Model Be-C1
Machine Code: D046/D049

Field Service Manual

August 2008
Subject to change

Safety, Conventions, Trademarks

Safety

PREVENTION OF PHYSICAL INJURY

1. Before disassembling or assembling parts of the machine and peripherals, make sure that they 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. Always connect the power cord directly into a wall outlet. Never use an extension cord.
8. Inspect the power cord for damage. Never cut or attempt to modify the power cord in any way.
9. Keep the machine away from dust and high humidity. Never expose the machine to corrosive gases.
10. Never use flammable liquids or aerosols around the machine.
11. Never handle the power cord or plug with wet hands.

HEALTH SAFETY CONDITIONS

1. Never operate the machine without the ozone filters installed.
2. Always replace the ozone filters with the specified types at the proper intervals.
3. Toner and developer are non-toxic, but if you get either of them in your eyes by accident, it may cause temporary eye discomfort. Try to remove with eye drops or flush with water as first aid. If unsuccessful, get medical attention.
4. This machine employs an LED array in the scanner and image writing unit.

   Important

   - **This machine is rated as a Class 1 LED Device. It is safe for both office and EDP use.**

OBSERVANCE OF ELECTRICAL SAFETY STANDARDS

1. The machine and its peripherals must be installed and maintained by a customer service representative who has completed the training course on those models.
2. Test the breaker switches on the main machine and all peripheral devices at least once a year.

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.

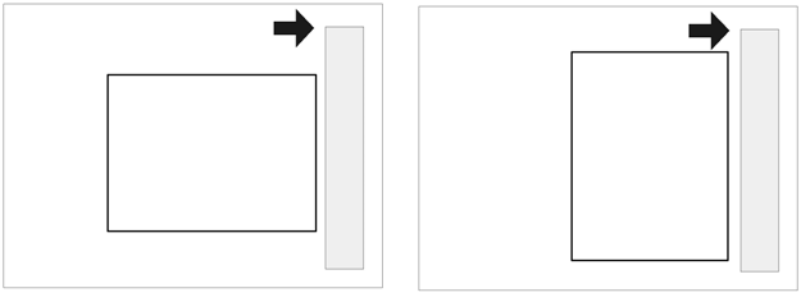
⚠CAUTION

- 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.

Conventions and Trademarks

Conventions

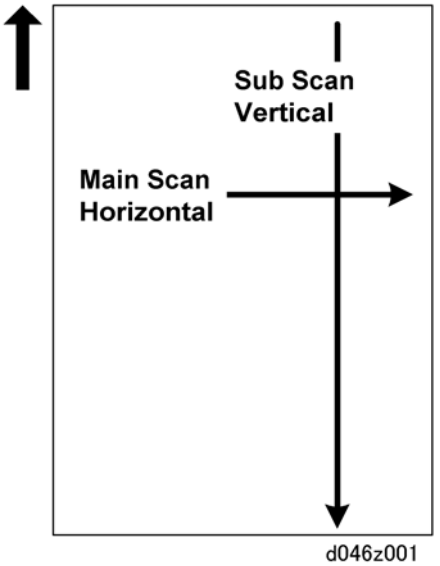
Symbol	What it means
CT	Core Tech Manual
	Screw
	Connector
	E-ring
	C-ring
	Harness clamp



SEF (Short Edge Feed)

LEF (Long Edge Feed)

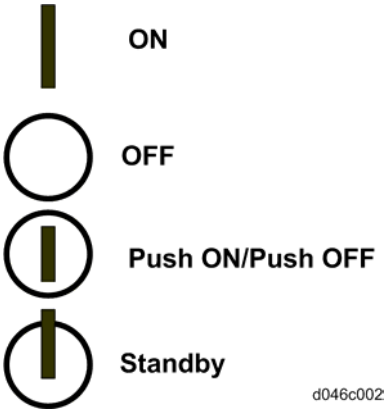
The notations "SEF" and "LEF" describe the direction of paper feed. The arrows indicate the direction of paper feed.



In this manual "Horizontal" means the "Main Scan Direction" and "Vertical" means the "Sub Scan Direction" relative to the paper feed direction.

Switches and Symbols

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



Warnings, Cautions, Notes

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

⚠WARNING

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

⚠CAUTION

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

Important

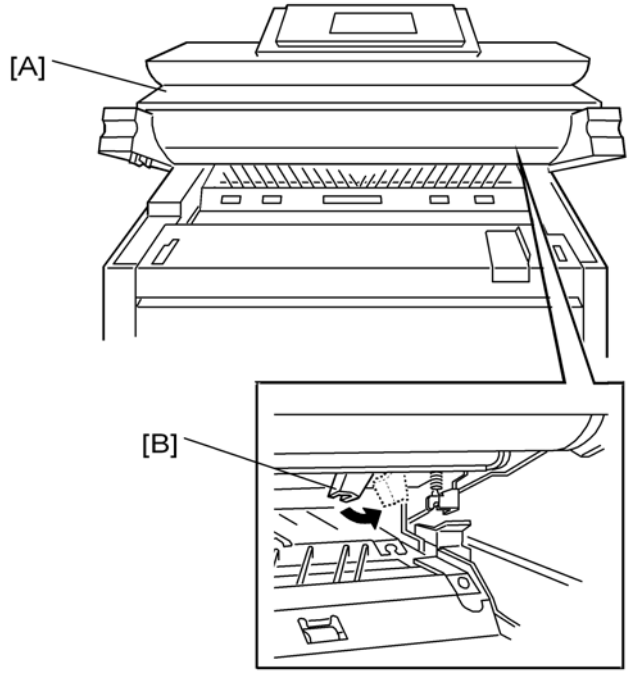
- **Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine**

Note

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

Special Instructions

Moving the Copier



1. Open the upper unit [A]
2. Push the pressure lever [B] to the left. This separates the cleaning the blade from the drum so the blade does not damage the drum during shipping.
3. After setting up the printer in its new location, repeat this procedure and push the pressure lever to the right to bring the cleaning blade in contact with the drum.
4. After moving the machine to a new location, always re-install the leveling shoes under the casters of the machine.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.

- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur:
    1. Something has spilled into the product.
    2. Service or repair of the product is necessary.
    3. The product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.
- Caution operators about storing extra toner cartridges. To prevent clumping on one end of the toner cartridge, it should always be stored horizontally on a flat service. A toner cartridge should never be stored on its end vertically.

Trademarks

- Microsoft®, Windows®, and MS-DOS® are registered trademarks of Microsoft Corporation in the United States and /or other countries.
- PostScript® is a registered trademark of Adobe Systems, Incorporated.
- PCL® is a registered trademark of Hewlett-Packard Company.
- Ethernet® is a registered trademark of Xerox Corporation.
- PowerPC® is a registered trademark of International Business Machines Corporation.
- Other product names used herein are for identification purposes only and may be trademarks of their respective companies. We disclaim any and all rights involved with those marks.

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3. Preventive Maintenance

4. Replacement and Adjustment

5. System Maintenance Reference

6. Troubleshooting

1. Product Information

Specifications

See the "Appendices" for the following information:

- Main Machine Specifications
- Printer Controller Specifications
- Scanner Specifications
- Peripheral Specifications

Overview

See the "Appendices" for the following information:

- Machine Layout
- Mechanical Component Layout
- Drive Layout (With Optional Roll Feeder)
- Original/Copy Paper Paths

Machine Codes, Peripheral Configurations

For the machine codes and peripherals configuration, please refer to the "Appendices".

Guidance for Those Who are Familiar with Predecessor Products

1

Machine D046/D049 is a successor model to Machine B188. I f you have experience with the predecessor products, the following information will be of help when you read this manual.

Different Points from Predecessor Products

	D046/D049	B188
Developer	TYPE 30W BLACK	TYPE 16W BLACK
Toner	New cartridge	Same cartridge as B010/ B125/B286
Printer Option	GW: Type W7140 External: Type RW-7140	- External: Type RW-480
Scanner	Scanner unit can be separated with scanner separation unit	-
SD Card Slots	2 slots	3 slots
Firmware update	Mainframe: SD card MFP options: SD card Folder FD6500A/B: IC card	Mainframe: SD card MFP options: SD card -
Folder Option	New option Fan Folder: FD6500A Cross Folder: FD6500B	-

2. Installation

Preparation

Environment

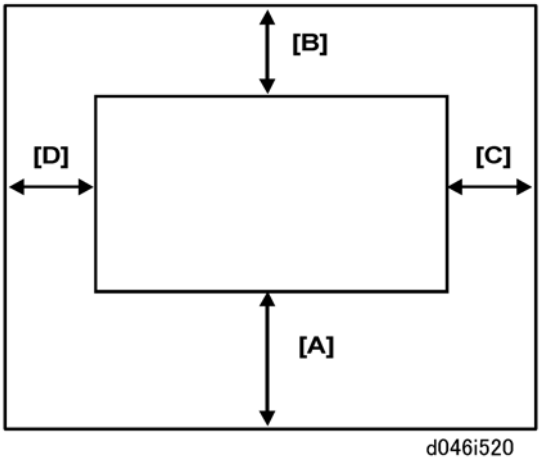
⚠CAUTION

- Never turn off the main power switch when the power LED is lit or flashing. To avoid damaging the hard disk or memory, press the operation power switch on the operation panel to turn the power off, wait for the power LED to go off, then turn the main power switch off.

1. Temperature Range: 10°C to 30°C (50°F to 86°F)
2. Humidity Range: 15% to 90% RH
3. Ambient Illumination: Less than 1,500 Lux (do not expose to direct sunlight).
4. Ventilation:Minimum space 20 m3 (approx. 700 cubic ft.)
   Room air should turn over at least 3 times per hour.
5. Ambient Dust: Less than 0.075 mg/m3
6. If the installation place is air-conditioned or heated, place the machine as follows:
   - Where it will not be subjected to sudden temperature changes from low to high, or vice versa.
   - Where it will not be directly exposed to cool air from an air conditioner in the summer.
   - Where it will not be directly exposed to reflected heat from a space heater in the winter.
7. Avoid placing the machine in an area filled with corrosive gases.
8. Avoid any area higher than 2,000 m (6,500 ft) above sea level.
9. Place the machine on a strong and level base.
10. Avoid any area where the machine may be subjected to frequent strong vibration.

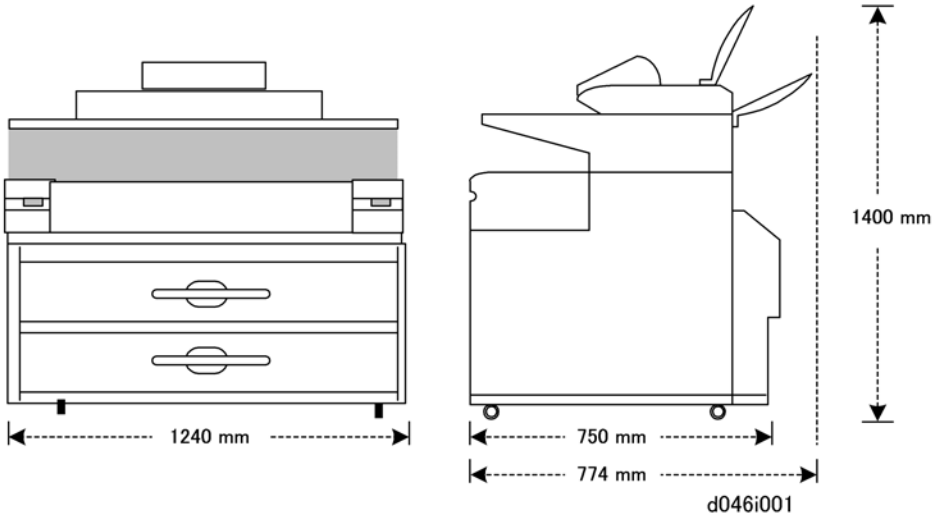
Space Requirements

Minimum Space Requirements

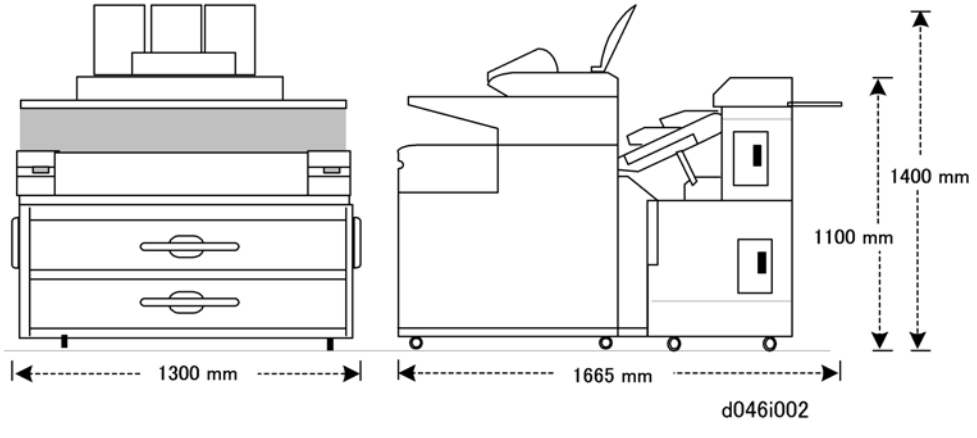


[A]	Front: 1,000 mm (39")
[B]	Back: 600 mm (23.6")
[C]	Right: 600 mm (23.6")
[D]	Left: 600 mm (23.6")
	Height: 450 mm (18")

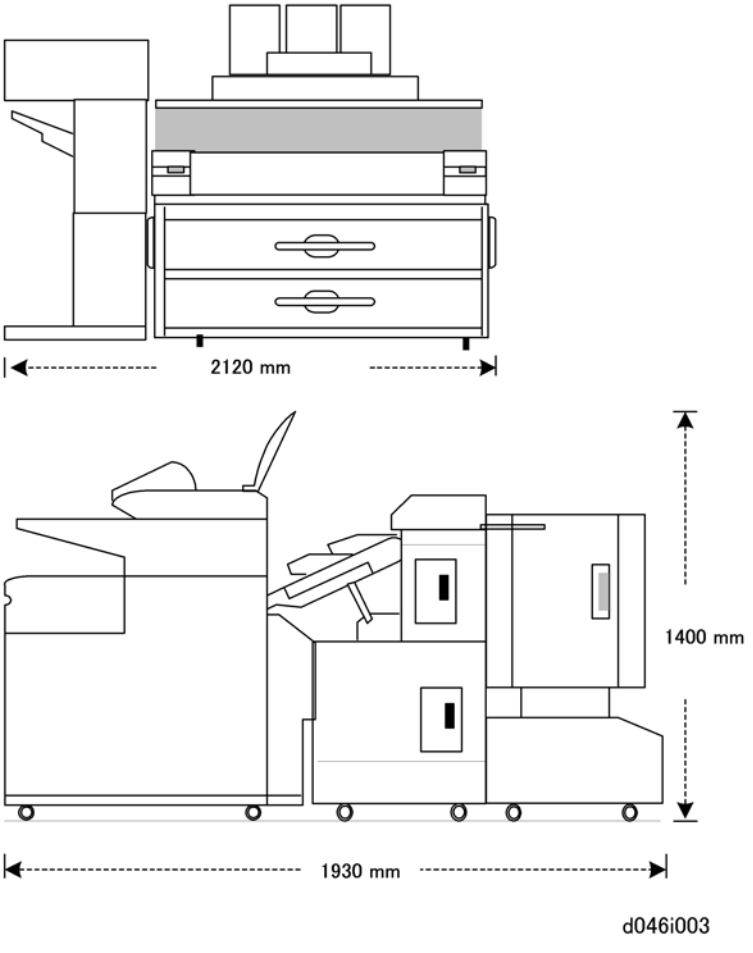
Configuration 1: Main Machine (D046/D049) Standalone



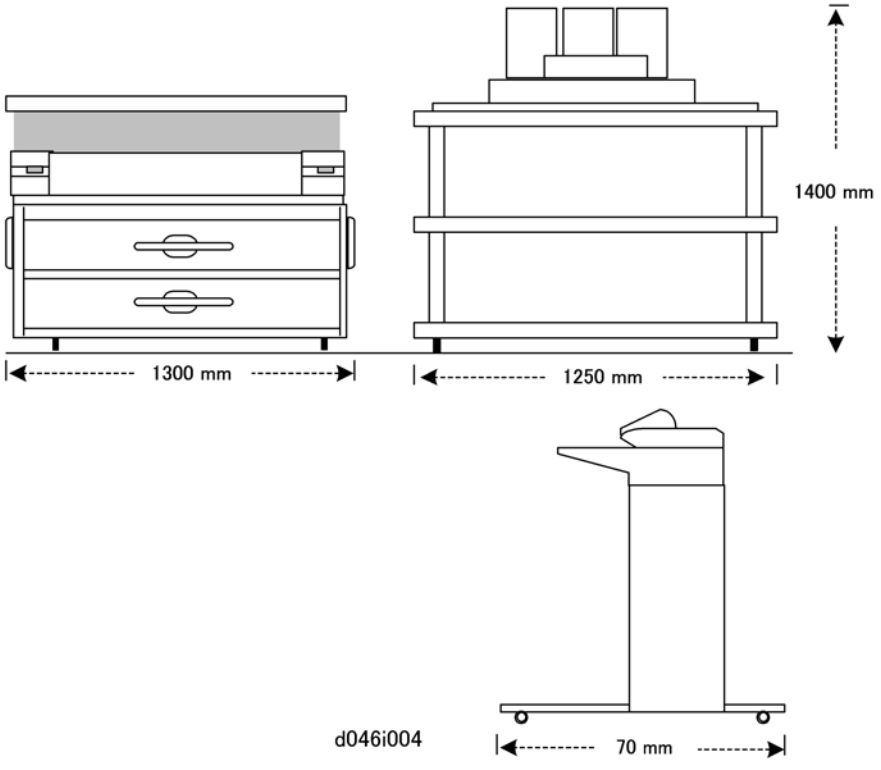
Configuration 2: Main Machine + Folder FD6500A (B889)



Configuration 3: Main Machine + Folder FD6500B (B890)



Configuration 4: Main Machine + Scanner Separation Unit Type 7140 (D436)



Machine Level

1. Front to back: Within 0.15 mm/1000 mm (0.006"/39.4") of level
2. Right to left: Within 0.15 mm/1000 mm (0.006"/39.4") of level. Make sure that the machine is level using a carpenter's level.

Power Source

The machines must be installed in a building or facility equipped with a protective device such as a circuit breaker, as the machine relies on such devices for protection against over-current and short circuits

Main Machine (D046/D049)

1. Input Voltage Level:

   200V, 60Hz, More than 15 A (for the U.S.A. version)

   220 to 240V, 50/60Hz, More than 15 A (for the Europe/China version)

RTB 19
Correction

2. Permissible Voltage Fluctuation: ± 10%
3. Do not set anything on the power cord.

Note

- Make sure the plug is firmly inserted in the outlet.
- Avoid multi-wiring.

2

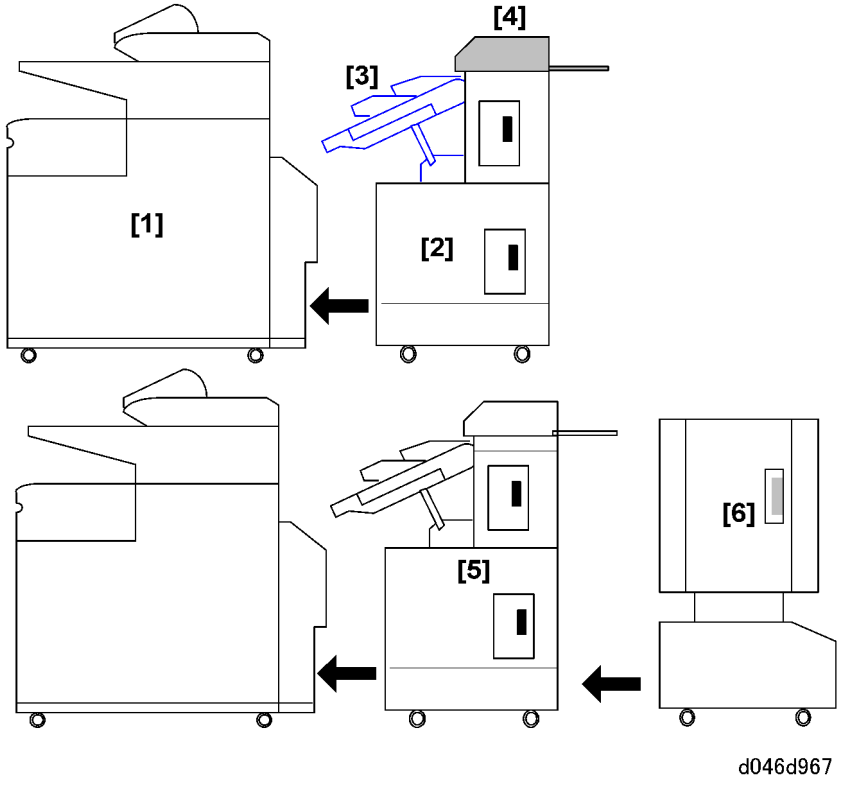
Folder FD6500A/B (B889/B890)

1. Input Voltage Level:

   120V, 60Hz, More than 2.5 A (for the U.S.A. version)

   220 to 240V, 50/60Hz, More than 1.2 A (for the Europe/China version)
2. Permissible Voltage Fluctuation: ± 10%
3. Do not set anything on the power cord.

Installation Procedure Guide



The peripheral units for this machine are shown above.

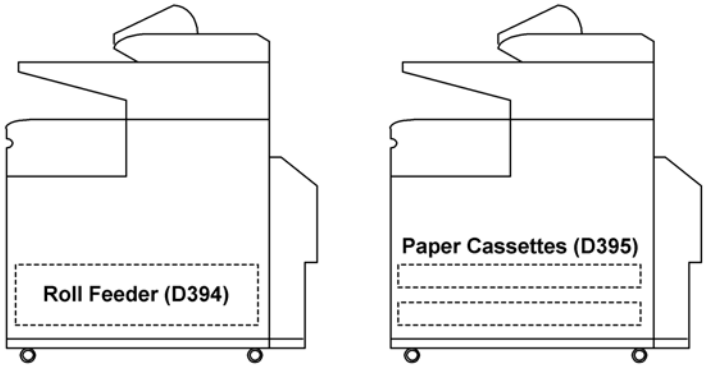
[1]	Main Machine (D046/D049)
[2]	Fan Folder FD6500A (B889)
[3]	Bridge Unit BU6500 (D407)
[4]	Manual Feeder (D333)
[5]	Folder FD6500B Fan Unit (B890-17, -27) (Fan Fold Unit)
[6]	Folder FD6500B Cross Unit (B890-57) (Transport Unit + Cross Fold Unit)

This guide describes the correct order of installation for these devices.

1. Main Machine (D046/D049) Stand-alone

Install the main machine.

2. Roll Feeder Type 7140 (D394) or Paper Cassette Type 7140 (D395)



1. Install the main machine. ☛ p.27
2. Install:

   Roll Feeder (D394) ☛ p.47

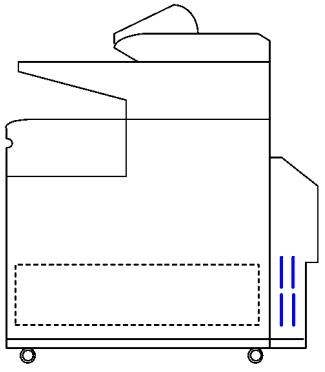
   -or-

   Paper Cassette (D395) ☛ p.64

Important

- **You must install the roll feeder or paper cassette before installation of folder FD6500A/B. Folder FD6500A/B will block access to the rear of the machine and you will not be able to install the roll feeder or paper cassette.**
- **If the folder FD6500A/B has already been installed, you must disconnect it and pull it away from the back of the main machine in order to install the roll feeder or paper cassette.**

3. MFP Options



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1. Install the main machine. ☛ p.27
2. Install the roll feeder ☛ p.47

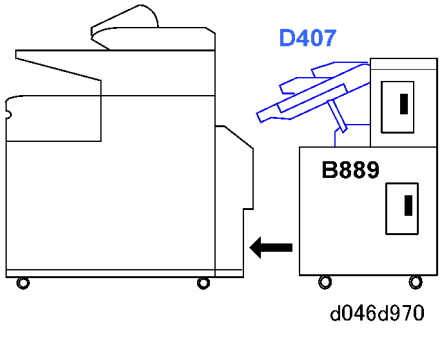
   -or-

   Paper cassette. ☛ p.64
3. Install the MFP options. ☛ p.186

Important

- **Install the MFP options now before installing Folder FD6500A/B. It is much easier to access the controller box SD card slots and board slots before the fan folder is installed.**
- **If the fan folder has already been installed, disconnect folder FD6500A/B and pull it away from the main machine.**

4. Folder FD6500A (B889), Bridge Unit BU6500 (D407)



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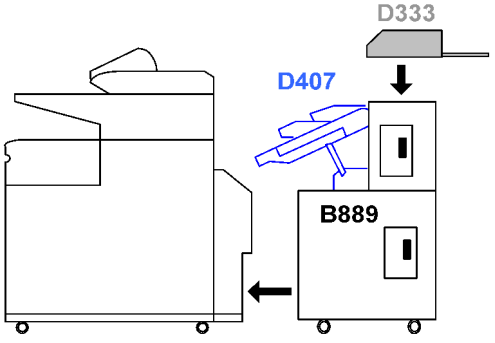
1. Install the main machine. ☛ p.27
2. Install the roll feeder ☛ p.47

   –or-

   Paper cassette ☛ p.64
3. Install the MFP options.

4. Remove the tapes and shipping materials from the Folder 6500A (B889).
5. Remove the tapes and shipping materials from the Bridge Unit BU6500 (D407).
6. Install the bridge unit on the folder. ☛ p.103
7. Dock the folder to the main machine.

5. Folder FD6500A (B889), Bridge Unit BU6500 (D407), with Manual Feeder (D333)

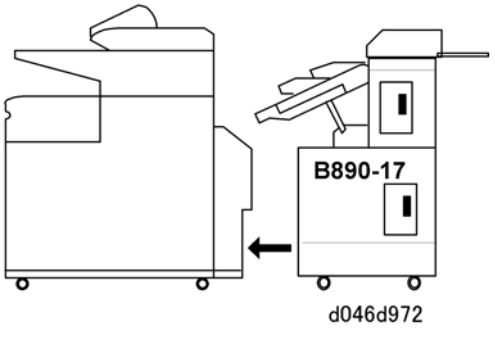


1. Install the main machine. ☛ p.27
2. Install the roll feeder ☛ p.47

   -or-

   Paper cassette. ☛ p.64
3. Install the MFP options. ☛ p.186
4. Remove the tapes and shipping materials from the Folder FD6500A (B889).
5. Remove the tapes and shipping materials from the Bridge Unit BU6500A (D407). ☛ p.103
6. Remove the tapes and shipping materials from the Manual Feeder (D333). ☛ p.145
7. Install the bridge unit on the folder. ☛ p.103
8. Install the Manual Feeder (D333) on top of the folder. ☛ p.145
9. Dock the folder to the main machine.

6. Folder FD6500B (B890)



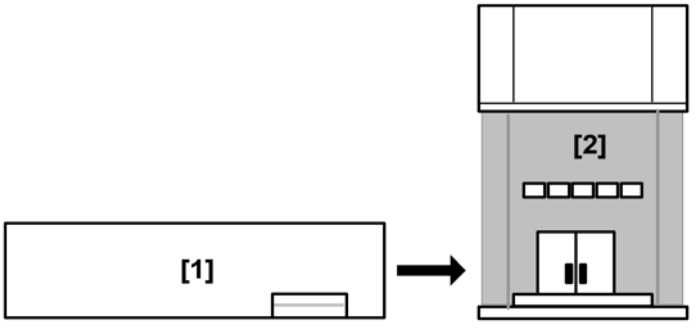
1. Install the main machine. ☛ p.27
2. Install the roll feeder ☛ p.47

   -or-

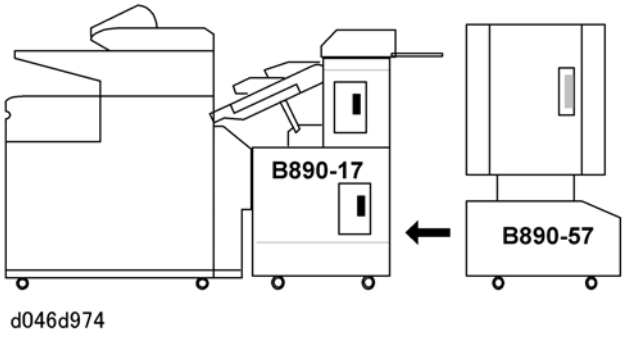
   Paper cassette. ☛ p.64
3. Install the MFP options. ☛ p.186
4. Remove the tapes and shipping materials from the Fan Fold Unit (B890-17, -27). ☛ p.152

   Note

   - The manual feeder and bridge unit are pre-installed on the fan fold unit.
5. Dock the fan fold unit to the back of the main machine.



6. Remove the tapes and shipping materials from the Cross Fold Unit (B890-57) (transport unit and cross fold unit). ☛ p.152
7. Connect the transport unit [1] and cross fold unit [2].

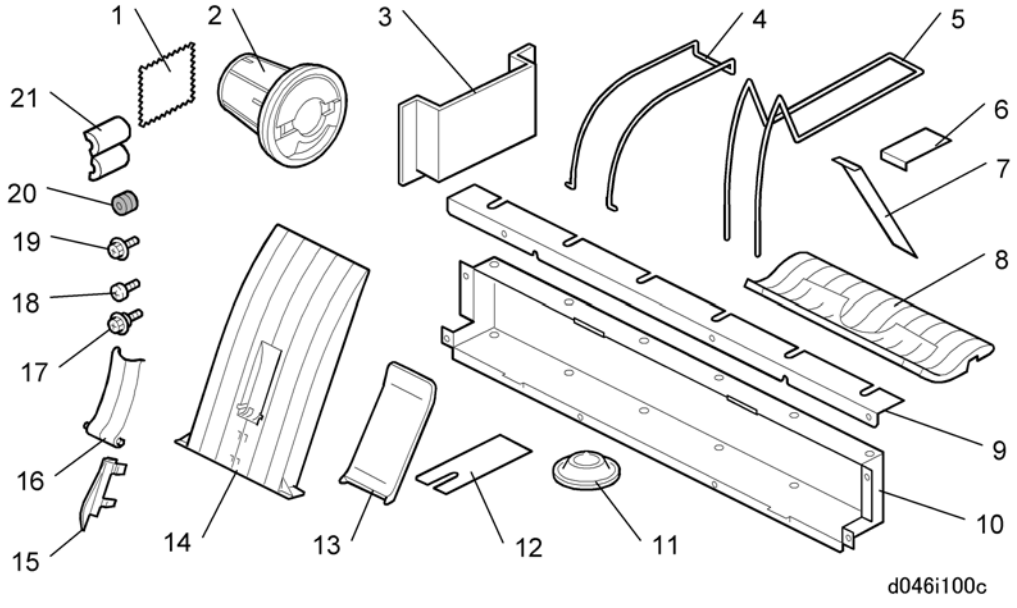


1. Dock the assembled cross fold unit (B890-57) to the fan fold unit (B890-17, -27).

Main Machine (D046/D049)

Accessory Check

Check the accessories and their quantities against the following list:



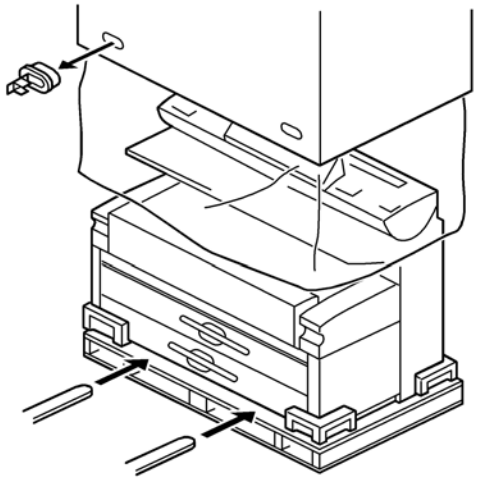
No.	Description	Q'ty
1.	Cloth – Exposure Glass	1
2.	Paper Holder	4
3.	Operating Instructions Holder	1
4.	Rear Copy Tray Guide	3
5.	Rear Copy Tray	3
6.	Guide Mylar (Curved)	2
7.	Guide Mylar (Strips)	3
8.	Front Copy Tray	1
9.	Support Bracket	1

No.	Description	Q'ty
10.	Rear Copy Tray Holder	1
11.	Leveling Shoes	4
12.	Original Tray Mylars	3
13.	Upper Original Guide	1
14.	Original Tray	3
15.	Original Guide	1
16.	Original Guide Plate	1
17.	Step Screws	2
18.	Round Head Screws (M4 x8) (Original Tray x2 each)	6
19.	Tapping Screws (M3 x 6)	5
20.	Grommets	6
21	Ferrite Core	1

Note

- Because the installation procedure is not packed with the copier as an accessory, always bring this manual with you.

Installation Procedure



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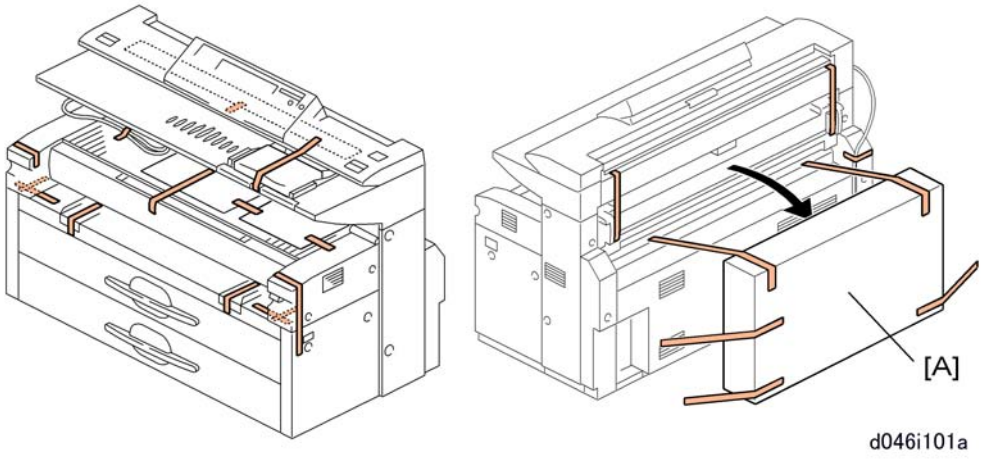
Unpacking

1. Unpack the machine box and place the copier onto a flat floor with lifting equipment (a fork lift).

⚠CAUTION

- The machine weighs approximately 230 kg (507 lb). If a fork lift is not available, at least 4 people, one on each corner of the machine, are needed to lift it from the pallet.



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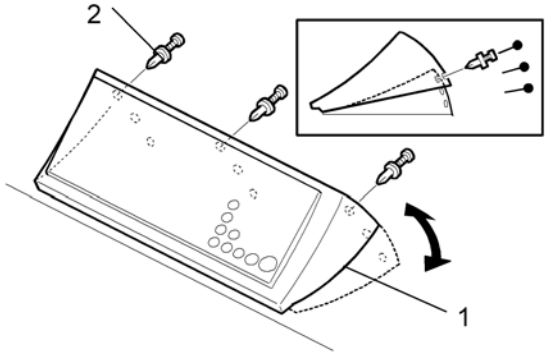
⚠CAUTION

- Before you start this procedure, make sure the machine is unplugged.

2. Remove the accessories [A] from the back of the machine.
3. Remove all tape and shipping materials.

Important

- **Keep the shipping retainers after installing the machine. They will be reused if the machine is moved to another location in the future.**



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The position of the operation panel can be adjusted to reduce reflection on the operation panel display.

4. If you want to adjust the position, remove the screws (x3).
5. Raise or lower the operation panel [1] to one of the three sets of holes.
6. Push each screw [2] into its hole (x3). (These screws do not need to be tightened.)

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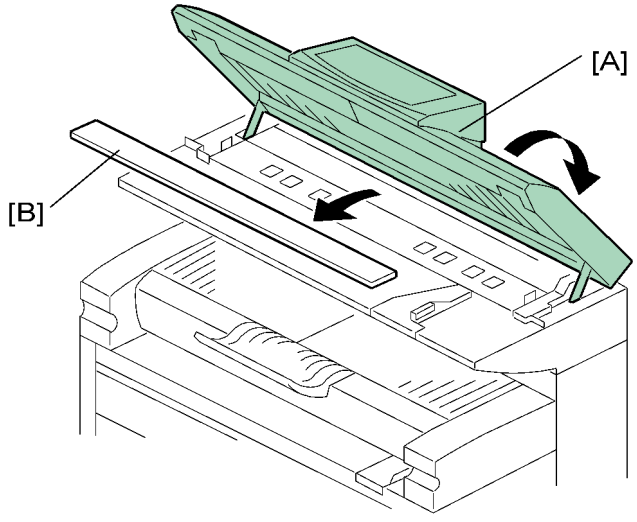
7. Pull out the upper tray.
8. Take out the four paper holders and remove their tapes (x 2 each).



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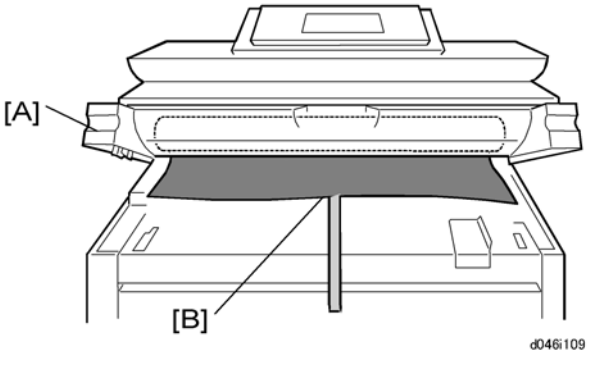
9. Open the scanner cover [A].
10. Remove the packing [B].



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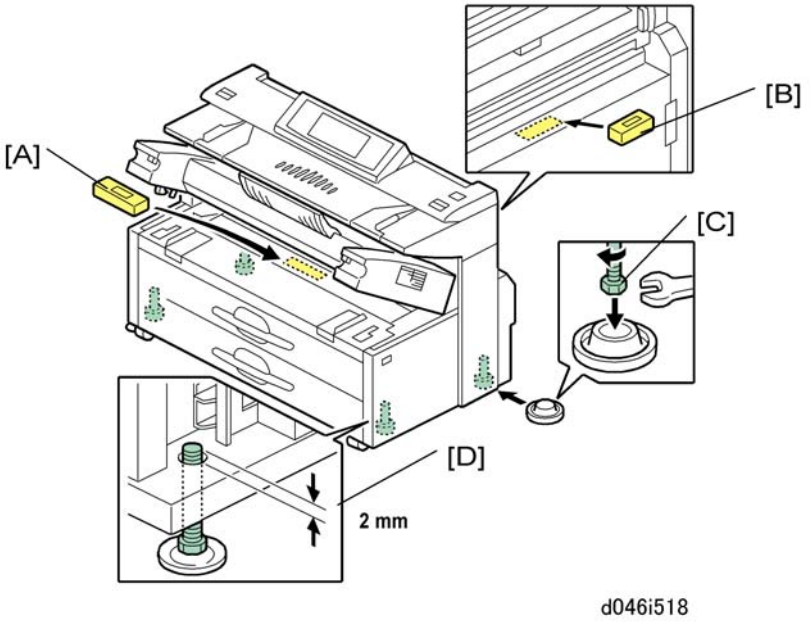
11. Open the upper unit [A].
12. Pull out the red tape and remove the drum protection sheet [B].

⚠CAUTION

- Pull the red tape out slowly and carefully, to prevent damage to the cleaning unit entrance seal.

Leveling the Machine

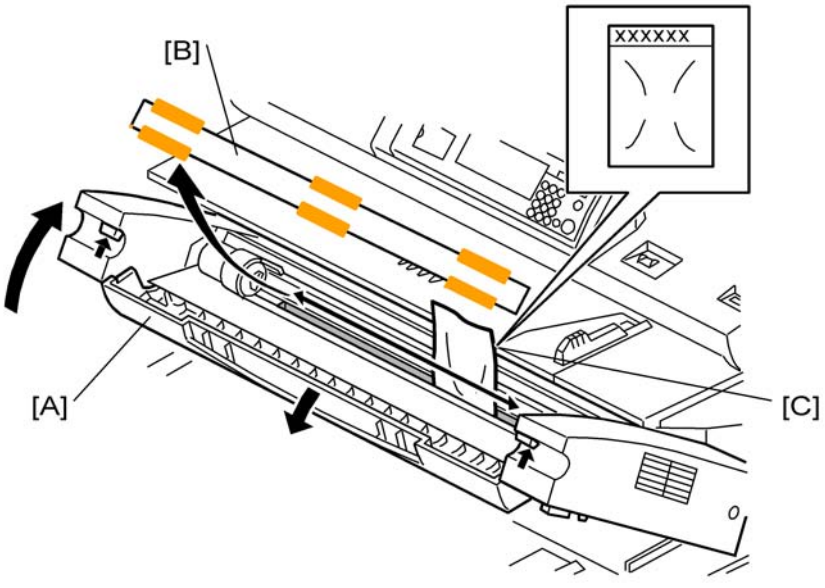


1. Place a level at [A] and [B].
2. Make the machine level by turning the bolts [C] on the machine's four feet.

Note

- The gap [D] must be less than 2 mm for the bolt to clear the roll feeder (option) when the feeder is opened and closed.

Developer and Toner



d046i100

1. With the upper unit raised, open the toner hopper cover [A].
2. Remove the sheet [B].

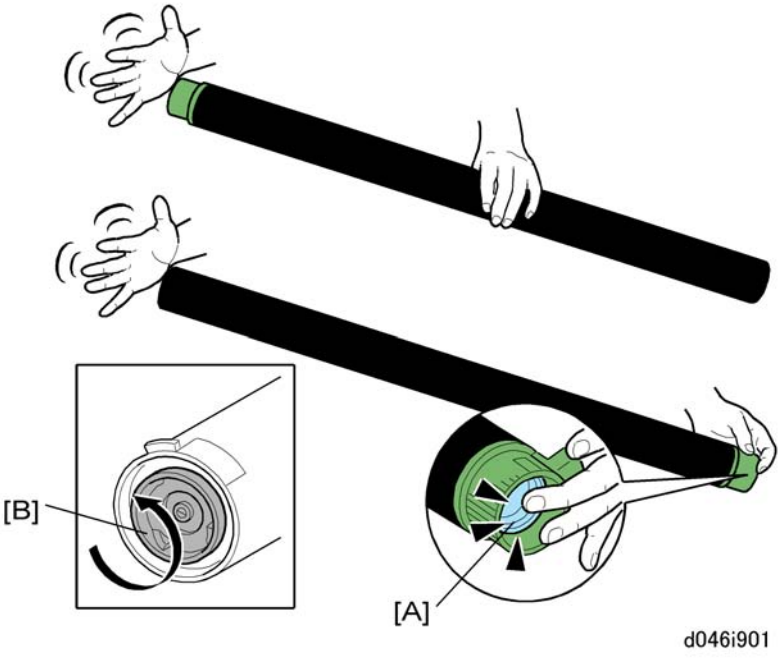
Important

- **A developer lot number is embossed on the top edge of each package. Keep these top edges after you open each developer package. You will need these numbers when you input them later with SP2801-2 and -3.**

3. Open the first 1 kg pack of developer [C] and pour it into the development unit.
   - Slowly add the developer from the first pack into the development unit, while you move the pack from left to right until the pack is empty.
   - An equal amount of developer must be spread along the entire open slot of the development unit.

Important

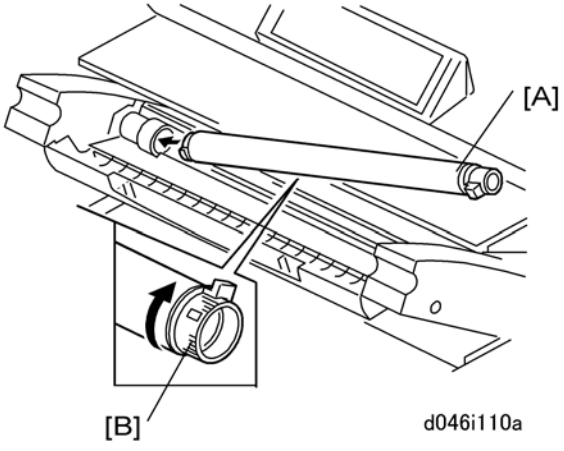
- **Do not open and add the second pack at this time.**



4. Prepare the toner cartridge for installation.
   - Shake the cartridge several times and make sure that the toner is moving inside.
   - Push the cartridge cap [A]. At the same time, tap the bottom of the toner cartridge 4 or 5 times.
   - Hold the cartridge horizontally and shake it quickly from side to side 4 or 5 times.
   - Hold the joint [B] of the toner cartridge with two fingers, and turn the joint. If the joint does not turn, do the procedure again.

Important

- **Tell the customer how to prepare a toner cartridge for installation.**
- **If toner is not loosened before the toner cartridge is installed, the customer may hear a rattling noise. The agitators inside the toner cartridge will disengage if compacted toner does not let them turn easily. This is the source of the rattling noise.**
- **To prevent this problem, instruct the customer to store extra toner cartridges horizontally on a flat surface. A toner cartridge should never be put on its end or stored vertically.**

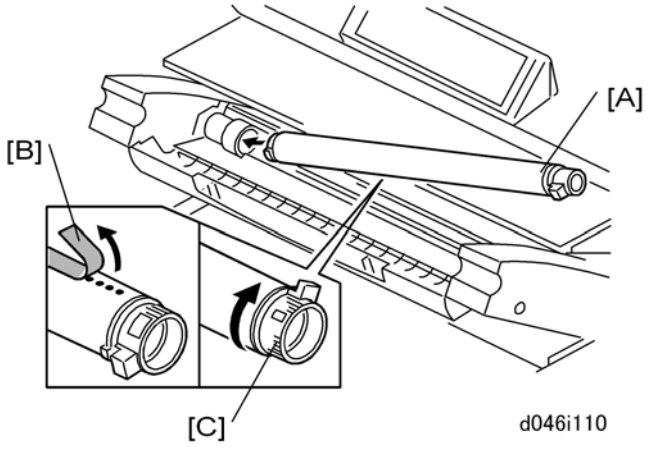


5. Install the unopened toner cartridge [A].

Important

- **Do not remove the tape from the toner cartridge at this time.**

6. Rotate knob [B] until it stops.
7. Close the toner hopper cover.
8. Close the upper unit.
9. Connect the power supply cord and switch the main power switch on. The main motor switches on and distributes the developer evenly inside the development unit.
10. Wait about 22 seconds until the machine stops.
11. Turn the operation switch off.
12. Turn the main power switch off.
13. Open the upper unit.
14. Open the toner hopper cover.
15. Remove the unopened toner cartridge.
16. Open the second 1 kg pack of developer, then slowly add it to the development unit. Move the pack from left to right until it is empty.
17. Use a clean cloth to clean the edges around the slot of the development unit.



18. Install the toner cartridge [A]. Refer to the decal attached to the left side of the machine.
    - Peel off the green tape [B] from right to left to expose the clear tape and toner supply holes.
    - Rotate knob [C] clockwise until it stops.
19. Close the toner hopper cover.
20. Close the upper unit.

Enter Developer Lot Numbers

1. Turn on the main switch.
2. Wait for the machine to warm up.
3. Enter SP mode.
    - Press the [Clear Modes] key.
    - Enter [1] [0] [7].
    - Hold down [Clear/Stop] for more than 3 seconds.
    - Touch "System SP".
4. Do SP2801-2 and 3 to enter the lot numbers.

    Use the soft keyboard on the display panel to enter the lot numbers. (The lot numbers are embossed on the top edge of each developer pack.) If the numbers are the same, enter the same number twice.

    Important

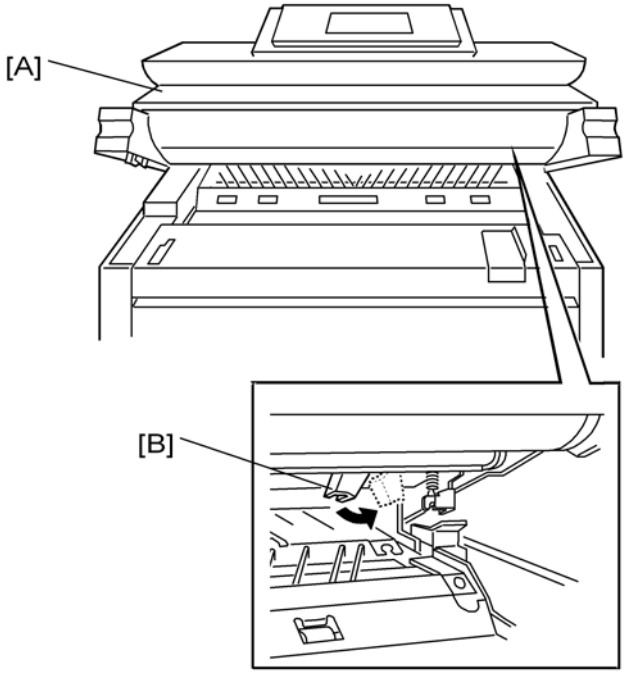
    - **You must enter the lot numbers with SP2801-2 and -3 before doing SP2801-1. The main machine will return an error ("Failed") if you attempt to do SP2801-1 before SP2801-2 and -3.**

Initializing the Developer

Important

- **Do not do this procedure until you have entered the Lot Numbers. See the previous section.**

1. Go into the SP mode.
2. Enter 2801 001 and press [#].
3. When the message prompts you to proceed, touch "Yes".
4. Push [Execute]. Wait for about 2.5 min.
5. When the message tells you that the operation is finished, touch "Exit".
6. Touch "SP Direct", then use the 10-key pad to enter 2923 001 and push [#].
7. Push [Execute]. The machine enters the drum set mode and dusts the drum with toner.
8. When the message prompts you that the operation is finished, touch [Exit].



d046i521

9. Open the upper unit [A] and confirm that the drum is covered with toner.
10. Push the pressure lever [B] to the right to push the cleaning blade against the drum, then close the upper unit.
11. To initialize the ID sensor, touch "SP Direct", push [#], enter SP3001 002 then touch [Execute]. Wait about 6 seconds for initialization to complete.
12. When the message prompts you that the operation is finished, touch "Exit".

Enable NIB and USB

The Ethernet NIB and USB are built in but must be enabled.

1. Do SP 5985 (the default is 'disabled').
    - 001: Onboard NIC (Ethernet NIB)
    - 002: Onboard USB
2. Exit the SP mode.

Sample Copies

1. Load some roll paper in the machine.

    Note

    - For loading instructions, see the decals on the top edge of the roll feeder front cover.
2. Make some copy samples.

Emblem Panel: Brand Set D046 or D049

d046i904

1. Attach the emblem to the original feed unit cover.

    Note

    - Push the panel in until the emblem and panel move into their positions with an audible click.

Front Copy Tray

d046i903

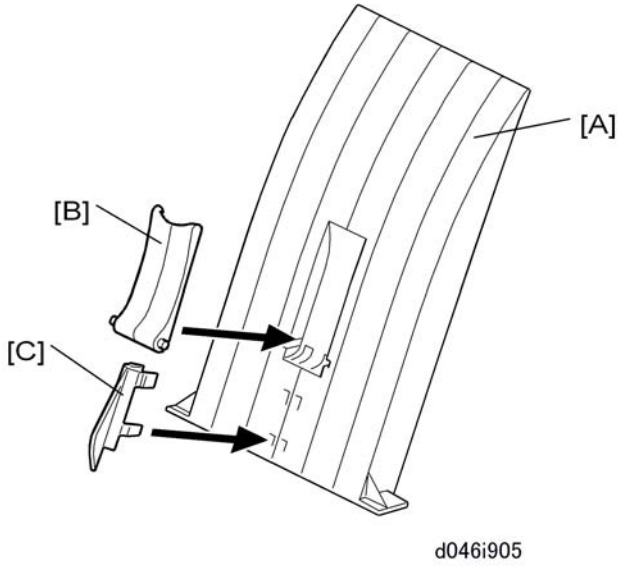
1. Attach the front copy tray [A].

Original Trays

Important

- Only three original trays are provided. The trays can be installed on top of the machine (Top Exit) or at the rear (Rear Exit)

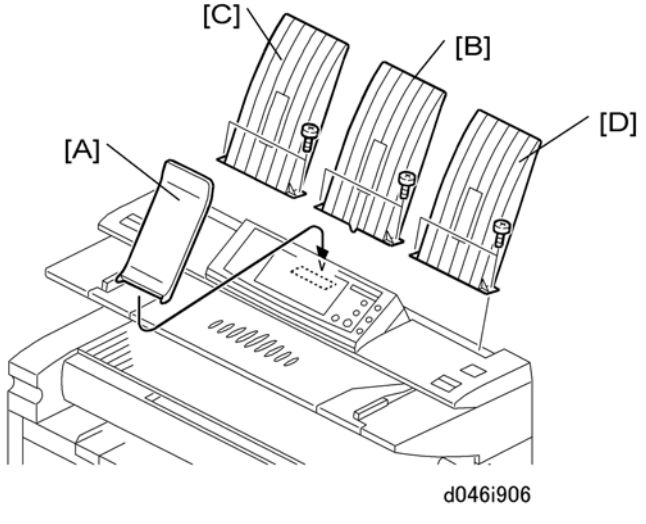
Original Trays: Top Exit



1. Select any original tray [A] (they are identical).
1. Attach

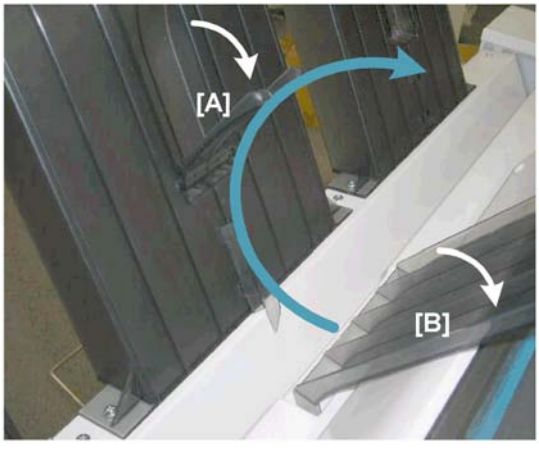
   [B] Original guide plate

   [C] Original guide



2. Set upper original guide [A].
3. Set original tray [B] in the center. (This is the tray with the original guide plate and original guide attached in the previous step.)

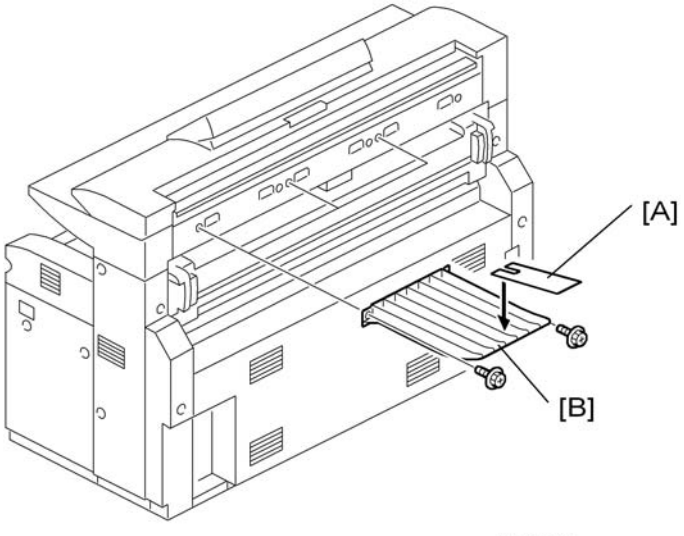
4. Set the other original trays [C] and [D] next to the center tray.
5. Fasten each original tray (x2 each, round-headed screws).



d046i907

6. Instruct the operators about this point of operation: Before feeding large originals (larger than A0), pull the original guide plate [A] out and pull the original guide [B] forward.

Original Trays: Rear Exit



d046i906a

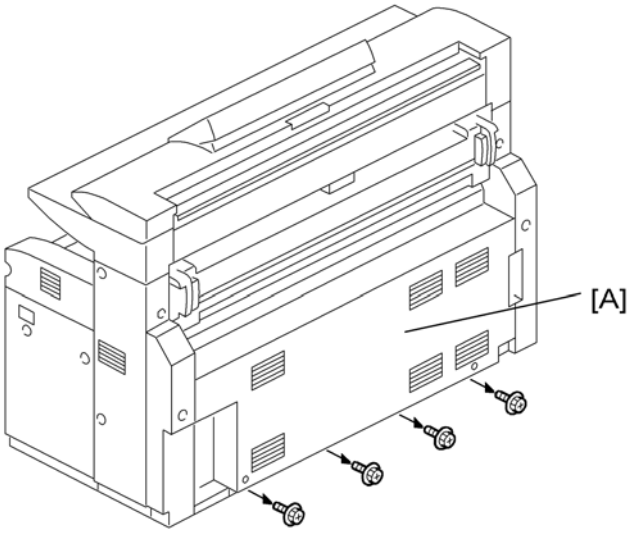
1. Attach an original tray mylar [A] to each tray [B].

Note

- The trays must be installed with the flat side facing up.

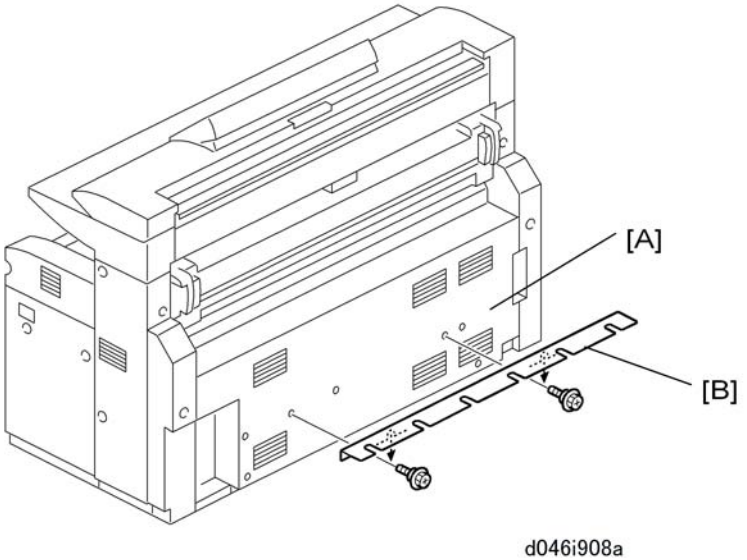
2. Attach each tray to the back of the main machine (x2 each).

Rear Copy Trays and Mylars



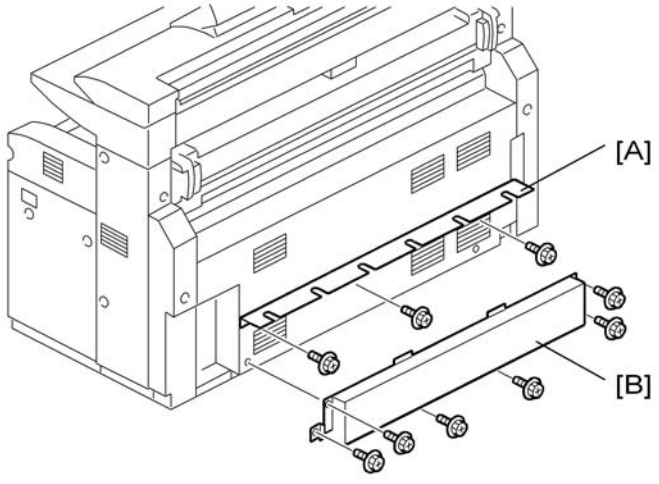
d046i908

1. Remove the bottom screws of the rear cover [A] (x4). Do not discard these screws.

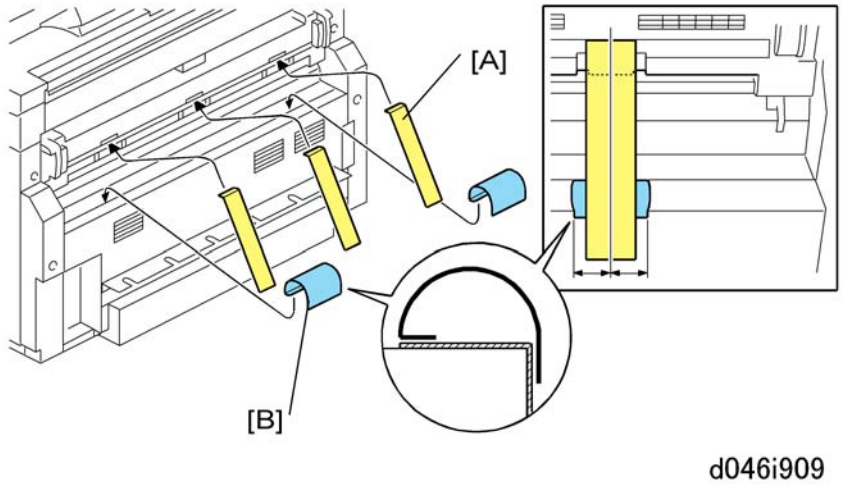


d046i908a

2. Set the step screws in the rear cover [A] (x2).
3. Hang the support bracket [B] on the step screws.



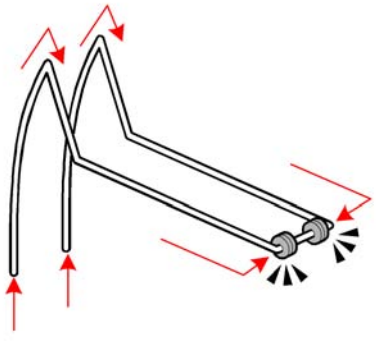
4. Fasten the support bracket [A] (x3).
5. Fasten the rear copy tray holder [B] (x6). (Use the four screws removed earlier from the bottom edge of the rear cover).



6. At the rear, attach:

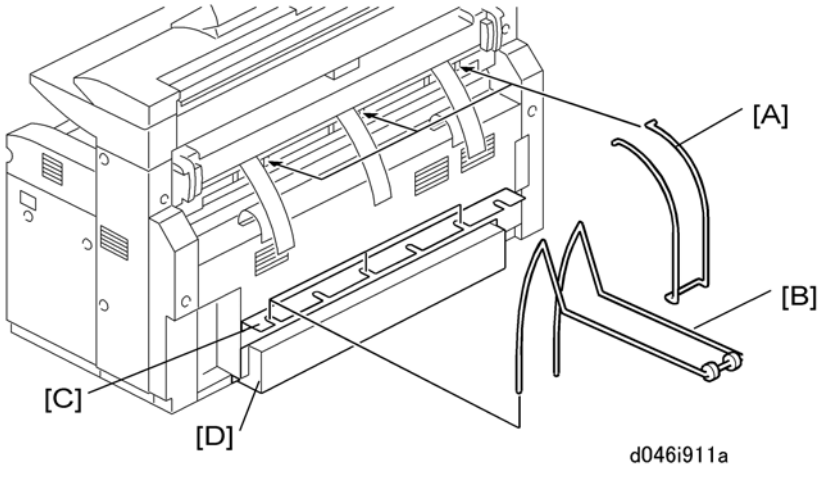
   [A] Guide mylar strips x3

   [B] Curved mylars x2.



d046i910a

7. Slide two grommets onto each rear copy tray, and set them in the center as shown.



d046i911a

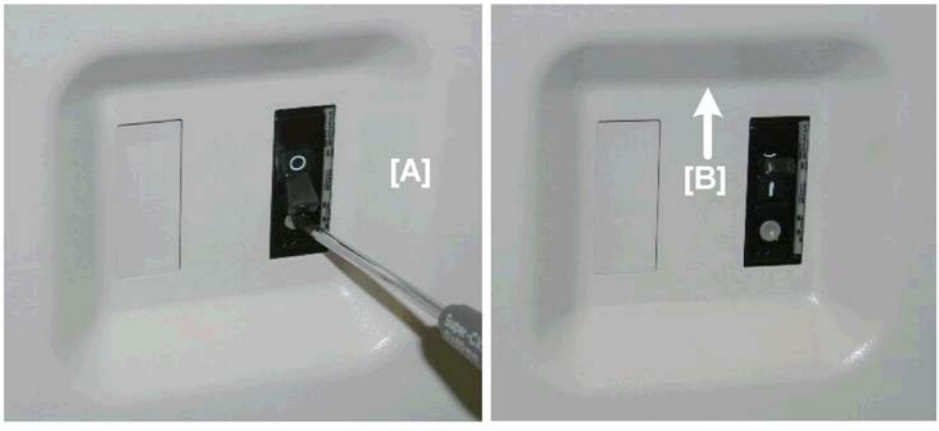
8. Use the holes provided to hang the rear copy tray guides [A] (x3) from the back of the main machine.
9. Set the rear copy tray [B] (x3) into the holes in the support bracket [C] and rear copy tray holder [D].

Testing the Breaker Operation

1. Make sure that the main power switch is off.
2. Check the power cord of the copier and make sure that it is connected to the power source.

⚠CAUTION

- Before you test the breaker, always make sure that the main power switch is off. Do not attempt to test the breaker switch with the copier power turned on.



d046i902

3. Push in the breaker test button with the tip of the screwdriver, until the breaker snaps to the 'Trip' ("O") position [A].
4. Confirm that the breaker switch is at the 'O' position.

   If the breaker switch does not drop to the "O" position:

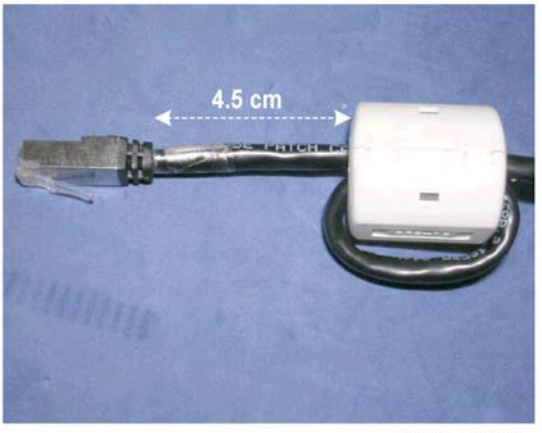
   - Make sure that the power cord is securely connected to the power supply.
   - Push the test button again.
   - If the breaker switch does not snap down to the 'O' position, the breaker switch must be replaced.
5. Raise the breaker switch to the on ("|") position [B].

   Important

   - **The breaker switch must be at the "|" position for the machine to operate.**

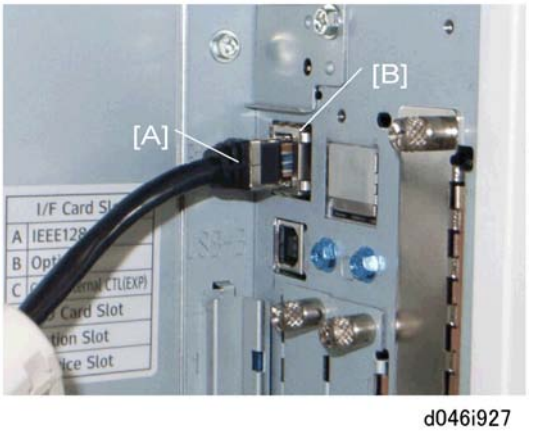
Connect the LAN Cable

1. Make sure that the main power switch is off.



d377i-gig008

2. Fasten the ferrite core to the end of the LAN cable connector about 4.5 cm from the end nearest the machine.

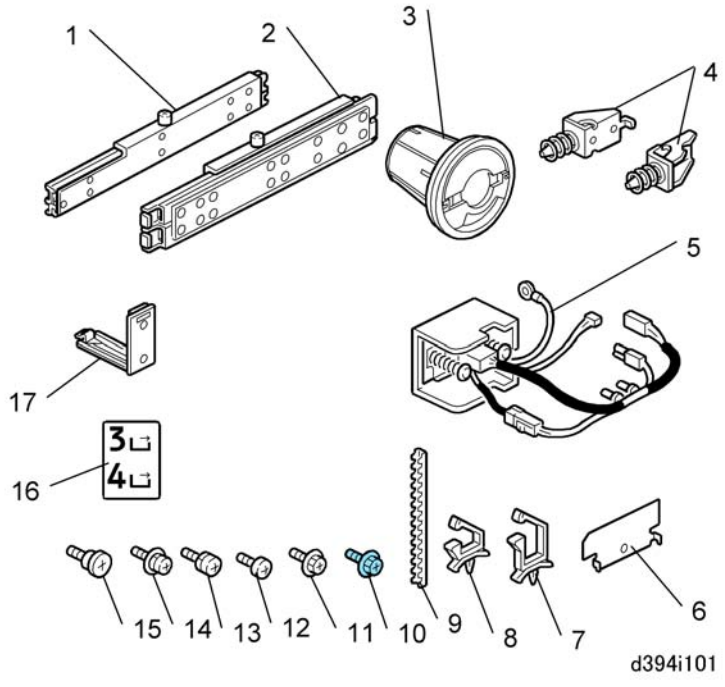


d046i927

3. Attach the LAN cable [A] to the LAN connector [B].

Roll Feeder Type 7140 (D394)

Accessory Check



Check the accessories and their quantities against the following list:

No.	Description	Q'ty
1.	Left Slide Rail	1
2.	Right Slide Rail	1
3.	Paper Holder	4
4.	Positioning Pins	2
5.	Drawer Connector	1
6.	Cover Plates	2
7.	Harness Clamp – LWS-21116	2
8.	Locking Support EMSS-45	1

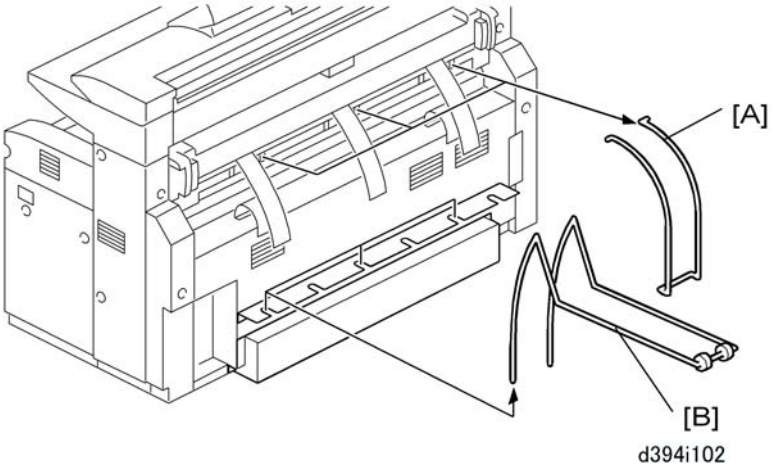
No.	Description	Q'ty
9.	Edging	1
10.	Tapping Screws M4x8	4
11.	Tapping Screws – M4x8	4
12.	Tapping Bind Screws – M3x6	4
13.	Screw with Spring Washer – M4x6	1
14.	Screws M4x6	24
15.	Step Screw M4	4
16.	Decal – Tray 3/4	1
17.	Harness Clamp – FCW52	2

Installation

⚠CAUTION

- Unplug the main machine power cord before starting the following procedure.
- Before starting the installation, insert the leveling shoes under the leveling feet, and level the machine.
- The machine is very heavy. To avoid serious injury, make sure that you have a sufficient number of people to assist, and use proper lifting equipment for lifting or moving.
- The feed tray weighs 32 kg (70.5 lb.) and requires at least two people to lift and install.

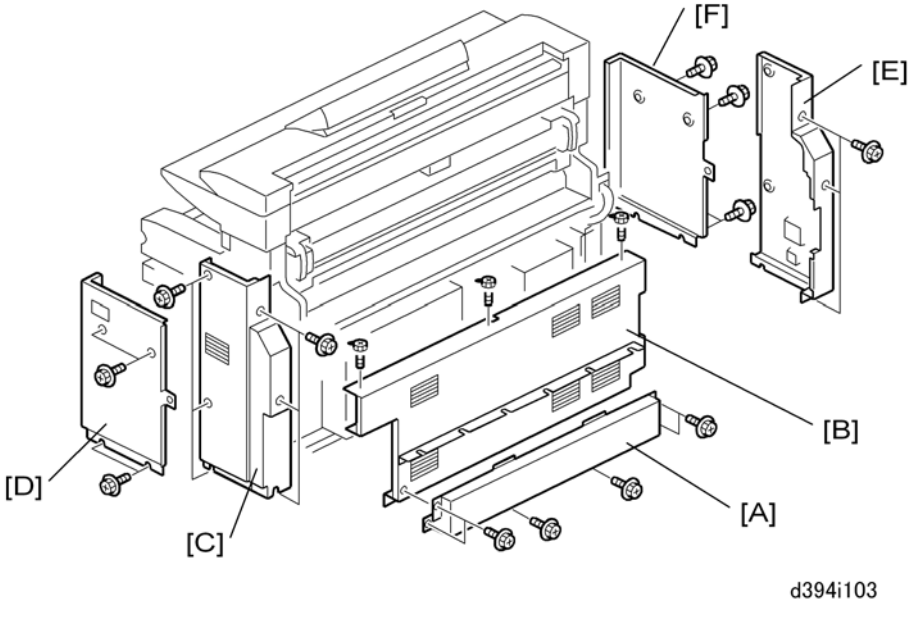
Covers



1. Remove:

   [A] Rear copy tray guides (x3)

   [B] Rear copy tray (x3)



2. Remove:

   [A] Rear copy tray holder (x6)

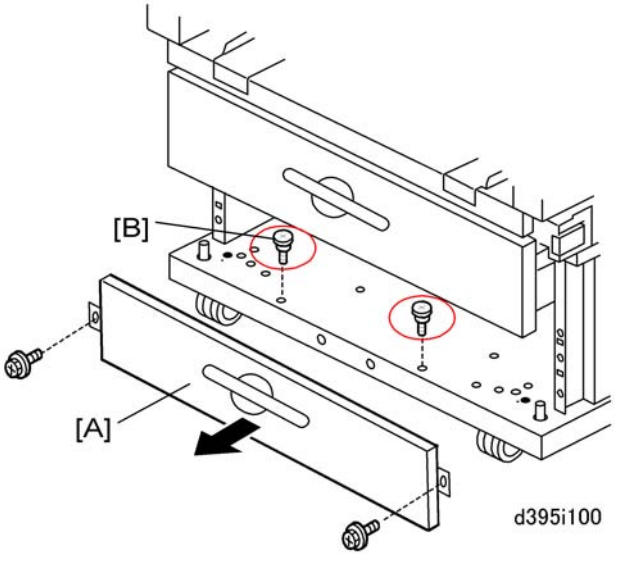
   [B] Rear cover (x3)

   [C] Right rear cover (x6)

[D] Right front cover (x4)

[E] Left rear cover (x7)

[F] Left front cover (x4).

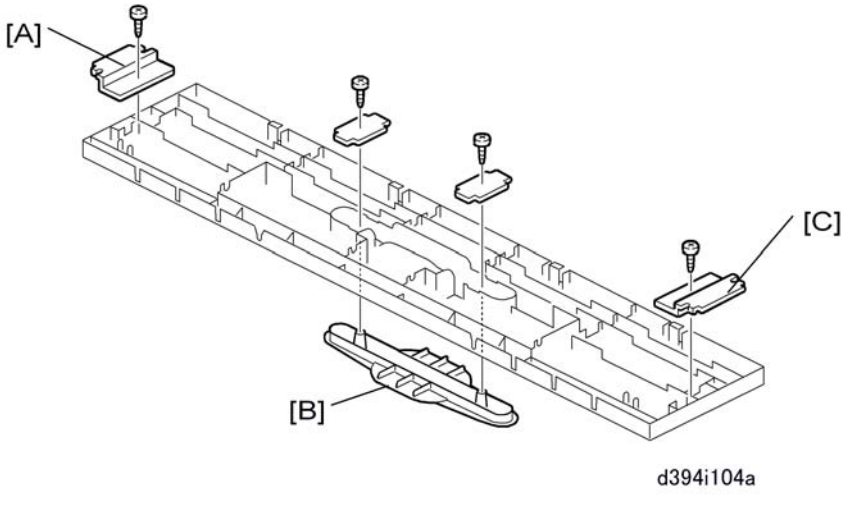


3. Remove tray cover [A] (x2).

Note

- Keep these screws, to reattach the cover later.

4. Remove the step screws [B] and discard them (x2).



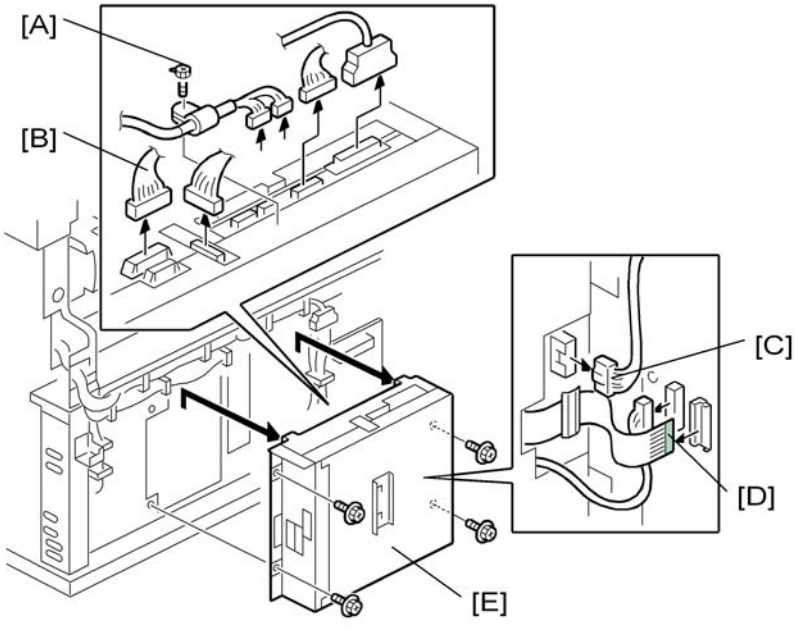
5. Remove and discard these screws:

[A] Left side bracket (x1)

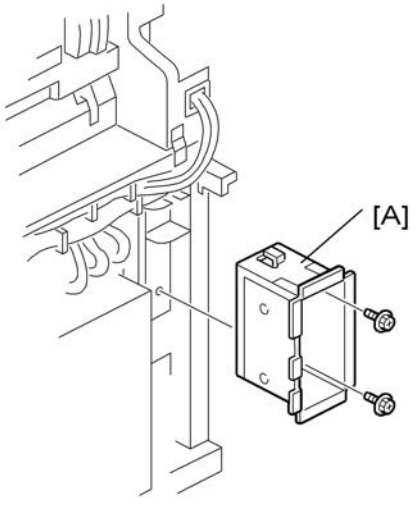
[B] Handle and brackets (x2)

[C] Right side bracket (x1)

Controller Box



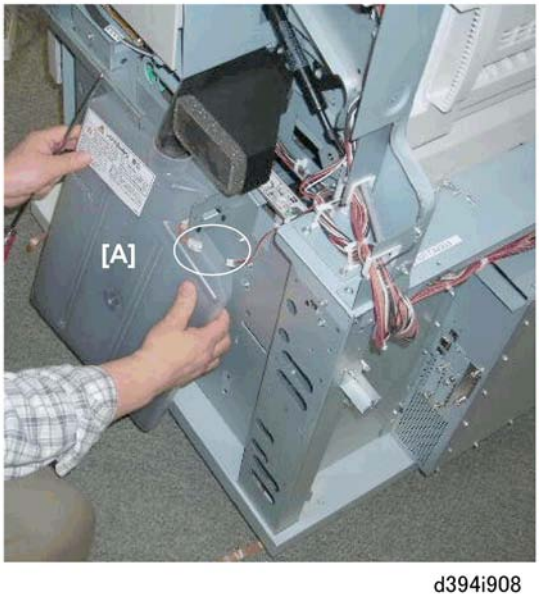
1. Top:
   [A] Harness clamp screw (x1).
   [B] Connectors and clamps (x2, x6).
2. Right side:
   [C] Connectors (x2)
   [D] FFC x1.
3. Remove the controller box [E] (x4).



d394i106a

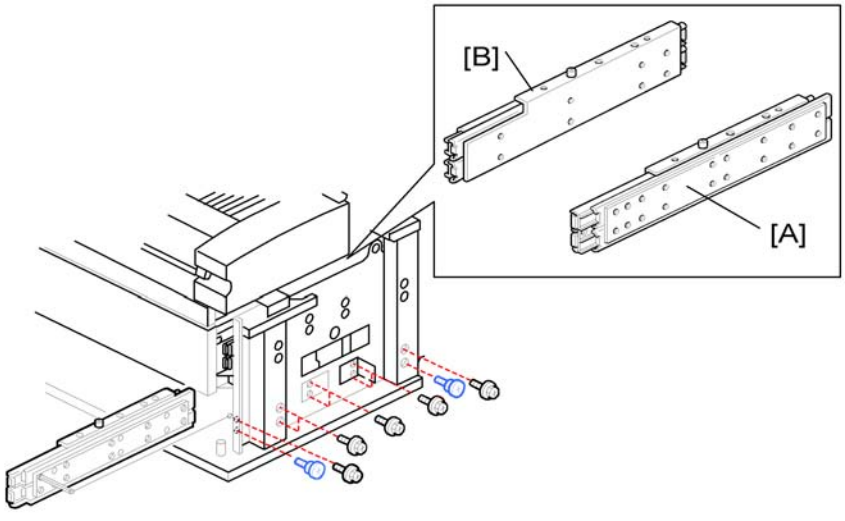
4. Remove the inner cover [A] (x2).

Rails and Front Positioning Pins



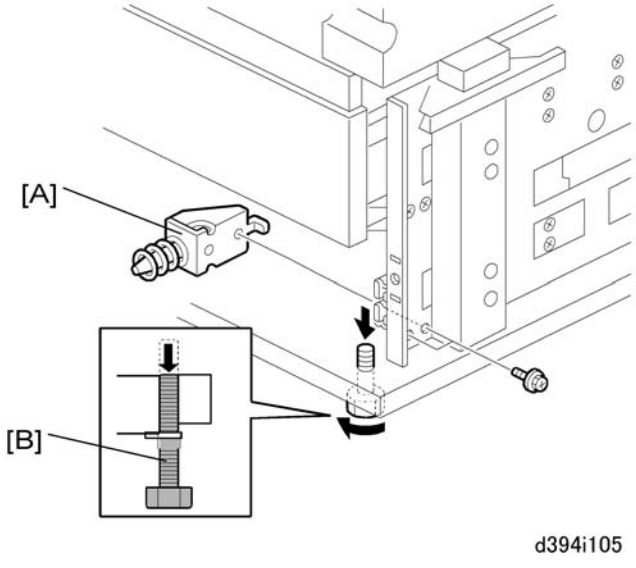
d394i908

1. Remove the used toner bottle [A] (x1).



d394i104

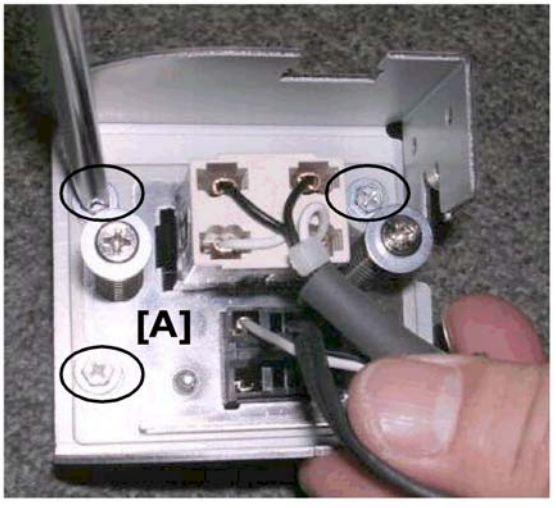
2. Install the right rail [A] and left rail [B] (Step x 2 each, x 8 each M4 x 6).



d394i105

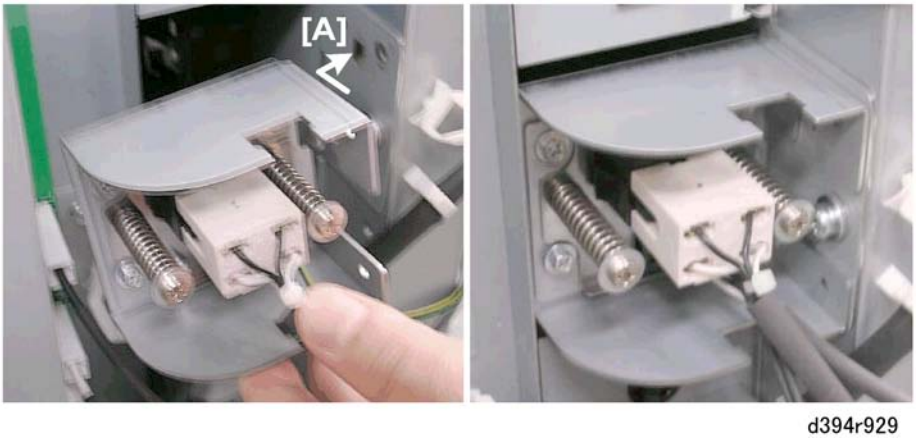
3. Install the positioning pins [A] (x 2 each, M4 x 6).
4. Lower the bolt [B] until it is level with the base plate.

Drawer Connector



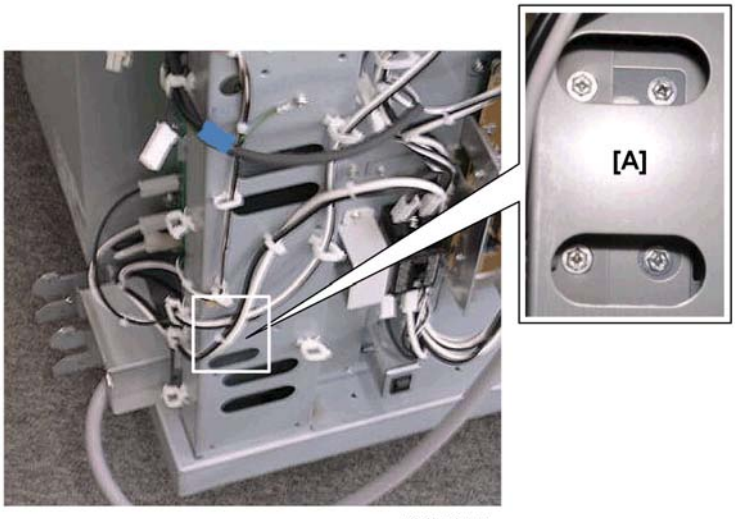
d394i928

1. Loosen the screws on the connector bracket [A] (x3).



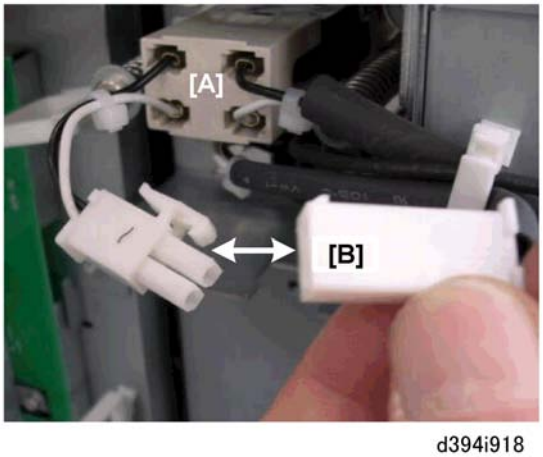
d394r929

2. Set the drawer connector [A] in its slot at the rear of the machine.



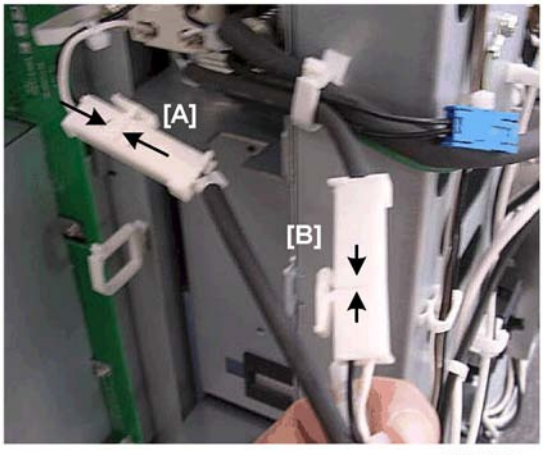
d394i917

3. On the left side, fasten the drawer connector bracket [A] (x4).



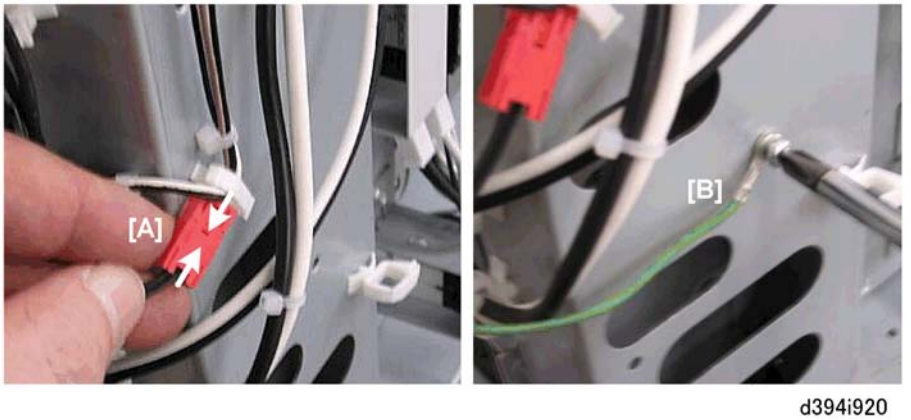
d394i918

4. Behind the connector of the upper roll feeder drawer [A], separate the connectors [B] (x1)



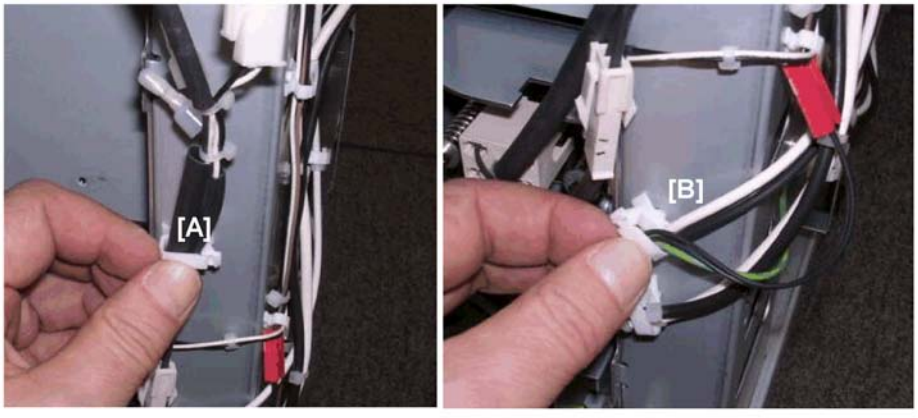
d394i919

5. Connect lower connector [A] (long harness) to the right connector, which was separated in the previous step (x1).
6. Connect lower connector [B] (short harness) to the left connector, which was separated in the previous step (x1).



d394i920

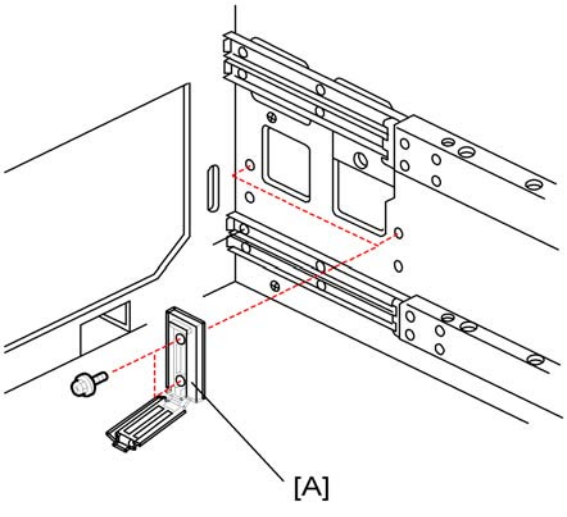
7. Connect the harness from the lower drawer connector to the red connector [A] on the left side of the machine (x1).
8. Fasten the lower drawer connector ground [B] (x1).
9. Push the connector right, left, up, and down to make sure there is a slight amount of play in the bracket around the three screws.



d394i923

10. At the top, fasten the thick harnesses [A] with the clamp (x1).
11. At the bottom, fasten the thin harness (red connector) and ground wire [B] with the clamp (x1).

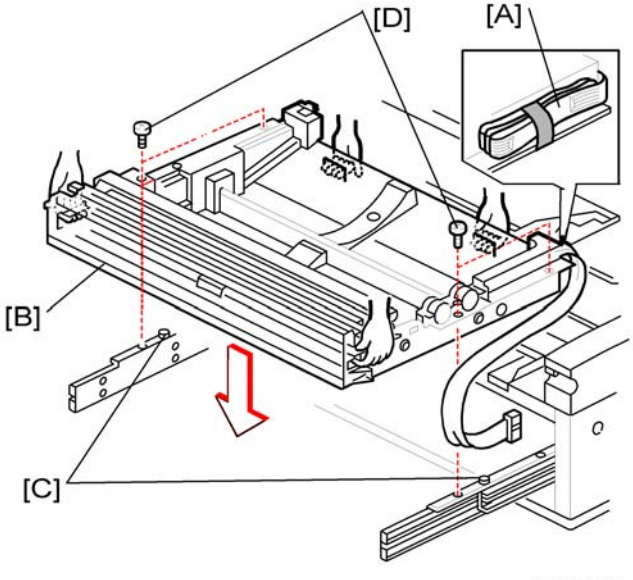
Flat Cable and Roll Feeder Tray



1. At the right rear corner inside the machine, install two harness clamps [A] (x 2 each M3 x 6).

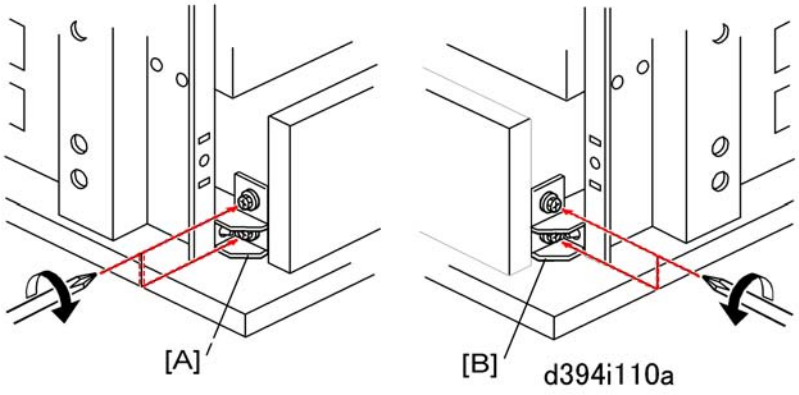
d394i926

2. Set harness clamps [A] and [B].
3. Attach edging cover [C].

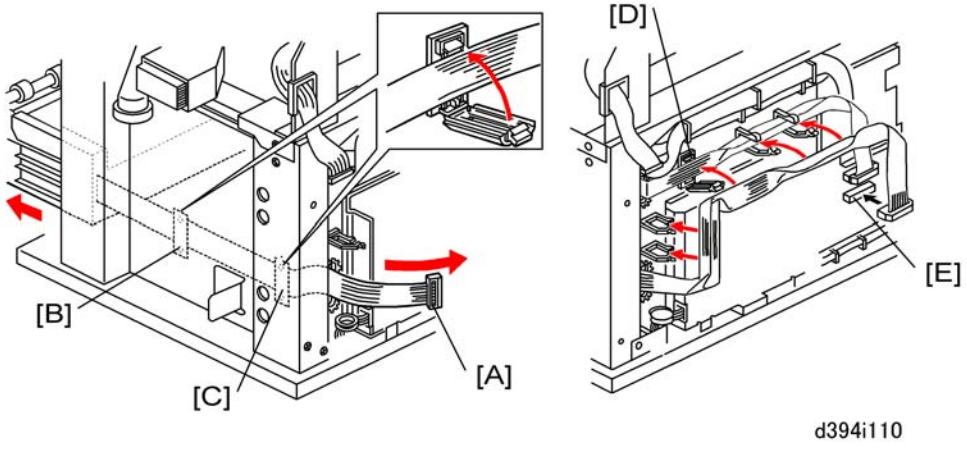


d394i109

4. Remove flat cable [A].
5. Set the roll feeder [B] on the positioning pins [C] of the left and right rails.
6. Fasten the tray to the rails [D] (x 2 each M4 x 6).



7. With the drawer open, loosen the roll feeder positioning brackets:
   [A] On the left (x2)
   [B] On the right (x2)

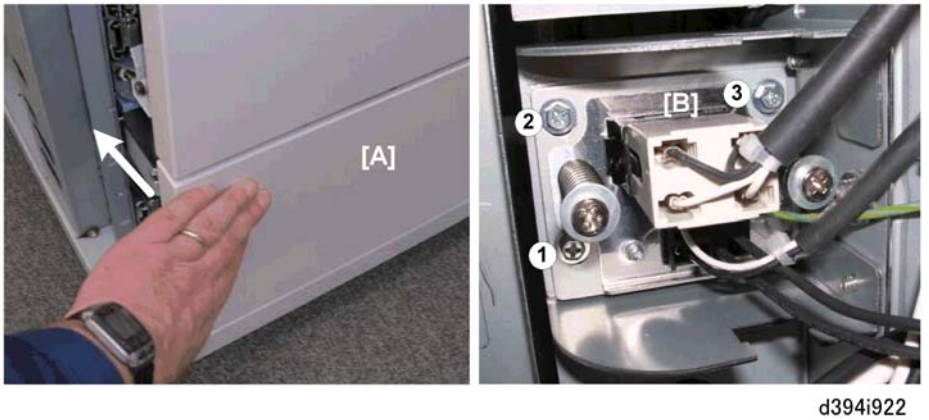


8. Pull out the lower roll feeder drawer completely.
9. Pull out the flat cable [A] as far as it will reach.
10. Set the cable in flat clamp [B] and [C], then close the clamps.
11. Open the harness clamps (x7) and flat clamp [D].
12. Close the clamps over the flat cable and connect the flat cable at [E] to **CN230** of the IOB (x8, x1)

Roll Feeder Drawer Positioning

d394i927

1. Remove the plastic and tape from the roll feeder on the left [A] and right [B].

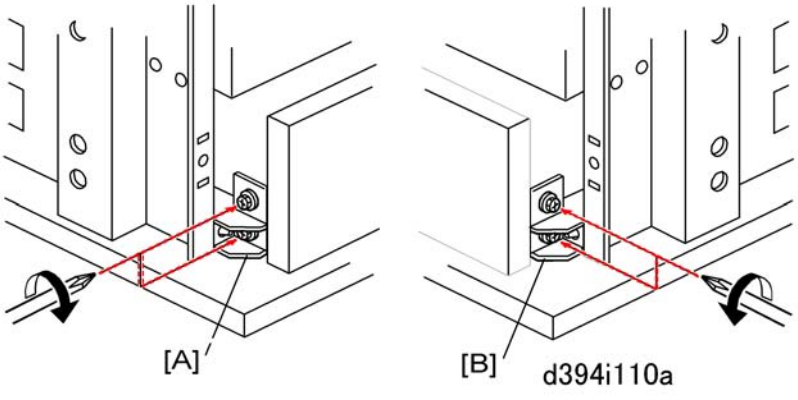


d394i922

2. Very slowly, push in the lower drawer [A] until it locks. This positions the drawer correctly at the drawer connector at the rear, and at the positioning pins at the left and right front corners.
3. At the rear, tighten the screws ①, ②, ③, of the lower drawer connector [B].

d394i924

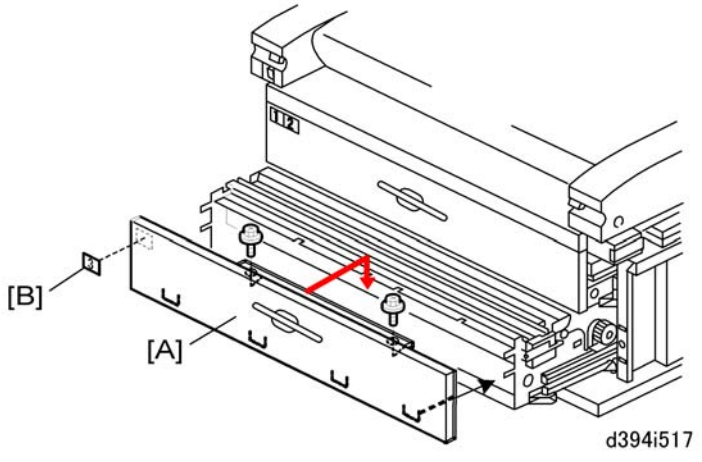
4. Reattach the inner cover [A] (x2).



d394i110a

5. At the front (with the drawer still closed), tighten the roll feeder positioning brackets:
   [A] On the left (x2)
   [B] On the right (x2)

Drawer Cover, End Plates



1. Open the lower drawer.
2. Attach the lower front cover [A] (x2).

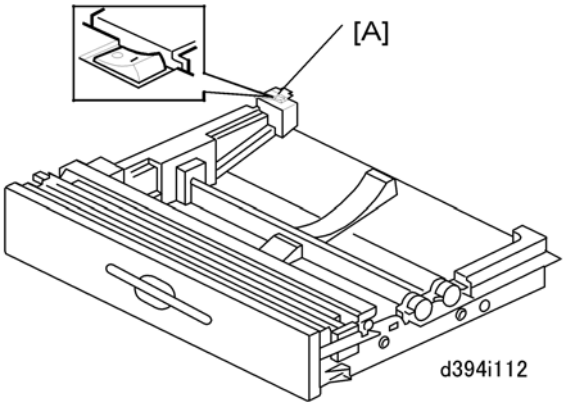
Note

- Use the screws removed from either end of the cover when you removed it.

3. Attach the decal [B].

4. Fasten one cover plate [1] to the left side of the drawer (x1).
5. Attach the other cover plate to the right side of the drawer (x1).

Roll Heater Switch



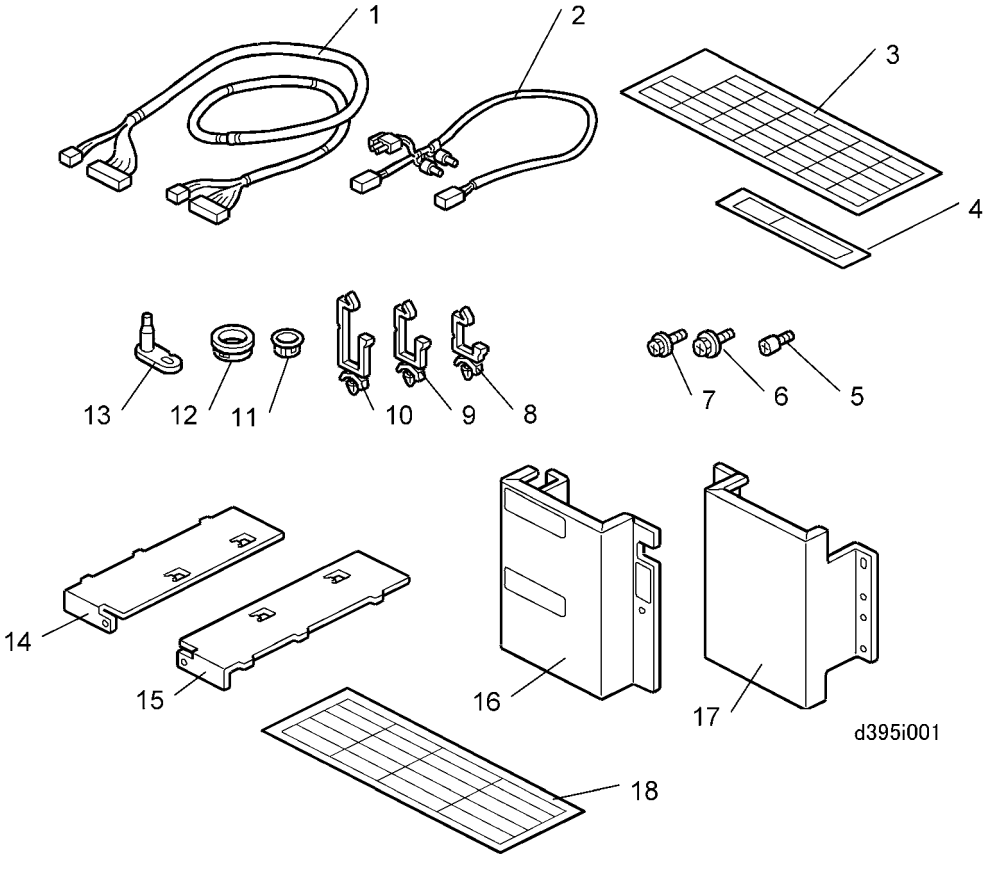
1. The heater switch [A] for the roll feeder is at the rear left corner of the roll feeder.
2. Switch on the roll heater if the humidity at the installation site is high.

Paper Cassette Type 7140 (D395)

Accessory Check

Check the accessories and their quantities against this list:

No.	Description	Qty
1.	Interface Harness	1
2.	Heater Harness	1
3.	Decal: Paper Size Indication	1
4.	Decal: Warning A2 (High Temperature)	1
5.	Guide Screws	2
6.	Tapping Screws (M4 x 8)	6
7.	Tapping Screws (M3 x 8)	4
8.	Harness Clamps – LWS-0711	5
9.	Harness Clamps – LWS-2218	2
10.	Harness Clamp	1
11.	Bushing - 11.5 mm	1
12.	Bushing – 25 mm	1
13.	Lock Pins	2
14.	Cover Plate - Right	1
15.	Cover Plate - Left	1
16.	Left End Cover	1
17.	Right End Cover	1
18.	Decal: Cassette: Multi-Language (-27 only)	1


1
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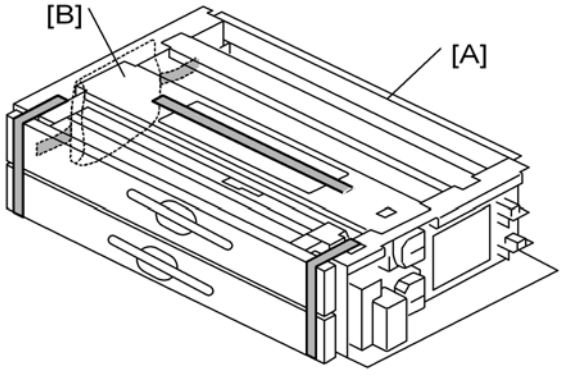
d395i001

Installation

Unpacking the Unit



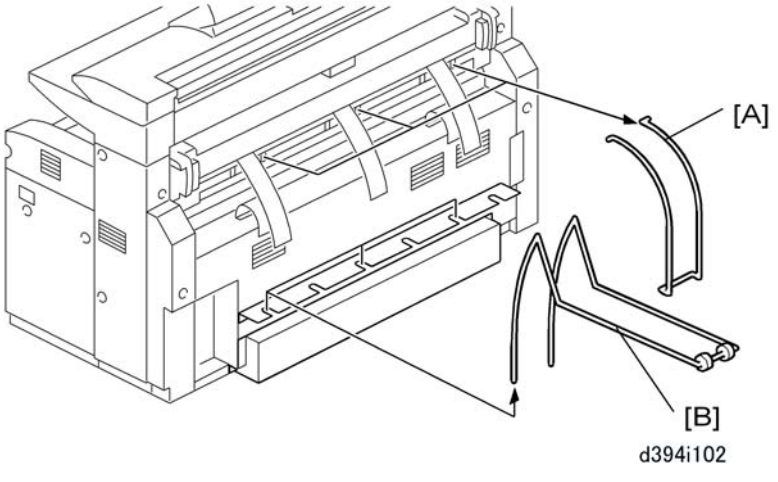
d395i002

1. Unpack the cassette tray [A].
2. Remove accessory pack [B], all tapes, and shipping material.

⚠CAUTION

- Always turn the machine off and unplug the machine before you do any of the following procedures.
- The cassette tray weighs 60 kg (132 lb.). At least two people are needed to lift and install it.

Removing the Covers

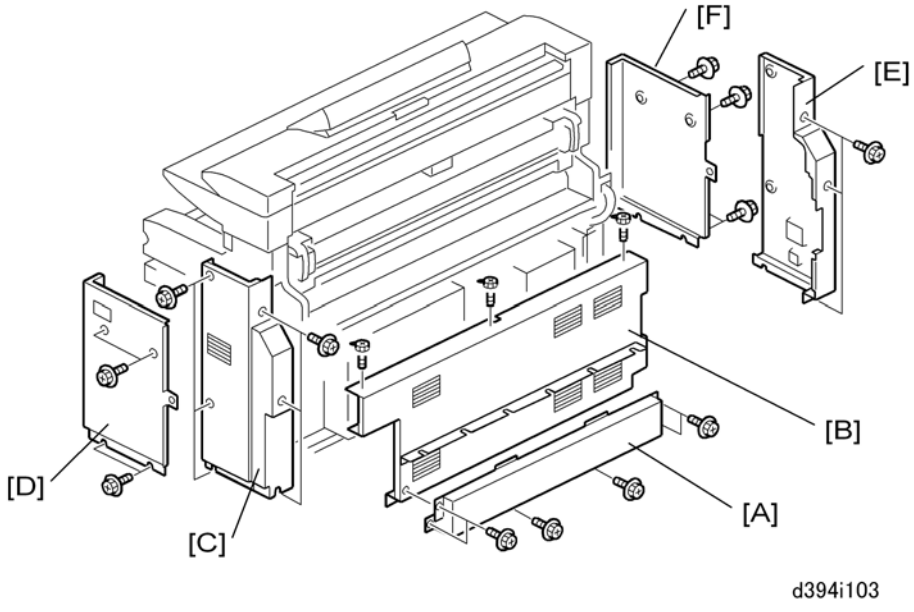


d394i102

1. Remove:

   [A] Rear copy tray guides (x3)

   [B] Rear copy tray (x3)



2. Remove:

   [A] Rear copy tray holder (x6)

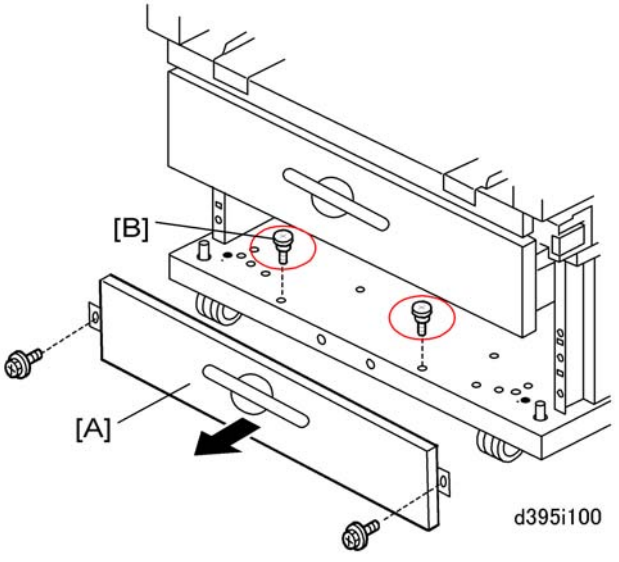
   [B] Rear cover (x3)

   [C] Right rear cover (x6)

   [D] Right front cover (x4)

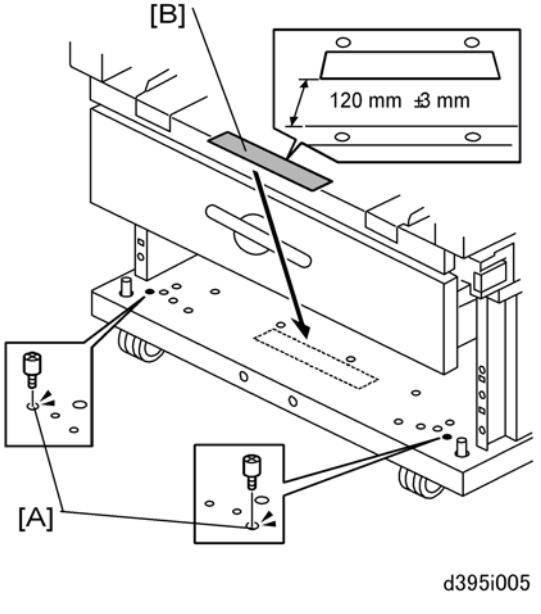
   [E] Left rear cover (x7)

   [F] Left front cover (x4).

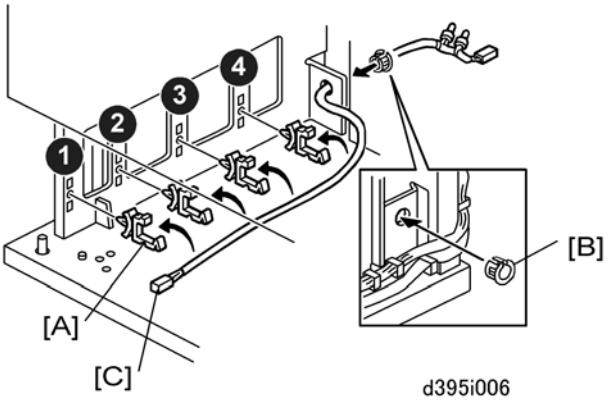


3. Remove tray cover [A] (x2). Discard these screws.
4. Remove the step screws [B] (x2). Discard these screws.

Guide Screws, Caution Decal, Heater Harness

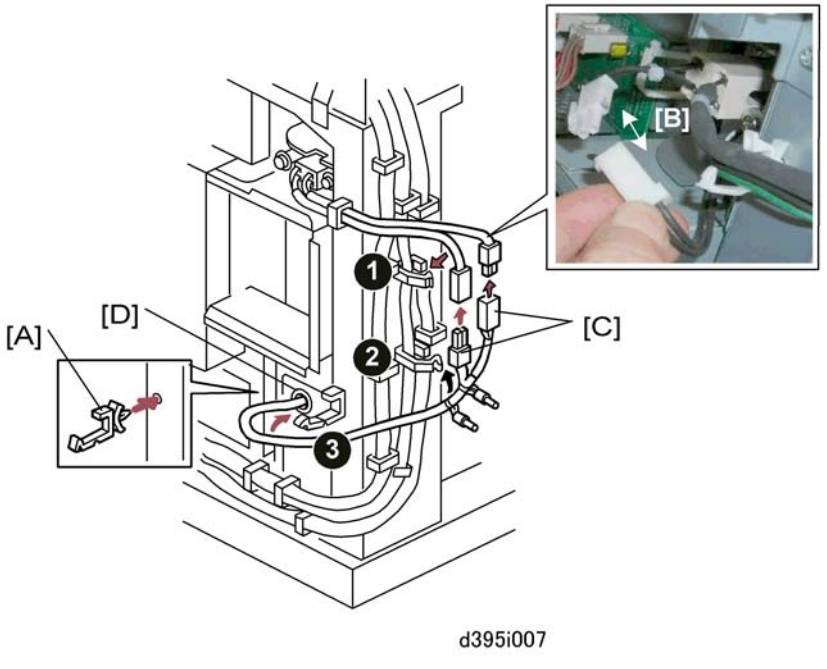


1. Put the guide screws [A] (x2) in the holes.
2. Attach the warning decal (high temperature) [B].



d395i006

3. Attach the small harness clamps (x4) [A] to the holes (①, ②, ③, ④) on the left side of the frame inside the drawer.
4. Attach the small bushing [B] to the hole.
5. Insert the small end of the heater harness [C] through the grommet and pull it to the front.
6. Close the harness clamps on the harness.

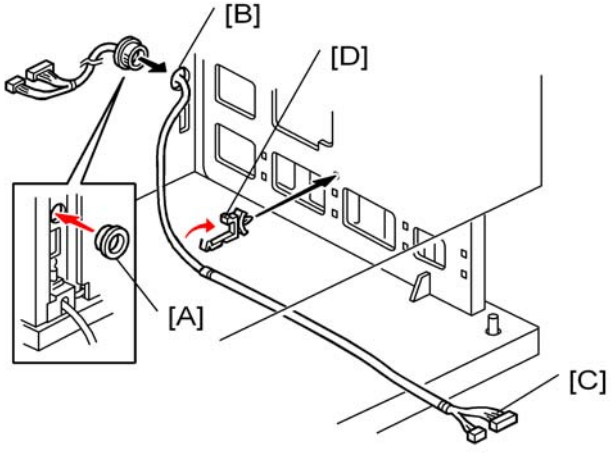


d395i007

7. At the left rear corner, attach the small harness clamp [A] (x1).

8. Open the harness clamps (x2).
9. Separate the connectors [B] to provide connection points for the harness.
10. Connect the heater harness [C] (x2).
11. Push the heater harness through the hole [D] to remove slack.
12. Close the harness clamps ①, ②, ③ (x3).

Interface Harness



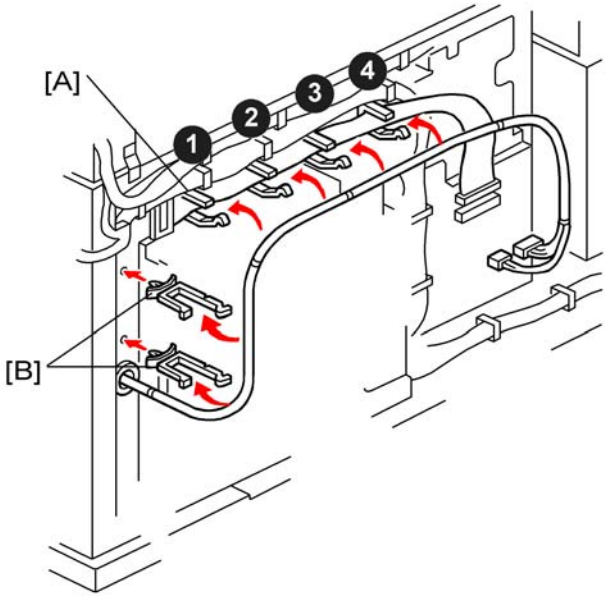
d395i008

1. At the right rear corner, attach the large bushing [A].
2. Thread one end of the interface harness [B] through the hole.

Note

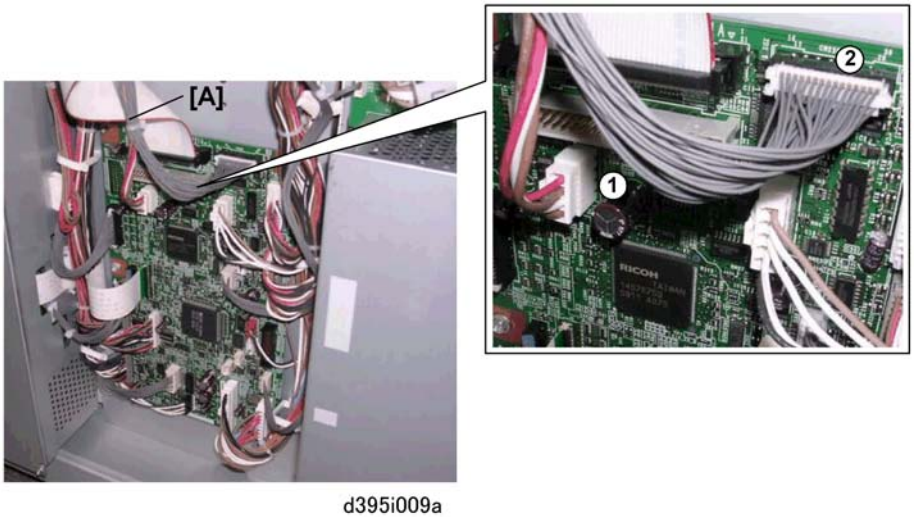
- The white/gray connector pair [C] is at the front end of the cable.

3. Attach one large harness clamp [D] to the right frame inside the drawer, then close the clamp around the cable.



d395i009

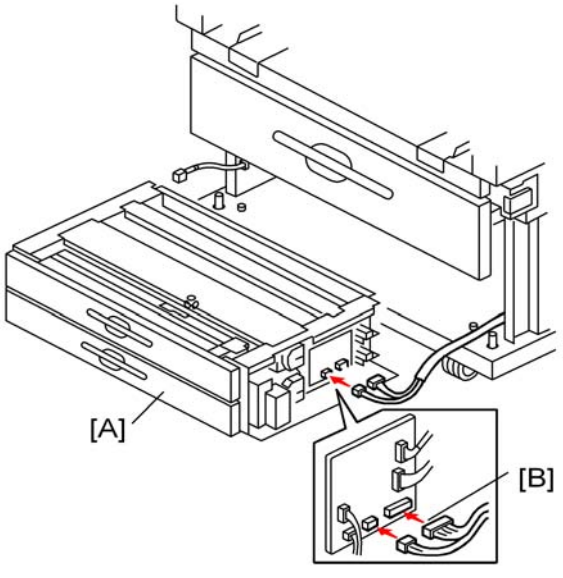
4. At the rear, release the four harness clamps [A].
5. Attach the long harness clamps [B].



d395i009a

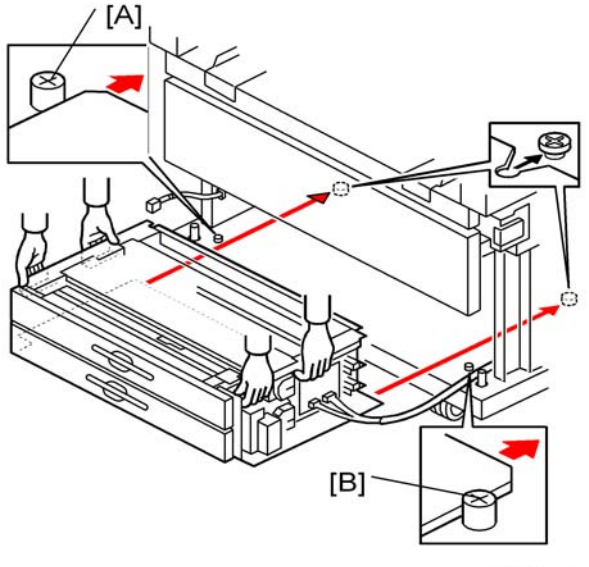
6. Connect the harness [A] to **CN235** ① and **CN236** ② on the IOB (☞ x2).
7. Put the harness in the clamps, and close the clamps around the harness (☞ x6).

Inserting and Setting the Cassette Tray



d395i010

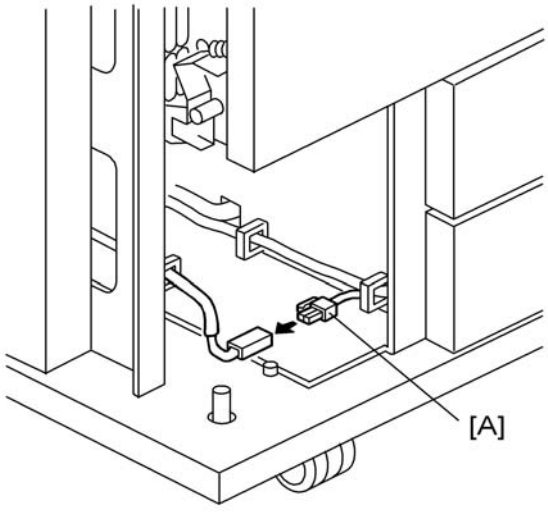
1. Set the cassette tray [A] in front of the copier.
2. Connect the cassette tray interface connector [B] (x2).



d395i011

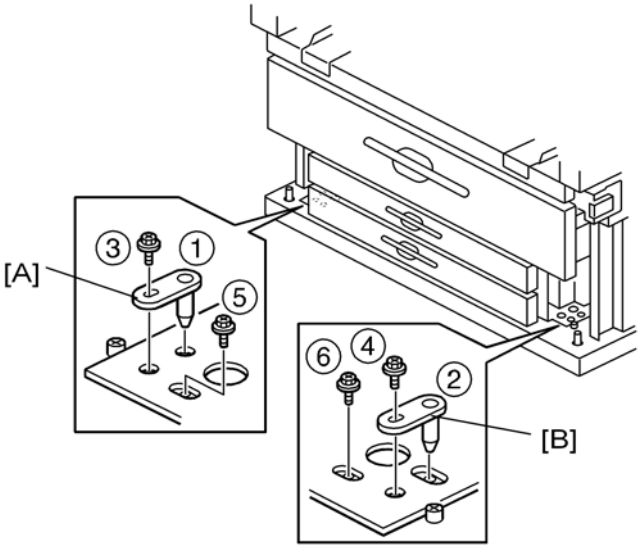
3. With one person on each side of the tray, lift the tray and slide it between the guide pin on the left [A] and on the right [B].

4. Push the tray in until it stops.



d395i012

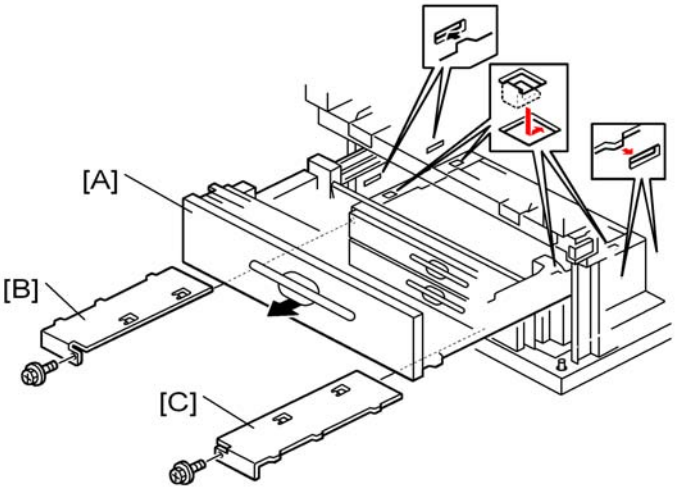
5. At the front left corner of the copier, connect the heater cable [A] to the tray (x2)



d395i013

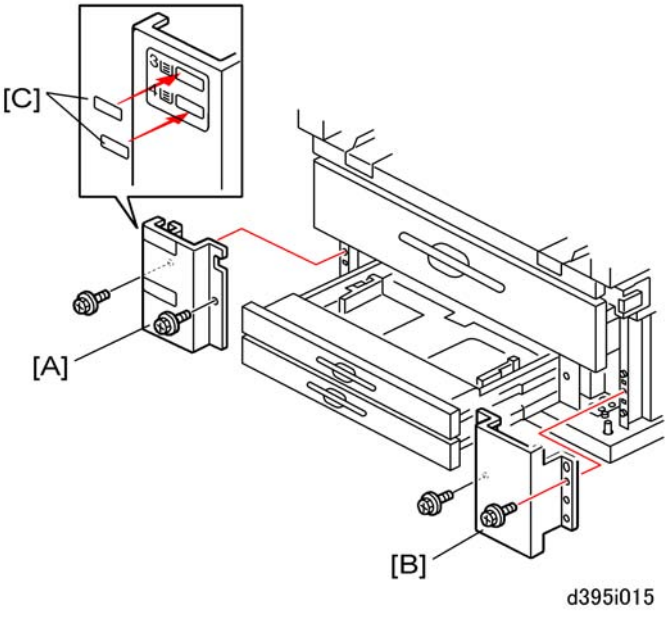
6. Attach the left lock pin [A] and right lock pin [B] in the order that is shown by the numbers (x2 each).
    - Insert the stud of each lock pin first on the left ① then on the right ②.
    - Check that all 6 holes are aligned correctly before you attach the screws.
    - You may need to move the cassette tray slightly to the right or to the left to align the holes.
    - Screws ③ and ④ are M3 size.

- Screws ⑤ and ⑥ are M4 size



d395i014

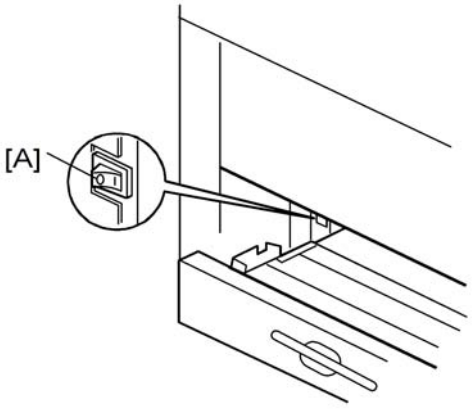
7. Pull out the roll feeder drawer [A].
8. Install the left cover plate [B] (x1).
9. Install the right cover plate [C] (x1).
10. Close the roller feeder drawer.
11. Open the cassette drawer.



d395i015

12. Attach the left end cover [A] (x2).
13. Attach the right end cover [B] (x2).
14. Attach the paper size decals [C].

Tray Cassette Heater Switch



1. Turn on the tray cassette heater switch [A] if the humidity at the installation site is very high.
2. To turn the cassette tray heater on:
    - Open the top drawer until you can see the heater switch.
    - Turn the switch on.

Tray and Stacker Options

Important

- After installation of the original exit tray or stacker at the rear, go into the SP mode and switch of SP4975 (Original Edge Hold). Otherwise, only one original can be fed at a time.

Original Exit Tray Type G (B341)

Important

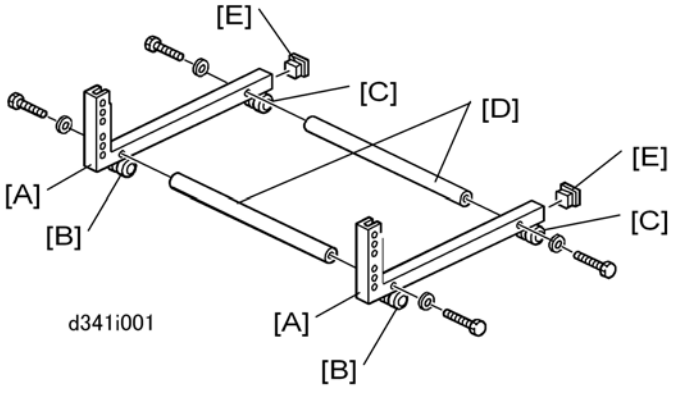
- This option cannot be used when Folder FD6500 A/B (B889/B890) is installed.

Accessory Check

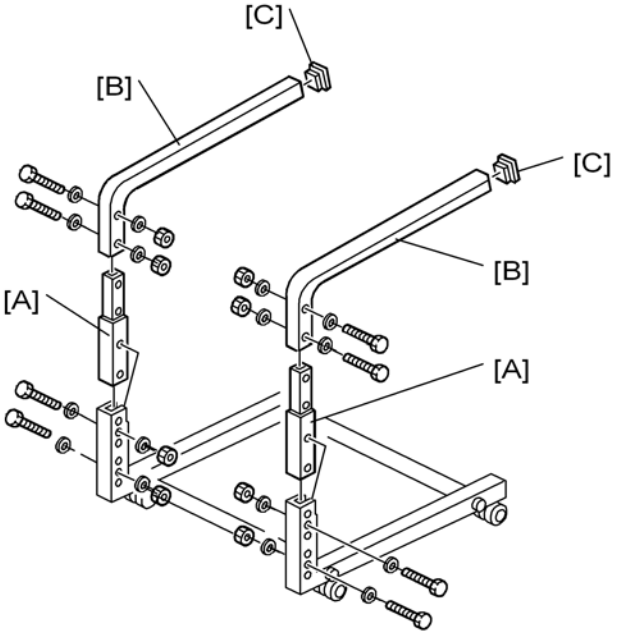
No.	Description	Q'ty
1	Base Strut Frame	2
2	Base Struts	2
3	Middle Struts	2
4	Tray Struts	2
5	Original Tray	1
6	Size Decal Sheet	1
7	Original Stoppers	2
8	Original Guides	2
9	Caps – Base Struts	2
10	Caps –Tray Struts	2
11	Hexagonal Bolt – M8 x 40	12
12	Washer – 8 mm	20
13	Tapping Screw – M4 x 8	6
14	Hex Nut – M8	8
15	Caster – ϕ40	2

No.	Description	Q'ty
16	Caster – ϕ40 Stopper	2

Installation Procedure



1. Attach the following to the base struts [A]:
   [B] Casters: diameter 40 with stopper
   [C] Caster: diameter 40
2. Assemble base stays [D] and base frame struts [A] (Bolts x4, Washers x4).
3. Attach caps [E] to base frame struts [A].



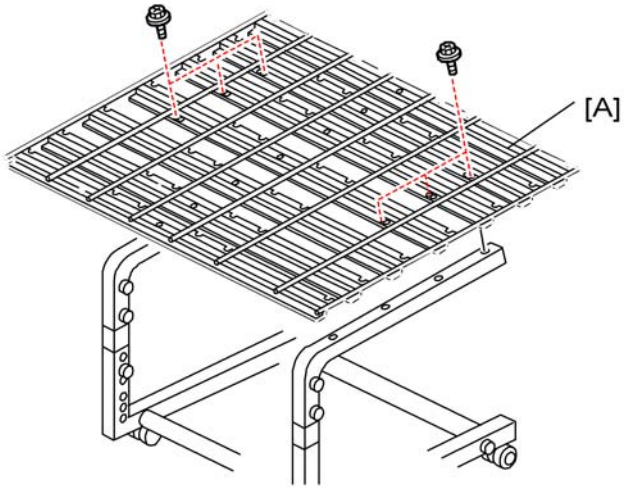
d341i002

4. Attach:

   [A] Middle struts (Bolts x4, Washers x8, Nuts 4)

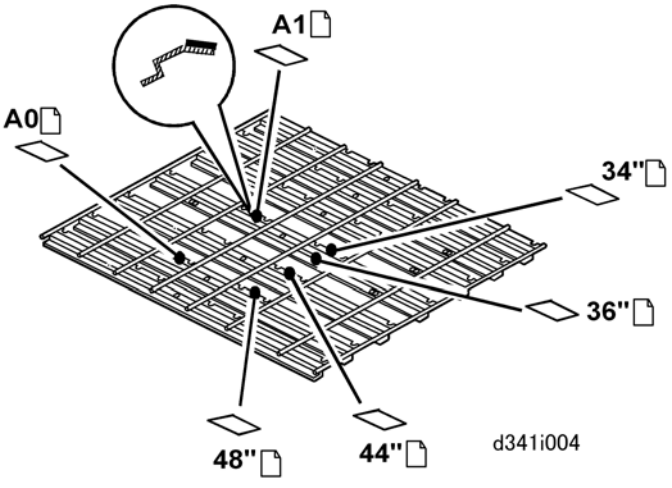
   [B] Tray struts (Bolts x4, Washers x8, Nuts x4)

   [C] Caps

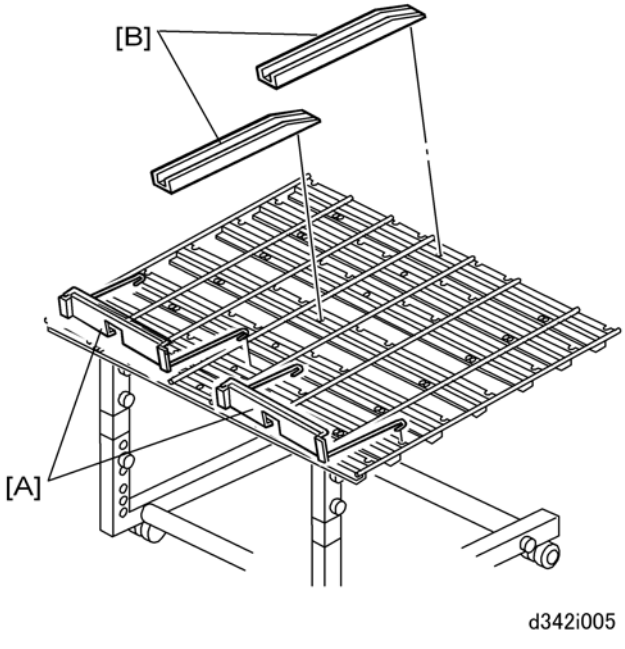


f341i003

5. Install the original tray [A] on the original tray stays (x 6).



6. Attach the size decals.

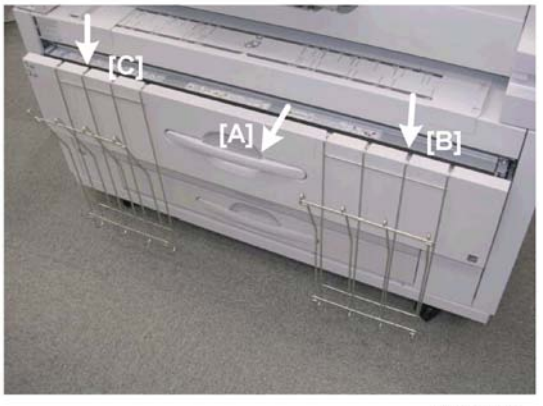


7. Attach:

   [A] Original stoppers

   [B] Original guides

Original Hanger (D311)



d311i001

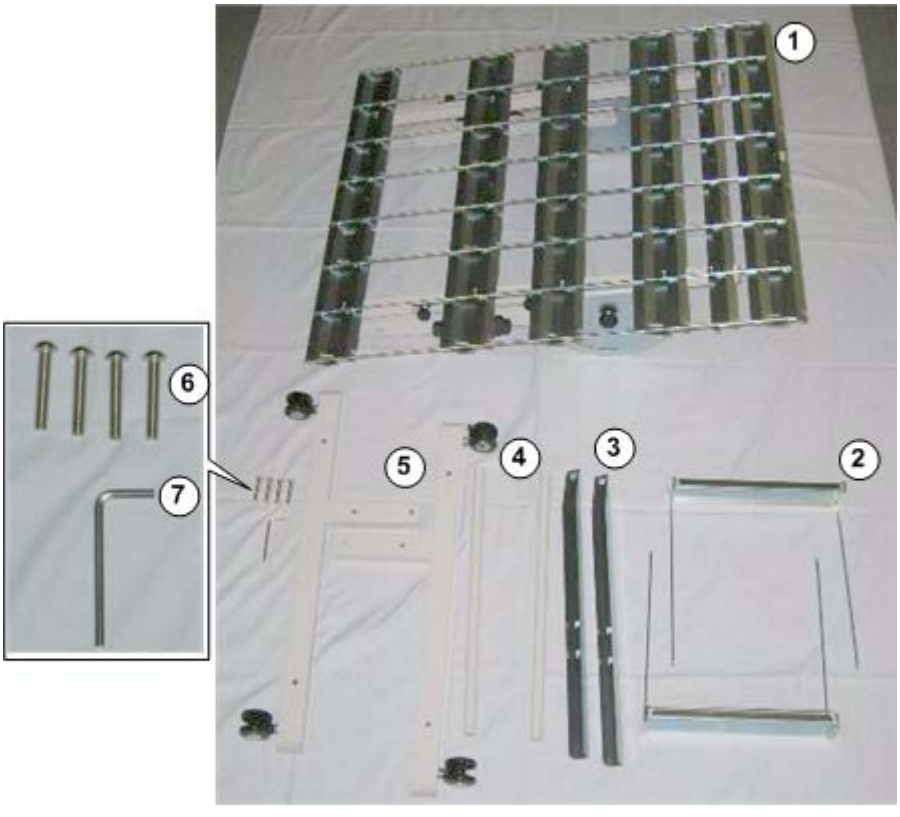
1. Open the top roller feeder drawer [A].
2. Hang one stacker [B] on the right.
3. Hang the other stacker [C] on the left.

Multi Stacker Type 7140 (D437)

Important

- This option cannot be used at the rear when the following are installed: Folder FD 6500 A/B (B889/B890), Original Exit Tray Type G (B341), Rear Copy Stacker Type 7140 (D438).

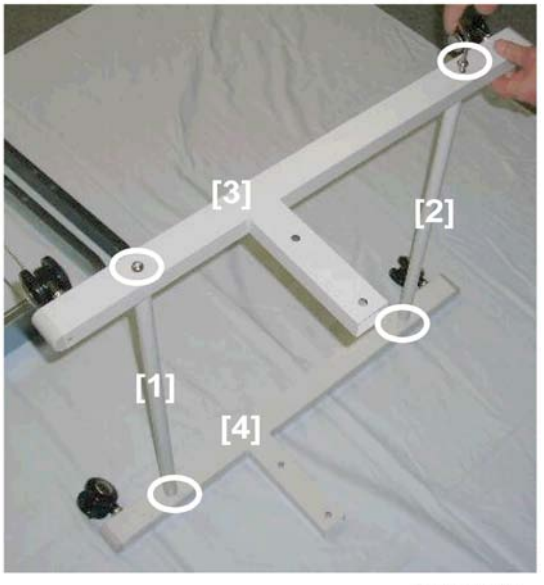
Accessories



d437i001

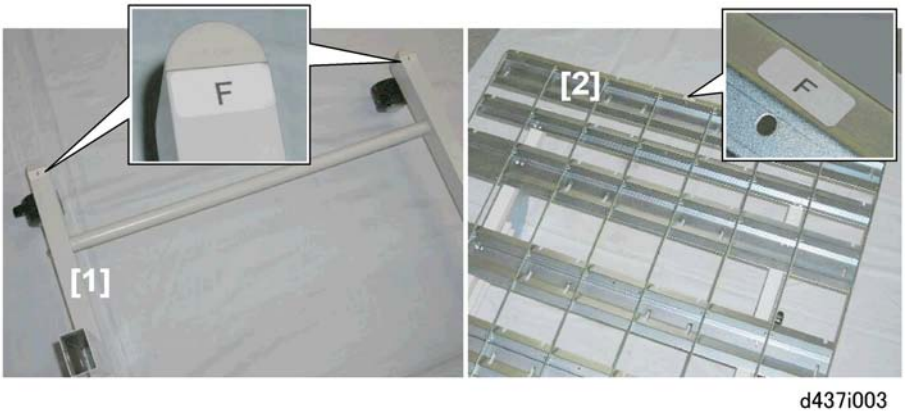
No.	Description	Q'ty
1	Stacker Tray	1
2	Stoppers	2
3	Guides	2
4	Crosspieces	2
5	Tray Legs	2
6	Long Bolts – M8x45	4
7	Allen Key	1

Installation



d437i002

1. Assemble the base:
   - Fasten cross-piece [1] to tray legs [3] and [4] (Long bolts x2).
   - Fasten cross-piece [2] to tray legs [3] and [4] (Long bolts x2).



d437i003

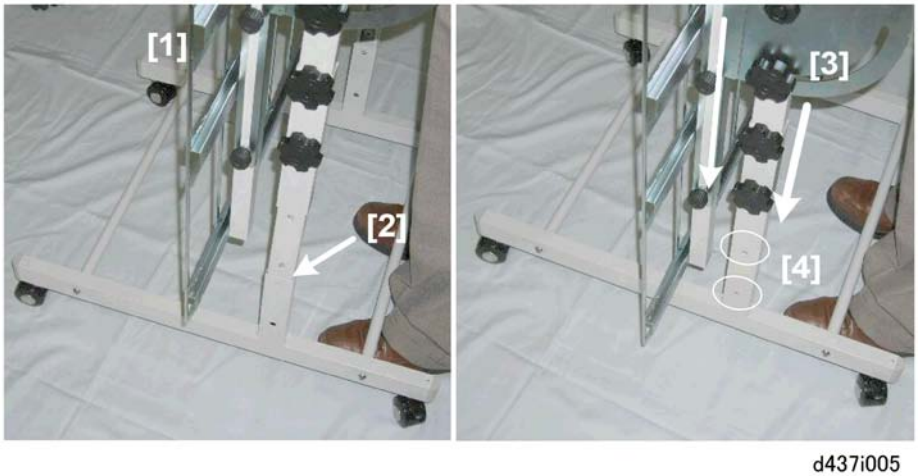
2. Note the "F" markings on the tray legs [1] and the stacker tray [2]. The "F" marks must face toward the rear of the main machine.

d437i004

3. Remove the lower knobs:

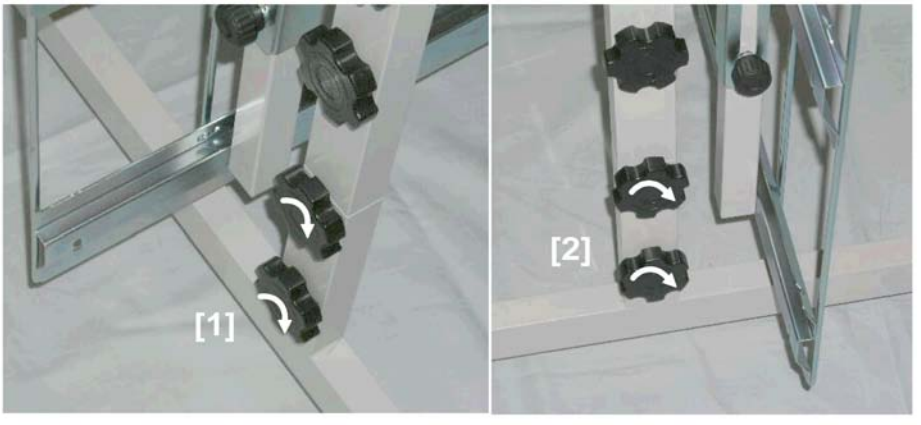
   [1] Left knobs x2

   [2] Right knobs x2



d437i005

4. With the "F" mark on the stacker tray [1] over the "F" marks on the legs, insert the arms of the stacker tray into the holes in the upright supports [2].
5. Push down the stacker tray [3] completely so the holes [4] are aligned on both the left and right upright supports.

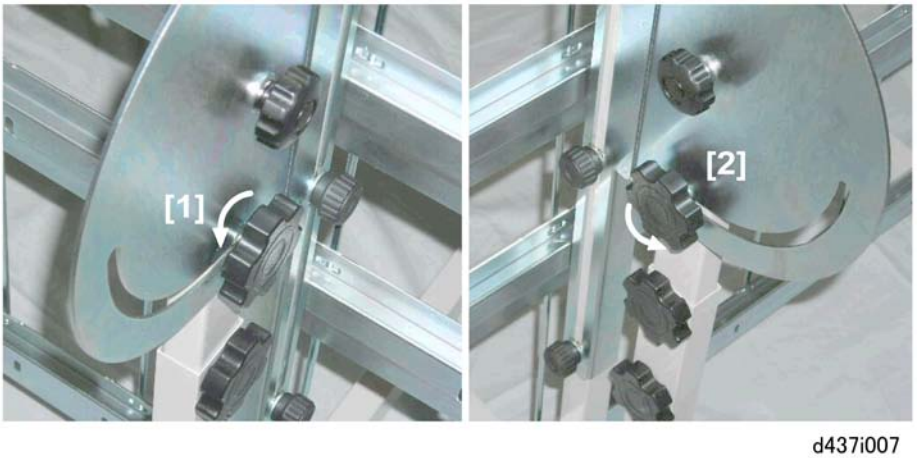


d437i006

6. Reattach the knobs:

   [1] Left knobs x2

   [2] Right knobs x2



d437i007

7. Loosen the tray height adjustment knobs:

   [1] Left knob x1

   [2] Right knob x 1

d437i008

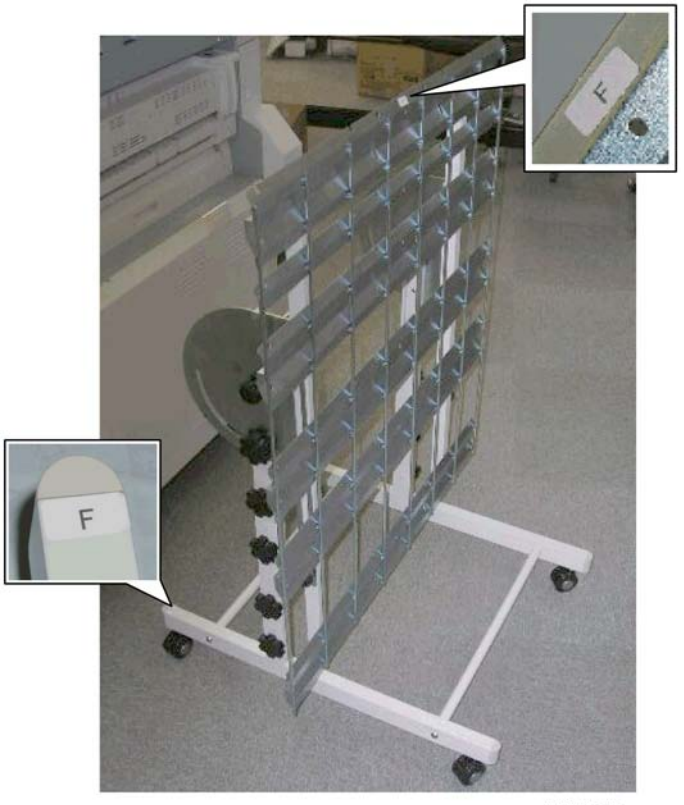
8. Swing the tray [1] up to the required height and tighten the height adjustment knobs.
9. Install the tray:
    - At the rear for originals or copies

    -or-

    - At the front for copies

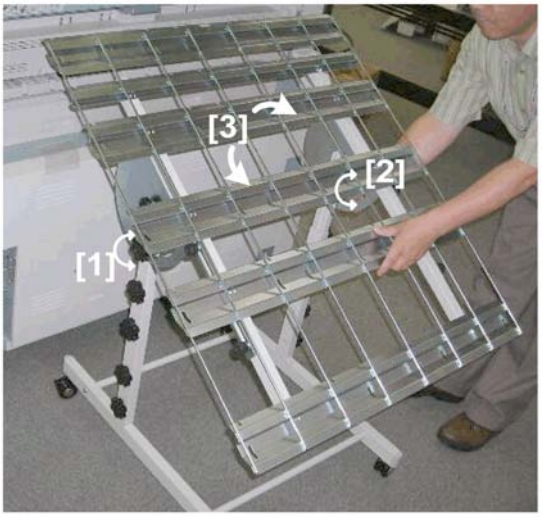
Original Rear Exit

Follow this procedure to set the multi-stacker tray to hold long originals from the rear exit.



d437i010

1. Make sure that the "F" mark on the stacker tray is on the same side as the "F" marks on the legs.



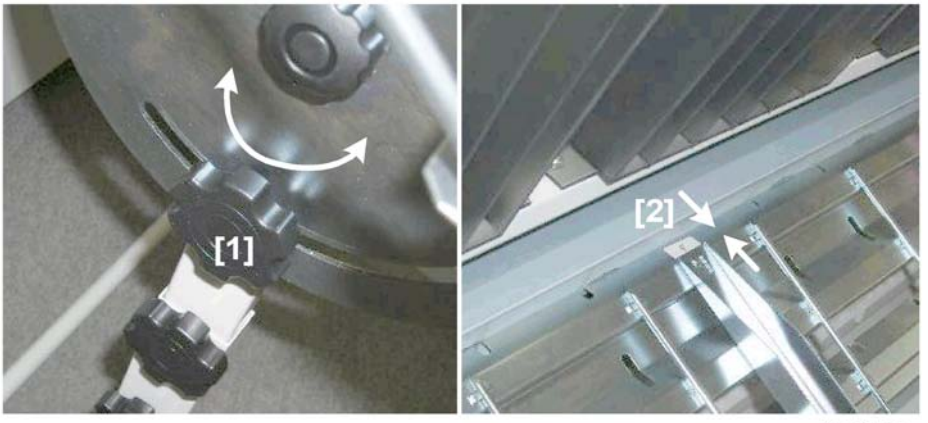
2. Loosen the tray angle adjustment knobs on the right [1] and left [2].
3. Adjust the angle of the tray [3] to the height of the original exit and tighten the knobs.

d437i012

4. Loosen the tray extension adjustment knobs on the right [1] and left [2].

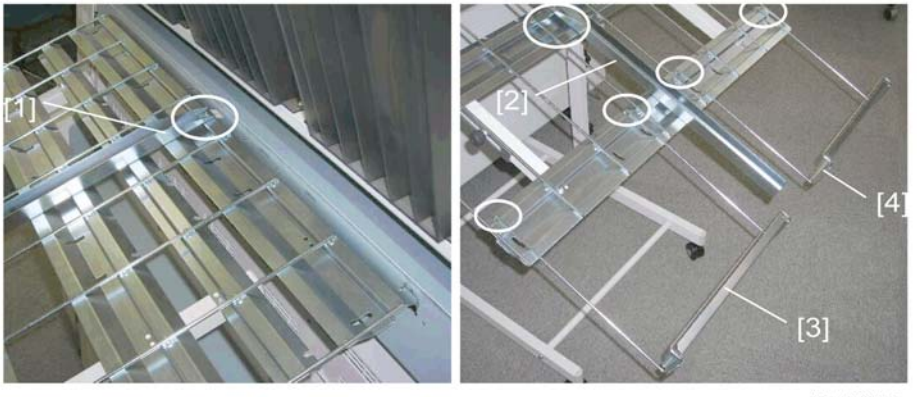
d437i013

5. Push the stacker tray [1] as far as the rear original exit [2].
6. Tighten the tray extension knobs on the left [3] and right [4].



d437i014

7. On the left and right, loosen the tray height adjustment knobs [1], swing the edge of the stacker tray to the exact height of the rear original exit [3], then tighten the knobs.



d437i015

8. Set the remaining accessories on the stacker tray:

   [1] Upper guide

   [2] Lower guide

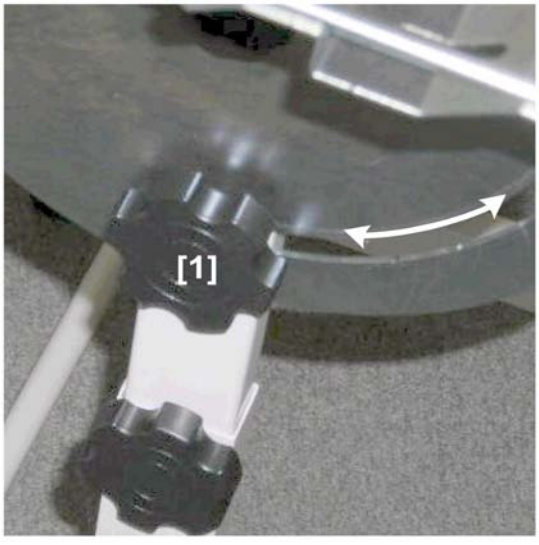
   [3] Right stopper

   [4] Left stopper

9. Hang the stoppers at the correct position for the length of the originals. The illustration above shows the stoppers set for the maximum length.
10. Go into the SP mode and switch off SP4975 (Original Edge Hold).

