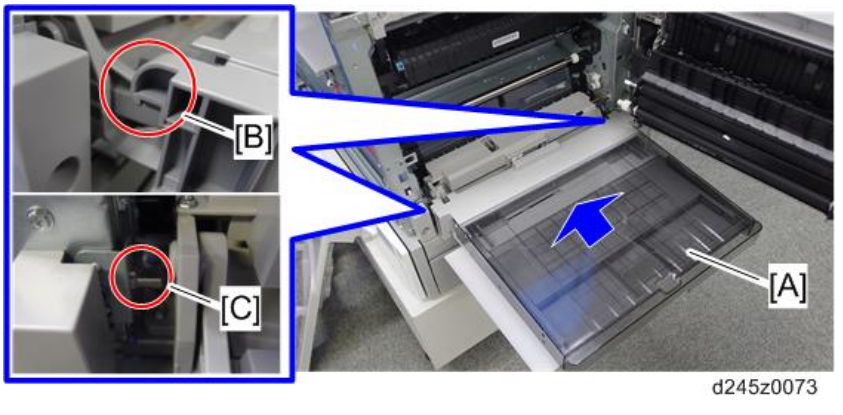
15. **Attach the rear stud cover [A] (x 1: M3x8).**



16. **Reassemble all covers.**

17. **Place the by-pass tray cover [A] on the by-pass tray.**

    - Make sure that hooks [B] at front and rear side of the by-pass tray cover hold the front and rear studs [C] on the machine.



18. **Close the right door.**

DDST Unit Type M16

Component Check

No.	Description	Q'ty
1	DDST unit	1

Installing the Expansion Component

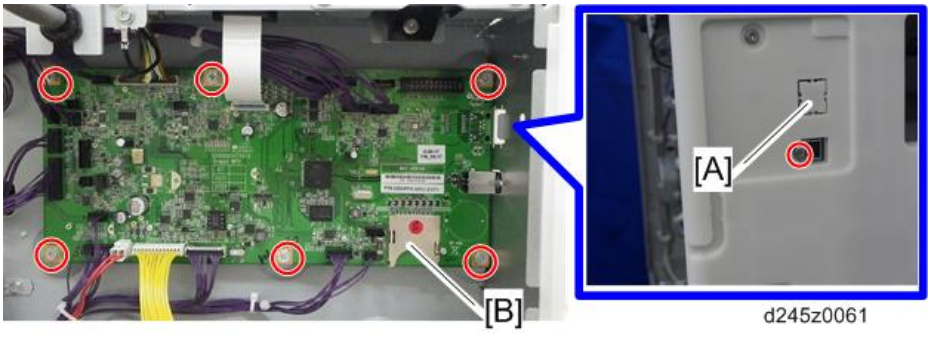
⚠CAUTION

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

1. **Rear cover [A] (x 9)**

d245z0052

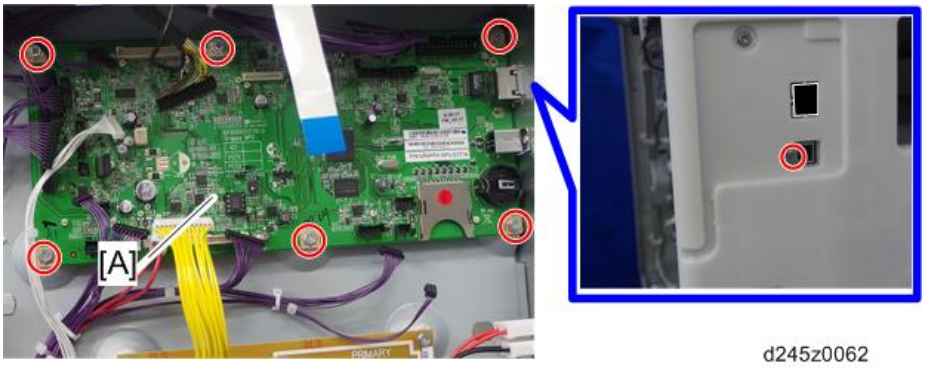
2. **Cut off the network slot cover [A] on the left cover of the machine.**
3. **Remove the MPU [B] (x 7, x all, x 1).**



d245z0061

4. **Remove the EEPROM on the MPU.**

5. Install the EEPROM in the DDST unit.
6. Install the DDST unit [A] (x 7).



7. Attach all cables and flat cable to the DDST unit.
8. Reassemble the rear cover (x 9).

Operation Guidance for Users

Machine Function	User Instruction
Basic machine functions (all models)	Basic user instruction: • How to load and replace consumables (paper, and toner) • Basic machine operations (power ON/OFF, other) • How to make copies (basic operations) • Daily machine maintenance • How to removed jammed paper and clear the jam condition • How to clear SC errors, contact service provider in case of occurrence • Supported paper types/sizes/weights, paper storage • How to add program (up to 3) icons to the Home screen • Machine limitations and other important notes regarding machine usage/operation
Printer, scanner	Settings, print jobs: • Printer/Scanner settings (USB, network, other) • Printer/Scanner driver and utilities recommended installation, settings (printer ports, TWAIN drivers) • Print test (printing out the driver test page) • Scan test using a Windows standard scanning application Basic user instruction: • How to print out a file • How to install drivers, perform settings (recommended installation) • Introduction to the settings and menus available from the operation panel • Machine limitations and other important notes regarding machine usage/operation

3. Preventive Maintenance

Preventive Maintenance Tables

See “Appendices” for the following information:

- Preventive Maintenance

PM Parts Settings

PM Parts Replacement Procedure

1. **Enter the SP mode.**
2. **Output the SMC logging data. (page 188)**
3. **Set the following SPs to "1".**

Item	SP
PCDU	SP7-622-002
Transfer roller	SP7-622-108
Fusing unit	SP7-622-115

4. **Exit the SP mode.**
5. **Turn off the main power.**
6. **Replace the PM parts and turn the power on.**

   The machine will reset the PM counters.

   After replacing the PCDU, execute SP2-801-001 (Deve Initializati Init TD Sen Execu) to reinitialize the TD sensor.

After Installing the New PM parts

1. **Turn on the main power.**
2. **Output the SMC logging data (page 188 "SMC Page Printing") and check the counter values.**
3. **Make sure that the PM counters for the replaced units are "0" with SP7-621 and SP7-944.**

Operation Check

Check if the sample image has been copied normally.

4. Replacement and Adjustment

Beforehand

⚠WARNING

- Turn off the main power switch and disconnect the power cord.
- After replacing, make sure that all removed harnesses are connected up again and secured in their clamps.

Special Tools and Lubricants

The following special tools should be prepared for maintenance of this model in the field.

Unique or Common:

U: Unique for this model

C: Common with listed model

Special Tools

No.	Part Number	Description	Q'ty	Unique or Common
1	B6455010	SD card	1	C (General)
2	B6455020	SD card (1GB)	1	C (General)
3	52039502	Silicon grease G-501	1	C (General)
4	A2929500	Test chart – S5S (10 pcs/set)	1	C (General)

Exterior Covers

Important

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

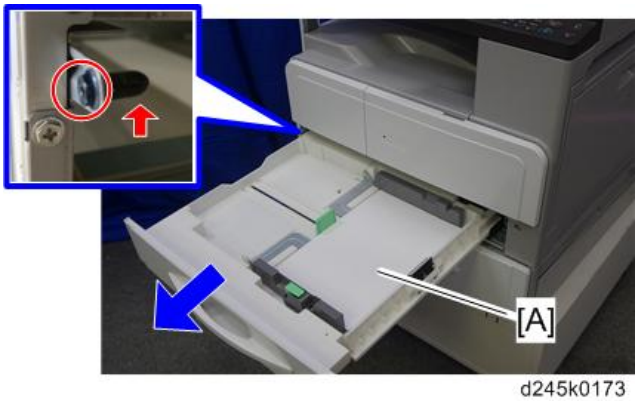
Front Door

1. Front door [A]

d245k0001

Paper Tray 1

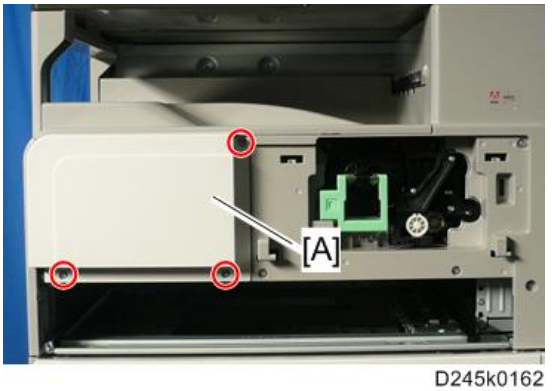
1. Open the paper tray 1 [A].
2. Paper tray 1 [A] (x 1, Cap x 1)



d245k0173

Front Left Cover

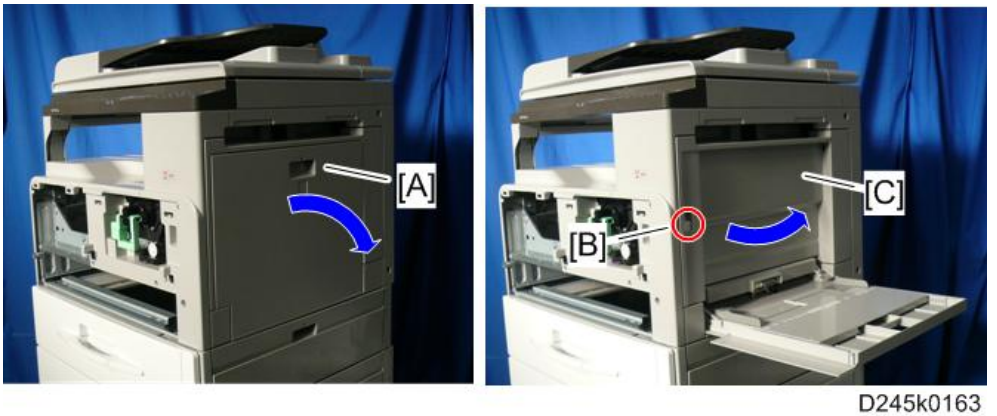
1. Paper tray 1 (page 63)
2. Front door (page 63)
3. Front left cover [A] (x 3)



D245k0162

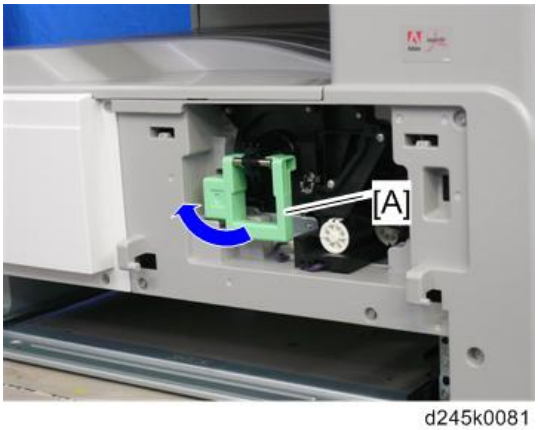
Front Right Cover

1. Front left cover (page 64)
2. Open the by-pass tray [A], and then press the button [B] to open the right door [C].



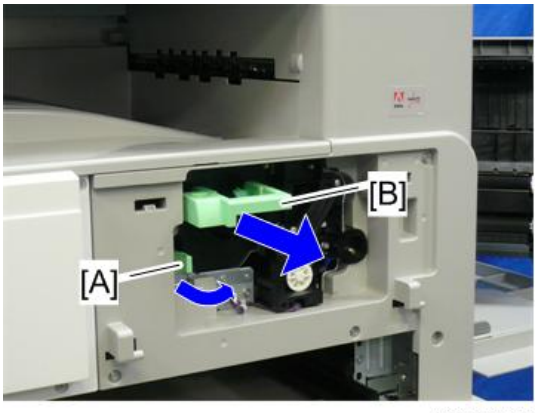
D245k0163

3. Pull the toner bottle holder lever [A] upward.



d245k0081

4. Release the lock lever [A], and then pull the toner bottle holder [B].

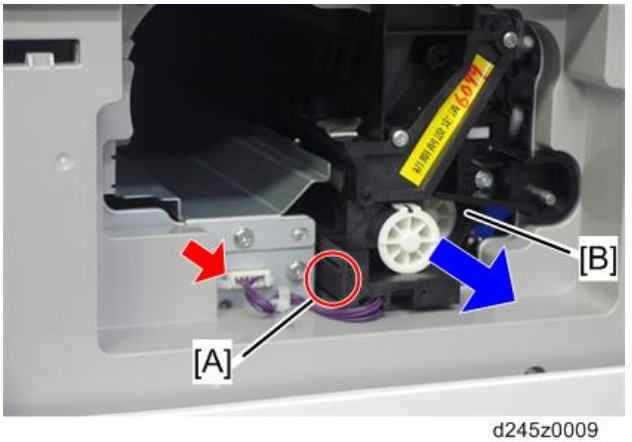


d245k0082

5. Remove the toner bottle holder [A].

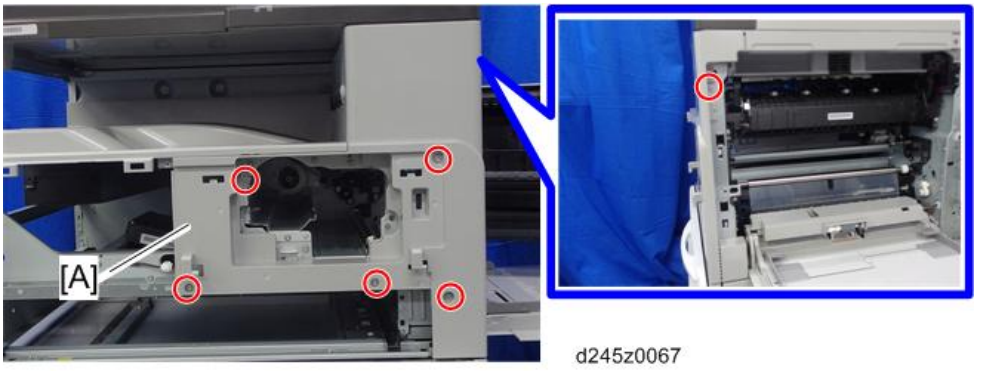
d245k0083

6. Hold the lock [A], and then remove the PCDU [B] (x 1).



d245z0009

7. Front right cover [A] (x 6)



d245z0067

Left Cover

1. Left cover [A] (x 5)

d245z0065

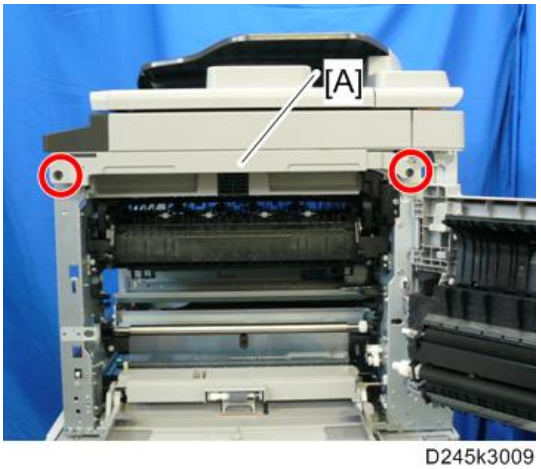
Right Rear Cover

1. Right rear cover [A] (x 2)

d245z0064

Right Upper Cover

1. Front right cover (page 64)
2. Right rear cover (page 67)
3. Right upper cover [A] (x 2)



D245k3009

Paper Exit Tray

1. Front left cover (page 64)
2. Left cover (page 66)

3. Paper exit tray [A] (x1)

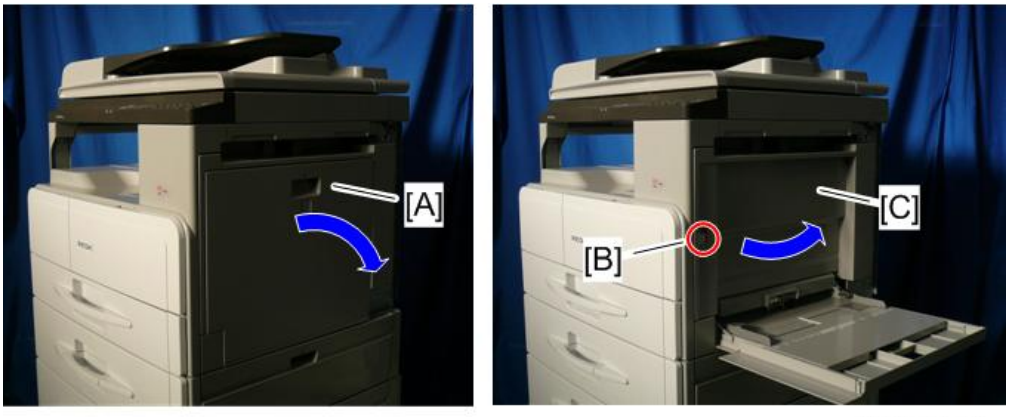
Rear Cover

1. Rear cover [A] (x 9)

Right Door

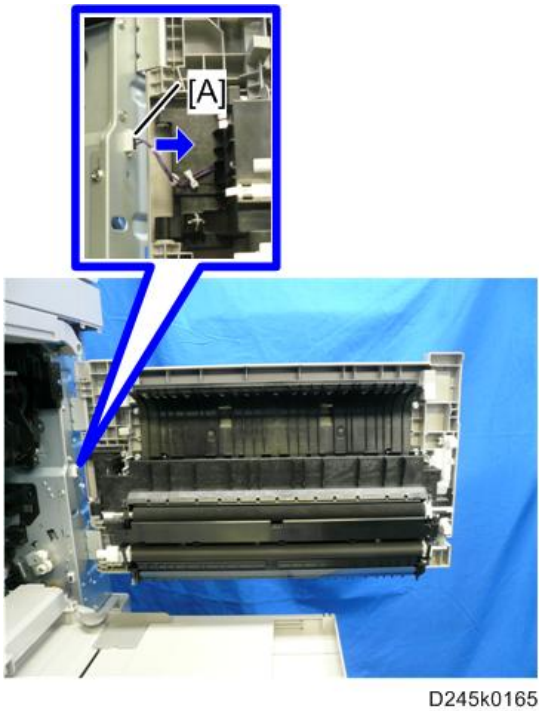
1. Right rear cover (page 67)

2. Open the by-pass tray [A], and then press the button [B] to open the right door [C].



D245k0164

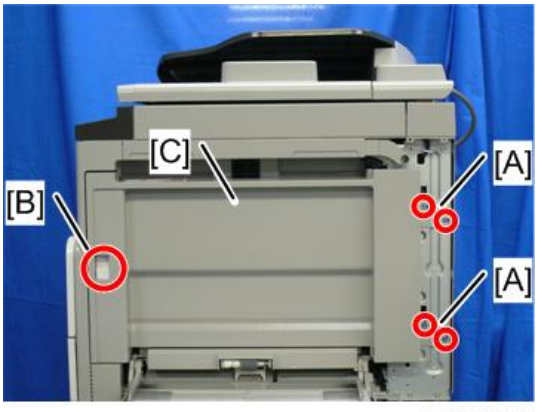
3. ID sensor connector [A]



D245k0165

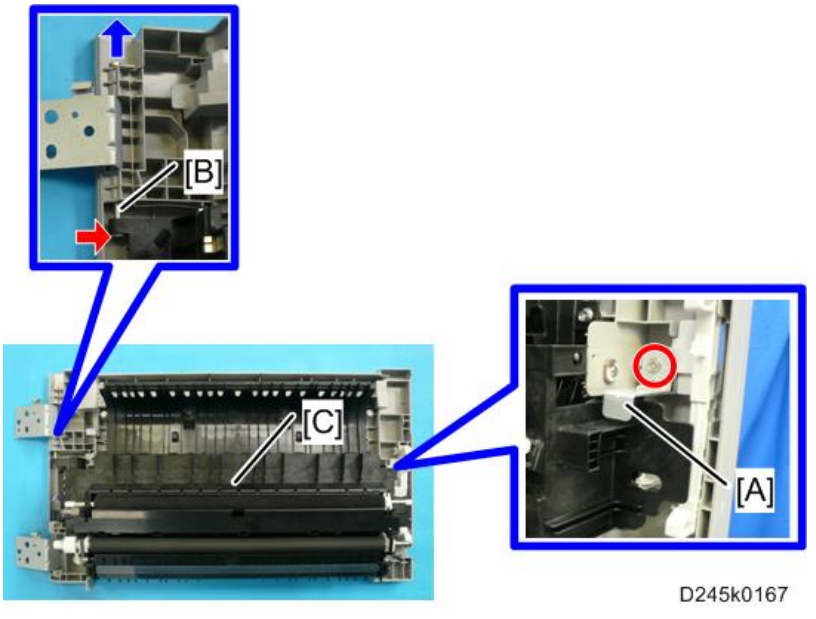
4. Close the right door.
5. Right door hinge brackets [A] (x 4)

6. Press the button [B] to remove the right door [C].



D245k0166

7. Duplex unit bracket [A] (x 1)
8. Slide the right door hinge shaft [B] (x 1).
9. Transfer guide unit [C]

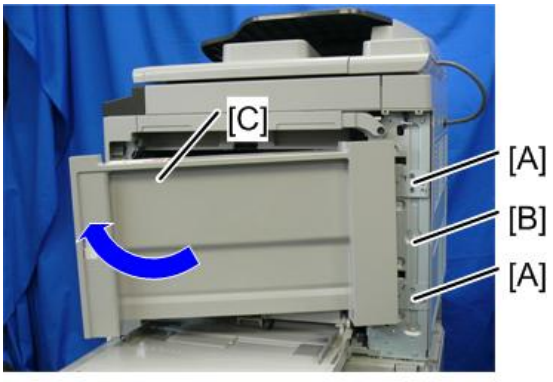


D245k0167

Reinstall the right door

1. Reinstall the transfer guide unit on the right door.
2. Hook the right door hinge brackets [A] to the rear flame [B].
3. Close the right door [C].

4. Tighten the right door hinge brackets [A] (x 4)



D245k0168

5. Reconnect the ID sensor connector.
6. Reinstall the right rear cover.

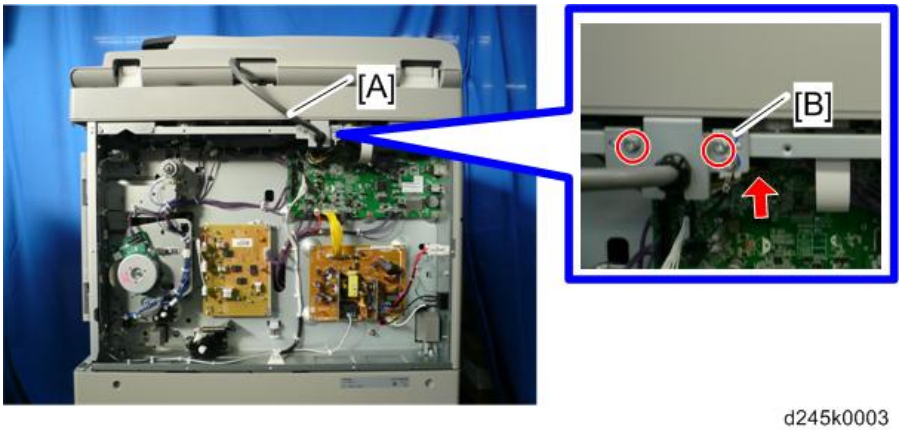
Important

- Be sure to close the right door first then secure the right door hinge brackets in place with screws. Otherwise the right door may shift and may not close properly.

ADF Unit

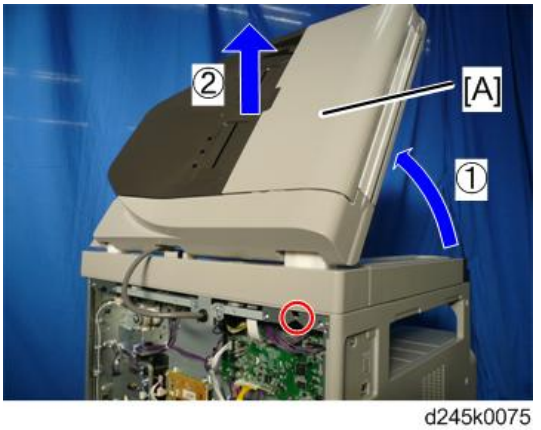
ADF Unit

1. Rear cover (page 68)
2. Disconnect the ADF cable [A] and remove the ground plate [B] (x 2, x 1).



d245k0003

3. Open and remove the ADF unit [A] (x 1).

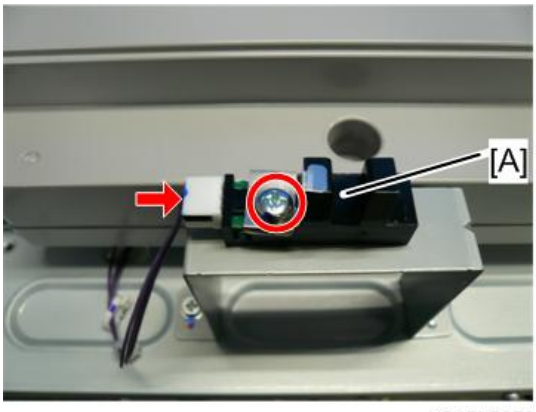


d245k0075

Platen Cover Sensor

1. Top rear cover (page 85)

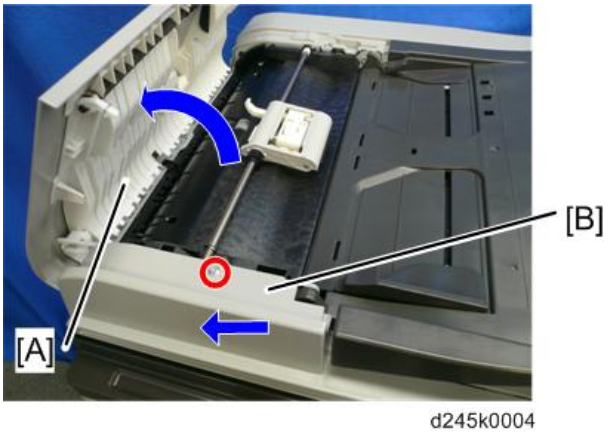
2. Platen cover sensor [A] (x 1, x 1)



d245k0072

ADF Front Cover

1. Open the ADF upper cover [A].
2. ADF front cover [B] (x 1)

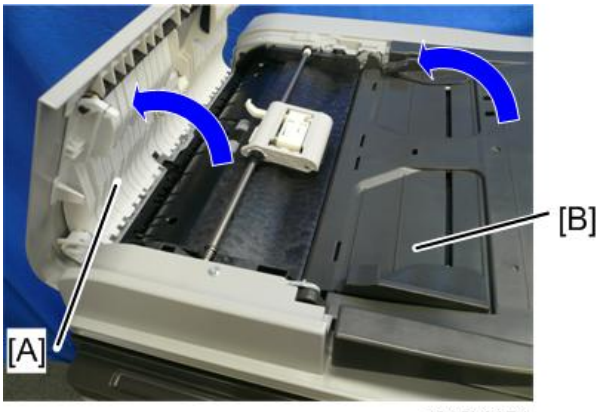


d245k0004

ADF Rear Cover

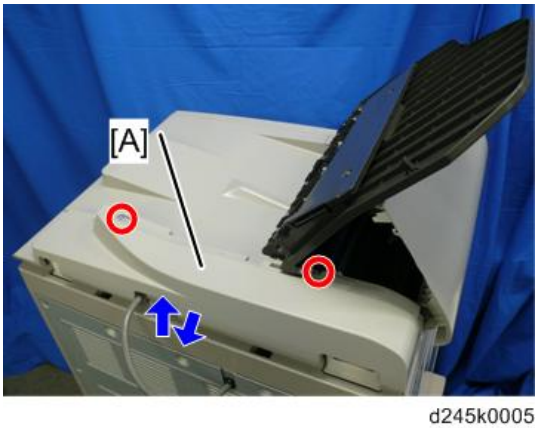
1. Open the ADF upper cover [A].

2. **Open the document table [B].**



d245k0074

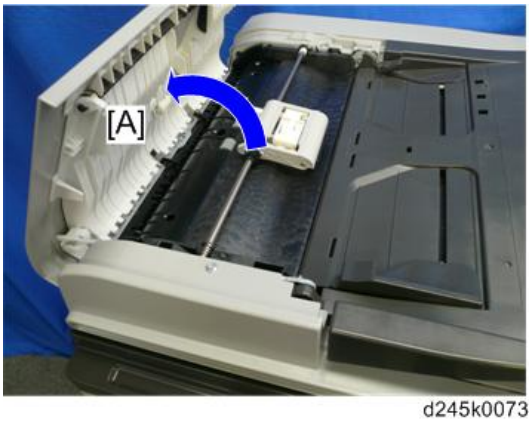
3. **ADF rear cover [A] (x 2)**



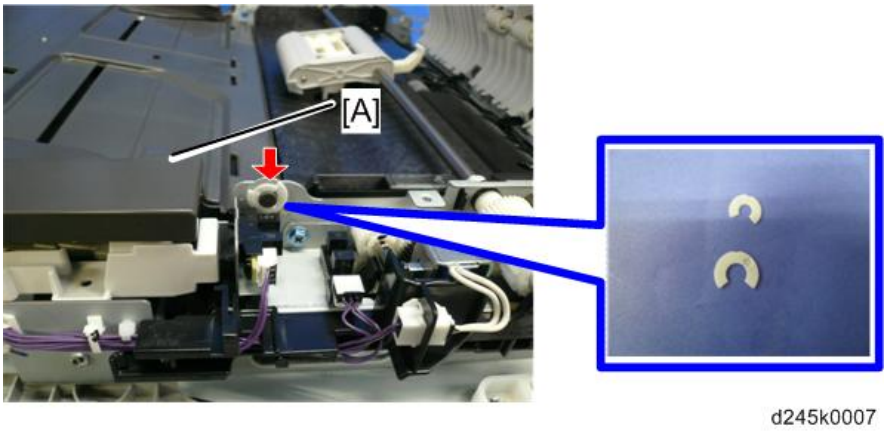
d245k0005

Document Table

1. Open the ADF upper cover [A].



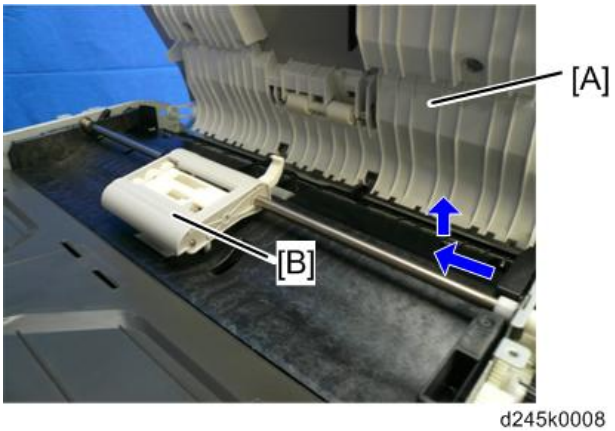
2. ADF rear cover (page 73)
3. Document table [A] (x 2)



Pick-up Roller

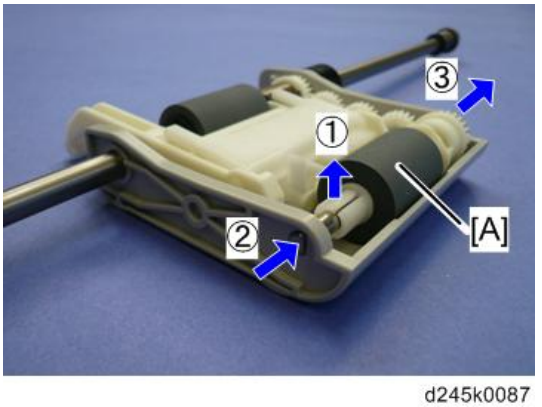
1. Open the ADF upper cover [A].