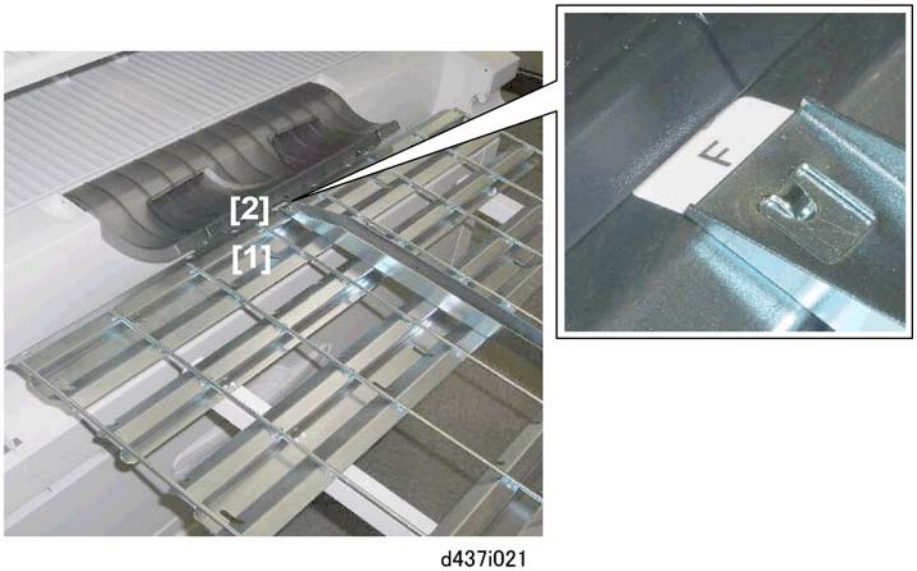
Front Copy Tray

Follow this procedure to set the multi-stacker to hold copies from the front copy tray.



d437i020

1. Move the assembled multi-stacker to the front of the machine.
2. Loosen the height adjustment knobs [1] on the left and right side of the multi-stacker.



d437i021

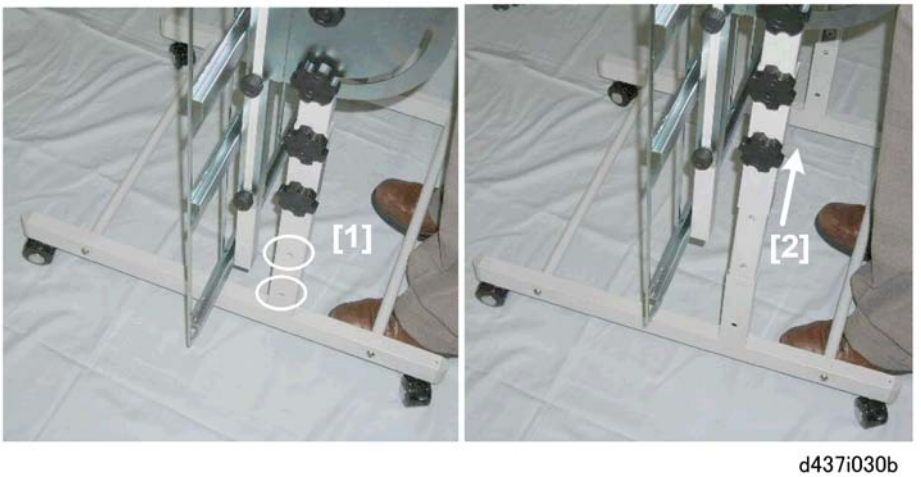
3. Swing the edge of the stacker [1] to the edge of the front copy tray [2].
4. Tighten the height adjustment knobs on the left and right side of the stacker.

Rear Copy Exit

Follow this procedure to set the multi-stacker to hold long copies.

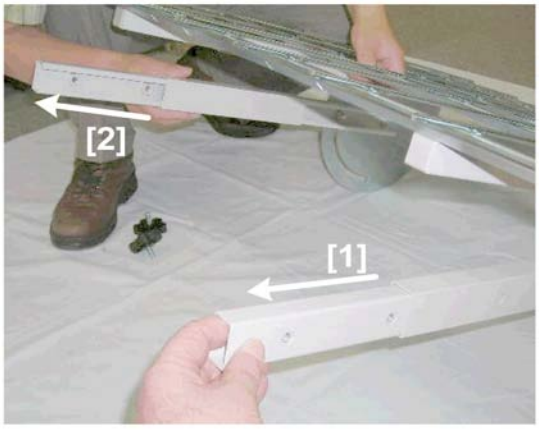
d437i030a

1. Remove the rear copy tray supports [1] (x3).
2. Remove the mylar strips [2] (x3).



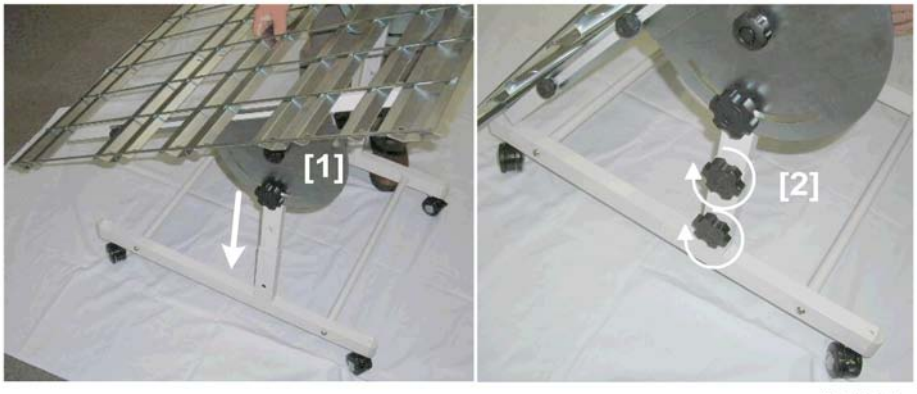
d437i030b

3. Remove the two lower knobs [1] on the left and right side of the stacker.
4. Pull the stacker [2] out of the upright supports.



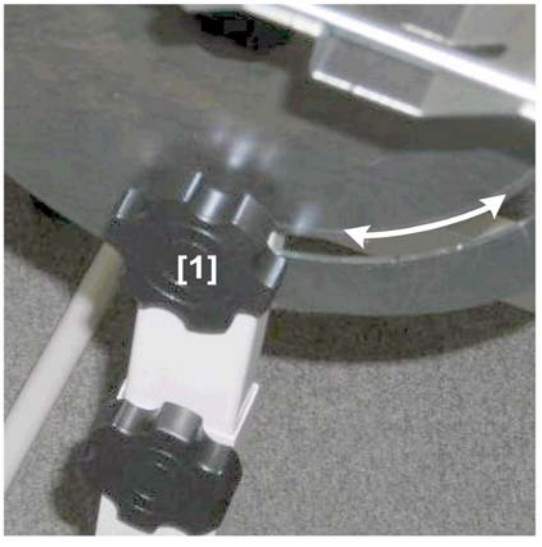
d437i031

5. Lay the stacker on a flat surface and remove the extensions [1] and [2].



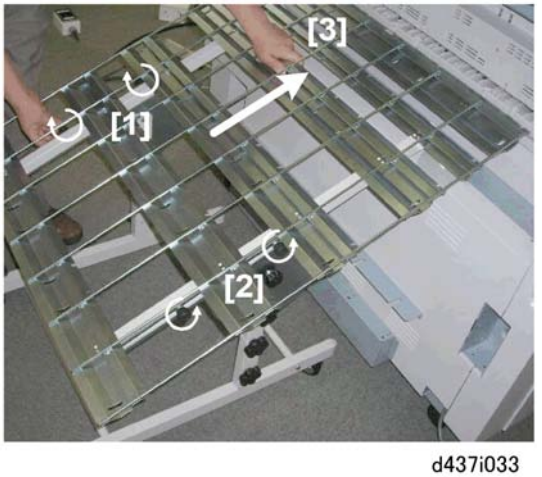
d437i032

6. Re-insert the arms of the stacker [1] completely into the upright supports so the holes are aligned on the left and right upright supports.
7. Reattach the knobs on the left and right upright supports [2] (2 each).



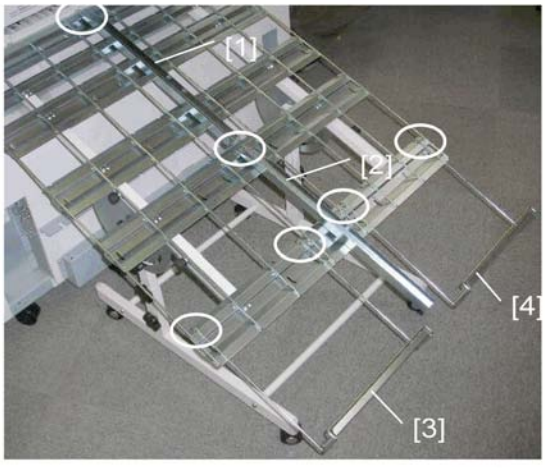
d437i020

1. Move the assembled multi-stacker to the rear of the machine.
2. Loosen the height adjustment knobs [1] on the left and right side of the multi-stacker.
3. Swing the edge of the stacker to the edge of the rear copy exit.
4. Tighten the height adjustment knobs on the left and right side of the stacker.



d437i033

5. Loosen the tray extension knobs [1] and [2].
6. Extend the tray [3] to the edge of the rear copy exit .
7. Tighten the extension knobs.



d437i034

8. Set the remaining accessories on the stacker tray:

   [1] Upper guide

   [2] Lower guide

   [3] Right stopper

   [4] Left stopper

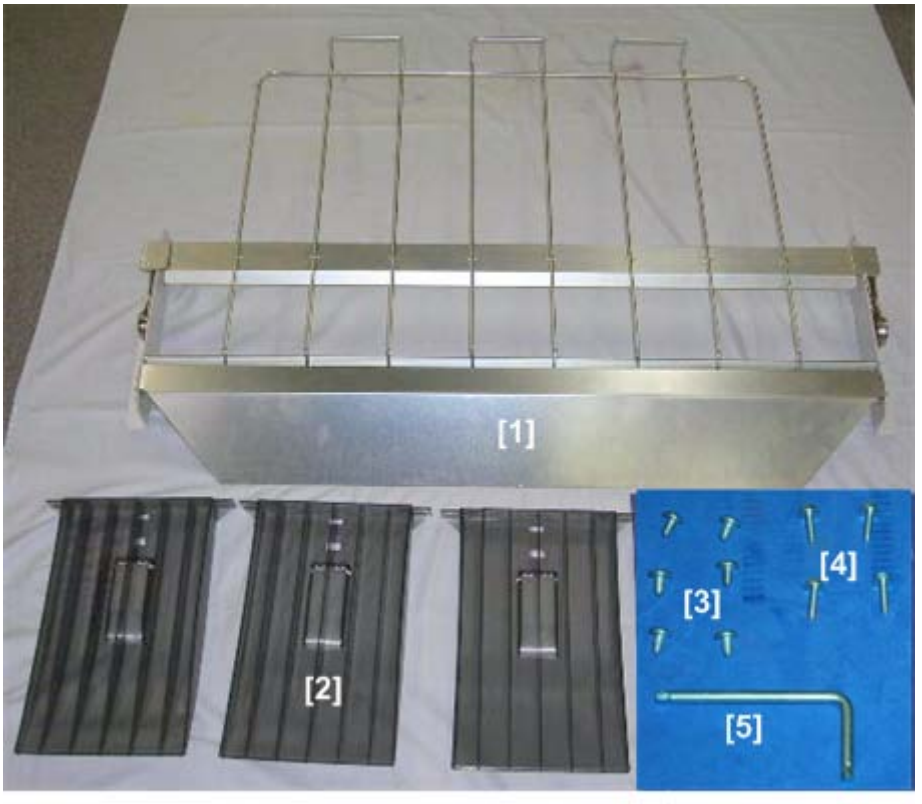
9. Hang the stoppers at the correct position for the length of the copies. The illustration above shows the stoppers set for the maximum length.

Rear Stacker Type 7140 (D438)

Important

- **This option can be installed only when the Manual Feeder (D333) is installed on top of the Folder FD 6500A (B889) or Folder FD 6500B (B890).**

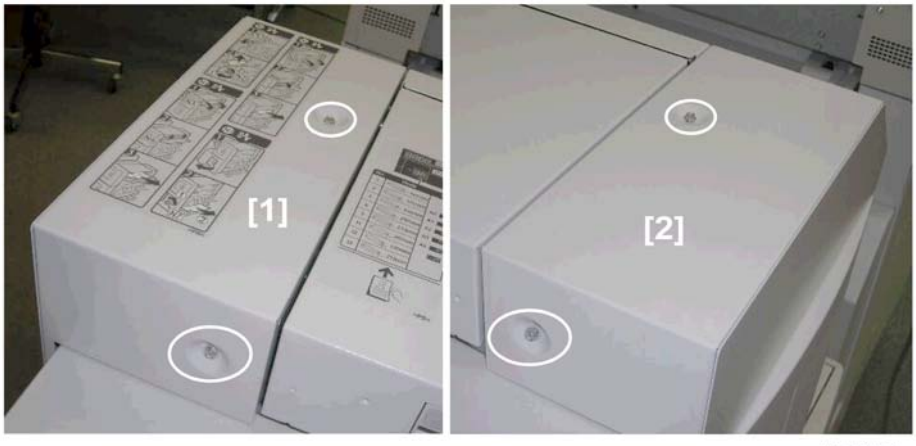
Accessories



d438i001

No.	Description	Q'ty
1	Rear Stacker	1
2	Original Tray	3
3	Round-head Screws – M4x8 (Original Tray 2 ea.)	6
4	Tapping Screws – M3x12 (Rear Stacker)	4
5	Allen Key	1

Installation



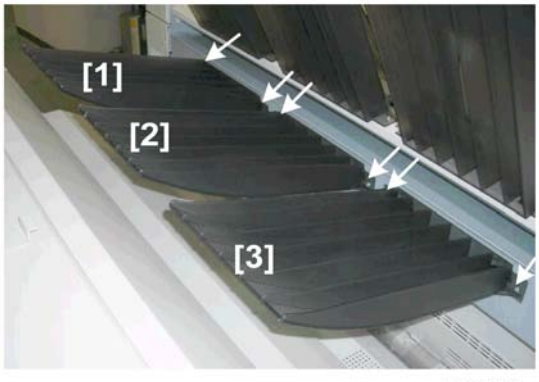
d438i002

1. From the fan folder, remove:

   [1] Right end cover screws (x2)

   [2] Left end cover screws (x2).

   Do not remove the end covers!



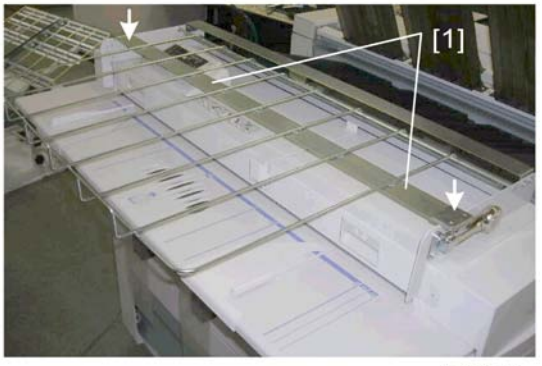
d438i003

2. Attach the original trays to the rear of the main machine:

   [1] Right (x2)

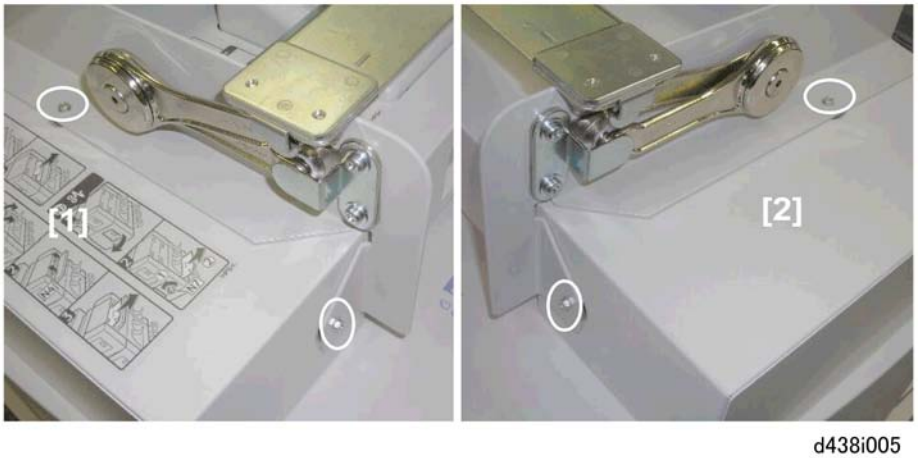
   [2] Center (x2)

   [3] Left (x2)



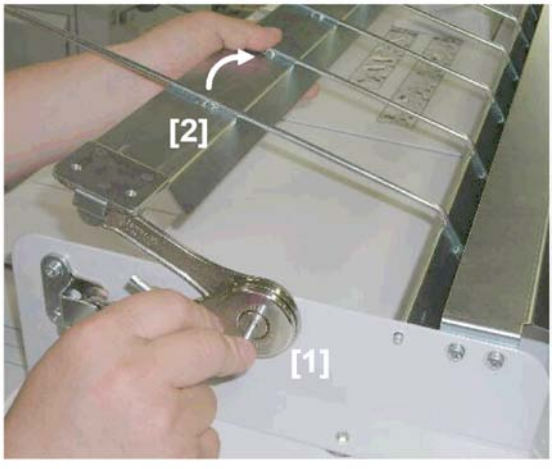
d046i004

3. Set the rear stacker [1] on top of the fan folder.



d438i005

4. Use the long screws to attach the rear stacker to the end covers of the fan folder:
   [1] Right end cover (x2)
   [2] Left end cover (x2)



d438i006

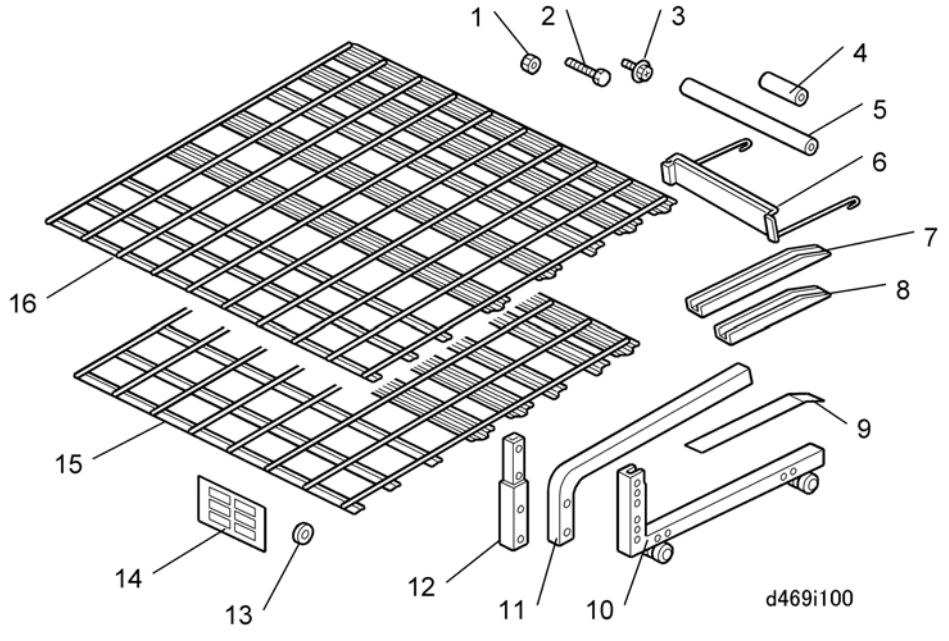
5. Use the Allen key [1] to loosen the height adjustment bolts on both ends of the rear stacker.
6. Raise the stacker tray [2] to the desired height, then use the Allen key to tighten the adjustment bolts on both ends of the rear stacker.

Double Stacker Type 7140 (D469)

Important

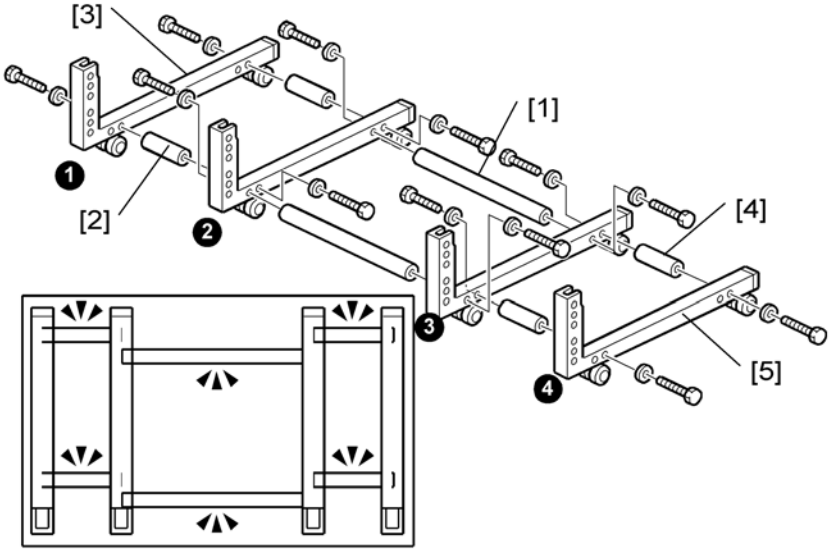
- **This option cannot be used when the Folder 6500A/B is installed.**

Accessories



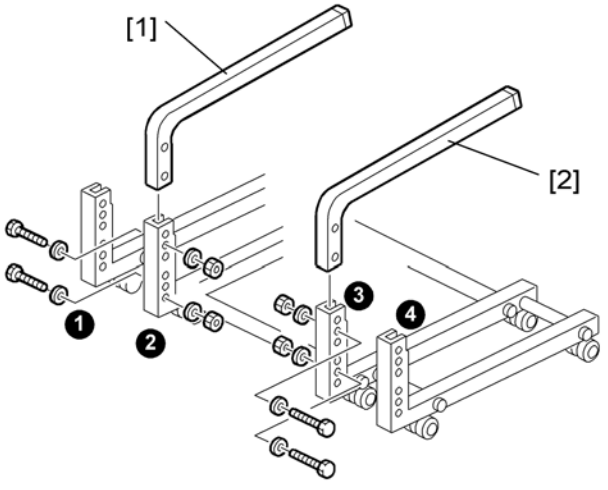
No.	Description	Q'ty
1	Nuts	12
2	Bolts	24
3	Screws – M4x8	6
4	Base Stay – Short	4
5	Base Stay – Long	2
6	Stoppers	4
7	Guides - Long	2
8	Guides - Short	2
9	Mylars	8
10	Base Struts	4
11	Tray Struts	4
12	Middle Struts	2

No.	Description	Q'ty
13	Spacers	36
14	Decal Sheet	1
15	Small Tray	1
16	Large Tray	1

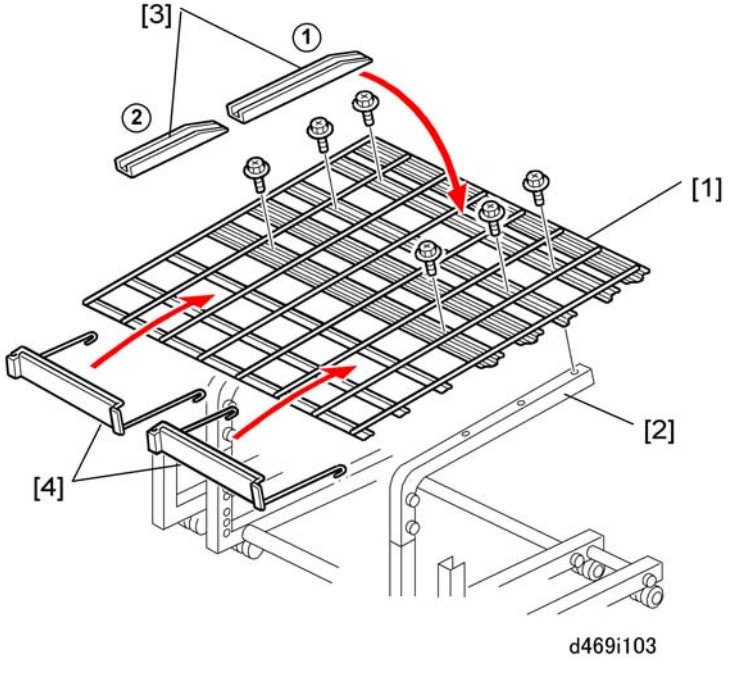


d469i101

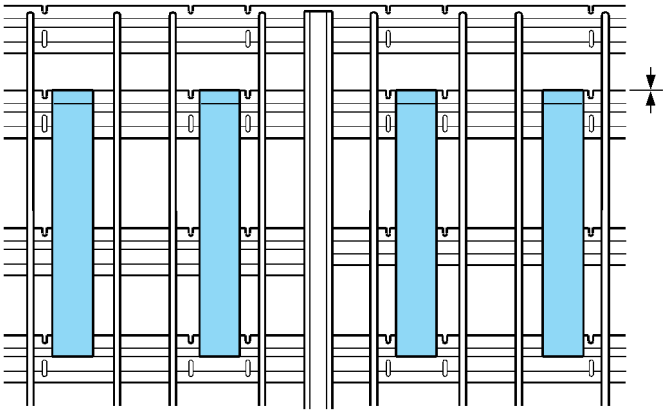
1. Use the two long base stays [1] to assemble base struts ② and ③ (🔩 x4, Spacers x4)
2. Use two of the short base stays [2] to attach base frame strut [3] to base frame strut ① (🔩 x4, Spacers x4)
3. Use the remaining two short base stays [4] to attach base frame strut [5] to base strut ③ (🔩 x4, Spacers x4).



4. Attach tray strut [1] to base strut ② (🔩 x2, Nuts x2, Spacers x4)
5. Attach tray strut [2] to base strut ③ (🔩 x2, Nuts x2, Spacers x4).

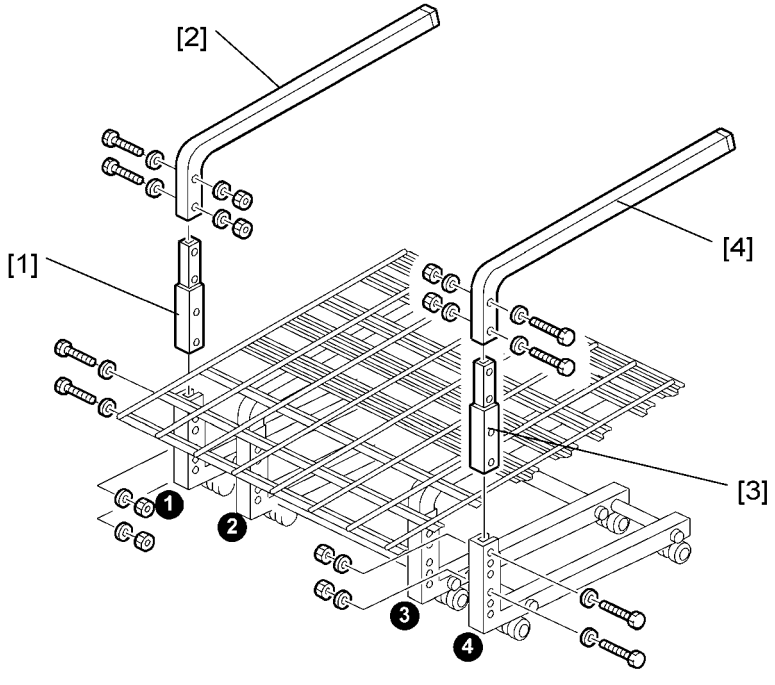


6. Attach the small tray [1] to the tray struts [2] (🔩 x6).
7. Hang the guides [3] on top of the tray (① long, ② short).
8. Hang the stoppers [4] on the tray. (These stoppers can be moved to a higher or lower position to accommodate the length of the copy.)

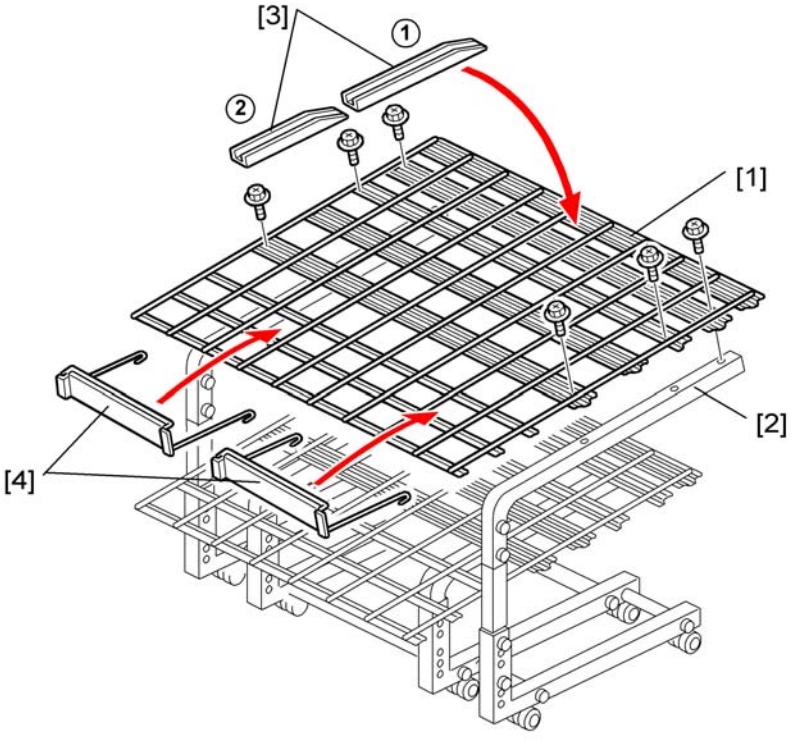


d469i106

9. Attach four mylars to the small tray as shown above.

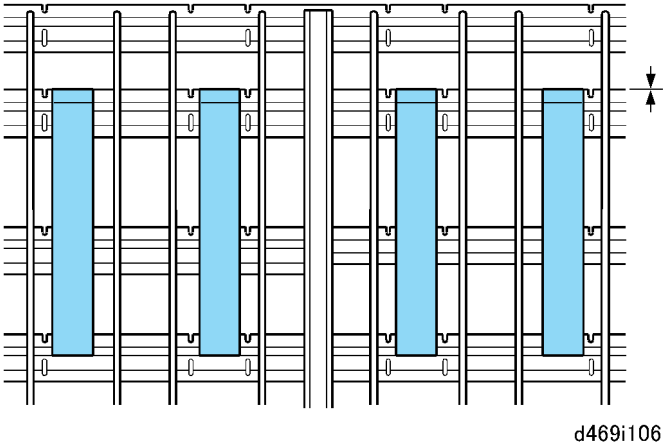


10. Attach middle strut [1] to base strut ① (x2, Nuts x2, Spacers x4).
11. Attach original strut [2] to the middle strut [1] (x2, Nuts x2, Spacers x4).
12. Attach middle strut [3] to base strut ④ (x2).
13. Attach original strut [4] to the middle strut [3] (x2, Nuts x2, Spacers x4).



d469i105

14. Attach the large tray [1] to the tray struts [2] (x6).
15. Hang the guides [3] on the tray (① long, ② short).
16. Hang the stoppers [4] on the tray. (These stoppers can be moved to a higher or lower position to accommodate the length of the original.)



d469i106

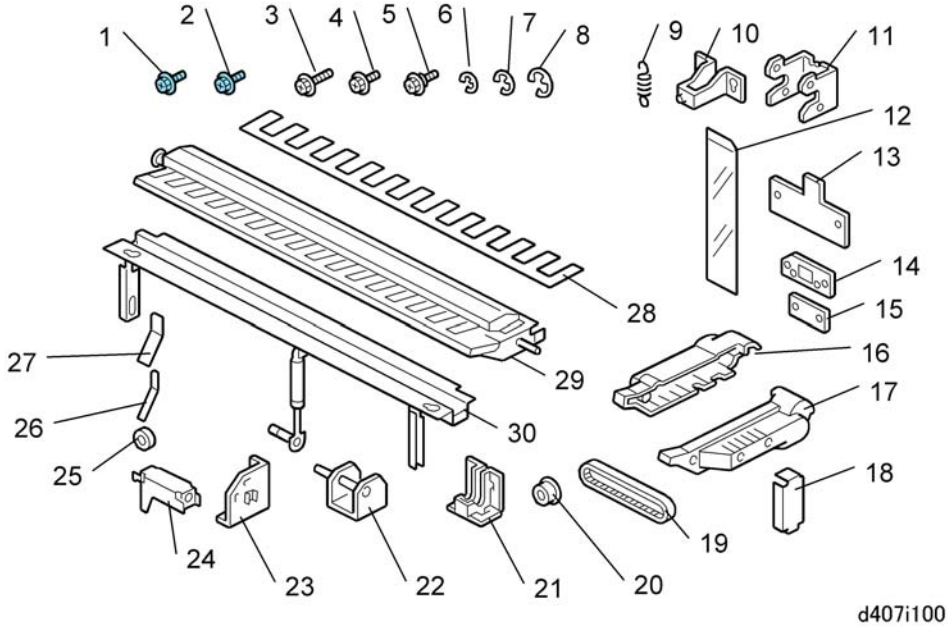
17. Attach four mylars to the large tray as shown above.

Bridge Unit BU6500 (D407) Folder FD6500A (B889)

Important

- The Bridge Unit BU6500 (D407) is required for installation of the Folder FD6500A with the main machine (D046/D049).

Accessories: Bridge Unit



No.	Description	Qty
1.	Screws M3x6	6
2.	Screws M4x8	4
3.	Screws M3x8	11
4.	Screws M3x6	32
5.	Screws: Shoulder	4
6.	E-ring M4	1

No.	Description	Qty
7.	E-ring M6	1
8.	E-rings M10	2
9.	Spring	1
10.	Positioning Bracket	2
11.	Connection Bracket	2
12.	Mylar (Large)	2
13.	T-Plate	1
14.	Connector Harness Bracket	1
15.	Rectangular Plate	1
16.	Side Cover: Left	1
17.	Side Cover: Right	1
18.	Arm Cover	2
19.	Timing Belt	1
20.	Pulley	1
21.	Lower Damper Bracket	1
22.	Lock Bracket	1
23.	Arm Brackets (Left, Right)	2
24.	Cover Arm	3
25.	Collar	2
26.	Mylar (Narrow)	4
27.	Mylar (Wide)	2
28.	Exit Guide Mylar Strip	1
29.	Bridge Unit	1
30.	Damper Unit	1

Before You Begin

1. Unpack the Folder FD6500A (Fan Fold Unit) (B889)

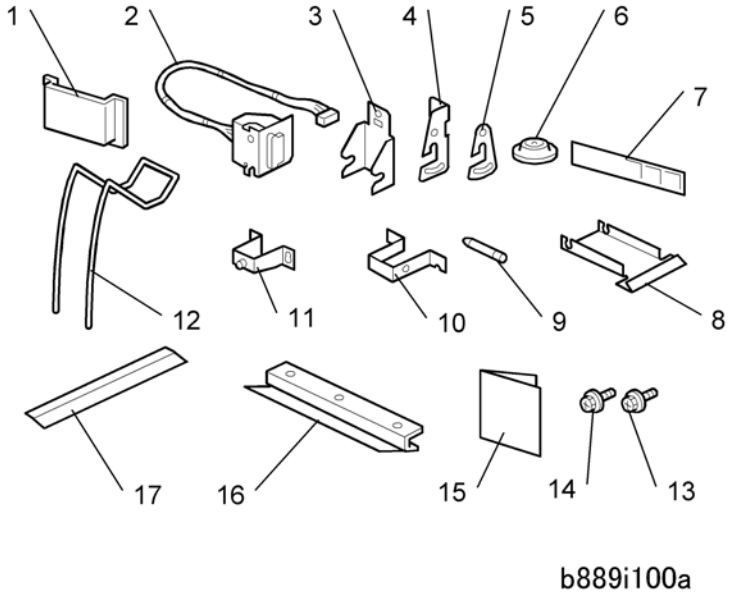
⚠CAUTION

- The fan fold unit weighs 145 kg (319 lb.) and requires two service technicians to move it and install it safely.
- Before installing the fan fold unit, switch off the main machine and disconnect its power cord from the main power source.
- Do not reconnect the main machine and switch it on until after the fan fold unit installation has been completed.

2. Check the accessories and their quantities against the table below.

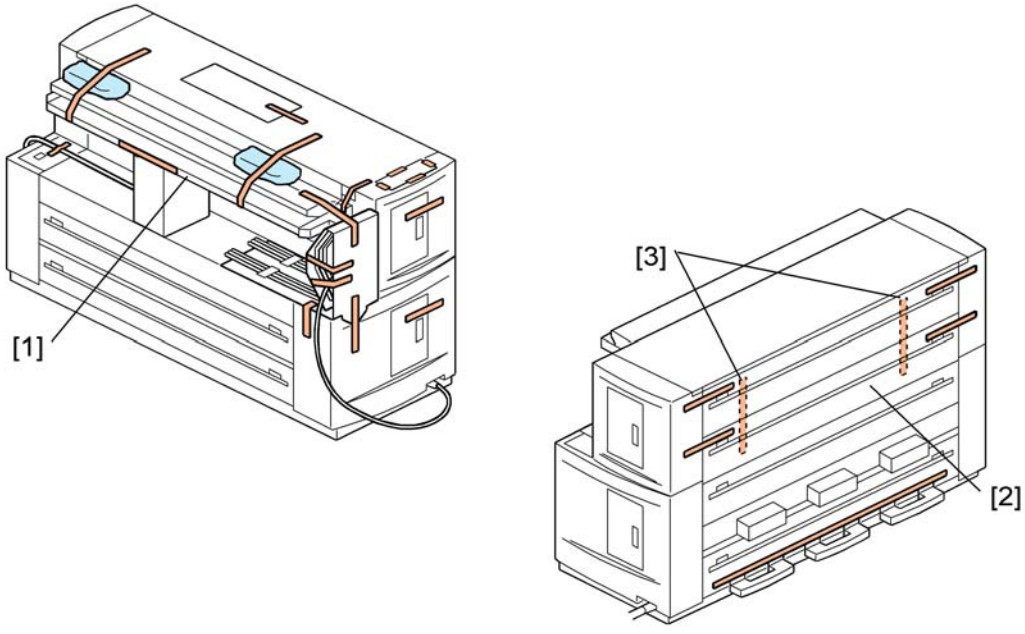
No.	Description	Qty	Comment
1	Operating Instructions Holder	1	
2	Connector Harness	1	
3	Joint Brackets	2	Not used: D046/D049
4	Lock Plate: Right	1	
5	Lock Plate: Left	1	
6	Shoes	4	
7.	Decal	1	
8.	Guide Mylar	1	
9	Pin	2	
10.	Folder Positioning Bracket: Lower	2	
11.	Folder Positioning Bracket: Upper	2	Not used: D046/D049
12.	Rear Copy Tray	3	
13.	Screw (M4x8)	8	For items 3, 4, 5
14.	Screw (M3x6)	15	For items 2, 10, 11, 16
15.	Operating Instructions	1	
16.	Upper Guide Mylars	2	Not used: D046/D049

No.	Description	Qty	Comment
17.	Mylars	2	



⚠CAUTION

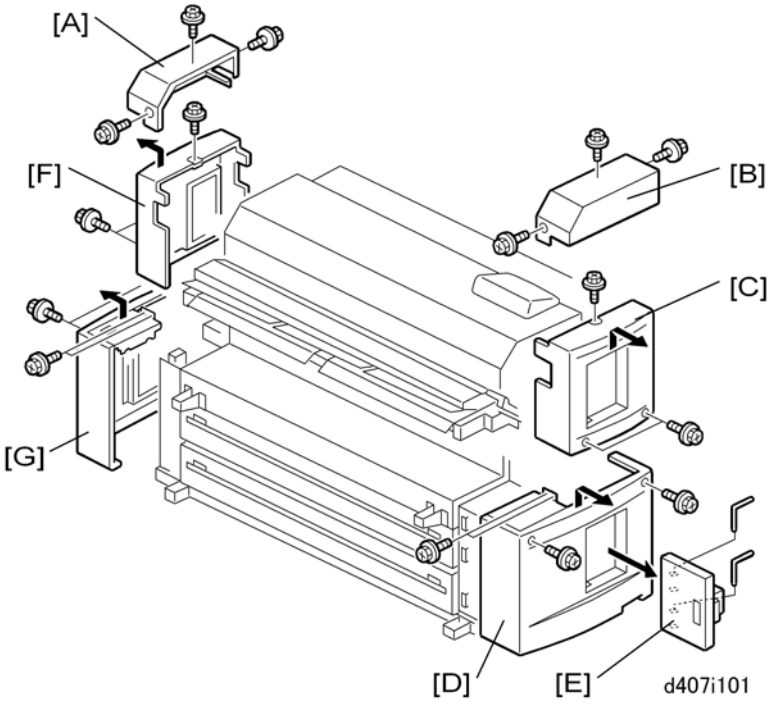
- Do not connect the fan fold unit power cord to a power source during these procedures until you are specifically instructed to do so.



1. Remove the filament tape from the front [1] and rear [2].
2. Open the rear doors, and remove tapes [3] inside the fan fold unit.

Bridge Unit Installation

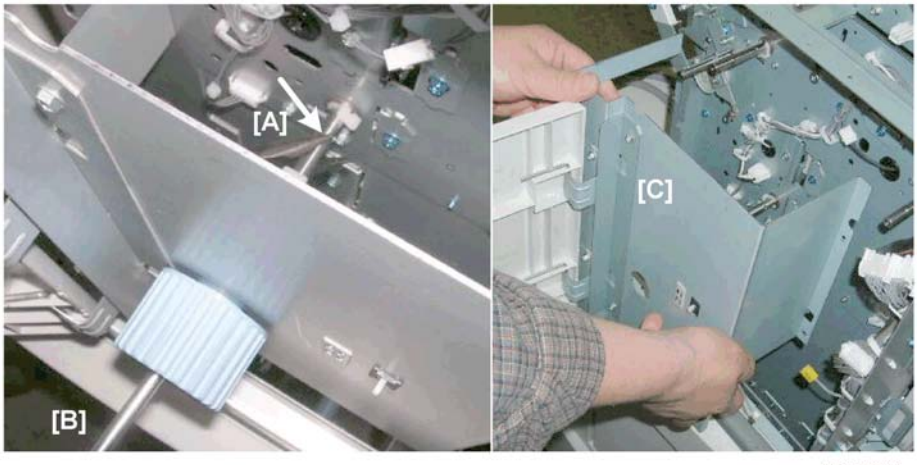
Preparation



1. If the manual feeder is installed, remove:
   [A] Left end cover (x3)
   [B] Right end cover (x3)
2. From the right side of the fan fold unit, remove:
   [C] Right upper cover (x3)
   [D] Right lower cover (x4)
   [E] Right door (L-hinges x2)
3. From left side of the fan fold unit, remove:
   [F] Left upper cover (x3)
   [G] Left lower cover (x4)

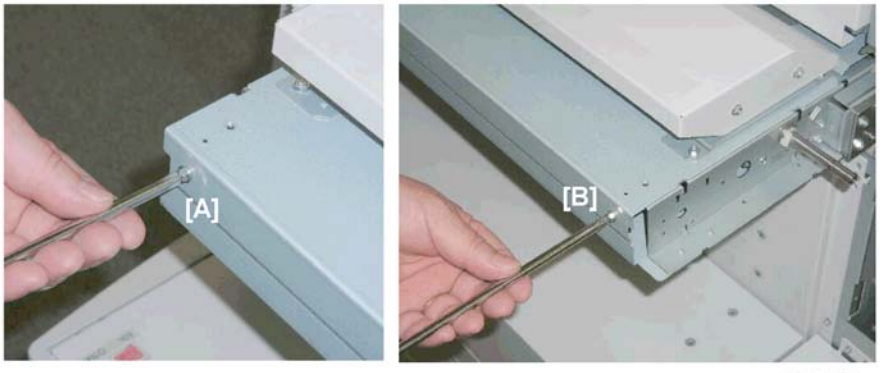
d407i005

4. From the relay unit, remove:
   [A] Paper entrance right cover (x2)
   [B] Paper entrance left cover (x2)



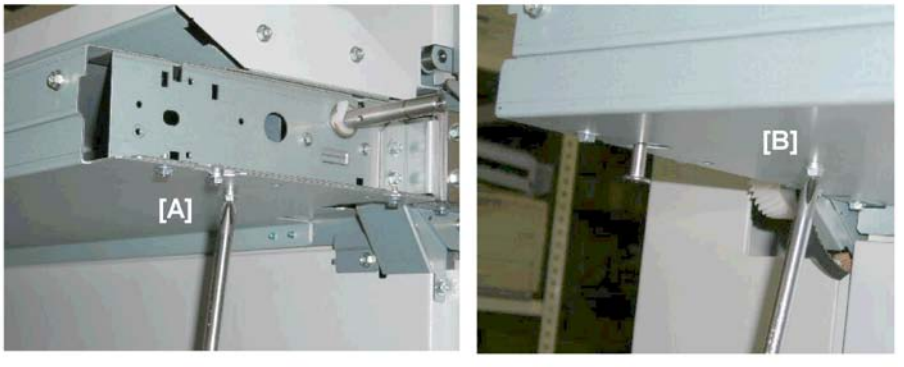
d407i008

5. Open the right door of the fan fold unit.
6. Remove knob N2 (x1). Clamp pliers at [A] to stop rotation of the shaft and use a long screwdriver [B] to remove the screw.
7. Remove the inner cover [C] (x4, x1).



d407i010

8. Fasten shoulder screws to the paper entrance unit on the left end [A] and right end [B] (x2).



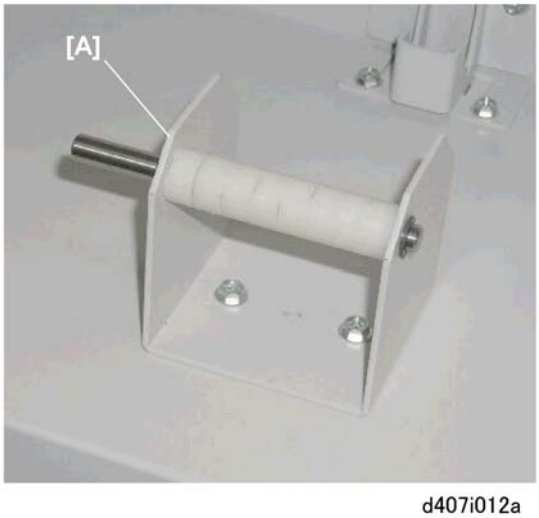
d407i011

9. Fasten shoulder screws under the paper entrance unit on the right [A] and left [B] (x2).

Damper Unit

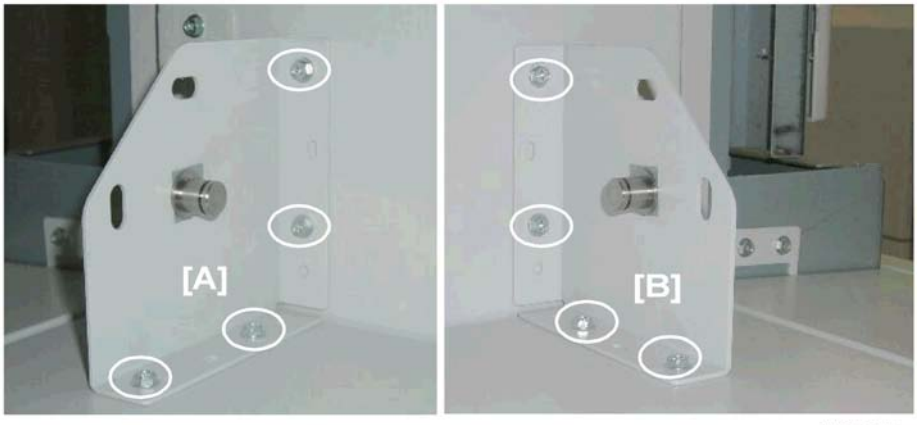
d407i012

1. Attach the lower damper bracket below the center of the relay unit (x6 M3x6).



d407i012a

2. Attach the lock bracket [A] (x2 M3x6).



d407i013

3. Below the paper entrance unit, attach:

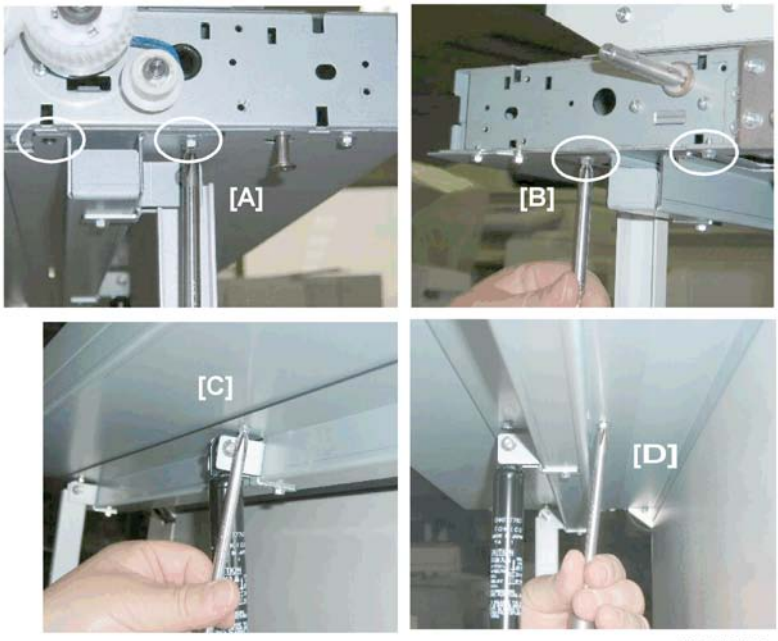
   [A] Left arm bracket (x4 M3x6)

   [B] Right arm bracket (x4 M3x6)

   The brackets are marked "L" and "R" (Left and Right).

d407i014

4. Lift the damper unit [A], and position it.



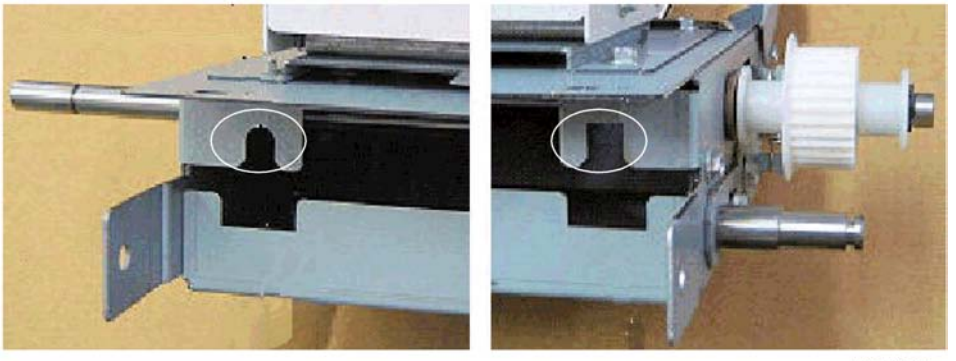
d407i015

5. Fasten the damper unit to the paper entrance unit: (x6 M3x6).
   [A] Left (x2 M3x6)
   [B] Right (x2 M3x6)
   [C] Center front (x1 M3x6)
   [D] Center rear (x1 M3x6)

Bridge Unit

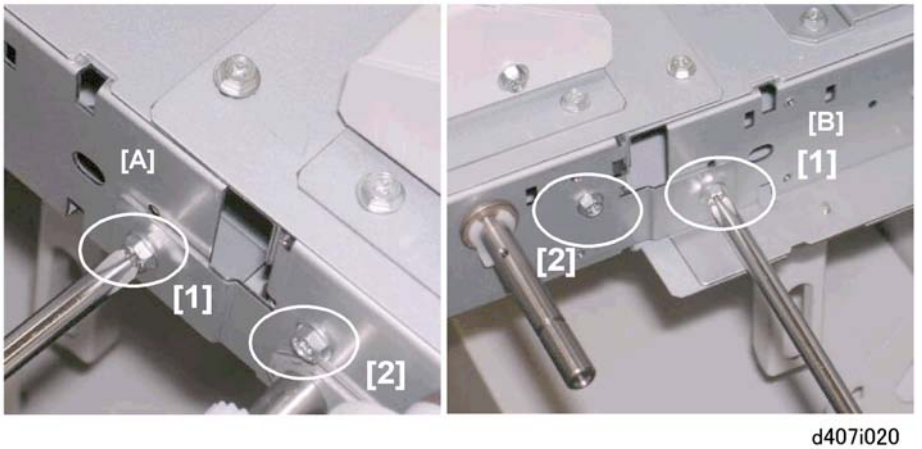
d407i017

1. Lift the bridge unit and place its holes over the two shoulder screws that were previously installed on the paper entrance unit.



d407i018

The illustration above shows the cutouts in the bridge unit that hang over the shoulder screws.

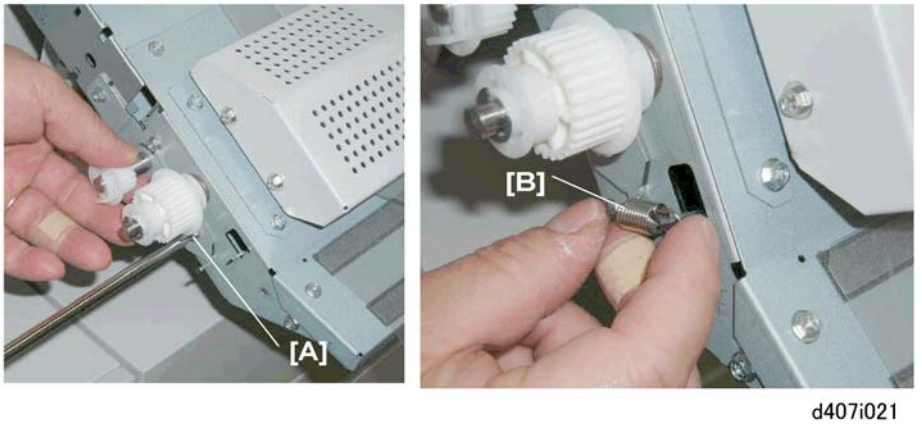


d407i020

2. Fasten the bridge unit to the fan fold unit.

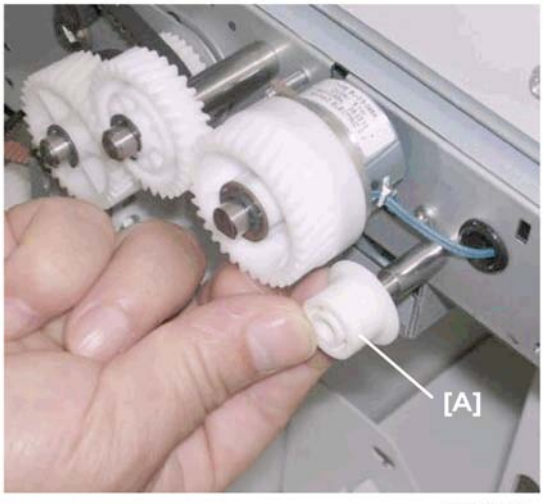
   [A] Left side: Fasten [1] then [2] (x2 M3x6)

   [B] Right side: Fasten [1] then [2] (x2 M3x6)



d407i021

3. On the left, loosen the screw of the timing belt tension plate [A].
4. Attach spring [B].

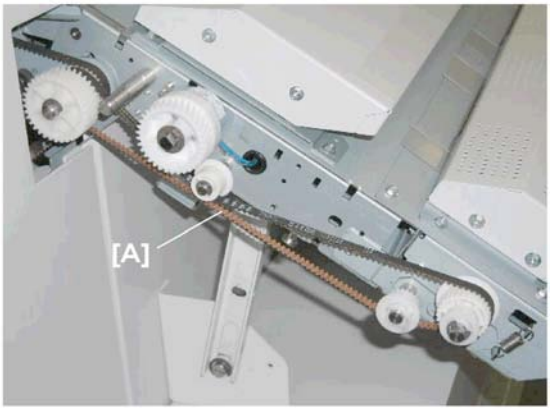


d407i022

5. Attach pulley [A] (℃ x1)

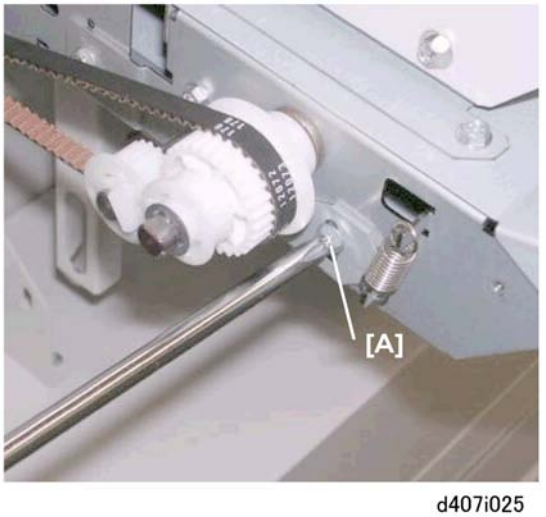
d407i023

6. Remove gear [A] (℃ x1).



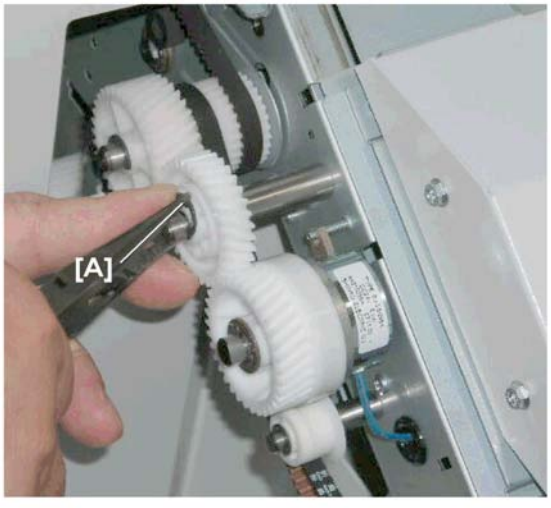
d407i024

7. Set the timing belt [A] over the gears and pulleys.



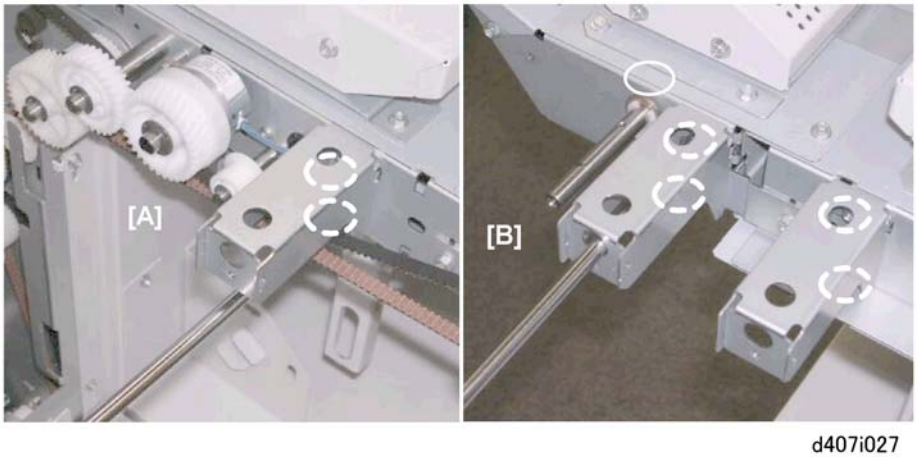
d407i025

8. Tighten the screw of the timing belt tension plate [A].



d407i026

9. Reattach the gear [A] (removed in Step 6) with the accessory e-ring (M6). (Discard the original e-ring removed in Step 6).



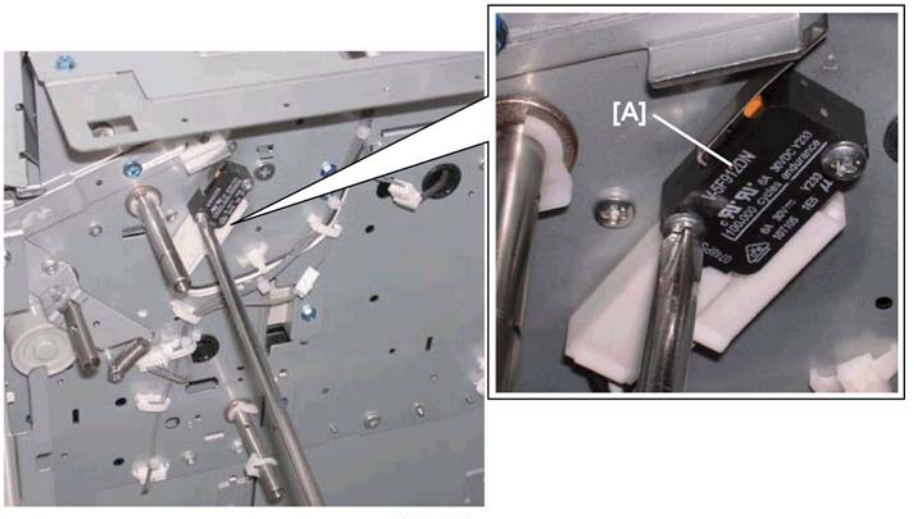
d407i027

10. Fasten the cover arms.

    [A] Left side: 1 Cover arm (x2 M3x8)

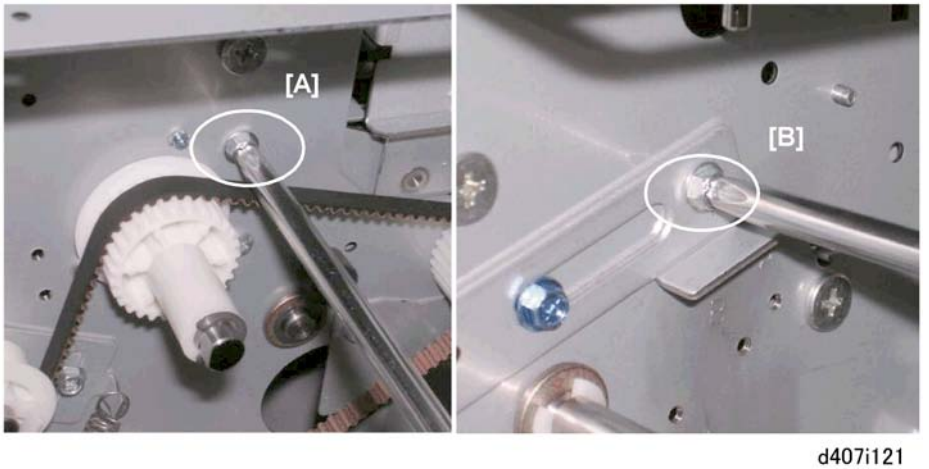
    [B] Right side: 2 Cover arms (x2 each M3x8)

Move the Bridge Unit Position Switch



d407i120

1. Remove the switch [A].

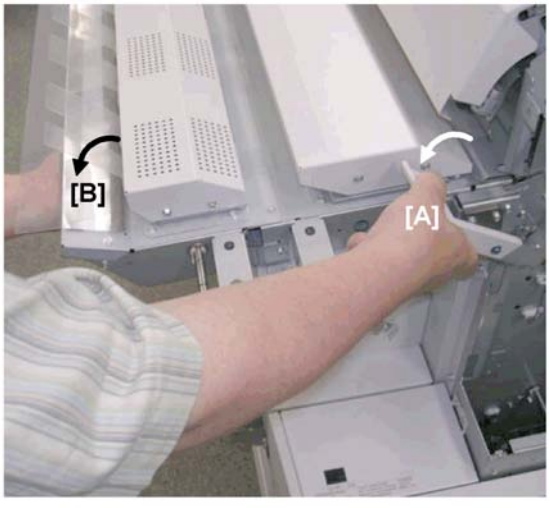


d407i121

2. Remove the screws:

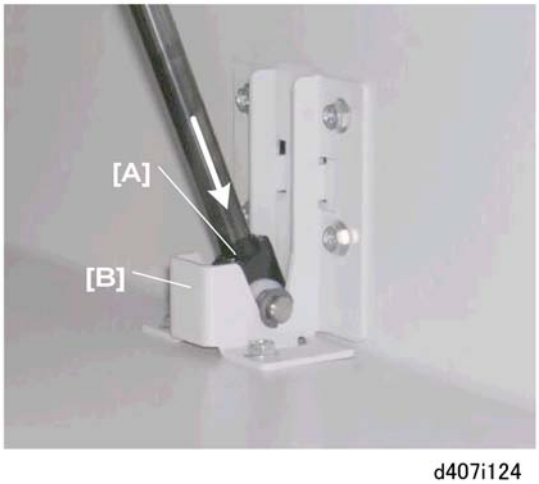
   [A] Left side

   [B] Right side



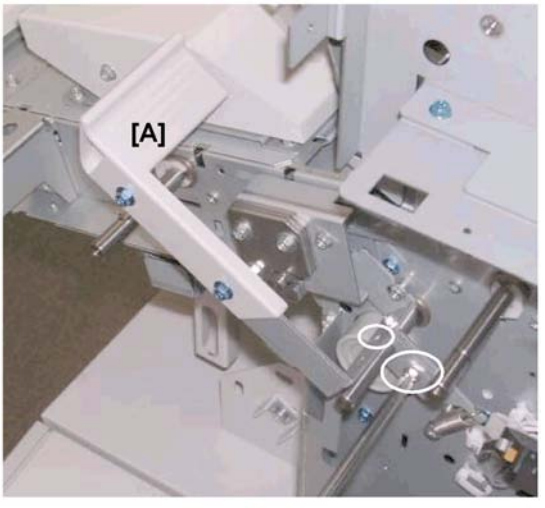
d407i122

3. Press lock lever [A] and lower the bridge unit [B].



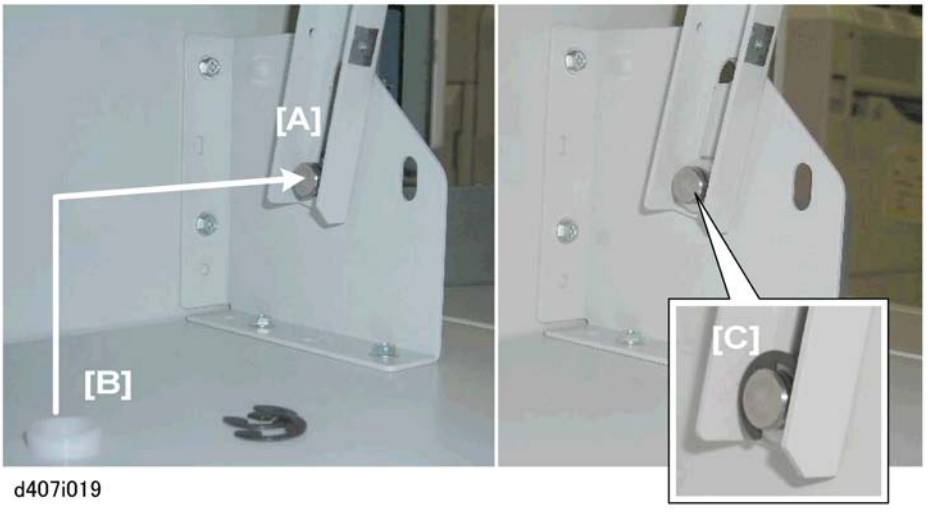
d407i124

4. Set the damper plunger [A] in the lower damper bracket [B].



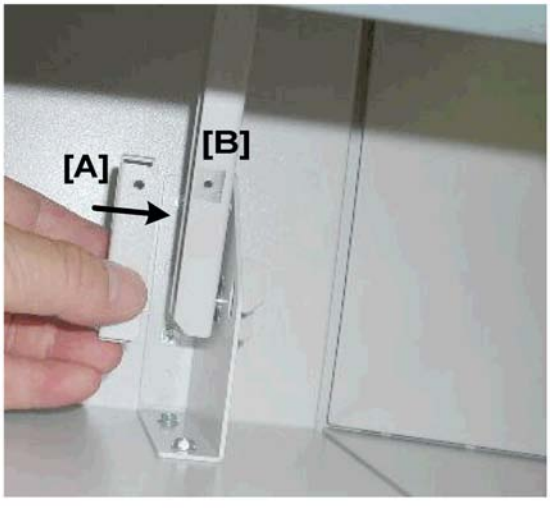
d407i123

5. Remove the lock lever [A] (x2)



d407i019

6. On the right, fit the arm [A] over the pin of the arm bracket.
7. Attach a collar [B] and fasten it [C] (x1 M10).

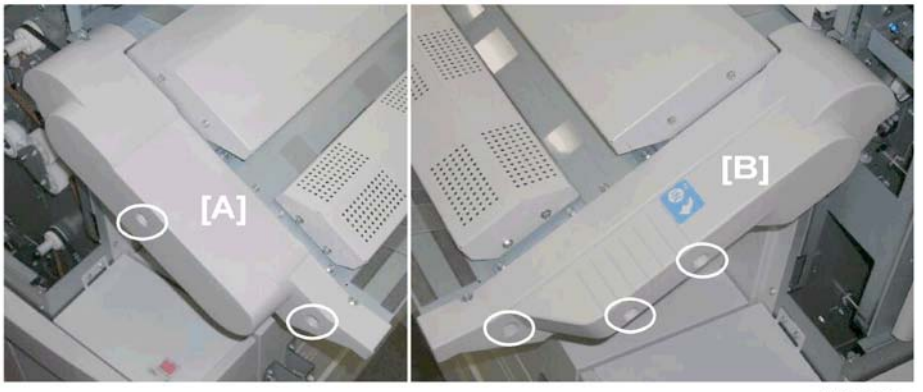


d407i031

8. Fasten arm cover [A] to the right bracket [B] (x1 M3x6).
9. Repeat Steps 6, 7, 8 to attach the left arm.

d407i108

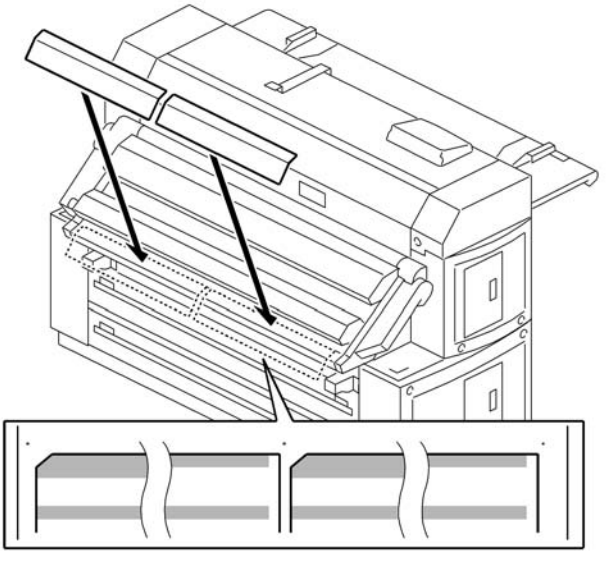
10. Locate the two holes marked "B" [1].
11. Fasten the microswitch [2] with screws to the "B" holes.



d407i032

12. Attach the covers.
    [A] Left cover (x2 M3x8)
    [B] Right cover (x3 M3x8)

Mylars

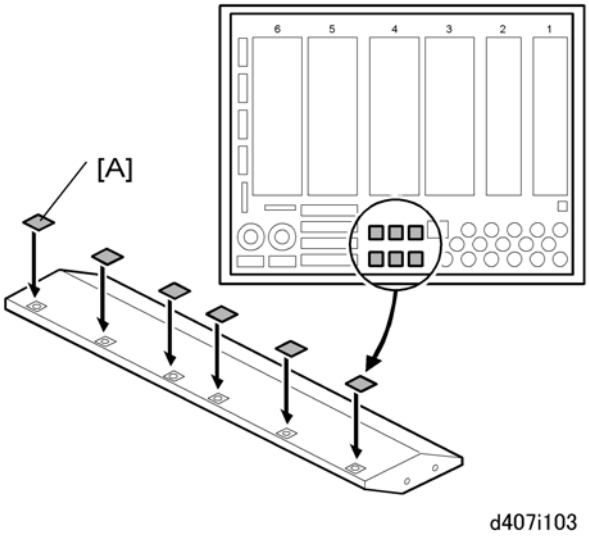


d407i102

1. Use the holes as a reference to position the sponge mylars on the bridge unit.
    - These sponge mylar strips are provided as accessories with the Folder FD6500A (B889).
    - Clean the surface before attaching the mylars.

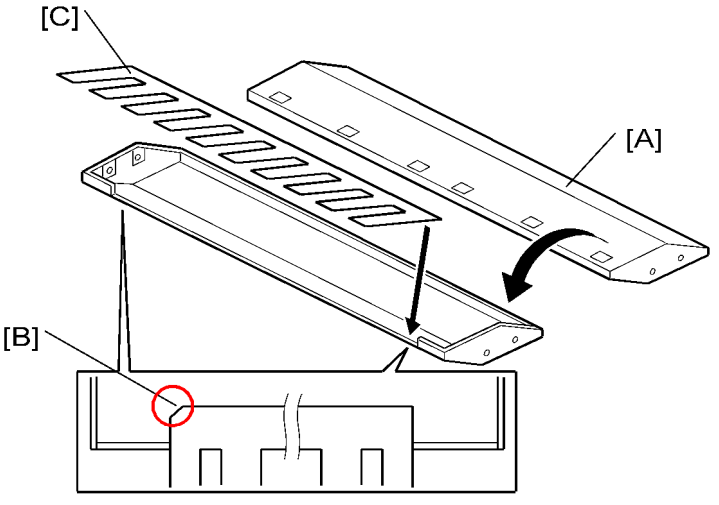
d407i034

2. Remove the paper entrance cover [A] of the fan fold unit (x4).
3. Clean the surface of the paper entrance cover.



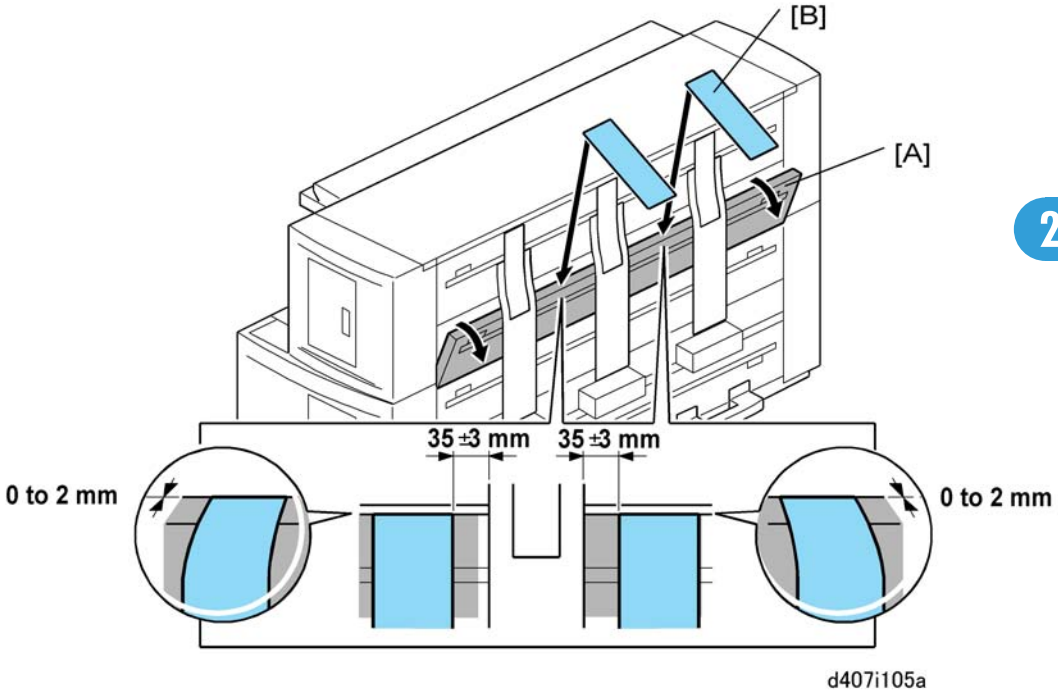
d407i103

4. Attach the square seals [A] to the paper entrance cover.

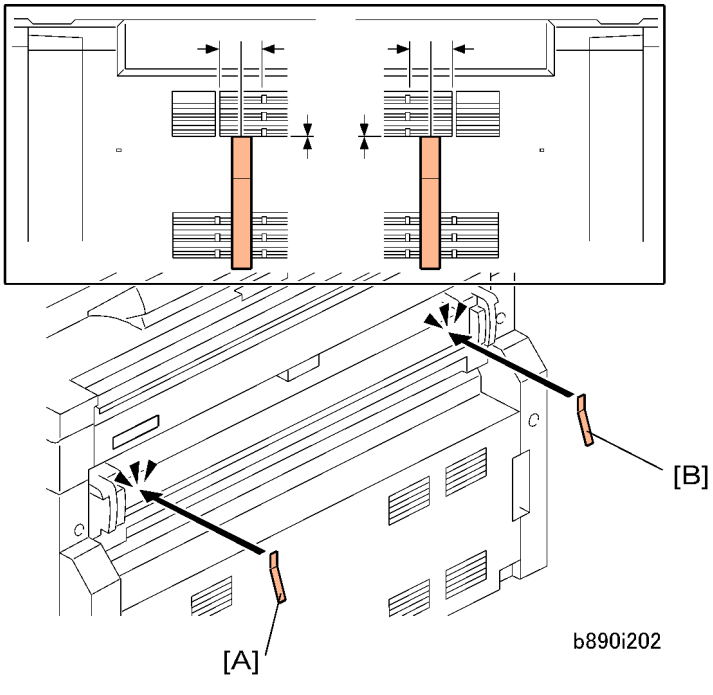


d407i104

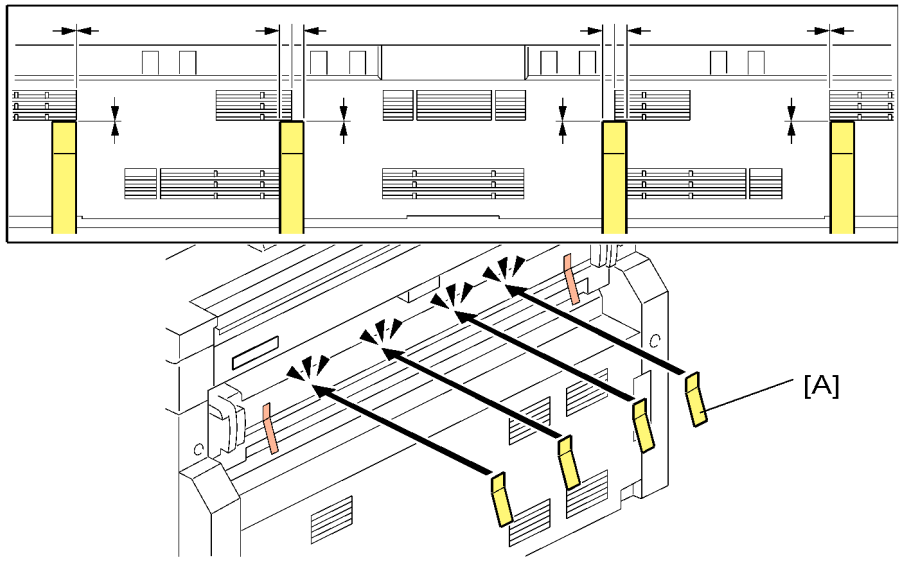
5. Turn over the paper entrance cover [A].
6. Clean the surface of the cover edge where the mylar strip will be attached.
7. Using the small holes as reference points and with the beveled corner [B] on the left, attach the exit guide mylar [C].
8. Reattach the paper entrance cover to the unit.
9. Reattach all covers removed from the fan fold unit and manual feed unit.



10. Open cover [A].
11. Attach the large mylars [B] to cover N5.



12. Attach the wide mylars [A] and [B] to the fusing exit cover of the main machine.

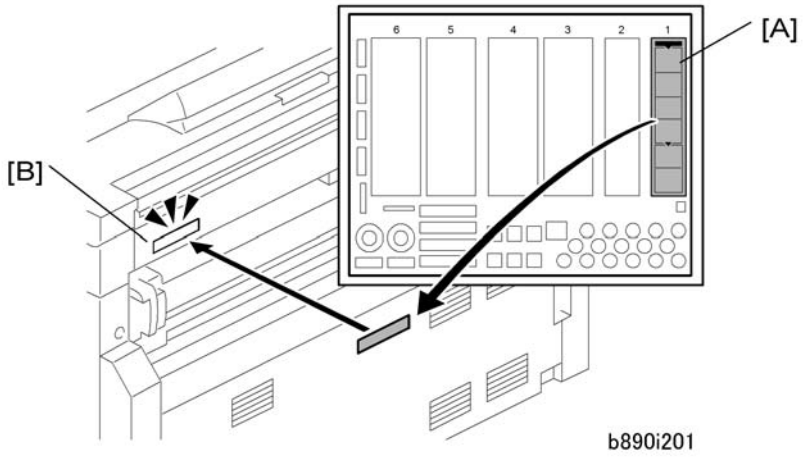


13. Attach the narrow mylars to the fusing exit cover of the main machine.

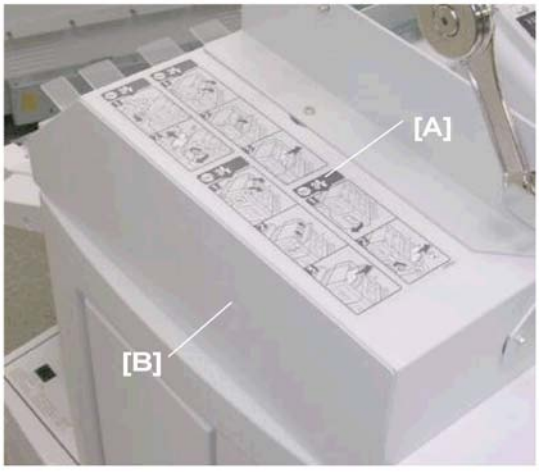
Decals

Important

- **These decals are provided as accessories with the Folder FD6500A (B889).**



1. Attach decal "1" [A] to the original rear exit guide [B].



db80i928

2. Attach decal "3" [A] to the right end cover of the manual feeder [B].

Note

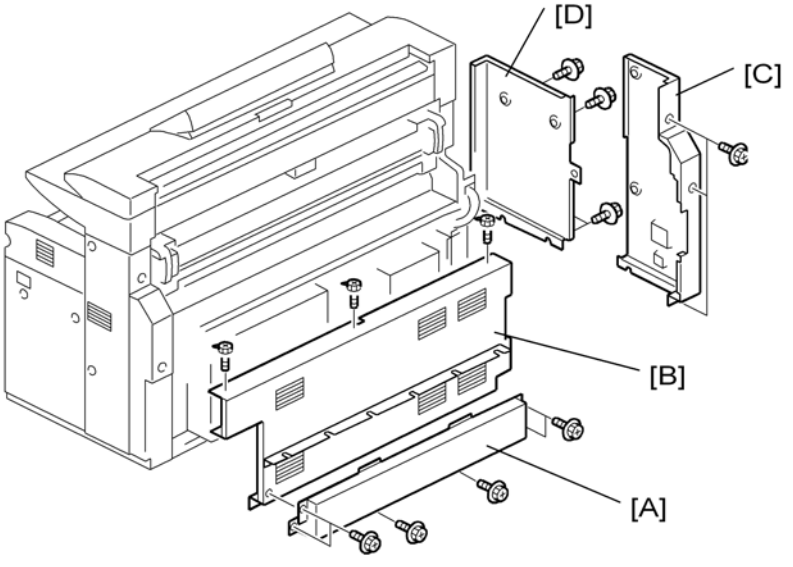
- If the manual feeder is not installed, attach the decal to the right upper cover of the Folder FD6500A at the same position.

d890i929

3. Attach "N1" decal [A] to the right side cover of the bridge unit.

Fan Fold Unit Installation

Fan Fold Unit



b890i104

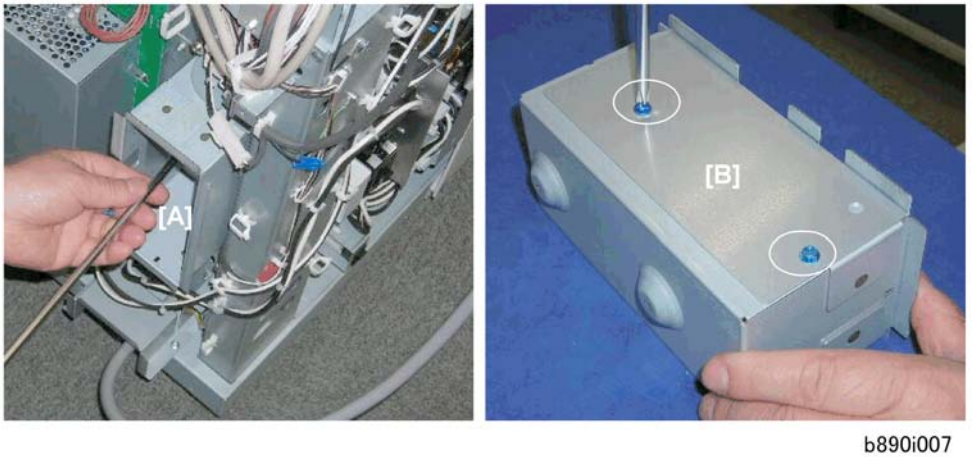
1. Remove:

   [A] Base plate (x6)

   [B] Rear cover (x3)

   [C] Left rear cover (x7)

   [D] Left front cover (x6)



b890i007

2. Remove:

   [A] Inner cover (x2)

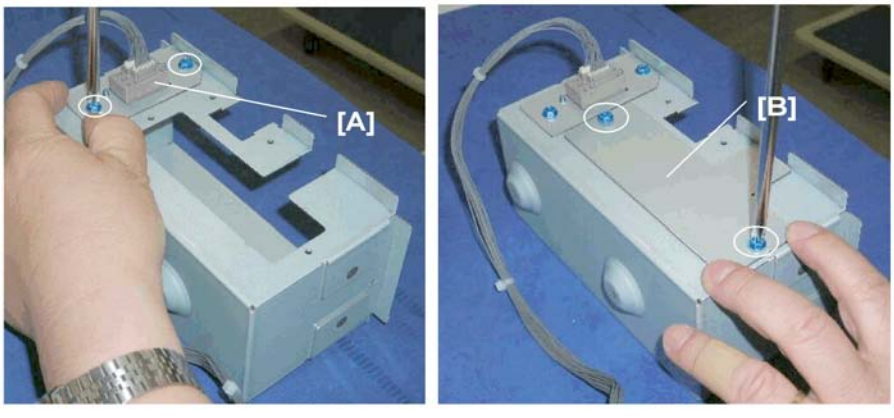
   [B] Cover plate (x2) (Keep these screws)

d407i125

3. Replace connector harness bracket [A] with bracket [B]:

   [A] Connector harness: Folder FD6500A Accessory

   [B] Connector harness bracket: Bridge Unit BU 6500 Accessory

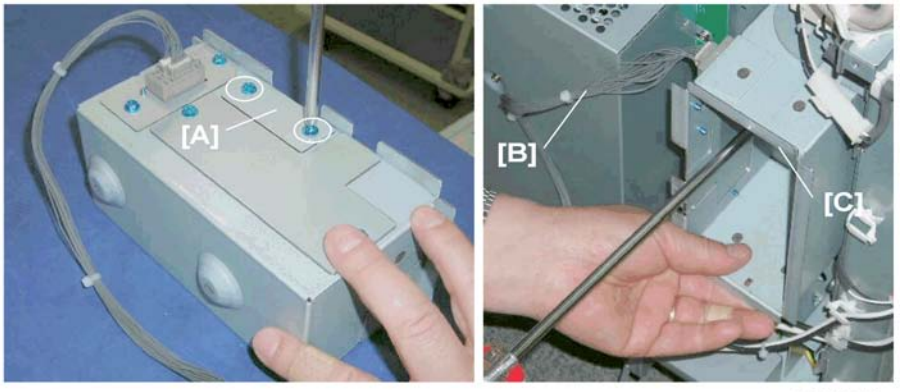


b890i008

4. Attach:

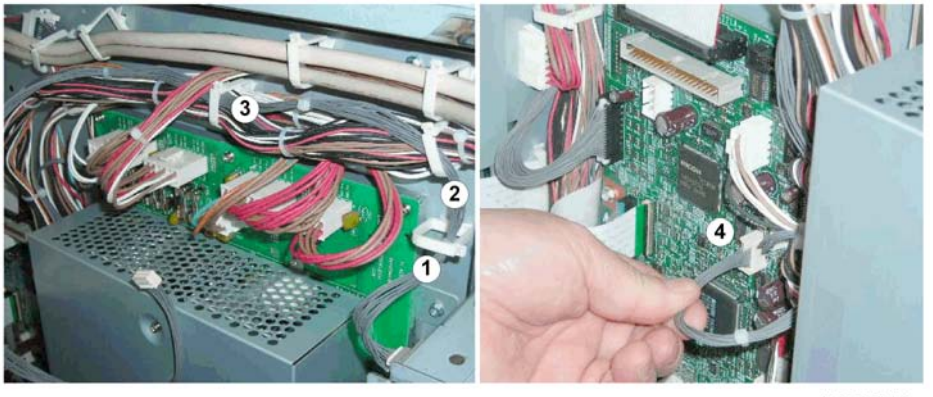
   [A] I/F connector plate (x2) (Use the screws removed from the plate in the previous step.)

   [B] T-plate (x2)



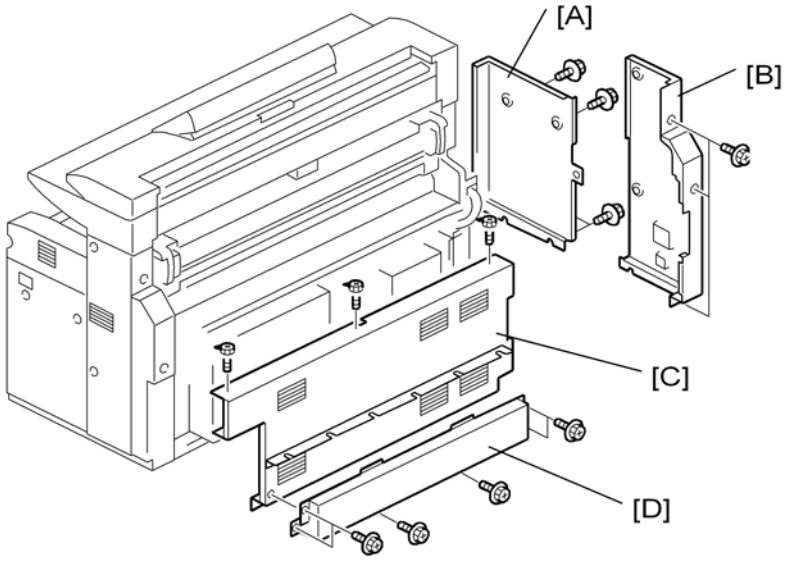
b890i009

5. Attach the small rectangle plate [A] (x2).
6. With the I/F cable [B] to the left, reinstall the inner cover [C] (x2).



b890i010

7. Open harness clamps ①, ②, ③, then route the I/F cable through the open clamps, then close the clamps (x3).
8. Insert the I/F connector ④ at connection point "208".



b890i104

9. Reattach:

   [A] Left front cover (x4)

   [B] Left rear cover (x7)

   [C] Rear cover (x3)

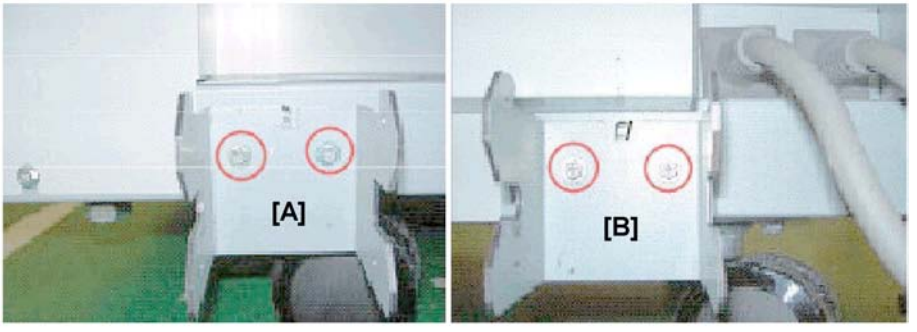
   [D] Base plate (x6)

Important

- **In the following steps, use the positioning joint brackets and joint brackets provided as accessories with the Bridge Unit BU6500.**

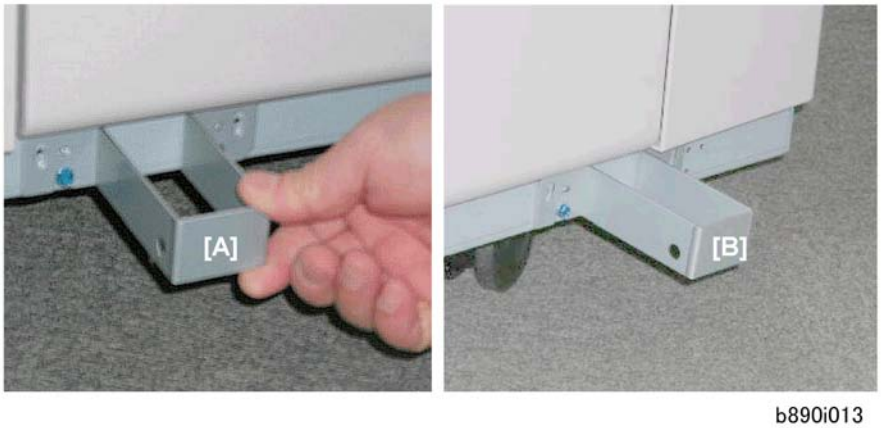
d407i037

10. Attach the left and right positioning brackets [A] and [B] to the front of the fan fold unit (x2 each).



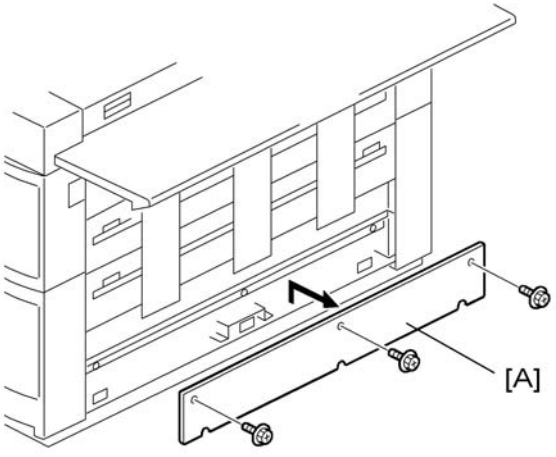
d407i038

11. Attach the left and right joint brackets [A] and [B] to the rear bottom edge of the main unit.



b890i013

12. Attach the following to the front of the fan fold unit:
    [A] Right lower positioning bracket (x2)
    [B] Left lower positioning bracket (x2)



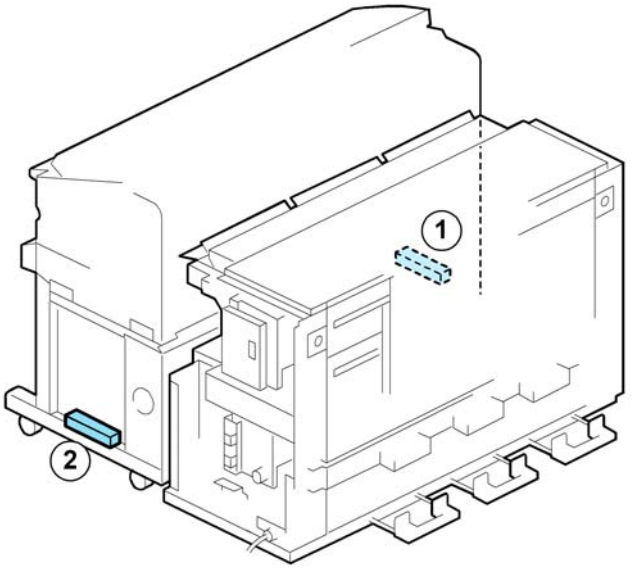
b890i105

13. At the rear of the fan fold unit, remove the bottom panel [A] (x3).

b890i018

14. On the left side of the fan fold unit, remove the lower cover (x4).
15. Remove the red tag, brace, and screw [A] (x1).

Leveling and Docking

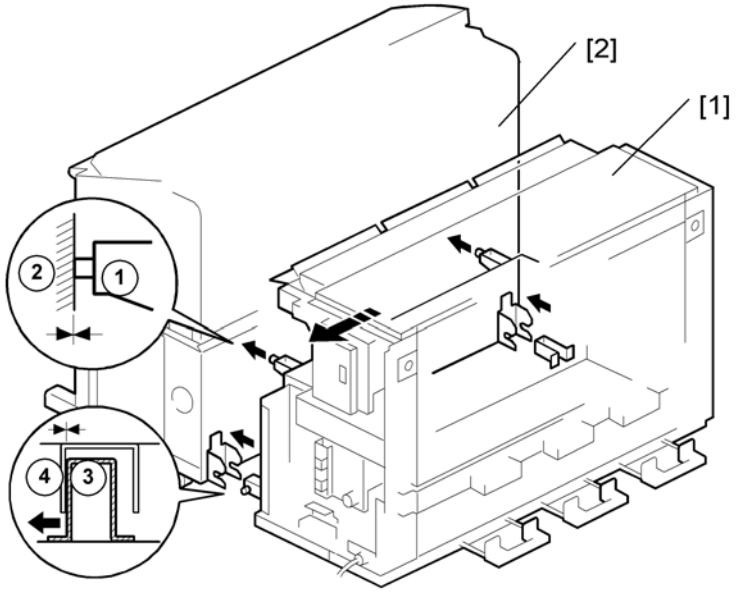


b889i203a

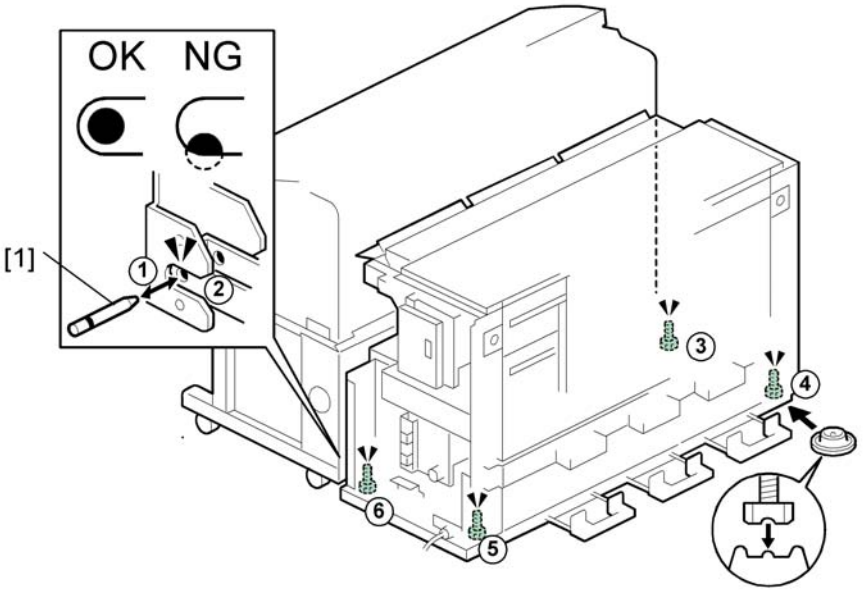
1. Level the main machine.

Important

- **The main machine should already have been leveled (side-to-side) at installation. If the main machine has not been leveled side-to-side, this must be done before doing the procedure below (leveling front-to-rear).**
- Set the level on the left bottom support ① and then on the right bottom ② support.
- Use a wrench to turn the nut on the leg at each corner under the machine to adjust the height.
- The machine should be level (front to rear) on both sides to within ±0.15 mm/m.

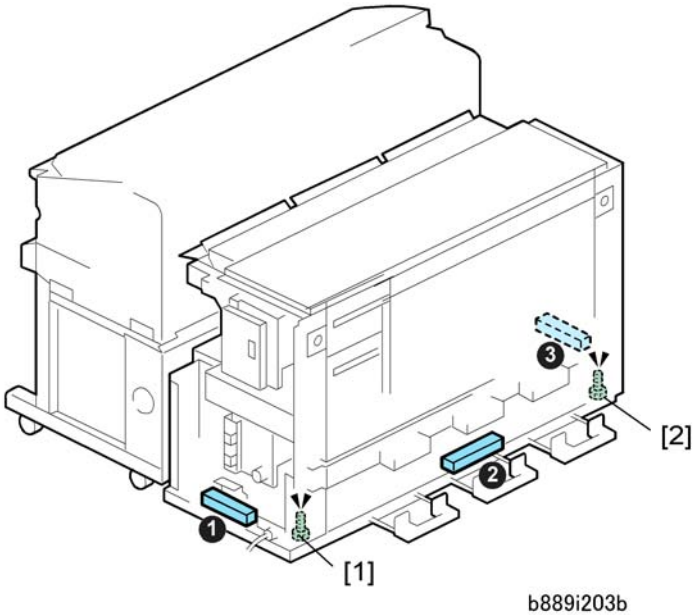


2. Push the fan fold unit [1] against the back of the machine [2].
3. Make sure that the fan fold unit is aligned properly with the back of the main machine.
    - At the top and on both sides, make sure that upper positioning bracket ① of the fan fold unit is touching the back of the main machine ②. There must be no gap here.
    - At the right bottom side, make sure that the lower positioning bracket ③ of the fan fold unit is touching the outer arm of the joint bracket ④ of the main machine.



b889i202b

4. On each side of the unit, insert the pin [1] through the arms of the joint bracket ① into the hole in the lower fan fold unit positioning bracket ②.
    - If the pins cannot be inserted because the holes are not aligned, use a wrench to turn the nuts on the legs under each corner of the fan fold unit until the holes are aligned.
    - ③ and ④ must both be adjusted with the same number of turns.
    - ⑤ and ⑥ must both be adjusted with the same number of turns.
5. Remove both pins after you make sure that they can be easily inserted.

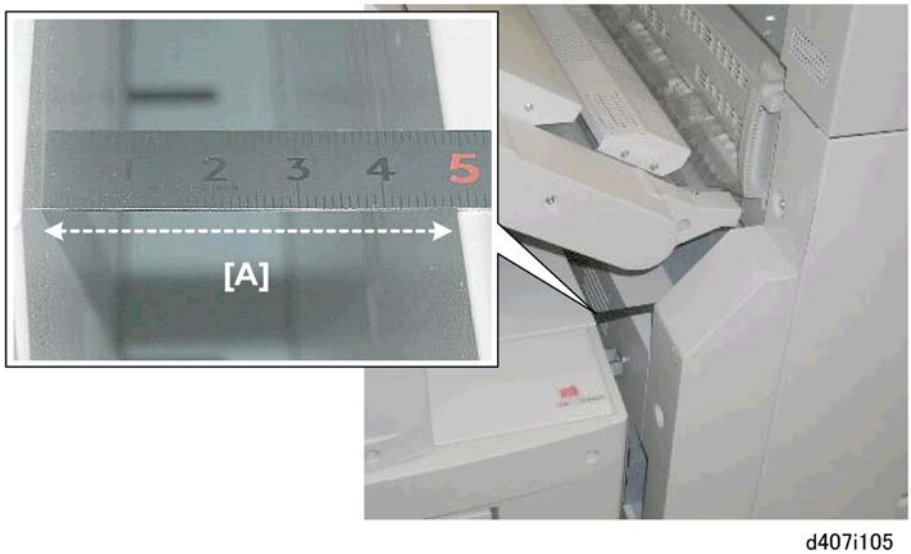


b889i203b

6. Level the fan fold unit.

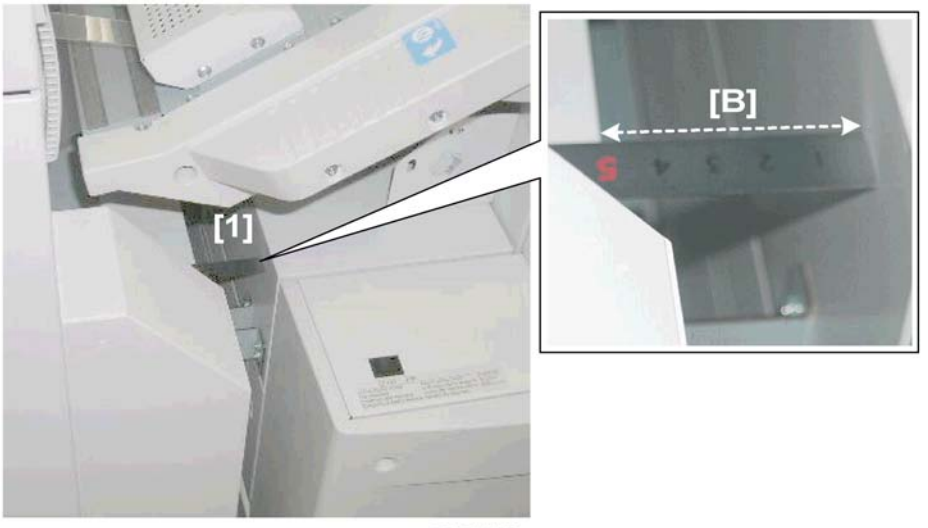
Important

- **The fan fold unit must be level within ±0.15 mm/m on the right, left, and rear sides.**
- Set the level on each side of the fan fold unit as shown above.
- Level the sides of the fan fold unit in this order: ① right, ② rear, ③ left.
- Use a wrench to adjust the nuts on the right leg [1] and left leg [2] to raise or lower the fan fold unit until it is level.



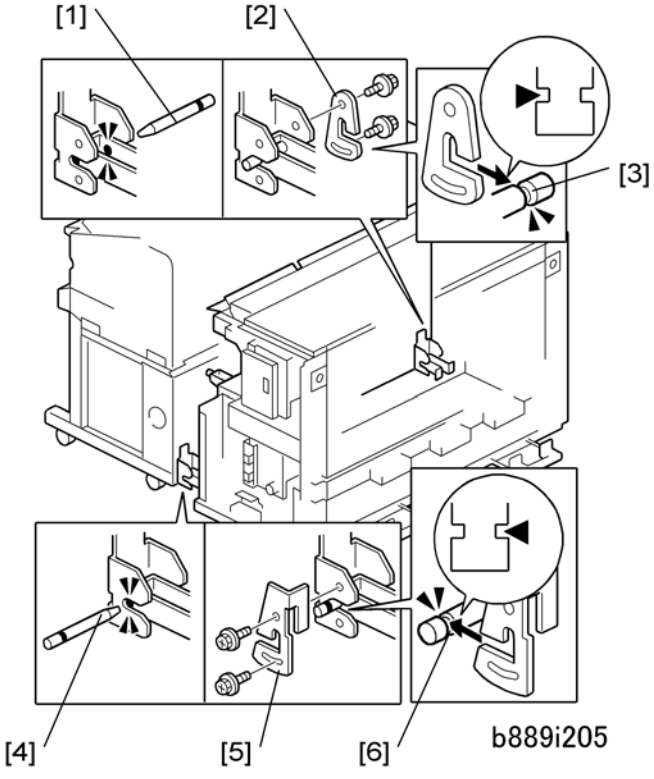
d407i105

7. At the left rear corner of the main machine, measure the distance [A] between the bridge unit and the main machine. (This should be about 49.5 to 50 mm.)



d407i106

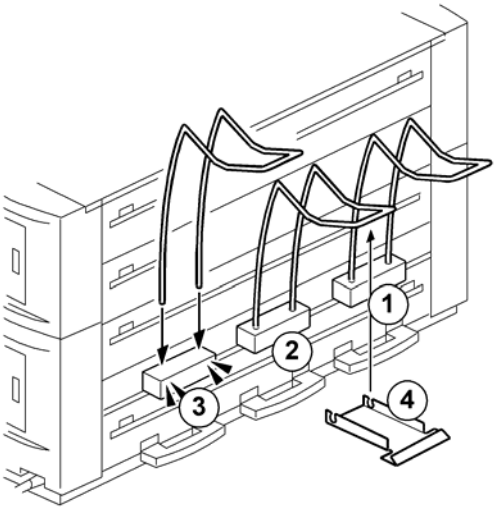
8. At the right rear corner of the main machine, measure the distance [B] between the bridge unit and the main machine. (This should be about 49.5 to 50 mm.)
9. The difference between the measured distances on the left and right ([A] – [B]) must not be more than 0.5 mm.



10. On the left side:
    - Insert the pin [1]
    - Attach the lock plate [2] (x2).

    Note

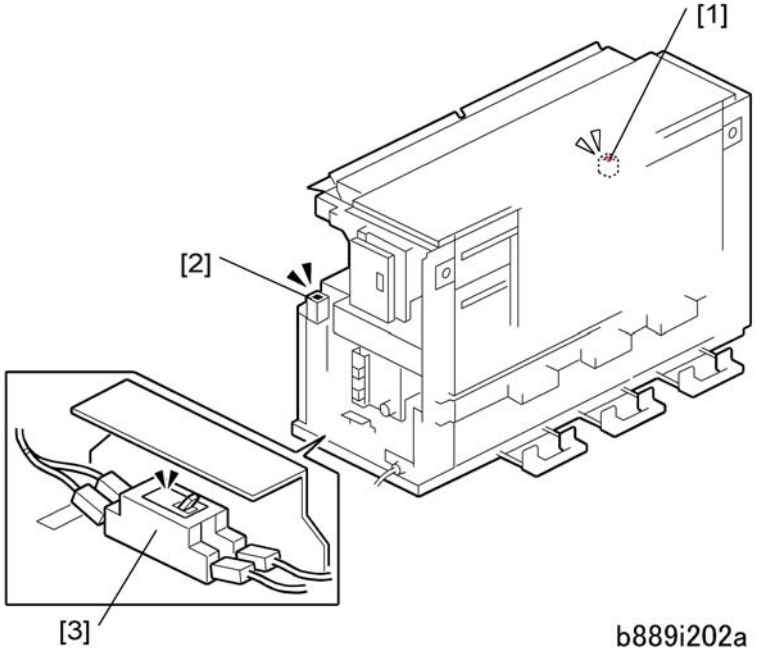
    - The shapes of the left lock plate [2] and right lock plate [5] are different.
    - Confirm that the groove of the pin [3] is in the slot of the lock plate.
11. On the right side:
    - Insert the pin [4]
    - Attach the lock plate [5] (x2).
    - Confirm that the groove of the pin [6] is in the slot of the lock plate.
12. Reattach all covers and doors.



b889i110

13. Attach the guides of the copy tray ①, ②, ③ to the rear of the fan fold unit.
14. Attach the guide mylar ④ to the middle copy tray guide.

Checking the Fan Fold Unit Circuit Breaker



b889i202a

Important

- **On the fan fold unit, check that the main switch [1] and heater switch [2] are off.**

1. Connect the fan fold unit power cord to the power source.
2. Look at the circuit breaker [3].
   - With the horizontal line displayed on the circuit breaker, use the tip of a small screwdriver to depress the breaker test button.
   - The circuit breaker should flip to the "O" position. This indicates that the circuit breaker is operating normally.
   - If the circuit breaker does not flip to the "O" position, the circuit breaker must be replaced.
   - Push the lever to display the vertical line again and reset the machine for normal operation.

     Important

     - **The fan fold unit will not switch on if the lever remains at the "O" position.**
3. Disconnect the fan fold unit power cord from the power source.

Power On

The fan fold unit must be switched on before the main machine.

1. Switch on the fan fold unit.
2. Switch on the main machine.

Note

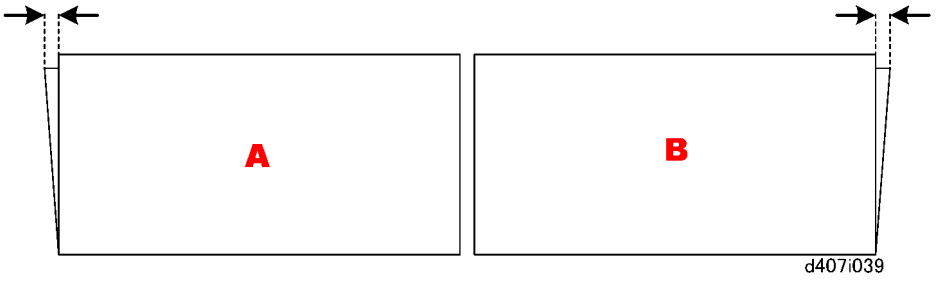
- The fan fold unit must be switched on first, so that the main machine will recognize the fan fold unit after the main machine is powered on and starts its initialization procedure.

Skew Adjustment

1. After setting up the system, do a folding test run with at least 10 sheets of A1 LEF paper.

   Important

   - **Before doing this procedure, measure the distances between the bridge unit and the left and right rear corners of the main machine. The difference between these two distances must not be more than 1 mm.**
2. Measure the amount of skew.
   - If the average amount of skew is less than ±0.5 mm, no adjustment is required.
   - If the average amount of skew is more than ±0.5 mm, adjustment is required.



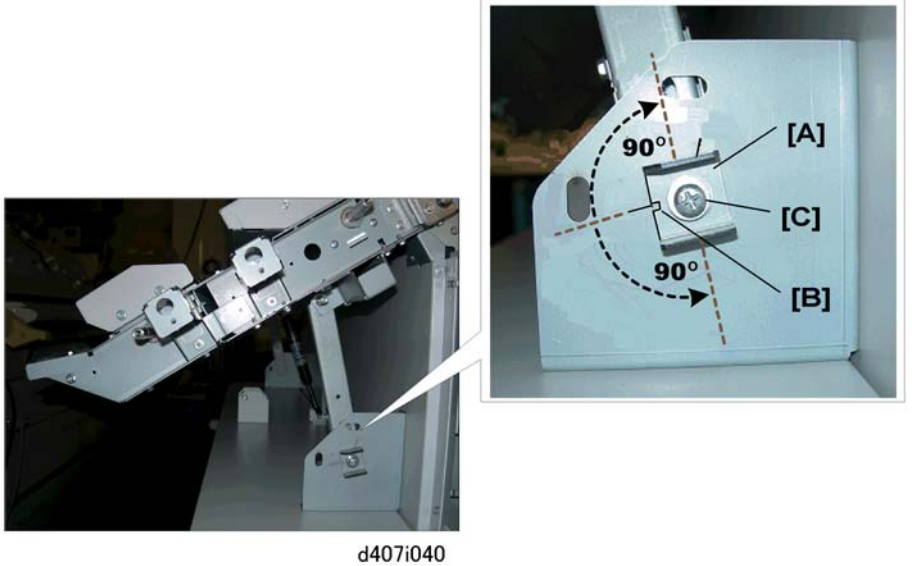
3. Do the adjustment:

For	Adjust:	Turn plate:
A	Right side	Right (cw)
B	Right side	Left (ccw)

- In the table above, "cw" means "clockwise", "ccw" means "counter-clockwise".
- The range of adjustment is ±1.5 mm within an arc of 90 degrees (±0.75 mm if rotated only 45 degrees.)

4. To determine the amount of adjustment, divide the amount of measured skew (mm) by 0.0166 mm. Refer to the detailed instructions below.

Adjustment Plates



The photo above shows the **right side** (viewed from the front of the main machine).

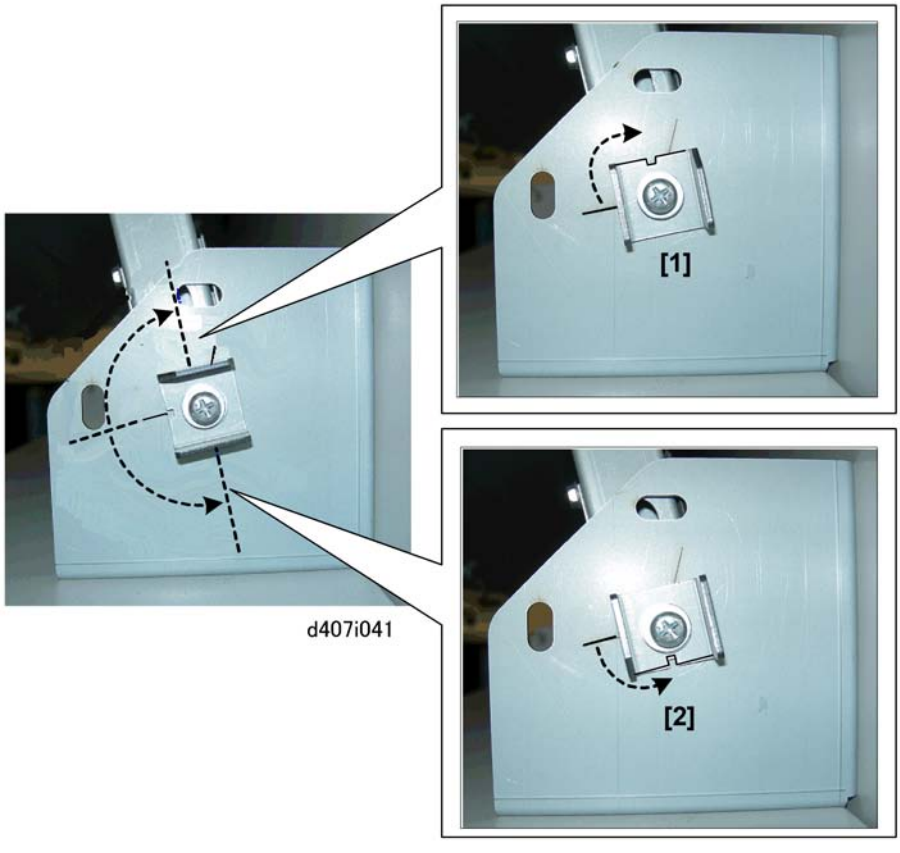
- [A] is the adjustment plate.

- [B] is the notch (shown at the starting position).

Loosen the screw [C], change the position of the plate, then re-tighten the screw.

The dotted arrows show the range of adjustment **up** (cw) and **down** (ccw) (90 degrees). This adjustment mechanism is the same on the **left side** of the machine.

Right Side Adjustment



[1] The plate has been rotated right (clockwise) 90 degrees.

[2] The plate has been rotated left (counter clockwise) 90 degrees.

Rotation	To adjust for
90°	1.5 mm
67°	1.2 mm
45°	0.75 mm

Examples

Each degree of rotation adjusts for 0.0166 mm.

- If the amount of "A" type skew is 0.8 mm, the plate should be rotated right approximately 50 degrees (0.8/0.0166 = 48.2)
- If the amount of "B" type skew is 0.8 mm, the plate should be rotated left approximately 50 degrees (0.8/0.0166 = 48.2)

Manual Feeder (D333)

Before You Begin

The manual feeder is installed on top of the Folder FD6500A (B889).

Safety

⚠CAUTION

- The Manual Feeder D333 (hereafter "manual feeder") weighs 31 kg (68.2 lb.) and requires two service technicians to move it and install it without bending or warping its shape.
- Before installing the manual feeder: 1) Switch off the main machine and folder unit, 2) Disconnect both the main machine and folder unit from the power source.
- Do not reconnect the main machine and switch it on until after the manual feeder has been installed.

Location

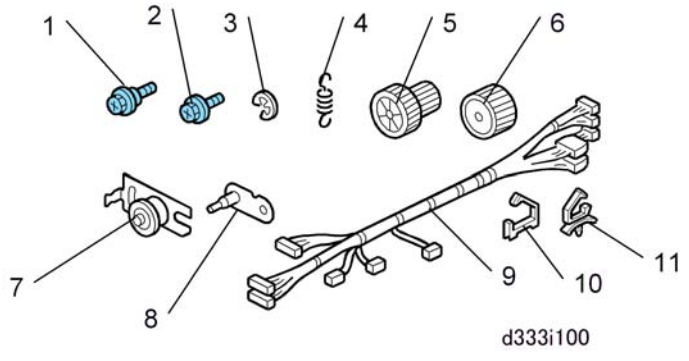
The environmental specifications of the main machine apply to the manual feeder as well.

Accessories

Check the accessories and their quantities against the table below.

No.	Description	Qty
1	Shoulder Screw	1
2	Screw (M3 x 8)	8
3	E-ring	2
4	Spring	1
5	Timing Pulley/Gear	1
6	Gear	1
7	Tension Bracket	1
8	Lock Plate	2
9	Harness	1

No.	Description	Qty
10	Edge Clamps	2
11	Clamps	3

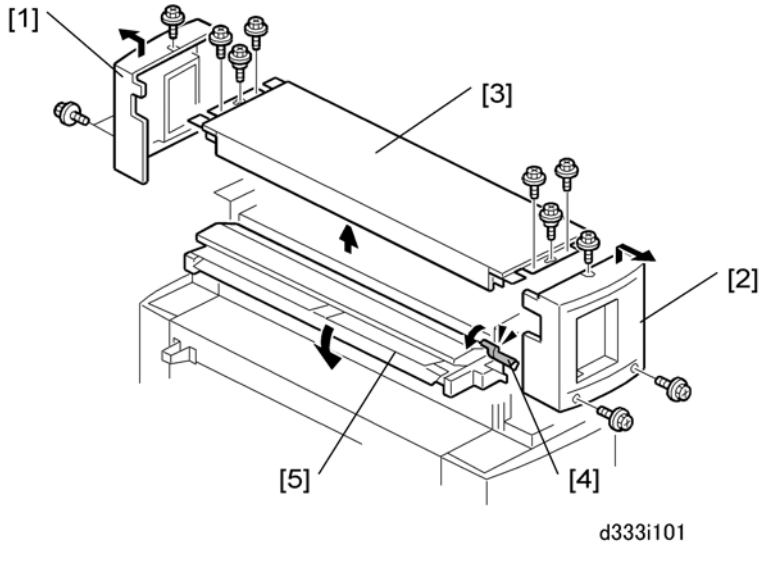


Manual Feeder Installation

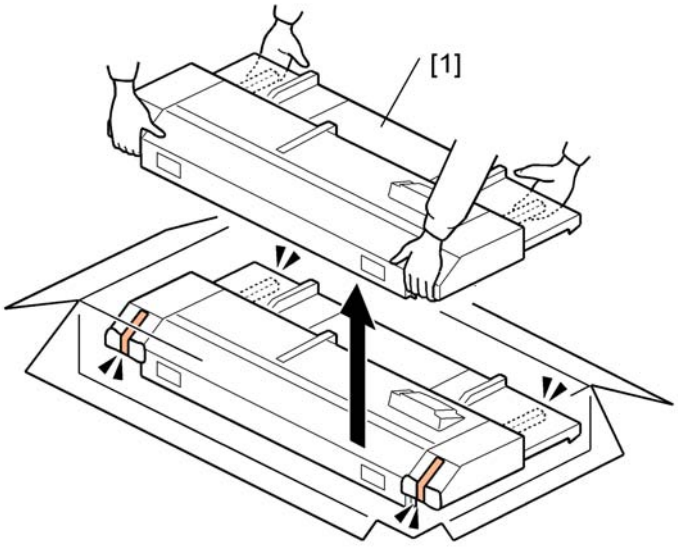
⚠CAUTION

- Confirm that the folder unit is switched off and disconnected from the power source before doing this procedure.

Mounting the Manual Feeder on the Folder Unit



1. Remove:
    - [1] Left cover (x3)
    - [2] Right cover (x2)
    - [3] Top cover (x6)
2. Push down the lever [4] and lower the cover [5].

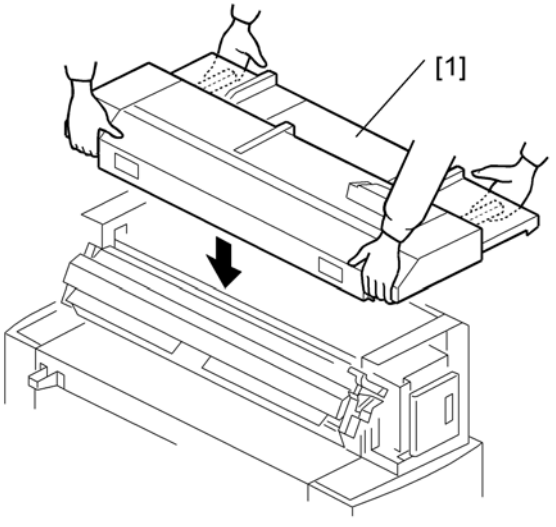


d333i102

Important

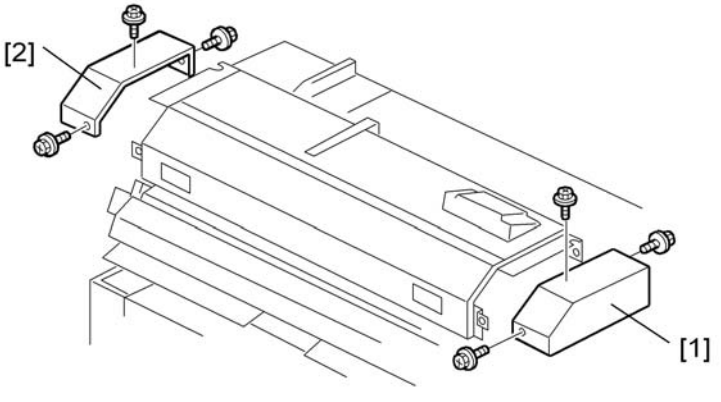
- **To prevent bending or warping the manual feeder, two people are required to lift the manual feeder as shown above and place it on the top of the folder unit.**

3. With a service technician on each end, lift the manual feeder [1].



d333i103

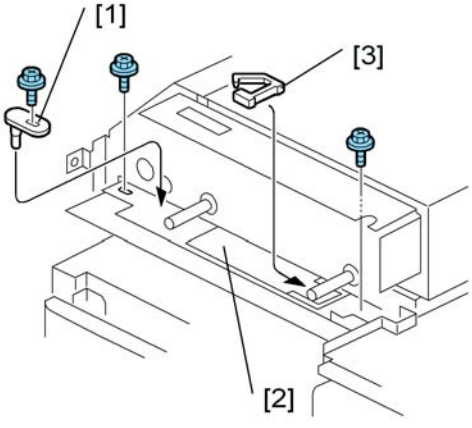
4. With a service technician on each end, place the manual feeder on top of the folder unit [1].



d333i104

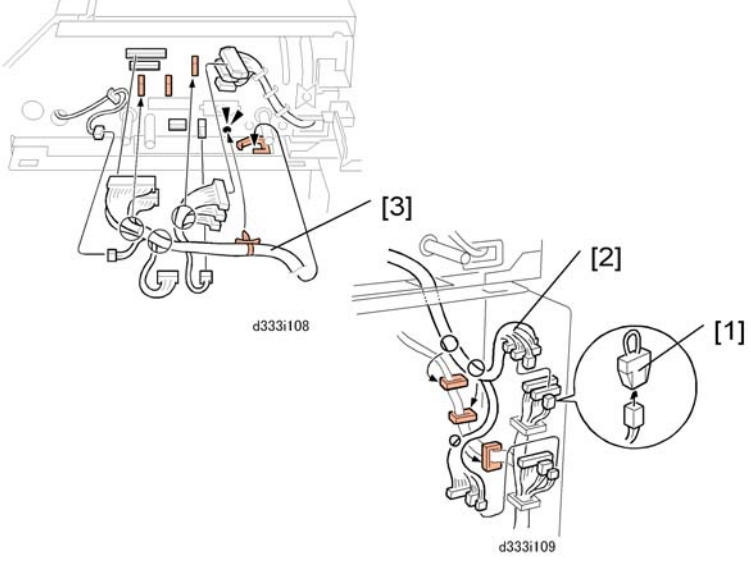
5. Remove:
    - [1] Right cover (x3)
    - [2] Left cover (x3)

Right Side



d333i105

1. Attach and fasten lock pin [1] (x1).
2. Fasten the manual feeder [2] to the top of the folder unit (x2).
3. Attach the edge clamp [3].

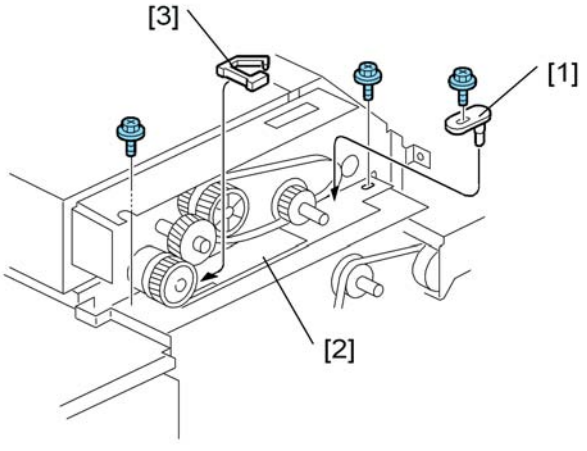


d333i108

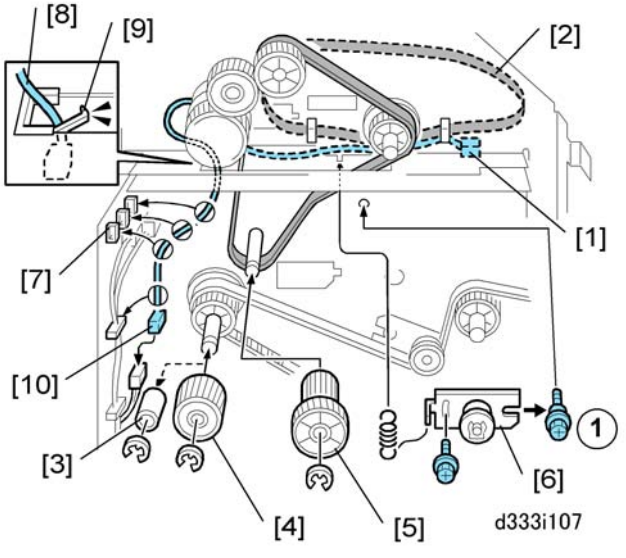
d333i109

4. Remove the short-circuit connector [1].
5. Route and attach the harness:
    - To the folder unit [2] (x6, x3)
    - To the manual feeder [3] (x7, x5)
6. Reattach the right covers.

Left Side



1. Attach and fasten lock pin [1] (x1).
2. Fasten the manual feeder [2] to the top of the folder unit (x2).
3. Attach the edge clamp [3].



4. Release the clamps holding the harness [1] and timing belt [2], then close the clamps.
5. Route the timing belt as shown above.
6. Remove the bushing [3] (x1)
7. Attach

- [4] Gear (x1)
- [5] Timing pulley/gear (x1)
- [6] Tension bracket (x2, Spring x1) (Screw ① is a shoulder screw.)
- [7] Clamps (x3)

8. Route the harness [8] through the edge clamp [9] and close it (x1).
9. Connect the harness [10].
10. Reattach the left covers.

Power On

The folder unit must be switched on before the main machine.

1. Switch on the folder unit.
2. Switch on the main machine.

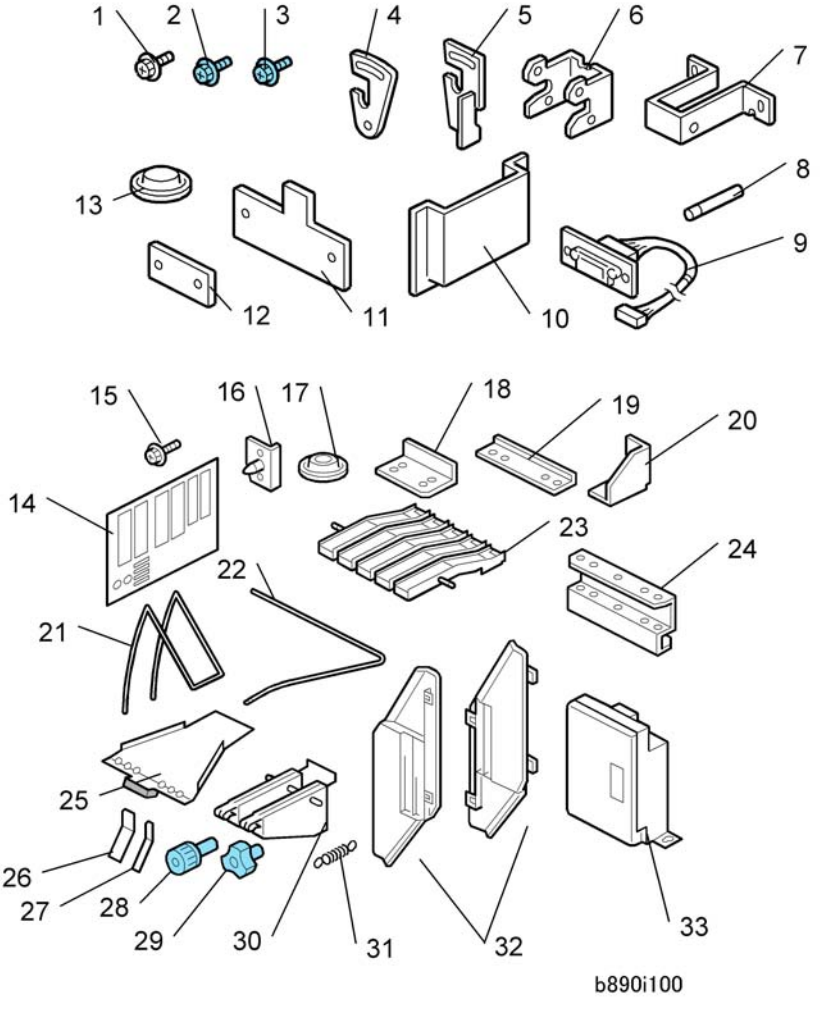
Note

- The folder unit must be switched on first, so that the main machine will recognize the folder unit after the main machine is powered on and starts its initialization procedure. If the main machine is powered on before the folder unit, the folder will not operate because it has not been recognized by the main machine.

Folder FD6500B (Cross Folder) (B890)

Accessories

Check the accessories and their quantities against the following list:



	Description	Qty
1.	Screws: Tapping M3x6	6
2.	Screws: Tapping M3x36	6
3.	Screws: Tapping M4x8	8

	Description	Qty
4.	Lock Plate: Right	1
5.	Lock Plate: Left	1
6.	Joint Brackets	2
7.	Folder Position Brackets: Lower	2
8.	Pins	2
9.	Connector Harness	1
10.	Operating Instructions Pocket	1
11.	T-Plate	1
12.	Rectangular Plate	1
13.	Shoes	4
14.	Decal: Paper Jam	1
15.	Screws: Tapping M3x8	20
16.	Transport Unit Brackets	2
17.	Shoes	8
18.	Rear Brace	1
19.	Right Brace	1
20.	Left Corner Bracket	1
21.	Rear Copy Tray	3
22.	Side Copy Tray	5
23.	Exit Tray	1
24.	Side Copy Tray Bracket	1
25.	Guide Mylar	3
26.	Mylar – Wide	2
27.	Mylar – Narrow	4
28.	Round Knob (with one M4x8 screw)	1

	Description	Qty
29.	Winged Knob (with one M4x8 screw)	1
30.	Stoppers	3
31.	Spring	1
32.	Side Fences	2
33.	Rear Door	1

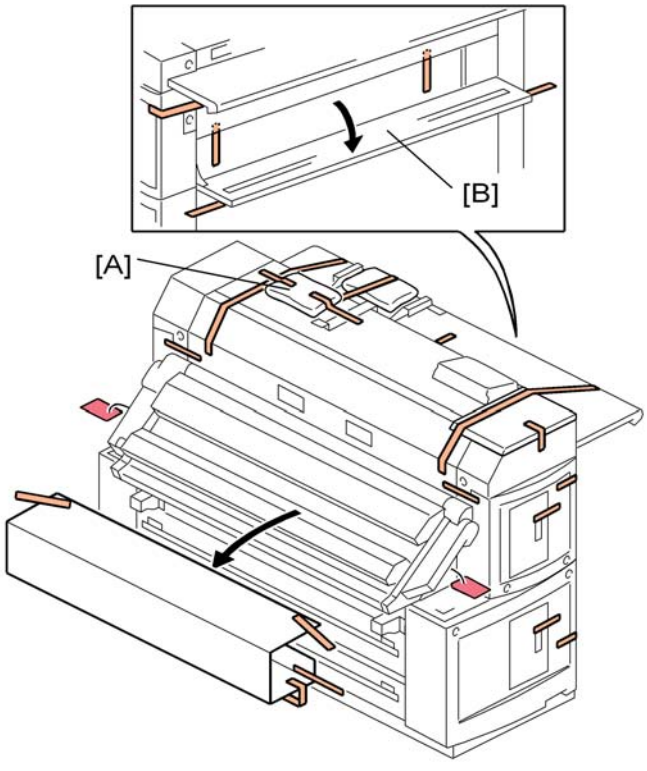
Installation

Fan Fold Unit (B890-17, -27)

1. Unpack the Fan Fold Unit (B890-17, -27)

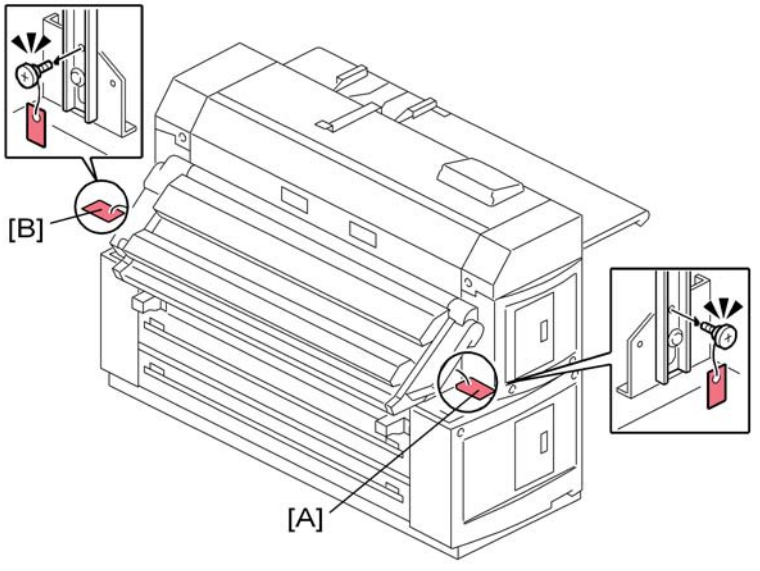
⚠CAUTION

- The fan fold unit weighs 145 kg (319 lb.) and requires two service technicians to move it and install it safely.
- Before installing the fan fold unit, switch off the main machine and disconnect its power cord from the main power source.
- Do not reconnect the main machine and switch it on until after the fan fold unit installation has been completed.



b890i101

2. Remove all orange tape and shipping blocks from the front and rear.
3. Remove the accessory packs [A] from the top.
4. At the rear, open N5 [B] and remove the tapes on the left and right.

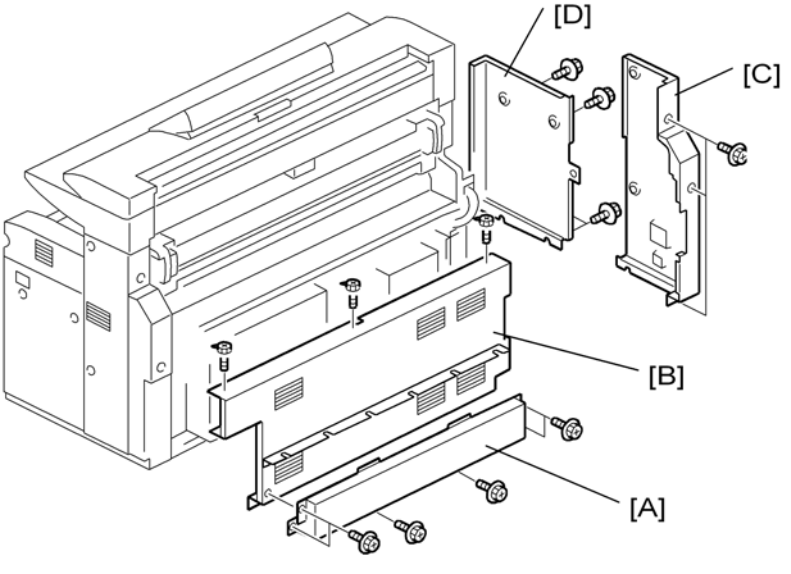


d890i101a

5. Remove tape, screws, and red shipping tags:

   [A] Right side

   [B] Left side



b890i104

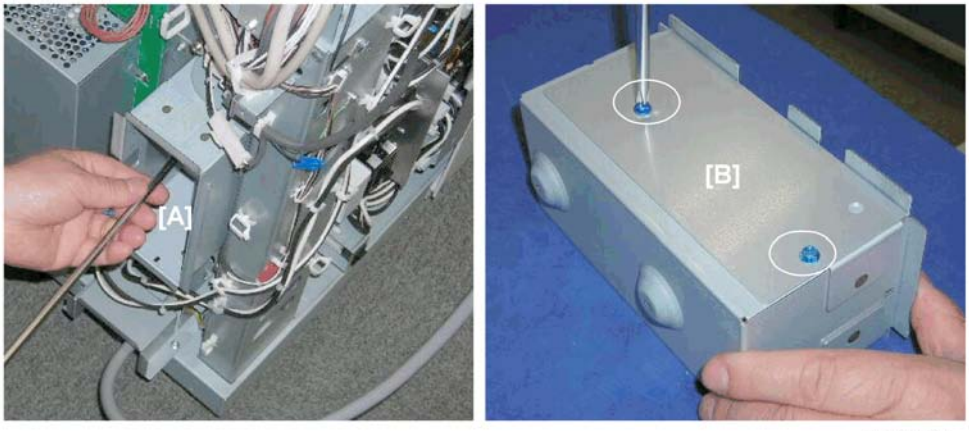
6. Remove:

   [A] Base plate (x6)

   [B] Rear cover (x3)

[C] Left rear cover (x7)

[D] Left front cover (x6)

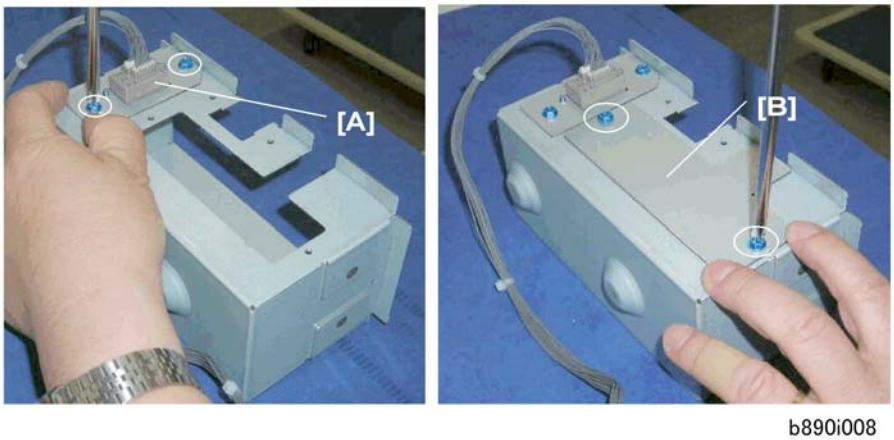


b890i007

7. Remove:

[A] Inner cover (x2)

[B] Cover plate (x2)

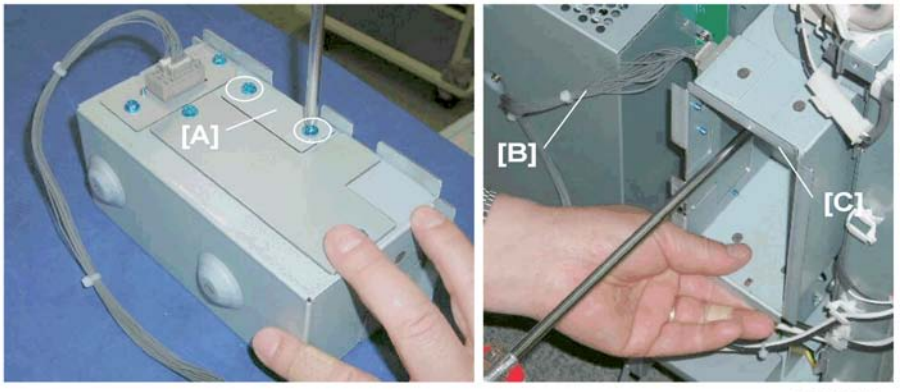


b890i008

8. Attach:

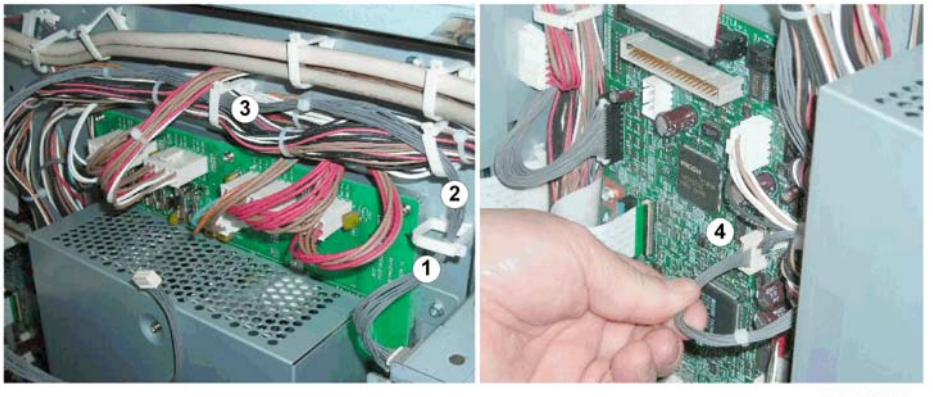
[A] Connector harness (x2).

[B] T-plate (x2)



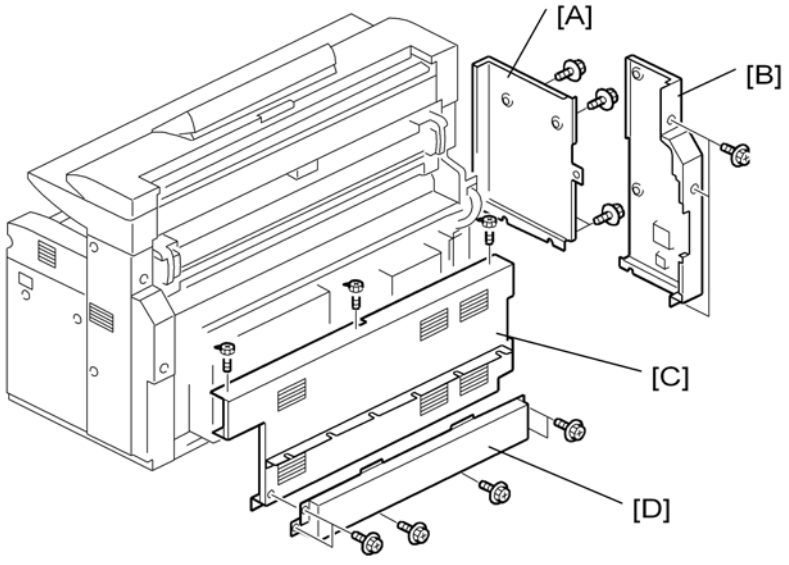
b890i009

9. Attach the rectangle plate [A] (x2).
10. With the connector harness [B] to the left, reinstall the inner cover [C] (x2).



b890i010

11. Open harness clamps ①, ②, ③, route the connector harness through the open clamps, then close them (x3).
12. Insert the connector harness ④ at connection point CN208.



b890i104

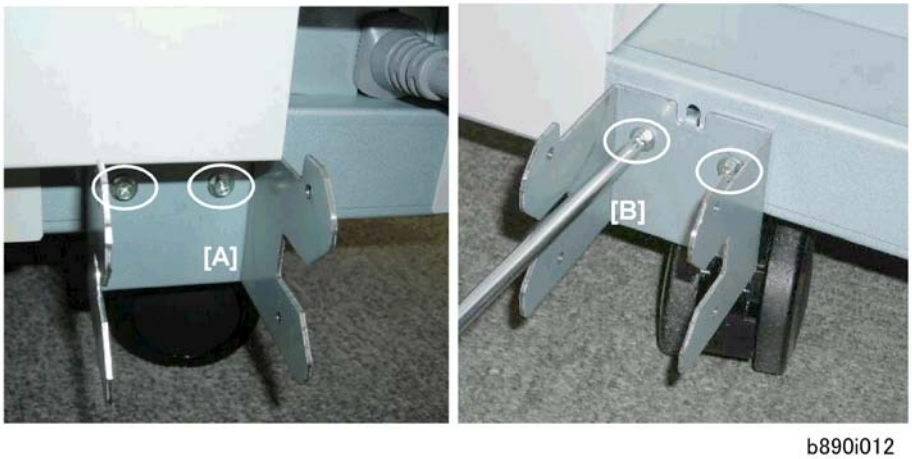
13. Reattach:

    [A] Left front cover (x4)

    [B] Left rear cover (x7)

    [C] Rear cover (x3)

    [D] Base plate (x6)

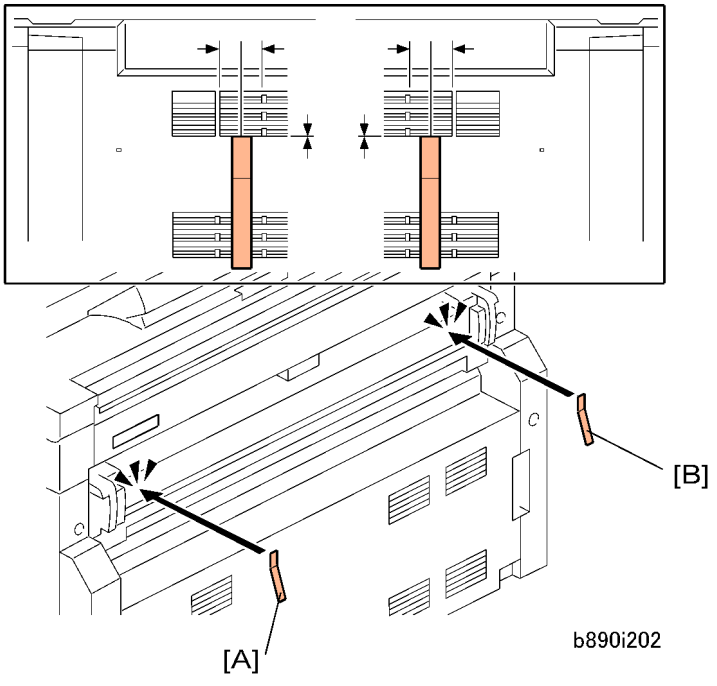


b890i012

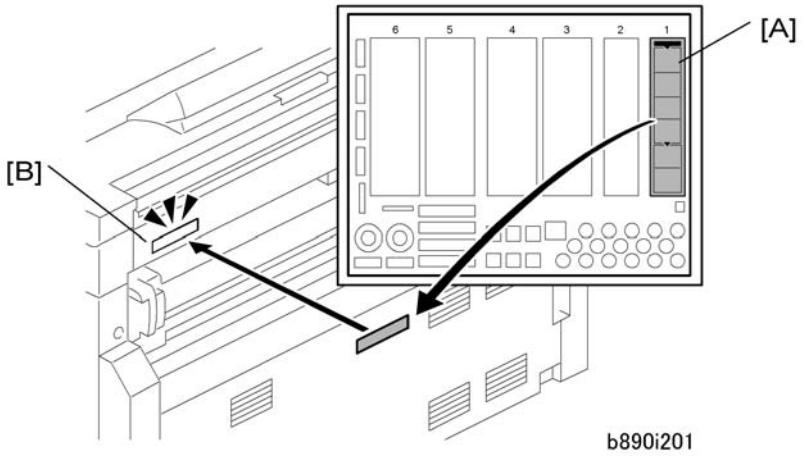
14. Attach the following to the rear of the main machine:

    [A] Left joint bracket (x2)

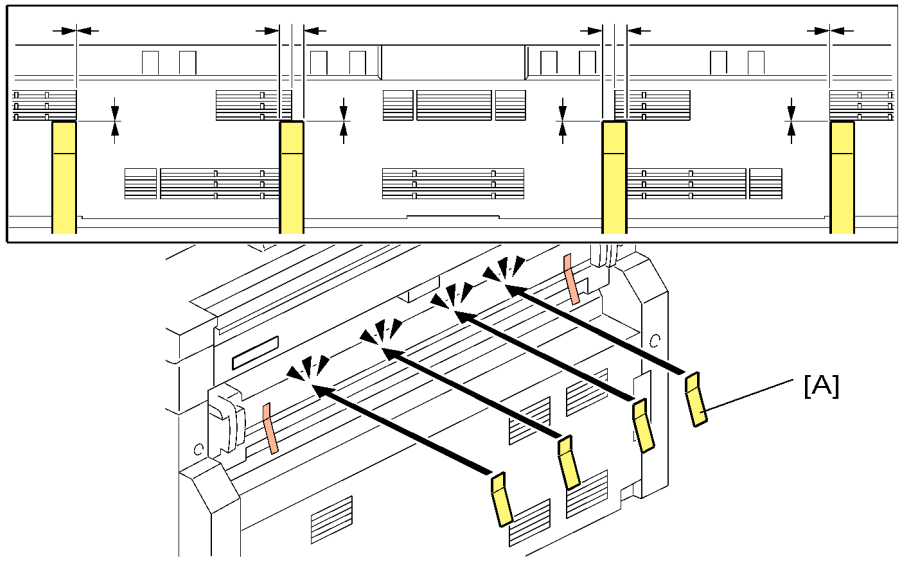
    [B] Right joint bracket (x2)



15. Attach the wide mylars [A] and [B] to the fusing exit cover of the main machine.

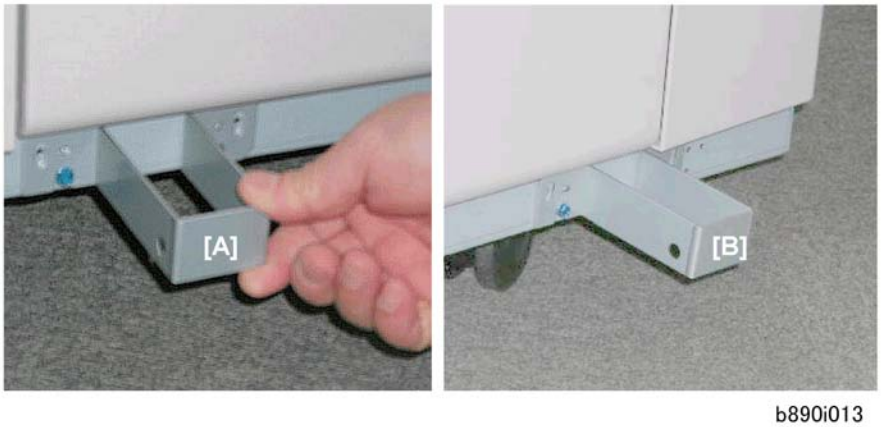


16. Attach the paper jam decal [A] to the original rear exit guide [B].



b890i203

17. Attach the narrow mylars [A] to the fusing unit exit cover of the main machine.

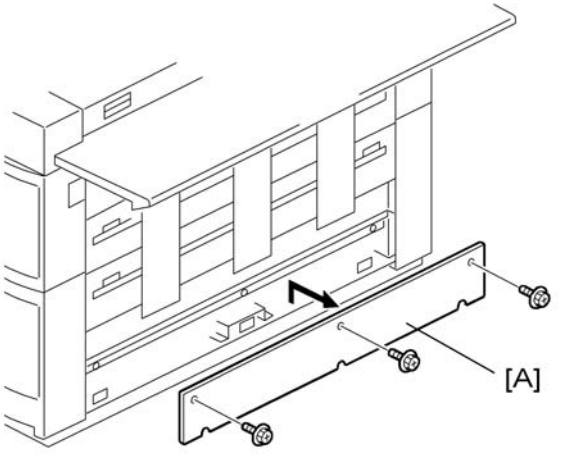


b890i013

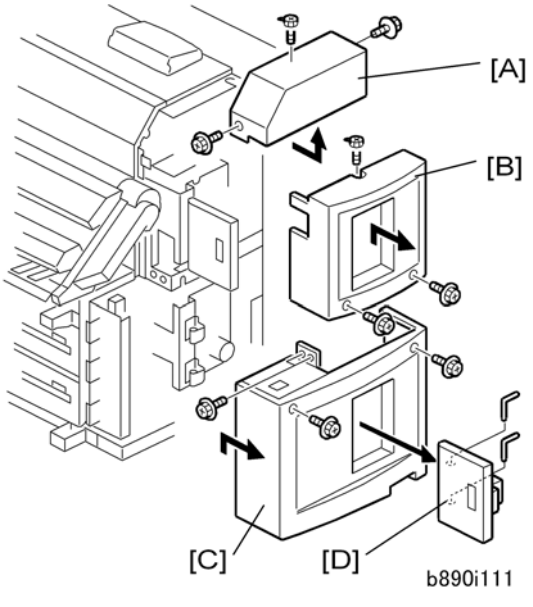
18. Attach the following to the front of the fan fold unit:

    [A] Left lower positioning bracket (x2).

    [B] Right lower positioning bracket (x2).



19. At the rear of the fan unit, remove the bottom panel [A] (x3).



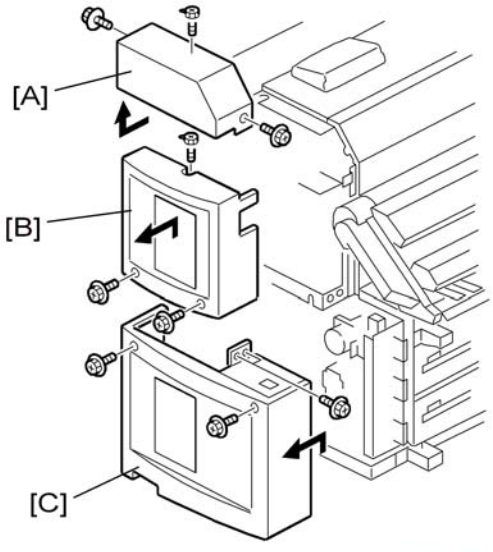
20. On the right side, remove:

    [A] Right end cover (manual feeder) (x3)

    [B] Right upper cover (x3)

    [C] Right lower cover (x4)

    [D] Right door (L-pin hinges x2)



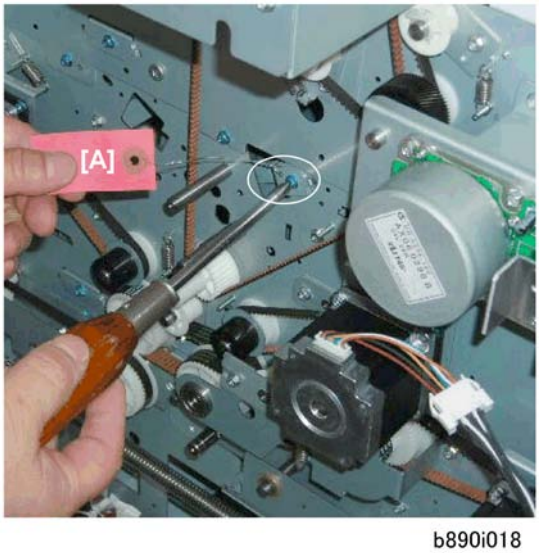
b890i112

21. On the left side, remove:

    [A] Left end cover (manual feeder) (x3)

    [B] Left upper cover (x3)

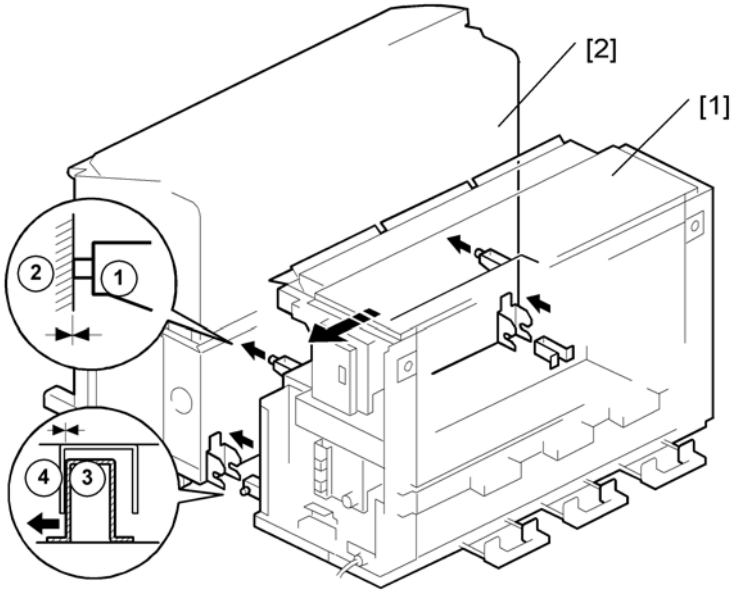
    [C] Left lower cover (x4)



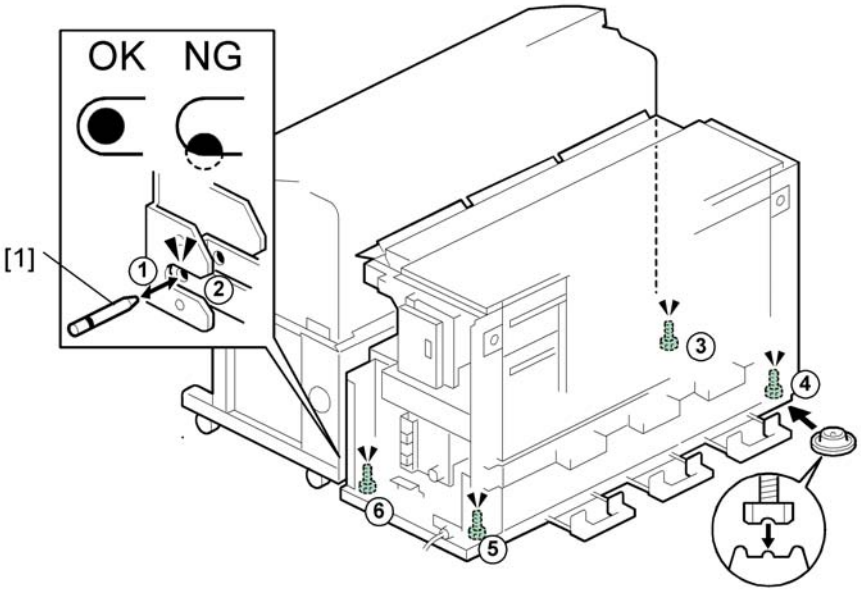
b890i018

22. Remove the red tag, brace, and screw [A] (x1).

Leveling and Docking

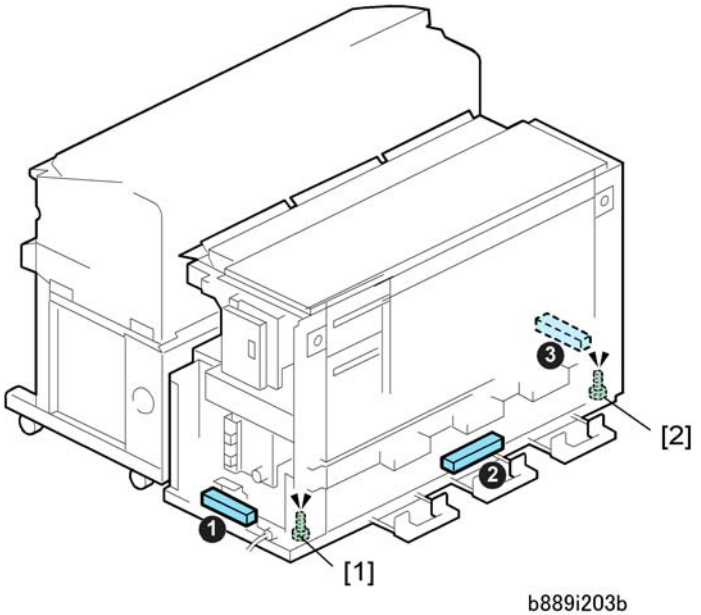


1. Push the fan fold unit [1] against the back of the machine [2].
2. Make sure that the folder is aligned properly with the back of the main machine.
    - At the top and on both sides, make sure that upper positioning bracket ① of the fan fold unit is touching the back of the main machine ②. There must be no gap here.
    - At the right bottom side, make sure that the lower positioning bracket ③ of the folder is touching the outer arm of the joint bracket ④ of the main machine.



b889i202b

3. On each side of the unit, insert the pin [1] through the arms of the joint bracket ① into the hole in the lower folder positioning bracket ②.
    - If the pins cannot be inserted because the holes are not aligned, use a wrench to turn the nuts on the legs under each corner of the fan fold unit until the holes are aligned.
    - ③ and ④ must both be adjusted with the same number of turns.
    - ⑤ and ⑥ must both be adjusted with the same number of turns.
4. Remove both pins after you make sure that they can be easily inserted.

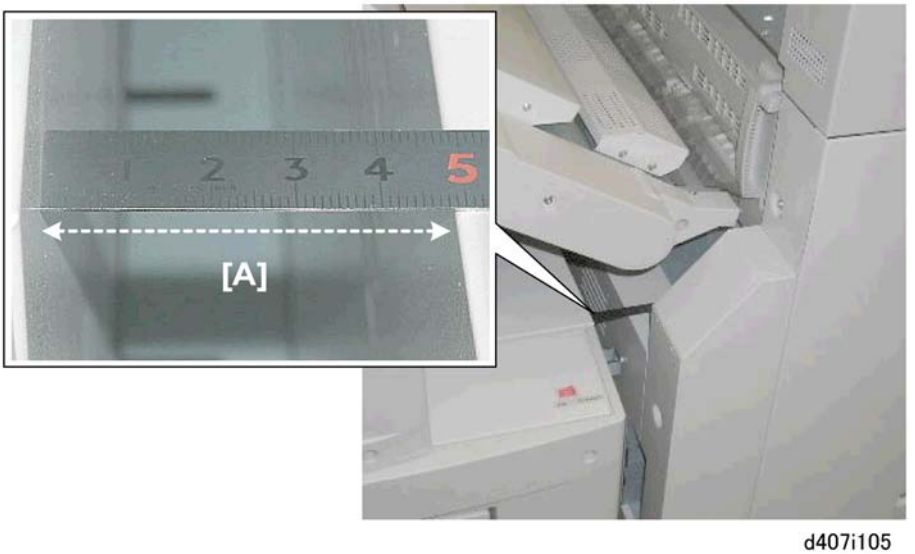


b889i203b

5. Level the folder.

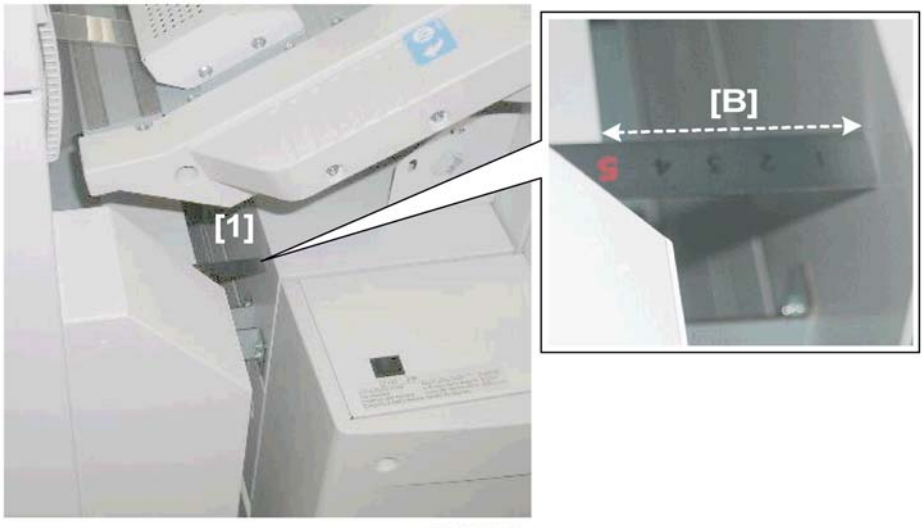
Important

- **The fan fold unit must be level within ±0.15 mm/m on the right, left, and rear sides.**
- Set the level on each side of the folder as shown above.
- Level the sides of the fan fold unit in this order: ① right, ② rear, ③ left.
- Use a wrench to adjust the nuts on the right leg [1] and left leg [2] to raise or lower the fan fold unit until it is level.



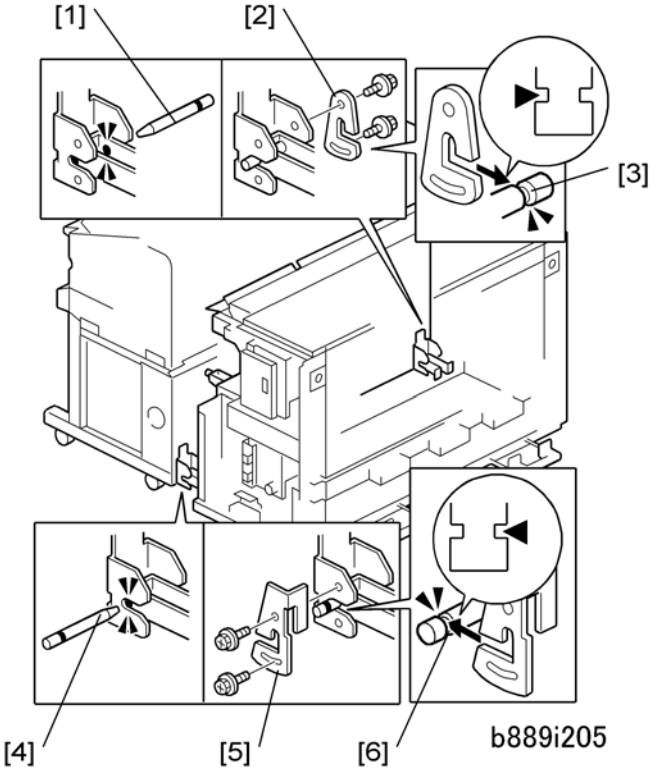
d407i105

6. At the left rear corner of the main machine, measure the distance [A] between the bridge unit and main machine. (This should be about 49.5 to 50 mm.)



d407i106

7. At the right rear corner of the main machine, measure the distance [B] between the bridge unit and main machine. (This should be about 49.5 to 50 mm.)
8. The difference between the measured distances on the left and right ([A] – [B]) must not be more than 0.5 mm.

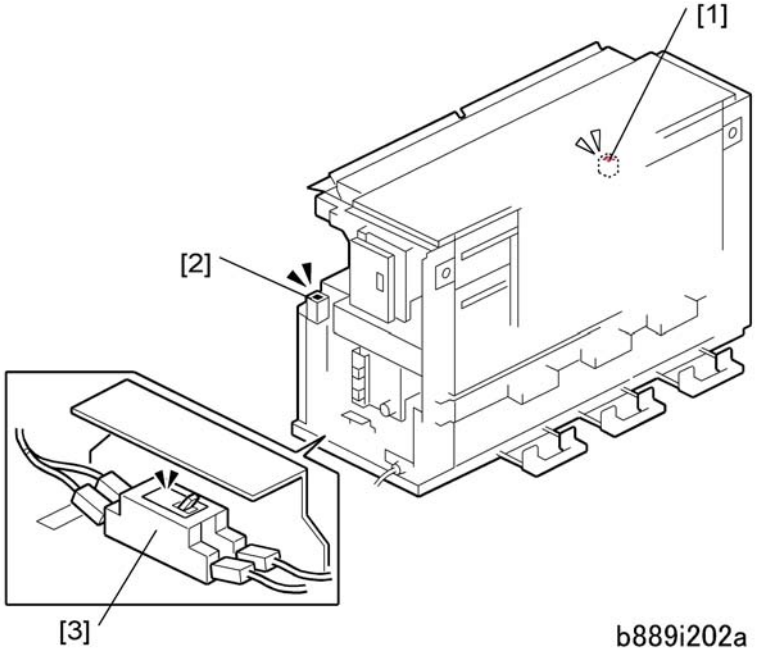


9. On the left side:
    - Insert the pin [1]
    - Attach the lock plate [2] (x2).

    Note

        - The shapes of the left lock plate [2] and right lock plate [5] are different.
    - Confirm that the groove of the pin [3] is in the slot of the lock plate.
10. On the right side:
    - Insert the pin [4]
    - Attach the lock plate [5] (x2).
    - Confirm that the groove of the pin [6] is in the slot of the lock plate.

Checking the Fan Fold Unit Circuit Breaker



Important

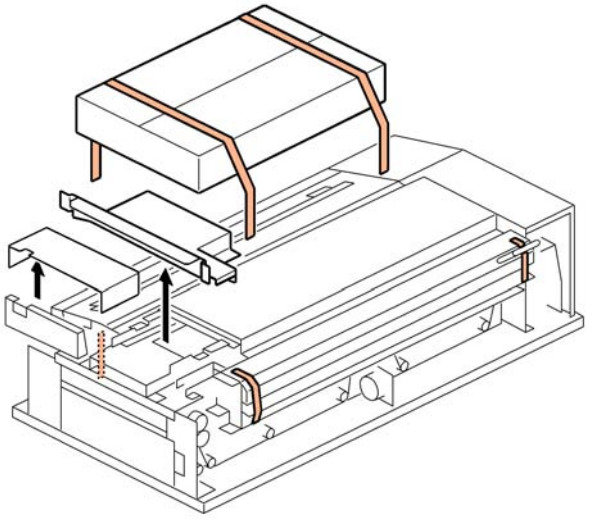
- **On the fan fold unit, check that the main switch [1] and heater switch [2] are off.**

1. Connect the fan fold unit power cord to the power source.
2. Look at the circuit breaker [3].
   - With the horizontal line displayed on the circuit breaker, use the tip of a small screwdriver to depress the breaker test button.
   - The circuit breaker should flip to the "O" position. This indicates that the circuit breaker is operating normally.
   - If the circuit breaker does not flip to the "O" position, the circuit breaker must be replaced.
   - Push the lever to display the vertical line again and reset the machine for normal operation.

     Important

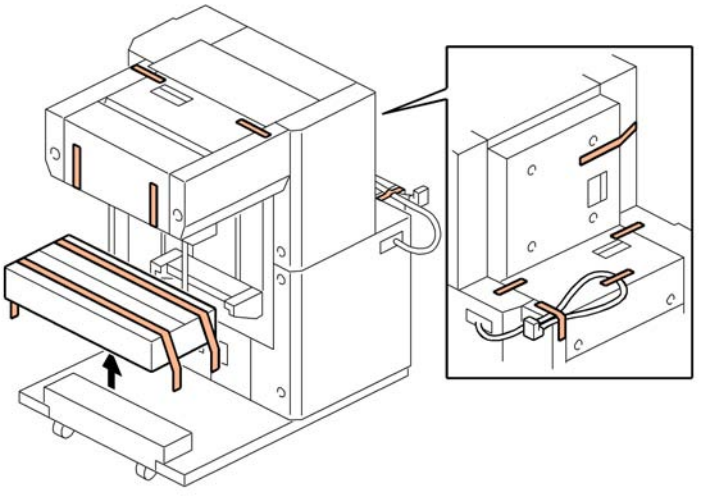
     - **The fan fold unit will not switch on if the lever remains at the "O" position.**
3. Disconnect the fan fold unit power cord from the power source.
4. Reattach all covers and doors.

Cross Folder (B890-57)



b890i102

1. Remove all tape and accessories from the transport unit.

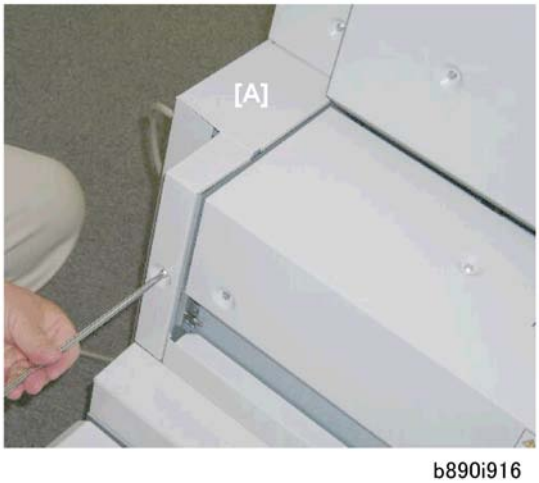


b890i103

2. Remove all tape and accessories from the cross fold unit.

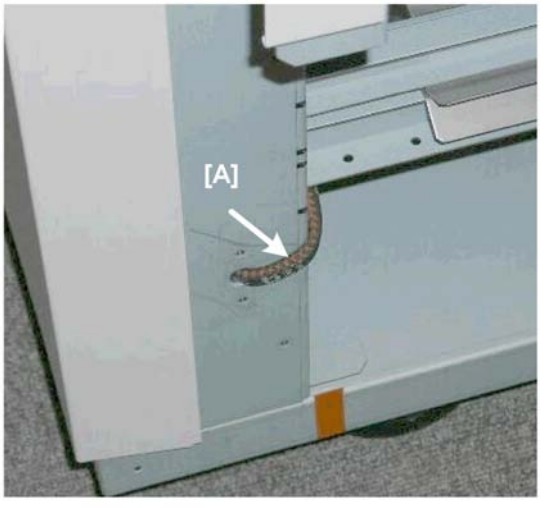
b890i905

3. Remove the rear cover [A] of the cross fold unit (x3).



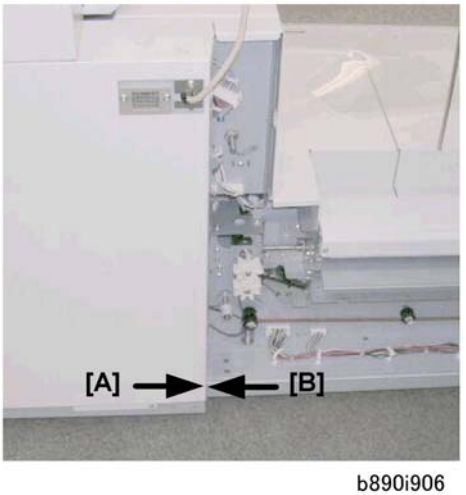
b890i916

4. Remove cover [A] (x1).



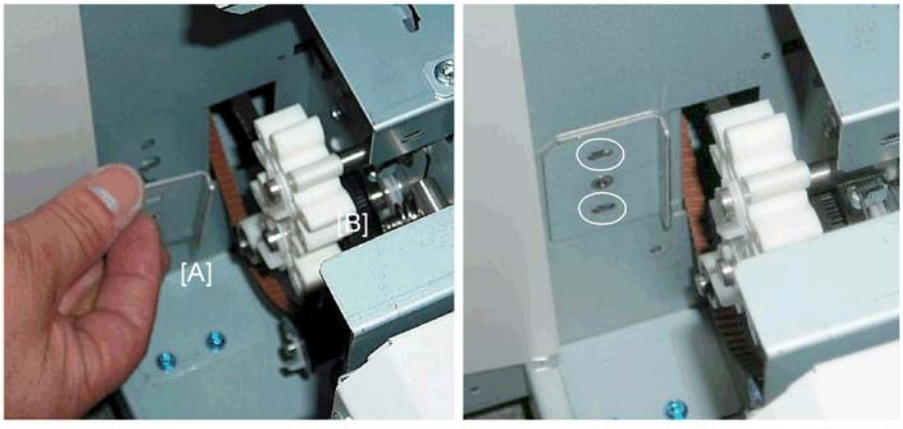
b890i922

5. Locate the timing belt [A] protruding from the cross folder unit and pull it out.



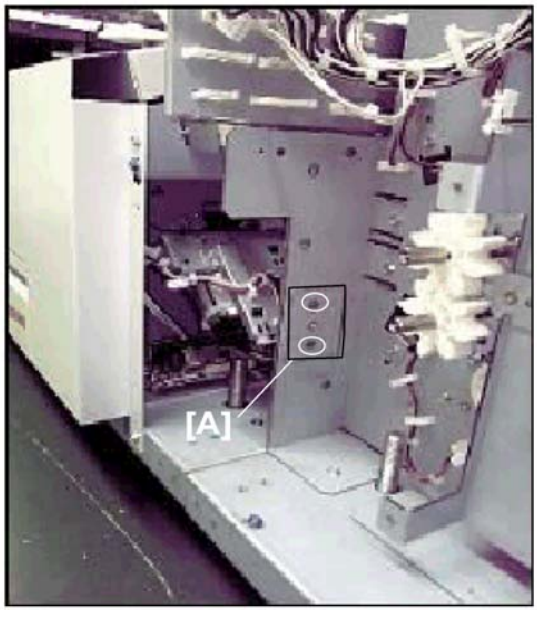
b890i906

6. Push the cross-fold unit [A] and transport unit [B] together.



b890i917

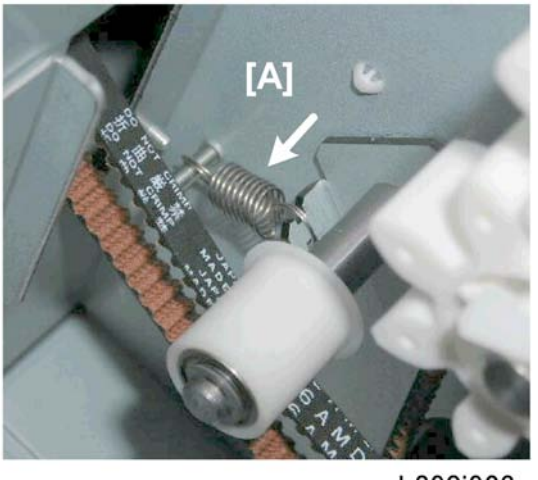
7. Set the front joint bracket [A] and fasten it (x2 M3x8).



8. At the rear, set the rear joint bracket [A] and fasten it (x2 M3x8).

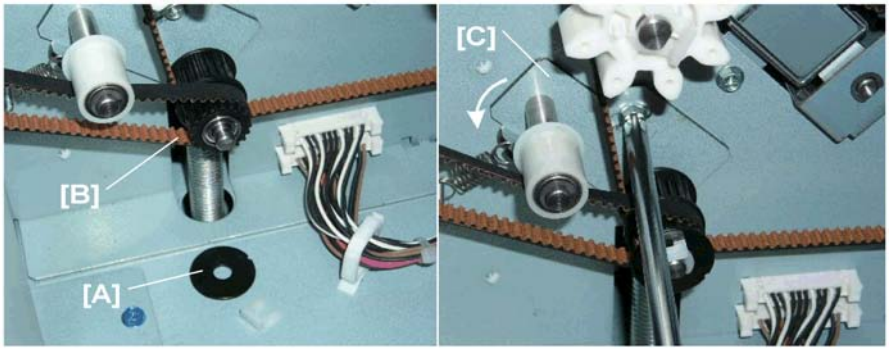
b890i908

9. Attach the rear brace [A] between the transport unit [B] and cross fold unit [C] (x4 M3x8).



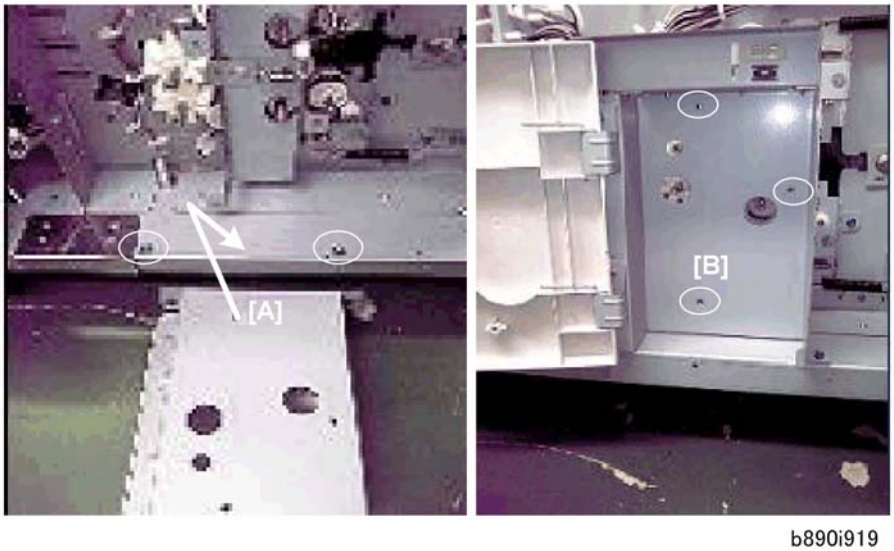
b890i923

10. Attach spring [A].



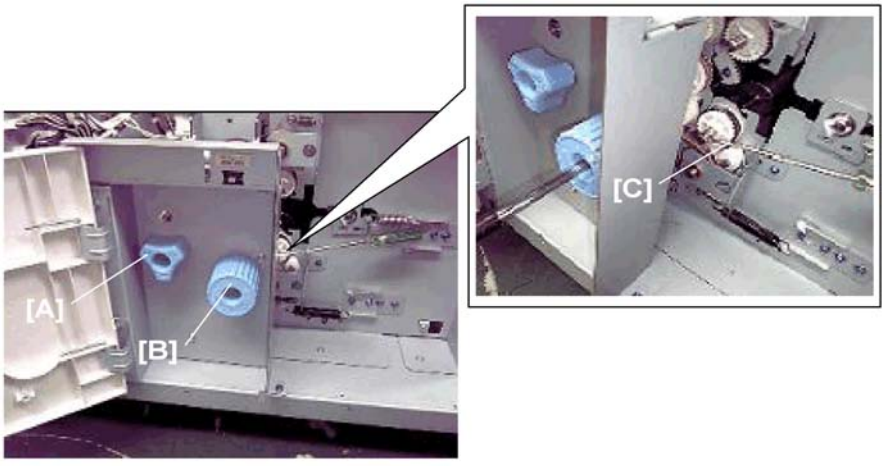
b890i907

11. Remove the collar [A] (x1) and attach timing belt [B].
12. Reattach the collar (x1).
13. Tighten the timing belt tension plate [C] (x1).



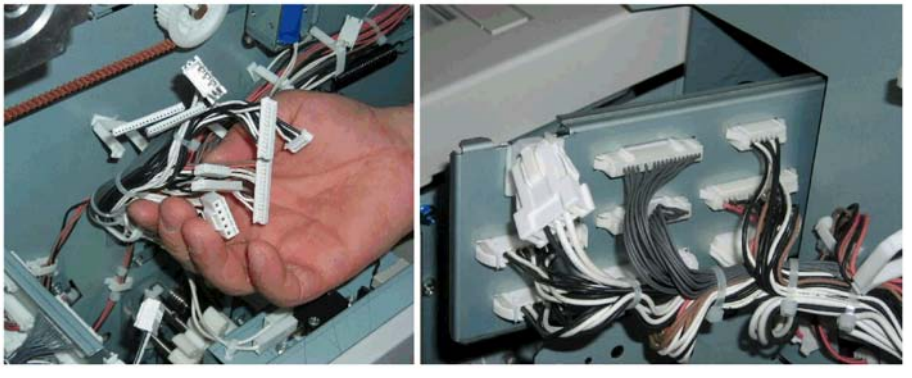
b890i919

14. Stand the rear door frame [A] up and fasten it to the rear base frame of the cross folder unit (x2).
15. Fasten the panel of the rear door [B] (x3).



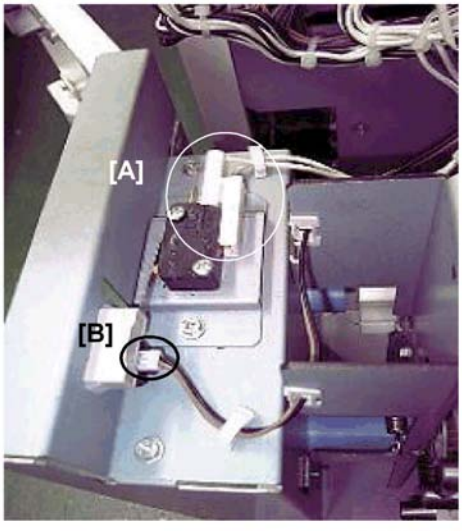
b890i920

16. Attach knob [A] (x1, M4x8)
17. Attach knob [B] (x1, M4x8). Insert a screwdriver at [C] to stop the rotation of the round knob while the screw is being tightened.



b890i909

18. Release the harness clamp and pull away the connectors.
19. Above the rear brace, connect the cross folder unit to the transport unit (x9).

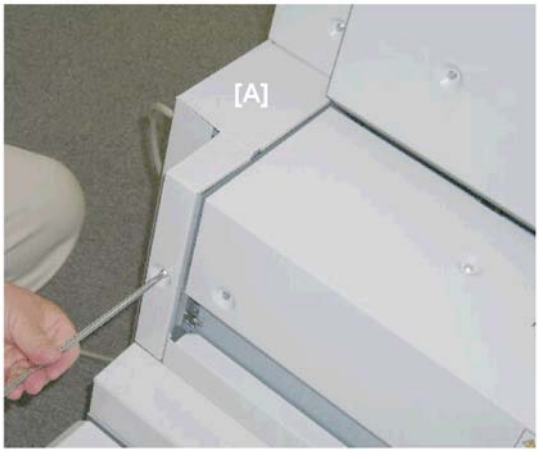


b890i921

20. Connect the bayonet connectors to the micro-switch [A] (x2).
21. Connect the door sensor [B] (x1).

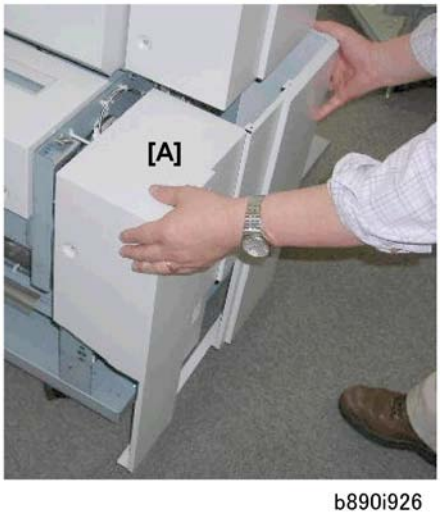
d890i925

22. Fasten the cover of the transport unit [A] to the cross fold unit (x2).



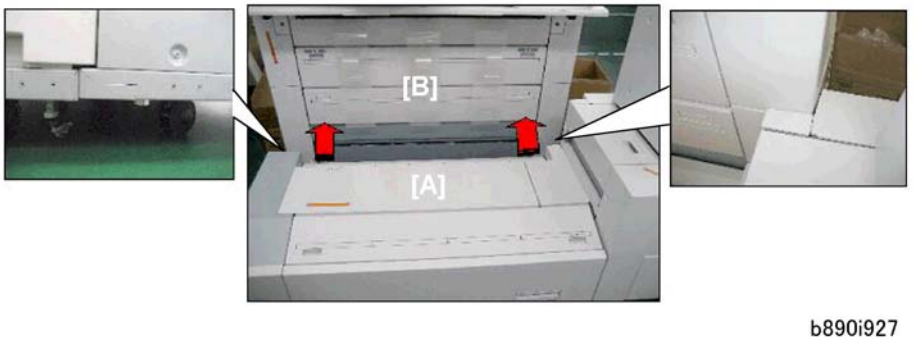
b890i916

23. Reattach cover [A] (x1).



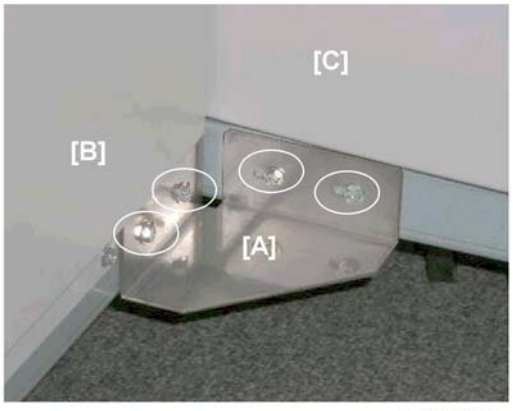
b890i926

24. Reattach cover [A] (x3).



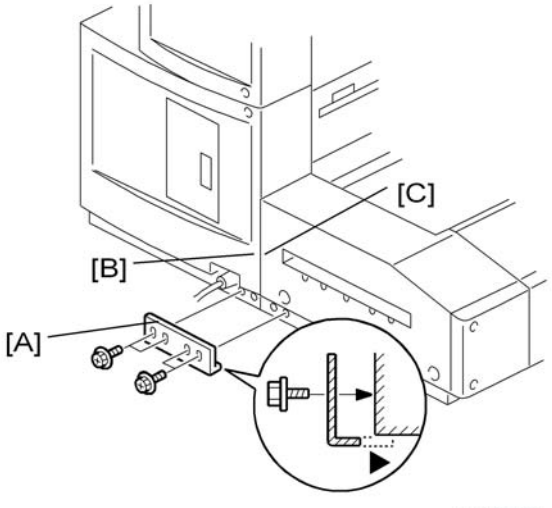
b890i927

25. Push the transport/cross unit [A] against the rear of the fan fold unit [B].



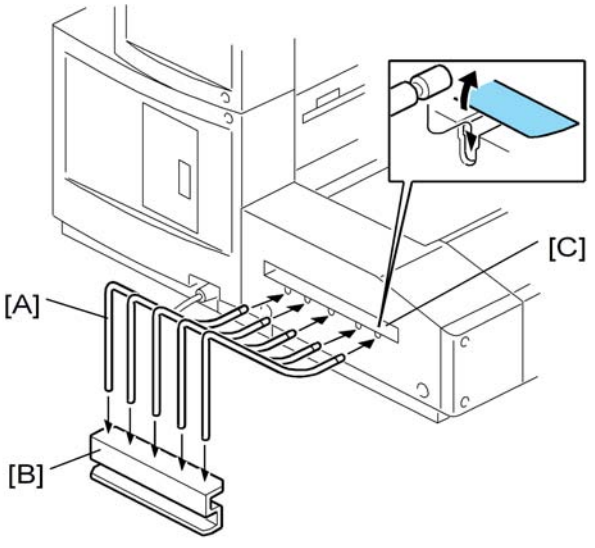
b890i910

26. At the front, fasten the left corner bracket [A] to the cross folder unit [B] and the fan fold unit [C].



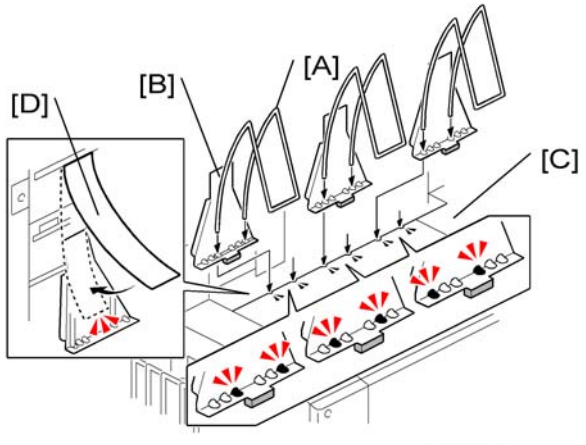
b890i106

27. On the right side, fasten the right brace [A] to connect the fan folder [B] and transport unit [C] (x4 M3x8).



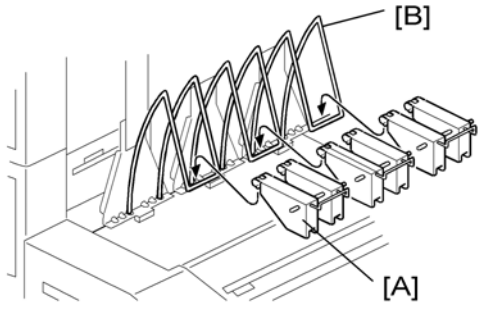
b890i107

28. Set the ends of the side copy tray supports [A] (x5) into the side copy tray bracket [B].
29. Slide the groove on the end of each copy tray support into the slots [C] in the side of the transport unit.
30. Position the side copy tray brackets and supports so that the bracket is parallel to the side of the transport unit and the supports are evenly spaced.



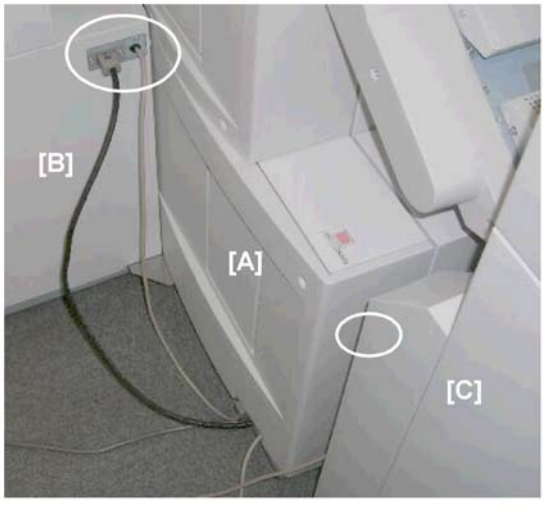
b890i108

31. Set the rear copy tray supports [A] (x3) and wide guide mylars [B] in the holes at the top of the transport unit [C].
32. Make sure that the strip mylars [D] overlap the wide guide mylars.



b890i109

33. Attach [A] to the base of each rear copy tray support [B].



b890i023

34. Attach the I/F cables of the fan fold unit [A] to the cross fold unit [B] and the main machine [C].

Power On

The fan fold unit must be switched on before the main machine.

1. Switch on the fan fold unit.
2. Switch on the main machine.

Note

- The fan fold unit must be switched on first, so that the main machine will recognize the fan fold unit after the main machine is powered on and starts its initialization procedure.

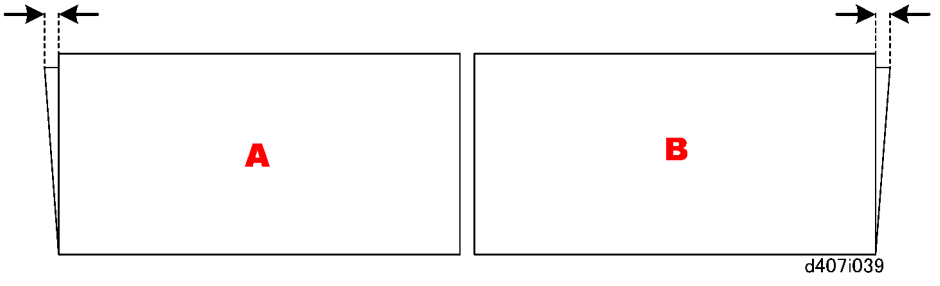
Skew Adjustment

1. After setting up the system, do a folding test run with at least 10 sheets of A1 LEF paper.

   Important

   - **Before doing this procedure, measure the distances between the bridge unit and the left and right rear corners of the main machine. The difference between these two distances must not be more than 1 mm.**

2. Measure the amount of skew.
   - If the average amount of skew is less than ±0.5 mm, no adjustment is required.
   - If the average amount of skew is more than ±0.5 mm, adjustment is required.



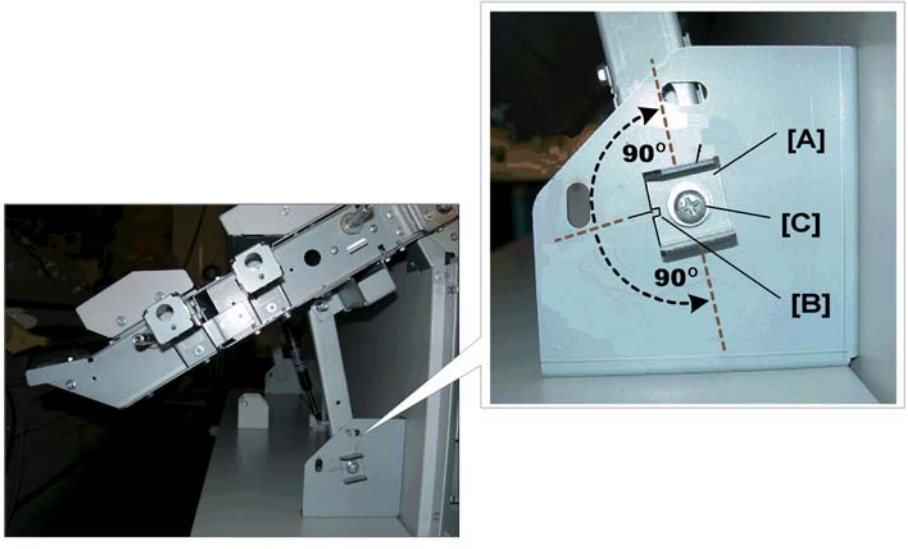
3. Do the adjustment:

For	Adjust:	Turn plate:
A	Right side	Right (cw)
B	Right side	Left (ccw)

   - In the table above, "cw" means "clockwise", "ccw" means "counter-clockwise".
   - The range of adjustment is ±1.5 mm within an arc of 90 degrees (±0.75 mm if rotated only 45 degrees.)

4. To determine the amount of adjustment, divide the amount of measured skew (mm) by 0.0166 mm. Refer to the detailed instructions below.

Adjustment Plates



d407i040

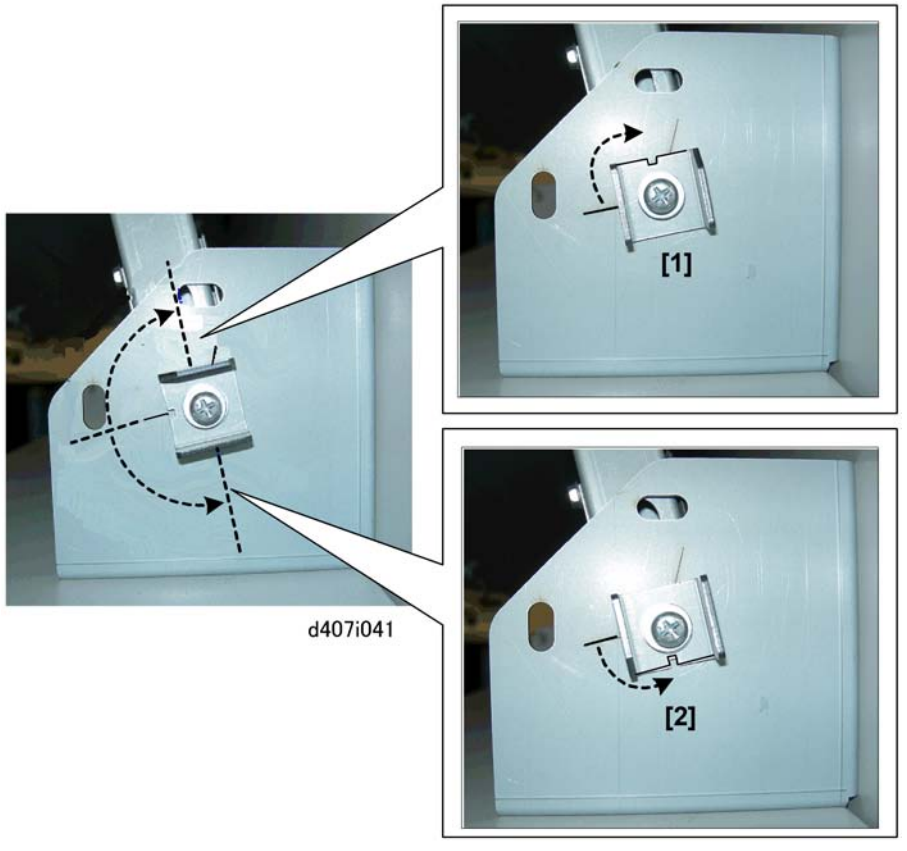
The photo above shows the **right side** (viewed from the front of the main machine).

- [A] is the adjustment plate.
- [B] is the notch (shown at the starting position).

Loosen the screw [C], change the position of the plate, then re-tighten the screw.

The dotted arrows show the range of adjustment **up** (cw) and **down** (ccw) (90 degrees). This adjustment mechanism is the same on the **left side** of the machine.

Right Side Adjustment



[1] The plate has been rotated right (clockwise) 90 degrees.

[2] The plate has been rotated left (counter clockwise) 90 degrees.

Rotation	To adjust for
90°	1.5 mm
67°	1.2 mm
45°	0.75 mm

Examples

Each degree of rotation adjusts for 0.0166 mm.

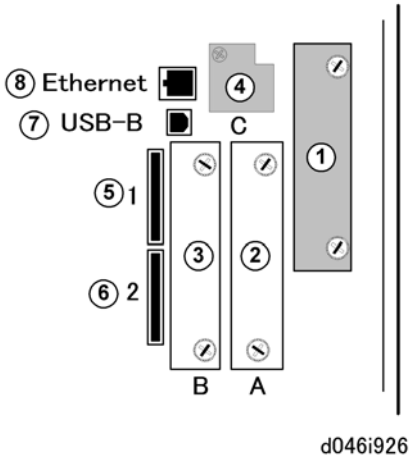
- If the amount of "A" type skew is 0.8 mm, the plate should be rotated right approximately 50 degrees (0.8/0.0166 = 48.2)

- If the amount of "B" type skew is 0.8 mm, the plate should be rotated left approximately 50 degrees (0.8/0.0166 = 48.2)

MFP Options

Overview

The machine controller box has four board slots and two SD card slots. Make sure that each board and SD card is put in the correct slot.



Board Slots

No.	Name	Description
①	---	File Format Converter (MLB). Pre-installed at the factory.
②	Slot A	• IEEE1284 (B679)
③	Slot B	• IEEE 802.11a/g (D377-01, -02, -19)
④	Slot C	• Gigabit Ethernet (D377-21) -or- • Interface PCB Type W7140 (D445).
⑤	Slot 1	• Printer Option (D396) (Printer SD Card) • Scanner Option (D397) • Data Overwrite Security (D377-06) • Browser Unit (D377-17, -18, -08) • HDD Encryption Unit (D377-16)

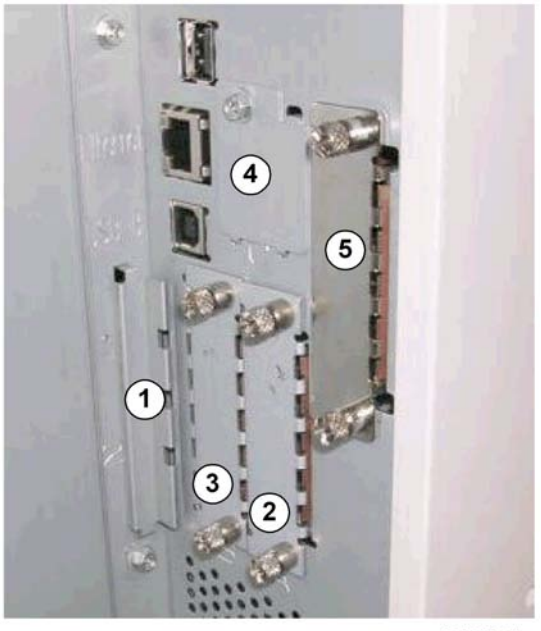
No.	Name	Description
⑥	Slot 2	• Service Slot. Used as the Service Slot for firmware updates, moving applications to another SD card with SP5873 (Apli Move). • VM Card (D377-10, -11, -12). The VM card must remain in the service slot. • Printer Option (D396) (TIFF/GL Filter SD Card)
⑦	USB B	Built-in for connection of USB devices. **Note**: USB is built-in, but it must be enabled with SP5985.
⑧	Ethernet	Standard LAN connection point for network

Important Notes

- Only two SD Card slots are available for applications.
- The printer option consists of two SD cards: Printer Option (must be in Slot 1) and TIFF/GL filter (must be in Slot 2).
- The VM card must be inserted in Slot 2 (the service slot). The VM card cannot be used if the printer option is installed.
- Other applications must be inserted in Slot 1.
- If more than one application is required in Slot 1, the applications must be moved to the same SD card with SP5873-1.

Before You Begin

Slot Cover Removal



d046i921

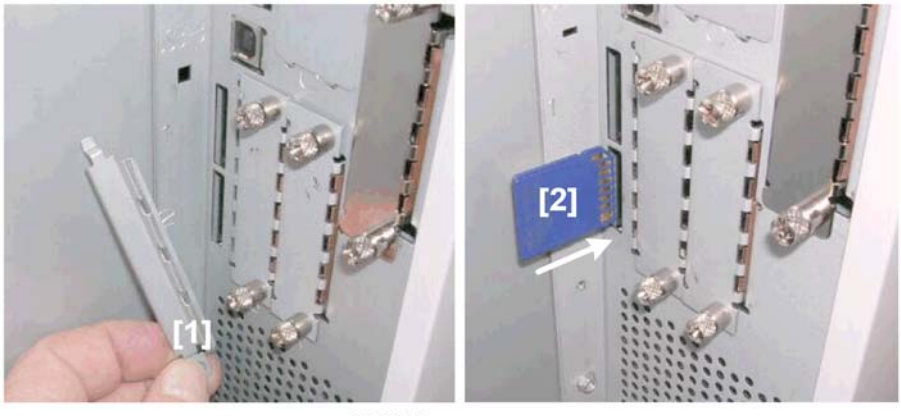
The SD card slot cover ① and board slot covers ②, ③, and ④ are located on the faceplate of the controller box attached to the right rear side of the main machine. The unmarked board slot ⑤ holds the File Format Converter which is pre-installed at the factory.

- The SD card slots (under the cover) are marked "1" and "2" on the left.
- The board slot covers (2), (3), (4) are marked "A", "B", "C" below each cover.
- The decal attached to the back of the machine tells you where the SD cards are boards should be installed.

I/F Card Slot	
A	IEEE1284
B	Option
C	Giga/External CTL(EXP)
SD Card Slot	
1	Option Slot
2	Service Slot

d046i923

To insert an SD card:



d046i922a

1. Remove the screw, and pull off the SD card slot cover [1] (x1).
2. Insert the SD card [2] (beveled corner up) in either Slot 2 or Slot 1.

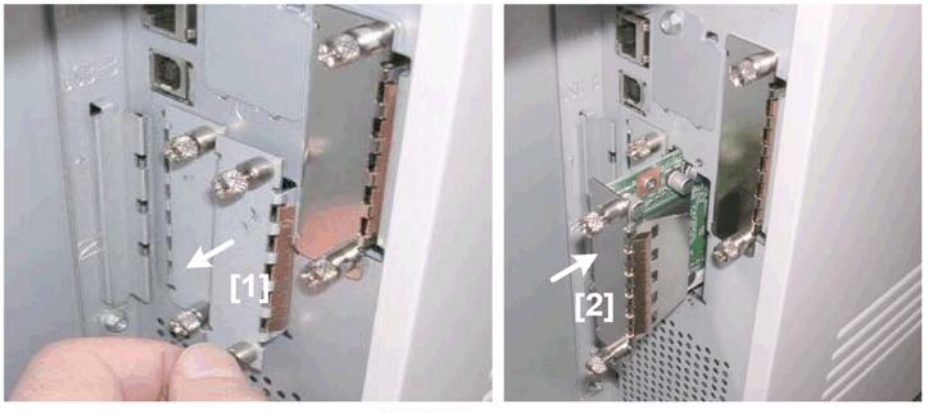
Important

- **SD cards are held in position by a small spring-lock mechanism.**
- **To install an SD card, push it into the slot until it stops, then release it.**
- **To remove an SD card, push the SD card in carefully to release it, and then remove it from the slot.**

3. Reattach the SD card slot cover (x1).

2

To insert a board:



d046i922b

1. With your fingers, loosen the top and bottom screws of the cover [1].
2. Discard the cover.
3. Insert the board [2] in the slot.
4. With your fingers, tighten the top and bottom screws.

Important

- **Finger-tighten the screws attached to the board. Do not use a screw driver. If the screws are too tight, this could twist and damage the board.**

Moving Applications on to One SD Card

There are only two SD card slots:

- **Slot 1**. Insert the application card in this slot. If more than one application is needed, the applications must be moved to one SD card with SP5873-1.
- **Slot 2**. This is the service slot used for updating the firmware. Also, the VM card application must reside in this slot.

Here are some important points you should keep in mind about SD cards and their applications:

- The data necessary for authentication is transferred with the application program to the target SD card.
- Do not use an SD card if it has previously been used with a computer. Correct operation is not guaranteed if such an SD card is used.
- The SD card is the only evidence that the customer is licensed to use the application program. The service technician may occasionally need to check the SD card and its contents to solve problems. Although copied SD cards are disabled for use, they must be stored at the customer site as proof of purchase.

- After an SD card has been used to hold several applications, it should not be used for any other purpose.

Moving Applications

Do this procedure to put more than one application on one SD card.

1. Turn off the copier.
2. Remove the SD card slot cover (x 2).
3. Insert the Source SD card in Slot 2. This card contains the application that you want to move to the other SD card.
4. Put the Target SD card in Slot 1.
5. Turn the copier on.
6. Go into the SP mode and do SP5873-1.
7. Follow the instructions on the display and touch "Execute" to start copying.
8. When the display tells you copying is completed, touch "Exit".
9. Turn the copier off.
10. Remove the Source SD card from Slot 2, and leave the target SD card in Slot 1.
11. Turn the copier on.
12. Go into the User Tools mode and confirm that all the applications on the SD card in Slot 1 are enabled.

    User Tools> System Settings> Administrator Tools> Next> Firmware Version> Next (3/4)
13. Turn the copier off again, then:
    - Reattach the SD card slot cover.
    - Store the copied SD card at the customer site.

The SD card must be stored with the machine for these reasons:

- After an SD card has been copied, it can no longer be used. But it must be stored at the customer site to serve as proof of purchase by the customer.
- Also, at a later time the stored SD cards can be restored to full use with SP5873-2 (described in the next section).
- Before storing the SD card at the customer site, label it so that it can be easily identified.

Undo Exec

1. Turn the main switch off.
2. Put the SD card with the applications in Slot 2.
3. Put the original destination SD card into Slot 1.

2

Note

- The SD card in Slot 1 must be the original SD card of the application you want to move from Slot 2 to Slot 1. You cannot use any blank SD card in Slot 1. The application will be moved only to the original SD card.

4. Turn the main switch on.
5. Go into the SP mode and do SP5873-2 (Undo Exec)
6. Follow the messages on the operation panel to complete the procedure.
7. Turn the main switch off.
8. Remove the SD cards from the slots.
9. Turn the main switch on.

Printer Option Type W7140 (D396)

Accessories

d396i001

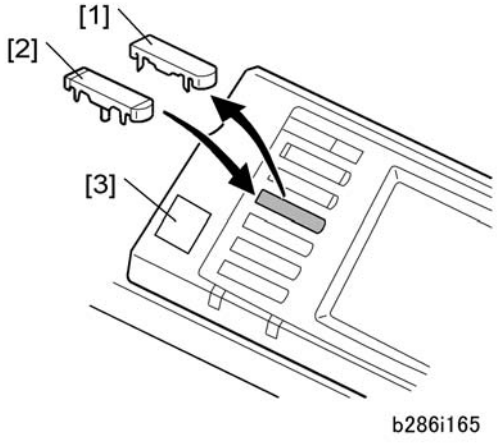
	Description	Qt'y
1.	SD Card: Printer	1
2.	SD Card: TIFF/GL Filter	1
3.	Keytop	1
4.	Decal: PS3	1

Installation

⚠CAUTION

- Before doing the procedure, turn off the main power switch and unplug the machine from its power source.

1. Make sure that the machine is switched off and disconnected from its power source.
2. Remove the SD card slot cover (x1).
3. Insert the Printer Option (D396) SD Card in Slot 1.
4. Insert the Printer Option (D396) SD Card: TIFF/GL Filter in Slot 2.
5. Reattach the SD card slot cover.



6. On the operation panel, remove the dummy keytop [1] and replace it with the "Printer" keytop [2].
7. Attach the "PS3" decal [3].
8. Reconnect the machine to its power source and turn the main power switch on.
9. Enter the SP mode and set SP5985-1 to "1" (Device Setting: Onboard NIC).
10. Set SP5985-2 (USB) to "1".
11. Turn the machine power off/on.
12. Print a Configuration Page to make sure that the machine recognizes the installed board:
    User Tools> Printer Features> List/Test Print> Configuration Page
13. Contact the system administrator then do the network settings in the User Tools mode (IP address, subnet mask, etc.)

Important

- **If the customer intends to use the Printer Controller Type RW-7140, the GW controller printer SD card must be removed from the main machine.**

Scanner Option Type W7140 (D397)

Important

- **The Memory Unit Type 7140 1GB (D444-17) is required for the scanner option.**

2

Accessories

No.	Description	Qt'y
1.	SD Card: Scanner	1
2.	Keytop	1

d397i001a

Installation

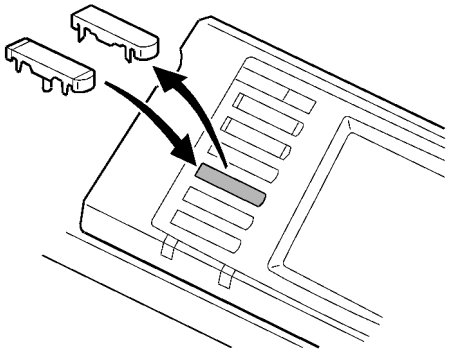
⚠CAUTION

- Before doing the procedure, turn off the main power switch and unplug the machine from its power source.

1. Make sure that the machine is switched off and disconnected from its power source.
2. Remove the SD card slot cover (x1).
3. Insert the scanner SD card into Slot 1.

   Important

   - **If the printer SD card is in Slot 1, do SP5873-1 to move the scanner application to the printer application SD card.**
4. Reattach the SD card slot cover (x1).



b286i166

5. On the operation panel, remove the dummy keytop and replace it with the "Scanner" keytop.
6. Remove the controller box cover.

RTB 35
These steps not required for machines with serial numbers later than a certain number.

d397i002

7. Insert the memory unit in the open slot on the controller board.
8. Reconnect the machine to its power source and turn the main power switch on.
9. Enter the SP mode and set SP5985-1 to "1" (Device Setting: Onboard NIB).
10. Set SP5985-2 (Device Setting: Onboard USB) to "1".
11. Turn the machine power off/on.
12. Print a Configuration Page to make sure that the machine recognizes the installed board:
    User Tools> Printer Features> List/Test Print> Configuration Page

Important

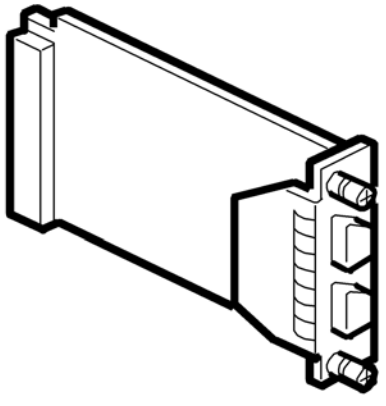
- If the customer intends to use the Printer Controller Type RW-7140, the GW controller scanner option can be used and does not need to be removed from the main machine.
- If the GW printer option has been moved to the scanner SD card, be sure to remove the printer option from this SD card.

13. Reassemble the machine.

IEEE 1284 Interface Board Type A (B679-17) (Centronics)

Accessories

	Description	Qty
1.	IEEE1284 Interface Board B679	1



b679i001

Installation

1. Remove the cover of Slot A (x 2).
2. Touch a metal surface to discharge any static electricity from your hands.
3. Install the interface board in Slot A (x 2).
4. Cycle the machine power off and on.
5. Do SP5990 to print an SMC Report.
6. Check the report to confirm that the interface board is installed correctly (the Centronics option should appear in the report).

IEEE 802.11a/g Interface Unit Type J/K (D377-01, -02, -19)

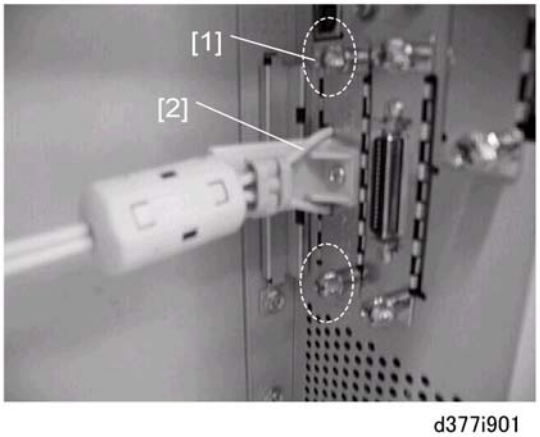
Accessories

Check the accessories and their quantities against this list.

	Description	Qty
1.	Wireless LAN PCB (GW-WLAN)	1
2.	Card (GW-WLAN)	1
3.	Wireless LAN Instructions	1

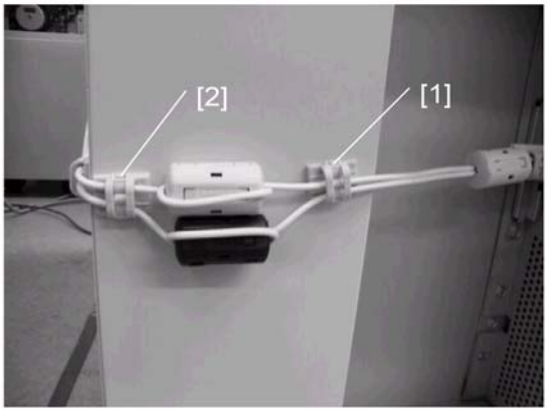
Installation

1. Remove the cover of Slot B (x 2).
2. Touch a metal surface to discharge any static electricity from your hands.
3. Insert the interface board in Slot B.



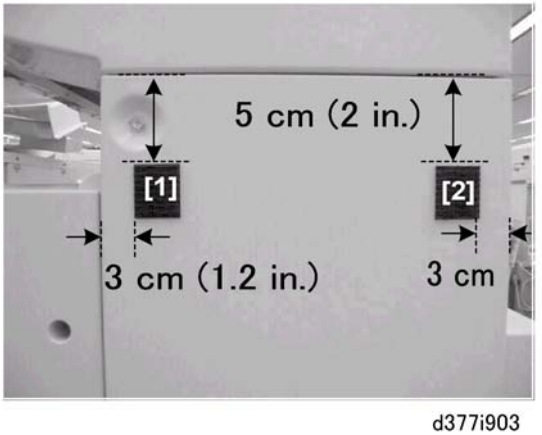
d377i901

4. Confirm that the board is inserted completely, tighten the board screws [1] with your fingers (do not use a screwdriver).
5. Fasten the cable connector [2] (x 2).
6. Separate the antenna cables so they are not tangled.



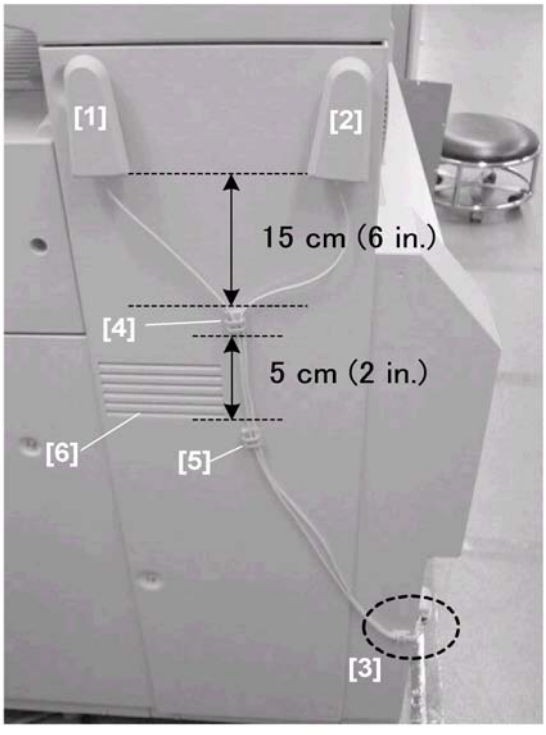
d377i902

7. With the white ferrite core above and the black ferrite core below, close the clamps [1] and [2] around the cables on each side of the cores.
8. Remove the seals from the backs of the clamps.
9. Attach the clamps [1] and [2] to the rear panel of the right rear cover. Attach the clamps at the same height so the cables are straight and level with the board connection to the controller board.



d377i903

10. Measure the distances using the dimensions shown above and mark the positions with a pencil. (5 cm from the top edge, 3 cm from the side edges of the cover).
11. Remove the seals from the back of the black Velcro pads.
12. Below the scanning unit attach the black Velcro pads [1] and [2] to the right panel of the right rear cover.
13. Determine which antenna has the black ferrite core on its cable and which has the white core on its cable. (These are the ferrite cores attached to the rear panel in Step 9.)



d377i904

14. Attach the antenna with the black core [1] to the front pad.
15. Attach the antenna with the white core [2] to the rear pad.
    - The antenna with the black core transmits and receives. It must be installed at the front.
    - The antenna with the white core only receives. It must be installed at the rear.
16. Peel the seal from a clamp, close the clamp around the cables at [3], and attach the clamp to the cover.
17. Attach then next clamp [4] 15 cm below the antennas.
18. Attach the last clamp [5] 5 cm below clamp [4].
19. Confirm that the cables are not covering any part of the ventilation port [6].
20. Confirm that the cables are not crossed.
    - Cable with the black core to the antenna at the front.
    - Cable with the white core to the antenna at the rear.

    Important

    - **To assure reliable data sending and receiving, the antenna with the black core must be installed at front, and the antenna with the white core at the rear.**

SP Mode Settings for 802.11a/g Wireless LAN

The following SP commands can be set for 802.11a/g

1. Go into the SP mode
2. Touch "System SP" on the touch-panel.
3. Do SP5840-11.

SP No.	Name	Function
5840 011	WEP Key Select	Used to select the WEP key (Default: 00).

HDD Encryption Unit Type A (D377-16)

Accessories

	Description	Qty
1.	HDD Encryption Unit D377-16	1

d377i-hde001

Before You Begin the Procedure

1. Make sure that the following items have been set for the operation of the encryption option:
   - Supervisor login password
   - Administrator login name
   - Administrator login password

   Important
   - **These settings must be set up by the customer before the encryption option can be installed.**
2. Confirm that "Admin. Authentication" is on:

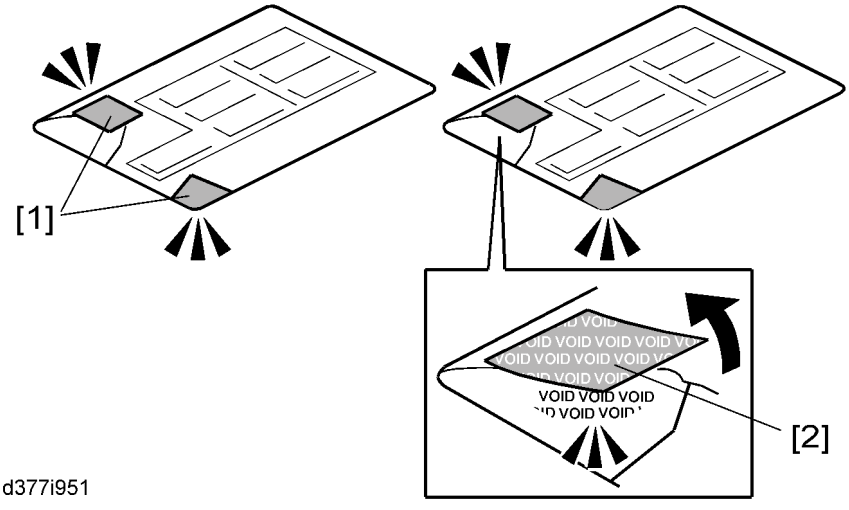
[User Tools]> "System Settings"> "Administrator Tools"> > "Next"> "Authentication Management"> "Admin. Authentication"> "On"

"Available Settings: [Administrator Tools]" appears below "Authentication Management".

Note

- "Available Settings" is not displayed until "Admin. Authentication" is switched on.
- This setting must be selected and displayed before you can do the installation procedure.

Seal Check and Removal



d377i951

CAUTION

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

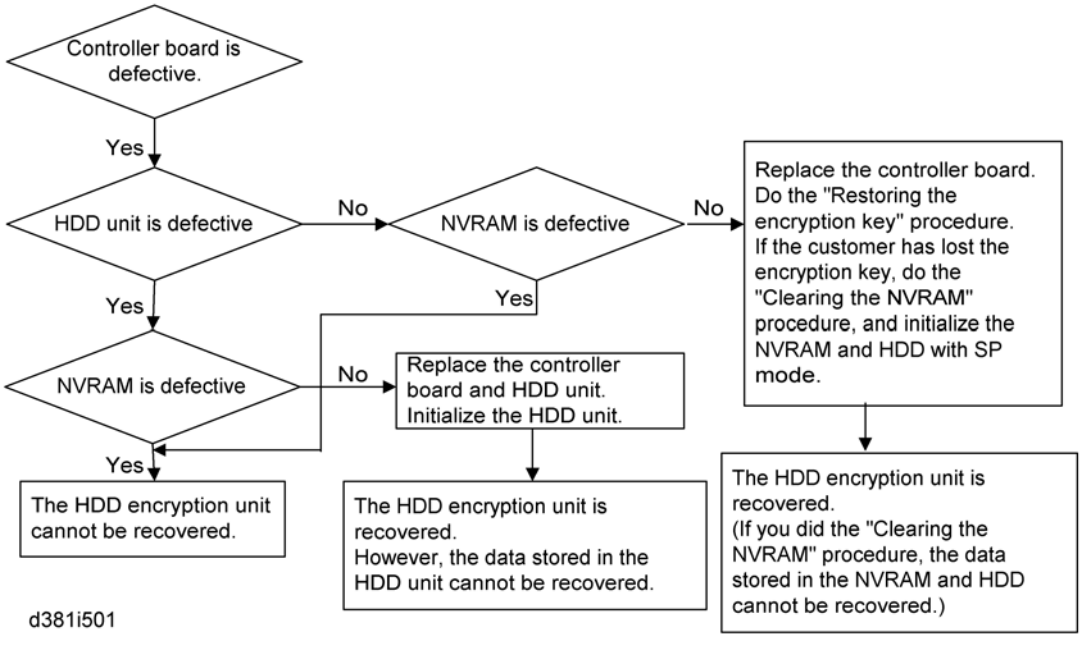
1. Check the box seals [1] on each corner of the box.
   - Make sure that a tape is attached to each corner.
   - The surfaces of the tapes must be blank. If you see "VOID" on the tapes, do not install the components in the box.
2. If the surfaces of the tapes do not show "VOID", remove them from the corners of the box.
3. You can see the "VOID" marks [2] when you remove each seal. In this condition, they cannot be attached to the box again.

Installation Procedure

1. Remove the SD card slot cover (x 1).

2. Insert the SD card in Slot 1.
3. Turn on the main power switch.
4. Enter the SP mode.
5. Select SP5878-002 (Option Setup – Encryption Option), and then touch [Execute].
6. Turn off the main power switch.
7. Remove the SD card.
8. Re-attach the SD card slot cover (x 1).
9. Switch the machine on.

Recovery from a Device Problem



Restoring the encryption key

The encryption key must be updated after the controller board has been replaced in a model in which the HDD encryption unit was installed.

1. Prepare an SD card which has been initialized.
2. Make the "restore_key" folder in the SD card.
3. Make an "nvram_key.txt" file in the "restore_key" folder in the SD card.
4. Ask an administrator to input the encryption key (this has been printed out earlier by the user) into the "nvram_key.txt" file.

5. Remove only the HDD unit.
6. Turn on the main power switch.
7. Confirm that the prompt on the LCD tells you to install the SD card (storing the encryption key) in the machine.
8. Turn off the main power switch.
9. Insert the SD card that contains the encryption key into Slot 1.
10. Turn on the main power switch, and the machine automatically restores the encryption key in the flash memory on the controller board.
11. Turn off the main power switch after the machine has returned to normal status.
12. Remove the SD card from Slot 1.
13. Reinstall the HDD unit.

Clearing the NVRAM

When replacing the controller board for a model in which the HDD encryption unit has been installed and a customer has lost the encryption key, clearing the NVRAM is required to recover the HDD encryption unit.

1. Prepare an SD card which has been initialized.
2. Make the "restore_key" folder in the SD card.
3. Make an "nvram_key.txt" file in the "restore_key" folder in the SD card.
4. Input "nvclear" into the "nvram_key.txt" file.
5. Turn on the main power switch.
6. Confirm that the prompt on the LCD tells you to install the SD card (storing the encryption key) in the machine.
7. Turn off the main power switch.
8. Insert the SD card that contains "nvclear" into Slot 1.
9. Turn on the main power switch, and the machine automatically restores the encryption key in the flash memory on the controller board.
10. Turn off the main power switch after the machine has returned to normal status.
11. Remove the SD card from Slot 1.
12. Turn on the main power switch.
13. Initialize the NVRAM (SP5801-001) and HDD unit (SP5832-001) with SP mode.
14. The user must enable the HDD encryption unit with a user tool.

Data Overwrite Security Unit Type H (D377-06)

Accessory Check

Check the accessories and their quantities against the table below.

2

Description	Qt'y
1. Data Overwrite Security SD Card	1
2. Operating Instructions CD-ROM	1
3, Comments Sheet (17 languages)	2

d377i-dos001

Before You Begin...

1. Make sure that the Data Overwrite Security unit SD card is the correct type for this machine. **The correct type for this machine is type "H"**.
2. Make sure that the following settings are not at the factory default settings:
   - Supervisor login password
   - Administrator login name
   - Administrator login password

   These settings must be set up by the customer before the Data Overwrite Security unit can be installed.
3. Confirm that "Admin. Authentication" is on:

   [User Tools]> "System Settings"> "Administrator Tools"> > "Next"> "Administrator Authentication Management"> "Admin. Authentication"> "On"

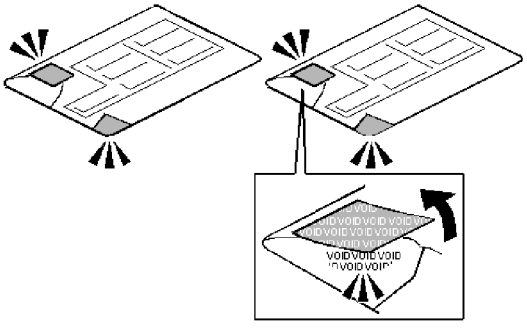
   "Available Settings: [Administrator Tools]" appears below "Authentication Management".

   Note

   - "Available Settings" is not displayed until "Admin. Authentication" is switched on.

- This setting must be selected and displayed before you can do the installation procedure.

Seal Check and Removal



d377i-dos003

1. Check the two seals and confirm that they are firmly attached.

   Important

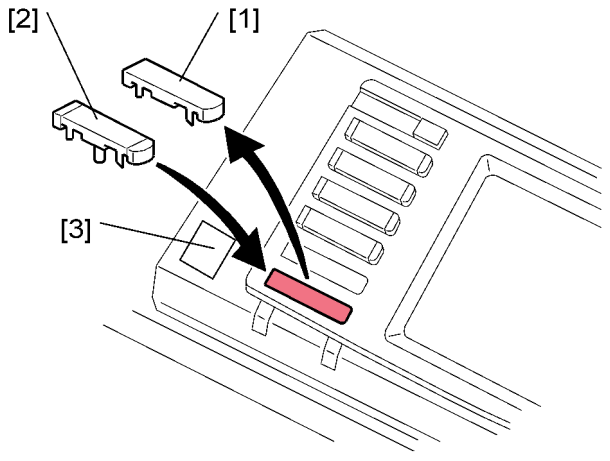
   - **If you see "VOID" on the tapes this means that the seals have been disturbed. If the "VOID" notations are visible, do not use the SD card for this installation. Contact your sales division.**

2. Remove the seals. The silver "VOID" notations become visible only after you have removed the seals.

Installation Procedure

Before doing the procedure, turn off the main power switch and unplug the machine from its power source.

1. Make sure that the machine is switched off and disconnected from its power source.
2. Disconnect the network cable.
3. Turn the main power switch on.
4. Turn the operation switch and main power switch off.
5. Remove the SD card slot cover (x1).
6. Check the security tape on the wrapping.
   - If you see "VOID" on the security tape this means that the tape has been disturbed.
   - If the "VOID" notations are visible, do not use the SD card for this installation. Contact your sales division
7. Remove the security tape from the SD card wrapping.
8. Insert the DOS SD card into Slot 1.

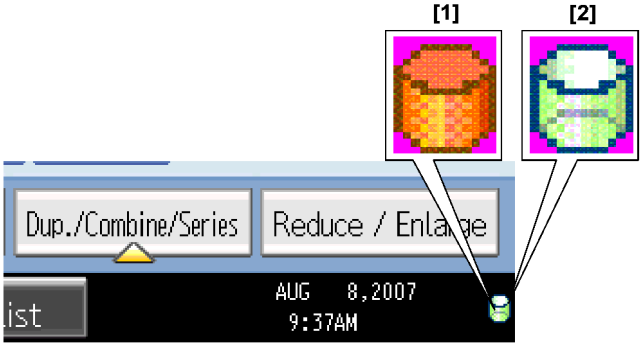


d046i166

9. On the operation panel, remove the dummy keytop and replace it with the "Other Functions" keytop.
10. Reconnect the network cable.
11. Turn the main power switch on.
12. Do SP5878-1 and push [Execute] to enable the Data Overwrite Security option.
13. Go out of the SP mode.
14. Cycle the machine off/on.
15. Do SP5990-5 to print the Self Diagnosis Test.
16. Make sure the ROM number and firmware version in area [a] of the diagnostic report are the same as those in area [b]:
    - Area [a]: “ROM Number/Firmware Version” – “HDD Format Option”
    - Area [b]: “Loading Program” - “GW4a_zoffyx”

Check Operation of the DOS Application

1. Turn "Auto Erase Memory Setting" on:
   [User Tools]> "System Settings"> "Administrator Tools"> "Auto Erase Memory Setting"> "On"
2. Exit User Tools.



d377i-dos004

3. Check the display and make sure that the overwrite erase icon is displayed is the lower left corner of the operation panel.
4. Check the overwrite erase icon.
    - Icon [1]. Lights when temporary data exists that must be overwritten, and blinks during overwriting.
    - Icon [2]: Lights when no temporary data exists that must be overwritten.

Browser Unit Type D (D377-17, -18, -08)

Accessories

Check the accessories and their quantities against the table below.

Description	Qt'y
1. Browser Unit B828 SD Card	1
2. Keytops	2

d377i-bro001

Installation

Browser unit RTB 2
The installation procedure was modified.

1. Switch the machine off.
2. Remove the SD card slot cover.
3. Insert the browser SD card into Slot 1.
4. Turn the machine on.
5. Push [User Tools]> [Login/Logout].
6. Login with the administrator user name and password.
7. Touch "Extended Feature Settings" twice.
8. Touch "SD Card" then touch the "Browser" line.
9. Under "Install to:" touch "Machine HDD"> "Next".
10. When you see "Ready to Install", check the information on the screen to confirm your previous selection.
11. Touch "OK". You will see "Installing..." then "Completed".
12. Touch "Exit" twice to return to the copy screen.
13. Remove the SD card from the SD card slot.

VM Card Type E (D377-10/-11/-12)

Accessories

Check the accessories and their quantities against the table below.

Description	Qt'y
1. VM SD Card D377	1
2. Keytops	2
3. Decal	1

d377i-vm001

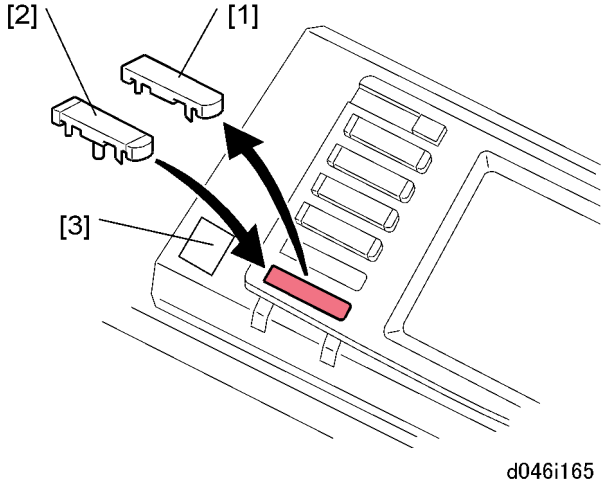
Installation

1. Switch the machine off.
2. Remove the SD card slot cover (x1).
3. Insert the SD card into Slot 2.

Note

- The VM card must stay in SD card Slot 2 (lower slot).

4. Reattach the SD card slot cover.



d046i165

5. On the operation panel, remove the bottom blank keytop [1] and replace it with the "Other Functions" keytop [2].
6. Attach the decal [3] to the copier.
7. Switch the machine on.

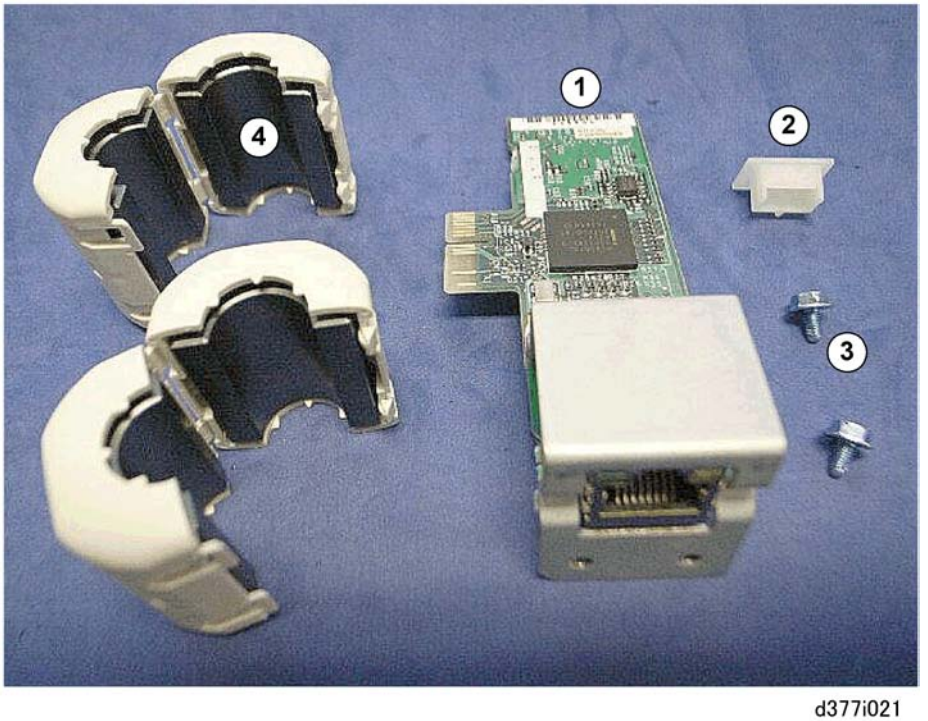
Gigabit Ethernet Type B (D377-21)

Accessories

Check the accessories and their quantities against the table below.

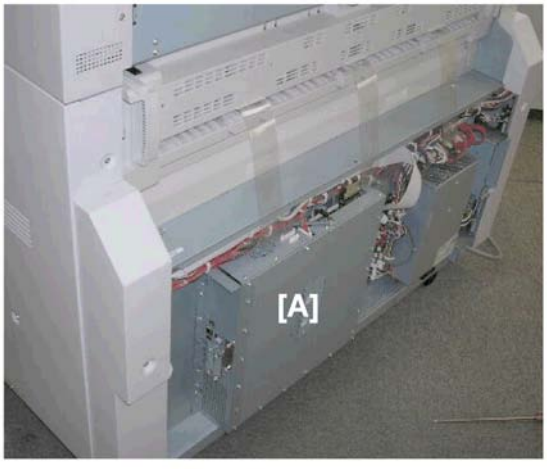
2

No.	Description	Qt'y
1.	Gigabit Ethernet PCB	1
2.	Cap – LAN Connector	1
3.	Screws	2
4.	Ferrite Cores	2



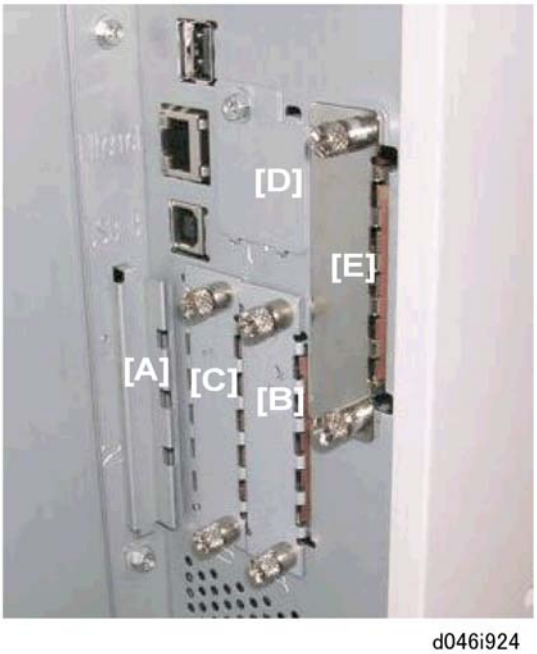
d377i021

Installation



d377i-gig001

1. Remove the rear cover of the machine to expose the controller box [A] (x8).



d046i924

2. Remove:

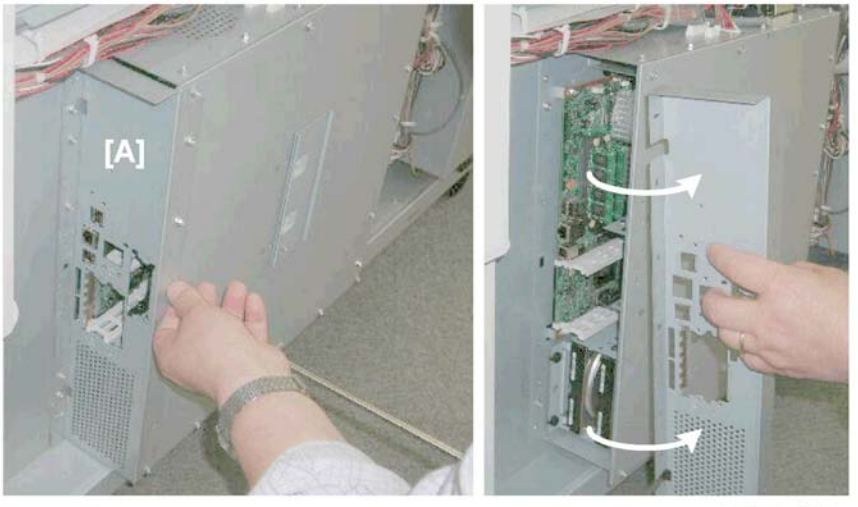
   [A] SD card slot cover (x1)

   [B] Slot A cover (or installed board) (x2)

   [C] Slot B cover (or installed board) (x2)

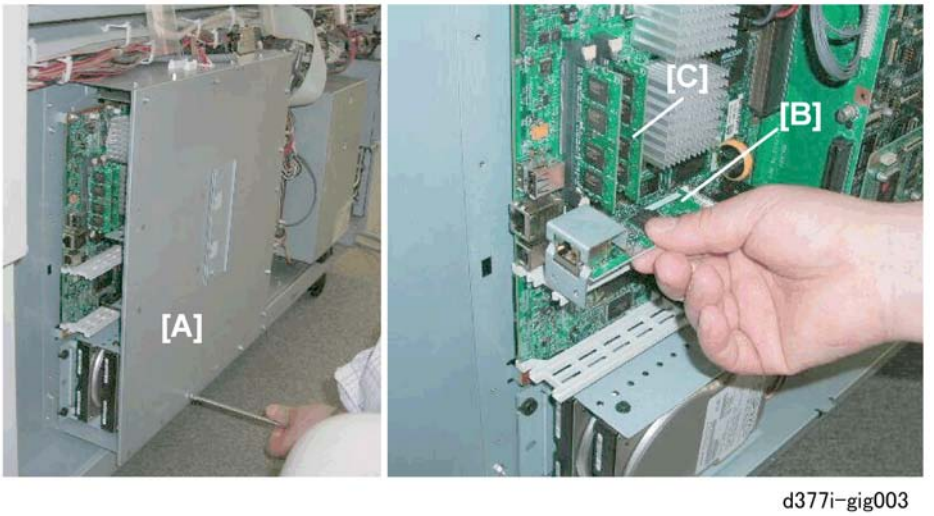
   [D] Slot C cover (x1)

[E] File format converter board (x2)



d377i-gig002

3. Remove the controller box faceplate [A] (x6).



d377i-gig003

4. Remove the controller box cover [A] (x18).
5. Insert the edge connector of the gigabit Ethernet PCB [B] into the controller board.

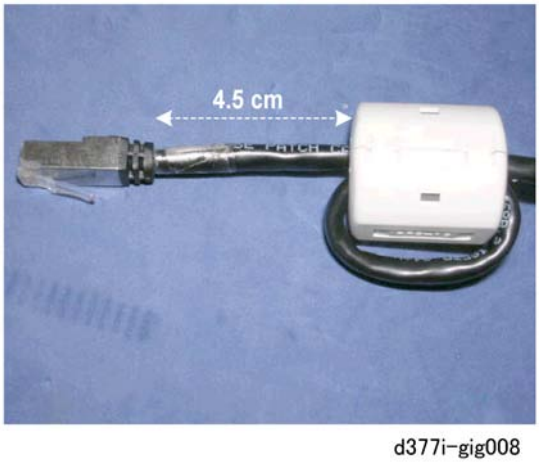
Important

- **If the scanner unit will be installed, you must also install Memory Unit Type 7140 1GB (D444) [C]. Do this now while the controller box cover is off.**

6. Reattach the controller box cover and faceplate.
7. Reattach all slot covers (or reinstall any boards, including the file format converter board).

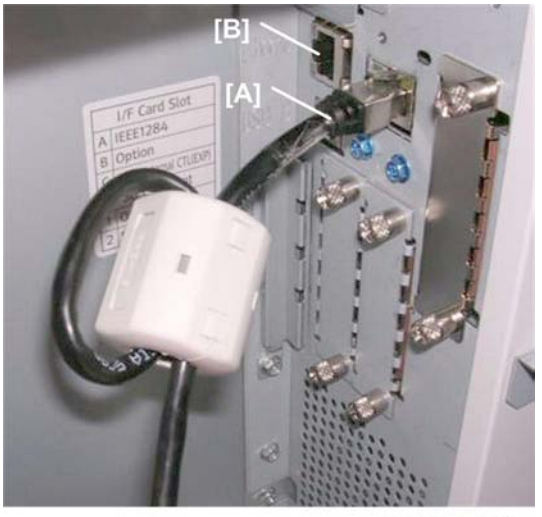
d377i-gig005

8. Fasten the gigabit Ethernet PCB [A] to the faceplate (☞ x2).



d377i-gig008

9. Fasten one ferrite core to each end of the cable, about 4.5 cm from the ends.



d377i-gig009a

10. Attach the cable [A] to the connector.
11. Attach the Cap – LAN connector [B] to the standard LAN connector.

Interface PCB Type W7140 (D445)

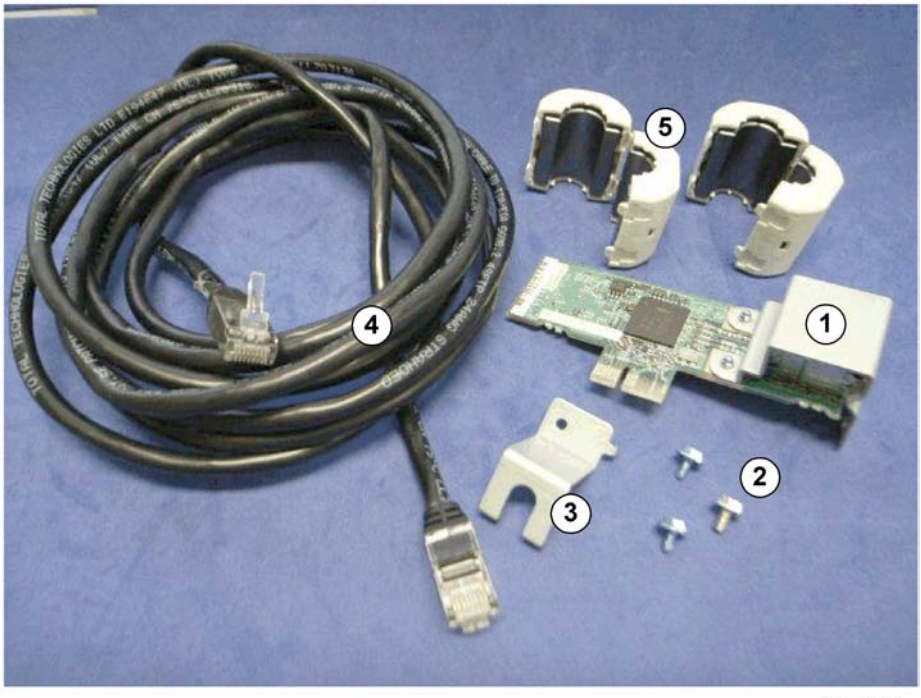
Important

- **The Interface PCB Type W7140 (D455) is required for the Printer Controller Type RW-7140 (D399).**

Accessories

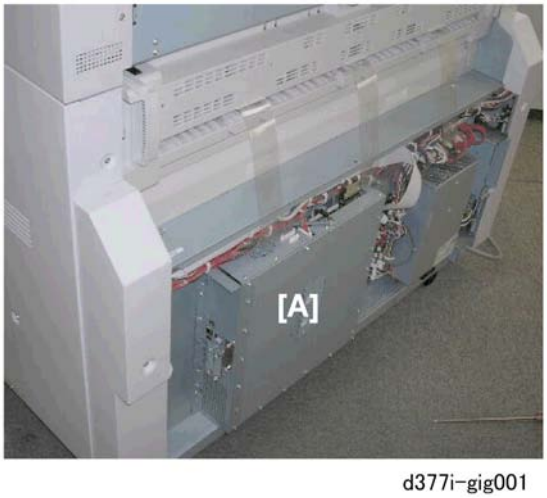
Check the accessories and their quantities against the table below.

No.	Description	Qt'y
1.	Interface PCB	1
2.	Screws	3
3.	Protector Plate	1
4.	Cable	1
5.	Ferrite Cores	2



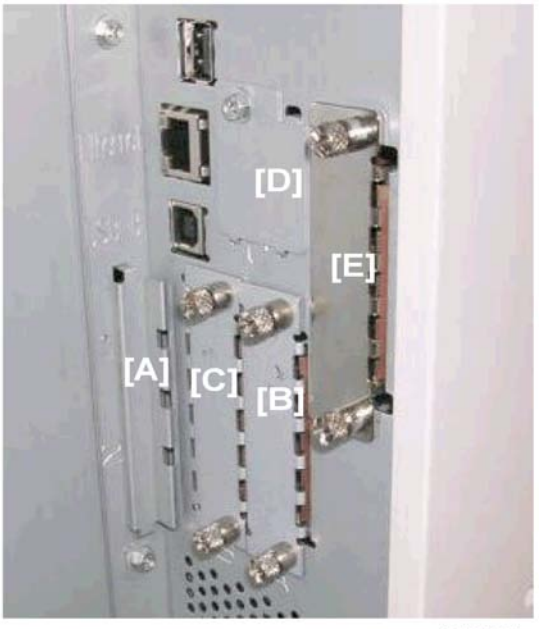
d455i001

Installation



d377i-gig001

1. Remove the rear cover of the machine to expose the controller box [A] (x8).



d046i924

2. Remove:

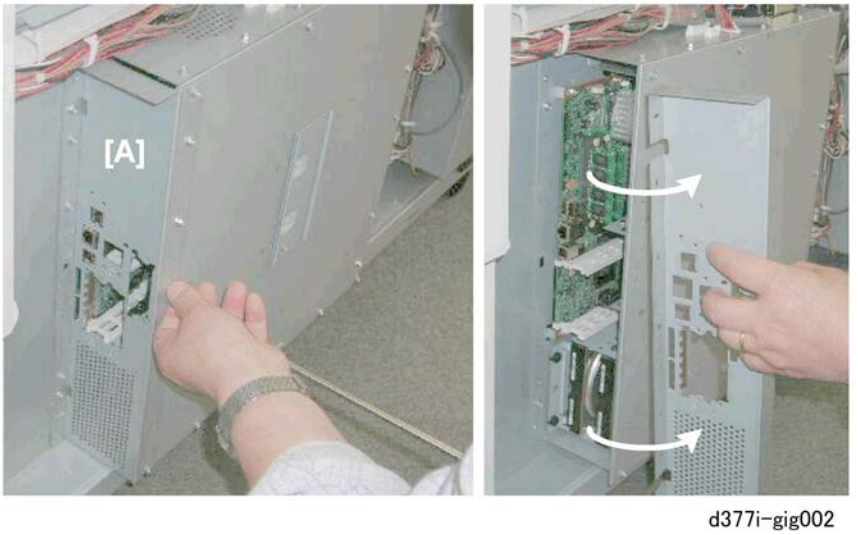
   [A] SD card slot cover (x1)

   [B] Slot A cover (or installed board) (x2)

   [C] Slot B cover (or installed board) (x2)

   [D] Slot C cover (x1)

   [E] File format converter board (x2)



d377i-gig002

3. Remove the controller box faceplate [A] (x6).

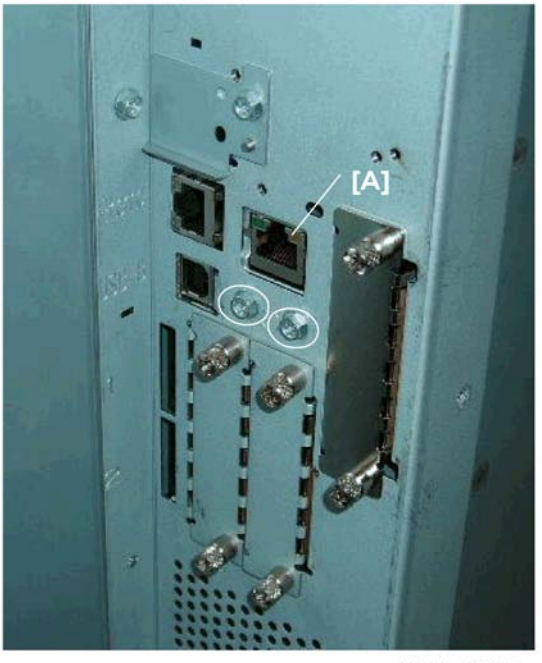
d377i-gig003

4. Remove the controller box cover [A] (x18).
5. Insert the edge connector of the interface PCB [B] into the controller board.

Important

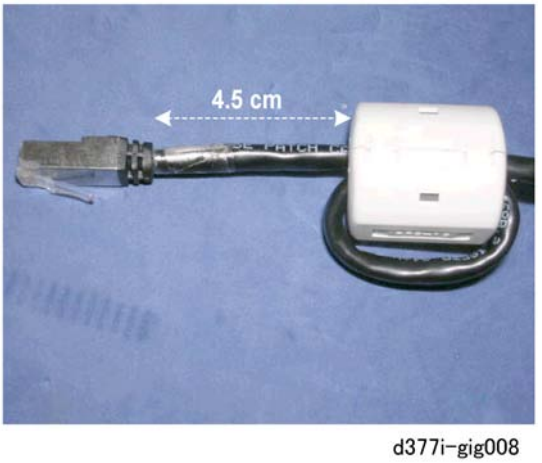
- **If the scanner unit will be installed, you must also install Memory Unit Type 7140 (D444) [C]. Do this now while the controller box cover is off.**

6. Reattach the controller box cover and faceplate.
7. Reattach all slot covers (or reinstall any boards, including the file format converter board).



d377i-gig005

8. Fasten the interface PCB [A] to the faceplate (x2).



d377i-gig008

9. Fasten one ferrite core to each end of the cable, about 4.5 cm from the ends.

d377i-gig009

10. Attach the cable [A] to the connector.

d377i-rat001

11. With the prongs of the protector plate on both sides of the attached cable, fasten the protector plate [A] to the controller box face plate (x1).

RTB 19
Additional steps to perform

Scanner Separation Unit Type 7140 (D436)

Important

- **This option can be installed and used with the D049 only.**

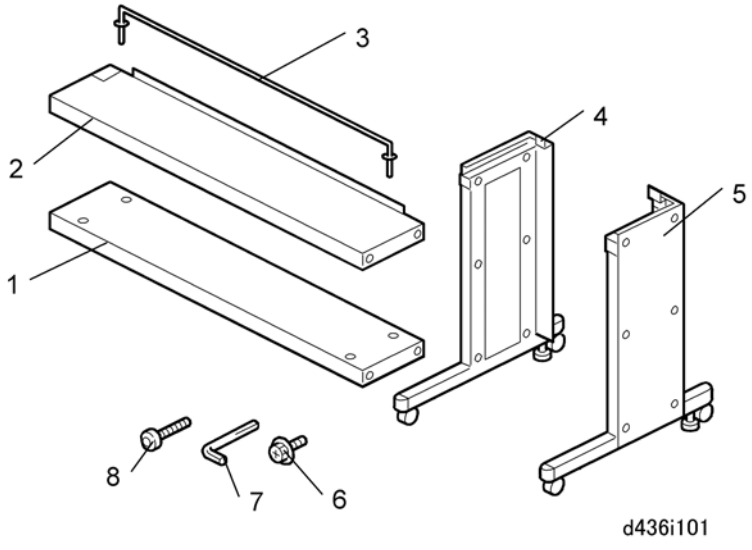
2

Accessories: Table (D346)

Check the accessories and their quantities against the following list:

No.	Description	Q'ty
1.	Shelves	2
2.	Top Shelf	1
3.	Rails*1	2
4.	Left Stay	1
5.	Right Stay	1
6.	Screws	6
7.	Hex Wrench	1
8.	Long Bolts	12

*1: Taped to the bottom of one of the shelves (1),

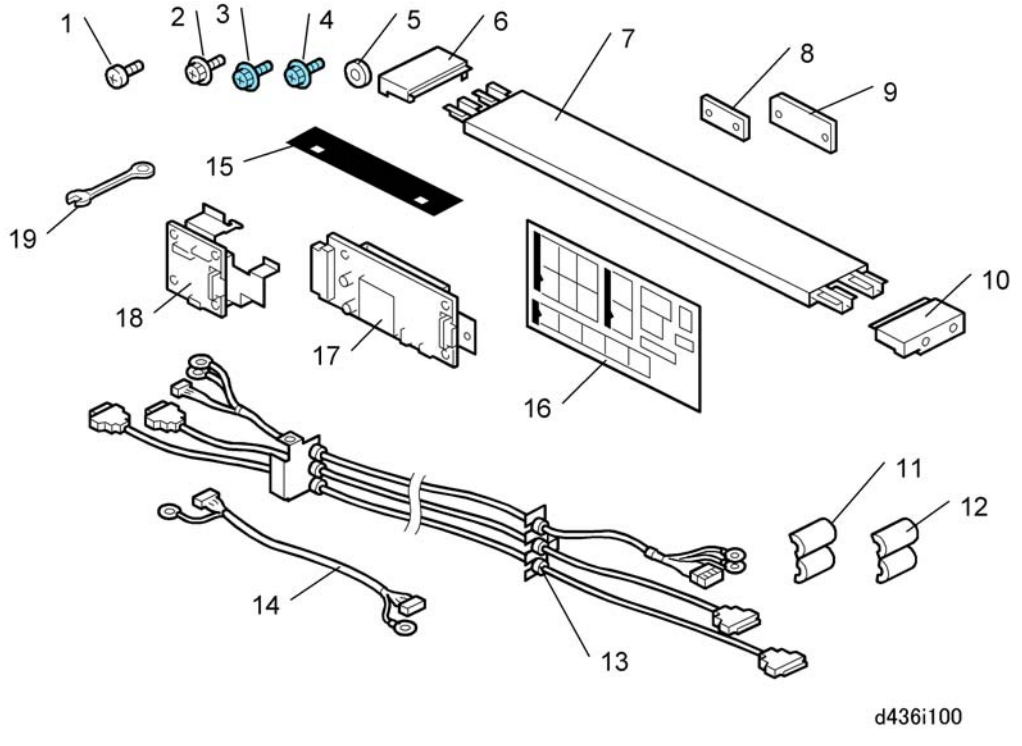


Accessories: Scanner Separation Unit (D436)

Check the accessories and their quantities against the following list:

No.	Description	Q'ty
1.	Screws: Round Head	4
2.	Screws: Tapping (M4x8)	12
3.	Screws: Tapping (M3x6) Blue	13
4.	Screws (Blue: M4 x 8)	4
5	Lock Washers	4
6	End Cover: Left	1
7	Top Cover (for copier)	1
8	Square Plate	1
9	Beveled Plate	1
10.	End Cover: Right	1
11.	Ferrite Core	2
12.	Ferrite Core	4

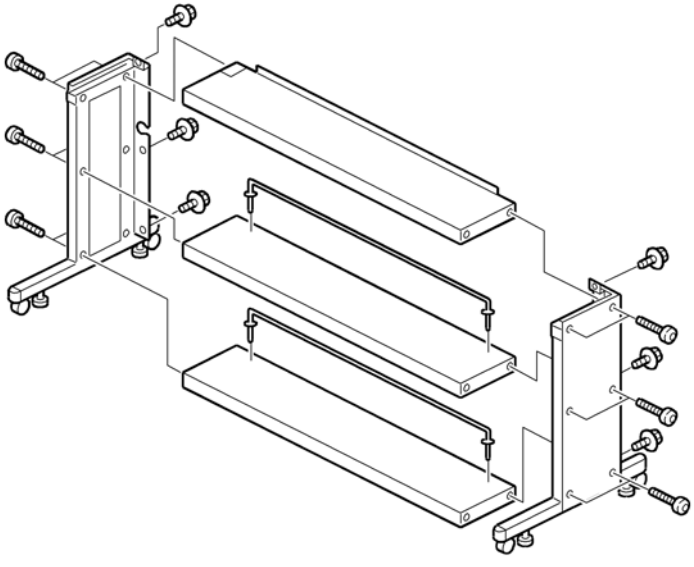
No.	Description	Q'ty
13.	Cable Harness (brackets attached)	1
14.	Cable Harness: Small	1
15.	Mylars: Black	2
16.	Decals	1
17.	Scanner Relay Board (Large)	1
18.	Printer Relay Board (Small)	1
19.	Flat Wrench (5.5 mm)	1



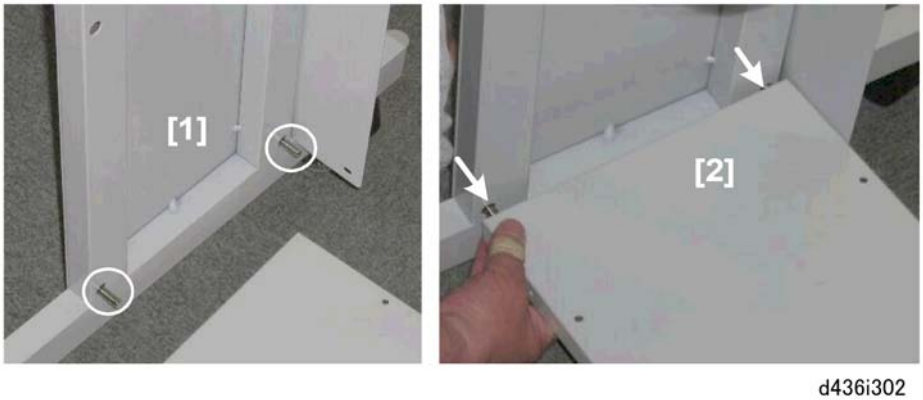
⚠WARNING

- Work carefully to avoid damaging the cable harness with attached brackets (Item 13 above). Never attempt to modify these cables in any way.

Assembling the Table



d436i102

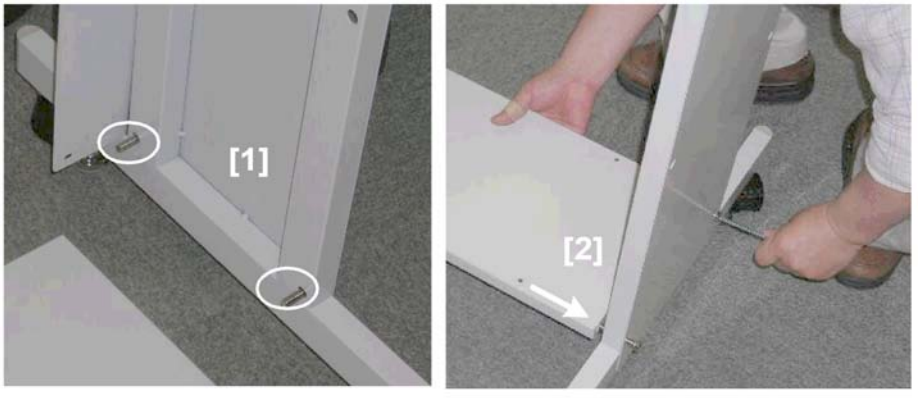


d436i302

1. Hold the left stay [1] upright.
2. Insert two long bolts at the bottom.
3. Select either of the two identical shelves.
4. Lean the stay toward the end of the shelf [2] and turn the bolts.

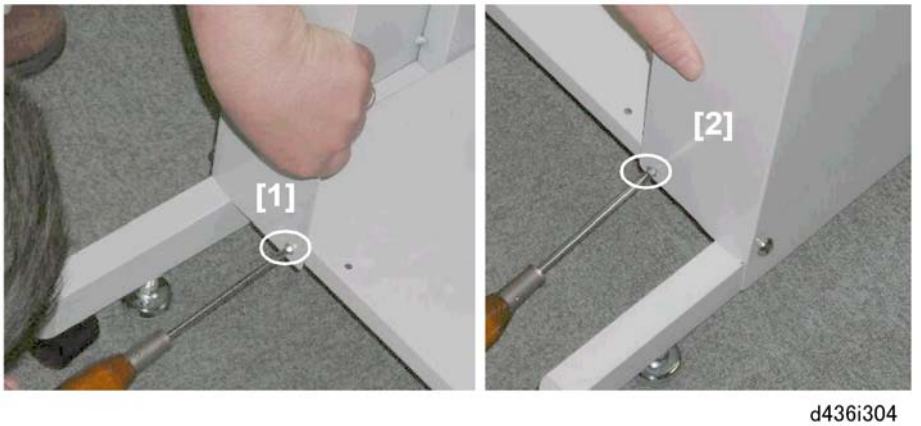
Important

- **Leave the bolts loosely attached. Do not tighten any bolt or screw until you are instructed to do so.**



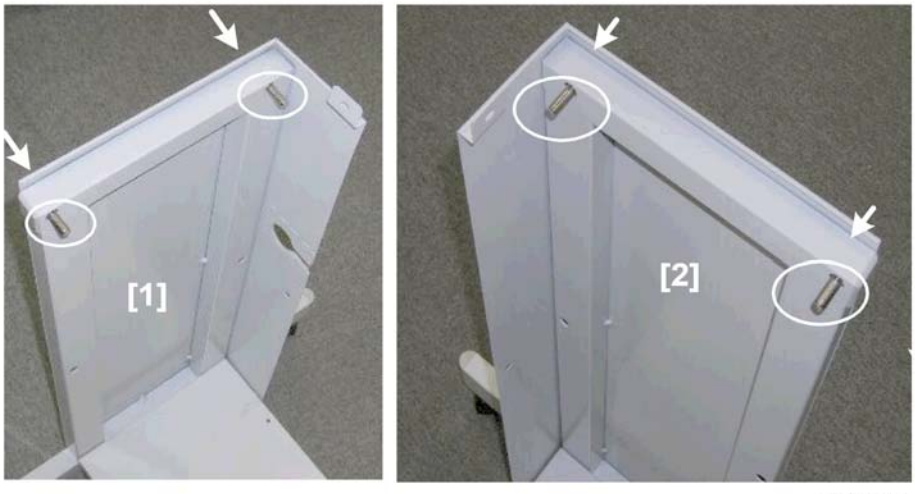
d436i303

5. Hold the right stay [1] upright.
6. Insert two long bolts at the bottom.
7. Turn the bolts to attach them to the right end of the bottom tray [2] (do not tighten).



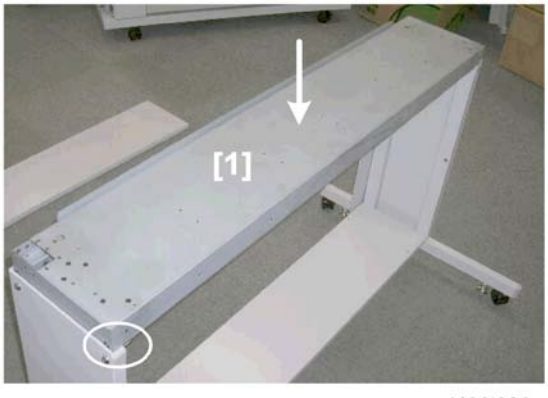
d436i304

8. Fasten the bottom right rear panel [1] and bottom left rear panel [2] (x1 each). (Do not tighten.)



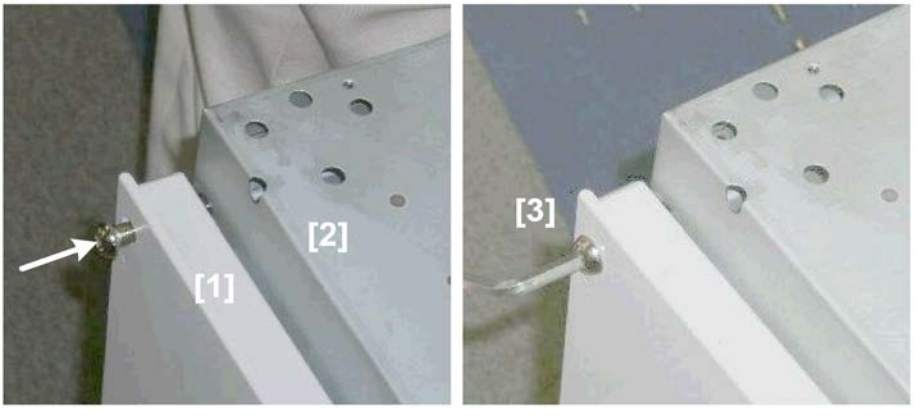
d436i305

9. Insert two long bolts at the top of the left stay [1] and at the top of the right stay [2].



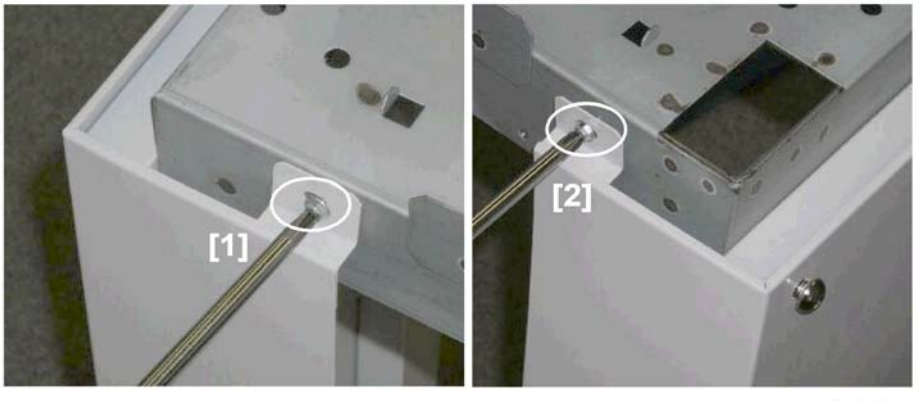
d436i306

10. Set the top cover [1] on the bolts.



d436i307

11. At each corner between the stays [1] and top cover [2], insert each long bolt into its hole.
12. Turn each bolt with the hex wrench [3] to set it (x4). (Do not tighten.)

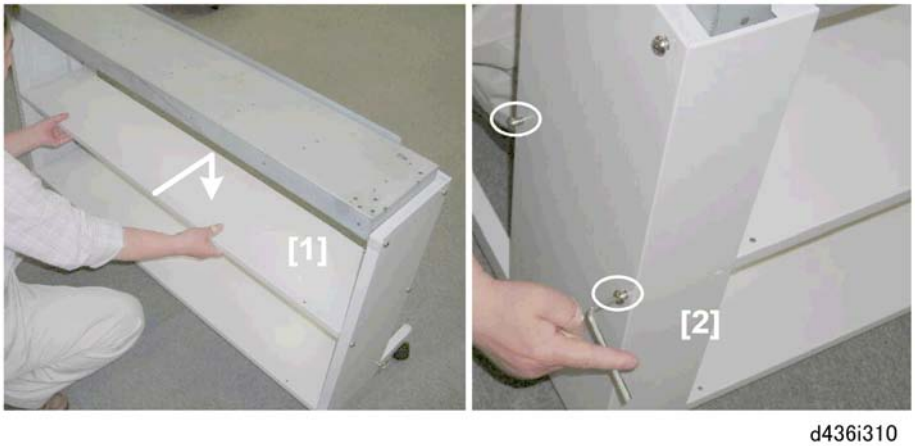


d436i308

13. At the rear, fasten the top of the right stay [1] and the top of the left stay [2] to the top cover (x 1 each). (Do not tighten.)

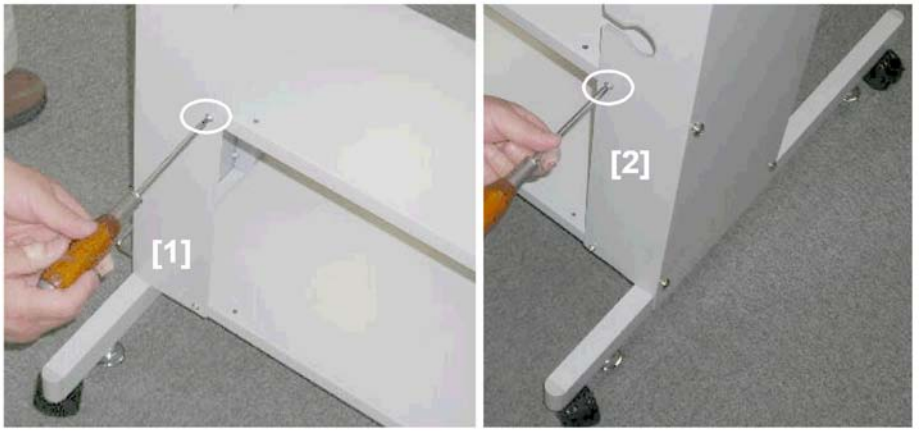
d436i309

14. Insert two long bolts in the middle of the left stay [1] and right stay [2].



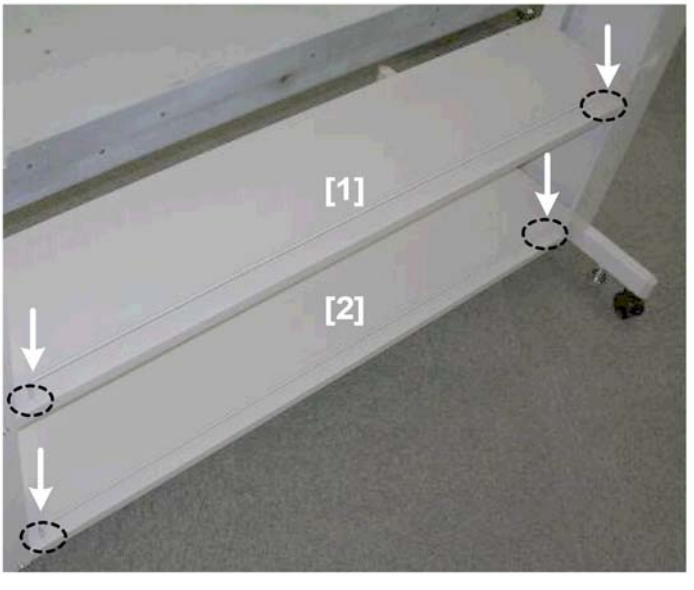
d436i310

15. Set the remaining shelf [1] on top of the bolts.
16. At both ends of the middle shelf, insert each bolt [2] into its hole and turn with the hex wrench to fasten the bolts (x4). (Do not tighten.)



d436i311

17. At the rear, fasten the left stay panel [1] and right stay panel [2] to the middle shelf (x1 each) (Do not tighten.)



18. Set each end of rail [1] into the holes in the middle shelf.
19. Set each end of rail [2] into the holes in the bottom shelf.
20. Tighten all long bolts and screws.

Installation: Scanner Unit

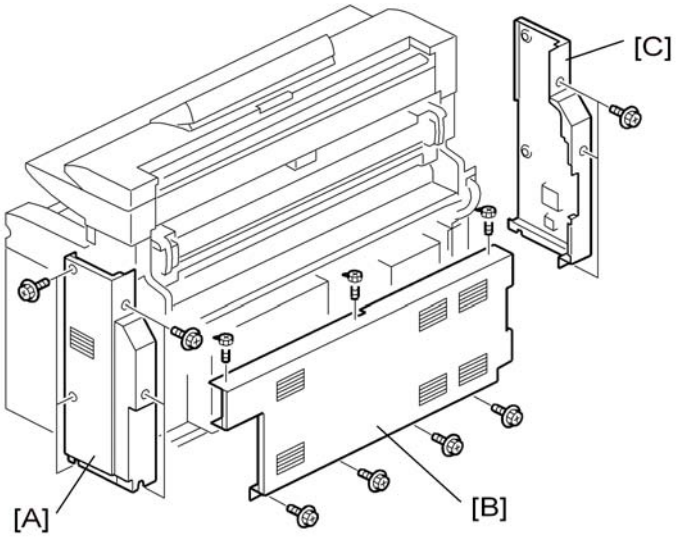
⚠CAUTION

- Unplug the main machine power cord before doing the following procedures.

Preparation

Important

- You must assemble the table before you do this procedure.
- Two service technicians are required at installation for disassembly and reassembly of the scanner unit.



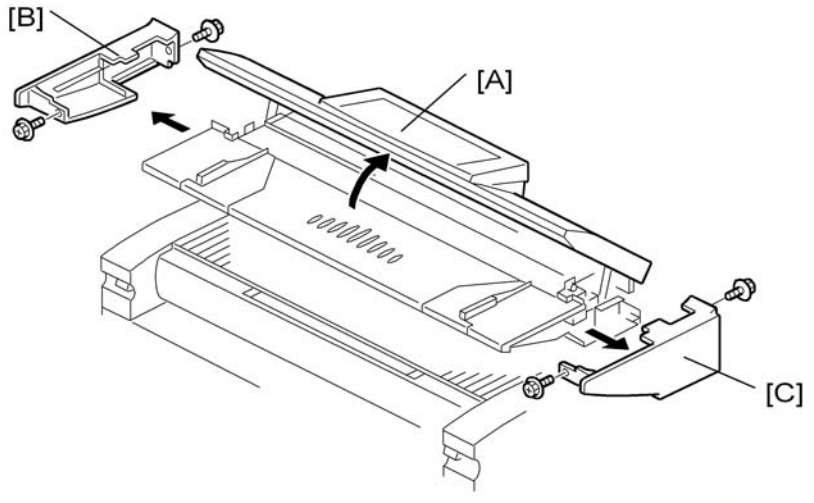
d436i104

1. Remove:

   [A] Right rear cover (x6)

   [B] Rear cover (x7)

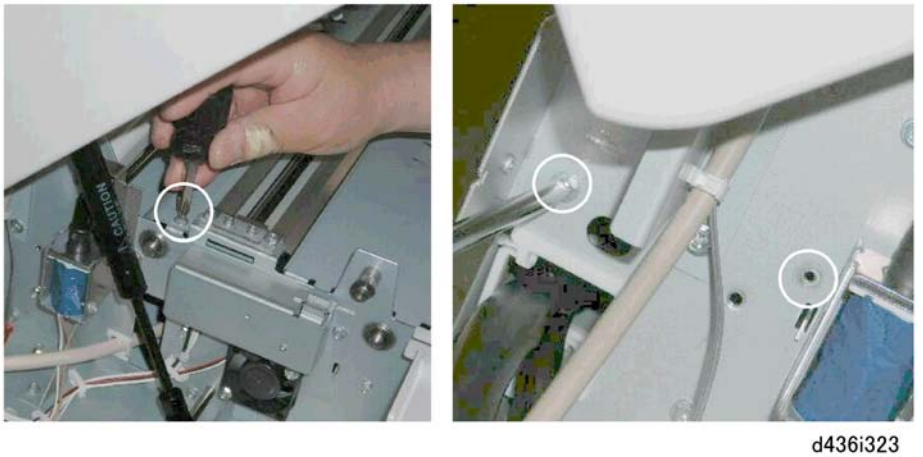
   [C] Left rear cover (x7)



d436i105

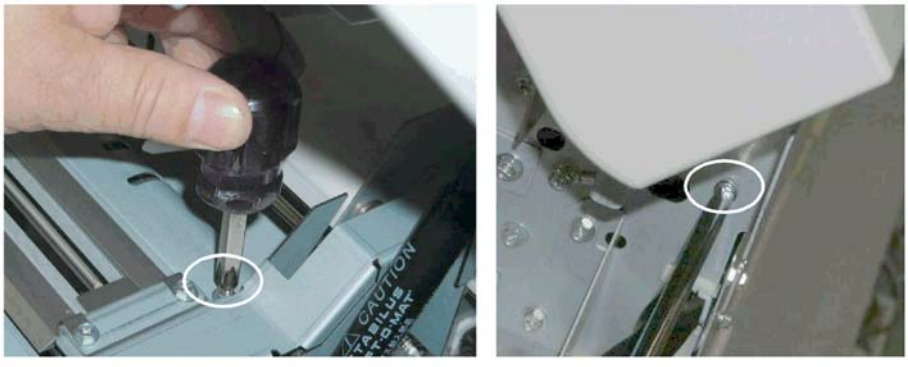
2. Open the scanner cover unit [A]
3. Remove:
   [B] Left end cover (x2)
   [C] Right end cover (x2)

Original Rear Exit Guide



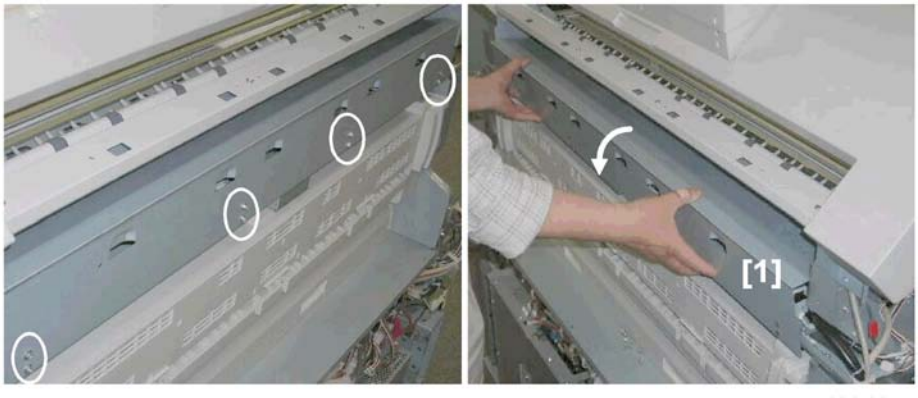
d436i323

1. Open the scanner cover.
2. Remove the screws on the left side.



d436i324

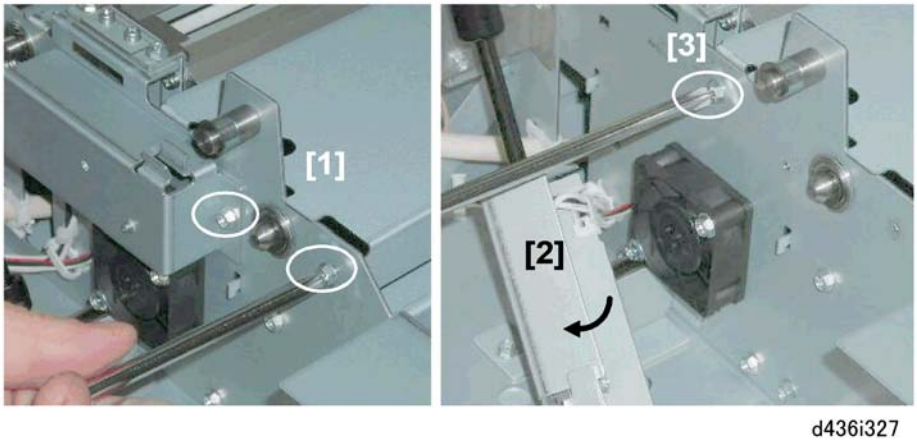
3. Remove the screws on the right side (x2).



d436i325

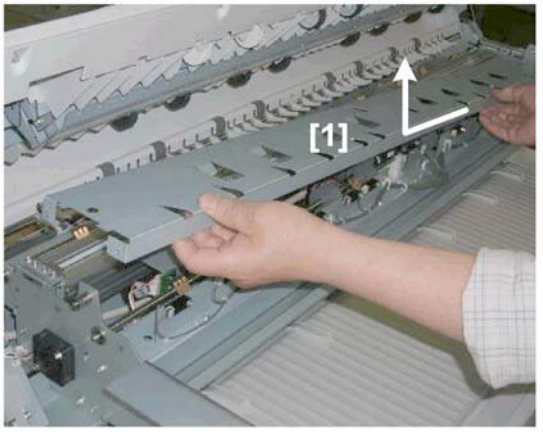
4. Remove the original rear exit guide [1] (x8).

Original Transport Guide



d436i327

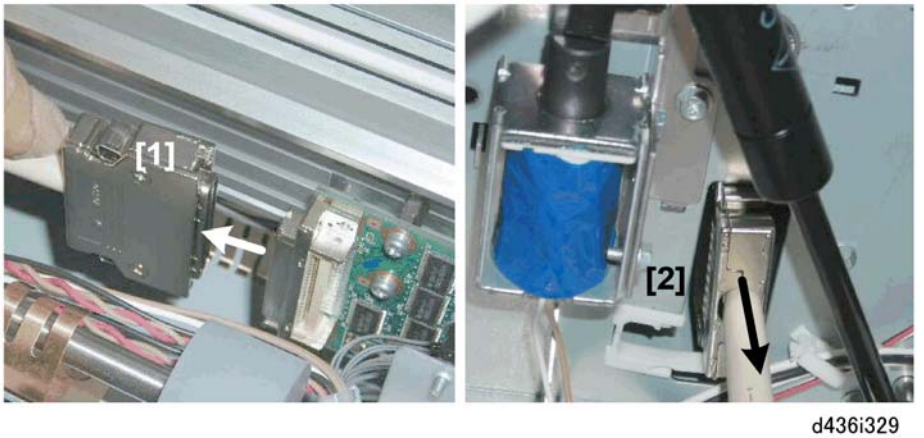
1. On the left side, remove screws [1] (x2) and pull away the switch bracket [2].
2. Remove the third screw [3] (x1).



d436i328

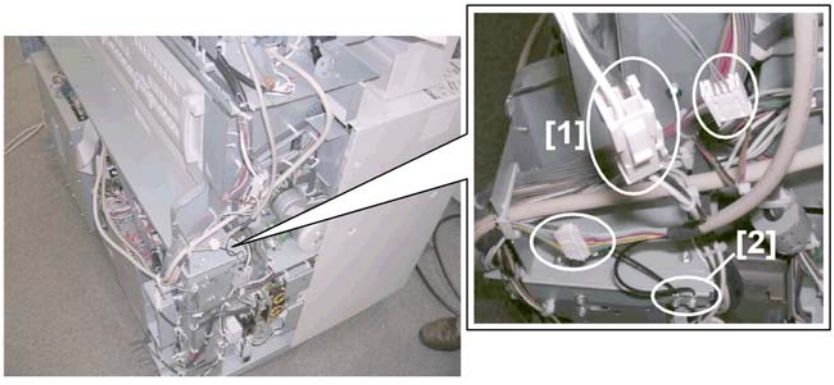
3. Remove the original transport guide [1].

CIS, Controller



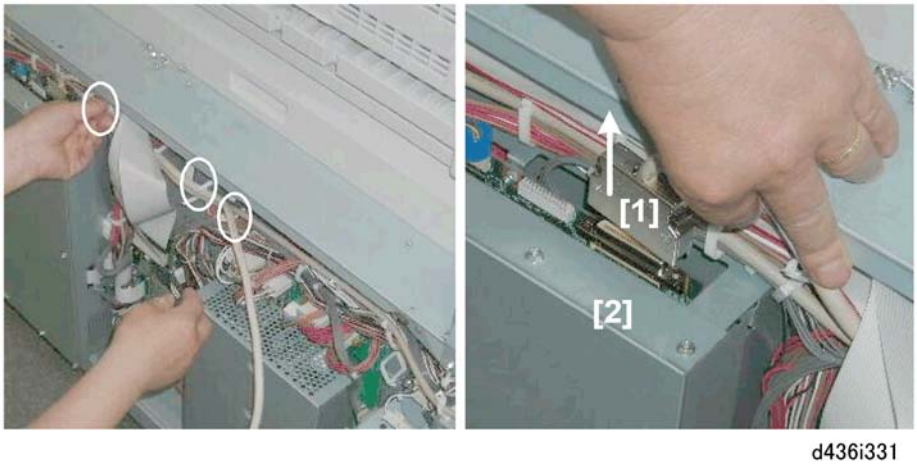
d436i329

1. At the center of the main machine inside the CIS unit, disconnect the connector [1] from the CIS board.
2. Pull out the cable and head of the connector through the hole [2].



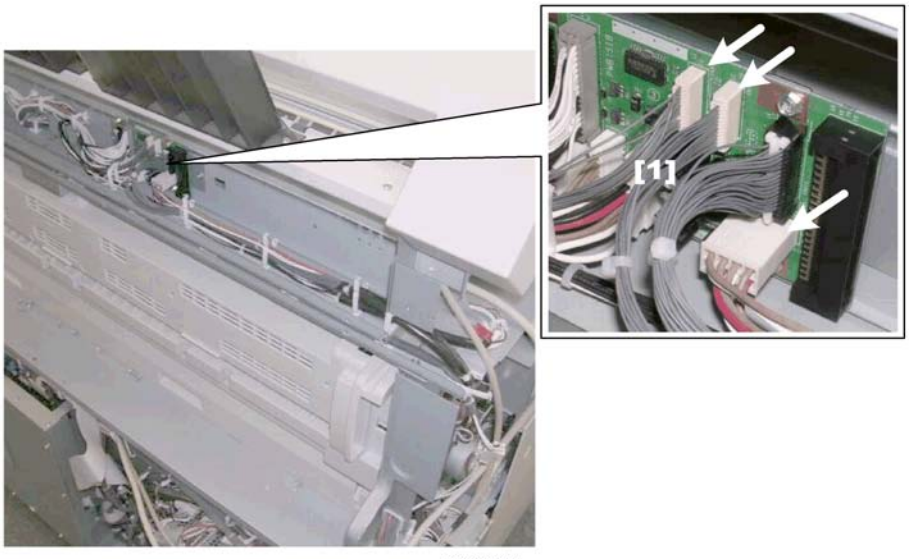
d436i330

3. At the left rear corner [1], disconnect the connectors and ground wire [2] (x2, x2).



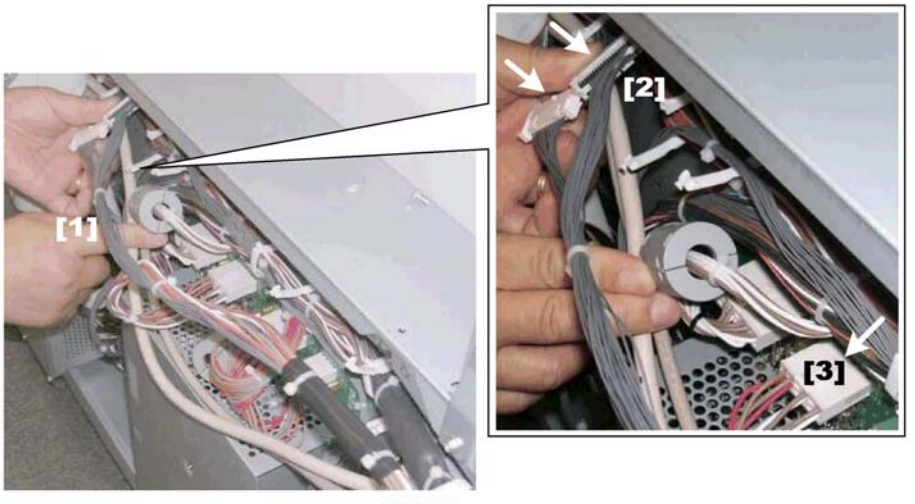
d436i331

4. At the rear of the main machine, disconnect the CIS-IPU harness [1] from the top of the controller box [2] (x1).



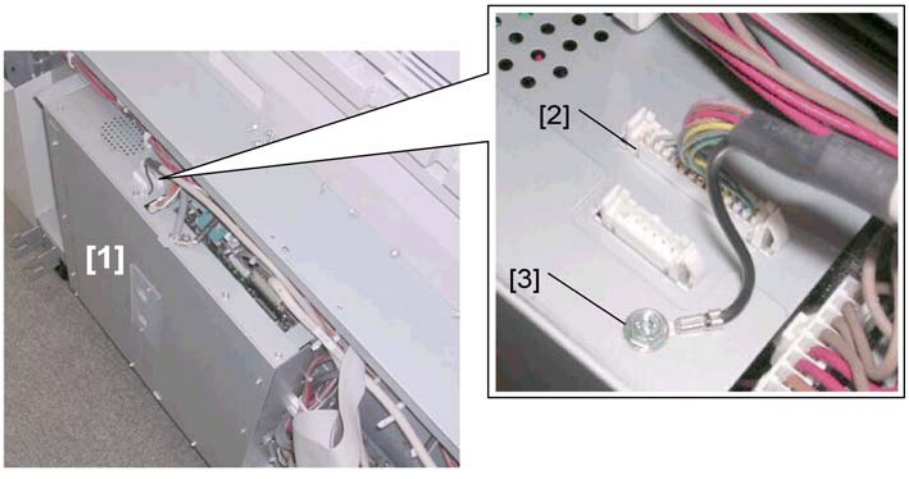
d436i391

5. Disconnect the SIB-IOB harness [1] from the SIB (x3).



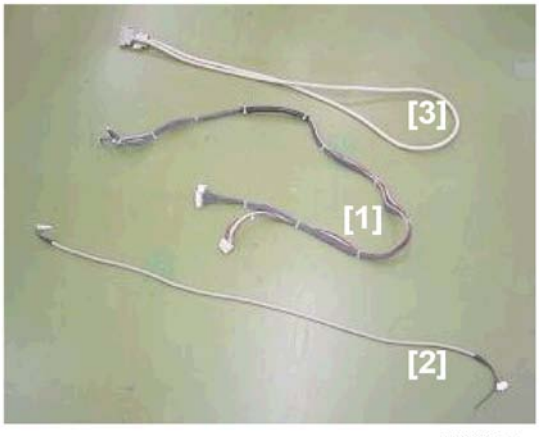
d436i392

6. Above the IOB [1], disconnect the SIB-IOB harnesses [2] (x2).
7. Disconnect the SIB-IOB harness [3] from the PSU (x1).



d436i393

8. On top of the controller box [1], disconnect the operation panel-MB harness [2] and ground wire [3] (x1, x1).



d436i394

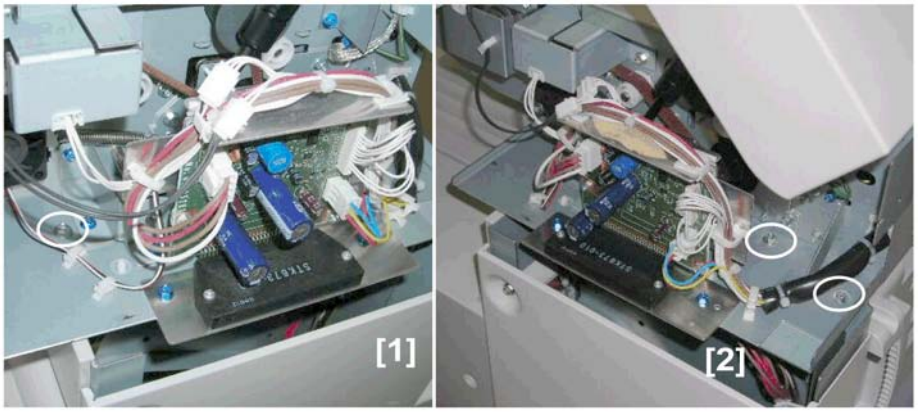
9. Remove the harnesses:

   [1] SIB-IOB harness

   [2] Operation Panel-MB harness

   [3] CIS-IPU harness

Scanner Unit Removal



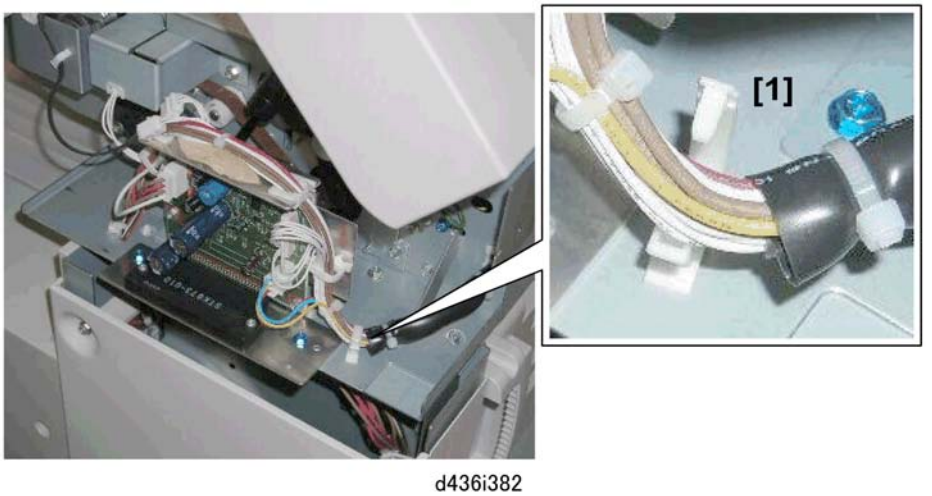
d436i381

Left Side

1. Locate the three screws that must be removed on the right side:

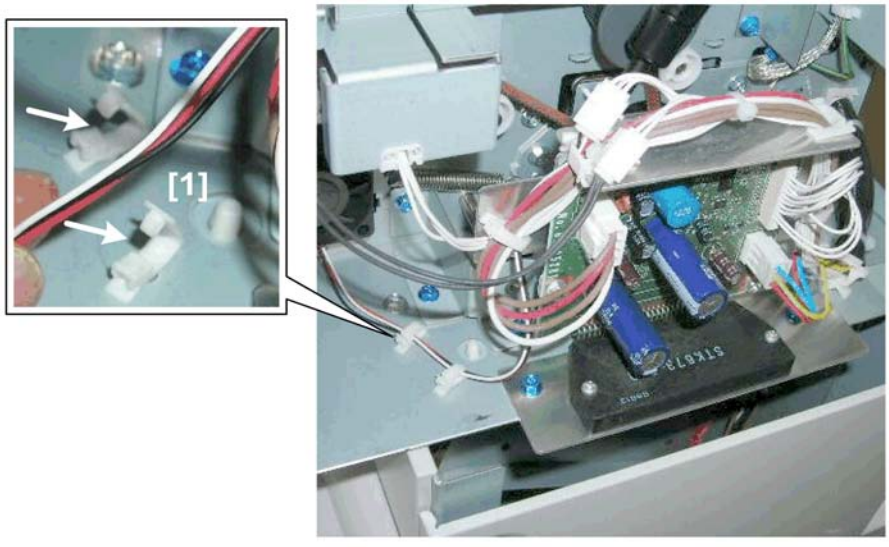
   [1] Right front (x1)

   [2] Right rear (x2)



d436i382

2. At the rear, open harness clamp [1] (x1).

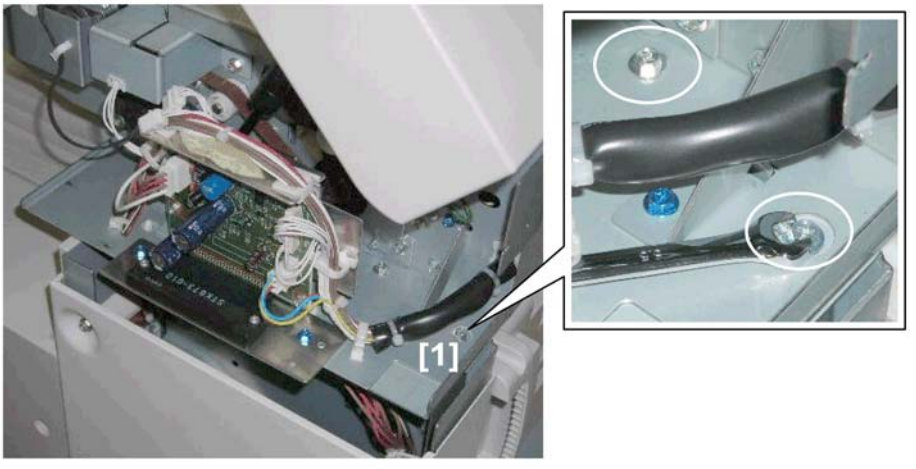


d436i383

3. At the front, open harness clamps [1] (x2).

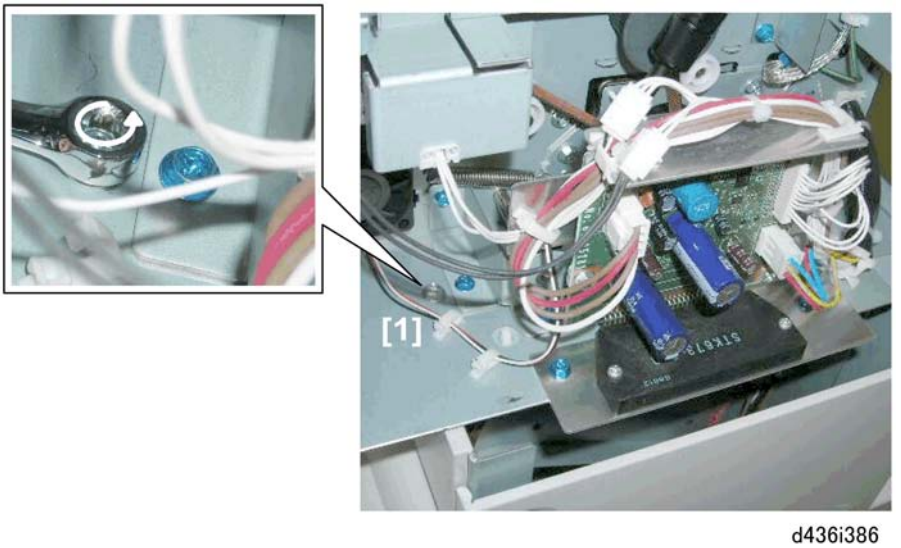
d436i384

4. Remove the screws of the scanner motor drive board [1] (x2).
5. Turn the scanner motor drive board [2] so you can see the rear screws. (You do not need to remove the drive board.)



d436i385

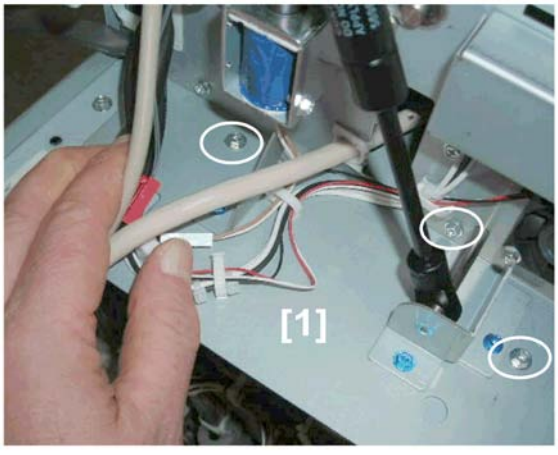
6. At the rear, remove the screws near the large harness [1] (x2).



d436i386

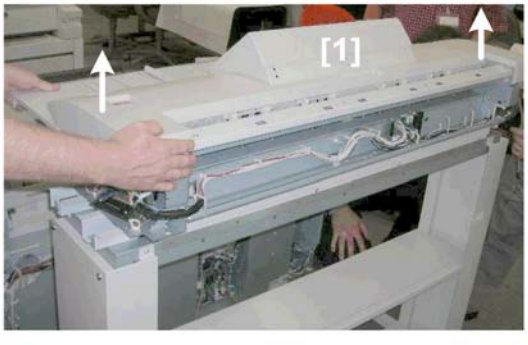
7. At the front, [1] remove the screw (x1).