2. **Original feed unit [B]**



d245k0008

3. **Pick-up roller [A]**

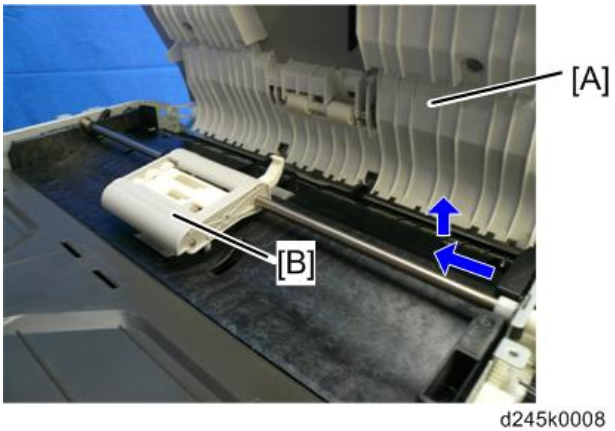


d245k0087

Separation Pad

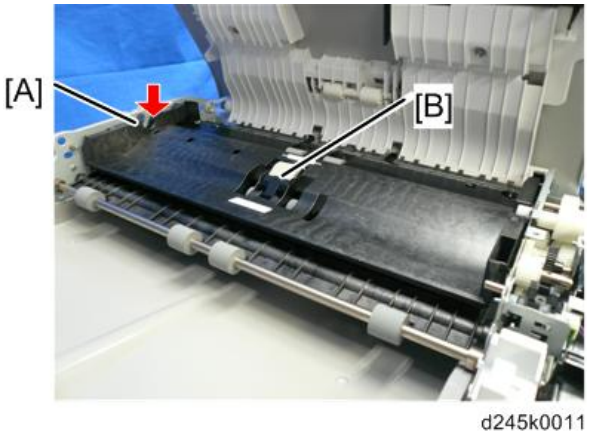
1. **Open the ADF upper cover [A].**

2. Original feed unit [B]



d245k0008

3. Push the lever [A] to pop up the separation pad [B].

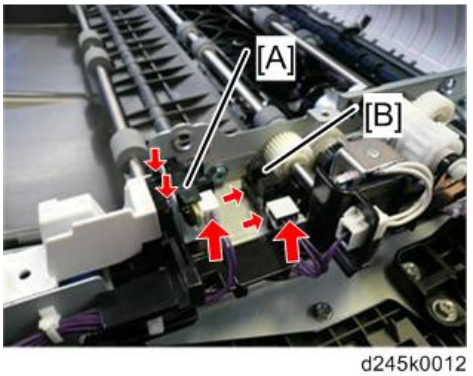


d245k0011

ADF Cover Sensor/Original Set Sensor

1. ADF rear cover (page 73)
2. ADF cover sensor [A] (x 1, x 2)

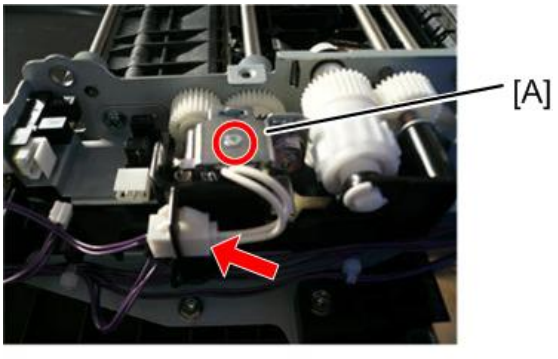
3. Original set sensor [B] (x 1, x 2)



d245k0012

ADF Pick-up Solenoid

1. ADF rear cover (page 73)
2. ADF pick-up solenoid [A] (x 1, x 1)

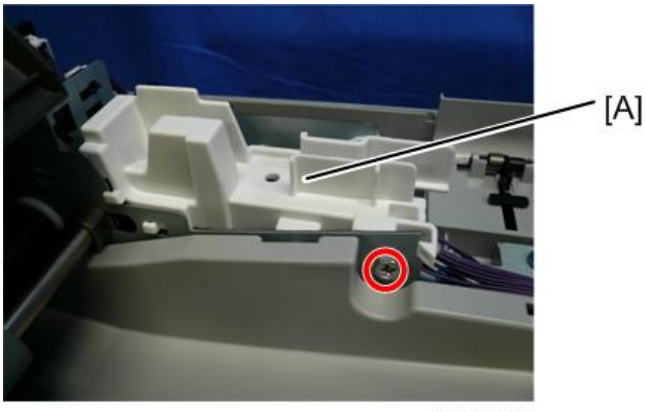


d245k0013

ADF Inverter Solenoid

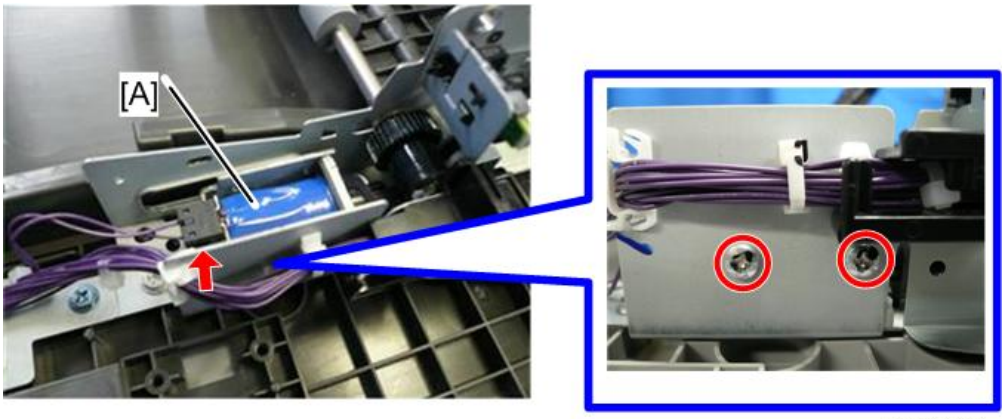
1. ADF rear cover (page 73)

2. Bracket [A] (x 1)



d245k0014

3. ADF inverter solenoid [A] (x 2, x 1)

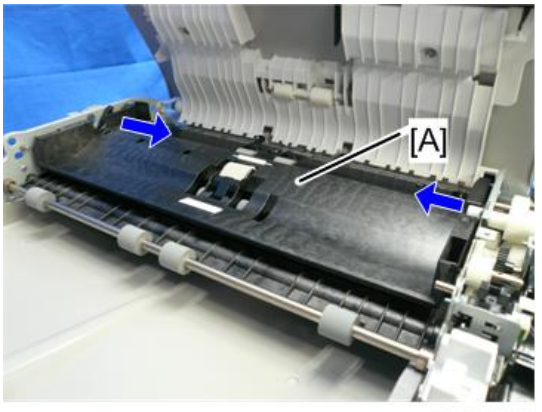


d245k0015

ADF Feed Roller

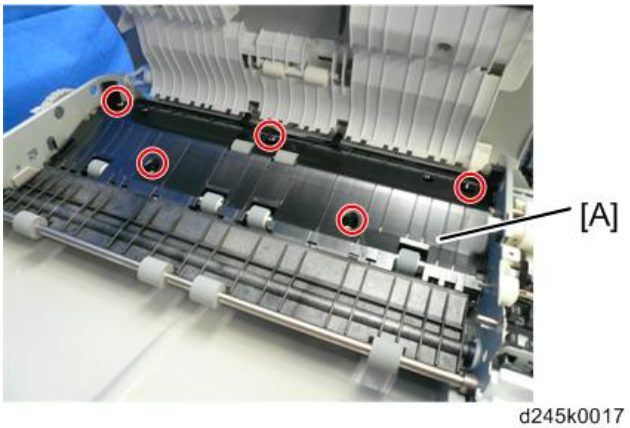
1. ADF unit (page 72)
2. ADF front cover (page 73)
3. ADF rear cover (page 73)
4. Document table (page 75)
5. Original feed unit (page 75)

6. Original feed-in guide plate[A]



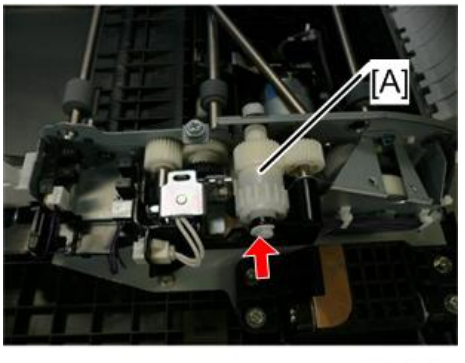
d245k0086

7. Original turn guide plate [A] (x 5)



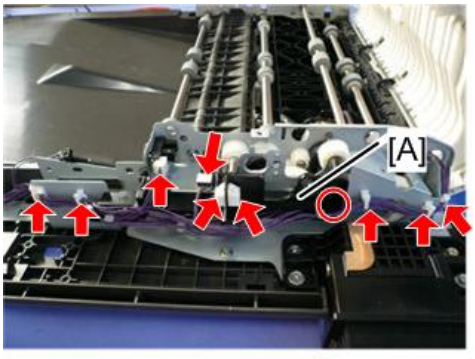
d245k0017

8. ADF feed clutch [A] (x 1)



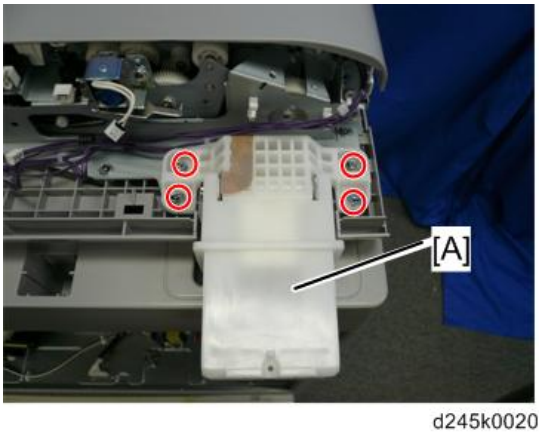
d245k0018

9. Harness guide [A] (x 5, x 4, x1)



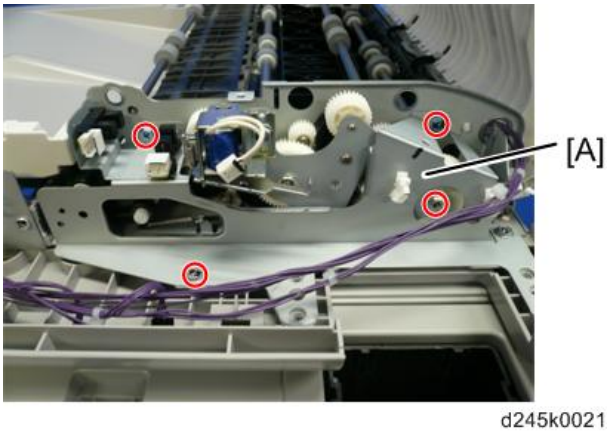
d245k0019

10. Hinge [A] (x 4)



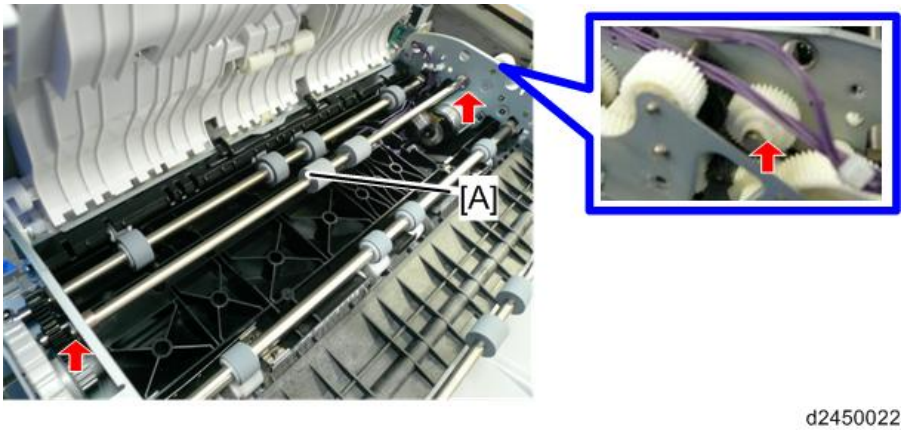
d245k0020

11. Bracket [A] (x 4)



d245k0021

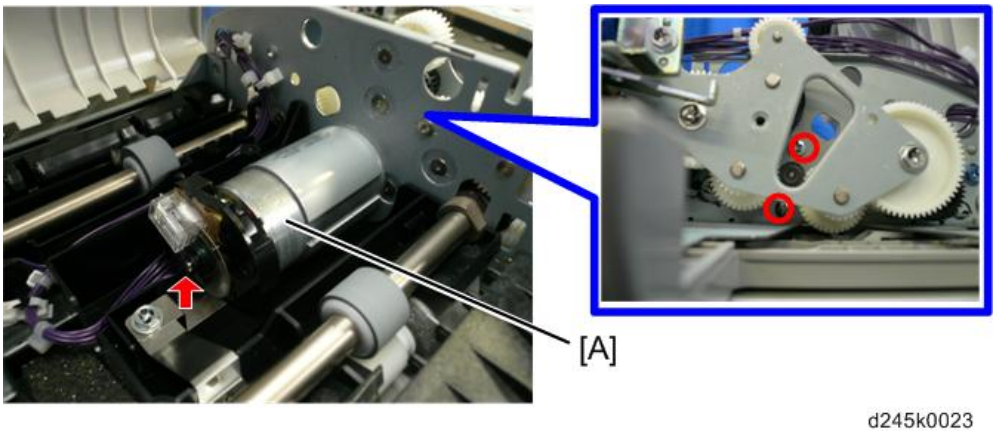
12. ADF feed roller [A] (x 3)



d2450022

ADF Motor

1. ADF feed roller (page 79)
2. ADF main motor [A] (x 2, x 1)

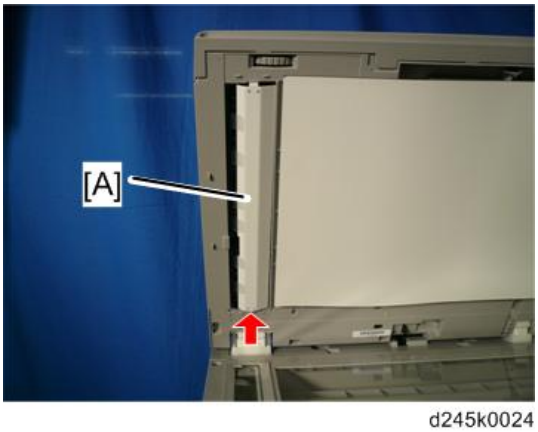


d245k0023

ADF Registration Sensor

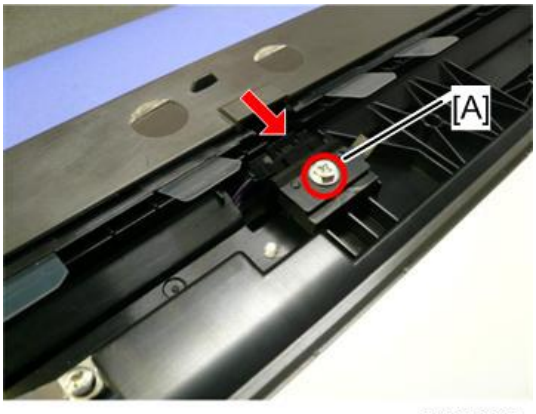
1. Open the ADF unit.

2. White plate guide [A] (x 1)



d245k0024

3. ADF registration sensor [A] (x 1, x 1, x 1)

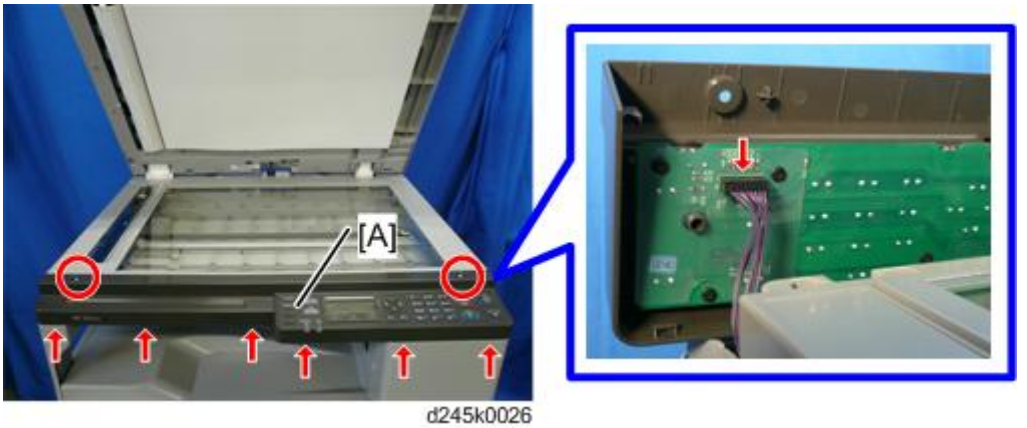


d245k0025

Operation Panel

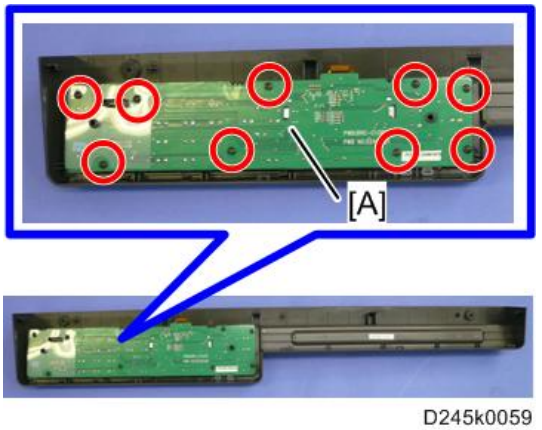
OPU Board

1. Open the ADF unit or platen cover.
2. Operation panel [A] (x 2, x 6, x 1)



d245k0026

3. OPU board [A] (x 9)

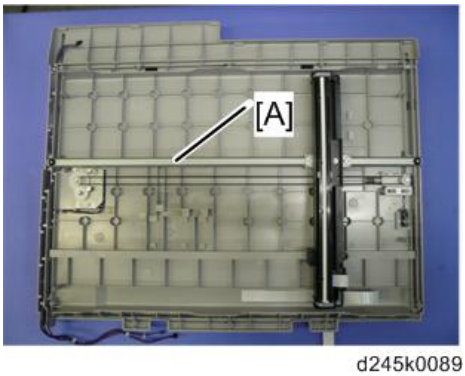


D245k0059

Scanner Unit

Important

- Unplug the machine power cord before starting the following procedures.
- Do not touch the guide rod [A], because they are greased.



d245k0089

Top Rear Cover

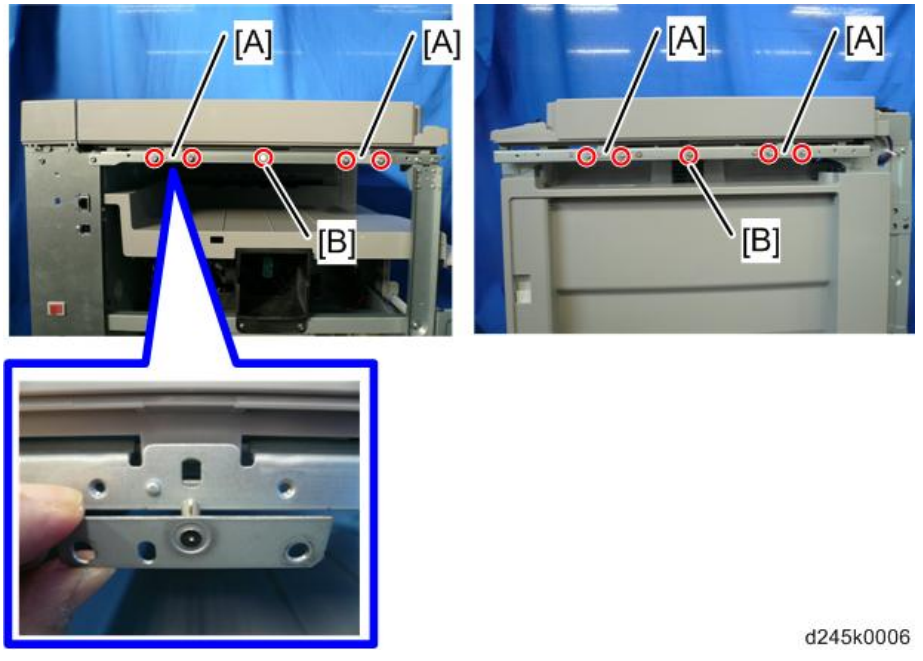
1. Platen cover or ADF unit (page 72)
2. Top rear cover [A] (x 4)

d245k0071

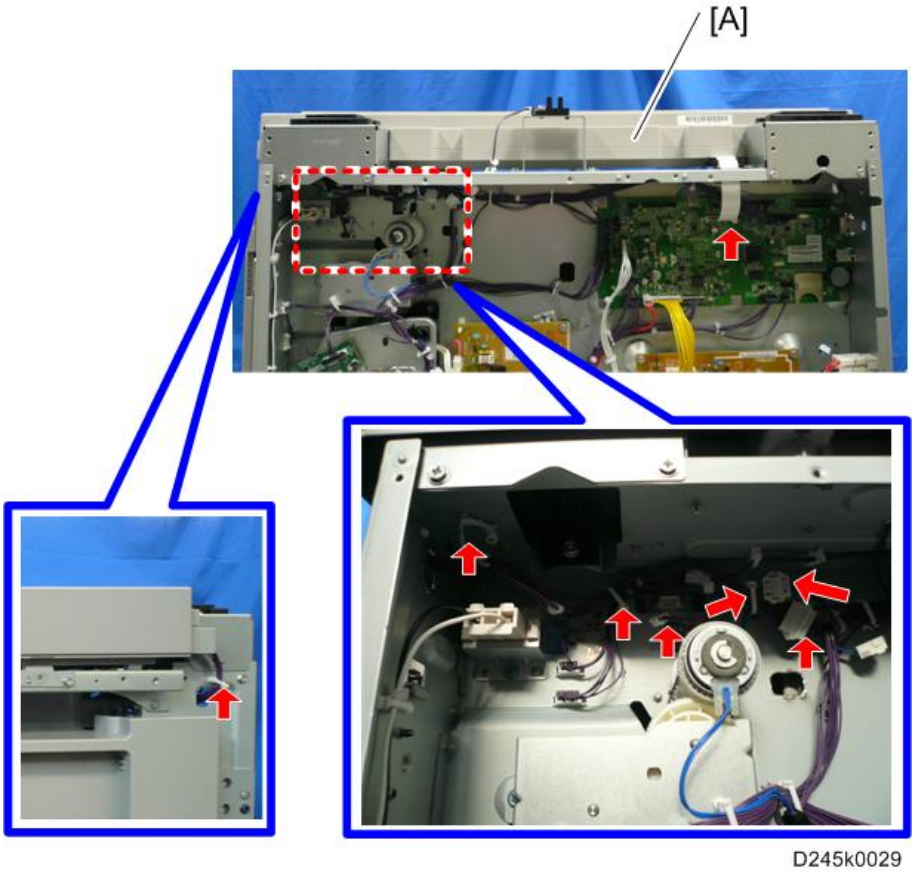
Scanner Unit

1. Top rear cover (page 85)
2. Right upper cover (page 67)

3. Left cover (page 66)
4. Right rear cover (page 67)
5. Operation panel (page 84)
6. Remove the four brackets [A] (2 for each) and release the two ground parts [B] (1 for each).



7. **Remove the scanner unit [A] (x 1, x 4, x 3).**

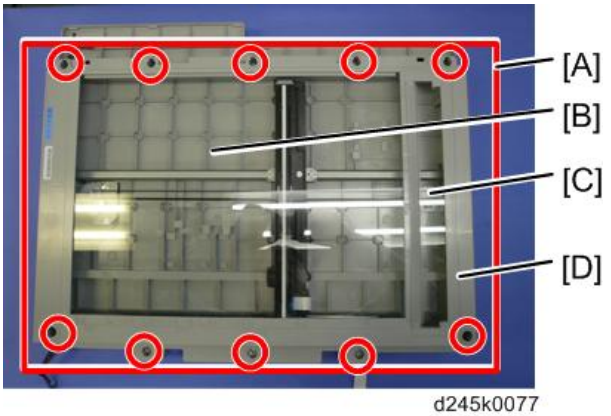


Exposure Glass Unit

1. **Top rear cover (page 85)**
2. **Exposure glass unit [A] (x 10)**

Note

- Exposure glass [B], DF exposure glass [C] and cover [D] are all in one unit.
- Do not disassemble this unit into the individual parts.



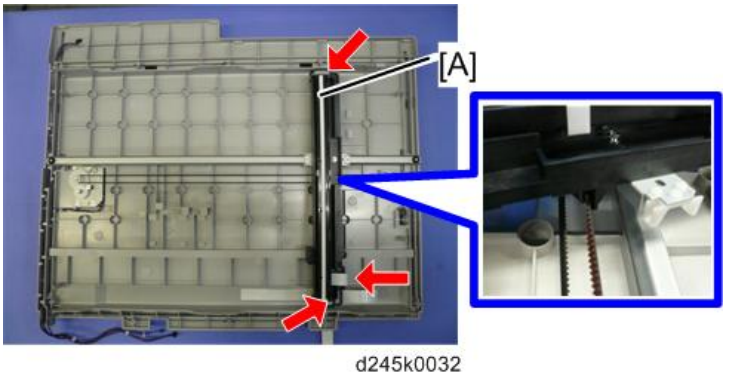
d245k0077

CIS Unit

Important

- When replacing the CIS unit or scanner drive belt, be careful not to touch the grease that is applied to the guide rod under the timing belt.

1. Exposure glass unit (page 87)
2. CIS unit [A] (x 1, x 2)

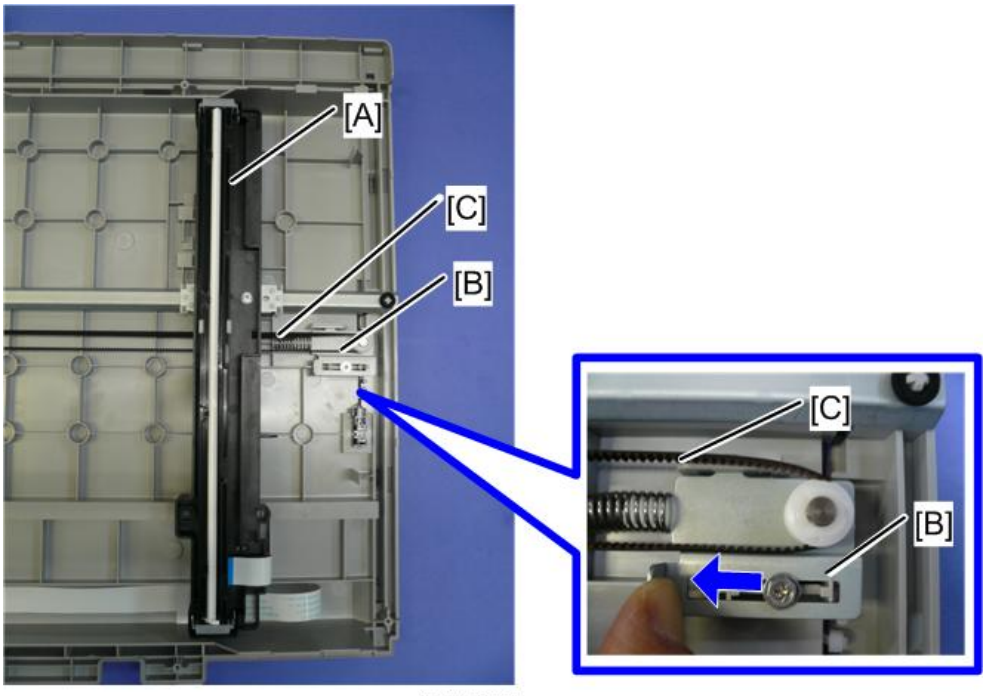


d245k0032

Scanner Drive Belt

1. Exposure glass unit (page 87)
2. Move the CIS unit [A] to expose the left bracket [B].

3. Push the left bracket [B] and remove the scanner drive belt [C].

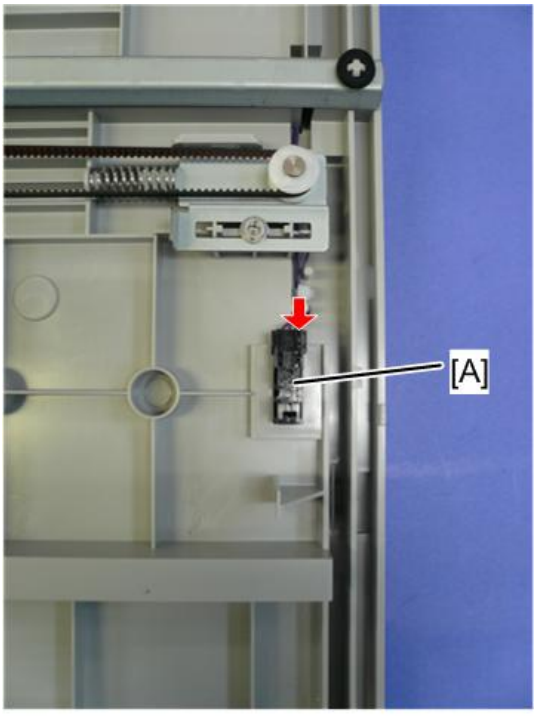


d245k0033

Scanner HP Sensor

1. Exposure glass unit (page 87)

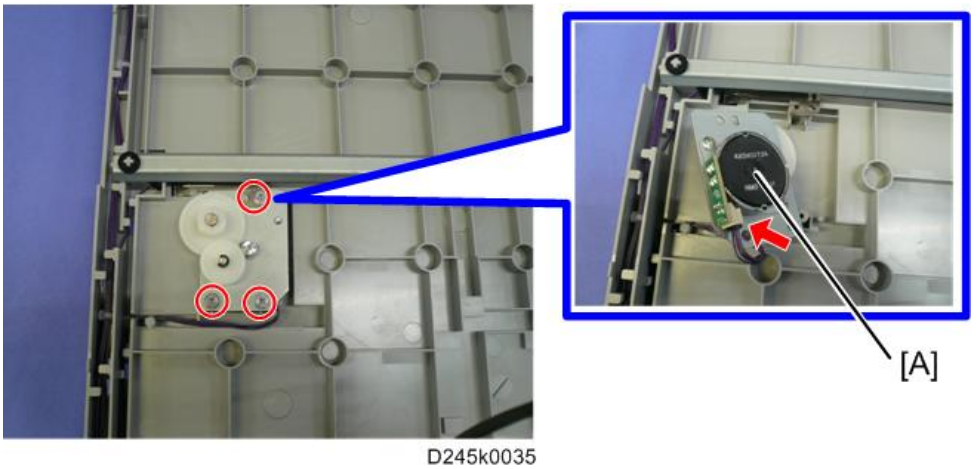
2. Scanner HP sensor [A] (x 1, x 1)



d245k0078

Scanner Motor

1. Scanner drive belt (page 88)
2. Scanner motor [A] (x 3, x 1)



D245k0035

Adjusting the Scanner Parameters

- Adjust the following SP modes after you replace the scanner unit or each part of the scanner unit:
- SP4-008-001 (Sub Scan Mag. Adj): (page 140)
- SP4-010-001 (L-Edge Regist Adj): (page 140)
- SP4-011-001 (S-Edge Regist Adj): (page 140)
- SP4-688-001 (ADF Adj Density): Use this to adjust the density level if the image density of outputs made in the DF and platen mode is different.

Laser Unit

⚠WARNING

- The laser beam can seriously damage your eyes. Be absolutely sure that the main power switch is off and that the machine is unplugged before you access the laser unit.

Important

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

Location of Caution Decal

d245z1001

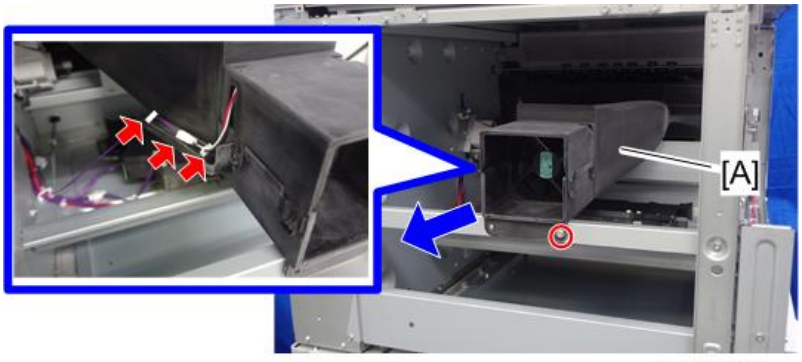
Tonner Shield Glass

1. Front right cover (page 64)
2. Tonner shield glass [A]

D245k0060

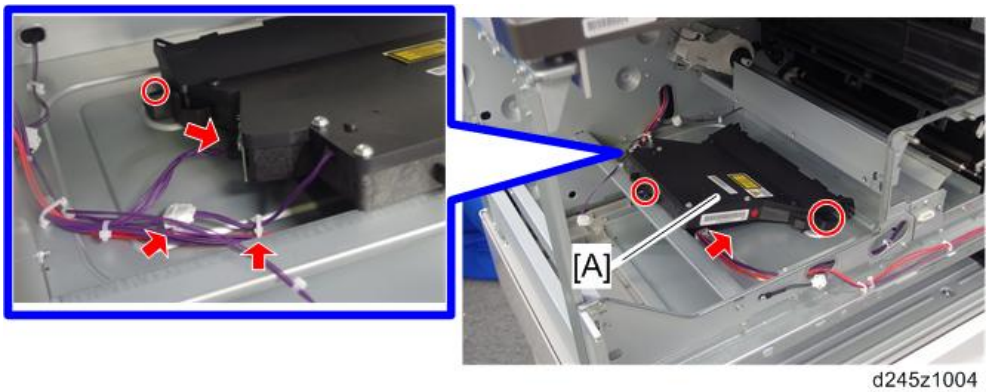
Laser Unit

1. Front right cover (page 64)
2. Paper exit tray (page 67)
3. Fan duct [A] (x 2, x 1, x 1)



d245k0172

4. Laser unit [A] (x 3, x 1, x 2)



d245z1004

PCDU Section

Important

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

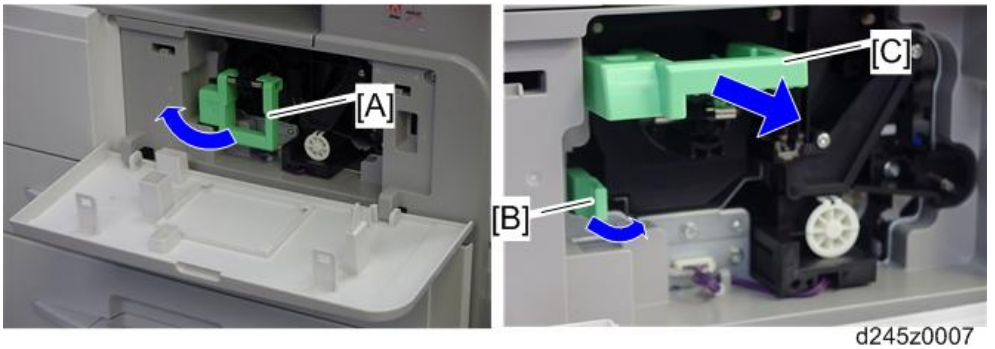
Before Replacing a PCU or Development Unit

Important RTB 2: Notes about putting the PCU and development unit back in the machine

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

PCDU

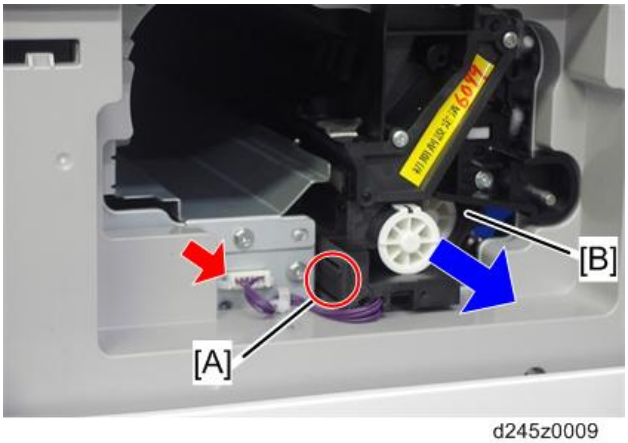
1. Open the front door, and then pull the toner bottle holder lever [A] upward.
2. Release the lock lever [B], and then pull the toner bottle holder [C].



3. **Toner bottle with the holder [A]**

d245k0134

4. **Open the right door.**
5. **Hold the lock [A], and then remove the PCDU [B] (x 1).**



d245z0009

Note

- Do not touch the OPC drum surface with bare hands.

6. **Execute SP2-801-001 (Deve Initializati Init TD Sen Execu) to reinitialize the TD sensor.**

Pick-off Pawls

⚠CAUTION

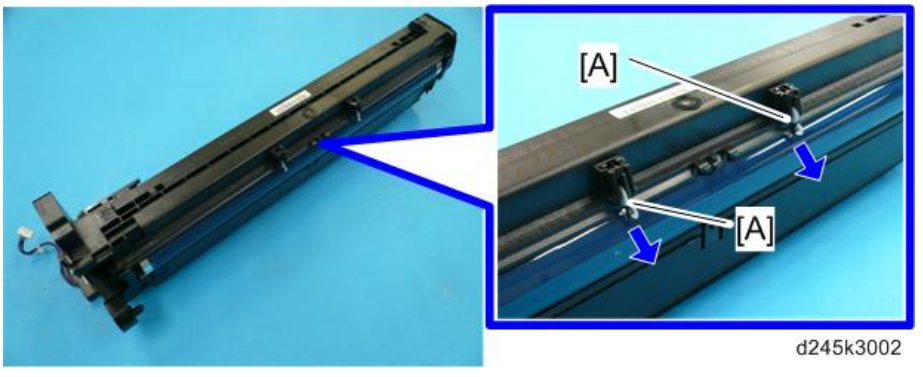
- Do not turn the PCU upside down. This causes toner and developer to spill out.

1. **PCDU (page 94)**

2. Pawl [A]

Note

- Pull down the pawl and release the bottom end.



3. After reinstalling the pick-off pawls, adjust the image quality (page 101).

OPC Drum

1. PCDU (page 94)
2. Front side piece [A] (x 1)
3. Rear side piece [B] (x 2, 1 coupling)

4. Separate the PCU [A] from the development unit [B].

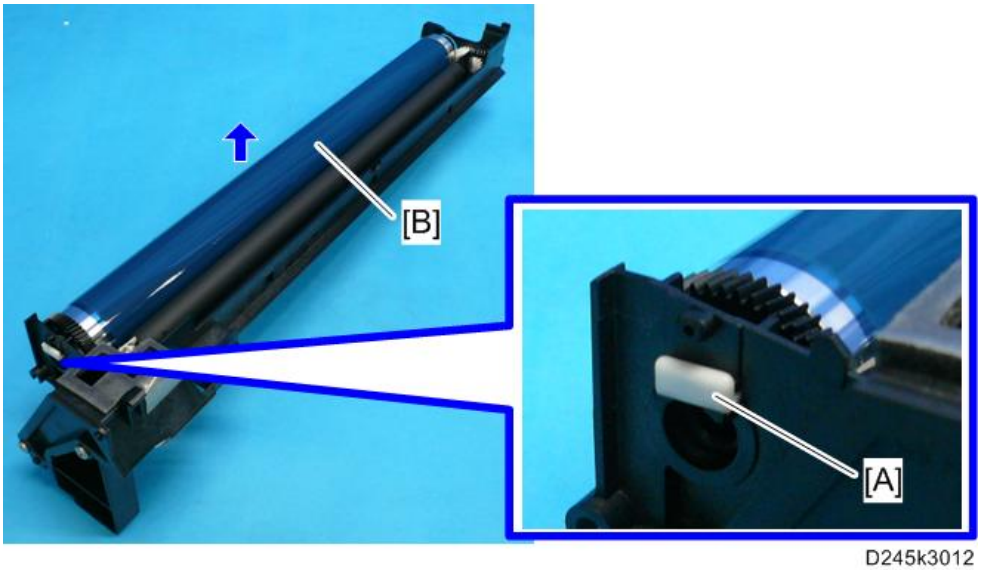
D245k3011

5. Pry out the drum retaining clip [A].

Note

- Install the clip in the same orientation (with the lip facing away from the drum shaft) when you reassemble.