Right Side



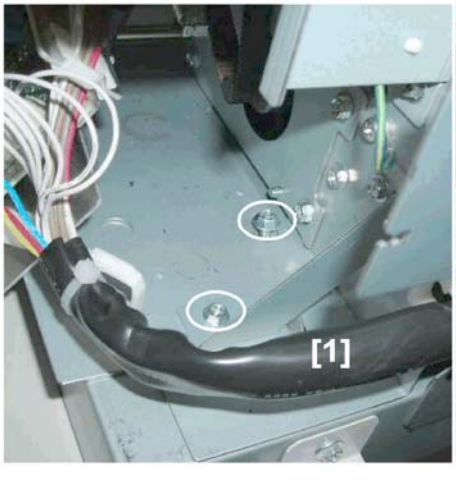
d436i387

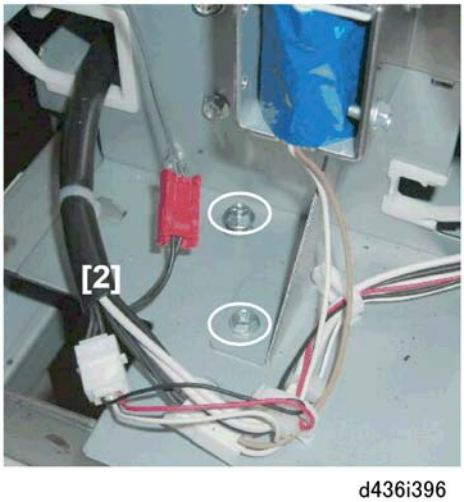
1. On the right side [1], remove the screws (x3).



d346i388

2. Close the scanner cover unit [1], then lift it off the main machine and set it on the table [2].





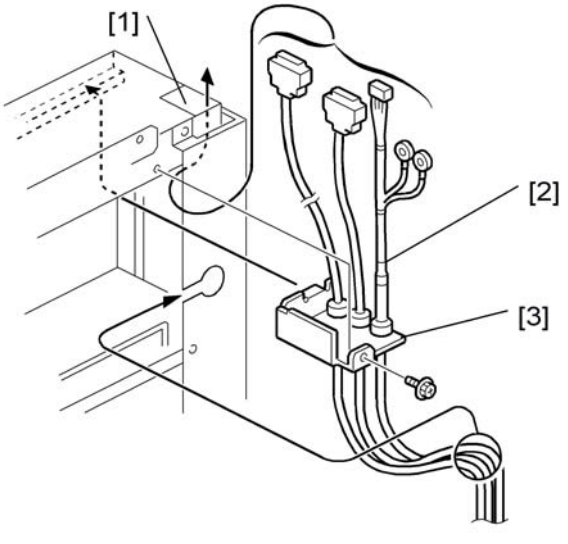
d436i396

3. Fasten the scanner unit at the right corner [1] (x2) and left corner [2] (x2).

Scanner Relay Board, Cable Connection

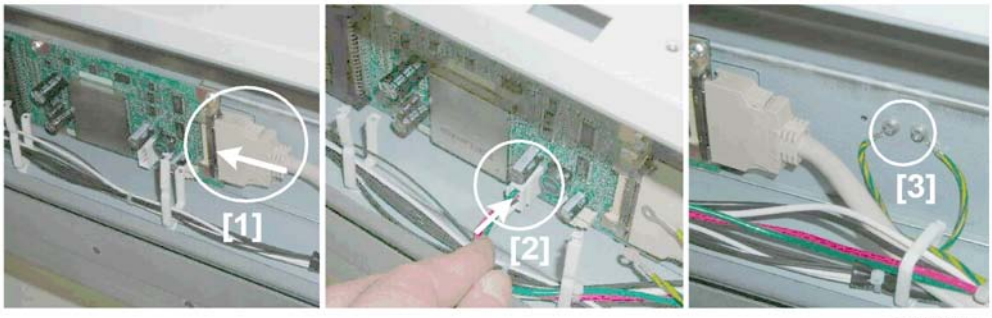
d436i343

1. At the rear of the main machine, insert the scanner relay board [1] into the side of the SIB [2].
2. Fasten the relay board bracket [3] to the main machine (x1 M3).



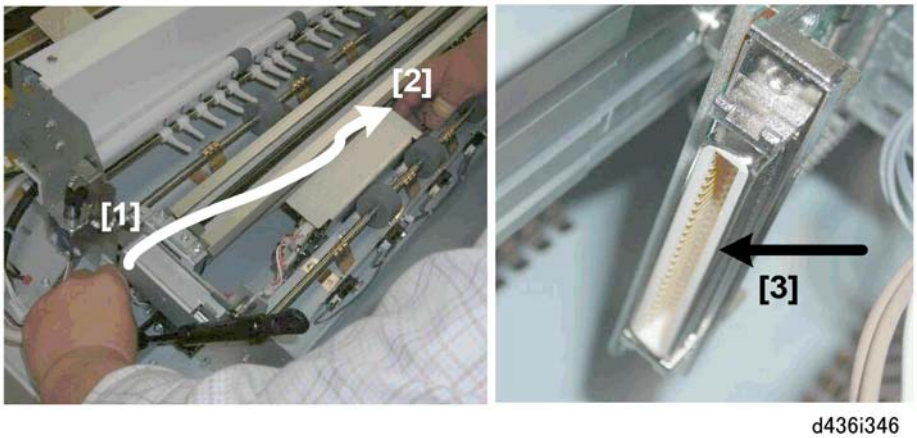
d436i103

3. At the left rear corner of the table [1], route the large cable harness [2] from below through the hole.
4. Set the bracket [3] at the left top corner of the table and fasten it (x1).



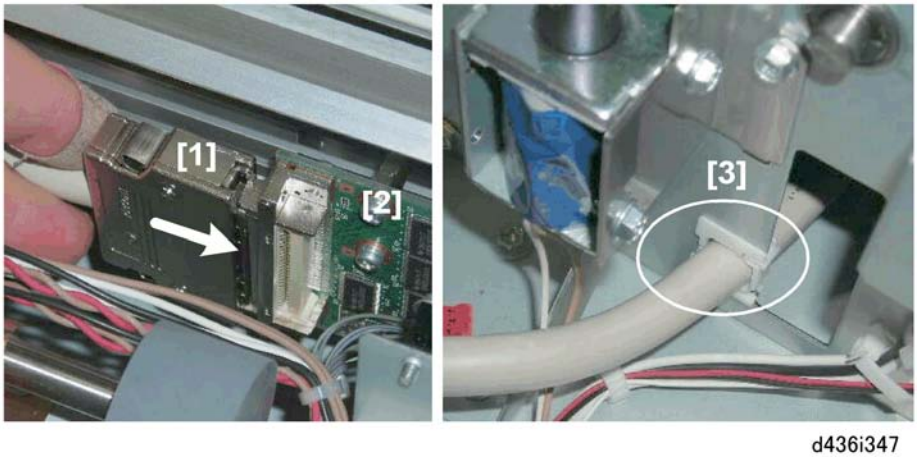
d436i345

5. Connect the harness [1] and [2] to the scanner relay board (x2).
6. Fasten the two ground wires [3] (x2 Round head, Lock washers x 1 each).



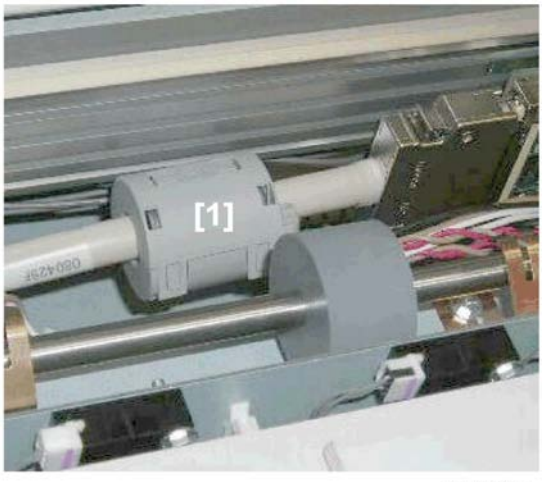
d436i346

7. On the left side of the main machine, route the other end of the cable through the hole [1] as far as the CIS board [2].
8. Note the shape and position of the D-connector [3] on the left side of the CIS board.



d436i347

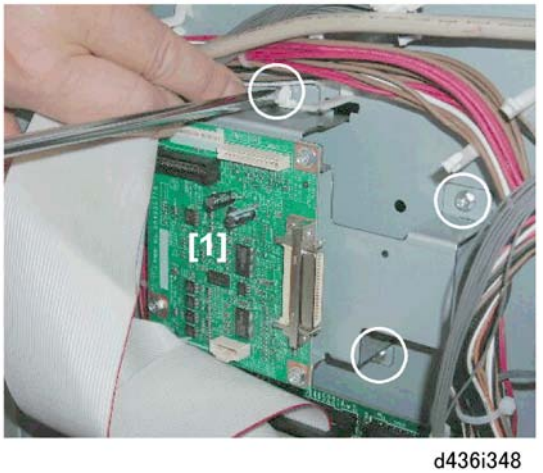
9. Turn the connector [1] to match the shape of the D-connector on the left side of the CIS board [2].
10. Connect the cable to the left side of the CIS board (x1).
11. Make sure there is no slack in the cable between the left side of the main machine and the CIS board.
12. Clamp the cable at [3] (x1).



d436i397

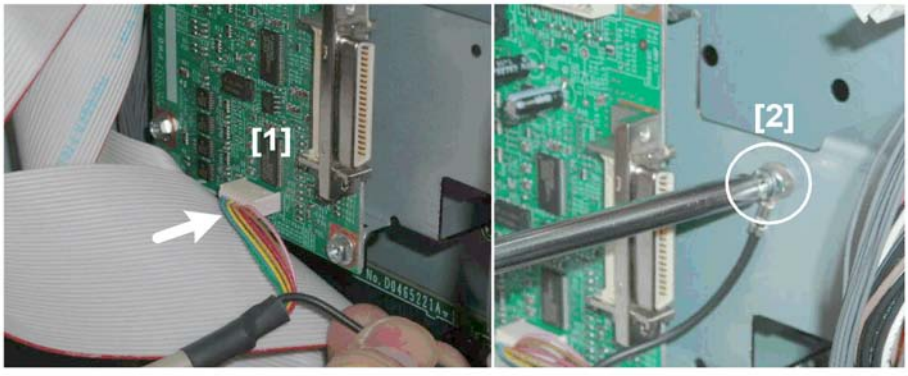
13. Attach the ferrite core [1].

Printer Relay Board, Cable Connection



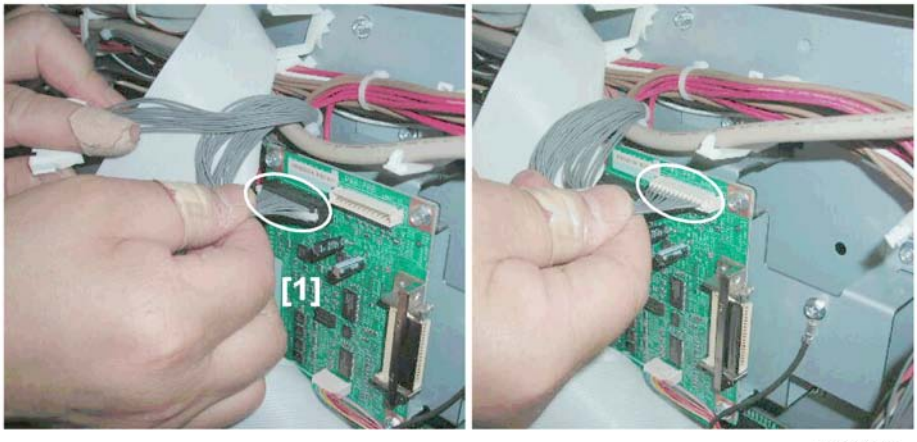
d436i348

1. At the rear of the main machine, attach the printer relay board [1] above the IOB (x3 M3).



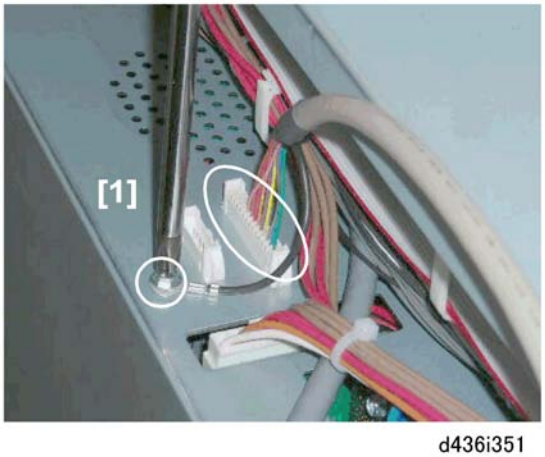
d436i349

2. Attach connector [1] (x1).
3. Fasten ground wire [2] (x1 M3).



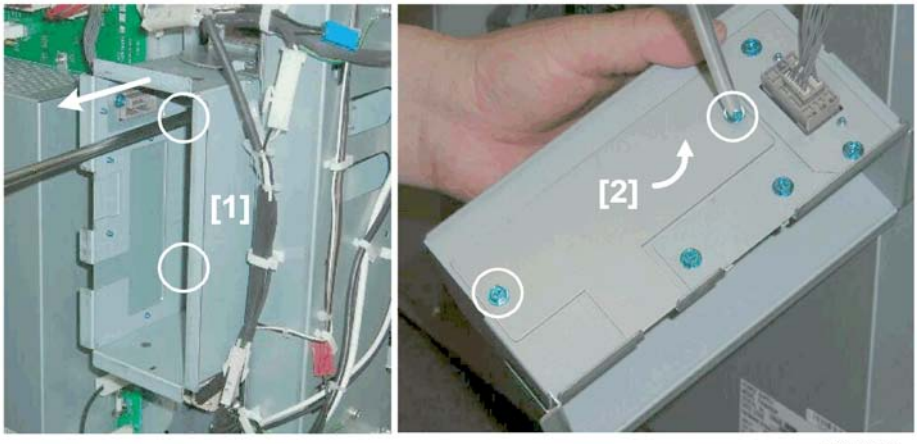
d436i350

4. Attach the connectors to the printer relay board [1] (x2).



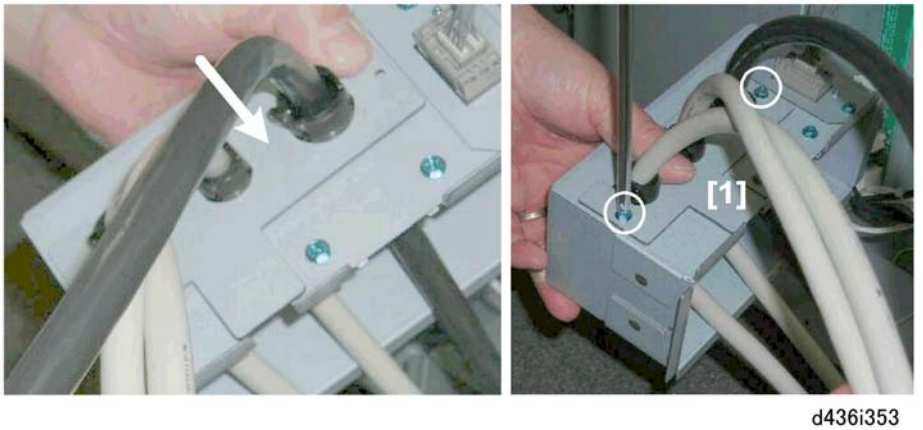
d436i351

5. On top of the PSU cover [1], attach the connector (x1, x1 M3).



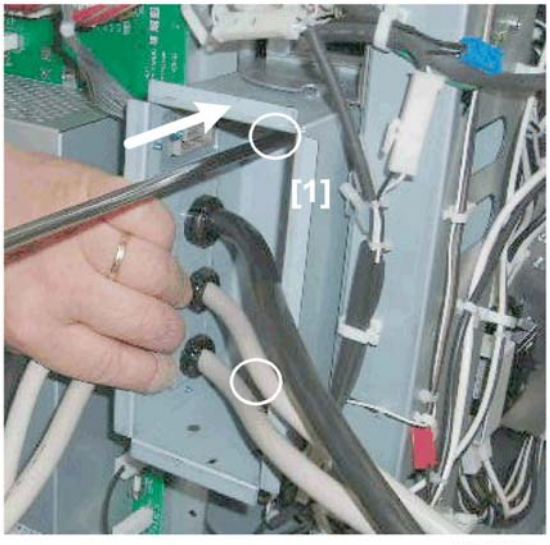
d436i352

6. Remove the inner cover [1] from the left rear corner of the main machine (x2).
7. Remove the T-bracket [2] from the side of the inner cover (x2).



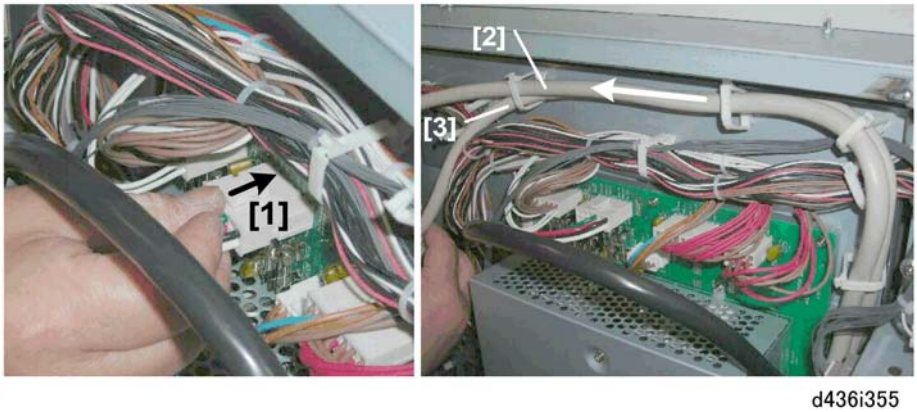
d436i353

8. Fasten the T-bracket [1] (with the cables attached) to the side of the inner connector (x2).



d436i354

9. Reattach the inner cover [1] to the rear of the main machine (x2).



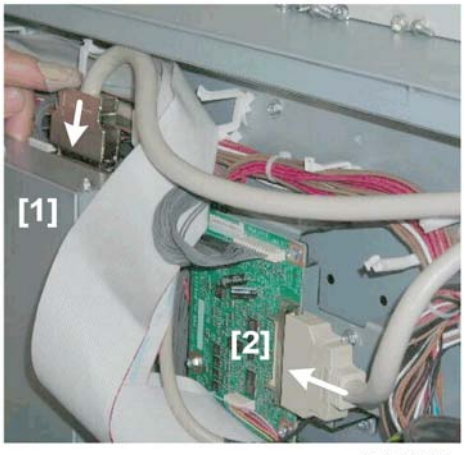
d436i355

10. Attach connector [1] to the PSU.

Important

- **Make sure that you have connected this harness, which is attached to the 24V power supply harness. This is a black DP1 cable that meets electrical standards (UL, etc.)**

11. Route the cables [2] and [3] through the clamps and close the clamps (x4).



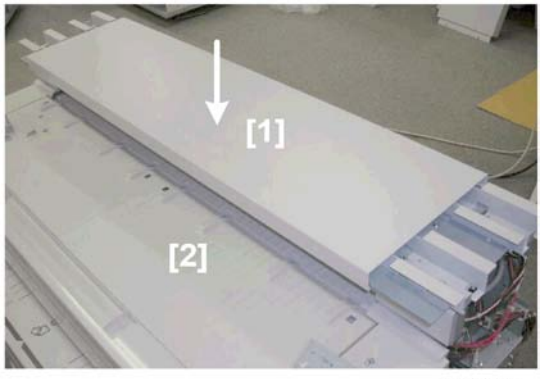
d436i356

12. Attach connector [1] to the controller board.
13. Attach connector [2] to the printer relay board.

d436i357a

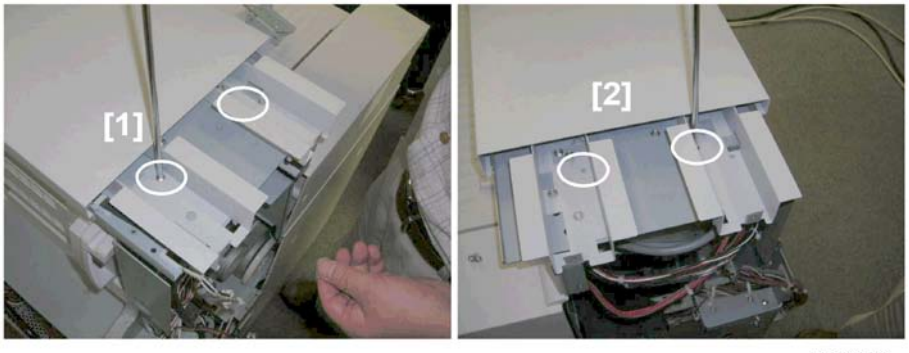
14. Attach ferrite core [1].
15. Above the PSU, fasten the two ground wires [2] (x2 Round head, Lock washer x1 each).

Top Cover: Main Unit



d436i358

1. Set the top cover [1] on top of the main unit [2].



d436i359

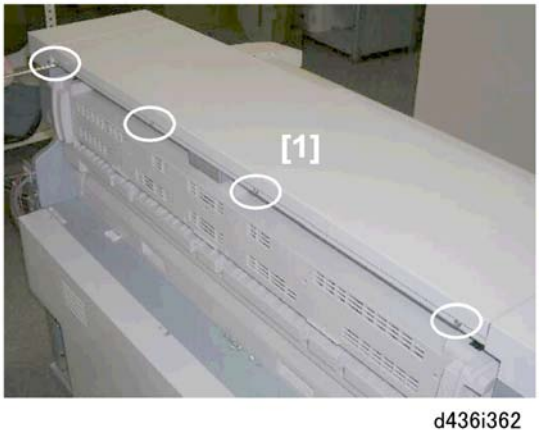
2. Fasten the left end [1] of the cover (x2).
3. Fasten the right end [2] of the cover (x2).

d436i360

4. Attach the right end cover [1] to the right end of the top cover (x2).

d436i361

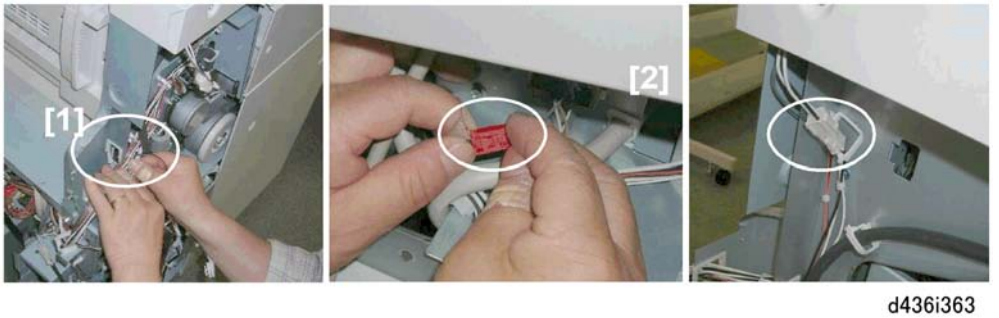
5. Attach the left end cover [1] to the left end of the top cover (x2).



d436i362

6. Fasten the rear edge of the top cover [1] to the main machine (x4).

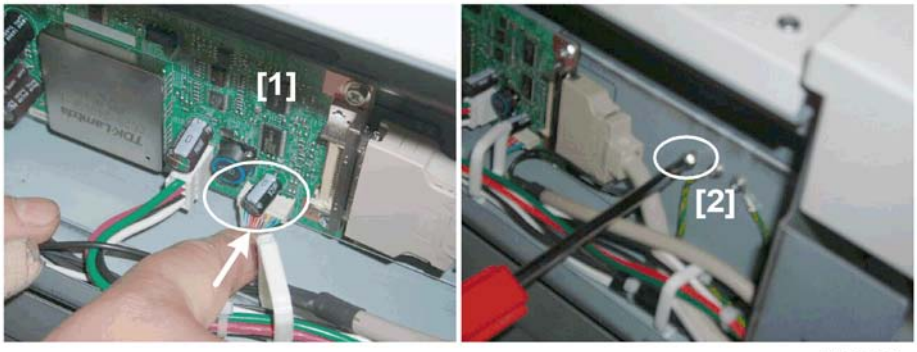
Final Connections



d436i363

1. On the left side of the main machine, route the small harness though the hole [1].

2. Connect the connectors [2] (x2).



d436i364

3. Connect the other end of the connector [1] to the SIB (x1).
4. Fasten the ground wire [2] (x1).

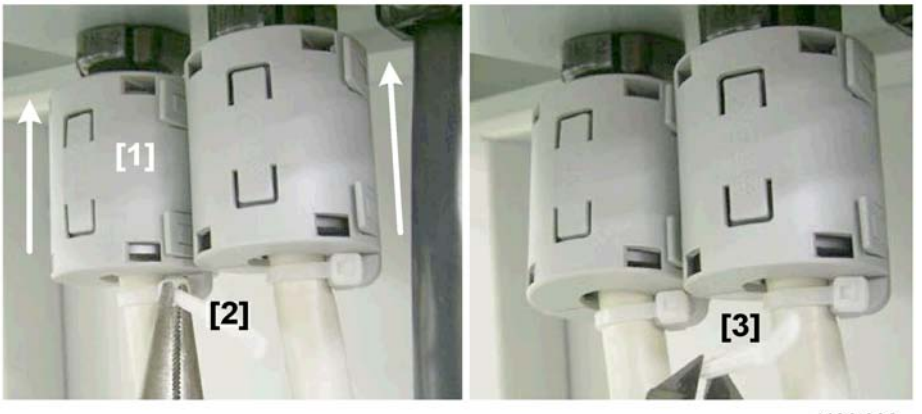
d436i398

5. Attach the ferrite core [1].

Ferrite Cores

d436i389

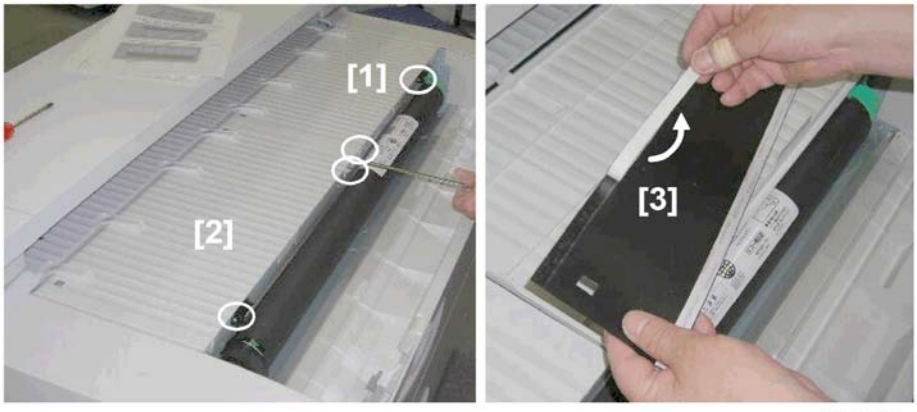
1. Below the left front corner of the table, fasten one ferrite core to each white cable:
   [1] Close the ferrite core around the cable to lock it.
   [2] Insert the end of the band into its clamp and pull it tight with your fingers.



d436i390

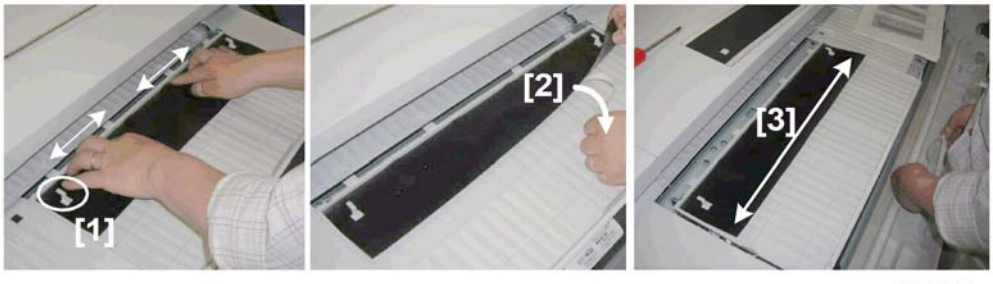
2. Slide both cores [1] up until they stop against the bottom of the table.
3. Use a pair of long nose pliers [2] to pull the bands tight so the cores will not slip down.
4. Use a pair of nippers [3] to trim off the ends of the bands.

Black Mylars



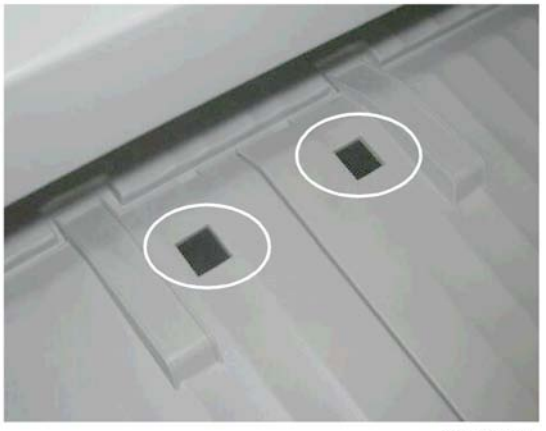
d436i365

1. Remove the right copy tray [1] (x2).
2. Remove the left copy tray [2] (x2).
3. Turn over both copy trays.
4. Remove the tape [3] from the edge closest to the hole.



d436i366

5. With its sticky side facing down, set the hole in the mylar over the hook [1], align it with the top edge, then press down.
6. Remove the second tape [2] from the bottom.
7. Press down on the bottom edge [3].
8. Make sure that the top and bottom edges of the mylar are both flat.
9. Attach the second mylar to the underside of the other copy tray.



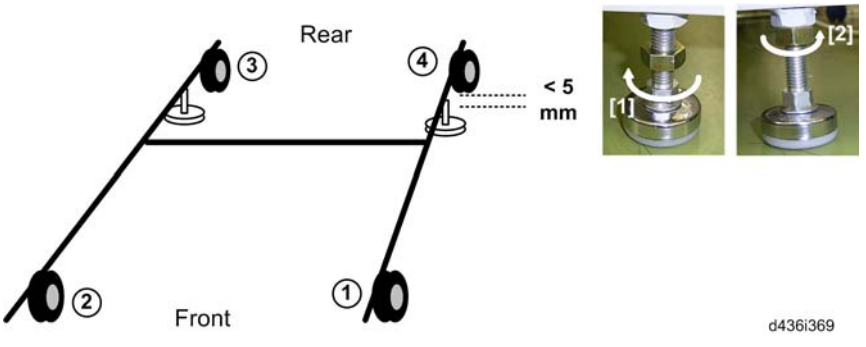
d436i367

10. Reattach the copy trays.
11. Check the holes and make sure that the mylars are snug and cover the holes completely.

Note

- These mylars prevent light from entering the development unit.

Table Leveling



d436i369

1. Rotate the leveling shoes with your fingers until they touch the floor.
2. With at least three casters touching the floor (①, ②, ③), make sure that the 4th caster is not floating more that 5 mm above the floor.
3. Tighten the lower nut [1] until it is snug.
4. Tighten the upper nut [2] to fix the position.

Reinstallation

Follow these instructions in reverse order to reattach:

- Scanner cover

- Original transport guide
- Original table
- Rear exit guide
- End covers
- Left, right rear trays
- Rear tray

3. Preventive Maintenance

Preventive Maintenance

The PM tables are included in the "Appendices".

4. Replacement and Adjustment

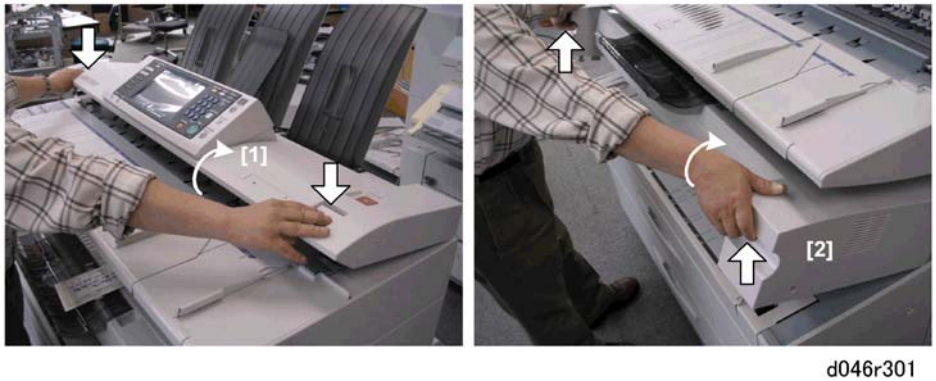
Common Procedures

Opening and Closing the Machine

⚠WARNING

- Before you attempt any procedure described in this section, always switch off the main power switch on the machine and disconnect the machine from the power source.
- Never turn off the main power switch when the power LED is lit or flashing. To avoid damaging the hard disk or memory, press the operation power switch on the operation panel to turn the power off, wait for the power LED to go off, then turn the main power switch off.

Scanner Cover, Upper Unit



d046r301

Important

- **To avoid bending the catch and release mechanisms, always release and raise the right and left sides together.**

1. Push the scanner cover release buttons on both sides and raise the scanner cover [1].
2. Push the upper unit release buttons on both sides and raise the upper unit [2].

Roll Tray, Toner Hopper

d046r302

1. Pull out the handle [1] to unlock it and pull out the roll tray.
2. Set your thumbs in the recesses on both sides of the toner hopper cover [2] and lower the cover.

Paper Exit Cover, Paper Exit Guide Plate

d046r303

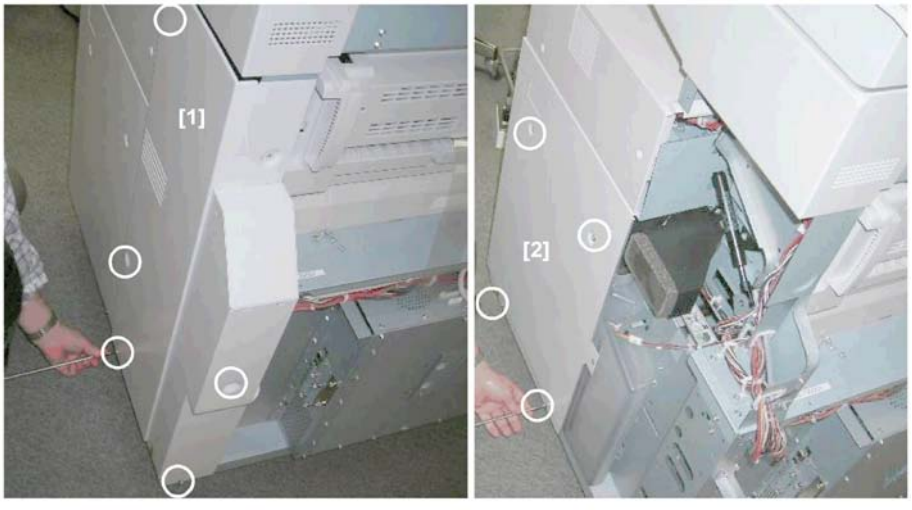
1. Grip both ends of the paper exit cover [1], pull it toward you to release it, and lower the cover.

d046r304

2. Grip the rings on both ends of the paper exit guide [1], pull it toward you to release it, and lower the guide.

Covers

Right Covers



d046r305

[1] Right rear cover (x5)

[2] Right front cover (x4)

Left Covers

d046r306

[1] Left rear cover (x7)

[2] Left front cover (x4)

Inner Covers

Left Inner Cover

d046r307

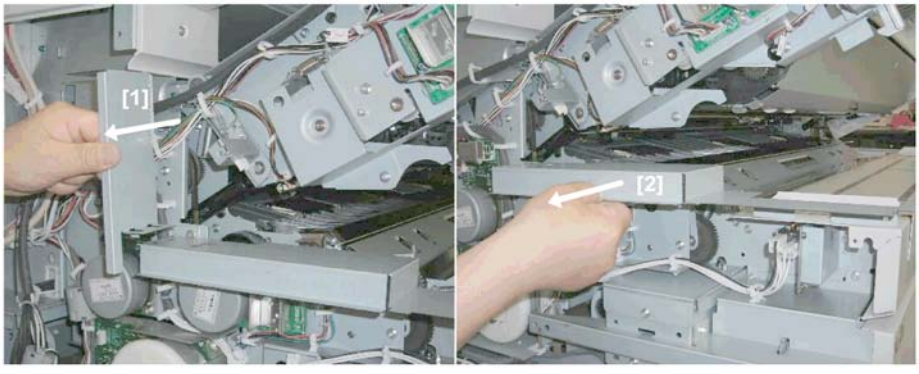
Preparation

- Remove the left rear cover, left front cover ☛ p.260
- Open the upper unit ☛ p.257

1. Remove:

[1] Front screw (☞ x1)

[2] Rear screw (☞ x1)



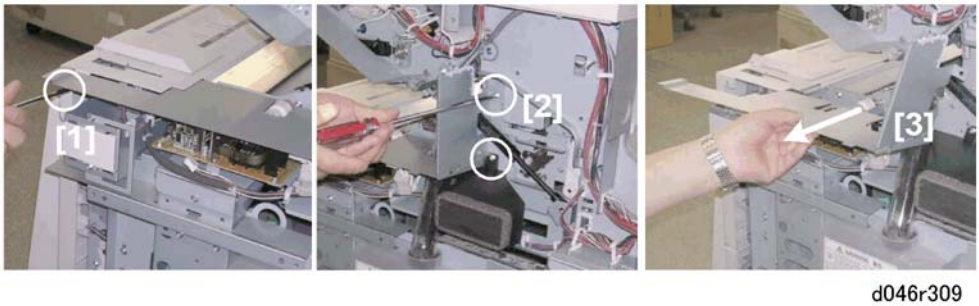
d046r308

1. Remove:

   [1] Rear plate x1

   [2] Front plate x1

Right Inner Cover



d046r309

Preparation

- Remove the right rear cover, right front cover ☛ p.259

  [1] Front screw (☞ x1)

  [2] Rear screws (☞ x2)

  [3] Right inner cover

Upper Unit Covers

Left Upper Unit Cover

d046r310

1. Raise the upper unit [1] and remove screws (x2)
2. Push up the release [2] then remove the left upper unit cover [3].

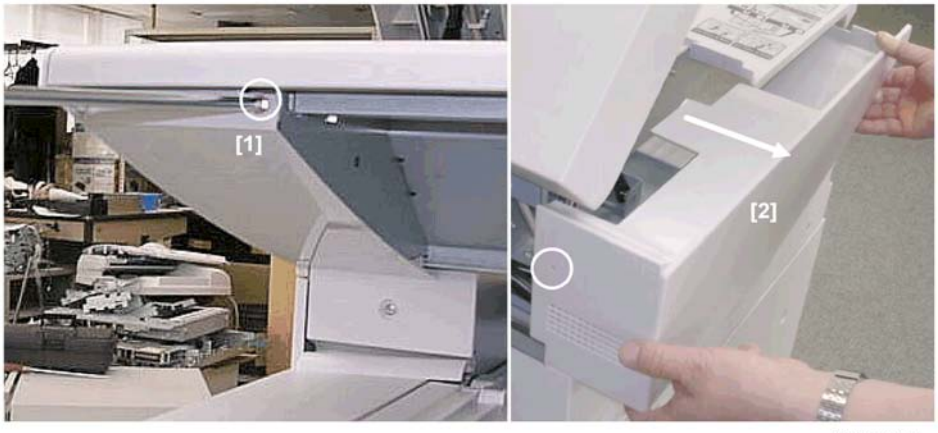
Right Upper Unit Cover

d046r311

1. Raise the upper unit and remove screws (x2)
2. Push up the release [1] then remove the right upper unit cover [2].

End Covers

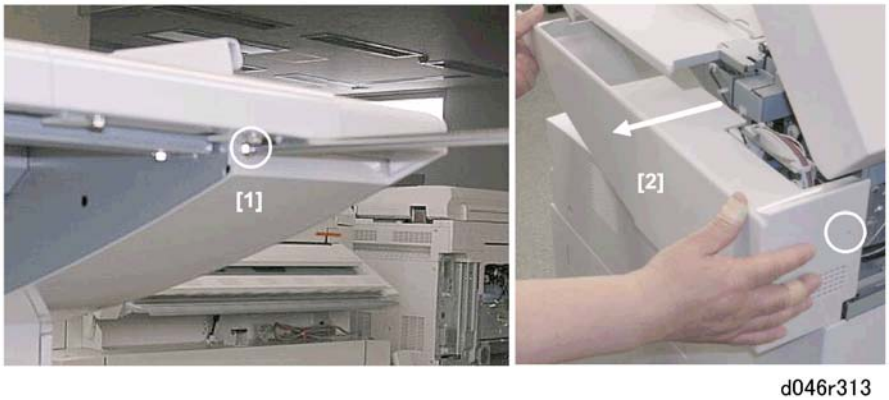
Left End Cover



d046r312

1. At the front [1], remove the screw.
2. Remove the screw at the rear, and pull off the left end cover [2].

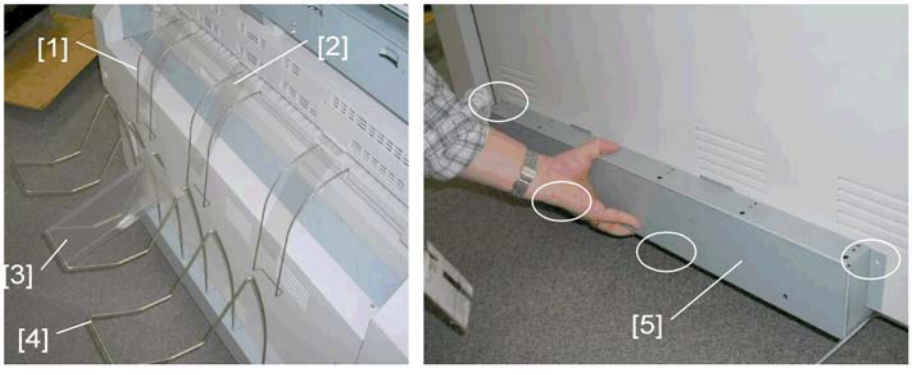
Right End Cover



d046r313

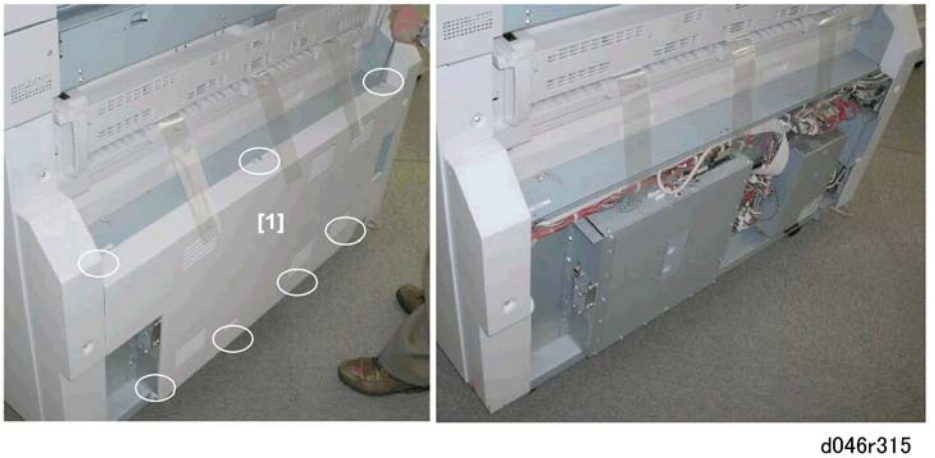
1. At the front [1], remove the screw.
2. Remove the screw at the rear, and pull off the right end cover [2].

Rear Cover



d046r314

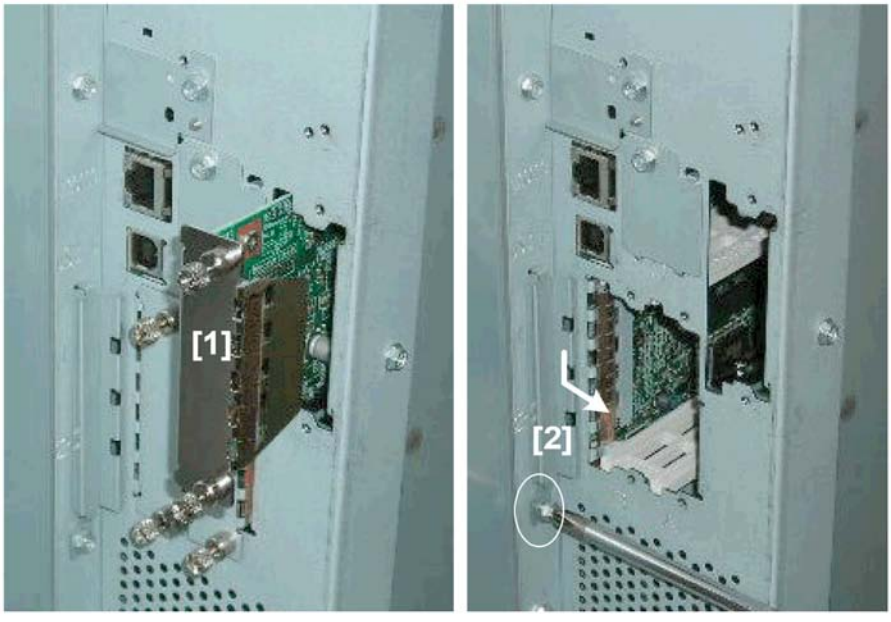
1. Remove:
   [1] Guides x3
   [2] Small mylars x3
   [3] Large mylar x1
   [4] Rear copy tray stays x3
   [5] Rear copy tray holder (x4)



d046r315

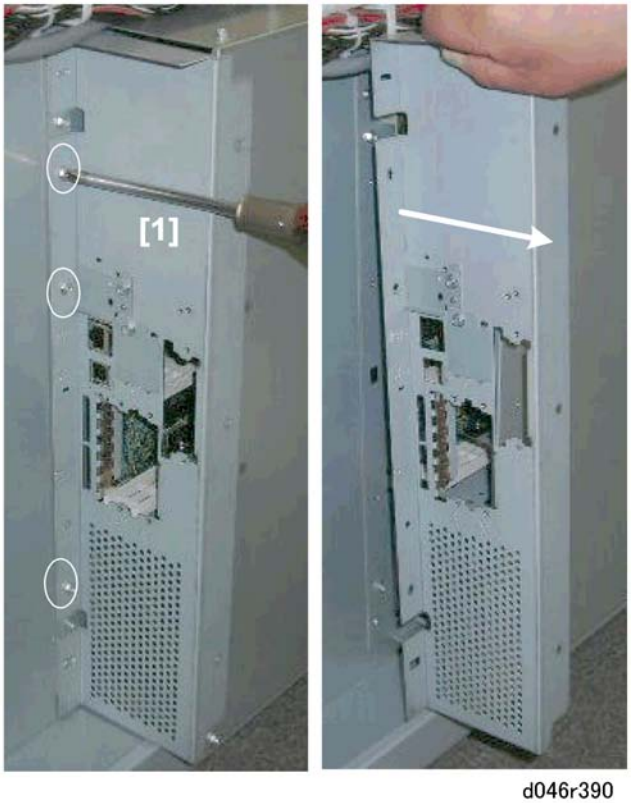
2. Remove the rear cover [1] (x7)

Controller Box Cover



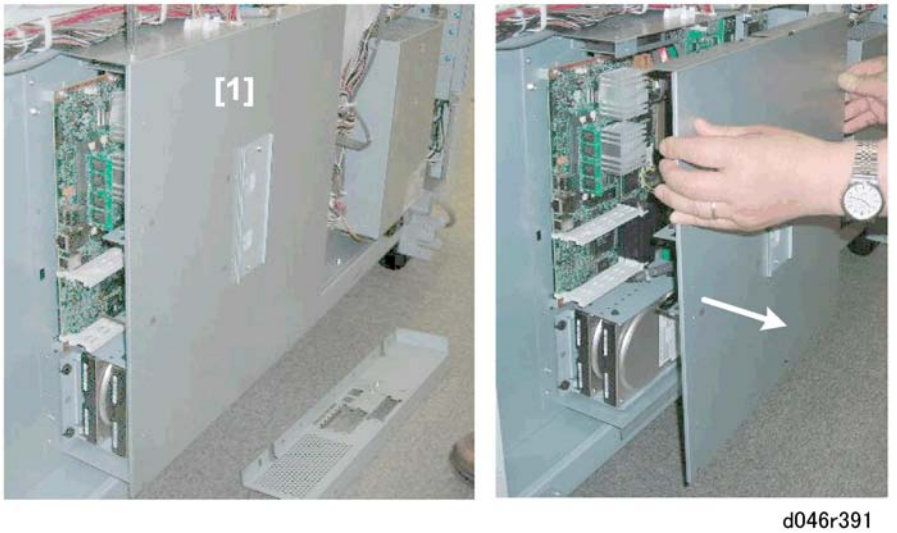
d046r389

1. Remove all installed boards, including the file format converter board [1].
2. Remove the SD card cover plate [2] (x1).



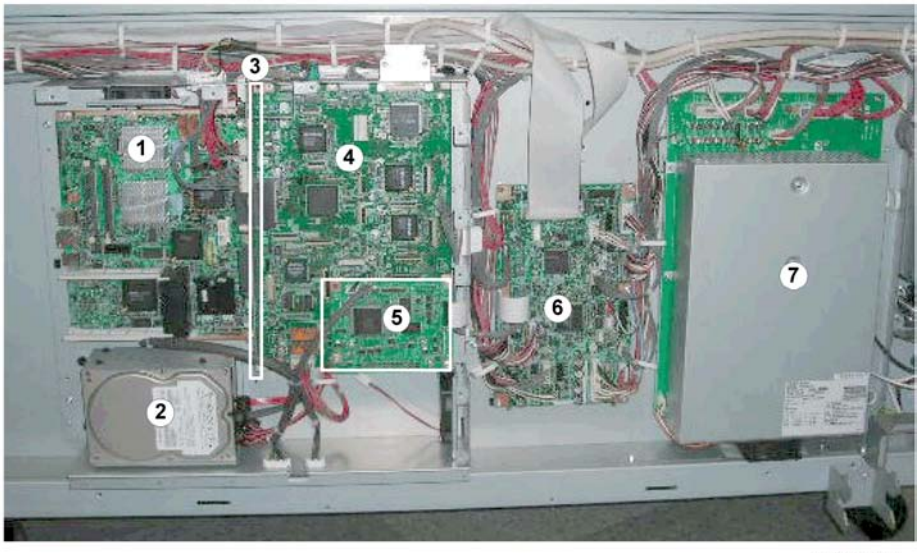
d046r390

3. Remove the controller box faceplate [1] (x6).



d046r391

4. Remove the controller box cover [1] (x11).



d046r392

With the controller box cover removed, you can see:

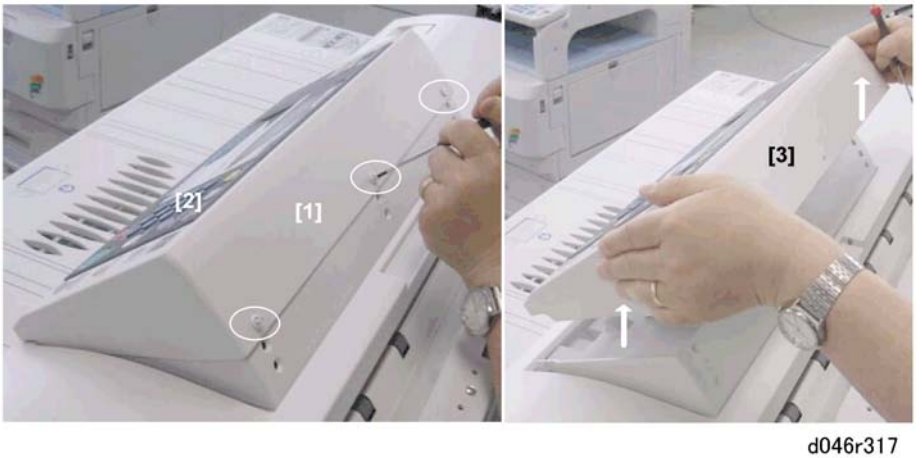
①	Controller board
②	HDD unit
③	Motherboard (MB)
④	IPU
⑤	BCU
⑥	IOB
⑦	PSU

Scanner Unit

Operation Panel

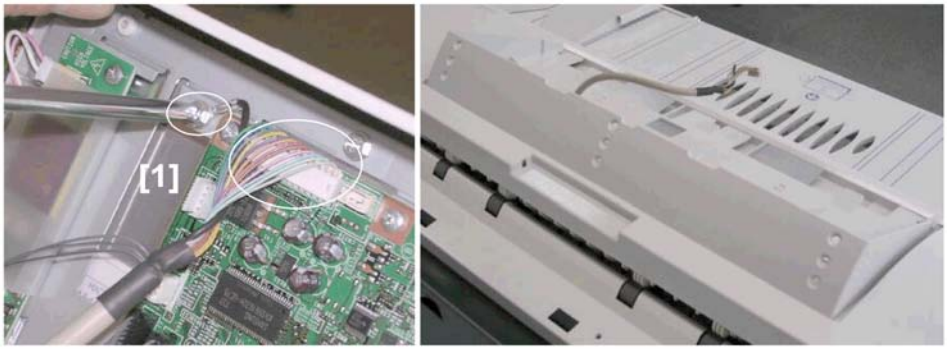
d046r316

1. Remove the three original guide trays [1] (x2 each).
2. Pinch the two bottom sides of the upper original guide [2] and remove it.



d046r317

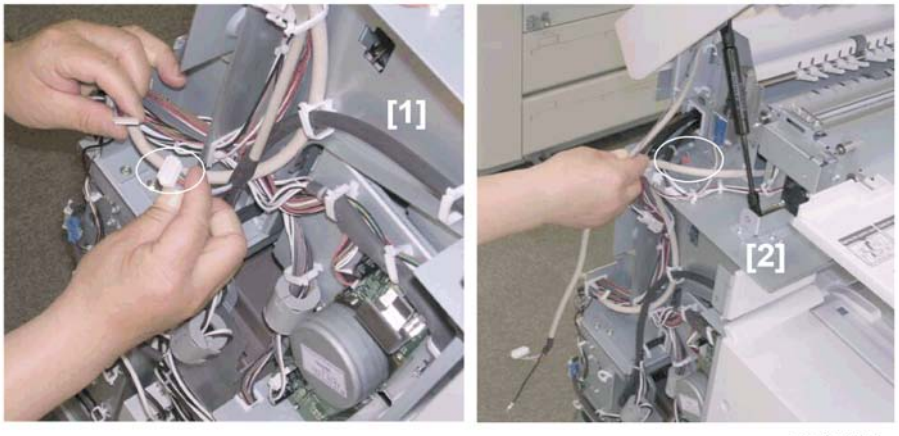
3. Remove the anchor screws [1] from the back of the operation panel [2] (x3).
4. Lift the operation panel [3] and turn it over.



d046r318

5. Disconnect the operation panel [1] (x1, x1).

Scanner Cover



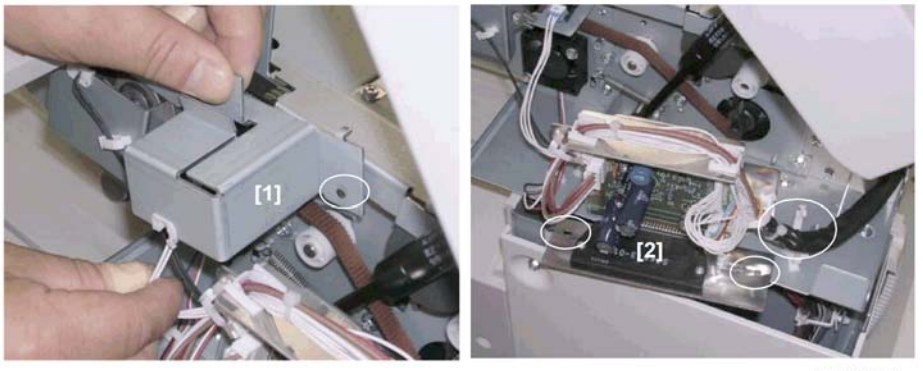
d046r319

Preparation

Remove:

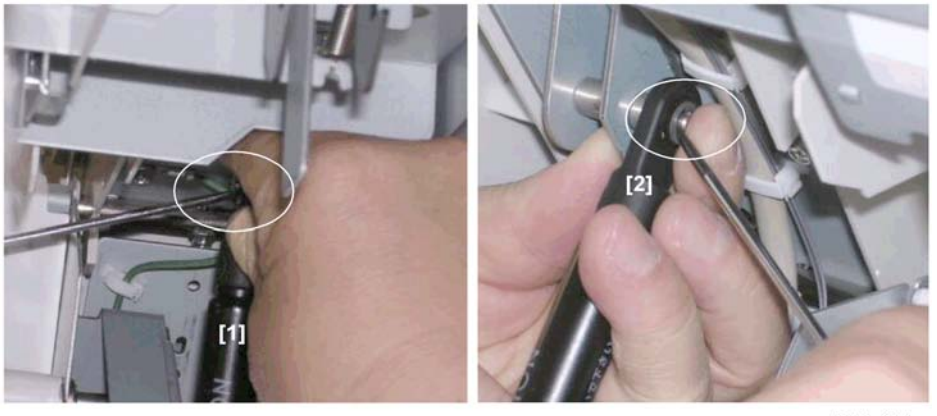
- Operation panel ☛ p.268
- Left, right end covers ☛ p.263
- Left rear cover ☛ p.260
- Raise the scanner cover ☛ p.257

1. Disconnect the scanner unit on the right [1] and left [2] (x2).



d046r320

2. On the left side, remove the scanner cover microswitch cover [1] (x1).
3. On the right side, remove the screws of the SIB [2] and slide it out slightly (x1, x2).

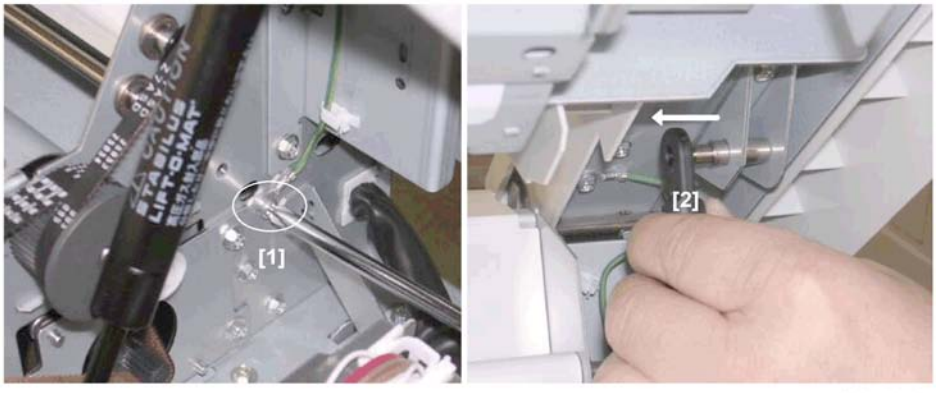


d046r321

4. Remove the e-rings from the pneumatic springs:
   [1] Right side (x1)
   [2] Left side (x1)

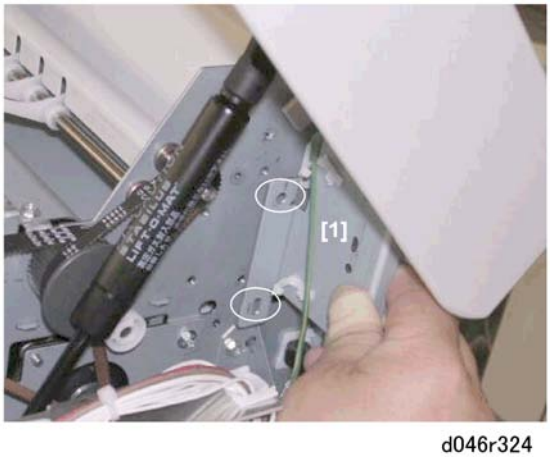
d046r322

5. On the right, remove the bracket [1] (x2)



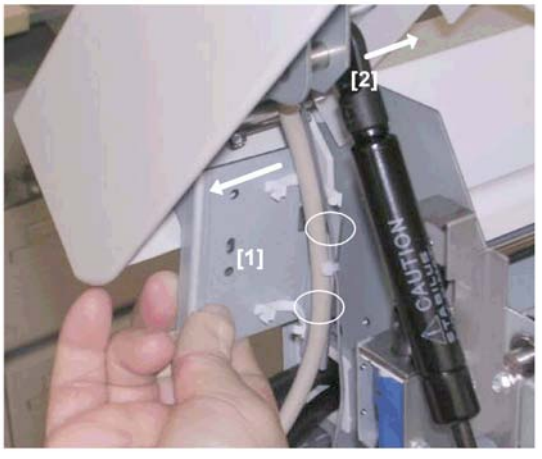
d046r323

6. Disconnect a ground wire [1] (x1).
7. Disconnect the right pneumatic spring arm [2].



d046r324

8. Remove bracket [1] (x2).

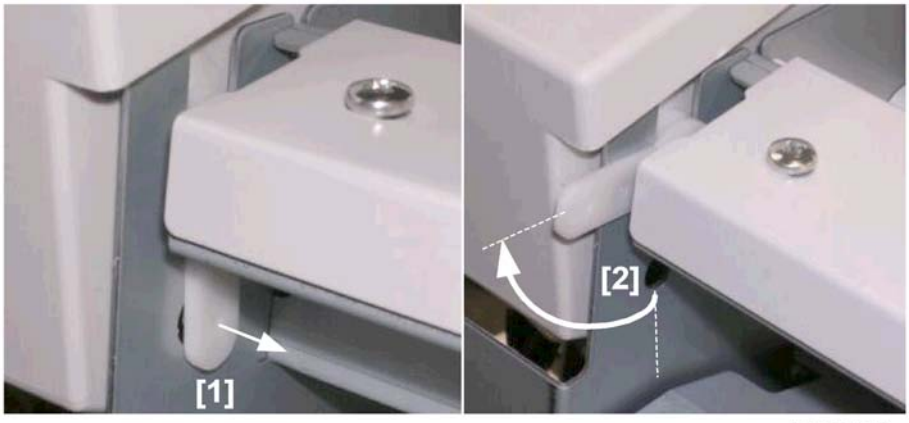


d046r325

9. On the left, remove bracket [1] (x1), and disconnect the left pneumatic spring arm [2].

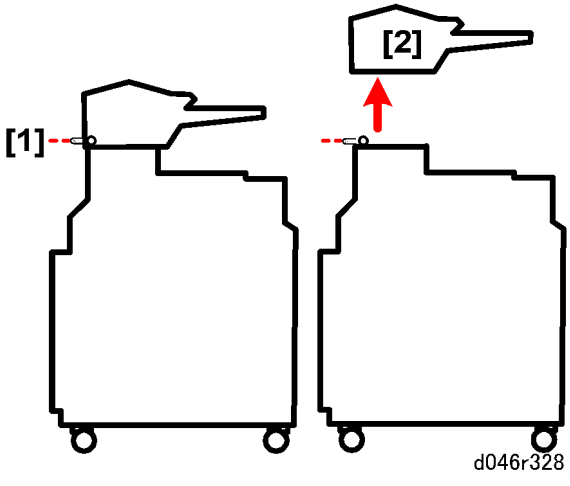
d046r326

10. At the left rear corner of the machine, pull out the stopper arm [1].
11. Rotate it to the horizontal position [2].



d046r0327

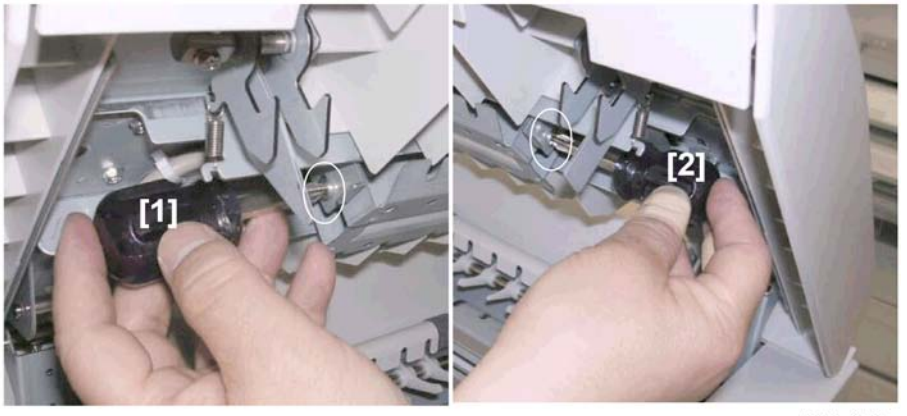
12. At the right rear corner of the machine, pull out the stopper arm [1].
13. Rotate it to the horizontal position [2].



d046r328

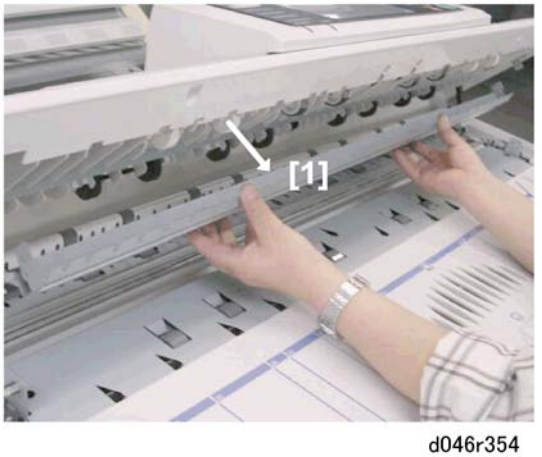
14. With both stopper arms [1] on the right and left released and at the horizontal position, lift the scanner cover [2] from the top of the machine.

Platen Plate



d046r353

1. Open the scanner cover. ☛ p.257
2. Remove the screws from the left end [1] and right end [2] of the platen plate (☞ x2).

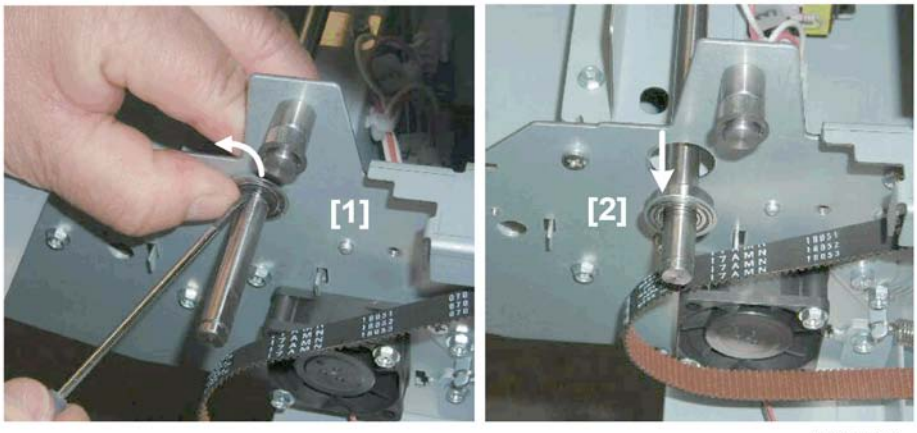


d046r354

3. Remove the platen plate [1] from under the scanner cover.

Original Transport Rollers

Original Entrance Roller



d046r526

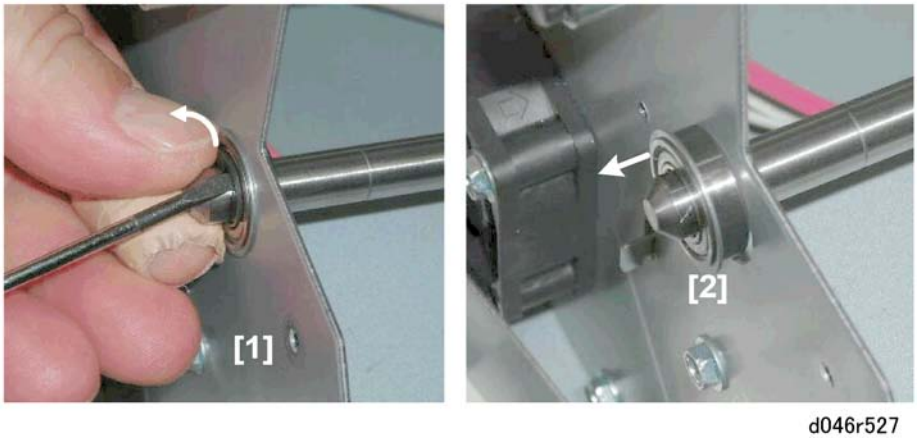
Preparation

- Open the scanner cover ☛ p.257
- Microswitch cover (scanner open switch) ☛ p.269
- Registration clutch ☛ p.318

1. On the right side, remove:

   [1] E-rings (ℂx2)

   [2] Bearing x1

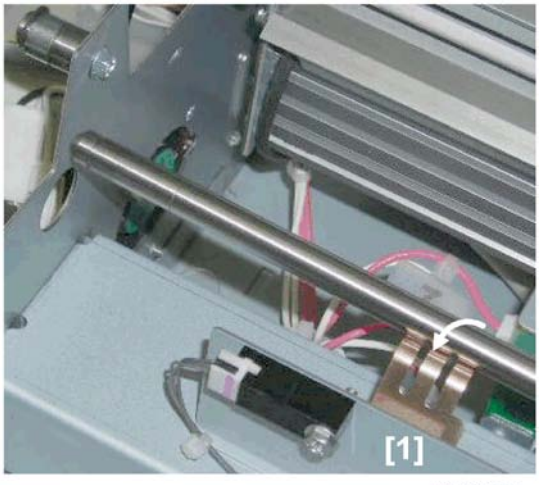


d046r527

2. On the left side, remove:

   [1] E-ring (ℂx1)

[2] Bearing x1



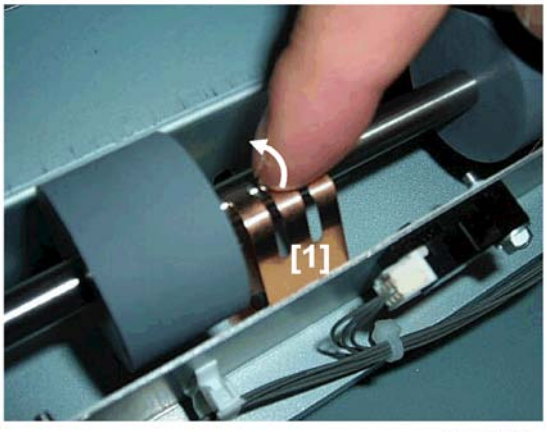
d046r528

3. Disengage the anti-static plates [1] that cover the roller, to prevent bending them when the roller is removed.

d046r529

4. Remove the roller [1] from the front.

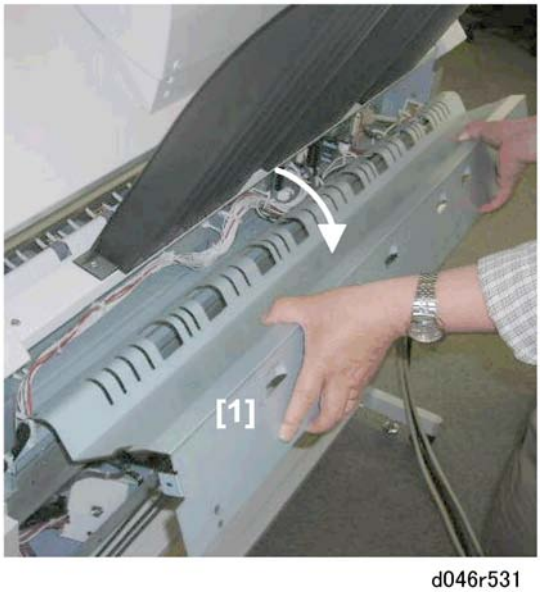
Reinstallation



d046r530

1. Set the anti-static plates [1] on top of the roller when you reinstall the roller.

Original Exit Roller

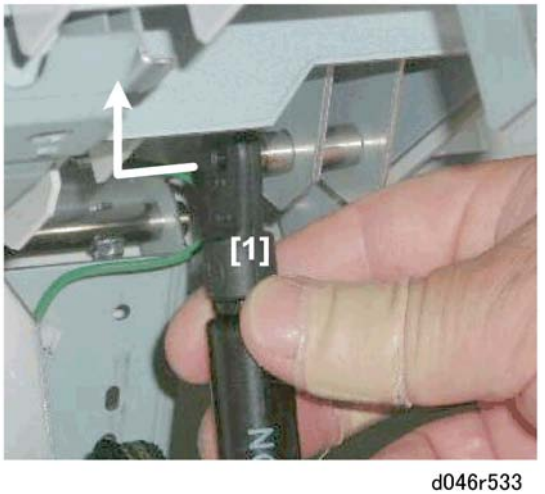


d046r531

1. Remove the original exit guide [1].

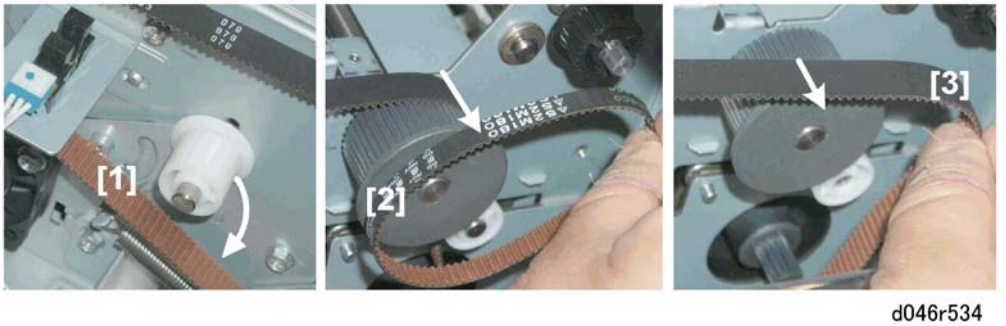
d046r532

2. On the right side, remove plate [1] (x2).



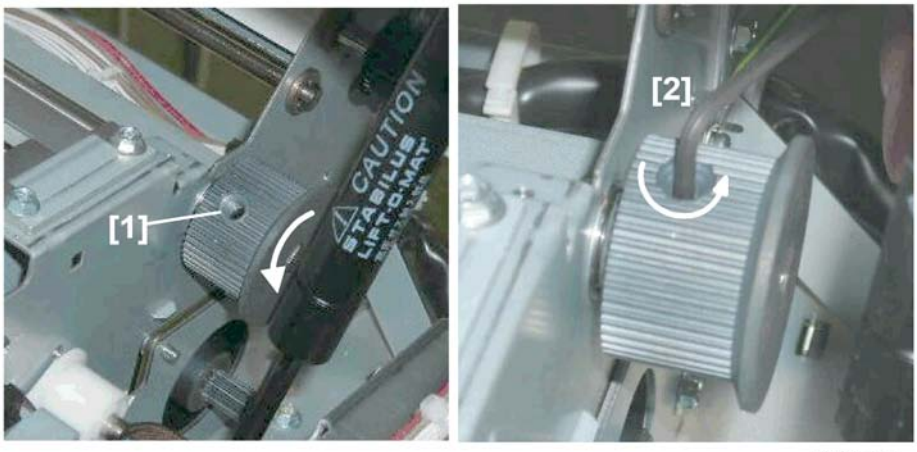
d046r533

3. Disconnect the right pneumatic spring arm [1] (x1).
4. Set the arm in the closest available notch, to prop up the right side of the scanner cover while you continue to work.



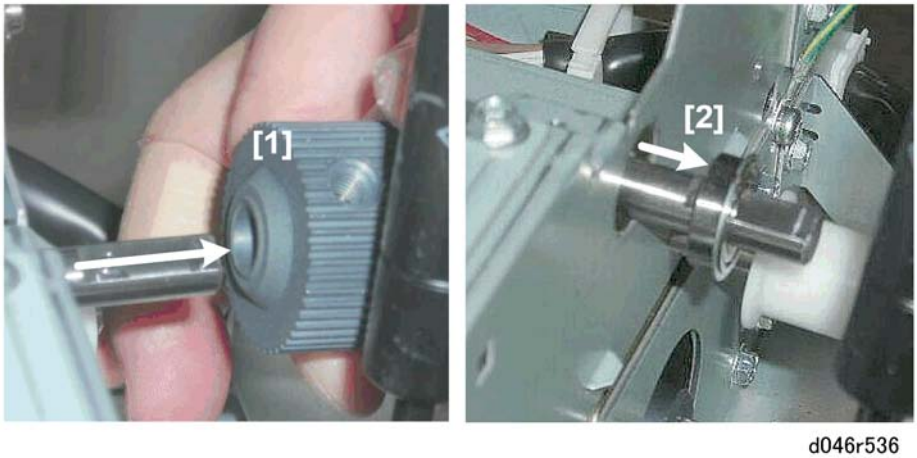
d046r534

5. On the right, disconnect timing belts [1], [2], [3].



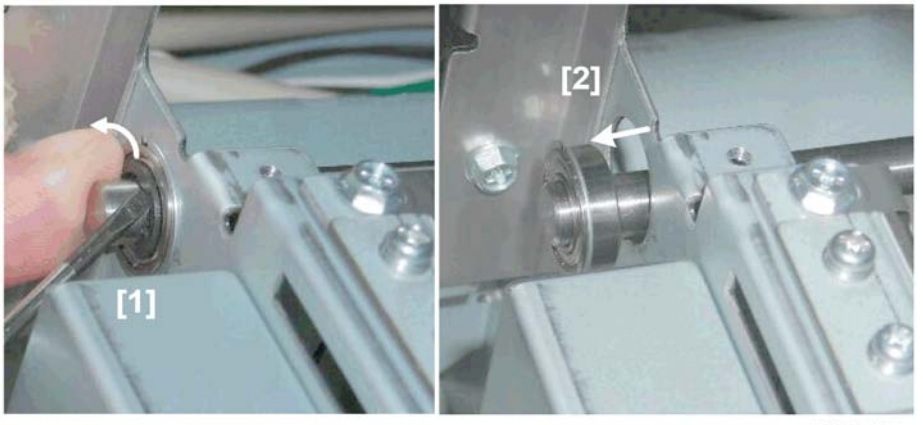
d046r535

6. Rotate the gear until the hole [1] is visible.
7. Use a hex wrench [2] to loosen the set screw (do not remove).



d046r536

8. Remove the gear [1] and bearing [2].



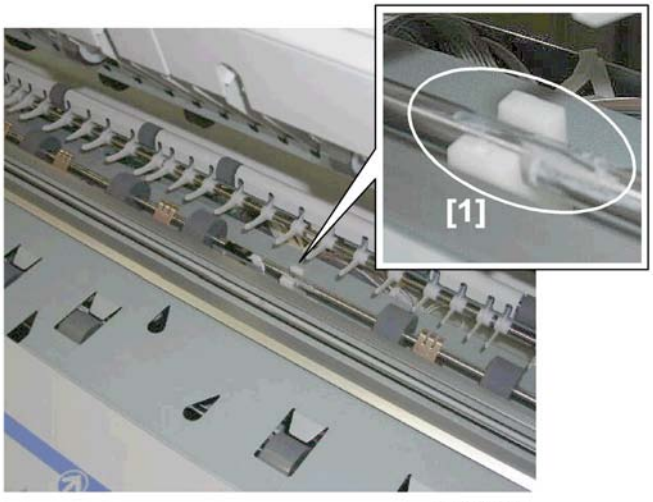
d046r537

9. On the left, remove the e-ring [1] and bearing [2] (ℂx1, Bearing x1)

d046r538

10. From the rear, disengage the anti-static plates [1], to prevent them from bending when the roller is removed.
11. Remove the roller [2] from the rear.

Reinstallation



d046r539

1. Apply some grease (Silicone Grease G501) at [1].

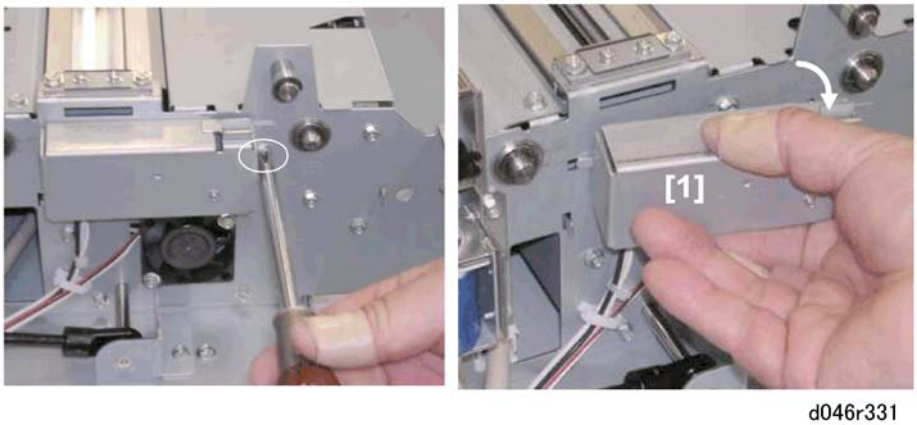
CIS

Important

- **The CIS and two lamp regulators must be replaced as a set.**

Preparation

- Remove the scanner cover. ☛ p.269

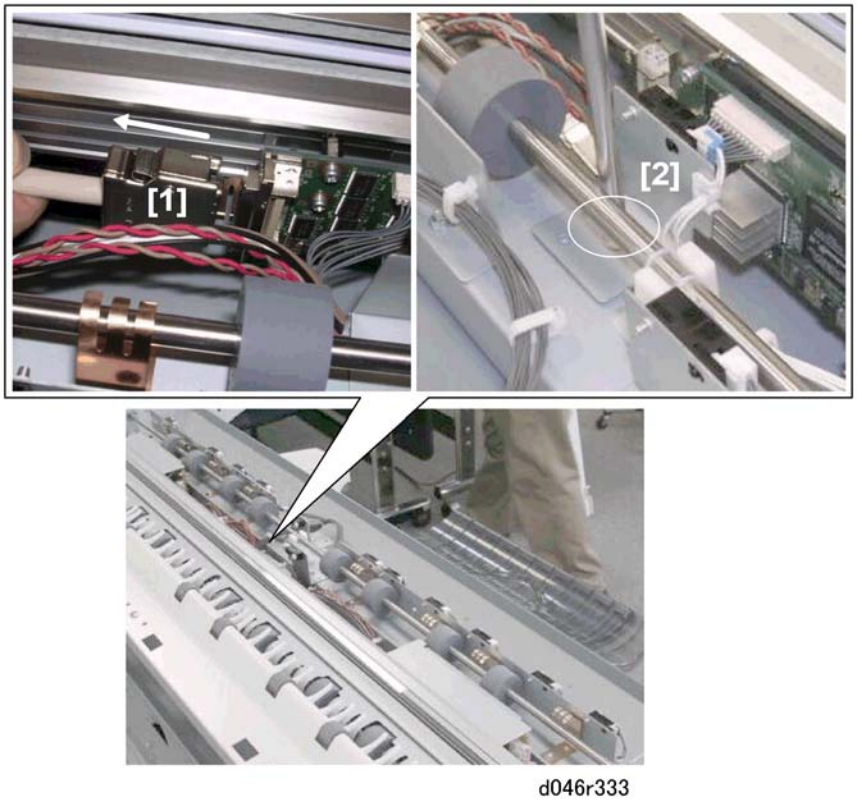


d046r331

1. On the left, disconnect the cover [1] of the scanner cover microswitch (x1).

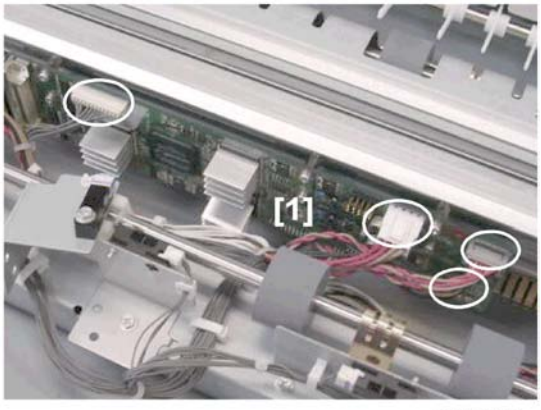
d046r332

2. Remove the original transport guide [1] (x2).



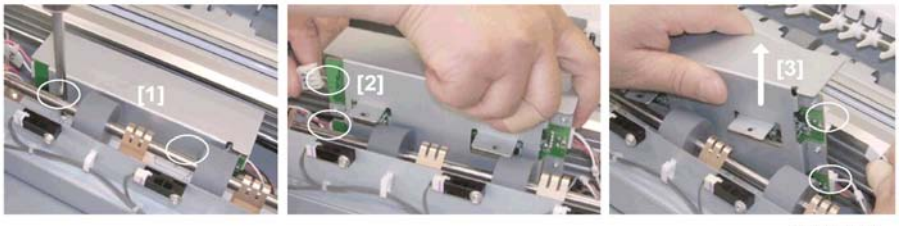
d046r333

3. Disconnect the large connector [1] from the CIS board (x1).
4. Disconnect the original registration sensor bracket [2] (x1).



d046r334

5. Disconnect the other connectors from the CIS board [1] (x4).



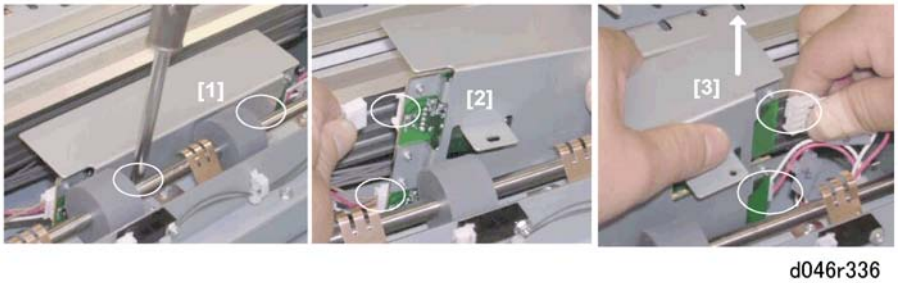
d046r335

6. Remove the left lamp regulator:

   [1] Screws x2

   [2] Left connectors x2

   [3] Right connectors x2



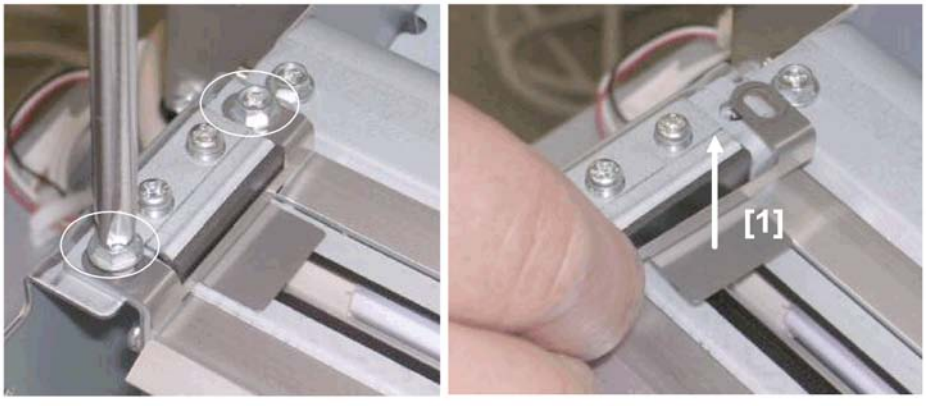
d046r336

7. Remove the right lamp regulator:

   [1] Screws x2

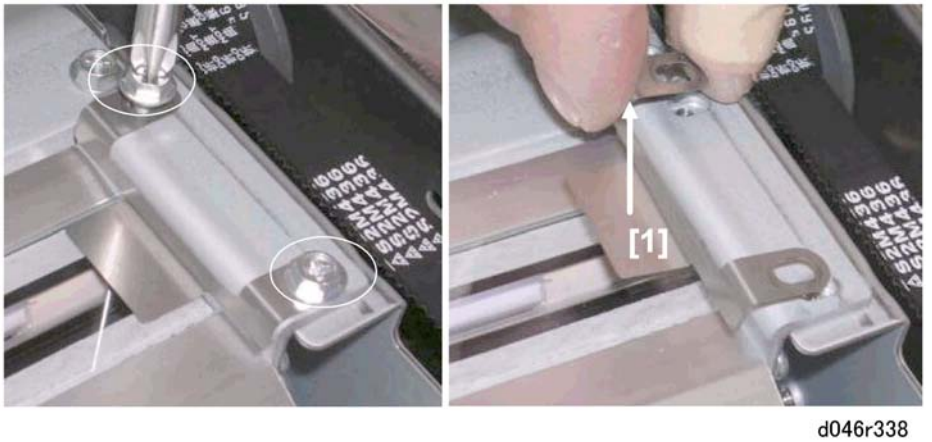
   [2] Left connectors x2

   [3] Right connectors x2



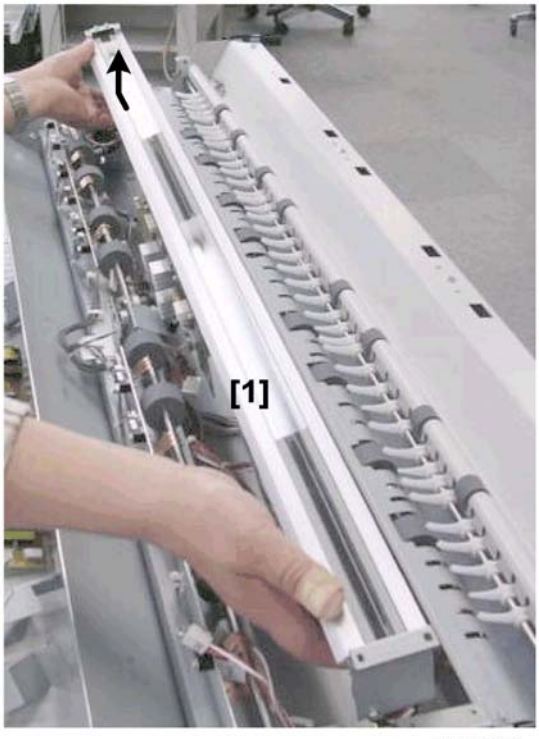
d046r337

8. Remove the left scanner plate [1] (x2).



d046r338

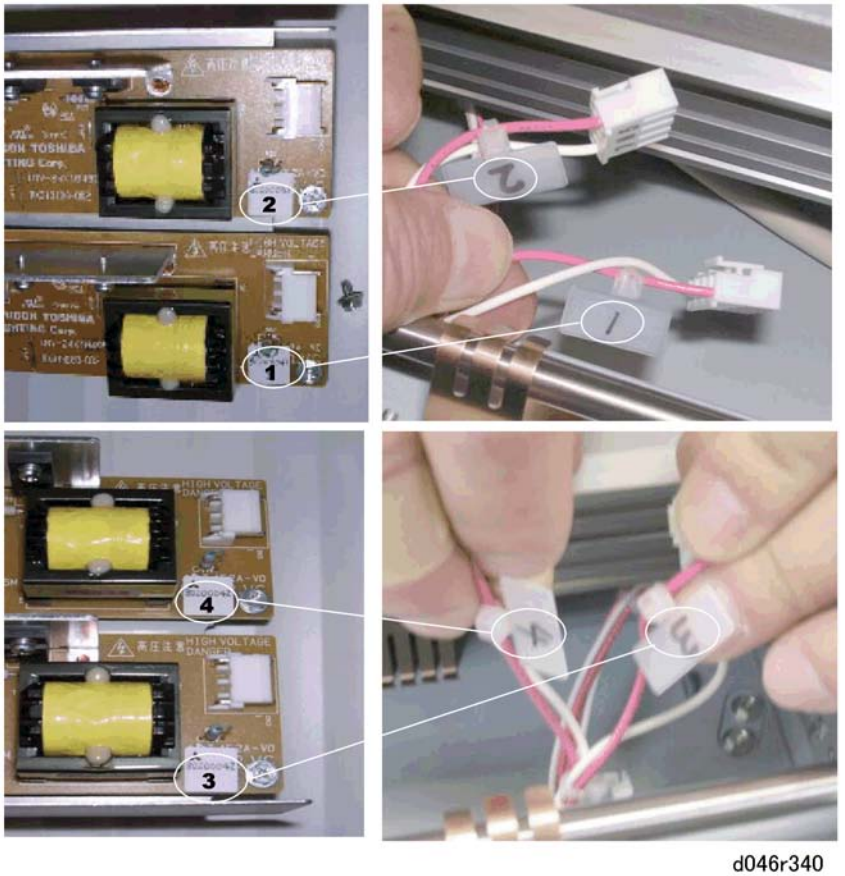
9. Remove the right scanner plate [1] (x2).



d046r339

10. Remove the CIS unit [1].

Reinstallation

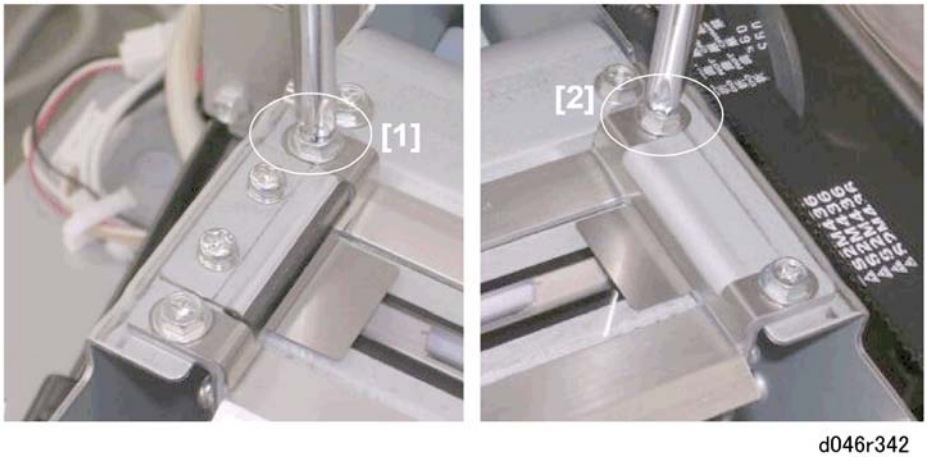


d046r340

1. Make sure that you match the lamp regulator connectors with the correct connection points on the lamp regulator boards.
    - Lamp regulator 1 (left). The connectors/sockets are marked "1" and "2".
    - Lamp regulator 2 (right). The connectors/sockets are marked "3" and "4".

d046r341

2. When you reattach the left and right exposure plates:
    - Set front screw [1]. Do not tighten.
    - Set front screw [2]. Do not tighten.



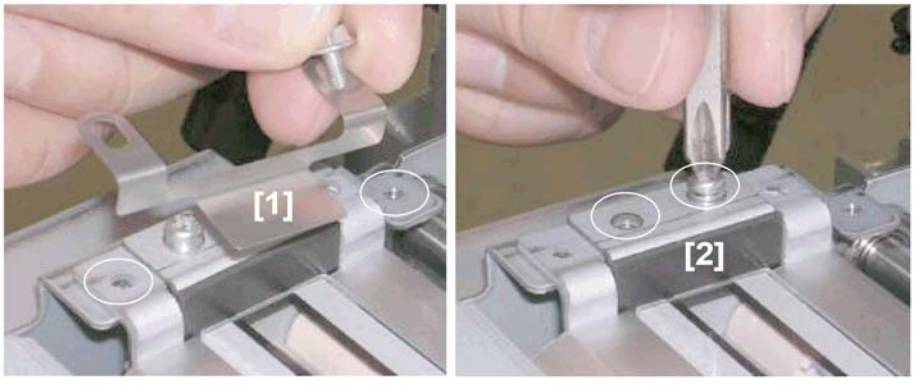
d046r342

- Set and tighten rear screw [1].
- Set and tighten rear screw [2].
- Tighten the left front screw then the right front screw.

Exposure Glass

Important

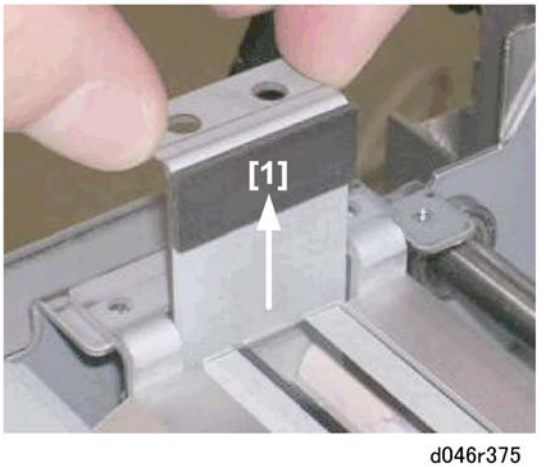
- **After removal of the exposure glass, work carefully to prevent dust from entering the CIS unit.**



d046r374

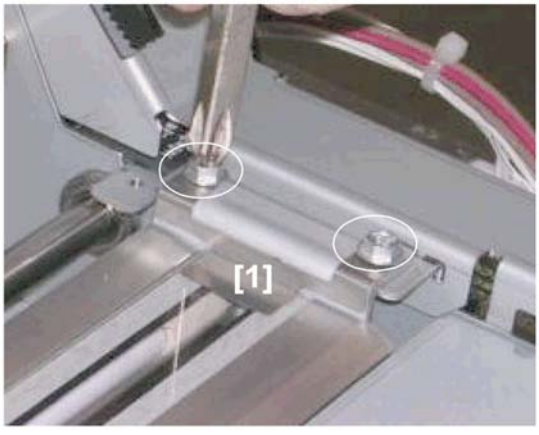
4

1. Raise the scanner cover. ☛ p.257
2. Remove the left exposure plate [1] (x2).
3. Remove the stopper plate screws [2] (x2).



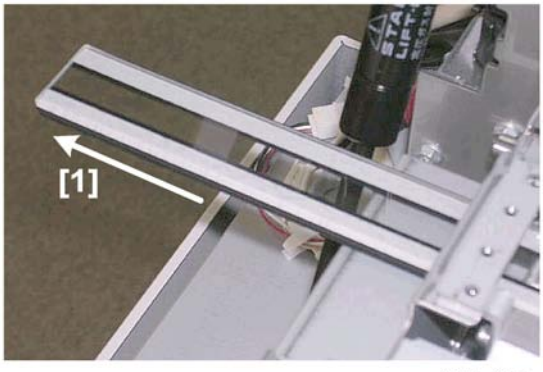
d046r375

4. Remove the stopper plate [1].



d046r376

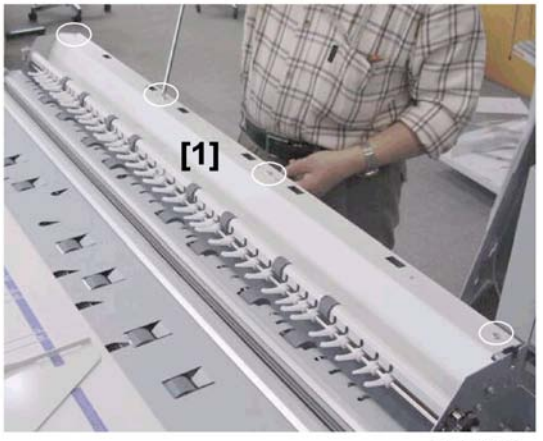
5. Remove the right exposure glass plate [1] (x2).



d046r377

6. On the left, pull out the exposure glass [1].

Original Junction Gate, Original Junction Gate Solenoid

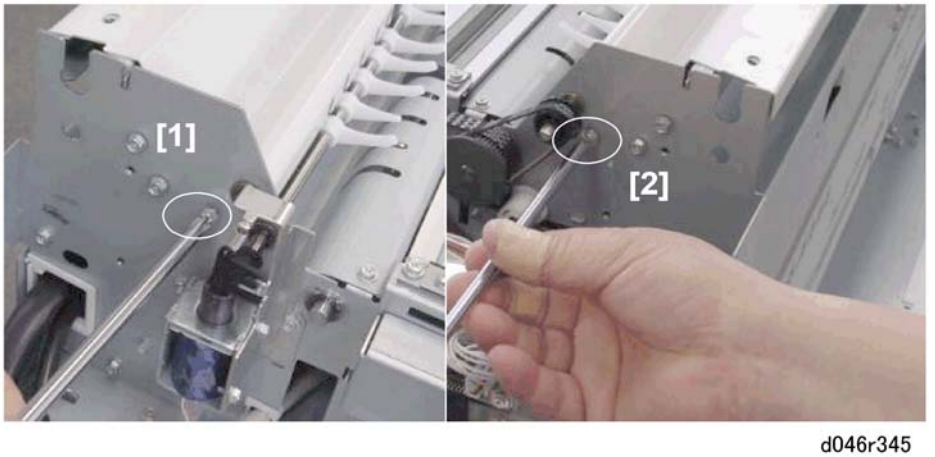


d046r344

Preparation

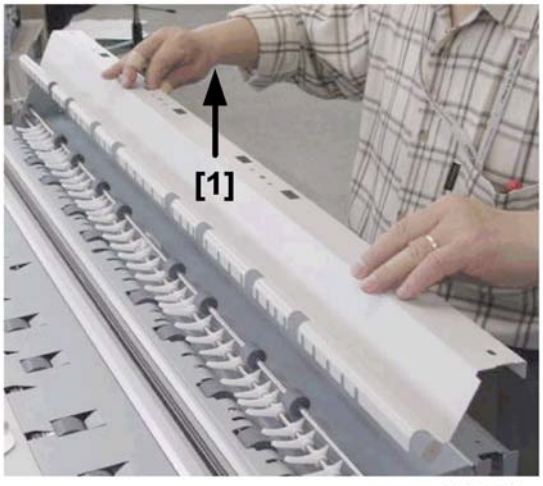
- Remove the scanner cover. ☛ p.269

1. Remove the original upper exit guide [1] (x4).



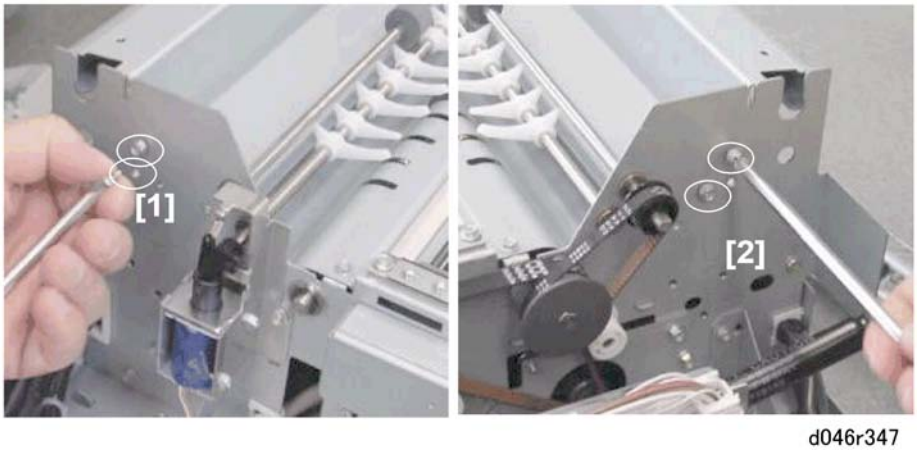
d046r345

2. Remove screw [1] on the left and screw [2] on the right (x2).



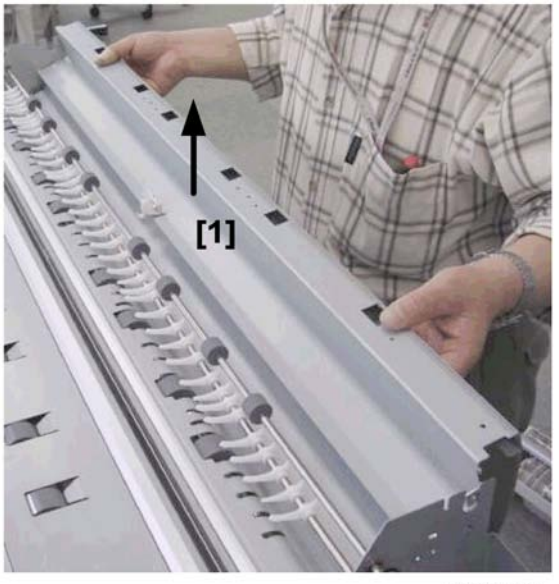
d046r346

3. Remove the original upper exit guide [1].



d046r347

4. Remove screws on the left [1] (x2) and screws [2] on the right (x2).



d046r348

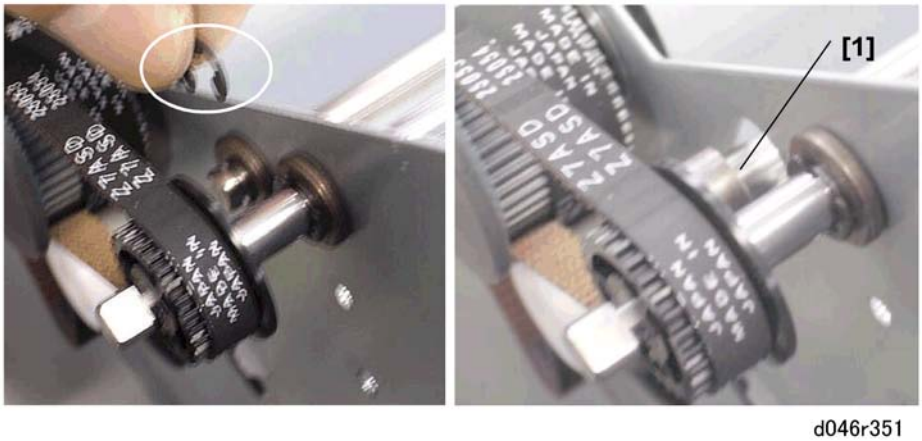
5. Remove the original stay [1].

d046r349

6. On the left, remove the original junction gate solenoid bracket [1] (x1, Spring x1).

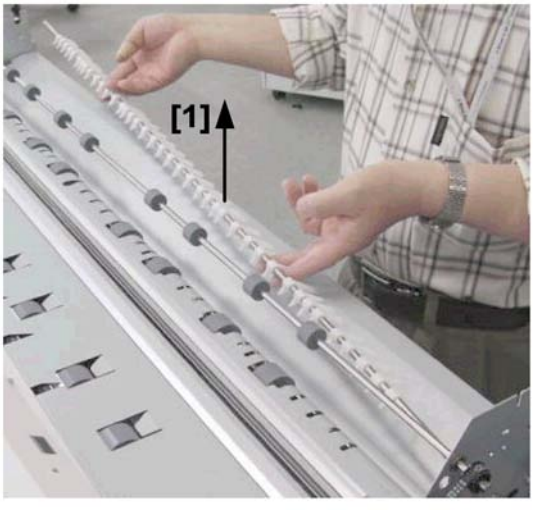
d346r350

7. Disconnect the shaft [1] of the original junction gate (x1, x1, Bushing x1).



d046r351

8. On the right, disconnect the other end of the original junction gate shaft [1] (x1, Bushing x1).



d046r352

9. Remove the original junction gate [1].

Around The Drum

LPH (LED Print Head)

Preparation

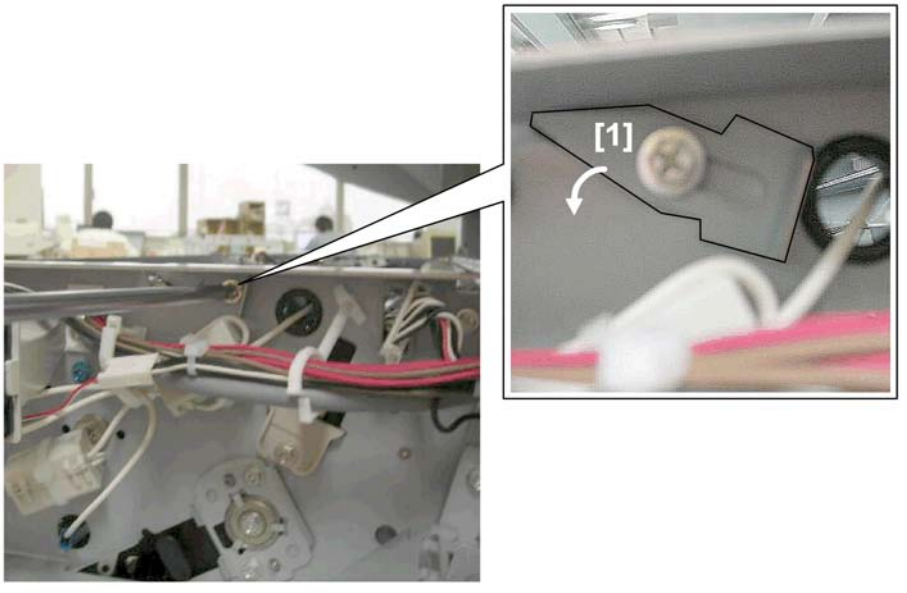
- Raise the upper unit. ☛ p.257
- Remove the upper unit left and right covers. ☛ p.262
- Close the upper unit.
- Open the toner hopper cover. ☛ p.258

d046r388a

1. Remove:

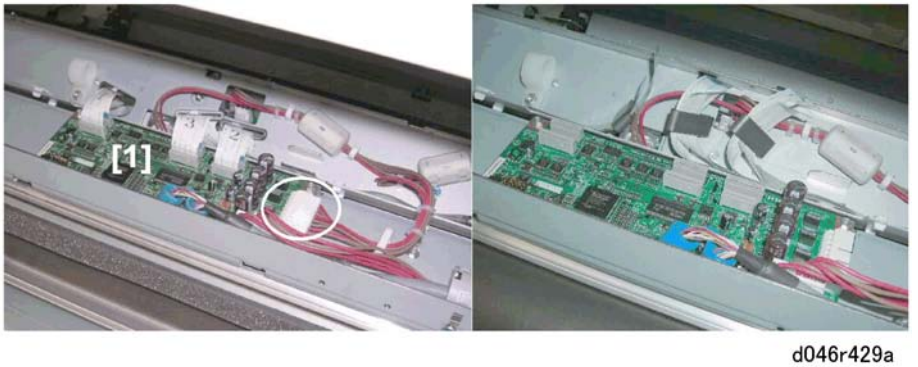
   [1] Right copy tray (x2)

   [2] Left copy tray (x2)



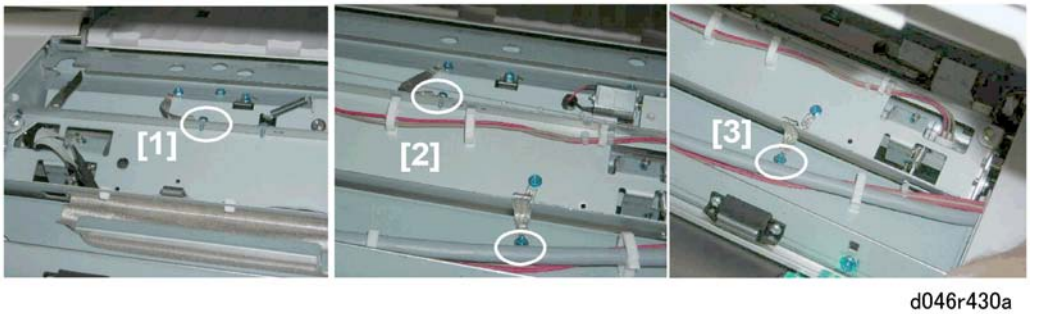
d046r429

2. On the left and right side of the upper unit, loosen the screw to release lock plate [1].



d046r429a

3. Disconnect the VDB [1] (FFC x6, x1).



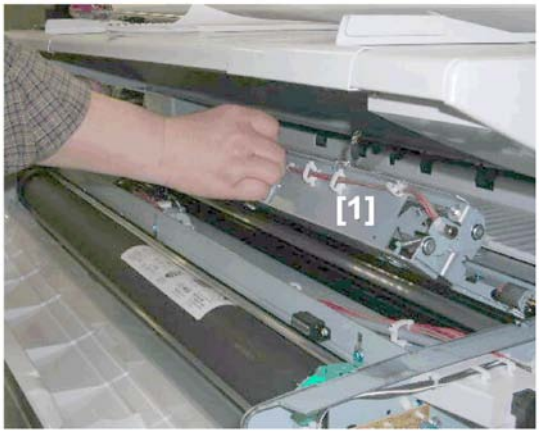
d046r430a

4. Disconnect the **front** screws:

[1] Left (x1)

[2] Center (x2)

[3] Right (x1)



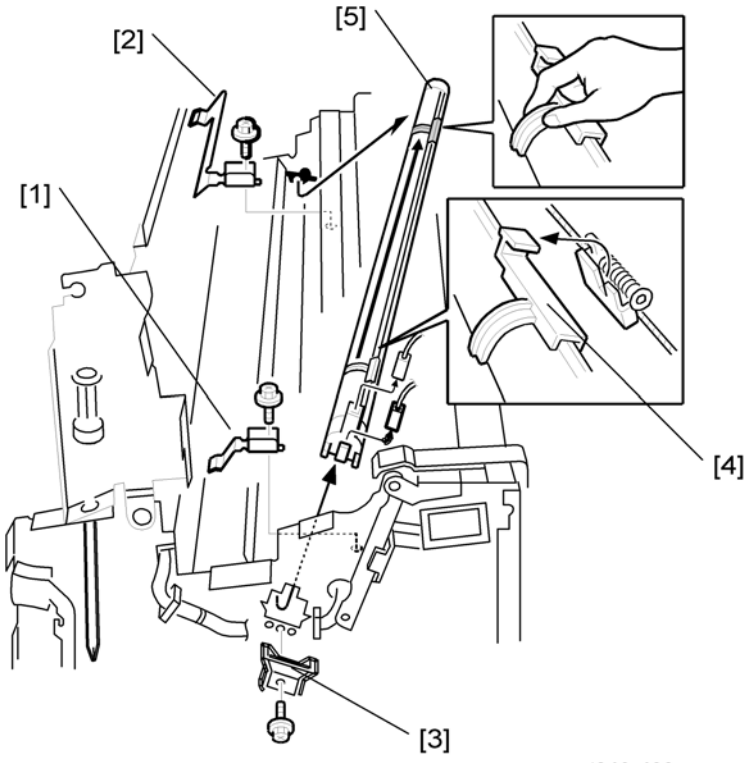
d046r431

5. Remove the LPH [1].

Important

- **Before replacing the right copy tray, read the LPH settings from the labels attached to the LPH.**
- **After replacing the LPH, print an IPU Test Pattern to confirm that the joints of the LPH are aligned correctly and then adjust if necessary. For Details, see "Replacement and Adjustment, Important Adjustments, LPH Adjustment with SP Codes"**

Charge Corona Unit



Preparation

- Open and raise the upper unit. ☛ p.257
- Remove the scanner motor. ☛ p.311

1. Remove:

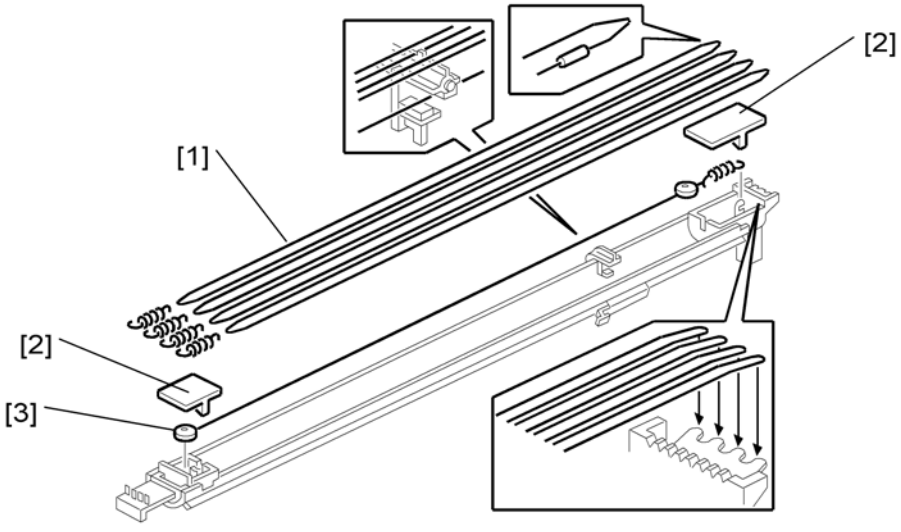
   [1] Leaf spring (☞ x1)

   [2] Leaf spring (☞ x1)

   [3] End plate (☞ x1)

   [4] Disconnect the cleaning pad, and move it to the left

   [5] Charge corona unit



2. Remove:

   [1] Guide wires (Springs x1 each)

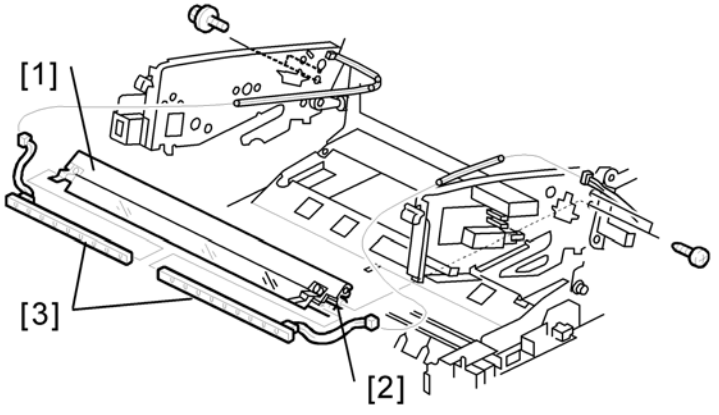
   [2] Cover plates (x2 pressure release)

   [3] Charge corona wire

Reinstallation

1. Insert the right end into the right hole.
2. Insert the left end into the left hole.
3. Attach the right plate, then the left plate.
4. After replacing the corona wire, do **SP2803** to clean the new corona wire.

Quenching Lamps



D046R110

Preparation

- Remove the charge corona unit ☛ p.298

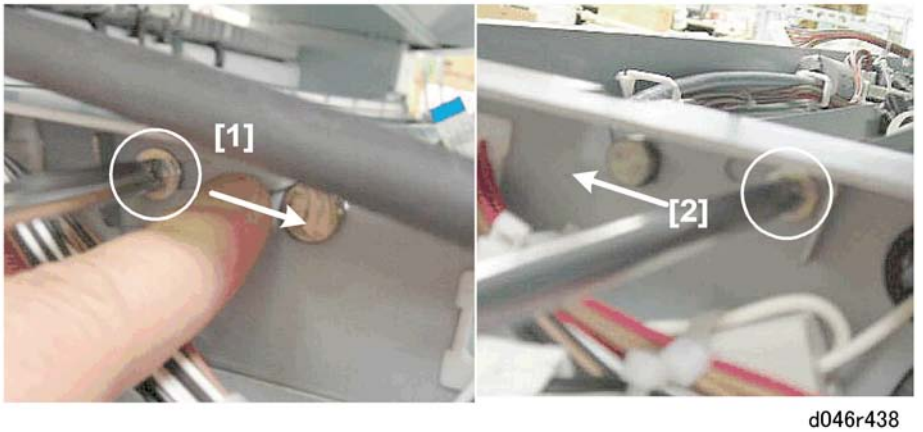
1. Remove:

   [1] Lamp bracket, left (x 2, x 1)

   [2] Lamp bracket, right (x 1, x 1)

   [3] Quenching lamp arrays x 2

Reinstallation



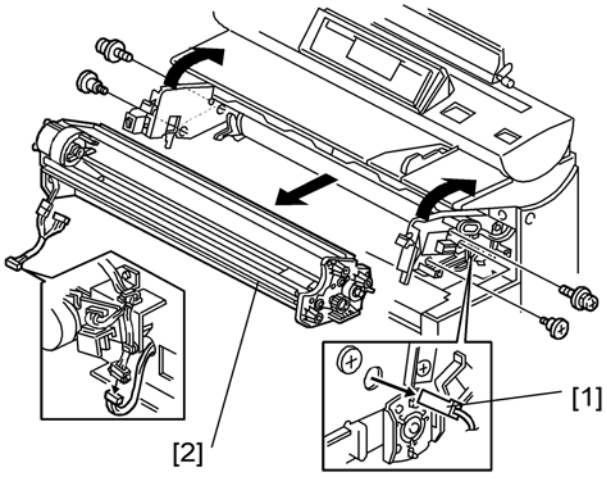
d046r438

1. On the left side [1] and right side [2] of the upper unit, reset the lock brackets and tighten the screws.

Drum, Development Unit

Development Unit

Development Unit Removal



D046R113

Preparation

- Left and right upper unit covers ☛ p.262
- Toner hopper cover, lower toner hopper cover ☛ p.258

⚠CAUTION

- The development unit weighs 10.4 kg (22.9 lb.) with the toner cartridge installed.

1. Confirm that the upper unit is open.

Important

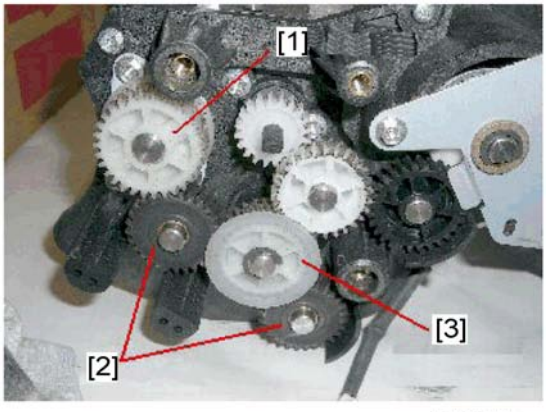
- **Make sure the upper unit is open. Do not remove the development unit with the upper unit closed.**

2. Disconnect the bias connector [1] (x 1).
3. Remove the development unit [2] (x 6, x 1).

Important

- **To avoid damaging the fragile wings on either end of the development unit, never attempt to remove or install the development unit in the machine with the upper unit closed.**

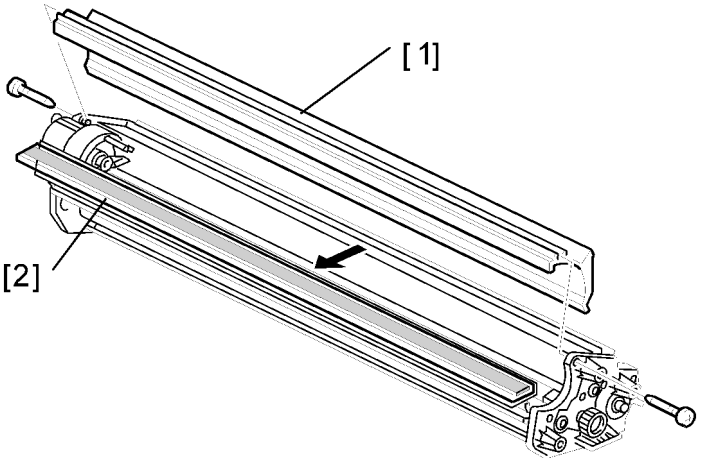
Development Unit Gear Replacement



d046d541a

The gears on the development unit [1], [2], and [3] (© x1 each) must be checked every 200 Km (656 K ft.) of paper feed and replaced if necessary.

Developer



D046R114

Preparation

- You need one unopened toner cartridge to do this procedure.
- Remove the toner cartridge from the machine. Follow the instructions on the decal on the front left side of the machine.

1. Remove

[1] Toner supply casing (x 2)

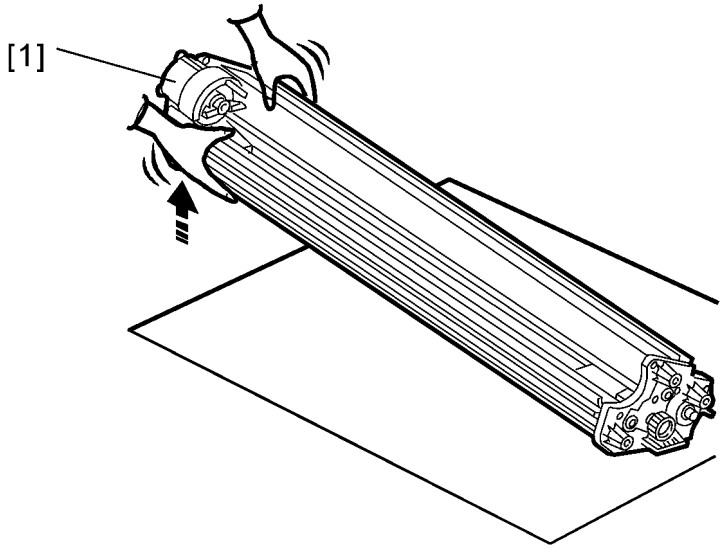
[2] Development filter and bracket.

Important

- **Always handle the development unit carefully, to avoid damaging the bias terminal on the left end of the unit.**

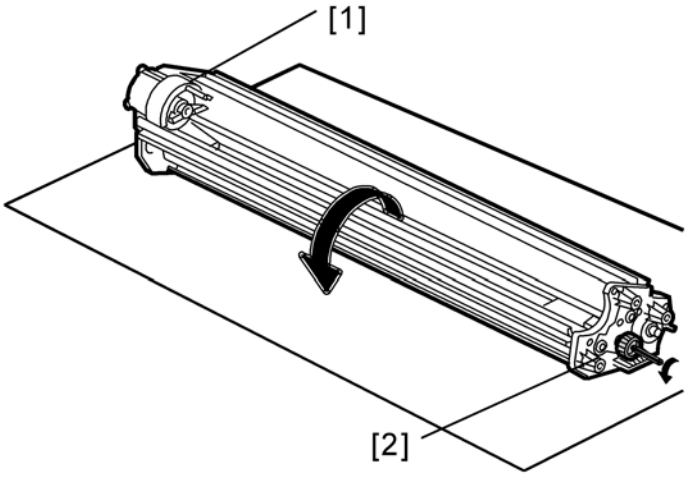
Note

- Make sure that the filter is re-installed with the holes facing down.



D046R115

2. Raise the clutch-end [1] up about 45° to remove the developer, and then lay it flat.



D046R116

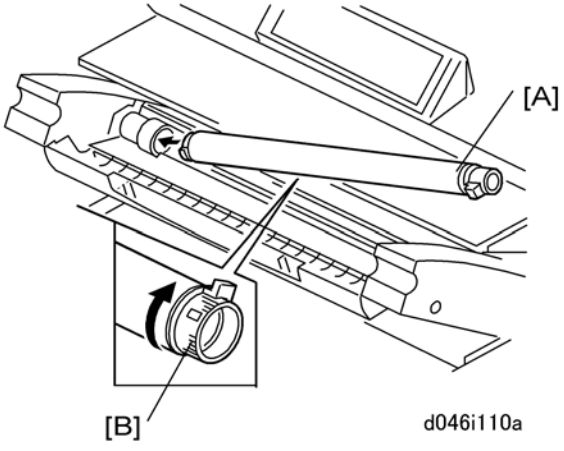
3. Rotate the unit [1] to remove more developer.
4. Rotate the knob [2] to remove the remaining developer.

Installing the developer

1. Open the first 1 kg pack of developer and pour it into the development unit.
   - Slowly add the developer from the first pack into the development unit, while you move the pack from left to right until the pack is empty.
   - An equal amount of developer must be spread along the entire open slot of the development unit.

   Important

   - **Do not add the second pack at this time.**



2. Set an **unopened** toner cartridge [A] in the machine.

Important

- **If a new toner cartridge is not available, cover the open slot of the toner cartridge with some tape to seal it temporarily.**

3. Rotate knob [B] until it stops.
4. Close the toner hopper cover.
5. Close the upper unit.
6. Connect the power supply cord and switch the main power switch on. The main motor switches on and distributes the developer evenly inside the development unit.
7. Wait about 22 seconds until the machine stops.
8. Turn the operation switch off.
9. Turn the main power switch off.
10. Open the upper unit.
11. Open the toner hopper cover.
12. Remove the toner cartridge.
13. Open the second 1 kg pack of developer, then slowly add it to the development unit. Move the pack from left to right until it is empty.
14. Use a clean cloth to clean the edges around the slot of the development unit.
15. Remove the **unopened** toner cartridge from the machine.
16. Install the **original** toner cartridge.
17. Close the toner hopper cover.
18. Close the upper unit.

Enter Developer Lot Numbers

1. Turn on the main switch.
2. Wait for the machine to warm up.
3. Enter SP mode.
   - Press the [Clear Modes] key.
   - Enter [1] [0] [7].
   - Hold down [Clear/Stop] for more than 3 seconds.
   - Touch "System SP".
4. Do SP2801-2 and 3 to enter the lot numbers.

   Use the soft keyboard on the display panel to enter the lot numbers. (The lot numbers are embossed on the top edge of each developer pack.) If the numbers are the same, enter the same number twice.

   Important

   - **You must enter the lot numbers with SP2801-2 and -3 before doing SP2801-1. The main machine will return an error ("Failed") if you attempt to do SP2801-1 before SP2801-2 and -3.**

Initializing the Developer

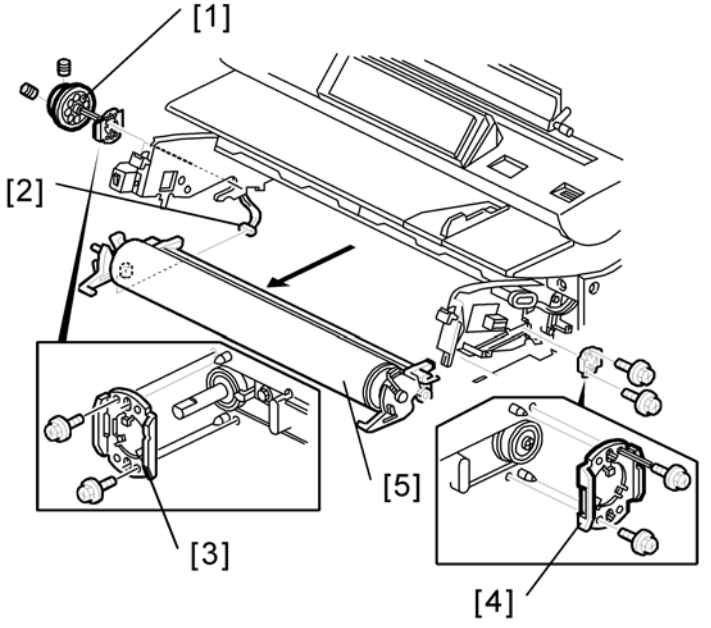
Important

- **Do not do this procedure until you have entered the Lot Numbers. See the previous section.**

1. Go into the SP mode.
2. Enter 2801 001 and press [#].
3. When the message prompts you to proceed, touch "Yes".
4. Push [Execute]. Wait for about 2.5 min.
5. When the message tells you that the operation is finished, touch "Exit".
6. Touch "SP Direct", then use the 10-key pad to enter 2923 001 and push [#].
7. Push [Execute]. The machine enters the drum set mode and dusts the drum with toner.
8. When the message prompts you that the operation is finished, touch [Exit].
9. Open the upper unit and confirm that the drum is covered with toner.
10. Push the pressure lever to the right to push the cleaning blade against the drum, then close the upper unit.
11. To initialize the ID sensor, touch "SP Direct", push [#], enter SP3001 002 then touch [Execute].

    Wait about 6 seconds for initialization to complete.
12. When the message prompts you that the operation is finished, touch "Exit".

Drum, ID Sensor, and Cleaning Blade



Preparation

- Remove the development unit ☛ p.301
- To the right of the drum drive gear, loosen the screw to relieve the tension on the drive belt.

1. Remove

   [1] Drum drive gear and belt (x 2, use a hex wrench)

   [2] ID sensor connector (x 1)

   [3] Left drum bracket (x 2)

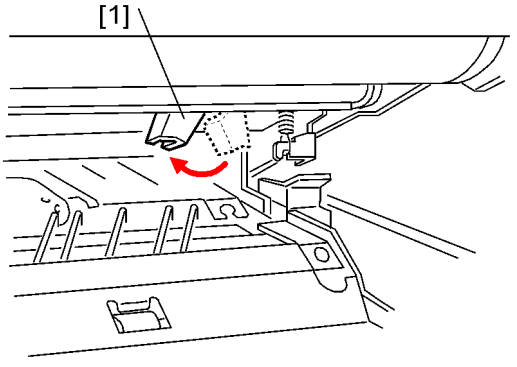
   [4] Right drum bracket (x 2)

   [5] OPC drum assembly

2. Cover the OPC with a sheet of paper to protect it from light.

   Important

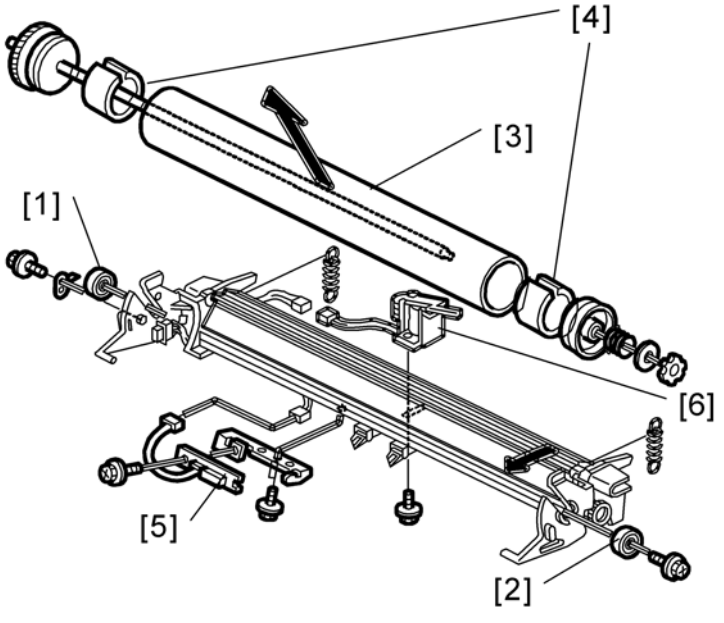
   - **Never touch the surface of the drum.**



d046d122a

4

3. Set the lever [1] to the left to release the blade from the drum.



D046R120

4. Remove:

[1] Drum unit left side (x 1, spring x 1, bushing x 1)

[2] Drum unit right side (x 1, spring x 1, bushing x 1)

[3] OPC drum

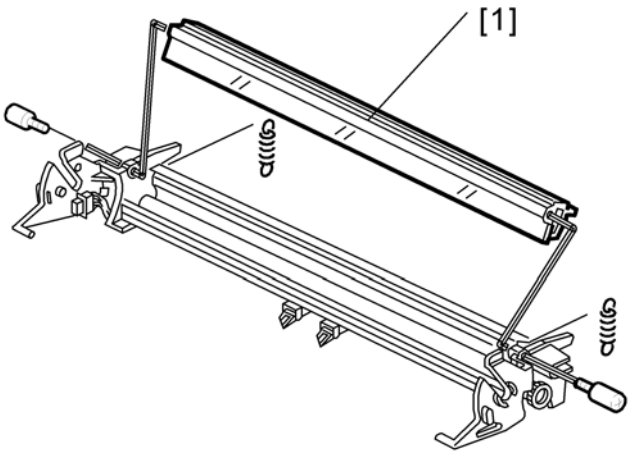
[4] Rubber plates

Important

- **When installing a new drum, remove both rubber plates inside the old drum and install them in the new drum. (These plates reduce the noise caused by inertia when the drum starts and stops.)**

[5] ID Sensor (x 2, x 2)

[6] Pick-off pawl solenoid (x 1, x 1)



D046R121

5. Remove the cleaning blade [1] (Springs x2, x 2).

Reinstallation

Do the following SP codes after replacing the drum and cleaning blade.

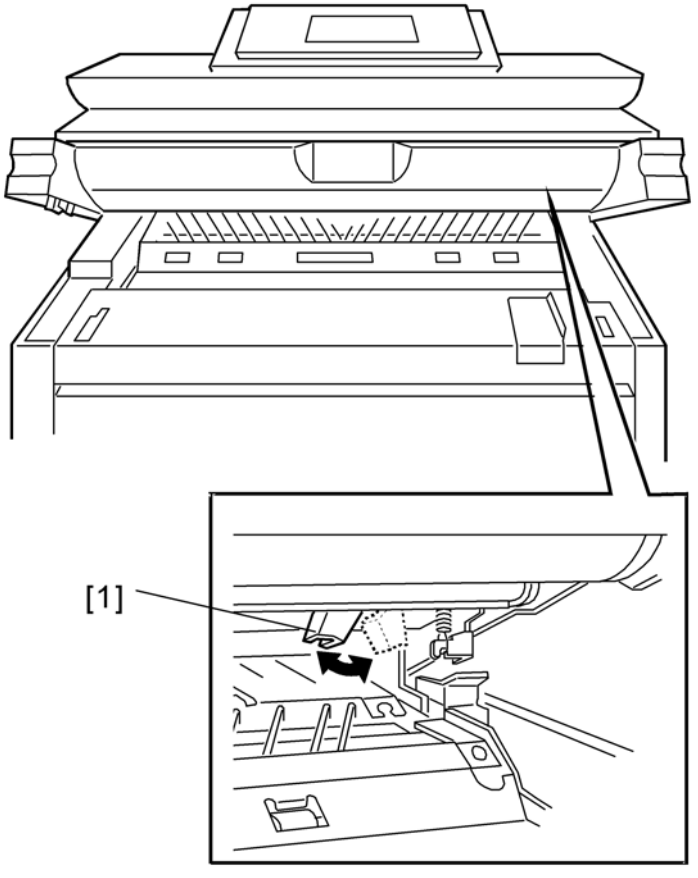
- After Drum Replacement:

SP2923	Drum Set Mode. Applies toner to the drum and blade to reduce friction between the drum and cleaning blade. As a result of this, the blade will not bend and will not scratch the surface of the drum.
SP3001 002	ID Sensor Setting – Initial Setting. Initializes the ID sensor.

- After Blade Replacement

SP2923	Drum Set Mode – Execute. Applies toner to the drum and blade to reduce friction between the drum and cleaning blade. This prevents the blade from bending or scratching the surface of the drum.

- Drum set mode procedure



D046R122

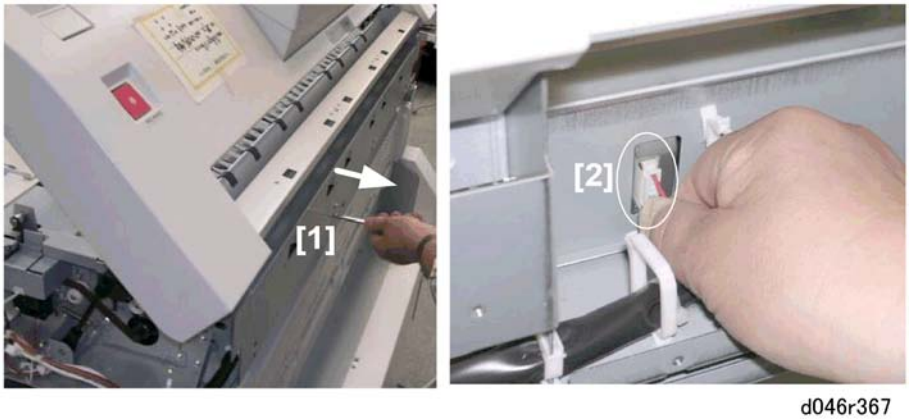
1. Set the pressure lever [1] to the left.
2. Plug in the power cable and switch the main power switch on.
3. Press C/⊘.
4. Enter "107".
5. Hold down C/⊘ for more than 3 seconds.
6. On the touch panel, touch "Copy SP".
7. Enter 2923, press [#] , then push [Start] to execute Drum Set Mode.
8. After it has finished, set the pressure lever [1] to the right.
9. If you have replaced the OPC drum, enter 3001 002, press [#], then press Start to initialize the ID sensor.

Motors

Scanner Motor

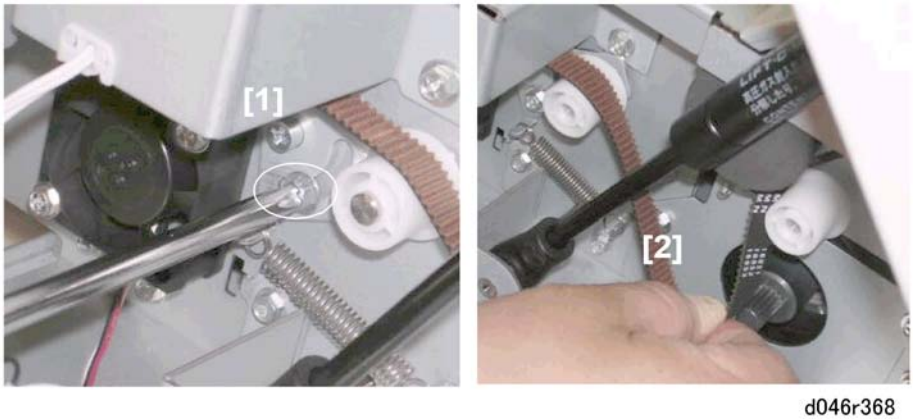
Preparation

- Raise the scanner cover and open the upper unit. ☛ p.257
- Remove the upper unit right cover (x2). ☛ p.262



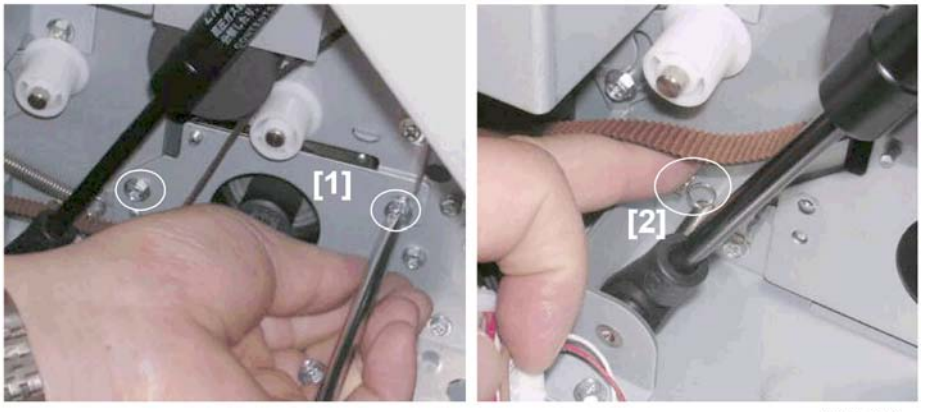
d046r367

1. Remove the original exit guide [1] (x11).
2. Disconnect the scanner motor [2] (x1).



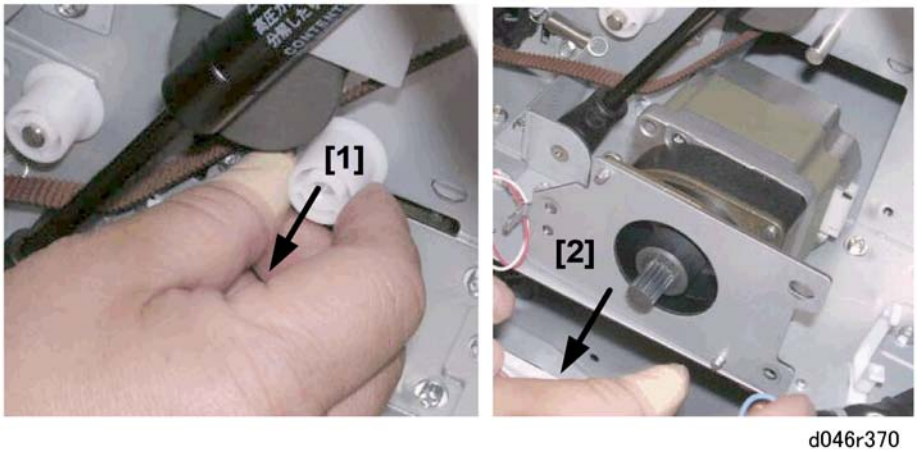
d046r368

3. Loosen the timing belt tension screw [1].
4. Pull off the tension belt [2].



d046r369

5. Remove the cover plate [1] (x2).
6. Remove the spring [2].

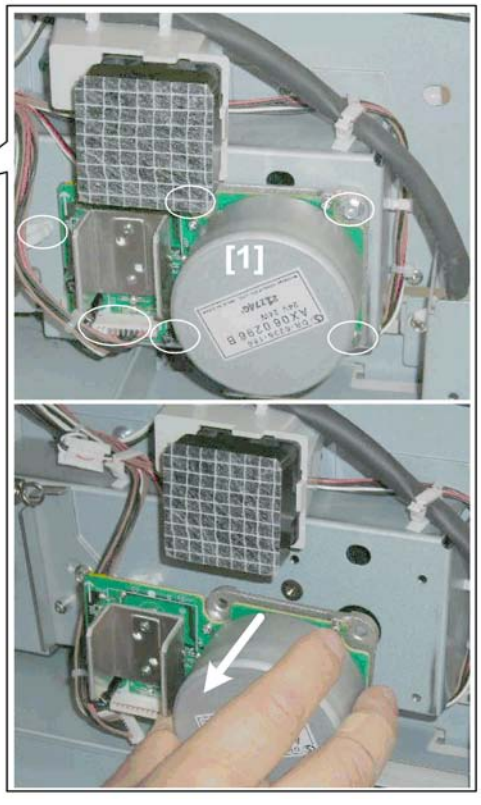


d046r370

7. Pull off the sprocket [1].
8. Pull out the motor bracket [2] and motor.

Main Motor

d046r402

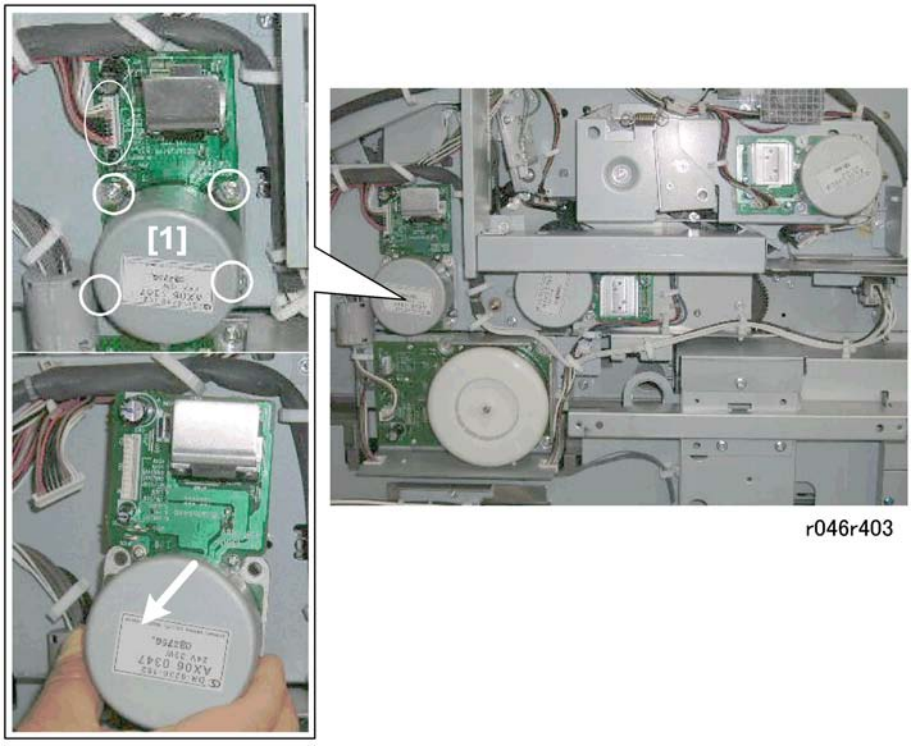


Preparation

- Raise the upper unit. ☛ p.257
- Remove the left cover of the upper unit. ☛ p.262
- Remove the left rear cover and the left front cover. ☛ p.260

1. Remove the main motor [1] (x4, x1, x4).

Fusing/Exit Motor



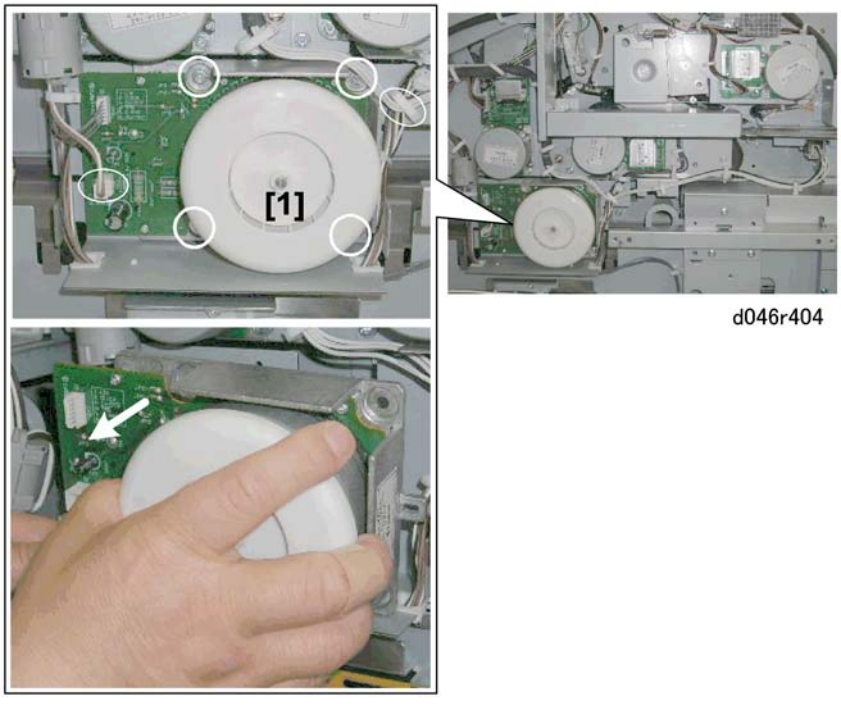
r046r403

Preparation

- Raise the upper unit. ☛ p.257
- Remove the left cover of the upper unit. ☛ p.262
- Remove the left rear cover and the left front cover. ☛ p.260

1. Remove the fusing/exit motor [1] (x1, x4).

Development Motor



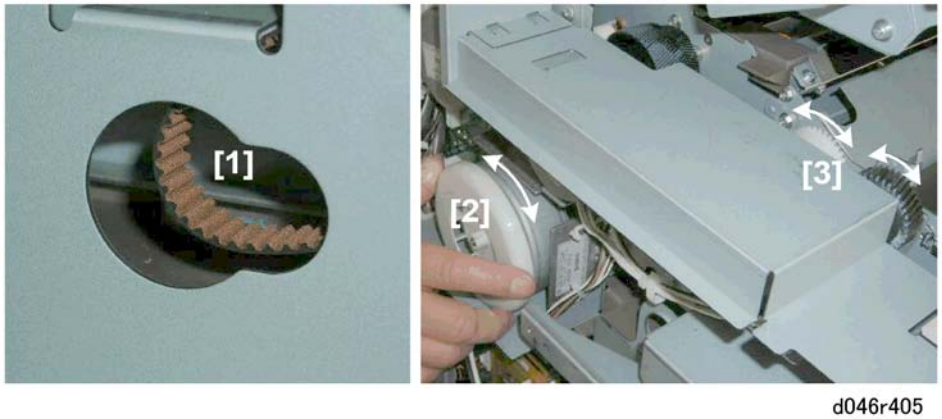
d046r404

Preparation

- Raise the upper unit. ☛ p.257
- Remove the left cover of the upper unit. ☛ p.262
- Remove the left rear cover and the left front cover. ☛ p.260

1. Remove the development motor [1] (x1, x4).

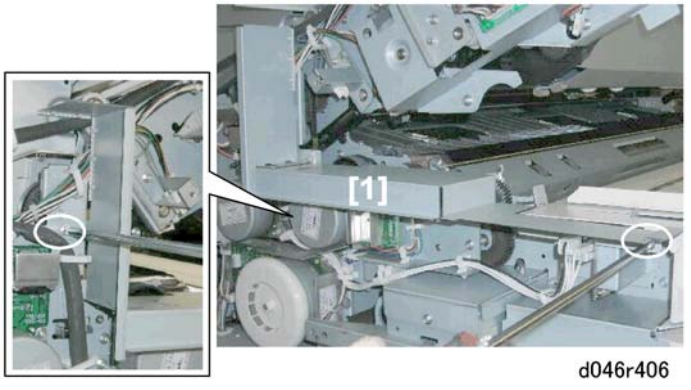
Reinstallation



d046r405

1. Set the timing belt [1] behind the panel to receive the drive gear of the development motor.
2. After reattaching the development motor [2], turn it slowly to the front and back.
3. If the two gears at [3] move to the front and back when you turn the development motor, the belt and timing gear are correctly engaged.

Registration Motor

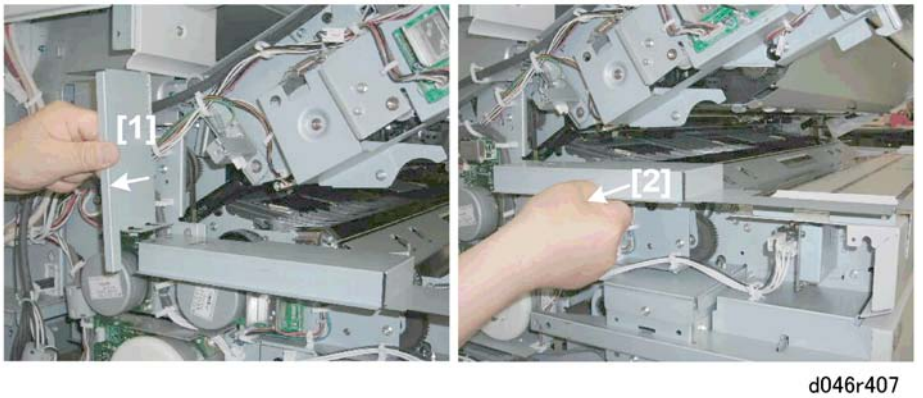


d046r406

Preparation

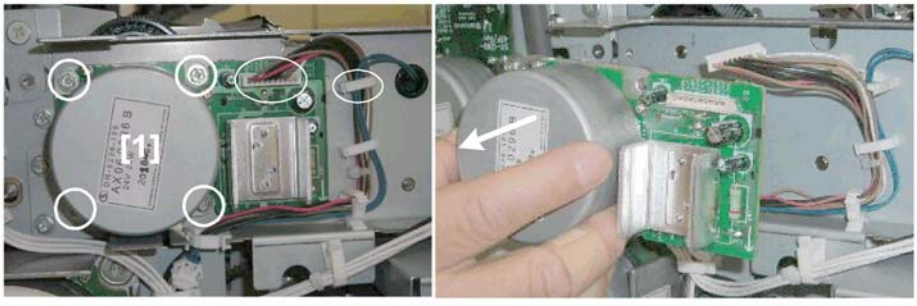
- Raise the upper unit. ☛ p.257
- Remove the left cover of the upper unit. ☛ p.262
- Remove the left rear cover and the left front cover. ☛ p.260

1. Remove the screws of the left inner plate [1] (x2).



d046r407

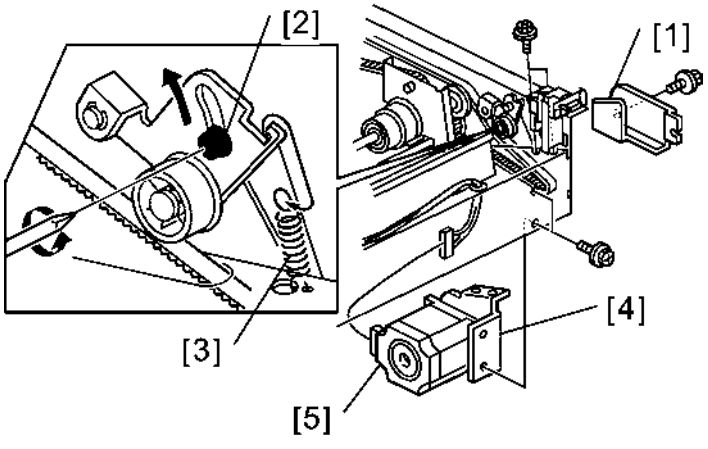
2. Remove the vertical [1] and horizontal [2] halves of the left inner plate.



d046r408

3. Remove the registration motor [1] (x1, x1, x4).

Paper Feed Motor



D046R132

Preparation

- The paper feed drive motor is located under the front left corner of the roll tray.
- Remove the roll tray.

1. Remove:

   [1] Paper feed drive cover, left rear corner (x 1)

   [2] Loosen the adjustment screw.

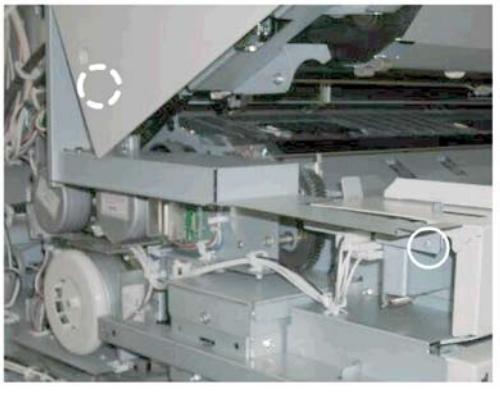
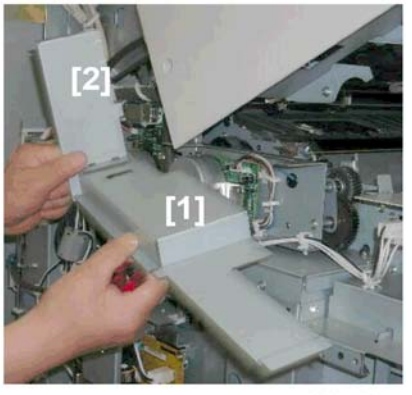
   [3] Remove the pressure spring.

   [4] Motor assembly (x 1, x 2 top, x 2 side)

   [5] Paper feed motor (x 2)

Clutches

Registration Clutch

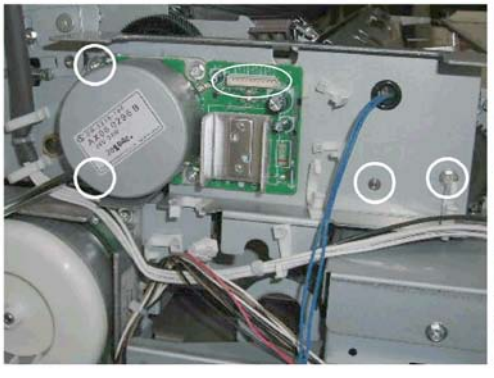
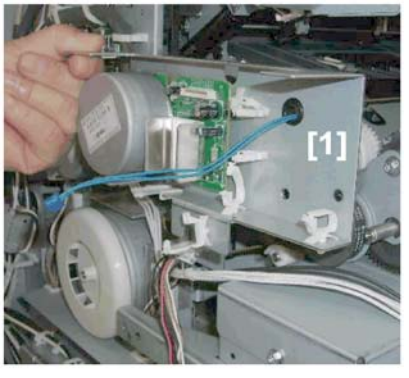



d046r491

Preparation

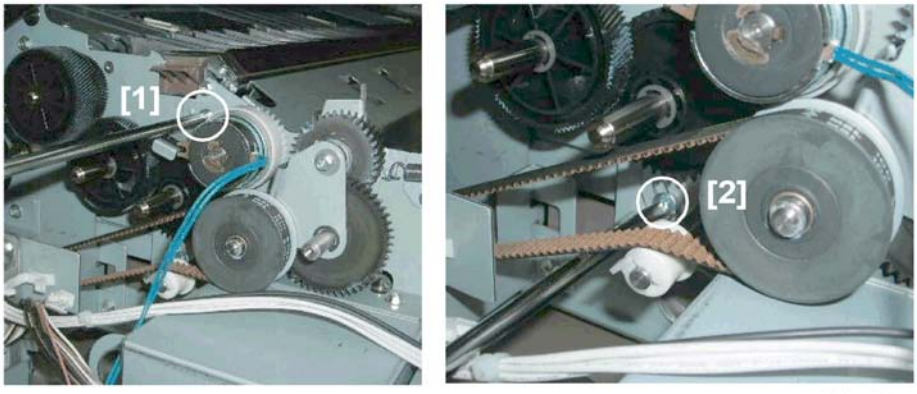
- Raise the scanner cover, open the upper unit ☛ p.257
- Remove the left rear and left front covers. ☛ p.260

1. Remove the front [1] and rear [2] halves of the left inner plate (x2).

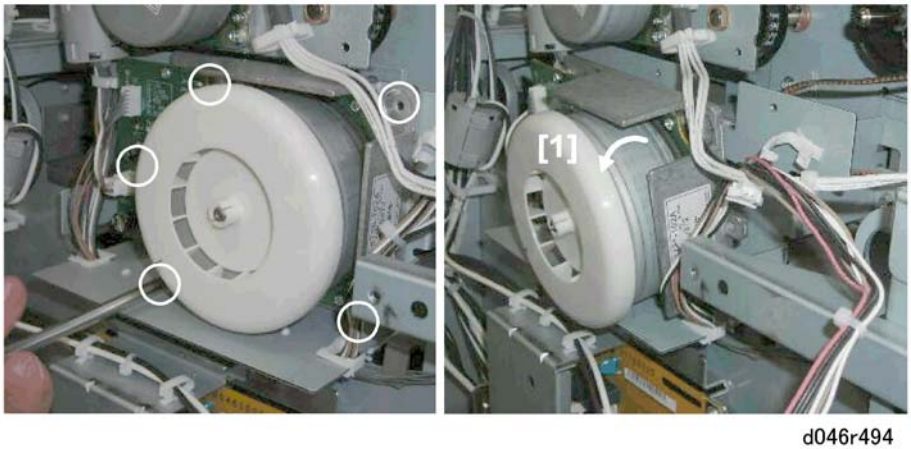
d046r492

2. Pull off the registration motor assembly [1] (x1, x4, x4).



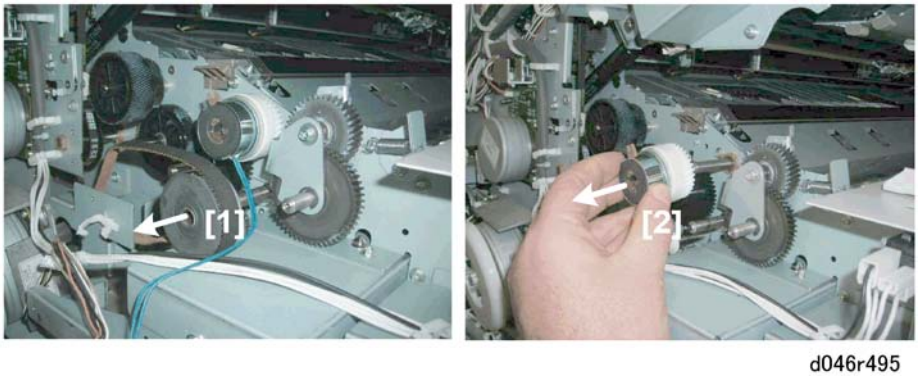
d046r493

3. Remove the clutch bracket screw [1].
4. Loosen the belt tension screw [2].



d046r494

5. Remove the screws of the development motor and tip the motor [1] forward slightly (x5).

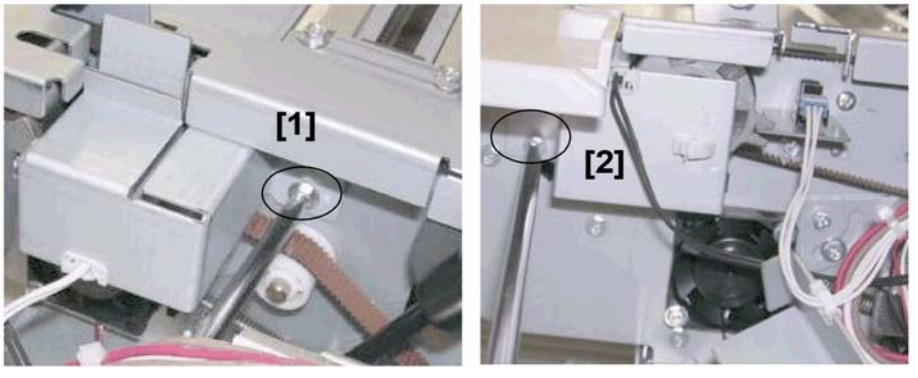


d046r495

6. Pull off the gear and drive belt [1].

7. Remove the registration clutch [2].

Original Feed Clutch



d046r371

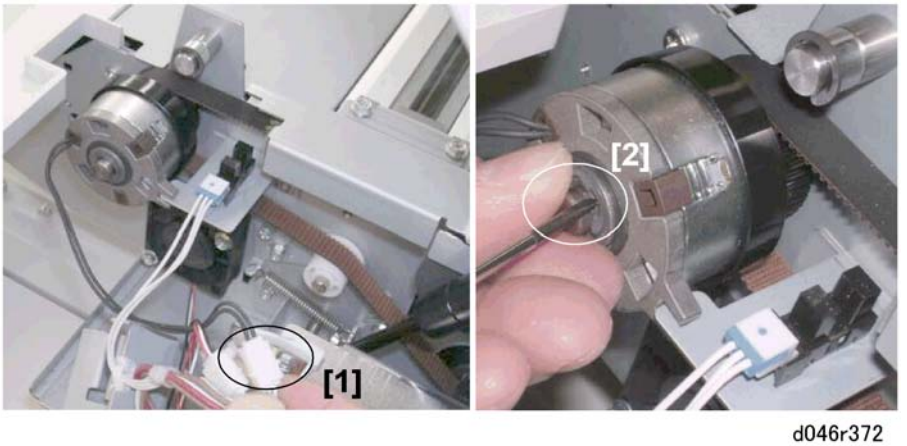
Preparation

- Open the scanner cover. ☛ p.257
- Remove the right cover of the upper unit. ☛ p.262

1. Remove:

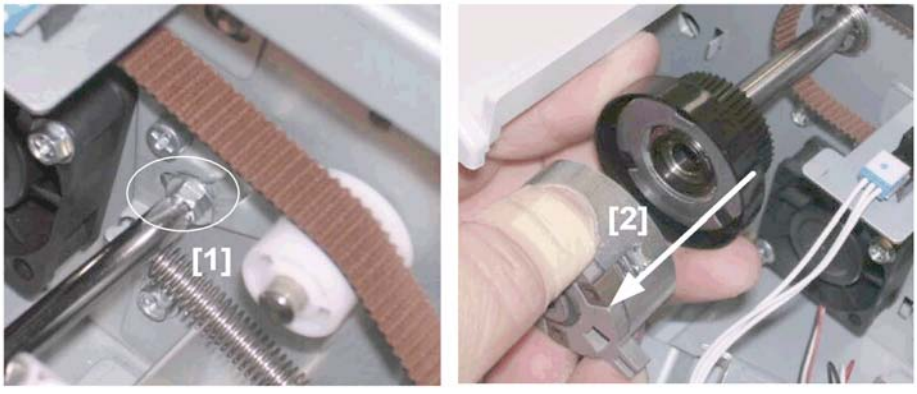
   [1] Sensor cover (x1)

   [2] Clutch cover (x1, x1)



d046r372

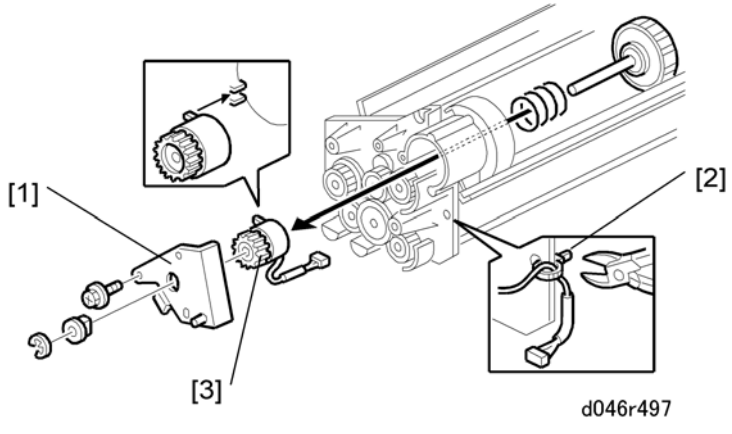
2. Disconnect the clutch [1] (x1).
3. Remove the e-ring [2] (x1).



d046r373

4. Loosen the belt tension spring screw [1] (x1).
5. Remove the clutch [2].

Toner Supply Clutch



d046r497

Preparation

- Remove the development unit. p.301

1. Remove:

   [1] Plate (x1, x1, Bushing x1)

   The stopper is spring-loaded. It will pop out suddenly after removal of the e-ring.

   [2] Cut the harness clamp

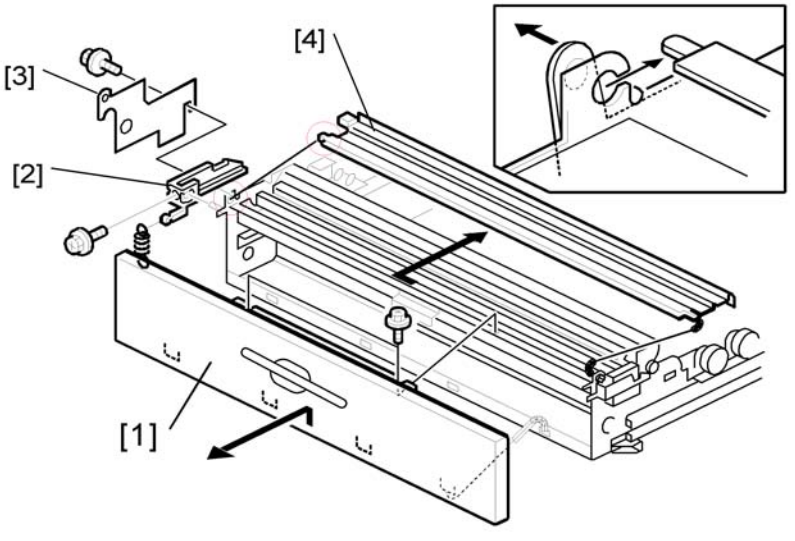
   [3] Toner supply clutch

Paper Feed, Cutting

Cutter Unit

Preparation

- Pull out the roll tray



D046R123

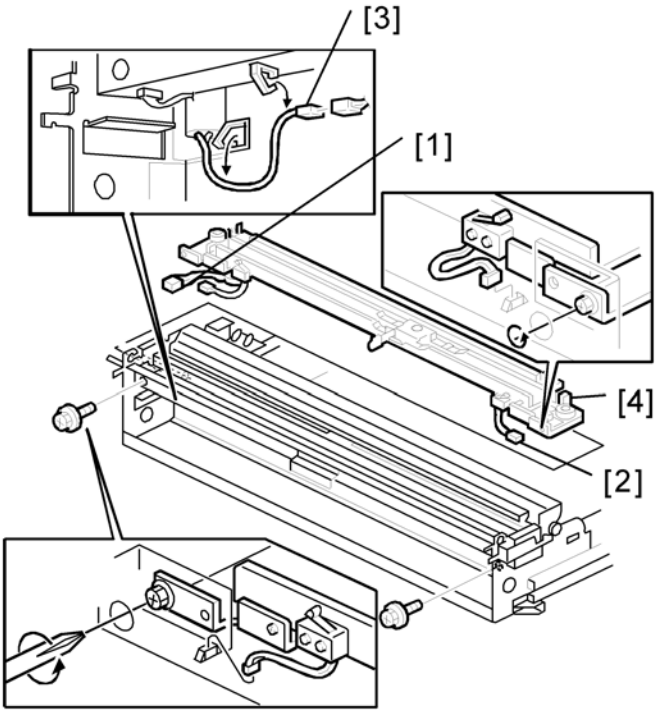
1. Remove

   [1] Roll tray cover (x 2)

   [2] Left spring, hook (x 1)

   [3] Side plate (x 2)

   [4] Guide plate (pressure release).



2. Remove:

   [1] Left cutter HP switch connector (x 1)

   [2] Right cutter HP switch connector (x 1)

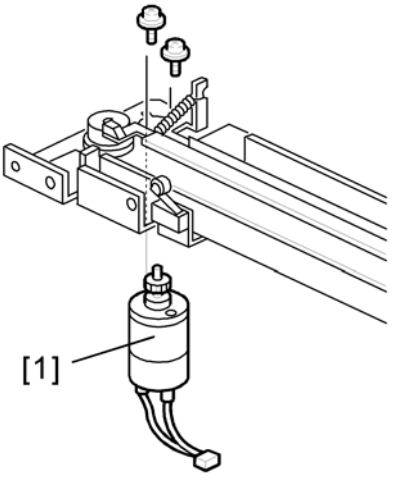
   [3] Cutter motor connector (x 1, clamps x 2)

   [4] Cutter unit (x 2). (Slide out to the left.)

Cutter Motor, Cutter HP Switches

Preparation

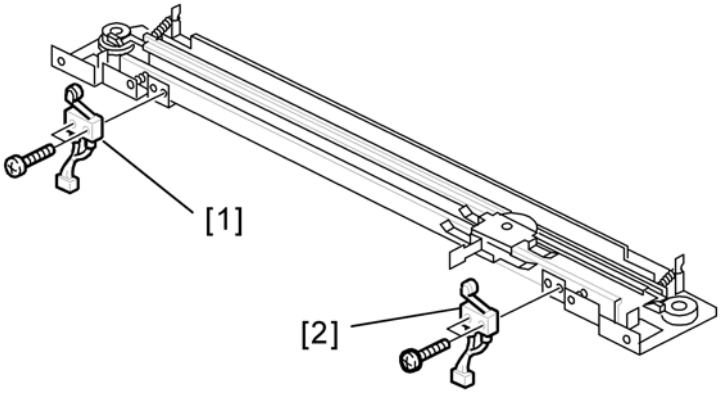
- Remove the cutter unit ☛ p.322



D046R125A

1. Remove:

   [1] Cutter motor (x 2, x 1)



D046R125B

2. Remove:

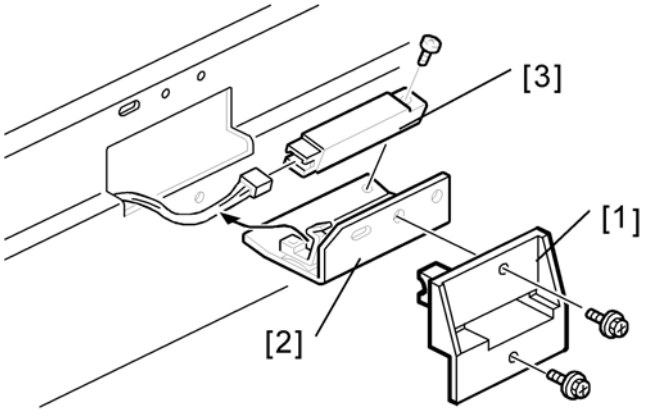
   [1] Left cutter HP switch (x 2, x 1)

   [2] Right cutter HP switch (x 2, x 1)

Cutting Sensor, Feed Exit Roller

Preparation

- Pull out the roll tray drawer.
- Remove the left and right inner cover. ☛ p.260



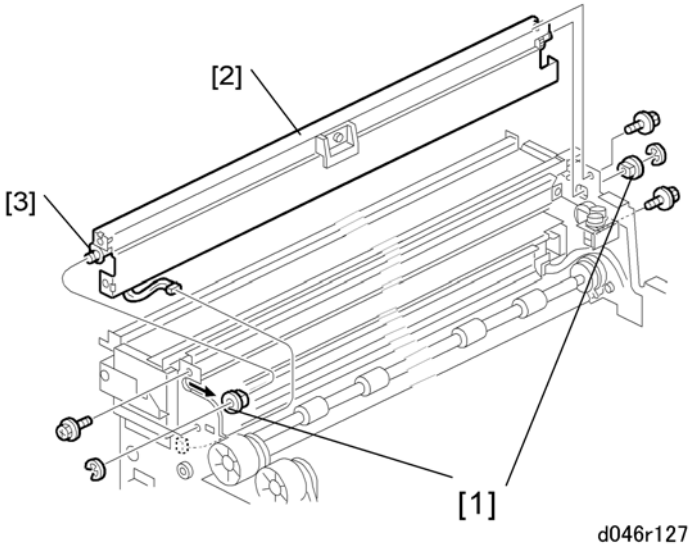
D046R126

1. Remove

   [1] Lock plate (x 2)

   [2] Sensor bracket

   [3] Cutting sensor (x 1, x 1)



d046r127

2. Remove:

   [1] Bushings (x 2)

   [2] Guide plate (x 4)

   [3] Feed exit roller

Reinstallation

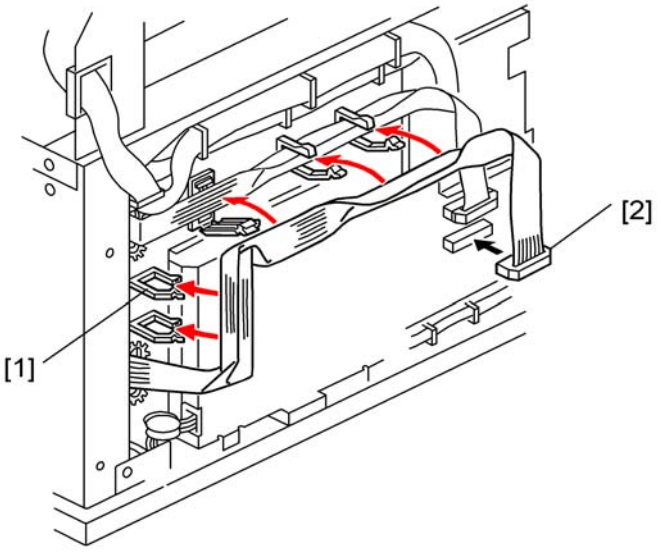
- Re-install the left end first (viewed from the front).

Roll Tray

Preparation

⚠CAUTION

- The roll tray weighs 36 kg (80 lb.) At least two technicians are needed to remove it and re-install it.
- Prepare a clean flat surface to set the unit on after removal. The paper feed motor is mounted under the roll tray. A strong table, or four blocks, to raise the roll tray slightly, is ideal and will make it easier to service.
- Right rear cover, right front cover ☛ p.259
- Rear cover ☛ p.264
- Controller box cover ☛ p.265

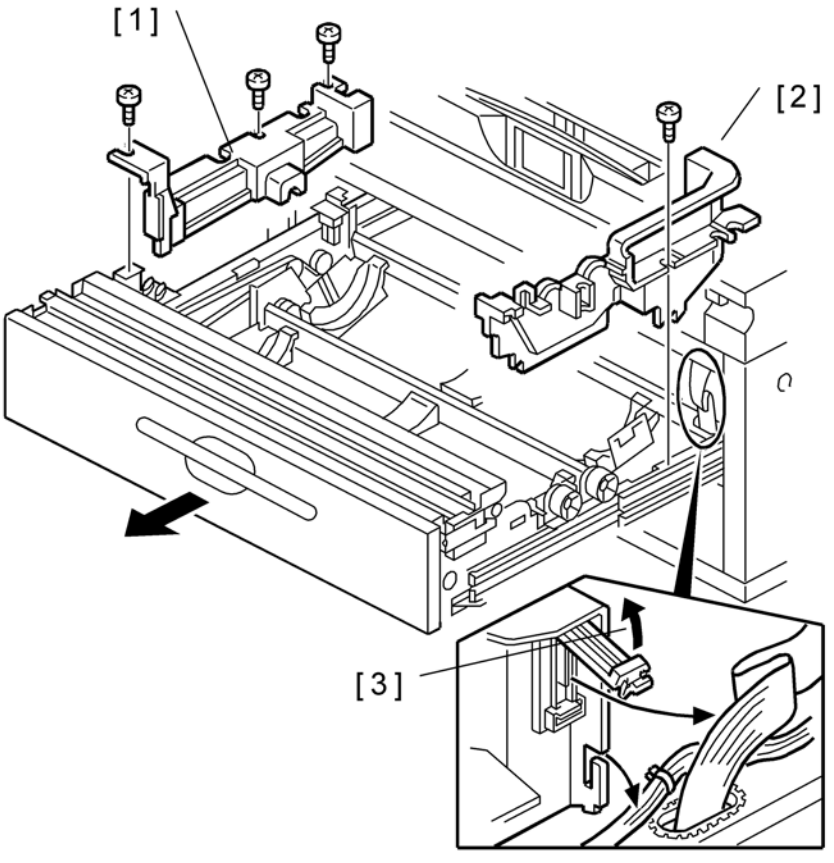


d046r160

1. Remove:

   [1] Open the harness clamps (x 6)

   [2] Connectors (x 2)



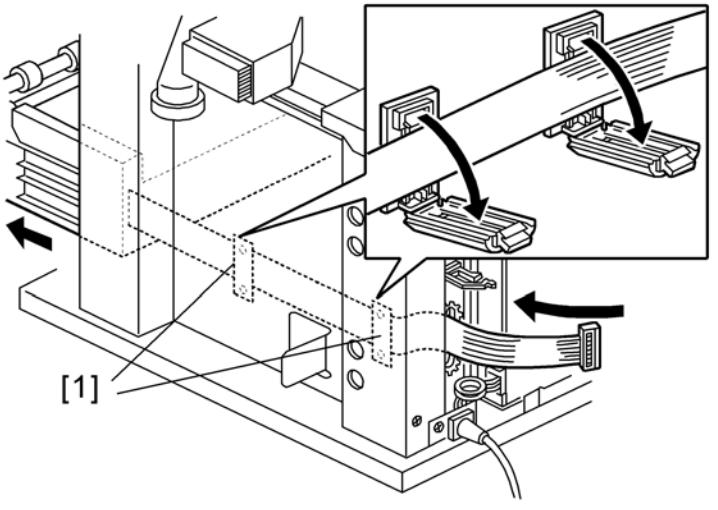
D 046 R 129

2. Remove:

   [1] Left inner cover (x 3)

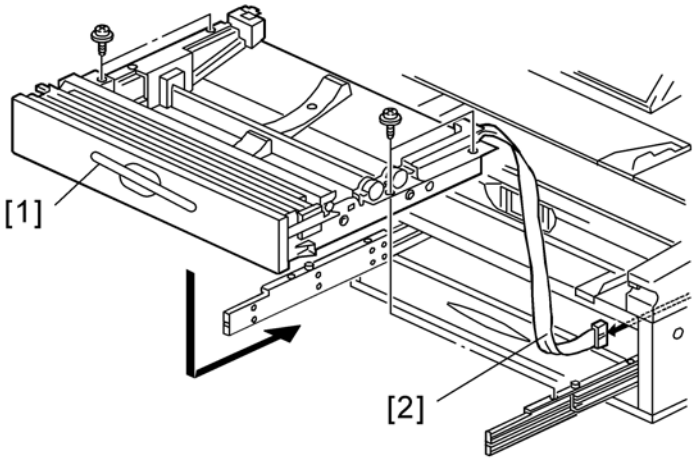
   [2] Right inner cover (x 2)

   [3] Harness clamp at the corner of the right inner cover



D046R130

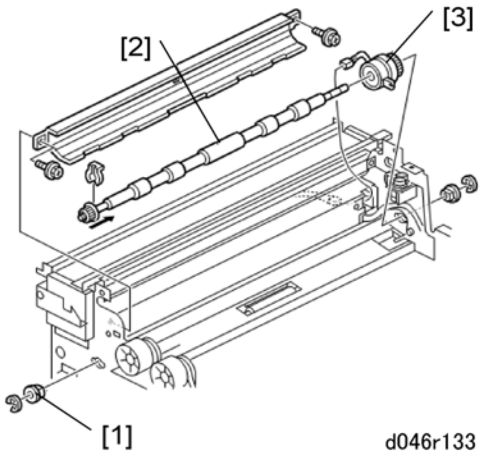
3. Remove harness clamps [1] inside the machine (x 2).



D046R131

4. Remove the roll tray [1] (x 4 with washers).
5. Pull the flat connector [2] from the back to the front of the machine.
6. Coil the flat connector and then place it inside the roll tray.
7. With a technician on each side of the roll tray, lift it off the rail and set it down on a clean flat surface.

1st/3rd Feed Roller and Clutch



Preparation

- Remove the roll tray. ☛ p.326

1. Remove:

   [1] Bushings (ℂ x 2)

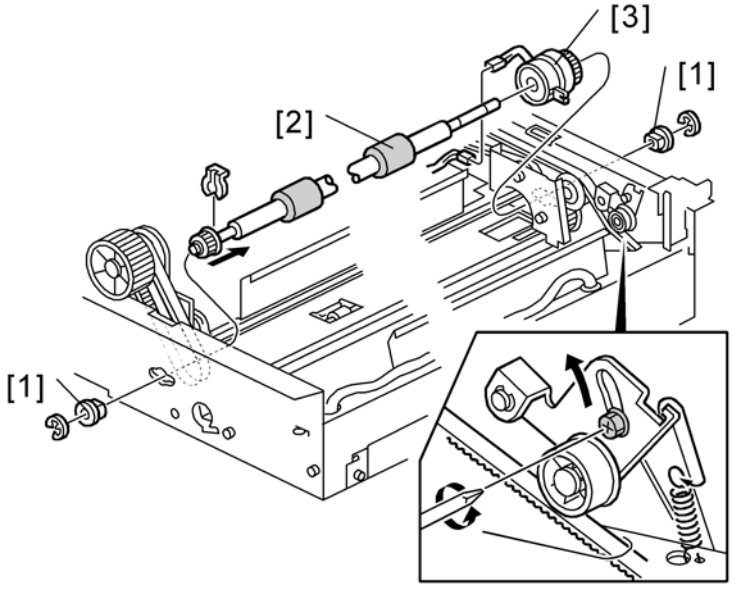
   [2] First feed roller (⟅⟆ x 1)

   [3] Paper feed clutch (⊑ x 1, clamps x 2)

2. After replacement, do the SP codes for the roller which you replaced, to adjust the cut length.

SP1920-021 - 253	Cut Length Adjustment

2nd/4th Feed Roller and Clutch



D046R134

Preparation

- Remove the roll tray. ☛ p.326

1. Remove:

   [1] Bushings (ℂ x 2)

   [2] Second feed roller (⟲ x 1)

   [3] Paper feed clutch (☞ x 1, clamps x 2)

2. After replacement, do these SP codes for the roller which you replaced, to adjust the cut length.

SP1920-021 - 253	Cut Length Adjustment

Registration Roller

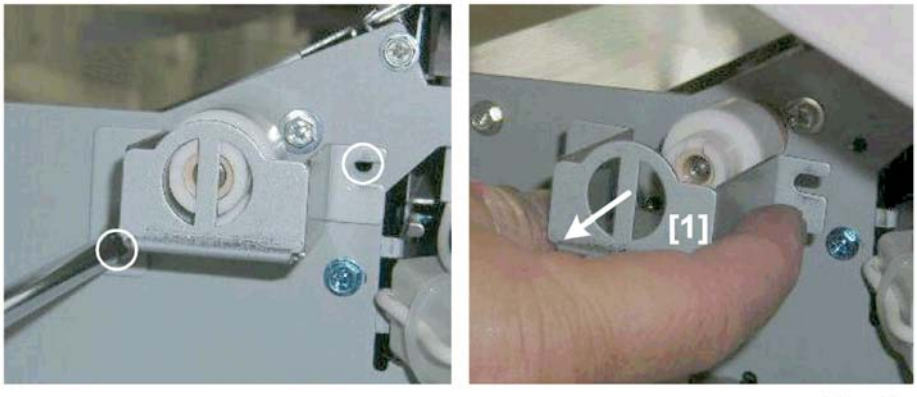
Preparation

1. Raise the upper unit.
2. On the left, remove:
   - Upper unit left cover p.262
   - Left front cover ☛ p.260

- Left inner cover ☛ p.262
- Registration motor ☛ p.316
- Registration clutch ☛ p.318

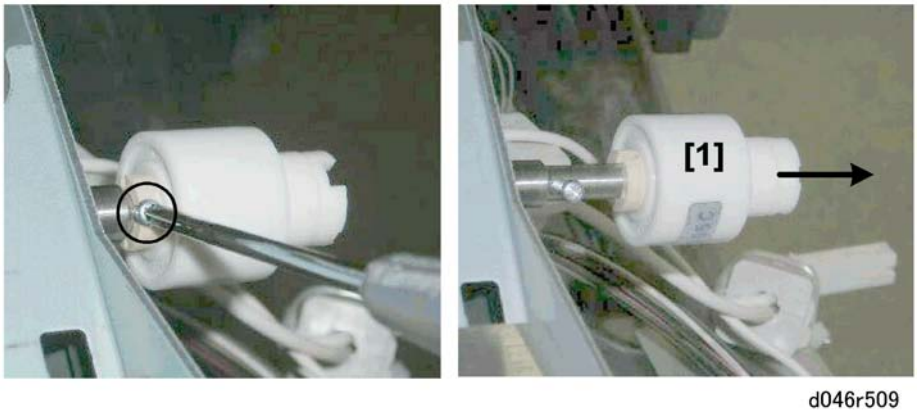
3. On the right, remove:
   - Upper unit right cover ☛ p.262
   - Right front cover ☛ p.259
   - Right inner cover ☛ p.260
   - T/S power pack ☛ p.380
4. At the front, remove the bypass feed table.

Torque Limiter



d046r508

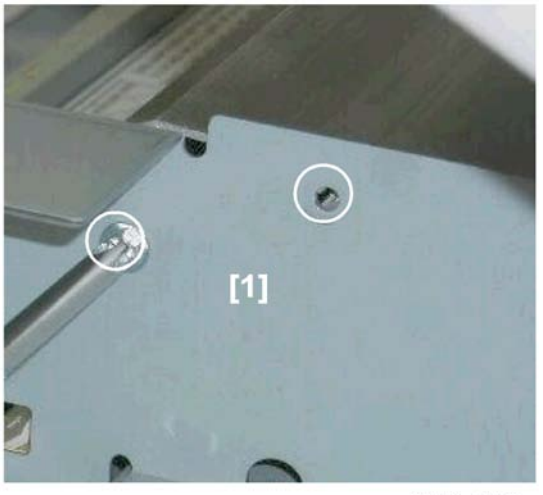
1. On the right side, remove the torque limiter bracket [1] (☞x2).



d046r509

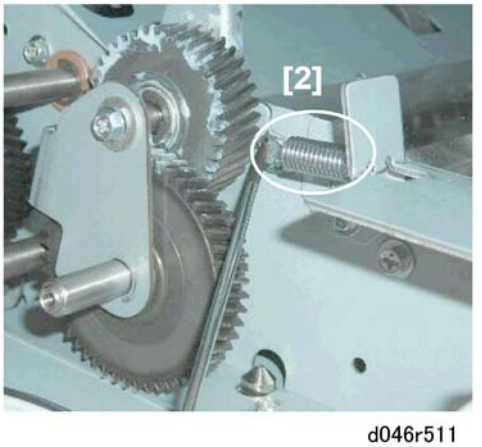
2. Remove the torque limiter [1] from the right end of the roller (☞x1).

Aluminum Guide Plate



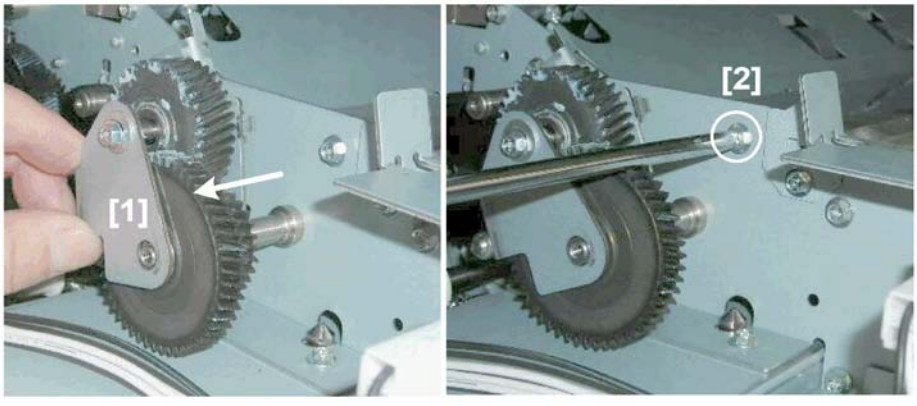
d046r510

1. On the right [1], remove the screws (x2).



d046r511

2. On the left, remove:
   [1] E-ring (ℂx1)
   [2] Spring x1



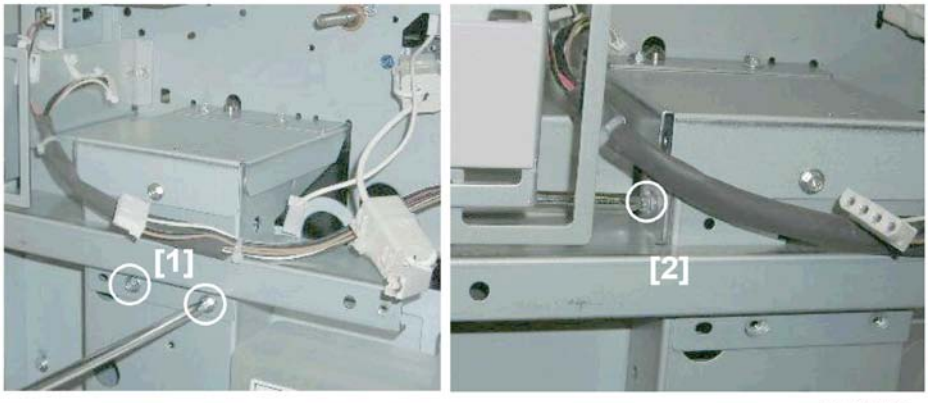
d046r512

3. Slide the gear [1] out slightly (do not remove it).
4. Remove the screw [2] (x1).

d046r513

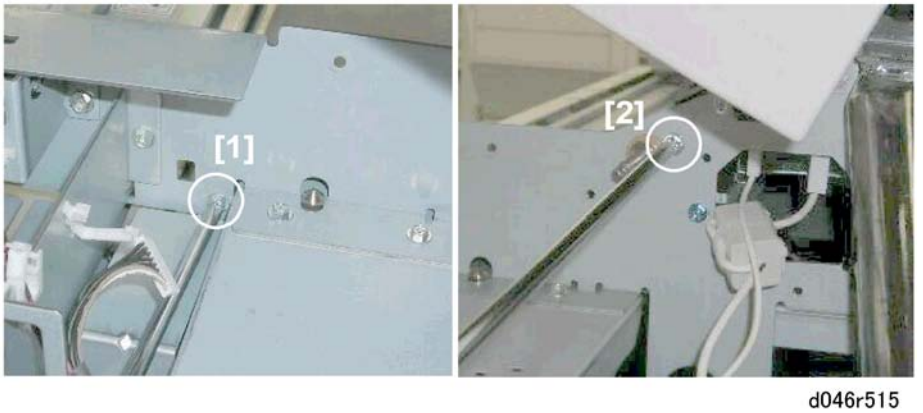
5. Remove the aluminum guide plate [1].

Main Guide Plate



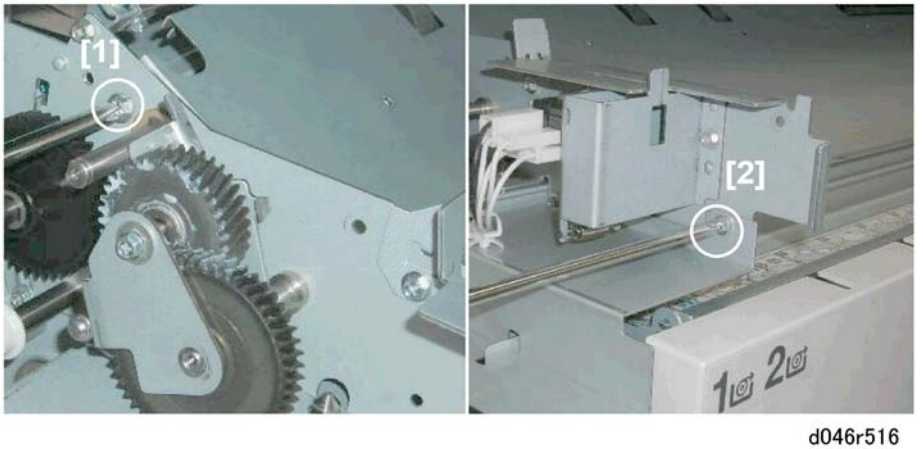
d046r514

1. On the left, remove screws [1] and [2] (x3).



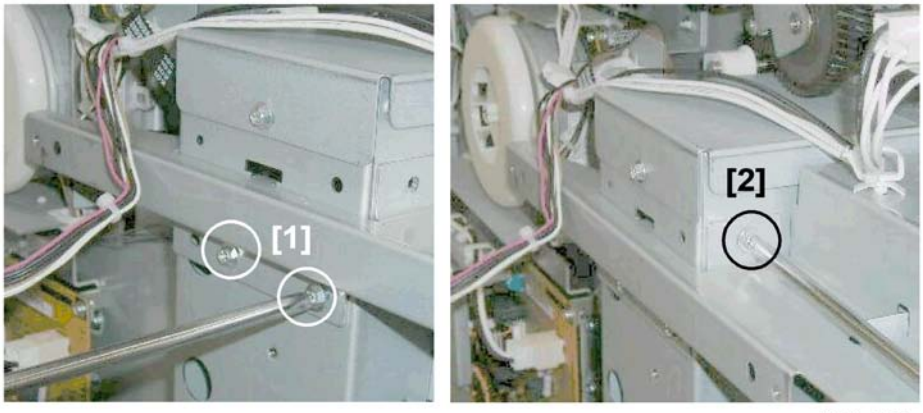
d046r515

2. On the right, remove screws [1] and [2] (x2).



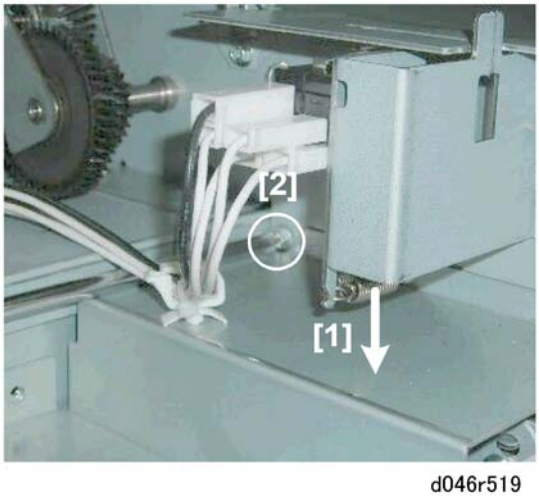
d046r516

3. On the left, remove screws [1] and [2] (x2).



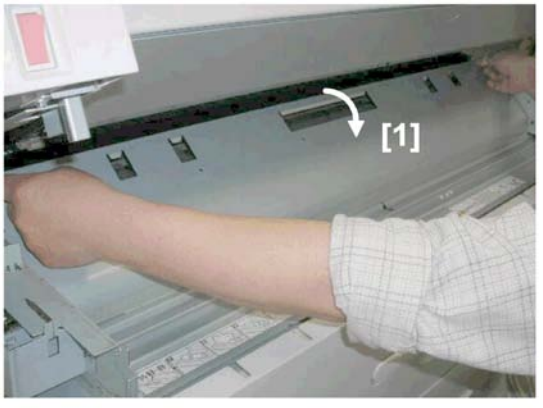
d046r518

4. Remove screws [1] and [2] (x3).



d046r519

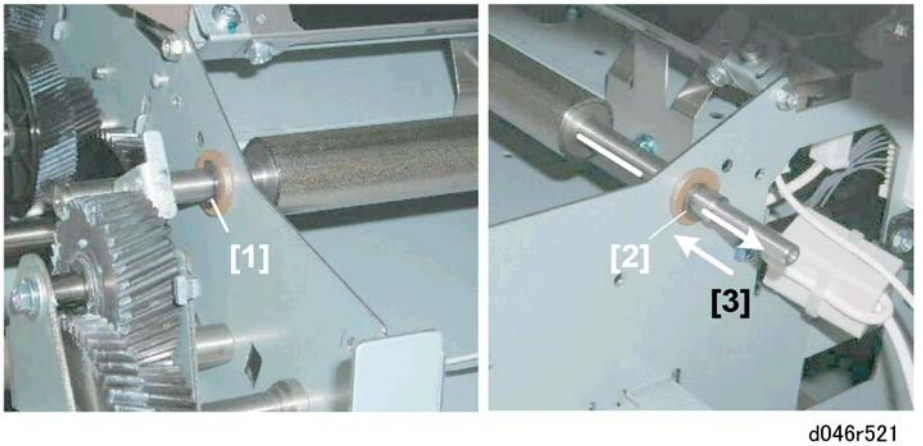
5. While pressing down plate [1], remove screw [2] (x1).



d046r520

6. Grasp the main guide plate at each corner and remove it [1].

Roller Removal



d046r521

1. Disconnect the roller:

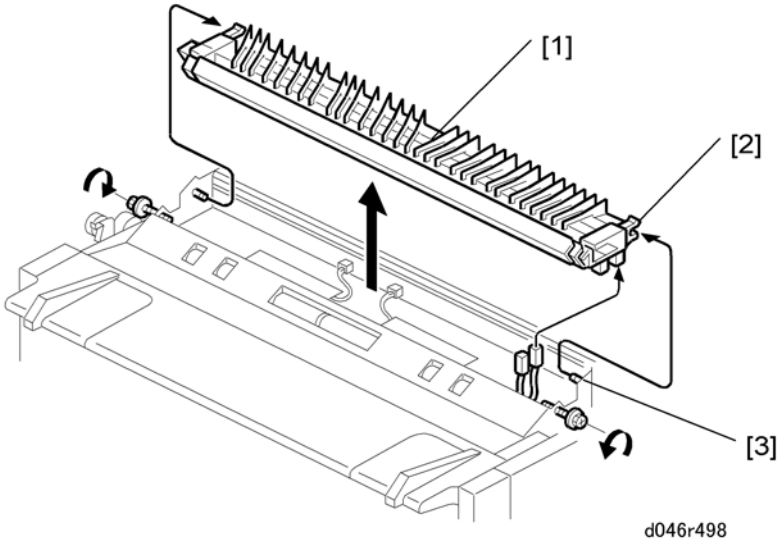
   [1] Left end (ℂx1, Bushing x1)

   [2] Right end (ℂx1, Bushing x1)

2. Slide the right end of the roller [3] to the right until the left end of the roller shaft clears its hole on the left.
3. Pull the roller to the left and remove it.

Paper Transfer, Transport Unit

Transfer Unit



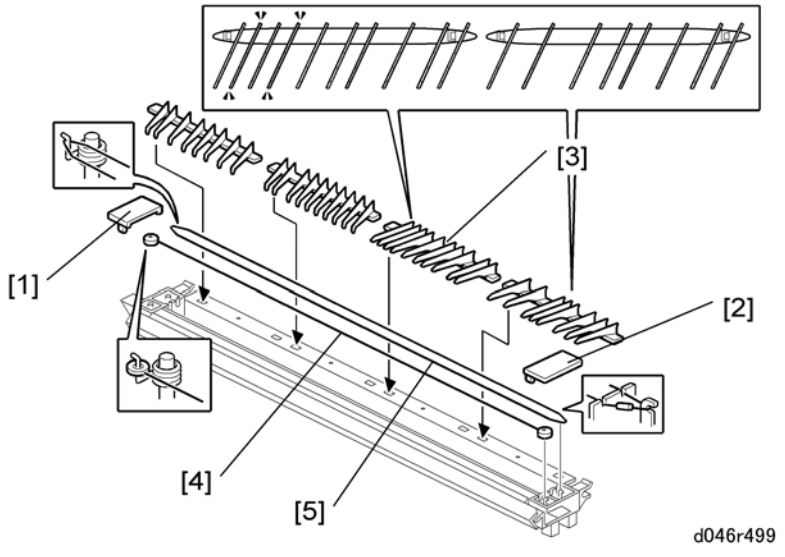
Preparation

- Open and raise the upper unit. ☛ p.257
- Remove the right side cover. ☛ p.259
- Remove the left side cover. ☛ p.260

1. Remove the transfer unit [1].

   Reinstallation

   Confirm that tabs [2] and [3] are engaged on both ends of the unit. The tabs are engaged correctly when the end caps are level.



2. Remove:

   [1] Left cap (tab release)

   [2] Right cap (tab release)

   [3] Paper guides

   - Note the position of each guide before removal. Each guide must be installed at its original position.
   - To remove a paper guide, lift it slightly and move it toward the center.

   [4] Transfer wire

   [5] Separation wires

Reinstallation

- Each paper guide pair must be installed at the original position.
- For each pair, the high guide is set on the outer side, and the low guide is set on the inner side.
- Paper will wrinkle if the guides are not installed at their original positions.

⚠CAUTION

- Remove the T/S corona unit carefully, to avoid touching or scratching the OPC drum above.

Note

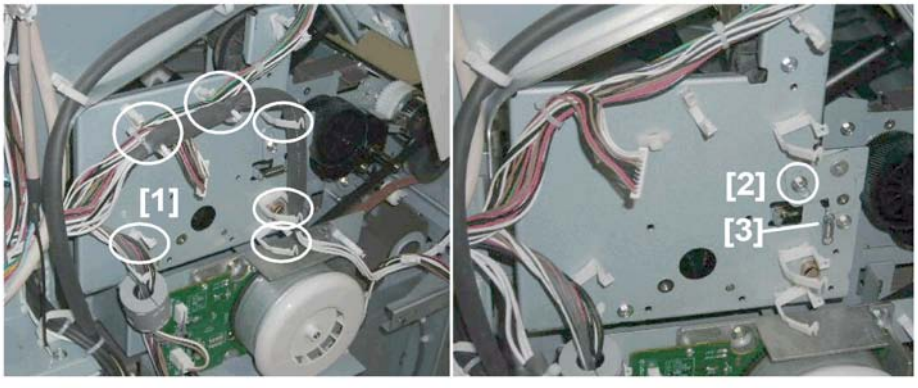
- The single wire at the front and the double wire at the back are both spring-loaded on the left.

- Make sure the wires are correctly positioned in the correct slots and not crossed.
- If replacing wires, hold them by the ends. Oil from hands could cause uneven charge on the drum.
- Handle wires carefully. Never bend or stretch them.

Transport Unit

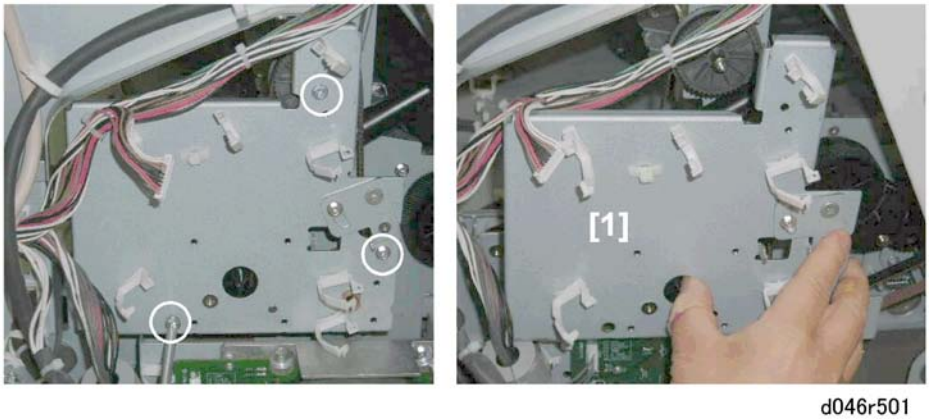
Preparation

- Raise the upper unit. ☛ p.257
- Left rear cover, left front covers ☛ p.260
- Registration motor ☛ p.316
- Right rear, right front cover ☛ p.259
- Fusing unit ☛ p.345



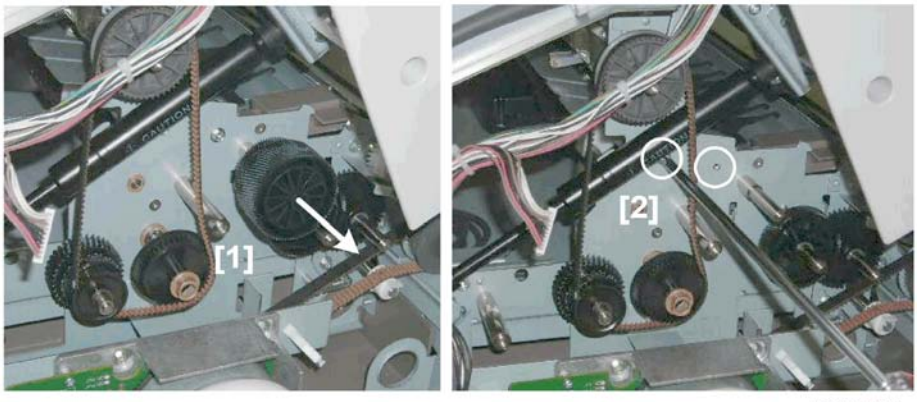
d046r500

1. Free the cables on the registration motor bracket [1] (x5).
2. Loosen the tension screw [2] and remove the spring [3].



d046r501

3. Remove the registration motor bracket [1] (x3).



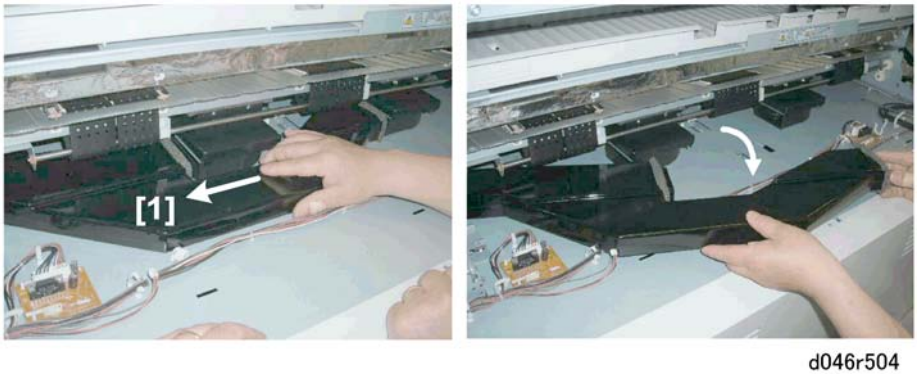
d046r502

4

4. Remove the gear [1] and screws [2] (x2).

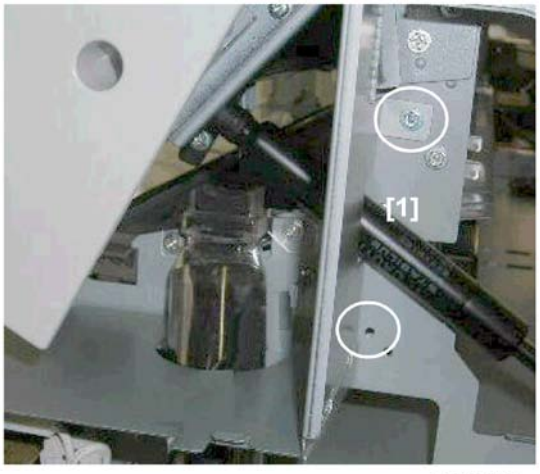
d046r503

5. Remove the ozone filter duct [1] (x2).



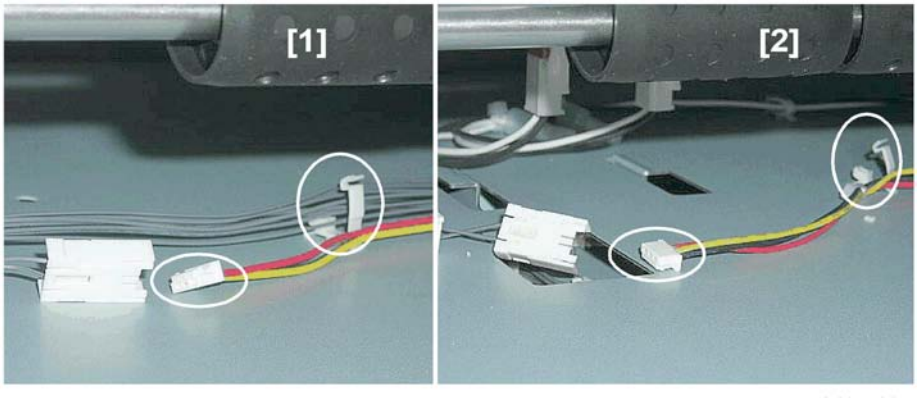
d046r504

6. Push the internal duct [1] to the left to disconnect it, then remove it.



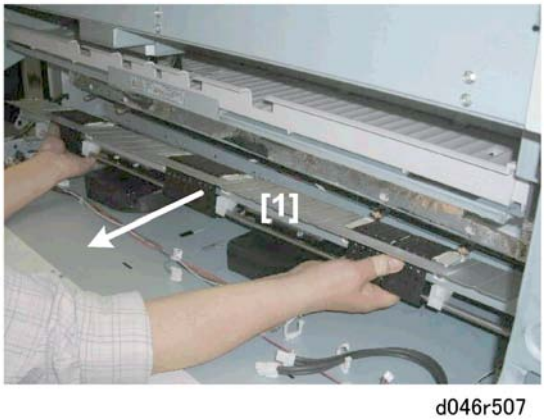
d046r505

7. On the right [1], remove the screws (x2).



d046r506

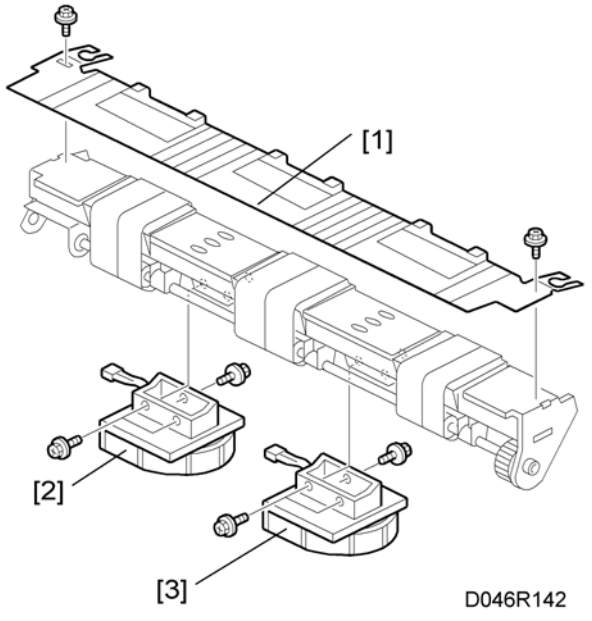
8. At the rear, disconnect the connectors below the left transport belt [1] and right transport belt [2] (x2, x2).



d046r507

9. Remove the transport unit [1].

Transport Belts



Preparation

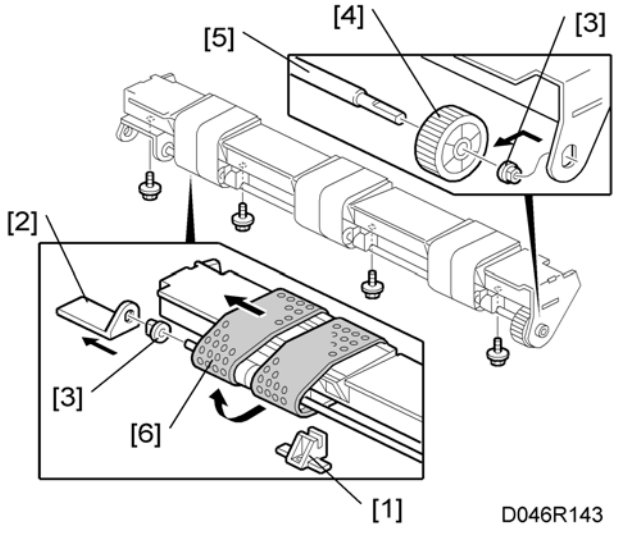
- Remove the transport unit. ☛ p.339

1. Remove:

   [1] Guide plate (x 2)

   [2] Left transport fan motor (x 2)

   [3] Right transport fan motor (x 2)



2. Remove:

   [1] Arm bushings (x 3)

   [2] Bracket (x 1)

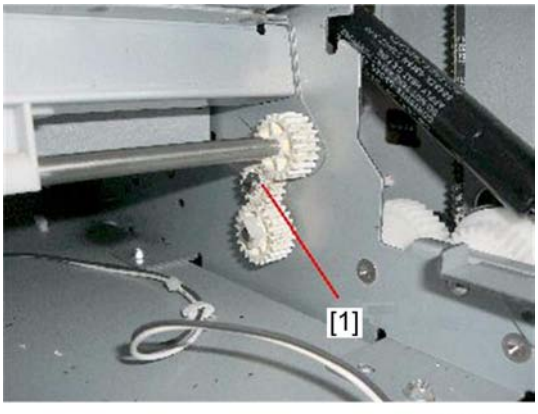
   [3] Bushings x 2

   [4] Drive gear

   [5] Drive shaft

   [6] Transport belts

Gear Replacement



- Remove the fusing unit ☛ p.345

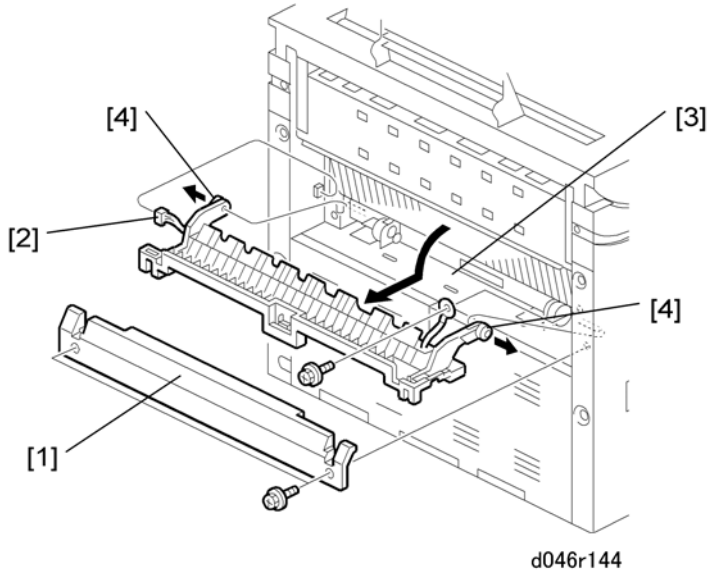
- Remove gear [1].

Note

- Gear [1] must be checked every 200 Km (656 K ft.) of paper feed and replaced if necessary.

Fusing

Fusing Unit



Preparation

⚠CAUTION

- To avoid serious personal injury, switch off the main power, unplug the machine from its power source, and allow the fusing unit to cool before removing the fusing unit.

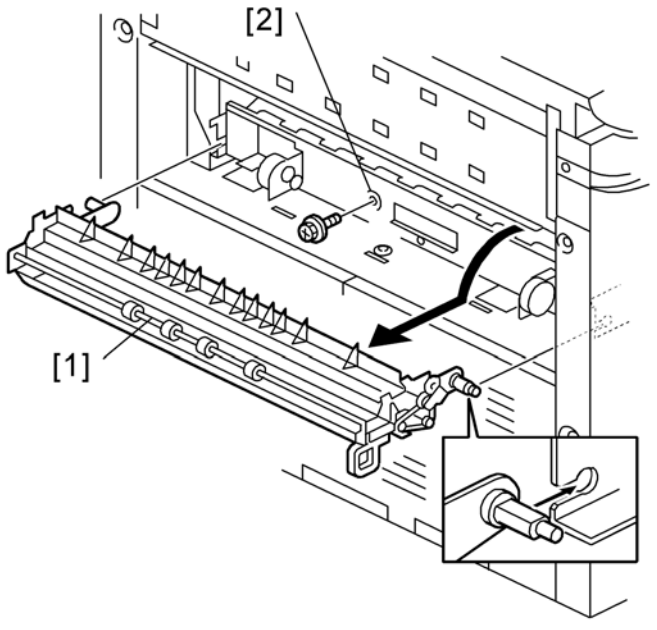
1. Remove:

   [1] Fusing lower cover (x 2)

   [2] Connector (x 1, x 2)

   [3] Grounding wire (x 1)

   [4] Paper exit cover (hinges x 2)

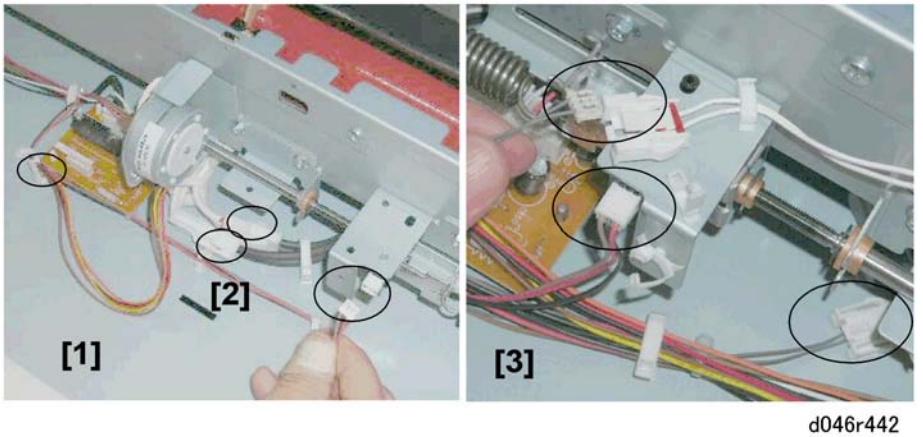


D046R145

2. Remove:

   [1] Paper exit guide plate (hinges x 2)

   [2] Ground wire (🔩 x 1)



d046r442

3. Disconnect:

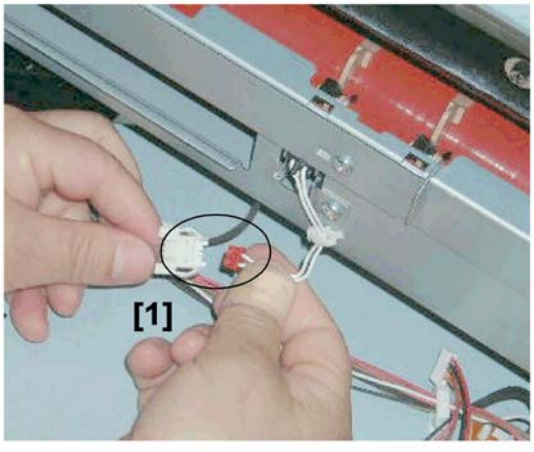
   [1] Right fusing pressure motor (✋x2)

   [2] Fusing lamp connectors (✋x2)

   [3]Left fusing pressure motor (✋x3)

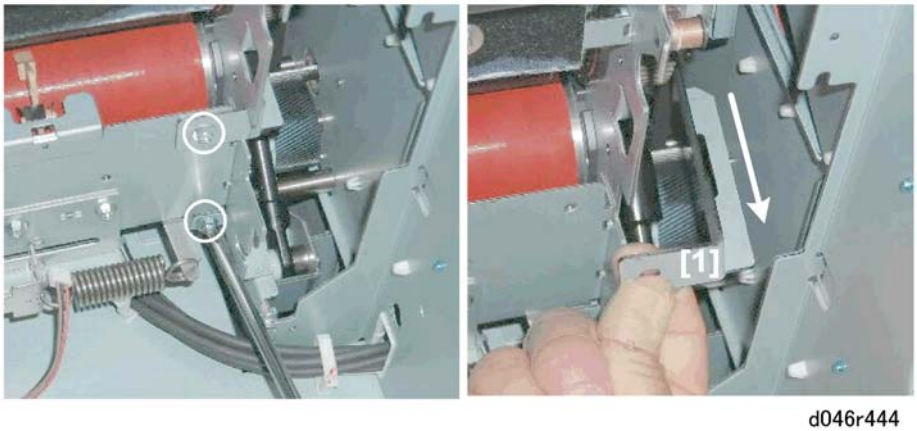
Important

- The rated voltages of the fusing lamps are different, depending on location (EU or NA). Also, make sure that you always install the correct fusing lamp for the machine (D046 or D049).



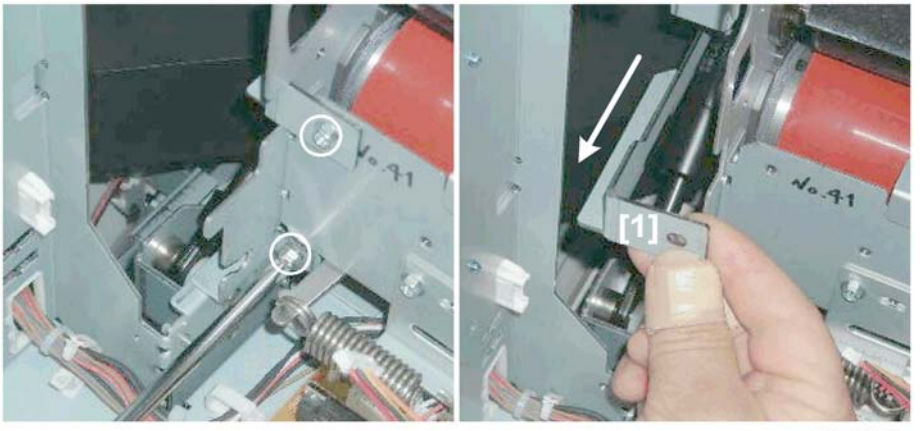
d046r443

4. Disconnect the thermistor [1] (x1).



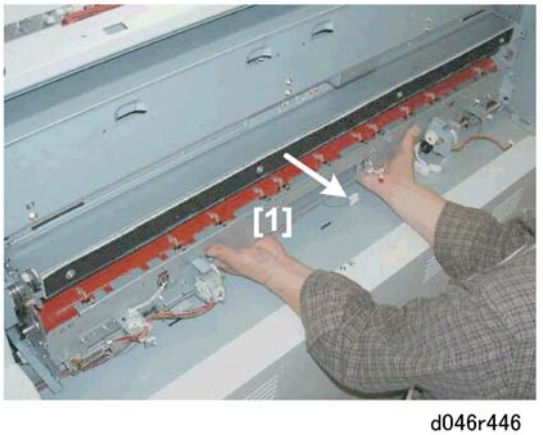
d046r444

5. Remove the right plate [1] (x2).



d046r445

6. Remove the left plate [1] (x2).



d046r446

7. Slowly slide the fusing unit [1] out.

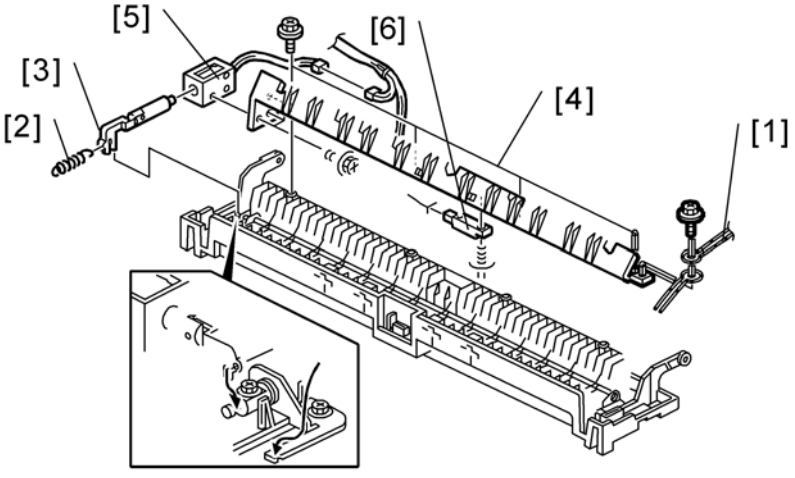
CAUTION

- The fusing unit is heavy, about 14 kg (31 lb). Hold it carefully at both ends when you remove it from the machine, and place it on a flat clean surface.

Important

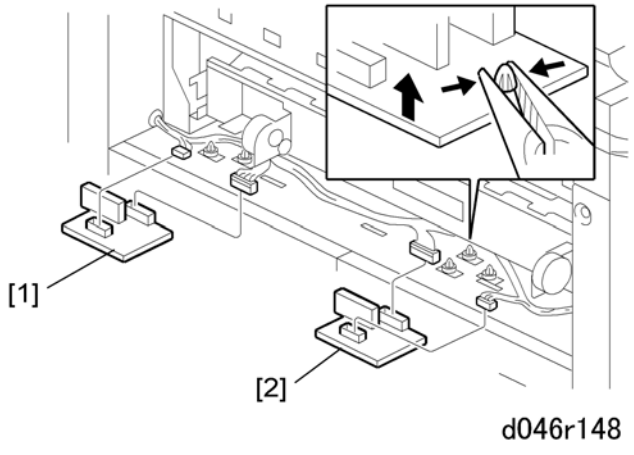
- **Re-install the fusing unit carefully to avoid hitting other components when the fusing unit passes over them.**

Paper Junction Gate Solenoid/Exit Sensor



1. Remove:
   [1] Ground wire (x 1)
   [2] Spring
   [3] Solenoid arm
   [4] Guide plate (x 4, x 4)
   [5] Solenoid (x 2, x 1)
   [6] Exit sensor (x 1, x 1)

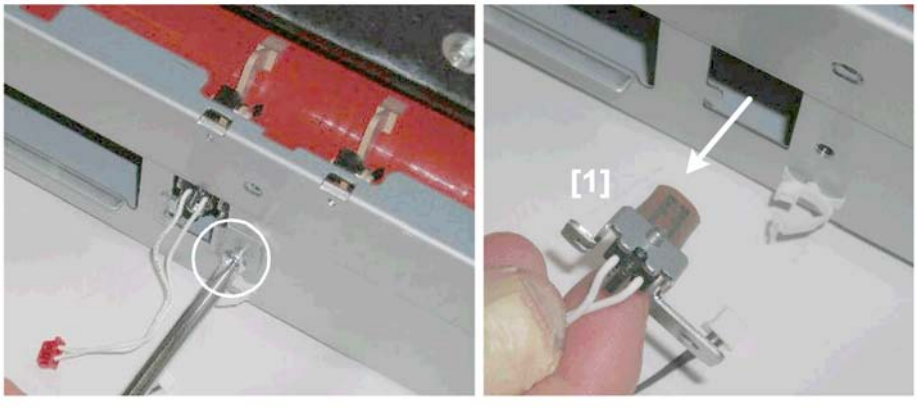
FPDB (Fusing Pressure Drive Board)



1. Remove:
   [1] Right FPDB (x 2, standoffs x 3, x 2)
   [2] Left FPDB (x 2, standoffs x 3, x 2)

Pressure Roller Thermistors

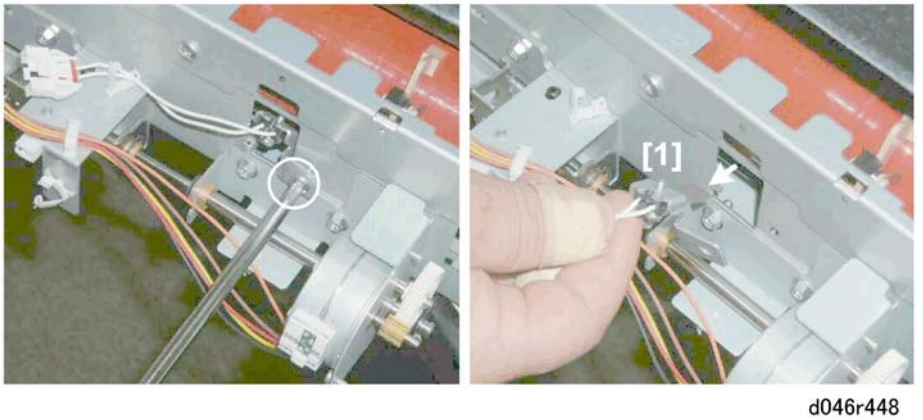
Pressure Roller Center Thermistor



d046r447

1. Remove the fusing unit. ☛ p.345
2. Remove the thermistor bracket [1] (x1).

Pressure Roller End Thermistor

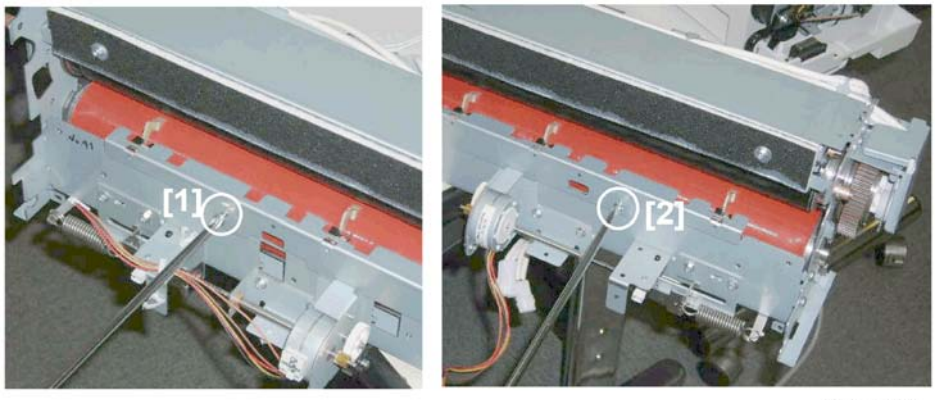


d046r448

1. Remove the fusing unit. ☛ p.345

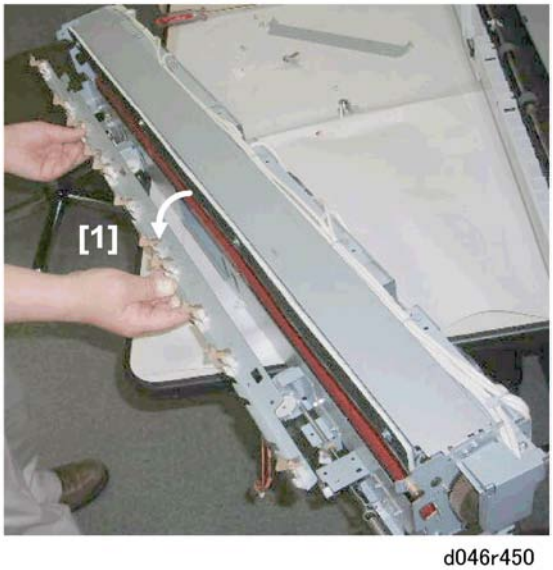
2. Remove the thermistor bracket [1] (x1).

Hot Roller Strippers



d046r449

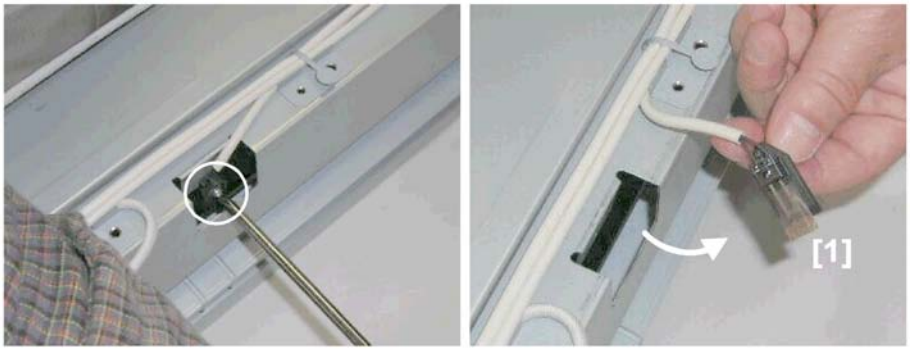
1. Remove the fusing unit. p.345
2. Remove screws [1] and [2] (x2).



d046r450

3. Remove the stripper support plate [1].

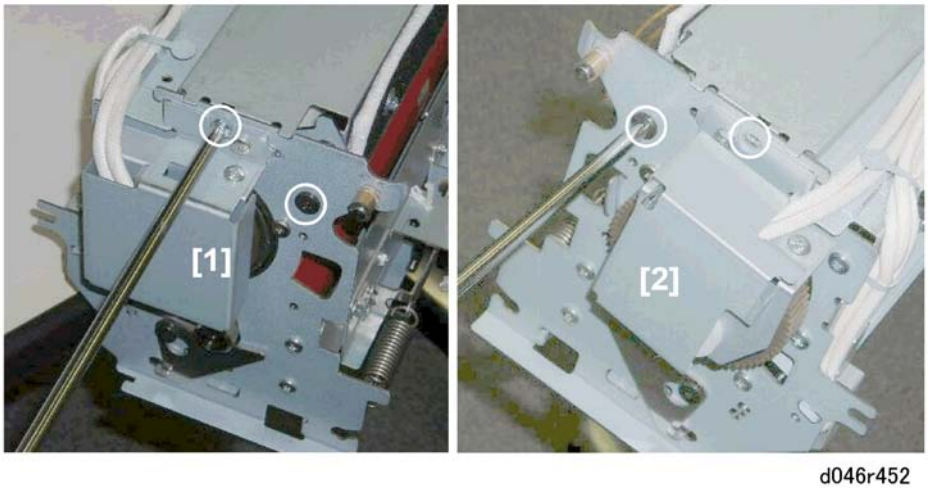
Hot Roller Center Thermistor



d046r451

1. Remove the fusing unit. ☛ p.345
2. Remove the thermistor bracket [1] (x1).

Hot Roller Cleaning Roller

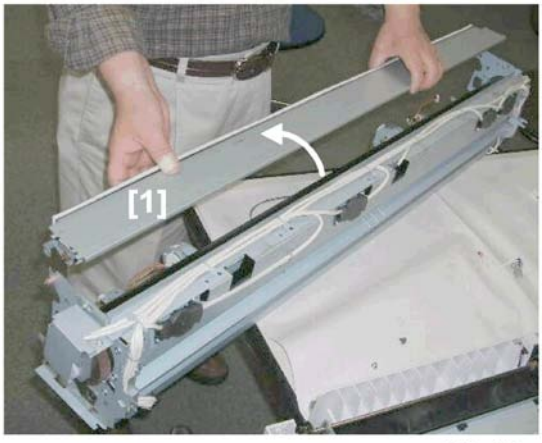


d046r452

1. Remove the fusing unit. ☛ p.345
2. Remove:

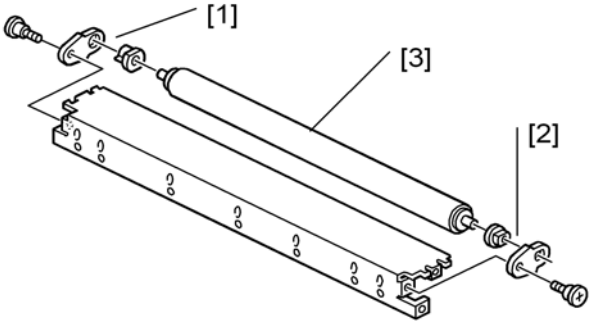
   [1] Left screws (x2)

   [2] Right screws (x2)



d046r453

3. Remove the cleaner roller assembly [1].



d046r454

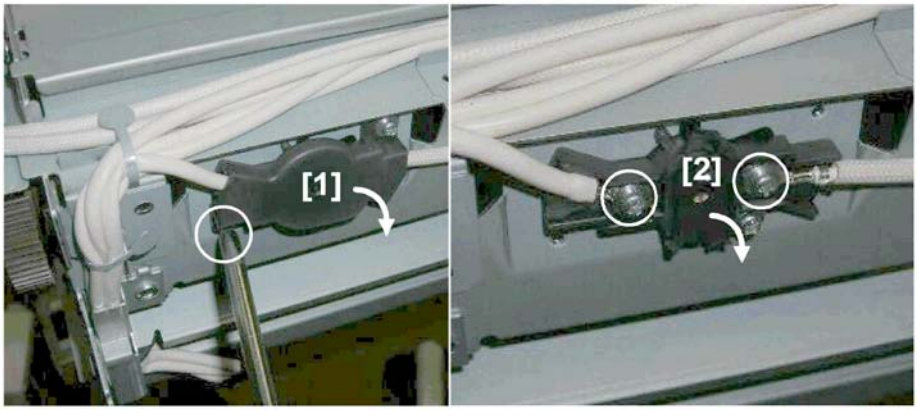
4. Remove:

   [1] Plate (x1, Bushing x1)

   [2] Plate (x1, Bushing x1)

   [3] Cleaning roller

Thermostats



d046r455

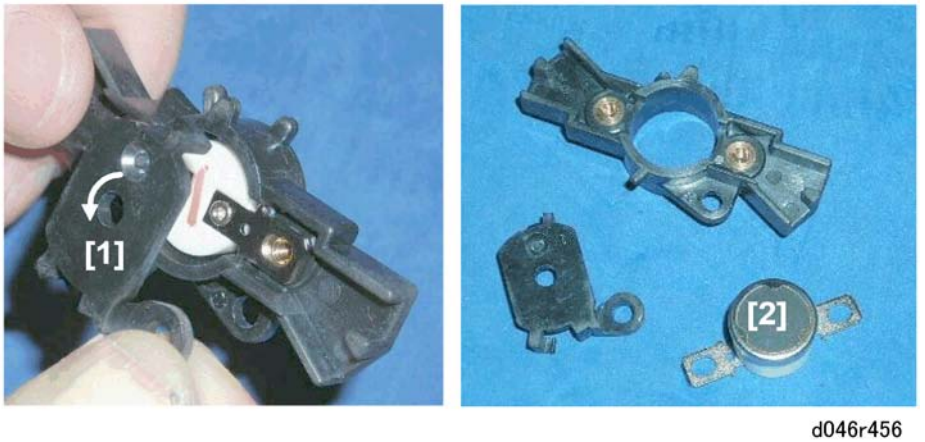
1. Remove the fusing unit. ☛ p.345
2. Remove:

   [1] Cover

   [2] Bracket

   Important

   - **Note the correct arrangement of the harness wires at [2]. They must be reattached in the same way. If they are not reattached correctly, this will cause a SC code for a fusing unit error.**



d046r456

3. Pull apart the thermostat assembly [1] to remove the thermostat [2].

   If you are replacing a thermostat:

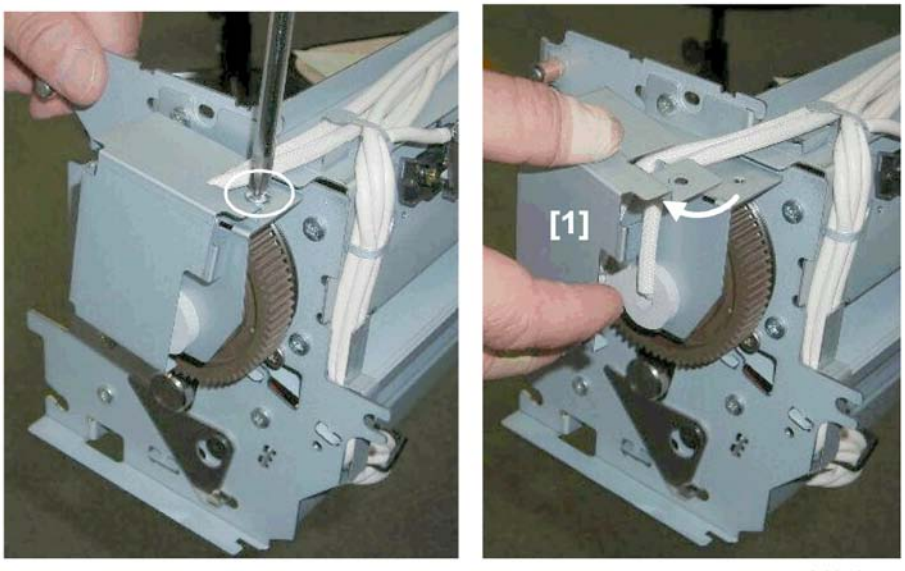
   - Use only thermostats rated for use with this machine.
   - The thermostats may have different numbers. This means they are taken from different lots.

- This is a backup safety policy that ensures the thermostats are taken from separate lots.

⚠WARNING

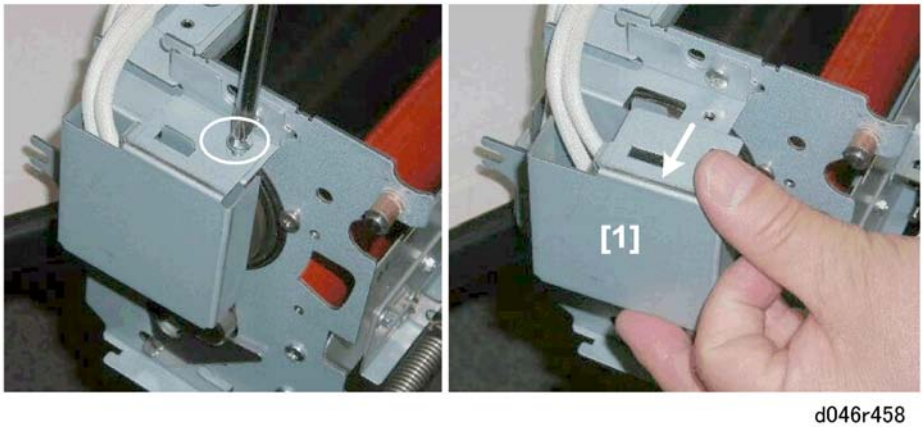
- Always replace a thermostat with a new thermostat.
- Never attempt to reset a thermostat by striking it on a table. If a thermostat has triggered an error, discard it and replace it with a new one.

Fusing Lamps



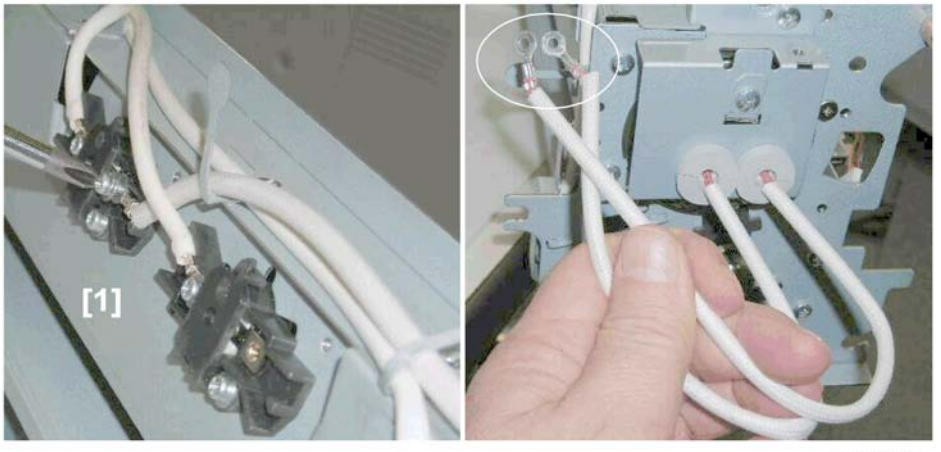
d046r457

1. Remove the fusing unit. ☛ p.345
2. Remove the left plate [1] (🔩x1).



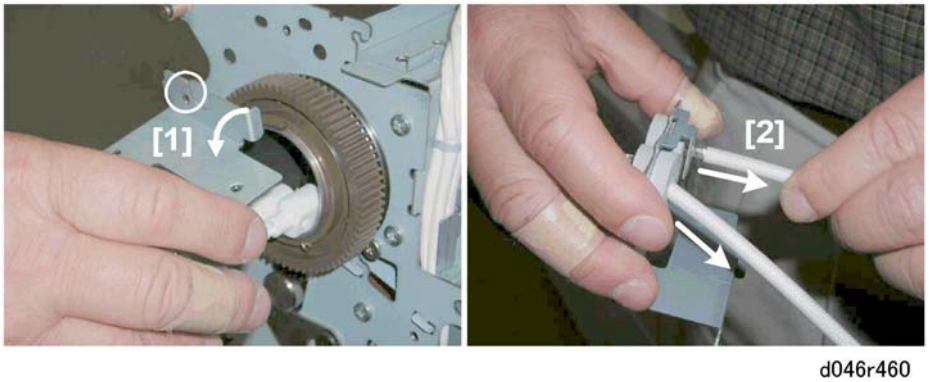
d046r458

3. Remove the right plate [1] (x1).



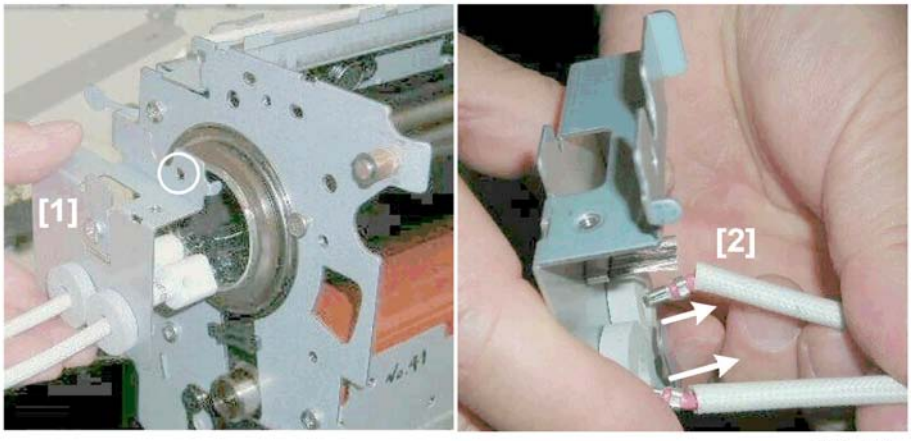
d046r459

4. Locate the positions of the connections of the leads [1] from the fusing lamps and disconnect them (x4). (You should mark their positions for correct reconnection.)



d046r460

5. On the left, remove plate [1] (x1).
6. With the fusing lamps still inside the hot roller, pull the leads [2] out of the rubber stoppers of the plate.



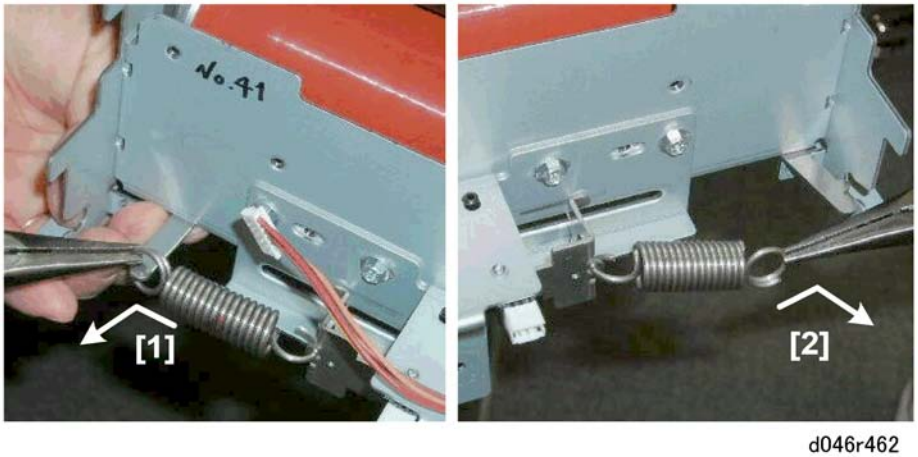
d046r461

7. On the right, remove plate [1] (x1).
8. With the fusing lamps still inside the hot roller, pull the leads [2] out of the rubber stoppers of the plate.
9. Carefully remove the fusing lamps from the hot roller.

Important

- **Use a dry cloth to avoid touching the lamps with your fingers. Oils from the fingers could cause the lamp to burn unevenly.**
- **If you touch the surface of a fusing lamp accidentally, clean the surface with a clean cloth dampened slightly with alcohol, then wipe it dry with a dry cloth.**

Hot Roller

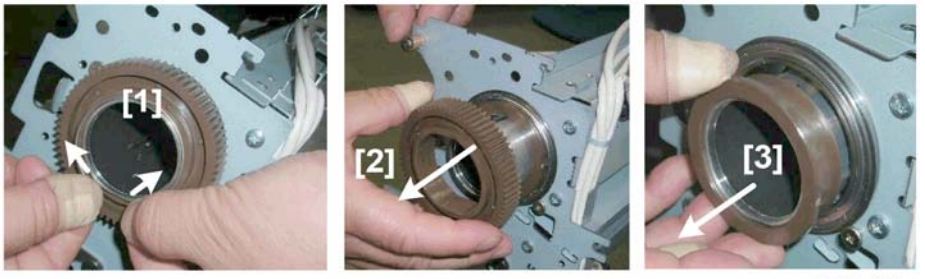


d046r462

1. Remove:
   - Fusing unit ☛ p.345

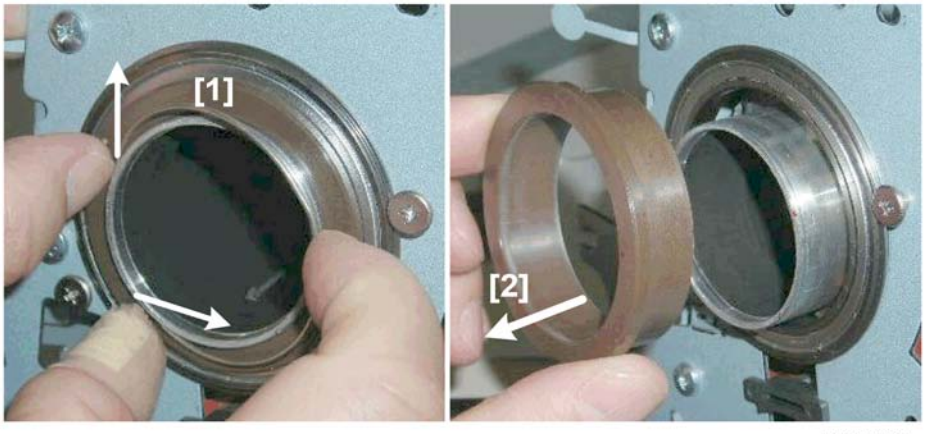
- Fusing lamps ☛ p.355

2. Disconnect:
   [1] Left pressure spring
   [2] Right pressure spring



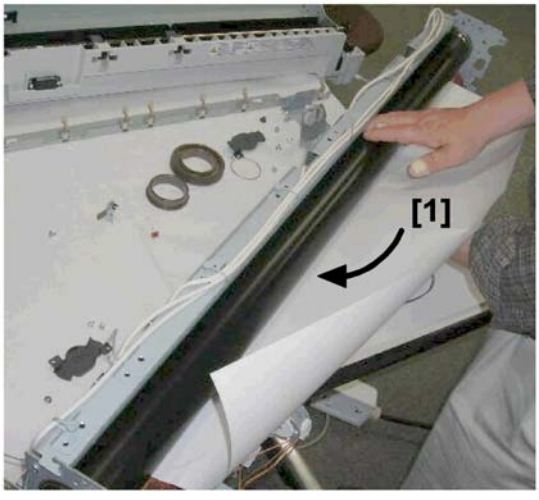
d046r463

3. On the left, spread the wire clamp [1] with your fingers and remove it.
4. Remove gear [2] and bearing [3].



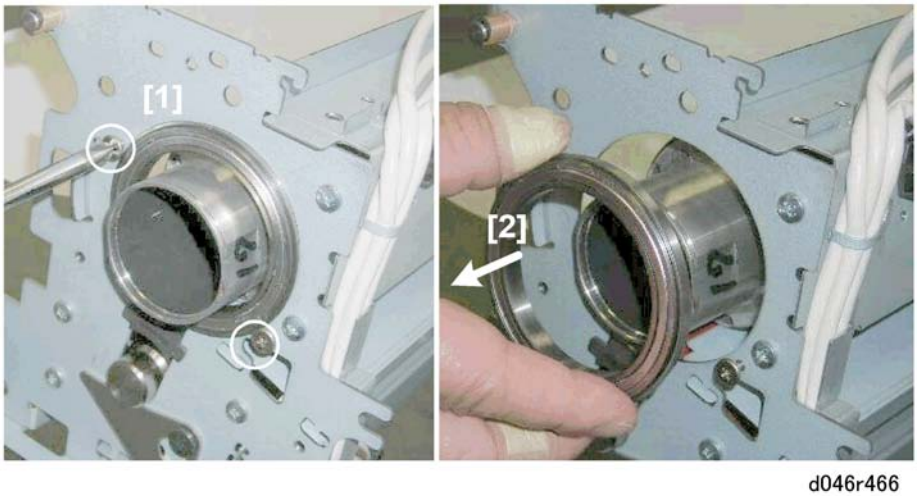
d046r464

5. On the right, spread the wire clamp [1] with your fingers and remove it.
6. Remove bearing [2].



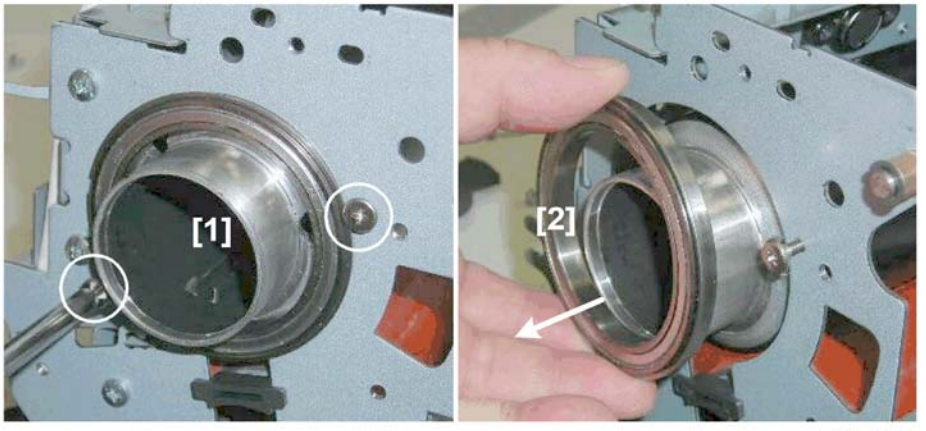
d046r465

7. Insert some paper [1] between the hot roller and pressure roller.



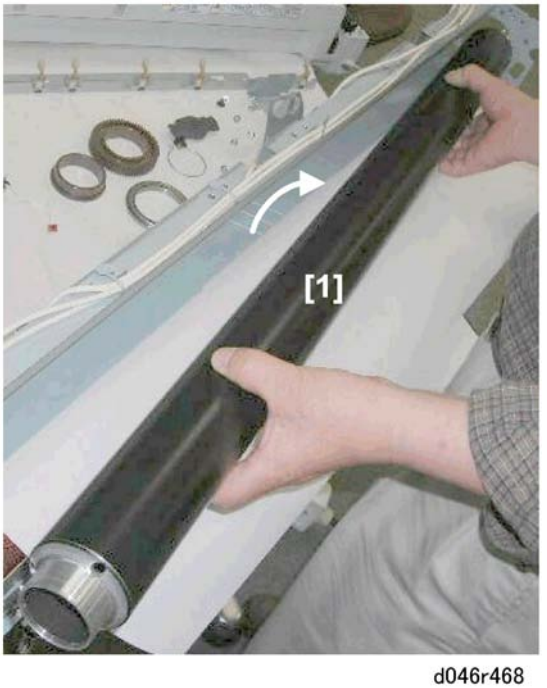
d046r466

8. On the left, remove the screws [1] and bearing [2] (x2).



d046r467

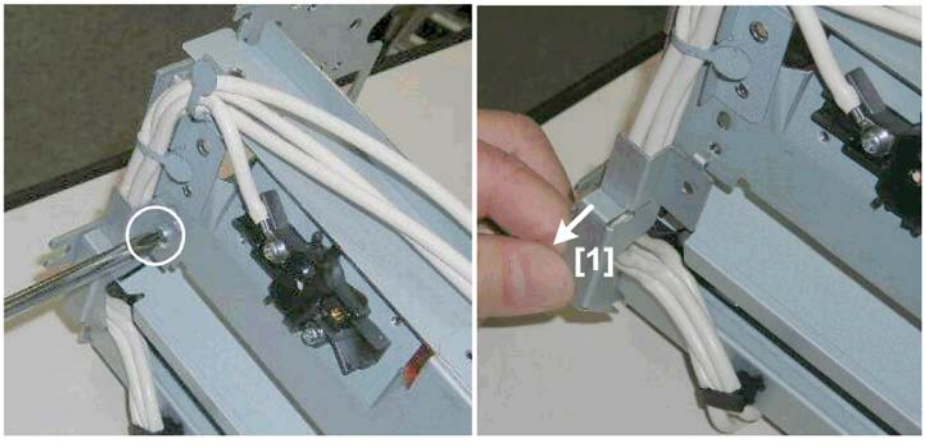
9. On the right, remove the screws [1] and bearing [2] (x2).



d046r468

10. Remove the hot roller [1].

Pressure Roller



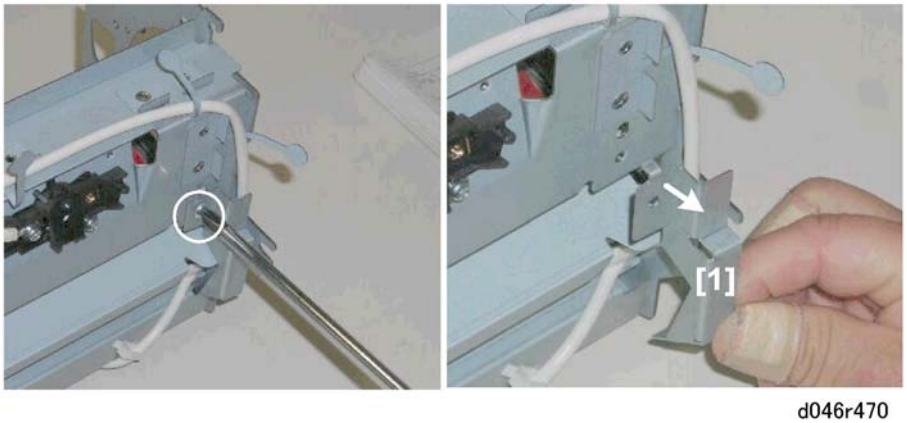
d046r469

Preparation

Remove:

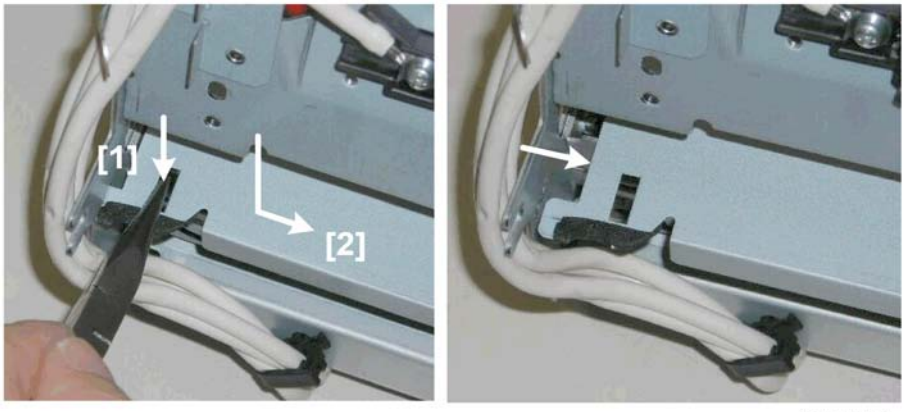
- Fusing unit ☛ p.345
- Fusing lamps ☛ p.355
- Hot roller ☛ p.357

1. On the left, remove plate [1] (x1).



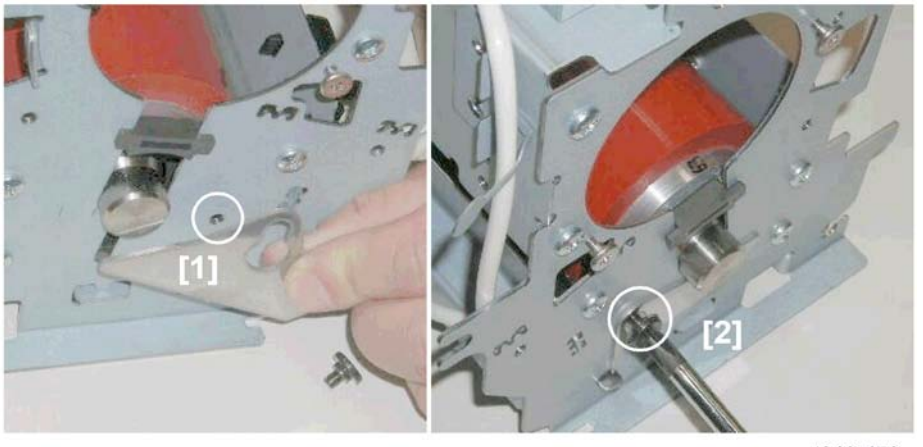
d046r470

2. On the right, remove plate [1] (x1).



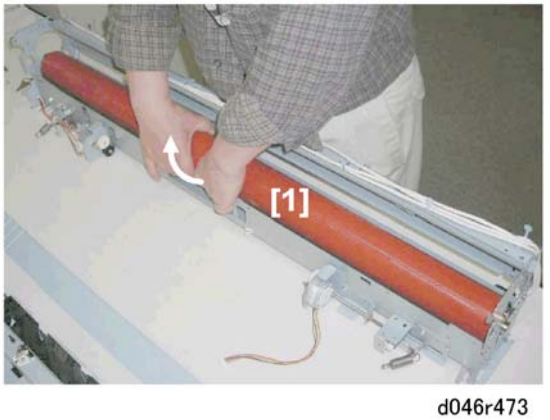
d046r471

3. While depressing the release plate [1] with the tip of a screwdriver or narrow pliers, press the plate [2] to the right.



d046r472

4. Remove the plates [1] and [2] from the left and right ends of the fusing unit (x2).

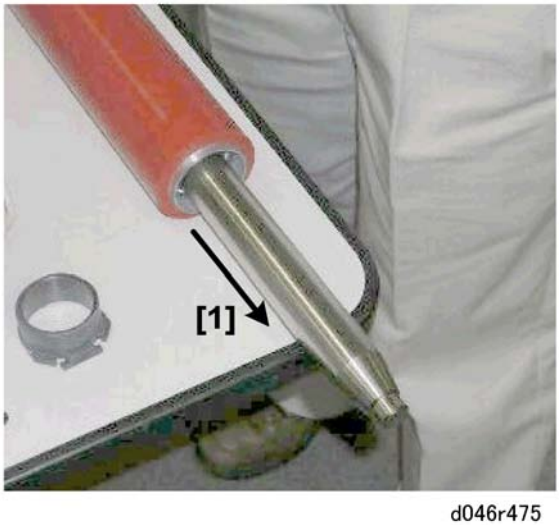


d046r473

5. Remove the pressure roller [1] from the fusing unit.

d046r474

6. Pull the bearings [1] and [2] from the left and right ends of the roller.



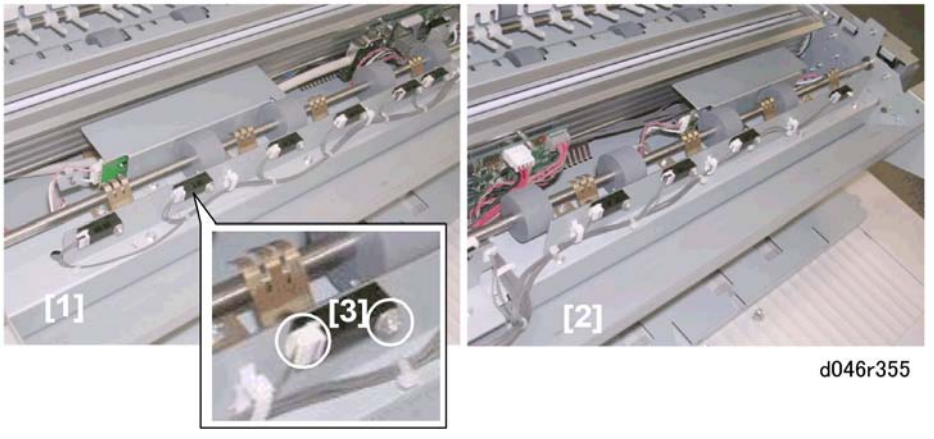
d046r475

7. Pull out the steel spindle roller [1] and remove it from inside the pressure roller.

Sensors, Switches

Original Sensors

Original Width Sensors



Preparation

- Remove the original transport guide. ☛ p.281

EU

1	Original Size Sensor B1T
2	Original Size Sensor B2T
3	Original Size Sensor B3T
4	Original Size Sensor B4T
5	Original Set Sensor/Size Sensor A4
6	Original Size Sensor A3T
7	Original Size Sensor A2T
8	Original Size Sensor A1T
9	Original Size Sensor 660
10	Original Size Sensor A0T

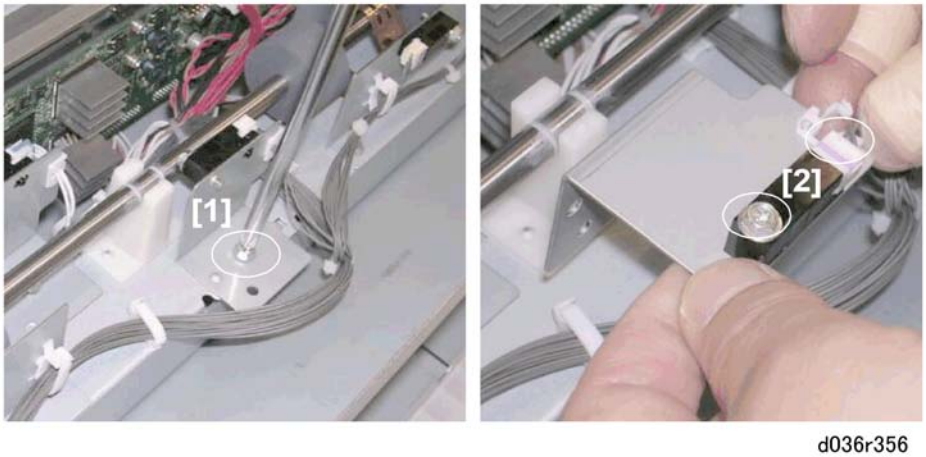
11	Original Size Sensor 914

NA

1	Original Size Sensor 36"
2	Original Size Sensor 30"
3	Original Size Sensor 24"
4	Original Size Sensor 18"
5	Original Size Sensor 12"
6	Original Size Sensor 9"
7	Original Set Sensor/Size Sensor 8.5"
8	Original Size Sensor 11"
9	Original Size Sensor 17"
10	Original Size Sensor 22"
11	Original Size Sensor 34"

1. The sensors are arrayed from left [1] to right [2] in a straight line.
2. Remove the sensor [3] (x1, x1, x1).

Original Set Sensor



d036r356

Preparation

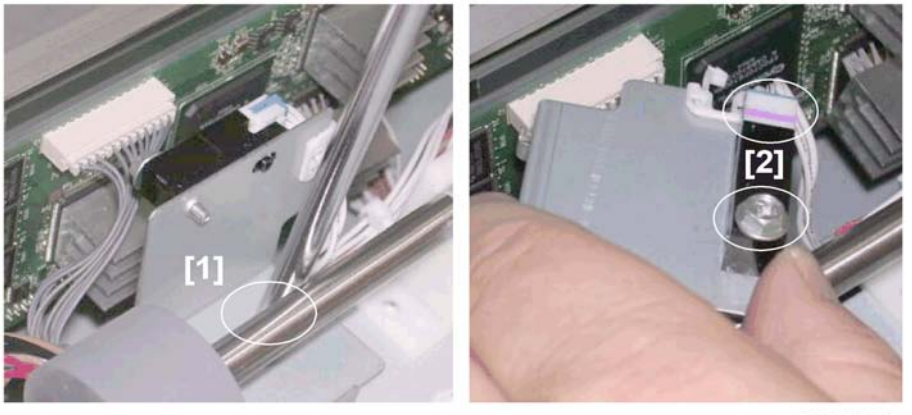
- Remove the original transport guide. ☛ p.281

Remove:

[1] Sensor assembly (x1)

[2] Sensor (x1, x1)

Original Registration Sensor



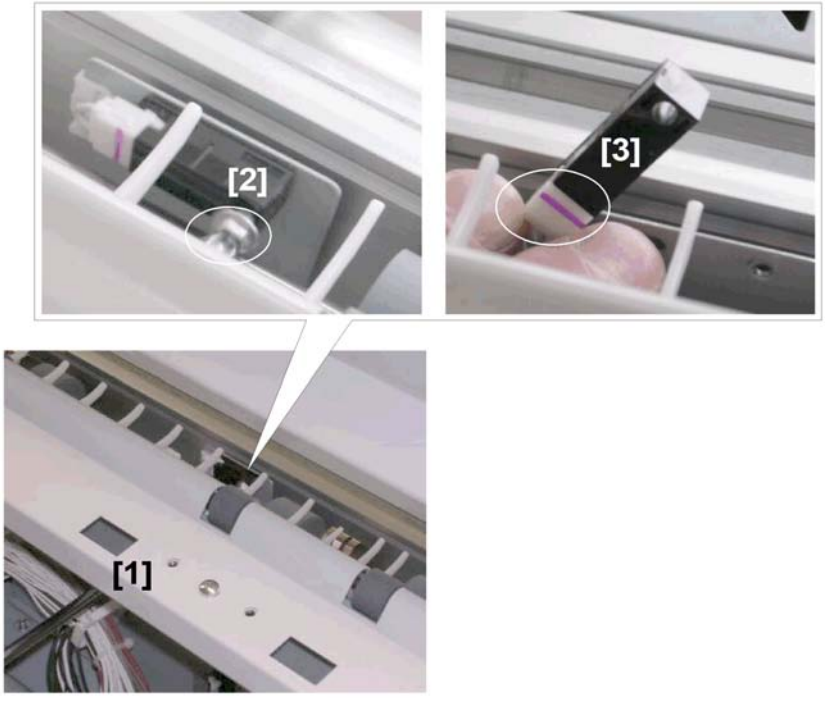
d046r357

Preparation

- Remove the original transport guide. ☛ p.281

1. Remove:
   [1] Sensor assembly (x1)
   [2] Sensor (x1, x1)

Original Exit Sensor



d046r363

Preparation

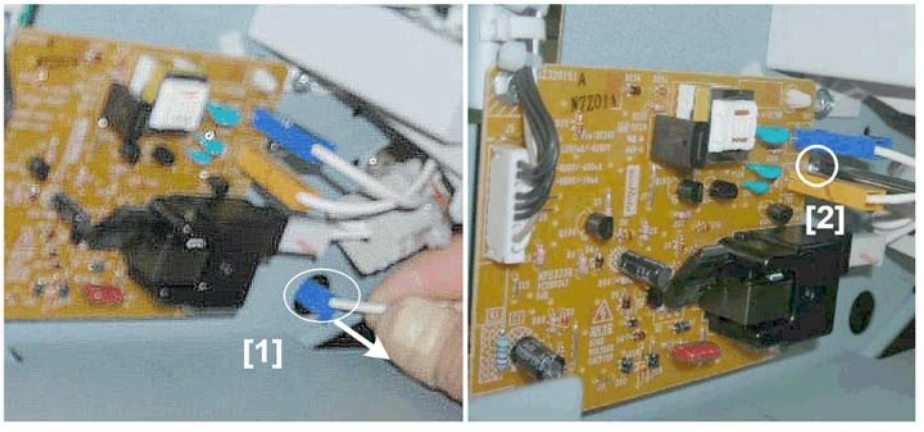
- Open the scanner cover. ☛ p.257
- Remove the original exit guide plate. ☛ p.311

1. Insert a long screwdriver [1] at the rear of the machine.
2. Remove:

   [2] Screw (x1)

   [3] Sensor (x1)

Bypass Set, Bypass Registration Sensors



d046r414

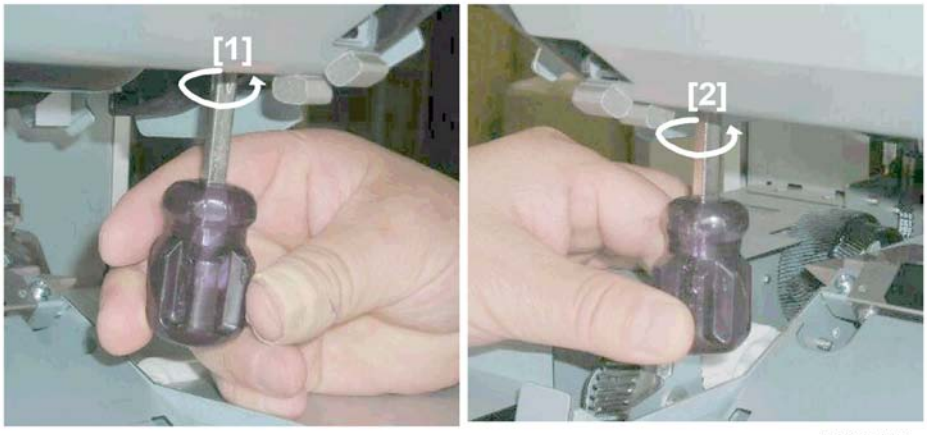
Preparation

- Raise the upper unit. ☛ p.257
- Remove the upper unit right cover. ☛ p.262

1. Pull out the bias connector [1] (x1).
2. Remove screw [2] (x1).

d046r415

3. Remove screws [1] and [2] (x2).



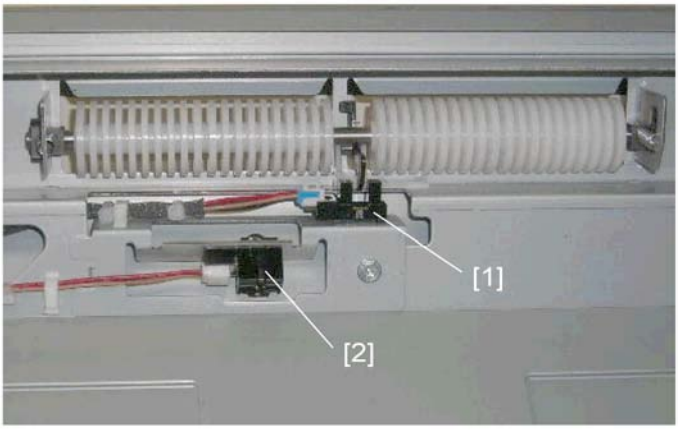
d046r416

4

4. Remove screws [1] and [2] on the right and left (x2).

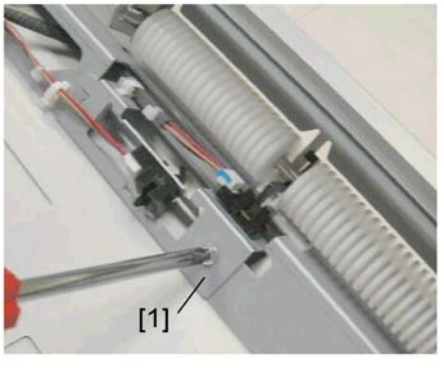
d046r417

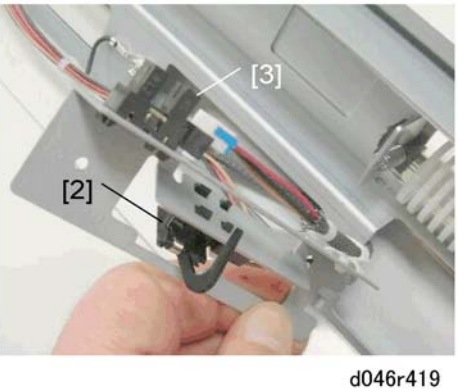
5. Remove the registration idle roller panel [1].



d046r418

6. Turn over the registration idle roller panel and lay it on a flat surface.
   - [1] is the bypass set sensor, [2] is the bypass registration sensor





d046r419

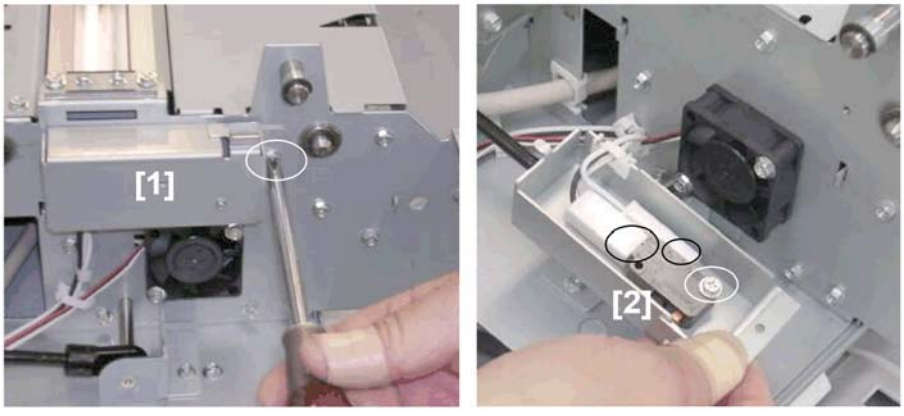
7. Remove:

   [1] Sensor assembly (x1)

   [2] Bypass paper set sensor (x1, x1)

   [3] Bypass paper registration sensor (x1, x1)

Scanner Cover Microswitch



d046r343

Preparation

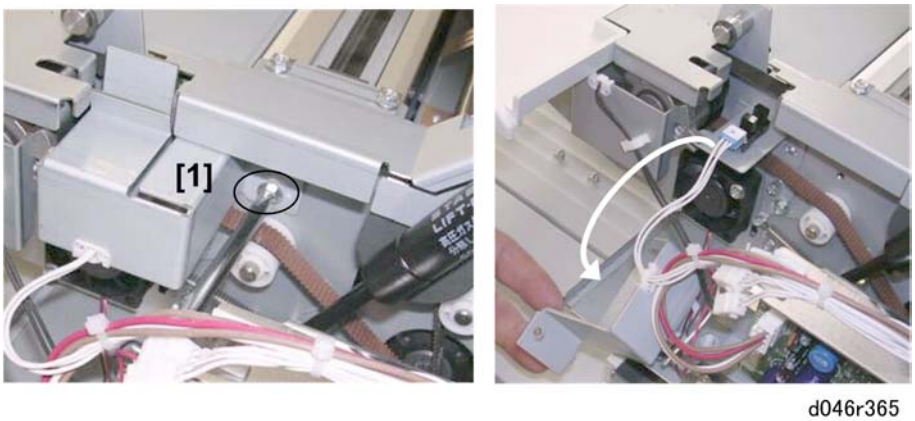
- Remove the left end cover. ☛ p.263

1. Remove the switch cover [1] (x1).
2. Remove the microswitch [2] (x1, x2).

Scanner Cover Sensor

Preparation

- Raise the upper unit. ☛ p.257
- Remove the upper unit right cover. ☛ p.262



d046r365

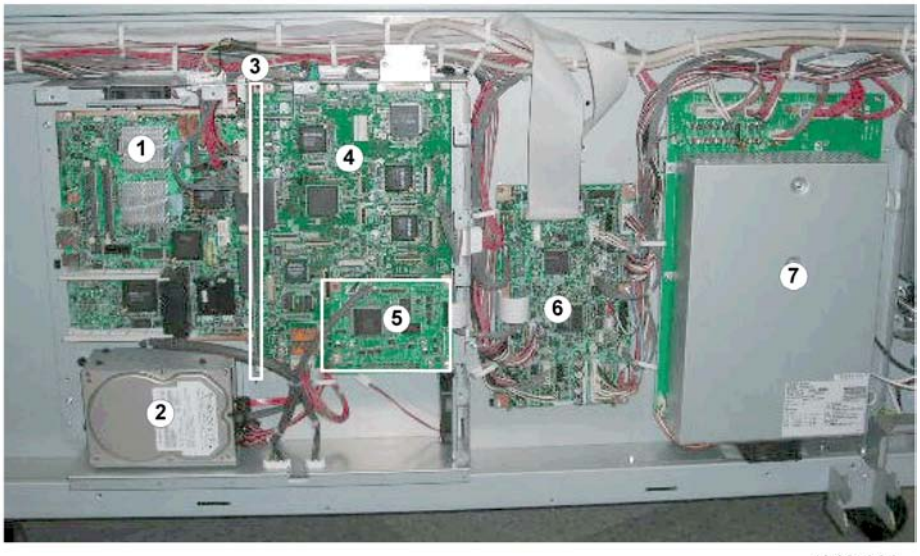
1. Disconnect the sensor cover [1] (x1).

d046r366

2. Disconnect the sensor assembly [1] (x1).
3. Remove the sensor [2] (x1, Pawls x4).

PCB, HDD

Overview

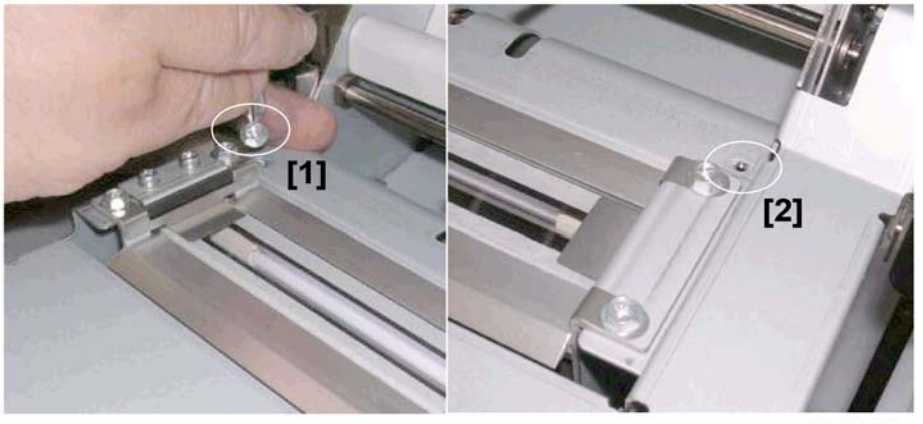


d046r392

With the rear cover and controller box cover removed, you can see:

①	Controller board
②	HDD unit
③	Motherboard (MB)
④	IPU
⑤	BCU
⑥	IOB
⑦	PSU

SIB (Scanner Interface Board)

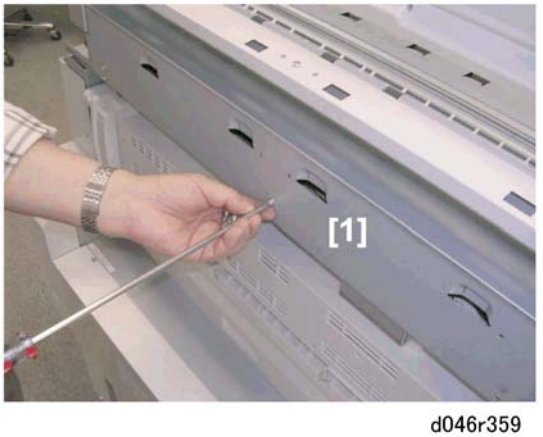


d046r358

Preparation

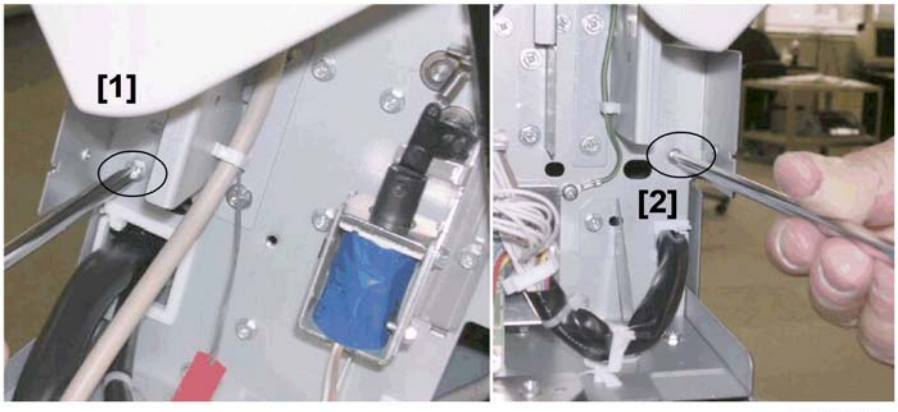
- Left end cover, right end cover (x2 each) ☛ p.263

1. Behind the exposure glass, remove screws [1] and [2] on the left and right (x2).



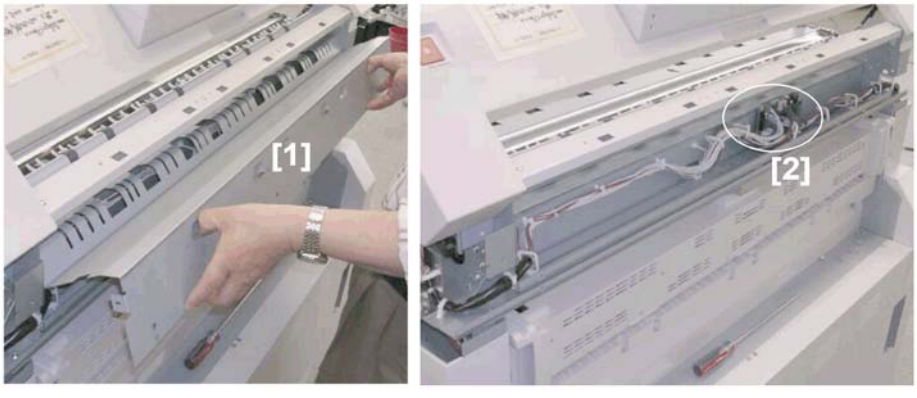
d046r359

2. Remove the four pairs of screws from the original rear exit guide [1] (x8).



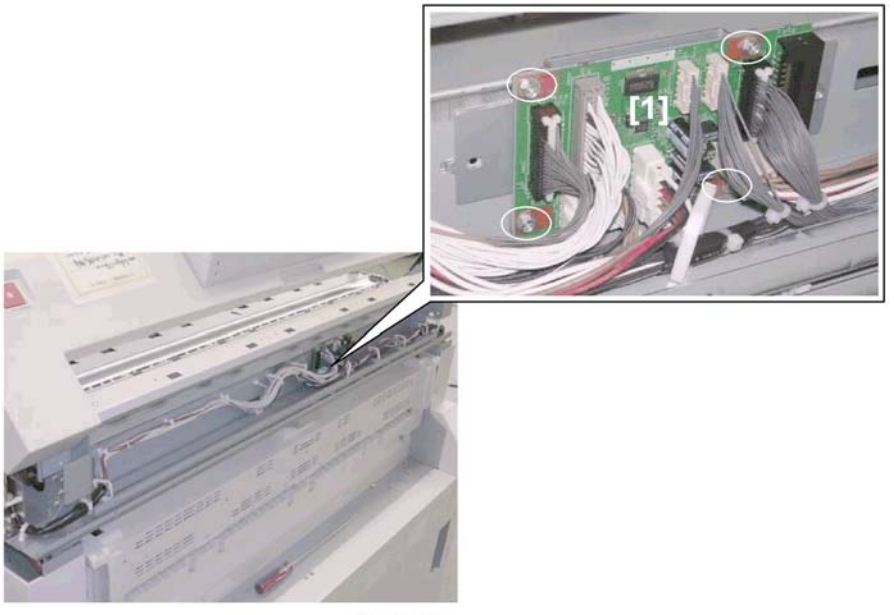
d046r360

3. Remove the screws [1] and [2] from the left and right side (x2).



d046r361

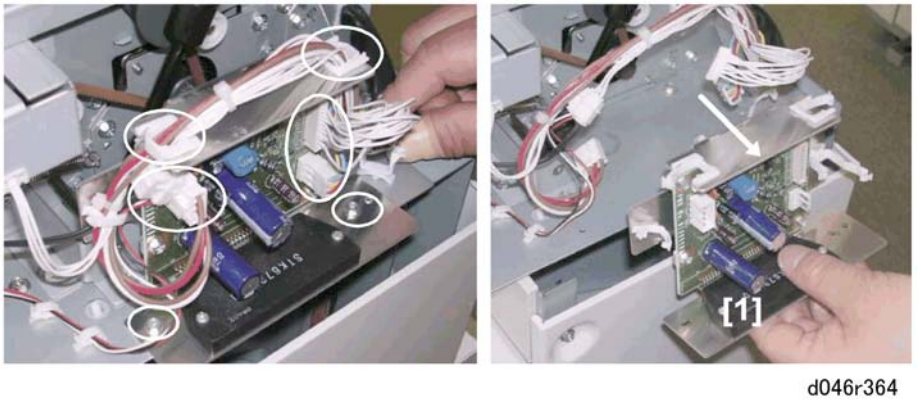
4. Remove the original rear exit guide [1] to expose the SIB [2].



d046r362

5. Remove the SIB assembly [1] (x6, x4).

SDB (Scanner Drive Board)



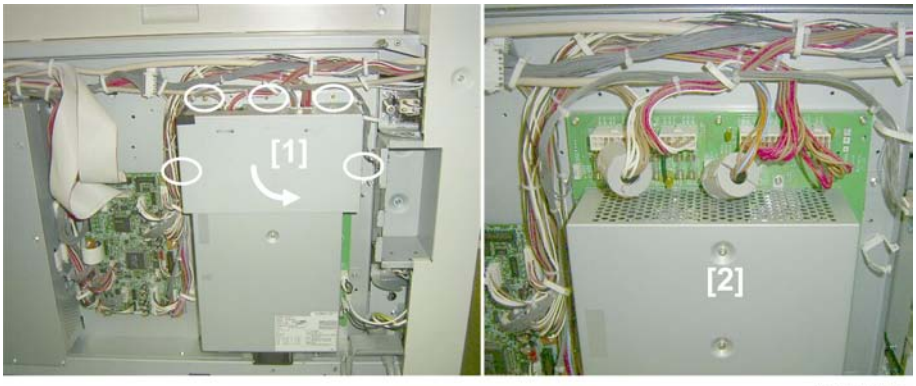
d046r364

Preparation

- Remove the right cover of the upper unit. ☛ p.262

1. Remove the SDB [1] (x4, x3, x2).

PSU



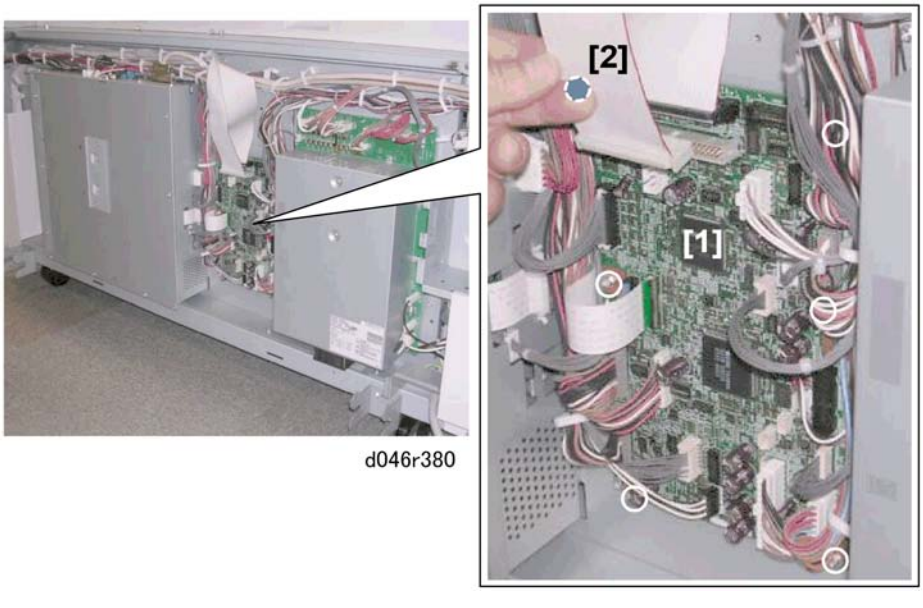
d046r378

Preparation

- Rear cover (x7). ☛ p.264

1. Remove the PSU cover [1] (x5).
2. Remove the PSU assembly [2] (x8, x5).

IOB



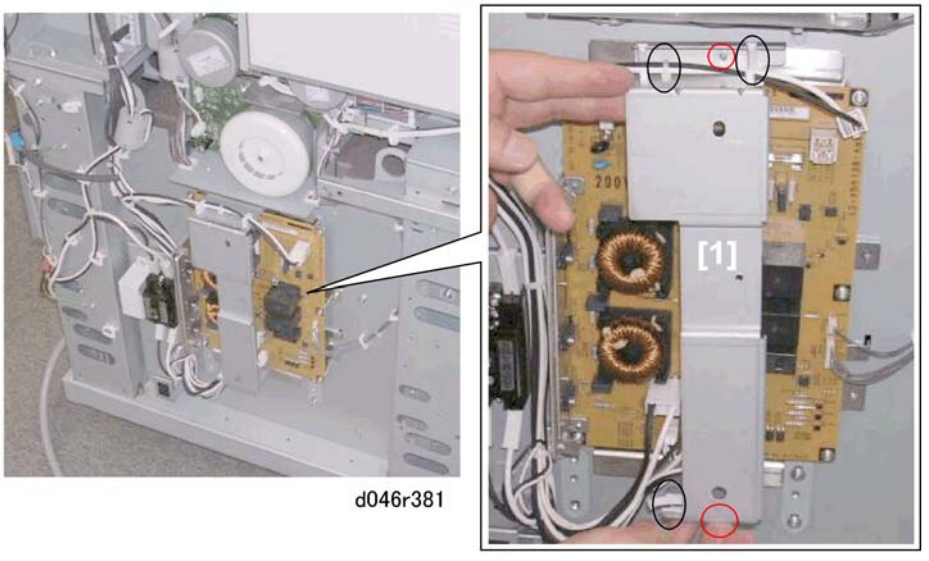
d046r380

Preparation

- Remove the rear cover (x7). ☛ p.264

1. Remove the IOB [1] (x4, x18, x5, FFC x1). There is a standoff at [2], not a screw.

AC Control Board

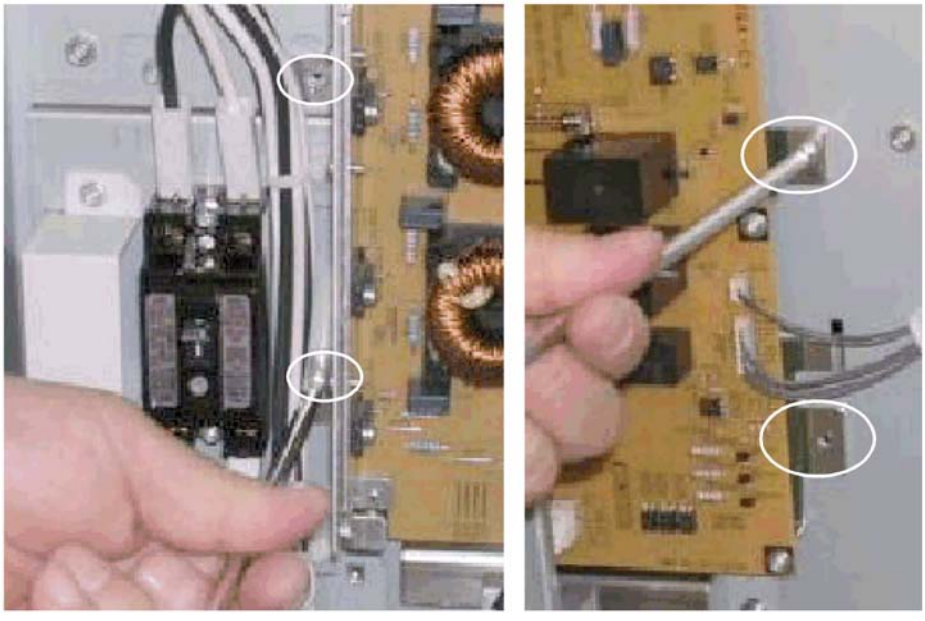


Preparation

Remove:

- Left rear cover, left front cover ☛ p.260

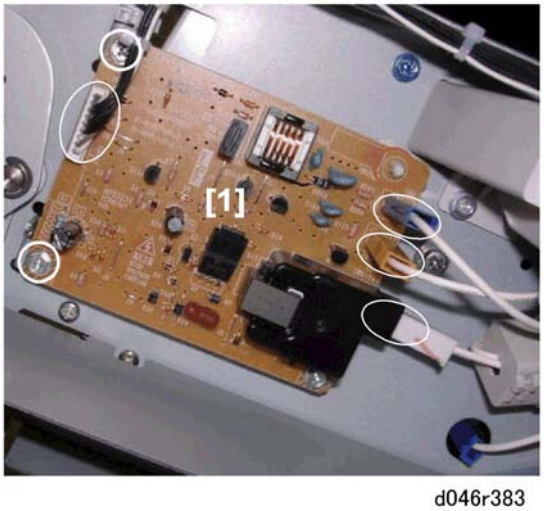
1. Remove the cover plate [1] (x2, x3).



d046r382

2. Remove the AC control board assembly (x8, x4).

CGB Power Pack



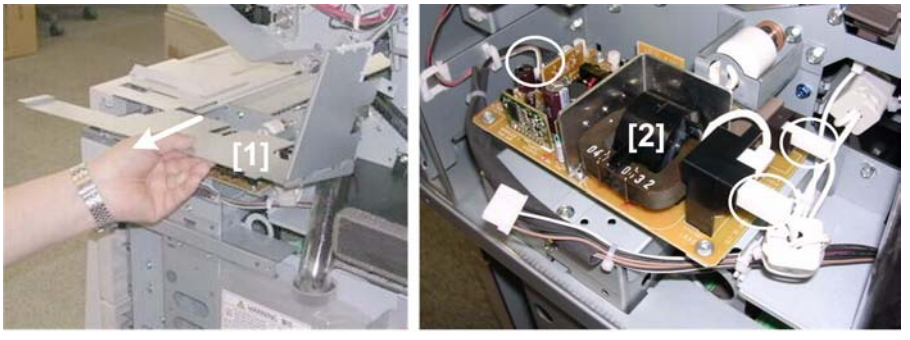
d046r383

Preparation

- Raise the upper unit. ☛ p.257
- Remove the right cover of the upper unit (x2). ☛ p.262

1. Remove the CGB power pack [1] (x3, Standoff x1, x1, x4).

T/S Power Pack



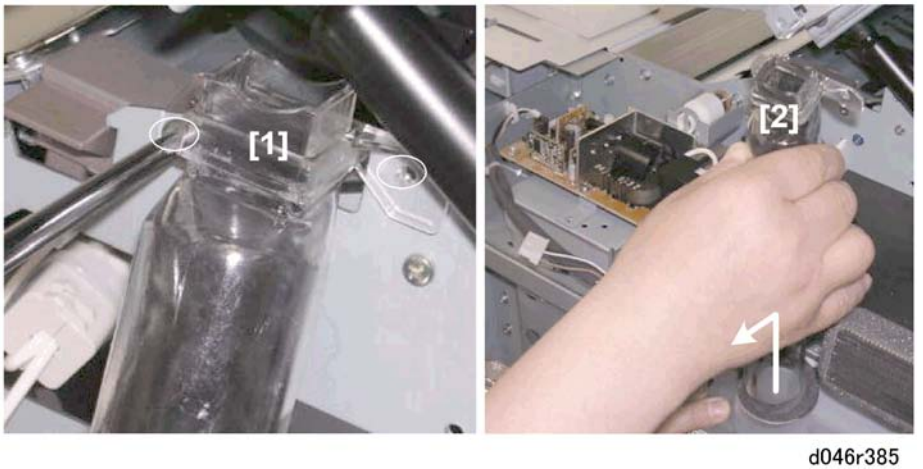
d046r384

Preparation

Remove:

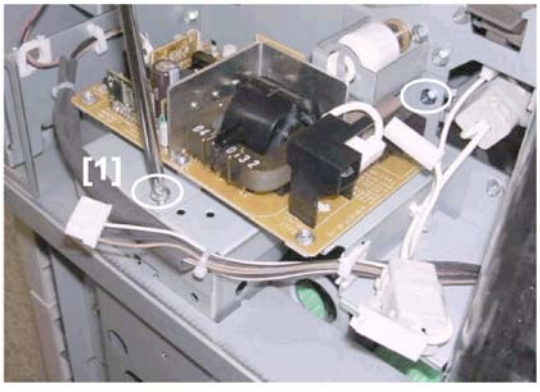
- Right rear cover, right front cover ☛ p.259

1. Remove the right inner cover [1] (x3).
2. Disconnect the T/S power pack [2] (x3).



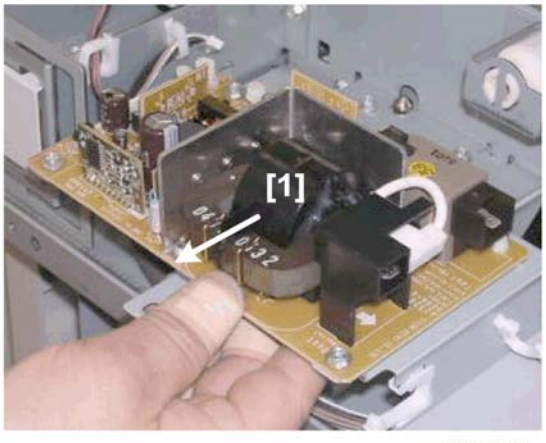
d046r385

3. Disconnect the used toner tube [1] (x2).
4. Remove the tube [2].



d046r386

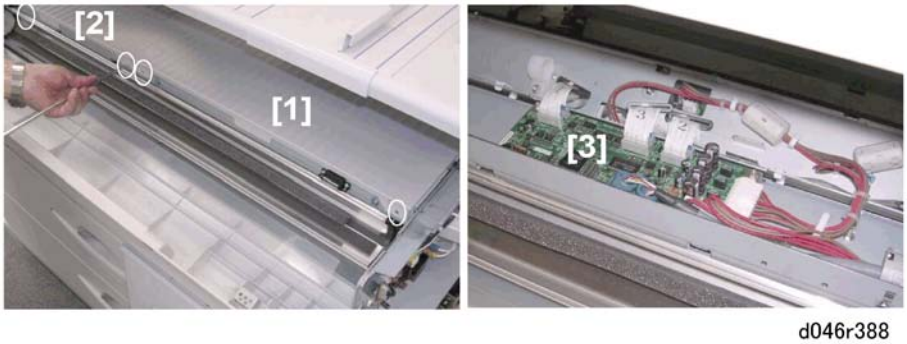
5. Disconnect the T/S power pack assembly [1] (x2).



d046r387

6. Pull the T/S power pack [1] straight out and remove it.

VDB (Video Drive Board)



d046r388

1. Remove:

   [1] Right copy tray (x2)

   [2] Left copy tray (x2)

   CAUTION

   - To avoid damaging the pawls on the bottom of the covers, hold the cover level when you pull it straight out.