6. OPC drum [B]



D245k3012

7. When reassembling, adjust the image quality (page 101).

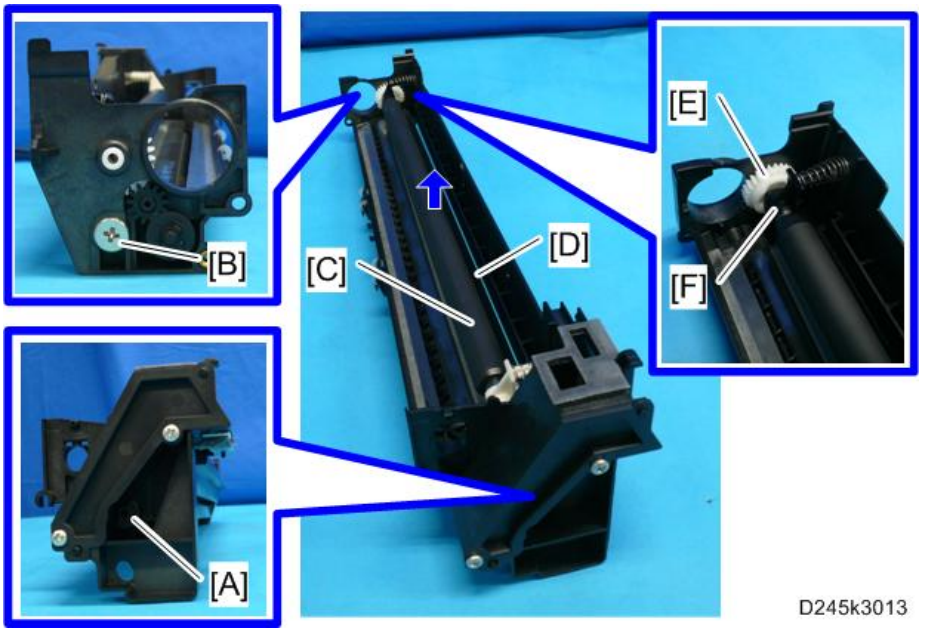
Charge Roller and Cleaning Brush

1. OPC drum (page 96)
2. Holding pin [A]

3. Stepped screw [B]
4. Charge roller [C] and cleaning brush [D] (with the holders and springs)

Note

- Turn the gear [E] (as necessary) so that the rear holder [F] comes out.



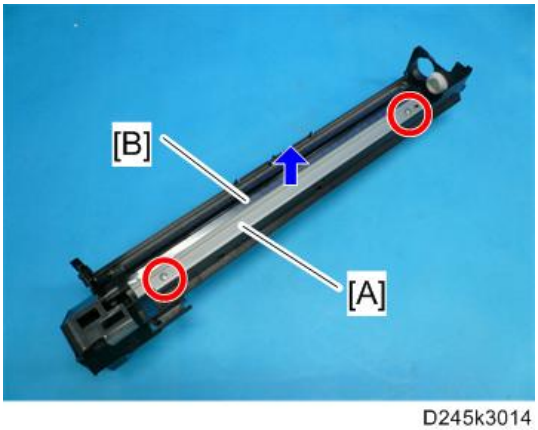
5. When reassembling, adjust the image quality (page 101).

Cleaning Blade

1. Charge roller (page 97)
2. Cleaning blade [A] (x 2)
3. When reassembling, adjust the image quality (page 101).

Important

- Reassembling
- Apply toner to the edge of the new cleaning blade when you replace the cleaning blade. This prevents possible damage to the OPC drum and blade.
  1. After installing the cleaning blade, remove some of the toner from the old blade with your finger.
  2. Apply the toner to the edge [B] of the new cleaning blade. Make sure to apply the toner evenly along full length of the new cleaning blade.



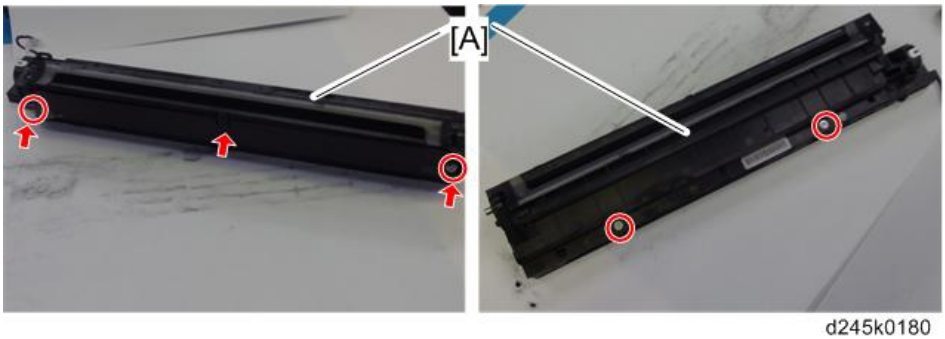
D245k3014

Developer

RTB 13 Procedure modified

1. PCDU (page 94)
2. To let the toner fall to the development unit, gently tap about eight different spots on the top of the PCDU with a screwdriver. Each spot must be approximately at an equal distance from the next spot.
3. Reinstall the PCDU in the copier.
4. Turn the main switch on.
5. Open and close the front door and wait for the machine to rotate the development roller for about 10 seconds.
6. Repeat the previous step two more times.
7. PCDU (page 94)
8. Separate the development unit from the OPC drum section (page 96).
9. Top part [A] of the development unit (x 4, x 3)

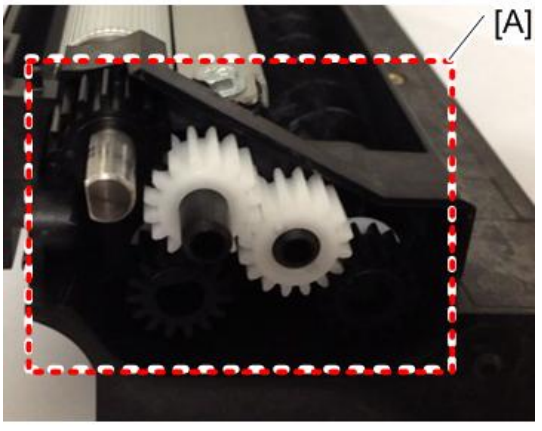
Also see RTB 3



d245k0180

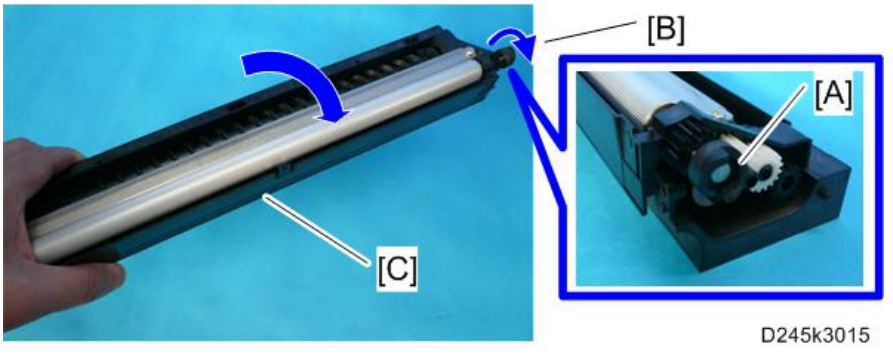
Note

- If any of the gears [A] fall off, attach them as shown below.



D245k0182

10. **Set the coupling [A] back to the shaft.**
11. **Turn the coupling in the direction of the arrow [B] to remove developer from the roller.**
12. **Turn the bottom part [C] over and rotate the gears to remove the developer.**



D245k3015

13. **Load new developer.** Also see RTB 3
14. **Reassemble the PCDU.**
15. **Install the PCDU in the machine.**
16. **Reassemble the machine.**
17. **Plug in and turn on the main power switch of the machine.**
18. **Execute SP2-801-001 (Deve Initializati Init TD Sen Execu) to reinitialize the TD sensor.**

Note

- Make sure no toner or developer stays on the gear. Clean the gears as necessary with a blower brush, etc.
- Be sure to replace the Mylar at the rear side in the correct position. (The Mylar protects the gears at the rear side from falling toner).

After Replacement or Adjustment

Important

- **Do the following procedure after replace or adjust any of the PCDU components. This procedure is not necessary when you replaced the whole PCDU with a new one.**

1. **Take 5 sample copies.**
2. **If black dots (dropped toner) show on any of the copies, continue as follows. (If all copies are clean, you do not need to do the following steps.)**
3. **Remove the PCDU from the mainframe.**
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. **Put the PCDU back into the mainframe.**
6. **Turn the main power on. Then open and close the door and wait for the machine to rotate the development roller for 10 seconds. Then open and close the door two more times, so that total rotation time is 30 seconds.**
7. **Make some sky-shot copies (or solid black prints).**

- If using A4 or $8^1/_2$" x 11" paper, make 4 copies/prints.
- If using A3 or 11" x 17" paper, make 2 copies/prints.

Note

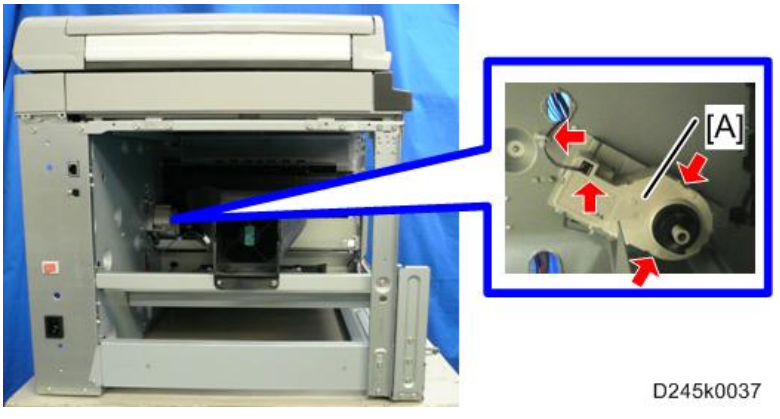
- Step 7 is required only after parts replacement or adjustment. You do not need to make sky-shot (or solid black) copies after you replace the developer.

Toner Supply Motor

Important

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

1. Front door (page 63)
2. Front left cover (page 64)
3. Front right cover (page 64)
4. Paper exit tray (page 67)
5. Toner supply motor [A] (x 1, x 2)



Fusing

Important

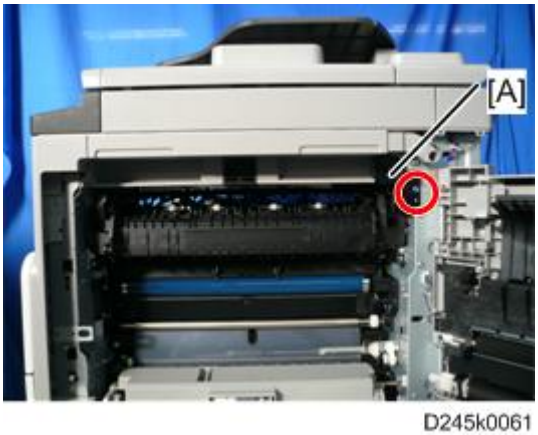
- Unplug the machine power cord before starting the following procedures.

Fusing Unit

⚠CAUTION

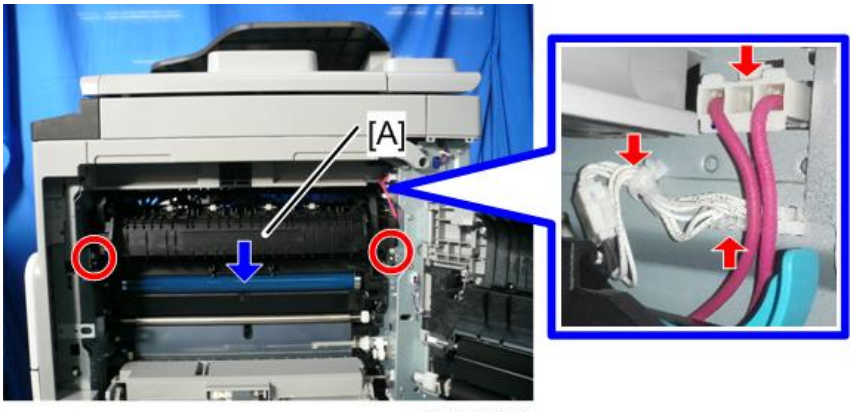
- The fusing unit can become very hot. Make sure that it has cooled down sufficiently before you handle it.

1. Turn off the main switch, and unplug the machine.
2. Right rear cover (**page 67**)
3. Open the right door.
4. Cable cover [A] (x 1)



D245k0061

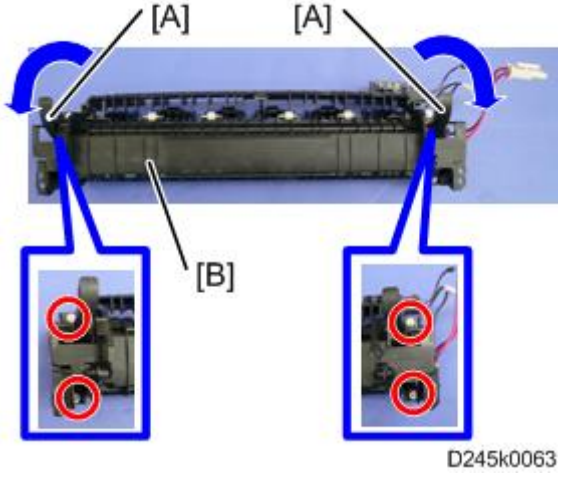
5. Fusing unit [A] (x 2, x 1, x 2)



D245k0062

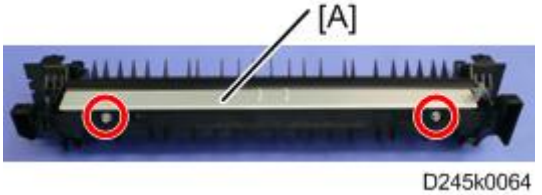
Fusing Entrance Guide Plate

1. Fusing unit (page 103)
2. Pull up the pressure arms [A]
3. Separate the pressure roller section [B] from the hot roller section (x 4).



D245k0063

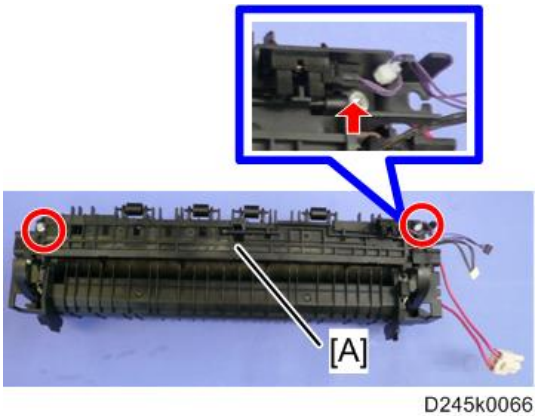
4. Fusing entrance guide plate [A] (x 2)



D245k0064

Fusing Exit Guide Plate

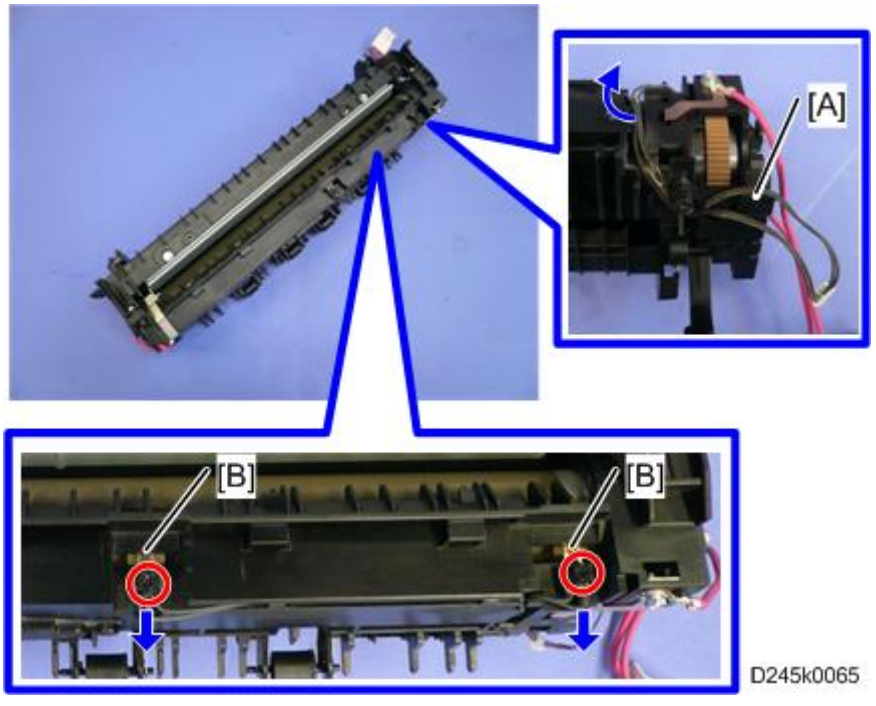
1. Fusing unit (page 103)
2. Fusing exit guide plate [A] (x 1, x 2)



Thermistor

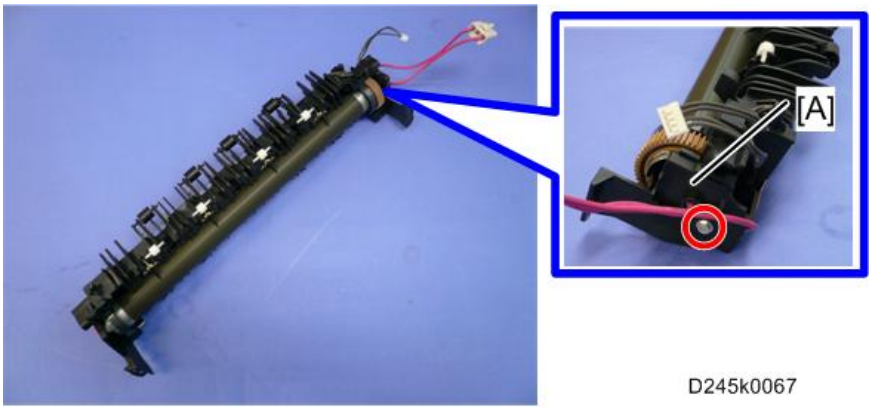
1. Fusing unit (page 103)
2. Fusing exit guide plate (page 105)
3. Thermistor harness [A]

4. Thermistors [B] (x 2)



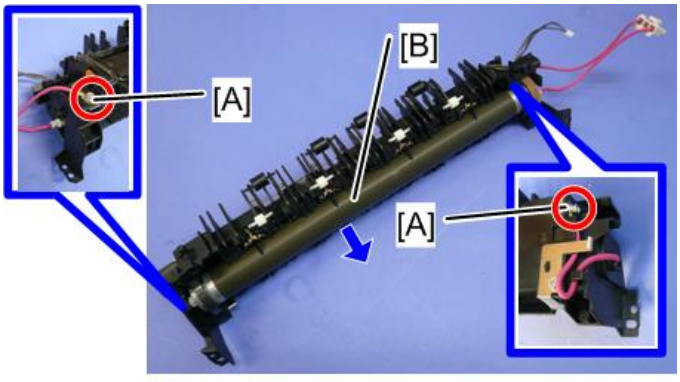
Fusing Lamp

1. Fusing unit (page 103)
2. Pressure roller section (page 104)
3. Rear holding plate [A] (x 1)



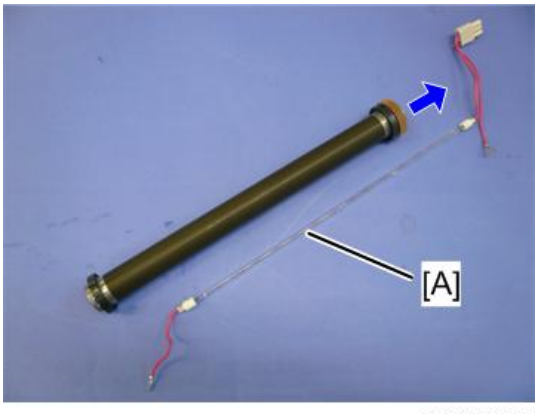
4. Fusing lamp connectors [A] (x 2)

5. Hot roller unit [B]



D245k0068

6. Pull out the fusing lamp [A] from hot roller unit.

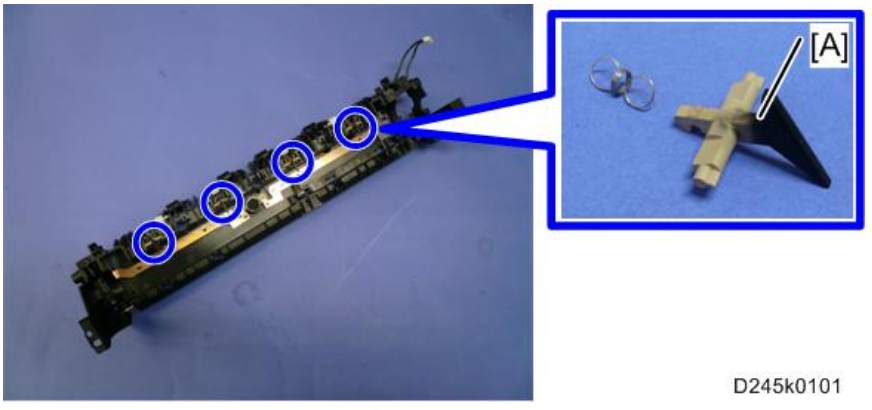


D245k0069

Hot Roller Stripper Pawls

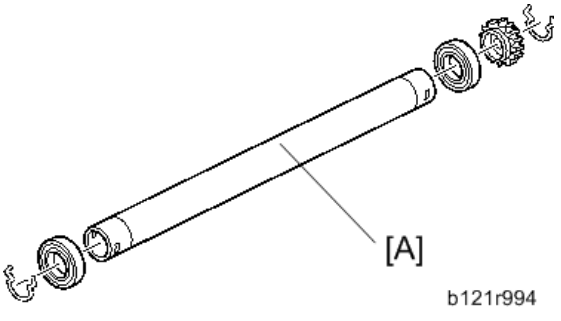
1. Hot roller unit (page 106)

2. Hot roller stripper pawls [A] (1 for each)



Hot Roller

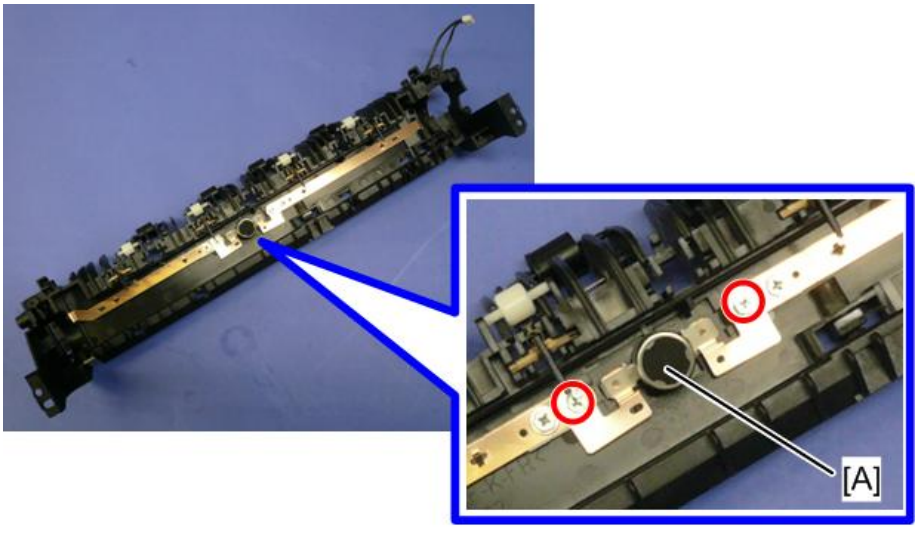
1. Hot roller unit (page 106)
2. Hot roller [A] (2 , 1 gear, 2 bearings)



Thermostat

1. Hot roller unit (page 106)

2. Thermostat [A] (x 2)

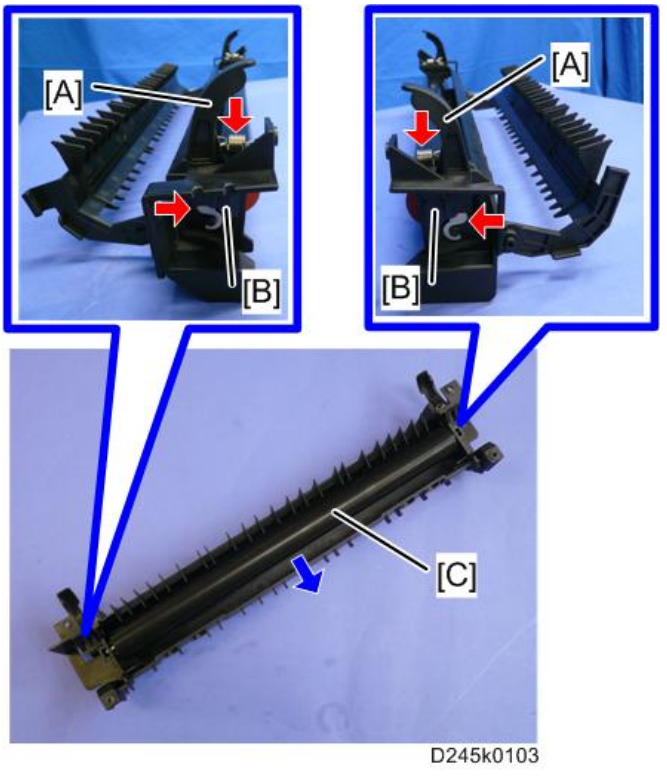


D245k0102

Pressure Roller and Bushings

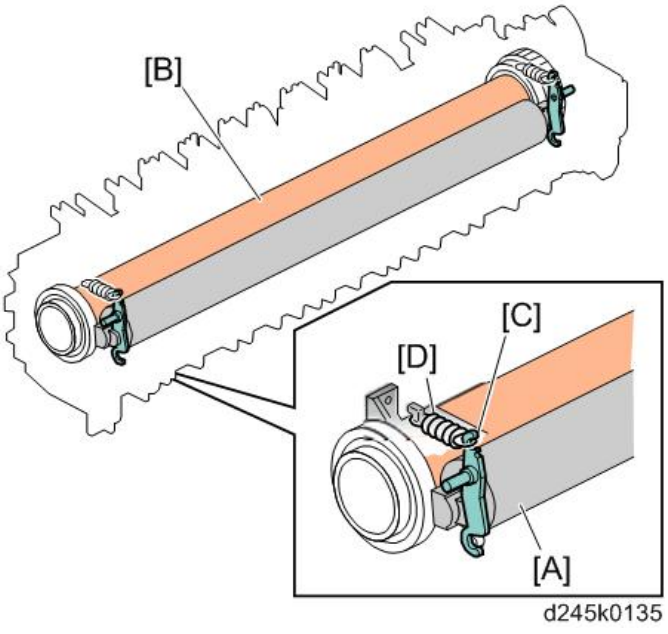
1. Separate the hot roller section from the pressure roller section (**page 104**).
2. Fusing entrance guide plate (**page 104**)
3. Two pressure arms [A] (bracket x 1, x 1 for each arm)
4. Two bushings [B]

5. **Pressure roller [C]**



NIP Band Width Adjustment

Do this adjustment when the fusing unit is at its operating temperature. The size of the OHP sheet must be A4/LT LEF. Any other sizes may cause a paper jam.



- [A] Pressure roller
- [B] Hot roller
- [C] Spring hook
- [D] Spring

1. **Place an OHP sheet on the by-pass feed table.**
2. **Enter SP mode, and run SP 1-152-001 (Fusing Nip Band Check).**
3. **Press '1' (Yes), or "Execute".**
4. **Press ⓞ twice. The machine feeds the OHP sheet into the by-pass feed, stops it at the registration roller for 300 seconds, then 20 seconds in the fusing unit.**
5. **Check that the OHP sheet is ejected to the copy tray.**
6. **Press the ⓒ key.**
7. **Quit the SP mode.**
8. **Check that the nip band (the opaque stripe) across the ejected OHP sheet is symmetrical, with both ends slightly thicker than the center.**

Note

- There is no standard value for the nip band on this machine. Make the adjustment based on the band's appearance.

9. **If the band is not as described above, change the position of the spring hooks [C] (one on each side), and then check the band again.**

Note

- The higher hook position produces greater tension.

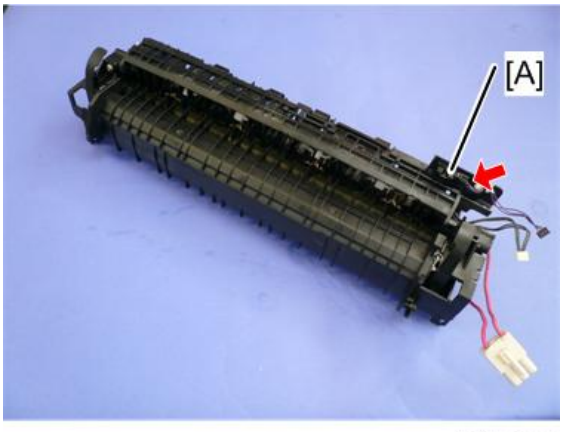
Paper Exit Section

Important

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

Paper Exit Sensor

1. Fusing unit (page 103)
2. Paper exit sensor [A] (x 1)



d245k3005

Paper Feed Section

Important

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

Paper Feed Roller

1. Paper tray 1 (page 63)
2. Paper feed roller [A]

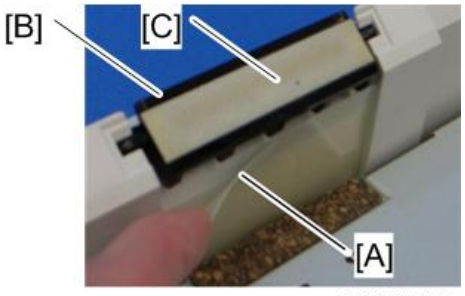
Friction Pad

1. Paper tray 1 (page 63)
2. Friction pad [A]

Note

- When replacing the friction pad

- Make sure that the mylar [A] does not go under the friction pad [B] when reinstalling the friction pad [B].
- Do not touch the upper surface [C] of the friction pad [B] with your bare hands when replacing it. If you do, clean the upper surface [C] of the friction pad [B] with a damp cloth or alcohol.



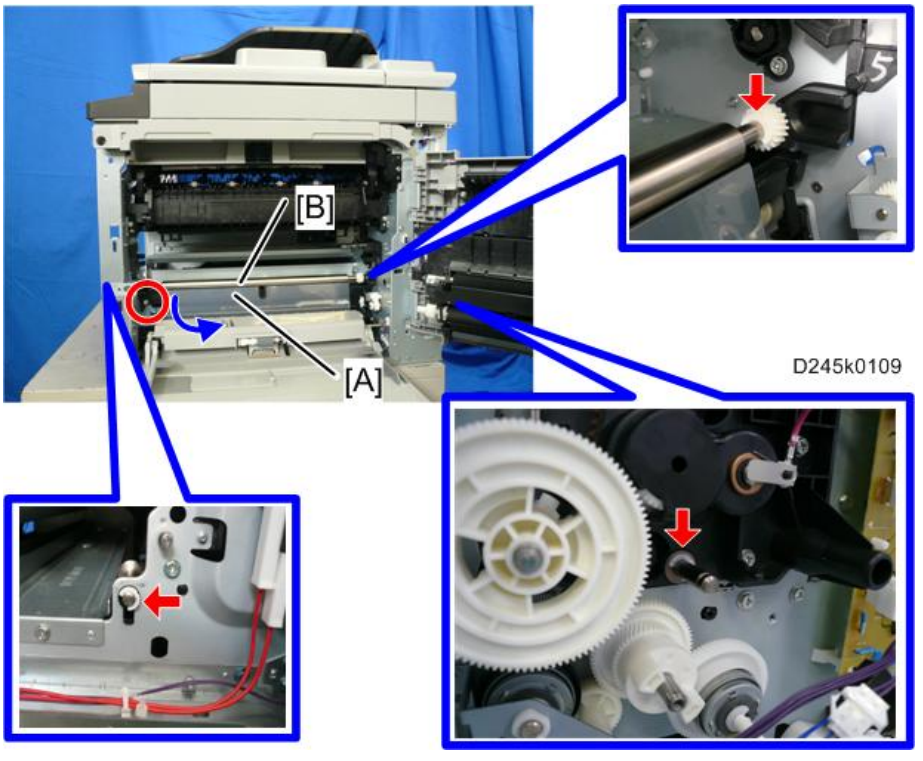
D245k0170

Registration Roller

Driven Side

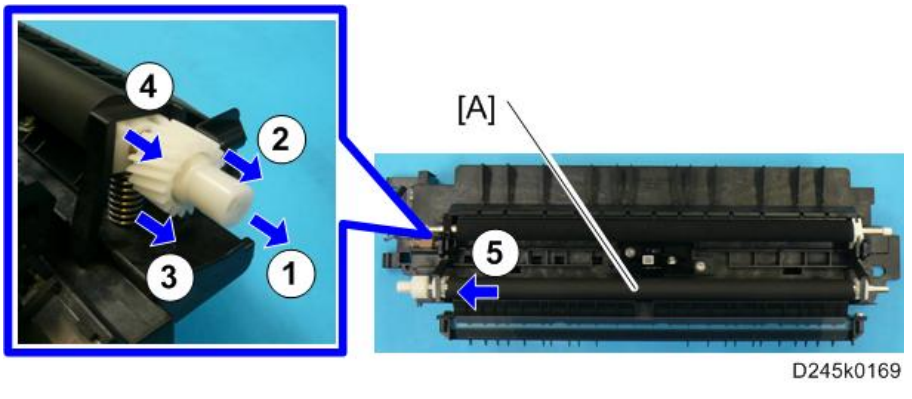
1. PCDU (page 94)
2. Front right cover (page 64)
3. Right rear cover (page 67)
4. Registration clutch (page 138)
5. Open the right door.
6. Feed roller cover [A] (x 1)

7. Registration roller [B] (x 3)



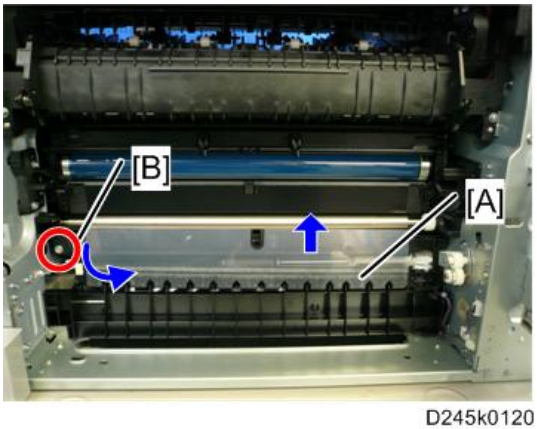
Drive Side

1. ID sensor cover (page 125)
2. Registration roller [A] (Cap x 1, Gear x 1, x 1, Bushing x 1)



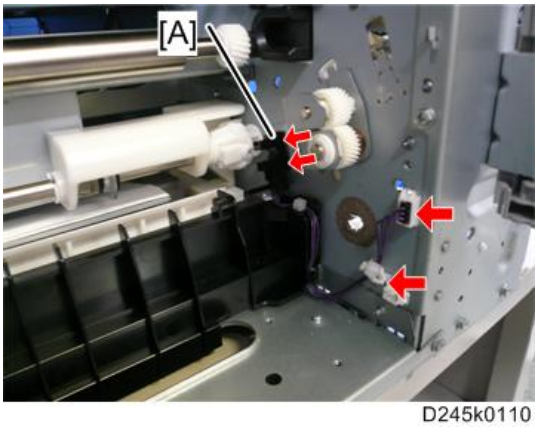
Registration Sensor

1. By-pass tray lower section (page 121)
2. Paper feed guide [A]
3. Feed roller cover [B] (x 1)



D245k0120

4. Registration sensor [A] (x 1, x 1, x2)

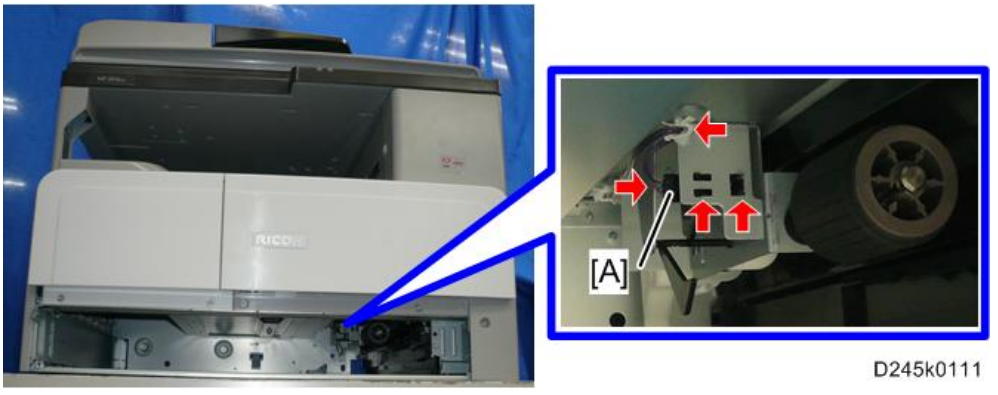


D245k0110

Paper End Sensor

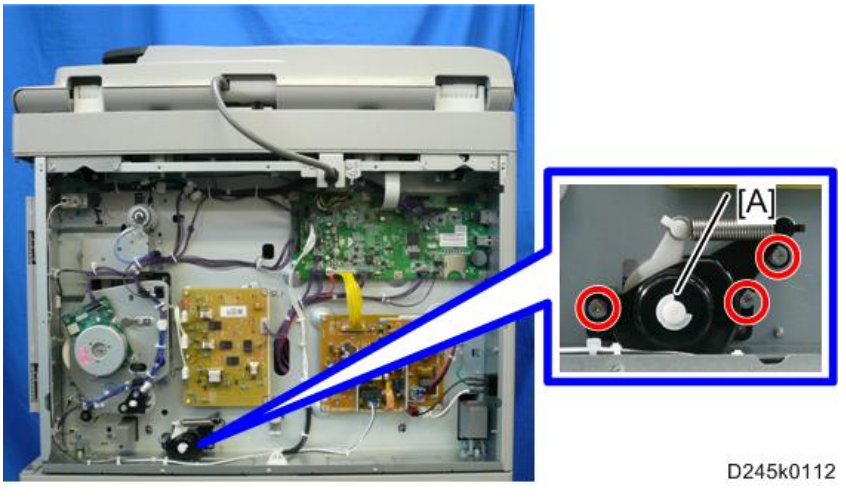
1. Paper tray 1 (page 63)

2. Paper end sensor [A] (x 1, x 2)



Tray Lift Unit

1. Paper tray 1 (page 63)
2. Rear cover (page 68)
3. Tray lift unit [A] (x 3)



By-pass Tray

1. Right rear cover (page 67)

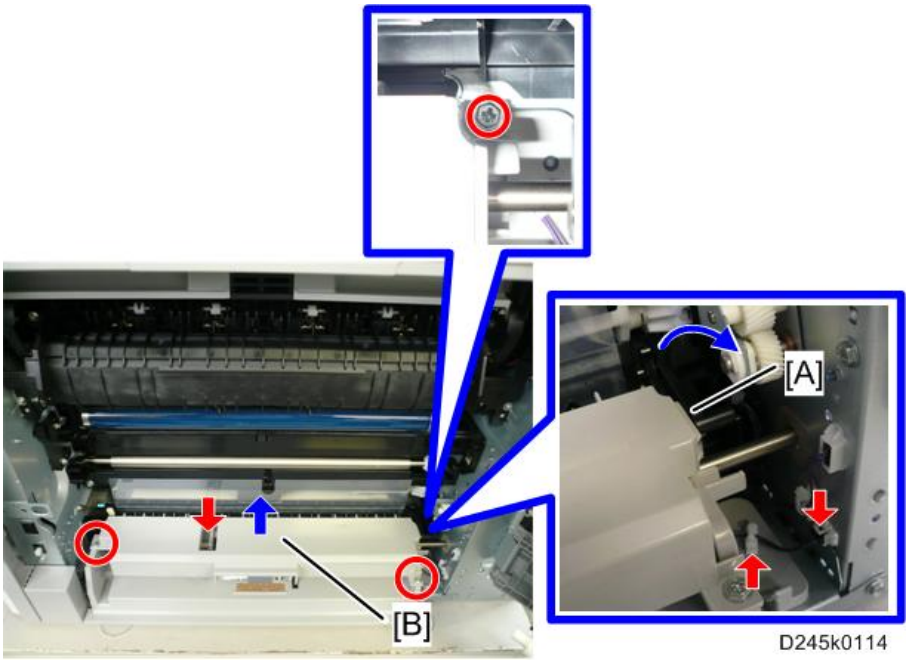
2. By-pass tray [A]

D245k0113

By-pass Paper Feed Roller and By-pass Paper End Sensor

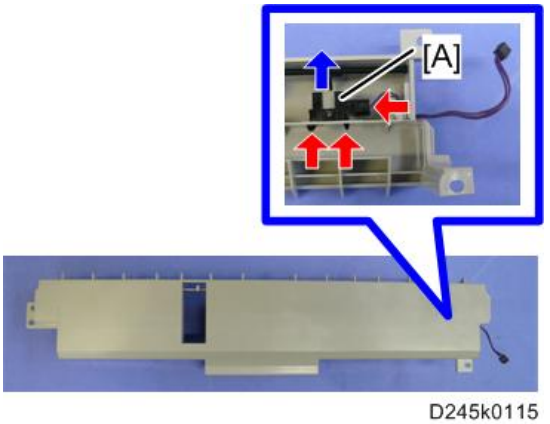
1. Right rear cover (page 67)
2. By-pass tray (page 118)
3. Rear cover (page 68)
4. By-pass paper feed clutch (page 136)
5. Open the right door.
6. Arm [A]

7. By-pass tray upper section [B] (x 3, x 1, x 1, x 1)



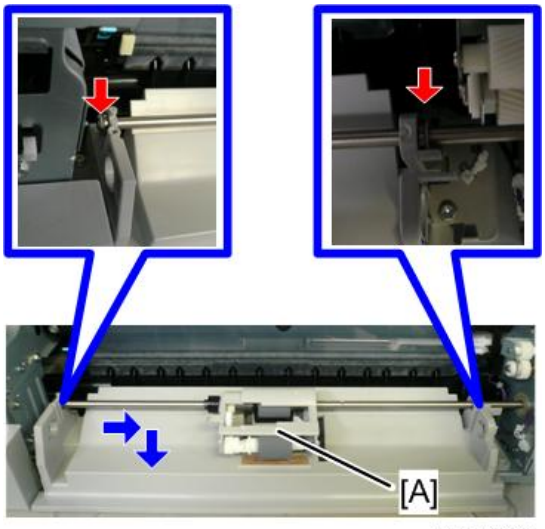
D245k0114

8. By-pass paper end sensor [A] (x 2, x 1)



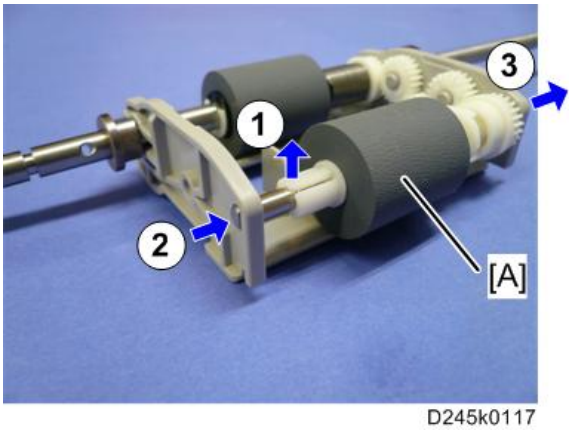
D245k0115

9. By-pass paper feed roller unit [A] (x 2)



D245k0116

10. By-pass paper feed roller [A]

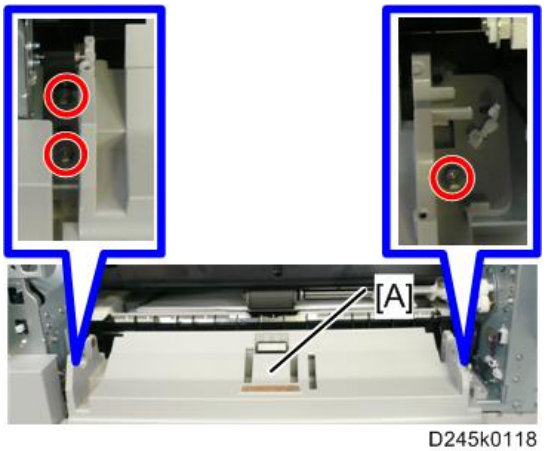


D245k0117

By-pass Tray Friction Pad

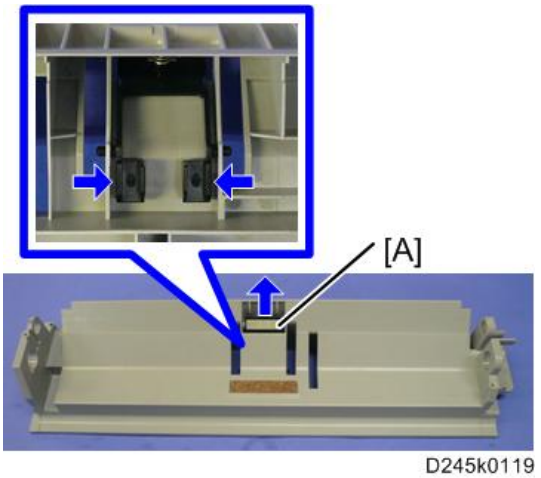
1. By-pass paper feed roller unit (page 119)

2. By-pass tray lower section [A] (x 3)



D245k0118

3. By-pass tray friction pad [A]



D245k0119

Duplex Unit

Important

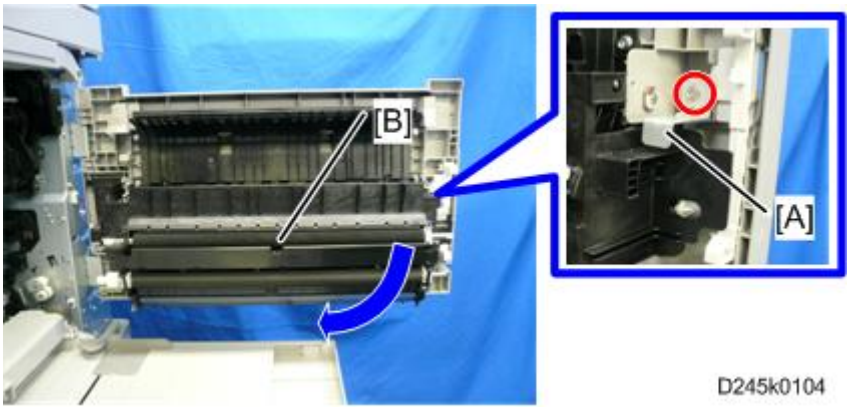
- **Unplug the machine power cord before starting the following procedures.**

Note

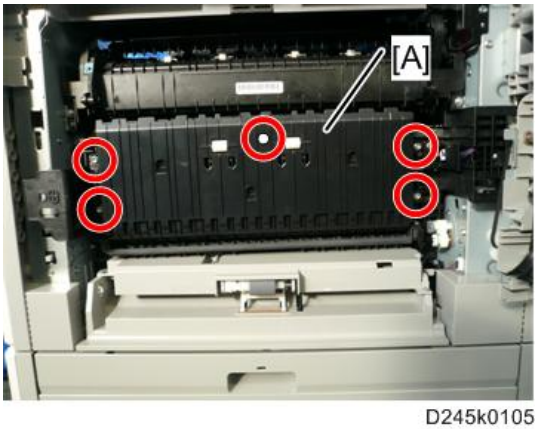
- Duplex models – D246, D247
- Non-duplex model – D245

Duplex Guide Plate

1. **Right rear cover (page 67)**
2. **Open the right door.**
3. **Duplex unit bracket [A] (x 1)**
4. **Open the transfer roller unit [B].**



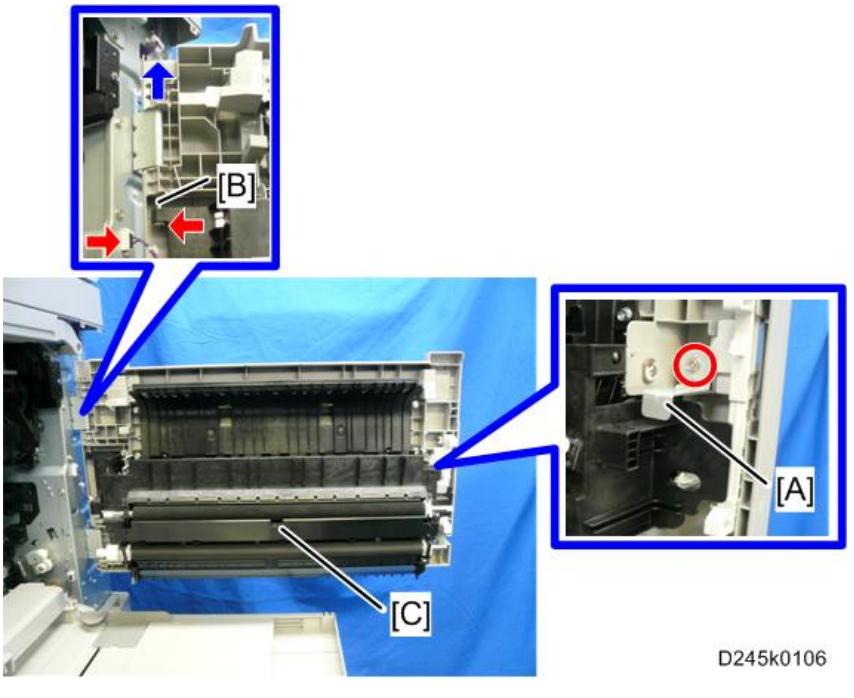
5. Duplex guide plate [A] (x 5)



D245k0105

Transfer Guide Unit

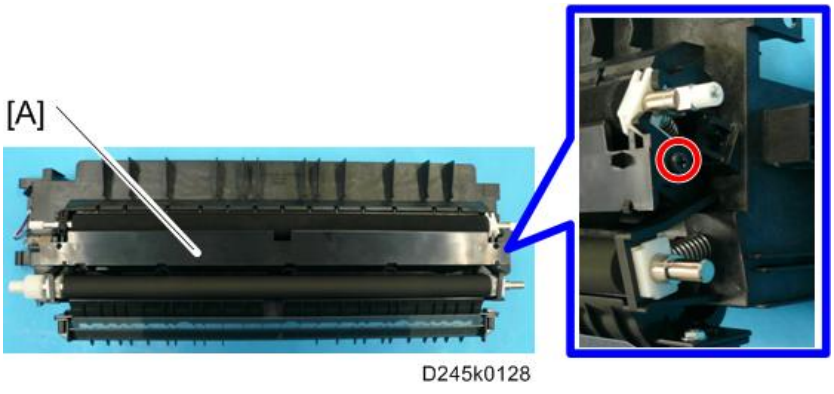
1. Right rear cover (page 67)
2. Open the right door.
3. Duplex unit bracket [A] (x 1)
4. Slide the right door hinge shaft [B] (x 1).
5. Transfer guide unit [C] (x 1)



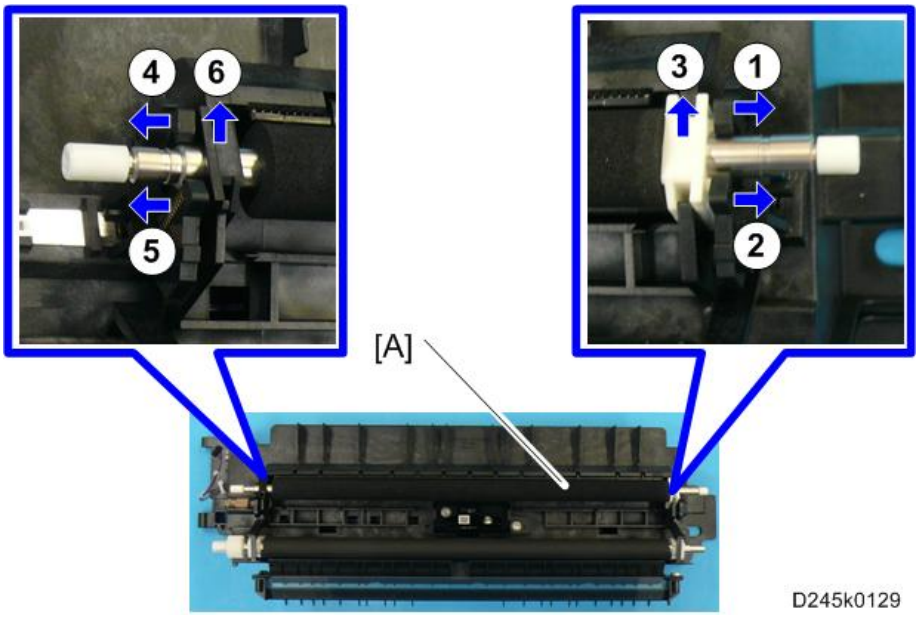
D245k0106

Transfer Roller

1. Transfer guide unit (page 124)
2. ID sensor cover [A] (x 1)



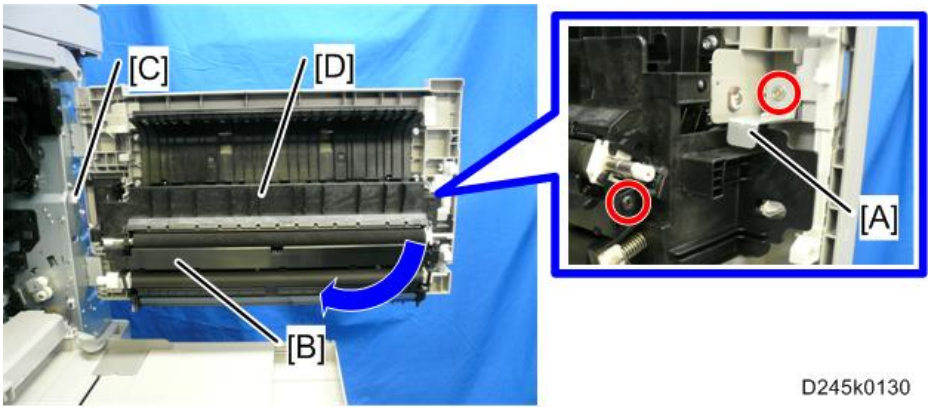
3. Transfer roller [A] (x 2 each side)



ID Sensor

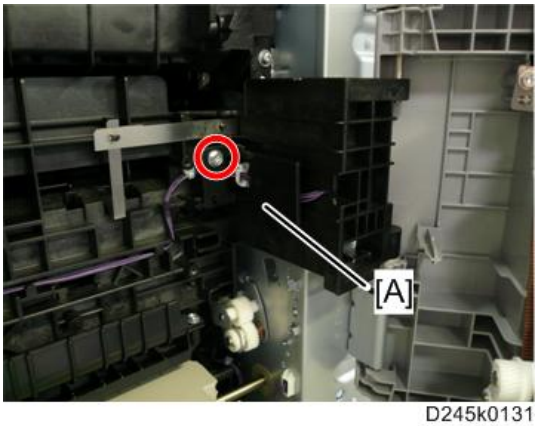
1. Right rear cover (page 67)
2. Open the right door.
3. Duplex unit bracket [A] (x 1)

4. ID sensor cover [B] (x 1)
5. Sensor connector [C]
6. Open the transfer guide unit [D].



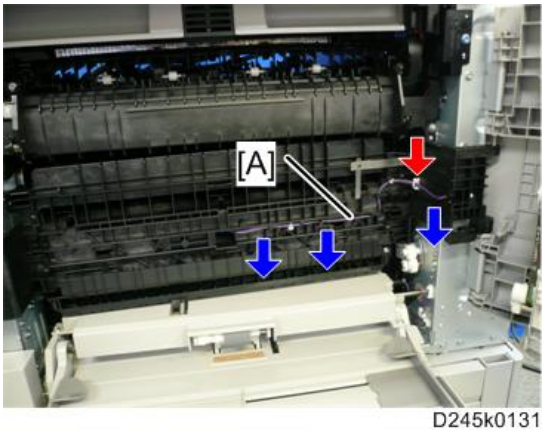
D245k0130

7. ID sensor harness cover [A] (x 1)



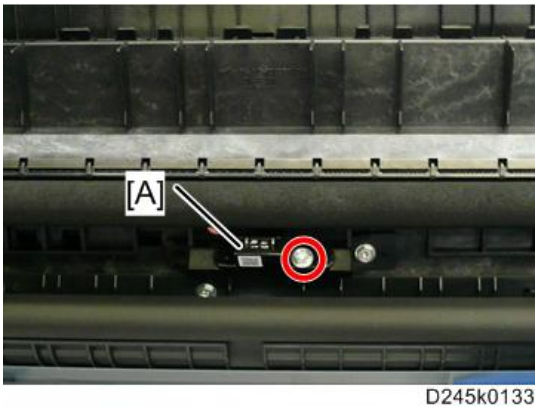
D245k0131

8. ID sensor harness [A] (x 1)



D245k0131

9. Close the transfer guide unit.
10. ID sensor [A] (x 1)



D245k0133

Electrical Components

Important

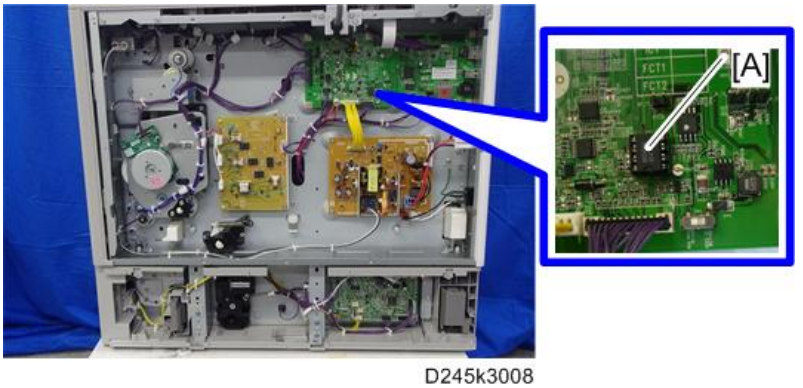
- **Unplug the machine power cord before starting the following procedure.**

MPU

⚠CAUTION

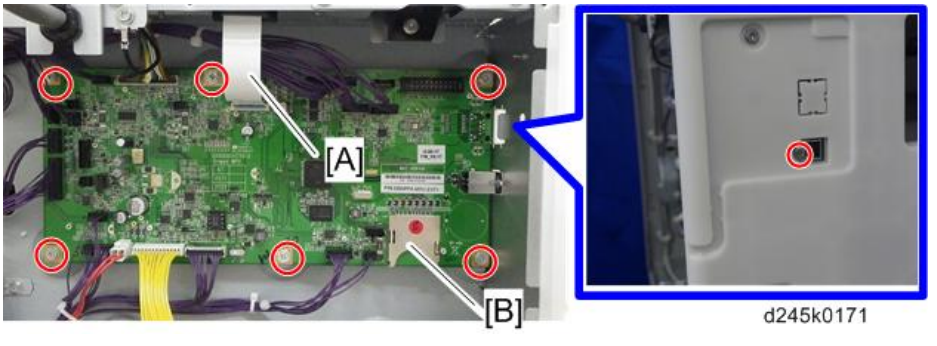
- The battery on the control board can explode if replaced incorrectly.
- Dispose of the old battery in accordance with the instructions.

1. **Rear cover (page 68)**
2. **Remove the EEPROM [A] from the old MPU.**



D245k3008

3. **[A]**
4. **MPU [B] (x 7, x all)**



d245k0171

5. **Install the new MPU.**
6. **Install the old EEPROM on the new MPU.**
7. **Replace the EEPROM if the EEPROM on the old MPU is defective.**

Note

- Make sure you print out the SMC reports ("SP Mode Data" and "Logging Data") before you replace the EEPROM.

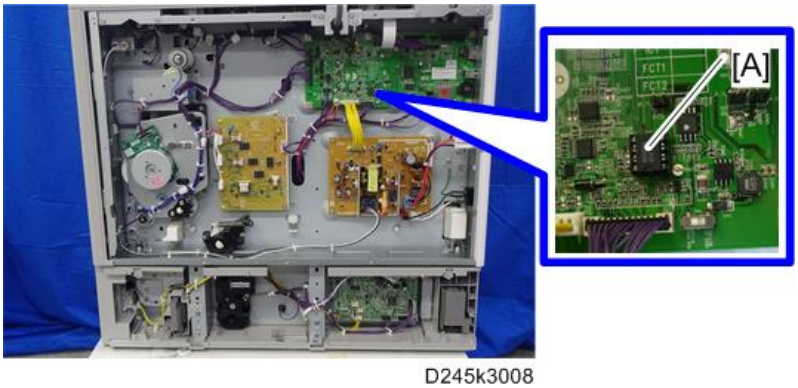
⚠CAUTION

- Keep EEPROM away from any objects that can cause static electricity. Static electricity can damage EEPROM data.
- Make sure the EEPROM is correctly installed on the MPU.

EEPROM

Also see RTB 8

1. **Rear cover (page 68)**
2. **EEPROM [A]**



D245k3008

Note

- Make sure you print out the SMC reports ("SP Mode Data" and "Logging Data") before you replace the EEPROM.

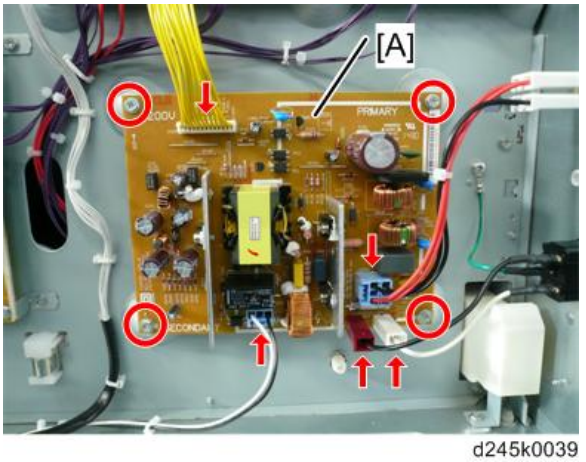
⚠CAUTION

- Keep EEPROM away from any objects that can cause static electricity. Static electricity can damage EEPROM data.
- Make sure the EEPROM is correctly installed on the MPU.

PSU (Power Supply Unit)

1. **Rear cover (page 68)**

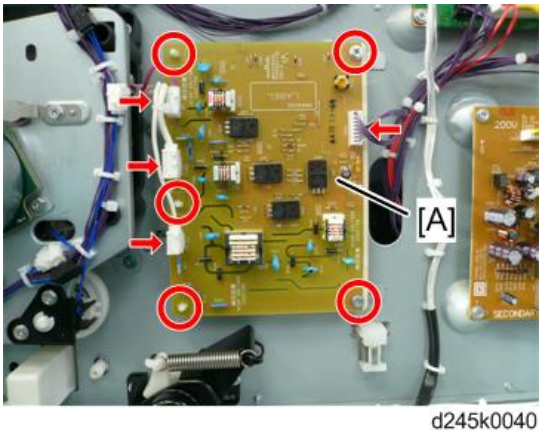
2. PSU [A] (x 4, x 5)



d245k0039

High-Voltage Power Supply Board

1. Rear cover (page 68)
2. High-voltage power supply board [A] (x 2, x 4, Stud x 3)



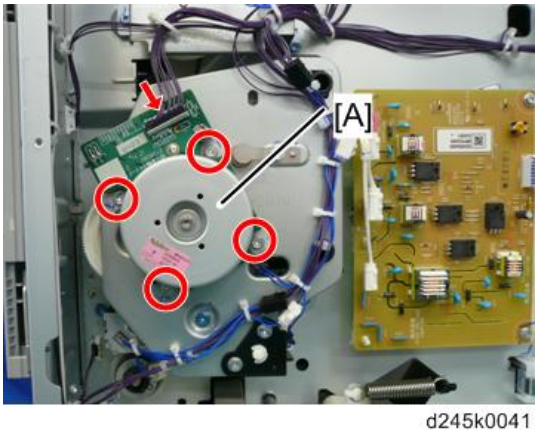
d245k0040

RTB 4: Take care when reconnecting CN2

Main Motor

1. Rear cover (page 68)

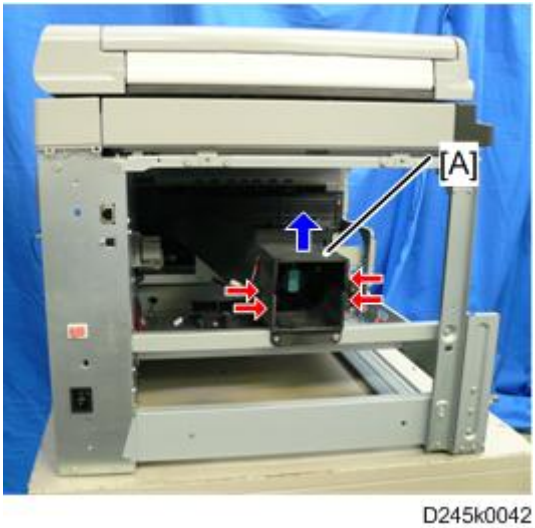
2. Main motor [A] (x 4, x 1)



d245k0041

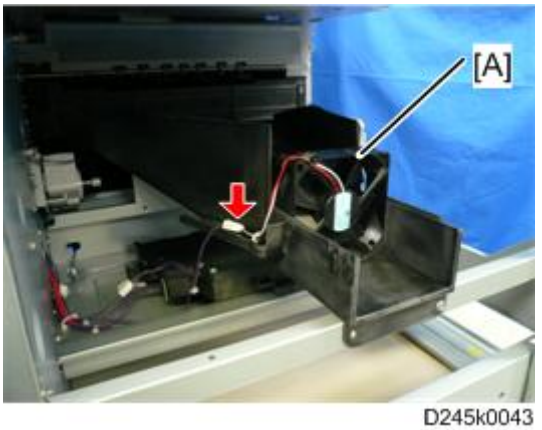
Main Fan

1. Paper exit tray (page 67)
2. Fan cover [A] (x 4)



D245k0042

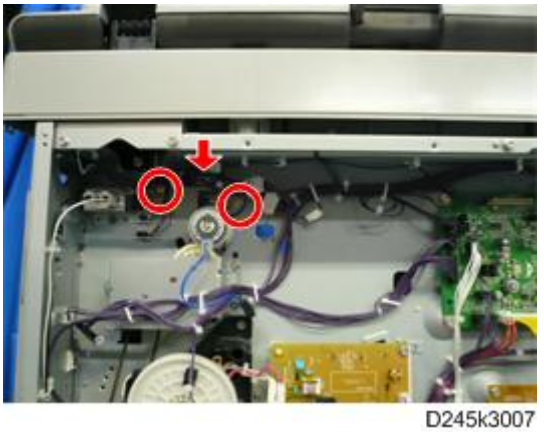
3. **Main fan [A]** (x 1)



D245k0043

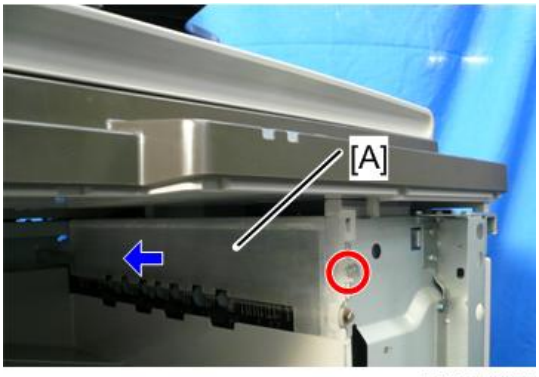
Exhaust Fan

1. **Rear cover** (page 68)
2. **Front right cover** (page 64)
3. **Paper exit tray** (page 67)
4. **Fusing unit** (page 103)
5. **Open the right door.**
6. **Exhaust fan unit [A]**
   - Rear side (x2, x 1)



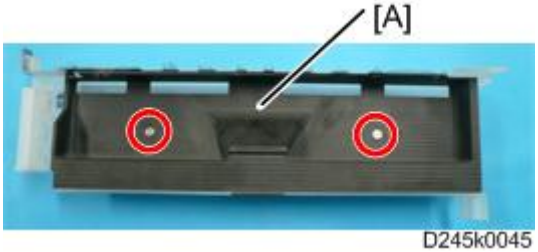
D245k3007

   - Front side (x1)



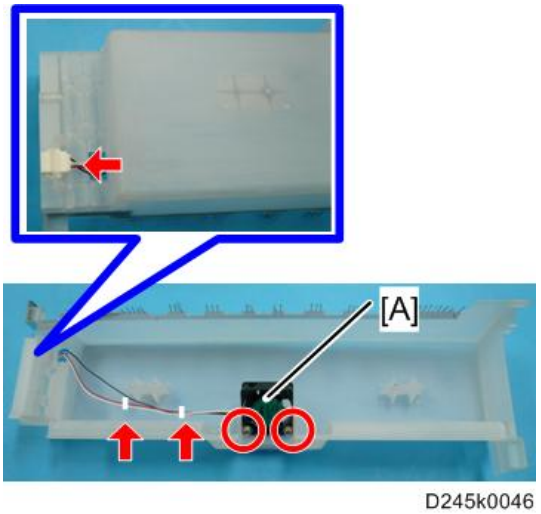
D245k0044

7. Exhaust fan cover [A] (x 2)



D245k0045

8. Exhaust fan [A] (x 2, x 2, x 1)

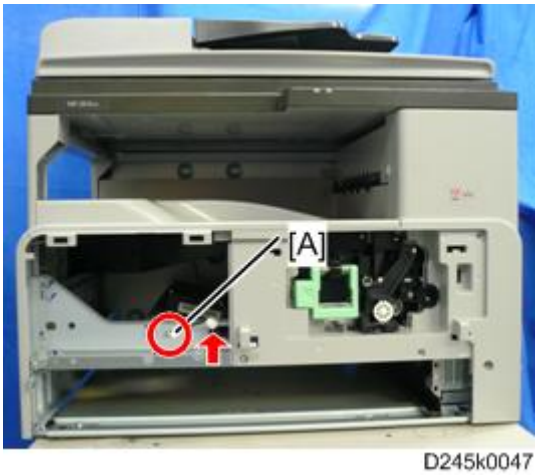


D245k0046

Temperature Sensor

1. Front left cover (page 64)

2. **Temperature sensor [A] (x1, x 1)**



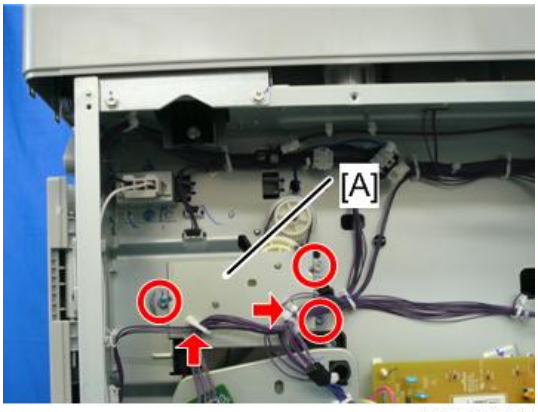
D245k0047

Paper Exit Clutch and Reverse Clutch

1. **Rear cover (page 68)**
2. **Reverse clutch [A] (x1, x 1, x 1)**

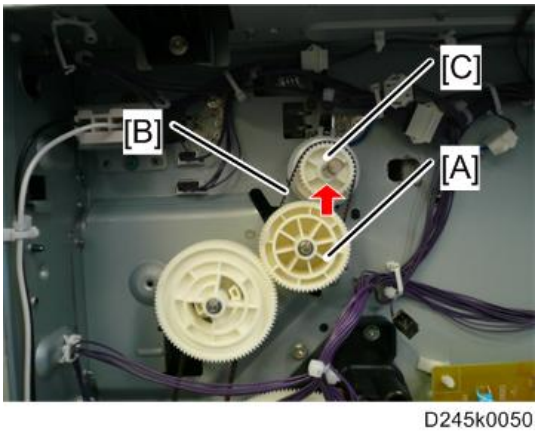
d245k0048

3. Gear cover [A] (x3, x 2)



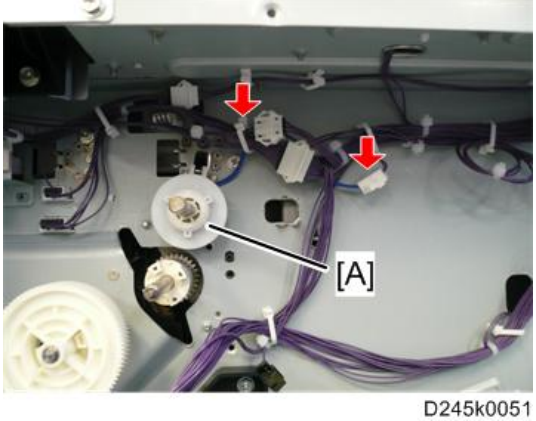
D245k0049

4. Gear [A] and timing belt [B]
5. Gear [C] (x 1)



D245k0050

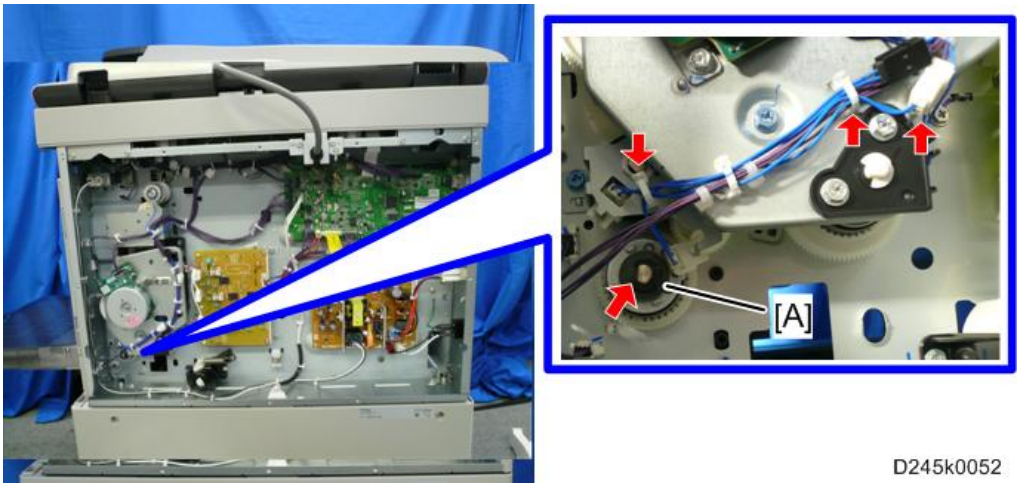
6. Paper exit clutch [A] (x 1, x 1)