   [3] VDB (x4, FFC x6, x4, Ground x)

NVRAM

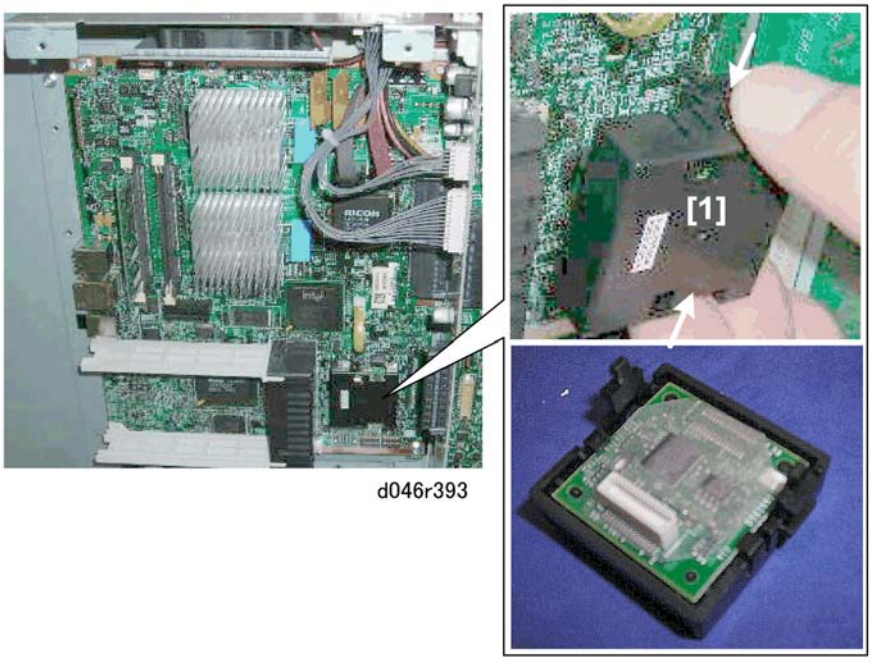
Also see RTB 18

To Upload NVRAM to an SD Card

1. Enter the SP mode and do SP5990-2 to print an SMC report.
2. Turn the machine off.
3. Insert the SD card in Slot 1.
4. Turn the machine on.
5. Enter the SP mode and do SP5824.
6. Touch [OK] on the operation panel to start the upload.
7. Data uploaded from NVRAM is stored in the NVRAM folder on the card.

See General RTB 32 for new information on NVRAM uploading and downloading.

To Replace the NVRAM



Preparation

Remove:

- Rear cover (x7) ☛ p.264
- Controller box cover ☛ p.265

1. Depress the top and bottom sides of the NVRAM [1] and remove it.

After Replacement

1. Turn the machine main power on.
2. Do SP5801-1 (All Clear) to reset all of the NVRAM memory to the defaults.
3. On the User Tools main menu, confirm that the counter is zero.
4. Enter the serial number with SP5811-1 (contact the technical supervisor).

RTB 19
Replace this procedure

Note

- The machine serial number must be re-entered manually.

To Download NVRAM Data from the SD Card

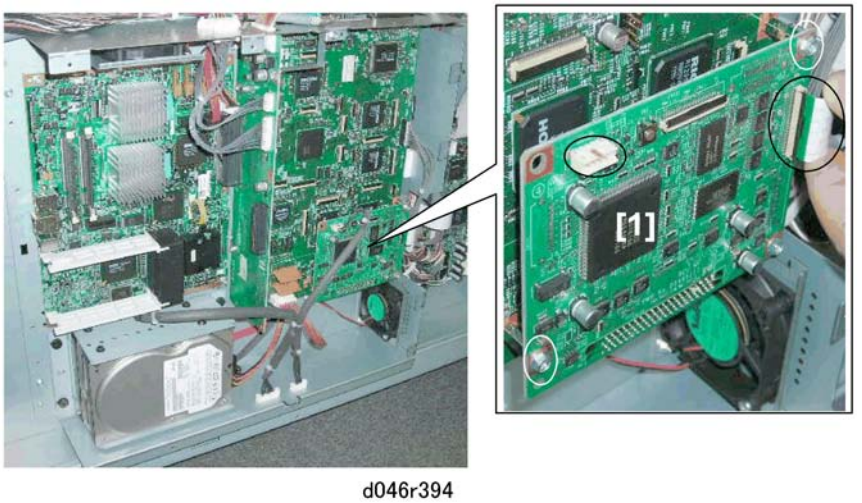
1. Turn the machine off.

2. Insert the SD card to hold the NVRAM data in Slot 1.
3. Turn the machine on.
4. Enter the SP mode and do SP5825.
5. Print an SMC report with SP5990-2.
6. Compare the information in this SMC report with the one you printed before NVRAM removal.
    - If the content of the SMC reports do not match, this means that the content of the old NVRAM could not be uploaded to the SD card.
    - In this case, do SP5801-1 again and do the settings recommended for the machine.

Important

- **The factory settings are printed on a sheet of paper taped on the inside of the rear cover.**

BCU



d046r394

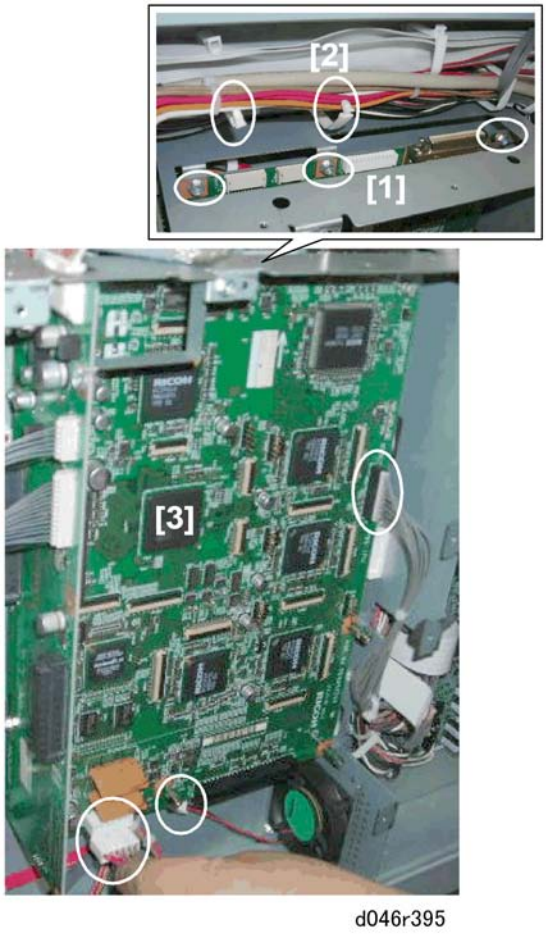
Preparation

Remove:

- Rear cover (x7) ☛ p.264
- Controller box cover ☛ p.265

1. Remove the BCU [1] (x1, FFC x1, x3).

IPU



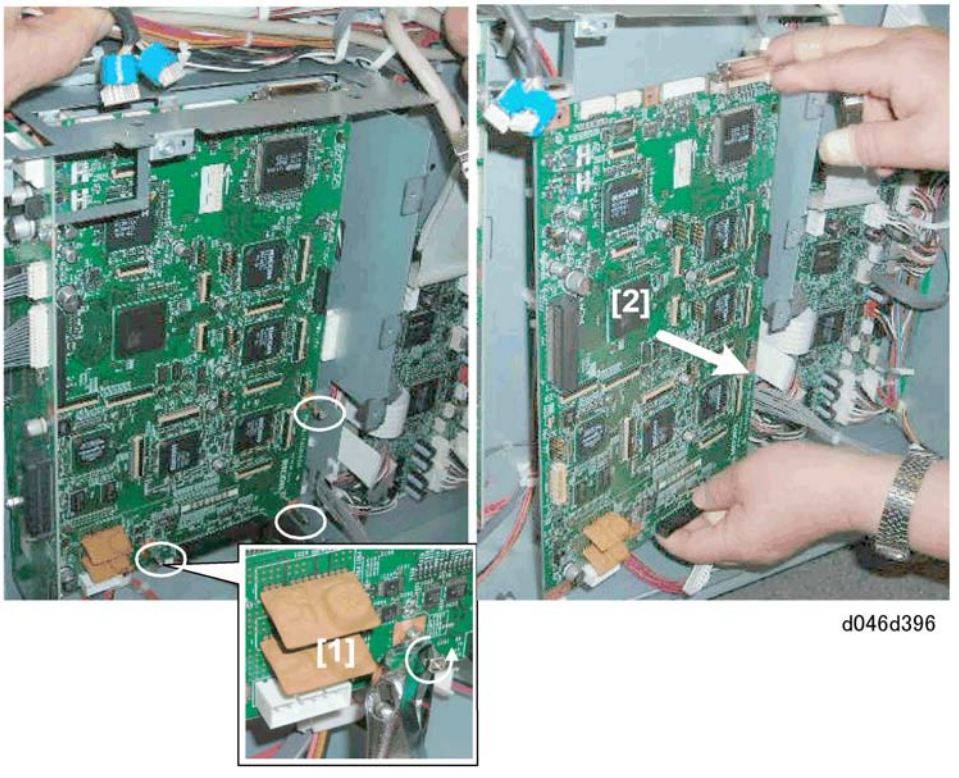
d046r395

Preparation

Remove:

- Rear cover (x7) ☛ p.264
- Controller box cover ☛ p.265
- BCU ☛ p.384

1. At the top [1], disconnect the IPU (x4, x3).
2. Release the motherboard harnesses [2] (x2).
3. Disconnect the IPU [3] (x3).



4. Use a wrench [1] to remove the BCU stand screws (x3).
5. Remove the IPU [2].

Controller Board

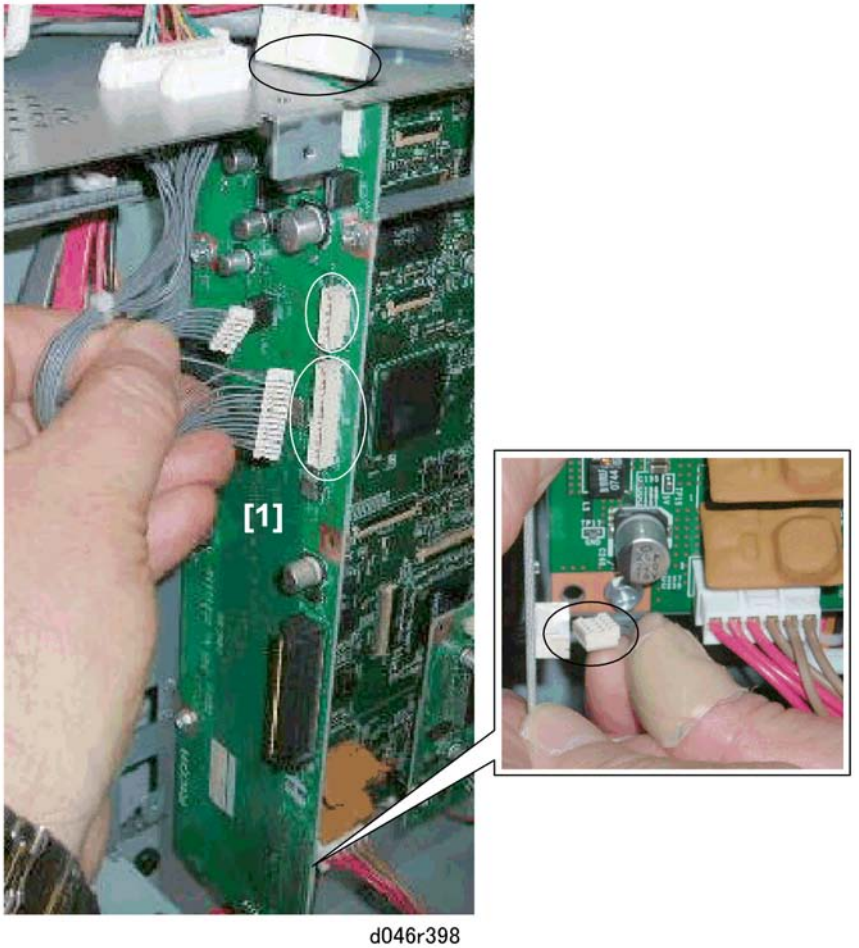
d046r397

Preparation

- Rear cover ☛ p.264
- Controller box cover ☛ p.265

1. Remove the controller board [1] (x4, x5 Standoff x1 at [2]).

MB

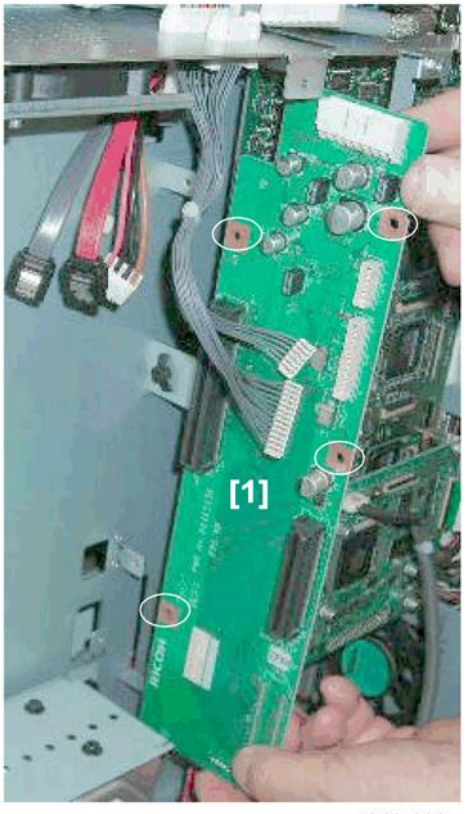


d046r398

Preparation

- Rear cover ☛ p.264
- Controller box cover ☛ p.265
- Controller board ☛ p.387

1. Disconnect the motherboard [1] (x3).



d046r399

2. Remove the motherboard [1] (x4).

HDD

Before Replacement

Explain to the customer that the following information on the HDD is lost after the HDD has been replaced

- Document server documents
- Document server address book
- Document stamps created by the user

The address book and document server documents (if needed) must be input again. However, before replacing the HDD, you can try to recover the address book by uploading it to an SD Card.

To Upload the Address Book to an SD Card

Do this procedure before replacing the HDD

Important

- **This procedure may not execute successfully if the HDD is damaged.**

1. Turn the main power switch off.
2. Insert an SD card in SD card Slot 1.
3. Do SP5846-51 to upload the address book to the SD card in Slot 1.
4. Turn the main power switch on.
5. Remove the SD card from Slot 1.

To Download the Address Book from an SD Card

Do this procedure after replacing the HDD

1. Turn the main power switch off.
2. Insert the SD card with the directory information in SD card Slot 1.
3. Do SP5846-52 to download the information from the SD card in Slot 1.
4. Turn the main power switch on.
5. Remove the SD card from Slot 1.

HDD Replacement

d046r400

Preparation

- Remove the rear cover. ☛ p.264
- Remove the controller box cover. ☛ p.265

1. Remove the HDD unit assembly [1] (x4).
2. Mark the connectors [2] on left side of the HDD before you remove them, so that they can be connected correctly when an HDD unit is reinstalled.
3. Disconnect the HDD unit (x2).

Important

- **This is a two-disk unit. All disks must be replaced at the same time. Do not try to replace one disk only.**

Reinstallation

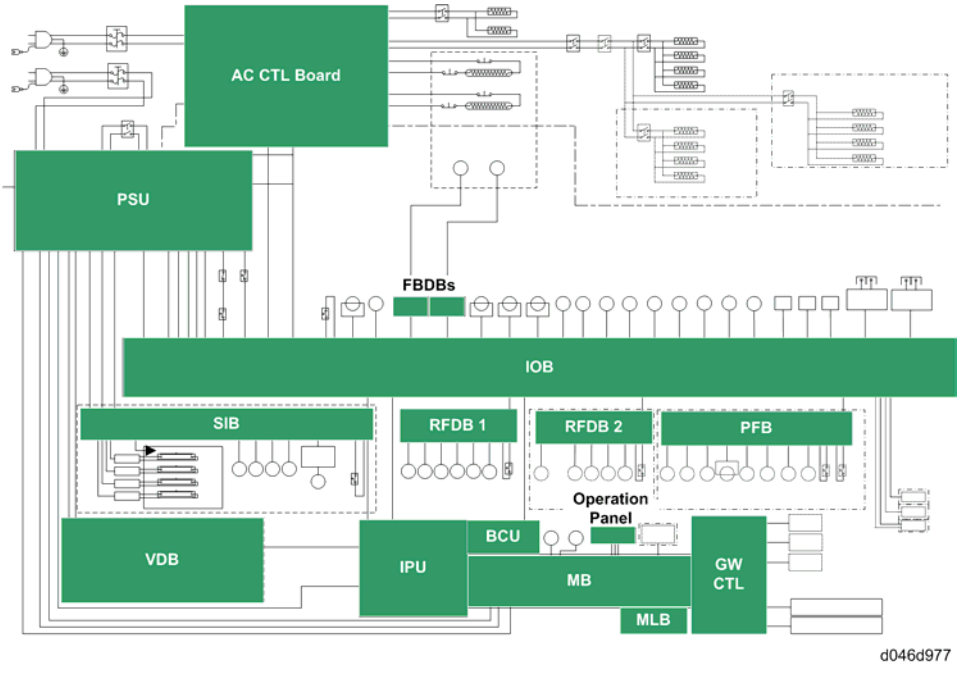
- Follow the directions provided on the decal.
- Do SP5853 to copy the preset stamp data from the firmware to the hard disk. Then turn the main power switch off/on.
- If you successfully uploaded the address book to an SD card, download the information now.
- If the customer is using the Data Overwrite Security feature, the DOS function must be set up again.
- If the customer is using the optional Browser Unit, this unit must be installed again. For more, see Section 1 (Installation).
- Explain to the customer that the following information stored on the HDD is lost when the HDD is replaced:
  - Document server documents
  - Custom-made stamps
  - Document server address book
- The address book and document server documents (if needed) must be input again.

Important Notes about HDD Replacement

- Never remove an HDD unit from the work site without the consent of the client.
- If the customer has concerns about the security of information on the HDD, leave the HDD unit with the customer for disposal or safekeeping.
- The HDD may contain proprietary or classified (Confidential, Secret) information. Specifically, the HDD contains document server documents and data stored in temporary files created automatically during copy job sorting and jam recovery. Such data is stored on the HDD in a special format, so it cannot normally be read but can be recovered with illegal methods.

More About Boards

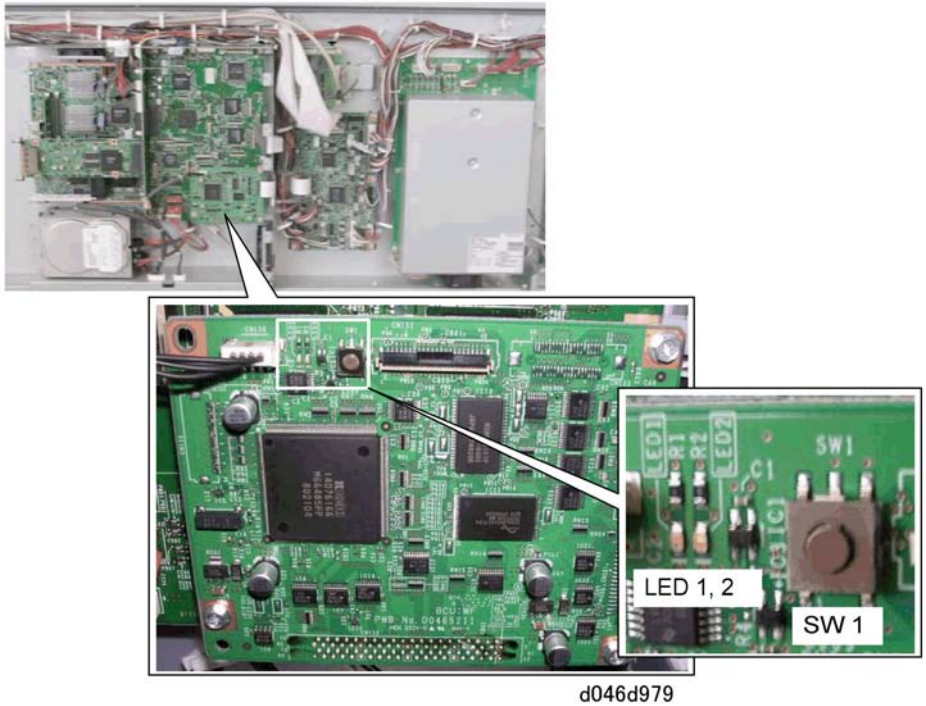
Overview



Main Boards

BCU

The BCU (Base Control Unit) is the main board. It controls the printer engine and all system processing.



d046d979

SW Address: SW 1

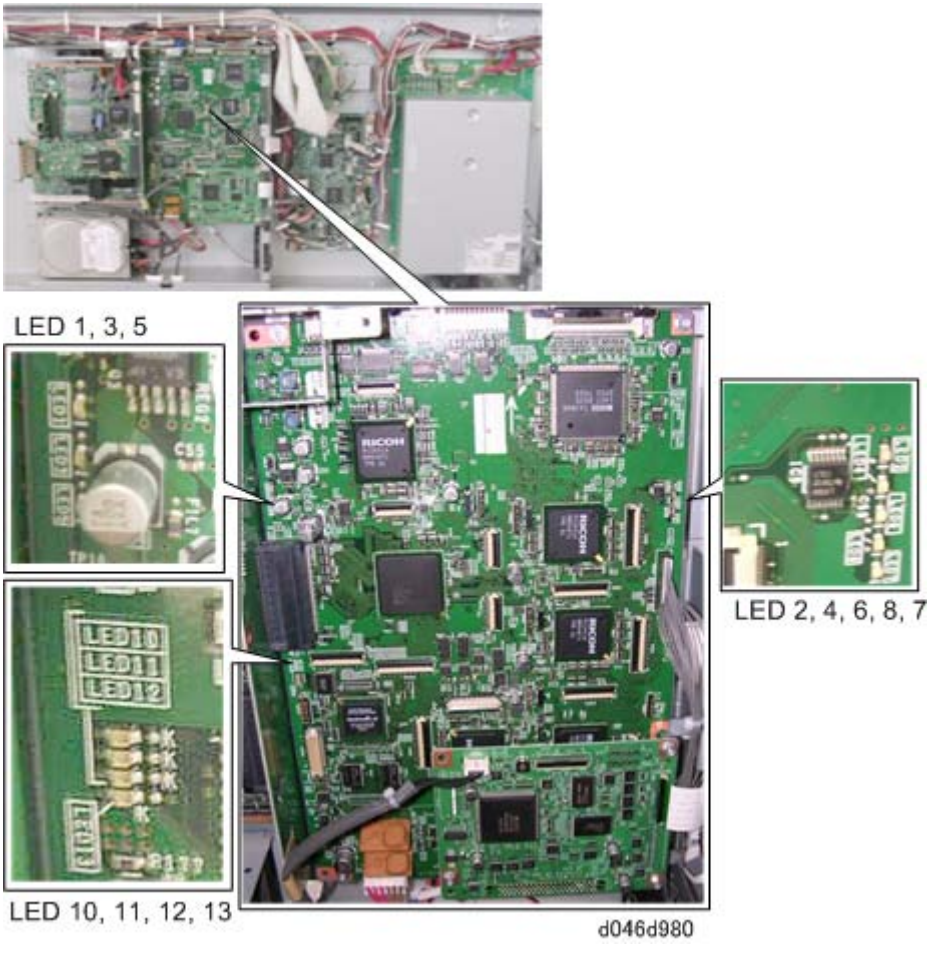
SW No.	Function	Factory Setting	Comments
SW1	Reset	None	Engine control reset operates only when button is depressed.

LED

LED	Color	Function	Downloading		Normal
			EXECUTE	END	
LED 1	RED	Displays BCU Operation Status _eSOC	ON	OFF	OFF
LED 2	GREEN		OFF	FLASH	FLASH

IPU

The IPU (Image Processing Unit) conducts image processing. It processes image data from the CIS (Contact Image Sensors), sends it to the VDB (Video Drive Board), and then to the LPH (LED Print Heads).

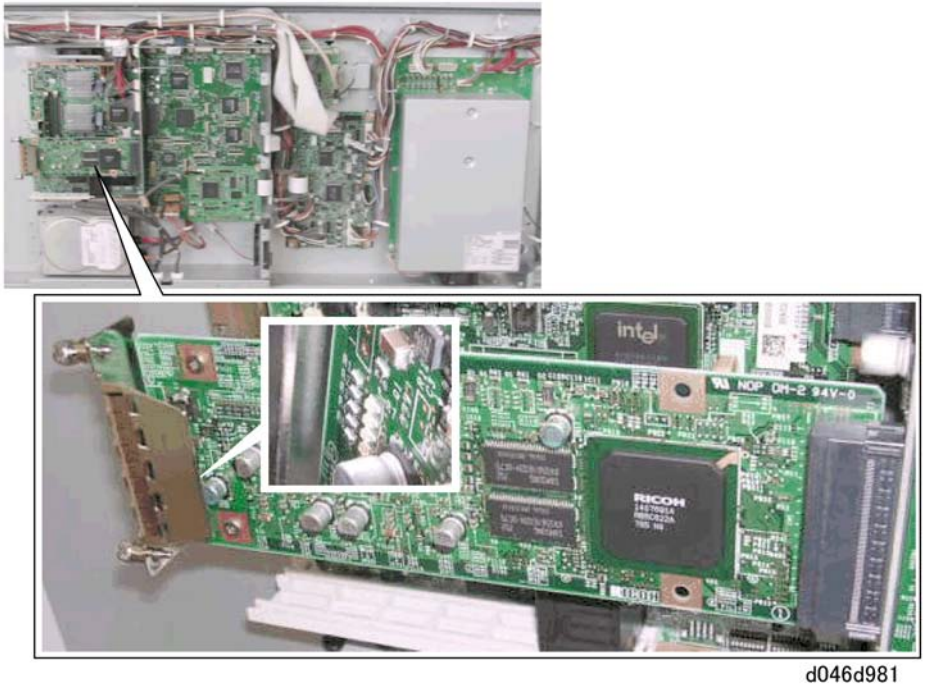


LED	Color	LED Definition	LED State
1	GREEN	Power Display: 3.3V	Normal: ON Abnormal: OFF
3	YELLOW	Power Display: 3.3VEP	Normal: ON Abnormal: OFF
5	RED	Power Display: 5VE	Normal: ON Abnormal: OFF
2	ORANGE	Image Processing IC (IC14) Status Display	Standby: FLASH Operation: ON
4	ORANGE	Image Processing IC (IC16) Status Display	Standby: FLASH Operation: ON

LED	Color	LED Definition	LED State
6	ORANGE	Image Processing IC (IC24) Status Display	Standby: FLASH Operation: ON
8	ORANGE	Image Processing IC (IC25) Status Display	Standby: FLASH Operation: ON
7	GREEN	Image Processing IC (IC8) Status Display	Standby: FLASH Operation: ON
10	YELLOW	Image Processing IC (IC23) Status Display	Standby: OFF Original Reading: OFF (ON at power on, download end)
11	YELLOW	Image Processing IC (IC23) Status Display	Normal: ON Memory Line Over Abnormal: OFF
12	YELLOW	Image Processing IC (IC23) Status Display	No JPEG Line Over Interrupt: ON JPEG Line Over Interrupt: OFF (No abnormality if OFF.)
13	YELLOW	Image Processing IC (IC23) Status Display	Normal: ON DDR Lead Line Abnormal: OFF

File Format Converter (MLB)

The file format converter (also called the "Media Link Board" or "MLB") allows you to download copy and print data through via network with Desk Top Binder.



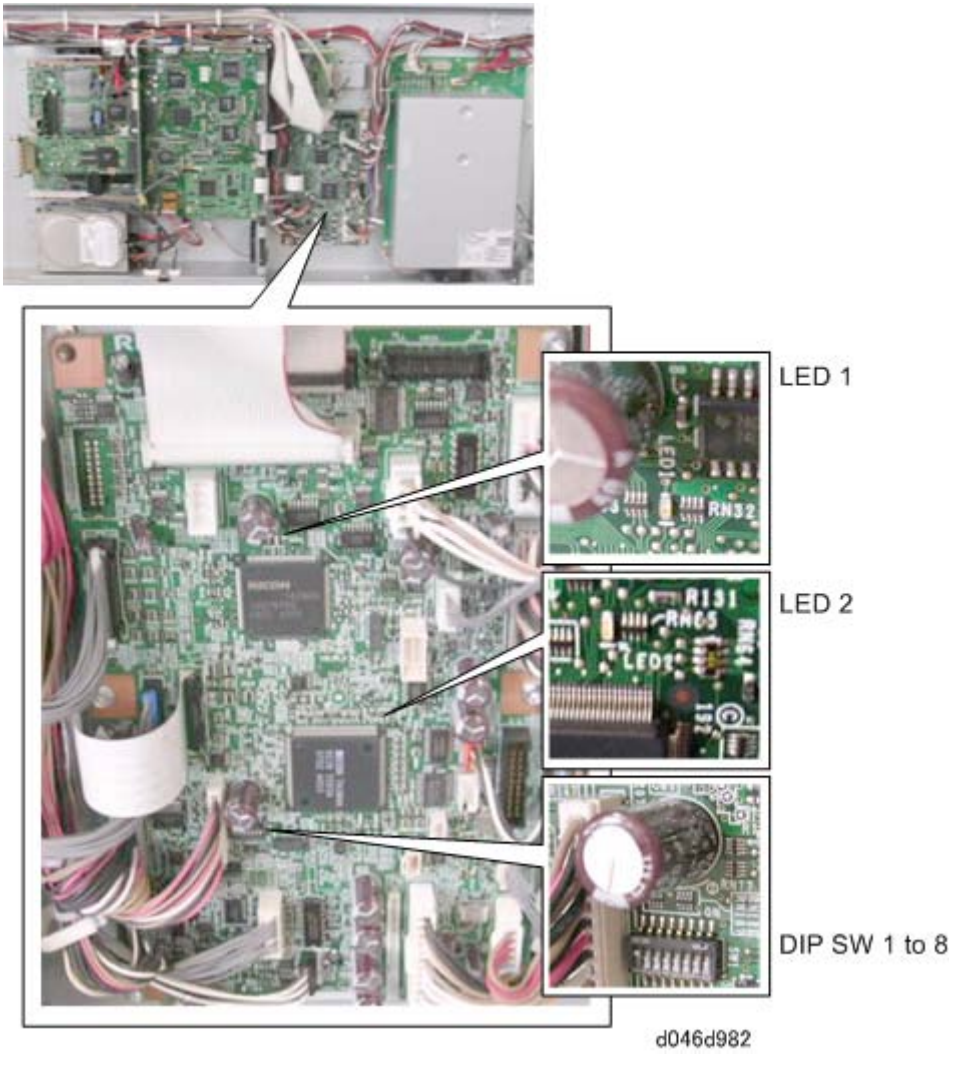
d046d981

LED	Color	Normal Status
LED1	GREEN	Lights
LED2	GREEN	Lights
LED3	YELLOW	Flashes
LED4	YELLOW	Flashes
LED5	YELLOW	Flashes

IOB

The IOB (Input/Output Board) controls each sensor, motor, solenoid, and high voltage supply board. It contains the drive circuits for these components. It also performs process control, transfers serial data between the machine and peripherals, and controls the fusing unit.

- The paper cassette sensors and motors are controlled by the RFDB (Roll Feeder Drive Board).
- The pressure motors are controlled by the FPDB (Fusing Pressure Drive Board).



Important

- The DIP switch settings are provided here for reference only. They should always remain OFF (default). They should never be changed in the field.

DIP SW Address: SW 1

SW No.	Function	Default	Comments		
1	Destination Setting 1	OFF	Region	SW1	SW2
			Japan	OFF	OFF
			NA	ON	OFFF
			EU	OFF	ON

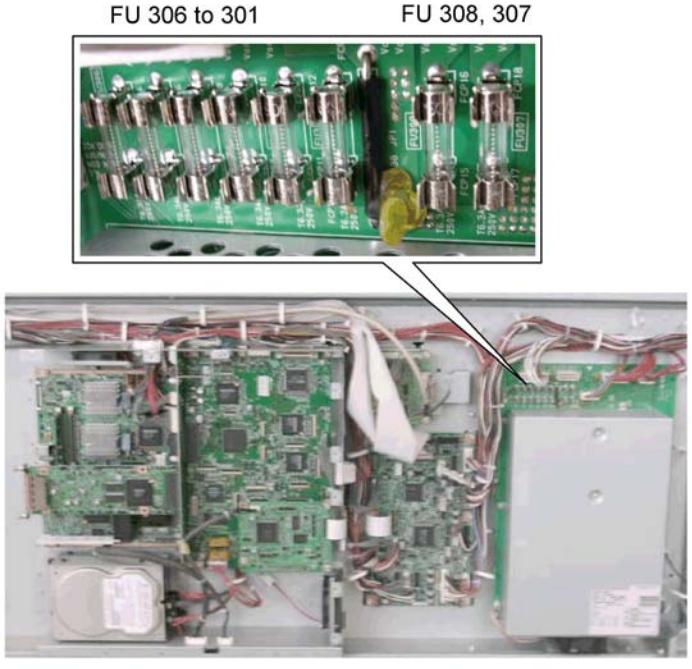
SW No.	Function	Default	Comments		
			CHN	ON	ON
2	Destination Setting 2	OFF			
3	Jam Detect OFF	OFF	No jam detection at ON		
4	SC Detection OFF	OFF	No SC detection at ON		
5	(Not Used)	OFF	--		
6	(Not Used)	OFF	--		
7	(Not Used)	OFF	--		
8	(Not Used)	OFF	--		

LEDs

LED	Color	Function	Downloading		Normal
			EXECUTE	END	
1	RED	Displays IOB Operation Status _e10	ON or OFF		FLASH
2	RED	IOB Operation Status _Trio2	ON or OFF		FLASH

PSU

The PSU (Power Supply Unit) supplies direct current for every electrical component in the machine, and controls alternating current input to the fusing lamps and anti-condensation heaters.

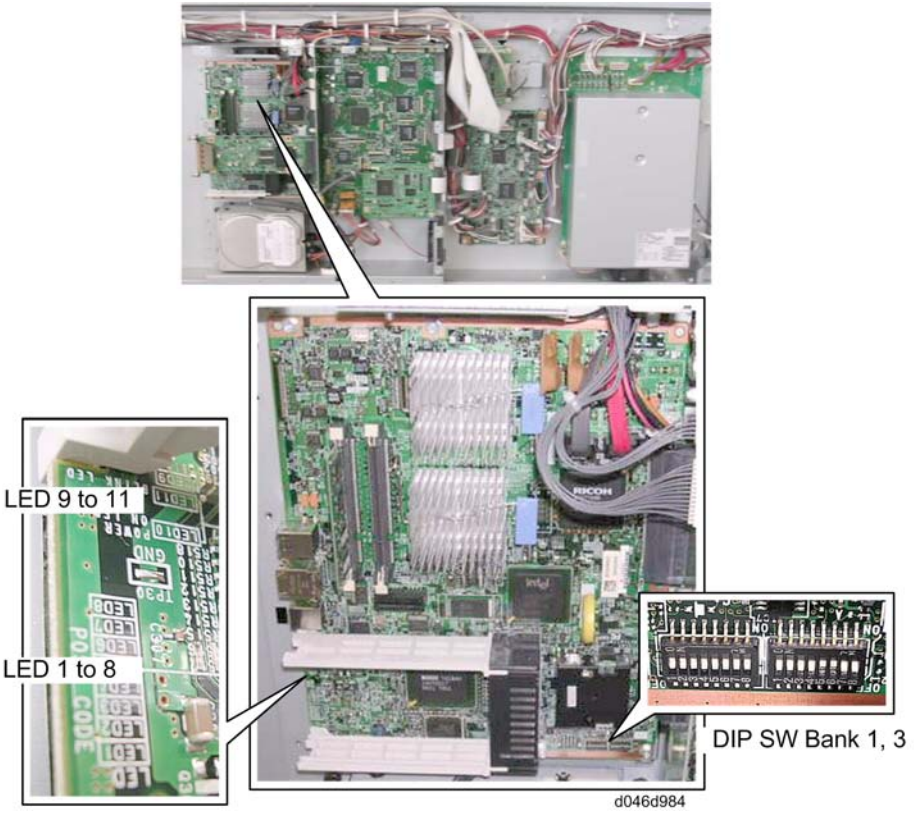


Fuses

No.	Connector	Capacity	Volts	Load Type	Part No.
FU1	--	10A/250V	AC	DC Power	11071160
FU301	CN126-1	6.3A/250V	24V	IOB (via interlock)	11071067
FU302	CN126-2	6.3A/250V	24V	IOB (via interlock)	11071067
FU303	CN126-3	6.3A/250V	24V	IOB	11071067
FU304	CN126-4	6.3A/250V	24V	--	11071067
FU305	CN126-5,6,7	6.3A/250V	24V	IOB, MB	11071067
FU306	CN126-8	6.3A/250V	24V	--	11071067
FU307	CN129-1,2	6.3A/250V	24V	SIB (Drive System)	11071067
FU308	CN129-3,4	6.3A/250V	24V	SIB (Xe lamp system)	11071067

GW Controller

GW (Ground Works) controller architecture allows a basic 600-dpi copier to be upgraded to a full multifunctional product, including printing, Internet, scanning, scan-to-email, and scan-to-folder with Scan Router.



Controller LED States

LED	Color	Function	LED State
1	RED	BIOS Post Code	Normal: ON Installing: ON Installing END: ON
2	RED	BIOS Post Code	Normal: ON Installing: ON Installing END: ON
3	RED	BIOS Post Code	Normal: ON Installing: ON

LED	Color	Function	LED State
			Installing END: ON
4	RED	BIOS Post Code	Normal: ON Installing: ON or FLASH Installing END: ON
5	RED	BIOS Post Code	Normal: ON Installing: OFF Installing END: ON
6	RED	BIOS Post Code	Normal: ON Installing: OFF Installing END: ON
7	RED	BIOS Post Code	Normal: OFF Installing: OFF Installing END: ON
8	RED	BIOS Post Code	Normal: FLASH Installing: FLASH Install END: FLASH
9	RED	BIOS/OS Distinction	Normal: FLASH Installing: FLASH Install END: FLASH
10	GREEN	Power On	Normal: ON Installing: ON Installing END: ON
11	YELLOW	Flash LED	Normal: FLASH Installing: FLASH Install END: FLASH

Controller DIP Switches

SW 1

No.	Application	Default	Comments			
1	Selects boot device	OFF	Boot	SW1	SW2	SW3
			USB	OFF	OFF	OFF
			SD Card	ON	OFF	OFF
2	Selects boot device	OFF				
3	Selects boot device	OFF				
4	Selects "Quick Boot"	OFF	OFF: Quick Boot ON: Normal Boot			
5	Selects Boot Prompt	OFF	OFF: Disable ON: Enable			
6	-	OFF	Do Not Use			
7	-	OFF	Do Not Use			
8	-	OFF	Do Not Use			

SW 3

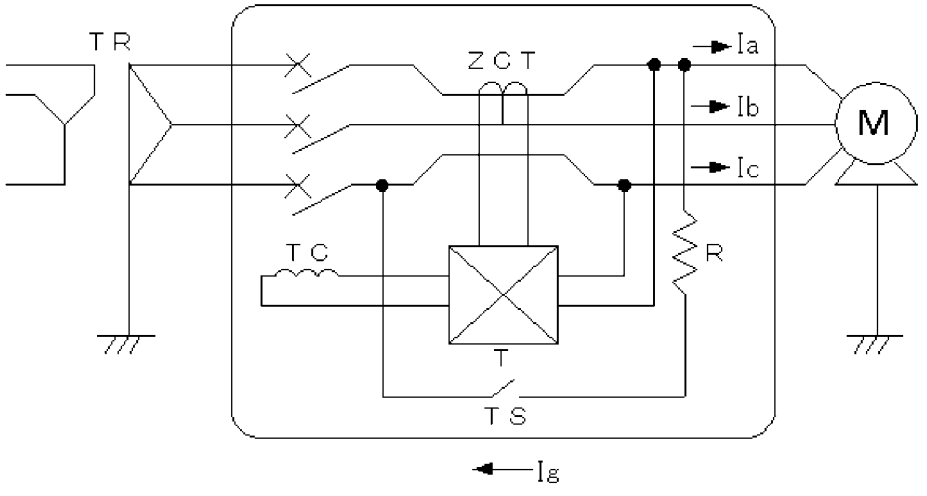
No.	Application	Default	Comments		
1	-	OFF	Do Not Use		
2	-	OFF	Do Not Use		
3	Initializes CMOS RAM in ICH6-M	OFF	OFF: Normal ON: Clear		
4	-	OFF	Do Not Use		
5	Selects boot device 2	ON:	Selects sub system software boot device.		
			Boot	SW5	SW6
			Flash ROM	ON	ON
			SD Card	OFF	OFF
6	Selects boot device 2	ON:			

No.	Application	Default	Comments
7	Selects HDD common power source	OFF	OFF: VE System Power Power always on, regardless of energy save status. ON: VEP System Power Power source goes off according to energy save mode (STR). However, ASIC: Whistle controls HDD common power source, regardless of this setting.
8	-	OFF	Do Not Use

Other Boards

- **VDB**. The Video Drive Board controls the LPH (LED Print Heads). It processes the image information sent from the IPU and sends it to the LPH.
- **RFDB.** Roll Feed Drive Board controls the motors, solenoids, and clutches inside the roll paper trays.
- **FPDB**. The Fusing Pressure Drive Board controls the two pressure roller motors mounted on each side of the pressure roller. These motors apply more or less pressure between the pressure roller and hot roller, depending on the type of paper used for the copy/print job.
- AC CTL Board. The AC Control Board is the connection point for the main power supply. It controls the power supply to the PSU, fusing lamps, and all heaters.
- HVPS. Two power packs comprise the High Voltage Power Supply unite. The CGB power pack provides is the power supply for the charge, grid, bias applied to the drum. The T&S power pack is the power supply for image transfer to paper and paper separation from the drum.
- SIB. The Scanner Interface Board controls the scanner, and serves as the signal I/F board between the IOB and IPU.
- PFB. The Paper Feed Board inside the optional Paper Cassette (D395) controls the components that feed paper from the paper cassette (sensors, clutches, and motors).
- MLB. The file format converter (also called the "Media Link Board" or "MLB") allows you to download copy and print data through via network with Desk Top Binder.
- Operation Panel. Mounted directly below the operation panel LCD, controls the operation panel display and input from the 10-key pad.

Breaker Switch



Key to Acronyms

TR	Transformer
TC	Trip Coil
ZCT	Zero Cross Terminal
R	Resistance Test Switch
M	Load Device
Ig	Current Leakage

The breaker switch mechanism consists of a ZCT (Zero Cross Terminal), a sensor inside the breaker switch unit checks the amplified signals from a detection device.

The main power supply line runs through the ZCT. The ZCT generates a signal if it detects any fluctuation in the power supply caused by a short circuit.

Normally, the current phase is zero and the breaker does not operate.

When a short circuit occurs:

- The current leakage (Ia + Ib Ic = Ig) flows.
- Voltage is generated at the secondary winding.
- The amplitude of the detection device increases

- The magnetic trip coil operates and opens the breaker circuit to cut the power supply to the machine.

Other

Ozone Filter

d046r522

Preparation

Remove:

- Right rear cover ☛ p.264

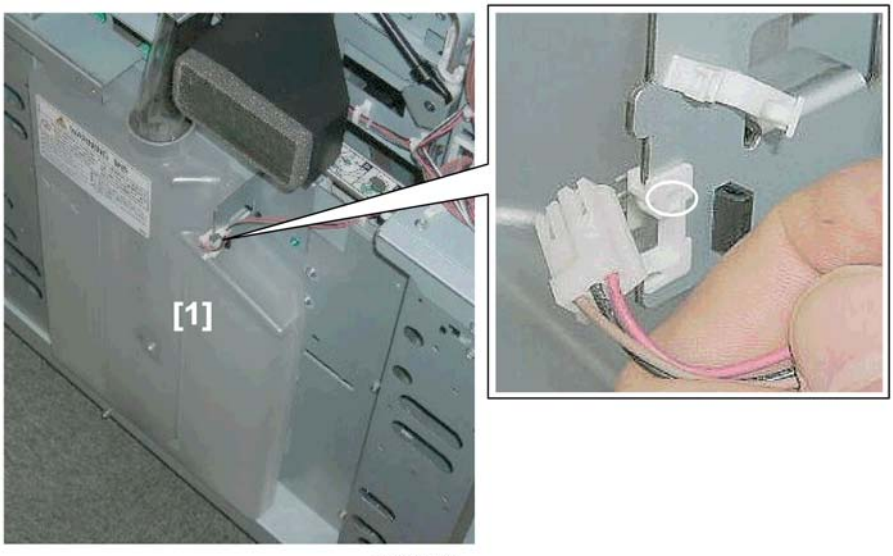
1. Pull the old ozone filter [1] out of the duct.
2. Insert the new ozone filter.

Used Toner Bottle Cleaning

Preparation

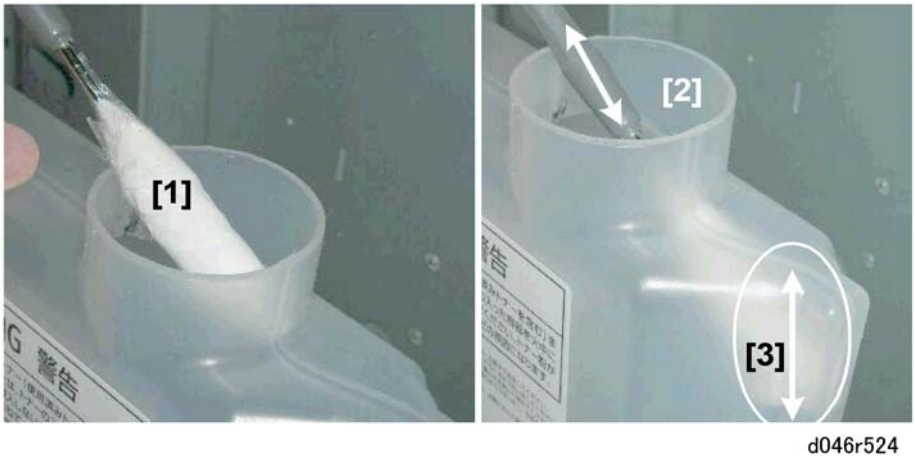
Remove:

- Right rear cover, right front cover ☛ p.259



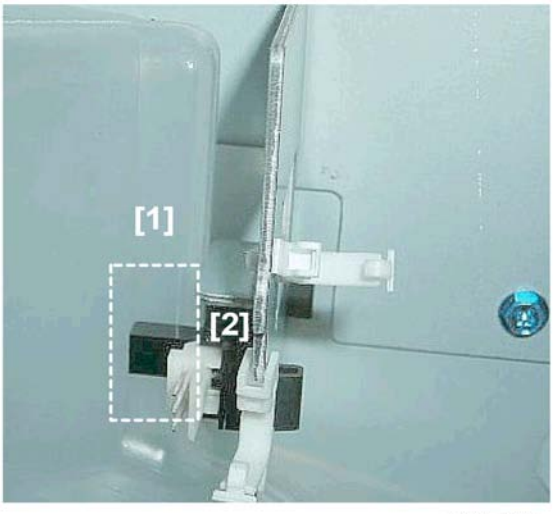
d046r523

1. Remove the used toner bottle [1] (☞ x1).



d046r524

2. Wrap a piece of dry cloth [1] around the tip of a small screwdriver and fasten it with tape.
3. Insert the covered tip [2] and clean the area around the upper right corner of the toner bottle [3] to remove all toner.



d046r525

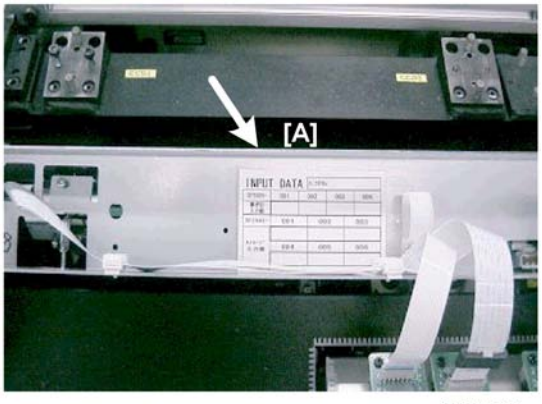
4. The area [1] around the used toner bottle sensor [2] must be clean so that the sensor can function accurately.

Important Adjustments

LPH Adjustment with SP Codes

Doing SP Adjustment Settings for a Replacement LPH

1. Remove the replacement LPH from its box.



d046r540

2. Read the label [A] attached to the replacement LPH and write down the settings for SP2952 and SP2943.

Note

- This label is attached to the replacement LPH only.

3. Remove the old LPH and install the new LPH unit.
4. Do SP2952-1, -2, -11, -12 and enter the settings you read from the label attached to the LPH replacement unit.
5. Do SP2943-1, -2, -3 and enter the settings you read from the label attached to the replacement unit.
6. Do SP4417 to print IPU Test Pattern 19 to make sure that the LPH joints are aligned correctly (see the procedure below).

To Print IPU Test Pattern 19

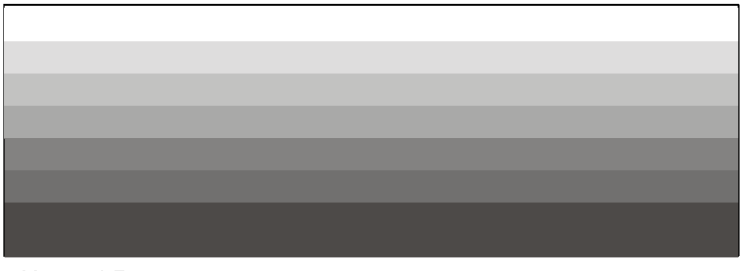
1. Open the roll feeder drawer. Cut off a sheet manually from a roll.
2. Close the roll feeder drawer.
3. Go into the SP mode.
4. Do SP4417 (Printing Test Pattern), select Pattern "19" then press "OK".

5. Touch "COPY Window" to go to the copy display.
6. Select one of the rolls for paper feed.
7. Feed a blank sheet of paper into the machine, then press [Start].
8. Check the printed pattern:
    - If you see vertical white or black lines, do the vertical line adjustments (See the next section, "Main Scan Adjustment: White or Black Vertical Lines").
    - If you see the areas are not aligned, do the misalignment adjustments (See below, "To Adjust the LPH for Misalignment").
    - If you see vertical white/black lines and misalignment, do the vertical line adjustment first.

4

Main Scan Adjustment: White or Black Vertical Lines

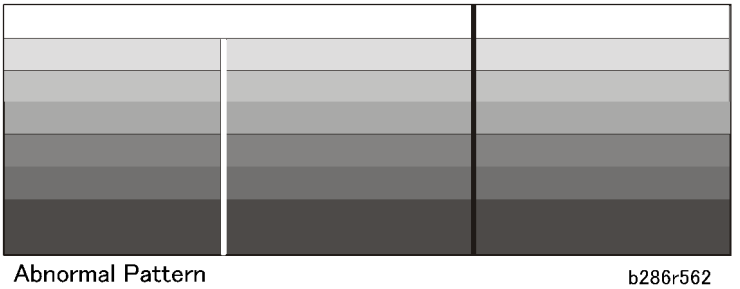
1. Check the printed pattern at LPH 1-2 for white or black lines.
2. If there are no lines, no adjustment is necessary.



Normal Pattern b286r561

If you see white or black lines at LPH 1-2, go to the next step.

- White lines occur if too few LEDs come on at the joint.
- Black lines occur if too many LEDs come on at the joint.



Abnormal Pattern b286r562

3. Left line:
    - If the left line is **white**, adjust SP2952-1 to a smaller value.
    - If the left line is **black**, adjust SP2952-1 to a larger value.

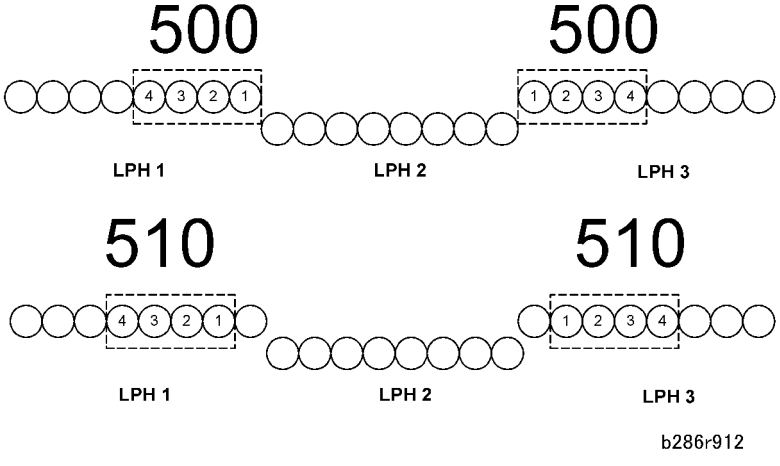
4. Right line:
    - If the right line is **white**, adjust SP2952-2 to a smaller value.
    - If the right line is **black**, adjust SP2952-2 to a larger value.
5. After the adjustment, feed the blank sheet again to print one more pattern.
6. Check the results of the adjustment.
7. Do the adjustment again until the lines appear faint.

Note

- The lines cannot be completely erased.

Main Scan Adjustment: LED Light Level at LPH Joints

After you do the previous procedure to adjust the main scan at the LPH joints, you can do a fine adjustment on this area. To do this, you increase or decrease the intensity of the light from the four LEDs at the joints.

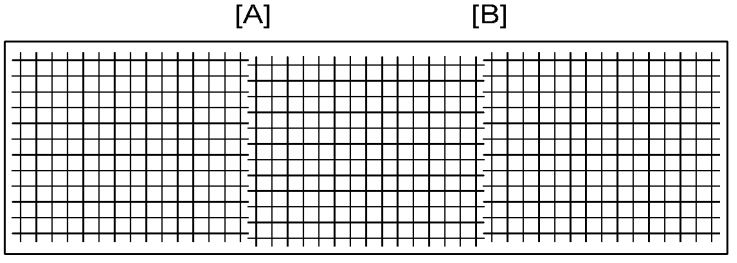


"500" is the default setting for LPH 1-2 and LPH 2-3.

- If you change the 2nd digit of the value for LPH 1-2 (500 to **510**) with SP2952-1, this moves the four LEDs by one position to the **left**.
- If you change the 2nd digit of the value for LPH 2-3 (500 to **510**) with SP2952-2, this moves the four LEDs by one position to the **right**.
- If you change the 3rd digit of LPH 1-2 or LPH 2-3 (510 to **512**, for example), this increases the quantity of light from LEDs 1, 2, 3, 4 in the illustration.

The quantity of light can be adjusted for each LED independently with SP2953 (Power Correction). But, this fine adjustment is usually not necessary in the field.

Adjusting LPH Alignment



b286r986

4

Broken lines [A] or [B] in the IPU Test Pattern (SP4417, Pattern 28) indicate incorrect sub scan timing at one or both joints.

1. Go into the SP mode, and do SP2952-11 for LPH 1-2
    - Adjust the position of LPH 2 (LPH 1 does not move).
    - If LPH 2 is higher than LPH 1, set a larger value.
    - If LPH 2 is lower than LPH 1, set a smaller value.
2. Print one more pattern with SP2952-11 and check the alignment at the joints.
3. Do this procedure again until the pattern at the joint is correct.
4. Do SP2952-12 for LPH 2-3
    - Adjust the position of LPH 3 to LPH 2 (LPH 2 is the standard).
    - If LPH 3 is higher than LPH 2, set a larger value.
    - If LPH 3 is lower than LPH 2, set a smaller value.
5. Do this procedure again until the pattern at the joint is correct.

LPH Density Adjustment with SP Codes

To Print the IPU Test Pattern 19

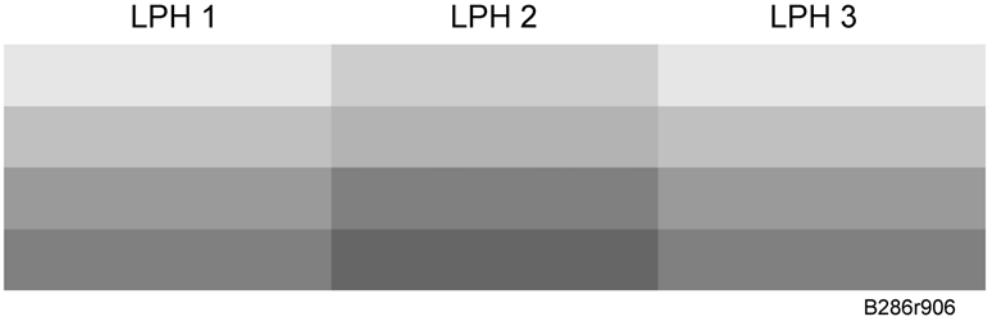
1. Open the roll feeder drawer. Cut off a sheet manually from a roll.
2. Close the roll feeder drawer.
3. Go into the SP mode.
4. Do SP4417, select Pattern "19", then touch "OK".
5. Touch "COPY Window" to show the main screen.
6. On the operation panel, select one of the rolls for paper feed.

Note

- You must select Tray 1 (1st Roll) or Tray 2 (2nd Roll). You cannot use "Auto Paper Select". If you select "Auto Paper Select" the pattern will not print.

7. Set the blank sheet of paper on the original feed tray.
8. Press [Start]. The pattern prints.
9. Touch "SP Mode" to return to the SP mode.
10. Check the density of the patterns in LPH 1, LPH 2, and LPH 3.

    If density is equal for all areas, no adjustment is necessary. If the density is not equal, do the next procedure.



To Correct Pattern Density

1. Do SP2943-1, -2, and -3
   - This SP makes the output of each LPH block brighter or darker.
2. Adjust the density for LPH 1 with SP2943-1.
   - If the density is too dark, set a smaller value.
   - If the density is too light, set a larger value.
3. Do SP4417, select Pattern #19, touch [OK], then print the pattern by feeding the blank sheet and check the density.
4. Do this procedure for LPH2 and LPH3 until the density is the same in each of the three sections.
   - LPH2: SP2943-2
   - LPH3: SP2943-3

Image Position, Magnification, Margin Adjustments

Do these adjustments if the customer is unhappy about the above properties of the output. Before you do any measurements, allow the test print output to cool for five minutes.

Note

- Do these adjustments in the order prescribed below.

(1)	**Printer Skew Adjustment** SP1914-2, -3 (Fusing Pressure Adjustment) Standard: No more than 1 mm skew /1 m. **Note**: Difference between the two SP values must be less than 30.
(2)	**Printer Magnification Adjustment** Standard: Magnification error less than ±0.3%.
(3)	**Print and Erase Margin Setting** SP4012-5, -7 (Scanner Erase Margin): 0 SP2101-1, -3 (Print Erase Margin): 5 mm
(4)	**Printer Leading Edge and Side-to-Side Registration** SP1001 (Leading Edge Registration) Standard: 5±2.8 mm. SP1002 (Side-to-side Registration) Standard: 5±2.0 mm
(5)	**Restoring the Printing and Scanner Erase Margin Setting** SP4012 (Scanner Erase Margin) SP2101 (Printing Erase Margin) Return to previous setting (before Step 3)
(6)	**Printer/Scanner Magnification** SP4101 001 (Scanner Main Scan Mag.) SP4008 001 (Scanner Sub Scan Mag.). Standard: Magnification error less than ±0.5%
(7)	**Printer/Scanner Leading Edge Registration** SP4010 001 (Scanner Sub Scan Registration) Standard: ±3.0 mm
(8)	**Printer/Scanner Side-to-side Registration** SP4011 (Scanner Main Scan Registration) Standard: ±2.8 mm

(9)	**Printer Cut Length Adjustment** SP1920 (Cut Length Adjustment) SP1921 (Cut Length Offset) Standard: Depends on the length
(10)	**Printer/Scanner Trailing Edge Registration (Synchro-cut)** SP4961 (Original Adjustment): SP4961 001: Standard: 210 mm ±0.5 mm .SP4961 002: Standard: 1000 mm ±1 mm

(1) Printer Skew Adjustment

1. Set normal weight plain paper (841 mm wide/E size, from roll 1) and print an IPU dot pattern with SP2902-3 (IPU Print Test Pattern – Pattern 1), of length 6 m, and output to the rear exit.
2. At the rear paper exit, measure the amount of skew on the output. Make sure it is within the standards below.

Allowed skew	< 1 mm per meter

3. If the amount of measured shift is not within standards, adjust the right and left fusing pressure from the pressure roller with the following SP codes.

SP1914 002	Fusing Pressure Motor –Pressure Adjustment: Right
SP1914 003	Fusing Pressure Motor –Pressure Adjustment: Left

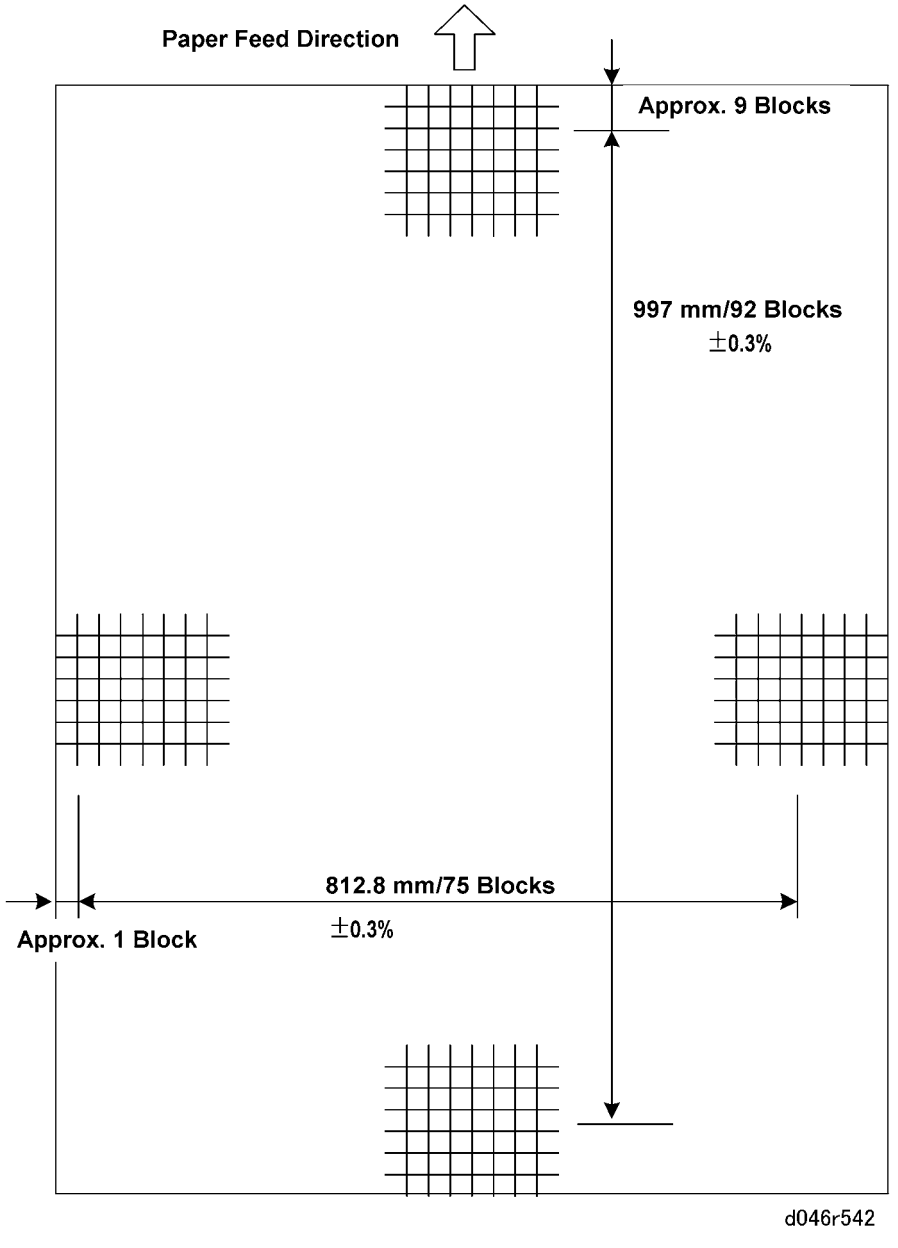
If the paper is skewed to the right, weaken the pressure on the right roller, then increase the pressure on the left roller.

To determine if there is skew, look at the trailing edge.

The SP values must be the same size, but of opposite sign (for example, if SP 1914 002 is –10, SP 1914 003 must be + 10). The difference between the two SP values must be less than 30.

If roller pressure adjustment is not successful, reset the SP settings to their previous values, then try again to adjust roller pressure.

(2) Printer Magnification Adjustment



1. Set normal weight plain paper (841 mm wide/E size, from roll 1) and print an IPU dot pattern with SP2902-3, Pattern 1, A0 SEF/E SEF (send it out the rear exit).
2. Refer to the illustration above:
    - From the top measure the distance from the bottom of the 9th black to the bottom of the 101st block. This should be 997±3 mm

- On the left measure the distance from the right edge of the first block to the right edge of the 76th block. This should be 812.8±3 mm.

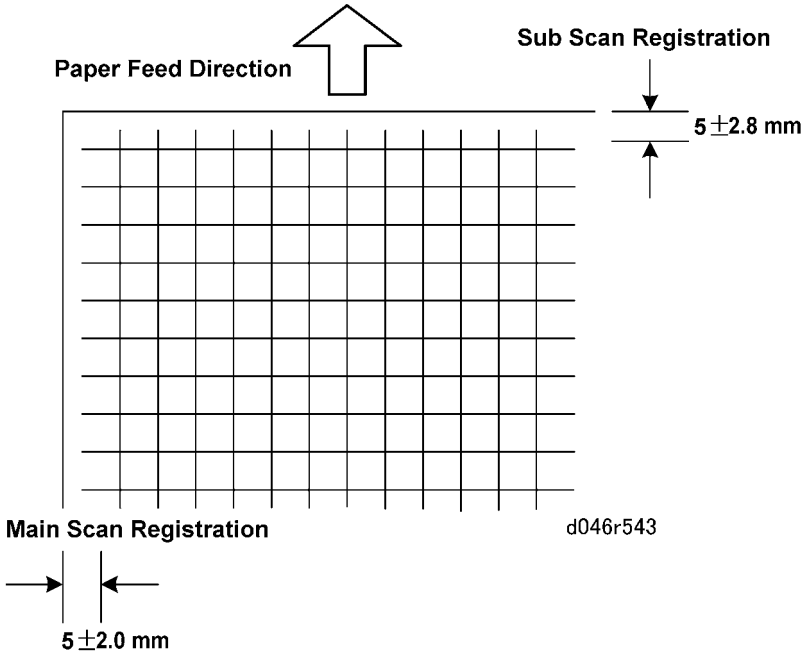
3. If the main scan measurement (down) is not 997±3 mm do SP2916-1 to adjust it.
4. If the sub scan measurement (left to right) is not 812.8±3 mm do SP2916-2 to adjust it.
5. Repeat this procedure until the measurements are within standard.
6. After the measurements are within standard, adjust the following SP codes with the same value you used to adjust SP2916-1:
   - SP2916-7
   - SP2916-9
   - SP2916-15
7. Next, adjust the following SP codes with the same value you used to adjust SP2916-2:
   - SP2916-8
   - SP2916-10
   - SP2916-16

(3) Print and Erase Margin Setting

1. Execute SP5990 002 to print the SMC Copy List (a list of the SPs).
2. Set the following SPs to the settings below to make measurement easier.

SP	Name	Setting
2101-1	Printing Erase Margin – Leading Edge	2 to 5
2101-3	Printing Erase Margin – Left Edge	2 to 5
4012-5	Scanner Erase Margin – DF Leading Edge	1.5 to 0
4012-7	Scanner Erase Margin – DF Left	1.5 to 0

(4) Printer Leading Edge and Side-to-Side Registration



Leading Edge Registration

1. Set normal weight plain paper (841 mm wide/E size, from roll 1) and print an IPU dot pattern with SP2902-003, Pattern 1 (Length: A1 LEF/D LEF)
2. Measure the leading edge registration.

Standard	5±2.8 mm

3. Adjust leading edge registration for each paper feed station if necessary.

SP	Name
1001-1	Leading Edge Registration - 1st Roll
1001-2	Leading Edge Registration - 2nd Roll
1001-3	Leading Edge Registration - 3rd Roll/1st Cassette
1001-4	Leading Edge Registration - 4th Roll/2nd Cassette
1001-5	Leading Edge Registration - By-pass feed

Side-to-Side Registration

1. Set normal weight plain paper (841 mm wide/E size, from roll 1) and print an IPU Print Pattern with SP2902-003, Pattern 1.

2. Measure the side-to-side registration.

Standard	5±2.0 mm

3. Adjust side-to-side Registration for each paper feed station if necessary.

SP	Name
1002-1	Side-to-Side Registration - 1st Roll
1002-2	Side-to-Side Registration - 2nd Roll
1002-3	Side-to-Side Registration - 3rd Roll/1st Cassette
1002-4	Side-to-Side Registration - 4th Roll/2nd Cassette
1002-5	Side-to-Side Registration - By-pass feed

(5) Restoring the Printing and Scanner Erase Margin Setting

1. Restore the SP codes listed below to their original settings. (Refer to the SMC list printed earlier).

SP	Name	Setting
2101-1	Printing Erase Margin – Leading Edge	5 to 2 (default)
2101-3	Printing Erase Margin – Left Edge	5 to 2 (default)
4012-5	Scanner Erase Margin – DF Leading Edge	0 to 1.5 (default)
4012-7	Scanner Erase Margin – DF Left	0 to 1.5 (default)

(6) Printer/Scanner Magnification

1. Copy an OS-A-1 Test Chart with plain paper (cut sheet or roll).
2. Measure the length and width of the image on the original and the copy.

Standard	Less than ± 0.5 %

3. If the measurements do not meet the standard, adjust the following SP codes.

SP4101-1	Scanner Main Scan Magnification
SP4008-1	Scanner Sub Scan Magnification

(7) Printer/Scanner Leading Edge Registration

1. Copy an OS-A-1 Test Chart with plain paper (cut sheet or roll).

Note

- Make sure that you execute the copy with manual density set at the operation panel.
- Measure the leading edge registration.

Standard	Within ±3.0 mm

If the measurement does not meet the standard, adjust the following SP code.

SP4010 001	Scanner Sub Scan Registration Leading Edge

(8) Printer/Scanner Side-To-Side Registration

1. Copy an OS-A-1 Test Chart with plain paper (cut sheet or roll).

Note

- Make sure that you execute the copy with manual density set at the operation panel.
- Measure the side-to-side registration, within 50 mm from the leading edge of the copy.

Standard	Within ±2.8 mm

If the measurement does not meet the standard, adjust the following SP code.

SP4011 001	Scanner Main Scan Registration

(9) Printer Cut Length Adjustment

1. Using the Preset Cut feature, make standard cuts of plain paper for A4 sideways, A3 sideways, A1 lengthways, and A0, A sideways, B sideways, D lengthways, and E.
2. Measure the cuts and check them against the standards in the table.

Range	Plain	Translucent/Film
Up to 297 mm	Less than ±2 mm	Less than ±3 mm
298 - 800 mm	Less than ±3 mm	Less than ±4.5 mm
801 - 1189 mm	Less than ±4 mm	Less than ±5 mm
1190 - 2500 mm	Less than ±7 mm	Less than ±9 mm

2501 - 3600 mm	Less than ±11 mm	Less than ±13.5 mm
3601 - 6000 mm	Less than ±20 mm	---
6001 - 15000 mm	Less than –32 to +200 mm	---
15001 – 30000 mm	Less than –32 to +400 mm	---

3. If a measurement does not meet the standard, then adjust the following SPs for each roller and paper type.

Upper Tray	
SP1920-21 to 33	Cut Length Adjustment – 1st Roll: Plain
SP1920-41 to 53	Cut Length Adjustment - 1st Roll: Translucent
SP1920-61 to 73	Cut Length Adjustment – 1st Roll: Film
SP1920-81 to 93	Cut Length Adjustment – 2nd Roll: Plain
SP1920-101 to 113	Cut Length Adjustment - 2nd Roll: Translucent
SP1920-121 to 133	Cut Length Adjustment - 2nd Roll: Film
Lower Tray	
SP1920-141 to 153	Cut Length Adjustment – 3rd Roll: Plain
SP1920-161 to 173	Cut Length Adjustment – 3rd Roll: Translucent
SP1920-181 to 193	Cut Length Adjustment – 3rd Roll: Film
SP1920-201 to 213	Cut Length Adjustment – 4th Roll: Plain
SP1920-221 to 233	Cut Length Adjustment – 4th Roll: Translucent
SP1920-241 to 253	Cut Length Adjustment – 4th Roll: Film

(10) Printer/Scanner Trailing Edge Registration (Synchro-Cut)

1. Prepare two originals. One must have length 210 mm, and the other must have length 1000 mm.
2. Make a copy of each original with plain paper in the synchro cut mode.
3. Measure the cuts and check them against the standards in the table.

Range	Plain	Translucent/Film

Up to 297 mm	Less than ±3.5 mm	Less than ±4.5 mm
298 to 594 mm	Less than ±4.0 mm	Less than ±5.0 mm
595 to 841 mm	Less than ±4.5 mm	Less than ±6.5 mm
842 to 1189 mm	Less than ±6.0 mm	Less than ±8.5 mm
1190 to 2500 mm	Less than ±12 mm	Less than ±17.5 mm
2501 to 3600 mm	Less than ±17.5 mm	Less than ±25.5 mm
3601 to 6000 mm	Less than ±32 mm	---
6001 to 15000 mm	Less than –32 to +200 mm	---
15001 to 30000 mm	Less than –32 to +400 mm	---

4

4. If the measurements do not meet the standards (see the table below), adjust the following SP settings.

SP4961 001	Original Adjustment – Synchro Cut Adjustment 210 mm Standard: 210 mm ±0.5 mm
SP4961 002	Original Adjustment – Synchro Cut Adjustment 1000 mm Standard: 1000 mm ±1 mm

5. System Maintenance Reference

Service Program Mode

Please refer to the "Appendices" for information about the following:

- SP Table Key
- System SP Tables
- Printer SP Tables
- Scanner SP Tables
- Input Check
- Output Check
- Test Patterns

Firmware Update

To upgrade the firmware for this machine, you need the most recent version of the firmware downloaded onto an SD card. The SD card is then inserted into the service slot (Slot 2) of the controller so the firmware can be downloaded from the card to the machine.

Important

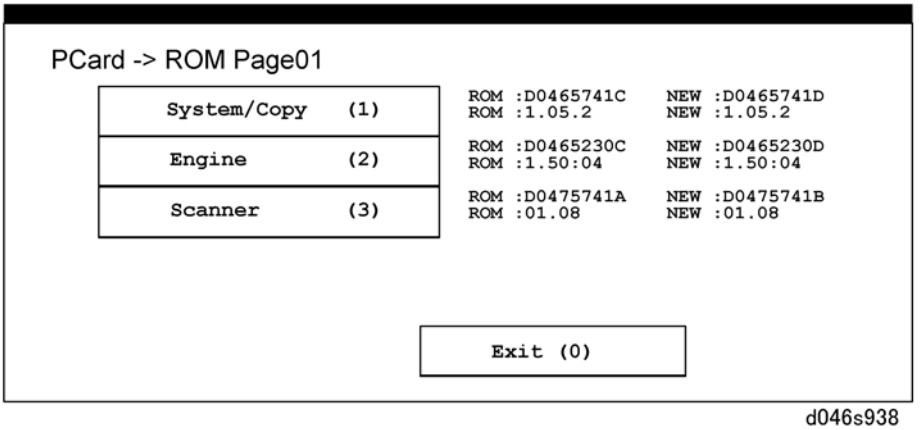
- **Never insert or remove the SD card with the main power switch turned on.**
- **Never turn the machine off while the firmware is being updated.**

1. Prepare the SD card.
   - Format the SD card.
   - Create a "romdata" folder on the SD card.
   - Download the firmware into the " romdata " folder.
2. Turn the main power switch off.
3. Remove the SD slot cover (x1).
4. Insert the SD card with the firmware into Slot 2 (the bottom slot).

   Important

   - **Insert the SD card carefully into the slot. Make sure that you do not wedge the SD card in the gap between the slot and the frame.**
5. Turn the copier on. A message appears on the screen:

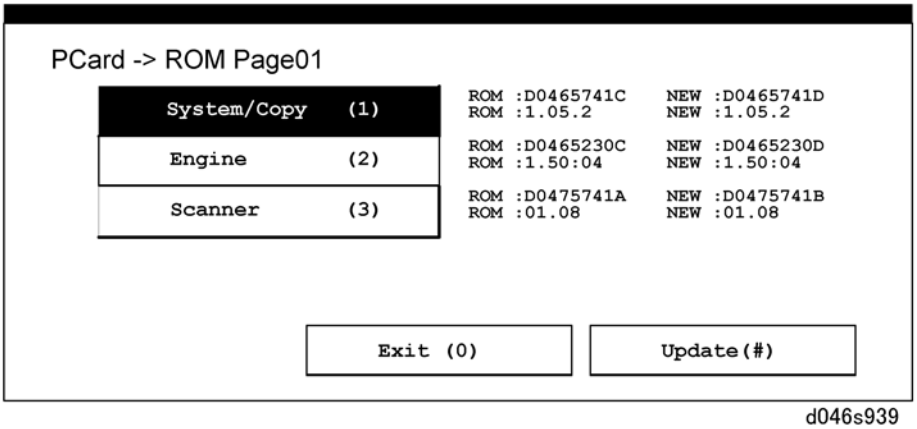
   Preparing to start firmware update...
6. Wait for the initial screen to appear.



d046s938

7. Read the left and right columns to the right of the touch-keys.
   - The "ROM" column lists the numbers of the versions currently installed.
   - The "NEW" column lists the numbers of the versions on the SD card in Slot 2.

8. Touch the key for the item that you want to update: (1) System/Copy, (2) Engine, (3) Scanner.



   - The selected item appears in reverse.
   - The "Update(#) touch-key appears to the right of the "Exit" key.
9. Touch [Update (#)] to start the update procedure.
   - You will see a series of progress bars (lines of asterisks) appear while the update is in progress.
   - When you see "Update done" the update is finished.
10. Update the next item if necessary.
11. When you are finished, turn the copier off and remove the SD card from Slot 2.
12. Turn the copier on, wait for the machine to warm up, then confirm that it is operating normally.

NVRAM Upload, Download

Uploading NVRAM Data to an SD Card

An SD card is used to upload and download NVRAM data.

Important

- **Data upload from NVRAM to SD card will fail if the machine serial number of the machine is not registered with SP5811. The machine serial number should be set at the factory before shipping.**
- **NVRAM data can be uploaded from several machines and stored on the same SD card. A unique filename is created automatically for each machine.**

1. Enter the SP mode and do SP5990-2 to print an SMC report.
   - Always print an SMC report before uploading NVRAM data, just in case the download of the NVRAM data fails.
   - If the download fails you can use the report to re-enter the SP and UP settings manually.
2. Turn the machine off.
3. Insert the SD card in Slot 2 (the bottom slot).
4. Turn the machine on.
5. Enter the SP mode and do SP5824.
6. Touch [OK] on the operation panel to start the upload. Data uploaded from NVRAM is stored in the NVRAM folder on the card:

   NVRAM\<Machine No.>.nv

   Important

   - **The upload automatically overwrites any file of the same name without warning.**

Downloading NVRAM Data from an SD Card

Important

- **Downloading NVRAM data from an SD card may fail if the SD card is defective or if there is poor connection between the controller and the BCU.**
- **If downloading NVRAM data from an SD card fails, just repeat the procedure.**
- **If the second attempt to download from the SD card fails, then you must enter the SP and UP settings manually from the SMC report your printed before uploading the NVRAM data to the SD card.**

1. Turn the machine off.
2. Insert the SD card to hold the NVRAM data in Slot 2.

3. Turn the machine on.
4. Enter the SP mode and do SP5825.

   The download executes, provided the SD card contains the NVRAM data for the machine. (The machine serial number in the file name of the NVRAM data must match the registered number of the machine.)

   -or-

   The download will not proceed if the correct NVRAM data is not on the SD card.

Using the Debug Log

Overview

This machine provides a Save Debug Log feature that allows the Customer Engineer to save and retrieve error information for analysis.

Every time an error occurs, debug information is recorded in volatile memory but this information is lost when the machine is switched off and on.

The Save Debug Log feature provides two main features:

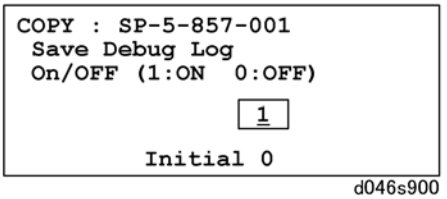
- Switching on the debug feature so error information is saved directly to the HDD for later retrieval.
- Copying the error information from the HDD to an SD card.

When a user is experiencing problems with the machine, follow the procedure below to set up the machine so the error information is saved automatically to the HDD.

Switching On and Setting Up Save Debug Log

The debug information cannot be saved the until the "Save Debug Log" function has been switched on and a target has been selected.

1. Enter the SP mode and switch the Save Debug Log feature on.
   - Press [#] then use the 10-key pad to enter 1 0 7.
   - Press and hold down [C/⊘] for more than 3 seconds.
   - Touch "Copy SP".
   - On the LCD panel, open SP5857.
2. Under "5857 Save Debug Log", touch "1 On/Off".



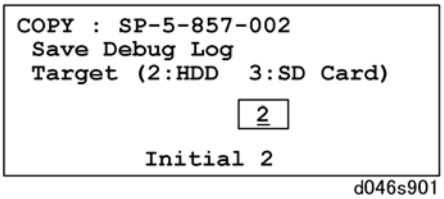
d046s900

3. On the control panel keypad, press "1" then press #. This switches the Save Debug Log feature on.

Note

- The default setting is "0" (OFF).
- This feature must be switched on in order for the debug information to be saved.

4. Next, select the target destination where the debug information will be saved. Under "5857 Save Debug Log", touch "2 Target", enter "2" with the operation panel key to select the hard disk as the target destination, then press #.



d046s901

Select "3 SD Card" to save the debug information directly to the SD card if it is inserted in the service slot.

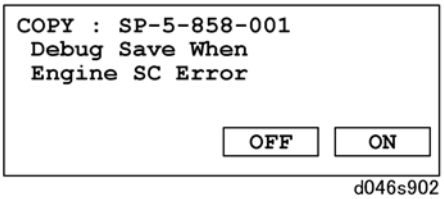
5. Now touch "5858" and specify the events that you want to record in the debug log. SP5858 (Debug Save When) provides the following items for selection.

1	Engine SC Error	Saves data when an engine-related SC code is generated.
2	Controller SC Error	Saves debug data when a controller-related SC Code is generated.
3	Any SC Error	Saves data only for the SC code that you specify by entering code number.
4	Jam	Saves data for jams.

More than one event can be selected.

Example 1: To Select Items 1, 2, 4

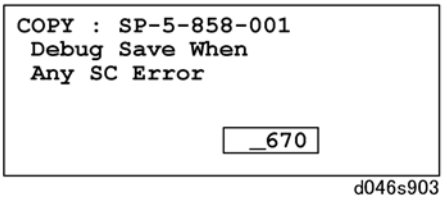
Touch the appropriate items(s). Press "ON" for each selection. This example shows "Engine SC Error" selected.



d046s902

Example 2: To Specify an SC Code

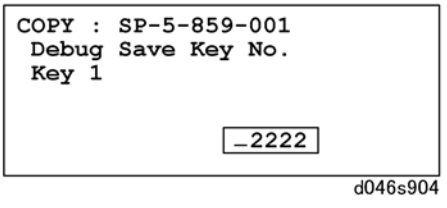
Touch "3 Any SC Error", enter the 3-digit SC code number with the control panel number keys, then press #. This example shows an entry for SC670.



d046s903

For details about SC code numbers, please refer to the SC tables in Section "4. Troubleshooting".

6. Next, select the one or more memory modules for reading and recording debug information. Touch "5859".
   - Under "5859" press the appropriate key item for the module that you want to record.
   - Enter the appropriate 4-digit number, then press #.
   - Refer to the two tables below for the 4-digit numbers to enter for each key.
   - The example below shows "Key 1" with "2222" entered.



d046s904

The following keys can be set with the corresponding numbers. (The initials in parentheses indicate the names of the modules.)

4-Digit Entries for Keys 1 to 10

Key No.	Copy	Printer	Scanner	Web
1	2222 (SCS)			
2	2223 (SRM)			
3	256 (IMH)			
4	1000 (ECS)			
5	1025 (MCS)			
6	4848 (COPY)	4400 (GPS)	5375 (Scan)	5682 (NFA)
7	2224 (BCU)	4500 (PDL)	5682 (NFA)	6600 (WebDB)
8		4600 (GPS-PM)	3000 (NCS)	3300 (PTS)
9		2000 (NCS)	2000 (NCS)	6666 (WebSys)

10		2224 (BCU)		2000 (NCS)

The default settings for Keys 1 to 10 are all zero ("0").

Key to Acronyms

Acronym	Meaning	Acronym	Meaning
ECS	Engine Control Service	NFA	Net File Application
GPS	GW Print Service	PDL	Printer Design Language
GSP-PM	GW Print Service – Print Module	PTS	Print Server
IMH	Image Memory Handler	SCS	System Control Service
MCS	Memory Control Service	SRM	System Resource Management
NCS	Network Control Service	WebDB	Web Document Box (Document Server)

The machine is now set to record the debugging information automatically on the HDD (the target selected with SP5857-002) for the events that you selected SP5858 and the memory modules selected with SP5859.

Please keep the following important points in mind when you are doing this setting:

- Note that the number entries for Keys 1 to 5 are the same for the Copy, Printer, Scanner, and Web memory modules.
- The initial settings are all zero.
- These settings remain in effect until you change them. Be sure to check all the settings, especially the settings for Keys 6 to 10. To switch off a key setting, enter a zero for that key.
- You can select any number of keys from 1 to 10 (or all) by entering the corresponding 4-digit numbers from the table.
- You cannot mix settings for the groups (COPY, PRINTER, etc.) for 006 to 010. For example, if you want to create a PRINTER debug log you must select the settings from the 9 available selections for the "PRINTER" column only.
- One area of the disk is reserved to store the debug log. The size of this area is limited to 4 MB.

Retrieving the Debug Log from the HDD

Retrieve the debug log by copying it from the hard disk to an SD card.

1. Insert the SD card into the service slot of the copier.

2. Enter the SP mode and execute SP5857-009 (Copy HDD to SD Card (Latest 4 MB)) to write the debugging data to the SD card.
3. After you return to the service center, use a card reader to copy the file and send it for analysis to Ricoh by email, or just send the SD card by mail.

Recording Errors Manually

Since only SC errors and jams are recorded to the debug log automatically, for any other errors that occur while the customer engineer is not on site, please instruct customers to perform the following immediately after occurrence to save the debug data. Such problems would include a controller or panel freeze.

In order to use this feature, the customer engineer must have previously switched on the Save Debug Feature (SP5857-001) and selected the hard disk as the save destination (SP5857-002).

1. When the error occurs, on the operation panel, press [Clear Modes] (Clear Modes).
2. On the control panel, enter "01" then hold down [C] for at least 3 sec. until the machine beeps then release. This saves the debug log to the hard disk for later retrieval with an SD card by the service representatives.
3. Switch the machine off and on to resume operation.

   The debug information for the error is saved on the hard disk so the service representatives can retrieve it on their next visit by copying it from the HDD to an SD card.

New Debug Log Codes

SP5857-015: Copy SD Card-to-SD Card: Any Desired Key

This SP copies the log on an SD card (the file that contains the information written directly from shared memory) to a log specified by key number. The copy operation is executed in the log directory of the SD card inserted in the same slot. (This function does not copy from one slot to another.) Each SD card can hold up to 4 MB of file data. Unique file names are created for the data during the copy operation to prevent overwriting files of the same name. This means that log data from more than one machine can be copied onto the same SC card. This command does not execute if there is no log on the HDD for the name of the specified key.

SP5857-016: Create a File on HDD to Store a Log

This SP creates a 32 MB file to store a log on the HDD. However, this is not a completely empty file. The created file will hold the number "2225" as the SCS key number and other non-volatile information. Even if this SP is not executed, a file is created on the HDD when the first log is stored on the HDD, but this operation takes time. This creates the possibility that the machine may be switched off and on before the log can be created completely. If you execute this SP to create the log file beforehand, this will greatly reduce the amount of time required to acquire the log information and save onto the HDD. With the file already created on the HDD for the log file, the data only needs to be recorded; a new log file does not

require creation. To create a new log file, execute SP5857-011 to delete the debug log data from the HDD and then execute this SP (SP5857-016).

SP5857-017 Create a File on SD Card to Store a Log

This SP creates a 4 MB file to store a log on an SD card. However, this is not a completely empty file. The created file will hold the number "2225" as the SCS key number and other non-volatile information. Even if this SP is not executed, a file is created on the SD card when the first log is stored on the SD card, but this operation takes time. This creates the possibility that the machine may be switched off and on before the log can be created completely. If you execute this SP to create the log file beforehand, this will greatly reduce the amount of time required to acquire the log information and save onto the SD card. With the file already created on the SD card for the log file, the data only needs to be recorded; a new log file does not require creation. To create a new log file, execute SP5857-012 to delete the debug log data from the SD card and then execute this SP (SP5857-017).

Printing an SMC Report

The SP mode settings are adjusted before shipment, and are listed in the copy of the SMC print provided on the original table. Keep this SMC print in the used-toner-bottle cabinet as a record of the default settings.

Follow this procedure if you want to print another copy of the SMC list.

1. Enter the SP Mode.
   - Press [ ] then use the 10-key pad to enter 1 0 7.
   - Press and hold down C for more than 3 seconds.
2. Press [Copy Mode] to return to the initial screen and select the feed source and other settings for the print job, and then press SP Mode to return to the SP Mode.
3. Enter 5990-2 and then press #.
4. Press [Start].

Initialize All SP Settings

Follow this procedure to initialize the SP settings and restore them to their factory default settings.

1. Enter the SP Mode.
2. Print an SMC list (see the procedure above).
3. To initialize the SP settings, do 5801-1.

   Note

   - The total counter is not cleared when RAM is cleared.
4. After initializing the SP settings, use SP5811 to re-enter the serial number of the machine.

Calibrating the Touch Panel

Calibrating the Touch Panel

Follow this procedure to calibrate the touch panel.

1. On the operation panel, enter "1993".
2. Press and release ⓒ/⊘ 5 times to open the menu.
3. Touch "[1] Touch Screen Adjust".
4. With a blunt instrument, press the circle in the upper left corner.

   Important

   - **Never press the touch panel with a sharp object.**
5. Touch the center of the circle in the lower right corner.
6. Touch any location on the touch panel. A "+" should appear where you touched the screen.
7. Touch the screen again several times to confirm that a "+" sign appears every time where you touch the screen.
8. To leave the touch panel calibration mode, press [OK] and press [EXIT].
9. Wait for the panel to go off, then turn the machine off and on.

Software Reset

To reset the software, hold down ⊙ and # together for 10 seconds. This software reset is the same as turning the machine off on and with the main power switch.

You cannot use this procedure to reset the software when the operation panel has stalled or if a fusing-related SC code has appeared.

Card Save Function

Overview

Card Save:

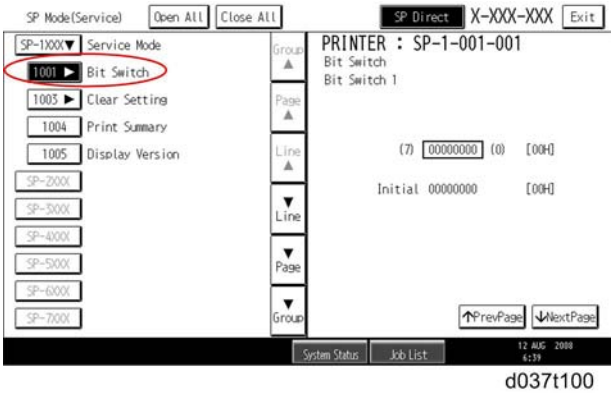
- The Card Save function is used to save print jobs received by the printer on an SD card with no print output. Card Save mode is toggled using printer Bit Switch #1 bit number 4. Card Save will remain enabled until the SD card becomes full, or until all file names have been used.
- Captures are stored on the SD card in the folder /prt/cardsave. File names are assigned sequentially from PRT00000.prn to PRT99999.prn. An additional file PRT.CTL will be created. This file contains a list of all files created on the card by the card save function.
- Previously stored files on the SD card can be overwritten or left intact. Card Save SD has “Add” and “New” menu items.
  - **Card Save (Add):** Appends files to the SD Card. Does not overwrite existing files. If the card becomes full or if all file names are used, an error will be displayed on the operation panel. Subsequent jobs will not be stored.
  - **Card Save (New):** Overwrites files in the card's /prt/cardsave directory.

Limitation:

- Card Save cannot be used with PJL Status Readback commands. PJL Status Readbacks will not work. In addition they will cause the Card Save to fail.

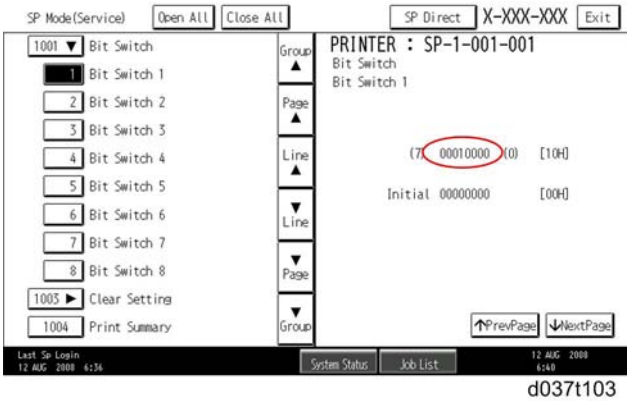
Procedure

1. Turn the main power switch OFF.
2. Insert the SD card into slot 2. Then turn the power ON.
3. Enter SP mode.
4. Select the “Printer Sp”.
5. Select SP-1001 "Bit Switch”.



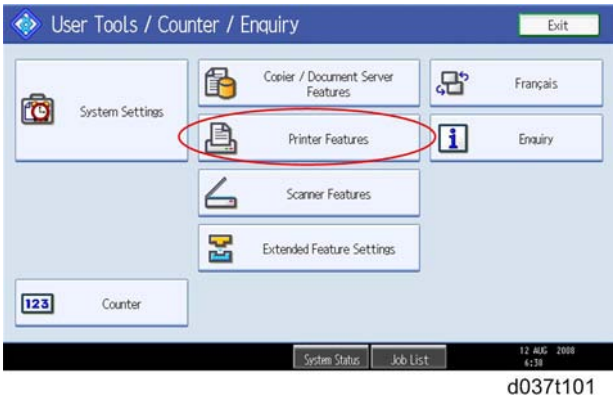
d037t100

6. Select “Bit Switch 1 Settings” and use the numeric keypad to turn bit 4 ON and then press the “#” button to register the change. The result should look like: **00010000**. By doing this, Card Save option will appear in the “List/Test Print” menu.



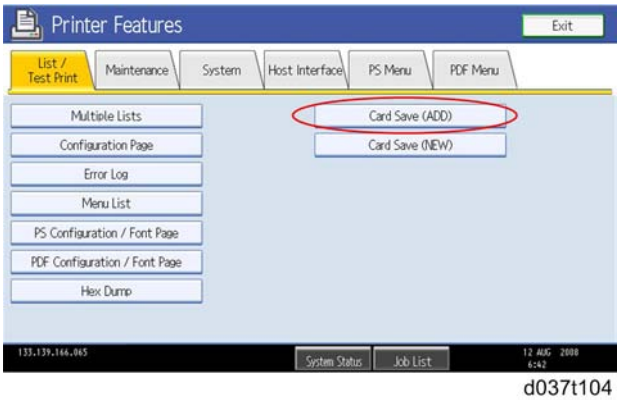
d037t103

7. Press “Exit” to exit SP Mode.
8. Press the “User Tools/Counter” button.
9. Select “Printer Features”.



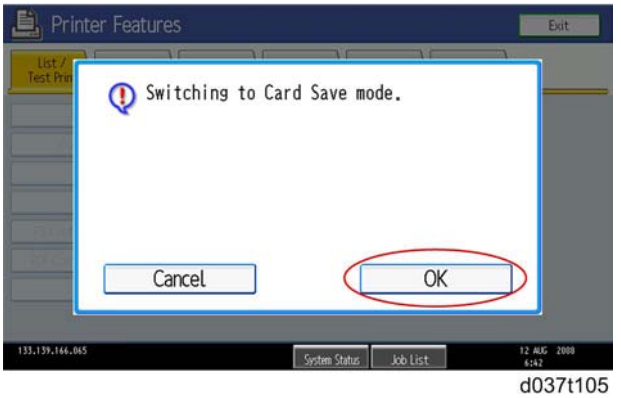
d037t101

10. Card Save (Add) and Card Save (New) should be displayed on the screen. Select Card Save (Add) or Card Save (New).



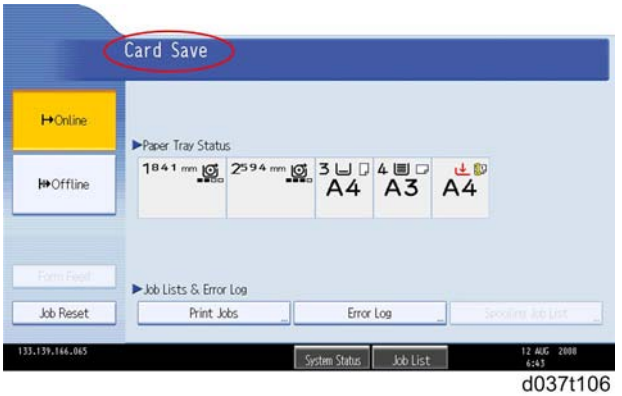
d037t104

11. Press "OK" and then exit the "User Tools/Counter" menu.



d037t105

12. Press the "Printer" button.
13. Card Save should be displayed in the top left of the display panel.

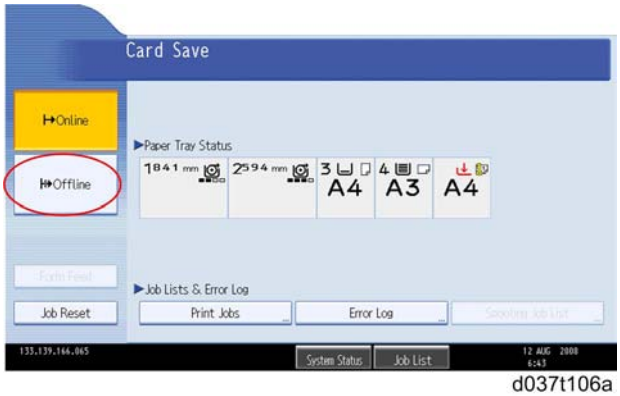


d037t106

14. Send a job to the printer. The Communicating light should start blinking as shown below.

d037t107

15. As soon as the printer receives the data, it will be stored on the SD card automatically with no print output. Nothing is displayed on the screen, indicating that a Card Save operation was successful.
16. Press "Offline" and then the "Clear/Stop" button to exit Card Save mode.



d037t106a

17. Change the Bit Switch Settings back to the default **00000000**. Press the "#" button in the numeric keypad to register the changes.
18. Remove the SD card after the main power switch is turned off.

Error Messages

Card Save error messages:

- **Init error:** A card save process (i.e. card detection, change to kernel mode) failed to initialize.
- **Card not found:** Card cannot be detected in the slot.
- **No memory:** Insufficient working memory to process the job.
- **Write error:** Failed to write to the card.
- **Other error:** An unknown error occurred.

If an error occurs, pressing "OK" will cause the device to discard the job and return to the ready state.

Error Messages

Card Save error messages:

- **Init error:** A card save process (e.g. card detection, change to kernel mode) failed to initialize.
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- **No memory:** Insufficient working memory to process the job.
- **Write error:** Failed to write to the card.
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6. Troubleshooting

Troubleshooting

See the "Appendices" for the following information:

- SC Tables
- Troubleshooting Guide
- Jam Detection

Model Be-C1
Machine Code: D046/D049

Appendixes

August 2008
Subject to change

TABLE OF CONTENTS

7. Appendix: Jam Detection

8. Appendix: SP Mode Tables

1. Appendix: Specifications

Specifications

Main Machine (D046/D049)

Configuration	Console		
Copy/print method	Dry electro-static printing		
Originals	Sheet		
Max. Original Width	Max. : 950 mm (37.4")		
Original Image Size (W x L)		**D046**	**D049**
	Max.	914.4 x 15,000 mm 36" x 590"	914.4 x 30,000 mm 36" x 1180"
	Min.	210 x 210 mm 8.5" x 8.5"	
	Max. through-put width: 950 mm (37.4")		
Original Weight			
Rear: Straight	20.0 to 157 g/m² (5.32 to 41.7 lb), 30 µm to 1.1 mm		
Upper	20.0 to 104.7 g/m² (5.32 to 27.9 lb)		
Copy Paper Size	**Roll Feed**	**Max.**	**Min.**
	Max.	914.4 x 15,000 mm 36" x 590"	914.4 x 30,000 mm 36" x 1180"
	Min.	182 mm x 210 mm, 8.5" x 8.5"	
	Bypass	**Max.**	**Min.**
		914 x 2,000 mm 36" x 78"	210 mm x 257 mm 8.5" x 11"
Copy Paper Weight	52.3 to 110 g/m² (13.9 to 29.3 lb)		
Printing Speed	D046: 10 ppm @ A1 / D LEF		

RTB 19 Correction

(ppm: print / minute)	D049: 14 ppm @ A1 / D LEF	
Photoconductor	Organic photoconductor drum	
Non-reproduction area (copier)	Leading Edge:	Less than 8 mm (0.32")
	Trailing Edge:	Less than 8 mm (0.32")
	Left, Right Edges:	2±2 mm (0.08±0.08") Less than 5 mm (0.19") on either side

Reduction, Enlargement			
Preset Red./Enlarge	**Inch**		**Metric**
	Engineering	**Architecture**	
Reduce	25%, 32.4%, 50%, 64,7%	25%, 33.3%, 50% , 66.7%	25%, 35.4%, 50%, 70.7%
100%	100%	100%	100%
Enlargement	129.4%, 200%, 258.8%, 400%	133.3%, 200%, 266.7%, 400%	141.4%, 200%, 282.8%, 400%
Zoom	25 to 400% (0.1% / step)		
Resolution	Scanning: 600 dpi Printing: 600 dpi		
Gradation	Scanning: 256 levels Printing: 2 levels		
Warm-up Time	Less than 120 seconds (Room temperature 23 °C)		
First Print Time	From 1st Feed with A1/ D LEF: D046: 13 sec. D049: 10 sec.		
Print Number Input	Ten-key Pad, 1 to 99 (Standard size only)		
Print Paper Capacity	Roll Feed: 2 rolls • Width: 210 to 914 mm • Max length: 150,000 mm • Max diameter: 175 mm		

	Bypass Feed: 1 sheet		
Output Tray Capacity	Upper: 99 sheets @ A1/D LEF (plain paper) (Larger than A1/D size cannot be stacked.) • 10 sheet @ A1/D LEF (application paper) • 1 sheet/film Rear: 10 sheets @ A0/E SEF (plain paper) (Smaller than A2/C size cannot be stacked) • 1 sheet @ A0/E SEF (application paper) • 1 sheet @ film	RTB 19 Corrections	
Memory Capacity	1024 MB (Copy, Printer), 2048 MB (Scanner)		
HDD	320 GB (shared with copy, print, scan applications)		
Toner Replenishment	Cartridge exchange (800 g/cartridge)		
Toner Yield	2,200 prints (A1 LEF, 6% full black, 1 to 99 printing, Text mode)		
Power Source			
D046	NA	RTB 19 Corrections	200V 15A 60 Hz
	EU/Asia		220V-240V/8A 50/60 Hz
D049	NA		200V 15A 60 Hz
	EU/Asia		220V-240V/15A 50/60 Hz
Dimensions (w x d x h)			1250 × 757 × 1200 mm 49.2 x 29.8 x 47.2 in.
Weight			230 kg (506 lb)

Power Consumption

EU

Operation Mode		D046 D394/D395	D046 D394/D395 B890	D049 D394/D395	D049 D394/D395 B890
1.	Warm-up	2100W	2100W	3000W	3000W

Operation Mode		D046 D394/D395	D046 D394/D395 B890	D049 D394/D395	D049 D394/D395 B890
2.	Standby	300W	375W	300W	375W
3.	Copying	1750W	2020W	2000W	2020W
4.	Maximum	2100W	2650W	3000W	3550W
5.	Low Power Mode	210W	285W	210W	285W
6.	Off/Sleep Mode	11W/30W	86W/105W	11W\30W	86W/105W

NA

Operation Mode		D046 D394/D395	D046 D394/D395 B890	D049 D394/D395	D049 D394/D395 B890
1.	Warm-up	2400W	2400W	3500W	3500W
2.	Standby	300W	370W	300W	370W
3.	Copying	1750W	2000W	2200W	2450W
4.	Maximum	2400W	2950W	3500W	4050W
5.	Low Power Mode	210W	280W	210W	280W
6.	Off/Sleep Mode	11W/30W	81W/100W	11W\30W	81W/100W

Noise Level

Operation Mode		D046 D394	D046 D394 B890	D049 D394	D049 D394 B890
1.	Standby	55.7 db	55.2 db	55.0 db	55.2 db
2.	Copying	68.8 db	75.1 db	70.1 db	75.1 db
3.	Copying (from memory)	68.8 db	75.1 db	70.1 db	75.1 db

Printer Option Type W7140 (D396)

Resolution	600 x 600 dpi	
Printing Speed	D049	14 ppm (A1/D Plain Paper SEF)
	D046	10 ppm (A1/D Plain Paper SEF)
Interface	Standard	• Ethernet Interface (100BASE-TX/10BASE-T) • USB2.0 Interface
	Option	• Giga Ethernet Interface (1000BASE-T/ 100BASE-TX/ 10BASE-T) • IEEE1284 Parallel Interface • IEEE802.11a/b/g Wireless LAN Interface
Network Protocol	IPv4, IPv6, IPX/SPX, AppleTalk	
Printer Language	RPCS, PostScript3, PDF, GL/2 & TIFF Filter*1	
Fonts	PostScript3: 136 fonts (Type 2:24, Type 14: 112)	
Memory	1 GB	
Hard Disk	Capacity: 320 GB	

USB Interface (Standard)	• Supported Operating Systems
	  • Windows 2000, Windows XP, Windows Vista, Windows Server 2003, Windows 2003R2
	  • Mac OS 10.3.3 or later
	• Transmission Specs: USB2.0 Standard
	• Connectable Devices: Devices corresponding to USB2.0 Standard	

*1: This machine can print HP-GL, HP-GL/2, and TIFF files.

Note

- When using Mac OS, use only the standard USB Interface. The optional USB interface board is not supported.
- When using USB Interface (Standard) with Mac OS 10.3.3, USB2.0 is supported.

Scanner Option Type W7140 (D397)

Scanning Method	Original feed image scanning	
Scanning Speed	B&W Originals	• 150 dpi: 340 mm (13.3")/sec. • 200 dpi: 255 mm (10.0")/sec. • 300 dpi: 340 mm (13.3")/sec. • 600 dpi: 170 mm (6.6")/sec. • 1200 dip: 85 mm (3.3")/sec.
	Grayscale Originals	• 150 dpi: 300 mm (11.8")/sec. • 200 dpi: 225 mm (8.8")/sec. • 300 dpi: 300 mm (11.8")/sec. • 600 dpi: 150 mm (5.9")/sec. • 1200 dip: 75 mm (2.9")/sec.
	Full Color Originals	• 150 dpi: 200 mm (7.8")/sec. • 200 dpi: 150 mm (5.9")/sec. • 300 dpi: 200 mm (7.8")/sec. • 600 dpi: 100 mm (3.9")/sec. • 1200 dip: 50 mm (1.9")/sec.
	Note: Scanning originals at 1200 dpi is possible only if you are using the network TWAIN scanner function.	
Image Sensor	Fixed CIS (Contact Image Sensor)	
Scan Modes	Text/Photo, Text/Line Art, Photo, Drawing, Gray Scale	
Scan Type	Sheet	
Ethernet Interface	10BASE-T/100BASE-TX or 100BASE-T (optional)	
Original Size	D046	• Length: 210 to 15,000 mm (8.3 to 590") • Width: 210 to 914 mm (8.3 to 36.0")
	D049	• Length: 210 to 30,000 mm (8.3 to 1,181") • Width: 210 to 914 mm (8.3 to 36.0")
Basic Resolution	600 dpi	

Resolution Selection	150 dpi, 200 dpi, 300 dpi, 400 dpi, 600 dpi, when using Scan-to-Email, Scan-to-Folder, Network delivery	
	150 dip to 1200 dpi when using TWAIN scanner.	
Send Formats	TIFF, JPEG, PDF	
Image Compression	B&W Binary	TIFF (MH, MR, MMR)
	Grayscale, Full Color	JPEG
Protocols	Network	IPv4, IPX
	Send-to-Email	SMTP, POP3
	Scan-to-Folder	SMB, FTP, NCP

Peripheral Specifications

Roll Feeder Type 7140 (D394)

Paper Weight	52.3 to 110 g/m² (13.9 to 29.3 lb)
Paper Capacity	2 roll papers Width: 210 to 914 mm Max length: 150,000mm Max diameter: 175mm
Power Source	From main frame
Weight	36 kg (79.2 lb)

Paper Cassette Type 7140 (D395)

Paper Size	A2/C LEF (Max.) to A4/A LEF (Min.)
Paper Weight:	64 to 110 g/m² (17 to 29.3 lb)
Paper Capacity:	Plain paper: 250 sheets (or less than 27 mm stack thickness) Translucent paper: 100 sheets (or less than 7 mm)
Power Source:	From mainframe

Weight:	Less than 38 kg (83.6 lb)

1

Folder FD6500A (B889)

Unfolded Paper Exit		Paper types	Plain paper, recycled paper
		Paper sizes	Same as main machine*1
		Stack capacity	10 sheets A1 (D-size paper)
		Paper weight	64 to 81.4 g/m^2 (17.1 to 21.7 lb)
		*1: Paper 200 to 320 mm (7.9" to 12.6") is output from paper exit.	
Folded Paper Exit		Paper types	Plain paper, recycled paper
		Paper sizes	Same as main machine*1
		Offline	297 to 6000 mm (11.7" to 236.3")
		Online	320 to 6000 mm (12.6" to 236.3")
		Note: Regardless of paper length, the number of folded surfaces cannot exceed 30 (i.e. 29 folds).	
		Stack capacity	1 sheet
		Paper weight	64 to 81.4 g/m^2 (17.1 to 21.7 lb)
Fold Types		Five patterns • Fan folding: 4 patterns • Fan fold (with margin): 1 pattern	
Fold Lengths	Inch	Fan folding: 8.5", 9", 11", 12" Fan folding (with margin): 8.5"	
	Metric	Fan folding: 140 mm, 170 mm, 210 mm, 297 mm Fan folding (with margin): 210 mm	
Folding Speed		A0 SEF (E SEF): 2 sheets/min. A1 SEF (D SEF): 3 sheets/min. A2 SEF, A1 SEF (C SEF, DLEF): 4 sheets/min.	
Power Source		NA	120V, 60 Hz, 15.A

	EU	220-240V, 50/60 Hz, 8A
Max. Power Consumption	200 W (20 W with only heaters operating)	
Dimensions (w x d x h)	126 x 545 x 995 mm (49.9 x 21.5 x 39.2 in.)	
Weight	145 kg (319.7 lb)	

Folder FD6500B (B890)

Unfolded Paper Exit (Fan Folder)	Paper types	Plain paper, recycled paper
	Paper sizes	Same as main machine
	Stack capacity	10 sheets A1 (D-size paper)
	Paper weight	64 to 81.4 g/m^2 (17.1 to 21.7 lb)
	*1: Paper 200 to 320 mm (7.9" to 12.6") is output from paper exit.	
Folded Paper Exit (Fan Folder)	Paper types	Plain paper, recycled paper
	Paper sizes	Same as main machine
	Width	Same as main machine
	Length	320 to 6000 mm (12.6 to 236.3")
	Note: Regardless of paper length, the number of folded surfaces cannot exceed 30 (i.e. 29 folds).	
	Stack capacity	1 sheet
	Paper weight	64 to 81.4 g/m^2 (17.1 to 21.7 lb)
Cross-Folder Shift Tray	Paper types	Plain paper, recycled paper
	Paper sizes	• Standard fold: A0(E) LEF, A1(D) LEF/SEF, A2(C) LEF/SEF, A3(B) LEF/SEF • No fold: A4(A) LEF/SEF
	Stack capacity	50 sheets A1(A) standard fold
	Paper weight	64 to 81.4 g/m^2 (17.1 to 21.7 lb)

<table>
<tr><td>Fold Types (11 Patterns)</td><td colspan="2">NA
Fan fold: 5 patterns:
• Fan fold: 2 patterns
• Fan margin fold: 1 pattern
• Special fan fold: 2 patterns
Standard folds: 4 patterns:
• Margin fold
• Standard fold
• Special fold 1
• Special fold 2
EU
Fan fold: 6 patterns:
• Fan fold: 3 patterns
• Fan margin fold: 1 pattern
• Special fan fold: 2 patterns
Standard folds: 5 patterns:
• Standard fold
• Narrow standard fold
• Margin fold
• Special fold 1
• Special fold 2</td></tr>
<tr><td>Fold Widths</td><td colspan="2"></td></tr>
<tr><td rowspan="4">NA</td><td>Fan fold</td><td>8.5 to 9 in.</td></tr>
<tr><td>Fan fold (margin)</td><td>8.5"</td></tr>
<tr><td colspan="2">Standard Fold</td></tr>
<tr><td>Engineering
Architecture</td><td>Margin, Standard: 8.5 to 11"
Margin, Standard: 9 to 12"</td></tr>
<tr><td>EU</td><td>Fan fold</td><td>• 140 mm (5.6"
• 170 mm (6.7")
• 210 mm (8.3")
• Fan margin fold: 210 mm (8.3")</td></tr>
</table>

	Standard fold	• Standard, margin fold: A4 • Narrow standard fold: 170 x 297 mm (6.7 x 11.7")
Folding Speed	Fan Fold (210 mm/8.5")	• A0(E) LEF: 2 sheets/min. • A1(D) LEF/SEF: 3 sheets/min. • A2(C): LEF: 3 sheets/min.
	Standard Fold	• A0(E) LEF: 3 sheets/min. • A1(D) LEF: 5 sheets/min. • A1(D) SEF: 4 sheets/min. • A2(C) LEF: 5 sheets/min.
Power Source	NA	120V, 60 Hz, 15A
	EU	220 - 240V, 50/60 Hz, 8A
Max. Power Consumption		550 W
Dimensions (w x d x h)		2250 x 1550 x 1140 mm (88.6 x 61.0 x 44.8 in.)
Weight		370 kg (815.7 lb)

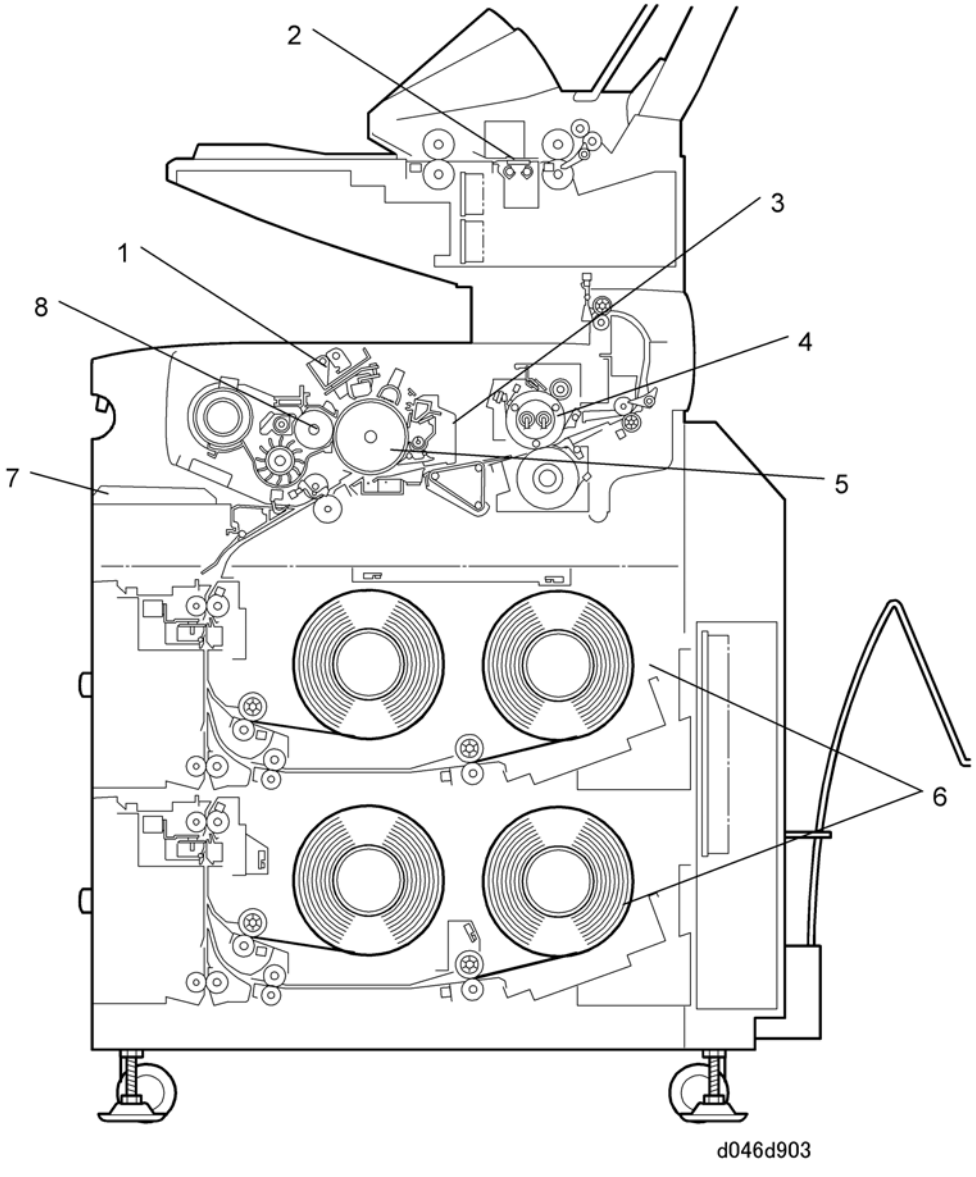
Manual Feeder (D333)

Copy Paper Size: (W x L)	Maximum: 914 x 15,000 mm (36" x 590") Minimum: 210 x 280 mm (8.5" x 11")
Copy Paper Weight	64 g/m^2 (55 kg, 17 lb) to 81.4 g/m^2 (70 kg, 22 lb)
Paper Type	Plain paper only
Power Source:	From the folder unit
Dimensions (w x d x h)	1263 x 596 x 236 mm (49.7 x 23.5 x 9.3 in.)
Weight:	33 kg (76.6 lb)

2. Appendix: Overview

Overview

Machine Layout

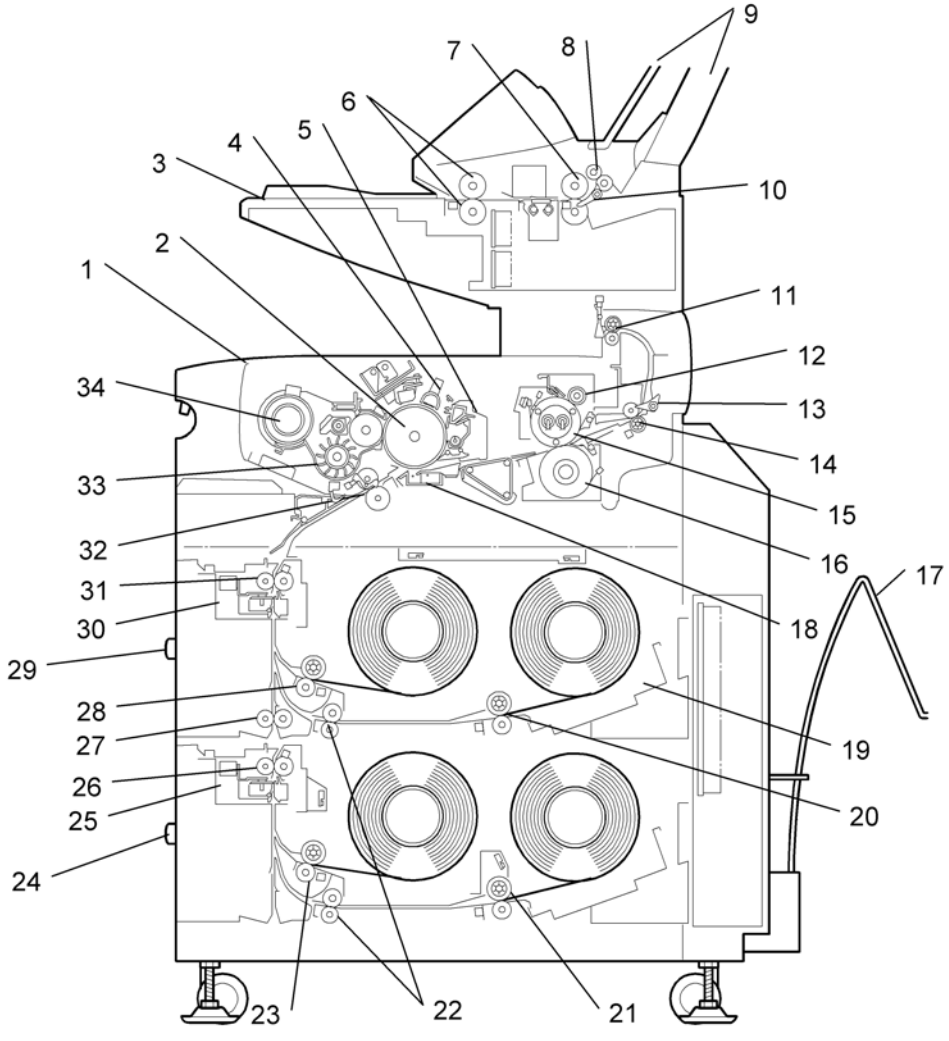


1. Image Writing Unit

- Uses an LPH (LED Print Head) capable of 32-level gradation to write 2-bit image data.

2. Scanner Unit
   - Uses a CIS for 256-level scanning. To minimize black lines caused by dust or other particles, the original is scanned from above.
3. Cleaning Unit
   - The drum is cleaned with a counter blade.
4. Fusing Unit
   - Fusing is done using a hot roller containing two halogen lamps. For the given paper type/size selected by the user, the machine chooses the most suitable fusing temperature and nip band width.
5. OPC Drum, Around the Drum
   - The units located around the OPC drum do the charging, image writing, development, transfer, separation, cleaning, and quenching.
6. Roll Trays (2nd Tray optional)
   - Paper is supplied from continuous rolls.
7. By-pass Tray
   - The by-pass tray can be used to feed individual sheets of copy paper.
8. Development Unit
   - Toner is attracted from a single magnetic roller to the low charge areas on the OPC drum. The ID sensor inside the unit is used to control the toner concentration.

Mechanical Component Layout

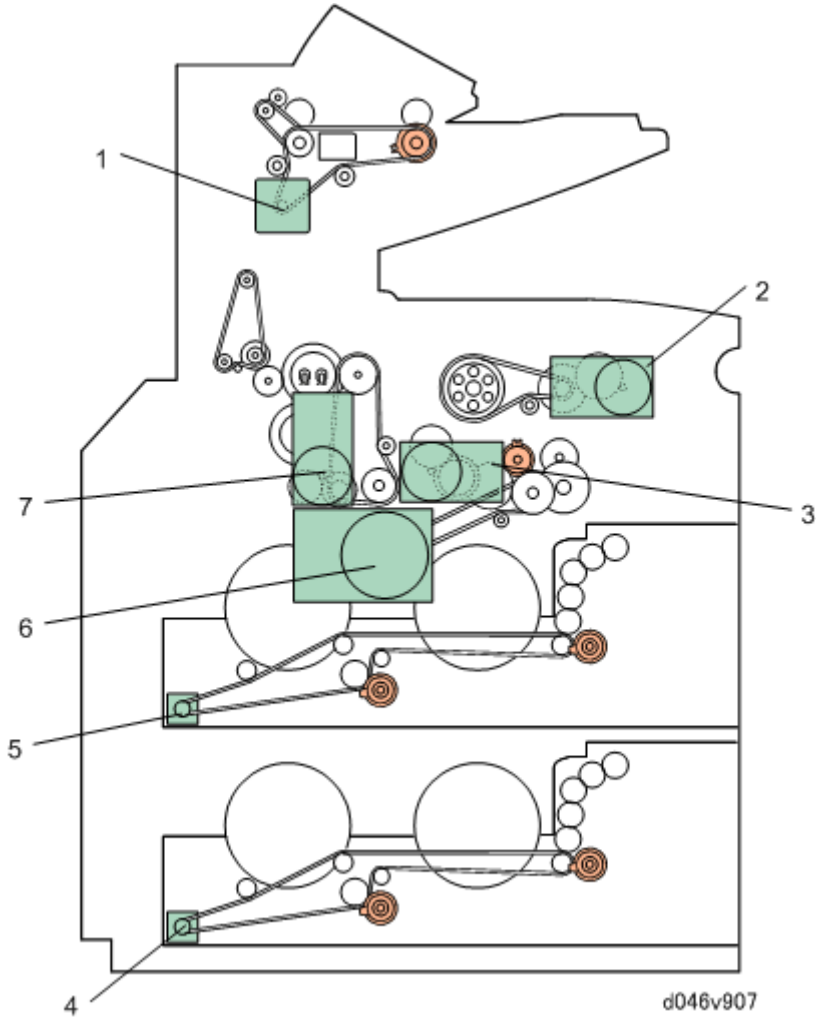


d046d904

1	Front Copy Tray	18	Transfer & Separation Corona Unit
2	OPC Drum	19	Roll Holder
3	Original Table	20	2nd Feed Rollers
4	Charge Corona Unit	21	4th Feed Rollers
5	Cleaning Unit	22	Relay Rollers

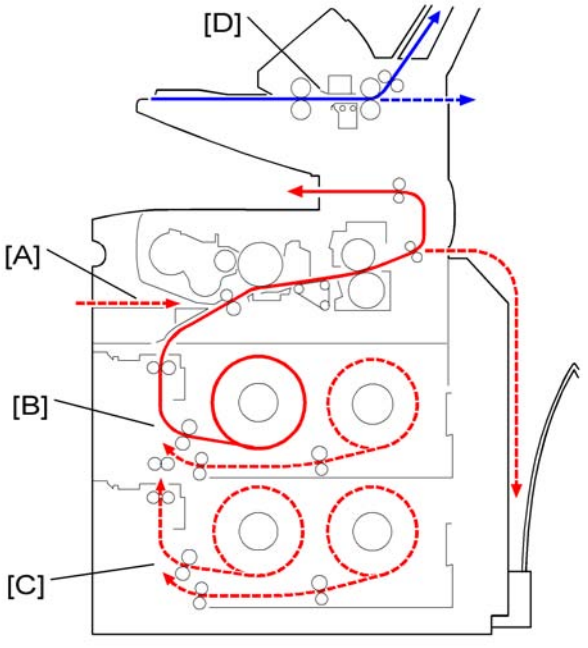
6	Original Feed Rollers	23	3rd Feed Rollers
7	Original Exit Rollers	24	2nd Roll Tray (option)
8	Upper Original Exit Rollers	25	Cutter Unit 2
9	Upper Original Exit Guides	26	3rd/4th Feed Exit Roller
10	Original Exit Junction Gate	27	Vertical Feed Rollers
11	Upper Exit Rollers	28	1st Feed Rollers
12	Fusing Cleaning Roller	29	1st Roll Tray
13	Paper Exit Junction Gate	30	Cutter Unit 1
14	Exit Rollers	31	1st/2nd Feed Exit Roller
15	Hot Roller	32	Registration Rollers
16	Pressure Roller	33	Development Unit
17	Rear Copy Tray	34	Toner Cartridge

Drive Layout (With Optional Roll Feeder)



1	Original Feed Motor	5	Roll Feed Motor 1
2	Drum Motor	6	Development Motor
3	Registration Motor	7	Fusing/Exit Motor
4	Roll Feed Motor 2		

Original/Copy Paper Paths



A	Paper path from the by-pass feed table
B	Paper path from the 1st/2nd roll tray
C	Paper path from the 3rd/4th paper tray (option)
D	Original paths

3. Appendix: Machine Codes and Peripherals Configuration

Machine Codes, Peripheral Configurations

Machine Codes

Machine	Machine code
Main Machine	D046/D049
Roll Feeder Type 7140	D394
Paper Cassette Type 7140	D395
Printer Option Type W7140	D396
Scanner Option Type W7140	D397
Printer Controller Type RW-7140	D399
Folder FD6500A	B889
Manual Feeder	D333
Bridge Unit BU6500	D407
Folder FD6500B	B890
Original Hanger	D311
Scanner Separation Unit Type 7140	D436
Memory Unit Type 7140 1GB	D444-17
Original Tray Type G	B341
Multi Copy Stacker Type 7140	D437
Rear Stacker Type 7140	D438
W Stacker Type 7140	D469
Gigabit Ethernet Type B	D377-21

Machine	Machine code
DATA Overwrite Security Unit Type H	D377-06
Browser Unit Type D	D377-17, -18, -08
Java VM Card Type F	D377-10, -11, -12
HDD Encryption Unit Type A	D377-16
Interface PCB Type W7140	D445-17
IEEE 1284 Interface Board Type A	B679-17
IEEE802.11a/g Interface Unit Type J/K	D377-01, -02, -19

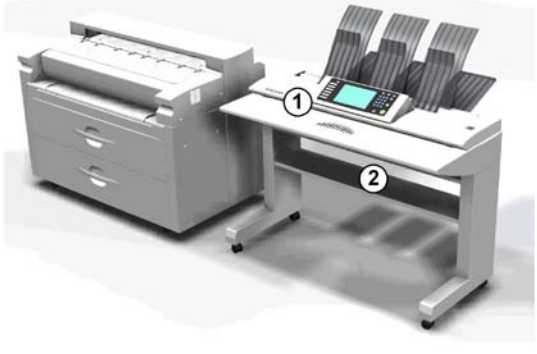
Machine Configuration

d046v001

①	Roll Feeder Type 7140 (D394)

d046v002

①	Paper Cassette Type 7140 (D395)



d046v003

①	Scanner Separation Unit Type 7140 (D436)
	The scanner unit is removed from the main machine and placed on the table (assembly required). A cover is installed on top of the main machine to replace the removed scanner unit.
	Table

d046v004

①	Bridge Unit BU6500 (D407)
②	Manual Feeder (D333)
③	Folder FD6500A (B889)

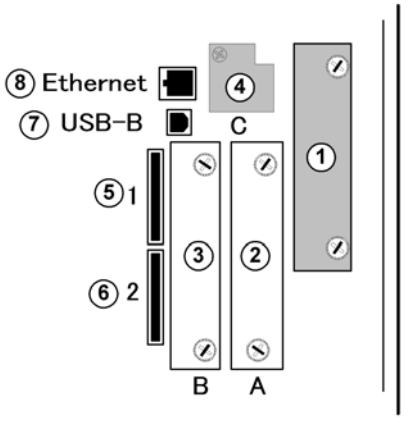
d046v005

①	Folder FD6500B (B890-17/-27) (Fan fold unit)
②	Folder FD6500B (B890-57)

	(Transport and cross fold unit)

MFP Options

The machine controller box has four board slots and two SD card slots.



d046i926

No.	Name	Description
①	---	File Format Converter (MLB). Pre-installed at the factory.
②	Slot A	• IEEE1284 (B679)
③	Slot B	• IEEE 802.11a/g (D377-01, -02, -19)
④	Slot C	• Gigabit Ethernet (D377-21).
⑤	Slot 1	• Printer Option (D396) (Printer SD Card) • Scanner Option (D397) • Data Overwrite Security (D377-06) • Browser Unit (D377-17, -18, -08) • HDD Encryption Unit (D377-16)
⑥	Slot 2	• Service Slot. Used as the Service Slot for firmware updates, moving applications to another SD card with SP5873 (Apli Move). • VM Card (D377-10, -11, -12). The VM card must remain in the service slot. • Printer Option (D396) (TIFF/GL Filter SD Card)

No.	Name	Description
⑦	USB B	Built-in for connection of USB devices. **Note**: USB is built-in, but it must be enabled with SP5985.
⑧	Ethernet	Standard LAN connection point for network

4. Appendix: Preventive Maintenance Tables

PM Tables

Letter	PM
A	Adjust
C	Clean
I	Inspect
L	Lubricate
R	Replace

Units of measure in the PM Interval column: 1 m = 3.28 ft.

Main Machine (D046/D049)

Original Feed

Item	Interval		PM	Comment
	m	ft.		
Original Feed Roller	10K	32.8K	C	Alcohol or water, dry cloth
Original Exit Roller				
Original Set Sensor	60K	196.8 K	C	Blower brush
Original Registration Sensor				
Original Table	10K	32.8K	C	Water, dry cloth

Optics

Item	Interval		PM	Comment
	m	ft.		
Platen Plate	10K	32.8 K	C	Alcohol or water, dry cloth
Exposure Glass	10K	32.8 K	C	Water, glass cleaner

Development

Item	Qty	Interval		PM	Comment
		m	ft.		
Developer	2	30K	114.8K	R	Replace if necessary.
Development Filter	1	20K	65.6K	R	Dry cloth, vacuum
Development Sleeve Gear*1	---	10K	32.8K	L	Silicone Grease G501
	1	200K	656K	R	Replace if necessary
Gear - 28Z	2	200K	656K	R	Replace
Paddle Gear	1	200K	656K	R	Replace
Cartridge Holder		10K	32.8K	C	Blower brush, dry cloth.
Registration Upper Guide Plate		10K	32.8K	C	Damp cloth, then dry cloth.
Side Seals		10K	32.8K	I/C	Dry cloth
Development Lower Gears*1		10K	32.8K	IL	Silicone Grease G501
Development Lower Casing		10K	32.8K	C	Damp cloth, dry cloth
Used Toner Bottle		10K	32.8K	I	Empty used toner. Clean rear shoulder of bottle near full sensor.

*1: See "Lubrication Points" (at end of this section).

Cleaning

Item	Qty	Interval		PM	Comment
		m	ft.		
Cleaning Blade	1	30K	94.8K	R	Replace if necessary.
Cleaning Entrance Seal		20K	65.6K	C	Dry cloth, when required
Side Seals		20K	65.6K	C	Dry cloth.
Pick-off Pawls		20K	65.6K	C	Dry cloth.
Cleaning Unit Interior		20K	65.6K	I	Dry cloth if necessary

Drum, Around the Drum

Item	Qty	Interval		PM	Comment
		m	ft.		
Charge Corona Wire	1	10K	32.8K	R	Replace
Cleaner: Charge Corona: Ass'y	1	10K	32.8K	R	Replace
Charge Corona Casing	1	10K	32.8K	C	Damp cloth, dry cloth.
Grid Wire	1	10K	32.8K	C	Damp cloth, dry cloth. Every PM visit.
Transfer Corona Wire	1	10K	32.8K	R	Replace if necessary
Separation Corona Wire	1	10K	32.8K	R	Replace if necessary
T&S Corona Casing	1	10K	32.8K	C	Damp cloth, dry cloth
T&S Corona Guide	1	10K	32.8K	C	Dry cloth
Quenching Lamp		10K	32.8K	C	Dry cloth
ID Sensor		10K	32.8K	C	Blower brush
LPH (LED Print Heads)		10K	32.8K	C	Alcohol, dry cloth. No chemical cleaners! After wiping, touch to discharge static.

Item	Qty	Interval		PM	Comment
		m	ft.		
Drum Drive Gear		10K	32.8K	L	Silicone Grease G501

Paper Feed

Item	Qty	Interval		PM	Comment
		m	ft.		
Cutter Unit	1	10K	32.8K	C	Replace if necessary (approx. service life: 140K cuts)
Paper Feed Roller	1	10K	32.8K	C	Alcohol, dry cloth
Paper Exit Roller	1	10K	32.8K	C	Alcohol, dry cloth
Cutting Sensor		20K	65.6K	C	Blower brush
Registration Rollers		10K	32.8K	C	Alcohol, dry cloth (both drive and idle rollers)
Registration Sensor		10K	32.8K	C	Blower brush
Transport Belt		10K	32.8K	C	Alcohol, dry cloth
Timing Belt		10K	32.8K	I	Adjust tension if necessary.

Fusing Unit

Item	Qty	Interval		PM	Comment
		m	ft.		
Hot Roller	1	35K	114.8K	R	Replace if necessary.
Fusing Cleaning Roller	1	30K	98.4K	R	Replace if necessary.
Bushing – Hot Roller	2	35K	114.8K	R	Replace with hot roller.
Cleaning Roller (Pressure Roller)	1	30K	98.4K	R	Replace if necessary.
Pressure Roller	1	35K	114.8K	R	Replace if necessary.
Hot Roller Stripper		10K	32.8K	C	Dry cloth.

Item	Qty	Interval		PM	Comment
		m	ft.		
Pressure Roller Stripper		10K	32.8K	C	Dry cloth.
Thermistors	2	20K	65.6K	C	Dry cloth.
Fusing Entrance Guide		10K	32.8K	C	Alcohol, dry cloth
Fusing Entrance Spurs					
Fusing Exit Guide Plate		10K	32.8K	C	Alcohol, dry cloth.
Fusing Unit Gears*1		120K	393.6K	L	Barrieta JFE 55/2
Fusing Pressure Screw Shaft*1		40K	130.2K	L	Barrieta JFE 55/2
Fusing Drive Gears		10K	32.8K	L	Silicone Grease G501
Exit Turn Guide		10K	32.8K	C	Damp cloth, then dry cloth.
Paper Exit Sensor		10K	32.8K	C	Blower brush
Exit Rollers		20K	65.6K	C	Alcohol, dry cloth

*1: See "Lubrication Points" (end of this section).

Others

Item	Qty	Interval		PM	Comment
		m	ft.		
Ozone Filter	1	20K	65.6 K	R	Replace.
Breaker switch	1	---	---	C	Check operation once a year.
Gear – 16Z	1	200K	656K	R	Replace

Options

Roll Feeder Type 7140 (D394)

Item	Qty	Interval		PM	Comment
		m	ft.		
Cutter Unit	1	10K	32.8K	C	Replace if necessary. Approx. service life: 140K cuts
Paper Feed Roller		10K	32.8K	C	Alcohol, dry cloth

Paper Cassette Type 7140 (D395)

Item	Qty	Interval		PM	Comment
		m	ft.		
Pick-up Roller	2	10K	32.8K	R	Replace
Paper Feed Roller	2	10K	32.8K	R	Replace
Separation Roller	2	10K	32.8K	R	Replace

Folder FD6500A (B889)

Item	Qty	PM Interval		PM	Comment
		m	ft.		
Fan Fold Sensors		20K	65.6K	C	Blower brush or dry cloth
Fan Fold Rollers		20K	65.6K	C	Damp cloth
Fan Fold Sensors		20K	65.6K	C	Blower brush or dry cloth
Circuit Breaker	The circuit bracket should be tested once a year.				

Manual Feeder (D333)

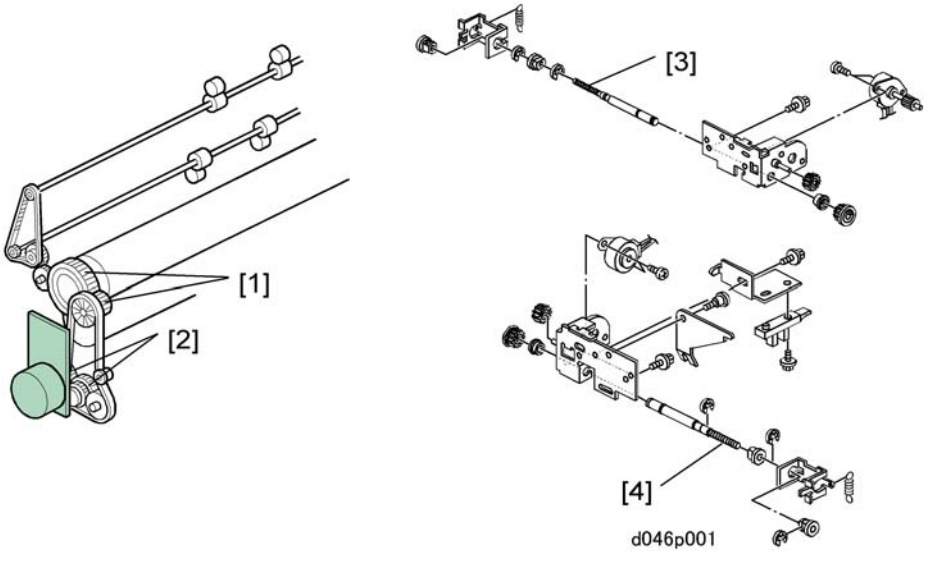
Item	Qty	PM Interval		PM	Comment
		m	ft.		
Paper Width Sensors		20K	65.6K		Blower brush or dry cloth
Bypass Relay Sensor		20K	65.6K		Blower brush or dry cloth

Folder FD6500B (B890)

Item	Qty	Interval		PM	Comment
		m	ft.		
Stay: Stopper: Guide: Adhesion	2	280K	918.4K	R	Replace
Torque Limiter: OTLV8-2000C	2	280K	918.4K	R	Replace
Shaft: Holder: Driven Roller	6	350K	1148K	R	Replace
Paper Width Sensors		20K	65.6K	C	Blower brush or dry cloth
Bypass Relay Sensor		20K	65.6K	C	Blower brush or dry cloth
Fan Fold Sensors		20K	65.6K	C	Blower brush or dry cloth
Fan Fold Rollers		20K	65.6K	C	Damp cloth
Fan Fold Sensors		20K	65.6K	C	Blower brush or dry cloth
Circuit Breaker	The circuit bracket should be tested once a year.				

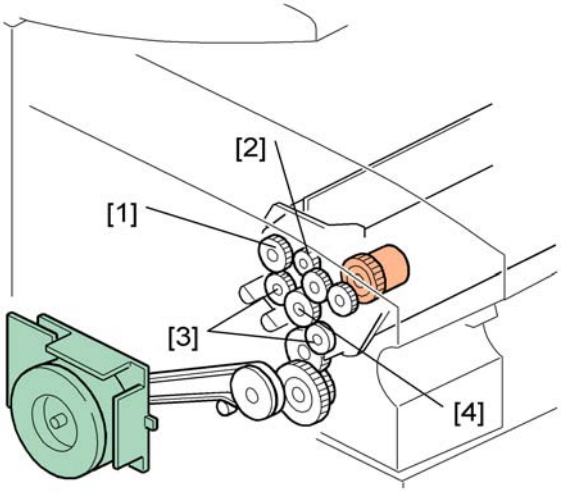
Lubrication Points

Fusing Section



[1]	Fusing Gears (Barrieta JFE 55/2)
[2]	Fusing Drive Gears (Silicone Grease G501)
[3], [4]	Fusing Pressure Screw Shaft (Barrieta JFE 55/2)

Development Section

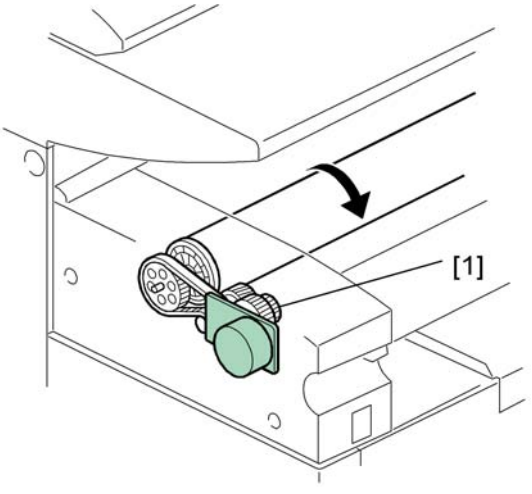


[1]	Development Sleeve Gear (Silicone Grease G501)
[2]	Gear-20Z (Auger) (Silicone Grease G501)

The following gears should be checked every 200 km and replaced if necessary:

- [1] Development Sleeve Gear
- [3] Gear 28Z (Idle Gear)
- [4] Paddle Gear

Drum Drive Section



[1]	Drum Drive Gear (Silicone Grease G501)

5. Appendix: Service Call Conditions

SC Tables

Service Call Conditions

There are 4 levels of service call conditions.

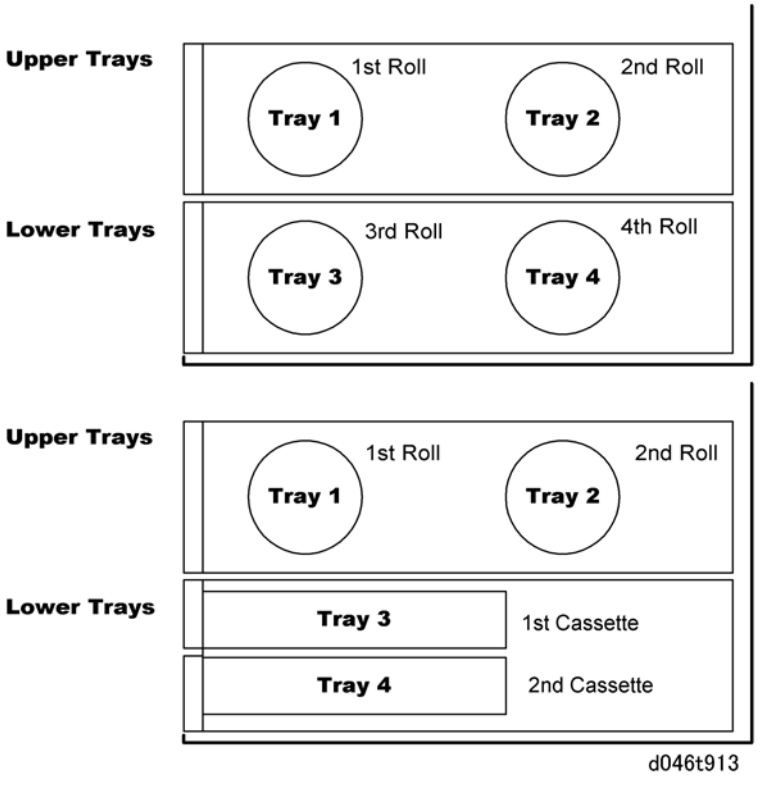
Level	Definition	Reset Procedure
A	To prevent the machine from being damaged, the SC can only be reset by a service representative (see the note below). The copier cannot be operated at all.	Enter SP mode, then turn the main power switch off and on.
B	The SC can be reset by turning the main power switch off and on if the SC was caused by incorrect sensor detection.	Turn the operation switch or main power switch off and on. A level B' SC can only be reset by turning the main power switch off and on.
C	The copier can be operated as usual except for the unit related to the service call.	Turn the operation switch off and on.
D	The SC history is updated. The machine can be operated as usual.	The SC is not displayed, but SC history is updated.