D245k0051

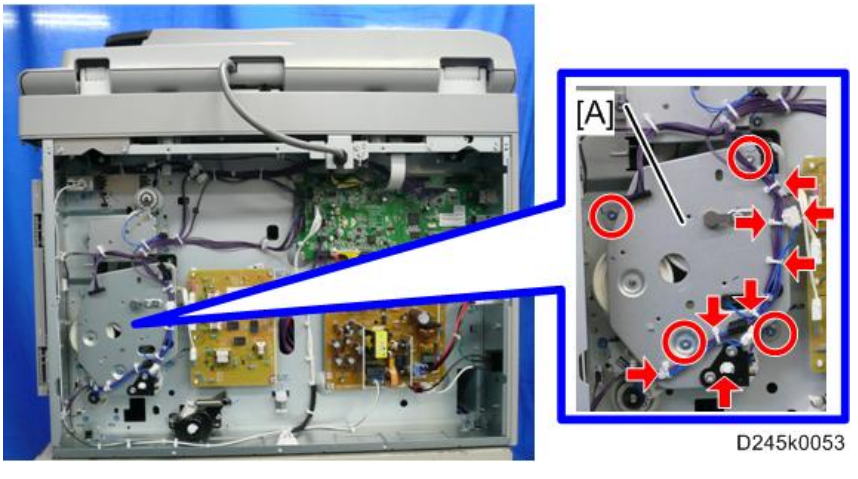
By-pass Paper Feed Clutch

1. Rear cover (page 68)
2. By-pass paper feed clutch [A] (x1, x 2, x 1)



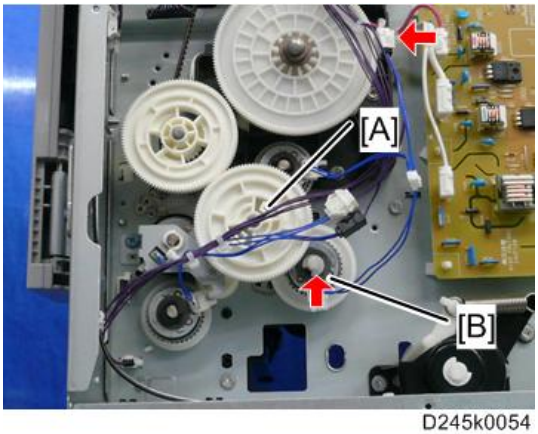
Paper Feed Clutch

1. Rear cover (page 68)
2. Main motor (page 130)
3. Gear box cover [A] (x4, x1, x 6, x 1)



4. Gear [A]

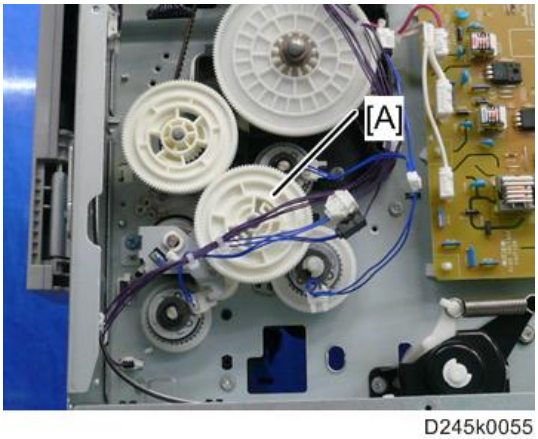
5. Paper feed clutch [B] (x 1, x 1)



D245k0054

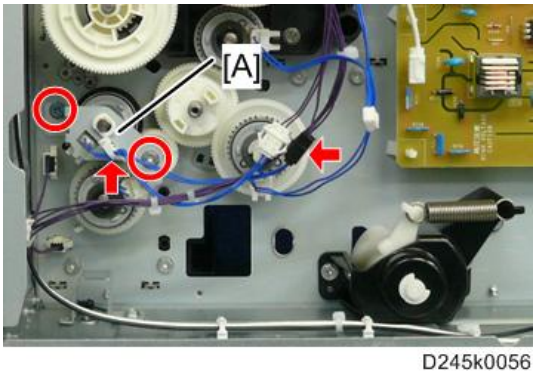
Duplex Clutch

1. Gear box cover (page 136)
2. Gear [A]



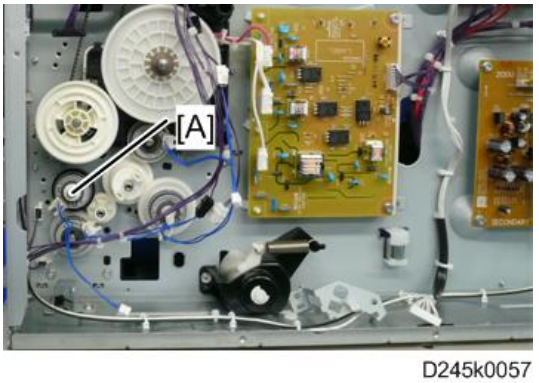
D245k0055

3. Clutch cover [A] (x2, x 1, x 1)



D245k0056

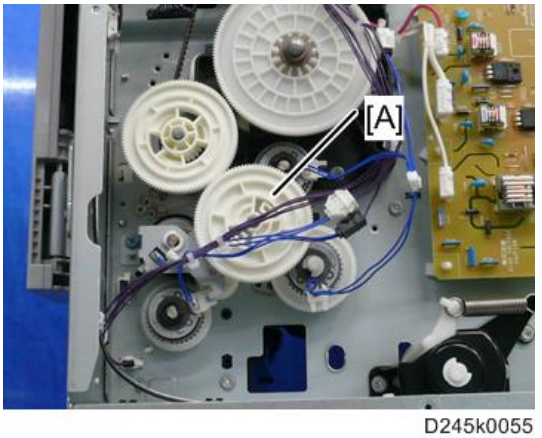
4. Duplex clutch [A]



D245k0057

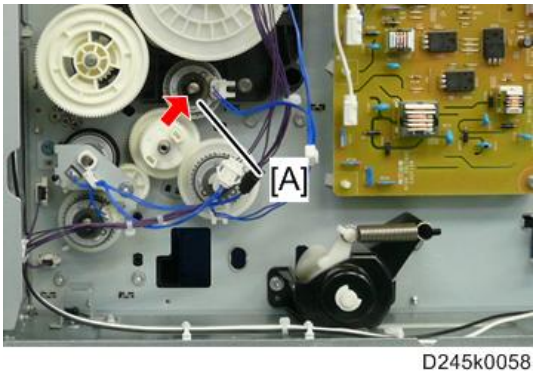
Registration Clutch

1. Gear box cover (page 136)
2. Gear [A]



D245k0055

3. **Registration clutch [A] (x 1)**



D245k0058

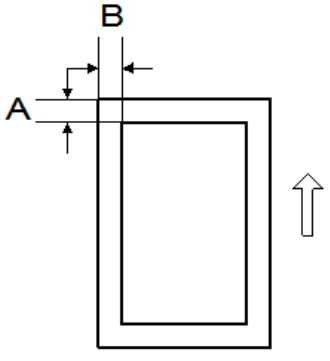
Adjustment after Replacement

Printing

Note

- Make sure the paper is installed correctly in each paper tray before you start these adjustments.
- Print the registration page (page 186 "Test Pattern Printing") to use for these adjustments.

Registration - Leading Edge/Side-to-Side



A: Leading edge registration (3 ± 2 mm)

B: Side-to-side registration (2 ± 1.5 mm)

1. **Check the leading edge registration [A] for each paper feed station, and adjust them using SP1-001.**

Tray	SP No.	Threshold
Tray: Plain	SP1-001-002	4.2 ± 1.5 mm
Tray: Mid Thick	SP1-001-003	
Tray: Thick	SP1-001-004	
Bypass: Plain	SP1-001-007	
Bypass: Mid Thick	SP1-001-008	4.2 ± 1.5 mm
Bypass: Thick	SP1-001-009	

Tray	SP No.	Threshold
Duplex: Plain	SP1-001-013	4.2 ± 1.5 mm
Duplex: Mid Thick	SP1-001-014	
Duplex: Thick	SP1-001-015	

2. **Check the side-to-side registration [B] for each paper feed station, and adjust them using SP1-002.**

Tray	SP No.	Threshold
By-pass	SP1-002-001	2 ±1.5 mm
Tray Main1	SP1-002-002	
Tray Bank1	SP1-002-004	
Tray Bank2	SP1-002-005	
Duplex	SP1-002-006	

Main Scan Magnification

Note

- Use an S5S test chart to perform the following adjustments.

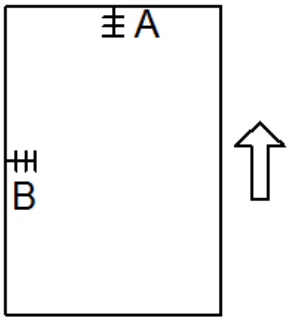
1. **Check the magnification, and adjust the magnification using SP2-102-001 (Magnification Adjustment Main Scan) if necessary. The specification is ± 0.5%.**

Scanning

Note

- Before doing the following scanner adjustments, perform or check the printing registration /side-to-side adjustment and the blank margin adjustment.
- Use an S5S test chart to perform the following adjustments.

Registration: Platen Mode



A: Leading edge registration (L-Edge Regist Adj)

B: Side-to-side registration (S-Edge Regist Adj)

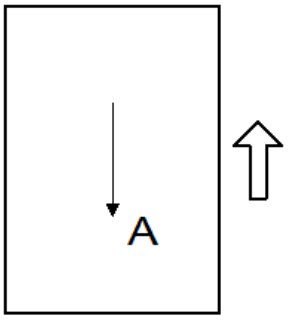
1. **Place the test chart on the exposure glass and make a copy from one of the feed stations.**
2. **Check the leading edge and side-to-side registration, and adjust them using the following SP modes if necessary.**

SP No.	SP Name	Adjustment Range
SP4-010-001	L-Edge Regist Adj	±2.0 mm
SP4-011-001	S-Edge Regist Adj	±2.0 mm

Magnification

Note

- Use an S5S test chart to do the following adjustment.



A: Sub scan magnification

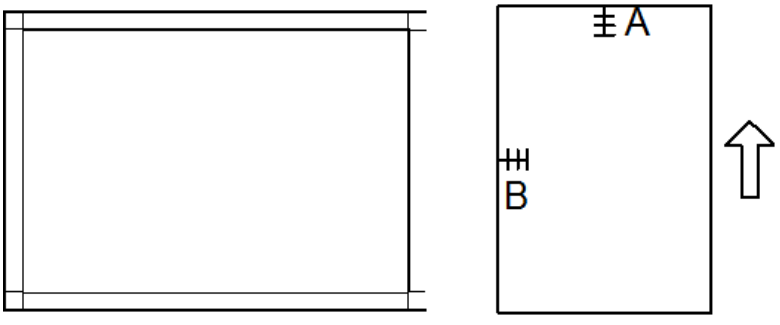
1. **Place the test chart on the exposure glass and make a copy from one of the feed stations.**

2. **Check the magnification ratio and adjust using the following SP mode if necessary.**

SP No.	SP Name	Adjustment Range
SP4-008-001	Sub scan Mag. Adj	±1.0 %

ADF Image Adjustment

Registration



A: Leading Edge Registration

B: Side-to-side Registration

Note

- Make a temporary test chart as shown above using A3/DLT paper.

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

SP No.	SP Name	Adjustment Range
SP6-006-001	ADF Adjustment SideEdge: Front	±3.0 mm
SP6-006-002	ADF Adjustment SideEdge: Rear	±3.0 mm
SP6-006-003	ADF Adjustment LeadingEdge: Front	±5.0 mm
SP6-006-004	ADF Adjustment LeadingEdge: Rear	±5.0 mm

Sub Scan Magnification

Note

- Make a temporary test chart as shown above using A3/DLT paper.

1. **Place the temporary test chart on the ADF 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 %

5. System Maintenance

Service Menu

Overview

These models have several service menus. Each service menu has several adjustment items. This section explains how to enter each service menu and what you can do in each service menu.

There are two menus depending on how you enter the service menus.

Maintenance Mode Menu	This is a menu for maintenance and service.
Special Maintenance menu	Displays the serial number of the machine.

Maintenance Mode Menu

Menu List

Display Info		
Model Name		Displays the Model Name depending on Engine Firmware Settings.
FW Version	CTL FW Version	Displays the Firmware Version.
	Engine FW Version	Displays the Engine Firmware Version.
	Scan FW Version	Displays the Scanner Firmware Version.

Counter	Printer Counter	Displays the black image counter of the printer engine.
	Scanner Counter	Displays the sum total of scanner counters for each mode. Total Page/ Black Page/ Color Page / ADF Used
	Jam Counter	Displays the number of paper jams at each location. JAM Total/ ARDF/ Initialize jam/ Tray1 nofeed jam/ Bank1 nofeed jam/ Bank2 nofeed jam/ Bypass nofeed jam/ Duplex nofeed jam (for C1b/C1c)/ Not reach bank1 Ver. Deliver/ Not reach regist/ Not reach exit sensor/ Stay on bank1 ver. Deliver/ Stay on bank2 ver. Deliver/ Stay on regist/ Stay on exit sensor/ Stayed on duplex exit

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Print Report		
Print Report	SMC Report	Prints out the SMC repot.

Engine Maintenance
See “Engine SP Mode” for details.

Scan Maintenance	
Mono Compression	Sets the monochrome compression type for scanning. MH (Default)/ MR/ MMR

Factory Default		
Factory Default	Return	Returns to the upper level of the mode
	Execute	Resets all the settings to the factory default settings.

CTL Maintenance		
FW Update Mode	Not Execute	Not used
	Execute	

Auto IP	Turns automatic IP assignment on or off. Off/ On

Special Maintenance Menu

Menu List

Engine maintenance		
Engine maintenance	Serial No	Displays the serial number of the machine.

Engine SP Mode

SP1-XXX (Paper Handling)

1001	**[Sub Registration]** Leading Edge Registration Adjustment (Tray Location, Paper Type, Color Mode), Paper Type: Plain, Middle Thick, Thick		
	Adjusts the leading edge registration by changing the registration motor operation timing for each mode. Increasing a value: an image is moved to the trailing edge of paper. Decreasing a value: an image is moved to the leading edge of paper.		
1-001-002	Tray: Plain	*ENG	[-9.0 to 9.0 / **0.0** / 0.1 mm / step]
1-001-003	Tray: Mid Thick	*ENG	[-9.0 to 9.0 / **0.0** / 0.1 mm / step]
1-001-004	Tray: Thick	*ENG	[-9.0 to 9.0 / **0.0** / 0.1 mm / step]
1-001-007	Bypass: Plain	*ENG	[-9.0 to 9.0 / **0.0** / 0.1 mm / step]
1-001-008	Bypass: Mid Thick	*ENG	[-9.0 to 9.0 / **0.0** / 0.1 mm / step]
1-001-009	Bypass: Thick	*ENG	[-9.0 to 9.0 / **0.0** / 0.1 mm / step]
1-001-013	Duplex: Plain:	*ENG	[-9.0 to 9.0 / **0.0** / 0.1 mm / step]
1-001-014	Duplex: Mid Thick	*ENG	[-9.0 to 9.0 / **0.0** / 0.1 mm / step]
1-001-015	Duplex: Thick	*ENG	[-9.0 to 9.0 / **0.0** / 0.1 mm / step]

1002	**[Main Registration]**		
	Adjusts the printing side-to-side registration from each paper feed station, using the “Test Page” in the [User Tools]. Adjustments are supported for all five possible feed trays (including optional trays).		
1-002-001	By-pass	*ENG	[-4.0 to 4.0 / **0.0** / 0.1 mm / step]
1-002-002	Tray Main1	*ENG	[-4.0 to 4.0 / **0.0** / 0.1 mm / step]
1-002-004	Tray Bank1	*ENG	[-4.0 to 4.0 / **0.0** / 0.1 mm / step]
1-002-005	Tray Bank2	*ENG	[-4.0 to 4.0 / **0.0** / 0.1 mm / step]

1-002-006	Duplex	*ENG	[-4.0 to 4.0 / **0.0** / 0.1 mm / step]

1003	**[Paper Buckle]** Paper Buckle Adjustment (Tray Location, Paper Type)		
	Adjusts the amount of paper buckle on the registration roller.		
1-003-002	Tray1: Plain	*ENG	[-9 to 5 / **3** / 1 mm / step]
1-003-003	Tray1: Mid Thick	*ENG	[-9 to 5 / **3** / 1 mm / step]
1-003-004	Tray1: Thick	*ENG	[-9 to 5 / **3** / 1 mm / step]
1-003-005	Bank1:Plain	*ENG	[-9 to 5 / **3** / 1 mm / step]
1-003-006	Bank1:Mid Thick	*ENG	[-9 to 5 / **3** / 1 mm / step]
1-003-007	Bank1:Thick	*ENG	[-9 to 5 / **3** / 1 mm / step]
1-003-008	Bank2:Plain	*ENG	[-9 to 5 / **3** / 1 mm / step]
1-003-009	Bank2:Mid Thick	*ENG	[-9 to 5 / **3** / 1 mm / step]
1-003-010	Bank2:Thick	*ENG	[-9 to 5 / **3** / 1 mm / step]
1-003-012	Bypass: Plain	*ENG	[-9 to 5 / **1** / 1 mm / step]
1-003-013	Bypass: Mid Thick	*ENG	[-9 to 5 / **2** / 1 mm / step]
1-003-014	Bypass: Thick	*ENG	[-9 to 5 / **4** / 1 mm / step]
1-003-018	Duplex: Plain	*ENG	[-9 to 5 / **3** / 1 mm / step]
1-003-019	Duplex: Mid Thick	*ENG	[-9 to 5 / **3** / 1 mm / step]
1-003-020	Duplex: Thick	*ENG	[-9 to 5 / **3** / 1 mm / step]

1103	**[Fusing Reload Adj]**		
	Specifies the settings of the reload permit for cold temperature in color mode.		
1-103-001	Fusing Idling	*ENG	[0 to 1 / **0** / 1 / step] Turns on or off the fusing idling mode. 0: Off, 1: On

1-103-002	Reload Temp.	*ENG	[90 to 190 / **160** / 1 deg / step] Adjusts the reload temperature.
1-103-003	Thresh	*ENG	[60 to 160 / **140** / 1 deg / step] Adjusts the threshold temperature for the reload mode change from the forced reload mode to normal reload control.
1-103-004	Forced ReloadTime	*ENG	[5.0 to 20.0 / **23.0** / 0.1 sec / step] Adjusts the time for the forced reload mode (no fusing idling).

1105	**[Fusing Temp Adj]**		
	Adjusts the target fusing temperature. "Center" indicates the center of the roller; "End" indicates the front and rear ends. (Paper Type, Fusing Control Mode) Plain 1/2, Middle Thick, Thick 1/2		
1-105-001	Center:Plain1	*ENG	[160 to 200 / **170** / 1 deg / step]
1-105-003	Center:Plain2	*ENG	[160 to 200 / **175** / 1 deg / step]
1-105-005	Center:M-Thick	*ENG	[160 to 200 / **175** / 1 deg / step]
1-105-007	Center:Thick	*ENG	[0 to 40 / **15** / 1 deg / step] Adjusts the additional temperature for the thick paper. This value is added to the temperature for the plain 1 (SP1-105-001).
1-105-008	Center:Thick2	*ENG	[0 to 40 / **25** / 1 deg / step] Adjusts the additional temperature for the thick paper 2. This value is added to the temperature for the plain 1 (SP1-105-001).
1-105-009	Center Minus:Thin	*ENG	[0 to 20 / **10** / 1 deg / step] Adjusts the subtract temperature for the thin paper. This value is subtracted from the temperature for the plain 1 (SP1-105-001).

1-105-011	Low Power	*ENG	[0 to 150/ **105** / 1 deg / step] Adjusts the standby temperature for the low power mode.
1-105-012	Wait Temp: Center	*ENG	[160 to 190/ **175** / 1 deg / step] Adjusts the standby temperature for the normal power mode.
1-105-013	Print Ready	*ENG	[160 to 190/ **175** / 1 deg / step] Adjusts the print ready temperature for the normal power mode.
020 to 025	Turns on or off the paper waiting control for each paper type. Thin, Plain 1/2, Middle Thick, Thick 1/2		
1-105-020	Reg. Wait:Thin	*ENG	[0 or 1 / **1** / 1 / step] 0: Off, 1: On
1-105-021	Reg. Wait:Plain1	*ENG	[0 or 1 / **1** / 1 / step] 0: Off, 1: On
1-105-022	Reg. Wait:Plain2	*ENG	[0 or 1 / **1** / 1 / step] 0: Off, 1: On
1-105-023	Reg. Wait:M-Thick	*ENG	[0 or 1 / **1** / 1 / step] 0: Off, 1: On
1-105-024	Reg. Wait:Thick	*ENG	[0 or 1 / 1 / 1 / step] 0: Off, 1: On
1-105-025	Reg. Wait:Thick2	*ENG	[0 or 1 / 1 / 1 / step] 0: Off, 1: On
026 to 037	Adjusts the lower or upper limit temperature against the actual target temperarure of the fusing unit for the paper waiting control. These are activated only if the setting of SP1-105-020 to -025 is turned on.		
1-105-026	Wait:Lower:Thin	*ENG	[0 to 60 / **30** / 1 deg / step]
1-105-027	Wait:Lower:Plain1	*ENG	[0 to 60 / **30** / 1 deg / step]
1-105-028	Wait:Lower:Plain2	*ENG	[0 to 60 / **30** / 1 deg / step]
1-105-029	Wait:Lower:MThick	*ENG	[0 to 60 / **10** / 1 deg / step]

1-105-030	Wait:Lower:Thick	*ENG	[0 to 60 / **10** / 1 deg / step]
1-105-031	Wait:Lower:Thick2	*ENG	[0 to 60 / **10** / 1 deg / step]
1-105-032	Wait:Upper:Thin	*ENG	[0 to 60 / **40** / 1 deg / step]
1-105-033	Wait:Upper:Plain1	*ENG	[0 to 60 / **40** / 1 deg / step]
1-105-034	Wait:Upper:Plain2	*ENG	[0 to 60 / **40** / 1 deg / step]
1-105-035	Wait:Upper:MThick	*ENG	[0 to 60 / **40** / 1 deg / step]
1-105-036	Wait:Upper:Thick	*ENG	[0 to 60 / **40** / 1 deg / step]
1-105-037	Wait:Upper:Thick2	*ENG	[0 to 60 / **40** / 1 deg / step]
1-105-038	Regist Wait Time	*ENG	[0 to 120 / **120** / 1 sec / step]
1-105-040	Low-V:Wait:Center	*ENG	[0 to 100/ **10** / 1 deg / step] Adjusts the lower limit temperature for the center thermistor of the fusing unit.
1-105-041	Low-V:Wait:End	*ENG	[0 to 100/ **50** / 1 deg / step] Adjusts the lower limit temperature for the end thermistor of the fusing unit.
1-105-043	Low-V:Wait Time	*ENG	[0 to 300/ **60** / 1 sec / step] Adjusts the waiting time for the recovery to the lower limit temperature of the fusing unit. If the temperature of the fusing unit does not reach the lower limit temperature for the specified time in this SP, the machine stops paper feeding, and then isses SC549-02.
1-105-050	Duplex Correction	*ENG	[0 to 1 / **0** / 1 / step]
1-105-061	High Temp Corr.	*ENG	[0 to 40 / **5** / 1 deg / step] Adjusts the subtracted temperature against the CPM down temperature 3.

1106	[Fusing Temp Disp]		
	Displays the current temperature of the heating roller and ambient temperature in the machine.		
1-106-001	Roller Center	ENG	[-20 to 250 / **0** / 1 deg / step]
1-106-003	MachineTemp PowOn	ENG	[-20 to 250 / **0** / 1 deg / step]

1107	[Env. Correction]		
	Adjusts the settings related to the environmental correction in the low temperature condition.		
1-107-001	Thresh:S1	*ENG	[0 to 50/ **17** / 1 deg / step] Adjusts the threshold temperature for the low temperature condition.
1-107-002	Thresh:delta t	*ENG	[0 to 50/ **0** / 1 deg / step] Adjusts the additional temperature to the threshold temperature for the low temperature condition.
-003 to -008	Adjusts the correction temperature to the threshold temperature for each paper type		
1-107-003	Low:thin	*ENG	[0 to 30/ **0** / 1 deg / step]
1-107-004	Low:Plain1	*ENG	[0 to 30/ **0** / 1 deg / step]
1-107-005	Low:Plain2	*ENG	[0 to 30/ **0** / 1 deg / step]
1-107-006	Low:M-Thick	*ENG	[0 to 30/ **0** / 1 deg / step]
1-107-007	Low:Thick	*ENG	[0 to 30/ **0** / 1 deg / step]
1-107-008	Low:Thick2	*ENG	[0 to 30/ **0** / 1 deg / step]

1108	[CNTL Period Adj]		
	Adjusts the fusing control interval for each mode.		
1-108-001	Warming-Up	*ENG	[100 to 3000 / **1000** / 100 msec / step]
1-108-002	Print	*ENG	[100 to 3000 / **1000** / 100 msec / step]

1-108-003	Wait	*ENG	[100 to 3000 / **1000** / 100 msec / step]
1-108-004	Print Start	*ENG	[100 to 3000 / **200** / 100 msec / step]
1-108-005	Print Start Time	*ENG	[0 to 999 / **5** / 1 sec / step]

1109	**[Fusing Rev. Adj]**		
	Adjusts the time for the fusing temperature control.		
1-109-001	Before Print Time	*ENG	[0 to 120 / **7** / 1 sec / step] Adjusts the idling time for the fusing unit before printing.
1-109-002	Pre Rev. Time	*ENG	[0 to 120 / **120** / 1 sec / step]
1-109-003	Low-V PrePrt Time	*ENG	[0 to 120 / **0** / 1 sec / step] Adjusts the idling time for the fusing unit in the low voltage mode.

1112	**[Image Temp Corr]**		
	These SPs are used for the fusing temperature control for variable job images. This control saves the power consumption when the machine copies or prints a job text image in black and white mode.		
1-112-001	Temp.:Normal:Lv1	*ENG	[-25 to 10 / **0** / 1 deg / step]
1-112-002	Temp.:Normal:Lv2	*ENG	[-25 to 10 / **0** / 1 deg / step]

1124	**[CPM Down Setting]**		
	Sets the temperature differential used to calculate CPM down for low and high temperatures. Also, sets the interval for temperature checks for CPM down.		
1-124-001	Low:Down Temp.	*ENG	[-50 to 0 / **-25** / 1 deg / step]
1-124-002	Low:Up Temp.	*ENG	[-50 to 0 / **-5** / 1 deg / step]
1-124-003	Low :1st CPM	*ENG	[10 to 100 / **80** / 5% / step]
1-124-004	Low :2nd CPM	*ENG	[10 to 100 / **60** / 5% / step]
1-124-005	Low :3rd CPM	*ENG	[10 to 100 / **40** / 5% / step]

1-124-006	High:1st CPM	*ENG	[10 to 100/ **100** / 5% / step]
1-124-007	High:2nd CPM	*ENG	[10 to 100/ **50** / 5% / step]
1-124-008	High:3rd CPM	*ENG	[10 to 100/ **10** / 5% / step]
1-124-009	H:CPM-D Temp1.:LT	*ENG	[150 to 250 / **210** / 1 deg / step]
1-124-010	H:CPM-D Temp2.:LT	*ENG	[150 to 250 / **215** / 1 deg / step]
1-124-011	H:CPM-D Temp3.:LT	*ENG	[150 to 250 / **220** / 1 deg / step]
1-124-012	H:CPM-D Temp1.:A4	*ENG	[150 to 250 / **210** / 1 deg / step]
1-124-013	H:CPM-D Temp2.:A4	*ENG	[150 to 250 / **215** / 1 deg / step]
1-124-014	H:CPM-D Temp3.:A4	*ENG	[150 to 250 / **220** / 1 deg / step]
1-124-015	H:CPM-D Temp1.:B5	*ENG	[150 to 250 / **210** / 1 deg / step]
1-124-016	H:CPM-D Temp2.:B5	*ENG	[150 to 250 / **215** / 1 deg / step]
1-124-017	H:CPM-D Temp3.:B5	*ENG	[150 to 250 / **220** / 1 deg / step]
1-124-018	H:CPM-D Temp1.:A5	*ENG	[150 to 250 / **210** / 1 deg / step]
1-124-019	H:CPM-D Temp2.:A5	*ENG	[150 to 250 / **215** / 1 deg / step]
1-124-020	H:CPM-D Temp3.:A5	*ENG	[150 to 250 / **220** / 1 deg / step]
1-124-021	H:CPM-D Temp1.:A6	*ENG	[150 to 250 / **210** / 1 deg / step]
1-124-022	H:CPM-D Temp2.:A6	*ENG	[150 to 250 / **215** / 1 deg / step]
1-124-023	H:CPM-D Temp3.:A6	*ENG	[150 to 250 / **220** / 1 deg / step]
1-124-024	Judging Interval	*ENG	[1 to 999 / **10** / 1 sec / step]
1-124-025	Start Timing	*ENG	[1 to 999 / **10** / 1 sec / step]
1-124-026	H:1st CPM:Thick	*ENG	[10 to 100 / **60** / 5% / step]
1-124-027	H:2nd CPM:Thick	*ENG	[10 to 100 / **50** / 5% / step]
1-124-028	H:3rd CPM:Thick	*ENG	[10 to 100 / **10** / 5% / step]
1-124-029	H:CPM-D Temp1T:LT	*ENG	[150 to 250/ **210** / 1 deg / step]
1-124-030	H:CPM-D Temp2T:LT	*ENG	[150 to 250/ **215** / 1 deg / step]
1-124-031	H:CPM-D Temp3T:LT	*ENG	[150 to 250/ **220** / 1 deg / step]

1-124-032	H:CPM-D Temp1T:A4	*ENG	[150 to 250/ **210** / 1 deg / step]
1-124-033	H:CPM-D Temp2T:A4	*ENG	[150 to 250/ **215** / 1 deg / step]
1-124-034	H:CPM-D Temp3T:A4	*ENG	[150 to 250/ **220** / 1 deg / step]
1-124-035	H:CPM-D Temp1T:B5	*ENG	[150 to 250/ **210** / 1 deg / step]
1-124-036	H:CPM-D Temp2T:B5	*ENG	[150 to 250/ **215** / 1 deg / step]
1-124-037	H:CPM-D Temp3T:B5	*ENG	[150 to 250/ **220** / 1 deg / step]
1-124-038	H:CPM-D Temp1T:A5	*ENG	[150 to 250/ **210** / 1 deg / step]
1-124-039	H:CPM-D Temp2T:A5	*ENG	[150 to 250/ **215** / 1 deg / step]
1-124-040	H:CPM-D Temp3T:A5	*ENG	[150 to 250/ **220** / 1 deg / step]
1-124-041	H:CPM-D Temp1T:A6	*ENG	[150 to 250/ **210** / 1 deg / step]
1-124-042	H:CPM-D Temp2T:A6	*ENG	[150 to 250/ **215** / 1 deg / step]
1-124-043	H:CPM-D Temp3T:A6	*ENG	[150 to 250/ **220** / 1 deg / step]
1-124-101	Low-V:1st CPM	*ENG	[10 to 100/ **30** / 5% / step]
1-124-102	Low-V:2nd CPM	*ENG	[10 to 100/ **20** / 5% / step]
1-124-103	Low-V:3rd CPM	*ENG	[10 to 100/ **10** / 5% / step]
1-124-104	Low-V:Stop Time	*ENG	[0 to 100/ **30** / 1 sec / step]

1152	**[Fusing Nip Check]**		
	Checks and adjusts the nip of the hot roller and pressure roller.		
1-152-001	0:OFF, 1:ON	ENG	[0 or 1 / **1** / 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]
1-152-004	Fusing Temp.	*ENG	[100 to 200/ **175** / 1 deg / step]

1159	**[Fusing Jam Detect]**
	This SP mode detects SC559. Set this SP mode to 'Yes' if the machine experiences paper jam problems on a continual basis.

1-159-001	SC Display	*ENG	[0 to 1 / **0** / 1 / step] 0: Off (No fusing jam SC) 1: On (Fusing jam SC displayed)

1801	**[MotorSpeedAdjust]**		
	Adjusts the speeds of each motor.		
1-801-001	MainMonitor:100	*ENG	[-2.5 to 2.5/ **0** / 0.1% / step]
	Adjusts the speed of main motor.		