- 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.
- When a Level A or B SC occurs while in an SP mode, the display does not indicate the SC number. If this occurs, check the SC number after leaving the SP mode. This does not apply to Level B' codes.
- Some of these SC codes contain more than one level (SC303-1, SC303-2, SC303-3, etc.); however, some SCs may display a "-1" even if there is no second or third level (-2, -3).

⚠CAUTION

- Never turn off the main power switch when the power LED is lit or flashing. To avoid damaging the hard disk or memory, press the operation power switch on the operation panel to turn the power off, wait for the power LED to go off, then turn the main power switch off.

Tray Names



SC Code Tables

Group 100: Exposure

SC101	B	Lamp error
		Lamp does not light at power on.
		If cycling the machine power off/on does not solve the problem: • Clean the white plate • Clean the CIS glass • Lamp regulator connection loose broken, defective • CIS, IPU, BCU connection loose broken defective

		• Harness connection between Xenon lamp and lamp regulator loose broken defective • Harness between CIS and IPU loose, broken, defective • Harness between CIS and PSU loose, broken, defective • One or more defective: CIS, IPU, BCU, PSU, Xenon lamp

SC 144	B	CIS communication error
		A serial communication error occurred with the CIS due to a PCB malfunction or loose connection.
		If cycling the machine power off/on does not solve the problem: • Harness between CIS and IPU loose broken defective • Harness between CIS and PSU loose, broken, defective • CIS defective • IPU defective • BCU defective

SC161	B	IPU Error
		Three attempts to configure the Cetus chip on the IPU board failed when the machine was switched on or when machine recovered from the energy save mode.
		• Replace the IPU

SC180	B	Left scanner fan lock
		The BCU detected a left scanner fan lock signal 5 sec. after the machine was switched on.
		If cycling the machine power off/on does not solve the problem: • Left scanner fan harness connection to the IOB loose, broken, defective • Left scanner fan defective • IOB defective • BCU defective

SC181	B	Right scanner fan lock

		The BCU detected a right scanner fan lock signal 5 sec. after the machine was switched on.
		If cycling the machine power off/on does not solve the problem: • Left scanner fan harness connection to the IOB loose, broken, defective • Left scanner fan defective • IOB defective • BCU defective

SC186	B	Gray balance adjustment error
		The value for gray balance was detected out of range after gray adjustment.
		If cycling the machine power off/on does not solve the problem: • Clean the white strip • Clean the CIS glass • Check the following harnesses for loose, broken, or defective connectors: 1. Xe lamp to lamp regulator 2. Lamp regulator to CIS 3. CIS to IPU 4. CIS to IPU 5. IPU to IOB • One of the following boards is defective 1. CIS 2. IPU 3. IOB 4. BCU

SC191	A	Original exit roller thermistor error
		The original exit roller thermistor reading was abnormal.
		• Thermistor connection loose, broken, defective • Thermistor short • Harness between thermistor and IOB loose, broken, defective • IOB defective • BCU defective

Group 300: Charge, Development

SC300	D	Charge corona output error
		Charge corona feedback voltage less than 0.5 V was detected for more than 200 sec after power on.
		• TD power pack defective. • High voltage cable defective. • Dirty charge corona wire caused voltage leak

SC303	D	Charge grid output error
		Control PWM duty value is higher than 1% (FB less than 1V) for more than 200 ms due to grid current leak.
		• CGB power pack is defective. • CGB power pack harness loose, broken, defective

SC305	D	Charge corona wire cleaner error
		The wire cleaning pad did not return to its home position within 5 sec. after wire cleaning.
		• Wire cleaner motor harness loose, broken, defective • Wire cleaner motor defective • Charge corona wire defective **Note**: • This SC is not issued if SP2804 is set to zero (no cleaning). • If immediate repair is not possible, set SP2804 to zero to switch off the charge corona cleaner function.

SC347	D	Development drive motor lock error
		Development drive motor stopped (the lock signal remained HIGH longer than 5 sec. when the development was operating).
		• Motor or drive mechanism blocked • Motor harness loose, broken, defective • Motor defective

SC392	D	Development bias error
		The PWM duty level was detected higher than 5% within 100 ms after high voltage output started, and the feedback voltage was detected less than 0.3 V for more than 200 ms.
		• Harness connection between CGB power pack and IOB loose, broken, defective • CGB power defective • High voltage cable damaged

Group 400: Around the Drum (Transfer, Separation, Cleaning)

SC400	B	ID sensor error 1: automatic adjustment error
		During the process control self-check, the Vsg value (reflectivity of the bare drum surface) could not be adjusted to within 4.0±0.2V within 20 sec. after automatic adjustment began.
		• ID sensor dirty • ID sensor harness loose, broken, defective • ID sensor harness connection at IOB loose, broken, defective. • ID sensor defective • Exposure unit defective • Development unit defective • TD power pack defective

SC401	B	ID sensor error 2: Vsg
		When the ID sensor was calibrated, Vsg (reflectivity of the bare drum surface) was detected less than 2.5V after two attempts. -or- After calibration, Vsg was detected as 5.0V at PWM adjustment and PWM=0.
		• Dirty ID sensor • ID sensor harness connection loose, broken, defective • TD power pack defective • IOB defective

SC402	B	ID sensor error 3: Vsp
		The Vsp (reflectivity of ID sensor pattern) value was detected at "0" or more than 2.5V when the ID sensor was calibrated during process control.
		• OPC drum gear Allen screw loose • ID sensor dirty • ID sensor harness loose, broken, defective • ID sensor defective • IOB defective • Exposure unit defective • Development unit defective • TD power pack defective

SC403	B	ID sensor error 4: LED current error
		During Vsg adjustment (reflectivity of the bare drum surface) during process control, the averaged PWM output was zero or 255.
		• ID sensor dirty • ID sensor harness connection loose, broken, defective • ID sensor defective • IOB defective • Exposure unit defective • Development unit defective • TD power pack defective

SC406	B	ID sensor error 5: edge detection error during calibration
		The voltage reading of the ID sensor pattern during process control remained less than 2.5V for more than 0.6 sec. during process control.
		• ID sensor dirty • ID sensor harness connection loose, broken, defective • ID sensor defective • IOB defective • Exposure unit defective • Development unit defective

		• TD power pack defective

SC440	B	Transfer voltage output error
		100 ms after the TD power pack started to output the transfer voltage, the feedback voltage was detected less than 0.5 V for more than 200 ms.
		• Defective high voltage cable caused a voltage leak • TD power pack defective

SC460	B	Paper separation DC error
		100 ms after the TD power pack started to output the separation charge, the feedback voltage was detected less than 0.5 V for more than 200 ms.
		• Defective high voltage cable • TD power pack defective

Group 500: Paper Feed, Paper Transport, Fusing

SC503	B	Lift sensor 1 error
		After the upper paper cassette was closed, lift sensor 1 did not switch on within 20 s after tray lift motor 1 switched on. -or- Lift sensor 1 did not switch off within 1 sec. after the tray started to descend.
		• Tray lift motor 1 connector loose, disconnected, broken. • Paper or other foreign object has jammed tray lift motor 1. • Pickup solenoid 1 connector is loose, disconnected, damaged. • Paper or other foreign object has jammed pickup solenoid 1 • Lift sensor 1 defective

SC504	B	Lift sensor 2 error
		After the lower paper cassette was closed, lift sensor 2 did not switch on within 20 s after tray lift motor 2 switched on. -or- Lift sensor 2 did not switch off within 1 sec. after the tray started to descend.

		• Tray ift motor 2 connector loose, disconnected, broken. • Paper or other foreign object has jammed tray lift motor 2. • Pickup solenoid 2 connector is loose, disconnected, damaged. • Paper or other foreign object has jammed pickup solenoid 2 • Lift sensor 2 defective

SC506	B	Cassette feed motor error
		The cassette feed motor lock signal remained HIGH longer than 2 sec. during operation. **Note**: When this SC occurs, paper feed from the cassette is not possible. However, roll paper can feed from tray 1 and tray 2.
		• Cassette feed motor harness loose, broken, defective • Drive mechanism overload due to physical obstruction • Motor driver PCB or motor defective

SC507	D	Main motor lock: registration
		The registration motor lock signal remained high longer than 5 sec. during motor operation.
		• Motor harness loose, broken, defective • Drive mechanism overloaded due to obstruction • Motor driver PCB or motor defective

SC521	A	Drum motor error
		The main motor lock signal remained HIGH for 5 sec. after the motor started.
		• Motor harness loose, broken, defective • Motor driver PDB or motor defective

SC531	D	Fusing drive motor error
		The fusing drive motor lock signal remained HIGH for 5 sec.
		• Fusing motor drive mechanism overloaded. • Motor defective.

SC532	D	Left fusing pressure motor home position error 1
		The left pressure motor did not arrive at the home position within 23 sec. after the left pressure motor started.
		• Left fusing pressure motor home position sensor loose, broken, defective. • Sensor defective. • Motor drive mechanism overloaded • Motor defective.

SC533	D	Left fusing pressure motor home position error 2
		The left pressure motor remained at the home position for 3 sec. after the motor switched on.
		• Left fusing pressure motor home position sensor loose, broken, defective. • Left fusing pressure motor drive mechanism overloaded • Sensor defective. • Motor defective.

SC534	D	Right fusing pressure motor home position error 1
		The right pressure motor did not arrive at the home position 23 sec. after the right pressure motor switched on.
		• Right fusing pressure motor home position sensor loose, broken, defective. • Right fusing pressure motor drive mechanism overloaded • Sensor defective. • Motor defective.

SC535	D	Right fusing pressure motor home position error 2
		The right pressure motor remained at the home position 3 sec. after motor switched on.
		• Right fusing pressure motor home position sensor loose, broken, defective. • Right fusing pressure motor drive mechanism overloaded • Sensor defective. • Motor defective.

SC541	A	Fusing thermistor open
		The fusing temperature detected by the thermistor remained below 5°C (41°F) for 30 sec.
		• Thermistor cable disconnected, broken, defective • Thermistor defective

SC542	A	Fusing temperature warm-up error
		During warm-up after switching on the machine, or after opening and closing the machine, hot roller did not attain the ready temperature within 5 minutes (the temperature was detected below 3°C (37.4°F) 5 times within 5 sec.).
		• Fusing lamp defective • Thermistor floating, out of position • Thermistor cable disconnected, broken • Fusing thermistor defective

SC543	A	Fusing overheat error 1: Software
		A fusing temperature of over 230°C (446°F) was detected for 2 sec.
		• PSU defective • TRIAC short, IOB board defective • BCU board defective

SC544	A	Fusing overheat error 2: Hardware
		The backup circuit detected fusing temperature over 235°C (455°F) for longer than the time prescribed for high temperature fluctuation.
		• TRIAC short, IOB board defective • PSU board defective • Fusing unit defective

SC545	A	Fusing lamp overheat error 3
		After reaching the ready temperature, the hot roller does not start to rotate and the fusing lamp stays on at full power for 50 sec.

		• Fusing lamp harness loose, broken, defective • IOB defective

SC546	A	Unstable fusing temperature
		Fusing temperature fluctuated more than 20°C (68°F) within 1 sec. more than 7 times during the previous 60 sec. of fusing temperature control.
		• Thermistor disconnected • Thermistor out of position, not in contact with hot roller • Thermistor connection loose, broken, defective

SC547	D	Zero-cross signal error
		One of the following conditions occurred: • No zero-cross signal detected within 50 ms after the machine was powered on with Relay 0 off, or abnormal zero-cross detected 3 times. • No zero-cross signal detected for 3 sec. after fusing relay turned on after power on. • Abnormal mains frequency was detected more than 10 times.
		• Electrical noise on the power line • PSU power relay defective.

SC551	A	Pressure roller center thermistor error 1
		The thermistor returned temperature readings less than 5°C (41°F) for 12 sec. during fusing temperature control while the hot roller and pressure rollers were rotating
		• Thermistor connection loose, broken, defective • Thermistor floating free, not positioned correctly • Thermistor defective • IOB defective

SC553	A	Pressure roller center thermistor error
		During fusing temperature control the thermistor at the center of the pressure roller returned an abnormally low reading.

		• Thermistor has short circuited • Thermistor not positioned correctly • Thermistor harness loose, broken, defective • Thermistor defective • IOB defective

SC557	D	Applied zero-cross waveform error
		The applied power ac frequency was detected less than 66 Hz more than 10 times.
		• Noise on the ac power supply line

SC559	A	Three consecutive fusing paper jam errors
		Three consecutive paper jam errors occurred in the fusing unit. **Note**: This SC code is not issued unless SP1159 is switched on.
		• Paper jam in fusing unit • Pick-off pawl defective • Paper scraps in fusing unit • Exit sensor defective

SC561	A	Pressure roller end thermistor error 1
		The thermistor returned temperature readings less than 5°C (41°F) for 12 sec. during fusing temperature control while the hot roller and pressure rollers were rotating
		• Thermistor connection loose, broken, defective • Thermistor floating free, not positioned correctly • Thermistor defective • IOB defective

SC563	A	Pressure roller end thermistor error 2
		The thermistor returned digital readings for the pressure roller during fusing temperature control that were low (out of range).
		• Thermistor connection loose, broken, defective

		• Thermistor floating free, not positioned correctly • Thermistor defective • IOB defective

SC571	A	Pressure roller end thermistor error 3
		The thermistor returned 30 readings for the end of the pressure roller that were below 5°C (41°F) for 30 sec.
		• Thermistor connection loose, broken, defective • Thermistor floating free, not positioned correctly • Thermistor defective

SC572	A	Pressure roller end thermistor error 4
		The thermistor returned 5 readings for the end of the pressure roller that were below 3°C (37.4°F) for 5 sec.
		• Fusing lamp disconnected • Fusing lamp defective • IOB defective

SC573	A	Fusing temperature error: Software
		Fusing temperature exceeded 230°C (446°F) for more than 2 sec.
		• TRIAC short, IOB defective

SC591	B	Cutter 1 home position error 1: Upper Tray
		Both left and right cutter HP switches were on: Immediately after the machine was turned on. -or- After the upper tray was opened and closed.
		• Right or left cutter home position switch defective.

SC592	B	Cutter 1 home position error 2: Upper Tray

		The left home position switch remained on 300 ms after the cutter motor switched on.
		• Cutter motor 1 harness loose, broken, defective • Cutter motor overload due to physical obstruction • Cutter motor 1 defective

SC593	B	Cutter 1 home position error 3: Upper Tray
		The home position switch remains off for 1 sec. after cutter motor 1 switches on.
		• Cutter motor 1 harness loose, broken, defective • Cutter motor 1 overload due to physical obstruction • Cutter motor 1 defective

SC594	B	Cutter 2 home position error 1: Lower Tray
		Both left and right cutter HP switches were on: Immediately after the machine was turned on. -or- After the upper tray was opened and close.
		• Right or left cutter home position switch defective.

SC595	B	Cutter 2 home position error 2: Lower Tray
		The left home position switch remained on 300 ms after the cutter motor switched on.
		• Cutter motor 1 harness loose, broken, defective • Cutter motor overload due to physical obstruction • Cutter motor 1 defective

SC596	B	Cutter 2 home position error 3: Upper Tray
		The home position switch remained off for 1 sec. after cutter motor 1 switched on.
		• Cutter motor 1 harness loose, broken, defective • Cutter motor 1 overload due to physical obstruction • Cutter motor 1 defective

Group 600: Communication

SC628	B	Fan folder communication error 1	
		The main machine issued a timeout three failed attempts to communicate with the fan folder unit. Possible causes: • There was no answer from the fan folder within 100 ms in response to data sent from the main machine. • The fan folder unit was switched off while folding was in progress. • The main machine received an illegal command from the fan folder. • 60 sec. after the main machine fed the document to the fan folder, the fan folder failed to notify the main machine that the folded document has exited the fan folder.	
		• Fan folder not connected to main machine • Fan folder main control unit connector loose, broken, defective • Fan folder main control unit defective	

SC629	B	Fan folder communication error 2: Cross Folder	
		There was no answer from the fan folder within 100 ms in response to data sent from the main machine.	
		• Fan folder not connected to main machine • Fan folder main control unit connector loose, broken, defective • Fan folder main control unit defective	

SC632	B	Key/card counter device error 1	GW
		After 1 data frame is sent to the device, an ACK signal is not received within 100 ms, and is not received after 3 retries.	
		• The serial line from the device to the copier is unstable, disconnected, or defective.	

SC633	B	Key/card counter device error 2	GW
		During communication with the device, the BCU received a break (Low) signal.	
		• The serial line from the device to the copier is unstable, disconnected, or defective.	

SC634	B	Key/card counter device error 3	GW
		The backup battery of the counter device RAM is low.	
		• Replace the RAM backup battery.	

SC635	B	Key/card counter device error 4	GW
		After installation of the device, a message alerts user to a battery voltage abnormal error.	
		• Device control board defective • Device control board backup battery defective	

SC636	B	Expansion recognition module error	GW
		An error has occurred while trying to access the file of the expansion recognition module.	
		• DESS module does not exist on SD card • External expansion recognition module does not exist on SD card • SD card damaged • External expansion recognition file corrupted	

SC641	B	Engine-to-controller communication error: No response	GW
		The controller sent a frame to the main machine engine but there was no response as demanded by RAPI protocol. The frame was sent 3 times at 100 ms intervals. This SC was issued after the 3rd attempt failed.	
		• Examine the connection between the controller and the engine board. • Replace the engine board if the error is frequent.	

SC650	B	Cumin-M communication error	GW
		An error occurred with the Cumin modem (dialup, modem port) when the machine was switched on.	
		• The settings for @Remote SP5816 are incorrect • Modem disconnected from the phone line • Modem port disconnected	

		• Wireless LAN card missing

SC651	B	@Remote dial-up incorrect	GW
		An unexpected error occurred while the machine was dialing up the @Remove service center via modem.	
		• No action required	

SC670	D	Engine startup error	GW
		The BCU failed to respond with the prescribed time when the machine was turned on.	
		• Connections between BCU and controller board are loose, disconnected, or damaged • Replace the BCU • Replace the controller board	

SC671	B	Illegal engine board detected	GW
		An illegal engine board was detected at power on by the firmware.	
		• NIA	

SC672	C	Controller startup error	GW
		After power on, the line between the controller and the operation panel did not open for normal operation. After normal startup, communication with the controller stopped.	
		• Controller stalled • Controller installed incorrectly • Controller board defective • Operation panel harness disconnected or defective	

SC687	B	Per-command error
		The main machine received no per-command module from the GW controller.
		• Poor communication, cycle the machine power off/on

SC690	B	VDB communication error
		An error occurred on the video drive board.
		• VDB harness loose, broken, defective • IOB harness loose, broken, defective • VDB to IPU harness loose, broken, defective

Group 700: Peripheral Devices

SC720	B	Fan folder transport motor error
		A lock signal was detected at the transport motor for longer than 5 sec.
		• Transport motor harness loose, broken, defective • Transport motor drive mechanism overloaded due to physical obstruction • Transport motor defective • MCU defective

SC722	B	Horizontal transport guide HP sensor error
		The home position sensor neither switched on nor switched off while the pressure release drive was operating.
		• Fan fold motor harness loose, broken, defective • Vertical transport clutch defective • HP sensor harness loose, broken, defective • HP sensor defective • MCU defective

SC726	B	Cross folder jogger HP sensor error
		The jogger fence HP sensor neither switched on nor switched off during operation of the jogger fence.
		• Jogger fence HP sensor harness loose, broken, defective • Jogger motor harness loose, broken, defective • Motor drive overload due to physical obstacle • Jogger fence HP sensor defective

		• Jogger motor defective • MCU defective

SC727	B	Cross folder horizontal transport guide HP sensor error
		The horizontal transport guide HP sensor did not switch on or switch off during operation of the horizontal transport press motor.
		• Horizontal transport guide HP sensor harness loose, broken, defective • Horizontal transport press motor harness loose, broken, defective • Motor drive overload due to physical obstacle • Horizontal transport guide HP sensor defective • Horizontal transport press motor defective • MCU defective

SC728	B	Horizontal transport guide lower limit sensor error
		The horizontal transport guide HP sensor did not go ON or OFF at the prescribed time.
		• Horizontal transport guide motor harness loose, broken, defective • Horizontal transport guide lower limit sensor harness loose broken defective • Motor drive overload due to physical obstruction • Motor defective • Sensor defective • MCU defective

SC750	B	Cross fold shift tray upper limit sensor error
		The sensor did not go on or off while the tray was being raised and lowered.
		• Tray lift motor harness loose, broken, defective • Tray lift motor overloaded due to physical obstacle • Tray upper limit sensor 1 harness loose, broken, defective • Tray lift motor defective • Tray upper limit sensor 1 defective • Main board defective

SC762	B	Fan folder fan fold plate HP sensor (F) error
		The state (on/off) of the front fan fold plate HP sensor did not change within 1 sec. after the fan fold plate motor (F) switched on
		• Undetected paper or scraps have jammed the fold mechanism • HP sensor harness loose, broken, defective • Motor harness loose, broken defective • HP sensor defective • Motor defective • MCU defective

SC763	B	Fan folder fan fold plate HP sensor (R) error
		The state (on/off) of the rear fan fold plate HP sensor did not change within 1 sec. after the fan fold plate motor (R) switched on
		• Undetected paper or scraps have jammed the fold mechanism • HP sensor harness loose, broken, defective • Motor harness loose, broken defective • HP sensor defective • Motor defective • MCU defective

SC764	B	Cross folder fold plate HP sensor (U) error
		The state (on/off) of the upper fold plate HP sensor did not change within 1 sec. after the fold plate motor (U) switched on
		• Undetected paper or scraps have jammed the fold mechanism • HP sensor harness loose, broken, defective • Motor harness loose, broken defective • HP sensor defective • Motor defective • MCU defective

SC765	B	Cross folder fold plate HP sensor (L) error

		The state (on/off) of the lower fold plate HP sensor did not change within 1 sec. after the fold plate motor (L) switched on
		• Undetected paper or scraps have jammed the fold mechanism • HP sensor harness loose, broken, defective • Motor harness loose, broken defective • HP sensor defective • Motor defective • MCU defective

SC790		Fan folder PCB fan motor error
		A motor lock signal was detected at the PCB cooling fan for more than 20 sec. after the fan was switched on.
		• Fan overloaded due to physical obstruction • Fan motor harness loose, broken, defective • Fan motor defective • MCU defective

Group 800

SC816	A	Energy save I/O sub system error	GW
		An error occurred in the energy save sub system. This error occurs only when energy sub system module such as ASIC Whistle is present.	
		• Cycle the machine power off/on • If cycling the machine off/on does not restore normal operation, replace the IOB.	

SC817	D	Monitor Error	GW
		This is a file detection and electronic file signature check error when the boot loader attempts to read the self-diagnostic module, system kernel, or root system files from the OS Flash ROM, or the items on the SD card in the controller slot are false or corrupted.	
		• OS Flash ROM data defective; change the controller firmware	

		• SD card data defective; use another SD card

SC818	C	Watchdog error
		While the system program is running, a bus hold or interrupt program goes into an endless loop, preventing any other programs from executing.
		• System program defective; switch off/on, or change the controller firmware if the problem cannot be solved • Controller board defective • Replace the peripheral device

SC819	C	Fatal kernel error	GW
		Due to a control error, a RAM overflow occurred during system processing. One of the following messages was displayed on the operation panel.	
		HAIC-P2 Error	Data decompression error
		554C	USB loader stop
		• System program defective • Controller board defective • Optional board defective • Replace controller firmware For more details about this SC code error, execute SP5990 to print an SMC report so you can read the error code. The error code is not displayed on the operation panel.	

SC820	C	Sellf-diagnostic error 1: CPU	GW
		An unexpected error occurred, or the boot monitor program or self-diagnostic program generated an interrupt. In either case, this is a fatal error.	
		• Replace the controller board • Update (upload again) all firmware modules to restore the boot program and the self-diagnostics. This SC displays up to approximately 50 number codes. These codes are used to find design problems and have no meaning for service technicians. The procedure for solving the problem is the same in every case.	

SC821	C	Self-diagnostic error 2: ASIC		GW
		The ASIC provides the central point for the control of bus arbitration for CPU access, for option bus and SDRAM access, for SDRAM refresh, and for management of the internal bus gate.		
		0B00	Error code 0xffff ffff is returned when the register Write & Verify check is executed on the ASIC mounted on the controller board. The ASIC controls the ROM and buses for other devices.	
			• ASIC defective, replace the controller board	
		0D05	The interrupts of the ASIC and CPU are not timed correctly.	
			• ASCI timing device defective, or CPU defective. Replace the controller board.	

SC833	D	Self-diagnostic error 8: Engine I/F ASIC	GW
0F30 0F31		ASIC (Mandolin) for system control could not be detected. After the PCI configuration, the device ID for the ASIC could not be checked.	
0F41		The read/write check done for resident RAM on the mother board could not be done correctly.	
50B1		Could not initialize or read the bus connection.	
50B2		Value of the SSCG register is incorrect.	
		• Check for loose connections at MB (Mother Board) • Replace MB	

SC851	B	IEEE1394 interface error	GW
		The 1394 interface is unusable.	
		• Defective controller	

SC853	B	Wireless LAN Error 1: Startup	GW
		During machine start-up, the machine can access the board that holds the wireless LAN, but not the wireless LAN card.	
		• Wireless LAN card missing from slot	

SC854	B	Wireless LAN Error 2: Operation	GW
		During machine start-up, the machine can access the board that holds the wireless LAN, but not the wireless LAN card.	
		• Wireless LAN card missing from slot	

SC855	B	Wireless LAN Error 3: Board Error	GW
		During machine operation of the wireless connection, an error occurred on the wireless LAN board.	
		• Wireless LAN board not installed properly • Wireless LAN board defective	

SC856	B	Wireless LAN error 5: Board Error	GW
		An error was detected on the wireless LAN board.	
		• Wireless LAN board defective • PCI connector (to the mother board) loose	

SC857	B	USB I/F Error	GW
		The USB driver is not stable and caused an error.	
		• Bad USB board connection • Replace the controller board	

SC858	B	Serious data encryption error	GW
		A serious error occurred during data encryption due to corruption of USB Flash or other data, or the presence of a magnetic field.	
		• Power the system off/on • If this does not solve the problem, replace the data encryption board	

SC859	B	Data encryption HDD error	GW
		An error occurred while data encryption was in progress. • The update procedure for the data encryption key was started with no HDD installed in the main machine.	

		• The machine was switched off while the data encryption key was being updated. • An HDD error occurred caused by the effect of spurious noise on the disk or harnesses.	
		• Check all the HDD harness connection points • Initialize the HDD with SP5832 • Replace the HDD	

SC860	B	HDD startup error at main power on	GW
		HDD is connected but a driver error is detected. The driver does not respond with the status of the HDD within 30 s.	
		• HDD is not initialized • Level data is corrupted • HDD is defective	

SC861	D	HDD re-try failure	GW
		At power on with the HDD detected, power supply to the HDD is interrupted, after the HDD is awakened from the sleep mode, the HDD is not ready within 30 s.	
		• Harness between HDD and board disconnected, defective • HDD power connector disconnected • HDD defective • Controller board defective	

SC863	D	HDD data read failure	GW
		The data written to the HDD cannot be read normally, due to bad sectors generated during operation.	
		• HDD defective **Note**: If the bad sectors are generated at the image partition, the bad sector information is written to NVRAM, and the next time the HDD is accessed, these bad sectors will not be accessed for read/write operation.	

SC864	D	HDD data CRC error	GW

		During HDD operation, the HDD cannot respond to an CRC error query. Data transfer did not execute normally while data was being written to the HDD.	
		• HDD defective	

SC865	D	HDD access error	GW
		HDD responded to an error during operation for a condition other than those for SC863, 864.	
		• HDD defective.	

SC866	B	SD card error 1: Recognition error	GW
		The SD card mounted in the slot contains illegal program data.	
		• Use only SD cards that contain the correct data.	

SC867	D	SD card error 2: SD card removed	GW
		The SD card in the boot slot when the machine was turned on was removed while the machine was on.	
		• Insert the SD card, then turn the machine off and on.	

SC868	D	SD card error 3: SC card access	GW
		An error occurred while an SD card was used.	
		• SD card not inserted correctly • SD card defective • Controller board defective **Note**: If you want to try to reformat the SC card, use SD Formatter Ver 1.1.	

SC870	D	Address book data error	GW
		Address book data on the hard disk was detected as abnormal when it was accessed from either the operation panel or the network. The address book data cannot be read from the HDD or SD card where it is stored, or the data read from the media is defective.	
		• Software defective. Turn the machine off/on. If this is not the solution for the problem, then replace the controller firmware.	

		• HDD defective. **More Details** 1. Do SP5846 050 (UCS Settings – Initialize all Directory Info.) to reset all address book data. 2. Reset the user information with SP5832 006 (HDD Formatting– User Information). 3. Replace the HDDs. 4. Boot the machine from the SD card.

SC872	D	HDD mail RX data error	GW
		An HDD error was detected immediately after power on. The HDD may be defective or the machine was accidentally powered off while the HDD was being accessed.	
		• Reformat the HDD with SP5832-7 (Mail RX Data) • Replace the HDD	

SC873	D	HDD mail send data error	GW
		An error was detected on the HDD immediately after the machine was turned on, or power was turned off while the machine used the HDD.	
		• Do SP5832-007 (Format HDD – Mail TX Data) to initialize the HDD. • Replace the HDD	

SC874	D	Delete All error 1: HDD	GW
		A data error was detected for the HDD/NVRAM after the Delete All option was used. **Note**: The source of this error is the Data Overwrite Security Unit running from an SD card.	
		• Turn the main switch off/on and try the operation again. • Install the Data Overwrite Security Unit again. For more, see section “MFP Options” in "Installation". • HDD defective	

SC875	D	Delete All error 2: Data area	GW
		An error occurred while the machine deleted data from the HDD.	

		Note: The source of this error is the Data Overwrite Security Unit running from an SD card.
		• Turn the main switch off/on and try the operation again.

SC876	D	Log data errors	GW
		These errors occur when the machine tries to acquire the log data immediately after power on or upon leaving the energy save mode.	
SC876-1	D	Log data error 1	
		Log data file corrupted	
		• Do SP5832-4 (HDD Formatting - Job Log)	
SC876-2	D	Log data error 2	
		There was no data encryption module available when there was an attempt to set up data encryption. This error can occur at power on, while the machine is operating, or when the data encryption settings are set up or changed.	
		• Replace the data encryption board • Do the set up procedure again	
SC876-3	D	Log data error 3	
		NVRAM error. The log encryption key was disabled when the machine was turned on.	
		• Do SP5832-4 (HDD Formatting - Job Log) • Disable the log encryption settings	
SC876-4	D	Log data error 4	
		NVRAM error 2. One of the following occurred: • Although log encryption has been disabled, the log data file was encrypted. • Although the log encryption has been enabled, the log data file was not encrypted.	
		• Do SP5832-4 (HDD Formatting - Job Log)	
SC876-5	B	Log data error 5	

		NVRAM, HDD switch error. This error can occur when the NVRAM or the HDD is removed and installed in another machine.
		• Remove the NVRAM and replace it with the original NVRAM. • Remove the HDD and replace it with the original HDD. • With the SC code displayed, do SP5832-4 (HDD Formatting - Job Log)
SC876-99	B	Log data error 99
		Other errors. .
		• Contact the service center if this SC appears

If only the HDD is replaced:

1. Switch off the machine.
2. Remove the HDD, switch the machine on again.
3. Do SP5801-19 (Memory Clear - LCS).
4. Switch off the machine.
5. Reinstall the original HDD and switch on the machine.
6. Do SP5832-4 (HDD Formatting - Job Log).
7. Cycle the machine off/on.
8. Do **SP9730-2** and switch it ON (set to "1").
9. Do **SP9730-3** and switch it ON (set to "1").
10. Do **SP9730-4** and switch it ON (set to "1").
11. Cycle the machine off/on.

SC877	B	Data Overwrite Security SD card error	GW
		An error occurred, preventing successful execution of the Data Overwrite Security function, even though it has been set up and enabled.	
		• DOS card is not inserted completely into the SD card slot • DOS card has been removed from the SD card slot • DOS card is damaged. **Note**: • If the SD card has been removed (or was not installed correctly), switch the machine off, insert the SD card, then switch on the machine again. • If the SD card has been damaged, procure a new SD card, replace the NVRAM, then do the DOS option installation.	

SC878	B	TPM electronic authentication error	GW
		The attempt by the main machine to electronically authenticate TPM failed. When the machine was switched on the value registered by TPM did not match the value stored in the USB Flash Memory	
		• Replace the IOB.	

SC880	D	File Format Converter (MLB) error	GW
		A request to get access to the MLB was not answered within the specified time.	
		• MLB defective, replace the MLB	

Group 900

SC900	D	Electrical total counter error	GW
		The total counter contains something that is not a number.	
		• NVRAM incorrect type • NVRAM defective • NVRAM data scrambled • Unexpected error from external source	

SC901	D	Mechanical counter error
		At the beginning of a count, the machine detected that the mechanical was not connected. **Note**: This function is provided only in EXP machines.
		• Mechanical counter disconnected • Mechanical counter connector loose or defective

SC910	B	External controller error 1	GW
SC911		External controller error 2	GW
SC912		External controller error 3	GW
SC913		External controller error 4	GW

SC914		External controller error 5	GW
		An external application sent an error notice.	
		• VLB defective • I/F cable defective	

SC919	D	External controller down	GW
		The EAC received an interrupt signal from the FLUTE serial driver during print jobs in progress and the connection between the copier and external controller was broken. **Note**: The EAC is the External API Converter.	
		1. Turn the machine off. 2. Check the I/F cable to determine if it became disconnected during operation. 3. Turn the machine on.	

SC920	B	Printer error 1	GW
		An internal application error was detected and operation cannot continue.	
		• Software defective; turn the machine off/on, or change the controller firmware • Insufficient memory	

SC921	B	Printer error 2	GW
		When the application started, the necessary font was not on the SD card.	
		• Font not on the SD card	

SC954	D	Printer Image Setting Error
		The IPU did not issue the signal required to start image processing for the printing mode within 60 s after the paper stops for registration.
		• Software defective • Replace the software (all firmware modules). • IPU defective

SC965	D	Print start signal error 1

		The printer received another print start signal after print job has already started.
		• Main machine firmware defective • Replace all firmware modules on the main machine

SC967	D	Print start signal error 2
		The printer received another print start signal after print job has already started.
		• Main machine firmware defective • Replace all firmware modules on the main machine • IOB defective

SC984	D	Print image data send error
		No data was sent within 1 sec. after the print image data stream started.
		• Harness from IPU to controller board loose, broken, defective • IPU defective

SC990	D	Software error 1	GW
		The software performs an unexpected function and the program cannot continue.	
		• Software defective, re-boot*1	
SC991	C	Software error 2	GW
		The software performs an unexpected function. However, unlike SC990, recovery processing allows the program to continue.	
		• Software defective, re-boot	

For more details about SC990 and SC991:

1. Execute SP7403 or print an SMC Report (SP5990) to read the history of the 10 most recent logged errors.
2. If you press the "0" key on the operation panel with the SP selection menu displayed, you will see detailed information about the recently logged SC990 or SC991 error, including the software file name, line number, and so on.
3. The first method "1" is because another SC could write over the information for the previous SC.

SC992	C	Software error 3: Undefined	GW

		An error not controlled by the system occurred (the error does not come under any other SC code).	
		• Software defective • Turn the machine power off and on. The machine cannot be used until this error is corrected.	

SC994	C	Operation panel management code error	GW
		Thee number of records exceeded the limit for images managed in the service layer of the firmware. This can occur if there are too many application screens open on the operation panel.	
		• No action required. • This error does not interfere with operation of the machine.	

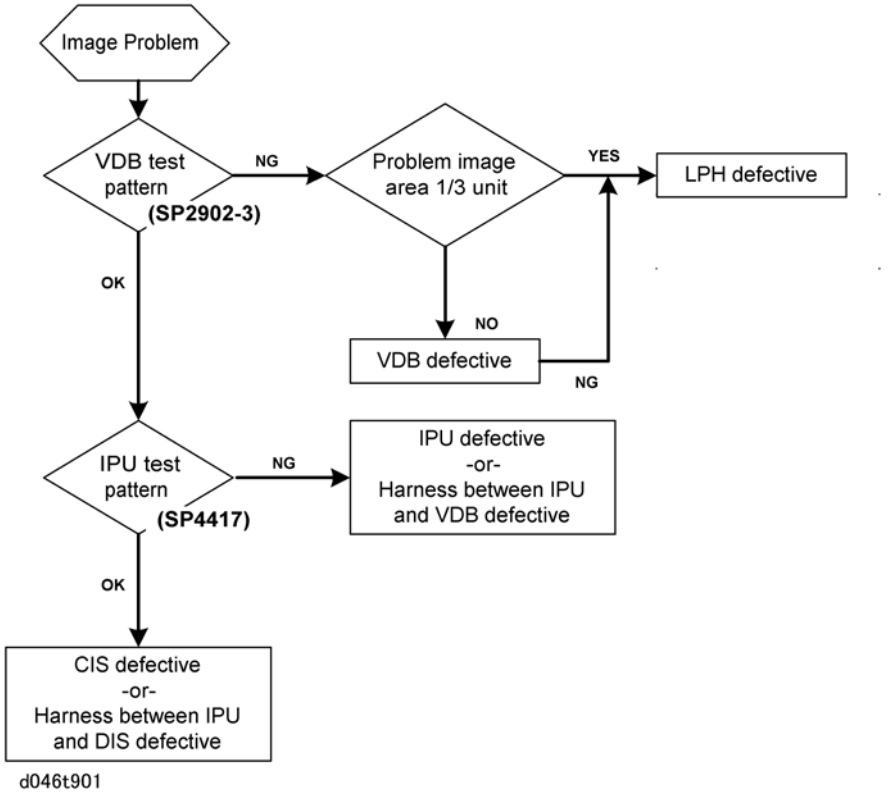
SC997	B	Software Error 4: Cannot select application function	GW
		An application does not start after the user pushed the correct key on the operation panel.	
		• Software bug • A RAM or DIMM option necessary for the application is not installed or not installed correctly.	

SC998	D	Software Error 5: Application cannot start	GW
		Register processing does not operate for an application within 60 s after the machine power is turned on. No applications start correctly, and all end abnormally.	
		• Software bug • A RAM or DIMM option necessary for the application is not installed or not installed correctly.	

6. Appendix: Troubleshooting Guide

Troubleshooting Guide

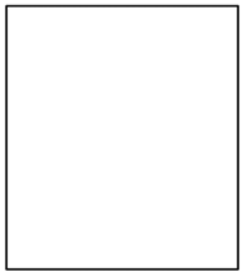
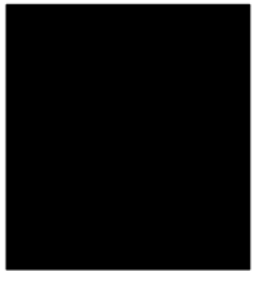
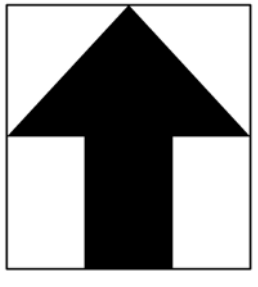
Troubleshooting Flowchart

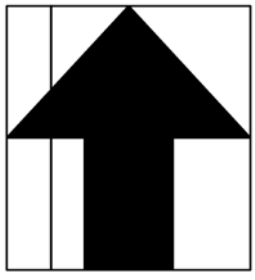
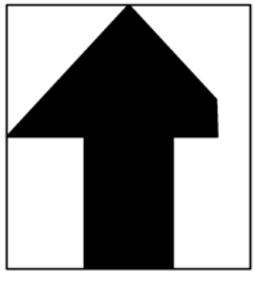


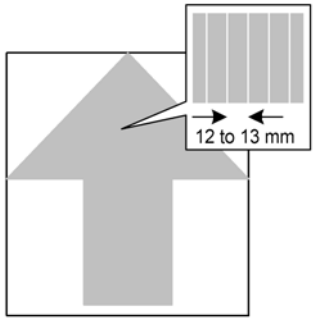
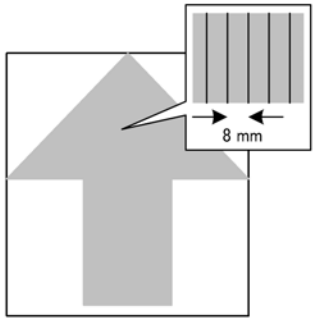
For the VDB test patterns, use SP2902-003.

For the IPU test patterns, use SP 4417

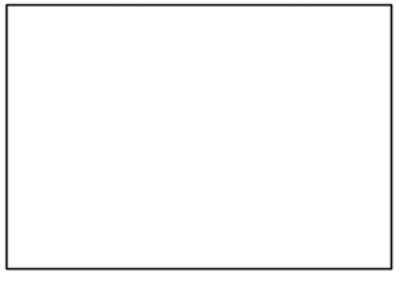
Scanning

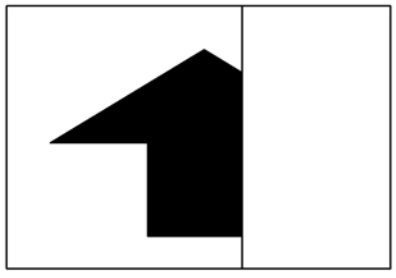
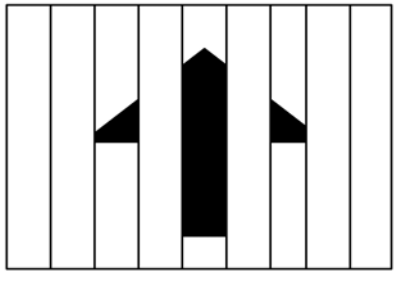
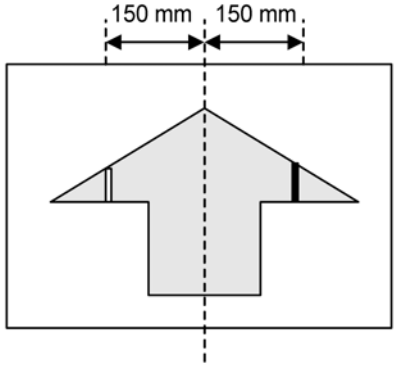
 d046t902	1.	No image (blank copy/print, or no image with only vertical black lines on the output) **Possible causes**: • Connection problem between CIS and IPU. • CIS defective
 d046t903	2.	No image (solid black copy/print, or no image with only vertical white lines on the output) **Possible causes:** • Connection problem between CIS and IPU. • CIS defective
 d046t904	3.	Light image **Possible causes:** • Low CIS output • IPU board defective

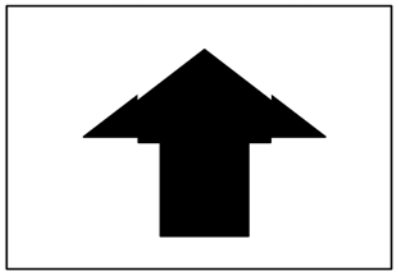
 d046t905	4.	Vertical black lines **Possible causes:** • Dirty exposure glass • CIS defective
 d046t906	5.	Vertical white lines **Possible causes**: • Dirty exposure glass • Dirty or scratched white platen roller • CIS defective
 d046t907	6.	Black or white bands with no image-width 1/8 A0 (E) size **Possible causes:** • Connection problem between CIS and IPU • CIS output error • IPU board adjustment error

 d046t907a	7.	White lines every 1 mm pitch in halftone areas **Possible cause:** • CIS defective
 d046t907b	8.	Bands/lines every 8 mm pitch in halftone areas **Possible cause:** • LPH defective

Printing

 d046t908	1.	No Image (blank copy/print) **Possible causes:** • VDB board defective • IPU board defective • LPH (LED head) defective

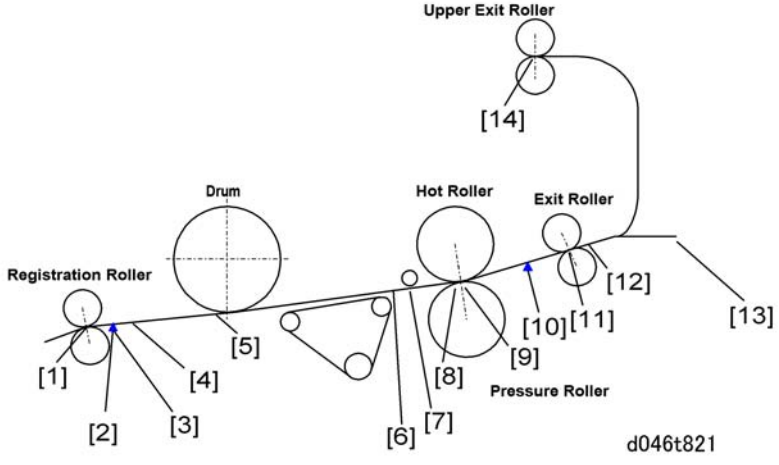
 d046t909	2.	Band with no image-width 1/3 of image **Possible cause:** • Connection problem between VDB and LPH
 d046t910	3.	Bands with no image-width 1/8 A0 (E) size **Possible cause:** • VDB board defective
 d046t911	4.	Vertical white and black line at 150 mm from center. **Possible causes:** LPH Joints adjustment error (☛LPH Adjustment)

 d046t912	5.	Horizontal line broken at 150 mm from center. **Possible causes:** • LPH sub scan timing error at joint position. (☛LPH Adjustment)

7. Appendix: Jam Detection

Jam Detection

Paper Feed Path Layout



1.	Registration roller nip: R
2.	Registration sensor ON: RS
3.	Registration sensor OFF: RS
4.	Paper stop position: P
5.	Image transfer position: T
6.	Transfer belt END: BE
7.	Spur position: H
8.	Hot roller/pressure roller entrance: NIP
9.	Hot roller/pressure roller exit: NIP
10.	Fusing unit exit sensor: FS
11.	Fusing exit roller nip: E1
12.	Separation stripper pawl position: B

13.	Lower paper exit: EX
14.	Upper paper exit roller nip: E2

Jam Code Table

	Jam Name	Detection Site Sensor
1	At Power On	If any sensor is ON.
3	Tray 1: No Feed: A2	Upper tray roll feed exit sensor. Exit sensor did not go ON during paper feed from Tray 1
4	Tray 2: No Feed: A2	Upper tray roll feed exit sensor. Exit sensor did not go ON during paper feed from Tray 2.
5	Tray 3: No Feed: A1 (Upper)	Lower roll feed exit sensor. Exit sensor did not go ON during paper feed from Tray 3.
		Upper cassette exit sensor Threshold: CF 270 mm
6	Tray 4: No Feed: A1	Exit sensor did not go ON during paper feed from Tray 4.
		Lower cassette exit sensor
8	Tray 3/4: No Feed: A2	Upper tray roll feed exit sensor. Upper tray roll feed, feeding from Tray 3 or Tray 4. Roll or cassette). Exit sensor did not go ON.
9	Tray 4: No Feed: A1 (Upper)	Upper cassette exit sensor. Tray 3 (cassette), feeding from Tray 4 (cassette). Cassette only. Exit sensor did not go ON.
13	Registration Sensor: Not On: B	(1) Registration sensor. Registration sensor did not go ON during paper feed. Other than when feeding paper manually.
		(2) Manual paper set sensor. Manual paper set sensor did not go ON during manual feed.
16	Exit Sn: Not On: C	Exit Sensor. Exit sensor did not go ON after paper passed registration sensor.
34	Bypass: No Feed: B	Registration sensor. Registration sensor did not go on during manual paper feed.

	Jam Name	Detection Site Sensor
53	Tray 1: Paper Lag: A2	Upper tray roll feed exit sensor. Exit sensor did not go OFF during paper feed from Tray 1.
54	Tray 2: Paper Lag: A2	Upper tray roll feed exit sensor. Exit sensor did not go OFF during paper feed from Tray 2.
55	Tray 3: Paper Lag: A1 (Upper)	Lower roll feed exit sensor. Exit sensor did not go OFF during paper feed from Tray 3.
		Upper cassette exit sensor. Exit sensor did not go OFF during paper feed from Tray 3 (upper paper cassette).
56	Tray 4 feed sensor A1 (Lower)	Lower roll feed exit sensor. Exit sensor did not go OFF during paper feed from Tray 4.
		Lower cassette exit sensor. Exit sensor did not go OFF during paper feed from Tray 4 (lower paper cassette).
58	Tray 3/4: No Feed: A2	Upper tray roll feed exit sensor. Upper tray roll feed, feeding from Tray 3 or Tray 4. (Roll or cassette.)
		Exit sensor did not go OFF.
59	Tray 4: Paper Log: A1 (Upper)	Upper cassette exit sensor. Tray 3 (cassette), feeding from Tray 4 (cassette). Cassette only. Exit sensor did not go OFF.
63	Registration Sensor: Not Off: B	Registration sensor. Registration sensor did not go OFF after start of paper feed.
66	Exit Sensor: Not Off: C	Exit Sensor. Exit sensor did not go OFF after paper passed registration sensor.
84	Bypass Sn: Not Off: B	Manual paper set sensor. Manual paper set sensor did not go OFF after start of manual paper feed.

8. Appendix: SP Mode Tables

SP Table Key

Notation	What it means
[range/step]	Example: [-9 to +9/0.1 mm]. Setting can be adjusted in the range ±9, and the value can be changed in 0.1 mms with each key press. The initial settings are recorded in the SMC report and displayed on the operation panel in the "Initial" box of each SP setting display.
italics	Comments.
DFU	Denotes "Design or Factory Use". Do not change this value.
Japan only	Feature or item is for Japan only. Do not change this value.
GW	These SP codes are related to controller operation.

Important

- **As a general rule, cycle the machine off and on with the main power switch every time you enter numbers for a new SP code settings. Switching the machine off and on enables the new settings.**
- **After you reset any SP code in Groups 1000 to 4000, a message on the operation panel will prompt you to cycle the machine off and on.**
- **The machine must be cycled off and on after changing any SP code in Group 5000 as well. However, a message does not appear to prompt you to cycle the machine off and on.**

⚠CAUTION

- Never turn off the main power switch when the power LED is lit or flashing. To avoid damaging the hard disk or memory, press the operation power switch on the operation panel to turn the power off, wait for the power LED to go off, then turn the main power switch off.

System Service Mode

SP1000 Feed

1001	Leading Edge Registration	
1	1st Roll	Adjusts the printing leading edge registration. [+10.0 to -10.0/**0**/0.1 mm] To delay the starting position of the image, increase the value.
2	2nd Roll	
3	3rd Roll/1st Cassette	
4	4th Roll/2nd Cassette	
5	By-pass feed	

1002	Side-to-Side Registration	
1	1st Roll	Adjusts the printing side-to-side registration. [+10.0 to -10.0/**0**/0.1 mm] To shift the starting position to the right, increase the value.
2	2nd Roll	
3	3rd Roll/1st Cassette	
4	4th Roll/2nd Cassette	
5	By-pass feed	

1003	Registration Buckle Adjustment
	Removes skew from sheets feed from the cassettes or paper rolls.
1	Cassette Feed
	When the registration sensor detects the leading edge of a cut sheet paper at the nip of the registration roller, the registration roller motor stops briefly and then starts again. • This buckles the paper slightly (about 5 mm) to correct skew. Use this SP to adjust the amount of time that the roller stops. • Too much buckle can cause wrinkling and lead to poor images. Lower this setting to shorten the time the registration motor remains off. • Not enough buckle can cause a jam at the registration roller (lag error). Raise this setting to lengthen the time registration motor remains off. [-20 to +20/**0**/1 mm]

10	1st Roll/2nd Roll
	D046: [-20 to +20/-**5**/1 mm] D049: [-20 to +20/**0**/1 mm]
11	3rd Roll/4th Roll
	D046: [-20 to +20/-**5**/1 mm] D049: [-20 to +20/**0**/1 mm] This SP adjusts the amount paper buckle created when the paper hits the registration roller. When the leading edge of paper longer than 460 mm from Tray 1, or paper longer than 690 mm from Tray 2, stops temporarily at the registration roller, even if the paper is stretched tight or there is too much slack, this can be corrected. After paper feed and registration roller rotation resume the paper is fed the prescribed distance to create buckle, the paper feed motor stops, then the paper is cut.

1103	Fusing Idling **DFU**
	Selects the fusing idling time. [0 to 5/**0**/1 min.] If the fusing temperature is below 100°C when the machine is turned on, idling starts as soon as the hot roller reaches the target temperature. However, if the fusing temperature is below 15°C the hot roller will idle for at least 1 minute, even with this SP set to "0" (OFF: No idling).

1105	Fusing Temp. Adjustment
1	Copy Ready Temperature
	This setting is used to determine the copy ready temperature. Copying can start at this temperature before the target control temperature set with SP1931-3. **Note**: This SP code applies to Mode 3 only. [0 to 50/**40**/1°C] **Example**: 195 - 40 = 155°C where "195" is the target control temperature set with SP1931-3 and "40" is the default setting of SP1105-1.
2	Edge Temperature **DFU**
	When the temperature set for the ends of the fusing roller is different from the temperature at the center, the setting for this SP is subtracted from the value of the target center temperature.

	Note: This SP applies to the D046 only. D046: [0 to 25/**10**/1]
3	Low Power Mode
	Sets the fusing temperature for low power mode. [80 to 150/**90**/1°C]
4	Lower Limit Edge Temperature **DFU**
	This SP sets the lower limit for the value of the hot roller/pressure roller end temperature. If the difference between the center and roller end temperature is greater than or equal to the value of the SP code setting, the machine will suspend fusing until these temperatures are once rise to acceptable levels. **Note**: This SP applies to the D046 only. [150 to 170/**155**/1°C] Center Temp (SP1105-1).- End Temp (SP1105-2 ≥ SP1104
5	Fusing Temperature Calibration **DFU**
	Calibrates the scale for the fusing temperature settings at the center of the hot roller. [-10 to +10/**0**/1°C]
6	Pressure Temperature Calibration **DFU**
	Calibrates the scale for the pressure temperature control at the center of the pressure roller. [-10 to +10/1°C]
7	Pressure Temperature Calibration: Edge **DFU**
	Calibrates the scale for the temperature control at the end of the pressure roller. [-10 to +10/**0**/1°C]
8	Fusing Temperature Calibration: Edge **DFU**
	Calibrates the scale for the temperature control at the end of the hot roller. [-10 to +10/1°C] Note: This SP applies to the D046 only. (The D046 has one hot roller end thermistor; the D049 has none.)

1106	Fusing Temperature Display
	Displays the hot roller and pressure roller temperatures (°C)

1	Hot Roller Temperature	
2	Pressure Roller Temperature: Center	
3	Pressure Roller Temperature: Edge	
4	Hot Roller Temperature: Edge	D046 only

1159	Fusing SC Settings
	This SP determines whether the machine stops and displays an SC if three consecutive jams occur in the fusing unit. [0 to 1/**0**/1] 0: Disable. SC code is not displayed. 1: Enable. SC code is displayed.

1801	Motor Speed Adjustment **DFU**	
	These speeds of the motors below can be adjusted by the percentage entered. • D046 120 mm/s • D049 170 mm/s • Raising the setting in the plus direction increases speed, lowering the setting in the minus direction lowers speed.	
1	Feed Motor: 1st Roll	Adjusts the feed motor speed. [D046: [-5 to +5/**-0.4**./0.1%] [D049: [-5 to +5/**-0.2**./0.1%]
2	Feed Motor: 2nd Roll	
3	Feed Motor: 3rd Roll	
4	Feed Motor: 4th Roll	
5	Feed Motor: Cut Paper Tray	[-5 to +5/**0**/0.1%]
6	Registration Motor	Adjusts the registration motor speed. [-5 to +5/**0**/0.02%]
7	Fusing Motor	Adjusts the fusing motor speed. D046: [-5 to +5/**0.8**/0.01%] D049: [-5 to +5/**0.3**/0.01%]

1901	Black Core Full Paste

	Use this SP code to select the feed station where a full-paste roll with a black core has been installed. The roll has a black core with the trailing edge of the roll paper either fully or partially taped to the surface of the black core. **Note**: • The normal paper-out control sequence does not for this type of roll. • When a roll reaches the end, paper feed stops before the end of the roll separates from the roll core, and the machine signals a paper jam.	
1	1st Roll	[0 to 1/**1**/1 Step]
2	2nd Roll	
3	3rd Roll	
4	4th Roll	

1911	By-pass Feed Start Timing Adjustment
	Adjusts the waiting time for the by-pass paper feed when paper is fed manually from the manual feed table. [0.5 to 8.0/**2**/0.5 sec.]

1912	Registration Motor Speed-Up Adjustment **DFU**
	Determines how fast the registration motor speeds up before the paper leaves the registration roller. [0 to 5/**2**/0.02%] • To keep a long sheet of paper taut and to prevent it from wrinkling the fusing motor rotates slightly faster than the registration motor. • If this tension is not adjusted the paper will snap out of the nip of the registration rollers and cause "jitter" in the image. This problem can occur specifically with A SEF paper. • While using Cut Pattern 3 with a copy longer than 460 mm from the upper roll tray (or longer than 690 mm from the lower roll tray), when the trailing edge of the paper feeds to a point 50 mm before the registration sensor, the speed of the registration motor is increased 20 pulses. This reduces the tension in the paper and allows the paper to exit the nip of the registration rollers smoothly. • This has the same effect as adjusting the feed motor speed with SP1801.

1913	Fusing Motor Speed-Up Control **DFU**

1	Adjustment Ratio
	Adjusts the percent of the increase in fusing motor speed. Normally, the speed of the fusing motor is slightly faster to keep the paper taut and prevent skewing and wrinkling. [0 to 18/**10**/1%]
2	Off Timing
	After the registration roller starts turning to feed paper, just before the paper reaches the nip of the fusing roller, the speed of the fusing motor is increased slightly while the paper is still in the paper separation path. This raises the speed of the paper separation belt and prevents skew. This SP adjusts the length of time from when the speed of the fusing motor is increased to when it returns to normal speed. [180 to 230/**205**/5 mm)

1914	Fusing Pressure Motor **DFU**	
1	Home Position Stop Mode	Resets the fusing pressure roller motor to the home position. [1 = ON, 0 = OFF]
2	Pressure Adjustment: Right	Adjusts the pressure. [-25 to +25/1]
3	Pressure Adjustment: Left	

1915	Fusing Motor Speed-Down Adjustment **DFU**
	This SP sets the rate of reduction in the fusing motor speed before the trailing edge of the paper leaves the nip of the registration rollers. [0 to -5/**-0.4**./0.02%] Note: • During paper feed to the fusing unit the fusing/exit motor speeds up slightly to keep the paper straight and tight in the paper feed path. • Before the trailing edge of the leaves the registration rollers, the speed of the fusing/exit motor is reduced so the paper does not snap out of the registration nip quickly and cause jitter in the image. • Stretching the paper excessively could cause distortion of the image. This SP allows you to correct this.

1916	Fusing Motor Speed Adj. **DFU**

These SP codes are used to calculate the speed of the fusing motor.

Example: Translucent Paper, Mode 2, 420 mm Roll Paper

- SP1-916-012...1.0% (298~460 mm Width)
- SP1-916-032...0.5% (Trans. Mode 2)
- SP1-916-051... 0% (Roll)

SP1916-10 to -13 Settings Table

	Width (mm)	Range	Default	Step (%)
10	611	-5 to +5	0	0.01
11	461 to 610		0.7	
12	298 to 460		1	
13	297 Less		1.2	

SP1916-21 to -45 Settings Table

	Type	Mode	Range(%)	Default(%)	Step (%)
21	Plain	1	-5 to +5	**0.01**	0.01
22		2			
23		3			
24		4			
25		5			
31	Trans.	1	-5 to +5	**0.5**	0.01
32		2			
33		3			
34		4			
35		5			
41	Film.	1	-5 to +5	**0.5**	0.01
42		2			

	Type	Mode	Range(%)	Default(%)	Step (%)
43		3			
44		4			
45		5			

SP1916-51 to -53 Settings Table

	Source	Range (%)	Default (%)	Step (%)
51	Roll	-5 to +5	0	0.1
52	Bypass			
53	Cassette			

1917	Side-to-Side Registration Offset
	The center of the paper cassette is the reference point for the alignment of all paper sizes in the paper cassettes. However, the amount of skew can be different for some paper sizes due to the positions of the side fences and the number of feed rollers that touch the paper. • After buckle adjustment, the machine corrects skew in the main scan direction (side-to-side) based on the size of the paper. • Based on the settings of SP1002-3, -4, this SP sets the amount of offset for the paper sizes. • This is a mechanical adjustment that is stored before execution. This adjustment is done for paper wider than 400 mm (in the main scan direction) after the adjustments of SP1002 003, 004 have been done.

SP1917 Settings Table

	Source	Width (mm)	Range	Default	Step (mm)
30	Cassette-1	230	-5 to +5	0	0.1
31		310			
32		400			
40	Cassette-2	230	-5 to +5	0	0.1
41		310			

	Source	Width (mm)	Range	Default	Step (mm)
42		400			
110	1st Roll	299	-5 to +5	**0**	0.1
111		440			
112		600			
120	2nd Roll	299	-5 to +5	**0**	0.1
121		440			
122		600			
130	3rd Roll	299	-5 to +5	**0**	0.1
131		440			
132		600			
140	4th Roll	299	-5 to +5	**0**	0.1
141		440			
142		600			

1918	Fusing/Registration Motor Speed Change **DFU** The machine stretches the paper between the registration roller and fusing roller by running the fusing/exit motor at a speed slightly higher than that of the registration motor. This "stretch-transport" method prevents long sheets from skewing and wrinkling. However, this stretching can also affect the rate of magnification. magnification. • To compensate for this, these SP codes change a shift in speed and timing control. • These settings are done for three variables: paper type, paper width, feed station. • Up to three shifts during the printing of one sheet is possible, but normally there is only one shift per sheet.

SP1918 Settings Table

	Source	Event	Type	Width	
10	Roll	1st Chg Timing	Plain	> 611	[132-3200/**170**/1 mm]
11				461-610	

	Source	Event	Type	Width	
12				298-460	
13				<297	
15		1st Chg %		>611	D046:[-5 to +5/**-0.8**/0.01%] D049:[-5 to +5/**-0.5**/0.01%]
16				461-610	D046:[-5 to +5/**-1.1**/0.01%] D049:[-5 to +5/-**1.2**/0.01%]
17				298-460	D046:[-5 to +5/**-1.3**/0.01%] D049:[-5 to +5/**-1.5**/0.01%]
18				<297	
20		1st Chg Timing		> 611	[0-3200/**170**/1 mm]
21				461-610	
22				298-460	
23				<297	
25	Roll	1st Chg %	Trans.	>611	[-5 to +5/**-0.8**/0.01%]
26				461-610	D046:[-5 to +5/**-1.2**/0.01%] D049:[-5 to +5/**-1.3**/0.01%]
27				298-460	D046:[-5 to +5/**-1.3**/0.01%] D049:[-5 to +5/**-1.5**/0.01%]
28				<297	
30		1st Chg Timing		> 611	[0-3200/**170**/1 mm]
31				461-610	
32				298-460	
33				<297	
35	Roll	1st Chg %	Film.	>611	[-5 to +5/**-1**/0.01%]
36				461-610	D046:[-5 to +5/**-1.4**/0.01%] D049:[-5 to +5/**-1.2**/0.01%]
37				298-460	D049:[-5 to +5/**-1.5**/0.01%]

1918-35
RTB 1a: New defaults (f/w ver 1.07)

	Source	Event	Type	Width	
38				<297	
41	Cass.	1st Chg Timing	Plain	461-610	[0-3200/**170**/1 mm]
42				298-460	
43				<297	
46		1st Chg %		461-610	[-5 to +5/**-1**/0.01%]
47				298-460	[-5 to +5/**-1.2**/0.01%]
48				<297	
51	Cass.	1st Chg Timing	Trans	461-610	[0-3200/**170**/1 mm]
52				298-460	
53				<297	
56		1st Chg %		461-610	[-5 to +5/**-1.2**/0.01%]
57				298-460	D046:[-5 to +5/**-1.5**/0.01%] D049:[-5 to +5/**-1.3**/0.01%]
58				<297	[-5 to +5/**-1.5**/0.01%]
70	Bypass	1st Chg Timing	Plain.	> 611	[0-3200/**170**/1 mm]
71				461-610	
72				298-460	
73				<297	
75		1st Chg %		>611	[-5 to +5/**-0.8**/0.01%]
76				461-610	D046:[-5 to +5/**-1.2**/0.01%] D049:[-5 to +5/**-1.1**/0.01%]
77				298-460	D046:[-5 to +5/**-1.4**/0.01%] D049:[-5 to +5/**-1.3**/0.01%]
78				<297	[-5 to +5/**-1.5**/0.01%]
80	Bypass	1st Chg Timing	Trans..	> 611	[0-3200/**170**/1 mm]

	Source	Event	Type	Width	
81				461-610	
82				298-460	
83				<297	
85		1st Chg %		>611	D046:[-5 to +5/**-1**/0.01%] D049:[-5 to +5/**-0.7**/0.01%]
86				461-610	D046:[-5 to +5/**-1.4**/0.01%] D049:[-5 to +5/**-1.2**/0.01%]
87				298-460	D046:[-5 to +5/**-1.6**/0.01%] D049:[-5 to +5/**-1.3**/0.01%]
88				<297	D046:[-5 to +5/**-1.7**/0.01%] D049:[-5 to +5/**-1.5**/0.01%]
90	Bypass	1st Chg Timing	Film.	> 611	[0-3200/**170**/1 mm]
91				461-610	
92				298-460	
93				<297	
95		1st Chg %		>611	[-5 to +5/**-0.9**/0.01%]
96				461-610	D046:[-5 to +5/**-1.5**/0.01%] D049:[-5 to +5/**-1.2**/0.01%]
97				298-460	D046:[-5 to +5/**-1.6**/0.01%] D049:[-5 to +5/**-1.3**/0.01%]
98				<297	D046:[-5 to +5/**-1.7**/0.01%] D049:[-5 to +5/**-1.5**/0.01%]
110	Roll	2nd Chg Timing	Plain	> 611	[132-3200/**170**/1 mm]
111				461-610	
112				298-460	
113				<297	

	Source	Event	Type	Width	
115		2nd Chg %		>611	[-5 to +5/**0**/0.1%]
116				461-610	
117				298-460	
118				<297	
120	Roll	2nd Chg Timing	Trans.	> 611	[0-3200/**170**/1 mm]
121				461-610	
122				298-460	
123				<297	
125		2nd Chg %		>611	[-5 to +5/**0**/0.1%]
126				461-610	
127				298-460	
128				<297	
130	Roll	2nd Chg Timing	Film.	> 611	[0-3200/**170**/1 mm]
131				461-610	
132				298-460	
133				<297	
135		2nd Chg %		>611	[-5 to +5/**-1**/0.01%]
136				461-610	
137				298-460	[-5 to +5/**0**/0.01%]
138				<297	
141	Cass.	2nd Chg Timing	Plain	461-610	[0-3200/**0**/1 mm]
142				298-460	
143				<297	
146		2nd Chg %		461-610	[-5 to +5/**0**0.01%]
147				298-460	

	Source	Event	Type	Width	
148				<297	
151	Cass.	2nd Chg Timing	Trans	461-610	[0-3200/**0**/1 mm]
152				298-460	
153				<297	
156		2nd Chg %		461-610	[-5 to +5/**0**0.01%]
157				298-460	
158				<297	
170	Bypass	2nd Chg Timing	Plain.	> 611	[0-3200/**0**/1 mm]
171				461-610	
172				298-460	
173				<297	
175		2nd Chg %		>611	[-5 to +5/**0**0.01%]
176				461-610	
177				298-460	
178				<297	
180	Bypass	2nd Chg Timing	Trans..	> 611	[0-3200/**0**/1 mm]
181				461-610	
182				298-460	
183				<297	
185		2nd Chg %		>611	[-5 to +5/**0**0.01%]
186				461-610	
187				298-460	
188				<297	
190	Bypass	2nd Chg Timing	Film.	> 611	[0-3200/**0**/1 mm]
191				461-610	

	Source	Event	Type	Width	
192				298-460	
193				<297	
195		2nd Chg %		>611	[-5 to +5/**0**0.01%]
196				461-610	
197				298-460	
198				<297	
210	Roll	3rd Chg Timing	Plain	> 611	[0-2200/**0**/1 mm]
211				461-610	
212				298-460	
213				<297	
215		3rd Chg %		>611	[-5 to +5/**0**/0.1%]
216				461-610	
217				298-460	
218				<297	
220	Roll	3rd Chg Timing	Trans.	> 611	[0-2200/**0**/1 mm]
221				461-610	
222				298-460	
223				<297	
225		3rd Chg %		>611	[-5 to +5/**0**/0.1%]
226				461-610	
227				298-460	
228				<297	
230	Roll	3rd Chg Timing	Film.	> 611	[0-2200/**0**/1 mm]
231				461-610	
232				298-460	

	Source	Event	Type	Width	
233				<297	
235		3rd Chg %		>611	[-5 to +5/**0**0.01%]
236				461-610	
237				298-460	
238				<297	
250	1st Change Speed Min. Length				
	This adjustment affects the minimum length of the paper fed from Tray 1 only when the roll feeder is installed in Tray 2 as well. [0 to 300/**0**/1 mm]				

1919	Paper Interval Adjustment **DFU** This SP allows you to increase or decrease the lengh of the interval between sheets when they go through the paper feed path. [0 to 1000/**0**/1 mm] Notes: • Enter the number with the operation panel, and push [#]. Use the [./*] key to enter a minus sign. • "0" is the smallest setting allowed. The "0" sets default interval of 90 mm; it does not set the interval to zero. • If this SP setting is less than the CPM down setting (which also sets the interval) the machine will ignore this SP setting and use the CPM setting to set the interval between sheets. • If this SP setting is more than the CPM down setting, the CPM setting will be subtracted from this SP setting and the difference will be added to the CPM setting. For example, if this SP setting "80" and CPM is "50", then (80 - 50) + 50 = 30 + 50 = 80 mm.

1920	Cut Length Adjustment
	This SP adjusts the cut length for each paper source and type of paper.

SP1920 Settings Table

	Source	Length (mm)	Type	Range	Default	Step (mm)
21	1st Roll	210 (8.5"/9")	Plain	-5 to 5	0	0.1
22		297 (11"/12")		-10 to +10		
23		420 (17"/18")				
24		594 (22"/24")				
25		841 (34"/36")				
26		1189 (44"/48")				
27		2000		-15 to 15		
28		3600		-30 to 30		
29		6000		-100 to 100		
30		15000		-300 to 300		
33		30000		-300 to 300		
41	1st Roll	210 (8.5"/9")	Translucent	-5 to 5	0	0.1
42		297 (11"/12")		-10 to 10		
43		420 (17"/18")				
44		594 (22"/24")				
45		841 (34"/36")				
46		1189 (44"/48")				
47		2000		-15 to 15		
48		3600		-30 to 30		
49		6000		-100 to 100		
50		15000		-300 to 300		
53		30000		-300 to 300		
61	1st Roll	210 (8.5"/9")	Film	-5 to 5	0	0.1
62		297 (11"/12")		-10 to 10		

	Source	Length (mm)	Type	Range	Default	Step (mm)
63		420 (17"/18")				
64		594 (22"/24")				
65		841 (34"/36")				
66		1189 (44"/48")				
67		2000		-15 to 15		
68		3600		-30 to 30		
69		6000		-100 to 100		
70		15000		-300 to 300		
73		30000		-300 to 300		
81	2nd Roll	210 (8.5"/9")	Plain	-5 to 5	0	0.1
82		297 (11"/12")		-10 to +10		
83		420 (17"/18")				
84		594 (22"/24")				
85		841 (34"/36")				
86		1189 (44"/48")				
87		2000		-15 to 15		
88		3600		-30 to 30		
89		6000		-100 to 100		
90		15000		-300 to 300		
93		30000		-300 to 300		
101	2nd Roll	210 (8.5"/9")	Translucent	-5 to 5	0	0.1
102		297 (11"/12")		-10 to 10		
103		420 (17"/18")				
104		594 (22"/24")				

	Source	Length (mm)	Type	Range	Default	Step (mm)
105		841 (34"/36")				
106		1189 (44"/48")				
107		2000		-15 to 15		
108		3600		-30 to 30		
109		6000		-100 to 100		
110		15000		-300 to 300		
113		30000		-300 to 300		
121	2nd Roll	210 (8.5"/9")	Film	-5 to 5	0	0.1
122		297 (11"/12")		-10 to 10		
123		420 (17"/18")				
124		594 (22"/24")				
125		841 (34"/36")				
126		1189 (44"/48")				
127		2000		-15 to 15		
128		3600		-30 to 30		
129		6000		-100 to 100		
130		15000		-300 to 300		
133		30000		-300 to 300		
141	3rd Roll	210 (8.5"/9")	Plain	-5 to 5	0	0.1
142		297 (11"/12")		-10 to +10		
143		420 (17"/18")				
144		594 (22"/24")				
145		841 (34"/36")				
146		1189 (44"/48")				

	Source	Length (mm)	Type	Range	Default	Step (mm)
147		2000		-15 to 15		
148		3600		-30 to 30		
149		6000		-100 to 100		
150		15000		-300 to 300		
153		30000		-300 to 300		
161		210 (8.5"/9")		-5 to 5		
162		297 (11"/12")				
163		420 (17"/18")				
164		594 (22"/24")		-10 to 10		
165		841 (34"/36")				
166	3rd Roll	1189 (44"/48")	Translucent		0	0.1
167		2000		-15 to 15		
168		3600		-30 to 30		
169		6000		-100 to 100		
170		15000		-300 to 300		
173		30000		-300 to 300		
181		210 (8.5"/9")		-5 to 5		
182		297 (11"/12")				
183		420 (17"/18")				
184		594 (22"/24")		-10 to 10		
185	3rd Roll	841 (34"/36")	Film		0	0.1
186		1189 (44"/48")				
187		2000		-15 to 15		
188		3600		-30 to 30		

	Source	Length (mm)	Type	Range	Default	Step (mm)
189		6000		-100 to 100		
190		15000		-300 to 300		
193		30000		-300 to 300		
201	4th Roll	210 (8.5"/9")	Plain	-5 to 5	0	0.1
202		297 (11"/12")		-10 to +10		
203		420 (17"/18")				
204		594 (22"/24")				
205		841 (34"/36")				
206		1189 (44"/48")				
207		2000		-15 to 15		
208		3600		-30 to 30		
209		6000		-100 to 100		
210		15000		-300 to 300		
213		30000		-300 to 300		
221	4th Roll	210 (8.5"/9")	Translucent	-5 to 5	0	0.1
222		297 (11"/12")		-10 to 10		
223		420 (17"/18")				
224		594 (22"/24")				
224		841 (34"/36")				
226		1189 (44"/48")				
227		2000		-15 to 15		
228		3600		-30 to 30		
229		6000		-100 to 100		
230		15000		-300 to 300		

	Source	Length (mm)	Type	Range	Default	Step (mm)
233		30000		-300 to 300		
241	4th Roll	210 (8.5"/9")	Film	-5 to 5	0	0.1
242		297 (11"/12")		-10 to 10		
243		420 (17"/18")				
244		594 (22"/24")				
245		841 (34"/36")				
246		1189 (44"/48")				
247		2000		-15 to 15		
248		3600		-30 to 30		
249		6000		-100 to 100		
250		15000		-300 to 300		
253		30000		-300 to 300		

1923	Cutter Brake Timing **Not Used**	
	These two SP codes set the brake timing for the 1st and 2nd cutter. [0 to 12/**10**/1 ms]	
1	1st Cutter	For upper tray drawer (T1, T2)
2	2nd Cutter	For lower tray drawer (T3, T4)

1924	Roll Reverse Timing **DFU**
	Sets the length of time that the paper feed motor stops before it reverses take-up paper after paper feed. (The rolls are reversed after every job to take-up the leading edge of the roll so the common paper path remains clear.) [0 to 2/**1**/0.1 sec.]

1925	Cut Length Offset Correction **Not Used**

	This setting corrects for factors that affect paper slippage during feed, such as paper surface characteristics. 0: Japanese paper (Factory standard) 1: Other countries paper

1926	Lift Motor Off Timing **DFU**	
	When a loaded paper cassette tray is closed: • The tray lift motor lifts the tray until the lift sensor switches on. • The tray lowers until the sensor switches off. • The tray lift motor switches the prescribed time (20 ms) to lift the tray to the correct feed position. This SP adjusts the length of time for the prescribed lift.	
1	1st Cassette	[20 to 200/**20**/20 ms]
2	2nd Cassette	

1927	Pickup Solenoid On Time **DFU**	
	This SP adjusts the length of time the pickup solenoid remains on (500 ms) when a sheet of paper is feed from a cassette tray.	
1	1st Cassette	[200 to 1000/**500**/20 ms]
2	2nd Cassette	

1929	Registration Clutch ON/OFF: Leading Edge Roll **DFU**
	This SP switches off the registration clutch timing. Switch this SP on (1) if a blank spot appears in the center of the image at the leading edge. [0 to 1/**0**/1] 0: OFF This is normal operation. The registration clutch disengages and stops the registration roller just before the leading edge reaches the roller. 1: ON The registration roller does not disengage, and the registration roller does not stop. The paper continues to feed without the leading edge hitting the stopper roller to correct skew.

1931	Target Temperature: Hot Roller		
	These settings set the values for the target temperature of the hot roller, based on the type of paper used: Plain Paper, Tracing Paper (Trans.), and Film. Each paper type has 5 modes, so a total of 15 calculations is done:		
	Type	**Mode**	**[Range/Default/Step °C]**
1	Plain	1	[120 to 220/**195**/5°C]
2		2	
3		3	
4		4	[120 to 220/**185**/5°C]
5		5	[120 to 220/**175**/5°C]
6	Trans.	1	[120 to 220/**220**/5°C]
7		2	[120 to 220/**195**/5°C]
8		3	
9		4	[120 to 220/**165**/5°C]
10		5	
11	Film	1	[120 to 220/**195**/5°C]
12		2	[120 to 220/**190**/5°C]
13		3	[120 to 220/**185**/5°C]
14		4	
15		5	[120 to 220/**175**/5°C]
016	Plain: Low Temperature Mode		[120 to 220/**195**/5°C]

1932	Target Temperature: Pressure Roller
	These settings set the values for the target temperature of the pressure roller, based on the type of paper used: Plain Paper, Tracing Paper (Trans.), and Film. Each paper type has 5 modes, so a total of 15 calculations is done. This SP codes sets the start temperature for feedback pressure control.

SP1932 Settings Table

	Type	Mode	[Range/Default/Step °C]
1	Plain	1	[55 to 180/**100**/5°C]
2		2	[55 to 180/**90**/5°C]
3		3	[55 to 180/**60**/5°C]
4		4	
5		5	
6	Trans.	1	[55 to 180/**150**/5°C]
7		2	[55 to 180/**100**/5°C]
8		3	[55 to 180/**60**/5°C]
9		4	
10		5	
11	Film	1	
12		2	
13		3	
14		4	
15		5	
16	Plain: Low Temperature Mode		[55 to 180/**120**/5°C]

1934	Lower Limit Temperature: Hot Roller			
	These settings set the values for minimum temperature, based on the type of paper used: Plain Paper, Tracing Paper (Trans.), and Film. Each paper type has 5 modes, so a total of 15 calculations is done:			
	Target	**Type**	**Mode**	**[Range/Default/Step]**
1	Hot Roller	Plain	1	[0 to 50/**20**/5°C]
2			2	[0 to 50/**15**/5°C]
3			3	[0 to 50/**25**/5°C]
4			4	[0 to 50/**20**/5°C]

5			5	
6		Trans.	1	
7			2	
8			3	
9			4	
10			5	
11		Film	1	
12			2	
13			3	
14			4	
15			5	
16	Plain: Low Temperature Mode			[0 to 50/**0**/5°C]

1935	Upper Limit Temperature: Pressure Roller			
	These settings set the values for maximum temperature, based on the type of paper used: Plain Paper, Tracing Paper (Trans.), and Film. Each paper type has 5 modes, so a total of 15 calculations is done:			
	Target	**Type**	**Mode**	**[Range/Default/Steps]**
1	Pressure Roller	Plain	1	[0 to 50/**20**/5 Steps]
2			2	[0 to 50/**25**/5 Steps]
3			3	[0 to 50/**30**/5 Steps]
4			4	[0 to 50/**20**/5 Steps]
5			5	
6		Trans.	1	
7			2	
8			3	
9			4	

10			5	
11		Film	1	
12			2	
13			3	
14			4	
15			5	
16	Plain: Low Temperature Mode			[0 to 50/**0**/5 Steps]

1936	Lower Limit Temperature: Press Roller		
	This SP sets the minimum difference allowed between the actual temperature and the target temperature of the pressure roller. • If the setting for the target temperature of the pressure roller is high (SP1932), the temperature of the pressure roller is lowered for continuous printing on plain paper. • At this time, if the temperature is below the temperature set for the pressure roller, paper feed will stop during a long job to perform inching to allow enough time for the pressure roller temperature to rise to the level of the prescribed setting, and then the job will continue. **Important**: • Modes "1" to "5" below refer to the paper and thickness settings selected in User Tools. • In order for this SP to operate, SP9952-1 must be at "0" (default) so that the machine can acquire temperature readings (feedback) from the pressure roller thermistors. SP9952 should never be adjusted in the field.		
	Type	**Mode**	**[Range/Default/Steps]**
1	Plain	1	[0 to 50/**20**/5°C]
2		2	
3		3	
4		4	
5		5	
6	Trans.	1	[0 to 50/**0**/5°C]
7		2	[0 to 50/**20**/5°C]

8		3	
9		4	
10		5	
11	Film	1	
12		2	
13		3	
14		4	
15		5	

1937	Low Temp Environ Detect Control
	These SP's are used to modify fusing temperature control sequence in a low temperature environment where room temperature is below the optimum room temperature of 20°C (68°F). **Note** • At optimum room temperature, the machine should reach the target fusing temperature within 2 min. • If the hot roller does not reach the target fusing temperature within 2 minutes, the machine issues SC542 (Fusing Temperature Warmup Error).
1	Low Temperature Setting
	The machine monitors the time required for the hot roller temperature to reach the critical temperature defined by this SP: Copy Ready Temperature (SP1105) - This SP Value (Default: 20°C) In a low temperature environment copying will not begin at the normal copy ready temperature. [0 to 50/**20**/5]
2	Low Temperature Time Setting
	This SP sets the length of time within which the hot roller temperature should reach the target temperature set with SP1937-1. If the hot roller does not reach the SP1937-1 temperature within this time limit, the machine will not allow copying to start when the temperature reaches the ready temperature. [0 to 120/**120**/1 sec.]
3	Pressure Inching Start Temperature

	This SP sets the temperature at which inching starts in a low-temperature environment where fusing temperature control is handled with the settings of SP1937. If the machine detects a low temperature environment at power on: • Inching starts if the temperature of the pressure roller is more than 60°C. Inching will start when the hot roller reaches its target temperature. • Inching does not start if the temperature of the pressure roller is less than 60°C. Inching will start when the temperature of the hot roller reaches the copy ready temperature. Note: 60°C is the default target temperature of the pressure roller set with SP1932-3 (Roll paper, plain Mode 3). [0 to 50/**20**/5]
11	Low Temperature Mode Setting: Cold Start
	If the hot roller temperature is below the temperature set with this SP at the beginning of a cold start, the machine determines that it is in a low temperature environment [0 to 50/**15**/1]
12	Low Temp Mode Setting: Cold Start Hold Time
	This SP determines the length of time the machine remains in the low temperature cold start mode after the machine determines that that it has been cold started in a low temperature environment. After this time has elapsed, fusing temperature control will operate with the paper type and thickness settings. [0 to 20/**7**/0.5 min.]
13	Low Temp Mode Paper Interval Ratio
	This SP sets the size of the gap between sheets of paper while the machine is in the low temperature environment cold start mode. [1 to 10/**3**/0.1 mm]

1940	CPM Down **DFU**
	While the machine is operating the CPM down function increases the gap between the trailing edge of the sheet in the fusing unit and the leading edge of the sheet behind. Widening this gap allows more time for the hot roller to transfer heat to the pressure roller while there is no paper between the fusing roller and pressure roller. This keeps the fusing temperature at the optimum level for fusing. This is especially important in long jobs that use narrow paper.
1	Enable
	This setting disables/enables the CPM down function during machine operation.

	[0 to 1/1/1] **Note**: Disabling this feature is not recommended.	
11	Temperature Differential: Step 1	[25 to 75/**50**/5]
12	Temperature Differential: Step 2	[5 to 50/**25**/5]
13	Temperature Differential: Step 3	[5 to 50/**25**/5]
21	Paper Interval: Step 1	[90 to 200/**100**/10 mm]
22	Paper Interval: Step 2	[100 to 420/**210**/10 mm]
23	Paper Interval: Step 3	[100 to 420/**210**/10 mm]

SP1940-11, -12, -13, -21, -22, -23

Item	Temp. Difference (°C)		Gap (mm)	
	Setting	Default	Setting	Default
Step 1	25 to 75	**50**	100 to 420	**100**
Step 2	5 to 50	**25**	100 to 420	**210**
Step 3	5 to 50	**25**	100 to 420	**210**
Cutoff Value	**5**		10	

- The "differential" (SP1940-11, -12, -13) is the difference between the temperatures at the center and end of the pressure roller (measured by the pressure roller center and end thermistsor).
- The "paper interval" (SP1940-21, -22, -23), is set (or adjusted) with SP1940-21, -22, -23.

Step 1	If the temperature reading of the pressure roller center thermistor is higher than the temperature of the pressure roller end thermistor ("differential"), the paper feed timing widens the gap between paper by the Default distance (+100 mm to existing gap).
Step 2	If the difference between the temperatures is still not within range at Step 2 after the gap was widened at Step 1, the default distance for Step 2 is added to the gap (+210 mm to existing gap).
Step 3	If the difference between the temperatures is still not within range at Step 3 after the gap was widened at Step 3, the default distance for Step 3 is added to the gap (+210 mm to existing gap).

1943	CPM Down Setting II **DFU**	
	The SP1940 settings control the operation of the CPM function while the machine is operating. SP1943 controls the operation of the CPM down function after a cold start and after the machine recovers from the energy save mode.	
1	Enable II	
	This setting disables/enables the CPM down function after a cold start after the machine recovers from the energy save mode. [0 to 1/1/1] **Note**: Disabling this feature is not recommended.	
11	Paper Interval: Step 2 II	[100 to 1500/**450**/10 mm]
12	Paper Interval: Step 3 II	[100 to 1500/**1300**/10 mm]

SP1943-11, -12

Plain Paper, Recycled paper, Film					
	Mode 1	**Mode 2**	**Mode 3**	**Mode 4**	**Mode 5**
Step 1	160<T	155<T	148<T		
Step 2	151<T<159	146<T<154	143<T<147		
Step 3	T<150	T<145	T<142		

Tracing Paper					
	Mode 1	**Mode 2**	**Mode 3**	**Mode 4**	**Mode 5**
Step 1	175<T	170<T	166<T		155<T
Step 2	166<T<174	161<T<169	156<T<165		146<T<154
Step 3	T<165	T<160	T<155		T<145

- The numbers in the table above are the temperatures at the center and end of the pressure roller (measured by the pressure roller center and end thermistsor) when the machine is turned on or leaves the energy save mode.
- The temperature thresholds are based on the type of paper selected for the job and the mode.

Range/Defaults for Both Types of Paper

	Setting Range (mm)	Gap mm (Defaults)
Step 1	Normal: No Adjustment	---
Step 2	100 to 1500	**450**
Step 3	100 to 1500	**1300**

- The "Setting Ranges" are the ranges for SP1943-11, -12.
- The "Gap" settings are the default sizes set for the gap between the trailing edge of the sheet ahead and leading edge of the sheet behind (S1943-11, -12).

Step 1	No adjustment.
Step 2	The size of the gap is increased with the default (450) if the temperature is not within range.
Step 3	The size of the gap is increased with the default setting (1300) if the temperature is still not within range after the gap is widened by at Step 2.

1945	Long Print Level Setting **DFU**
1949	Press FB Temperature Coeff **DFU**

1950	Paper Exit Control **DFU**

1951	Fusing Pressure
	Control adjustments are done for each fusing mode to achieve optimum pressure between the fusing roller and pressure roller for the job. The adjustments are done for the type of paper used (normal, tracing paper, film) in Modes 1 to 5 (5 Modes/Each Paper Type (3) = 15 patterns). There are three: Step 1, 2, 3 • Step 1: Less than 165°C • Step 2: 166-180°C • Step 3: More than 181°C The amount of pressure exerted by each pressure motor can be adjusted with this SP code for optimum fusing. • Step 1 (< 165°C) entered value [a] • Step 2 (166-180°C) entered value [b] + Step 1 entered value [a]

	• Step 3 (>181°C) entered value [c] + Step 2 entered value [b] + Step [1] entered value [a]. **Notes:** • Sum limit is [a] + [b] + [c] less than or equal to 5000. • The priority for reflection of the values is in this order: [a], [b], [c]. • The initial values for D046/D049 are not the same (see below).

SP1951 Settings Table

	Type	Mode	Step	Input Value	[Range/Default/Step]
11	Plain	**1**	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]
12			2	[a]+[b]	[0 to 5000/**0**/1]
13			3	[a]+[b]+[c]	
21	Plain	**2**	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]
22			2	[a]+[b]	D046: [0 to 5000/**200**/1] D049: [0 to 5000/**750**/1]
23			3	[a]+[b]+[c]	D046: [0 to 5000/**300**/1] D049: [0 to 5000/**750**/1]
31	Plain	**3**	1	[a]	D046: [0 to 5000/**1800**/1] D049: [0 to 5000/**500**/1]
32			2	[a]+[b]	D046: [0 to 5000/**1200**/1] D049: [0 to 5000/**1750**/1]
33			3	[a]+[b]+[c]	D046: [0 to 5000/**300**/1] D049: [0 to 5000/**750**/1]
41	Plain	**4**	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]
42			2	[a]+[b]	D046: [0 to 5000/**200**/1] D049: [0 to 5000/**750**/1]
43			3	[a]+[b]+[c]	D046: [0 to 5000/**300**/1]

	Type	Mode	Step	Input Value	[Range/Default/Step]
					D049: [0 to 5000/**750**/1]
51	Plain	***5***	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]
52			2	[a]+[b]	[0 to 5000/**750**/1]
53			3	[a]+[b]+[c]	D046: [0 to 5000/**300**/1] D049: [0 to 5000/**750**/1]
61	Trans.	**1**	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]
62			2	[a]+[b]	[0 to 5000/**0**/1]
63			3	[a]+[b]+[c]	
71	Trans.	**2**	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]
72			2	[a]+[b]	[0 to 5000/**0**/1]
73			3	[a]+[b]+[c]	
81	Trans.	**3**	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]
82			2	[a]+[b]	[0 to 5000/**0**/1]
83			3	[a]+[b]+[c]	
91	Trans.	**4**	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]
92			2	[a]+[b]	D046: [0 to 5000/**200**/1] D049: [0 to 5000/**750**/1]
93			3	[a]+[b]+[c]	[0 to 5000/**300**/1]
101	Trans.	***5***	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]
102			2	[a]+[b]	D046: [0 to 5000/**200**/1] D049: [0 to 5000/**750**/1]

	Type	Mode	Step	Input Value	[Range/Default/Step]
103			3	[a]+[b]+[c]	[0 to 5000/**300**/1]
111	Film.	**1**	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]
112			2	[a]+[b]	D046: [0 to 5000/**200**/1] D049: [0 to 5000/**750**/1]
113			3	[a]+[b]+[c]	D046: [0 to 5000/**300**/1] D049: [0 to 5000/**750**/1]
121	Film.	**2**	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]
122			2	[a]+[b]	D046: [0 to 5000/**200**/1] D049: [0 to 5000/**750**/1]
123			3	[a]+[b]+[c]	D046: [0 to 5000/**300**/1] D049: [0 to 5000/**750**/1]
131	Film.	**3**	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]
132			2	[a]+[b]	D046: [0 to 5000/**200**/1] D049: [0 to 5000/**750**/1]
133			3	[a]+[b]+[c]	D046: [0 to 5000/**300**/1] D049: [0 to 5000/**750**/1]
141	Film.	**4**	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]
142			2	[a]+[b]	D046: [0 to 5000/**200**/1] D049: [0 to 5000/**750**/1]
143			3	[a]+[b]+[c]	D046: [0 to 5000/**300**/1] D049: [0 to 5000/**750**/1]
151	Film.	**5**	1	[a]	D046: [0 to 5000/**2800**/1] D049: [0 to 5000/**1500**/1]

	Type	Mode	Step	Input Value	[Range/Default/Step]
152			2	[a]+[b]	D046: [0 to 5000/**200**/1] D049: [0 to 5000/**750**/1]
153			3	[a]+[b]+[c]	D046: [0 to 5000/**300**/1] D049: [0 to 5000/**750**/1]

1955	Transport Fan Duty Setting **DFU**
1	Very Thin Paper
	Selects the transport fan rotation speed for Japanese chemical paper. The suction created by the transport motor below the paper feed path keeps the paper straight. The force of this suction could be too great for extremely thin paper. [0 to 100/**0**/10 %]
2	Stand-by Condition
	Selects the transport fan rotation speed for stand-by mode. [0 to 100/100/10%]

SP2000 Drum

2001	Charge Corona Adjustment **DFU**	
1	Total Corona Current	Adjusts the charge corona output. [650 to 1530/**1250**/10 uA]
2	Grid Voltage: Image Area	Adjusts the charge grid output. [160 to 1080/**800**/10V]
3	Grid Voltage: ID Sensor Pattern	Adjusts the charge grid output for the ID sensor pattern. [160 to 1080/**650**/10V]

2101	Printing Erase Margin	
	SP2946 must be "On", or these settings will be ignored.	
1	Leading Edge	Adjusts the printing margin. [0 to 10/**2**/0.1 mm]

2	Trailing Edge	
3	Left Edge	
4	Right Edge	

2110	Test Mode dpi **DFU**
	This SP adjusts the image resolution. This adjustment is required for Design checking and testing the FCI operation with the test patterns. Once the machine leaves the SP mode, this SP automatically returns to its default settings. [0 to 19/**8**/1]

2201	Development Bias Adjustment
1	Image Area
	Sets the development bias voltage to adjust the toner amount for the image area. [100 to 1000/**650**/10V]
2	ID Sensor Pattern: Low Duty Copy Jobs
	Sets the development bias to adjust the toner amount for the ID sensor pattern. [100 to 1000/**390**/10V]
3	ID Sensor Pattern: High Duty Copy Jobs
	Sets the development bias to adjust the toner amount for the ID sensor pattern. [100 to 1000/**440**/10V]
4	Copy Jobs
	Determines the mode used for generating the ID sensor pattern. [0 to 1/**1**/1] 0: Low, 1:High

2207	Forced Toner Supply
	Press [Execute] to execute a forced toner supply. If this switched on, this SP supplies more toner to darken light copies. For every execution, toner is supplied one time. After doing this SP, make a copy and check the copy density.

2208	Toner Supply Setting
	Gain
1	Adjusts the toner supply for ordinary operations by adjusting the GAIN (Vsp/Vsg). **DFU** [0 to 9/**3**/1] The GAIN value for toner supply is determined by the ID sensor reading (Vsp/Vsg) and selected from a lookup table. The larger the value of the setting, the larger the GAIN used to control the density. This setting may require adjustment for a customer with special needs, such as continuous copy jobs of that contain photographs.
	Supply Capacity
2	Selects the toner supply capacity for the job load. [0.1 to 3.5/**2.5**/0.1] This SP sets the toner supply coefficient for toner supply control. This coefficient is used to determine the amount of toner, based on the calculation with this coefficient, the GAIN value, and width of the paper. Increasing the value of this setting raises the amount of toner applied and controls the image density. The larger this setting, the larger the amount of toner for the image density.
	Toner Supply Mode
3	This SP sets the toner supply mode. Three selections are available. [0 to 2/**0**/1] 0: Detect Mode. Uses the ID sensor reading (Vsp/Vsg) to determine the GAIN setting. 1: Fixed Mode (3%) Sets the GAIN value for toner supply for 3% coverage and ignores the ID sensor input. Use this setting for drawings (originals that contain fine lines.) 2: Fixed Mode (6%). Sets the GAIN value for toner supply for 6% coverage and ignores the ID sensor input. Use this setting for graphics (originals that contain photos or graphics that require large amounts shading or fill.) Note: • Normally the machine uses the Detect Mode (the default) for copies up to 1250 mm (49.2 in.) in length. • Even with the default setting (0: Detect Mode) the machine automatically switches to Fixed Mode for "Long Prints". Long prints are copies longer than 1250 mm (49.2 in.).

	• For the Fixed Mode only two selections are available: 1:3% or 2:6%. However, you can adjust this amount of coverage for either setting. SP2208-5 adjusts the amount of coverage for selection "1" (3%). SP2208-6 adjusts the amount of cover for selection "2" (6%). SP2208-7 must be switched on for either adjustment to take effect. • If the ID sensor is damaged and cannot be replaced immediately, set to 1 or 2 so the customer can continue to use the machine until a new ID sensor is available for replacement. After installing a new ID sensor, reset this SP code to 0.
4	Toner Supply Time
	This SP determines the length of time that the toner supply clutch remains on to supply toner. [0 to 1/**0**/1] 0: Normal 1: Increase Toner Supply Time **Important**: If "1" is selected **independently** all toner is supplied while the development unit rollers are rotating. This can adversely affect toner supply control.
5	Long Print: Drawing
	This SP sets the percent of coverage precisely for drawings when the machine uses the Fixed Mode (SP2208-3). [1 to 40/3/1%] **Note**: • If the length of the copy exceeds 1250 mm (49.2 in.) the machine automatically switches to the Fixed Mode (SP208-3). • The Long Print: Drawing mode (this SP) and Long Print: Graphic mode (SP2208-6) are separate. Drawings are originals with large numbers of fine lines, and Graphics are originals with graphic images that require more solid shading and fill such as photos. • If the customer is scanning large numbers of drawings, first switch on SP2208-7 (select "1") then do this SP adjustment to set the percent of coverage.
6	Long Print: Graphic
	This SP sets the percent of coverage precisely for graphics when the machine uses the Fixed Mode (SP2208-3). [1 to 40/**6**/1%] **Note**: • If the length of the copy exceeds 1250 mm (49.2 in.) the machine automatically switches to the Fixed Mode (SP208-3).

	• The Long Print: Graphic mode (this SP) and Long Print: Drawing mode (SP2208-5) are separate. Drawings are originals with large numbers of fine lines, and Graphics are originals with graphic images that require more solid shading and fill such as photos. • If the customer is scanning large numbers of originals that contain graphics, first switch on SP2208-7 (select "1") then do this SP adjustment to set the percent of coverage.
	Long Print Mode Setting
7	This SP must be switched ON to have the adjustments for SP2208-5 and SP2208-6 enabled for Fixed Mode (SP2208-3). If the length of the copy exceeds 1250 mm (49.2 in.) the machine automatically switches to the Fixed Mode (SP208-3). [0 to 1/**0**/1] 0: Off: SP2208-5, SP2208-6 adjustments are ignored. In SP2208-3 the default settings are used for 3% or 6% ("1" or "2", whichever is selected). 1: On. After this SP is switched ON: • The SP2208-5 (Long Print: Drawing) setting will applied to the "1" selection (3%) for SP2208-3 . • The SP2208-6 (Long Print: Graphic) setting will be applied to the "2" selection (6%) for SP2208-3.

2301	Transfer Current Adjustment
	These SPs adjust the transfer output power and the transfer output coefficients for the leading edges, central images, and trailing edges. Adjustments can be done for each type of paper.

8

SP2301 Settings Table

	Source	Type	Location	[Range/Default/Step]
1	Roll	Plain	Before Leading Edge	[0 to 230/**75**/1 uA]
2			Leading Edge	
3			Image Area	[0 to 230/**80**/1 uA]
4			Trailing Edge	[0 to 230/**75**/1 uA]
5			Coefficient	[1 to 2/**1**/0.1]
6		Trans	Before Leading Edge	[0 to 230/**75**/1 uA]
7			Leading Edge	
8			Image Area	[0 to 230/**80**/1 uA]

	Source	Type	Location	[Range/Default/Step]
9			Trailing Edge	[0 to 230/**75**/1 uA]
10			Coefficient	[1 to 2/**1**/0.1]
11			Before Leading Edge	[0 to 230/**95**/1 uA]
12			Leading Edge	
13		Film	Image Area	[0 to 230/**100**/1 uA]
14			Trailing Edge	[0 to 230/**95**/1 uA]
15			Coefficient	[1 to 2/**1**/0.1]
21			Before Leading Edge	[0 to 230/**75**/1 uA]
22			Leading Edge	
23		Plain	Image Area	[0 to 230/**80**/1 uA]
24			Trailing Edge	[0 to 230/**75**/1 uA]
25			Coefficient	[1 to 2/**1**/0.1]
26			Before Leading Edge	[0 to 230/**75**/1 uA]
27			Leading Edge	
28	Cut	Trans	Image Area	[0 to 230/**80**/1 uA]
29			Trailing Edge	[0 to 230/**75**/1 uA]
30			Coefficient	[1 to 2/**1**/0.1]
31			Before Leading Edge	[0 to 230/**95**/1 uA]
32			Leading Edge	
33		Film	Image Area	[0 to 230/**100**/1 uA]
34			Trailing Edge	[0 to 230/**95**/1 uA]
35			Coefficient	[1 to 2/**1**/0.1]

2401	Transfer Current Timing
	These SP codes adjust the transfer current timing.

2301-22, -31
RTB 1a: New defaults (f/w ver 1.07)

1	ON Timing: Roll Paper
	SP2401-1 to SP2401-3 controls current timing at the leading edge of roll paper, SP2401-5 controls current timing to areas other than the leading edge of roll paper. [-5 to 30/**-5**/ 1 mm]
2	ON Timing: Cut Paper
	SP2401-2 to SP2401-4 controls current timing at the leading edge of cut sheet paper, SP2401-5 controls current timing to areas other than the leading edge of cut sheet paper.. [-5 to 30/**-5**/ 1 mm]
3	Leading Edge: Roll Paper
	SP2401-1 to SP2401-3 controls charge timing at the leading edge of roll paper, SP2401-5 controls charge timing to areas other than the leading edge of roll paper. [10 to 300/**100**/1 mm]
4	Leading Edge: Cut Paper
	This SP sets area outside the image area from the time separation ac/dc goes ON and switches the separation dc for the leading edge separation. AC is not reflected. Also, this setting is specific for different types of paper. • SP2401-2 to SP2401-4 controls current timing at the leading edge of cut sheet paper, • SP2401-5 controls current timing to areas other than the leading edge of cut sheet paper. [10 to 300/**100**/1 mm]
5	OFF Timing: Roll Paper
	This SP sets the OFF timing for ac/dc with roller paper. Also, ac/dc is done separately, this setting is specific for different types of paper. • SP2401-1 to SP2401-3 controls charge timing at the leading edge of roll paper • SP2401-5 controls charge timing to areas other than the leading edge of roll paper. [-30 to 30/**19**/1]
6	OFF Timing: Cut Paper
	This SP sets the OFF timing for ac/dc with cut sheets. Also, ac/dc is done separately, this setting is specific for different types of paper. • SP2401-2 to SP2401-4 controls current timing at the leading edge of cut sheet paper

	• SP2401-5 controls current timing to areas other than the leading edge of cut sheet paper. [-30 to 30/**19**/1]

2402	Separation AC Current Adjustment	
	Adjusts the separation ac voltage setting. **DFU**	
1	Roll Paper	[18 to 466/**280**/1 uA]
2	Cut Paper	

2403	Separation DC Current Adjustment **DFU**
	Adjusts the separation dc voltage. If the setting is too high, toner will be re-attracted from the paper to the drum after transfer.

SP2403 Settings Table

	Source	Type	Area	[Range/Default/Step]
1	Roll	Plain	Leading Edge	[0 to 80/**40**/0.1 uA]
2			Image Area	[0 to 80/**30**/0.1 uA]
3		Trans	Leading Edge	[0 to 80/**50**/0.1 uA]
4			Image Area	[0 to 80/**40**/0.1 uA]
5		Film	Leading Edge	
6			Image Area	[0 to 80/b/0.1 uA]
11	Cut	Plain	Leading Edge	[0 to 80/**60**/0.1 uA]
12			Image Area	[0 to 80/**30**/0.1 uA]
13		Trans	Leading Edge	[0 to 80/**0**/60.1 uA]
14			Image Area	[0 to 80/**0**/40.1 uA]
15		Film	Leading Edge	
16			Image Area	[0 to 80/**0**/0.1 uA]

2602	PTL Adjustment **DFU**

2801	Developer Initial Setting	
	Execute this SP only after replacing the developer. Executing this SP raises the chargeability of the developer in the development unit. You must also enter the lot numbers of the toner that has just been installed. **Note**: The lot number is embossed on the top edge of each developer pack.	
1	Initialize Developer: Execute	Press [Start] to execute.
2	Lot Number 1	Enter the lot numbers with the 10-key pad.
3	Lot Number 2	

2803	Charge Corona Wire Cleaning
	Press [Start] to clean the charge corona wire. Executing this SP also ensures that the cleaning pad is set at the home position. Cleaning requires about 60 seconds.

2804	Corona Wire Cleaning Interval	
	This SP selects the interval between corona wire cleanings. [0 to 6/3/1]	
	0:	None (no cleaning)
	1:	After main power SW on
	2:	After 300 m prints (job end)
	3:	After 600 m prints (job end)
	4:	After 900 m prints (job end)
	5:	After 1200 m prints (job end)
	6:	After 1000 m prints (job end)

2902	Test Pattern
	Select the test pattern number, touch [Copy Screen], then push [Start].
	Operates the test pattern printing. Enter the number for the desired test pattern, switch the display to the "Copy Window" then press the [Start] button. Once you leave the SP mode, the pattern selection is disabled and the test pattern cannot be printed.

	[0 to 25/**0**/1]
0	None
1	Grid Pattern (1-dot)
2	Grid Pattern (2-dot)
3	Grid Pattern (3-dot)
4	Grid Pattern (4-dot)
5	Grid Pattern (5-dot)
6	Grid Pattern (6-dot)
7	Argyle Pattern (1-dot)
8	Argyle Pattern (2-dot)
9	Argyle Pattern (3-dot)
10	Argyle Pattern (4-dot)
11	Argyle Pattern (5-dot)
12	Argyle Pattern (6-dot)
13	Vertical Line (1-dot)
14	Vertical Line (2-dot)
15	Horizontal Line (1-dot)
16	Horizontal Line (2-dot)
17	Checkered Flag
18	Alternating Dot Pattern (1-dot)
19	Alternating Dot Pattern (2-dot)
20	Alternating Dot Pattern (4-dot)
21	Trimming Area
22	Full Dot Pattern
23	Black Band (Vertical)
24	Black Band (Horizontal)

25	Blank Image

2916	Fine Magnification
	This SP supplements the rate of magnification and paper selected by the user for the job in order to maintain the fine magnification for the paper in use.

SP2916 Settings Table

	Type	Mode	Direction	[Range/Default/Step]
1	Plain	1 to 4	Main Scan	[-1 to 1/**0**/0.01%]
2			Sub Scan	[-0.8 to 1/**0**/0.1%]
3	Trans		Main Scan	[-1 to 1/**0**/0.01%]
4			Sub Scan	[-0.8 to 1/**0**/0.1%]
5	Film		Main Scan	[-1 to 1/**0**/0.01%]
6			Sub Scan	[-0.8 to 1/**0**/0.1%]
7	Recycled		Main Scan	[-1 to 1/**0**/0.01%]
8			Sub Scan	[-0.8 to 1/**0**/0.1%]
9	Plain	5	Main Scan	[-1 to 1/**0**/0.01%]
10			Sub Scan	[-0.8 to 1/**0**/0.1%]
11	Trans		Main Scan	[-1 to 1/**0**/0.01%]
12			Sub Scan	[-0.8 to 1/**0**/0.1%]
13	Film		Main Scan	[-1 to 1/**0**/0.01%]
14			Sub Scan	[-0.8 to 1/**0**/0.1%]
15	Recycled		Main Scan	[-1 to 1/**0**/0.01%]
16			Sub Scan	[-0.8 to 1/**0**/0.1%]

2923	Execute Cleaning Blade Replace Mode
	Do this SP after replacing the drum or cleaning blade

	After drum or cleaning blade replacement, this SP dusts the drum and blade with toner to reduce friction between the new drum and/or new blade, reducing the chance of scouring the drum or bending the blade.

2924	Developer Mixing: Warmup **DFU**
1	Warm-up
	This SP setting controls warm-up to prevent dark backgrounds in the first prints after a cold start. [0 to 2/**1**/1] 0: No warm-up control 1: Executes warm-up control only if the fusing temperature is below 50°C. 2: Executes warm-up control every time the machine is powered on, regardless of the fusing temperature. Warm-up timing. • D046: 31.5 sec. • D049: 22.3 sec.
2	Enable
	If the drum seal is left open external light can fatigue the drum and cause horizontal banding in prints. After the upper unit has been open, the charge corona is applied and the drum operates so the drum can recover from drum fatigue. [0 to 1/**0**/1] 0: (Upper unit opening/closing) drum initialization operates. 1: (Upper unit opening/closing) drum initialization does not operate. However, each setting is affected by the following: • "Toner-End Recovery" and "Drum Initialization"> Toner-end recovery executes. Drum initialization is not done. • "Warm-up Control" and "Drum Initialization"> Cold-start inching executes. Drum initialization is not done. • After the machine is turned on with the upper unit open, after the upper unit is closed then the conditions described above exist. The operation timing of drum initializing when the drum is opened and closed is: • D046: 4.3 sec. • D049: 3.0 sec.

2925	Transfer Current Timing **DFU**
	Adjusts the timing of voltage on timing for paper separation at the leading/trailing edges for different paper. Enter a minus setting for the voltage to apply earlier, enter a plus setting for the voltage to apply later.

SP2925 Settings Table

	Action	Source	Type	[Range/Default/Step
1	ON Timing	Roll	Plain	[-5 to 10/**0**/1 mm]
2			Trans	
3			Film	
5		Cut	Plain	
6			Trans	
7			Film	

	Action	Target	[Range/Default/Step
10	OFF Timing	Leading Edge	[10 to 30/**16**/1 mm]
11		Trailing Edge	[-30 to 10/**-8**/1 mm]

	Action	Source	Type	[Range/Default/Step
15	OFF Timing	Roll	Plain	[0 to 35/**8**/1 mm]
16			Trans	
17			Film	
21		Cut	Plain	
22			Trans	
23			Film	

25	Transfer Current ON Timing
	This SP sets the transfer current ON timing. This cannot be adjusted for each paper type (roll, cut sheets, plain paper, translucent, etc.)

	[-20 to -5/**10**/1 mm

2927	Toner (Near) End Detection
1	Near End Level
	Selects the near end level (Vsp/Vsg). **DFU** [0.13 to 0.215/**0.155**/0.005] A higher setting increases toner, a lower setting increases toner.
	This SP sets the level to trigger the toner-near end condition. **Toner Near-End Conditions** • The toner near-end alert is issued if the values of three successive readings of the ID sensor pattern (Vsp/Vsg) are larger than the Vsp/Vsg pattern selected in SP2927-1. • After the toner near-end alert is issued it is cancelled immediately if even one of the Vsp/Vsg readings after the alert is issued is less that the Vsp/Vsg value set in this SP mode. • The toner near-end alert is issued once again if the values of three successive readings of the ID sensor pattern (Vsp/Vsg) are larger than the Vsp/Vsg pattern selected in this SP code. • After the near-end alert appears on the operation panel screen, prints go through the machine one at a time (before near-end detection they go through at the default distance of 1 m).
2	Toner End Level
	After the toner near-end alert has been issued based on the ID sensor pattern readings, if the reading is larger than this SP for three successive readings, the toner end alert is issued and the machine stops. [0.15 to 0.235/**0.175**/0.005]

2928	Toner End Recovery: Recovery Level **DFU**
	Selects the recovery level (Vsp/Vsg). [0.13 to 0.215/**0.155**/0.005] Once the calculated Vsp/Vsg drops below the value of this SP setting, the machine recovers from the toner-end (or toner near-end) condition.

2940	LPH Fan Motor Setting
	This setting controls the operation of the LPH fan.

	[0 to 2/**1**/1] 0: Synchronized with driving motor Fan operation is synchronized with main motor or fusing motor. • The left, right motors go ON when the main motor, fusing motor start-up (whichever is first) goes ON. • Left, right motors go OFF when the main motor or fusing motor goes OFF (whichever goes OFF second). 1: Off 2: Synchronized with power relay. Synchronized with the operation of the fusing lamps (OFF when an SC is issued and when the upper unit is open.)

2943	LED Duty Adjustment	
	Adjusts the LED duty level for each LPH.	
1	LPH1	[24 to 80/**72.8**/0.2 us]
2	LPH2	
3	LPH3	

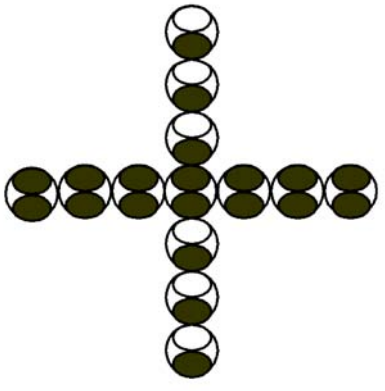
2952	LPH Joint Adjustment
	These SP codes adjust the scanning at the points of the LPH joints. **Note**: Do these adjustments only after replacing the LPH>

SP2952 Settings Table

		Scan	Paper	Joint	[Range/Default/Step]
1	LPH-2	Main	All	LPH1, 2	[0 to 999/**500**/1]
2	LPH-3			LPH2, 3	
11	LPH-2	Sub		LPH1, 2	[300 to 500/**412**/1]
12	LPH-3			LPH2, 3	[2 to 100/**16**/1]

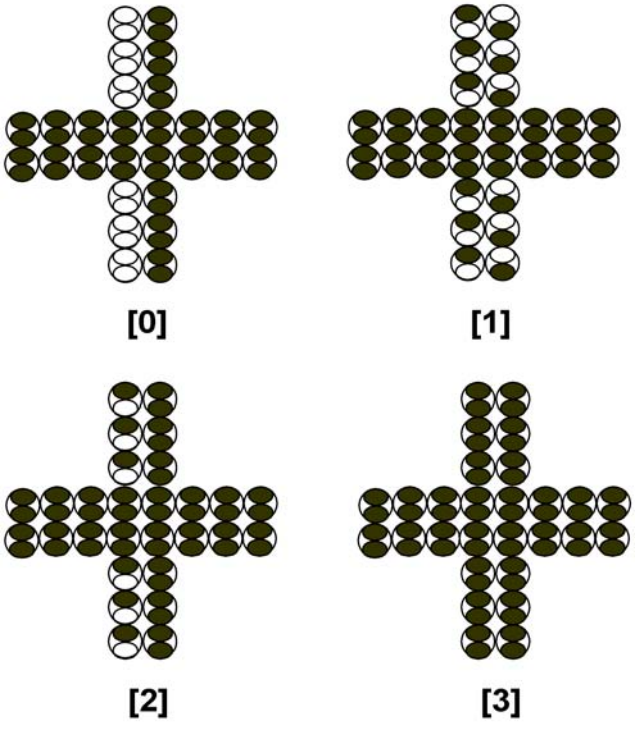
2954	Binary Line Width Correction: Print
	These SP's determine how line processing is handled for vertical lines. Note: This SP has no effect on horizontal lines.

1	Change On/Off
	This SP switches fine line processing by the LPH off and on. [0 to 1/**1**/1] 0: Disabled 1: Enabled
10	Level Select: > 2 dots
	This SP selects the level for fine line processing of vertical lines thicker than two dots. [0 to 3/**1**/1] 0: Strongest processing (thinnest) 1: Normal processing 2: Weaker processing 3: Weakest processing (thickest)



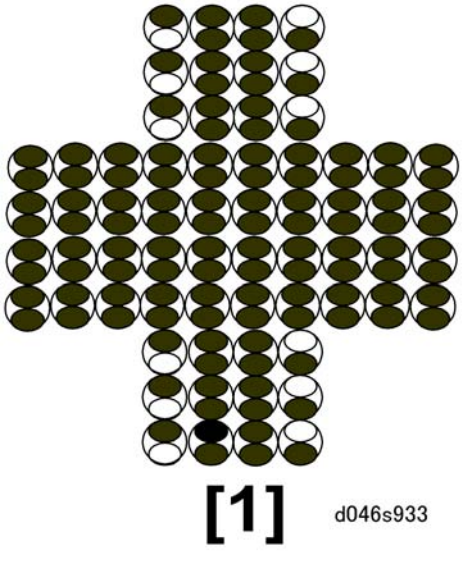
d046s931

The illustration above shows how two elements comprise each dot. This example shows vertical and horizontal 1-dot lines.



d046s932

The diagram above illustrates the patterns for the settings SP2954-10 (0 to 3) on a 2-dot vertical line. The settings have no effect on the horizontal line.



d046s933

When line thickness more than 2 dots the value selected for SP2954-10 affects only the outer lines. The diagram above shows "1" selected for SP2954-10. The setting does not affect the horizontal line.

2955	Binary Smoothing: Print
	This SP controls the number of times that binary smoothing is performed.
1	2 Times
	This SP switches double-smoothing ON/OFF [0 to 2/2/1] [0 to 2/2/1]
2	3 Times
	This SP switches triple-smoothing ON/OFF [0 to 2/2/1]

2959	VDB ID
	Reads and displays the FPGA version 8-bit data of the VDB. Note: The VDB (Video Drive Board) controls the LPH. It processes the image information sent from the IPU and sends it to the LPH.

8 SP3000 Process Control

3001	ID Sensor Initial Setting
1	PWM Setting: ID Sensor LED
	Adjusts PWM. DFU [0 to 100/**20**/0.01%]
2	Initialization
	Automatically adjusts the output to 4.0 ±0.2V. During auto adjustment, the voltage applied to the ID Sensor LED depends on the PWM value. Press the Start button to initialize the ID sensor LED with the value entered for the PWM. Initialization requires about 4 seconds. Note: Do this SP cleaning the ID sensor and after replacement of the drum, ID sensor, NVRAM and BCU.

3103	ID Sensor Output Display

	Displays the values for Vsp/Vsg (0.0V to 5.0V)	
1	Vsg	Measured reflection of bare drum surface.
2	Vsp	Measured reflection from ID sensor pattern.

3920	ID Sensor Pattern Interval
	Determines the intervals between ID sensor readings of the ID sensor pattern.
1	Job End
	[20 to 1000/**100**/10 cm] This SP sets the distance between creation and reading of the ID sensor patterns. The default setting (100) creates the ID sensor pattern for the next reading if the previous copy was longer than 100 cm (4 in.).
2	During Job On/Off
	This SP determines whether ID sensor patterns are created and read during jobs. [0 to 1/1/1] 1: On. ID sensor patterns are created and read during the job at prescribed intervals so the Vsp/Vsg readings are updated for more accurate toner supply control. (The interval is prescribed by SP3020-3 below.) 0: Off. No ID sensor patterns are created and read during the job. The machine uses the last Vsp/Vsg reading of the previous job for toner supply control.
3	During Job
	[20 to 200/**100**/10 cm] This SP determines the interval for creation and reading of the ID sensor pattern done for toner supply control during a job. This setting is ignored if SP3920-2 above is switched off.

SP4000 Scanner

4008	Scanner Sub Scan Magnification
	Adjusts the magnification by changing the scanning speed. [-0.9 to +0.9/**0**/0.1 %]

4010	Scanner Sub Scan Registration
1	Leading Edge
	Fine adjusts the time between the sensor-on position and the leading edge of the image. [-10 to +10/**0**/0.1 mm]
2	Trailing Edge
	Fine adjusts the time between the sensor-off position and the trailing edge of the image. This determines the timing for the CIS to stop reading the image after the original has passed the registration sensor. [-10 to +10/**0**/0.1 mm]

4011	Scanner Main Scan Registration
	Adjusts the scan registration. [-4 to +4/**0**/0.1 mm]

4012	Scanner Erase Margin	
	Adjusts the non-scanning area.	
5	DF: Leading Edge	[0.0 to +9.0/**1.5**/0.1 mm]
6	DF: Trailing Edge	
7	DF: Left	
8	DF: Right	[0.0 to +9.0/**0.5**/0.1 mm]

4013	Scanner Free Run
	This SP sets up the free run operation.
1	Start
	To start the free run, touch [On]. To end the free run, touch [Off]. The free run simulates scanning pages of length determined by SP4013 003, with the interval between each page determined by SP4013 002.
2	Page Interval Setting

	Adjusts the scanner free run (see the description for SP4013-1). [0 to 25/0.1 s]
3	Original Length Setting
	Adjusts the scanner free run (the description for 4013 001). [0.1 to 15/0.1 m]

4101	Scanner Main Scan Magnification
	Adjusts the side-to-side scan magnification. [-0.9 to +0.9/**0**/0.1 %]

4417	IPU Test Pattern: Test Pattern Selection
	Operates the test pattern printing. Enter the number for the desired test pattern, switch the display to the "Copy Window" then press the [Start] button. Once you leave the SP mode, the pattern selection is disabled and the test pattern cannot be printed.
	Scan Test Patterns
0	Scanner Data
1	Vertical Line: 1-dot: SCN
2	Vertical Line: 2-dot: SCN
3	Horizontal Line: 1-dot: SCN
4	Horizontal Line: 2-dot: SCN
5	Independent Dot: 1-dot: SCN
6	Grid Pattern: 1-dot: SCN
7	Vertical Stripes: SCN
8	Grayscale Horizontal: 16-level: SCN
9	Grayscale Vertical: 16-level: SCN
10	Density Patch: 16-level: SCN
11	Plus Sign: SCN

12	Argyle Pattern: SCN
13	Density Patch: 256-level: SCN
14	Density Patch: 64-level: SCN
15	Trimming Area: SCN
16	Bandwidth Vertical: SCN
17	Bandwidth Horizontal: SCN
	Print Test Patterns
18	Independent Dot: 1-4 dot: PRN
19	Grayscale Horizontal: 16-level: PRN
20	Grayscale Vertical: 16-level: PRN
21	Grayscale: 16-level: PRN
22	Density Patch: 256-level: PRN
23	Density Patch: 64-level: PRN
24	Plus Sign: PRN
25	Grid Pattern: 96-dot: PRN
26	Argyle Pattern: PRN
27	Grayscale Horizontal: 16-level: + Line: PRN
28	Grid Pattern: 128-dot: PRN

4550	Scanner: Text/Chart **DFU**
	Sets the MTF (Modulation Transfer Function) level. When the CCD converts the original image to electrical signals, the contrast is reduced due to the influence that adjacent white and black pixels have on one another as a result of lens properties. Typically, you will see very narrow width and spacing between black and white areas. MTF corrects this problem and emphasizes image detail. For each adjustment below: • Weak: Low end of the range (0) • Medium: Center of the range (default) • Strong: High end of the range.

5	MTF: 0 (Off) 1-15 (Weak – Strong)	[0 to 15/**8**/1
6	Smoothing 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]
7	Brightness: 1 – 255	[1 to 255/**128**/1]
8	Contrast: 1 – 255	
9	Ind Dot Erase: 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]

4551	Scanner: Text **DFU** Adjusts the MTF level in the main scan direction for the Text (OCR) mode of the scanner application. For each adjustment below: • Weak: Low end of the range (0) • Medium: Center of the range (default) • Strong: High end of the range.	
5	MTF: 0 (Off) 1-15 (Weak – Strong)	[0 to 15/**8**/1
6	Smoothing 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]
7	Brightness: 1 – 255	[1 to 255/**128**/1]
8	Contrast: 1 – 255	
9	Ind Dot Erase: 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]

4553	Scanner: Text/Photo **DFU**	
	Adjusts the MTF level in the main scan direction for the Photo mode of the scanner application. For each adjustment below: • Weak: Low end of the range (0) • Medium: Center of the range (default) • Strong: High end of the range.	
5	MTF: 0 (Off) 1-15 (Weak – Strong)	[0 to 15/**8**/1
6	Smoothing 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]
7	Brightness: 1 – 255	[1 to 255/**128**/1]
8	Contrast: 1 – 255	

9	Ind Dot Erase: 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]

4554	Scanner: Photo **DFU**	
	Adjusts the MTF level in the main scan direction for the Drawing mode of the scanner application. For each adjustment below: • Weak: Low end of the range (0) • Medium: Center of the range (default) • Strong: High end of the range.	
5	MTF: 0 (Off) 1-15 (Weak – Strong)	[0 to 15/**8**/1
6	Smoothing 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]
7	Brightness: 1 – 255	[1 to 255/**128**/1]
8	Contrast: 1 – 255	
9	Ind Dot Erase: 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]

4555	Scanner: Drawing **DFU**	
	Adjusts the MTF level in the main scan direction for the Drawing mode of the scanner application. For each adjustment below: • Weak: Low end of the range (0) • Medium: Center of the range (default) • Strong: High end of the range.	
5	MTF: 0 (Off) 1-15 (Weak – Strong)	[0 to 15/**8**/1
6	Smoothing 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]
7	Brightness: 1 – 255	[1 to 255/**128**/1]
8	Contrast: 1 – 255	
9	Ind Dot Erase: 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]

4565	Scanner: Grayscale **DFU**

	Adjusts the MTF level in the main scan direction for the Drawing mode of the scanner application. For each adjustment below: • Weak: Low end of the range (0) • Medium: Center of the range (default) • Strong: High end of the range.	
5	MTF: 0 (Off) 1-15 (Weak – Strong)	[0 to 15/**8**/1
6	Smoothing 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]
7	Brightness: 1 – 255	[1 to 255/**128**/1]
8	Contrast: 1 – 255	
9	Ind Dot Erase: 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]

4570	Scanner: Color: Text/Photo **DFU**	
	Adjusts the MTF level in the main scan direction for the Text/Photo mode of the scanner application. For each adjustment below: • Weak: Low end of the range (0) • Medium: Center of the range (default) • Strong: High end of the range.	
5	MTF: 0 (Off) 1-15 (Weak – Strong)	[0 to 15/**8**/1
6	Smoothing 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]
7	Brightness: 1 – 255	[1 to 255/**128**/1]
8	Contrast: 1 – 255	
9	Ind Dot Erase: 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]

4571	Scanner: Color: Glossy Photo **DFU**
	Adjusts the MTF level in the main scan direction for the Glossy Photo mode of the scanner application. For each adjustment below: • Weak: Low end of the range (0)

	• Medium: Center of the range (default) • Strong: High end of the range.	
5	MTF: 0 (Off) 1-15 (Weak – Strong)	[0 to 15/**8**/1
6	Smoothing 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]
7	Brightness: 1 – 255	[1 to 255/**128**/1]
8	Contrast: 1 – 255	
9	Ind Dot Erase: 0 (x1) 1 – 7 (Weak – Strong)	[0 to 7/**0**/1]

4700	Display the ID of ASIC
	This SP displays the ID of ASIC or FPGA_A0 after an error occurs and causes SC144 (CIS Communication Error). **Note**: This SP displays after SC144 is issued if the reading of the ID value is not within specifications for automatic CIS adjustment control.
1	CIS: ASIC_1
	Reads and displays the ID of ASIC_1 (Marble 1) where an error was detected during automatic CIS adjustment.
2	CIS: ASIC_2
	Reads and displays the ID of ASIC_2 (Marble 2) when an error was detected during automatic CIS adjustment.
3	CIS: ASIC_3
	Reads and displays the ID of ASIC_3 (Marble 3) when an error was detected during automatic CIS adjustment.
4	FPGA_A0
	Reads and displays the ID of FPGA_A0 when an error was detected during automatic CIS adjustment.

4701	Periodic Adjustment Setting **DFU**
	This SP sets the CIS read cycle for lines in the main scan direction.
	[0 to 65535/14455/1]

4705	Gray Balance Adjustment: Flag Displays
	Displays "Adjusted" after executing 4705 002. Displays a flag to indicate that grayscale balance adjustment has executed. 1-Bit Copy Mode 0: Not Executed, 1: Executed 0-Bit Color Scan Mode 0: Not Executed, 1: Executed

4706	Gray Balance Adjustment **DFU**
1	CS: Start
	This SP is used to adjust the gray balance for color scan (CS) mode after the machine has left the factory.
2	BS: Start
	This SP is used to adjust the gray balance for monochrome scan (BS) mode after the machine has left the factory.
3	BC: Start
	This SP is used at the factory to adjust the gray balance for monochrome copy (BC) mode.
4	CS: Start
	This SP is used after the machine has left the factory to confirm that SP4706-1 (gray adjustment for color scan mode) executed successfully. SC 186 issues of the adjustment is not correct.
5	BS: Start
	This SP is used after the machine has left the factory to confirm that SP4702-2 (gray adjustment for monochrome scan mode) executed successfully. **Note**: SC186 (Gray Balance Adjustment Error) is issued if the adjustment is abnormal.
5	BC: Start
	This SP is used after the machine has left the factory to confirm that SP4706-3 (gray adjustment for monochrome copy mode) executed successfully. SC 186 issues of the adjustment is not correct.

4709	CS: Gray Balance Adjustment Value
	This SP displays the adjusted gray balance value of ASIC_1 (the value set for "R" digital gain) for the CIS color scan mode.

4710	BS: Gray Balance Adjustment Value
	This SP displays the adjusted gray balance value of ASIC_1 (the value set for "R" digital gain) for the CIS monochrome scan mode.
4711	BC: Gray Balance Adjustment Value
	This SP displays the adjusted gray balance value of ASIC_1 (the value set for "R" digital gain) for the CIS monochrome copy mode.

4718	CS: Gray Balance Reading Value (Present)
	This SP displays the current value of the gray balance adjustment for ASIC_1:R (Marble_1:R). [0 to 4095/0/1]
4719	CS: Gray Balance: Reading Value (Factory)
	This SP displays the gray balance adjust setting for CS: ASIC_1:R (CS: Marble_1:R) that was done at the factory.
4720	BS: Gray Balance: Reading Value (Factory)
	This SP displays the gray balance adjust setting for BS: ASIC_1:R (BS: Marble_1:R) that was done at the factory.
4721	BC: Gray Balance: Reading Value (Factory)
	This SP displays the gray balance adjust setting for BC: ASIC_1:R (BC: Marble_1:R) that was done at the factory.

4744	Gray Balance Error Flag
	This SP displays errors that occur during gray balance adjustment. **Note**: In the bit display "0" indicates "normal", "1" indicates an "error".
	0 : GB_ERR_R_CS 1 : GB_ERR_G_CS 2 : GB_ERR_B_CS 3 : GB_ERR_R_BC 4 : GB_ERR_G_BC 5 : GB_ERR_B_BC

4745	CIS Adjustment Error Flag
	This SP displays any black level or white level errors that occur during automatic CIS adjustment for the scan or copy modes (CS, BC, BS) after the machine is turned on.

SP4745 Settings Table

	Flag		Level	[Range/Default/Step]
1	CS	Black	L	[0 to 4095/**0**/1]
2	BS			
3	BC			
4	CS		H	
5	BS			
6	BC			
7	CS	White	L	
8	BS			
9	BC			
10	CS		H	
11	BS			
12	BC			

4746	CIS Hard Error Flag		
	Displays a code for the error if any occurs as a result of the communication check with the CIS done immediately after the machine is switched on. Displays "0000 000" for normal. Displays a "1" for an error at the bit position.		
	Bit	**Error**	**Description**
	0	1	Serial output board defective.
	1	1	Failed to read CIS version information.
	2	1	Mismatch between version data read and data stored in the CIS register.

4750	CIS Output Mode Setting
	This SP sets the CIS output mode. [0 to 4/0/1] 0 : Normal output. Corrected black data output, corrected white data (shading data) output. 1: Black Correction 2: White Correction 3 : Test Pattern 4 : No Correction (raw data)

4751	CIS Test Pattern
	This SP sets the mode for the CIS test pattern. [0 to 4/0/1] 0 : Fixed pattern 1 : Main Scan Gradation Pattern (1 Grade/1 Pixel) 2 : Sub Scan Gradation Pattern (1 Grade/1 Line) 3 : 1-Bit Grid Pattern (128 pixel intervals) 4 : 1-Bit Grid Pattern-X (128 pixel intervals)

4753	CIS Test Pattern Setting: Fixed Data **DFU**
	This SP displays and sets the fixed data when the RGB test pattern is done. [0 to 2023/**1023**/1]

4820	Lamp Abnormal Detection	
1	Counter Lamp 1	Displays the error counts for the Xe lamps that are used in the CIS unit to scan originals. [0 to 255/**0**/1]
2	Counter Lamp 2	
3	Counter Lamp 3	
4	Counter Lamp 4	
5	Counter Clear	
6	Lamp Error Flag	Displays the error flags for lamps 1, 2, 3, 4.

4901	Scan Correction **DFU**
	Adjusts the AEREF (Automatic Exposure Reference) setting used for shading correction processing during image scanning and shading data output.
1	Shading Correction: AEREF Setting
	[0 to 63/**0**/1] Set a low value for weak background erase, a high value for stronger background erase.
2	Shading Correction: Shading Data Output 4901-2 RTB 1a: Name change (f/w ver 1.07)
	[0 to 4095/**4000**/1] This SP displays and sets the coefficient for shading correction of scanned images.
3	Digital AE: AEREF Correction
	Changes the level for background erase (AEREF value) that is used in the digital A/E processing of the scan data. [-63 to +63/**0**/1]
4	Digital AE: Low Limit
	Defines the lower limit of the background erase level that is used in the digital A/E processing of the scanned data. [0 to 255/**82**/1]
5	Digital AE: Start Position
	Changes the starting point for digital A/E processing of the scanning data. [0.5 to 10.0/**3**/0.1 mm] Note: The starting position specified with the scanning application takes priority over this setting.
6	Digital AE: Left Start Position
	This SP sets the start position for digital AE processing P-Wind for scanned image data in the main scan direction (from the center of the orignal as a reference point), starting at the left side of the original. [0 to 512/**60**/0.1 mm]
7	Digital AE: Right Start Position
	This SP sets the start position for digital AE processing P-Wind for scanned image data in the main scan direction (from the center of the orignal as a reference point), stopping at the right side of the original.

	[0 to 512/**60**/0.1 mm]

4903	Image Quality Adjustment **DFU**
	Sets the independent dot erase mode and line width correction mode for the Text (scanning) mode.

SP4903 Settings Table

	Function	Mode	[Range/Default/Step]
1	Ind Dot Erase	Text	[0 to 7/**4**/1]
2		Generation	
3		Drawing	[0 to 7/**0**/1]
11	Line Width Corr	Text: Mode Select	[0 to 8/**3**/1]
12		Text: Main Scan	[0 to 2/**1**/1]
13		Text: Sub Scan	[0 to 1/**1**/1]
14		Generation Mode: Select	[0 to 8/**3**/1]
15		Generation: Main Scan	[0 to 2/**1**/1]
16		Generation: Sub Scan	[0 to 1/**1**/1]
17		Drawing: Mode Select	[0 to 8/**3**/1]
18		Drawing: Main Scan	[0 to 2/**1**/1]
19		Drawing: Sub Scan	[0 to 1/**1**/1]

4904	Image Process Setting **DFU**
	Sets the filter level for copy text mode. **Note**: Filter level corrections false outlines in images.

SP4904 Settings Table

	Smoothing Filter Level	[Range/Default/Step]
1	Text	[0 to 3/**1**/1]

2	Photo	[0 to 3/**2**/1]
3	Text/Photo	[0 to 3/**1**/1]
4	Generation	
5	Drawing	
6	Patched Original	
7	Blue Line	

4905	Gray Scale Processing Select
	Selects the type of dithering done in Text/Photo mode. [0 to 255/0/1] 0: 2-value dithering 8x8 1: 2-value dithering 16x16 2: 2-value dithering 16x16

4918	Manual Gamma **DFU**

4961	Original Adjustment
1	Synchro-cut Adjustment 210 mm
	Adjusts the synchro-cut position. [-9.9 to +9.9/**0**/0.1 mm] Use the 210-mm position in the sample to check the difference. This difference is used to calculate the motor clock count for adjusting the difference.
2	Synchro-cut Adjustment 1000 mm
	Adjusts the synchro-cut position. [-9.9 to +9.9/**0**/0.1 mm] Use the 1000-mm position in the sample to check the difference. This difference is used to calculate the motor clock count for adjusting the difference.
3	Original Length Display
	Display the original length.

4962	Original Speed Calibration by Temperature
	Displays the temperature of the original exit roller. Note: There are two abnormal readings. The thermistor requires servicing if you see either of these readings: A 100oC reading means the thermistor is disconnected. A 0oC reading means the thermistor has shorted.
1	Feed Roller Temperature Display
2	Calibration Value Display
3	Calibration Value Setting DFU

4975	Original Edge Hold
	This SP switches the original edge hold function off and on. [0 to 1/**0**/1] 0: On. With paper longer than 450 mm (18"), the original exit roller stops and holds the paper at the trailing edge so it does not fall off the original exit tray. 1: Off. With paper shorter than 450 mm, the rollers do not stop. The paper is allowed to fall onto the tray. **Note**: When the rollers hold the original edge the operator must pull the paper out of the nip and remove it from the tray before another original can feed.

4991	IPU Image Data Path **DFU**
1	RGB Frame Memory (Change 1) [0 to 255/**0**/1] 0: Dot correction module 1: Gray create module 2: Scanner gamma module 3: Registration adjustment & mirroring module 4: Main scan magnification & left shift/right shift module 5: Multi-rate_filter module 6: Multi-rate_line correction module 7: Multi-rate_independent dot erase module
2	RGB Frame Memory (Change 2)

	0: Multi-rate gamma conversion module 1: Main scan fine adjust/simple magnification module 2: Density gamma module 3: Gradation processing (M-to-P) module 4: Reserved 5: Reserved 6: Reserved 7: Reserved

SP5000 Mode

5024	mm/inch Display Selection	GW
	Selects the unit. Press mm or inch. 0: Metric, 1: Inch	

5045	Accounting Counter	GW
	Sets the method of accounting for machine usage.	
1	Japan Only	
2	Selects the unit for the counter (m, ft, yards, m2, ft2, or yd2) 0: metres 1: yards 2: feet 3: m2 4: yards2 5: feet2 6: A3 area = 1 unit 7: 0.1 metre (key counter only) 8: 0.1 yard (key counter only)	

5055	Display IP Address	GW
	Switches the IP address display on the operation panel on/off. OFF: IP address not displayed on operation panel ON: IP address displayed on operation panel.	

5056	Coverage Counter Display	GW
	Display or does not display the coverage counter on the LCD. [0 to 1 / **0** / 1] 0: Not displayed, 1: Displayed	

5101	Panel Off Level **DFU**
	Sets the level of the panel off mode according to the hot roller temperature control: 0: Level 1 – 190°C (374°F) 1: Level 2 – 180°C (356°F) 2: Level 3 – 170°C (338°F) 3: Level 4 – 155°C (311°F)

5113	Optional Counter Type	GW
	This SP is used for the key counter only.	
1	Default Optional Counter Type	
	Selects the type of counter: 0: None 1: Key card (RK3, 4) Japan only 2: Key card down Japan only 3: Pre-paid card Japan only 4: Coin Lock Japan only 5: MF key card Japan only 11: Exp Key Card (Add) (used key counter connector) 12: Exp Key Card (Deduct) (used key counter connector)	
2	External Optional Counter Type	
	Enables the SDK application. This lets you select a number for the external device for user access control. Note: "SDK" refers to software on an SD card. [0 to 3/1] 0: None 1: Expansion Device 1	

	2: Expansion Device 2 3: Expansion Device 3

5114	Optional Counter I/F **Japan Only**	GW
	This SP enables the I/F connection for the MF key card.	

5118	Disable Copying	GW
	Temporarily denies access to the machine. 0: Release for normal operation 1: Prohibit access to machine	

5120	Mode Clear Opt. Counter Removal	GW
	Do not change. 0: Yes. Normal reset 1: Standby. Resets before job start/after completion 2: No. Normally no reset	

5121	Counter Up Timing	GW
	Determines whether the optional counter counts up at paper feed-in or at paper exit. 0: Feed count 1: No feed count	

5127	APS OFF Mode	GW
	This SP can be used to switch APS (Auto Paper Select) off when a coin lock or pre-paid key card device is connected to the machine. 0: On 1: Off	

5162	App. Switch Method	GW
	Controls if the application screen is changed with a hardware switch or a software switch. 0: Soft Key Set 1: Hard Key Set	

5169	CE Login	GW
	To change the printer bit switches, you must log into service mode with this SP before you go into the printer SP mode. 0: Off. Printer bit switches cannot be adjusted. 1: On. Printer bit switches can be adjusted.	

5180	Charge Count Method **Japan Only**

5188	Copy NV Version	GW
	Displays the version number of the NVRAM on the controller board.	

5191	Mode Set **DFU**

SP 5193
RTB 19: Added

5195	Limitless SW **DFU**	GW

5212	Page Numbering **DFU**
	Do the page numbering settings with the User Tools menus.

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5302	Set Time **DFU**	GW
	Sets the time clock for the local time. This setting is done at the factory before delivery. The setting is GMT expressed in minutes. [–1440 to 1440/1 min.] • JA: +540 (Tokyo) • NA: -300 (NY) • EU: +60 (Paris) • CH: +480 (Peking) • TW: +480 (Taipei) • AS: +480 (Hong Kong)	

5305	Auto Off Setting **DFU**	GW
	This SP switches off the energy save feature. [0 to 1/**0**/1]	

	0: Enable 1: Disable **Important**: Do not change this setting.

5307	Summer Time		GW
	Lets you set the machine to adjust its date and time automatically with the change to Daylight Savings time in the spring and back to normal time in the fall. This SP lets you set these items: Day and time to go forward automatically in April. Day and time to go back automatically in October. Set the length of time to go forward and back automatically. The settings for 002 and 003 are done with 8-digit numbers:		
	Digits	**Meaning**	
	1st, 2nd	Month. 4: April, 10: October (for months 1 to 9, the first digit of 0 cannot be input, so the eight-digit setting for 002 or 003 becomes a seven-digit setting)	
	3rd	Day of the week. 0: Sunday, 1: Monday	
	4th	The number of the week for the day selected at the 3rd digit. If "0" is selected for "Sunday", for example, and the selected Sunday is the start of the 2nd week, then input a "2" for this digit.	
	5th, 6th	The time when the change occurs (24-hour as hex code). Example: 00:00 (Midnight) = 00, 01:00 (1 a.m.) = 01, and so on.	
	7th	The number of hours to change the time. 1 hour: 1	
	8th	If the time change is not a whole number (1.5 hours for example), digit 8 should be 3 (30 minutes).	
1	Setting	Enables/disables the settings for 002 and 003. [0 to 1/1] 0: Disable 1: Enable	
3	Rule Set (Start)	The start of summer time.	
4	Rule Set (End)	The end of summer time.	

5401	Access Control	GW

	This SP stores the settings that limit uses access to SDK (Software Development Kit) application data. This data can be converted from SAS (VAS) when installed or uninstalled.	
103	Default Document ACL	
162	ExtAuth Detail	
200	SDK1 Unique ID	
201	SDK1 Recognition	
210	SDK2 Unique ID	
211	SDK2 Recognition	
220	SDK3 Unique ID	
221	SDK3 Recognition	
230	SDK Certification Device	
240	Detail Option	

5404	User Code Count Clear	GW
	Clears all user code counters. Press [#] to execute.	

5411	LDAP Certification	GW
4	Easy Certification Determines whether easy LDAP certification is done. [0 to 1/**1**/1] 1: On 0: Off	
5	Password Null Not Permit This SP is referenced only when SP5411-4 is set to "1" (On). [0 to 1/**0**/1] 0: Password NULL not permitted. 1: Password NULL permitted.	

5413	Lockout Setting	GW
1	Lockout On/Off Switches on/off the lock on the local address book account. [0 to 1/b/1] 0: Off 1: On	
2	Lockout Threshold Sets a limit on the frequency of lockouts for account lockouts. [1 to 10/b/1]	
3	Cancellation On/Off Determines whether the system waits the prescribed time for input of a correct user ID and password after an account lockout has occurred. [0 to 1/**0**/1] 0: Off (no wait time, lockout not cancelled) 1: On (system waits, cancels lockout if correct user ID and password are entered.	
4	Cancellation Time Determines the length of time that the system waits for correct input of the user ID and password after a lockout has occurred. This setting is used only if SP5413-3 is set to "1" (on). [1 to 999/**60**/1 min.]	
5	Counter Clear Time (**Not available**)	

5414	Access Mitigation	GW
1	Mitigation On/Off Switches on/off masking of continuously used IDs and passwords that are identical. [0 to 1/**0**/1] 0: Off 1: On	
2	Mitigation Time Sets the length of time for excluding continuous access for identical user IDs and passwords. [0 to 60/**15**/1 min.]	

5415	Password Attack	GW
1	Permissible Number Sets the number of attempts to attack the system with random passwords to gain illegal access to the system. [0 to 100/**30**/1 attempt]	
2	Detect Time Sets the time limit to stop a password attack once such an attack has been detected. [1 to 10/**5**/1 sec.]	

5416	Access Information	GW
1	Access User Max Number Limits the number of users used by the access exclusion and password attack detection functions. [50 to 200/200/1 users]	
2	Access Password Max Number Limits the number of passwords used by the access exclusion and password attack detection functions. [50 to 200/**200**/1 passwords]	
3	Monitor Interval Sets the processing time interval for referencing user ID and password information. [1 to 10/**3**/1 sec.]	

5417	Access Attack	GW
1	Access Permissible Number Sets a limit on access attempts when an excessive number of attempts are detected for MFP features. [0 to 500/**100**/1]	
2	Attack Detect Time Sets the length of time for monitoring the frequency of access to MFP features. [10 to 30/**10**/1 sec.]	
3	Productivity Fall Wait	

	Sets the wait time to slow down the speed of certification when an excessive number of access attempts have been detected. [0 to 9/b/1 sec.]
4	Attack Max Number Sets a limit on the number of requests received for certification in order to slow down the certification speed when an excessive number of access attempts have been detected. [50 to 200/**200**/1 attempt]

5420	User Authentication	GW
	These settings should be done with the System Administrator. **Note**: These functions are enabled only after the user access feature has been enabled.	
1	Copy	
	Determines whether certification is required before a user can use the copy applications. [0 to 1/**0**/1] 0: On 1: Off 2: Color Security Setting	
11	Document Server Determines whether certification is required before a user can use the document server. [0 to 1/**0**/1] 0: On 1: Off	
31	Scanner Determines whether certification is required before a user can use the scan applications. [0 to 1/0/1] 0: On 1: Off	
41	Printer Determines whether certification is required before a user can use the printer applications. [0 to 1/**0**/1] 0: On	

	1: Off	
51	SDK1	[0 or 1/ **0** / 1] 0: ON. 1: OFF Determines whether certification is required before a user can use the SDK application.
61	SDK2	
71	SDK3	

5481	Authentication Error Code	GW
	These SP codes determine how the authentication failures are displayed.	
1	System Log Disp Determines whether an error code appears in the system log after a user authentication failure occurs. [0 to 1/**0**/1] 0: Off 1: On	
2	Panel Disp Determines whether an error code appears on the operation panel after a user authentication failure occurs. [0 to 1/**1**/1] 1: On 0: Off	

5490	MF Keycard **Japan Only**
	Sets up operation of the machine with a keycard. [0 to 1/**0**/1] 0: Disabled. Cancels operation if no code is input. 1: Enabled. Allows operation if another code is input and decrements the counter once for use of the entered code.

5501	PM Alarm
1	PM Alarm Level Sets the count level for the PM alarm. [0 to 9999/1] 0: Alarm disabled

	Note: The PM alarm goes off when the print count reaches this value (multiplied by 1,000).
2	Original Count **DFU**

5504	Jam Alarm	**Japan Only**
5505	Error Alarm	
5507	Supply Alarm	

5508	CC Call **Japan Only**
1	Jam Remains
2	Continuous Jams
3	Continuous Door Open
	Enables/disables initiating a call. [0 to 1/1] 0: Disable 1: Enable
11	Jam Detection: Time Length
	Sets the length of time to determine the length of an unattended paper jam. [03 to 30/1] This setting is enabled only when SP5508-004 is enabled (set to 1).

5515	SC/Alarm Setting	
	With @Remote in use, these SP codes can be set to issue an SC call when an SC error occurs. If this SP is switched off, the SC call is not issued when an SC error occurs.	
001	SC Call	[0 or 1 / **1** / 1] 0: OFF 1: ON
002	Service Parts Near End Call	
003	Service Parts End Call	
004	User Call	
005	Communication Information Test Call	[0 or 1 / **1** / 1] 0: OFF
006	Machine Information Notice	

007	Alarm Notice	1: ON
008	Non Genuine Toner Alarm	
009	Supply Automatic Ordering Call	
010	Supply Management Report Call	
012	Jam/Door Open Call	

5801	Memory Clear	GW
	Clears all data from NVRAM. Before executing this SP, print an SMC Report.	
1	All Clear	
	Initializes items 2 to 15 below. Note: This SP does not clear the information stored for the following SP codes: SP8381 to SP83878 (counter information) SP5811 001 (Serial Number) SP5907 (Plug & Play)	
2	Engine	
	Initializes all registration settings for the engine and copy process settings.	
3	SCS	
	Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information.	
4	IMH Memory Clear	
	Initializes the image file system. (IMH: Image Memory Handler)	
5	MCS	
	Initializes the automatic delete time setting for stored documents. (MCS: Memory Control Service)	
6	Copier application	
	Initializes all copier application settings.	
7	Not used.	

8	Printer application
	Initializes the printer defaults, programs registered, the printer SP bit switches, and the printer CSS counter.
9	Scanner application
	Initializes the defaults for the scanner and all the scanner SP modes.
10	Web Service
	Deletes the Netfile (NFA) management files and thumbnails, and initializes the Job login ID. Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software
11	NCS
	Initializes the system defaults and interface settings (IP addresses also), the SmartNetMonitor for Admin settings, WebStatusMonitor settings, and the TELNET settings. (NCS: Network Control Service)
14	Clear DCS Setting
	Initializes the DCS (Delivery Control Service) settings.
15	Clear UCS Setting
	Initializes the UCS (User Information Control Service) settings.
16	MIRS Setting
	Initializes the MIRS (Machine Information Report Service) settings.
17	CCS
	Initializes the CCS (Certification and Charge-control Service) settings.
18	SRM Memory Check
	Initializes the SRM (System Resource Manager) settings.
19	LCS
	Initializes the LCS (Log Count Service) settings.
20	Web Uapli
	Initializes the web user application settings.

21	ECS
	Initializes the ECS settings.

5802	Engine Free Run
	Makes a base engine free run. Note: The machine automatically leaves free run mode after the machine leaves the SP mode or after the machine is cycled off and on. [0 to 1/1] 0: Disable: Release free run mode 1: Enable: Enable free run mode

5803	Input Check
	Allows you to test component input. For details see "Input Check" in the "Appendices".

5804	Output Check
	Allows you to test component output. For details see "Input Check" in the "Appendices".

5810	SC Reset **DFU**
	When the machine issues one of the "Level A" SC codes shown below, this indicates a serious problem in the fusing unit. The machine is disabled and the operator cannot reset the SC. The machine requires servicing immediately. Touch [EXECUTE] release the machine for servicing. • SC542 – SC545 Heating roller thermistor 1 • SC547 – Zero Cross • SC548 – SC550 Heating roller thermistor 2 • SC551 – Pressure roller thermistor • SC553 – SC555 Pressure roller thermistor • SC662 – SC565 Hot roller thermistor

5811	Machine Serial Number	GW
	The serial number is set with this code before shipping.	

5812	Service Tel. No. Setting		GW
1	Service	Inputs the telephone number of the CE (displayed when a service call condition occurs.)	
2	Facsimile	Input the fax number of the CE.	
3	Supply	These SP codes allow you to enter the telephone numbers to be displayed for the supply and operation support centers in the User Tools mode.	
4	Operation		

5816	Remote Service	GW
1	I/F Setting	
	Selects the remote service setting. [0 to 2 / **2** / 1 /step] 0: Remote service off 1: CSS remote service on 2: @Remote service on	
2	CE Call	
	Performs the CE Call at the start or end of the service. [0 or 1 / **0** / 1 /step] 0: Start of the service 1: End of the service **NOTE:** This SP is activated only when SP 5816-001 is set to "2".	
3	Function Flag	
	Enables or disables the remote service function. [0 to 1 / **0** / 1 /step] 0: Disabled, 1: Enabled **NOTE:** This SP setting is changed to "1" after @Remote registor has been completed.	
6	Device Information Call Display	
	Controls if the item for initial setting of the screen for the NRS device-information notification-call is shown. [0 to 1/1] 0: Enabled. Item initial setting not shown.	