1903	**[Feed Re-energize]**		
	Directly reflects the adjusted value. • A "+" setting increases the amount of driving. • A "-" setting decreases the amount of driving.		
1-903-001	Bypass Feed	*ENG	[-10 to 10 / **0** / 1 mm / step]
1-903-002	Tray1 Feed	*ENG	[-10 to 10 / **0** / 1 mm / step]

1907	**[Paper Timing Adj.]**		
	Adjusts the timing of paper feed. (A "+" setting broadens paper feed interval, a "-" setting narrows paper feed interval.) Parts Name -> ExitCL; Exit Clutch, D:ExCL; Exit Clutch in Duplex Mode, D:ReCL; Relay Clutch in Duplex		
1-907-001	ExitCL Stop Pos.	*ENG	[-30 to 30/ **0** / 1 mm / step]
1-907-002	ExitCL Start Pos.	*ENG	[-30 to 30/ **0** / 1 mm / step]
1-907-003	D:ExCL Stop Pos.	*ENG	[-30 to 30/ **0** / 1 mm / step]
1-907-004	D:ReCL Start Time	*ENG	[0 to 150/ **0** / 10 msec / step]
1-907-005	Duplex Feed Pos.	*ENG	[-30 to 30/ **0** / 1 mm / step]
1-907-006	Duplex Wait Pos.	*ENG	[-30 to 30/ **0** / 1 mm / step]

1911	[Bypass Envelope]		
	0 = Disabled / 1= Enabled The program dedicated to envelope printing runs when you enable this program (SP 1911 1) and you select "Thick Paper" as the paper type of the by-pass tray (System Settings > Tray Paper Settings > Paper Type: Bypass Tray).		
1-911-001	Bypass Envelope	*ENG	[0 or 1 / **0** / 1 / step]

1950	[Fan]		
	Adjust the rotation time for fan motor after a job end.		
1-950-001	Fan Cooling Time	*ENG	[0 to 900 / **60** / 1 sec / step]

1990	[SC990 plt detail]		
	Displays the details about SC990.		
1-990-001	-	*ENG	[0 to 4294967295 / **0** / 1 / step]
	0x29000: Process buffer full 0x29001: No paper feed without optional tray 0x29002: No paper exit without optional tray 0x29003: No termination of process without optional tray 0x81E00: No termination of recovery without optional tray 0x60048: No restart of registration roller 0x60049: No recovery from optional tray 1 0x6004A: No recovery from optional tray 2 0x49000: No termination of recovery with optional trays 0x49001: No termination of process control		

1991	[Max Fusing Duty]		
	Adjusts the maximum duty of the heating lamp at printing or warming up.		
1-991-001	Roller Center	*ENG	[40 to 100 / **100** / 10% / step]
1-991-003	Warm-up Center	*ENG	[40 to 100 / **100** / 10% / step]

1996	[Heater Forced Off]		
	Specifies the time for turning off the heating lamp forcibly when the paper type is changed during the printing.		
1-996-005	After Printing	*ENG	[0 to 120 / **7** / 1 sec / step]

SP2-XXX (Drum)

2001	[Charge Roller Bia]		
	-		
2-001-001	Printing	*ENG	[-2100 to -1300 / **-1450** / 10 vol / step]
	Adjusts the voltage applied to the charge roller when printing. The actually applied voltage changes automatically as charge roller voltage correction is carried out. The value you set here becomes the base value on which this correction is carried out.		

2102	[Main Scn Mag. Adj]		
	Adjust the image scale for main scan magnification. • A "+" setting stretches the image. • A "-" setting compresses the image.		
2-102-001	-	*ENG	[-0.5 to 0.5 / **0.0** / 0.1% / step]

2105	[LD Power Adjust]		
2-105-001	Unit	*ENG	[-50 to 50/ **0** / 0.1% / step] Adjusts the standard power of the LD unit for the image arear.
2-105-002	Unit	*ENG	[-50 to 50/ **0** / 0.1% / step] Adjusts the standard power of the LD unit for discharging.

2201	[Deve Bias Adjust]

2-201-001	Printing	*ENG	[-1000 to 0 / **-520** / 10 vol / step]
	Adjusts the voltage applied to the development roller for printing. Image density becomes higher when you specify a smaller value (a greater absolute value). Image density becomes lower when you specify a greater value (a smaller absolute value).		
2-201-002	P Pattern Revisio	*ENG	[0 to 4 / **0** / 1 / step] 0: N(Normal) 1: H(Drak) 2: L(Light) 3: HH(Darker) 4: LL(Lighter)
	Adjusts the voltage applied to the development roller for the ID sensor pattern. The voltage applied is obtained by adding SP2-201-002 to SP2-201-001. The setting affects ID sensor pattern density, which in turn affects the toner supply.		
2-201-003	ID Sensor Pattern	*ENG	**DFU**

2210	**[Bias OFF Time] DFU**		
2-210-001	Charge Bias 2nd	*ENG	-
2-210-002	Deve Bias 2nd	*ENG	-

2211	**[PCU Reverse Inter] DFU**		
2-211-001	-	*ENG	-

2213	**[After Toner End] DFU**		
2-211-001	End Limits	*ENG	-

2220	**[Process Data Dila]**
	Displays: a) Vt: the current TD sensor output value and b) Vref: the target TD output value Vts (SP2-926) + correction for ID sensor output. The TD sensor output value changes every copy. If a > b, toner is supplied to the development unit.

2-220-001	Vsp	*ENG	[0.00 to 9.99 / **0.00** / 0.01 vol / step]
2-220-002	Vsg	*ENG	[0.00 to 9.99 / **0.00** / 0.01 vol / step]
2-220-003	Vsdp	*ENG	[0.00 to 9.99 / **0.00** / 0.01 vol / step]
2-220-004	Vt	*ENG	[0.00 to 9.99 / **0.00** / 0.01 vol / step]
2-220-005	Vtref	*ENG	[0.00 to 9.99 / **2.5** / 0.01 vol / step]

2301	**[Transfer Curr Adj]**		
	Adjusts the correction value of the transfer current for each mode (1sit side or 2nd side), paper type (Thin, Plain 1/2, Middle Thick or Thick 1/2), and area (image, leading edge or trailing edge).		
2-301-001	1side:Thin:Image	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-002	1side:Thin:Lead	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-003	1side:Thin:Trail	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-011	1side:Plai1:Image	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-012	1side:Plai1:Lead	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-013	1side:Plai1:Trail	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-021	1side:Plai2:Image	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-022	1side:Plai2:Lead	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-023	1side:Plai2:Trail	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-031	1side:Mid:Image	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-032	1sideMid:Lead	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-033	1side:Mid:Trail	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-041	1side:Thic1:Image	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-042	1side:Thic1:Lead	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-043	1side:Thic1:Trail	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-051	1side:Thic2:Image	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-052	1side:Thic2:Lead	*ENG	[-8 to 8 / **0** / 1 uA / step]

2-301-053	1side:Thic2:Trail	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-111	2side:Plai1:Image	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-112	2side:Plai1:Lead	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-113	2side:Plai1:Trail	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-121	2side:Plai2:Image	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-122	2side:Plai2:Lead	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-123	2side:Plai2:Trail	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-131	2side:Mid:Image	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-132	2sideMid:Lead	*ENG	[-8 to 8 / **0** / 1 uA / step]
2-301-133	2side:Mid:Trail	*ENG	[-8 to 8 / **0** / 1 uA / step]

2302	**[Transfer Curr Tim]**		
2-302-001	Lead Edge	*ENG	[-10 to 120 / **5** / 1 mm / step]
	Sets to change the image transfer electric current position that is based on the FGATE assert.		
2-302-002	Trail Edge	*ENG	[-10 to 35 / **3** / 1 mm / step]
	Sets to change the image transfer off position that is based on the FGATE negation.		

2303	**[Transfer Clean Bi]**		
2-303-001	Positive	*ENG	[3 to 20 / **10** / 1 uA / step]
	Adjusts when backside contamination occurred that is caused by reverse polarity toner on the transfer roller or weak charging toner on the drum.		
2-303-002	Negative	*ENG	[0 to 20 / **4** / 1 –uA / step]
	Adjusts to improve the toner cleaning performance adhered on the transfer roller due to paper jamming etc...		
2-303-003	Deve Warmup -	*ENG	[0 to 20 / **4** / 1 –uA / step]
	Adjusts to improve the toner cleaning performance at the development bias activating.		

2-303-004	Deve Cooldown -	*ENG	[0 to 20 / **4** / 1 –uA / step]
	Adjusts to improve the toner cleaning performance at the development bias deactivating.		

2304	**[Transfer Curr Dir]**		
	Specifies the transfer current manually for each side.		
2-304-001	Input:1side	ENG	[0 to 30 / **0** / 1 uA / step]
2-304-002	Input:2side	ENG	[0 to 30 / **0** / 1 uA / step]

2305	**[Transfer Curr Set]**		
2-305-001	Non Image Area	*ENG	[3 to 30 / **10** / 1 uA / step]
	Adjusts the transfer current for non-image area when backside contamination occurred that is caused by reverse polarity toner on the transfer roller or weak charging toner on the drum.		
2-305-002	TR Anti-Static Pr	*ENG	[3 to 30 / **10** / 1 uA / step]
	Adjusts the discharge current at pre-charging.		
2-305-003	TR Anti-Static Re	*ENG	[3 to 30 / **10** / 1 uA / step]
	Adjusts the discharge current at charging.		

2306	**[Transfer Curr Tem]**		
	Adjusts the machine ambiense temperature for the reference table of the transfer current adjustment.		
2-306-001	Temp Inside Machi	*ENG	[0 to 99 / **20** / 1 deg / step]

2307	**[TR Curr Tem Thres]**		
	Specifies the threshold temperature for the reference table of the transfer current adjustment.		
2-307-001	Division 1	*ENG	[0 to 99/ **13** / 1 deg / step]
2-307-002	Division 2	*ENG	[0 to 99/ **19** / 1 deg / step]

2-307-003	Division 3	*ENG	[0 to 99/ **24** / 1 deg / step]

2801	**[Deve Initializati]**		
2-801-001	Init TD Sen Execu	ENG	[- / - / -] [Execute]
	Executes developer initialization when new PCDU is replaced.		

2802	**[Developer Mixing]**		
2-802-001	-	ENG	[- / - / -] [Execute]
	Initializes the developer and checks the TD sensor output (Vt). The machine mixes the developer for 2 minutes while reading and displaying the Vt value. The machine does not initialize the TD sensor output. If the machine has not been used for a long period, prints may have a dirty background. In a case like this, use this SP to mix the developer. The message "Completed" is displayed when the program ends normally.		

2803	**[Deve Initializati]**		
2-803-001	Vtref	*ENG	[0.00 to 9.99 / **2.50** / 0.01 vol / step]
	Vtref value at the completion of the initial agent configuration		
2-803-002	ID Sensor PWM Val	*ENG	[0 to 1023 / **0** / 1 /step]
	ID sensor PWM value at the time of completion of the initial agent configuration		
2-803-003	Initial mu count	*ENG	**DFU**
2-803-004	Initial Vt Target	*ENG	**DFU**
2-803-005	Vt Target	*ENG	**DFU**
2-803-006	Vt Target Corr	*ENG	**DFU**

2906	**[Tailing Control]**

2-906-001	Shift Range	*ENG	[0.0 to 1.0 / **0.0** / 0.1 mm / step]
	Shifts the image position at the intervals specified by SP2-906-002. When the copier is continuously printing vertical lines (such as in tables), the paper may not separate correctly. This SP can prevent this.		
2-906-002	Number of Sheets	ENG	[0 to 10 / **0** / 1 sheet / step]
	Changes the interval of the image position shift specified by SP2-906-001.		

2908	**[Forced Toner Supp]**		
2-908-001	-	ENG	[- / **-** / -] [Execute]
	Supplies the toner to the development unit. The processing stops under either of the following conditions: • The toner density in the development unit reaches the standard level. • The processing has continued for 2 minutes.		

2915	**[Polygon Rota Time]**		
2-915-001	Idling Time ADJ	*ENG	[0 to 60 / **15** / 1 sec / step]
	Adjusts the polygon motor idling time.		
2-915-002	Post Idling ADJ	*ENG	[0 to 60 / **10** / 1 sec / step]
	Adjusts the post idling time		

2921	**[Toner Supply Mode]**		
2-921-001	Mode Select	*ENG	**DFU**

2922	**[Toner Supply Mode]**		
2-922-001	[sec]	*ENG	**DFU**
2-922-002	Coefficient L 2	*ENG	**DFU**
2-922-003	Coefficient L 3	*ENG	**DFU**
2-922-004	Coefficient L 4	*ENG	**DFU**

2-922-005	Coefficient L 5	*ENG	**DFU**

2923	**[Toner Supply Mode]**		
2-923-001	Time	*ENG	**DFU**
2-923-002	Inter Sup ON Time	*ENG	**DFU**
2-923-003	Inter Sup OFF Tim	*ENG	**DFU**

2925	**[Fix TonerSupTime]**		
2-925-001	-	*ENG	**DFU**

2926	**[Standard Vt]**		
2-926-001	-	*ENG	**DFU**

2927	**[ID Sensor Contorl]**		
2-927-001	Function Select	*ENG	**DFU**

2928	**[Toner End Clear]**		
	Clears the following messages and counters without supplying the toner: • Toner near end message • Toner end message • Toner near end counter • Toner end counter Do not use this SP in usual operations. When the toner in the development unit is abnormally insufficient, the drum may attract the toner carrier to its surface. The toner carrier might damage the drum surface.		
2-928-001	-	ENG	[0 or 1 / **0** / 0 / step]

2929	**[Vref Adjustment]**		
2-929-001	Upper Limit	*ENG	**DFU**
2-929-002	Lower Limit	*ENG	**DFU**

2930	[T Sens Manual Set]		
2-930-001	-	*ENG	DFU

2931	[T (V/wt%) Setting]		
2-931-001	[V/wt%]	*ENG	DFU

2932	[Toner Dens Cnt Le]		
2-932-001	Level Select	*ENG	DFU

2933	[ID Sens Cnt Corre]		
2-933-001	-	*ENG	DFU

2934	[ID Sens PWM Set]		
2-934-001	Dilay	*ENG	[0 to 1023 / **200** / 1 / step]
	Displays ID Sensor PWM value.		
2-933-003	Upper Limit Corrc	*ENG	DFU

2935	[ID.Sens Initializ]		
	Executes ID Sensor initialization. It must be done after replacing the ID sensor. This SP clears PWM value and executes Vsg adjustment again, then resets PWM value.		
2-935-001	-	ENG	[Execute]

2937	[ID.Sens Coef :Set]		
	Adjusts the coeficience for the Vsp/Vsdp adjustment.		
2-937-001	Vsp Coef	*ENG	[0.50 to 1.50 / **1.00** / 0.01 / step]
2-937-002	Vsdp Coef	*ENG	[0.50 to 1.50 / **1.00** / 0.01 / step]
2-937-003	Sens Chara Coef	*ENG	[0.10 to 1.50 / **1.00** / 0.01 / step]

2992	[After T Sens Err]

2-992-001	Upper Threshold	*ENG	**DFU**
2-992-002	Lower Threshold	*ENG	**DFU**
2-992-003	Thresh Num UpCoun	*ENG	**DFU**
2-992-004	Thresh Num LoCoun	*ENG	**DFU**

2995	**[ID Sens Detec Int]**		
2-995-001	Warming-up	*ENG	**DFU**
2-995-002	Number of Pages	*ENG	**DFU**
2-995-003	Effect Timing	*ENG	**DFU**

2996	**[Transfer Cleaning]**		
2-996-001	Function Select	*ENG	**DFU**
2-996-002	Interval	*ENG	**DFU**

2998	**[PCU Reverse Time]**		
2-998-001	Wait Time	*ENG	**DFU**
2-998-002	Reverse Time	*ENG	**DFU**

SP3-XXX (Process)

There are no Group 3 SP modes for this machine.

SP4-XXX (Scan)

4008	**[Sub Scan Mag Adj]**		
	Adjusts the sub-scan magnification by changing the scanner motor speed.		
4-008-001	-	ENG	[-1.0 to 1.0 / **0.0** / 0.1 % / step]

4010	[L-Edge Regist Adj]		
	Adjusts the leading edge registration for scanning.		
4-010-001	-	ENG	[-2.0 to 2.0 / **0.0** / 0.1 mm / step]

4011	[S-Edge Regist Adj]		
	Adjusts the side-to-side registration by changing the scanning start timing in the main scan direction.		
4-011-001	-	ENG	[-2.0 to 2.0 / **0.0** / 0.1 mm / step]

4012	[FB Erase ForSP]		
	Adjusts scanning margins for the leading and trailing edges (sub scan) and right and left edge (main scan) in the book scanning mode. **Note** • Do not adjust unless the customer desires a scanner margin greater than the printer margin.These settings are adjusted to erase shadows caused by the gap between the original and the scale of the scanner unit.		
4-012-001	Book:LeadingEdge	ENG	[0.0 to 3.0 / **1.0** / 0.1 mm / step]
4-012-002	Book:TrailingEdge	ENG	[0.0 to 3.0 / **0.0** / 0.1 mm / step]
4-012-003	Book: Left	ENG	[0.0 to 3.0 / **1.0** / 0.1 mm / step]
4-012-004	Book: Right	ENG	[0.0 to 3.0 / **0.0** / 0.1 mm / step]

4013	[Scanner Free Run]		
	Performs a scanner free run with the exposure lamp on or off.		
4-013-001	Lamp OFF	ENG	[0 or 1 / **0** / 1 / step] 0:OFF, 1:ON
4-013-002	Lamp ON	ENG	[0 or 1 / **0** / 1 / step] 0:OFF, 1:ON

4400	[FB Erase Margin]		
	Sets the Mask for Original. These SPs set the area to be masked during platen (book) mode scanning.		
4-400-003	Book: Left	ENG	[2.0 to 3.0 / **2.0** / 0.1 mm / step]
4-400-004	Book: Right	ENG	[2.0 to 3.0 / **2.0** / 0.1 mm / step]
4400	[ADF Erase Margin]		
	Sets the Mask for Original. These SPs set the area to be masked during ADF mode scanning.		
4-400-007	ADF: Left	*ENG	[2.0 to 3.0 / **2.0** / 0.1 mm / step]
4-400-008	ADF: Right	*ENG	[2.0 to 3.0 / **2.0** / 0.1 mm / step]

4603	[AGC Execution]		
4-603-001	HP Detect Enable	-	**DFU**

4606	[WhiteLevel Adjust]		
4-606-001	Color	*ENG	**DFU**

4607	[WhiteLevel Adjust]		
4-607-001	Bw	*ENG	**DFU**

4609	[GrayBalance Set:R]		
4-609-001	Book Scan	*ENG	**DFU**
4-609-002	DF Scan	*ENG	**DFU**

4610	[GrayBalance Set:G]		
4-610-001	Book Scan	*ENG	**DFU**
4-610-002	DF Scan	*ENG	**DFU**

4611	[GrayBalance Set:B]

4-611-001	Book Scan	*ENG	DFU
4-611-002	DF Scan	*ENG	DFU

4612	[GrayBalanceSet:BW]		
4-612-001	Book Scan	*ENG	DFU
4-612-002	DF Scan	*ENG	DFU

4623	[BlackLevel Adj:FC]		
4-623-001	Offset DAC	-	DFU
4-623-002	RLC DAC	-	DFU

4624	[BlackLevel Adj:BW]		
4-624-001	OffsetDAC: 300dpi	-	DFU
4-624-002	RLC DAC: 300dpi	-	DFU
4-624-003	OffsetDAC: 600dpi	-	DFU
4-624-004	RLC DAC: 600dpi	-	DFU

4631	[Digit Gain Adj:FC]		
4-631-001	-	-	DFU

4632	[Digit Gain Adj:BW]		
4-632-001	300dpi	-	DFU
4-632-002	600dpi	-	DFU

4645	[Scan Adjust Error]		
4-645-001	-	-	DFU

4673	[BlackLevel Adj:FC]		
4-673-001	FactSet:OffsetDAC	*ENG	DFU

4-673-002	FactSet: RLC DAC	*ENG	**DFU**

4674	**[BlackLevel Adj:BW]**		
4-674-001	FactSet:OffsetDAC	*ENG	**DFU**
4-674-002	FactSet: RLC DAC	*ENG	**DFU**
4-674-003	FactSet:OffsetDAC	*ENG	**DFU**
4-674-004	FactSet: RLC DAC	*ENG	**DFU**

4680	**[Digit Gain Adj:FC]**		
4-680-001	FactorySet	*ENG	**DFU**

4681	**[Digit Gain Adj:BW]**		
4-681-001	FactorySet:300dpi	*ENG	**DFU**
4-681-002	FactorySet:600dpi	*ENG	**DFU**

4688	**[ADF Adj Density]**		
	Adjust the density difference in the ADF and the Book.		
4-688-001	-	*ENG	[50 to 150 / **100** / 1 % / step]

4690	**[WhiteLevel Peak:R]**		
4-690-001	FactorySet	-	**DFU**

4691	**[WhiteLevel Peak:G]**		
4-691-001	FactorySet	-	**DFU**

4692	**[WhiteLevel Peak:B]**		
4-692-001	FactorySet	-	**DFU**

4693	**[WhiteLevelPeak:BW]**

4-693-001	300dpi	-	DFU
4-693-002	600dpi	-	DFU

4694	[BkLevel bottom:FC]		
4-694-001	-	-	DFU

4695	[BkLevel bottom:BW]		
4-695-001	300dpi	-	DFU
4-695-002	600dpi	-	DFU

4698	[FactorySet Input]		
4-698-001	Execution Flag	*ENG	DFU

4802	[DF SHD FreeRun]		
4-802-001	Lamp OFF	-	DFU
4-802-002	Lamp ON	-	DFU

4803	[Home Position Adj]		
	-		
4-803-001	-	*ENG	Adjusts the scanner home position. [-2.0 to 2.0 / **0.0** / 0.1 mm / step]

4804	[Home Position]		
4-804-001	-	-	DFU

4810	[LED ONTIME]		
4-810-001	R	-	DFU
4-810-002	G	-	DFU
4-810-003	B	-	DFU

4-810-004	BW_R	-	**DFU**
4-810-005	BW_G	-	**DFU**
4-810-006	BW_B	-	**DFU**

4812	**[LED ONTIME]**		
4-812-001	Factory Set: R	*ENG	**DFU**
4-812-002	Factory Set: G	*ENG	**DFU**
4-812-003	Factory Set: B	*ENG	**DFU**
4-812-004	Factory Set: BW_R	*ENG	**DFU**
4-812-005	Factory Set: BW_G	*ENG	**DFU**
4-812-006	Factory Set: BW_B	*ENG	**DFU**

SP5-XXX (Mode)

5067	**[Parts Sys Setting]**		
	Selects the service maintenance or user maintenance for each PM parts. If the user service is selected, PM alert is displayed on the LCD.		
5-067-001	0:Service 1:User	*ENG	[0 or 1 / **0** / 1 / step]

RTB 14

5104	**[A3/DLT Dble Cnt]**		
	Specifies whether the counter is doubled for A3/DLT. "ON" counts ~~except from the bypass tray~~. When "ON" is selected, A3 and DLT paper are counted twice, that is A4 x2 and LT x2 respectively.		
5-104-001	-	*ENG	[0 or 1 / **0** / 1 / step] 0: OFF, 1: ON

5181	**[Feed CL off adj.]**		
	Adjusts the off timing for the pape feed clutch in the optional PFU.		
5-181-002	Bank1	*ENG	[-10 to 10 / **0** / 1 mm / step]

5-181-003	Bank2	*ENG	[-10 to 10 / **0** / 1 mm / step]

5182	**[Next feed st adj.]**		
	Adjusts the feed timing of the pape feed clutch in the optional PFU for the next sheet of paper.		
5-182-002	Bank1	*ENG	[-10 to 10 / **0** / 1 mm / step]
5-182-003	Bank2	*ENG	[-10 to 10 / **0** / 1 mm / step]

5183	**[Refeed start adj.]**		
	Adjusts the feed timing of the pape feed clutch in the optional PFU 1 for the next job.		
5-183-002	Bank1	*ENG	[-10 to 10/ **0** / 1 mm / step]
5183	**[Re-feed timing]**		
	Adjusts the feed timing of the pape feed clutch in the optional PFU 2 for the next job.		
5-183-003	Bank2	*ENG	[-10 to 10/ **0** / 1 mm / step]

5801	**[Memory Clear]**		
5-801-002	Engin	ENG	[- / **-** / -] [Execute]
	Initializes all registration settings for the engine and copy process settings.		

5803	**[Input Check]**
	See "page 182 "Input Check"".

5804	**[Output Check]**
	See "page 184 "Output Check"".

5810	[SC Reset]		
	Resets a type A service call condition. Note • Turn the main switch off and on after resetting the SC code.		
5-810-001	Fusing SC Reset	ENG	[- / - / -] [Execute]

5811	[Serial No Setting]		
	Machine Serial Number Display		
5-811-001	Serial No.	*ENG	[0 to 0 / **0** / 0 / step]

5940	[ID Setting]		
	Specifies the brand ID.		
5-940-002	Brand ID	*ENG	[0 to 7 / **1** / 1 / step] 0: not used, 1: RICOH, 2: Gestetner, 3: infotec, 4: LANIER, 5: NRG, 6: Savin, 7: MP

5950	[PnP ID Setting]		
	Specifies the PnP ID.		
5-950-001	PnP ID	*ENG	[0 to 15 / **1** / 1 / step] 0: not used, 1: 2014, 2: DSm1120, 3: MP 2014, 4: 2014D, 5: MP 2014D, 6: DSm1120d, 7: 2014AD, 8: MP 2014AD, 9: DSm1120ad, 10 to 15: not used

5955	[Factory Mode]		
	Selects the display typle for SC355.		
5-955-001	-	*ENG	[0 or 1 / **0** / 1 / step] 0: No details information 1: Details information (SC350 to SC354 can be displayed depending on an error condition.)

SP6-XXX (Option)

6006	[ADF Adjustment]		
	Adjusts the side-to-side and leading edge registration for simplex and duplex original feeding in ARDF mode. SP6006-5 sets the maximum setting allowed for rear edge erase.		
6-006-001	SideEdge: Front	*ENG	[-3.0 to 3.0 / **0.0** / 0.1 mm / step]
6-006-002	SideEdge: Rear	*ENG	[-3.0 to 3.0 / **0.0** / 0.1 mm / step]
6-006-003	LeadingEdge:Front	*ENG	[-5.0 to 5.0 / **0.0** / 0.1 mm / step]
6-006-004	Leading Edge:Rear	*ENG	[-5.0 to 5.0 / **0.0** / 0.1 mm / step]

6007	[ADF Input Check]
	See “page 182 "Input Check"”.

6008	[ADF Output Check]
	See “page 184 "Output Check"”.

6017	[ADF Ajust Mag]		
	Adjusts the sub scan magnification at the DF scanning.		
6-017-001	-	*ENG	[-5.0 to 5.0 / **0.0** / 0.1 % / step]

SP7-XXX (Data Log 1)

7001	[Distance Counter]		
	Displays the total operation distance.		
7-001-001	-	*ENG	[0 to 4294967295/ **0** / 1 mm / step]

7621	[PM Count:Pages]		
	Displays the page counter for each PM part.		
7-621-002	#PCDU	*ENG	[0 to 99999999/ **0** / 1 page / step]
7-621-108	Paper Transfer Ro	*ENG	[0 to 99999999/ **0** / 1 page / step]
7-621-115	Fusing Unit	*ENG	[0 to 99999999/ **0** / 1 page / step]

7622	[PM Counter Reset]		
	Clears the page counter for each PM part.		
7-622-002	#PCDU	ENG	[0 to 1/ **0** / 1 / step]
7-622-108	Paper Transfer Ro	ENG	[0 to 1/ **0** / 1 / step]
7-622-115	Fusing Unit	ENG	[0 to 1/ **0** / 1 / step]

7623	[PM Set:Life Pages]		
7-623-002	#PCDU	*ENG	**DFU**
7-623-108	Paper Transfer Ro	*ENG	**DFU**
7-623-115	Fusing Unit	*ENG	**DFU**

7625	[Prev Count:Pages]		
	Displays the previous page counter for each PM part.		
7-625-002	#PCDU	*ENG	[0 to 99999999/ **0** / 1 page / step]
7-625-108	Paper Transfer Ro	*ENG	[0 to 99999999/ **0** / 1 page / step]
7-625-115	Fusing Unit	*ENG	[0 to 99999999/ **0** / 1 page / step]

7626	[Prev Count2:Pages]		
	Displays the previous page counter 2 for each PM part.		
7-626-002	#PCDU	*ENG	[0 to 99999999/ **0** / 1 page / step]
7-626-108	Paper Transfer Ro	*ENG	[0 to 99999999/ **0** / 1 page / step]
7-626-115	Fusing Unit	*ENG	[0 to 99999999/ **0** / 1 page / step]

7628	[PM Counter Reset]		
	Clears the all page counters for PM parts.		
7-628-002	SCS	*ENG	[0 or 1 / **0** / 1 / step]

7801	[ROM Info Display]		
	Displays ROM numbers in the machine.		
7-801-102	Version: Engine	ENG	[- / **-** / -]
7-801-115	Version: Scanner	ENG	[- / **-** / -]

7853	[Replace Counter]		
	Displays the replacement counter for each PM part.		
7-853-002	#PCDU	*ENG	[0 to 255/ **0** / 1 / step]
7-853-108	Paper Transfer Ro	*ENG	[0 to 255/ **0** / 1 / step]
7-853-115	Fusing Unit	*ENG	[0 to 255/ **0** / 1 / step]

7906	[Pre Count:Distanc]		
	Displays the previous distance counter for each PM part.		
7-906-002	#PCDU	*ENG	[0 to 4294967295/ **0** / 1 mm / step]
7-906-108	Paper Transfer Ro	*ENG	[0 to 4294967295/ **0** / 1 mm / step]
7-906-115	Fusing Unit	*ENG	[0 to 4294967295/ **0** / 1 mm / step]

7907	[Pre Cntr:Dista(%)]		
	Displays the previous distance rate (%) counter for each PM part. This counter shows the usage rate against the part's yield (distance).		
7-907-002	#PCDU	*ENG	[0 to 255/ **0** / 1% / step]
7-907-108	Paper Transfer Ro	*ENG	[0 to 255/ **0** / 1% / step]
7-907-115	Fusing Unit	*ENG	[0 to 255/ **0** / 1% / step]

7908	[Pre Count:Page(%)]		
	Displays the previous page rate (%) counter for each PM part. This counter shows the usage rate against the part's yield (page).		
7-908-002	#PCDU	*ENG	[0 to 255/ **0** / 1% / step]
7-908-108	Paper Transfer Ro	*ENG	[0 to 255/ **0** / 1% / step]
7-908-115	Fusing Unit	*ENG	[0 to 255/ **0** / 1% / step]

7940	[PM Set:Life Dista]		
7-940-002	#PCDU	*ENG	**DFU**
7-940-108	Paper Transfer Ro	*ENG	**DFU**
7-940-115	Fusing Unit	*ENG	**DFU**

7942	[PM Count:Dista(%)]		
	Displays the distance rate (%) counter for each PM part. This counter shows the usage rate against the part's yield (distance).		
7-942-002	#PCDU	*ENG	[0 to 255/ **0** / 1% / step]
7-942-108	Paper Transfer Ro	*ENG	[0 to 255/ **0** / 1% / step]
7-942-115	Fusing Unit	*ENG	[0 to 255/ **0** / 1% / step]

7944	[PM Count:Distance]		
	Displays the distance counter for each PM part.		
7-944-002	#PCDU	*ENG	[0 to 4294967295/ **0** / 1 mm / step]

7-944-108	Paper Transfer Ro	*ENG	[0 to 4294967295/ **0** / 1 mm / step]
7-944-115	Fusing Unit	*ENG	[0 to 4294967295/ **0** / 1 mm / step]

7954	**[PM Count:Pages(%)]**		
	Displays the page rate (%) counter for each PM part. This counter shows the usage rate against the part's yield (page).		
7-954-002	#PCDU	*ENG	[0 to 255/ **0** / 1% / step]
7-954-108	Paper Transfer Ro	*ENG	[0 to 255/ **0** / 1% / step]
7-954-115	Fusing Unit	*ENG	[0 to 255/ **0** / 1% / step]

7993	**[Total Counter]**		
	Displays the total page counter.		
7-993-001	-	*ENG	[0 to 4294967295/ **0** / 1 / step]

SP8-XXX (Data Log 2)

There are no Group 8 SP modes for this machine.

Input and Output Check

Input Check

5803	[Input Check]		
001	TrayPap Size Snr (Paper Set Sensor)	ENG	[0 to 1 / **0** / 1 / step] 0: Paper detected, 1: No paper
002	Registration Snr	ENG	[0 to 1 / **0** / 1 / step] 0: Paper detected, 1: No paper
003	Paper Exit Sensor	ENG	[0 to 1 / **0** / 1 / step] 0: Paper detected, 1: No paper
004	BypassPap Set Snr	ENG	[0 to 1 / **0** / 1 / step] 0: Paper detected, 1: No paper
005	PSU Low Voltage	ENG	[0 to 1 / **0** / 1 / step] 0: Low voltage, 1: Normal voltage
006	Interlock Switch	ENG	[0 to 1 / **0** / 1 / step] 0: Close, 1: Open
007	Right Cover Open	ENG	[0 to 1 / **0** / 1 / step] 0: Close, 1: Open
009	Fan Lock	ENG	[0 to 1 / **0** / 1 / step] 0: Normal, 1: Not normal
010	Main Motor Lock	ENG	[0 to 1 / **0** / 1 / step] 0: Lock, 1: Unlock
011	Polygon Motor Lok	ENG	[0 to 1 / **0** / 1 / step] 0: Lock, 1: Unlock
012	HVP Transfer	ENG	[0 to 1 / **0** / 1 / step] 0: Normal, 1: Not normal
013	HVP Dep/Charge	ENG	[0 to 1 / **0** / 1 / step] 0: Normal, 1: Not normal

014	Exhaust Fan Lock	ENG	[0 to 4294967295 / **0** / 1 / step] 0: Normal, 1: Not normal
015	U Sensor	ENG	[0 to 1023 / **0** / 1 / step]
016	P Sensor	ENG	[0 to 1023 / **0** / 1 / step]
017	Fusing Thm:middle	ENG	[0 to 1023 / **0** / 1 / step]
018	Fusing Thm:end	ENG	[0 to 1023 / **0** / 1 / step]
200	Scanner HP Sensor	ENG	[0 to 1 / **0** / 1 / step]
201	PlatenCoverSensor	ENG	[0 to 1 / **0** / 1 / step]
211	FeedCoverOpen1	ENG	[0 to 1 / **0** / 1 / step]
212	FeedCoverOpen2	ENG	[0 to 1 / **0** / 1 / step]
213	Size Sensor1*	ENG	See the table below.
214	Size Sensor2*	ENG	
215	PaperEndSensor1	ENG	[0 to 1 / **0** / 1 / step]
216	PaperEndSensor2	ENG	[0 to 1 / **0** / 1 / step]
217	FeedSensor1	ENG	[0 to 1 / **0** / 1 / step]
218	FeedSensor2	ENG	[0 to 1 / **0** / 1 / step]
219	UpperLimitSensor1	ENG	[0 to 1 / **0** / 1 / step]
220	UpperLimitSensor2	ENG	[0 to 1 / **0** / 1 / step]
221	TraySetSensor1	ENG	[0 to 1 / **0** / 1 / step]
222	TraySetSensor2	ENG	[0 to 1 / **0** / 1 / step]

* Size code for PFU (Paper feed unit)

PFU	00	01	02	03	04	05	06	07
EU	LTT	B5T	HLTY	A3T	A4T	B5Y	A4Y	B4T
NA	LTT	B5T	A5Y	DLTT	A4T	Exe	LTY	LGT

6007	[ADF INPUT Check]		
	Displays ADF sensor information.		
009	Doc Detect Sensor	ENG	[0 or 1 / **0** / 1 / step] 0: No paper detected 1: Paper Detected
013	Regist Sensor	ENG	[0 or 1 / **0** / 1 / step] 0: No paper detected 1: Paper Detected
015	Feed Cover Sensor	ENG	[0 or 1 / **0** / 1 / step] 0: Close 1: Open

Output Check

5804	[OUTPUT Check]		
001	Main Motor:CW	ENG	[0 or 1 / **0** / 1 / step]
002	Main Motor:CCW	ENG	[0 or 1 / **0** / 1 / step]
003	Toner Motor	ENG	[0 or 1 / **0** / 1 / step]
004	Polygon Motor	ENG	[0 or 1 / **0** / 1 / step]
005	Fan:High	ENG	[0 or 1 / **0** / 1 / step]
006	Fan:Low	ENG	[0 or 1 / **0** / 1 / step]
007	HVP:Charge	ENG	[0 or 1 / **0** / 1 / step]
008	HVP:Development	ENG	[0 or 1 / **0** / 1 / step]
009	HVP.: Transfer +	ENG	[0 or 1 / **0** / 1 / step]
010	HVP.: Transfer -	ENG	[0 or 1 / **0** / 1 / step]
011	P Sensor(PWM)	ENG	[0 or 1 / **0** / 1 / step]
012	Paper Feed CL	ENG	[0 or 1 / **0** / 1 / step]
013	Registration CL	ENG	[0 or 1 / **0** / 1 / step]

014	By-pass CL	ENG	[0 or 1 / **0** / 1 / step]
015	Duplex CL	ENG	[0 or 1 / **0** / 1 / step]
016	Pap Exit (CCW) CL	ENG	[0 or 1 / **0** / 1 / step]
017	Pap Exit (CW) CL	ENG	[0 or 1 / **0** / 1 / step]
019	LD(Force)	ENG	[0 or 1 / **0** / 1 / step]
020	Exhaust Fan: High	ENG	[0 or 1 / **0** / 1 / step]
021	Exhaust Fan: Low	ENG	[0 or 1 / **0** / 1 / step]
022	Anti-static LED	ENG	[0 or 1 / **0** / 1 /step]
241	FeedMotor1	ENG	[0 or 1 / **0** / 1 / step]
242	FeedMotor2	ENG	[0 or 1 / **0** / 1 / step]
243	PaperFeedClutch1	ENG	[0 or 1 / **0** / 1 / step]
244	PaperFeedClutch2	ENG	[0 or 1 / **0** / 1 / step]

6008	**[ADF OUTPUT Check]**		
	-		
003	Feed Motor Forward	ENG	[0 or 1 / **0** / 1 / step] 0:Off, 1:On
	Rotats the paper feed motor to check the operation of ADF.		
004	Feed Motor Reverse	ENG	[0 or 1 / **0** / 1 / step] 0:Off, 1:On
	Reverses the paper feed motor to check the operation of the load on the ADF.		
009	Feed Solenoid	ENG	[0 or 1 / **0** / 1 / step] 0:Off, 1:On
	Drives the feed solenoid to check the operation of ADF.		
011	Inverter Solenoid	ENG	[0 or 1 / **0** / 1 / step] 0:Off, 1:On
	Drives the inverter solenoid to check the operation of ADF.		

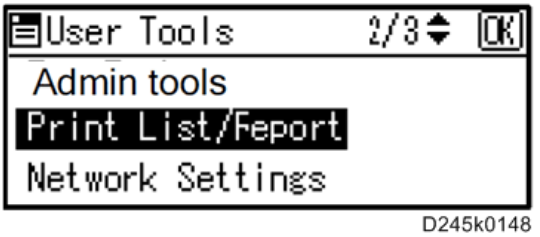
Test Pattern Printing

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

Note

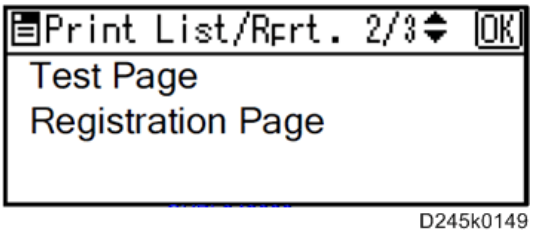
- Do not operate the machine until the test pattern is printed out completely. Otherwise, SC will occur.

1. **Press the [User Tools] key.**
2. **Select "Print List/Report" from the list then press the [OK] key.**



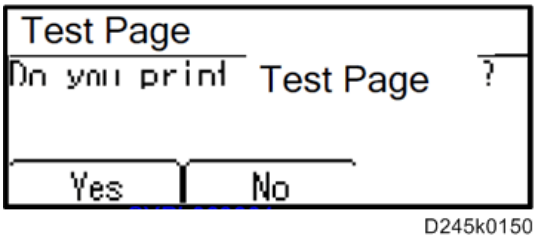
D245k0148

3. **Select "Test Page" or "Registration Page" for print from the list then press the [OK] key.**

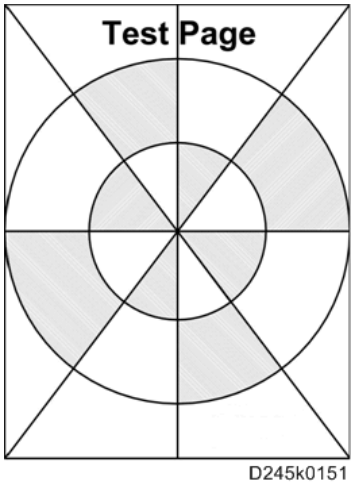
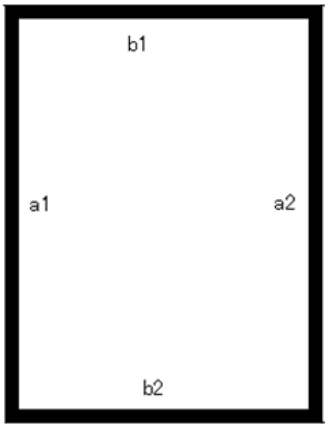


D245k0149

4. **Press [Yes] to print the selected pattern.**

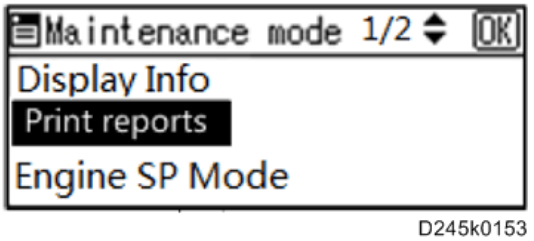


D245k0150

Test Page	Registration Page
 D245k0151	 D245k0152

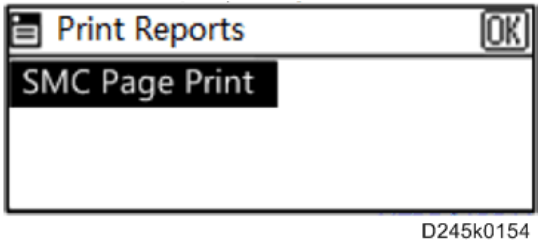
SMC Page Printing

1. Enter the “Maintenance Mode”.
2. Select “Print reports” from the list then press [OK] key.



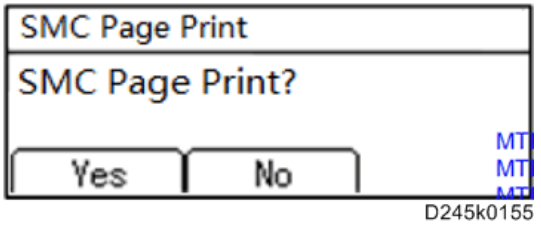
D245k0153

3. Select “SMC Page Print” for print from the list then press [OK] key.



D245k0154

4. Press [Yes] to print the SMC reports.



D245k0155

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 on the MPU.

Before You Begin

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

- Always switch the machine off before you insert an SD card. Never insert the SD card into the slot with the power on.
- Do not remove the SD card from the service slot after the power has been switched on.
- Never switch the machine off while the firmware is downloading from the SD card.
- Keep SD cards in a safe location where they are not exposed to high temperature, high humidity, or exposure to direct sunlight.
- Always handle SD cards with care. Do not bend or scratch them. Do not let the SD card get exposed to shock or vibration.

Updating Firmware

Preparation

1. **Confirm the SD Card is using FAT or FAT32 File system (or, please format the SD Card).**
2. **Setup the "D245" folder on SD card.**
3. **Copy the "D245*****.brn" files into the "D245" folder on SD card.**

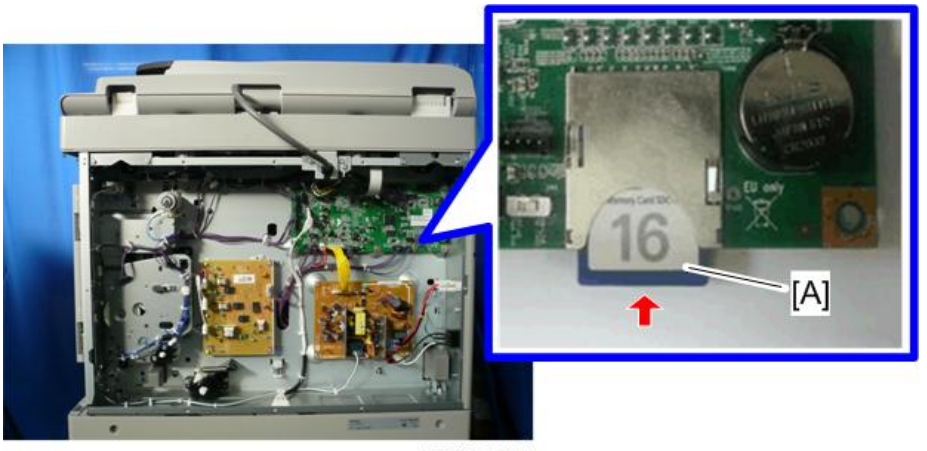
Note

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

Updating Procedure

1. **Turn the main power switch off.**
2. **Rear cover (page 68)**

3. **Insert the SD card [A] straight into the SD card slot.**



D245k0126

4. **Slowly push the SD card into the slot so it locks in place. You will hear it click. Make sure the SD card locks in place.**

Note

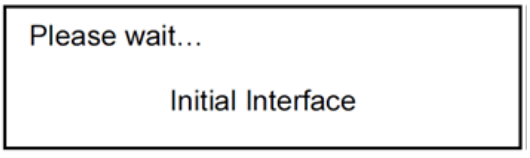
- To remove the SD, push it in to unlock the spring lock. Then release it so it pops out of the slot.

5. **Turn on the update switch (SW5) [A].**

D245k0127

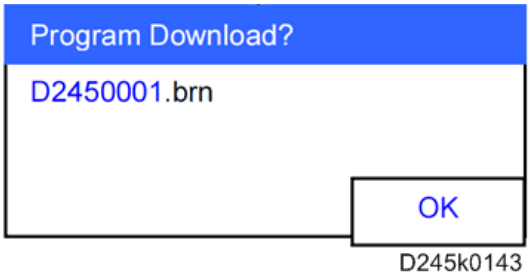
6. **Disconnect the network cable if the machine is connected to a network.**
7. **Attach the rear cover.**

8. Turn the main power switch on. After about 45 seconds, the initial screen for the update will appear on the LCD in English.



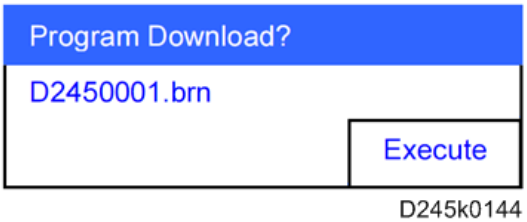
D245k0142

9. The file name for the update appears on the LCD. If the file is the one you want, press the [OK] key.



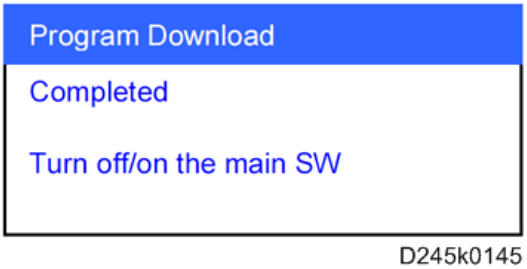
D245k0143

10. The file is stored in memory, and the screen shown below appears. Press the [Execute] key to start updating.



D245k0144

11. When updating completes, the screen shown below appears.



D245k0145

12. Turn the main power switch off.
13. Rear cover (page 68)
14. Press in the SD card to release it. Then remove it from the slot.

15. **Turn off the update switch (SW5) [A].**

D245k0146

16. **Turn the main power switch on, then the new firmware will be working.**

Recovery after power loss

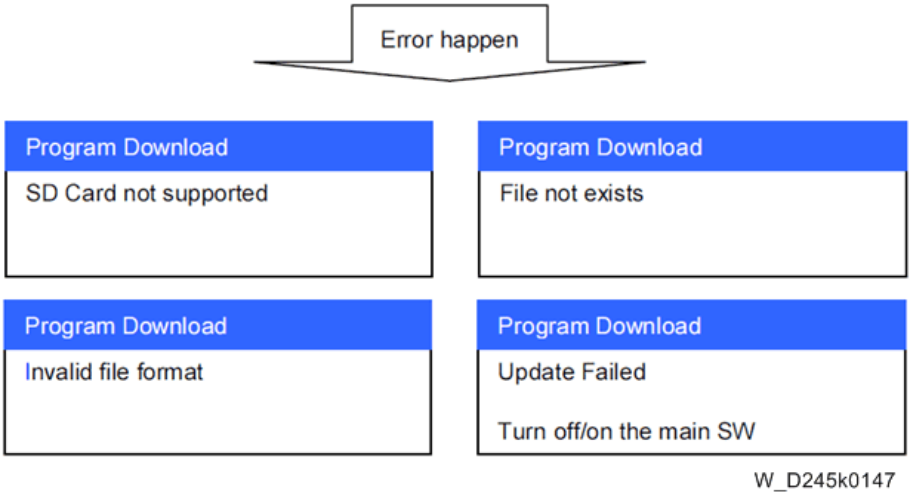
Note

- When the power supply is switched OFF during firmware update, update is interrupted, and the power is switched ON again, normal operation cannot be guaranteed.
- To guarantee operation, an update error continues to be displayed until update is successful.
- In this case, insert the SD card again, switch the power ON, and continue download of firmware from the SD card automatically.

Handling Firmware Update Errors

If an error occurs, the panel will display an error message.

There are 4 different messages as shown below.



The following are the possible error conditions for each of the 4 error messages:

Error Message	Error Situations
SD Card not supported	1. SD card not inserted 2. Bad card 3. SD card format 4. SD3.0 card
File not exists	1. FW file not in D245/D245***.brn
Invalid file format	1. FW file not correct
Update Failed	1. MPU defective

6. Troubleshooting

Service Call Conditions

Summary

There are four levels of service call conditions.

Level	Definition	Reset Procedure
A	To prevent damage to the machine, the main machine cannot be operated until the SC has been reset by a service representative (see the note below).	Enter SP mode, and then turn the main power switch off and on.
B	If the SC was caused by incorrect sensor detection, the SC can be reset by turning the main power switch off and on.	Turn the main power switch off and on.
C	The main machine can be operated as usual, excluding the unit related to the service call.	Turn the main power switch off and on.
D	The SC history is updated. The machine can be operated as usual.	The SC will not be displayed. Only the SC history is updated.

Note

- If the problem concerns electrical circuit boards, first disconnect then reconnect the connectors before replacing the PCBs.
- If the problem concerns a motor lock, first check the mechanical load before replacing motors or sensors.

SC Code Descriptions

SC1xx: Scanning

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
101-01	B	Lamp error (scanning)
		The white level peak did not reach the prescribed threshold when the white plate was scanned.
		• CIS defective • MPU defective • Harness defective • Condensation in the scanner unit • CIS dirty or positioned incorrectly • White plate dirty or positioned incorrectly
		1. Perform the following operations. • Reconnect the harness of the CIS. • Reattach or clean the CIS. • Reattach or clean the white plate. 2. Replace the following parts. • Replace the CIS. • Replace the MPU. • Replace the harness of the CIS.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
102-00	B	LED light adjustment error
		The white peak exceeded the prescribed threshold when the white plate was scanned after a specified number of adjustments.
		• CIS defective. • MPU defective • Harness defective

		1. Reconnect the harness of the CIS.
		2. Replace the following parts.
		  • Replace the CIS
		  • Replace the MPU.
		  • Replace the harness of the CIS.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
120-00	B	Scanner home position error 1
		• The scanner home position sensor does not go OFF even if the scanner moves 30 mm at homing. • The scanner home position sensor does not go OFF even if the scanner moves 13 mm at the white balance adjustment. • The scanner home position sensor goes ON before the scanner reaches the specified position (in the sensor OFF area) at returning from the scanning position. • This SC is issued only when the error signal of the scanner HP sensor is detected three times consecutively to prevent the sensor detection error due to some noise.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Motor driver defective • Motor defective • Scanner HP sensor defective • Harness defective • Timing belt, pulley, wire, or carriage not installed correctly
		1. Perform the following operations. • Check the harness. • Check the timing belt, pulley, wire, or carriage installation. 2. Replace the following parts. • Replace the scanner motor. • Replace the scanner HP sensor.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
121-00	B	Scanner home position error 2
		• The scanner home position sensor does not go ON even if the scanner moves 480 mm (from the sensor off area) or 30 mm (from the sensor on position) at homing. • The scanner home position sensor goes OFF on starting the DF scanning/Book scanning. • The scanner home position sensor does not go ON when the scanner reaches to the specified position (in the sensor ON area) from the scanning position • This SC is issued only when the error signal of the scanner HP sensor is detected three times consecutively to prevent the sensor detection error due to some noise.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Motor driver defective • Motor defective • Scanner HP sensor defective • Harness defective • Timing belt, pulley, wire, or carriage not installed correctly
		1. Perform the following operations. • Check the harness. • Check the timing belt, pulley, wire, or carriage installation. 2. Replace the following parts. • Replace the scanner motor. • Replace the scanner HP sensor.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
141-00	B	Black level detection error
		The black level cannot be adjusted within the specified value.
		• CIS defective • MPU defective • Harness defective
		1. Reconnect the harness of the CIS. 2. Replace the following parts. • Replace the CIS • Replace the MPU. • Replace the harness of the CIS.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
142-00	B	White level detection error
		The white level cannot be adjusted within the specified value.
		• CIS defective • MPU defective • Harness defective • Condensation in scanner unit • CIS dirty or positioned incorrectly • White plate dirty or positioned incorrectly
		1. Perform the following operations. • Reconnect the harness of the CIS. • Reattach or clean the CIS. • Reattach or clean the white plate. 2. Replace the following parts. • Replace the CIS • Replace the MPU. • Replace the harness of the CIS.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
144-00	B	Scanner communication error
		The machine cannot communicate in the MPU, or the communication result is unexpected.
		• Unexpected communication • Power failure
		1. Reconnect the harness of the CIS. 2. Replace the following parts. • Replace the MPU. • Replace the harness of the CIS.

SC2xx: Exposure

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
202-00	B	Polygon motor: ON timeout error
		Polygon motor locking has not been detected when 7 seconds have elapsed after the machine turned the polygon motor ON.
		• The interface harness to the polygon motor driver damaged or not connected correctly. • Polygon motor or polygon motor driver defective • Polygon motor drive pulse cannot be output correctly. (Polygon controller)
		• Check the harness of the laser unit (disconnected, etc.). • Check if the laser unit connector is connected. • Check if the PSU 24 V power is output. • Replace the interface harness of the laser unit. • Replace the laser unit. • Replace the MPU • Replace the PSU

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
203-00	B	Polygon motor: OFF timeout error
		Polygon motor has not stopped when 3 seconds have elapsed after the machine turned the polygon motor OFF.
		• The interface harness to the polygon motor driver damaged or not connected correctly. • Polygon motor or polygon motor driver defective • Polygon motor drive pulse cannot be output correctly.
		• Check the harness of the laser unit (disconnected, etc.). • Check if the laser unit connector is connected. • Check if the PSU 24 V power is output. • Replace the interface harness of the laser unit. • Replace the laser unit. • Replace the MPU. • Replace the PSU

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
204-00	B	Polygon motor: Lock signal error
		An error is detected during the polygon motor rotation.
		• The interface harness to the polygon motor driver damaged or not connected correctly. • Polygon motor or polygon motor driver defective
		• Check the harness of the laser unit (disconnected, etc.). • Check if the laser unit connector is connected. • Check if the PSU 24 V power is output. • Replace the interface harness of the laser unit. • Replace the laser unit. • Replace the MPU. • Replace the PSU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
220-00	B	Laser synchronization detection error
		An error of the laser synchronizing is detected at the LD lighting.
		• The interface harness to the synchronization detection unit damaged or not connected correctly. • Synchronization detection board defective • Beam does not enter photo detector.
		• Check the harness of the laser unit (disconnected, etc.). • Check if the laser unit connector is connected. • Replace the interface harness of the laser unit. • Replace the laser unit. • Replace the MPU.

SC3xx: Image Processing

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
302-00	B	High voltage charge error
		The machine detects "1" (error) 10 times consecutively when monitoring the output error signal every 20 msec (excluding in Sleep mode or with the front door open).
		• PCDU defective • HVPS board harness defective
		• Replace the PCDU. • Replace the harness of the HVPS board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
350-00	B	ID sensor error (detailed)
		One of the conditions below occurs during the ID sensor detection (only when the SP5-995-001 is set to "1"). • Vsp > 2.5V • Vsg < 2.5V • Vsp = 0V • Vsg = 0V
		• ID sensor defective • ID sensor harness damaged. • ID sensor not connected correctly. • MPU defective • Laser unit defective • Imaging density fault • HVPS board defective • ID sensor dirt
		• Clean the ID sensor • Replace the ID sensor. • Replace and reset the ID sensor harness. • Replace the MPU. • Replace the HVPS board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
351-00	B	ID sensor error: Vsg measurement error (detailed)
		Only when the following two conditions are met during the ID sensor detection (only when the SP5-995-001 is set to "1"). • Vsg is 5V and LED drive current is minimum (PWM=0).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• ID sensor defective • ID sensor harness damaged. • ID sensor not connected correctly. • MPU defective • Laser unit defective • Imaging density fault • HVPS board defective
		• Clean the ID sensor • Replace the ID sensor. • Replace and reset the ID sensor harness. • Replace the MPU. • Replace the HVPS board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
353-00	B	ID sensor: Auto adjustment PWM value error (detailed)
		One of the following conditions occurs when the ID sensor is adjusting Vsg automatically, this SC is issued (only when the SP5-995-001 is set to "1"). • Vsg is less than 4 V with the LED drive current set to maximum (PWM=1023). • Vsg is more than 4 V with the LED drive current set to minimum (PWM=1).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• ID sensor defective • ID sensor harness damaged. • ID sensor not connected correctly. • MPU defective • Laser unit defective • Imaging density fault • HVPS board defective • ID sensor dirt
		• Clean the ID sensor. • Replace the ID sensor. • Replace and reset the ID sensor harness. • Replace the MPU. • Replace the HVPS board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
354-00	B	ID sensor: Auto adjustment timeout error (detailed)
		If Vsg is not automatically adjusted to 4.0±0.2 V twice consecutively when the ID sensor is adjusting Vsg automatically, this SC is issued (only when the SP5-995-001 is set to "1").
		• ID sensor defective • ID sensor harness damaged. • ID sensor not connected correctly. • MPU defective • Laser unit defective • Imaging density fault • HVPS board defective • ID sensor dirt
		• Clean the ID sensor. • Replace the ID sensor. • Replace and reset the ID sensor harness. • Replace the MPU. • Replace the HVPS board.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
355-00	B	ID sensor error
		If one of the SC codes from 350 to 354 happens when the SP5-995-001 is set to "0" (default), SC355 is issued as the logging SC. This error is not displayed on the panel.
		• ID sensor defective • ID sensor harness damaged • ID sensor not connected correctly • MPU defective • Laser unit defective • Imaging density fault • HVPS board defective • ID sensor dirt
		• Replace the ID sensor. • Reconnect the ID sensor connector.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
360-01	B	TD sensor calibration error
		The error of the TD sensor calibration is determined if the TD sensor calibration is not out of the target range described below. The TD sensor calibration error is detected three times consecutively, this SC is issued. • Upper threshold (SP2-992-001) • Lower threshold (SP2-992-002)
		• TD sensor defective • TD sensor harness not connected correctly or damaged • Not initial developer
		• Replace the harness of the TD sensor. • Insert the connector of the TD sensor. • Replace the development unit.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
361-01	B	TD sensor output upper limit error (K)
		TD sensor output: The Vt (SP2-220-004) output continuously exceeds the upper limit threshold value (SP2-992-001) for the time of the upper limit threshold (SP2-992-003).
		TD sensor is not connected correctly.
		• Check if the TD sensor connector is connected. • Check the harness of the TD sensor (disconnected, etc.). • Replace the development unit if some error is detected.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
362-01	B	TD sensor output lower limit error (K)
		TD sensor output: The Vt (SP2-220-004) output is continuously below the lower limit threshold value (SP2-992-002) for the time of the lower limit threshold (SP2-992-004).
		TD sensor is not connected correctly.
		• Check if the TD sensor connector is connected. • Check the harness of the TD sensor (disconnected, etc.). • Replace the development unit if some error is detected.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
392-00	B	Initial developer setting error
		• A read error for the ID sensor pattern at the initial developer setting is detected. • If the Vsp output is more than 2.5 V, the machine detects that there is no developer, and displays SC.
		• ID sensor defective • The OPC drum does not rotate. • The development roller does not rotate.
		• Replace the ID sensor. • Replace the developer. • Replace the PCDU.

SC4xx: Image Processing

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
440-00	B	Image transfer current error
		The machine detects "1" (error) 10 times consecutively when monitoring the output error signal every 20 msec (excluding in Sleep mode or with the front door open).
		Right door not closed correctly PCDU out of position HVPS board defective HVPS board harness defective
		• Close the right door correctly. • Reinstall the PCDU correctly or replace the PCDU. • Replace the HVPS board. • Replace the harness of the HVPS board.

SC5xx: Paper Feed and Fusing

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
502-01	B	2nd tray (option) error (lift error)
		The tray lift sensor does not detect the tray bottom plate or stack of paper for 10 seconds after the machine start to initialize all units. * If the machine detects an error three times consecutively, this SC is issued.
		• Tray lift motor error or harness disconnected • Tray lift sensor error or harness disconnected • Each harness damaged • Main board defective • Foreign matter, such as paper scrap, is caught between the tray and tray lift motor or in the tray. • Paper set fault • Bottom plate defective • Paper feed roller missing • Tray lift sensor feeler defective
		• Reload the paper. • Remove the foreign matter. • Replace the tray lift motor. • Reconnect the connector. • Replace the harness. • Replace the tray lift sensor. • Replace the main board. • Replace the tray. • Replace the paper feed roller. • Replace the tray lift sensor feeler. • Replace the bottom plate.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
502-02	B	2nd tray (option) error (lowering error)
		The tray lift sensor does not turn off for 1,000 msec. after the tray bottom plate has started to lower when the upper limit and paper load are simultaneously detected at the power-on or tray installation. * If the machine detects an error five times consecutively, this SC is issued.
		• Tray lift motor error or harness disconnected • Tray lift sensor error or harness disconnected • Each harness damaged • Main board defective • Foreign matter, such as paper scrap, is caught between the tray and tray lift motor or in the tray. • Paper set fault • Bottom plate defective • Paper feed roller missing • Tray lift sensor feeler defective
		• Reload the paper. • Remove the foreign matter. • Replace the tray lift motor. • Reconnect the connector. • Replace the harness. • Replace the tray lift sensor. • Replace the main board. • Replace the paper feed roller. • Replace the tray lift sensor feeler • Replace the tray bottom plate. • Replace the tray.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
503-01	B	3rd tray (option) error (lift error)
		The tray lift sensor does not detect the tray bottom plate or stack of paper for 10 seconds after the machine start to initialize all units. * If the machine detects an error three times consecutively, this SC is issued.
		• Tray lift motor error or harness disconnected • Tray lift sensor error or harness disconnected • Each harness damaged • Main board defective • Foreign matter, such as paper scrap, is caught between the tray and tray lift motor. • Paper set fault • Tray bottom plate defective • Paper feed roller missing • Tray lift sensor feeler defective • Foreign matter, such as paper scrap, is caught in the tray.
		• Reload the paper. • Remove the foreign matter. • Replace the tray lift motor. • Reconnect the connector. • Replace the harness. • Replace the tray lift sensor. • Replace the main board. • Replace the tray. • Replace the paper feed roller. • Replace the tray lift sensor feeler • Replace the tray bottom plate.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
503-02	B	3rd tray (option) error (lowering error)
		The tray lift sensor does not turn off for 1,000 msec. after the tray bottom plate has started to lower when the upper limit and paper load are simultaneously detected at the power-on or tray installation. * If the machine detects an error five times consecutively, this SC is issued.
		• Tray lift motor error or harness disconnected • Tray lift sensor error or harness disconnected • Each harness damaged • Main board defective • Foreign matter, such as paper scrap, is caught between the tray and tray lift motor. • Paper set fault • Bottom plate defective • Paper feed roller missing • Tray lift sensor feeler defective • Foreign matter, such as paper scrap, is caught in the tray.
		• Reload the paper. • Remove the foreign matter. • Replace the tray lift motor. • Reconnect the connector. • Replace the harness. • Replace the tray lift sensor. • Replace the main board. • Replace the tray. • Replace the paper feed roller. • Replace the tray lift sensor feeler • Replace the bottom plate.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
520-00	B	Main motor error
		"High" signal is detected continuously 20 times or more when the main motor is turned on. Detection cycle: 100 msec
		• Motor lock due to overload to the drive chain • Motor driver defective
		• Replace the main motor.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
522-00	B	2nd tray (option) transport motor error
		• Encoder defective An error is detected when phase A/phase B signals of the encoder are not input • Encoder phase pulse over An error is detected when the phase difference between phase A and phase B is shifted by more than the specified number of pulses. • Rotor restrained time over (overload) An error is detected when phase A/phase B signals of the encoder are not input within the predetermined time.
		• Transport motor error • Harness damaged • Harness not connected correctly • Main board defective
		• Reconnect the harness. • Replace the harness. • Replace the main board. • Replace the transport motor.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
523-00	B	3rd tray (option) transport motor error
		• Encoder defective An error is detected when phase A/phase B signals of the encoder are not input • Encoder phase pulse over An error is detected when the phase difference between phase A and phase B is shifted by more than the specified number of pulses. • Rotor restrained time over (overload) An error is detected when phase A/phase B signals of the encoder are not input within the predetermined time.
		• Transport motor error • Harness damaged • Harness not connected correctly • Main board defective
		• Reconnect the harness. • Replace the harness. • Replace the main board. • Replace the transport motor.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
530-00	B	Main fan error
		A motor lock error is detected for 5 seconds or more when the main fan is turned on.
		Main fan motor defective
		Replace the main fan.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
531-00	B	Exhaust fan error
		A motor lock error is detected for 5 seconds or more when the exhaust fan is turned on.
		Exhaust fan motor defective
		Replace the exhaust fan.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
541-01	A	Thermistor (center) disconnection
		Temperature of 0°C or lower is detected for 7 seconds continuously.
		• Thermistor (center) disconnection • Thermistor (center) not connected correctly
		• Reconnect the thermistor (center). • Replace the thermistor (center). • Clear this SC by executing SP5-810-001.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
541-02	A	Thermistor (center) disconnection: Low voltage
		An error is detected only when the input voltage at power-on is low. • Temperature of 0°C or lower is detected for 20 seconds continuously.
		• Thermistor (center) disconnection • Thermistor (center) not connected correctly
		• Reconnect the thermistor (center). • Replace the thermistor (center). • Clear this SC by executing SP5-810-001.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
542-01	A	Reload failure: Thermistor deformation
		The temperature of 9°C or lower is detected five times consecutively for three seconds. • Measurement begins 15 seconds after the heater is turned on. • Measurement interval: 0.1 sec. • If the reload temperature is reached during measuring, the measurement is cancelled.
		• Thermistor deformed • Thermistor out of position • Out of guaranteed input voltage
		• Replace the thermistor (center). • Clear this SC by executing SP5-810-001.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
542-03	A	Reload failure: Heater damage
		Normal (no pre-rotation): • The reload temperature is not reached for 35 seconds after heater control starts. Pre-rotation: • The reload temperature is not reached for 90 seconds after heater control starts.
		• Heater damaged • After over-heat prevention
		• Replace the heater. • Clear this SC by executing SP5-810-001.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
542-04	B	Reload failure: Low voltage and thermistor deformation
		An error is detected only when the input voltage at power-on is low. The temperature of 7°C or lower is detected five times consecutively for 3 seconds. • Measurement begins 15 seconds after the heater is turned on. • Measurement interval: 0.1 sec. • If the reload temperature is reached during measuring, the measurement is cancelled.
		• Thermistor deformed • Thermistor out of position • Out of guaranteed input voltage • After over-heat prevention
		• Replace the thermistor (center).

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
542-06	B	Reload failure: Low voltage and heater deformation
		An error is detected only when the input voltage at power-on is low. • Normal (no pre-rotation): The reload temperature is not reached for 90 seconds after heater control starts. • Pre-rotation: The reload temperature is not reached for 285 seconds after heater control starts.
		• Heater damaged • After over-heat prevention
		• Replace the heater.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
543-00	A	Thermistor (center) high temperature detection: Software
		An error is detected when the temperature of 230°C or higher is detected for 1 seconds continuously. • Detection with the thermistor (center) • Detection time: 10 or more • Measurement interval: 0.1 sec
		• Triac short-circuit • MPU defective
		• Replace the MPU. • Clear this SC by executing SP5-810-001.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
544-00	A	Thermistor (center) high temperature detection: Hardware
		An error is detected when the temperature of 250°C or higher is detected • Detection with the thermistor (center)
		• Triac short-circuit • MPU control board defective • Fusing control error
		• Replace the MPU. • Clear this SC by executing SP5-810-001.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
545-01	A	Heater continuously heat
		An error is detected when the target temperature cannot be reached for 10 seconds or more after reloading.
		• Thermistor detection error • Heater damaged • After over-heat prevention
		• Replace the thermistor (center). • Replace the heater. • Clear this SC by executing SP5-810-001.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
545-02	A	Heater continuously heat: Low voltage
		An error is detected only when the input voltage at power-on is low. An error is detected when the target temperature cannot be reached for 10 seconds or more after reloading.
		• Thermistor detection error • Heater damaged • After over-heat prevention
		• Replace the thermistor (center). • Replace the heater. • Clear this SC by executing SP5-810-001.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
547-01	B	Zero cross error (relay-contact soldering)
		When a zero cross signal is detected consecutively three times or more, this SC is issued. When a zero cross signal is detected consecutively less than three times, the error counter for the zero cross signal increments, and then the machine retries the checking out the zero cross signal again.
		• Fusing relay defective (contact soldering, contact open) • Drive circuit of the fusing relay defective • PSU fuse (24 VS) damaged • Frequency instability of input power line
		• Replace the fusing relay. • Replace the fuse of the PSU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
547-02	B	Zero cross error (relay-contact fault)
		When a zero cross signal is detected consecutively three times or more, this SC is issued. When a zero cross signal is detected consecutively less than three times, the machine tries to turn off the relay of the fusing unit.
		• Fusing relay defective (contact soldering, contact open) • Drive circuit of the fusing relay defective • PSU fuse (24 VS) damaged • Frequency instability of input power line
		• Replace the fusing relay. • Replace the fuse of the PSU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
547-03	B	Zero cross error (low-frequency error)
		When low frequency is detected once, the SC557 is determined. When low frequency is detected twice or more, this SC is issued.
		• Fusing relay defective (contact soldering, contact open) • Drive circuit of the fusing relay defective • PSU fuse (24 VS) damaged • Frequency instability of input power line
		• Replace the fusing relay. • Replace the fuse of the PSU.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
549-01	B	Temperature lowering detection
		When the thermistor (center) detects 75°C lower than the target temperature of each paper type for 60 seconds continuously after the registration roller has started to rotate, this SC is issued.
		• Heater damaged during paper feeding • Heater not connected correctly.
		• Reconnect the heater. • Replace the heater.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
549-02	B	Temperature lowering detection: Low voltage
		When fusing temperature does not reach the target temperature for each paper type for the specified time with SP1-105-043 (default: 60 sec) after the fusing pre-rotation due to the low voltage, this SC is issued.
		• Heater damaged during paper feeding • Loose connectors • Lowering the input voltage
		• Reconnect the heater. • Replace the heater.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
549-03	B	Temperature lowering detection: Low voltage
		When fusing temperature does not reach the target temperature for each paper type for the specified time with SP1-124-104 (default: 30 sec) after the machine has entered the CPM down level 3 in the low voltage operation mode, this SC is issued.
		• Heater damaged during paper feeding • Loose connectors • Lowering the input voltage
		• Reconnect the heater. • Replace the heater.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
551-01	A	Thermistor (edge) disconnection
		Temperature of 0°C or lower is detected for 7 seconds continuously. Detection time: 10 or more Measurement interval: 0.5 sec.
		• Thermistor (edge) disconnection • Thermistor (edge) not connected correctly
		• Reconnect the thermistor (edge). • Replace the thermistor (edge). • Clear this SC by executing SP5-810-001.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
551-02	A	Thermistor (edge) disconnection: Low voltage
		• An error is detected only when the input voltage at power-on is low. • Temperature of 0°C or lower is detected for 25 seconds continuously. Detection time: 10 or more Detection interval: 0.1 seconds
		• Thermistor (edge) disconnection • Thermistor (edge) not connected correctly
		• Reconnect the thermistor (edge). • Replace the thermistor (edge). • Clear this SC by executing SP5-810-001.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
553-00	A	Thermistor (edge) high temperature detection: Software
		• Temperature above 230°C is detected for 1 second continuously. • Detection with the thermistor (edge) Detection time: 10 or more Measurement interval: 0.1 sec
		• Triac short-circuit • MPU defective
		• Replace the MPU. • Clear this SC by executing SP5-810-001.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
554-00	A	Thermistor (edge) high temperature detection: Hardware
		Temperature of 250°C or higher is detected by the thermistor (edge).
		• Triac short-circuit • MPU defective • Fusing control error
		• Replace the MPU. • Clear this SC by executing SP5-810-001.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
557-00	D	Zero cross frequency exceeded
		When low frequency is detected once, this SC is issued.
		Power line noise
		Turn the power off and on.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
559-00	A	Fusing jam SC
		A fusing jam, which does not reach the paper exit sensor, is detected three times consecutively. • If paper exits normally (passes the paper exit sensor), the count will be cleared. • This detection is effective only when the setting of SP1-159-001 (Fusing jam 3 times SC setting) is set to "1 (on)". (Default: 0 (off)) • The fusing jam counter value is retained after turning the power off/on. • The fusing jam counter (internal counter) is reset when the setting of SP1-159-001 is changed from "1" to "0". • The fusing jam counter is reset when clearing this SC after SC559-00 has been issued.
		Paper winding around the fusing roller.
		• Replace the fusing unit. • Clear this SC by executing SP5-810-001.