	1: Disable. Item for initial setting shown.
7	SSL Disable
	Uses or does not use the RCG certification by SSL when calling the RCG. [0 to 1 / **0** / 1 /step] 0: Uses the RCG certification 1: Does no use the RCG certification
8	RCG Connect Timeout
	Specifies the connect timeout interval when calling the RCG. [1 to 90 / **10** / 1 second /step]
9	RCG Write to Timeout
	Specifies the write timeout interval when calling the RCG. [1 to 100 / **60** / 1 second /step]
10	RCG Read Timeout
	Specifies the read timeout interval when calling the RCG. [1 to 100 / **60** / 1 second /step]
11	Port 80 Enable
	Enables/disables access via port 80 to the SOAP method. [0 or 1 / **0** / –] 0: Disabled, 1: Enabled
21	RCG – C Registed
	This SP displays the Embedded RC Gate installation end flag. 0: Installation not completed 1: Installation completed
22	RCG – C Registed Detail
	This SP displays the Embedded RC Gate installation status. 0: RCG device not registered 1: RCG device registered 2: Device registered
23	Connect Type (N/M)

	This SP displays and selects the Embedded RC Gate connection method. [0 or 1 / **0** / 1 /step 0: Internet connection 1: Dial-up connection
61	Cert. Expire Timing **(DFU)**
	Proximity of the expiration of the certification.
62	Use Proxy
	This SP setting determines if the proxy server is used when the machine communicates with the service center.
63	Proxy Host
	This SP sets the address of the proxy server used for communication between Embedded RC Gate-N and the gateway. Use this SP to set up or display the customer proxy server address. The address is necessary to set up Embedded RC Gate-N. **Note**: The address display is limited to 128 characters. Characters beyond the 128 character are ignored. This address is customer information and is not printed in the SMC report.
64	Proxy Port Number
	This SP sets the port number of the proxy server used for communication between Embedded RC Gate-N and the gateway. This setting is necessary to set up Embedded RC Gate-N. **Note**: This port number is customer information and is not printed in the SMC report.
65	Proxy User Name
	This SP sets the HTTP proxy certification user name. **Note**: The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored. This name is customer information and is not printed in the SMC report.
66	Proxy Password
	This SP sets the HTTP proxy certification password. **Note**: The length of the password is limited to 31 characters. Any character beyond the 31st character is ignored. This name is customer information and is not printed in the SMC report.
67	CERT: Up State
	Displays the status of the certification update.

	0	The certification used by Embedded RC Gate is set correctly.
	1	The certification request (setAuthKey) for update has been received from the GW URL and certification is presently being updated.
	2	The certification update is completed and the GW URL is being notified of the successful update.
	3	The certification update failed, and the GW URL is being notified of the failed update.
	4	The period of the certification has expired and new request for an update is being sent to the GW URL.
	11	A rescue update for certification has been issued and a rescue certification setting is in progress for the rescue GW connection.
	12	The rescue certification setting is completed and the GW URL is being notified of the certification update request.
	13	The notification of the request for certification update has completed successfully, and the system is waiting for the certification update request from the rescue GW URL.
	14	The notification of the certification request has been received from the rescue GW controller, and the certification is being stored.
	15	The certification has been stored, and the GW URL is being notified of the successful completion of this event.
	16	The storing of the certification has failed, and the GW URL is being notified of the failure of this event.
	17	The certification update request has been received from the GW URL, the GW URL was notified of the results of the update after it was completed, but a certification error has been received, and the rescue certification is being recorded.
	18	The rescue certification of No. 17 has been recorded, and the GW URL is being notified of the failure of the certification update.
68	CERT: Error	
	Displays a number code that describes the reason for the request for update of the certification.	
	0	Normal. There is no request for certification update in progress.
	1	Request for certification update in progress. The current certification has expired.

	2	An SSL error notification has been issued. Issued after the certification has expired.
	3	Notification of shift from a common authentication to an individual certification.
	4	Notification of a common certification without ID2.
	5	Notification that no certification was issued.
	6	Notification that GW URL does not exist.
69	CERT: Up ID	
	The ID of the request for certification.	
83	Firmware Up Status	
	Displays the status of the firmware update.	
84	Non-HDD Firm Up	
	This setting determines if the firmware can be updated, even without the HDD installed. 0: Not allowed update 1: Allowed update	
85	Firm Up User Check	
	This SP setting determines if the operator can confirm the previous version of the firmware before the firmware update execution. If the option to confirm the previous version is selected, a notification is sent to the system manager and the firmware update is done with the firmware files from the URL.	
86	Firmware Size	
	Allows the service technician to confirm the size of the firmware data files during the firmware update execution.	
087	CERT: Macro	
	Displays the macro version of the @Remote certification.	
88	CERT: PAC	
	Displays the PAC version of the @Remote certification.	
89	CERT: ID2 Code	

	Displays ID2 for the @Remote certification. Spaces are displayed as underscores (_). Asteriskes (*) indicate that no @Remote certification exists. "000000_____" indicates "Common certification".
90	CERT: Subject
	Displays the common name of the @Remote certification subject. CN = the following 17 bytes. Spaces are displayed as underscores (_). Asterisks (*) indicate that no @Remote certification exists. "000000_____" indicates "Common certification".
091	CERT: Serial No.
	Displays serial number for the @Remote certification. Asterisks (*) indicate that no @Remote certification exists.
92	CERT: Issuer
	Displays the common name of the issuer of the @Remote certification. CN = the following 30 bytes. Asteriskes () indicate that no @Remote certification exists.
93	CERT: Valid Start
	Displays the start time of the period for which the current @Remote certification is enabled.
94	CERT: Valid End
	Displays the end time of the period for which the current @Remote certification is enabled.
150	Selection Country
	Not used
151	Line type Automatic Judgment
	Not used
152	Line type Judgment Result
	Not used
153	Selection Dial/push
	Not used
154	**Not used**
	The SP sets the number that switches to PSTN for the outside connection for embedded RCG-M in a system that employs a PBX (internal line).

	• If the execution of SP5816-151 has succeeded and embedded RCG-M has connected to the external line, this SP display is completely blank. • If embedded RCG-M has connected to an internal line, then the number of the • connection to the external line is displayed. • If embedded RCG-M has connected to an external line, a comma is displayed with • the number. The comma is inserted for a 2 sec. pause. • The number setting for the external line can be entered manually (including commas).
155	Remove Service: PPP Certification Timeout **(SSP)**
	Sets the length of the timeout for the embedded RCG-M connection to its access point. The timeout is the time from when the modem sends the ATD to when it receives the result code. [1 to 65536 / **60** / 1 /step]
156	Dial Up User Name
	Use this SP to set a user name for access to remote dial up. Follow these rules when setting a user name: • Name length: Up to 32 characters • Spaces and # allowed but the entire entry must be enclosed by double quotation marks (").
157	Dial Up Password
	Use this SP to set a password for access to remote dial up. Follow these rules when setting a user name: • Name length: Up to 32 characters • Spaces and # allowed but the entire entry must be enclosed by double quotation marks (").
161	Local Phone Number
	Use this SP to set the telephone number of the line where embedded RCG-M is connected. This number is transmitted to and used by the Call Center to return calls. Limit: 24 numbers (numbers only)
162	Connection Timing Adjustment Incoming
	When the Call Center calls out to an embedded RCG-M modem, it sends a repeating ID tone (*#1#). This SP sets the time the line remains open to send these ID tones after the number of the embedded RCG-M modem is dialed up and connected. [0 to 24 / **1** / 1 /step]

	The actual amount of time is this setting + 2 sec. For example, if you set "2", the line will remain open for 4 sec.
163	Access Point
	This is the telephone number of the dial-up access point for embedded RCG-M. If no setting is done for this SP code, then a preset value (determined by the country selected) is used. Default: 0 Allowed: Up to 16 numeral characters
164	Line Connecting
	This SP sets the connection conditions for the customer. This setting dedicates the line to embedded RCG-M only, or sets the line for sharing between embedded RCG-M and a fax unit. [0 or 1 / **0** / -] 0: Line shared by embedded RCG-M/Fax 1: Line dedicated to embedded RCG-M only • If this setting is changed, the copier must be cycled off and on. • SP5816-187 determines whether the off-hook button can be used to interrupt an embedded RCG-M transmission in progress to open the line for fax transaction.
173	Modem serial No.
	This SP displays the serial number registered for the embedded RCG-M.
174	Retransmission Limit
	Normally, it is best to allow unlimited time for certification and ID2 update requests, and for the notification that the certification has been completed. However, embedded RCGM generates charges based on transmission time for the customer, so a limit is placed upon the time allowed for these transactions. If these transactions cannot be completed within the allowed time, do this SP to cancel the time restriction.
186	RCG - C M Debug Bit SW **DFU**
	This is a debugging tool used by Designers.
187	FAX TX Priority
	This SP determines whether pushing the off-hook button will interrupt an embedded RCGM transmission in progress to open the line for fax transaction. This SP can be used only if SP5816-164 is set to "0".

	[0 or 1/ **0** / -] 0: Disable. Setting the fax unit off-hook does not interrupt a fax transaction in progress. If the off-hook button is pushed during a embedded RCG-M transmission, the button must be pushed again to set the fax unit on-hook after the embedded RCG-M transmission has completed. 1: Enable. When embedded RCG-M shares a line with a fax unit, setting the fax unit off-hook will interrupt a embedded RCG-M transmission in progress and open the line for a fax transaction.	
200	Manual Polling	
	No information is available at this time.	
201	Regist: Status	
	Displays a number that indicates the status of the @Remote service device.	
	0	Neither the registered device by the external nor embedded RCG device is set.
	1	The embedded RCG device is being set. Only Box registration is completed. In this status, this unit cannot answer a polling request from the external RCG.
	2	The embedded RCG device is set. In this status, the external RCG unit cannot answer a polling request.
	3	The registered device by the external RCG is being set. In this status the embedded RCG device cannot be set.
	4	The registered module by the external RCG has not started.
202	Letter Number	
	Allows entry of the number of the request needed for the embedded RCG.	
203	Confirm Execute	
	Executes the inquiry request to the @Remote Gate Way URL.	
204	Confirm Result	
	Displays a number that indicates the result of the inquiry executed with SP5816-203.	
	0	Succeeded
	1	Inquiry number error
	2	Registration in progress

	3	Proxy error (proxy enabled)
	4	Proxy error (proxy disabled)
	5	Proxy error (Illegal user name or password)
	6	Communication error
	7	Certification update error
	8	Other error
	9	Inquiry executing
205	Confirm Place	
	Displays the result of the notification sent to the device from the GW URL in answer to the inquiry request. Displayed only when the result is registered at the GW URL.	
206	Register Execute	
	Executes "Embedded RCG Registration".	
207	Register Result	
	Displays a number that indicates the registration result.	
	0	Succeeded
	2	Registration in progress
	3	Proxy error (proxy enabled)
	4	Proxy error (proxy disabled)
	5	Proxy error (Illegal user name or password)
	6	Communication error
	7	Certification update error
	8	Other error
	9	Registration executing
208	Error Code	
	Displays a number that describes the error code that was issued when either SP5816 204 or SP5816 207 was executed.	

	Cause	Code	Meaning
	Illegal Modem Parameter	-11001	Chat parameter error
		-11002	Chat execution error
		-11003	Unexpected error
	Operation Error, Incorrect Setting	-12002	Inquiry, registration attempted without acquiring device status.
		-12003	Attempted registration without execution of an inquiry and no previous registration.
		-12004	Attempted setting with illegal entries for certification and ID2.
		-12005	@Remove communication prohibited
		-12006	Confirmation requested again after confirmation completed.
		-12007	Different numbers were used for registration and confirmation.
		-12008	Update certification failed because device was in use.
	Error Caused by Response from GW URL	-2385	Attempted dial up overseas without the correct international prefix for the telephone number.
		-2387	Not supported at the Service Center
		-2389	Database out of service
		-2390	Program out of service
		-2391	Two registrations for same device
		-2392	Parameter error
		-2393	External RCG not managed
		-2394	Device not managed
		-2395	Box ID for external RCG is illegal
		-2396	Device ID for external RCG is illegal

		-2397	Incorrect ID2 format
		-2398	Incorrect request number format
209	Inst Clear		
	Releases the machine from its embedded RCG setup.		
250	CommLog Print		
	Prints the communication log.		

5821	Remote Service Address **Japan Only**	
1	CSS PI Device Code	
	Sets the PI device code. After you change this setting, you must turn the machine off and on.	
2	RCG IP Address	
	Sets the IP address of the RCG (Remote Communication Gate) destination for call processing at the remote service center. [00000000h to FFFFFFFFh/1]	

5824	NVRAM Data Upload	GW
	Uploads the NVRAM data to an SD card. Push Execute. Note: When uploading in this SP mode data, the front door must be open.	

5825	NVRAM Data Download	GW
	Downloads data from an SD card to the NVRAM in the machine. After downloading is completed, remove the card and turn the machine power off and on. Note: The pages-printed data stored by SP8381 to SP8387 are not downloaded.	

5828	Network Setting	GW
50	1284 Compatibility (Centro)	
	Enables and disables bi-directional communication on the parallel connection between the machine and a computer. 0: Off 1: On	

<table>
<tr><td rowspan="2">52</td><td colspan="4">ECP (Centro)</td></tr>
<tr><td colspan="4">Disables and enables the ECP feature (1284 Mode) for data transfer.
0: Disabled
1: Enabled</td></tr>
<tr><td rowspan="2">65</td><td colspan="4">Job Spool Setting</td></tr>
<tr><td colspan="4">Switches job spooling spooling on and off.
0: No spooling 1: Spooling enabled</td></tr>
<tr><td rowspan="2">66</td><td colspan="4">Job Spool Clear: Start Time</td></tr>
<tr><td colspan="4">This SP determines whether the job interrupted at power off is resumed at the next power on. This SP operates only when SP5828 065 is set to 1.
1: Resumes printing spooled jog.
0: Clears spooled job.</td></tr>
<tr><td rowspan="6">69</td><td colspan="4">Job Spool (Protocol)</td></tr>
<tr><td colspan="4">This SP detemines whether job spooling is enabled or dispabled for each protocol. This is a 8-bit setting.</td></tr>
<tr><td>0</td><td>LPR</td><td>4</td><td>BMLinks (Japan Only)</td></tr>
<tr><td>1</td><td>FTP (Not Used)</td><td>5</td><td>DIPRINT</td></tr>
<tr><td>2</td><td>IPP</td><td>6</td><td>Reserved (Not Used)</td></tr>
<tr><td>3</td><td>SMB</td><td>7</td><td>Reserved (Not Used)</td></tr>
<tr><td rowspan="2">90</td><td colspan="4">TELNET Operation SettingsTELNET (0:OFF 1:ON)</td></tr>
<tr><td colspan="4">Disables or enables Telnet operation. If this SP is disabled, the Telnet port is closed.
0: Disable
1: Enable</td></tr>
<tr><td rowspan="2">91</td><td colspan="4">Web Operation Web (0:OFF 1:ON)</td></tr>
<tr><td colspan="4">Disables or enables the Web operation.
0: Disable
1: Enable</td></tr>
</table>

145	Active IPv6 Link Local Address	This is the IPv6 local address referenced on the Ethernet or wireless LAN (802.11) in the format: "Link-Local address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. These notations can be abbreviated. See "Note: IPV6 Addresses " below this table.
147	Active IPv6 Stateless Address 1	These SPs are the IPv6 stateless addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11b) in the format: "Stateless Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
149	Active IPv6 Stateless Address 2	
151	Active IPv6 Stateless Address 3	
153	Active IPv6 Stateless Address 4	
155	Active IPv6 Stateless Address 5	
156	IPv6 Manual Address	
	This SP is the IPv6 manually set address referenced on the Ethernet or wireless LAN (802.11) in the format: "Manual Set Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. These notations can be abbreviated. See "Note: IPV6 Addresses" below this table.	
158	IPv6 Gateway	
	This SP is the IPv6 gateway address referenced on the Ethernet or wireless LAN (802.11). The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. These notations can be abbreviated. See "Note: IPV6 Addresses" below this table.	

Note: IPV6 Addresses

Ethernet and the Wireless LAN (802.11) reference the IPV6 "Link-Local address + Prefix Length". The IPV6 address consists of 128 bits divided into 8 blocks of 16 bits:
aaaa:bbbb:cccc:dddd:eeee:ffff:gggg:hhhh:

The prefix length is inserted at the 17th byte (Prefix Range: 0x0 to 0x80). The initial setting is 0x40 (64).

For example, the data: "2001123456789012abcdef012345678940h" is expressed:

"2001:1234:5678:9012:abcd:ef01:2345:6789": prefixlen 64

However, the actual IPV6 address display is abbreviated according to the following rules.

Rules for Abbreviating IPV6 Addresses

The IPV6 address is expressed in hexadecimal delimited by colons (:) with the following characters:

0123456789abcdefABCDEF

1. A colon is inserted as a delimiter every 4th hexadecimal character.

   fe80:0000:0000:0000:0207:40ff:0000:340e

2. The notations can be abbreviated by eliminating zeros where the MSB and digits following the MSB are zero. The example in "2" above, then, becomes

   fe80:0:0:0207:40ff:0:340e

3. Sections where only zeros exist can be abbreviated with double colons (::). This abbreviation can be done also where succeeding sections contain only zeros (but this can be done only at one point in the address). The example in "2" and "3" above then becomes:

   fe80::207:40ff:0:340e (only the first null sets zero digits are abbreviated as "::")

   -or-

   fe80:0:0:0:207:40ff::340e (only the last null set before "340e" is abbreviated as "::")

161	IPv6 Stateless Auto Setting	Enable or disables the automatic setting for IPv6 stateless.
236	Web Item visible	
	Displays or does not display the Web system items. [0 x 0000 to 0 x ffff / **0 x ffff**] 0: Not displayed, 1: Displayed bit0: Net RICOH bit1: Consumable Supplier bit2-15: Reserved (all)	
237	Web shopping link visible	
	Displays or does not display the link to Net RICOH on the top page and link page of the web system. [0 to 1 / **1** / 1] 0: Not display, 1:Display	
238	Web supplies Link visible	
	Displays or does not display the link to Consumable Supplier on the top page and link page of the web system. [0 to 1 / **1** / 1] 0: Not display, 1:Display	
239	Web Link1 Name	

	This SP confirms or changes the URL1 name on the link page of the web system. The maximum characters for the URL name are 31 characters.	
240	Web URL	
	This SP confirms or changes the link to URL1 on the link page of the web system. The maximum characters for the URL are 127 characters.	
241	Web visible	
	Displays or does not display the link to URL1 on the top page of the web system. [0 to 1 / **1** / 1] 0: Not display, 1:Display	
242	Web Link2 Name	Same as "-239"
243	Web Link2 URL	Same as "-240"
244	Web Link2 visible	Same as "-241"

5831	Initial Settings Clear **DFU**
	This SP code clears all initial settings with the exception of the time setting and user code settings, and returns them to the factory defaults. Note: This function can also be done with the User Tools.

5832	HDD Formatting	GW
	Enter the SP number for the partition to initialize, then press #. When the execution ends, cycle the machine off and on.	
1	HDD Formatting (All)	
2	HDD Formatting (IMH)	
3	HDD Formatting (Thumbnail)	
4	HDD Formatting (Job Log)	
5	HDD Formatting (Printer Fonts)	
6	HDD Formatting (User Info.)	
7	Mail RX Data	
8	Mail TX Log	

9	HDD Formatting (Data for Design)
10	HDD Formatting Log
11	HDD Formatting (Ridoc I/F)

5836	Capture	GW
1	Capture Function (0:Off 1:On)	
	With this function disabled, the settings related to the capture feature cannot be initialized, displayed, or selected. 0: Disable 1: Enable	
2	Panel Setting	
	Determines whether each capture related setting can be selected or updated from the initial system screen. 0: Disable 1: Enable The setting for SP5836-001 has priority.	
3	Print Backup Function (0:Off 1:On) **DFU**	
	Turns the print backup feature on and off. Default: 0 (Off) When this feature is on, the print backup features are shown in the initial system settings. Enabled only when optional File Format Converter (MLB) is installed. 0: Disable 1: Enable	
72	Reduction for Copy B&W Text	0:1 1:1/2 2:1/3 3:1/4 6:2/3
73	Reduction for Copy B&W Other	0:1 1:1/2 2:1/3 3:1/4 6:2/3
76	Reduction for Printer B&W HQ DFU	1:1/2 3:1/4 4:1/6 5:1/8
82	Format for Copy B&W Text	0: JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR
83	Format Copy B&W Other	0: JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR
85	Format for Printer B&W DFU	0: JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR
86	Format for Printer B&W HQ DFU	0: JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR

91	Default for JPEG
	Sets the JPEG format default for documents sent to the document management server with the MLB, with JPEG selected as the format. Enabled only when optional File Format Converter (MLB: Media Link Board) is installed. [5 to 95/1]
92	High Quality for JPEG
	Sets the quality level of JPEG images for high quality sent to the Document Server with the MLB (Media Link Board). [5 to 95/1]
93	Low Quality for JPEG
	Sets the quality level of JPEG images for low quality sent to the Document Server with the MLB (Media Link Board). [5 to 95/1]
94	Default Format for Backup Files DFU
	Sets the format of the backup files. 0: TIFF 1: JPEG 2: For printing This feature can be selected only if SP5836-3 is set to "1".
95	Default Resolution for Backup Files DFU
	Sets the resolution conversion ratio for the backup files. 0: 1x 1: 1/2x 2: 1/3 x 3: 1/4x
96	Default User Name for Backup Files
	Do this SP to open the soft keyboard. Enter the default user name for the backup up files.
97	Default Compression for Backup Files DFU
	Sets the rate of compression for the backup files. [0 to 2/1] 0: Standard 1: Low 2: High
98	Back Projection Removal
	Removes the ghost images that are copied from the back sides of two-sided originals. 0: Disable 1: Enable

5840	IEEE 802.11b	GW
6	Channel MAX	
	Sets the maximum range of the bandwidth for the wireless LAN. This bandwidth setting varies for different countries. NA/CHN: [1 to 11/1] EU: [1 to 13/1]	
7	Channel MIN	
	Sets the minimum range of the bandwidth for operation of the wireless LAN. This bandwidth setting varies for different countries. NA/CHN: [1 to 11/1] EU: [1 to 13/1]	
11	WEP Key Select	
	Determines how the initiator (SBP-2) handles subsequent login requests. 00: If the initiator receives another login request while logging in, the request is refused. 01: If the initiator receives another login request while logging in, the request is refused and the initiator logs out. 10: Not used 11: Not used Note: Displayed only when the wireless LAN card is installed.	
42	Fragment Thresh	
	Adjusts the fragment threshold for the IEEE802.11 card. [256 to 2346 / **2346** / 1] This SP is displayed only when the IEEE802.11 card is installed.	
43	11g CTS to Self	
	Determines whether the CTS self function is turned on or off. [0 to 1 / **1** / 1] 0: Off, 1: On This SP is displayed only when the IEEE802.11 card is installed.	
44	11g Slot Time	
	Selects the slot time for IEEE802.11. [0 to 1 / **0** / 1] 0: 20 µm, 1: 9 µm	

	This SP is displayed only when the IEEE802.11 card is installed.
45	WPA Debug Lvl
	Selects the debug level for WPA authentication application. [1 to 3 / **3** / 1] 1: Info, 2: warning, 3: error This SP is displayed only when the IEEE802.11 card is installed.

5841	Supply Name Setting	GW
	This SP allows you to enter the names of the supplies that will appear when you push [User Tools] and then touch "Inquiry" on the operation panel display. After you open this SP, touch the "Soft Key Board" button then use the keyboard to enter the names of the supplies.	

5842	GWWS Analysis Mode Setting **DFU**		GW
	This is a debugging tool. It sets the debugging output mode of each Net File process. Bit SW 0011 1111	**Bit**	**Groups**
		0	System & other groups (LSB)
		1	Capture related
		2	Certification related
		3	Address book related
		4	Machine management related
		5	Output related (printing, delivery)
		6	Repository related

5844	USB	GW
1	Transfer Rate	
	Sets the speed for USB data transmission. [Full Speed] [Auto Change]	
2	Vendor ID **DFU**	
	Sets the vendor ID: Initial Setting: 0x05A Ricoh Company	

	[0x0000 to 0xFFFF/1]
3	Product ID **DFU**
	Sets the product ID. [0x0000 to 0xFFFF/1]
4	Device Release No. **DFU**
	Sets the device release number of the BCD (binary coded decimal) display. [0000 to 9999/1] Enter as a decimal number. NCS converts the number to hexadecimal number recognized as the BCD.

5845	Delivery Server	GW
	These are delivery server settings.	
1	FTP Port No.	
	[0 to 65535/1]	
2	IP Address	
	Use this SP to set the Scan Router Server address. The IP address under the transfer tab can be used with the initial system setting. [0 to FFFFFFFF/1]	
6	Delivery Error Display Time	
	Use this setting to set the length of time that the message is shown when a test error occurs during document transfer with the NetFile application and an external device. [0 to 999/1 sec.]	
8	IP Address (Secondary)	
	Sets the IP address that is given to the computer that is the secondary delivery server for Scan Router. This SP lets you set only the IP address, and does not refer to the DNS setting.	
9	Delivery Server Model	
	Lets you change the model of the delivery server that is registered by the I/O device. 0: Unknown 1: SG1 Provided 2: SG1 Package	

	3: SG2 Provided 4: SG2 Package	
10	Delivery Svr. Capability	
	Changes the functions that the registered I/O device can do. [0 to 255/1] Bit7 = 1 Comment information exits Bit6 = 1 Direct specification of mail address possible Bit5 = 1 Mail RX confirmation setting possible Bit4 = 1 Address book automatic update function exists Bit3 = 1 Fax RX delivery function exists Bit2 = 1 Sender password function exists Bit1 = 1 Function to link MK-1 user and Sender exists Bit0 = 1 Sender specification required (if set to 1, Bit6 is set to "0")	
11	Delivery Svr.Capability (Ext)	
	These settings are for future use. They will let you increase the number of registered devices (in addition to those registered for SP5845 010). There are eight bits (Bit 0 to Bit 7). All are unused at this time.	
013	Server Scheme (Primary)	
014	Server port Number (Primary)	[1 to 65535 / **80** / 1]
015	Server URL Path (Primary)	
016	Server Scheme (secondary)	
017	Server Port (Secondary)	[1 to 65535 / **80** / 1]
018	Server URL Path (Secondary)	
019	Capture Server Port Number	
020	Capture Server URL Path	[1 to 65535 / **80** /1]
021	Capture Server URL Path	
	These SPs (5845-013/014/015/016/017/018/019/020/021) listed above are used for the scan router program.	
022	Rapid Sending Control	[0 to 1 / **0** / -]

		0: Disable, 1: Enable
	Enables or disables the prevention function for the continuous data sending error.	

5846	UCS Setting	GW
1	Machine ID (Delivery Server)	
	Displays the unique device ID in use by the delivery server directory. The value is only displayed and cannot be changed. This ID is created from the NIC MAC or IEEE 1394 EUI. The ID is displayed as either 6-byle or 8-byte binary. 6-byte %02X.%02X.%02X.%02X.%02X.%02X 8-byte %02X.%02X.%02X.%02X.%02X.%02X.%02X.%02X	
2	Machine ID Clear (Delivery Server)	
	Clears the unique ID of the device used as the name in the file transfer directory. Execute this SP if the connection of the device to the delivery server is unstable. After clearing the ID, the ID will be established again automatically by cycling the machine off and on.	
3	Maximum Entries	
	Changes the maximum number of entries that UCS can handle. [2000 to 20000/1] If a value smaller than the present value is set, the UCS managed data is cleared, and the data (excluding user code information) is displayed.	
6	Delivery Server Retry Timer	
	Sets the interval for retry attempts when the delivery server fails to acquire the delivery server address book. [0 to 255/1 s] 0: No retries	
7	Delivery Server Retry Times	
	Sets the number of retry attempts when the delivery server fails to acquire the delivery server address book. [0 to 255/1]	

8	Delivery Server Maximum Entries
	Lets you set the maximum number of account entries and information about the users of the delivery server controlled by UCS. [20000 to 50000/1]
10	LDAP Search Timeout
	Sets the length of the time-out for the search of the LDAP server. [1 to 255/1]
40	Addr Book Migration (USB -> HDD)
	This SP moves the address book data from the SD card or flash ROM on the controller board to the HDD. You must cycle the machine off and on after executing this SP. 1. Turn the machine off. 2. Install the HDD. 3. Turn the machine on. 4. Do SP5846 040. 5. Turn the machine off/on. **Note**: Executing this SP overwrites any address book data already on the HDD with the data from the flash ROM on the controller board. We recommend that you back up all directory information to an SD card with SP5846-051 before you execute this SP. After the address book data is copied to HDD, all the address book data is deleted from the flash ROM. If the operation fails, the data is not erased from the flash ROM.
41	Fill Addr Acl Info.
	This SP must be executed immediately after installation of an HDD unit in a basic machine that previously had no HDD. The first time the machine is powered on with the new HDD installed, the system automatically takes the address book from the NVRAM and writes it onto the new HDD. However, the new address book on the HDD can be accessed only by the system administrator at this stage. Executing this SP by the service technician immediately after power on grants full address book access to all users. **Procedure** 1. Turn the machine off. 2. Install the new HDD. 3. Turn the machine on.

	4. The address book and its initial data are created on the HDD automatically. However, at this point the address book can be accessed by only the system administrator or key operator. 5. Enter the SP mode and do SP5846 041. After this SP executes successfully, any user can access the address book.	
43	Addr Book Media	
	Displays the slot number where an address book data is in. [0 to 30 / - /1]	
	0: Unconfirmed 1: SD Slot 1 2: SD Slot 2 4: USB Flash ROM	20: HDD 30: Nothing
47	Initialize Local Address Book	
	Clears all the information in the local address book. This SP also clears all the user codes.	
48	Initialize Delivery Info.	
	Push [Execute] to delete all items (this does not include user codes) in the delivery address book that is controlled by UCS.	
49	Initialize LDAP Info.	
	Push [Execute] to delete all items (this does not include user codes) in the LDAP address book that is controlled by UCS.	
50	Initialize Local Info.	
	Clears everything (including users codes) in the directory information managed by UCS. However, the accounts and passwords of the system administrators are not deleted.	
51	Upload All Directory Info.	
	Uploads all directory information to the SD card.	
52	Download All Directory Info.	
	Downloads all directory information from the SD card.	
53	Update Info Clear	
	Deletes the address book uploaded from the SD card in the slot. Deletes only the files uploaded for that machine. This feature does not work if the card is write-protected.	

	Note: After you do this SP, go out of the SP mode, turn the power off. Do not remove the SD card until the Power LED stops flashing.	
060	Search Option	
	This SP uses bit switches to set up the fuzzy search options for the UCS local address book.	
	Bit	**Meaning**
	0	Checks both upper/lower case characters
	1	**Japan Only**
	2	
	3	
	4	--- Not Used ---
	5	--- Not Used ---
	6	--- Not Used ---
	7	--- Not Used ---
062	Complexity Option 1	
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to upper case and sets the length of the password. [0 to 32 / **0** / 1step] **Note**: • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.	
063	Complexity Option 2	
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to lower case and defines the length of the password. [0 to 32 / **0** / 1step] **Note**: • This SP does not normally require adjustment.	

	• This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.
064	Complexity Option 3
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to numbers and defines the length of the password. [0 to 32 / **0** / 1step] **Note**: • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.
065	Complexity Option 4
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to symbols and defines the length of the password. [0 to 32 / **0** / 1step] **Note**: • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.
91	FTP Auth. Port Settings
	Sets the FTP port to get the delivery server address book that is used in the individual authorization mode. [0 to 65535/1]
94	Encryption Status
	Shows the status of the encryption function of the address book on the LDAP server. [0 to 255/1] No default

5847	Net File Resolution Reduction	GW
	5847 1 through 5847 6 changes the default settings of image data sent externally by the Net File page reference function. [0 to 2/1] 5847 21 sets the default for JPEG image quality of image files controlled by NetFile.	

	"NetFile" refers to jobs to be printed from the document server with a PC and the DeskTopBinder software.	
2	Rate for Copy B&W Text	[0 to 6/1]
3	Rate for Copy B&W Other	
5	Rate for Printer B&W	
21	Network Quality Default for JPEG	
	Sets the default value for the quality of JPEG images sent as NetFile pages. This function is available only with the MLB (Media Link Board) option installed. [5 to 95/1]	

5848	Web Service	GW
	5847 2 sets the 4-bit switch assignment for the access control setting. Setting of 0001 has no effect on access and delivery from Scan Router. 5847 100 sets the maximum size of images that can be downloaded. The default is equal to 1 gigabyte.	
2	Access Control. : Repository (Lower 4 Bits)	0000: No access control 0001: Denies access to DeskTop Binder.
3	Access Control. : Doc. Svr. Print (Lower 4 Bits)	Switches access control on and off. 0000: OFF
4	Access Control. : User Directory (Lower 4 Bits)	
5	Access Control. : Delivery Input (Lower 4 Bits)	
9	Access Control. : Job Control (Lower 4 Bits)	
11	Access Control: Device Management (Lower 4 Bits)	
21	Access Control: Delivery (Lower 4 Bits)	
22	Access Control: User Administration (Lower 4 Bits)	
210	Setting: Log Type: Job 1	
211	Setting: Log Type: Job 2	
212	Setting: Log Type: Access	
213	Setting: Primary Srv	

214	Setting: Secondary Srv
215	Setting: Start Time
216	Setting: Interval Time
217	Setting: Timing

5849	Installation Date	GW
	Displays or prints the installation date of the machine.	
1	Display	
	The "Counter Clear Day" has been changed to "Installation Date" or "Inst. Date".	
2	Switch to Print	
	Determines whether the installation date is printed on the printout for the total counter. 0: No Print 1: Print	
3	Total Counter	
	Displays the total count on the day SP5849-1 was set.	

5851	Bluetooth	GW
	Sets the operation mode for the Bluetooth Unit. Press either key. **[0: Public]** / [1: Private]	

5853	Stamp Data Download	GW
	Push [Execute] to download the fixed stamp data from the machine ROM onto the hard disk. Then these stamps can be used by the system. If this is not done, the user will not have access to the fixed stamps ("Confidential", "Secret", etc.). You must always execute this SP after replacing the HDD or after formatting the HDD. Always switch the machine off and on after executing this SP.	

5856	Remote ROM Update **DFU**	GW
	When set to "1" allows reception of firmware data via the local port (IEEE 1284) during a remote ROM update. This setting is reset to zero after the machine is cycled off and on. Allows the technician to upgrade the firmware using a parallel cable	

	0: Not allowed 1: Allowed

5857	Save Debug Log	GW
	On/Off (1:ON 0:OFF)	
1	Switches on the debug log feature. The debug log cannot be captured until this feature is switched on. 0: OFF 1: ON	
	Target (2: HDD 3: SD Card)	
2	Selects the destination where the debugging information generated by the event selected by SP5858 will be stored if an error is generated 2: HDD 3: SD Card	
	Save to HDD	
5	Specifies the decimal key number of the log to be written to the hard disk.	
	Save to SD Card	
6	Specifies the decimal key number of the log to be written to the SD Card.	
	Copy HDD to SD Card (Latest 4 MB)	
9	Takes the most recent 4 MB of the log written to the hard disk and copies them to the SD Card. A unique file name is generated to avoid overwriting existing file names on the SD Card. Up to 4MB can be copied to an SD Card. 4 MB segments can be copied one by one to each SD Card.	
	Copy HDD to SD Card Latest 4 MB Any Key)	
10	Takes the log of the specified key from the log on the hard disk and copies it to the SD Card. A unique file name is generated to avoid overwriting existing file names on the SD Card. Up to 4 MB can be copied to an SD Card. 4 MB segments can be copied one by one to each SD Card. This SP does not execute if there is no log on the HDD with no key specified.	
	Erase HDD Debug Data	
11	Erases all debug logs on the HDD	
12	Erase SD Card Debug Data	

	Erases all debug logs on the SD Card. If the card contains only debugging files generated by an event specified by SP5858, the files are erased when SP5857 010 or 011 is executed. To enable this SP, the machine must be cycled off and on.
13	Free Space on SD Card
	Displays the amount of space available on the SD card.
14	Copy SD to SD (Latest 4MB)
	Copies the last 4MB of the log (written directly to the card from shared memory) onto an SD card.
15	Copy SD to SD (Latest 4MB Any Key)
	This SP copies the log on an SD card (the file that contains the information written directly from shared memory) to a log specified by key number.
16	Make HDD Debug
	This SP creates a 32 MB file to store a log on the HDD.
17	Make SD Debug
	This SP creates a 4 MB file to store a log on an SD card.

5858	Debug Save When	GW
	These SPs select the content of the debugging information to be saved to the destination selected by SP5857 002. SP5858 3 stores one SC specified by number. Refer to Section 4 for a list of SC error codes.	
1	Engine SC Error	
	Stores SC codes generated by copier engine errors. 0: OFF 1: ON	
2	Controller SC Error	
	Stores SC codes generated by GW controller errors. 0: OFF 1: ON	
3	Any SC Error	
	[0 to 65535/1]	
4	Jam	

	Stores jam errors. 0: OFF 1: ON

5859	Debug Log Save Function	GW
	These SPs allow you to set up to 10 keys for log files for functions that use common memory on the controller board. [-9999999 to 9999999/1]	
	001 to 010	Key 1 to 10

5860	SMTP/IMAP4	GW
20	Partial Mail Receive Timeout	
	[1 to 168/1] Sets the amount of time to wait before saving a mail that breaks up during reception. The received mail is discarded if the remaining portion of the mail is not received during this prescribed time.	
21	MDN Response RFC2298 Compliance	
	Determines whether RFC2298 compliance is switched on for MDN reply mail. 0: No 1: Yes	
22	SMTP Auth. From Field Replacement	
	Determines whether the FROM item of the mail header is switched to the validated account after the SMTP server is validated. 0: No. "From" item not switched. 1: Yes. "From" item switched.	
25	SMTP Auth Direct Sending	
	Occasionally SMTP fails to be recognized. If this occurs use this SP to force manual recognition.	
26	S/MIVE: MIME Header Setting	
	Selects the MIME header type of an E-mail sent by S/MIME. [0 to 2 / **0** / 1] 0: Microsoft Outlook Express standard	

	1: Internet Draft standard 2: RFC standard

5866	E-Mail Report	
1	Report Validity	Enables or disables the email alert function. [0 or 1 / **0** / –] 0: Enabled, 1: Disabled
5	Add Date Field	Adds or does not add the date field to the header of the alert mail. [0 or 1 / **0** / –] 0: Not added, 1: Added

5870	Common Key Info Writing
	Writes to flash ROM the common proof for validating the device for NRS specifications. Note: This SP is for future use and currently not used.
1	Writing
3	Initialize

5873	SD Card Apli.	GW
	Allows you to copy MFP controller applications from one SD card to another SD card.	
1	Move Exec	
	Executes the move from one SD card to another.	
2	Undo Exec	
	This is an undo function. It cancels the previous execution.	

5875	SC Auto Reboot	GW
	This SP determines whether the machine reboots automatically when an SC error occurs. **Note**: The machine does not rebut for Type A (fatal) SC code errors.	
1	Reboot Setting	
	[0 to 1/ **0** / 1] 0: The machine reboots automatically when the machine issues an SC error and logs the SC error code. If the same SC occurs again, the machine does not reboot.	

	1: The machine does not reboot when an SC error occurs.
2	Reboot Type
	[0 to 1 / **0** / 1] 0: Manual reboot, 1: Automatic reboot

5878	Option Setup	GW
	Data Overwrite Security (DOS) Setup	
	This SP enables the DOS function after it has been installed. For more, see "MFP Options" in the installation section of the Service Manual.	
1	Data Overwrite Security	Enables the DOS option.
2	Encryption Option	Enables the data encryption.

5881	Fixed Phase Block Erasing **DFU**
	Detects fixed phase.

5887	SD Get Counter
	This SP sends a text file to an SD card inserted in SD card Slot 2 (lower slot). The operation stores. The file is stored in a folder created in the root directory of the SD card called SD_COUNTER. The file is saved as a text file (*.txt) prefixed with the number of the machine. 1. Insert the SD card in SD card Slot 2 (lower slot). 2. Select SP5887 then touch [EXECUTE]. 3. Touch [Execute] in the message when you are prompted.

5888	Personal Information Protect	GW
	Selects the protection level for logs. [0 to 1 / **0** / 1} 0: No authentication, No protection for logs 1: No authentication, Protected logs (only an administrator can see the logs)	

5907	Plug & Play Maker/Model Name	GW

	Selects the brand name and the production name for Windows Plug & Play. This information is stored in the NVRAM. If the NVRAM is defective, these names should be registered again. After selecting, press the "Original Type" key and "#" key at the same time. When the setting is completed, the beeper sounds five times.

5913	Switchover Permission Time: Print Application Timer	GW
	Sets the length of time to elapse before allowing another application to take control of the display when the application currently controlling the display is not operating because a key has not been pressed. [3 to 30/1 s]	

5967	Copy Server: Set Function	GW
	Enables and disables the document server. This is a security measure that prevents image data from being left in the temporary area of the HDD. After changing this setting, you must switch the main switch off and on to enable the new setting. 0: ON 1: OFF	

5974	Cherry Server **Japan Only**	GW

5985	Device Setting
	The NIC and USB support features are built into the GW controller. Use this SP to enable and disable these features. In order to use the NIC and USB functions built into the controller board, these SP codes must be set to "1".
1	On Board NIC
	[0 to 2 / **0** / 1 /step] 0: Disable, 1: Enable, 2: Function limitation When the "Function limitation" is set, "On board NIC" is limited for use with only NRS or LDAP/NT authentication. Note: • Other network applications than @Remote or LDAP/NT authentication are not available when this SP is set to "2". • Even if you can change the initial settings of those network applications, the settings will not work
2	On Board USB

	[0 or 1 / **0** / 1/step] 0: Disable, 1: Enable

5990	SP Print Mode (SMC Print)	GW
	In the SP mode, press Copy Window to move to the copy screen, select the paper size, then press Start. Select A4/LT (Sideways) or larger to ensure that all the information prints. Press SP Window to return to the SP mode, select the desired print, and press Execute.	
1	All (Data List)	
2	SP (Mode Data List)	
3	User Program Data	
4	Logging Data	
5	Self-Diagnostic Report	
6	Non-Default (Prints only SPs set to values other than defaults.)	
7	NIB Summary	
8	Capture Log	
21	Copier User Program	
22	Scanner SP	
23	Scanner User Program	

SP6000 Peripherals

6117	Folder Input Check
	This SP retrieves the SP settings of each bit within 0.5 sec., collects the data into 1-byte, then sends it to the controller. However, undefined sensor information on the Folder unit side is set to "0" without checking the Folder unit. • If there is no response from the Folder FD within the prescribed time after it is checked, the 1-byte data (sensor information) is set to "0". • The requests for engine information stop after this SP screen is closed.
	(7) 0000 0000 (0)

1	Fan Folder 1		
	Bit	**Input**	**Status**
	7	Not used	---
	6	Not used	---
	5	Original width sensor	36 in.
	4	Not used	---
	3	Entrance sensor	0: No paper, 1: Paper present
	2	Not used	---
	1	Exit JG sensor	0: No paper, 1: Paper present
	0	Not used	---
2	Fan Folder 2		
	Bit	**Input**	**Status**
	7	Original width sensor: 24 in.	0: No paper, 1: Paper present
	6	Original width sensor: 18 in.	0: No paper, 1: Paper present
	5	Original width sensor: 12 in.	0: No paper, 1: Paper present
	4	Original width sensor: 30 in.	0: No paper, 1: Paper present
	3	Original width sensor: 841 mm/34 in.	0: No paper, 1: Paper present
	2	Original width sensor: 594 mm/22 in.	0: No paper, 1: Paper present
	1	Original width sensor: 420 mm/17 in.	0: No paper, 1: Paper present
	0	Original width sensor: 297 mm/11 in.	0: No paper, 1: Paper present
3	Fan Folder 3		
	Bit	**Input**	**Status**
	7	Not used	---
	6	Not used	---
	5	Not used	---
	4	Not used	---

	3	Fold plate HP sensor (F)	0: Off, 1: On
	2	Fold plate HP sensor (R)	0: Off, 1: On
	1	Fold plate down sensor (F)	0: Off, 1: On
	0	Fold plate down sensor (R)	0: Off, 1: On
4	Fan Folder 4		
	Bit	**Input**	**Status**
	7	Folder unit entrance sensor	0: No paper, 1: Paper present
	6	Corner fold entrance sensor	0: No paper, 1: Paper present
	5	Fan fold sensors (F)	0: No paper, 1: Paper present
	4	Corner fold sensors (F)	0: No paper, 1: Paper present
	3	Fan fold sensors (R)	0: No paper, 1: Paper present
	2	Corner fold sensors (R)	0: No paper, 1: Paper present
	1	Fan fold exit sensor	0: No paper, 1: Paper present
	0	Corner fold exit sensor	0: No paper, 1: Paper present
5	Transport Switching (Cross-Folder)		
	Bit	**Input**	**Status**
	7	Junction gate entrance sensor	0: No paper, 1: Paper present
	6	Paper exit sensor	0: No paper, 1: Paper present
	5	Paper length sensor	0: No paper, 1: Paper present
	4	Horizontal pressure HP sensor 1	0: No paper, 1: Paper present
	3	Horizontal pressure HP sensor 2	0: No paper, 1: Paper present
	2	Jogger HP sensor	0: No paper, 1: Paper present
	1	Punch registration sensor (H)	0: No paper, 1: Paper present
	0	Punch reginstration sensor (V)	0: No paper, 1: Paper present
6	Cross Folder		
	Bit	**Input**	**Status**

	7	Not used	---
	6	Not used	---
	5	Not used	---
	4	Cross folder entrance sensor	0: No paper, 1: Paper present
	3	Cross folder (U) sensor	0: No paper, 1: Paper present
	2	Cross folder (L) sensor	0: No paper, 1: Paper present
	1	Cross fold plate HP sensor (U)	0: Off, 1: On
	0	Cross fold plate HP sensor (L)	0: Off, 1: On
7	Invert/Rotate (Cross-Folder)		
	Bit	**Input**	**Status**
	7	Not used	0: No paper, 1: Paper present
	6	Inverter entrance sensor	0: No paper, 1: Paper present
	5	Inverter exit sensor	0: No paper, 1: Paper present
	4	Inverter output sensor	0: No paper, 1: Paper present
	3	Rotate entrance sensor	0: No paper, 1: Paper present
	2	Non-rotate entrance sensor (U)	0: No paper, 1: Paper present
	1	Non-rotate entrance sensor (L)	0: No paper, 1: Paper present
	0	Paper registration sensor	0: No paper, 1: Paper present
8	Shift Tray (Cross-Folder)		
	Bit	**Input**	**Status**
	7	Not used	---
	6	Not used	---
	5	Not used	---
	4	Exit sensor	0: No paper, 1: Paper present
	3	Shift tray HP sensor	0: Off, 1: On
	2	Paper sensor	0: No paper, 1: Paper present

	1	Lower limit sensor	0: Off, 1: On
	0	Door Switch	0: Off, 1: On
9	Punch: Horiz (**Japan Only**)		
	Bit	**Input**	**Status**
	7	Not used	---
	6	Not used	---
	5	Not used	---
	4	Not used	---
	3	Not used	---
	2	Not used	---
	1	Punch HP sensor	0: Off, 1: On
	0	Punch hopper full sensor	0: Off, 1: On
10	Punch: Vert (**Japan Only**)		
	Bit	**Input**	**Status**
	7	Not used	---
	6	Not used	---
	5	Not used	---
	4	Not used	---
	3	Punch unit HP sensor	0: Off, 1: On
	2	Punch hopper full sensor	0: Off, 1: On
	1	Punch leading edge sensor (V)	0: Off, 1: On
	0	Punch HP sensor (V)	0: Off, 1: On
11	Door 1: Fan Folder		
	Bit	**Input**	**Status**
	7	N3 door switch	0: Close, 1: Open
	6	N5 door switch	0: Close, 1: Open

	5	N6 door switch	0: Close, 1: Open
	4	N7 door switch	0: Close, 1: Open
	3	Bypass front cover	0: Close, 1: Open
	2	Bypass rear cover	0: Close, 1: Open
	1	N6 guide switch (U)	0: Close, 1: Open
	0	N6 guide switch (L)	0: Close, 1: Open
12	Door 2: Fan Folder		
	Bit	**Input**	**Status**
	7	Not used	---
	6	Not used	---
	5	Not used	---
	4	Not used	---
	3	N1 guide microswitch	0: Close, 1: Open
	2	N3 door microswitch	0: Close, 1: Open
	1	N5 door microswitch	0: Close, 1: Open
	0	Bypass jam door microswitch	0: Close, 1: Open
13	Door 1: Cross Folder		
	Bit	**Input**	**Status**
	7	Not used	---
	6	Not used	---
	5	Not used	---
	4	Not used	---
	3	Transport JG door sensor (F)	0: Close, 1: Open
	2	Transport JG door sensor (U)	0: Close, 1: Open
	1	Transport JG door sensor (R)	0: Close, 1: Open
	0	Cross fold door sensor (R)	0: Close, 1: Open

14	Door 2: Cross Folder		
	Bit	**Input**	**Status**
	7	Not used	---
	6	Not used	---
	5	Not used	---
	4	Transport JG door microswitch (F)	0: Close, 1: Open
	3	Cross horizontal microswitch 1	0: Close, 1: Open
	2	Cross horizontal microswitch 2	0: Close, 1: Open
	1	Inverter door microswitch	0: Close, 1: Open
	0	Inverter door microswitch	0: Close, 1: Open
15	---	Stamp **Japan Only**	---

6118	Folder Output Check
	Use this SP to switch on the motors, clutches, and solenoids of the Folder unit B889 to test their operation. **Important**: After switching on a motor, clutch, or solenoid, be sure to switch it off after you finish your work.
1	Transport Motor: Fwd: Fan Folder
2	Bypass Feed Clutch: Fan Folder
3	Paper Entrance Clutch: Fan Folder
4	Output Junction Gate SOL: Fan Folder
5	Pre-Fold Motor: SE: Fwd: Fan Folder
6	Pre-Fold Motor: LE Fwd: Fan Folder
7	Pre-Fold Clutch: SE: Fan Folder
8	Pre-Fold Clutch: LE: Fan Folder
9	Relay Clutch: Fan Folder
10	Corner Fold Exit Clutch: Fan Folder

11	Front Fold Plate: Fan Folder
12	Rear Fold Plate: Fan Folder
13	Fold Motor: Fwd: Fan Folder
14	Fold Motor: Rev: Fan Folder
15	Corner Fold Guide SOL: Fan Folder (**Japan Only**)
16	Front Fold Plate Motor: Fwd: Fan Folder
17	Front Fold Plate Motor: Rev: Fan Folder
18	Rear Fold Plate Motor: Fwd: Fan Folder
19	Rear Fold Plate Motor: Rev: Fan Folder
20	Feed 5 Clutch: Fan Folder
21	Fan Fold Press Position Clutch: Fan Folder
22	Corner Fold Guide Plate Motor: Fan Folder (**Japan Only**)
31	Vert Transport Motor: Fwd: Fan Folder
32	Vert Transport Motor: Rev: Fan Folder
33	Jogger Motor: Fwd: Cross Folder
34	Jogger Motor HP Sensor: Cross Folder
35	Punch Transport JG SOL: Cross Folder
36	Horiz Feed Pressure Motor HP Sensor: Cross Folder
37	Horiz Feed Press Motor Press Position Cross
38	Vert Feed Pressure SOL 1-3: Cross Folder
39	Horiz Feed Motor: Fwd: Cross Folder
40	Horiz Feed Motor: Rev: Cross Folder
41	Vert Feed Pres Idle SOL 1: L: Cross Folder
42	Vert Feed Pres Idle SOL 2: C: Cross Folder
43	Vert Feed Pres Idle SOL 3: R: Cross Folder
44	Fold Motor: Fwd: Cross Folder

45	Fold Motor: Rev: Cross Folder	
46	Upper Fold Plate Motor: Fwd: Cross Folder	
47	Upper Fold Plate Motor: Rev: Cross Folder	
49	Lower Fold Plate Motor: Fwd: Cross Folder	
50	Lower Fold Plate Motor: Rev: Cross Folder	
51	Fold Plate Motor Position HP Sensor: Cross Folder	
52	Inverter Motor: Fwd: Cross Folder	
53	Inverter Motor: Rev: Cross Folder	
54	Rotate/Transport Motor: Fwd: Cross Folder	
55	Inverter Entrance JG SOL: Cross Folder	
57	Rotation Sensor SOL: Cross Folder	
58	Rotation Entrance Pressure SOL: Cross Folder	
59	Rotation Exit Pressure SOL: Cross Folder	
60	Rotation Right Pressure SOL: Cross Folder	
61	Rotation Left Pressure SOL: Cross Folder	
64	Tray Lift Motor HP Sensor: Cross Folder	
65	Tray Upper Sensor Release SOL	
66	Punch Move Motor: Fwd Horiz	
67	Punch Move Motor: Rev Horiz	
68	Punch Waste Absorption Fan Output (**Japan Only**)	
73	Punch Move Motor: Fwd Vert	
74	Punch Move Motor: Rev Vert	
75	Punch Drive Motor: Horiz	
76	Punch Drive Clutch	
081	Stamp Transport Motor: Fwd : Cross Folder	**Japan Only**
082	Stamp Trans Motor: Rev : Cross Folder	

083	Stamp Trans Motor: HP Sensor : Cross Folder	
084	Stamp Press Motor: Fwd : Cross Folder	
085	Stamp Press Motor: Rev : Cross Folder	
086	Stamp Press Motor: HP Sensor : Cross Folder	

6961	Trans. Motor Adj.: Fan Folder: Number of Folder Motor Rotations
	This SP adjusts the speed of the transport motor. Each step increases or reduces the speed by 0.1%. [-10 to +10/**0**/0.1%]

6962	Fold Motor Adjustment: Fan Folder **DFU**
	Use these SP's to adjust the fan motor speed to correct skew and offset at the Folder unit entrance. The fan fold motor drives both pairs of fan fold rollers at the bottom of the Folder unit.
1	Display Paper Length
	This SP displays the length of the paper most recently fed into and folded in the Folder unit. [0 to 32767 mm] One of two sensors detects the leading edge and trailing edge of the paper, and calculates the paper length based on the length of time for the paper to pass below: • On line mode. The Folder unit entrance sensor detects the length of the paper fed from the main machine. • Off line mode. The leading edge sensor of the Manual Feeder detects the length of the paper fed directly into the manual feeder.
2	Display Folded Length
	This SP displays the length of the paper most recently folded in the Folder unit. [0 to 32767 mm] One of two sensors detects the leading edge and trailing edge of the paper, and calculates the paper length based on the length of time for the paper to pass below: • On line mode. The Folder unit entrance sensor detects the length of the paper fed from the main machine. • Off line mode. The leading edge sensor of the Manual Feeder detects the length of the paper fed directly into the manual feeder.
11	Fold Roller Speed

	The SP sets the default speed of the fan fold roller motor when the man machine is turned on. [80 to 160/**80**/1 mm/s]
21	Skew at Folder Entrance
	This SP can be adjusted to correct the reading of the paper length. The input from SP6962-1 (paper length) and SP6962-22 (paper offset) are used together. After two sheets of different length have passed, the amount of skew and offset are calculated then corrected using this equation: Y = aX + b where: X: Actual paper length Y: Paper length read by machine (SP6962-1) a: Skew correction (SP6962-21) b: Offset correction (SP6962-22) [70 to 130/**100**/0.1 %]
22	Offset at Folder Entrance
	This SP can be adjusted to correct reading of the paper length. The input from SP6962-1 (paper length) and SP6962-021 (paper skew) are used together. After two sheets of different length have passed, the amount of skew and offset are calculated then corrected using this equation: Y = aX + b where: X: Actual paper length Y: Paper length read by machine (SP6962-1) a: Skew correction (SP6962-21) b: Offset correction (SP6962-22) [70 to 130/**100**/0.1 %]
31	Offset at Folder Exit
	This SP adjusts the length of the fan folds in the paper to be sent to the cross fold unit. [-10 to +10/**0**/0.1 mm]
41	Fold Motor Rotation
	This SP adjusts the rotations of the fan fold motor. [-10 to +10/**0**/0.1 %]

51	Fan Folder Entrance Loop Timing
	This SP adjusts the timing of the entrance clutch to increase amount of registration to correct skew which can occur with paper of short length. [-5 to +20/**0**/0.1 mm] This SP is enabled for the following paper. (1) Standard Sizes • A3 SEF • 11 x 17 SEF • 12 x 18 SEF (2) Free Cut • Paper shorter than 470 mm

6963	Fold Plate Adjustment: Fan Folder **DFU**
	Use these SP's to adjust operation of the fold plates inside the fan folder of the Folder unit.
1	Fold Plate Movement : LEdge
	This SP adjusts how far the fold plates descend to guide the leading edge. [-200 to +200/**0**/1] **Note**: • An adjustment of 1 step is equivalent to 0.191 mm. • An adjustment in the "+" direction moves the fold plates closer to the fan fold rollers, and an adjustment in the "-" direction moves them away from the fan fold rollers.
2	Fold Plate Movement
	This SP adjusts how far the fold plates descend to push the paper between the fan fold rollers to form the folds. [-400 to +400/**0**/1] **Note**: • An adjustment of 1 step is equivalent to 0.191 mm. • An adjustment in the "+" direction moves the fold plates closer to the fan fold rollers, and an adjustment in the "-" direction moves them away from the fan fold rollers.
11	Fold Plate Halt : LEdge
	This SP adjusts when the fold plates pause on the downstroke at the lowest point near the fan fold rollers after the leading edge of the paper has entered the fan folder mechanism.

	[-100 to 500/**0**/10 ms] **Note**: An adjustment in the "+" direction sets a longer time, and an adjustment in the "-" direction sets a shorter time.
12	Fold Plate Halt : Folding
	This SP adjusts the how long the fold plates pause on the down stroke at its lowest point near the fan fold rollers. [-100 to 500/**0**/10 ms] **Note**: An adjustment in the "+" direction sets a longer time, and an adjustment in the "-" direction sets a shorter time.
21	Fold Plate Timing : LEdge
	This SP adjusts the distance the paper feeds past the fan folder entrance sensor (the sensor goes ON) before the fold plate starts to descend. [-70 to 70/**0**/0.1 mm] **Note**: An adjustment in the "+" direction lengthens the distance, and an adjustment in the "-" direction shortens the distance.
22	Fold Plate Timing: Folding
	This SP adjusts the distance that the paper travels past the fan fold sensor pair before the fold plate starts to descend. [-70 to 70/**0**/0.1 mm] **Note**: An adjustment in the "+" direction lengthens the distance, and an adjustment in the "-" direction shortens the distance.
31	Fold Plate Movement: LEdge Corner Folding
	This SP adjusts the distance that the fan fold plate descends in order to guide the paper into the fan folding unit for the first fold when corner folding and fan folding have been selected for the job. [-200 to +200/**0**/1 mm] **Note**: • This SP applies only if corner folding the first sheet has been selected for the job. • An adjustment of 1 step is equivalent to 0.191 mm. • An adjustment in the "+" direction moves the fan fold plates closer to the fan fold rollers, and an adjustment in the "-" direction moves the plate away from the fan fold rollers.
32	Fold Plate Halt: LEdge Corner Folding (**Japan Only**)

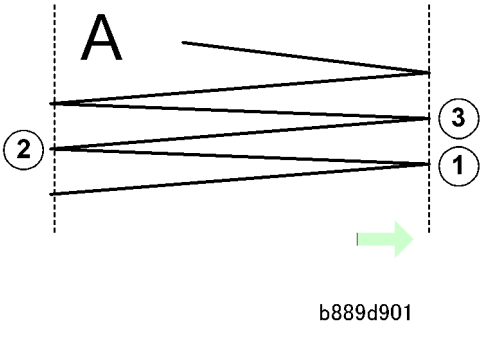
	This SP adjusts the length of time the paper feeds before the fan fold plate starts to ascend when corner folding and fan folding have been selected for the job. [-100 too +500/**0**/10 mm] **Note**: • This SP applies only if corner folding has also been selected for the job. • An adjustment in the "+" direction lengthens the time, and an adjustment in the "-" direction shortens the time.
33	Fold Plate Timing: LEdge Corner Folding (**Japan Only**)
	This SP adjusts the distance the paper feeds past the fan folder entrance sensor (the sensor goes ON) before the fold plate starts to descend when corner folding is also selected for the job. [-70 to 70/**0**/0.1 mm] **Note**: • This adjustment applies only after corner folding is also selected for the job. • An adjustment in the "+" direction lengthens the distance, and an adjustment in the "-" direction shortens the distance.
41	Fold Plate Movement: Paper Exit
	This SP adjusts the distance for the fan fold plate to move in order to guide the trailing edge of the last fold out of the fan folder unit. [-200 to +200/**0**/1 mm] **Note**: • An adjustment of 1 step is equivalent to 0.191 mm. • An adjustment in the "+" direction moves the fan fold plates closer to the fan fold rollers, and an adjustment in the "-" direction moves the plate away from the fan fold rollers.
42	Fold Plate Halt: Paper Exit
	This SP adjusts the length of time that the fan fold plate stops after descending in order to output trailing edge of the folded copy out of the folder unit after the last fold. [-100 to +6000/**0**/1 msec.] **Note**: An adjustment in the "+" direction lengthens the time, and an adjustment in the "-" direction shortens the time.
43	Fold Plate Timing: Paper Exit
	This SP adjusts distance that the paper moves after the fan fold sensor pair detects the trailing edge and switches ON until the fan fold plate starts to move when feeding the copy out of the folder unit after the last fold.

	[0 to 350/**0**/1 mm] **Note**: An adjustment in the "+" direction lengthens the distance, and an adjustment in the "-" shortens the distance.

6964	Length Adjustment: Fan Folder
	These SP codes adjust the length of the folds. The summary below describes important terms used in these SP descriptions. For more see the "Folder FD 6500 Service Manual".

There are two types of folding:

- **Long folding**. The folded copy looks like an accordion with the edges of the folded surfaces aligned.
- **File folding**. The same as long folding but the leading edge of the bottom sheet protrudes from the bottom of the stack. This margin can be used to fasten the leading edge into a flat binder, or it can be punched for filing in a ring binder.



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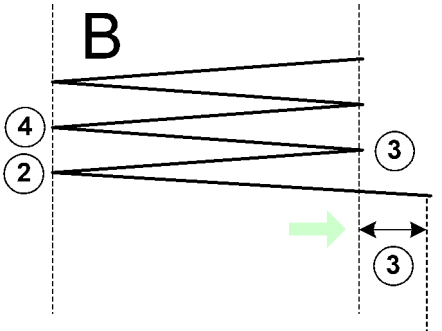

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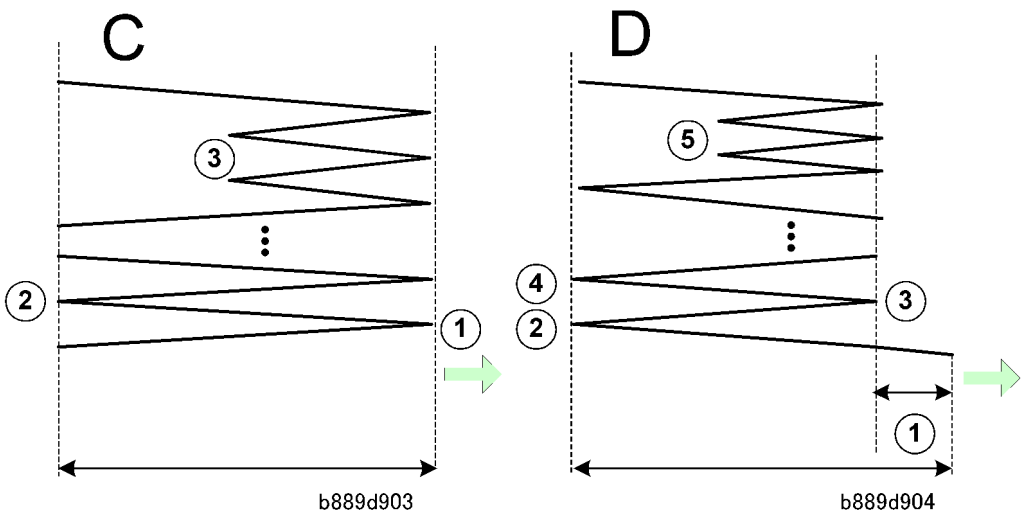
The first example [A] is a long fold. The second example [B] is a file fold. The colored arrows show the direction of paper feed when viewed from the right side of the folder unit. For the sake of convention, the folds on the right sides of the stacks shown above are called "peak folds" and those on the left are "valley folds". In Stack [A], fold ① is a peak fold, fold is a valley fold, ③ is a peak fold, and so on.

- In a "long fold" like Stack [A], the first fold is always a peak fold.
- In Stack [B], ① is the leading edge fed wider than other sections of the stack, is a valley fold, ③ is a peak fold, ④ is a valley fold, and so on.
- In a "file fold" like Stack [B], the first fold is always a valley fold (done after creating the longer bottom sheet with the protruding leading edge). To create this difference in length, the fan fold motor feeds the leading edge to the rear slightly farther (about 40 mm) than the other folded sections above.



As shown in Stack [A] above, the top flap is slightly shorter than the other folds below which are of uniform size. If this is not desirable, the folding job can be set to calculate how much paper is needed for the last fold to ensure that the top flap is the same length as the other folds below, with folded surfaces of shorter length hidden in the stack. The folds of the paper remaining before the final full-length fold are "adjusted" to create shorter sections that will be covered by the top flap, so that the stack has a neat and uniform appearance.

These adjusted folds can be done for either long folds or file folds as shown above.

- Stack [C] is a long fold (the first fold ① is a peak fold). The folds are adjusted at ③ so that the last flap is the same size as the other sections of the stack and long enough to cover the shorter adjusted folds below.
- Stack [D] is a file fold (the first fold is a valley fold). The folds are adjusted at ⑤ so that the last flap is the same size as the other sections of the stack and long enough to cover the short adjusted folds below.

1	Fold Length: 1st Fold Peak
	This SP determines the start of the first peak fold. To do this, it changes the timing of the fan fold sensor (F) that affects how far the paper feeds past this sensor after the first peak fold. This adjustment determines the length of a flap at the first fold wider than the succeeding folds. [-70 to 70/**0**/0.1 mm] **Note**: • Adjustment in the "-" or "+" direction decreases or increases the amount of paper that feeds past the sensor. This decreases or increases the length of paper between the first two folds.
2	Fold Length: 1st Fold Valley

	This SP determines the start of the first valley fold. To do this, it changes the timing of the fan fold sensor (R) that affects how far the paper feeds past this sensor after the first peak fold. This adjustment determines the length of a flap, starting at the leading edge, that is wider than the succeeding folds. (This elongated flap can be used to bind the folded copy.) [-70 to 70/**0**/0.1 mm] **Note**: Adjustment in the "-" or "+" direction decreases or increases amount of paper that feeds past the sensor. This decreases or increases the length of the paper (section) from the leading edge to the first valley fold.
3	Fold Length: 2nd Fold Peak
	This SP adjusts the operation of the fan fold sensor (F). • If the first fold is a peak fold, this SP setting determines the length of even number sections, excluding that of the first section. • If the first fold is a valley fold, this SP setting determines the length of odd sections. **Note**: Adjustment in the "-" or "+" direction decreases or increases amount of paper that feeds past the sensor. This decreases or increases the length of the even or odd sections.
4	Fold Length: 2nd Fold Valley
	This SP adjusts the operation of the fan fold sensor (R). • If the first fold is a peak fold, this SP setting determines the length of odd number sections. • If the first fold is a valley fold, this SP setting determines the length of even sections, excluding that of the first section. **Note**: Adjustment in the "-" or "+" direction decreases or increases amount of paper that feeds past the sensor. This decreases or increases the length of the even or odd sections.
11	Margin Fold Length: 3rd Fold: A0 SEF
	This SP adjusts the length of the 3rd section when folding A0 SEF paper. [-20 to +20/**-2.5**/01. mm] **Note**: Adjustment in the "-" or "+" direction decreases or increases the length of the 3rd section.
12	Margin Fold Length: 5th Fold A0 SEF
	This SP adjusts the length of the 5th section when folding A0 SEF paper. [-20 to +20/**-3**/01. mm] **Note**: Adjustment in the "-" or "+" direction decreases or increases the length of the 5th section.
13	Margin Fold Length: 3rd Fold: A1 SEF
	This SP adjusts the length of the 3rd section when folding A1 SEF paper.

	[-20 to +20/**-1.5**/01. mm] **Note**: Adjustment in the "-" or "+" direction decreases or increases the length of the 3rd section.	
14	Margin Fold Length: 3rd Fold: A2 SEF	
	This SP adjusts the length of the 3rd section when folding A2 SEF paper. [-20 to +20/**-6**/01. mm] **Note**: Adjustment in the "-" or "+" direction decreases or increases the length of the 3rd section.	
15	Fold Length: 1st Fold Valley: Corner Folding	(Japan Only)
16	Margin Fold Length: 1st Fold: Corner Fold: A2L	
17	Margin Fold Length: 1st Fold: Corner Fold: A2	
18	Margin Fold Length: 1st Fold: Corner Fold: A2	
21	Margin Fold Length: 7th Fold	
	This SP adjusts the length of the 6th section in order to complete the 7th (last) section. [-20 to +20/**3**/01. mm] **Note**: Adjustment in the "-" or "+" direction decreases or increases the length.	
22	Margin Fold Length: 5th Fold	
	This SP adjusts the length of the 4th section in order to complete the 5th (last) section. [-20 to +20/**0**/01. mm] **Note**: Adjustment in the "-" or "+" direction decreases or increases the length.	
23	Margin Fold Length: 3rd Fold	
	This SP adjusts the length of the 2nd section in order to complete the 3rd (last) section. [-20 to +20/**-3**/01. mm] **Note**: Adjustment in the "-" or "+" direction decreases or increases the length.	
31	Margin Fold Length: Regular Size	
	This SP fine adjusts the length of the sections between folds for copies printed on standard size paper. [-20 to +20/**0**/0.1] **Note**: Adjustment in the "-" or "+" direction decreases or increases the length.	
32	Margin Fold Length: Long Print	

	This SP adjusts the length of the last section (from last fold to the trailing edge) during long fan folding. [-20 to +20/**0**/0.1 mm] **Note**: Adjustment in the "-" or "+" direction decreases or increases the length.
41	Long Print: 1st Fold Peak: After 2nd Fold
	This SP modifies the operation of the fan fold sensor (F) to determine the lengths of the odd and even sections for long fan folding only. • If the first fold is a peak fold, this SP setting determines the length of even number sections, excluding the 1st section. • If the first fold is a valley fold, this SP setting determines the length of odd sections. **Note**: Adjustment in the "-" or "+" direction decreases or increases the length.
42	Long Print: 1st Fold Valley: After 2nd Fold
	This SP modifies the operation of the fan fold sensor (R) to determine the lengths of the odd and even sections for long fan folding. • If the first fold is a peak fold, this SP setting determines the length of odd number sections, excluding the 1st section. • If the first fold is a valley fold, this SP setting determines the length of even sections. **Note**: Adjustment in the "-" or "+" direction decreases or increases the length.
43	Margin Fold: 1st Fold Peak: After 4th Fold
	This SP modifies the operation of the fan fold sensor (F) to determine the lengths of the odd and even sections for long fan folding (including file flap or margin folding). • If the first fold is a peak fold, this SP setting determines the length even number sections, excluding the 1st section. • If the first fold is a valley fold, this SP setting determines the length of odd sections. **Note**: Adjustment in the "-" or "+" direction decreases or increases the length.
44	Margin Fold: 1st Fold Valley: After 2nd Fold
	This SP modifies the operation of the fan fold sensor (R) to determine the lengths of the odd and even sections for long fan folding) including file flap folding). • If the first fold is a peak fold, this SP setting determines the length even number sections. • If the first fold is a valley fold, this SP setting determines the length of odd sections, excluding the 1st section. **Note**: Adjustment in the "-" or "+" direction decreases or increases the length.

45	Fold Length: 1st Fold Peak: A3 SEF
	This SP fine adjusts the length of the sections between folds for copies printed on A3 SEF paper. [-20 to +20/**0**/0.1] **Note**: Adjustment in the "-" or "+" direction decreases or increases the length.
48	Margin Fold Length: Odd (19-30) Section Fold
	This SP adjusts the length of odd sections so they come out the same width in order to avoid "W" adjusted folds in the folded paper. [-70 to +70/**0**/0.1 mm] • If the fold width is wide, the machine calculates the width as soon as the fan fold sensors (R) or (F) go on. • If the fold width is extremely narrow, the machine calculates the width automatically and the fan fold sensors are ignored.
49	Margin Fold Length: Even (19-30) Section Fold
	This SP adjusts the length of odd sections after the second fold so they come out the same width in order to avoid "W" adjusted folds in the folded paper. [-70 to +70/**0**/0.1 mm]
50	Margin Fold Length:
	This SP adjusts the size of the margin (the first length of the fold used for binding) when the job has been set up to ignore fan fold sensor input. [-70 to +70/**0**/0.1 mm]
51	Margin Fold Length: File
	This SP fine adjusts the calculated length of the file flap. [-20 to +20/**0**/0.1]
61	Margin Fold Length: Threshold
	This SP adjusts the threshold variable that the machine uses to calculate when to do adjusted folding. [-70 to +70/**0**/0.1]
71	Fold Length: 1st Fold: Extra Length **DFU**
91	Regular Size Fold Switching
	This SP determines whether the lengths of the sections can be adjusted for folding standard paper sizes.

	[0 to 1/**0**/1] 0: Adjustment allowed 1: Adjustment not allowed

6965	Pre-Fold Adjustment (Corner Folder) **Not Used**

6966	Fan Fold Selection: Fan Folder
1	Standard Fold Switching This SP determines whether fixed pattern printing only is enabled when the Folder unit is online. [0 to 1/**0**/1] 0: Disable 1: Enable fixed pattern only
3	Fold Length Margin Fold
	This SP changes the fold direction to prevent the surface of the margin fold from standing up. [0 to 9/**0**/1

0: Margin Fold A0 SEF, A1 SEF, A2 SEF with fold adjustments
1: Margin Fold without fold adjustments

Size	Std Fold	1st	1st	2nd	3rd	4th	5th	6th	7th
A2 SEF	Margin Fold	Valley	210	192	192	---	---	---	---

Note: A0 SEF, A1 SEF conform with standard specificati ons.
2: Margin Fold with last at 150 mm

Size	Std Fold	1st	1st	2nd	3rd	4th	5th	6th	7th
A1 SEF	Margin Fold	Valley	210	166	166	150	149	---	---
A2 SEF	Margin Fold	Valley	164	104	88	88	150	---	---

Note: A0 SEF conforms with standard specifications.
3: Margin Fold with last at 170 mm

Size	Std Fold	1st	1st	2nd	3rd	4th	5th	6th	7th
A0 SEF	Margin Fold	Valley	210	170	170	150	149	170	170
A1 SEF	Margin Fold	Valley	210	146	145	170	170	---	---
A2 SEF	Margin Fold	Valley	144	104	88	88	170	---	---

4-9: Not used

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4	Long Print Adjusted Fold Enable
	This SP selects the adjustment for long folding. [0 to 2/**0**/1] 0: Long paper adjustment enable (default). 1: Longer sizes

	• Millimeters. No adjustment for sizes up to 1189 mm (A0), adjustment done for sizes longer than 1189 mm (A0). • Inches: No adjustment up to Engineering sizes, adjustment done for paper longer than Engineering sizes. 2: Disabled (no fold adjustments)

6969	Bypass Feed Setting **DFU**
	This sets the how the bypass feed sensors read paper sizes. [0 to 1/**0**/1] 0: DOM, EU (Japan, Europe) 1: NA (North America)

6971	Trans. Switch Adj.: Cross
1	Cross Vertical Transport Motor Halt Timing
	Normally the transport motor stops once the trailing edge of the paper feeds 90 mm past the transport entrance sensor. This distance that the paper feeds past the sensor can be adjusted in the range of –10 mm to +30 mm. Raising or lowering the setting increases or decreases the distance that the paper feeds past the sensor. [-10 to +30/**0**/1 mm]
2	Cross Vertical Transport Motor Reverse Timing
	The return roller motor reverses 100 ms after the the return roller solenoids turn on. This timing (100 ms before the motor reverses and feeds the paper against the jogger fence) can be adjusted in the range of ±50 ms. Raising or lowering the setting increases or decreases the time before the motor reverses. [-50 to +50/**0**/10 ms]
11	Vertical Transport Retraction Amount
	Normally after the return roller motor reverses it feeds the paper 30 mm. This distance that the paper feeds toward the jogger fence can be adjusted in the range ± 30 mm. Raising or lowering the setting increases or decreases the distance that the paper feeds. (This is the length of time the motor remains on to feed the paper against the jogger fence.) [-30 to +30/**0**/1 mm]
21	Jogger Adjustment

	The width of the folded paper output from the fan folder unit determines the stop position of the jogger fence for each job, but this distance can be adjusted within ± 5 mm. Raising or lowering the setting increases or decreases the distance away from the normal stop position. [-5 to +5/**0**/1 mm]
31	Horizontal Trans Pres Motor Position Adj
	The press motor turns on and lowers the guide plate in 1222 steps from when the horizontal transport guide HP sensor goes OFF and presses the plate down on top of the paper. The pressure position can be adjusted within the range of ±20 steps. Raising or lower the setting increases or decreases the amount of pressure applied. [-20 to +20/**0**/1]
41	Vertical Feed Speed: High
	If the folded paper is fed from the fan folder at a speed of more than 100 mm/s, the line speed is lowered once the trailing edge of the paper passes the transport entrance sensor. The amount of reduction in the line speed at this point can be adjusted. The table below shows how the speed is reduced. These adjustments apply to all standard paper sizes other than A2 LEF. [-2 to +2/**0**/1]

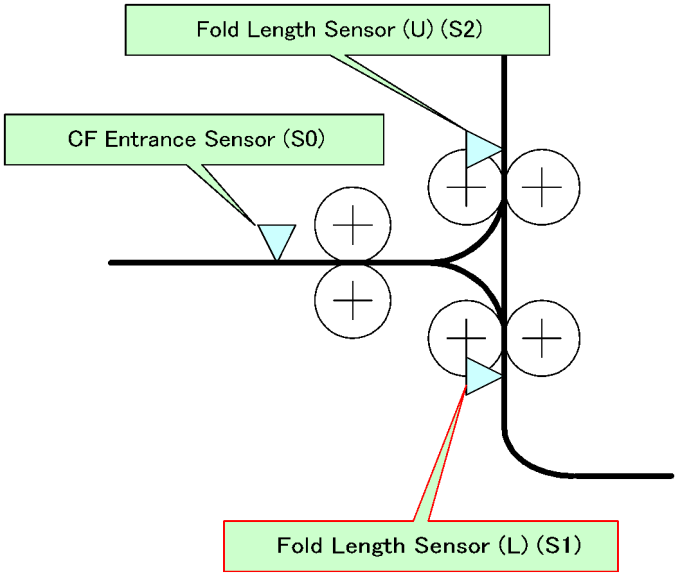
	SP	Speed (mm/s)	Drive Freq. (pps)	
	2	100 (100.626)	810.9254	
	1	90 (89.553)	721.5262	
	0	82.1670	662.1178	
	-1	70 (71.153)	573.4108	
	-2	58.1	468.188	

42	Vertical Feed Speed: Low
	If the folded paper is fed from the fan folder at a speed of more than 100 mm/s, the line speed is lowered once the trailing edge of the paper passes the transport entrance sensor. The amount of reduction in the line speed at this point can be adjusted. The table below shows how the speed is reduced. This adjustment applies to A2 LEF size paper only. [-2 to +2/**0**/1]

	SP	Speed (mm/s)	Drive Freq. (pps)	

	2	82.161	662.1178	
	1	70 (71.153)	573.4108	
	0	58.1	468.188	

6972	Cross Fold Adjustment (Cross Folder)
1	Fold Plate HP
	The cross fold motor stops 169 steps after the fold plate HP sensor goes on and stops the plate. The 169 steps can be adjusted in the range 0 to 100. Raising the value increases the number of steps before the fold plate stops. [0 to 100/**0**/1]
2	Fold Plate Movement
	Once the fold plate HP sensor goes OFF, the cross fold motor turns on and rotates the fold plate down (or up) 648 steps. The 648 steps can be adjusted in the range ±100 steps. Raising or lowering the value increases or decreases the number of steps before the fold plate stops. [-100 to +100/**0**/1]
11	Fold Plate Timing: LEdge: Line Speed 300mm/s
	Once the leading edge of the paper is detected by the cross folder entrance sensor and feeds 80 mm past the sensor, the cross fold motor turns on and rotates the upper fold plate down to guide the leading edge down. This distance that the paper feeds feeds down can be adjusted in the range ±10 mm. . Raising or lowering the setting increases or decreases the time before the cross fold motor stops. [-10 to +10/**-3**/1 mm]
12	Fold Plate Timing: LEdge: Line Speed 450mm/s
	This SP adjusts the timing (SP6972-11) of the upper fold plate (fold plate 1) that guides the leading edge down during high speed operation, but at present there is no provision for high speed operation so the setting of this SP code is ignored. Once the leading edge of the paper is detected by the cross folder entrance sensor and feeds 80 mm past the sensor, the cross fold motor turns on and rotates the upper fold plate down to guide the leading edge down. This distance that the paper feeds down can be adjusted in the range ±10 mm. . Raising or lowering the setting increases or decreases the time before the cross fold motor stops. [-10 to +10/**0**/1]



d046s937

The "S1 Direction" in the two SP codes below refers to the Fold length Sensor (L) (S1) shown in the illustration above.

21	Reverse Timing: Last Fold: S1 Direction
	When the last fold is opposite the direction of output, after the trailing edge of the paper passes the cross folder entrance sensor and feeds 94.6 mm toward Fold Length Sensor (S1), the cross fold motor and transport motor go off. This 94.6 mm distance that the paper feeds can be adjusted in the range ±50 mm. Raising or lowering the setting increases or decreases the time before the motors stop. [-50 to +10/**-9**/1 mm]
22	Fold Plate Timing: Last Fold: S1 Direction
	When the last fold is a valley fold, the cross fold motor turns on, feeds the paper toward the paper exit, and then raises fold plate 1 (upper fold plate) once the paper has fed 2 mm toward Fold Length Sensor (S1). This 2 mm distance that the paper feeds can be adjusted in the range 0 to +30 mm. Raising the setting increases the distance the paper feeds. [0 to 30/**4**/1 mm]
31	Fold Motor Power: Paper Entrance
	This SP sets the amount of voltage fed to the cross fold motor until the first fold is done in the cross folder unit. [0 to 3/**0**/1]

	Setting	**Power**	
	0	Low power (2.02V)	
	1	Medium low power (2.20V)	
	2	Medium high power (2.50V)	
	3	High power (2.77V)	
32	Fold Motor Power: Paper Folding		
	This SP sets the amount of voltage fed to the cross fold motor until the 2nd fold is done in the cross folder unit. [0 to 3/**0**/1]		
	Setting	**Power**	
	0	Low power (2.02V)	
	1	Medium low power (2.20V)	
	2	Medium high power (2.50V)	
	3	High power (2.77V)	
41	Fold Length: 1st Fold Peak		
	This SP adjusts the length of the fold by the lower fold length sensor. This is applied to the 1st peak fold. The width of the folded surface can be adjusted in the range ±20 mm. Raising the setting increases the width of the fold. [-20 to +20/**-6.5**/0.5 mm]		
42	Fold Length: 1st Fold Valley		
	This SP adjusts the length of the fold by the upper fold length sensor. This is applied to the 1st valley fold. The width of the folded surface can be adjusted in the range ±20 mm. Raising the setting increases the width of the fold. [-20 to +20/**-6.5**/0.5 mm]		
51	1st Fold		
	The width of the 1st folded surface can be adjusted in the range ±10 mm. Raising the setting increases the width of the fold. [-10 to +10/**0**/0.5 mm]		
52	Cross 2nd Fold		

	The width of the 2nd folded surface can be adjusted in the range ±10 mm. Raising the setting increases the width of the fold. [-10 to +10/**0**/0.5 mm]
53	3rd Fold
	The width of the 3rd folded surface can be adjusted in the range ±10 mm. Raising the setting increases the width of the fold. [-10 to +10/**0**/0.5 mm]
61	Margin Fold Finish Length: 3rd Fold
	The width of the 2nd folded surface can be adjusted in the range ±10 mm when the paper is cross folded three times with a margin. Raising the setting increases the width of the fold. [-10 to +10/**0**/0.5 mm]
62	Margin Fold Finish Length: 5th Fold
	The width of the 4th folded surface can be adjusted in the range ±10 mm when the paper is cross folded 5 times with a margin. Raising the setting increases the width of the fold. [-10 to +10/**0**/0.5 mm]
63	Margin Fold Length: 3rd Fold: A2 LEF
	The width of the 3rd folded surface can be adjusted in the range ±10 mm when A2 LEF is cross folded with a margin. Raising the setting increases the width of the fold. [-10 to +10/**0**/0.5 mm]
71	Cross Std/Pack Size Fold Length: 1st Fold: A0 SEF
	This SP adjusts the width of the 1st cross folded surface for A0 SEF, Standard Folded or Narrow Std. Folded. The higher the setting, the greater the side of the fold. [-20 to +20/**-3**/0.5 mm]
72	Std/Pack Size Fold Length: 2nd Fold: A1 SEF
	This SP adjusts the width of the 2nd cross folded surface for A0 SEF, Standard Folded or Narrow Std. Folded. The higher the setting, the greater the side of the fold. [-20 to +20/**-1.5**/0.5 mm]
81	Fan Fold Selection: Peak or Valley
	This SP selects the cross fold direction for 2T margin folded paper. Select "0" for a valley fold, select "1" for a peak fold. [0 to 1/**0**/1]

6973	Invert/Rotate Adj: Cross
1	Rotation Time
	This SP adjusts the rotation time. Raising the setting increases the rotation time. The table below shows the time adjustments for both 90 and 180 rotation. [-15 to +15/**0**/0.7 degrees]
2	Rotation Time : Large Size
	A0 SEF: Standard, Narrow Std.: Eng. Size SEF (44x32): Margin Fold, Standard Fold Eng. Size SEF (48x36): Margin Fold, Standard Fold For these 3 sizes (x 2 = 6 patterns), increasing SP6973-1 adusts the amount of rotation. The times calculated for SP6973-1 are shown in the table below. [-15 to +15/**0**/0.7 degrees]
11	Paper Halt Position During Rotation
	The position where the paper is stopped at the center for rotation can be adjusted in the range ±10 mm. Raising the setting increases the amount of rotation before the paper stops. [-10 to +10/**0**/0.5 mm]
12	Paper Halt Position During Rotation: Large Size
	A0 SEF: Standard, Narrow Std.: Eng. Size SEF (44x32): Margin Fold, Standard Fold Eng. Size SEF (48x36): Margin Fold, Standard Fold For these 3 sizes (x 2 = 6 patterns), increasing SP6973-11 adusts the center stop position for rotation. [-15 to +15/**10**/1 mm]
21	Paper Halt Position During Inversion
	During inversion the inverter motor stops once the trailing edge of the paper passes the inverter entrance sensor and feeds 129 mm. This 129 mm distance that the paper feeds can be adjusted in the range 0 to +15 mm. Raising the setting increases the distance that the paper feeds. [0 to 15/**0**/1 mm]

6974	Shift Tray Adjustment : Stand-by Position

	This SP adjusts the standby position where the tray receives output after the tray upper limit sensor goes OFF. Raising this setting lowers the tray standby position, lowering the setting raises the position. [0 to 50/**25**/5]

6975	Punch Position Adjustment (**Japan Only**)

6976	Stamp Adjustment (**Japan Only**)

6991	Folder Counter	
	These SP codes display the counts for each item listed below in the range: 0 to 9999 9999,	
1	Fan Folder Sheet Count	Number of sheets through the fan folder (with or without folding)
2	Cross Folder Sheet Count	Number of sheets through the cross folder unit (with or without folding)
3	Fan Fold Count	Number of folds done by fan folder.
4	Corner Fold Count	Number of folds done by corner folder. (**Japan Only**)
5	Cross Fold Count	Number of folds done by cross folder.
6	Punch Count (Vert)	Number of vertical punches (2 holes across direction of feed)
7	Punch Count (Horiz)	Number of vertical punches (2 holes parallel to direction of feed)
8	Stamp Counter	**Japan Only**

SP7000 Data Log

7001	Main Motor Operation Time
	Displays the drum drive motor operation time (for checking the print count and drum operation time.)

7401	Total SC Counter

	Displays the total number of SCs logged.

7403	SC History		GW
	Displays the latest 10 SC codes.		
	1	Latest	
	2	Latest 1	
	3	Latest 2	
	4	Latest 3	
	5	Latest 4	
	6	Latest 5	
	7	Latest 6	
	8	Latest 7	
	9	Latest 8	
	10	Latest 9	

7502	Total Copy Jam Counter	GW
	Displays the total paper jam count (copy paper) as a 4-digit number.	

7503	Total Original Jam Counter	GW
	Displays the total paper jam count (original) as a 4-digit number.	

7504	Paper Jam Counter by Jam Location	GW
	Displays the total number of copy jams by location. A "Paper Late" error occurs when the paper fails to activate the sensor at the precise time. A "Paper Lag" paper jam occurs when the paper remains at the sensor for longer than the prescribed time. Display range: 0000 to 9999	
	Main Machine (D046/D049)	
	1: At Power On	

	3: Tray 1: No Feed: A2	
	4: Tray 2: No Feed: A2	
	5: Tray 3: No Feed: A1	
	6: Tray 4: No Feed: A1	
	8: Tray 3/4: No Feed: A1 (Upper)	
	9: Tray 4: No Feed: A1 (Upper)	
	13: Registration Sensor: Not On: B	
	16: Exit Sn: Not On: C	
	34: Bypass: No Feed: B	
	53: Tray 1: Paper Lag: A2	
	54: Tray 2: Paper Lag: A2	
	55: Tray 3: Paper Lag: A1	
	58: Tray 3/4: No Feed: A2	
	59: Tray 4: Paper Log: A1 (Upper)	
	63: Registration Sensor: Not Off: B	
	66: Exit Sensor: Not Off: C	
	84: Bypass Sn: Not Off: B	
	Folder FD Unit (Fan Folder)	
	100: Folder: At Power On	
	130: Bypass Ent Sn: Not On: V2 (J31)	
	131: Bypass Relay Sn: Not Off: V2 (J32)	
	132: Straight Exit Sn: Not Off: N3 (J03)	
	133: Straight Exit Sn: Not On: N3 (J03)	
	134: Folder Relay Sn: Not On: N5 (J05)	
	135: Folder Relay Sn: Not On: N5 (J05)	
	136: Corner Folder Exit Sn: Not Off: N5 (J05)	**Japan Only**

	137: Corner Folder Exit Sn: Not On: N5 (J05)	**Japan Only**
	138: Fan Folder Ent Sn: Not Off: N7 (J07)	
	139: Fan Folder Ent Sn: Not On: N7 (J07)	
	140: Front Fold Width Sn: Not On: N7 (J07)	
	141: Rear Fold Width Sn: Not On: N7 (J07)	
	142: Rear Fold Width Sn: Not Off: N7 (J07)	
	143: Fan Folder Exit Sn: Not On: N7 (J07)	
	144: Fan Folder Exit Sn: Not On: N7 (J07)	
	145: Minimum Paper Length: V2 (J32)	
	146: Fold Count Limit: N7 (J07)	
	Cross Folder	
	150: Cross Folder: At Power On	
	170: Trans Unit Ent Sn: Not On: N8 (J08)	
	171: Trans Unit Ent Sn: Not Off: N8 (J08)	
	172: Punch Reg Sn (Vert): Not On: N9 (J09)	**Japan Only**
	173: Punch Reg Sn (Horiz): Not On: N9 (J09)	**Japan Only**
	174: Trans Unit Exit Sn: Not On: N9 (J09)	
	175: Trans Unit Exit Sn: Not Off: N9 (J09)	
	176: Long Print Exit Sn: Not On: N9 (J09)	
	177: Long Print Exit Sn: Not Off: N9 (J09)	
	178: Cross Folder Ent Sn: Not On: N12 (J09)	
	179: Cross Folder Ent Sn: Not Off: N12 (J09)	
	180: Fold Width Sn (Lower): Not On: N12 (J12)	
	181: Fold Width Sn (Upper): Not On: N12 (J12)	
	182: Folder Width Sn (Lower): Not Off: N12 (J12)	
	183: Inverter Ent Sn: Not On: N12 (J12)	

	184: Inverter Ent Sn: Not Off: N12 (J12)	
	185: Inverter Exit Sn: Not On: N14 (J14)	
	186: Inverter Exit Sn: Not On: N14 (J14)	
	187: Inverter Output Sn: Not Off: N14 (J14)	
	188: Rotation Ent Sn: Not On: N15 (J15)	
	189: Rotation Ent Sn: Not Off: N15 (J15)	
	190: No Rotation Sn: N15 (J15)	**Not used*1**
	191: Rotation Exit Sn: Not On: N15 (J15)	
	192: Rotation Exit Sn: Not Off: N15 (J15)	
	193: Cross Folder Exit Sn: Not Off: N16 (J16)	
	194: Cross Folder Exit Sn: Not On: N16 (J16)	
	196: Folder Paper Width Error: N12 (J12)	

*1: This sensor exists but is not used at the present time.

7505	Original Jam Detection		GW
	Displays the total number of original jams by location. These jams occur when the original does not activate the sensors.		
		Operation Panel Display	
	1	Original at Power On	
	2	Original Reg Sn: Not On: P	
	3	Org Reg Sn/Exit Sn: Both Off: P	
	4	Original Reg Sn: Not Off: P	
	5	Org Exit Sensor: Not Off: P	
	6	Original Stop: P	
	7	Original Exit Sensor: Not On: P	
	8	Original Interval Error: P	

7506	Jam Counter by Copy Size	GW
	Displays the jam count for each paper width. **Note**: In the table below, T=SEF (Short Edge Feed)	
97	A0T/A1	
98	A1T/A2	
99	A2T/A3	
100	A3T/A4	
101	A4T	
106	B1T/B2	
107	B2T/B3	
108	B3T/B4	
109	B4T	
225	36x48T/24x36	
226	24x36T/18x24	
227	18x24T/12x18	
228	12x18T/9x12	
229	9x12T	
234	34x44T/22x34	
235	22x34T/17x22	
236	17x22T/11x17	
237	11x17T/8.5x11	
238	8.5x11T	
255	Others	

7507	Plotter Jam History	GW
	Displays the following items for the last 10 copy paper jams: 1) Jam code, 2) Paper size, 3) Total count when jam occurred, 4) Date of jam.	

	The "jam codes" are listed in the SMC report under SP7504.
1	Latest
2	Latest 1
3	Latest 2
4	Latest 3
5	Latest 4
6	Latest 5
7	Latest 6
8	Latest 7
9	Latest 8
10	Latest 9

7508	Original Jam History	GW
	Displays the following items for the Latest 10 original jams: 1) Jam code, 2) Paper size, 3) Total count when jam occurred, 4) Date of jam. The "jam codes" are listed in the SMC report under SP7504.	
1	Original Latest	
2	Latest 1	
3	Latest 2	
4	Latest 3	
5	Latest 4	
6	Latest 5	
7	Latest 6	
8	Latest 7	
9	Latest 8	
10	Latest 9	

7801	ROM No./Firmware Version	
	Displays the ROM version numbers of the main machine and connected peripheral devices.	

7803	PM Counter Display	GW
	Displays the PM counter.	

7804	PM Counter Reset	GW
	To clear the PM counter, press Start (SP7803).	

7807	SC/Jam Counter Reset	GW
	Push [Start] to reset the SC and jam counters.	

7826	MF Error Counter **Japan Only**	GW
	Displays the number of counts requested of the card/key counter.	
1	Error Total	
	A request for the count total failed at power on. This error will occur if the device is installed but disconnected.	
2	Error Staple	
	The request for a staple count failed at power on. This error will occur if the device is installed but disconnected.	

7827	MF Error Counter Clear **Japan Only**	GW
	Press Execute to reset to 0 the values of SP7826. Japan Only	

7832	Self-Diagnostic Report Details	GW
	Press # to display a list of error codes. Nothing is displayed if no errors have occurred.	

7833	Toner Amount of Consumption Management **DFU**
	Note: These SP codes are used for debugging by designers. For current display information, refer to the Group 8000 SP codes referenced below.

1	Dot Coverage: Last Page **Note**: See SP8851 to SP8881.
2	Dot Coverage: Accumulated Average **Note**: See SP8921.
3	Total Toner Cartridges Used **Note**: See SP8781.
4	Number of Total Cartridges Used **Note**: See SP8911.
5	Page/Toner Cartridge: Before Previous **Note**: See SP8911.

7834	Coverage Data Clear **DFU**
1	Last & Average
2	Number of Total Toner Cartridges Used
3	Toner Cartridge Count: Last & Before Last
4	Page Counts
255	All Clear

7836	Total Memory Size	GW
	Displays the contents of the memory on the controller board.	

7901	Assert Info.**DFU**	
1	Filename	Used for debugging.
2	Number of Lines	
3	Location	

7960	Cutter Operation Time
	Displays the total number of cuts executed by the cutters in the upper tray (1st Cutter) and lower tray (2nd Cutter).

1	1st Cutter	[0 to 9 9999 9999/1/1 cut] Target service life: 120,000 cuts
2	2nd Cutter	

SP8000: Data Log2

Many of these counters are provided for features that are currently not available, such as sending color faxes, and so on. However, here are some Group 8 codes that when used in combination with others, can provide useful information.

SP Numbers	What They Do
SP8211 to SP8216	The number of pages scanned to the document server.
SP8401 to SP8406	The number of pages printed from the document server
SP8691 to SP8696	The number of pages sent from the document server

Specifically, the following questions can be answered:

- How is the document server actually being used?
- What application is using the document server most frequently?
- What data in the document server is being reused?

Most of the SPs in this group are prefixed with a letter that indicates the mode of operation (the mode of operation is referred to as an 'application'). Before reading the Group 8 Service Table, make sure that you understand what these prefixes mean.

T:	Total: (Grand Total).	Grand total of the items counted for all applications (C, F, P, etc.)..
C:	Copy application.	Totals (pages, jobs, etc.) executed for each application when the job was not stored on the document server.
P:	Print application.	
S:	Scan application.	
L:	Local storage (document server)	Totals (jobs, pages, etc.) for the document server. The L: counters work differently case by case. Sometimes, they count jobs/pages stored on the document server; this can be in document server mode (from the document server window), or from another mode, such as from a printer driver or by pressing the Store

		File button in the Copy mode window. Sometimes, they include occasions when the user uses a file that is already on the document server. Each counter will be discussed case by case.
O:	Other applications (external network applications, for example)	Refers to network applications such as Web Image Monitor. Utilities developed with the SDK (Software Development Kit) will also be counted with this group in the future.

The Group 8xxx SP codes are limited to 17 characters, forced by the necessity of displaying them on the small LCDs of other machines that use these SP codes. Read over the list of abbreviations below and refer to it again if you see the name of an SP that you do not understand.

Key for Abbreviations

Abbreviation	What It Means
/	"By", e.g. "T:Jobs/Apl" = Total Jobs "by" Application
>	More (2> "2 or more", 4> "4 or more"
AddBook	Address Book
Apl	Application
B/W	Black & White
Bk	Black
C	Cyan
ColCr	Color Create
ColMode	Color Mode
Comb	Combine
Comp	Compression
Deliv	Delivery
DesApl	Designated Application. The application (Copy, Fax, Scan, Print) used to store the job on the document server, for example.
Dev Counter	Development Count, no. of pages developed.
Dup, Duplex	Duplex, printing on both sides

Abbreviation	What It Means
Emul	Emulation
FC	Full Color
FIN	Post-print processing, i.e. finishing (punching, stapling, etc.)
Full Bleed	No Margins
GenCopy	Generation Copy Mode
GPC	Get Print Counter. For jobs 10 pages or less, this counter does not count up. For jobs larger than 10 pages, this counter counts up by the number that is in excess of 10 (e.g., for an 11-page job, the counter counts up 11-10 =1)
IFax	Internet Fax
ImgEdt	Image Edit performed on the original with the copier GUI, e.g. border removal, adding stamps, page numbers, etc.
K	Black (YMCK)
LS	Local Storage. Refers to the document server.
LSize	Large (paper) Size
Mag	Magnification
MC	One color (monochrome)
NRS	New Remote Service, which allows a service center to monitor machines remotely. "NRS" is used overseas, "CSS" is used in Japan.
Org	Original for scanning
OrgJam	Original Jam
Palm 2	Print Job Manager/Desk Top Editor: A pair of utilities that allows print jobs to be distributed evenly among the printers on the network, and allows files to moved around, combined, and converted to different formats.
PC	Personal Computer
PGS	Pages. A page is the total scanned surface of the original. Duplex pages count as two pages, and A3 simplex count as two pages if the A3/DLT counter SP is switched ON.
PJob	Print Jobs

Abbreviation	What It Means
Ppr	Paper
PrtJam	Printer (plotter) Jam
PrtPGS	Print Pages
R	Red (Toner Remaining). Applies to the wide format model A2 only. This machine is under development and currently not available.
Rez	Resolution
SC	Service Code (Error SC code displayed)
Scn	Scan
Sim, Simplex	Simplex, printing on 1 side.
S-to-Email	Scan-to-E-mail
SMC	SMC report printed with SP5990. All of the Group 8 counters are recorded in the SMC report.
Svr	Server
TonEnd	Toner End
TonSave	Toner Save
TXJob	Send, Transmission
YMC	Yellow, Magenta, Cyan
YMCK	Yellow, Magenta, Cyan, BlacK

All of the Group 8xxx SPs are reset with SP5801-001 Memory All Clear, or the Counter Reset SP7808.

8001	T:Total Jobs
8002	C:Total Jobs
8004	P:Total Jobs
8005	S:Total Jobs
8006	L:Total Jobs

	These SPs count the number of times each application is used to do a job. [0 to 9999999/1] Note: The L: counter is the total number of times the other applications are used to send a job to the document server, plus the number of times a file already on the document server is used.

- These SPs reveal the number of times an application is used, not the number of pages processed.
- When an application is opened for image input or output, this counts as one job.
- Interrupted jobs (paper jams, etc.) are counted, even though they do not finish.
- Only jobs executed by the customer are counted. Jobs executed by the customer engineer using the SP modes are not counted.
- When using secure printing (when a password is required to start the print job), the job is counted at the time when either "Delete Data" or "Specify Output" is specified.
- When a copy job on the document server is printed, SP8022 also increments, and when a print job stored on the document server is printed, SP8024 also increments.
- When an original is both copied and stored on the document server, the C: and L: counters both increment.
- When a print job is stored on the document server, only the L: counter increments.
- When the user presses the Document Server button to store the job on the document server, only the L: counter increments.
- When the user enters document server mode and prints data stored on the document server, only the L: counter increments.
- When an image received from Palm 2 is received and stored, the L: counter increments.
- When the customer prints a report (user code list, for example), the O: counter increments

8011	T:Jobs/LS
8012	C:Jobs/LS
8014	P:Jobs/LS
8015	S:Jobs/LS
8016	L:Jobs/LS
8017	O:Jobs/LS
	These SPs count the number of jobs stored to the document server by each application, to reveal how local storage is being used for input. [0 to 9999999/1]

	The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.

- When a scan job is sent to the document server, the S: counter increments. When you enter document server mode and then scan an original, the L: counter increments.
- When a print job is sent to the document server, the P: counter increments.
- When a network application sends data to the document server, the O: counter increments.
- When an image from Palm 2 is stored on the document server, the O: counter increments.

8021	T:Pjob/LS
8022	C:Pjob/LS
8024	P:Pjob/LS
8025	S:Pjob/LS
8026	L:Pjob/LS
8027	O:Pjob/LS
	These SPs reveal how files printed from the document server were stored on the document server originally. [0 to 9999999/1] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.

- When a copy job stored on the document server is printed with another application, the C: counter increments.
- When an application like DeskTopBinder merges a copy job that was stored on the document server with a print job that was stored on the document server, the C: and P: counters both increment.
- When a job already on the document server is printed with another application, the L: counter increments.
- When a scanner job stored on the document server is printed with another application, the S: counter increments. If the original was scanned from within document server mode, then the L: counter increments.
- When images stored on the document server by a network application (including Palm 2), are printed with another application, the O: counter increments.
- When a copy job stored on the document server is printed with a network application (Web Image Monitor, for example), the C: counter increments.

8031	T:Pjob/DesApl
8032	C:Pjob/DesApl
8034	P:Pjob/DesApl
8035	S:Pjob/DesApl
8036	L:Pjob/DesApl
8037	O:Pjob/DesApl
	These SPs reveal what applications were used to output documents from the document server. [0 to 9999999/1] The L: counter counts the number of jobs printed from within the document server mode screen at the operation panel.

- When documents already stored on the document server are printed, the count for the application that started the print job is incremented.
- When the print job is started from a network application (Desk Top Binder, Web Image Monitor, etc.) the L: counter increments.

8041	T:TX Jobs/LS
8042	C:TX Jobs/LS
8044	P:TX Jobs/LS
8045	S:TX Jobs/LS
8046	L:TX Jobs/LS
8047	O:TX Jobs/LS
	These SPs count the applications that stored files on the document server that were later accessed for transmission over the telephone line or over a network (attached to an e-mail). [0 to 9999999/1] Note: Jobs merged for sending are counted separately. The L: counter counts the number of jobs scanned from within the document server mode screen at the operation panel.

- When a stored copy job is sent from the document server, the C: counter increments.

- When images stored on the document server by a network application or Palm2 are sent as an e-mail, the O: counter increments.

8051	T:TX Jobs/DesApl
8052	C:TX Jobs/DesApl
8054	P:TX Jobs/DesApl
8055	S:TX Jobs/DesApl
8056	L:TX Jobs/DesApl
8057	O:TX Jobs/DesApl
	These SPs count the applications used to send files from the document server over the telephone line or over a network (attached to an e-mail). Jobs merged for sending are counted separately. [0 to 9999999/1] The L: counter counts the number of jobs sent from within the document server mode screen at the operation panel.

If the send is started from Desk Top Binder or Web Image Monitor, for example, then the O: counter increments.

8061	T:FIN Jobs	[0 to 9999999/1]
	These SPs total the finishing methods. The finishing method is specified by the application.	
8062	C:FIN Jobs	[0 to 9999999/1]
	These SPs total finishing methods for copy jobs only. The finishing method is specified by the application.	
8064	P:FIN Jobs	[0 to 9999999/1]
	These SPs total finishing methods for print jobs only. The finishing method is specified by the application.	
8065	S:FIN Jobs	[0 to 9999999/1]
	These SPs total finishing methods for scan jobs only. The finishing method is specified by the application. Note: Finishing features for scan jobs are not available at this time.	
8066	L:FIN Jobs	[0 to 9999999/1]

	These SPs total finishing methods for jobs output from within the document server mode screen at the operation panel. The finishing method is specified from the print window within document server mode.		
8067	O:FIN Jobs		[0 to 9999999/1]
	These SPs total finishing methods for jobs executed by an external application, over the network. The finishing method is specified by the application.		
	001	Sort	Number of jobs started in Sort mode. When a stored copy job is set for Sort and then stored on the document server, the L: counter increments. (See SP8066)
	002	Stack	Number of jobs started out of Sort mode.
	003	Staple	Number of jobs started in Staple mode.
	004	Booklet	Number of jobs started in Booklet mode. If the machine is in staple mode, the Staple counter also increments.
	005	Z-Fold	Number of jobs started In any mode other than the Booklet mode and set for folding (Z-fold).
	006	Punch	Number of jobs started in Punch mode. When Punch is set for a print job, the P: counter increments. (See SP8064)
	007	Other	Reserved. Not used.

8071	T:Jobs/PGS	[0 to 9999999/1]
	These SPs count the number of jobs broken down by the number of pages in the job, regardless of which application was used.	
8072	C:Jobs/PGS	[0 to 9999999/1]
	These SPs count and calculate the number of copy jobs by size based on the number of pages in the job.	
8074	P:Jobs/PGS	[0 to 9999999/1]
	These SPs count and calculate the number of print jobs by size based on the number of pages in the job.	
8075	S:Jobs/PGS	[0 to 9999999/1]
	These SPs count and calculate the number of scan jobs by size based on the number of pages in the job.	

8076	L:Jobs/PGS		[0 to 9999999/1]
	These SPs count and calculate the number of jobs printed from within the document server mode window at the operation panel, by the number of pages in the job.		
8077	O:Jobs/PGS		[0 to 9999999/1]
	These SPs count and calculate the number of "Other" application jobs (Web Image Monitor, Palm 2, etc.) by size based on the number of pages in the job.		
	1	1 Page	
	2	2 Pages	
	3	3 Pages	
	4	4 Pages	
	5	5 Pages	
	6	6 to 10 Pages	
	7	11 to 20 Pages	
	8	21 to 50 Pages	
	9	51 to 100 Pages	
	10	101 to 300 Pages	
	11	301 to 500 Pages	
	12	501 to 700 Pages	
	13	701 to 1000 Pages	
	14	1001 to Pages	

- For example: When a copy job stored on the document server is printed in document server mode, the appropriate L: counter (SP8076-0xx) increments.
- Interrupted jobs (paper jam, etc.) are counted, even though they do not finish.
- If a job is paused and re-started, it counts as one job.
- If the finisher runs out of staples during a print and staple job, then the job is counted at the time the error occurs.
- For copy jobs (SP8072) and scan jobs (SP8075), the total is calculated by multiplying the number of sets of copies by the number of pages scanned. (One duplex page counts as 2.)

- The first test print and subsequent test prints to adjust settings are added to the number of pages of the copy job (SP8072).
- When printing the first page of a job from within the document server screen, the page is counted.

8131	T:S-to-Email Jobs	[0 to 9999999/1]
	These SPs count the total number of jobs scanned and attached to an e-mail, regardless of whether the document server was used or not.	
8135	S:S-to-Email Jobs	
	These SPs count the number of jobs scanned and attached to an e-mail, without storing the original on the document server.	

- These counters count jobs, not pages.
- If the job is stored on the document server, after the job is stored it is determined to be color or black-and-white then counted.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- If several jobs are combined for sending to the Scan Router, Scan-to-Email, or Scan-to-PC, or if one job is sent to more than one destination. each send is counted separately. For example, if the same document is sent by Scan-to-Email as well as Scan-to-PC, then it is counted twice (once for Scan-to-Email and once for Scan-to-PC).

8141	T:Deliv Jobs/Svr	[0 to 9999999/1]
	These SPs count the total number of jobs scanned and sent to a Scan Router server.	

8145	S:Deliv Jobs/Svr
	These SPs count the number of jobs scanned in scanner mode and sent to a Scan Router server.

- These counters count jobs, not pages.
- The jobs are counted even though the arrival and reception of the jobs at the Scan Router server cannot be confirmed.
- If even one color image is mixed with black-and-white images, then the job is counted as a "Color" job.

- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be delivered, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8151	T:Deliv Jobs/PC	[0 to 9999999/1]
	These SPs count the total number of jobs scanned and sent to a folder on a PC (Scan-to-PC). Note: At the present time, SP8151 and SP8155 perform identical counts.	

8155	S:Deliv Jobs/PC
	These SPs count the total number of jobs scanned and sent with Scan-to-PC.

- These counters count jobs, not pages.
- If the job is cancelled during scanning, it is not counted.
- If the job is cancelled while it is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8191	T:Total Scan PGS
8192	C:Total Scan PGS
8195	S:Total Scan PGS
8196	L:Total Scan PGS
	These SPs count the pages scanned by each application that uses the scanner to scan images. [0 to 9999999/1]

- SP8191 to 8196 count the number of scanned sides of pages, not the number of physical pages.
- These counters do not count reading user stamp data, or reading color charts to adjust color.
- Previews done with a scanner driver are not counted.
- A count is done only after all images of a job have been scanned.
- Scans made in SP mode are not counted.
- Examples

- If 3 B5 pages and 1 A3 page are scanned with the scanner application but not stored, the S: count is 4.
- If both sides of 3 A4 sheets are copied and stored to the document server using the Store File button in the Copy mode window, the C: count is 6 and the L: count is 6.
- If both sides of 3 A4 sheets are copied but not stored, the C: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8211	T:Scan PGS/LS
8212	C:Scan PGS/LS
8215	S:Scan PGS/LS
8216	L:Scan PGS/LS
	These SPs count the number of pages scanned into the document server . [0 to 9999999/1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen

- Reading user stamp data is not counted.
- If a job is cancelled, the pages output as far as the cancellation are counted.
- If the scanner application scans and stores 3 B5 sheets and 1 A4 sheet, the S: count is 4.
- If pages are copied but not stored on the document server, these counters do not change.
- If both sides of 3 A4 sheets are copied and stored to the document server, the C: count is 6 and the L: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8221	ADF Org Feeds	[0 to 9999999/1]
	These SPs count the number of pages fed through the ADF for front and back side scanning.	
1	Front	
	Number of front sides fed for scanning: With an ADF that can scan both sides simultaneously, the Front side count is the same as the number of pages fed for either simplex or duplex scanning. With an ADF that cannot scan both sides simultaneously, the Front side count is the same as the number of pages fed for duplex front side scanning. (The front side is determined by which side the user loads face up.)	

2	Back
	Number of rear sides fed for scanning: With an ADF that can scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex scanning. With an ADF that cannot scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex rear-side scanning.

- When 1 sheet is fed for duplex scanning the Front count is 1 and the Back count is 1.
- If a jam occurs during the job, recovery processing is not counted to avoid double counting. Also, the pages are not counted if the jam occurs before the first sheet is output.

8231	Scan PGS/Mode	[0 to 9999999/1]
	These SPs count the number of pages scanned by each ADF mode to determine the work load on the ADF.	
1	Large Volume	Selectable. Large copy jobs that cannot be loaded in the ADF at one time.
2	SADF	Selectable. Feeding pages one by one through the ADF.
3	Mixed Size	Selectable. Select "Mixed Sizes" on the operation panel.
4	Custom Size	Selectable. Originals of non-standard size.
5	Platen	Book mode. Raising the ADF and placing the original directly on the platen.
6	Mixed 1side/2side	Job mixed with printing one/two sides.

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.
- If the user selects "Mixed Sizes" for copying in the platen mode, the Mixed Size count is enabled.
- In the SADF mode if the user copies 1 page in platen mode and then copies 2 pages with SADF, the Platen count is 1 and the SADF count is 3.

8241	T:Scan PGS/Org	[0 to 9999999/1]
	These SPs count the total number of scanned pages by original type for all jobs, regardless of which application was used.	
8242	C:Scan PGS/Org	[0 to 9999999/1]

	These SPs count the number of pages scanned by original type for Copy jobs.	
8245	S:Scan PGS/Org	[0 to 9999999/1]
	These SPs count the number of pages scanned by original type for Scan jobs.	
8246	L:Scan PGS/Org	[0 to 9999999/1]
	These SPs count the number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen	

	8241	8242	8243	8245	8246	8247
1: Text	Yes	Yes	Yes	Yes	Yes	Yes
2: Text/Photo	Yes	Yes	Yes	Yes	Yes	Yes
3: Photo	Yes	Yes	Yes	Yes	Yes	Yes
4: GenCopy, Pale	Yes	Yes	No	Yes	Yes	Yes
5: Map	Yes	Yes	No	Yes	Yes	Yes
11 Other	Yes	No	Yes	No	Yes	Yes

If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.

8251	T:Scan PGS/ImgEdt
8252	C:Scan PGS/ImgEdt
8256	L:Scan PGS/ImgEdt
8257	O:Scan PGS/ImgEdt
	These SPs show how many times Image Edit features have been selected at the operation panel for each application. Some examples of these editing features are: • Erase> Border • Erase> Center • Image Repeat • Centering • Positive/Negative [0 to 9999999/1]

	Note: The count totals the number of times the edit features have been used. A detailed breakdown of exactly which features have been used is not given.

The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen.

8281	T:Scan PGS/TWAIN
8285	S:Scan PGS/TWAIN
	These SPs count the number of pages scanned using a TWAIN driver. These counters reveal how the TWAIN driver is used for delivery functions. [0 to 9999999/1] Note: At the present time, these counters perform identical counts.

8291	T:Scan PGS/Stamp
8295	S:Scan PGS/Stamp
	These SPs count the number of pages stamped with the stamp in the ADF unit. [0 to 9999999/1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen

8301	T:Scan PGS/Size	[0 to 9999999/ 0 / 1]
	These SP's count by size the total number of pages scanned by all applications. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-441].	
8302	C:Scan PGS/Size	[0 to 9999999/ 0 / 1]
	These SP's count by size the total number of pages scanned by the Copy application. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-442].	
8305	S:Scan PGS/Size	[0 to 9999999/ 0 / 1]
	These SP's count by size the total number of pages scanned by the Scan application. Use these totals to compare original page size (scanning) and output page size [SP 8-445].	
8306	L:Scan PGS/Size	[0 to 9999999/ 0 / 1]

	These SP's count by size the total number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File but to n from within the Copy mode screen. Use these totals to compare original page size (scanning) and output page size [SP 8-446].		
830x 1	A3	830x 104	B1
830x 2	A4	830x 105	B2
830x 4	B4	830x 106	30x42
830x 6	DLT	830x 107	34x44
830x 8	LT	830x 108	22x34
830x 100	A2	830x 109	17x22
830x 101	B3	830x 254	Other (Standard)
830x 102	A0	830x 255	Other (Custom)
830x 103	A1		

8311	T:Scan PGS/Rez	[0 to 9999999/1]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings.	
8315	S:Scan PGS/Rez	[0 to 9999999/1]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings. Note: At the present time, SP8311 and SP8315 perform identical counts.	
1	1200dpi to	
2	600dpi to 1199dpi	
3	400dpi to 599dpi	
4	200dpi to 399dpi	
5	to 199dpi	

Copy resolution settings are fixed so they are not counted.

8381	T:Total PrtPGS

8382	C:Total PrtPGS	
8384	P:Total PrtPGS	
8385	S:Total PrtPGS	
8386	L:Total PrtPGS	
8387	O:Total PrtPGS	
	These SPs count the number of pages printed by the customer. The counter for the application used for storing the pages increments. [0 to 9999999/1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.	
838x 1	Field Number	Total number of copies (regardless of size)
838x 2	Length (High)	Total length
838x 3	Length (Low)	Total length
838x 4	Area (High)	Total area coverage
838x 5	Area (Low)	Total area coverage
	Note: • The values for "Length" are displayed in mm. If a "Length" reading is "42126" this is 42,126 mm (42.126 m). • The values for "Area" are displayed as mm^2. If an "Area" reading is "33213257" this is 33,213,257 mm^2 (33,213.257 m^2). • The counts for the "Length" and "Area" start with "Low". Once the count exceeds the width of the field on the display the "Low" field will reset to "0" and the count overflows to the "High" SP codes. (This is necessary because the fields of the "Low" SP codes are limited to 8 digits and not wide enough to display the full reading for a reading larger than 8 digits.) • Always check the "Low" SP first. If the "Low" display is zero, check the "High" field. • When the length count reaches "99,999,999" in the "Low" field (8 digits), for example, after the next copy the count will show "1" in the "High" field and "00 000 000" in the "Low". Multiply the "1" in the "High" field by: 1) 10^{8}" (100,000,000 mm), 2) 10^{5} (100, 000 m) or 3) 10^{2} (100 kilometers) to determine the accurate count.	

- When several documents are merged for a print job, the number of pages s to red are counted for the application that stored them.
- These counters are used primarily to calculate charges on use of the machine, so the following pages are not counted as printed pages:
- Blank pages in a duplex printing job.
- Blank pages inserted as document covers, chapter title sheets, and slip sheets.
- Reports printed to confirm counts.
- All reports done in the service mode (service summaries, engine maintenance reports, etc.)
- Test prints for machine image adjustment.
- Error notification reports.
- Partially printed pages as the result of a jam.

8401	T:PrtPGS/LS
8402	C:PrtPGS/LS
8404	P:PrtPGS/LS
8405	S:PrtPGS/LS
8406	L:PrtPGS/LS
	These SPs count the number of pages printed from the document server. The counter for the application used to print the pages is incremented. The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel. [0 to 9999999/1]

Print jobs done with Web Image Monitor and Desk Top Binder are added to the L: count.

8411	Prints/Duplex
	This SP counts the amount of paper (front/back counted as 1 page) used for duplex printing. Last pages printed only on one side are not counted. [0 to 9999999/1]

8421	T:PrtPGS/Dup Comb	[0 to 9999999/ 0 / 1]
	These SP's count by binding and combine, and n-Up settings the number of pages processed for printing. This is the total for all applications.	
8422	C:PrtPGS/Dup Comb	[0 to 9999999/ 0 / 1]

	These SP's count by binding and combine, and n-Up settings the number of pages processed for printing by the application.	
8424	P:PrtPGS/Dup Comb	[0 to 9999999/ 0 / 1]
	These SP's count by binding and combine, and n-Up settings the number of pages processed for printing by the printer application.	
8425	S:PrtPGS/Dup Comb	[0 to 9999999/ 0 / 1]
	These SP's count by binding and combine, and n-Up settings the number of pages processed for printing by the scanner application.	
8426	L:PrtPGS/Dup Comb	[0 to 9999999/ 0 / 1]
	These SP's count by binding and combine, and n-Up settings the number of pages processed for printing from within the document server mode window at the operation panel.	
8427	O:PrtPGS/Dup Comb	[0 to 9999999/ 0 / 1]
	These SP's count by binding and combine, and n-Up settings the number of pages processed for printing by Other applications	
842x 1	Simplex> Duplex	
842x 2	Duplex> Duplex	
842x 3	Book> Duplex	
842x 4	Simplex Combine	
842x 5	Duplex Combine	
842x 6	2>	2 pages on 1 side (2-Up)
842x 7	4>	4 pages on 1 side (4-Up)
842x 8	6>	6 pages on 1 side (6-Up)
842x 9	8>	8pages on 1 side (8-Up)
842x 10	9>	9 pages on 1 side (9-Up)
842x 11	16>	16 pages on 1 side (16-Up)
842x 12	Booklet	
842x 13	Magazine	

- These counts (SP8421 to SP8427) are especially useful for customers who need to improve their compliance with ISO standards for the reduction of paper consumption.
- Pages that are only partially printed with the n-Up functions are counted as 1 page.
- Here is a summary of how the counters work for Booklet and Magazine modes:

Booklet			Magazine	
Original Pages	Count		Original Pages	Count
1	1		1	1
2	2		2	2
3	2		3	2
4	2		4	2
5	3		5	4
6	4		6	4
7	4		7	4
8	4		8	4

8431	T:PrtPGS/ImgEdt	[0 to 9999999/1]
	These SPs count the total number of pages output with the three features below, regardless of which application was used.	
8432	C:PrtPGS/ImgEdt	[0 to 9999999/1]
	These SPs count the total number of pages output with the three features below with the copy application.	
8434	P:PrtPGS/ImgEdt	[0 to 9999999/1]
	These SPs count the total number of pages output with the three features below with the print application.	
8436	L:PrtPGS/ImgEdt	[0 to 9999999/1]
	These SPs count the total number of pages output from within the document server mode window at the operation panel with the three features below.	
8437	O:PrtPGS/ImgEdt	[0 to 9999999/1]

	These SPs count the total number of pages output with the three features below with Other applications.		
	1	Cover/Slip Sheet	Total number of covers or slip sheets inserted. The count for a cover printed on both sides counts 2.
	2	Series/Book	The number of pages printed in series (one side) or printed as a book with booklet right/left pagination.
	3	User Stamp	The number of pages printed where stamps were applied, including page numbering and date stamping.

8441	T:PrtPGS/Ppr Size	[0 to 9999999/ 0 / 1]	
	These SP's count by print paper size the number of pages printed by all applications.		
8442	C:PrtPGS/Ppr Size	[0 to 9999999/ 0 / 1]	
	These SP's count by print paper size the number of pages printed by the copy application.		
8444	P:PrtPGS/Ppr Size	[0 to 9999999/ 0 / 1]	
	These SP's count by print paper size the number of pages printed by the printer application.		
8445	S:PrtPGS/Ppr Size	[0 to 9999999/ 0 / 1]	
	These SP's count by print paper size the number of pages printed by the scanner application.		
8446	L:PrtPGS/Ppr Size	[0 to 9999999/ 0 / 1]	
	These SP's count by print paper size the number of pages printed from within the document server mode window at the operation panel.		
8447	O:PrtPGS/Ppr Size	[0 to 9999999/ 0 / 1]	
	These SP's count by print paper size the number of pages printed by Other applications.		
844x 1	A3	844x 240	841 mm Custom:-A0
844x 2	A4	844x 241	594 mm Custom
844x 4	B4	844x 242	420 mm Custom
844x 6	DLT	844x 243	297 mm Custom

844x 8	LT	844x 244	210 mm Custom
844x 100	A2	844x 245	728 mm Custom
844x 101	B3	844x 246	515 mm Custom
844x 102	A0	844x 247	364 mm Custom
844x 103	A1	844x 248	257 mm Custom
844x 104	B1	844x 249	30/34/36 inch Custom
844x 105	B2	844x 250	22 inch Custom
844x 106	30x42	844x 251	17 inch Custom
844x 107	34x44	844x 252	11 inch Custom
844x 108	22x34	844x 253	8.5 inch Custom
844x 109	17x22	844x 254	Other (Standard)
844x 239	841 mm Custom: A0-	844x 255	Other (Custom)

- These counters do not distinguish between LEF and SEF.

<table>
<tr><td rowspan="11">8451</td><td colspan="2">PrtPGS/Ppr Tray</td><td>[0 to 9999999/1]</td></tr>
<tr><td colspan="3">These SPs count the number of sheets fed from each paper feed station.</td></tr>
<tr><td>1</td><td>Bypass</td><td>Bypass Tray</td></tr>
<tr><td>2</td><td>Tray 1</td><td>Copier</td></tr>
<tr><td>3</td><td>Tray 2</td><td>Copier</td></tr>
<tr><td>4</td><td>Tray 3</td><td>Paper Tray Unit (Option)</td></tr>
<tr><td>5</td><td>Tray 4</td><td>Paper Tray Unit (Option)</td></tr>
<tr><td>6</td><td>Tray 5</td><td>LCT (Option)</td></tr>
<tr><td>7</td><td>Tray 6</td><td rowspan="4">Currently not used.</td></tr>
<tr><td>8</td><td>Tray 7</td></tr>
<tr><td>9</td><td>Tray 8</td></tr>
<tr><td>10</td><td>Tray 9</td></tr>
</table>

	11	Tray 10	
	12	Tray 11	

8461	T:PrtPGS/Ppr Type	[0 to 9999999/1]
	These SPs count by paper type the number pages printed by all applications. These counters are not the same as the PM counter. The PM counter is based on feed timing to accurately measure the service life of the feed rollers. However, these counts are based on output timing. Blank sheets (covers, chapter covers, slip sheets) are also counted. During duplex printing, pages printed on both sides count as 1, and a page printed on one side counts as 1.	
8462	C:PrtPGS/Ppr Type	[0 to 9999999/1]
	These SPs count by paper type the number pages printed by the copy application.	
8464	P:PrtPGS/Ppr Type	[0 to 9999999/1]
	These SPs count by paper type the number pages printed by the printer application.	
8466	L:PrtPGS/Ppr Type	[0 to 9999999/1]
	These SPs count by paper type the number pages printed from within the document server mode window at the operation panel.	
	1	Normal
	2	Recycled
	3	Special
	4	Thick
	5	Normal (Back)
	6	Thick (Back)
	7	OHP
	8	Other

8471	PrtPGS/Mag	[0 to 9999999/1]
	These SPs count by magnification rate the number of pages printed.	

	001	to 49%
	002	50% to 99%
	003	100%
	004	101% to 200%
	005	201% to

- Counts are done for magnification adjusted for pages, not only on the operation panel but performed remotely with an external network application capable of performing magnification adjustment as well.
- Magnification adjustments done with printer drivers with PC applications such as Excel are also counted.
- Magnification adjustments done for adjustments after they have been stored on the document server are not counted.
- Magnification adjustments performed automatically during Auto Reduce/Enlarge copying are counted.
- The magnification rates of blank cover sheets, slip sheets, etc. are automatically assigned a rate of 100%.

8481	T:PrtPGS/TonSave
8484	P:PrtPGS/TonSave
	These SPs count the number of pages printed with the Toner Save feature switched on. [0 to 9999999/1] Note: These SPs return the same results as this SP is limited to the Print application.

8511	T:PrtPGS/Emul		[0 to 9999999/1]
	These SPs count by printer emulation mode the total number of pages printed.		
8514	P:PrtPGS/Emul		[0 to 9999999/1]
	These SPs count by printer emulation mode the total number of pages printed.		
	1	RPCS	
	2	RPDL	
	3	PS3	

	4	R98	
	5	R16	
	6	GL/GL2	
	7	R55	
	8	RTIFF	
	9	PDF	
	10	PCL5e/5c	
	11	PCL XL	
	12	IPDL-C	
	13	BM-Links	Japan Only
	14	Other	

- SP8511 and SP8514 return the same results as they are both limited to the Print application.
- Print jobs output to the document server are not counted.

8521	T:PrtPGS/FIN	[0 to 9999999/1]
	These SPs count by finishing mode the total number of pages printed by all applications.	
8522	C:PrtPGS/FIN	[0 to 9999999/1]
	These SPs count by finishing mode the total number of pages printed by the Copy application.	
8524	P:PrtPGS/FIN	[0 to 9999999/1]
	These SPs count by finishing mode the total number of pages printed by the Print application.	
8525	S:PrtPGS/FIN	[0 to 9999999/1]
	These SPs count by finishing mode the total number of pages printed by the Scanner application.	
8526	L:PrtPGS/FIN	[0 to 9999999/1]
	These SPs count by finishing mode the total number of pages printed from within the document server mode window at the operation panel.	
	1	Sort

	2	Stack
	3	Staple
	4	Booklet
	5	Z-Fold
	6	Punch
	7	Other

- If stapling is selected for finishing and the stack is too large for stapling, the unstapled pages are still counted.
- The counts for staple finishing are based on output to the staple tray, so jam recoveries are counted.

8531	Staples
	This SP counts the amount of staples used by the machine. [0 to 9999999/1]

8581	T:Counter	[0 to 9999999/1]
	These SPs count the total output broken down by color output, regardless of the application used. In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine. Note: This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	

8591	O:Counter	[0 to 9999999/1]
	These SPs count the totals for A3/DLT paper use, number of duplex pages printed, and the number of staples used. These totals are for Other (O:) applications only.	
	001	A3/DLT
	002	Duplex
	003	Staple

8651	T:S-to-Email PGS	[0 to 9999999/1]
	These SPs count by color mode the total number of pages attached to an e-mail for both the Scan and document server applications.	

	Note: This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
8655	S:S-to-Email PGS	[0 to 9999999/1]
	These SPs count by color mode the total number of pages attached to an e-mail for the Scan application only. Note: This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
	1	B/W
	2	Color

- The count for B/W and Color pages is done after the document is stored on the HDD. If the job is cancelled before it is stored, the pages are not counted.
- If Scan-to-Email is used to send a 10-page document to 5 addresses, the count is 10 (the pages are sent to the same SMTP server together).
- If Scan-to-PC is used to send a 10-page document to 5 folders, the count is 50 (the document is sent to each destination of the SMB/FTP server).
- Due to restrictions on some devices, if Scan-to-Email is used to send a 10-page document to a large number of destinations, the count may be divided and counted separately. For example, if a 10-page document is sent to 200 addresses, the count is 10 for the first 100 destinations and the count is also 10 for the second 100 destinations, for a total of 20.).

8661	T:Deliv PGS/Svr	[0 to 9999999/1]
	These SPs count by color mode the total number of pages sent to a Scan Router server by both Scan and LS applications. Note: This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
8665	S:Deliv PGS/Svr	[0 to 9999999/1]
	These SPs count by color mode the total number of pages sent to a Scan Router server by the Scan application. Note: This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
	1	B/W
	2	Color

- The B/W and Color counts are done after the document is stored on the HDD of the Scan Router server.
- If the job is canceled before storage on the Scan Router server finishes, the counts are not done.
- The count is executed even if regardless of confirmation of the arrival at the Scan Router server.

8671	T:Deliv PGS/PC	[0 to 9999999/1]
	These SPs count by color mode the total number of pages sent to a folder on a PC (Scan-to-PC) with the Scan and LS applications. Note: This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
8675	S:Deliv PGS/PC	[0 to 9999999/1]
	These SPs count by color mode the total number of pages sent with Scan-to-PC with the Scan application. Note: This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
	1	B/W
	2	Color

8691	T:TX PGS/LS
8692	C:TX PGS/LS
8694	P:TX PGS/LS
8695	S:TX PGS/LS
8696	L:TX PGS/LS
	These SPs count the number of pages sent from the document server. The counter for the application that was used to store the pages is incremented. [0 to 9999999/1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the count.
- If several documents are merged for sending, the number of pages stored are counted for the application that stored them.

8701	TX PGS/Port	
	These SPs count the number of pages sent by the physical port used to send them. For example, if a 3-page original is sent to 4 destinations via ISDN G4, the count for ISDN (G3, G4) is 12.	
	1	PSTN-1
	2	PSTN-2
	3	PSTN-3
	4	ISDN (G3,G4)
	5	Network

8711	T:Scan PGS/Comp	
	These SPs count the number of compressed pages scanned into the document server, counted by the formats listed below.	
8715	S:Scan PGS/Comp	
	These SPs count the number of compressed pages scanned by the scan application, counted by the formats listed below.	
1	JPEG/JPEG2000	[0 to 9999999/ 1]
2	TIFF (Multi/Single)	
3	PDF	
4	Other	
5	PDF Comp	

8741	RX PGS/Port
	These SPs count the number of pages received by the physical port used to receive them.
1	PSTN-1
2	PSTN-2
3	PSTN-3
4	ISDN (G3,G4)

5	Network

8771	Dev Counter	[0 to 9999999/1]
	These SPs count the frequency of use (number of rotations of the development rollers) for black and other color toners. Note: For machines that do not support color, the Black toner count is the same as the Total count.	

8781	Toner Bottle Info.
	Total number of toner cartridges used, determined by toner end to toner end.

8791	LS Memory Remain
	This SP displays the percent of space available on the document server for storing documents. [0 to 100/1]

8801	Toner Remain	[0 to 100/1]
	This SP displays the percent of toner remaining for each color. This SP allows the user to check the toner supply at any time. Note: This precise method of measuring remaining toner supply (1%s) is better than other machines in the market that can only measure in increments of 10 (10%s). This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	

8851	Cover Cnt: 0-10%	
	These SP's count the percentage of toner dot coverage. [0 to 9999999]	
11	0~2%: BK	
21	3~4%: BK	
31	5~7%: BK	
41	8~10%: BK	

8861	Cvr Cnt: 11-20%
	This SP counts the number of copies in the toner dot coverage range 11-20% [0 to 9999999]

8871	Cvr Cnt: 21-30%
	This SP counts the number of copies in the toner dot coverage range 21-30% [0 to 9999999]

8881	Cvr Cnt: 31%~
	This SP counts the number of copies in the toner dot coverage range 31% and over. [0 to 9999999]

8891	Page/Toner Bottle	Previous cartridge	Counts that record number of pages per toner cartridge.
8901	Page/Toner_Prev1	Previous but 1	
8911	Page/Toner_Prev2	Previous but 2	

8921	Cvr Cnt Total	
	These SP's display the percent and number of pages for black toner coverage.	
1	Coverage (%): BK	
11	Coverage (/P):BK	

8941	Machine Status	[0 to 9999999/1]
	These SPs count the amount of time the machine spends in each operation mode. These SPs are useful for customers who need to investigate machine operation for improvement in their compliance with ISO Standards.	
1	Operation Time	
	Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).	
2	Standby Time	

	Engine not operating. Includes time while controller saves data to HDD. Does not include time spent in Energy Save, Low Power, or Off modes.
3	Energy Save Time
	Includes time while the machine is performing background printing.
4	Low Power Time
	Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.
5	Off Mode Time
	Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.
6	Down Time/SC
	Total down time due to SC errors.
7	Prt_Jam
	Total down time due to paper jams during printing.
8	Org_Jam
	Total down time due to original jams during scanning.
9	Down Time/TonEnd
	Total down time due to toner end.

8951	AddBook Register		
	These SP's count the number of events when the machine manages data registration.		
1	User Code/User ID	User code registrations.	[0 to 9999999/ 0 / 1]
2	Mail Address	Mail address registrations.	
3	Fax Destination	Fax destination registrations.	
4	Group	Group destination registrations.	
5	Transfer Request	Fax relay destination registrations for relay TX.	
6	F-Code	F-Code box registrations.	

7	Copy Program	Copy application registrations with the Program (job settings) feature.	[0 to 255 / 0 / 255]
8	Fax Program	Fax application registrations with the Program (job settings) feature.	
9	Printer Program	Printer application registrations with the Program (job settings) feature.	
10	Scanner Program	Scanner application registrations with the Program (job settings) feature.	

Printer SP Tables

RTB 16
RTB 31
Bit switches

1001	Bit SW **DFU**	
	Adjusts the bit switch settings. **Note: Do not change these settings.**	
1	Bit Switch 1	Default: **00H**
2	Bit Switch 2	
3	Bit Switch 3	
4	Bit Switch 4	
5	Bit Switch 5	
6	Bit Switch 6	
7	Bit Switch 7	
8	Bit Switch 8	

1003	Clear Setting
1	Initialize System
	Press [Execute] to initialize the User Tool printer settings. All User Tool printer settings are returned to the factory default settings.
2	Delete Program **DFU**

1004	Print Summary
	Touch [Execute] to print a summary of all printer settings set up with User Tools menus. The following items are listed in the printed report: • System Reference • Paper Input • System. • PS Menu • PDF Menu • Host Interface • Interface Information

	• Printer Log • Bit Switches • GPS Internal Log

1005	Display Version
	Displays the number of the printer application that is currently installed.

Scanner SP Tables

1001	Scan NV Version	GW
	This SP displays the current version of the scanner firmware in NVRAM. It is a 9-digit display, for example: **S_BLG1_03** where: • **S**: Function name: "Scanner" • **BLG1**: Machine name: Beluga-C1 • **03**: Update number: 3rd Version	

1004	Compression Type	GW
	Selects the compression type for binary picture processing when the original is scanned in the following modes: Text, Text/Photo, Photo. These modes are selected on the operation panel before the original is scanned. [1 to 3/**3**/1] 1: MH, 2:MR, 3: MMR	

1005	Erase Margin (Remote Scan)	GW
	Creates an erase margin at each of the four edges of the scanned image if the original has been scanned edge-to-edge with no margin. [0 to 5/**0**/1 mm]	

1008	Program Registration	GW
	Displays the number of user programs registered for the current scanner application. [0 to 10/**0**/1]	

1009	Remote Scan Disable	GW
	This SP is a scanner application function. It determines whether a network TWAIN scanner application can be used. [0 to 10/**0**/1] 0: Enable. TWAIN application can be used. 1: Disable. TWAIN application cannot be used.	

1011	Org Count Disp	GW

	This SP determines whether the total for the number of scanned originals is displayed on the operation panel. [0 to 1/**0**/1] 0: OFF. Total not displayed 1: ON. Total displayed.

1012	User Info Release	GW
	This SP determines whether user information is released at the end of every job. [0 to 1/1/1] 0: OFF. Do not release 1: ON. Release the following details: • Destination (Email/Folder/CS • Sender name • Mail text • Subject • File name	

1020	Signature Setting (Scan-to-Email)	GW
	This SP determines whether the sender signature is allowed for scan-to-email sending. [0 to 2/0/1] 0: Allows setting for each job. Operator selects before sending. 1: Always allowed. Signature required before sending. 2: OFF. Never allowed.	

2021	Compression Level (Grayscale)	GW
	Sets the rate of compression for JPG files that are sent to another destination with a software application. There are five settings. Each setting below corresponds to the notches selected for compression level with User Tools: 1.[User Tools]> "Scanner Features"> "Send Settings"> Compression (Grayscale/Full Color). 2. Touch "Low" to move the notch selection (highlight) left for lower compression. -or- Touch "High" to move the notch selection right for higher compression.	

1	Comp 1: 5-95	Notch 1: [5 to 95/**20**/1]
2	Comp 2: 5	Notch 2: [5 to 95/**40**/1]
3	Comp 3: 5	Notch 3: [5 to 95/**65**/1]
4	Comp 4: 5	Notch 4: [5 to 95/**80**/1]
5	Comp 5: 5	Notch 5: [5 to 95/**95**/1]

Input Check

Input Check

You can check the sensors and switches with SP5803.

Each mode displays an 8-digit number, numbered 7 to 0 reading from left to right.

Bit	7	6	5	4	3	2	1	0
Display	0	0	0	0	0	0	0	1

A "0" (OFF) or "1" (ON) bit indicates the current status of the corresponding sensor or switch. For most components in the list below only the first bit on the right (the "0" bit) is used.

SP5803 Input Check

No.	Component			
1	Upper Roll Tray Open	Bit7 to 1 Not Used		
2	Upper Cutter Cover Open	Bit0	1	ON
3	Upper Cutter HP Switch: Left			
4	Upper Cutter HP Switch: Right			
5	Upper Roll Tray Exit Sensor			
6	Roll 1 Leading Edge Sensor			
7	Roll 1 Roll End Sensor			
8	Roll 1 Paper End Sensor			
9	Roll 1 Pre-Feed Switch			
10	Roll 1 Width Sensor	**Not Used**		
11	Roll 2 Leading Edge Sensor	Bit7 to 1 Not Used		
12	Roll 2 Roll End Sensor	Bit0	1	ON
13	Roll 2 Paper End Sensor			

No.	Component			
14	Roll 2 Pre-Feed Switch			
15	Roll 2 Width Sensor	**Not Used**		
20	Lower Roll Tray Safety Switch	Bit7 to 1 Not Used		
21	Lower Roll Tray Open	Bit0	1	ON
22	Lower Cutter Cover Open			
23	Lower Cutter Switch: Right			
24	Lower Cutter Switch: Left			
25	Lower Roll Tray Exit Sensor			
26	Roll 3 Leading Edge Sensor			
27	Roll 3 Roll End Sensor			
28	Roll 3 Paper End Sensor			
29	Roll 3 pre-Feed Switch			
30	Roll 3 Width Sensor	**Not Used**		
31	Roll 4 Leading Edge Sensor	Bit7 to 1 Not Used		
32	Roll 4 Roll End Sensor	Bit0	1	ON
33	Roll 4 Paper End Sensor			
34	Roll 4 Pre-Feed Switch			
35	Roll 4 Width Sensor	**Not Used**		
50	Cassette Unit Sensor	Bit7 to 1 Not Used		
51	Cassette Open Sensor 1	Bit0	1	ON
52	Paper Feed Sensor 1			
53	Paper End sensor 1			
54	Paper Near End Sensor 1			
55	Tray Lift Sensor 1			
56	Paper Width Switch 1	Bit7 to 3: Not Used		

No.	Component			
		Bit2	1	Cass. 1 Sn 3 ON
		Bit1	1	Cass. 1 Sn 2 ON
		Bit0	1	Cass. 1 Sn 1 ON
61	Cassette Open Sensor 2	Bit7 to 1 Not Used		
62	Paper Feed Sensor 2	Bit0	1	ON
63	Paper End sensor 2			
64	Paper Near End Sensor 2			
65	Tray Lift Sensor 2			
66	Paper Width Switch 2	Bit7 to 3: Not Used		
		Bit2	1	Cass. 2 Sn 3 ON
		Bit1	1	Cass. 2 Sn 2 ON
		Bit0	1	Cass. 2 Sn 1 ON
70	Paper Set Sensor	Bit7 to 1 Not Used		
71	Paper Registration Sensor	Bit0	1	ON
72	Paper Exit Sensor			
73	Front Tray Full Sensor			
74	Total Counter Set			
75	Waste Toner bottle Full Sensor			
76	Corona Wire Cleaner Motor			
80	Upper Unit Open Switch: Left			
81	Upper Unit Open Sensor: Right			
82	Exit Door Open Switch			
83	Fusing Cover Open Sensor			
84	Toner Hopper Cover Open Sensor			
85	PSU Door Open Sensor			

No.	Component			
90	Main Motor			
91	Development Motor			
92	Registration Motor			
93	Fusing Motor			
94	LPH Cooling Fan Motor: Left			
95	LPH Cooling Fan Motor: Right			
96	Not Used			
97	Not Used			
100	Fusing High Temperature Latch			
101	Zero Cross			
102	Left Fusing Motor HP Sensor			
103	Right Fusing Motor HP Sensor			
110	Model Check			
111	DIPSW1	Bit7	1	DIP SW1-8 ON
		Bit6	1	DIP SW1-7 ON
		Bit5	1	DIP SW1-6 ON
		Bit4	1	DIP SW1-5 ON
		Bit3	1	DIP SW1-4 ON
		Bit2	1	DIP SW1-3 ON
		Bit1	1	DIP SW1-2 ON
		Bit0	1	DIP SW1-1 ON
112	Key Card Set	Bit7 to 1 Not Used		
113	Key Counter Set	Bit0	1	ON
114	Folder Status			
115	Folder Connection			

No.	Component			
116	Color Counter: KEY_IN			
117	Color Counter: START			
118	Color Counter: SET			
150	Original Size Sensor: A	Bit7 to 6 Not Used		
		Bit5	1	A3/36" Sensor ON
		Bit4	1	A2/30" Sensor ON
		Bit3	1	A1/24" Sensor ON
		Bit2	1	660/18" Sensor ON
		Bit1	1	A0/12" Sensor ON
		Bit0	1	914/9" Sensor ON
151	Original Size Sensor: B	Bit7 to 4 Not Used		
		Bit3	1	B4/11" Sensor ON
		Bit2	1	B3/17" Sensor ON
		Bit1	1	B2/22" Sensor ON
		Bit0	1	B1/34" Sensor ON
152	Original Exit Sensor: Rear	Bit7 to 1 Not Used		
153	Original Registration Sensor	Bit0	1	ON
154	Original Set Sensor*1			
155	Scanner Open Sensor: Right			
156	Scanner Open Sensor: Left			
157	SDB Cooling Fan Motor: Left			
158	SDB Cooling Fan Motor: Right			
159	Original Stp Key			

*1: Size sensor A4/8.5"

Output Check

Output Check

You can check the listed parts with SP5804.

Item	Parts
1	Original Feed Motor
2	Original Feed Clutch
3	Original Junction Gate Solenoid
4	Scanner Lamp 1
5	Scanner Lamp 2
6	Scanner Lamp 3
7	Scanner Lamp 4
8	Scanner Cooling Fan Motor
11	Roll Feed Motor 1: Forward
12	Roll Feed Motor 1: Reverse
13	Roll Feed Motor 2: Forward
14	Roll Feed Motor 2: Reverse
15	1st Roll Feed Clutch
16	2nd Roll Feed Clutch
17	3rd Roll Feed Clutch
18	4th Roll Feed Clutch
19	Cutter 1 (On Only)
20	Cutter 2 (On Only)
21	Cassette Feed Motor
22	Cassette Transport Clutch

Item	Parts
23	1st Cassette Pickup Solenoid
24	2nd Cassette Pickup Solenoid
25	1st Cassette Feed Clutch
26	2nd Cassette Feed Clutch
27-30	--- Not Used ---
31	Registration Motor
32	Main Motor (Drum Drive)
33	Fusing/Exit Motor
34	Registration Clutch
35	Junction Gate Solenoid (Original)
36-40	--- Not Used ---
41	Charge Corona
42	Charge Grid: Image Area
43	Charge Grid: ID Sensor Pattern
44	Charge Corona/Grid: Image Area
45	Development Bias: Image Area
46	Development Bias: ID Sensor Pattern
49	Separation Corona: Leading Edge
50	Separation Corona (Not Leading Edge)
51	Development Motor
52	Toner Supply Clutch
53	Quenching Lamp
54	Pickoff Pawl Solenoid
55	ID Sensor LED (PWM)
56	Potential Measuring Mode (Drum)

Item	Parts
57	Pre-Transfer Lamp
58	LPH ON
60	LPH Cooling Fan Motor
61	Right Fusing Pressure Motor: Home
62	Right Fusing Pressure Motor: Release
63	Left Fusing Pressure Motor: Home
64	Left Fusing Pressure Motor: Release
65	Transport Fan Motor
66	Charge Corona Wire Cleaner Motor
67	Recycle Counter (Mechanical Counter)
68	Dehumidfiers (Tray Heaters)
70	Separation Corona: Before Leading Edge
71	Separation Corona: Leading Edge
72	Separation Corona: Trailing Edge

Test Patterns

Test Patterns

2902	Test Pattern	
	Select the test pattern number, touch [Copy Screen], then push [Start].	
	Operates the test pattern printing. Enter the number for the desired test pattern, switch the display to the "Copy Window" then press the [Start] button. Once you leave the SP mode, the pattern selection is disabled and the test pattern cannot be printed. [0 to 25/0/1]	
0	None	
1	Grid Pattern (1-dot)	
2	Grid Pattern (2-dot)	
3	Grid Pattern (3-dot)	
4	Grid Pattern (4-dot)	
5	Grid Pattern (5-dot)	
6	Grid Pattern (6-dot)	
7	Argyle Pattern (1-dot)	
8	Argyle Pattern (2-dot)	
9	Argyle Pattern (3-dot)	
10	Argyle Pattern (4-dot)	
11	Argyle Pattern (5-dot)	
12	Argyle Pattern (6-dot)	
13	Vertical Line (1-dot)	
14	Vertical Line (2-dot)	
15	Horizontal Line (1-dot)	
16	Horizontal Line (2-dot)	

17	Checkered Flag	
18	Alternating Dot Pattern (1-dot)	
19	Alternating Dot Pattern (2-dot)	
20	Alternating Dot Pattern (4-dot)	
21	Trimming Area	
22	Full Dot Pattern	
23	Black Band (Vertical)	
24	Black Band (Horizontal)	
25	Blank Image	

Do SP4417 to print an IPU Test Pattern if you experience problems with image processing (poor halftones, line widths, etc.)

4417	IPU Test Pattern: Test Pattern Selection
	Operates the test pattern printing. Enter the number for the desired test pattern, switch the display to the "Copy Window" then press the [Start] button. Once you leave the SP mode, the pattern selection is disabled and the test pattern cannot be printed.
	Scan Test Patterns
0	Scanner Data
1	Vertical Line: 1-dot: SCN
2	Vertical Line: 2-dot: SCN
3	Horizontal Line: 1-dot: SCN
4	Horizontal Line: 2-dot: SCN
5	Independent Dot: 1-dot: SCN
6	Grid Pattern: 1-dot: SCN
7	Vertical Stripes: SCN
8	Grayscale Vertical: 16-level: SCN
9	Grayscale Horizontal: 16-level: SCN

10	Density Patch: 16-level: SCN
11	Plus Sign: SCN
12	Argyle Pattern: SCN
13	Density Patch: 256-level: SCN
14	Density Patch: 64-level: SCN
15	Trimming Area: SCN
16	Bandwidth Vertical: SCN
17	Bandwidth Horizontal: SCN
	Print Test Patterns
18	Independent Dot: 1-4 dot: PRN
19	Grayscale Horizontal: 16-level: PRN
20	Grayscale Vertical: 16-level: PRN
21	Grayscale: 16-level: PRN
22	Density Patch: 256-level: PRN
23	Density Patch: 64-level: PRN
24	Plus Sign: PRN
25	Grid Pattern: 96-dot: PRN
26	Argyle Pattern: PRN
27	Grayscale Horizontal: 16-level: + Line: PRN
28	Grid Pattern: 128-dot: PRN