SC6xx: Device Communication

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
622-00	B	2nd tray communication error
		• An error occurs during the line connection between the mainframe and the optional PFU (2nd tray). • A communication error report is received between the mainframe and the optional PFU (2nd tray) is received.
		• The 2nd paper tray's main board defective • MPU defective • 2nd tray and the machine are not connected correctly.
		• Reconnect the 2nd tray connection cable. • Replace MPU. • Replace the 2nd tray.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
623-00	B	3rd tray communication error
		• An error occurs during the line connection between the mainframe and the optional PFU (3rd tray). • A communication error report is received between the mainframe and the optional PFU (3rd tray).
		• 2nd tray main board defective • 3rd tray main board defective • 2nd tray and 3rd tray not connected correctly
		• Reconnect the 2nd tray and 3rd tray connection cable. • Replace the 3rd tray.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
669-01	B	EEPROM communication error – Access-type designation error
669-02	B	EEPROM communication error – Bus error
669-03	B	EEPROM communication error – Device error
669-04	B	EEPROM communication error – Communication abort error
669-05	B	EEPROM communication error – Communication failed error
669-06	B	EEPROM communication error – Device access inhibited
669-07	B	EEPROM communication error – Buffer full error
669-08	B	EEPROM communication error – Request parameter error

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		When the machine retries three times after an error report has been received in the EEPROM communication, but the machine does not recover the communication, this SC is issued.
		• Noise • EEPROM not connected • EEPROM mounted in reverse • EEPROM defective
		EEPROM not connected: • Reinstall the EEPROM on the MPU. **EEPROM mounted in reverse:** • Mount the EEPROM correctly on the MPU. **EEPROM defective:** • Replace the EEPROM on the MPU.

SC7xx: Peripherals

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
790-00	B	Option PFU stack over
		When the power is turned ON, it is detected that the number of stacked PFUs exceeds the specified value.
		The number of stacked banks exceeds the specified value.
		Install the optional PFU correctly. Only 2 optional PFUs can be installed on this machine.

SC9xx: Controllers

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
903-00	B	Total counter error
		• If the counter values (4 bits) for the machine and mirroring agree, the SUM value of the machine is recalculated, and it does not agree with the SUM value of upper 4 bits, this SC is issued. • If the counter values (4 bits) for the machine and mirroring do not agree, recalculate the SUM values for the machine and mirroring. If the values for both machine and mirroring do not agree with the SUM value of upper 4 bits, this SC is issued.
		EEPROM defective
		Replace the EEPROM.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
990-00	B	Fail-safe SC
		• An unexpected error occurred on the software.
		System error
		Update the firmware.

Jam Detection

Jam Description and Position Code

Note

- Position code: Shows the location of a jam. Appears on the operation panel.

These are lists of codes for the main machine and peripheral devices. Please note:

- **Late jam.** The paper has failed to arrive within the prescribed time due to a jam that has occurred upstream of the referenced sensor.
- **Lag jam.** The paper has failed to leave the location of the referenced sensor within the prescribed time due to a jam downstream of the referenced sensor.

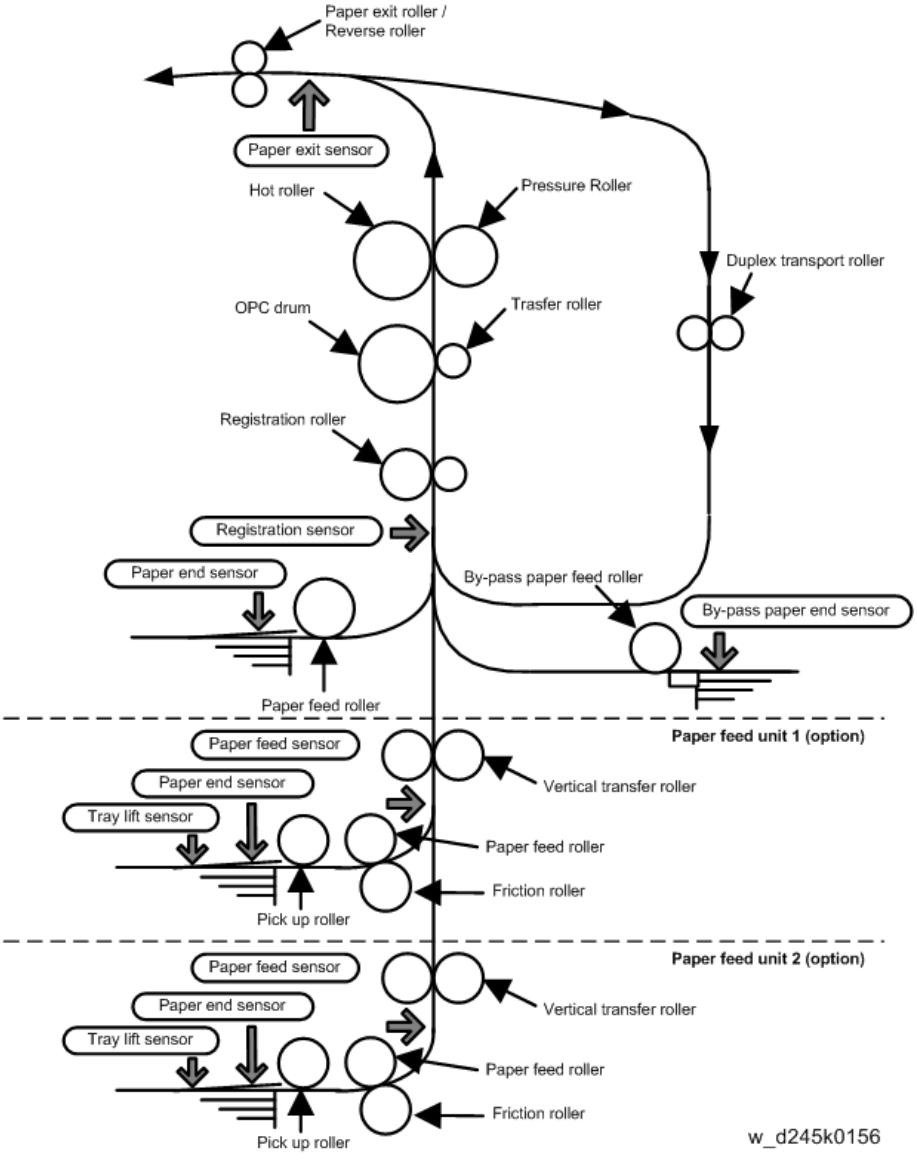
Main Machine

No.	Jam Description	Position Code
1	Initial jam	*1
2	Tray 1 no feed	A
3	Optional PFU 1 no feed	Y1
4	Optional PFU 2 no feed	Y2
5	By-pass paper tray no feed	A
6	Duplex no feed	Z
7	Optional PFU 1 paper feed sensor: Late jam	Y1
8	Registration sensor: Late jam	A
10	Exit sensor: Late jam	C
11	Optional PFU 1 paper feed sensor: Lag jam	Y1
12	Optional PFU 2 paper feed sensor: Lag jam	Y2
13	Registration sensor: Lag jam	B
14	Exit sensor: Lag jam	C
15	Exit sensor (duplex reverse): Lag jam	Z

***1 Initial Jam**

Jam Description	Position Code
Main Machine	
Registration sensor	B
Exit sensor	C
ADF registration sensor	P
Optional PFU	
PFU 1	Y1
PFU 2	Y2

Sensor Locations



MEMO

MEMO

MEMO

Model Bc-C1
Machine Code: D245/D246/D247

Appendices

June, 2015

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2. Appendices:Preventive Maintenance Tables

1. Appendices:Specifications

General Specifications

Mainframe

Item	Spec.
Configuration:	Desktop
Color Supported:	Black and White
Scanning Element:	CIS
Printing process:	Laser beam scanning/marking and electro-photographic printing.
Development:	Dry, dual component toner development
Fusing System:	Heat roll
Max. Imageable Area:	Flatbed : 297 x 432 mm (11" x 17") ARDF : 297 x 600 mm (11" x 23")
Target Monthly ACV:	4K
First Copy Time (LT/A4 LEF, 1st tray):	10 sec or less (Nominal Value)
Warm-up Time (From main switch):	33 sec or less (Nominal Value)
Power Source:	LA: 120-127V 60Hz 7A EU/Asia/China: 220-240V 50-60 Hz 3.7A TW: --
Max Power Consumption (Full Configuration):	950 W or less

Item	Spec.
Dimensions (W x D x H):	**Mainframe (without platen cover or ADF):** • 587 x 581 x 426 (23.1" x 22.9" x 16.8") **Mainframe (with platen cover):** • 587 x 581 x 461 (23.1" x 22.9" x 18.1") **Mainframe (with ADF):** • 587 x 581 x 537 (23.1" x 22.9" x 21.1")
Weight:	**D245** • Less than 30.0 kg (66.1 lbs) **D246** • Less than 35.0 kg (77.2 lbs) **D247** • Less than 35.0 kg (77.2 lbs)
CPU:	360 MHz
RAM:	256 MB
HDD:	No
Max Email Address in HDD:	-
Register Group Address in HDD:	-
Register client folder address in HDD:	-

Item		Spec.
Recommended Paper Size:	Standard Tray:	**Simplex:** A3 SEF, A4 SEF/LEF, B4 (JIS) SEF, B5 (JIS) SEF/LEF,A5 SEF/LEF, DLT SEF , Legal SEF, 8 1/2×13 2/5 SEF, LT SEF/LEF, Government LG SEF, G LT SEF/LEF, F SEF, Foolscap SEF, Folio SEF, Executive SEF/LEF, Eng Quatro SEF/LEF, HLT SEF 8K SEF, 16K SEF/LEF, 11×15 SEF, 11×14 SEF, 10×15 SEF, 10×14 SEF **Duplex:** A3 SEF, A4 SEF/LEF, B4 (JIS) SEF, B5 (JIS) SEF, A5 SEF, DLT SEF , Legal SEF, 8 1/2×13 2/5SEF, LT SEF/LEF, Government LG SEF, G LT SEF/LEF, F SEF, Foolscap SEF, Folio SEF, Executive SEF, Eng Quatro SEF/LEF, HLT SEF, 8K SEF, 16K SEF/LEF, 11×15 SEF, 11×14 SEF, 10×15 SEF, 10×14 SEF
Recommended Paper Size:	2nd & 3rd Paper Tray (optional):	A3 SEF, A4 SEF/LEF, B4 (JIS) SEF, B5 (JIS)SEF/LEF,A5 SEF, B6 (JIS) SEF, DLT SEF, Legal SEF, 8 1/2×13 2/5 SEF, LT SEF/LEF, Government LG SEF, G LT SEF/LEF, F SEF, Foolscap SEF, Folio SEF, Executive SEF/LEF, Eng Quatro SEF/LEF, HLT SEF 8K SEF, 16K SEF/LEF, 11×15 SEF, 11×14 SEF, 10×15 SEF, 10×14 SEF <Custom Size Paper> Width: 98 mm (3.86 inch) – 297 mm (11.69 inch), Length: 162 mm (6.38 inch) – 432 mm (17.00 inch)

Item		Spec.
Recommended Paper Size:	Bypass:	A3 SEF, A4 SEF/LEF, A5 SEF/LEF, A6 SEF, B4 SEF, A3 SEF, A4 SEF/LEF, B4 (JIS) SEF, B5 (JIS) SEF/LEF,A5 SEF/LEF, A6 SEF, B6 (JIS) SEF DLT SEF, Legal SEF, 8 1/2×13 2/5 SEF, LT SEF/LEF, Government LG SEF, G LT SEF/LEF, F SEF, Foolscap SEF, Folio SEF, Executive SEF/LEF, Eng Quatro SEF/LEF, HLT SEF, Com10 SEF, Monarch SEF, Env.C5 SEF/LEF, Env.C6 SEF, Env.DL SEF, 8K SEF, 16K SEF/LEF, 12×18 SEF, 11×15 SEF, 11×14 SEF, 10×15 SEF, 10×14 SEF <Custom Size Paper> Width: 90 mm (3.55 inch) – 305 mm (12.00 inch), Length: 148 mm (5.83 inch) – 600 mm (23.62 inch) **Note** • Image quality is not assured for the length over 432 mm.
Paper Feeding Capacity (LT/A4: 80gsm paper):	Std:	350 sheets (550 sheets + 550 sheets + 100 Sheets/ Bypass) 350 sheets (mainframe tray 250 sheets + by-pass tray 100 sheets)
	Option:	500sheet (500sheet x 1) or 1,000 sheets (500sheets x 2)
	Max:	1,350 sheets (mainframe tray + bypass tray + optional tray 500 sheets x 2)
Paper Output Capacity (LT/A4: 80gsm paper):	Std:	250 sheets (internal tray)
	Option:	-
	Max:	-

Item		Spec.
Paper Type Capacity:	Std Tray:	Thin Paper*, Plain Paper 1, Plain Paper 2, Recycled, Color Paper, Special Paper, Middle Thick Paper, Printed Paper, Preprinted Paper, Prepunched Paper, Letterhead, Bond Paper, Cardstock *Supported only simplex
	Bypass Tray: (Supported only simplex)	Thin Paper, Plain Paper 1, Plain Paper 2, Recycled, Color Paper, Special Paper, Middle Thick Paper, Printed Paper, Preprinted Paper, Prepunched Paper, Letterhead, Bond Paper, Cardstock, Thick Paper 1, Thick Paper 2,Label Paper, OHP, Envelope
	Duplex: (Not supported by-pass tray)	Plain Paper 1, Plain Paper 2, Recycled, Color Paper, Special Paper, Middle Thick Paper, Printed Paper, Preprinted Paper, Prepunched Paper, Letterhead, Bond Paper, Cardstock
	Paper Feed Unit:	Plain Paper 1, Plain Paper 2, Recycled, Color Paper, Special Paper, Middle Thick Paper, Printed Paper, Preprinted Paper, Prepunched Paper, Letterhead, Bond Paper, Cardstock
Paper Weight:	Std Tray:	52 – 105 g/m^2 (14 – 27.9 lb. Bond)
	Bypass:	52 – 216 g/m^2 (14 – 57.5 lb. Bond)
	Duplex Unit:	64 – 105 g/m^2 (17 – 27.9 lb. Bond)
	Paper Feed Unit:	60 – 105 g/m^2 (16 – 27.9 lb. Bond)
Reliability:	Max Monthly CV (5 years):	5K
	Duty	30K
	PM Cycle:	60K
	MCBC (Mean Copy Between Calls):	50K
	Life	Approx. 300K or 5 years whichever comes first
	ADF life	Approx. 300K or 5 years whichever comes first

Copier Specifications

Item		Spec.
CPM Black:		20
CPM Color:		-
Copy Resolution:		Normal mode: 300 x 600 dpi Fine mode: 600 x 600 dpi
Multiple Copying:		Up to 99 copies
Reproduction Ratio:	LA:	155%, 129%, 121%, 100%, 93%, 78%, 65%, 50%
	EU/Asia:	200%, 141%, 122%, 100%, 93%, 82%, 71%, 50%
Zoom:		From 50% to 200% in 1% step
Number of Copy Reservations:		-
Image Density:		Manual: 5 levels Default: 3
Copy Mode:		Default = Mixed Mixed, Text, Photo, Diazo, Voucher
Paper Selection:		Default = Tray 1 Tray 1 (Default), Tray 2, Tray 3, Bypass Tray
Auto Tray Switch:		Copy: Yes, only for A4 LEF/SEF, LT LEF/SEF Printer: Yes By-pass is available
Duplex:		D245: No D246/D247: Yes
Book:	Booklet:	No
	Magazine:	
	Layout & Booklet:	
Series:	Book to simplex:	No
	2 sided original to simplex:	Yes

Item		Spec.
Combine (Layout):		The following combinations are supported: 2 into 1 simplex, 4 into 1 simplex, 8 into 1 simplex, 1 duplex into 1 simplex, 2 duplex into 1 simplex, 4 duplex into 1 simplex, 4 into 1 duplex, 8 into 1 duplex, 16 into 1 duplex, 2 duplex into 1 duplex, 4 duplex into 1 duplex
Shift/Erase/ Margin Adjustment:	Centering:	No
	Cornering:	
	Margin Adjustment:	
	Scan Position Adjustment:	
	Creep Adjustment:	
	Erase Center:	
	Erase Border:	
Cover Sheet Chapter Slip Sheets:	Front Cover:	No
	Front and Back Cover:	
	Chapter:	
	Slip Sheets:	
Image Rotation:		No

Item		Spec.
Electronic Sort:	Without Shift Sort:	Yes
	Rotate Sort:	No
	Shift Sort:	No
Electronic Stack:		No
Stapling:		No
Image Creation:	Repeat:	No
	Double Copy:	No
	Mirror:	No
	Positive/Negative:	No
	Erase Inside:	No
	Erase Outside:	No
Stamp/ Numbering:	Preset Stamp:	No
	User Stamp:	No
	Date Stamp:	No
	Page Number:	No
	Bates Numbering:	No
	Printing copy prevention pattern:	No
Sharp/Soft:		No
Contrast:		No
Background Density Adjustment:		No
Job Programs:		No
User Code:		No
Interrupt Copy:		No
Auto Start:		No

Item	Spec.
Job Preset:	No
Sample Copy:	No

Printer Specifications

Item	Spec.
Printer Language:	Standard: GDI Option: -
Print Resolution:	Max: 600 x 600 dpi (1bit)
Font:	No
Host Interfaces:	**Standard:** USB 2.0 **Option:** Ethernet
Network Protocol:	TCP/IP (Option)
MIB:	**Standard:** MIB-II(RFC1213), Host Resource MIB, Printer MIB **Private:** Ricoh Private MIB

Item	Spec.
Network/Operating System:	Windows Server 2003 Standard Edition/Standard x64 Edition/ Enterprise Edition/Enterprise x64 Edition Windows Server 2003 R2 Standard Edition/Standard x64 Edition/Enterprise Edition/Enterprise x64 Edition Windows Vista Home Basic/Home Premium/Business/ Enterprise/Ultimate Windows Server 2008 Standard Edition/Standard Edition without Hyper-V/Enterprise Edition/Enterprise Edition without Hyper-V Windows Server 2008 R2 Standard Edition/Enterprise Edition Windows 7 Home Basic/Home Premium/Professional/ Enterprise/Ultimate Windows 8 Home Basic/Home Premium/Professional/ Enterprise/Ultimate Windows 8.1 Home Basic/Home Premium/Professional/ Enterprise/Ultimate Windows Server 2012 R2 Standard Edition/Enterprise Edition

Scan Specifications

Item		Spec.
Color Scan:		Yes
Scanning Resolution:		100 / 200 (default) / 300 / 400 / 600 dpi
Auto Size Detection (LA):	Exposure Glass:	No
	ARDF:	No
Auto Size Detection (EU/AS/ CHN):	Exposure Glass:	No
	ARDF:	No
Scan Area	Main:	297 mm (11 inches)
	Sub:	432 mm (17 inches)

Item		Spec.
sRGB Supported:		No
Network Interface:		USB, LAN: Local Area Network Ethernet/ 10base-T, 100base-TX (Option)
Protocol:		Network: TCP/IP (IPv4, IPv6)
Compression Method:		BW: MH, MR, MMR Color: JPEG
Scan Mode:		BW: BW, Grayscale Color: True Color
Image Density:		Yes: Manual
Image Rotation:		No
SADF/Batch Mode:		No
Mixed Size Mode:		No
Reduce and Enlarge:		No
Split scan from Booklet type Original:		No
Digital Signature for PDF:		No
Single Page TIFF:	On	-
	Off	-
Multi Page TIFF:	On	-
	Off	-
Single Page JPEG:	On	-
	Off	-
Single Page PDF:	On	-
	Off	-

Item		Spec.
Multi PagePDF:	On	-
	Off	-
Single Page High Compression PDF:	On	-
	Off	-
Multi Page High Compression PDF:	On	-
	Off	-
Single Page PDF-A:	On	-
	Off	-
Multi Page PDF-A:	On	-
	Off	-

Scan to Email

Item	Spec.
Requirement (Mail Protocol, Transmission Protocol, Protocol):	SMTP Client (TCP port 25)
Authorization Function:	SMTP authentication, POP before SMTP
Resolution:	100, 150, 200 (Default), 300, 600
Max Email Address in HDD:	-
Register Group Address in HDD:	-
Input of Destination E-mail Address via Soft Key:	No
Search methods of Email Address in HDD:	-
LDAP Search:	No
Max Address Numbers Per Send:	1

Item	Spec.
Address Numbers Per Send:	From HDD: - Direct Input: 1 Via LDAP: -
Simultaneous Transmission:	1
Attention:	-
Email Size:	With Restriction: 1 – 5 MB Without Restriction: Yes
Input Subject:	**Manual:** Max. 64 Characters **User Pre-register:** Max. 64 Characters
Input Main body text:	**Manual:** No **User Pre-register:** No **Preset:** No
Input File Name:	Yes, 16 Characters
File Type:	True Color: JPEG/ PDF Grayscale: JPEG/ PDF Black and White: TIFF/ PDF
Program User Settings:	No
Divide and send Email (If the file size exceed the max size.):	No
Resend:	No

Scan to Folder

Item	Spec.
Protocol Support:	SMB 1.0

Item	Spec.
Security:	No
Resolution:	100 dpi, 150 dpi, 200 dpi (default), 300 dpi, 600 dpi
Register client folder address in HDD:	-
Maintain client folder address in HDD:	-
Direct addressing of destination client folder via soft key:	No
Search client folder:	By name and ID
Homefolder over LDAP:	No
Max. client folder numbers per send:	1
Simultaneous Transmission:	No
Group address:	No
Input File Name:	Yes, 16 Characters
Input Subject:	Max. 64 Characters
Scan to File size	1 – 5 MB
File Size when combined Scan to Folder & Scan to E-mail:	-
File Type:	True Color: JPEG/ PDF Grayscale: JPEG/ PDF Black and White: TIFF/ PDF
Program User Settings:	No
Resend:	No

Network TWAIN Driver

Item		Spec.
OS:		Windows Server 2003 Standard Edition/Standard x64 Edition/ Enterprise Edition/Enterprise x64 Edition Windows Server 2003 R2 Standard Edition/Standard x64 Edition/Enterprise Edition/Enterprise x64 Edition Windows Vista Home Basic/Home Premium/Business/ Enterprise/Ultimate Windows Server 2008 Standard Edition/Standard Edition without Hyper-V/Enterprise Edition/Enterprise Edition without Hyper-V Windows Server 2008 R2 Standard Edition/Enterprise Edition Windows 7 Home Basic/Home Premium/Professional/ Enterprise/Ultimate Windows 8 Home Basic/Home Premium/Professional/ Enterprise/Ultimate Windows 8.1 Home Basic/Home Premium/Professional/ Enterprise/Ultimate Windows Server 2012 R2 Standard Edition/Enterprise Edition
Scanning Speed:	BW	13.6 ipm(Simplex, 200dpi, A4LEF)
	Color	5.78 ipm(Simplex, 200dpi, A4LEF)
Resolution:	BW:	75, 100, 150, 200, 300, 600
	Color:	75, 100, 150, 200, 300, 600
Scan Mode:		True Color, Grayscale, Black and White
Image Adjustment:		Gamma, Sharpness, Brightness Adjustment, Contrast, Saturation, Hue
Endorser:		No
Stamp:		No

Supported Paper Sizes

Original Size Detection

Remarks:

Y	Yes; available
-	Not available

Size (W x L) [mm]	BOOK	ADF	
		Simplex	Duplex
A3 SEF (297 x 420)	Y	Y	Y
A4 SEF (210 x 297)	Y	Y	Y
A4 LEF (297 x 210)	Y	Y	Y
B4 SEF (257 x 364)	Y	Y	Y
B5 SEF (182 x 257)	Y	Y	Y
B5 LEF (257 x 182)	Y	Y	Y
A5 SEF (148 x 210)	Y	Y	Y
A5 LEF (210 x 148)	Y	Y	Y
A6 SEF (105 x 148)	Y	-	-
A6 LEF (148 x 105)	Y	-	-
B6 SEF (128 x 182)	Y	Y	Y
B6 LEF (182 x 128)	Y	-	-
DLT SEF (11" x 17")	Y	Y	Y
LG SEF ($8\frac{1}{2}$" x 14")	Y	Y	Y
Oficio / Folio SEF ($8\frac{1}{2}$"×13.4")	Y	Y	Y
LT SEF ($8\frac{1}{2}$" x 11")	Y	Y	Y

Size (W x L) [mm]	BOOK	ADF	
		Simplex	Duplex
LT LEF (11" x 8 1/2")	Y	Y	Y
G-LGL SEF (8 1/4" x 14")	Y	Y	Y
G-LT SEF (8" x 10 1/2")	Y	Y	Y
G-LT LEF (10 1/2" x 8")	Y	Y	Y
F SEF (8" x 13")	Y	Y	Y
Foolscap SEF (8 1/2" x 13")	Y	Y	Y
Folio SEF (8 1/4" x 13")	Y	Y	Y
Exective SEF (7 1/4" x 10 1/2")	Y	Y	Y
Exective LEF (10 1/2" x 7 1/4")	Y	Y	Y
Eng quatro SEF (8" x 10")	Y	Y	Y
Eng quatro LEF (10" x 8")	Y	Y	Y
HLT SEF (5 1/2" x 8 1/2")	Y	Y	Y
HLT LEF (8 1/2" x 5 1/2")	Y	-	-
Env.#10 SEF (104.8 x 241.3 mm)	-	-	-
Com10SEF (4.125" x 9.5")	Y	-	-
Env.Monarc SEF (98.4 x 190.5 mm)	-	-	-
Monarch SEF (3.875" x 7.5")	Y	-	-
Env.C5 SEF (162 x 229)	Y	Y	Y
Env.C5 LEF (229 x 162)	Y	Y	Y
Env.C6 SEF (114 x 162)	Y	-	-
Env.DL SEF (110 x 220)	Y	-	-
8K SEF (267 x 390)	Y	Y	Y

Size (W x L) [mm]	BOOK	ADF	
		Simplex	Duplex
16K SEF (195 x 267)	Y	Y	Y
16K LEF (267 x 195)	Y	Y	Y
11 x 15 SEF (11" x 15")	Y	Y	Y
11 x 14 SEF (11" x 14")	Y	Y	Y
10 x 15 SEF (10" x 15")	Y	Y	Y
10 x 14 SEF (10" x 14")	Y	Y	Y

Paper Feed

Remarks:

Y	Yes; available
-	Not available

Size (W x L) [mm]	Tray 1	Tray 2/3 (Option)	By-pass Tray	Duplex
A3 SEF (297 x 420)	Y	Y	Y	Y
A4 SEF (210 x 297)	Y	Y	Y	Y
A4 LEF (297 x 210)	Y	Y	Y	Y
B4 SEF (257 x 364)	Y	Y	Y	Y
B5 SEF (182 x 257)	Y	Y	Y	Y
B5 LEF (257 x 182)	Y	Y	Y	-
A5 SEF (148 x 210)	Y	Y	Y	Y
A5 LEF (210 x 148)	Y	-	Y	-
A6 SEF (105 x 148)	-	-	Y	-
A6 LEF (148 x 105)	-	-	-	-

Size (W x L) [mm]	Tray 1	Tray 2/3 (Option)	By-pass Tray	Duplex
B6 SEF (128 x 182)	-	Y	Y	-
B6 LEF (182 x 128)	-	-	-	-
DLT SEF (11" x 17")	Y	Y	Y	Y
LG SEF (8 1/2" x 14")	Y	Y	Y	Y
Oficio / Folio SEF (8 1/2"×13.4")	Y	Y	Y	Y
LT SEF (8 1/2" x 11")	Y	Y	Y	Y
LT LEF (11" x 8 1/2")	Y	Y	Y	Y
G-LGL SEF (8 1/4" x 14")	Y	Y	Y	Y
G-LT SEF (8" x 10 1/2")	Y	Y	Y	Y
G-LT LEF (10 1/2" x 8")	Y	Y	Y	Y
F SEF (8" x 13")	Y	Y	Y	Y
Foolscap SEF (8 1/2" x 13")	Y	Y	Y	Y
Folio SEF (8 1/4" x 13")	Y	Y	Y	Y
Exective SEF (7 1/4" x 10 1/2")	Y	Y	Y	Y
Exective LEF (10 1/2" x 7 1/4")	Y	Y	Y	-
Eng quatro SEF (8" x 10")	Y	Y	Y	Y
Eng quatro LEF (10" x 8")	Y	Y	Y	Y
HLT SEF (5 1/2" x 8 1/2")	Y	Y	Y	Y
HLT LEF (8 1/2" x 5 1/2")	-	-	-	-
Env.#10 SEF (104.8 x 241.3 mm)	-	-	-	-
Com10SEF (4.125" x 9.5")	-	-	Y	-

Size (W x L) [mm]	Tray 1	Tray 2/3 (Option)	By-pass Tray	Duplex
Env.Monarc SEF (98.4 x 190.5 mm)	-	-	-	-
Monarch SEF (3.875" x 7.5")	-	-	Y	-
Env.C5 SEF (162 x 229)	-	-	Y	-
Env.C5 LEF (229 x 162)	-	-	Y	-
Env.C6 SEF (114 x 162)	-	-	Y	-
Env.DL SEF (110 x 220)	-	-	Y	-
8K SEF (267 x 390)	Y	Y	Y	Y
16K SEF (195 x 267)	Y	Y	Y	Y
16K LEF (267 x 195)	Y	Y	Y	Y
12 x 18 SEF (12" x 18")	-	-	Y	-
11 x 15 SEF (11" x 15")	Y	Y	Y	Y
11 x 14 SEF (11" x 14")	Y	Y	Y	Y
10 x 15 SEF (10" x 15")	Y	Y	Y	Y
10 x 14 SEF (10" x 14")	Y	Y	Y	Y

Optional Equipment

Paper Feed Unit PB2020 (D3B1)

Item	Description
Number of Trays:	1
Paper Size:	A3 SEF, A4 SEF/LEF, B4 (JIS) SEF, B5 (JIS)SEF/LEF, A5 SEF, B6 (JIS) SEF, DLT SEF, Legal SEF, 8 1/2×13 2/5 SEF, LT SEF/LEF, Government LG SEF, G LT SEF/LEF, F SEF, Foolscap SEF, Folio SEF, Executive SEF/LEF, Eng Quatro SEF/LEF, HLT SEF, 8K SEF, 16K SEF/LEF, 11×15 SEF, 11×14 SEF, 10×15 SEF, 10×14 SEF <Custom Size Paper> Width: 98 – 297mm, Length: 162 – 432mm"
Paper Weight:	60 – 105 g/m^2 (16 – 28 lb.)
Paper Capacity (80 g/m^2, 20 lb. Bond):	500 sheets with 80g/m^2 paper
Power Consumption:	Less than 27 W (Average)
Dimension (W x D x H):	587 × 556.2 × 140 mm (23.11 × 21.89 × 5.51 inches)
Weight:	12 kg (26.5 lb.)

2. Appendices:Preventive Maintenance Tables

Preventive Maintenance

Preventive Maintenance Items

Note

- The amounts mentioned as the PM interval indicate the number of prints.

Chart: A4/LT (LEF) / 5%

Mode: 2 copies / original (prints/job)

Ratio 20%

Environment: Normal temperature and humidity

Yield may change depending on circumstances and print conditions.

Symbol keys: C: Clean, R: Replace, L: Lubricant, I: Inspect

RTB 1: The PM tables were modified.

Mainframe:

Item	60K	120K	180K	EM	Note
Scanner					
Platen cover	C/I/L				Replace the platen sheet if necessary. Dry cloth or alcohol
Exposure glass	C/I/L				Dry cloth or alcohol
Toner shield glass	C/I/L				Dry cloth or optics cloth
PCU					
OPC drum	R				
Charge roller	R				
Cleaning brush	R				
Drum cleaning blade	R				

Item	60K	120K	180K	EM	Note
Pick-off pawls	R				
Developer	R				
Transfer					
Transfer rollers		R			
Discharge plate		R			
ID Sensor	C/I				Blower brush or dry cloth
Fusing					
Hot roller	R				
Pressure roller		R			
Thermistors		R			
Hot roller stripper pawls	C/I	R			Wipe with a cloth dampened with ethyl alcohol.
Fusing entrance guide plate	C/I				
Bearing		C/I/L			
Paper path					
Feed roller		R		C	Damp cloth
Friction pad		R		C	Damp cloth
Paper end sensor				C	Damp cloth
By-pass pick-up roller				C	Damp cloth
By-pass separation roller				C	Damp cloth
By-pass friction pad				C	Damp cloth
By-pass paper end sensor				C	Damp cloth
Registration roller	C				Damp cloth

Item	60K	120K	180K	EM	Note
Registration sensor				C	Damp cloth
ADF					
ADF friction pad				C	Replace parts every 30K (original). Damp cloth
ADF pickup roller				C	Replace parts every 45K (original). Damp cloth
ADF feed roller				C	Replace parts every 45K (original). Damp cloth
ADF feed roller torque limiter				C	Replace parts every 45K (original).
Duplex					
Duplex transfer rollers				C	Damp cloth

Paper Feed Unit PB2020

Item	120K	EM	Note
Vertical transfer roller		C	Remove dust with dry cloth.
Paper Feed Sensor		C	
Pick-up roller		C	
Paper feed roller	R	C	
Friction roller	R	C	
Tray bottom plate pad		C	

MEMO